01-20-2023 LETTING ITEM 030

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-5HB-BP-1	MADISON	12	1
	ILLINOIS	CONTRACT NO. 76P70		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROPOSED
HIGHWAY PLANS

FAI ROUTE 270 (I–270)
SECTION 60–5HB–BP–1
PROJECT NHPP–031F(861)
BRIDGE PAINTING
MADISON COUNTY

C–98–108–21

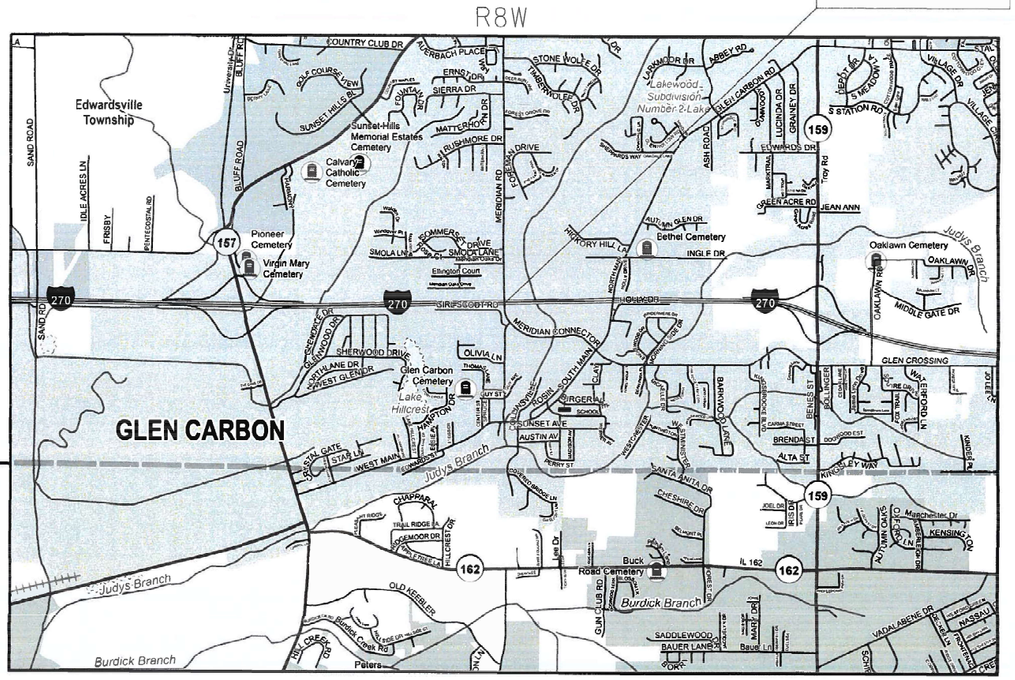
FOR INDEX OF SHEETS, SEE SHEET NO. 2

FAI 270 ADT

2024 = 57,800 (ESTIMATED)
SU = 2.2% MU = 16.0%

FUNCTIONAL CLASSIFICATION:
INTERSTATE

PROJECT LOCATION
S.N. 060–0185
MERIDIAN ROAD
OVER I–270
LAT: 38.75677° N
LONG: 89.98447° W



LOCATION MAP
NOT TO SCALE

GROSS LENGTH = 224 FT. = 0.042 MILE
NET LENGTH = 224 FT. = 0.042 MILE

D-98-077-21

LOCATION OF SECTION INDICATED THUS: –

100′ 200′ 300′ — 1″ = 100′
10′ 20′ 30′ — 1″ = 10′
50′ 100′ — 1″ = 50′
50′ 100′ — 1″ = 40′
50′ 100′ — 1″ = 30′
50′ 100′ — 1″ = 20′

FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS
1–800–892–0123
OR 811

PROJECT ENGINEER: BILLIE OWEN
PROJECT MANAGER: BRANDON HUMPHREYS

CONTRACT NO. 76P70

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED Oct. 5 20 22
Kirk Brown, PDM
REGIONAL ENGINEER

December 9, 2022
ENGINEER OF DESIGN AND ENVIRONMENT

December 9, 2022
Stephen McGrath
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

INDEX OF SHEETS

HIGHWAY STANDARDS

000001-08	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001006	DECIMAL OF AN INCH AND OF A FOOT
701101-05	OFF-RD OPERATIONS, MULTILANE, 15' TO 24" FROM PAVEMENT EDGE
701106-02	OFF-RD OPERATIONS, MULTILANE, MORE THAN 15' AWAY
701400-11	APPROACH TO LANE CLOSURE, FREEWAY/EXPRESSWAY
701401-13	LANE CLOSURE, FREEWAY/EXPRESSWAY
701428-01	TRAFFIC CONTROL SETUP AND REMOVAL FREEWAY/EXPRESSWAY
701901-08	TRAFFIC CONTROL DEVICES

GENERAL NOTES

1. THE UTILITIES KNOWN TO HAVE FACILITIES WITHIN THE PROJECT AREA ARE AS FOLLOWS:

   - AMEREN ILLINOIS
   - AT&T ILLINOIS
   - CHARTER COMMUNICATIONS, INC.
   - VILLAGE OF GLEN CARBON
   - LEVEL 3 COMMUNICATIONS, LLC

2. NO SURVEY WAS PERFORMED FOR THIS PROJECT AND THE PLANS WERE CREATED USING MICROFILM AND FIELD MEASUREMENTS.

3. THE RESIDENT ENGINEER SHALL VERIFY THE EXISTENCE OF HIGHWAY LIGHTING, INTELLIGENT TRANSPORTATION SYSTEMS (I.T.S.) UTILITIES, AND/OR ELECTRICAL CABLES ASSOCIATED WITH TRAFFIC SIGNALS WITHIN THE PROJECT LIMITS. IF ANY OF THESE EXIST WITHIN THE PROJECT LIMITS, AND IF THESE ITEMS REQUIRE LOCATING, THE CONTRACTOR SHALL BE DIRECTED TO DO SO ACCORDING TO SECTION 803 OF THE STANDARD SPECIFICATIONS. THIS WORK SHALL BE PAID FOR ACCORDING TO ARTICLE 109.04 OF THE STANDARD SPECIFICATIONS.

4. TWO CHANGEABLE MESSAGE SIGNS SHALL BE REQUIRED FOR THIS PROJECT. THEY WILL BE REQUIRED TWO WEEKS PRIOR TO ANY LANE CLOSURE. LOCATIONS SHALL BE AT THE DIRECTION OF THE RESIDENT ENGINEER.

5. SSPC-QP1 AND QP2 CONTRACTOR CERTIFICATION IS REQUIRED FOR THIS CONTRACT.

6. CLEANING AND PAINTING OF THE EXISTING STEEL SHALL BE AS SPECIFIED IN THE SPECIAL PROVISION FOR "CLEANING AND PAINTING EXISTING STEEL STRUCTURES." ALL BEAMS, BEARINGS, AND OTHER STRUCTURAL STEEL SHALL BE CLEANED PER NEAR WHITE BLAST CLEANING - SSPC-SP10.

7. THE AREAS CLEANED PER NEAR WHITE BLAST CLEANING SHALL BE PAINTED ACCORDING TO THE REQUIREMENTS OF SYSTEM 1-OZ/E/U. THE COLOR OF THE FINAL FINISH COAT FOR ALL STEEL SURFACES SHALL BE GRAY (MUNSELL NO 5B 7/1).

8. A MINIMUM OF 2 AIR MONITORS WILL BE REQUIRED TO MONITOR ABRASIVE BLASTING OPERATIONS AT THIS SITE. SEE SPECIAL PROVISION FOR "CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES."

9. THE DEPARTMENT STRONGLY ENCOURAGES THE PRIME CONTRACTOR AND THEIR APPROVED SUB-CONTRACTORS TO HIRE MINORITY, WOMEN AND DISADVANTAGED INDIVIDUALS FROM ITS FEDERALLY FUNDED HIGHWAY CONSTRUCTION CAREERS TRAINING PROGRAM (HCCTP) TO HELP MEET WORKFORCE AND TRAINEE GOALS. THIS PROGRAM IS TRAINING MINORITIES, WOMEN AND DISADVANTAGED INDIVIDUALS IN HIGHWAY CONSTRUCTION-RELATED SKILLS, E.G., MATH FOR THE TRADES, JOB READINESS, TECHNICAL SKILLS COURSEWORK (CARPENTRY, CONCRETE FLATWORK, BLUEPRINT READING, SITE PLANS, SITE WORK, TOOLS USE, ETC.) AND OSHA 10 HOUR CERTIFICATION, TO PREPARE THEM FOR A CAREER IN THE HIGHWAY CONSTRUCTION TRADES. GRADUATES ARE WELL-TRAINED AND READY TO BECOME PRODUCTIVE ENTRY-LEVEL CONSTRUCTION WORKERS. CONTACT THE DISTRICT 8 EEO OFFICE AT 618-346-3360 AND/OR THE HCCTP COORDINATOR AT 618-874-6528 TO LEARN MORE ABOUT THE PROGRAM AND ASSISTANCE IN MEETING WORKFORCE AND TRAINEE GOALS.

10. ALL TURF AREAS DISTURBED BY THE CONTRACTOR SHALL BE SEEDED WITH THE APPROPRIATE EROSION CONTROL, AS DIRECTED BY THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

COMMITMENTS

NONE

USER NAME = Brandon.Humphreys	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 10/4/2022	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS, HIGHWAY STANDARDS, GENERAL NOTES, AND COMMITMENTS

SCALE: | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-5HB-BP-1	MADISON	12	2
		CONTRACT NO. 76P70		
	ILLINOIS	FED. AID PROJECT		

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	URBAN CONSTR. CODE 90% FEDERAL 10% STATE BRIDGE 0047 S.N. 060-0185
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	3	3
67100100	MOBILIZATION	L SUM	1	1
70107025	CHANGEABLE MESSAGE SIGN	CAL DA	122	122
70200100	NIGHTTIME WORK ZONE LIGHTING	L SUM	1	1
X7010805	TRAFFIC CONTROL AND PROTECTION, STANDARD 701401 (SPECIAL)	L SUM	1	1
X7010001	MOBILE BARRIER TRAILER	L SUM	1	1
Z0007101	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 1	L SUM	1	1
Z0010501	CLEANING AND PAINTING STEEL BRIDGE NO. 1	L SUM	1	1

REV. - MS

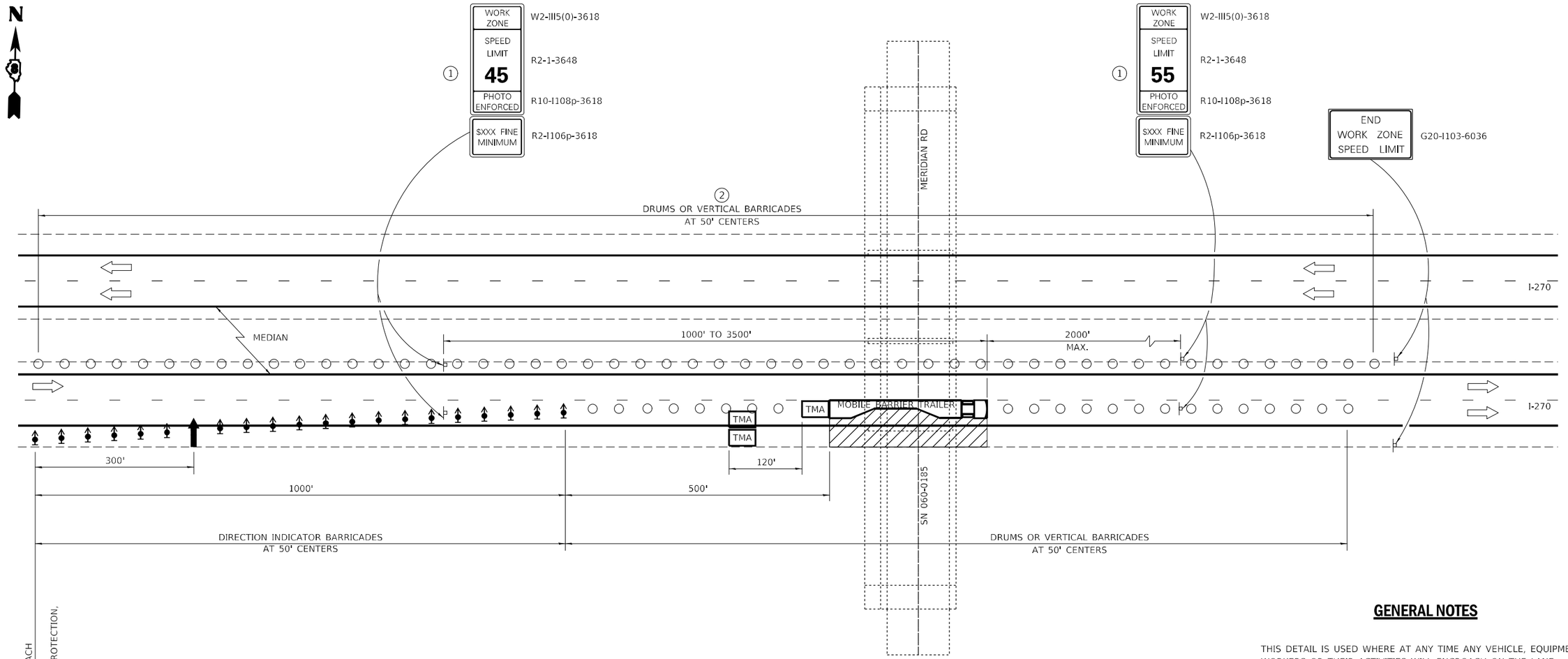
USER NAME = Brandon.Humphreys	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 10/4/2022	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-5HB-BP-1	MADISON	12	3
		CONTRACT NO. 76P70		
		ILLINOIS FED. AID PROJECT		



LEGEND

- ARROW BOARD
- WORK AREA
- TMA — TRUCK/TRAILER MOUNTED ATTENUATOR (TL-3)
- SIGN
- DIRECTION INDICATOR BARRICADE WITH STEADY BURN MONODIRECTIONAL LIGHT
- DRUM OR VERTICAL BARRICADE
- MOBILE BARRIER TRAILER — MOBILE BARRIER TRAILER

NOT TO SCALE

(1) WORK ZONE SPEED LIMIT SIGNS SHALL BE MOVED AS NECESSARY TO MAINTAIN THE REQUIRED SPACING BETWEEN THE SIGNS AND THE WORKERS IN EACH SEPARATE WORK ACTIVITY. WORK ZONE SPEED LIMIT 55 PHOTO ENFORCED SIGN SHALL BE OMITTED WHEN THE WORK AREA DICTATES PLACEMENT OF THE SIGN ARRAY WITHIN 500' OF THE END WORK ZONE SPEED LIMIT SIGN.

(2) DRUMS OR VERTICAL BARRICADES SHALL BE PLACED WHERE CABLE MEDIAN BARRIER IS TEMPORARILY REMOVED, WHEN ADJACENT LANE HAS BEEN OPENED TO TRAFFIC. PLACEMENT OF DEVICES ARE SUBJECT TO DISCRETION OF RESIDENT ENGINEER.

GENERAL NOTES

THIS DETAIL IS USED WHERE AT ANY TIME ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES WILL ENCROACH ON THE LANE ADJACENT TO THE SHOULDER, OR ON THE SHOULDER WITHIN 2' OF THE EDGE OF PAVEMENT.

THIS DETAIL MUST BE USED IN COMBINATION WITH STANDARD 701400.

THIS DETAIL ALSO APPLIES WHEN WORK IS BEING PERFORMED IN THE LEFT LANE. UNDER THESE CONDITIONS, THE SETUP WOULD BE A MIRROR IMAGE TO WHAT IS SHOWN.

EDGE OF MOBILE BARRIER TRAILER SHALL NOT CROSS CENTERLINE PAVEMENT MARKINGS.

A CHECK BARRICADE SHALL BE PLACED IN THE MIDDLE OF THE CLOSED LANE AND AT THE SHOULDER AT 1000' CENTERS.

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SHOWN.

LANE CLOSURE, FREEWAY / EXPRESSWAY DETAIL

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USER NAME = Brandon.Humphreys	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 11/16/2022	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL AND PROTECTION, STANDARD 701401 (SPECIAL)

SCALE: NTS | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-5HB-BP-1	MADISON	12	4
		CONTRACT NO. 76P70		
	ILLINOIS FED. AID PROJECT			

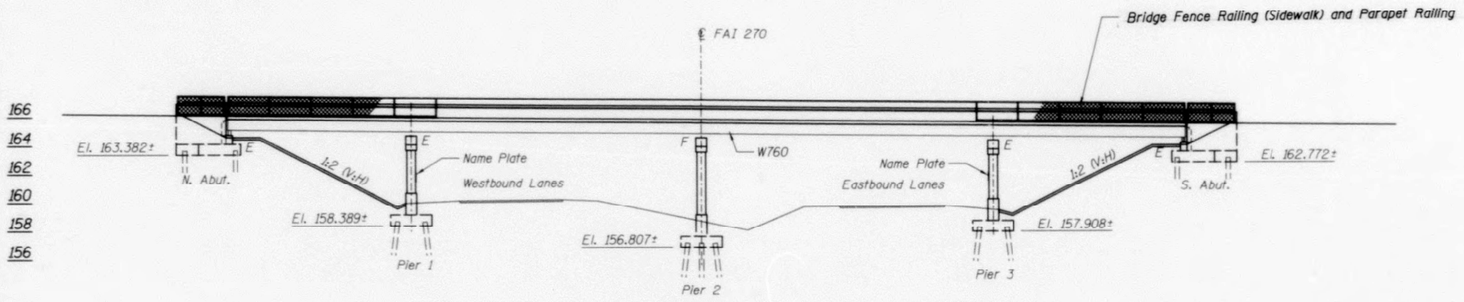
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	*	MADISON	33	11

Sheet No. 1 of 22 Sheets

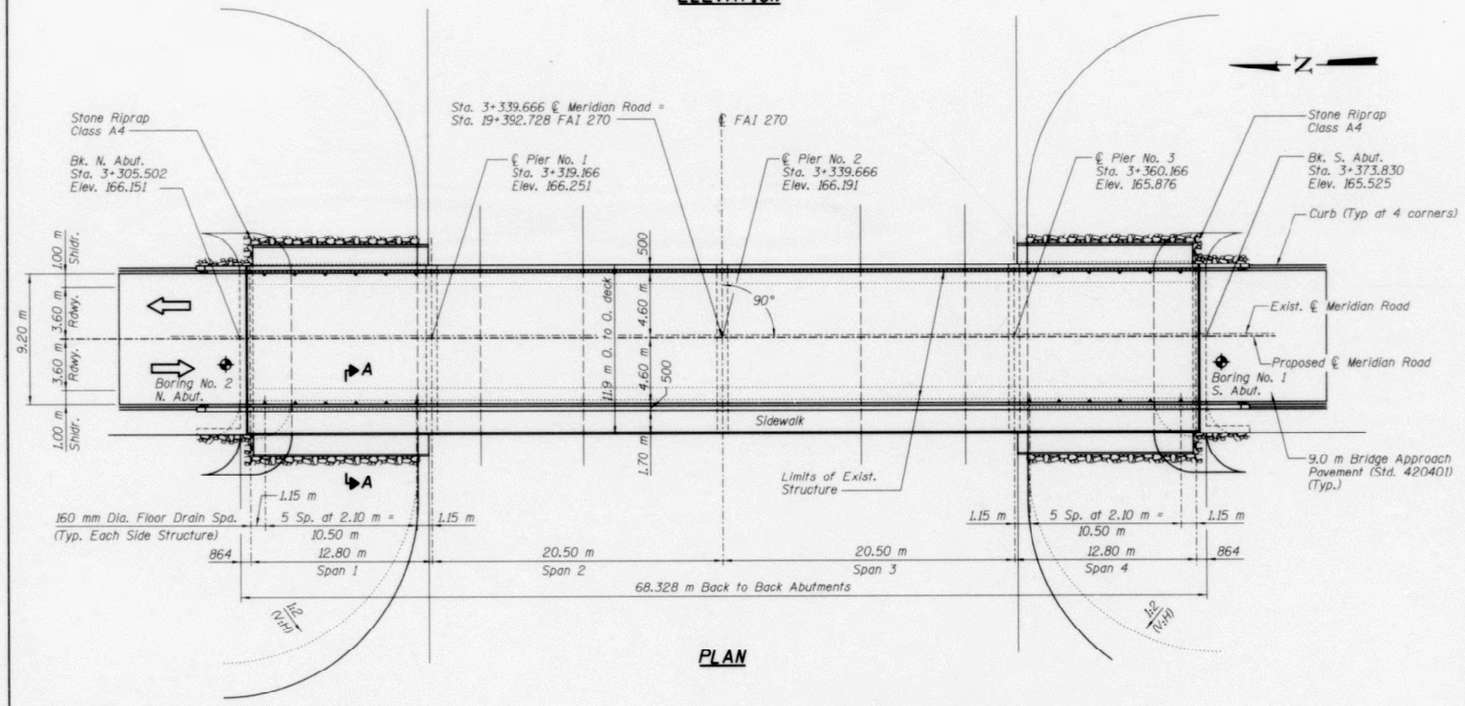
*98-00019-05-BR

Existing Structure:
4 span bridge, continuous span steel 30WF124 (English) beams with concrete deck supported on concrete piers and abutments. 9.04 m out to out of deck and 67.716 m back to back abutments with metal handrails

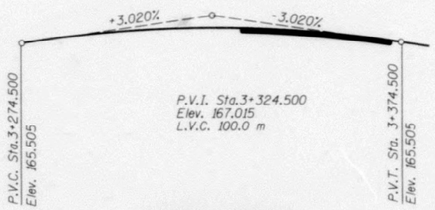
FOR INFORMATION ONLY



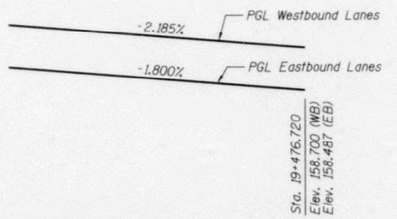
ELEVATION



PLAN



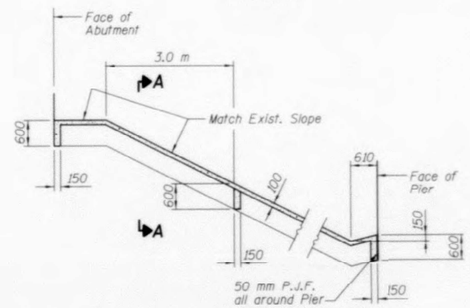
PROFILE GRADE



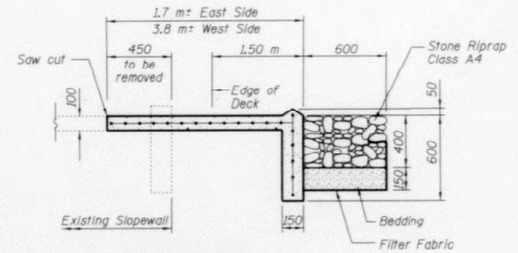
PROFILE GRADE - FAI 270

STATION 3+339.666
REBUILT 199 BY
VILLAGE OF GLEN CARBON
SEC. 98-00019-05-BR
STA. 3+339.666
LOADING MS18
STR. NO. 060-0185

NAME PLATE
See Std. 515001



SECTION THRU SLOPEWALL



SECTION A-A

DESIGN SPECIFICATIONS

AASHTO Standard Specifications & 1997 Interims.
Seismic Retrofitting Manual for Highway Bridges FHWA-RD-94-052

LOADING MS 18

Allow 1.2 kN/m² for future wearing surface.

DESIGN STRESSES

FIELD UNITS
New Construction (Metric)

fs = 138 MPa (Structural Steel)
fs = 160 MPa (Reinforcing)
fc = 9.6 MPa (Concrete)
f'c = 24 MPa (Concrete)

Existing Structure

(Metric)		(English)
fs = 138 MPa	(Structural Steel)	20000 psi
fs = 138 MPa	(Reinforcing)	20000 psi
fc = 9.6 MPa	(Concrete)	1400 psi

SEISMIC DATA

Seismic Performance Category = B
Site Bedrock Acceleration = 0.102g
Site Coefficient = 1.2
Site Ground Acceleration = 0.122g

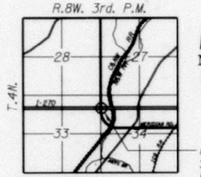
APPROVED
FOR STRUCTURAL ADEQUACY ONLY

Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. the design is an economical one for the style of structure and complies with the requirements of the current "AASHTO Standard Specifications for Highway Bridges."

STATE OF ILLINOIS
JOHN W. CLARK
NUMBER 3859
REGISTERED PROFESSIONAL ENGINEER

10 May 98



LOCATION SKETCH

GENERAL PLAN AND ELEVATION

REVISIONS		
No.	DATE	INITIALS
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERIDIAN ROAD SEC. 98-00019-05-BR
SN 060-0185
MADISON COUNTY

HOMER L. CHASTAIN & ASSOCIATES, LLP
CONSULTING ENGINEERS

DRAWN BY	DATE
RL King	4/95
CHECKED BY	DATE
JWC	4/95

BOOK NUMBER

PROJECT No. 3860

SHEET No. 11

USER NAME = Brandon.Humphreys	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 10/4/2022	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE DETAILS – SN 060–0185

SCALE: | SHEET 1 OF 7 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-5HB-BP-1	MADISON	12	5
		CONTRACT NO. 76P70		
		ILLINOIS	FED. AID PROJECT	

MODEL: Default
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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	*	MADISON	33	12

* 98-00019-05-BR

GENERAL NOTES

Fasteners shall be high strength bolts Bolts (AASHTO M164M) M20, open holes 22 ϕ, unless otherwise noted.

Calculated mass of Structural Steel = 18,400 kg M270 Grade 250

Field welding of construction accessories will not be permitted to the bottom flange of beams or girders nor to the top flange for a distance equal to one-fourth the span length each way from the pier supports. Field welding in other areas will be permitted only when approved by the Engineer.

Anchor bolts shall be set before bolting diaphragms over supports.

The structural steel bearing plates of the Elastomeric Bearing Assembly shall conform to the requirements of AASHTO M 270M Grade 345.

The main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are the wide flange beams and all splice plate material except fill plates.

Reinforcement bars shall conform to the requirements of AASHTO M-31M, M-42M or M-53M Grade 400.

Slope wall shall be reinforced with welded wire fabric, 152 x 152 - MW25.8 x MW25.8, with a mass of 2.91 kg/m².

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Expansion bolts shall consist of approved expansion anchors, providing minimum certified proof load = 18.15 kN, and M20 mm ϕ x 300 mm hooked bolts.

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 3 mm. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two 3 mm adjusting shims, of the dimension of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims. For Type 1 Elastomeric Bearings, shims of the dimensions of top plate shall be provided and placed as detailed.

The contractor shall drive one creosoted test pile in a permanent location at Pier 2 and one concrete test pile at the South Abutment as directed by the Engineer before ordering the remainder of piles.

Prior to pouring the new concrete for the deck, all loose rust, loose mill scale and all other loose, detrimental foreign material shall be removed from the embedded portions of flanges of stringers. The removal shall be accomplished in accordance with the requirements of the SSPC Surface Preparation Specifications SP-3 for power tool cleaning or SP-2 for hand tool cleaning. Cost shall be included with Concrete Removal.

Bridge Seat Sealer shall be applied to the seat area of the abutments.

All dimensions are in millimeters (mm) except as noted.

The Inorganic zinc rich primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat for all interior steel surfaces shall be gray, Munsell No B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Interstate Green, Munsell No. 7.5G 4/8.

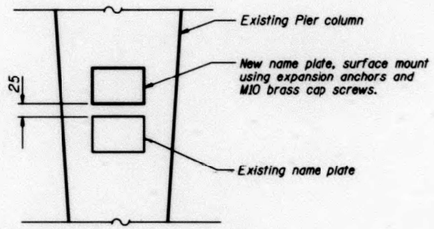
Existing structural steel shall only be cleaned and painted as required by the Special Provision "Cleaning and Painting Adjacent Areas of Existing Steel Structures".

In addition to all other requirements of section 512 of the Standard Specifications, splices for concrete piles shall develop the full capacity of the steel's cross sectional area of the pile for tension, shear and bending forces. One approved method of achieving this requirement is full penetration butt welding of the entire cross section. Other types of splices meeting the full capacity requirement may be allowed subject to the approval of the Engineer. Any proposal by the contractor to use an alternate splice method must include adequate documentation demonstrating that the full tension, shear and bending capacities will be met. Appropriate welder qualifications will be required for the positions and processes used in splicing all piles. Nondestructive testing of completed welds will be limited to visual inspection.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Protective Coat	Sq. m	965.9	---	965.9
Protective Shield	Sq. m	400	---	400
Structure Excavation	Cu. m	---	99.1	99.1
Concrete Removal	Cu. m	---	13.5	13.5
Removal of Existing Concrete Deck	Each	1	---	1
Preformed Joint Seal 102 mm	meter	23.7	---	23.7
Floor Drains	Each	24	---	24
Elastomeric Bearing Assembly Type I	Each	24	---	24
Concrete Structures	Cu. m	---	96.8	96.8
Concrete Superstructure	Cu. m	203.3	---	203.3
Reinforcement Bars, Epoxy Coated	kg	31,590	7990	39,580
Name Plates	Each	---	2	2
Bridge Fence Railing (Sidewalk)	meter	73.05	---	73.05
Furnishing and Erecting Structural Steel	kg	18,400	---	18,400
Bridge Seat Sealer	Sq. m	---	10.5	10.5
Bridge Deck Grooving	Sq. m	616.1	---	616.1
Furnishing Creosoted Piles 6.1 to 11.5 meters	meter	---	57.0	57.0
Driving Timber Piles	meter	---	57.0	57.0
Test Pile Timber	Each	---	1	1
Furnishing Concrete Piles	meter	---	126.0	126.0
Driving Concrete Piles	meter	---	126.0	126.0
Test Pile Concrete	Each	---	1	1
Slopewall 100 mm	Sq. m	---	150.8	150.8
Slopewall Removal	Sq. m	---	24.7	24.7
Expansion Bolts M20x300 mm	Each	---	24	24
Shear Studs	Each	3456	---	3456
Jack and Remove Existing Bearings	Each	25	---	25
Stone Riprap, Class A4	Sq. m	---	44	44
Filter Fabric for use with Riprap	Sq. m	---	44	44
Parapet Railing	meter	73.05	---	73.05

*Includes 729.9 sq. m of bridge deck area



NAME PLATE LOCATION DETAIL

INTERIOR BEAM MOMENT TABLE

		0.4 Sp. 1 or 0.6 Sp. 4	Pier 1 or Pier 3	0.5 Sp. 2 or 0.5 Sp. 3	Pier 2
Is	(10^6 mm⁴)	2230	2230	2230	2780
Ic (n)	(10^6 mm⁴)	6148	--	6148	--
Ic (3n)	(10^6 mm⁴)	4506	--	4506	--
Ss	(10^3 mm³)	5820	5820	5820	7140
Sc (n)	(10^3 mm³)	8700	--	8700	--
Sc (3n)	(10^3 mm³)	7849	--	7849	--
D	(kN/m)	11.7	15.5	11.7	16.0
MD	(kN·m)	100.3	411.9	212.6	610.8
fsD non-comp	(MPa)	17.2	70.8	36.5	85.5
sD	(kN/m)	3.8	--	3.8	--
MsD	(kN·m)	41.9	--	97.8	--
fsD (comp)	(MPa)	5.3	--	12.5	--
ML	(kN·m)	355.8	262.6	544.0	330.2
M (Imp)	(kN·m)	106.4	73.0	141.4	85.9
fs(ML+M(Imp))	(MPa)	53.1	57.7	78.8	58.3
fs (Total)	(MPa)	75.6	128.5	127.8	143.8
VR	(kN)	208.2	--	226.0	--

INTERIOR BEAM REACTION TABLE

		Abut.	Piers 1 or 3	Pier 2
RD	(kN)	67.2	280.2	336.3
RL	(kN)	139.0	206.8	216.2
Imp.	(kN)	50.7	57.4	56.0
R (Total)	(kN)	286.9	544.4	608.5

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total).

Ic(n) and Sc(n) are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.

Ic(3n) and Sc(3n) are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads. (see AASHTO 10.38)

VR is the maximum Live Load + Impact shear range in span.

fs (Total) (Non-compact section) is the sum of the stresses due to [MD + Ms D + (ML + Mimp)].

FOR INFORMATION ONLY

GENERAL NOTES AND BILL OF MATERIAL

REVISIONS

No.	DATE	DETAILS
1		
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERIDIAN ROAD SEC. 98-00019-05-BR
SN 060-0185
MADISON COUNTY

HOMER L. CHASTAIN & ASSOCIATES, LLP
CONSULTING ENGINEERS

DRAWN BY R King DATE 4/95
CHECKED BY JWC DATE 4/95
BOOK NUMBER
PROJECT No. 3860
SHEET No. 12

USER NAME = Brandon.Humphreys	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STRUCTURE DETAILS – SN 060–0185			
	DRAWN -	REVISED -					
PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -					
PLOT DATE = 10/4/2022	DATE -	REVISED -		SCALE:	SHEET 2 OF 7 SHEETS	STA.	TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-5HB-BP-1	MADISON	12	6
		CONTRACT NO. 76P70		
	ILLINOIS FED. AID PROJECT			

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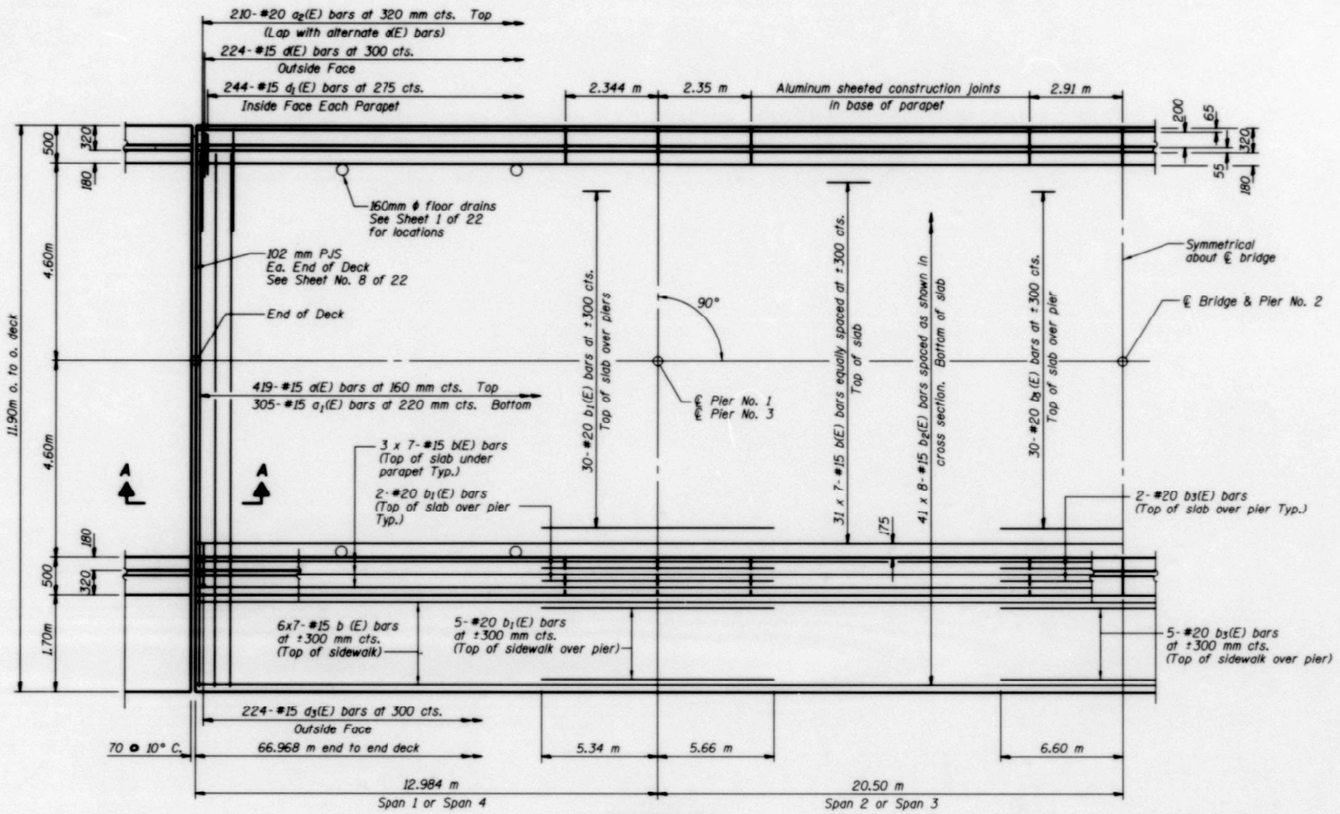
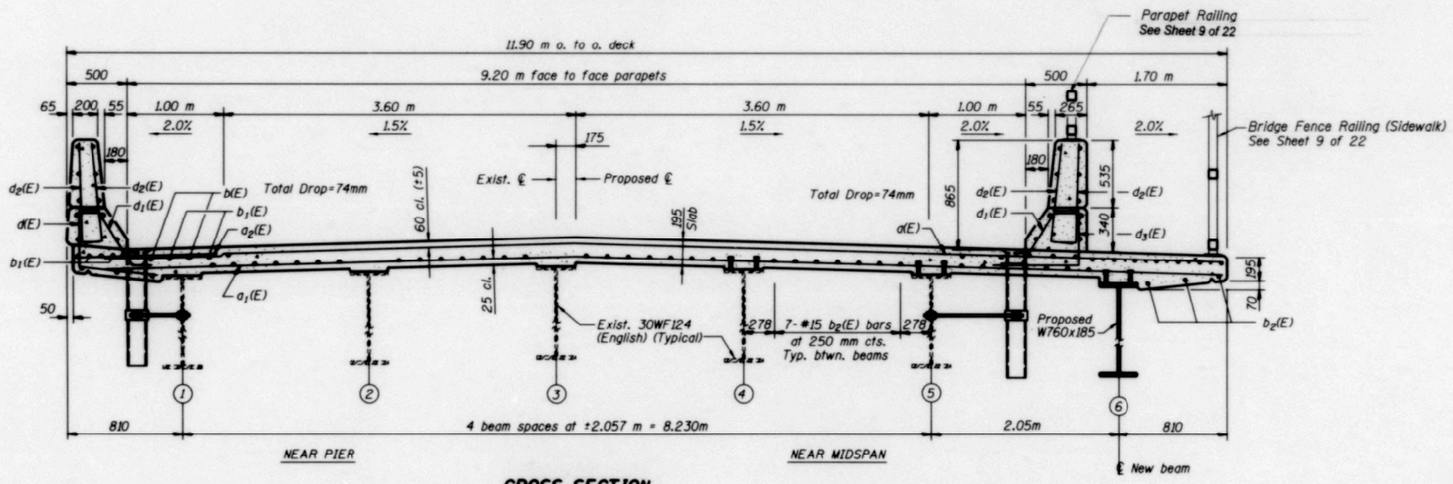
Sheet No. 6 of 22 Sheets	ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		*	MADISON	33	16

* 98-00019-05-BR



HALF PLAN



CROSS SECTION

(Looking Up Station)

MIN. BAR LAP

#15 Bar = 510 mm

Notes: See Sheet No. 7 of 22 for superstructure details and Bill of Material.
Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 20 x 3-#15 etc. indicates 20 lines of bars with 3 lengths per line.
See Sheet No. 7 of 22 for parapet reinforcement.
All dimensions are in millimeters (mm) except as noted.
See Sheet No. 7 of 22 for Section A-A.

FOR INFORMATION ONLY

SUPERSTRUCTURE DETAILS

REVISIONS		
No.	DATE	DETAILS
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERIDIAN ROAD SEC. 98-00019-05-BR
SN 060-0185
MADISON COUNTY

HOMER L. CHASTAIN & ASSOCIATES, LLP
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JWC	4/95
BOOK NUMBER	
PROJECT No.	3860
SHEET No.	16

USER NAME = Brandon.Humphreys	DESIGNED -	REVISED -	
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE DETAILS – SN 060-0185

SCALE: | SHEET 3 OF 7 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-5HB-BP-1	MADISON	12	7
		CONTRACT NO. 76P70		
	ILLINOIS FED. AID PROJECT			

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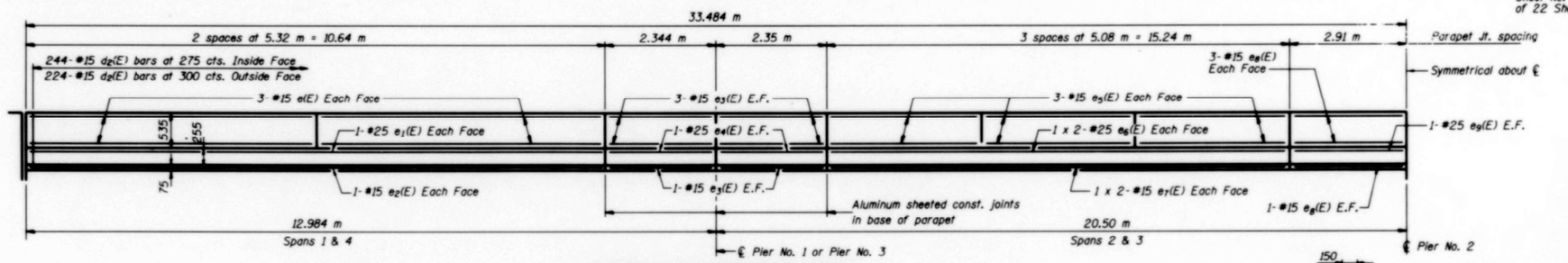
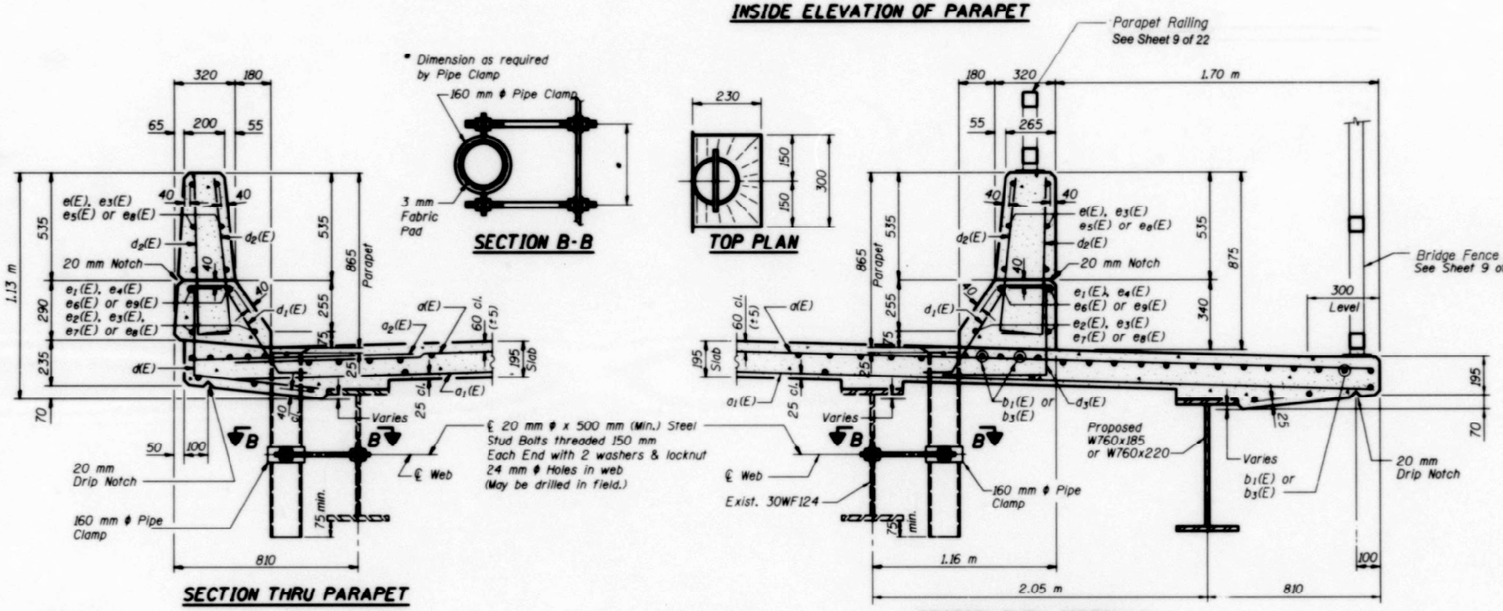
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	*	MADISON	33	17

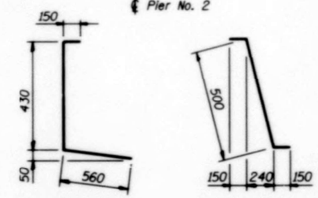
Sheet No. 7 of 22 Sheets

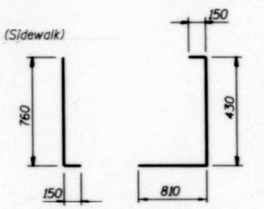
* 98-00019-05-BR



INSIDE ELEVATION OF PARAPET





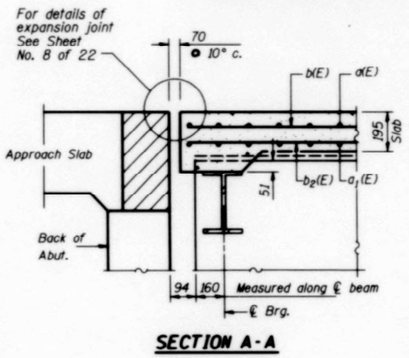


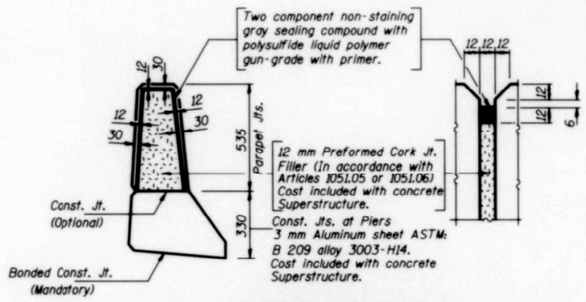
SUPERSTRUCTURE BILL OF MATERIAL

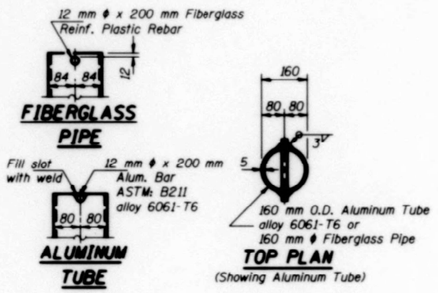
Bar	No.	Size	Length (m)	Shape
a(E)	419	#15	11.50	
a1(E)	305	#15	11.20	
a2(E)	210	#20	1.20	
b(E)	301	#15	10.00	
b1(E)	78	#20	11.00	
b2(E)	328	#15	8.80	
b3(E)	39	#20	13.20	
d(E)	224	#15	1.14	
d1(E)	488	#15	0.80	
d2(E)	336	#15	0.91	
d3(E)	224	#15	1.39	
e(E)	48	#15	5.24	
e1(E)	8	#25	10.55	
e2(E)	8	#15	10.55	
e3(E)	64	#15	2.25	
e4(E)	16	#25	2.25	
e5(E)	72	#15	5.00	
e6(E)	16	#25	8.27	
e7(E)	16	#15	7.91	
e8(E)	32	#15	2.83	
e9(E)	8	#25	2.83	
Reinforcement Bars, Epoxy Coated		kg	31,590	
Concrete Superstructure		Cu. m	203.3	

Reinforcement bars designated (E) shall be epoxy coated.

Bars indicated thus 1 x 3-#15 etc. indicates 1 line of bars with 3 lengths per line.







Notes:

The exterior surfaces of the floor drain shall be painted with the finish coat of the paint system specified for Structural Steel. The exterior surfaces of the drain shall be cleaned and given a washcoat pretreatment in accordance with Steel Structures Painting Council's Spec. SSPC-SP1 & SSPC-Paint 27 prior to painting.

Fiberglass pipe shall conform to ASTM: D2996, with short-time rupture strength hoop tensile stress of 200 MPa minimum. The surface of the Fiberglass pipe shall be free of bond inhibiting agents.

All dimensions are in millimeters (mm) except as noted.

MIN. BAR LAP

#15 Bar = 660 mm
#25 Bar = 1.37 m

FOR INFORMATION ONLY

SUPERSTRUCTURE DETAILS

REVISIONS		
No.	DATE	DETAILS
1		
2		
3		
4		
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERIDIAN ROAD SEC. 98-00019-05-BR
SN 060-0185
MADISON COUNTY

HOMER L. CHASTAIN & ASSOCIATES, LLP
CONSULTING ENGINEERS

DRAWN BY	DATE
R King	4/95
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JWC	4/95
BOOK NUMBER	
PROJECT No.	3860
SHEET No.	17

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	DRAWN -	REVISED -	STRUCTURE DETAILS – SN 060-0185
PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 10/4/2022	DATE -	REVISED -	SCALE: SHEET 4 OF 7 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-5HB-BP-1	MADISON	12	8
		CONTRACT NO. 76P70		
	ILLINOIS FED. AID PROJECT			

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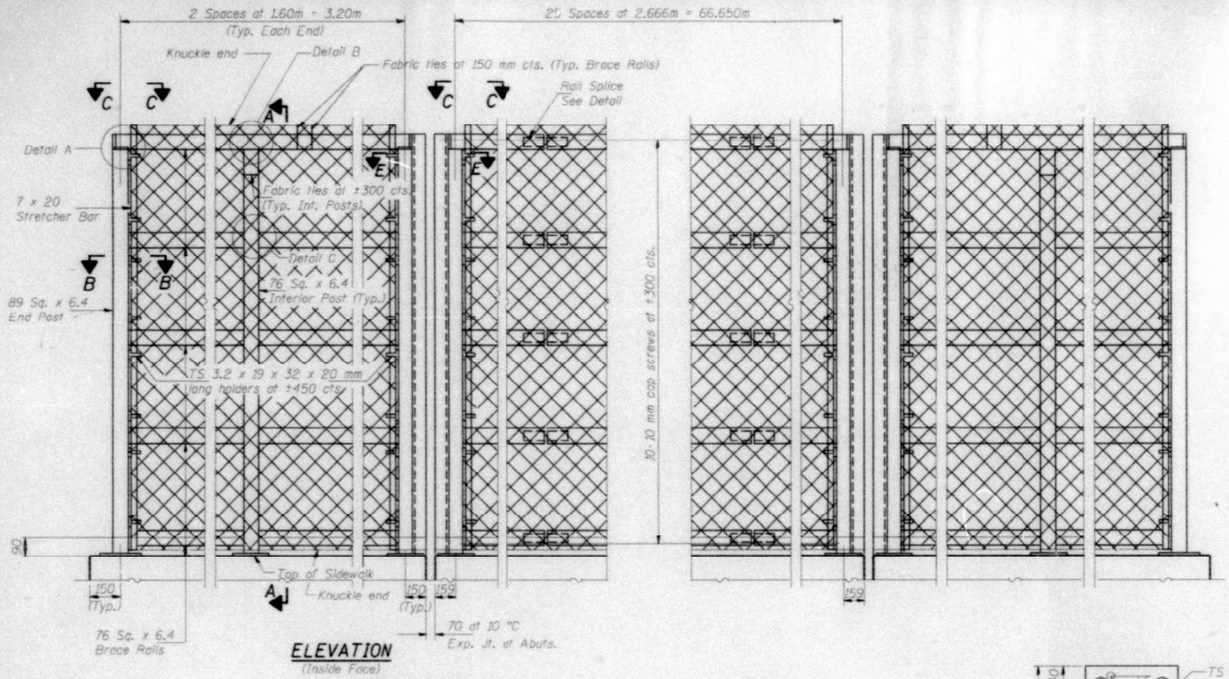
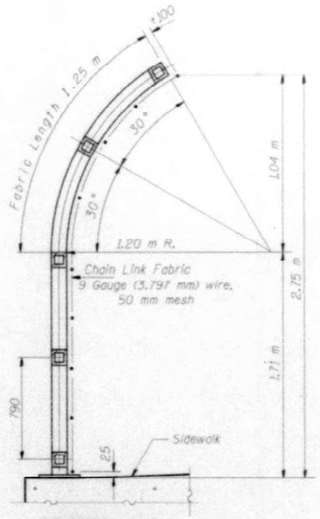
Sheet No. 9 of 22 Sheets	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		*		33	19

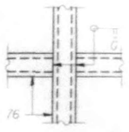
* 98-00019-05-BR



ELEVATION
(Inside Face)



SECTION A-A



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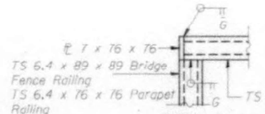
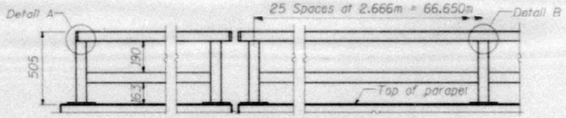
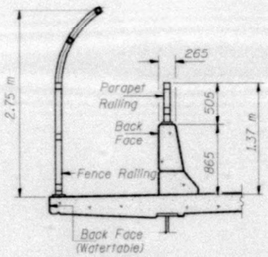


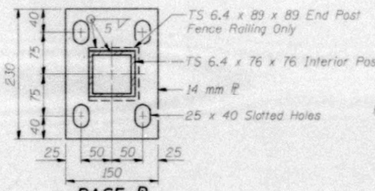
DETAIL A DETAIL B



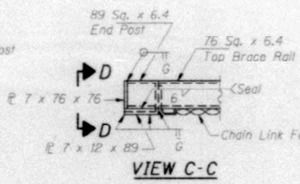
PARAPET RAILING ELEVATION
(Inside Face of Rail)



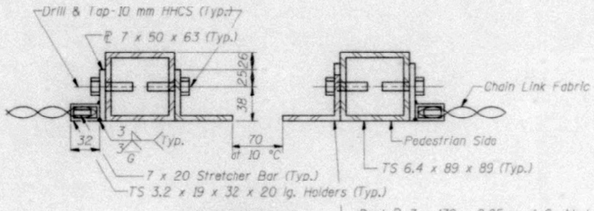
SECTION THRU DECK



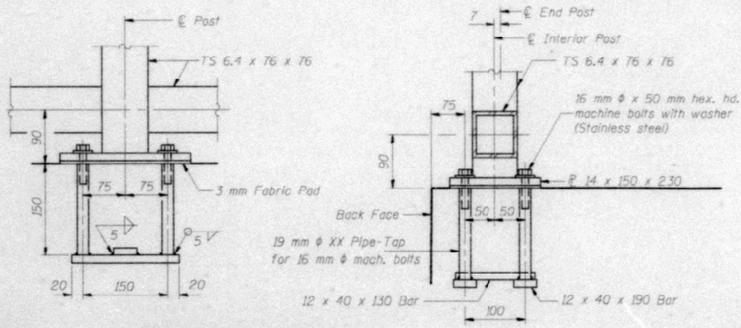
BASE PL
(3.00 m Maximum Post Spacing)



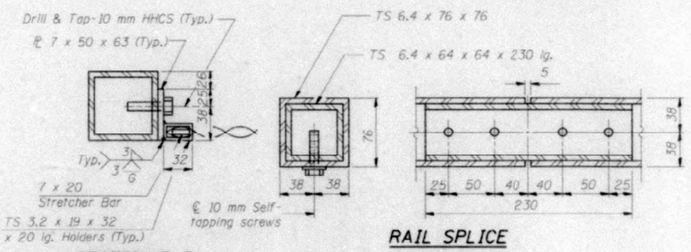
VIEW C-C



SECTION E-E
(At Expansion Joint)



ANCHOR BOLT DETAILS
(In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and epoxy grouting M16 anchor rods. Embedment shall be according to the manufacturer's specifications.)



SECTION B-B

RAIL SPLICE

VIEW D-D

NOTES

Railing shall be according to Section 509 of the Standard Specifications, except as noted, and will be paid for at the Contract Unit Price per meter for Bridge Fence Railing (Sidewalk) and Parapet Railing.

The 9 gauge (3.797 mm) fabric ties shall be according to Article 1006.27(a) of the Standard Specifications.

Installation of the chain link fabric shall be according to Section 664 of the Standard Specifications.

Hollow structural steel tubing shall conform to the requirements of ASTM designation A 500, Grade B, structural steel tubing.

All other steel shapes and plates shall conform to the requirements of AASHTO M 270M Grade 250.

The chain link fabric shall be placed along Pedestrian Side as shown on Section A-A.

Stretcher bars shall be used at each end of fabric.

A minimum of one complete turn is required at ends of all fabric ties.

If the option of drilling and epoxy grouting the anchor rods is chosen, the Contractor shall use the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures. The capsule or the adhesive cartridge shall be sealed with premeasured amounts of the adhesive chemical.

Space reinforcement to miss anchor rods.

All dimensions are in millimeters (mm) except as noted.

All posts, railing, splices, anchor devices, and bent plates shall be galvanized after shop fabrication according to AASHTO M 111 and ASTM A 385. All bolts, nuts, washers and anchor rods shall be galvanized according to AASHTO M 232 except stainless steel bolts as noted.

Vent holes for galvanizing shall be placed in the posts and rails at locations that will not allow the accumulation of moisture in the members.

The chain link fabric shall conform to the requirements of Article 1006.27(a)(1)a, b or c of the Standard Specifications.

BILL OF MATERIAL

Item	Unit	Quantity
Bridge Fence Railing (Sidewalk)	m	73.05
Parapet Railing	m	73.05

BRIDGE FENCE RAILING SIDEWALK MOUNTED

REVISIONS			STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS	DRAWN BY DATE
No.	DATE	DETAILS		CHECKED BY DATE
			MERIDIAN ROAD SN 060-0185 SEC. 98-00019-05-BR	BOOK NUMBER
			MADISON COUNTY	PROJECT No. 3860
			HOMER L. CHASTAIN & ASSOCIATES, LLP CONSULTING ENGINEERS	SHEET No. 19

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STRUCTURE DETAILS – SN 060–0185

SCALE: | SHEET 5 OF 7 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-5HB-BP-1	MADISON	12	9
		CONTRACT NO. 76P70		
	ILLINOIS	FED. AID PROJECT		

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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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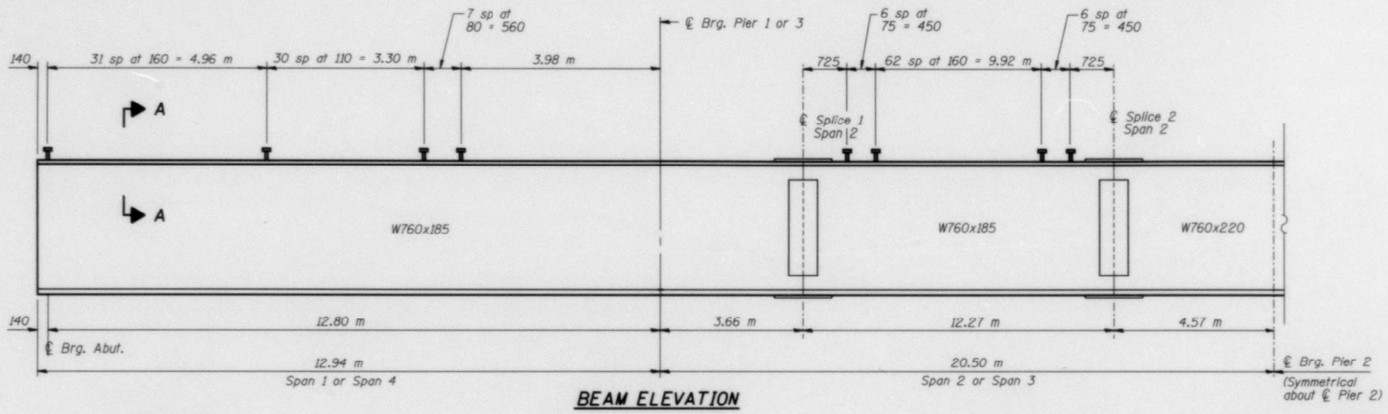
Sheet No. 10 of 22 Sheets

* 98-00019-05-BR



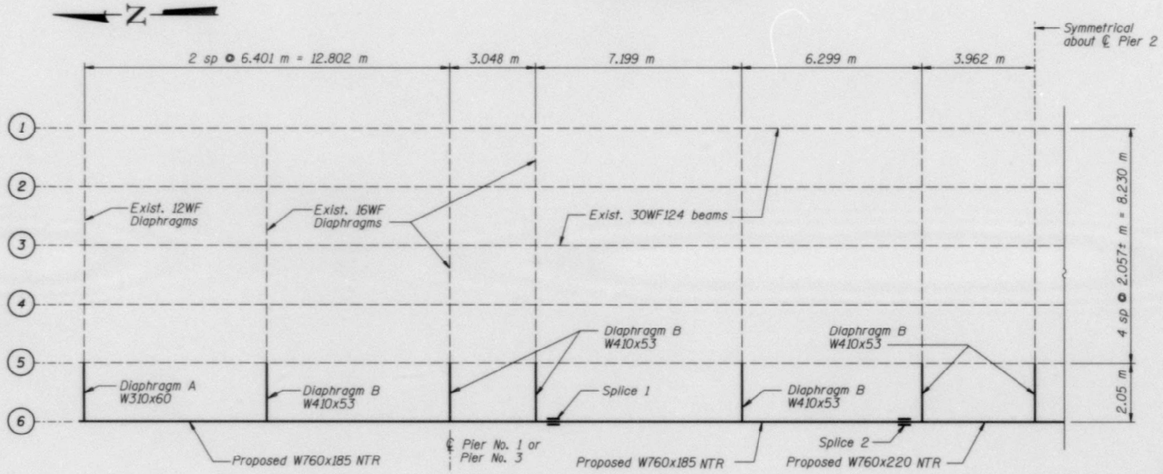
BEAM ELEVATION

TOP OF BEAM ELEVATIONS

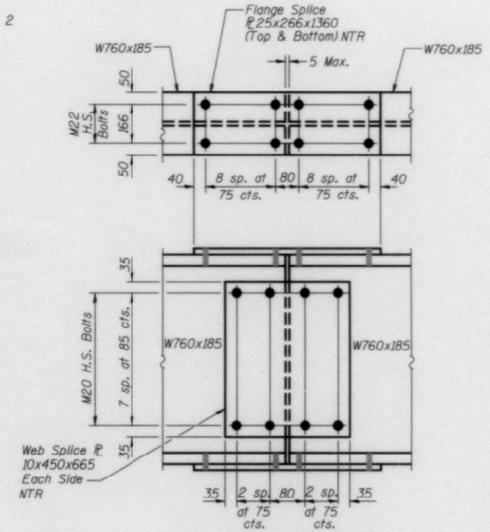
(For Fabrication Only)

LOCATION	BM6
℄ Bearing North Abutment	165.846
℄ Bearing Pier 1	165.936
℄ Splice 1	165.919
℄ Splice 2*	165.886
℄ Bearing Pier 2	165.876
℄ Splice 2*	165.802
℄ Splice 1'	165.611
℄ Bearing Pier 3	165.561
℄ Bearing South Abutment	165.238

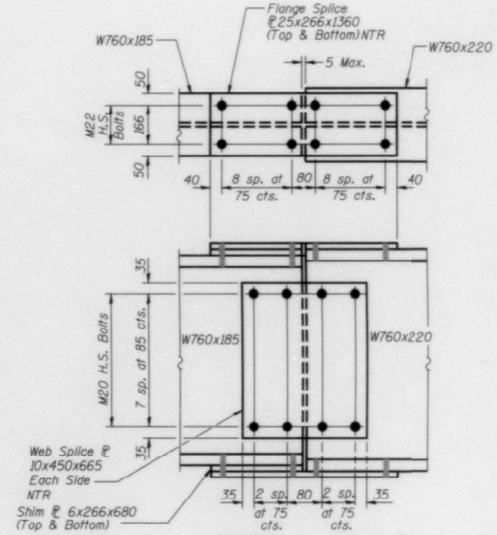
*Top of W760x220



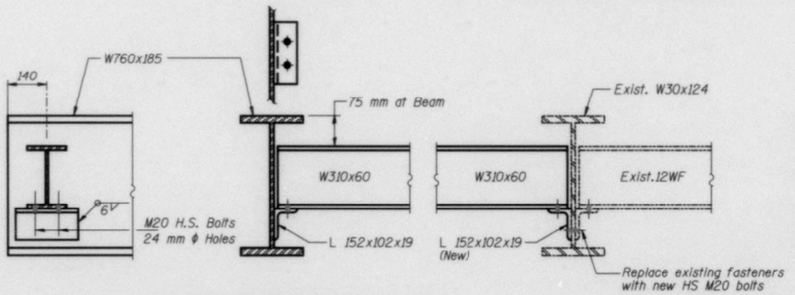
FRAMING PLAN



DETAIL - SPLICE 1

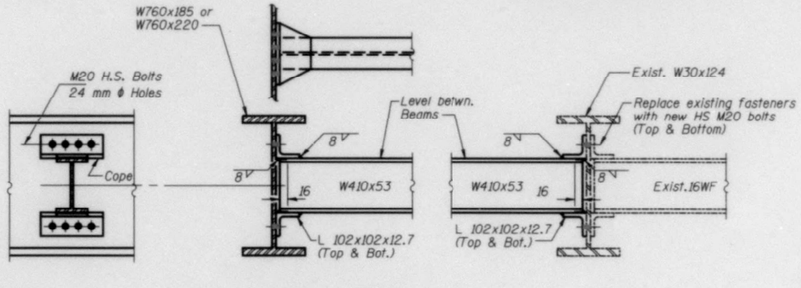


DETAIL - SPLICE 2



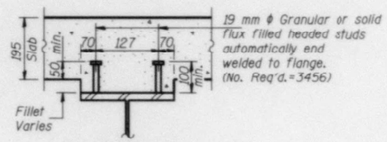
DIAPHRAGM A

2 Required



DIAPHRAGM B

11 Required



SECTION A-A

*Note: Two hardened washers shall be required over all oversize holes for diaphragms.
All dimensions are in millimeters (mm) except as noted.
Contractor shall verify existing dimensions and elevations in field prior to fabrication of steel.
NTR designates Notch Toughness Requirement.

FOR INFORMATION ONLY

FRAMING DETAILS

REVISIONS		
No.	DATE	INITIALS
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERIDIAN ROAD SEC. 98-00019-05-BR
SN 060-0185
MADISON COUNTY

HOMER L. CHASTAIN & ASSOCIATES, LLP
CONSULTING ENGINEERS

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BOOK NUMBER	
PROJECT No.	3860
SHEET No.	20

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PLOT DATE = 10/4/2022	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE DETAILS – SN 060–0185

SCALE: | SHEET 6 OF 7 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-5HB-BP-1	MADISON	12	10
		CONTRACT NO. 76P70		
	ILLINOIS	FED. AID PROJECT		

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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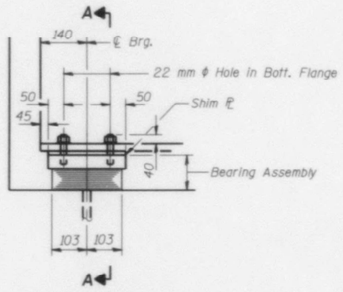
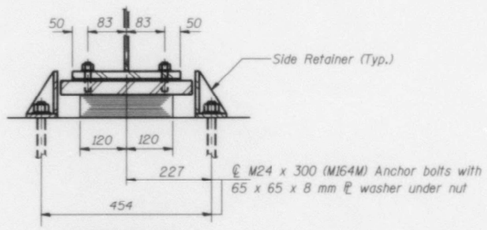
*98-00019-05-BR

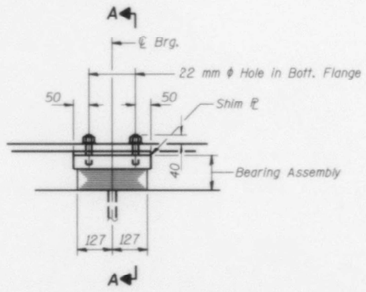
FOR INFORMATION ONLY



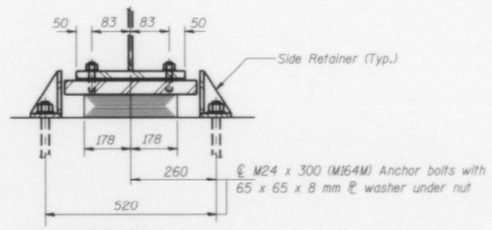
ELEVATION AT ABUT.



SECTION A-A



ELEVATION AT PIERS 1 & 3



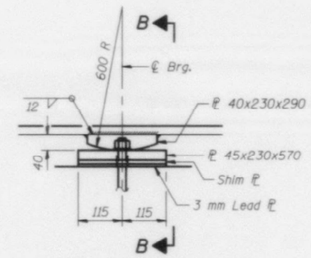
SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.

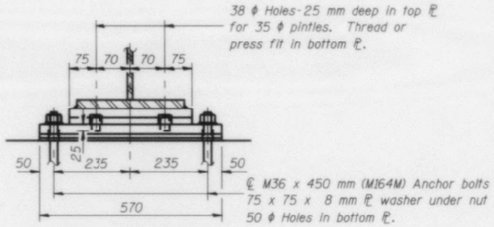
Notes: Anchor bolts at fixed bearings may be built into the masonry.
See Sheet No. 21 for Anchor Bolt installation.
All dimensions are in millimeters (mm) except as noted.

TABLE OF SHIM PLATES, THICKNESS

BEAM	1	2	3	4	5	6
NABUT	--	--	12	--	--	--
PIER1	--	--	12	--	--	--
PIER2	--	--	15	--	--	--
PIER3	--	--	12	--	--	--
SABUT	--	--	12	--	--	--

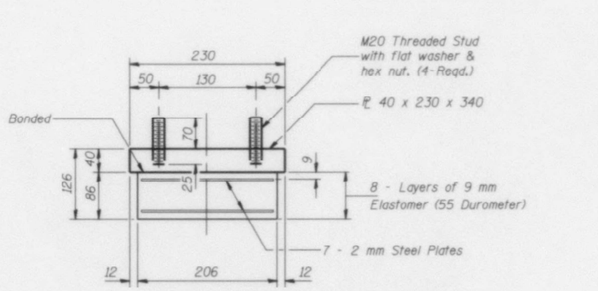


ELEVATION AT PIER 2



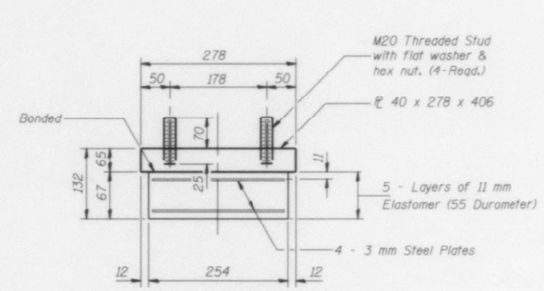
SECTION B-B

FIXED BEARING



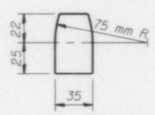
BEARING ASSEMBLY AT ABUTMENTS

Note: Shim plates shall not be placed under Bearing Assembly.



BEARING ASSEMBLY AT PIERS

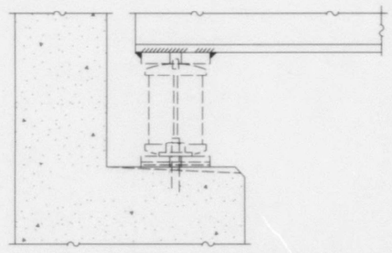
Note: Shim plates shall not be placed under Bearing Assembly.



PINTLE

JACKING LOADS (kN)

	Abut	Pier 1 & 3	Pier 2
Str steel	8.5	36.2	45.2



JACK AND REMOVE EXISTING BEARINGS

JACK AND REMOVE EXISTING BEARINGS

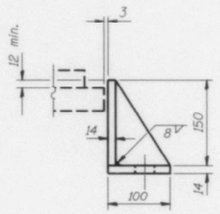
1. The Contractor shall submit for approval by the Engineer, plans for jacking prior to commencing the work on the bearings.

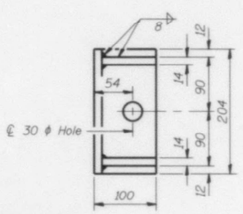
2. Jacking and removing existing bearings shall be done after the deck is removed and before the new deck is poured.

3. All beams at each support may be lifted simultaneously. If lifted individually the relative difference between adjacent beams shall not exceed $\frac{1}{8}$ inch. Maximum lift shall not exceed $\frac{1}{2}$ inch without approval of the Engineer.

4. The existing anchor bolts shall be removed or cut off flush and ground smooth with the bridge seat. The bearings shall be removed and the bottom flange area of the beam shall be cleaned and painted as required for structural steel prior to placing the new bearings.

5. The new bearings shall be placed and the jacks lowered before the new deck is poured.





SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	24

TYPE I ELASTOMERIC BEARING DETAILS

REVISIONS		
No.	DATE	INITIALS
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

MERIDIAN ROAD SEC. 98-00019-05-BR
SN 060-0185
MADISON COUNTY

HOMER L. CHASTAIN & ASSOCIATES, LLP
CONSULTING ENGINEERS

DRAWN BY	DATE
R King	4/95
CHECKED BY	DATE
JWC	4/95

BOOK NUMBER

PROJECT No. 3860

SHEET No. 21

USER NAME = Brandon.Humphreys	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 10/4/2022	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE DETAILS – SN 060–0185

SCALE: | SHEET 7 OF 7 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-5HB-BP-1	MADISON	12	11
		CONTRACT NO. 76P70		
		ILLINOIS FED. AID PROJECT		

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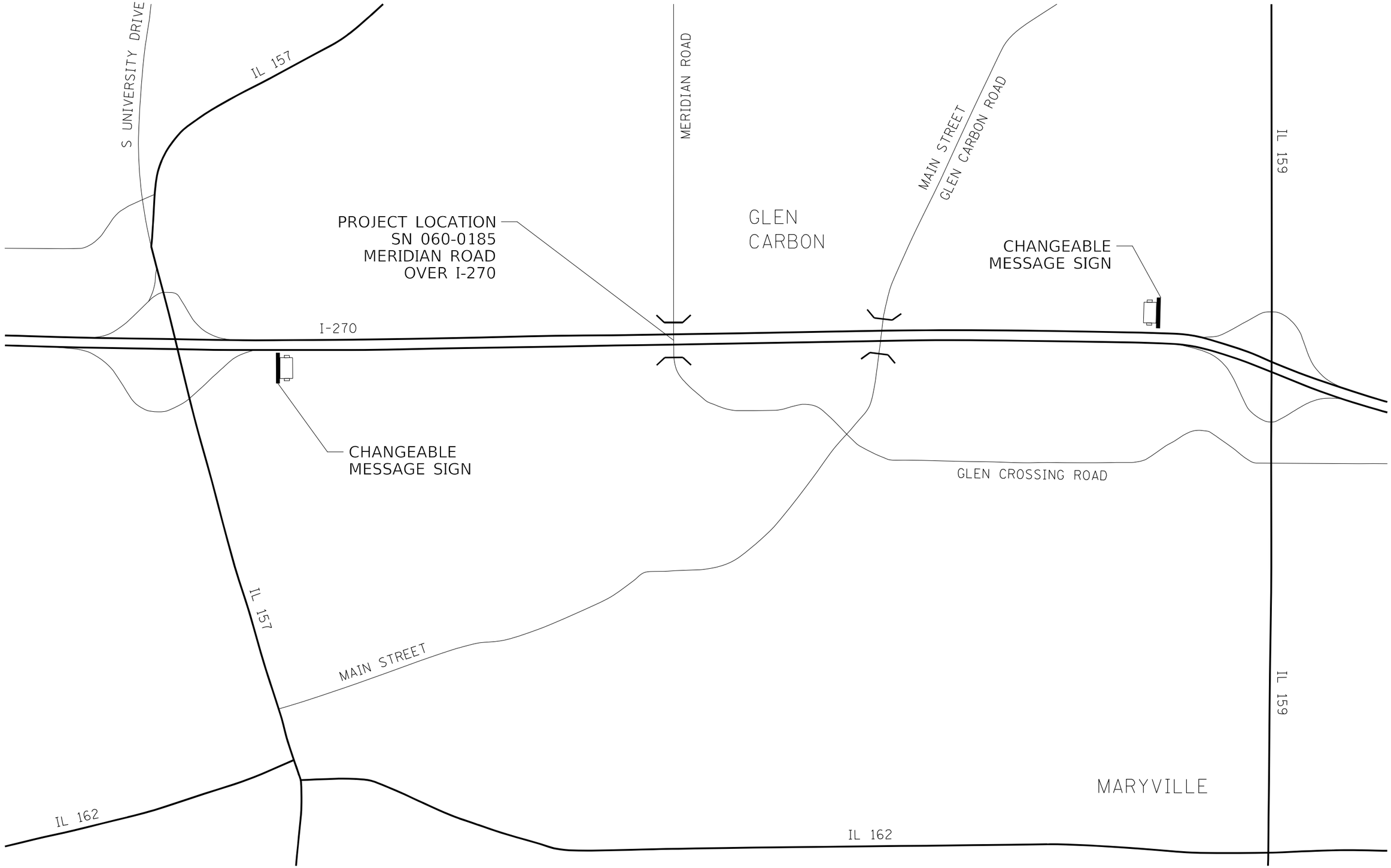

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USER NAME = Brandon,Humphreys	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 10/4/2022	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LOCATION MAP SHEET

SCALE: NTS | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
270	60-5HB-BP-1	MADISON	12	12
		CONTRACT NO. 76P70		
	ILLINOIS FED. AID PROJECT			