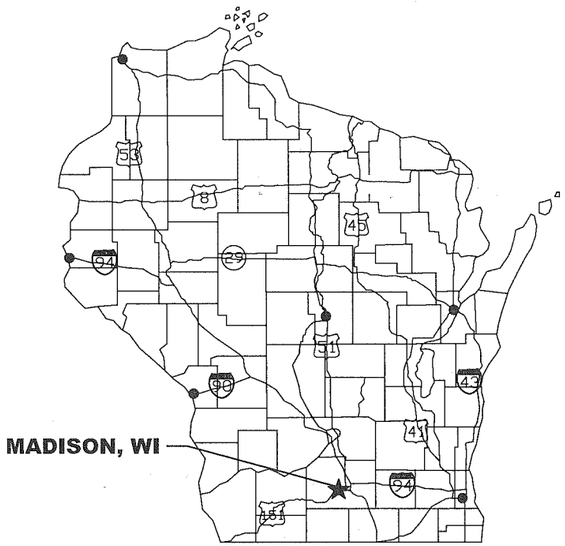
WINGRA CREEK PEDESTRIAN BRIDGE REPLACEMENT - WEST WINGRA DRIVE AT SOUTH STREET

FOR THE

CITY OF MADISON ENGINEERING DIVISION

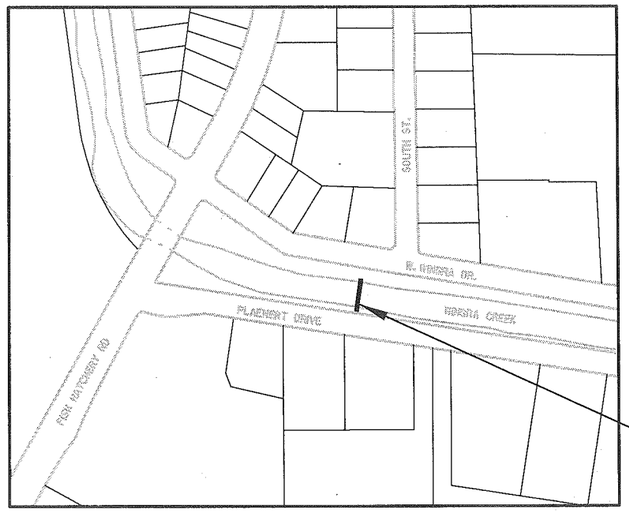
MADISON, WISCONSIN

JANUARY, 2018



PROJECT LOCATION

NO SCALE



PEDESTRIAN BRIDGE

DRAFTING SYMBOLS

DETAIL NOTATION
A / S1 — DETAIL LETTER; SHEET WHERE SHOWN

SECTION NOTATION
1 / S1 — SECTION NUMBER; SHEET WHERE SECTION IS SHOWN

SECTION 1 / A1.1 (SCALE) — SECTION NUMBER; DRAWING THAT SECTION IS SHOWN ON

① KEY/SPECIFIC NOTE CALL-OUT

△3 REVISION

EXISTING OBJECTS ARE SCREENED

EXISTING OBJECTS TO BE DEMOLISHED

HIDDEN OBJECT

ARCHITECTURAL SYMBOLS

EARTH

WATER SURFACE

TOPOGRAPHICAL SYMBOLS

EXISTING DECIDUOUS TREE

SILT FENCE

BENCH MARK

910 West Wingra Drive
Madison, WI 53715
608-251-4843
608-251-8655 fax
www.strand.com

CONTRACT NO. 8101
MUNIS NO. 11294

WISCONSIN
KEITH R. BEHREND
E-42073
MADISON
WI
PROFESSIONAL ENGINEER
Keith R. Behrend
1/9/2018

LIST OF DRAWINGS

SHEET NO.	DRAWING TITLE
1	TITLE SHEET
2	SITE PLAN
3	DEMOLITION PLAN
4	STRUCTURE DETAILS - 1
5	STRUCTURE DETAILS - 2
6	STRUCTURE DETAILS - 3
7	STRUCTURE DETAILS - 4

PUBLIC IMPROVEMENT PROJECT APPROVED

JANUARY 2, 2018

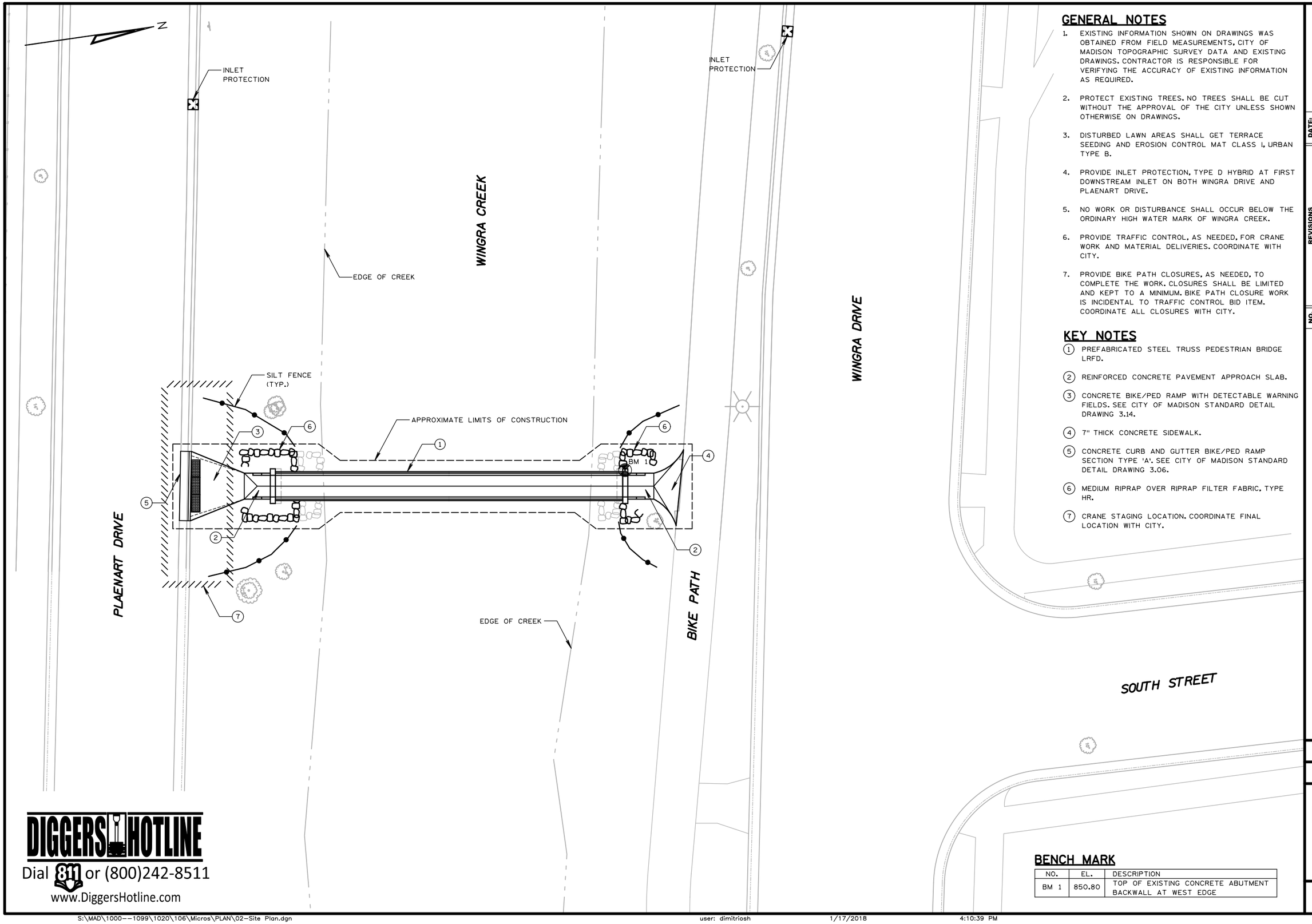
BY THE COMMON COUNCIL
OF MADISON, WISCONSIN

PUBLIC IMPROVEMENT DESIGN
APPROVED BY:

CITY ENGINEER — DATE 1/24/18

STRAND ASSOCIATES®

SHEET 1
JOB NO. 1020.106



GENERAL NOTES

1. EXISTING INFORMATION SHOWN ON DRAWINGS WAS OBTAINED FROM FIELD MEASUREMENTS, CITY OF MADISON TOPOGRAPHIC SURVEY DATA AND EXISTING DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE ACCURACY OF EXISTING INFORMATION AS REQUIRED.
2. PROTECT EXISTING TREES. NO TREES SHALL BE CUT WITHOUT THE APPROVAL OF THE CITY UNLESS SHOWN OTHERWISE ON DRAWINGS.
3. DISTURBED LAWN AREAS SHALL GET TERRACE SEEDING AND EROSION CONTROL MAT CLASS I, URBAN TYPE B.
4. PROVIDE INLET PROTECTION, TYPE D HYBRID AT FIRST DOWNSTREAM INLET ON BOTH WINGRA DRIVE AND PLAENART DRIVE.
5. NO WORK OR DISTURBANCE SHALL OCCUR BELOW THE ORDINARY HIGH WATER MARK OF WINGRA CREEK.
6. PROVIDE TRAFFIC CONTROL, AS NEEDED, FOR CRANE WORK AND MATERIAL DELIVERIES. COORDINATE WITH CITY.
7. PROVIDE BIKE PATH CLOSURES, AS NEEDED, TO COMPLETE THE WORK. CLOSURES SHALL BE LIMITED AND KEPT TO A MINIMUM. BIKE PATH CLOSURE WORK IS INCIDENTAL TO TRAFFIC CONTROL BID ITEM. COORDINATE ALL CLOSURES WITH CITY.

KEY NOTES

(1) PREFABRICATED STEEL TRUSS PEDESTRIAN BRIDGE LRFD.

(2) REINFORCED CONCRETE PAVEMENT APPROACH SLAB.

(3) CONCRETE BIKE/PED RAMP WITH DETECTABLE WARNING FIELDS. SEE CITY OF MADISON STANDARD DETAIL DRAWING 3.14.

(4) 7" THICK CONCRETE SIDEWALK.

(5) CONCRETE CURB AND GUTTER BIKE/PED RAMP SECTION TYPE 'A'. SEE CITY OF MADISON STANDARD DETAIL DRAWING 3.06.

(6) MEDIUM RIPRAP OVER RIPRAP FILTER FABRIC, TYPE HR.

(7) CRANE STAGING LOCATION. COORDINATE FINAL LOCATION WITH CITY.

BENCH MARK

NO.	EL.	DESCRIPTION
BM 1	850.80	TOP OF EXISTING CONCRETE ABUTMENT BACKWALL AT WEST EDGE

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

DATE:
REVISIONS
NO.

SITE PLAN

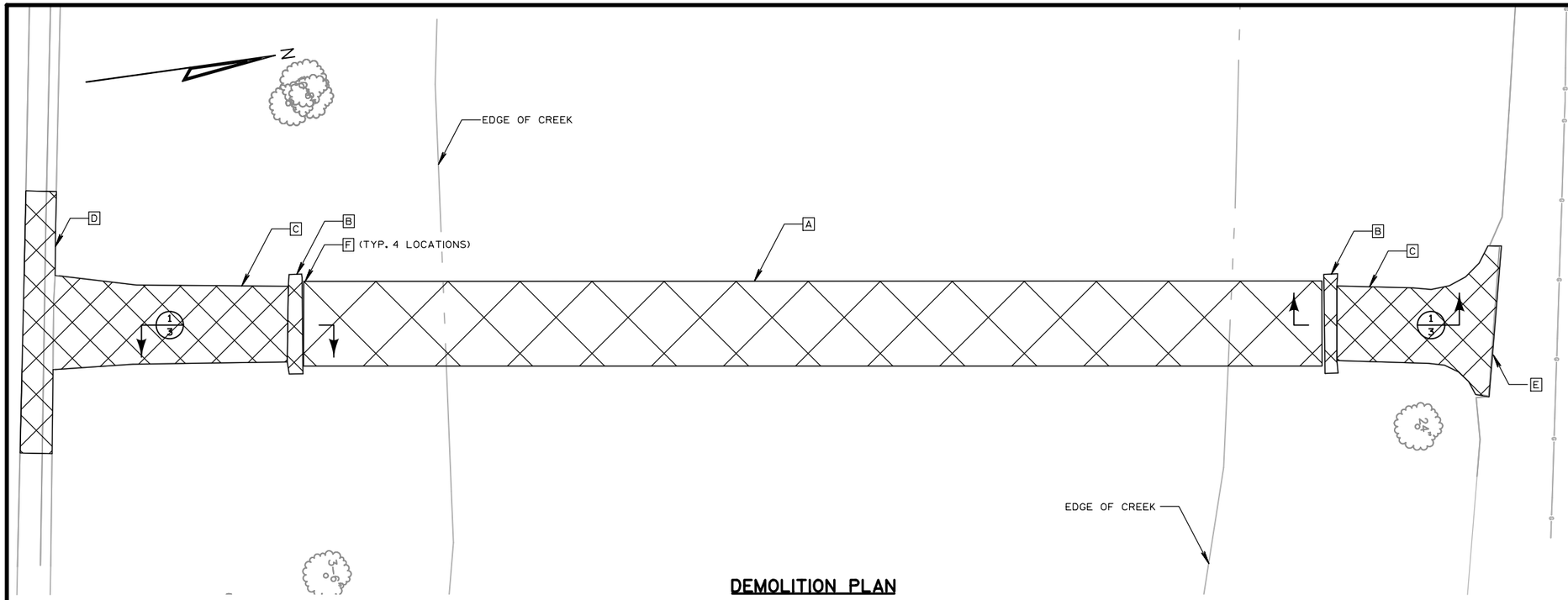
WINGRA CREEK PEDESTRIAN BRIDGE REPLACEMENT - WEST WINGRA DRIVE AT SOUTH STREET
CITY OF MADISON ENGINEERING DIVISION
MADISON, WISCONSIN

JOB NO. 1020.106
PROJECT MGR. KRB

STRAND ASSOCIATES®

SHEET 2

S:\MAD\1000--1099\1020\106\Micros\PLAN\02-Site Plan.dgn user: dimitriosh 1/17/2018 4:10:39 PM



DEMOLITION PLAN

GENERAL NOTES

1. SEE GENERAL NOTES, SHEET 2.

DEMOLITION KEY NOTES

A. REMOVE EXISTING STEEL TRUSS BRIDGE INCLUDING ALL STEEL COMPONENTS, CONCRETE DECK AND GROUT PADS BELOW BRIDGE BEARINGS.

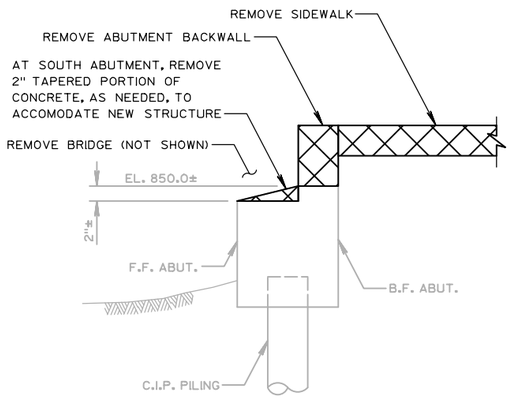
B. REMOVE CONCRETE ABUTMENT BACKWALL.

C. REMOVE CONCRETE SIDEWALK.

D. REMOVE CONCRETE CURB AND GUTTER.

E. SAWCUT ASPHALT PAVEMENT TO ACCOMODATE NEW SIDEWALK.

F. SAWCUT EXISTING SS ANCHOR BOLTS FLUSH TO TOP OF FINISHED ABUTMENT BEARING SEAT IF NOT BEING REUSED FOR NEW STRUCTURE.



DEMOLITION SECTION 1/3

NO.	REVISIONS	DATE:

DEMOLITION PLAN

WINGRA CREEK PEDESTRIAN BRIDGE REPLACEMENT - WEST WINGRA DRIVE AT SOUTH STREET
CITY OF MADISON ENGINEERING DIVISION
MADISON, WISCONSIN

JOB NO.
1020.106

PROJECT MGR.
KRB

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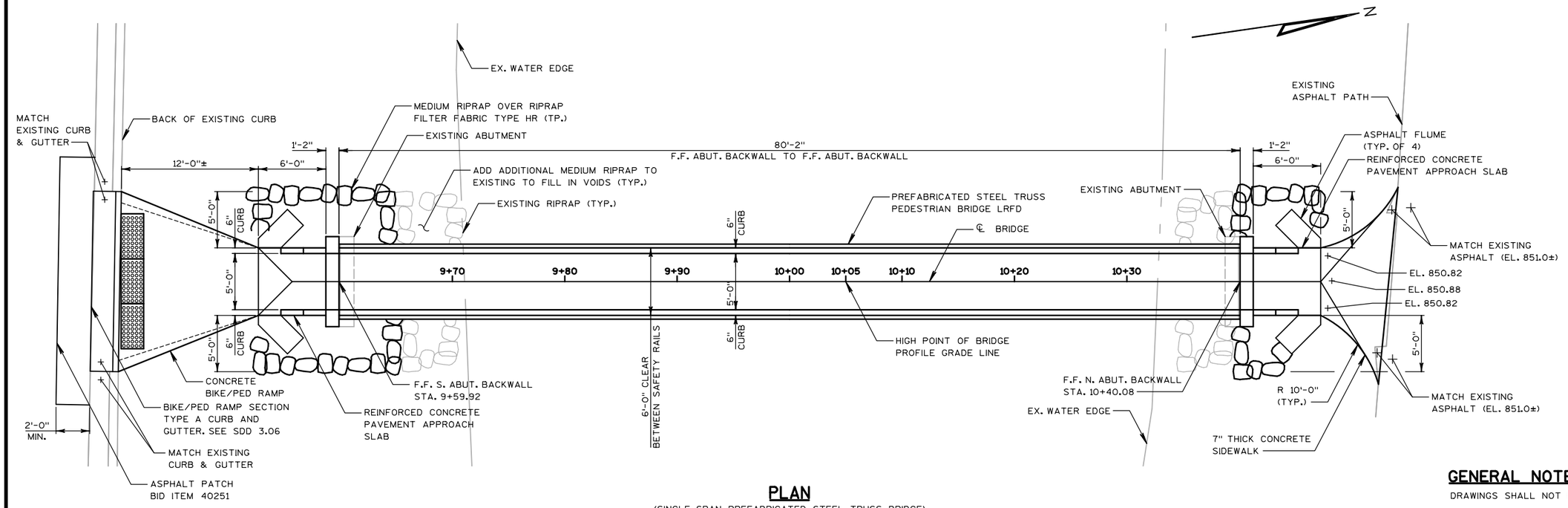
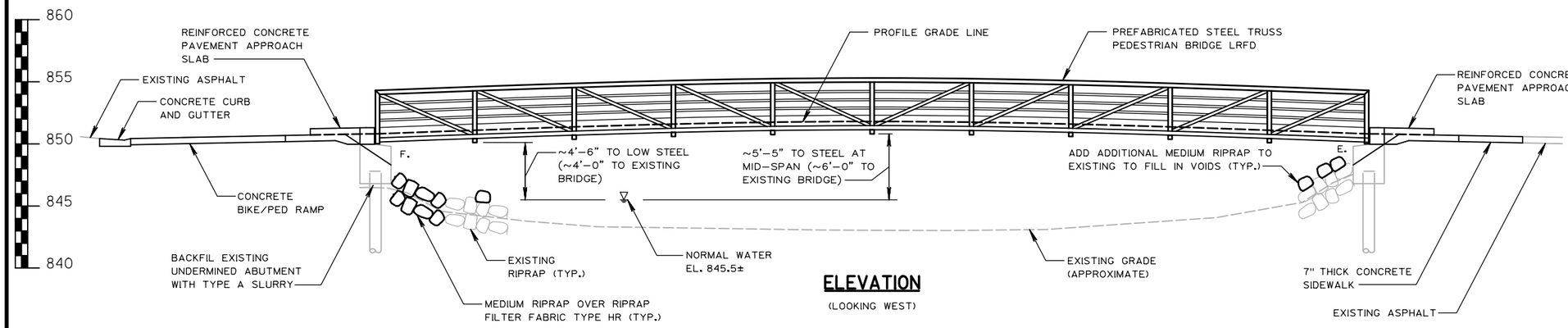
SHEET
3

S:\MAD\1000--1099\1020\106\Micros\PLAN\03-Demolition Plan.dgn user: dimitriosh 1/17/2018 4:10:39 PM



PLAN

(SINGLE-SPAN PREFABRICATED STEEL TRUSS BRIDGE)



ELEVATION

(LOOKING WEST)

DESIGN DATA

LIVE LOAD:
- 90 PSF PEDESTRIAN LOAD
- 35 PSF WIND LOAD (AS IF ENCLOSED)
- 20 PSF WIND UPLIFT

ULTIMATE DESIGN STRESSES:
- CONCRETE DECK ____ f'c = 4,000 psi
- CONCRETE SUBSTRUCTURE ____ f'c = 3,500 psi
- HIGH STRENGTH BAR STEEL REINFORCEMENT ____ fy = 60,000 psi
- HIGH STRENGTH STRUCTURAL STEEL ASTM A847, ASTM A588, ASTM A606, ASTM A709 OR ASTM A242 ____ fy = 50,000 psi

ESTIMATED BRIDGE REACTIONS

LOAD TYPE	P (LBS.)	H (LBS.)	L (LBS.)
DEAD LOAD	9,000		
UNIFORM LIVE LOAD, 90 psf	9,000		
WIND UPLIFT, 20 psf WINDWARD/LEEWARD	-4,500/ -1,600		
WIND	± 2,500	3,500	
SEISMIC			
THERMAL			1,000

P = VERTICAL LOAD AT EACH BASE PLATE (4 PER BRIDGE)
H = HORIZONTAL LOAD AT EACH SPAN END (2 PER BRIDGE)
L = LONGITUDINAL LOAD AT EACH BEARING (4 PER BRIDGE)

NOTES:

1. VALUES IN THIS TABLE ARE ESTIMATES. ACTUAL VALUES SHALL BE PROVIDED BY PREFABRICATED BRIDGE MANUFACTURER.
2. "+" INDICATES DOWNWARD LOAD. "-" INDICATES UPWARD LOAD.
3. ESTIMATED BRIDGE LIFTING WEIGHT = 12,800 LBS (TO BE VERIFIED BY BRIDGE MANUFACTURER).

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALL STATIONS AND ELEVATIONS ARE IN FEET.

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

ALL BAR STEEL IN BRIDGE DECK AND APPROACH SLABS IS TO BE EPOXY COATED.

ALL REINFORCING BARS ARE ENGLISH AND THE FIRST ONE OR TWO DIGITS OF THE BAR MARK SIGNIFY THE BAR SIZE.

THE EMBANKMENTS ADJACENT TO THE BRIDGE SHALL BE COVERED WITH MEDIUM RIPRAP AND GEOTEXTILE FABRIC TYPE HR TO THE EXTENT SHOWN ON THE SITE PLAN AND IN THE ABUTMENT DETAILS OR AS REQUESTED BY THE ENGINEER.

AT THE BACKFACE OF ABUTMENTS ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH SELECT FILL.

ALL STRUCTURAL STEEL SHALL BE UNPAINTED.

NUMBER OF TRUSS PANELS TO BE DETERMINED BY BRIDGE MANUFACTURER.

BEVEL ALL EXPOSED EDGES OF CONCRETE ¾" UNLESS SHOWN OTHERWISE.

THE SUPERSTRUCTURE SHALL BE ANCHORED TO THE FOUNDATIONS IN A MANNER TO:
-ALLOW THERMAL MOVEMENTS OF THE SUPERSTRUCTURE.
-PREVENT HORIZONTAL TRANSLATION OF THE SUPERSTRUCTURE PERPENDICULAR TO THE ℄ OF THE PATH.

PROVIDE PROTECTIVE SURFACE TREATMENT TO TOP SURFACE OF CONCRETE DECK AND REINFORCED CONCRETE APPROACHES AND TOP SURFACE AND INSIDE VERTICAL SURFACE OF CONCRETE CURBS AND TO TOP SURFACE OF ABUTMENT BACKWALL.

DESIGN CONTACT:
KEITH BEHREND (608) 251-4843

DATE:
REVISIONS
NO.

STRUCTURE DETAILS - 1

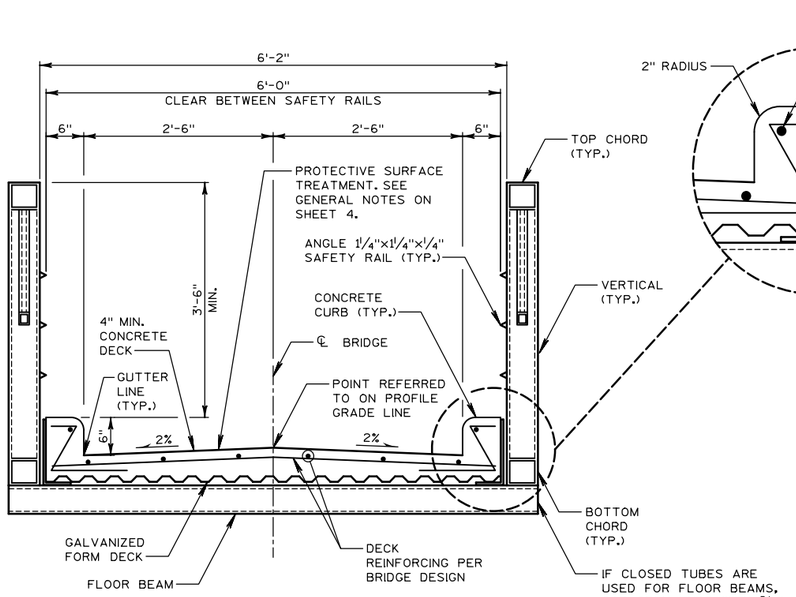
WINGRA CREEK PEDESTRIAN BRIDGE REPLACEMENT - WEST WINGRA DRIVE AT SOUTH STREET CITY OF MADISON ENGINEERING DIVISION MADISON, WISCONSIN

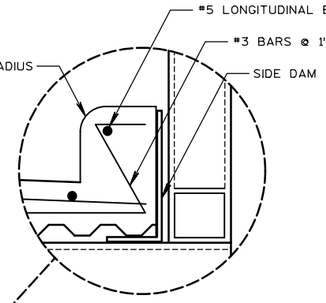
JOB NO. 1020.106

PROJECT MGR. KRB

STRAND ASSOCIATES®

SHEET 4

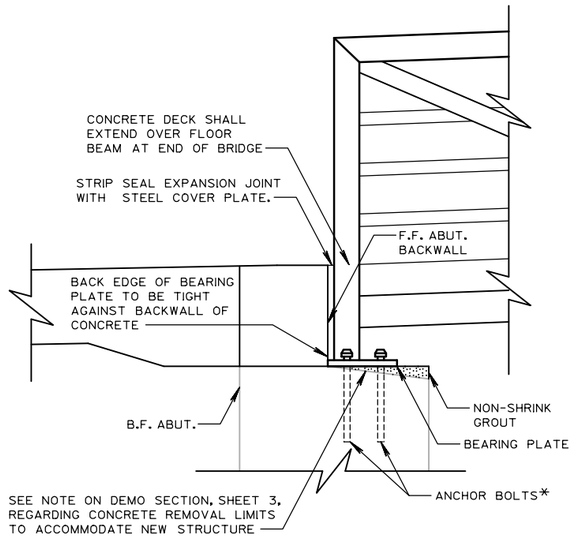




NOTES

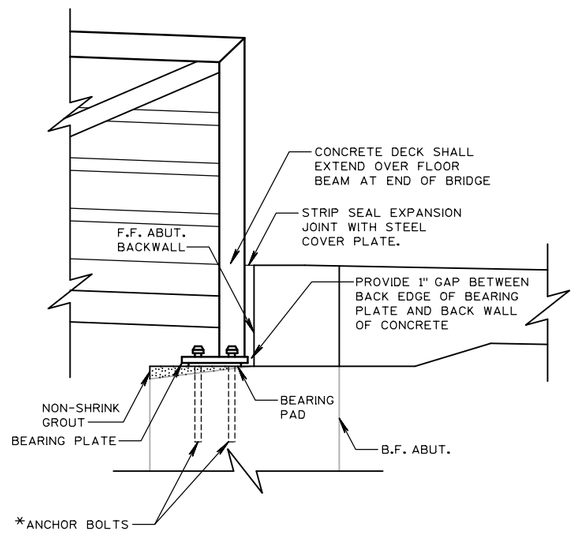
1. SEE SPECIFICATIONS FOR SAFETY RAIL MINIMUM SPACING REQUIREMENTS.
2. SEE SPECIFICATIONS FOR DECK CONCRETE AND REINFORCING. INCLUDED IN BID ITEM "PREFABRICATED STEEL TRUSS PEDESTRIAN BRIDGE LRFD".

CROSS SECTION THRU BRIDGE



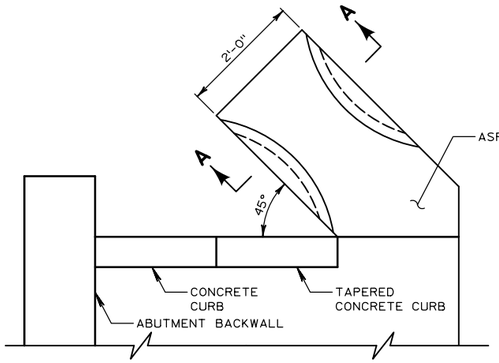
FIXED END

* REUSE EXISTING ANCHOR BOLTS OR ABANDON EXISTING AND PROVIDE NEW SS ADHESIVE ANCHORED ANCHOR BOLTS. MIN. EMBED 8". LOCATE NEW ANCHOR BOLTS MIN. 4" FROM CONCRETE EDGES AND FAR ENOUGH AWAY FROM EXISTING ANCHORS TO PERMIT DRILLING. CONTRACTOR TO FIELD VERIFY AND COORDINATE EXISTING ANCHOR BOLT LOCATIONS.

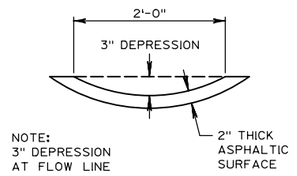


EXPANSION END

END OF BRIDGE AND BEARING DETAILS



ASPHALT FLUME

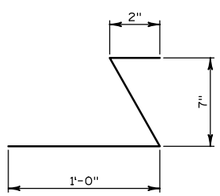


SECTION A-A

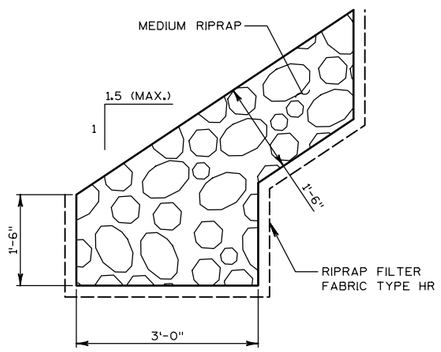
TOP OF DECK ELEVATIONS

LOCATION	GUTTER LINES –		C/L BRIDGE –	
	STATION	ELEV.	STATION	ELEV.
S. END OF BRIDGE	9+60	850.78	9+60	850.83
0.125L POINT	9+70	851.22	9+70	851.27
0.250L POINT	9+80	851.56	9+80	851.61
0.375L POINT	9+90	851.77	9+90	851.82
0.500L POINT	10+00	851.88	10+00	851.93
0.562L POINT	10+05	851.95	10+05	852.00
0.625L POINT	10+10	851.88	10+10	851.93
0.750L POINT	10+20	851.76	10+20	851.81
0.875L POINT	10+30	851.53	10+30	851.58
N. END OF BRIDGE	10+40	851.19	10+40	851.24

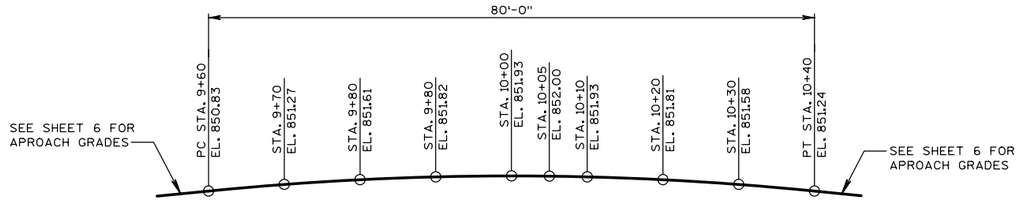
ELEVATIONS SHOWN ARE FINISHED GRADE ELEVATIONS.



#3 BAR AT CURB DETAIL



MEDIUM RIPRAP DETAIL



PROFILE GRADE LINE OVER BRIDGE

NO. | REVISIONS | DATE:

STRUCTURE DETAILS - 2

WINGRA CREEK PEDESTRIAN BRIDGE REPLACEMENT - WEST WINGRA DRIVE AT SOUTH STREET
CITY OF MADISON ENGINEERING DIVISION
MADISON, WISCONSIN

JOB NO. 1020.106

PROJECT MGR. KRB

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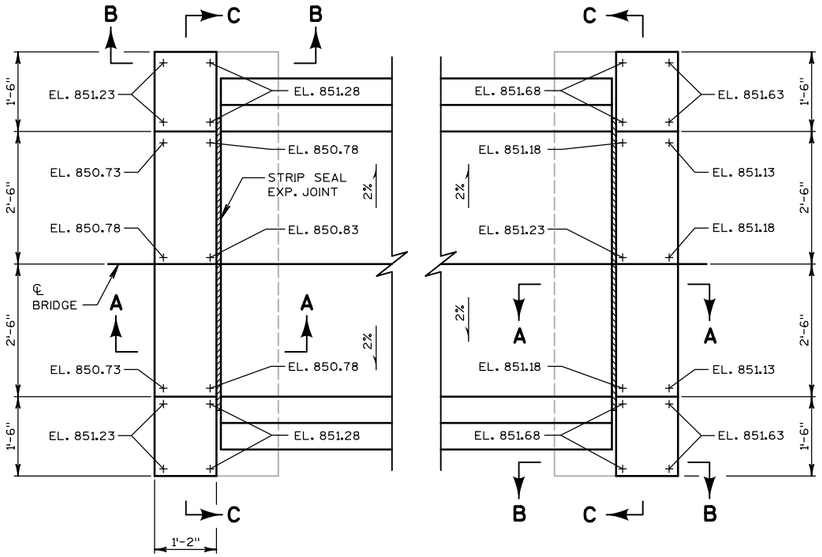
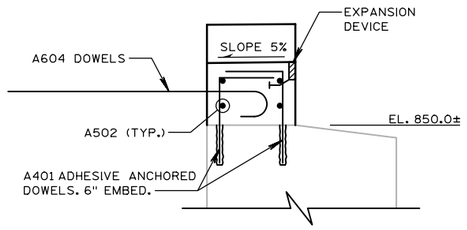
SHEET 5

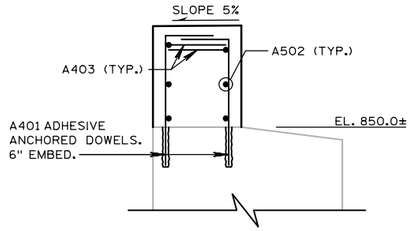


SOUTH ABUT. PLAN

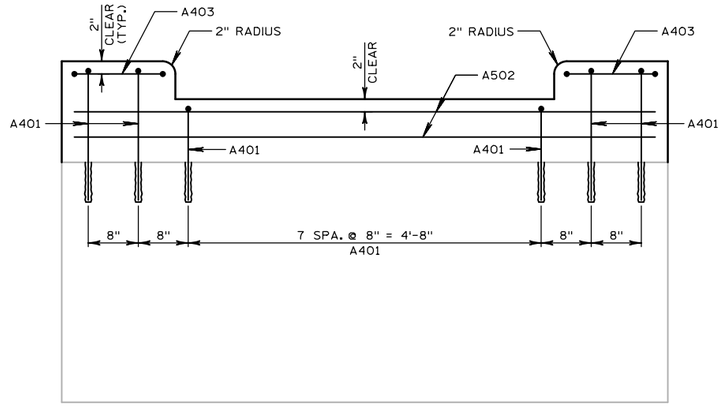
NORTH ABUT. PLAN



SECTION A-A



SECTION B-B



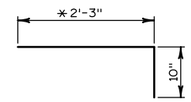
SECTION C-C

ABUTMENTS
BILL OF BARS

COATED: 290 LBS

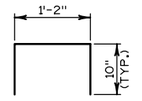
MARK	LENGTH	BENT	COAT	QUANTITY		LOCATION
				S. ABUT.	N. ABUT.	
A401	3'-0"	X	X	24	24	ABUT. BACKWALL ADHESIVE DOWELS - VERT.
A502	7'-8"		X	4	4	ABUT. BACKWALL - HORIZ.
A403	2'-8"	X	X	4	4	ABUT. BACKWALL - HORIZ. - ENDS
A604	4'-2"	X	X	9	9	ABUT. BACKWALL - APPROACH SLAB DOWELS

ABUTMENT DETAILS

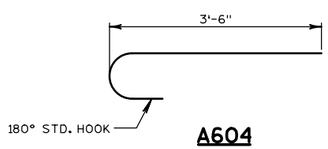


A401

*THIS LEG IS LONG AND IS TO BE CUT TO LENGTH IN FIELD.



A403



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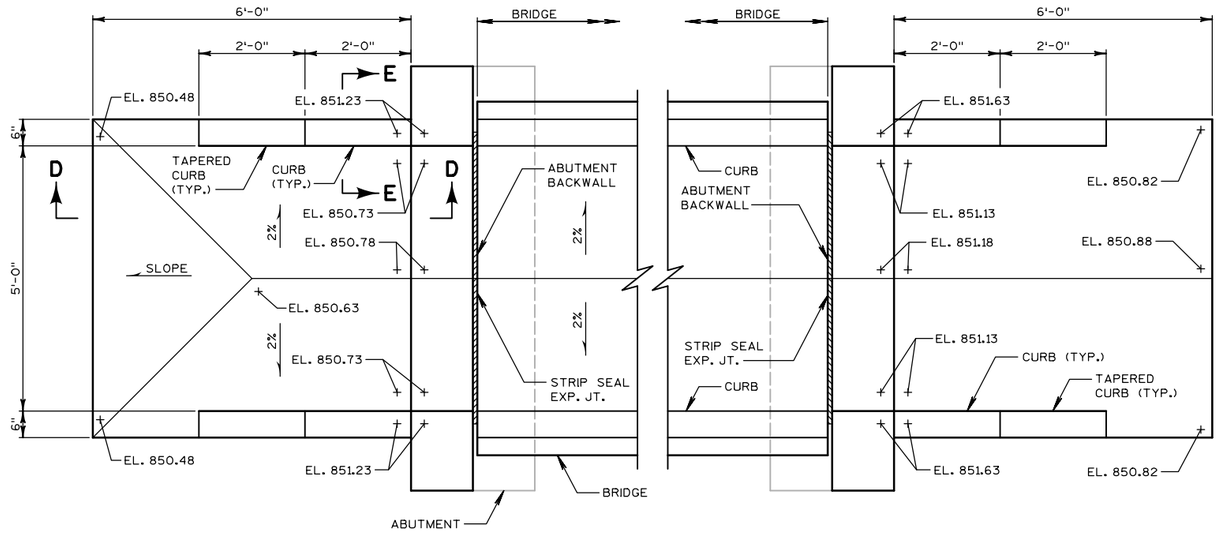
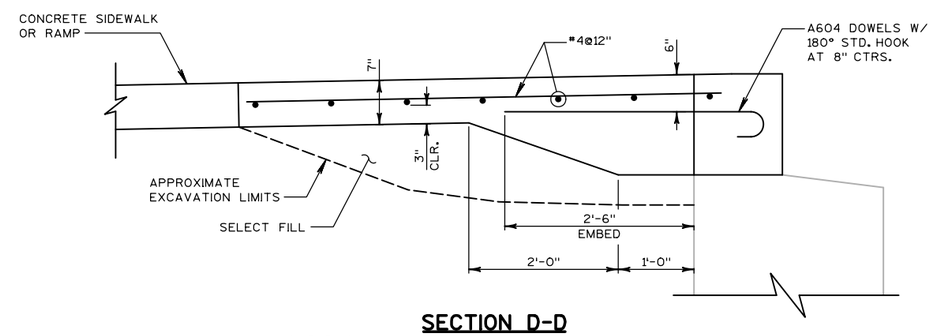
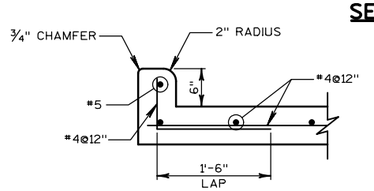


SOUTH APPROACH PLAN

NORTH APPROACH PLAN



SECTION D-D



SECTION E-E

REINFORCED CONCRETE APPROACH SLAB DETAILS

DATE:
REVISIONS
NO.

STRUCTURE DETAILS - 3

WINGRA CREEK PEDESTRIAN BRIDGE REPLACEMENT -
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CITY OF MADISON ENGINEERING DIVISION
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JOB NO.
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PROJECT MGR.
KRB

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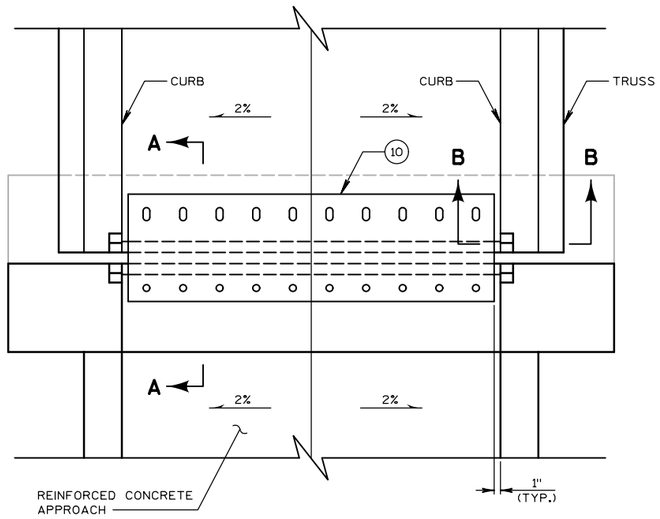
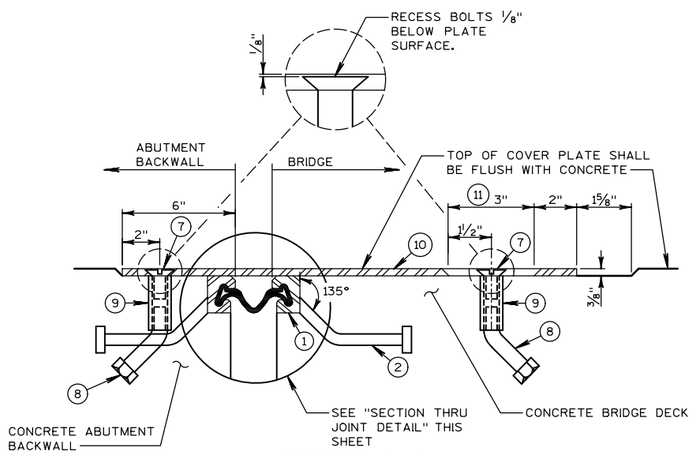
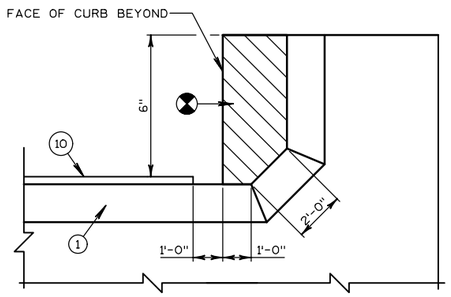
SHEET
6



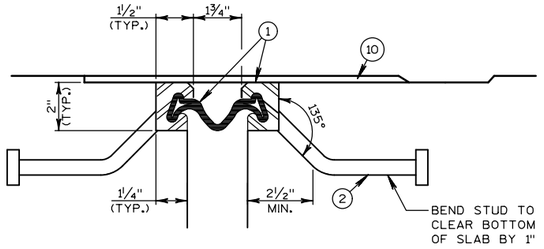
TYPICAL PLAN



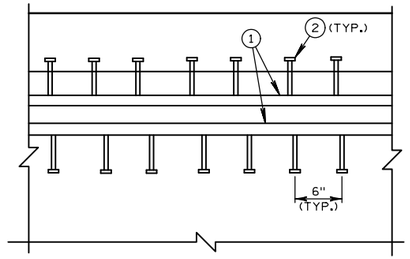
SECTION A-A
SECTION THRU JOINT



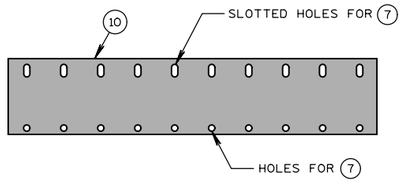
SECTION B-B
SECTION THRU JOINT AT CURB



SECTION THRU JOINT DETAIL



PART PLAN
(COVER PLATES NOT SHOWN)



PLAN OF COVER PLATE WITH SLIP RESISTANT SURFACE

PLACE SLIP-RESISTANT SURFACE ON TOP WALKING SURFACE IN SHADED AREA.

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

STRIP SEAL EXPANSION JOINT AND COVER PLATE DETAILS

LEGEND

(1) NEOPRENE STRIP SEAL (4-INCH) & STEEL EXTRUSIONS.

(2) STUDS 5/8"ϕ × 6 3/8" LONG AT 6" CENTERS. WELD TO EXTRUSIONS & BEND AS SHOWN AFTER WELDING.

(7) 3/4"ϕ × 1 1/2" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. RECESS 1/8" BELOW PLATE SURFACE.

(8) 3/4"ϕ × 4" GALVANIZED HEX HEAD BOLT. AT ABUTMENT BACKWALL, BEND 45°. AT BRIDGE DECK, BEND TO CLEAR BOTTOM OF SLAB BY 1".

(9) 3/4"ϕ × 2 1/4" GALVANIZED THREADED COUPLING.

(10) GALVANIZED PLATE 3/8" × 1'-4" × 4'-10", WITH HOLES FOR #7.

(11) 1" × 3" SLOTTED COUNTERSUNK HOLE FOR #7. SLOT PARALLEL TO DIRECTION OF MOVEMENT.

⊠ BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.

GENERAL NOTES

NO FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS.
NO SPLICING PERMITTED IN NEOPRENE STRIP SEAL.

AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST & SWEEP.

FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN & SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

SANDBLAST PLATES & EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING, THE PLATES & EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED.

ANCHOR SYSTEM #8 & #9 SHALL CONFORM TO ASTM A307 & SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C & D.

THE EXPANSION DEVICE MANUFACTURER SHALL PROVIDE A MECHANISM TO SUPPORT THE JOINT IN PLACE DURING THE CONCRETE POUR.

STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS & HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICES".

PLACE SLIP RESISTANT SURFACE ON TOP WALKING SURFACE OF COVER PLATE. SEE DETAIL THIS SHEET.

JOINT MANUFACTURER SHALL INFORM AND PROVIDE JOINT DETAILS TO THE STEEL BRIDGE DESIGNER/FABRICATOR.

DATE:
REVISIONS
NO.

STRUCTURE DETAILS - 4

WINGRA CREEK PEDESTRIAN BRIDGE REPLACEMENT - WEST WINGRA DRIVE AT SOUTH STREET
CITY OF MADISON ENGINEERING DIVISION
MADISON, WISCONSIN

JOB NO.
1020.106

PROJECT MGR.
KRB

STRAND ASSOCIATES®

SHEET
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