WKE

PROJECT ID: 2030-14-70

COUNTY: MILWAUKEE

FEB 2018

ORDER OF SHEETS

Section No.	1	Title
Section No.	2	Typical Sections and Details
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	4	Right of Way Plat
Section No.	5	Plan and Profile
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 = 324

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

108TH STREET, CITY OF WEST ALLIS

HANK AARON STATE TRAIL, B-40-107/108

STH 100

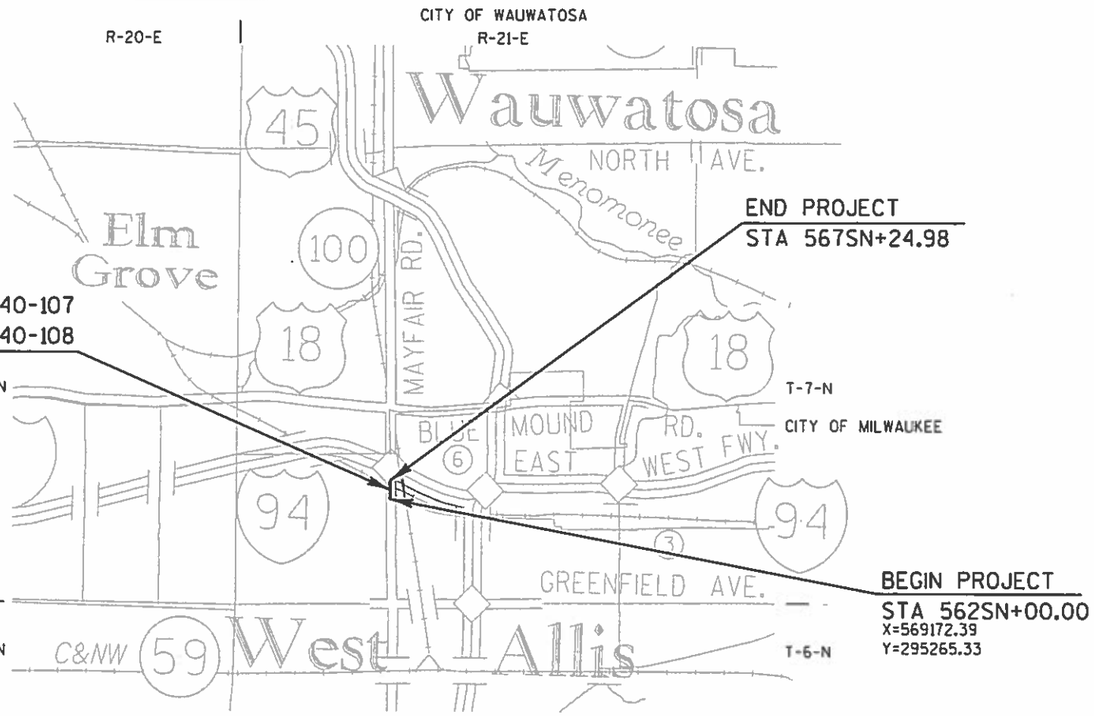
MILWAUKEE COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2030-14-70	WISC 2018086	1



N

STATE PROJECT NUMBER
2030-14-70



DESIGN DESIGNATION STH 100

A.A.D.T. 2013	=	33,430
A.A.D.T. 2035	=	41,100
D.H.V. 2035	=	5,420
D.D.	=	38% NB/62% SB
T.	=	2.70%
DESIGN SPEED	=	45 MPH
ESALS	=	2,387,100

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
- HIGH VOLTAGE — CAUTION
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE

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

UTILITIES

- ELECTRIC — E
- FIBER OPTIC — FO
- GAS — G
- SANITARY SEWER — SAN
- STORM SEWER — SS
- TELEPHONE — T
- WATER — W
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE
- TRANSMISSION TOWER

LAYOUT
SCALE 0 0.5 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.099 MI.

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

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM NAVD 88 (2007)

ORIGINAL PLANS PREPARED BY
KAPUR & ASSOCIATES, INC.
CONSULTING ENGINEERS
MILWAUKEE, WISCONSIN
414.751.7200

WISCONSIN
PAUL G. STANKEVICH
E-31654
MUSKEGO, WI.
PROFESSIONAL ENGINEER

12/12/2017
(Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	KAPUR & ASSOCIATES
Designer	KAPUR & ASSOCIATES / BLOOM
Project Manager	CHRISTOPHER HAGER
Regional Examiner	
Regional Supervisor	WAFA ELDAQ
C.O. Examiner	

APPROVED FOR THE DEPARTMENT
DATE: 12/19/2017 (Signature)

E

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melissa.cook@wisconsin.gov

TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

WIS. STATUTE 182.0175 (1974) REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE.

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

GENERAL NOTES

NO TREES OR SHRUBS SHALL BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.

ANY REINFORCEMENT LOCATED IN EXISTING CONCRETE PAVEMENT SHALL BE CONSIDERED INCIDENTAL TO THE REMOVING PAVEMENT ITEM, AND NO ADDITIONAL COMPENSATION WILL BE GRANTED.

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

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

WHEN THE QUANTITY OF HMA PAVEMENT OR BASE AGGREGATE IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLAN IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

THE QUANTITY OF TOPSOIL IS COMPUTED FROM MEASUREMENTS BETWEEN THE SUBGRADE SHOULDER POINTS AND THE SLOPE INTERCEPTS AS SHOWN ON THE CROSS SECTIONS PLUS 5 FEET FOR ROUNDING.

CURB AND GUTTER GRADES ARE GIVEN TO THE FLANGE OF CURB AND GUTTER. CURB AND GUTTER RADII ARE MEASURED TO THE FACE OF CURB AND GUTTER.

PROVIDE A TYPICAL SIDEWALK CROSS SLOPE OF 1.5% WITH A CONSTRUCTION TOLERANCE OF +/- 0.5%.

CROSS SECTIONS SHOWN INCLUDE THE THICKNESS OF TOPSOIL WHERE REQUIRED. TOPSOIL SHALL BE REPLACED WITH 6-INCH TYPICAL DEPTH THROUGHOUT THE PROJECT.

A SAWED JOINT IS REQUIRED WHERE NEW HMA PAVEMENT MEETS EXISTING HMA PAVEMENT.

REMOVAL OF EROSION CONTROL DEVICES IS INCLUDED IN THE COST OF THEIR RESPECTIVE BID ITEMS.

RE-TOPSOIL OF GRADED AREAS, AS DESIGNATED BY THE ENGINEER, IMMEDIATELY AFTER GRADING IS COMPLETED WITHIN THOSE AREAS. SEED, FERTILIZE, AND EROSION MAT TOP-SOILED AREAS, AS DESIGNATED BY THE ENGINEER, WITHIN FIVE (5) CALENDAR DAYS AFTER PLACEMENT OF TOPSOIL. IF GRADED AREAS ARE LEFT EXPOSED FOR MORE THAN (14) CALENDAR DAYS, SEED THOSE AREAS WITH TEMPORARY SEED AND MULCH.

STOCKPILE EXCESS MATERIAL OR SPOILS ON UPLAND AREAS AWAY FROM WETLANDS, FLOODPLAINS AND WATERWAYS. STOCKPILED SOIL SHALL BE PROTECTED AGAINST EROSION. IF STOCKPILED MATERIAL IS LEFT FOR MORE THAN FOURTEEN (14) CALENDAR DAYS, SEED THE STOCKPILE WITH TEMPORARY SEED AND MULCH.

EROSION CONTROL BMPS ARE AT SUGGESTED LOCATIONS. THE ACTUAL LOCATIONS WILL BE DETERMINED BY THE CONTRACTOR'S ECIP AND BY THE ENGINEER. EROSION CONTROL BMPS SHALL BE MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED OR UNTIL THE ENGINEER DETERMINES THAT THE BMP IS NO LONGER REQUIRED.

FERTILIZER SHALL NOT BE USED WITHIN 100' OF NAVIGABLE WATERWAYS OR WETLANDS.

WHEN DEFINING THE PAVEMENT STRUCTURE, THE BOTTOM OF THE BASE AGGREGATE DENSE IS CONSIDERED THE SUBGRADE LINE. THE SELECT CRUSHED MATERIAL LAYER IS A SUBGRADE IMPROVEMENT.

CONTACT THE PROJECT ENGINEER AND THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION (SEWRPC) AT LEAST TWO WEEKS PRIOR TO WORK NEAR ANY PUBLIC SURVEY MONUMENT.

PROVIDE A CONCRETE JOINT DETAIL PLAN 14 DAYS PRIOR TO PAVING FOR APPROVAL BY THE ENGINEER. 15' MAXIMUM SPACING FOR LONGITUDINAL JOINTS.

CONCRETE PAVEMENT TINING SHALL BE LONGITUDINAL.

VERIFY EXISTING PAVEMENT ELEVATIONS AT ALL TIE-INS TO EXISTING PAVEMENT PRIOR TO CONSTRUCTION. IF A DISCREPANCY IS FOUND BETWEEN PROPOSED PLAN ELEVATIONS AND EXISTING PAVEMENT ELEVATIONS, CONTRACTOR IS TO NOTIFY ENGINEER.

ALL PRIVATE EXISTING UTILITIES ARE TO BE ADJUSTED BY THE UTILITIES CONCERNED.

DESIGN, PLANS, SPECIFICATIONS AND QUANTITIES FOR PERMANENT SIGNING PROVIDED BY WISDOT SE REGION. DESIGN, PLANS, SPECIFICATIONS AND QUANTITIES FOR ALL REMAINING ITEMS PROVIDED BY, OR UNDER THE DIRECT SUPERVISION OF KAPUR & ASSOCIATES AND BLOOM COMPANIES.

UTILITY TRENCH PAVEMENT RESTORATION SHALL BE CONSTRUCTED WITH ASPHALTIC SURFACE 5-INCH ON BASE AGGREGATE DENSE 1 1/4-INCH, 10-INCH.

CONSTRUCT HMA PAVEMENT WITH THE FOLLOWING LAYERS AND GRADATIONS:

PAVEMENT TYPE	TOTAL LAYER PAVEMENT THICKNESS	LAYERS	NOMINAL MAXIMUM SIZE GRADATION	ASPHALTIC BINDER
4 MT 58-28 H	2 1/2"	ONE 2-1/2" LAYER		
ASPHALTIC SURFACE TEMPORARY	5"	2" UPPER LAYER 3" LOWER LAYER	12.5 MM 19.0 MM	58-28 H

ORDER OF SECTION 2 DETAIL SHEETS

GENERAL NOTES
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
REMOVAL PLANS
PLAN DETAILS
PAVING GRADES
EROSION CONTROL
STORM SEWER
PERMANENT SIGNING
LIGHTING PLANS
TRAFFIC SIGNALS
PAVEMENT MARKING
TRAFFIC CONTROL
ALIGNMENT LAYOUT

STANDARD ABBREVIATIONS

AEW	APRON END WALL
AGG	AGGREGATE
ASPH	ASPHALTIC
BAD	BASE AGGREGATE DENSE
BM	BENCH MARK
C&G	CURB AND GUTTER
C/L	CENTER OR CONSTRUCTION LINE
CMCP	CULVERT PIPE CORRUGATED METAL
CONC	CONCRETE
CP	CULVERT PIPE
CPRC	CULVERT PIPE REINFORCED CONCRETE
CSD	CONCRETE SURFACE DRAIN
CY	CUBIC YARD
D	DEGREE OF CURVE
Δ	DELTA
DISCH	DISCHARGE
EB	EASTBOUND
ENB	EXISTING NOISE BARRIER
FE	FIELD ENTRANCE
FL	FLOW LINE
HMA	HOT MIX ASPHALT
INV	INVERT
L	LENGTH OF CURVE
LHF	LEFT HAND FORWARD
LP	LOW POINT
LT	LEFT
MIN	MINIMUM
M/L	MATCHLINE
NB	NORTHBOUND
NC	NORMAL CROWN
PAVT	PAVEMENT
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PE	PRIVATE ENTRANCE
PI	POINT OF INTERSECTION
PGL	PROFILE GRADE LINE
PLE	PERMANENT LIMITED EASEMENT
PNB	PROPOSED NOISE BARRIER
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENT
R	RADIUS OF CURVE
R/L	REFERENCE LINE
R/W	RIGHT OF WAY
RC	REVERSE CROWN
RCAEW	APRON ENDWALL FOR CULVERT PIPE REINFORCED CONCRETE
REQD	REQUIRED
RHF	RIGHT HAND FORWARD
RO	RUN OFF LENGTH
RRSP	RAILROAD SPIKE
RT	RIGHT
SALV	SALVAGED
SAPBC	SALVAGED ASPHALTIC PAVEMENT BASE COARSE
SB	SOUTHBOUND
SDD	STANDARD DETAIL DRAWING
SE	SUPER ELEVATION
SF	SQUARE FOOT
SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
STA	STATION
SY	SQUARE YARD
T	TANGENT LENGTH
TLE	TEMPORARY LIMITED EASEMENT
VCL	VERTICAL CURVE LENGTH
VPC	POINT OF VERTICAL CURVE
VPI	POINT OF VERTICAL INTERSECTION
VPT	POINT OF VERTICAL TANGENT
WB	WESTBOUND

2

N

CITY OF WAUWATOSA

W. BLUEMOUND ROAD

N. MAYFAIR ROAD

CITY OF MILWAUKEE

HANK AARON STATE TRAIL

100HA 105HA 110HA 115HA 120HA 125HA 130HA 135HA 140HA 145HA 150HA 155HA 160HA 165HA 170HA 175HA 180HA 185HA 190HA

CONSTRUCTION LIMIT
STA 555SC+65.55

535SC 540SC 545SC 550SC 555SC

R/L HA

R/L SC

B-40-107

B-40-108

IH 94

END PROJECT 2030-14-70
STA 567SN+24.98

BEGIN PROJECT 2030-14-70
STA 562SN+00.00

R/L SS

R/L SN

STH 100

UNION PACIFIC RAILROAD

W. THEODORE TRECKER WAY

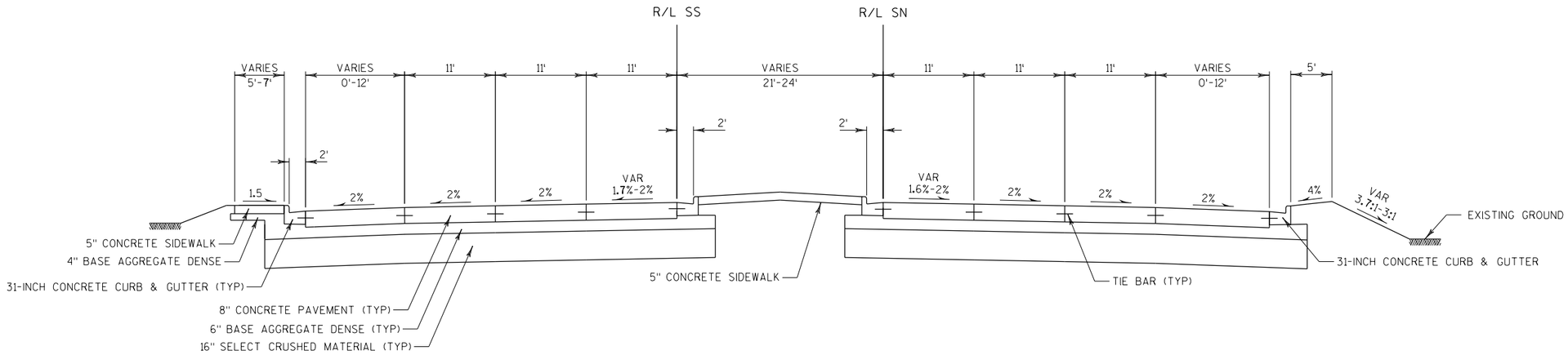
S. 108TH STREET

IH 894/USH 45

CITY OF WEST ALLIS

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	PROJECT OVERVIEW	SHEET 4	E

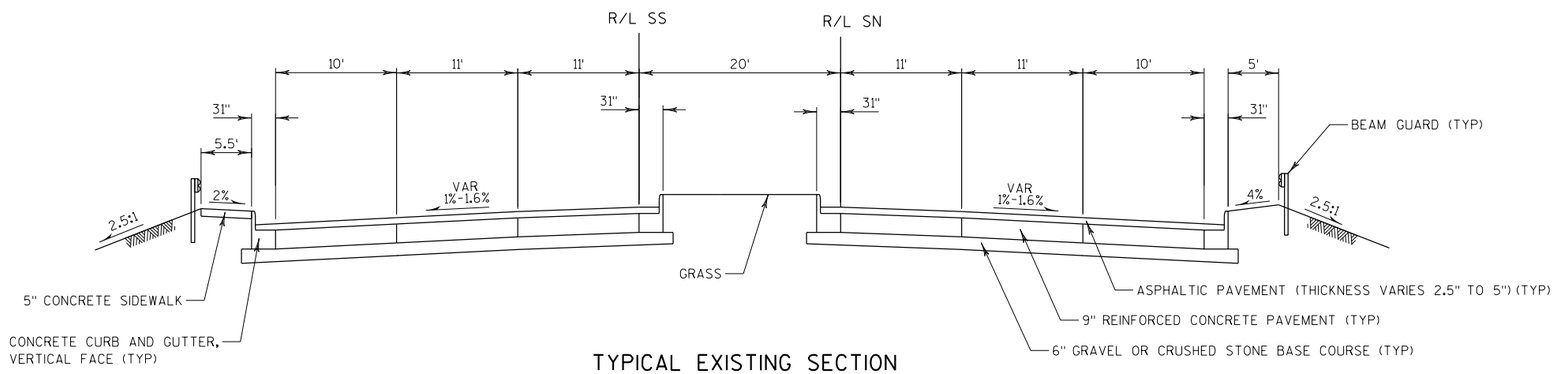
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TYPICAL EXISTING SECTION

STH 100

STA 566SN+16.01 TO STA 567SN+24.98



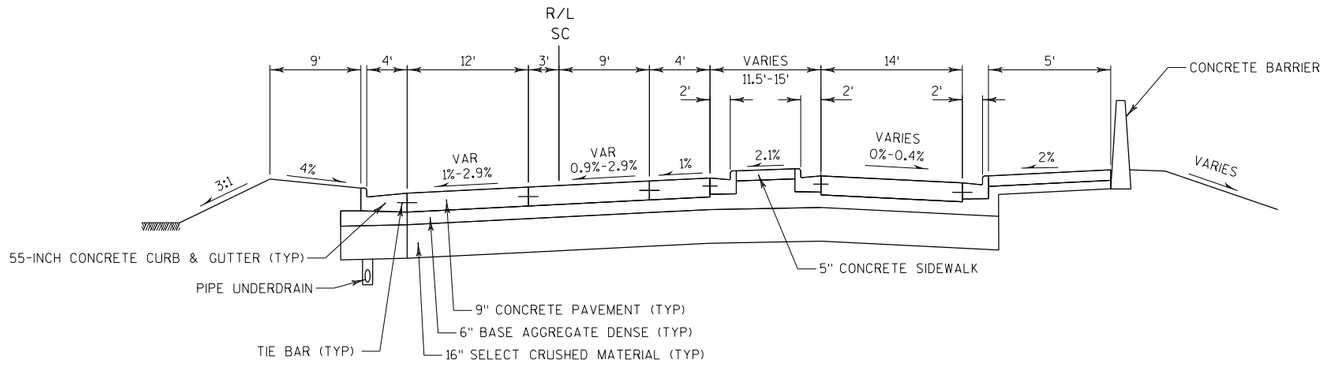
TYPICAL EXISTING SECTION

STH 100

STA 562SN+00.00 TO STA 564SN+52.96

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 5	E

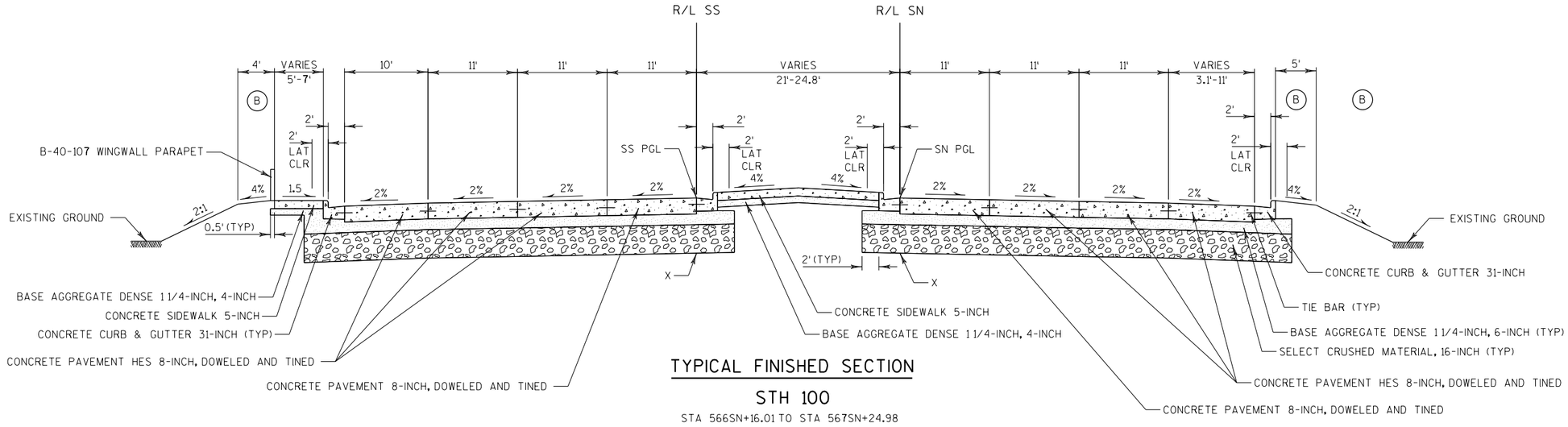
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TYPICAL EXISTING SECTION

RAMP SC

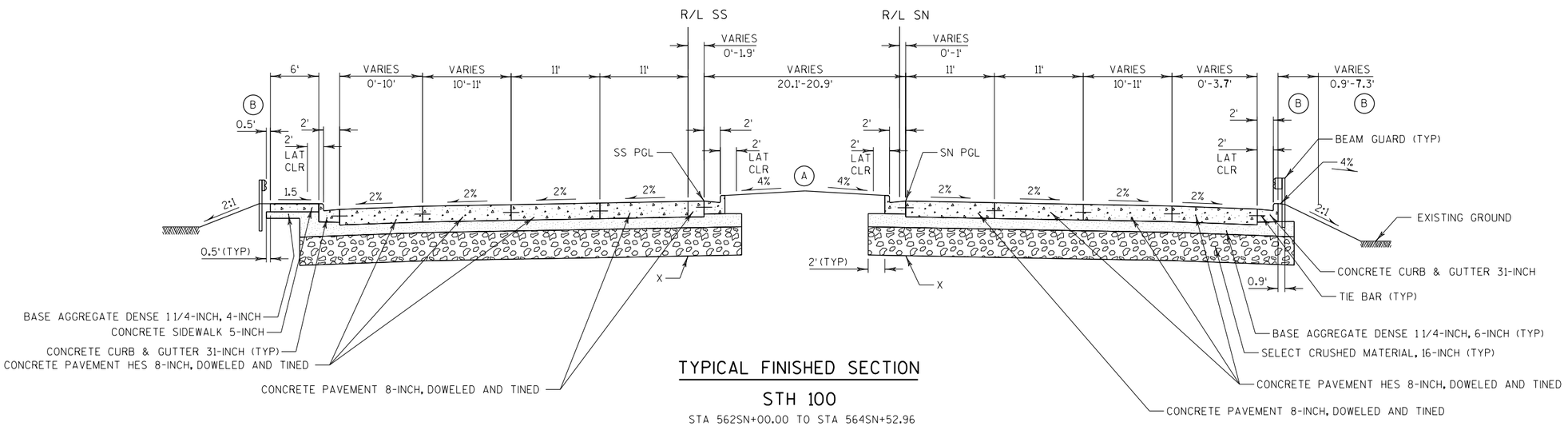
STA 555SC+65.55 TO STA 556SC+01.35



TYPICAL FINISHED SECTION

STH 100

STA 566SN+16.01 TO STA 567SN+24.98



TYPICAL FINISHED SECTION

STH 100

STA 562SN+00.00 TO STA 564SN+52.96

LEGEND

(A) 6" TOPSOIL SPECIAL, SOD LAWN & FERTILIZER TYPE B

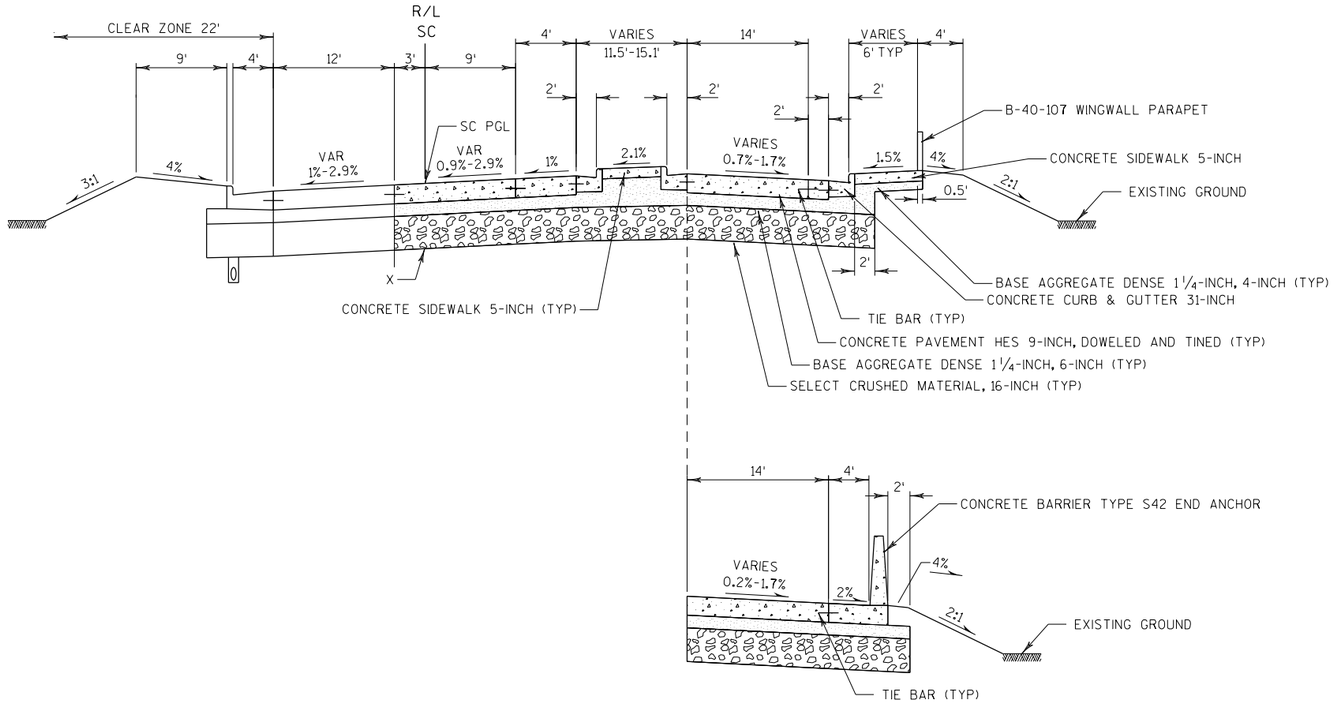
(B) 6" TOPSOIL SPECIAL, SEEDING MIXTURE NO. 20, FERTILIZER TYPE B, AND MULCH/EROSION MAT

NOTES

PGL = POINT REFERRED TO ON PROFILE
X = POINT REFERRED TO ON CROSS-SECTION

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 7	E

2



STA 555SC+65.55 TO STA 555SC+70.52

TYPICAL FINISHED SECTION

RAMP SC

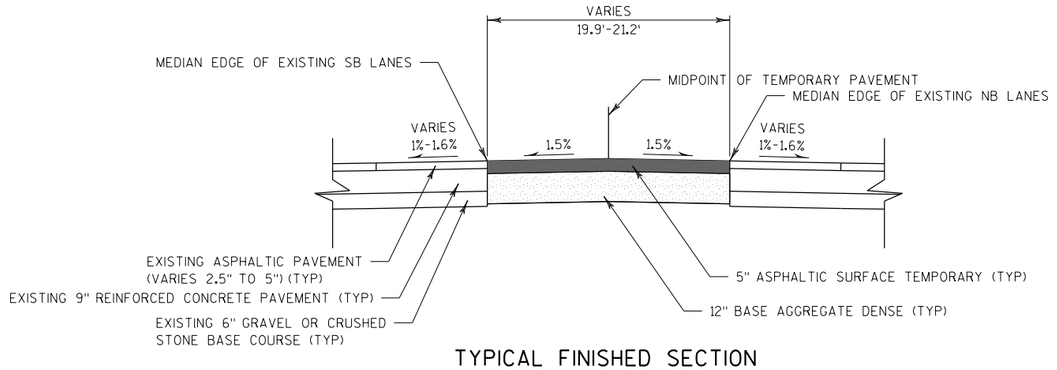
STA 555SC+65.55 TO STA 556SC+01.35

NOTES

PGL = POINT REFERRED TO ON PROFILE
X = POINT REFERRED TO ON CROSS-SECTION

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 8	E

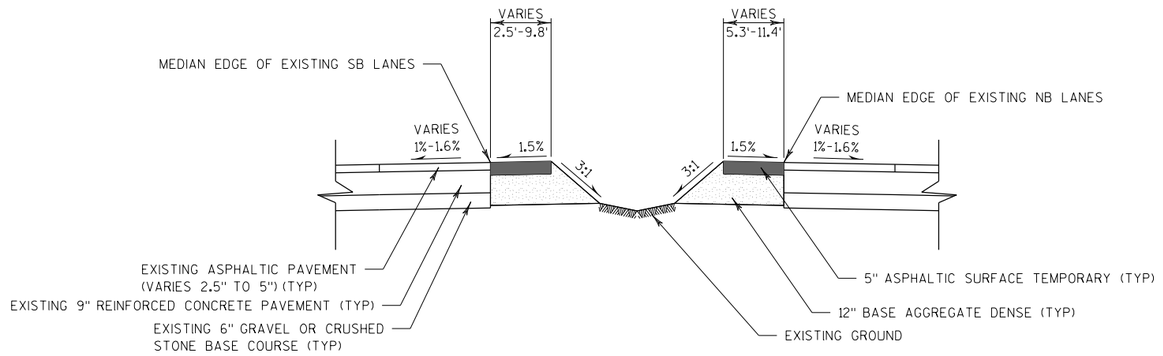
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TYPICAL FINISHED SECTION

TEMPORARY WIDENING FOR STAGE 2

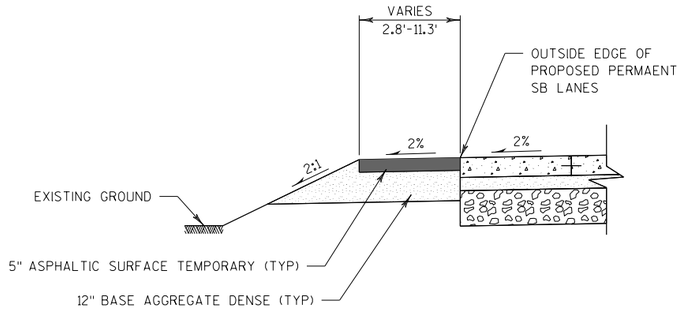
STA 560SN+99 TO STA 564SN+63



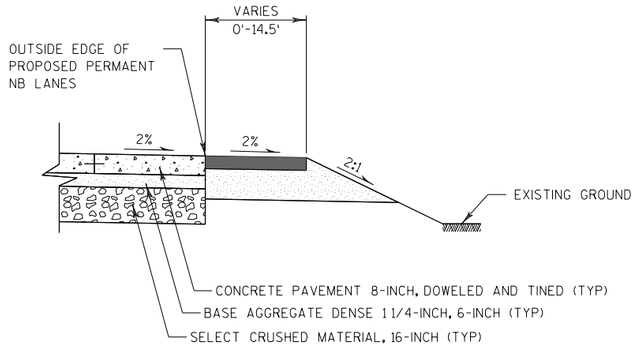
TYPICAL FINISHED SECTION

TEMPORARY WIDENING FOR STAGE 2

STA 559SN+49 TO STA 560SN+99



STA 561SS+18 TO STA 564SS+89
STA 566SS+48 TO STA 566SS+68
STA 566SS+93 TO STA 567SS+10

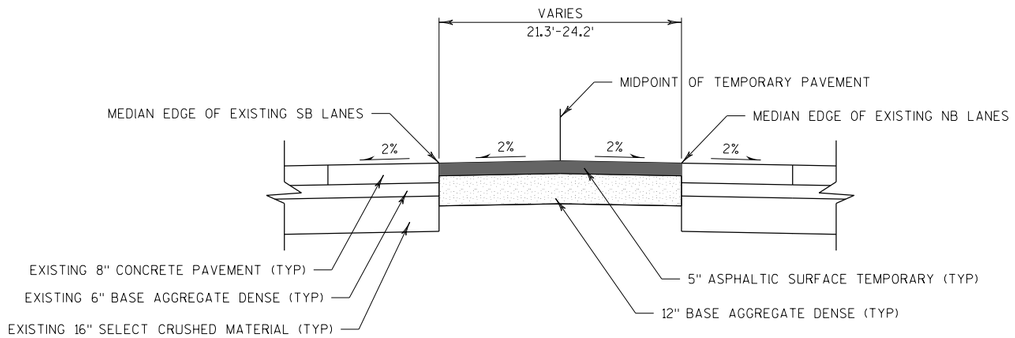


STA 560SN+76 TO STA 564SN+34
STA 565SN+93 TO STA 567SN+17

TYPICAL FINISHED SECTION

TEMPORARY WIDENING FOR STAGE 3

STA 560SN+76 TO STA 567SN+17
STA 561SS+18 TO STA 567SS+10

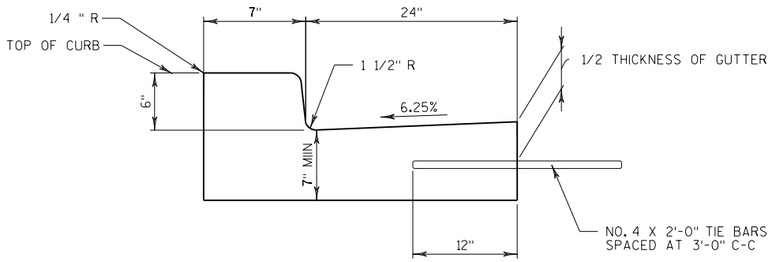


TYPICAL FINISHED SECTION

TEMPORARY WIDENING FOR STAGE 2

STA 566SN+16 TO STA 567SN+25

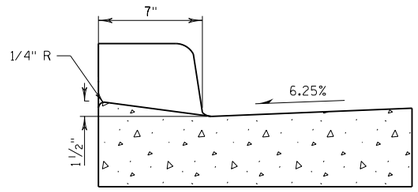
PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	TYPICAL SECTIONS	SHEET 10	E



NOTES

1. TIE BARS ARE REQUIRED FOR CURB AND GUTTER ADJACENT TO NEW CONCRETE PAVEMENT.
2. OMIT TIE BARS WHERE INTEGRAL CURB AND GUTTER IS REQUIRED.
3. SEE STANDARD DETAIL DRAWING FOR DETAILS NOT SHOWN HERE.

CONCRETE CURB AND GUTTER 31-INCH

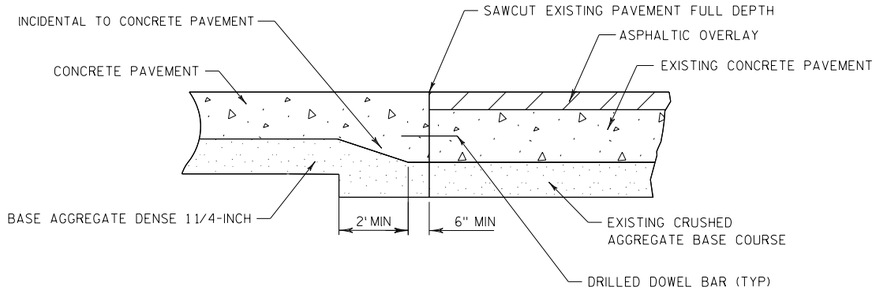


NOTE

PAID FOR AS CURB & GUTTER, MEASURED ALONG FLOW LINE.

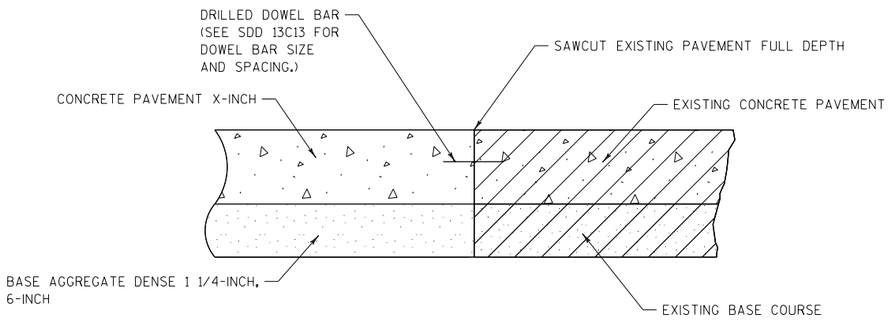
DRIVEWAY ENTRANCE CURB

LOCATIONS AS NOTED ON THE PLAN DETAILS

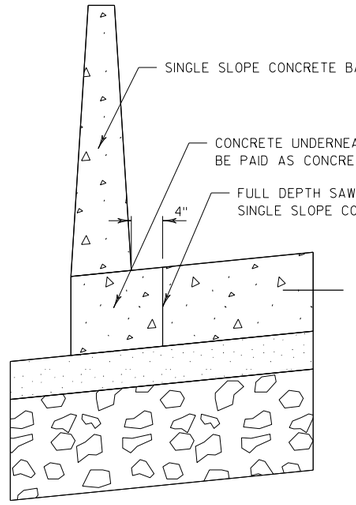


MATCH AT EXISTING CONCRETE PAVEMENT WITH ASPHALT OVERLAY

STA 562SN+00
STA 562SS+00



MATCH AT EXISTING CONCRETE PAVEMENT

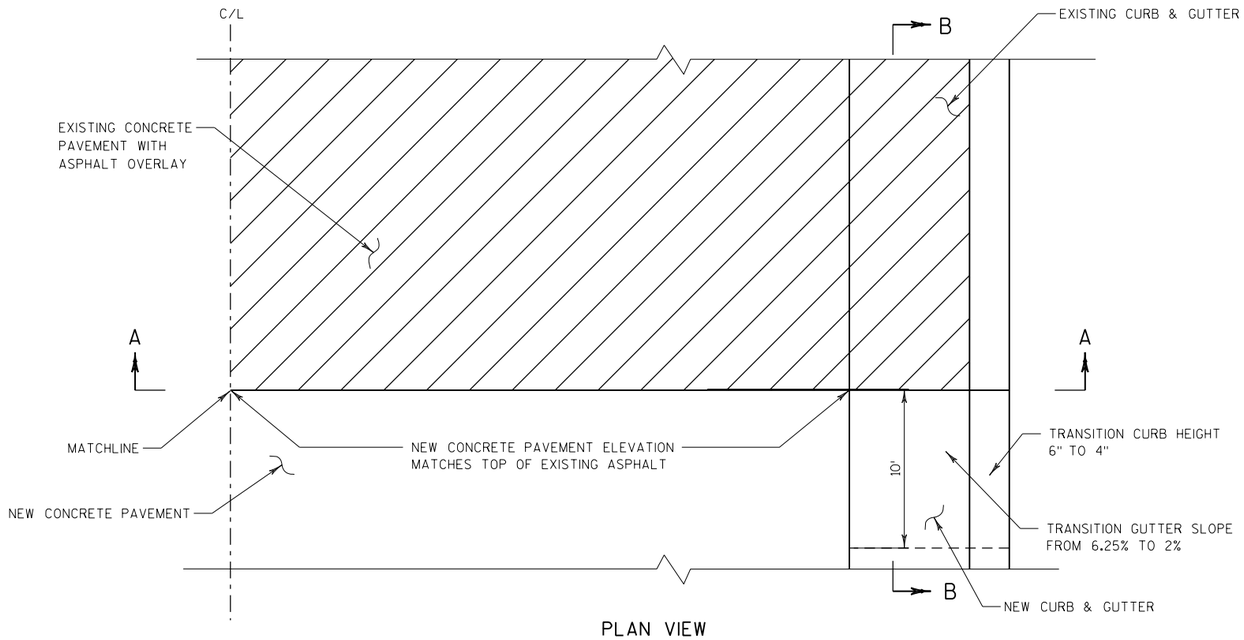


NOTES

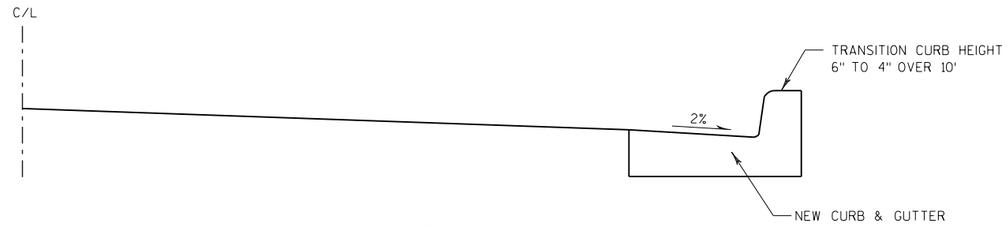
1. DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.
2. SEE SDD SINGLE SLOPE CONCRETE BARRIER FOR DETAILS NOT SHOWN HERE.
3. PROVIDE SAWED CONTRACTION JOINT IN BARRIER FOOTING ONLY AT CORRESPONDING CONCRETE PAVEMENT CONTRACTION JOINTS. OTHER CONTRACTION JOINTS NOT REQUIRED.

SINGLE SLOPE CONCRETE BARRIER QUANTITIES

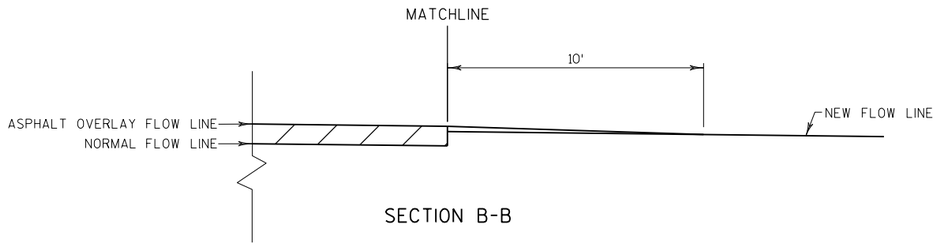
2



PLAN VIEW

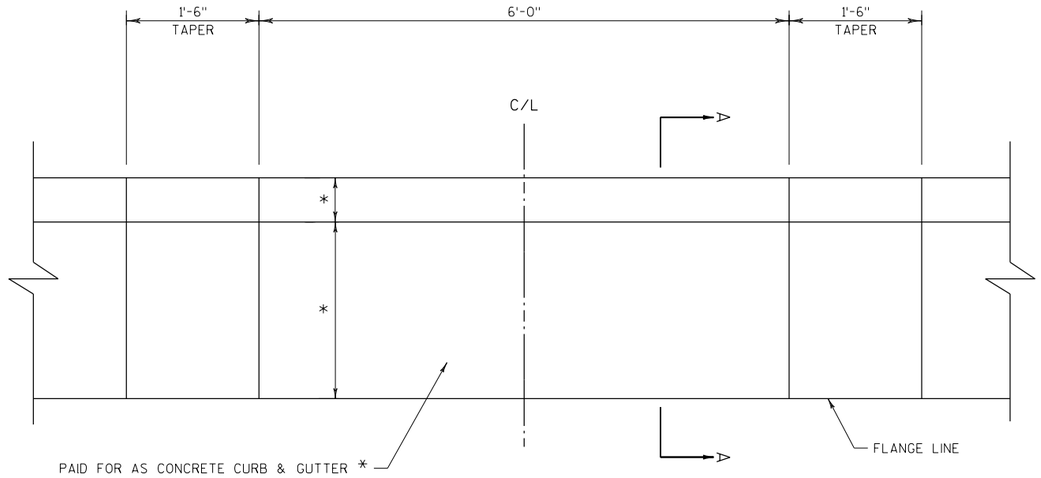


SECTION A-A

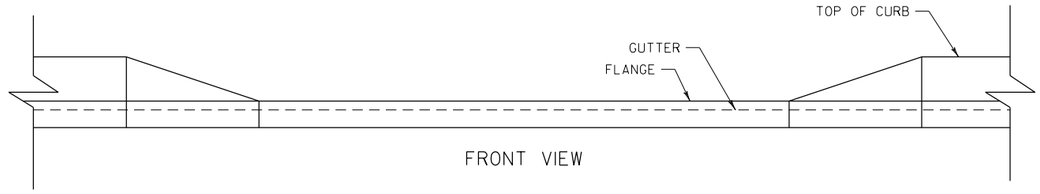


SECTION B-B

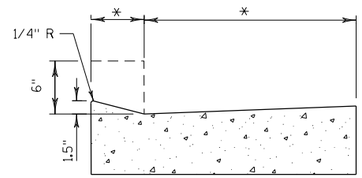
CURB & GUTTER TRANSITION AT EXISTING CONCRETE PAVEMENT WITH ASPHALT OVERLAY



PLAN VIEW



FRONT VIEW

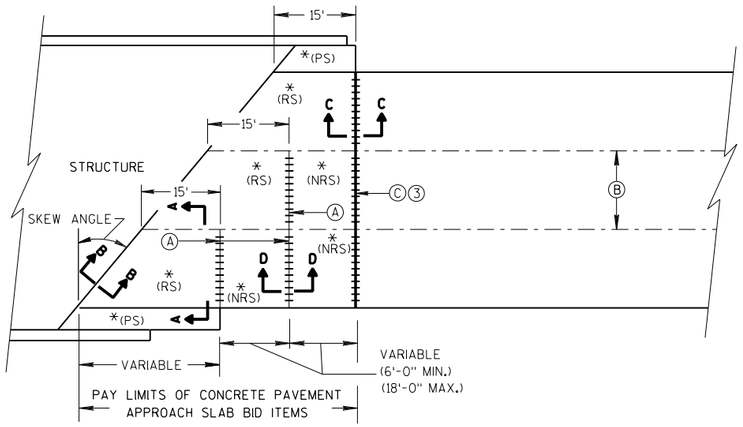


SECTION A-A

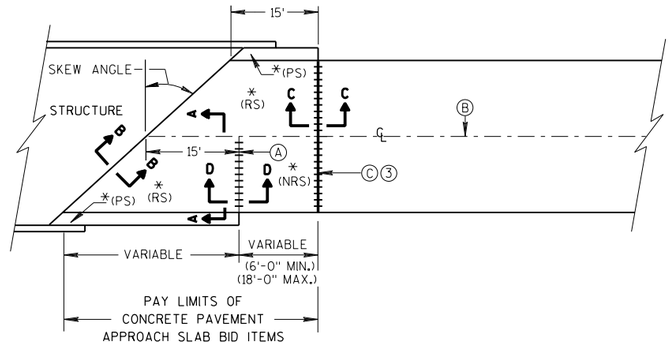
* TYPE AND DIMENSIONS TO MATCH ADJACENT CURB AND GUTTER.

MAINTENANCE OPENING

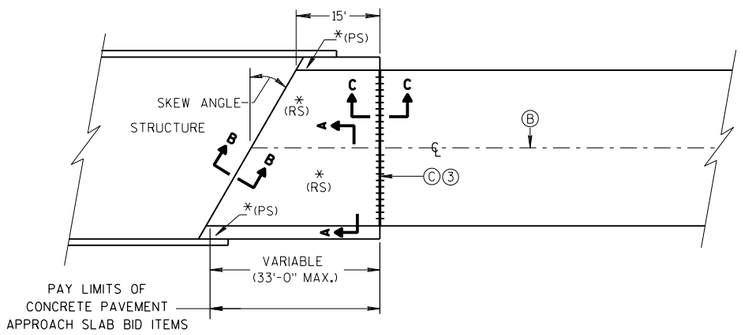
LOCATION SHOWN ON PAVING DETAILS



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS > 20°
(PAVEMENT WIDTH ≤ 30')



SKEWS ≤ 20°
(PAVEMENT WIDTH ≤ 30')

APPROACH SLAB AND ADJACENT PAVEMENT

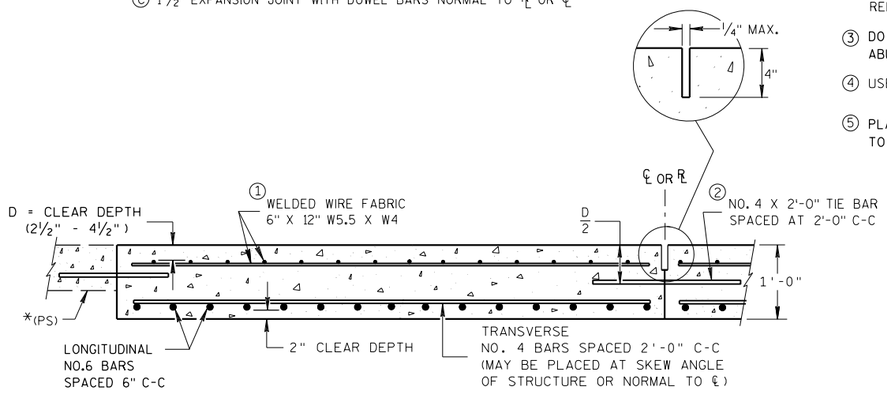
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

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

Ⓐ STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄

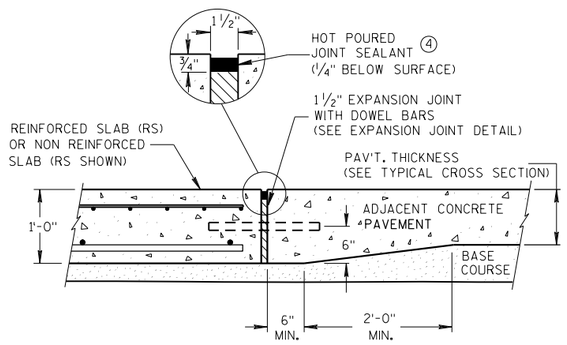
Ⓑ STANDARD LONGITUDINAL JOINT WITH TIE BARS.

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



SECTION A-A

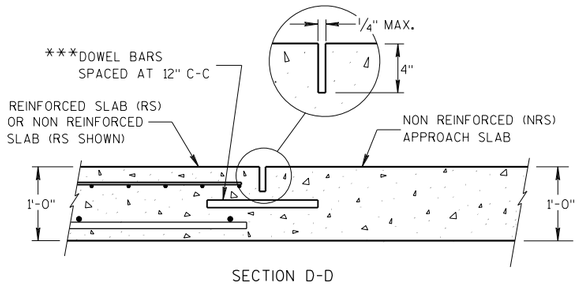
REINFORCEMENT POSITIONING DETAIL



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.

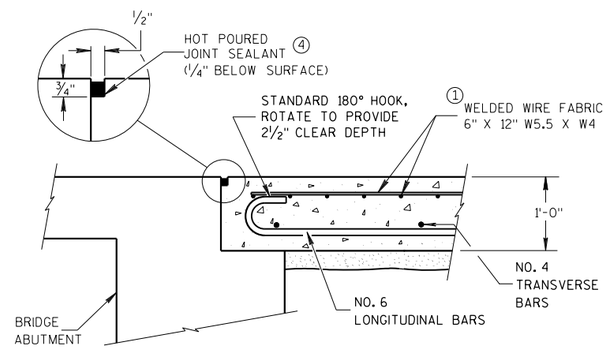
① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

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.

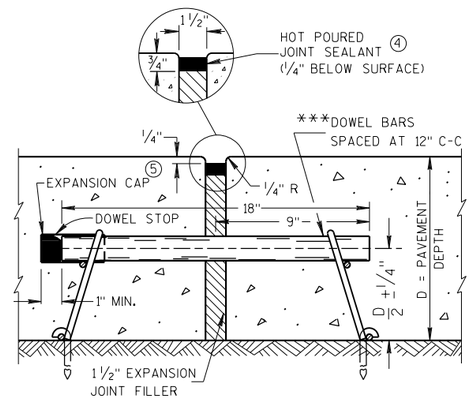
⑤ PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.



SECTION B-B

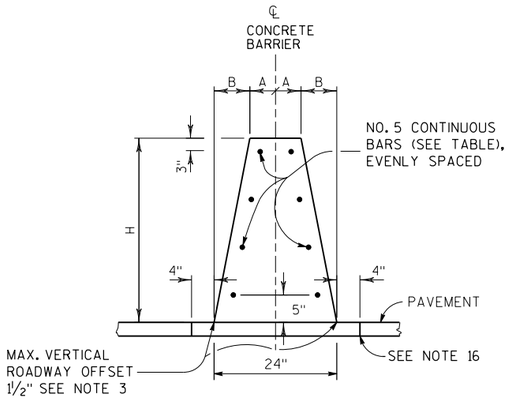
BEND DETAIL

BOTTOM REINFORCEMENT



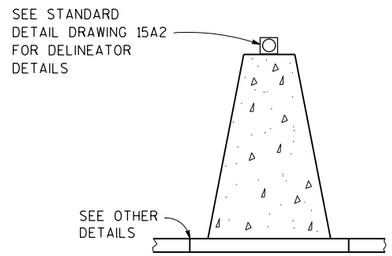
EXPANSION JOINT DETAIL

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SHEET 13	E



42-INCH
SINGLE SLOPE CONCRETE BARRIER
(TYPE S42)

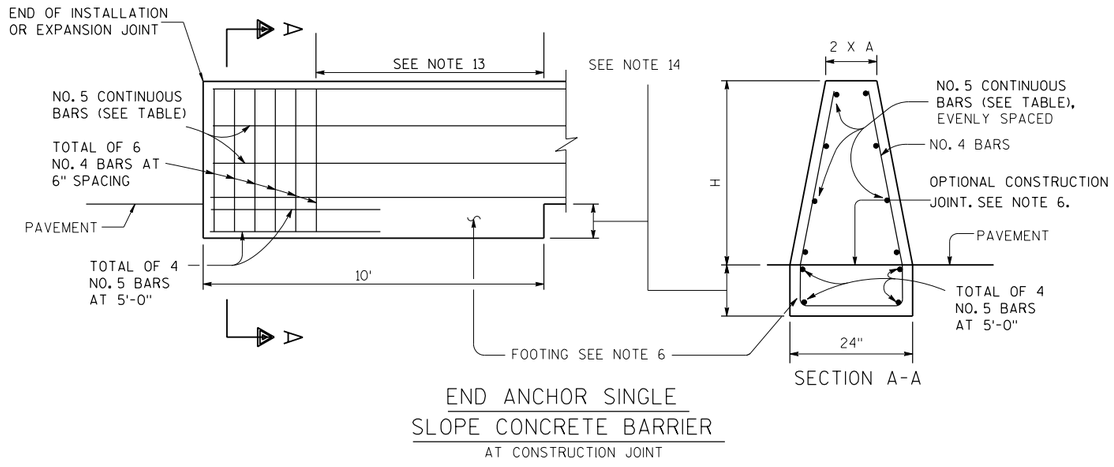
BARRIER HEIGHT H INCHES	A INCHES	B INCHES	NUMBER OF NO. 5 BARS EACH
42	5¼	6¾	10



DELINEATION

GENERAL NOTES

1. WHERE THE CONCRETE BARRIER IS ADDED TO THE FACE OF EXISTING CONCRETE STRUCTURE, MATCH EXISTING WEEP HOLES.
2. EXPANSION JOINTS IN CONCRETE BARRIER SHALL BE LOCATED AT ALL DECK, AND PRINCIPAL WALL JOINTS. EXPANSION JOINT FILLER MATERIAL SHALL BE THE SAME SIZE AS JOINT OR ½" MINIMUM.
3. WHERE VERTICAL ROADWAY OFFSET IS GREATER THAN 1 1/2 ", USE TYPE A.
4. PLACE BARRIER PERPENDICULAR TO SHOULDER GRADE, UNLESS INDICATED IN PLAN.
5. EXCEPT IN ANCHORS, VERTICAL REINFORCING STIRRUP NOT REQUIRED FOR ROADWAY OFFSETS LESS THAN 1'-0".
6. FOR TYPE S32, TYPE S36, TYPE S42, AND S56 MONOLITHIC FOOTING OR DOWELED FOOTING WITH 2-#8 x 8" @ 2'-0".
7. STAGGER LAPPING OF LONGITUDINAL STEEL. MINIMUM OVERLAP OF STEEL 2 FEET. BARS AT LAPS TO BE FIRMLY TIED OR CONNECTED.
8. 4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATION 501.
9. WHEN SWITCHING BETWEEN SLIP FORM AND CAST-IN-PLACE OPERATIONS, EXTEND LONGITUDINAL STEEL 3 FEET BEYOND SLIP-FORMING CUT OFF POINT. EXPOSED STEEL INTO NEXT POURS REINFORCEMENT. LAPS TO BE FIRMLY TIED.
10. USE 3/4" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS OTHERWISE NOTED.
11. 2" CLEAR COVER TYPICAL.
12. COLD-JOINTS MAY BE USED BETWEEN ANCHOR INSTALLATIONS. WHEN A COLD JOINT IS NEEDED, 3 FEET OF LAP OF LONGITUDINAL STEEL IS REQUIRED. LAPS TO BE FIRMLY TIED.
13. IN TYPE S32, TYPE S36, TYPE S42 AND TYPE S56 NO ADDITIONAL VERTICAL STEEL NEEDED. IN TYPE S32A, TYPE S36A, TYPE S42A AND TYPE S56A REQUIRES VERTICAL STEEL. SEE OTHER DETAIL.
14. IN TYPE S32, TYPE S36, TYPE S42 AND TYPE S56 DEPTH OF FOOTING 10". IN TYPE S32A, TYPE S36A, TYPE S42A AND TYPE S56A MATCH TOTAL HEIGHT OF SINGLE SLOPE BARRIER RETAINING WALL.
15. FOR ALL BARRIER TYPES SHOWN, ANCHOR IS REQUIRED AT CONCRETE BARRIER ENDS AND AT INTERRUPTIONS IN CONCRETE BARRIER. ANCHOR MAY BE AS SHOWN ON DRAWING OR DETAILS SHOWN ON S.D.D. 14B33. ANCHORS ARE PAID FOR AS EACH.
16. CONCRETE PAD UNDER CBSS MAY BE PLACED INTEGRAL WITH BARRIER, PLACED SEPARATELY OR PLACED WITH CONCRETE SHOULDER AND SAWED FULL DEPTH. CONCRETE PAD MINIMUM DEPTH IS 6 INCHES, OR EQUAL TO THE DEPTH OF THE CONCRETE SHOULDER. FULL-DEPTH SAWING IS INCIDENTAL TO CBSS.



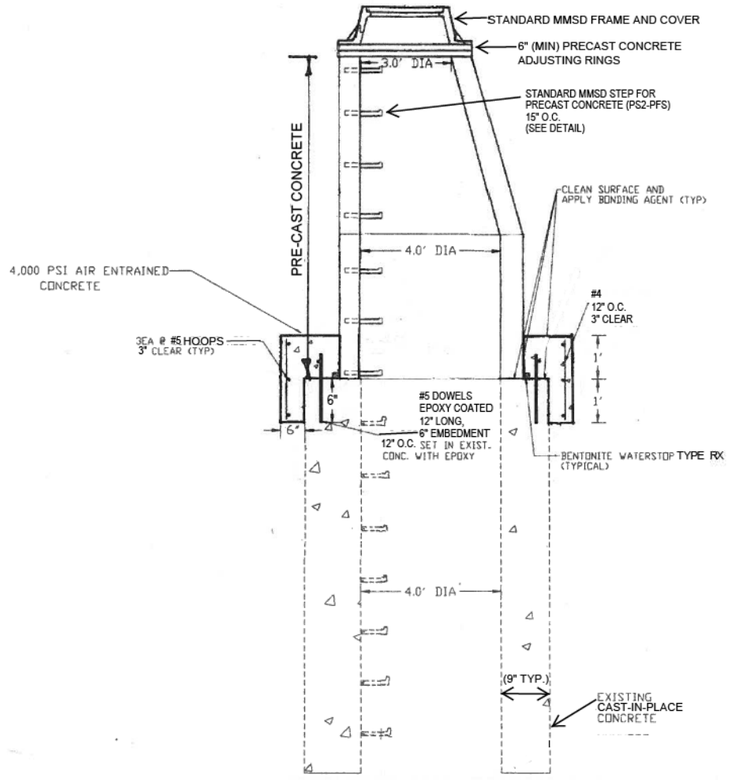
END ANCHOR SINGLE SLOPE CONCRETE BARRIER
AT CONSTRUCTION JOINT

DELINEATOR SPACING ON HORIZONTAL CURVES

RADIUS OF CURVE	APPROXIMATE SPACING ON CURVE
50 FEET	20 FEET
115 FEET	25 FEET
180 FEET	35 FEET
250 FEET	40 FEET
300 FEET	50 FEET
400 FEET	55 FEET
500 FEET	65 FEET
600 FEET	70 FEET
700 FEET	75 FEET
800 FEET	80 FEET
900 FEET	85 FEET
1000 FEET	90 FEET

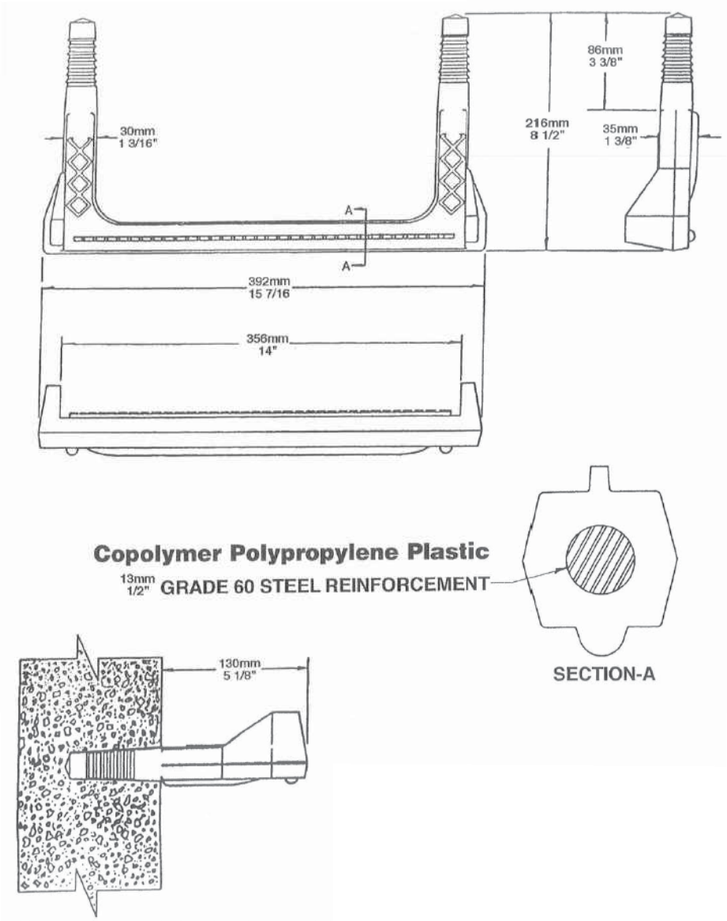
DELINEATOR SPACING ON RADIUS GREATER THAN 1000 FEET OR TANGENT SECTIONS

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



DETAIL FOR PRECAST MANHOLE EXTENSION TO A MONOLITHIC MANHOLE WITH CONCRETE COLLAR

NOT TO SCALE



STANDARD MMSD STEP DETAIL

NOT TO SCALE

2

N

RAMP SC

BEGIN CONSTRUCTION
STA 555SC+65.55

R/L SC

556SC

567SS

R/L SS

STH 100 SB

6.25%

6.25%

SC+85.88, 46.01' RT
774.51G
775.01T

SC+87.75, 45.75' RT
774.65F

SC+86.84, 47.22' RT
774.61G

SC+84.83, 53.86' RT
775.09

SC+89.49, 65.16' RT
775.45

SC+86.87, 51.58' RT
774.87

SC+94.42, 61.20' RT
775.06G
775.66T

5.0%

7.0%

4.0%

2.0%

5.0%

5.0%

4.0%

SC+91.97, 54.99' RT
774.90G

SC+92.15, 23.39' RT
774.47P
774.97T

2.0%

SC+93.73, 54.06' RT
774.94F

SC+96.35, 60.67' RT
775.14F

SC+91.93, 61.87' RT
775.24

SC+86.61, 23.30' RT
774.24G
774.74T

4.0%

SC+86.07, 25.18' RT
774.32F

SC+92.14, 25.61' RT
774.41G
774.91T

4.0%

SC+91.41, 27.47' RT
774.49F

SC+86.72, 44.44' RT
774.59F

3.4%

3.0%

1.9%

4.0%

SC+86.51, 14.55' RT
773.97G
774.47T

2.0%

SC+86.80, 12.57' RT
774.01F

2.0%

SC+92.44, 13.48' RT
774.17F

SC+92.20, 15.46' RT
774.13G
774.63T

SC+92.19, 17.37' RT
774.19P
774.69T

SC+01.44, 18.14' RT
774.53G
775.03T

SC+01.44, 24.17' RT
774.63G
775.13T

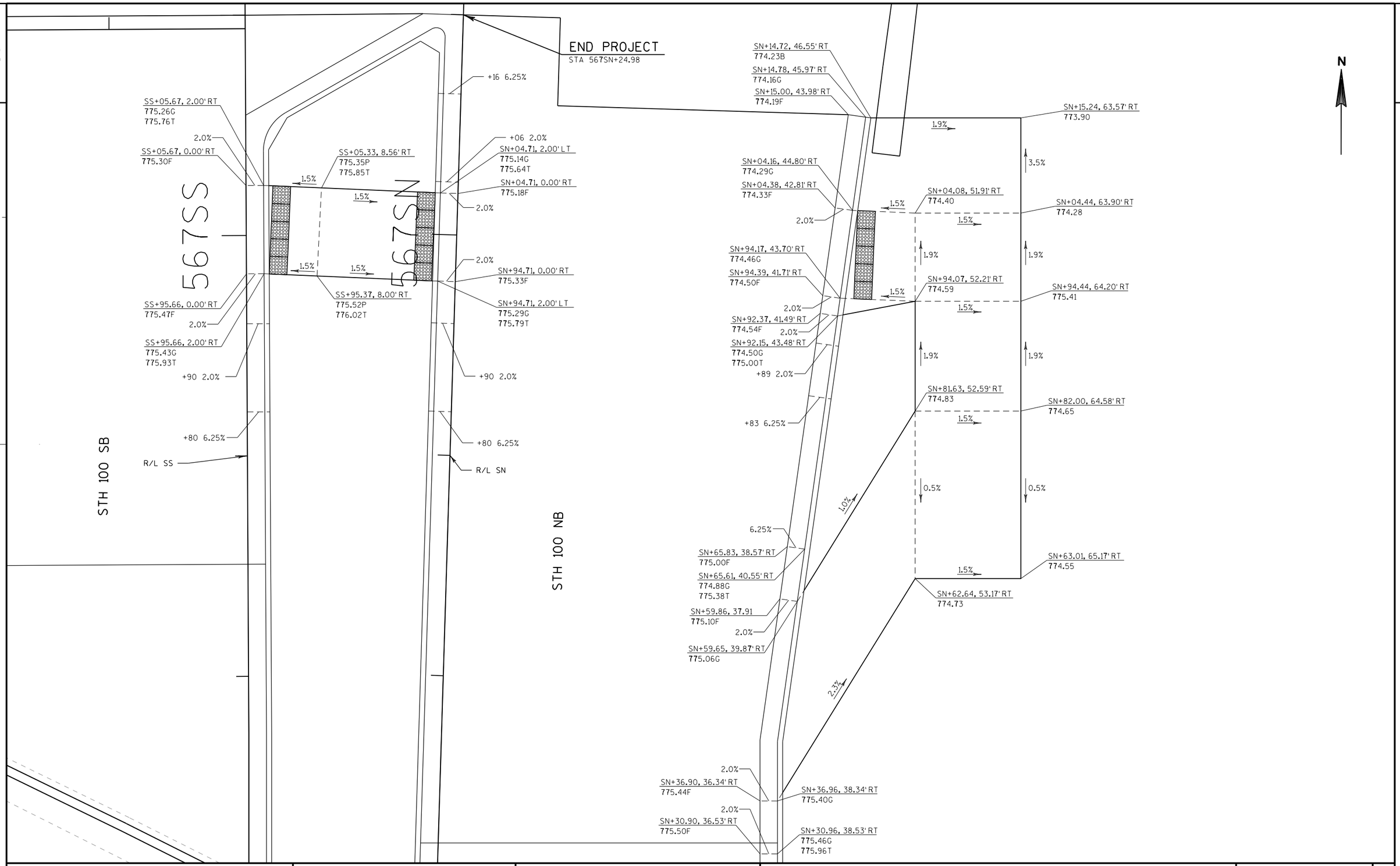
2.0%

2.0%

SC+03.44, 24.17' RT
774.67F

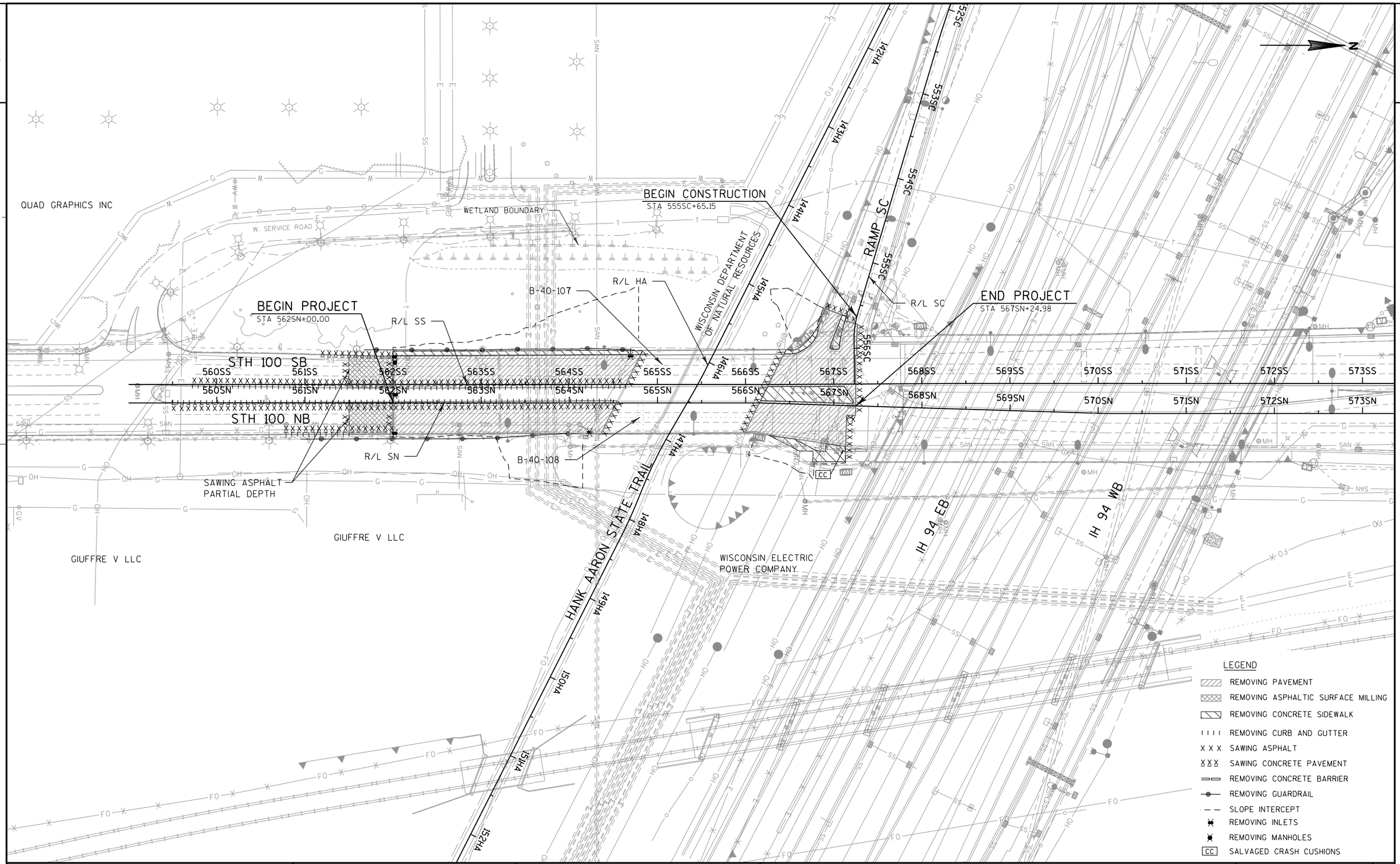
SC+03.44, 18.15' RT
774.57F

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SHEET 16	E



PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	CONSTRUCTION DETAILS	SHEET 17	E

2



PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	REMOVAL PLAN	SHEET 18	E

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Roads\cds\021200_rm.dgn PLOT DATE : 12/14/2017 PLOT BY : wwolak PLOT NAME : $FILE$ PLOT SCALE : 1:100

LEGEND

TEMPORARY WIDENING FOR STAGE 2

TEMPORARY WIDENING FOR STAGE 3

PV11 ASPHALTIC SURFACE TEMPORARY 5-INCH

N

MATCHLINE STA 862SN+00

STH 100 SB

STH 100 NB

SS+17.91
34.07' LT

SS+17.83
31.27' LT

PV11

SS+73.06
2.06' RT

SS+72.91
0.30' LT

560SS

R/L SS

PV11

561SS

SS+37.93
9.24' RT

562SS

SS+72.32
2.69' RT

SN+49.44
3.39' LT

560SN

561SN

562SN

SN+49.32
1.92' RT

SN+02.32
1.82' RT

R/L SN

SN+00.00
33.00' RT

SN+76.28
33.33' RT

PV11

SN+99.96
42.55' RT

2

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	PLAN DETAILS: TEMP WIDENING	SHEET 19	E

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Roads\cds\021201_pd.dgn PLOT DATE : 12/14/2017 PLOT BY : wwolak PLOT NAME : $FILE$ PLOT SCALE : 1:40

WISDOT/CADDS SHEET 42

2

MATCHLINE STA 562SN+00

LEGEND

TEMPORARY WIDENING FOR STAGE 2

TEMPORARY WIDENING FOR STAGE 3

PV11 ASPHALTIC SURFACE TEMPORARY 5-INCH

N

HANK AARON STATE TRAIL

RAMP SC

STH 100 SB

STH 100 NB

R/L SS

R/L SN

IH 94

PV11

SS+49.91
46.18' LT

SS+87.16
46.14' LT

SS+85.55
42.91' LT

SS+42.03
30.92' LT

SS+63.47
0.92' RT

SS+49.33
45.93' LT

SS+67.60
45.82' LT

SC+94.74
28.76' RT

SC+95.51
13.80' RT

SS+47.79
42.94' LT

SS+62.87
44.07' LT

SS+54.18
42.94' LT

SS+25.98
0.0' RT

SS+10.80
4.50' RT, R=5'

SS+10.80
0.00' RT

SS+14.78
2.41' RT

SN+24.00
7.29' LT

SN+20.47
4.50' LT, R=5'

SN+20.47
0.00' RT

SN+57.17
0.73' RT

SN+53.29
0.00' RT

SN+15.66
0.00' RT

SN+73.24
33.00' RT

SN+34.12
36.97' RT

SN+29.46
40.72' RT

SN+15.17
46.24' RT

SN+30.04
44.98' RT

SN+15.17
44.98' RT

SN+07.83
32.23' RT

SN+31.33
35.10' RT

SN+99.53
32.34' RT

SN+54.25
36.78' RT

SN+93.09
44.98' RT

SN+17.36
44.19' RT

SN+07.97
44.98' RT

SN+07.98
46.73' RT

562SS 563SS 564SS 565SS 566SS 567SS

562SN 563SN 564SN 565SN 566SN 567SN

14AHA 14BHA 14CHA 14DHA

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	PLAN DETAILS: TEMP WIDENING	SHEET 20	E

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Roads\cds\021202_pd.dgn PLOT DATE : 12/14/2017 PLOT BY : wwolak PLOT NAME : $FILE$ PLOT SCALE : 1:40

WISDOT/CADDS SHEET 42

2

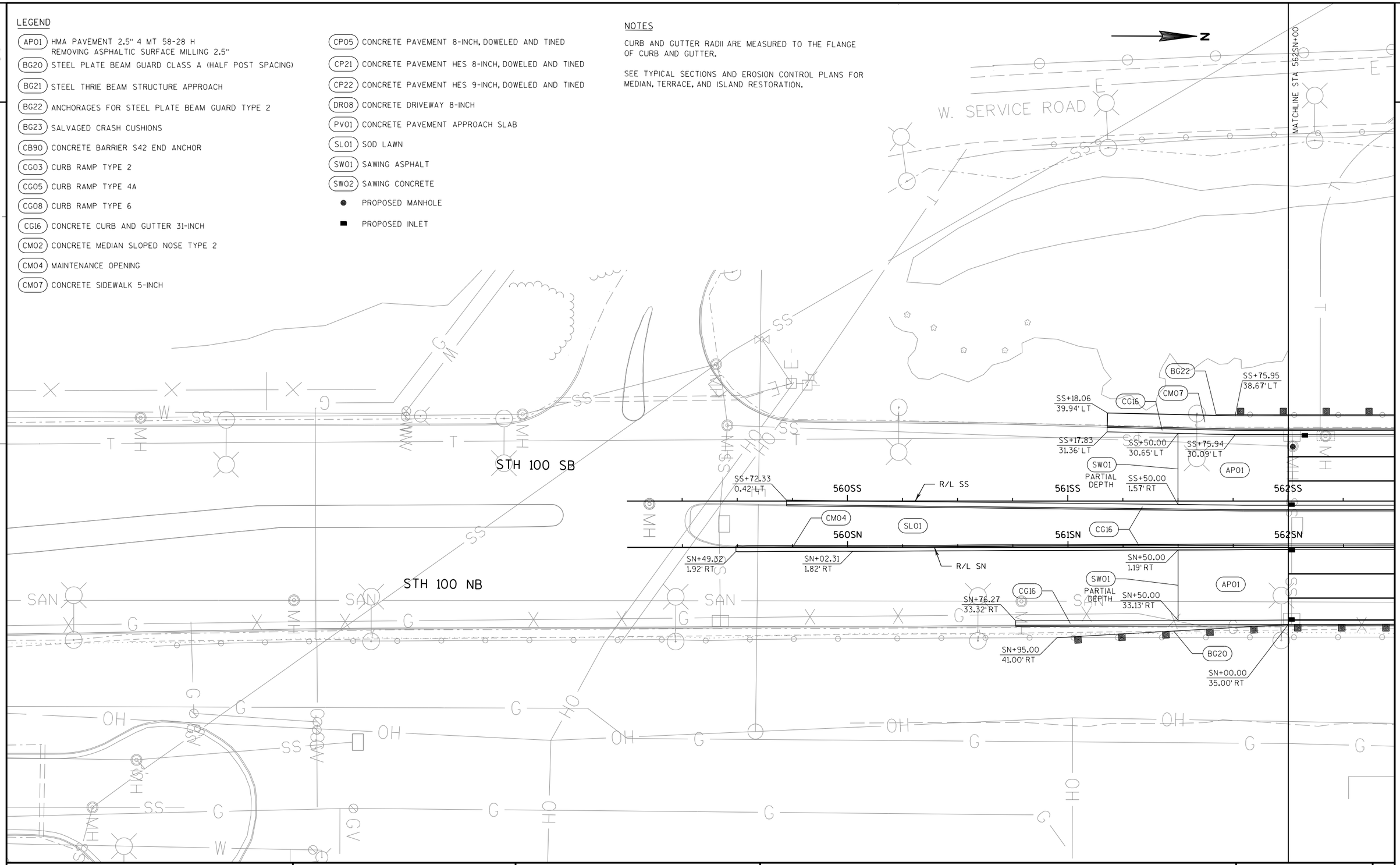
LEGEND

- (AP01) HMA PAVEMENT 2.5" 4 MT 58-28 H
  REMOVING ASPHALTIC SURFACE MILLING 2.5"
- (BG20) STEEL PLATE BEAM GUARD CLASS A (HALF POST SPACING)
- (BG21) STEEL THRIE BEAM STRUCTURE APPROACH
- (BG22) ANCHORAGES FOR STEEL PLATE BEAM GUARD TYPE 2
- (BG23) SALVAGED CRASH CUSHIONS
- (CB90) CONCRETE BARRIER S42 END ANCHOR
- (CG03) CURB RAMP TYPE 2
- (CG05) CURB RAMP TYPE 4A
- (CG08) CURB RAMP TYPE 6
- (CG16) CONCRETE CURB AND GUTTER 31-INCH
- (CM02) CONCRETE MEDIAN SLOPED NOSE TYPE 2
- (CM04) MAINTENANCE OPENING
- (CM07) CONCRETE SIDEWALK 5-INCH
- (CP05) CONCRETE PAVEMENT 8-INCH, DOWELED AND TINED
- (CP21) CONCRETE PAVEMENT HES 8-INCH, DOWELED AND TINED
- (CP22) CONCRETE PAVEMENT HES 9-INCH, DOWELED AND TINED
- (DR08) CONCRETE DRIVEWAY 8-INCH
- (PV01) CONCRETE PAVEMENT APPROACH SLAB
- (SL01) SOD LAWN
- (SW01) SAWING ASPHALT
- (SW02) SAWING CONCRETE
- ● PROPOSED MANHOLE
- ■ PROPOSED INLET

NOTES

CURB AND GUTTER RADII ARE MEASURED TO THE FLANGE OF CURB AND GUTTER.

SEE TYPICAL SECTIONS AND EROSION CONTROL PLANS FOR MEDIAN, TERRACE, AND ISLAND RESTORATION.



PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 21	E

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Roads\cds\021205_pd.dgn PLOT DATE : 12/14/2017 PLOT BY : wwolak PLOT NAME : $FILE$ PLOT SCALE : 1:40

WISDOT/CADDS SHEET 42

LEGEND

- APO1 HMA PAVEMENT 2.5" 4 MT 58-28 H REMOVING ASPHALTIC SURFACE MILLING 2.5"
- BG20 STEEL PLATE BEAM GUARD CLASS A (HALF POST SPACING)
- BG21 STEEL THRIE BEAM STRUCTURE APPROACH
- BG22 ANCHORAGES FOR STEEL PLATE BEAM GUARD TYPE 2
- BG23 SALVAGED CRASH CUSHIONS
- CB90 CONCRETE BARRIER S42 END ANCHOR
- CG03 CURB RAMP TYPE 2
- CG05 CURB RAMP TYPE 4A
- CG08 CURB RAMP TYPE 6
- CG16 CONCRETE CURB AND GUTTER 31-INCH
- CM02 CONCRETE MEDIAN SLOPED NOSE TYPE 2
- CM04 MAINTENANCE OPENING
- CM07 CONCRETE SIDEWALK 5-INCH
- CP05 CONCRETE PAVEMENT 8-INCH, DOWELED AND TINED
- CP21 CONCRETE PAVEMENT HES 8-INCH, DOWELED AND TINED
- CP22 CONCRETE PAVEMENT HES 9-INCH, DOWELED AND TINED
- DR08 CONCRETE DRIVEWAY 8-INCH
- PV01 CONCRETE PAVEMENT APPROACH SLAB
- SL01 SOD LAWN
- SW01 SAWING ASPHALT
- SW02 SAWING CONCRETE
- PROPOSED MANHOLE
- PROPOSED INLET

NOTES

CURB AND GUTTER RADII ARE MEASURED TO THE FLANGE OF CURB AND GUTTER.

SEE TYPICAL SECTIONS AND EROSION CONTROL PLANS FOR MEDIAN, TERRACE, AND ISLAND RESTORATION.

TRANSITION CONCRETE BARRIER S42 END ANCHOR SINGLE SLOPE FACE ON THE TRAFFIC SIDE OVER THE END ANCHOR LENGTH TO MATCH B-40-107 WING WALL 3.

MATCHLINE STA 562SN+00

BEGIN PROJECT
STA 562SN+00.00

END PROJECT
STA 567SN+24.98

BEGIN CONSTRUCTION
STA 555SC+65.55

STH 100 SB

STH 100 NB

HANK AARON STATE TRAIL

RAMP SC

IH 94

B-40-107

B-40-108

DRIVEWAY ENTRANCE CURB

RADIUS TABLE							
POINT	STATION	OFFSET	RADIUS	PC		PT	
				STATION	OFFSET	STATION	OFFSET
1	555SC+75.25	70.67' RT	30'	555SC+80.44	39.72' RT	555SC+97.47	69.24' RT
2	555SC+99.44	26.30' RT	2'	555SC+97.99	30.30' RT	556SC+03.44	26.30' RT
3	555SC+99.44	18.06' RT	2'	555SC+99.61	14.06' RT	556SC+03.44	18.06' RT
4	556SC+03.40	75.85' LT	92'	555SC+78.42	10.87' RT	556SC+03.44	18.06' RT
5	567SS+09.56	7.0' RT	5'	567SS+09.56	2.0' RT	567SS+13.92	4.53' RT
6	567SN+22.44	3.0' LT	1'	567SN+22.44	2.0' LT	567SN+23.29	3.52' LT

RADIUS DATA GIVEN FOR FACE OF CURB

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	PLAN DETAILS	SHEET 22	E

2

N

HANK AARON STATE TRAIL

RAMP SC

555SC

BEGIN CONSTRUCTION
STA 555SC+65.55

END PROJECT
STA 567SN+24.98

BEGIN PROJECT
STA 562SN+00.00

STH 100 SB

STH 100 NB

562SS 563SS 564SS 565SS 566SS 567SS

562SN 563SN 564SN 565SN 566SN 567SN

14AHA 14BHA 14CHA 14DHA

NOTE

1) PAVING GRADES ARE SHOWN AT 25' INTERVALS BASED ON REFERENCE LINES FOR EACH DIRECTION OF TRAFFIC ALONG DIVIDED ROADWAYS.

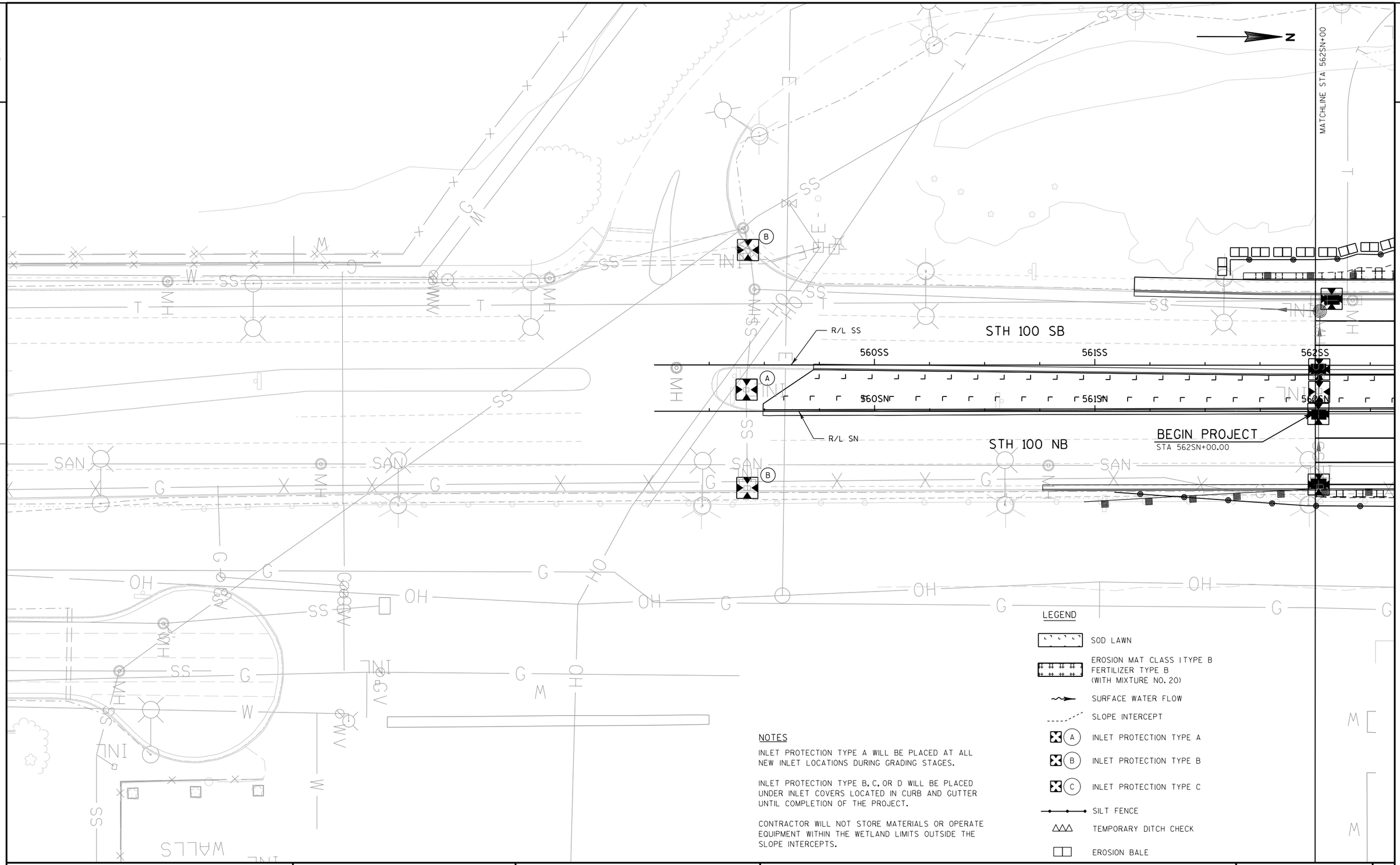
*-TRANSITION FROM BRIDGE CROSS SLOPE TO NORMAL 6.25% GUTTER SLOPE OVER 10 FEET.

**-2% GUTTER SLOPE ADJACENT TO PAVEMENT APPROACH SLAB. TRANSITION TO NORMAL 6.25% GUTTER SLOPE OVER 10 FEET.

***-2% GUTTER SLOPE.

PROJECT NO: 2030-14-00	HWY: STH 100	COUNTY: MILWAUKEE	PAVING GRADES	SHEET 23	E

2



NOTES

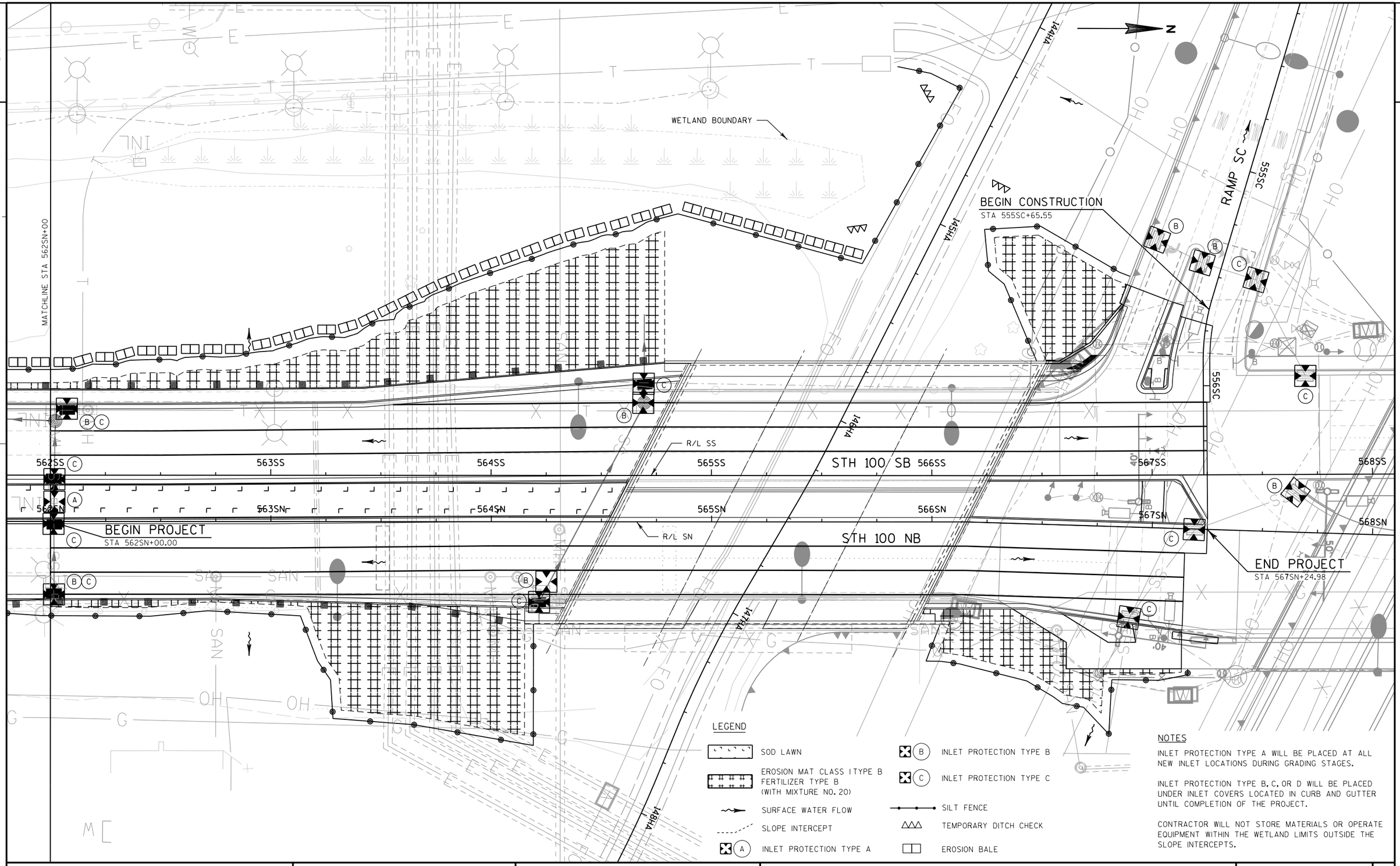
INLET PROTECTION TYPE A WILL BE PLACED AT ALL NEW INLET LOCATIONS DURING GRADING STAGES.

INLET PROTECTION TYPE B, C, OR D WILL BE PLACED UNDER INLET COVERS LOCATED IN CURB AND GUTTER UNTIL COMPLETION OF THE PROJECT.

CONTRACTOR WILL NOT STORE MATERIALS OR OPERATE EQUIPMENT WITHIN THE WETLAND LIMITS OUTSIDE THE SLOPE INTERCEPTS.

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	EROSION CONTROL	SHEET 24	E

2



PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	EROSION CONTROL	SHEET 25	E

GENERAL DRAINAGE NOTES

LOCATION OF STRUCTURES IN CURB AND GUTTER OR BARRIER SECTION REFER TO CURB AND GUTTER OR BARRIER FLOW LINE. LOCATION OF STRUCTURES NOT IN CURB AND GUTTER SECTION REFER TO CENTER OF STRUCTURE OR AS NOTED ON PLAN.

RIM ELEVATIONS ARE GIVEN AT FLOW LINE OF INLET OR AT CENTER OF MANHOLE. SEE STRUCTURE LOCATION DETAIL.

ADJUSTMENT RINGS MAY BE USED TO A COMBINED MAXIMUM THICKNESS OF 6-INCHES.

PLAN LENGTH REPRESENTS LENGTH OF PIPE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE AND IS USED FOR ESTIMATING. PIPE LENGTH REPRESENTS LENGTH OF PIPE MEASURED FROM INSIDE FACE OF STRUCTURE TO INSIDE FACE OF STRUCTURE AND IS USED TO COMPUTE PIPE SLOPE.

INLET AND DISCHARGE ELEVATIONS FOR DRAINAGE STRUCTURES AND PIPES SHOWN ON THE PLANS MAY BE ADJUSTED BY THE ENGINEER TO FIT EXISTING FIELD CONDITIONS.

UTILITY INFORMATION SHOWN ON THE PLANS IS APPROXIMATE. LOCATIONS SHOWN ARE TAKEN FROM EXISTING RECORDS AND BEST INFORMATION AVAILABLE FROM EXISTING PLANS. IT IS EXPECTED THAT THERE MAY BE DISCREPANCIES AND OMISSIONS IN THE LOCATION OF UTILITIES AND STRUCTURES SHOWN. VERIFY ALL LOCATIONS IN THE FIELD.

SEE REMOVAL PLAN FOR REMOVAL OF EXISTING STORM SEWER SYSTEM.

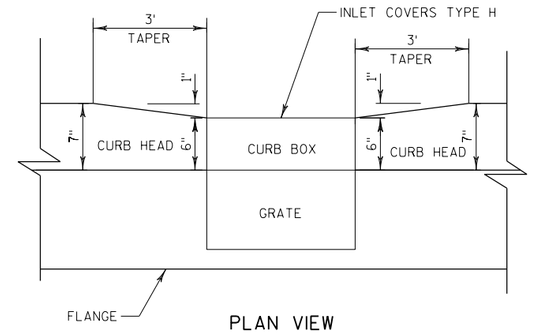
VERIFY THE STORM SEWER SYSTEM CONNECTIONS, LOCATIONS, AND ELEVATIONS PRIOR TO ORDERING DRAINAGE STRUCTURES AND PIPES. NOTIFY THE ENGINEER OF ANY DEVIATIONS FROM THE INFORMATION SHOWN ON THE PLANS PRIOR TO INSTALLING THE PROPOSED STORM SEWER.

PROVIDE TEMPORARY POSITIVE DRAINAGE THROUGHOUT THE PROJECT DURING ALL PROJECT STAGES. PROVIDING TEMPORARY POSITIVE DRAINAGE IS INCIDENTAL TO CONSTRUCTION.

SUPPORTING UTILITIES DURING STORM SEWER CONSTRUCTION IS INCIDENTAL TO STORM SEWER PIPE AND/OR STORM SEWER STRUCTURE.

STORM SEWER LEGEND

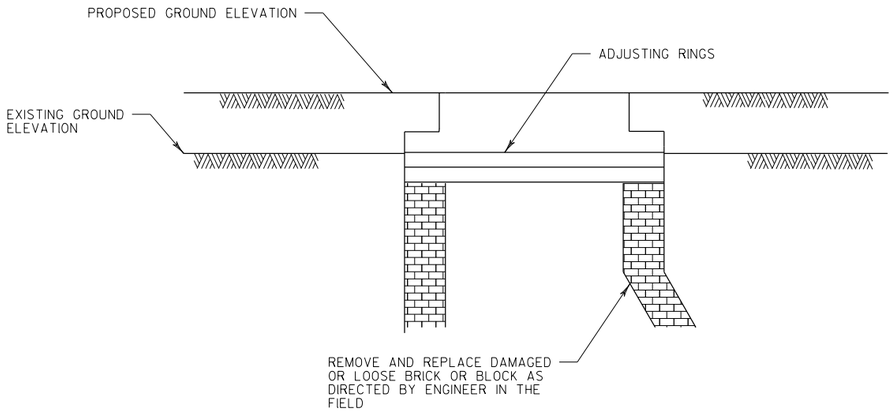
HA***	PROPOSED DRAINAGE STRUCTURE
●	PROPOSED MANHOLE
■	PROPOSED INLET / PROPOSED CATCH BASIN
EXISTING PE***	EXISTING STORM SEWER PIPE
P***	PROPOSED STORM SEWER PIPE
⟶	PROPOSED STORM SEWER PIPE PLAN VIEW



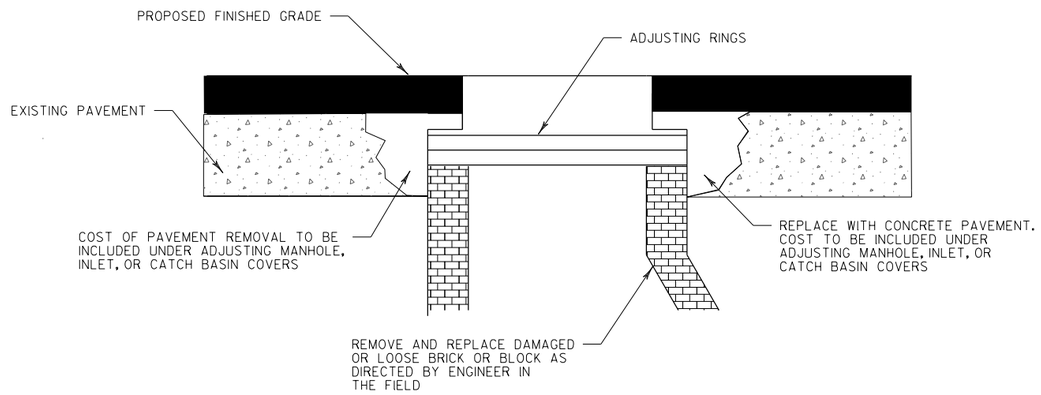
PLAN VIEW

CURB HEAD TRANSITION FOR INLET COVERS TYPE H

NOTE:
TAPER BACK CURB HEAD EDGE; MAINTAIN FRONT CURB FACE.
PAID FOR AS CONCRETE CURB AND GUTTER 31-INCH.



NON-PAVED LOCATION



PAVED LOCATION

NOTES

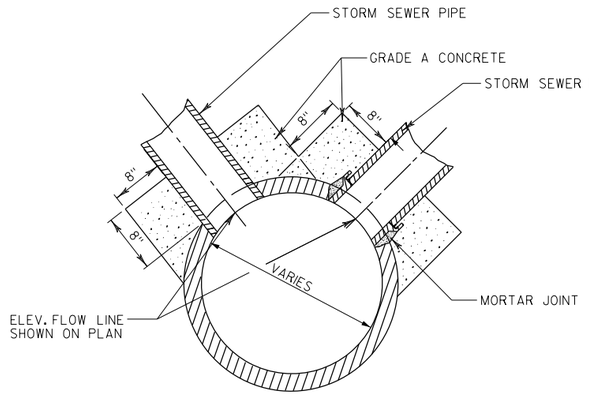
1. ADJUST CHIMNEY WITH PROPER SIZE CONCRETE ADJUSTING RINGS (SIZE OF OPENING OF CONCRETE ADJUSTING RING TO BE DETERMINED BY SIZE OF OPENING IN FRAME) AND REINSTALL EXISTING FRAME AND LID TO FINISHED GRADE. BACKFILL AND OTHER WORK TO BE DONE IN ACCORDANCE WITH ITEM ADJUSTING INLET COVERS.

2. SAWING ASPHALT OR SAWING CONCRETE IS INCIDENTAL TO ADJUSTING MANHOLE OR INLET COVERS

ADJUSTING MANHOLE OR INLET COVERS

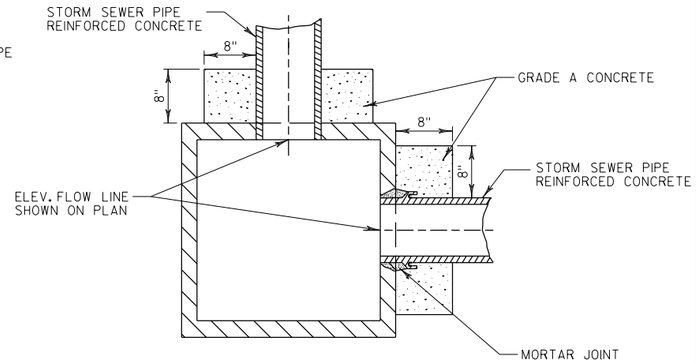
NOTE

CONCRETE COLLAR TO BE PAID AS A BID ITEM WHEN CONNECTING AN EXISTING PIPE TO A NEW STRUCTURE.



AT MANHOLE

INCIDENTAL TO NEW STRUCTURE AND NEW PIPE ITEMS



AT STORM SEWER INLET

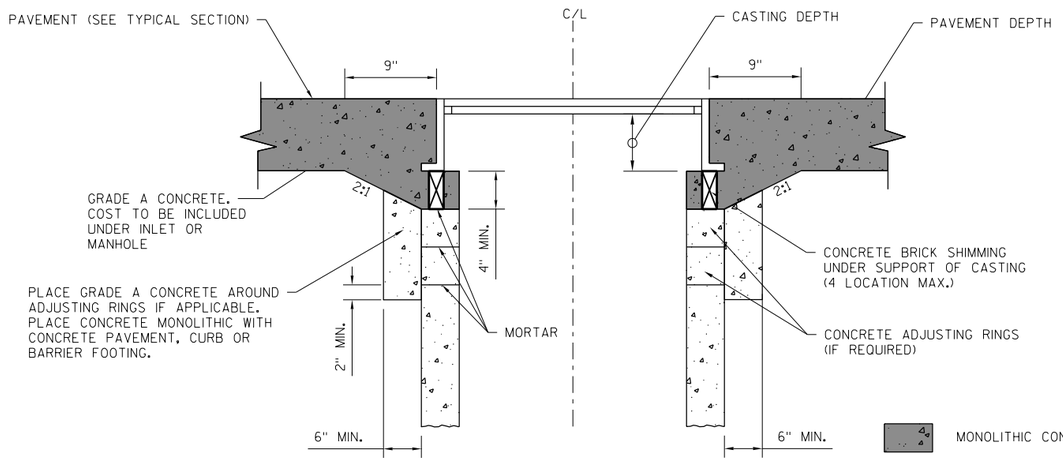
INCIDENTAL TO NEW STRUCTURE AND NEW PIPE ITEMS

CONCRETE COLLAR DETAIL

FOR LOCATIONS SEE MISCELLANEOUS QUANTITIES SHEETS

NOTES

(1) PROVIDE MONOLITHIC CONCRETE SHIMMING FOR FINAL ADJUSTMENT OF DRAINAGE STRUCTURES LOCATED WITHIN THE CONCRETE CURB & GUTTER.



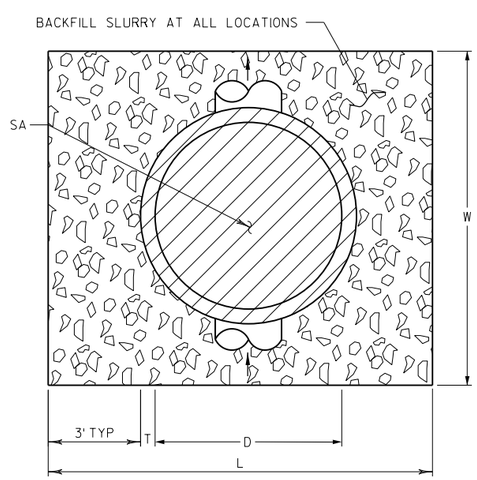
MONOLITHIC CONCRETE SHIMMING DETAIL

BACKFILL SLURRY STRUCTURES

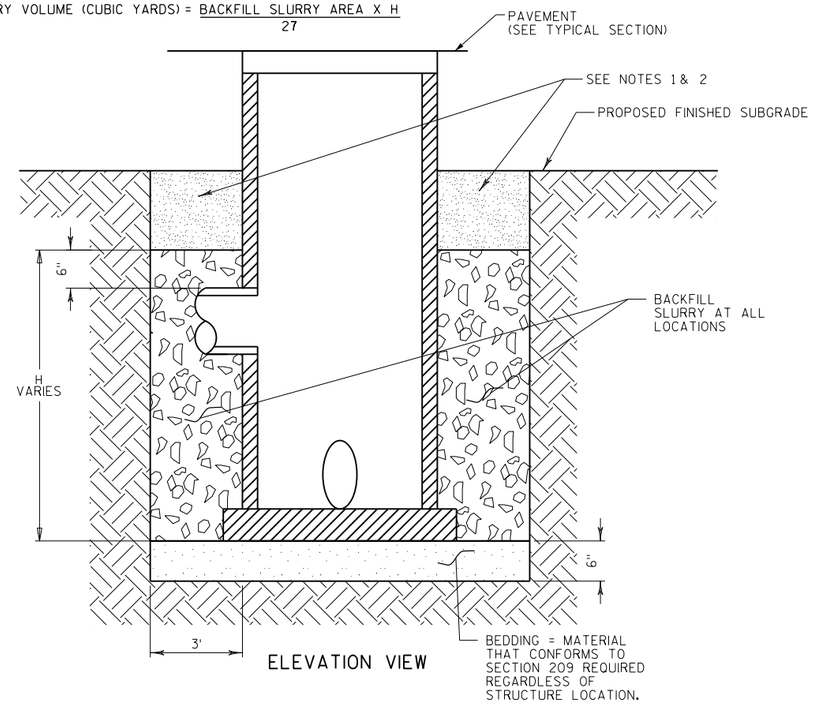
DESCRIPTION	DIAMETER / STR LENGTH D FT	RECTANGULAR STR WIDTH RW FT	WALL THICKNESS T INCH	SLAB THICKNESS ST INCH	STRUCTURE EXCAVATION LENGTH L FT	STRUCTURE EXCAVATION WIDTH W FT	STRUCTURE EXCAVATION AREA SF	STRUCTURE AREA SA SF	BACKFILL SLURRY AREA SF
INLETS 4-FT DIAMETER	4	---	5	6	10.83	10.83	117.36	18.34	99.02
MANHOLES 4-FT DIAMETER	4	---	5	6	10.83	10.83	117.36	18.34	99.02

H = UP TO 6" ABOVE THE TOP OF THE HIGHEST PIPE IN THE STRUCTURE

BACKFILL SLURRY VOLUME (CUBIC YARDS) = $\frac{\text{BACKFILL SLURRY AREA X H}}{27}$



PLAN VIEW



ELEVATION VIEW

NOTES

(1) IF THE STRUCTURE IS OUTSIDE THE TRAVELED WAY INCLUSIVE OF SHOULDERS AND AUXILIARY LANES, NATIVE BACKFILL MAY BE USED ABOVE BACKFILL SLURRY AND SHALL CONFORM TO SECTION 207 EMBANKMENT SPECIFICATIONS.

(2) IF THE STRUCTURE IS WITHIN THE TRAVELED WAY INCLUSIVE OF SHOULDERS AND AUXILIARY LANES, BACKFILL ABOVE BACKFILL SLURRY SHALL CONFORM TO SECTION 209.

(3) WHEN TEMPORARY SUBGRADE IS HIGHER THAN PROPOSED FINISHED SUBGRADE, PROVIDE GRANULAR BACKFILL AT ALL LOCATIONS. COST FOR GRANULAR BACKFILL IS CONSIDERED INCIDENTAL TO CONSTRUCTION.

(4) PAYMENT FOR BACKFILL SLURRY QUANTITY IS LIMITED TO THE DETAIL AS SHOWN. BACKFILL SLURRY QUANTITY FOR ANY OVER EXCAVATED AREA IS CONSIDERED PART OF CONSTRUCTION, AND NO ADDITIONAL PAYMENT WILL BE MADE.

BACKFILL SLURRY DETAIL - STORM SEWER STRUCTURES

NOTES

(1) IF THE PIPE IS OUTSIDE THE TRAVELED WAY INCLUSIVE OF SHOULDERS, NATIVE BACKFILL MAY BE USED ABOVE BACKFILL SLURRY AND SHALL CONFORM TO SECTION 207 EMBANKMENT SPECIFICATIONS.

(2) IF THE PIPE IS WITHIN THE TRAVELED WAY INCLUSIVE OF SHOULDERS, BACKFILL ABOVE BACKFILL SLURRY SHALL CONFORM TO SECTION 209.

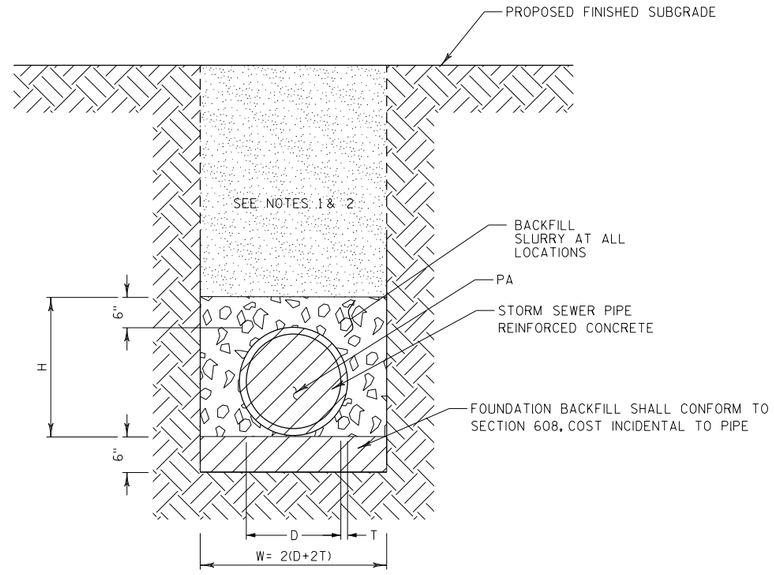
(3) WHEN TEMPORARY SUBGRADE IS HIGHER THAN PROPOSED FINISHED SUBGRADE, PROVIDE GRANULAR BACKFILL AT ALL LOCATIONS. COST FOR GRANULAR BACKFILL IS CONSIDERED INCIDENTAL TO CONSTRUCTION.

(4) PAYMENT FOR BACKFILL SLURRY QUANTITY IS LIMITED TO THE DETAIL AS SHOWN. BACKFILL SLURRY QUANTITY FOR ANY OVER EXCAVATED AREA IS CONSIDERED PART OF CONSTRUCTION, AND NO ADDITIONAL PAYMENT WILL BE MADE.

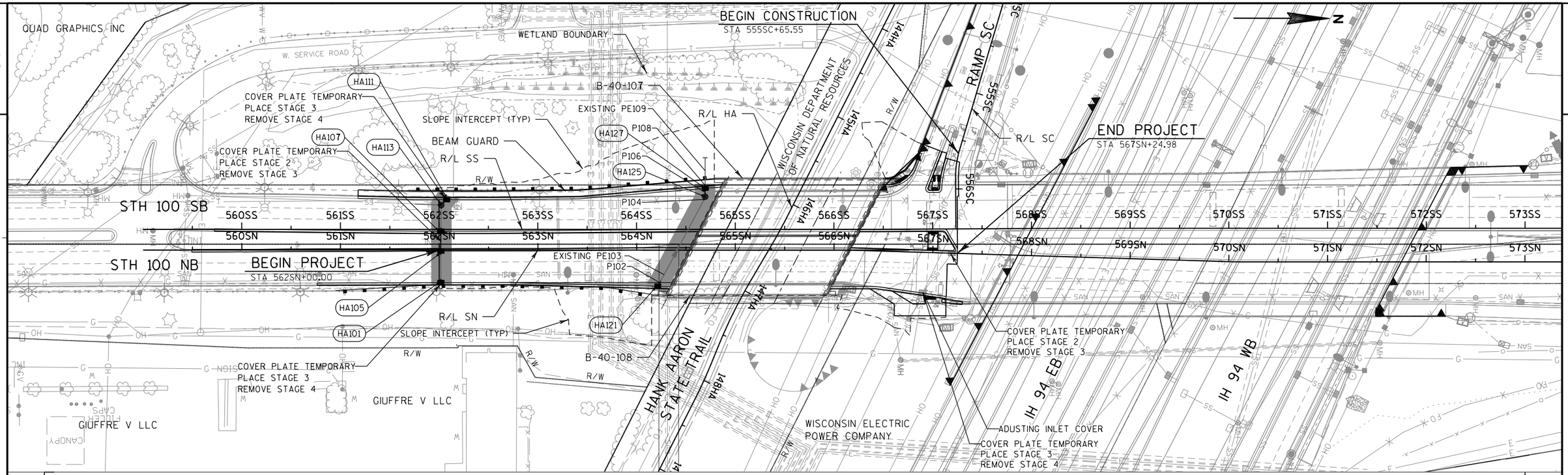
BACKFILL SLURRY TRENCHES

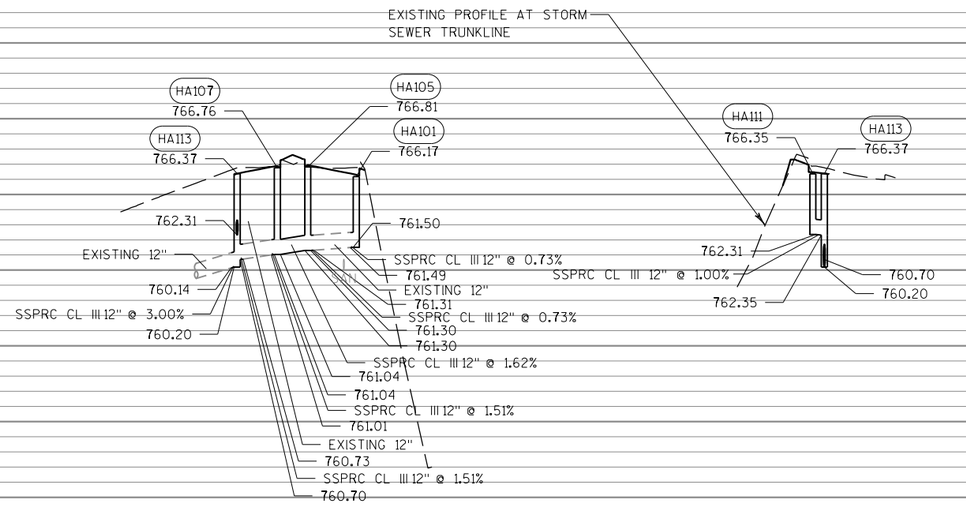
Pipe Diameter PW INCHES	Wall Thickness T Inches	Trench Width W FT	Height of Pipe Zone H (From pipe bottom to 6" above top of pipe)	Area of Pipe Zone SF	Area of Pipe PA SF	Backfill Slurry Area SF
12	2.00	2.67	1.83	4.89	1.40	3.49

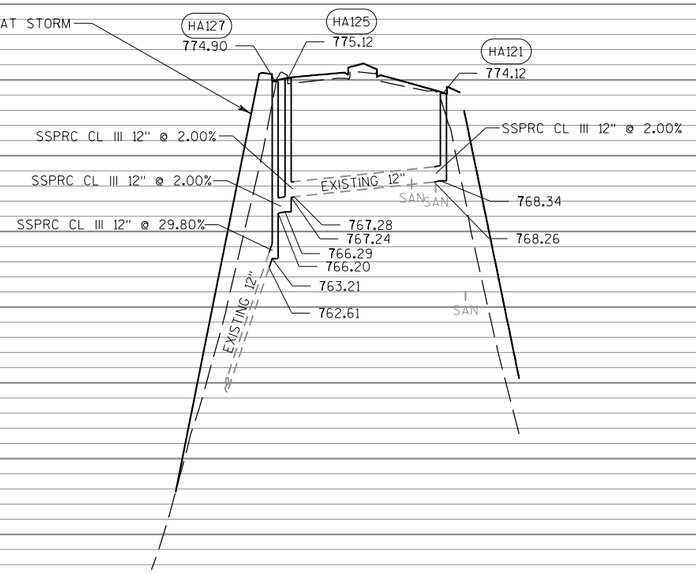
BACKFILL SLURRY VOLUME (CUBIC YARDS) = $\frac{\text{(PIPE ZONE AREA - PIPE AREA) X PIPE PLAN LENGTH}}{27}$



BACKFILL SLURRY DETAIL - STORM SEWER TRENCH







PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	STORM SEWER	SHEET 29	E

NOTES:
TYPE II ALUMINUM SIGNS REMOVED UNDER THE CONTRACT SHALL BE DELIVERED TO THE COUNTY SIGN SHOP. CONTACT THE FOLLOWING INDIVIDUAL AT THE SIGN SHOP FOR DISTRIBUTION COUNTY LOCATION.
SIGNING COORDINATOR COUNTY(S) PHONE*

- DENNIS NEWTON MILWAUKEE 414-750-0257
- ANDRE CHAPMAN RACINE 414-531-2635
- JENNY BUCKETT KENOSHA, WASHINGTON, OZAUKEE 414-750-2427
- CHUCK SALDIVAR WALWORTH, WAUKESHA 414-750-1682

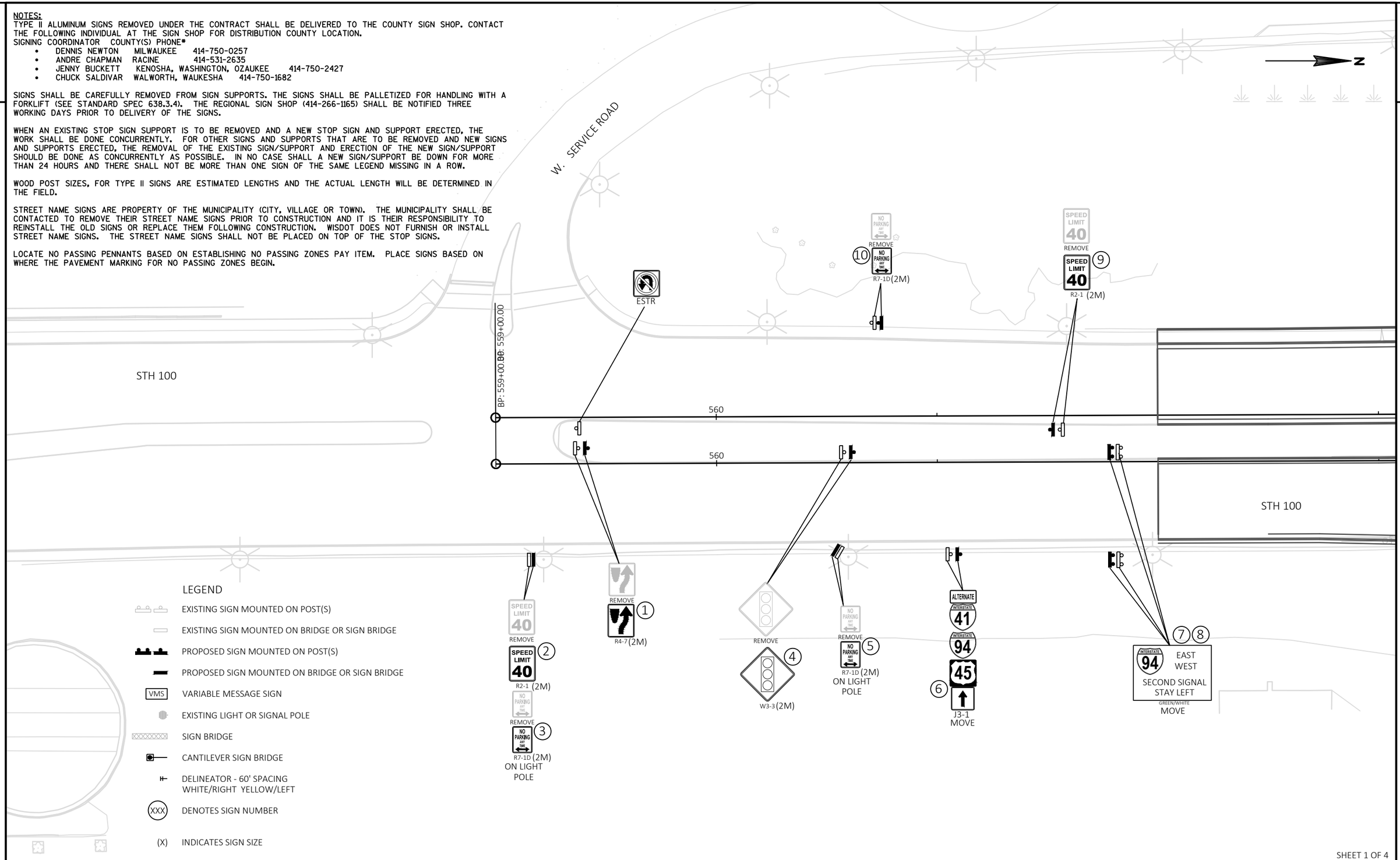
SIGNS SHALL BE CAREFULLY REMOVED FROM SIGN SUPPORTS. THE SIGNS SHALL BE PALLETIZED FOR HANDLING WITH A FORKLIFT (SEE STANDARD SPEC 638.3.4). THE REGIONAL SIGN SHOP (414-266-1165) SHALL BE NOTIFIED THREE WORKING DAYS PRIOR TO DELIVERY OF THE SIGNS.

WHEN AN EXISTING STOP SIGN SUPPORT IS TO BE REMOVED AND A NEW STOP SIGN AND SUPPORT ERECTED, THE WORK SHALL BE DONE CONCURRENTLY. FOR OTHER SIGNS AND SUPPORTS THAT ARE TO BE REMOVED AND NEW SIGNS AND SUPPORTS ERECTED, THE REMOVAL OF THE EXISTING SIGN/SUPPORT AND ERECTION OF THE NEW SIGN/SUPPORT SHOULD BE DONE AS CONCURRENTLY AS POSSIBLE. IN NO CASE SHALL A NEW SIGN/SUPPORT BE DOWN FOR MORE THAN 24 HOURS AND THERE SHALL NOT BE MORE THAN ONE SIGN OF THE SAME LEGEND MISSING IN A ROW.

WOOD POST SIZES, FOR TYPE II SIGNS ARE ESTIMATED LENGTHS AND THE ACTUAL LENGTH WILL BE DETERMINED IN THE FIELD.

STREET NAME SIGNS ARE PROPERTY OF THE MUNICIPALITY (CITY, VILLAGE OR TOWN). THE MUNICIPALITY SHALL BE CONTACTED TO REMOVE THEIR STREET NAME SIGNS PRIOR TO CONSTRUCTION AND IT IS THEIR RESPONSIBILITY TO REINSTALL THE OLD SIGNS OR REPLACE THEM FOLLOWING CONSTRUCTION. WISDOT DOES NOT FURNISH OR INSTALL STREET NAME SIGNS. THE STREET NAME SIGNS SHALL NOT BE PLACED ON TOP OF THE STOP SIGNS.

LOCATE NO PASSING PENNANTS BASED ON ESTABLISHING NO PASSING ZONES PAY ITEM. PLACE SIGNS BASED ON WHERE THE PAVEMENT MARKING FOR NO PASSING ZONES BEGIN.



PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	PERMANENT SIGNING PLAN	SHEET 30	E

FILE NAME : N:\PDS\C3D\CAD\20301400\SIGN\023201_PS.DWG
LAYOUT NAME - 023201_PS
PLOT DATE : 10/30/2017 3:41 PM
PLOT BY : WAGNER, SCOTT H
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

2

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- VMS — VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- DELINEATOR - 60' SPACING WHITE/RIGHT YELLOW/LEFT
- (XXX) — DENOTES SIGN NUMBER
- (X) — INDICATES SIGN SIZE

N

STH 100

565

565

PI: 566+15.66

PI: 566+34.59

PI: 568+34.58

PT: 555+88.50

PC: 555+60.53

EP: 556+40.45

PT: 146+42.38

PC: 146+99.55

PT: 147+60.14

PC: 147+80.06

PT: 148+19.97

IH 94

(11) REMOVE WRONG WAY / WRONG WAY R5-1A (2M) ON LIGHT POLE

(12) NO CRUSING — CITY SIGN MOVE

(13) DETOUR WEST

(14) INTERSTATE 94 — J2-1 MOVE

(15) REMOVE STOP

(16) R1-1F (3) ON SIGNAL POLE

(18) REMOVE DO NOT ENTER / R5-1 (2M) ON SIGNAL POLE

(19) N MAYFAIR RD — M1-94S MOVE SIGNAL ARM

(20) REMOVE R3-4 (2M) ON SIGNAL POLE

(21) REMOVE DO NOT ENTER / R5-1 (2M)

(22) REMOVE R3-18 (2M) ON SIGNAL POLE

(23) REMOVE R4-7 (2M)

(24) REMOVE STOP / R1-1F (3) ON SIGNAL POLE

(25) REMOVE DO NOT ENTER / R5-1 (2M) ON SIGNAL POLE

(26) REMOVE STOP / R1-1F (3) ON SIGNAL POLE

(27) REMOVE DO NOT ENTER / R5-1 (2M)

(28) REMOVE / W12-1L (2S) 2' HEIGHT FACING NORTH

(29) REMOVE STOP / R1-1F (3) ON WOOD POST

(30) REMOVE STOP / R1-1F (3) ON SIGNAL POLE

(31) REMOVE SPEED LIMIT 40 / R2-1 (2M) ON LIGHT POLE

(32) REMOVE DO NOT ENTER / R5-1 (2M) ON PED POLE

SHEET 2 OF 4

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	PERMANENT SIGNING PLAN	SHEET 31	E

FILE NAME : N:\PDS\C3D\CAD\20301400\SIGN\023201_PS.DWG
LAYOUT NAME - 023202_PS

PLOT DATE : 10/30/2017 3:41 PM PLOT BY : WAGNER, SCOTT H PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

2

N

IH 94

STH 100

570

PI: 570+08.61

570

BEGIN LEFT TURN LANE

REMOVE

33

BEGIN LEFT TURN LANE

R3-20L (2M) ON LIGHT POLE

STH 100

IH 94

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- VMS — VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- DELINEATOR - 60' SPACING WHITE/RIGHT YELLOW/LEFT
- XXX — DENOTES SIGN NUMBER
- (X) — INDICATES SIGN SIZE

SHEET 3 OF 4

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	PERMANENT SIGNING PLAN	SHEET 32	E

FILE NAME : N:\PDS\C3D\CAD\20301400\SIGN\023201_PS.DWG
LAYOUT NAME - 023203_PS

PLOT DATE : 10/30/2017 3:41 PM PLOT BY : WAGNER, SCOTT H PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- VMS — VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- DELINEATOR - 60' SPACING
  WHITE/RIGHT YELLOW/LEFT
- XXX — DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE

N

STH 100

575

580

PI: 577+69.62

PI: 577+69.81

STH 100

HWY

NO SIGNS ON THIS SHEET

2

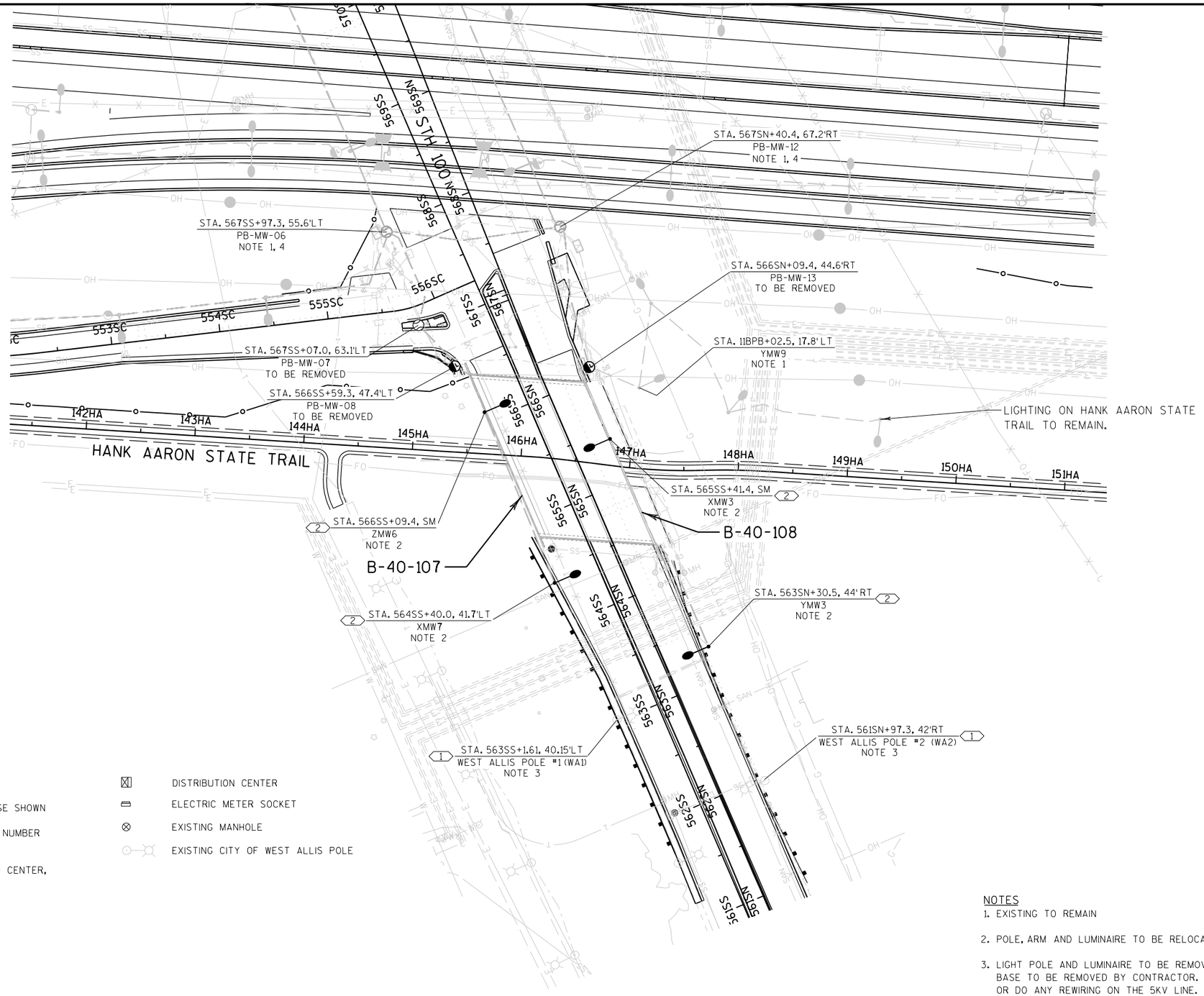
SHEET 4 OF 4

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	PERMANENT SIGNING PLAN	SHEET 33	E

FILE NAME : N:\PDS\C3D\CAD\20301400\SIGN\023201_PS.DWG
LAYOUT NAME - 023204_PS

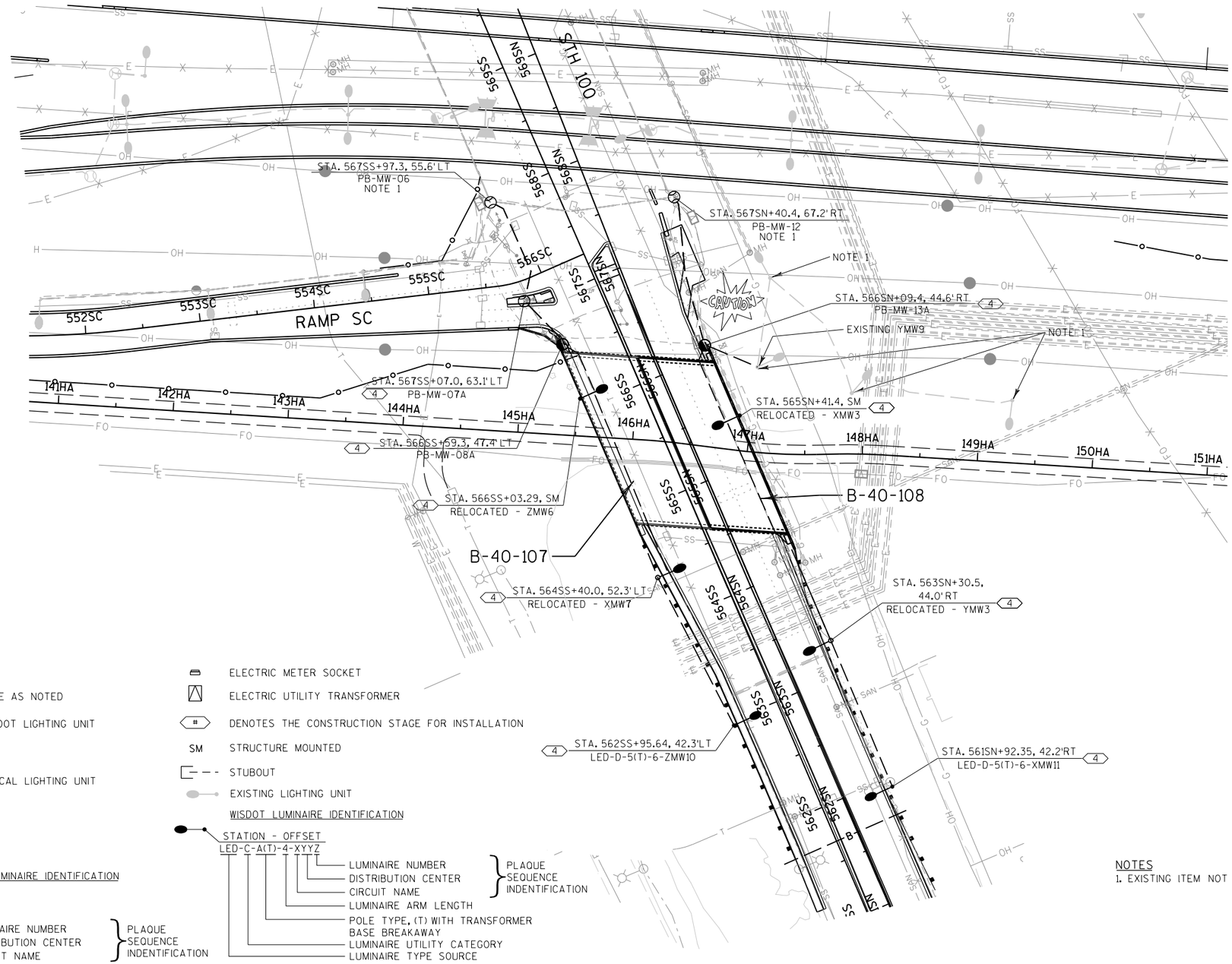
PLOT DATE : 10/30/2017 3:41 PM PLOT BY : WAGNER, SCOTT H PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42



NOTES

1. EXISTING TO REMAIN
2. POLE, ARM AND LUMINAIRE TO BE RELOCATED. SEE FINAL DRAWINGS.
3. LIGHT POLE AND LUMINAIRE TO BE REMOVED BY THE CITY OF WEST ALLIS. BASE TO BE REMOVED BY CONTRACTOR. CONTRACTOR SHALL NOT ABANDON OR DO ANY REWIRING ON THE 5KV LINE.
4. DISCONNECT WIRING TO BRIDGE AT PB-MW-06 AND PB-MW-12.



LEGEND

- CID (CABLE IN DUCT)
- CABLE IN CONDUIT - SIZE AS NOTED
- PROPOSED SINGLE ARM DOT LIGHTING UNIT
- PROPOSED TWIN ARM LOCAL LIGHTING UNIT
- DISTRIBUTION CENTER
- PULL BOX 24" x 36"
- PULL BOX 24" x 42"

CITY OF WAUWATOSA LUMINAIRE IDENTIFICATION

STATION - OFFSET
LED-C-A(T)-4-XYYZ

- LUMINAIRE NUMBER
- DISTRIBUTION CENTER
- CIRCUIT NAME } PLAQUE SEQUENCE INDENTIFICATION
- LUMINAIRE ARM LENGTH
- POLE TYPE, (T) WITH TRANSFORMER BASE BREAKAWAY
- LUMINAIRE UTILITY CATEGORY
- LUMINAIRE TYPE SOURCE

- ELECTRIC METER SOCKET
- ELECTRIC UTILITY TRANSFORMER
- (#) DENOTES THE CONSTRUCTION STAGE FOR INSTALLATION
- SM STRUCTURE MOUNTED
- STUBOUT
- EXISTING LIGHTING UNIT

WISDOT LUMINAIRE IDENTIFICATION

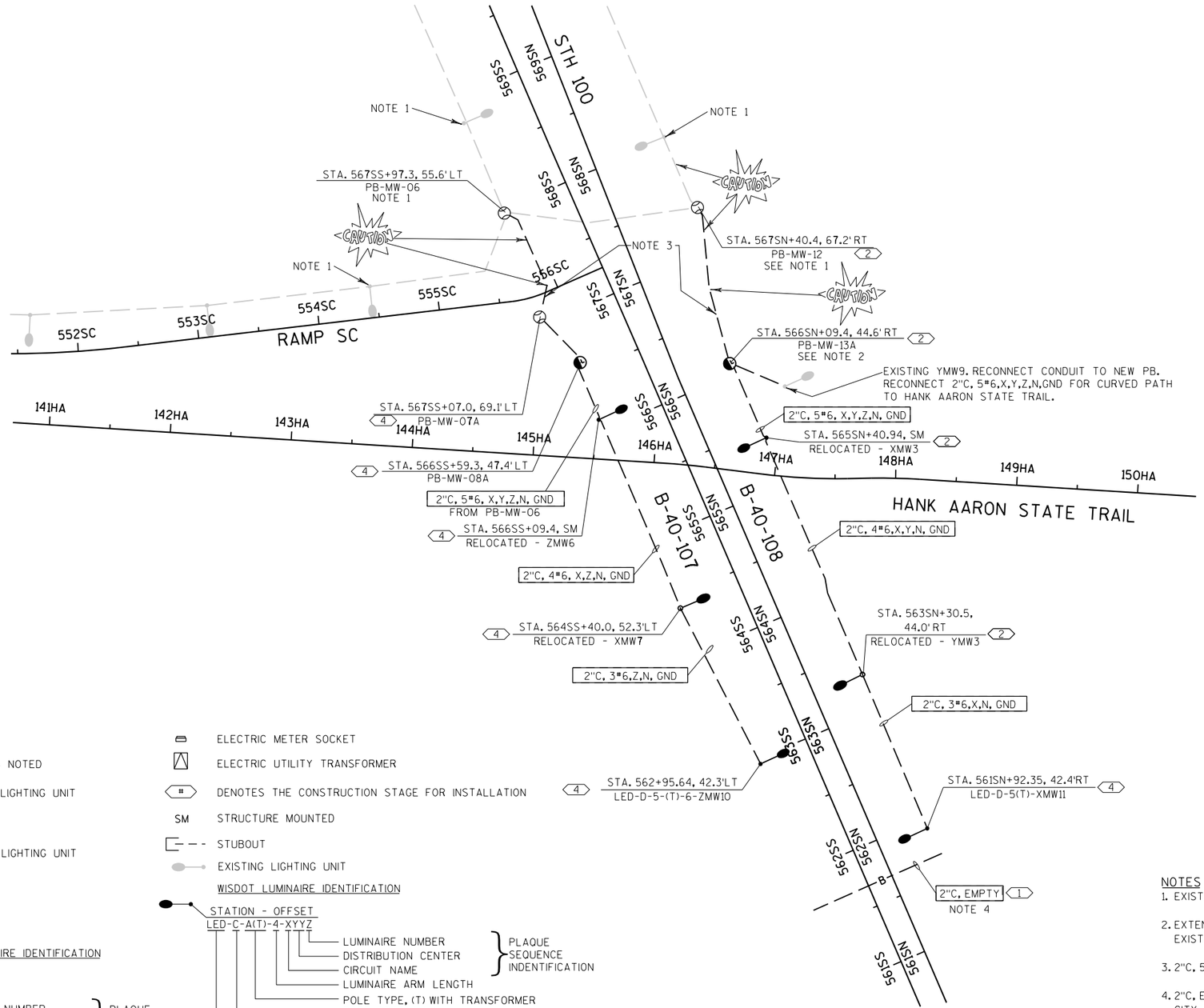
STATION - OFFSET
LED-C-A(T)-4-XYYZ

- LUMINAIRE NUMBER
- DISTRIBUTION CENTER
- CIRCUIT NAME } PLAQUE SEQUENCE INDENTIFICATION
- LUMINAIRE ARM LENGTH
- POLE TYPE, (T) WITH TRANSFORMER BASE BREAKAWAY
- LUMINAIRE UTILITY CATEGORY
- LUMINAIRE TYPE SOURCE

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	LIGHTING PLANS - FINAL	SHEET 35	E

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Roads\cds\023553_lp.dgn PLOT DATE : 12/18/2017 PLOT BY : wwolak PLOT NAME : $FILE$ PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42



LEGEND

- CID (CABLE IN DUCT)
- CABLE IN CONDUIT - SIZE AS NOTED
- PROPOSED SINGLE ARM DOT LIGHTING UNIT
- PROPOSED TWIN ARM LOCAL LIGHTING UNIT
- DISTRIBUTION CENTER
- PULL BOX 24" x 36"
- PULL BOX 24" x 42"
- ELECTRIC METER SOCKET
- ELECTRIC UTILITY TRANSFORMER
- # — DENOTES THE CONSTRUCTION STAGE FOR INSTALLATION
- SM — STRUCTURE MOUNTED
- STUBOUT
- EXISTING LIGHTING UNIT

CITY OF WAUWATOSA LUMINAIRE IDENTIFICATION

STATION - OFFSET
LED-C-A(T)-4-XYYZ

- LUMINAIRE NUMBER
- DISTRIBUTION CENTER
- CIRCUIT NAME
- LUMINAIRE ARM LENGTH
- POLE TYPE, (T) WITH TRANSFORMER BASE BREAKAWAY
- LUMINAIRE UTILITY CATEGORY
- LUMINAIRE TYPE SOURCE

PLAQUE SEQUENCE INDENTIFICATION

WISDOT LUMINAIRE IDENTIFICATION

STATION - OFFSET
LED-C-A(T)-4-XYYZ

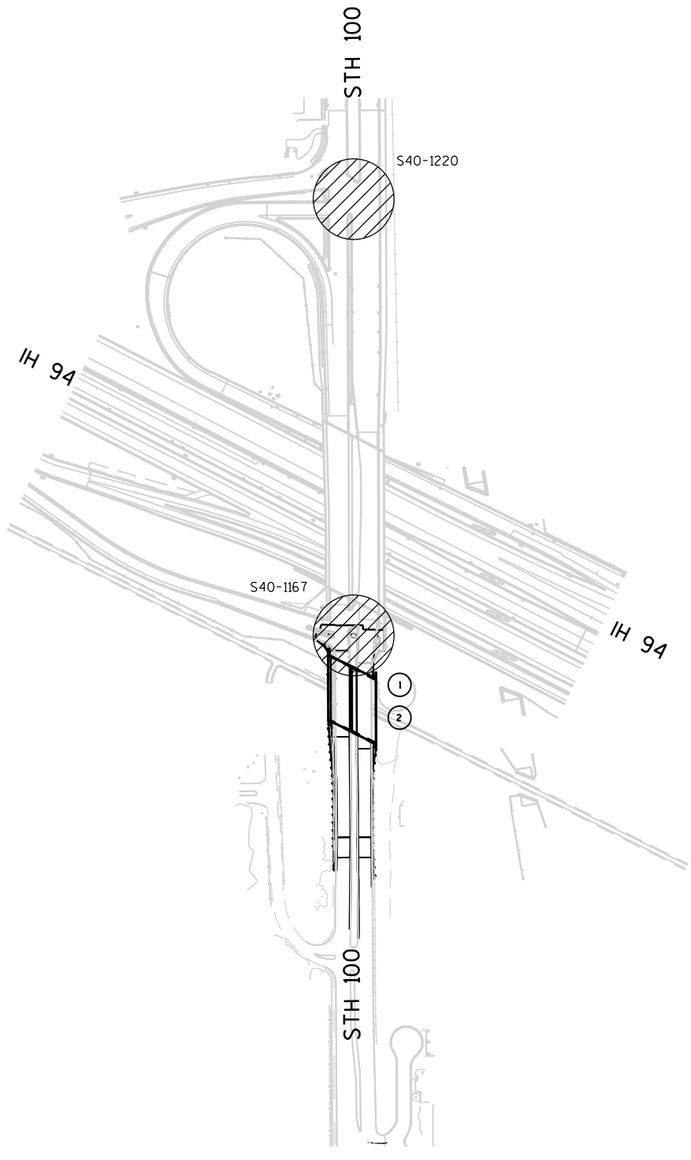
- LUMINAIRE NUMBER
- DISTRIBUTION CENTER
- CIRCUIT NAME
- LUMINAIRE ARM LENGTH
- POLE TYPE, (T) WITH TRANSFORMER BASE BREAKAWAY
- LUMINAIRE UTILITY CATEGORY
- LUMINAIRE TYPE SOURCE

PLAQUE SEQUENCE INDENTIFICATION

NOTES

1. EXISTING ITEM NOT MOVED/MODIFIED UNDER THIS CONTRACT.
2. EXTEND 2"C,5#6, X,Y,Z,N,GND FROM PB-MW-13A TO POLE YMW9. INTERCEPT EXISTING CONDUIT.
3. 2"C, 5#6, X,Y,Z,GND INTERCEPT EXISTING CONDUIT AND EXTEND.
4. 2"C, EMPTY, BORED, HDPE IN STAGE 1 FOR CITY OF WEST ALLIS. CITY TO WIRE. EXTEND 4'-0" BEYOND CURB. STA 561SS+70.

2



LEGEND

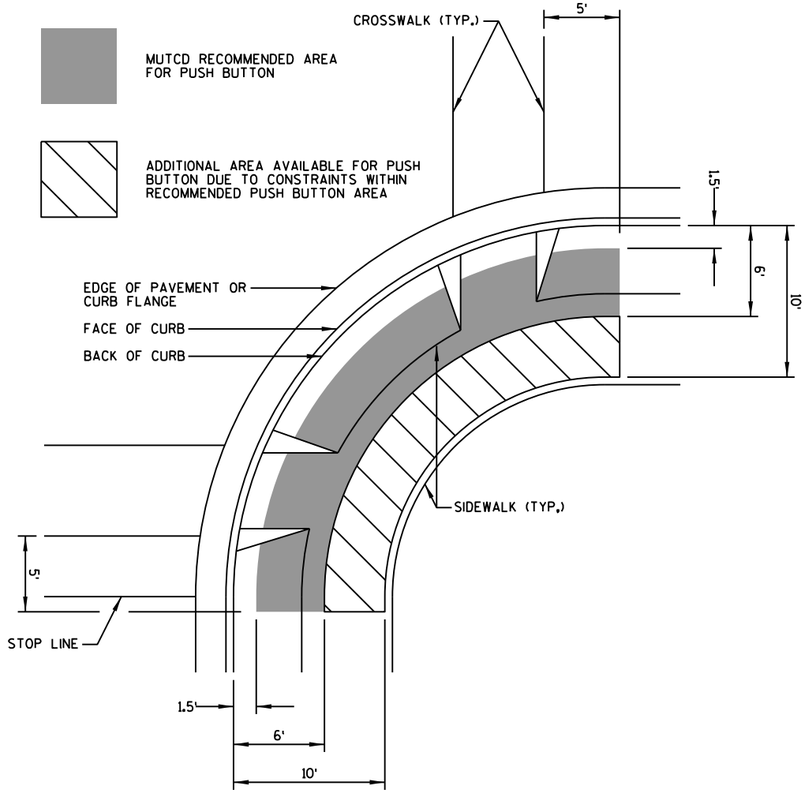
WISDOT OWNED TRAFFIC SIGNAL

SXX-XXXX

(1) INSTALL TEMPORARY TRAFFIC SIGNAL

(2) REMOVE TEMPORARY TRAFFIC SIGNAL UPON PROJECT COMPLETION

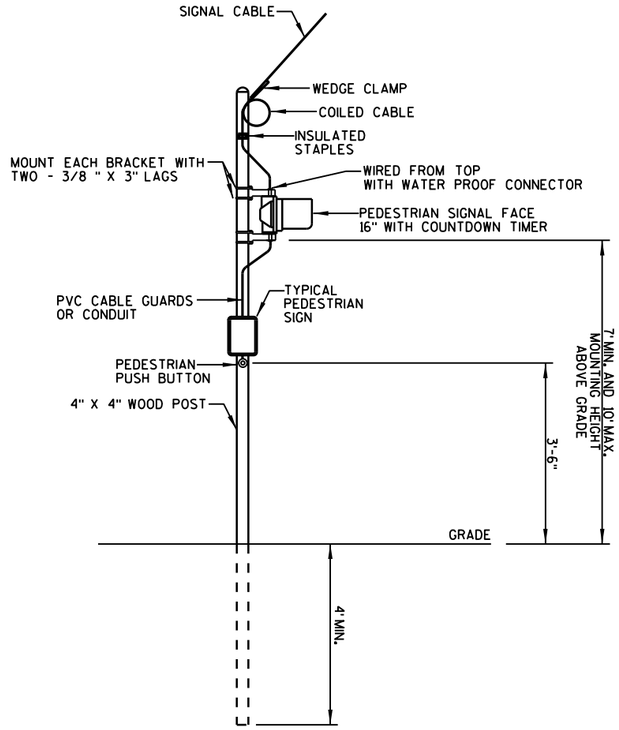
PROJECT NO: 2030-14-70	HWY: IH 94	COUNTY: MILWAUKEE	TEMPORARY TRAFFIC SIGNAL PROJECT OVERVIEW	SHEET 37	E



PUSH BUTTON LOCATION NOTES;

1. PUSHBUTTONS SHOULD BE CAPABLE OF EASY ACTIVATION AND CONVENIENTLY LOCATED NEAR EACH END OF CROSSWALK OR CROSSING AREA.
2. PUSHBUTTONS SHOULD BE PLACED UNOBSTRUCTED AND ADJACENT TO A LEVEL ALL-WEATHER SURFACE TO PROVIDE ACCESS FROM A WHEELCHAIR.
3. PUSHBUTTONS SHOULD BE PLACED WHERE THERE IS AN ALL-WEATHER SURFACE, A WHEELCHAIR ACCESSIBLE ROUTE FROM THE PUSHBUTTON TO THE RAMP.
4. PUSHBUTTONS SHOULD BE PLACED BETWEEN THE EDGE OF THE CROSSWALK LINE (EXTENDED) FARTHEST FROM THE CENTER OF THE INTERSECTION AND THE SIDE OF A CURB RAMP (IF PRESENT), BUT NOT GREATER THAN 5-FEET FROM SAID CROSSWALK LINE.
5. PUSHBUTTONS SHOULD BE PLACED BETWEEN 1.5-FEET AND 6-FEET FROM THE EDGE OF THE CURB, SHOULDER, OR PAVEMENT. IF THERE ARE PHYSICAL CONSTRAINTS THAT MAKE IT IMPRACTICAL TO PLACE THE PEDESTRIAN PUSHBUTTON BETWEEN 1.5-FEET AND 6-FEET FORM THE EDGE OF THE CURB, SHOULDER, OR PAVEMENT, IT SHOULD NOT BE FARTHER THAN 10-FEET FROM THE EDGE OF CURB, SHOULDER, OR PAVEMENT.
6. PUSHBUTTONS SHOULD BE PLACED WITH THE FACE OF THE PUSH BUTTON PARALLEL TO THE CROSSWALK TO BE USED.
7. PUSHBUTTONS ON THE SAME CORNER OF AN INTERSECTION SHOULD BE SEPARATED BY A DISTANCE OF AT LEAST 10-FEET. WHERE THERE ARE PHYSICAL CONSTRAINTS ON A PARTICULAR CORNER THAN MAKE IT IMPRACTICAL TO PROVIDE THE 10-FOOT SEPARATION BETWEEN THE TWO PEDESTRIAN PUSHBUTTONS, THE PUSHBUTTONS MAY BE PLACED CLOSER TOGETHER OR ON THE SAME POLE.
8. PUSHBUTTON POLES SHALL BE PLACED SO THAT ALL EQUIPMENT ATTACHED TO THE POLE (PEDESTRIAN SIGNAL HEAD, PUSHBUTTON, SIGN, ETC.) IS OUTSIDE THE MINIMUM LATERAL CLEARANCE DISTANCE OF 2-FEET FROM FACE OF CURB OR EDGE OF TRAVELED WAY.
9. PUSHBUTTONS SHOULD BE PLACED SO THE THE REACH DISTANCE FROM THE EDGE OF THE FLAT SURFACE ADJACENT TO THE PUSHBUTTON DOES NOT EXCEED THE MAXIMUM ADA REACH DISTANCE OF 2-FEET.

TEMPORARY PEDESTRIAN SIGNAL AREA



WOOD POST

TEMPORARY PEDESTRIAN SIGNAL NOTES;

1. SIGNAL DROP CABLES SHALL BE PLACED A MINIMUM OF 12-FEET ABOVE GROUND NOT SUBJECT TO VEHICULAR TRAFFIC.
2. SIGNAL DROP CABLES SHALL BE PLACED A MINIMUM OF 17-FEET ABOVE GROUND SUBJECT TO VEHICULAR TRAFFIC, INCLUDING CONSTRUCTION VEHICLES.
3. MAXIMUM REACH DISTANCE FROM THE EDGE OF THE PEDESTRIAN AREA TO THE PUSH BUTTON SHALL NOT EXCEED THE MAXIMUM ADA REACH DISTANCE OF 2-FEET.
4. PUSHBUTTONS SHOULD BE PLACED AT A MOUNTING HEIGHT OF 3.5-FEET ABOVE THE WALKING SURFACE.
5. MAINTAIN ADA ACCESSIBLE ROUTE AND PEDESTRIAN ACCESSIBILITY REQUIREMENTS FOR ALL ACTIVE PEDESTRIAN SIGNAL INDICATION CROSSING AREAS.
6. MAINTAIN TEMPORARY PEDESTRIAN SIGNALS THROUGHOUT CONSTRUCTION TO ENSURE THAT THE PLACEMENT OF THE TEMPORARY PEDESTRIAN SIGNALS COMPLIES WITH ALL APPLICABLE ADA AND MUTCD SIGNAL PLACEMENT REQUIREMENTS.

TEMPORARY PEDESTRIAN SIGNAL

2

LEGEND

- WORK AREA
- TEMPORARY PAVEMENT
- SIGNAL HEAD, OVERHEAD MOUNT
- CLASS 4 WOOD POLE
- WOOD POST
- CABLE - OVERHEAD
- SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- NON-INTRUSIVE DETECTION AREA

LEGEND (CON'T)

- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- YELLOW ARROW
- GREEN ARROW
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- TEMPORARY LUMINAIRE LED CATEGORY D
- TRAFFIC SIGNAL HEAD TO BE COVERED AND DE-ENERGIZED

NOTE: ALL LENSES ARE 12-INCH
GRAY SHADE REPRESENTS EXISTING

N

IH 94 EB OFF RAMP

STH 100 (S. 108TH STREET)

565SS 566SS 567SS 568SS 569SS 570SS

565SN 566SN 567SN 568SN 569SN 570SN

R/W IS OFF THE PAGE

HWE

CONSTRUCTION NOTES:

1. FINAL LOCATION OF SIGNAL POLES, SIGNAL CABINET, & HEADS SHALL BE AS DIRECTED BY THE ENGINEER.
2. GUYING OF POLES IS REQUIRED AND LOCATIONS SHALL BE APPROVED BY THE ENGINEER.
3. ALL NEAR RIGHT TRAFFIC SIGNAL HEADS SHALL BE PLACED BETWEEN THE SPAN WIRE AND TETHER WIRE.
4. DETECTION AREAS ARE APPROXIMATE. ZONES SHALL BE ADJUSTED BY THE CONTRACTOR TO MATCH FIELD CONDITIONS.
5. WISDOT ELECTRICAL (414 266-1170) SHALL BE NOTIFIED 5 WORKING DAYS BEFORE SWITCH TO TEMPORARY TRAFFIC SIGNALS.
6. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
7. ADJUST TEMPORARY SIGNALS WITHIN EACH CONSTRUCTION STAGE AS DIRECTED BY THE ENGINEER TO MAINTAIN MUTCD SIGNAL REQUIREMENTS.
8. MAINTAIN 12 FOOT VERTICAL CLEARANCE BETWEEN SIDEWALK AND OVERHEAD LINES.

WISCONSIN
JASON R. MATSON
37111
JKESHA
WI
PROFESSIONAL ENGINEER
12/13/2017

TRAFFIC CONTROL SIGNAL
IH 94 EB OFF RAMP &
STH 100 (S. 108TH STREET)
CITY OF WEST ALLIS
MILWAUKEE COUNTY

SIGNAL NO. S40-1167

REGION CONTACT: JOYCE MURPHY
DESIGNED BY: HNTB
REVISED BY:

PAGE 1 OF 6

PROJECT NO: 2030-14-70	HWY: IH 94	COUNTY: MILWAUKEE	TEMPORARY TRAFFIC SIGNAL PLAN - STAGE 1	SHEET 39	E

FILE NAME : \\milw00\ingrproj\71232\t1\cds\023911_sp_tmp.dgn PLOT DATE : 12/13/2017 PLOT BY : dbaumann PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

LEGEND

- WORK AREA
- TEMPORARY PAVEMENT
- SIGNAL HEAD, OVERHEAD MOUNT
- CLASS 4 WOOD POLE
- WOOD POST
- CABLE - OVERHEAD
- SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- NON-INTRUSIVE DETECTION AREA

LEGEND (CON'T)

- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- YELLOW ARROW
- GREEN ARROW
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- TEMPORARY LUMINAIRE LED CATEGORY D
- TRAFFIC SIGNAL HEAD TO BE COVERED AND DE-ENERGIZED

NOTE: ALL LENSES ARE 12-INCH GRAY SHADE REPRESENTS EXISTING

N

IH 94 EB OFF RAMP

STH 100 (S. 108TH STREET)

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565SN 566SN 567SN 568SN 569SN 570SN

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14SHA 18SHA

R/W

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SPEED LIMIT=40 MPH

HWE

CC

MH

CONSTRUCTION NOTES:

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2. GUYING OF POLES IS REQUIRED AND LOCATIONS SHALL BE APPROVED BY THE ENGINEER.
3. ALL NEAR RIGHT TRAFFIC SIGNAL HEADS SHALL BE PLACED BETWEEN THE SPAN WIRE AND TETHER WIRE.
4. DETECTION AREAS ARE APPROXIMATE. ZONES SHALL BE ADJUSTED BY THE CONTRACTOR TO MATCH FIELD CONDITIONS.
5. WISDOT ELECTRICAL (414 266-1170) SHALL BE NOTIFIED 5 WORKING DAYS BEFORE SWITCH TO TEMPORARY TRAFFIC SIGNALS.
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7. ADJUST TEMPORARY SIGNALS WITHIN EACH CONSTRUCTION STAGE AS DIRECTED BY THE ENGINEER TO MAINTAIN MUTCD SIGNAL REQUIREMENTS.
8. MAINTAIN 12 FOOT VERTICAL CLEARANCE BETWEEN SIDEWALK AND OVERHEAD LINES.

TRAFFIC CONTROL SIGNAL
IH 94 EB OFF RAMP &
STH 100 (S. 108TH STREET)
CITY OF WEST ALLIS
MILWAUKEE COUNTY

SIGNAL NO. S40-1167

REGION CONTACT: JOYCE MURPHY
DESIGNED BY: HNTB
REVISED BY:

PAGE 2 OF 6

PROJECT NO: 2030-14-70	HWY: IH 94	COUNTY: MILWAUKEE	TEMPORARY TRAFFIC SIGNAL PLAN - STAGE 2	SHEET 40	E

FILE NAME : \\milw00\ingrproj\71232\t1\cds\023912_sp_tmp.dgn PLOT DATE : 12/13/2017 PLOT BY : dbaumann PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

LEGEND

- WORK AREA
- TEMPORARY PAVEMENT
- SIGNAL HEAD, OVERHEAD MOUNT
- CLASS 4 WOOD POLE
- WOOD POST
- CABLE - OVERHEAD
- SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- NON-INTRUSIVE DETECTION AREA

LEGEND (CON'T)

- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- YELLOW ARROW
- GREEN ARROW
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- TEMPORARY LUMINAIRE LED CATEGORY D
- TRAFFIC SIGNAL HEAD TO BE COVERED AND DE-ENERGIZED

NOTE: ALL LENSES ARE 12-INCH GRAY SHADE REPRESENTS EXISTING

N

IH 94 EB OFF RAMP

STH 100 (S. 108TH STREET)

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SPEED LIMIT=40 MPH

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HWE

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CONSTRUCTION NOTES:

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TRAFFIC CONTROL SIGNAL
IH 94 EB OFF RAMP &
STH 100 (S. 108TH STREET)
CITY OF WEST ALLIS
MILWAUKEE COUNTY

SIGNAL NO. S40-1167

REGION CONTACT: JOYCE MURPHY
DESIGNED BY: HNTB
REVISED BY:

PAGE 3 OF 6

PROJECT NO: 2030-14-70	HWY: IH 94	COUNTY: MILWAUKEE	TEMPORARY TRAFFIC SIGNAL PLAN - STAGE 2A	SHEET 41	E

FILE NAME : \\milw00\ingrproj\71232\t1\cds\023912a_sp_tmp.dgn PLOT DATE : 12/13/2017 PLOT BY : dbaumann PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

LEGEND

- WORK AREA
- TEMPORARY PAVEMENT
- SIGNAL HEAD, OVERHEAD MOUNT
- CLASS 4 WOOD POLE
- WOOD POST
- CABLE - OVERHEAD
- SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- [ ] NON-INTRUSIVE DETECTION AREA

LEGEND (CON'T)

- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- YELLOW ARROW
- GREEN ARROW
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- TEMPORARY LUMINAIRE LED CATEGORY D
- TRAFFIC SIGNAL HEAD TO BE COVERED AND DE-ENERGIZED

NOTE: ALL LENSES ARE 12-INCH
GRAY SHADE REPRESENTS EXISTING

N

IH 94 EB OFF RAMP

STH 100 (S. 108TH STREET)

SPEED LIMIT=40 MPH

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565SN 566SN 567SN 568SN 569SN 570SN

CONSTRUCTION NOTES:

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TRAFFIC CONTROL SIGNAL
IH 94 EB OFF RAMP &
STH 100 (S. 108TH STREET)
CITY OF WEST ALLIS
MILWAUKEE COUNTY

SIGNAL NO. S40-1167

REGION CONTACT: JOYCE MURPHY
DESIGNED BY: HNTB
REVISED BY:

PAGE 4 OF 6

PROJECT NO: 2030-14-70	HWY: IH 94	COUNTY: MILWAUKEE	TEMPORARY TRAFFIC SIGNAL PLAN - STAGE 3	SHEET 42	E

FILE NAME : \\milw00\ingrproj\71232\t1\cds\023913_sp_tmp.dgn PLOT DATE : 12/13/2017 PLOT BY : dbaumann PLOT NAME : PLOT SCALE : 40:1

LEGEND

- WORK AREA
- TEMPORARY PAVEMENT
- SIGNAL HEAD, OVERHEAD MOUNT
- CLASS 4 WOOD POLE
- WOOD POST
- CABLE - OVERHEAD
- SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- NON-INTRUSIVE DETECTION AREA

LEGEND (CON'T)

- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- YELLOW ARROW
- GREEN ARROW
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- TEMPORARY LUMINAIRE LED CATEGORY D
- TRAFFIC SIGNAL HEAD TO BE COVERED AND DE-ENERGIZED

NOTE: ALL LENSES ARE 12-INCH GRAY SHADE REPRESENTS EXISTING

N

IH 94 EB OFF RAMP

STH 100 (S. 108TH STREET)

565SS 566SS 567SS 568SS 569SS 570SS

565SN 566SN 567SN 568SN 569SN 570SN

SPEED LIMIT=40 MPH

SPEED LIMIT=40 MPH

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R/W IS OFF THE PAGE

HWE

R/W

CONSTRUCTION NOTES:

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2. GUYING OF POLES IS REQUIRED AND LOCATIONS SHALL BE APPROVED BY THE ENGINEER.
3. ALL NEAR RIGHT TRAFFIC SIGNAL HEADS SHALL BE PLACED BETWEEN THE SPAN WIRE AND TETHER WIRE.
4. DETECTION AREAS ARE APPROXIMATE. ZONES SHALL BE ADJUSTED BY THE CONTRACTOR TO MATCH FIELD CONDITIONS.
5. WISDOT ELECTRICAL (414 266-1170) SHALL BE NOTIFIED 5 WORKING DAYS BEFORE SWITCH TO TEMPORARY TRAFFIC SIGNALS.
6. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
7. ADJUST TEMPORARY SIGNALS WITHIN EACH CONSTRUCTION STAGE AS DIRECTED BY THE ENGINEER TO MAINTAIN MUTCD SIGNAL REQUIREMENTS.
8. MAINTAIN 12 FOOT VERTICAL CLEARANCE BETWEEN SIDEWALK AND OVERHEAD LINES.

TRAFFIC CONTROL SIGNAL
IH 94 EB OFF RAMP &
STH 100 (S. 108TH STREET)
CITY OF WEST ALLIS
MILWAUKEE COUNTY

SIGNAL NO. S40-1167

REGION CONTACT: JOYCE MURPHY
DESIGNED BY: HNTB
REVISED BY:

PAGE 5 OF 6

PROJECT NO: 2030-14-70	HWY: IH 94	COUNTY: MILWAUKEE	TEMPORARY TRAFFIC SIGNAL PLAN - STAGE 4	SHEET 43	E

FILE NAME : \\milw00\ingrproj\71232\t1\cds\023914_sp_tmp.dgn PLOT DATE : 12/13/2017 PLOT BY : dbaumann PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

2

SEQUENCE OF OPERATION

RING 1

	HEAD NUMBERS	01 R/W	01 **	01 CLEAR TO	02 R/W	02 **	02 CLEAR TO	03 R/W	03 **	03 CLEAR TO	04 R/W	04 **	04 CLEAR TO	FLASH
		NOT USED			⇐			NOT USED			↳			
01														
02	5,6,7,8				G	Y	R				R	R	R	R
03														
04	9,10,11,12				R	R	R				G,G	Y	R	R
05														
06	1,2,3,4				R	R	R				R	R	R	R
07														
08														
02P														
04P														
06P														
08P														

RING 2

	HEAD NUMBERS	05 R/W	05 **	05 CLEAR TO	06 R/W	06 **	06 CLEAR TO	07 R/W	07 **	07 CLEAR TO	08 R/W	08 **	08 CLEAR TO
		NOT USED			⇒			NOT USED			NOT USED		
01													
02	5,6,7,8				R	R	R						
03													
04	9,10,11,12				R	R	R						
05													
06	1,2,3,4				G	Y	R						
07													
08													
02P													
04P													
06P													
08P													

BARRIER

N

DETECTOR LOGIC

DETECTOR NUMBER	AMPLIFIER CHANNEL NUMBER	DETECTOR OPERATION: CALLS AND EXTENDS	DETECTOR OPERATION: CALLS ONLY	DETECTOR OPERATION: EXTENDS ONLY	PHASE CALLED	PHASE EXTENDED	DETECTOR DISCONNECT PHASE	CALLING DELAY	EXTENSION STRETCH	SIZE	NUMBER OF TURNS
4		X			4	4					

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1				
2		6	MAX.	X
3				
4				X
5				
6		2	MAX.	X
7				
8				

OVERLAPS

O.L. "A" =
O.L. "B" =
O.L. "C" =
O.L. "D" =

TYPE OF INTERCONNECT COMMUNICATION	
NONE	X
TBC	
CLOSED LOOP TWISTED PAIR*	
CLOSED LOOP FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	
RADIO	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM *:	SS- -

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	X
GTT	
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC SIGNAL CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	CHANNEL A	CHANNEL B	CHANNEL C
MOVEMENT	← →	← →	↓
PHASE	2+6	6+2	4

AFTER PREEMPTION SEQUENCE 2 OR 6, CONTROLLER SHALL RETURN TO PHASES 2+6.

AFTER PREEMPTION SEQUENCE 4, CONTROLLER SHALL RETURN TO PHASE 4.

CHART 1

PHASE ON	NONCONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
1		
2	6	4
3		
4	NONE	2,6
5		
6	2	4
7		
8		

GENERAL NOTES:

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
2. WHEN ONE PHASE IS ON ALONE, ANY NONCONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL. (SEE CHART 1.)

IH 94 EB OFF RAMP &
STH 100
CITY OF WEST ALLIS
MILWAUKEE COUNTY

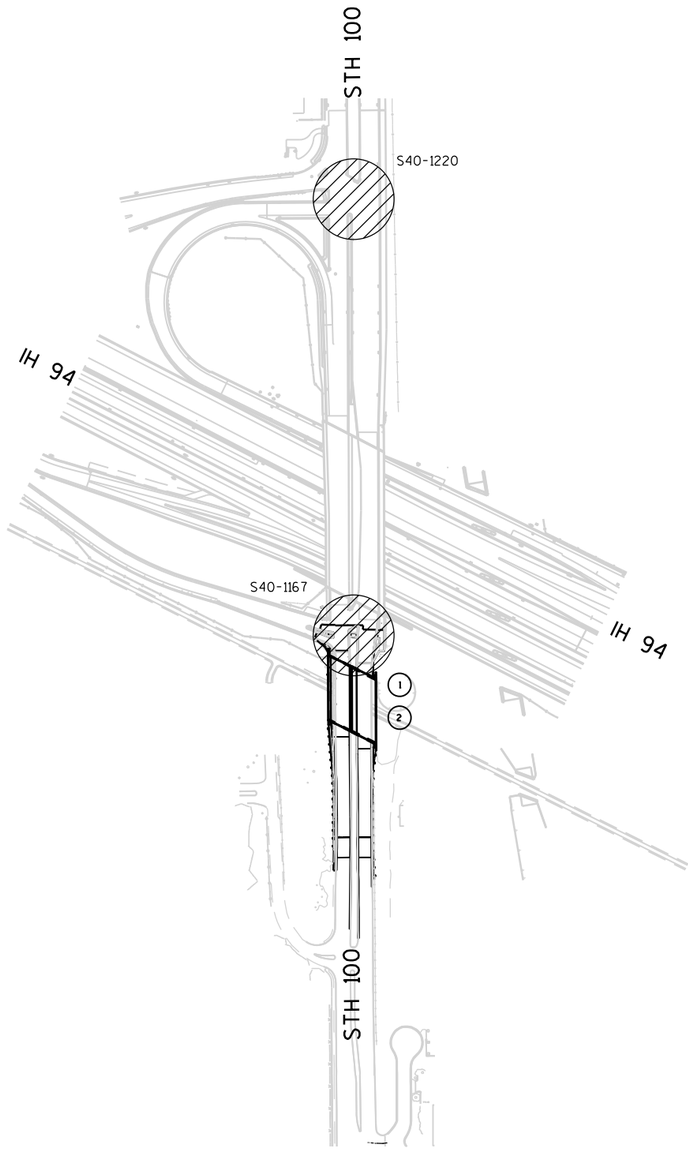
SIGNAL NO. S40-1167

CONTROLLER TYPE: TEMP

DATE 12/17

PAGE NO. 6 OF 6

2



LEGEND

WISDOT OWNED TRAFFIC SIGNAL

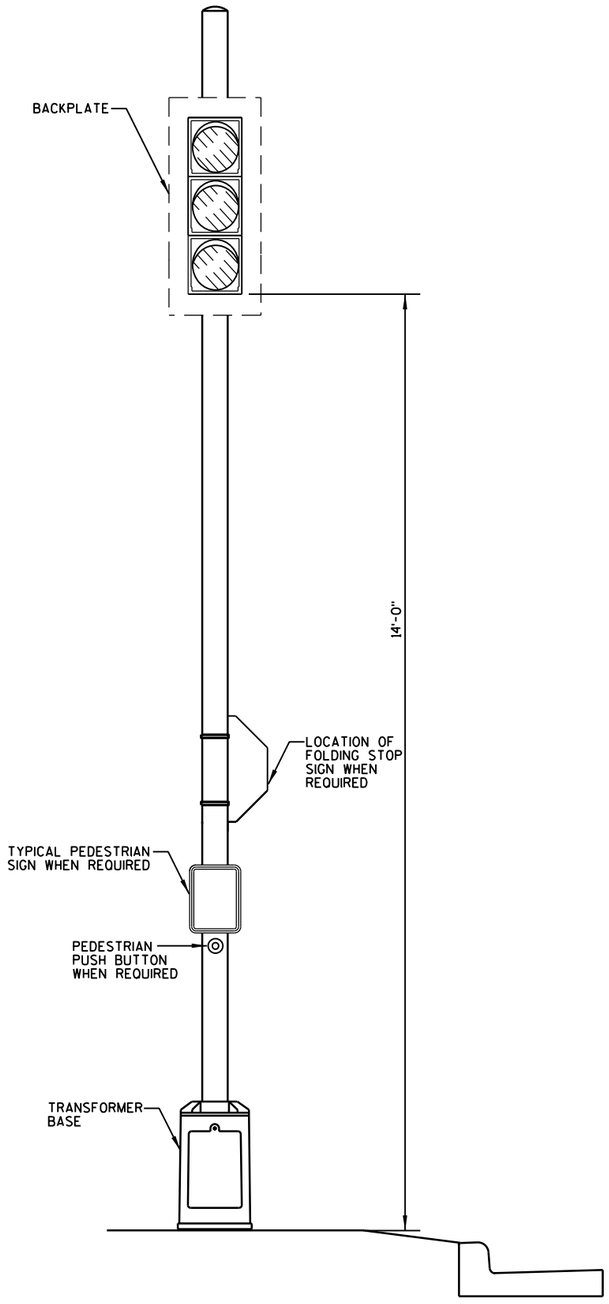
SXX-XXXX

1 REMOVE PORTIONS OF TRAFFIC SIGNAL

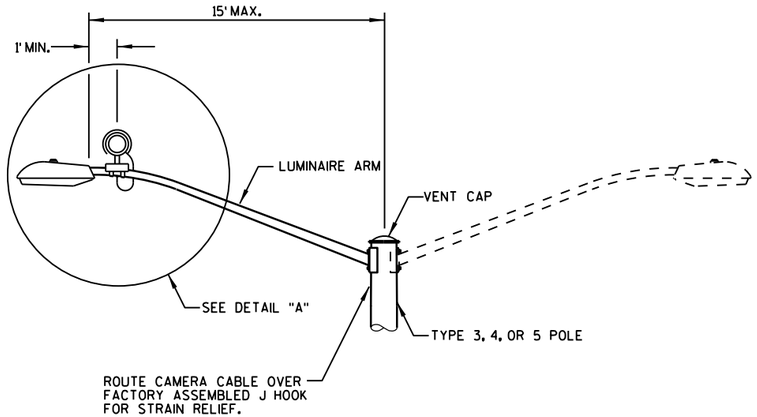
2 INSTALL PORTIONS OF PERMANENT TRAFFIC SIGNAL

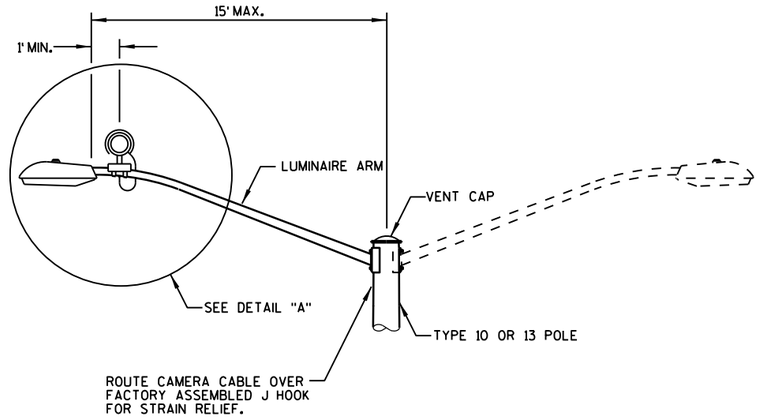
PROJECT NO: 2030-14-70	HWY: IH 94	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PROJECT OVERVIEW	SHEET 45	E

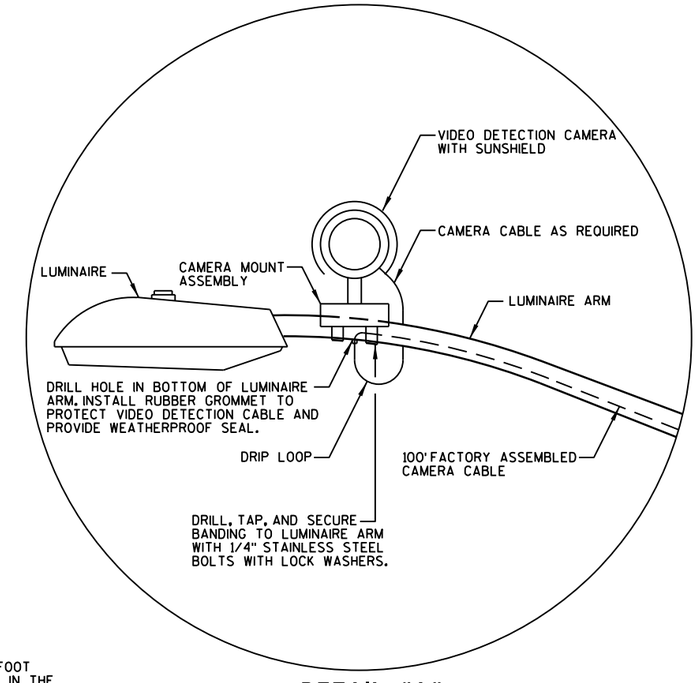
2



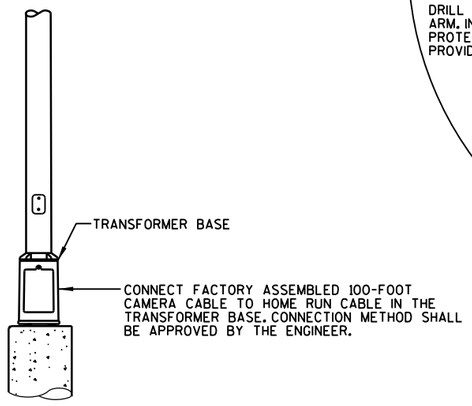
FAR INDICATIONS
TYPE 2 OR TYPE 3 POLE, TYPE 2 CONCRETE BASE



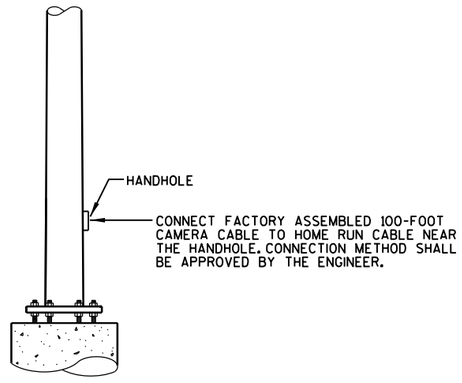




DETAIL "A"



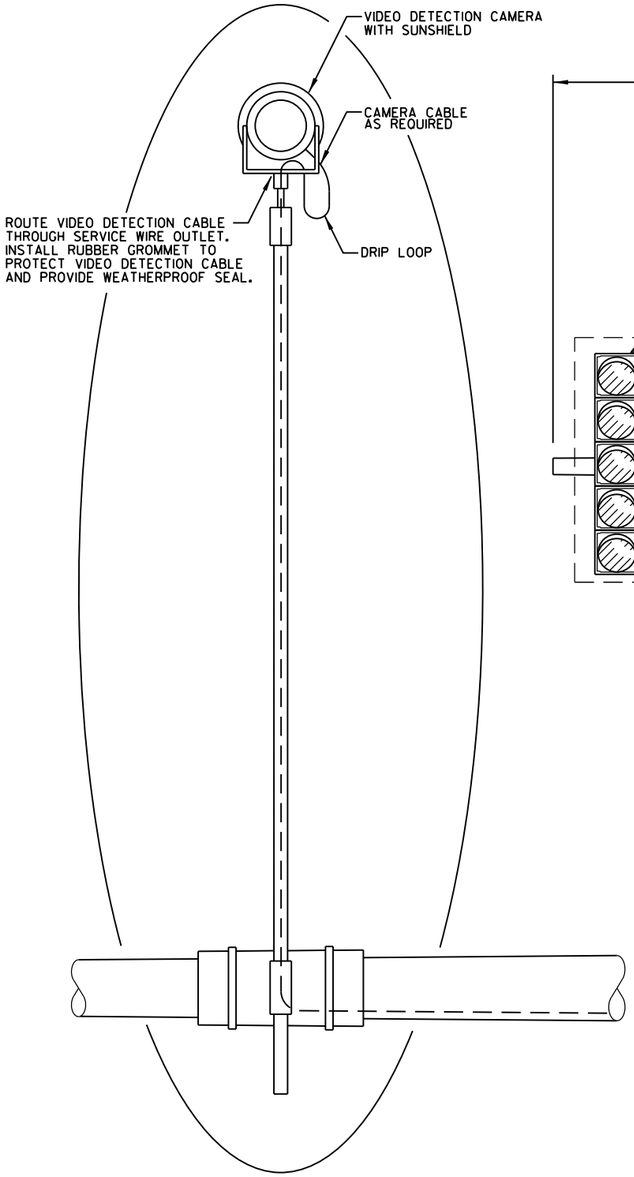
TYPE 3, 4, OR 5
MOUNTING CONFIGURATION



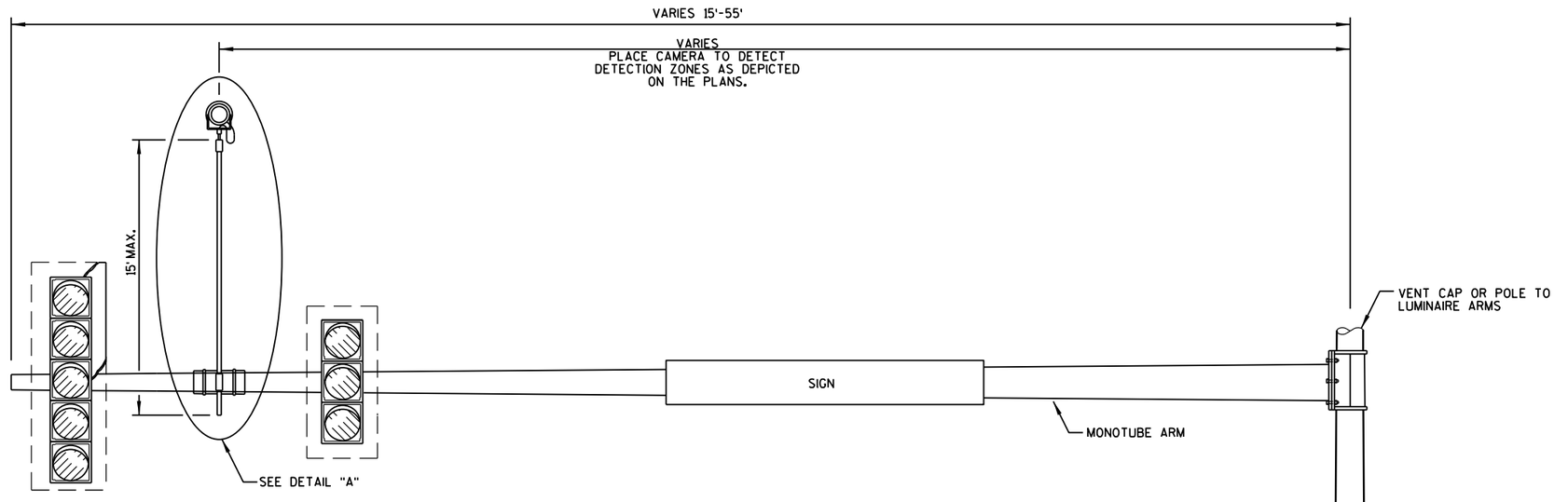
TYPE 10 OR 13
MOUNTING CONFIGURATION

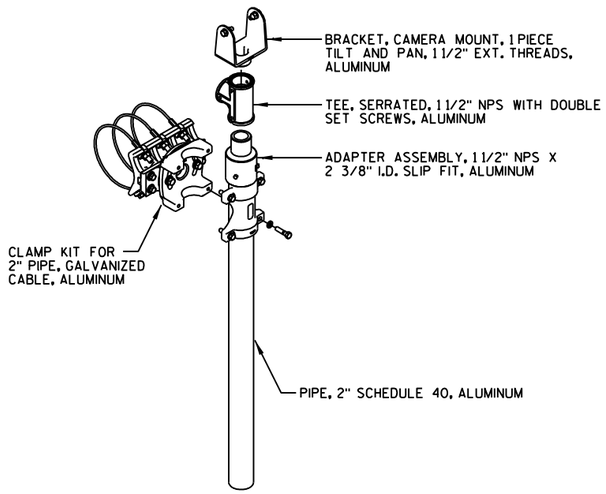
VIDEO DETECTION MOUNTING DETAIL
(LUMINAIRE ARM MOUNT)

2



DETAIL "A"



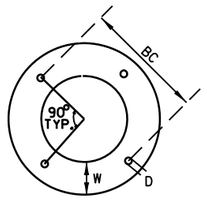


EXTENSION ARM

VIDEO DETECTION MOUNTING DETAIL
(MAST ARM MOUNT)

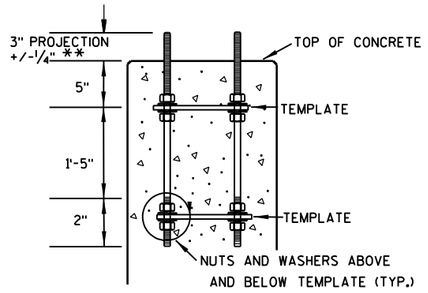
SPREAD FOOTING DIMENSIONS
STEEL AND CONCRETE QUANTITIES ARE APPROXIMATE

TYPE OF BASE	IF D =	THEN L=	401 HOOPS LBS.	402 VERTICAL BARS LBS.	602 VERTICAL BARS LBS.	403 HORIZ BARS LBS.	TOTAL LBS. STEEL	CONCR YDS.
TYPE 1	2'	5' 0"	8	7	-	36	51	1.9
TYPE 1	3'	4' 6"	12	13	-	36	61	1.6
TYPE 1	4'	4' 6'	8	18	-	36	62	1.6
TYPE 2 OR 5	2'	6' 6"	8	-	14	72	94	3.1
TYPE 2 OR 5	3'	6' 6"	12	-	26	72	110	3.2
TYPE 2 OR 5	4'	6' 0"	12	-	35	55	102	2.8
TYPE 2 OR 5	5'	6' 0"	15	-	44	55	114	2.9
TYPE 2 OR 5	6'	6' 0"	20	-	53	55	128	3.0



	TYPE 1	TYPE 2 OR 5
THICKNESS OF PLATE	½"	½"
BOLT CIRCLE "BC"	12.75"	11.50"
WIDTH "W"	3" +/-	3" +/-
HOLE DIAMETER "D"	1.125"	1.125"
ANCHOR ROD	1" X 2'-3"	1" X 2'-3"

ANCHOR ROD TEMPLATE



ANCHOR ROD ASSEMBLY

ANCHOR ROD SHALL BE ASTM A449/AASHTO M314-90 GR55
THREADED 12-INCH AT TOP; 4-INCH AT BOTTOM,
HOT-DIP GALVANIZED TO ASTM A153, GR C

REQUIRED:

2 TEMPLATES
4 ANCHOR RODS
16 FLAT WASHERS HOT-DIP GALVANIZED
16 HEAVY DUTY HEX NUTS* HOT-DIP GALVANIZED

*CHASE THREADS FOR HOT-DIP GALVANIZED ANCHOR RODS
** FAILURE TO MEET TOLERANCE CONDEMNS THE BASE

GENERAL NOTES

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

TOP SURFACES OF CONCRETE BASES SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

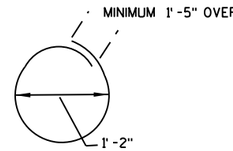
CONDUIT SIZES AND LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

THE FINAL OR TERMINATING CONCRETE BASE IN A CONDUIT RUN SHALL HAVE A 6" EXIT STUB INSTALLED FOR FUTURE CABLING USE. THE EXIT STUB SHALL BE SIZED AS USED THROUGHOUT THE CONDUIT RUN AS SHOWN AT THE ENTRANCE OF THE BASE.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6 X THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1 INCH. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.



401 HOOP
QUANTITY VARIES

402 OR 602 VERTICAL "D" - 4"
QUANTITY 6, LENGTH VARIES

403 HORIZONTAL "L" - 6"
QUANTITY AND LENGTH VARY

GENERAL NOTES (CONTINUED)

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC.

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE DIRT OR FILL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

A 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) FOR TYPE 2 AND TYPE 5 BASES.

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE OF THE TYPE 2 AND TYPE 5 BASES THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

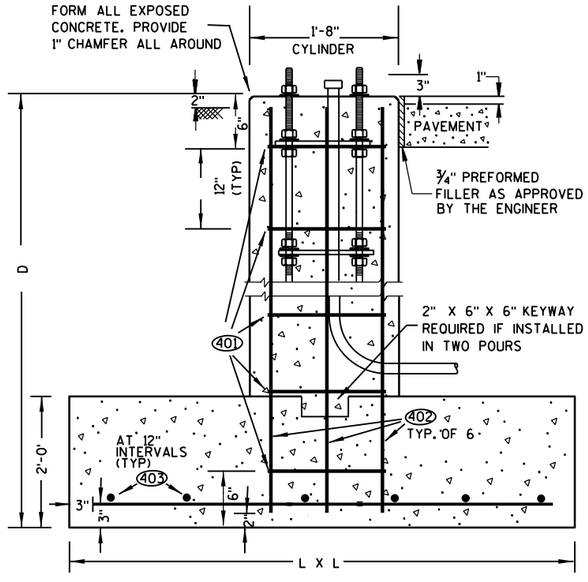
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL PER SECTION 5.17.6.3, AASHTO 2001 4TH EDITION STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES AND TRAFFIC SIGNALS.

WELDING OF THE ANCHOR RODS TO THE CAGE OR TEMPLATE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

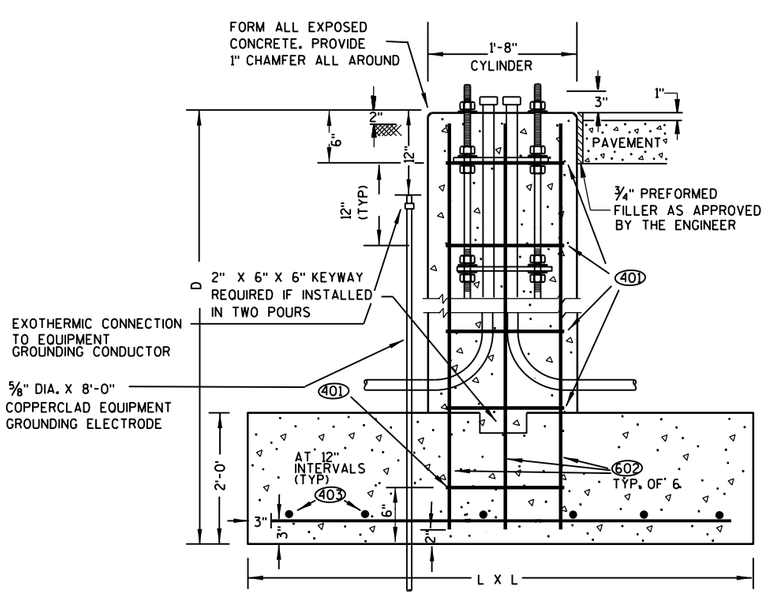
BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

CONDUIT SHOWN FOR ILLUSTRATION ONLY AND VARIES BY "D"

ANCHOR ROD PATTERN SHALL BE PARALLEL TO THE ROADWAY



SPREAD FOOTING
TYPE 1



SPREAD FOOTING
TYPE 2 OR 5

LEGEND

- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) MONOTUBE BASE, POLE, 35'-55' ARM
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- RADAR DETECTION AREA
- RX RADAR DETECTOR
- CONFIRMATION LIGHT
- PULL BOX, 24" X 42"
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- CONTROL CABINET
- TRAFFIC SIGNAL HEAD
- SIGNAL HEAD NUMBER

LEGEND (CON'T)

- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- R RED CIRCULAR INDICATOR
- Y YELLOW CIRCULAR INDICATOR
- G GREEN CIRCULAR INDICATOR
- R RED ARROW
- Y Y YELLOW ARROW
- G G GREEN ARROW

NOTE: ALL LENSES ARE 12-INCH GRAYSHADE REPRESENTS EXISTING

N

STH 100 (S. 108TH STREET)

IH 94 EB OFF RAMP

565SS 566SS 567SS 568SS 569SS 570SS

565SN 566SN 567SN 568SN 569SN 570SN

SB2 SB3 SB4 SB5 SB6 SB7 SB8 SB9 SB10 PB1 PB2 PB3 PB4 PB5 PB6 PB7 PB8

50' TO RADAR DETECTOR UNIT

550' TO END OF DETECTION AREA

R/W IS OFF THE PAGE

HWE

CONSTRUCTION NOTES:

1. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
2. EXISTING CONDUIT RUNS NO LONGER USED FOR THE PROPOSED TRAFFIC SIGNAL INSTALLATION TO BE ABANDONED IN PLACE. CONTRACTOR TO REMOVE ANY EXISTING TRAFFIC SIGNAL CABLE AND TRAFFIC SIGNAL WIRE NO LONGER USED FOR THE PROPOSED TRAFFIC SIGNAL INSTALLATION.

STRUCTURE NUMBERS

SB2 = S-40-1349
SB4 = S-40-1350
SB7 = S-40-1351

WISCONSIN JASON R. WATSON 3[illegible] N. [illegible] WI PROFESSIONAL ENGINEER 12/13/2017

TRAFFIC CONTROL SIGNAL
IH 94 EB OFF RAMP &
STH 100 (S. 108TH STREET)
CITY OF WEST ALLIS
MILWAUKEE COUNTY

SIGNAL NO. S40-1167

REGION CONTACT: JOYCE MURPHY
DESIGNED BY: HNTB
REVISED BY: HNTB

PAGE 1 OF 1

PROJECT NO: 2030-14-70	HWY: IH 94	COUNTY: MILWAUKEE	TRAFFIC SIGNAL REMOVAL PLAN	SHEET	E

FILE NAME : \\milw00\ingrproj\71232\t1\cds\024011_sp.dgn PLOT DATE : 12/13/2017 PLOT BY : dbaumann PLOT NAME : PLOT SCALE : 40:1

LEGEND

- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) MONOTUBE BASE, POLE, 35'-55' ARM
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- RADAR DETECTION AREA
- RX RADAR DETECTOR
- CONFIRMATION LIGHT
- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- CONTROL CABINET
- TRAFFIC SIGNAL HEAD
- SIGNAL HEAD NUMBER

LEGEND (CON'T)

- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- R RED CIRCULAR INDICATOR
- Y YELLOW CIRCULAR INDICATOR
- G GREEN CIRCULAR INDICATOR
- RA RED ARROW
- YA YELLOW ARROW
- GA GREEN ARROW

NOTE: ALL LENSES ARE 12-INCH GRAYSHADE REPRESENTS EXISTING

N

IH 94 EB OFF RAMP

STH 100 (S. 108TH STREET)

565SS 566SS 567SS 568SS 569SS 570SS

565SN 566SN 567SN 568SN 569SN 570SN

R/W

HWE

SAN

SPEED LIMIT=40 MPH

R/W IS OFF THE PAGE

50' TO RADAR DETECTOR UNIT

550' TO END OF DETECTION AREA

6-6'X20' 3 TURNS EACH

PB1 PB2 PB3 PB4 PB5 PB6 PB7 PB8 PB9

SB1 SB2 SB3 SB4 SB5 SB6 SB7 SB8 SB9 SB10

CB1

EXT

1¼" FO I/C

2-3" 3-3½"

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT THE REGIONAL ELECTRICAL FIELD UNIT AT (414) 266-1170.
2. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
3. ALL LUMINAIRES ARE LED CATEGORY C UNLESS OTHERWISE NOTED.
4. PROPOSED STORM SEWER, LIGHTING, DETECTABLE WARNING FIELDS, AND FTMS ARE SHOWN GRAYSHADED FOR PLAN CLARITY.
5. RADAR DETECTION UNIT LOCATIONS ARE APPROXIMATE. COORDINATE PLACEMENT OF THE EQUIPMENT WITH WISDOT SIGNAL OPERATIONS AND THE REGIONAL ELECTRICAL FIELD UNIT. NOTIFY THE REGIONAL ELECTRICAL FIELD UNIT AT (414) 266-1170 A MINIMUM OF 5 DAYS PRIOR TO PLACING THE EQUIPMENT.

STRUCTURE NUMBERS

SB2 = S-40-1349
SB4 = S-40-1350
SB6 = S-40-1351

JASON MATSON 37711 WAUKESHA WI PROFESSIONAL ENGINEER

12/13/2017

2014 UPDATE DETECTION AND CABINET. ADD INSYNC ADAPTIVE CONTROL.

REVISION

Rev. No.	RECONSTRUCT SOUTH MEDIAN AND WEST PORK CHOP ISLAND. PLAN UPDATE.			
	APPROVAL RECOMMENDED		APPROVED	
	REGION		CENTRAL OFFICE	
2	Date	By	Date	By
	12/18/17	JMM		

TRAFFIC CONTROL SIGNAL
IH 94 EB OFF RAMP &
STH 100 (S. 108TH STREET)
CITY OF WEST ALLIS
MILWAUKEE COUNTY

CABINET TYPE: TS2-E
SIGNAL NO. S40-1167 CONTROLLER TYPE: ECONOLITE

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED
Date 6/25/13 MITZI M. DOBERSEK, REGION TRAFFIC ENGINEER

APPROVED
Date 6/26/13 JOANNA L. BUSH, STATE TRAFFIC ENGINEER

REGION CONTACT: JOYCE MURPHY
DESIGNED BY: FORWARD 45
REVISED BY: HNTB

PAGE 1 OF 2

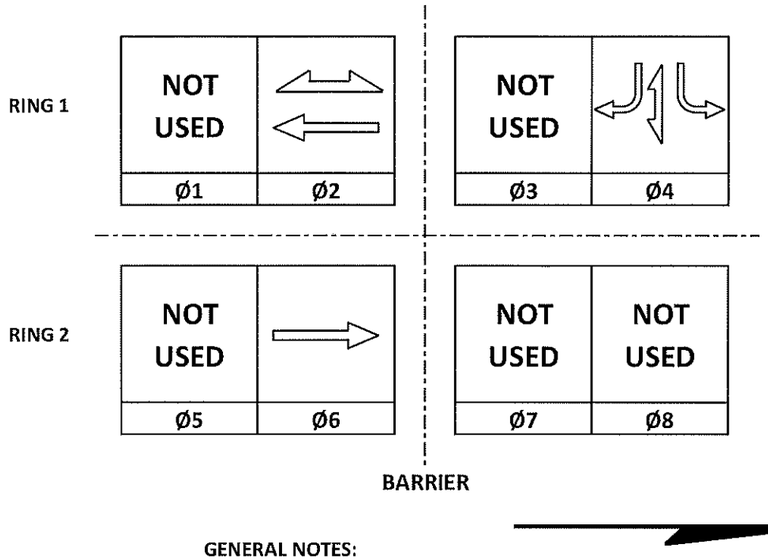
PROJECT NO: 2030-14-70	HWY: IH 94	COUNTY: MILWAUKEE	TRAFFIC SIGNAL PLAN	SHEET 51	E

12-13-17 JMM

FILE NAME : \\milw00\ingrproj\71232\t1\cds\024015_sp.dgn PLOT DATE : 12/13/2017 PLOT BY : dbaumann PLOT NAME : PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

	HEAD NUMBERS	FLASH
Ø1		
Ø2	5,6,7,8	R
Ø3		
Ø4	9,10,11,12,13,14	R
Ø5		
Ø6	1,2,3,4	R
Ø7		
Ø8		
Ø2P	17,18	
Ø4P	15,16	
Ø6P		
Ø8P		
OLE		
OLF		
OLG		
OLH		



GENERAL NOTES:

1. INTERSECTION UTILIZES VIDEO DETECTION CAMERAS FOR INSYNC ADAPTIVE CONTROL. THESE CAMERAS ARE NOT INCLUDED IN THE DETECTOR LOGIC CHART. REFER TO INSYNC PROGRAMMING FOR DETAILS.

CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1				
2	X	6	MIN	X
3				
4				X
5				
6	X	2	MIN	X
7				
8				

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	A	B	C	D
MOVEMENT	← →	← →	↓	
PHASE	2+6	6+2	4	

AFTER PREEMPTION SEQUENCE 2+6 OR 6+2, CONTROLLER SHALL RETURN TO PHASES 2+6.
AFTER PREEMPTION SEQUENCE 4, CONTROLLER SHALL RETURN TO PHASE 4.

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR	
FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	X
RADIO	
CELL MODEM	

TYPE OF COORDINATION	
NONE	
TBC	
TRAFFIC RESPONSIVE	
ADAPTIVE	X
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM NO:	SS-

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	X
GTT	X
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTION	

DETECTOR LOGIC

DETECTOR INPUT	19	17	23	21	27	25	31	29
PLAN LOOP DETECTOR*(S)	62	64	66					
CALLED PHASE	6	6	6					
CALL OPTION	X	X	X					
DELAY TIME								
EXTENTION OPTION	X	X	X					
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

DETECTOR INPUT	33	35	37	39	41	43	45	47
PLAN LOOP DETECTOR*(S)	22	24	43					
CALLED PHASE	2	2	4					
CALL OPTION	X	X	X					
DELAY TIME								
EXTENTION OPTION	X	X	X					
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

DETECTOR INPUT	49	51	53	55	57	59	61	63
PLAN LOOP DETECTOR*(S)	21	61						
CALLED PHASE	2	6						
CALL OPTION								
DELAY TIME								
EXTENTION OPTION	X	X						
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

DETECTOR INPUT	20	18	24	22	28	26	32	30
PLAN LOOP DETECTOR*(S)	63	65	67					
CALLED PHASE	6	6	6					
CALL OPTION	X	X	X					
DELAY TIME								
EXTENTION OPTION	X	X	X					
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

DETECTOR INPUT	34	36	38	40	42	44	46	48
PLAN LOOP DETECTOR*(S)	23	42	44					
CALLED PHASE	2	4	4					
CALL OPTION	X	X	X					
DELAY TIME		X						
EXTENTION OPTION	X	X	X					
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

DETECTOR INPUT	50	52	52	56	58	60	62	64
PLAN LOOP DETECTOR*(S)	41							
CALLED PHASE	4							
CALL OPTION								
DELAY TIME								
EXTENTION OPTION	X							
EXTEND TIME	X							
USE ADDED INITIAL								
CROSS SWITCH PHASE								

IH 94 EB OFF RAMP & STH 100
CITY OF WEST ALLIS
MILWAUKEE COUNTY
SIGNAL NO: S40-1167 CABINET TYPE: TS2-E
CONTROLLER TYPE: ECONOLITE
DATE: 12/2017 PAGE NO. 2 OF 52

PROJECT NO: 2030-14-70	HWY: IH 94	COUNTY: MILWAUKEE	SEQUENCE OF OPERATIONS	SHEET NO: E

FILE NAME : \\milw00\ingrproj\71232\t1\eng\Quantities\01_EB_Ramps\Econolite_SEQ.pptm PLOT DATE : 12/1/2017 12:55:04 PM PLOT BY : HNTB PLOT NAME : 030241_mq_sp_ph PLOT SCALE : 1:1

12-1-17 PJM
12/1/17

IH 94 EB OFF RAMP & STH 100

PROJECT ID:	2030-14-70
INTERSECTION:	IH 94 EB OFF RAMP & STH 100 (S. 108TH STREET)

SIGNAL WIRE COLOR CODING	BLK-BLACK	RED-RED	GRN-GREEN
	WHT-WHITE	BLU-BLUE	ORG-ORANGE

CB1 TO	NO. OF CONDUCTORS	HEAD NO.	RED	YELLOW	GREEN	<RED>	<YELLOW>	<GREEN>	FLASHING <YELLOW>	D/WALK	WALK	PED BUTTON	OTHER
SB1	12	5	RED	ORG	GRN								
SB2	12	2	RED	ORG	GRN								
		3	RED	ORG	GRN								
		4	RED	ORG	GRN								
SB3	7	15								BLK	BLU		
		B										WHT/BLK	
SB4	12	1	RED	ORG	GRN								
		10	RED/BLK				ORG/BLK	GRN/BLK					
		11	RED/BLK				ORG/BLK	GRN/BLK					
		12	RED/BLK				ORG/BLK	GRN/BLK					
SB5	12	14	RED				ORG	GRN					
SB6	12	6	RED	ORG	GRN								
		7	RED	ORG	GRN								
		8	RED	ORG	GRN								
		13	RED/BLK				ORG/BLK	GRN/BLK					
SB7	5	B										WHT/BLK	
SB8	7	16								BLK	BLU		
		B										WHT/BLK	
SB9	12	9	RED	ORG	GRN								
		17								BLK	BLU		
		B										WHT/BLK	
SB10	7	18								BLK	BLU		
		B										WHT/BLK	

NOTES: USE WHITE CONDUCTOR IN THE SIGNAL CABLE AS THE GROUNDED CONDUCTOR FOR ALL TRAFFIC SIGNAL INDICATIONS.
ENSURE THE GROUNDED CONDUCTOR IN THE FEEDER CABLE AND THE POLE CABLES ARE BOTH 18" LONGER THAN THE UNGROUNDED CONDUCTORS.
AT THE SIGNAL BASES, CONNECT ON TERMINAL FROM THE PEDESTRIAN PUSH BUTTONS TO THE COLOR INDICATED IN THE CHART. CONNECT THE OTHER TERMINAL TO THE GROUNDED CONDUCTOR.

GRAY SHADED ROWS INDICATE REQUIRED CHANGES DICTATED BY TRAFFIC SIGNAL REVISIONS. ALL OTHER ROWS ARE CONSIDERED EXISTING CABLING.

WISCONSIN
JASON R. MATSON
37111
WAUKESHA
WI
PROFESSIONAL ENGINEER
12/01/2017

(CONTINUED ON NEXT SHEET)

PROJECT NO: 2030-14-70	HWY: IH 94	COUNTY: MILWAUKEE	CABLE ROUTING	SHEET: E

FILE NAME : \\milw00\ingrproj\71232\t1\cds\024020_sp_cr.ppt PLOT DATE : 12/1/2017 11:44:43 AM PLOT BY : HNTB PLOT NAME : 024020_sp_cr#› PLOT SCALE : 1:1

(CONTINUED)

EQUIPMENT GROUNDING CONDUCTOR 10 AWG GRN XLP *	
FROM	TO
CB1	SB1
SB1	SB2
SB2	SB3
SB3	SB4
SB4	SB5
SB5	SB6
SB6	SB7
SB7	SB8
SB8	SB9
SB9	SB10
SB10	CB1

PULL BOX BONDING JUMPER 10 AWG GRN XLP **	
FROM	TO
PB1	SB1
PB2	SB2
PB3	SB3
PB4	SB4
PB5	SB6
PB6	SB9
PB7	SB9
PB8	SB10
PB9	SB5

EMERGENCY VEHICLE PREEMPTION	
FROM	TO
CB1	SB6 (HEAD A)
CB1	SB2 (HEAD B)
CB1	SB4 (HEAD C)

LIGHTING UF 10 AWG W/ GROUND	
FROM	TO
CB1	SB6
CB1	SB9

RADAR DETECTOR CABLE	
CB1	SB2 (RA1)
CB1	SB2 (RM1)
CB1	SB4 (RA2)
CB1	SB6 (RA3)
CB1	SB6 (RM3)

VIDEO DETECTOR CABLE	
CB1	SB2 (V2)
CB1	SB3 (V3)
CB1	SB6 (V1)

*RE-INSTALL EXISTING EQUIPMENT GROUNDING CONDUCTORS TO RE-ESTABLISH THE COMPLETE GROUNDING FROM BASE TO BASE WHERE THE EXISTING CIRCUIT IS DISTURBED BY CONSTRUCTION. REUSE EXISTING WIRING WHERE POSSIBLE. CHART SHOWN FOR INFORMATION ONLY.

**RE-INSTALL EXISTING PULL BOX BONDING JUMPER FOR ALL EXISTING PULL BOXES WHERE THE EXISTING BONDING JUMPER IS DISTURBED BY CONSTRUCTION. REUSE EXISTING WIRING WHERE POSSIBLE. CHART SHOWN FOR INFORMATION ONLY.

GRAY SHADED ROWS INDICATE REQUIRED CHANGES DICTATED BY TRAFFIC SIGNAL REVISIONS. ALL OTHER ROWS ARE CONSIDERED EXISTING CABLING.

LEGEND

(1) MARKING LINE EPOXY 4-INCH (YELLOW)

(2) MARKING LINE EPOXY 4-INCH (WHITE)

(16) MARKING ARROW EPOXY (WHITE)

(68) MARKING STOP LINE EPOXY 18-INCH (WHITE)

(70) MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH

(79) MARKING ARROW EPOXY (WHITE)(TYPE 7)

(201) MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 8-INCH (WHITE)

(202) MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 4-INCH (DASHED WHITE) (12.5 FT LINE 37.5 FT SKIP)

(203) MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 8-INCH (DOT PATTERN WHITE) (2 FT LINE 6 FT SKIP)

N

W. SERVICE ROAD

MATCHLINE STA 562SN+00

STH 100 SB

STH 100 NB

SS+17.83
31.36' LT

SN+72.33
0.42' LT

560SS

561SS

562SS

R/L SS

560SN

561SN

562SN

R/L SN

SN+49.32
1.92' RT

SN+50.00
12.00' RT

SN+76.27
33.32' RT

SN+50.00
23.00' RT

303.1'

48.1'

35.2'

315.2'

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 55	E

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Roads\cds\024501_pm.dgn PLOT DATE : 12/14/2017 PLOT BY : wwolak PLOT NAME : $FILE$ PLOT SCALE : 1:40

WISDOT/CADDS SHEET 42

LEGEND

1 MARKING LINE EPOXY 4-INCH (YELLOW)

2 MARKING LINE EPOXY 4-INCH (WHITE)

16 MARKING ARROW EPOXY (WHITE)

68 MARKING STOP LINE EPOXY 18-INCH (WHITE)

70 MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH

79 MARKING ARROW EPOXY (WHITE) (TYPE 7)

201 MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 8-INCH (WHITE)

202 MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 4-INCH (DASHED WHITE) (12.5 FT LINE 37.5 FT SKIP)

203 MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 8-INCH (DOT PATTERN WHITE) (2 FT LINE 6 FT SKIP)

MATCHLINE STA 562SN+00

BEGIN PROJECT
STA 562SN+00.00

END PROJECT
STA 567SN+24.98

BEGIN CONSTRUCTION
STA 555SC+65.55

MATCHLINE STA 567SN+50

RAMP SC

HANK AARON STATE TRAIL

STH 100 SB

STH 100 NB

IH 94

B-40-107

B-40-108

R/L SS

R/L SN

SS+42 32.4' LT

SS+55 33.5' LT

SS+53 32.8' LT

SS+71 9.0' RT

SS+84 11.8' RT

SS+84 41.9' RT

SS+07 37.5' RT

SS+06 0.0' RT

SN+05 0.0' RT

SN+05 42.8' RT

SN+15 33.0' RT

SN+85 33.0' RT

562SS 563SS 564SS 565SS 566SS 567SS

562SN 563SN 564SN 565SN 566SN 567SN

555SS 555SC

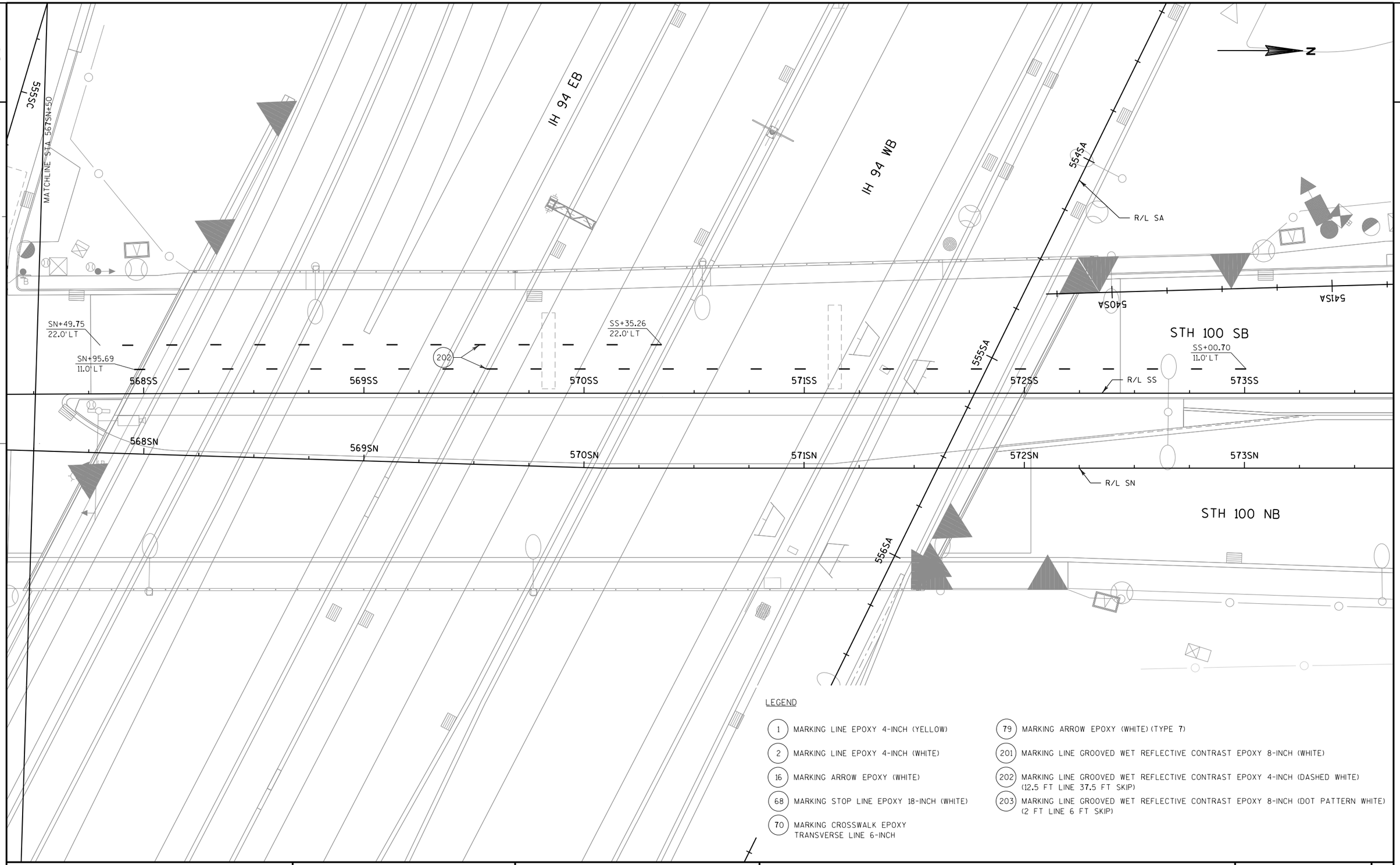
14HA 14TSA

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 56	E

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Roads\cds\024502_pm.dgn PLOT DATE : 12/14/2017 PLOT BY : wwolak PLOT NAME : $FILE$ PLOT SCALE : 1:40

WISDOT/CADDS SHEET 42

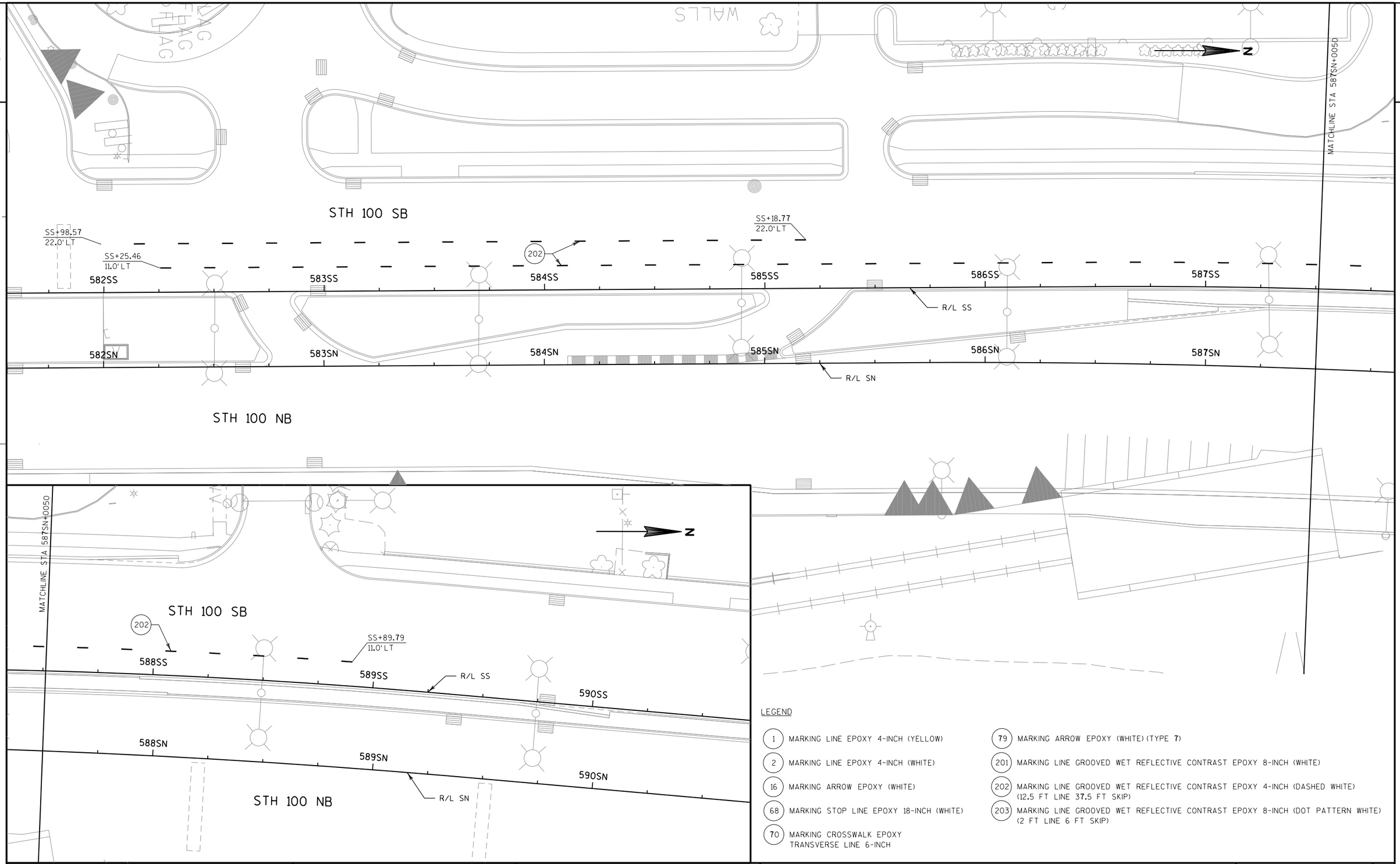
2



LEGEND

1	MARKING LINE EPOXY 4-INCH (YELLOW)	79	MARKING ARROW EPOXY (WHITE)(TYPE 7)
2	MARKING LINE EPOXY 4-INCH (WHITE)	201	MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 8-INCH (WHITE)
16	MARKING ARROW EPOXY (WHITE)	202	MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 4-INCH (DASHED WHITE) (12.5 FT LINE 37.5 FT SKIP)
68	MARKING STOP LINE EPOXY 18-INCH (WHITE)	203	MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 8-INCH (DOT PATTERN WHITE) (2 FT LINE 6 FT SKIP)
70	MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH		

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 57	E



LEGEND

1	MARKING LINE EPOXY 4-INCH (YELLOW)	79	MARKING ARROW EPOXY (WHITE)(TYPE 7)
2	MARKING LINE EPOXY 4-INCH (WHITE)	201	MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 8-INCH (WHITE)
16	MARKING ARROW EPOXY (WHITE)	202	MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 4-INCH (DASHED WHITE) (12.5 FT LINE 37.5 FT SKIP)
68	MARKING STOP LINE EPOXY 18-INCH (WHITE)	203	MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 8-INCH (DOT PATTERN WHITE) (2 FT LINE 6 FT SKIP)
70	MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH		

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 58	E

2

LEGEND

(1) MARKING LINE EPOXY 4-INCH (YELLOW)

(2) MARKING LINE EPOXY 4-INCH (WHITE)

(16) MARKING ARROW EPOXY (WHITE)

(68) MARKING STOP LINE EPOXY 18-INCH (WHITE)

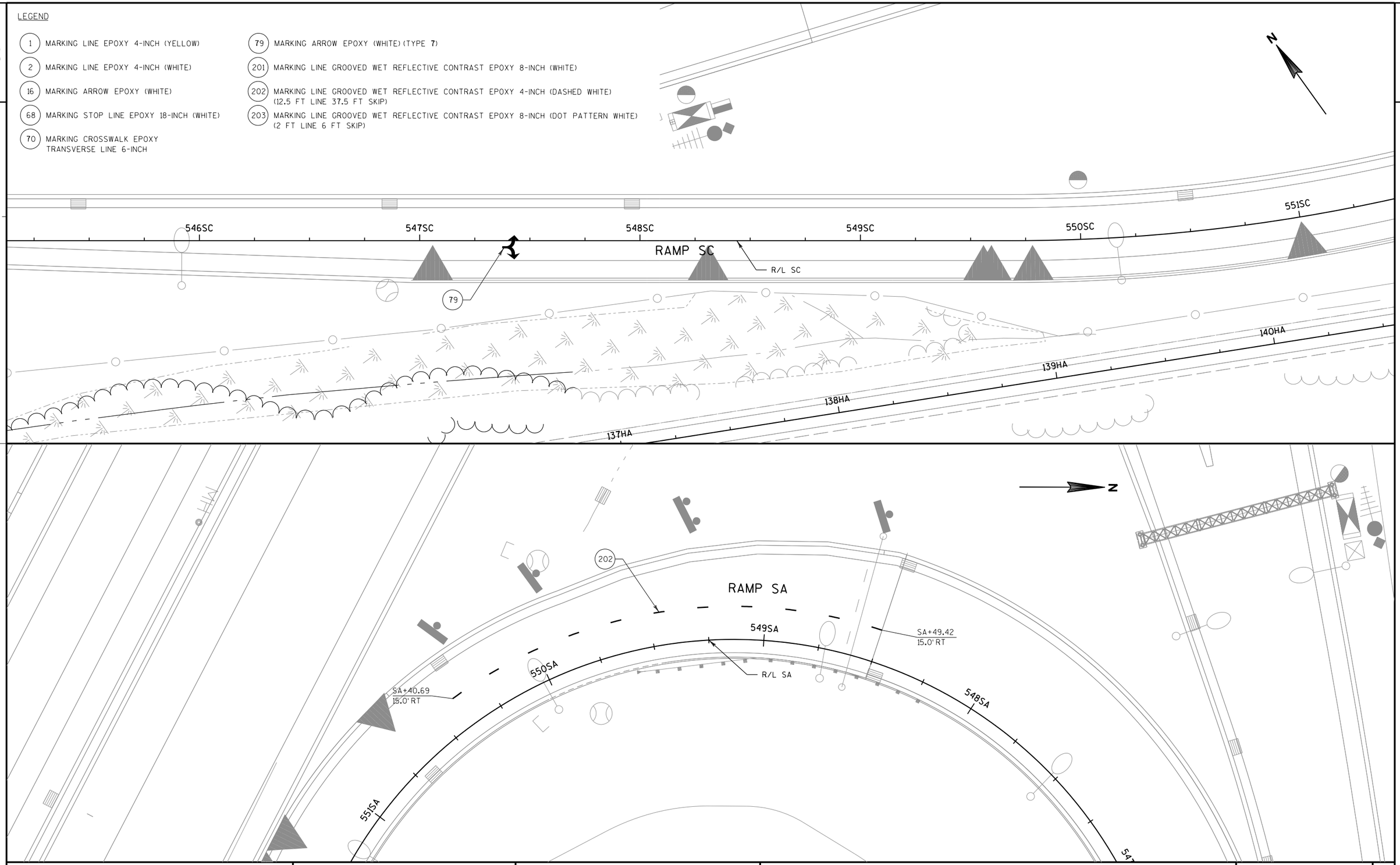
(70) MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH

(79) MARKING ARROW EPOXY (WHITE)(TYPE 7)

(201) MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 8-INCH (WHITE)

(202) MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 4-INCH (DASHED WHITE) (12.5 FT LINE 37.5 FT SKIP)

(203) MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 8-INCH (DOT PATTERN WHITE) (2 FT LINE 6 FT SKIP)



PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	PAVEMENT MARKING	SHEET 59	E

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Roads\cds\024505_pm.dgn PLOT DATE : 12/14/2017 PLOT BY : wwolak PLOT NAME : $FILE$ PLOT SCALE : 1:40

WISDOT/CADDS SHEET 42

2

GENERAL NOTES FOR TRAFFIC CONTROL:

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

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

3. ALL TYPE III BARRICADES SHALL BE 8' WIDE, UNLESS OTHERWISE NOTED, AND EQUIPPED WITH TWO TYPE "A" (LOW INTENSITY FLASHING) LIGHTS.

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

5. DIMENSIONS TO CONCRETE BARRIER TEMPORARY PRECAST ARE TO THE FACE OF BARRIER ADJACENT TO TRAFFIC. STATION CALL-OUTS TO CONCRETE BARRIER TEMPORARY PRECAST ARE TO THE FACE OF THE BARRIER.

6. WORK AREAS SHOWN MAY NOT ILLUSTRATE ALL REMOVALS. SEE REMOVAL SHEETS FOR ADDITIONAL INFORMATION.

7. ALL TRAFFIC CONTROL SIGNS LOCATED IN MEDIANS SHALL BE MOUNTED ON CONCRETE BARRIER UNLESS OTHERWISE NOTED. SEE TRAFFIC CONTROL DETAILS.

8. INSTALL PROPOSED TRAFFIC CONTROL SIGNS ON BOTH OUTSIDE SHOULDER AND MEDIAN SIDE OF ALL DIVIDED ROADWAYS.

TEMPORARY PAVEMENT MARKING LEGEND

(45) TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (YELLOW).

(46) TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE).

(51) TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (DASHED WHITE) (12.5 FT LINE 37.5 FT SKIP).

(52) TEMPORARY MARKING LINE STOP LINE REMOVABLE TAPE 18-INCH .

TRAFFIC CONTROL LEGEND

CC	CRASH CUSHION TEMPORARY
CC	CRASH CUSHION TEMPORARY PLACED IN PRIOR STAGE
●	TRAFFIC CONTROL DRUM
	DRUM W/ TYPE C LIGHT
	TYPE III BARRICADE
	TYPE III BARRICADE WITH SIGN AND TWO TYPE "A" WARNING LIGHTS (FLASHING)
	SIGN ON TEMPORARY SUPPORT
	SIGN ON PERMANENT SUPPORT
	ARROW BOARD
	DIRECTION OF TRAFFIC
	CONCRETE BARRIER TEMPORARY PRECAST
	WORK ZONE
	TEMPORARY PAVEMENT
(R)	MARKING REMOVAL

STAGING NOTES:

1. IN ADDITION TO THE SIGNS SHOWN IN THE TRAFFIC CONTROL STAGING SHEETS, "ROAD WORK AHEAD" SIGNS (W020-1) SHOULD BE INSTALLED AT THE FOLLOWING LOCATIONS:

- THEO TRECKER WAY EASTBOUND AT WIS 100 (INCLUDE A "WIS 100" SHIELD AND "NORTH" PLAQUE ON THIS ASSEMBLY)
- WIS 100 SOUTHBOUND SOUTH OF WISCONSIN AVENUE
- BLUEMOUND ROAD EASTBOUND AT WIS 100 (INCLUDE A "WIS 100" SHIELD AND " SOUTH" PLAQUE ON THIS ASSEMBLY)
- BLUEMOUND ROAD WESTBOUND AT WIS 100 (INCLUDE A "WIS 100" SHIELD AND " SOUTH" PLAQUE ON THIS ASSEMBLY)
- WALKER STREET WESTBOUND AT WIS 100 (INCLUDE A "WIS 100" SHIELD AND "SOUTH" PLAQUE ON THE ASSEMBLY)

2. IN ADDITION TO THE SIGNS SHOWN IN THE TRAFFIC CONTROL STAGING SHEETS, "DO NOT BLOCK INTERSECTION" SIGNS (R10-7) SHOULD BE INSTALLED ON BOTH THE RIGHT AND LEFT SIDE AT THE FOLLOWING LOCATIONS:

- WIS 100 NORTHBOUND AT THE DOGGY DAY CARE DRIVEWAY (APPROXIMATELY 475' SOUTH OF COLDER'S DRIVEWAY)

3. IN ADDITION TO THE SIGNS SHOWN IN THE TRAFFIC CONTROL STAGING SHEETS, PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) SHOULD BE PLACED AT THE FOLLOWING LOCATIONS:

- IH 94 EASTBOUND EXIT RAMP TO WIS 100 (PLACE PMCS AT CRASH INVESTIGATION SITE)
- IH 94 WESTBOUND EXIT RAMP TO WIS 100 (PLACE PCMS JUST AFTER RAMP PASSES UNDER WIS 100 BRIDGES)
- WIS 100 NORTHBOUND AT THEO TRECKER WAY
- BLUEMOUND ROAD EASTBOUND AT WIS 100
- BLUEMOUND ROAD WESTBOUND AT WIS 100

4. IN ADDITION TO THE SIGNS SHOWN IN THE TRAFFIC CONTROL STAGING SHEETS, "NO U-TURN" SIGNS (R3-4) SHOULD BE PLACED AT THE FOLLOWING LOCATIONS:

- WIS 100 NORTHBOUND MEDIAN OPENING FOR LEFT-TURNS TO WHEATON FRANCISCAN HEALTHCARE (APPROXIMATELY 700' NORTH OF WIS 100 ENTRANCE RAMP TO IH 94)

5. THE FOLLOWING SIGNAGE ADJUSTMENTS NEED TO BE MADE TO FREEWAY SIGNAGE ON IH 94 EASTBOUND :

- IH 94 EASTBOUND AT SPRINGFIELD ROAD (MILE MARKER 296.8): ADD A "NORTH" PLAQUE TO "WIS 100" ON MEDIAN BUTTERFLY SIGN
- IH 94 EASTBOUND AT CALHOUN ROAD (MILE MARKER 299.8): ADD A "NORTH" PLAQUE TO "WIS 100" ON MEDIAN BUTTERFLY SIGN
- IH 94 EASTBOUND EAST OF ELM GROVE ROAD (MILE MARKER 302.9): COVER "108TH ST TO GREENFIELD AVE" ON OVERHEAD FMS
- IH 94 EASTBOUND EAST OF ELM GROVE ROAD (MILE MARKER 303.0): COVER "GREENFIELD AVE TRAFFIC USE THIS EXIT" FMS ON RIGHT SIDE
- IH 94 EASTBOUND EAST OF ELM GROVE ROAD (MILE MARKER 303.1): ADD A "NORTH" PLAQUE TO "WIS 100" ON MEDIAN BUTTERFLY SIGN
- IH 94 EASTBOUND EAST OF UNDERWOOD PARKWAY (MILE MARKER 303.5): ADD A "NORTH" PLAQUE TO "WIS 100" ON MEDIAN BUTTERFLY SIGN
- IH 94 EASTBOUND AT 121ST STREET (MILE MARKER 303.7): COVER "108TH ST TO GREENFIELD AVE" ON OVERHEAD FMS
- IH 94 EASTBOUND AT HANK AARON STATE TRAIL (MILE MARKER 304.0): COVER "108TH ST TO GREENFIELD AVE" ON CANTILEVER FMS
- IH 94 EASTBOUND EXIT RAMP TO WIS 100 (PROCEEDING FROM BEGINNING OF RAMP TO END OF RAMP):
  - COVER "RIGHT LANE RIGHT TURN ONLY" ON FMS ON BOTH RIGHT AND LEFT SIDE
  - COVER "TO GREENFIELD AVENUE RIGHT" FMS ON RIGHT SIDE
  - COVER "SOUTH WIS 100 AHEAD RIGHT" FMS ON RIGHT SIDE
  - COVER "WEST ALLIS RIGHT" ON FMS ON RIGHT SIDE
  - COVER "SOUTH WIS 100 RIGHT" FMS ON RIGHT SIDE

6. THE FOLLOWING SIGNAGE ADJUSTMENTS NEED TO BE MADE TO FREEWAY SIGNAGE ON IH 94 WESTBOUND FOR STAGE 2A ONLY:
- IH 94 WESTBOUND WEST OF 76TH STREET (MILE MARKER 306.4): ADD A "NORTH" PLAQUE TO "WIS 100" ON MEDIAN BUTTERFLY SIGN
- IH 94 WESTBOUND WEST OF 84TH STREET (MILE MARKER 305.9): COVER "108TH ST" ON CANTILEVER FMS
- IH 94 WESTBOUND WEST OF 92ND STREET (MILE MARKER 305.4): COVER "108TH ST" ON FMS ON RIGHT SIDE
- IH 94 WESTBOUND WEST OF IH 41 (MILE MARKER 305.1): COVER "108TH ST" ON OVERHEAD FMS
- ZOO INTERCHANGE S-W SYSTEM RAMP (APPROXIMATELY OVER HANK AARON STATE TRAIL): COVER "108TH ST" ON CANTILEVER FMS
- ZOO INTERCHANGE N-W SYSTEM RAMP (EAST OF MERGE POINT WITH ZOO INTERCHANGE S-W SYSTEM RAMP): COVER "108TH ST" ON FMS ON LEFT SIDE
- ZOO INTERCHANGE N-W SYSTEM RAMP (AT MERGE POINT WITH ZOO INTERCHANGE S-W SYSTEM RAMP): COVER "108TH ST" ON OVERHEAD FMS
- ZOO INTERCHANGE N-W/S-W SYSTEM RAMP (AT EXIT RAMP TO WIS 100): COVER "108TH ST" ON OVERHEAD FMS
- IH 94 WESTBOUND EXIT RAMP TO WIS 100 (APPROXIMATELY AT UNION PACIFIC RAILROAD): COVER "WIS 100 SOUTH 108TH STREET ↓" OVERHEAD FMS
- IH 94 WESTBOUND EXIT RAMP TO WIS 100 (APPROXIMATELY AT UNION PACIFIC RAILROAD): COVER ARROW "↓" ON "WIS 100 NORTH MAYFAIR RD ↓" OVERHEAD FMS
- IH 94 WESTBOUND EXIT RAMP TO WIS 100 (PROCEEDING FROM BEGINNING OF RAMP TO END OF RAMP):
  - COVER "RIGHT TURN ONLY" SIGN ON OVERHEAD FMS OVER RIGHT LANE
  - COVER "SOUTH WIS 100 RIGHT" FMS ON RIGHT SIDE
  - COVER "WEST ALLIS RIGHT" ON FMS ON LEFT SIDE

7. IN ADDITION TO THE SIGNS SHOWN IN THE TRAFFIC CONTROL STAGING SHEETS, "SIDEWALK CLOSED" SIGNS (R9-9) ON TYPE III BARRICADES SHOULD BE PLACED AT THE FOLLOWING LOCATIONS:

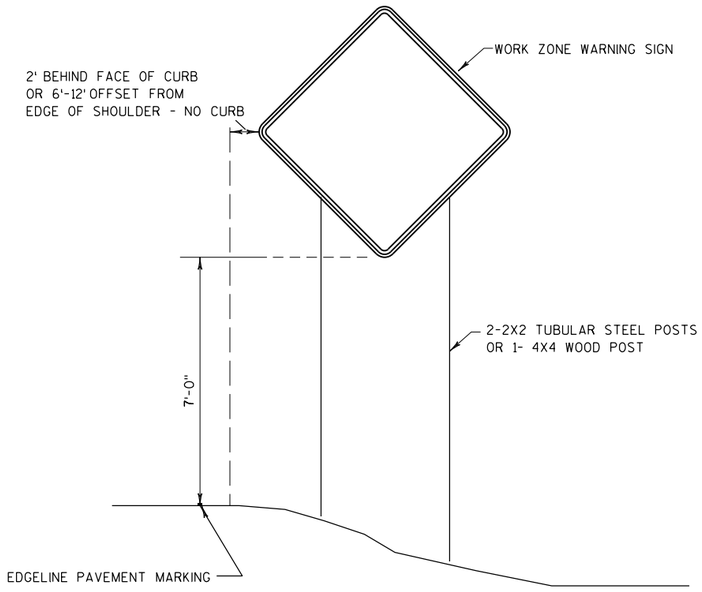
- ON SIDEWALK OF WEST SIDE OF WIS 100 JUST NORTH OF THEO TRECKER WAY (APPROXIMATELY ADJACENT TO QUAD GRAPHICS PERMANENT SIGN)
- ON SIDEWALK OF WEST SIDE OF WIS 100 JUST NORTH OF IH94 ENTRANCE RAMPS, (APPROXIMATELY ADJACENT TO SOUTHERN LIMIT OF STARBUCKS PARKING LOT)

8. IN ADDITION TO THE SIGNS SHOWN IN THE TRAFFIC CONTROL STAGING SHEETS, "SIDEWALK CLOSED AHEAD → CROSS HERE" SIGNS (R9-11) ON TYPE III BARRICADES SHOULD BE PLACED AT THE FOLLOWING LOCATIONS:

- ON SIDEWALK OF WEST SIDE OF WIS 100 AT SOUTHWEST CORNER OF BLUEMOUND ROAD AND WIS 100 INTERSECTION.

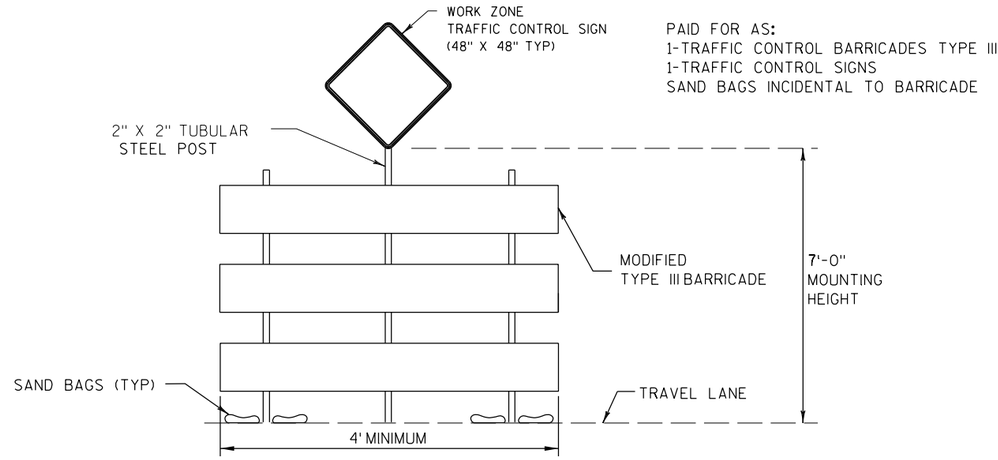
9. UPON COMPLETION OF CONSTRUCTION ACTIVITIES REQUIRING THE LANE CLOSURE ON WIS 100 NORTHBOUND, WIS 100 SOUTHBOUND, AND THE IH 94 EASTBOUND EXIT RAMP, ALL SIGNAGE DESCRIBED IN NOTES 1-8 SHOULD BE REMOVED.

2



TYPICAL TEMPORARY TRAFFIC CONTROL DETAIL
MOUNTING ON FIXED SUPPORT

LONG TERM
7 DAYS OR MORE



PAID FOR AS:
1-TRAFFIC CONTROL BARRICADES TYPE III
1-TRAFFIC CONTROL SIGNS
SAND BAGS INCIDENTAL TO BARRICADE

TYPICAL TEMPORARY TRAFFIC CONTROL DETAIL
MOUNTING ON TEMPORARY SUPPORT

2

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	TRAFFIC CONTROL - DETAILS	SHEET 61	E

2

N

STH 100 SB

STH 100 NB

W THEODORE TRECKER WAY

BOLLARDS (2)

FILLER CAPS

CANOPY

SIGN

INL

MH

HW

WV

VLV

PWV

POST

25' TYP

25' TYP

700'

700'

350'

320'

MATCHLINE - SEE NEXT SHEET

ROAD WORK AHEAD
W020-1

RIGHT LANE CLOSED AHEAD
W020-5S

W04-2R

W01-4B

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

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 1	SHEET 62	E

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Roads\cds\025010_tc.dgn PLOT DATE : 12/14/2017 PLOT BY : wwolak PLOT NAME : $FILE$ PLOT SCALE : 1:100

2

N

MATCHLINE - SEE PREVIOUS SHEET

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

30 M.P.H.
W013-1
18" X 18"

NO OUTLET
W14-2
30" X 30"

STH 100 SB

559SN+60
21.0' LT

559SN+30
3.0' LT

320' TAPER

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

DO NOT BLOCK INTERSECTION
R10-7
24" X 30"

W05-52L
12" X 36"

560SS 561SS 562SS 563SS 564SS 565SS 566SS 567SS

560SN 561SN 562SN 563SN 564SN 565SN 566SN 567SN

STH 100 NB

567SN+11
24.2' LT

567SN+20
0.0' LT

B-40-107

B-40-108

HANK AARON STATE TRAIL

RAMP SC

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

R3-1
24" X 24"

W05-52L
12" X 36"

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

R3-1
24" X 24"

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

25' TYP

10' TYP

25' TYP

14HA 14HA 14HA 14HA 14HA 14HA 14HA 14HA 14HA 15HA

552SC 553SC 555SC 556SC

568SS

568SN

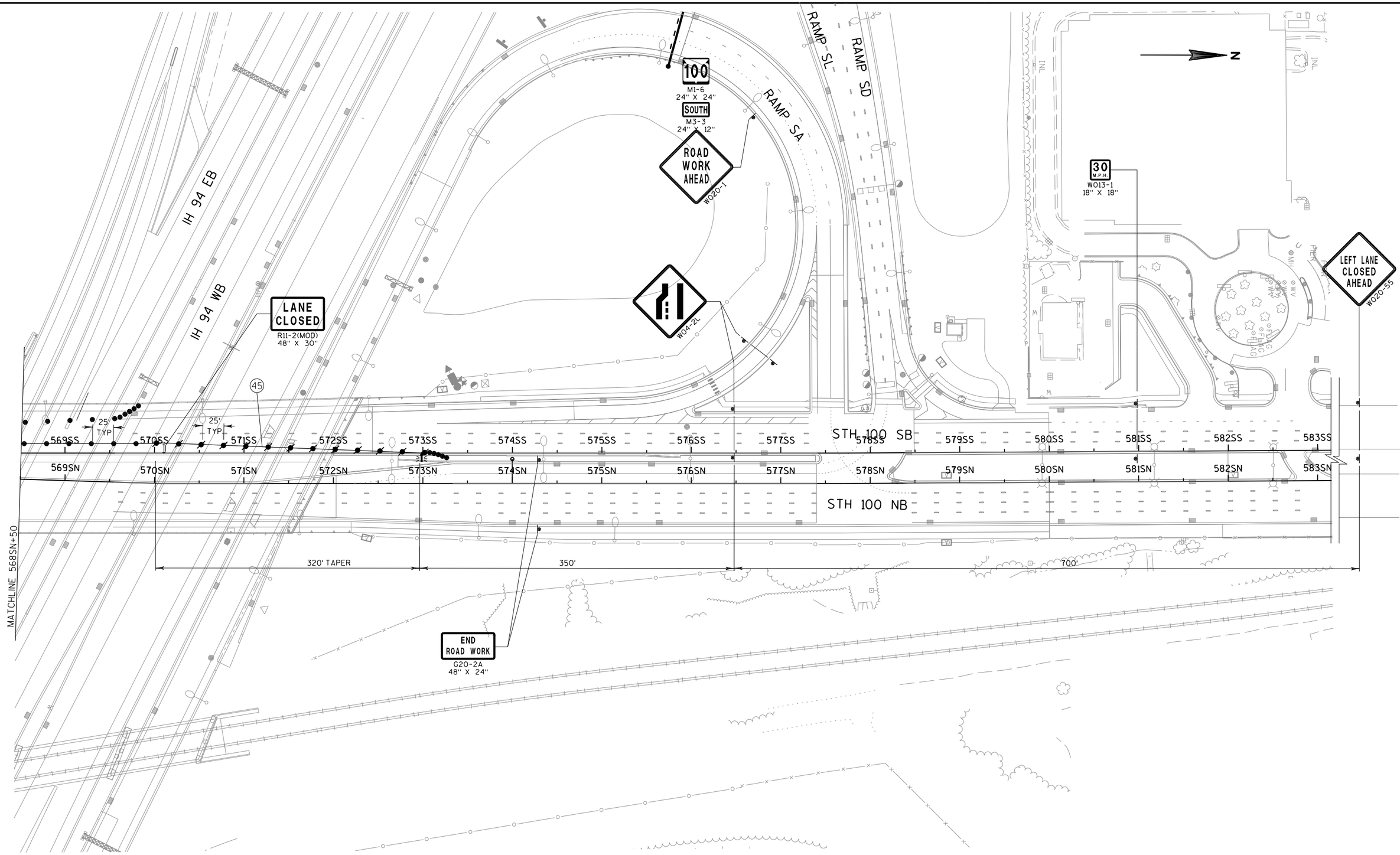
MATCHLINE 568SN+50

IH 94 EB

IH 94 WB

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 1	SHEET 63	E

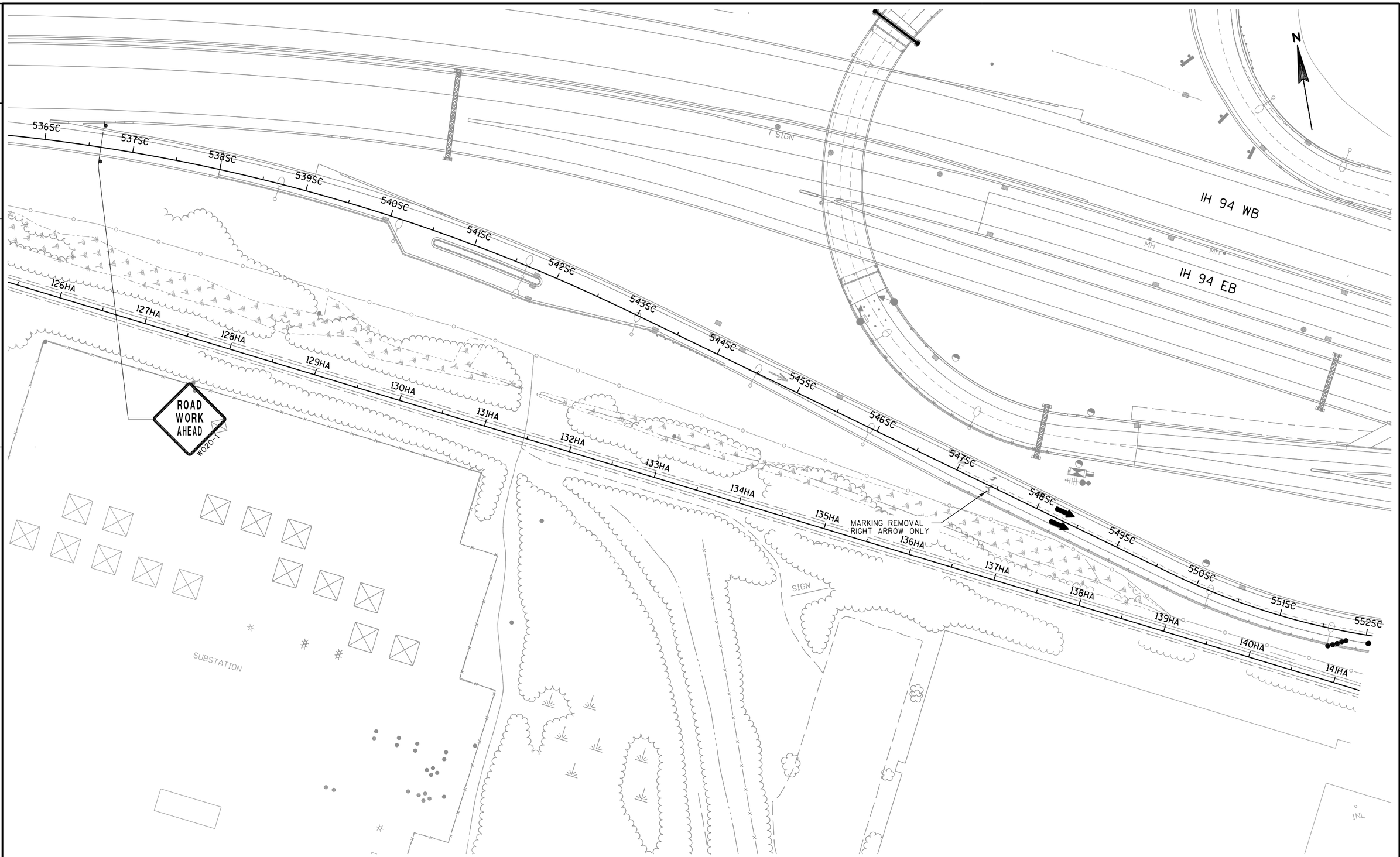
2



PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 1	SHEET 64	E

2

2



PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 1	SHEET 65	E

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Roads\cds\025013_tc.dgn PLOT DATE : 12/14/2017 PLOT BY : wwolak PLOT NAME : $FILE$ PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

2

N

W THEODORE TRECKER WAY

STH 100 SB

STH 100 NB

BOULEVARD (2)

CANOPY

FILLER CAPS

SIGN

25' TYP

25' TYP

MATCHLINE - SEE NEXT SHEET

700'

700'

350'

320' TAPER

ROAD WORK AHEAD W020-1

RIGHT LANE CLOSED AHEAD W020-5S

W04-2R

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

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 2	SHEET 66	E

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Roads\cds\025020_tc.dgn PLOT DATE : 12/14/2017 PLOT BY : wwolak PLOT NAME : $FILE$ PLOT SCALE : 1:100

2

N

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

W01-4B

NO OUTLET
W14-2
30" X 30"

30 M.P.H.
W013-1
18" X 18"

STH 100 SB

STH 100 NB

25' TYP

350'

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

R3-1
24" X 24"

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

R3-1
24" X 24"

W05-52R
12" X 36"

B-40-107

ANCHOR CONCRETE BARRIER TEMPORARY PRECAST ON BRIDGE

HANK AARON STATE TRAIL

BAMP SC

25' TYP

10' TYP

25' TYP

559SN+72
18.0' LT

561SN+00
50.0' LT

561SN+53
33.0' LT

566SN+63
37.0' LT

567SN+00
60.0' LT

560SS 561SS 562SS 563SS 564SS 565SS 566SS 567SS 568SS

560SN 561SN 562SN 563SN 564SN 565SN 566SN 567SN 568SN

552SC 553SC 555SC 556SC

14AHA 14BHA 14CHA 14DHA 14EHA 14FHA 14GHA

560SN+08
3.0' LT

560SN+75
32.0' RT

561SN+43
15.0' RT

W05-52R
12" X 36"

B-40-108

566SN+70
11.0' RT

567SN+00
18.0' LT

567SN+22
10.0' LT

568SN+04
46.0' RT

ANCHOR CONCRETE BARRIER TEMPORARY PRECAST ON BRIDGE

14BHA 14GHA 15DHA 15EHA

IH 94 EB

IH 94 WB

MATCHLINE 568SN+50

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

DO NOT BLOCK INTERSECTION
R10-7
24" X 30"

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

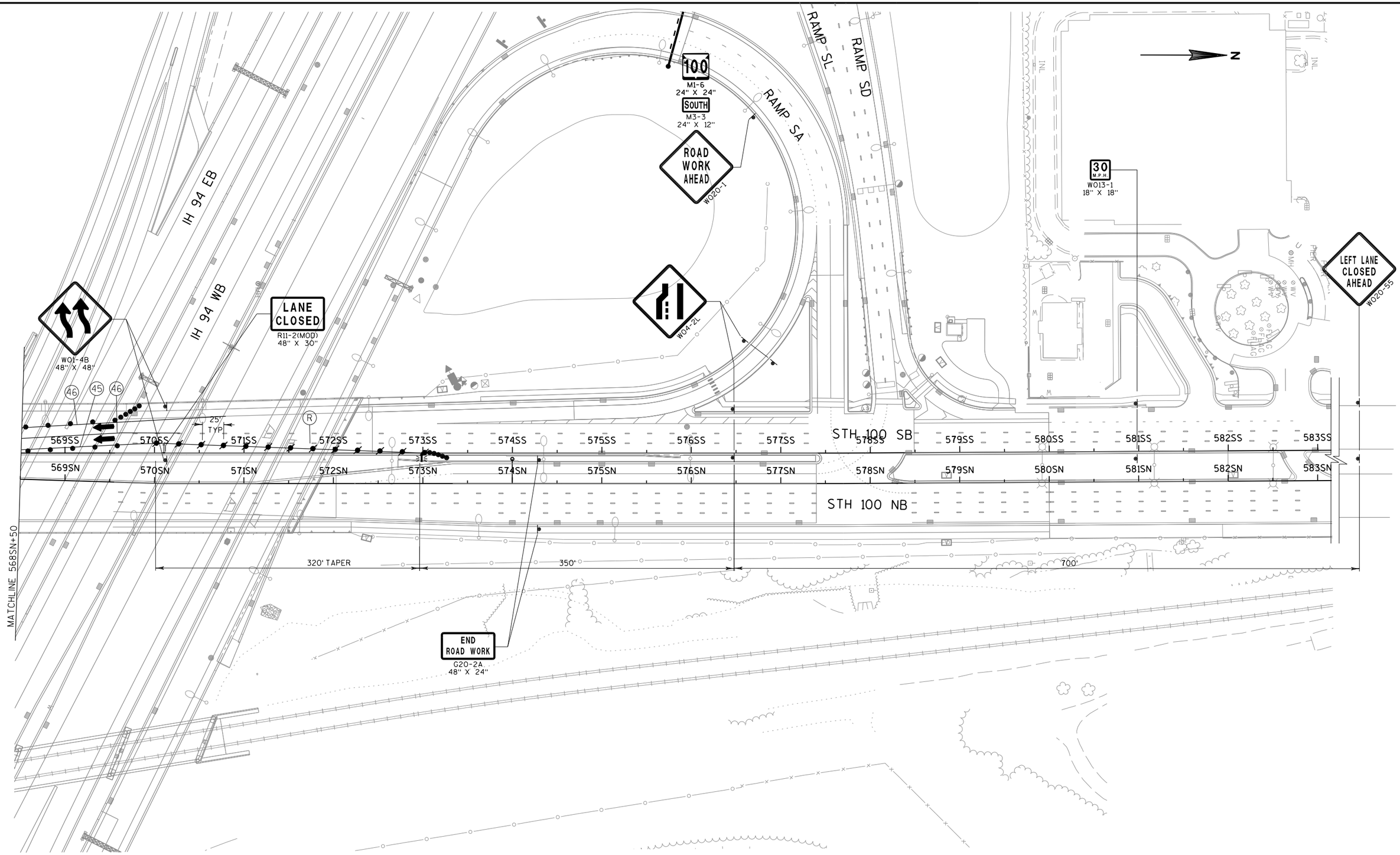
W01-6
48" X 24"

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

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 2	SHEET 67	E

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Roads\cds\025021_tc.dgn PLOT DATE : 12/14/2017 PLOT BY : wwolak PLOT NAME : $FILE$ PLOT SCALE : 1:100

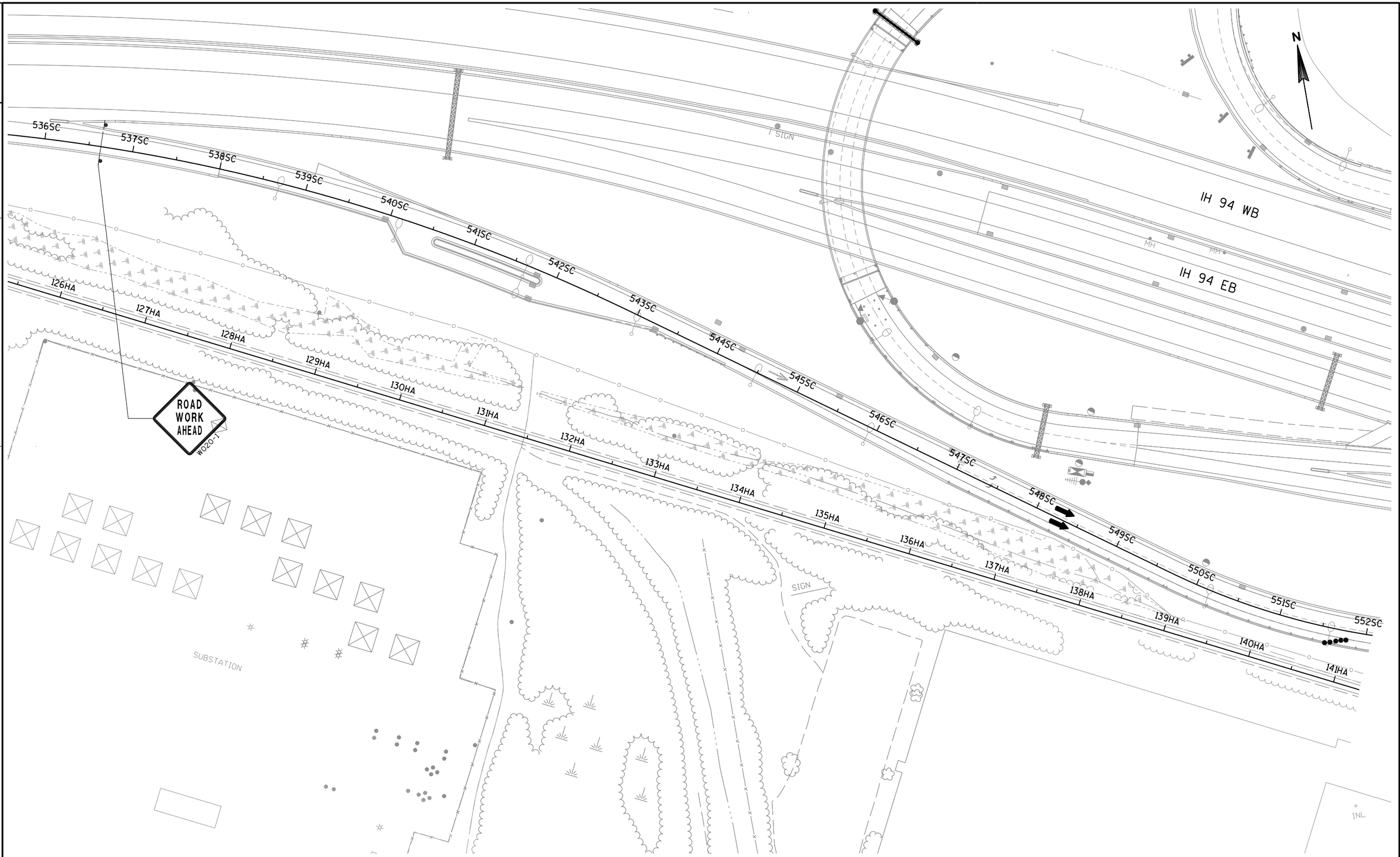
2



PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 2	SHEET 68	E

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Roads\cds\025022_tc.dgn PLOT DATE : 12/14/2017 PLOT BY : wwolak PLOT NAME : $FILE$ PLOT SCALE : 1:100

2



PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 2	SHEET 69	E

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Roads\cds\025023_tc.dgn PLOT DATE : 12/14/2017 PLOT BY : wwolak PLOT NAME : $FILE$ PLOT SCALE : 1:100

2

N

STH 100 SB

STH 100 NB

W THEODORE TRECKER WAY

BOULEVARD (2)

FILLER CAPS

CANOPY

SIGN

INL

MH

WV

VLV

PWV

POST

25' TYP

25' TYP

MATCHLINE - SEE NEXT SHEET

700'

700'

350'

320' TAPER

640'

ROAD WORK AHEAD
W020-1

RIGHT TWO LANES CLOSED AHEAD
W020-58A

W04-2R

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

DO NOT BLOCK INTERSECTION
R10-7
24" X 30"

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

W04-2R

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 2A	SHEET 70	E

2

MATCHLINE - SEE PREVIOUS SHEET

MATCHLINE 552SC+00

N

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

NO OUTLET
W14-2
30" X 30"

30 M.P.H.
W013-1
18" X 18"

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

R3-1
24" X 24"

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

R3-1
24" X 24"

W05-52R
12" X 36"

B-40-107

ANCHOR CONCRETE BARRIER TEMPORARY PRECAST ON BRIDGE

HANK AARON STATE TRAIL

RAMP SC

25' TYP

10' TYP

559SN+72
18.0' LT

560SN+98
45.0' LT

560SN+67
22.0' LT

566SN+65
27.0' LT

567SN+01
31.0' LT

560SS 561SS 562SS 563SS 564SS 565SS 566SS 567SS 568SS

560SN 561SN 562SN 563SN 564SN 565SN 566SN 567SN 568SN

STH 100 SB

STH 100 NB

25' TYP

25' TYP

560SN+05
2.0' LT

561SN+00
33.0' RT

561SN+62
5.0' RT

566SN+99
3.0' RT

566SN+66
0.5' RT

ANCHOR CONCRETE BARRIER TEMPORARY PRECAST ON BRIDGE

B-40-108

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

W01-6
48" X 24"

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

W05-52R
12" X 36"

DO NOT BLOCK INTERSECTION
R10-7
24" X 30"

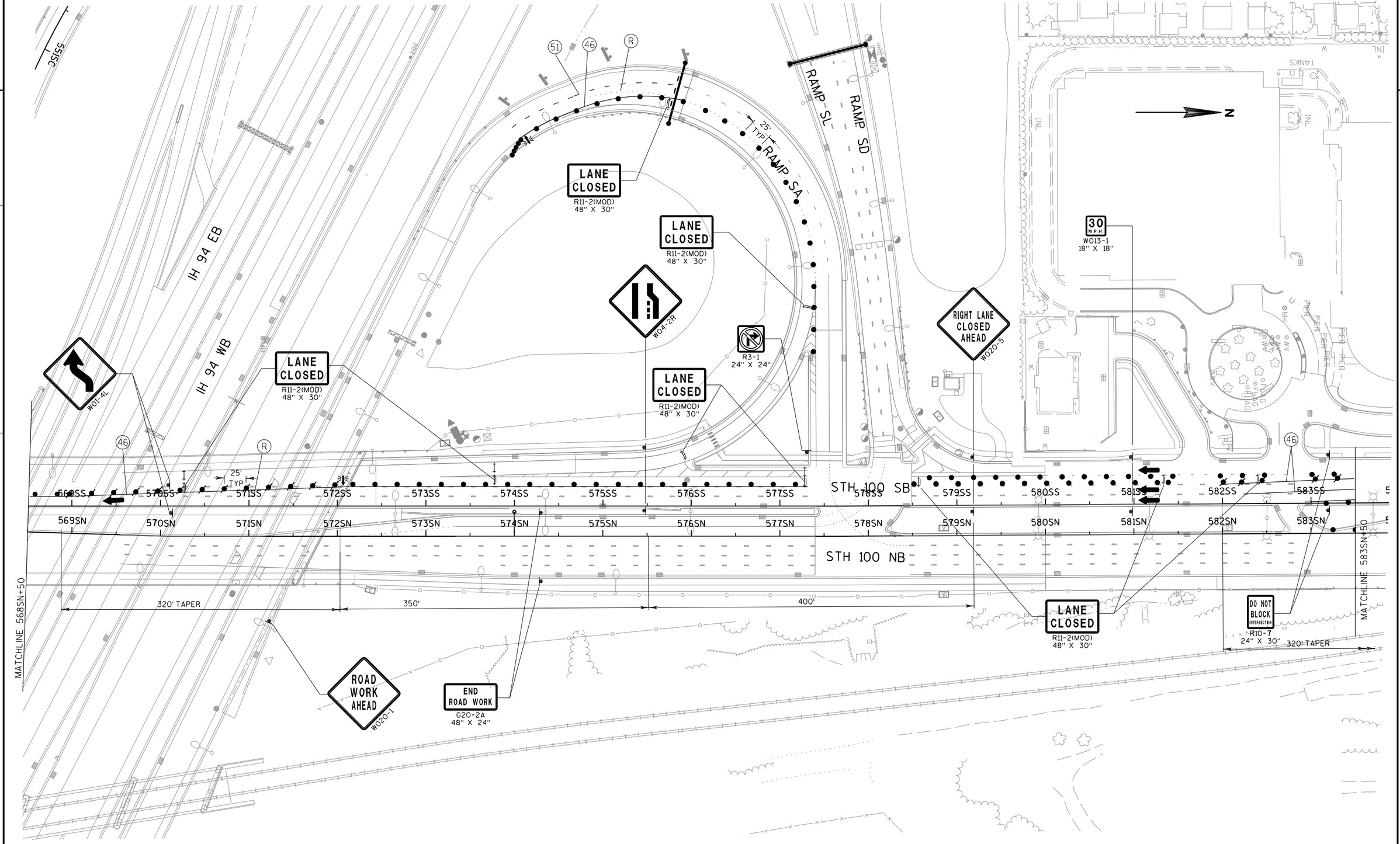
MATCHLINE 568SN+50

IH 94 EB

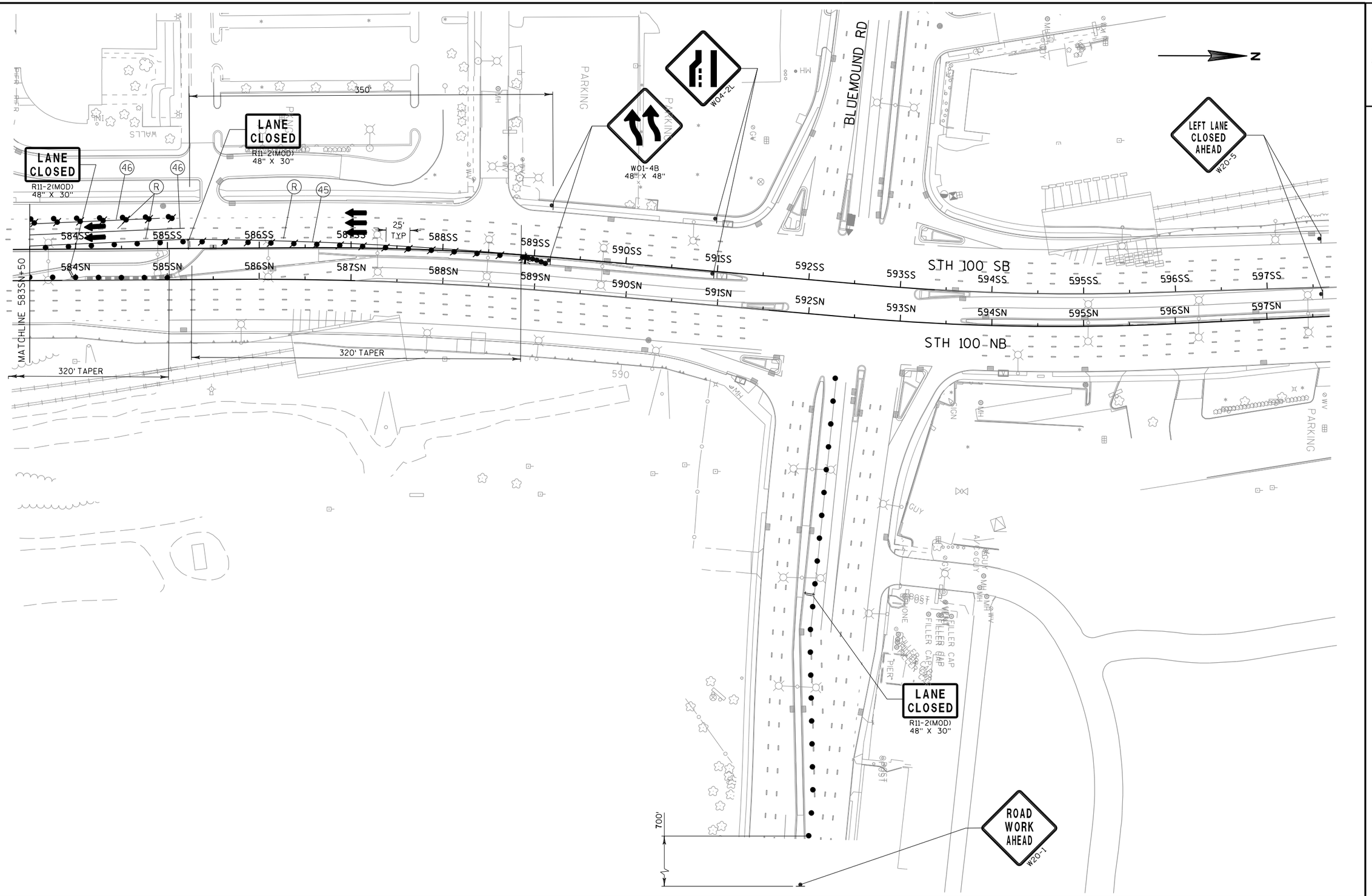
IH 94 WB

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 2A	SHEET 71	E

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Roads\cds\025026_tc.dgn PLOT DATE : 12/14/2017 PLOT BY : wwolak PLOT NAME : $FILE$ PLOT SCALE : 1:100



PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 2A	SHEET 72	E



PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 2A	SHEET 73	E

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Roads\cds\025028_tc.dgn PLOT DATE : 12/14/2017 PLOT BY : wwolak PLOT NAME : $FILE$ PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42

2

2

536SC 537SC 538SC 539SC 540SC 541SC 542SC 543SC 544SC 545SC 546SC 547SC 548SC 549SC 550SC 551SC RAMP SC 552SC

126HA 127HA 128HA 129HA 130HA 131HA 132HA 133HA 134HA 135HA 136HA 137HA 138HA 139HA 140HA 141HA

IH 94 WB

IH 94 EB

HANK AARON STATE TRAIL

SIGN

SIGN

MH

MH

SUBSTATION

INL

N

46

ROAD WORK AHEAD
W20-1

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

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

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

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 2A	SHEET 74	E

2

N

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

NO OUTLET
W14-2
30" X 30"

W01-4B

30 M.P.H.
W013-1
18" X 18"

STH 100 SB

25' TYP

STH 100 NB

350'

700'

700'

350'

320' TAPER

RIGHT LANE CLOSED AHEAD
W020-5S

W04-2R

ROAD WORK AHEAD
W020-1

W01-6
48" X 24"

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

DO NOT BLOCK INTERSECTION
R10-7
24" X 30"

561SN+20
53.0' LT

561SN+20
32.0' LT

320' TAPER

ANCHOR CONCRETE BARRIER TEMPORARY PRECAST

560SS 561SS 562SS 563SS 564SS 565SS 566SS 567SS

560SN 561SN 562SN 563SN 564SN 565SN 566SN 567SN 568SN

561SN+42
3.0' RT

W05-52L
12" X 36"

REDUCE TO 1 LANE EACH DIRECTION DURING OFF PEAK HOURS TO COMPLETE MILL & OVERLAY

ANCHOR CONCRETE BARRIER TEMPORARY PRECAST ON BRIDGE
B-40-107

567SN+02
43.0' LT

ANCHOR CONCRETE BARRIER TEMPORARY PRECAST ON BRIDGE
B-40-108

567SN+15
17.0' RT

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

R3-1
24" X 24"

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

R3-1
24" X 24"

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

HANK AARON STATE TRAIL

RAMP SC

25' TYP

10' TYP

25' TYP

14AHA 14BHA 14CHA 14DHA 14EHA 14FHA 14GHA 14HHA 14JHA 14KHA 14LHA 14MHA 14NHA 14PHA 14QHA 14RHA 14SHA 15AHA 15BHA 15CHA 15DHA 15EHA 15FHA 15GHA 15HHA 15JHA 15KHA 15LHA 15MHA 15NHA 15PHA 15QHA 15RHA 15SHA

35SSC 35SSC 35SSC 35SSC 35SSC

IH 94 EB

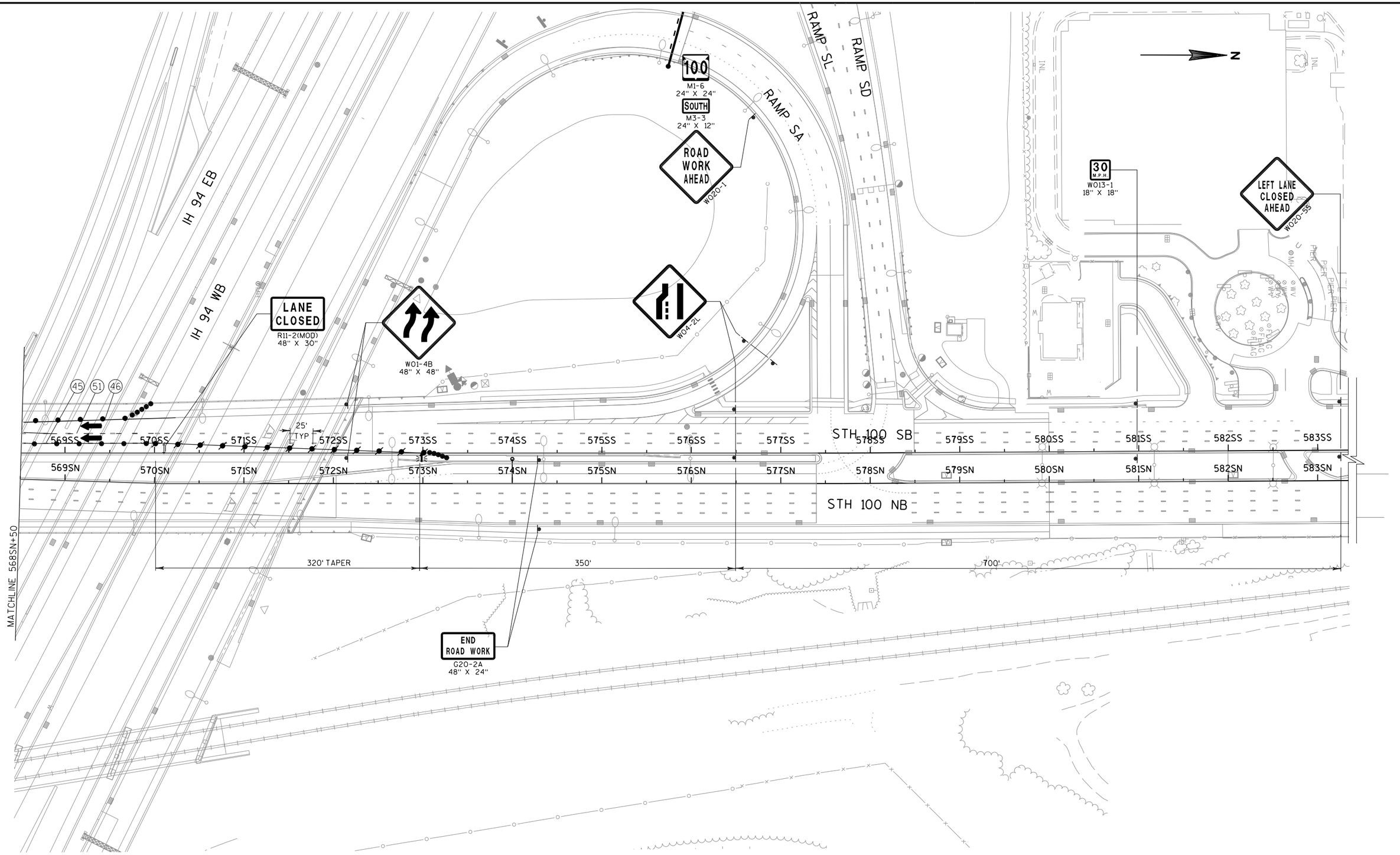
IH 94 WB

MATCHLINE 568SN+50

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 3	SHEET 75 E

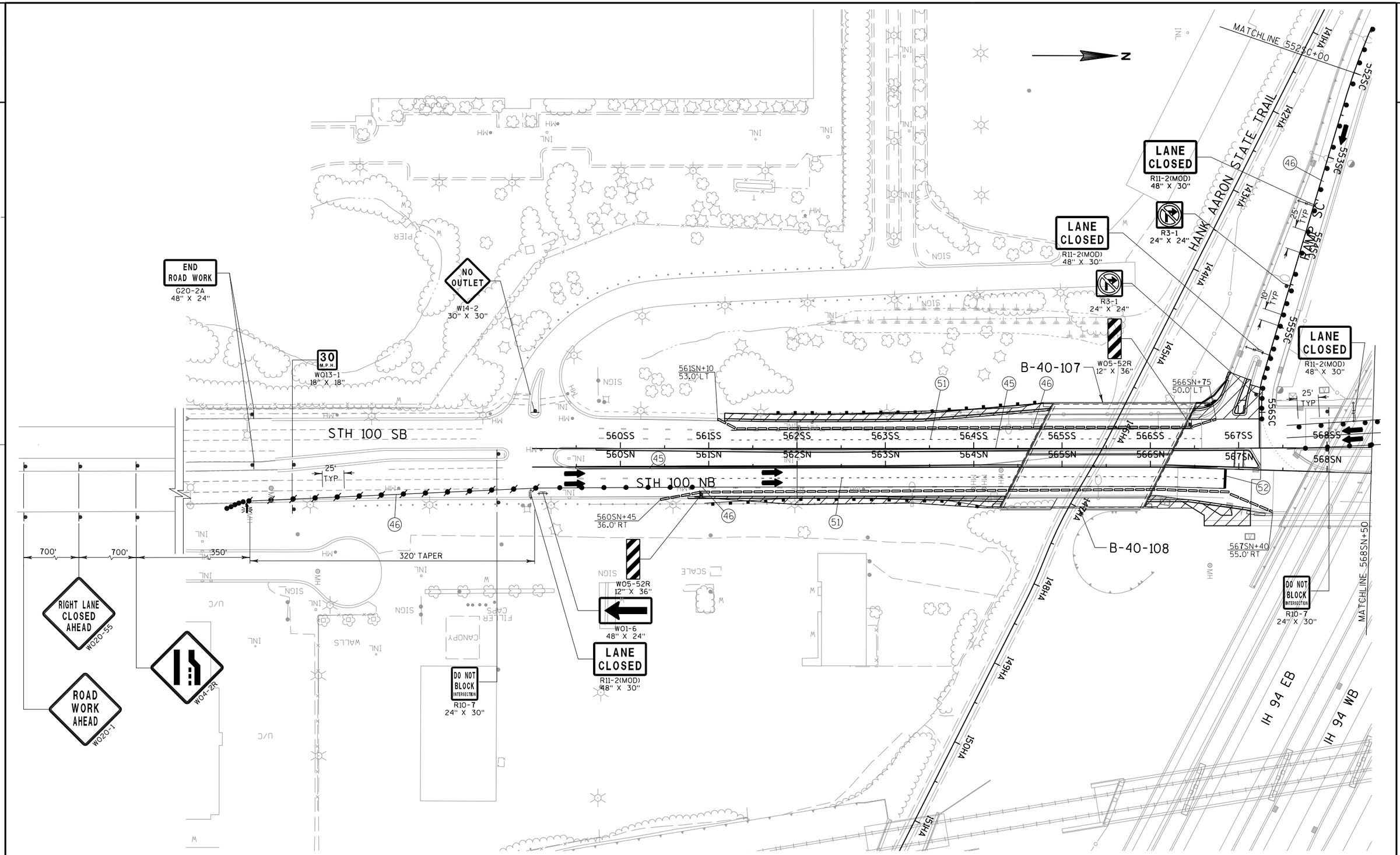
FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Roads\cds\025031_tc.dgn PLOT DATE : 12/14/2017 PLOT BY : wwolak PLOT NAME : $FILE$ PLOT SCALE : 1:100

2



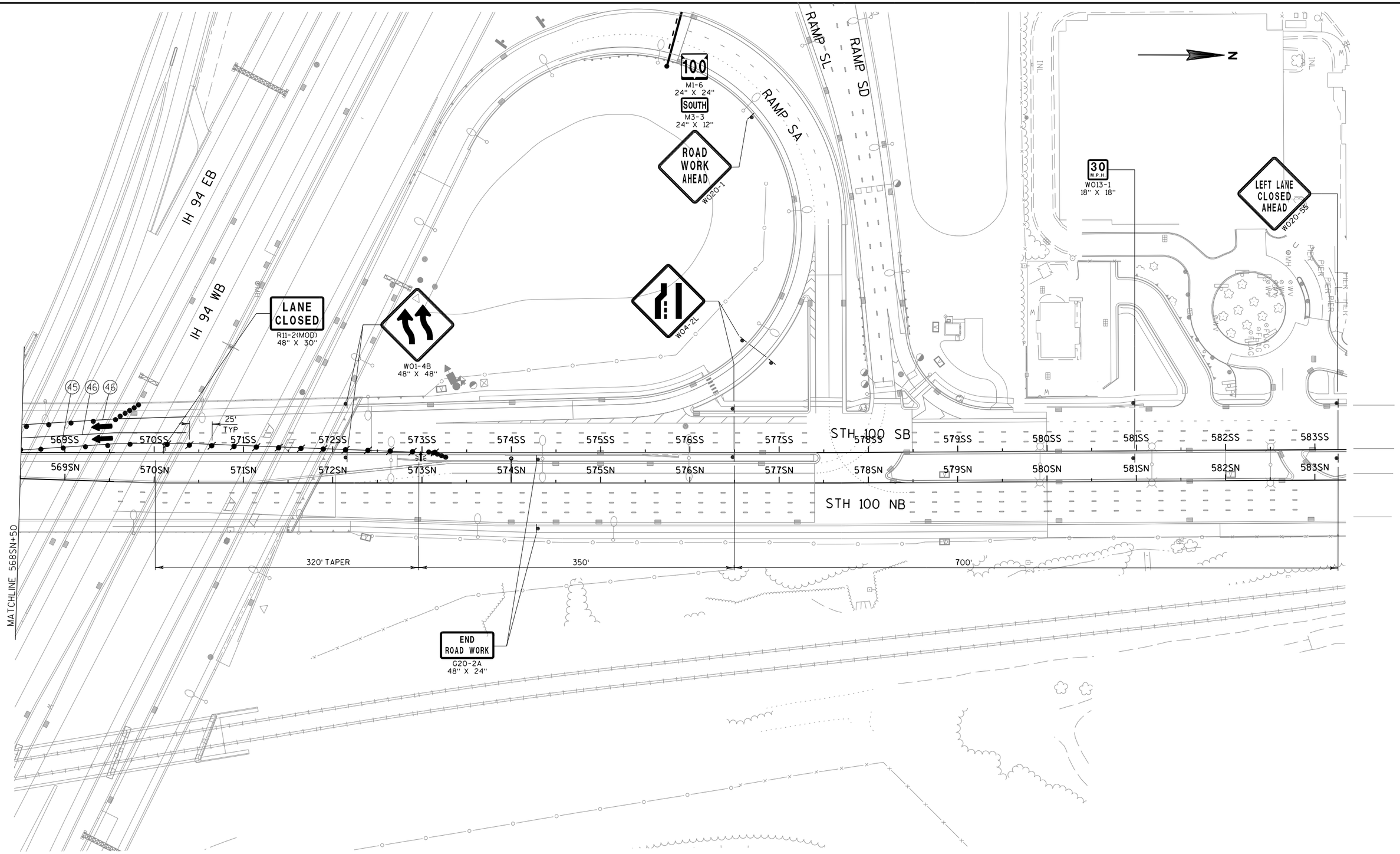
PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 3	SHEET 76	E

2



PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 4	SHEET 77	E

2



PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 4	SHEET 78	E

2

2

536SC 537SC 538SC 539SC 540SC 541SC 542SC 543SC 544SC 545SC 546SC 547SC 548SC 549SC 550SC 551SC RAMP SC 552SC

126HA 127HA 128HA 129HA 130HA 131HA 132HA 133HA 134HA 135HA 136HA 137HA 138HA 139HA 140HA 141HA

IH 94 WB

IH 94 EB

HANK AARON STATE TRAIL

SIGN

SIGN

MH

MH

SUBSTATION

INL

N

ROAD WORK AHEAD
W20-1

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

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

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

46

46

46

25'
TYP

PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	TRAFFIC CONTROL - STAGE 4	SHEET 79	E

2

N

HANK AARON STATE TRAIL

RAMP SC

BEGIN CONSTRUCTION
STA 555SC+65.55

R/L SC

R/L HA

R/L SS

CURVE SC1

PI 555+74.62

PC 555+60.53

PT 555+88.50

PT 552+37.56

S73°37'49"E
322.96'

N89°30'6"E
51.95

PI559+00.00
X=569152.26
Y=294965.18

PI566+43.59
X=569150.09
Y=295180.77

PI 568+34.58
X = 569148.54
Y = 295899.75

STH 100 SB

560SS 561SS 562SS 563SS 564SS 565SS 566SS 567SS 568SS 569SS 570SS 571SS

NO°10'2"W
743.59'

NO°28'2"W
190.98'

560SN 561SN 562SN 563SN 564SN 565SN 566SN 567SN 568SN 569SN 570SN 571SN

SECTION LINE
NO°10'02"W 2657.18'

NO°10'2"W
715.66'

N1°34'58"E
392.94'

STH 100 NB

R/L SN

PI 556+40.45
X = 569149.44
Y = 295788.63

STA 567SS+23.45 =
STA 556SC+40.45
X=569149.44
Y=295788.63

BEGIN PROJECT
STA 562SN+00.00
X=569172.39
Y=295265.33

END PROJECT
STA 567SN+24.98
X=569174.19
Y=295790.27

PI559+00.00
X=569173.26
Y=294965.33

PI566+15.66
X=569171.17
Y=295680.99

PI 570+08.61
X=569182.02
Y=296073.78

IH 94 EB

IH 94 WB

T 6 N
R 22 E
31 32

X=569169.56
Y=294177.71

T 7 N
R 21 E
31 32 29 30

X=569161.81
Y=296834.88

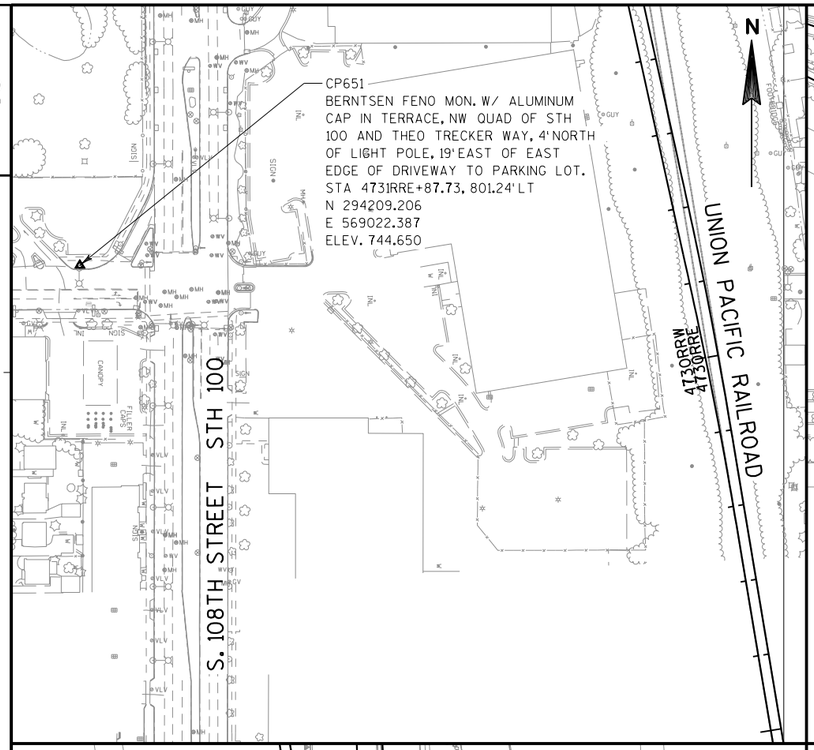
CURVE SC1

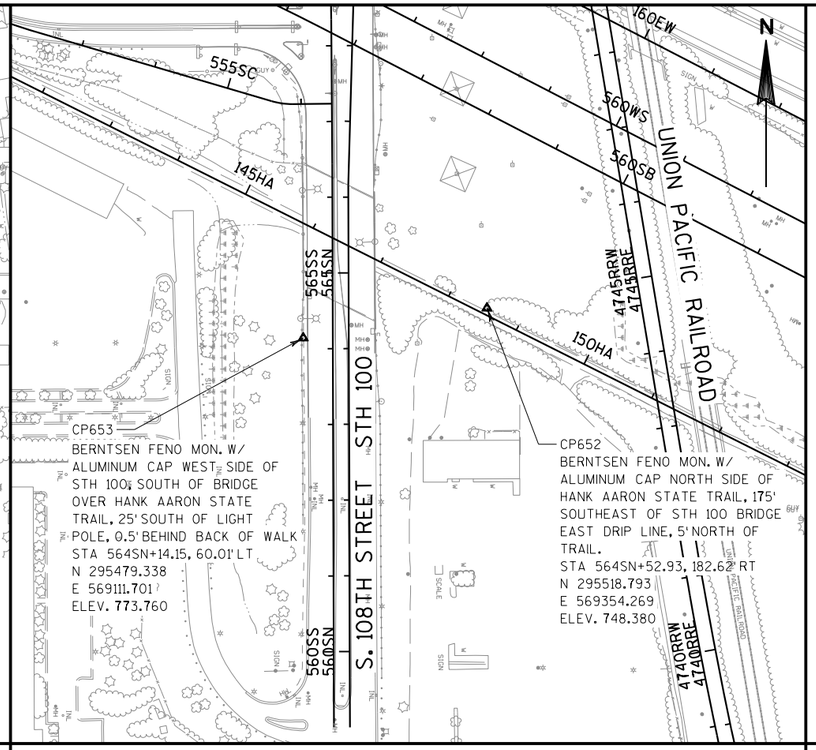
PC=555SC+60.53
X=569069.89
Y=295792.03
PI=555SC+74.62
X=569083.41
Y=295788.06
PT=555SC+88.50
X=569097.49
Y=295788.18
R=95.0000
DELTA=16°52'05" LT
D=60°18'41"
L=27.9681
T=14.0860
BK=S 73°37'49" E
AH=N 89°30'06" E

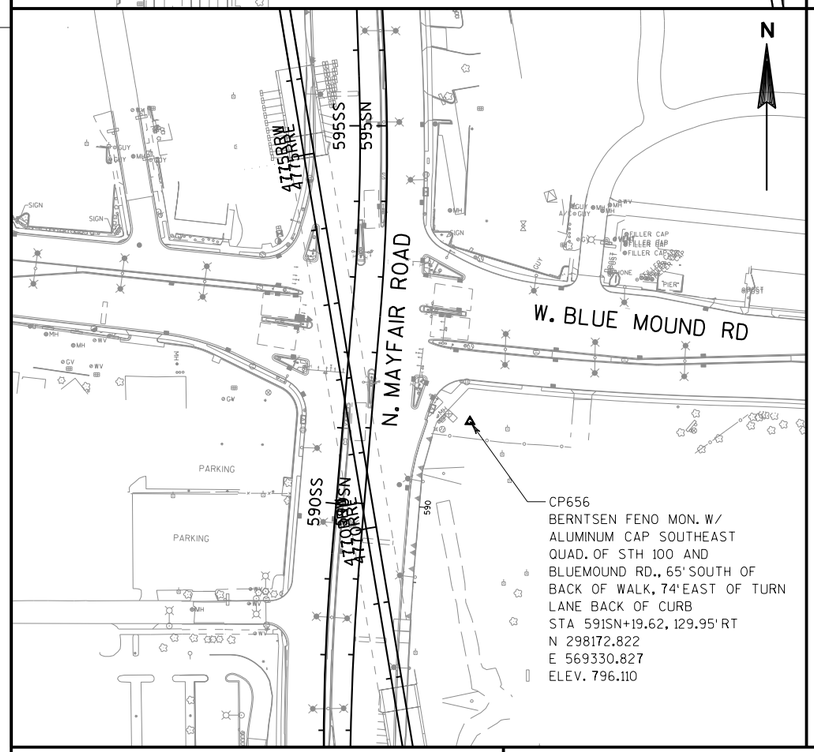
PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	ALIGNMENT DIAGRAM	SHEET 80	E

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Roads\cds\027201_ad.dgn PLOT DATE : 12/14/2017 PLOT BY : wwolak PLOT NAME : $FILE$ PLOT SCALE : 1:100

WISDOT/CADDS SHEET 42







PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	ALIGNMENT LAYOUT - SURVEY CONTROL	SHEET 81	E

2030-14-70

Line	Item	Item Description	Unit	Total	Qty
0002	108.4400	CPM Progress Schedule	EACH	1.000	1.000
0004	203.0200	Removing Old Structure (station) 4000. 565SS+00	LS	1.000	1.000
0006	203.0200	Removing Old Structure (station) 4100. 565+33.68	LS	1.000	1.000
0008	203.0225.S	Debris Containment (structure) 4001. B-40-107	LS	1.000	1.000
0010	203.0225.S	Debris Containment (structure) 4102. B-40-108	LS	1.000	1.000
0012	204.0100	Removing Pavement	SY	3,090.000	3,090.000
0014	204.0120	Removing Asphaltic Surface Milling	SY	285.000	285.000
0016	204.0150	Removing Curb & Gutter	LF	1,417.000	1,417.000
0018	204.0155	Removing Concrete Sidewalk	SY	393.000	393.000
0020	204.0157	Removing Concrete Barrier	LF	20.000	20.000
0022	204.0165	Removing Guardrail	LF	626.000	626.000
0024	204.0195	Removing Concrete Bases	EACH	8.000	8.000
0026	204.0210	Removing Manholes	EACH	1.000	1.000
0028	204.0220	Removing Inlets	EACH	5.000	5.000
0030	204.0245	Removing Storm Sewer (size) 0001. 12-Inch	LF	54.000	54.000
0032	204.9060.S	Removing (item description) 3001. Concrete Base Type 13	EACH	1.000	1.000
0034	204.9105.S	Removing (item description) 3001. Traffic Signals IH 94 EB Off Ramp & STH 100	LS	1.000	1.000
0036	205.0100	Excavation Common	CY	2,970.000	2,970.000
0038	206.1000	Excavation for Structures Bridges (structure) 4002. B-40-107	LS	1.000	1.000
0040	206.1000	Excavation for Structures Bridges (structure) 4103. B-40-108	LS	1.000	1.000
0042	210.1500	Backfill Structure Type A	TON	1,548.000	1,548.000
0044	213.0100	Finishing Roadway (project) 0001. 2030-14-70	EACH	1.000	1.000
0046	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	3,156.000	3,156.000
0048	312.0115	Select Crushed Material	CY	1,617.000	1,617.000
0050	415.0080	Concrete Pavement 8-Inch	SY	730.000	730.000
0052	415.0410	Concrete Pavement Approach Slab	SY	440.000	440.000
0054	415.1080	Concrete Pavement HES 8-Inch	SY	1,593.000	1,593.000
0056	415.1090	Concrete Pavement HES 9-Inch	SY	192.000	192.000
0058	416.0180	Concrete Driveway 8-Inch	SY	115.000	115.000
0060	416.0610	Drilled Tie Bars	EACH	52.000	52.000
0062	416.0620	Drilled Dowel Bars	EACH	90.000	90.000
0064	455.0605	Tack Coat	GAL	158.000	158.000
0066	460.2000	Incentive Density HMA Pavement	DOL	40.000	40.000
0068	460.6424	HMA Pavement 4 MT 58-28 H	TON	56.000	56.000
0070	465.0125	Asphaltic Surface Temporary	TON	521.000	521.000
0072	502.0100	Concrete Masonry Bridges	CY	183.000	183.000
0074	502.3100	Expansion Device (structure) 4003. B-40-107	LS	1.000	1.000

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Line	Item	Item Description	Unit	Total	Qty
0076	502.3100	Expansion Device (structure) 4104. B-40-108	LS	1.000	1.000
0078	502.3200	Protective Surface Treatment	SY	2,136.000	2,136.000
0080	502.3210	Pigmented Surface Sealer	SY	159.000	159.000
0082	502.4204	Adhesive Anchors No. 4 Bar	EACH	24.000	24.000
0084	502.4205	Adhesive Anchors No. 5 Bar	EACH	225.000	225.000
0086	502.4206	Adhesive Anchors No. 6 Bar	EACH	97.000	97.000
0088	502.4208	Adhesive Anchors No. 8 Bar	EACH	10.000	10.000
0090	505.0400	Bar Steel Reinforcement HS Structures	LB	12,480.000	12,480.000
0092	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	180,650.000	180,650.000
0094	506.0605	Structural Steel HS	LB	102,594.000	102,594.000
0096	506.3014	Welded Stud Shear Connectors 3/4x6-Inch	EACH	866.000	866.000
0098	506.3015	Welded Stud Shear Connectors 7/8x6-Inch	EACH	1,326.000	1,326.000
0100	506.5000	Bearing Assemblies Fixed (structure) 4005. B-40-107	EACH	2.000	2.000
0102	506.5000	Bearing Assemblies Fixed (structure) 4106. B-40-108	EACH	2.000	2.000
0104	506.6000	Bearing Assemblies Expansion (structure) 4006. B-40-107	EACH	16.000	16.000
0106	506.6000	Bearing Assemblies Expansion (structure) 4107. B-40-108	EACH	16.000	16.000
0108	506.7050.S	Removing Bearings (structure) 4007. B-40-107	EACH	10.000	10.000
0110	506.7050.S	Removing Bearings (structure) 4108. B-40-108	EACH	12.000	12.000
0112	509.1500	Concrete Surface Repair	SF	90.000	90.000
0114	511.2200	Temporary Shoring Left in Place (structure) 4109. B-40-108	SF	235.000	235.000
0116	513.4091	Railing Tubular Screening (structure) 4008. B-40-107	LF	175.000	175.000
0118	516.0500	Rubberized Membrane Waterproofing	SY	30.000	30.000
0120	517.0600	Painting Epoxy System (structure) 4009. B-40-107	LS	1.000	1.000
0122	517.0600	Painting Epoxy System (structure) 4110. B-40-108	LS	1.000	1.000
0124	517.0900.S	Preparation and Coating of Top Flanges (structure) 4010. B-40-107	LS	1.000	1.000
0126	517.0900.S	Preparation and Coating of Top Flanges (structure) 4111. B-40-108	LS	1.000	1.000
0128	517.1800.S	Structure Repainting Recycled Abrasive (structure) 4011. B-40-107	LS	1.000	1.000
0130	517.1800.S	Structure Repainting Recycled Abrasive (structure) 4112. B-40-108	LS	1.000	1.000
0132	517.4500.S	Negative Pressure Containment and Collection of Waste Materials (structure) 4012. B-40-107	LS	1.000	1.000
0134	517.4500.S	Negative Pressure Containment and Collection of Waste Materials (structure) 4113. B-40-108	LS	1.000	1.000
0136	517.6001.S	Portable Decontamination Facility	EACH	1.000	1.000
0138	520.8000	Concrete Collars for Pipe	EACH	8.000	8.000

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Line	Item	Item Description	Unit	Total	Qty
0140	550.0010	Pre-Boring Unconsolidated Materials	LF	30.000	30.000
0142	550.0500	Pile Points	EACH	39.000	39.000
0144	550.1120	Piling Steel HP 12-Inch X 53 Lb	LF	2,675.000	2,675.000
0146	601.0331	Concrete Curb & Gutter 31-Inch	LF	2,256.000	2,256.000
0148	602.0410	Concrete Sidewalk 5-Inch	SF	3,903.000	3,903.000
0150	602.0515	Curb Ramp Detectable Warning Field Natural Patina	SF	116.000	116.000
0152	602.0615	Curb Ramp Detectable Warning Field Radial Natural Patina	SF	23.000	23.000
0154	603.8000	Concrete Barrier Temporary Precast Delivered	LF	2,653.000	2,653.000
0156	603.8125	Concrete Barrier Temporary Precast Installed	LF	4,451.000	4,451.000
0158	604.0500	Slope Paving Crushed Aggregate	SY	438.000	438.000
0160	608.0312	Storm Sewer Pipe Reinforced Concrete Class III 12-Inch	LF	71.000	71.000
0162	611.0535	Manhole Covers Type J-Special	EACH	2.000	2.000
0164	611.0624	Inlet Covers Type H	EACH	6.000	6.000
0166	611.2004	Manholes 4-FT Diameter	EACH	2.000	2.000
0168	611.3004	Inlets 4-FT Diameter	EACH	6.000	6.000
0170	611.8115	Adjusting Inlet Covers	EACH	1.000	1.000
0172	611.8120.S	Cover Plates Temporary	EACH	7.000	7.000
0174	611.9710	Salvaged Inlet Covers	EACH	2.000	2.000
0176	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	195.000	195.000
0178	612.0806	Apron Endwalls for Underdrain Reinforced Concrete 6-Inch	EACH	4.000	4.000
0180	614.0115	Anchorages for Steel Plate Beam Guard Type 2	EACH	2.000	2.000
0182	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	2.000	2.000
0184	614.0200	Steel Thrie Beam Structure Approach	LF	42.000	42.000
0186	614.0305	Steel Plate Beam Guard Class A	LF	516.000	516.000
0188	614.0905	Crash Cushions Temporary	EACH	4.000	4.000
0190	614.0930	Salvaged Crash Cushions	EACH	1.000	1.000
0192	616.0700.S	Fence Safety	LF	500.000	500.000
0194	619.1000	Mobilization	EACH	1.000	1.000
0196	620.0300	Concrete Median Sloped Nose	SF	66.000	66.000
0198	623.0200	Dust Control Surface Treatment	SY	5,914.000	5,914.000
0200	624.0100	Water	MGAL	18.000	18.000
0202	627.0200	Mulching	SY	946.000	946.000
0204	628.1104	Erosion Bales	EACH	193.000	193.000
0206	628.1504	Silt Fence	LF	1,772.000	1,772.000
0208	628.1520	Silt Fence Maintenance	LF	1,772.000	1,772.000
0210	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0212	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000

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Line	Item	Item Description	Unit	Total	Qty
0214	628.2004	Erosion Mat Class I Type B	SY	2,408.000	2,408.000
0216	628.7005	Inlet Protection Type A	EACH	1.000	1.000
0218	628.7010	Inlet Protection Type B	EACH	7.000	7.000
0220	628.7015	Inlet Protection Type C	EACH	10.000	10.000
0222	628.7504	Temporary Ditch Checks	LF	40.000	40.000
0224	628.7560	Tracking Pads	EACH	1.000	1.000
0226	628.7570	Rock Bags	EACH	100.000	100.000
0228	629.0210	Fertilizer Type B	CWT	1.800	1.800
0230	630.0120	Seeding Mixture No. 20	LB	53.000	53.000
0232	630.0200	Seeding Temporary	LB	28.000	28.000
0234	631.0300	Sod Water	MGAL	21.600	21.600
0236	631.1000	Sod Lawn	SY	961.000	961.000
0238	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	15.000	15.000
0240	637.2210	Signs Type II Reflective H	SF	134.250	134.250
0242	637.2215	Signs Type II Reflective H Folding	SF	44.760	44.760
0244	637.2230	Signs Type II Reflective F	SF	13.000	13.000
0246	638.2102	Moving Signs Type II	EACH	7.000	7.000
0248	638.2602	Removing Signs Type II	EACH	26.000	26.000
0250	638.3000	Removing Small Sign Supports	EACH	15.000	15.000
0252	643.0300	Traffic Control Drums	DAY	24,050.000	24,050.000
0254	643.0420	Traffic Control Barricades Type III	DAY	2,284.000	2,284.000
0256	643.0705	Traffic Control Warning Lights Type A	DAY	4,567.000	4,567.000
0258	643.0715	Traffic Control Warning Lights Type C	DAY	3,888.000	3,888.000
0260	643.0800	Traffic Control Arrow Boards	DAY	341.000	341.000
0262	643.0900	Traffic Control Signs	DAY	9,778.000	9,778.000
0264	643.0910	Traffic Control Covering Signs Type I	EACH	14.000	14.000
0266	643.0920	Traffic Control Covering Signs Type II	EACH	25.000	25.000
0268	643.1050	Traffic Control Signs PCMS	DAY	730.000	730.000
0270	643.5000	Traffic Control	EACH	1.000	1.000
0272	645.0111	Geotextile Type DF Schedule A	SY	72.000	72.000
0274	646.1020	Marking Line Epoxy 4-Inch	LF	2,771.000	2,771.000
0276	646.1545	Marking Line Grooved Wet Ref Contrast Epoxy 4-Inch	LF	1,097.000	1,097.000
0278	646.3545	Marking Line Grooved Wet Ref Contrast Epoxy 8-Inch	LF	1,379.000	1,379.000
0280	646.5020	Marking Arrow Epoxy	EACH	1.000	1.000
0282	646.6120	Marking Stop Line Epoxy 18-Inch	LF	86.000	86.000
0284	646.7420	Marking Crosswalk Epoxy Transverse Line 6-Inch	LF	259.000	259.000
0286	646.9000	Marking Removal Line 4-Inch	LF	2,339.000	2,339.000
0288	646.9300	Marking Removal Special Marking	EACH	1.000	1.000
0290	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	20,012.000	20,012.000
0292	649.0805	Temporary Marking Stop Line Paint 18-Inch	LF	65.000	65.000

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Line	Item	Item Description	Unit	Total	Qty
0294	652.0125	Conduit Rigid Metallic 2-Inch	LF	86.000	86.000
0296	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	1,771.000	1,771.000
0298	652.0235	Conduit Rigid Nonmetallic Schedule 40 3-Inch	LF	425.000	425.000
0300	652.0800	Conduit Loop Detector	LF	552.000	552.000
0302	653.0135	Pull Boxes Steel 24x36-Inch	EACH	3.000	3.000
0304	653.0140	Pull Boxes Steel 24x42-Inch	EACH	4.000	4.000
0306	653.0220	Junction Boxes 18x6x6-Inch	EACH	6.000	6.000
0308	653.0222	Junction Boxes 18x12x6-Inch	EACH	2.000	2.000
0310	653.0905	Removing Pull Boxes	EACH	3.000	3.000
0312	654.0101	Concrete Bases Type 1	EACH	1.000	1.000
0314	654.0102	Concrete Bases Type 2	EACH	2.000	2.000
0316	654.0105	Concrete Bases Type 5	EACH	4.000	4.000
0318	654.0113	Concrete Bases Type 13	EACH	1.000	1.000
0320	655.0230	Cable Traffic Signal 5-14 AWG	LF	532.000	532.000
0322	655.0240	Cable Traffic Signal 7-14 AWG	LF	125.000	125.000
0324	655.0260	Cable Traffic Signal 12-14 AWG	LF	661.000	661.000
0326	655.0320	Cable Type UF 2-10 AWG Grounded	LF	369.000	369.000
0328	655.0515	Electrical Wire Traffic Signals 10 AWG	LF	841.000	841.000
0330	655.0610	Electrical Wire Lighting 12 AWG	LF	822.000	822.000
0332	655.0625	Electrical Wire Lighting 6 AWG	LF	5,039.000	5,039.000
0334	655.0700	Loop Detector Lead In Cable	LF	1,194.000	1,194.000
0336	655.0800	Loop Detector Wire	LF	1,716.000	1,716.000
0338	655.0900	Traffic Signal EVP Detector Cable	LF	328.000	328.000
0340	657.0100	Pedestal Bases	EACH	1.000	1.000
0342	657.0255	Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	EACH	2.000	2.000
0344	657.0322	Poles Type 5-Aluminum	EACH	2.000	2.000
0346	657.0405	Traffic Signal Standards Aluminum 3.5-FT	EACH	1.000	1.000
0348	657.0610	Luminaire Arms Single Member 4 1/2-Inch Clamp 6-FT	EACH	2.000	2.000
0350	657.1360	Install Poles Type 13	EACH	1.000	1.000
0352	657.1540	Install Monotube Arms 40-FT	EACH	1.000	1.000
0354	657.1815	Install Luminaire Arms Steel 15-FT	EACH	2.000	2.000
0356	657.6005	Anchor Assemblies Light Poles on Structures	EACH	2.000	2.000
0358	658.5069	Signal Mounting Hardware (location) 3001. IH 94 EB Off Ramp & STH 100	LS	1.000	1.000
0360	659.1130	Luminaires Utility LED D	EACH	2.000	2.000
0362	661.0200	Temporary Traffic Signals for Intersections (location) 3001. IH 94 EB Off Ramp & STH 100	LS	1.000	1.000
0364	661.0300	Generators	DAY	4.000	4.000
0366	690.0150	Sawing Asphalt	LF	208.000	208.000
0368	690.0250	Sawing Concrete	LF	3,219.000	3,219.000

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Line	Item	Item Description	Unit	Total	Qty
0370	715.0415	Incentive Strength Concrete Pavement	DOL	755.000	755.000
0372	715.0502	Incentive Strength Concrete Structures	DOL	1,368.000	1,368.000
0374	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	1,100.000	1,100.000
0376	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	1,800.000	1,800.000
0378	SPV.0035	Special 4000. HPC Masonry Structures	CY	650.000	650.000
0380	SPV.0035	Special 8001. Backfill Slurry	CY	98.000	98.000
0382	SPV.0060	Special 0162. Concrete Barrier Type S42 End Anchor	EACH	1.000	1.000
0384	SPV.0060	Special 0403. Traffic Control Local Road Lane Closures	EACH	20.000	20.000
0386	SPV.0060	Special 1019. Relocating Light Poles Arms and Luminaires	EACH	4.000	4.000
0388	SPV.0060	Special 3001. Concrete Bases Type 1 Spread Footing	EACH	1.000	1.000
0390	SPV.0060	Special 3002. Install Salvaged Pedestal Bases	EACH	1.000	1.000
0392	SPV.0060	Special 3003. Install Salvaged Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	EACH	2.000	2.000
0394	SPV.0060	Special 3004. Install Salvaged Poles Type 2	EACH	1.000	1.000
0396	SPV.0060	Special 3005. Install Salvaged Poles Type 3	EACH	1.000	1.000
0398	SPV.0060	Special 3006. Install Salvaged Traffic Signal Standards Aluminum 10-Ft	EACH	1.000	1.000
0400	SPV.0060	Special 3007. Install Salvaged Luminaire Arms Single Member 4-Inch Clamp 6-Ft	EACH	2.000	2.000
0402	SPV.0060	Special 3008. Install Salvaged Pedestrian Push Buttons	EACH	3.000	3.000
0404	SPV.0060	Special 3009. Install Salvaged Luminaires Utility LED C	EACH	4.000	4.000
0406	SPV.0060	Special 3010. Install Salvaged Traffic Signal Head 3-12 Inch Vertical	EACH	6.000	6.000
0408	SPV.0060	Special 3011. Install Salvaged Pedestrian Signal Head 16-Inch	EACH	2.000	2.000
0410	SPV.0060	Special 5102. MMSD Sanitary Manhole Reconstruct	EACH	1.000	1.000
0412	SPV.0060	Special 5200. Adjusting Sanitary Manholes	EACH	1.000	1.000
0414	SPV.0075	Special 0002. Pavement Cleanup Project 2030-14-70	HRS	100.000	100.000
0416	SPV.0075	Special 4200. Obstructions Drilled Foundation Shaft	HRS	4.000	4.000
0418	SPV.0085	Special 0900. ICE HPC Hot Weather Croncreting	LB	4,470.000	4,470.000
0420	SPV.0090	Special 0410. Concrete Barrier Temporary Precast Anchoring	LF	806.000	806.000
0422	SPV.0090	Special 0412. Concrete Barrier Temporary Precast Anchored on Bridge	LF	493.000	493.000
0424	SPV.0090	Special 1025. Conduit Special HDPE 2-Inch	LF	105.000	105.000
0426	SPV.0090	Special 3001. Cable Type UF 2-14 AWG	LF	328.000	328.000
0428	SPV.0090	Special 3002. Install Camera Power Cable	LF	303.000	303.000
0430	SPV.0090	Special 3003. Install Cat-5E Cable	LF	315.000	315.000
0432	SPV.0090	Special 4400. Drilled Shaft Foundation 60-Inch Diameter	LF	62.000	62.000

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Line	Item	Item Description	Unit	Total	Qty
0434	SPV.0105	Special 0001. Survey Project 2030-14-70	LS	1.000	1.000
0436	SPV.0105	Special 3001. Transport & Install State Furn EVP Detector Heads IH 94 EB Off Ramp & STH	LS	1.000	1.000
0438	SPV.0105	Special 3002. Transport & Install State Furn Radar Det Sys IH 94 EB Off Ramp & STH 100	LS	1.000	1.000
0440	SPV.0105	Special 3003. Transport & Install State Furn Adaptive Traffic Signal Equip IH 94 EB Off	LS	1.000	1.000
0442	SPV.0105	Special 3004. Covering Traffic Signal Equipment	LS	1.000	1.000
0444	SPV.0105	Special 3005. Temporary EVP System IH 94 EB Off Ramp & STH 100	LS	1.000	1.000
0446	SPV.0120	Special 0001. Water For Seeded Areas	MGAL	21.000	21.000
0448	SPV.0135	Special 0001. Vibration Monitoring	MON	5.000	5.000
0450	SPV.0165	Special 4700. Longitudinal Grooving Bridge Deck **P**	SF	15,046.000	15,046.000
0452	SPV.0180	Special 0180. Topsoil Special	SY	2,594.000	2,594.000
0454	SPV.0180	Special 4750. Clean Abutment Seats	SY	16.000	16.000
0456	SPV.0195	Special 0700. Management of Solid Waste	TON	1,210.000	1,210.000

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REMOVING PAVEMENT

CATEGORY	STAGE	ROADWAY	STATION	TO	STATION	OFFSET	204.0100 REMOVING PAVEMENT SY
		RAMPS					
1000	2	RAMP SC					
			555SC+64	-	556SC+07	RT	74
			555SC+64	-	556SC+07	RT	140
		LOCAL ROADS					
		STH 100					
			562SN+00	-	564SN+48	RT	575
			562SS+00	-	564SS+80	LT	656
			565SN+99	-	567SN+15	RT	267
			566SS+32	-	567SS+25	LT	214
		SUBTOTAL					1,926
1000	3	**LOCAL ROADS**					
		STH 100					
			562SN+00	-	564SN+54	RT	306
			562SS+00	-	564SS+80	LT	326
			566SN+10	-	567SN+25	RT	170
			566SS+25	-	567SN+25	LT	161
		SUBTOTAL					963
		LOCAL ROADS					
1000	4	STH 100					
			562SN+00	-	564SN+37	RT	56
			562SS+00	-	564SS+80	LT	57
			565SN+99	-	567SN+15	RT	88
		SUBTOTAL					201
		TOTAL					3,090

REMOVING CURB & GUTTER

CATEGORY	STAGE	ROADWAY	FROM STATION	FROM OFFSET	TO STATION	TO OFFSET	204.0150 REMOVING CURB & GUTTER LF
		LOCAL ROADS					
1000	2	STH 100					
			560SN+76	35' RT	562SN+00	35' RT	124
			561SS+18	33' LT	562SS+00	30' LT	82
			566SN+17	0' LT	567SN+23	3' LT	106
			566SS+25	0' RT	567SS+23	21' RT	109
		SUBTOTAL					421
		LOCAL ROADS					
1000	3	STH 100					
			559SS+72	2' RT	564SS+63	2' RT	491
			559SN+49	0' LT	564SN+54	2' LT	505
		SUBTOTAL					996
		TOTAL					1,417

REMOVING CONCRETE SIDEWALK

CATEGORY	STAGE	ROADWAY	STATION	TO	STATION	OFFSET	204.0155 REMOVING CONCRETE SIDEWALK SY
		LOCAL ROADS					
1000	1	STH 100					
			566SS+25	-	567SS+22	RT	240
		SUBTOTAL					240
		RAMPS					
1000	2	RAMP SC					
			555SC+66	-	556SC+01	RT	31
			555SC+78	-	556SC+05	RT	26
		LOCAL ROADS					
		STH 100					
			562SS+00	-	564SS+83	LT	153
		SUBTOTAL					153
		TOTAL					393

REMOVING ASPHALTIC SURFACE MILLING

CATEGORY	STAGE	ROADWAY	STATION	TO	STATION	OFFSET	204.0120 REMOVING ASPHALTIC SURFACE MILLING SY
		LOCAL ROADS					
1000	2	STH 100					
			561SN+50	-	562SN+00	RT	117
			561SS+50		562SS+00	LT	117
		SUBTOTAL					234
1000	3	STH 100					
			561SN+50	-	562SN+00	RT	61
			561SS+50		562SS+00	LT	51
		SUBTOTAL					51
		TOTAL					285

REMOVING CONCRETE BARRIER

CATEGORY	STAGE	ROADWAY	FROM STATION	FROM OFFSET	TO STATION	TO OFFSET	204.0157 REMOVING CONCRETE BARRIER LF
		RAMPS					
1000	3	RAMP SC					
			555SC+64	38' RT	555SC+78	42' RT	20
		TOTALS					20

REMOVING GUARDRAIL

CATEGORY	STAGE	ROADWAY	FROM STATION	FROM OFFSET	TO STATION	TO OFFSET	204.0165 REMOVING GUARDRAIL LF
		RAMPS					
1000	2	RAMP WS					
			561SS+67	39' LT	564SS+75	39' LT	308
			560SN+95	41' RT	564SN+12	35' RT	318
		TOTAL					626

REMOVING MANHOLES

STAGE	ROADWAY	STATION	OFFSET	204.0210 REMOVING MANHOLES EACH
2	**STH 100 SB**			
		562SS+02	25' LT	1
	TOTAL			1

REMOVING INLETS

STAGE	ROADWAY	STATION	OFFSET	204.0220 REMOVING INLETS EACH
2	**STH 100 NB**			
		562SN+02	35' RT	1
		564SN+23	34' RT	1
	STH 100 SB			
		562SS+02	31' LT	1
		564SS+70	33' LT	1
	SUBTOTAL			4
2	**STH 100 NB**			
		562SN+02	9' LT	1
	SUBTOTAL			1
	TOTAL			5

STORM SEWER PIPE REMOVALS

STAGE	ROADWAY	STATION	OFFSET	TO	STATION	OFFSET	204.0245.0001 REMOVING STORM SEWER 12-INCH LF
2	**STH 100 NB**						
		562SN+02	29' RT	--	562SN+02	34' RT	5
	STH 100 SB						
		561SS+98	25' LT	--	562SS+00	25' LT	2
		562SS+02	31' LT	--	562SS+02	27' LT	4
		562SS+02	23' LT	--	562SS+02	21' LT	2
		564SS+70	32' LT	--	564SS+68	29' LT	3
		564SS+70	46' LT	--	564SS+70	33' LT	12
	SUBTOTAL						28
3	**STH 100 NB**						
		562SN+02	8' LT	--	562SN+02	5' RT	13
	STH 100 SB						
		562SS+02	2' LT	--	562SS+02	11' RT	13
	SUBTOTAL						26
	TOTAL						54

ALL ITEMS CATEGORY 1000

3

SAWING

CATEGORY	STAGE	ROADWAY	STATION	TO	STATION	OFFSET	690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF	COMMENTS
		LOCAL ROADS							
1000	1	STH 100							
			559SN+49	-	564SN+54	RT	--	541	
			559SS+72	-	564SS+64	LT	--	495	
			566SS+25	-	567SS+25	LT	--	118	
			566SN+16	-	567SN+26	RT	--	105	
		SUBTOTALS					--	1,259	
		RAMPS							
1000	2	RAMP SC	555SC+64	-	555SC+66	RT	-	21	
			555SC+71	-	556SC+07	RT	--	36	
		LOCAL ROADS							
		STH 100							
			560SN+76	-	562SN+00	RT	--	130	
			561SS+18	-	562SS+00	LT	--	93	
			562SS+00	-	564SS+81	LT	--	545	
			562SN+00	-	564SN+45	RT	--	490	
			561SN+50			RT	22	--	SAWING ASPHALT PARTIAL DEPTH
			561SS+50			LT	22	--	SAWING ASPHALT PARTIAL DEPTH
			562SS+00			LT	23	--	
			562SN+00			RT	23	--	
			564SN+37	-	564SN+48	RT	23	3	
			564SN+69	-	564SN+81	LT	25	6	
			565SN+99	-	566SN+10	LT	--	26	
			566SS+32	-	566SS+46	LT	--	32	
			566SN+05	-	567SN+15	RT	--	214	
			566SS+38	-	567SS+25	LT	--	180	
			567SN+15			RT	--	53	
			567SS+25			LT	--	22	
		SUBTOTALS					138	1,851	
		LOCAL ROADS							
1000	3	STH 100							
			561SN+50			RT	11	--	SAWING ASPHALT PARTIAL DEPTH
			561SS+50			LT	11	--	SAWING ASPHALT PARTIAL DEPTH
			562SS+00			LT	12	--	
			562SN+00			RT	12	--	
			564SN+48	-	564SN+54	RT	12	3	
			564SS+64	-	564SS+70	LT	12	3	
			566SN+10	-	566SN+17	RT	--	15	
			566SS+15	-	566SS+32	LT/RT	--	36	
			567SN+15	-	567SN+25	RT	--	21	
			567SS+25			LT/RT	--	31	
		SUBTOTALS					70	109	
		TOTALS					208	3,219	

3

EARTH WORK SUMMARY

Division	From/To Station	Location	205.0100 Excavation Common (CY) (1)	Salvaged/ Unusable Pavement Material (CY)	Available Material (4)	Unexpanded Fill (5)	Expanded Fill (6)	Mass Ordinate +/- (7)	Waste (8)	Borrow	Comment:
			Cut (2)				Factor 1.10			Item 208.0100	
1	562+00 TO 567+25	HWY 100	2,970	0	2,970	1,373	1,511	1,460	1,460	0	
Division 1 Subtotal Stage 1			2,970	0	2,970	1,373	1,511	1,460	1,460	0	
Total			2,970	0	2,970	1,373	1,511	1,460	1,460	0	

NOTES:

1) Salvaged/Unsuable Pavement Material is included in Cut.
2) Available Material = Cut - Salvaged/Unusuable Pavement Material
3) The backfill needed to construct the mechanically stabilized earth walls has been estimated. The MSE backfill quantity has been subtracted from the fill volume in all end area calculations. The width of the MSE backfill off of the back of the MSE wall has been estimated as 0.8 times the height of the retaining walls.
4) Expanded Fill. Factor = 1.20 Expanded Fill = Unexpanded Fill * 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) A soil expansion factor of 1.1 was used to generate estimated earthwork quantities. Due to potential soil variability, actual quantities may vary. No quantity adjustments will be made for differing soil expansion factors encountered in the field.

ALL ITEMS CATEGORY 1000

BASE AGGREGATE ITEMS

CATEGORY	STAGE	ROADWAY	STATION	TO	STATION	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	312.0115 SELECT CRUSHED MATERIAL CY
		RAMPS					
1000	1	**LOCAL ROADS**					
		STH 100					
			562SN+00		564SN+19	666	--
			566SN+31		567SN+25	219	--
		SUBTOTAL				885	--
		RAMPS					
1000	2	RAMP SC					
			555SC+71	-	556SC+03	27	34
		LOCAL ROADS					
		STH 100					
			562SS+00	-	564SS+49	383	288
			562SN+00		564SN+19	383	255
			566SN+31		567SN+25	137	119
			566SS+63		567SS+25	75	95
		SUBTOTAL				1,005	791
		LOCAL ROADS					
1000	3	STH 100					
			562SS+00	-	564SS+49	211	201
			562SN+00		564SN+19	202	183
			566SN+31		567SN+25	54	84
			566SS+63		567SS+25	410	71
		SUBTOTAL				877	539
		RAMPS					
1000	4	RAMP SC					
			555SC+66	-	556SC+03	69	84
		LOCAL ROADS					
		STH 100					
			562SS+00	-	564SS+49	151	85
			562SN+00		564SN+19	91	66
			566SN+31		567SN+25	78	52
		SUBTOTAL				389	287
		TOTAL				3,156	1,617

CONCRETE PAVEMENT

CATEGORY	STAGE	ROADWAY	STATION	TO	STATION	415.0080 CONCRETE PAVEMENT 8-INCH SY	415.1080 CONCRETE PAVEMENT HES 8-INCH SY	415.1090 CONCRETE PAVEMENT HES 9-INCH SY
		RAMPS						
1000	2	RAMP SC						
			555SC+71	-	556SC+03	--	--	192
		LOCAL ROADS						
		STH 100						
			562SS+00	-	564SS+49	--	629	--
			562SN+00		564SN+19	--	548	
			566SN+31		567SN+25	--	264	
			566SS+63		567SS+25	--	152	--
		SUBTOTAL				--	1,593	192
		LOCAL ROADS						
1000	3	STH 100						
			562SS+00	-	564SS+49	271	--	--
			562SN+00		564SN+19	268	--	--
			566SN+31		567SN+25	115	--	--
			566SS+63		567SS+25	76		
		SUBTOTAL				730	--	--
		TOTAL				730	1,593	192

CONCRETE PAVEMENT APPROACH SLAB

CATEGORY	STAGE	ROADWAY	STATION	415.0410 CONCRETE PAVEMENT APPROACH SLAB SY
		LOCAL ROADS		
1000	2	STH 100		
			564SN+19	62
			564SS+49	95
			566SN+31	78
			566SS+63	82
		SUBTOTAL		317
		LOCAL ROADS		
1000	3	STH 100		
			564SN+19	38
			564SS+49	22
			566SN+31	22
			566SS+63	41
		SUBTOTAL		123
		TOTALS		440

DRIVEWAYS

CATEGORY	STAGE	ROADWAY	STATION	OFFSET	416.0180 CONCRETE DRIVEWAY 8-INCH SY
1000	4	STH 100			
			566SN+77	RT	115
		TOTALS			115

DRILLED BAR ITEMS

CATEGORY	STAGE	ROADWAY	STATION	TO	STATION	OFFSET	416.0610 DRILLED TIE BARS EACH	416.0620 DRILLED DOWEL BARS EACH
		RAMPS						
1000	2	RAMP SC						
			555SC+71	-	555SC+72	LT/RT	3	12
			555SC+72	-	556SC+07	LT	14	--
		LOCAL ROADS						
		STH 100						
					557SC+25	LT	--	21
					567SN+15	RT	--	21
		SUBTOTALS					17	54
		LOCAL ROADS						
1000	3	STH 100						
					559SS+72	LT/RT	3	--
					559SN+49	LT/RT	3	--
					567SN+24	RT/LT	17	9
		SUBTOTALS					23	9
		RAMPS						
1000	4	RAMP SC						
			555SC+64	-	555SC+66	RT	3	17
		STH 100						
					560SN+76	RT	3	--
					561SS+18	LT	3	--
					567SN+15	RT	3	10
		SUBTOTALS					12	27
		TOTALS					52	90

ASPHALTIC ITEMS

CATEGORY	STAGE	ROADWAY	STATION	TO	STATION	455.0605 TACK COAT GAL	460.6424 HMA PAVEMENT 4 MT 58-28 H TON	465.0125 ASPHALTIC SURFACE TEMPORARY TON
		LOCAL ROADS						
1000	1	STH 100						
			559SN+49	-	564SN+63	70	--	280
			566SN+16	-	567SN+25	18	--	71
		SUBTOTAL				88	--	351
1000	2	STH 100						
			560SN+76	-	564SN+34	19		78
			561SS+18	-	564SN+87	23		92
			561SS+50	-	562SS+00	9	18	--
			561SN+50	-	562SN+00	9	18	--
		SUBTOTAL				60	36	170
	3	STH 100						
			561SS+50	-	562SS+00	5	10	--
			561SN+50	-	562SN+00	5	10	--
		SUBTOTAL				10	20	--
	4	STH 100						
			566SN+61	-	566SN+94	--	--	--
		SUBTOTAL				--	--	--
		TOTALS				158	56	521

BEAM GUARD ITEMS

CATEGORY	STAGE	ROADWAY	FROM STATION	OFFSET	TO STATION	OFFSET	614.0115 ANCHORAGES FOR STEEL PLATE BEAM GUARD TYPE 2 EACH	614.0200 STEEL THRIE BEAM STRUCTURE APPROACH LF	614.0305 STEEL PLATE BEAM GUARD CLASS A LF	614.0930 SALVAGED CRASH CUSHIONS EACH	COMMENT
		LOCAL ROADS									
1000	4	STH 100									
			560SN+95	41' RT	564SN+15	45' RT	1	21	258	--	
			562SS+00	39' LT	564SN+79	52' LT	1	21	258	--	
			567SN+11	48' RT	--		--	--	--	1	Removed in Stage 1
		TOTALS					2	42	516	1	

MOBILIZATION

CATEGORY	STAGE	LOCATION	619.1000 EACH
1000	ALL	2030-14-70	1.00
		TOTAL	1.00

DUST CONTROL SURFACE TREATMENT

CATEGORY	STAGE	LOCATION	623.0200 SY
1000	ALL	PROJECT	5,914
		TOTALS	5,914

WATER

CATEGORY	STAGE	LOCATION	624.0100 MGAL
1000	ALL	PROJECT-BASE AGGREGATE	6
		PROJECT- EXCAVATION	12
		TOTALS	18

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Roads\cds\030201_mq_pav.ppt PLOT DATE : 12/18/2017 9:45:25 AM PLOT BY : NEAL R. STYKA PLOT NAME : 03021_mq_pav PLOT SCALE : 1:1

3

CONCRETE CURB & GUTTER

CATEGORY	STAGE	ROADWAY	STATION	TO	STATION	OFFSET	601.0331 CONCRETE CURB & GUTTER 31-INCH LF
		RAMPS					
1000	2	RAMP SC					
			555SC+71	-	556SC+01.44	RT	35
		SUBTOTAL					35
		LOCAL ROADS					
1000	3	STH 100					
			559SS+72	-	564SS+63	RT	490
			559SN+49	-	564SN+53	LT	504
			566SN+17	-	567SN+23	LT	127
			566SS+25	-	567SS+14	RT	90
		SUBTOTAL					1,211
		RAMPS					
1000	4	RAMP SC					
			555SC+66	-	556SC+01	RT	43
			555SC+71	-	555SC+95	RT	56
		LOCAL ROADS					
		STH 100					
			560SN+76	-	564SN+33	RT	356
			561SS+18	-	564SS+87	LT	369
			566SS+97	-	567SS+05	LT	8
			565SN+96	-	567SN+15	RT	178
		SUBTOTAL					1,010
		TOTAL					2,256

CONCRETE SIDEWALK

CATEGORY	STAGE	ROADWAY	STATION	TO	STATION	OFFSET	602.0410 CONCRETE SIDEWALK 5-INCH SF
		LOCAL ROADS					
1000	3	STH 100					
			566SN+18	-	567SN+22	MEDIAN	1,685
		SUBTOTAL					1,685
		RAMPS					
1000	4	RAMP SC					
			555SC+66	-	556SC+01	MEDIAN	277
			555SC+72	-	555SC+95	RIGHT	230
		LOCAL ROADS					
		STH 100					
			561SS+18	-	564SS+90	LT	2,219
		SUBTOTAL					2,219
		TOTAL					3,903

CONCRETE BARRIER ITEMS

CATEGORY	STAGE	LOCATION	STATION	TO	STATION	OFFSET	SPV.0060.0162 CONCRETE BARRIER TYPE S42 END ANCHOR EACH
		RAMPS					
1000	4	RAMP SC					
			555SC+64	RT	--	37	1
		TOTALS					1

3

CURB RAMP DETECTABLE WARNING FIELD NATURAL PATINA

CATEGORY	STAGE	ROADWAY	STATION	OFFSET	602.0515 CURB RAMP DETECTABLE WARNING FIELD NATURAL PATINA SF	602.0615 CURB RAMP DETECTABLE WARNING FIELD RADIAL NATURAL PATINA SF
		LOCAL ROADS				
1000	3	STH 100				
			567SS+01	RT	20	--
			567SN+00	LT	20	--
			567SN+01	RT	20	--
		SUBTOTAL			60	--
		RAMPS				
1000	4	RAMP SC				
			555SC+89	RT	12	--
			555SC+89	RT	12	--
			555SC+89	RT	--	23
		LOCAL ROADS				
		STH 100				
			567SS+02	LT	12	--
			567SN+02	RT	20	--
		SUBTOTAL			56	23
		TOTAL			116	23

CONCRETE MEDIAN SLOPED NOSE

CATEGORY	STAGE	ROADWAY	STATION	OFFSET	620.0300 CONCRETE MEDIAN SLOPED NOSE TYPE 2 SF
		RAMPS			
1000	2	RAMP SC			
			556SC+01	RT	11
			556SC+01	RT	14
		SUBTOTALS			25
		LOCAL ROADS			
1000	3	HYW 100			
			567SN+23	MEDIAN	19
			567SS+14	MEDIAN	22
		SUBTOTALS			41
		TOTAL			66

CONCRETE COLLARS FOR PIPE

STAGE	ROADWAY	STATION	OFFSET	520.8000 CONCRETE COLLARS FOR PIPE EACH
2	**STH 100 NB**			
		562SN+02	29' RT	1
		564SN+24	31' RT	1
	STH 100 SB			
		561SS+98	25' LT	1
		562SS+02	21' LT	1
		564SS+68	29' LT	1
		564SS+70	46' LT	1
	SUBTOTAL			6
3	**STH 100 NB**			
		562SN+02	5' RT	1
	STH 100 SB			
		562SS+02	2' LT	1
	SUBTOTAL			2
	TOTAL			8

COVER PLATE TEMPORARY

STAGE	ROADWAY	STATION	OFFSET	611.8120.S COVER PLATE TEMPORARY EACH	NOTES
2	**STH 100 NB**				
		562SN+02	9' LT	1	COVER PLATE TEMPORARY UNTIL STAGE 3
		567SN+20	2' LT	1	COVER PLATE TEMPORARY UNTIL STAGE 3
	SUBTOTAL			2	
3	**STH 100 NB**				
		562SN+02	33' RT	1	COVER PLATE TEMPORARY UNTIL STAGE 4
		564SN+22	37' RT	1	COVER PLATE TEMPORARY UNTIL STAGE 4
		566SN+91	42' RT	1	COVER PLATE TEMPORARY UNTIL STAGE 4
	STH 100 SB				
		562SS+08	30' LT	1	COVER PLATE TEMPORARY UNTIL STAGE 4
		564SS+70	42' LT	1	COVER PLATE TEMPORARY UNTIL STAGE 4
	SUBTOTAL			5	
	TOTAL			7	

APRON ENDWALLS FOR UNDERDRAIN REINFORCED CONCRETE

STAGE	ROADWAY	LOCATION	612.0806 APRON ENDWALLS FOR UNDERDRAIN REINFORCED CONCRETE 6-INCH EACH	NOTES
2	**STH 100**			
		B-40-107 NORTH ABUTMENT	1	PLACE IN SLOPE PAVING AT MINIMUM 0.5% SLOPE FROM ELEV 763.81 AT ABUTMENT
		B-40-107 SOUTH ABUTMENT	1	PLACE IN SLOPE PAVING AT MINIMUM 0.5% SLOPE FROM ELEV 763.81 AT ABUTMENT
		B-40-108 NORTH ABUTMENT	1	PLACE IN SLOPE PAVING AT MINIMUM 0.5% SLOPE FROM ELEV 766.69 AT ABUTMENT
		B-40-108 SOUTH ABUTMENT	1	PLACE IN SLOPE PAVING AT MINIMUM 0.5% SLOPE FROM ELEV 765.47 AT ABUTMENT
	TOTAL		4	

ADJUSTING STRUCTURES

STAGE	LOCATION	STATION	OFFSET FT	EXISTING RIM ELEVATION	TO	PROPOSED RIM ELEVATION	611.8115 ADJUSTING INLET COVERS EACH	SPV.0060.5200 ADJUSTING SANITARY MANHOLE EACH
2	**STH 100 NB**							
		562SN+75	25' RT	769.46	--	769.40	---	1
	SUBTOTALS						0	1
4	**STH 100 NB**							
		566SN+91	42' RT	774.33	--	774.52	1	---
	SUBTOTALS						1	0
	TOTALS						1	1

SALVAGED INLET COVERS

STAGE	ROADWAY	STATION	OFFSET	611.9710 SALVAGED INLET COVERS EACH
3	**STH 100 NB**			
		567SN+20	2' LT	1
	SUBTOTAL			1
4	**STH 100 NB**			
		566SN+91	42' RT	1
	SUBTOTAL			1
	TOTAL			2

ALL ITEMS CATEGORY 1000

STORM SEWER STRUCTURES												STORM SEWER PIPES													
ROADWAY	STRUCTURE NO.	STRUCTURE STAGE	STATION	OFFSET (FT)	LOCATION	RIM OR FLOW ELEV	STRUCTURE TYPE	INLET/MANHOLE COVERS TYPE	DEPTH[1] (FT)	BACKFILL SLURRY CY	STRUCTURE COMMENTS	PIPE ID	STAGE	FROM STR	TO STR	INLET ELEV	DISCH ELEV	SLOPE[A] %	PIPE LENGTH[B] (FT)	PLAN LENGTH[C] (FT)	PIPE CLASS	PIPE SIZE (INCH)	BACKFILL SLURRY CY	PIPE COMMENTS	SPV.0035.8001 BACKFILL SLURRY CY
STH 100 NB	HA101	2	562SN+01.65	35.0	RT	766.17	INLETS 4-FT DIAMETER	H	4.67	8	INSTALL COVER STAGE 4	P102	2	HA101	PE103	761.50	761.49	0.73	2	4	III	12	1	---	9
---	---	---	---	---	---	---	---	---	--	---	---	PE103	---	P102	P104	761.49	761.31	---	---	---	---	12	---	EXIST PIPE INTERPOL ELEV	---
---	---	---	---	---	---	---	---	---	--	---	---	P104	3	PE103	HA105	761.31	761.30	0.73	2	4	III	12	1	---	1
STH 100 NB	HA105	3	562SN+01.53	1.0	LT	766.81	INLETS 4-FT DIAMETER	H	5.51	8	---	P106	3	HA105	HA107	761.30	761.04	1.62	16	20	III	12	2	---	10
STH 100 SB	HA107	3	562SS+01.76	3.9	RT	766.76	INLETS 4-FT DIAMETER	H	5.72	8	---	P108	3	HA107	PE109	761.04	761.01	1.51	2	4	III	12	1	---	9
---	---	---	---	---	---	---	---	---	--	---	---	PE109	---	P108	P110	761.01	760.73	---	---	---	---	12	---	EXIST PIPE INTERPOL ELEV	---
---	---	---	---	---	---	---	---	---	--	---	---	P110	2	PE109	HA113	760.73	760.70	1.51	2	4	III	12	1	---	1
STH 100 SB	HA111	2	562SS+07.54	32.1	LT	766.35	INLETS 4-FT DIAMETER	H	4.00	8	INSTALL COVER STAGE 4	P112	2	HA111	HA113	762.35	762.31	1.00	4	8	III	12	1	---	9
STH 100 SB	HA113	2	562SS+02.21	24.6	LT	766.37	MANHOLES 4-FT DIAMETER	J-SPECIAL	6.17	16	---	P114	2	HA113	PE115	760.20	760.14	3.00	2	4	III	12	1	---	17
---	---	---	---	---	---	---	---	---	--	---	---	PE115	---	P114	---	760.14	---	---	---	---	---	12	---	EXIST PIPE INTERPOL ELEV	---
STH 100 NB	HA121	2	564SN+21.53	38.7	RT	774.12	INLETS 4-FT DIAMETER	H	5.78	8	INSTALL COVER STAGE 4	P122	2	HA121	PE123	768.34	768.26	2.00	4	6	III	12	1	---	9
---	---	---	---	---	---	---	---	---	--	---	---	PE123	---	P122	P124	768.26	767.28	---	---	---	---	12	---	EXIST PIPE INTERPOL ELEV	---
---	---	---	---	---	---	---	---	---	--	---	---	P124	2	PE123	HA125	767.28	767.24	2.00	2	4	III	12	1	---	1
STH 100 SB	HA125	2	564SS+69.50	33.0	LT	775.12	MANHOLES 4-FT DIAMETER	J-SPECIAL	8.83	11	---	P126	2	HA125	HA127	766.29	766.20	2.00	5	9	III	12	1	---	12
STH 100 SB	HA127	2	564SS+69.33	43.6	LT	774.90	INLETS 4-FT DIAMETER	H	11.69	19	INSTALL COVER STAGE 4	P128	2	HA127	PE129	763.21	762.61	29.80	2	4	III	12	1	---	20
---	---	---	---	---	---	---	---	---	--	---	---	PE129	---	P128	---	762.61	---	---	---	---	---	12	---	EXIST PIPE INTERPOL ELEV	---
																								TOTAL	98

[1]DEPTH = RIM OR FLOW ELEV - LOWEST PIPE INVERT ELEVATION

[A] SLOPE CALCULATED BASED ON PIPE LENGTH. PIPE LENGTH REPRESENTS LENGTH OF PIPE MEASURED FROM INSIDE FACE OF STRUCTURE TO INSIDE FACE OF STRUCTURE

[B]PIPE LENGTH SHOWN FOR SLOPE CALCULATION ONLY. NOT INTENDED FOR PAY QUANTITY.

[C]PLAN LENGTH SHOWN FOR PAY QUANTITY.

STORM SEWER STRUCTURE SUMMARY			
611.2004 MANHOLES 4-FT DIAMETER EACH	611.3004 INLETS 4-FT DIAMETER EACH	611.0535 MANHOLE COVERS TYPE J SPECIAL EACH	611.0624 INLET COVERS TYPE H EACH
2	6	2	6

STORM SEWER PIPE SUMMARY
608.0312 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 12-INCH LF
71

ALL ITEMS CATEGORY 1000

MANAGEMENT OF SOLID WASTE

CATEGORY	STAGE	LOCATION	STATION	TO	STATION	SPV.0195.0700 TON
1000	6	SW CORE POND				
			564SN+90	-	565SN+45	248
			563SN+90	-	564SN+90	466
			564SN+90	-	566SN+00	496
		TOTAL				1,210

ICE HPC HOT WEATHER CONCRETING

CATEGORY	LOCATION	SPV.0085.0900 LB
1000	BRIDGE DECKS	4,470
	TOTALS	4,470

SURVEY PROJECT

CATEGORY	STAGE	ROADWAY	SPV.0105.0001 SURVEY PROJECT 2030-14-70 LS
1000	ALL	PROJECT	1
		TOTAL	1

PAVEMENT CLEANUP

CATEGORY	STAGE	LOCATION	SPV.0075.0001 PAVEMENT CLEANUP 2030-14-70 HRS
1000	ALL	PROJECT	100
		TOTAL	100

VIBRATION MONITORING

CATEGORY	STAGE	LOCATION	SPV.0135.0001 VIBRATION MONITORING MON
1000	1	WALL R-40-630	5
		TOTAL	5

TRACKING PADS

CATEGORY	LOCATION	628.7560 EACH
1000	UNDISTRIBUTED	1
	TOTAL	1

EROSION CONTROL ITEMS

CATEGORY	STAGE	LOCATION	STATION	TO	STATION	OFFSET	628.1104 EROSION BALES EACH	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.2004 EROSION MAT CLASS I TYPE B SY	628.7504 TEMPORARY DITCH CHECKS LF	628.7570 ROCK BAGS EACH
		RAMPS												
1000	2	RAMP SC												
			555SC+66	-	566SC+49	RT	--	140	140	--	--	217	--	--
		LOCAL ROADS												
		STH 100												
			561SN+09	-	564SN+15	RT	--	401	401	--	--	535	--	--
			565SN+96	-	567SN+15	RT	--	172	172	--	--	184	--	--
			562SS+00	-	565SS+63	LT	138	553	553	--	--	784	30	--
		SUBTOTAL					138	1,266	1,266	--	--	1,720	30	--
		UNDISTRIBUTED					55	506	506	3	3	688	10	100
		TOTALS					193	1,772	1,772	3	3	2,408	40	100

RESTORATION ITEMS

CATEGORY	LOCATION	STATION	TO	STATION	627.0200* MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0200 SEEDING TEMPORARY LB	631.0300 SOD WATER MGAL	631.1000 SOD LAWN SY	SPV.0120.0001 WATER FOR SEEDED AREAS MGAL	SPV.0180.0200 TOPSOIL SPECIAL SY
	RAMPS											
1000	RAMP SC											
		555SC+66	-	566SC+49	109	.1	6	3	--	--	2.4	217
	LOCAL ROADS											
	STH 100											
		559SN+49	-	564SN+60	267	.9	15	8	19.6	874	6.0	1,409
		565SN+96	-	567SN+15	92	.1	5	3	--	--	2.1	184
		562SS+00	-	565SS+63	392	.5	22	11	--	--	8.8	784
	SUBTOTALS				860	1.6	48	25	19.6	874	19	2,594
	UNDISTRIBUTED				86	.2	5	3	2.0	87	2	--
	TOTALS				946	1.8	53	28	21.6	961	21	2,594

* USE WITH SEEDING TEMPORARY

INLET PROTECTION

CATEGORY	STAGE	LOCATION	STATION	TO	STATION	628.7005 TYPE A EACH	628.7010 TYPE B EACH	628.7015 TYPE C EACH
		RAMPS						
1000	1	RAMP SC						
			555SC+40	-	555SC+50	--	2	2
		LOCAL ROADS						
		STH 100						
			562SN+00	-	567SN+20	1	1	3
			562SS+00	-	567SS+75	--	1	3
		SUBTOTALS				1	4	8
		LOCAL ROADS						
1000	2	STH 100						
			562SN+00	-	567SN+20	--	1	--
			562SS+00	-	567SS+75	--	1	--
		SUBTOTALS				--	2	--
		LOCAL ROADS						
1000	4	STH 100						
			562SN+00	-	567SN+20	--	1	1
			562SS+00	-	567SS+75	--	2	1
		SUBTOTALS				--	3	2
		TOTALS				1	7	10

SANITARY SEWER MANHOLES

CATEGORY	STAGE	LOCATION	SPV.0060.5102 MMSD SANITARY MANHOLE RECONSTRUCT EACH	EXISTING RIM ELEV.	PROPOSED RIM ELEV.	CHANGE FT.
7047	4	564SN+01, 50' RT	1	766.45	771.20	4.75
		TOTAL	1			

CPM PROGRESS SCHEDULE

CATEGORY	LOCATION	108.4400 CPM PROGRESS SCHEDULE EACH
1000	PROJECT	1
	TOTALS	1

BACKFILL STRUCTURE TYPE A

CATEGORY	STAGE	ROADWAY	LOCATION	210.1500 BACKFILL STRUCTURE TYPE A TON
1000	2	STH 100		
			B-40-107 NE WINGWALL	358
		TOTALS		358

TEMPORARY CONCRETE BARRIER ITEMS

CATEGORY	STAGE	LOCATION	STATION	TO	STATION	OFFSET	603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF	603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF	614.0905 CRASH CUSHIONS TEMPORARY EACH	SPV.0090.0410 CONCRETE BARRIER TEMPORARY PRECAST ANCHORING LF	SPV.0090.0412 CONCRETE BARRIER TEMPORARY PRECAST ANCHORED ON BRIDGE LF
1000	1	STH 100									
			563SN+67	-	567SN+00	RT	794	--	--	--	--
			563SS+93	-	567SS+02	LT	753	--	--	--	--
		SUBTOTALS					1,547	--	--	--	--
1000	2	STH 100									
			560SN+04	-	567SN+22	LT	--	1,268	2	--	--
			563SN+09		567SN+58	RT	178	279	--	--	--
			561SS+31	-	567SS+03	LT	928	--	--	--	165
		SUBTOTALS					1,106	1,547	2	--	165
1000	2A	STH 100									
			560SS+98	-	567SS+20	LT	--	625	1	--	--
			561SN+01		566SN+72	RT	--	731	1	--	163
		SUBTOTALS					--	1,356	2	--	163
1000	3	STH 100									
			561SN+42	-	567SN+15	RT	--	573	--	409	164
			562SN+21	-	567SN+28	RT	--	192	1	--	--
			561SS+22	-	564SS+79	LT		358	--	--	--
			561SS+19	-	567SS+02	LT	--	561	1	397	164
		SUBTOTALS					--	1,684	2	806	328
1000	4	STH 100									
			560SN+45	-	567SN+40	RT	--	652	--		--
			561SS+10	-	566SS+75	LT	--	568	--	--	--
		SUBTOTALS					--	1,220	--	--	--
		TOTALS					2,653	4,451	4	806	493

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Roads\cds\030201_mq_pav.ppt PLOT DATE : 1/2/2018 10:13:56 AM PLOT BY : NEAL R. STYKA PLOT NAME : 03021_mq_pav PLOT SCALE : 1:1

TRAFFIC CONTROL

CATEGORY	LOCATION	643.5000 TRAFFIC CONTROL EACH
1000	PROJECT	1
	TOTALS	1

TRAFFIC CONTROL CLOSURE ITEMS

CATEGORY	ROADWAY	SPV. 0060.0403 TRAFFIC CONTROL LOCAL ROAD LANE CLOSURES EACH
1000	STH 100	20
	TOTALS	20

FINISHING ROADWAY

CATEGORY	STAGE	LOCATION	213.0100 EACH
1000	ALL	2030-14-70	1.00
		TOTAL	1.00

FENCE SAFETY

CATEGORY	STAGE	LOCATION	616.0700.S LF
1000	ALL	UNDISTRIBUTED	500.00
		TOTAL	500.00

TRAFFIC CONTROL PAVEMENT MARKING

CATEGORY	STAGE	LOCATION	STATION	TO	STATION	646.9000 MARKING REMOVAL LINE 4-INCH LF	646.9300 MARKING REMOVAL SPECIAL MARKING EACH	649.0150 TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH WHITE LF	649.0150 TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH YELLOW LF	649.0805 TEMPORARY MARKING LINE STOP LINE REMOVABLE TAPE 18-INCH WHITE LF
1000	1	STH 100								
			555SN+83	-	566SN+84	326	--	921	735	--
			563SS+33	-	573SS+00	361	--	--	1,231	--
		RAMP SC								
			553SC+08	-	555SC+42	--	1	520	--	--
		SUBTOTALS				687	1	1,441	1,966	--
1000	2	STH 100								
			547SN+00	-	567SN+35	758	--	1,354	785	21
			559SS+44	-	573SS+00	772	--	1,571	1,324	--
		SUBTOTALS				1,530	--	2,925	2,109	21
1000	2A	STH 100								
			547SN+00	-	567SN+25	--	--	1,529	--	--
			559SS+44	-	589SS+00	246	--	1,537	594	--
		RAMP SA								
			548SA+50	-	550SA+43	52	--	--	--	--
		RAMP SC								
			544SC+75	-	547SC+00	--	--	220	--	--
		SUBTOTALS				298	--	3,066	594	--
1000	3	STH 100								
			547SN+00	-	567SN+15	122	--	1,802	737	22
			561SS+18	-	57033+32	--	--	1,777	1,142	--
		SUBTOTALS				122	--	3,579	1,879	22
1000	4	STH 100								
			547SN+00	-	567SN+19	--	--	1,101	732	22
			561SS+25	-	569SS+57	--	--	813	1,078	--
		RAMP SC								
			544SC+70	-	547SC+00	--	--	228	--	--
		SUBTOTALS				--	--	2,142	1,810	22
		UNDISTRIBUTED					--	1,326	836	--
		TOTALS				2,339	1	11,412	8,600	65
		TOTALS						20,012		

TRAFFIC CONTROL ITEMS

CATEGORY	STAGE	LOCATION	STAGE DURATION	643.0300 TRAFFIC CONTROL DRUMS		643.0420 TRAFFIC CONTROL BARRICADES TYPE III		643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A		643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C		643.0800 TRAFFIC CONTROL ARROW BOARDS		643.0900 TRAFFIC CONTROL SIGNS		643.0910 TRAFFIC CONTROL COVERING SIGNS TYPE I			643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II			643.1050 TRAFFIC CONTROL SIGNS PCMS	
			DAYS	EACH**	DAY	EACH**	DAY	EACH**	DAY	EACH**	DAY	EACH**	DAY	EACH**	DAY	CYCLES	SIGNS	EACH	CYCLES	SIGNS	EACH	EACH**	DAY
1000	1	**STAGE 1**	17																				
		IH 94		--	--	--	--	--	--	--	--	--	--	--	--	1	4	4	--	--	--	--	--
		RAMP SA		--	--	--	--	--	--	--	--	--	--	5	85	--	--	--	--	--	--	1	17
		RAMP SC		31	524	4	68	8	136	--	--	--	--	6	102	--	--	--	1	9	9	1	17
		HWY 100		110	1,867	8	136	16	272	22	374	2	34	38	646	--	--	--	1	4	4	1	17
		BLUEMOUND ROAD		--	--	--	--	--	--	--	--	--	--	6	102	--	--	--	--	--	--	2	34
		THEO TRECKER WAY		--	--	--	--	--	--	--	--	--	--	3	51	--	--	--	--	--	--	--	--
		WALKER STREET		--	--	--	--	--	--	--	--	--	--	3	51	--	--	--	--	--	--	--	--
		SUBTOTALS			2,390		204		408		374		34		986			4			13		85
1000	2	**STAGE 2**	46																				
		IH 94		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		RAMP SA		--	--	--	--	--	--	--	--	--	--	5	230	--	--	--	--	--	--	1	46
		RAMP SC		31	1,417	4	184	8	368	--	--		--	6	276	--	--	--	--	--	--	1	46
		HWY 100		115	5,308	10	460	20	920	35	1,601	2	92	42	1,932	--	--	--	--	--	--	1	46
		BLUEMOUND ROAD		--	--	--	--	--	--	--	--	--	--	6	276	--	--	--	--	--	--	2	92
		THEO TRECKER WAY		--	--	--	--	--	--	--	--	--	--	3	138	--	--	--	--	--	--	--	--
		WALKER STREET		--	--	--	--	--	--	--	--	--	--	3	138	--	--	--	--	--	--	--	--
		SUBTOTALS			6,725		644		1,288		1,601		92		2,990			--			--		230
1000	2A	**STAGE 2A**	15																				
		IH 94		--	--	--	--	--	--	--	--	--	--	--	--	1	3	3	--	--	--	--	--
		RAMP SA		26	393	3	45	6	90	--	--	--	--	4	60	1	1	1	1	6	6	1	15
		RAMP SC		60	906	8	120	16	240	8	120	1	15	9	135	--	--	--	1	2	2	1	15
		RAMP SW		--	--	--	--	--	--	--	--	--	--	--	--	1	1	1	--	--	--	--	--
		RAMP NW		--	--	--	--	--	--	--	--	--	--	--	--	1	2	2	--	--	--	--	--
		RAMP NW/SW		--	--	--	--	--	--	--	--	--	--	--	--	1	1	1	--	--	--	--	--
		HWY 100		189	2,832	20	300	40	600	82	1,224	4	60	60	900	--	--	--	--	--	--	1	15
		BLUEMOUND ROAD		22	330	1	15	2	30	--	--	--	--	8	120	1	1	1	--	--	--	2	30
		THEO TRECKER WAY		--	--	--	--	--	--	--	--	--	--	3	45	--	--	--	--	--	--	--	--
		WALKER STREET		--	--	--	--	--	--	--	--	--	--	3	45	--	--	--	--	--	--	--	--
		SUBTOTALS			4,461		480		960		1,344		75		1,305			9			8		75

**FOR INFORMATION ONLY

TRAFFIC CONTROL ITEMS (Continued)

CATEGORY	STAGE	LOCATION	STAGE DURATION	643.0300 TRAFFIC CONTROL DRUMS		643.0420 TRAFFIC CONTROL BARRICADES TYPE III		643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A		643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C		643.0800 TRAFFIC CONTROL ARROW BOARDS		643.0900 TRAFFIC CONTROL SIGNS		643.0910 TRAFFIC CONTROL COVERING SIGNS TYPE I			643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II			643.1050 TRAFFIC CONTROL SIGNS PCMS	
			DAYS	EACH**	DAY	EACH**	DAY	EACH**	DAY	EACH**	DAY	EACH**	DAY	EACH**	DAY	CYCLES	SIGNS	EACH	CYCLES	SIGNS	EACH	EACH**	DAY
1000	3	**STAGE 3**	41																				
		IH 94		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		RAMP SA		--	--	--	--	--	--	--	--	--	--	5	205	--	--	--	--	--	--	1	41
		RAMP SC		31	1,263	4	164	8	328	--	--	--	--	4	164	--	--	--	--	--	--	1	41
		HWY 100		89	3,649	7	287	14	574	--	--	2	82	40	1,640	--	--	--	--	--	--	1	41
		BLUEMOUND ROAD		--	--	--	--	--	--	--	--	--	--	6	246	--	--	--	--	--	--	2	82
		THEO TRECKER WAY		--	--	--	--	--	--	--	--	--	--	3	123	--	--	--	--	--	--	--	--
		WALKER STREET		--	--	--	--	--	--	--	--	--	--	3	123	--	--	--	--	--	--	--	--
		SUBTOTALS			4,912		451		902		--		82		2,501			--			--		205
1000	4	**STAGE 4**	27																				
		IH 94		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		RAMP SA		--	--	--	--	--	--	--	--	--	--	3	81	--	--	--	--	--	--	1	27
		RAMP SC		60	1,631	8	216	16	432	8	216	1	27	9	243	--	--	--	1	2	2	1	27
		HWY 100		65	1,744	3	81	6	162	--	--	--	--	17	459	--	--	--	--	--	--	1	27
		BLUEMOUND ROAD		--	--	--	--	--	--	--	--	--	--	6	162	--	--	--	--	--	--	2	54
		THEO TRECKER WAY		--	--	--	--	--	--	--	--	--	--	3	81	--	--	--	--	--	--	--	--
		WALKER STREET		--	--	--	--	--	--	--	--	--	--	3	81	--	--	--	--	--	--	--	--
		SUBTOTALS			3,375		297		594		216		27		1,107			--			2		135
		UNDISTRIBUTED			2,186		208		415		353		31		889			1			2		--
		TOTALS			24,050		2,284		4,567		3,888		341		9,778			14			25		730

**FOR INFORMATION ONLY

3

PAVEMENT MARKING ITEMS

CATEGORY	LOCATION	STATION	TO	STATION	646.1020 MARKING LINE EPOXY 4-INCH WHITE LF	646.1020 MARKING LINE EPOXY 4-INCH YELLOW LF	646.1545 MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 4-INCH 12.5 FT LINE, 37.5 FT SKIP WHITE LF	646.3545 MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 8-INCH 2 FT LINE, 6 FT SKIP WHITE LF	646.3545 MARKING LINE GROOVED WET REFLECTIVE CONTRAST EPOXY 8-INCH 2 FT LINE, 6 FT SKIP YELLOW LF	646.6120 MARKING STOP LINE EPOXY 18-INCH WHITE LF	646.5020 MARKING ARROW EPOXY WHITE EACH	646.7420 MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH WHITE LF
1000	**RAMPS**											
	RAMP SA											
		550SA+43	-	548SA+50	--	--	52	--	--	--	--	--
	RAMP SC											
		555SC+64	-	556SC+03	28	--	--	23	3	45	1	100
	LOCAL ROADS											
	STH 100											
		559SN+50	-	567SN+26	607	780	510	780	--	--	--	85
		588SS+90	-	567SS+25	592	764	587	574	--	41	--	74
TOTAL					2,771		1,097	1,379		86	1	259

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Roads\cds\030201_mq_pav.ppt PLOT DATE : 12/18/2017 2:25:46 PM PLOT BY : NEAL R. STYKA PLOT NAME : 03021_mq_pav PLOT SCALE : 1:1

SIGN NO.	SIGN CODE	SIGN MESSAGE	TYPE II SIGN SIZE W [IN.]	x	H [IN.]	637.2210 SIGNS TYPE II REFLC H [SF]	637.2230 SIGNS TYPE II REFLC F [SF]	637.2215 SIGNS TYPE II REFLC H FOLDING [SF]	638.2602 REM SIGNS TYPE II [EA]	638.3000 REM SMALL SIGN SUP [EA]	638.2102 MOVE SIGNS TYPE II [EA]	634.0618 WOOD POSTS 4"X 6"x18' [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS
1	R4-7(2M)		24	X	30	5.000			1	1		1		
2	R2-1(2M)		30	X	36	7.500			1					LIGHT POLE
3	R7-1D(2M)		24	X	30	5.000			1					LIGHT POLE
4	W3-3(2M)		36	X	36		9.000		1	1		1		
5	R7-1D(2M)		24	X	30	5.000			1					LIGHT POLE
6	J3-1									1	1	1		
7	NONE	94 EAST WEST, SECOND SIGNAL, STAY LEFT								2	1	2		
8	NONE	94 EAST WEST, SECOND SIGNAL, STAY LEFT								2	1	2		
9	R2-1(2M)		30	X	36	7.500			1	1		1		
10	R7-1D(2M)		24	X	30	5.000			1	1		1		
11	R5-1A(2M)		42	X	30	8.750			1					LIGHT POLE
12	NONE	CITY SIGN - CRUISING								1	1	1		
13	J3-1									1	1	1		
14	J3-1									1	1	1		
15	R1-1F(3)		36	X	36			7.460	1					SIGNAL POLE
16	R1-1F(3)		36	X	36			7.460	1					SIGNAL POLE
17	R3-18(2M)		36	X	36	9.000			1					SIGNAL POLE
18	R5-1(2M)		36	X	36	9.000			1					SIGNAL POLE
19	M1-94S	100 MAYFAIR RD									1			SIGNAL ARM
20	R3-4(2M)		36	X	36	9.000			1					SIGNAL POLE
21	R5-1(2M)		36	X	36	9.000			1	1		1		
22	R3-18(2M)		36	X	36	9.000			1					SIGNAL POLE
23	R4-7(2M)		24	X	30	5.000			1					SIGNAL POLE
24	R1-1F(3)		36	X	36			7.460	1					SIGNAL POLE
25	R5-1(2M)		36	X	36	9.000			1					SIGNAL POLE
26	R1-1F(3)		36	X	36			7.460	1					SIGNAL POLE
27	R5-1(2M)		36	X	36	9.000			1					SIGNAL POLE
28	W12-1L(2S)		24	X	24		4.000		1	1		1		2 FOOT MOUNTING HEIGHT
29	R1-1F(3)		36	X	36			7.460	1	1		1		
30	R1-1F(3)		36	X	36			7.460	1					SIGNAL POLE
31	R2-1(2M)		30	X	36	7.500			1					LIGHT POLE
32	R5-1(2M)		36	X	36	9.000			1					PED POLE
33	R3-20L(2M)		24	X	36	6.000			1					LIGHT POLE
TOTALS						134.250	13.000	44.760	26	15	7	15		

LIGHTING AND MISCELLANEOUS

CATEGORY	STAGE	DESCRIPTION	LOCATION	204.0195* REMOVING CONCRETE BASES EACH	653.0135 PULL BOXES STEEL 24x36-INCH EACH	653.0140 PULL BOXES STEEL 24x42-INCH EACH	654.0105 CONCRETE BASES TYPE 5 EACH	655.0610* ELECTRICAL WIRE LIGHTING 12 AWG LF	657.0255 TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE EACH	657.0322 POLES TYPE 5-ALUMINUM EACH	657.0610 LUMINAIRE ARMS SINGLE MEMBER 4 1/2-INCH CLAMP 6-FT EACH	659.1130 LUMINAIRE UTILITY LED D EACH	SPV.0060.1019 RELOCATING LIGHT POLES ARMS AND LUMINAIRES EACH	REMARKS
1100	1	561SN+70, 55.0' RT	561SN+70, 50.0' LT	--	--	--	--	--	--	--	--	--	--	
1100	2	ZMW6	STA.566SS+09.4,SM	--	--	--	--	--	--	--	--	--	1	
		XMW7	STA.564SS+40.0,41.7'LT	1	--	--	--	--	--	--	--	--	1	
		WA1	STA.563SS+1.61,40.15'LT	1	--	--	--	--	--	--	--	--	--	
		YMW3	STA.563SN+30.5,44'RT	1	--	--	--	--	--	--	--	--	1	
		WA2	STA 561SN+97.3,42'RT	1	--	--	--	--	--	--	--	--	--	
		XMW3	STA.565SS+41.4,SM	--	--	--	--	--	--	--	--	--	1	
1100	2		SUBTOTAL	4	0	0	0	0	0	0	0	0	4	
1100	4	PB-MW-08A	STA.567SS+59.3,47.4'LT	--	1	--	--	--	--	--	--	--	--	
		ZMW6	STA.566SS+03.29,SM	--	--	--	--	--	--	--	--	--	--	NOTE 1
		XMW7	STA.564SS+40.0,@@.@'LT	--	--	--	1	--	--	--	--	--	--	NOTE 1
		ZMW10	STA.562SS+95.64,42.3'LT				1	150	1	1	1	1	--	NOTE 2
		YMW3	STA.563SN+30.5,44.0'RT	--	--	--	1	--	--	--	--	--	--	NOTE 1
		PB-MW-13A	STA.566SN+09.4,44.6'RT	--	1	--	--	--	--	--	--	--	--	
		XMW11	STA 561SN+92.35,42.2"RT	--	--	--	1	150	1	1	1	1	--	NOTE 2
		XMW3	STA.565SN+41.4,SM	--	--	--		--	--	--	--	--	--	NOTE 1
		PB-MW-07A	STA.576SS+07.0,63.1'LT	--	--	1	--	--	--	--	--	--	--	
1100	4		SUBTOTAL	0	2	1	4	300	2	2	2	2	0	
1100			TOTALS	4	2	1	4	300	2	2	2	2	4	

* = ADDITIONAL QUANTITIES SHOWN ELSEWHERE

NOTE 1: SEE REMOVAL DRAWINGS FOR RELOCATING LIGHT POLES, ARMS AND LUMINIARES

NOTE 2: PREVOUSLY WEST ALLIS POLE IN THIS AREA. NEW DOT POLE

2

LIGHTING - WIRE AND CONDUIT

CATEGORY	STAGE	FROM	TO	652.0225* CONDUIT RIGID NONMETALLIC SCHEDULE 40 2 -INCH LF	655.0625 ELECTRICAL WIRE LIGHTING 6 AWG LF	SPV.0090.1025 CONDUIT SPECIAL HDPE 2-INCH LF	REMARKS
1100	1	561SN+70, 55.0' RT	561SN+70, 50.0' LT			105	
			SUBTOTAL	0	0	105	
1100	4	PB-MW-06	PB-MW-07A	50	560	--	NOTE 1
		PB-MW-07A	PB-MW-08A	55	310	--	
		PB-MW-08A	ZMW6	10	85	--	
		PB-MW-08A	ZMW6	SM	260	--	
		ZMW6	XMW7	SM	528	--	
		ZMW6	XMW7	60	268	--	
		XMW7	ZMW10	145	456	--	
		PB-MW-12	PB-MW-13A	70	710	--	NOTE 1
		PB-MW-13A	XMW3	20	135	--	
		PB-MW-13A	XMW3	SM	335	--	
		XMW3	YMW3	SM	488	--	
		XMW3	YMW3	105	448	--	
		YMW3	XMW11	145	456	--	
1100	4		SUBTOTAL	660	5039	0	
1100			TOTAL	660	5039	105	

* = ADDITIONAL QUANTITIES SHOWN ELSEWHERE

NOTES

1 INTERCEPT EXISTING CONDUIT AT EDGE OF CONSTRUCTION AND EXTEND CONDUIT TO NEW PULLBOX.
NEW WIRING FROM EXISTING PULLBOX TO NEW PULLBOX.

3

3

SUMMARY OF SALVAGED ITEMS TO BE STORED AND RE-INSTALLED - FOR INFORMATION ONLY

QUANTITY	UNIT	DESCRIPTION
1	EACH	PEDESTAL BASES
2	EACH	TRANSFORMER BASES BREAKAWAY 11 1/2 INCH BOLT CIRCLE
1	EACH	POLES TYPE 2
1	EACH	POLES TYPE 3
1	EACH	TRAFFIC SIGNAL STANDARDS ALUMINUM 10-FT
2	EACH	LUMINAIRE ARMS SINGLE MEMBER 4-INCH CLAMP 6-FT
3	EACH	PEDESTRIAN PUSH BUTTONS
4	EACH	LUMINAIRES UTILITY LED C
1	EACH	POLES TYPE 13
1	EACH	MONOTUBE ARMS 40-FT
2	EACH	LUMINAIRE ARMS STEEL 15-FT
6	EACH	TRAFFIC SIGNAL HEAD 3-12 INCH VERTICAL
2	EACH	PEDESTRIAN SIGNAL HEAD 16-INCH

SUMMARY OF SALVAGED ITEMS TO BE PICKED-UP BY THE DEPARTMENT - FOR INFORMATION ONLY

QUANTITY	UNIT	DESCRIPTION
1	EACH	TRANSFORMER BASES BREAKAWAY 11 1/2 INCH BOLT CIRCLE
1	EACH	POLES TYPE 2
1	EACH	EVP DETECTOR HEAD WITH CONFIRMATION LIGHT (HEAD A)
3	EACH	RADAR DETECTOR UNIT (RM2, RM3, RA3)
1	EACH	ADAPTIVE TRAFFIC SIGNAL CAMERA (V1)
1	LS	TRAFFIC SIGNAL MOUNTING HARDWARE

SUMMARY OF STATE FURNISHED MATERIALS - FOR INFORMATION ONLY

QUANTITY	UNIT	DESCRIPTION
1	EACH	EVP DETECTOR HEAD WITH CONFIRMATION LIGHT (HEAD A)
2	EACH	RADAR DETECTOR UNIT (RM3, RA3)
1	EACH	ADAPTIVE TRAFFIC SIGNAL CAMERA (V1)
1	EACH	ETHERNET REPEATER (SB6)



IH 94 EB OFF RAMP & STH 100

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

REMOVING CONCRETE BASES

EXISTING BASE NO.	204.0195* REMOVING CONCRETE BASES EACH	204.9060.S.3001 REMOVING CONCRETE BASE TYPE 13 EACH
SB5	1	--
SB6	1	--
SB7	--	1
SB8	1	--
SB9	1	--
TOTALS	4	1

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

REMOVALS

LOCATION	204.9105.S.3001 REMOVING TRAFFIC SIGNALS LS
IH 94 EB OFF RAMP & STH 100	1
TOTAL	1

CONDUIT

FROM	TO	652.0225* CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH LF
PB4	PB5	--	146
PB5	PB9	--	11
PB5	PB6	--	152
PB6	PB7	--	62
PB7	EXT1	--	42
PB5	SB7	20	--
PB5	SB6	--	12
PB7	SB8	18	--
PB7	SB9	4	--
PB9	SB5	19	--
	TOTALS	61	425

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

3

3

LOOP DETECTOR SCHEDULE

LOOP NUMBER	HOMERUN PB	STATION	LOCATION	SIZE (FT)X(FT)	NO. OF TURNS	PAVEMENT TYPE	SDD INSTALLATION REFERENCE	652.0800 CONDUIT LOOP DETECTOR LF	655.0700 LOOP DETECTOR LEAD IN CABLE LF	655.0800 LOOP DETECTOR WIRE LF
62	PB9	566SN+59.7	27.5' RT	6X20	3	CONCRETE	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)	114	199	352
63	PB9	566SN+87.7	27.5' RT	6X20	3	CONCRETE	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)	114	199	352
64	PB9	566SN+59.7	16.5' RT	6X20	3	CONCRETE	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)	92	199	286
65	PB9	566SN+87.7	16.5' RT	6X20	3	CONCRETE	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)	92	199	286
66	PB9	566SN+59.7	5.5' RT	6X20	3	CONCRETE	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)	70	199	220
67	PB9	566SN+87.7	5.5' RT	6X20	3	CONCRETE	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)	70	199	220
							TOTALS	552	1194	1716

3

PULL BOXES STEEL

PULL BOX NO.	STATION	LOCATION	653.0135* PULL BOXES STEEL 24X36-INCH EACH	653.0140* PULL BOXES STEEL 24X42-INCH EACH
PB5	566SN+74.8	6.0' LT	--	1
PB6	655SS+75.0	59.1' LT	--	1
PB7	555SC+82.4	17.3' RT	--	1
PB9	566SN+63.7	6.0' LT	1	--
		TOTALS	1	3

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

*** FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD

REMOVING PULL BOXES

EXISTING PULL BOX NO.	653.0905 REMOVING PULL BOXES EACH
PB5	1
PB6	1
PB7	1
TOTAL	3

3

CONCRETE BASES

BASE NO.	STATION	LOCATION	654.0101 CONCRETE BASES TYPE 1 EACH	654.0102 CONCRETE BASES TYPE 2 EACH	654.0113 CONCRETE BASES TYPE 13 EACH	SPV.0060.3001 CONCRETE BASES TYPE 1 SPREAD FOOTING EACH
SB5	566SS+45.5	10.0' RT	--	1	--	--
SB6	566SS+65.5	10.0' RT	--	--	1	--
SB7	566SS+94.2	11.8' RT	--	--	--	1
SB8	555SC+97.4	24.8' RT	1	--	--	--
SB9	555SC+82.4	17.3' RT	--	1	--	--
		TOTALS	1	2	1	1

*** FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD

IH 94 EB OFF RAMP & STH 100

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

3

UNDERGROUND TRAFFIC SIGNAL CABLE NO. 14

FROM	TO	655.0230* CABLE TRAFFIC SIGNAL 5-14 AWG LF	655.0240 CABLE TRAFFIC SIGNAL 7-14 AWG LF	655.0260 CABLE TRAFFIC SIGNAL 12-14 AWG LF
CB1	SB5	--	--	292
CB1	SB6	--	--	258
CB1	SB7	266	--	--
CB1	SB8	--	125	--
CB1	SB9	--	--	111
	TOTALS	266	125	661

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

ABOVE GROUND TRAFFIC SIGNAL CABLE NO. 14

FROM	TO	655.0230* CABLE TRAFFIC SIGNAL 5-14 AWG LF
SB5	HEAD 14	26
SB6	HEAD 6	44
SB6	HEAD 7	55
SB6	HEAD 8	66
SB6	HEAD 13	26
SB8	HEAD 16	15
SB9	HEAD 9	19
SB9	HEAD 17	15
	TOTAL	266

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

LIGHTING WIRE

FROM	TO	655.0320 CABLE TYPE UF 2-10 AWG GROUNDED LF	655.0610* ELECTRICAL WIRE LIGHTING 12 AWG LF
CB1	SB6	258	--
SB6	LUMIN (2)	--	288
CB1	SB9	111	--
SB9	LUMIN (2)	--	234
	TOTALS	369	522

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

TRAFFIC SIGNAL EVP DETECTOR CABLE

FROM	TO	655.0900 TRAFFIC SIGNAL EVP DETECTOR CABLE LF	SPV.0090.3001 CABLE TYPE UF 2-14 AWG LF
CB1	SB6 (HEAD A)	328	328
	TOTALS	328	328

ELECTRICAL WIRE TRAFFIC SIGNALS

FROM	TO	655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG LF
SB4	SB5	179
SB5	SB6	82
SB6	SB7	56
SB7	SB8	201
SB8	SB9	46
SB9	SB10	111
PB5	SB6	32
PB6	SB9	71
PB7	SB9	24
PB9	SB5	39
	TOTAL	841

CAST BASES, POLES, MONOTUBE ARMS, PUSH BUTTONS, AND LUMINAIRES

SIGNAL BASE NO.	657.0100 PEDESTAL BASES EACH	657.0405 TRAFFIC SIGNAL STANDARDS ALUMINUM 3.5-FT EACH	657.1360 INSTALL POLES TYPE 13 EACH	657.1540 INSTALL MONOTUBE ARMS 40-FT EACH	657.1815 INSTALL LUMINAIRE ARMS STEEL 15-FT EACH
SB5	--	--	--	--	--
SB6	--	--	1	1	2
SB7	1	1	--	--	--
SB8	--	--	--	--	--
SB9	--	--	--	--	--
TOTALS	1	1	1	1	2

CAST BASES, POLES, MONOTUBE ARMS, PUSH BUTTONS, AND LUMINAIRES

SIGNAL BASE NO.	SPV.0060.3002 INSTALL SALVAGED PEDESTAL BASES EACH	SPV.0060.3003 INSTALL SALVAGED TRANSFORMER BASES BREAKAWAY 11 1/2 INCH BOLT CIRCLE EACH	SPV.0060.3004 INSTALL SALVAGED POLES TYPE 2 EACH	SPV.0060.3005 INSTALL SALVAGED POLES TYPE 3 EACH	SPV.0060.3006 INSTALL SALVAGED TRAFFIC SIGNAL STANDARDS ALUMINUM 10-FT EACH	SPV.0060.3007 INSTALL SALVAGED LUMINAIRE ARMS SINGLE MEMBER 4-INCH CLAMP 6-FT EACH	SPV.0060.3008 INSTALL SALVAGED PEDESTRIAN PUSH BUTTONS EACH	SPV.0060.3009 INSTALL SALVAGED LUMINAIRES UTILITY LED C EACH
SB5	--	1	1	--	--	--	--	--
SB6	--	--	--	--	--	--	--	2
SB7	--	--	--	--	--	--	1	--
SB8	1	--	--	--	1	--	1	--
SB9	--	1	--	1	--	2	1	2
TOTALS	1	2	1	1	1	2	3	4

FILE NAME : \\milw00\ingrproj\71232\t1\cds\030241_mq_sp.ppt PLOT DATE : 12/1/2017 12:10:35 AM PLOT BY : HNTB PLOT NAME : 030241_mq_sp6 PLOT SCALE : 1:1

SIGNAL MOUNTING HARDWARE
IH 94 EB OFF RAMP & STH 100

LOCATION	658.5069.3001 SIGNAL MOUNTING HARDWARE LS
IH 94 EB OFF RAMP & STH 100	1
TOTAL	1

IH 94 EB OFF RAMP & STH 100

ALL ITEMS ARE CATEGORY 1500 UNLESS OTHERWISE NOTED

3

TEMPORARY TRAFFIC SIGNALS
IH 94 EB OFF RAMP & STH 100

LOCATION	661.0200.3001 TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS LS	661.0300 GENERATORS DAY	SPV.0105.3005 TEMPORARY EVP SYSTEM LS
IH 94 EB OFF RAMP & STH 100	1	4	1
TOTAL	1	4	1

PROJECT NO: 2030-14-70	HWY:IH 94	COUNTY: MILWAUKEE	MISCELLANEOUS QUANTITIES	SHEET:	E

3

TRAFFIC SIGNAL AND PEDESTRIAN FACES AND BACKPLATES

SIGNAL HEAD NO.	SIGNAL BASE NO.	SPV.0060.3010 INSTALL SALVAGED TRAFFIC SIGNAL HEAD 3-12 INCH VERTICAL EACH	SPV.0060.3011 INSTALL SALVAGED PEDESTRIAN SIGNAL HEAD 16-INCH EACH
6	SB6	1	--
7	SB6	1	--
8	SB6	1	--
9	SB9	1	--
13	SB6	1	--
14	SB5	1	--
16	SB8	--	1
17	SB9	--	1
	TOTALS	6	2

INSTALL STATE SUPPLIED CAT-5E CABLE

FROM	TO	SPV.0090.3003 INSTALL CAT-5E CABLE LF
CB1	SB6 (R1)	224
SB6 (R1)	SB6 (V1)	91
	TOTAL	315

INSTALL STATE SUPPLIED VIDEO DETECTION CABLE

FROM	TO	SPV.0090.3002 INSTALL CAMERA POWER CABLE LF
CB1	SB6 (V1)	303
	TOTAL	303

TRANSPORT AND INSTALL STATE FURNISHED EMERGENCY VEHICLE PREEMPTION (EVP) DETECTOR HEADS
IH 94 EB OFF RAMP & STH 100

LOCATION	SPV.0105.3001 TRANSPORT AND INSTALL STATE FURNISHED EMERGENCY VEHICLE PREEMPTION (EVP) DETECTOR HEADS LS
IH 94 EB OFF RAMP & STH 100	1
TOTAL	1

3

TRANSPORT AND INSTALL STATE FURNISHED RADAR DETECTION SYSTEM
IH 94 EB OFF RAMP & STH 100

LOCATION	SPV.0105.3002 TRANSPORT AND INSTALL STATE FURNISHED RADAR DETECTION SYSTEM LS
IH 94 EB OFF RAMP & STH 100	1
TOTAL	1

TRANSPORT AND INSTALL STATE FURNISHED ADAPTIVE TRAFFIC SIGNAL EQUIPMENT
IH 94 EB OFF RAMP & STH 100

LOCATION	SPV.0105.3003 TRANSPORT AND INSTALL STATE FURNISHED ADAPTIVE TRAFFIC SIGNAL EQUIPMENT LS
IH 94 EB OFF RAMP & STH 100	1
TOTAL	1

3

COVERING TRAFFIC SIGNAL EQUIPMENT
IH 94 EB OFF RAMP & STH 100

LOCATION	SPV.0105.3004 COVERING TRAFFIC SIGNAL EQUIPMENT LS
IH 94 EB OFF RAMP & STH 100	1
TOTAL	1

QUAD GRAPHICS INC

GIUFFRE V LLC

GIUFFRE V LLC

WETLAND BOUNDARY

W. SERVICE ROAD

BEGIN CONSTRUCTION
STA 555SC+65.55

R-40-483

RAMP SC

555SC

R/L SC

END PROJECT
STA 567SN+24.98

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

SLOPE INTERCEPT (TYP)

BEAM GUARD (TYP)

BEGIN PROJECT
STA 562SN+00.00

CAUTION

R/L HA

B-40-107

R/W

STH 100 SB

R/L SS

560SS 561SS 562SS 563SS 564SS 565SS 566SS 567SS 568SS 569SS 570SS 571SS 572SS

560SN 561SN 562SN 563SN 564SN 565SN 566SN 567SN 568SN 569SN 570SN 571SN 572SN

STH 100 NB

ADJUSTING SANITARY MANHOLES

R/L SN

SLOPE INTERCEPT (TYP)

R/W

CAUTION

R/W

MMSD SANITARY MANHOLE RECONSTRUCT
EXCAVATION AND HAULING OF SOLID WASTE SOIL.
SEE CROSS SECTIONS AND SPECIAL PROVISIONS
FOR ADDITIONAL DETAILS.

B-40-108

HANK AARON STATE TRAIL

149HA 147HA 144HA

CAUTION

R-40-471

R-40-630

WISCONSIN ELECTRIC
POWER COMPANY

CAUTION

IH 94 EB

IH 94 WB

R/W

NOTE:
FOR BENCHMARK INFORMATION SEE THE ALIGNMENT LAYOUT SURVEY CONTROL SHEETS.

5

5

790 785 780 775 770 765 760 755

VPI STA 554+89.00
VPI EL 778.44

PROPOSED PROFILE AT R/L

VPI STA 567+15.00
VPI EL 775.03

VPI STA 568+00.00
VPI EL 774.34

EXISTING PROFILE AT R/L

-1.51%

-0.81%

565+65.83
776.58

VPT STA 566+59.00
VPT EL 775.87

BEGIN PROJECT
STA 562SN+00.00

VPI STA 562+00.00
VPI EL 766.87

4.00%

VPI STA 561+49.30
VPI EL 765.00

3.69%

VPC STA 563+19.00
VPC EL 771.64

END PROJECT
STA 567SN+24.98

VCL 340.00
K 61.67

EXISTING ELEVATION AT R/L

PROPOSED ELEVATION AT R/L

| | | |

QUAD GRAPHICS INC

WETLAND BOUNDARY

BEGIN CONSTRUCTION
STA 555SC+65.55

BEGIN CONSTRUCTION
STA 562SS+00.00

BEAM GUARD (TYP)

SLOPE INTERCEPT (TYP)

BEGIN PROJECT
STA 562SN+00.00

CAUTION

R/L HA

B-40-107

R/W

STH 100 SB

560SS 561SS 562SS R/L SS 563SS 564SS 565SS 566SS 567SS 568SS 569SS 570SS 571SS 572SS

560SN 561SN 562SN 563SN 564SN 565SN 566SN 567SN 568SN 569SN 570SN 571SN 572SN

STH 100 NB

ADJUSTING SANITARY MANHOLES

R/L SN

SLOPE INTERCEPT (TYP)

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

14HA

RAMP SC

555SC

R-40-483

R/L SC

END CONSTRUCTION
STA 567SS+24.98

END PROJECT
STA 567SN+24.98

556SC

N

R/W

GIUFFRE V LLC

CAUTION

MMSD SANITARY MANHOLE RECONSTRUCT
EXCAVATION AND HAULING OF SOLID WASTE SOIL.
SEE CROSS SECTIONS AND SPECIAL PROVISIONS
FOR ADDITIONAL DETAILS.

B-40-108

HANK AARON STATE TRAIL

R-40-630

WISCONSIN ELECTRIC
POWER COMPANY

CAUTION

R-40-471

IH 94 EB

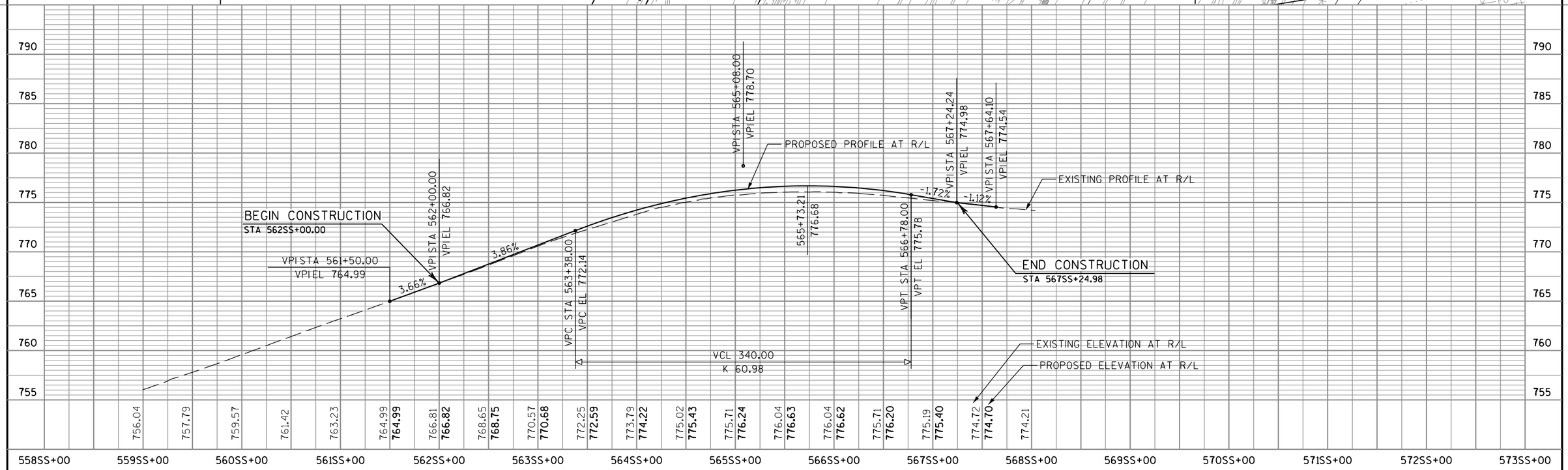
IH 94 WB

GIUFFRE V LLC

NOTE:
FOR BENCHMARK INFORMATION SEE THE ALIGNMENT LAYOUT SURVEY CONTROL SHEETS.

5

5



PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	PLAN & PROFILE: STH 100 SB	SHEET 118 E

Standard Detail Drawing List

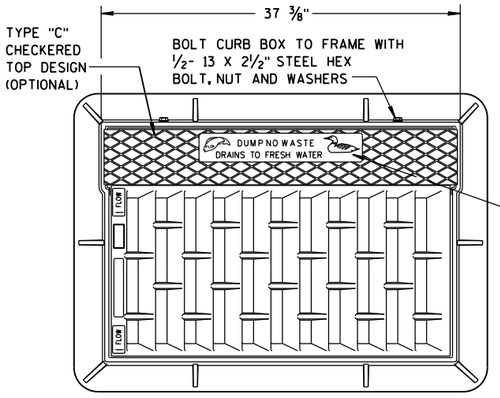
08A05-19A	INLET COVERS TYPE A, H, A-S, H-S & Z
08A05-19D	INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M
08B09-02	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER
08C06-02	INLETS 3-FT AND 4-FT DIAMETER
08D05-19A	CURB RAMPS TYPES 1 AND 1-A
08D05-19B	CURB RAMPS TYPES 2 AND 3
08D05-19C	CURB RAMPS TYPES 4A AND 4A1
08D05-19D	CURB RAMPS TYPE 4B AND 4B1
08D05-19E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08D05-19F	CURB RAMPS RADIAL DETECTABLE WARNING FIELD APPLICATIONS
08D05-19G	CURB RAMPS RECTANGULAR AND RADIAL DETECTABLE WARNING PLATES
08D16-10	CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E14-01	TRACKING PAD
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F06-04	REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN
09B02-10	CONDUIT
09B04-11	PULL BOX
09C02-07	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C03-04	TRANSFORMER/PEDESTAL BASES
09C12-09A	CONCRETE BASE TYPE 13
09C12-09B	CONCRETE BASE TYPE 13
09C13-02	CONCRETE BASE TYPE 10 & TYPE 13 EXTENSION
09E01-14A	POLE MOUNTINGS FOR TRAFFIC SIGNALS TYPE 2
09E01-14B	POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 3 (HEAVY DUTY)
09E01-14D	POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 5 (30 FEET)
09E01-14G	HARDWARE DETAILS FOR POLE MOUNTINGS
09E03-05	NON-FREEWAY LIGHTING UNIT POLE WIRING
09E07-05	TRAFFIC SIGNAL STANDARD PEDESTRIAN AND FLASHER TYPICAL MOUNTING DETAILS
09E08-08D	TYPE 13 POLE 35'-55' MONOTBE ARM
09E08-08E	GENERAL NOTES AND HARDWARE DETAILS FOR TYPE 9, 10, 12 & 13 POLES WITH MONOTUBE ARMS
09E12-01E	GENERAL NOTES AND HARDWARE DETAILS FOR OVER HEIGHT TYPE 9, 10, 12 & 13 POLES WITH MONOTUBE ARMS
09F15-04A	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)
09F15-04B	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)
09G01-04A	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-04B	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-04C	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-04D	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-04E	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-04F	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-04G	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
10A01-03	ELECTRICAL HANDHOLE WIRING
10A02-02	IDENTIFICATION PLAQUES LIGHT POLES
10A05-02	ELECTRICAL DETAILS GROUND MOUNT LIGHT POLES ISOLATED NEUTRAL SYSTEMS
10A08-02	ELECTRICAL DETAILS STRUCTURE MOUNT LIGHT POLES ISOLATED NEUTRAL SYSTEMS
11B02-02	CONCRETE MEDIAN NOSE
13B02-08A	CONCRETE PAVEMENT APPROACH SLAB
13B02-08B	STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB
13C01-18	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C13-08	URBAN DOWELED CONCRETE PAVEMENT
13C16-02A	DETAIL FOR RIGHT TURN LANE/TEE INTERSECTION BYPASS LANE ON A CONRETE ROADWAY
13C18-05A	CONCRETE PAVEMENT JOINTING
13C18-05B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-05C	CONCRETE PAVEMENT JOINT TYPES
13C18-05D	CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES
14B07-15A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15I	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B08-02A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

6

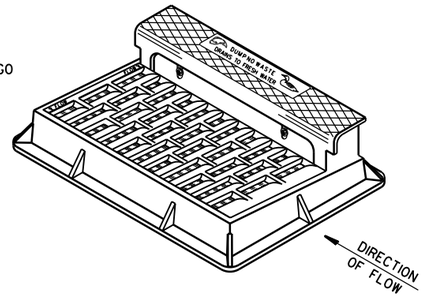
Standard Detail Drawing List

14B08-02B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02C	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02D	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02E	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B15-10A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-10B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-10C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B16-04A	ANCHORAGE FOR STEEL PLATE BEAM GUARD TYPE 2
14B16-04B	ANCHORAGE FOR STEEL PLATE BEAM GUARD TYPE 2
14B20-11A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-11C	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO VERTICAL FACED PARAPETS
14B20-11G	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL
14B20-11H	STEEL THRIE BEAM STRUCTURE APPROACH, SINGLE SLOPE ATTACHMENT
15C07-14C	PAVEMENT MARKING ARROWS
15C08-18A	LONGITUDINAL MARKING (MAINLINE)
15C27-02A	DOUBLE ARROW WARNING SIGN PLACEMENT
15C33-02	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D20-04	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D21-04	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D22-03	TRAFFIC CONTROL, TWO LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D23-04	TRAFFIC CONTROL, INTERSECTION WITHIN TWO LANE CLOSURE
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS

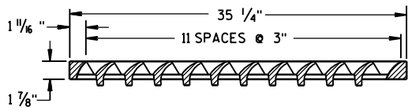
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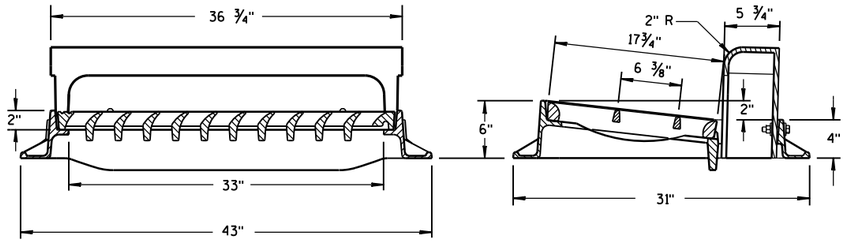


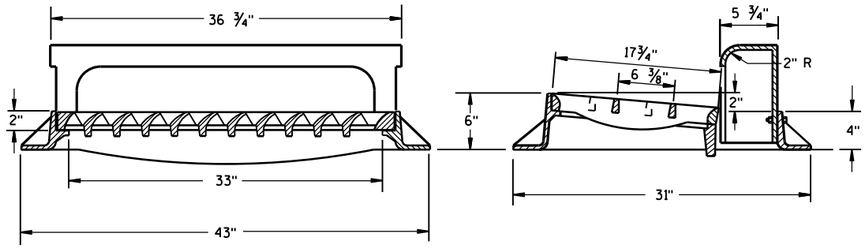
NOTE:
GRATE IS REVERSIBLE.



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

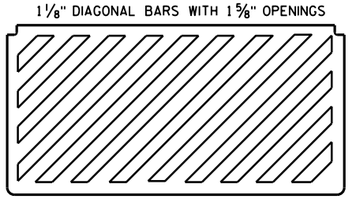






TYPE "H"

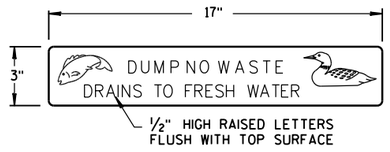
NOTE: EITHER CASTING IS ACCEPTABLE



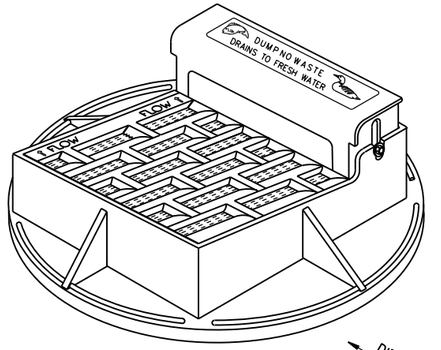
SPECIAL GRATE FOR TYPE "H" COVER

(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"

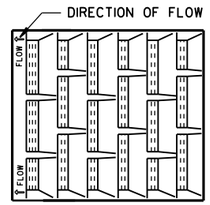
NOTE:
GRATE IS REVERSIBLE.

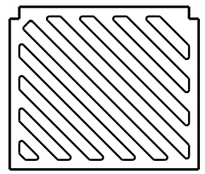
GENERAL NOTES

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.

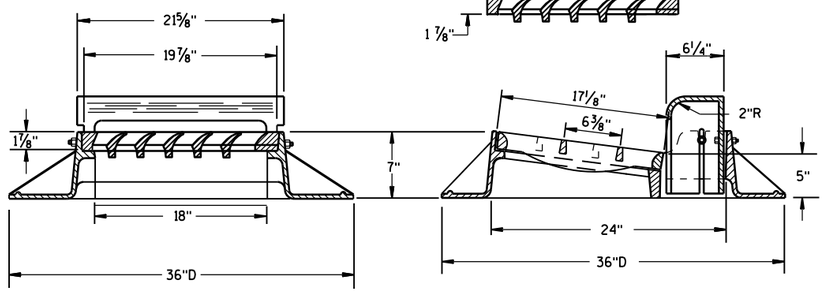




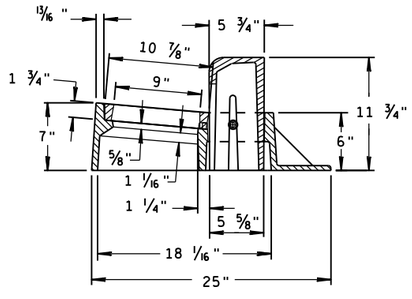
SPECIAL GRATE FOR TYPE "A" COVER

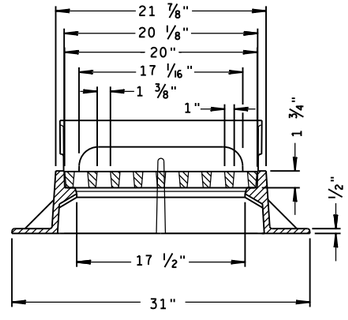
(MEASURES 19 3/4" X 17" X 1 7/8")

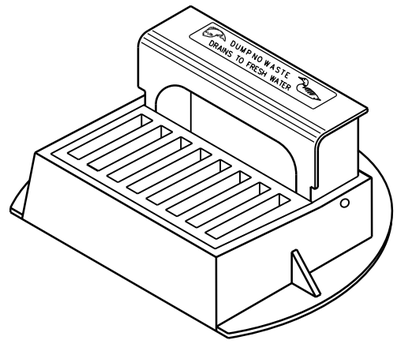
(NOTED AS TYPE A-S ON DRAINAGE TABLE)



TYPE "A"







TYPE "Z"

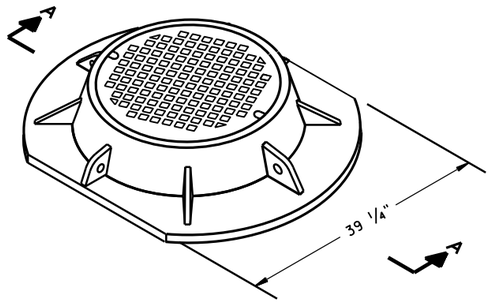
INLET COVERS
TYPE A, H, A-S, H-S & Z

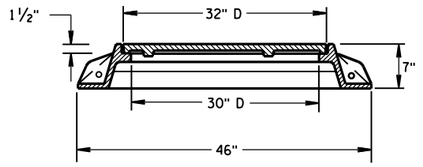
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

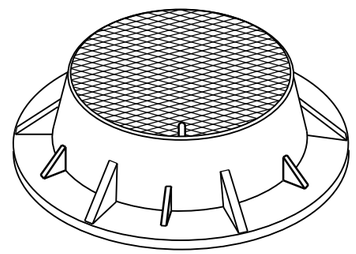
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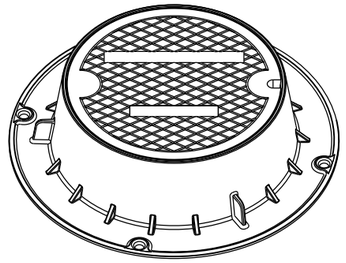
S.D.D. 8 A 5-19a

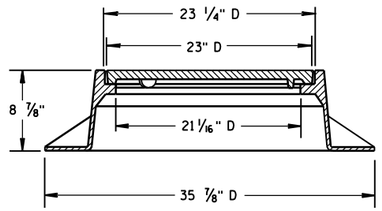


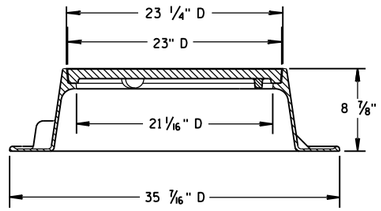


SECTION A-A
TYPE "K"









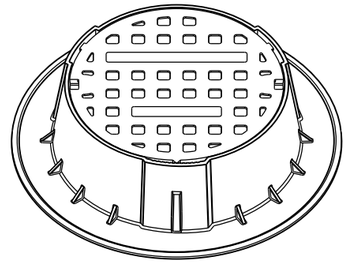
TYPE "J"
NOTE: EITHER CASTING IS ACCEPTABLE

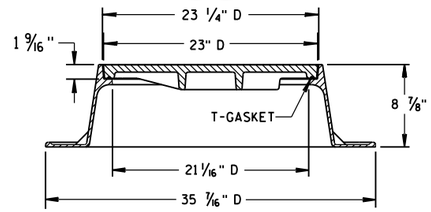
GENERAL NOTES

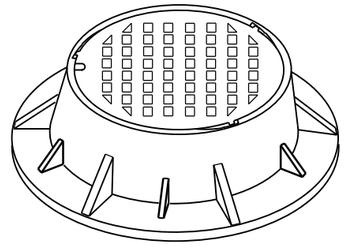
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

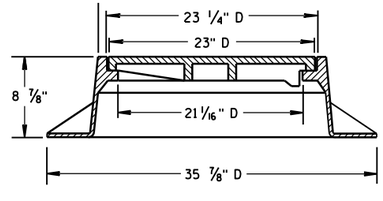
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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

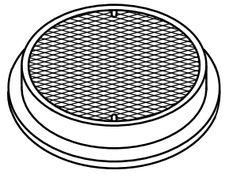


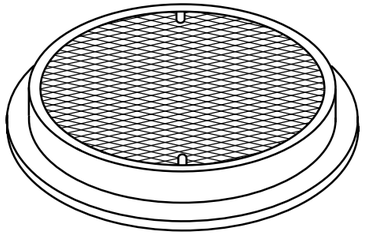


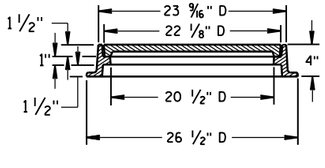




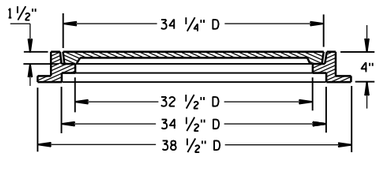
TYPE "J" SPECIAL
TYPE "B" NON-ROCKING SELF-SEAL LID
(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)
NOTE: EITHER CASTING IS ACCEPTABLE



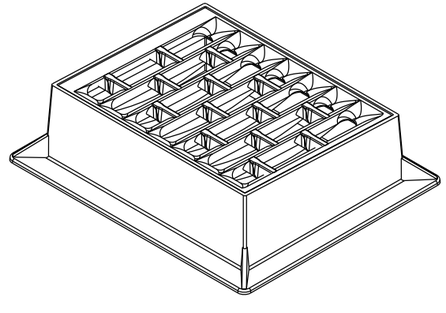


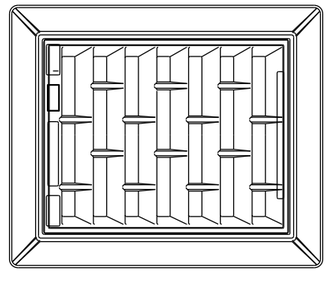


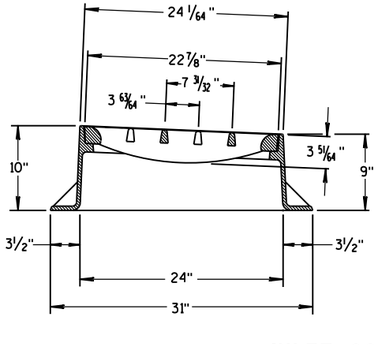
TYPE "L"

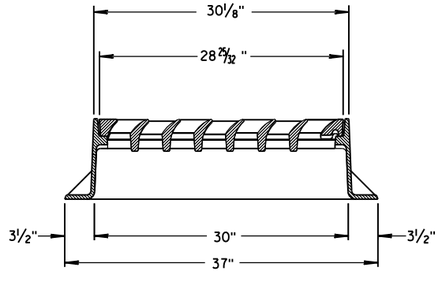


TYPE "M"









INLET COVER TYPE "BW"

INLET COVER TYPE BW
MANHOLE COVERS, TYPE K, J, J-S, L & M

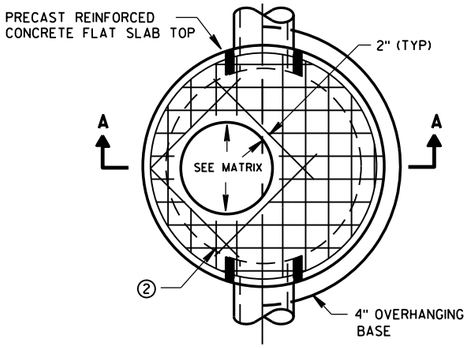
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/27/2013
DATE
FHWA

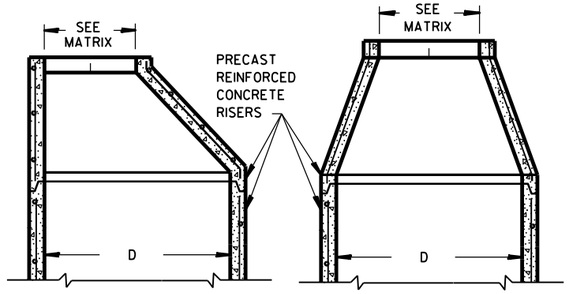
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

6

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

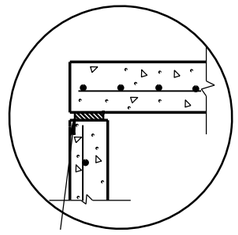


PLAN VIEW CIRCULAR OPENING

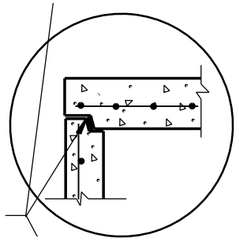


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP

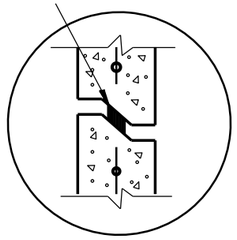


TOP WITH PLAIN END JOINT



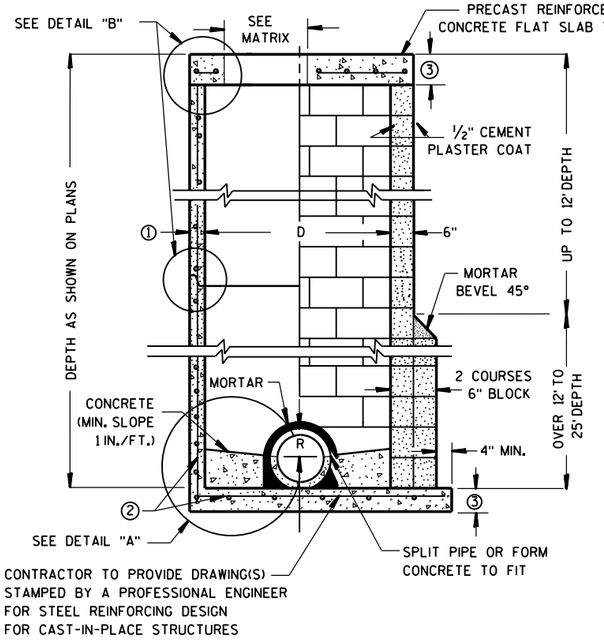
JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

TOP WITH TONGUE AND GROOVE JOINT



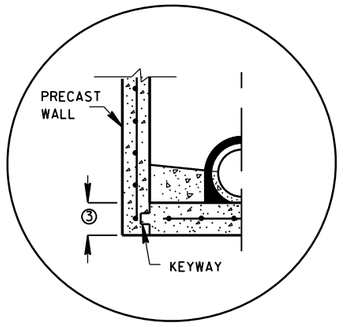
RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

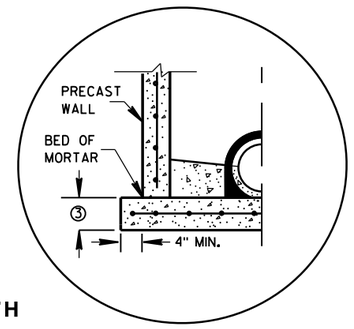


PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

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

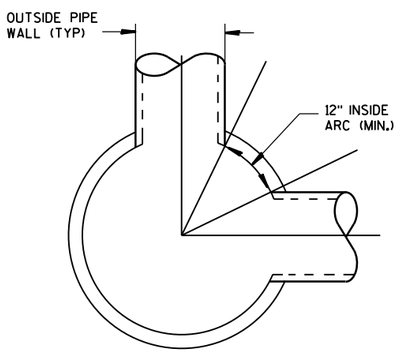


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



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 FOUNDATION 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.

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

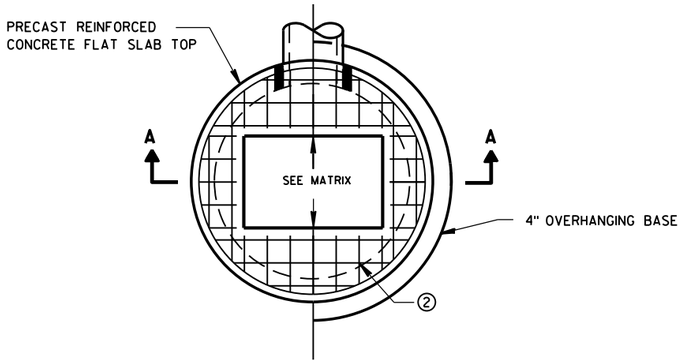
APPROVED

Sept., 2016
DATE

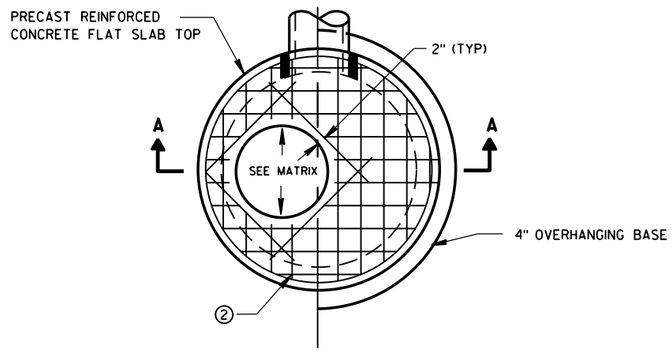
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERV

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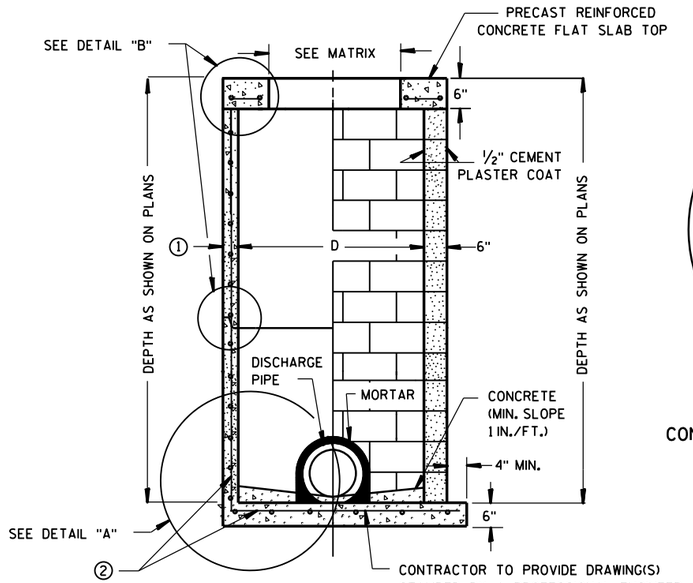
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S.D.D. 8 B 9-2



PLAN VIEW RECTANGULAR OPENING



PLAN VIEW CIRCULAR OPENING

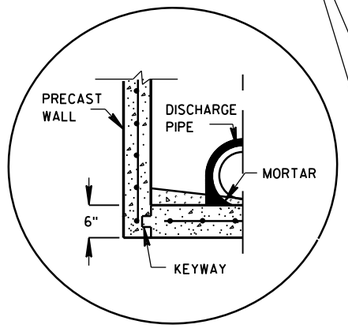


SECTION A-A

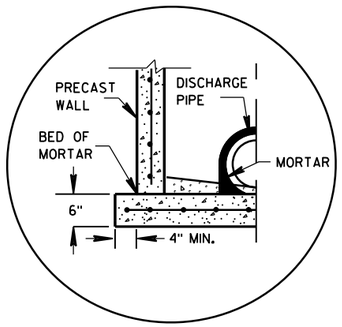
PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

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

CIRCULAR INLETS W/ FLAT TOP

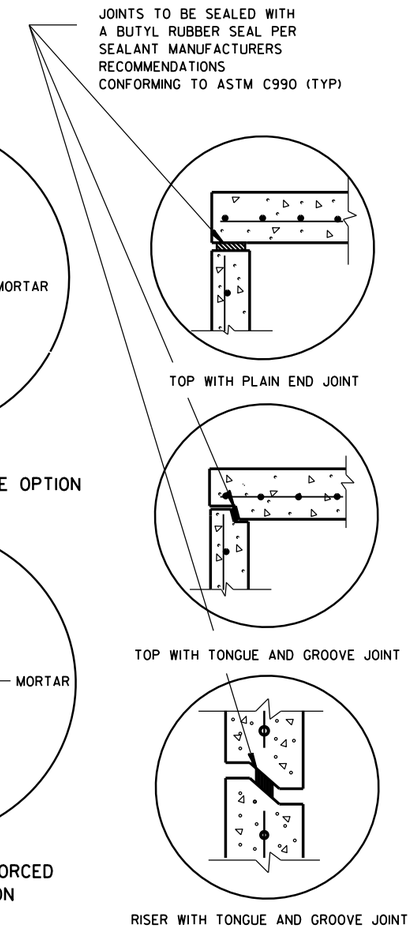


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



TOP WITH PLAIN END JOINT

TOP WITH TONGUE AND GROOVE JOINT

RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

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.

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

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

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

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

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

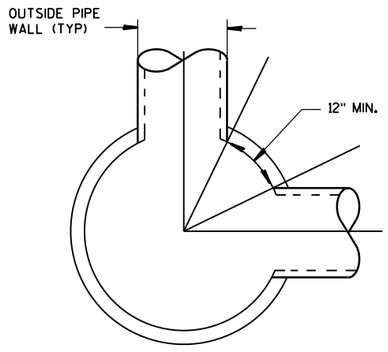
FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

① MINIMUM WALL THICKNESS SHALL BE 4-IN FOR 3-FT DIAMETER AND 5-IN FOR 4-FT DIAMETER PRECAST INLETS.

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

INLET COVER OPENING MATRIX

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



DETAIL "C"

PIPE MATRIX

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

INLETS 3-FT AND 4-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

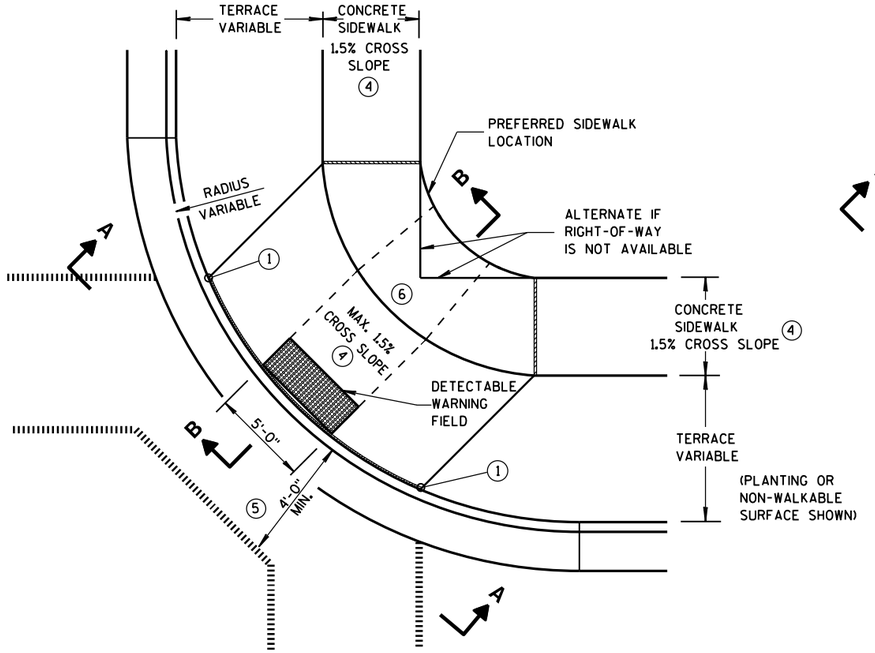
APPROVED
Sept., 2016 — /S/ Rodney Taylor
DATE — ROADWAY STANDARDS | UNIT SUPERVI ENT
FHWA

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S.D.D. 8 C 6-2

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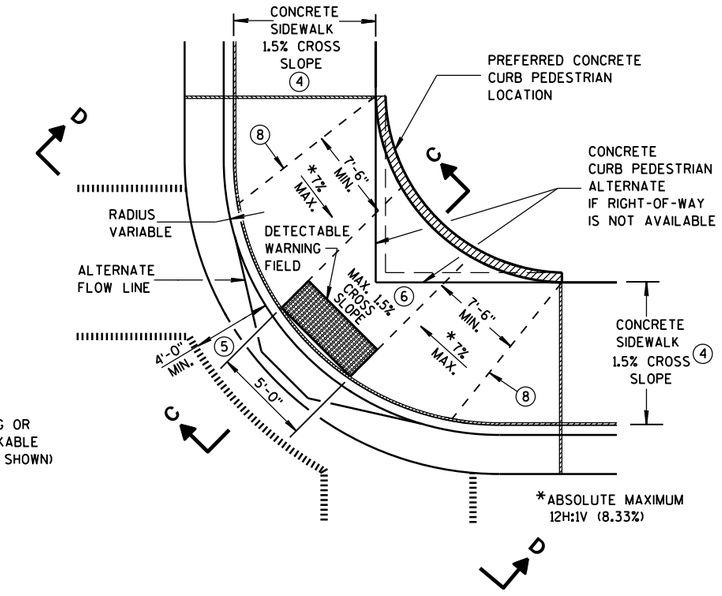
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PLAN VIEW

TYPE 1 RAMP

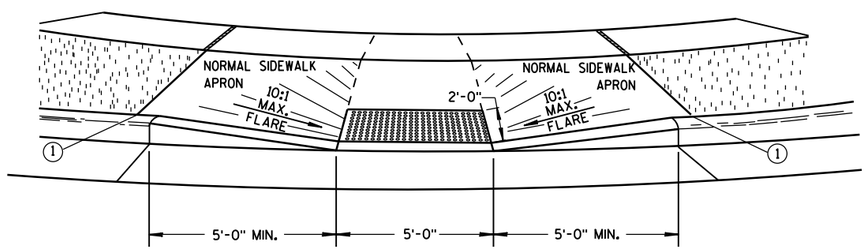
(CENTER OF CORNER RADIUS)



PLAN VIEW

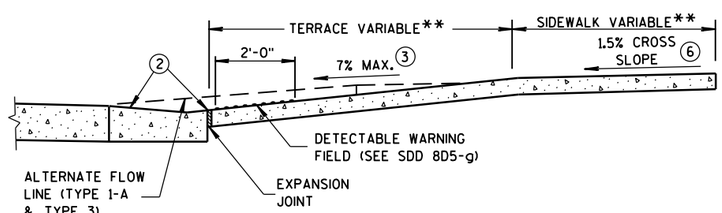
TYPE 1-A RAMP

(NO TERRACE)

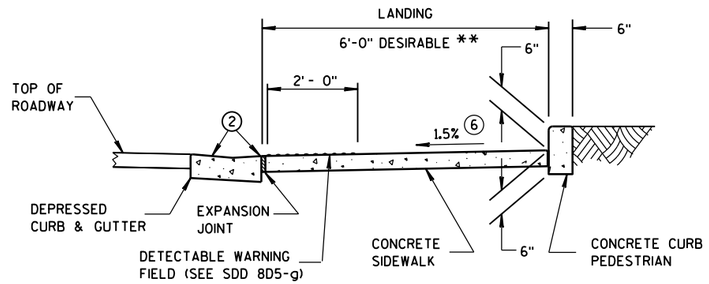


VIEW A-A

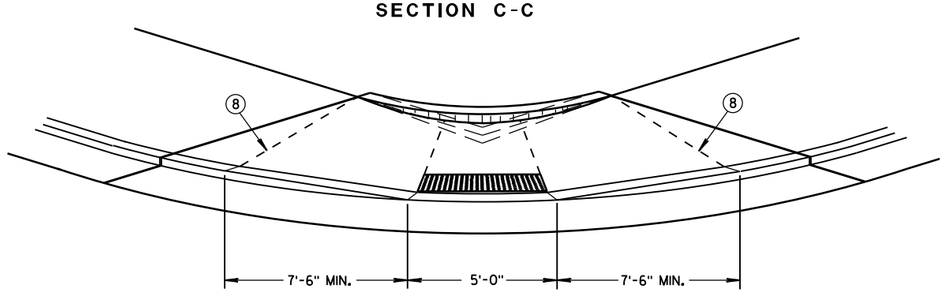
** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B-B



SECTION C-C



VIEW D-D

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

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.

WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

TYPE 1 RAMPS SHALL HAVE A NORMAL SIDEWALK APRON AND CURB ON BOTH SIDES OF RAMP.

DETECTABLE WARNING FIELD SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS "CURB RAMP DETECTABLE WARNING FIELD". THE CONCRETE PEDESTRIAN CURB, IF NEEDED, SHALL BE MEASURED AND PAID BY THE LINEAL FOOT AS "CONCRETE CURB PEDESTRIAN". CONCRETE SIDEWALK IN THE CURB RAMP AREA SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS CONCRETE SIDEWALK, INCLUDING THE AREA UNDER THE DETECTABLE WARNING FIELD.

SELECT CURB RAMP DETECTABLE WARNING FIELD MATERIALS AND DEVICES FROM THE DEPARTMENT'S APPROVED MATERIALS LIST. THE COLOR OF THE DETECTABLE WARNING FIELD IS SPECIFIED ELSEWHERE AND IS INCIDENTAL TO THE BID ITEM OF "CURB RAMP DETECTABLE WARNING FIELD".

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

(1) THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB. POINT LOCATION MAY BE ADJUSTED TO ALIGN WITH BEGINNING OF FULL-HEIGHT CURB IF THIS DISTANCE IS SHORT.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(5) PROVIDE A LEVEL LANDING IN THE STREET AND GUTTER AREA. (2% MAXIMUM SLOPE IN ANY DIRECTION). WHEN THE GUTTER SLOPE EXCEEDS 2%, CONSTRUCT THE LEVEL LANDING IN THE STREET AREA.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

LEGEND

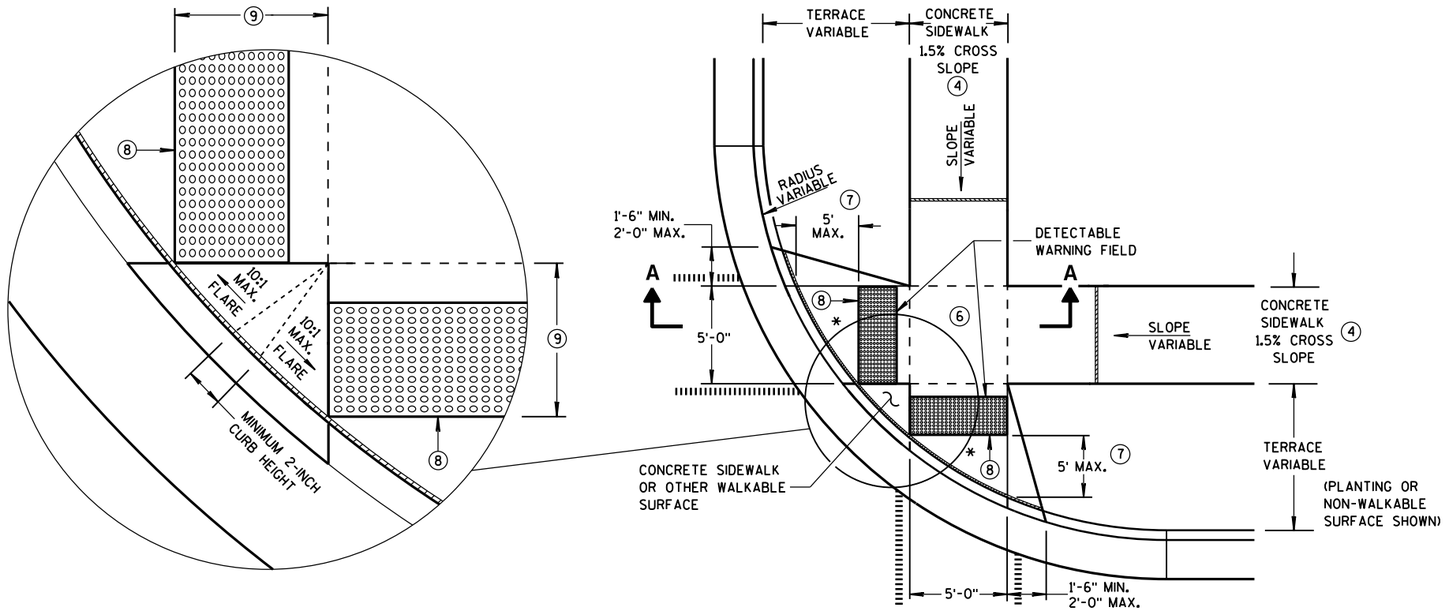
- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT

CURB RAMPS TYPES 1 AND 1-A

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

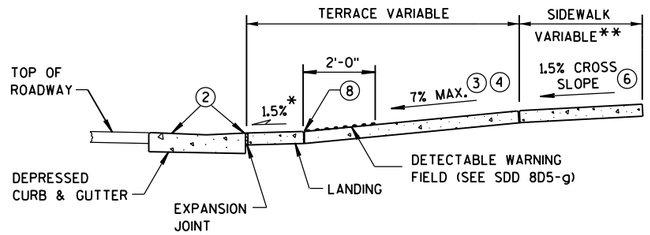
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S.D.D. 8 D 5-19a



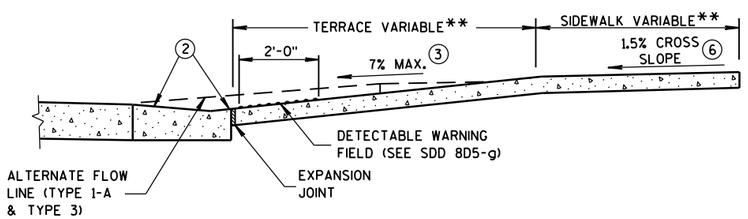
PLAN VIEW
TYPE 2 RAMP
(ON LINE WITH SIDEWALK)

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

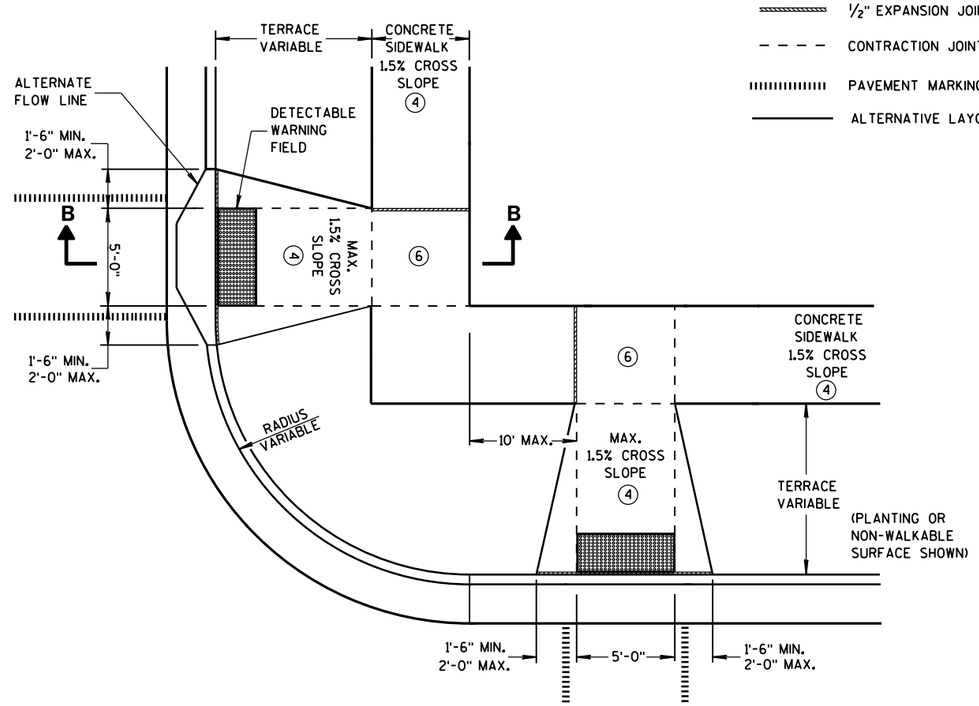


SECTION A-A

** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B-B



PLAN VIEW
TYPE 3 RAMP
(OUTSIDE OF CROSSWALK AREA)

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.

(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

(9) WHEN THIS DISTANCE IS LESS THAN 6'-0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. CONSTRUCT 2-INCH MINIMUM CURB HEIGHT BETWEEN 10:1 FLARES.

LEGEND

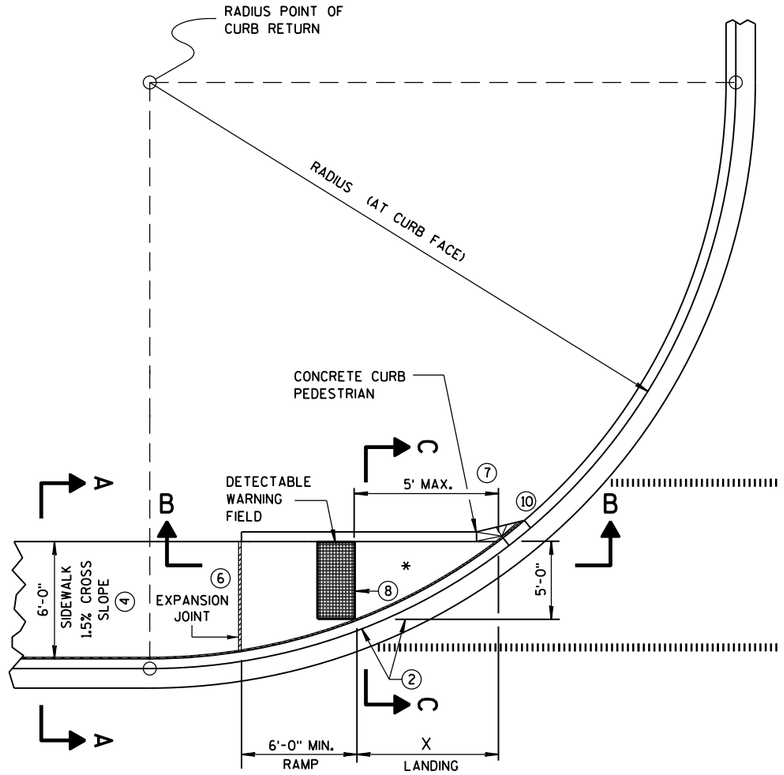
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT

CURB RAMPS TYPES 2 AND 3

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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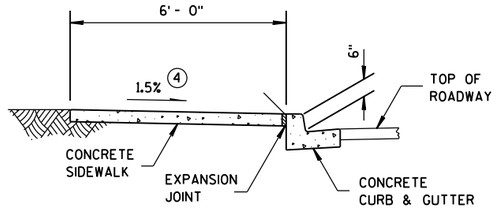
S.D.D. 8 D 5-19b



CURB RAMP TYPE 4A
PLAN VIEW

RADIUS (AT CURB FACE)	X
10 FEET	4'-7"
15 FEET	6'-5½"

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A-A FOR TYPE 4A

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

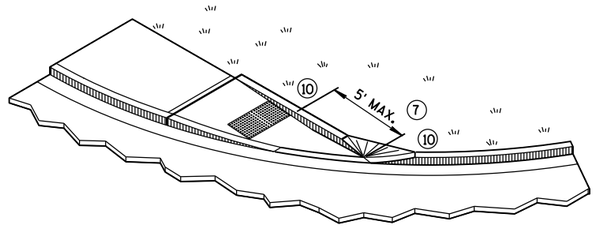
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.

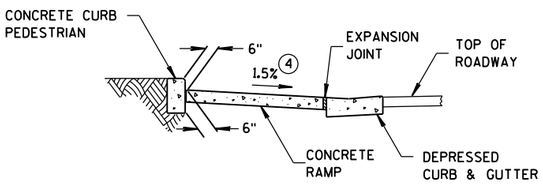
(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

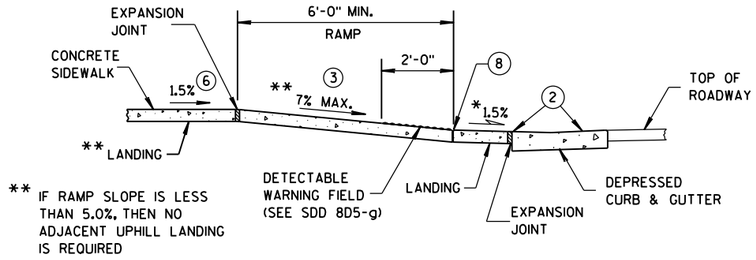
(10) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



ISOMETRIC VIEW FOR TYPE 4A



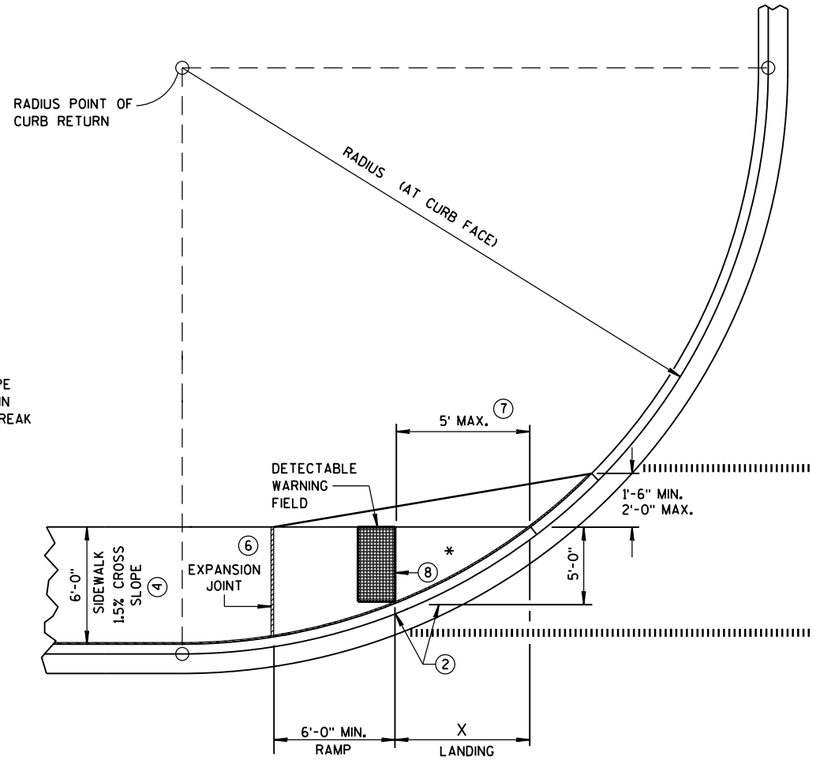
SECTION C-C FOR TYPE 4A



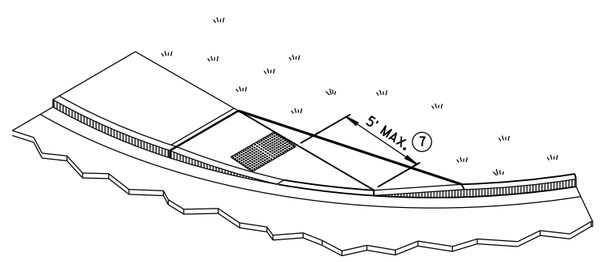
** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

SECTION B-B FOR TYPE 4A

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK



CURB RAMP TYPE 4A1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

½" EXPANSION JOINT-SIDEWALK

CONTRACTION JOINT FIELD LOCATED

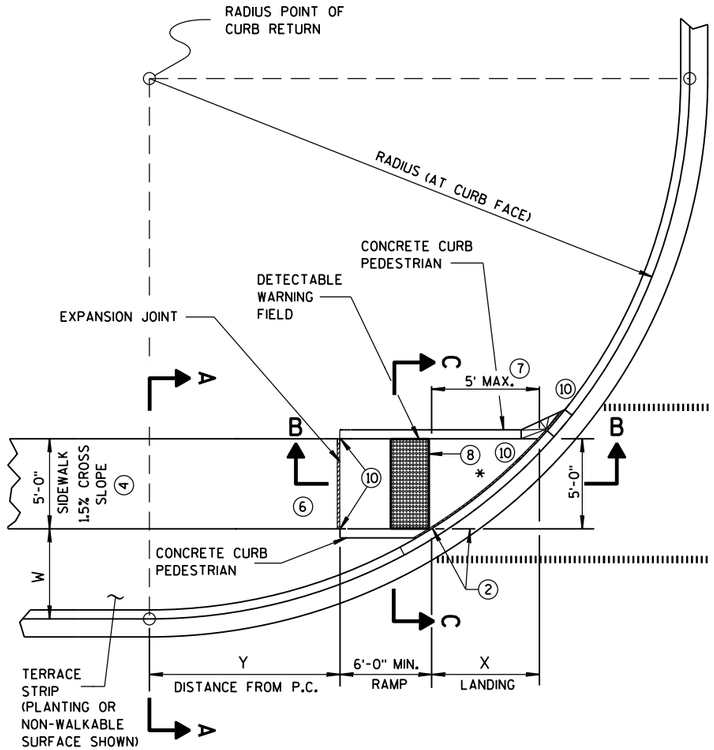
PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPES 4A AND 4A1

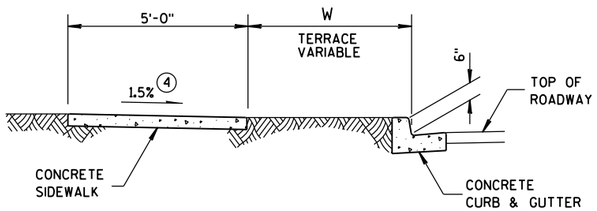
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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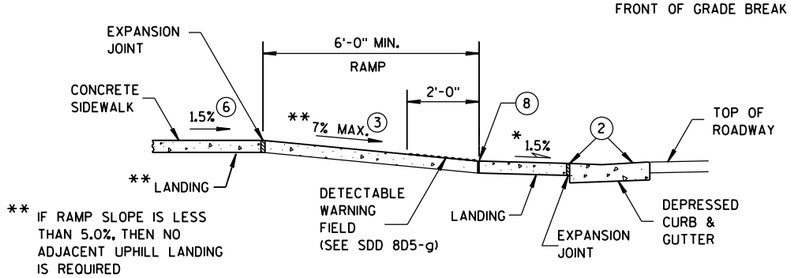
S.D.D. 8 D 5-19c



CURB RAMP TYPE 4B
PLAN VIEW



SECTION A-A FOR TYPE 4B



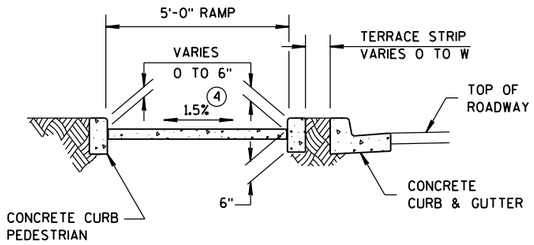
* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

SECTION B-B FOR TYPE 4B

RADIUS (AT CURB FACE)	W = 3'-0"		W = 4'-0"		W = 5'-0"		W = 6'-0"		W = 7'-0"		W = 8'-0"		W = 9'-0"		W = 10'-0"	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
10 FEET	2'-10¼"	0'-5"	2'-1"	1'-4½"	1'-5"	2'-1"	0'-10"	2'-7½"	0'-3¼"	3'-0¼"						
15 FEET	4'-6¾"	2'-1¾"	3'-9"	3'-5¼"	3'-1¼"	4'-6"	2'-6¾"	5'-4½"	2'-1"	6'-1"	1'-8"	6'-8½"	1'-3¼"	7'-2½"	0'-10¾"	7'-7¼"
20 FEET	5'-9¾"	3'-6½"	4'-11½"	5'-1¾"	4'-3¼"	6'-5½"	3'-8¾"	7'-7"	3'-3"	8'-6½"	2'-10"	9'-4½"	2'-5½"	10'-1¼"	2'-1¼"	10'-9"
30 FEET			6'-9¼"	7'-11¼"	6'-0¼"	9'-8"	5'-5"	11'-1¾"	4'-10¾"	12'-5¾"	4'-5½"	13'-7¾"	4'-0¾"	14'-8½"	3'-8½"	15'-8¼"
40 FEET									6'-1¾"	15'-8½"	5'-8"	17'-2"	5'-3"	18'-5¾"	4'-10¾"	19'-8¼"
50 FEET															5'-10¼"	23'-2"

INTERMEDIATE RADII CAN BE INTERPOLATED
DIMENSION "Y" IS CALCULATED BASED ON 6'-0" RAMP LENGTH
DIMENSION "X" IS CALCULATED BASED ON 5'-0" SIDEWALK WIDTH



SECTION C-C FOR TYPE 4B

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

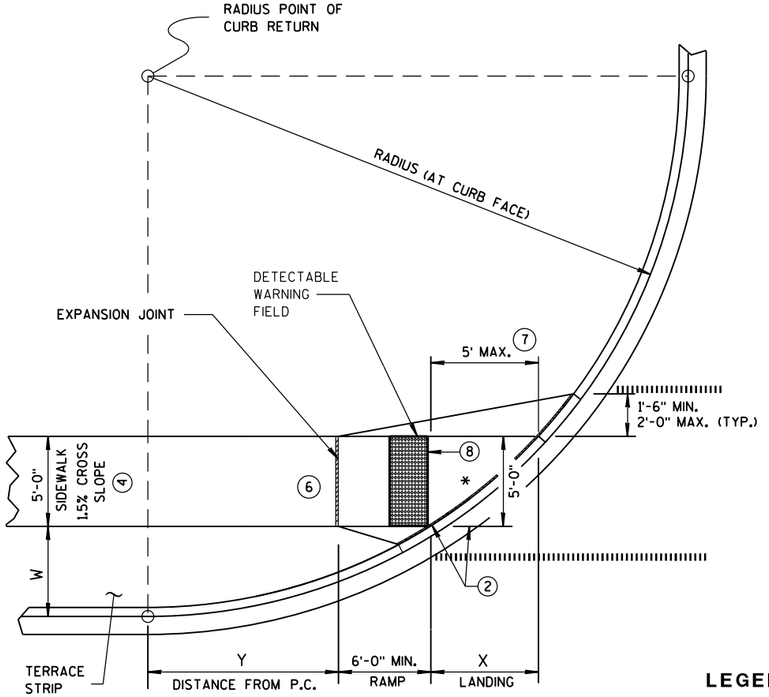
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.

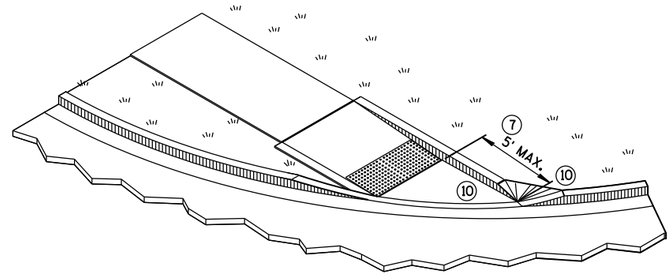
(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

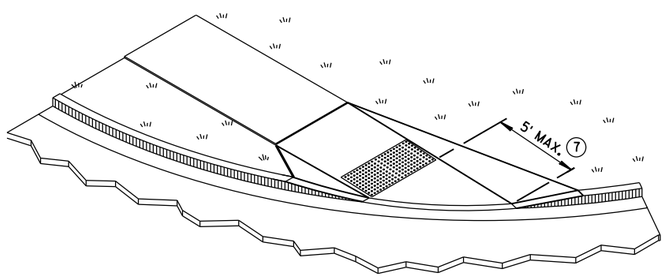
(10) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



CURB RAMP TYPE 4B1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4B



ISOMETRIC VIEW FOR TYPE 4B1

LEGEND

½" EXPANSION JOINT-SIDEWALK

CONTRACTION JOINT FIELD LOCATED

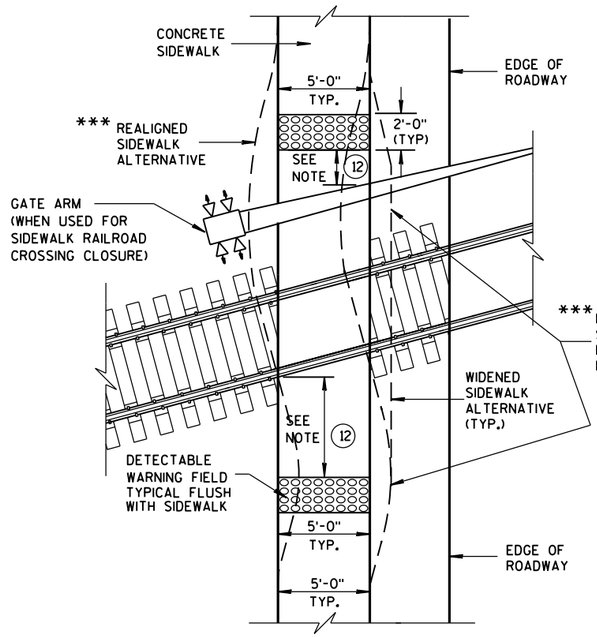
PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS TYPE 4B AND 4B1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

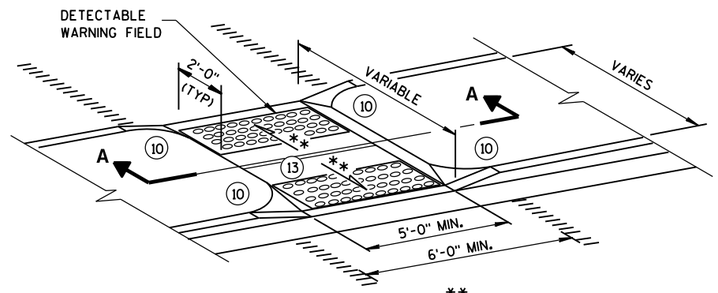
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S.D.D. 8 D 5-19d



TYPE 8
DETECTABLE WARNINGS AT RAILROAD CROSSING

*** DETAILS TO BE DETERMINED BY DESIGNER



** 1% MIN. (PROVIDE DRAINAGE)

MEDIAN ISLAND
NON-ELEVATED PEDESTRIAN CROSSING
TYPE 5

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

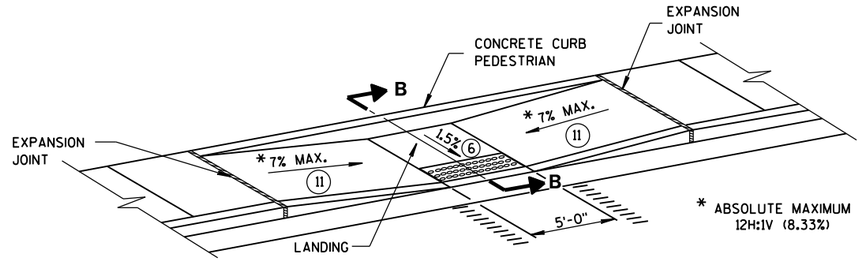
(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.

(10) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

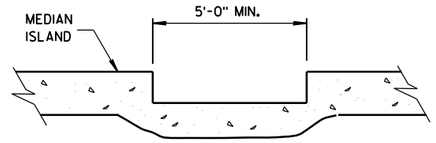
(11) SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

(12) THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ± 0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.

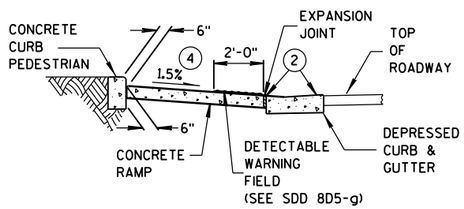
(13) DO NOT INSTALL DETECTABLE WARNING FIELDS AT THE EDGES OF STREET-LEVEL PEDESTRIAN REFUGE ISLANDS IF A MINIMUM 2-FOOT CONCRETE SURFACE WITHOUT DETECTABLE WARNINGS (MEASURED IN THE DIRECTION OF PEDESTRIAN TRAVEL) CANNOT BE ACHIEVED.



MID-BLOCK CROSSING
TYPE 7A

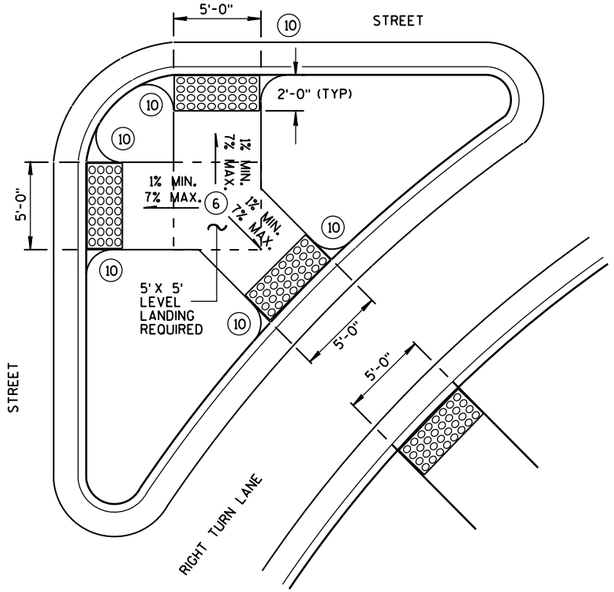


SECTION A-A

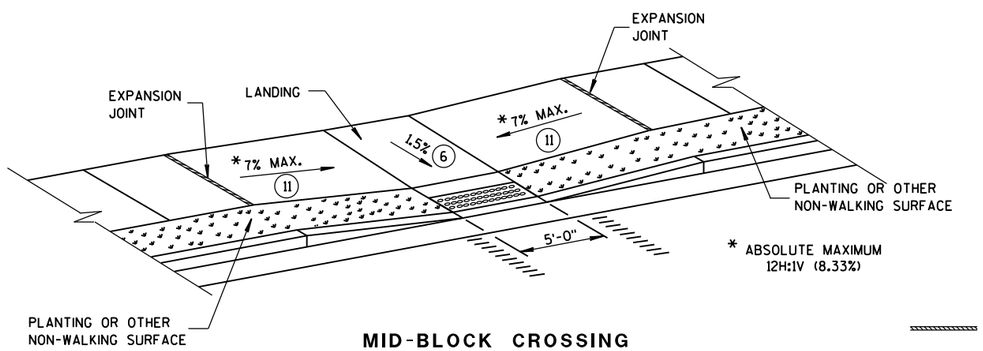


SECTION B-B

REFER TO GENERAL NOTES (2) AND (3) FOR ALL ISLAND CURB RAMPS



TYPE 6
DETECTABLE WARNING AT ISLANDS



MID-BLOCK CROSSING
TYPE 7B

NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMPS MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.

LEGEND

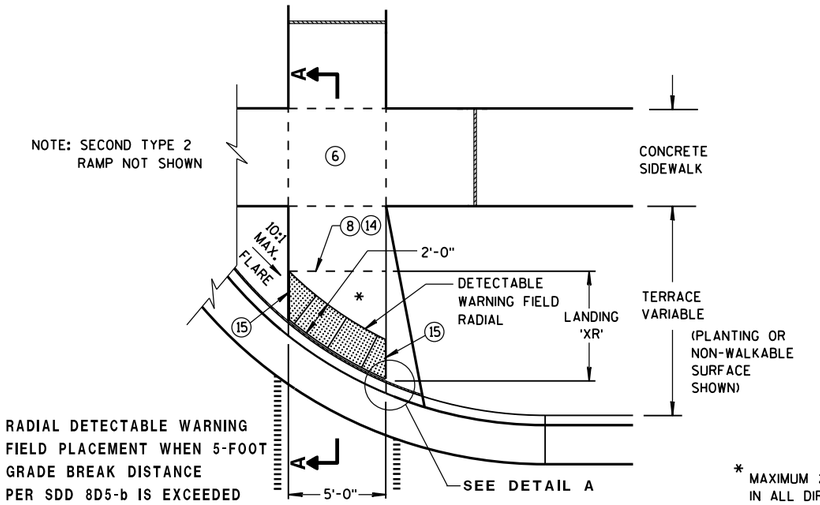
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPES 5, 6, 7A, 7B & 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

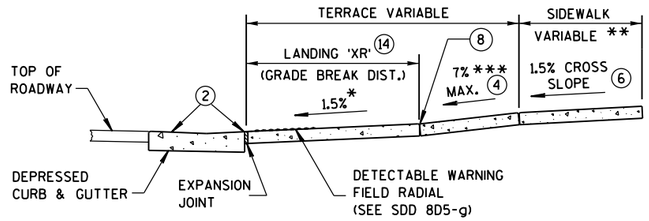
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S.D.D. 8 D 5-19e
S.D.D. 8 D 5-19e



TYPE 2 RAMP
PLAN VIEW
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)
(ON LINE WITH SIDEWALK)

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK



** WIDTH SHOWN ELSEWHERE IN THE PLANS

*** ABSOLUTE MAXIMUM 12H:1V (8.33%)

SECTION A-A

LEGEND

- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETECTABLE WARNING FIELDS (DWFs) THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

APPLY RADIAL DETECTABLE WARNING PLACEMENT SIMILARLY FOR TYPE 4A AND 4A1 CURB RAMPS AND SIMILARLY FOR TYPE 4B AND 4B1 CURB RAMPS. TYPE 4A AND 4B CURB RAMPS ARE NOT SHOWN.

REFER TO SDD 8D5-g FOR ADDITIONAL RADIAL PLATE REQUIREMENTS.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FIELD ARE PROHIBITED.

DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.

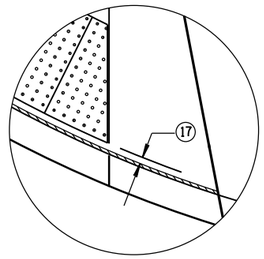
(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

(14) CONSULT ENGINEER IF GRADE BREAK LOCATION (END OF LANDING DIMENSION 'XR') REQUIRES FIELD ADJUSTMENT WHEN ESTABLISHING FINAL RADIAL DETECTABLE WARNING FIELD LOCATION.

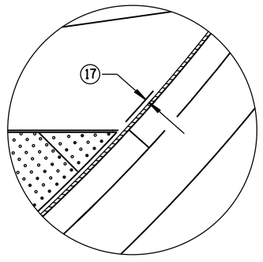
(15) FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/8" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.

(16) USE 1'X 2' RECTANGULAR END PLATE AT END OF TYPE 4A1 RAMP AND PROVIDE MINIMUM 2'-0" DETECTABLE WARNING FIELD COVERAGE (IN DIRECTION OF PEDESTRIAN TRAVEL) ALONG THE ENTIRE CURB RAMP WIDTH.

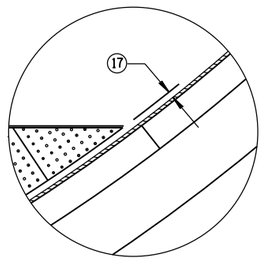
(17) A MAXIMUM 3-INCH CONCRETE BORDER WIDTH IS ALLOWABLE IN FRONT OF RADIAL DETECTABLE WARNING FIELD FOR CONSTRUCTABILITY PURPOSES. CONCRETE BORDER WIDTH MAY VARY UP TO 1 INCH.



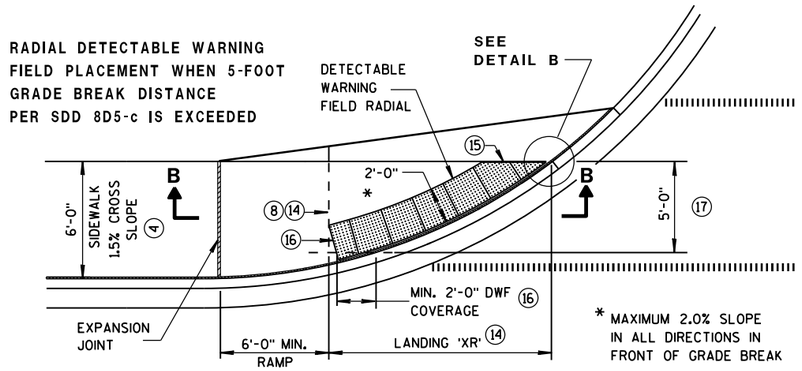
DETAIL A



DETAIL C

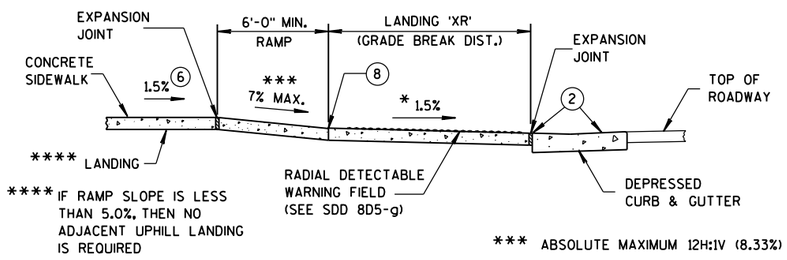


DETAIL B



* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

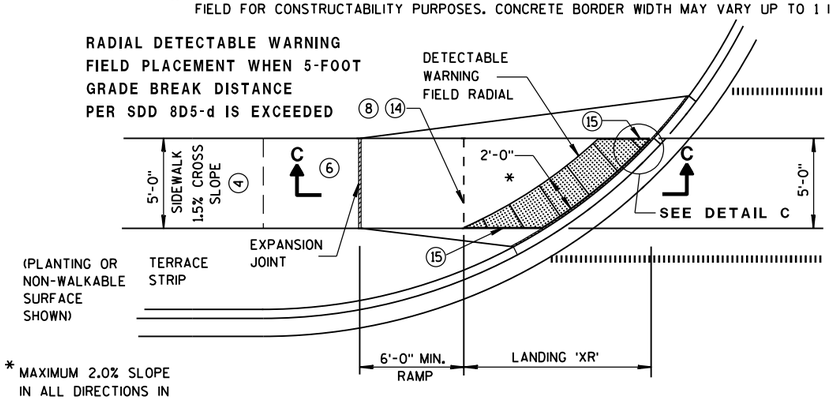
CURB RAMP TYPE 4A1
PLAN VIEW
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



**** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

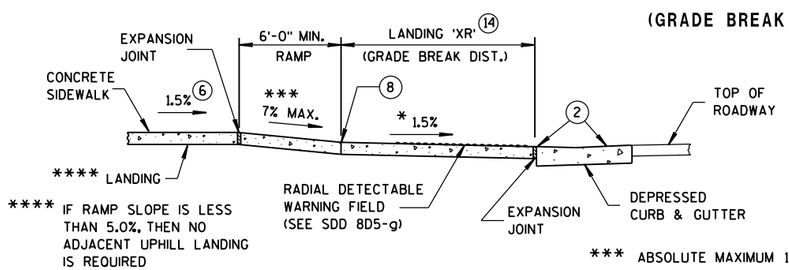
*** ABSOLUTE MAXIMUM 12H:1V (8.33%)

SECTION B-B FOR TYPE 4A1



* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

CURB RAMP TYPE 4B1
PLAN VIEW
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



**** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

*** ABSOLUTE MAXIMUM 12H:1V (8.33%)

SECTION C-C FOR TYPE 4B1

CURB RAMPS
RADIAL DETECTABLE WARNING FIELD APPLICATIONS

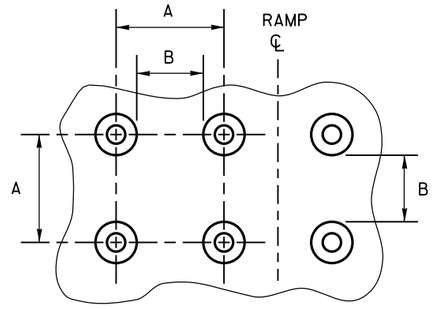
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

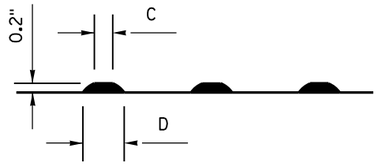
S.D.D. 8 D 5-19f

	MIN.	MAX.
A	1.6"	2.4"
B	0.65"	1.5"
C	*	*
D	0.9"	1.4"

* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.



PLAN VIEW



ELEVATION VIEW

TRUNCATED DOMES

DETECTABLE WARNING PATTERN DETAIL

GENERAL NOTES

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

PLACE ALL DETECTABLE WARNING FIELD SYSTEMS IN ACCORDANCE TO THE MANUFACTURER'S RECOMMENDATION.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FIELD ARE PROHIBITED.

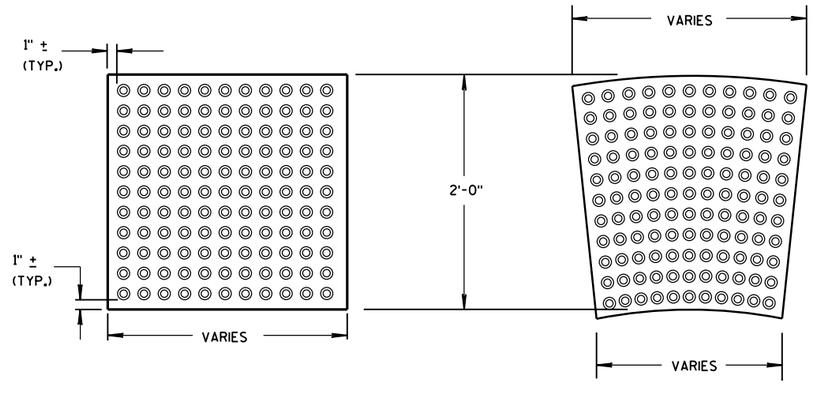
DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

FOR RADIAL DETECTABLE WARNING FIELD APPLICATIONS WHERE STANDARD RADIAL PLATES ARE NOT AVAILABLE AT AN INTERSECTION CURB RADIUS, A COMBINATION OF SQUARE OR RECTANGULAR PLATES AND RADIAL PLATES MAY BE USED TO FORM RADIAL CONFIGURATION. RADIAL WEDGES IN COMBINATION WITH SQUARE PANELS ARE ALSO ACCEPTABLE. FOLLOW MANUFACTURER'S RECOMMENDATIONS.

REFER TO CONTRACT AND STANDARD SPECIFICATIONS FOR FIELD CUTTING REQUIREMENTS.

DO NOT EMBED IN CONCRETE ANY FIELD-CUT PLATES WITH CUT EDGES SHORTER THAN 6 INCHES. CONSULT WITH MANUFACTURER FOR RE-DRILLING AND ANCHORING REQUIREMENTS OF FIELD-CUT PLATES.

⑮ FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/8" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.

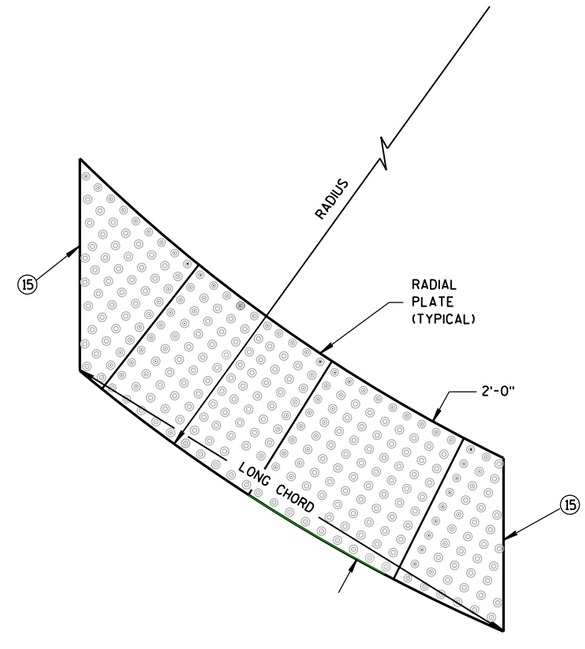


RECTANGULAR PLATES

RADIAL PLATES

DETECTABLE WARNING FIELDS (TYPICAL)

PLAN VIEW



RADIAL DETECTABLE WARNING FIELD ATTRIBUTES

CURB RAMPS
RECTANGULAR AND RADIAL
DETECTABLE WARNING PLATES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

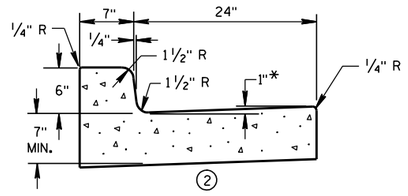
APPROVED
June, 2017 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS UNIT SUPERV
ENT
FHWA

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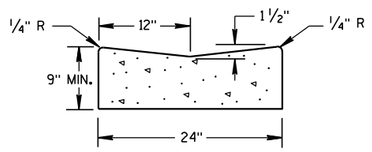
S.D.D. 8 D 5-19g

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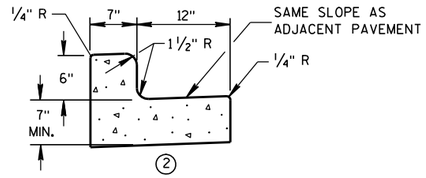
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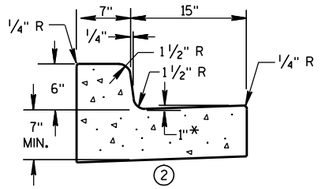
① CONCRETE CURB & GUTTER 31"



① CONCRETE GUTTER 24"

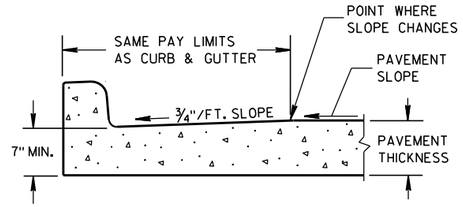


① CONCRETE CURB & GUTTER 19"



① CONCRETE CURB & GUTTER 22"

* TO BE MEASURED TO A MAXIMUM OF 3" WHERE DRAINAGE PROBLEMS EXIST.



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER

GENERAL NOTES

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

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

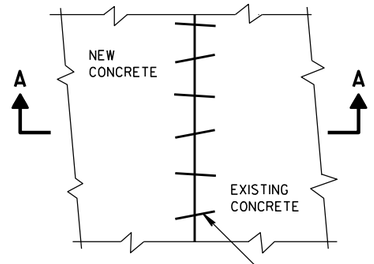
WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE COURSE AND UNCLASSIFIED EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURB.

① WHEN PLACED ADJACENT TO NEW CONCRETE, TIE BARS ARE REQUIRED FOR CURB AND GUTTER 31", 22", 19" AND CONCRETE GUTTER 24".

② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE COURSE PROVIDED A 7" MIMIMUM GUTTER THICKNESS IS MAINTAINED.

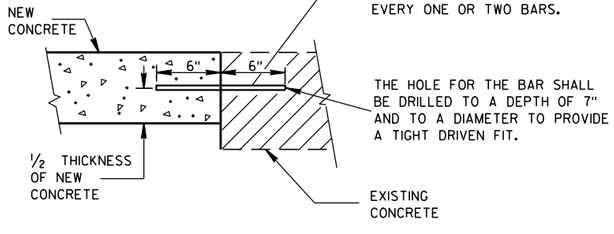
③ WHEN HIGH SIDE CURB SECTION IS REQUIRED, THE LOCATION(S) WILL BE NOTED ON THE PLAN.



PLAN VIEW

EXISTING AND NEW CONCRETE MAY BE CURB & GUTTER, SURFACE DRAIN, PAVEMENT OR OTHER CONCRETE STRUCTURE.

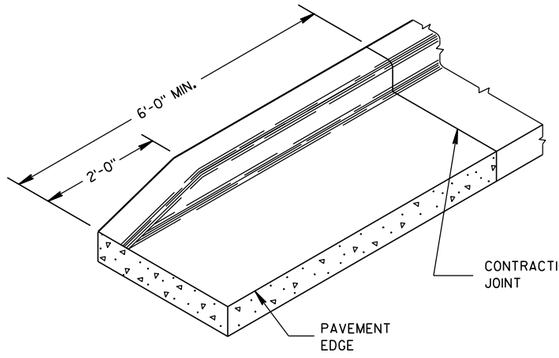
NO. 6 X 12" DEF. BARS SPACED 3'-0" C-C, INSTALLED ON 6:1 SKEW HORIZONTALLY. DIRECTION OF SKEW ALTERNATING AFTER EVERY ONE OR TWO BARS.



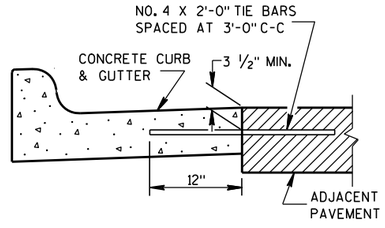
THE HOLE FOR THE BAR SHALL BE DRILLED TO A DEPTH OF 7" AND TO A DIAMETER TO PROVIDE A TIGHT DRIVEN FIT.

SECTION A-A

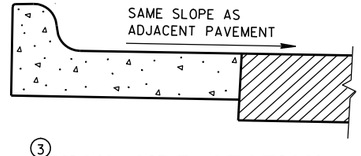
PAVEMENT TIES



END SECTION CURB & GUTTER



① TYPICAL TIE BAR LOCATION



③ HIGH SIDE SECTION

(TYPICAL FOR ALL CURB & GUTTER)

CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES

(For Optional Use in Milwaukee Co. Only)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/2/2010 — DATE

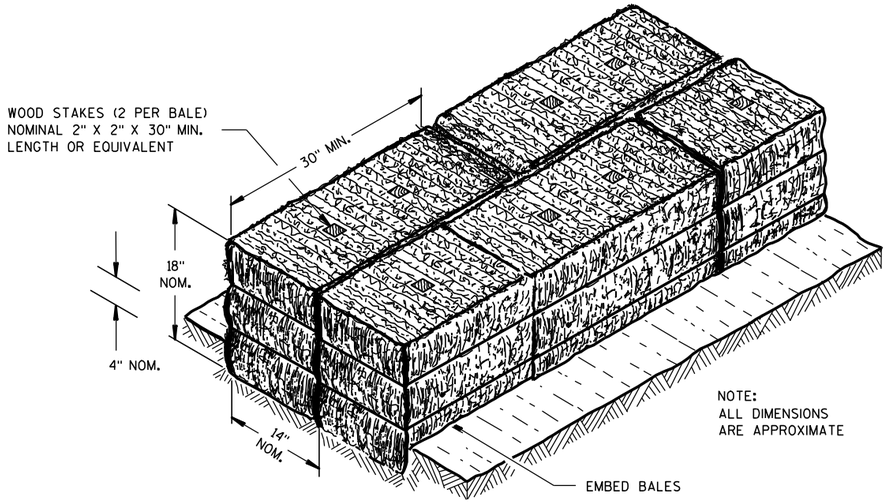
/S/ Jerry Zogg — ROADWAY STANDARDS ENGINEER

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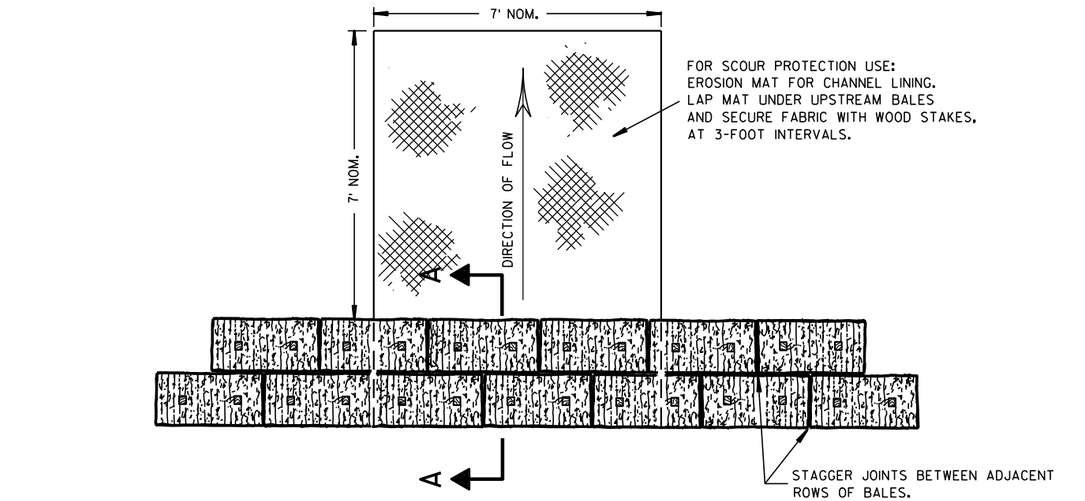
FHWA

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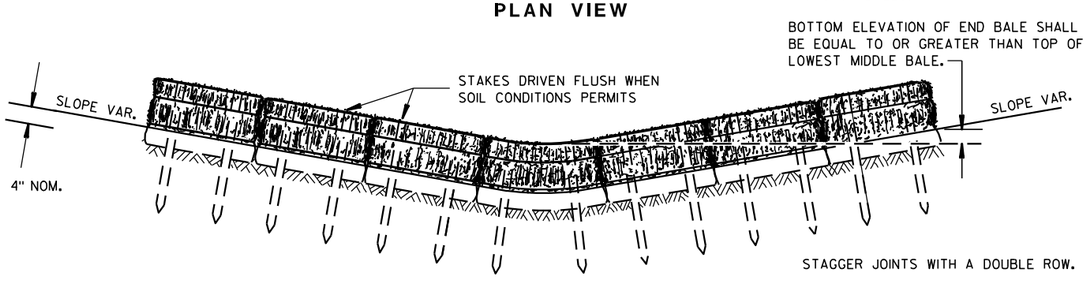
S.D.D. 8 D 16-10



SECTION A-A



PLAN VIEW



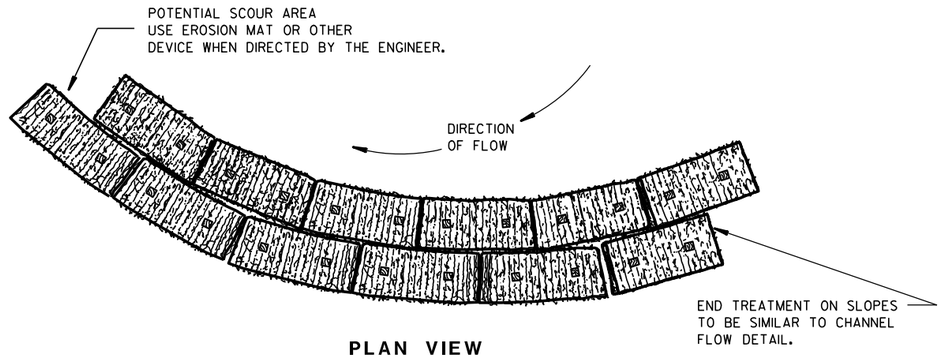
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

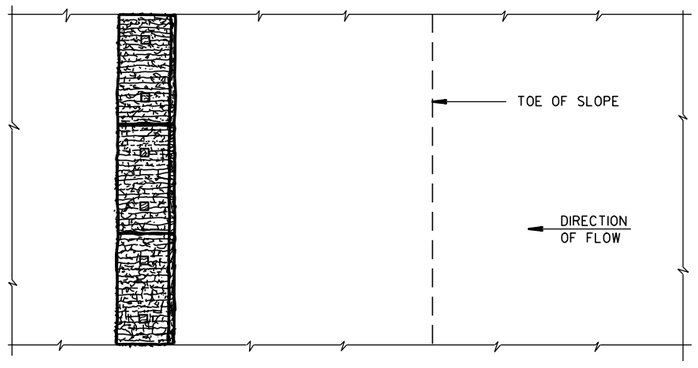
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

(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.

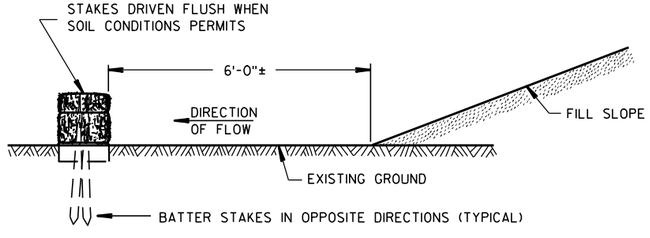


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

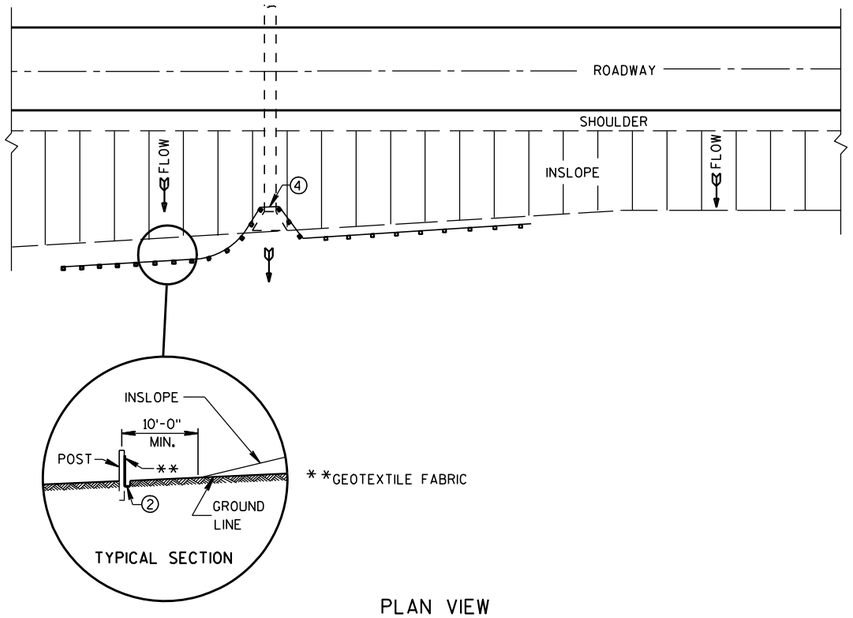
EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

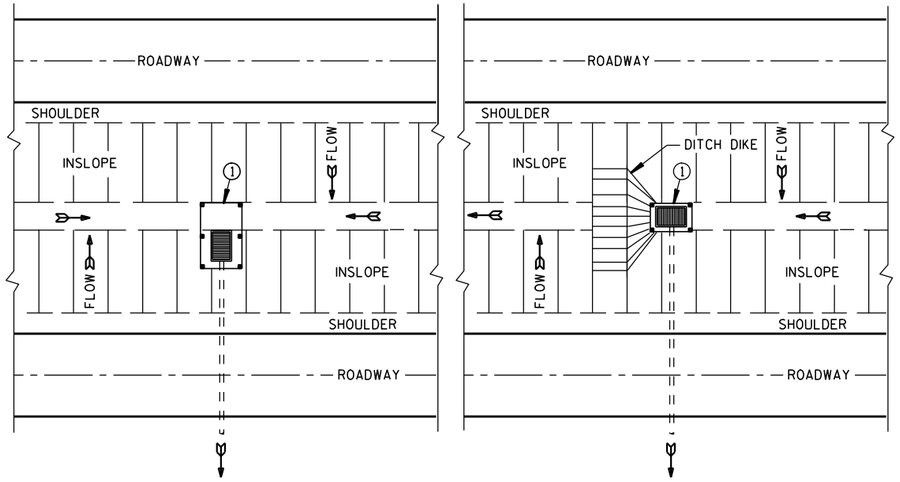
APPROVED
6/04/02 — DATE
/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

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



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

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

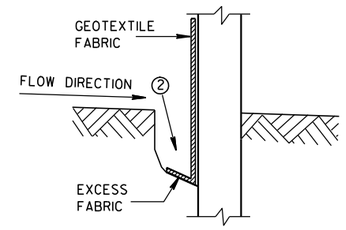
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

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

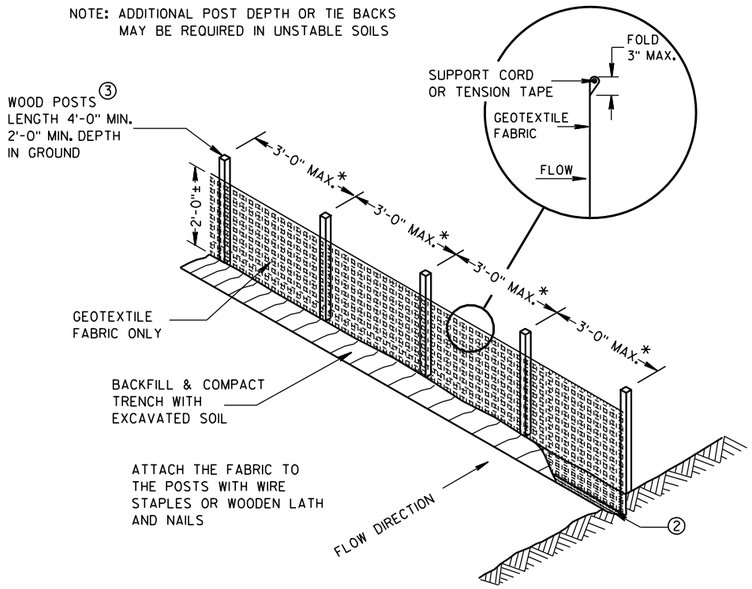
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

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

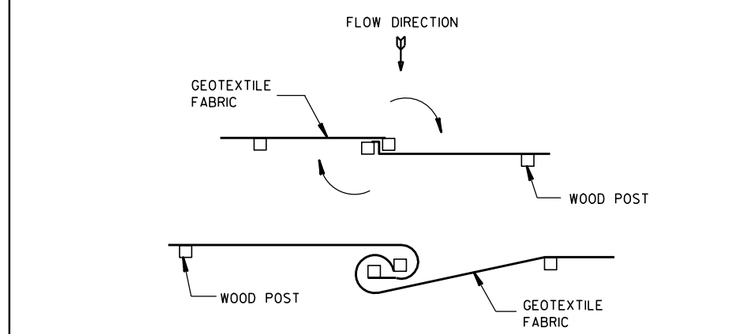
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



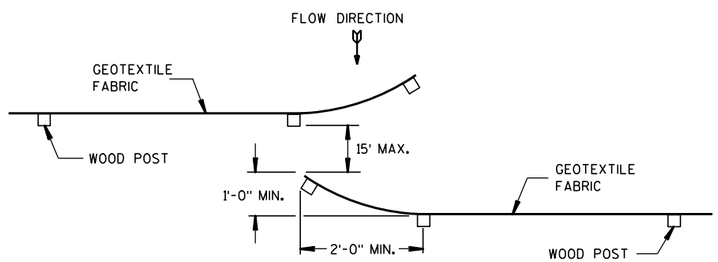
TRENCH DETAIL



SILT FENCE

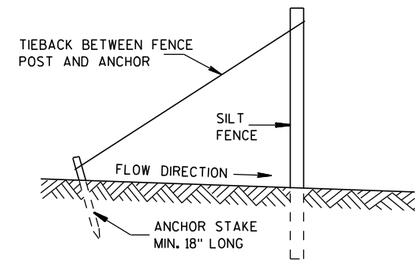


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

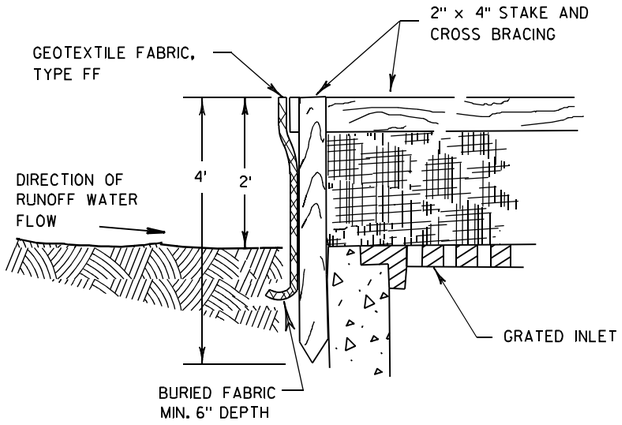
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

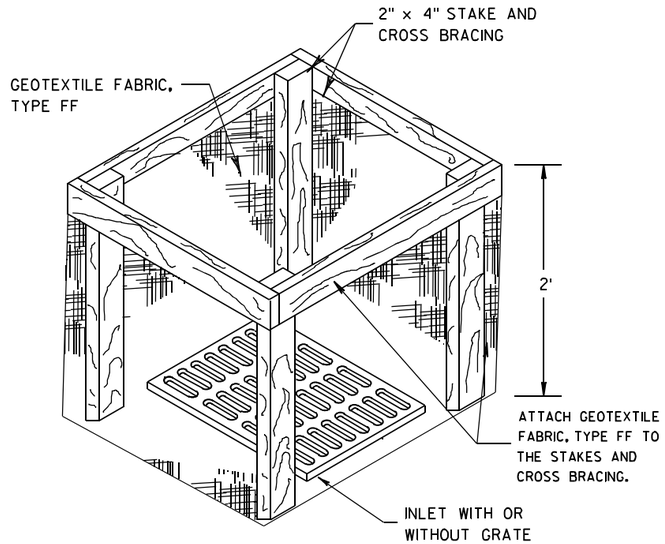
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S.D.D. 8 E 9-6

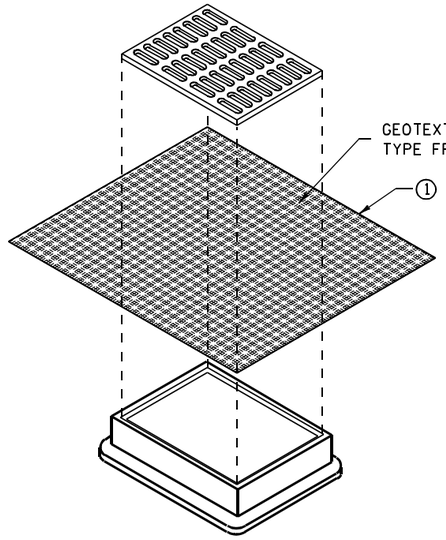
6

S.D.D. 8 E 9-6



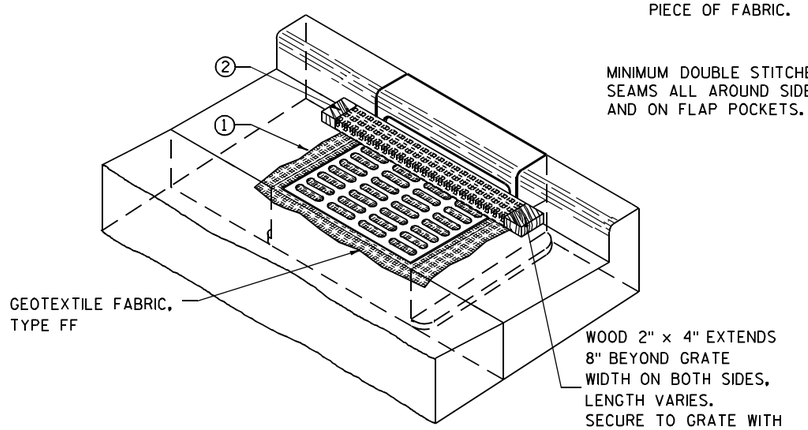


INLET PROTECTION, TYPE A

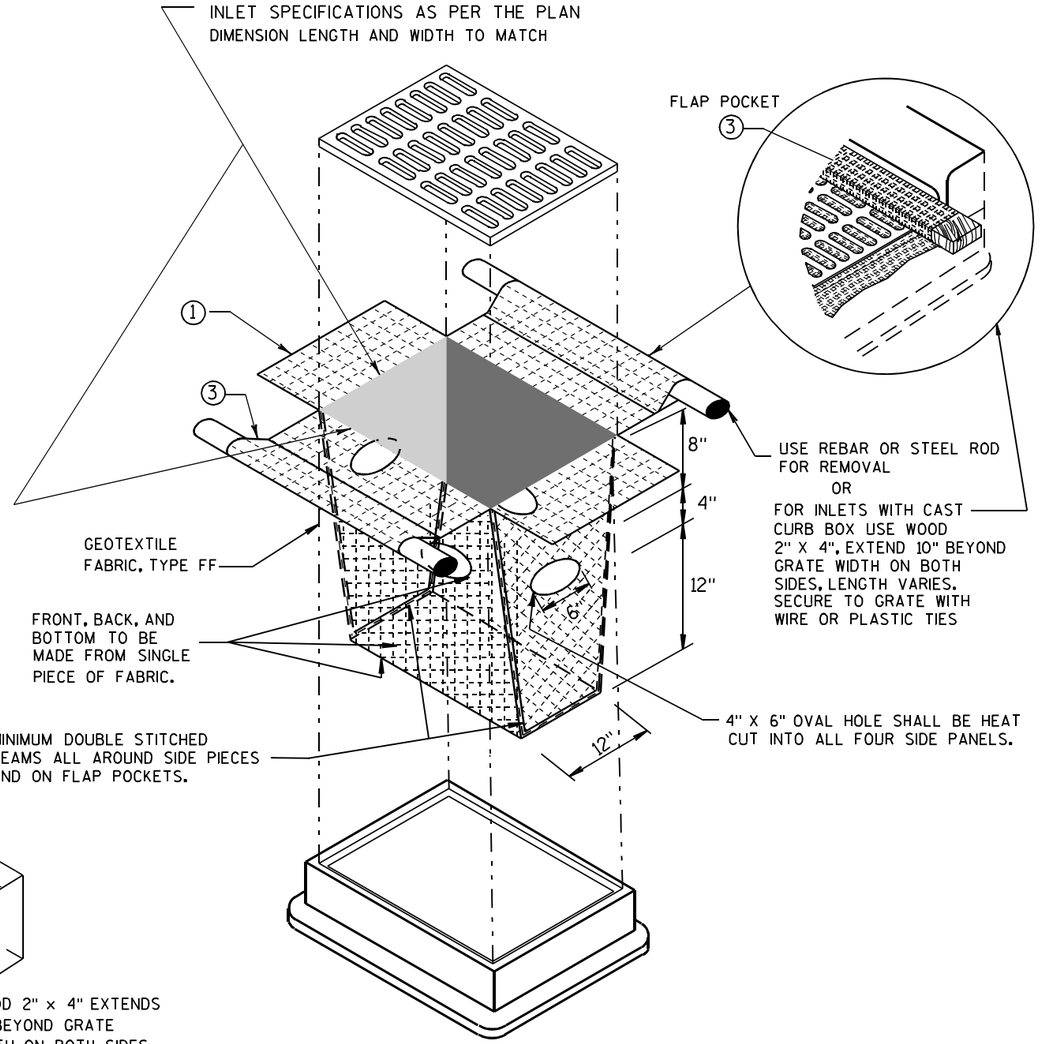


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

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

GENERAL NOTES

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

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

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

① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.

③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.

INSTALLATION NOTES

TYPE B & C

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

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

TYPE D

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

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

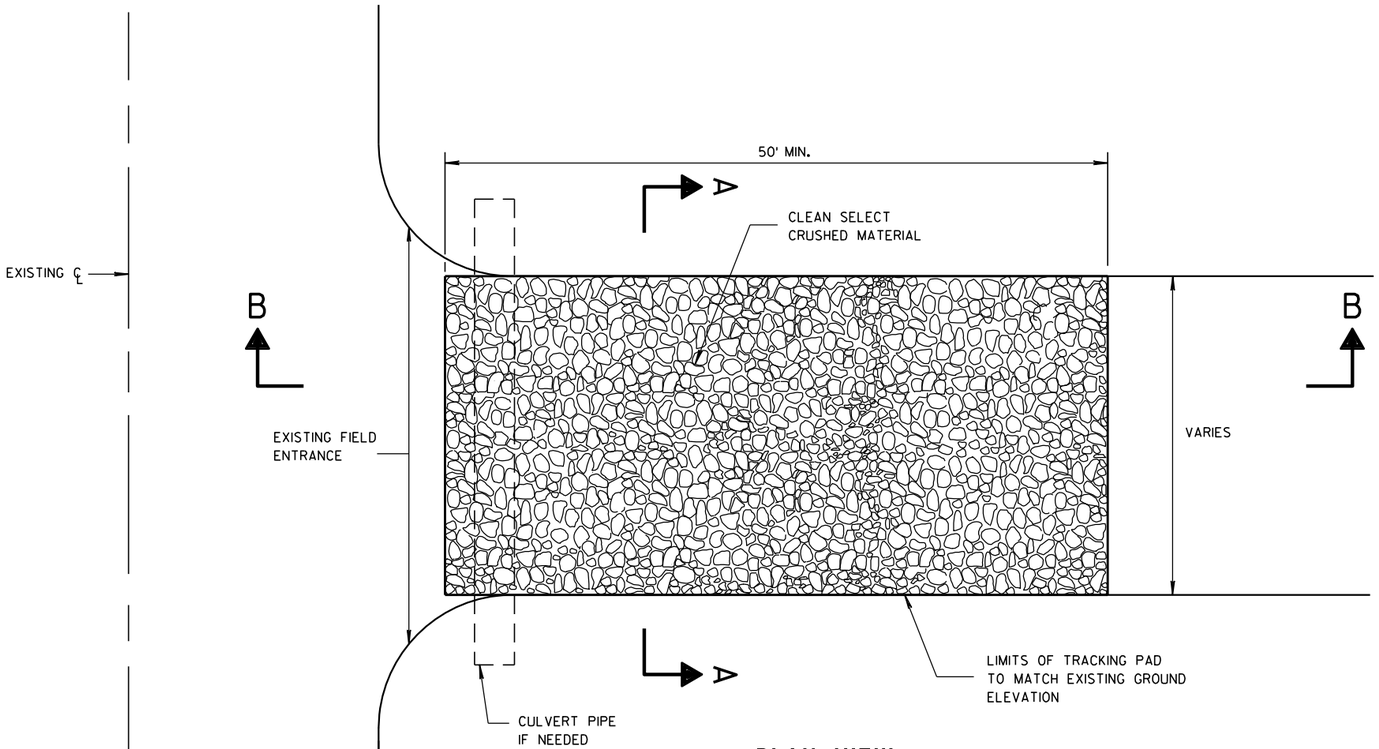
THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE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

INLET PROTECTION
TYPE A, B, C, AND D

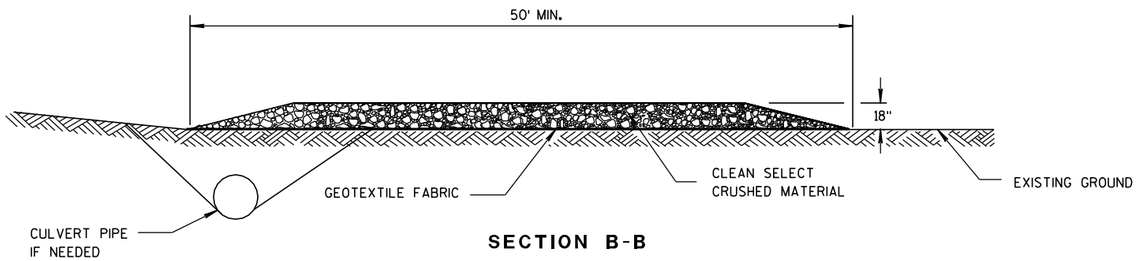
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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



PLAN VIEW



SECTION B-B

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.

TRACKING PAD SHALL BE INSPECTED DAILY. DEFICIENT AREAS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

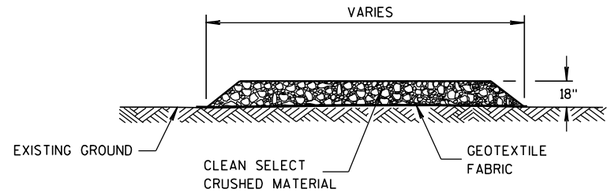
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT.

SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. FLOWS SHALL BE DIVERTED AWAY, AROUND OR CONVEYED UNDER THE TRACKING PAD.

CULVERT PIPE OR OTHER BMP USED TO DIVERT WATER AWAY, AROUND OR UNDER THE TRACKING PAD SHALL BE DESIGNED TO CONVEY THE 2 YEAR - 24 HOUR EVENT.

THE COST OF ADDITIONAL BMP TO DIVERT WATER ARE INCIDENTAL TO THE TRACKING PAD BID ITEM.



SECTION A-A

TRACKING PAD

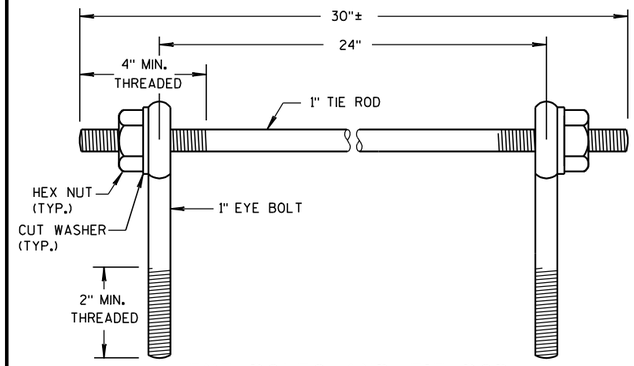
TRACKING PAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

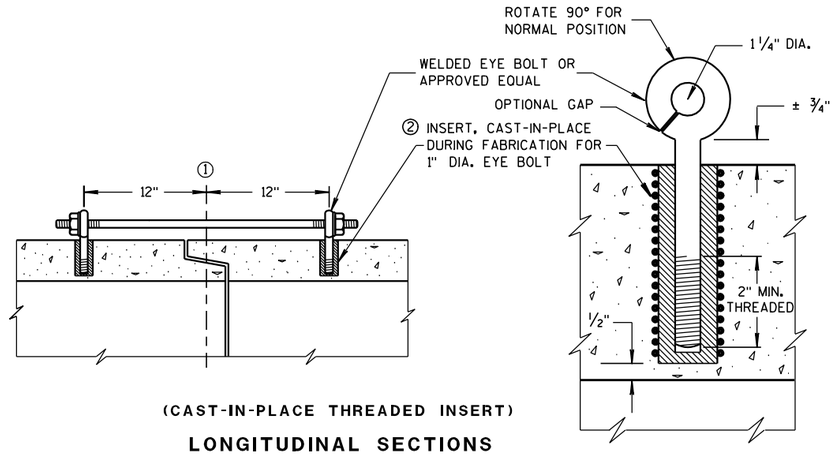
APPROVED
3/24/2011 — DATE
/S/ Jerry H. Zoda — ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 8 E 14-1



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.

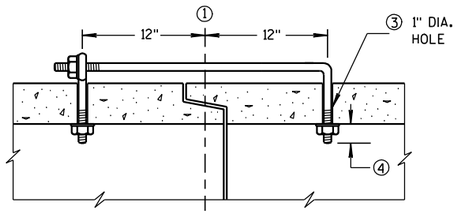
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

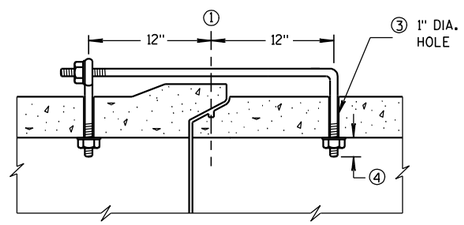
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

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)

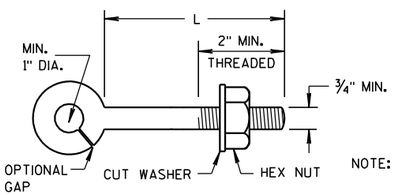


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

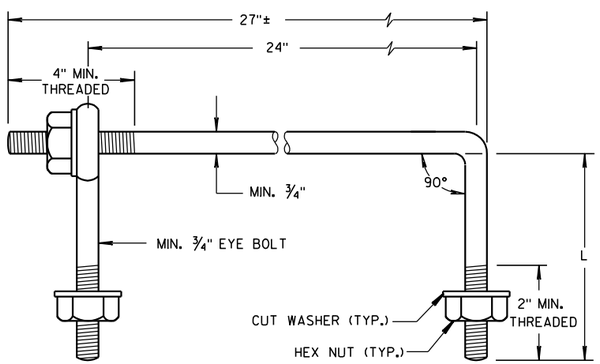
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



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

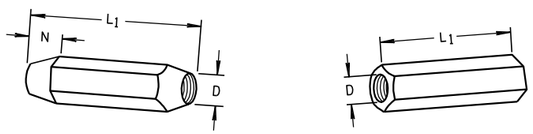
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

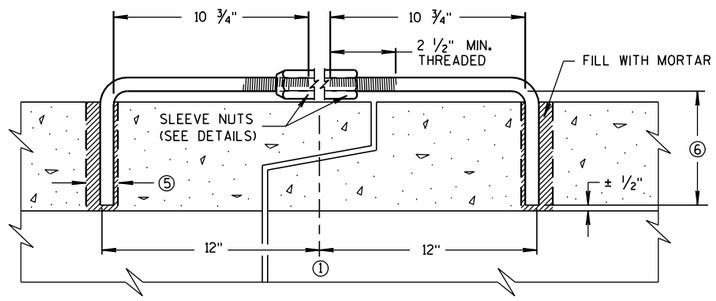
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

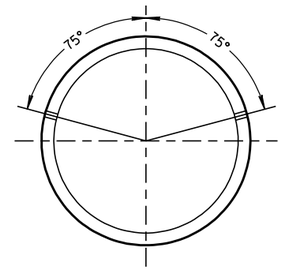
SLEEVE NUTS



LONGITUDINAL SECTION

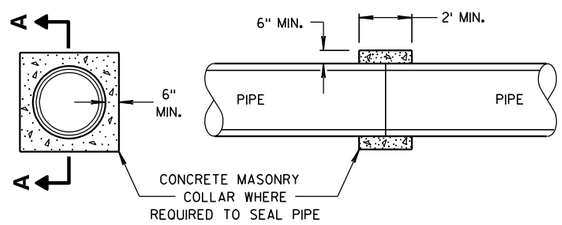
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

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

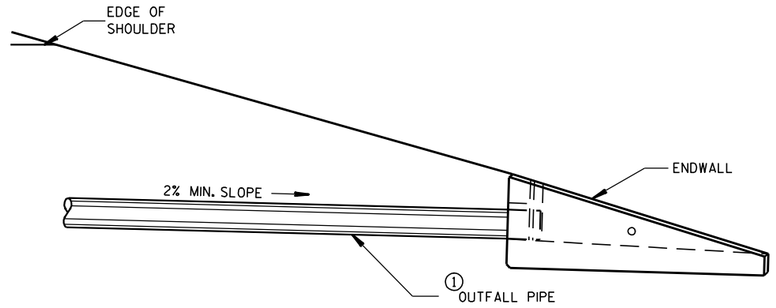
APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
137
FHWA

6

S.D.D. 8 F 4-7

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

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



INSTALLATION DETAIL

GENERAL NOTES

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

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

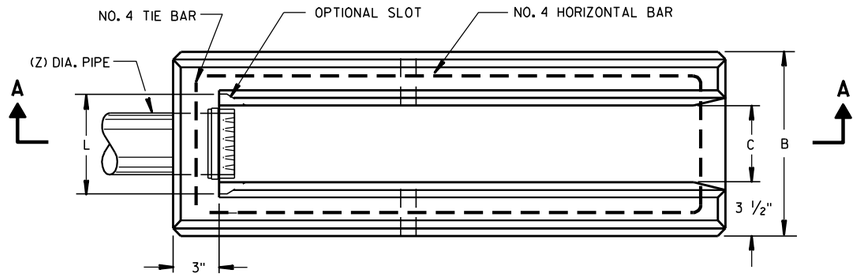
THE UNDERDRAIN PIPE SHALL BE FULLY INSERTED AND SEALED INTO THE ENDWALL WITH CEMENT MORTAR PRIOR TO BACKFILLING AROUND THE STRUCTURE.

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

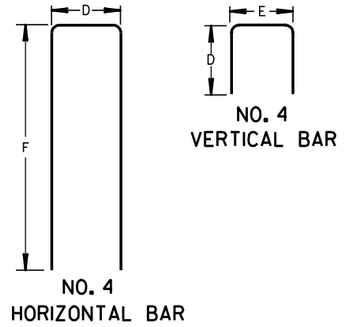
① THE OUTFALL PIPE UNDERDRAIN AND FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATION FOR POLY (VINYL CHORIDE) (PVC) PLASTIC DRAIN, WASTE AND VENT PIPE AND FITTINGS, ASTM DESIGNATION: D 2665, SCHEDULE 40 PVC OR THE STANDARD SPECIFICATION FOR TYPE PSM POLY (VINYL CHORIDE) (PVC) SEWER PIPE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

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

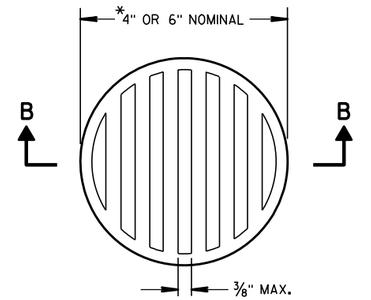
② THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE OUTFALL PIPE. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL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



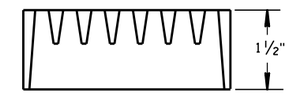
PLAN VIEW



BAR STEEL REINFORCEMENT DETAILS



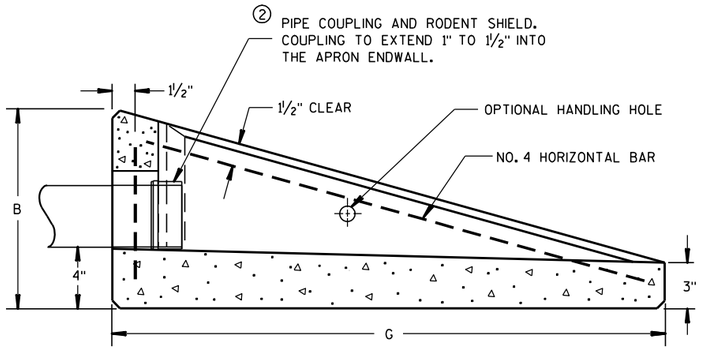
NOTE: ORIENT SHIELD SO SLOTS ARE VERTICAL.



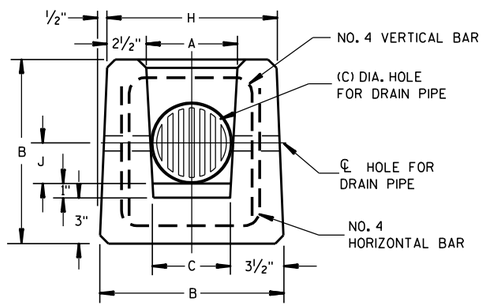
SECTION B-B

② RODENT SHIELD

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



SECTION A-A



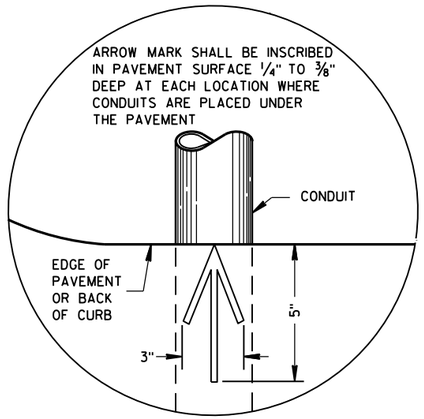
END VIEW

CONCRETE APRON ENDWALL FOR UNDERDRAIN

REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN

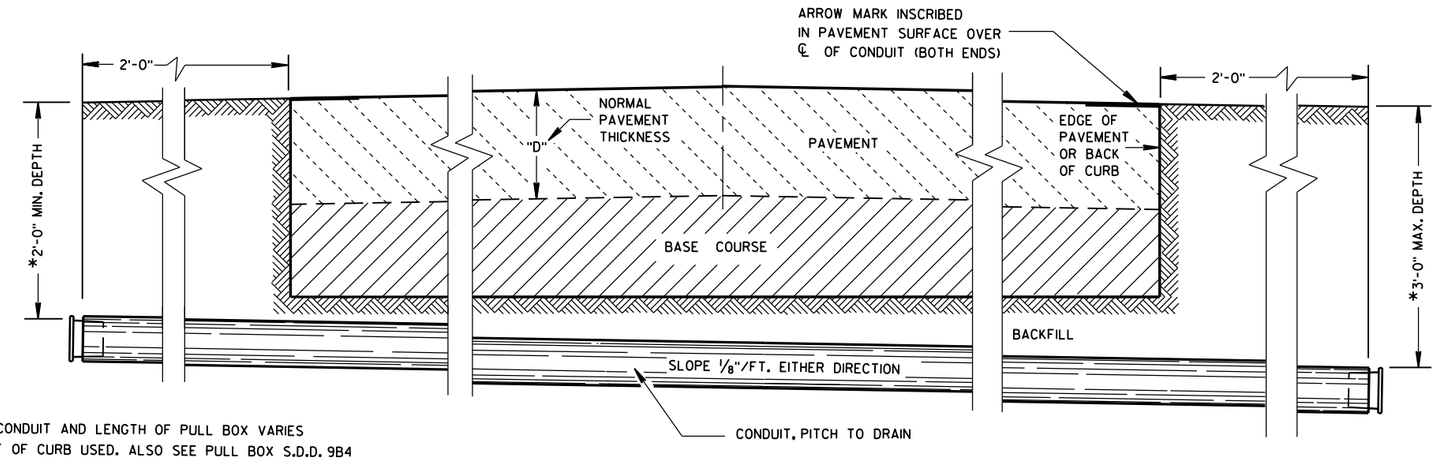
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW

ARROW MARK



*DEPTH OF CONDUIT AND LENGTH OF PULL BOX VARIES WITH HEIGHT OF CURB USED. ALSO SEE PULL BOX S.D.D. 9B4

SIDE ELEVATION

DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

GENERAL NOTES

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

METALLIC (STANDARD SPECIFICATION 652.2.2) OR NONMETALLIC (STANDARD SPECIFICATION 652.2.3) CONDUIT SHALL BE FURNISHED AND PLACED AS SHOWN.

DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.

DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.

ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.

THE TRENCH SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

ALL METALLIC CONDUIT IN WHICH WIRE OR CABLE IS TO BE INSTALLED SHALL BE BUSHED WITH APPROVED THREADED BUSHINGS BEFORE INSTALLATION OF THE WIRE OR CABLE.

ALL METALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT TO BE INSTALLED SHALL BE CAPPED WITH THREADED PROTECTIVE CAPS, AS APPROVED BY THE ENGINEER.

ALL NONMETALLIC CONDUIT SHALL BE CAPPED OR PLUGGED IMMEDIATELY AFTER INSTALLATION AND SHALL REMAIN CAPPED OR PLUGGED UNTIL WIRE/CABLES ARE INSTALLED.

NONMETALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BENDING OF PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR EMERSION TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.

ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON NONMETALLIC CONDUIT. (SEE NEC 347.5)

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY U.L. LISTED ADAPTER FITTINGS SHALL BE USED.

PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

ALL CONDUIT BEING FURNISHED AND INSTALLED SHALL HAVE THE U.L. LABEL FIRMLY ATTACHED.

CONDUIT RUNS SHALL BE THE SAME SIZE OF CONDUIT FROM ONE END TO THE OTHER (FROM PULL BOX TO PULL BOX-OR-JUNCTION BOX TO JUNCTION BOX-OR-BASE TO BASE, ETC.).

TRACER WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

ALL CONDUIT RUNS SHALL BE STRAIGHT (WITHOUT BENDS) FROM PULL BOX TO PULL BOX, PULL BOX TO BASE AND BASE TO BASE AS SHOWN ON THE PLANS.

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March, 2017 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

6

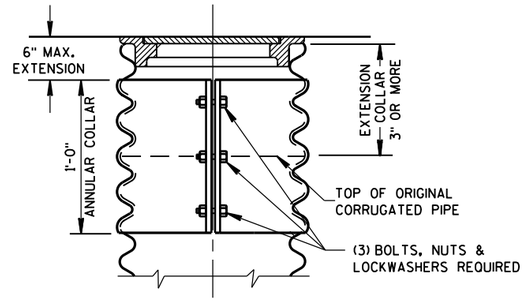
S.D.D. 9 B 2-10

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

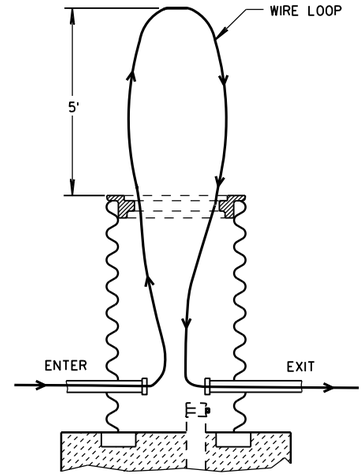
DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2	26 1/2	26 1/2	26 1/2
FRAME	F	8 1/2	8 1/2	8 1/2	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2
FRAME	G	11 1/2	11 1/2	11 1/2	17 1/2	17 1/2	17 1/2	23 1/2	23 1/2	23 1/2
WEIGHT IN POUNDS *										
FRAME AND COVER		60	60	60	110	110	110	155	155	155

* THE ACTUAL WEIGHT OF THE MANHOLE FRAME AND COVER MAY VARY WITHIN 5 PERCENT PLUS OR MINUS OF THE WEIGHTS SHOWN.

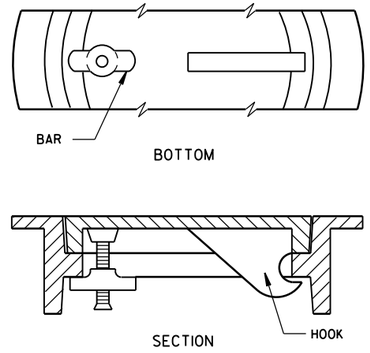
** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



CORRUGATED PIPE EXTENDER

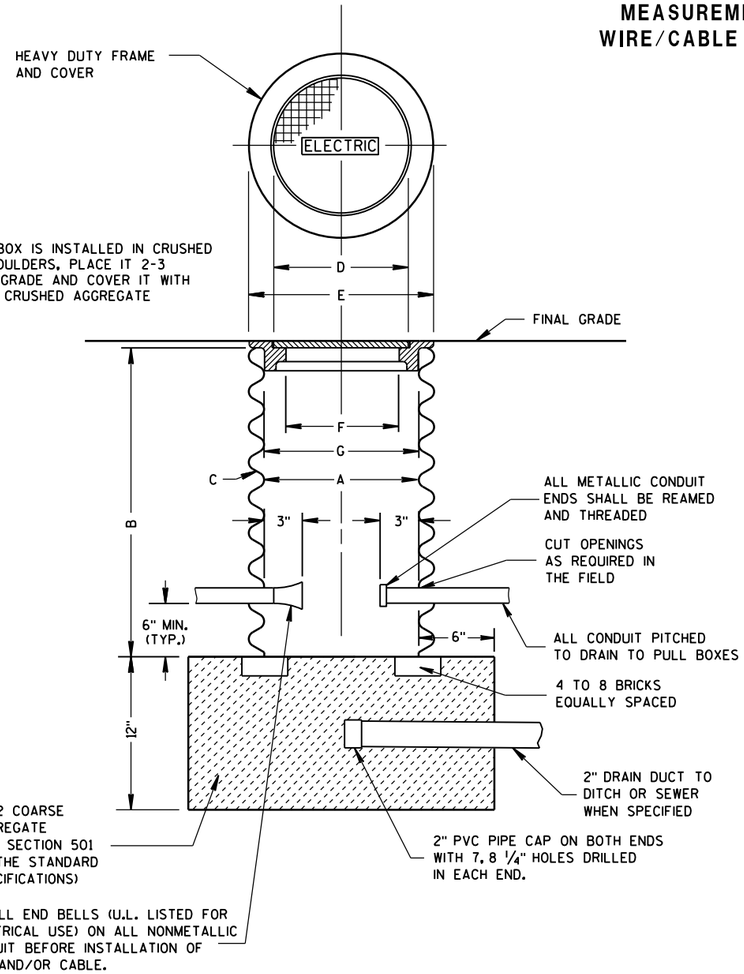


MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX



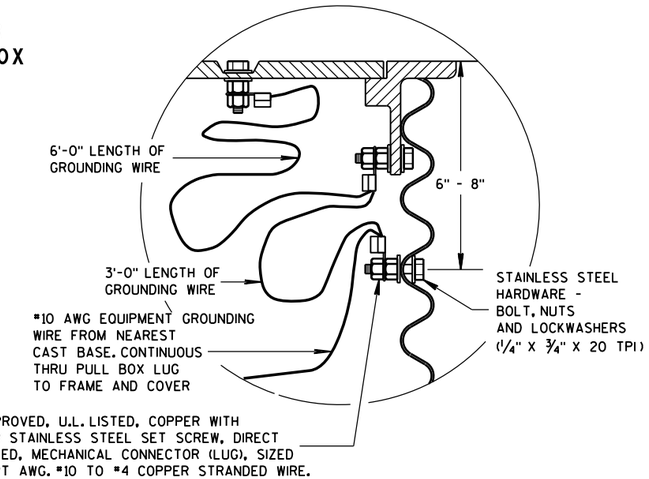
ALTERNATE COVER (LOCKING)

TIGHTENING BAR TYPE

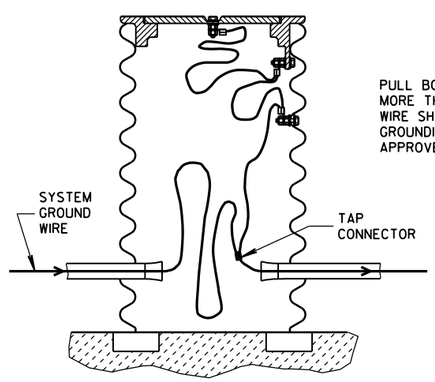


WHEN A PULL BOX IS INSTALLED IN CRUSHED AGGREGATE SHOULDERS, PLACE IT 2-3 INCHES BELOW GRADE AND COVER IT WITH 2-3 INCHES OF CRUSHED AGGREGATE

PULL BOX



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES



PULL BOX TO NEAREST BASE DISTANCE MORE THAN 20 FEET. PULL BOX GROUND WIRE SHALL CONNECT AT SYSTEM GROUNDING WIRE. USE DEPARTMENT APPROVED TAP CONNECTOR.

EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

GENERAL NOTES

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

ALL FRAMES AND COVERS SHALL BE HEAVY DUTY TYPE, SUITABLE FOR VEHICULAR TRAFFIC LOADS.

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

THE CONTRACTOR SHALL NOT INSTALL WIRE IN ANY PULL BOX UNTIL ITS INSTALLATION HAS BEEN INSPECTED AND ACCEPTED BY THE ENGINEER.

GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE.

ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.

WHEN PULL BOXES ARE INSTALLED FOR FUTURE USE, DO NOT INSTALL THE EQUIPMENT GROUNDING LUG. THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING ELECTRODE AND THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE REQUIRED AND INSTALLED UNDER A FUTURE WIRING CONTRACT.

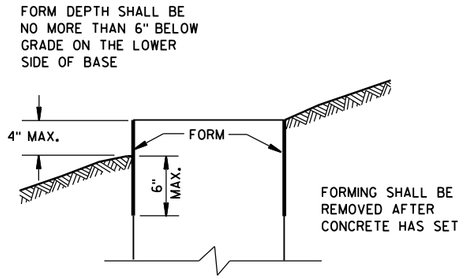
PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
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S.D.D. 9 B 4-11



FORMING DETAIL

QUANTITY REQUIREMENTS	CONCRETE BASE TYPE		
	1	2	5 & 6
APPROX. CUBIC YARDS OF CONCRETE	0.40	0.57	0.40
LBS. OF HOOP BAR STEEL	NONE	23	16
LBS. OF VERTICAL BAR STEEL	NONE	60	18

GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

TOP SURFACES OF CONCRETE BASES SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

CONDUIT SIZES AND LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

THE FINAL OR TERMINATING CONCRETE BASE IN A CONDUIT RUN SHALL HAVE A 6" EXIT STUB INSTALLED FOR FUTURE CABLING USE. THE EXIT STUB SHALL BE SIZED AS USED THROUGHOUT THE CONDUIT RUN AS SHOWN AT THE ENTRANCE OF THE BASE.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6 X THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1 INCH. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

GENERAL NOTES (CONTINUED)

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC.

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE DIRT OR FILL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) FOR TYPE 1, TYPE 2, TYPE 5, AND TYPE 6 BASES.

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE OF THE TYPE 2 AND TYPE 5 BASES THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD. ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 OF THE STANDARD SPECIFICATIONS.

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4" "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND END SHALL NOT BE THREADED.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

(1) THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL BY THE ENGINEER.

(2) (4) 1" DIA. X 3'-6" ANCHOR RODS.

(3) (4) 1" DIA. X 5'-0" ANCHOR RODS.

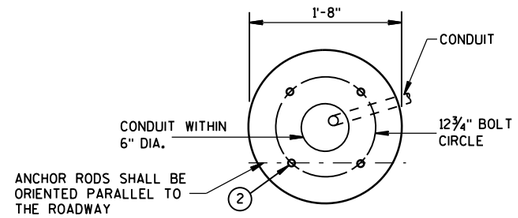
(4) (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.

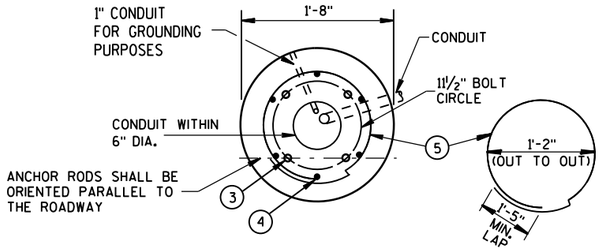
(5) (7) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

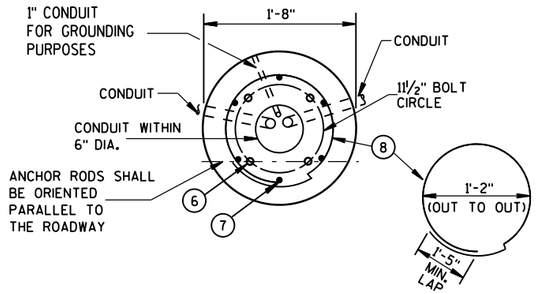
(6) (4) 1" DIA. X 3'-6" ANCHOR RODS.

(7) (6) NO.4 X 4'-8" BAR STEEL REINFORCEMENT.

(8) (5) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

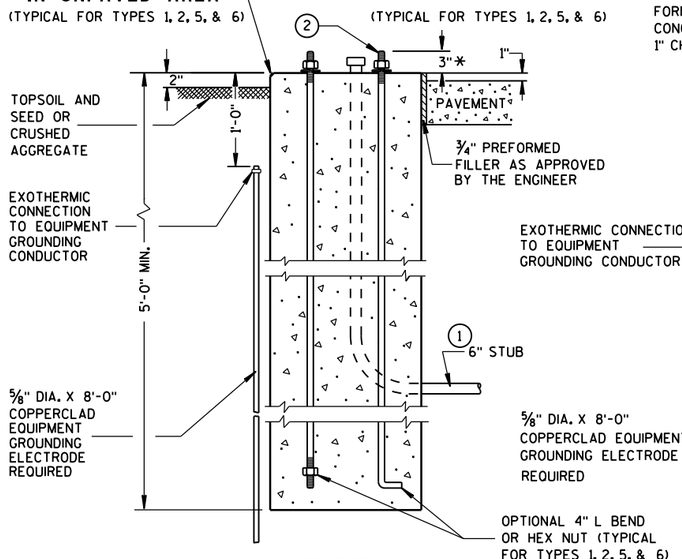




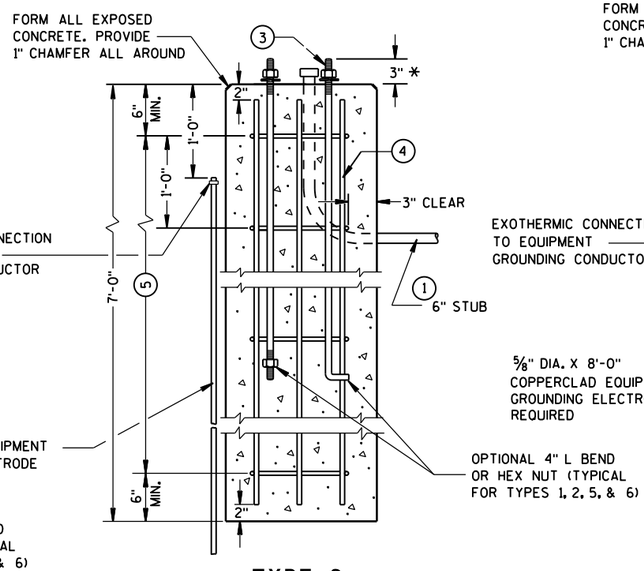


HALF SECTION IN UNPAVED AREA
(TYPICAL FOR TYPES 1, 2, 5, & 6)

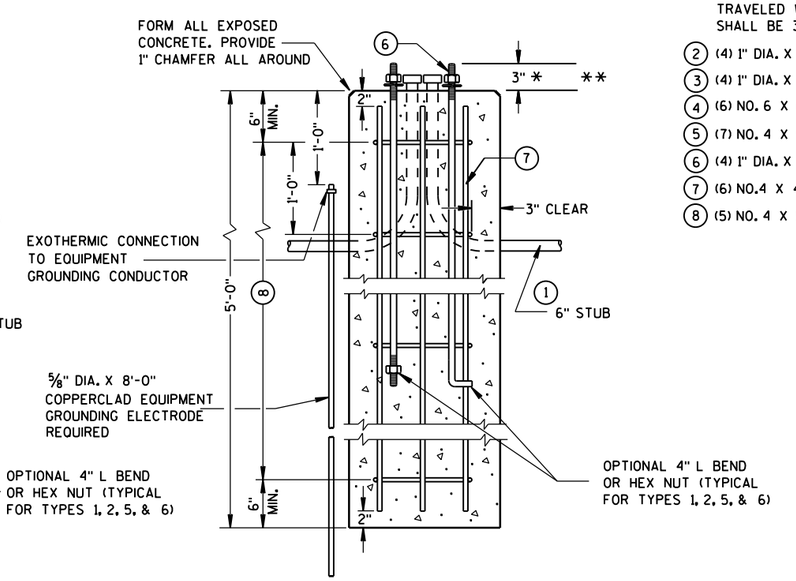
HALF SECTION IN PAVEMENT
(TYPICAL FOR TYPES 1, 2, 5, & 6)



TYPE 1



TYPE 2



TYPE 5 & 6

CONCRETE BASES

* ANY ANCHOR ROD PROJECTION SHORTER THAN 2¾" OR LONGER THAN 3¼" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

** FOR NONBREAKAWAY INSTALLATIONS, 4½" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

CONCRETE BASES, TYPES 1, 2, 5, & 6

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL

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GENERAL NOTES

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

FOUR (4) BOLTS SHALL BE FURNISHED WITH EACH TRANSFORMER BASE. BOLTS SHALL BE 1" DIAMETER, 4" IN LENGTH, WITH WASHERS, LOCK WASHERS AND NUTS. BOLTS, NUTS AND WASHERS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 641.2.2 OF THE STANDARD SPECIFICATIONS.

LEVELING SHIMS, IF NEEDED, SHALL BE DESIGNED FOR THE PURPOSE AND USED UNDER CAST BASES WHEN PLUMBING POLES OR STANDARDS DURING INSTALLATION. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE.

SHIM LENGTH SHALL BE LONG ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

A NEMA APPROVED, U.L. LISTED, COPPER WITH BRASS OR STAINLESS STEEL SET SCREW, DIRECT BURY RATED, MECHANICAL CONNECTOR (LUG), SIZED TO ACCEPT AWG. #10 TO #4 COPPER STRANDED WIRE SHALL BE FURNISHED AND INSTALLED IN THE PEDESTAL AND TRANSFORMER BASES.

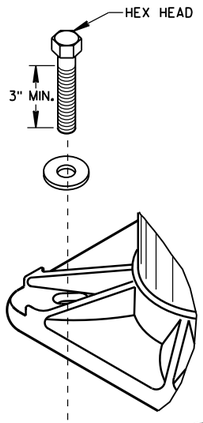
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

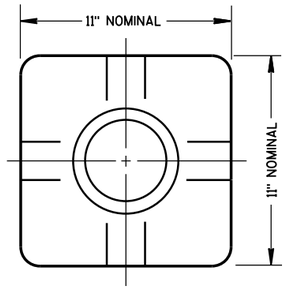
SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

PEDESTAL BASE COLLAR THREADING SHALL BE TAPERED AND IN ACCORDANCE WITH NATIONAL PIPE THREADING DIMENSIONS.

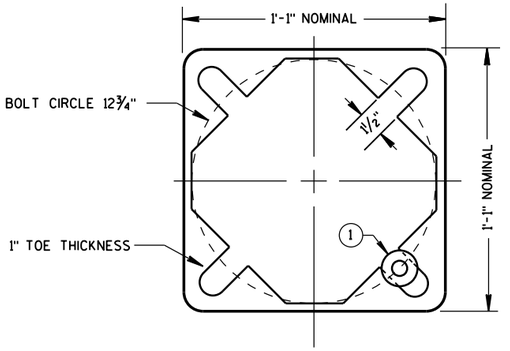
BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1 1/2", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

THE ACCESS DOOR SHALL BE OF THE SAME MATERIAL AS THE BASE.

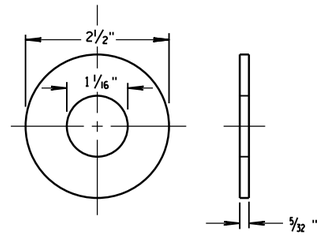




TOP VIEW
(PEDESTAL BASE)

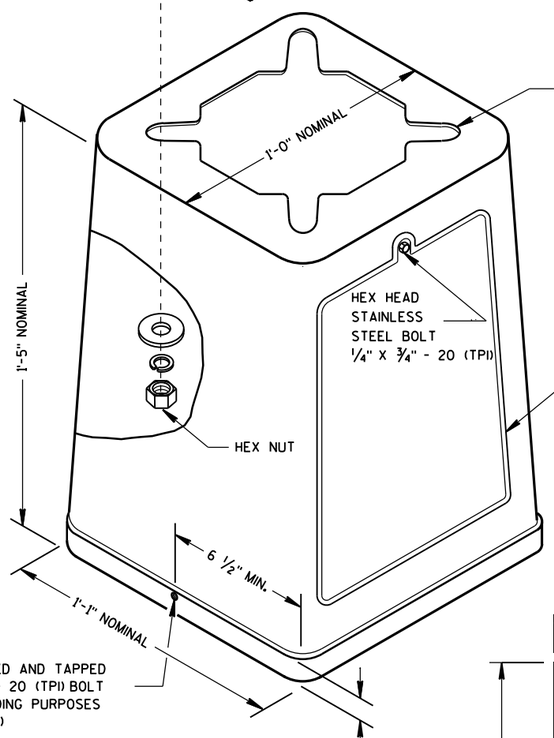


BOTTOM VIEW
(PEDESTAL BASE)

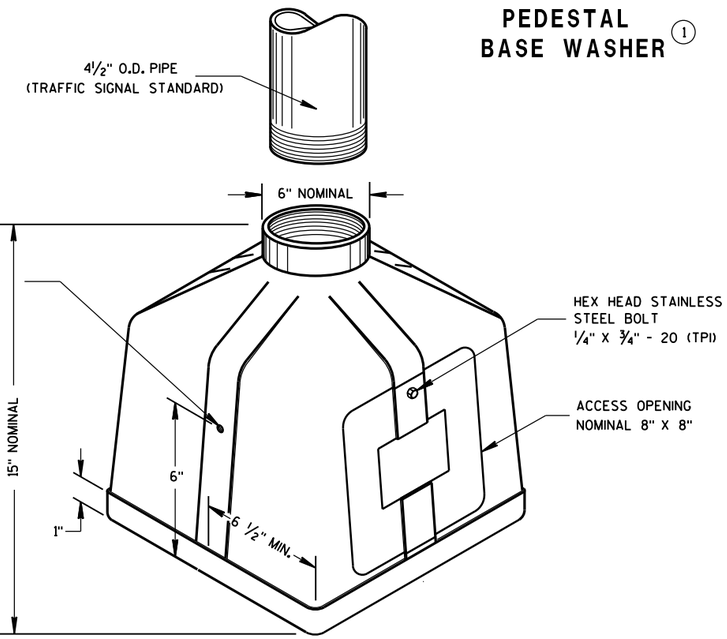


ZINC COATED STEEL WASHER
TO BE PROVIDED BY THE CONTRACTOR

PEDESTAL BASE WASHER (1)

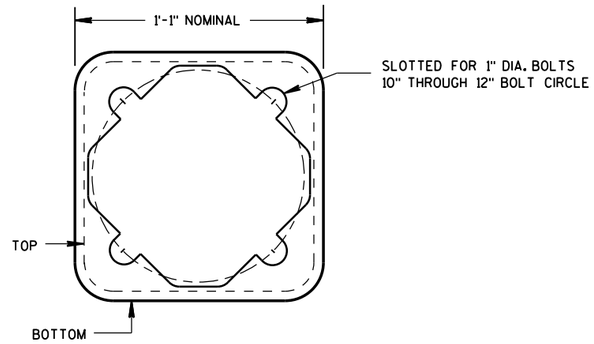


ISOMETRIC VIEW

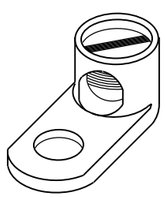


ISOMETRIC VIEW

PEDESTAL BASE



BOTTOM VIEW
(TRANSFORMER BASE)

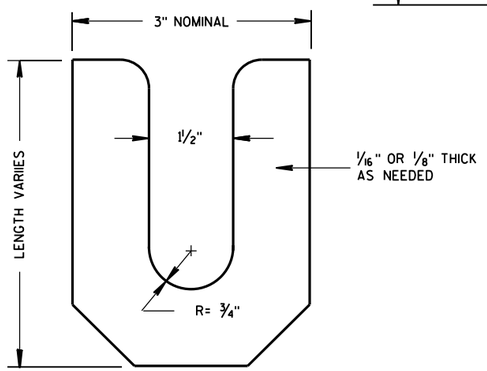


TYPICAL MECHANICAL CONNECTOR LUG

TO BE FURNISHED WITH EACH BASE

TRANSFORMER BASE

INTENDED FOR USE WITH TYPE 2, 3, 4, 5 & 6 POLES



LEVELING SHIM

TRANSFORMER/PEDESTAL BASES

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DEPARTMENT OF TRANSPORTATION

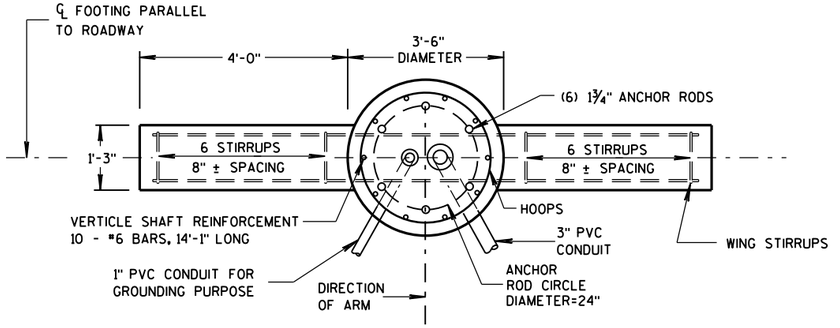
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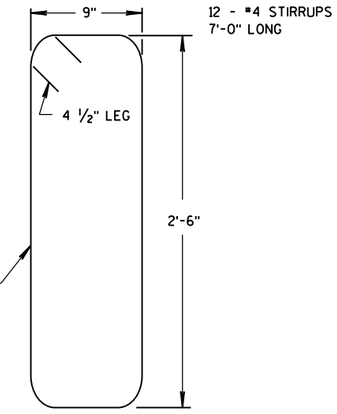
S.D.D. 9 C 3-4

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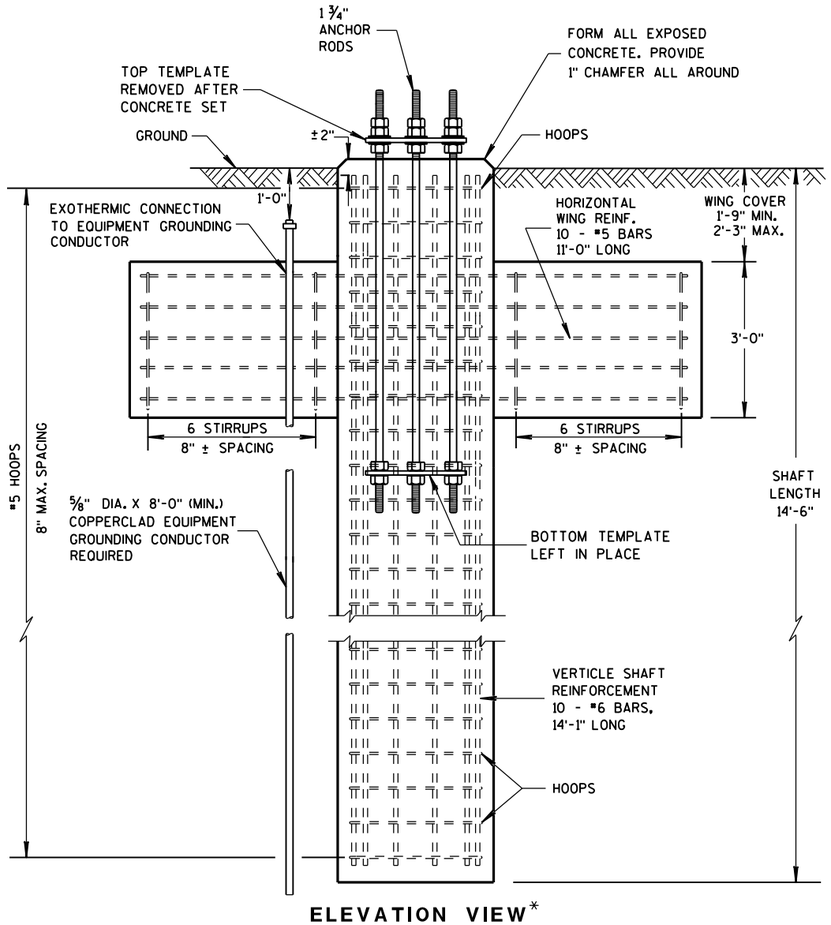
S.D.D. 9 C 3-4



PLAN VIEW

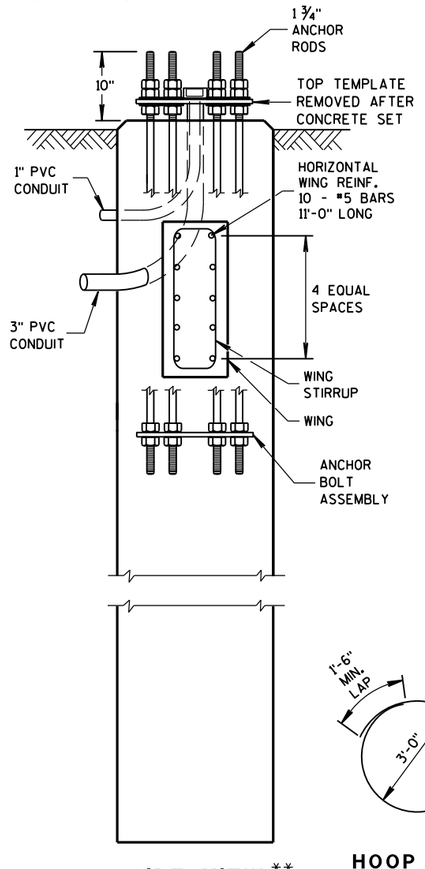


WING STIRRUP



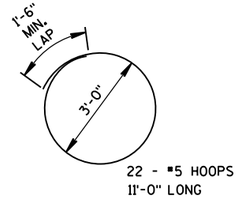
ELEVATION VIEW*

* CONDUITS ARE NOT SHOWN ON THIS VIEW FOR CLARITY



SIDE VIEW**

** HOOPS AND VERTICAL SHAFT REINFORCEMENT NOT SHOWN ON THIS VIEW FOR CLARITY



HOOP DETAIL

GENERAL NOTES

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

ORIENT ANCHOR RODS IN FOOTING AND PROVIDE ANCHOR ROD PROJECTION ABOVE TOP OF CONCRETE FOOTING BASE PER THIS SHEET.

BENDING DIMENSIONS FOR REINFORCING BARS ARE OUT TO OUT.

USE 3" CLEAR FOR ALL REINFORCEMENT UNLESS NOTED OTHERWISE.

THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF THE UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.

WELDING OF ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TEMPLATES SHALL BE USED.

BASES (SHAFT), BELOW THE WING, SHALL BE EXCAVATED BY THE USE OF A CIRCULAR AUGER. IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE SOIL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUNG THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

TOP SURFACE OF THE CONCRETE BASE SHALL BE TROWEL FINISHED AND LEVEL.

CONDUIT SIZE AND LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6 X THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASE SHALL BE 4½" INCHES. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED. NONMETALLIC CONDUIT SHALL HAVE BELL ENDS INSTALLED. ALL CONDUIT SHALL SLOPE TO PULL BOX.

ALL CONDUIT ENDS AT THE TOP OF THE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTOR FITTINGS, UL LISTED FOR ELECTRICAL USE, SHALL BE USED.

A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD).

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE THROUGH A 1-INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4-FOOT COIL OF WIRE ABOVE THE CONCRETE BASE, THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS.

THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVEL WAY SHALL BE 24-INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18-INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36-INCHES, (GREATER THAN 36-INCHES IF INSTALLED IN BREAKER-RUN), EXCEPT WITH THE WRITTEN APPROVAL OF THE ENGINEER.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

CONCRETE MASONRY	fc=3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60	fy=60,000 p.s.i.
ANCHOR RODS, ASTM F1554 GRADE 55 (IN ACCORDANCE WITH SECTION 641.2.2.3 OF THE STANDARD SPECIFICATIONS	fy=55,000 p.s.i.
TEMPLATES, ASTM A709 GRADE 36	fy=36,000 p.s.i.

(FOR TYPE 12 & 13 & OVER HEIGHT (OH) POLES)

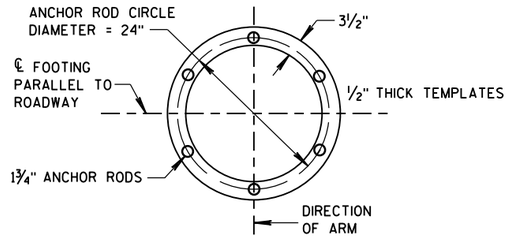
CONCRETE = 6.3 C.Y.
H.S. REINFORCEMENT = 635 LBS.

TO BE USED WHEN GROUND ELEVATION AT BASE EQUALS OR IS GREATER THAN HIGH POINT OF ROADWAY ELEVATION.
SEE S.D.D. 9C13-2 WHEN GROUND ELEVATION AT BASE IS LOWER THAN HIGH POINT OF ROADWAY ELEVATION.

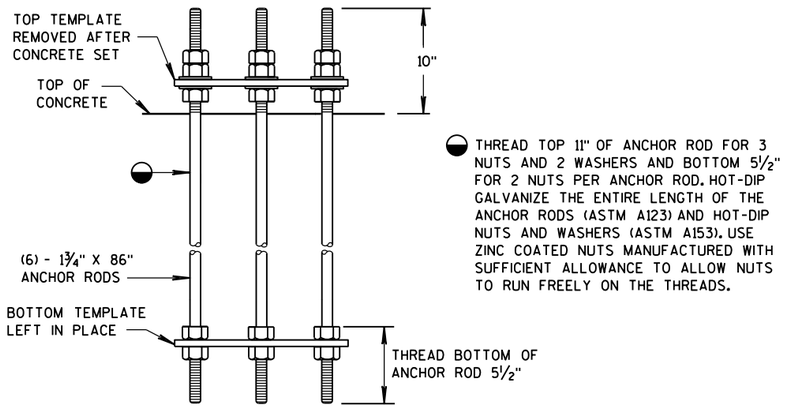
CONCRETE BASE TYPE 13

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6
S.D.D. 9 C 12-9a

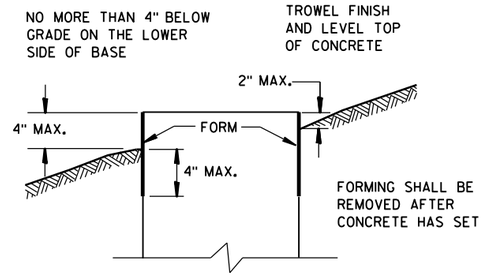


TOP AND BOTTOM TEMPLATES



ANCHOR BOLT ASSEMBLY DETAIL

CONCRETE BASE TYPE 13 ANCHOR ASSEMBLY



FORMING DETAIL

6

6

S.D.D. 9 C 12-9b

S.D.D. 9 C 12-9b

CONCRETE BASE TYPE 13

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

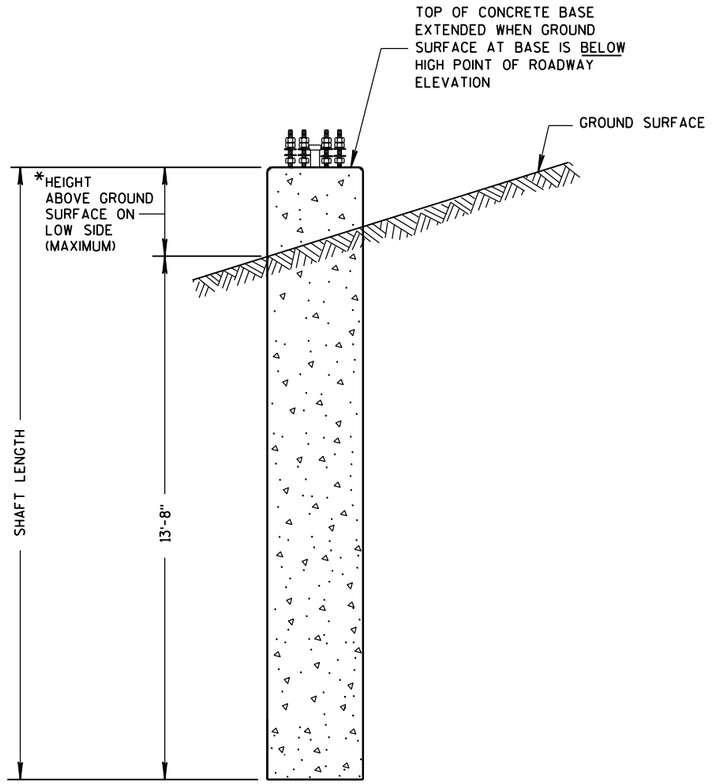
May 2017
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL

FHWA

REINFORCEMENT AND CONCRETE QUANTITIES
ADJUSTED FOR EXTENDED TYPE 10 CONCRETE BASE

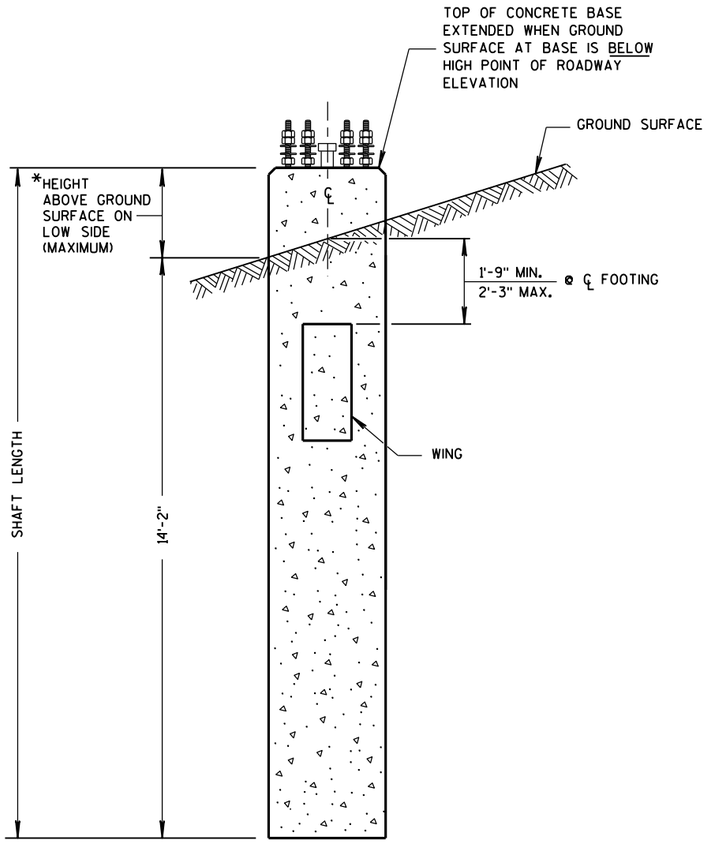
HEIGHT INCREASE REQUIRED	* HEIGHT ABOVE GROUND SURFACE ON LOW SIDE (MAXIMUM)	SHAFT LENGTH	LENGTH OF #6 VERTICAL REINF.	NO. OF #4 HOOPS	C.Y. OF CONCRETE	LBS. OF HOOP BAR STEEL	LBS. OF VERTICAL BAR STEEL
>0" TO 6"	10"	14'-6"	14'-1"	16	2.6	78	127
>6" TO 1'-0"	1'-4"	15'-0"	14'-7"	16	2.7	78	131
>1'-0" TO 1'-6"	1'-10"	15'-6"	15'-1"	17	2.8	83	136
>1'-6" TO 2'-0"	2'-4"	16'-0"	15'-7"	17	2.9	83	141



CONCRETE BASE TYPE 10 (EXTENDED)

REINFORCEMENT AND CONCRETE QUANTITIES
ADJUSTED FOR EXTENDED TYPE 13 CONCRETE BASE

HEIGHT INCREASE REQUIRED	* HEIGHT ABOVE GROUND SURFACE ON LOW SIDE (MAXIMUM)	SHAFT LENGTH	LENGTH OF #6 VERTICAL REINF.	NO. OF #4 HOOPS	C.Y. OF CONCRETE	LBS. OF H.S. BAR STEEL
>0" TO 6"	10"	15'-0"	14'-7"	16	6.5	447
>6" TO 1'-0"	1'-4"	15'-6"	15'-1"	16	6.6	454
>1'-0" TO 1'-6"	1'-10"	16'-0"	15'-7"	17	6.8	469
>1'-6" TO 2'-0"	2'-4"	16'-6"	16'-1"	17	7.0	476



CONCRETE BASE TYPE 13 (EXTENDED)

CONCRETE BASE
TYPE 10 & TYPE 13 EXTENSION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

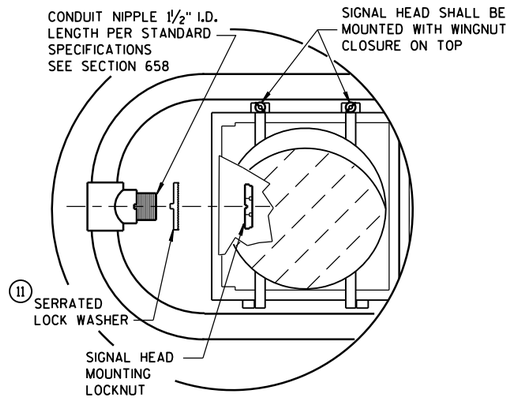
APPROVED
11-26-2013 DATE
/S/ Ahmet Demirbilek STATE ELECTRICAL
FHWA

6

S.D.D. 9 C 13-2

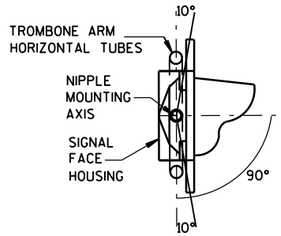
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S.D.D. 9 C 13-2



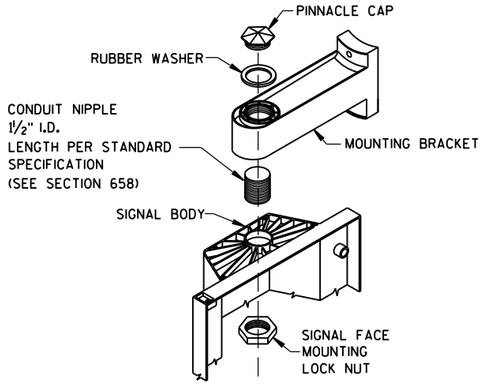
HORIZONTAL SIGNAL HEAD MOUNTING DETAIL *

* SIGNAL HEAD ATTACHMENT ALSO APPLYS TO MOUNTING AT CROSS BAR



SECTION A-A

(10 DEGREES TILT REQUIREMENT OF FACE(S) IN THE TROMBONE MOUNTING)



SIGNAL FACE MOUNTING DETAIL

(BANDED)

GENERAL NOTES

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

POLES SHALL BE EITHER ALUMINUM OR GALVANIZED STEEL AS CALLED FOR IN THE CONTRACT.

SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

A PULL WIRE/ROPE IN ACCORDANCE WITH STANDARD SPECIFICATION 652 SHALL BE INSTALLED IN EACH TROMBONE ARM RACEWAY DURING THE MANUFACTURING PROCESS.

TYPE 2 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063-T6 ALUMINUM ALLOY. SLEEVING INSIDE THE POLE IS NOT ACCEPTABLE.

WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

(1) 4" X 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) ¼" X ¾" - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.

(2) SIGNAL FACE MOUNTING BRACKETS. MOUNT WITH CAP SCREWS AND BANDING. (SEE STANDARD SPECIFICATIONS - SEC. 658)

(3) GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1⅜" HOLE IN POLE SHAFT FOR WIRING.

(4) SECURELY MOUNT DULL BLACK POLYCARBONATE BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURER'S RECOMMENDATIONS.

(5) POLE MOUNTED SIGNAL FACES SHALL REQUIRE 1 OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACES.

(6) CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.

(7) MOUNTING BRACKET NIPPLES FOR THE SIGNAL FACE(S) SHALL BE 2 INCHES IN LENGTH AND 1½ INCHES IN DIAMETER. (SEE STANDARD SPECIFICATION - SECTION 658).

(8) VERTICAL STRUT (ADJUSTABLE). ONE (1) SET SCREW (¼" X ¾" LONG - 20 TPI, STAINLESS STEEL, HEX HEAD) INTO EACH ARM MEMBER IF STRUT IS THE SLIDING TYPE.

(9) FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.

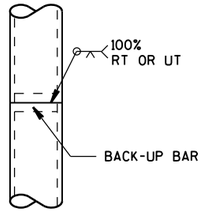
(10) SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE TRANSFORMER BASE.

(11) USE SERRATED LOCK WASHERS WITH NOTCHES BETWEEN END TEE AND SIGNAL HEAD.

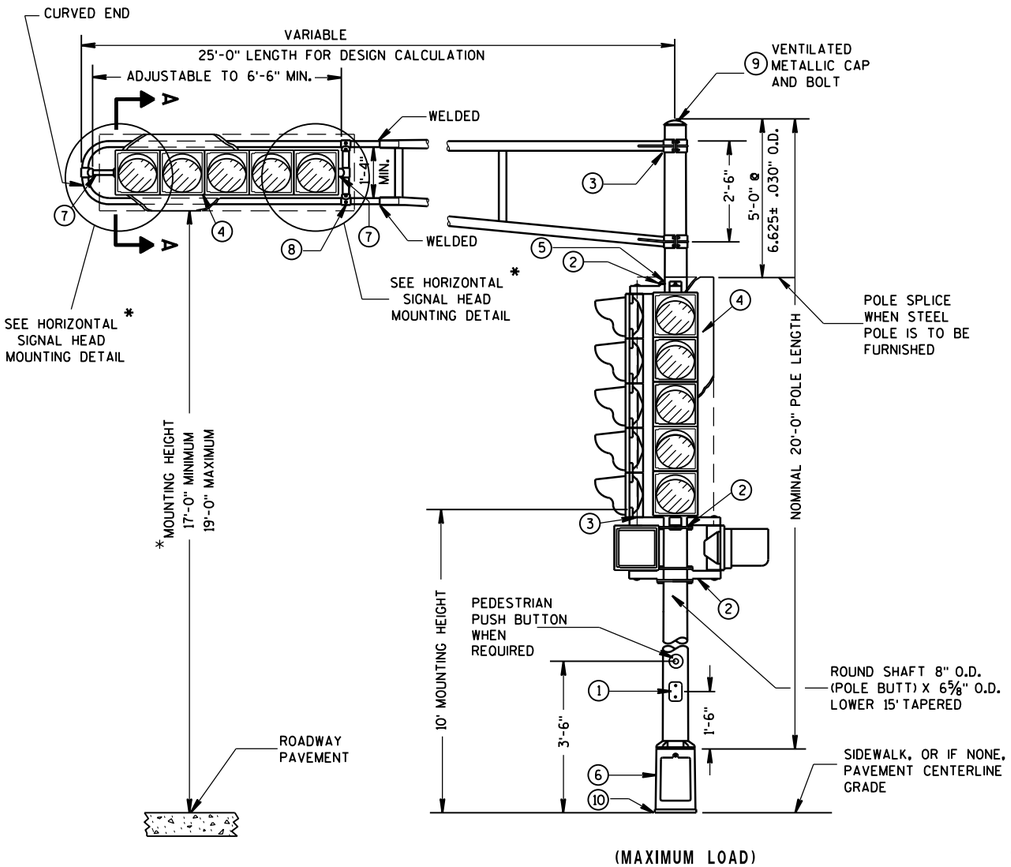
*MOUNTING HEIGHT LIMITATION DIMENSIONS OF THE TROMBONE MAST ARM WILL BE DEPENDENT UPON THE USE/NON-USE OF A TRANSFORMER BASE.

FOR MANUFACTURERS USE ONLY

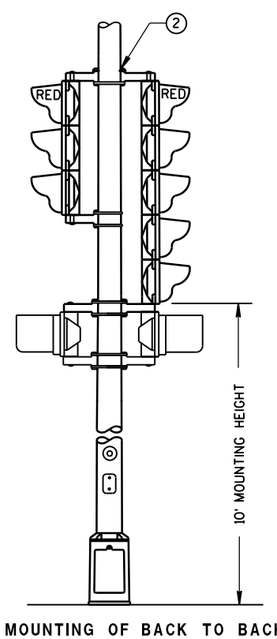
WELD TO BE 100% R.T. OR U.T. TESTED AS PER THE REQUIREMENTS OF AWS D 1.5-88. RECORDS OF COMPLIANCE OF SUCH TESTING SHALL BE FURNISHED TO THE OFFICE OF DESIGN/BRIDGE FOR VERIFICATION AND APPROVAL.



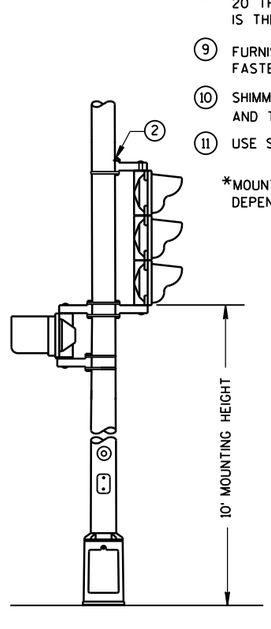
POLE SPLICE DETAIL



(MAXIMUM LOAD)



TYPICAL MOUNTING OF BACK TO BACK 3 AND 5 SECTION SIGNAL FACES



TYPICAL MOUNTING OF 3 SECTION SIGNAL FACE

TYPE 2 POLE MOUNTING CONFIGURATION

POLE MOUNTINGS FOR TRAFFIC SIGNALS TYPE 2

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

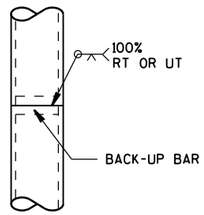
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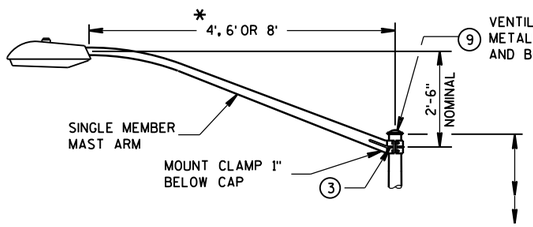
S.D.D. 9 E 1-14a

FOR MANUFACTURERS USE ONLY

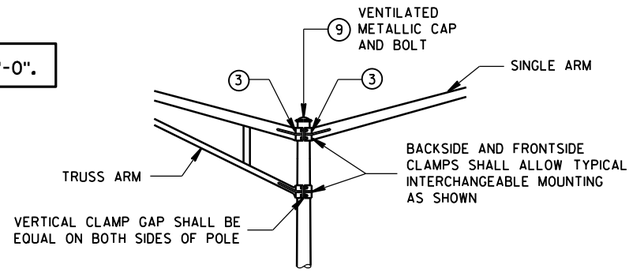
WELD TO BE 100% R.T. OR U.T. TESTED AS PER THE REQUIREMENTS OF AWS D 1.5-88. RECORDS OF COMPLIANCE OF SUCH TESTING SHALL BE FURNISHED TO THE OFFICE OF DESIGN/BRIDGE FOR VERIFICATION AND APPROVAL.

*RISE FOR 4' ARM SHALL BE 2'-0".





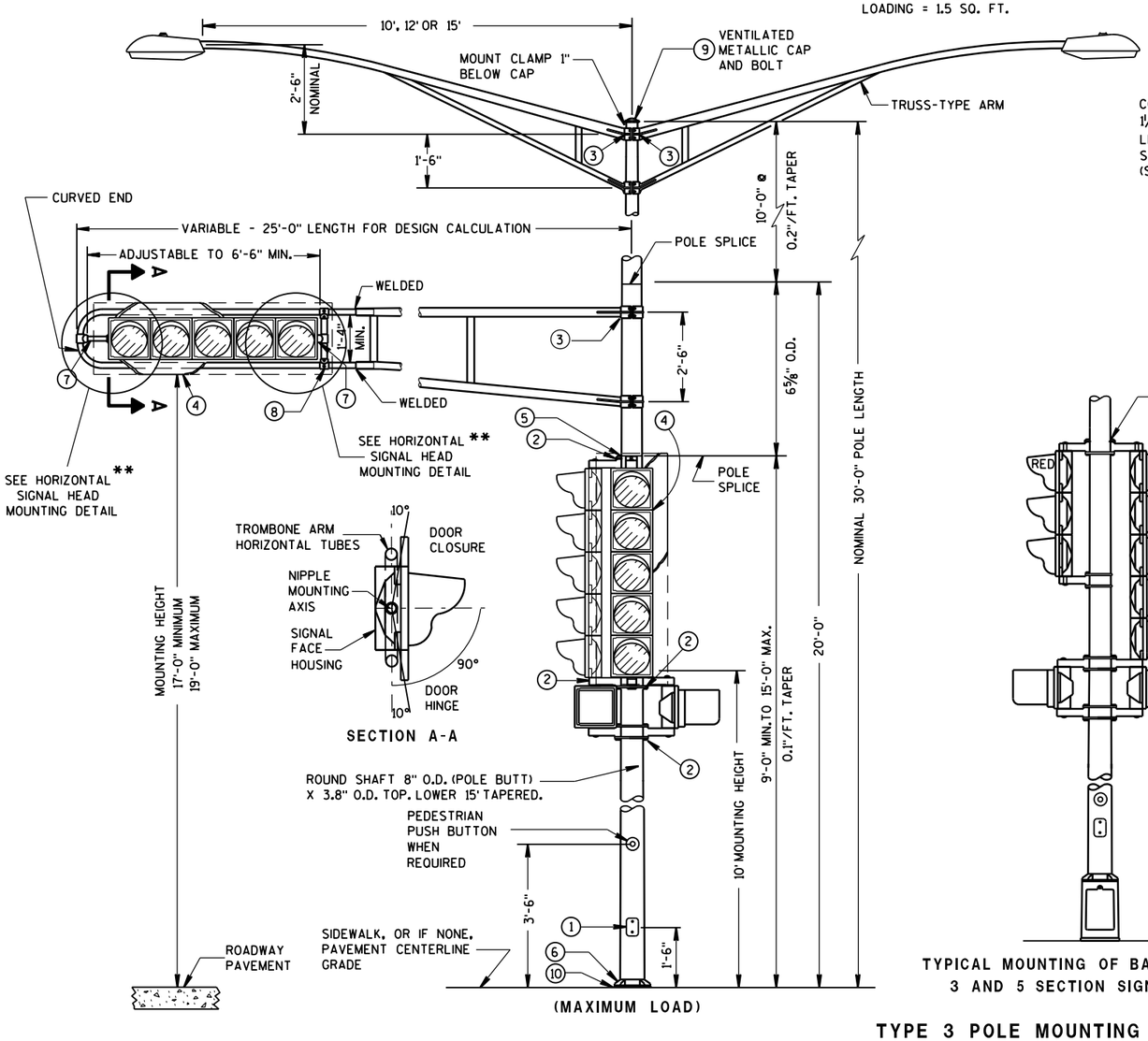
POLE SPLICE DETAIL



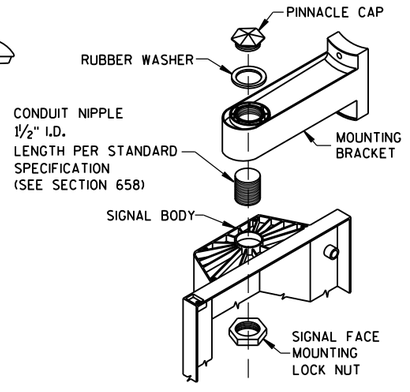
INTERCHANGEABLE MOUNTING DETAIL

LUMINAIRE

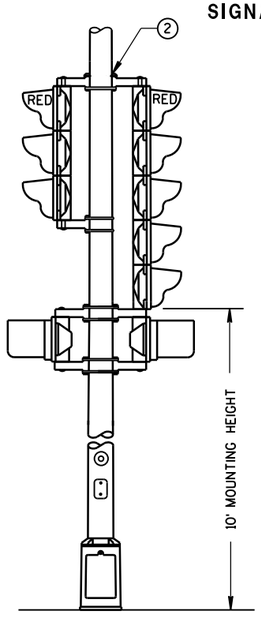
WT. - 50 LBS.
EFFECTIVE PROJECTED
AREA FOR WIND
LOADING = 1.5 SQ. FT.



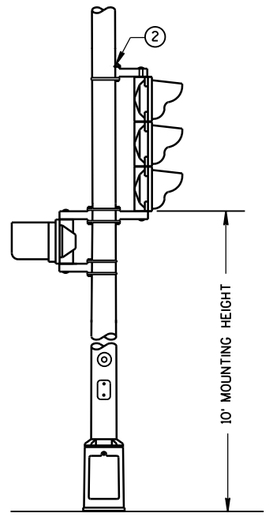
TYPE 3 POLE MOUNTING CONFIGURATION



SIGNAL FACE MOUNTING DETAIL
(BANDED)



TYPICAL MOUNTING OF BACK TO BACK
3 AND 5 SECTION SIGNAL FACES



TYPICAL MOUNTING OF 3 SECTION
SIGNAL FACE

GENERAL NOTES

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

ALL TYPE 3 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL.

SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

A PULL WIRE/ROPE IN ACCORDANCE WITH STANDARD SPECIFICATION 652, SHALL BE INSTALLED IN EACH TROMBONE ARM RACEWAY DURING THE MANUFACTURING PROCESS.

THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2⅜ INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

(1) 4" X 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) ¼" X ¾" - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.

(2) SIGNAL FACE MOUNTING BRACKETS, MOUNT WITH CAP SCREWS AND BANDING. (SEE STANDARD SPECIFICATIONS - SEC. 658)

(3) GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1⅜" HOLE IN POLE SHAFT FOR WIRING.

(4) SECURELY MOUNT DULL BLACK POLYCARBONATE BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURER'S RECOMMENDATIONS.

(5) POLE MOUNTED SIGNAL FACES SHALL REQUIRE 1 OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACE.

(6) TYPE 3 POLE CONFIGURATIONS SHALL BE MOUNTED DIRECTLY TO THEIR CONCRETE BASES.

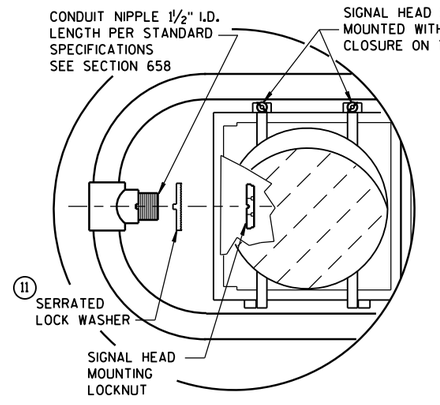
(7) MOUNTING BRACKET NIPPLES FOR THE SIGNAL FACE(S) SHALL BE 2 INCHES IN LENGTH AND 1½ INCHES IN DIAMETER. (SEE STANDARD SPECIFICATION - SECTION 658)

(8) VERTICAL STRUT (ADJUSTABLE). ONE (1) SET SCREW (1/4 " X ¾" -20 TPI, STAINLESS STEEL, HEX HEAD) INTO EACH ARM MEMBER IF STRUT IS THE SLIDING TYPE.

(9) FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.

(10) SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND POLE.

(11) USE SERRATED LOCK WASHERS WITH NOTCHES BETWEEN END TEE AND SIGNAL HEAD.



HORIZONTAL SIGNAL HEAD MOUNTING DETAIL **

** SIGNAL HEAD ATTACHMENT ALSO APPLYS TO MOUNTING AT CROSS BAR

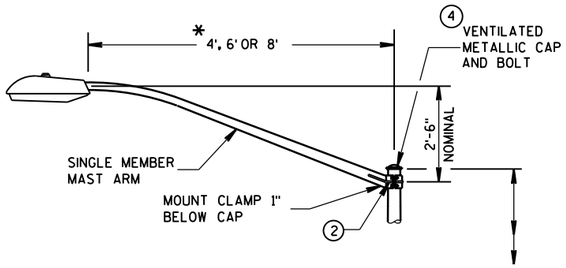
POLE MOUNTINGS FOR
TRAFFIC SIGNALS AND
LIGHTING UNITS, TYPE 3
(HEAVY DUTY)

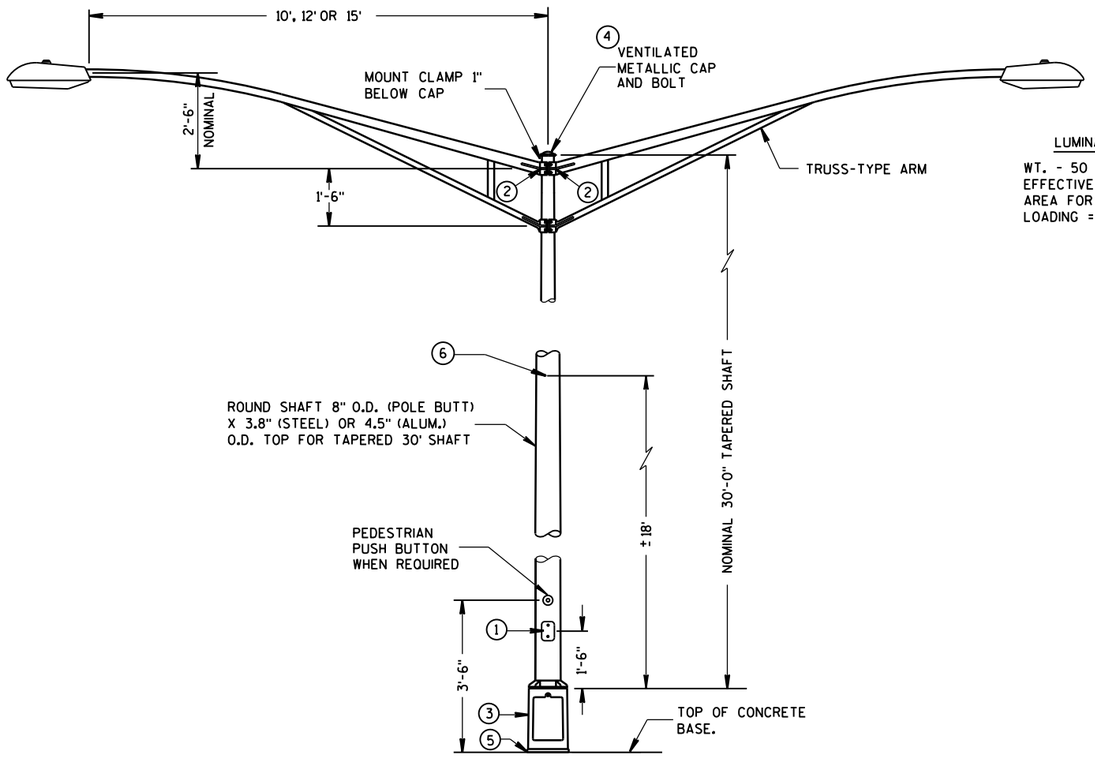
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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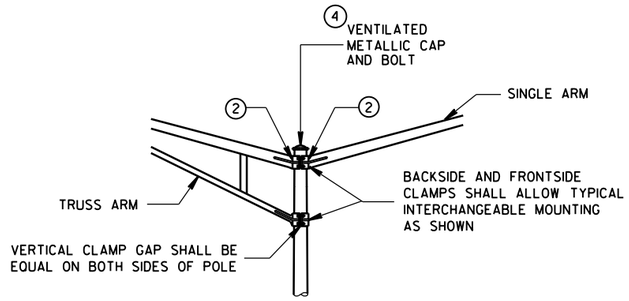
S.D.D. 9 E 1-14b

*RISE FOR 4' ARM SHALL BE 2'-0".





TYPE 5 POLE MOUNTING CONFIGURATION
(MAXIMUM LOAD)
LIGHTING ONLY



INTERCHANGEABLE MOUNTING DETAIL

LUMINAIRE

WT. - 50 LBS.
EFFECTIVE PROJECTED
AREA FOR WIND
LOADING = 1.5 SQ. FT.

GENERAL NOTES

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

ALL TYPE 5 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL OR ALUMINUM, AS CALLED FOR IN THE CONTRACT.

TYPE 5 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063-T6 ALUMINUM ALLOY. SLEEVING INSIDE THE POLE IS NOT ACCEPTABLE.

THE TYPE 5 ALUMINUM POLES SHALL HAVE A MINIMUM WALL THICKNESS OF 0.188".

TYPE 5 STEEL POLES SHALL HAVE A MINIMUM WALL THICKNESS OF U.S. STANDARD 11 GAGE (.1196").

THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2⅜ INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

WHEN TRANSFORMER BASES ARE USED, WIRE CONEECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

(1) 4" x 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) ¼" X ¾" - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.

(2) GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1⅜" HOLE IN POLE SHAFT FOR WIRING.

(3) CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.

(4) FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.

(5) SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE TRANSFORMER BASE.

(6) INTERNAL DUMBBELL-TYPE VIBRATION DAMPER.

6

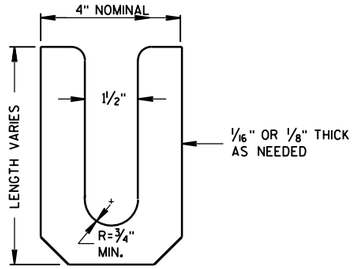
S.D.D. 9 E 1-14d

POLE MONTINGS FOR
LIGHTING UNITS, TYPE 5
(30 FEET)

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DEPARTMENT OF TRANSPOI

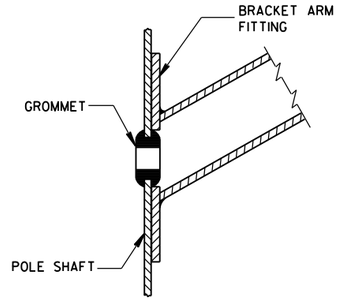
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S.D.D. 9 E 1-14d

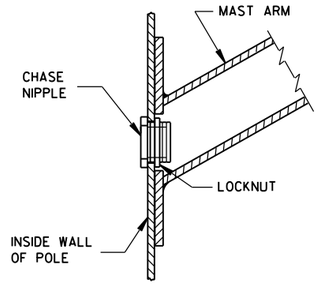


LEVELING SHIM (13)

SHALL BE ALUMINUM



TYPICAL APPLICATION OF GROMMET IN POLE SHAFT



TYPICAL APPLICATION OF CHASE NIPPLE IN POLE SHAFT

GENERAL NOTES

CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.

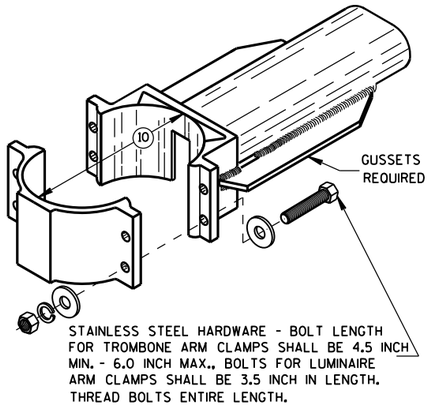
(10) 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP.
6.625" I.D. FOR TROMBONE MAST ARM CLAMP.

(11) INDIVIDUAL BASE PLATE ANCHOR ROD COVERS. (4 REQUIRED)

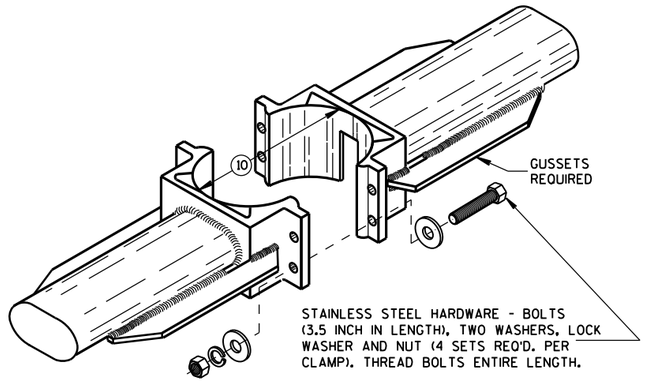
(12) BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT CIRCLE USING 1" DIAMETER ANCHOR RODS.

(13) LEVELING SHIMS, DESIGNED FOR THE PURPOSE, SHALL BE USED WHEN PLUMBING POLES. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE. LEVELING SHIMS SHALL BE USED ONLY BETWEEN THE TOP OF THE CONCRETE BASE AND A METALLIC BASE PLATE.

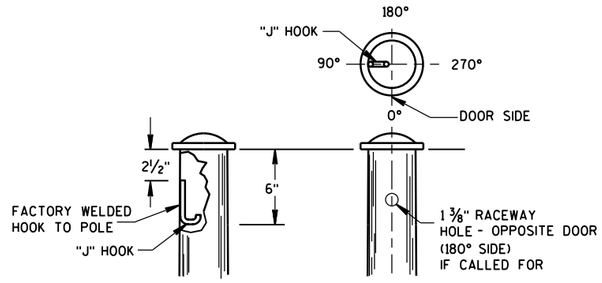
SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



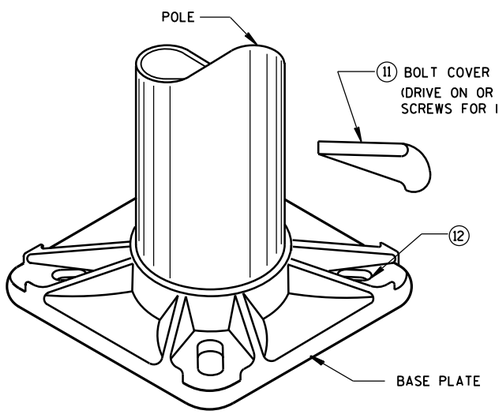
TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP



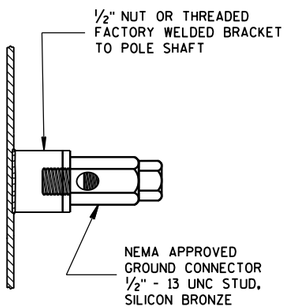
TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS

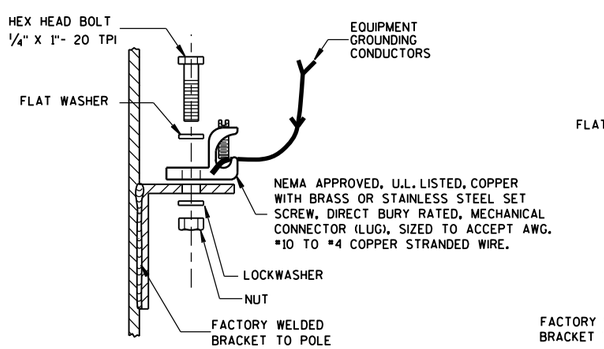


TYPICAL "J" HOOK LOCATION



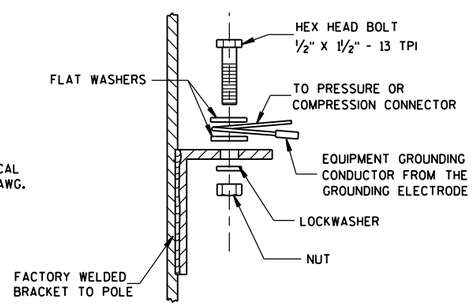
BASE PLATE





TYPICAL GROUNDING CONNECTIONS

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



HARDWARE DETAILS FOR POLE MOUNTINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

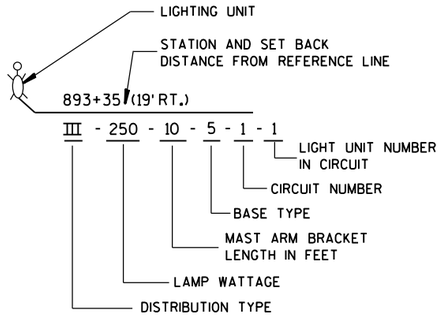
APPROVED
Feb. 2015
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL

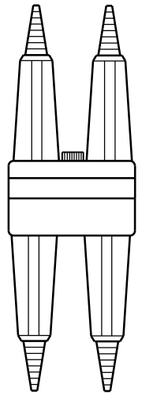
FHWA

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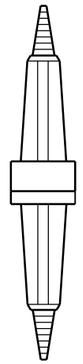
S.D.D. 9 E 1-14g



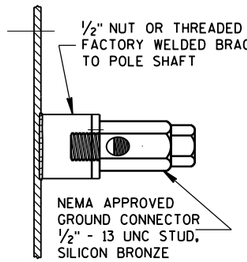
LIGHTING UNIT CODE
(TYPICAL)

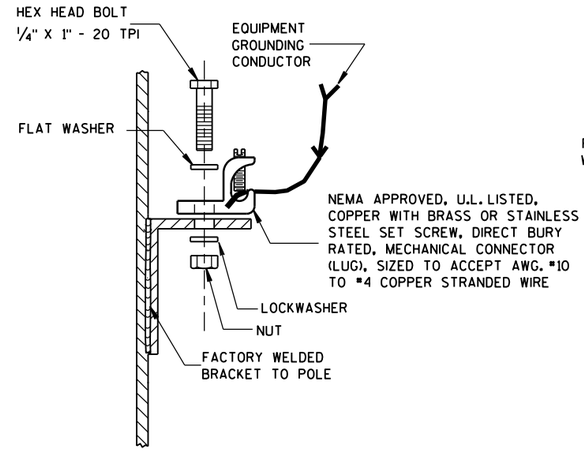


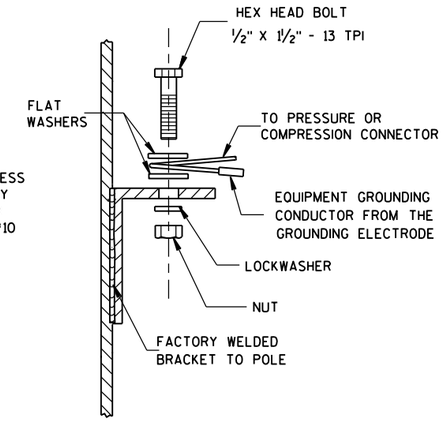
DETAIL "A"
BREAKAWY DOUBLE POLE WITH WATERPROOF INSULATING BOOT



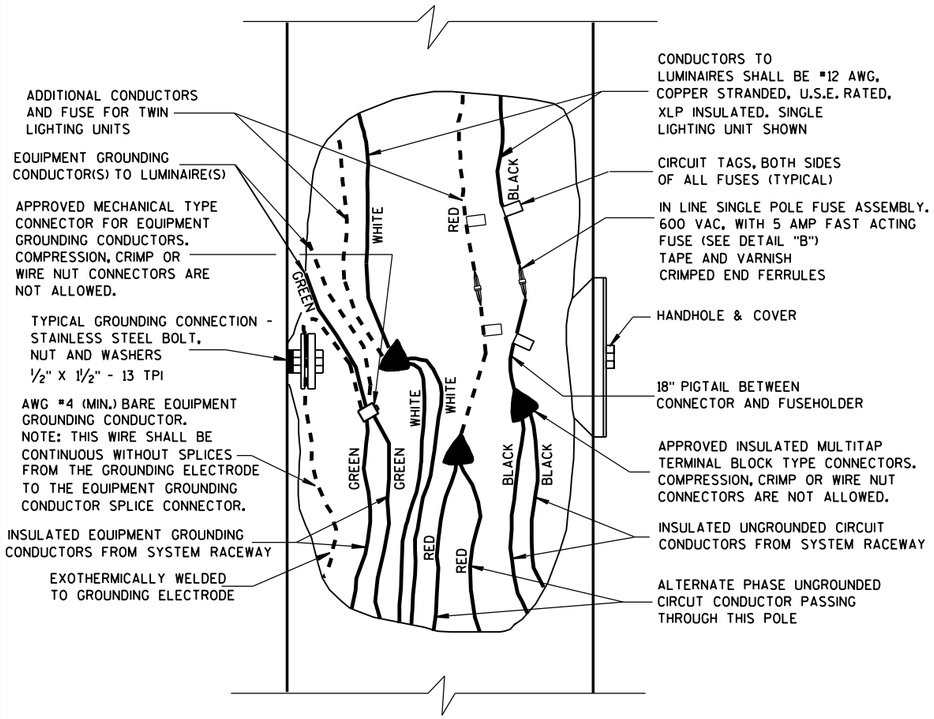
DETAIL "B"
BREAKAWY SINGLE POLE WITH WATERPROOF INSULATING BOOT



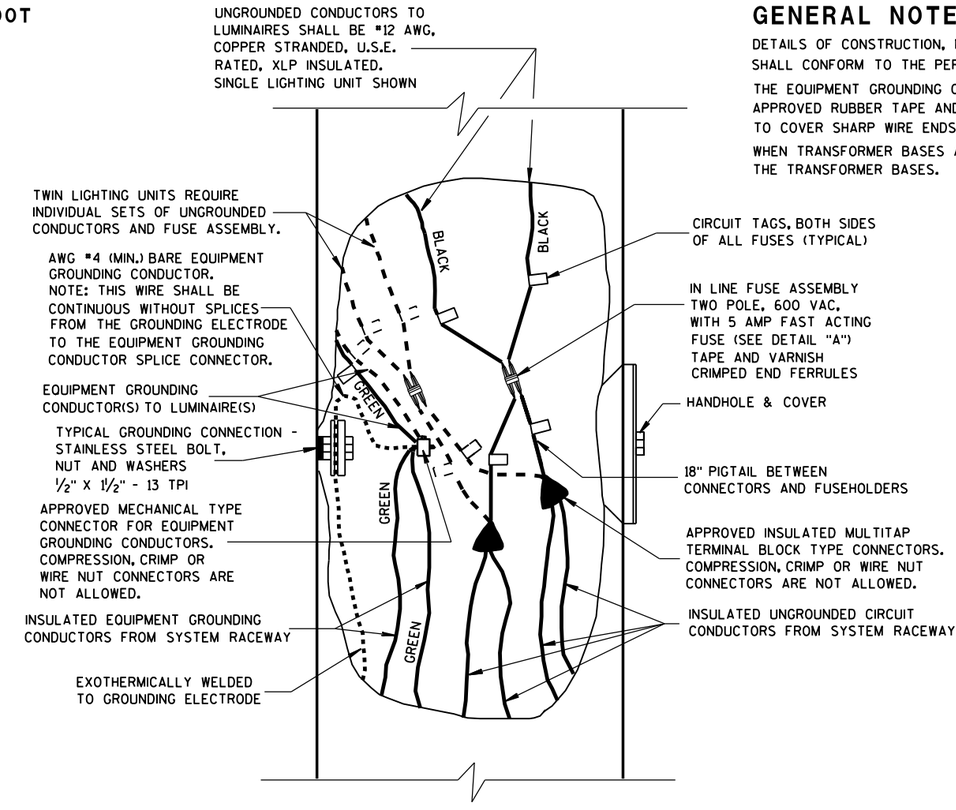




TYPICAL GROUNDING CONNECTIONS
NUT, BOLT, WASHERS AND LOCKWASHERS SHALL BE STAINLESS STEEL



3 WIRE - 120, 240 OR 480 VAC (UNGROUNDED CONDUCTOR) WITH GROUNDED CONDUCTOR AND WITH EQUIPMENT GROUNDING CONDUCTOR



2 WIRE - 240 OR 480 VAC (UNGROUNDED CONDUCTORS) WITH EQUIPMENT GROUNDING CONDUCTOR

GENERAL NOTES

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

THE EQUIPMENT GROUNDING CONNECTOR SHALL BE TAPED WITH 3 WRAPS (MINIMUM) OF APPROVED RUBBER TAPE AND THEN 3 WRAPS (MINIMUM) OF APPROVED VINYL TAPE TO COVER SHARP WIRE ENDS AFTER THE CONNECTION IS COMPLETED.

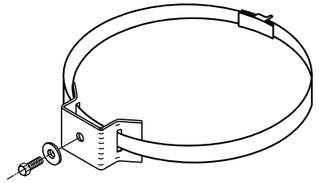
WHEN TRANSFORMER BASES ARE USED, ALL WIRING CONNECTIONS SHALL OCCUR WITHIN THE TRANSFORMER BASES.

NON-FREEWAY LIGHTING UNIT POLE WIRING

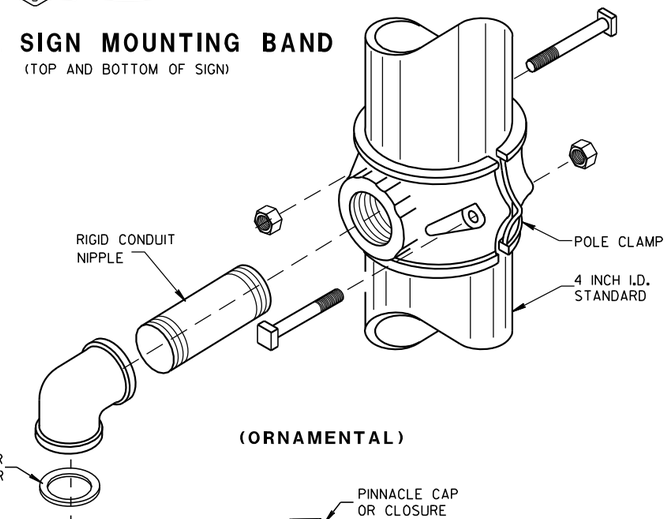
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

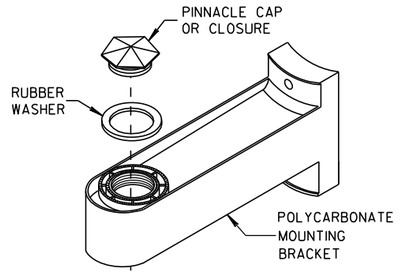
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S.D.D. 9 E 3-5



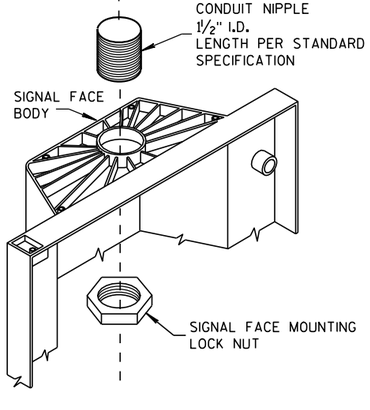
TYPICAL SIGN MOUNTING BAND
(TOP AND BOTTOM OF SIGN)



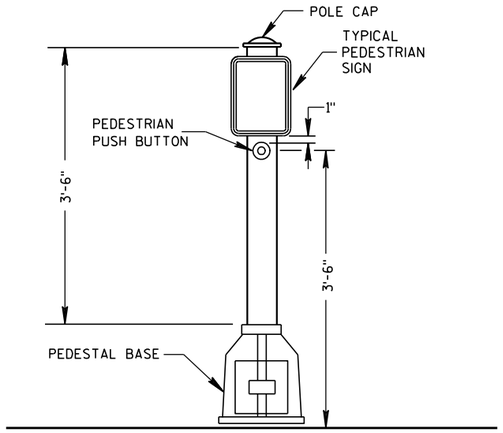
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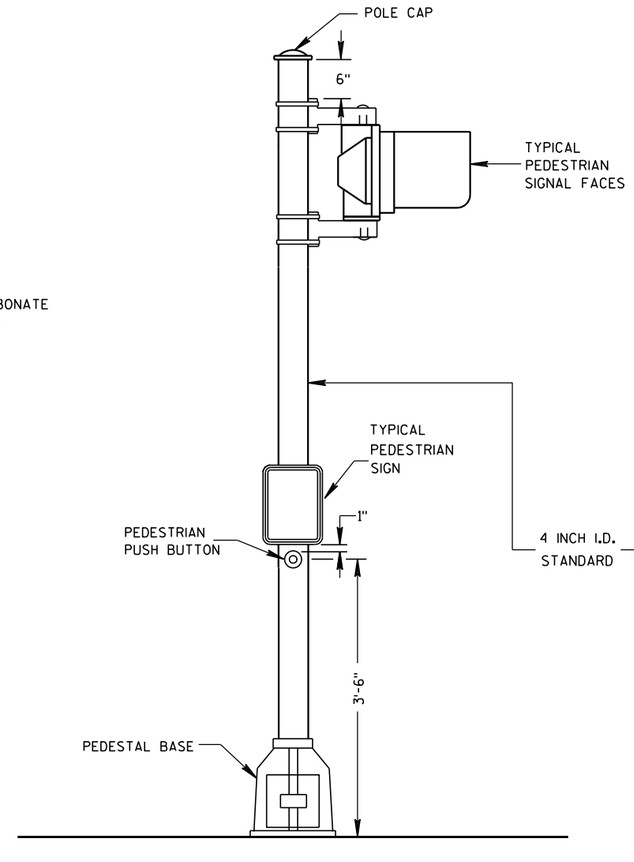
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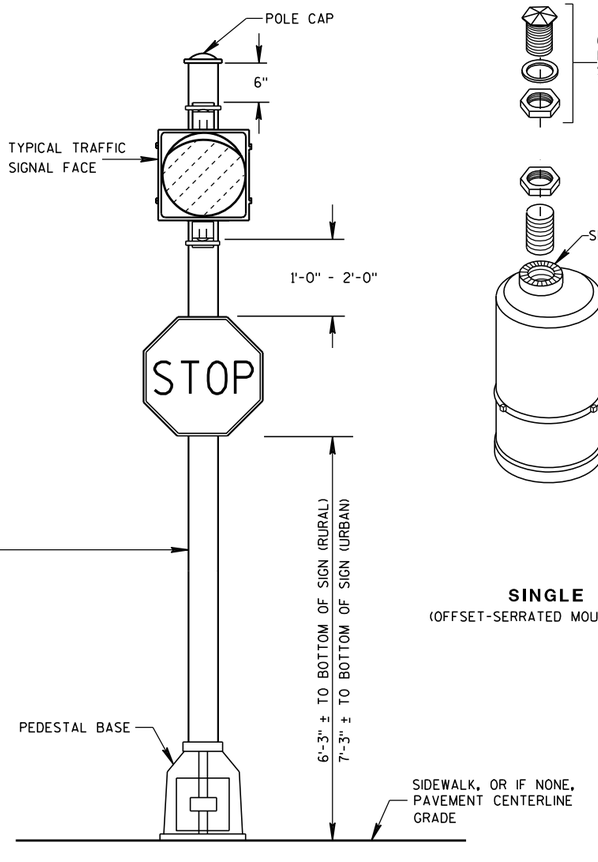
SIGNAL FACE MOUNTING DETAILS



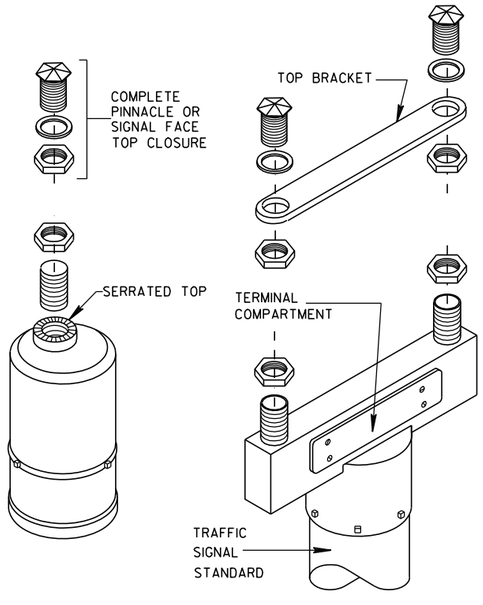
PEDESTRIAN PUSH BUTTON TYPICAL MOUNTING



PEDESTRIAN FACE STANDARD-10 FT.
(WALK-DON'T WALK)



STANDARD FLASHER.
10 FOOT, 13 FOOT OR 15 FOOT AS REQUIRED



SINGLE
(OFFSET-SERRATED MOUNTING)

DOUBLE
(SERRATED MOUNTING)

SLIPFITTERS

GENERAL NOTES

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

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

ALL PEDESTAL BASES SHALL BE MOUNTED ON CONCRETE BASE - TYPE 1.

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIFICATIONS.

POLYCARBONATE SIGNAL FACE MOUNTING BRACKETS SHALL BE USED UNLESS ORNAMENTAL POLE CLAMPS ARE SPECIFIED.

LENGTH OF TRAFFIC STANDARDS SHALL BE AS SHOWN ON THE PLANS.

MOUNTINGS AND BRACKETS SHALL BE AS SHOWN ON THE PLANS OR DESCRIBED IN THE SPECIAL PROVISIONS (BY THE DISTRICT TRAFFIC ENGINEER).

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.

TRAFFIC SIGNAL STANDARD PEDESTRIAN AND FLASHER TYPICAL MOUNTING DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5/11/10
DATE

/S/ John Corbin
STATE ELECTRICAL ENGI

FHWA

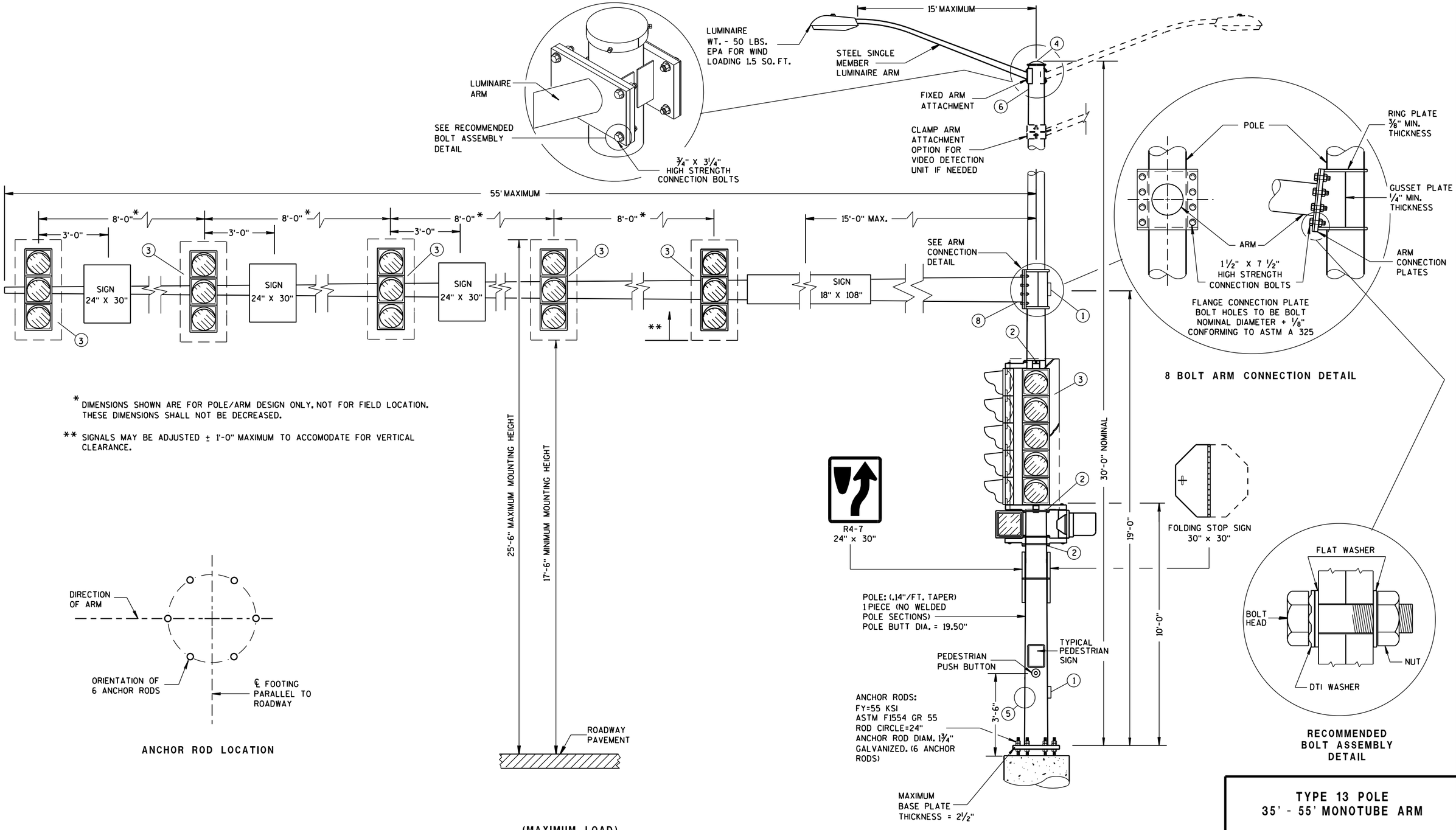
HWYS

6

S.D.D. 9 E 7-5

6

S.D.D. 9 E 7-5



* DIMENSIONS SHOWN ARE FOR POLE/ARM DESIGN ONLY, NOT FOR FIELD LOCATION. THESE DIMENSIONS SHALL NOT BE DECREASED.

** SIGNALS MAY BE ADJUSTED ± 1'-0" MAXIMUM TO ACCOMODATE FOR VERTICAL CLEARANCE.

8 BOLT ARM CONNECTION DETAIL

RECOMMENDED BOLT ASSEMBLY DETAIL

ANCHOR ROD LOCATION

(MAXIMUM LOAD)

TYPE 13 POLE 35'- 55' MONOTUBE ARM

TYPE 13 POLE
35' - 55' MONOTUBE ARM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2016 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

S.D.D. 9 E 8-8d

GENERAL NOTES

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

POLE TYPES 9 AND 10 ARE FOR ARM LENGTHS 15-FOOT TO 30-FOOT.

POLE TYPES 12 AND 13 ARE FOR ARM LENGTHS 35-FOOT TO 55-FOOT.

MONOTUBE POLE AND ARM SHALL BE GALVANIZED STEEL.

RING-STIFFENED BUILT-UP BOX TYPE OF ATTACHMENT FOR TRAFFIC SIGNAL ARM.

ONE (1) PIECE POLE CONSTRUCTION (NO WELDED POLE SECTIONS).

STANDARD STRAIGHT ARM DESIGN (3 % ± RISE).

SECTION 657, POLES OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

PROVIDE WIREWAY THRU POLE WALL AND ARM CONNECTION PLATES. PROVIDE ROUND, SMOOTH INSIDE SURFACE.

MANUFACTURER'S SUBMITTED POLE DESIGNS AND DRAWINGS SHALL BE SIGNED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER AND CERTIFIED AS BEING IN COMPLIANCE WITH THE AASHTO 2013 6TH EDITION AND ALL PERTINENT WISDOT SPECIFICATIONS AND DRAWINGS FOR TRAFFIC AND LIGHTING STRUCTURES AND AS FOLLOWS:

- CATEGORY III FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 9 AND TYPE 10 STRUCTURES.
- CATEGORY II FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 12 AND TYPE 13 STRUCTURES.
- 90 MPH (3-SECOND GUST) WIND SPEED AND A 50 YEAR DESIGN LIFE.

SECURE THE OPENING BELOW THE BASE PLATE WITH STAINLESS STEEL OR GALVANIZED STEEL MESH AND SECURE THE MESH WITH ¾" S.S. BANDING AROUND THE LEVELING NUTS.

INDENT PRINT (NOMINAL ½" HIGH) THE POLE LENGTH AND FIRST TWO LETTERS OF THE MANUFACTURERS NAME ON TWO SIDES OF THE BASE PLATE 180 DEGREES APART, BEFORE GALVANIZING. THE ARM SHALL BE IDENTIFIED WITH THE SAME INFORMATION BY INDENT PRINT.

SIGNAL FACE SHALL BE MOUNTED 6 INCHES (NOMINAL) FROM THE END OF THE MONOTUBE ARM OR AS SHOWN ON THE PLAN CONSTRUCTION DETAIL OR AS DIRECTED BY THE PROJECT ENGINEER/ELECTRICAL OPERATIONS PERSONNEL. MOUNT ALL LIKE HEADS AT SAME ELEVATION.

SIGN MOUNTING BRACKETS SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 637 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.

(1) DESIGN FOR MAXIMUM ALLOWABLE HANDHOLE WITH COVER ASSEMBLY WITH TWO ¼" X ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLTS.

(2) SIGNAL MOUNTING BRACKETS FOR POLE MOUNTING, MOUNT WITH CAP SCREW AND BANDING, (SEE SPECIFICATIONS SEC. 658).

(3) SECURELY MOUNT BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURERS RECOMMENDATIONS.

(4) THE TOP OF THE POLE SHAFT AND THE END OF THE MONOTUBE ARM SHALL BE EQUIPPED WITH A REMOVABLE, VENTILATED CAP HELD SECURELY IN PLACE WITH SET SCREWS.

(5) FACTORY-WELDED BRACKET FOR GROUNDING LUG, OPPOSITE HANDHOLE, (LUG AND HARDWARE PAID UNDER SEPARATE ITEM). PROVIDE HOLE IN BRACKET FOR ¼" X ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLT.

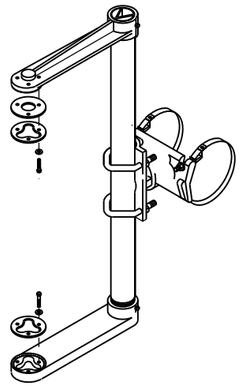
(6) FACTORY-WELDED "J" HOOK FOR STRAIN RELIEF FOR POLE LUMINAIRE WIRE.

(7) INSTALL STRUCTURAL IDENTIFICATION PLAQUES.

STRUCTURAL IDENTIFICATION PLAQUES SHALL BE PLACED ON THE POLES IN THE SAME DIRECTION AS THE ARM.

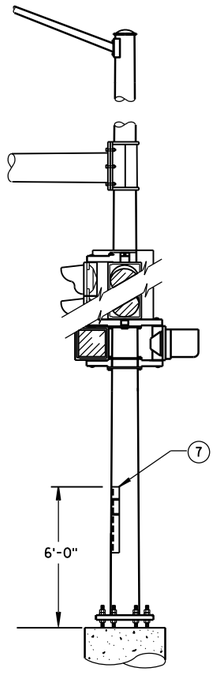
MOUNTING HEIGHT SHALL BE 6'-0" ABOVE THE CURB OR SHOULDER. ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL BE OBSTRUCTED.

(8) FACTORY DRILLED ½" DRAIN HOLE 2" FROM FLANGE CONNECTION PLATE.

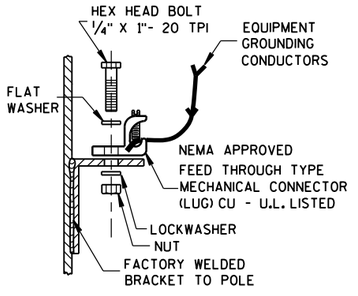


SIGNAL FACE MOUNTING BRACKET DETAIL FOR MONOTUBE ARM

(MOUNT PER MANUFACTURER'S RECOMMENDATION)

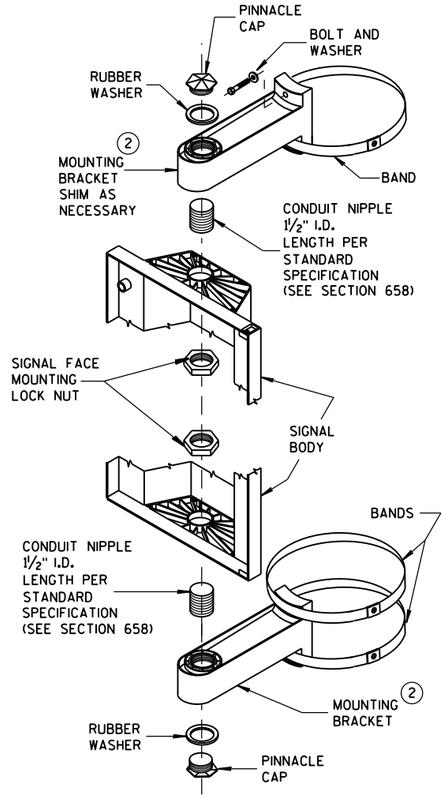


STRUCTURAL IDENTIFICATION PLAQUE PLACEMENT

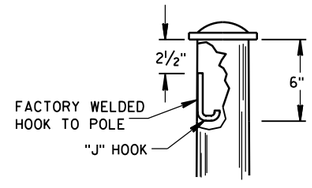


TYPICAL GROUNDING CONNECTIONS (5)

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



SIGNAL FACE VERTICAL MOUNTING DETAIL



"J" HOOK WIRE SUPPORT (6)

GENERAL NOTES AND HARDWARE DETAILS FOR TYPE 9, 10, 12 & 13 POLES WITH MONOTUBE ARMS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2016 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

S.D.D. 9 E 8-8e

GENERAL NOTES

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

OVER HEIGHT POLE TYPES 9 AND 10 ARE FOR ARM LENGTHS 15-FOOT TO 30-FOOT.

OVER HEIGHT POLE TYPES 12 AND 13 ARE FOR ARM LENGTHS 35-FOOT TO 55-FOOT.

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STANDARD STRAIGHT ARM DESIGN (3 % ± RISE).

SECTION 657, POLES OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

PROVIDE WIREWAY THRU POLE WALL AND ARM CONNECTION PLATES. PROVIDE ROUND, SMOOTH INSIDE SURFACE.

MANUFACTURER'S SUBMITTED POLE DESIGNS AND DRAWINGS SHALL BE SIGNED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER AND CERTIFIED AS BEING IN COMPLIANCE WITH THE AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNAL 2015 1ST EDITION (INCLUDING 2017 INTERIM REVISIONS) AND ALL PERTINENT WISDOT SPECIFICATIONS AND DRAWINGS FOR TRAFFIC AND LIGHTING STRUCTURES AND AS FOLLOWS:

- CATEGORY III FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 9 AND TYPE 10 STRUCTURES.
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SECURE THE OPENING BELOW THE BASE PLATE WITH STAINLESS STEEL OR GALVANIZED STEEL MESH AND SECURE THE MESH WITH ¾" S.S. BANDING AROUND THE LEVELING NUTS.

INDENT PRINT (NOMINAL ½" HIGH) THE POLE LENGTH AND FIRST TWO LETTERS OF THE MANUFACTURERS NAME ON TWO SIDES OF THE BASE PLATE 180 DEGREES APART, BEFORE GALVANIZING. THE ARM SHALL BE IDENTIFIED WITH THE SAME INFORMATION BY INDENT PRINT.

SIGNAL FACE SHALL BE MOUNTED 6 INCHES (NOMINAL) FROM THE END OF THE MONOTUBE ARM OR AS SHOWN ON THE PLAN CONSTRUCTION DETAIL OR AS DIRECTED BY THE PROJECT ENGINEER/ELECTRICAL OPERATIONS PERSONNEL. MOUNT ALL LIKE HEADS AT SAME ELEVATION.

SIGN MOUNTING BRACKETS SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 637 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.

(1) DESIGN FOR MAXIMUM ALLOWABLE HANDHOLE WITH COVER ASSEMBLY WITH TWO ¼" X ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLTS.

(2) SIGNAL MOUNTING BRACKETS FOR POLE MOUNTING, MOUNT WITH CAP SCREW AND BANDING, (SEE SPECIFICATIONS SEC. 658).

(3) SECURELY MOUNT BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURERS RECOMMENDATIONS.

(4) THE TOP OF THE POLE SHAFT AND THE END OF THE MONOTUBE ARM SHALL BE EQUIPPED WITH A REMOVABLE, VENTILATED CAP HELD SECURELY IN PLACE WITH SET SCREWS.

(5) FACTORY-WELDED BRACKET FOR GROUNDING LUG, OPPOSITE HANDHOLE, (LUG AND HARDWARE PAID UNDER SEPARATE ITEM). PROVIDE HOLE IN BRACKET FOR ¼" X ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLT.

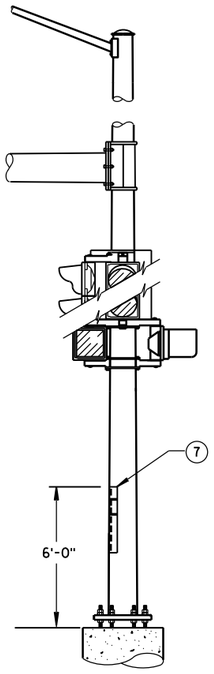
(6) FACTORY-WELDED "J" HOOK FOR STRAIN RELIEF FOR POLE LUMINAIRE WIRE.

(7) INSTALL STRUCTURAL IDENTIFICATION PLAQUES.

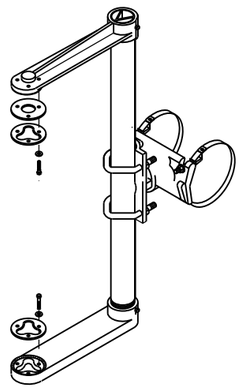
STRUCTURAL IDENTIFICATION PLAQUES SHALL BE PLACED ON THE POLES IN THE SAME DIRECTION AS THE ARM.

MOUNTING HEIGHT SHALL BE 6'-0" ABOVE THE CURB OR SHOULDER. ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL BE OBSTRUCTED.

(8) FACTORY DRILLED ½" DRAIN HOLE 2" FROM FLANGE CONNECTION PLATE.

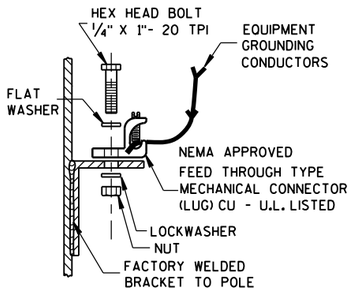


STRUCTURAL IDENTIFICATION PLAQUE PLACEMENT



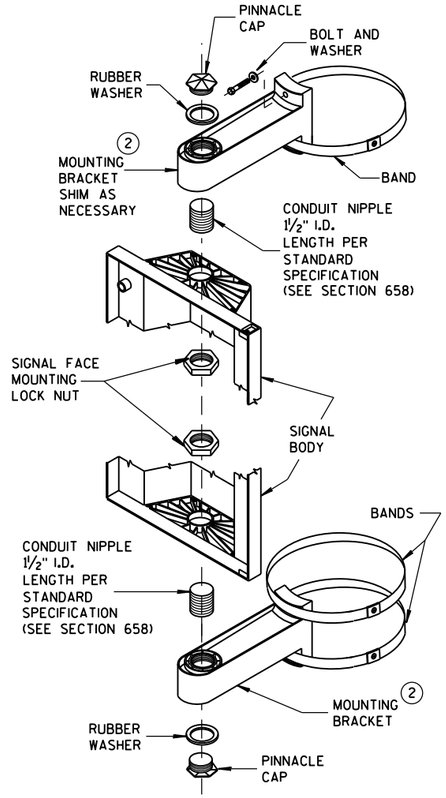
SIGNAL FACE MOUNTING BRACKET DETAIL FOR MONOTUBE ARM

(MOUNT PER MANUFACTURER'S RECOMMENDATION)

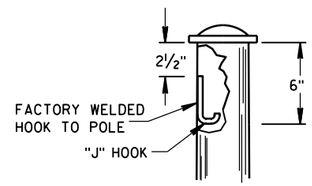


TYPICAL GROUNDING CONNECTIONS (5)

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



SIGNAL FACE VERTICAL MOUNTING DETAIL



"J" HOOK WIRE SUPPORT (6)

GENERAL NOTES AND HARDWARE DETAILS FOR OVER HEIGHT TYPE 9, 10, 12 & 13 POLES WITH MONOTUBE ARMS

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DEPARTMENT OF TRANSPORTATION

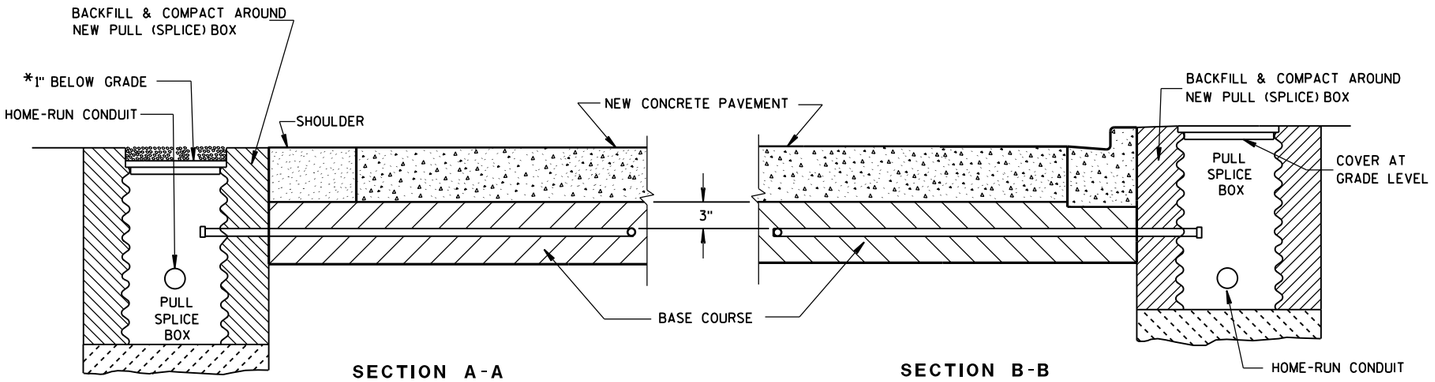
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May 2017 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
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S.D.D. 9 E 12-1e

6

S.D.D. 9 E 12-1e



SECTION A-A
NO CURB & GUTTER

SECTION B-B
CURB & GUTTER

*RECESS PULL (SPLICE) BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.

LOOP DETECTOR INSTALLATION DETAIL

GENERAL NOTES

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

LOOP SIZE, CONFIGURATION LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL (SPLICE) BOX.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST OR AN ENGINEER APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

MEASURE GROUND RESISTANCE USING A MEGGER. REPLACE LOOP WIRE NOT ATTAINING A READING OF INFINITY TO GROUND.

AFTER SPLICING THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READINGS TO THE PROJECT ENGINEER FOR EVALUATION.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

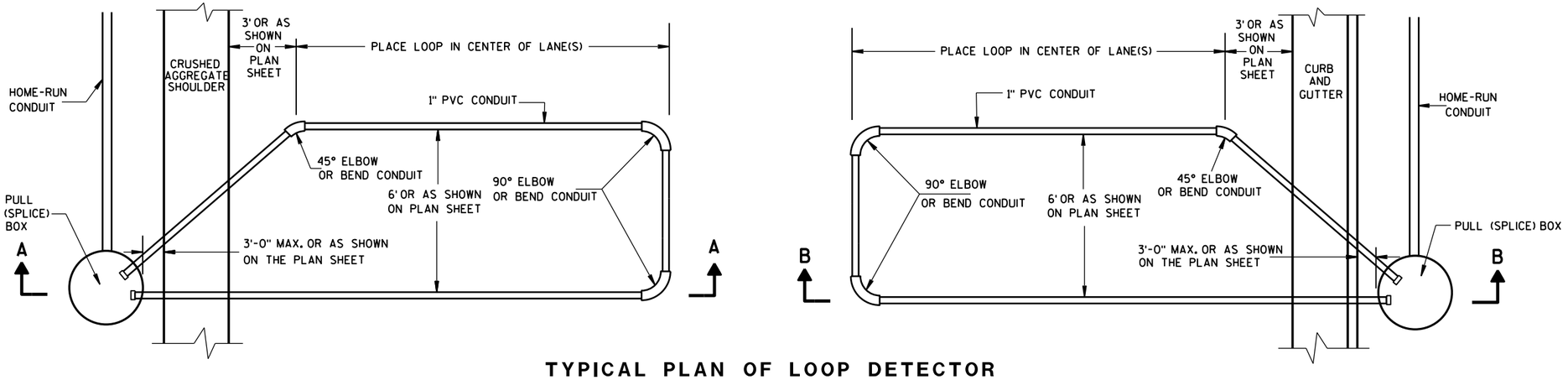
THE #12 AWG. LOOP WIRE IN THE PULL (SPLICE) BOX SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE BEING SPLICED TO THE LOOP LEAD-IN CABLE.

SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL (SPLICE) BOXES AT THE SIDE OF THE ROAD.

THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL (SPLICE) BOX THROUGH THE LOOP CONDUIT, BACK TO THE ROADSIDE PULL (SPLICE) BOX, AND BE INSTALLED IN ONE, NON-SPLICE CONTINUOUS LENGTH.

PROTECTION OF THE CONDUIT IN THE BASE COURSE, SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE NEW PAVEMENT IS INSTALLED.

SHOULD INSTALLATION REPAIR BE REQUIRED, IT SHALL BE DONE UNDER THE DIRECTION OF THE PROJECT ENGINEER.



TYPICAL PLAN OF LOOP DETECTOR WITH 18" OR 24" PULL (SPLICE) BOX

LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)

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Sept. 2014
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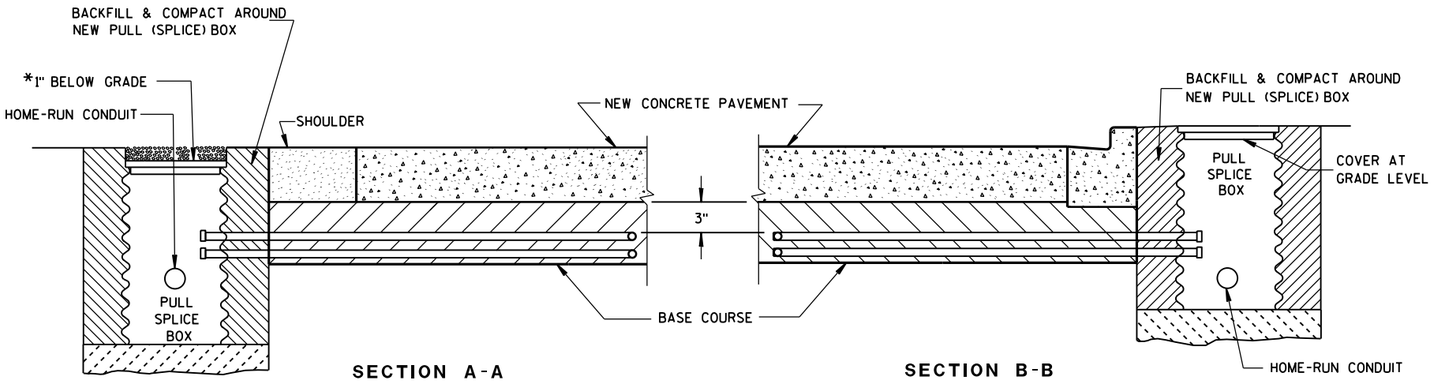
FHWA

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S.D.D. 9 F 15-4a

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S.D.D. 9 F 15-4a



SECTION A-A
NO CURB & GUTTER

SECTION B-B
CURB & GUTTER

*RECESS PULL (SPLICE) BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.

LOOP DETECTOR INSTALLATION DETAIL

GENERAL NOTES

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LOOP SIZE, CONFIGURATION LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL (SPLICE) BOX.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST OR AN ENGINEER APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

MEASURE GROUND RESISTANCE USING A MEGGER. REPLACE LOOP WIRE NOT ATTAINING A READING OF INFINITY TO GROUND.

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LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

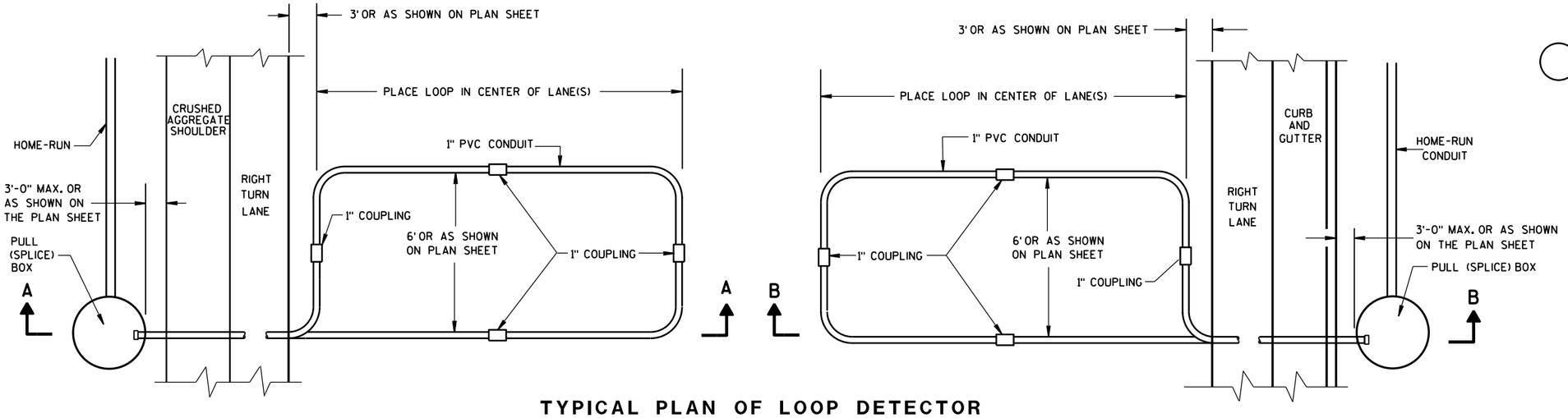
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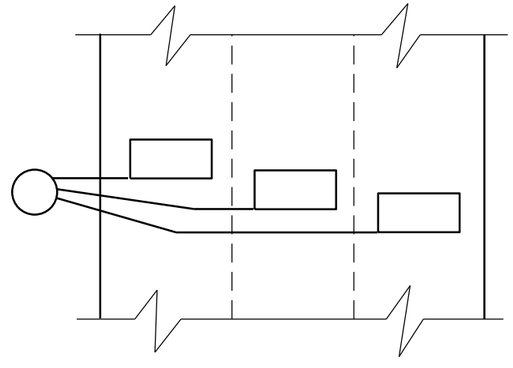
THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL (SPLICE) BOX, THROUGH THE LOOP CONDUIT, BACK TO THE ROADSIDE PULL (SPLICE) BOX, AND BE INSTALLED IN ONE, NON-SPLICED CONTINUOUS LENGTH.

PROTECTION OF THE CONDUITS IN THE BASE COURSE SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE NEW PAVEMENT IS INSTALLED.

SHOULD INSTALLATION REPAIR BE REQUIRED, IT SHALL BE DONE UNDER THE DIRECTION OF THE PROJECT ENGINEER.



TYPICAL PLAN OF LOOP DETECTOR WITH 24" PULL (SPLICE) BOX



MULTI-LANE INSTALLATION

LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014
DATE
/S/ Ahmet Demirbilek
STATE ELECTRICAL
FHWA

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S.D.D. 9 F 15-4b

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S.D.D. 9 F 15-4b

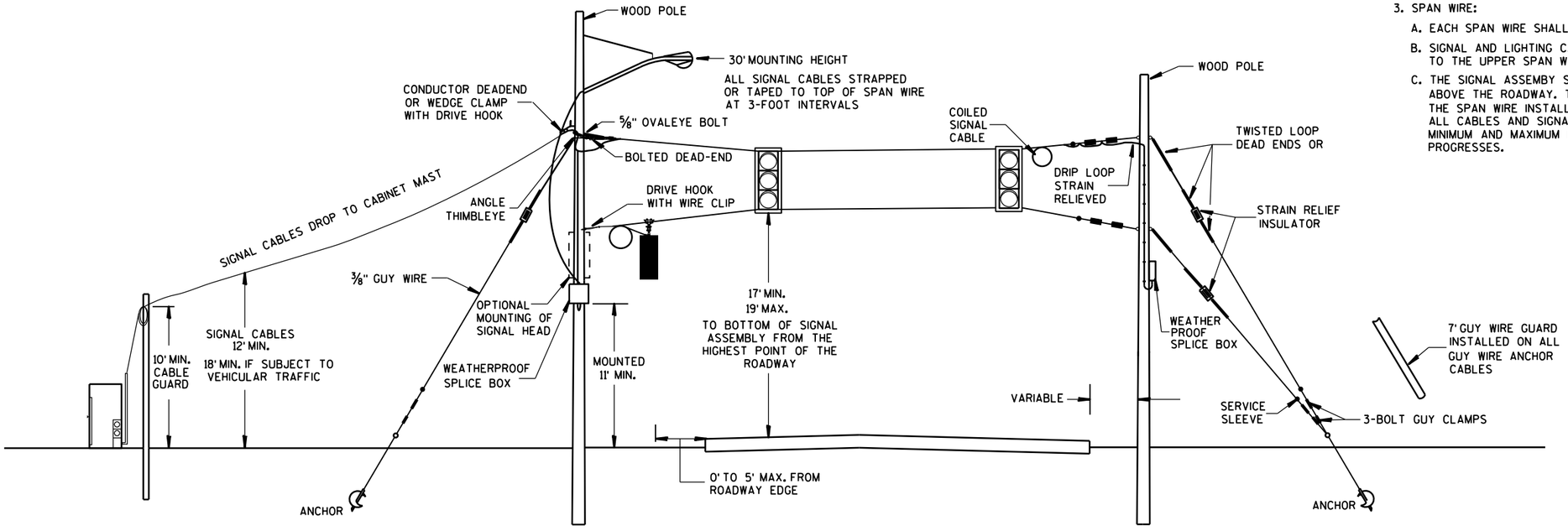
GENERAL NOTES

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

1. WOOD POLES SHALL BE CLASS 4. LENGTH DETERMINED BY SIGNAL PLAN.

2. SIGNAL FACES:
   A. ALL SECTIONS SHALL BE 12" AND POLYCARBONATE.
   B. EACH SHALL CONTAIN A 5" WIDE DULL BLACK POLYCARBONATE BACKPLATE.
   C. EACH SHALL BE WIRED FROM THE TOP SIGNAL MOUNTING BRACKET.
   D. NEAR RIGHT SIGNAL FACE SUSPENDED ON THE TETHER (NO BACKPLATE) SHALL NOT BE OVER THE TRAVELED WAY. IF THE POLE IS WITHIN 5 FEET OF THE TRAVELED WAY MOUNT THE SIGNAL FACE ON THE WOOD POLE WITH BACKPLATE.

3. SPAN WIRE:
   A. EACH SPAN WIRE SHALL BE INDIVIDUALLY DOWN GUYED.
   B. SIGNAL AND LIGHTING CABLES SHALL ONLY BE ATTACHED TO THE UPPER SPAN WIRE.
   C. THE SIGNAL ASSEMBY SHALL HAVE A 17' MIN. HEIGHT ABOVE THE ROADWAY. THIS SHALL BE MEASURED AFTER THE SPAN WIRE INSTALLATION IS COMPLETED WITH ALL CABLES AND SIGNAL FACES IN PLACE. MAINTAIN MINIMUM AND MAXIMUM HEIGHTS AS ROADWAY WORK PROGRESSES.



SPAN WIRE
TEMPORARY SIGNALS

MINIMUM POLE LENGTHS	POLE BURIEL DEPTHS
25'	5'
30'	6'
35'	7'
40'	8'
45'	9'

SPAN WIRE
TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

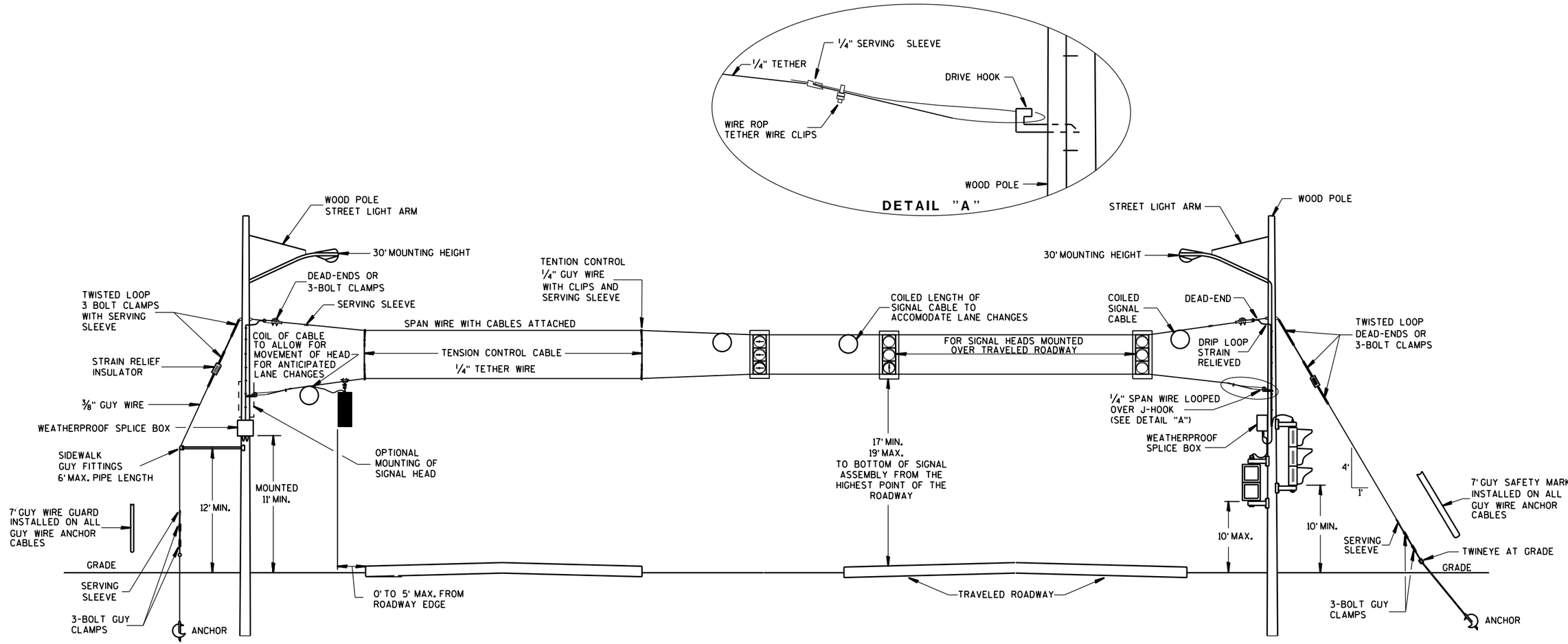
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June, 2015 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
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S.D.D. 9 G 1-4a

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S.D.D. 9 G 1-4a



GENERAL NOTES

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

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   E. FAR INDICATION SHALL BE MAINTAINED OVER CENTER OF TRAFFIC LANE.
3. SPAN WIRE:
   A. EACH SPAN WIRE SHALL BE INDIVIDUALLY DOWN GUYED.
   B. SIGNAL AND LIGHTING CABLES SHALL ONLY BE ATTACHED TO THE UPPER SPAN WIRE.
   C. THE SIGNAL ASSEMBY SHALL HAVE A 17' MIN. HEIGHT ABOVE THE ROADWAY. THIS SHALL BE MEASURED AFTER THE SPAN WIRE INSTALLATION IS COMPLETED WITH ALL CABLES AND SIGNAL FACES IN PLACE. MAINTAIN MINIMUM AND MAXIMUM HEIGHTS AS ROADWAY WORK PROGRESSES.

SPAN WIRE
TEMPORARY SIGNALS
4 LANE ROADWAYS

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

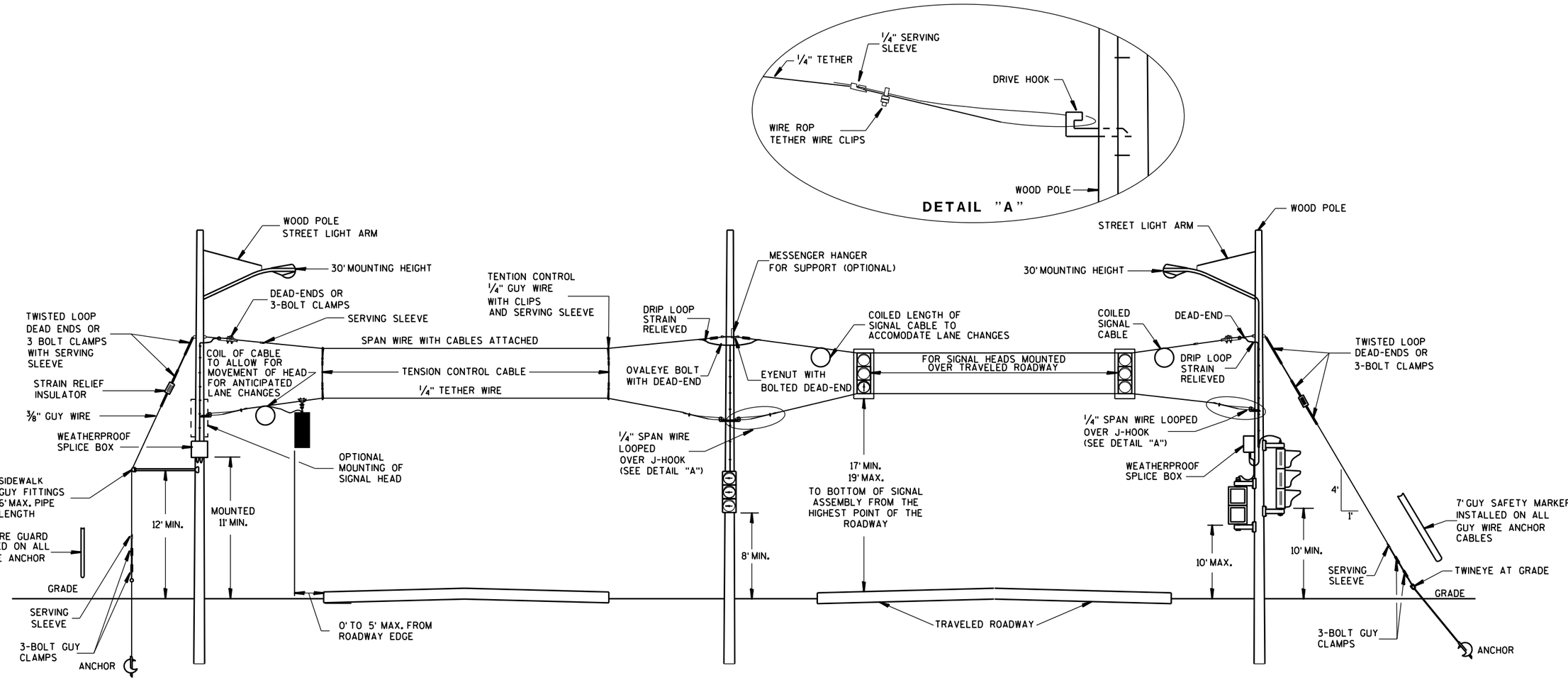
SPAN WIRE TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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June, 2015 — DATE
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S.D.D. 9 G 1-4b



SPAN WIRE
TEMPORARY SIGNALS
4 LANE ROADWAYS

GENERAL NOTES

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   D. NEAR RIGHT SIGNAL FACE SUSPENDED ON THE TETHER (NO BACKPLATE) SHALL NOT BE OVER THE TRAVELED WAY. IF THE POLE IS WITHIN 5 FEET OF THE TRAVELED WAY MOUNT THE SIGNAL FACE ON THE WOOD POLE WITH BACKPLATE.
   E. FAR INDICATION SHALL BE MAINTAINED OVER CENTER OF TRAFFIC LANE.

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

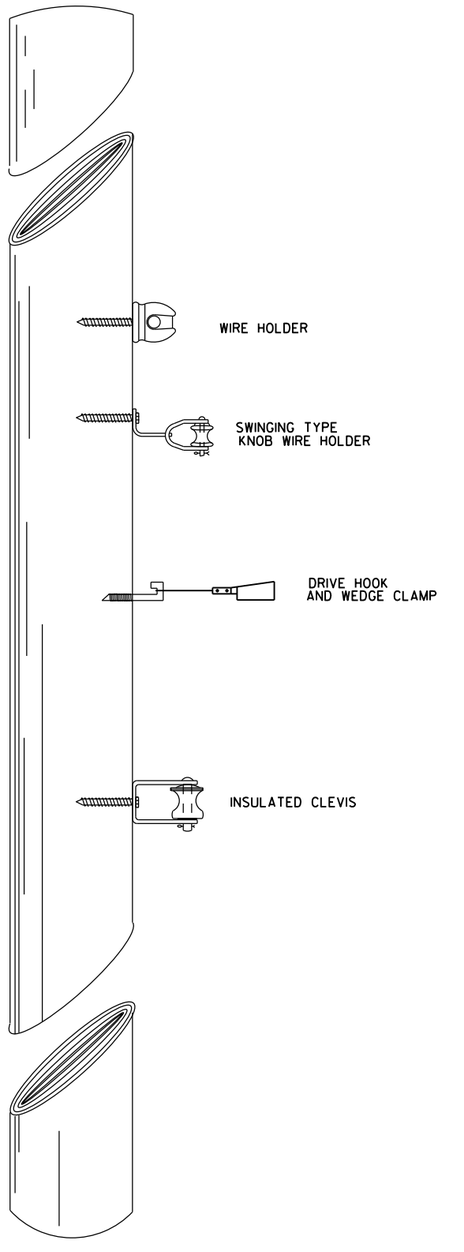
SPAN WIRE TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

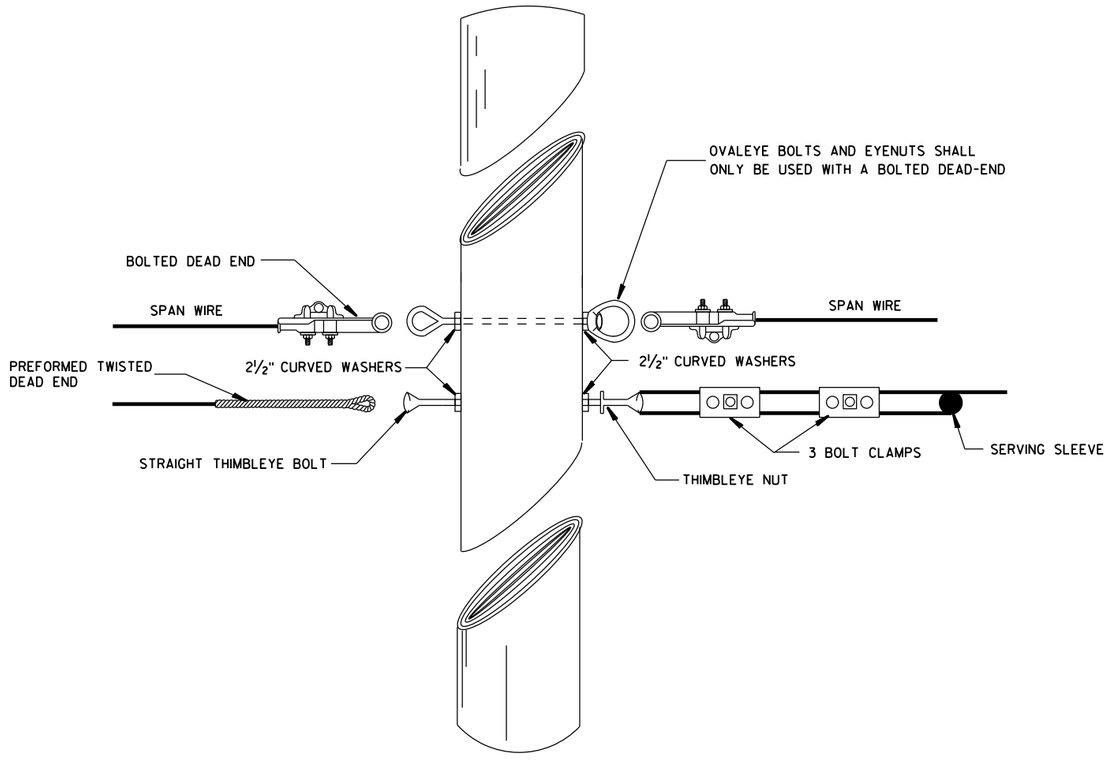
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S.D.D. 9 G 1-4c



TYPICAL CABLE HANGERS



TYPICAL DEAD-ENDING

SPAN WIRE
TEMPORARY TRAFFIC SIGNAL

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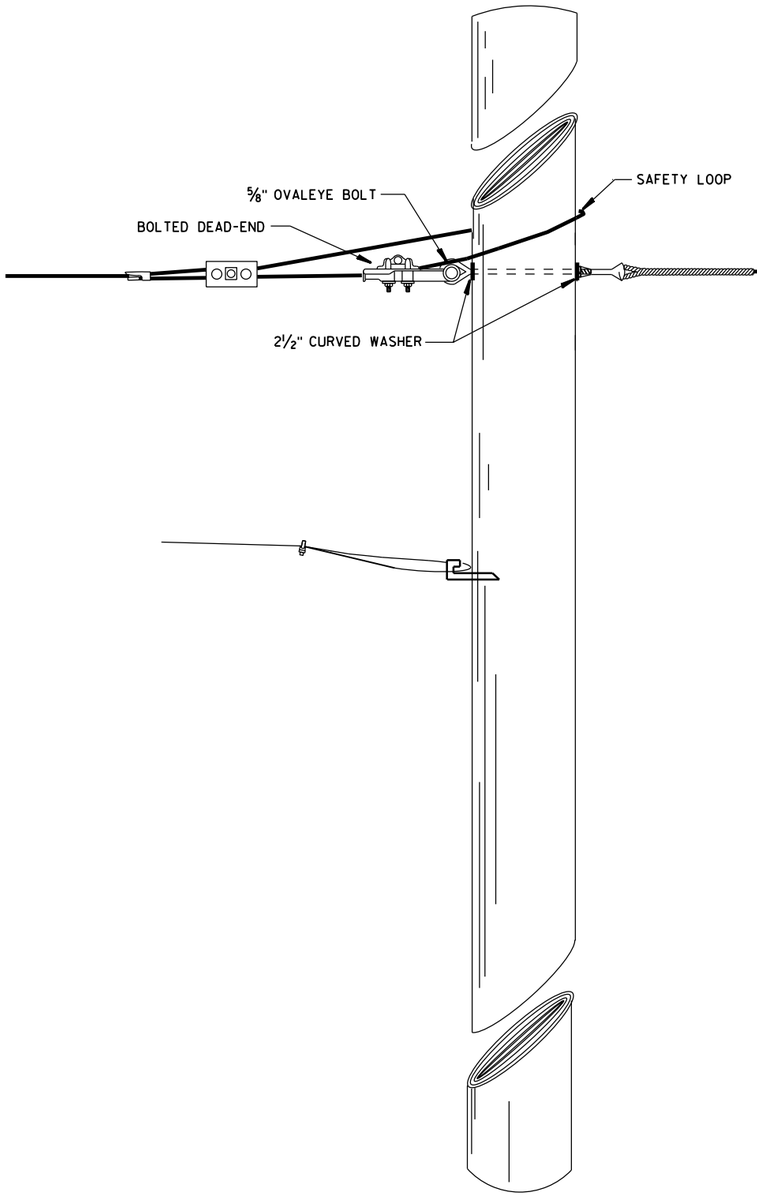
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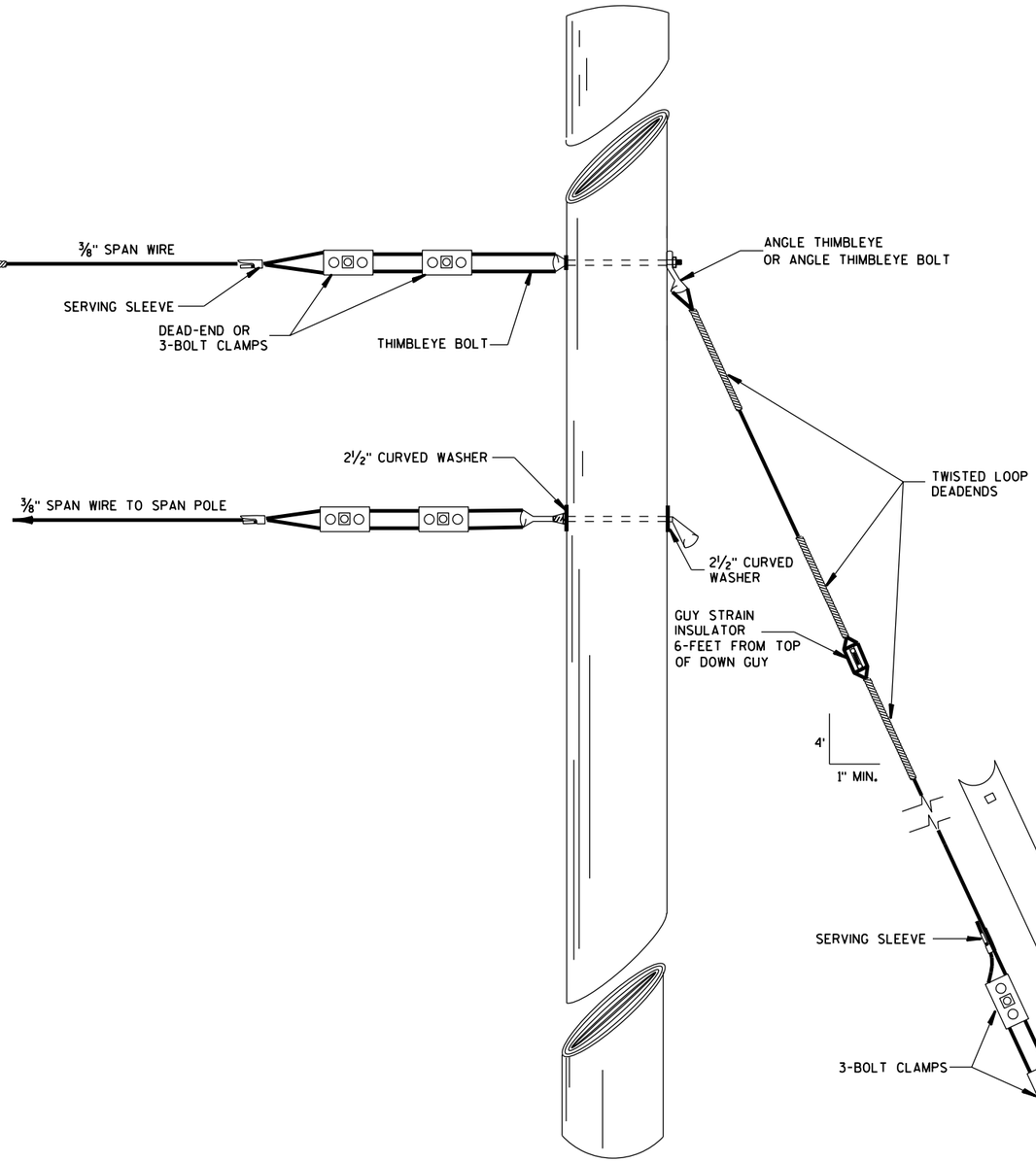
S.D.D. 9 G 1-4d

GENERAL NOTES

1. USE ¾" DRILL IN WOOD POLE TO PROVIDE HOLE FOR ⅝" BOLTS.
2. SAFTY LOOP REQUIRED ON EACH END OF ALL SPAN WIRES.



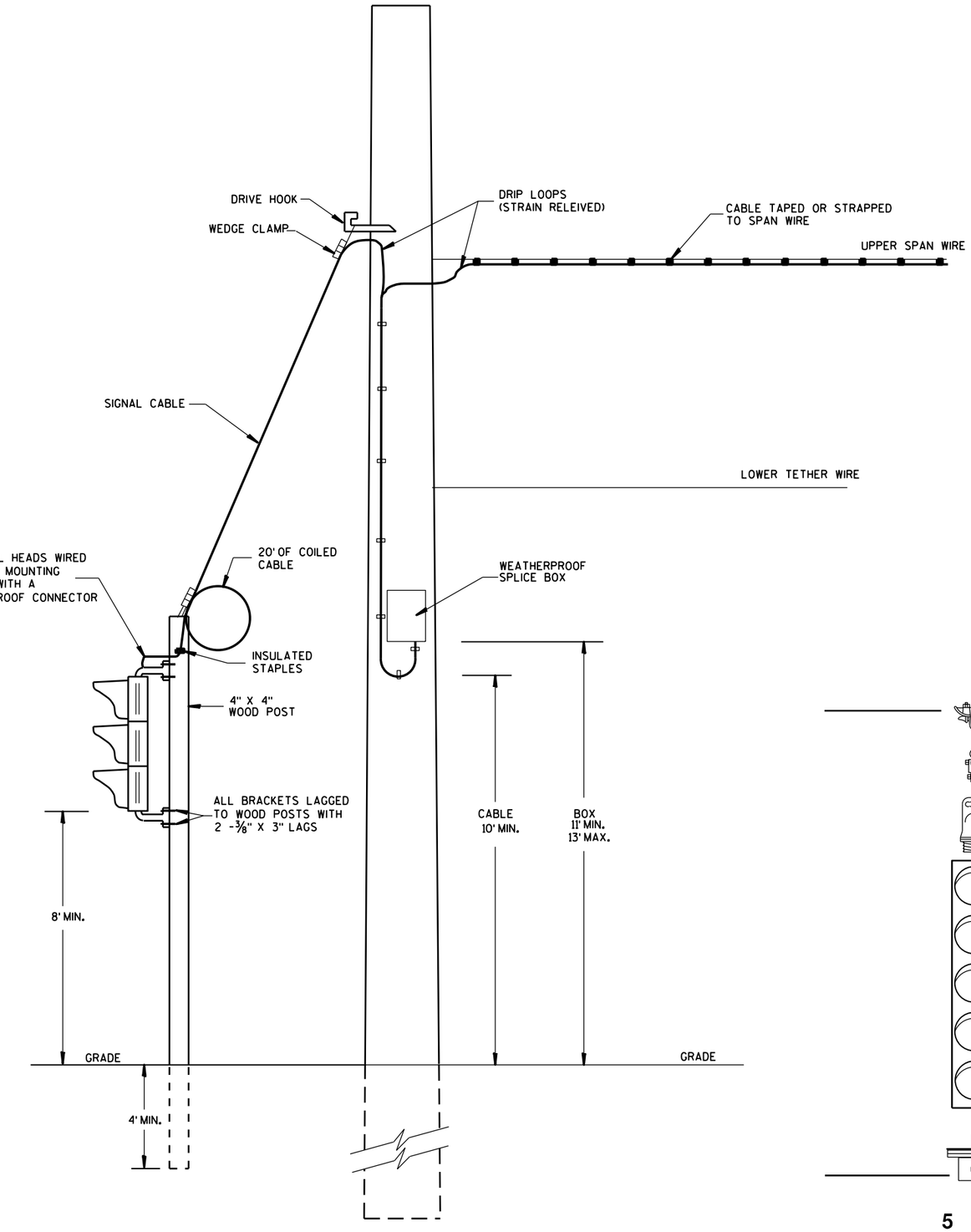
SPAN WIRE POLE



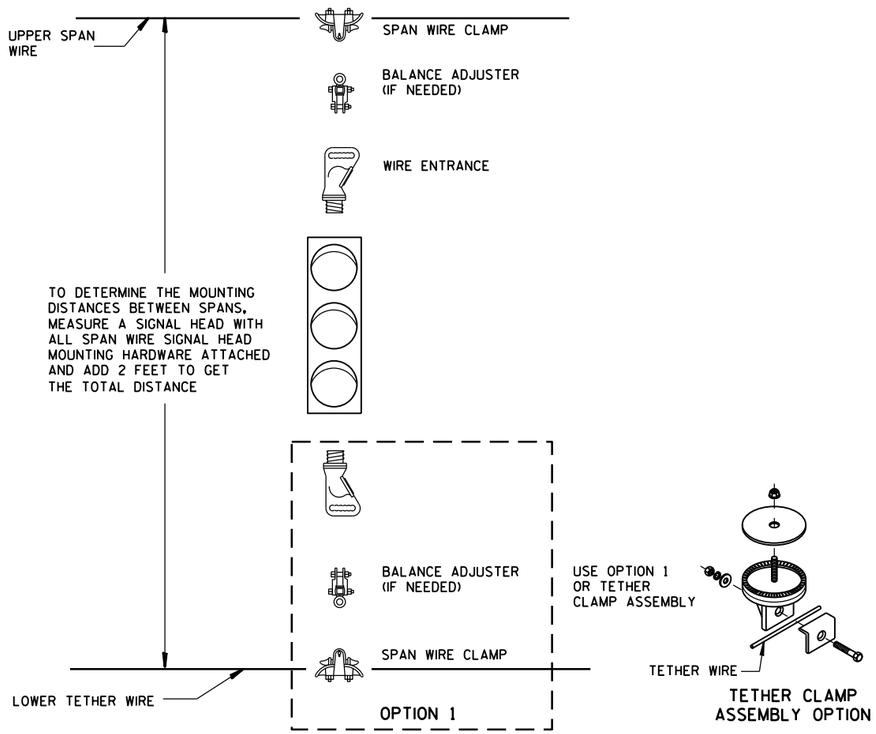
GUY POLE

TYPICAL DEAD-ENDINGS OR GUYING

SPAN WIRE TEMPORARY TRAFFIC SIGNAL
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED June. 2015 DATE /S/ Ahmet Demirbilek STATE ELECTRICAL FHWA

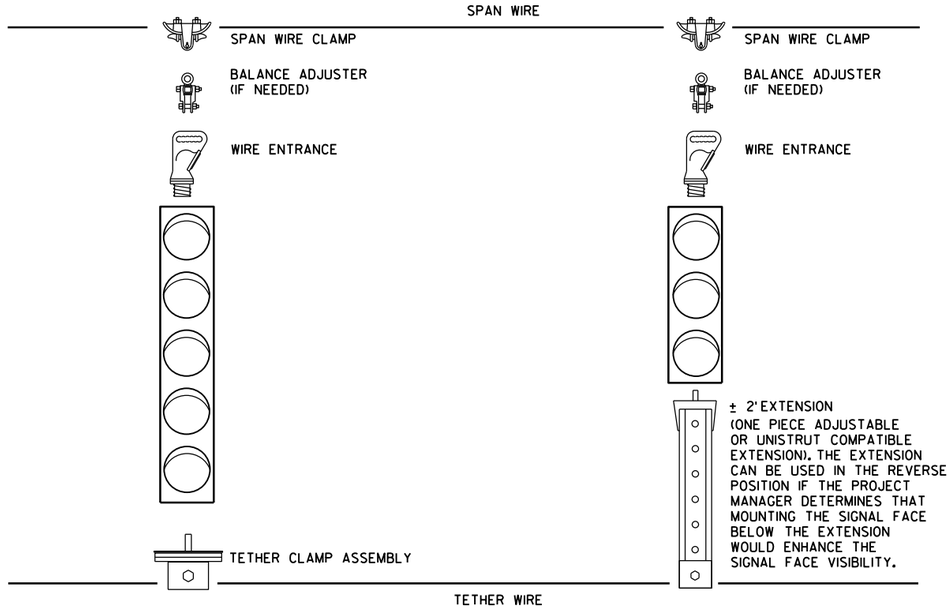


TYPICAL DROP TO TEMPORARY MOVEABLE SIGNAL



TETHER CLAMP ASSEMBLY OPTION

TYPICAL SPAN WIRE MOUNTING HARDWARE



5 SECTION VERTICAL WITH 3 SECTION VERTICAL ON ONE SPAN WIRE

SPAN WIRE TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

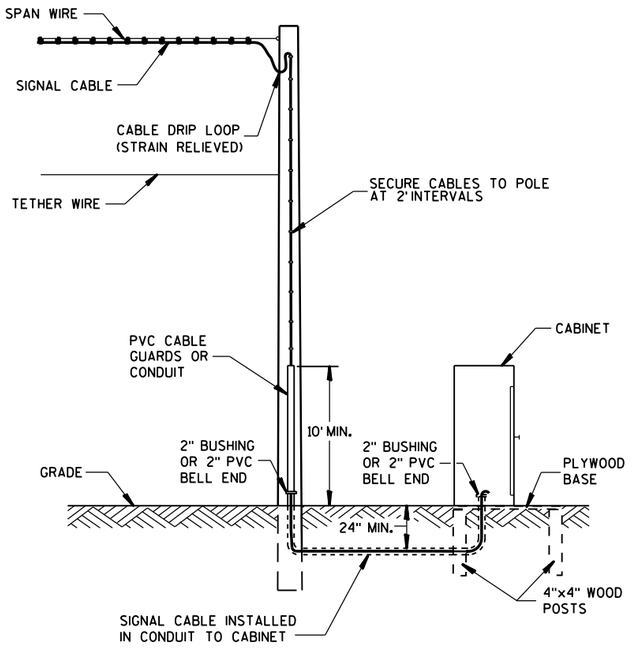
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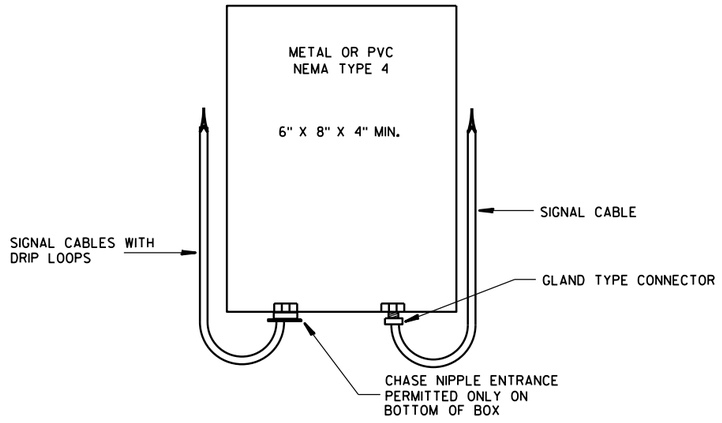
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S.D.D. 9 G 1-4f

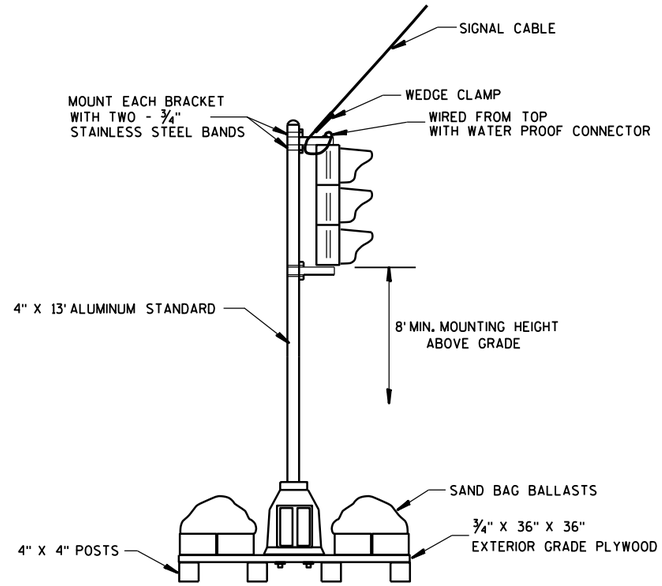
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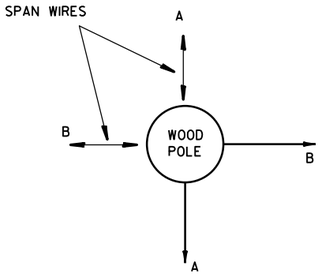




SPLICE BOX

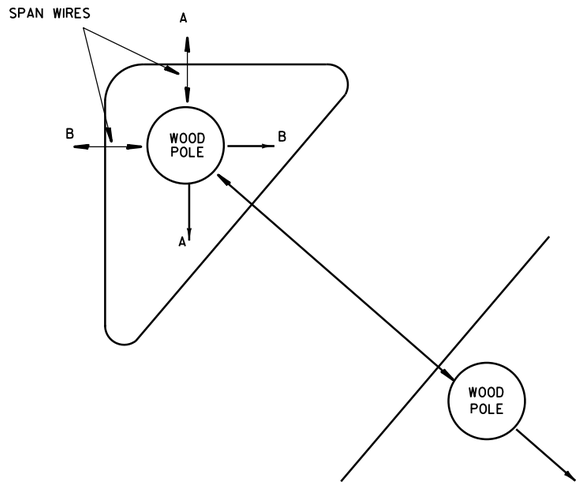


TYPICAL SKID TYPE TEMPORARY

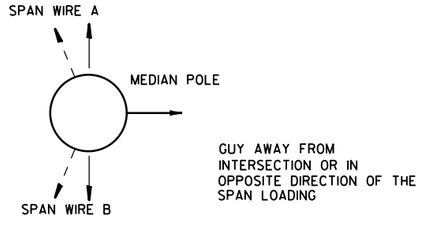


ALL DOWN OR SIDEWALK GUYS
SHALL BE INSTALLED IN THE
OPPOSITE DIRECTION OF THE
STRAIN OF THE SPAN WIRE

CORNER POLES



ISLAND POLES



MEDIAN POLES

SPAN WIRE
TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

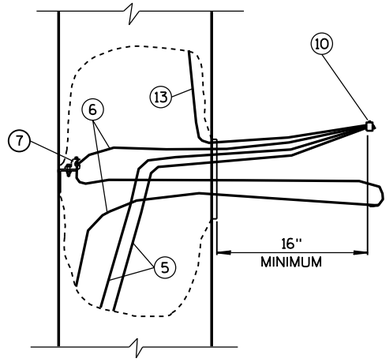
APPROVED
June, 2015 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

6

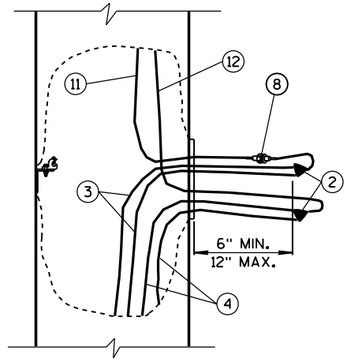
S.D.D. 9 G 1-4g

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S.D.D. 9 G 1-4g

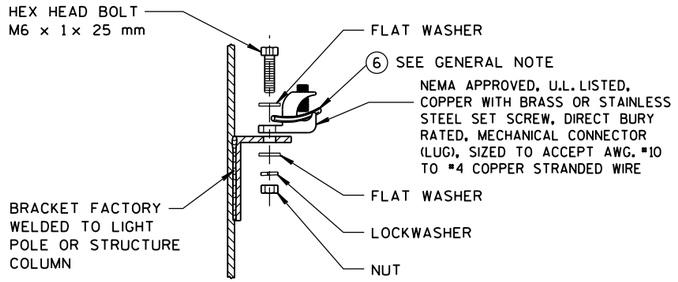


EQUIPMENT GROUNDING CONDUCTOR SLACK



UNGROUNDED CONDUCTOR SLACK (AND GROUNDED NEUTRAL SLACK IN GROUNDED NEUTRAL SYSTEM)

TYPICAL CONDUCTOR SLACK AT HANDHOLES



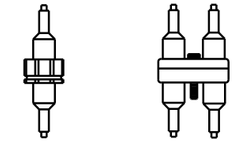
HANDHOLE GROUNDING LUG

(NUT, BOLT, WASHERS, AND LOCK WASHERS SHALL BE STAINLESS STEEL)

CONDUCTOR COLOR CODES

KEY	CONDUCTOR	COLOR
3	UNGROUNDED LINE WIRE	*
4	GROUNDED LINE WIRE	WHITE
5	SYSTEM GROUNDING LINE WIRE	GREEN
6	GROUNDING ELECTRODE CONDUCTOR	BARE
11	UNGROUNDED POLE WIRE	*
12	GROUNDED POLE WIRE	WHITE
13	EQUIPMENT GROUNDING POLE WIRE	GREEN

* FOLLOW COLOR CODING SHOWN IN THE PLANS. WHERE THE PLANS DO NOT SHOW COLOR CODING, USE BLACK FOR SINGLE LUMINAIRE POLES; BLACK AND RED FOR TWIN LUMINAIRE POLES.



FUSE ASSEMBLIES

GENERAL NOTES

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

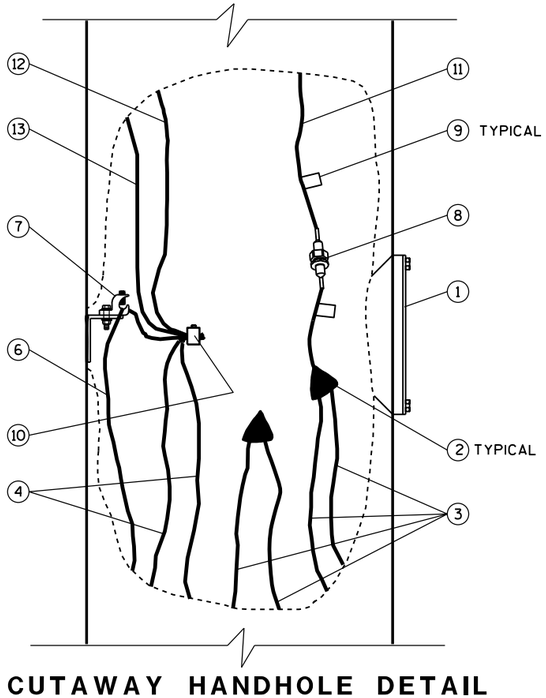
USE THIS DETAIL IN CONJUNCTION WITH THE ELECTRICAL DETAILS FOR THE APPLICATION, WHICH MAY BE A LIGHT POLE, SIGN BRIDGE, ETC.

THE GROUNDING ELECTRODE CONDUCTOR SHALL BE CONTINUOUS WITHOUT SPLICES FROM THE GROUNDING ELECTRODE THROUGH THE HANDHOLE GROUNDING LUG TO THE CONNECTOR.

THREE POLE WIRES ARE SHOWN FOR A SINGLE LUMINAIRE LIGHT POLE. THREE ADDITIONAL POLE WIRES REQUIRED FOR TWIN LUMINAIRE LIGHT POLES ARE OMITTED FROM THE DRAWING FOR CLARITY. IN THE TWIN POLE CASE, BUNDLE EACH SET OF THREE WIRES WITH A NYLON CABLE TIE.

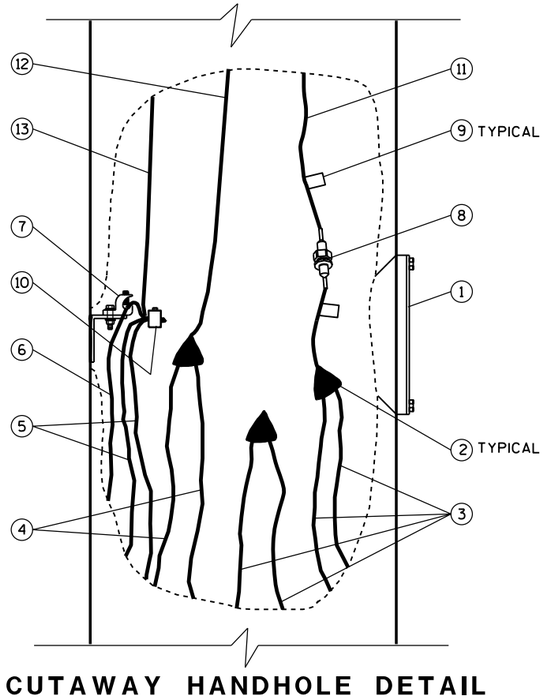
IN 3-PHASE SYSTEMS, THERE WILL BE ONE MORE UNGROUNDED LINE WIRE, WHICH IS OMITTED FROM THE DRAWING FOR CLARITY.

CIRCUIT TAGS SHALL BE INSTALLED ONLY WHERE REQUIRED IN THE SPECIAL PROVISIONS.



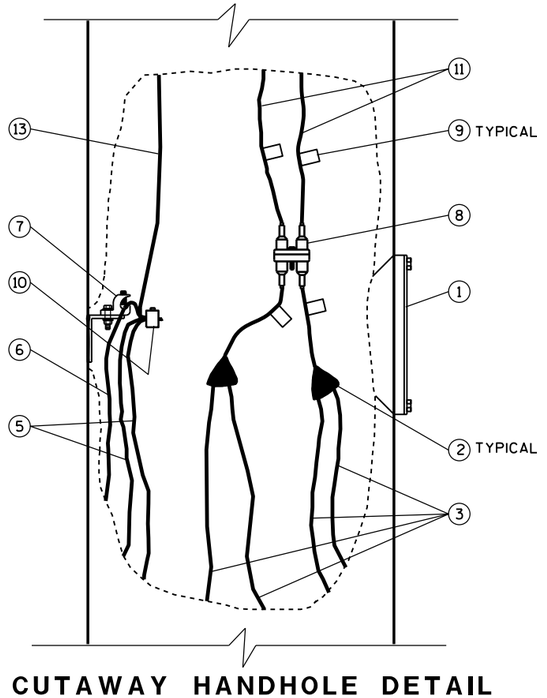
CUTAWAY HANDHOLE DETAIL

GROUNDED NEUTRAL SYSTEMS
1-Φ



CUTAWAY HANDHOLE DETAIL

ISOLATED NEUTRAL SYSTEMS
1-Φ SHOWN; 3-Φ WYE SIMILAR
(SEE GENERAL NOTE)



CUTAWAY HANDHOLE DETAIL

PHASE-TO-PHASE SYSTEMS
1-Φ SHOWN; 3-Φ DELTA SIMILAR
(SEE GENERAL NOTE)

NOTE: REQUIRED CONDUCTOR SLACK NOT SHOWN ON "CUTAWAY HAND HOLE" DETAILS FOR DRAWING CLARITY, SEE "TYPICAL CONDUCTOR SLACK AT HANDHOLES" ON THIS SHEET.

(1) HANDHOLE AND COVER
(2) INSULATED SPLICE
(3) UNGROUNDED LINE WIRE
(4) GROUNDED LINE WIRE
(5) SYSTEM GROUNDING LINE WIRE
(6) GROUNDING ELECTRODE CONDUCTOR
(7) HANDHOLE GROUNDING LUG
(8) FUSE ASSEMBLY, 1P OR 2P AS REQUIRED
(9) CIRCUIT TAG (SEE GENERAL NOTE)
(10) REVERSIBLE PRESSURE OR COMPRESSION GROUNDING CONNECTOR (NOT INSULATED)
(11) UNGROUNDED POLE WIRE
(12) GROUNDED POLE WIRE
(13) EQUIPMENT GROUNDING POLE WIRE

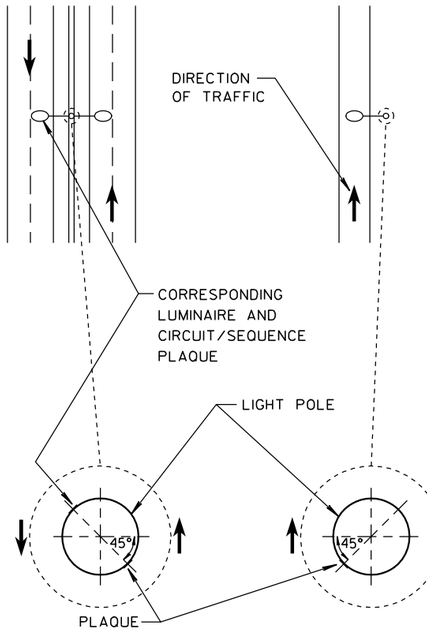
ELECTRICAL HANDHOLE WIRING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

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S.D.D. 10 A 1-3



MEDIAN POLE SINGLE ARM POLE

LOCATION OF LIGHT POLE CIRCUIT/SEQUENCE PLAQUE

GENERAL NOTES

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

PLAQUES SHALL BE INCIDENTAL TO ALL NEW INSTALLATIONS.

WHERE SHOWN IN THE PLANS, REPLACEMENT PLAQUES WILL BE MEASURED AND PAID SEPARATELY.

FASTEN TOP, CENTER AND BOTTOM OF PLAQUE TO POLE OR OTHER LOCATION AS FOLLOWS:

GALVANIZED STEEL SHAFT - STAINLESS STEEL POP RIVETS

A588 STEEL SHAFT - SHIM FOR DRAINAGE WITH STAINLESS WASHERS; FASTEN WITH STAINLESS SELF-TAPPING SCREWS

ALUMINUM SHAFTS - ALUMINUM POP RIVETS

MOUNTING HEIGHT SHALL BE APPROXIMATELY 5.0' ABOVE CURB OR SHOULDER. ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL OBSTRUCT.

PLAQUE MATERIALS:

BASE - SHEET ALUMINUM, 0.060" THICK.

FACE - WHITE, SELF-ADHESIVE VINYL SHEETING, NON-RETRORFLECTIVE

LINES - BLACK, 1/2" WIDE, SELF-ADHESIVE

CHARACTERS - BLACK, SELF-ADHESIVE, SERIES "D", SIZE AS SHOWN

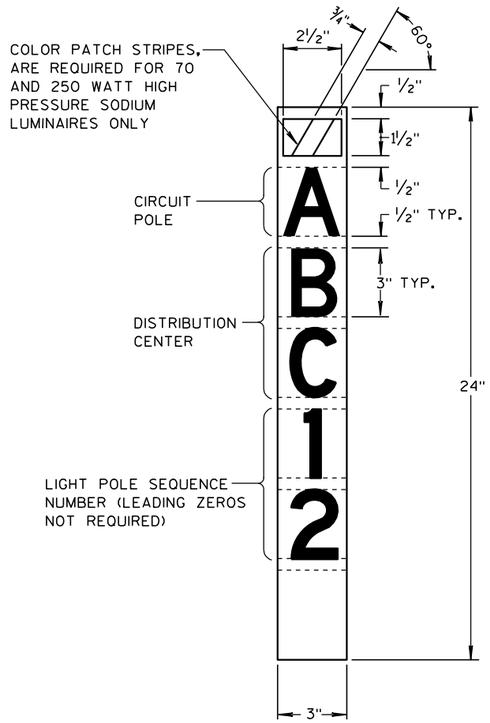
COLOR PATCHES - VARIOUS COLORS, SELF-ADHESIVE VINYL SHEETING

WITH THE APPROVAL OF THE ENGINEER, THE BASE MATERIAL MAY BE OMITTED AND THE FACE ADHERED DIRECTLY TO THE SURFACE, IN CASES SUCH AS SMOOTH, CLEAN ALUMINUM POLES.

ALTERNATIVE COMPUTER-GENERATED SIGN LETTERING MAY BE ACCEPTED IF THE ENGINEER FINDS IT TO BE EQUIVALENT.

COLOR PATCH CODE FOR HPS LUMINAIRES

1000 WATT - NO PATCH
400 WATT - ORANGE
310 WATT - BLUE
250 WATT - ORANGE WITH WHITE STRIPE
200 WATT - RED
150 WATT - GREEN
100 WATT - BROWN
70 WATT - BROWN WITH WHITE STRIPE



LIGHT POLE CIRCUIT/SEQUENCE PLAQUE

IDENTIFICATION PLAQUES LIGHT POLES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/25/2010 — DATE
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165
HWYS
FHWA

GENERAL NOTES

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

USE THIS DETAIL IN CONJUNCTION WITH THE DETAIL FOR ELECTRICAL HANDHOLE WIRING.

THE GROUNDING ELECTRODE CONDUCTOR SHALL BE CONTINUOUS WITHOUT SPLICES FROM THE GROUNDING ELECTRODE THROUGH THE HANDHOLE GROUNDING LUG TO THE CONNECTOR.

WIRING FOR SINGLE LUMINAIRE POLES IS SHOWN WITH SOLID LINES. WIRING FOR THE SECOND LUMINAIRE OF TWIN LUMINAIRE POLES IS SHOWN WITH DOTTED LINES.

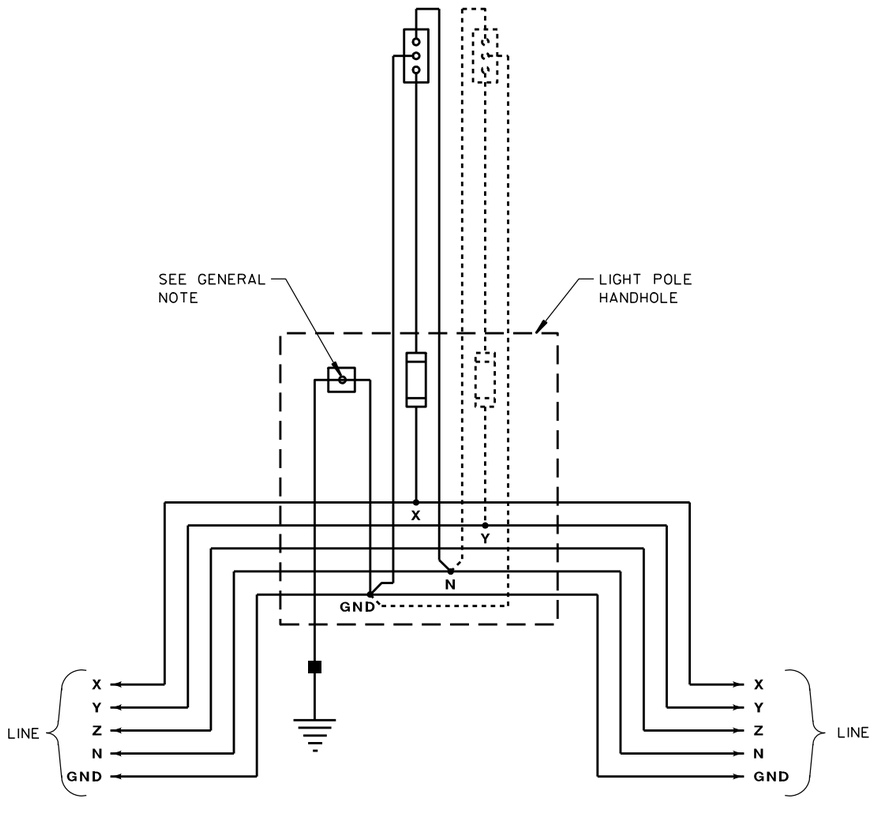
THE PLANS WILL SHOW WHICH CIRCUIT LEG(S) ARE CONNECTED TO EACH INSTALLATION.

HANDHOLE FUSE SCHEDULES

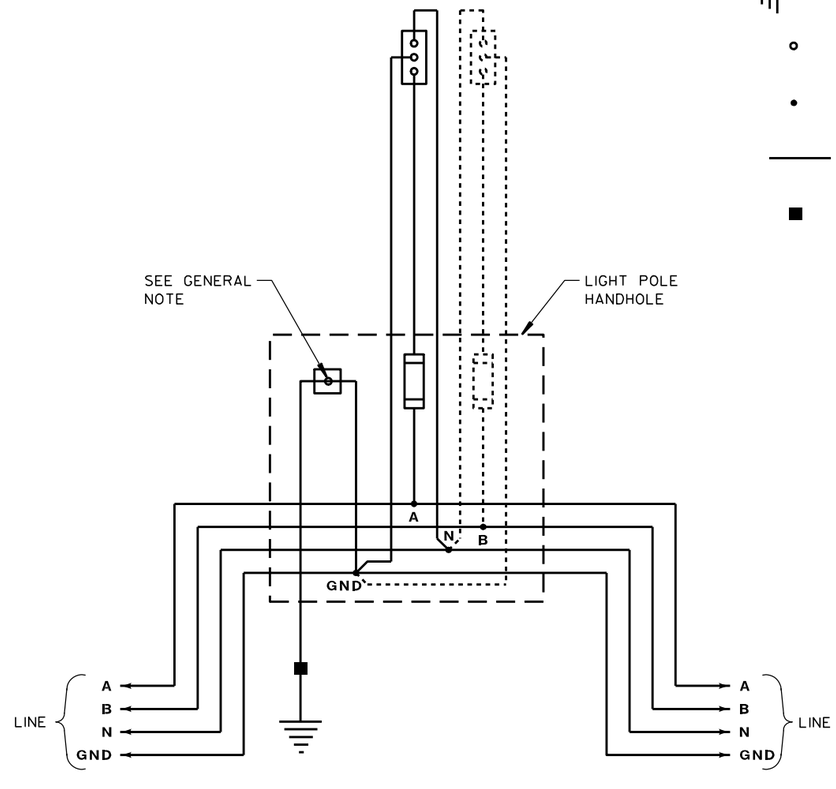
LINE VOLTAGE	BALLAST WATTAGE	
φ-GROUND	70-200 W	250-400 W
120 VAC	5 A	10 A
240 VAC	5 A	5 A
277 VAC	5 A	5 A
480 VAC	3 A	5 A

LEGEND

A,B,X,Y,Z	UNGROUNDED CIRCUIT CONDUCTORS
N	GROUNDED CIRCUIT CONDUCTORS
GND	EQUIPMENT GROUNDING CONDUCTOR
P	POLE (ELECTRICAL CIRCUIT)
φ	PHASE (ELECTRICAL CURRENT)
	HANDHOLE GROUND LUG
	SINGLE-POLE (1P) FUSE ASSEMBLY
	TWO-POLE (2P) FUSE ASSEMBLY
	UNFUSED LUMINAIRE
	EQUIPMENT GROUNDING ELECTRODE
	TERMINAL
	SPLICE
	CONDUCTOR
	EXOTHERMIC WELD



TYPICAL WIRING DIAGRAM
ISOLATED NEUTRAL SYSTEM
3-φ 208Y/120VAC OR 480Y/277VAC 4 WIRE



TYPICAL WIRING DIAGRAM
ISOLATED NEUTRAL SYSTEM
1-φ 120/240VAC OR 240/480VAC 3 WIRE

ELECTRICAL DETAILS
GROUND MOUNT LIGHT POLES
ISOLATED NEUTRAL SYSTEM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/25/2010 DATE
/S/ John Corbin
STATE ELECTRICAL ENGI
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S.D.D. 10 A 5-2

6

S.D.D. 10 A 5-2

HANDHOLE FUSE SCHEDULES

LINE VOLTAGE φ-GROUND	BALLAST WATTAGE	
	70-200 W	250-400 W
120 VAC	5 A	10 A
240 VAC	5 A	5 A
277 VAC	5 A	5 A
480 VAC	3 A	5 A

GENERAL NOTES

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

USE THIS DETAIL IN CONJUNCTION WITH THE DETAIL FOR ELECTRICAL HANDHOLE WIRING.

WIRING FOR SINGLE LUMINAIRE POLES IS SHOWN WITH SOLID LINES. WIRING FOR THE SECOND LUMINAIRE OF TWIN LUMINAIRE POLES IS SHOWN WITH DOTTED LINES.

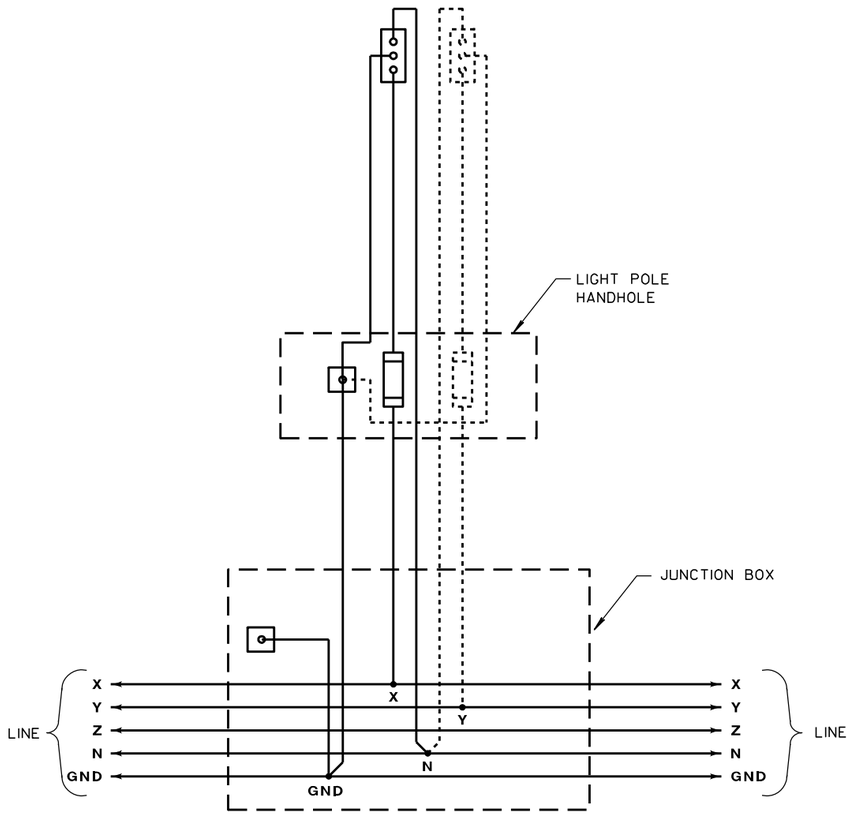
THE PLANS WILL SHOW WHICH CIRCUIT LEG(S) ARE CONNECTED TO EACH INSTALLATION.

WIRE SIZE FROM THE JUNCTION BOX TO THE POLE HANDHOLE SHALL EQUAL THE SIZE OF THE POLE WIRE.

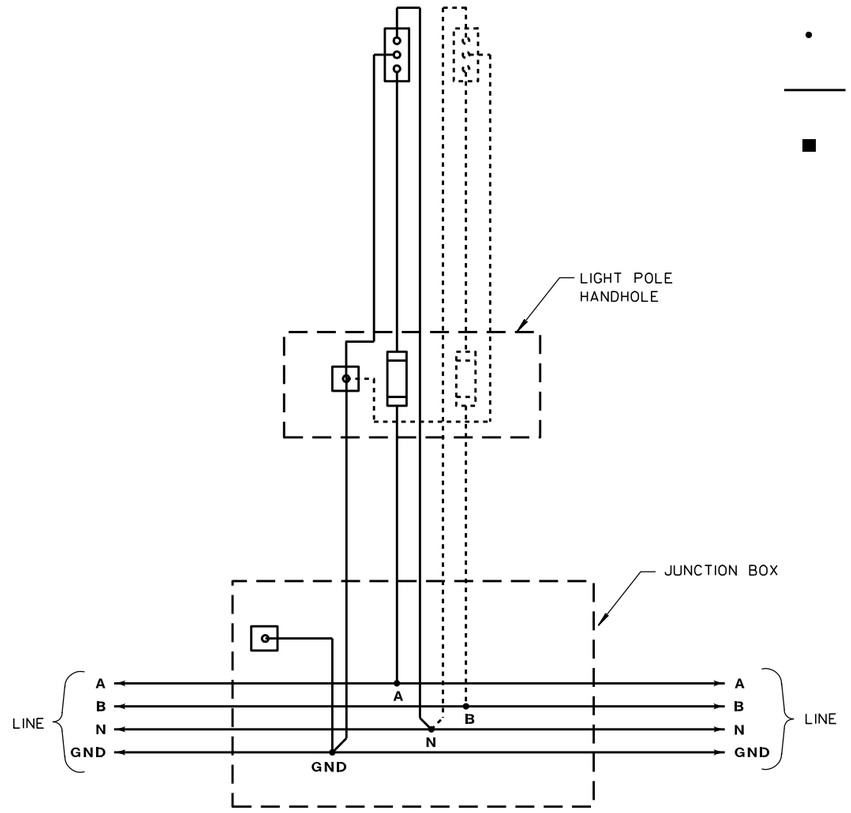
THE INTENT OF JUNCTION BOX SPLICES AS SHOWN IN THIS DETAIL IS FOR LIGHTING SYSTEMS WITH HEAVY LINE WIRE TOO LARGE TO PULL THROUGH THE CONDUIT INTO THE POLE HANDHOLE, DUE TO CONDUIT FILL REQUIREMENTS OF N.E.C., AND/OR THE STIFFNESS OF THE WIRE COMPARED TO THE NUMBER OF BENDS IN THE CONDUIT. IN CASES WHERE LINE WIRE IS LIGHTER, SUCH AS SMALLER SYSTEMS OR TOWARD THE FURTHEST END OF A LARGER SYSTEM, PULL THE LINE WIRE INTO THE POLE HANDHOLE FOR SPLICING.

LEGEND

A,B,X,Y,Z	UNGROUNDED CIRCUIT CONDUCTORS
N	GROUNDED CIRCUIT CONDUCTORS
GND	EQUIPMENT GROUNDING CONDUCTOR
P	POLE (ELECTRICAL CIRCUIT)
φ	PHASE (ELECTRICAL CURRENT)
	HANDHOLE GROUND LUG
	SINGLE-POLE (1P) FUSE ASSEMBLY
	TWO-POLE (2P) FUSE ASSEMBLY
	UNFUSED LUMINAIRE
	EQUIPMENT GROUNDING ELECTRODE
	TERMINAL
	SPLICE
	CONDUCTOR
	EXOTHERMIC WELD



TYPICAL WIRING DIAGRAM
ISOLATED NEUTRAL SYSTEM
3-φ 208Y/120VAC OR 480Y/277VAC 4 WIRE



TYPICAL WIRING DIAGRAM
ISOLATED NEUTRAL SYSTEM
1-φ 120/240VAC OR 240/480VAC 3 WIRE

ELECTRICAL DETAILS
STRUCTURE MOUNT LIGHT POLES
ISOLATED NEUTRAL SYSTEMS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

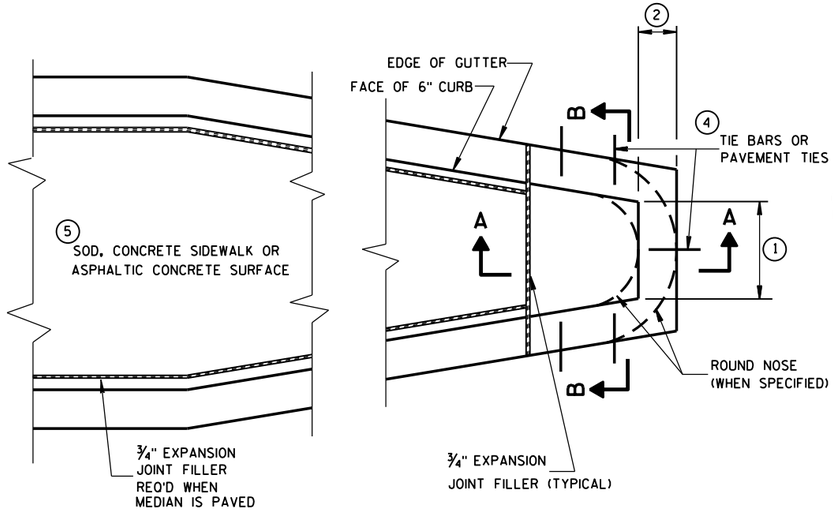
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FHWA — HWYS

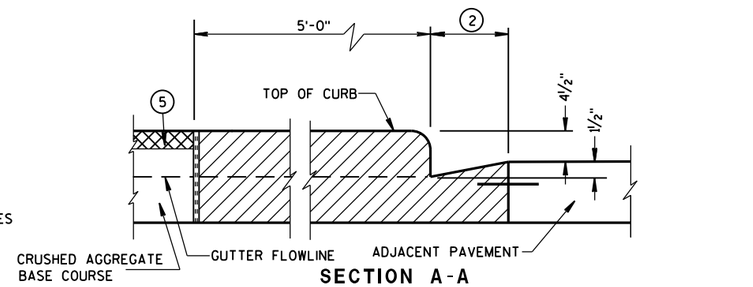
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S.D.D. 10 A 8-2

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S.D.D. 10 A 8-2





CONCRETE MEDIAN BLUNT NOSE DETAIL

GENERAL NOTES

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

(1) SEE PLAN FOR MEDIAN NOSE WIDTH AND RADIUS (FOR ROUND NOSE ALTERNATE).

(2) WIDTH OF GUTTER TO MATCH EXISTING ADJACENT GUTTER OR AS SPECIFIED ELSEWHERE IN THE PLAN.

(3) DEPTH EQUAL TO ADJACENT PAVEMENT. ADJACENT PAVEMENT STRUCTURE DETAILS ARE SHOWN ON THE PLAN. TYPICAL OPTIONS ARE:

(1) NEW OR EXISTING CONCRETE PAVEMENT.

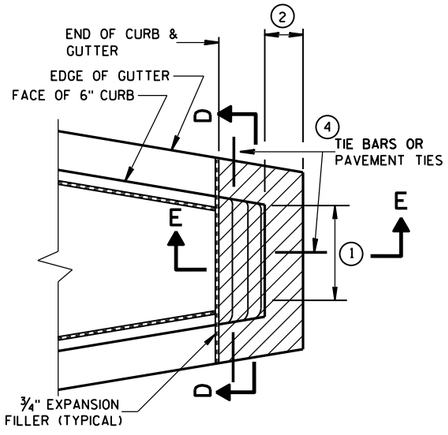
(2) ASPHALTIC CONCRETE PAVEMENT OVER NEW OR EXISTING CONCRETE BASE COURSE.

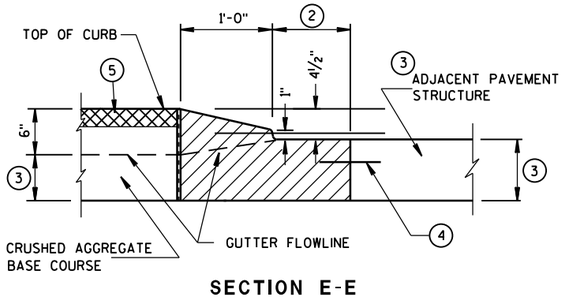
(3) ASPHALTIC CONCRETE PAVEMENT OVER CRUSHED AGGREGATE BASE COURSE.

(4) TIE BARS OR PAVEMENT TIES REQUIRED IN NEW CONCRETE PAVEMENT OR CONCRETE BASE COURSE. TIE BARS SHALL BE NO. 4 X 2'-0" SPACED AT 2'-0" C-C.

PAVEMENT TIES REQUIRED IN EXISTING CONCRETE BASE COURSE. PAVEMENT TIES SHALL BE NO. 6 X 1'-0" SPACED AT 3'-0" C-C INSTALLED ON A HORIZONTAL SKEW OF 6:1. THE DIRECTION OF SKEW SHALL ALTERNATE AFTER EVERY ONE OR TWO BARS.

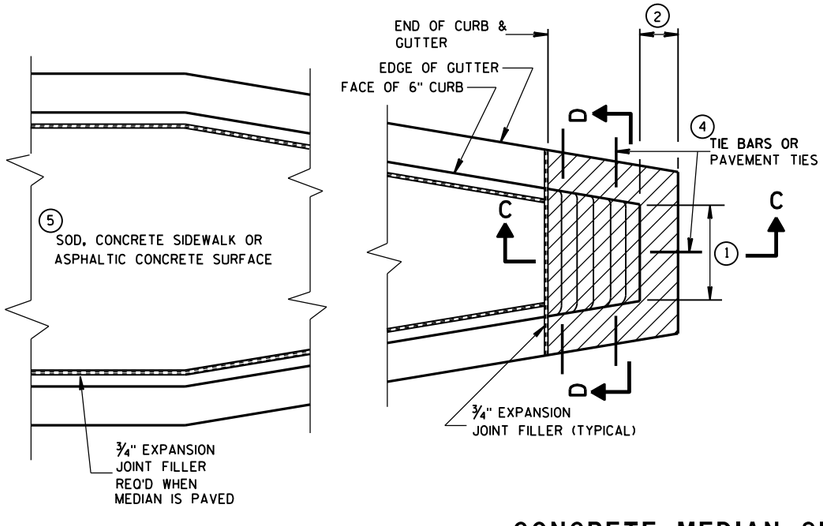
(5) SURFACE TYPE AND DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

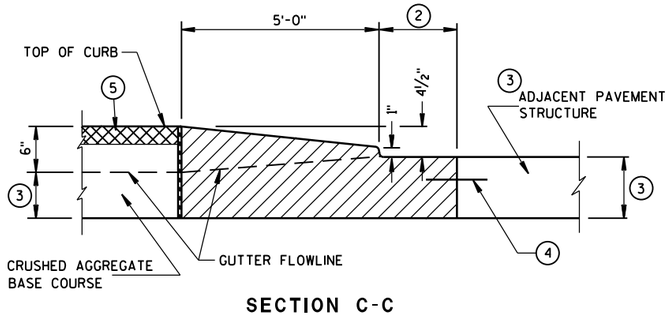




SECTION E-E

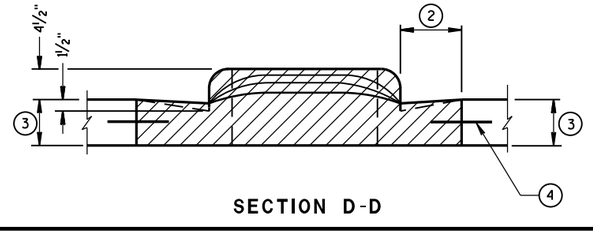
CONCRETE MEDIAN SLOPED NOSE TYPE 2





SECTION C-C

CONCRETE MEDIAN SLOPED NOSE TYPE 1



SECTION D-D

CONCRETE MEDIAN NOSE

STATE OF WISCONSIN
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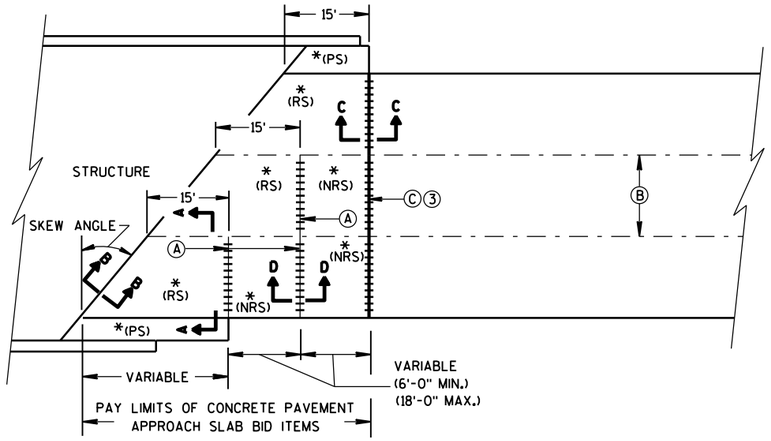
APPROVED
6/8/2006
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS D ENGINEER
FHWA

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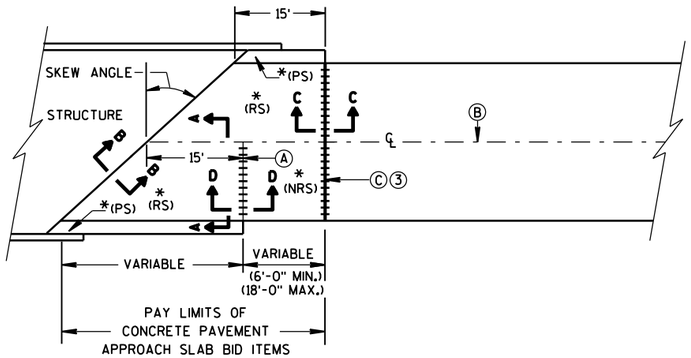
S.D.D. 11 B 2-2

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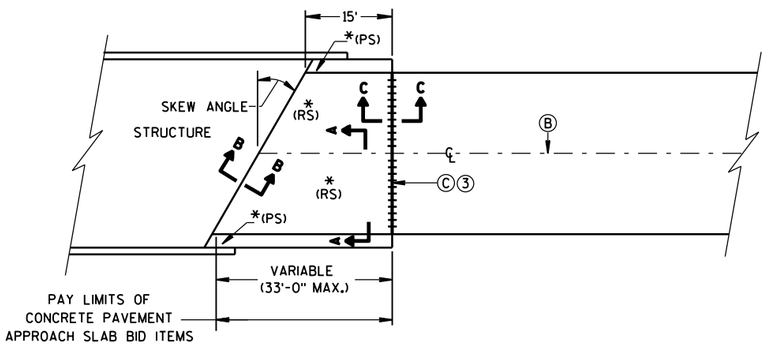
S.D.D. 11 B 2-2



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >20°
(PAVEMENT WIDTH ≤30')



SKEWS ≤20°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

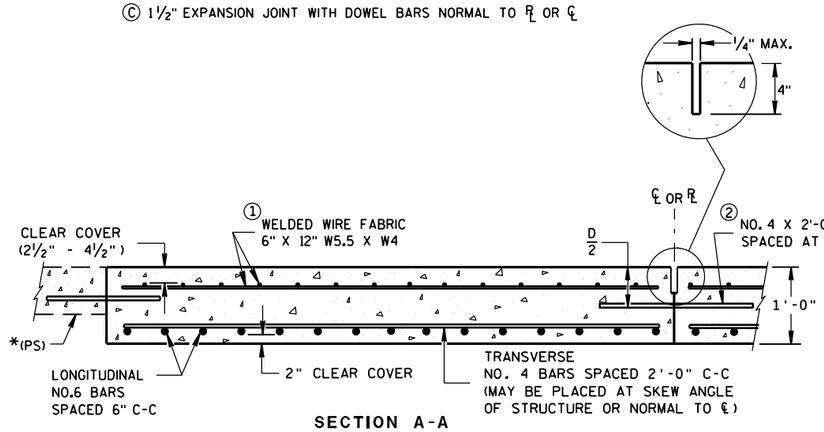
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

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

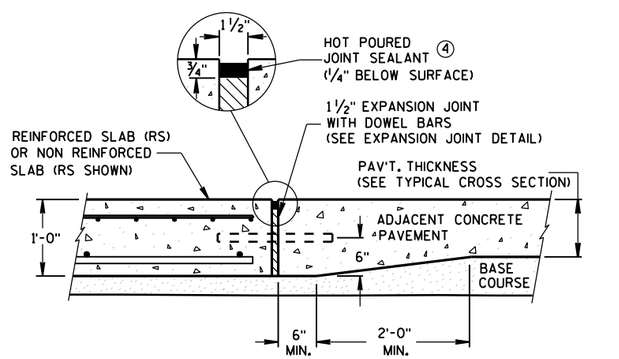
Ⓐ STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄

Ⓑ STANDARD LONGITUDINAL JOINT WITH TIE BARS.

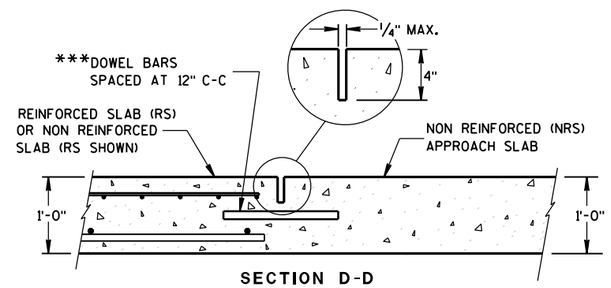
Ⓒ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄



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.

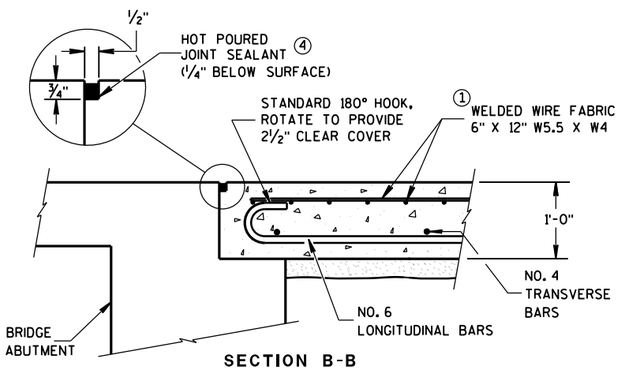
① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

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

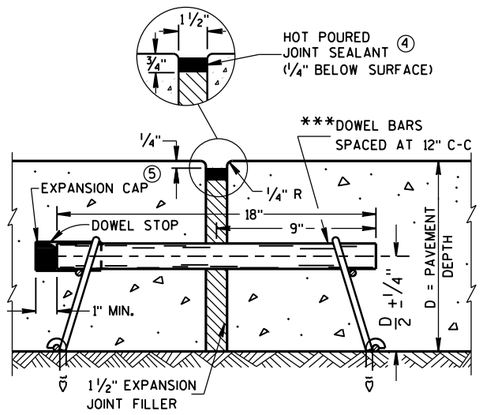
③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.

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

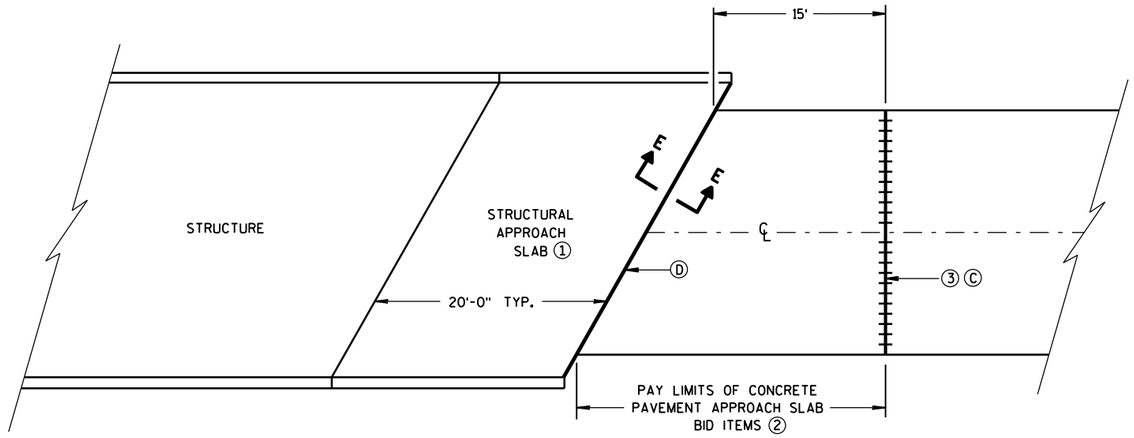
6

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

6

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

BRIDGE APPROACHES



GENERAL NOTES

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

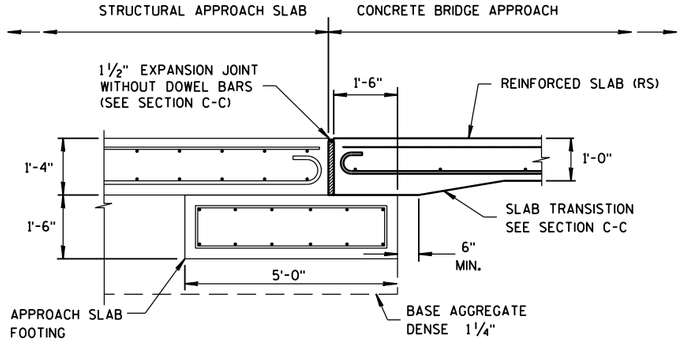
① SEE BRIDGE PLAN.

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

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

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

Ⓓ 1½" EXPANSION JOINT (NO DOWELS)



SECTION E-E

FOOTING DETAIL

STRUCTURAL APPROACH SLAB TO CONCRETE BRIDGE APPROACH

STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

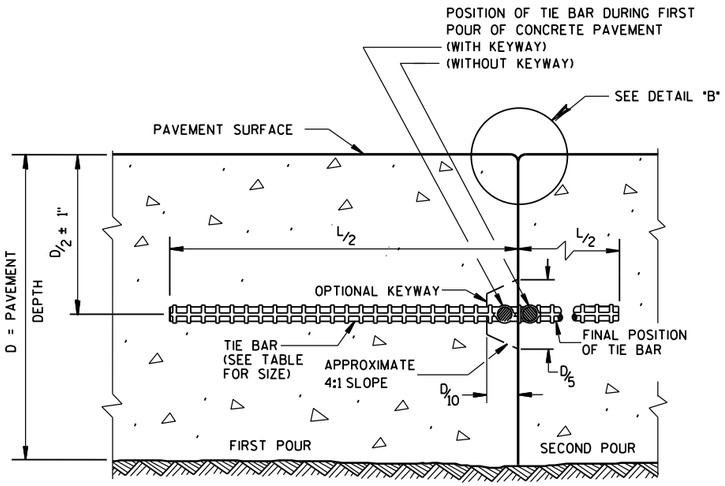
June, 2015
DATE

/S/ Peter Kemp, P.E.
PAVEMENT SUPEF

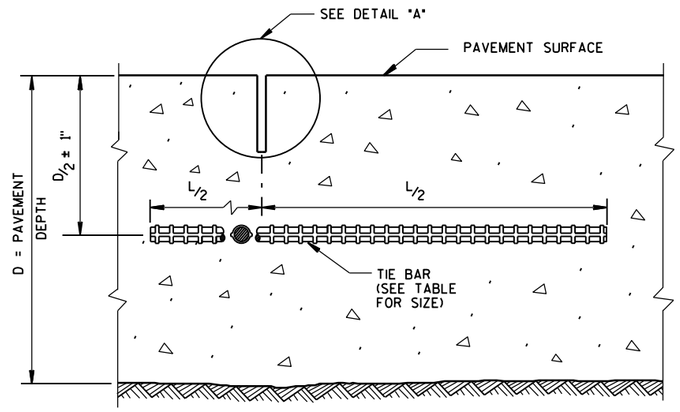
FHWA

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



CONSTRUCTION JOINT



SAWED JOINT

GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

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

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

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

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

PLAN VIEW

SECTION A-A

LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT

DETAIL "A"

DETAIL "B"

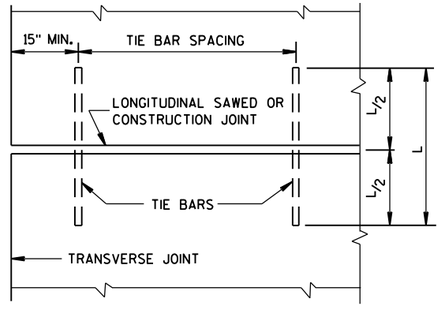
DETAIL "C"

TIE BAR TABLE

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

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

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



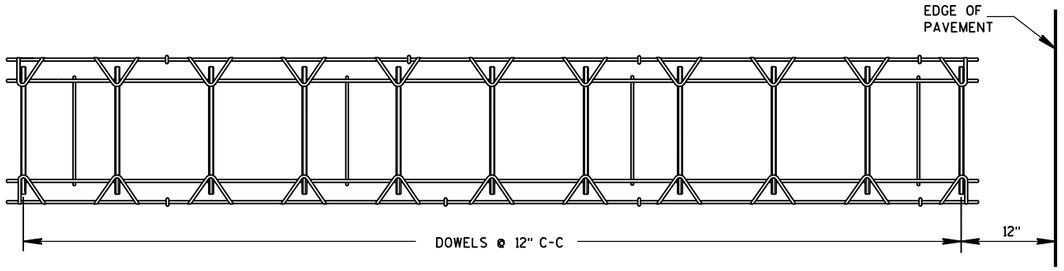
PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 13 C 1-18

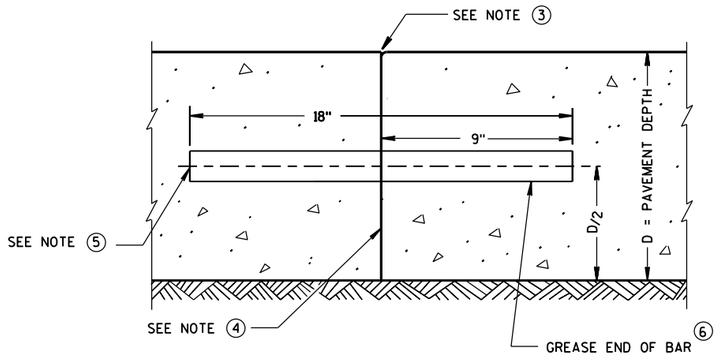


PLAN VIEW

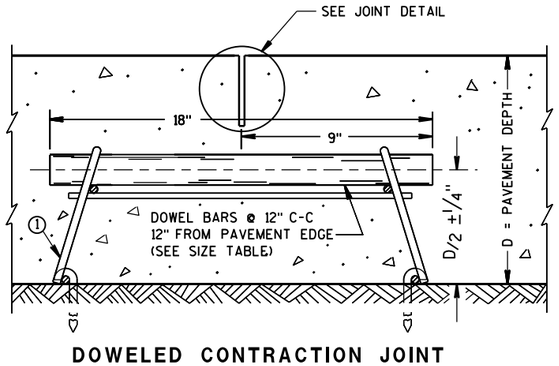


SIDE VIEW

CONTRACTION JOINT DOWEL ASSEMBLY ①



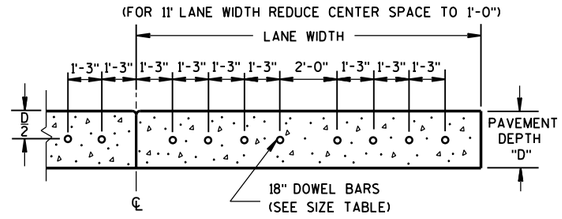
TRANSVERSE CONSTRUCTION JOINT



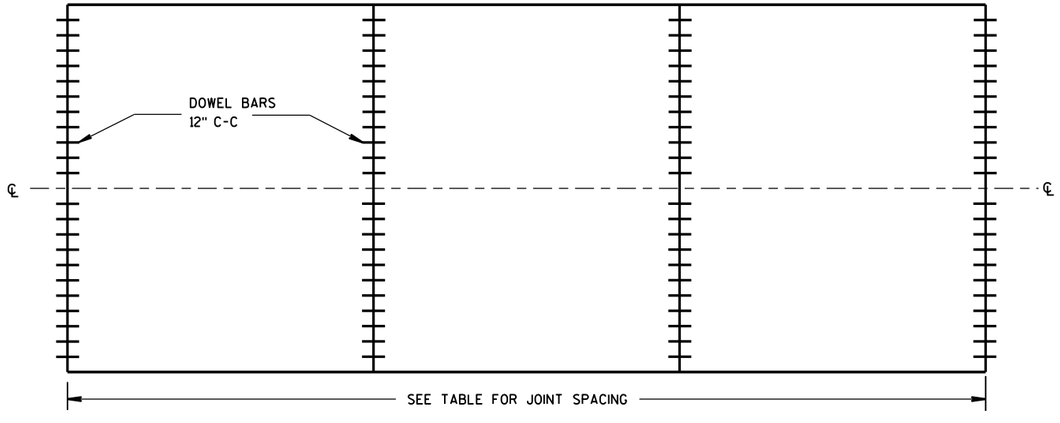
DOWELED CONTRACTION JOINT

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

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



DRILLED DOWEL BAR CONSTRUCTION JOINT ⑦



CONTRACTION JOINT LOCATIONS

GENERAL NOTES

CONTRACTION JOINTS

CONSTRUCT TRANSVERSE CONTRACTION JOINTS NORMAL TO THE CENTERLINE. SHOW THE LOCATION OF CONTRACTION JOINTS THROUGH INTERSECTIONS ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT SEAL OR FILL CONTRACTION JOINTS.

INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

FOR PAVEMENT SLABS OF VARYING WIDTHS, LOCATE THE OUTER MOST DOWEL BAR SO THAT THE CENTER OF THE BAR IS A MINIMUM OF 6 INCHES AND A MAXIMUM OF 18 INCHES FROM THE LONGITUDINAL JOINT AND THE FREE EDGE OF PAVEMENT.

CONSTRUCTION JOINTS

LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.

① **OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTING CONTRACTION JOINTS.**

② SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.

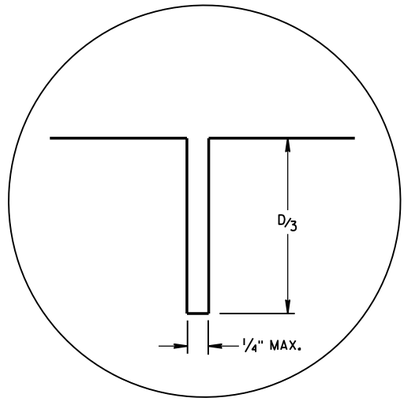
③ FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A ¼-INCH RADIUS AT FORMED JOINTS.

④ PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.

⑤ INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C-C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO *DRILLED DOWEL BAR CONSTRUCTION JOINT* DETAIL.

⑥ APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

⑦ ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS ⅛-INCH GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.



JOINT DETAIL

URBAN DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/3/2013 DATE
/S/ Deb Bischoff
PAVEMENT POLICY & DE ENGINEER
FHWA

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S.D.D. 13 C 13-8

6

S.D.D. 13 C 13-8

GENERAL NOTES

PCCP = PORTLAND CEMENT CONCRETE PAVEMENT.

SHLDR = SHOULDER.

CONTINUE SAW CUT CONTRACTION JOINT ACROSS TURN LANE, EXIT TAPER AND PASSING LANE.

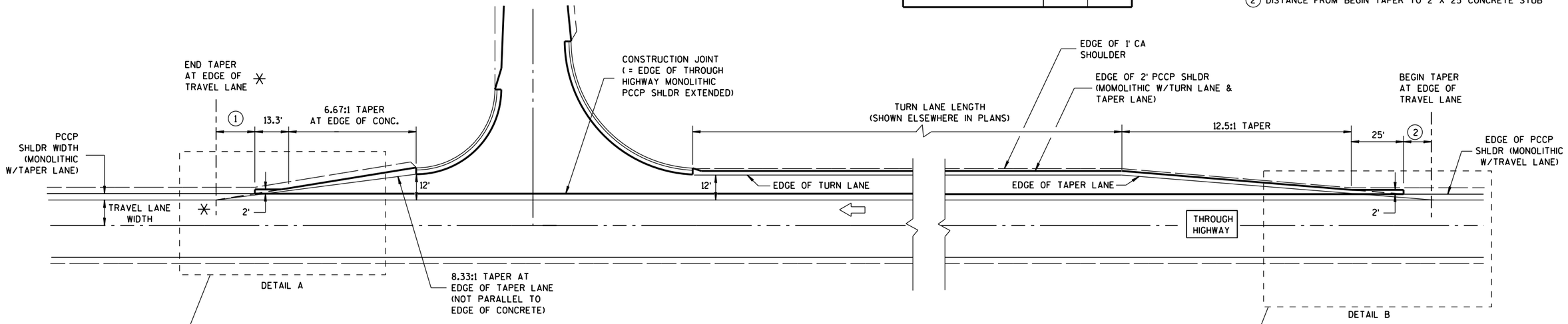
PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

THROUGH HIGHWAY LANE WIDTH AND PCCP SHOULDER WIDTH ARE SHOWN ELSEWHERE IN PLANS

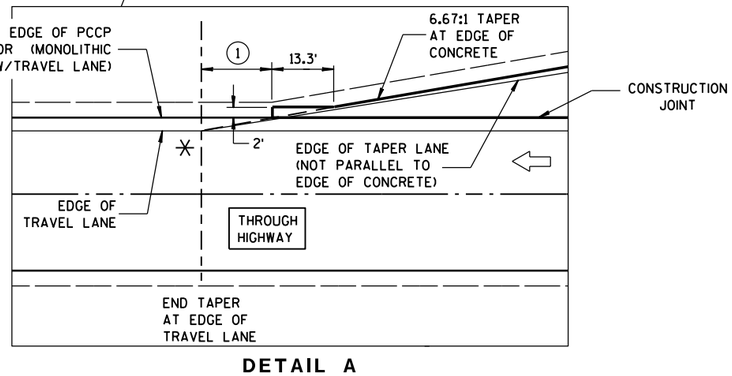
(1) DISTANCE FROM END TAPER TO 2' X 13.3' CONCRETE STUB

(2) DISTANCE FROM BEGIN TAPER TO 2' X 25' CONCRETE STUB

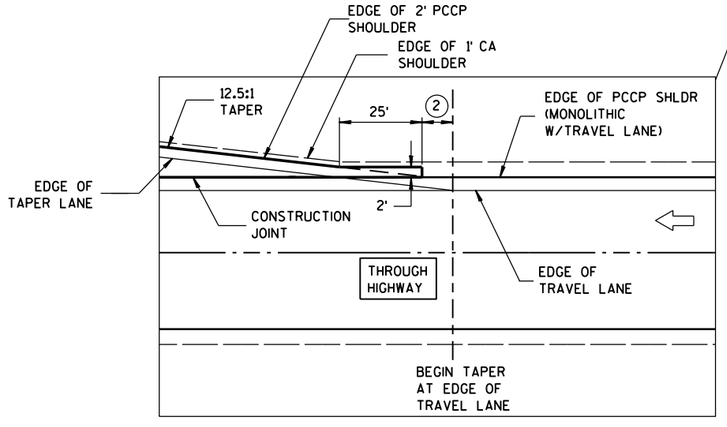
THROUGH HIGHWAY MONOLITHIC PCCP SHOULDER WIDTH (FEET)	DISTANCE (FEET)	
	(1)	(2)
2	13.3	0.0
3	20.0	12.5
TAPER RATE : 1	6.67	12.5



NOTE: EDGE OF CONCRETE TAPER (EXTENDED) & EDGE OF TAPER LANE CONVERGE



DETAIL A



DETAIL B

RIGHT TURN LANE AND EXIT TAPER

DETAIL FOR RIGHT TURN LANE/ TEE INTERSECTION BYPASS LANE ON A CONCRETE ROADWAY

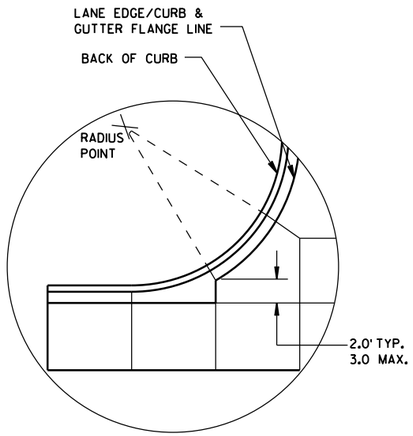
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6

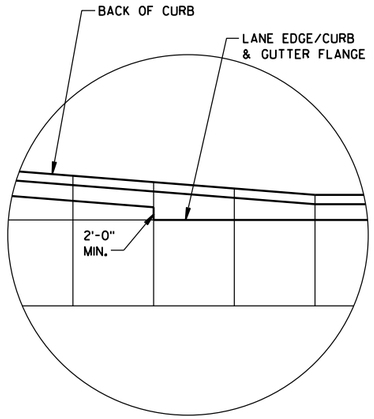
S.D.D. 13 C 16-2a

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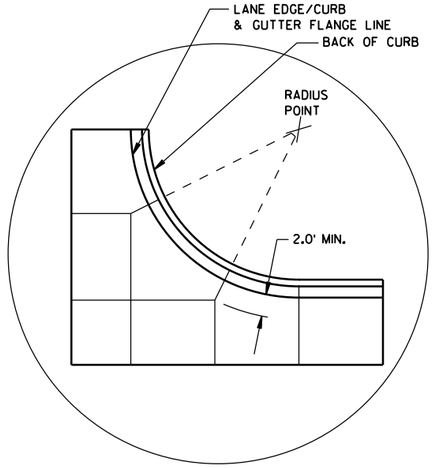
S.D.D. 13 C 16-2a



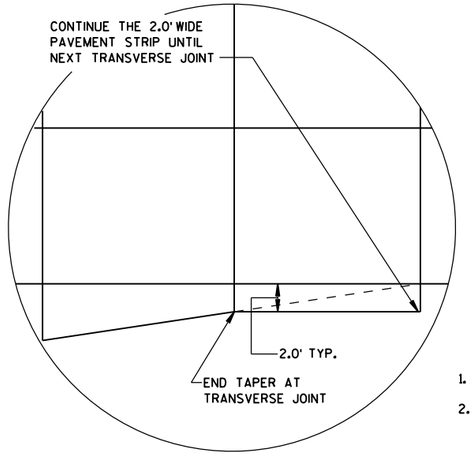
DETAIL "A"



DETAIL "B"



DETAIL "C"



DETAIL "D"

GENERAL NOTES

THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.

ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.

CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.

ADJUST TRANSVERSE JOINTS TO ALIGN WITH UTILITY FIXTURES (E.G. MANHOLES AND INLETS) IN THE PAVEMENT STRUCTURE WHEN POSSIBLE. WATER VALVES DO NOT REQUIRE JOINT ADJUSTMENT.

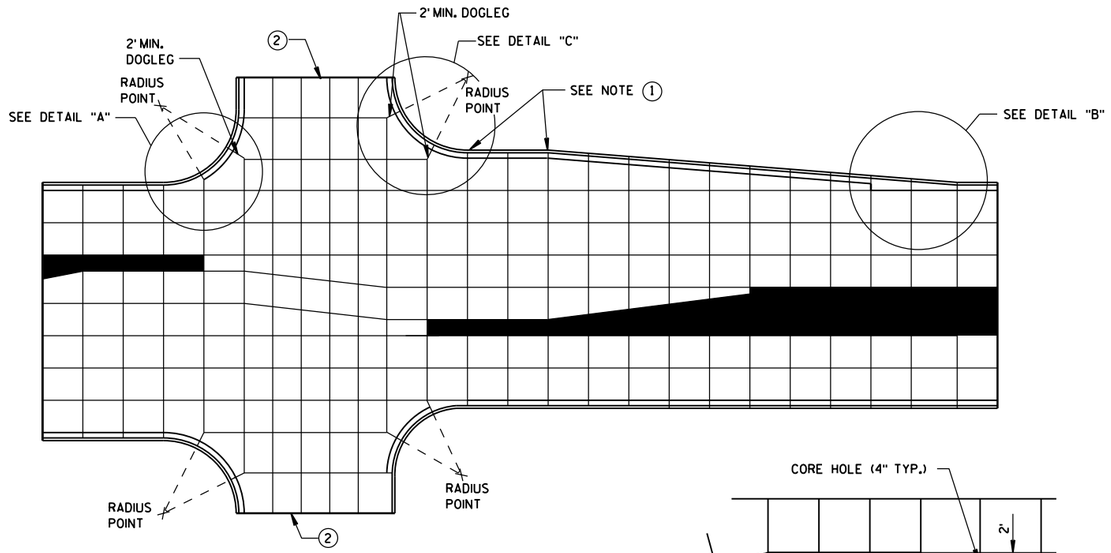
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

SEE TABLE FOR TRANSVERSE JOINT SPACING. JOINT SPACING SPECIFIED IS MAXIMUM AND ACTUAL SPACING CAN BE ADJUSTED TO ACCOMMODATE INTERSECTIONS.

AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

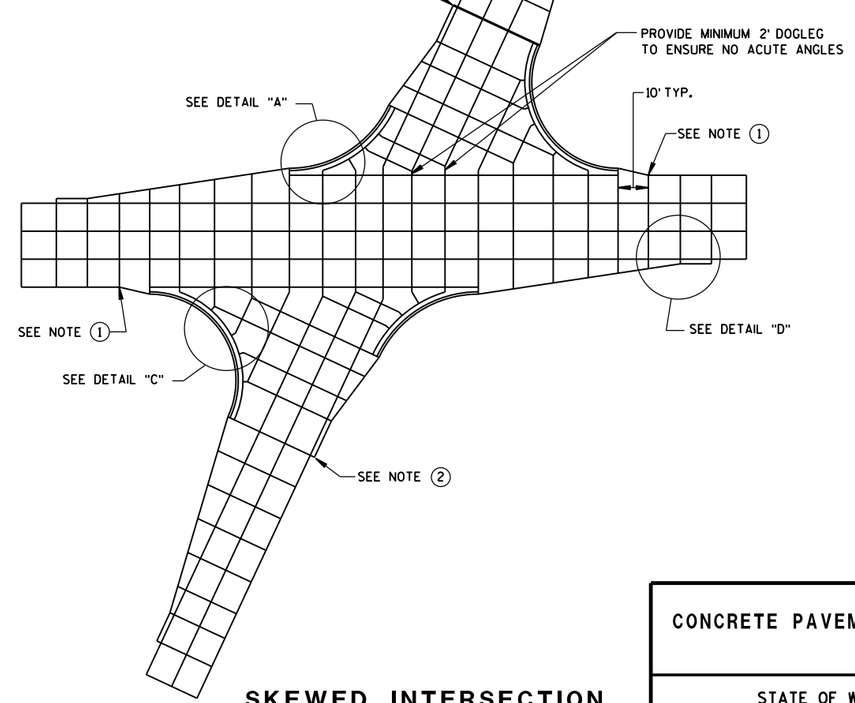
1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM THESE JOINTING DETAILS.



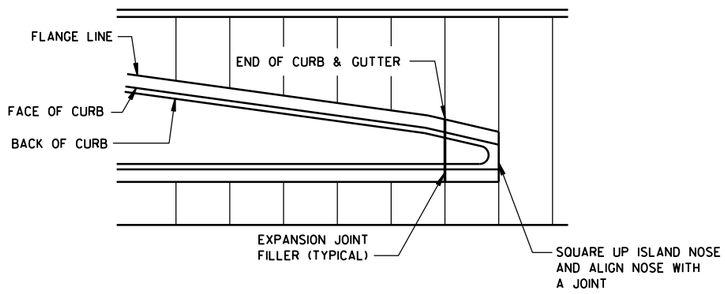
STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

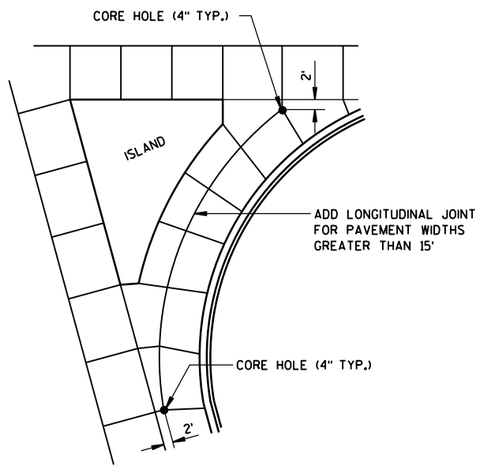
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6½"	12'
7", 7½"	14'
8" & ABOVE	15'



SKEWED INTERSECTION



APPROACH TO MEDIAN



LARGE RIGHT TURN

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

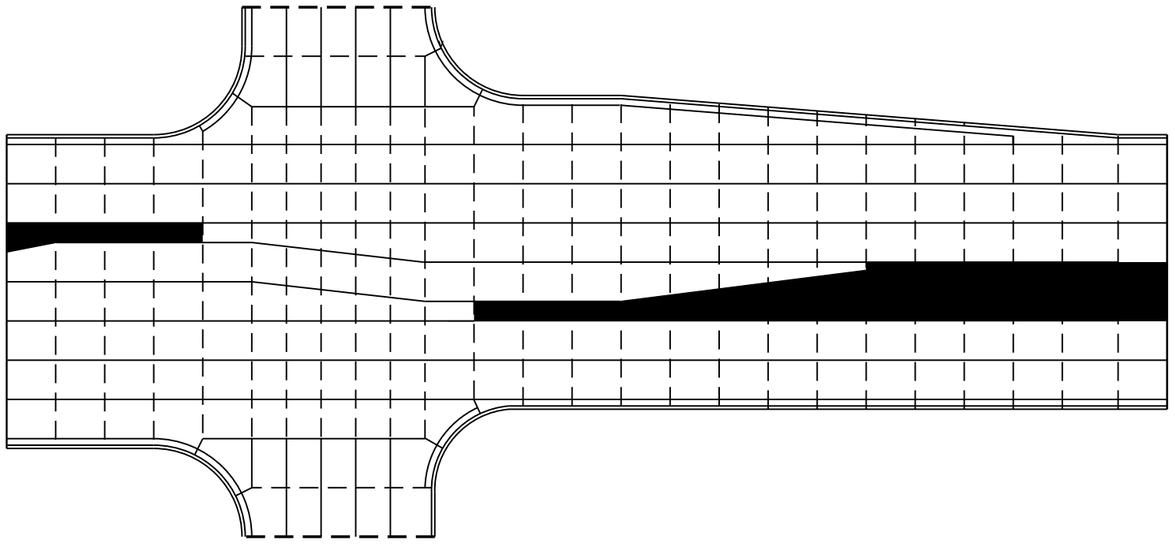
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S.D.D. 13 C 18-5a

LEGEND

POTENTIAL DOWELED EXPANSION JOINT

DOWELED JOINT

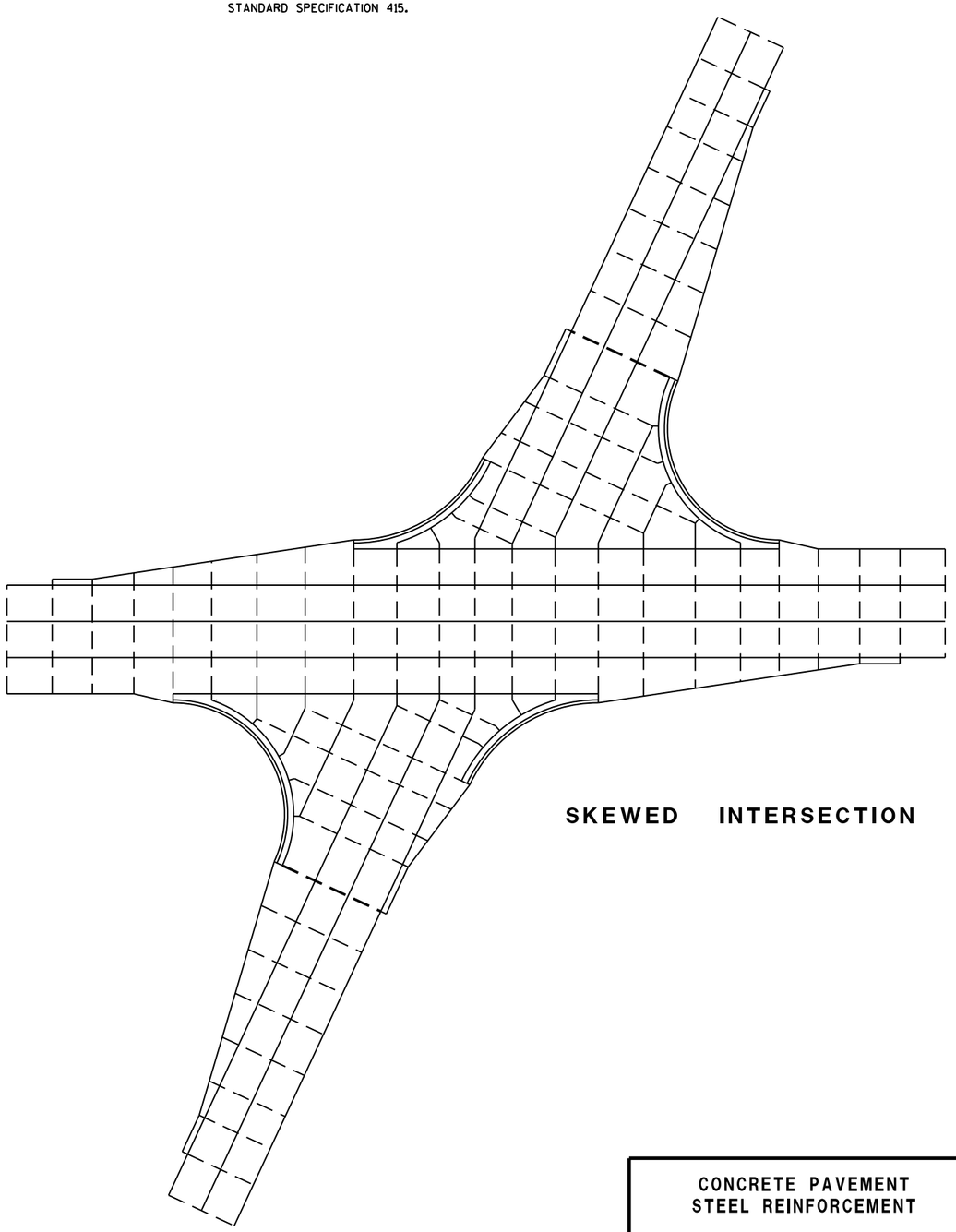
TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.



SKEWED INTERSECTION

CONCRETE PAVEMENT
STEEL REINFORCEMENT

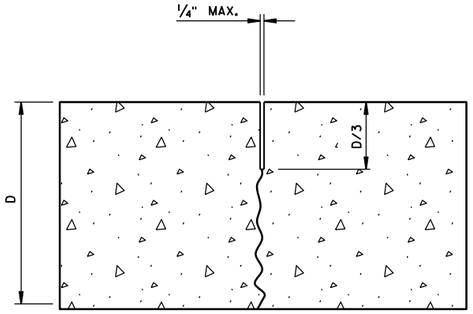
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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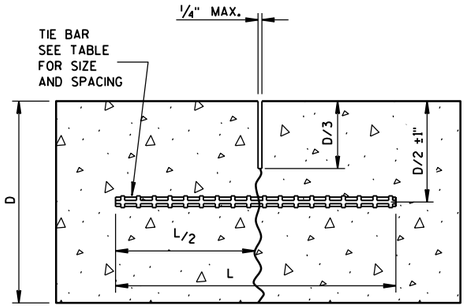
S.D.D. 13 C 18-5b

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S.D.D. 13 C 18-5b



UNDOWELED-TRANSVERSE



TIED LONGITUDINAL

TIE BAR TABLE

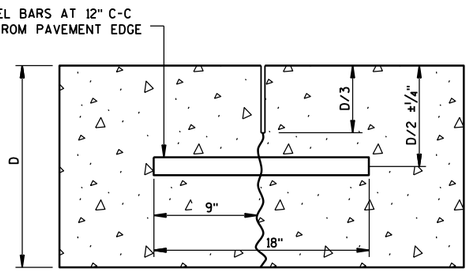
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4*	30"	24"**

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

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

GENERAL NOTES

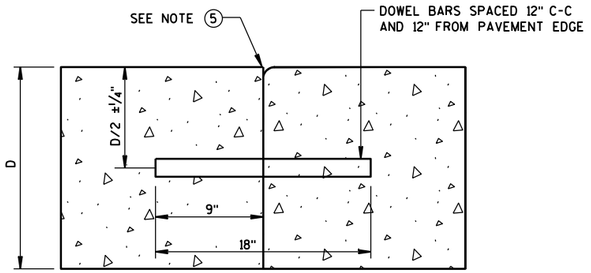
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.
4. CONSTRUCTION JOINTS CAN BE FORMED OR SAWED.
5. IF JOINT IS FORMED, PROVIDE A 1/4-INCH RADIUS.
6. ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



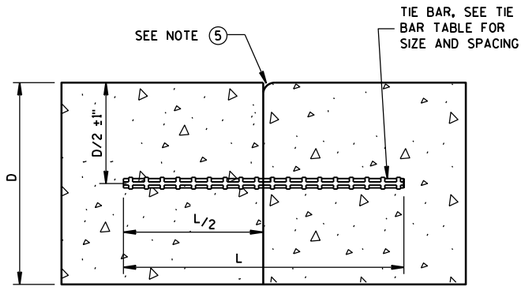
DOWELED-TRANSVERSE

CONTRACTION JOINTS

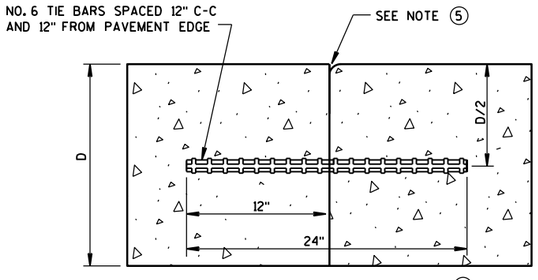
SEE NOTE (2)



DOWELED TRANSVERSE (3)

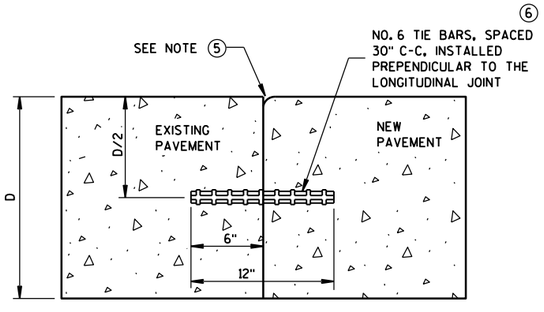


TIED LONGITUDINAL



TIED TRANSVERSE (3)

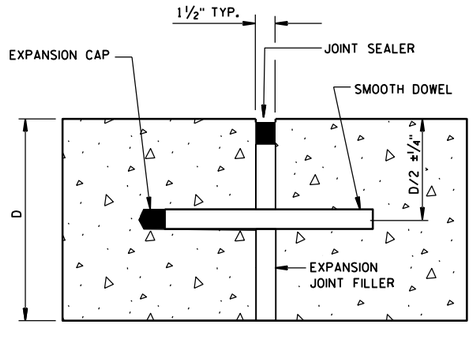
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



TIED LONGITUDINAL TO EXISTING

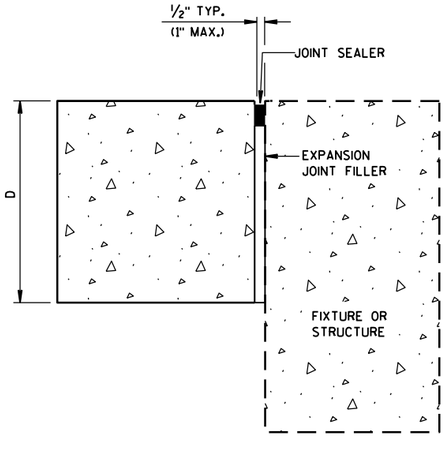
CONSTRUCTION JOINTS

SEE NOTE (4)



DOWELED-TRANSVERSE

SEE NOTE (1)



UNTIED-LONGITUDINAL

EXPANSION JOINTS

6

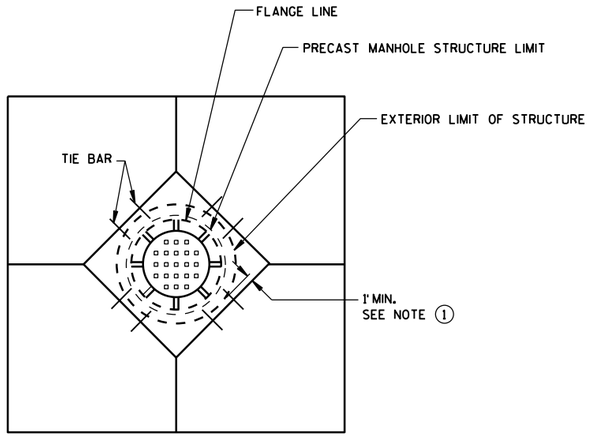
6

S.D.D. 13 C 18-5c

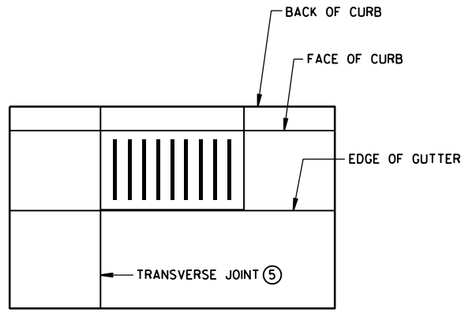
S.D.D. 13 C 18-5c

CONCRETE PAVEMENT
JOINT TYPES

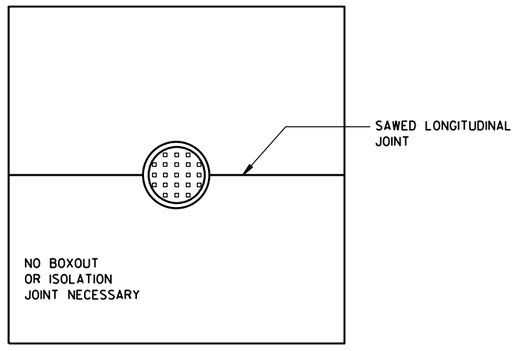
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI



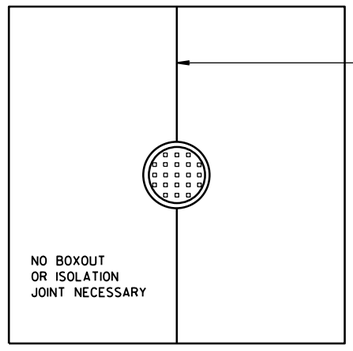
DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS



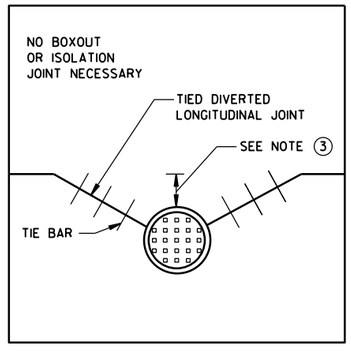
INLET WITH TRANSVERSE JOINT



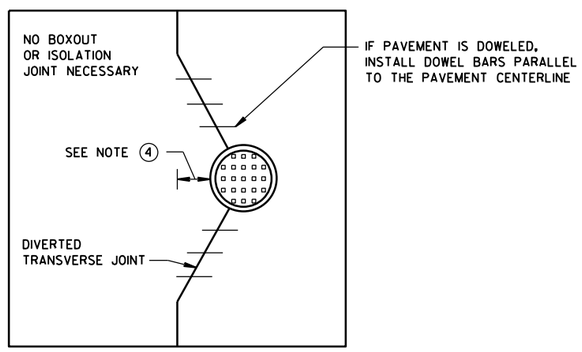
MANHOLE WITH LONGITUDINAL JOINT



MANHOLE WITH TRANSVERSE JOINT



MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT



MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT

GENERAL NOTES

(1) USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1-FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.

(2) ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.

(3) IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS 2 FEET OR LESS, DIVERT THE LONGITUDIAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE. IF THE DISTANCE IS GREATER THAN 2 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.

(4) IF DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS 4 FEET OR LESS, REDIRECT JOINT TO INTERSECT THE CENTER OF THE MANHOLE. IF DISTANCE IS GREATER THAN 4 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.

(5) ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.

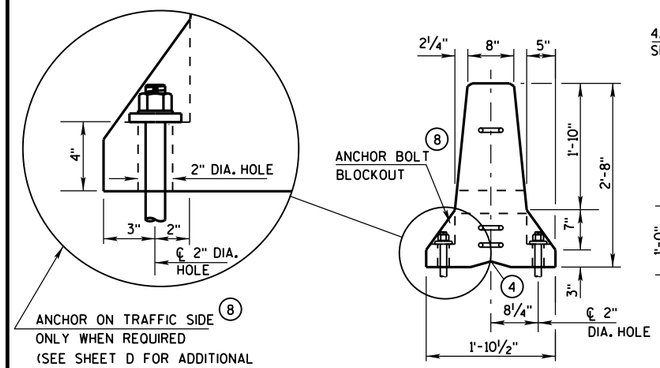
CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

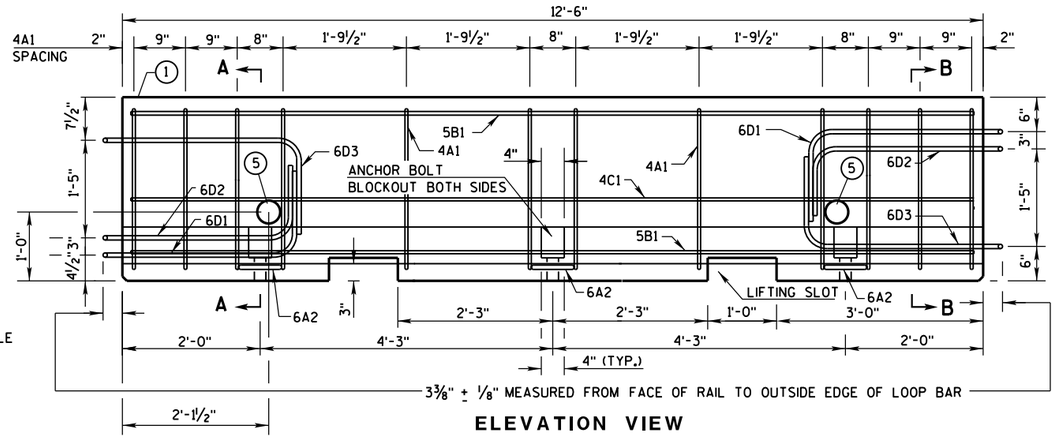
APPROVED
December, 2016 — /S/ Peter Kemp, P.E.
DATE — PAVEMENT SUPEF
FHWA

6

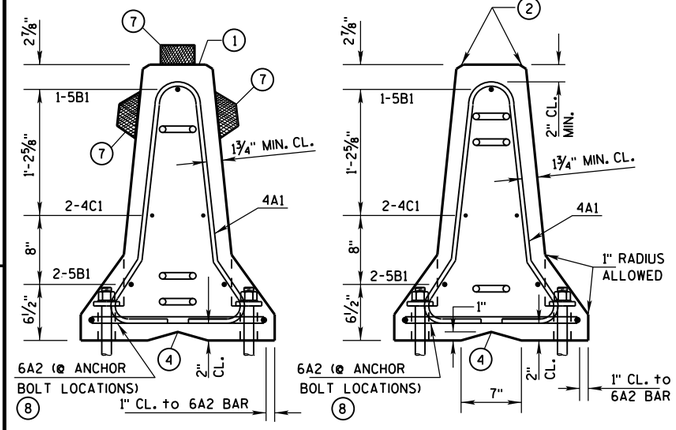
S.D.D. 13 C 18-5d



END VIEW

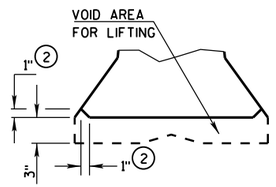


ELEVATION VIEW

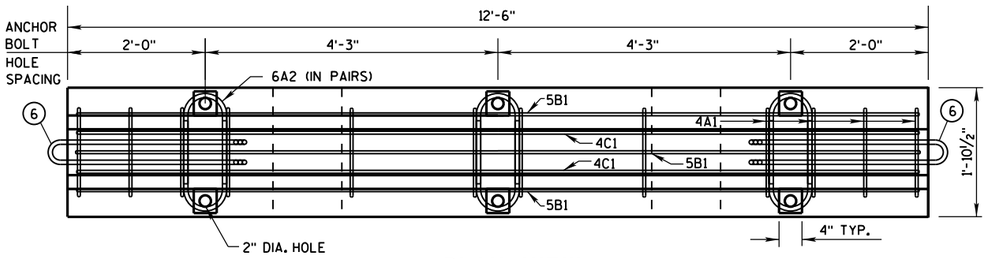


SECTION A-A
(STIRRUP PLACEMENT)

SECTION B-B
(STIRRUP PLACEMENT)

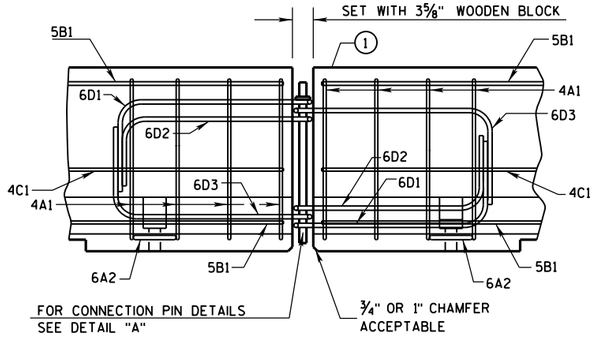


DETAIL "B"
LIFTING SLOT DETAIL

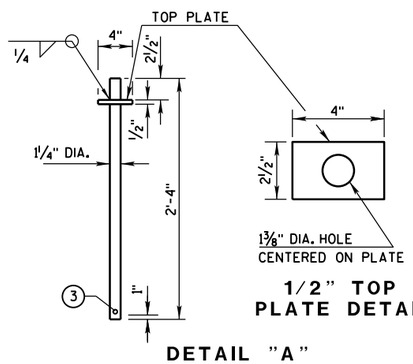


PLAN VIEW

DETAILS OF BARRIER SECTION

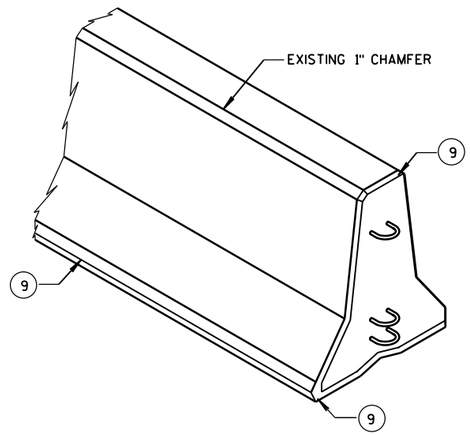


DETAILS OF BARRIER CONNECTION



1/2" TOP PLATE DETAIL

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



GENERAL NOTES

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

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

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

LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE ¾" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-½" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN ⅛" OF THE PLAN DIMENSION.

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

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

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

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

(2) 1" CHAMFER TO PREVENT SPALLING.

(3) A ⅜" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..

(4) "V" NOTCH IS OPTIONAL.

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

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

(7) USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURES INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.

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

(9) 1" CHAMFER OPTIONAL.

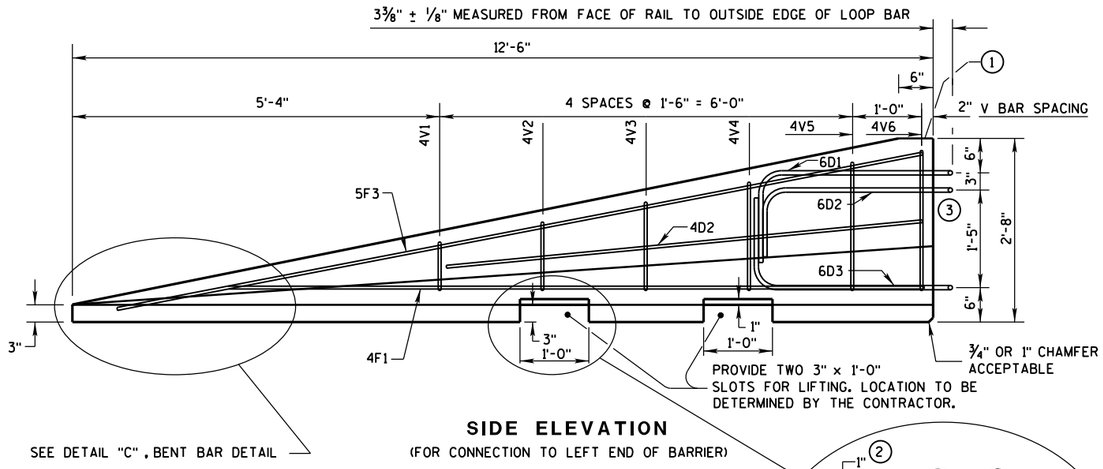
f'c = 4,000 psi

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

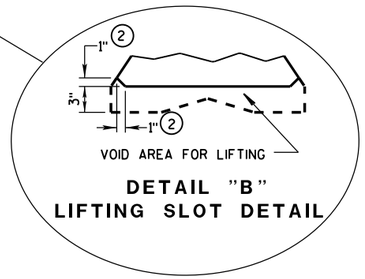
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

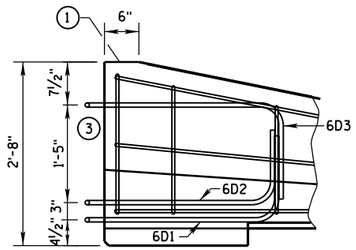
S.D.D. 14 B 7-15a



SIDE ELEVATION
(FOR CONNECTION TO LEFT END OF BARRIER)



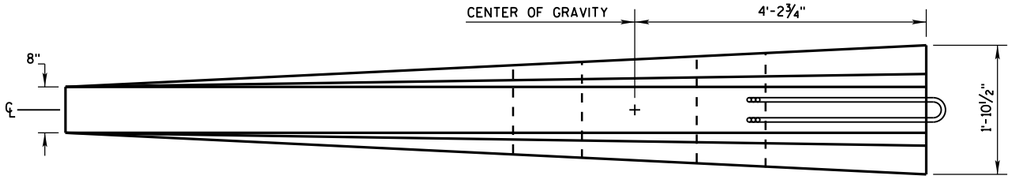
DETAIL "B"
LIFTING SLOT DETAIL



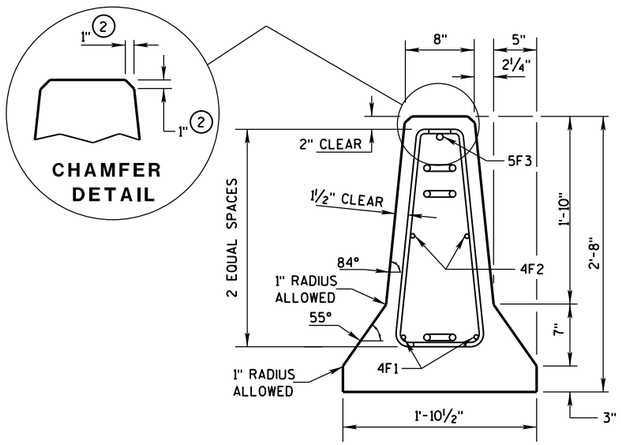
SIDE ELEVATION
LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

GENERAL NOTES

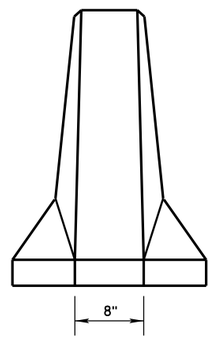
1. MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
   a. TYPE WICBTP
   b. MANUFACTURER
   c. DATE MANUFACTURED (MONTH AND YEAR)
2. 1" CHAMFER TO PREVENT SPALLING.
3. NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



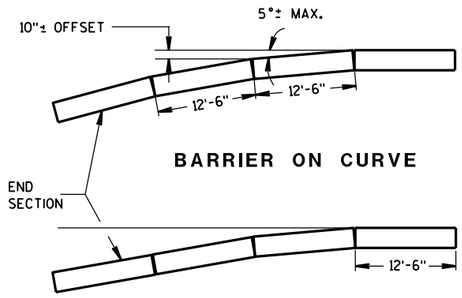
PLAN VIEW



END SECTION



FRONT ELEVATION



BARRIER ON CURVE

FLARE AT BARRIER END

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

DETAILS OF BARRIER TAPER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

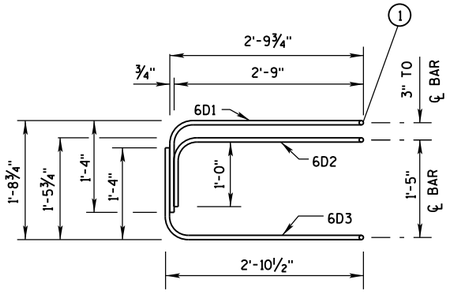
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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

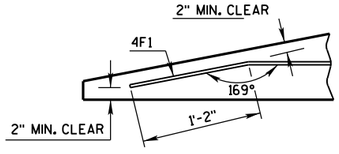
BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

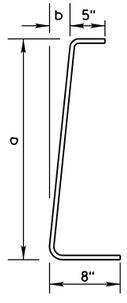
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



ELEVATION
LOOP BAR ASSEMBLY



DETAIL "C"
BENT BAR DETAIL



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

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

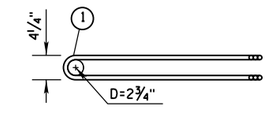
GENERAL NOTES

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

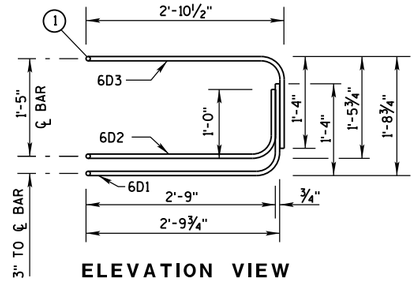
BARRIER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

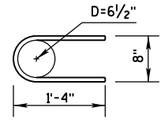
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



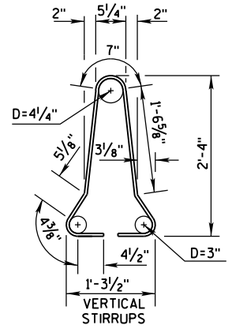
PLAN VIEW
LOOP BAR ASSEMBLY
(MARKED END SHOWN, INVERT FOR OTHER END)



ELEVATION VIEW



6A2



4A1

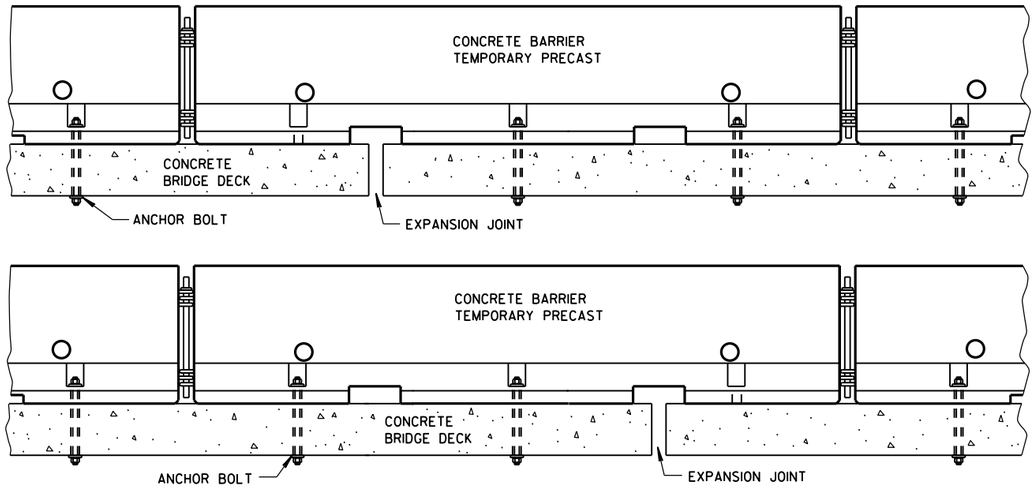
BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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



TREATMENT AT BRIDGE DECK EXPANSION JOINTS

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

GENERAL NOTES

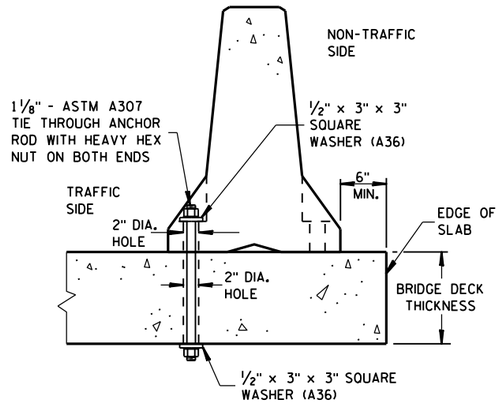
SEE SHEET E FOR WHEN TO ANCHOR. OTHER PARTS OF THE PLAN MAY SHOW ADDITIONAL LOCATIONS REQUIRING ANCHORING.

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

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

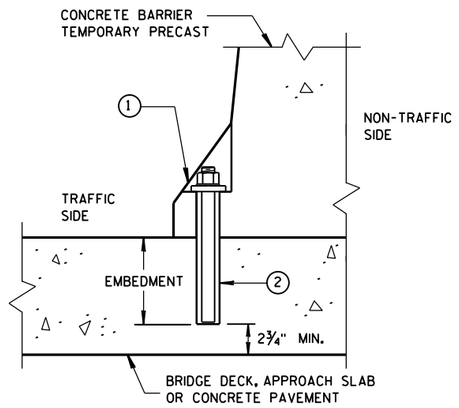
(2) ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5¼" EMBEDMENT. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.

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



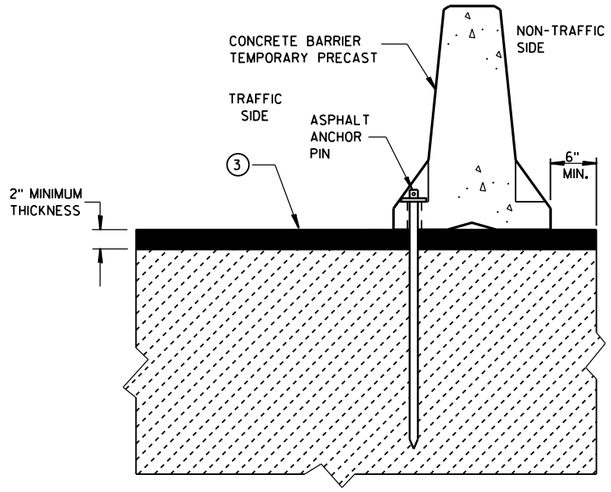
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOTUSE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)

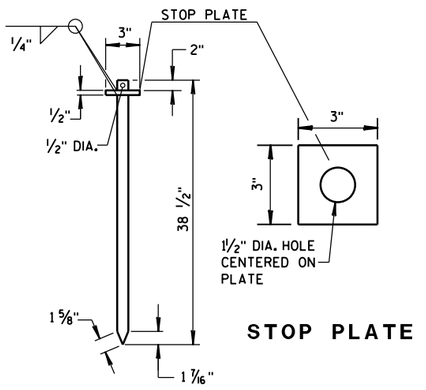


REMOVABLE ADHESIVE ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)



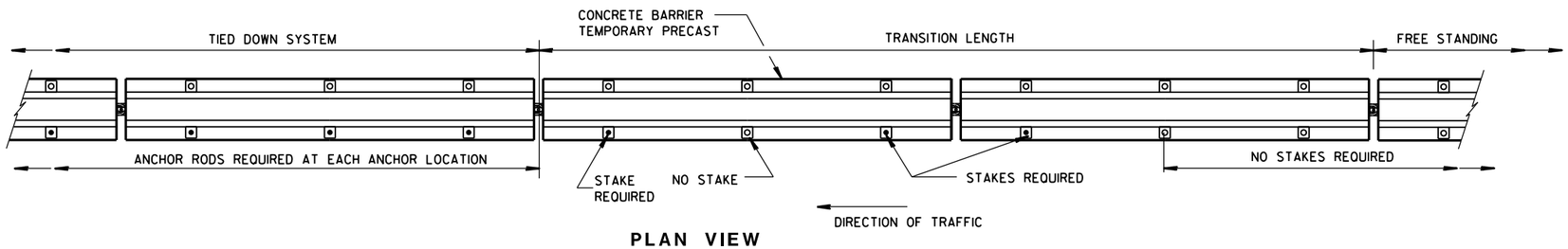
STAKE DOWN INSTALLATION FOR ASPHALTIC SURFACE



STOP PLATE

ASPHALT ANCHOR PIN

(ASTM A36 STEEL)



PLAN VIEW

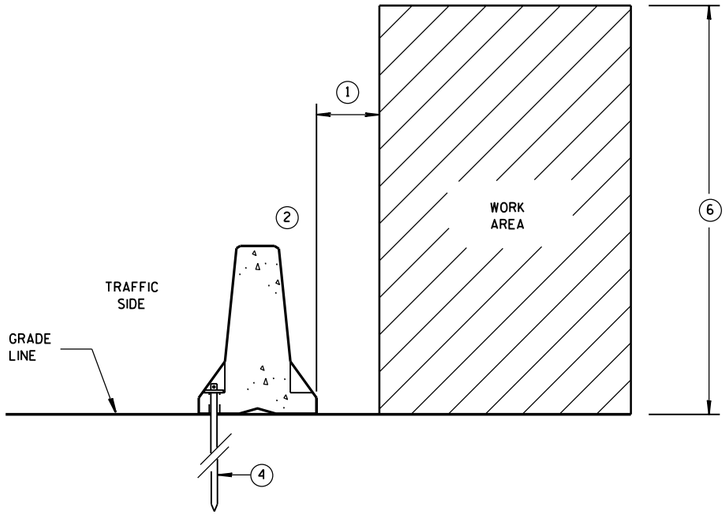
FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

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

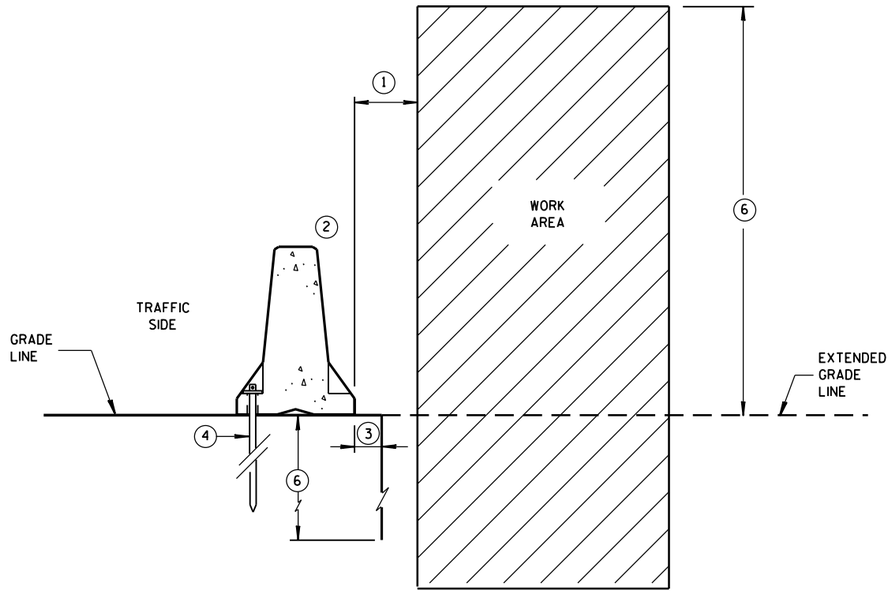
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

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ANCHORED BARRIER SPACE REQUIREMENTS FOR HAZARDS EXTENDED ABOVE THE GRADE LINE

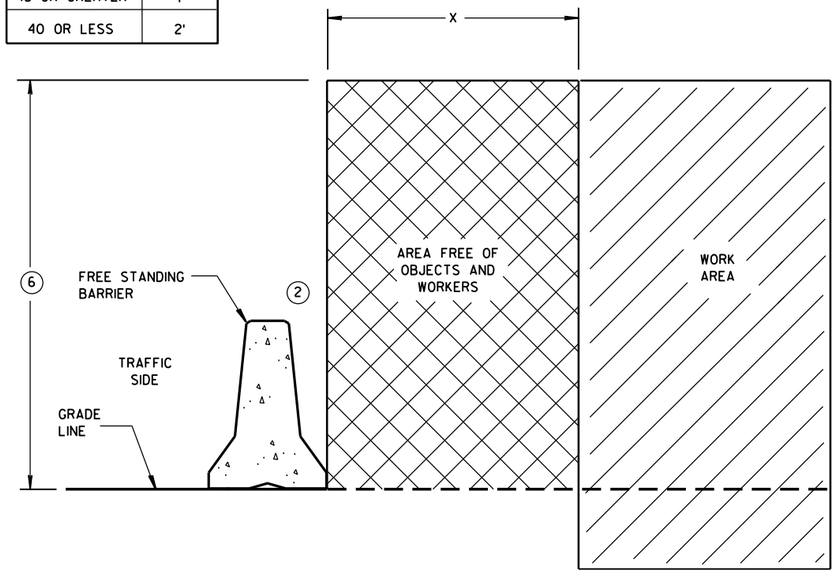


ANCHORED BARRIER SPACE REQUIREMENTS ON VERTICAL DROP OFFS

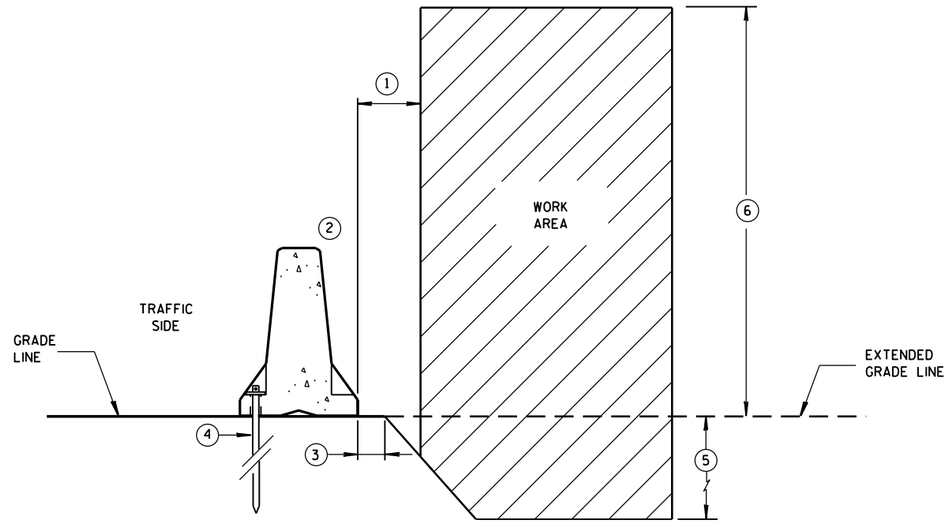
GENERAL NOTES

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

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



FREE STANDING BARRIER SPACE REQUIREMENTS



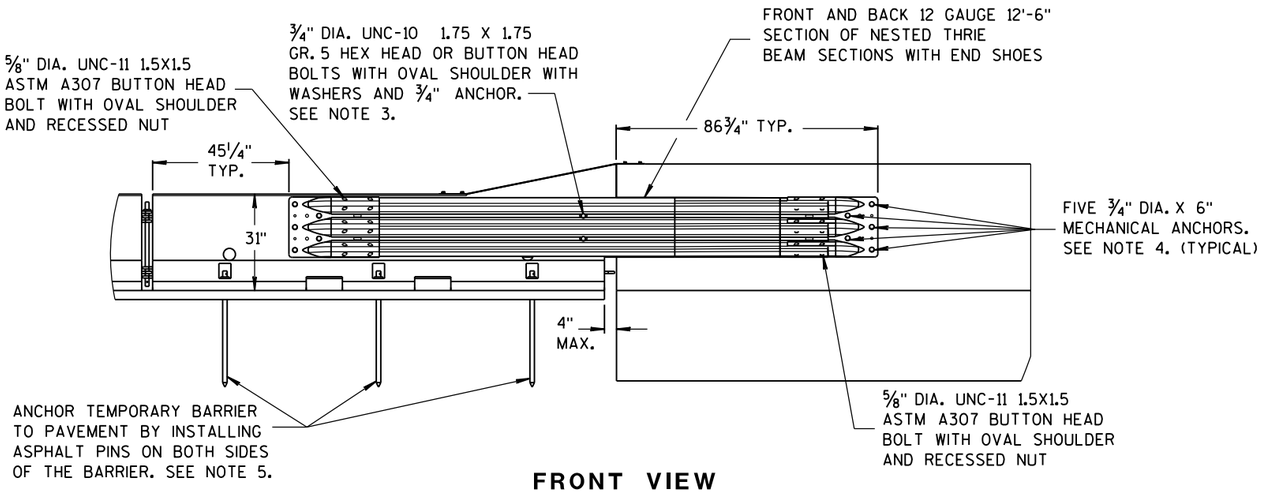
ANCHORED BARRIER SPACE REQUIREMENTS ON SLOPES

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

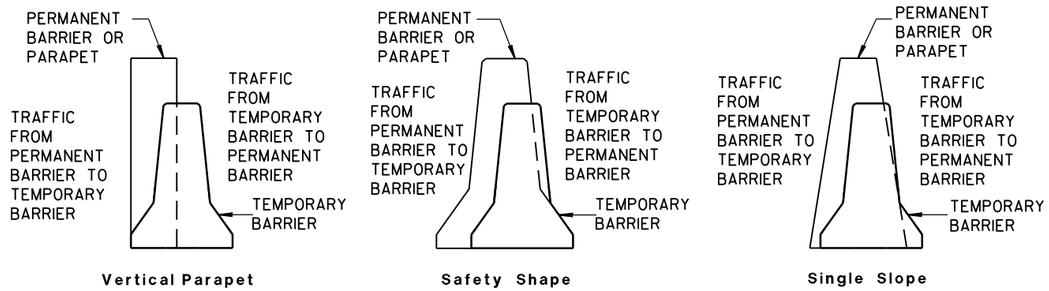
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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FRONT VIEW

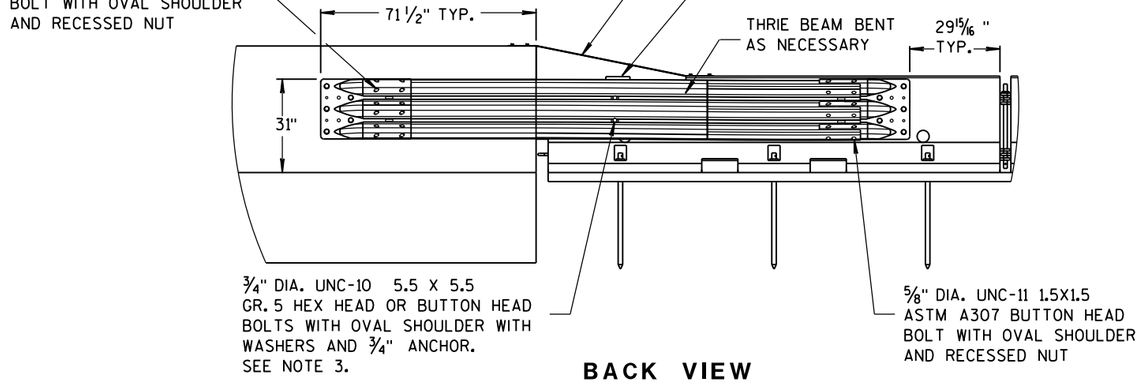


TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

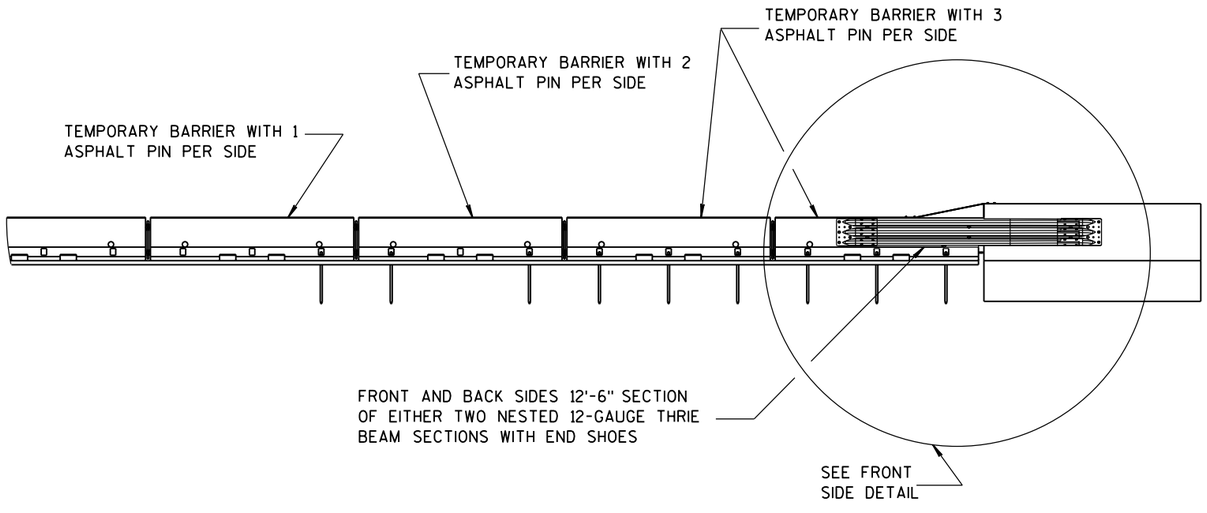
NOTES

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

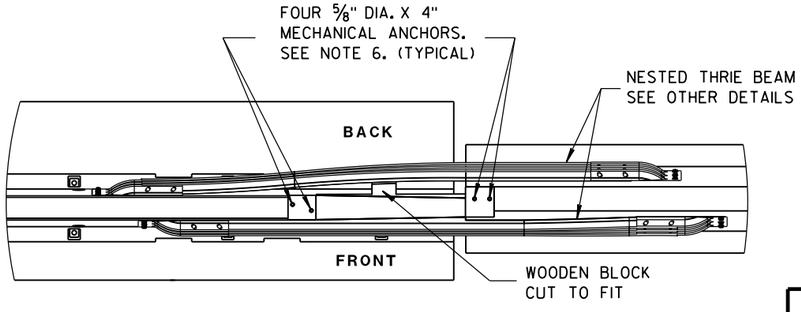
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD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



BACK VIEW



FRONT VIEW



PLAN VIEW

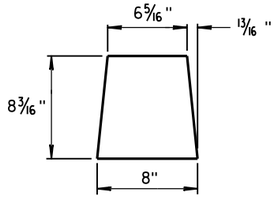
BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

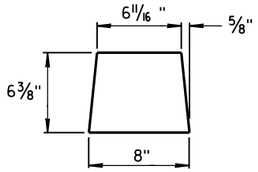
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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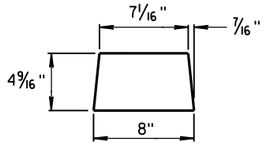
S.D.D. 14 B 7-15f



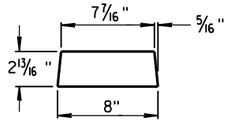
GUSSET 1



GUSSET 2

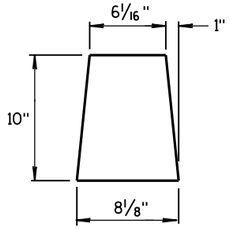


GUSSET 3

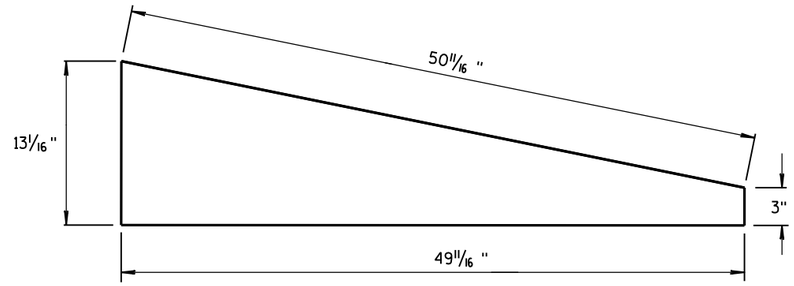


GUSSET 4

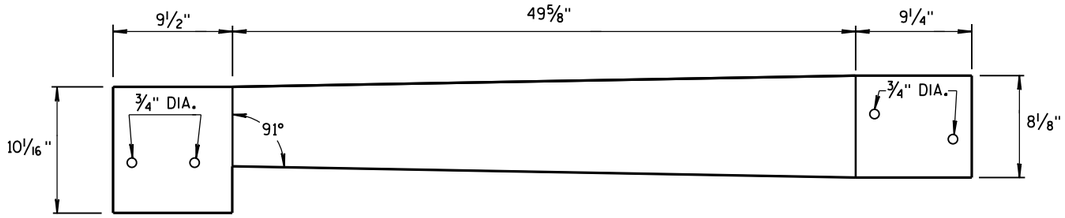
GUSSETS

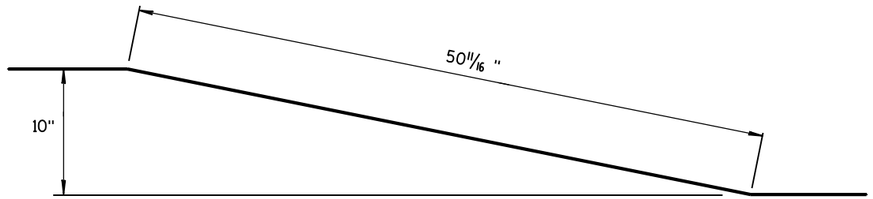


END PLATE



SIDE PLATE

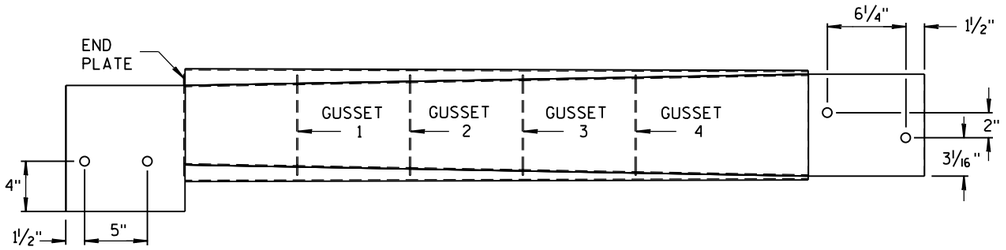


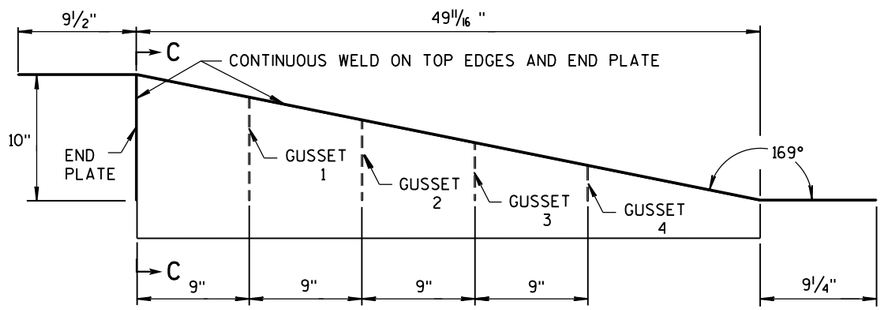


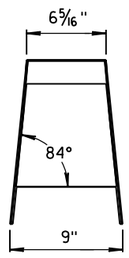
TOP PLATE

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

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







SECTION C-C

NOTES

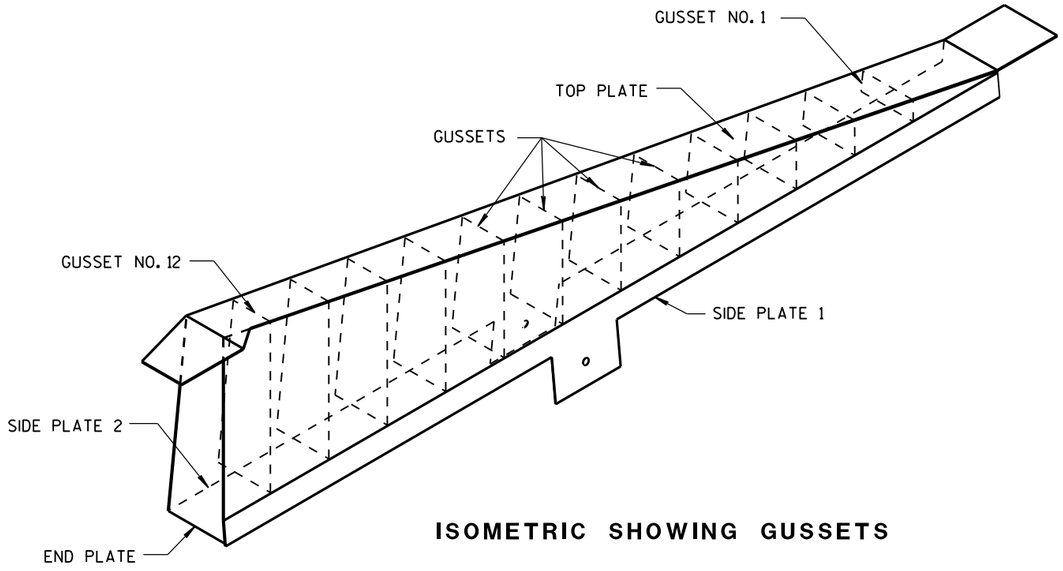
1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

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

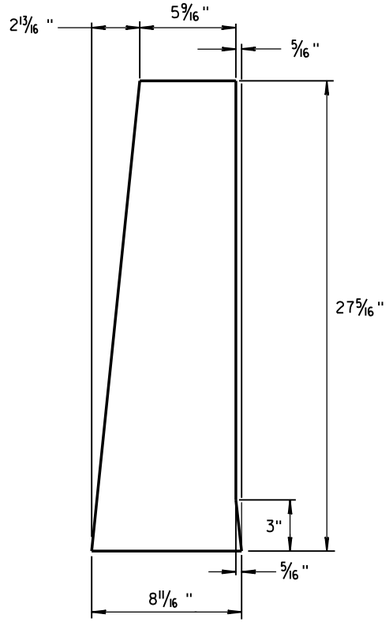
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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

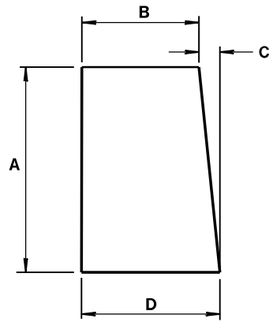


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



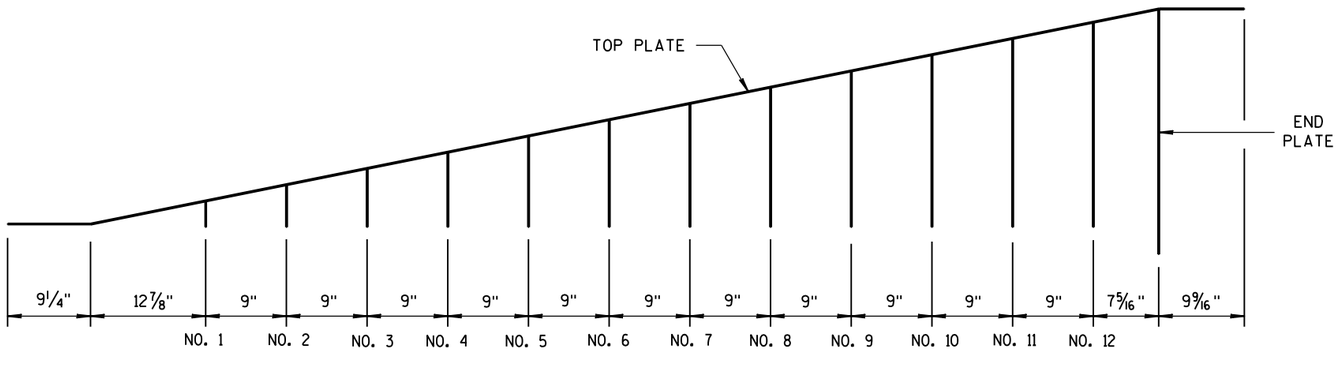
GUSSETS 1 - 12

ALL GUSSETS 1/8" STEEL PLATE

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

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

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



GUSSET LOCATION

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

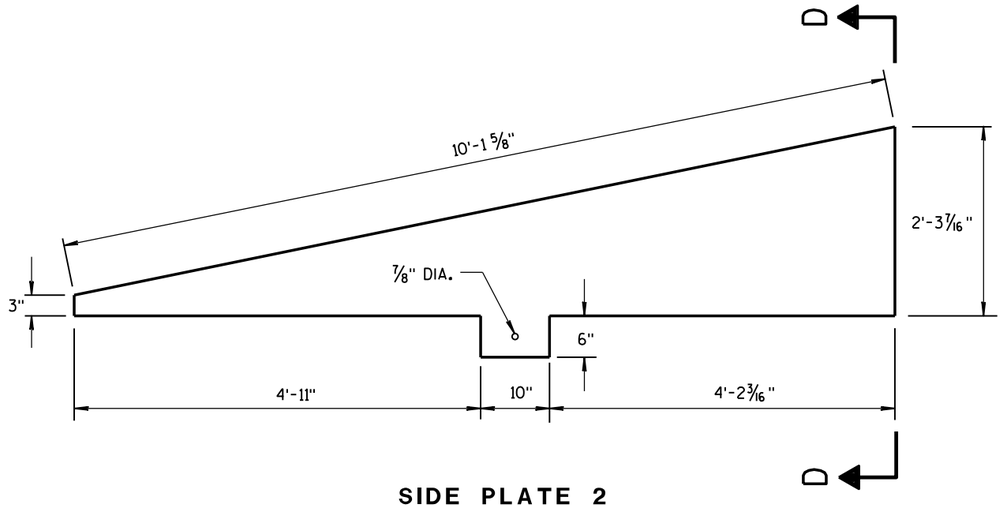
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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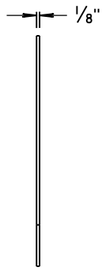
S.D.D. 14 B 7-15h

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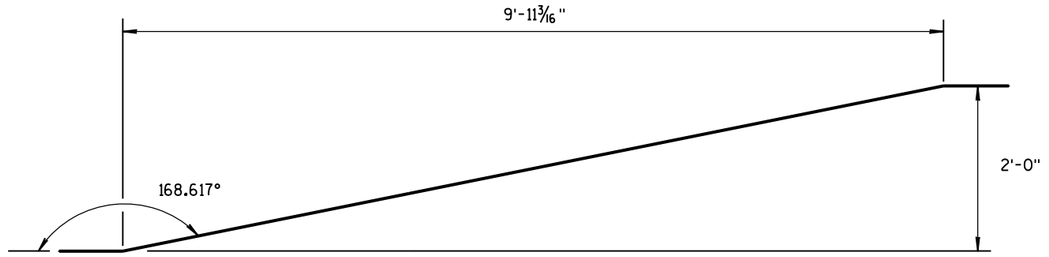
S.D.D. 14 B 7-15h



SIDE PLATE 2

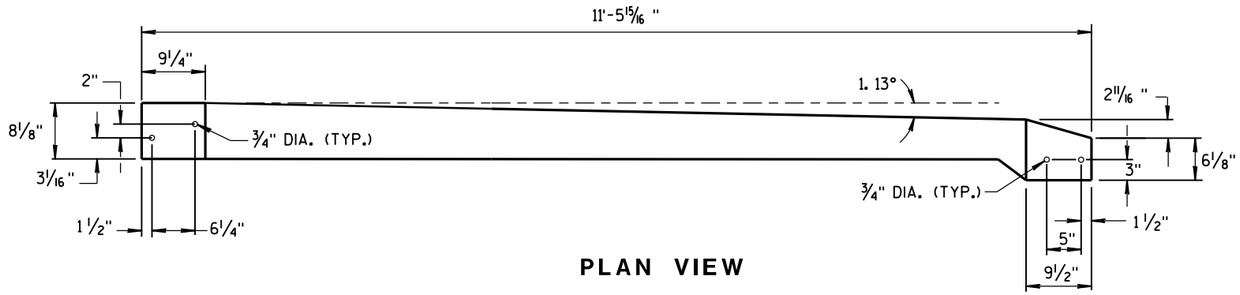


END VIEW



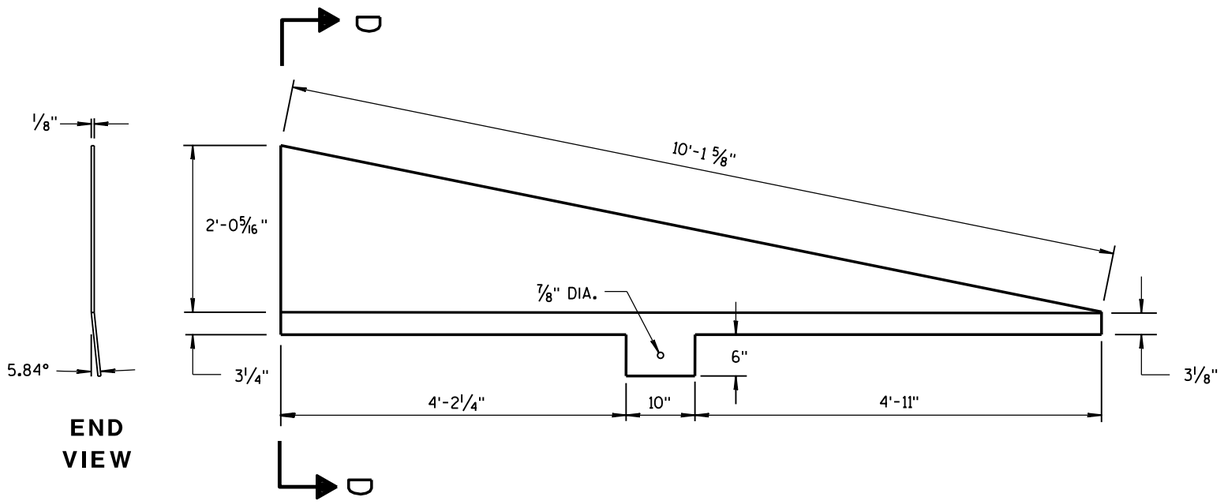
SIDE VIEW

TOP PLATE



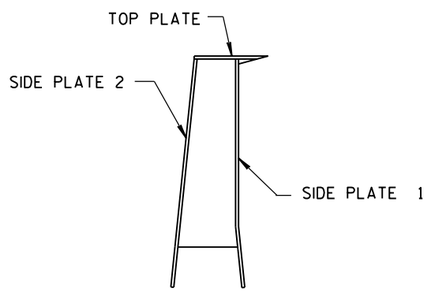
PLAN VIEW

TOP PLATE



END VIEW

SIDE PLATE 1



SECTION D-D

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT ENGINEER

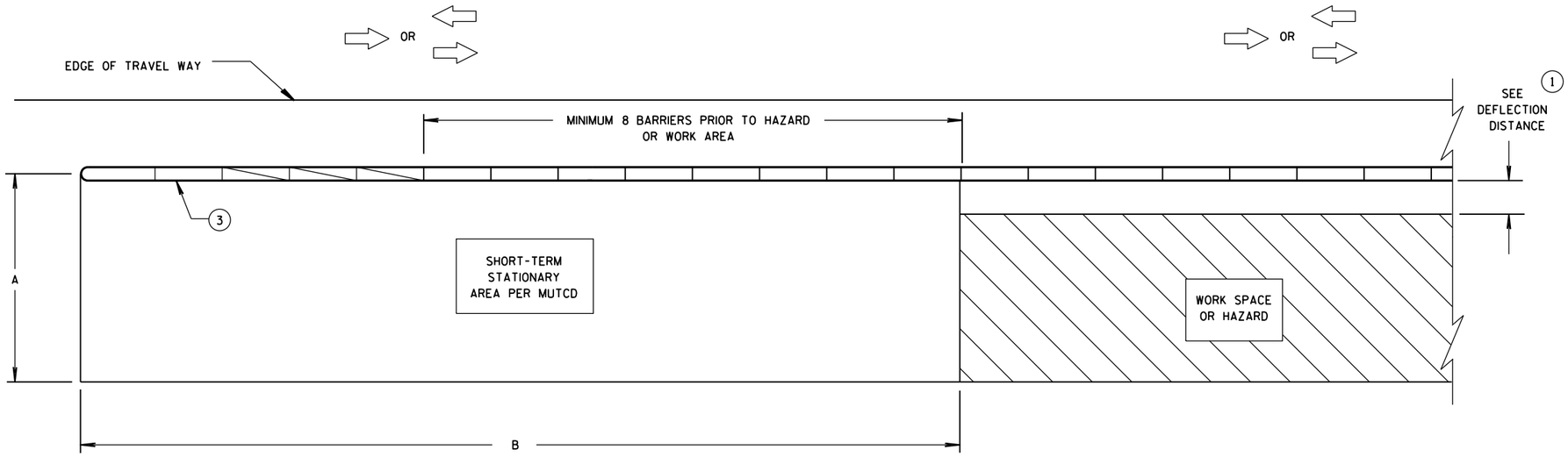
FHWA

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

6

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



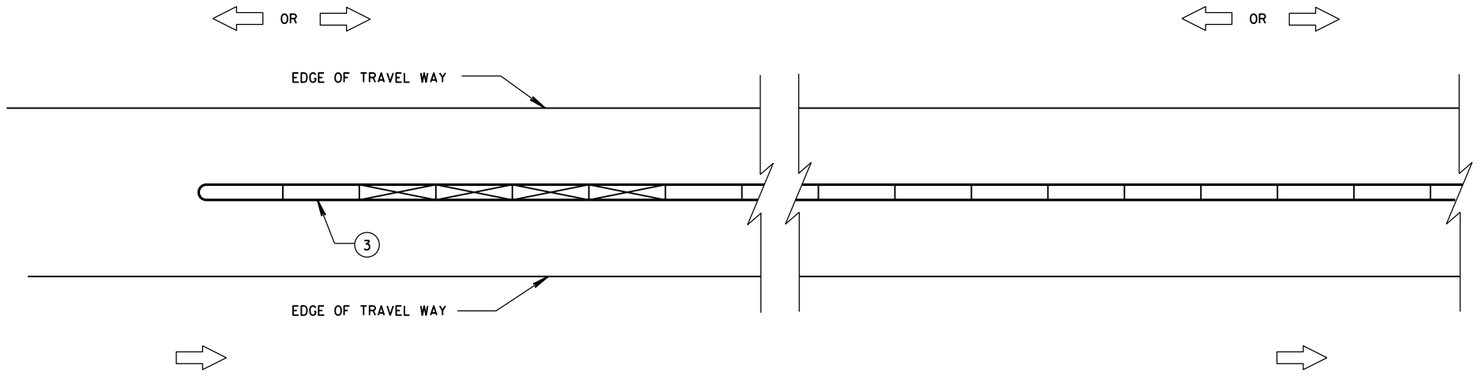
CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER

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.

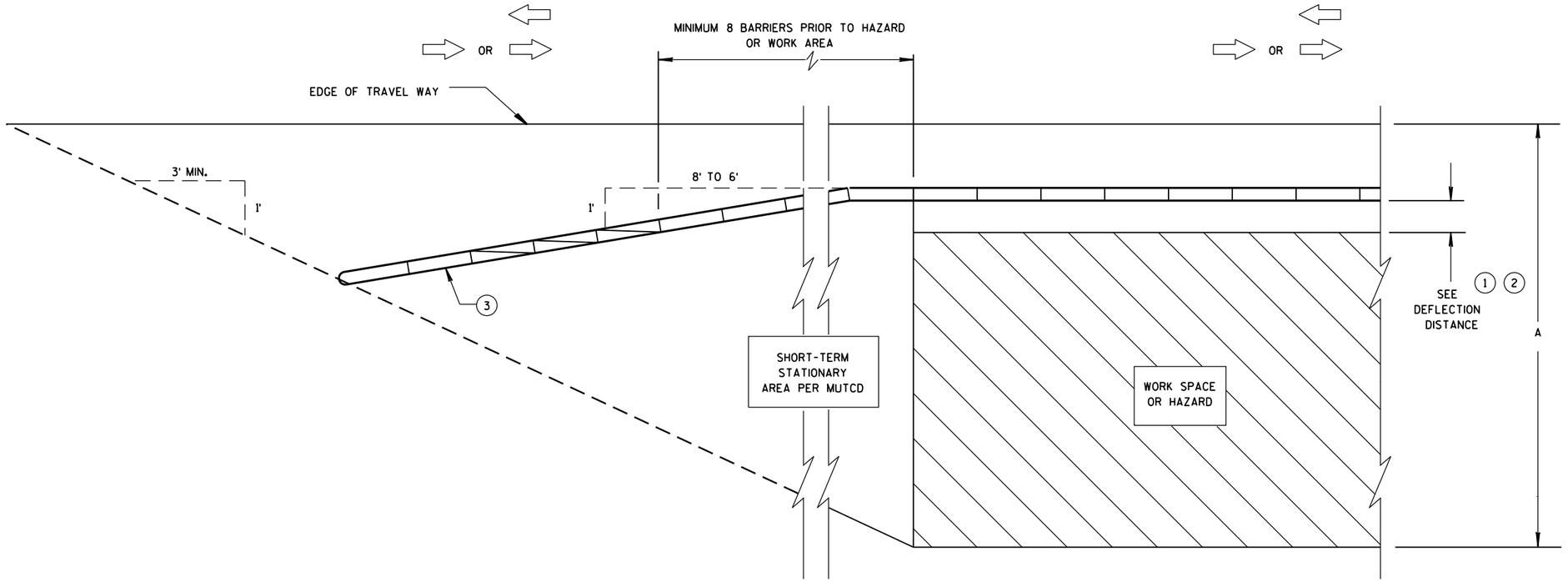
(3) ANCHOR TEMPORARY BARRIER ACCORDING TO CRASH CUSHION OR SAND BARREL MANUFACTURER'S RECOMMENDATIONS. IF MANUFACTURER'S RECOMMENDATIONS ARE NOT PROVIDED, ANCHOR 3 PINS ON TRAFFIC SIDE.

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

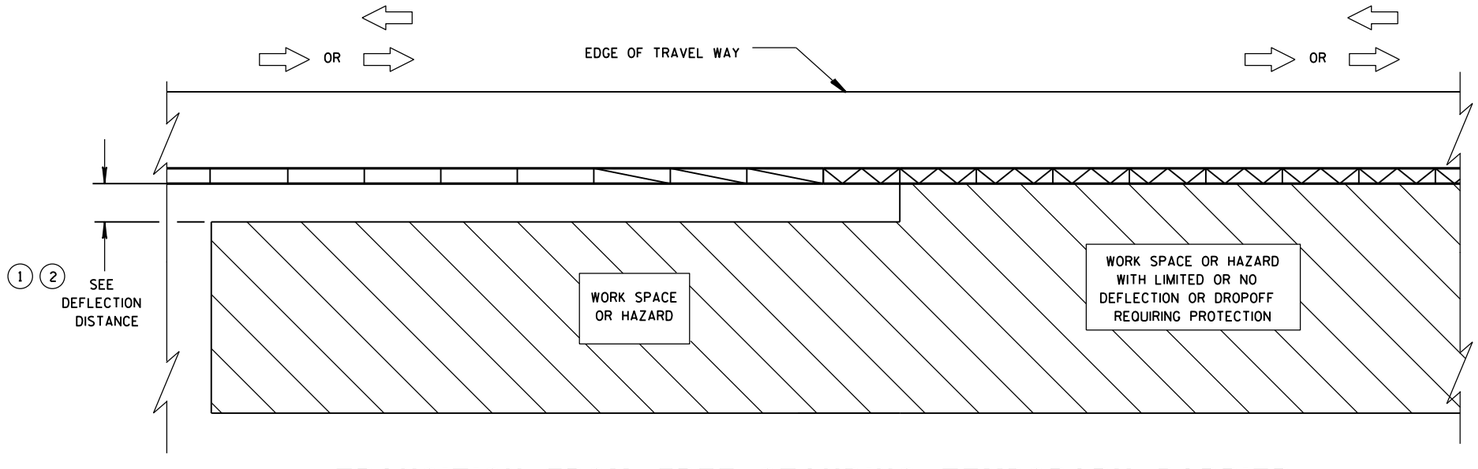
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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S.D.D. 14 B 8-2a



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

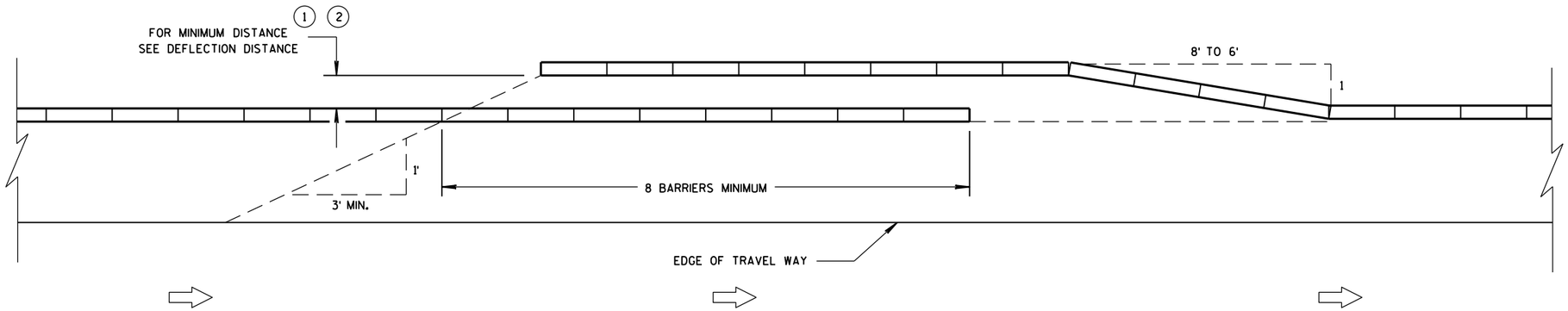
- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

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

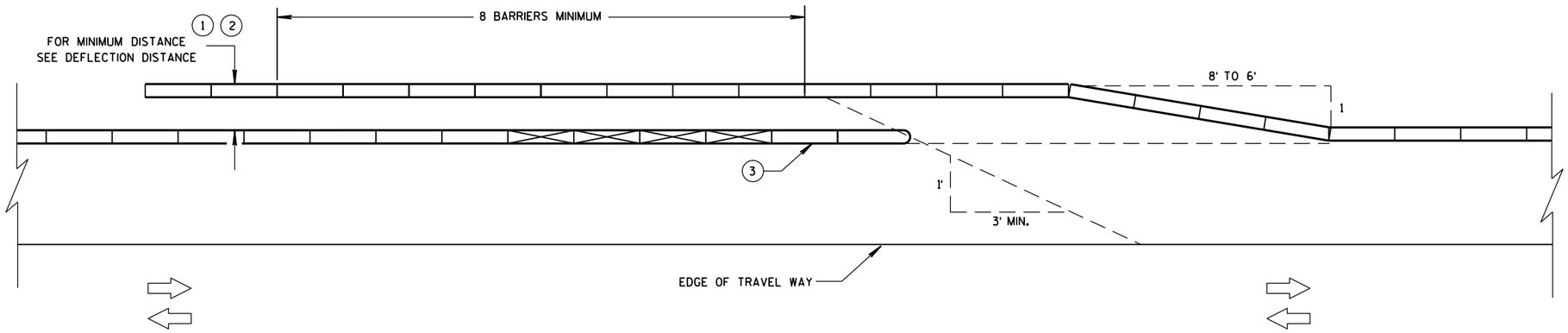
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

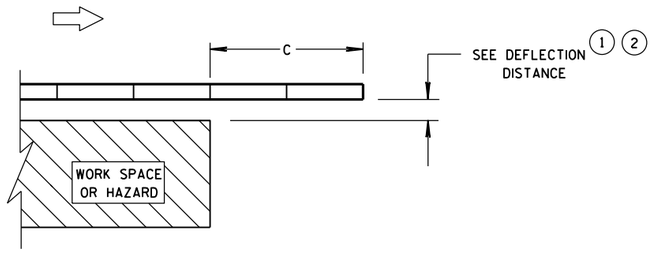
S.D.D. 14 B 8-2b



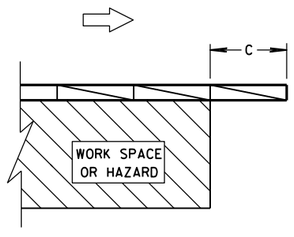
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



ENDING TEMPORARY BARRIER DOWNSTREAM - UNANCHORED



ENDING TEMPORARY BARRIER DOWNSTREAM - ANCHORED

LEGEND

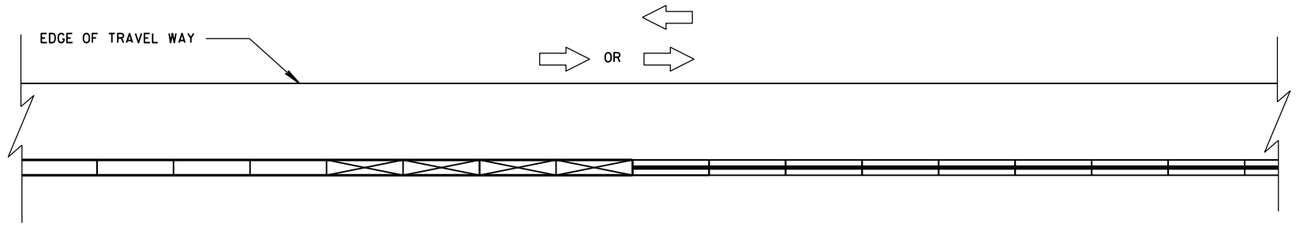
- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

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

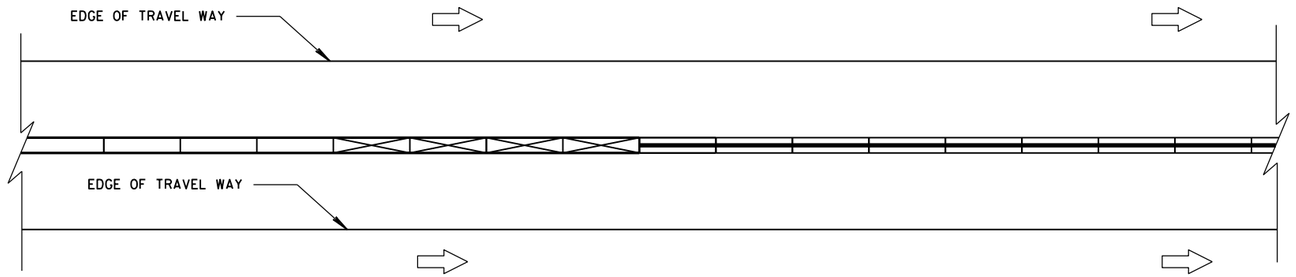
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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S.D.D. 14 B 8-2c



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



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

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR
SAND BARREL ARRAY

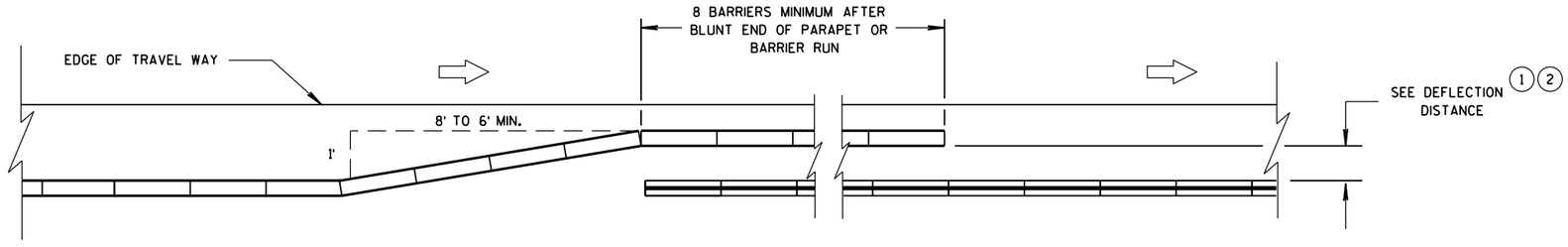
SEE FREE STANDING TRANSITION
TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION
TO TIED-DOWN SYSTEM DETAILS

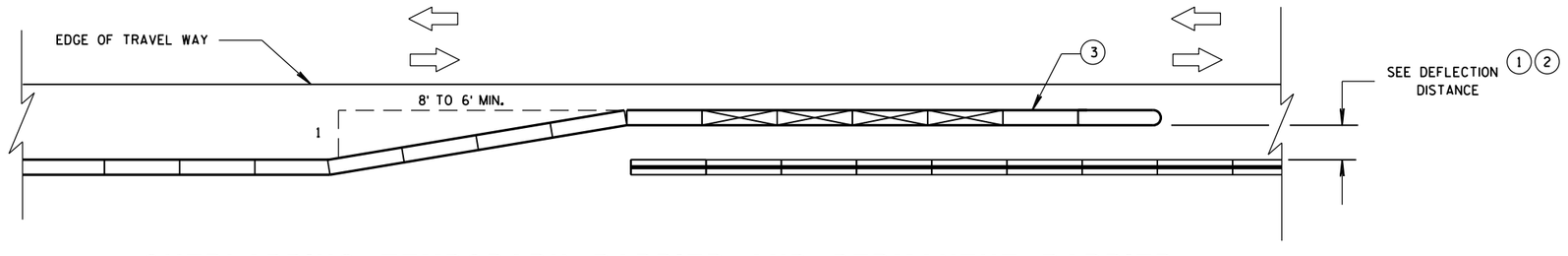
3 PINS PLACED ON
TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER
OR CONCRETE PARAPET

FREE STANDING TEMPORARY
BARRIER



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
ONE WAY TRAFFIC



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
TWO WAY TRAFFIC

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 14 B 8-2d

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

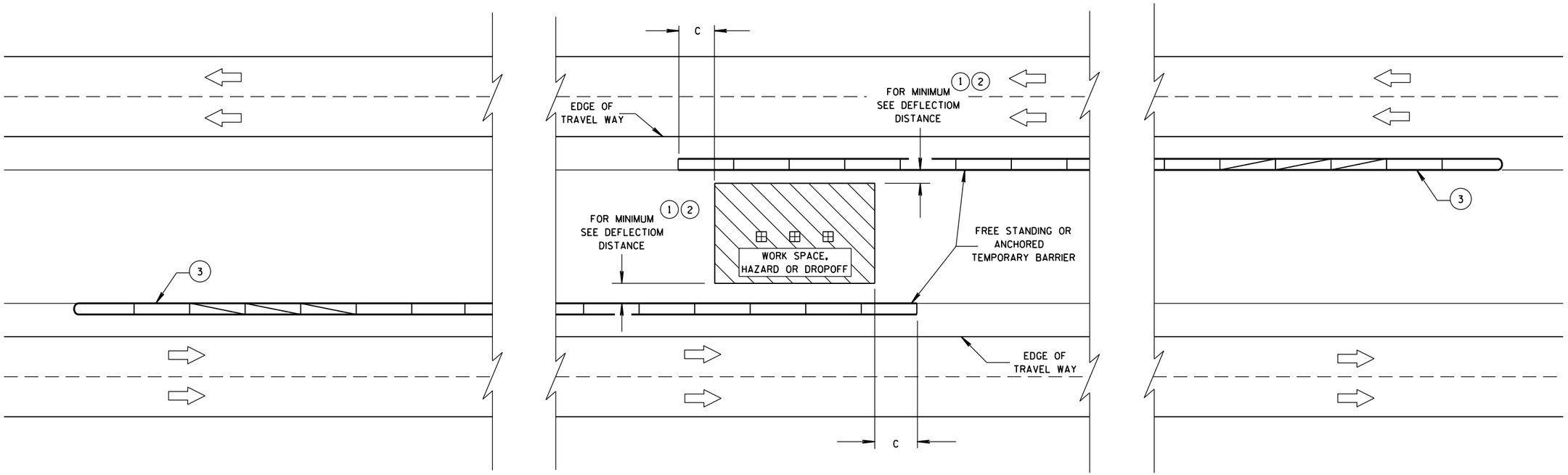
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

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
June, 2015
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINNER
FHWA

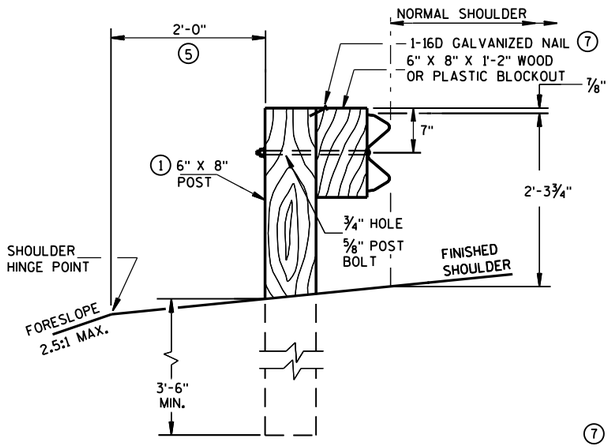
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S.D.D. 14 B 8-2e

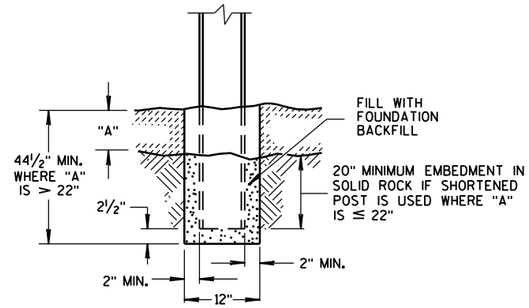
GENERAL NOTES

1. W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS.
   DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.
2. USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111. EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPELTER COATING ON GALVANIZED POSTS.
3. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
4. USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.
5. IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).
6. IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2½ INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN YHE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATEY.
7. WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

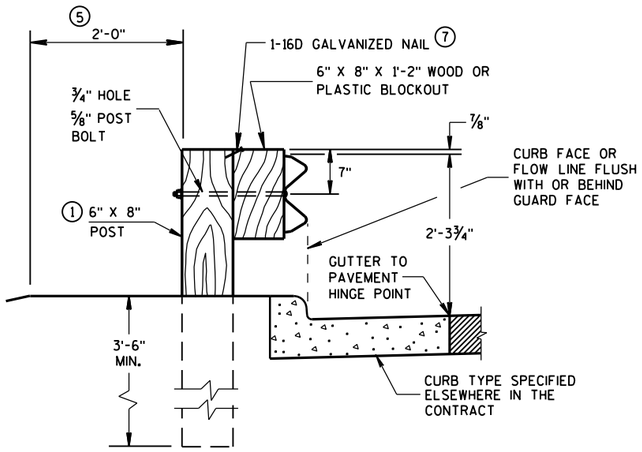
INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS.
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



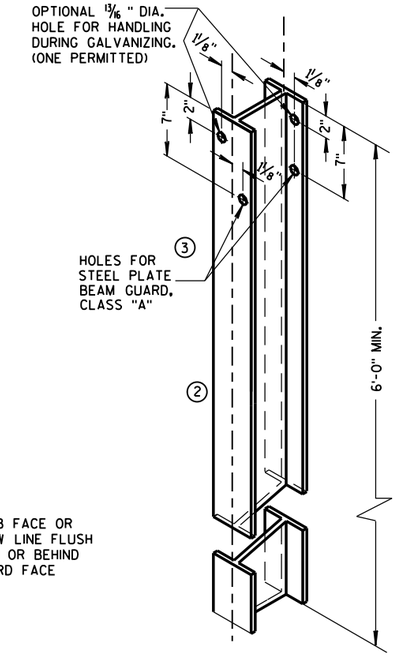
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



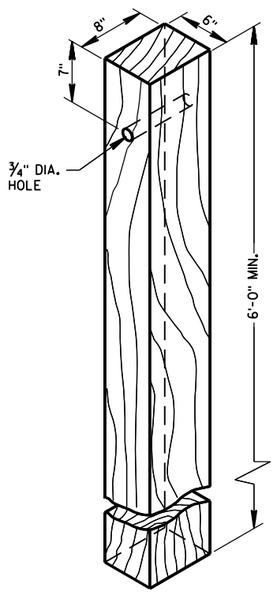
END VIEW
SETTING STEEL OR WOOD POST IN ROCK ⑥



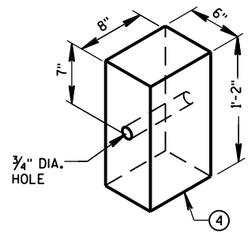
END VIEW
LOCATED ALONG A CURBED ROADWAY



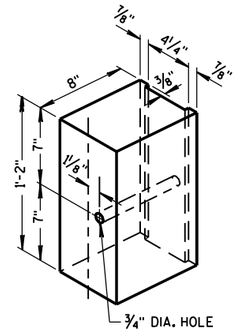
STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) ①
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



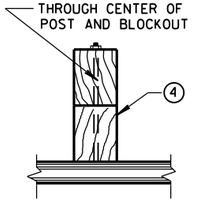
WOOD POST
(6"X8") NOMINAL



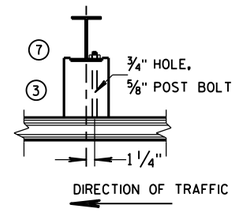
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



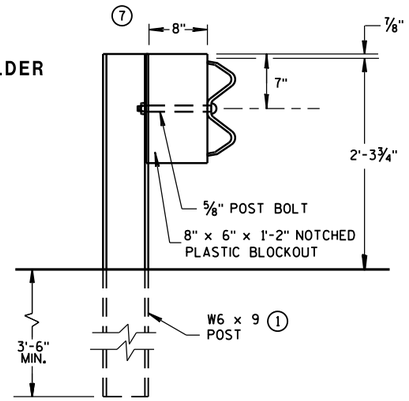
TYPICAL NOTCHED ①
PLASTIC BLOCKOUT
FOR STEEL POSTS



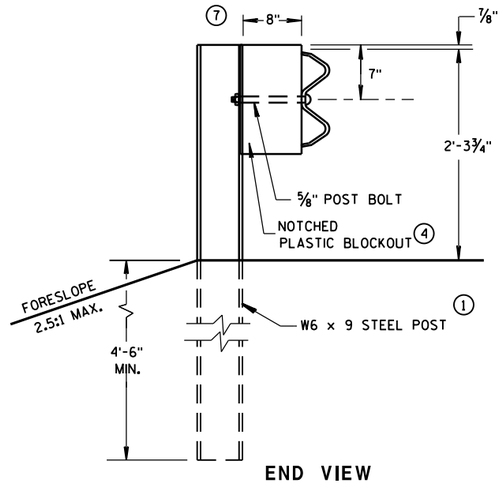
PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



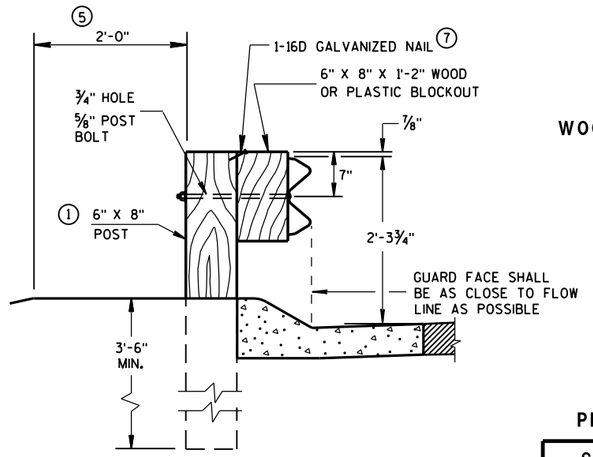
PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM



END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



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



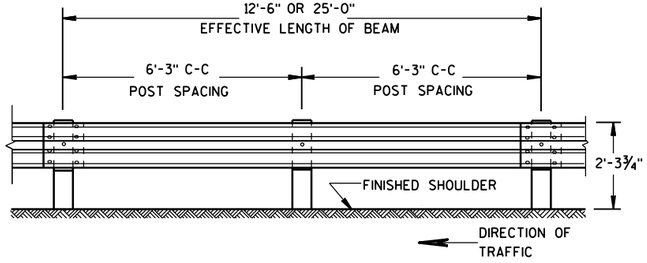
END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

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

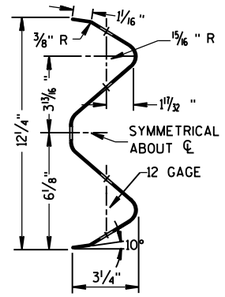
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6
S.D.D. 14 B 15-10a

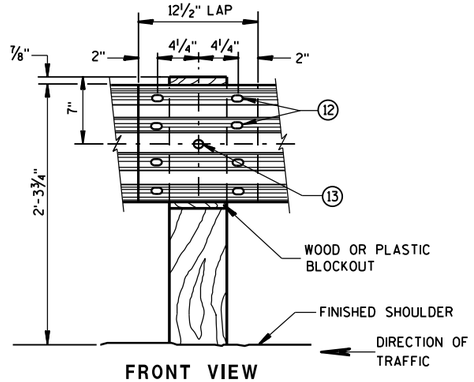


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM



FRONT VIEW

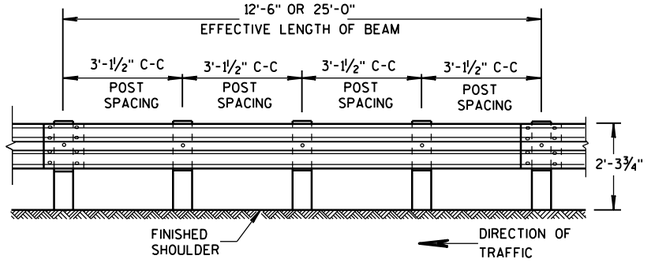
BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

GENERAL NOTES

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

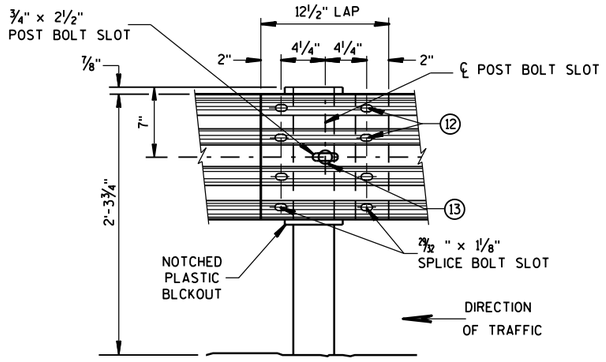
(12) 8 -⅝" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.

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



FRONT VIEW

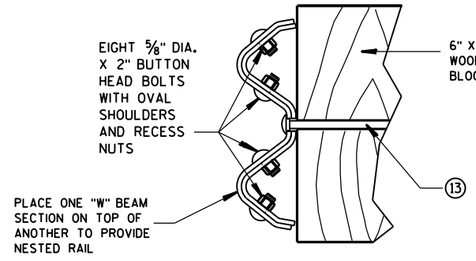
POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)



FRONT VIEW

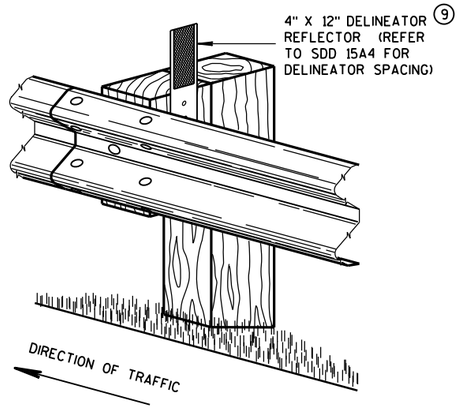
BEAM SPLICE AT STEEL POST

TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD



NESTED W BEAM (NW)

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



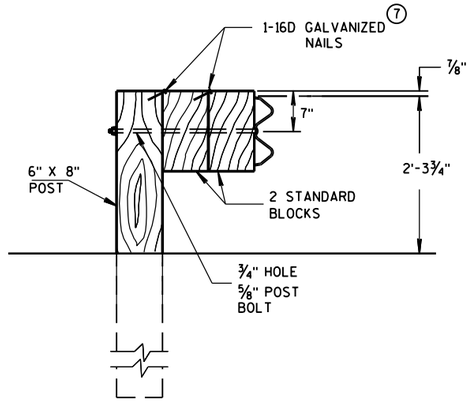
ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

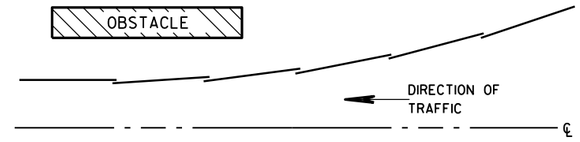
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S.D.D. 14 B 15-10b

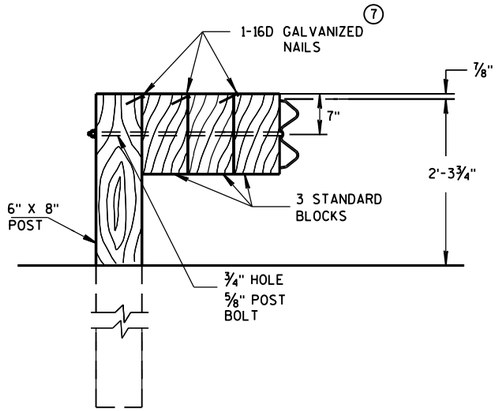


DETAIL FOR DOUBLE BLOCKS

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

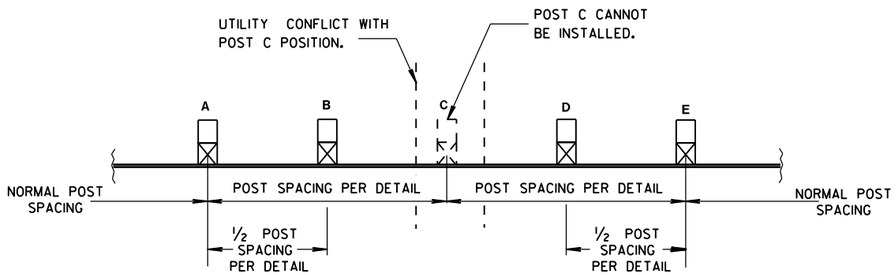


PLAN VIEW
BEAM LAPPING DETAIL



DETAIL FOR TRIPLE BLOCKS

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



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

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

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

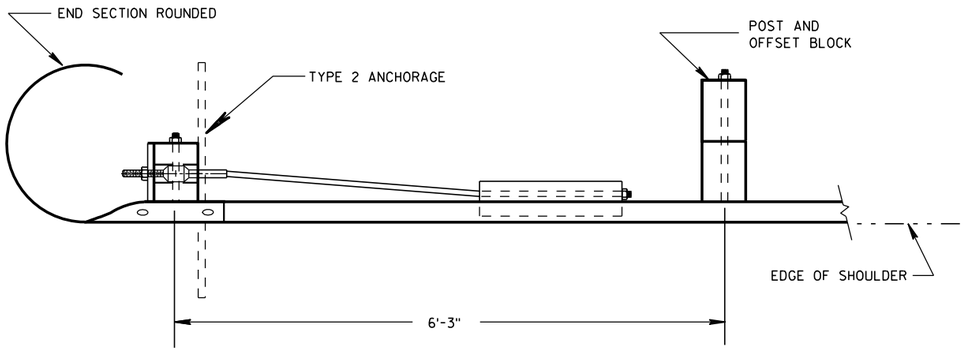
APPROVED
June 2017 — DATE
/S/ Rodney Taylor
ROADWAY STANDARDS D UNIT SUPERVI
NT
FHWA

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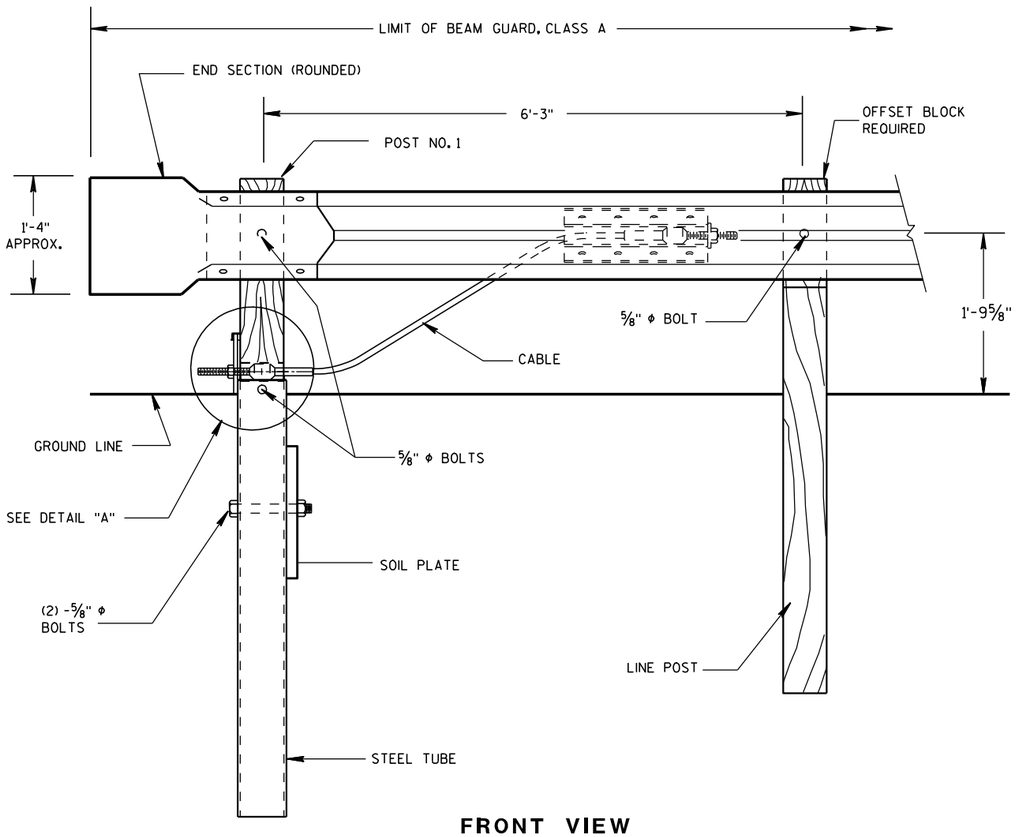
S.D.D. 14 B 15-10c

6

S.D.D. 14 B 15-10c



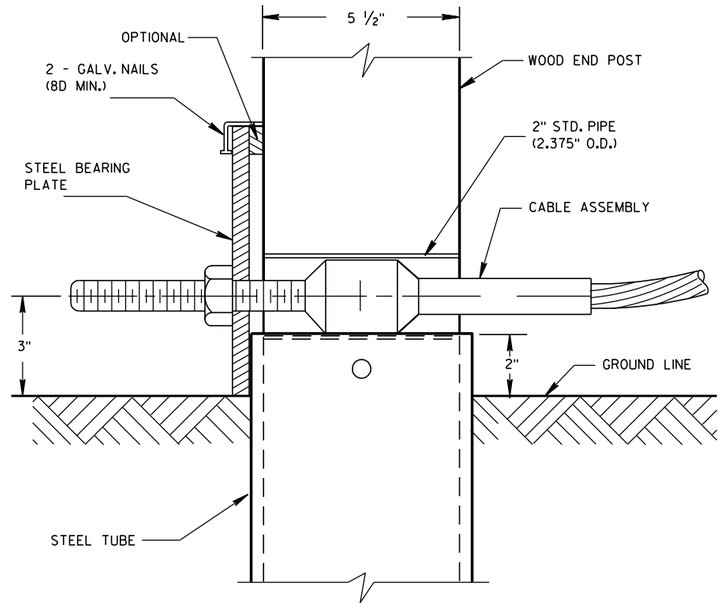
PLAN VIEW



FRONT VIEW

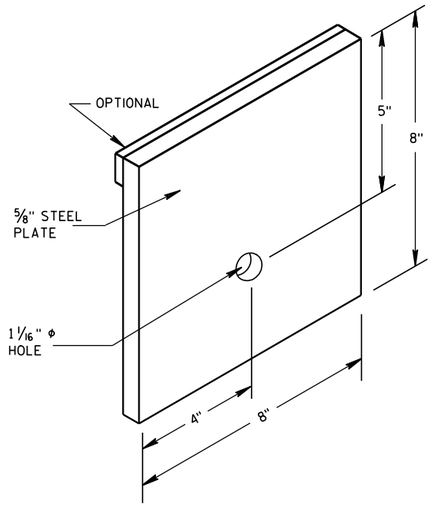
END TREATMENT WITH TYPE 2 ANCHORAGE

(USE ON ONE-WAY ROADWAYS ONLY - DEPARTING END)



DETAIL "A"

POST NO. 1



STEEL BEARING PLATE

ANCHORAGE FOR STEEL
PLATE BEAM GUARD
TYPE 2

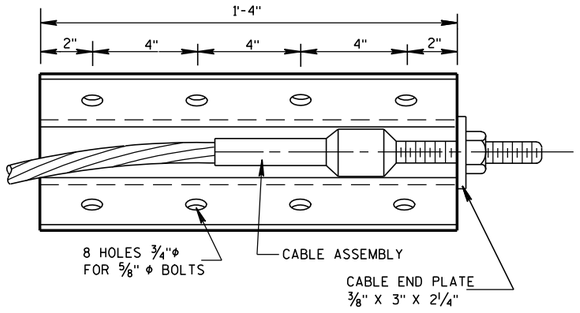
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

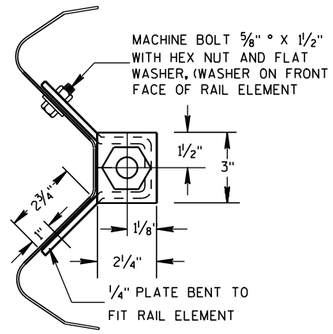
S.D.D. 14 B 16-4a

6

S.D.D. 14 B 16-4a

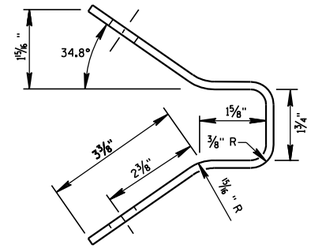


FRONT VIEW

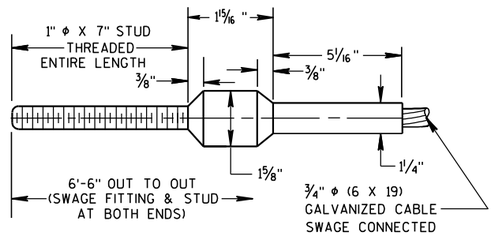


END VIEW

ANCHOR PLATE DETAIL



END VIEW OF BRACKET



CABLE ASSEMBLY

CABLE, SWAGE FITTING, STUD AND NUT SHALL DEVELOP
A MINIMUM BREAKING STRENGTH OF 40,000 LB
(TIGHTEN UNTIL TAUT)

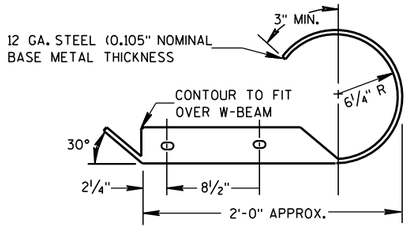
GENERAL NOTES

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

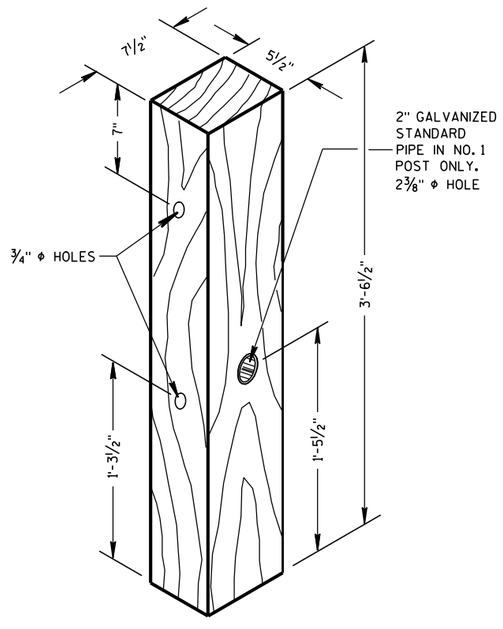
STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A-500 GRADE B OR ASTM A-501.

POST NO. 1 SHALL BE WOOD BREAKAWAY POST INSERTED AND BOLTED INTO STEEL TUBE.

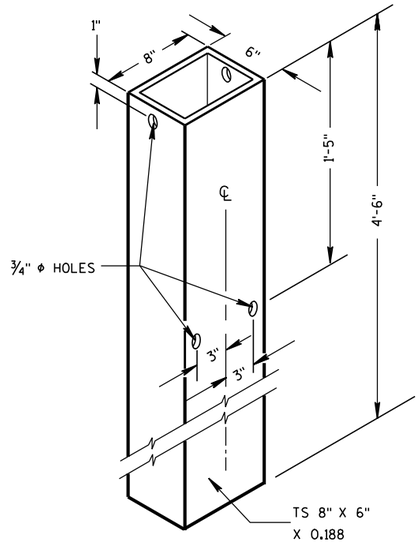
TYPE 2 ANCHORAGE SHALL CONSIST OF A STEEL TUBE, SOIL PLATE WOOD BREAKAWAY POST, BEARING PLATE, ANCHOR PLATE, CABLE ASSEMBLY AND ALL ASSOCIATED HARDWARE, ALL STEEL PARTS SHALL BE GALVANIZED.



PLAN VIEW

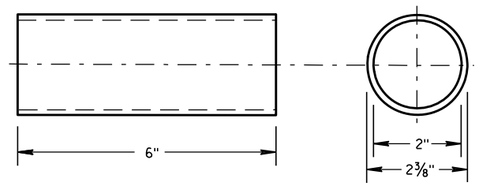


WOOD BREAKAWAY POST



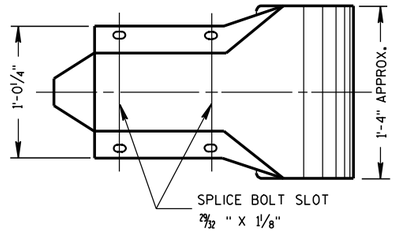
STEEL TUBE

STEEL TUBE SHALL CONFORM TO
REQUIREMENTS OF ASTM A500

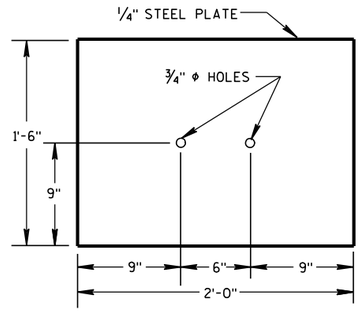


BREAKAWAY TERMINAL POST SLEEVE

GALVANIZED STANDARD STRENGTH STEEL PIPE, ASTM 53 GRADE "B"



FRONT VIEW
W BEAM END SECTION ROUNDED



SOIL PLATE

ANCHORAGE FOR STEEL
PLATE BEAM GUARD
TYPE 2

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

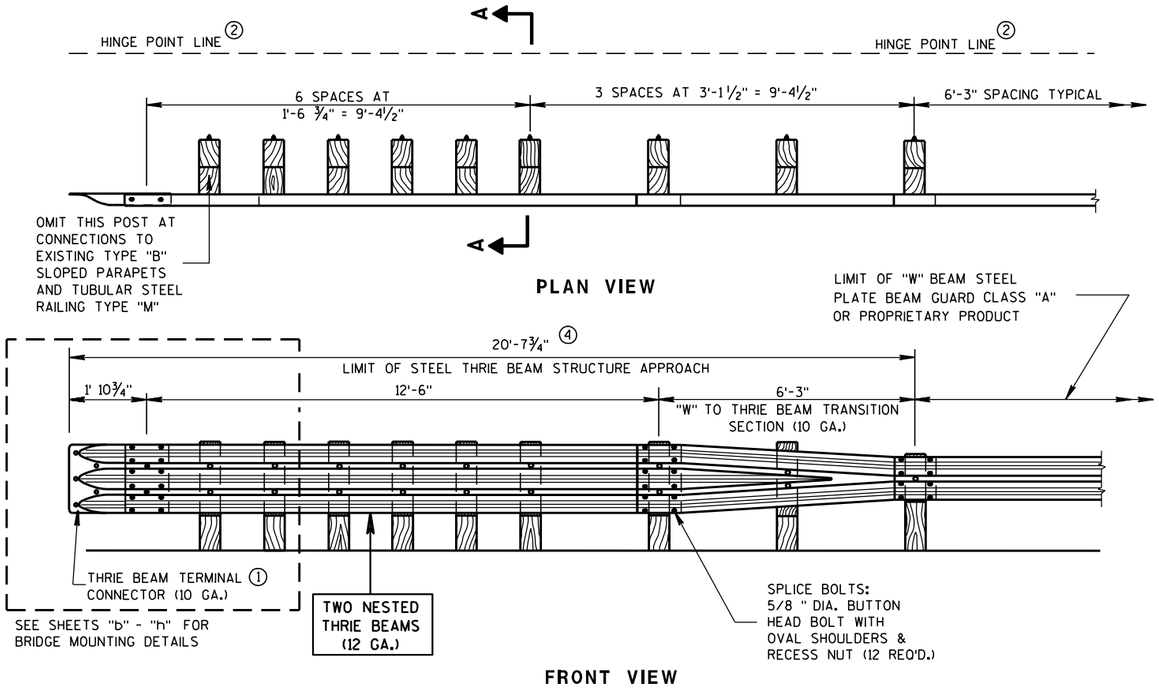
APPROVED
8/21/2007 DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER
196
FHWA

6

S.D.D. 14 B 16-4b

6

S.D.D. 14 B 16-4b



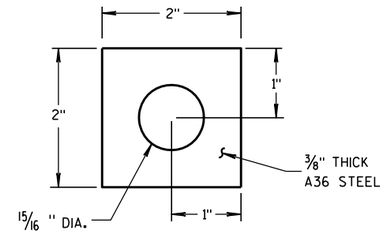


PLATE WASHER DETAIL

GENERAL NOTES

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

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

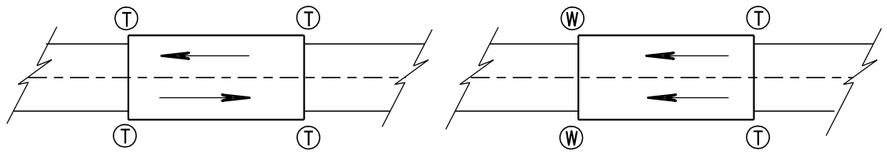
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2" , AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

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

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

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

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



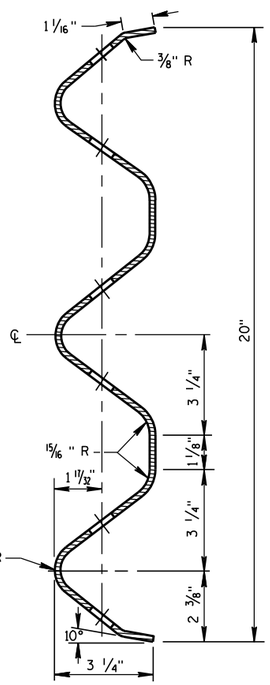
TWO WAY TRAFFIC

ONE WAY TRAFFIC

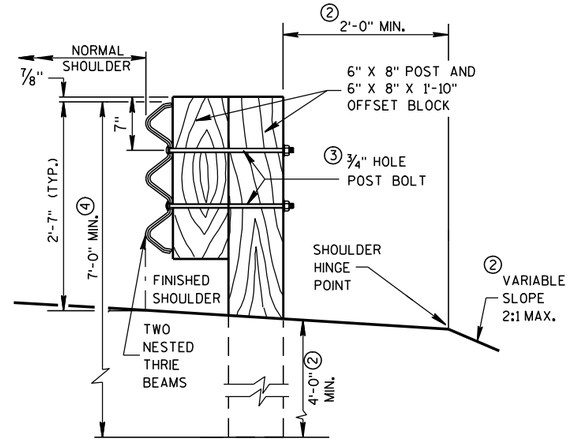
T THRIE BEAM CONNECTION

W W-BEAM CONNECTION WHEN REQUIRED

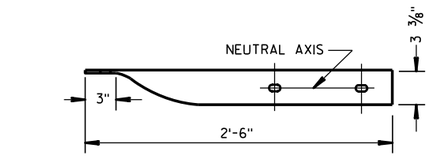
TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

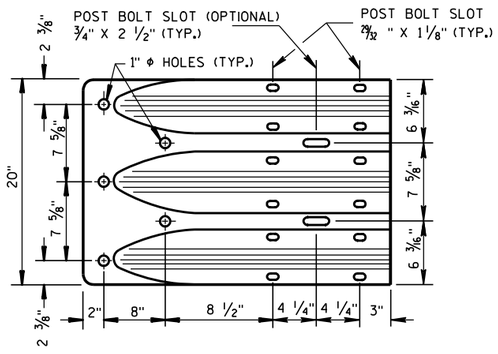


SECTION THRU THRIE BEAM RAIL ELEMENT

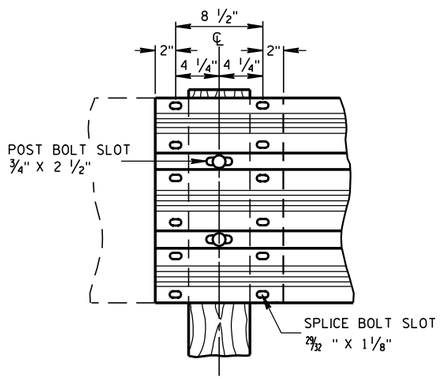


SECTION A-A





THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE

STEEL THRIE BEAM STRUCTURE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER

FHWA

GENERAL NOTES

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

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

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

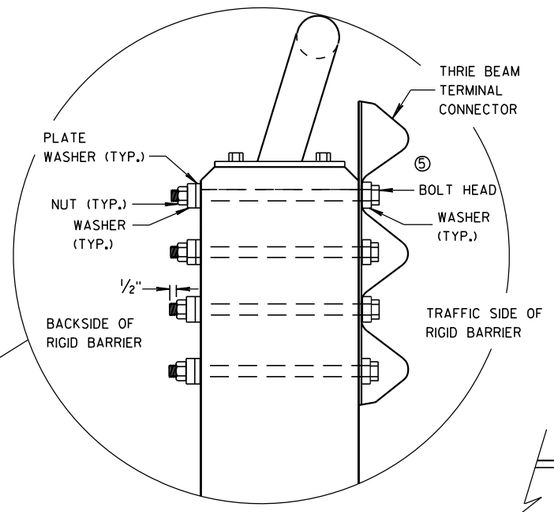
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X ⅝" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

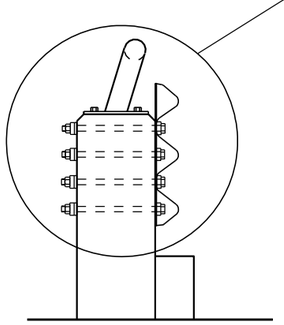
③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 ½".

④ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

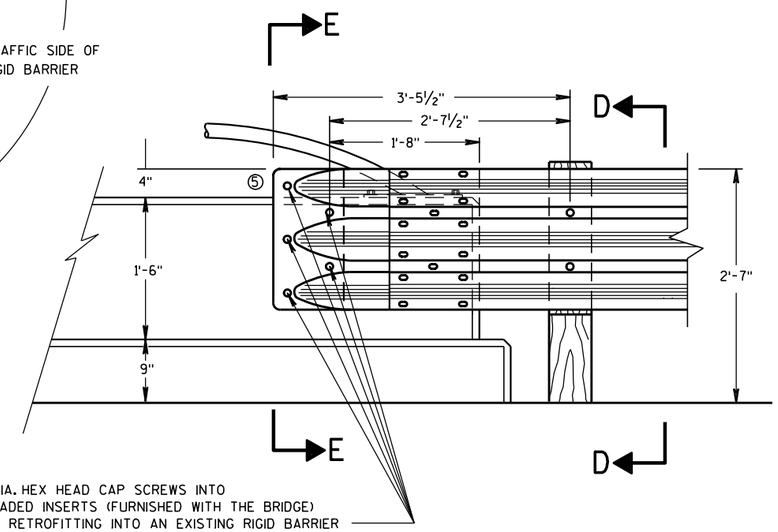
⑤ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

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





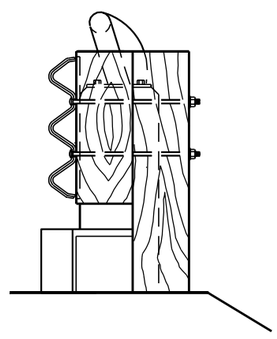
SECTION E-E



① ② ⅞" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER ⅞" DIA. H.S. HEX BOLT AND WASHERS REQUIRED

1" DIA. HOLES DRILLED THRU PARAPET (4 REQ'D.)

FRONT VIEW

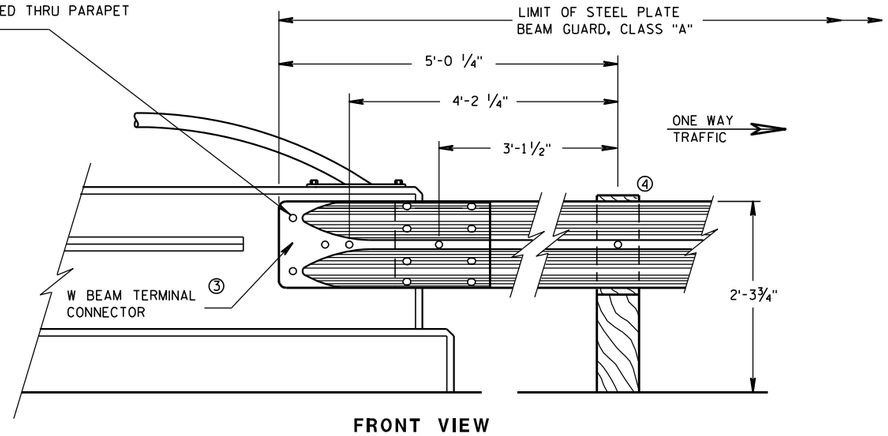


SECTION D-D

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

① ② ⅞" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER ⅞" DIA. H.S. HEX BOLT AND WASHERS REQUIRED

1" DIA. HOLES DRILLED THRU PARAPET (4 REQ'D.)



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO VERTICAL FACED PARAPETS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

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

6

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

GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

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

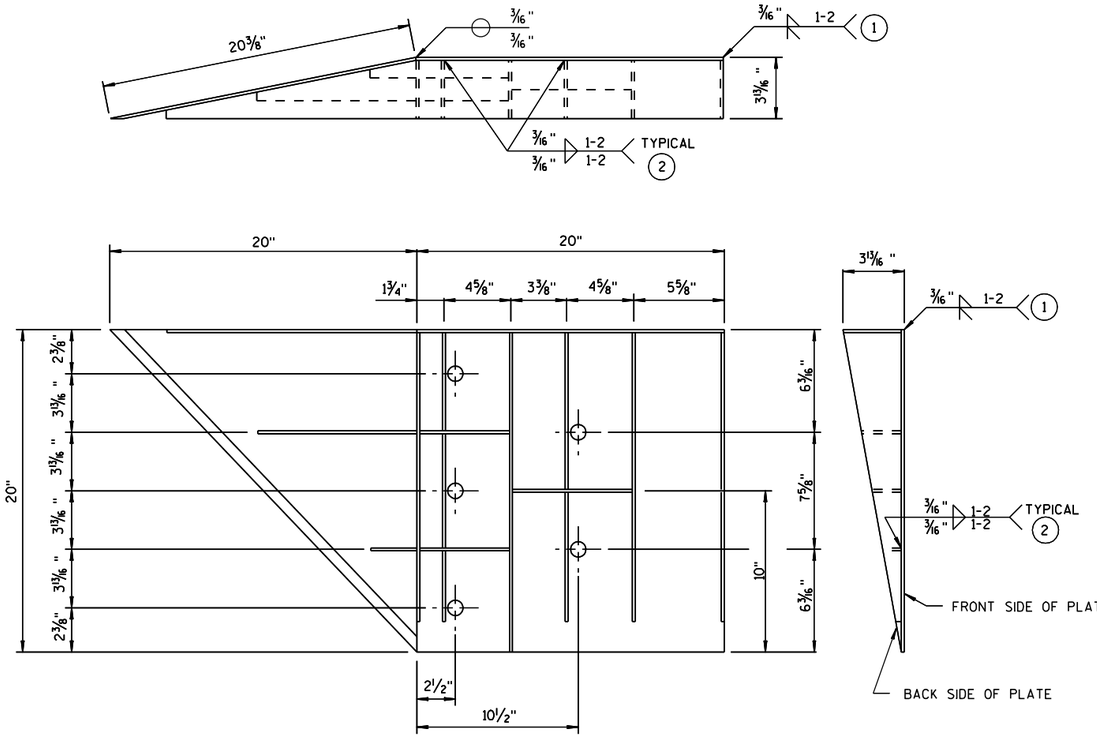
FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

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

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



WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

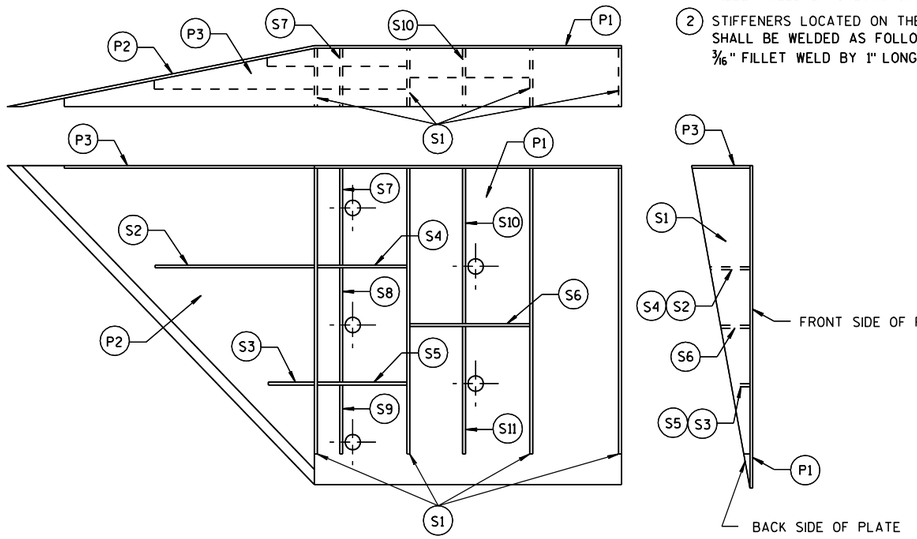


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

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

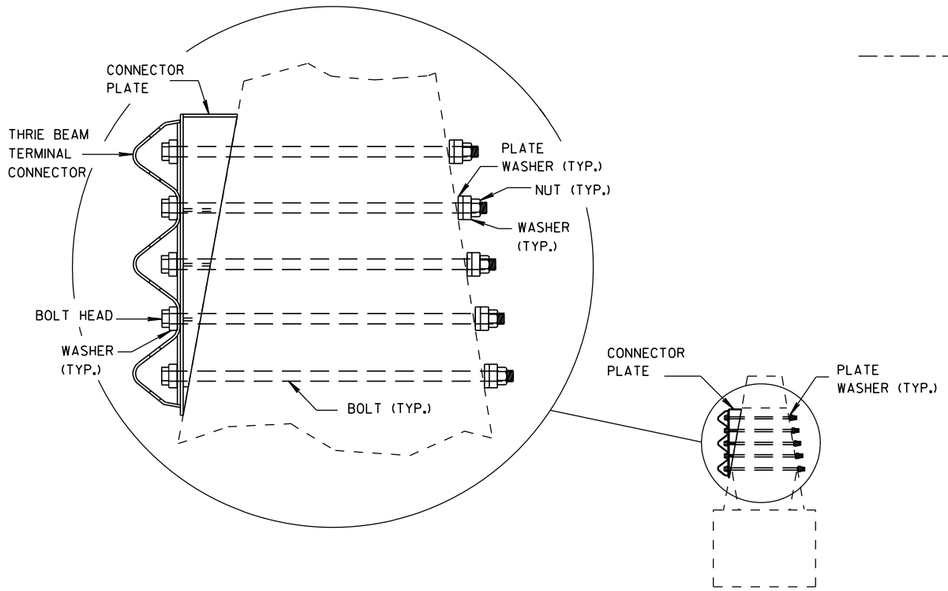
STEEL THRIE BEAM STRUCTURE APPROACH

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL

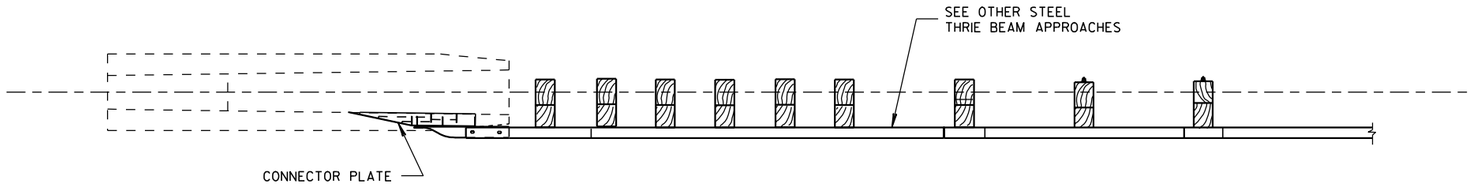
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

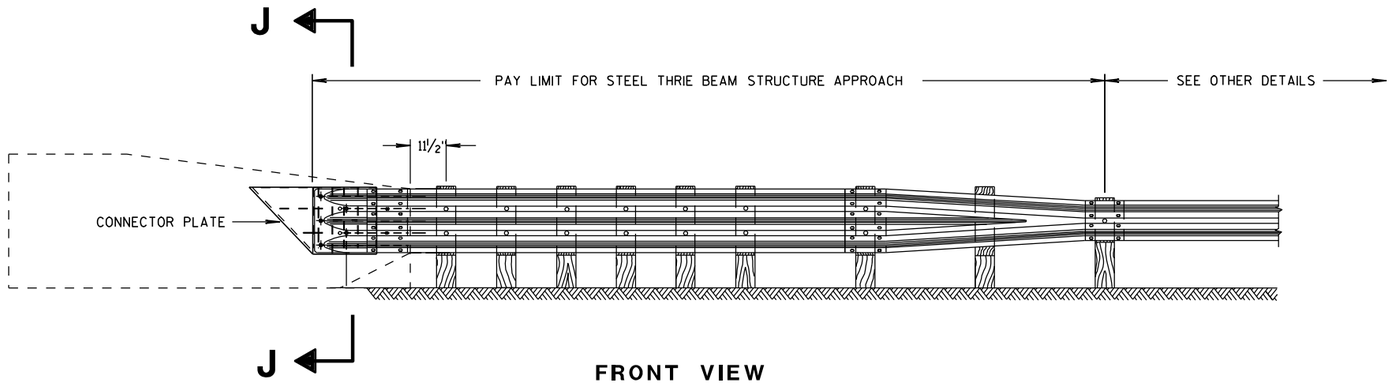
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S.D.D. 14 B 20-11g



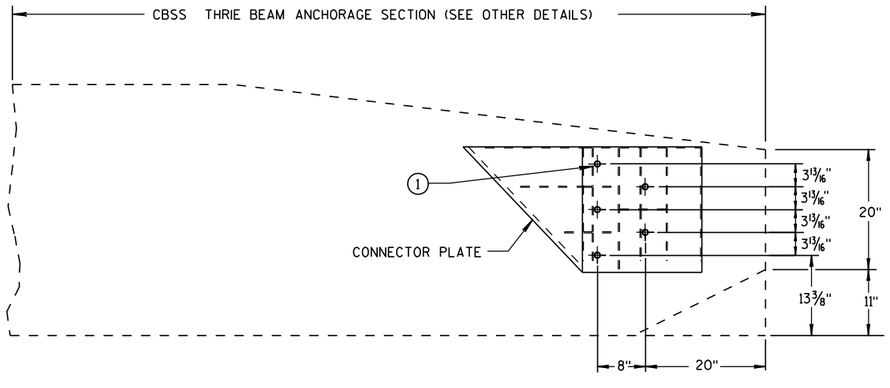
SECTION J-J



PLAN VIEW



FRONT VIEW



CONNECTOR PLATE LOCATION

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 614.

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

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

STEEL THRIE BEAM STRUCTURE APPROACH

STEEL THRIE BEAM STRUCTURE APPROACH, SINGLE SLOPE ATTACHMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

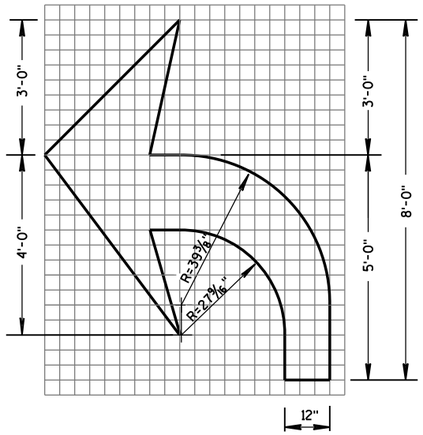
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

FHWA

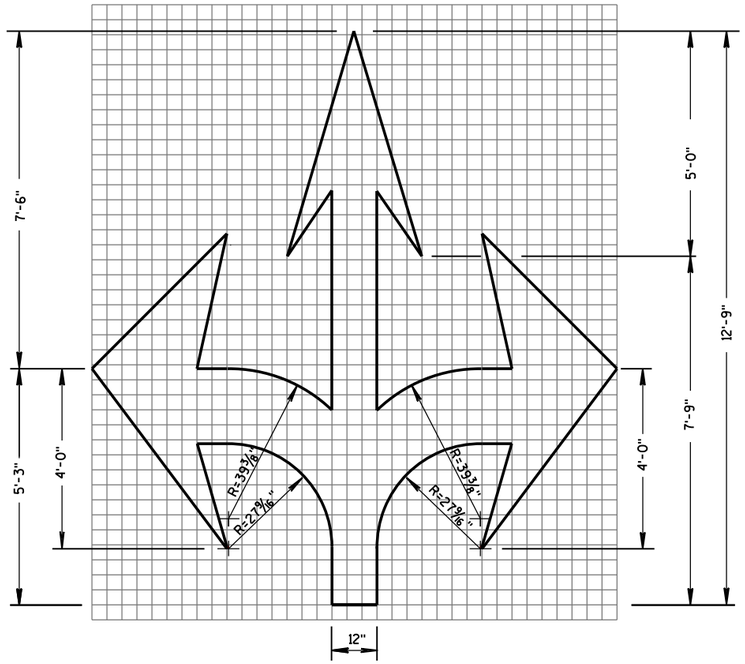
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S.D.D. 14 B 20-11h

GENERAL NOTES

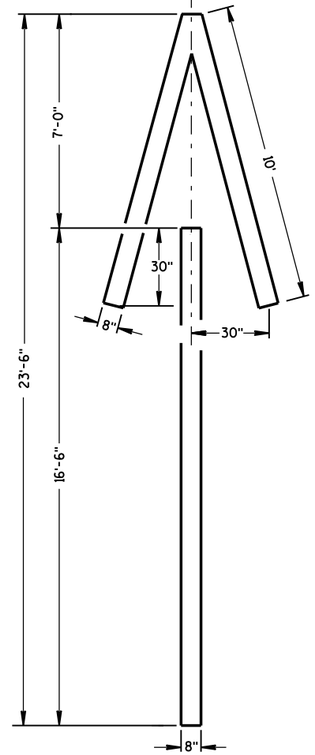
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.



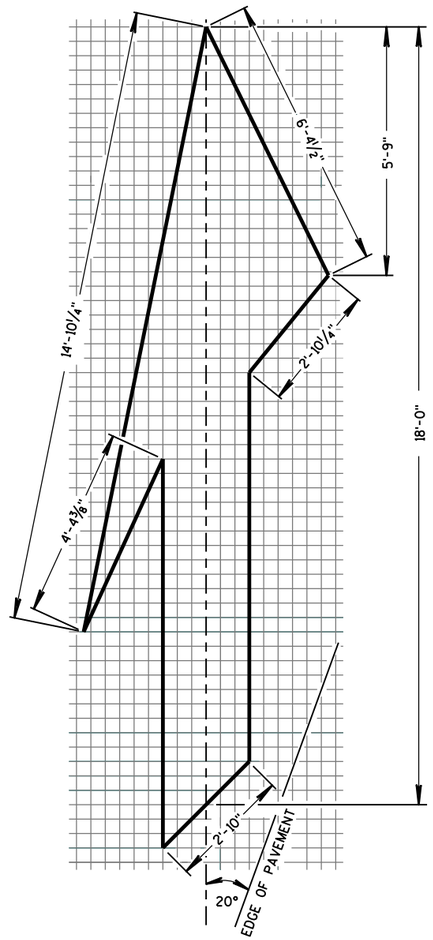
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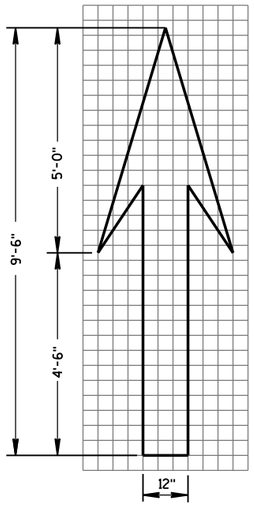
TYPE 6



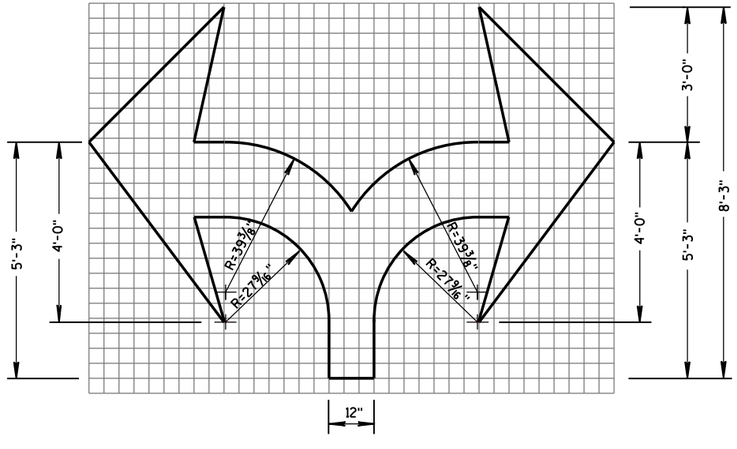
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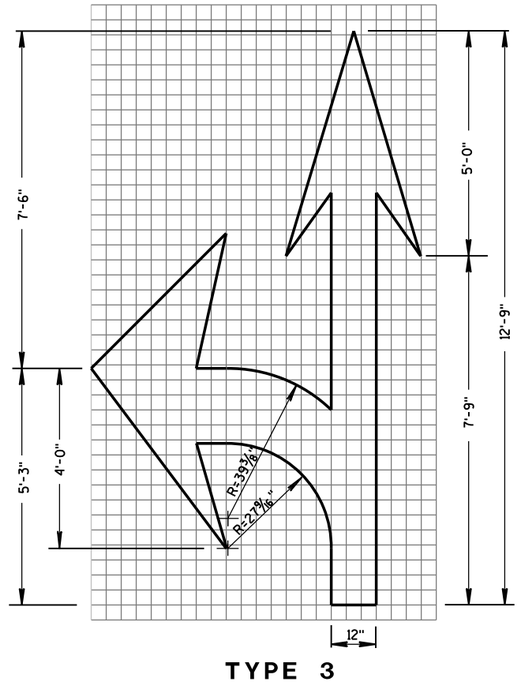
TYPE 5 LANE DROP ARROW



TYPE 1



TYPE 7



TYPE 3

PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MARKING ENGINEER
FHWA

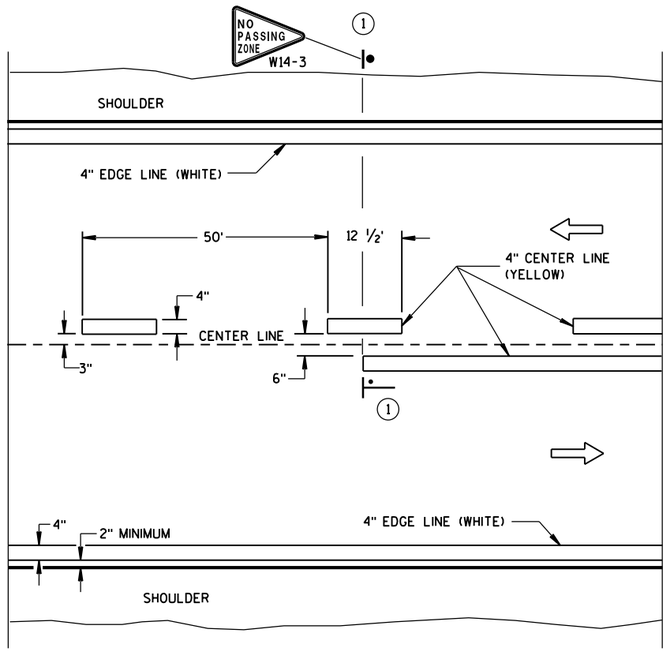
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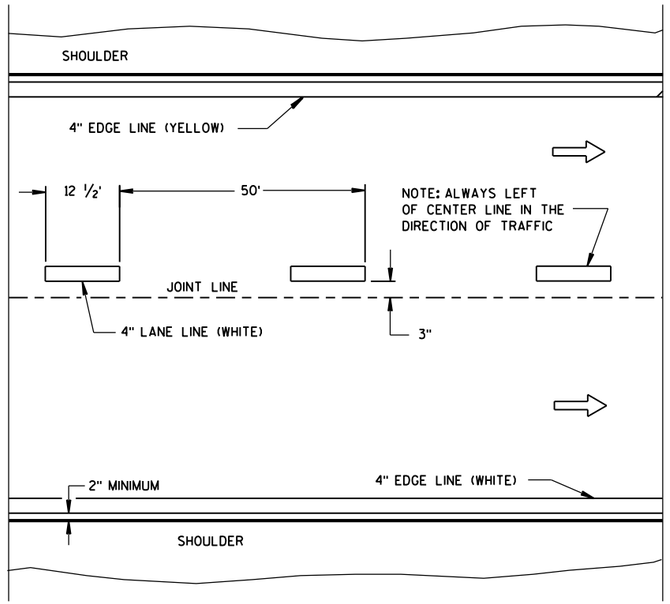
S.D.D. 15 C 7-14c

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



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

GENERAL NOTES

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

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

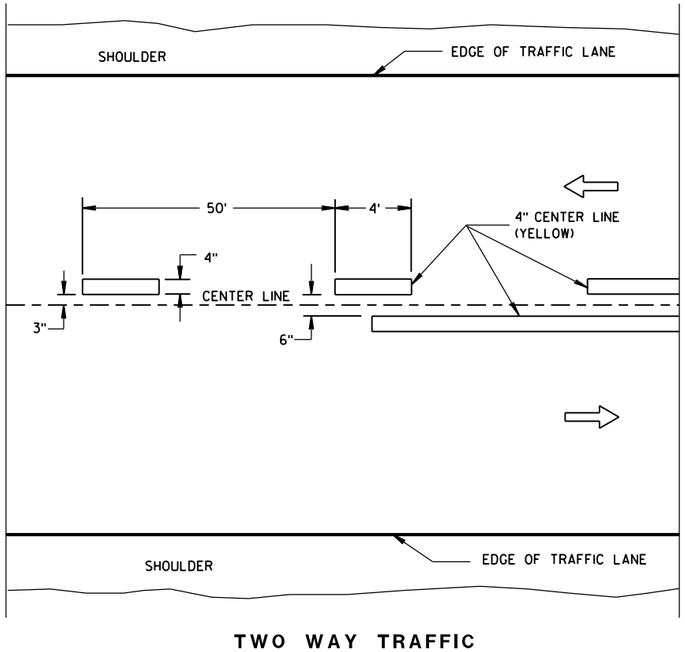
NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

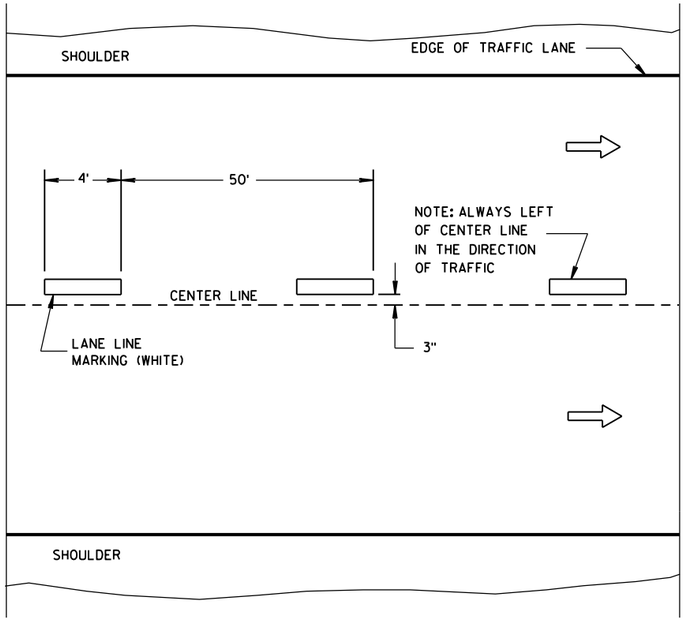
LEGEND

"T" MARKING

POST MOUNTED SIGN



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

LONGITUDINAL MARKING (MAINLINE)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Matthew R. Rauch STATE SIGNING AND MAR[illegible]INEER
FHWA	

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S.D.D. 15 C 8-18a

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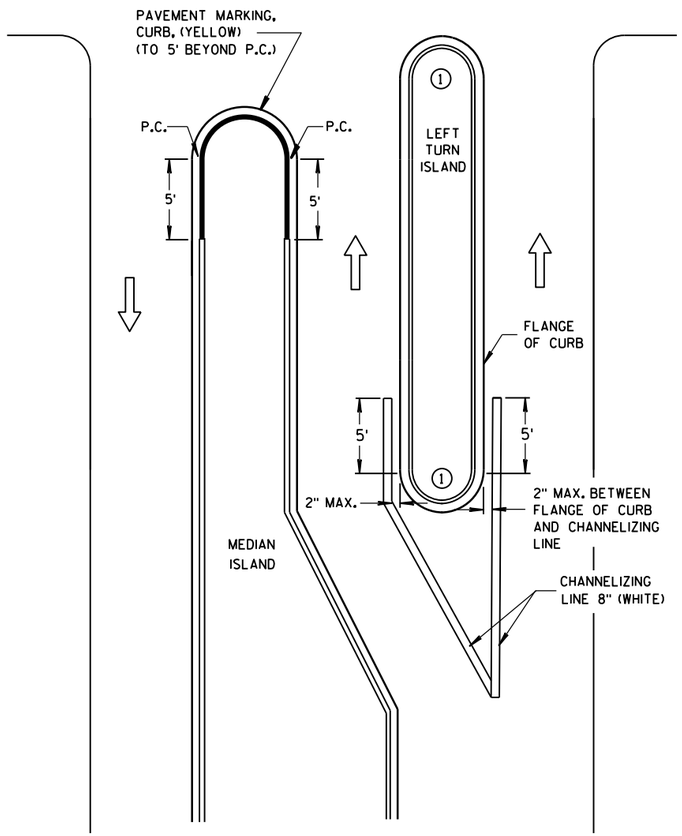
S.D.D. 15 C 8-18a

GENERAL NOTE

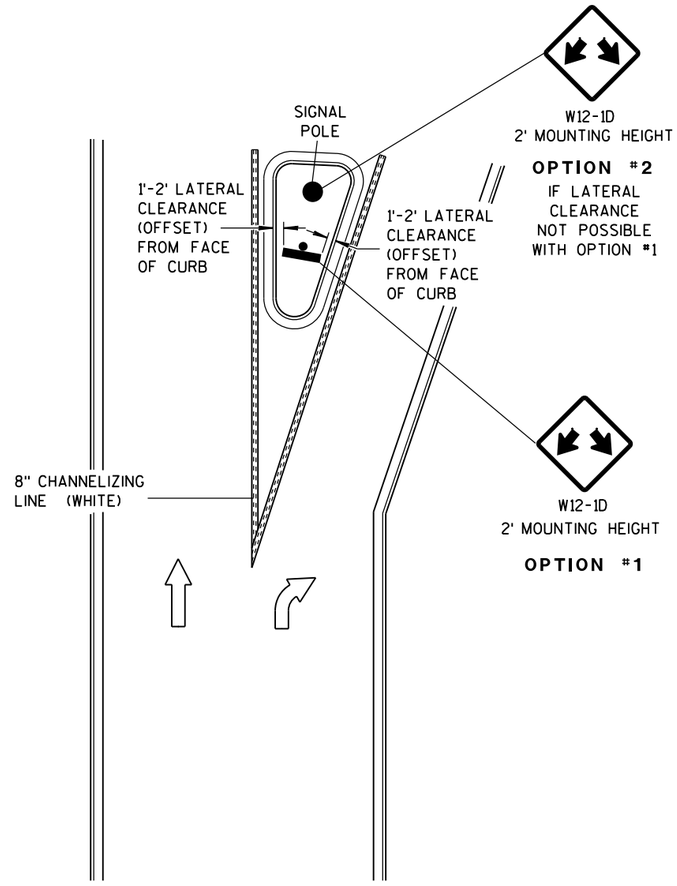
APPLIES TO ISLANDS AT LEFT TURNS AT ONE WAY ROADWAYS AS WELL.

SEE MISCELLANEOUS QUANTITIES FOR SIGN SIZE.

DIRECTION OF TRAVEL



LEFT TURN & MEDIAN ISLAND



RIGHT TURN ISLAND

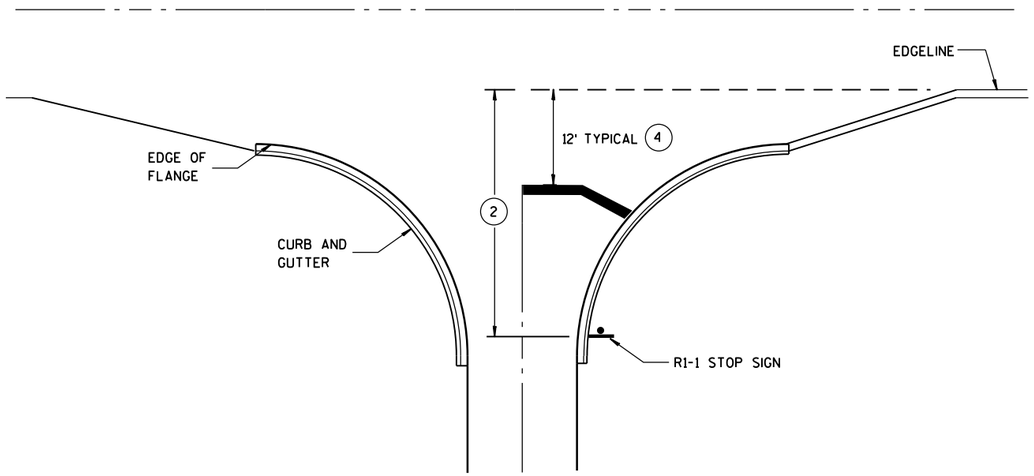
DOUBLE ARROW
WARNING SIGN PLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

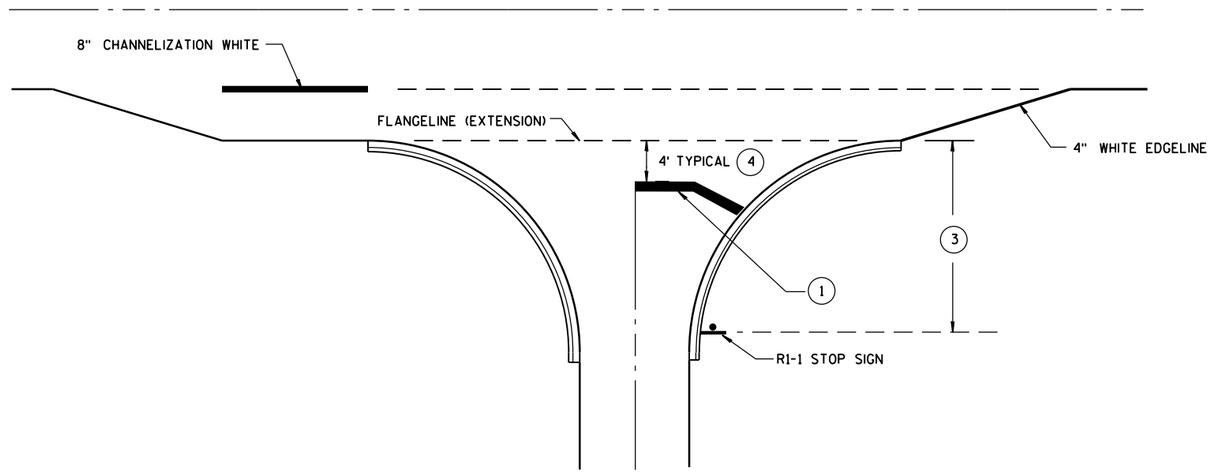
APPROVED
June 2017 — DATE
/S/ Matthew Rauch — STATE SIGNING AND MARKING ENGINEER
FHWA

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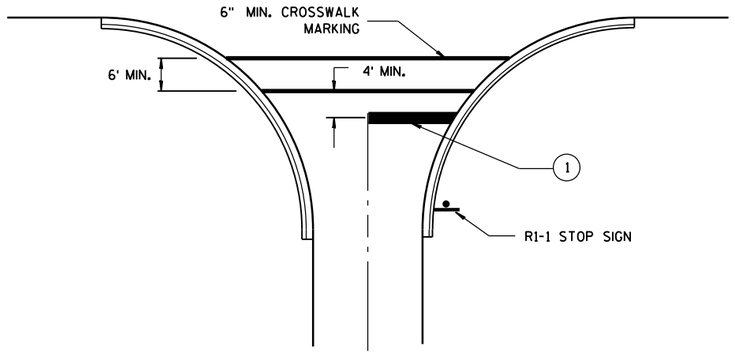
S.D.D. 15 C 27-2a



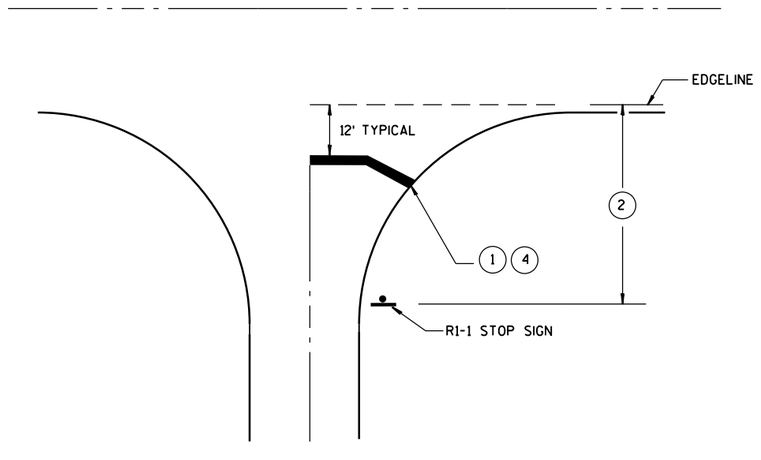
TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

GENERAL NOTES

(1) 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE PROJECT ENGINEER BASED ON VISIBILITY AND SIGHT LINES.

(2) IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE THAN NO STOP LINE IS REQUIRED.

(3) IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION THAN NO STOP LINE IS REQUIRED.

(4) MOVE CLOSER TO EDGE OF TRAVEL LANE AS NEEDED FOR VISIBILITY AND SIGHT LINES. (NO CLOSER THAN 4 FEET).

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

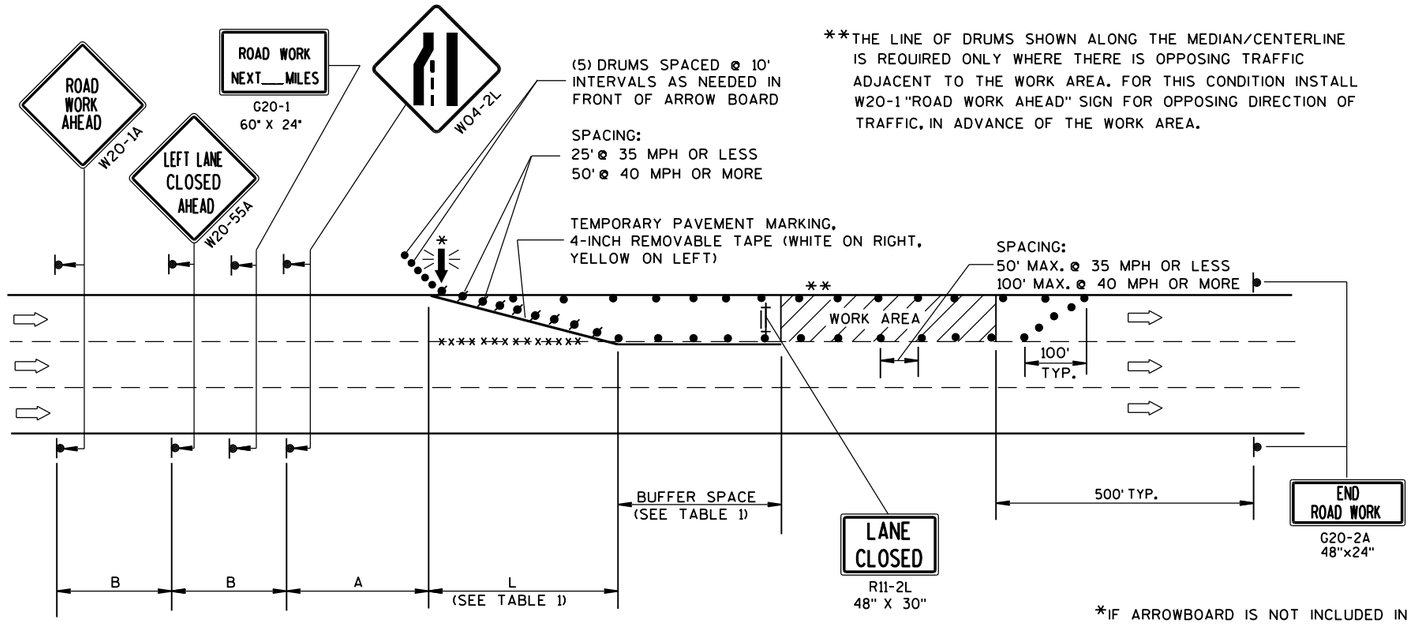
4-18-2016
DATE

/S/ Matthew R. Rauch
STATE SIGNING AND MAR[illegible]NEER

FHWA

6

S.D.D. 15 C 33-2



**THE LINE OF DRUMS SHOWN ALONG THE MEDIAN/CENTERLINE IS REQUIRED ONLY WHERE THERE IS OPPOSING TRAFFIC ADJACENT TO THE WORK AREA. FOR THIS CONDITION INSTALL W20-1 "ROAD WORK AHEAD" SIGN FOR OPPOSING DIRECTION OF TRAFFIC, IN ADVANCE OF THE WORK AREA.

B=400' AT 25-30 MPH
700' AT 35-40 MPH
1000' AT 45-55 MPH

A=200' AT 25-30 MPH
350' AT 35-40 MPH
500' AT 45-55 MPH

(PLACE BARRICADE AND SIGN APPROX. EVERY 1000' ACROSS THE CLOSED LANE)

*IF ARROWBOARD IS NOT INCLUDED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE A TYPE III BARRICADE WITH W01-6 SIGN IN THE LANE CLOSURE TAPER.

W01-6
48"x24"

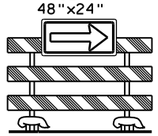


TABLE 1
TAPER AND BUFFER SPACE FOR 12' LANE WIDTH

S	L	BUFFER SPACE
25	125'	55'
30	180'	85'
35	245'	120'
40	320'	170'
45	540'	220'
50	600'	280'
55	660'	335'

FOR LANE WIDTH OTHER THAN 12':

L = WS AT 45 MPH OR GREATER

$L = \frac{WS^2}{60}$ AT 40 MPH OR LESS

L = TAPER LENGTH IN FEET

S = NON-CONSTRUCTION SPEED LIMIT (MPH)

W = WIDTH OF LANE CLOSURE

LEGEND

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

GENERAL NOTES

THIS LANE CLOSURE DETAIL IS TYPICAL FOR CLOSING THE LEFT LANE. FOR A RIGHT LANE CLOSURE, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR ROADWAYS WITH EITHER TWO OR THREE LANES IN EACH DIRECTION.

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 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.

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

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, 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.

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

ON UNDIVIDED ROADWAYS, OMIT THE SIGNS SHOWN ON LEFT SIDE OF ROAD.

W20-1A, G20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE LANE CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

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

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROWBOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROWBOARDS AND LANE CLOSURE DRUMS.

PLACE THE ARROWBOARD AS CLOSE AS POSSIBLE TO THE BEGINNING OF THE LANE CLOSURE TAPER, PREFERABLY ON THE SHOULDER OR TERRACE.

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.

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

TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 — DATE
FHWA

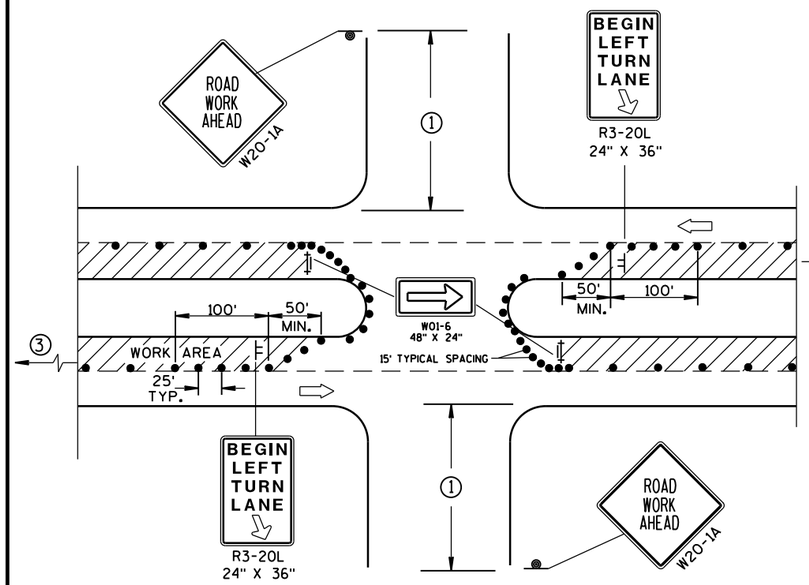
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE SAFETY ENGINEER

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S.D.D. 15 D 20-4

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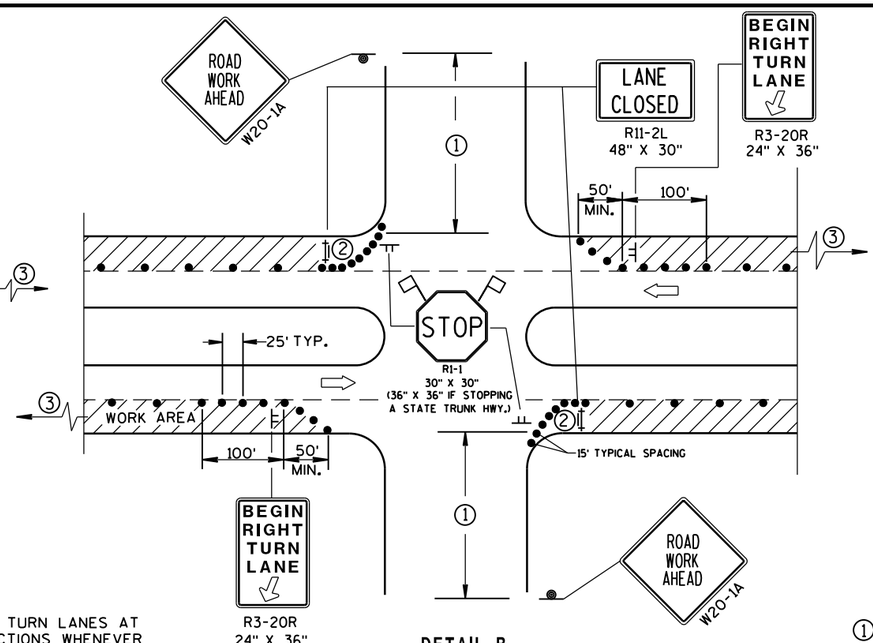
S.D.D. 15 D 20-4



DETAIL A

FOR LEFT LANE CLOSURE AT INTERSECTION OR MEDIAN OPENING

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 LANE CLOSURE 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.

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

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

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.

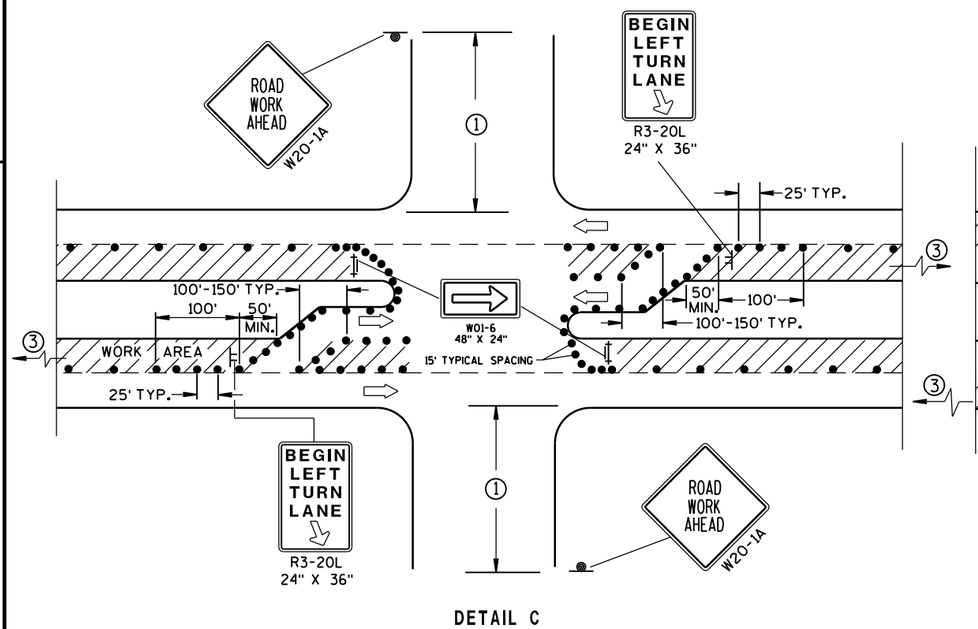
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

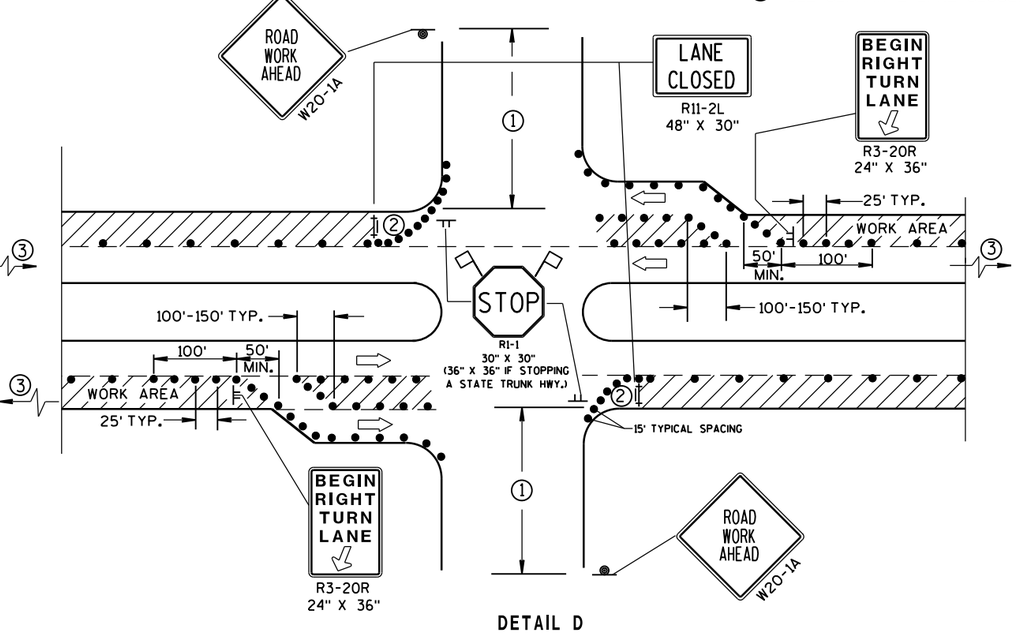
② ALSO USE BARRICADE AND 15-FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS.

③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.



DETAIL C

FOR LEFT LANE CLOSURE AT INTERSECTION OR MEDIAN OPENING (WITH LEFT TURN BAY OPEN)



DETAIL D

FOR RIGHT LANE CLOSURE 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 WITH ATTACHED SIGN AND TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- FLAGS, 16" X 16" MIN., (ORANGE)
- WORK AREA

TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 — DATE
/S/ Peter Anakobe Atepe
STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA

6

S.D.D. 15 D 21-4

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S.D.D. 15 D 21-4

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FOR 12' LANE WIDTH

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L = WS AT 45 MPH OR GREATER

$L = \frac{WS^2}{60}$ AT 40 MPH OR LESS

L = TAPER LENGTH IN FEET

S = NON-CONSTRUCTION SPEED LIMIT (MPH)

W = WIDTH OF LANE CLOSURE

LEGEND

TYPE III BARRICADE

TYPE III BARRICADE WITH ATTACHED SIGN

SIGN ON PERMANENT SUPPORT

SIGN ON TEMPORARY SUPPORT

TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT

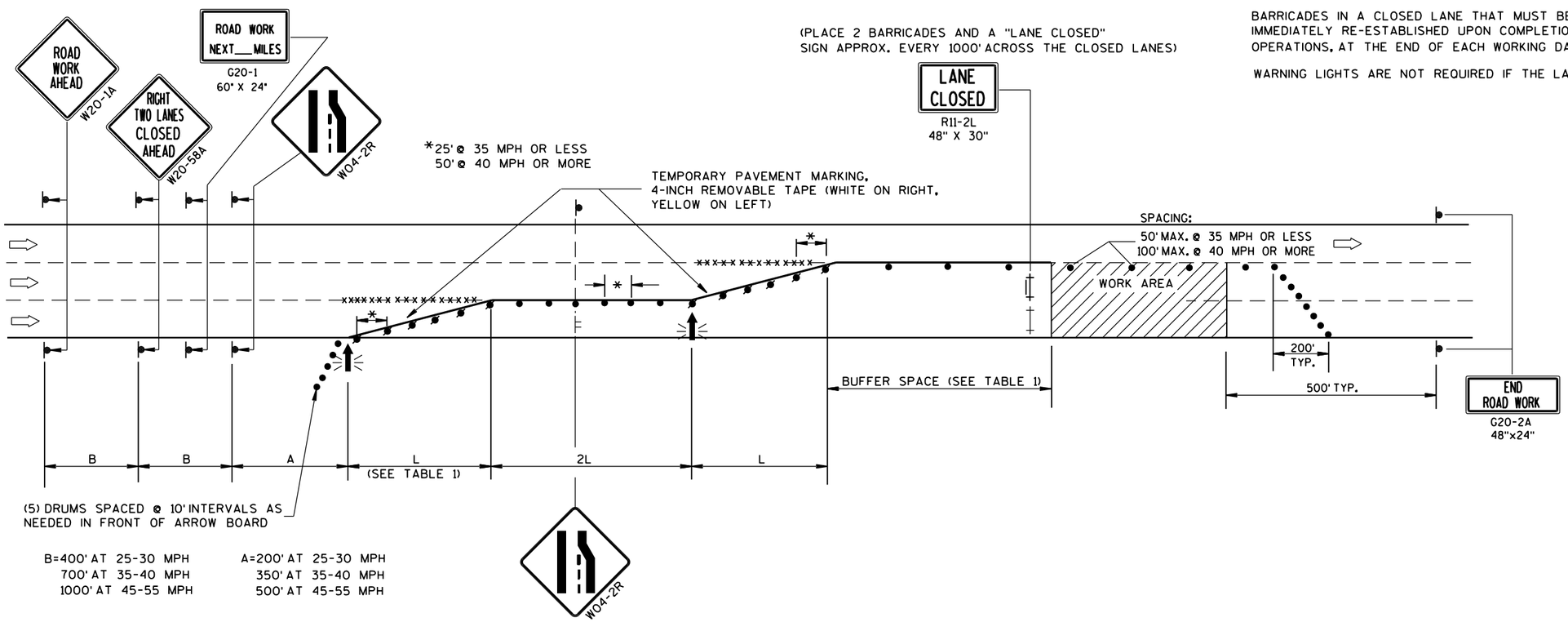
TRAFFIC CONTROL DRUM

FLASHING ARROW BOARD

DIRECTION OF TRAFFIC

REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)

WORK AREA



B=400' AT 25-30 MPH
700' AT 35-40 MPH
1000' AT 45-55 MPH

A=200' AT 25-30 MPH
350' AT 35-40 MPH
500' AT 45-55 MPH

GENERAL NOTES

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

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

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

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

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROWBOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROWBOARDS AND LANE CLOSURE DRUMS.

WHERE THE SHOULDER OR TERRACE HAS INSUFFICIENT SPACE TO LOCATE THE ARROWBOARD AS SHOWN, PLACE THE ARROWBOARD IN THE LANE CLOSURE TAPER AS CLOSE AS POSSIBLE TO THE BEGINNING OF THE TAPER.

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.

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

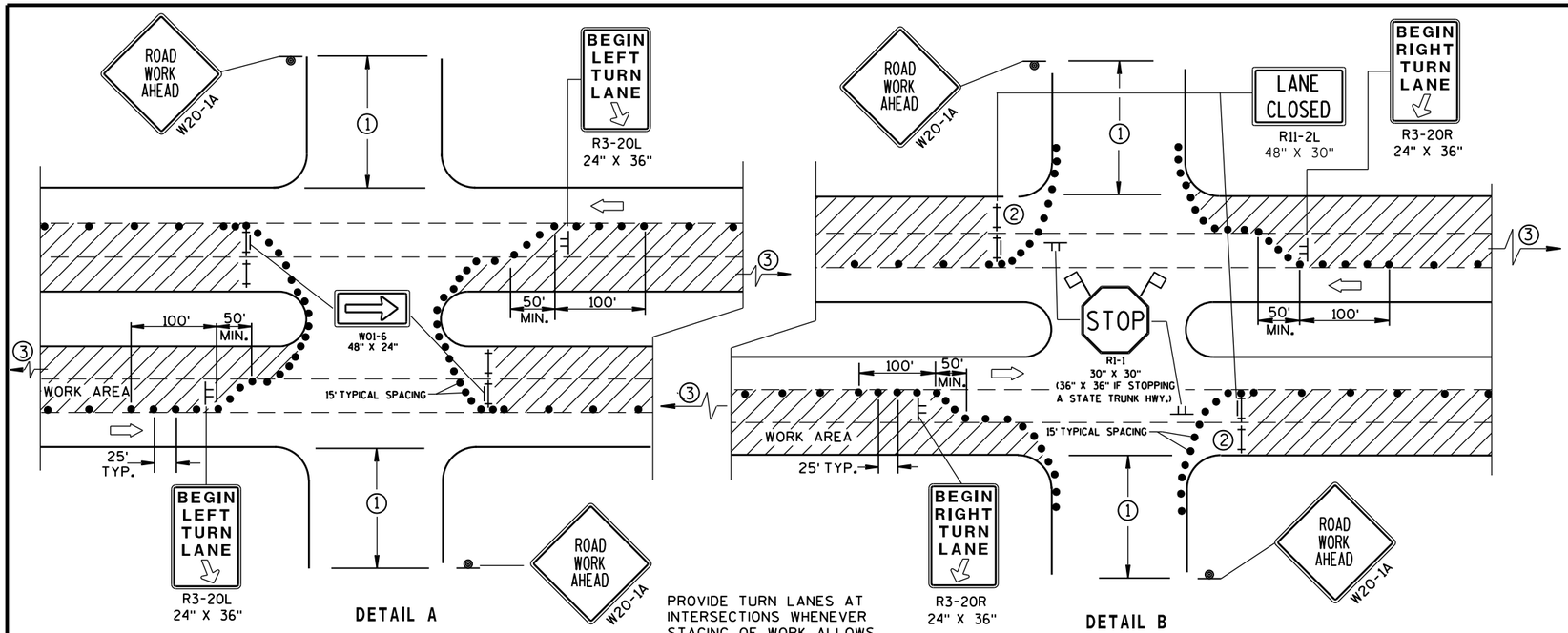
TRAFFIC CONTROL, TWO LANE CLOSURE, NON-FREEWAY/EXPRESSWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016
DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA

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S.D.D. 15 D 22-3



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.

FOR RIGHT TWO LANES CLOSED AT INTERSECTION

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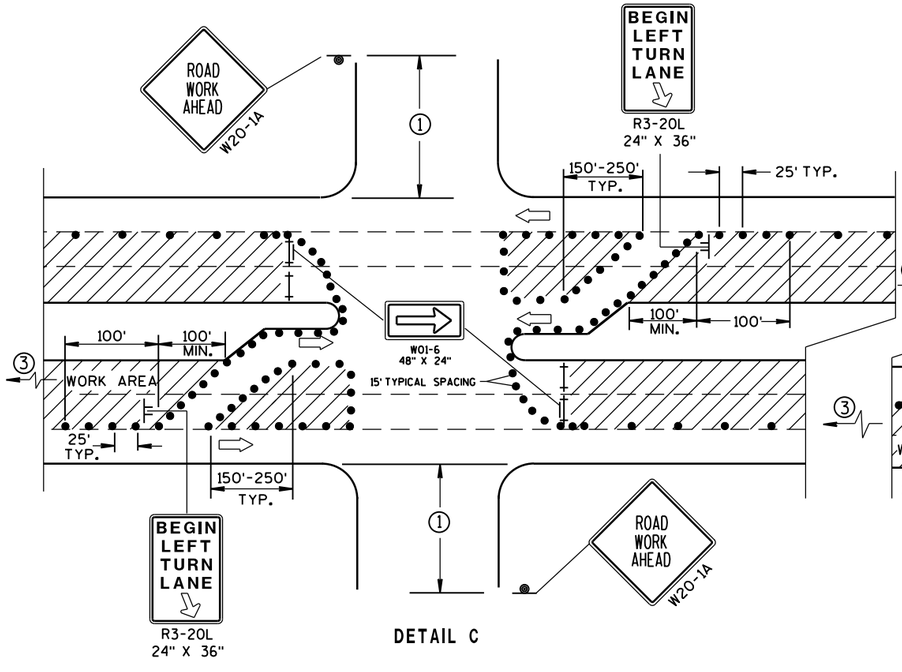
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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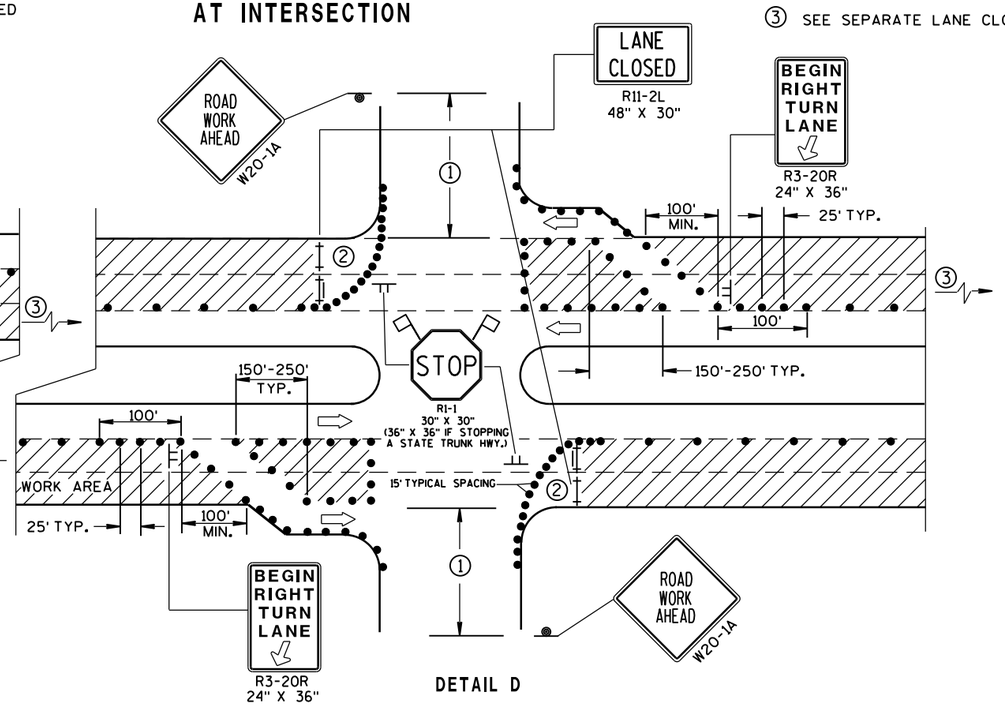
① 500 FEET TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350 FEET IF 35-40 MPH.
200 FEET IF 25-30 MPH.

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

③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.



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



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

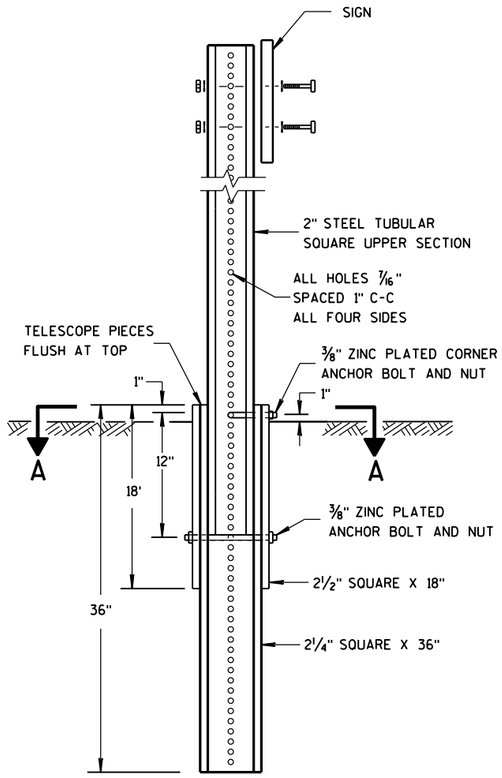
APPROVED
June 2016 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZON SAFETY ENGIN — FIC
FHWA

6

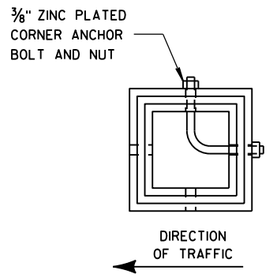
S.D.D. 15 D 23-4

6

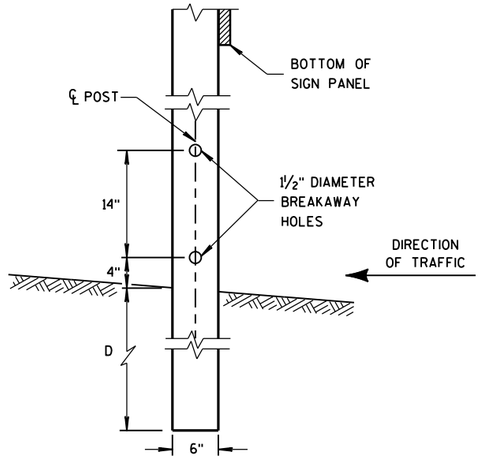
S.D.D. 15 D 23-4



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



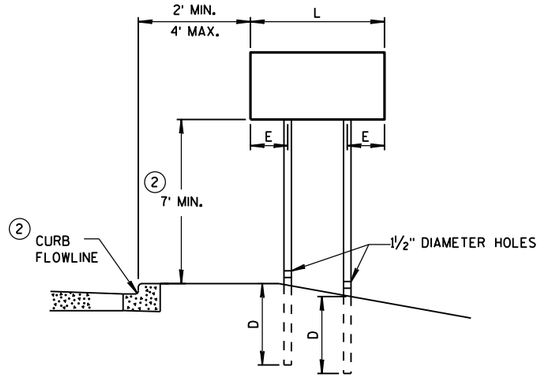
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

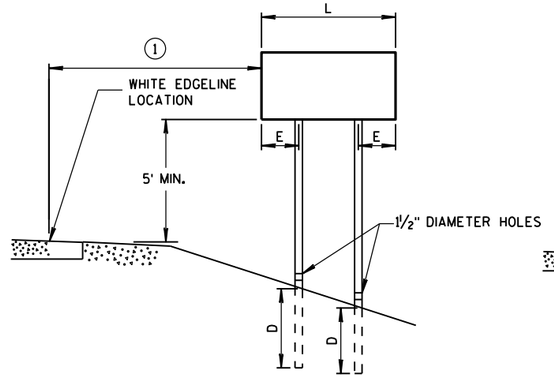
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

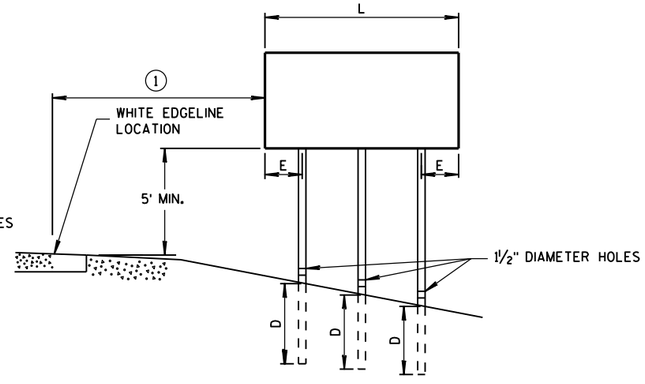
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK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

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



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

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

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

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

WOOD POST EMBEDMENT DEPTH

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

4" X 6" WOOD POST

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

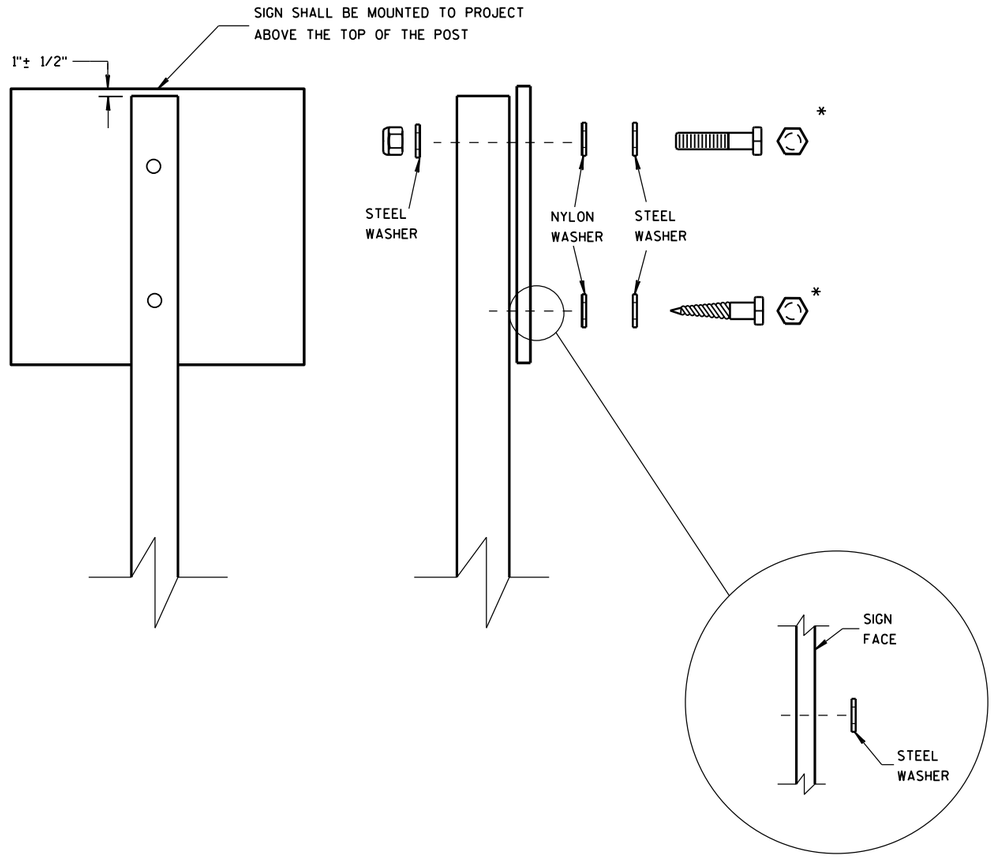
SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

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



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

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

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

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

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

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

LAG SCREWS - 3/8" X 3"

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

SQUARE STEEL POSTS (2" x 2")

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

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

WASHERS (ALL POSTS) -

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

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

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

6

6

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

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

ATTACHMENT OF SIGNS TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017
DATE

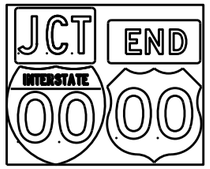
/S/ Andrew Heldtke
WORK ZONE ENG

FHWA

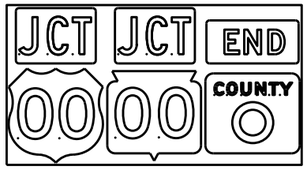
TYPICAL ASSEMBLIES



J1-1



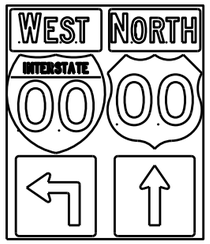
J1-2



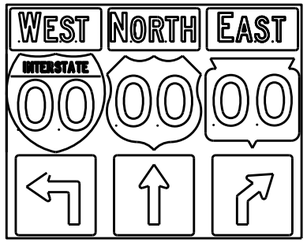
J1-3



J2-1



J2-2

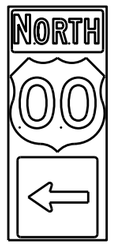


J2-3

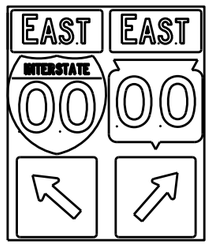


JV

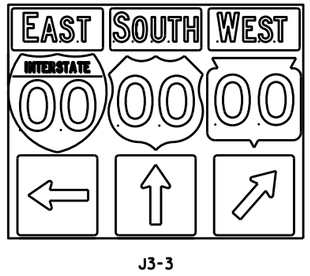
(Typical Vertical J-Assembly
See Note 10 and 11)



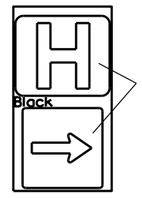
J3-1



J3-2



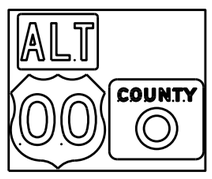
J3-3



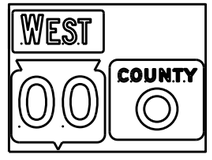
JH-1



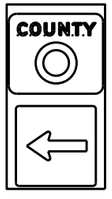
J4-1



J4-2



J4-2



J13-1



J12-1



J32-1



J33-1

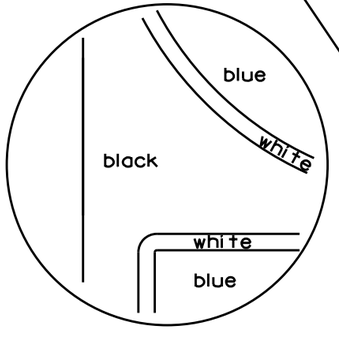


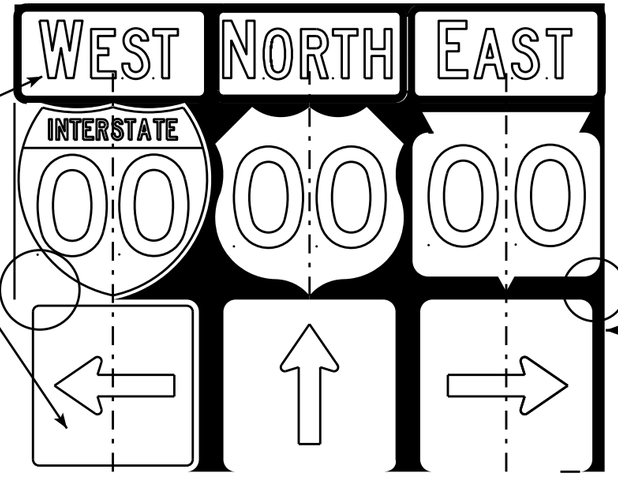
J23-1

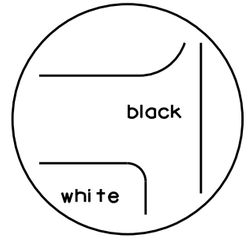


J22-1

blue background
with interstate







black background

NOTES

1. Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Black Non-reflective
   Message - see Note 5
3. Message Series - See Note 5
4. Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
5. The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
6. Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 Interstate marker shall be blue.
7. Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
8. Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
9. Route assemblies that have 36 inch shields and have dimensions greater than 48 inchs (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
10. All Vertical J Assemblies are given a Sign Code of JV
11. For JV Assemblies that have a mixture of Interstate and non Interstate shields, arrows and cardinals shall be white on blue.

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/06/14 PL... A2-1S.8

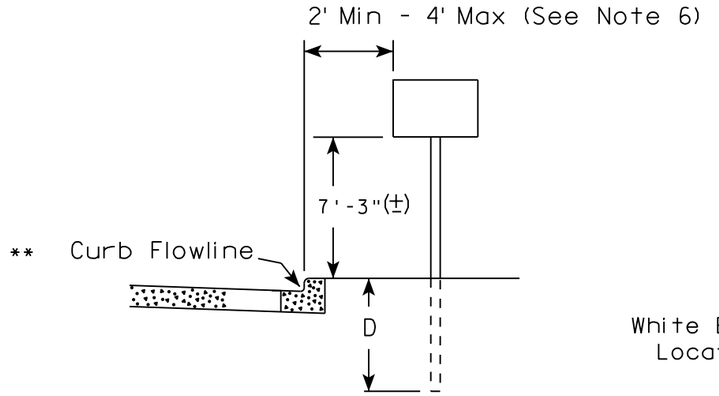
PROJECT NO:

SHEET NO: E

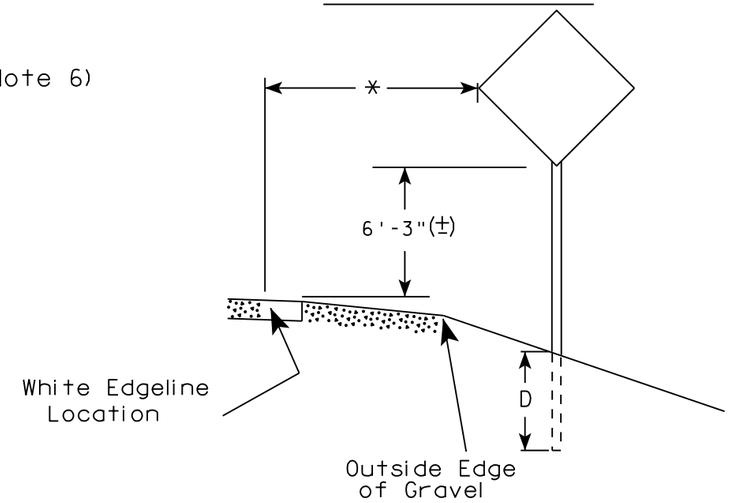
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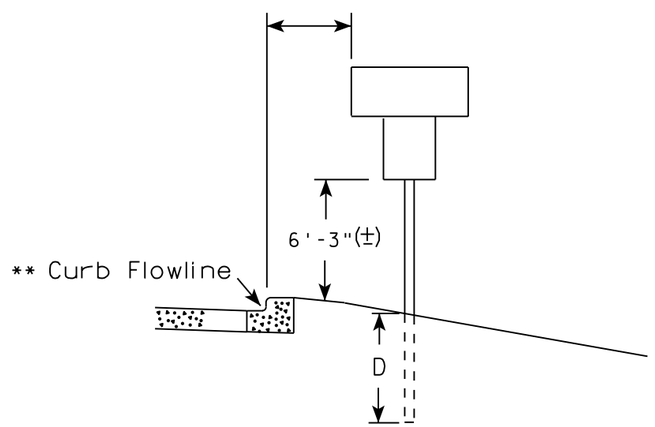
WISDOT/CADDS SHEET 42

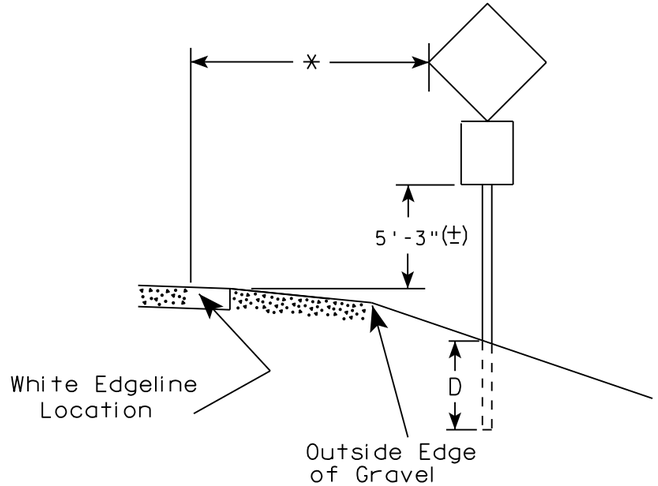
URBAN AREA



RURAL AREA (See Note 2)







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

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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. J-Assemblies are considered to be one sign for mounting height.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as 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" (±).

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

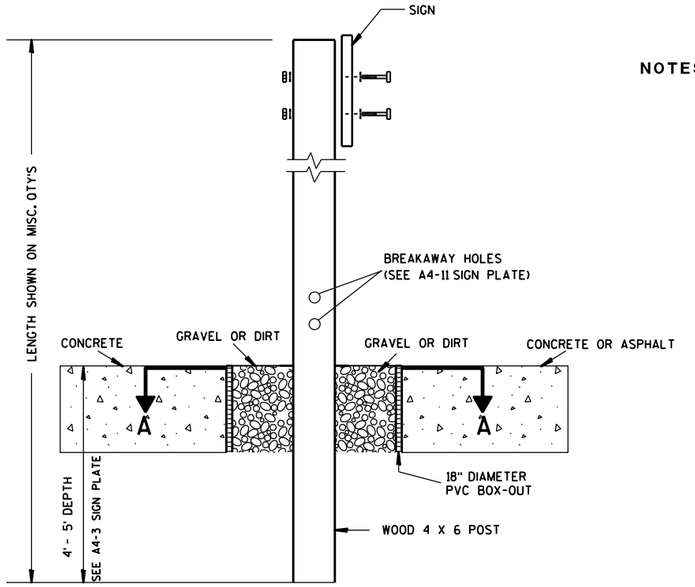
DATE 8/21/17 PLATE NO. A4-3.21

7

7

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 212	E

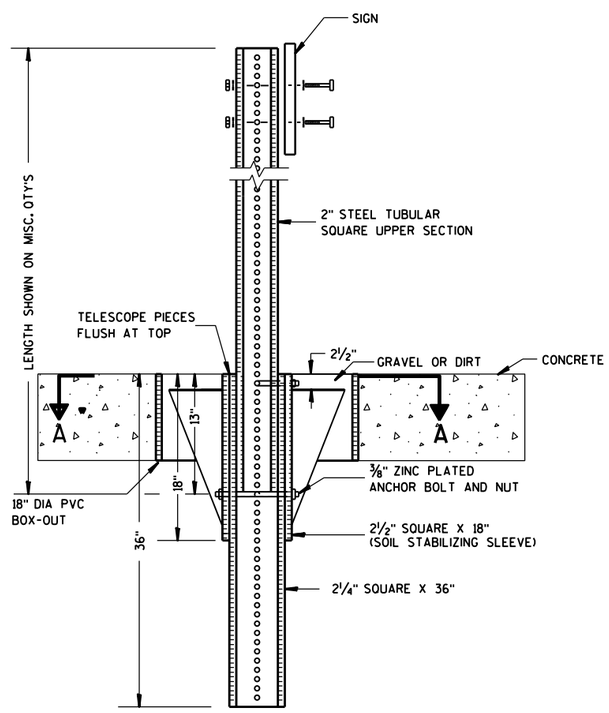
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ELEVATION VIEW

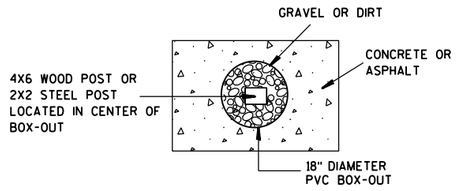
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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

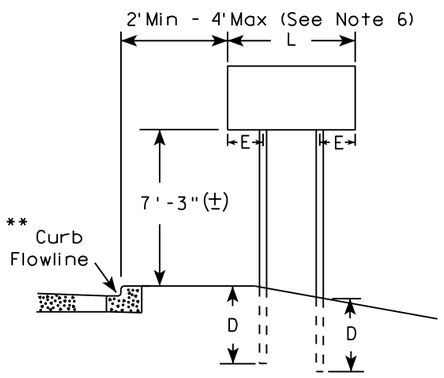
APPROVED Matthew R Rauch
for State Traffic Engineer

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

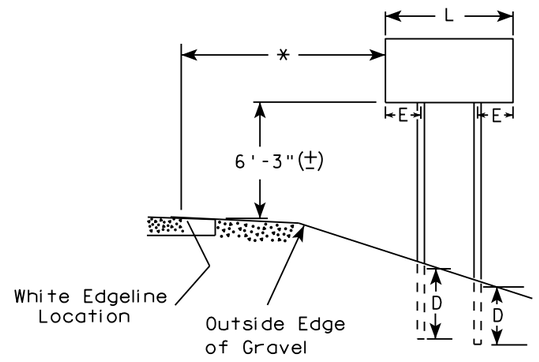
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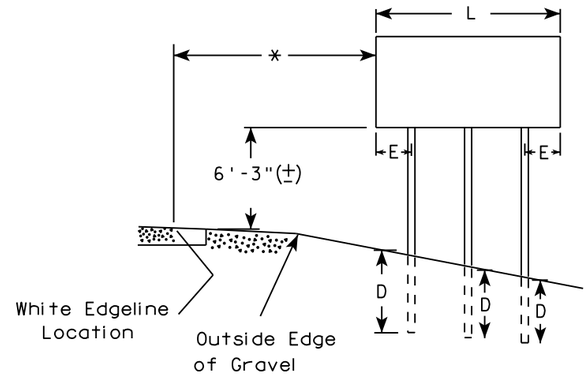
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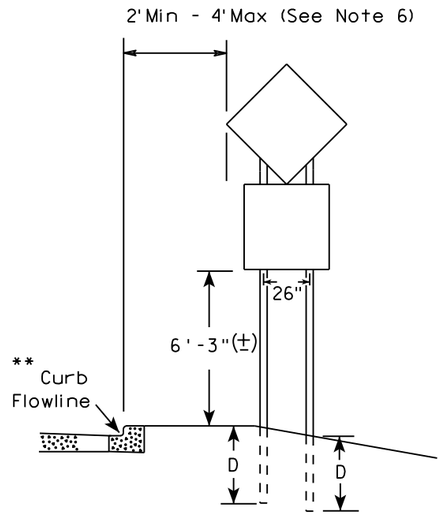
URBAN AREA



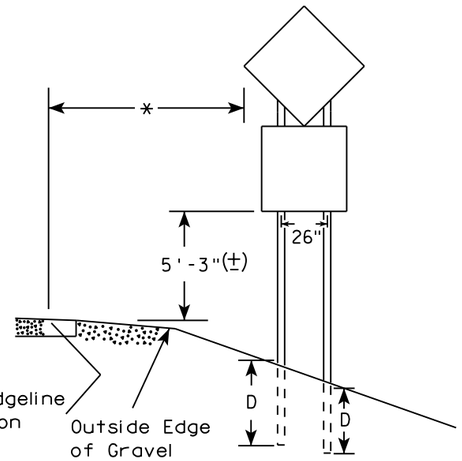
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

GENERAL NOTES

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

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

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

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

POST EMBEDMENT DEPTH

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

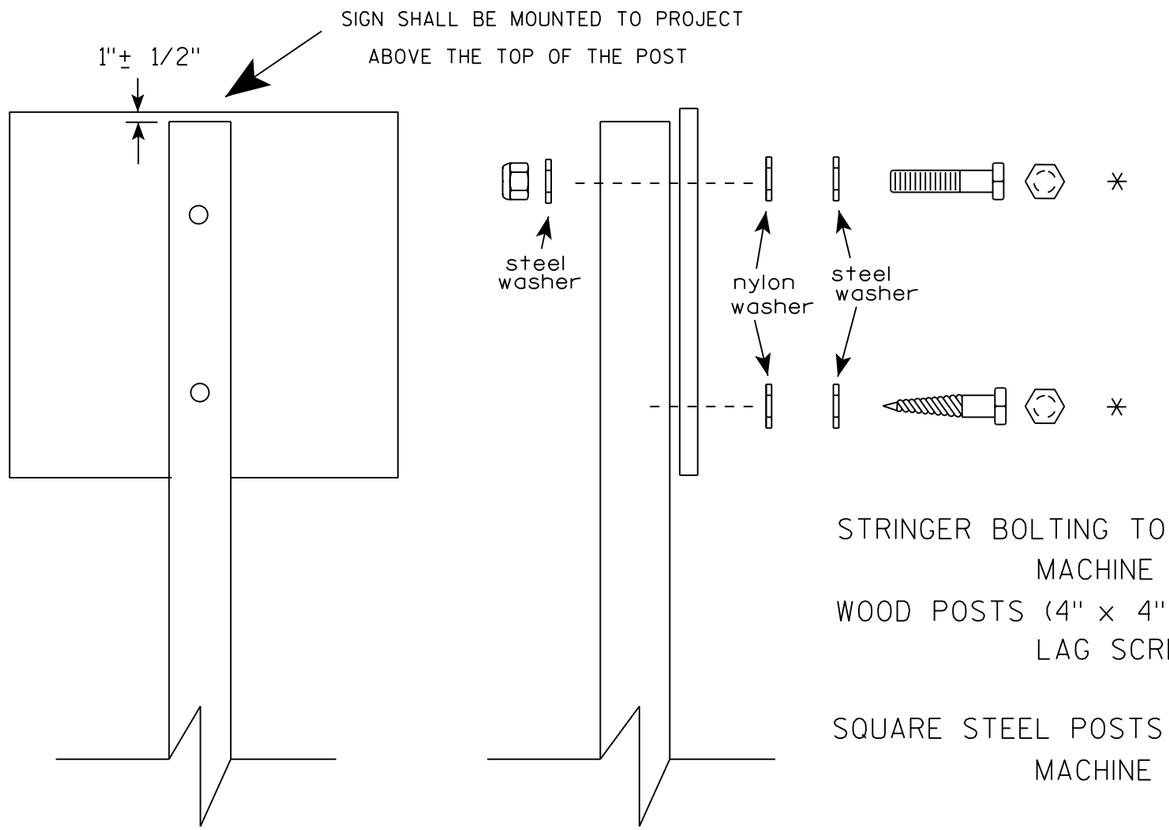
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 214	E



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

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

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

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

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

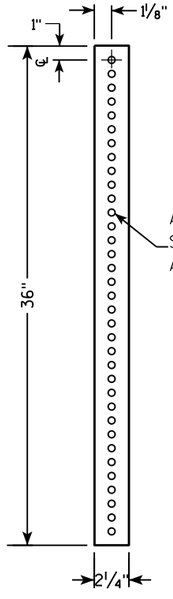
DATE 8/11/16 PLATE NO. A4-8.8

PROJECT NO: SHEET NO: E

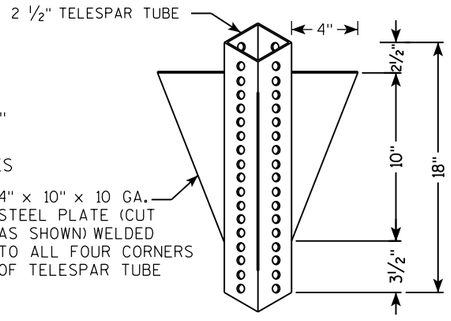
FILE NAME : C:\CADfiles\Projects\tr_stdplate\A48.DGN PLOT DATE : 11-AUG-2016 11:35 PLOT BY : $$ plotuser $$

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

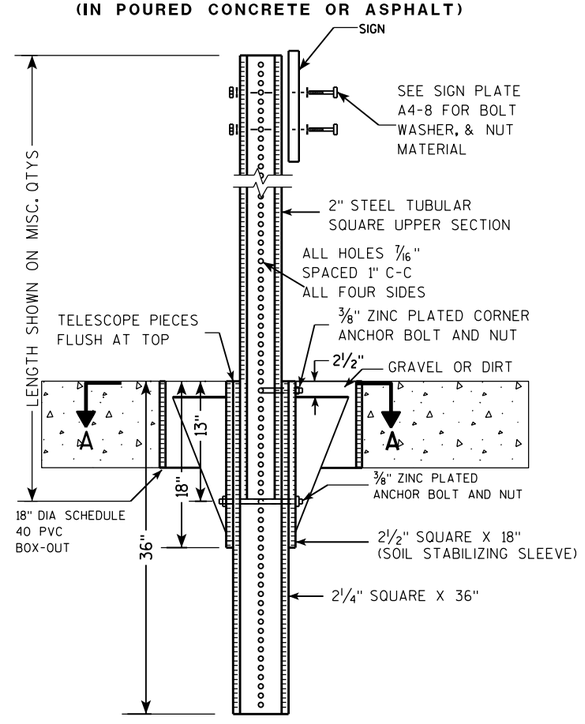
2 ¼ " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



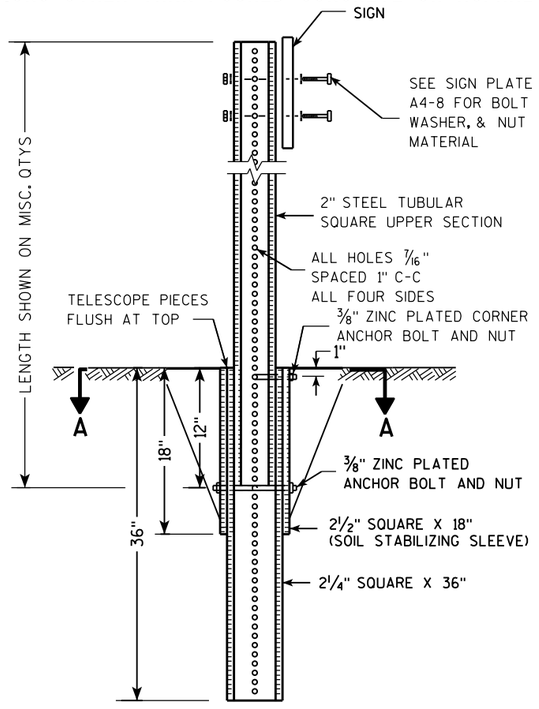
2 ½ " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

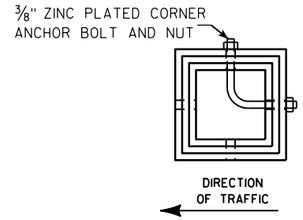


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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).

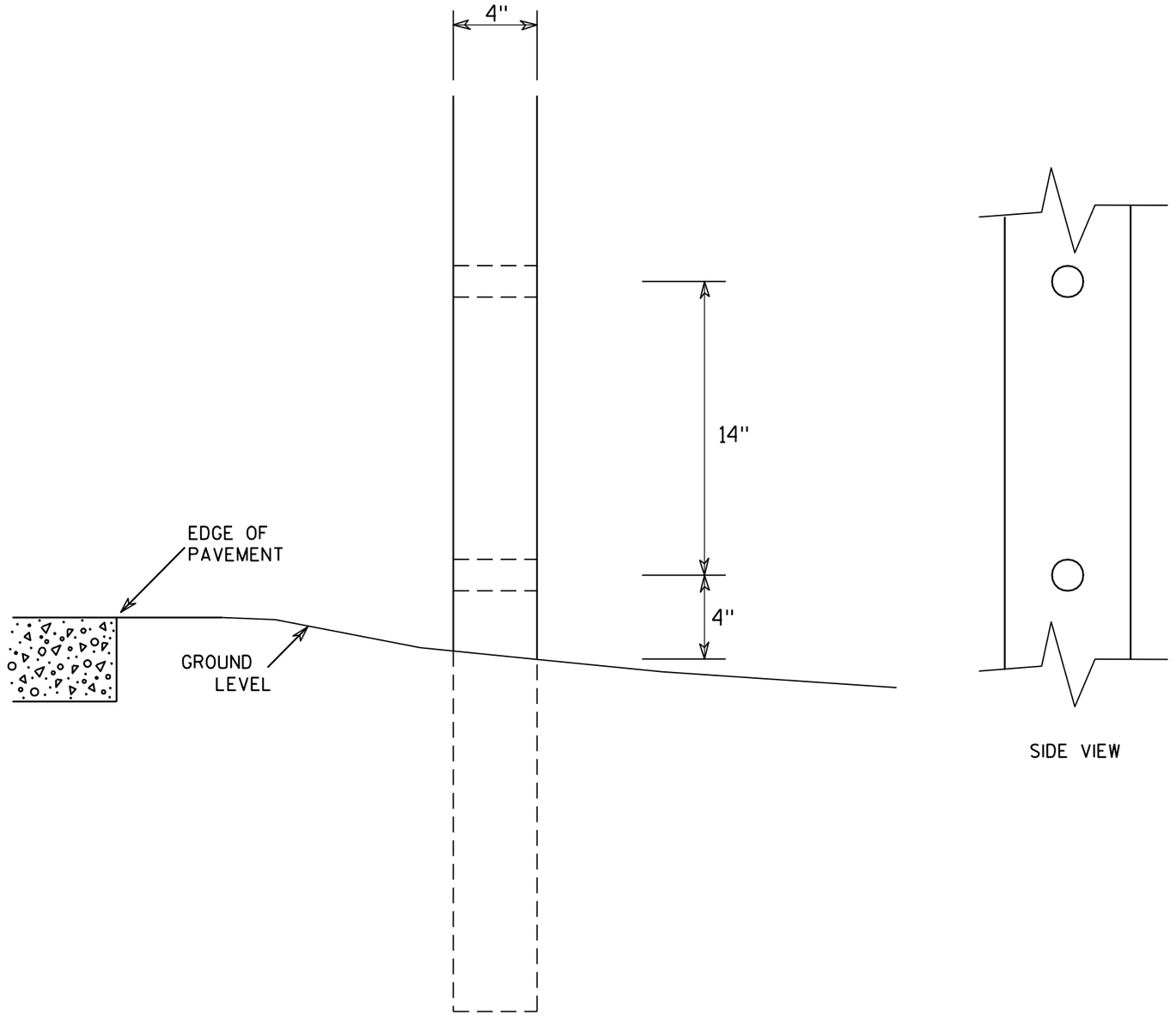
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE 216 A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



SIDE VIEW

GENERAL NOTES

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

7

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

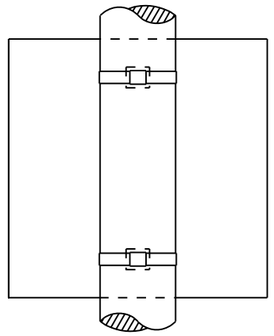
APPROVED Chester J Spang
for State Traffic Engineer

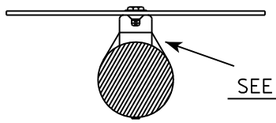
DATE 3/27/97 PLATE NO. A4-11.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 217	E

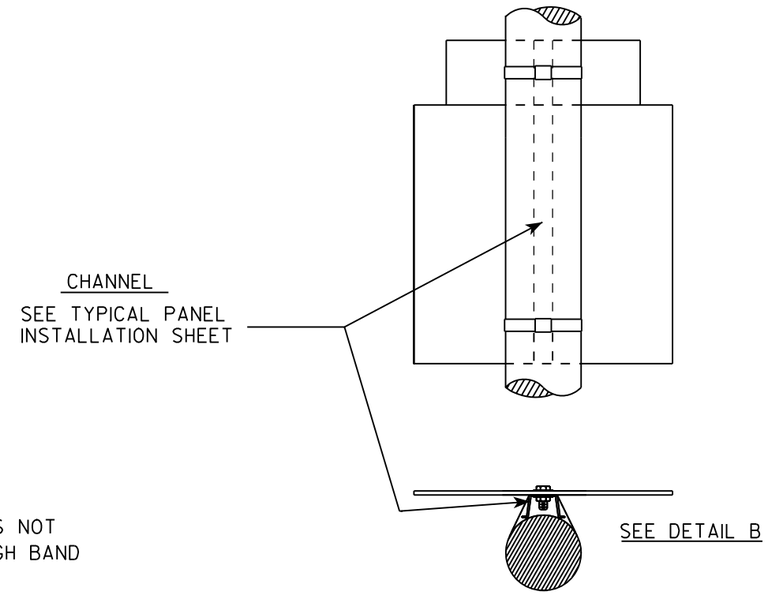
BANDING

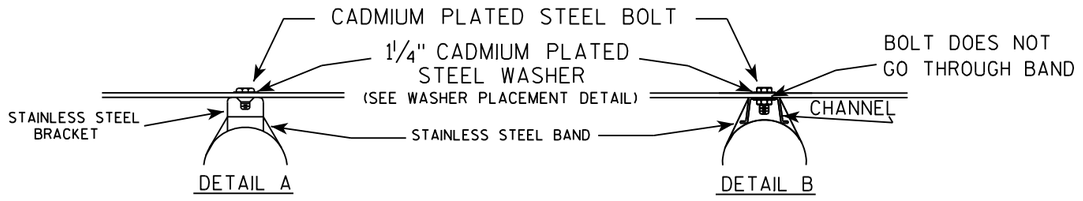
SINGLE SIGN



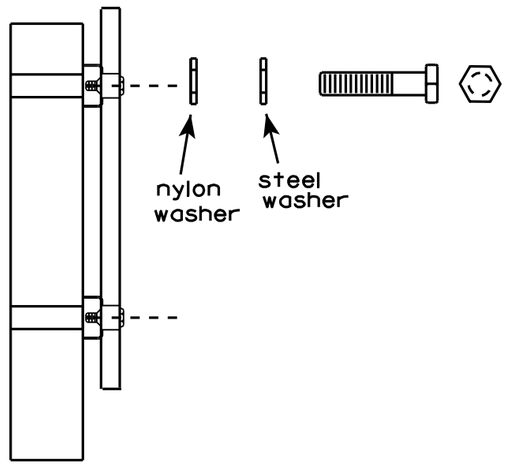


"J" ASSEMBLY





WASHER PLACEMENT



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

GENERAL NOTES

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

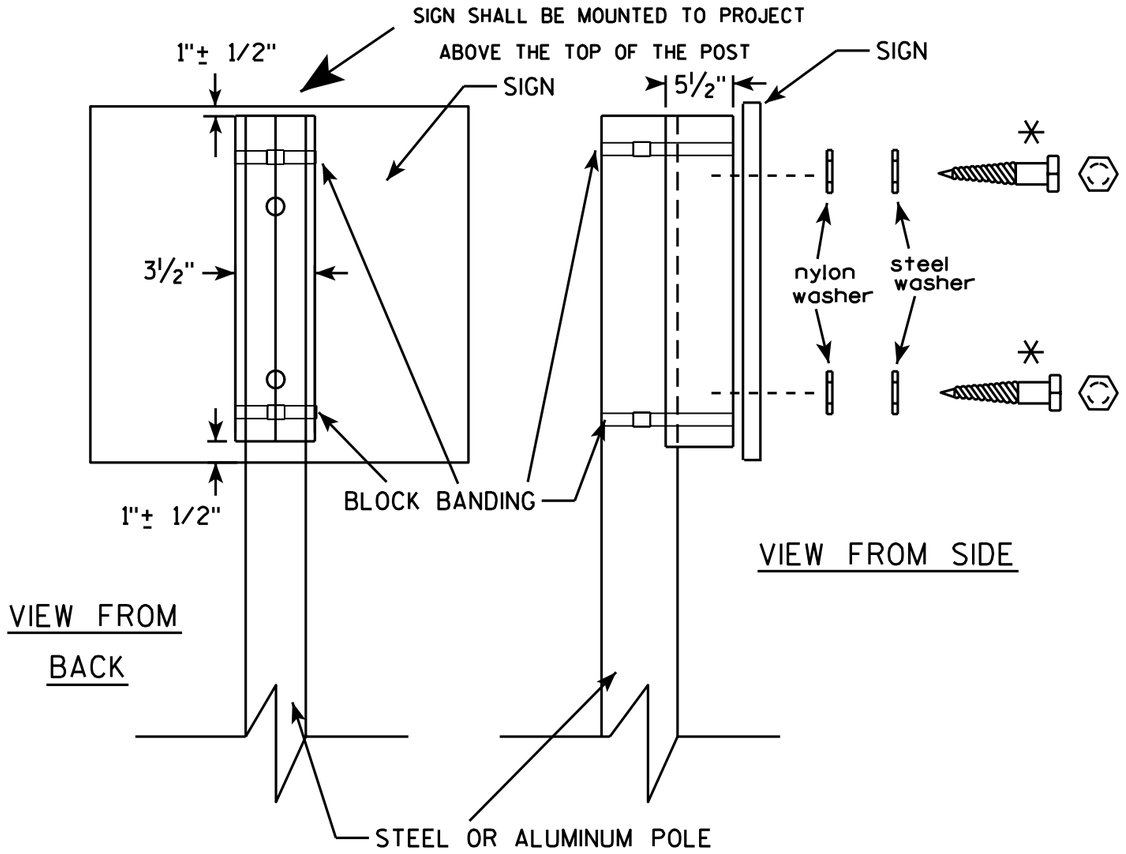
STANDARD SIGN
SIGN BANDING DETAILS

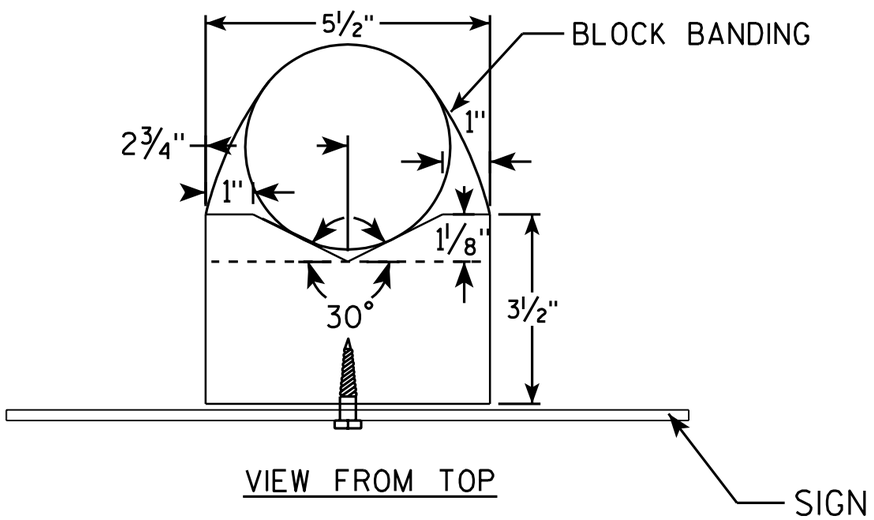
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 218	E





GENERAL NOTES

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

✳ LAG BOLTS SHALL BE ⅜" X 2½"

BLOCK BANDING DETAIL (V-BLOCK OPTION)

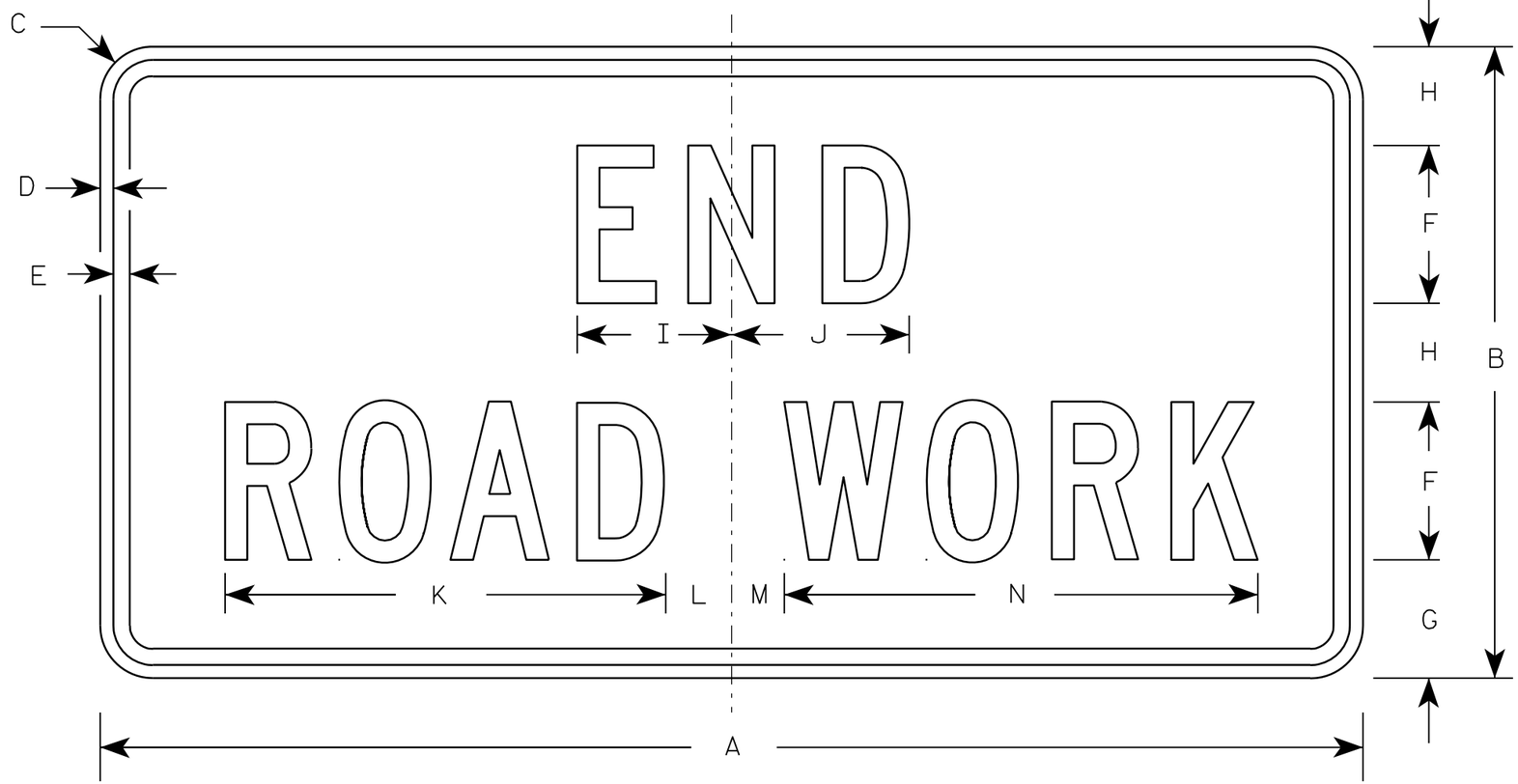
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:

SHEET NO: 219 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

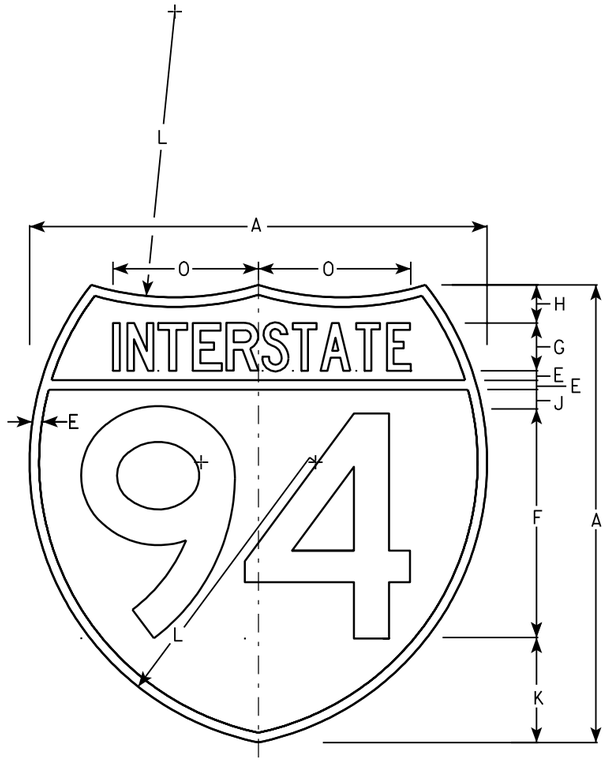
STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

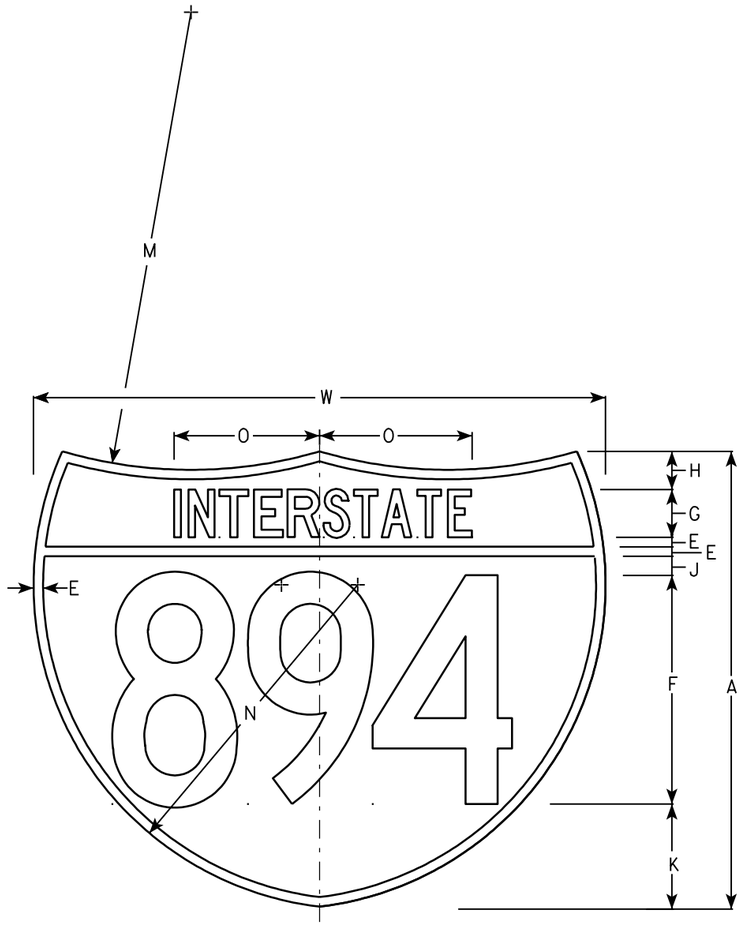
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 220	E



M1-1



M1-1A

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Top Red - Bottom Blue (See Note 6)
   Message - White - See Note 6
3. Message Series - See note 5
4. Substitute appropriate numerals & ajust spacing as per plate A10-1.
5. M1-1 - Numerals - D
   Interstate - C
   M1-1A - All copy - C
6. Permanent Signs
   Message - Type H Reflective
   Detour or other temporary signs
   Background - Reflective
   Message - Reflective

Metric equivalent for these signs are:

SIZE	M1-1	SIZE	M1-1A
1			
2	600 mm X 600 mm	2	600 mm X 750 mm
3	900 mm X 900 mm	3	900 mm X 1125 mm
4	900 mm X 900 mm	4	900 mm X 1125 mm
5	900 mm X 900 mm	5	900 mm X 1125 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	M1-1 Area sq. ft.	M1-1A Area sq. ft.	M1-1 Area m2	M1-1A Area m2
1																													
2	24				1/2	12	2 1/2	2		1	5 1/2	15	24	17	7 7/8								30			3.13	3.91	.36	.46
3	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05
4	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05
5	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05

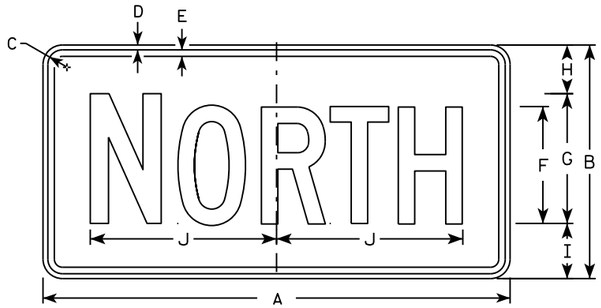
INTERSTATE ROUTE MARKER
M1-1 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

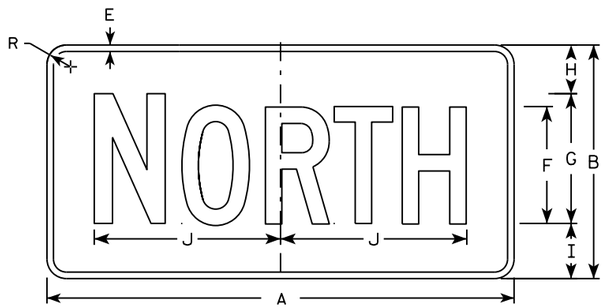
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 08/23/05 PLATE NO. M1-1.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 221	E



M3-1
MM3-1
MP3-1



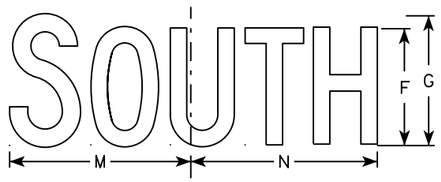
MB3-1
MK3-1
MN3-1



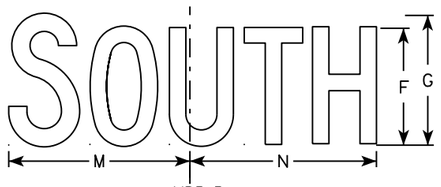
M3-2
MM3-2
MP3-2



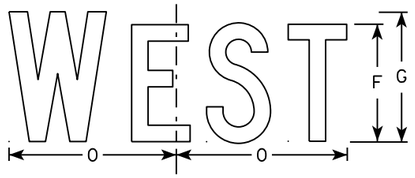
MB3-2
MK3-2
MN3-2



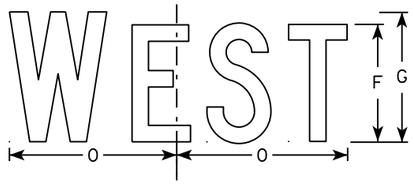
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

STANDARD SIGNS
M3-1 thur M3-4
SERIES

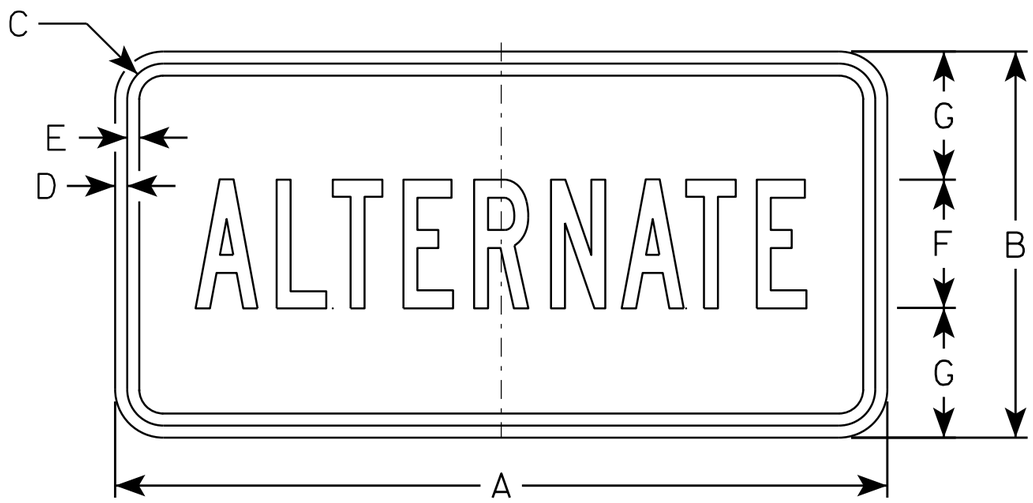
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew P Rauch for State Traffic Engineer

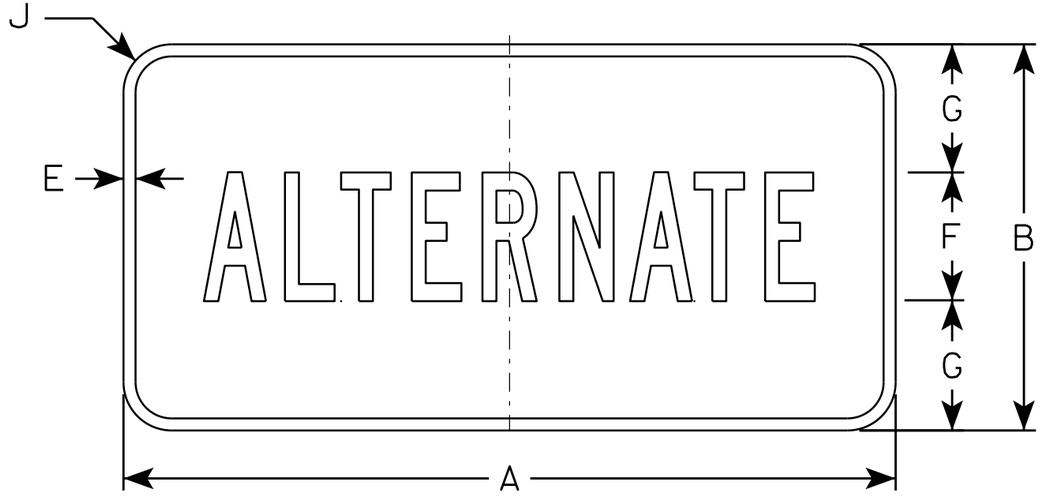
DATE 10/15/15 PLATE NO M3-1.14

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

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



M4-1
M04-1



MB4-1

NOTES

1. Sign is Type II - Type H except as Shown
2. Color:
   Background - See Note 5
   Message - See note 5
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.
5. M4-1 Background - White
   Message - Black

   MB4-1 Background - Blue
   Message - White

   M04-1 Background - Orange - Type F
   Message - Black

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	4	4	9 3/4	9 1/2	1 1/2																	2.00
3	36	18	1 1/8	3/8	1/2	7	5 1/2	16 3/8	16 1/2	1 1/2																	4.5
4	36	18	1 1/8	3/8	1/2	7	5 1/2	16 3/8	16 1/2	1 1/2																	4.5
5	36	18	1 1/8	3/8	1/2	7	5 1/2	16 3/8	16 1/2	1 1/2																	4.5

STANDARD SIGN
M4-1

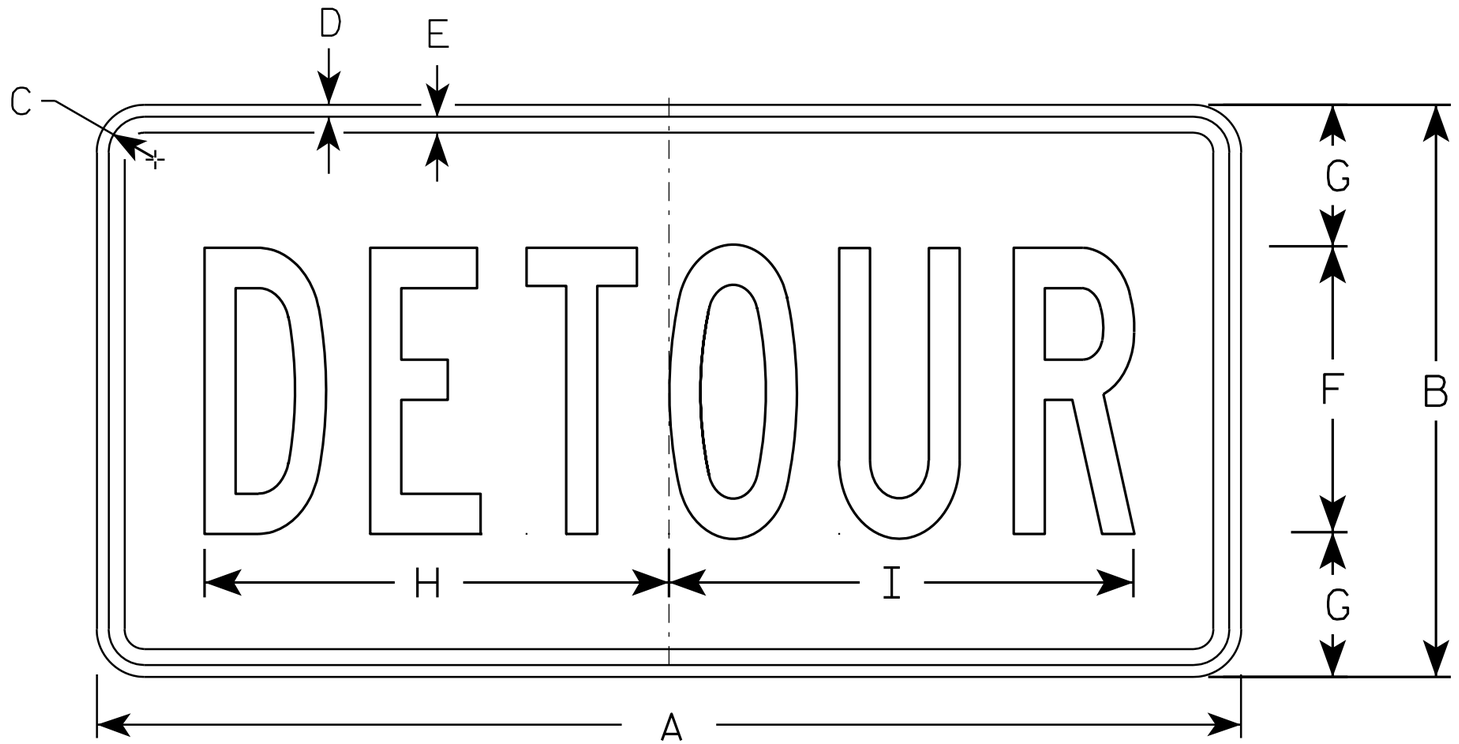
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/30/14 PLATE 14-1.8

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

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\M41.DGN PLOT DATE : 30-JUN-2014 15:38 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 4.708937:1.000000
WISDOT/CADDS SHEET 42



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																											

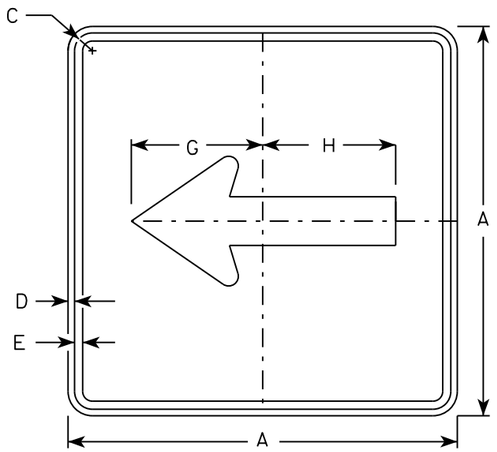
STANDARD SIGN
M4-8

WISCONSIN DEPT OF TRANSPORTATION

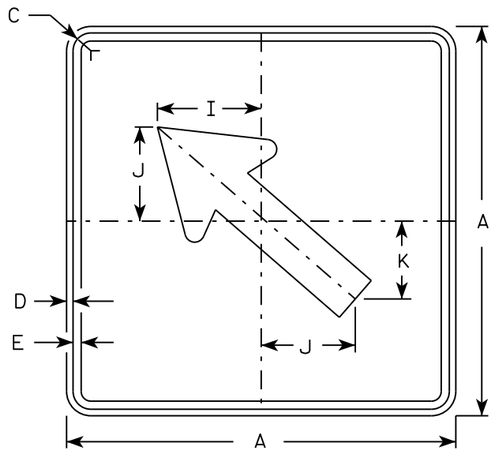
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 224	E



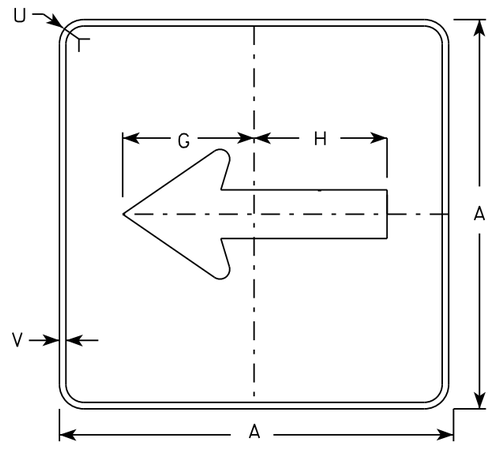
M6-1
MM6-1
MO6-1
MP6-1



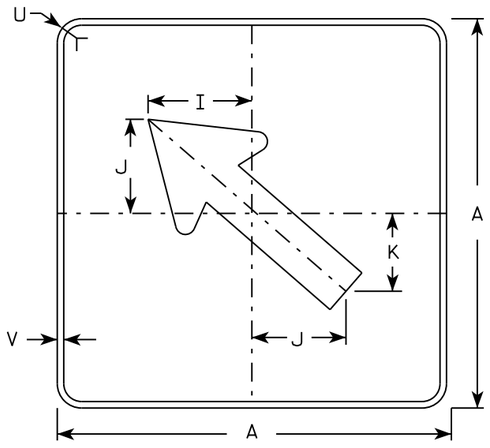
M6-2
MM6-2
MO6-2
MP6-2

NOTES

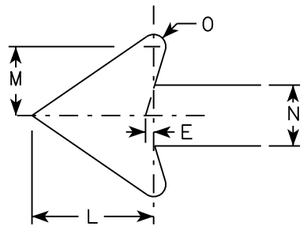
1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background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



MB6-2
MK6-2
MN6-2
MR6-2



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

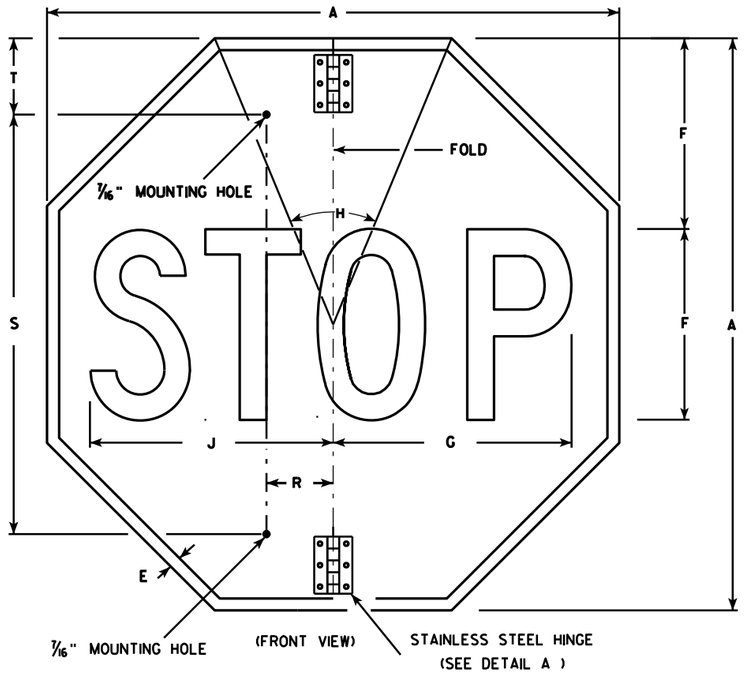
WISCONSIN DEPT OF TRANSPORTATION

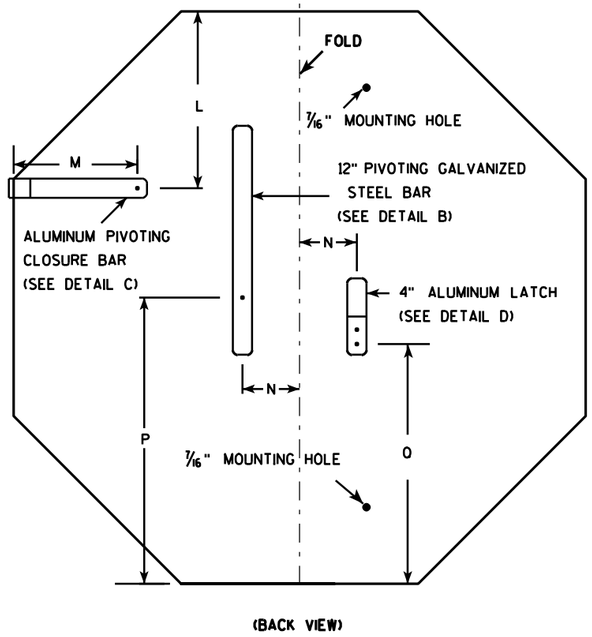
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/15/15 PLATI 225 M6-1.15

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

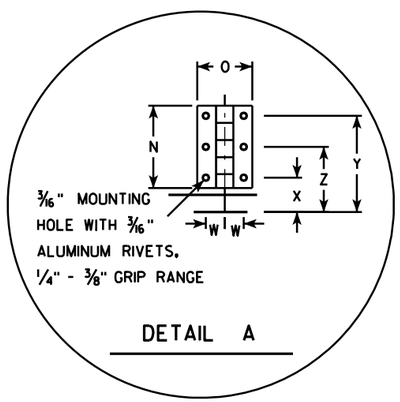
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M61.DGN PLOT DATE : 01-DEC-2015 17:57 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000



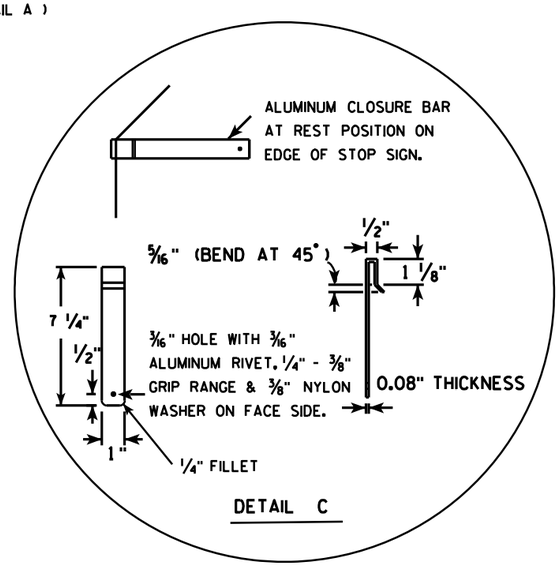


NOTES

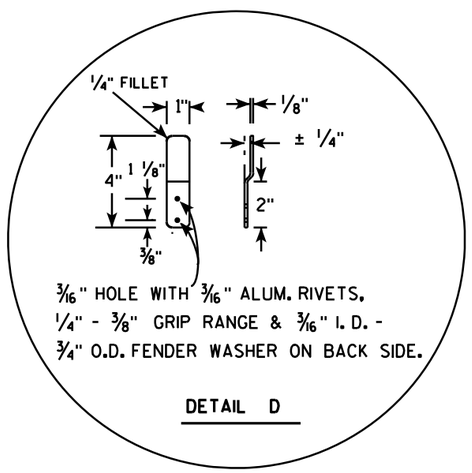
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
   Message - White
3. Message Series - C
4. All hardware used on the folding STOP sign installation shall conform to 637.2.4 of the WIS DOT Standard Specification.



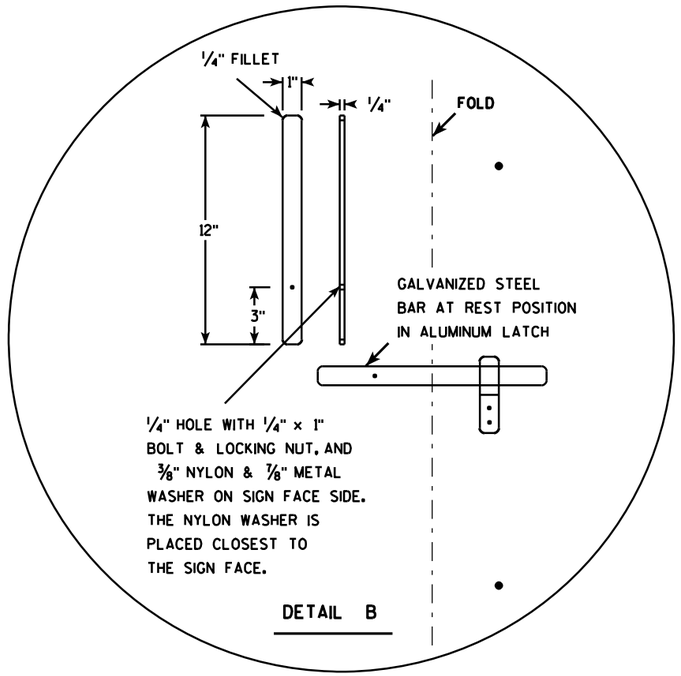
DETAIL A



DETAIL C



DETAIL D



DETAIL B

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30				5/8	10	12 1/2	45		12 3/4		9 1/4	6 1/2	3	2	15	12 3/8	2 1/2	22	5			11/16	1 1/4	3 1/2	2 3/8	5.18
2M	36				3/4	12	15	45		15 3/8		11	6 1/2	3	2	18	15 3/8	2 1/2	26	5			11/16	1 1/4	3 1/2	2 3/8	7.46
3	36				3/4	12	15	45		15 3/8		11	6 1/2	3	2	18	15 3/8	2 1/2	26	5			11/16	1 1/4	3 1/2	2 3/8	7.46
4																											
5																											

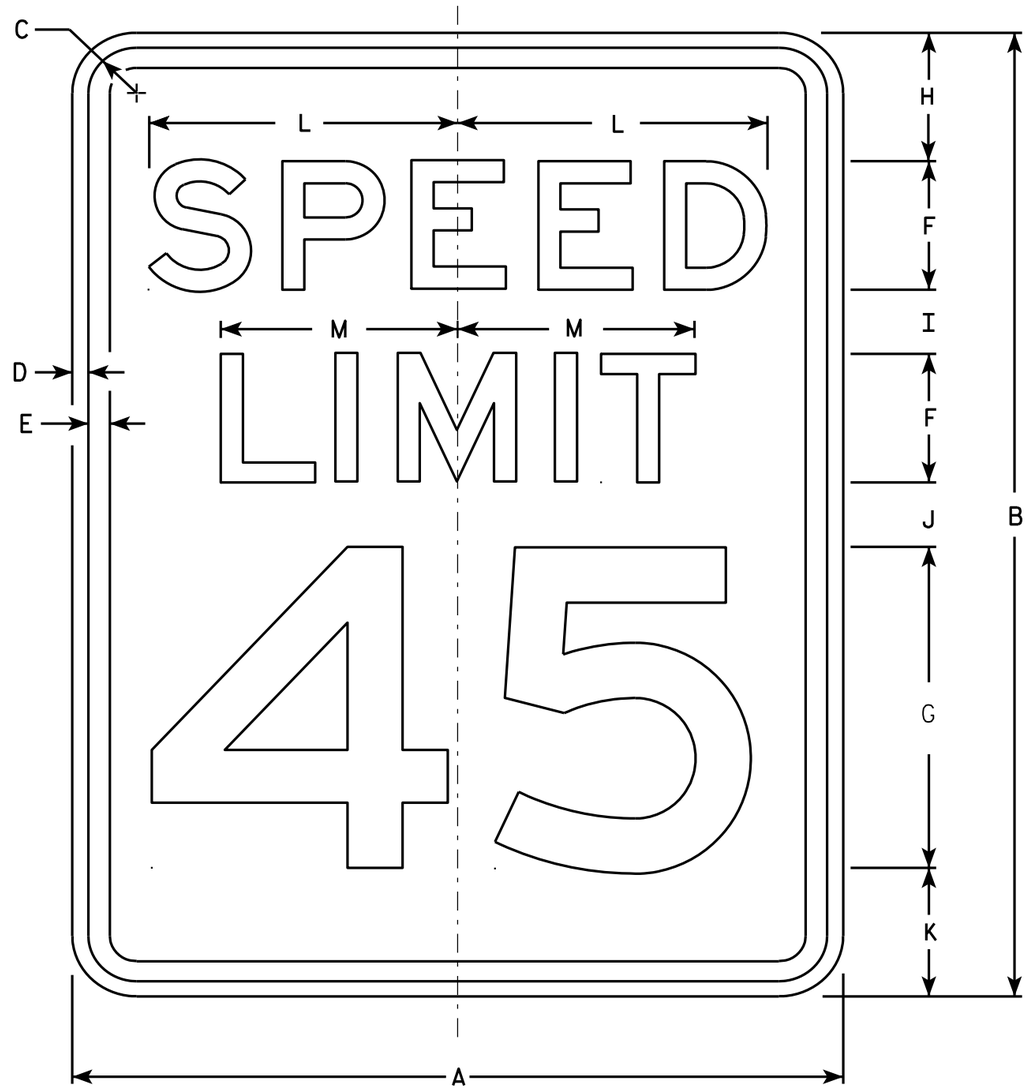
STANDARD SIGN
R1-1F

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1F.3

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 226 | E



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

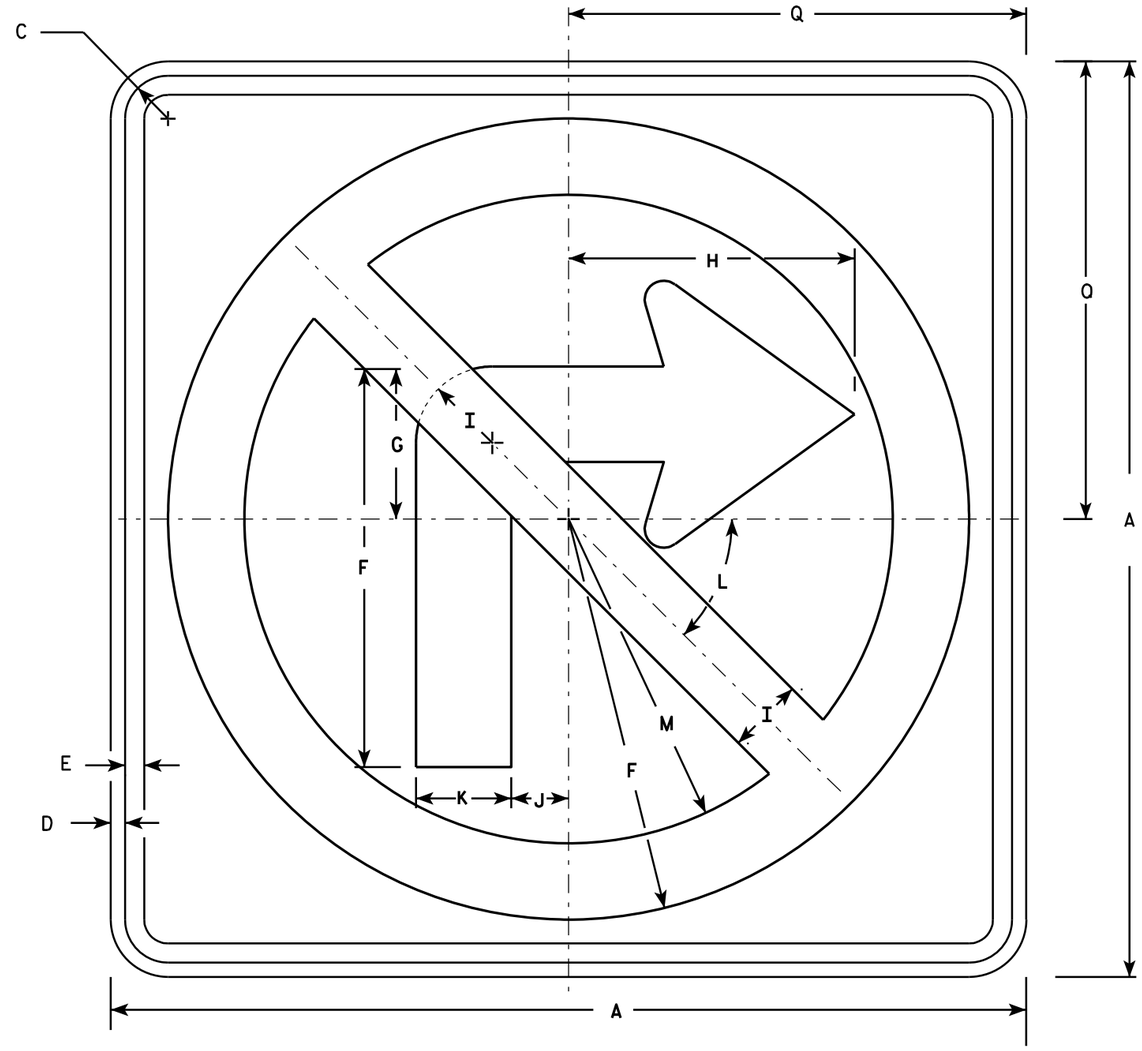
STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

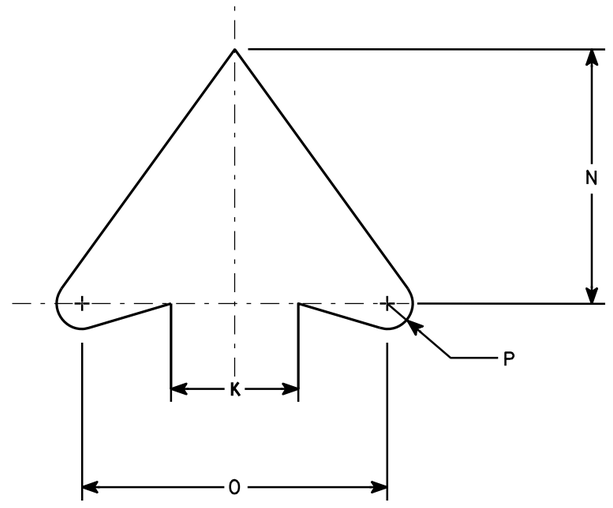
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 227 | E



R3-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45	8 1/2	5	6	1/2	12										4.0
2S	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2	12										4.0
2M	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
3	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
4	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4	18										9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1	24										16.0

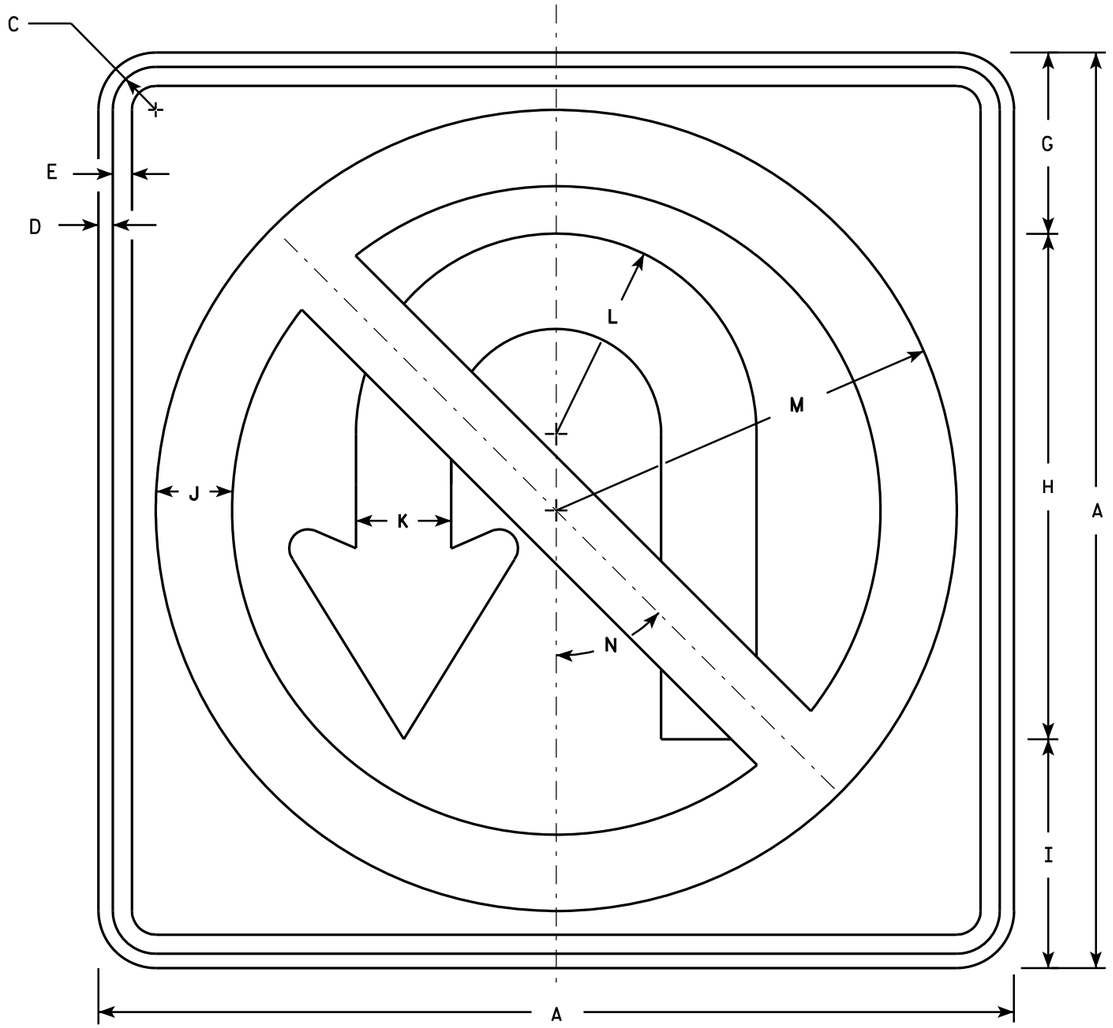
STANDARD SIGN
R3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

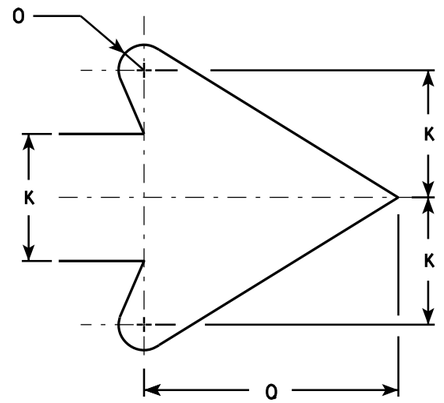
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 228	E



R3-4

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24		1 1/8	3/8	1/2		4 3/4	13 1/4	6	2	2 1/2	5 1/4	10 1/2	45°	1/2		5										4.0
2M	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8										9.0
3	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8										9.0
4	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8										9.0
5	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8										9.0

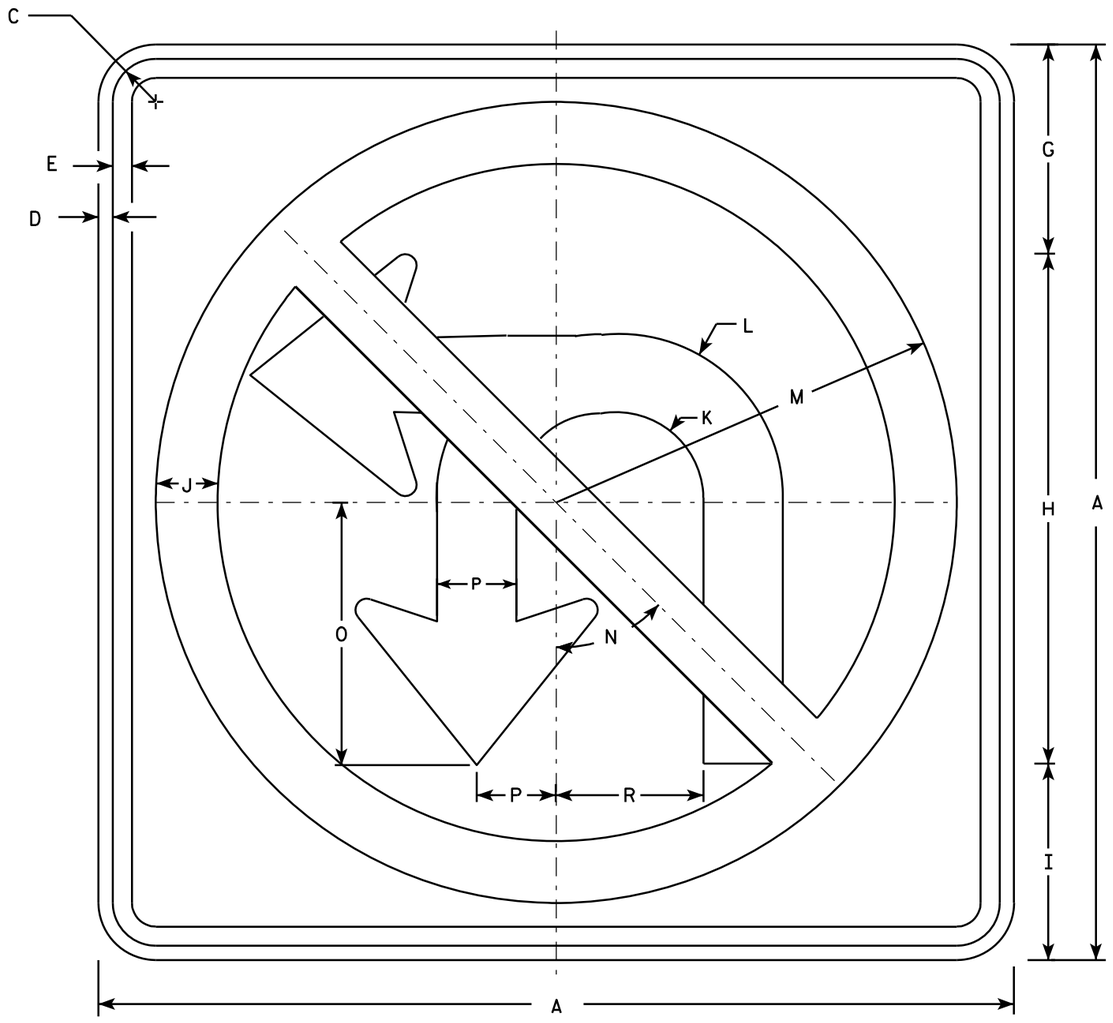
STANDARD SIGN
R3-4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-4.11

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 229	E



R3-18

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.

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		1 1/8	3/8	1/2		5 1/2	13 3/8	5 1/8	1 5/8	2 1/4	4 1/4	10 1/2	45°	6 7/8	2 1/8		3 7/8									4.0
2M	36		1 5/8	5/8	3/4		8 1/4	20	7 3/4	2 1/2	3 3/8	6 1/2	15 3/4	45°	10 3/8	3 1/8		5 3/4									9.0
3	36		1 5/8	5/8	3/4		8 1/4	20	7 3/4	2 1/2	3 3/8	6 1/2	15 3/4	45	10 3/8	3 1/8		5 3/4									9.0
4	36		1 5/8	5/8	3/4		8 1/4	20	7 3/4	2 1/2	3 3/8	6 1/2	15 3/4	45	10 3/8	3 1/8		5 3/4									9.0
5	48		2 1/4	3/4	1		11	26 3/4	10 1/4	3 1/4	4 5/8	8 5/8	21	45°	13 3/4	4 1/8		7 3/4									16.0

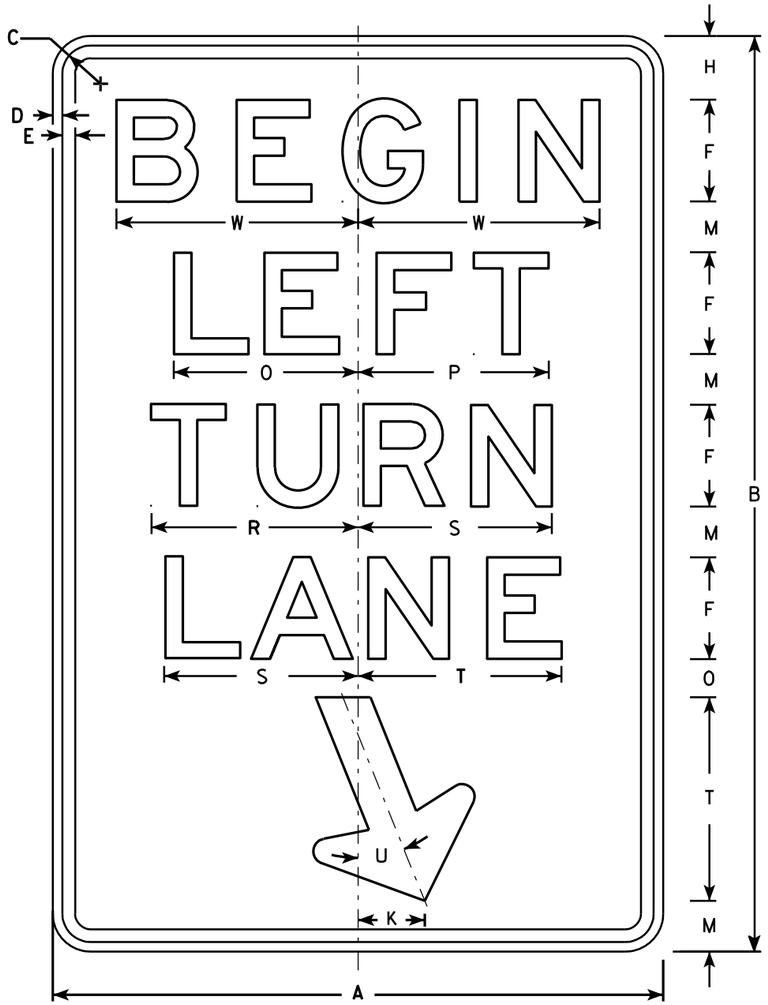
STANDARD SIGN
R3-18

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/21/10 PLATE NO. R3-18.2

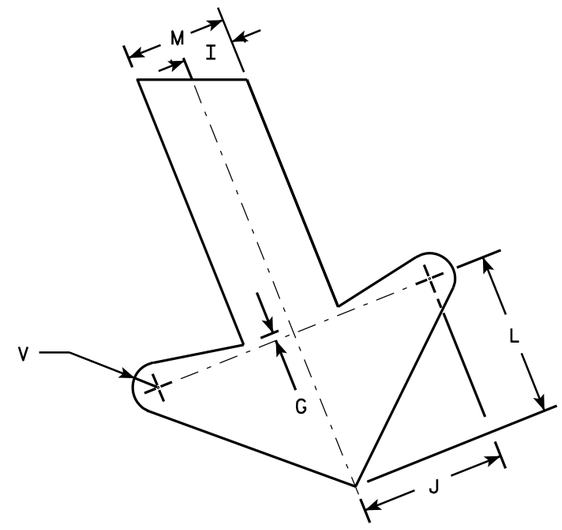
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 230	E



R3-20L

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	7 1/4	7 1/2		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	7 1/4	7 1/2		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	10 7/8	11 1/4		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5
4																											
5																											

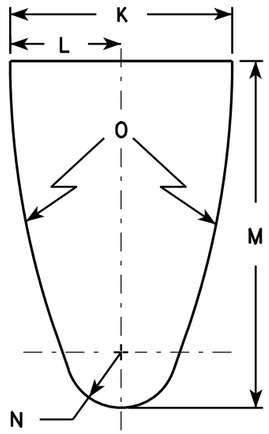
STANDARD SIGN
R3-20L

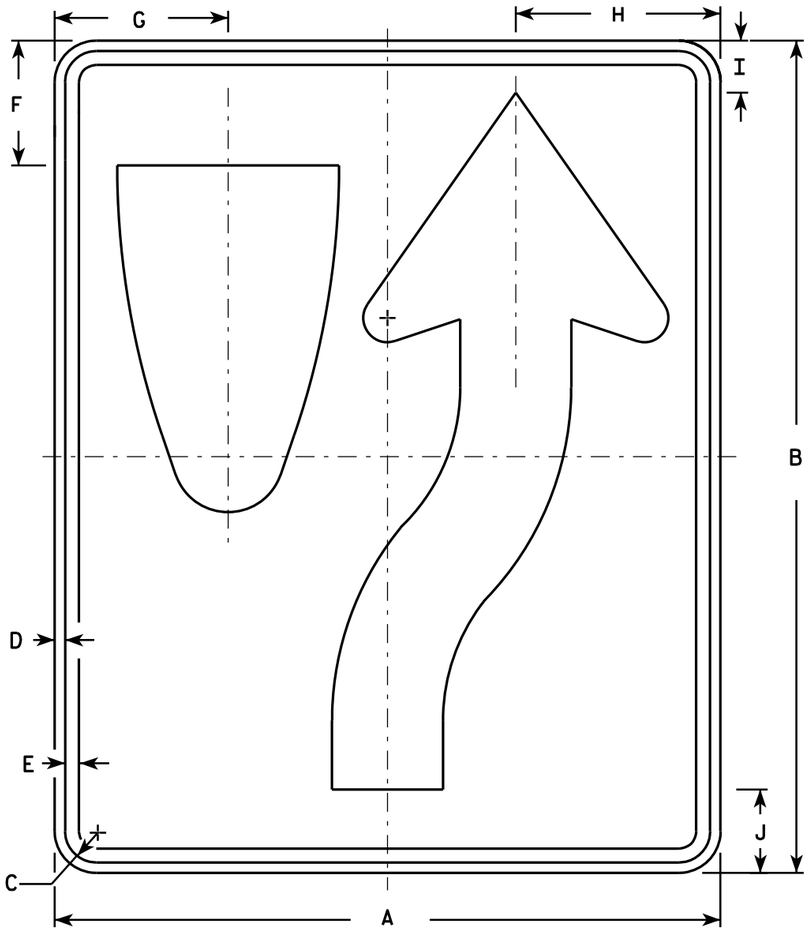
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/18/10 PLATE NO. R3-20L.7

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 231 | E

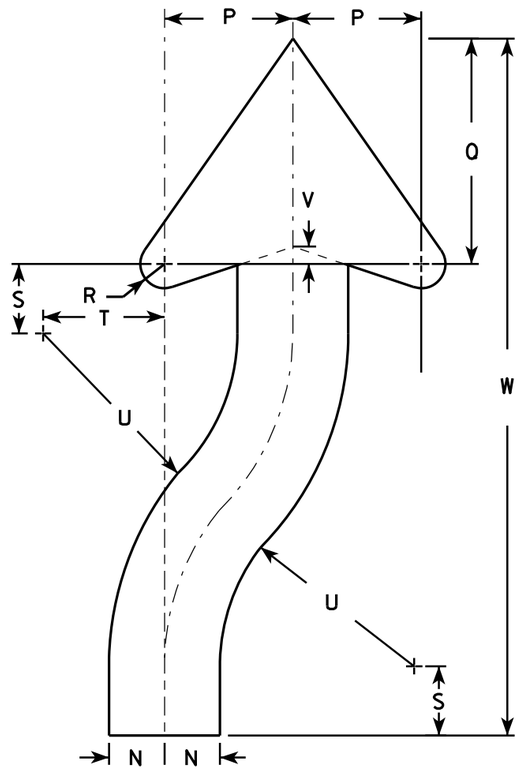




R4-7

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition. material is plywood but borders shall be rounded
2. Color:
   Background - White
   Message - Black
3. Corners may be square or rounded when base as shown. When base material is metal, the corners and borders shall be rounded.
4. R4-8 is the same as R4-7 except Legend is reversed.



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	18	24	1 1/8	3/8	1/2	3 3/8	4 3/4	5 1/2	1 3/8	2 1/4	6	3	9 3/8	1 1/2	22 1/2	3 1/2	6 1/8	5/8	1 7/8	3 1/4	6 3/4	1/2	20 3/8				3.0
2S	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
2M	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
3	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
4	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
5	48	60	2 1/4	3/4	1	9	12 1/2	14 3/4	3 3/4	6	16	8	25	4	60	9 1/4	16 1/4	1 5/8	5	8 3/4	18	1 1/4	50 1/4				20.0

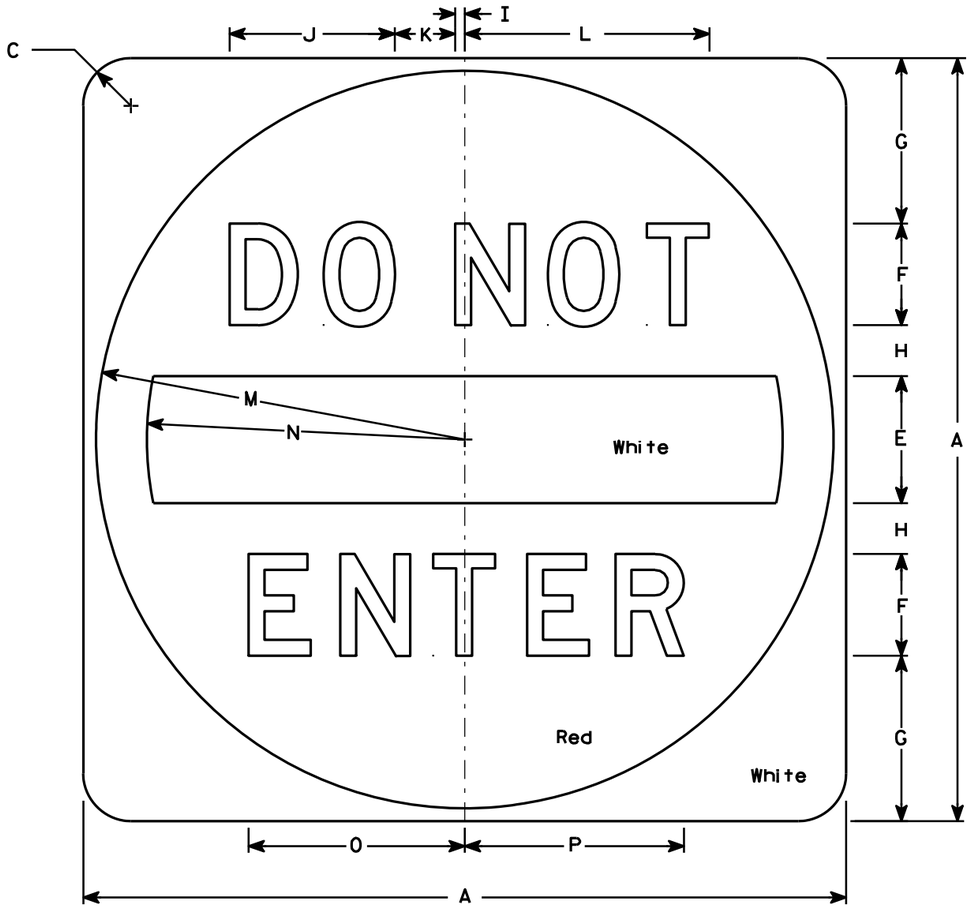
STANDARD SIGN
R4-7 & R4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-7.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 232	E



R5-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See detail
   Message - White - Type H Reflective
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but when base material is metal, the cornors 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	30		1 7/8		5	4	6 1/2	2	3/8	6 1/2	2 3/8	9 5/8	14 1/2	12 1/2	8 1/2	8 5/8											6.26
2M	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
3	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
4	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
5	48		3		8	6	11	3	5/8	9 3/4	3 5/8	14 1/2	23 1/2	20	12 3/4	12 7/8											16.0

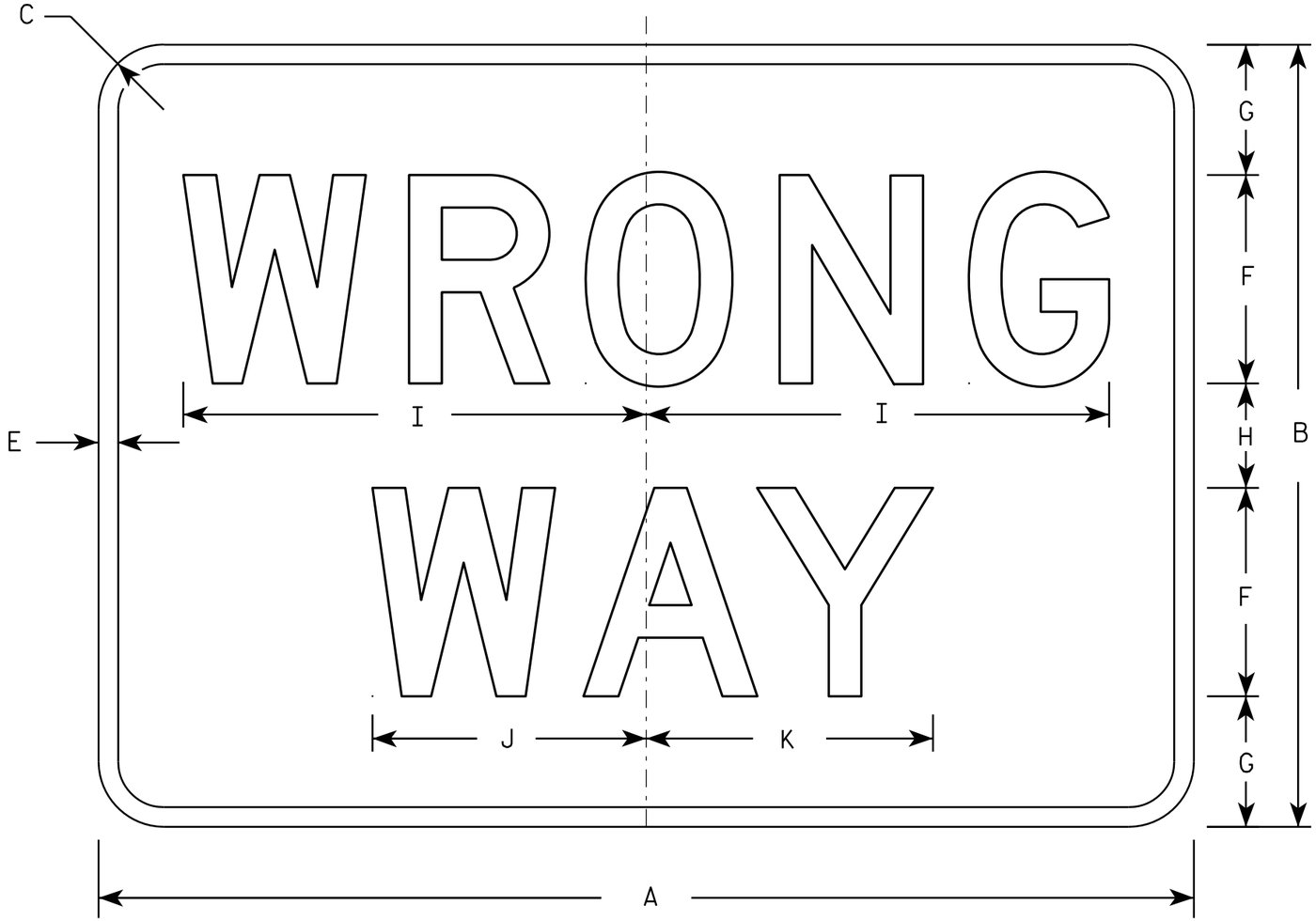
STANDARD SIGN
R5-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/17/10 PLATE NO. R5-1.15

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 233 | E



R5-1A

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
   Message - White
3. Message Series - 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	30	18	1 1/2		1/2	5	3	2	11	6 1/2	6 7/8																3.75
2S	36	24	2		5/8	6	4 1/2	3	13 1/4	7 7/8	8 1/4																6.00
2M	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
3	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
4	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
5	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75

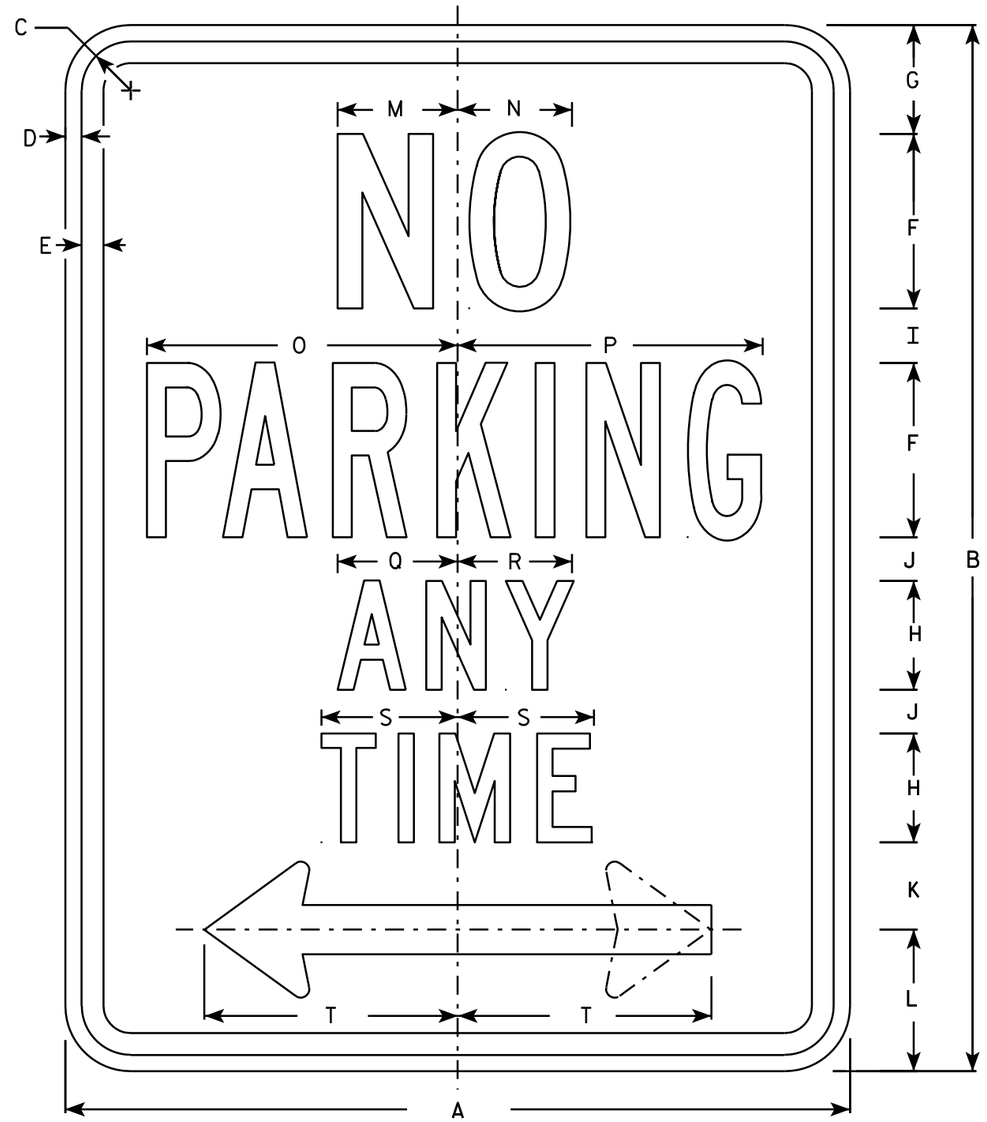
STANDARD SIGN
R5-1A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/17/10 PLATE NO. R5-1A.2

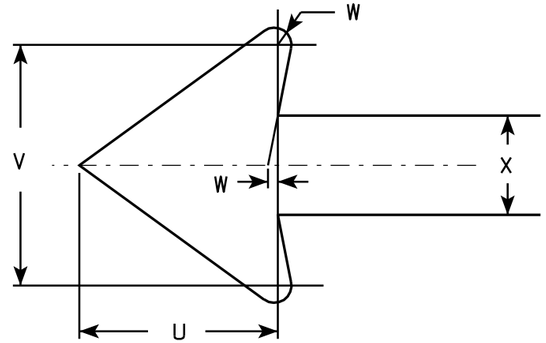
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 234 | E



R7-1

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 - Red
3. Message Series - See Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1, 3 and 4 are series C, line 2 is series B.
6. R7-1D (double arrow)
   R7-1L (left arrow)
   R7-1R (right arrow)



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	12	18	1 1/8	3/8	3/8	3	1 7/8	2	7/8	5/8	1 1/2	2 1/2	2	2	4 7/8	4 7/8	2 1/4	2 1/8	2 1/2	3 7/8	1 1/2	1 3/4	1/8	3/4			1.5
2S	18	24	1 1/8	3/8	1/2	4	2 1/2	2 1/2	1 1/4	1	2	3 1/4	2 3/4	2 5/8	7 1/8	7	2 3/4	2 5/8	3 1/8	5 7/8	2 1/4	2 5/8	1/4	1 1/8			3.0
2M	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
3	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
4																											
5																											

STANDARD SIGN
R7-1

WISCONSIN DEPT OF TRANSPORTATION

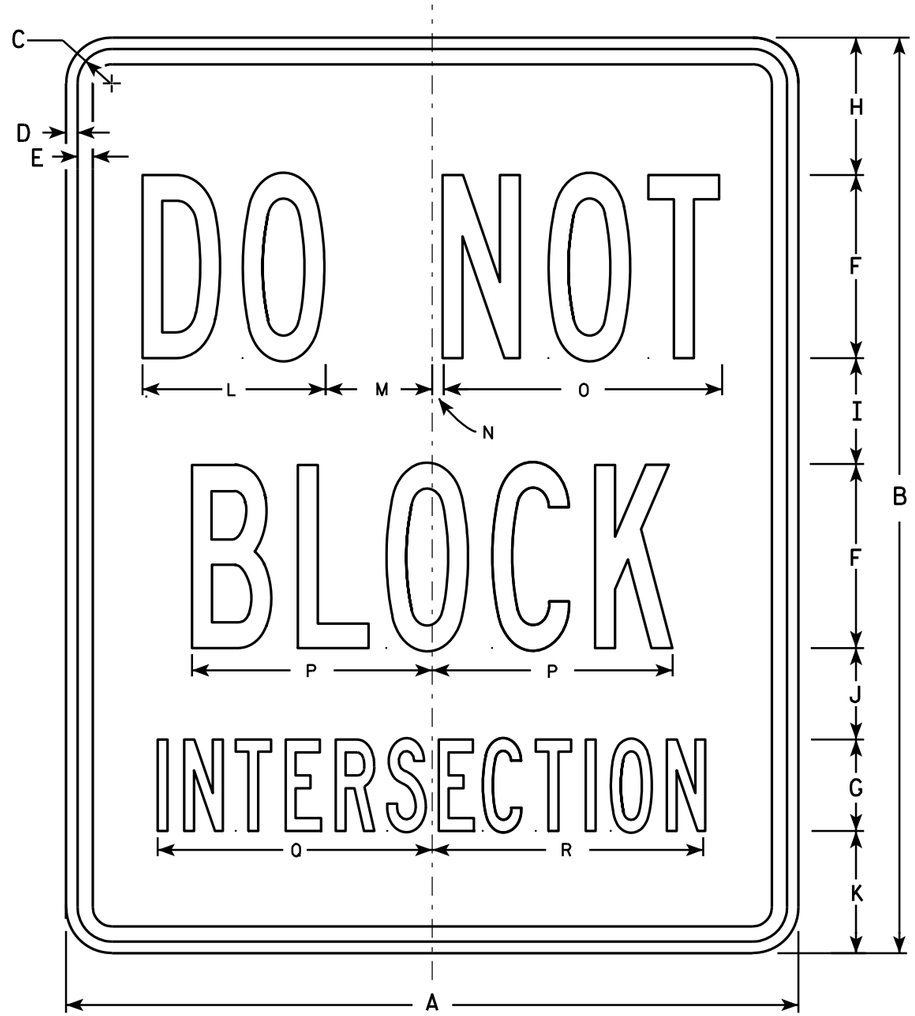
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R7-1.9

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 235 | E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R71.DGN PLOT DATE : 31-MAR-2011 09:20 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 3.476110:1.000000

WISDOT/CADDS SHEET 42



R10-7

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 - 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																											
2S	24	30	1 1/8	3/8	1/2	6	3	4 1/2	3 1/2	3	4	6	3 1/2	3/8	9 1/8	7 7/8	9	8 7/8									5.0
2M	24	30	1 1/8	3/8	1/2	6	3	4 1/2	3 1/2	3	4	6	3 1/2	3/8	9 1/8	7 7/8	9	8 7/8									5.0
3	36	48	1 3/8	1/2	5/8	10	5	7	5 1/4	4 1/2	6 1/4	10	5 5/8	1/2	15 1/8	13 1/8	15	14 7/8									12.0
4																											
5																											

STANDARD SIGN
R10-7

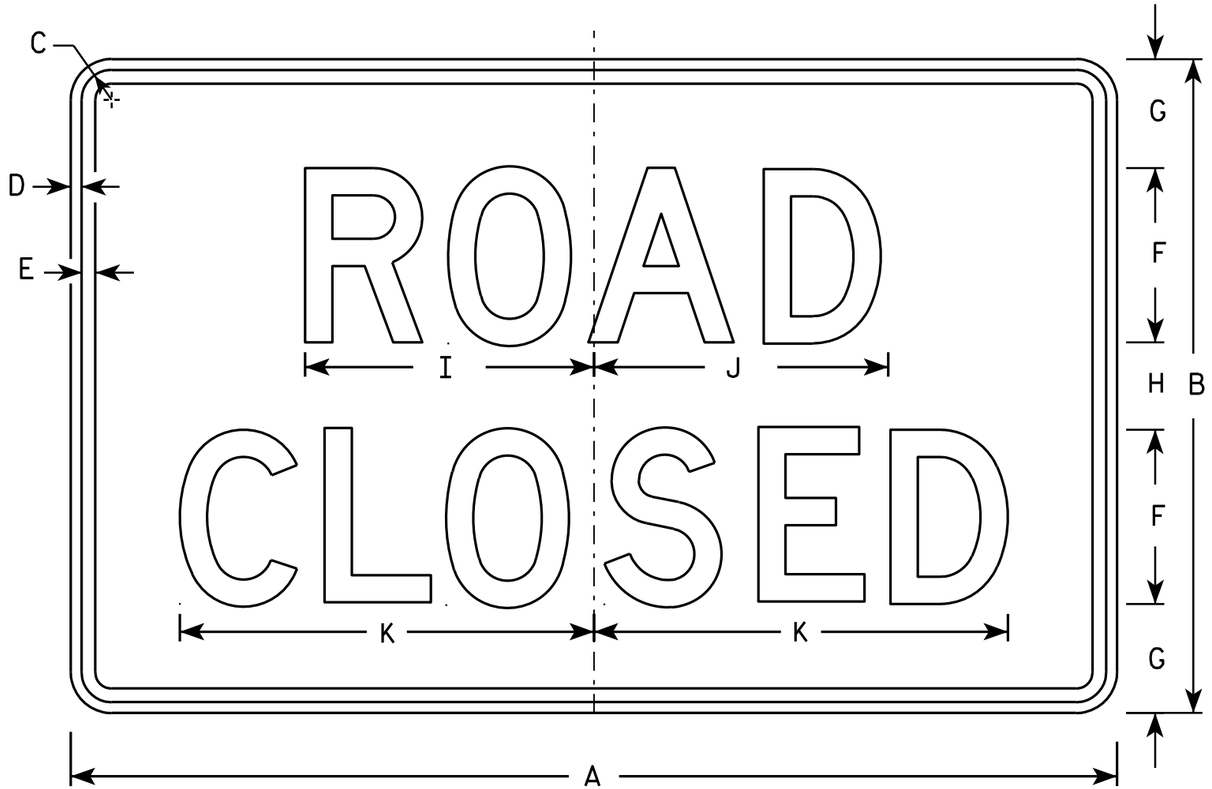
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/5/11 PLATE NO. R10-7.5

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 236 | E

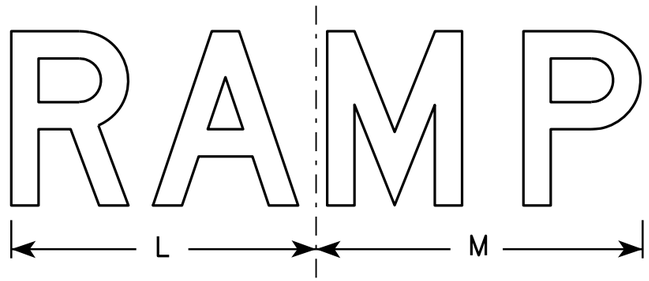
7



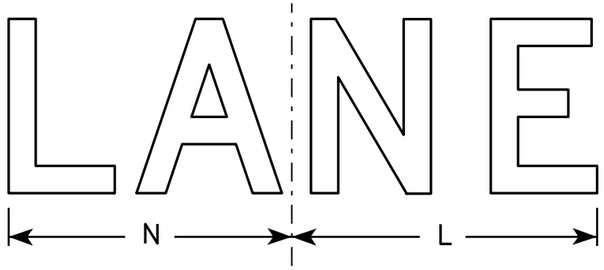
R11-2

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

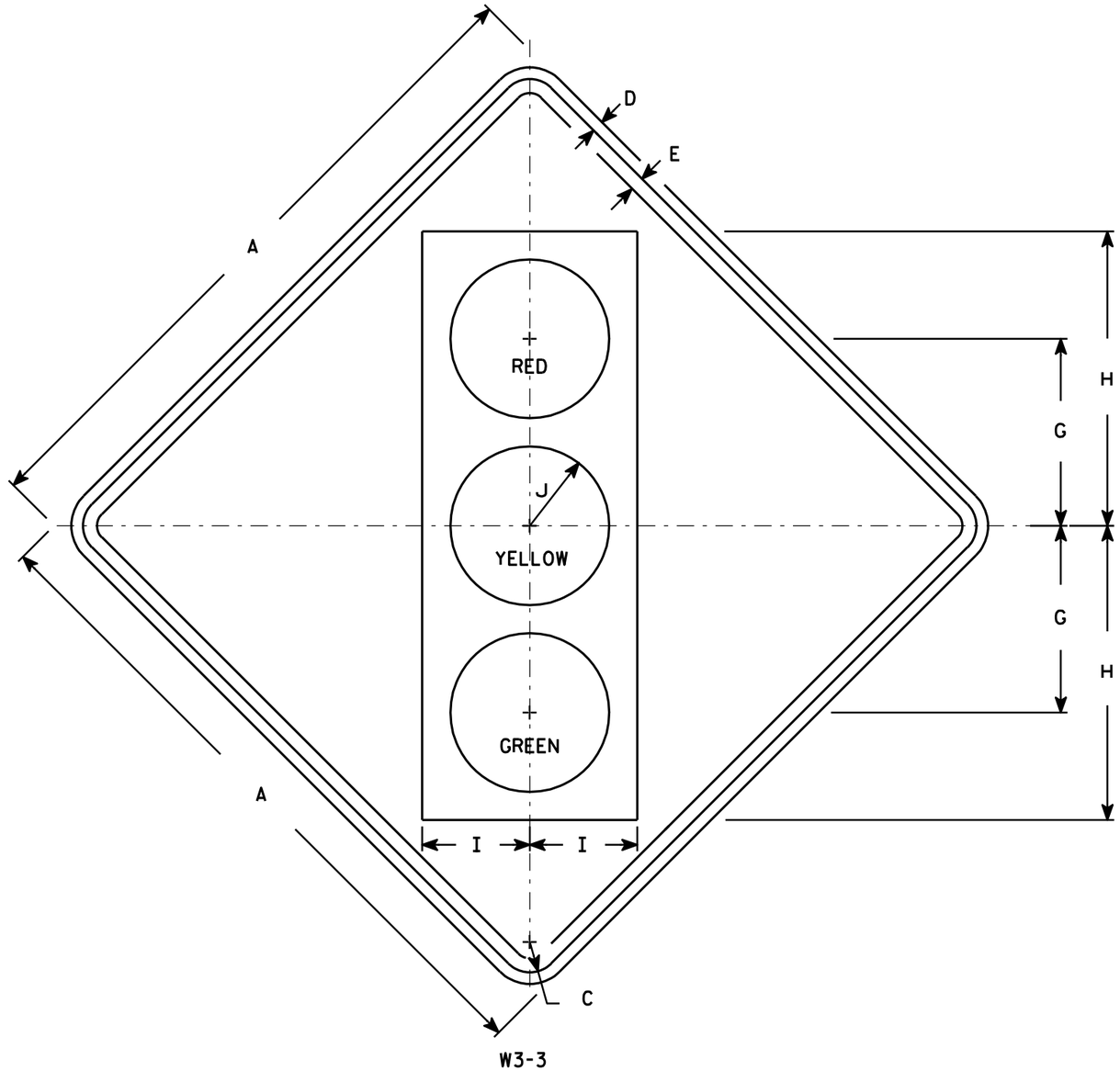
STANDARD SIGN
R11-2

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: 237 | 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 - See Note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Symbol and border are non-reflective black.
   Top circle - Type H Reflectorized Red
   Center circle - Same as background
   Bottom circle - Type H Reflectorized Green

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8		8 3/4	13 3/4	5	3 3/4																	6.25
2S	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
2M	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
3	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
4	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0
5	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0

STANDARD SIGN
W3-3

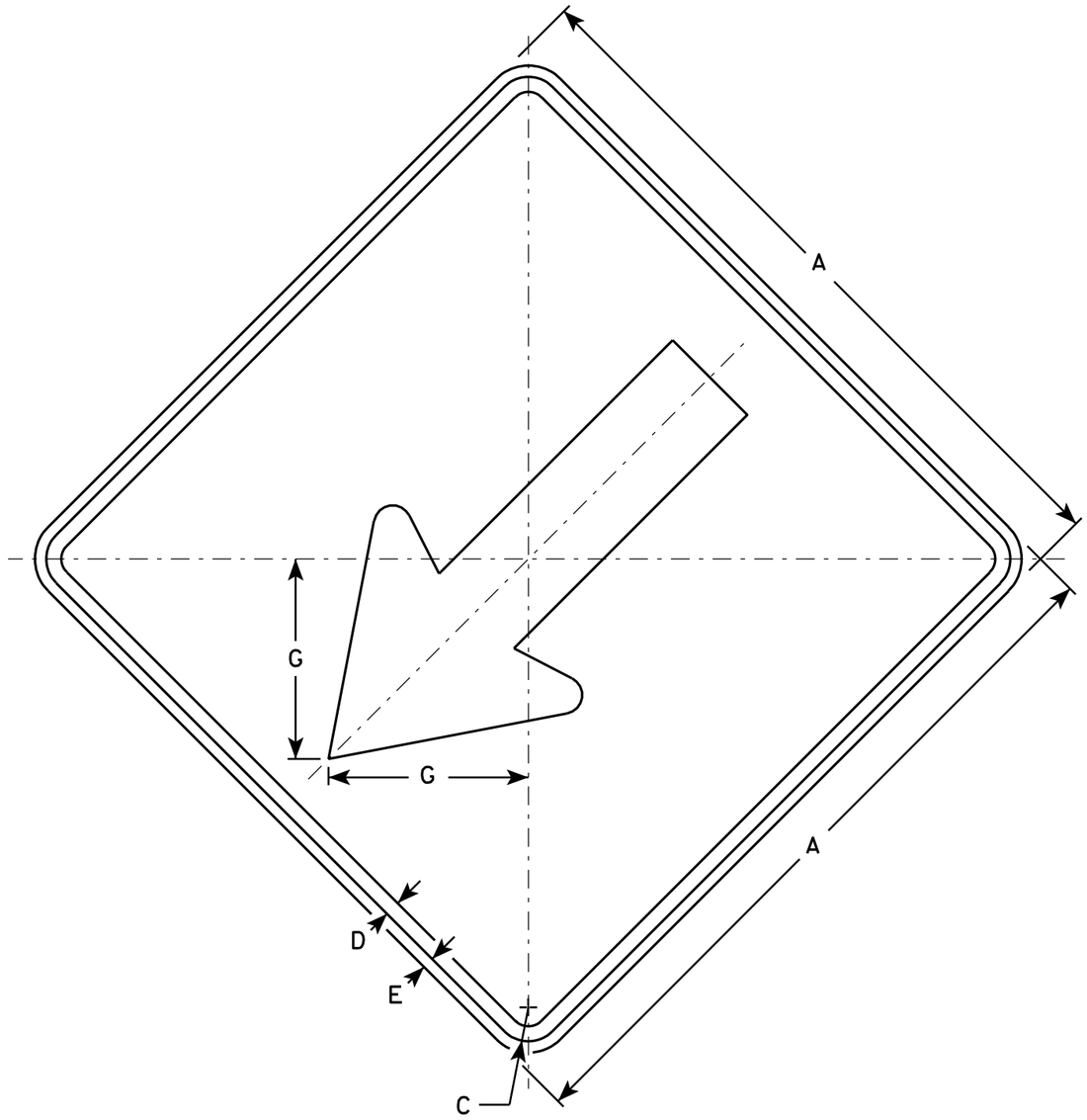
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W3-3.11

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 238 | E

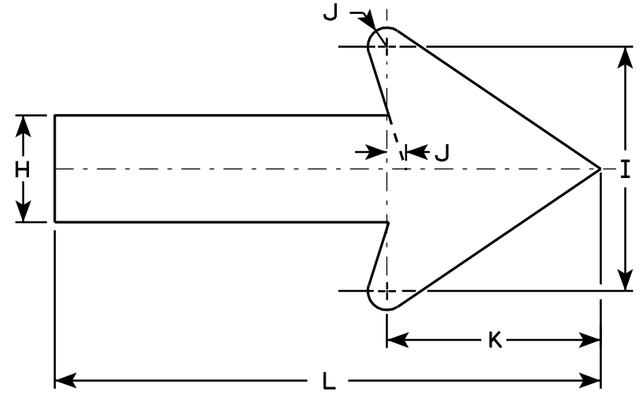
FILE NAME : C:\Users\PROJECTS\tr_stdplate\W33.DGN PLOT DATE : 07-JUN-2010 13:07 PLOT BY : ditjph PLOT NAME : PLOT SCALE : 7.448805:1.000000
WISDOT/CADDS SHEET 42



W12-1

NOTES

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



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		1 1/8	1/2	3/8		6 5/8	3 1/2	8	5/8	7	18															4
2M	24		1 1/8	1/2	3/8		6 5/8	3 1/2	8	5/8	7	18															4
3	30		1 3/8	5/8	1/2		8 1/4	4 3/8	10	3/4	8 3/4	22 3/8															6.25
4	36		1 3/4	3/4	5/8		10 3/8	5 1/2	12 1/2	1	11	27 7/8															9.0
5	48		2 1/4	3/4	1		12 1/2	6 5/8	15	1 1/4	13 1/4	33 1/2															16

STANDARD SIGN
W12-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/13/13 PLATE NO. W12-1.12

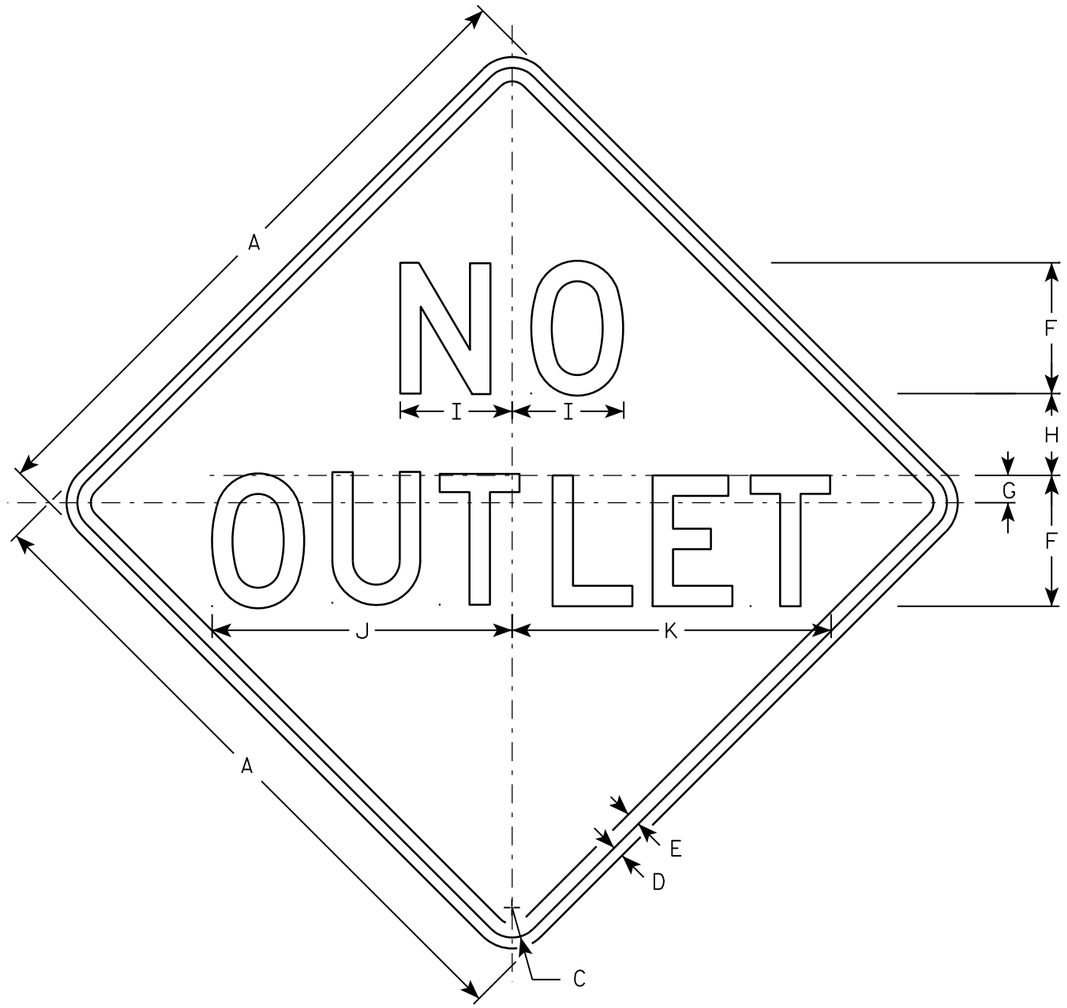
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 239	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W121.DGN PLOT DATE : 13-MAR-2013 13:26 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 4.961899:1.000000

WISDOT/CADDS SHEET 42

7

7



W14-2

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	24		1 1/8	3/8	1/2	5	1	2 3/4	4 1/8	11 3/4	12 3/8																4.0
2S	30		1 3/8	1/2	5/8	6	1 1/4	3 3/4	5 1/8	13 3/4	14 5/8																6.25
2M	30		1 3/8	1/2	5/8	6	1 1/4	3 3/4	5 1/8	13 3/4	14 5/8																6.25
3	36		1 5/8	5/8	3/4	7	1 3/8	4 5/8	6	16 1/8	17 1/8																9.0
4																											
5																											

STANDARD SIGN
W14-2

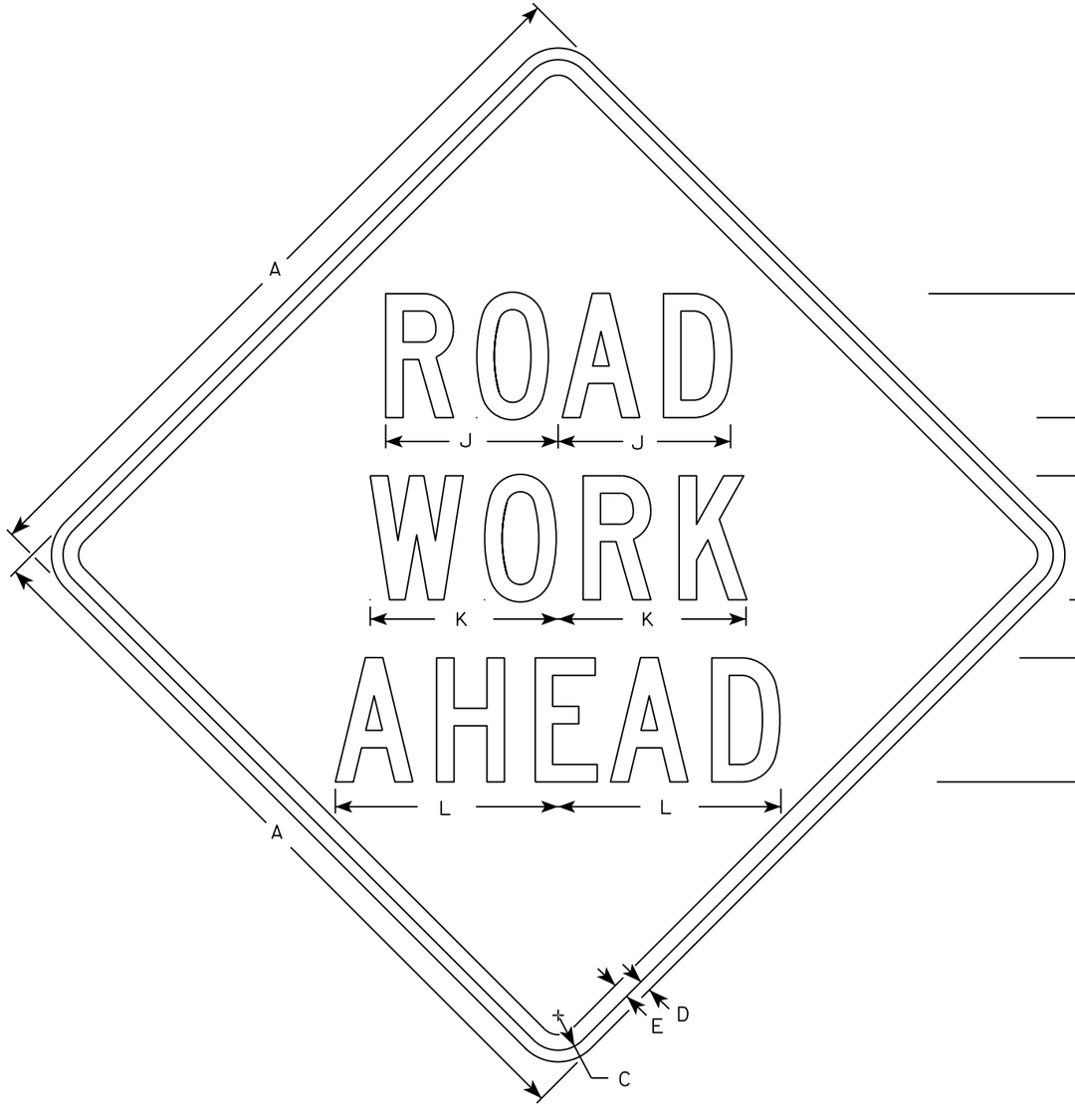
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

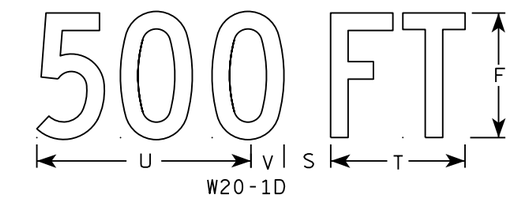
DATE 3/13/13 PLATE NO. W14-2.3

PROJECT NO:

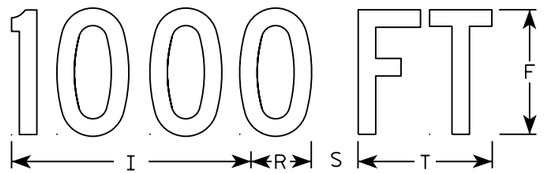
SHEET NO: 240 E



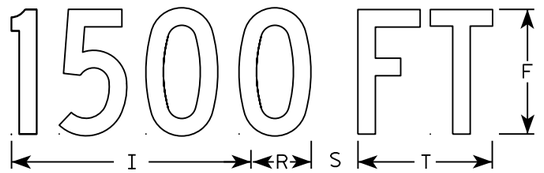
W20-1A



W20-1D



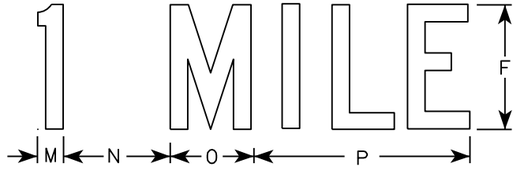
W20-1C



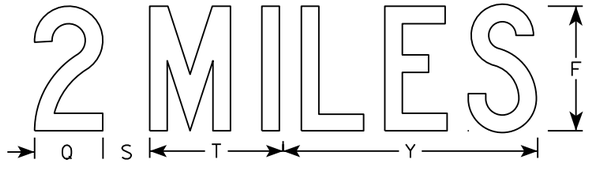
W20-1B



W20-1G



W20-1F



W20-1E

NOTES

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

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

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

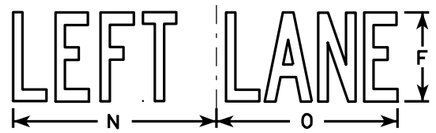
PROJECT NO:

SHEET NO: E

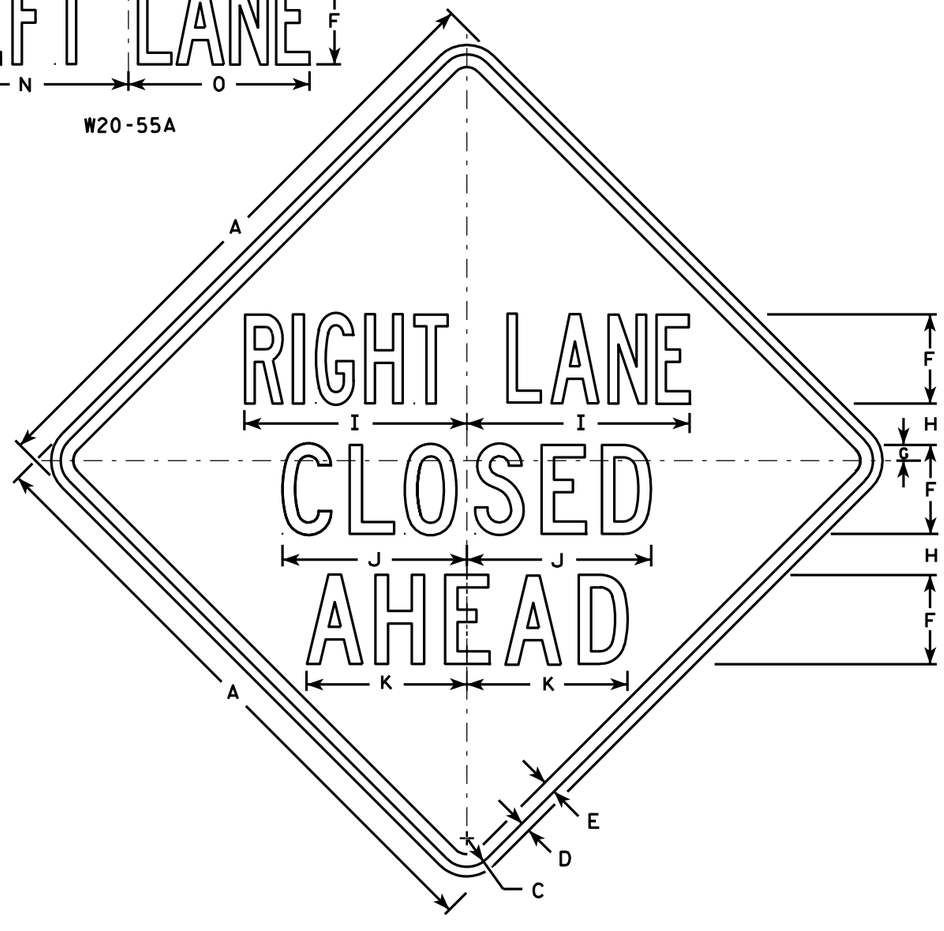
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W201.DGN PLOT DATE : 01-DEC-2015 18:24 PLOT BY : $$ plotuser $$



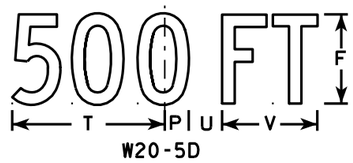
W20-56A



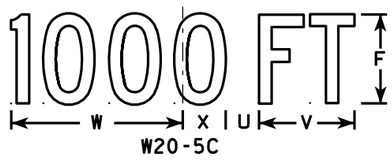
W20-55A



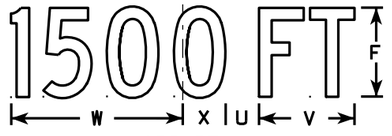
W20-5A



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

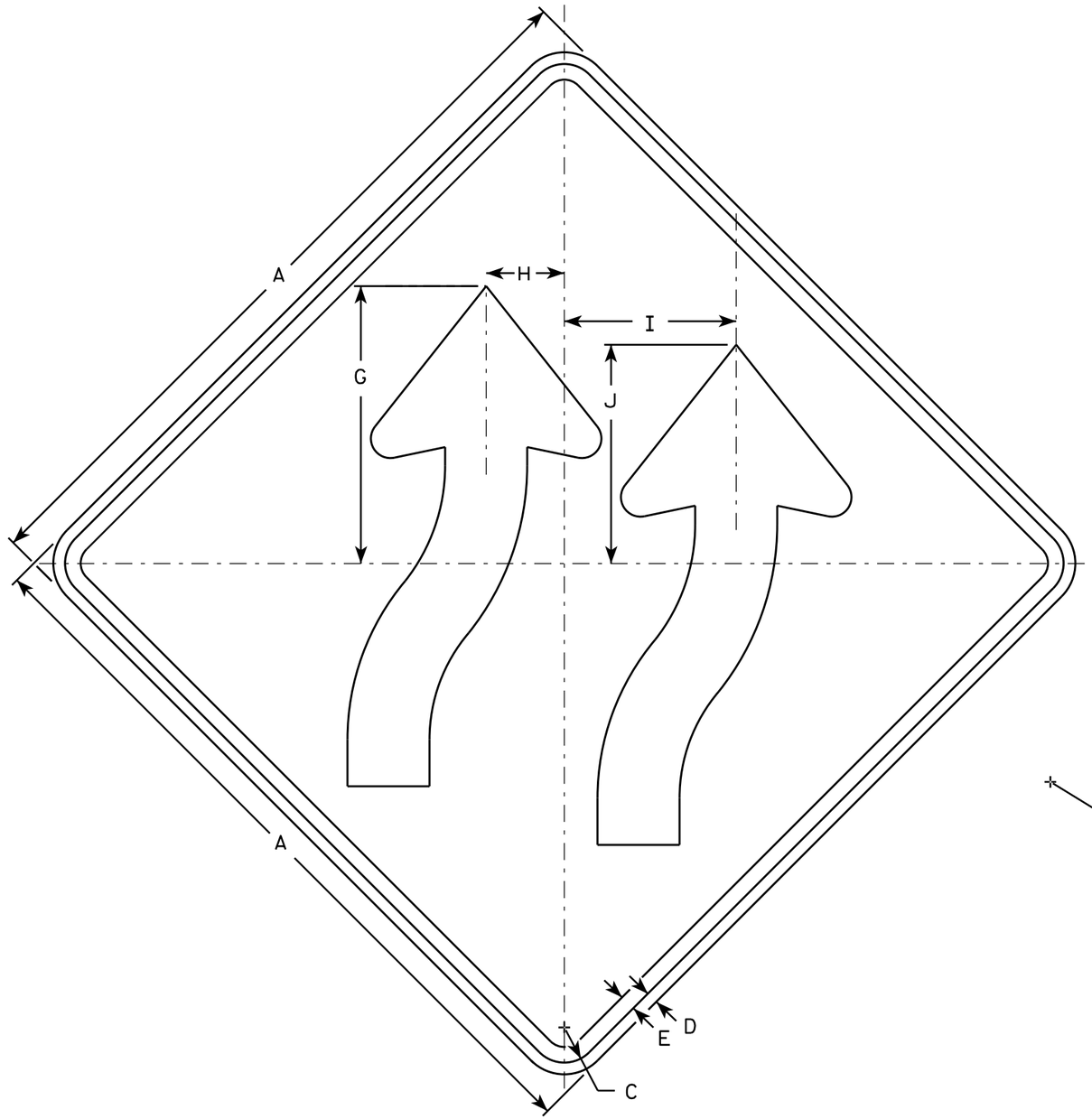
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-5.11

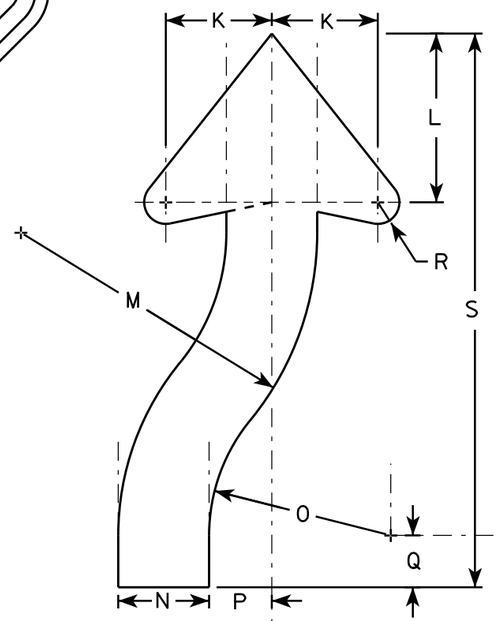
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 242 | E

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



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

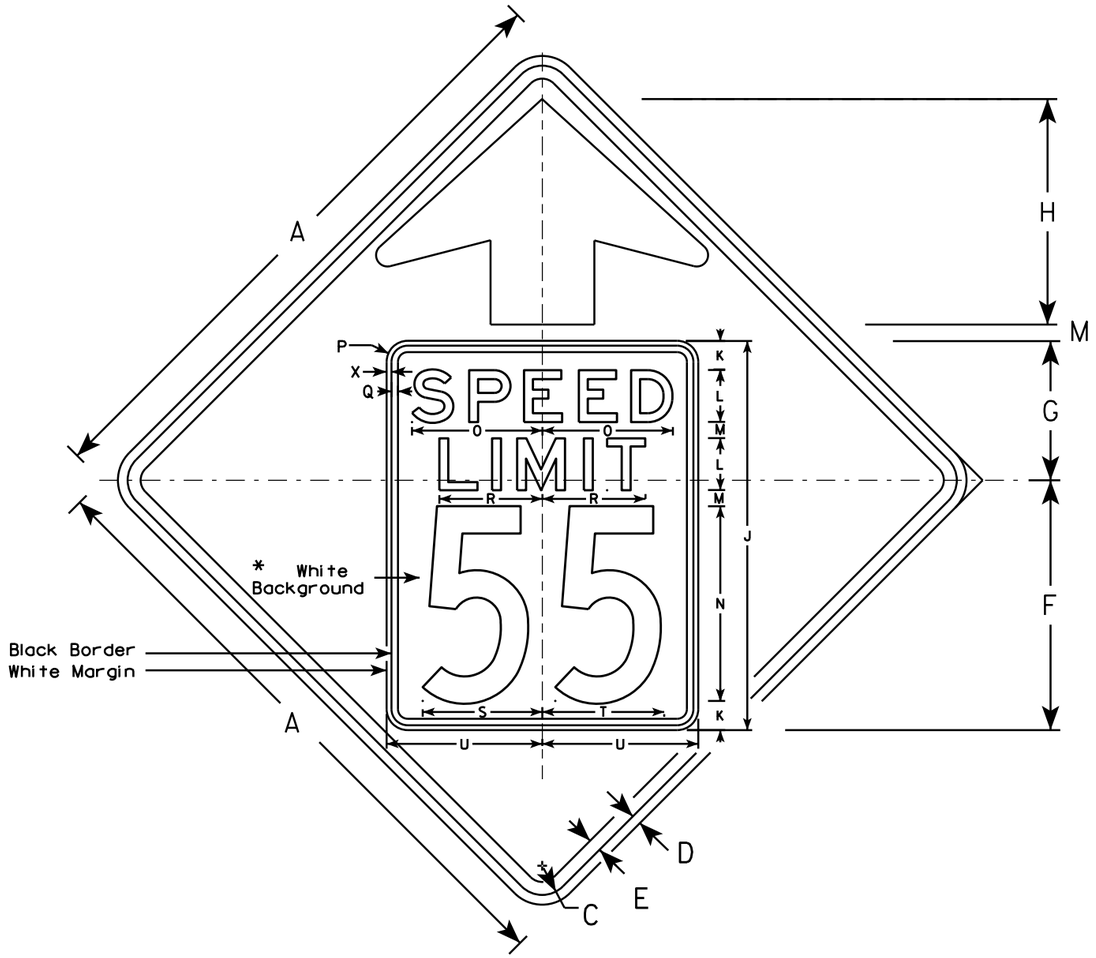
STANDARD SIGN
W01-4b

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

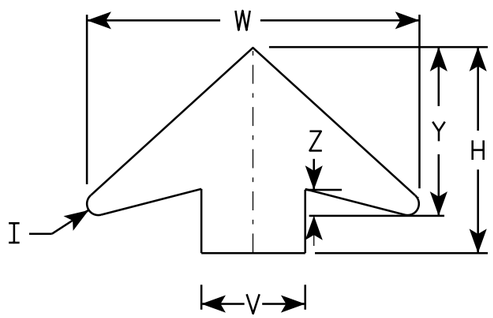


W03-5

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

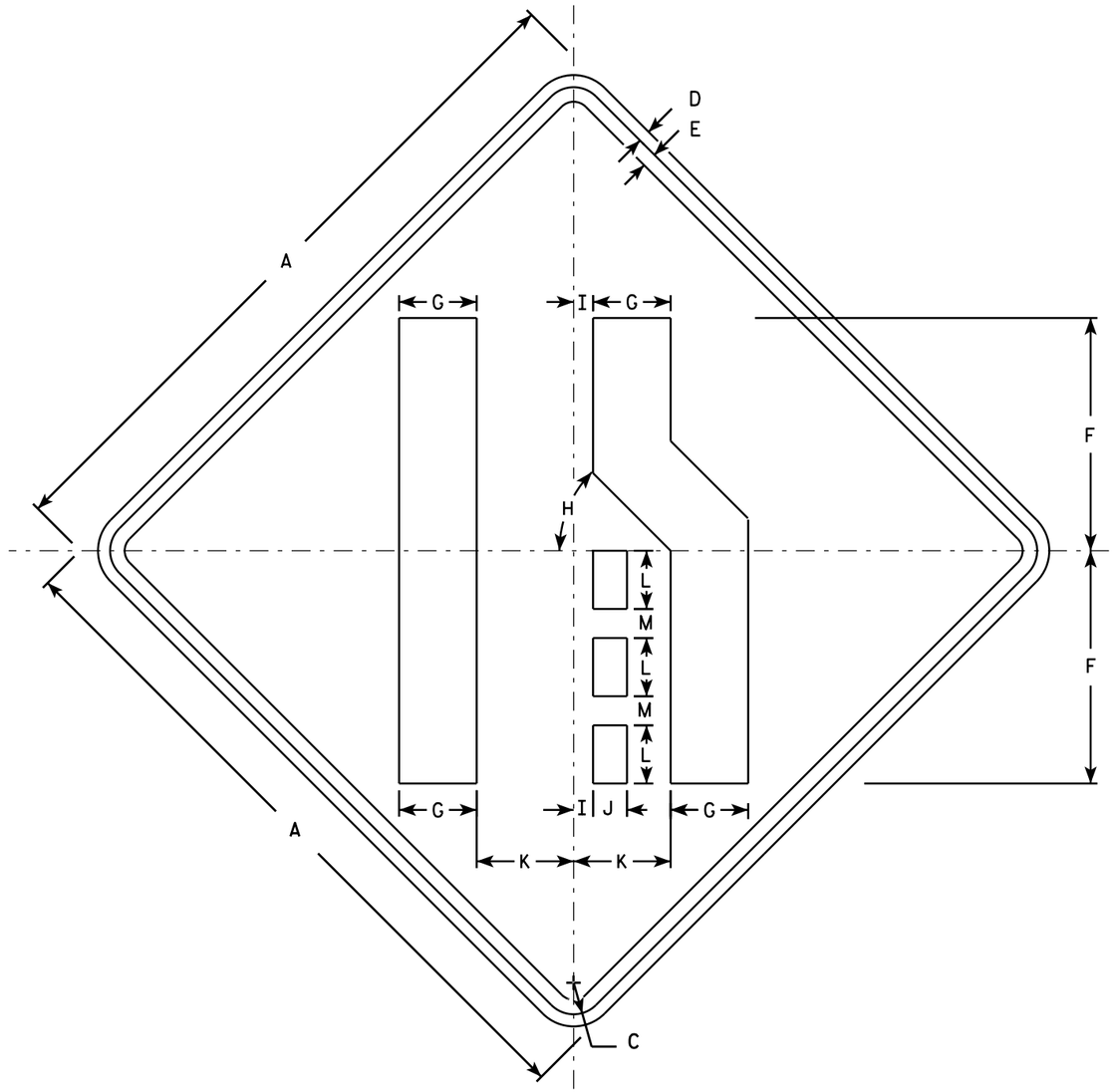
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE W03-5.1

PROJECT NO: SHEET NO: E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W035.DGN PLOT DATE : 20-NOV-2013 11:32 PLOT BY : mscsja

WISDOT/CADDS SHEET 42



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

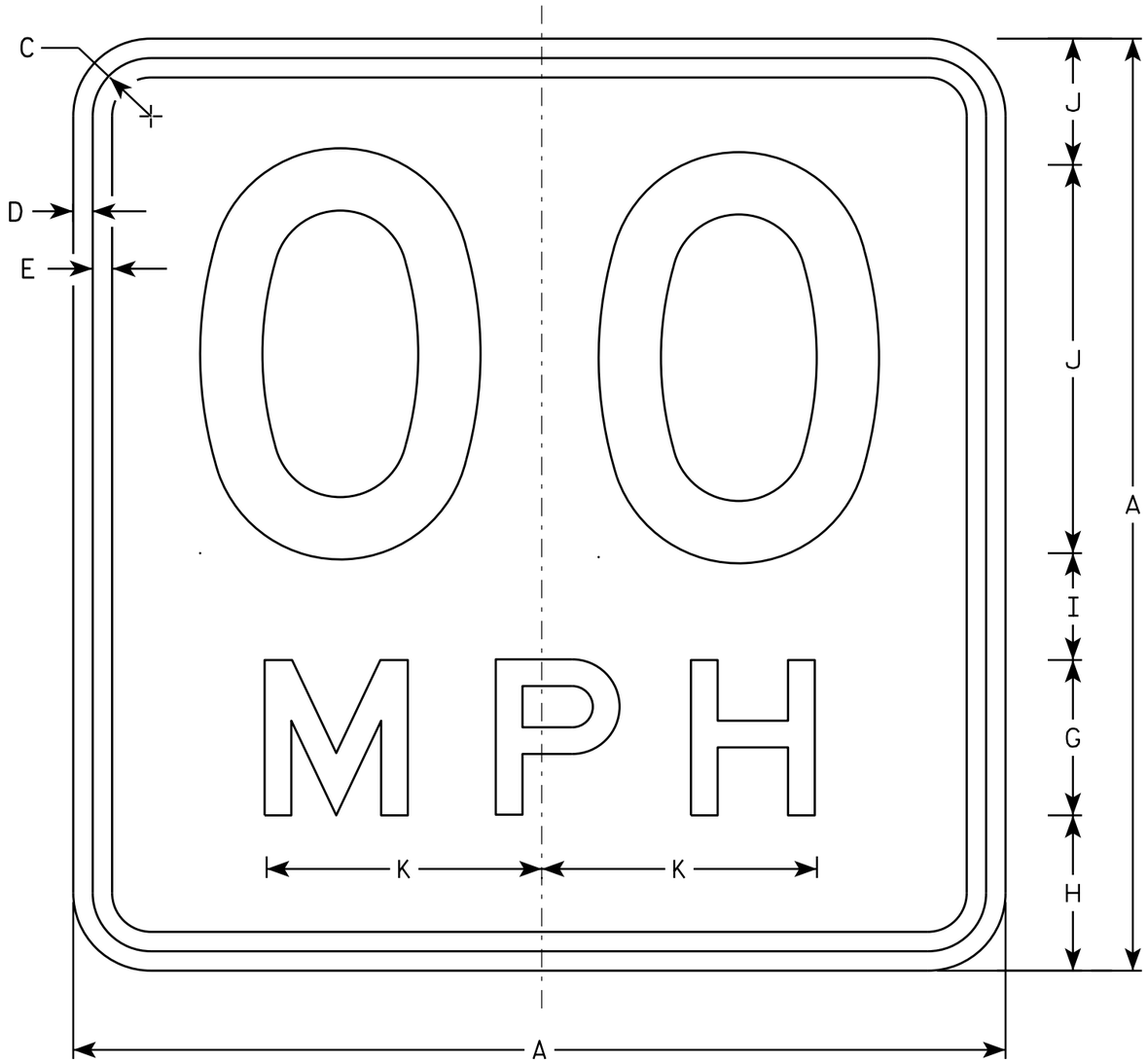
STANDARD SIGN
W04-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE 245 W04-2.1

PROJECT NO: | SHEET NO: E



W013-1

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 - See Note 6
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically space about centerline to achieve proper balance.
6. Line 1 is Series D
   Line 2 is Series E

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	10	4	4	2 3/4	3 1/4	7 1/8																4.00
2S	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
2M	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
3	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
4	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
5	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00

STANDARD SIGN
W013-1

WISCONSIN DEPT OF TRANSPORTATION

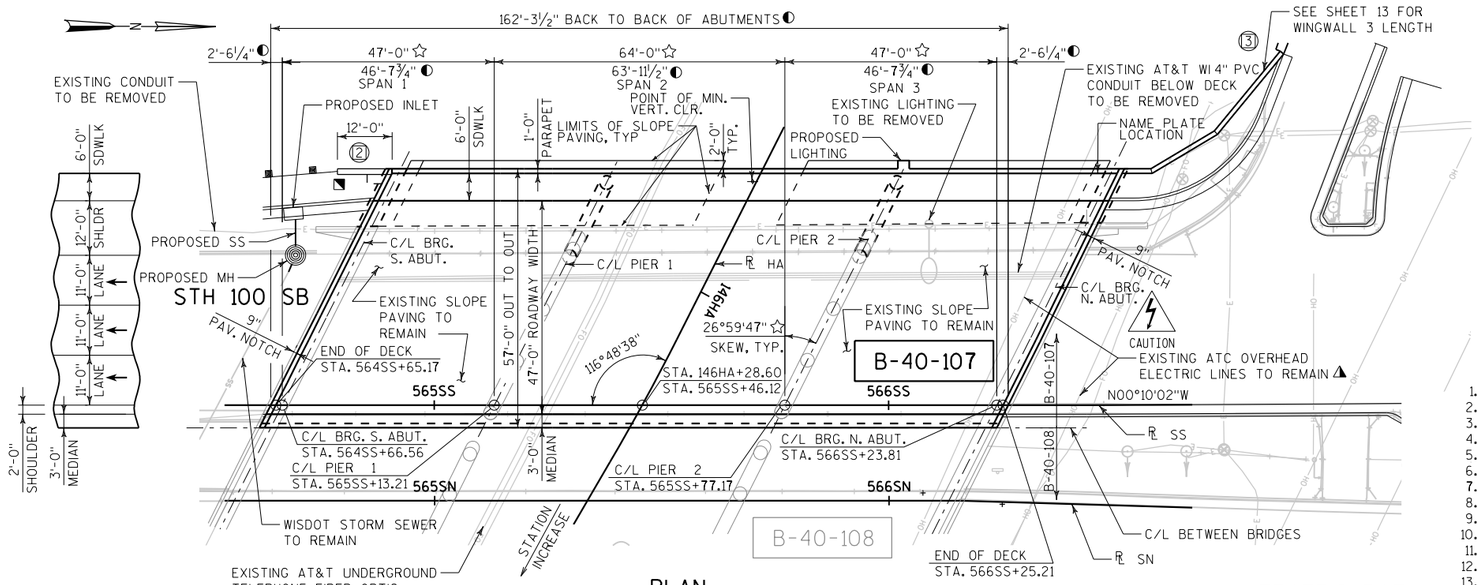
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/21/13 PLATE 246 W013-1.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

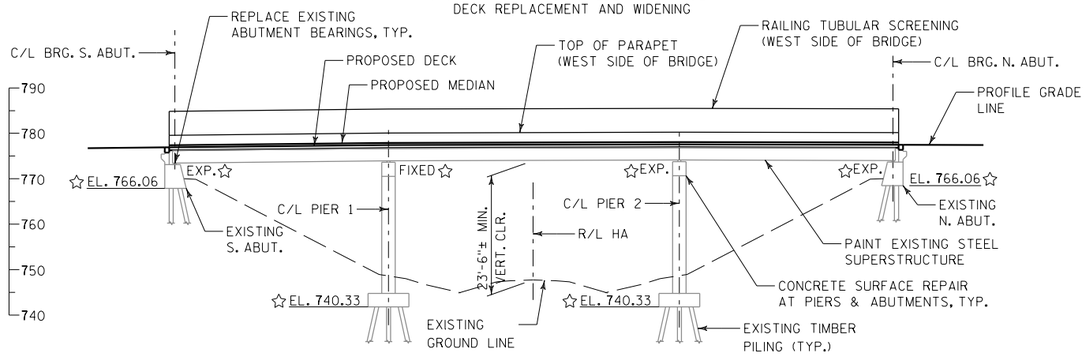
STATE PROJECT NUMBER

2030-14-70



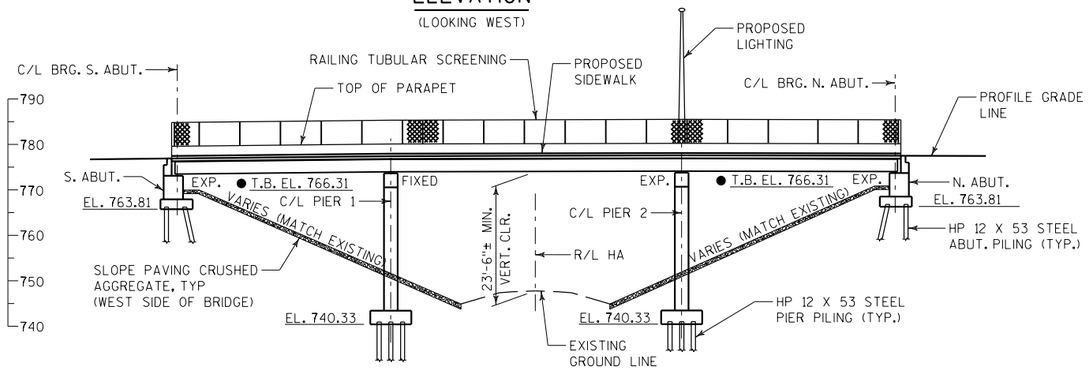
PLAN

3-SPAN CONTINUOUS STEEL DECK GIRDER DECK REPLACEMENT AND WIDENING



ELEVATION

(LOOKING WEST)



ELEVATION AT BRIDGE WIDENING

(LOOKING WEST)

TRAFFIC DATA

STH 100

AADT = 33,430 (2013)
AADT = 41,100 (2035)
RDS = 45 MPH

LEGEND

- DIRECTION OF TRAFFIC
- ☆ PER EXISTING STRUCTURE PLANS
- ◐ PER EXISTING SURVEY
- (X) WINGWALL NUMBER
- ◭ CONSTRUCTION MUST BE ACCOMPLISHED BENEATH ACTIVE CHARGED OVERHEAD LINES
- ◹ ATTACH GUARD RAIL TO WINGWALL PARAPET
- T.B. TOP OF BERM
- ● TO MATCH EXISTING

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. TYPICAL SECTION & PROFILE GRADE LINES
3. GENERAL NOTES & QUANTITIES
4. SUBSURFACE EXPLORATION
5. CONSTRUCTION STAGING (1 OF 2)
6. CONSTRUCTION STAGING (2 OF 2)
7. REMOVAL DETAILS (1 OF 2)
8. REMOVAL DETAILS (2 OF 2)
9. SOUTH ABUTMENT
10. SOUTH ABUTMENT DETAILS
11. NORTH ABUTMENT
12. NORTH ABUTMENT DETAILS
13. NORTH ABUTMENT WING WALL DETAILS (1 OF 2)
14. NORTH ABUTMENT WING WALL DETAILS (2 OF 2)
15. PIER 1 AND PIER 2 DETAILS
16. BEARING DETAILS
17. GIRDER ELEVATION AND FRAMING PLAN
18. DIAPHRAGM DETAILS
19. SPLICE DETAILS
20. GIRDER AND SUPERSTRUCTURE DETAILS
21. SUPERSTRUCTURE REINFORCEMENT PLAN
22. SUPERSTRUCTURE CROSS SECTIONS
23. SIDEWALK & MEDIAN REINFORCEMENT DETAILS
24. DIAPHRAGM REINFORCEMENT DETAILS
25. EXISTING GIRDER DETAILS AND BILL OF BARS
26. SLAB POURING SEQUENCE
27. EXPANSION JOINT DETAILS (1 OF 2)
28. EXPANSION JOINT DETAILS (2 OF 2)
29. VERTICAL FACE PARAPET A
30. LIGHT SUPPORT DETAILS
31. CONDUIT DETAILS (1 OF 2)
32. CONDUIT DETAILS (2 OF 2)
33. TUBULAR STEEL RAILING SCREENING
34. SLOPE PAVING DETAILS

BENCH MARK DATA

BM NO.	DESCRIPTION	STATION	ELEVATION
BM 81873	PAINTED X IN LIGHT POLE BASE	STA. 564SN+40, 61.2' LT	774.833
BM 81874	CHISELED X IN ATC TOWER BASE	STA. 567SN+84, 184.4' LT	770.479

DESIGN DATA

LIVE LOAD: LFD
(GIRDERS 3 THRU 7)

DESIGN LOADING: HS-20
INVENTORY RATING : HS-20
OPERATING RATING : HS-34
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 180 KIPS

LIVE LOAD: LRFD
(GIRDERS 1 AND 2)

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.08
OPERATING RATING FACTOR: RF = 1.39
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

MATERIAL PROPERTIES:

CONCRETE MASONRY:
SUPERSTRUCTURE (HPC)..... f'c = 4,000 psi
SUBSTRUCTURE..... f'c = 3,500 psi
BAR STEEL REINFORCEMENT..... fy = 60,000 psi
STEEL PILING..... Fy = 50,000 psi
STRUCTURAL STEEL (ASTM A709)..... Fy = 50,000 psi

FOUNDATION DATA

USING THE MODIFIED GATES ACCEPTANCE METHOD:

ABUTMENTS AND PIER SHALL BE SUPPORTED ON HP 12 X 53 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 220 TONS** PER PILE AT THE ABUTMENTS AND PIERS AS DETERMINED BY THE MODIFIED GATES ACCEPTANCE METHOD.

** THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.50 USING MODIFIED GATES ACCEPTANCE METHOD TO DETERMINE DRIVEN PILE CAPACITY.

ESTIMATED PILE LENGTHS:
SOUTH ABUTMENT ..... 75 FEET
NORTH ABUTMENT ..... 75 FEET
PIER 1..... 65 FEET
PIER 2..... 65 FEET

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
WILLIAM DREHER (608) 266-8489
CONSULTANT:
MOHAMMED ZAGLOUL (414) 751-7200

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY

KAPUR & ASSOCIATES
CONSULTING ENGINEERS
414.751.7200

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 12/19/17
CHIEF STRUCTURES DESIGN ENGINEER — DATE

WISCONSIN
MOHAMMED H. ZAGLOUL
E-26970
MILWAUKEE
WISCONSIN
PROFESSIONAL ENGINEER

STRUCTURE B-40-107

STH 100 SB OVER HANK AARON STATE TRAIL

COUNTY	CITY
MILWAUKEE	WEST ALLIS

DESIGN SPEC.
REHABILITATION/AASHTO LRFD DESIGN SPECIFICATIONS

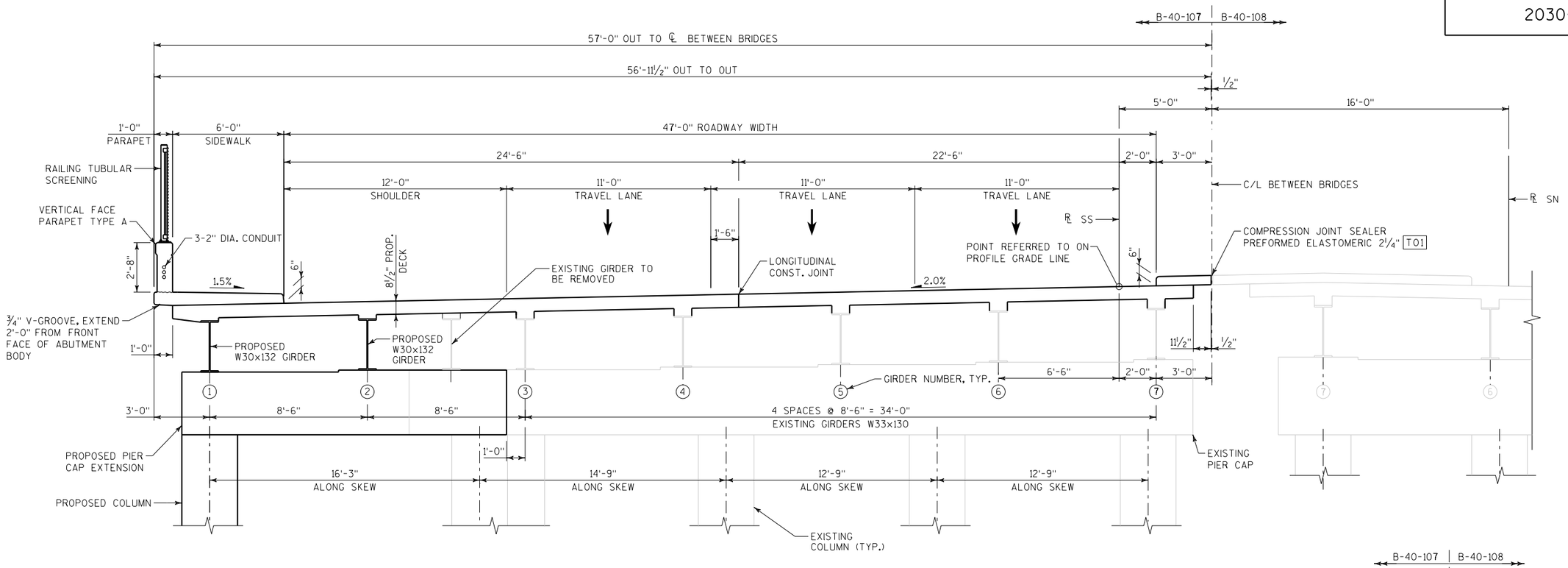
DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
AJA	MHZ	MM	MHZ

GENERAL PLAN & ELEVATION

SHEET 1 OF 34

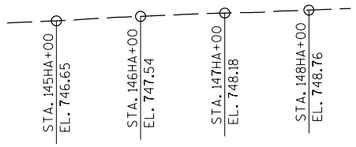
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PLOT DATE : 12/19/2017
PLOT BY : aaschenbrenner
PLOT NAME : $FILE$
PLOT SCALE : 1:33.3333

STATE PROJECT NUMBER
2030-14-70

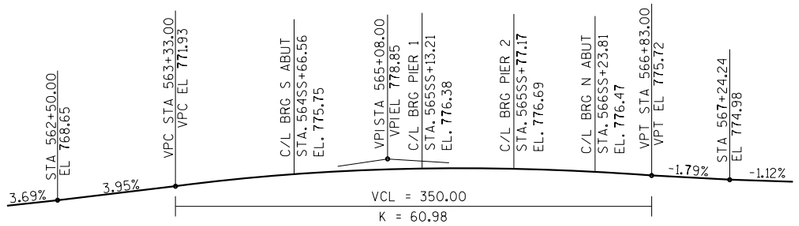


TYPICAL SECTION

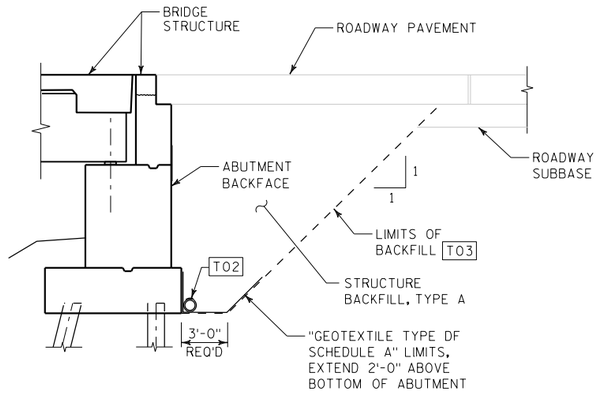
(LOOKING NORTH)



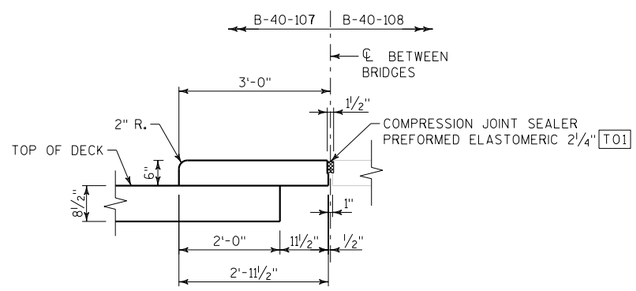
EXISTING PROFILE REFERENCE LINE - HA



PROFILE GRADE LINE - SS



BACKFILL LIMITS



CROSS SECTION THRU MEDIAN WITH A JOINT

(GIRDER NOT SHOWN FOR CLARITY)

LEGEND

→ DIRECTION OF TRAFFIC

☆ PER EXISTING STRUCTURE PLANS

T01 COMPRESSION JOINT SEALER PREFORMED ELASTOMERIC 2¼" TO BE PAID FOR UNDER BRIDGE B-40-108.

T02 PIPE UNDERDRAIN WRAPPED (6-INCH) SLOPE 0.5% MIN. CONNECT TO EXISTING 8" PIPE UNDERDRAIN.

T03 BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-107

DRAWN BY AJA | PLANS CK'D. MHZ

TYPICAL SECTION & PROFILE GRADE LINES

SHEET 2 OF 34

248

8

8

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Structures\B-40-107\DGN\cds\B107_080102_ts.dgn

PLOT DATE : 12/19/2017

PLOT BY : aaschenbrenner

PLOT NAME : $FILE$

PLOT SCALE : 1:6

TOTAL ESTIMATED QUANTITIES

ITEM NO.	BID ITEMS	UNIT	SOUTH ABUTMENT	PIER 1	PIER 2	NORTH ABUTMENT	SUPER.	TOTAL
203.0200.4000	REMOVING OLD STRUCTURE STA. 565SS+00	LS	-	-	-	-	-	1
203.0225.S.4001	DEBRIS CONTAINMENT B-40-107	LS	-	-	-	-	-	1
206.1000.4002	EXCAVATION FOR STRUCTURES BRIDGES B-40-107	LS	-	-	-	-	-	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	136	336	336	123	-	931
502.0100	CONCRETE MASONRY BRIDGES	CY	35	14	14	50	-	113
502.3100.4003	EXPANSION DEVICE B-40-107	LS	-	-	-	-	-	1
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-	-	-	-	1,014	1,014
502.3210	PIGMENTED SURFACE SEALER	SY	-	-	-	-	64	64
502.4204	ADHESIVE ANCHORS NO. 4 BAR	EACH	6	-	-	6	-	12
502.4205	ADHESIVE ANCHORS NO. 5 BAR	EACH	58	-	-	60	-	118
502.4206	ADHESIVE ANCHORS NO. 6 BAR	EACH	9	12	12	9	-	42
502.4208	ADHESIVE ANCHORS NO. 8 BAR	EACH	5	-	-	5	-	10
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	1,370	750	750	2,480	-	5,350
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,800	4,970	4,970	3,740	68,610	84,090
506.0605	STRUCTURAL STEEL HS	LB	-	-	-	-	51,374	51,374
506.3014	WELDED STUD SHEAR CONNECTORS 3/4X6-INCH	EACH	-	-	-	-	866	866
506.5000.4005	BEARING ASSEMBLIES FIXED B-40-107	EACH	-	2	-	-	-	2
506.6000.4006	BEARING ASSEMBLIES EXPANSION B-40-107	EACH	7	-	2	7	-	16
506.7050.S.4007	REMOVING BEARINGS B-40-107	EACH	5	-	-	5	-	10
509.1500	CONCRETE SURFACE REPAIR	SF	20	10	10	20	-	60
513.4091.4008	RAILING TUBULAR SCREENING B-40-107	LF	-	-	-	-	175	175
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	11	-	-	-	11	22
517.0600.4009	PAINTING EPOXY SYSTEM B-40-107	LS	-	-	-	-	-	1
517.0900.S.4010	PREPARATION AND COATING OF TOP FLANGES B-40-107	LS	-	-	-	-	-	1
517.1800.S.4011	STRUCTURE REPAINTING RECYCLED ABRASIVE B-40-107	LS	-	-	-	-	-	1
517.4500.S.4012	NEGATIVE PRESSURE CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-40-107	LS	-	-	-	-	-	1
517.6001.S	PORTABLE DECONTAMINATION FACILITY	EACH	-	-	-	-	1	1
550.0500	PILE POINTS	EACH	7	6	6	6	-	25
550.1120	PILING STEEL HP 12-INCH X 53 LB	LF	525	390	390	450	-	1,755
604.0500	SLOPE PAVING CRUSHED AGGREGATE	SY	120	-	-	114	-	234
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	50	-	-	75	-	125
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	-	-	-	-	1	1
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	14	-	-	14	-	28
652.0125	CONDUIT RIGID METALLIC 2-INCH	LF	-	-	-	-	50	50
652.0225	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	LF	-	-	-	-	500	500
653.0220	JUNCTION BOXES 18X6X6-INCH	EACH	-	-	-	-	3	3
653.0222	JUNCTION BOXES 18X12X6-INCH	EACH	-	-	-	-	1	1
657.6005	ANCHOR ASSEMBLIES LIGHT POLES ON STRUCTURES	EACH	-	-	-	-	1	1
SPV.0035.4000	HPC MASONRY STRUCTURES	CY	1	-	-	4	293	298
SPV.0165.4700	LONGITUDINAL GROOVING BRIDGE DECK	SF	-	-	-	-	7,522	7,522
SPV.0180.4750	CLEAN ABUTMENT SEATS	SY	4	-	-	4	-	8
	NON-BID ITEMS							
	PREFORMED JOINT FILLER	SIZE	-	-	-	-	-	¾", 1", 1½"
	NON-BITUMINOUS JOINT FILLER	SIZE	-	-	-	-	-	½"
	CORK FILLER	SIZE	-	-	-	-	-	¾"
	NAME PLATE	EACH	-	-	-	-	-	1

ALL ITEMS ARE CATEGORY 2000

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BAR STEEL REINFORCEMENT WILL BE PLACED WITH 2" OF CLEAR CONCRETE COVER UNLESS OTHERWISE NOTED.

ALL FIELD CONNECTIONS SHALL BE MADE WITH ¾" DIAMETER FRICTION TYPE HIGH-TENSILE STRENGTH BOLTS UNLESS SHOWN OR NOTED OTHERWISE.

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS UNLESS OTHERWISE NOTED.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MILWAUKEE COUNTY ZONE, NAD 83 (2007). ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF NAVD 88 (2007).

THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE. UTILITIES LABELED AS PROPOSED MAY BE INSTALLED BY OTHERS PRIOR TO THIS CONTRACT.

THE FIRST DIGIT OF A THREE DIGIT BAR MARK OR THE FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK SIGNIFY THE BAR SIZE.

CLEAN AND PAINT ALL EXPOSED STEEL SUPERSTRUCTURE SURFACES UNDERNEATH THE BRIDGE. THE SURFACES INCLUDE GIRDERS, DIAPHRAGMS, CONNECTIONS, ETC.

CLEAN AND PAINT ALL EXISTING STEEL BEARINGS AT THE PIERS. CLEANING AND PAINTING STEEL BEARINGS TO BE INCLUDED IN THE BID ITEM "STRUCTURE REPAINTING RECYCLED ABRASIVE B-40-107". PAINT APPLICATIONS ON THE BEARINGS SHOULD BE BRUSHED ON.

EXISTING & PROPOSED STEEL SUPERSTRUCTURE SHALL HAVE A FINISH COAT WITH COLOR TO MATCH SHERWIN WILLIAMS COLOR SW6523-DENIM BLUE.

UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK, UNLESS SPECIFIED OTHERWISE.

EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE SHALL BE PAID FOR IN THE LUMP SUM BID AS "EXPANSION DEVICE B-40-107".

CLEAN AND FILL EXISTING LONGITUDINAL AND TRANSVERSE CRACKS WITH PENETRATING EPOXY AS DIRECTED BY THE FIELD ENGINEER.

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 SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR OF 1961.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-40-107" SHALL BE THE EXISTING GROUNDLINE.

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

BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

BACKFILL AT WINGWALL 3 IS INCLUDED IN ROADWAY QUANTITIES.

THE EXISTING STRUCTURE B-40-107 IS 3-SPAN CONTINUOUS STEEL DECK GIRDER BRIDGE WITH AN OVERALL WIDTH OF 57'-0" AND AN OVERALL LENGTH OF 163'-0⅝". THE DECK, MEDIAN, SIDEWALK AND PARAPETS ARE TO BE REPLACED.

THE DECK, PARAPET, SIDEWALK AND MEDIAN CONCRETE QUANTITY SHALL BE PAID FOR UNDER BID ITEM "HPC MASONRY STRUCTURES".

APPLY PIGMENTED SURFACE SEALER TO THE TOP & INSIDE FACE OF PARAPETS ON THE BRIDGE.

APPLY PROTECTIVE SURFACE TREATMENT TO THE DECK, SIDEWALK AND MEDIAN ON THE BRIDGE.

COMPRESSION JOINT SEAL 2¼" BETWEEN BRIDGES B-40-107 AND B-40-108 TO BE PAID FOR UNDER BRIDGE B-40-108.

LOCATIONS OF THE FOLLOWING BID ITEMS SHALL BE DETERMINED IN THE FIELD BY THE PROJECT ENGINEER. QUANTITIES SHOWN FOR THESE BID ITEMS ARE APPROXIMATE:
-CONCRETE SURFACE REPAIR.

THE SLOPE OF FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH SLOPE PAVING MATERIAL TO THE EXTENT SHOWN ON SHEET 1 AND SLOPE PAVING DETAILS.

PROPOSED NEW GIRDERS AND NEW DIAPHRAGMS PAINTING ARE INCLUDED IN THE BID ITEM "PAINTING EPOXY SYSTEM B-40-107". EXISTING GIRDERS AND EXISTING DIAPHRAGMS PAINTING ARE INCLUDED IN THE BID ITEM "STRUCTURE REPAINTING RECYCLED ABRASIVE B-40-107".

STATE PROJECT NUMBER

2030-14-70

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-107

DRAWN BY AJA | PLANS CK'D. MHZ

GENERAL NOTES & QUANTITIES

SHEET 3 OF 34

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Structures\B-40-107\DGN\cds\B107_080103_qu.dgn PLOT DATE : 12/19/2017 PLOT BY : aaschenbrenner PLOT NAME : $FILE$ PLOT SCALE : 1:8

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.

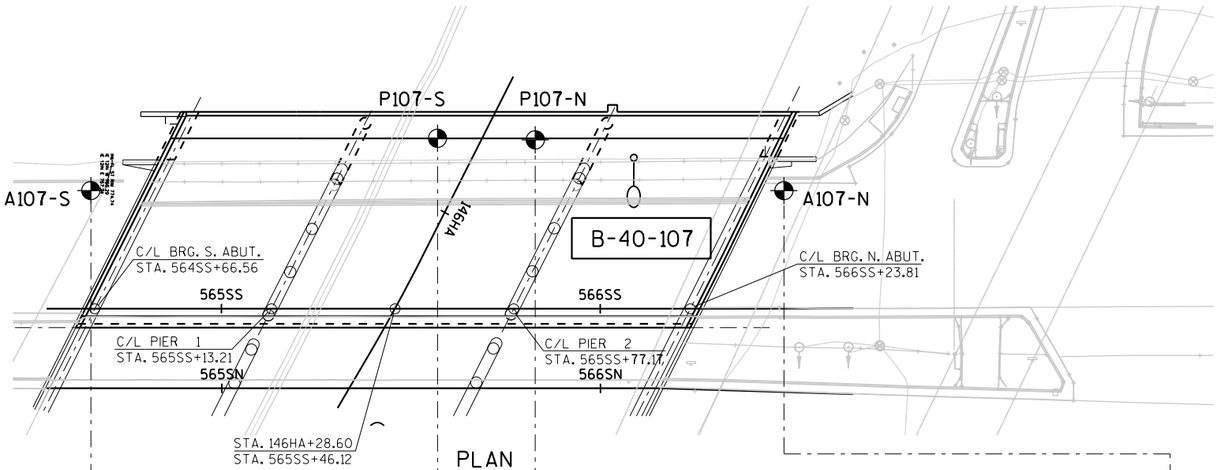
WATER LEVELS INDICATED MAY NOT BE REPRESENTATIVE OF HYDROSTATIC WATER LEVELS.

HISTORICAL BORING LOCATIONS ARE APPROXIMATE. ADDITIONAL INFORMATION IS AVAILABLE FROM THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

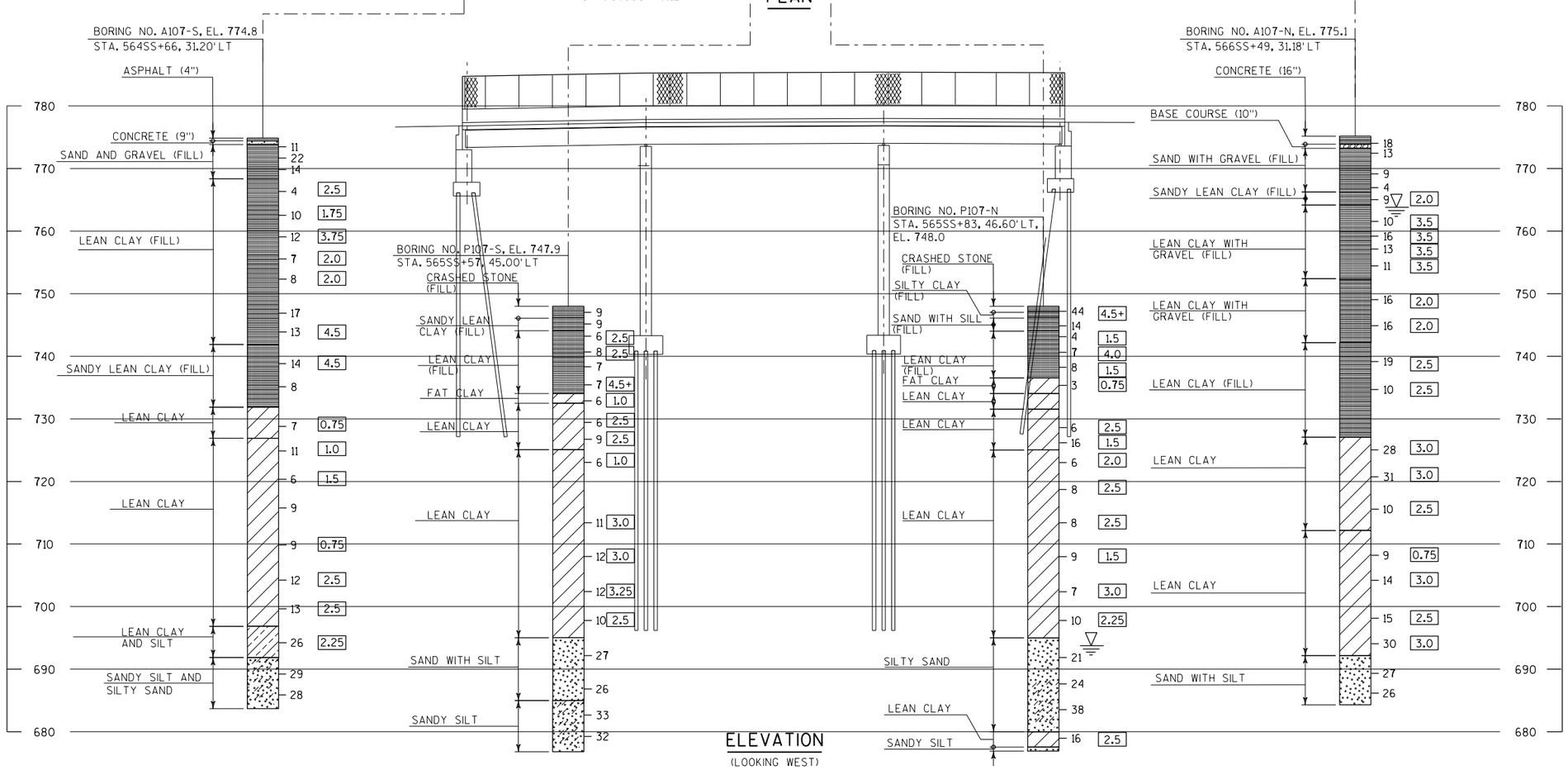
⊕ DENOTES SOIL BORING LOCATION

SOIL BORINGS COMPLETED BY:
GESTRA ENGINEERING, INC.

SOIL BORING TAKEN:
AUGUST 24, 2017 - BORING P107-N
AUGUST 25, 2017 - BORING P107-S
SEPTEMBER 22, 2017 - BORING A107-N
SEPTEMBER 14, 2017 - BORING A107-S



PLAN



ELEVATION
(LOOKING WEST)

STATE PROJECT NUMBER

2030-14-70

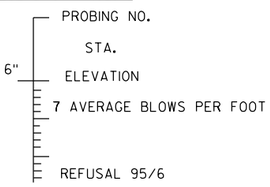
ABBREVIATIONS

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

MATERIAL SYMBOLS

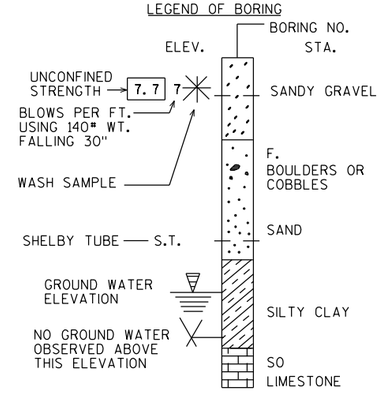
TOPSOIL / FILL, SILT, SANDSTONE
SAND, PEAT, LIMESTONE
GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING



95/6=95 BLOWS FOR 6" PENETRATION PROBING TAKEN WITH A 350# WT. FALLING 18" ON A 2" O.D. POINT.

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-40-107

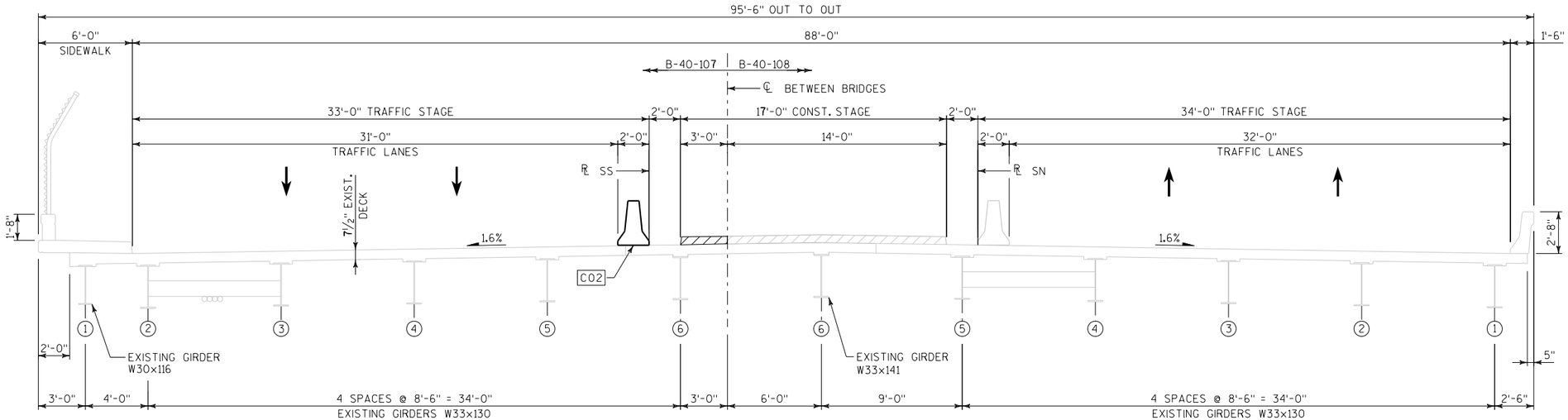
DRAWN BY AJA | PLANS CK'D. MHZ

SUBSURFACE EXPLORATION

SHEET 4 OF 34

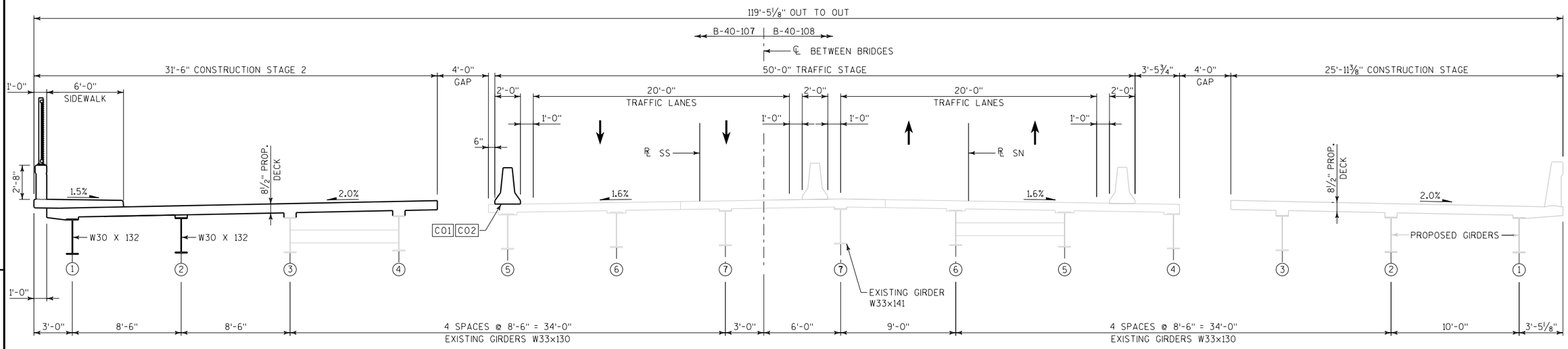
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PLOT DATE : 12/19/2017
PLOT BY : aaschenbrenner
PLOT NAME : $FILE$
PLOT SCALE : 1:40

STATE PROJECT NUMBER
2030-14-70



CONSTRUCTION STAGE 1

(LOOKING NORTH)



CONSTRUCTION STAGE 2

(LOOKING NORTH)

LEGEND

- → DIRECTION OF TRAFFIC
- REMOVAL AREA
- C01 TEMPORARY TRAFFIC BARRIER TO BE ANCHORED. WHEN TEMPORARY BARRIER ANCHORED TO NEW DECK, FILL HOLES ACCORDING TO THE SPECIAL PROVISIONS.
- C02 TEMPORARY TRAFFIC BARRIER TO BE PAID FOR AS A ROADWAY ITEM.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-107

DRAWN BY AJA | PLANS CK'D. MHZ

CONSTRUCTION STAGING (1 OF 2)

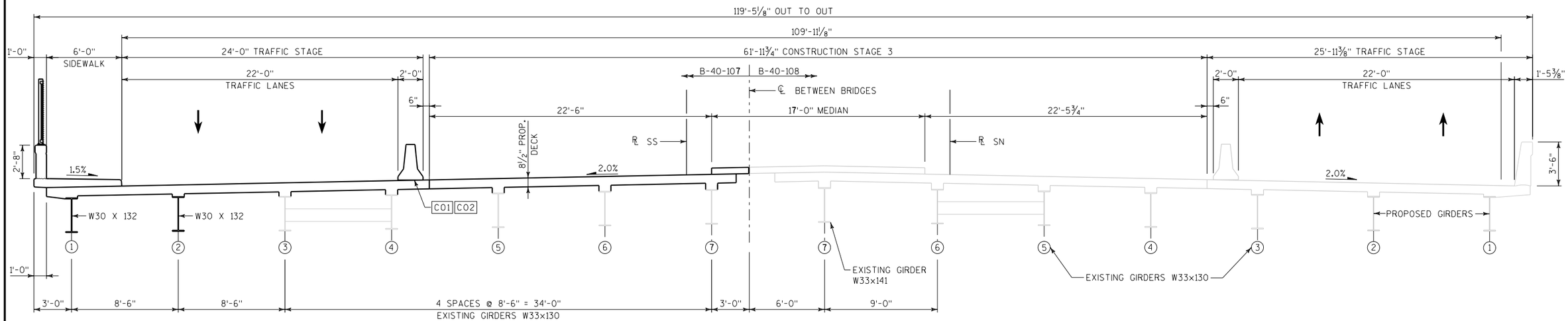
SHEET 5 OF 34

251

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Structures\B-40-107\DGN\cds\B107_080204_cs.dgn

PLOT DATE : 12/19/2017 PLOT BY : aaschenbrenner PLOT NAME : $FILE$ PLOT SCALE : 1:8

STATE PROJECT NUMBER
2030-14-70



CONSTRUCTION STAGE 3

(LOOKING NORTH)

8

8

LEGEND

→ DIRECTION OF TRAFFIC

C01 TEMPORARY TRAFFIC BARRIER TO BE ANCHORED. WHEN TEMPORARY BARRIER ANCHORED TO NEW DECK, FILL HOLES ACCORDING TO THE SPECIAL PROVISIONS.

C02 TEMPORARY TRAFFIC BARRIER TO BE PAID FOR AS A ROADWAY ITEM.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-107

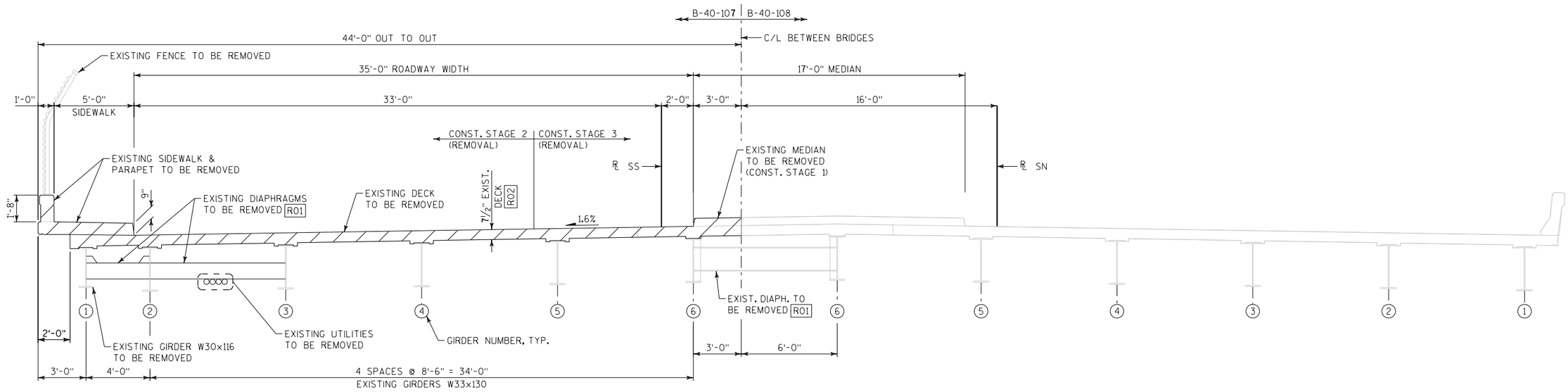
DRAWN BY AJA | PLANS CK'D. MHZ

CONSTRUCTION STAGING (2 OF 2)

SHEET 6 OF 34

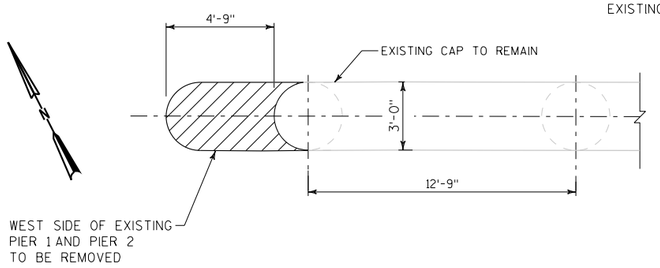
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PLOT DATE : 12/19/2017
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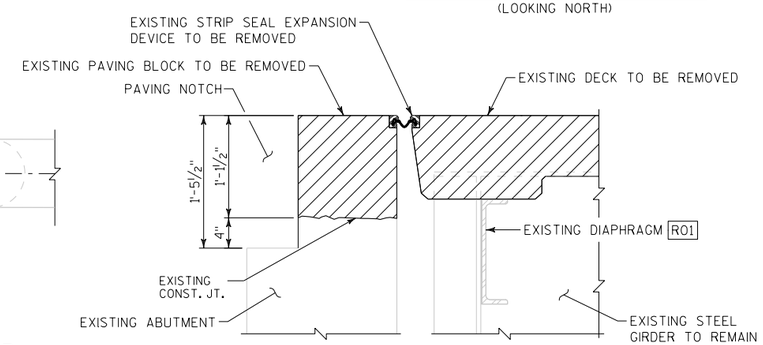


EXISTING TYPICAL SECTION

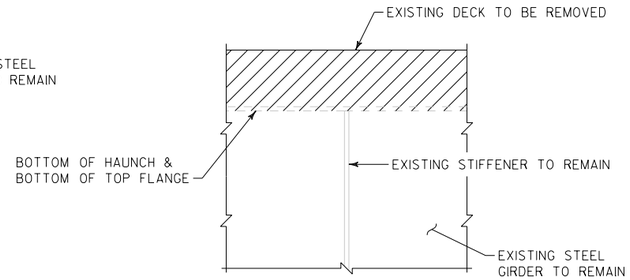
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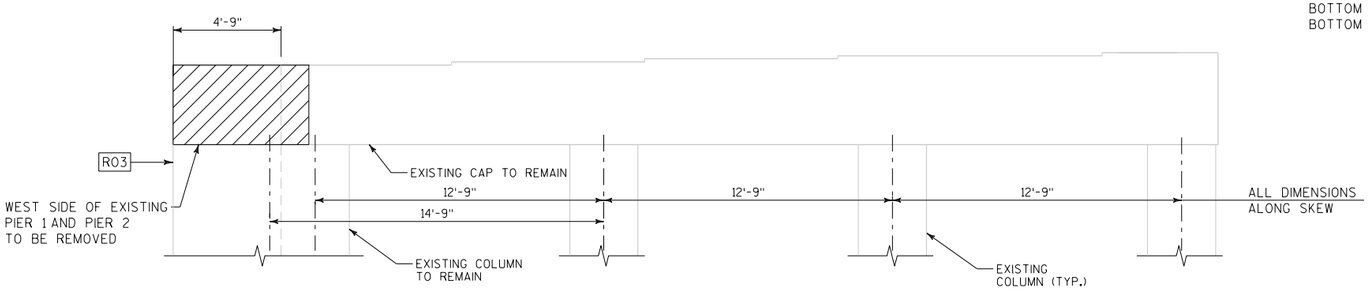
PARTIAL REMOVAL PLAN AT PIER



REMOVAL SECTION AT ABUTMENT



REMOVAL SECTION AT PIER



TYPICAL REMOVAL SECTION AT PIER

(LOOKING NORTH)
(DIMENSIONS SHOWN ALONG SKEW)

LEGEND

- REMOVAL AREA
- R01 EXISTING DIAPHRAGMS BETWEEN GIRDER 3 AND GIRDER 6 ARE TO REMAIN. ALL OTHER DIAPHRAGMS ON BRIDGE B-40-107 ARE TO BE REMOVED INCLUDING THE DIAPHRAGM CONNECTED TO BRIDGE B-40-108
- R02 SEE CONSTRUCTION STAGING PLANS FOR DECK PARTIAL REMOVAL
- R03 PRESERVE EXISTING COLUMN REINFORCEMENT
- (X) GIRDER NUMBER

NOTES

DIMENSIONS ARE TAKEN FROM THE EXISTING STRUCTURE PLAN.

SEE SHEET 8 FOR REMOVAL DETAILS AT ABUTMENTS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-107

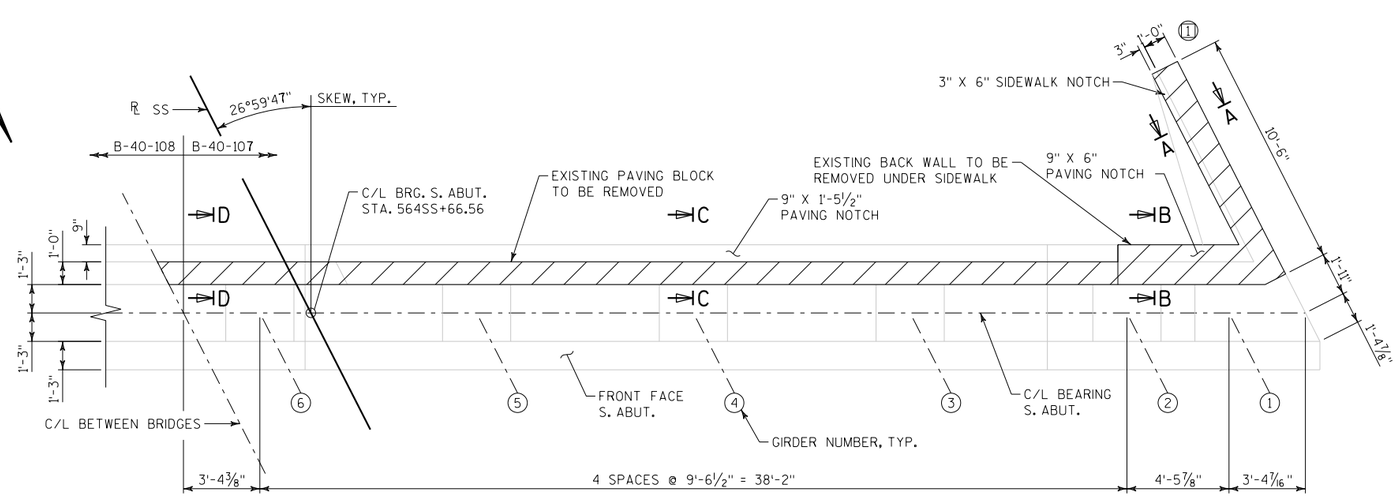
DRAWN BY AJA | PLANS CK'D. MHZ

REMOVAL DETAILS (1 OF 2)

SHEET 7 OF 34

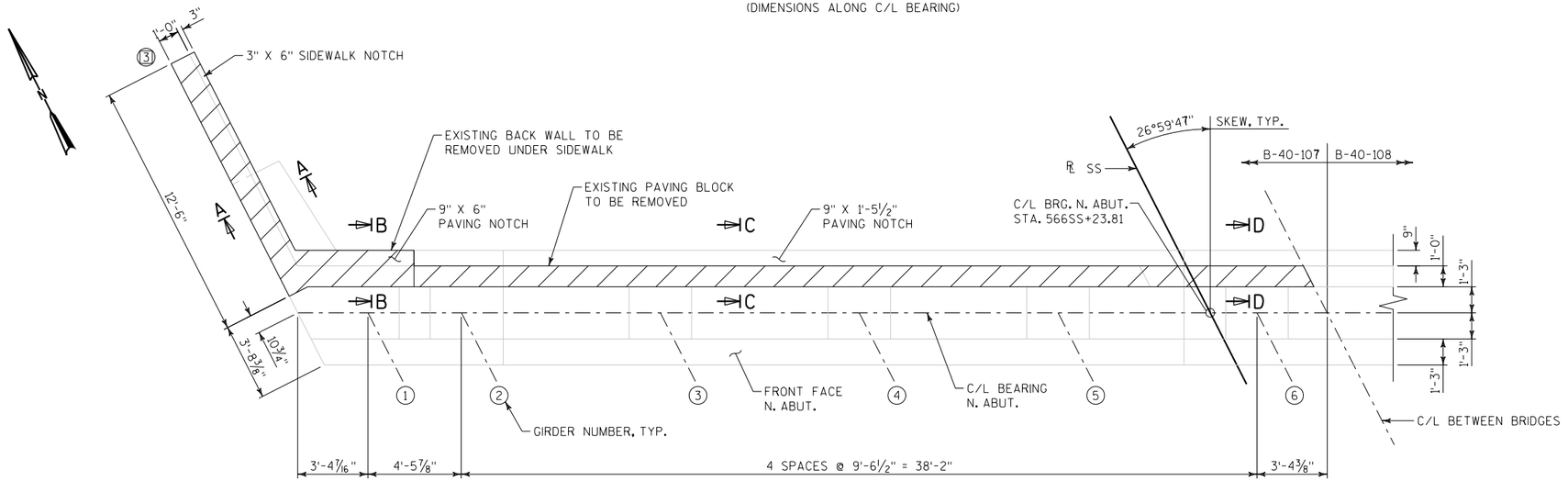
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PLOT DATE : 12/19/2017
PLOT BY : aaschenbrenner
PLOT NAME : $FILE$
PLOT SCALE : 1:6.66667

STATE PROJECT NUMBER
2030-14-70



SOUTH ABUTMENT REMOVAL PLAN

(DIMENSIONS ALONG C/L BEARING)



NORTH ABUTMENT REMOVAL PLAN

(DIMENSIONS ALONG C/L BEARING)

NOTES

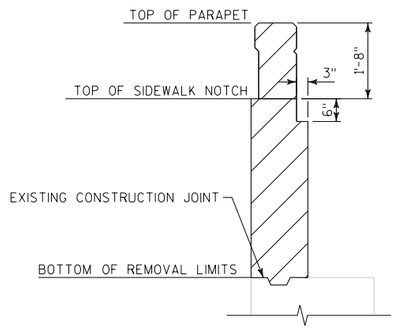
DIMENSIONS ARE TAKEN FROM THE EXISTING STRUCTURE PLAN.

SEE SHEETS 5 & 6 FOR CONSTRUCTION STAGING.

SEE SHEET 7 FOR SUPERSTRUCTURE REMOVAL DETAILS .

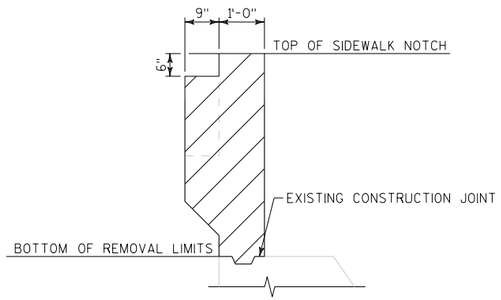
LEGEND

- REMOVAL AREA
- (X) WINGWALL NUMBER
- X GIRDER NUMBER

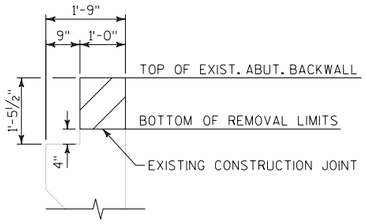


SECTION A-A

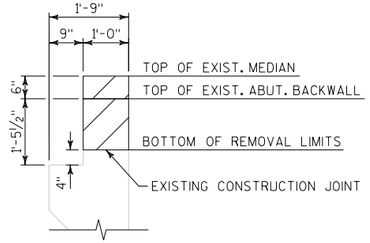
(FENCE NOT SHOWN FOR CLARITY)



SECTION B-B



SECTION C-C



SECTION D-D

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-107

DRAWN BY AJA | PLANS CK'D. MHZ

REMOVAL DETAILS (2 OF 2)

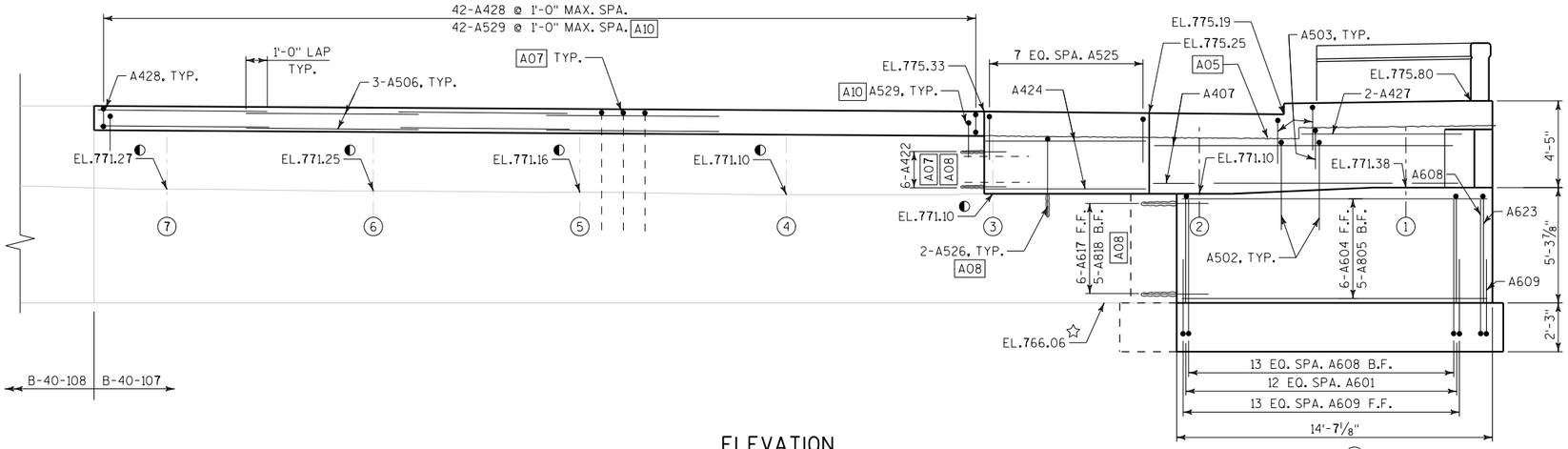
SHEET 8 OF 34

254

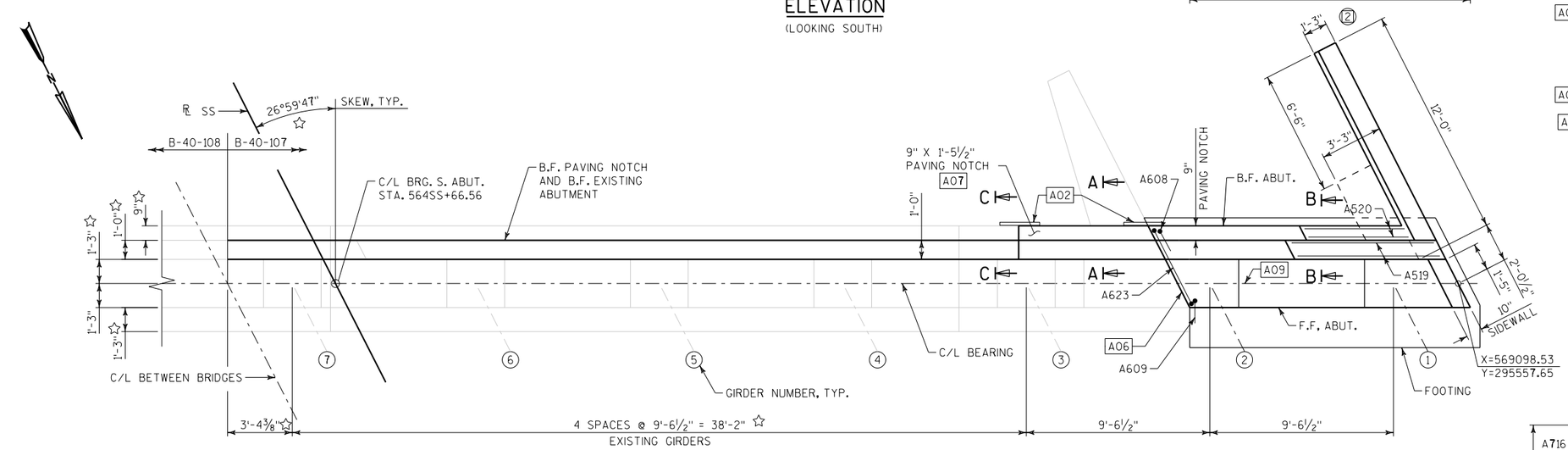
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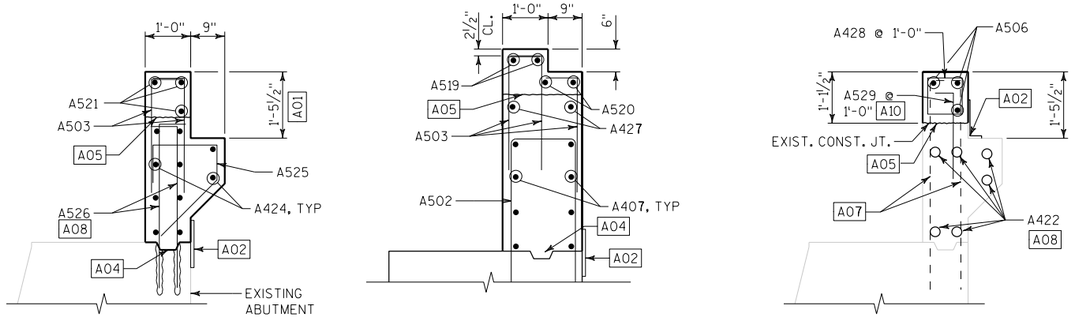
STATE PROJECT NUMBER
2030-14-70



ELEVATION
(LOOKING SOUTH)



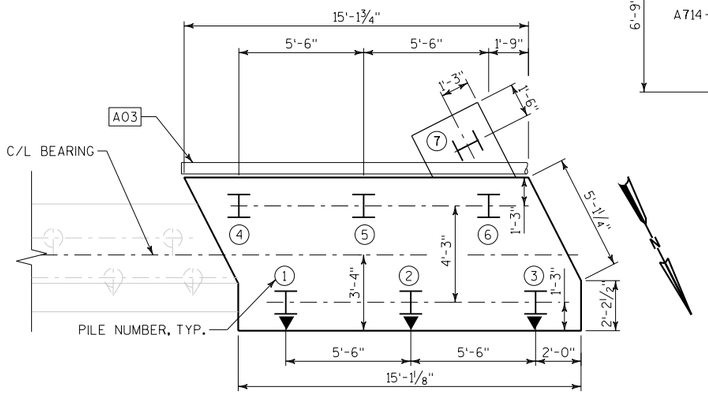
PLAN
(DIMENSIONS ALONG C/L BEARING)



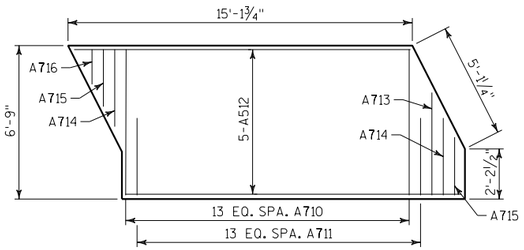
SECTION A-A

SECTION B-B

SECTION C-C



PILE PLAN



FOOTING REINFORCEMENT PLAN

LEGEND

- A01 TO MATCH EXISTING ABUTMENT PAVING NOTCH WIDTH AND DEPTH.
- A02 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE OF ABUTMENTS.
- A03 PIPE UNDERDRAIN WRAPPED (6-INCH) SLOPE 0.5% MIN. CONNECT TO EXISTING 8" PIPE UNDERDRAIN.
- A04 KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2"X6"
- A05 CONST. JOINT - POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE (STRIKE OFF AND LEAVE ROUGH)
- A06 ROUGHEN SURFACE OF CONCRETE ¼" DEEP MINIMUM AT ALL AREAS WHERE NEW CONCRETE CONTACTS EXISTING CONCRETE.
- A07 SALVAGE EXIST. REINFORCEMENT & EXTEND FULL LENGTH INTO NEW WORK
- A08 ADHESIVE ANCHORS:
  NO.4 BARS EMBED 0'-10", MIN. EDGE DISTANCE 3"
  NO.5 BARS EMBED 1'-1", MIN. EDGE DISTANCE 4"
  NO.6 BARS EMBED 1'-3", MIN. EDGE DISTANCE 4½"
  NO.8 BARS EMBED 1'-8", MIN. EDGE DISTANCE 6"
- A09 MATCH EXISTING ABUTMENT CENTER LINE BEARING
- A10 ADHESIVE ANCHORS NO. 5 BAR, EMBED 1'-6" IN CONCRETE. SPACE AT 1'-0". TURN 10" LEGS AS NECESSARY TO FIT.

- ☆ PER EXISTING STRUCTURE PLANS
- ◐ PER EXISTING SURVEY
- (X) WINGWALL NUMBER
- ▼ PILE BATTER DIRECTION
- (X) PILE NUMBER

NOTE

EXCAVATIONS BELOW THE EXISTING FOUNDATION SHALL BE FILLED WITH CONCRETE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-107

DRAWN BY AJA | PLANS CK'D. MHZ

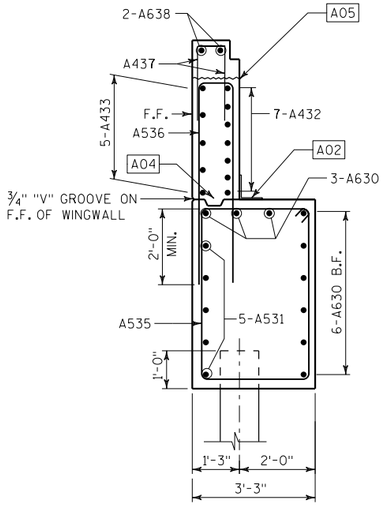
SOUTH ABUTMENT

SHEET 9 OF 34

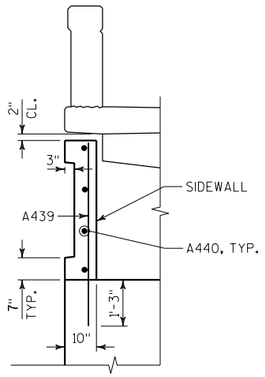
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STATE PROJECT NUMBER

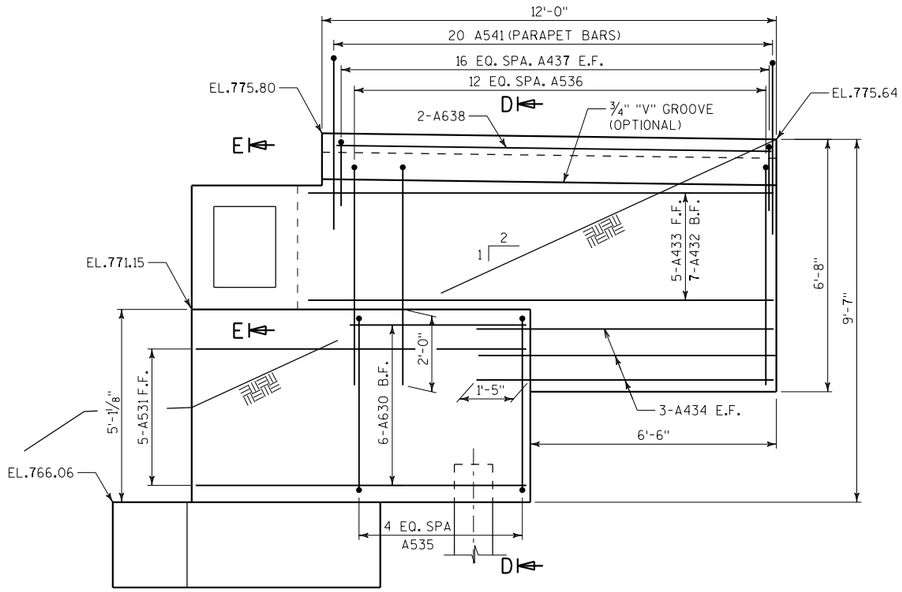
2030-14-70



SECTION D-D

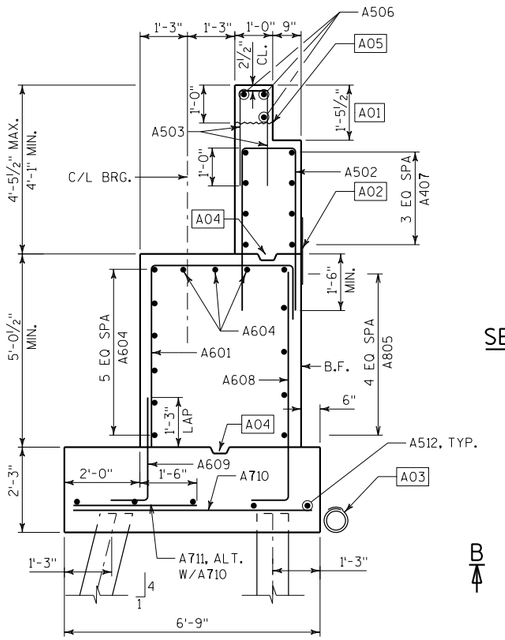


SECTION E-E

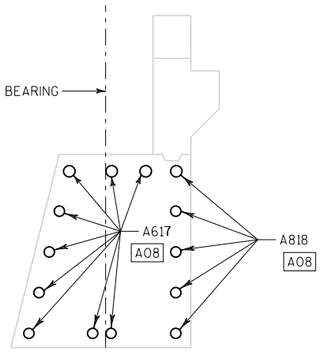


WING 2 ELEVATION

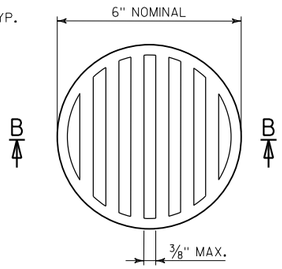
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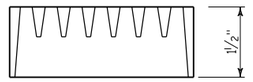


SECTION THRU ABUTMENT BODY
(AT BRIDGE WIDENING)



SECTION THRU EDGE OF EXISTNG ABUTMENT
(AT BRIDGE WIDENING)
*





SECTION B-B

(ORIENT SHIELD SO SLOTS ARE VERTICAL)

A09 RODENT SHIELD

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

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

BILL OF BARS

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

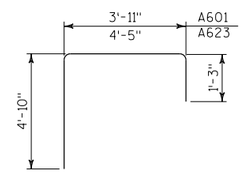
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A601	-	13	9'-8"	X		BODY VERTICAL
A502	X	15	9'-8"	X		BACKWALL VERTICAL
A503	X	40	3'-1"	X		PAVING BLOCK VERTICAL
A604	-	9	14'-3"			BODY LONGIT.
A805	-	5	14'-3"			BODY LONGIT.
A506	X	21	7'-10"			PAVING BLOCK LONGIT.
A407	X	8	14'-3"			BACKWALL LONGIT.
A608	-	16	7'-4"	X		BODY VERTICAL DOWEL
A609	-	16	3'-8"	X		BODY VERTICAL DOWEL
A710	-	14	6'-5"			FOOTING TRANS.
A711	-	14	3'-4"			FOOTING TRANS.
A512	-	5	14'-9"			FOOTING LONGIT.
A713	-	1	4'-6"			FOOTING TRANS. AT CORNER
A714	-	2	3'-6"			FOOTING TRANS. AT CORNER
A715	-	2	2'-6"			FOOTING TRANS. AT CORNER
A716	-	1	1'-6"			FOOTING TRANS. AT CORNER
A617	-	9	3'-0"			BODY LONGIT ANCHORS, F.F.
A818	-	5	5'-0"			BODY LONGIT ANCHORS, B.F.
A519	X	2	7'-6"			PAVING BLOCK AT SIDEWALK
A520	X	2	5'-3"			PAVING BLOCK UNDER SIDEWALK NOTCH
A521	X	3	7'-1"			PAVING BLOCK LONGIT. AT NEW BACKWALL
A422	X	6	1'-8"			BACKWALL LONGIT. ANCHORS
A623	-	2	10'-2"	X		BODY VERTICAL AT CORNERS
A424	X	10	6'-5"			BACKWALL LONGIT. OVER EXIST. ABUT.
A525	X	8	4'-7"	X		BACKWALL VERT. OVER EXIST. ABUT.
A526	X	16	4'-10"	X		BACKWALL VERT. ANCHORS
A427	X	2	5'-3"			BACKWALL TOP LONGIT. AT SIDEWALK
A428	X	42	3'-2"	X		PAVING BLOCK - VERT.
A529	X	42	3'-3"	X		PAVING BLOCK ANCHOR - VERT.
A630	X	9	4'-5"			WINGWALL LONGIT. B.F. & TOP
A531	X	5	15'-1"			WINGWALL LONGIT. F.F.
A432	X	7	11'-8"			WINGWALL LONGIT. B.F.
A433	X	5	11'-8"			WINGWALL LONGIT. F.F.
A434	X	6	7'-11"			WINGWALL LONGIT. F.F. & B.F.
A535	X	5	15'-6"	X		WINGWALL VERT.
A536	X	13	12'-2"	X		WINGWALL VERT.
A437	X	34	2'-7"	X		WINGWALL VERT.
A638	X	2	11'-2"			WINGWALL LONGIT. TOP
A439	X	4	4'-5"			SIDEWALL VERT.
A440	X	4	3'-10"			SIDEWALL HORIZ.
A541	X	20	9'-6"	X		PARAPET VERTICAL

LEGEND

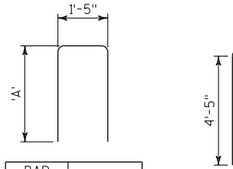
- A01 TO MATCH EXISTING ABUTMENT PAVING NOTCH WIDTH AND DEPTH.
- A02 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE OF ABUTMENTS.
- A03 PIPE UNDERDRAIN WRAPPED (6-INCH) SLOPE 0.5% MIN. CONNECT TO EXISTING 8" PIPE UNDERDRAIN.
- A04 KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2"X6"
- A05 CONST. JOINT - POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE (STRIKE OFF AND LEAVE ROUGH)
- A06 ROUGHEN SURFACE OF CONCRETE ¼" DEEP MINIMUM AT ALL AREAS WHERE NEW CONCRETE CONTACTS EXISTING CONCRETE.
- A07 SALVAGE EXIST. REINFORCEMENT & EXTEND FULL LENGTH INTO NEW WORK
- A08 ADHESIVE ANCHORS:
  NO.4 BARS EMBED 0'-10", MIN. EDGE DISTANCE 3"
  NO.5 BARS EMBED 1'-1", MIN. EDGE DISTANCE 4"
  NO.6 BARS EMBED 1'-3", MIN. EDGE DISTANCE 4½"
  NO.8 BARS EMBED 1'-8", MIN. EDGE DISTANCE 6"
- A09 THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHEILD TO THE OUTFALL PIPE. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

NOTES:

1. EXCAVATIONS BELOW THE EXISTING FOUNDATION SHALL BE FILLED WITH CONCRETE.
2. FOR PILE SPLICE DETAIL SEE SHEET 12.

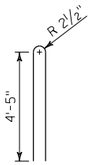


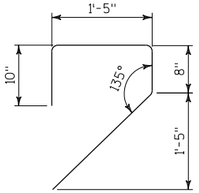
A601, A623



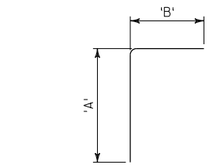
BAR MARK	DIM 'A'
A502	4'-3"
A536	5'-6"

A541

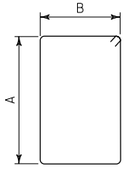




A525



BAR MARK	DIM 'A'	DIM 'B'
A503	2'-6"	8"
A608	6'-6"	10"
A609	2'-10"	1'-0"
A526	4'-3"	8"
A529	2'-6"	10"
A437	2'-0"	8"



BAR MARK	DIM 'A'	DIM 'B'
A428	8"	8"
A535	4'-8"	2'-9"

BENDING DIAGRAMS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-107

DRAWN BY AJA | PLANS CK'D. MHZ

SOUTH ABUTMENT DETAILS

SHEET 10 OF 34

256

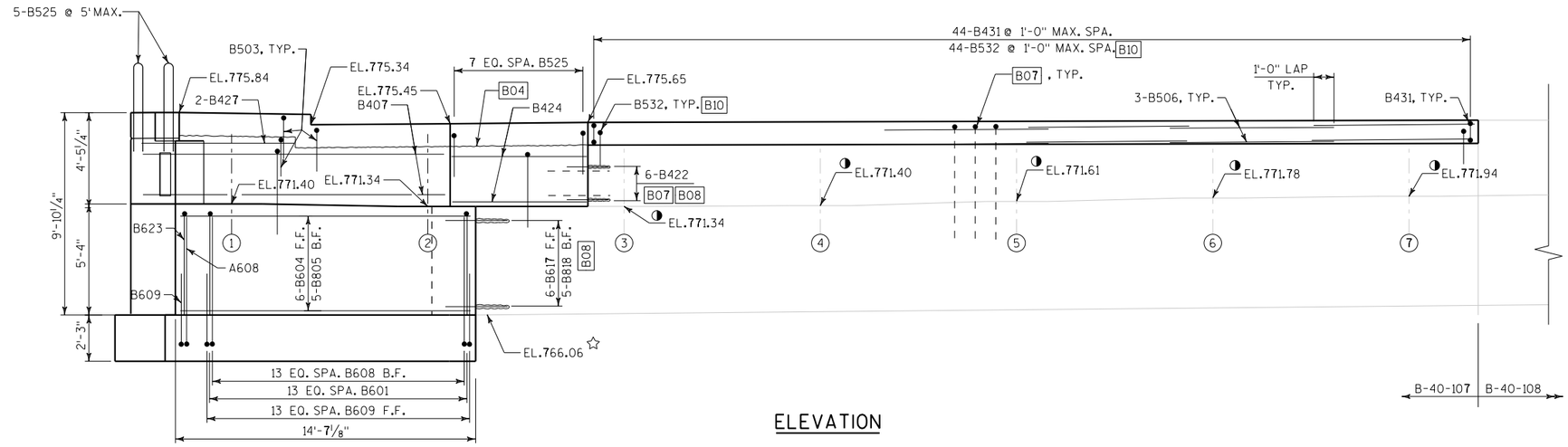
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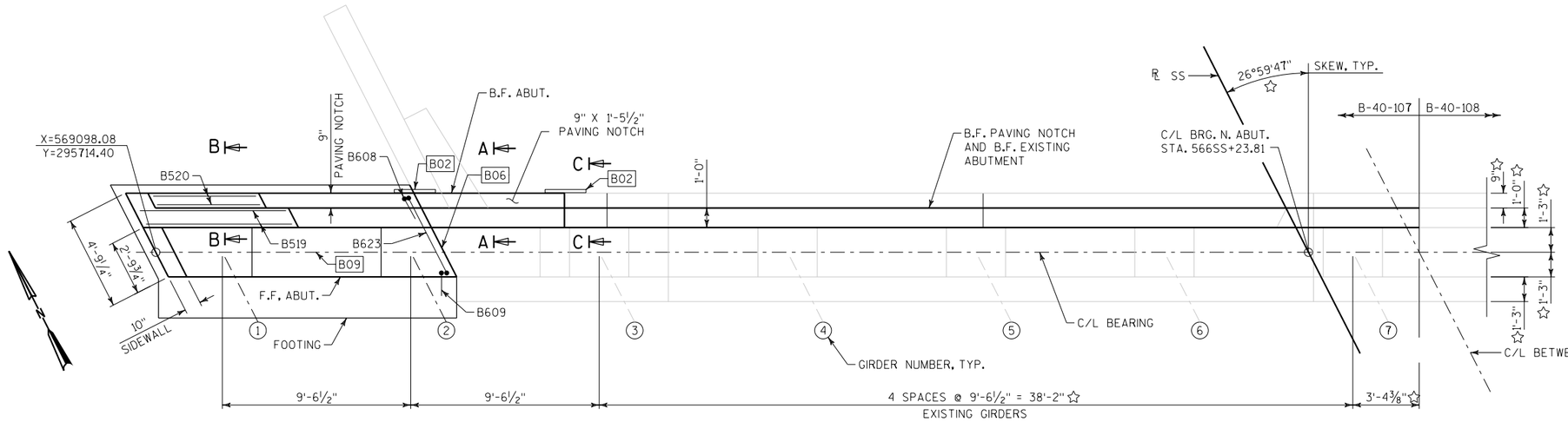
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PLOT DATE : 12/19/2017 PLOT BY : gaschenbrenner PLOT NAME : $FILE$ PLOT SCALE : 1:8

STATE PROJECT NUMBER
2030-14-70



ELEVATION



PLAN

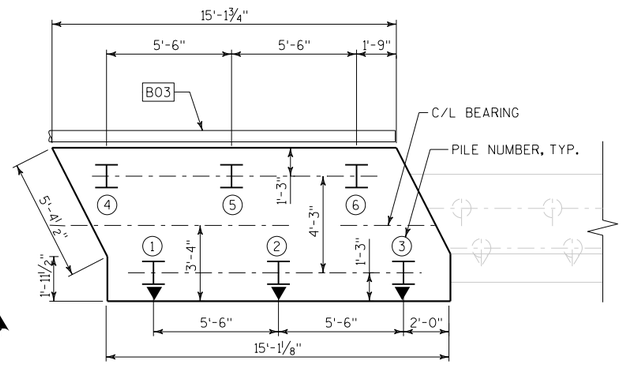
(DIMENSIONS ALONG C/L BEARING)

LEGEND

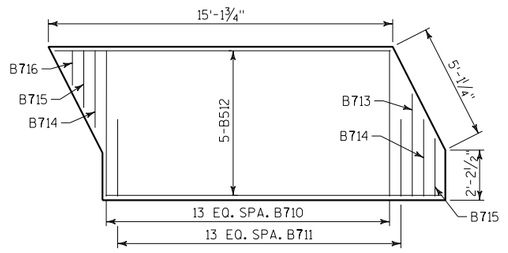
- B01 TO MATCH EXISTING ABUTMENT PAVING NOTCH WIDTH AND DEPTH.
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  NO.4 BARS EMBED 0'-10", MIN. EDGE DISTANCE 3"
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  NO.6 BARS EMBED 1'-3", MIN. EDGE DISTANCE 4½"
  NO.8 BARS EMBED 1'-8", MIN. EDGE DISTANCE 6"
- B09 MATCH EXISTING ABUTMENT CENTER LINE BEARING
- B10 ADHESIVE ANCHORS NO. 5 BAR, EMBED 1'-6" IN CONCRETE. SPACE AT 1'-0". TURN 10" LEGS AS NECESSARY TO FIT.
- ☆ PER EXISTING STRUCTURE PLANS
- ◐ PER EXISTING SURVEY
- (X) WINGWALL NUMBER
- ▼ PILE BATTER DIRECTION
- (X) PILE NUMBER

NOTE

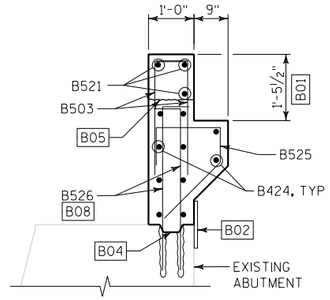
EXCAVATIONS BELOW THE EXISTING FOUNDATION SHALL BE FILLED WITH CONCRETE.



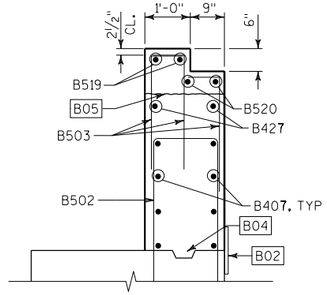
PILE PLAN



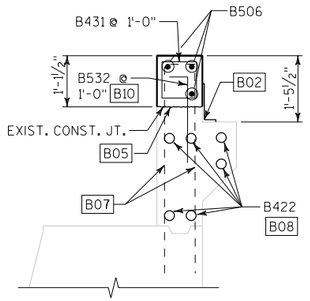
FOOTING REINFORCEMENT PLAN



SECTION A-A



SECTION B-B



SECTION C-C

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-107

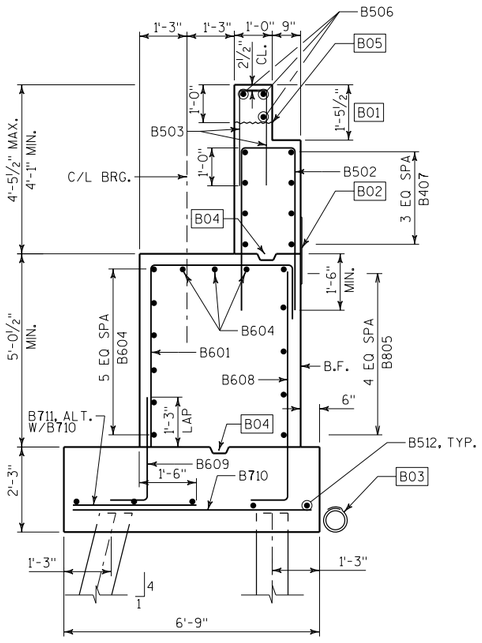
DRAWN BY AJA | PLANS CK'D. MHZ

NORTH ABUTMENT

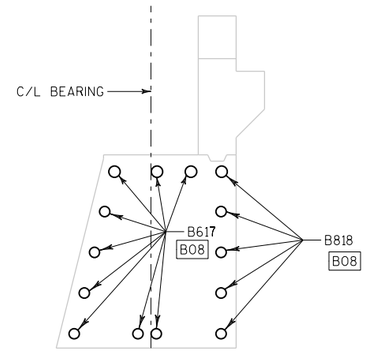
SHEET 11 OF 34

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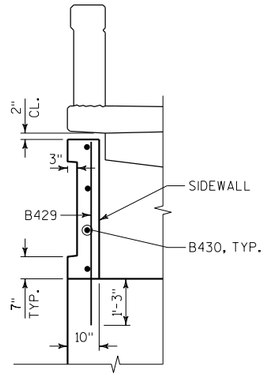
STATE PROJECT NUMBER
2030-14-70



SECTION THRU ABUTMENT BODY (AT BRIDGE WIDENING)



SECTION THRU EDGE OF EXISTING ABUTMENT (AT BRIDGE WIDENING)



SECTION THRU SIDEWALL

BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B601	-	13	9'-8"	X		BODY VERTICAL
B502	X	15	9'-8"	X		BACKWALL VERTICAL
B503	X	40	3'-1"	X		PAVING BLOCK VERTICAL
B604	-	9	14'-3"			BODY LONGIT.
B805	-	5	14'-3"			BODY LONGIT.
B506	X	21	7'-10"			PAVING BLOCK LONGIT.
B407	X	8	14'-3"			BACKWALL LONGIT.
B608	-	16	7'-4"	X		BODY VERTICAL DOWEL
B609	-	16	3'-8"	X		BODY VERTICAL DOWEL
B710	-	14	6'-5"			FOOTING TRANS.
B711	-	14	3'-4"			FOOTING TRANS.
B512	-	5	14'-9"			FOOTING LONGIT.
B713	-	1	4'-6"			FOOTING TRANS. AT CORNER
B714	-	2	3'-6"			FOOTING TRANS. AT CORNER
B715	-	2	2'-6"			FOOTING TRANS. AT CORNER
B716	-	1	1'-6"			FOOTING TRANS. AT CORNER
B617	-	9	3'-0"			BODY LONGIT ANCHORS, F.F.
B818	-	5	5'-0"			BODY LONGIT ANCHORS, B.F.
B519	X	2	7'-6"			PAVING BLOCK AT SIDEWALK
B520	X	2	5'-3"			PAVING BLOCK UNDER SIDEWALK NOTCH
B521	X	3	7'-1"			PAVING BLOCK LONGIT. AT NEW BACKWALL
B422	X	6	1'-8"			BACKWALL LONGIT. ANCHORS
B623	-	2	10'-2"	X		BODY VERTICAL AT CORNERS
B424	X	10	6'-7"			BACKWALL LONGIT. OVER EXIST. ABUT.
B525	X	8	4'-7"	X		BACKWALL VERT. OVER EXIST. ABUT.
B526	X	16	4'-10"	X		BACKWALL VERT. ANCHORS
B427	X	2	7'-6"			BACKWALL TOP LONGIT. AT SIDEWALK
B528	X	5	9'-6"	X		PARAPET DOWEL
B429	X	4	4'-5"			SIDEWALL VERT.
B430	X	4	3'-10"			SIDEWALL HORIZ.
B431	X	44	3'-2"	X		PAVING BLOCK - VERT.
B532	X	44	3'-3"	X		PAVING BLOCK ANCHOR - VERT.

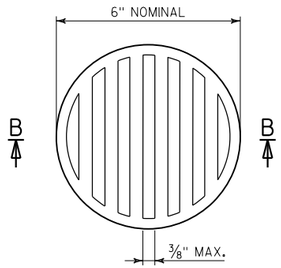
NOTE:
BAR DIMENSIONS ARE OUT TO OUT OF BAR. THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE

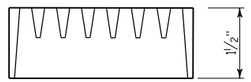
LEGEND

- B01 TO MATCH EXISTING ABUTMENT PAVING NOTCH WIDTH AND DEPTH.
- B02 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE OF ABUTMENTS.
- B03 PIPE UNDERDRAIN WRAPPED (6-INCH) SLOPE 0.5% MIN. CONNECT TO EXISTING 8" PIPE UNDERDRAIN.
- B04 KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2"X6"
- B05 CONST. JOINT - POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE (STRIKE OFF AND LEAVE ROUGH)
- B06 ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MINIMUM AT ALL AREAS WHERE NEW CONCRETE CONTACTS EXISTING CONCRETE.
- B07 SALVAGE EXIST. REINFORCEMENT & EXTEND FULL LENGTH INTO NEW WORK
- B08 ADHESIVE ANCHORS:
  NO.4 BARS EMBED 0'-10", MIN. EDGE DISTANCE 3"
  NO.5 BARS EMBED 1'-1", MIN. EDGE DISTANCE 4"
  NO.6 BARS EMBED 1'-3", MIN. EDGE DISTANCE 4½"
  NO.8 BARS EMBED 1'-8", MIN. EDGE DISTANCE 6"
- B09 THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHEILD TO THE OUTFALL PIPE. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

NOTE

EXCAVATIONS BELOW THE EXISTING FOUNDATION SHALL BE FILLED WITH CONCRETE.





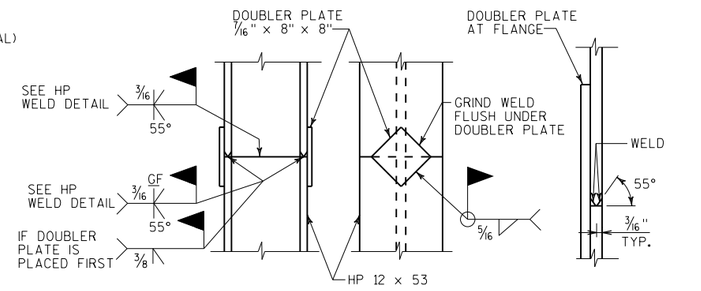
SECTION B-B

(ORIENT SHIELD SO SLOTS ARE VERTICAL)

B09 RODENT SHIELD

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

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

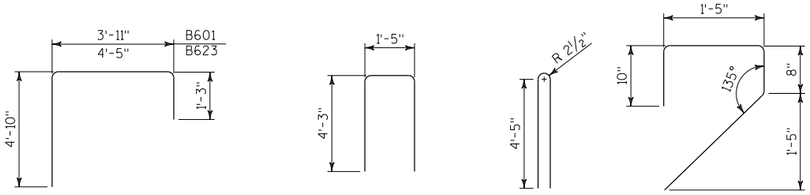


STEEL 'HP' SHAPE

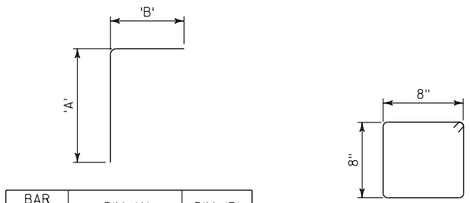
'HP' WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

PILE SPLICE DETAIL



B601, B623 B502 B528 B525



BAR MARK	DIM 'A'	DIM 'B'
B503	2'-6"	8"
B608	6'-6"	10"
B609	2'-10"	1'-0"
B526	4'-3"	8"
B532	2'-6"	10"

B431

BENDING DIAGRAMS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

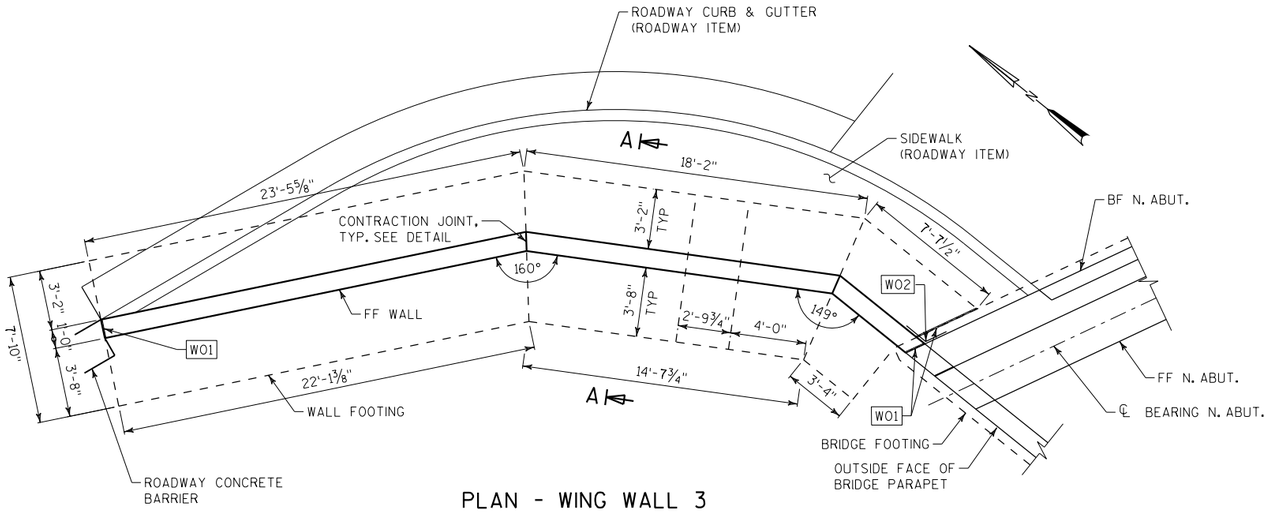
STRUCTURE B-40-107

DRAWN BY AJA | PLANS CK'D. MHZ

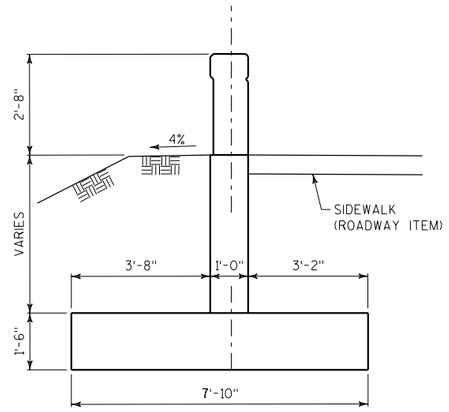
NORTH ABUTMENT DETAILS

SHEET 12 OF 34

STATE PROJECT NUMBER
2030-14-70



PLAN - WING WALL 3



SECTION A-A

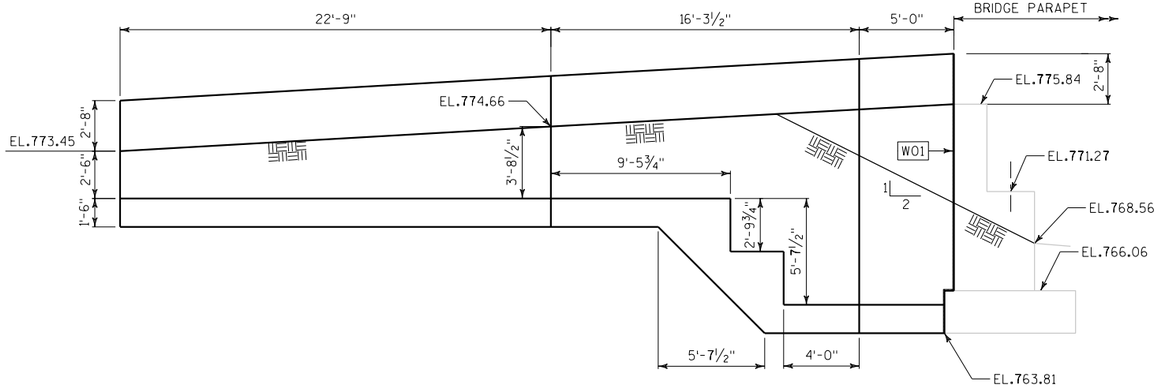
LEGEND

WO1 ¾" PREFORMED JOINT FILLER WITH NON-BITUMINOUS JOINT SEALER BETWEEN VERTICAL SURFACES

WO2 18" RUBBERIZED MEMBRANE WATERPROOFING

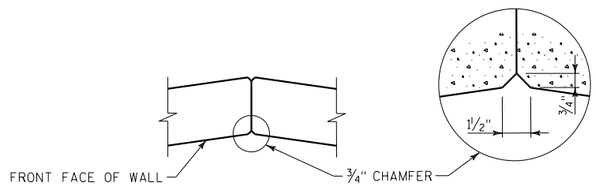
NOTE

MINIMUM FACTORED BEARING RESISTANCE = 1,600 PSF



WING WALL 3 ELEVATION

DIMENSIONS ARE ALONG FRONT FACE OF WALL



VERTICAL CONTRACTION JOINT

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-107

DRAWN BY MM | PLANS CK'D. MHZ

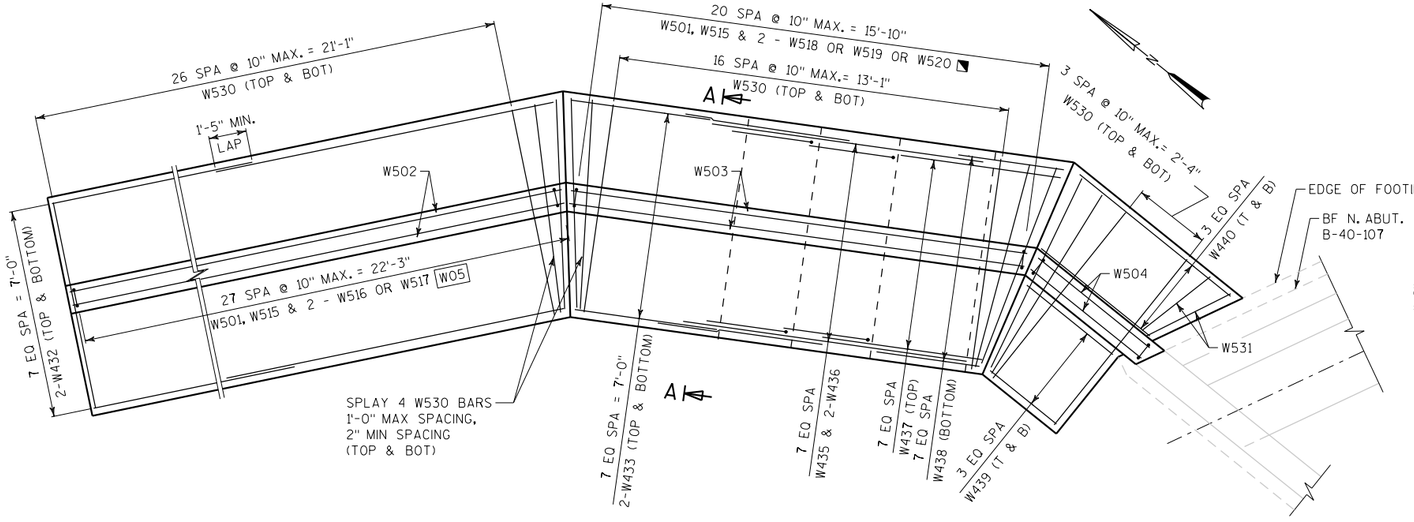
NORTH ABUTMENT
WING WALL
DETAILS (1 OF 2)

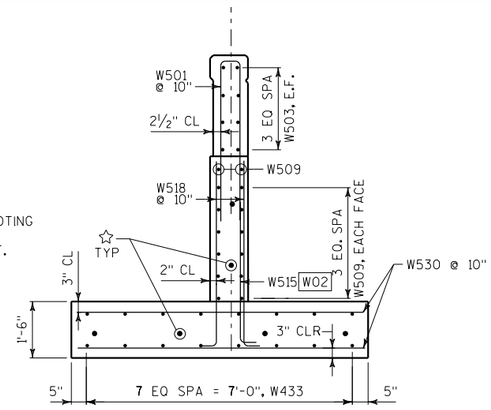
SHEET 13 OF 34

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PLOT DATE : 12/19/2017
PLOT BY : aaschenbrenner
PLOT NAME : $FILE$
PLOT SCALE : 1:8

STATE PROJECT NUMBER

2030-14-70





SECTION A-A

WING WALL 3

LEGEND

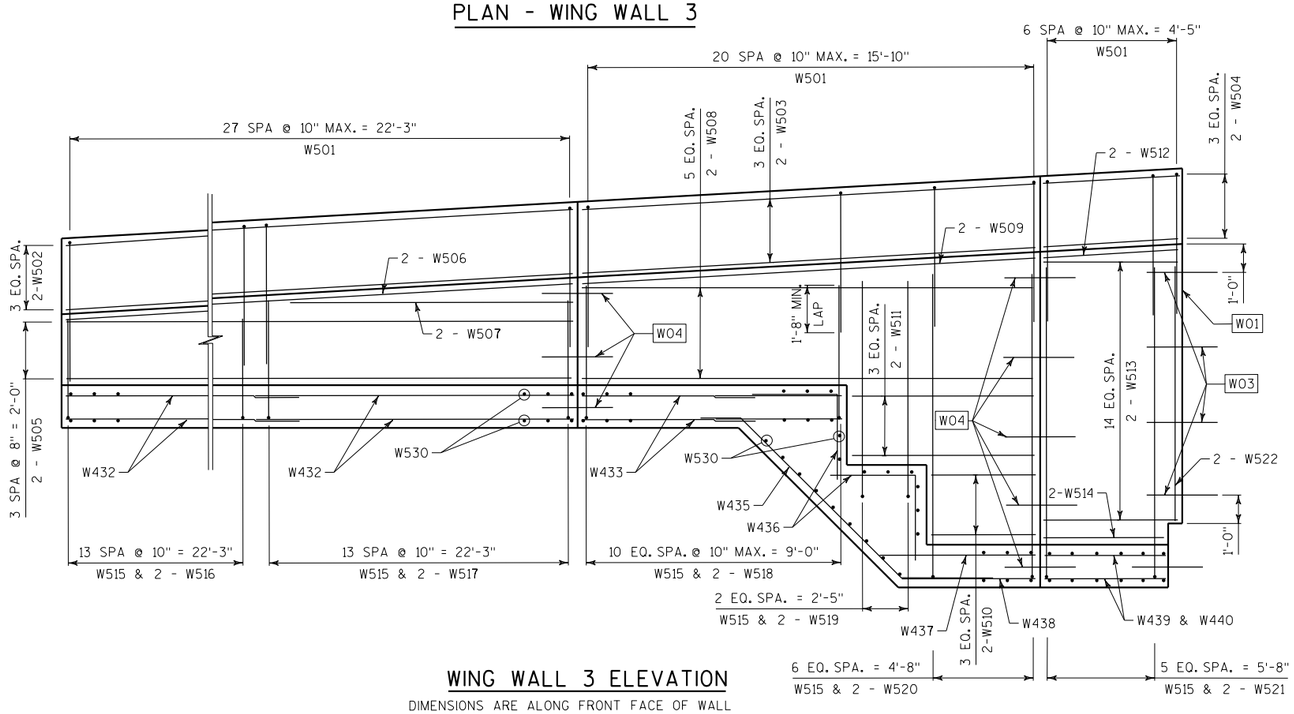
W01 ¾" PREFORMED JOINT FILLER WITH NON-BITUMINOUS JOINT SEALER BETWEEN VERTICAL SURFACES

W02 W515 IS TO BE PLACED ON THE SIDE OF WING WALL FACING THE ROADWAY.

W03 1" ϕ PLAIN (SMOOTH) ROUND DOWEL BAR, 2'-6" LONG. EMBED 1'-3" INTO ABUTMENT. USE DEBONDER ON EXTENSION INTO WING WALL. DOWELS SHALL BE LIGHTLY COATED WITH DEBONDING SURFACE TREATMENT OVER ONE HALF DOWEL LENGTH. INCLUDE IN THE BID ITEM "CONCRETE MASONRY BRIDGES".

W04 1" ϕ PLAIN (SMOOTH) ROUND DOWEL BAR, 2'-6" LONG. EMBED 1'-3" INTO ADJACENT WALLS. BEND AS REQUIRED. DOWELS SHALL BE LIGHTLY COATED WITH DEBONDING SURFACE TREATMENT OVER ONE HALF DOWEL LENGTH. INCLUDE IN THE BID ITEM "CONCRETE MASONRY BRIDGES".

PLAN - WING WALL 3



WING WALL 3 ELEVATION

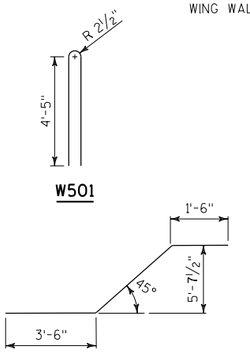
DIMENSIONS ARE ALONG FRONT FACE OF WALL

BILL OF BARS

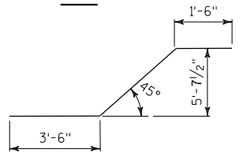
NOTE: BAR DIMENSIONS ARE OUT TO OUT OF BAR. THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
W501	X	57	9'-6"	X	-	PARAPET VERTICAL
W502	X	8	22'-6"	-	-	PARAPET LONGITUDINAL
W503	X	8	16'-0"	-	-	PARAPET LONGITUDINAL
W504	X	8	5'-0"	-	-	PARAPET LONGITUDINAL
W505	X	8	22'-5"	-	-	WALL LONGITUDINAL BODY
W506	X	2	22'-6"	-	-	WALL LONGITUDINAL TOP
W507	X	2	15'-0"	-	-	WALL LONGITUDINAL TOP
W508	X	12	15'-11"	-	-	WALL LONGITUDINAL BODY
W509	X	2	16'-0"	-	-	WALL LONGITUDINAL TOP
W510	X	8	3'-8"	-	-	WALL LONGITUDINAL BODY
W511	X	8	6'-6"	-	-	WALL LONGITUDINAL BODY
W512	X	2	4'-10"	-	-	WALL LONGITUDINAL TOP
W513	X	30	4'-9"	-	-	WALL LONGITUDINAL BODY
W514	X	2	4'-3"	-	-	WALL LONGITUDINAL TOP
W515	X	55	4'-2"	X	-	WALL VERTICAL BODY
W516	X	28	4'-2"	X	-	WALL VERTICAL BODY
W517	X	28	4'-9"	X	-	WALL VERTICAL BODY
W518	X	22	5'-4"	X	-	WALL VERTICAL BODY
W519	X	6	8'-3"	X	-	WALL VERTICAL BODY
W520	X	14	11'-4"	X	-	WALL VERTICAL BODY
W521	X	10	11'-7"	X	-	WALL VERTICAL BODY
W522	X	2	9'-0"	-	-	WALL VERTICAL BODY (END)
W530	-	66	7'-4"	-	-	WALL FOOTING TRANSVERSE (TOP & BOT.)
W531	-	2	3'-4"	-	-	WALL FOOTING TRANSVERSE (END)
W432	-	32	12'-3"	-	-	WALL FOOTING LONGITUDINAL (TOP & BOT.)
W433	-	32	5'-1"	-	-	WALL FOOTING LONGITUDINAL (TOP & BOT.)
W435	-	8	12'-10"	X	-	WALL FOOTING LONGITUDINAL (STEP)
W436	-	16	5'-5"	X	-	WALL FOOTING LONGITUDINAL (STEP)
W437	-	8	5'-10"	-	-	WALL FOOTING LONGITUDINAL (TOP)
W438	-	8	4'-6"	-	-	WALL FOOTING LONGITUDINAL (BOT.)
W439	-	8	3'-4"	-	X	WALL FOOTING LONGITUDINAL (TOP & BOT.)
W440	-	8	5'-10"	-	X	WALL FOOTING LONGITUDINAL (TOP & BOT.)

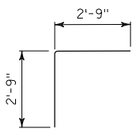
BENDING DIAGRAMS



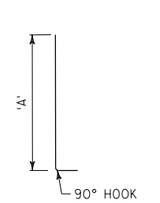
W501



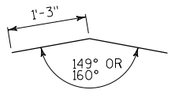
W435



W436



BAR MARK	DIM 'A'
W515	3'-6"
W516	3'-6"
W517	4'-1"
W518	4'-8"
W519	7'-7"
W520	10'-8"
W521	10'-11"



DOWEL BARS

BAR SERIES TABLE

BAR MARK	NO. REQ'D	LENGTH
W439	2 SERIES OF 4	2'-10" TO 3'-10"
W440	2 SERIES OF 4	4'-8" TO 7'-0"

BUNDLE AND TAG EACH SERIES SEPARATELY

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-107

DRAWN BY MM | PLANS CK'D. MHZ

NORTH ABUTMENT WING WALL DETAILS (2 OF 2)

SHEET 14 OF 34

260

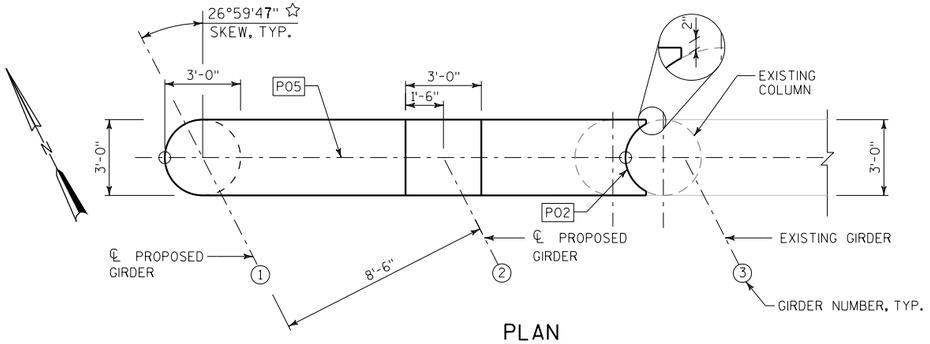
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8

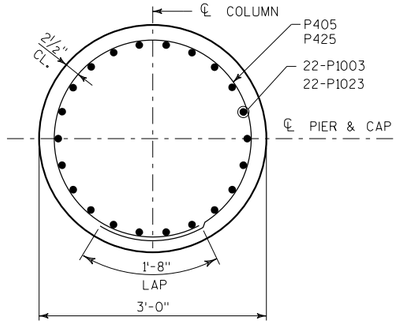
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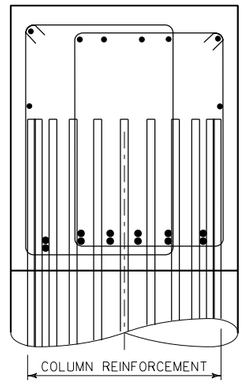
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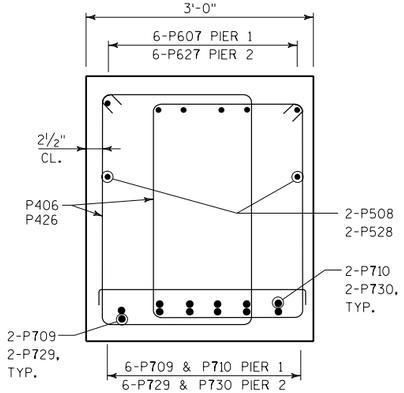
PLAN



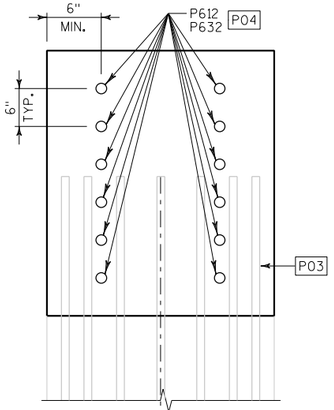
SECTION P1



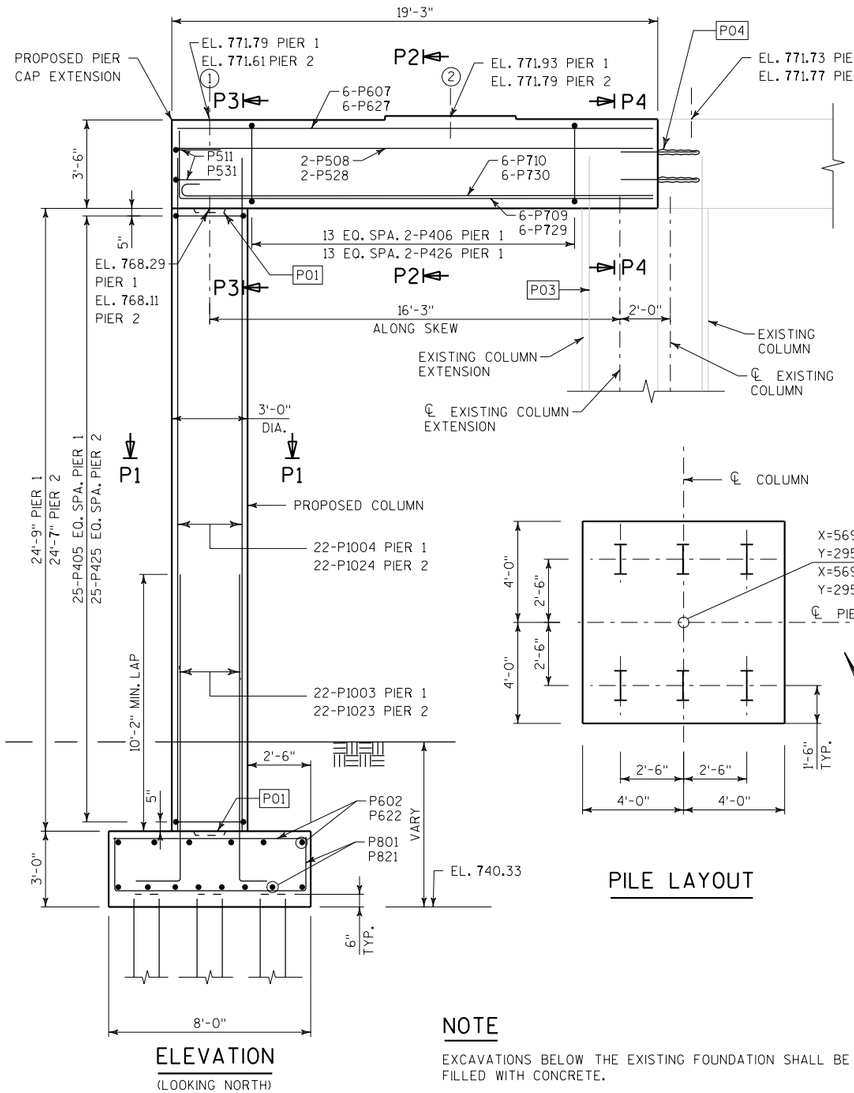
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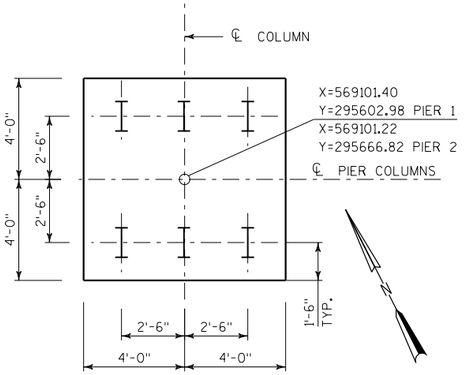
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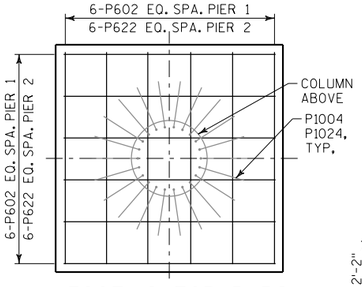
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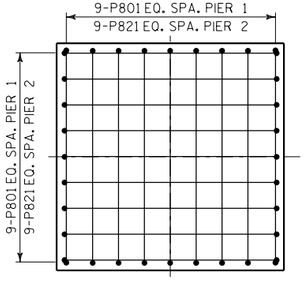
ELEVATION
(LOOKING NORTH)



PILE LAYOUT



FOOTING TOP BARS



FOOTING BOTTOM BARS

NOTE

EXCAVATIONS BELOW THE EXISTING FOUNDATION SHALL BE FILLED WITH CONCRETE.

LEGEND

P01 KEYED CONSTRUCTION JOINT FORMED BY SURFACE BEVELED 2" X 1'-3" X 1'-3" TYPICAL AT TOP AND BOTTOM OF COLUMN.

P02 ROUGHEN SURFACE OF CONCRETE ¼" DEEP MINIMUM AT ALL AREAS WHERE NEW CONCRETE CONTACTS EXISTING CONCRETE.

P03 EXISTING COLUMN REINFORCEMENT TO REMAIN AND TO EXTEND TO CAP A MINIMUM OF 2'-0". FIELD BEND REINFORCEMENT TO AVOID ANY CONFLICT IF NECESSARY .

P04 ADHESIVE ANCHORS
NO.6 BARS EMBED 1'-3", MIN. EDGE DISTANCE 4½"

P05 MATCH EXISTING PIER CENTER LINE BEARING

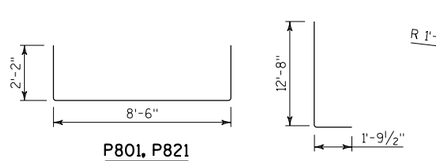
☆ PER EXISTING STRUCTURE PLANS

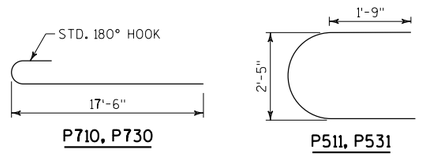
◐ PER EXISTING SURVEY

PIER BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
PIER 1						
P801	-	18	12'-5"	X	-	PIER 1 FOOTING BOTTOM E.W.
P602	-	12	8'-6"	-	-	PIER 1 FOOTING TOP E.W.
P1003	X	22	14'-2"	X	-	PIER 1 FOOTING DOWELS
P1004	X	22	26'-10"	-	-	PIER 1 COLUMN VERTICALS
P405	X	25	9'-10"	X	-	PIER 1 COLUMN HOOP BARS
P406	X	28	9'-2"	X	-	PIER 1 CAP STIRRUPS
P607	X	6	18'-10"	-	-	PIER 1 CAP HORIZONTAL TOP
P508	X	2	18'-10"	-	-	PIER 1 CAP HORIZONTAL
P709	X	6	20'-5"	X	-	PIER 1 CAP HORIZONTAL BOTTOM
P710	X	6	18'-4"	X	-	PIER 1 CAP END
P511	X	2	7'-3"	X	-	PIER 1 CAP HORIZONTAL BOTTOM
P612	X	12	3'-0"	-	-	PIER 1 CAP DOWELS
PIER 2						
P821	-	18	12'-5"	X	-	PIER 2 FOOTING BOTTOM E.W.
P622	-	12	8'-6"	-	-	PIER 2 FOOTING TOP E.W.
P1023	X	22	14'-2"	X	-	PIER 2 FOOTING DOWELS
P1024	X	22	26'-10"	-	-	PIER 2 COLUMN VERTICALS
P425	X	25	9'-10"	X	-	PIER 2 COLUMN HOOP BARS
P426	X	28	9'-2"	X	-	PIER 2 CAP STIRRUPS
P627	X	6	18'-10"	-	-	PIER 2 CAP HORIZONTAL TOP
P528	X	2	18'-10"	-	-	PIER 2 CAP HORIZONTAL
P729	X	6	20'-5"	X	-	PIER 2 CAP HORIZONTAL BOTTOM
P730	X	6	18'-4"	X	-	PIER 2 CAP END
P531	X	2	7'-3"	X	-	PIER 2 CAP HORIZONTAL BOTTOM
P632	X	12	3'-0"	-	-	PIER 2 CAP DOWELS

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





BENDING DIAGRAMS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-107

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PIER 1 AND PIER 2 DETAILS

SHEET 15 OF 34

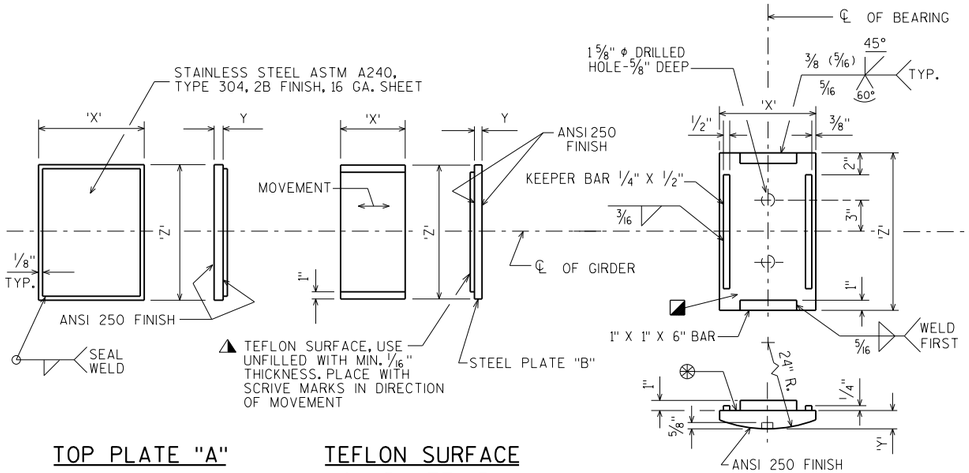
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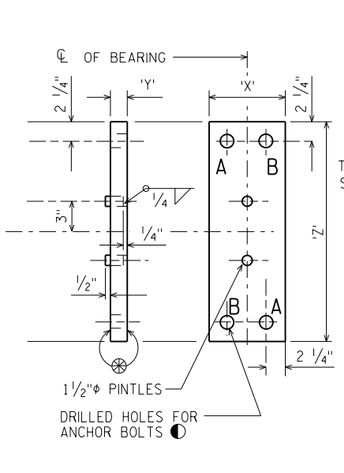
2030-14-70



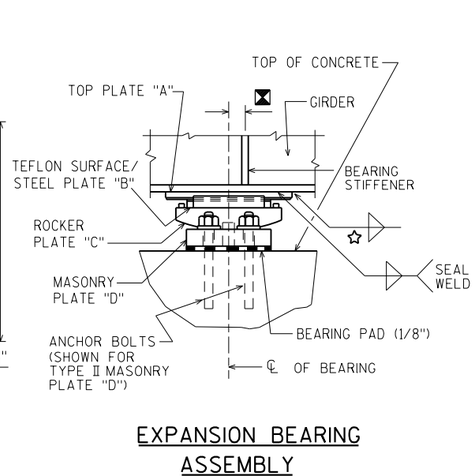
TOP PLATE "A"

TEFLON SURFACE ON PLATE "B"

ROCKER PLATE "C"



MASONRY PLATE "D"



EXPANSION BEARING ASSEMBLY

EXPANSION BEARING

	PLATE "A"			PLATE "B"			PLATE "C"			PLATE "D"			PLATE "D" TYPE	HEIGHT FEET	LOCATION	CAPACITY KIP
	'X'	'Y'	'Z'	'X'	'Y'	'Z'	'X'	'Y'	'Z'	'X'	'Y'	'Z'				
EXPANSION BEARING	11"	5/8"	1'-0"	7"	1/2"	1'-0"	7"	1 15/16"	1'-2 1/4"	8"	1 1/2"	1'-10"	II*	0.401	G1 & G2-ABUTMENTS	175
	1'-3"	5/8"	1'-0"	11"	1/2"	1'-0"	9"	2 7/8"	1'-2 1/4"	11"	2"	1'-10"	II*	0.521	G3 TO G7-ABUTMENTS	275
	1'-5"	5/8"	1'-2"	1'-1"	1/2"	1'-2"	1'-1"	3 7/8"	1'-4 1/4"	1'-2"	2 7/8"	2'-0"	II*	0.677	G1 & G2-PIER 2	375
				FIXED BEARING			5"	2 3/8"	1'-2"	1'-1"	2 7/8"	1'-11"	II*	0.448	G1 & G2-PIER 1	385

* ONLY TWO ANCHOR BOLTS REQUIRED. USE TWO OPPOSITE HOLES. FILL UNUSED HOLES IN CONCRETE AND PLATE "D" WITH NONSHRINK GROUT OR CAULK.

°F	S. ABUT.	N. ABUT.
30	0.1	-0.125
45	0	0
60	-0.1	0.125
75	-0.1	0.25
90	-0.2	0.4

☒ BEARING OFFSET TABLE

ALL DIMENSIONS IN INCHES
AMBIENT TEMPERATURE DURING GIRDER INSTALLATION

BEARING NOTES

ALL BEARINGS ARE SYMMETRICAL ABOUT ℄ OF GIRDER AND ℄ OF BEARING.

ALL STRUCTURAL STEEL BEARING PLATES SHALL BE FLAT ROLLED STEEL PLATES WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL.

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

ALL FINISHED SURFACES SHALL BE MACHINE FINISHED BY AN AUTOMATIC PROCESS.

CHAMFER ANCHOR BOLTS PRIOR TO THREADING.

ANCHOR BOLTS SHALL BE THREADED 3". PROVIDE ONE STANDARD WROUGHT WASHER AND ONE HEX NUT PER BOLT. PROJECT ANCHOR BOLTS, MASONRY PLATE "D" THICKNESS + 2 1/4", ABOVE TOP OF CONCRETE.
AT ABUT. GRD. 1 USE 1 1/4" DIA. X 1'-5" LONG ANCHOR BOLTS.
AT ABUT. GRD. 2 TO GRD. 7 USE 1 1/4" DIA. X 1'-7" LONG ANCHOR BOLTS.
AT PIERS USE 1 1/4" DIA. X 1'-5" LONG ANCHOR BOLTS.

CHAMFER TOP OF PINTLES 1/8". DRILL HOLES FOR ALL PINTLES IN MASONRY PLATE "D" FOR A DRIVING FIT.

ALL MATERIAL IN BEARINGS, INCLUDING SHIM PLATES, BUT EXCLUDING ANCHOR BOLTS, STAINLESS STEEL SHEET, TEFLON SURFACE, PINTLES, NUTS AND WASHERS SHALL CONFORM TO ASTM A709 GRADE 50W.

STEEL PINTLES SHALL CONFORM TO ASTM A449 OR MATERIAL OF EQUIVALENT YIELD STRENGTH AND ELONGATION.

ANCHOR BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A709 GRADE 36, OR MATERIAL OF EQUIVALENT YIELD STRENGTH AND ELONGATION.

PROVIDE 1/8" THICK BEARING PAD THE SAME SIZE AS MASONRY PLATE "D" FOR EACH BEARING.

ALL MATERIAL IN BEARINGS, INCLUDING SHIM PLATES AND BEARING PADS, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "BEARING ASSEMBLIES EXPANSION B-40-107", EACH.

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153, CLASS C.

TOP PLATE "A" AND STEEL PLATE "B" SHALL BE SHOP PAINTED. USE A WELDABLE PRIMER ON TOP PLATE "A". ROCKER PLATE "C" AND MASONRY PLATE "D" SHALL BE GALVANIZED. DO NOT PAINT STAINLESS STEEL OR TEFLON SURFACES.

● FOR GIRDER 2 ABUTMENT BEARING TWO PLATES "E" ARE REQUIRED.

⊛ FINISH THESE SURFACES TO ANSI 250 IF 'Y' DIMENSION IS GREATER THAN 2".

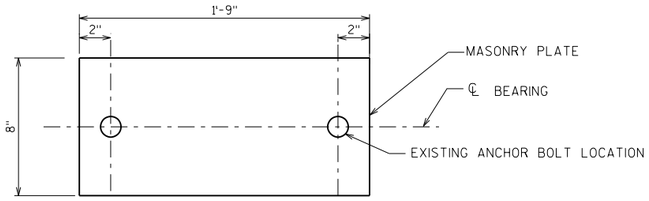
◪ PROVIDE A METHOD FOR HANDLING ROCKER PLATE "C" DURING GALVANIZING.

⚠ BOND STEEL PLATE "B" AND TEFLON WITH ADHESIVE MATERIAL MEETING FEDERAL SPECIFICATION MMM-A-134, FEP FILM OR EQUAL.

◐ DRILLED HOLES FOR ANCHOR BOLTS IN MASONRY PLATE "D" SHALL HAVE A DIAMETER 3/8" LARGER THAN ANCHOR BOLT.

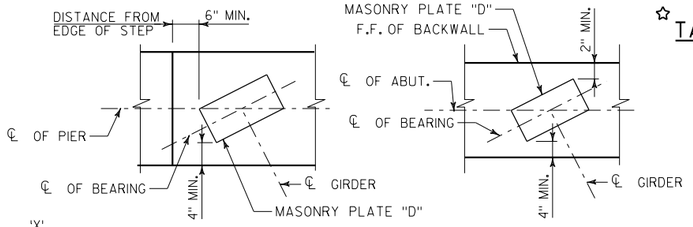
AT INSTALLATION, ENSURE STAINLESS STEEL SLIDING FACE OF THE UPPER ELEMENT AND THE TFE SLIDING FACE OF THE LOWER ELEMENT HAVE THE SURFACE FINISH SPECIFIED AND ARE CLEAN AND FREE OF ALL DUST, MOISTURE, AND OTHER FOREIGN MATTER.

EXISTING BEARINGS ON PIER 1 AND PIER 2 ARE TO BE CLEANED AND PAINTED.



EXISTING MASONRY PLATE

AT ABUTMENTS



AT PIER AT ABUTMENT

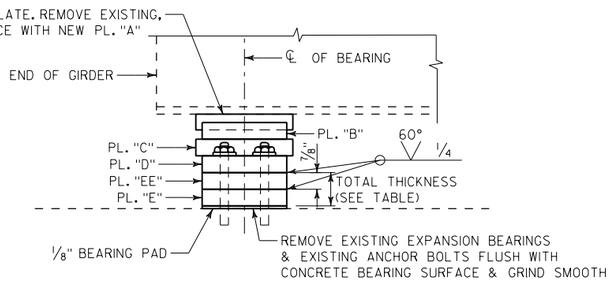
CLEARANCE DIAGRAM

☆ TABLE OF FILLET WELD SIZES

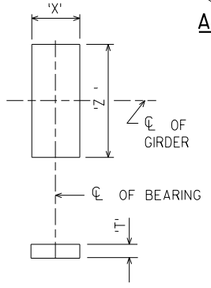
MATERIAL THICKNESS OF THICKER PART JOINED.	∓ MIN. SIZE OF FILLET WELD
TO 1/2" INCLUSIVE	3/16"
OVER 1/2" TO 3/4"	1/4"
OVER 3/4" TO 1 1/2"	△ 5/16"
OVER 1 1/2" TO 2 1/4"	△ 3/8"
OVER 2 1/4" TO 6"	△ 1/2"

∓ EXCEPT THAT THE WELD SIZE SHALL NOT EXCEED THE THICKNESS OF THE THINNER PART JOINED.

△ MIN. PASS SIZE IS 5/16"



EXPANSION BEARING REPLACEMENT



PLACE PLATE "E" BETWEEN BEARING PAD AND MASONRY PLATE "EE".

LOCATION	GDR. 2		GDR. 3		GDR. 4		GDR. 5		GDR. 6		GDR. 7	
	'T' (IN) ●	TOTAL THICK. (IN)	'T' (IN)	TOTAL THICK. (IN)	'T' (IN)	TOTAL THICK. (IN)	'T' (IN)	TOTAL THICK. (IN)	'T' (IN)	TOTAL THICK. (IN)	'T' (IN)	TOTAL THICK. (IN)
SOUTH ABUTMENT	1 15/16	4 3/4	1	1 7/8	3/4	1 5/8	3/4	1 5/8	7/16	1 5/16	3/4	1 5/8
NORTH ABUTMENT	1 3/4	4 3/8	9/16	1 7/16	0	7/8	1/8	1	0	7/8	5/16	1 3/16

FOR DIMS. 'X', 'Z' AND ANCHOR BOLT LOCATIONS FOR PLATES "E" AND "EE" SEE MASONRY PLATE "D".

TOTAL THICKNESS = PLATE "E" THICKNESS + PLATE "EE" THICKNESS

PLATE "E" DETAILS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
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STRUCTURE B-40-107

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BEARING DETAILS

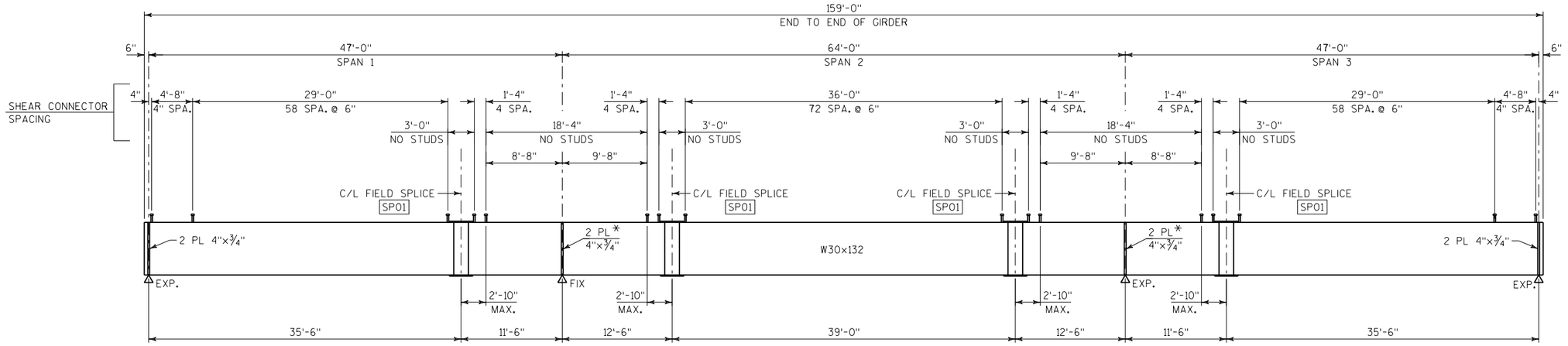
SHEET 16 OF 34

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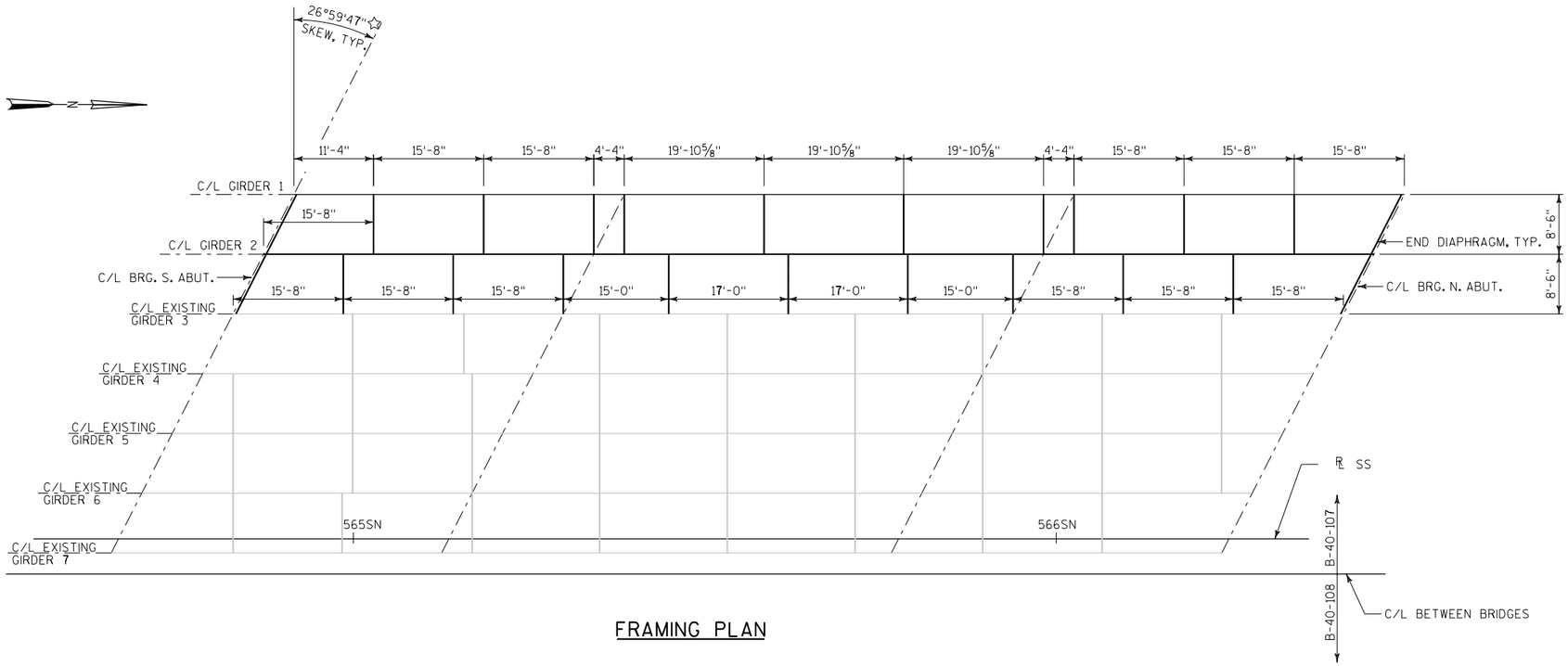
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PROPOSED GIRDER ELEVATION

* ONE ON EACH SIDE



FRAMING PLAN

LEGEND

SP01 CONTRACTOR CAN ELIMINATE ANY SPLICE(S). SHEAR STUDS SHALL CONTINUE OVER THE ELIMINATED SPLICE LOCATION.

☆ PER EXISTING STRUCTURE PLANS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

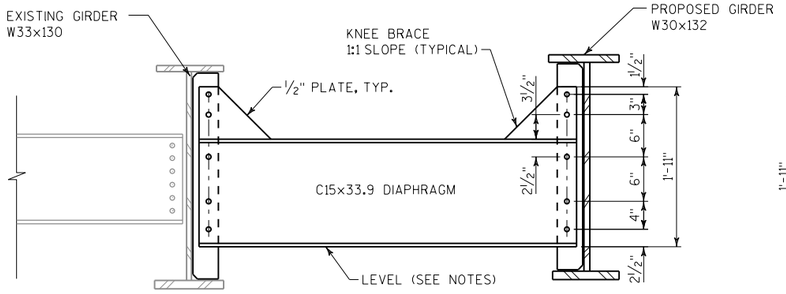
STRUCTURE B-40-107

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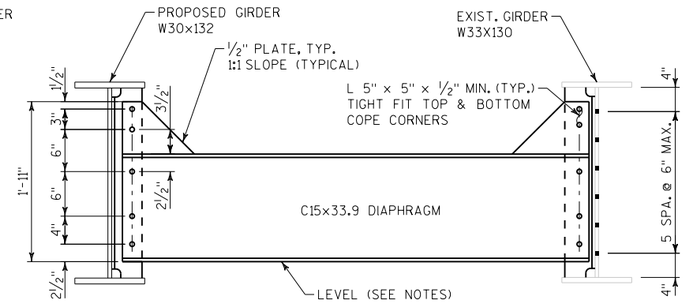
GIRDER ELEVATION AND FRAMING PLAN

SHEET 17 OF 34

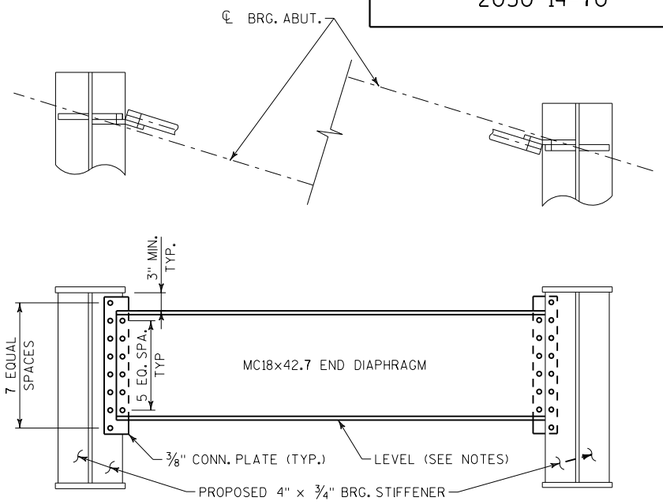
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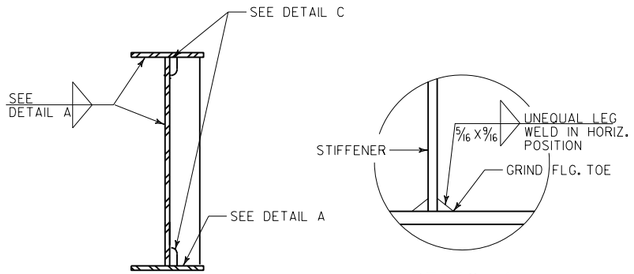
INTERMEDIATE DIAPHRAGM



DIAPHRAGM CONNECTION TO EXISTING STEEL GIRDER



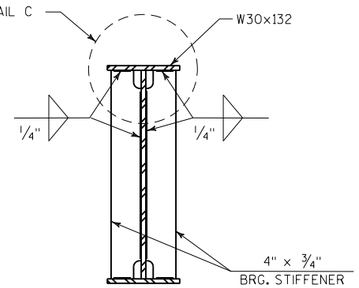
END DIAPHRAGM BETWEEN PROPOSED GIRDERS



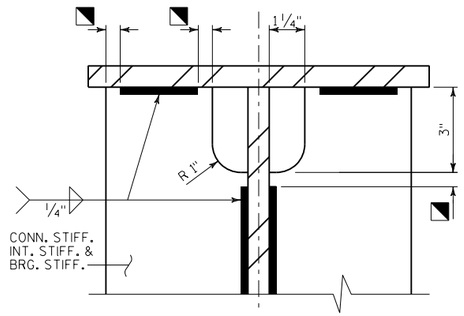
CONNECTION STIFFENER DETAILS

DETAIL A

CONNECTION STIFFENER
DETAIL @ TENSION FLANGE

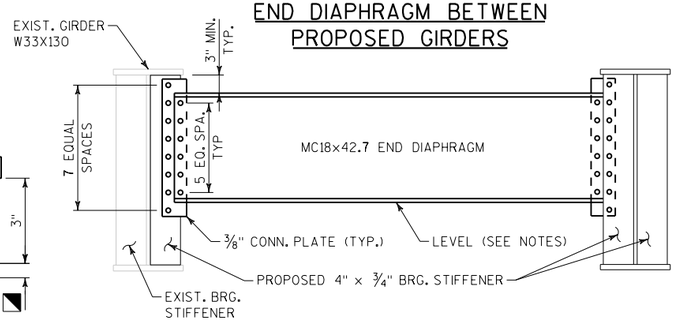


BEARING STIFFENER DETAILS TYP. AT ABUT. & PIER



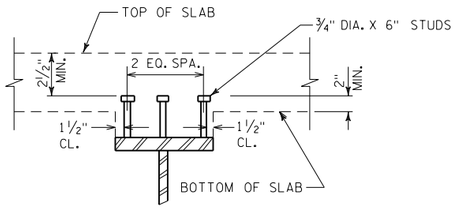
DETAIL C

STIFF. & CONN. STIFF. TO
WEB/FLANGE CONN. WELDS



END DIAPHRAGM BETWEEN EXISTING & PROPOSED GIRDERS

⅛" MIN., ¼" MAX.



NOTE:
USE THREE FIELD WELDED ¾" DIA. X 6" LONG STUDS EQUALLY SPACED WITH A MIN. OF 1½" CL. FROM THE FLANGE EDGE. STUDS SHALL NOT BE PLACED OVER FIELD SPLICE PLATES.

FOR WELDING STUDS TO EXISTING STEEL GIRDERS, SEE SHEET 25 FOR DETAILS.

SHEAR CONNECTION DETAILS

NOTES

ALL BOLTED CONNECTIONS SHALL BE FRICTION TYPE USING ¾"Φ HIGH STRENGTH ASTM A325 BOLTS WITH DOUBLE WASHERS.

MAXIMUM HOLE SIZE SHALL NOT BE MORE THAN 1/16" GREATER THAN THE NOMINAL BOLT DIAMETER. MINIMUM BOLT SPACING SHALL BE 2¼" FROM CENTER TO CENTER OF BOLTS AND A MINIMUM EDGE DISTANCE 1" FROM CENTER OF BOLT.

DIAPHRAGMS SHALL BE HORIZONTAL EXCEPT WHEN THE DIFFERENCE IN ADJACENT GIRDER ELEVATIONS IS OF A MAGNITUDE THAT NECESSITATES SLOPING THE DIAPHRAGMS.

WHEN DIAPHRAGMS ARE SLOPED, PLACE CENTER OF DIAPHRAGM AT MID-DEPTH OF GIRDER.

FOR WELDING STUDS TO EXISTING STEEL GIRDERS, SEE SHEET 25 FOR DETAILS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-107

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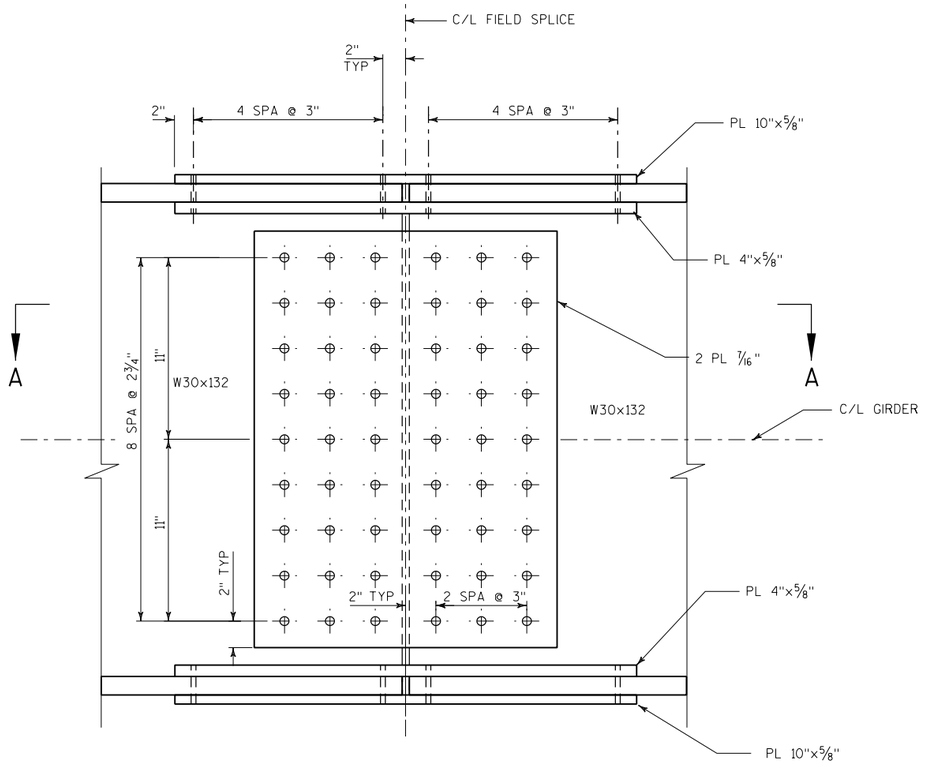
DIAPHRAGM DETAILS

SHEET 18 OF 34

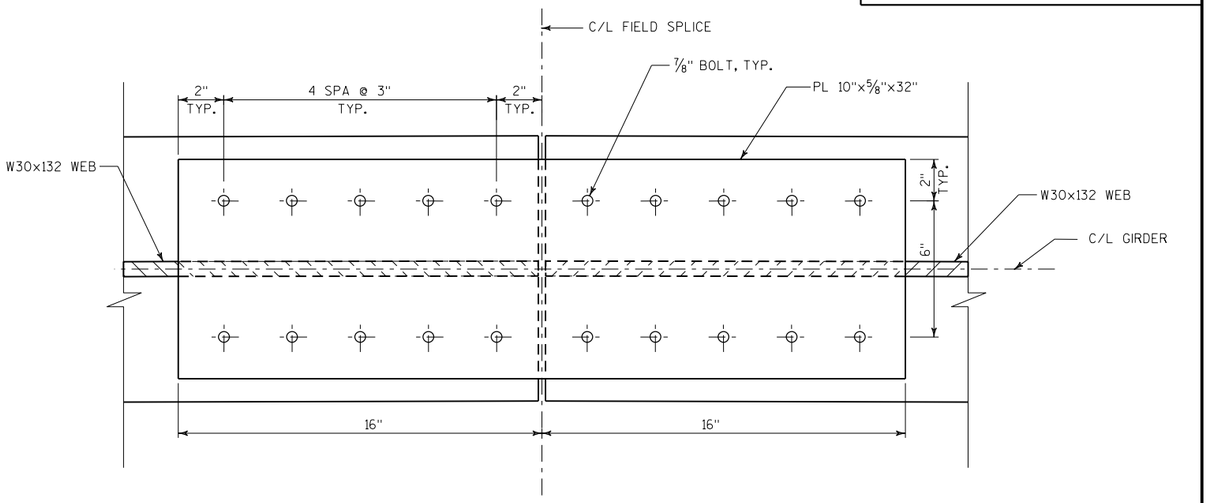
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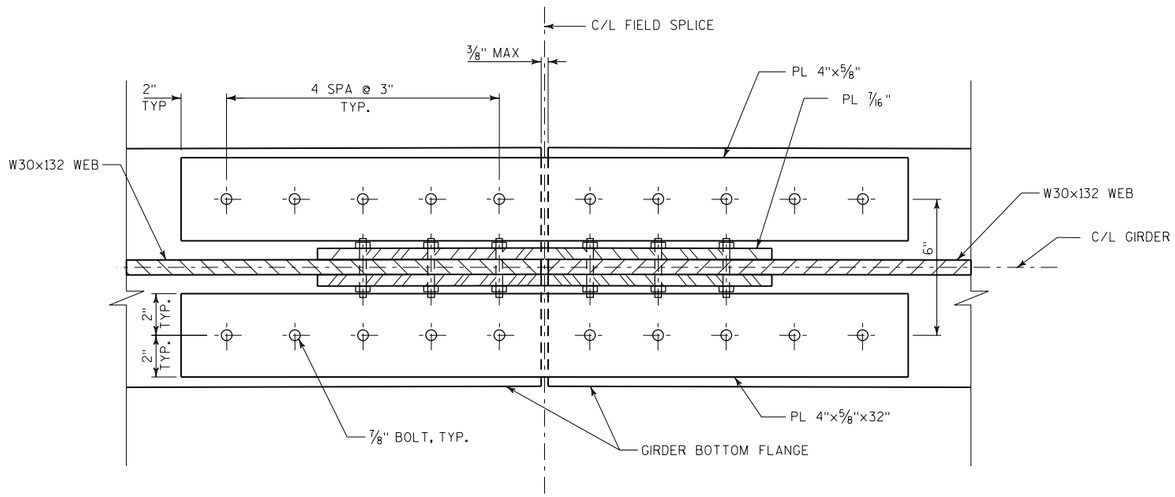
STATE PROJECT NUMBER
2030-14-70



ELEVATION



TOP AND BOTTOM FLANGE EXTERIOR PLATE



SECTION A-A

NOTES:

OPTIONAL WELDED SHOP SPLICES MAY BE USED FOR ALL FLANGE AND WEB PLATES OVER 60'-0" LONG. IF USED, THE LOCATION OF THE SPLICE SHALL BE SHOWN ON SHOP DRAWINGS AND WILL BE SUBJECT TO THE APPROVAL OF THE STRUCTURES DESIGN SECTION.

ALL BOLTED CONNECTIONS SHALL BE FRICTION TYPE USING 7/8" ϕ HIGH STRENGTH BOLTS (A.S.T.M. A325) WITH DOUBLE WASHERS.

PRIOR TO STEEL BLAST, ALL FLAME CUT EDGES OF PLATE THAT ARE TO BE PAINTED SHALL BE GROUND OR PLANED TO REMOVED THE HARDENED SURFACE CAUSE BY THE FLAME, AND CORNERS CHAMFERED 1/16" MINIMUM.

NO.	DATE	REVISION	BY

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STRUCTURE B-40-107

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SPLICE DETAIL

SHEET 19 OF 34

8

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FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Structures\B-40-107\DGN\cds\B107_080503_ss.dgn PLOT DATE : 12/19/2017 PLOT BY : gaschenbrenner PLOT NAME : $FILE$ PLOT SCALE : 1:20

STATE PROJECT NUMBER

2030-14-70

TOP OF DECK (T.D.) AND TOP OF STEEL (T.S.) ELEVATIONS *

		S. ABUT.	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	C/L Pier 1
W. DECK EDGE	T.D.	775.11	775.19	775.25	775.30	775.35	775.40	775.44	775.48	775.51	775.55	775.57
GIRDER 1	T.D.	775.15	775.21	775.27	775.33	775.38	775.42	775.47	775.51	775.54	775.58	775.60
	T.S.	774.31										774.77
GIRDER 2	T.D.	775.26	775.33	775.39	775.45	775.50	775.55	775.60	775.64	775.68	775.72	775.75
	T.S.	774.42										774.91
GIRDER 3	T.D.	775.37	775.44	775.50	775.56	775.62	775.67	775.72	775.77	775.81	775.85	775.89
	T.S.	774.54										774.89
GIRDER 4	T.D.	775.47	775.54	775.61	775.68	775.74	775.79	775.85	775.90	775.94	775.99	776.02
	T.S.	774.52										774.85
GIRDER 5	T.D.	775.57	775.65	775.72	775.79	775.85	775.91	775.97	776.02	776.07	776.12	776.16
	T.S.	774.58										774.98
GIRDER 6	T.D.	775.67	775.75	775.82	775.89	775.96	776.03	776.09	776.14	776.20	776.24	776.29
	T.S.	774.64										775.07
GIRDER 7	T.D.	775.76	775.85	775.92	776.00	776.07	776.14	776.20	776.26	776.32	776.37	776.42
	T.S.	774.69										775.20
E. DECK EDGE	T.D.	775.77	775.85	775.93	776.00	776.07	776.14	776.21	776.27	776.32	776.38	776.42

		C/L Pier 1	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	C/L Pier 2
W. DECK EDGE	T.D.	775.57	775.60	775.63	775.65	775.66	775.67	775.67	775.66	775.64	775.62	775.60
GIRDER 1	T.D.	775.60	775.64	775.66	775.68	775.70	775.71	775.71	775.70	775.69	775.67	775.64
	T.S.	774.77										774.81
GIRDER 2	T.D.	775.75	775.78	775.82	775.84	775.86	775.87	775.88	775.87	775.87	775.85	775.83
	T.S.	774.91										774.99
GIRDER 3	T.D.	775.89	775.93	775.97	776.00	776.02	776.03	776.04	776.05	776.04	776.03	776.02
	T.S.	774.89										775.00
GIRDER 4	T.D.	776.02	776.07	776.11	776.15	776.17	776.19	776.21	776.22	776.22	776.21	776.20
	T.S.	774.85										774.99
GIRDER 5	T.D.	776.16	776.21	776.25	776.29	776.33	776.35	776.37	776.38	776.39	776.39	776.38
	T.S.	774.98										775.14
GIRDER 6	T.D.	776.29	776.34	776.39	776.44	776.47	776.50	776.53	776.54	776.55	776.56	776.55
	T.S.	775.07										775.28
GIRDER 7	T.D.	776.42	776.48	776.53	776.58	776.62	776.65	776.68	776.70	776.72	776.73	776.73
	T.S.	775.20										775.46
E. DECK EDGE	T.D.	776.42	776.49	776.54	776.59	776.63	776.67	776.70	776.72	776.74	776.74	776.75

		C/L Pier 2	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	N. Abut.
W. DECK EDGE	T.D.	775.60	775.57	775.54	775.51	775.48	775.44	775.40	775.35	775.30	775.25	775.17
GIRDER 1	T.D.	775.64	775.62	775.59	775.56	775.53	775.49	775.45	775.40	775.35	775.30	775.25
	T.S.	774.81										774.41
GIRDER 2	T.D.	775.83	775.81	775.79	775.76	775.73	775.69	775.65	775.61	775.57	775.52	775.47
	T.S.	774.99										774.63
GIRDER 3	T.D.	776.02	776.00	775.98	775.95	775.93	775.89	775.86	775.82	775.78	775.73	775.69
	T.S.	775.00										774.74
GIRDER 4	T.D.	776.20	776.18	776.17	776.15	776.12	776.09	776.06	776.03	775.99	775.94	775.90
	T.S.	774.99										774.75
GIRDER 5	T.D.	776.38	776.37	776.35	776.34	776.31	776.29	776.26	776.23	776.19	776.15	776.11
	T.S.	775.14										774.97
GIRDER 6	T.D.	776.55	776.55	776.54	776.52	776.50	776.48	776.46	776.43	776.40	776.36	776.32
	T.S.	775.28										775.13
GIRDER 7	T.D.	776.73	776.72	776.72	776.70	776.69	776.67	776.65	776.63	776.60	776.56	776.53
	T.S.	775.46										775.32
E. DECK EDGE	T.D.	776.75	776.74	776.74	776.73	776.71	776.70	776.68	776.65	776.62	776.59	776.56

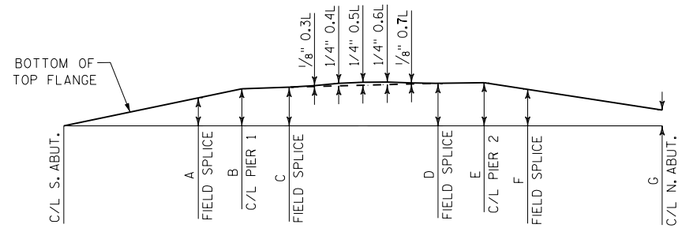
* THESE ELEVATIONS ARE TO TOP OF STEEL (PLICE AND COVER PLATE THICKNESS, IF APPLICABLE ARE ACCOUNTED FOR) AND THEY ARE FOR THE MATERIAL AS ERECTED.

DEAD LOAD DEFLECTION

SPAN 1	S. ABUT.	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	PIER 1
DEAD LOAD DEFLECTION (IN)	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.0

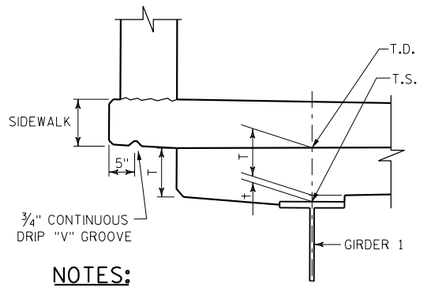
SPAN 2	PIER 1	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	PIER 2
DEAD LOAD DEFLECTION (IN)	0.0	0.1	0.3	0.4	0.6	0.6	0.6	0.4	0.3	0.1	0.0

SPAN 3	PIER 2	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	N. ABUT.
DEAD LOAD DEFLECTION (IN)	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.0



	A	B	C	D	E	F	G
GIRDER 1	4 1/8"	5 1/2"	5 5/8"	5 7/8"	6"	4 7/8"	1 1/4"
GIRDER 2	4 1/2"	5 7/8"	6 1/8"	6 5/8"	6 7/8"	5 3/4"	2 1/2"

BLOCKING DIAGRAM



NOTES:

† = HAUNCH HEIGHT AT CENTERLINE OF GIRDER.
HAUNCH HEIGHTS WILL NORMALLY BE MADE 2" AT EDGE OF GIRDER, AT ABUTMENTS, HINGES, AND FIELD SPLICES.
HAUNCH DEPTH VARIATIONS NEED NOT BE SHOWN ON THE PLANS.

(TO DETERMINE "+": AFTER ALL STRUCTURAL STEEL HAS BEEN ERECTED, ELEVATIONS OF THE TOP FLANGES, TOP OF SPLICE PLATES, OR TOP OF COVER PLATES, WHICHEVER APPLIES, SHALL BE TAKEN AT CENTERLINE OF BEARINGS, CENTERLINE OF FIELD SPLICES, AND AT 0.1 POINTS.

TOP OF DECK ELEV. AT FINAL GRADE.
\- TOP OF STEEL ELEV. AFTER STEEL ERECTION.
\+ CONC. ONLY DEFLECTION (DOWNWARD DEFLECTION IS ADDED. UPWARD DEFLECTION IS SUBTRACTED.)
\- SLAB THICKNESS ("T")

= "†" VALUE FOR SETTING HAUNCH.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

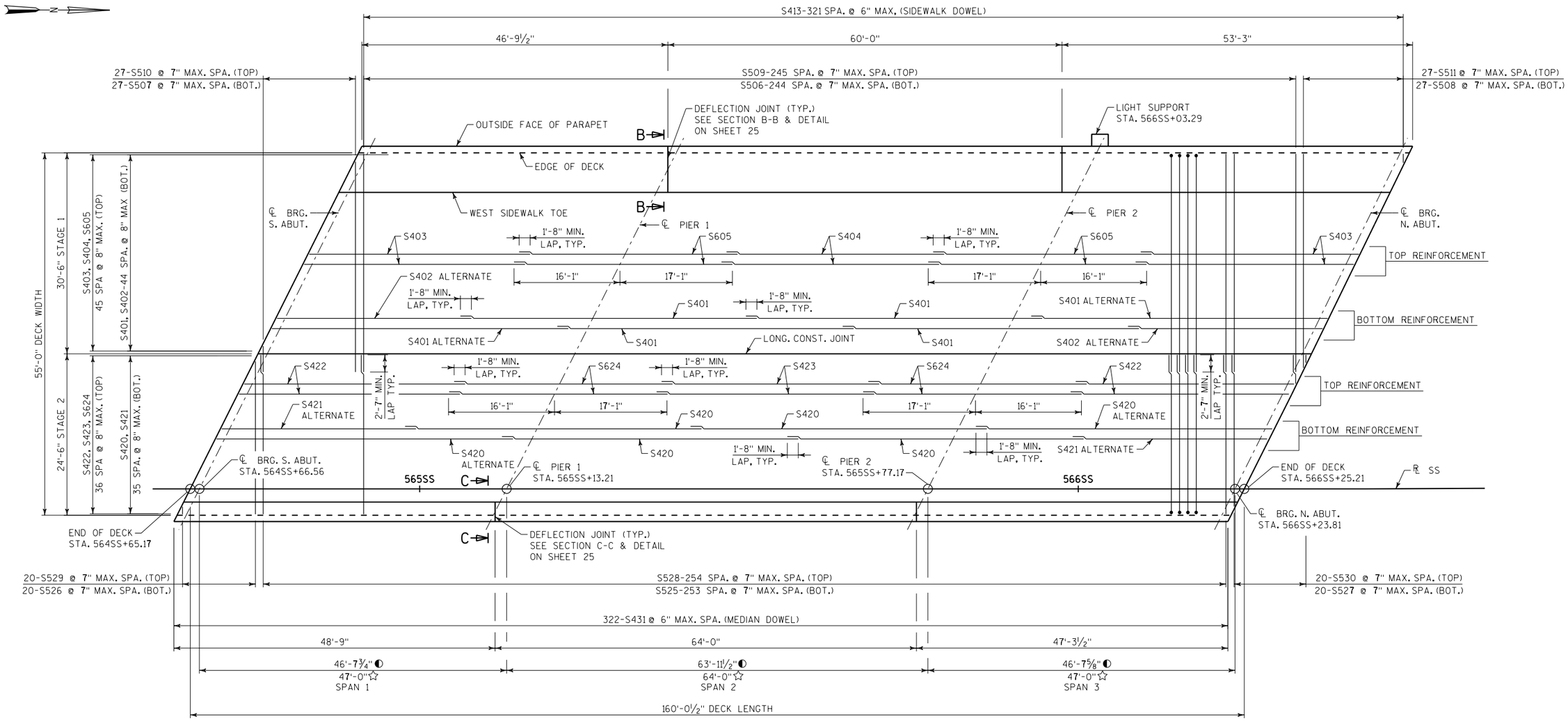
STRUCTURE B-40-107

DRAWN BY AJA | PLANS CK'D. MHZ

GIRDER AND SUPERSTRUCTURE DETAILS

SHEET 20 OF 34

STATE PROJECT NUMBER
2030-14-70



DECK REINFORCEMENT PLAN

LEGEND

☆ PER EXISTING STRUCTURE PLANS

◐ PER EXISTING SURVEY

NOTES

FOR SECTION THRU DECK, SIDEWALK & MEDIAN, SEE SHEET 22.

FOR SIDEWALK & MEDIAN REINFORCEMENT DETAILS, SEE SHEET 23.

FOR EXPANSION DIAPHRAGM REINFORCEMENT, SEE SHEET 24.

FOR SECTIONS B-B & C-C, SUPERSTRUCTURE BILL OF BARS & HAUNCH REINFORCEMENT, SEE SHEET 25.

FOR PARAPET REINFORCEMENT DETAILS, SEE SHEET 29.

FOR LIGHT SUPPORT REINFORCEMENT, SEE SHEET 30.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-107

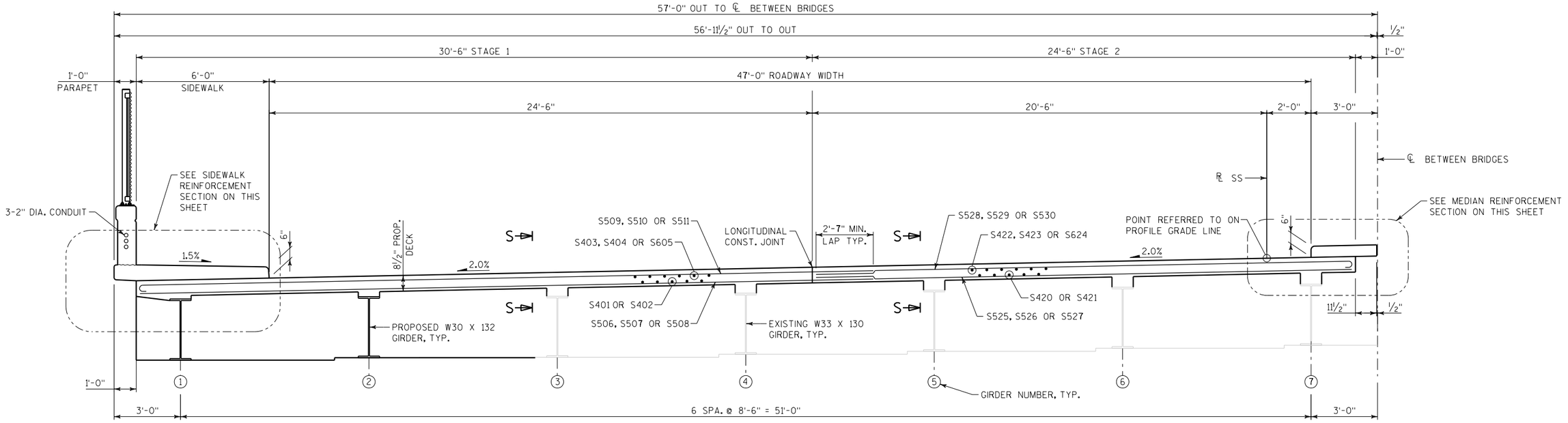
DRAWN BY AJA | PLANS CK'D. MHZ

SUPERSTRUCTURE REINFORCEMENT PLAN

SHEET 21 OF 34

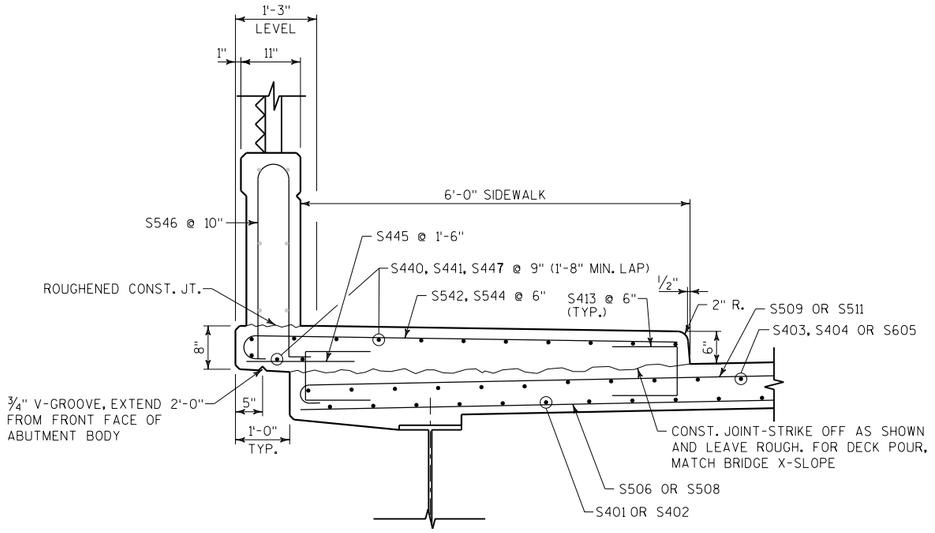
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STATE PROJECT NUMBER
2030-14-70

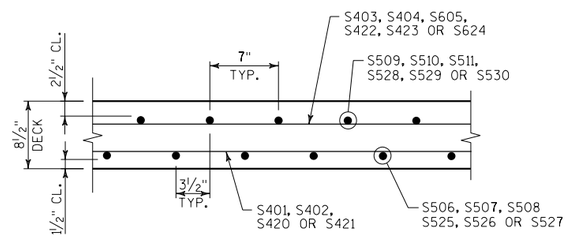


CROSS SECTION THRU DECK

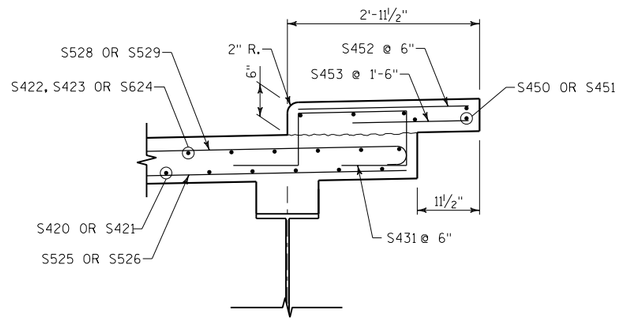
(LOOKING NORTH)



SIDEWALK REINFORCEMENT SECTION



SECTION S-S



MEDIAN REINFORCEMENT SECTION

(HAUNCH REINFORCEMENT NOT SHOWN FOR CLARITY)

NOTES

FOR DECK REINFORCEMENT PLAN, SEE SHEET 21.

FOR SIDEWALK & MEDIAN REINFORCEMENT DETAILS, SEE SHEET 23.

FOR EXPANSION DIAPHRAGM REINFORCEMENT, SEE SHEET 24.

FOR SUPERSTRUCTURE BILL OF BARS & HAUNCH REINFORCEMENT, SEE SHEET 25.

FOR PARAPET REINFORCEMENT DETAILS, SEE SHEET 29.

FOR LIGHT SUPPORT REINFORCEMENT, SEE SHEET 30.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-107

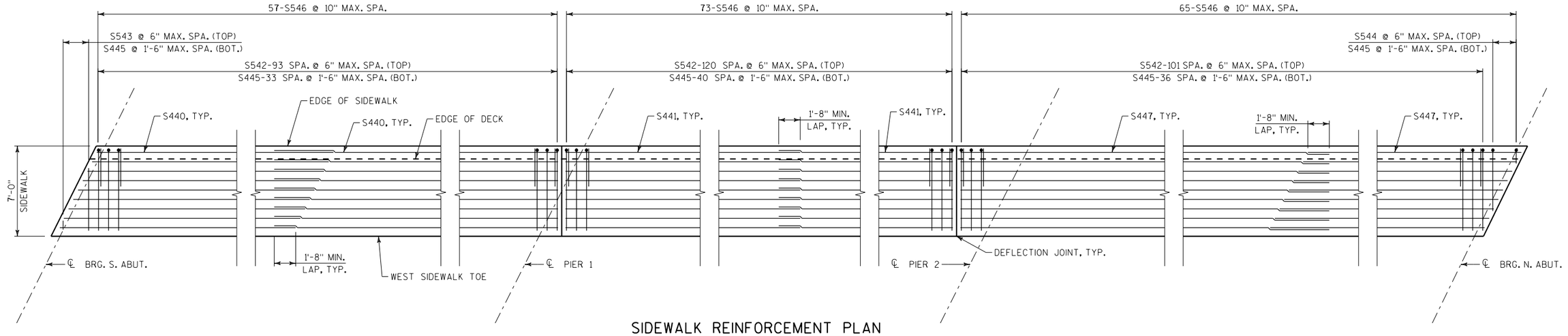
DRAWN BY AJA | PLANS CK'D. MHZ

SUPERSTRUCTURE CROSS SECTIONS

SHEET 22 OF 34

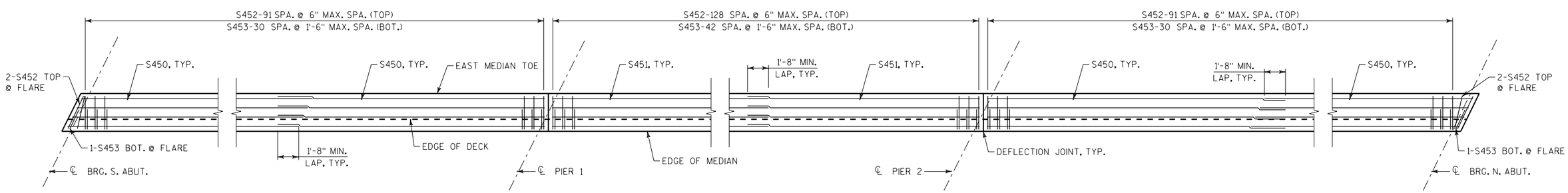
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PLOT DATE : 12/19/2017
PLOT BY : aaschenbrenner
PLOT NAME : $FILE$
PLOT SCALE : 1:4.66667

STATE PROJECT NUMBER
2030-14-70



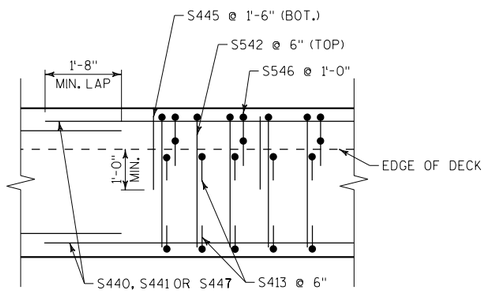
SIDEWALK REINFORCEMENT PLAN

(S413 SIDEWALK DOWELS NOT SHOWN FOR CLARITY)
(LIGHT SUPPORT NOT SHOWN FOR CLARITY)

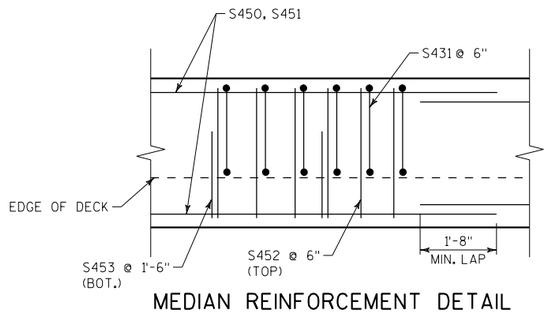


MEDIAN REINFORCEMENT PLAN

(S431 MEDIAN DOWELS NOT SHOWN FOR CLARITY)



SIDEWALK REINFORCEMENT DETAIL



MEDIAN REINFORCEMENT DETAIL

NOTES

FOR DECK REINFORCEMENT PLAN, SEE SHEET 21.

FOR SECTION THRU DECK, SIDEWALK & MEDIAN, SEE SHEET 22.

FOR EXPANSION DIAPHRAGM REINFORCEMENT, SEE SHEET 24.

FOR SUPERSTRUCTURE BILL OF BARS & HAUNCH REINFORCEMENT, SEE SHEET 25.

FOR PARAPET REINFORCEMENT DETAILS, SEE SHEET 29.

FOR LIGHT SUPPORT REINFORCEMENT, SEE SHEET 30.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-107

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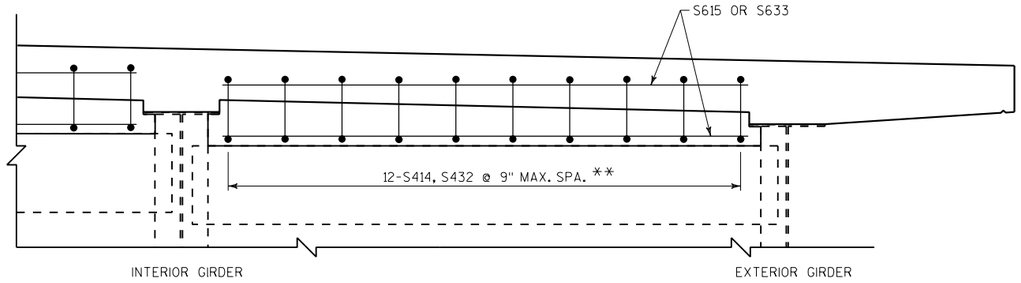
SIDEWALK & MEDIAN REINFORCEMENT DETAILS

SHEET 23 OF 34

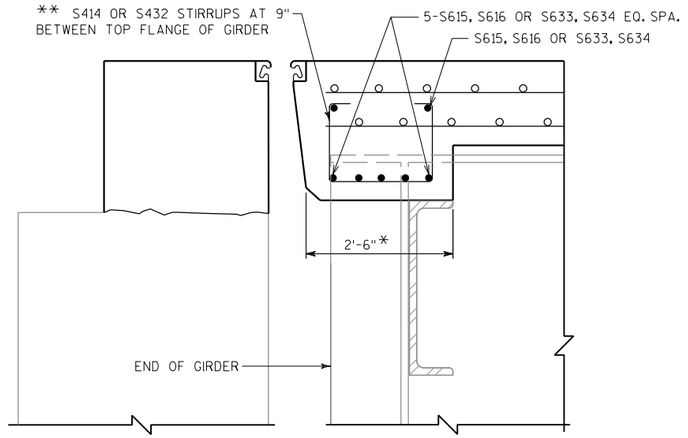
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STATE PROJECT NUMBER

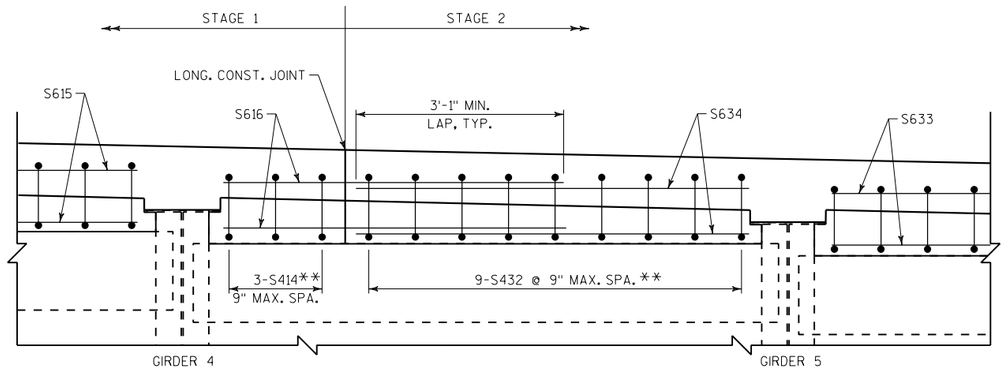
2030-14-70



PART TRANSVERSE SECTION AT DIAPHRAGM EXPANSION END



SECTION THRU EXPANSION END



PART TRANSVERSE SECTION DIAPHRAGM EXPANSION AT CONST. JOINT

8

8

LEGEND

* DIMENSION IS TAKEN NORMAL TO ℄ ABUTMENT

** DIMENSION IS TAKEN PARALLEL TO ℄ GIRDER

NOTES

FOR DECK REINFORCEMENT PLAN, SEE SHEET 21.

FOR SECTION THRU DECK, SIDEWALK & MEDIAN, SEE SHEET 22.

FOR SIDEWALK & MEDIAN REINFORCEMENT DETAILS, SEE SHEET 23.

FOR SUPERSTRUCTURE BILL OF BARS & HAUNCH REINFORCEMENT, SEE SHEET 25.

FOR PARAPET REINFORCEMENT DETAILS, SEE SHEET 29.

FOR LIGHT SUPPORT REINFORCEMENT, SEE SHEET 30.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-107

DRAWN BY AJA | PLANS CK'D. MHZ

DIAPHRAGM REINFORCEMENT DETAILS

SHEET 24 OF 34

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Structures\B-40-107\DGN\cds\B107_080514_ss.dgn PLOT DATE : 12/19/2017 PLOT BY : aaschenbrenner PLOT NAME : $FILE$ PLOT SCALE : 1:2

STATE PROJECT NUMBER

2030-14-70

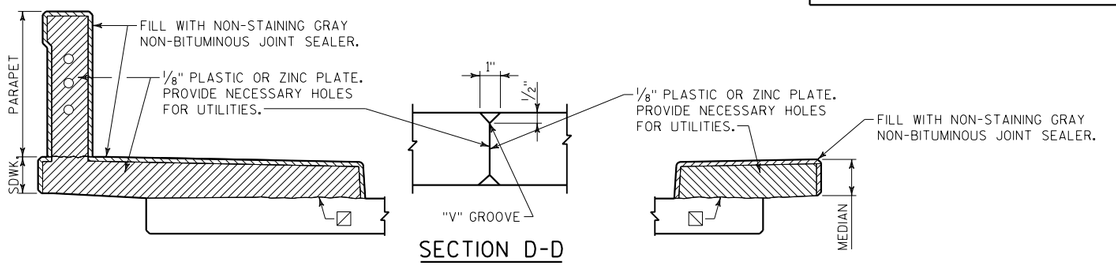
BILL OF BARS

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

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S401	X	135	45'-0"	-	-	DECK BOTTOM LONG. - STAGE 1
S402	X	45	29'-9"	-	-	DECK BOTTOM LONG. - STAGE 1
S403	X	92	33'-6"	-	-	DECK TOP LONG. SPANS 1 & 3 - STAGE 1
S404	X	46	33'-2"	-	-	DECK TOP LONG. SPAN 2 - STAGE 1
S605	X	92	33'-2"	-	-	DECK TOP LONG. OVER PIERS - STAGE 1
S506	X	245	33'-1"	-	-	DECK BOTTOM TRANS. - STAGE 1
S507	X	27	18'-0"	-	X	DECK BOTTOM TRANS. - STAGE 1
S508	X	27	16'-11"	-	X	DECK BOTTOM TRANS. - STAGE 1
S509	X	246	33'-8"	X	-	DECK TOP TRANS. - STAGE 1
S510	X	27	18'-0"	-	X	DECK TOP TRANS. - STAGE 1
S511	X	27	17'-6"	X	X	DECK TOP TRANS. - STAGE 1
S413	X	644	2'-6"	X	-	SIDEWALK DOWELS - STAGE 1
S414	X	39	4'-6"	X	-	EXPANSION DIAPHRAGM VERT. - STAGE 1
S615	X	21	8'-3"	-	-	EXPANSION DIAPHRAGM LONG. - STAGE 1
S616	X	7	6'-0"	-	-	EXPANSION DIAPHRAGM LONG. - STAGE 1
S420	X	108	45'-0"	-	-	DECK BOTTOM LONG. - STAGE 2
S421	X	36	29'-9"	-	-	DECK BOTTOM LONG. - STAGE 2
S422	X	74	33'-6"	-	-	DECK TOP LONG. SPANS 1 & 3 - STAGE 2
S423	X	37	33'-2"	-	-	DECK TOP LONG. SPAN 2 - STAGE 2
S624	X	74	33'-2"	-	-	DECK TOP LONG. OVER PIERS - STAGE 2
S525	X	254	24'-2"	-	-	DECK BOTTOM TRANS. - STAGE 2
S526	X	20	12'-2"	-	X	DECK BOTTOM TRANS. - STAGE 2
S527	X	20	12'-1"	-	X	DECK BOTTOM TRANS. - STAGE 2
S528	X	255	24'-9"	X	-	DECK TOP TRANS. - STAGE 2
S529	X	20	12'-10"	X	X	DECK TOP TRANS. - STAGE 2
S530	X	20	12'-8"	-	X	DECK TOP TRANS. - STAGE 2
S431	X	322	4'-8"	X	-	MEDIAN DOWELS - STAGE 1
S432	X	33	4'-6"	X	-	EXPANSION DIAPHRAGM VERT. - STAGE 2
S633	X	14	8'-3"	-	-	EXPANSION DIAPHRAGM LONG. - STAGE 2
S634	X	7	5'-4"	-	-	EXPANSION DIAPHRAGM LONG. - STAGE 2
S440	X	28	25'-8"	-	-	SIDEWALK TOP & BOT. SPAN 1 - LONG.
S441	X	28	30'-8"	-	-	SIDEWALK TOP & BOT. SPAN 2 - LONG.
S542	X	317	7'-3"	X	-	SIDEWALK TOP - TRANS.
S543	X	6	3'-1"	-	X	SIDEWALK TOP - TRANS.
S544	X	6	3'-8"	X	X	SIDEWALK TOP - TRANS.
S445	X	118	2'-0"	-	-	SIDEWALK BOTTOM - TRANS.
S546	X	195	6'-9"	X	-	PARAPET DOWELS
S447	X	28	27'-8"	-	-	SIDEWALK TOP & BOT. SPAN 3 - LONG.
S450	X	24	25'-8"	-	-	MEDIAN TOP & BOT. SPANS 1 & 3 - LONG.
S451	X	12	32'-8"	-	-	MEDIAN TOP & BOT. SPAN 2 - LONG.
S452	X	317	2'-7"	-	-	MEDIAN TOP - TRANS.
S453	X	107	2'-0"	-	-	MEDIAN BOTTOM - TRANS.
S460	X	745	3'-2"	X	-	HAUNCH - VERT.
S461	X	4	37'-4"	-	-	HAUNCH SPANS 1 & 3 - LONG.
S462	X	2	44'-8"	-	-	HAUNCH SPAN 2 - LONG.
S470	X	12	9'-0"	-	-	BETWEEN GIRDERS AT EXPANSION JOINTS - STAGE 1
S471	X	4	5-0"	-	-	BETWEEN GIRDERS AT EXPANSION JOINTS - STAGE 1
S472	X	8	9'-0"	-	-	BETWEEN GIRDERS AT EXPANSION JOINTS - STAGE 2
S473	X	4	5'-10"	-	-	BETWEEN GIRDERS AT EXPANSION JOINTS - STAGE 2

BAR SERIES TABLE

BAR MARK	NUMBER REQUIRED	LENGTH
S507	1 SERIES OF 27	4'-0" TO 31'-11"
S508	1 SERIES OF 27	1'-4" TO 32'-5"
S510	1 SERIES OF 27	3'-5" TO 32'-6"
S511	1 SERIES OF 27	1'-4" TO 33'-7"
S526	1 SERIES OF 20	1'-1" TO 23'-2"
S527	1 SERIES OF 20	1'-2" TO 23'-0"
S529	1 SERIES OF 20	1'-4" TO 24'-4"
S530	1 SERIES OF 20	1'-9" TO 23'-7"
S543	1 SERIES OF 6	8" TO 5'-6"
S544	1 SERIES OF 6	1'-3" TO 6'-1"



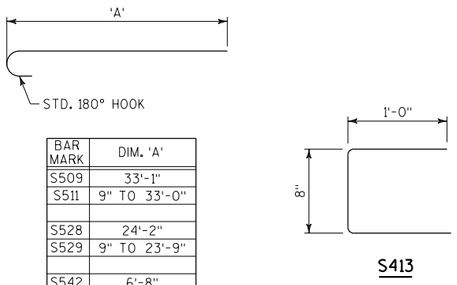
SECTION B-B

SECTION D-D

SECTION C-C

(FOR DEFLECTION JOINT LOCATIONS SEE SHEETS 21 & 23)
(SHOWING DEFLECTION JOINT IN PARAPET, SIDEWALK AND MEDIAN.)

WHEN PARAPETS AND MEDIANS ARE POURED CONTINUOUSLY FROM END TO END, THEY SHALL BE SEPARATED AT THE DEFLECTION JOINTS BY A PIECE OF 1/8" ZINC OR PLASTIC PLATE CUT AS SHOWN IN SECTION B-B BY SHADED AREA. IF CONSTRUCTION JOINTS IN PARAPETS ARE USED AT THE DEFLECTION JOINTS, ONE SIDE OF JOINT SHALL BE COATED WITH AN APPROVED LIQUID BOND BREAKER AND PLATE SEPARATORS MAY BE OMITTED.



BAR MARK	DIM. 'A'
S509	33'-1"
S511	9" TO 33'-0"
S528	24'-2"
S529	9" TO 23'-9"
S542	6'-8"
S544	8" TO 5'-6"

S413

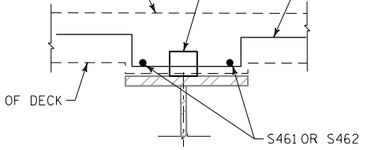
S414, S432

S431

S546

S460

BENDING DIAGRAMS



HAUNCH REINFORCEMENT DETAIL

NOTES

FOR SHEAR CONNECTOR DETAILS, SEE SHEET 18.

FOR DECK REINFORCEMENT PLAN, SEE SHEET 21.

FOR SECTION THRU DECK, SIDEWALK & MEDIAN, SEE SHEET 22.

FOR SIDEWALK & MEDIAN REINFORCEMENT DETAILS, SEE SHEET 23.

FOR EXPANSION DIAPHRAGM REINFORCEMENT, SEE SHEET 24.

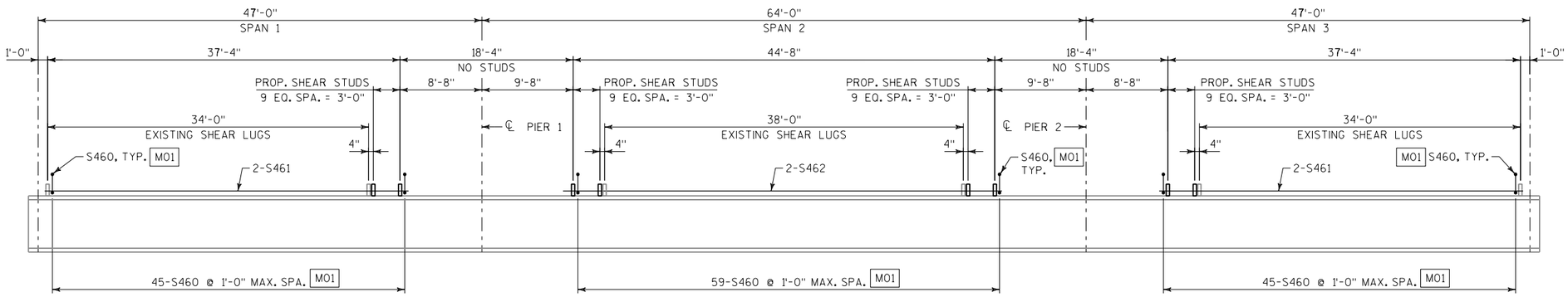
FOR PARAPET REINFORCEMENT DETAILS, SEE SHEET 29.

FOR LIGHT SUPPORT REINFORCEMENT, SEE SHEET 30.

LEGEND

☑ CONST. JOINT-STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR, MATCH BRIDGE X-SLOPE.

M01 FIELD ORIENTATE REINFORCEMENT IN CONFLICT WITH DECK SLAB TOP REINFORCEMENT MAT AS NEEDED.



EXISTING GIRDER ELEVATION

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-107

DRAWN BY AJA | PLANS CK'D. MHZ

EXISTING GIRDER DETAILS AND BILL OF BARS

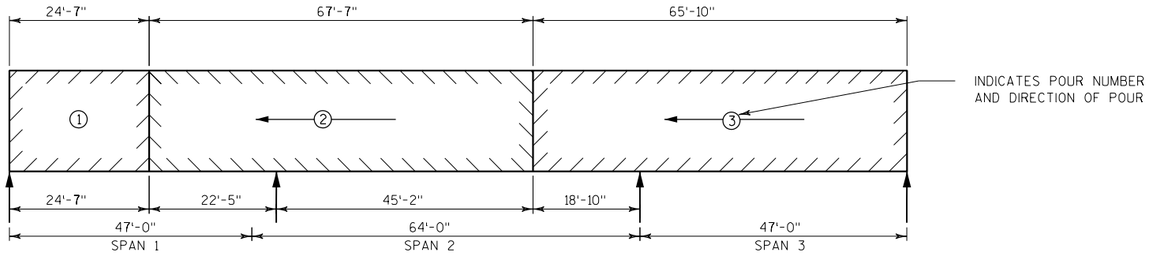
SHEET 25 OF 34

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8

8

STATE PROJECT NUMBER
2030-14-70



ELEVATION VIEW - STEEL GIRDER IDEAL POUR

NOTES

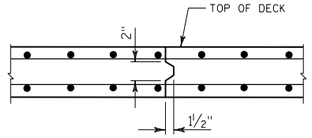
THE RATE OF PLACING CONCRETE SHALL EQUAL OR EXCEED 1/2 SPAN LENGTH PER HOUR BUT NEED NOT EXCEED 100 CU. YDS. PER HOUR. (REQUIRED ONLY FOR CONTINUOUS STEEL GIRDERS).

IF OPTIONAL JOINTS ARE PROVIDED, TWO OR MORE SEQUENTIAL POURS MAY BE COMBINED AND PLACED IN ONE CONTINUOUS OPERATION. TWO OR MORE ALTERNATE DECK POURS (E.G. 1 & 3) MAY BE PLACED ON THE SAME DAY.

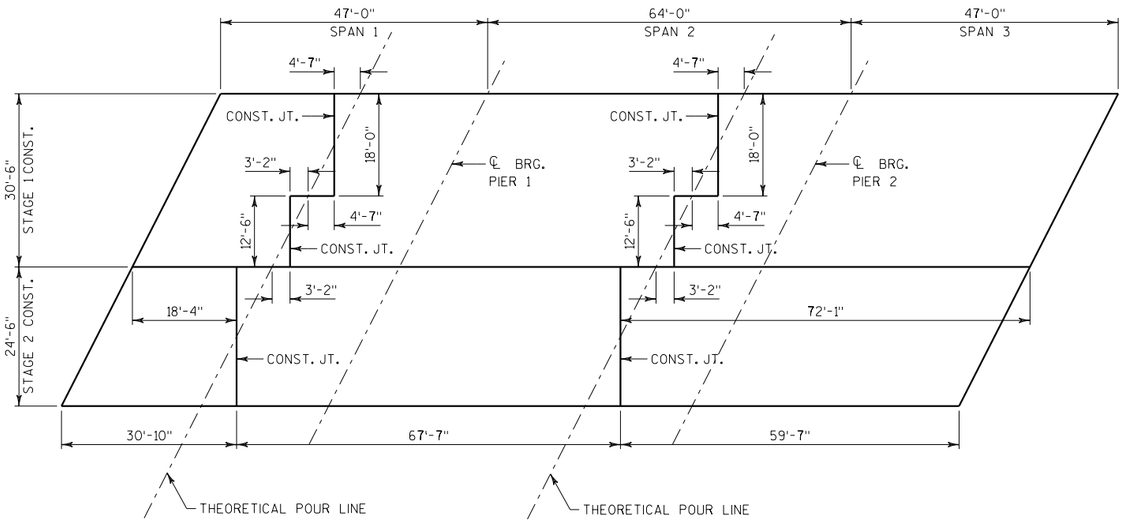
THE NEXT DECK POUR CAN BE MADE NO LESS THAN 72 HOURS AFTER THE PREVIOUS POUR.

THE CONTRACTOR MAY SUBMIT AN ALTERNATE POURING SEQUENCE SUBJECT TO THE APPROVAL OF THE STRUCTURES DESIGN SECTION.

THE CONTRACTOR SHALL POUR THE ENTIRE DECK PER THE DECK POUR SEQUENCE IF REQUIRED TRANSVERSE CONSTRUCTION JOINTS ARE SHOWN ON THE PLANS. THE CONTRACTOR MAY SUBMIT AN ALTERNATE POURING SEQUENCE SUBJECT TO THE APPROVAL OF THE STRUCTURES DESIGN SECTION.
(NOTE: REQUIRED WHEN REQUIRED TRANSVERSE CONSTRUCTION JOINTS ARE SHOWN)



SECTION THRU TRANSVERSE
OR LONGITUDINAL JOINT



PLAN VIEW - TRANSVERSE CONSTRUCTION JOINTS

OPTIONAL DECK POURING SEQUENCE

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-107

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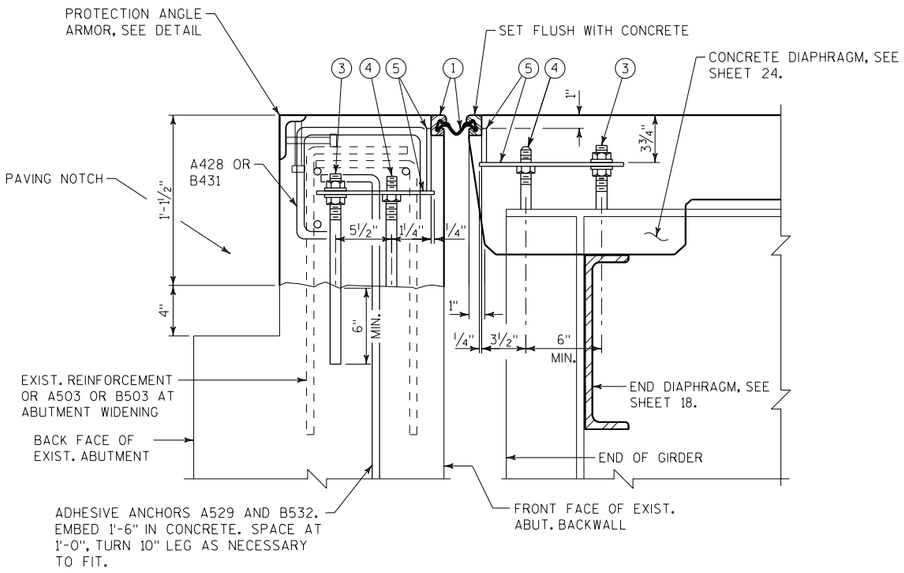
SLAB POURING SEQUENCE

SHEET 26 OF 34

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Structures\B-40-107\DGN\cds\B107_080516_ss.dgn PLOT DATE : 12/19/2017 PLOT BY : aaschenbrenner PLOT NAME : $FILE$ PLOT SCALE : 1:2

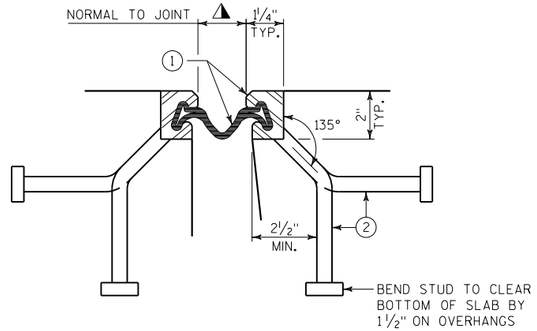
STATE PROJECT NUMBER

2030-14-70



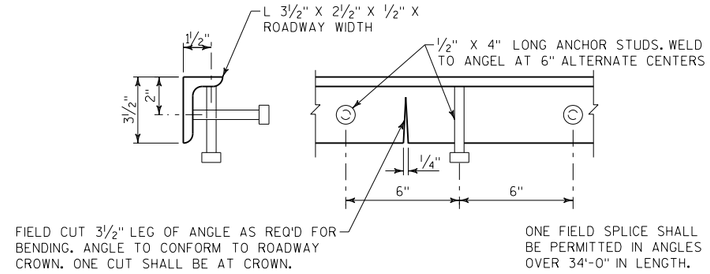
SECTION THRU JOINT AT STEEL GIRDER

NORMAL TO ℄ SUBSTRUCTURE



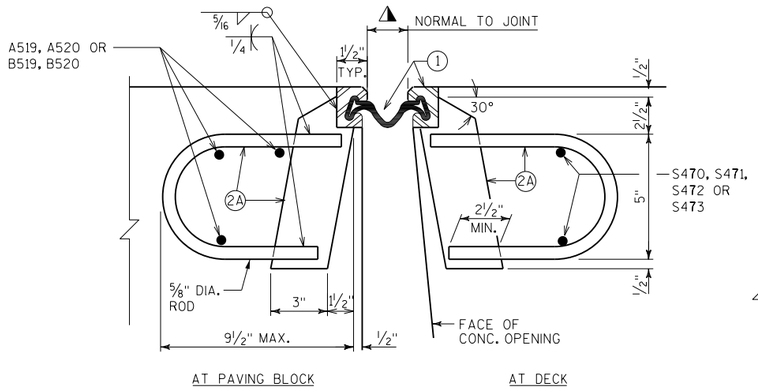
SECTION THRU JOINT

EXTERIOR GIRDER TO EDGE OF SLAB & AT PARAPETS, MEDIANS & SIDEWALKS



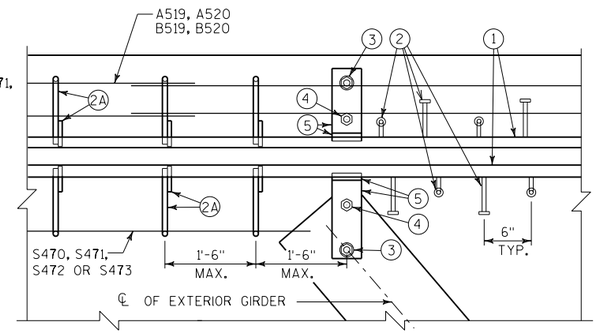
PROTECTION ANGLE ARMOR

SANDBLAST PROTECTION ANGLE AFTER FABRICATION PER NOTES. AFTER BLAST CLEANING, THE PROTECTION ANGLE SHALL BE HOT DIPPED GALVANIZED.

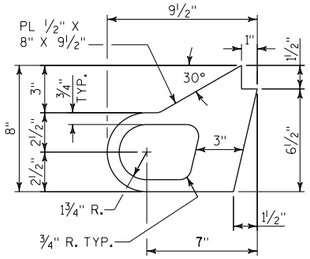


SECTION THRU JOINT

ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS.



PART PLAN



ALTERNATE STRIP SEAL ANCHOR

LEGEND

△ (1) NEOPRENE STRIP SEAL (4-INCH) AND STEEL EXTRUSIONS. SET JOINT OPENING AT 1¾". JOINT OPENING GIVEN NORMAL TO JOINT.

(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 & 1"Φ HOLE FOR NO. 4.

REFER TO SHEET 28.

(7) ¾"Φ X 1½" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS 1/16" BELOW PLATE SURFACE.

(8) ¾"Φ X 4" GALVANIZED HEX HEAD BOLT, BEND 45°.

(9) ¾" X 2¼" GALVANIZED THREADED COUPLING.

(10) SIDEWALK AND MEDIAN COVER PLATE ⅜" X 2'-0" X LIMITS SHOWN. BEND DOWN FACE OF SIDEWALK AND MEDIAN WITH HOLES FOR NO. 7. GALVANIZE PLATE AFTER SLIP-RESISTANT SURFACE IS APPLIED.

(11) 1" X 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.

NOTES

ONE FIELD SPLCE PERMITTED IN STEEL EXTRUSIONS. UNLESS MORE ARE REQUIRED FOR STAGED CONSTRUCTION, HANDLING OR GALVANIZING REQUIREMENTS. 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, SUPPORTS AND EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP.#6 "COMMERICAL BLAST CLEANING". AFTER BLAST CLEANING, THE PLATES, SUPPORTS AND EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED. SLIP-RESISTANT SURFACE IS APPLIED TO SIDEWALK AND MEDIAN COVER PLATES BY THE MANUFACTURER AND THEN HOT DIPPED GALVANIZED TO THEIR RECCOMENDATIONS TO MAINTAIN THE INTEGRITY OF THIS SURFACE.

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-40-107".

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-107

DRAWN BY AJA | PLANS CK'D. MHZ

EXPANSION JOINT DETAILS (1 OF 2)

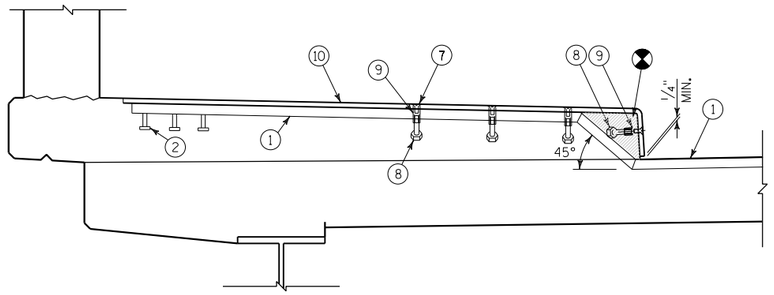
SHEET 27 OF 34

8

8

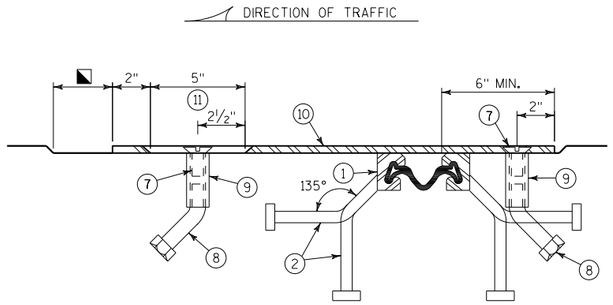
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STATE PROJECT NUMBER
2030-14-70

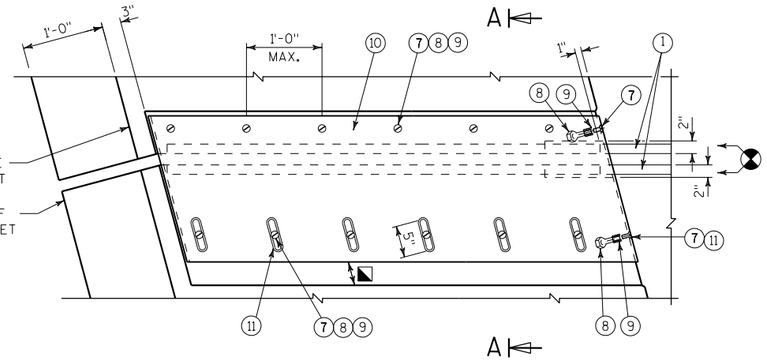


SECTION AT SIDEWALK

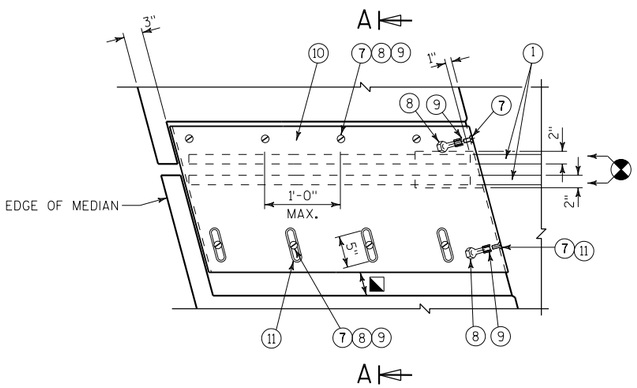
(LOOKING NORTH)
(MEDIAN SIMILAR DETAIL)



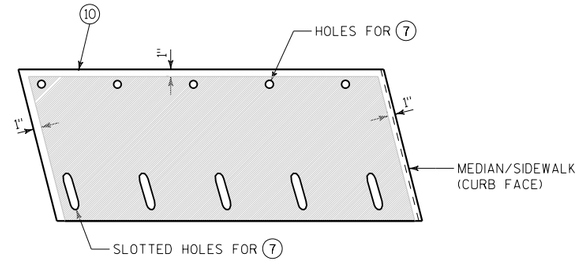
SECTION A-A



PLAN AT SIDEWALK



PLAN AT MEDIAN



PLAN OF MEDIAN AND SIDEWALK COVER PLATE WITH SLIP-RESISTANT SURFACE

PLACE SLIP-RESISTANT SURFACE ON TOP WALKING SURFACE
IN SHADED AREA ONLY (NOT ON CURB FACE).

LEGEND

- BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.
- JOINT OPENING DIMENSION ALONG SKEW PLUS 1/2".

NOTE

SEE SHEET 27 FOR LEGEND

APPROVED SLIP-RESISTANT APPLIED SURFACES FOR STEEL PLATES		
PRODUCT	MANUFACTURER	CONTACT AT
SLIPNOT GRADE 2, STEEL	W. S. MOLNAR COMPANY	1-800-SLIPNOT
ALGRIP, STEEL	ROSS TECHNOLOGY CORP.	1-800-345-8170

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
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STRUCTURE B-40-107

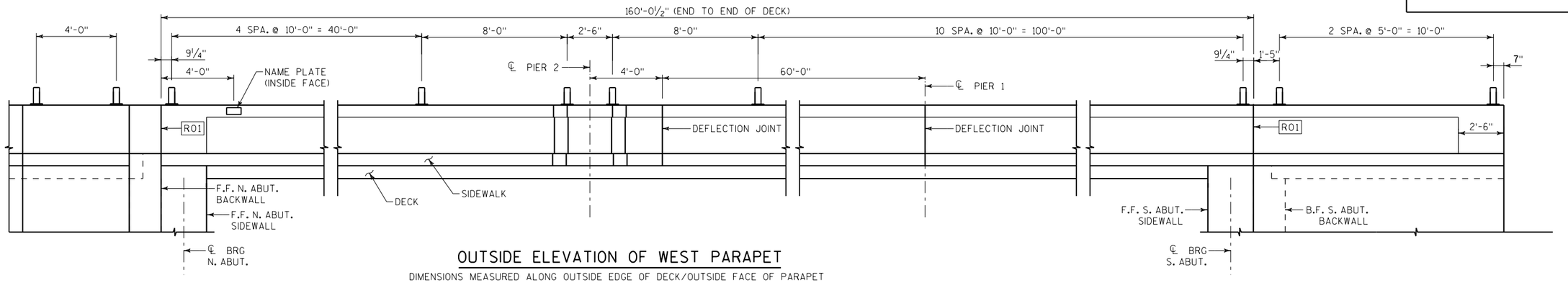
DRAWN BY AJA | PLANS CK'D. MHZ

EXPANSION JOINT DETAILS (2 OF 2)

SHEET 28 OF 34

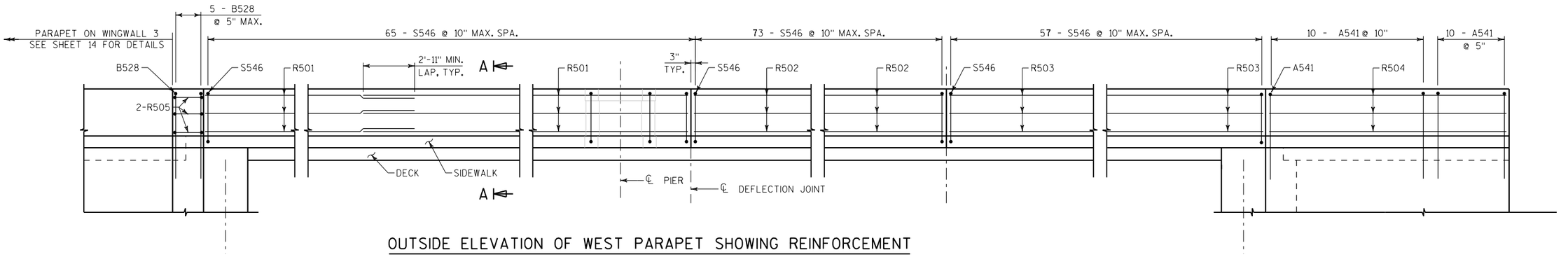
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STATE PROJECT NUMBER
2030-14-70



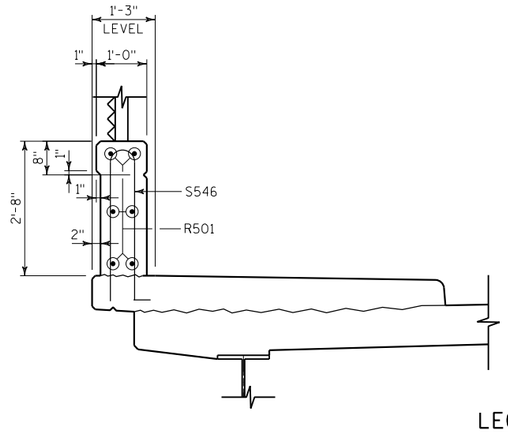
OUTSIDE ELEVATION OF WEST PARAPET

DIMENSIONS MEASURED ALONG OUTSIDE EDGE OF DECK/OUTSIDE FACE OF PARAPET
(LOOKING EAST)

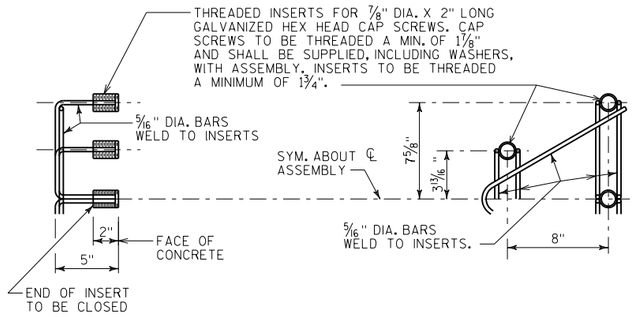


OUTSIDE ELEVATION OF WEST PARAPET SHOWING REINFORCEMENT

DIMENSIONS MEASURED ALONG OUTSIDE EDGE OF DECK/OUTSIDE FACE OF PARAPET
(LOOKING EAST)



SECTION A-A



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.

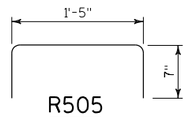
LEGEND

R01 SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

BILL OF BARS

BAR MARK	COAT	NO REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	12	27'-3"	-	-	PARAPET - LONG. OVER DECK
R502	X	12	31'-3"	-	-	PARAPET - LONG. OVER DECK
R503	X	12	25'-3"	-	-	PARAPET - LONG. OVER DECK
R504	X	6	11'-6"	-	-	PARAPET - LONG. OVER WINGWALL
R505	X	6	2'-4"	X	-	PARAPET - LONG. OVER N. ABUT.

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



R505

NOTES

FOR LOCATION OF "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", SEE GENERAL PLAN & ELEVATION SHEET.

FOR LIGHT SUPPORT DETAILS, SEE SHEET 30.

FOR CONDUIT DETAILS, SEE SHEETS 31 & 32.

FOR TUBULAR STEEL RAILING SCREENING DETAILS, SEE SHEET 32.

NO.	DATE	REVISION	BY

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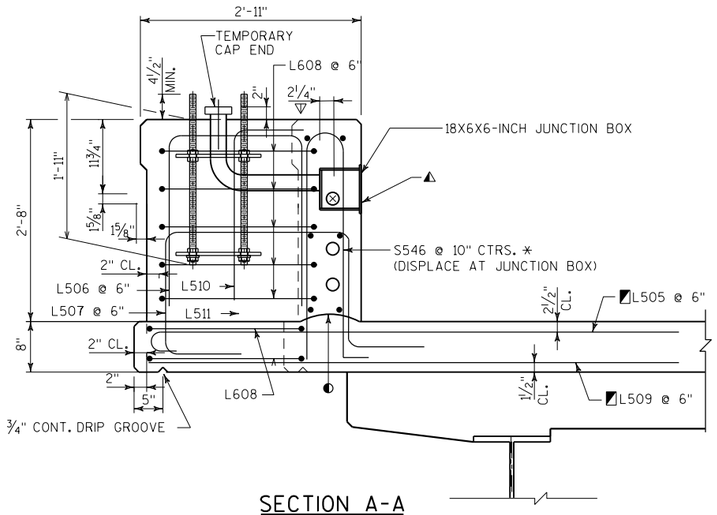
STRUCTURE B-40-107

DRAWN BY MM | PLANS CK'D. MHZ

VERTICAL FACE PARAPET A

SHEET 29 OF 34

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Structures\B-40-107\DGN\cds\B107_080701_rp.dgn PLOT DATE : 12/19/2017 PLOT BY : aaschenbrenner PLOT NAME : $FILE$ PLOT SCALE : 1:6



SECTION A-A

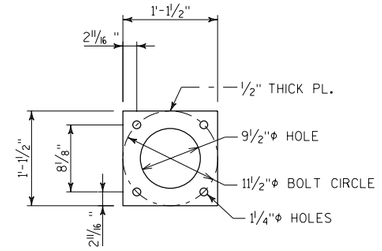
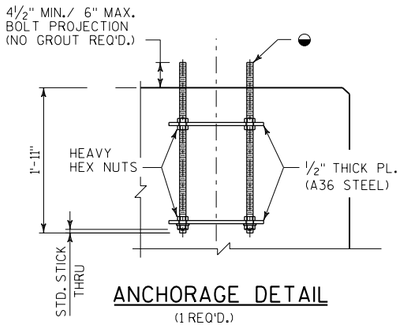


PLATE DETAIL
(1 REQ'D.)

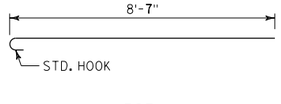


ANCHORAGE DETAIL
(1 REQ'D.)

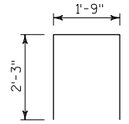
BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
L505	X	12	9'-2"	X	-	SIDEWALK TRANSV. @ LIGHT STD.
L506	X	4	6'-0"	X	-	PARAPET VERT. @ LIGHT STD.
L507	X	4	7'-0"	X	-	PARAPET VERT. @ LIGHT STD.
L608	X	8	10'-0"	X	-	PARAPET HORIZ. @ LIGHT STD.
L509	X	12	8'-7"	-	-	SIDEWALK TRANSV. @ LIGHT STD.
L510	X	2	3'-2"	X	-	PARAPET VERT. @ LIGHT STD.
L511	X	2	3'-5"	X	-	PARAPET VERT. @ LIGHT STD.

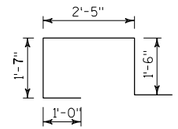
NOTE:
BAR DIMENSIONS ARE OUT TO OUT OF BAR. THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE



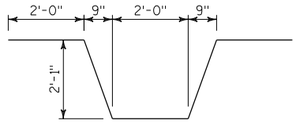
L505



L506



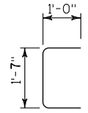
L507



L608

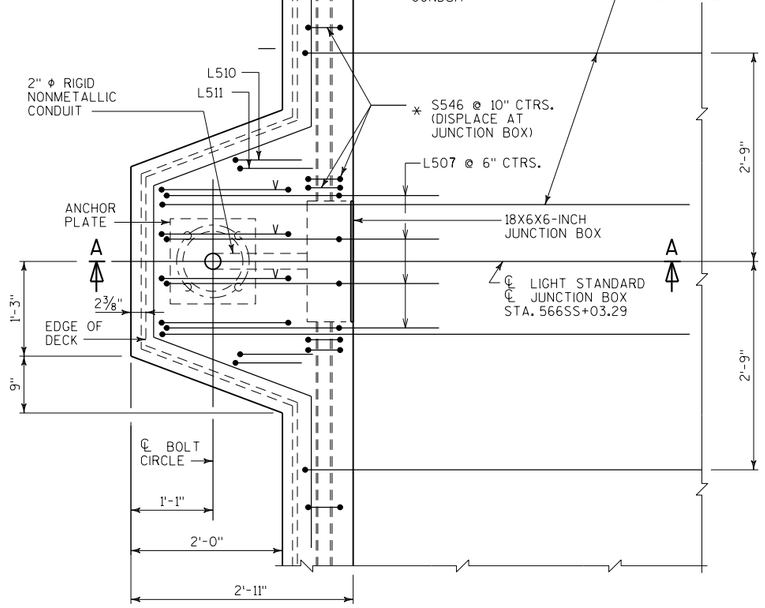


L510



L511

BENDING DIAGRAMS



PLAN AT LIGHT BLISTER

LEGEND

- ◐ CONSTR. JT. STRIKE OFF AS SHOWN
- ◭ CUT OUT ± 1" OF GASKET AT BOTTOM OF JUNCTION BOX COVER TO ALLOW FOR DRAINAGE. LOCATION OF JUNCTION BOX TO BE DETERMINED BY ENGINEER.
- ▽ LOCATION OF CONDUIT IS MEASURED FROM OUTSIDE EDGE OF JUNCTION BOX.
- ◩ THESE BARS ARE IN ADDITION TO STANDARD TRANSVERSE BARS IN DECK.
- ◒ 1"Φ THREADED ANCHOR BOLTS ASTM A449 OR AASHTO M 314-90 GR 55. HOT DIP ASTM A153, CLASS C, UPPER 8" OF BOLT INCLUDING NUTS & WASHERS. PROVIDE ENLARGED THREAD ON NUTS FOR PROPER FIT AFTER GALVANIZING. PROVIDE DOUBLE FLAT WASHERS & NUTS.
- * SEE VERTICAL FACE PARAPET "A", SHEET FOR ADDITIONAL BAR STEEL DETAILS.

NOTE

FOR CONDUIT DETAILS, SEE SHEETS 31 & 32.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-107

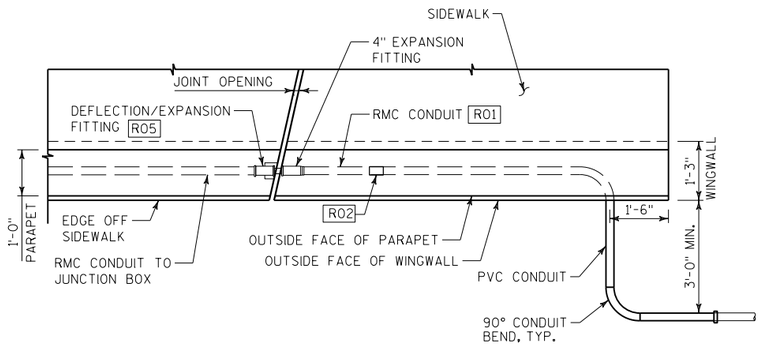
DRAWN BY MM | PLANS CK'D. MHZ

LIGHT SUPPORT DETAILS

SHEET 30 OF 34

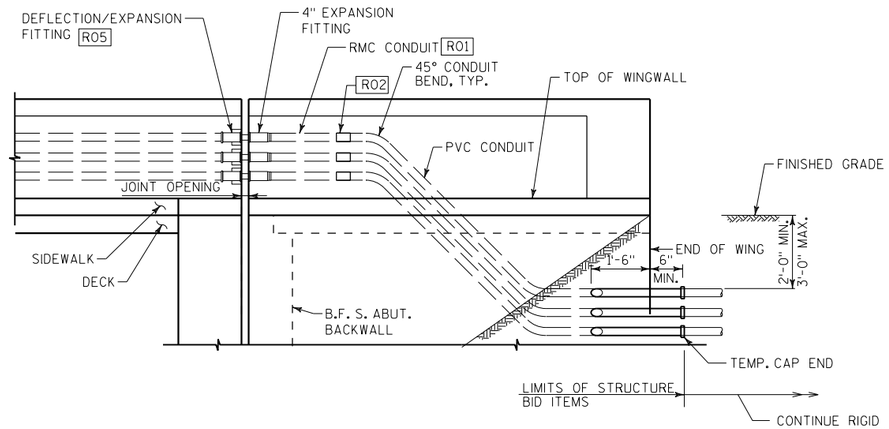
STATE PROJECT NUMBER

2030-14-70



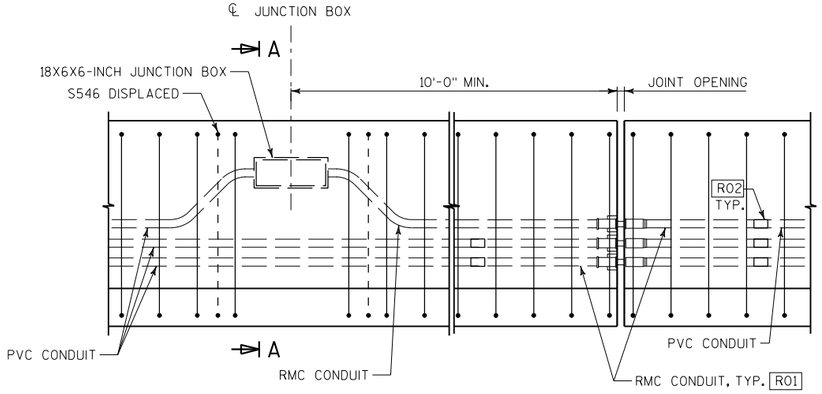
PLAN OF PARAPET AT EXP. JOINT

(SOUTH END OF BRIDGE)



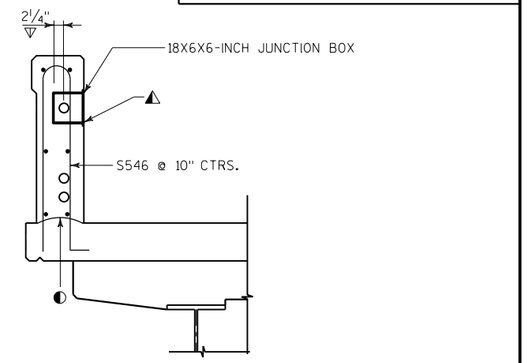
OUTSIDE ELEVATION OF PARAPET AT EXP. JOINT

(SOUTH END OF BRIDGE)

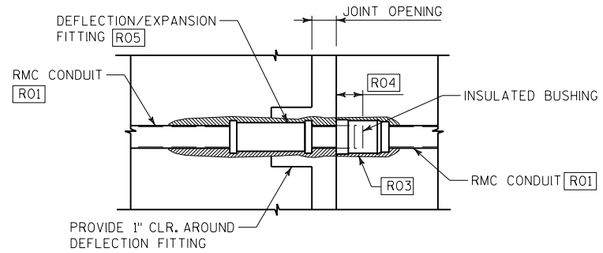


INSIDE ELEVATION AT JUNCTION BOX AT EXP. JOINT

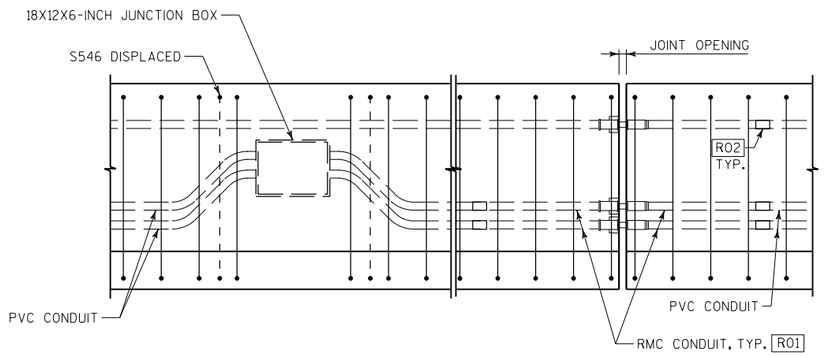
(SIDEWALK STEEL NOT SHOWN FOR CLARITY)
(SOUTH END OF BRIDGE)



SECTION A-A

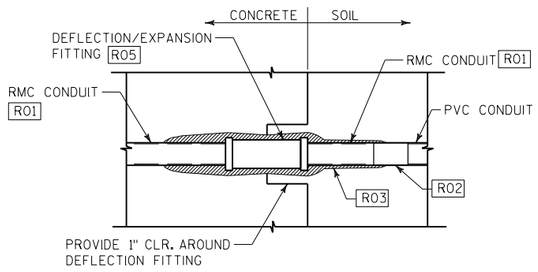


DEFLECTION/EXPANSION AND 4" EXPANSION FITTING



INSIDE ELEVATION AT JUNCTION BOX AT EXP. JOINT

(SIDEWALK STEEL NOT SHOWN FOR CLARITY)



DEFLECTION/EXPANSION FITTING

(CONCRETE TO SOIL FITTING)

NOTE

FOR CONDUIT DETAILS AT NORTH END OF BRIDGE, SEE SHEET 32.

LEGEND

R01 USE 2" DIA. RIGID METALLIC (RMC) CONDUIT AT FITTINGS. PROVIDE RMC FOR 3'-0" MIN. ON EACH SIDE OF JOINT OPENING UNLESS NOTED OTHERWISE.

R02 NONMETALLIC CONDUIT TO METALLIC CONDUIT ADAPTER FITTING (UL OR NRTL LISTED FOR ELECTRICAL USE SHALL BE USED).

R03 SPONGE RUBBER WRAP TO BE AASHTO M153 TYPE 1 OR EQUIVALENT. ¼" MINIMUM THICKNESS. PROVIDE WRAP FOR ENTIRE LENGTH OF FITTING. SPONGE RUBBER WRAP TO BE INCIDENTAL TO "CONDUIT RIGID METALLIC 2-INCH".

R04 POSITION MOVABLE END OF CONDUIT INSIDE EXPANSION FITTING, SUCH THAT IT WILL HAVE THE SAME ALLOWANCE FOR MOVEMENT (EXPANSION/CONTRACTION) AS THE EXPANSION DEVICE SET IN PLACE IN THE DECK BELOW IT. TAKE CARE TO INSTALL EXPANSION FITTING AND CONDUIT EXACTLY PARALLEL TO BRIDGE MOVEMENT.

R05 DEFLECTION/EXPANSION FITTING AND 4" EXPANSION FITTING REQUIREMENTS : MAXIMUM 4" TOTAL CONDUIT MOVEMENT WITH BONDING JUMPER UP TO 30 DEGREES OF ANGULAR MISALIGNMENT IN ANY DIRECTION WITH BONDING JUMPER.

◐ CONSTR. JT. STRIKE OFF AS SHOWN

◭ CUT OUT ± 1" OF GASKET AT BOTTOM OF JUNCTION BOX COVER TO ALLOW FOR DRAINAGE. LOCATION OF JUNCTION BOX TO BE DETERMINED BY ENGINEER.

▽ LOCATION OF CONDUIT IS MEASURED FROM OUTSIDE EDGE OF JUNCTION BOX.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-107

DRAWN BY MM | PLANS CK'D. MHZ

CONDUIT DETAILS (1 OF 2)

SHEET 31 OF 34

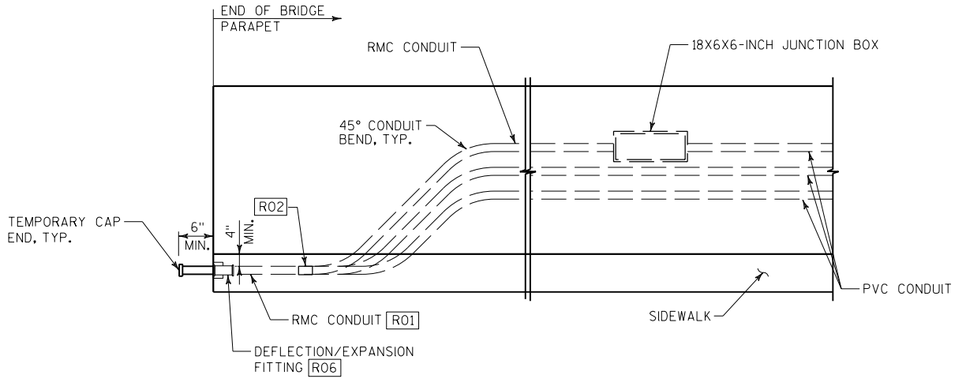
277

8

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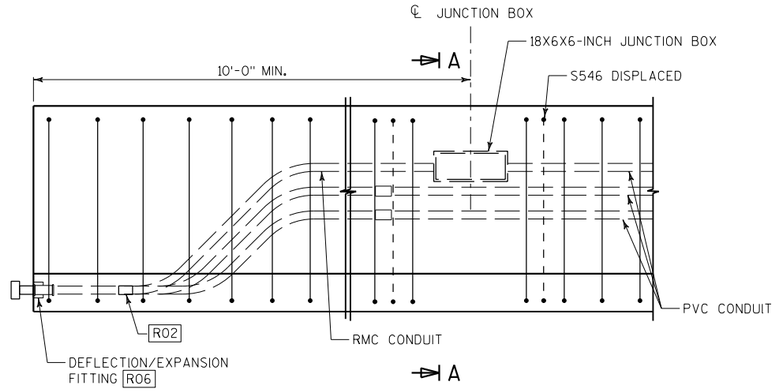
STATE PROJECT NUMBER

2030-14-70



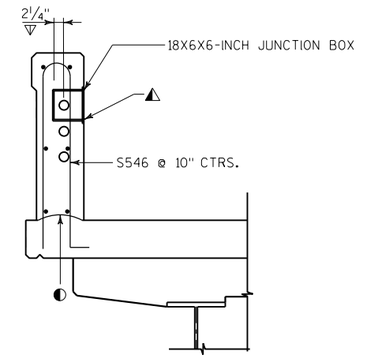
OUTSIDE ELEVATION AT JUNCTION BOX AT EXP. JOINT

(NORTH END OF BRIDGE)



INSIDE ELEVATION AT JUNCTION BOX AT EXP. JOINT

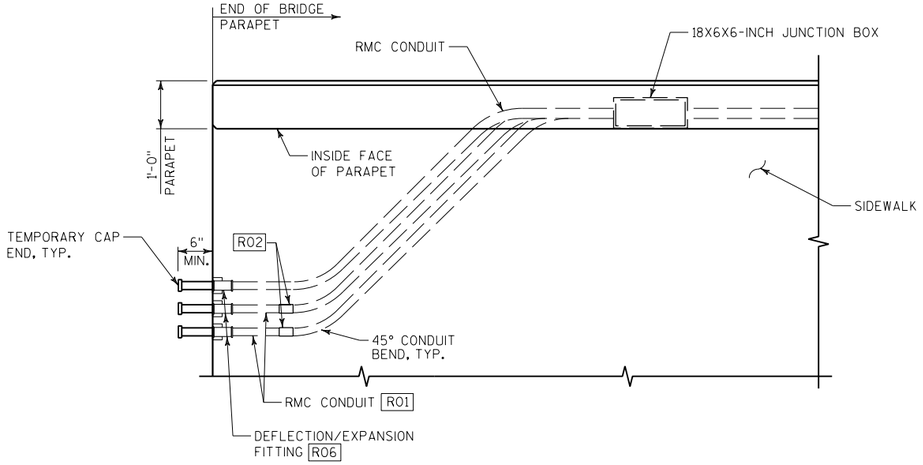
(SIDEWALK STEEL NOT SHOWN FOR CLARITY)
(NORTH END OF BRIDGE)



SECTION A-A

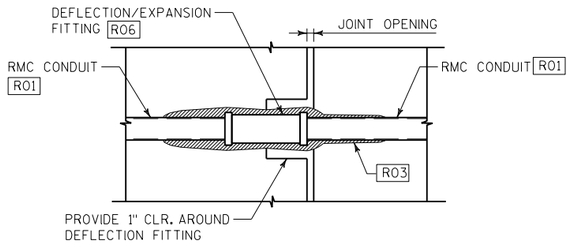
NOTE

FOR CONDUIT DETAILS AT SOUTH END OF BRIDGE, SEE SHEET 31.



PLAN OF PARAPET AT EXP. JOINT

(NORTH END OF BRIDGE)



DEFLECTION/EXPANSION FITTING

(CONCRETE TO CONCRETE FITTING)

LEGEND

R01 USE 2" DIA. RIGID METALLIC (RMC) CONDUIT AT FITTINGS. PROVIDE RMC FOR 3'-0" MIN. ON EACH SIDE OF JOINT OPENING UNLESS NOTED OTHERWISE.

R02 NONMETALLIC CONDUIT TO METALLIC CONDUIT ADAPTER FITTING (UL OR NRTL LISTED FOR ELECTRICAL USE SHALL BE USED).

R03 SPONGE RUBBER WRAP TO BE AASHTO M153 TYPE 1 OR EQUIVALENT. ¼" MINIMUM THICKNESS. PROVIDE WRAP FOR ENTIRE LENGTH OF FITTING. SPONGE RUBBER WRAP TO BE INCIDENTAL TO "CONDUIT RIGID METALLIC 2-INCH".

R04 POSITION MOVABLE END OF CONDUIT INSIDE EXPANSION FITTING, SUCH THAT IT WILL HAVE THE SAME ALLOWANCE FOR MOVEMENT (EXPANSION/CONTRACTION) AS THE EXPANSION DEVICE SET IN PLACE IN THE DECK BELOW IT. TAKE CARE TO INSTALL EXPANSION FITTING AND CONDUIT EXACTLY PARALLEL TO BRIDGE MOVEMENT.

R06 DEFLECTION/EXPANSION FITTING REQUIREMENTS :
UP TO ¾" CONDUIT CONTRACTION OR EXPANSION AND
UP TO 30 DEGREES OF ANGULAR MISALIGNMENT IN ANY DIRECTION WITH BONDING JUMPER.

◐ CONSTR. JT. STRIKE OFF AS SHOWN

◭ CUT OUT ± 1" OF GASKET AT BOTTOM OF JUNCTION BOX COVER TO ALLOW FOR DRAINAGE. LOCATION OF JUNCTION BOX TO BE DETERMINED BY ENGINEER.

▽ LOCATION OF CONDUIT IS MEASURED FROM OUTSIDE EDGE OF JUNCTION BOX.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-107

DRAWN BY MM | PLANS CK'D. MHZ

CONDUIT DETAILS (2 OF 2)

SHEET 32 OF 34

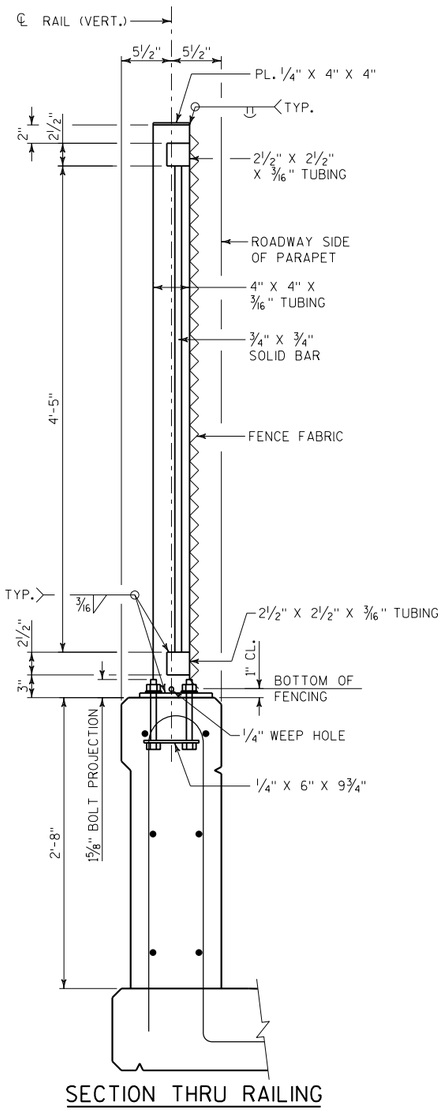
8

8

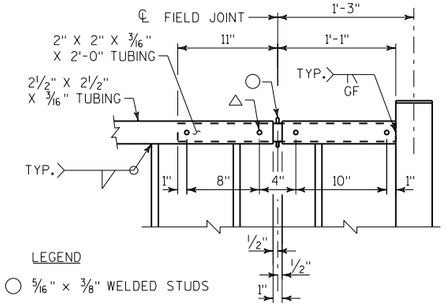
FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Structures\B-40-107\DGN\cds\B107_080704_rp.dgn PLOT DATE : 12/19/2017 PLOT BY : aaschenbrenner PLOT NAME : $FILE$ PLOT SCALE : 1:2

STATE PROJECT NUMBER

2030-14-70



SECTION THRU RAILING

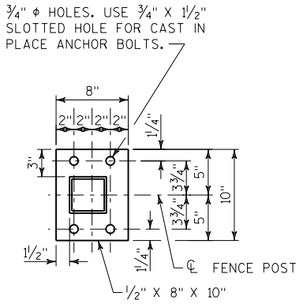


LEGEND

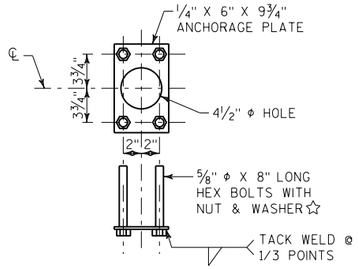
○ ⅝" × ⅜" WELDED STUDS

△ WELD BEAD ON EACH SIDE OF TUBE. GRIND BEADS SO THAT SLEEVE FITS FREELY INSIDE THE 2½" x 2½" TUBE.

RAILING EXPANSION JOINT DETAIL



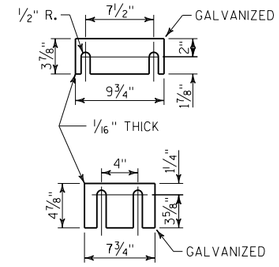
BASE PLATE



ANCHORAGE DETAIL

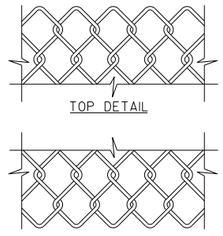
☆ ALTERNATIVE ANCHORAGE: ADHESIVE ANCHORS ⅝-INCH. EMBED 7" IN CONCRETE. ADHESIVE ANCHORS SHALL CONFORM TO SECTION 502.2.12 OF THE STANDARD SPECIFICATIONS.

NOTE: ANCHOR PLATE NOTE REQUIRED WHEN ADHESIVE ANCHORS ARE USED.



SHIM PLATE DETAILS

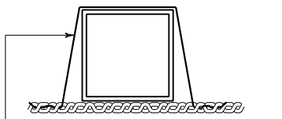
TWO SHIMS OF EACH SIZE REQUIRED PER POST



TOP DETAIL

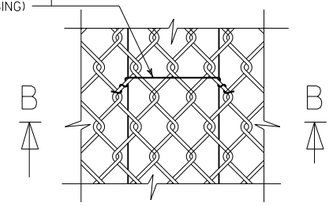
BOTTOM DETAIL

FENCE FABRIC

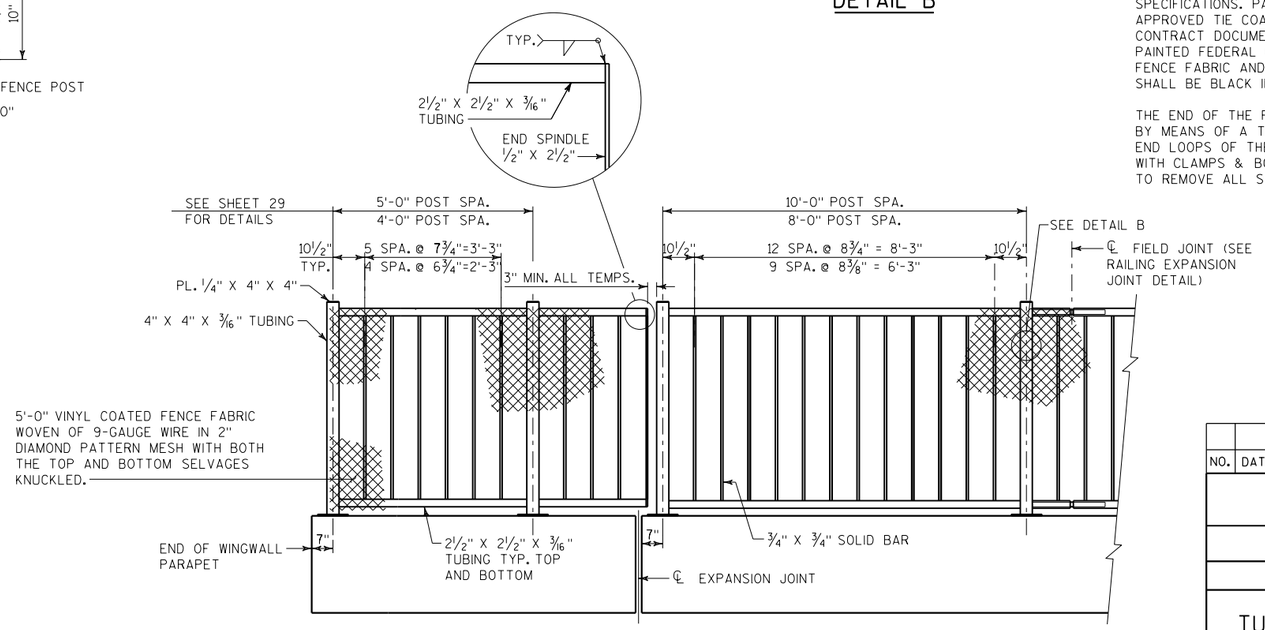


SECTION B-B

FABRIC TIE @ 1'-0" MAX. SPA. (TYP. RAIL POSTS & HORIZ. TUBING)



DETAIL B



INSIDE ELEVATION OF RAILING

NOTES

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

STRUCTURAL TUBING SHALL CONFORM TO ASTM A500, GRADE B. PLATES, ANGLES, BARS AND SHIMS SHALL CONFORM TO ASTM A709, GRADE 36. FENCE FABRIC SHALL CONFORM TO ASTM F668, CLASS 2B.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET POSTS NORMAL TO GRADE.

ALL POST SPACINGS ARE TAKEN HORIZONTAL ALONG CENTERLINE OF RAILING AT BASE OF POST.

STEEL SHIMS SHALL BE PROVIDED & USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT, AND SHALL BE GALVANIZED.

CAULK AROUND PERIMETER OF BASE PLATES AND FILL PORTION OF SLOTTED HOLES AROUND ANCHOR BOLTS WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

CUT BOTTOM OF POST TO MAKE VERTICAL IN TRANSVERSE DIRECTION.

☆ ANCHOR BOLTS, NUTS AND WASHERS SHALL BE EITHER STAINLESS STEEL OR ASTM 307. IF 307 IS USED, ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED.

THE BID ITEM SHALL BE "RAILING TUBULAR SCREENING B-40-107" WHICH SHALL INCLUDE ALL ITEMS SHOWN.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE NOT MORE THAN 3 POSTS.

VENT HOLES SHALL BE DRILLED IN MEMBERS AS REQUIRED TO FACILITATE GALVANIZING AND DRAINAGE.

ALL RAILING MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING THE STEEL RAILING SHALL BE GIVEN A NO. 6 BLAST CLEANING PER SSPC SPECIFICATIONS. PAINT OVER GALVANIZING WITH AN APPROVED TIE COAT AND TOP COAT AS SPECIFIED IN THE CONTRACT DOCUMENTS. THE RAILING SHALL BE PAINTED FEDERAL COLOR NO. 27038 BLACK. FENCE FABRIC AND TIES TO BE VINYL-COATED. COLOR SHALL BE BLACK IN ACCORDANCE WITH ASTM F934.

THE END OF THE FABRIC SHALL BE ATTACHED TO THE POST BY MEANS OF A TENSION BAR THREADED THROUGH THE END LOOPS OF THE FABRIC AND SECURED TO THE POST WITH CLAMPS & BOLT. THE FABRIC SHALL BE STRETCHED TO REMOVE ALL SLACK.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-107

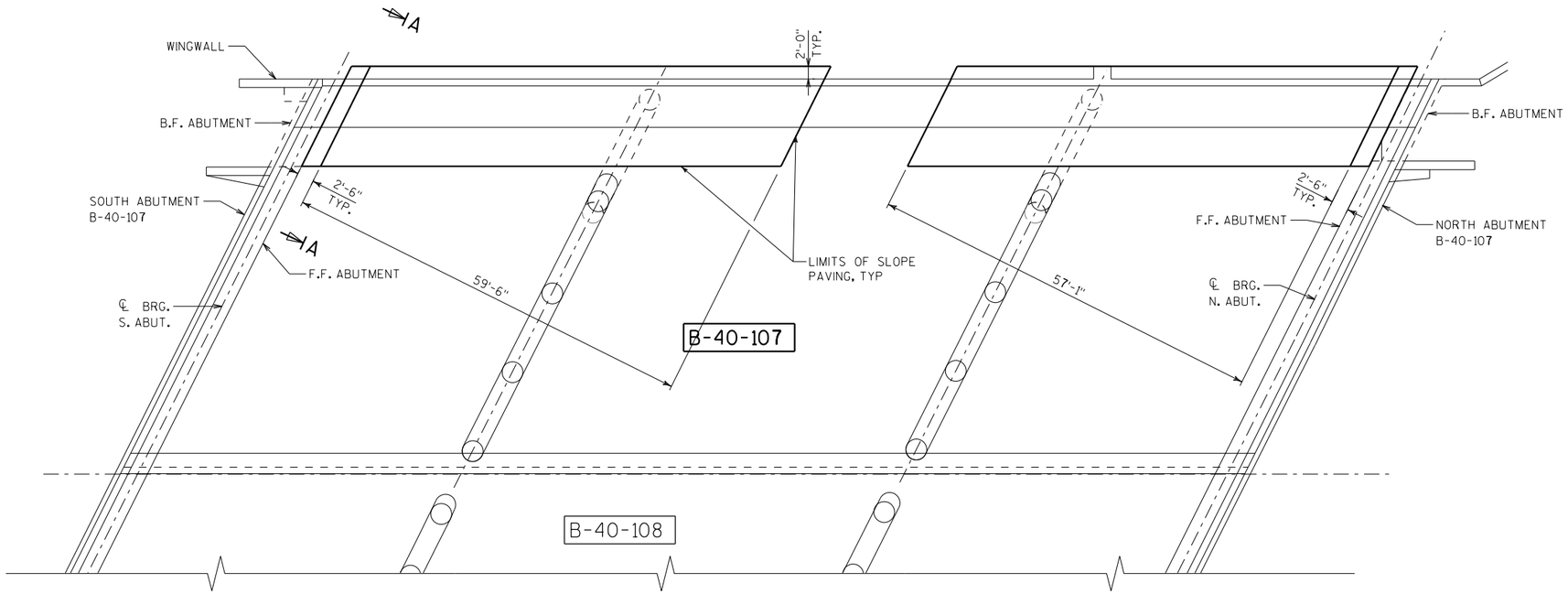
DRAWN BY AJA | PLANS CK'D. MHZ

TUBULAR STEEL RAILING SCREENING

SHEET 33 OF 34

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Structures\B-40-107\DGN\cds\B107_080705_rp.dgn PLOT DATE : 12/19/2017 PLOT BY : gaschenbrenner PLOT NAME : $FILE$ PLOT SCALE : 1:4

STATE PROJECT NUMBER
2030-14-70

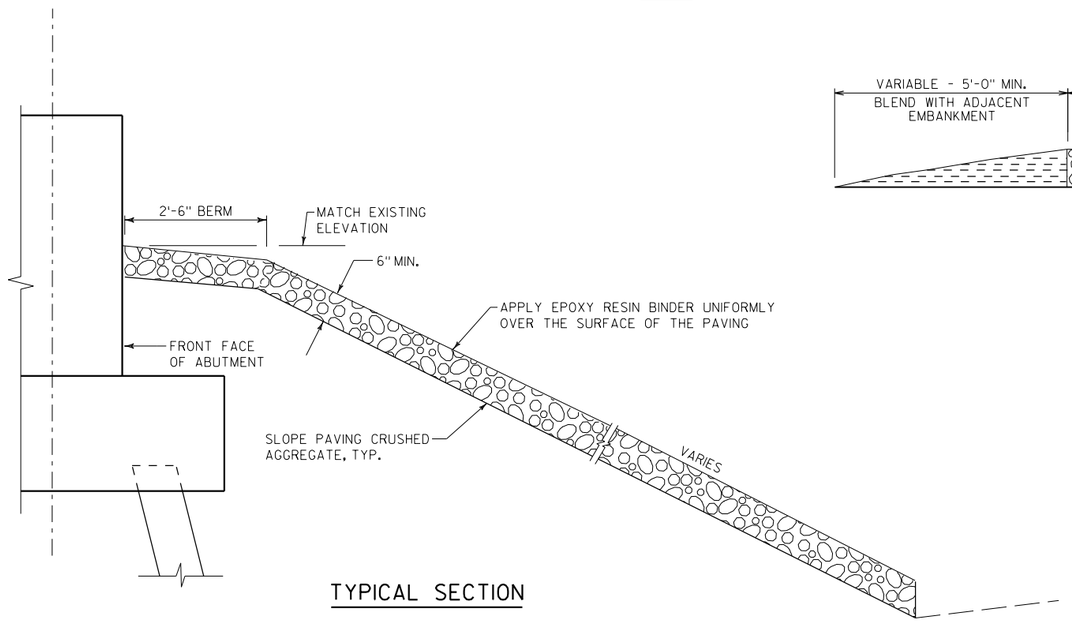


PLAN

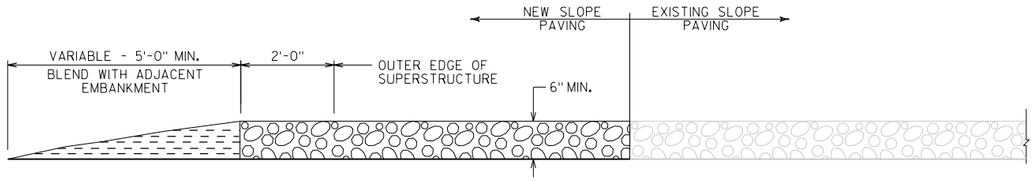
NOTES

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

WOOD FORMS MAY BE LEFT IN PLACE WHEN OF A QUALITY ACCEPTABLE TO THE ENGINEER.



TYPICAL SECTION



SECTION A-A

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-107

DRAWN BY AJA | PLANS CK'D. MHZ

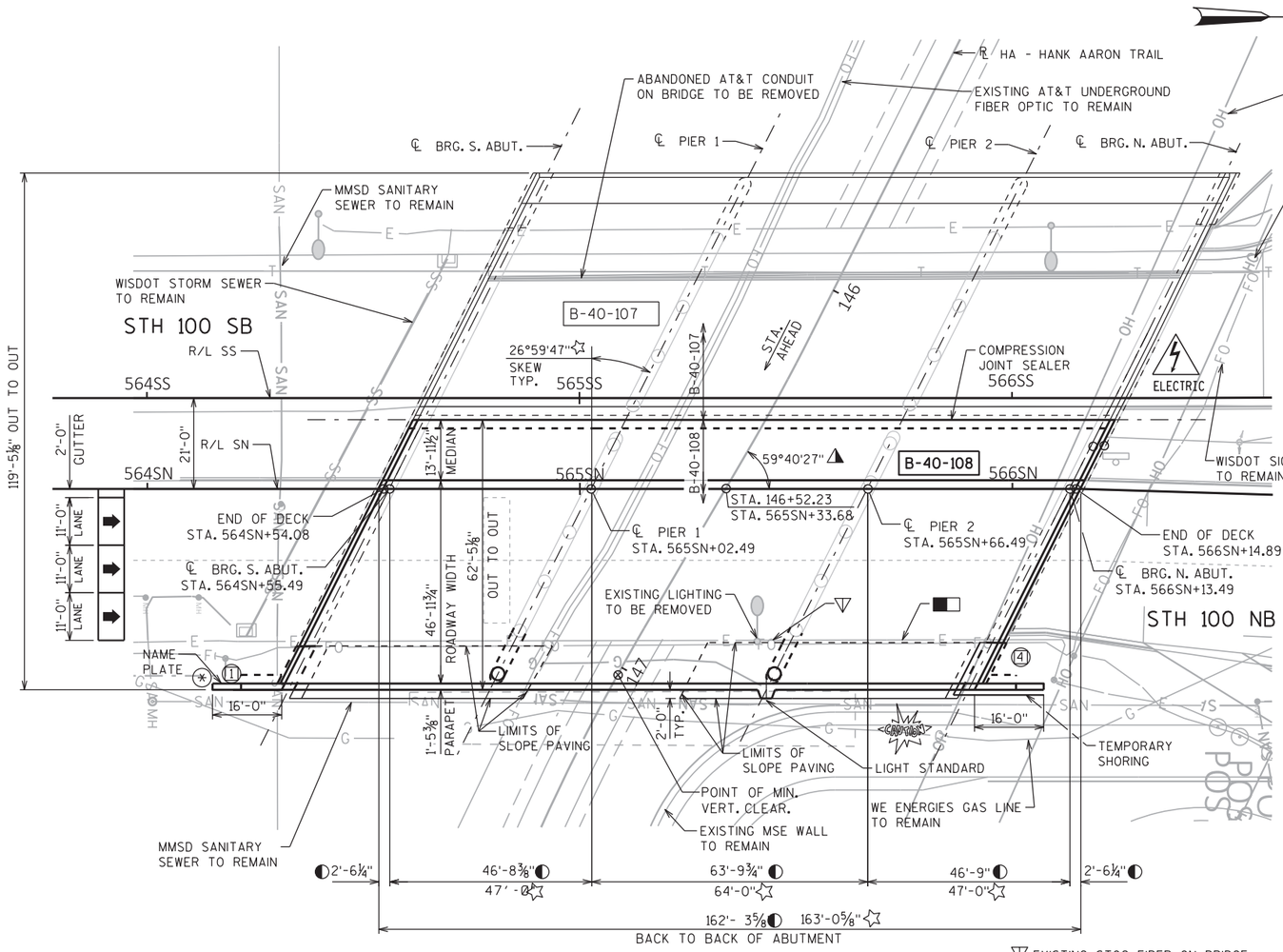
SLOPE PAVING DETAILS

SHEET 34 OF 34

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Structures\B-40-107\DGN\cds\B107_080801_sp.dgn PLOT DATE : 12/19/2017 PLOT BY : aaschenbrenner PLOT NAME : $FILE$ PLOT SCALE : 1:20

FILE NAME : F:\BMI-3558 STH 100 Bridge over HASTS_Design\04_Structures_Bridges\cds\Current Plans\01_B-40-108_General Plan & Elevation.dgn
PLOT DATE : 19-DEC-2017 15:25
PLOT BY : bthengon
PLOT NAME : 01_B-40-108.CPAE

STATE PROJECT NUMBER
2030-14-70

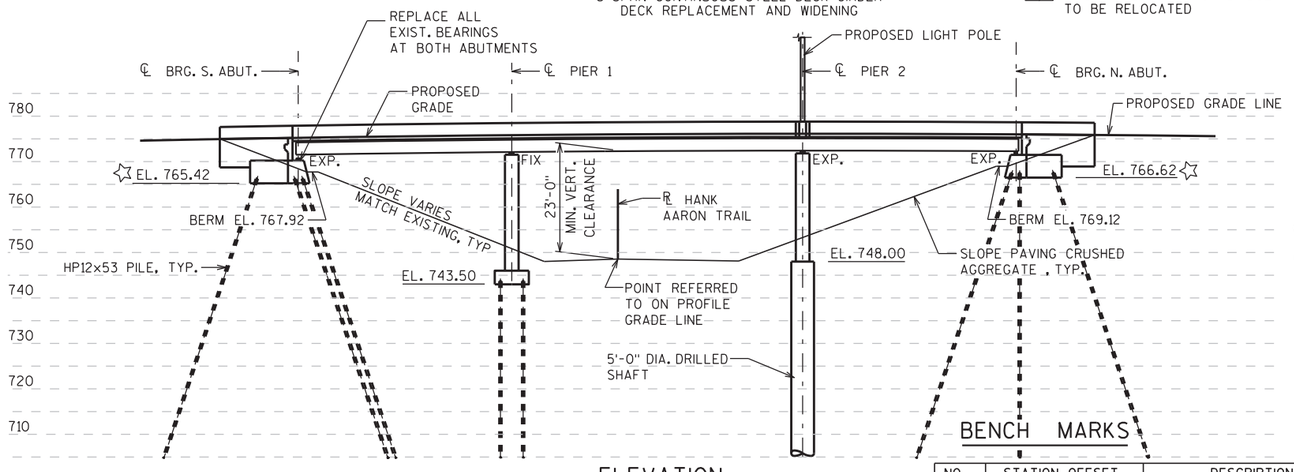


PLAN

3-SPAN CONTINUOUS STEEL DECK GIRDER DECK REPLACEMENT AND WIDENING

▽ EXISTING STOC FIBER ON BRIDGE TO BE RELOCATED

EXISTING ELECTRIC ON BRIDGE TO BE RELOCATED



ELEVATION

(LOOKING WEST)

BENCH MARKS

NO.	STATION, OFFSET	DESCRIPTION	ELEV.
81873	564SN+40, 61.2'LT	PAINTED X IN LIGHT POLE BASE	774.833
81874	567SN+84, 184.4'LT	CHISELED X IN ATC TOWER BASE	770.479

LIST OF DRAWINGS

1. GENERAL PLAN AND ELEVATION
2. TYPICAL SECTION AND GENERAL NOTES
3. ESTIMATE OF QUANTITIES
4. SUBSURFACE EXPLORATION
5. CONSTRUCTION STAGING (1 OF 2)
6. CONSTRUCTION STAGING (2 OF 2)
7. REMOVAL DETAILS (1 OF 2)
8. REMOVAL DETAILS (2 OF 2)
9. SUBSTRUCTURE PLAN
10. SOUTH ABUTMENT 1 OF 3
11. SOUTH ABUTMENT 2 OF 3
12. SOUTH ABUTMENT 3 OF 3
13. NORTH ABUTMENT 1 OF 3
14. NORTH ABUTMENT 2 OF 3
15. NORTH ABUTMENT 3 OF 3
16. PIER 1
17. PIER 2
18. BEARING DETAILS (1 OF 2)
19. BEARING DETAILS (2 OF 2)
20. FRAMING PLAN
21. GIRDER ELEVATION
22. DIAPHRAGM DETAILS
23. SPLICE DETAILS
24. GIRDER AND SUPERSTRUCTURE DETAILS
25. TOP OF DECK ELEVATIONS
26. SUPERSTRUCTURE REINFORCEMENT PLAN
27. SUPERSTRUCTURE CROSS SECTIONS
28. MEDIAN REINFORCEMENT DETAILS
29. DIAPHRAGM REINFORCEMENT DETAILS
30. HAT BAR DETAILS
31. SUPERSTRUCTURE BILL OF BARS
32. SLAB POURING SEQUENCE
33. EXPANSION JOINT DETAILS (1 OF 2)
34. EXPANSION JOINT DETAILS (2 OF 2)
35. SINGLE SLOPE PARAPET 42SS
36. LIGHT SUPPORT DETAILS
37. CONDUIT DETAILS
38. SLOPE PAVING DETAILS

LEGEND

- DIRECTION OF TRAFFIC
- ☆ PER EXISTING STRUCTURE PLANS
- ◐ PER EXISTING SURVEY
- (X) WINGWALL NUMBER
- (*) PROVIDE FOR "THRIE BEAM GUARD RAIL ATTACHMENT".
- ◭ ANGLE MEASURED BETWEEN ℄ STH-100 AND ℄ HANK AARON TRAIL AT THE INTERSECTION POINT.
- ◥ CONSTRUCTION MUST BE ACCOMPLISHED BENEATH ACTIVE CHARGED OVERHEAD ELECTRIC LINES.

STRUCTURE DESIGN CONTACTS

BUREAU OF STRUCTURES CONTACT:
WILLIAM DREHER
(608) 266-8489

CONSULTANT CONTACT:
YAN NENAYDYKH
(414) 292-4599

WISCONSIN
BABU D. THENGANAKUNNEL
E-35905
MILWAUKEE, WI
PROFESSIONAL ENGINEER
12/19/2017

DESIGN DATA

LIVE LOAD:

EXISTING GIRDERS (GIRDERS 3 THRU 7)

DESIGN RATING: HS19
INVENTORY RATING: HS19
OPERATING RATING: HS32
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): =210kips

NEW GIRDERS (GIRDERS 1 AND 2)

DESIGN RATING: HL93
INVENTORY RATING FACTOR: RF= 1.8
OPERATING RATING FACTOR: RF= 2.34
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): =250kips

FOUNDATION DATA

NEW ABUTMENTS AND PIER 1 EXTENSIONS TO BE SUPPORTED ON HP12X53 STEEL PILES DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 110 TONS ** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED 70 FEET LONG PILES AT THE SOUTH ABUTMENT.
ESTIMATED 65 FEET LONG PILES AT PIER 1
ESTIMATED 70 FEET LONG FOR PREBORED PILES AT PIER 1
ESTIMATED 60 FEET LONG PILES AT NORTH ABUTMENT.

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

NEW PIER 2 EXTENSION TO BE SUPPORTED OR SINGLE DRILLED SHAFT 5'-0" DIAMETER 62'LONG

MATERIAL PROPERTIES

CONCRETE MASONRY
SUPERSTRUCTURE..... f'c = 4,000 psi
ALL OTHER ..... f'c = 3,500 psi

BAR STEEL REINFORCEMENT,
HIGH STRENGTH, GRADE 60 .....Fy = 60,000 psi

STRUCTURAL STEEL (ASTMA709)....Fy= 50,000 psi

TRAFFIC DATA

STH 100

AADT (2013) = 33,430
AADT (2035) = 41,100
DESIGN SPEED = 45 MPH

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 12/20/17
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-40-108

STH 100 NB OVER HANK AARON STATE TRAIL

COUNTY	CITY
MILWAUKEE	WEST ALLIS

DESIGN SPEC.
REHABILITATION/AASHTO LRFD DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
DMC	YNN	TAL	BDT/YNN

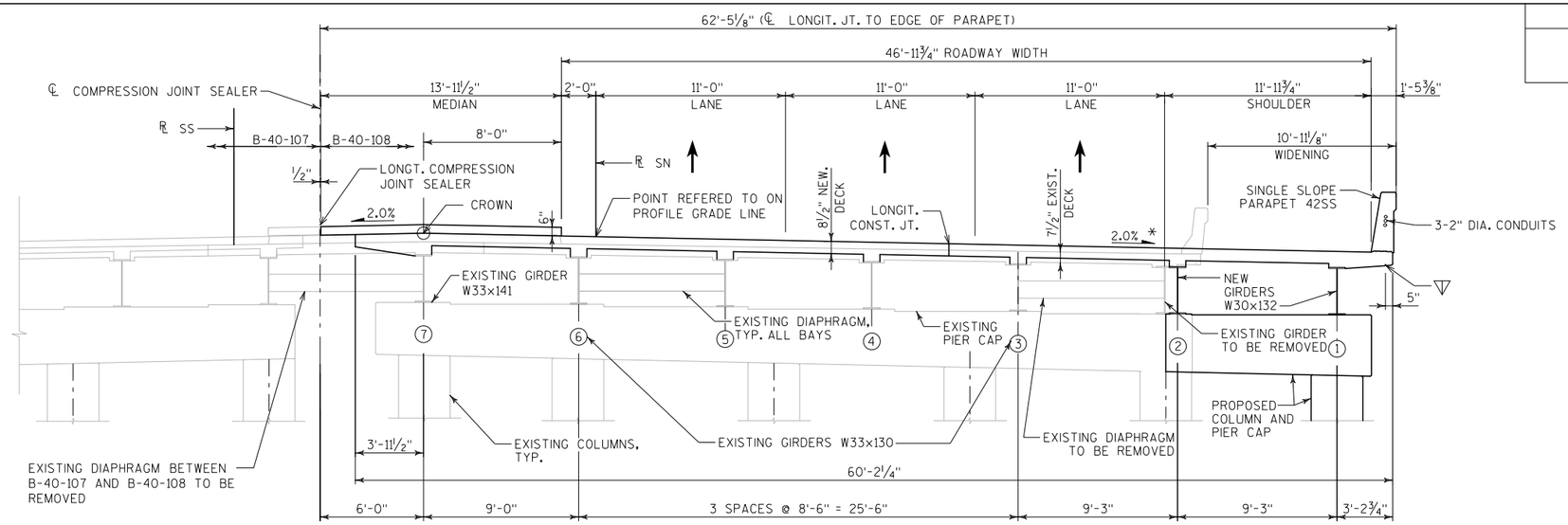
GENERAL PLAN AND ELEVATION

SHEET 1 OF 38
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I.D. 2030-14-00 DEC 2017

8 8

STATE PROJECT NUMBER
2030-14-70



TYPICAL SECTION

(LOOKING NORTH)

* EXISTING CROSS SLOPE IS 1.6%

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

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

ALL DIMENSIONS ARE IN FEET AND INCHES, UNLESS OTHERWISE NOTED.

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS NOTED OTHERWISE.

ALL STATIONS AND ELEVATIONS ARE IN FEET. ELEVATIONS ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM NAVD 88 (2007)

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE EXPOSED TOP OF DECK, SIDEWALK, MEDIAN, AND TO THE VERTICAL AND HORIZONTAL SURFACES OF PAVING NOTCH.

PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND TOP OF PARAPETS.

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFY THE BAR SIZE. ALL DIMENSIONS IN THE BAR BENDS ARE OUT TO OUT.

THE DECK, PARAPET, SIDEWALK AND MEDIAN CONCRETE QUANTITY SHALL BE PAID FOR UNDER BID ITEM "HPC MASONRY STRUCTURES"

UTILIZE EXISTING BAR STEEL REINFORCEMENT WHERE SHOWN AND EXTEND 24 BAR DIAMETERS INTO NEW WORK. EXISTING BARS SHALL BE CLEANED AND STRAIGHTENED.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURE BRIDGES B-40-108" SHALL BE THE EXISTING GROUNDLINE.

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

EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRED ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF THE EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON "BLOCKING AND SLAB HAUNCH DETAILS" SHEET.

STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE B-40-108".

SEAL ALL EXPOSED EDGES OF PREFORMED JOINT FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

VARIATIONS TO THE NEW GRADE LINE OVER ¼ INCH 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 1961.

PLANS OF THE EXISTING BRIDGE ARE ON FILE AND ARE AVAILABLE FOR INSPECTION AT THE WISCONSIN DEPARTMENT OF TRANSPORTATION, SOUTH EAST REGION.

CONCRETE SURFACE REPAIR REQUIRED IN AREAS DESIGNATED BY THE FIELD ENGINEER. QUANTITIES SHOWN ARE APPROXIMATE AND UNDISTRIBUTED.

PERFORM CRUSHED AGGEGATE SLOPE PAVING REPAIR ON BOTH THE ABUTMENTS. LIMITS TO BE DETERMINED BY THE FIELD ENGINEER.

CLEAN AND PAINT ALL EXISTING STEEL BEARINGS AT THE PIERS AND ABUTMENTS. CLEANING AND PAINTING STEEL BEARINGS TO BE INCLUDED IN THE BID ITEM "STRUCTURE REPAINTING RECYCLED ABRASIVE B-40-108" PAINT APPLICATIONS ON THE BEARINGS SHALL BE BRUSHED ON.

ALL FIELD CONNECTIONS SHALL BE MADE WITH ¾" DIAMETER, FRICTION TYPE, HIGH-TENSILE STRENGTH BOLTS UNLESS SHOWN OR NOTED OTHERWISE.

THE UTILITY INFORMATION SHOWN ON THIS DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE. UTILITIES LABELED AS PROPOSED MAY BE INSTALLED BY OTHERS PRIOR TO THIS CONTRACT.

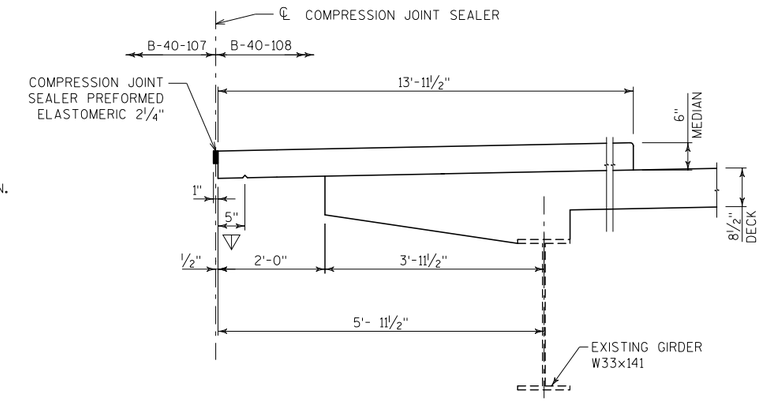
THE EXISTING STRUCTURE, B-40-108, IS A 3 SPAN, STEEL DECK GIRDER STRUCTURE WITH AN OVERALL WIDTH OF 51'-6" AND AN OVERALL LENGTH OF 163'-0⅝".

UNDER THE BID ITEM "REMOVING OLD STRUCTURE STA. 565SN+33.68", THE EXISTING DECK, PARAPET, MEDIAN, PAVING BLOCK AND EXPANSION JOINT SHALL BE COMPLETELY REMOVED AS PART OF THIS CONTRACT. EXISTING ABUTMENTS, WINGWALLS, AND PIERS SHALL BE PARTIALLY REMOVED. EXISTING GIRDERS, DIAPHRAGMS, AND STEEL BEARINGS SHALL BE PARTIALLY REMOVED.

CLEAN AND PAINT ALL EXPOSED STEEL SUPERTRUCTURE SURFACES UNDERNEATH THE BRIDGE. THE SURFACES INCLUDE GIRDERS, DIAPHRAGMS, CONNECTIONS, ETC.

EXISTING AND PROPOSED STEEL SUPERSTRUCTURE SHALL HAVE A FINISHED COAT WITH COLOR TO MATCH SHERWIN WILLIAMS COLOR SW6523-DENM BLUE.

ALL CONCRETE REMOVAL LIMITS SHALL BE DEFINED BY A 1 INCH DEEP SAWCUT. THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH SLOPE PAVING MATERIAL TO THE EXTENT SHOWN ON SHEET 1 AND SLOPE PAVING DETAILS.



CROSS SECTION THRU MEDIAN

LEGEND

▽ ¾" V-GROOVE REQD. EXTEND TO 2'-0" FROM F.F. OF ABUT. BODY

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

DRAWN BY	DMC	PLANS CK'D.	BDT

TYPICAL SECTION AND GENERAL NOTES

SHEET 2 OF 38

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FILE NAME: F:\BMI-3558 STH 100 Bridge over HASTI\5_Designs\04_Structures\Bridges\stdsCurrent Plans\02_B-40-108_Typical Section & General Notes.dgn
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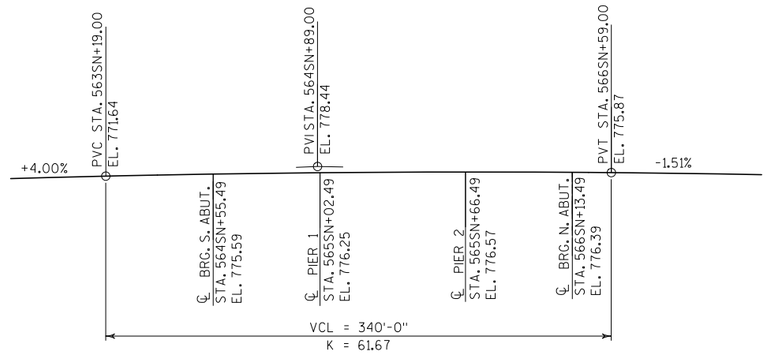
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TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEMS	UNIT	SOUTH ABUTMENT	PIER 1	PIER 2	NORTH ABUTMENT	SUPER	TOTAL
203.0200	REMOVING OLD STRUCTURES STA.565 SN+33.68	LS	-	-	-	-	-	1
203.0225.S	DEBRIS CONTAINMENT B-40-108	LS	-	-	-	-	-	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-40-108	LS	-	-	-	-	-	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	115	64	-	80	-	259
502.0100	CONCRETE MASONRY BRIDGES	CY	20.00	17	10.00	23	-	70
502.3100	EXPANSION DEVICE B-40-108	LS	-	-	-	-	-	1
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-	-	-	-	1,122	1122
502.3210	PIGMENTED SURFACE SEALER	SY	8	-	-	8	79	95
502.4204	ADHESIVE ANCHORS NO. 4 BAR	EACH	6	-	-	6	-	12
502.4205	ADHESIVE ANCHORS NO. 5 BAR	EACH	54	-	-	53	-	107
502.4206	ADHESIVE ANCHORS NO. 6 BAR	EACH	15	12	12	16		55
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	710	200	5500	720	-	7,130
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1950	3100	3200	1700	86,610	96,560
506.0605	STRUCTURAL STEEL HS	LB	-	-	-	-	51,220	51,220
506.3015	WELDED STUD SHEAR CONNECTORS 7/8X6-INCH	EACH	-	-	-	-	1,326	1,326
506.5000	BEARING ASSEMBLIES FIXED B-40-108	EACH	-	2	-	-	-	2
506.6000	BEARING ASSEMBLIES EXPANSION B-40-108	EACH	7	-	2	7	-	16
506.7050.S	REMOVING BEARINGS B-40-108	EACH	6	-	-	6	-	12
509.1500	CONCRETE SURFACE REPAIR	SF	8	7	7	8	-	30
511.2200	TEMPORARY SHORING LEFT IN PLACE B-40-108	SF						235
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	4	-	-	-	4	8
517.0600	PAINTING EPOXY SYSTEM B-40-108	LS	-	-	-	-	-	1
517.0900.S	PREPARATION AND COATING OF TOP FLANGES B-40-108	LS	-	-	-	-	-	1
517.1800.S	STRUCTURE REPAINTING RECYCLED ABRASIVE B-40-108	LS	-	-	-	-	-	1
517.4500.S	NEGATIVE PRESSURE CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-40-108	LS	-	-	-	-	-	1
550.0010	PRE-BORING UNCONSOLIDATED MATERIALS	LF	-	30	-	-	-	30
550.0500	PILE POINTS	EACH	4	6	-	4	-	14
550.1120	PILING STEEL HP 12-INCH X 53 LB	LF	280	400	-	240	-	920
604.0500	SLOPE PAVING CRUSHED AGGREGATE	SY	96	-	-	108	-	204
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	35			35		70
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	-	-	-	-	-	1
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	23	-	-	21	-	44
652.0125	CONDUIT RIGID METALIC 2-INCH	LF	-	-	-	-	36	36
652.0225	CONDUIT RIGID NONMETALIC SCHEDULE 40 2-INCH	LF	-	-	-	-	550	550
653.0220	JUNCTION BOXES 18X6X6-INCH	EACH	-	-	-	-	3	3
653.0222	JUNCTION BOXES 18X12X6-INCH	EACH	-	-	-	-	1	1
657.6005	ANCHOR ASSEMBLIES LIGHT POLES ON STRUCTURES	EACH	-	-	-	-	1	1
SPV.0035.4000	HPC MASONRY STRUCTURES	CY	2.50	-	-	2.50	347	352
SPV.0090.4400	DRILLED SHAFT FOUNDATION 60-INCH	LF	-	-	62	-	-	62
SPV.0165.4700	LONGITUDINAL GROOVING BRIDGE DECK	SF	-	-	-	-	7524	7524
SPV.0180.4750	CLEAN ABUTMENT SEATS	SY	4.00	-	-	4.00	-	8
	NON-BID ITEM							
	PREFORMED JOINT FILLER	SIZE	-	-	-	-	-	3/4",1", 1 1/2"
	NON-BITUMINOUS JOINT FILLER	SIZE	-	-	-	-	-	1/2"
	CORK FILLER	SIZE	-	-	-	-	-	3/4"
	NAME PLATE	EACH	-	-	-	-	-	1

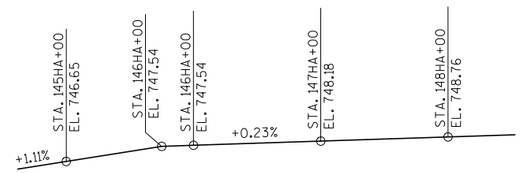
ALL ITEMS ARE CATEGORY 2010

PORTABLE DECONTAMINATION FACILITY FOR THIS PROJECT IS PAID UNDER BID ITEMS FOR STRUCTURE B-40-107.



PROFILE GRADE LINE STH-100 (NB) - SN

(ALONG ℄ SN)



EXISTING PROFILE REFERENCE LINE - HA

(ALONG ℄ HA)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

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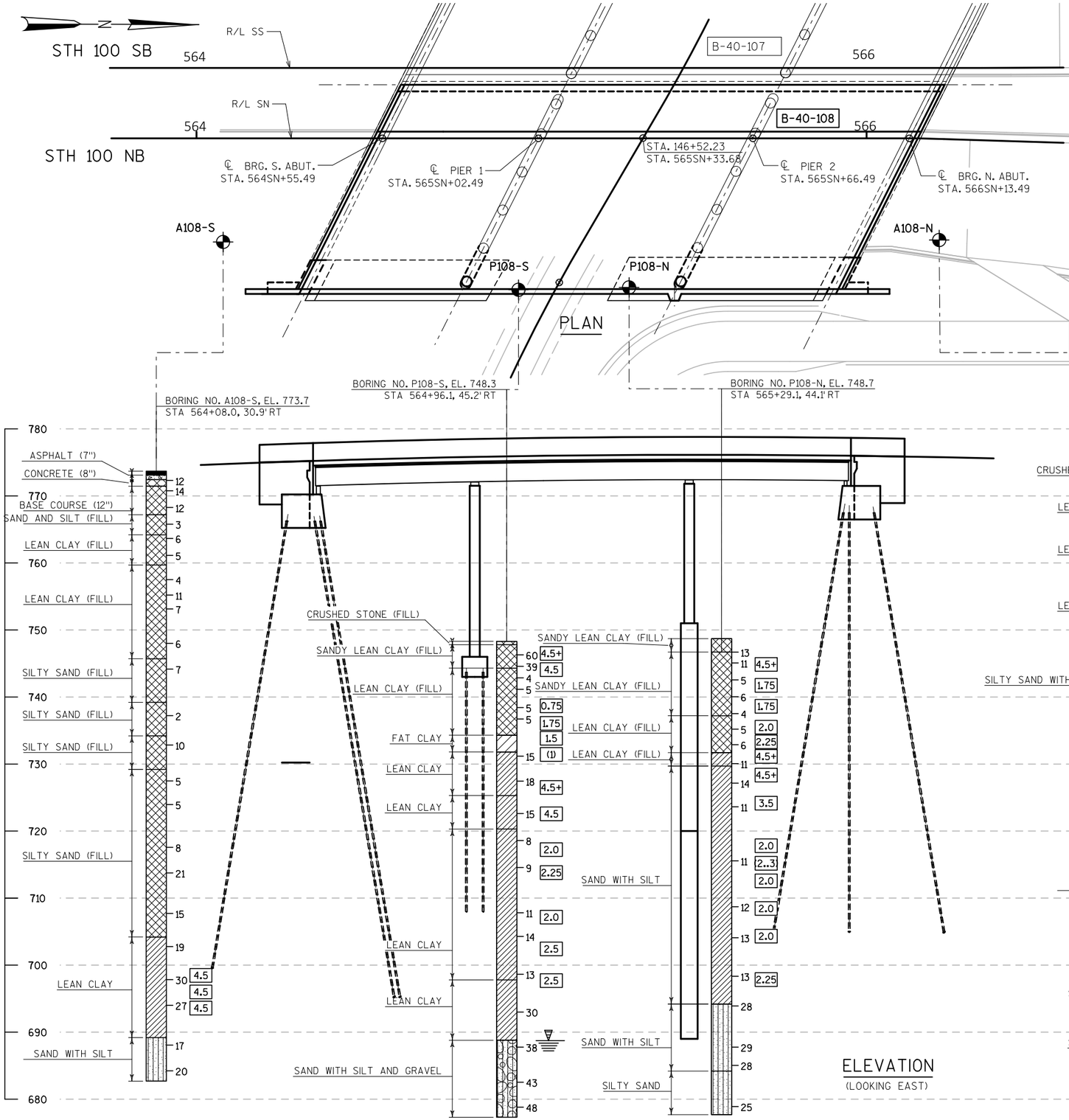
PROFILE GRADELINES & QUANTITIES

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DATE: 12/19/2017 3:35:44 PM Plotted by: bthengon PEN TABLE: v8_Structural_rev.tbl



ELEVATION
(LOOKING EAST)

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.

WATER LEVEL INDICATED MAY NOT BE REPRESENTATIVE OF HYDROSTATIC WATER LEVELS.

HISTORICAL BORING LOCATIONS ARE APPROXIMATE. ADDITIONAL INFORMATION IS AVAILABLE FROM THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

DENOTES SOIL BORING LOCATION

SOIL BORINGS COMPLETED BY:
CESTRA ENGINEERING, INC.

SOIL BORING TAKEN:
AUGUST 30, 2017 - BORING A108-N
AUGUST 28, 2017 - BORING P108-S
AUGUST 30, 2017 - BORING A108-S
AUGUST 29, 2017 - BORING P108-N

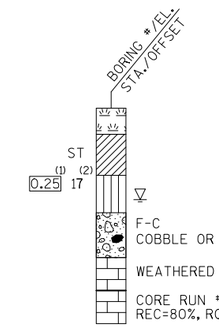
STATE PROJECT NUMBER

2030-14-70

MATERIAL SYMBOLS

ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)
SHALE	SANDSTONE	IGNEOUS/ META

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

- AT TIME OF DRILLING
- END OF DRILLING
- AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

DRAWN BY HKG | PLANS CK'D. BDT

SUBSURFACE EXPLORATION

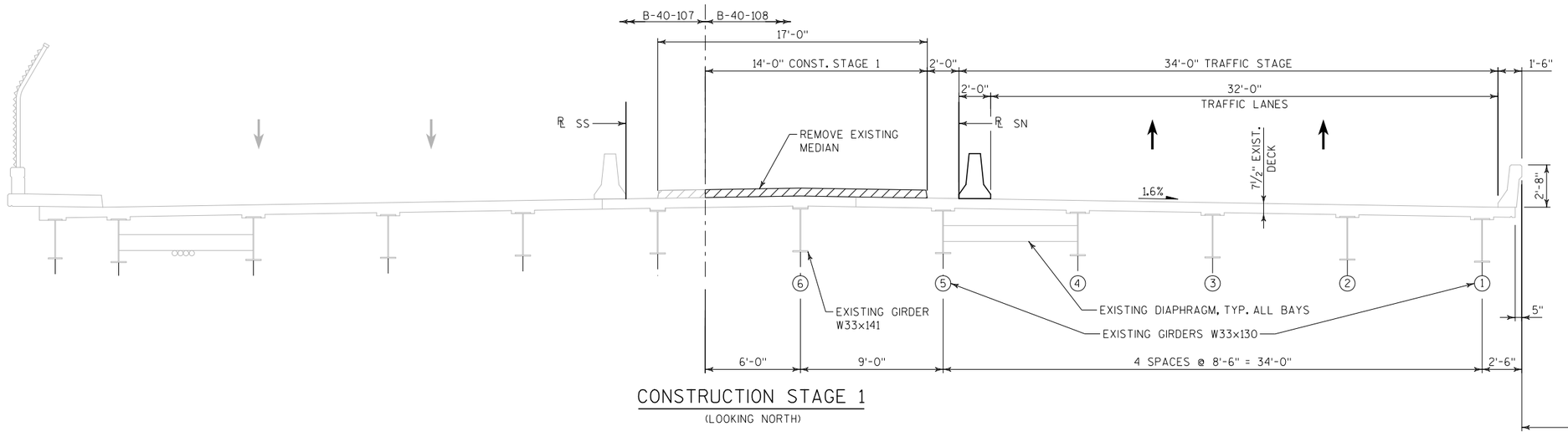
SHEET 4 OF 38

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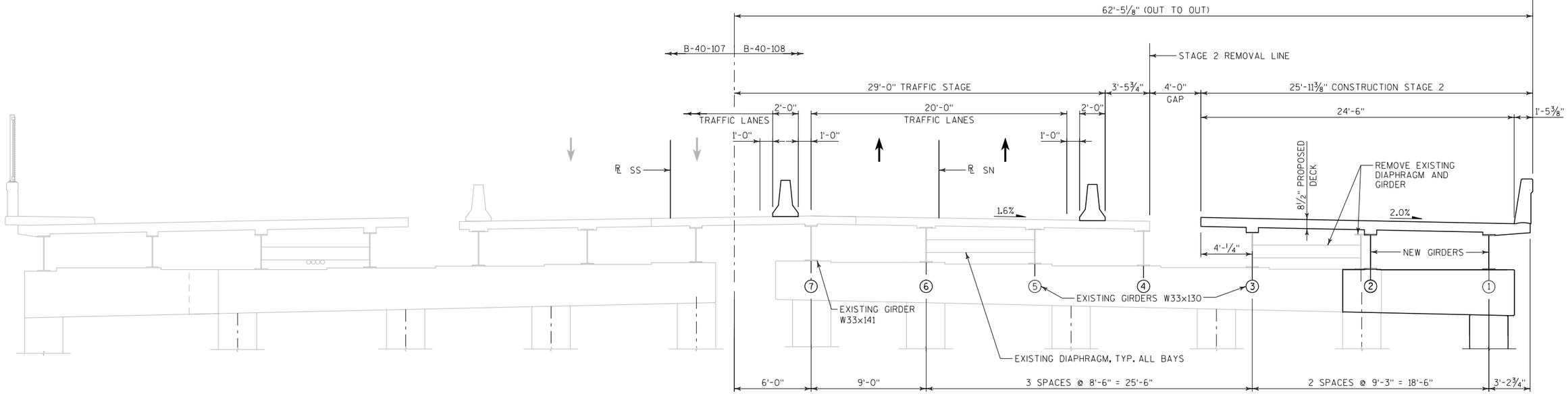
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STATE PROJECT NUMBER
2030-14-70



CONSTRUCTION STAGE 1

(LOOKING NORTH)



CONSTRUCTION STAGE 2

(LOOKING NORTH)

LEGEND

→ DIRECTION OF TRAFFIC

▨ REMOVAL AREA

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

DRAWN BY	DMC	PLANS CK'D.	BDT

CONSTRUCTION STAGING (1 OF 2)

SHEET 5 OF 38

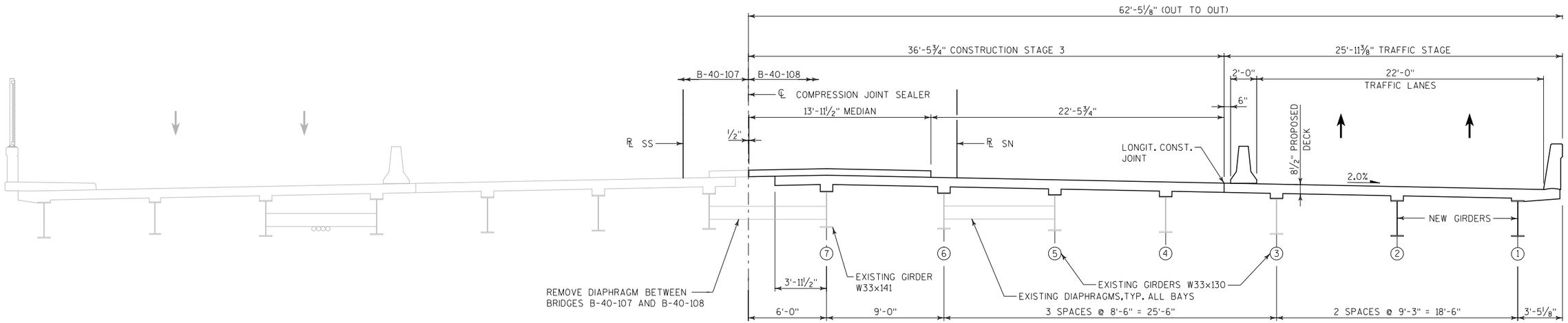
285

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STATE PROJECT NUMBER
2030-14-70



CONSTRUCTION STAGE 3

(LOOKING NORTH)

LEGEND

→ DIRECTION OF TRAFFIC

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

DRAWN BY	DMC	PLANS CK'D.	BDT

CONSTRUCTION STAGING (2 OF 2)

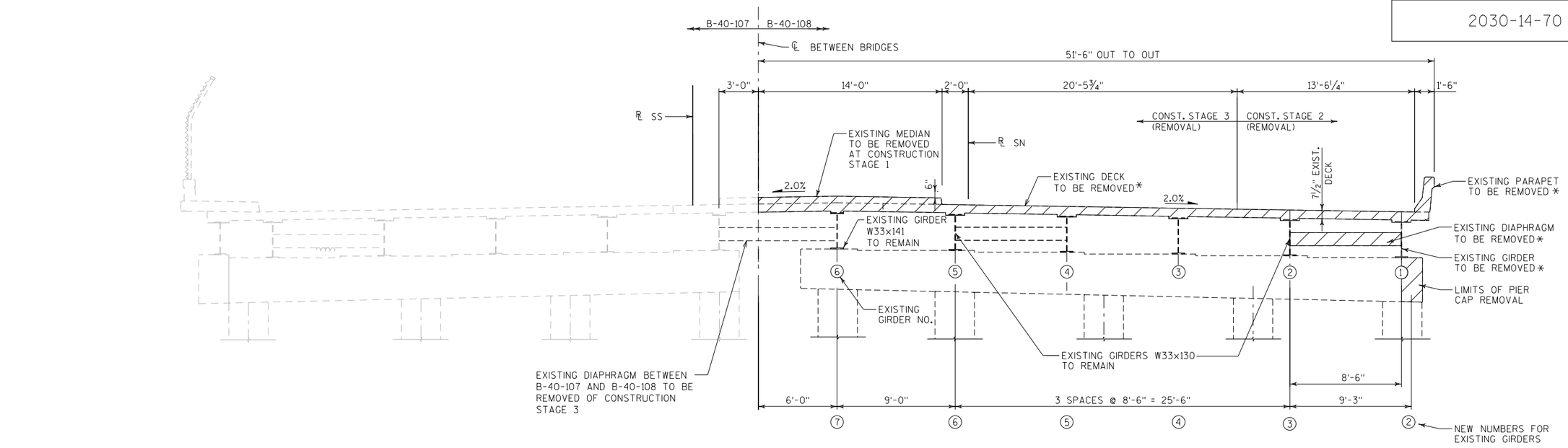
SHEET 6 OF 38

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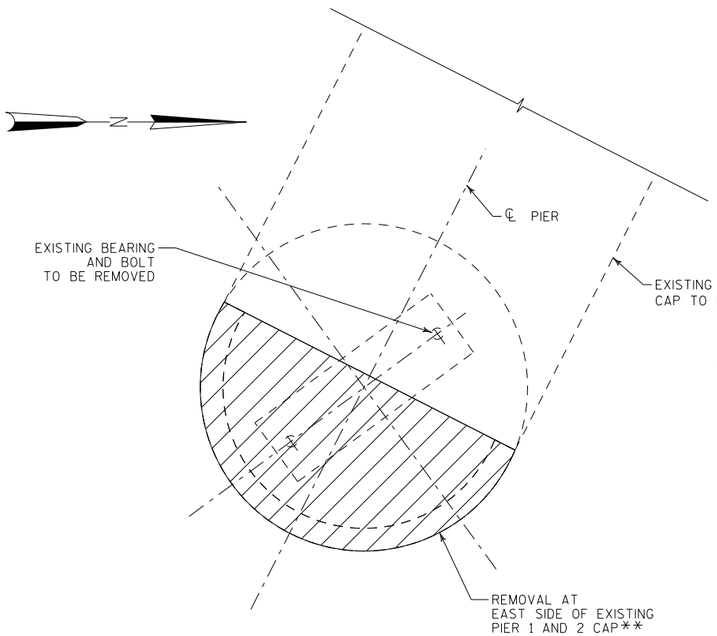
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EXISTING TYPICAL SECTION

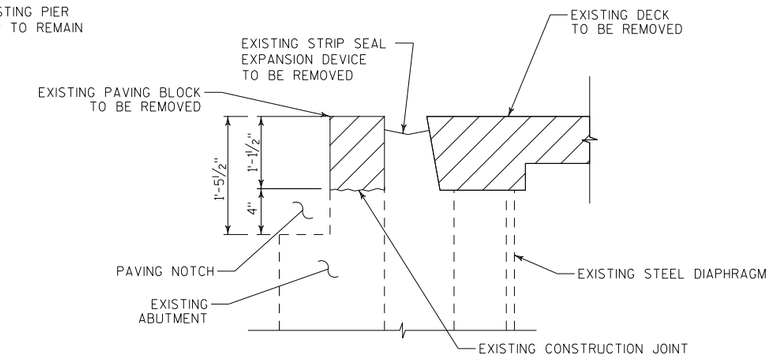
(LOOKING NORTH)

* SEE CONSTRUCTION STAGING PLANS SHEETS 4 AND 5 FOR DECK PARTIAL REMOVALS DETAILS



PIER 1 AND 2 CAP REMOVAL

** PRESERVE EXISTING COLUMN REINFORCEMENT EXTENDED INTO PIER CAP. DO NOT REMOVE ANY CONCRETE OF PIER COLUMN.



REMOVAL SECTION AT ABUTMENT

LEGEND

REMOVAL AREA

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

DRAWN BY HKG | PLANS CK'D. BDT

REMOVAL DETAILS (1 OF 2)

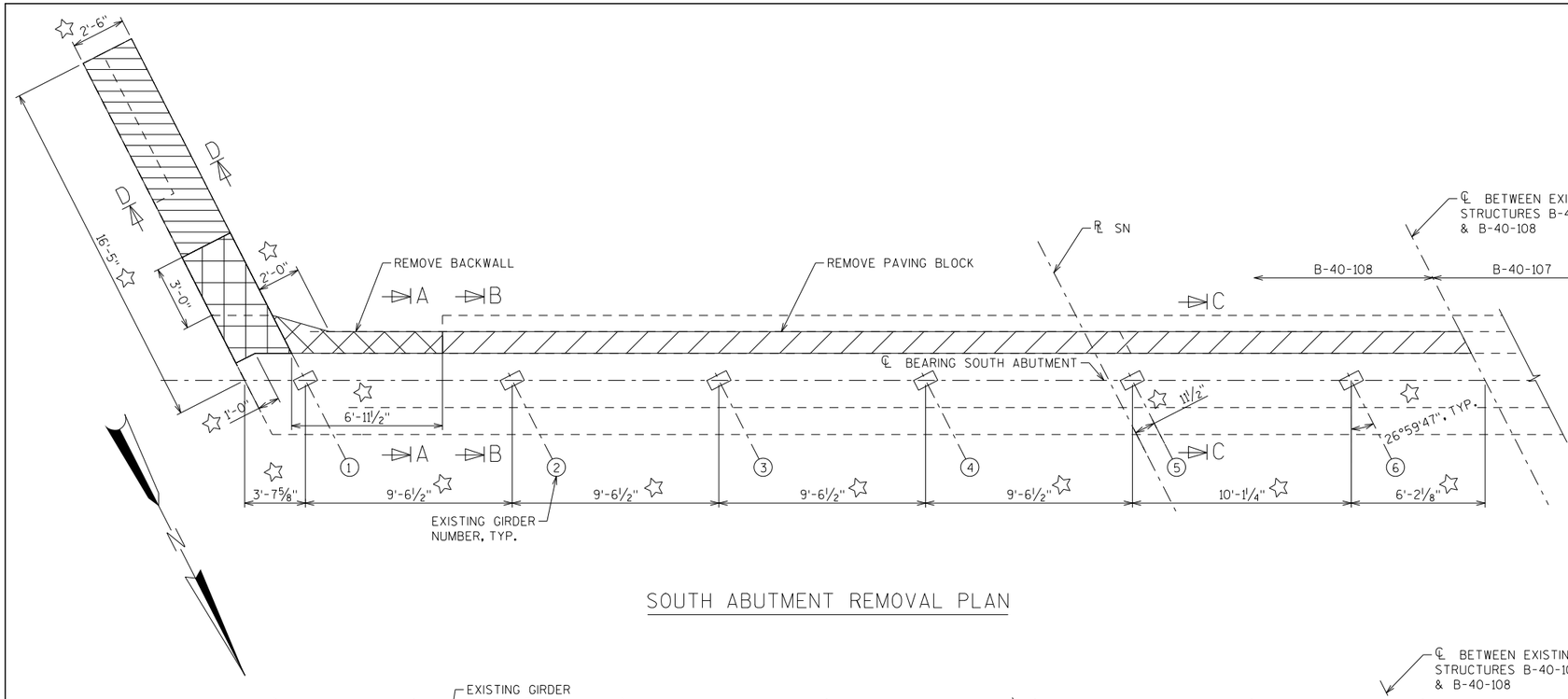
SHEET 7 OF 38
287

8

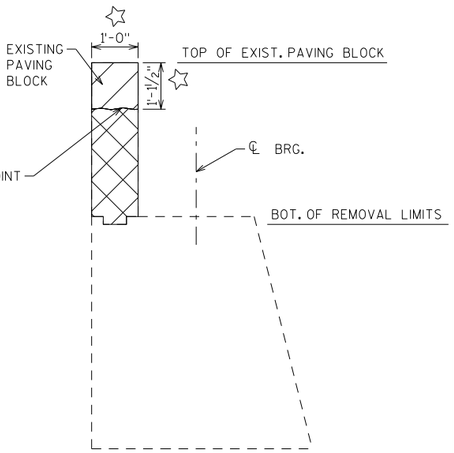
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DATE: 12/19/2017 3:35:46 PM Plotted by: bthengon PEN TABLE: v8_Structural_rev.tbl

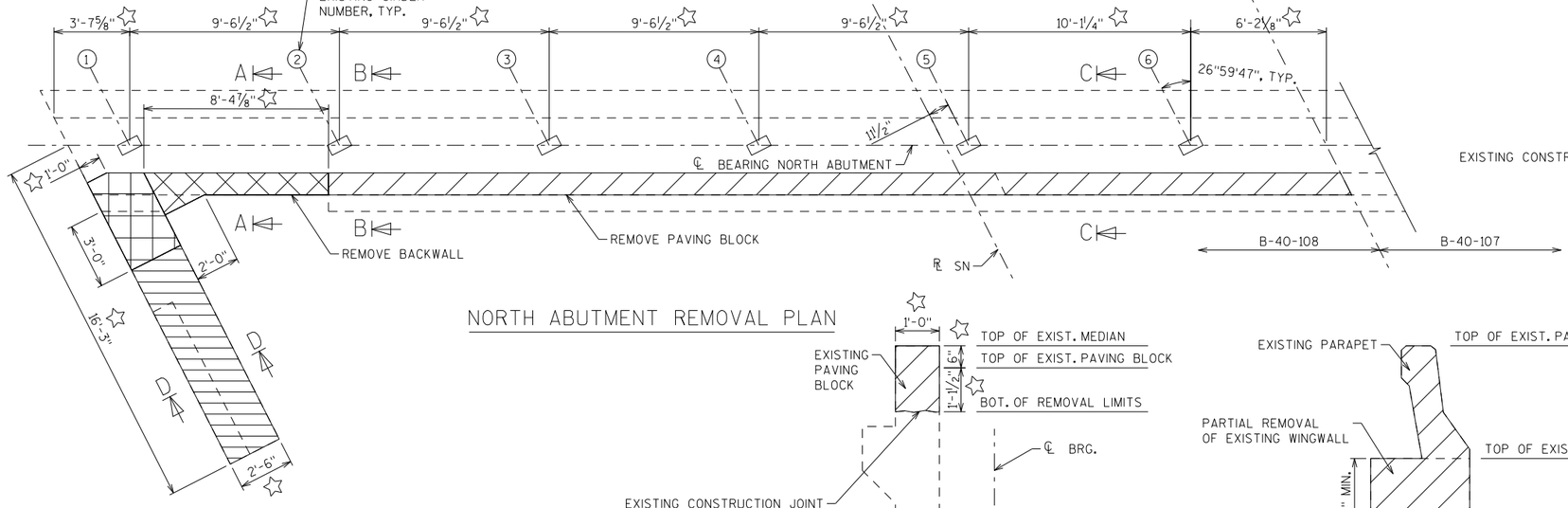
STATE PROJECT NUMBER
2030-14-70



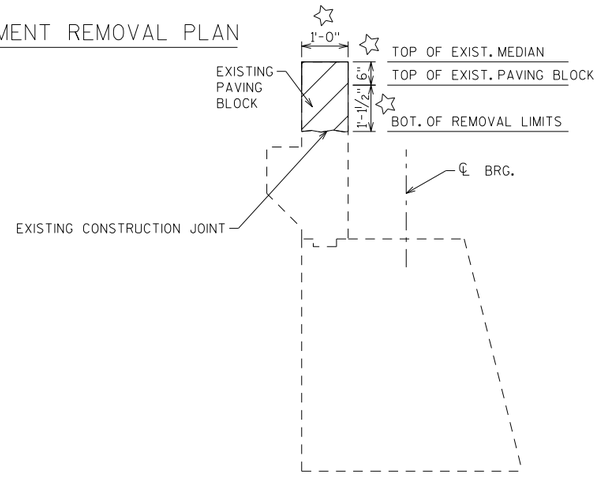
SOUTH ABUTMENT REMOVAL PLAN



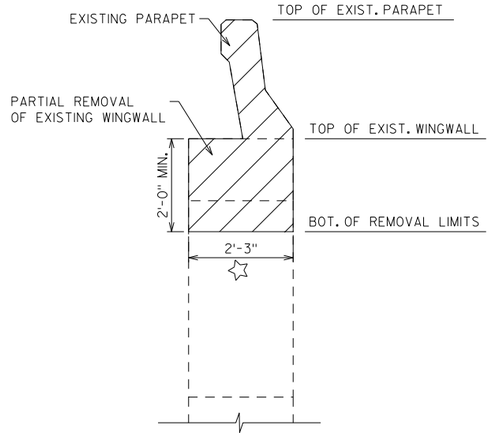
SECTION A-A



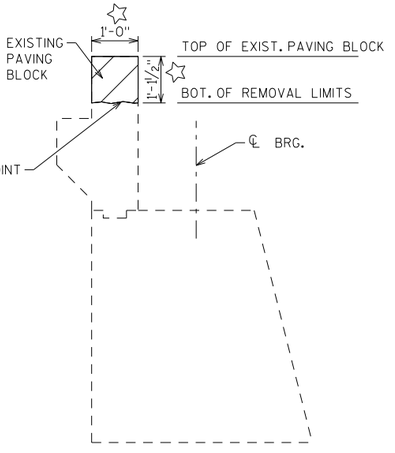
NORTH ABUTMENT REMOVAL PLAN



SECTION C-C



SECTION D-D



SECTION B-B

LEGEND

- PAVING BLOCK REMOVAL
- BACKWALL REMOVAL
- PARAPET AND TOP 2' OF WINGWALL REMOVAL
- PARAPET AND WINGWALL REMOVAL TO ABUTMENT SEAT ELEVATION
- ☆ PER EXISTING STRUCTURE PLANS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

DRAWN BY	JA	PLANS CK'D.	BDT

REMOVAL DETAILS (2 OF 2)

SHEET 8 OF 38
288

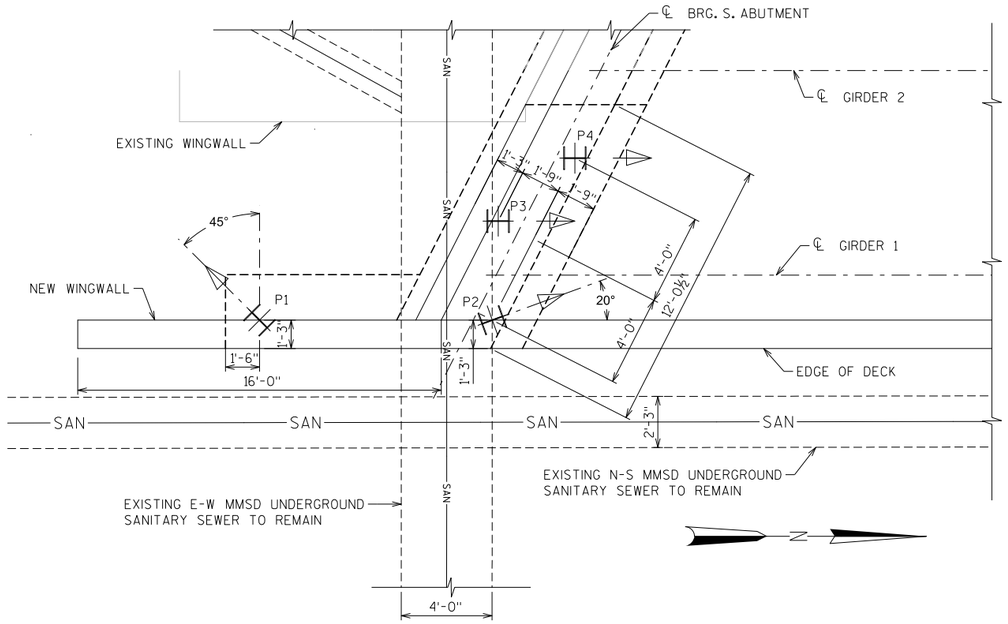
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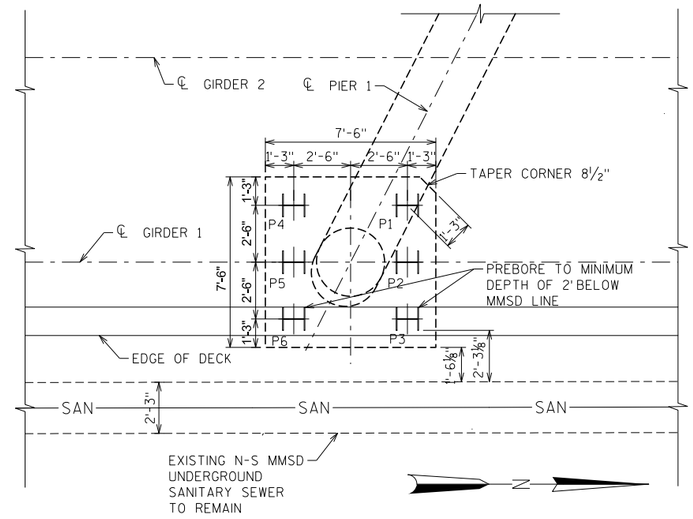
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STATE PROJECT NUMBER
2030-14-70



SOUTH ABUTMENT PLAN



PIER 1 PLAN

SOUTH ABUTMENT PILES

PILE NO.	LOCATION	LENGTH (FT)	BATTER	CLEARANCE FROM MMSD (FT)	PREBORE LENGTH (FT)
P1	S. WINGWALL	70	1:12	5.5	-
P2	S. ABUTMENT	70	2:12	5.5	-
P3	S. ABUTMENT	70	2:12	8.3	-
P4	S. ABUTMENT	70	1:12	7.5	-

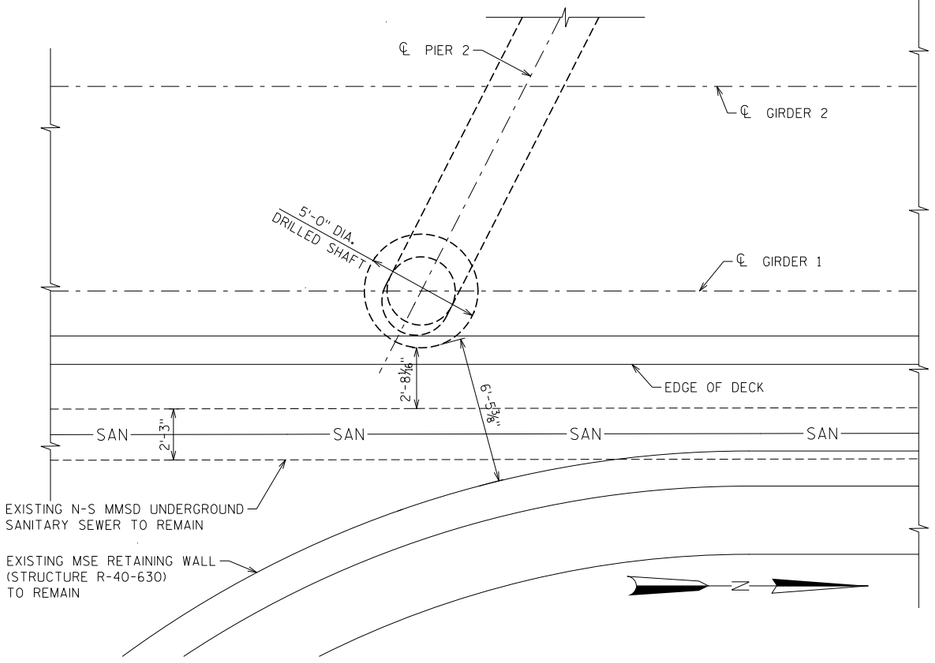
PIER 1 PILES

PILE NO.	LOCATION	LENGTH (FT)	BATTER	CLEARANCE FROM MMSD (FT)	PREBORE LENGTH (FT)
P1	PIER 1	65	NONE	7.2	-
P2	PIER 1	65	NONE	4.7	-
P3	PIER 1	70	NONE	2.2	15
P4	PIER 1	65	NONE	7.2	-
P5	PIER 1	65	NONE	4.7	-
P6	PIER 1	70	NONE	2.2	15

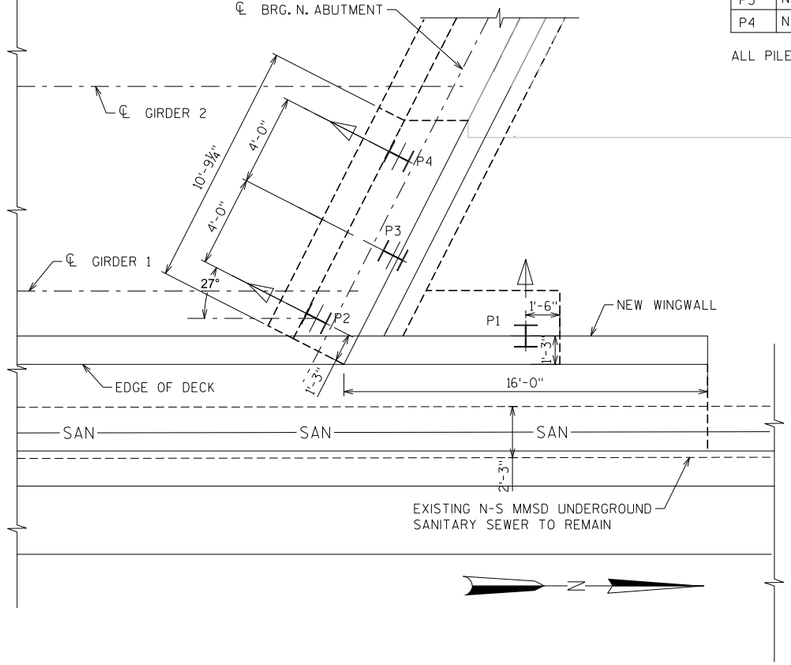
NORTH ABUTMENT PILES

PILE NO.	LOCATION	LENGTH (FT)	BATTER	CLEARANCE FROM MMSD (FT)	PREBORE LENGTH (FT)
P1	N. ABUT	60	2:12	5.25	-
P2	N. ABUT	60	NONE	5.25	-
P3	N. ABUT	60	2:12	5.9	-
P4	N. WINGWALL	60	1:12	12.9	-

ALL PILES HP12x53



PIER 2 PLAN



NORTH ABUTMENT PLAN

LEGEND

- BATTER DIRECTION
- PER EXISTING PLANS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

DRAWN BY	DMC	PLANS CK'D.	BDT

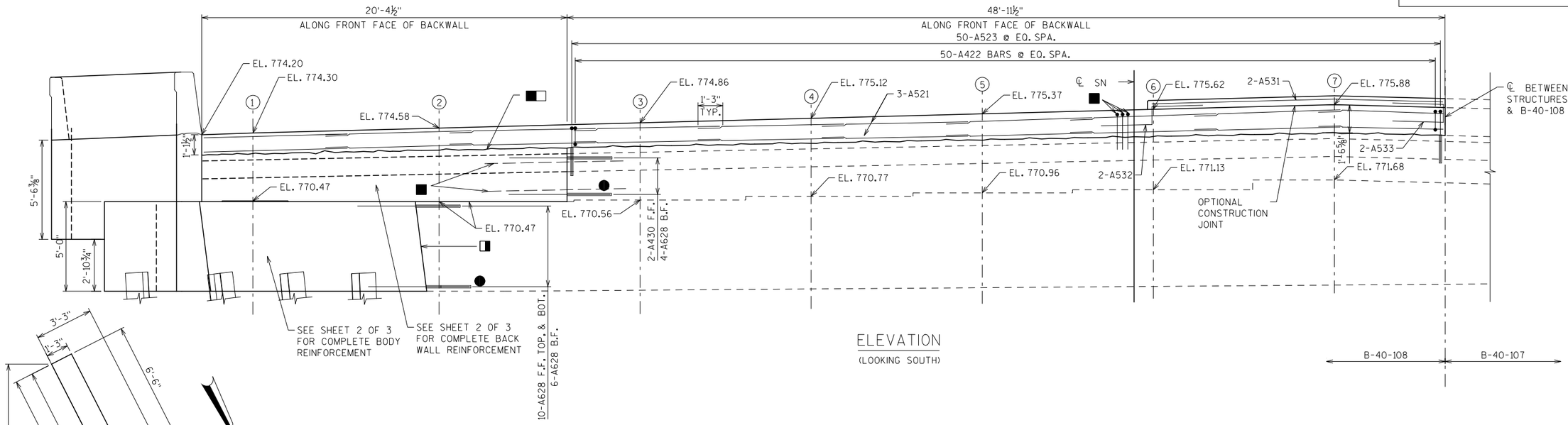
SUBSTRUCTURE PLAN

SHEET 9 OF 38
289

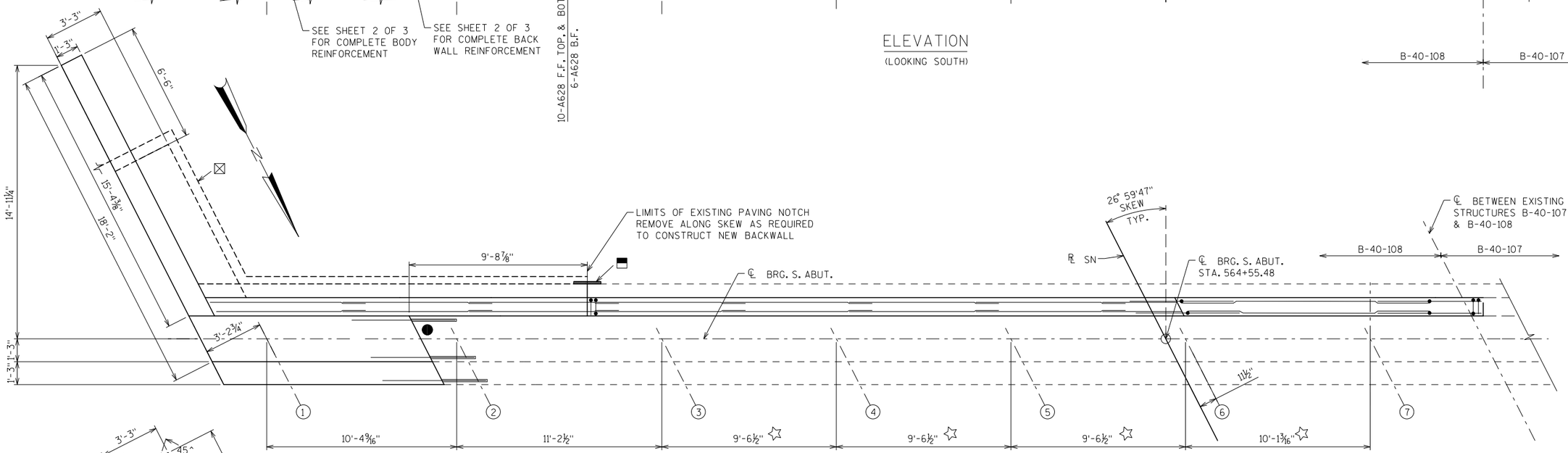
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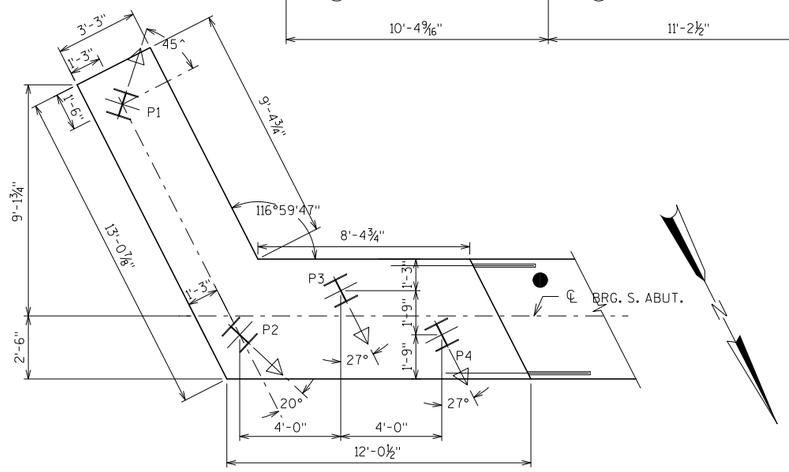
STATE PROJECT NUMBER
2030-14-70



ELEVATION
(LOOKING SOUTH)



PLAN



PILE PLAN

LEGEND

- BATTER DIRECTION
- CONCRETE ADHESIVE ANCHORS
  NO. 5 BARS EMBED 1'-0", MIN. EDGE DISTANCE 4"
  NO. 6 BARS EMBED 1'-3", MIN. EDGE DISTANCE 5"
  NO. 7 BARS EMBED 1'-5", MIN. EDGE DISTANCE 6"
  NO. 8 BARS EMBED 1'-8", MIN. EDGE DISTANCE 6"
- PIPE UNDERDRAIN WRAPPED (6-INCH) CONNECT TO EXISTING 8" DIA. PIPE UNDERDRAIN
- CONST. JOINT - POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE (STRIKE OFF AND LEAVE ROUGH).
- 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. AND VERT. JOINTS ON BACKFACE ABOVE FOOTING
- ROUGHEN EXISTING CONCRETE SURFACE MINIMUM ¼" DEEP.
- PER EXISTING STRUCTURE PLANS
- SALVAGE EXISTING LONGITUDINAL BARS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

DRAWN BY	JA	PLANS CK'D.	BDT

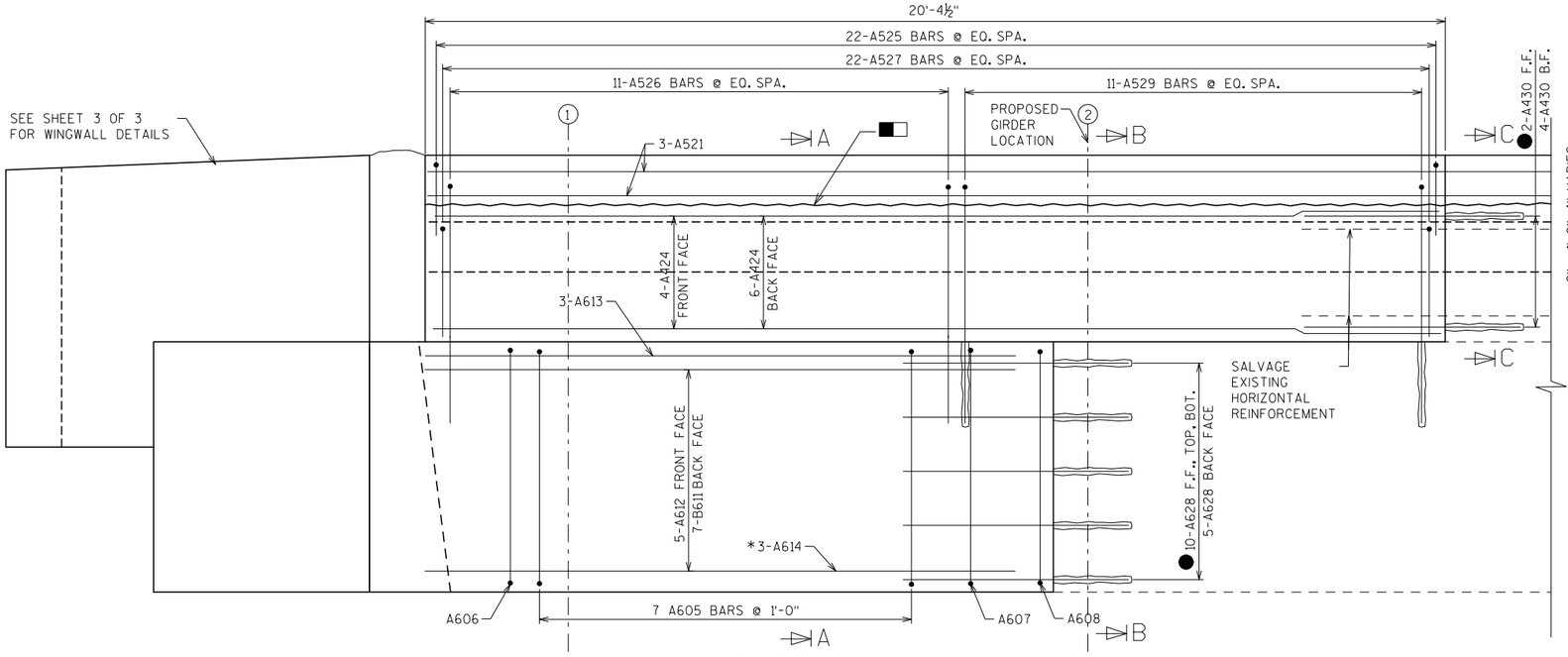
SOUTH ABUTMENT
1 OF 3

SHEET 10 OF 38
290

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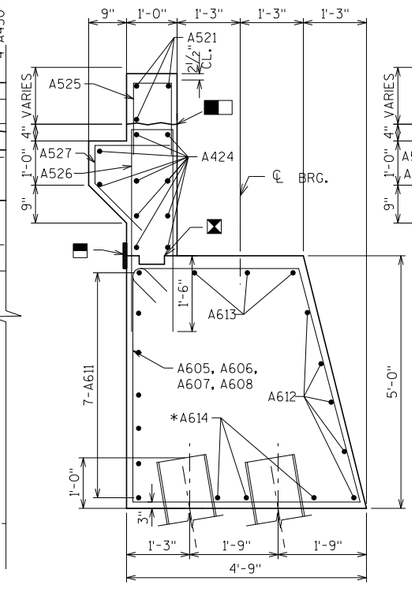
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STATE PROJECT NUMBER
2030-14-70



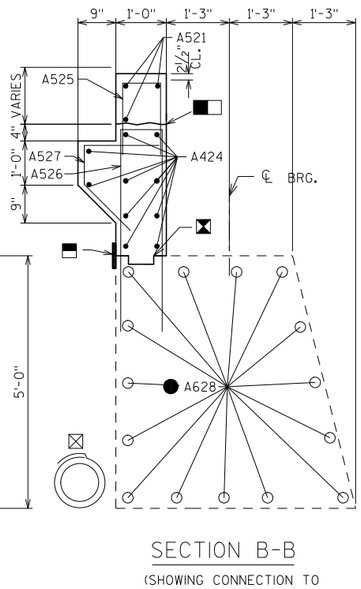
ELEVATION

(SHOWING REINFORCEMENT
PILES NOT SHOWN FOR CLARITY)



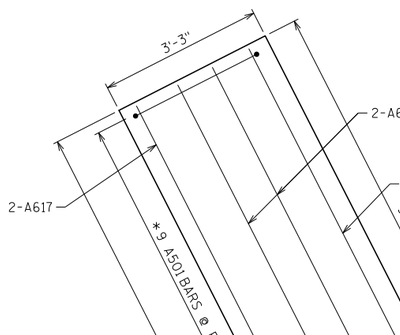
SECTION A-A

(SHOWING REINFORCEMENT)



SECTION B-B

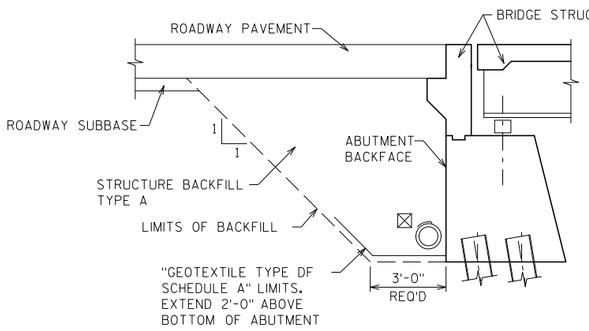
(SHOWING CONNECTION TO
EXISTING ABUTMENT STEM)



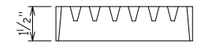
SECTION C-C

(SHOWING CONNECTION TO
EXISTING ABUTMENT BACKWALL)

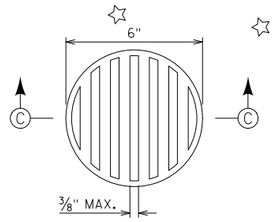
DETAIL A



BACKFILL LIMITS



SECTION C-C

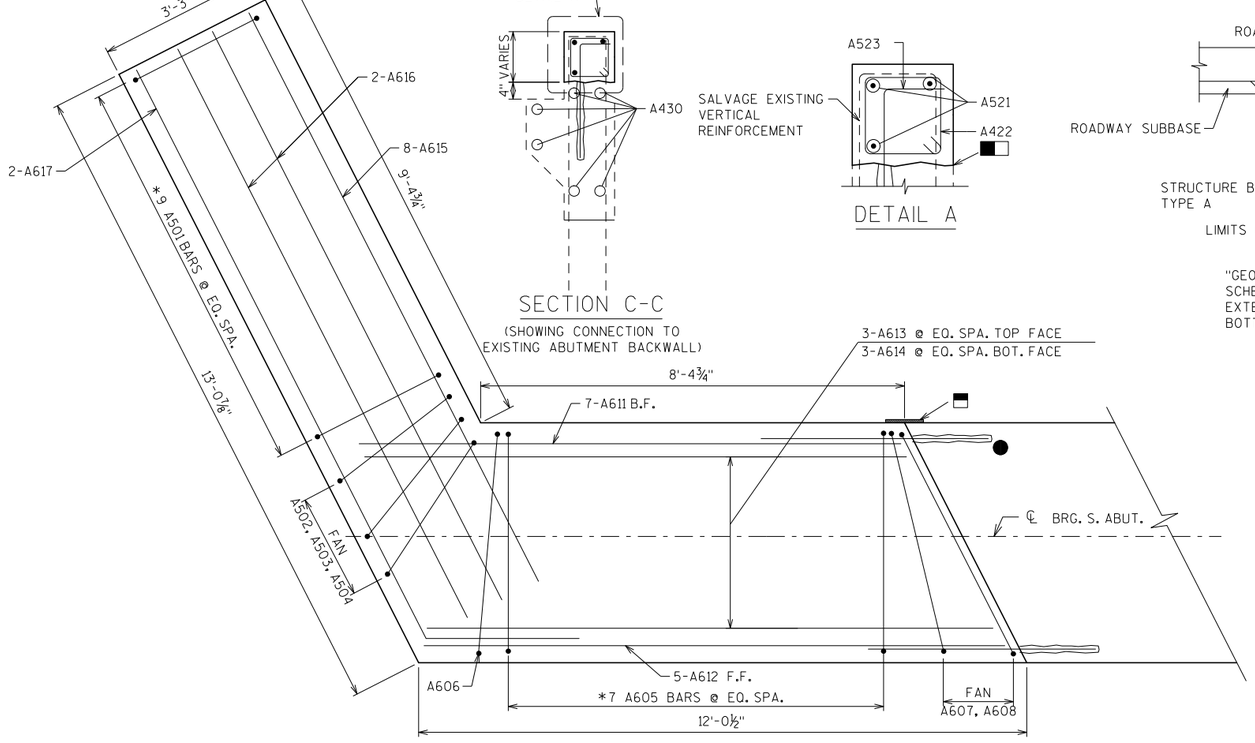


☆ DIMENSIONS ARE APPROXIMATE, THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.

ORIENT SHEILD SO SLOTS ARE VERTICAL.

COST OF RODENT SHEILD AND ALL FITTINGS TO BE INCLUDED IN THE BID ITEM " PIPE UNDERDRAIN WRAPPED 6-INCH."

RODENT SHIELD



FOOTING PLAN

(SHOWING REINFORCEMENT)

*SPACE BARS TO MISS PILES. MAINTAIN MAXIMUM SPACING BETWEEN STIRRUPS OF 1'-0"

LEGEND

- BATTER DIRECTION
- CONCRETE ADHESIVE ANCHORS
  NO. 5 BARS EMBED 1'-0", MIN. EDGE DISTANCE 4"
  NO. 6 BARS EMBED 1'-3", MIN. EDGE DISTANCE 5"
  NO. 7 BARS EMBED 1'-5", MIN. EDGE DISTANCE 6"
  NO. 8 BARS EMBED 1'-8", MIN. EDGE DISTANCE 6"
- PIPE UNDERDRAIN WRAPPED (6-INCH) CONNECT TO EXISTING 8" DIA. PIPE UNDERDRAIN
- KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2"X6"
- 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. AND VERT. JOINTS ON BACKFACE ABOVE FOOTING.
- CONST. JOINT - POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE (STRIKE OFF AND LEAVE ROUGH).

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

DRAWN BY JA | PLANS CK'D. BDT

SOUTH ABUMTMENT
2 OF 3

SHEET 11 OF 38
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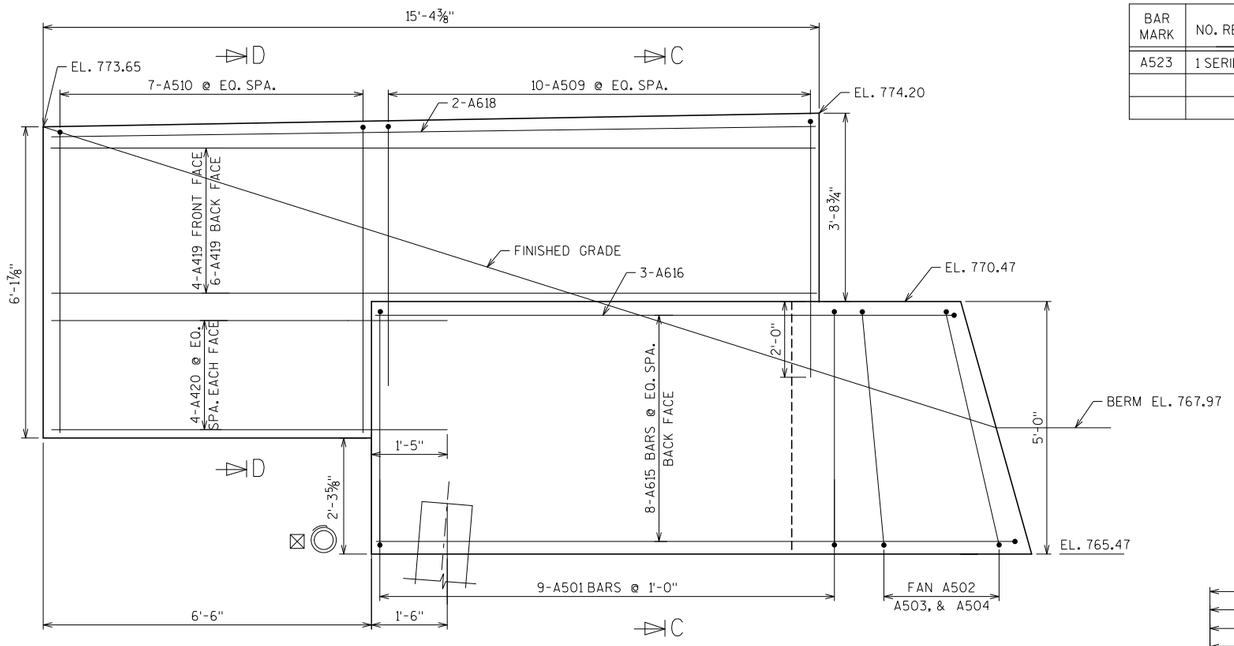
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STATE PROJECT NUMBER

2030-14-70



ELEVATION

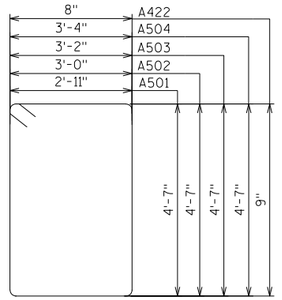
(LOOKING WEST)

BAR SERIES TABLE

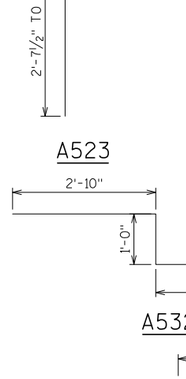
BAR MARK	NO. REQ'D	LENGTH
A523	1 SERIES OF 50	3'-5 1/2" TO 3'-9 1/8"

BILL OF BARS

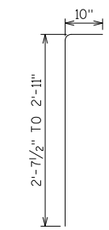
BAR MARK	COAT	NO.	LENGTH	BENT	BAR SERIES ▲	LOCATION
A501	X	9	15'-8"	X	-	WINGWALL FOOTING - TRANS.
A502	X	1	15'-10"	X	-	WINGWALL FOOTING - TRANS., FANNED
A503	X	1	16'-2"	X	-	WINGWALL FOOTING - TRANS., FANNED
A504	X	1	16'-6"	X	-	WINGWALL FOOTING - TRANS., FANNED
A605	-	7	17'-7"	X	-	BODY - TRANS.
A606	-	1	17'-11"	X	-	BODY - TRANS., FANNED
A607	-	1	18'-3"	X	-	BODY - TRANS., FANNED
A608	-	1	18'-7"	X	-	BODY - TRANS., FANNED
A509	X	10	11'-8"	X	-	WINGWALL - TRANS., ABOVE FOOTING
A510	X	7	12'-2"	X	-	WINGWALL - TRANS., CANTILEVER
A611	-	7	9'-11"	-	-	BODY - LONG., BACK FACE
A612	-	5	11'-8"	-	-	BODY - LONG., FRONT FACE
A613	-	3	11'-8"	-	-	BODY - LONG., TOP
A614	-	3	11'-8"	-	-	BODY - LONG., BOTTOM
A615	X	8	11'-4"	-	-	WINGWALL FOOTING - LONG., BACK FACE
A616	X	3	12'-0"	-	-	WINGWALL FOOTING - LONG., TOP
A517	X	6	13'-11"	X	-	WINGWALL FOOTING - LONG., FRONT FACE
A618	X	2	15'-8"	-	-	WINGWALL - LONG., TOP
A419	X	10	15'-1"	-	-	WINGWALL - LONG., ABOVE FOOTING
A420	X	9	7'-9"	-	-	WINGWALL - LONG., AT FOOTING
A521	X	30	8'-0"	-	-	BACKWALL - LONG., PAVING BLOCK
A422	X	50	2'-8"	X		BACKWALL - TRANS., PAVING BLOCK
A523	X	50	3'-7"	X	X	BACKWALL - VERT. MAS. ANCHOR, PAVING BLOCK
A424	X	10	20'-2"	-	-	BACKWALL - LONG.
A525	X	22	4'-1"	X	-	BACKWALL - TRANS., PAVING BLOCK
A526	X	11	12'-2"	X	-	BACKWALL - TRANS., BACKWALL
A527	X	22	5'-1"	X	-	BACKWALL - TRANS., PAVING NOTCH
A628	-	15	4'-6"	-	-	BODY - MAS. ANCHOR
A529	X	11	12'-2"	X	-	BACKWALL - VERTICAL MAS. ANCHORS
A430	X	6	3'-4"	-	-	BACKWALL - MAS. ANCHOR
A531	X	2	15'-3"	-	-	MEDIAN - LONG.
A532	X	2	6'-5"	X	-	MEDIAN - LONG., PAVING BLOCK DOWEL
A533	X	2	6'-5"	X	-	MEDIAN - LONG., PAVING BLOCK DOWEL



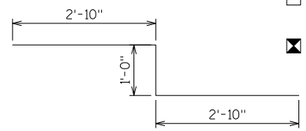
A501, A502, A503, A504, A422



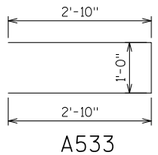
A605, A606, A607, A608



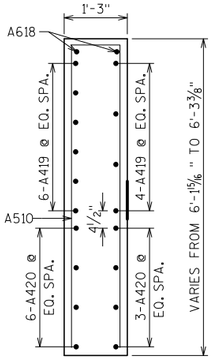
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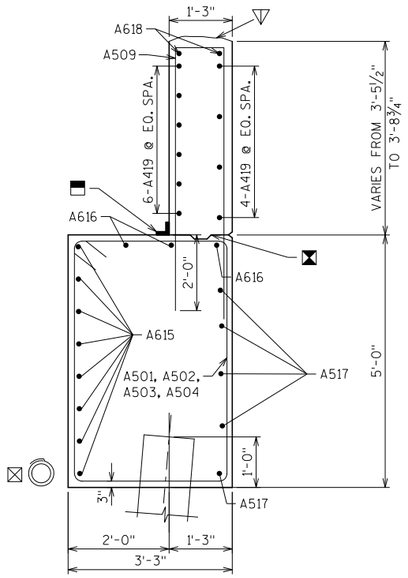
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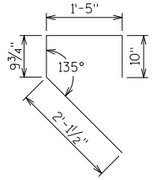
A533



SECTION D-D



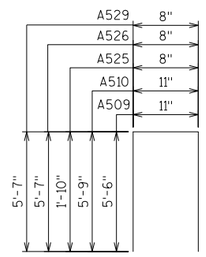
SECTION C-C



A527



A517



A509, A510, A525, A526, A529

LEGEND

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

⊠ PIPE UNDERDRAIN WRAPPED (6-INCH) CONNECT TO EXISTING 8" DIA. PIPE UNDERDRAIN

▽ CONSTRUCTION JOINT- STRIKE OFF AS SHOWN

▬ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. AND VERT. JOINTS ON BACKFACE ABOVE FOOTING.

⧓ KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2"X6"

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

DRAWN BY	JA	PLANS CK'D.	BDT

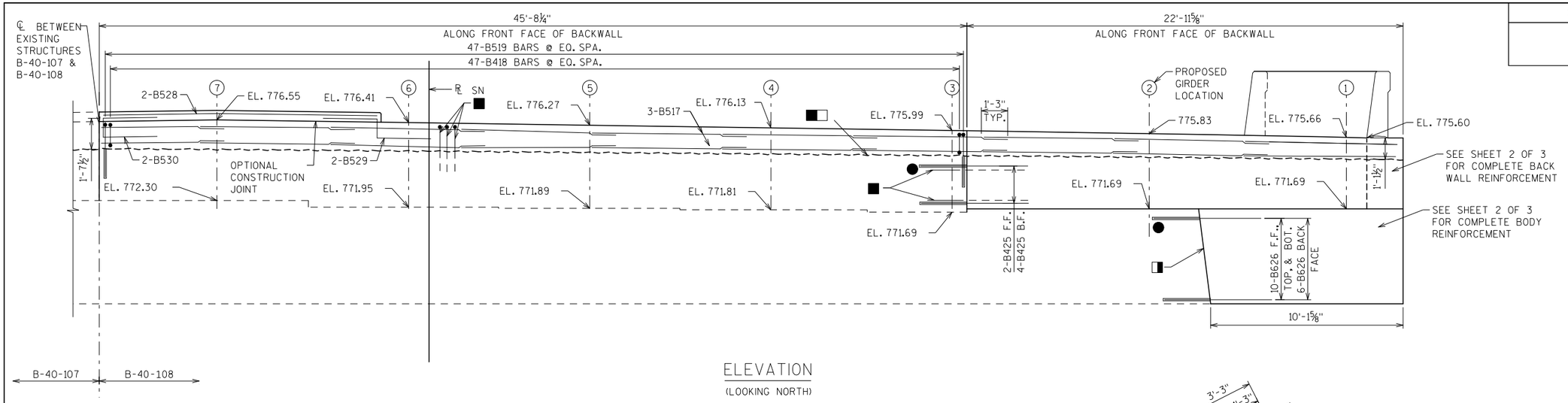
SOUTH ABUTMENT 3 OF 3

SHEET 12 OF 38

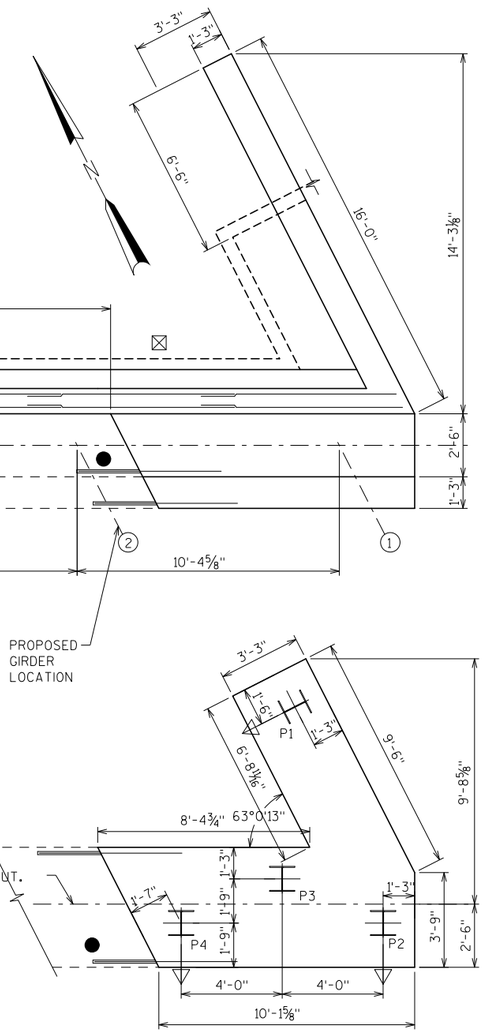
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ELEVATION
(LOOKING NORTH)



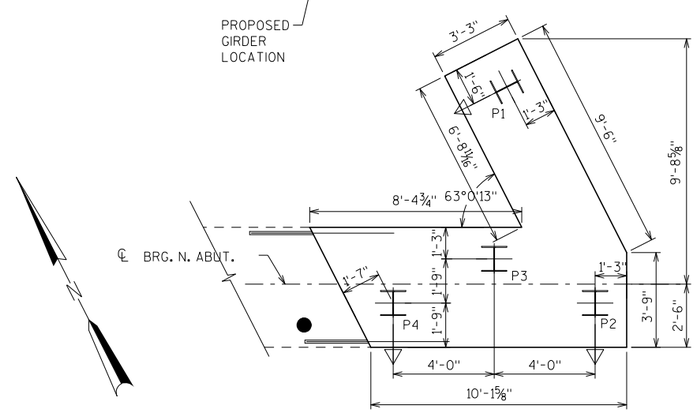
PLAN

LEGEND

- BATTER DIRECTION
- CONCRETE ADHESIVE ANCHORS
  NO. 5 BARS EMBED 1'-0", MIN. EDGE DISTANCE 4"
  NO. 6 BARS EMBED 1'-3", MIN. EDGE DISTANCE 5"
  NO. 7 BARS EMBED 1'-5", MIN. EDGE DISTANCE 6"
  NO. 8 BARS EMBED 1'-8", MIN. EDGE DISTANCE 6"
- PIPE UNDERDRAIN WRAPPED (6-INCH) CONNECT TO EXISTING 8" DIA. PIPE UNDERDRAIN
- CONST. JOINT - POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE (STRIKE OFF AND LEAVE ROUGH).
- 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. AND VERTICAL JOINTS ON BACKFACE ABOVE FOOTING
- PER EXISTING STRUCTURE PLANS

F.F FRONT FACE
B.F. BACK FACE
E.F. EACH FACE

- ROUGHEN EXISTING CONCRETE SURFACE MINIMUM 1/4" DEEP
- SALVAGE EXISTING LONGITUDINAL BARS



PILE PLAN

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

DRAWN BY	JA	PLANS CK'D.	BDT

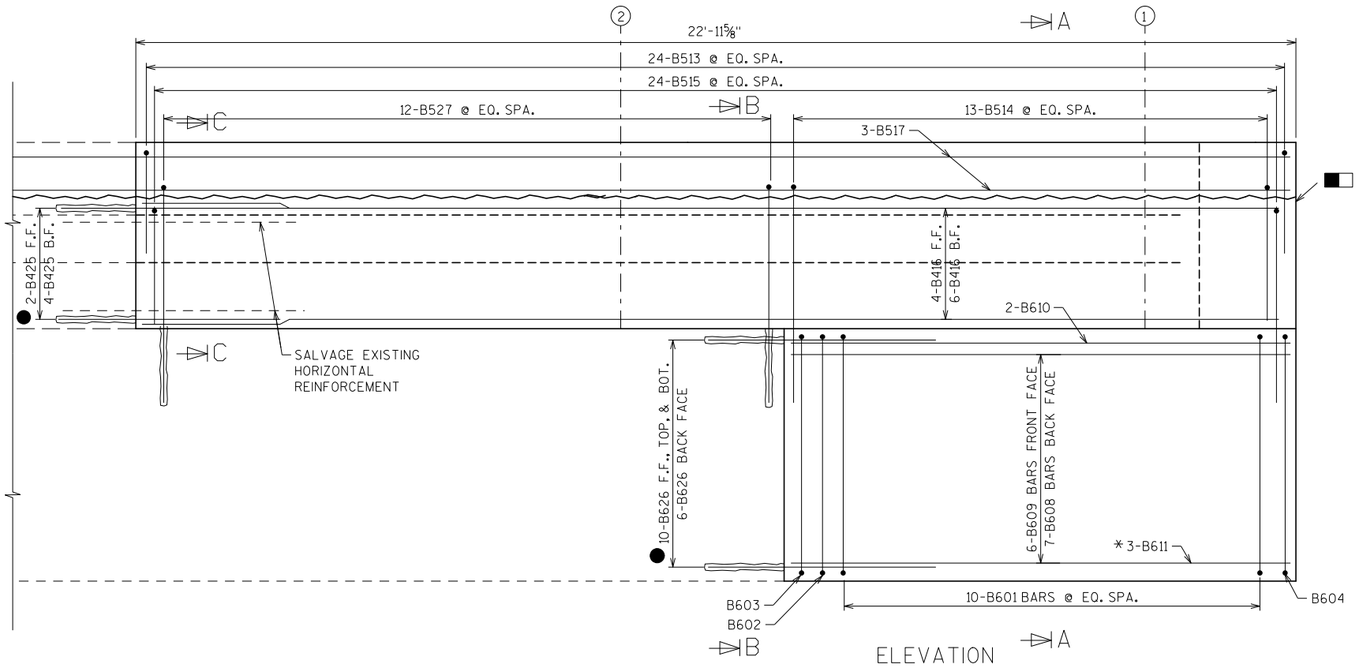
NORTH ABUTMENT
1 OF 3

SHEET 13 OF 38
293

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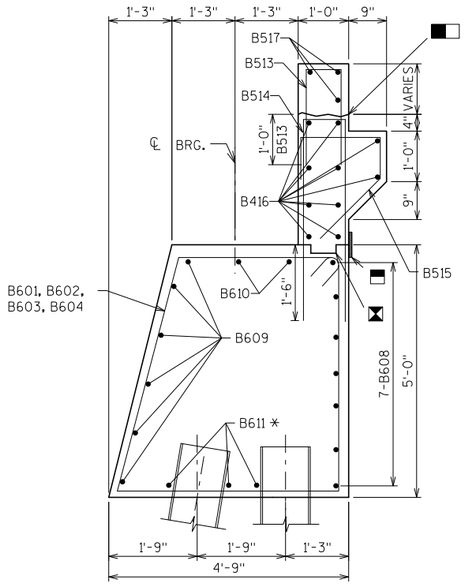
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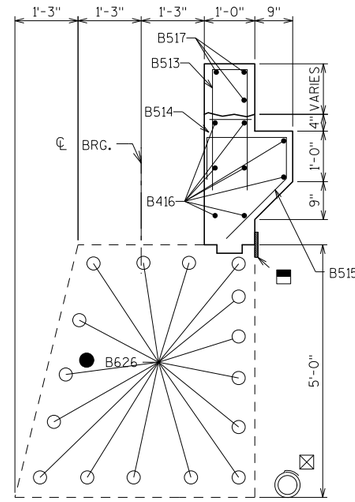
ELEVATION

(SHOWING REINFORCEMENT
PILES NOT SHOWN FOR CLARITY)



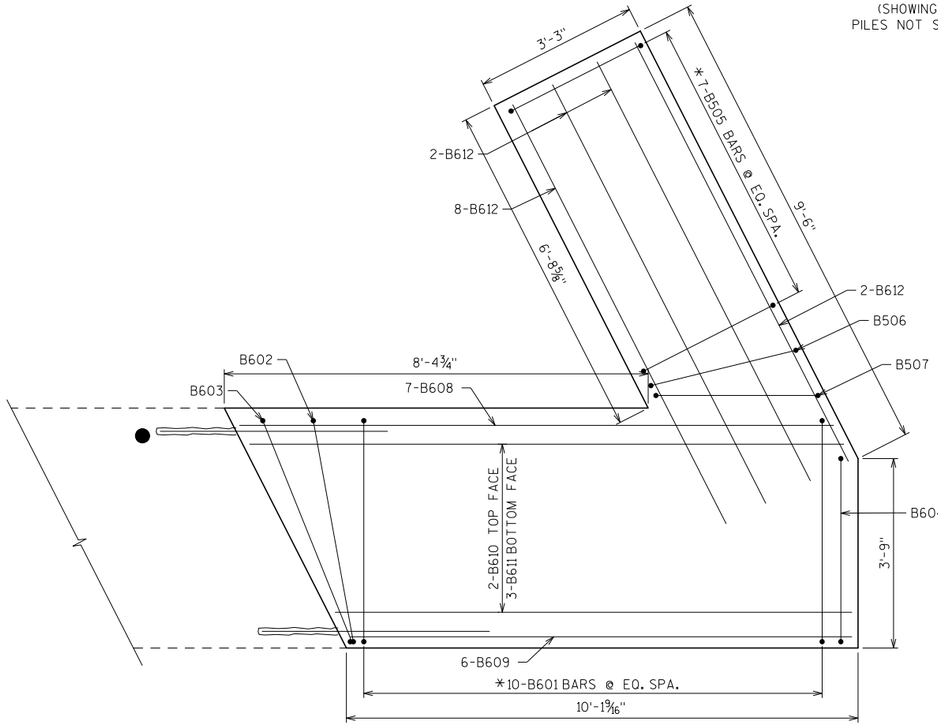
SECTION A-A

(SHOWING REINFORCEMENT)



SECTION B-B

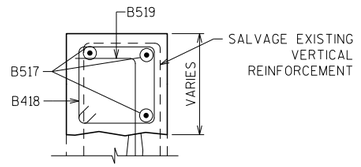
(SHOWING CONNECTION TO
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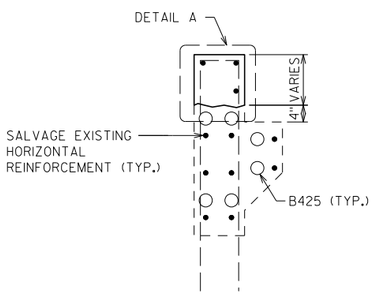
FOOING PLAN

(SHOWING REINFORCEMENT)

* SPACE BARS TO MISS PILES.
MAINTAIN MAXIMUM SPACING
BETWEEN STIRRUPS OF 1'-0".

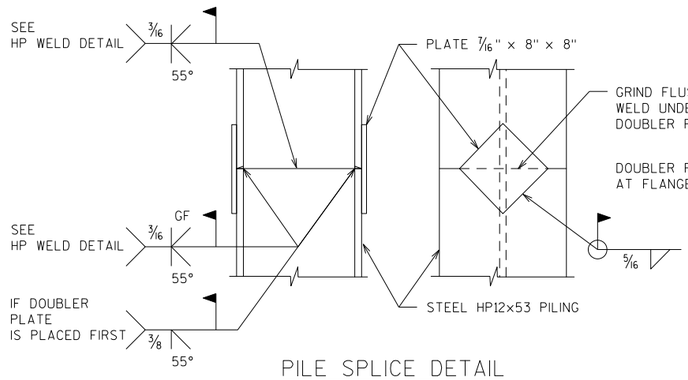


DETAIL A



SECTION C-C

(SHOWING CONNECTION TO
EXISTING ABUTMENT BACKWALL)



PILE SPLICE DETAIL

HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

LEGEND

- ⊠ PIPE UNDERDRAIN WRAPPED (6-INCH) CONNECT TO EXISTING 8" DIA. PIPE UNDERDRAIN
- ▬ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. AND VERT. JOINTS ON BACKFACE ABOVE FOOTING
- ▬ CONST. JOINT - POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE (STRIKE OFF AND LEAVE ROUGH)
- ⊠ KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2"X6"
- ● CONCRETE ADHESIVE ANCHORS
  NO. 5 BARS EMBED 1'-0", MIN. EDGE DISTANCE 4"
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  NO. 8 BARS EMBED 1'-8", MIN. EDGE DISTANCE 6"

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

DRAWN BY JA | PLANS CK'D. BDT

NORTH ABUTMENT
2 OF 3

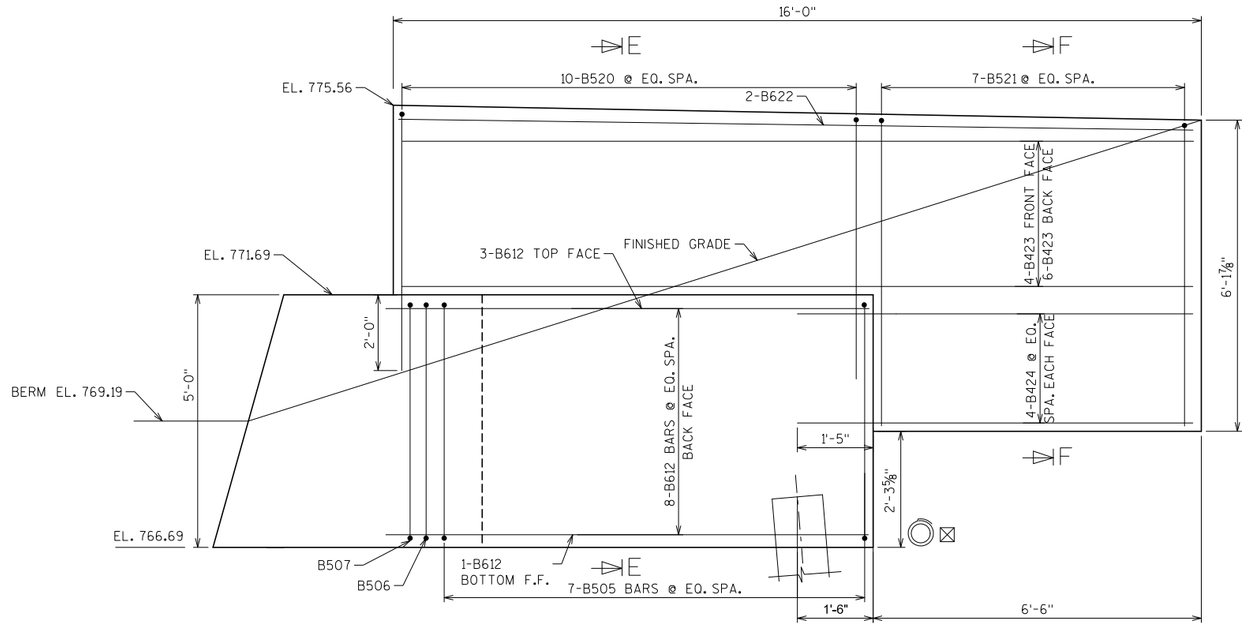
SHEET 14 OF 38
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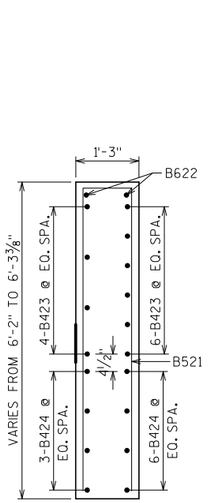
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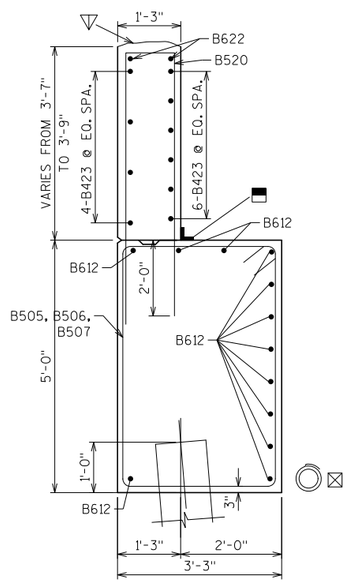


ELEVATION

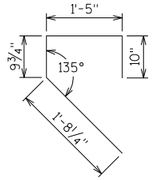
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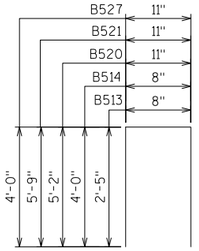
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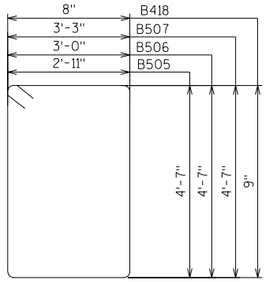
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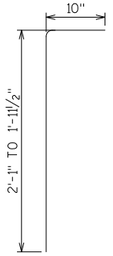
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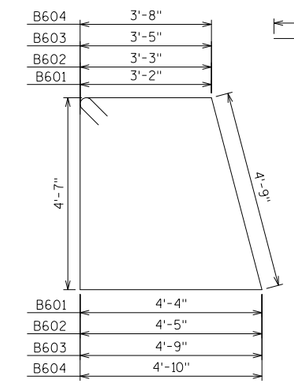
B513, B514, B520, B521, B527



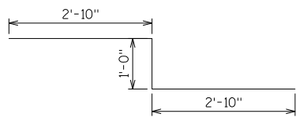
B418, B505, B506, B507



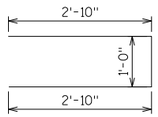
B519



B601, B602, B603, B604



B529



B530

BILL OF BARS

BAR MARK	NO. REQ'D	LENGTH
B519	1 SERIES OF 44	2'-11⅛" TO 2'-9¹¹⁄₁₆"

BILL OF BARS

BAR MARK	COAT	NO.	LENGTH	BENT	BAR SERIES ◭	LOCATION
B601	-	10	17'-8"	X	-	BODY - TRANS.
B602	-	1	17'-10"	X	-	BODY - TRANS., FANNED
B603	-	1	18'-6"	X	-	BODY - TRANS., FANNED
B604	-	1	17'-4"	X	-	BODY - TRANS., CORNER
B505	X	7	15'-10"	X	-	WINGWALL FOOTING - TRANS.
B506	X	1	16'-0"	X	-	WINGWALL FOOTING - TRANS., FANNED
B507	X	1	16'-6"	X	-	WINGWALL FOOTING - TRANS., FANNED
B608	-	7	11'-9"	-	-	BODY - LONG., BACK FACE
B609	-	6	9'-11"	-	-	BODY - LONG., FRONT FACE
B610	-	2	11'-4"	-	-	BODY - LONG., TOP
B611	-	3	11'-1"	-	-	BODY - LONG., BOTTOM
B612	X	11	9'-3"	-	-	WINGWALL FOOTING - LONG.
B513	X	24	5'-4"	X	-	BACKWALL - TRANS., PAVING BLOCK
B514	X	13	8'-6"	X	-	BACKWALL - TRANS., BACKWALL
B515	X	24	4'-7"	X	-	BACKWALL - TRANS., PAVING NOTCH
B416	X	10	20'-2"	-	-	BACKWALL - LONG.
B517	X	30	8'-0"	-	-	BACKWALL - LONG., PAVING BLOCK
B418	X	47	3'-6"	X	-	TRANS., PAVING BLOCK
B519	X	47	2'-10"	X	X	MAS. ANCHOR, PAVING BLOCK
B520	X	10	11'-0"	X	-	WINGWALL - TRANS., ABOVE FOOTING
B521	X	7	12'-2"	X	-	WINGWALL - TRANS., CANTILEVER
B622	X	2	15'-8"	-	-	WINGWALL - LONG., TOP
B423	X	10	15'-8"	-	-	WINGWALL - LONG., ABOVE FOOTING
B424	X	9	7'-9"	-	-	WINGWALL - LONG., AT FOOTING
B425	X	6	2'-0"	-	-	BACKWALL - MAS. ANCHORS
B626	-	16	3'-1"	-	-	BODY - MAS. ANCHORS
B527	X	12	8'-6"	X	-	BACKWALL - VERTICAL MAS. ANCHORS
B528	X	2	15'-3"	-	-	MEDIAN - LONG.
B529	X	2	6'-5"	X	-	MEDIAN - LONG., PAVING BLOCK DOWEL
B530	X	2	6'-5"	X	-	MEDIAN - LONG., PAVING BLOCK DOWEL

LEGEND

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

⊠ PIPE UNDERDRAIN WRAPPED (6-INCH) CONNECT TO EXISTING 8" DIA. PIPE UNDERDRAIN.

▽ CONSTRUCTION JOINT- STRIKE OFF AS SHOWN

▬ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. AND VERT. JOINTS ON BACKFACE ABOVE FOOTING.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

DRAWN BY	JA	PLANS CK'D.	BDT

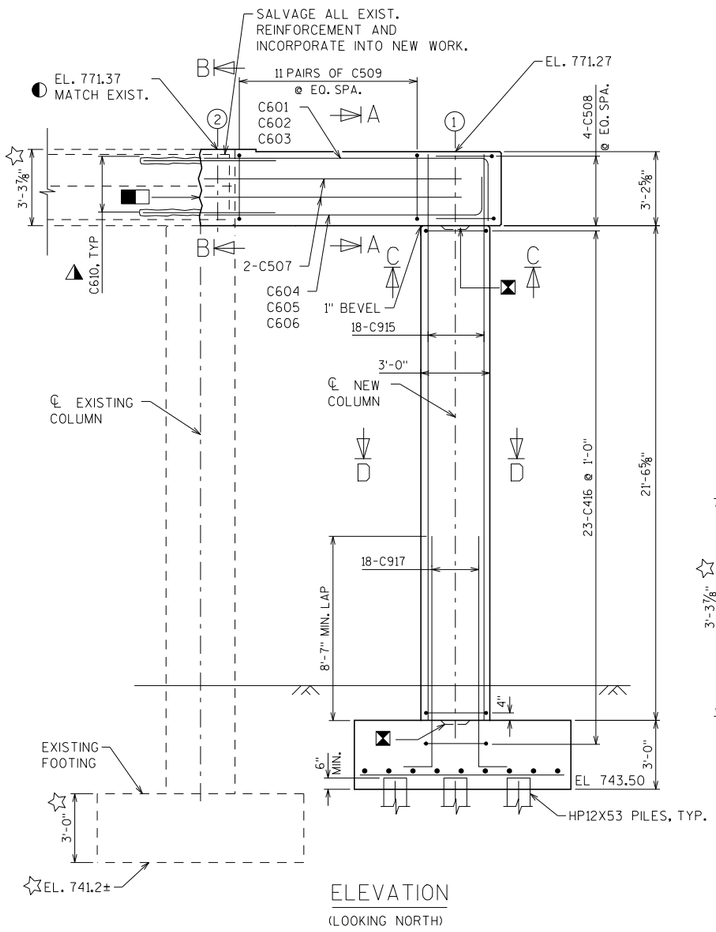
NORTH ABUTMENT
3 OF 3

SHEET 15 OF 38
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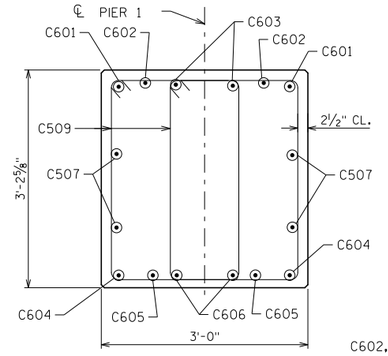
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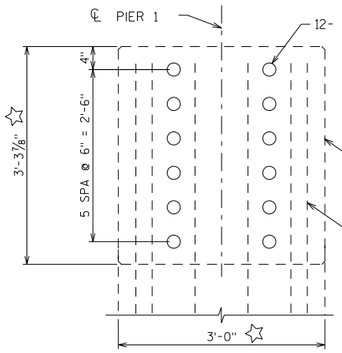
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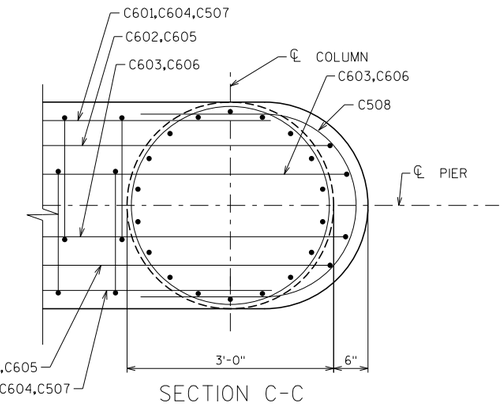
ELEVATION
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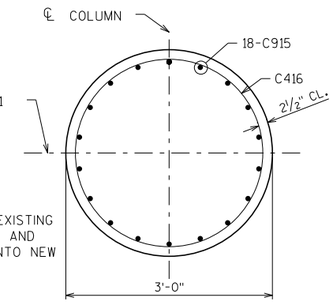
SECTION A-A



SECTION B-B



SECTION C-C

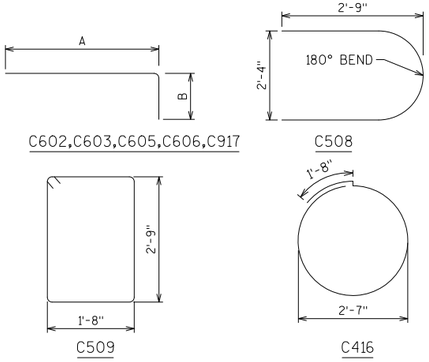


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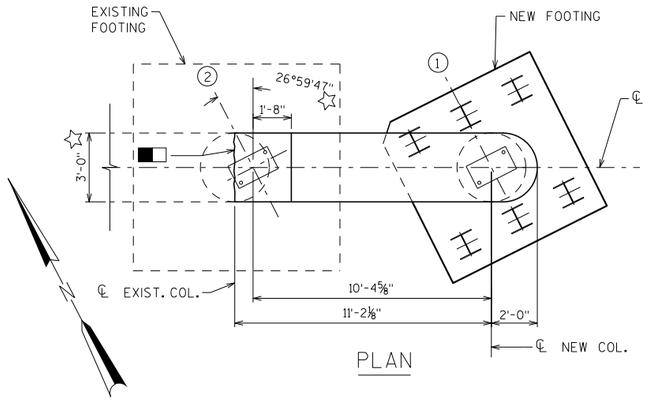
BILL OF BARS

BAR MARK	COAT	NO.	LENGTH	BENT	BAR SERIES	LOCATION
C601	X	2	12'-2"	-	-	PIER CAP - LONG., TOP
C602	X	2	15'-1"	X	-	PIER CAP - LONG., TOP
C603	X	2	15'-3"	X	-	PIER CAP - LONG., TOP
C604	X	2	13'-5"	-	-	PIER CAP - LONG., BOTT.
C605	X	2	13'-2"	X	-	PIER CAP - LONG., BOTT.
C606	X	2	13'-0"	X	-	PIER CAP - LONG., BOTT.
C507	X	4	12'-2"	-	-	PIER CAP - LONG., SKIN
C508	X	4	7'-0"	X	-	PIER CAP - OVERHANG SKIN
C509	X	22	9'-6"	X	-	PIER CAP - STIRRUPS
C610	X	12	4'-7"	-	-	PIER CAP - ADHESIVE ANCHORS
C915	X	18	24'-6"	-	-	COLUMN - VERTICAL
C416	X	23	9'-9"	X	-	COLUMN - TIES
C917	X	18	12'-3"	X	-	COLUMN - FOOTING DOWELS
C620	-	16	7'-2"	-	-	FOOTING - BOTTOM
C621	-	2	6'-5"	-	-	FOOTING - BOTTOM

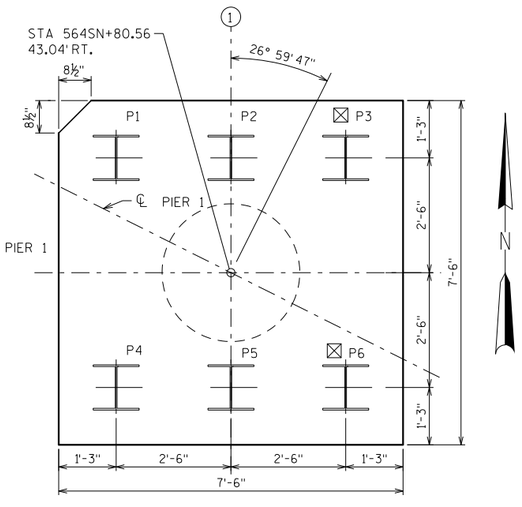
BAR MARK	A	B
C602	12'-6"	2'-9"
C603	12'-4"	2'-9"
C605	12'-4"	1'-0"
C606	12'-2"	1'-0"
C917	11'-0"	1'-6"



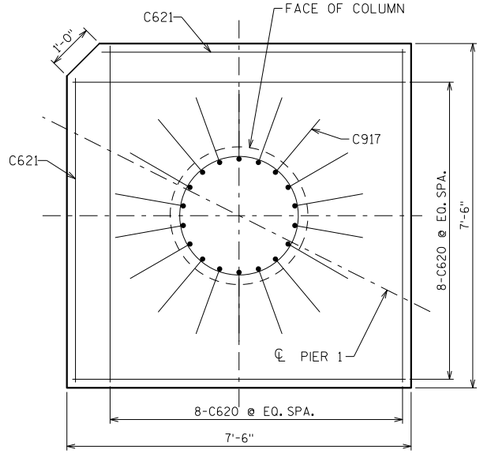
BENDING DIAGRAM



PLAN



PILE LAYOUT



FOOTING PLAN
(SHOWING REINFORCEMENT)

LEGEND

- 1'-3" X 1'-3" X 2" CONST. JOINT FORMED BY BEVELED KEYWAY
- ADHESIVE ANCHORS NO. 6 BARS EMBED 1'-6", MIN. EDGE DISTANCE 4"
- CONSTRUCTION JOINT
- PREBORE THESE PILES TO 15'-0" BELOW THE BOTTOM OF FOOTING
- PER EXIST. STRUCTURE PLANS
- PER EXIST. SURVEY

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

DRAWN BY DMC | PLANS CK'D. BDT

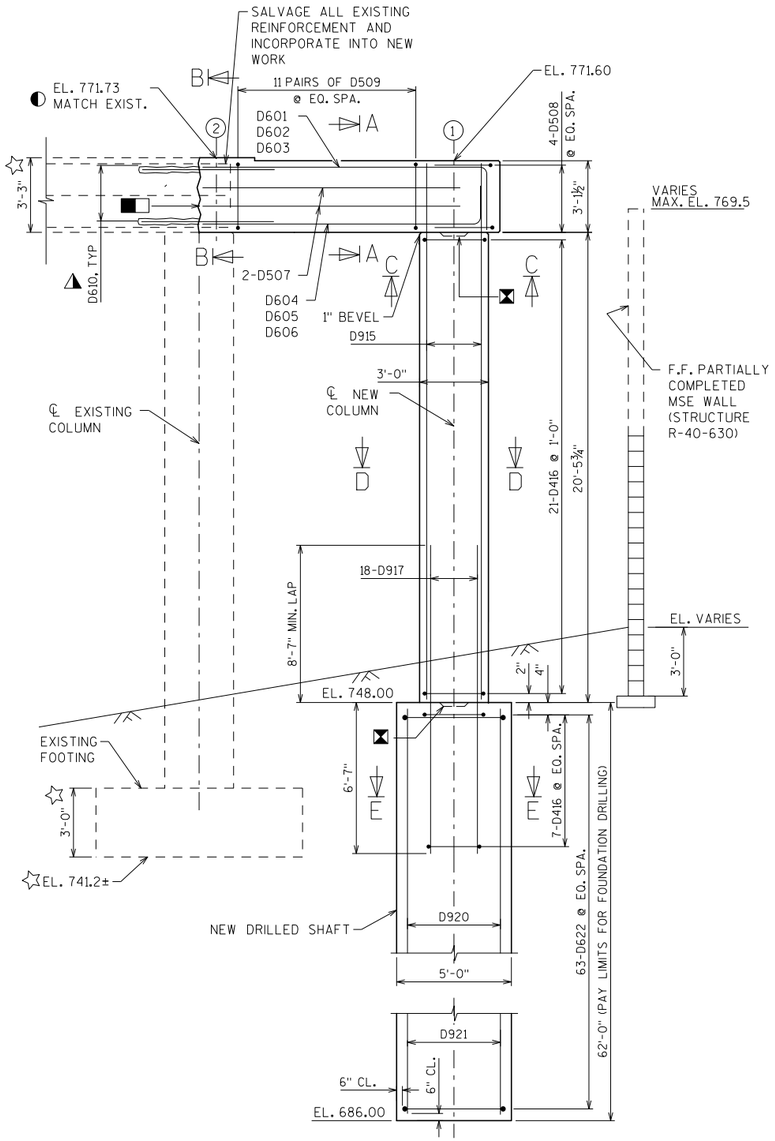
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SHEET 16 OF 38
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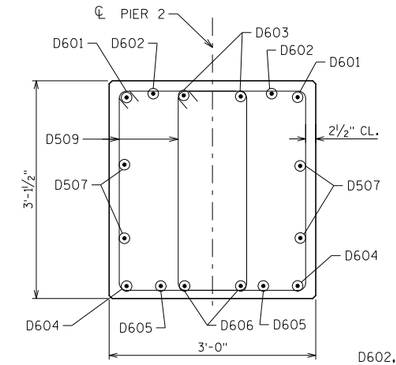
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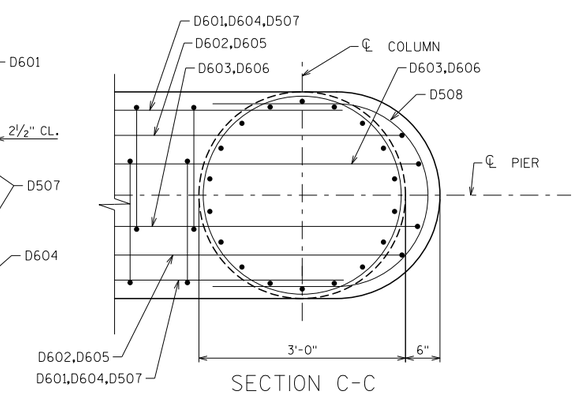
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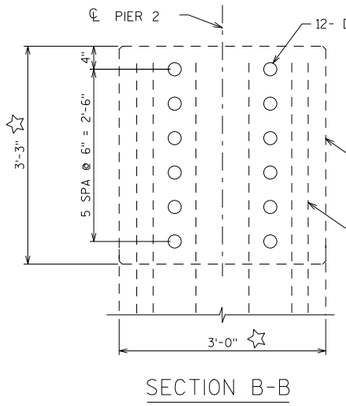
ELEVATION
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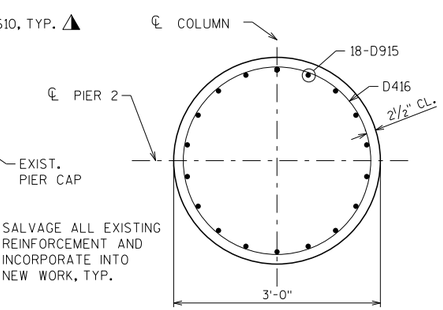
SECTION A-A



SECTION C-C



SECTION B-B

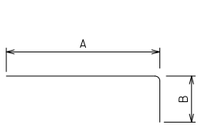


SECTION D-D

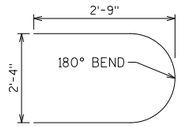
BILL OF BARS

BAR MARK	COAT	NO.	LENGTH	BENT	BAR SERIES	LOCATION
D601	X	2	12'-2"	-	-	PIER CAP - LONG., TOP
D602	X	2	15'-1"	X	-	PIER CAP - LONG., TOP
D603	X	2	15'-3"	X	-	PIER CAP - LONG., TOP
D604	X	2	13'-5"	-	-	PIER CAP - LONG., BOTT.
D605	X	2	13'-2"	X	-	PIER CAP - LONG., BOTT.
D606	X	2	13'-0"	X	-	PIER CAP - LONG., BOTT.
D507	X	4	12'-2"	-	-	PIER CAP - LONG., SKIN
D508	X	4	7'-0"	X	-	PIER CAP - OVERHANG SKIN
D509	X	22	9'-4"	X	-	PIER CAP - STIRRUPS
D610	X	12	4'-7"	-	-	PIER CAP - ADHESIVE ANCHORS
D915	X	18	23'-3"	-	-	COLUMN - VERTICAL
D416	X	28	9'-9"	X	-	COLUMN - TIES
D917	X	18	15'-2"	-	-	COLUMN - DRILLED SHAFT DOWELS
D920	-	18	40'-0"	-	-	DRILLED SHAFT VERTICAL
D921	-	18	27'-0"	-	-	DRILLED SHAFT VERTICAL
D622	-	63	14'-8"	X	-	DRILLED SHAFT TIES

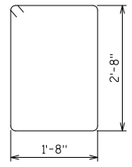
BAR MARK	A	B
D602	12'-6"	2'-9"
D603	12'-4"	2'-9"
D605	12'-4"	1'-0"
D606	12'-2"	1'-0"



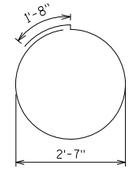
D602,D603,D605,D606



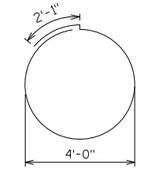
D508



D509

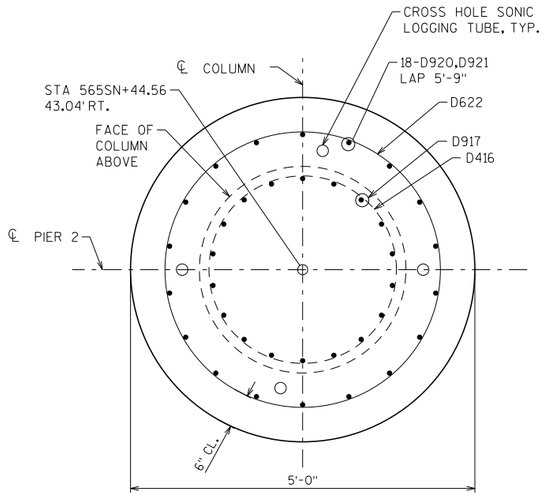


D416

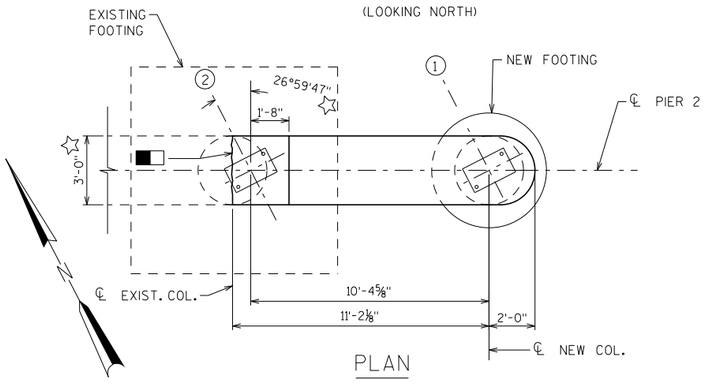


D622

BENDING DIAGRAM



SECTION E-E



PLAN

NOTES

PROVIDE TEMPORARY CASING FOR THE TOP 10 FEET OF THE DRILLED SHAFT BORE TO PROTECT EXISTING MSE WALL AND MMSD SEWER LINE.

PROVIDE TEMPORARY CASING AND/OR DRILLING FLUIDS AS REQUIRED TO STABILIZE THE DRILLED SHAFT BORE.

CONSTRUCTION OF THE DRILLED SHAFT SHALL NOT CAUSE VIBRATIONS DETRIMENTAL TO THE EXISTING MMSD SEWER LINE AND MSE WALL.

SEE GEOTECHNICAL REPORT AVAILABLE WITH WISDOT SOUTH EAST REGION FOR ADDITIONAL INFORMATION.

SEE SPECIAL PROVISION "QMP DRILLED SHAFTS" FOR QUALITY MANAGEMENT PROGRAM FOR DRILLED SHAFT.

LEGEND

- 1'-3" X 1'-3" X 2" CONST. JOINT FORMED BY BEVELED KEYWAY
- ADHESIVE ANCHORS NO. 6 BARS EMBED 1'-6", MIN. EDGE DISTANCE 4"
- CONSTRUCTION JOINT
- PER EXIST. STRUCTURE PLANS
- PER EXIST. SURVEY

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

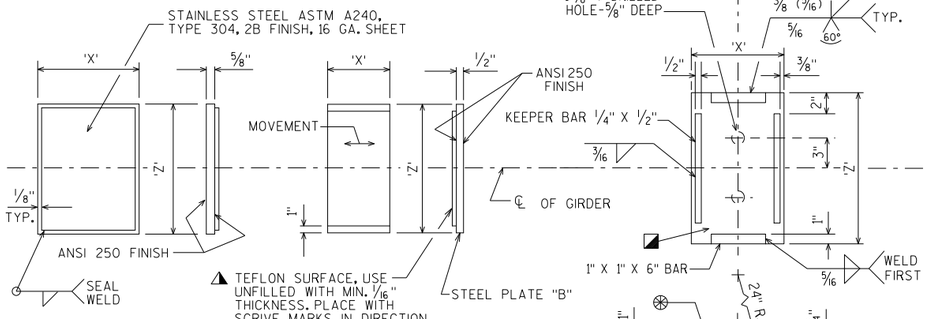
DRAWN BY DMC | PLANS CK'D. BDT

PIER 2

SHEET 17 OF 38
297

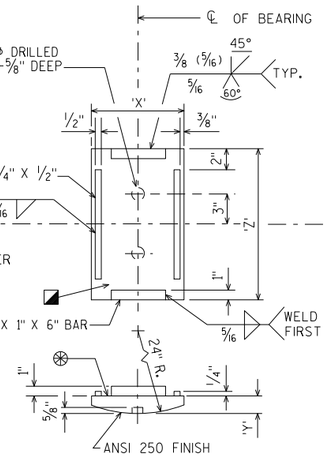
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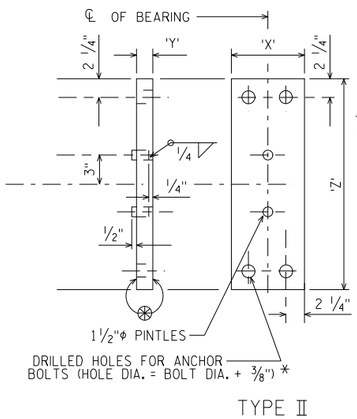


TOP PLATE "A"

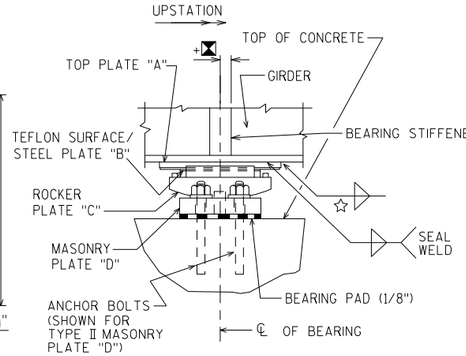
TEFLON SURFACE ON PLATE "B"



ROCKER PLATE "C"



TYPE II
MASONRY PLATE "D"



EXPANSION BEARING ASSEMBLY

EXPANSION BEARING

BEVELED ROCKER PLATE "C"
EXPANSION BEARING

BEVELED ROCKER PLATE "C"
FIXED BEARING

LOCATION	S. ABUT. "S" (%)	PIER 1 "S" (%)
GIRDER 1	2.10	1.35
GIRDER 2	2.03	1.33
GIRDER 3	1.95	1.25
GIRDER 4	1.88	1.18
GIRDER 5	1.81	1.11
GIRDER 6	1.74	-
GIRDER 7	1.67	-

BEVELED ROCKER PLATE "C" TABLE

°F	S. ABUT.	PIER 2	N. ABUT.
30	0.05	0.07	0.13
45	0	0	0
60	-0.05	-0.07	-0.13
75	-0.11	-0.15	-0.26
90	-0.17	-0.22	-0.39

◪ BEARING OFFSET TABLE

ALL DIMENSIONS IN INCHES
AMBIENT TEMPERATURE DURING GIRDER INSTALLATION

	PLATE "A"		PLATE "B"		PLATE "C"			PLATE "D"			PLATE "D" TYPE	ANCHOR BOLT SIZE	NO. OF BRG'S REQ'D.	HEIGHT FEET	LOCATION	CAPACITY
	'X'	'Z'	'X'	'Z'	'X'	'Y'	'Z'	'X'	'Y'	'Z'						
EXPANSION BEARING	1'-3"	1'-0"	11"	1'-0"	1'-1"	2 7/8"	1'-2 1/4"	11"	2"	1'-10"	II*	1 1/4" DIA.	8	0.521	ABUTS. GIRS 3,4,5&6	275
	11"	1'-0"	7"	1'-0"	9"	1 15/16"	1'-2 1/4"	8"	1 1/2"	1'-10"	II*	1 1/4" DIA.	6	0.401	ABUTS. GIRS 1,2&7	175
	1'-5"	1'-2"	1'-1"	1'-2"	1'-3"	3 7/8"	1'-4 1/4"	1'-2"	2 7/8"	2'-0"	II*	1 1/4" DIA.	2	0.677	PIER 2- GIRS 1&2	375
FIXED BEARING						2 3/8"	1'-2"	1'-1"	2 7/8"	1'-11"	II*	1 1/4" DIA.	2	0.448	PIER 1-GIRS 1&2	385

☆ TABLE OF FILLET WELD SIZES

MATERIAL THICKNESS OF THICKER PART JOINED.	∔ MIN. SIZE OF FILLET WELD
TO 1/2" INCLUSIVE	3/16"
OVER 1/2" TO 3/4"	1/4"
OVER 3/4" TO 1 1/2"	△ 5/16"
OVER 1 1/2" TO 2 1/4"	△ 3/8"
OVER 2 1/4" TO 6"	△ 1/2"

∔ EXCEPT THAT THE WELD SIZE SHALL NOT EXCEED THE THICKNESS OF THE THINNER PART JOINED.

△ MIN. PASS SIZE IS 5/16"

BEARING NOTES

ALL BEARINGS ARE SYMMETRICAL ABOUT ℄ OF GIRDER AND ℄ OF BEARING.

ALL STRUCTURAL STEEL BEARING PLATES SHALL BE FLAT ROLLED STEEL PLATES WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL.

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

ALL FINISHED SURFACES SHALL BE MACHINE FINISHED BY AN AUTOMATIC PROCESS.

CHAMFER ANCHOR BOLTS PRIOR TO THREADING.

ANCHOR BOLTS SHALL BE THREADED 3". PROVIDE ONE STANDARD WROUGHT WASHER AND ONE HEX NUT PER BOLT. BOLT LENGTH TO BE 1'-5 FOR 1 1/4" ϕ AND 1'-10 FOR 1 1/2" ϕ BOLTS. PROJECT ANCHOR BOLTS, MASONRY PLATE "D" THICKNESS + 2 1/4", ABOVE TOP OF CONCRETE.

CHAMFER TOP OF PINTLES 1/8". DRILL HOLES FOR ALL PINTLES IN MASONRY PLATE "D" FOR A DRIVING FIT.

ALL MATERIAL IN BEARINGS, INCLUDING SHIM PLATES, BUT EXCLUDING ANCHOR BOLTS, STAINLESS STEEL SHEET, TEFLON SURFACE, PINTLES, NUTS AND WASHERS SHALL CONFORM TO ASTM A709 GRADE 50W.

STEEL PINTLES SHALL CONFORM TO ASTM A449 OR MATERIAL OF EQUIVALENT YIELD STRENGTH AND ELONGATION.

ANCHOR BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A709 GRADE 36, OR MATERIAL OF EQUIVALENT YIELD STRENGTH AND ELONGATION.

PROVIDE 1/8" THICK BEARING PAD THE SAME SIZE AS MASONRY PLATE "D" FOR EACH BEARING.

ALL MATERIAL IN BEARINGS, INCLUDING SHIM PLATES AND BEARING PADS, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "BEARING ASSEMBLIES EXPANSION B-40-108_" OR "BEARING ASSEMBLIES FIXED B-40-108_", EACH.

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153, CLASS C.

FIXED BEARINGS:
ROCKER PLATE "C" SHALL BE SHOP PAINTED WITH A WELDABLE PRIMER.
MASONRY PLATE "D" SHALL BE GALVANIZED.

EXPANSION BEARINGS:
TOP PLATE "A" AND STEEL PLATE "B" SHALL BE SHOP PAINTED. USE A WELDABLE PRIMER ON TOP PLATE "A".
ROCKER PLATE "C" AND MASONRY PLATE "D" SHALL BE GALVANIZED. DO NOT PAINT STAINLESS STEEL OR TEFLON SURFACES.

⊛ FINISH THESE SURFACES TO ANSI 250 IF 'Y' DIMENSION IS GREATER THAN 2".

◪ PROVIDE A METHOD FOR HANDLING ROCKER PLATE "C" DURING GALVANIZING.

◭ BOND STEEL PLATE "B" AND TEFLON WITH ADHESIVE MATERIAL MEETING REQUIREMENTS FOUND IN THE STANDARD SPECIFICATION.

∗ ONLY TWO ANCHOR BOLTS REQUIRED. USE 2 OPPOSITE HOLES FILL UNUSED HOLES IN CONCRETE AND PLATE "D" WITH NONSHRINK OR CAULK.

AT INSTALLATION, ENSURE STAINLESS STEEL SLIDING FACE OF THE UPPER ELEMENT AND THE TFE SLIDING FACE OF THE LOWER ELEMENT HAVE THE SURFACE FINISH SPECIFIED AND ARE CLEAN AND FREE OF ALL DUST, MOISTURE, AND OTHER FOREIGN MATTER.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

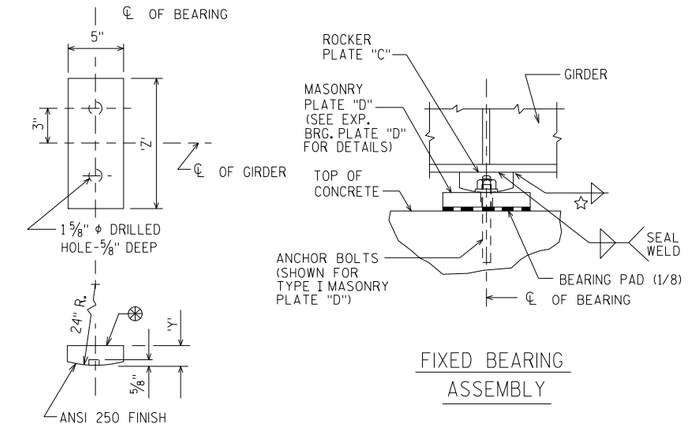
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BEARING DETAILS (1 OF 2)

SHEET 18 OF 38
298

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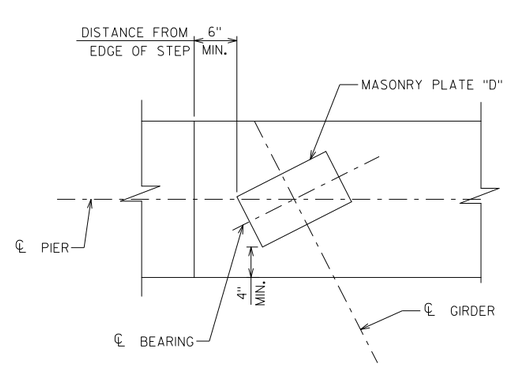
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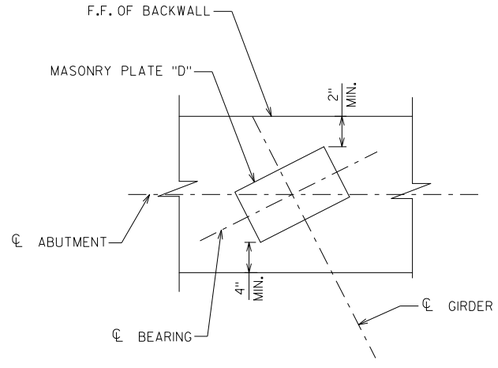
ROCKER PLATE "C"

FIXED BEARING ASSEMBLY

FIXED BEARING

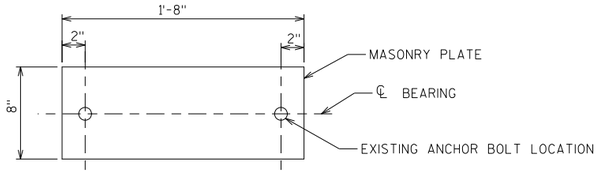


AT PIER



AT ABUTMENT

CLEARANCE DIAGRAM



EXISTING MASONRY PLATE

AT ABUTMENTS

☆ TABLE OF FILLET WELD SIZES

MATERIAL THICKNESS OF THICKER PART JOINED.	‡ MIN. SIZE OF FILLET WELD
TO 1/2" INCLUSIVE	3/16"
OVER 1/2" TO 3/4"	1/4"
OVER 3/4" TO 1 1/2"	△ 5/16"
OVER 1 1/2" TO 2 1/4"	△ 3/8"
OVER 2 1/4" TO 6"	△ 1/2"

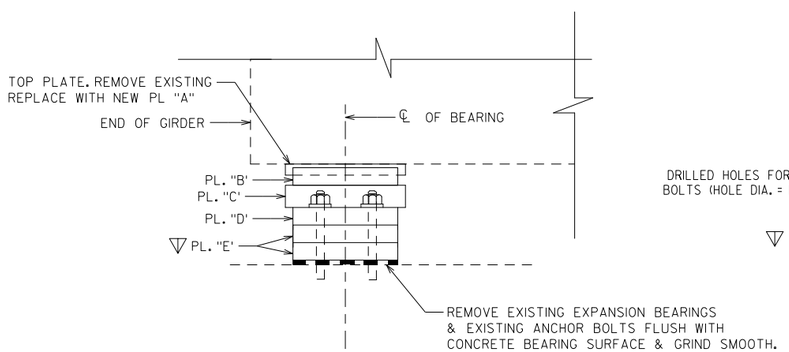
‡ EXCEPT THAT THE WELD SIZE SHALL NOT EXCEED THE THICKNESS OF THE THINNER PART JOINED.

△ MIN. PASS SIZE IS 5/16"

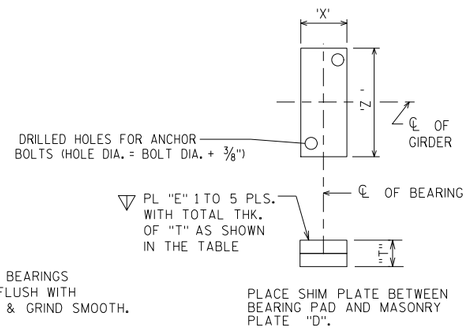
NOTES

⊛ FINISH THESE SURFACES TO ANSI 250 IF 'Y' DIMENSION IS GREATER THAN 2".

▽ PLATE "E" MAY BE 1 TO 5 PLATES WITH TOTAL THICKNESS OF 'T' AS SHOWN IN THE TABLE.



EXPANSION BEARING REPLACEMENT



SHIM PLATE DETAILS

IN LIEU OF USING SHIM PLATES, FABRICATOR MAY INCREASE THICKNESS OF TOP PLATE "A" OR MASONRY PLATE "D" BY "T", THE SHIM PLATE THICKNESS.

LOCATION	GIR. 1	GIR. 2	GIR. 3	GIR. 4	GIR. 5	GIR. 6	GIR. 7
	"T" (IN)	"T" (IN)	"T" (IN)	"T" (IN)	"T" (IN)	"T" (IN)	"T" (IN)
S. ABUT.	5/16"	2 15/16"	1 13/16"	1 13/16"	1 5/16"	1 1/4"	0
N. ABUT.	2 1/16"	2 1/16"	1 13/16"	1/2"	1/2"	1/2"	1/8"
PIER 1	-	1 15/16"	-	-	-	-	-
PIER 2	-	1 5/16"	-	-	-	-	-

FOR DIMS. 'X', 'Z' AND ANCHOR BOLT LOCATIONS SEE MASONRY PLATE "D".

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
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STRUCTURE B-40-108

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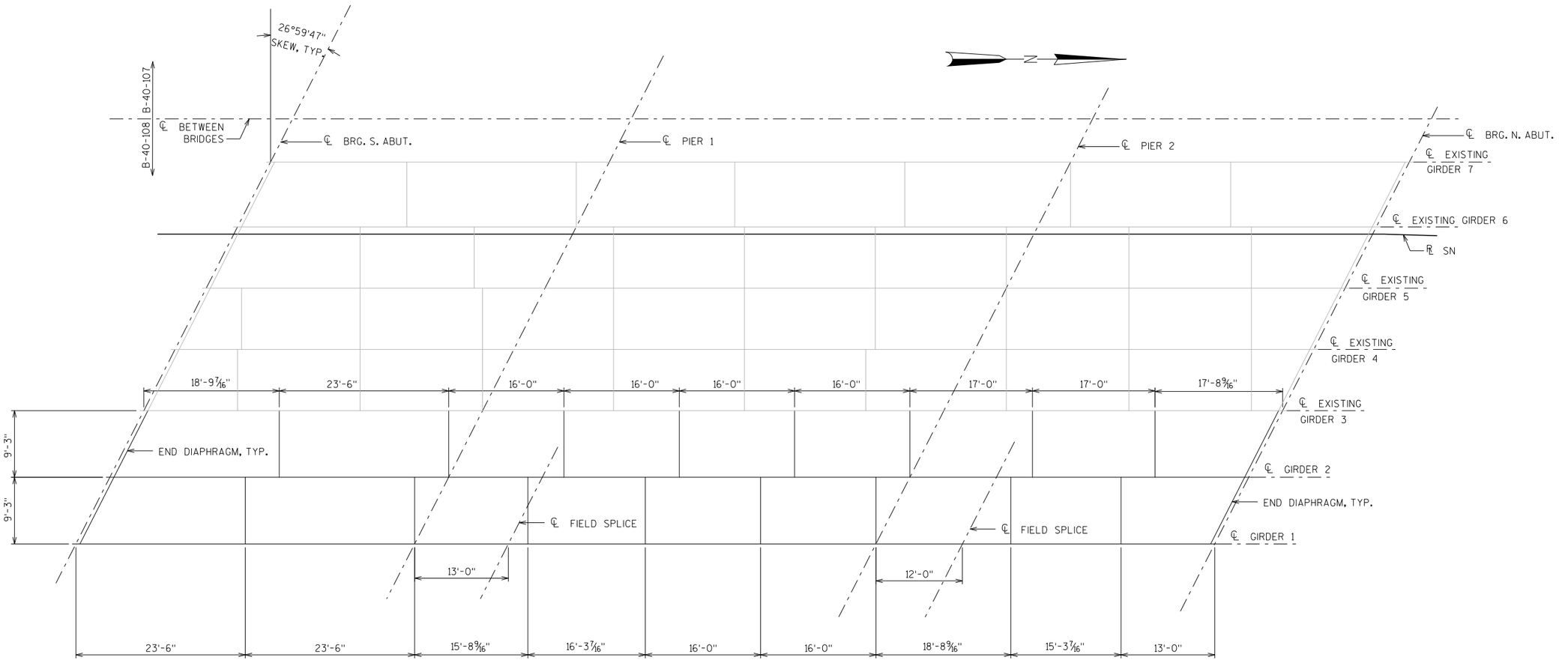
BEARING DETAILS (2 OF 2)

SHEET 19 OF 38
299

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8

STATE PROJECT NUMBER
2030-14-70



FRAMING PLAN

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

DRAWN BY	DMC	PLANS CK'D.	BDT

FRAMING PLAN

SHEET 20 OF 38
300

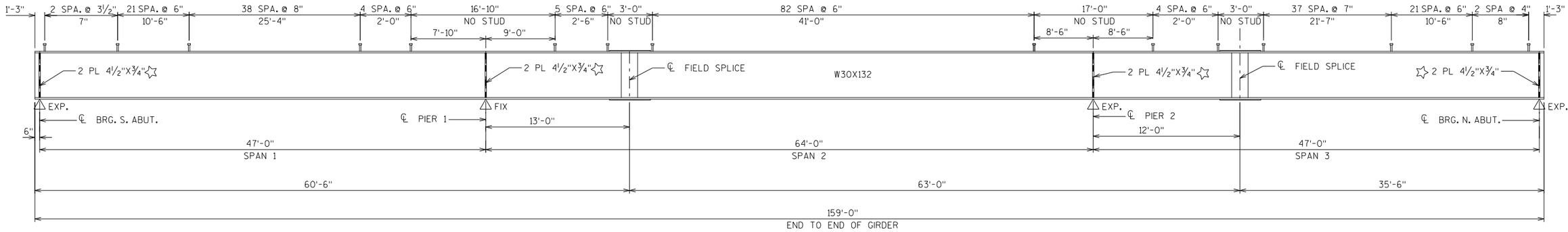
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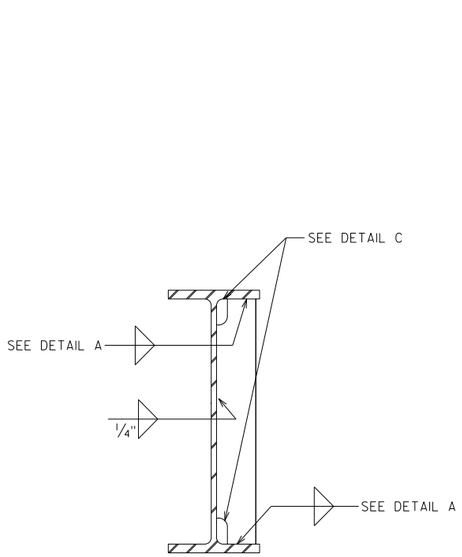
STATE PROJECT NUMBER
2030-14-70

℄ BRG. N. ABUT.

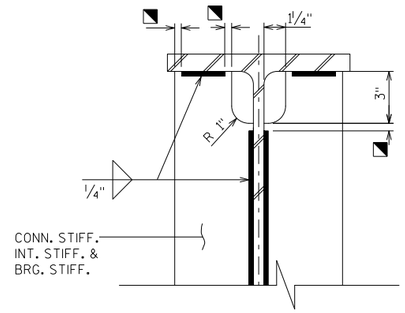


☆ ONE BEARING PLATE ON EACH SIDE

PROPOSED GIRDER ELEVATION WITH SHEAR STUD SPACING

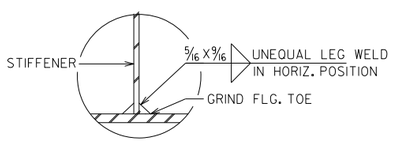


CONNECTION STIFF. DETAILS



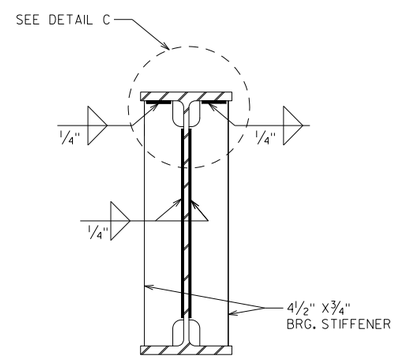
DETAIL C

STIFF. & CONN. STIFF. TO WEB/FLANGE CONN. WELDS

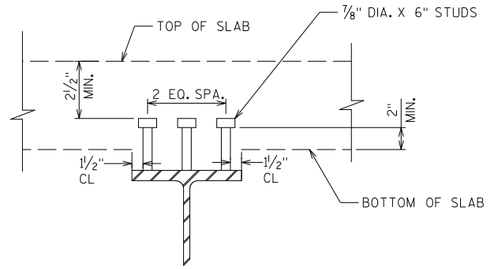


DETAIL A

CONNECTION STIFFENER DETAIL @ TENSION FLANGE



BRG. STIFF. DETAILS
TYP. AT ABUT. & PIER



SHEAR CONN. DETAILS

NOTE: USE THREE FIELD WELDED 7/8" DIA. X 6" LONG STUDS EQUALLY SPACED WITH A MIN. OF 1½" CL. FROM THE FLANGE EDGE. STUDS SHALL NOT BE PLACED OVER FIELD SPLICE PLATES.

⬔ ⅛" MIN., ¼" MAX. TYP.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

DRAWN BY	DMC	PLANS CK'D.	BDT

GIRDER ELEVATION

SHEET 21 OF 38
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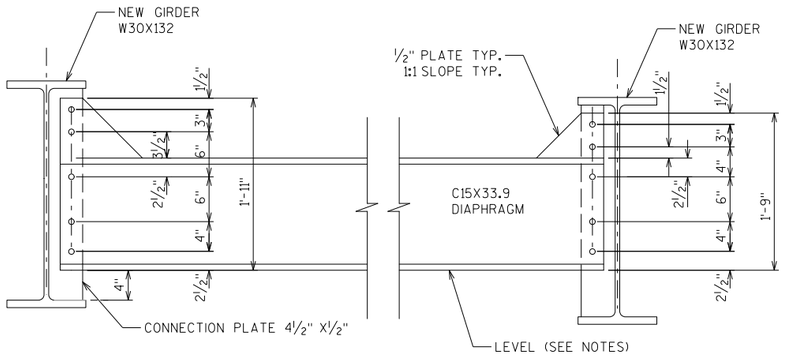
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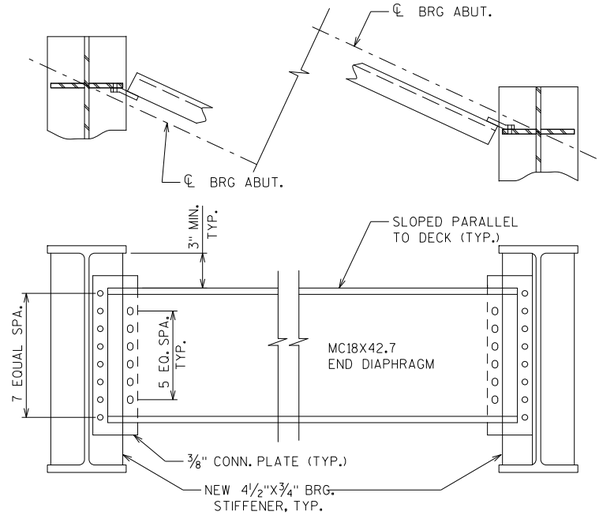
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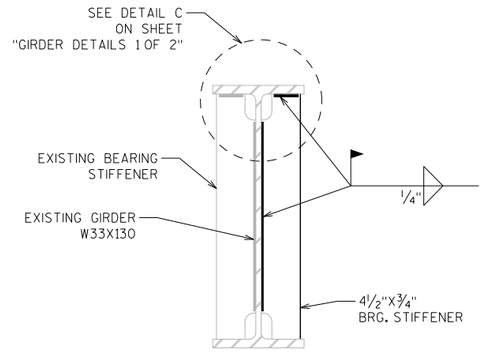
STATE PROJECT NUMBER
2030-14-70



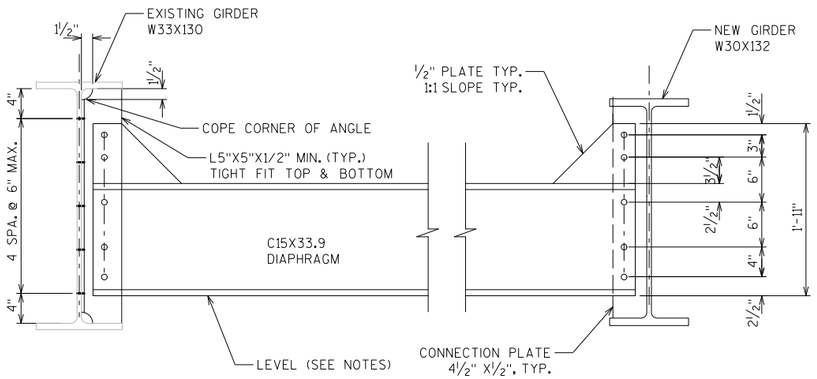
INTERMEDIATE DIAPHRAGM



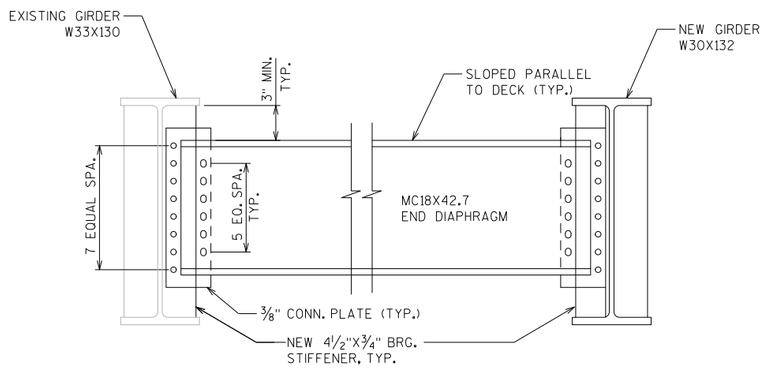
END DIAPHRAGM BETWEEN
NEW GIRDERS



BRG. STIFF. DETAILS
AT EXISTING GIRDER AT ABUT.



DIAPHRAGM CONNECTION TO
EXISTING STEEL GIRDER



END DIAPHRAGM BETWEEN
EXISTING & NEW GIRDERS

NOTES

ALL BOLTED CONNECTIONS FOR DIAPHRAGMS SHALL BE FRICTION TYPE USING ¾" DIA. HIGH STRENGTH ASTM A325 BOLTS WITH DOUBLE WASHERS

MAXIMUM HOLE SIZE SHALL NOT BE MORE THAN 1/16" GREATER THAN THE NOMINAL BOLT DIAMETER. MINIMUM BOLT SPACING SHALL BE 2½" FROM CENTER TO CENTER OF BOLTS AND A MINIMUM EDGE DISTANCE 1" FROM CENTER OF BOLTS.

INTERMIDIATE DIAPHRAGMS SHALL BE HORIZONTAL EXCEPT WHEN THE DIFFERENCE IN ADJACENT GIRDER ELEVATIONS IS OF A MAGNITUDE THAT NECESSITATES SLOPING THE DIAPHRAGM.

WHEN DIAPHRAGMS ARE SLOPED, PLACE CENTER OF DIAPHRAGM AT MID-DEPTH OF GIRDER.

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STRUCTURE B-40-108

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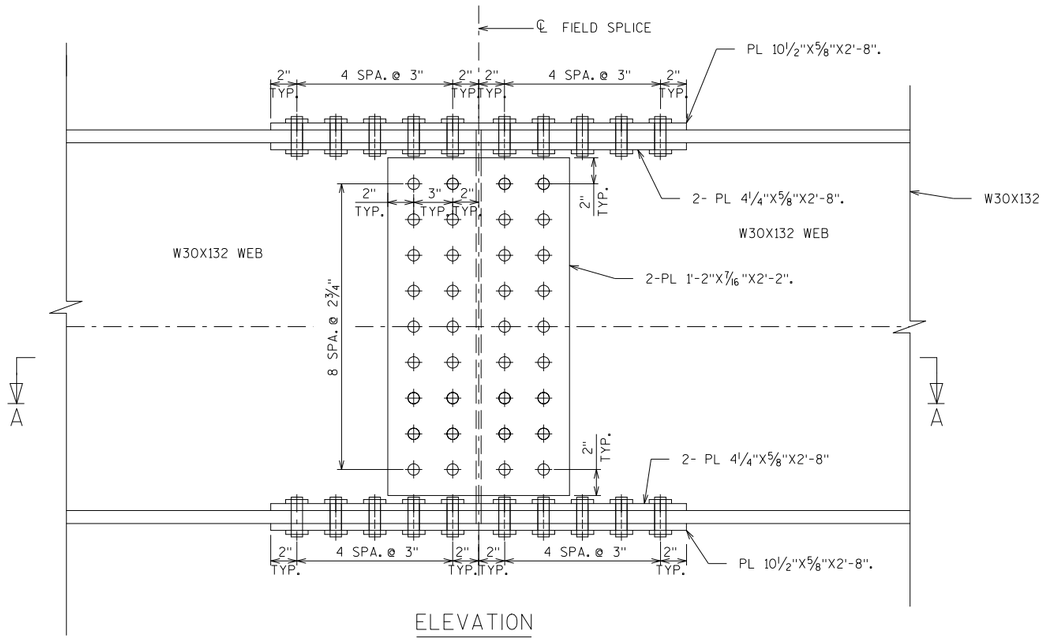
DIAPRHRAGM DETAILS

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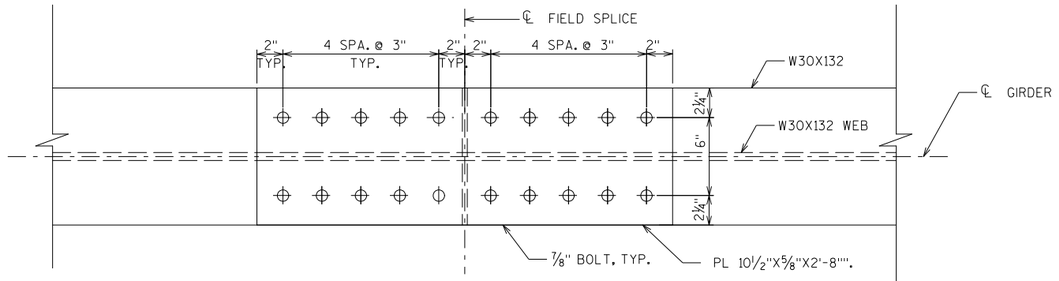
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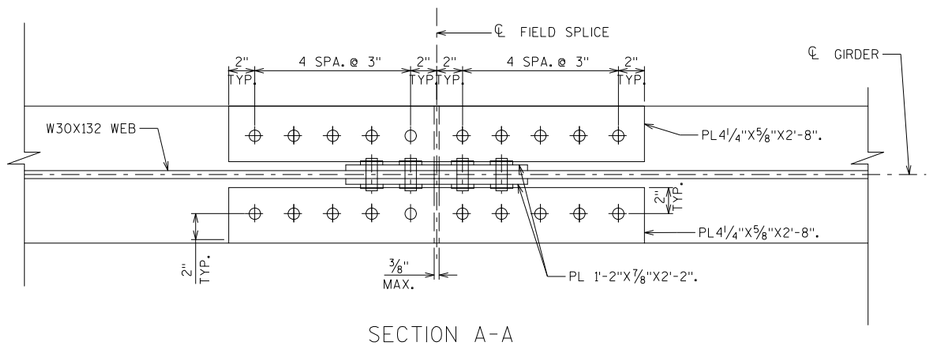
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ELEVATION



TOP AND BOTTOM FLANGE
EXTERIOR PLATE



SECTION A-A

NOTES

ALL BOLTED CONNECTIONS FOR FIELD SPLICE SHALL BE FRICTION TYPE USING ⅞" DIA. HIGH STRENGTH ASTM A325 BOLTS WITH DOUBLE WASHERS.

PRIOR TO STEEL BLAST, ALL FLAME CUT EDGES OF PLATE THAT ARE TO BE PAINTED SHALL BE GROUND OR PLANED TO REMOVE THE HARDENED SURFACE CAUSED BY THE FLAME, AND CORNERS CHEMFERED 1/16" MINIMUM.

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STRUCTURE B-40-108

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SPLICE DETAILS

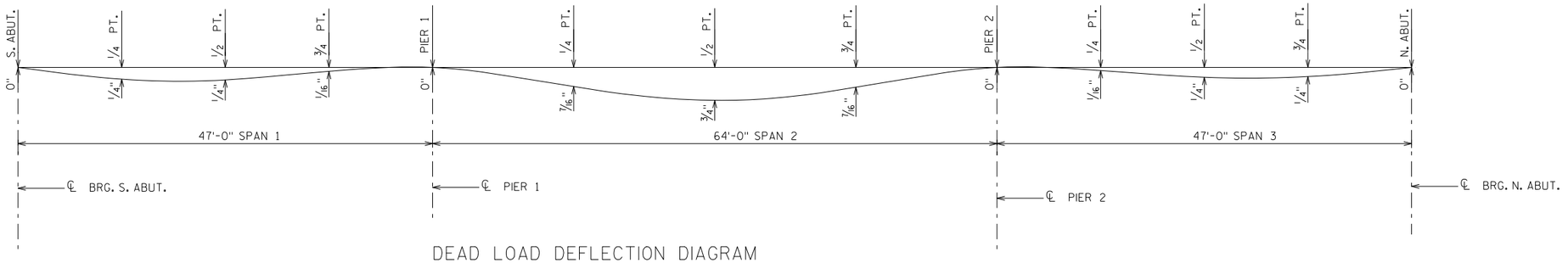
SHEET 23 OF 38
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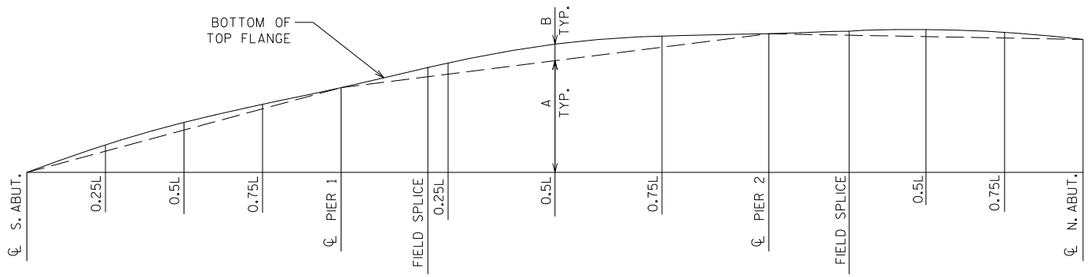
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STATE PROJECT NUMBER
2030-14-70



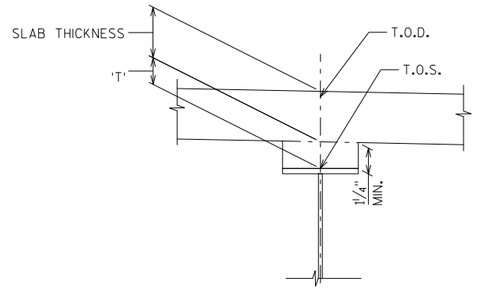
DEAD LOAD DEFLECTION DIAGRAM

(CONCRETE ONLY DEFLECTION)



		S. ABUT	0.25L	0.5L	0.75L	PIER 1	FS	0.5L	0.75L	PIER 2	0.25L	FS	0.5L	0.75L	N ABUT.
GIRDER 1	A	0	2½"	5"	7½"	10"	11¼"	1'-1¼"	1'-3"	1'-4½"	1'-4½"	1'-4½"	1'-4½"	1'-4⅜"	1'-4⅜"
	B	0	¾"	⅞"	½"	0	1"	1⅛"	¼"	0	½"	½"	¾"	⅝"	0
GIRDER 2	A	0	2⅜"	4¾"	7¼"	9½"	10¾"	1'-0½"	1'-2 "	1'-3½"	1'-3⅜"	1'-3⅜"	1'-3¼"	1'-3"	1'-3"
	B	0	¾"	⅞"	½"	0	1 "	1⅞"	1¼"	0	½"	½"	¾"	⅝"	0

BLOCKING DIAGRAM



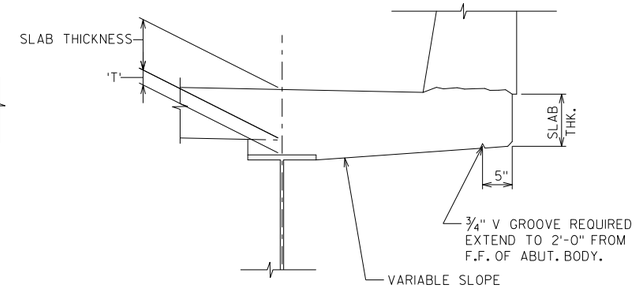
HAUNCH DETAIL

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 AFTER STEEL ERECTION
+ CONC. ONLY DEFLECTION: DOWNWARD DEFLECTION IS ADDED, UPWARD DEFLECTION IS SUBSTRACTED
- SLAB THICKNESS

= 'T' VALUE FOR SETTING HAUNCH

NOTE:
AN AVERAGE HAUNCH 'T' OF ____"
WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES"



SECTION THROUGH SLAB

ELEVATIONS AT TOP OF DECK (T.O.D.) & TOP OF STEEL (T.O.S.) *

		S. ABUT.	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	PIER 1	0.1L	0.2L	℄ SPLICE	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	PIER 2	0.1L	0.2L	℄ SPLICE	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	N. ABUT.
GIRDER 1	T.O.D.	774.30	774.40	774.49	774.59	774.67	774.76	774.84	774.92	774.99	775.06	775.13	775.21	775.29	775.29	775.36	775.43	775.49	775.54	775.58	775.62	775.65	775.68	775.69	775.71	775.71	775.71	775.72	775.72	775.71	775.71	775.69	775.68	775.66
	T.O.S.	773.42	773.53	773.64	773.73	773.82	773.91	773.98	774.05	774.12	774.19	774.25	774.35	774.44	774.50	774.53	774.61	774.67	774.72	774.75	774.78	774.79	774.80	774.82	774.83	774.89	774.85	774.86	774.86	774.86	774.85	774.83	774.81	774.79
GIRDER 2	T.O.D.	774.58	774.68	774.77	774.86	774.94	775.02	775.10	775.18	775.25	775.31	775.38	775.46	775.53	775.53	775.60	775.66	775.71	775.76	775.80	775.83	775.86	775.88	775.89	775.90	775.90	775.90	775.90	775.90	775.89	775.88	775.87	775.85	775.83
	T.O.S.	773.71	773.81	773.91	774.01	774.09	774.17	774.24	774.31	774.38	774.44	774.50	774.59	774.68	774.74	774.77	774.84	774.90	774.94	774.97	774.99	774.99	775.00	775.01	775.03	775.08	775.03	775.04	775.04	775.04	775.02	775.01	774.98	774.95

* THESE ELEVATIONS ARE TO TOP OF STEEL (SPLICE AND COVER PLATE THICKNESS, IF APPLICABLE ARE ACCOUNTED FOR)AND THEY ARE FOR THE MATERIAL AS ERECTED.

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STRUCTURE B-40-108

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GIRDER AND SUPERSTRUCTURE DETAILS

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TOP OF DECK ELEVATIONS SPAN 1

POINT	℄ BRG. S. ABUT	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	PIER 1
EAST EDGE	774.20	774.30	774.40	774.49	774.58	774.66	774.75	774.83	774.90	774.97	775.04
GIRDER 1	774.30	774.40	774.49	774.59	774.67	774.76	774.84	774.92	774.99	775.06	775.13
GIRDER 2	774.58	774.68	774.77	774.86	774.94	775.02	775.10	775.18	775.25	775.31	775.38
GIRDER 3	774.86	774.96	775.04	775.13	775.21	775.29	775.36	775.43	775.50	775.56	775.62
GIRDER 4	775.12	775.21	775.29	775.37	775.45	775.53	775.60	775.66	775.73	775.79	775.84
GIRDER 5	775.37	775.46	775.54	775.62	775.69	775.76	775.83	775.89	775.95	776.01	776.06
PGL	775.59	775.67	775.75	775.83	775.90	775.97	776.03	776.09	776.15	776.20	776.25
GIRDER 6	775.62	775.70	775.78	775.85	775.93	775.99	776.06	776.12	776.17	776.23	776.28
GIRDER 7/CROWN	775.88	775.96	776.03	776.10	776.17	776.24	776.30	776.35	776.41	776.46	776.50
WEST EDGE	775.63	775.71	775.78	775.85	775.92	775.98	776.04	776.10	776.15	776.20	776.24

TOP OF DECK ELEVATIONS SPAN 2

POINT	PIER 1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	PIER 2
EAST EDGE	775.04	775.13	775.21	775.28	775.35	775.41	775.46	775.51	775.55	775.58	775.61
GIRDER 1	775.13	775.21	775.29	775.36	775.43	775.49	775.54	775.58	775.62	775.65	775.68
GIRDER 2	775.38	775.46	775.53	775.60	775.66	775.71	775.76	775.80	775.83	775.86	775.88
GIRDER 3	775.62	775.70	775.76	775.83	775.88	775.93	775.97	776.01	776.04	776.06	776.08
GIRDER 4	775.84	775.91	775.98	776.03	776.09	776.13	776.17	776.20	776.22	776.24	776.25
GIRDER 5	776.06	776.13	776.19	776.24	776.29	776.33	776.36	776.39	776.41	776.42	776.43
PGL	776.25	776.31	776.37	776.42	776.46	776.50	776.53	776.55	776.56	776.57	776.58
GIRDER 6	776.28	776.34	776.39	776.44	776.48	776.52	776.55	776.57	776.59	776.59	776.60
GIRDER 7/CROWN	776.50	776.56	776.61	776.65	776.69	776.72	776.74	776.76	776.77	776.78	776.77
WEST EDGE	776.24	776.30	776.34	776.39	776.42	776.45	776.47	776.49	776.50	776.50	776.49

TOP OF DECK ELEVATIONS SPAN 3

POINT	PIER 2	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ BRG. N. ABUT
EAST EDGE	775.61	775.63	775.64	775.65	775.65	775.65	775.65	775.64	775.63	775.62	775.60
GIRDER 1	775.68	775.69	775.71	775.71	775.72	775.72	775.71	775.71	775.69	775.68	775.66
GIRDER 2	775.88	775.89	775.90	775.90	775.90	775.90	775.89	775.88	775.87	775.85	775.83
GIRDER 3	776.08	776.08	776.09	776.09	776.08	776.08	776.06	776.05	776.03	776.01	775.99
GIRDER 4	776.25	776.26	776.26	776.25	776.25	776.24	776.22	776.20	776.18	776.16	776.13
GIRDER 5	776.43	776.43	776.42	776.42	776.41	776.39	776.38	776.35	776.33	776.30	776.27
PGL	776.58	776.57	776.57	776.56	776.55	776.53	776.51	776.49	776.46	776.43	776.39
GIRDER 6	776.60	776.59	776.59	776.58	776.56	776.55	776.53	776.50	776.47	776.44	776.41
GIRDER 7/CROWN	776.77	776.77	776.76	776.74	776.73	776.71	776.68	776.66	776.62	776.59	776.55
WEST EDGE	776.49	776.48	776.47	776.46	776.44	776.42	776.39	776.36	776.33	776.29	776.25

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DEPARTMENT OF TRANSPORTATION

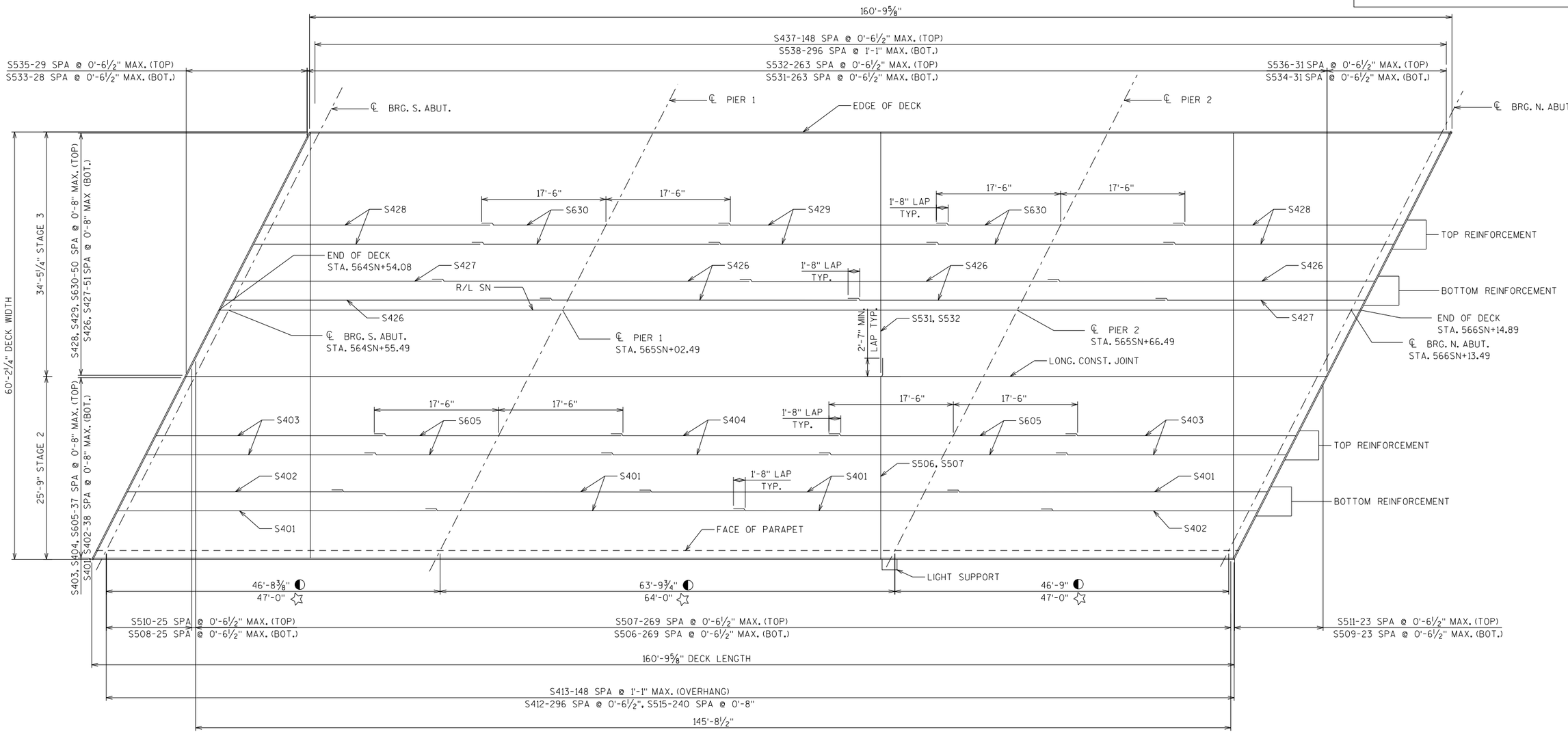
STRUCTURE B-40-108

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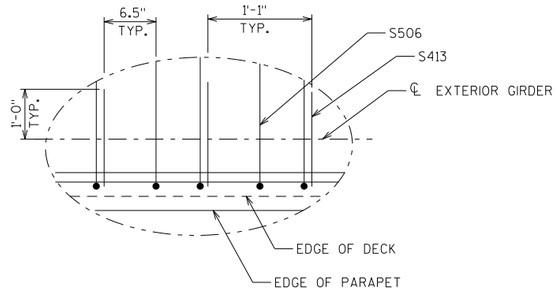
TOP OF DECK ELEVATIONS

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DECK REINFORCEMENT PLAN



OVERHANG REINFORCEMENT DETAIL

LEGEND

☆ PER EXISTING STRUCTURE PLANS

◐ PER EXISTING SURVEY

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

DRAWN BY	HKG	PLANS CK'D.	BDT

SUPERSTRUCTURE REINFORCEMENT PLAN

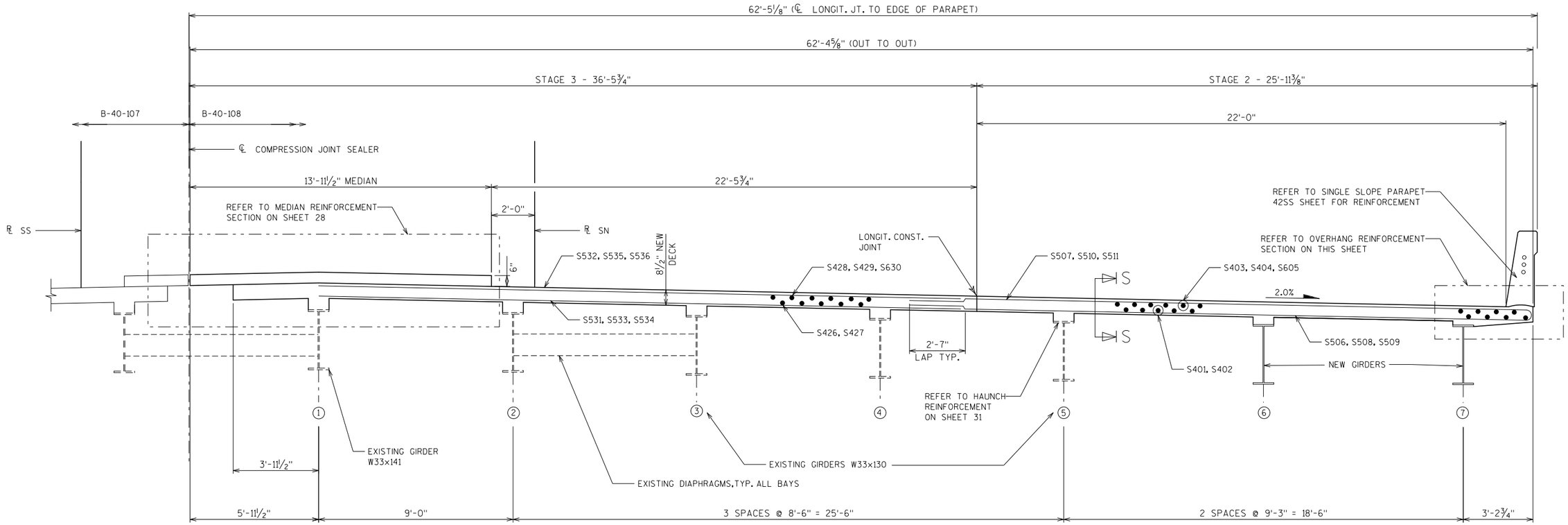
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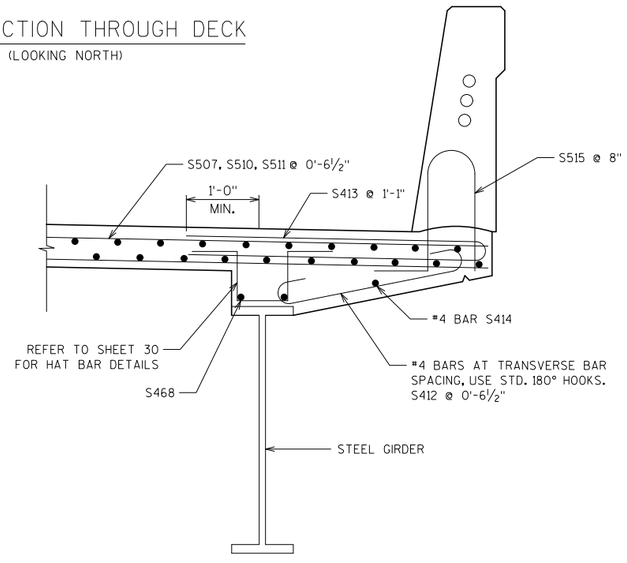
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STATE PROJECT NUMBER
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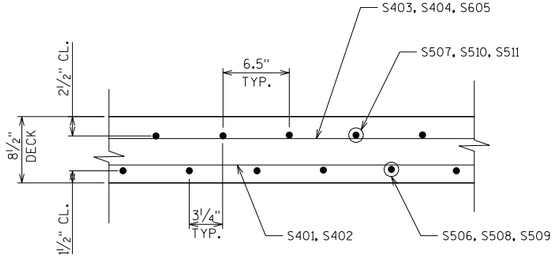


CROSS SECTION THROUGH DECK

(LOOKING NORTH)



OVERHANG REINFORCEMENT SECTION



SECTION S-S

NOTES

FOR DECK REINFORCEMENT PLAN, SEE SHEET 26

FOR MEDIAN REINFORCEMENT DETAILS, SEE SHEET 28

FOR EXPANSION DIAPHRAGM REINFORCEMENT, SEE SHEET 29

FOR SUPERSTRUCTURE BILL OF BARS & HAUNCH REINFORCEMENT PLAN, SEE SHEETS 30 AND 31

FOR PARAPET REINFORCEMENT DETAILS, SEE SHEET 35

FOR LIGHT SUPPORT REINFORCEMENT, SEE SHEET 36

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

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SUPERSTRUCTURE CROSS SECTIONS

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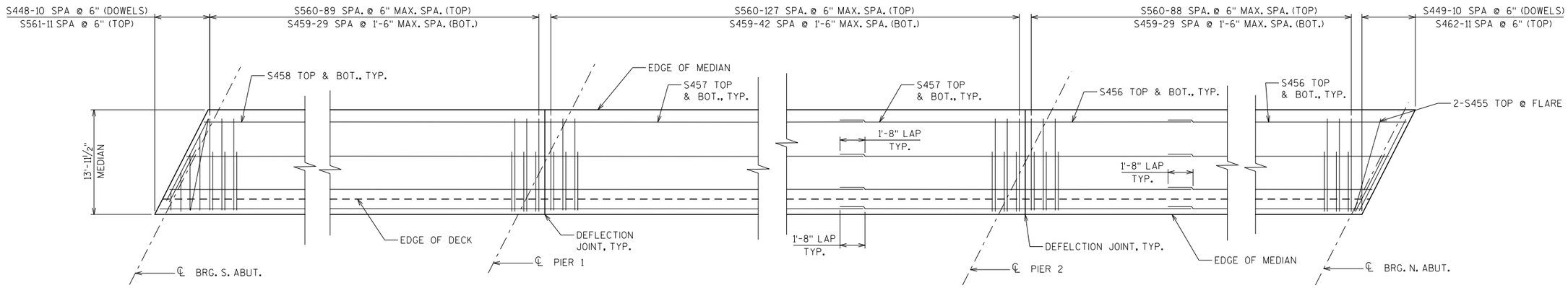
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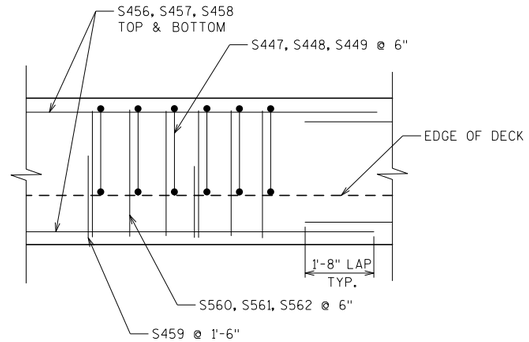
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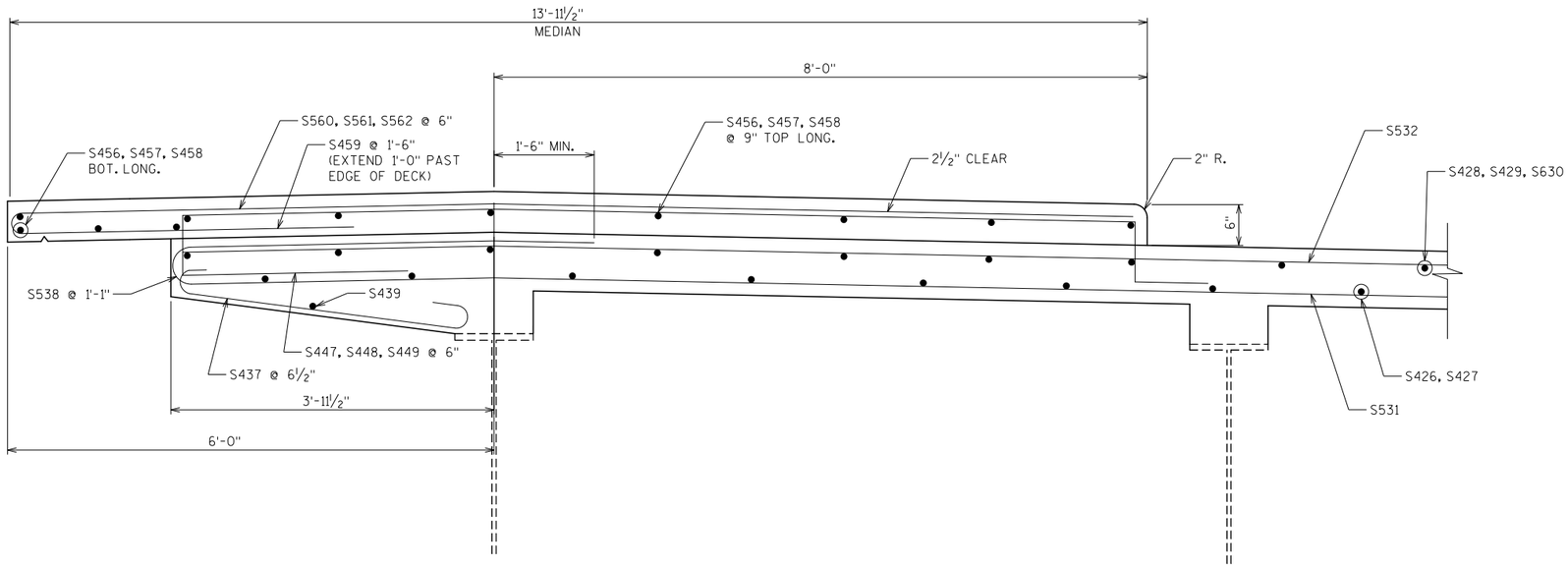


MEDIAN REINFORCEMENT PLAN

(MEDIAN DOWELS NOT SHOWN FOR CLARITY)



MEDIAN REINFORCEMENT DETAIL



MEDIAN REINFORCEMENT SECTION

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

DRAWN BY HKG | PLANS CK'D. BDT

MEDIAN REINFORCEMENT DETAILS

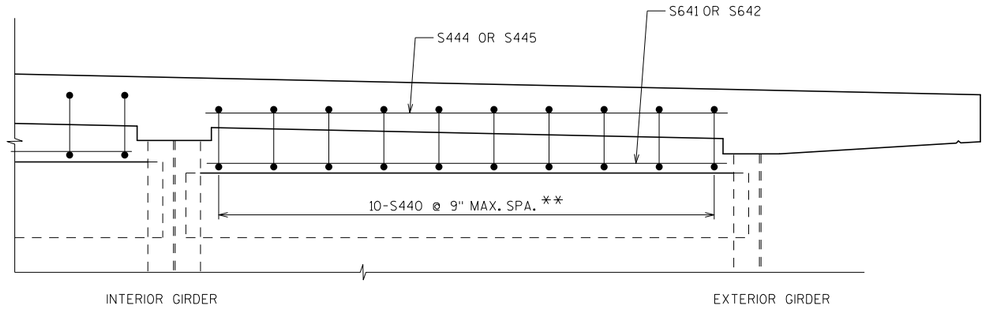
SHEET 28 OF 38

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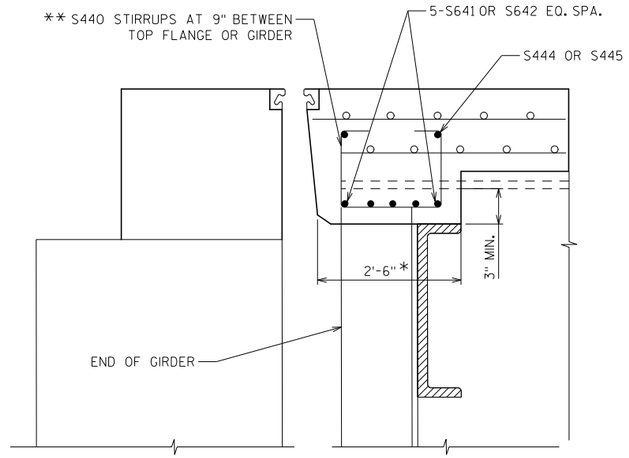
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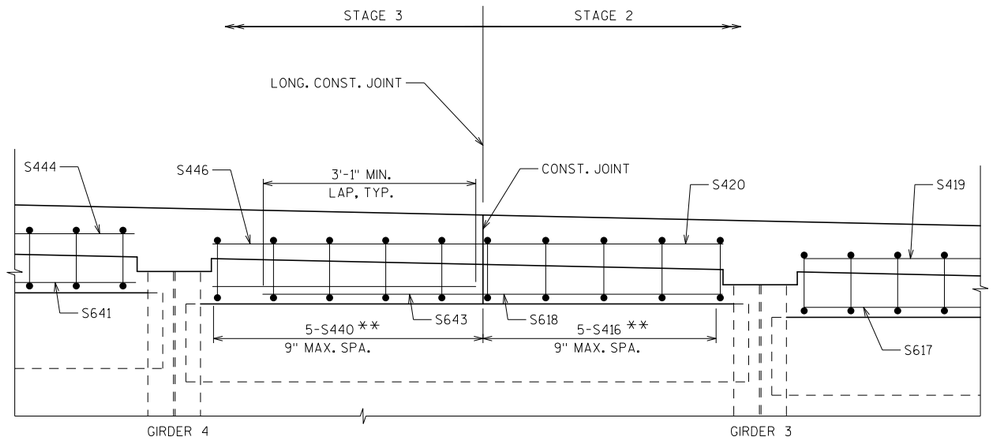
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DATE: 12/19/2017 3:36:07 PM Plotted by: bthompson PEN TABLE: v8_Structural_rev.tbl



PART TRANSVERSE SECTION AT DIAPHRAGM EXPANSION END



SECTION THRU EXPANSION END



PART TRANSVERSE SECTION DIAPHRAGM EXPANSION AT CONST. JOINT

NOTES

* DIMENSION IS TAKEN NORMAL TO ℄ ABUTMENT.

** BARS PLACED PARALLEL TO GIRDERS, SPACING PERPENDICULAR TO ℄ GIRDERS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
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STRUCTURE B-40-108

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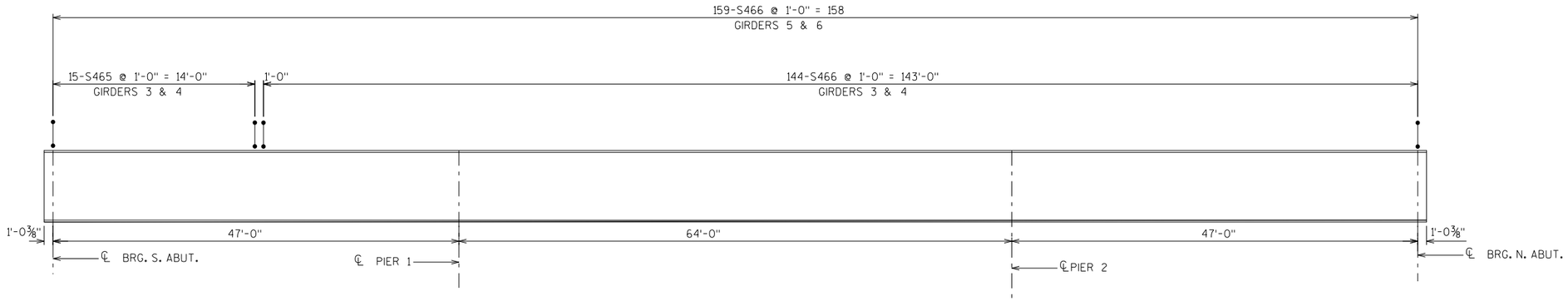
DIAPHRAGM REINFORCEMENT DETAILS

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309

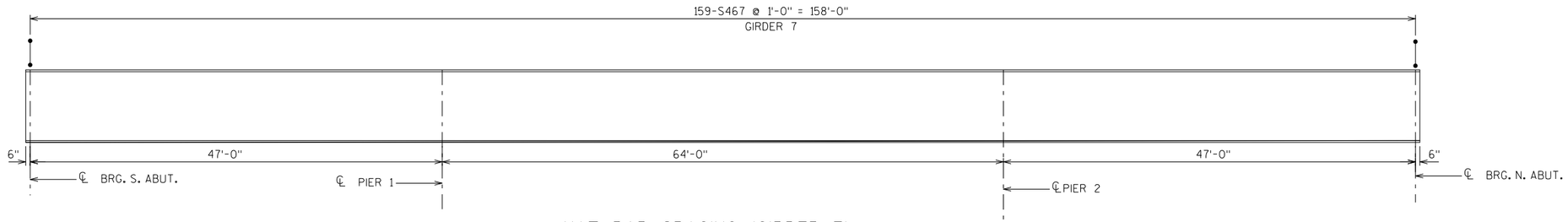
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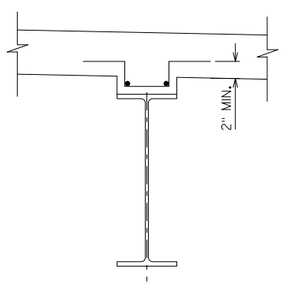
STATE PROJECT NUMBER
2030-14-70



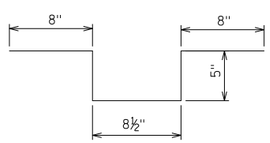
HAT BAR SPACING (GIRDERS 3 TO 6)



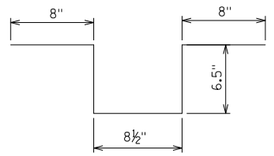
HAT BAR SPACING (GIRDER 7)



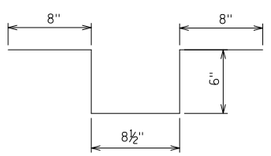
HAT BAR DETAILS



BAR S465



BAR S466



BAR S467

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

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HAT BAR DETAILS

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FILE NAME: F:\BMI\3558 STH 100 Bridge over HASTA5\Design\04_Structures\Bridges\dgn\Current Plans\30_B-40-108_Hat bar details.dgn
DATE: 12/19/2017 3:36:08 PM Plotted by: bthengon PEN TABLE: v8_Structural_rev.tbl

BILL OF BARS

BAR MARK	COAT	NO.	LENGTH	BENT	BAR SERIES ⚠	LOCATION
S401	X	117	45'-0"			DECK BOTTOM LONGITUDINAL - STAGE 2
S402	X	39	30'-5"			DECK BOTTOM LONGITUDINAL - STAGE 2
S403	X	76	32'-5"			DECK TOP LONGITUDINAL - STAGE 2
S404	X	38	32'-4"			DECK TOP LONGITUDINAL - STAGE 2
S605	X	76	35'-0"			DECK TOP LONGITUDINAL AT PIERS - STAGE 2
S506	X	270	28'-4"			DECK BOTTOM TRANSVERSE - STAGE 2
S507	X	270	28'-4"			DECK TOP TRANSVERSE - STAGE 2
S508	X	26	13'-10"		X	DECK BOTTOM TRANSVERSE - STAGE 2
S509	X	24	15'-8"		X	DECK BOTTOM TRANSVERSE - STAGE 2
S510	X	26	14'-5"		X	DECK TOP TRANSVERSE - STAGE 2
S511	X	24	15'-1"		X	DECK TOP TRANSVERSE - STAGE 2
S412	X	297	3'-7"	X		DECK OVERHANG BOTTOM - STAGE 2
S413	X	149	4'-7"	X		DECK OVERHANG TOP - STAGE 2
S414	X	4	45'-0"			DECK OVERHANG - STAGE 2
S515	X	241	4'-5"	X		PARAPET DOWEL BARS - STAGE 2
S416	X	58	4'-7"	X		EXPANSION DIAPHRAGM VERT - STAGE 2
S617	X	20	9'-4"			EXPANSION DIAPHRAGM BOTTOM - STAGE 2
S618	X	10	7'-3"			EXPANSION DIAPHRAGM BOTTOM - STAGE 2
S419	X	8	9'-4"			EXPANSION DIAPHRAGM TOP - STAGE 2
S420	X	4	7'-3"			EXPANSION DIAPHRAGM TOP - STAGE 2
S521	X	241	6'-8"	X		PARAPET VERTICAL - STAGE 2
S522	X	32	42'-1"			PARAPET HORIZONTAL - STAGE 2
S426	X	156	45'-0"			DECK BOTTOM LONGITUDINAL - STAGE 3
S427	X	52	30'-5"			DECK BOTTOM LONGITUDINAL - STAGE 3
S428	X	102	32'-5"			DECK TOP LONGITUDINAL - STAGE 3
S429	X	51	32'-4"			DECK TOP LONGITUDINAL - STAGE 3
S630	X	102	35'-0"			DECK TOP LONGITUDINAL AT PIERS - STAGE 3
S531	X	264	34'-1"			DECK BOTTOM TRANSVERSE - STAGE 3
S532	X	264	34'-1"			DECK TOP TRANSVERSE - STAGE 3
S533	X	29	18'-3"		X	DECK BOTTOM TRANSVERSE - STAGE 3
S534	X	32	17'-6"		X	DECK BOTTOM TRANSVERSE - STAGE 3
S535	X	30	18'-10"		X	DECK TOP TRANSVERSE - STAGE 3
S536	X	32	16'-11"		X	DECK TOP TRANSVERSE - STAGE 3
S437	X	297	3'-7"	X		DECK OVERHANG BOTTOM - STAGE 3
S538	X	149	5'-11"	X		DECK OVERHANG TOP - STAGE 3
S439	X	4	45'-0"			DECK OVERHANG - STAGE 3
S440	X	70	4'-7"	X		EXPANSION DIAPHRAGM VERT - STAGE 3
S641	X	20	8'-5"			EXPANSION DIAPHRAGM BOTTOM - STAGE 3
S642	X	10	9'-0"			EXPANSION DIAPHRAGM BOTTOM - STAGE 3
S643	X	10	4'-3"			EXPANSION DIAPHRAGM BOTTOM - STAGE 3
S444	X	8	8'-5"			EXPANSION DIAPHRAGM TOP - STAGE 3
S445	X	4	9'-0"			EXPANSION DIAPHRAGM TOP - STAGE 3
S446	X	4	4'-3"			EXPANSION DIAPHRAGM TOP - STAGE 3
S447	X	307	13'-7"	X		MEDIAN DOWELS
S448	X	11	8'-8"	X	X	MEDIAN DOWELS
S449	X	11	8'-10"	X	X	MEDIAN DOWELS
S555	X	2	4'-2"	X		MEDIAN TOP FLARE
S456	X	44	26'-7"			MEDIAN TOP & BOTTOM LONGITUDINAL
S457	X	44	32'-8"			MEDIAN TOP & BOTTOM LONGITUDINAL
S458	X	22	44'-7"			MEDIAN TOP & BOTTOM LONGITUDINAL
S459	X	103	2'-10"			MEDIAN BOTTOM TRANSVERSE
S560	X	307	14'-1"	X		MEDIAN TOP TRANSVERSE
S561	X	13	7'-3"	X	X	MEDIAN TOP TRANSVERSE
S562	X	12	8'-11"	X	X	MEDIAN TOP TRANSVERSE
S465	X	30	2'-7"	X		HAUNCH - VERTICAL
S466	X	606	2'-10"	X		HAUNCH - VERTICAL
S467	X	159	2'-9"	X		HAUNCH - VERTICAL
S468	X	40	40'-9"			HAUNCH - LONGITUDINAL GIRDERS 3-7
S470	X	4	9'-10"			BETWEEN GIRDERS AT EXPANSION JOINTS - STAGE 2
S471	X	2	6'-1"			BETWEEN GIRDERS AT EXPANSION JOINTS - STAGE 2
S472	X	2	4'-7"			BETWEEN GIRDERS AT EXPANSION JOINTS - STAGE 3
S473	X	4	9'-0"			BETWEEN GIRDERS AT EXPANSION JOINTS - STAGE 3
S474	X	2	9'-7"			BETWEEN GIRDERS AT EXPANSION JOINTS - STAGE 3

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

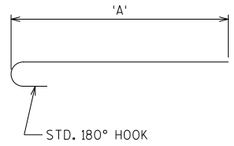
BAR SERIES TABLE

BAR MARK	NO. REQ'D	LENGTH
S508	1 SERIES OF 26	0'-6" TO 27'-1"
S509	1 SERIES OF 24	3'-5" TO 27'-10"
S510	1 SERIES OF 26	1'-1" TO 27'-8"
S511	1 SERIES OF 24	2'-10"TO 27'-3
S533	1 SERIES OF 29	3'-1" TO 33'-5"
S534	1 SERIES OF 32	1'-0" TO 34'-0"
S535	1 SERIES OF 30	3'-8" TO 33'-11"
S536	1 SERIES OF 32	0'-6" TO 33'-5"
S448	1 SERIES OF 11	3'-9" TO 13'-7"
S449	1 SERIES OF 11	3'-11" TO 13'-9"
S561	1 SERIES OF 13	1'-4" TO 13'-2"
S562	1 SERIES OF 11	3'-6" TO 14'-4"

S521

S412, S437

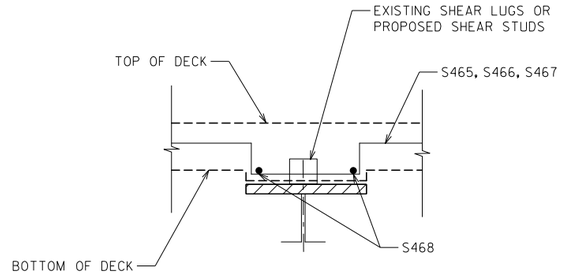
S515

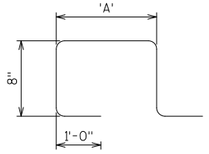


BAR MARK	DIM. 'A'
S413	4'-1"
S455	3'-7"
S538	5'-4"
S560	13'-6"
SERIES S561	0'-9" MIN. TO 12'7" MAX.
SERIES S562	2'-11" MIN. TO 13'-9" MAX.

S416, S440

BAR MARK	DIM. 'A'
S465	0'-5"
S466	0'-6½"
S467	0'-6"





S447

BAR MARK	DIM. 'A'
SERIES S448	0'-9" MIN.TO 10'-7" MAX.
SERIES S449	0'-11" MIN. TO 10'-9" MAX.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

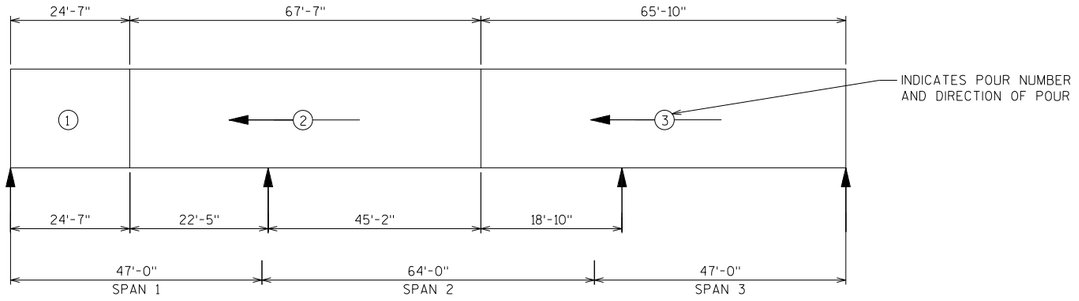
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SUPERSTRUCTURE
BILL OF BARS

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FILE NAME: F:\BMI-3558 STH 100 Bridge over HAST#5_Designs\04_Structures_Bridges\dgns\Current Plans\31_B-40-108_Superstructure bill of bars.dgn
DATE: 12/19/2017 3:36:09 PM Plotted by: bthengon PEN TABLE: v8_Structural_rev.tbl

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ELEVATION VIEW - STEEL GIRDER IDEAL POUR

NOTES

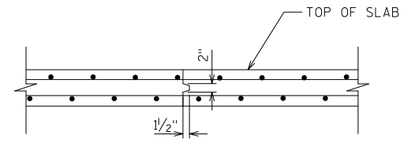
THE RATE OF PLACING CONCRETE SHALL EQUAL OR EXCEED 1/2 SPAN LENGTH PER HOUR BUT NEED NOT EXCEED 100 CU. YDS. PER HOUR. (REQUIRED ONLY FOR CONTINUOUS STEEL GIRDERS.)

IF OPTIONAL JOINTS ARE PROVIDED, TWO OR MORE SEQUENTIAL POURS MAY BE COMBINED AND PLACED IN ONE CONTINUOUS OPERATION. TWO OR MORE ALTERNATE DECK POURS (E.G. 1 & 3) MAY BE PLACED ON THE SAME DAY.

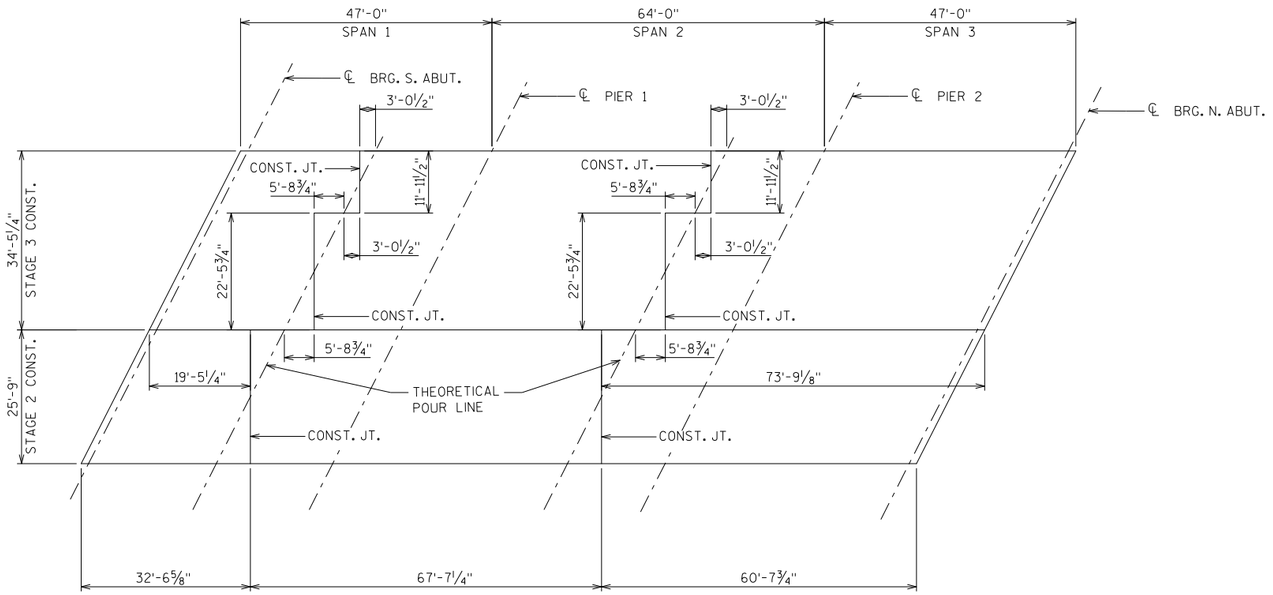
THE NEXT DECK POUR CAN BE MADE NO LESS THAN 72 HOURS AFTER THE PREVIOUS POUR.

THE CONTRACTOR MAY SUBMIT AN ALTERNATE POURING SEQUENCE SUBJECT TO THE APPROVAL OF THE STRUCTURES DESIGN SECTION.
(NOTE: APPLICABLE WHEN OPTIONAL TRANSVERSE CONSTRUCTION JOINTS ARE SHOWN)

THE CONTRACTOR MAY POUR THE ENTIRE DECK PER THE DECK POUR SEQUENCE IF REQUIRED TRANSVERSE CONSTRUCTION JOINTS ARE SHOWN ON THE PLANS. THE CONTRACTOR MAY SUBMIT AN ALTERNATE POURING SEQUENCE SUBJECT TO THE APPROVAL OF THE STRUCTURAL DESIGN SECTION.
(NOTE: REQUIRED WHEN REQUIRED TRANSVERSE CONSTRUCTION JOINTS ARE SHOWN)



SECTION THRU TRANSVERSE OR LONGITUDINAL JOINT



PLAN VIEW - TRANSVERSE CONSTRUCTION JOINTS

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STATE OF WISCONSIN
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STRUCTURE B-40-108

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SLAB POURING SEQUENCE

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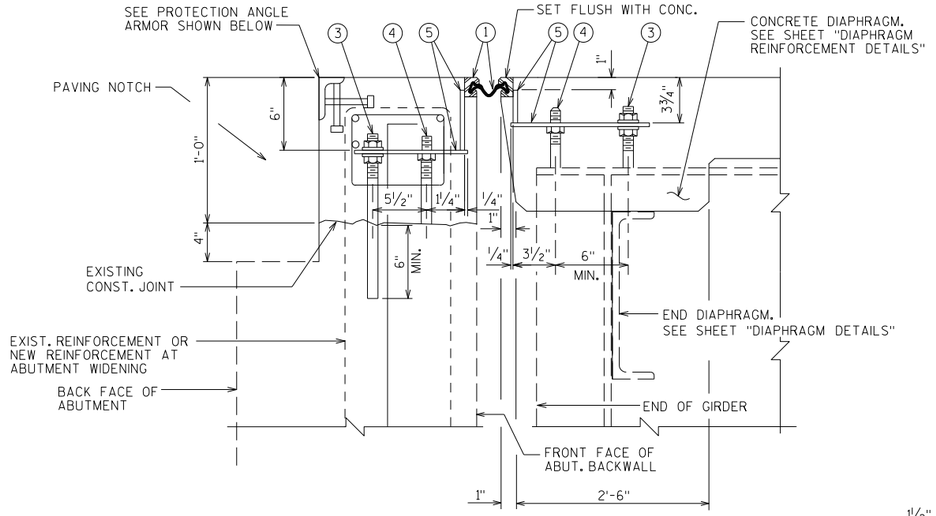
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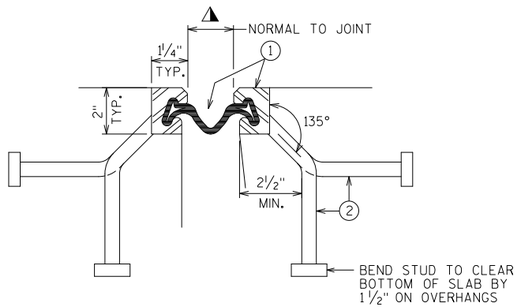
STATE PROJECT NUMBER

2030-14-70



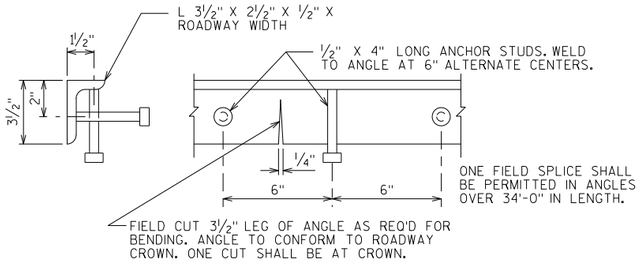
SECTION THRU JOINT AT ABUTMENT

NORMAL TO ℄ SUBSTRUCTURE



SECTION THRU JOINT

EXTERIOR GIRDER TO EDGE OF DECK AND AT PARAPETS AND MEDIANS



PROTECTION ANGLE ARMOR

SANDBLAST PROTECTION ANGLE AFTER FABRICATION PER NOTES. AFTER BLAST CLEANING, THE PROTECTION ANGLE SHALL BE HOT DIPPED GALVANIZED.

LEGEND

1. NEOPRENE STRIP SEAL (4 - INCH) AND STEEL EXTRUSIONS. SET JOINT OPENING AT 1¾". JOINT OPENING GIVEN NORMAL TO JOINT.
2. STUDS ⅝"Φ X 6 ⅜" 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" ? 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 1 ½" Φ HOLE FOR NO. 3 & 1" Φ HOLE FOR NO. 4.
6. GALVANIZED PLATE ⅜" X 10" 2'-2" LONG WITH HOLES FOR NO. 7.
7. ¾"Φ X 1½" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS 1/16" BELOW PLATE SURFACE.
8. ¾"Φ X 4" GALVANIZED HEX HEAD BOLT. BEND 45?.
9. ¾"Φ X 2 ¼" GALVANIZED THREADED COUPLING
10. SIDEWALK COVER PLATE⅜" X (2'-0" WIDE X LIMITS SHOWN. BEND DOWN FACE OF SIDEWALK WITH HOLES FOR NO. 7. GALVANIZE PLATE AFTER SLIP-RESISTANT SURFACE IS APPLIED.
11. 1" X 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.

NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS, UNLESS MORE ARE REQUIRED FOR STAGED CONSTRUCTION, HANDLING OR GALVANIZING REQUIREMENTS. IF USED, DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE STRIP SEAL.

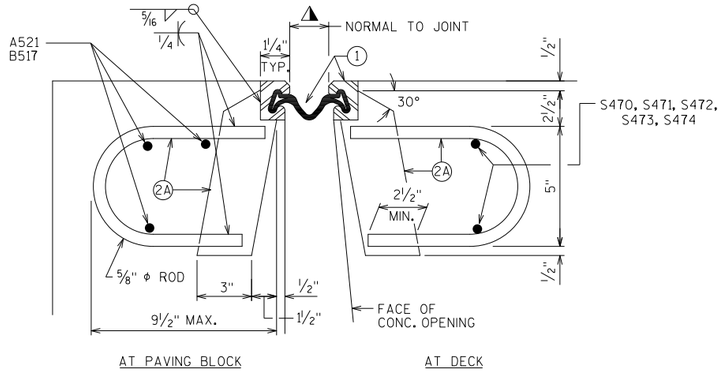
AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST AND SWEEP.

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, SUPPORTS 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. SLIP-RESISTANT SURFACE IS APPLIED TO SIDEWALK COVER PLATES BY THE MANUFACTURER AND THEN HOT DIPPED GALVANIZED TO THEIR RECOMMENDATIONS TO MAINTAIN THE INTEGRITY OF THIS SURFACE.

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.

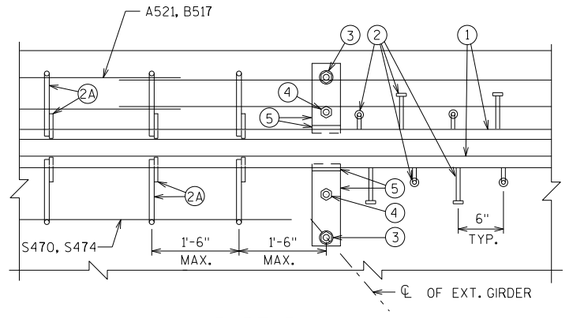
STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE B-40-108".



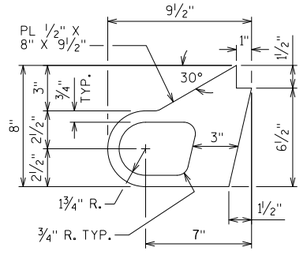
AT PAVING BLOCK AT DECK

SECTION THRU JOINT

ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS.



PART PLAN



ALTERNATE STRIP SEAL ANCHOR

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

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EXPANSION JOINT DETAILS (1 OF 2)

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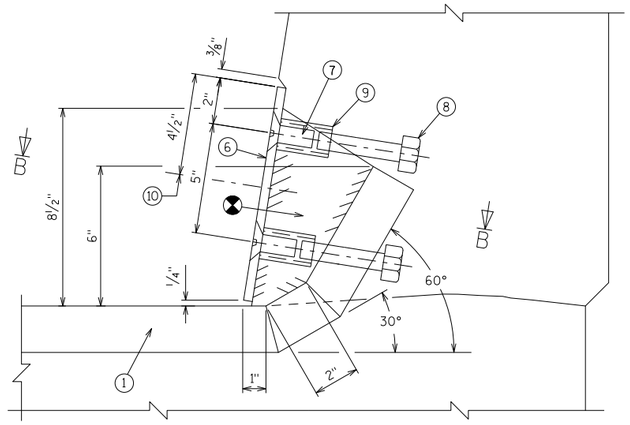
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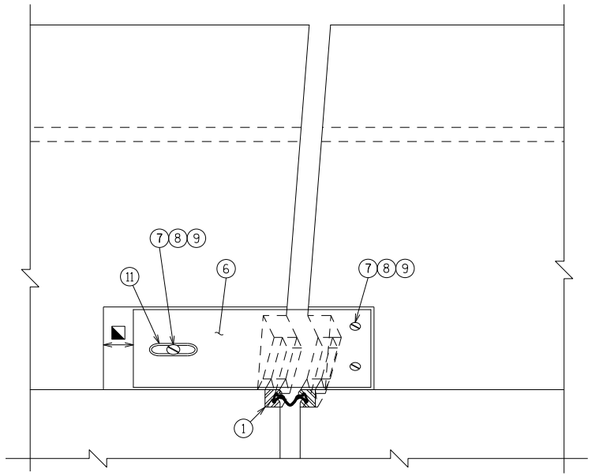
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STATE PROJECT NUMBER

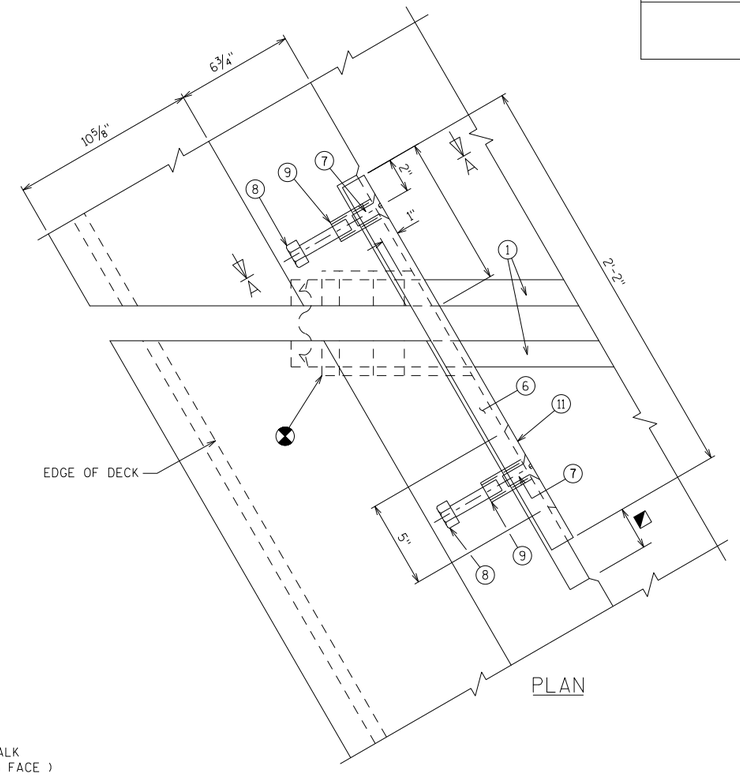
2030-14-70



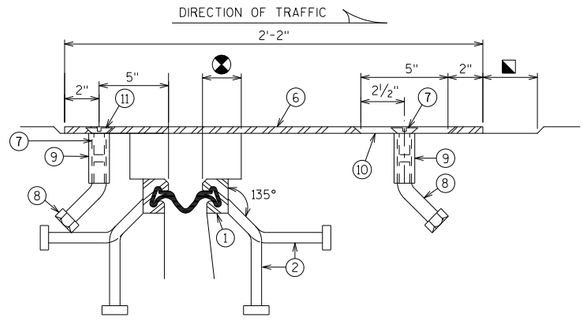
SECTION A-A



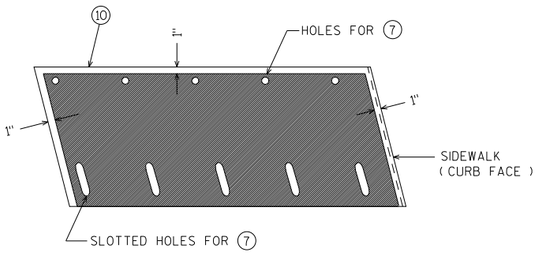
VIEW OF PARAPET PLATE FROM ROADWAY



PLAN



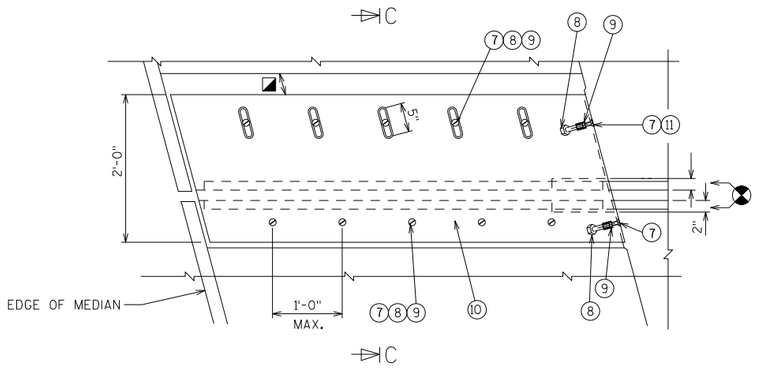
SECTION B-B



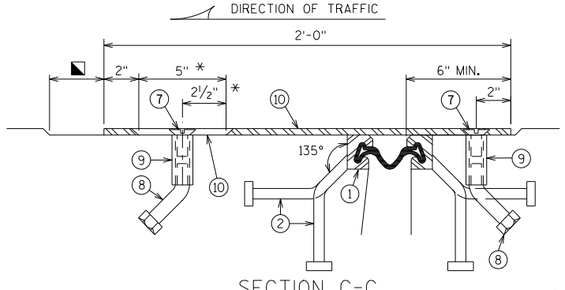
PLAN OF SIDEWALK COVER PLATE WITH SLIP-RESISTANT SURFACE

PLACE SLIP-RESISTANT SURFACE ON TOP WALKING SURFACE IN SHADED AREA ONLY (NOT ON CURB FACE).
DETAIL APPLIES TO MEDIAN COVER PLATE

APPROVED SLIP-RESISTANT APPLIED SURFACES FOR STEEL PLATES		
PRODUCT	MANUFACTURER	CONTACT AT
SLIPNOT GRADE 2, STEEL	W. S. MOLNAR COMPANY	1-800-SLIPNOT
ALGRIP, STEEL	ROSS TECHNOLOGY CORP.	1-800-345-8170



PLAN AT MEDIAN



SECTION C-C

* DIMENSION ALONG DIRECTION OF MOVEMENT

BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.

JOINT OPENING DIMENSION ALONG SKEW PLUS ½".

NOTE

SEE SHEET EXPANSION JOINT DETAILS (1 OF 2) FOR LEGEND

NO.	DATE	REVISION	BY

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

DRAWN BY HKG | PLANS CK'D. BDT

EXPANSION JOINT DETAILS (2 OF 2)

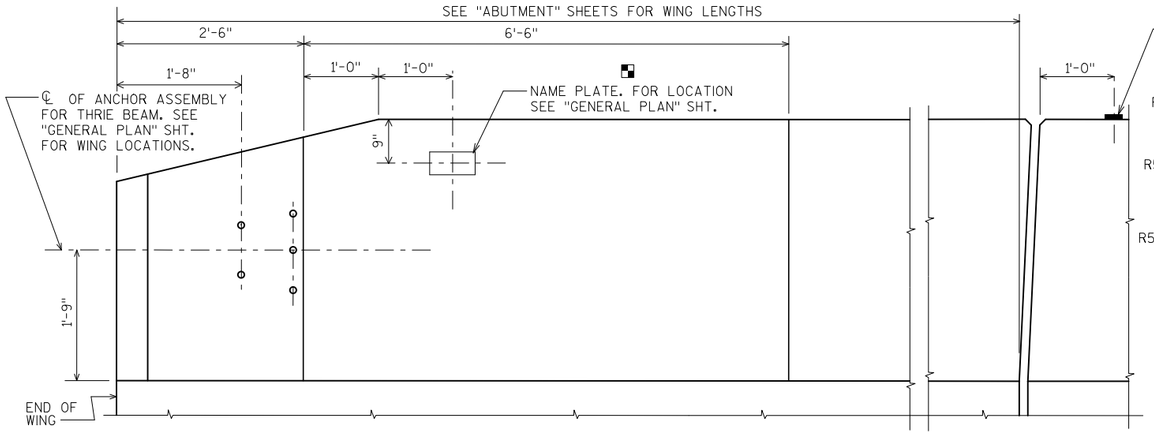
SHEET 34 OF 38
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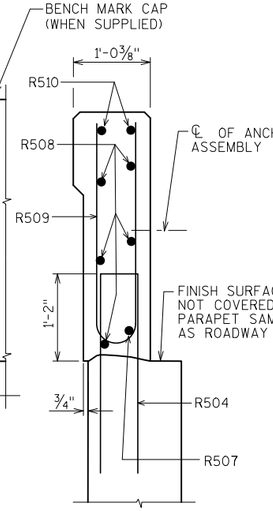
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2030-14-70

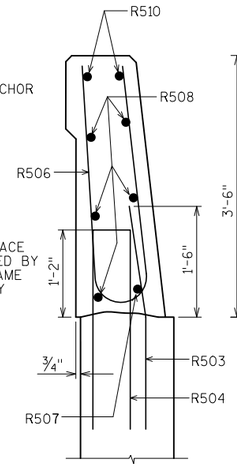


INSIDE ELEVATION

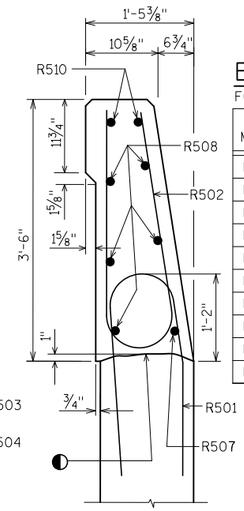
■ AVOID PLACING A BENCH MARK CAP BELOW A RAIL OR FENCE SYSTEM THAT IS ATTACHED TO THE TOP OF THE PARAPET.



SECTION A



SECTION B



SECTION C

BILL OF BARS

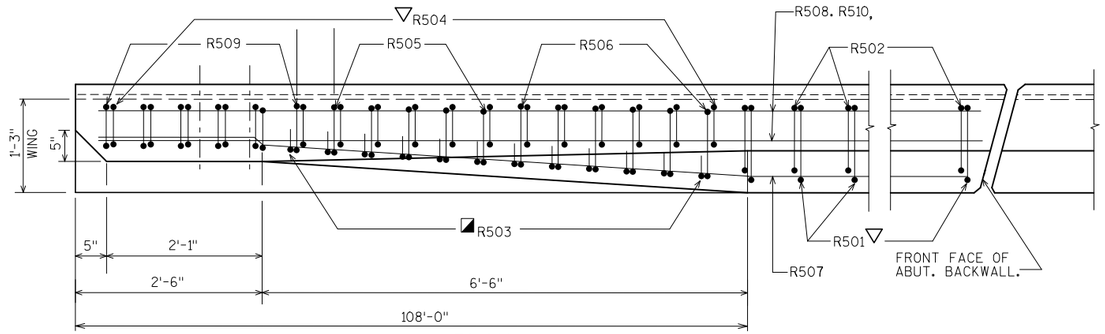
FOR ABUTMENT PARAPETS

BAR MARK	COAT	S. ABUT.	N. ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	11	11	5'-10"	X		PARAPET VERTICAL
R502	X	11	11	6'-8"	X		PARAPET VERTICAL
R503	X	11	11	3'-0"	X		PARAPET VERTICAL
R504	X	17	17	5'-7"	X		PARAPET VERTICAL
R505	X	5	5	6'-5"	X		PARAPET VERTICAL
R506	X	6	6	6'-6"	X		PARAPET VERTICAL
R507	X	1	1	15'-8"	X		PARAPET HORIZONTAL
R508	X	5	5	15'-8"			PARAPET HORIZONTAL
R509	X	6	6	5'-5"	X	X	PARAPET VERTICAL
R510	X	2	2	15'-8"	X		PARAPET HORIZONTAL

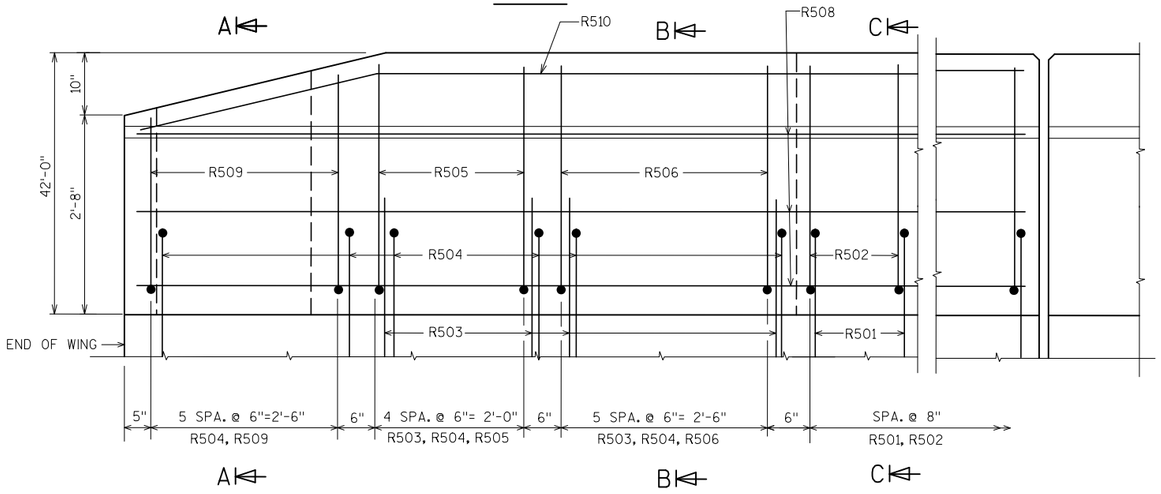
⚠ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR SERIES TABLE

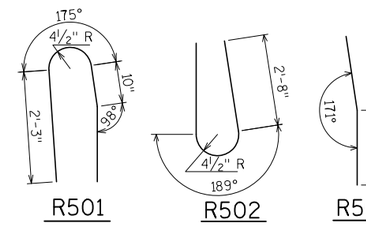
MARK	NO. REQD.	LENGTH
R509	4 SERIES OF 6	4'-9" TO 6'-1"



PLAN



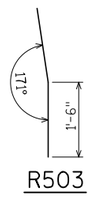
OUTSIDE ELEVATION



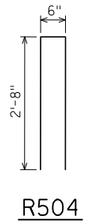
SECTION THRU PARAPET ON BRIDGE

R501

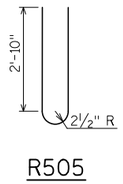
R502



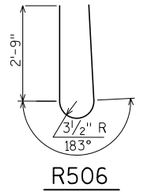
R503



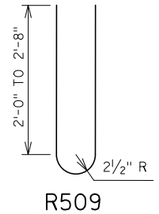
R504



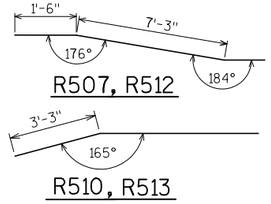
R505



R506

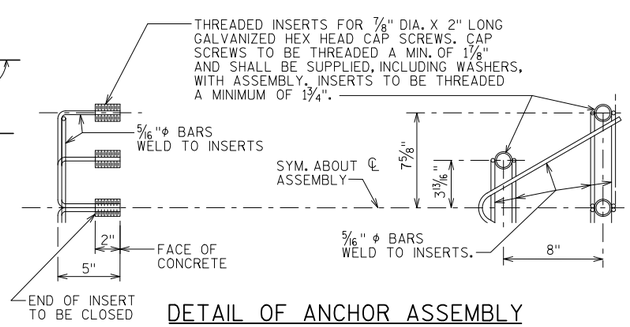


R509



R507, R512

R510, R513



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.

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

◪ R503 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE R503 OR S503 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

▽ R501 AND R504 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

DRAWN BY HKG | PLANS CK'D. BDT

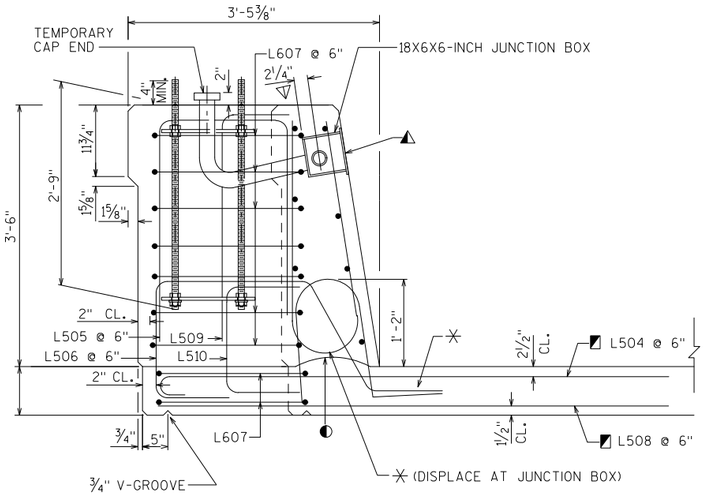
SINGLE SLOPE PARAPET 42SS

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FILE NAME: F:\BMI-3558 STH 100 Bridge over HAST\05_Design\04_Structures_Bridges\dsn\Current Plans\35_B-40-108_Single slope parapet 42SS.dgn
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SECTION A-A

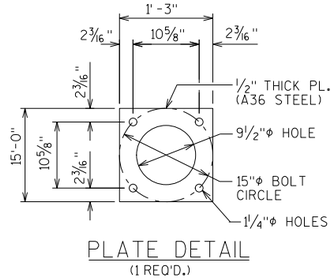
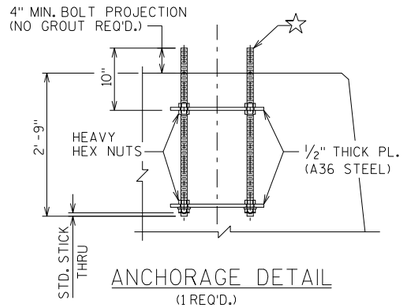


PLATE DETAIL
(1 REQ'D.)



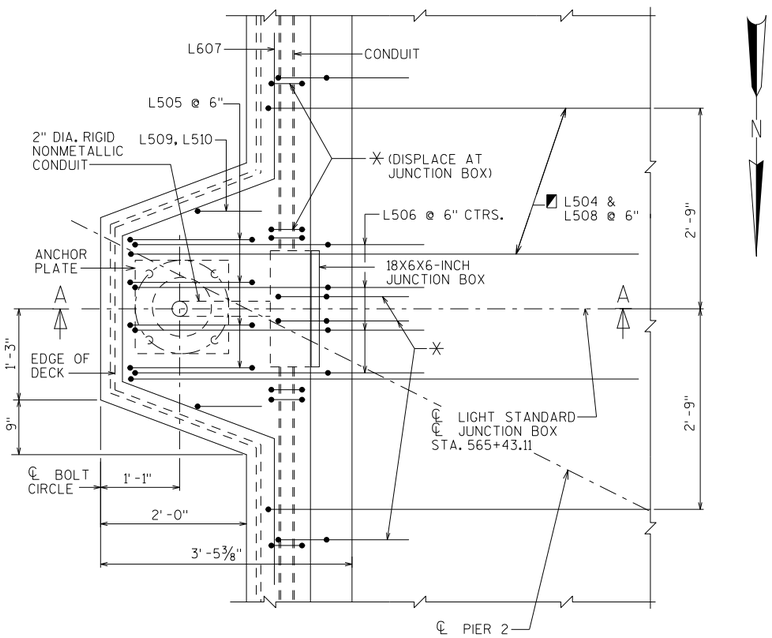
ANCHORAGE DETAIL
(1 REQ'D.)

LEGEND

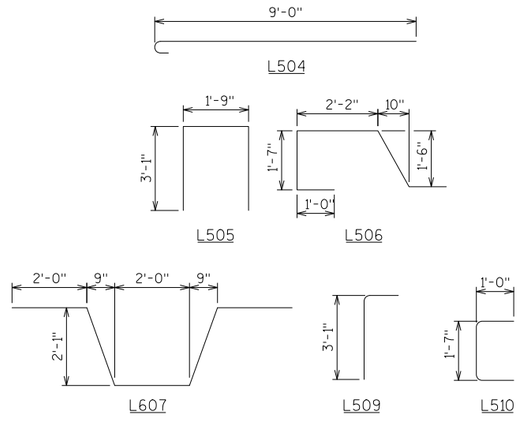
- ◐ CONSTR. JT. STRIKE OFF AS SHOWN
- ◭ CUT OUT ± 1" OF GASKET AT BOTTOM OF JUNCTION BOX COVER TO ALLOW FOR DRAINAGE. LOCATION OF JUNCTION BOX TO BE DETERMINED BY ENGINEER.
- ▽ LOCATION OF CONDUIT IS MEASURED FROM OUTSIDE EDGE OF JUNCTION BOX.
- ◩ THESE BARS ARE IN ADDITION TO STANDARD TRANSVERSE BARS IN DECK.
- ☆ 1"Φ THREADED ANCHOR BOLTS ASTM A449 OR AASHTO M 314-90 GR 55. HOT DIP ASTM A153, CLASS C, UPPER 8" OF BOLT INCLUDING NUTS & WASHERS. PROVIDE ENLARGED THREAD ON NUTS FOR PROPER FIT AFTER GALVANIZING. PROVIDE DOUBLE FLAT WASHERS & NUTS.
- ✳ SEE "SINGLE SLOPE PARAPET 42SS" FOR ADDITIONAL BAR STEEL DETAILS.

BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
L504	X	12	9'-7"	X		DECK TOP TRANSVERSE @ LIGHT STANDARD
L505	X	4	7'-8"	X		PARAPET VERTICAL @ LIGHT STANDARD
L506	X	4	7'-0"	X		PARAPET VERTICAL @ LIGHT STANDARD
L607	X	9	10'-0"	X		PARAPET HORIZONTAL @ LIGHT STANDARD
L508	X	12	9'-0"	X		DECK BOTTOM TRANSVERSE @ LIGHT STANDARD
L509	X	2	4'-0"			PARAPET VERTICAL @ LIGHT STANDARD
L510	X	2	3'-4"	X		PARAPET VERTICAL @ LIGHT STANDARD



PLAN AT LIGHT STANDARD



BENDING DIAGRAMS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

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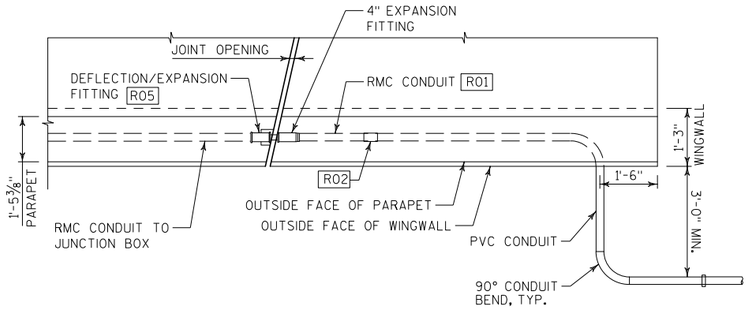
LIGHT SUPPORT DETAILS

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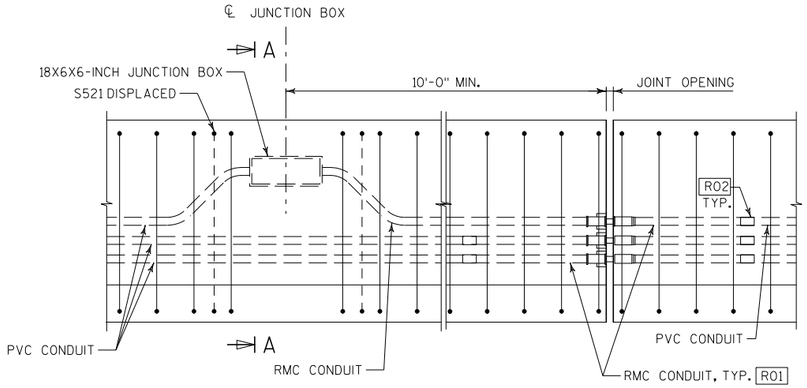
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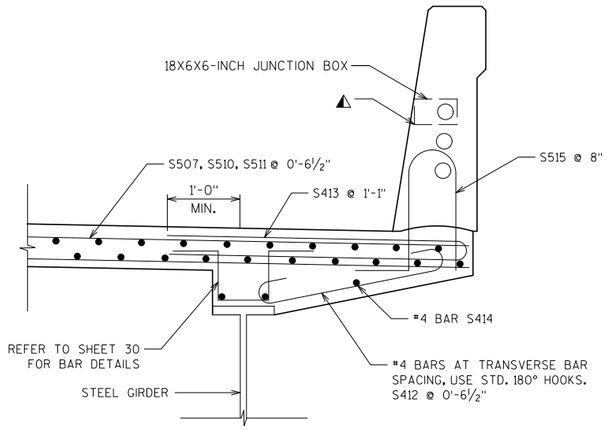
PLAN OF PARAPET AT EXP. JOINT

(NORTH END OF BRIDGE)

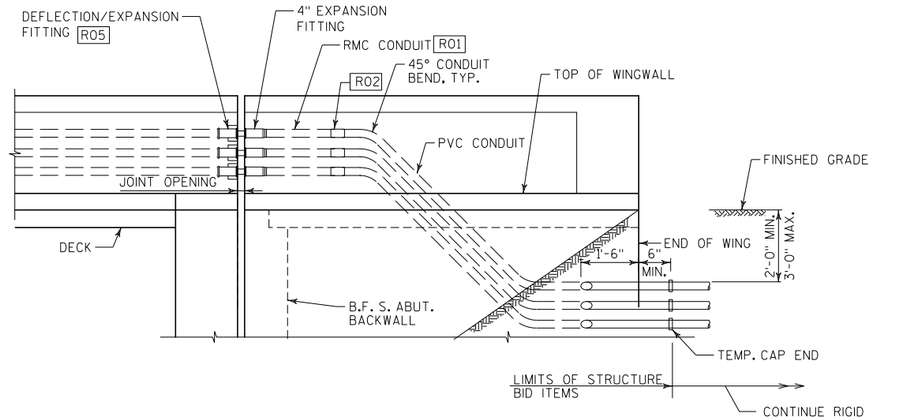


INSIDE ELEVATION AT JUNCTION BOX AT EXP. JOINT

(DECK STEEL NOT SHOWN FOR CLARITY)
NORTH AND SOUTH ENDS OF BRIDGE
(ONLY JUNCTION BOX FOR LIGHTING CONDUIT SHOWN)

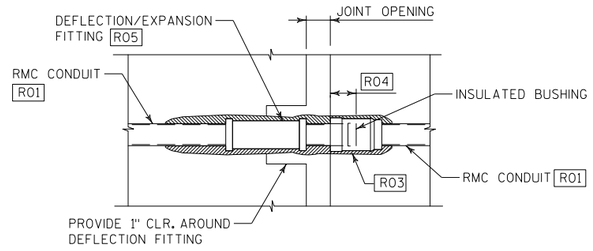


SECTION A-A

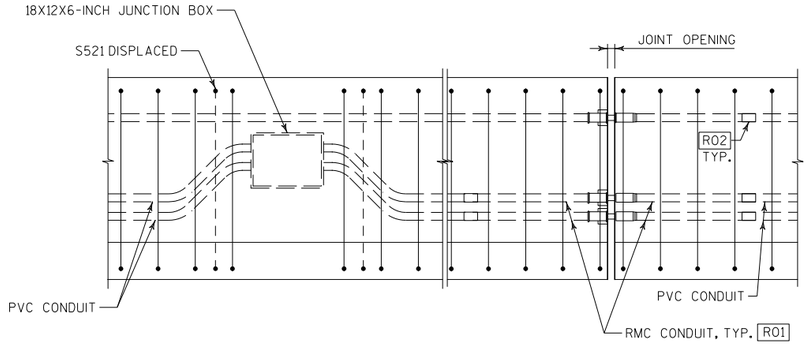


OUTSIDE ELEVATION OF PARAPET AT EXP. JOINT

(NORTH END OF BRIDGE)

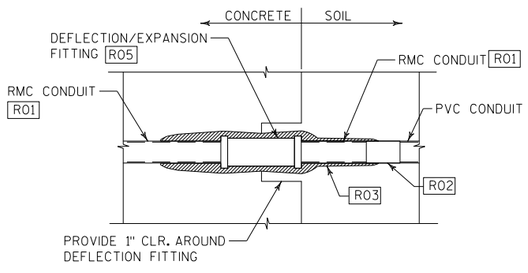


DEFLECTION/EXPANSION AND 4" EXPANSION FITTING



INSIDE ELEVATION AT JUNCTION BOX AT EXP. JOINT

(DECK STEEL NOT SHOWN FOR CLARITY)
NORTH END OF PARAPET ONLY
(JUNCTION BOX FOR LIGHTING CONDUIT NOT SHOWN FOR CLARITY)



DEFLECTION/EXPANSION FITTING

(CONCRETE TO SOIL FITTING)

NOTE

FOR CONDUIT DETAILS AT NORTH END OF BRIDGE, SEE SHEET 32.

LEGEND

R01 USE 2" DIA. RIGID METALLIC (RMC) CONDUIT AT FITTINGS. PROVIDE RMC FOR 3'-0" MIN. ON EACH SIDE OF JOINT OPENING UNLESS NOTED OTHERWISE.

R02 NONMETALLIC CONDUIT TO METALLIC CONDUIT ADAPTER FITTING (UL OR NRTL LISTED FOR ELECTRICAL USE SHALL BE USED).

R03 SPONGE RUBBER WRAP TO BE AASHTO M153 TYPE 1 OR EQUIVALENT. ¼" MINIMUM THICKNESS. PROVIDE WRAP FOR ENTIRE LENGTH OF FITTING. SPONGE RUBBER WRAP TO BE INCIDENTAL TO "CONDUIT RIGID METALLIC 2-INCH".

R04 POSITION MOVABLE END OF CONDUIT INSIDE EXPANSION FITTING, SUCH THAT IT WILL HAVE THE SAME ALLOWANCE FOR MOVEMENT (EXPANSION/CONTRACTION) AS THE EXPANSION DEVICE SET IN PLACE IN THE DECK BELOW IT. TAKE CARE TO INSTALL EXPANSION FITTING AND CONDUIT EXACTLY PARALLEL TO BRIDGE MOVEMENT.

R05 DEFLECTION/EXPANSION FITTING AND 4" EXPANSION FITTING REQUIREMENTS : MAXIMUM 4" TOTAL CONDUIT MOVEMENT WITH BONDING JUMPER UP TO 30 DEGREES OF ANGULAR MISALIGNMENT IN ANY DIRECTION WITH BONDING JUMPER.

◐ CONSTR. JT. STRIKE OFF AS SHOWN

◭ CUT OUT ± 1" OF GASKET AT BOTTOM OF JUNCTION BOX COVER TO ALLOW FOR DRAINAGE. LOCATION OF JUNCTION BOX TO BE DETERMINED BY ENGINEER.

▽ LOCATION OF CONDUIT IS MEASURED FROM OUTSIDE EDGE OF JUNCTION BOX.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

DRAWN BY HKG | PLANS CK'D. BDT

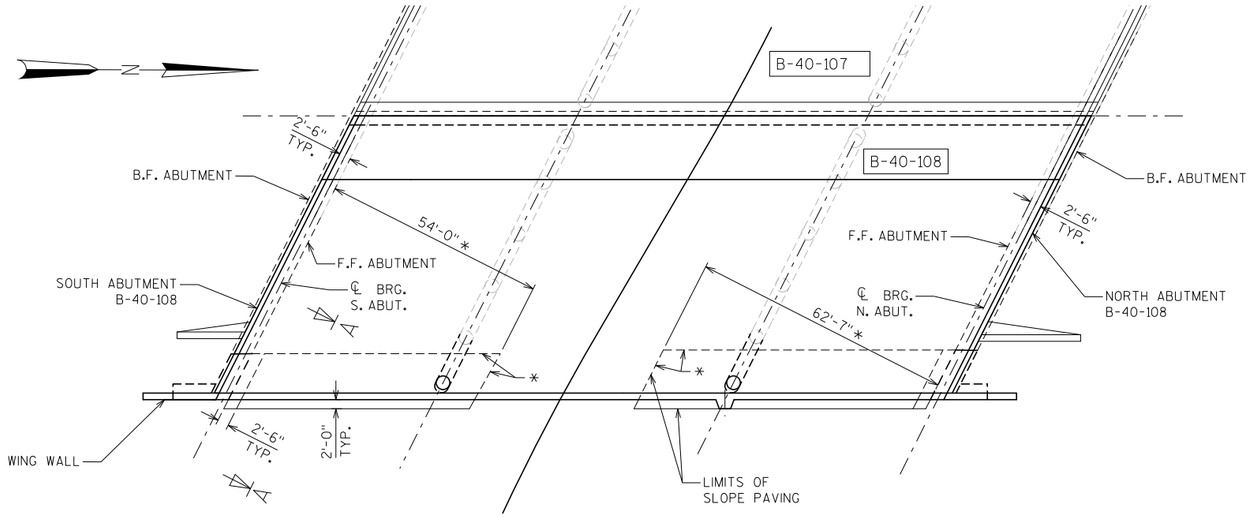
CONDUIT DETAILS

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STATE PROJECT NUMBER
2030-14-70



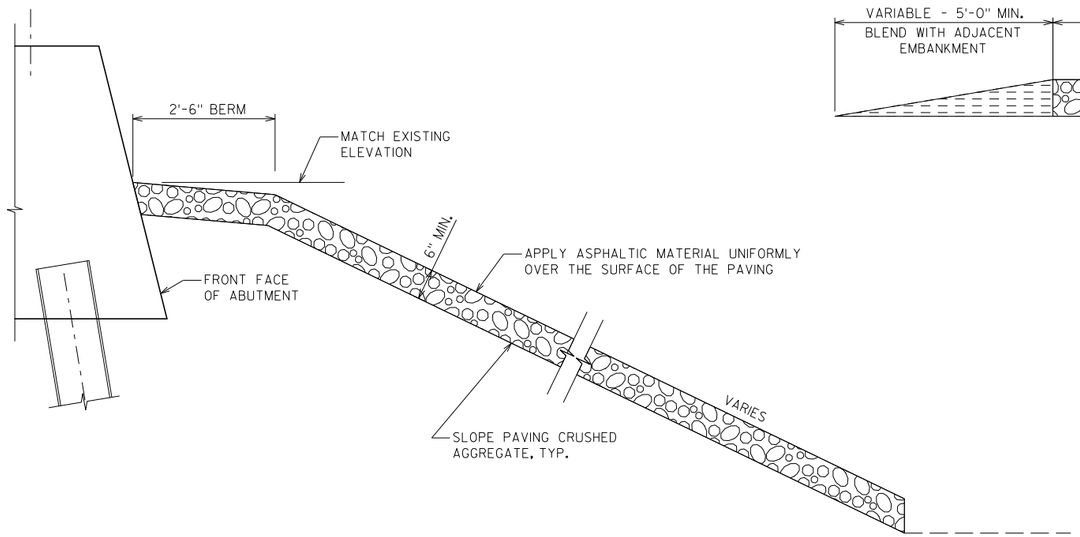
PLAN

*MATCH EXISTING SLOPE PAVING.

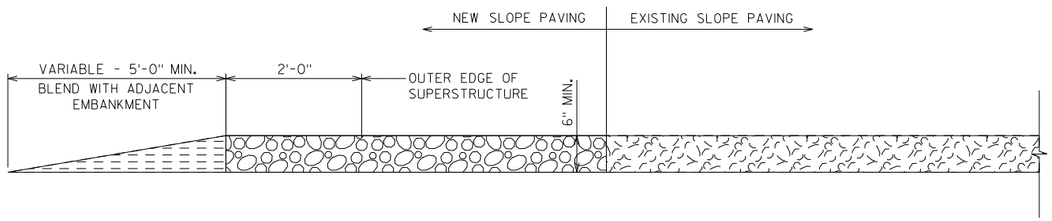
NOTES

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

WOOD FORMS MAY BE LEFT IN PLACE WHEN OF A QUALITY ACCEPTABLE TO THE ENGINEER.



TYPICAL SECTION



SECTION A-A

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-40-108

DRAWN BY HKG | PLANS CK'D. BDT

SLOPE PAVING DETAILS

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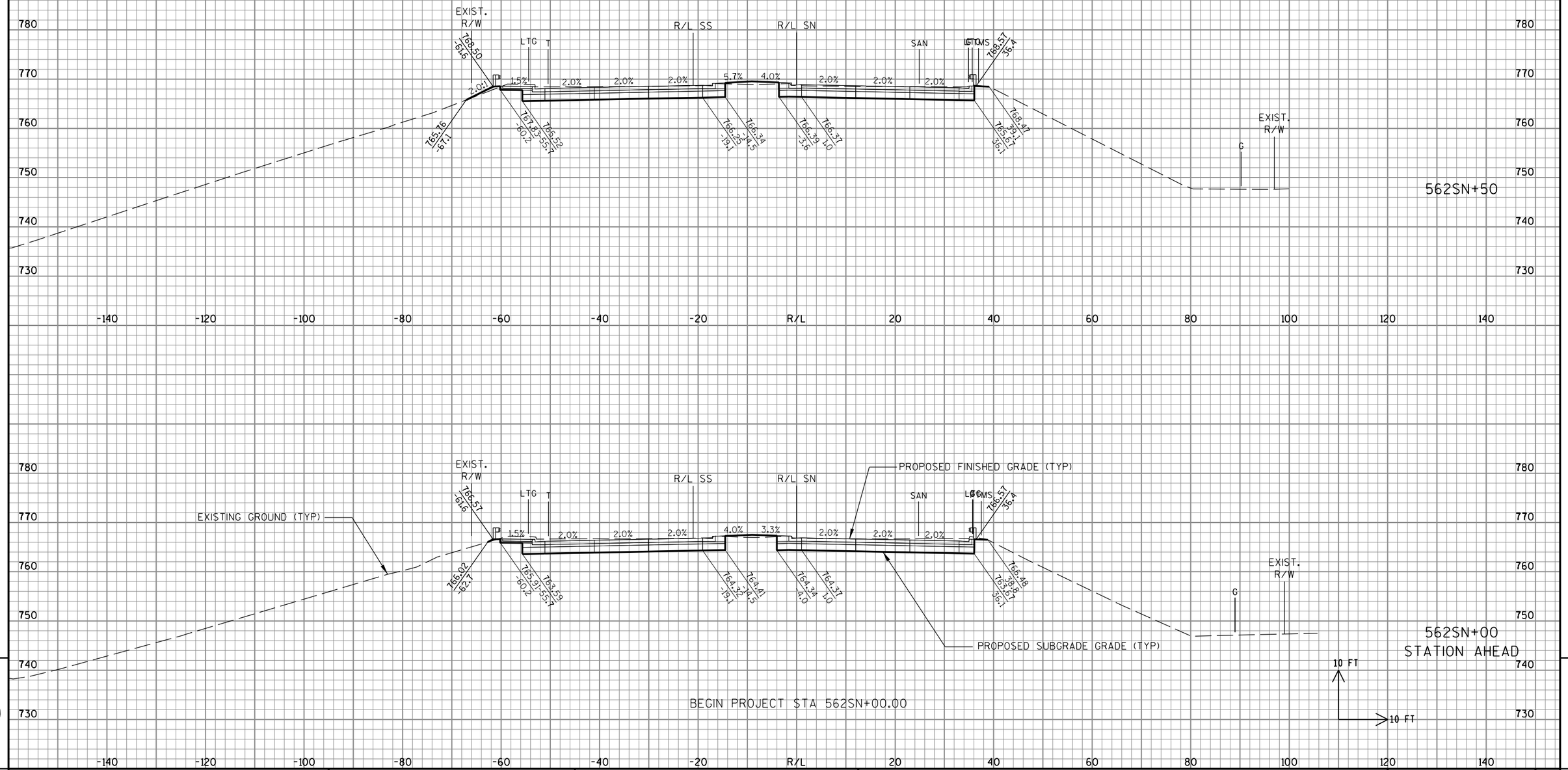
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DATE: 12/19/2017 3:36:15 PM Plotted by: bthengon PEN TABLE: v8.Structural_rev.tbl

HWY 100

STATION	Real Station	Distance	AREA (SF)				Incremental Vol (CY) (Unadjusted)				Cumulative Vol (CY)				Mass Ordinate
			Cut	Salvaged/ Unusable Pavement Material	Fill	EBS	Cut	Salvaged/ Unusable Pavement Material	Fill	EBS	Cut 1.0	Expanded Fill 1.1	Expanded EBS Backfill 1.3	Reduced EBS In Fill 0.8	
							Note 1	Note 2	Note 3				Note 4	Note 5	Note 6
562+00 AH	56200.00	0.00	227.35	0.00	4.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
562+50	56250.00	50.00	212.84	0.00	7.47	0.00	407.58	0.00	10.68	0.00	407.58	11.74	0.00	0.00	395.84
563+00	56300.00	50.00	206.12	0.00	12.08	0.00	387.93	0.00	18.10	0.00	795.51	31.66	0.00	0.00	763.85
563+50	56350.00	50.00	189.71	0.00	65.69	0.00	366.51	0.00	72.01	0.00	1162.02	110.87	0.00	0.00	1051.15
564+00	56400.00	50.00	200.72	0.00	318.23	0.00	361.51	0.00	355.48	0.00	1523.53	501.90	0.00	0.00	1021.63
564+50	56450.00	50.00	132.56	0.00	192.19	0.00	308.59	0.00	472.61	0.00	1832.12	1021.77	0.00	0.00	810.35
564+87 BK	56487.00	37.00	0.00	0.00	0.00	0.00	90.83	0.00	131.69	0.00	1922.95	1166.62	0.00	0.00	756.33
565+96 AH	56596.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
566+50	56650.00	54.00	204.82	0.00	161.94	0.00	204.82	0.00	161.94	0.00	204.82	178.13	0.00	0.00	26.69
567+00	56700.00	50.00	352.52	0.00	0.49	0.00	516.06	0.00	150.40	0.00	720.88	343.57	0.00	0.00	377.30
567+25 BK	56725.00	25.00	352.52	0.00	0.49	0.00	326.41	0.00	0.45	0.00	1047.28	344.07	0.00	0.00	703.21
					Column totals		2970.23	0.00	1373.36	0.00					

Notes:	
1 - Cut	Cut includes Salvaged/Unusable Pavement material
2 - Salvaged/Unusable Pavement Material	This does not show up in cross sections nor is it shown in these sheets. Refer to Summary Table for this roadway's quantity.
3 - Fill	Does not include Unusable Pavement Exc volume
4 - Expanded EBS	Will be backfilled with Borrow
5 - Reduced EBS in Fill	Reduced EBS Excavation that can be used in Fill
6 - Mass Ordinate	If EBS to be backfilled with Cut or Borrow: [(Cut + EBS) - ((Fill) - (Reduced EBS in Fill)) * Fill Factor)]

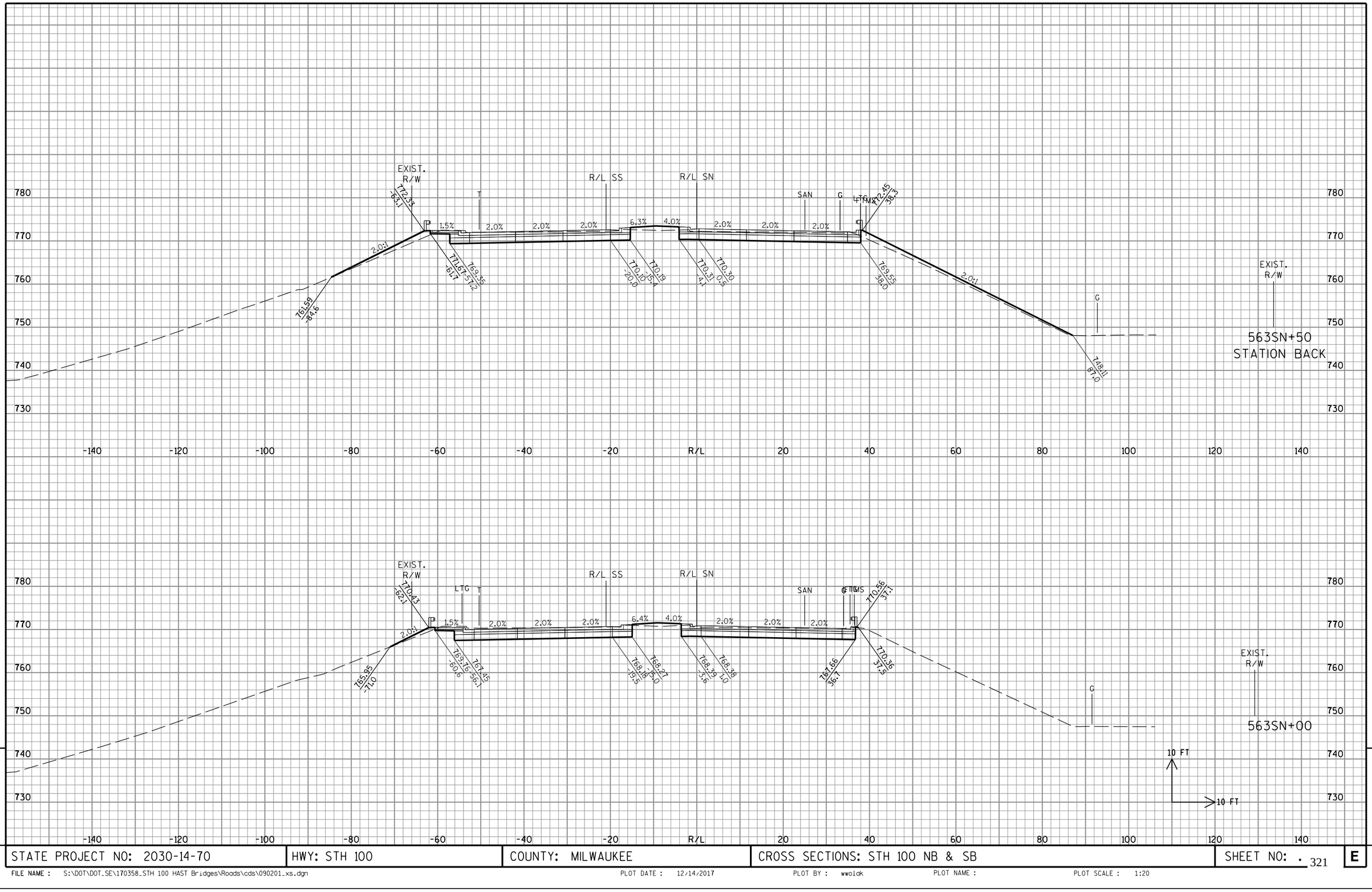
NOTE:
THE LOCATION OF EXISTING UTILITIES AS SHOWN ON THE CROSS SECTIONS ARE APPROXIMATE.



9

STATE PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	CROSS SECTIONS: STH 100 NB & SB	SHEET NO: . 320	E

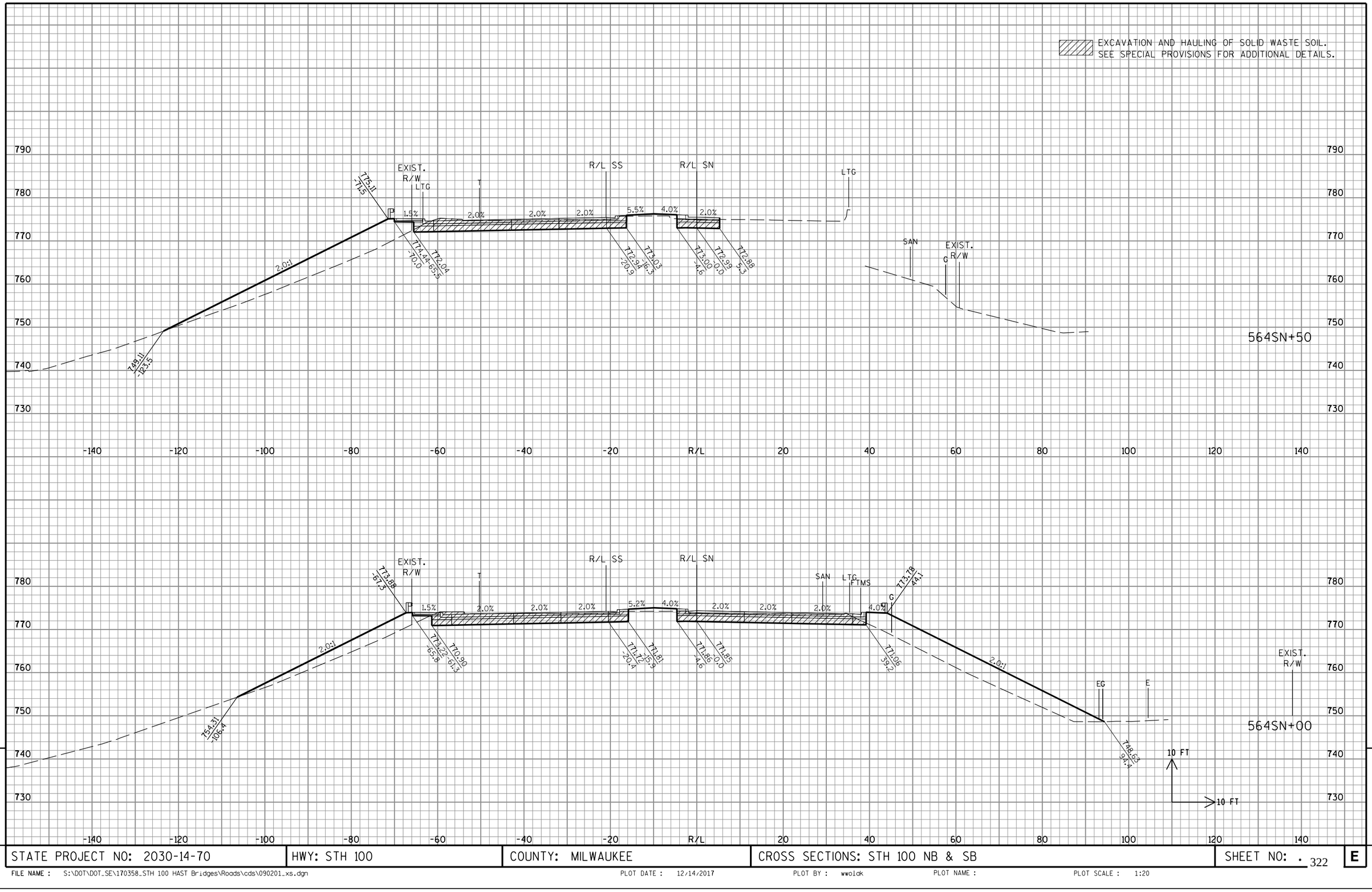
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STATE PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	CROSS SECTIONS: STH 100 NB & SB	SHEET NO: . 321 E

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Roads\cds\090201_xs.dgn PLOT DATE : 12/14/2017 PLOT BY : wwolak PLOT NAME : PLOT SCALE : 1:20

EXCAVATION AND HAULING OF SOLID WASTE SOIL.
SEE SPECIAL PROVISIONS FOR ADDITIONAL DETAILS.



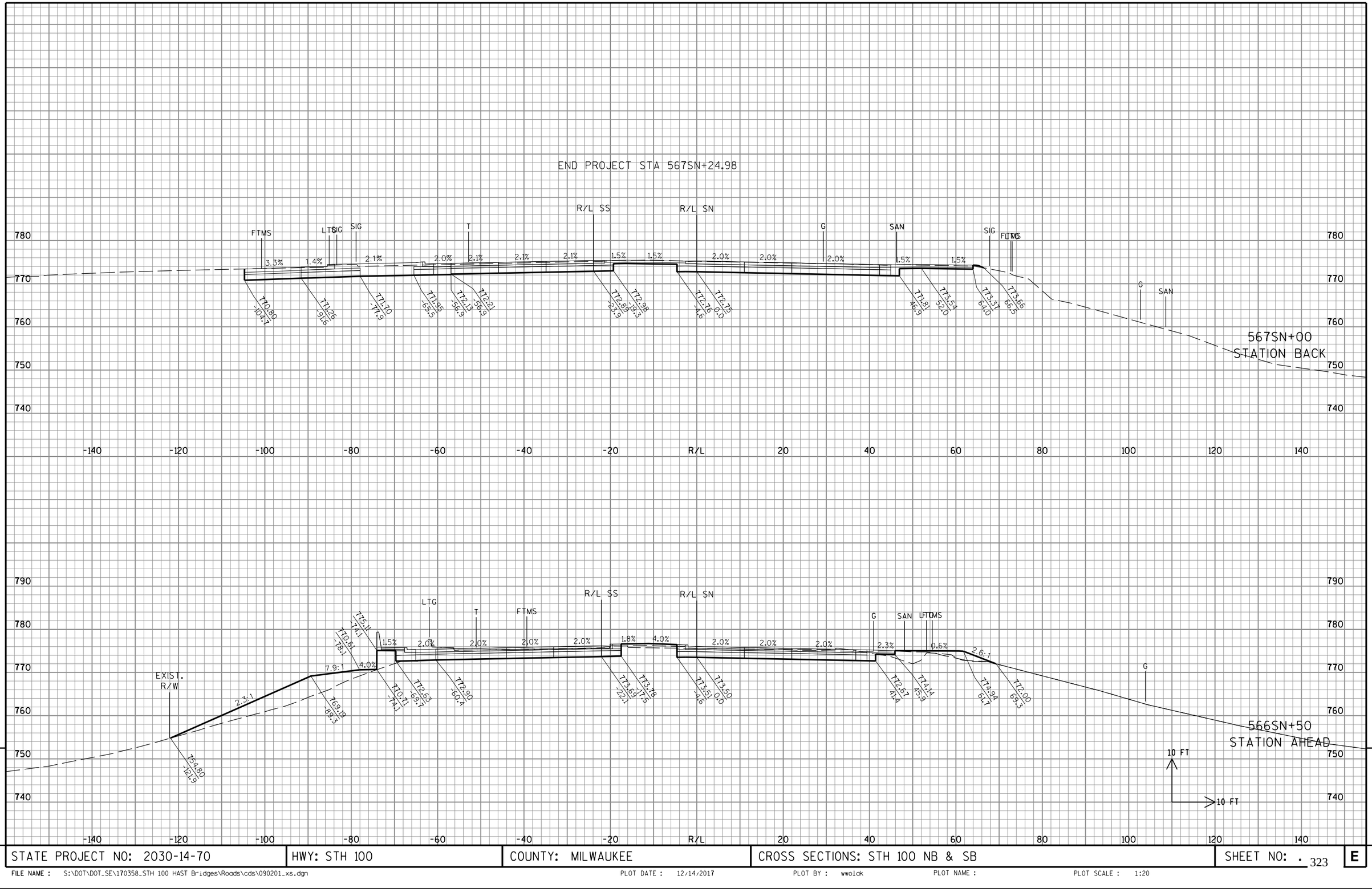
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9

STATE PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	CROSS SECTIONS: STH 100 NB & SB	SHEET NO: . 322	E

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END PROJECT STA 567SN+24.98



STATE PROJECT NO: 2030-14-70	HWY: STH 100	COUNTY: MILWAUKEE	CROSS SECTIONS: STH 100 NB & SB	SHEET NO: . 323	E

FILE NAME : S:\DOT\DOT_SE\170358_STH 100 HAST Bridges\Roads\cds\090201_xs.dgn PLOT DATE : 12/14/2017 PLOT BY : wwolak PLOT NAME : PLOT SCALE : 1:20

Wisconsin Department of Transportation

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