

030

01-17-2020 LETTING ITEM 050

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.P. ATE.	SECTION	CCUHTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BRIDGE PAINTING 2020	VARIABLES	22	1
CONTRACT NO. 72L42				

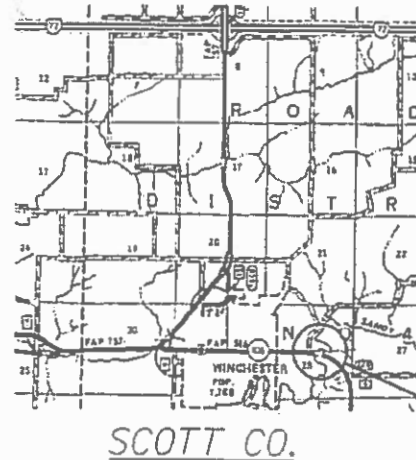
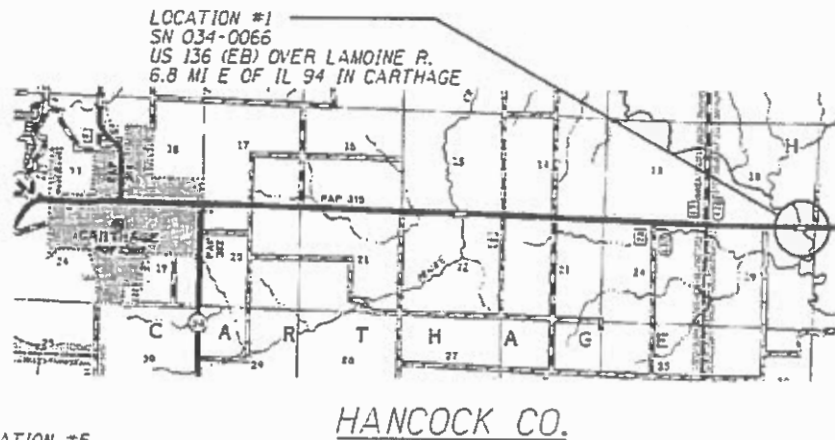
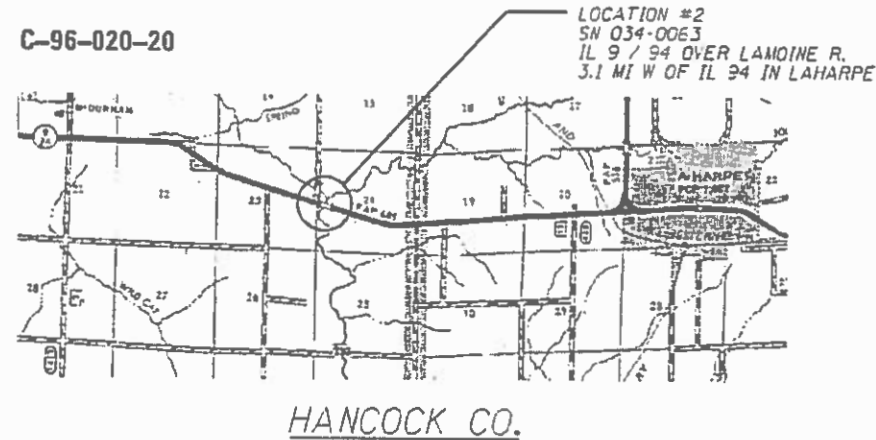
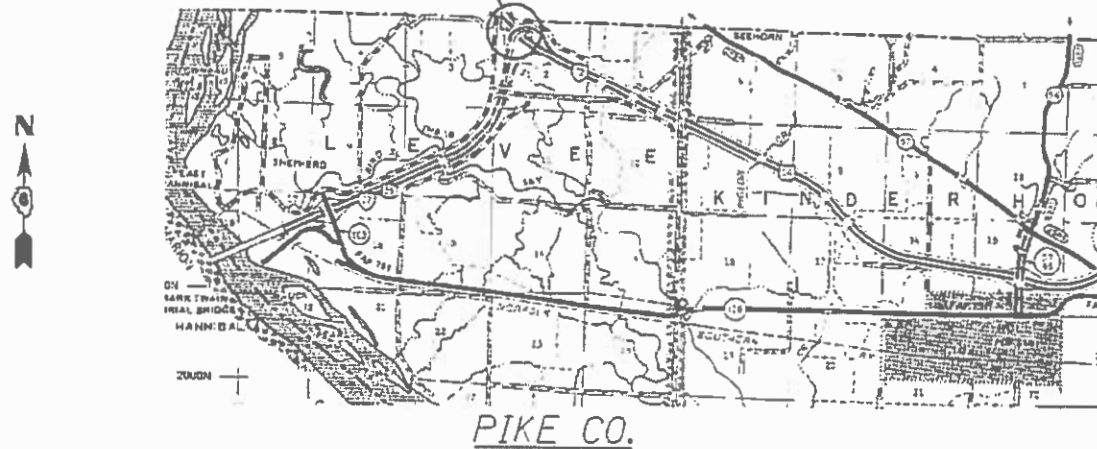
FOR INDEX OF SHEETS, SEE SHEET NO. 2

PROPOSED HIGHWAY PLANS

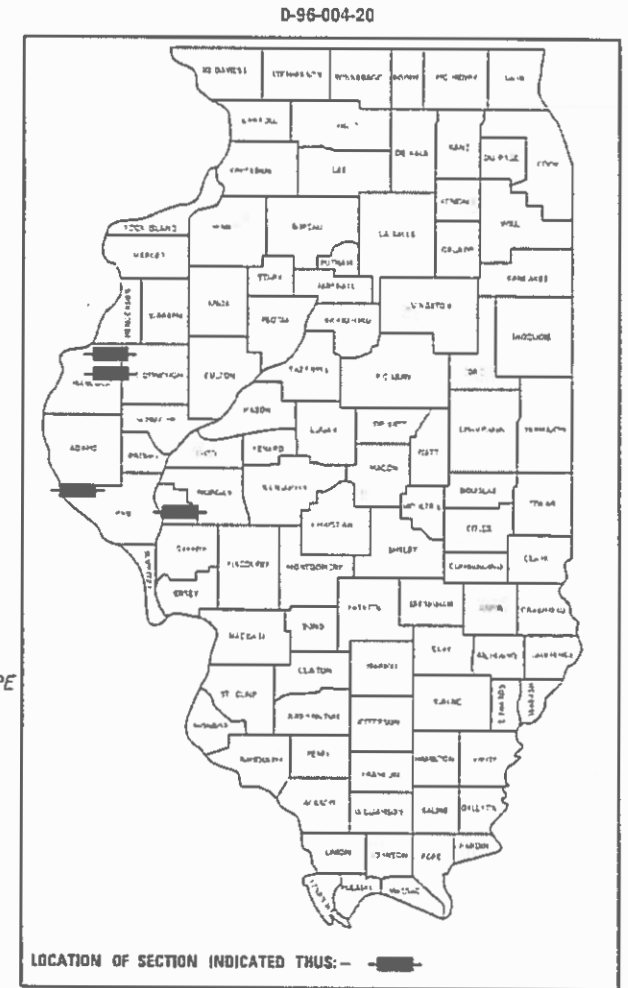
VARIOUS ROUTES
SECTION D6 BRIDGE PAINTING 2020
PROJECT STP-CB8X(713)
BRIDGE PAINTING
VARIOUS COUNTIES

LOCATION #3
SN 075-0130
I-72 WB OVER I-172
I-72 / I-172 INTERCHANGE

LOCATION #4
SN 075-0131
I-72 EB OVER I-172
I-72 / I-172 INTERCHANGE



LOCATION #5
SN 056-0045
IL 106 OVER SANDY CREEK
0.5 MI E OF WINCHESTER



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

BRIDGE MAINTENANCE ENGINEER: BRANDON DUDLEY - (217) 785-9290

GROSS LENGTH = x,xx FT. = x,xxx MILE
NET LENGTH = x,xx FT. = x,xxx MILE

CONTRACT NO. 72L42

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED October 10, 2019

[Signature] REGIONAL ENGINEER

[Signature] ENGINEER OF DESIGN AND ENVIRONMENT

[Signature] DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION 3

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OF THE STATE OF ILLINOIS

HIGHWAY STANDARDS




INDEX OF SHEETS

1	COVER SHEET
2	INDEX, STANDARDS, GENERAL NOTES, & SIGNATURES
3-4	SUMMARY OF QUANTITIES
5-8	EXISTING BRIDGE PLANS LOCATION #1: SN 034-0066
9-10	EXISTING BRIDGE PLANS LOCATION #2: SN 034-0063
11-15	EXISTING BRIDGE PLANS LOCATION #3: SN 075-0130
16-19	EXISTING BRIDGE PLANS LOCATION #4: SN 075-0131
20-22	EXISTING BRIDGE PLANS LOCATION #5: SN 086-0045

000001-07
001006
701001-02
701006-05
701101-05
701106-02
701201-05
701301-04
701400-09
701402-12
701411-09
701428-01
701901-08

GENERAL NOTES:

1. WORK SHALL CONSIST OF BLASTING AND PAINTING STRUCTURAL STEEL AT LOCATIONS DESCRIBED IN THE SPECIAL PROVISIONS. CLEANING AND PAINTING OF THE EXISTING STRUCTURAL STEEL SHALL BE AS SPECIFIED IN THE SPECIAL PROVISIONS FOR "CLEANING AND PAINTING EXISTING STEEL STRUCTURES". ALL AREAS TO BE PAINTED (EXCEPT OVERCOATED AREAS CALLED OUT IN THE SPECIAL PROVISIONS) SHALL BE CLEANED PER NEAR WHITE BLAST CLEANING PER SSPC SP 10. ALL EXISTING STEEL CLEANED SHALL BE PAINTED ACCORDING TO THE REQUIREMENTS OF PAINT SYSTEM 1 - OZ/E/U. THE COLOR OF THE FINAL FINISH COATS SHALL BE AS DESCRIBED IN THE SPECIAL PROVISIONS.
2. THE USE OF AIR MONITORS WILL NOT BE REQUIRED.
3. CONTAINMENT OF CLEANING RESIDUES IS REQUIRED TO CONTROL NUISANCE DUST. SEE SPECIAL PROVISIONS.
4. SSPC OP1 (AND SSPC OP2) CERTIFICATION IS REQUIRED FOR THIS CONTRACT.
5. CARE SHALL BE TAKEN NOT TO DAMAGE RUBBER BEARING OR JOINT COMPONENTS DURING BLASTING AND CLEANING OPERATIONS. ANY DAMAGE TO THESE COMPONENTS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. RUBBER COMPONENTS SHALL NOT BE PAINTED.
6. UPON COMPLETION OF PAINTING OPERATIONS, THE CONTRACTOR SHALL REMOVE ALL DEBRIS FROM PIER OR ABUTMENT CAPS UPON WHICH PAINTING OPERATIONS TOOK PLACE. FINAL CLEANUP SHALL BE CONSIDERED INCIDENTAL TO THE PAINT PAY ITEM FOR THE RESPECTIVE LOCATION. THE ENGINEER SHALL HAVE THE RIGHT TO WITHHOLD PAYMENT UNTIL SATISFACTORY CLEANUP IS ACHIEVED.

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS DISTRICT 6	
EXAMINED <u>10/3</u> 20 <u>19</u>	 ENGINEER OF OPERATIONS
EXAMINED <u>10-7</u> 20 <u>19</u>	 ENGINEER OF PROJECT IMPLEMENTATION
EXAMINED <u>October 9</u> 20 <u>19</u>	 ENGINEER OF PROGRAM DEVELOPMENT

MODEL Default
FILE NAME: \\C:\Users\B\Operations\Bridges\Bridges\CAD\72L42 - beam and pmt west FY20\job\sheet.dgn

USER NAME = dudleybm	DESIGNED - _____	REVISED - _____	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	INDEX OF SHEETS, STANDARDS, GENERAL NOTES & SIGNATURES	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT SCALE = 100.0000' / in.	CHECKED - _____	REVISED - _____			VAR.	D6 BRIDGE PAINTING 2020	VARIOUS	22	2
PLOT DATE = 11/14/2019	DATE - _____	REVISED - _____			CONTRACT NO. 72L42				
SCALE: _____ SHEET _____ OF _____ SHEETS STA. _____ TO STA. _____				ILLINOIS FED. AID PROJECT					

VARIOUS COUNTIES

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	6-01414-0021	6-01414-0021	6-01414-0020	6-01414-0020	6-01414-0021
				STP 80/20	STP 80/20	STP 80/20	STP 80/20	STP 80/20
				SN 034-0066 0047 HANCOCK	SN 034-0063 0047 HANCOCK	SN 075-0130 0047 PIKE	SN 075-0131 0047 PIKE	SN 086-0045 0047 SCOTT
67100100	MOBILIZATION	L SUM	1	0.2	0.2	0.2	0.2	0.2
70100207	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402	EACH	3	1	0	1	1	0
70100420	TRAFFIC CONTROL AND PROTECTION, STANDARD 701411	EACH	1	0	0	0	1	0
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	0	0.5	0	0	0.5
70400100	TEMPORARY CONCRETE BARRIER	FOOT	1650	650	0	500	500	0
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	1650	650	0	500	500	0
70600260	IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	3	1	0	1	1	0
70600332	IMPACT ATTENUATORS, RELOCATE (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	3	1	0	1	1	0
X5060601	CONTAINMENT AND DISPOSAL OF NON-LEAD PAINT CLEANING RESIDUES NO. 1	L SUM	1	1	0	0	0	0
X5060602	CONTAINMENT AND DISPOSAL OF NON-LEAD PAINT CLEANING RESIDUES NO. 2	L SUM	1	0	1	0	0	0
X5060603	CONTAINMENT AND DISPOSAL OF NON-LEAD PAINT CLEANING RESIDUES NO. 3	L SUM	1	0	0	1	0	0
X5060604	CONTAINMENT AND DISPOSAL OF NON-LEAD PAINT CLEANING RESIDUES NO. 4	L SUM	1	0	0	0	1	0
X5060605	CONTAINMENT AND DISPOSAL OF NON-LEAD PAINT CLEANING RESIDUES NO. 5	L SUM	1	0	0	0	0	1

MODEL: Default
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USER NAME = dudleybm	DESIGNED -	REVISED -
PLOT SCALE = 100.0000' / in.	DRAWN -	REVISED -
PLOT DATE = 10/10/2019	CHECKED -	REVISED -
	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES

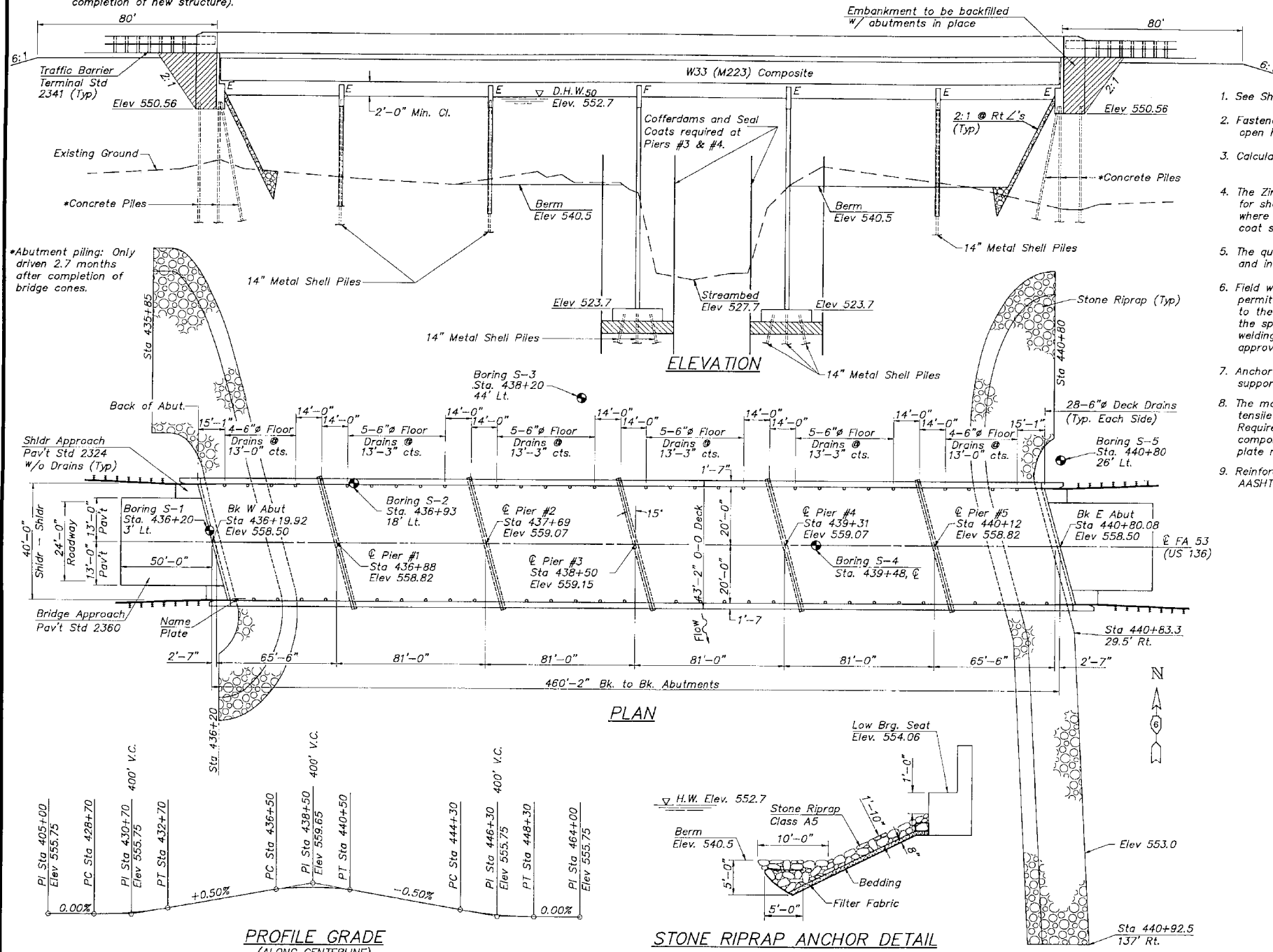
SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BRIDGE PAINTING 2020	VARIOUS	22	3
			CONTRACT NO. 72L42	
		ILLINOIS	FED. AID PROJECT	

Existing Structure - Structure No. 034-0055
Six span precast prestressed concrete beam bridge on closed abutments with 32 ft. approach span each end. 302'-9" Bk-Bk Abuts w/32' ft. roadway and steel bridge rail. (To be removed after completion of new structure).

BM - Chiseled "n" on Southwest Corner of LaMoine River Bridge at Station 437+28, Elevation 554.155

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 53		HANCOCK	223	60
SHEET NO. 1 OF 20 SHEETS				
FED. ROAD DIST. NO. 6 ILLINOIS FED. AID PROJECT				
*(24,25)(W-1,RS-4) & 25(X,B-1)				



Cofferdams - Piers 3 & 4
Bottom Elevation = 508.0

GENERAL NOTES

- See Sheet Nos. 19 and 20 for Boring data.
- Fasteners shall be high strength bolts. Bolts 7/8", open holes 15/16", unless otherwise noted.
- Calculated weight of Structural Steel=436,045 lbs. (M223-GR50) 54,995 lbs. (M183)
- The Zinc-silicate and vinyl paint system shall be used for shop and field painting of Structural Steel except where otherwise noted. The color of the vinyl finish coat shall be Munsell No. 7.5G 4/8 Interstate Green.
- The quantity of Protective Coat includes the top of deck and inside face and top of parapets.
- 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 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.
- Reinforcement bars shall conform to the requirements of AASHTO M31, M42, or M53 Grade 60.
- The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments. See Special Provisions to construction of the abutments. See Special Provisions
- Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 inch. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two 1/8" adjusting shims, of the dimension of the bottom bearing plate shall be provided for each bearing in addition to all other plates or shims.
- The contractor shall drive one (1) test pile (Concrete) in a permanent location at each Abutment and one (1) test pile (Metal Shell) at Piers No. 2 and 4 as directed by the Engineer before ordering the remainder of the piles.
- Layout of the slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.
- Concrete piles at abutments shall be driven in holes pre-cored through the embankment in accordance with Article 513.09(c) of the Standard Specifications.
- All structural steel shall be AASHTO (M223-GR50) except diaphragms and diaphragm connection angles which shall be AASHTO (M183).
- All top surfaces of the abutment shall receive Bridge Seat Sealer. Estimated Quantity=263 Sq. Ft.

TOTAL BILL OF MATERIAL

Item	Units	Superstructure	Substructure	Total
Removal of Existing Structures No. 2	Each			1
Structure Excavation	Cu. Yd.		42	42
Cofferdam Excavation	Cu. Yd.		1017	1017
Cofferdam (Pier 3)	Each		1	1
Cofferdam (Pier 4)	Each		1	1
Floor Drains	Each	56		56
Neoprene Expansion Joint 4"	Lin. Ft.	88		88
Protective Coat	Sq. Yd.	2420		2420
Elastomeric Bearing Assembly, Type II	Each	42		42
Class X Concrete Superstructure	Cu. Yd.	578.6		578.6
Class X Concrete	Cu. Yd.		561.4	561.4
Seal Coat Concrete	Cu. Yd.		237.8	237.8
Furn. and Erect Structural Steel	L. Sum	1		1
Stud Shear Connectors	Each	7504		7504
Reinforcement Bars	Pound		3330	3330
Reinforcement Bars, Epoxy Coated	Pound	134,460	44,370	178,830
Furnishing Metal Pile Shells, 14"	Lin. Ft.		2987	2987
Furnishing Concrete Piles	Lin. Ft.		1452	1452
Driving and Filling Shells	Lin. Ft.		2987	2987
Driving Concrete Piles	Lin. Ft.		1452	1452
Test Pile, Metal Shells	Each		2	2
Test Pile, Concrete	Each		2	2
Name Plates	Each	1		1
Stone Riprap Class A5	Ton		2806	2806
Filter Fabric for use with Riprap	Sq. Yd.		2379	2379
Bridge Seat Sealer	L. Sum		1	1
Bridge Deck Grooving	Sq. Yd.	2046		2046

APPROVED
FOR STRUCTURAL ADEQUACY ONLY

William L. Wells
Licensed Structural Engineer
Date: 3/8/91

William L. Wells
3/8/91
Date: 3/8/91
William L. Wells
Licensed Structural Engineer
State of Illinois No. 081-004362
License Expires November 30, 1992

WATERWAY INFORMATION

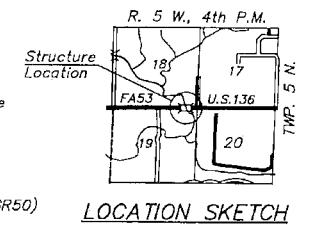
Drainage Area = 310 Sq. Mi. Low Grade Elev. Exist. 550.0 Prop. 555.75 Sta. 418+00 428+70

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Head-Ft.		Headwater El.		
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	
Design	50	19,700	4,575	5,230	552.7	0.1	0.7	552.8	553.4
Base	100	22,700	4,575	5,900	554.3	0.1	0.75	554.4	555.05
Overtopping	15%	14,000			549.5				
Max. Calc.	125%	24,000	3,960	6,190	555.0	0.5	0.8	550.0	555.8

DESIGN SPECIFICATION

1989 AASHTO & 1983 SEISMIC GUIDE SPECIFICATIONS
LOADING HS 20-44
Allow 25#/Sq. Ft. for future wearing surface

DESIGN STRESSES
f_c = 3,500 psi
f_y = 60,000 psi (Reinf.)
f_y = 50,000 psi (Struct.)(M223-GR50)
f_y = 36,000 psi (Struct.)(M183)



GENERAL PLAN
U.S. ROUTE 136 OVER
LAMOINE RIVER
F.A. RTE. 53 SECTION 25(B-1)
HANCOCK COUNTY
STA. 438+50
STRUCTURE NUMBER 034-0066



Consulting Engineers

613 Broadway • Quincy, Illinois 62301
(217)223-3670 • FAX: 223-3603

STATION 438+50
BUILT 199_ BY
STATE OF ILLINOIS
F.A. RTE. 53 SEC. 25(B-1)
LOADING HS 20
STR. NO. 034-0066

NAME PLATE
See Std. 2113

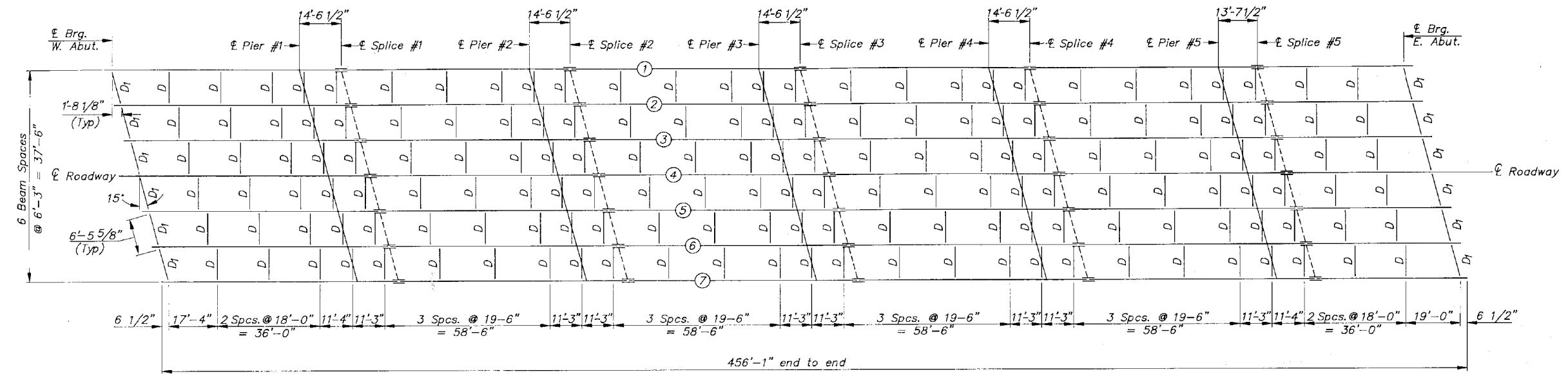
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS, SN 034-0066
(FOR INFORMATION ONLY)

USER NAME = dudleybm	DESIGNED -	REVISED -	SCALE:	SHEET	OF	SHEETS	STA.	TO	STA.	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT SCALE = 100,0000' / in.	DRAWN -	REVISED -								VAR.	D6 BRIDGE PAINTING 2020	VARIOUS	22	5
PLOT DATE = 10/10/2019	CHECKED -	REVISED -												CONTRACT NO. 72L42
	DATE -	REVISED -								ILLINOIS	FED. AID PROJECT			

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 8 OF 20 SHEETS
S. B. L.		HANCOCK	223	67	
F. A.	53				
FED. ROAD EST. NO. 7	ILLINOIS	FED. AID PROJECT-			

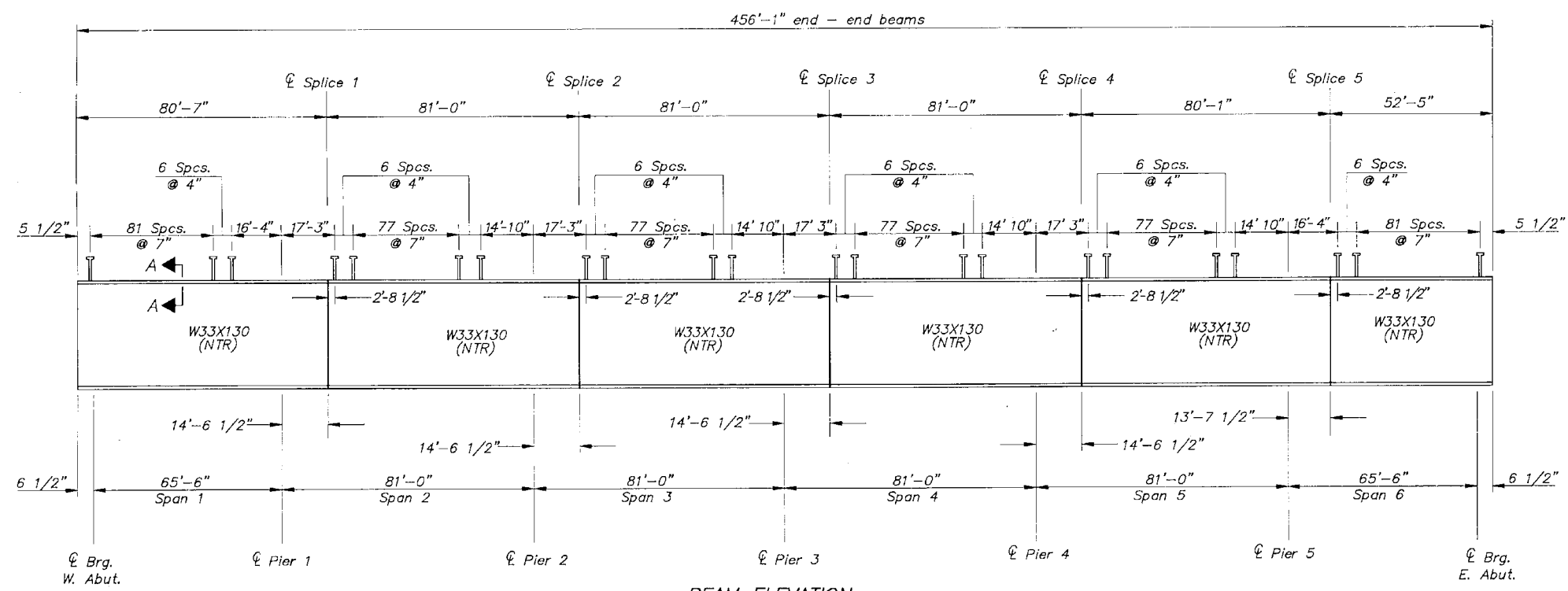
*(24,25)(W-1,RS-4) & 25(XB-1)



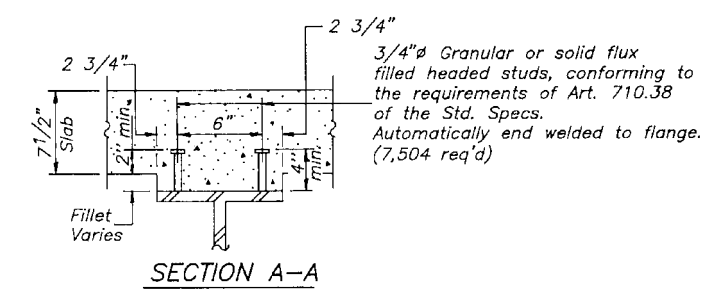
FRAMING PLAN

Interior Diaphragm - D (186 Req'd)
End Diaphragm - D₁ (12 Req'd)

Note:
All Structural Steel shall be AASHTO
M223 Gr 50 except diaphragms and
their connections.



BEAM ELEVATION
"NTR" denotes members to which notch
toughness requirements are applicable.



SECTION A-A

REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
F.A. ROUTE 53 (US 136) SECTION 25(B-1) HANCOCK COUNTY STRUCTURAL STEEL DETAILS STRUCTURE NO. 034-0066 STATION 438+50					

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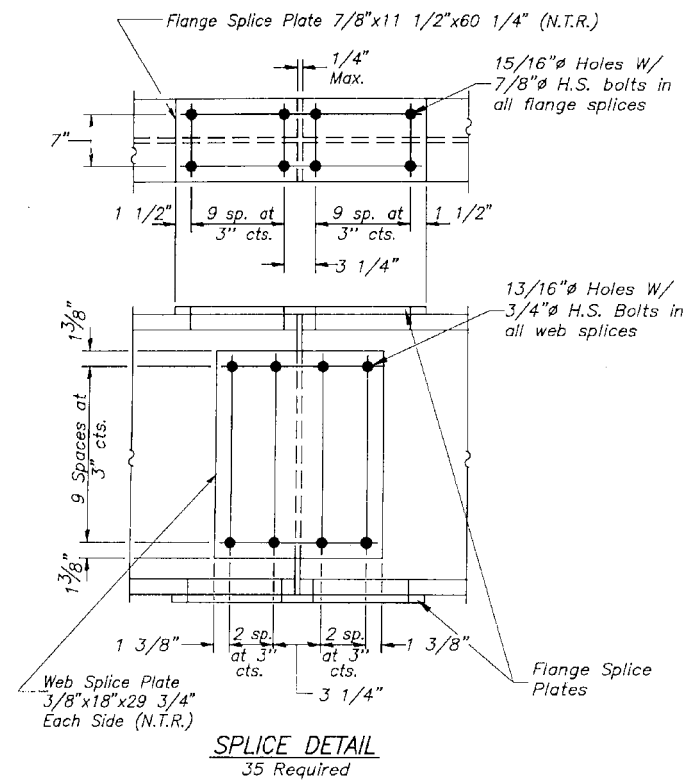
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	DRAWN -	REVISED -
PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED -
PLOT DATE = 10/10/2019	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS, SN 034-0066
(FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BRIDGE PAINTING 2020	VARIOUS	22	6
CONTRACT NO. 72142				
		ILLINOIS	FED. AID PROJECT	



INTERIOR BEAM MOMENT TABLE

Units	0.4 Span 1 & 0.6 Span 6	Piers 1 & 5	0.5 Span 2 & 5	Piers 2 & 4	0.5 Span 3 & 4	Pier 3
Is (in ⁴)	6710	6710	6710	6710	6710	6710
Ic (in ⁴)	17271	17271	17271	17271	17271	17271
Ss (in ³)	406	406	406	406	406	406
Sc (in ³)	587	587	587	587	587	587
Z		467		467		467
Q	(K/ft.) 0.749	1.009	0.749	1.009	0.749	1.009
M _l (K)	243.6	464.6	247.0	475.8	245.5	472.9
S _l (K/ft.)	0.260		0.260		0.260	
M _s (K)	95.2		110.3		107.7	
M _t (K)	455.3	247.4	514.1	273.5	518.3	275.7
M (Imp) (K)	119.3	62.5	124.9	66.5	125.9	67.0
S ₃ (M _t +I) (K)	957.7	517.3	1065.0	566.7	1073.7	571.2
M _a (K)	1685.4	1276.5	1849.0	1355.2	1854.9	1357.3
M _u (K)	3773		3773		3773	
f _s non-comp (k.s.i.)	7.2	13.7	7.3	14.0	7.3	14.0
f _s comp (k.s.i.)	1.9		2.3		2.2	
f _s (k.s.i.)	19.6	15.3	21.8	16.7	21.9	16.9
f _s (Overload) (k.s.i.)	28.7	29.0	31.4	30.7	31.4	30.9
f _s (Total) (k.s.i.)		37.7		39.9		40.2
VR (K)	47.3		45.1		44.9	

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

Ic and Sc are the moment of inertia and section modulus of the composite section used in computing fs (Total & Overload).

Z is the plastic section modulus used to determine the fully plastic moments in the non-composite areas.

M_l = Moment due to dead loads on non-composite area.

M_s = Moment due to dead loads on composite section.

M_t = Moment due to live loads on non-composite or composite section.

I = Live load impact

M_a (Applied Moment) = 1.3[M_l + M_s + S₃(M_t + I)].

M_u = Full plastic moment capacity for compact, braced section.

f_s (Overload) is the sum of the stresses due to M_l + M_s + S₃(M_t + I).

f_s (Total) is the sum of the stresses due to 1.3[M_l + M_s + S₃(M_t + I)].

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

INTERIOR BEAM REACTION TABLE

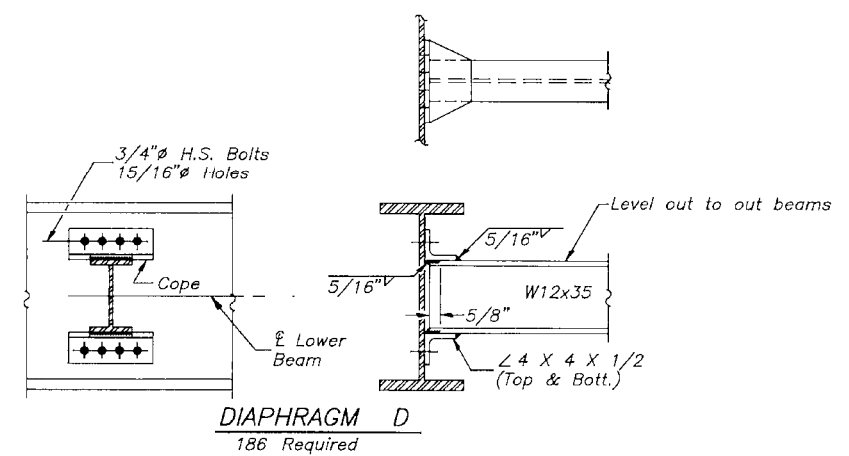
Units	E. & W. Abuts.	Piers 1 & 5	Piers 2 & 4	Pier 3
R _l (K)	25.2	82.2	81.8	81.6
R _t (K)	34.3	47.1	48.6	49.1
Imp. (K)	9.0	11.4	11.8	11.9
R (Total) (K)	68.5	140.7	142.2	142.6

TOP OF BEAM ELEVATIONS

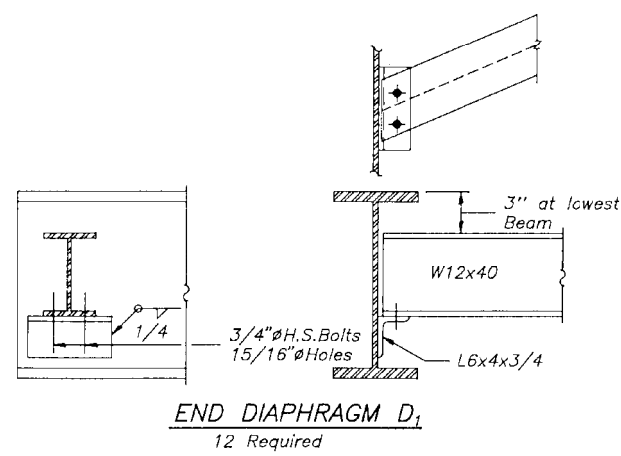
Beam No.	W E Brg.	Pier #1	Splice #1*	Pier #2	Splice #2*	Pier 3
1	557.410	557.724	557.851	557.980	558.077	558.072
2	557.548	557.861	557.987	558.113	558.210	558.202
3	557.657	557.968	558.093	558.217	558.313	558.302
4	557.763	558.072	558.198	558.318	558.414	558.400
5	557.673	557.981	558.106	558.224	558.318	558.302
6	557.582	557.888	558.012	558.127	558.221	558.202
7	557.460	557.764	557.888	558.000	558.094	558.072

Beam No.	Splice #3*	Pier #4	Splice #4*	Pier #5	Splice #5*	E E Brg.
1	558.139	558.000	558.037	557.764	557.768	557.460
2	558.269	558.127	558.164	557.888	557.908	557.582
3	558.368	558.224	558.260	557.981	557.999	557.673
4	558.466	558.318	558.354	558.072	558.089	557.763
5	558.367	558.217	558.252	557.968	557.983	557.657
6	558.266	558.113	558.148	557.861	557.874	557.548
7	558.135	557.980	558.013	557.724	557.736	557.410

*Top of Splice Plate For Fabrication Only



Note: Two hardened washers shall be required over all 15/16" holes.



Note: Two hardened washers shall be required over all 15/16" holes.

REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
					11/90

F.A. ROUTE 53 (US 136)
SECTION 25(B-1)
HANCOCK COUNTY

STRUCTURAL STEEL DETAILS
STRUCTURE NO. 034-0066
STATION 438+50

USER NAME = dudleybm	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED -
PLOT DATE = 10/10/2019	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

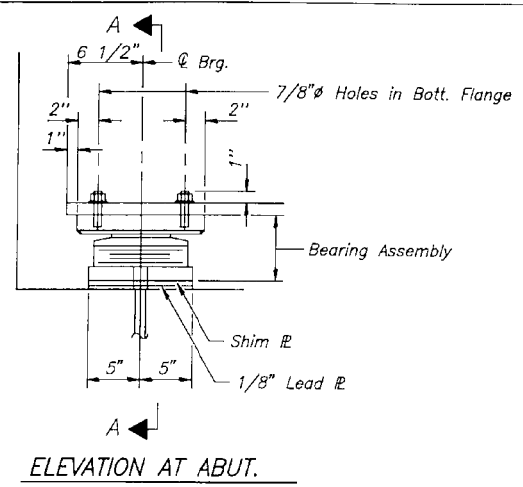
**EXISTING PLANS, SN 034-0066
(FOR INFORMATION ONLY)**

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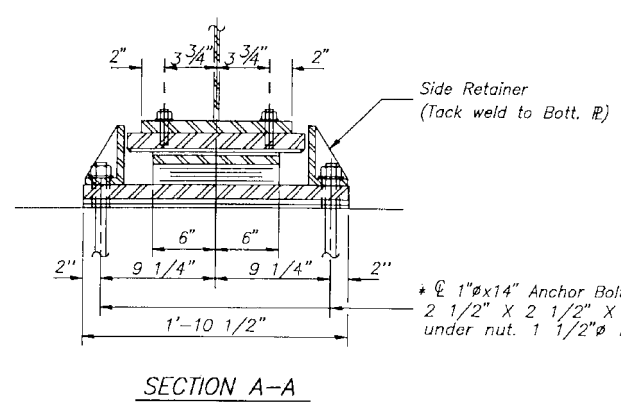
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BRIDGE PAINTING 2020	VARIOUS	22	7
CONTRACT NO. 72L42				
ILLINOIS FED. AID PROJECT				

MODEL: Default
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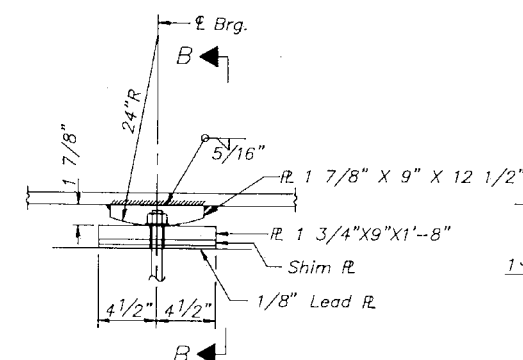
PROJECT NO.	SECTION	COUNTY	SHEET NO.	SHEET
F.A. 53		HANCOCK	223	69
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		
*(24,25)(W-1,RS-4) & 25(XB-1)				



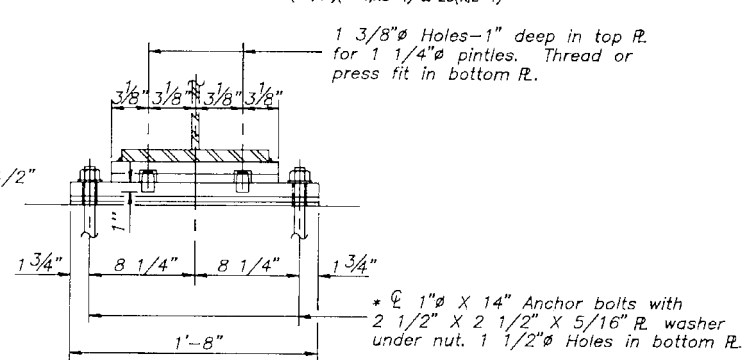
ELEVATION AT ABUT.



SECTION A-A



ELEVATION AT PIER 3

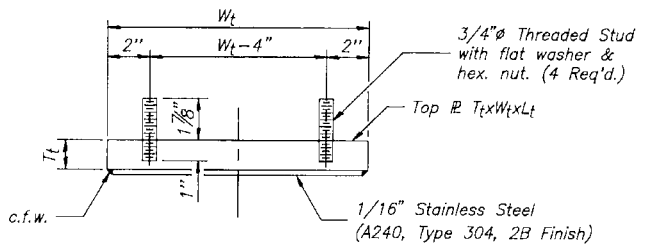


SECTION B-B

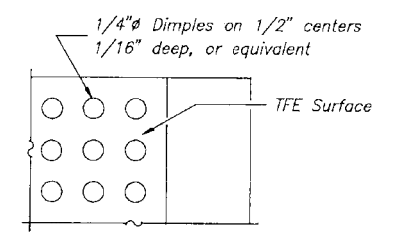
TYPE II TFE ELASTOMERIC EXP. BRG.

* Notes: Anchor bolts at fixed bearings may be built into the masonry. See sheet #11 for Anchor Bolt installation.

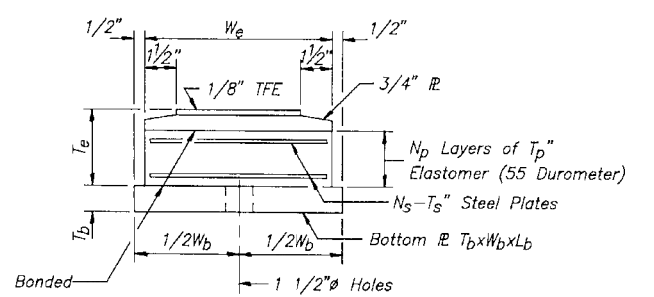
FIXED BEARING (7 Required)



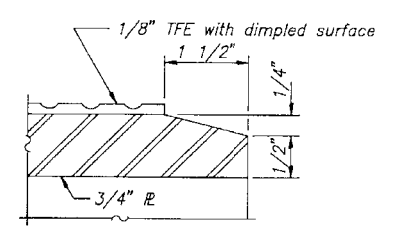
TOP BEARING ASSEMBLY



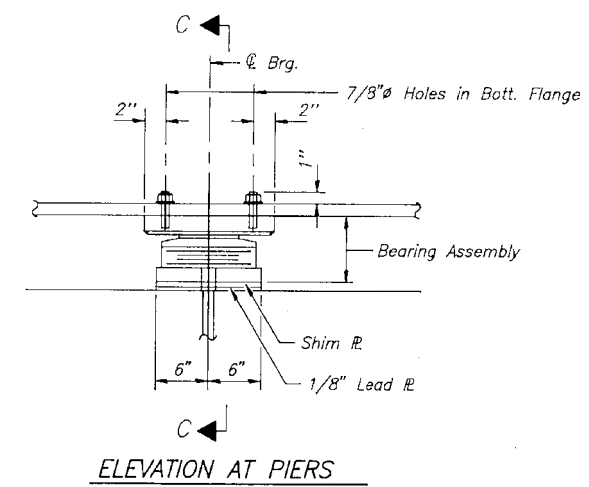
PLAN-TFE SURFACE



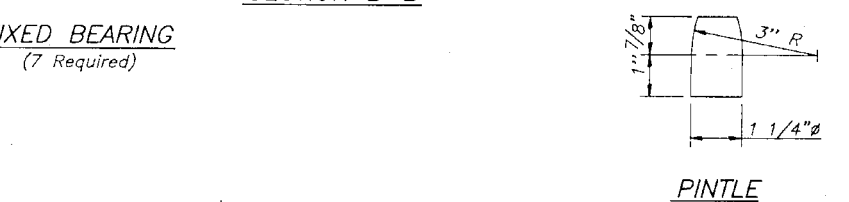
BOTTOM BEARING ASSEMBLY



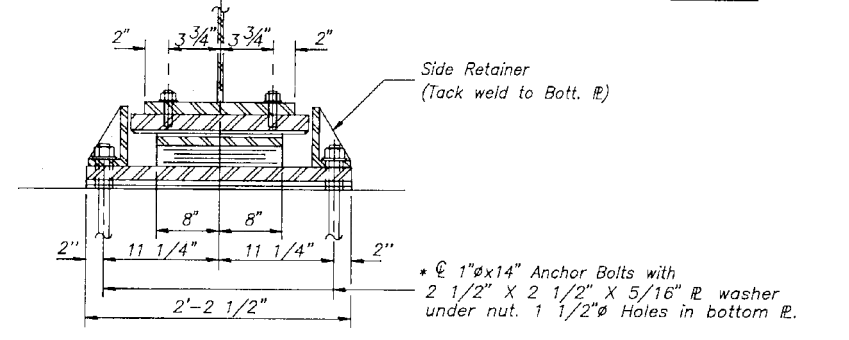
SECTION THRU TFE



ELEVATION AT PIERS



PINTLE



SECTION C-C

TYPE II TFE ELASTOMERIC EXP. BRG.

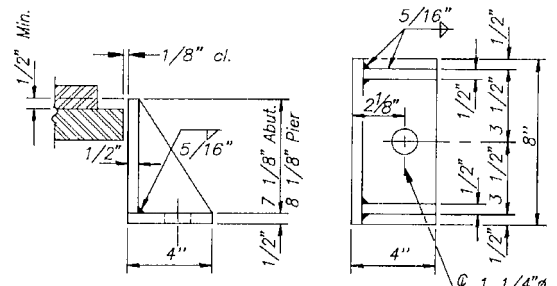
Note: The 1/8" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of 1/8" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

BILL OF MATERIAL

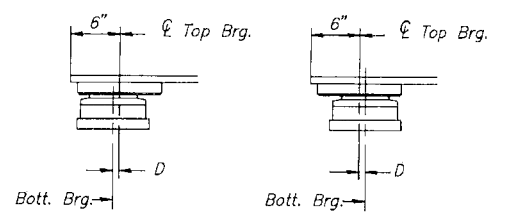
Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	42

Location	Tt	Wt	Lt	Tb	Wb	Lb	We	Tp	Np	Ts	Ns	Te
E. & W. Abuts.	1 1/2"	11"	14"	1"	10"	22 1/2"	9"	3/8"	8	3/32"	7	4 1/2"
Piers #1 & #5	2 3/4"	12"	18"	1 3/8"	12"	26 1/2"	11"	1/2"	5	1/8"	4	3 7/8"
Piers #2 & #4	2 7/8"	11"	18"	1 3/8"	12"	26 1/2"	11"	1/2"	5	1/8"	4	3 7/8"



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



BELOW 50F: (Move bott. brg. away from fixed brg.)
 ABOVE 50F: (Move bott. brg. toward fixed brg.)
 SETTING ANCHOR BOLTS AT EXP. BRG.
 D=1/8" per each 100' of expansion for every 15' temp. change from the normal temp. of 50F.

REV. NO.	DRAWN	CHKD.	APPD.	DESCRIPTION	DATE
				F.A. ROUTE 53 (US 136) SECTION 25(B-1) HANCOCK COUNTY BEARING ASSEMBLY, TYPE II STRUCTURE NO. 034-0066 STATION 438+50	11/90

MODEL: Default FILE NAME: C:\CONTRACTS\OPERATIONS\Bridges\Bridgplans_CAD\72L42 - beam end part west_F120\planbeam.ecdgn

USER NAME = dudleybm	DESIGNED -	REVISED -
PLOT SCALE = 100,0000' / in.	DRAWN -	REVISED -
PLOT DATE = 10/10/2019	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

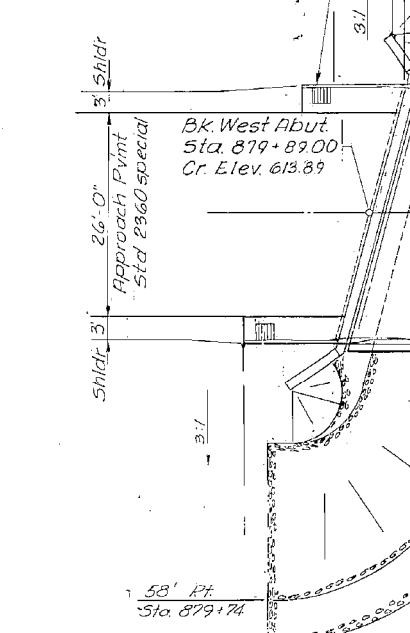
EXISTING PLANS, SN 034-0066
(FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

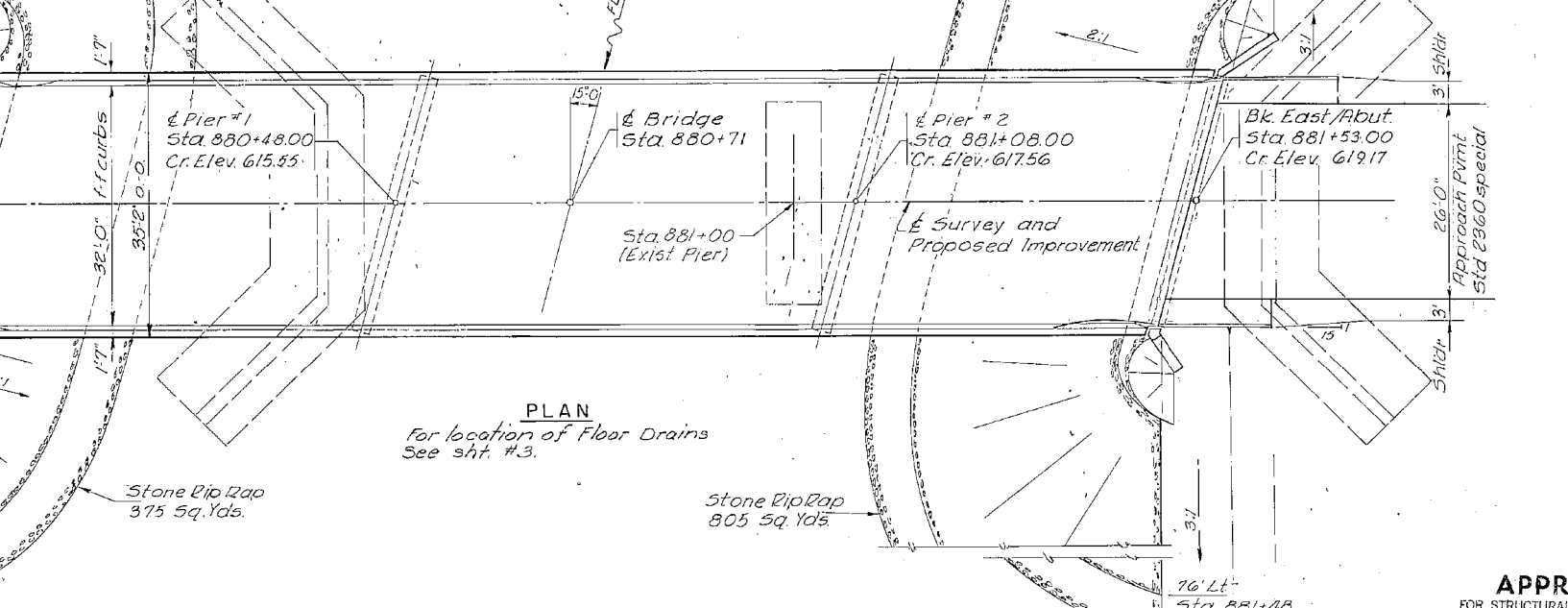
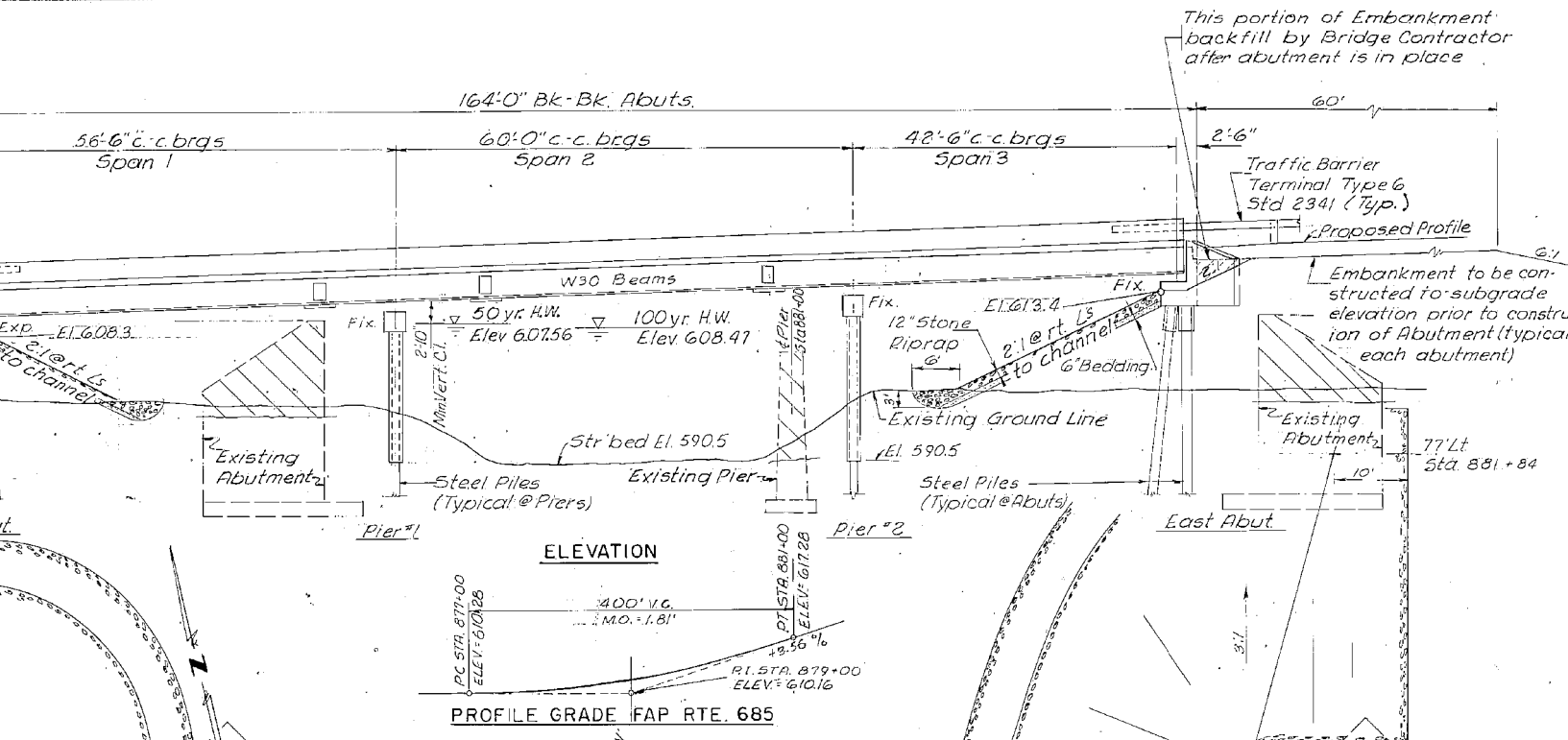
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR. D6 BRIDGE PAINTING 2020		VARIOUS	22	8
CONTRACT NO. 72L42				
ILLINOIS FED. AID PROJECT				

Existing Structure- Two span concrete deck girder, 2 spans @ 60'; 126'-2" Bk-Bk. Abuts; 24'-6" o-o. deck; Solid concrete Pier; Closed concrete Abutments; 22' rdwy; Str. No. 034-0009, built 1928
 BM #84-Chiseled + in SE corner 2'-6" wingwall of old concrete bridge 200' Lt. of Sta. 879+60. El. 601.61
 BM #84A-Chiseled + on SW wingwall of bridge @ Sta. 881+00 El. 609.92
 Existing structure to be removed by Contractor to 2'-0" below existing ground. Traffic shall be detoured during construction. No Salvage.

Bridge Approach Shoulder Pavement Std 2324 (typical) w/drain NW & SW corners w/o drains NE & SE corners



LETTERING FOR NAME PLATE
 LOCATE NAME PLATE AT SOUTHWEST WING. SEE STANDARD 2113



WATERWAY DATA

Drainage Area - 68 sq mi Low Grade Elev 613.85 @ Sta 879+87.61									
Flood	Freq Yr.	Q	Opening	SE Mat	Head Ft	Headwater			
Design	50	7330	1,080	1,335	607.56	1.12	0.74	609.68	608.3
Base	100	8375	-	-	608.47	1.46	0.84	609.93	609.31
Overtopping	N/A	-	-	-	-	-	-	-	-
Max Calc.	500	10,795	-	-	612.1	-	1.09	-	611.48

DESIGN STRESSES

SUPERSTRUCTURE	SUBSTRUCTURE
$f'_c = 3,500$ P.S.I.	$f'_c = 3,500$ P.S.I.
$f_s = 50,000$ P.S.I. (AASHTO-M222)	$f_y = 60,000$ P.S.I. (REINF.)
$f_y = 60,000$ P.S.I. (REINF.)	$n = 9$

DESIGN PROVIDES FOR FUTURE WEARING SURFACE OF 25 POUNDS PER SQUARE FOOT.
 THE DESIGN COMPLIES WITH REQUIREMENTS OF THE 1977 AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES AND APPLICABLE INTERIMS (1978 THRU 1983)
 LOADING HS 20-44

GENERAL NOTES

CLASS X CONCRETE SHALL BE USED THROUGHOUT.
 THE STANDARD SPECIFICATIONS ADOPTED BY THE DEPARTMENT OF TRANSPORTATION OCTOBER 1, 1993 SHALL APPLY TO THIS WORK.
 THE ZINC-SILICATE AND VINYL PAINT SYSTEM SHALL BE USED FOR SHOP AND FIELD PAINTING OF STRUCTURAL STEEL EXCEPT WHERE OTHERWISE NOTED.
 SEE PROPOSAL FOR BORING DATA.
 THE EMBANKMENT CONFIGURATION SHOWN SHALL BE THE MINIMUM EMBANKMENT THAT MUST BE CONST. PRIOR TO CONST. OF THE ABUTMENT.
 FIELD WELDING OF CONSTRUCTION ACCESSORIES WILL NOT BE PERMITTED TO THE BOTTOM FLANGE OF BEAMS 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.
 BEARING SEAT SURFACES SHALL BE CONSTRUCTED OR ADJUSTED TO THE DESIGNATED ELEVATIONS WITHIN A TOLERANCE OF 1/3 INCH. ADJUSTMENT SHALL BE MADE EITHER BY GRINDING OR BY SHIMMING THE BEARING. TWO 1/8 INCH ADJUSTING SHIMS OF THE DIMENSIONS OF THE BOTTOM BEARING PLATE, SHALL BE PROVIDED FOR EACH BEARING IN ADDITION TO ALL OTHER PLATES OR SHIMS.
 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 THEIR SPLICE PLATE MATERIAL.
 REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31 GRADE 50 OR M-63 GRADE 60.
 CALCULATED WEIGHT OF STRUCTURAL STEEL 92,460 LBS. (M222)
 ONE STEEL TEST PILE SHALL BE DRIVEN AT THE EAST ABUTMENT AS DIRECTED BY THE ENGINEER BEFORE ORDERING THE REMAINDER OF THE PILES.
 FASTENERS SHALL BE HIGH STRENGTH BOLTS (AASHTO M164, TYPE 3). BOLTS 7/8" DIA., OPEN HOLES 15/16" DIA., UNLESS OTHERWISE NOTED.
 ALL STRUCTURAL STEEL SHALL BE AASHTO M222.
 AASHTO M222 STRUCTURAL STEEL SHALL NOT BE PAINTED EXCEPT, THAT FOR A DISTANCE OF THREE TIMES THE DEPTH OF THE BEAMS OR GIRDERS (BUT NOT EXCEEDING 10 FEET) EACH WAY FROM DECK JOINTS, THE AASHTO M222 STRUCTURAL STEEL SHALL BE CLEANED AND GIVEN ONE COAT OF THE ZINC-SILICATE PRIMER AND A DARK MAROON VINYL FINISH COAT. BOTH COATS MAY BE APPLIED IN THE SHOP WITH SPOT PAINTING ONLY IN THE FIELD.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
REMOVAL OF EXISTING STRUCTURES	EACH	-	-	1
FLOOR DRAINS	EACH	14	-	14
PROTECTIVE COAT	SQ. YD.	705	-	705
CLASS X CONCRETE	CU. YD.	184.8	152.5	337.3
STRUCTURAL STEEL	L. SUM	-	-	1
STUD. SHEAR CONNECTORS	EACH	1,968	-	1,968
REINFORCEMENT BARS	POUND	-	10,110	10,110
REINFORCEMENT BARS (EPOXY COATED)	POUND	48,970	-	48,970
STEEL PILES HP8X36	LIN. FT.	-	420	420
STEEL PILES HP 10X42	LIN. FT.	-	452	452
TEST PILE STEEL HP8X36	EACH	-	1	1
NAME PLATES	EACH	1	-	1
STONE RIPRAP	SQ. YD.	-	1,180	1,180
NEOPRENE EXPANSION JOINT, 2"	LIN. FT.	35	-	35

APPROVED
 FOR STRUCTURAL ADEQUACY ONLY

Robert E. Gales
 Engineer of Bridges and Structures

ILLINOIS STRUCTURAL NO. 2875

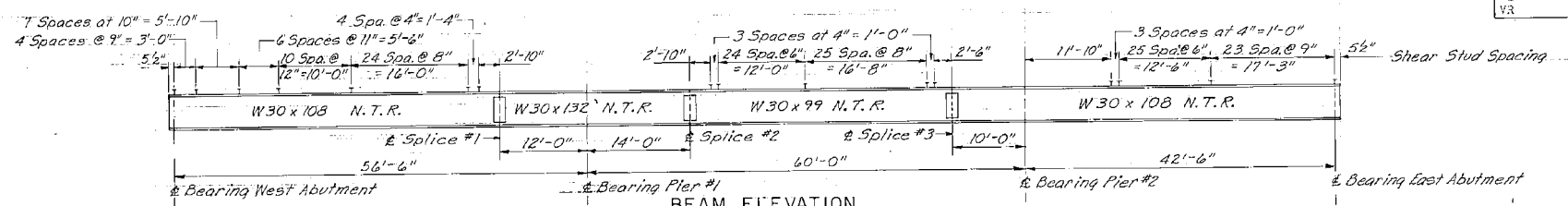
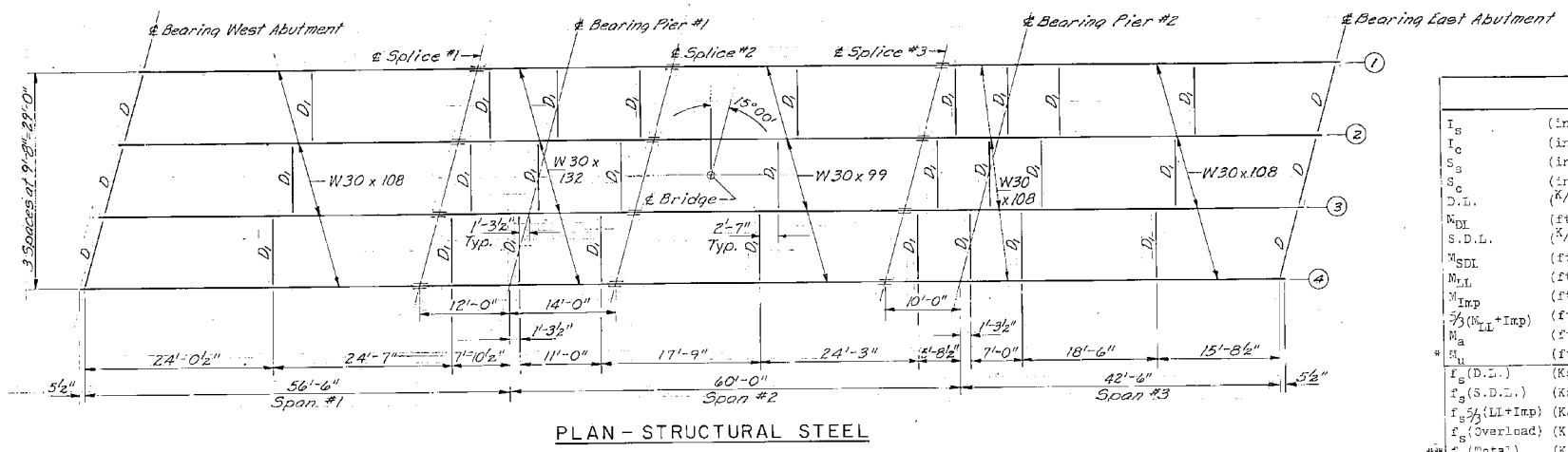
GENERAL PLAN & ELEVATION
 FAP 685 (ILL. RTES. 9 & 94)
 SECTION 116 BR.
 LAMOINE RIVER
 HANCOCK COUNTY
 STATION 880+71

auby, oglesby & bartolomucci
 consulting engineers
 and surveyors
 1323 south first street / springfield, illinois 62704

DRAWN T.E.B. DATE 4-4-04 JOB NO. 83-34 SHEET NO. 1 of 7
 CHECKED R.E.G.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
685	116 BR	HANCOCK	24	17
FED. ROAD DIST. NO. 1			ILLINOIS PROJECT 887-685 ()	

Sheet No. 5
7 Sheets



INTERIOR BEAM MOMENT TABLE

	0.4-Span 1	Pier 1	0.5-Span 2	Pier 2	0.6-Span 3
T_s (in ⁴)	4470	5770	3990	4470	3990
I_c (in ⁴)	13,640		12,550		12,550
S_x (in ³)	299	380	269	299	269
S_y (in ³)	426		390		390
$D.L.$ (K/ft)	1.124	1.528	1.124	1.528	1.124
M_{DL} (ft-K)	254	567	144	368	130
$S.D.L.$ (K/ft)	0.404		0.404		0.404
M_{SDL} (ft-K)	104		76		54
M_{Imp} (ft-K)	82		135		67
M_{Imp} (ft-K)	130		1055		505
M_{Total} (ft-K)	1999	1565	1658	1135	1283
M_u (ft-K)	2685		2562		2562
f_b (D.S.) (Ksi)	10.2	17.9	6.4	14.8	5.8
f_b (S.D.S.) (Ksi)	2.9		2.3		1.7
f_s (Total) (Ksi)	30.2	20.1	29.5	20.3	22.5
f_s (Overload) (Ksi)	43.3	38.0	38.2	35.1	30.0
f_s (Total) (Ksi)	70.4	49.4	62.6	45.6	68.5
VR (K)					

* M_u = Full plastic moment capacity for compact, braced section.
 ** Non-compact section
 M_u (Applied Moment) = $1.3 [M_{DL} + M_{SDL} + 5/3 (M_{LL} + I)]$
 I_s and I_c are the moment of inertia and section modulus of the steel section used in computing f_b (Overload).
 I_s and S_x are the moment of inertia and section modulus of the composite section used in computing f_s (Total and Overload).
 VR is the maximum L_c + impact shear range in span.
 The Fully Plastic Moment Capacity (M_u) is computed according to AASHTO 1.7.59(A) & 1.7.62(A).
 f_s (Total) is the sum of the stresses due to $1.3 [M_{DL} + 5/3 (M_{LL} + I)]$
 f_s (Overload) is the sum of the stresses due to $M_{DL} + 5/3 (M_{LL} + I)$

TOP OF BEAM ELEVATIONS (For Fabrication Only)

	C.L. Brg. W. Abut.	C.L. Splice No. 1	C.L. Brg. Pier No. 1	C.L. Splice No. 2	C.L. Splice No. 3	C.L. Brg. Pier No. 2	C.L. Brg. E. Abut.
Beam 1	613.10	614.31	614.68	615.12	616.36	616.72	618.27
Beam 2	613.20	614.40	614.77	615.20	616.43	616.79	618.34
Beam 3	613.13	614.32	614.68	615.11	616.34	616.70	618.25
Beam 4	612.90	614.08	614.44	614.87	616.08	616.45	617.99

INTERIOR BEAM REACTION TABLE

	W. ABUT.	PIER 1	PIER 2	E. ABUT.
R_{DL} (K)	33.2	102.4	83.7	23.8
R_{LL} (K)	51.2	80.4	58.6	47.7
R_{IMP} (K)	14.1	16.5	16.6	14.2
R_{TOTAL} (K)	98.5	179.3	158.9	85.7

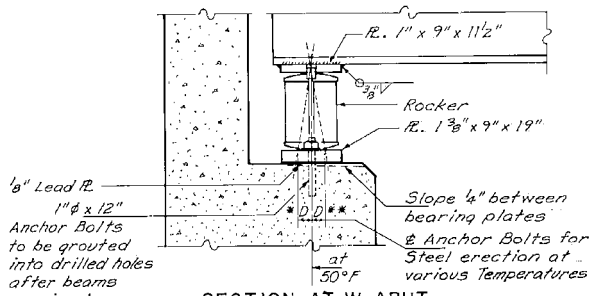
BILL OF MATERIAL

ITEM	QUANTITY
Structural Steel	Lump Sum 1
Stud Shear Connectors	Each 1,968

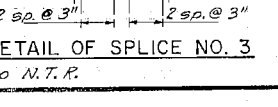
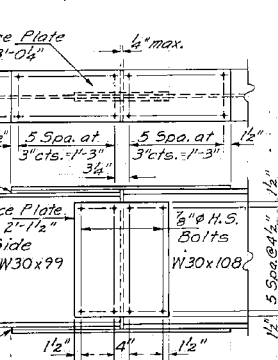
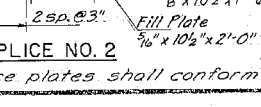
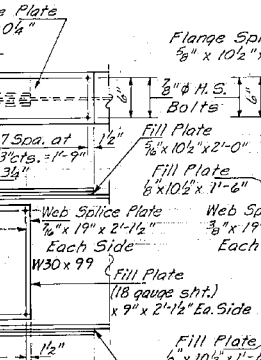
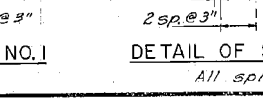
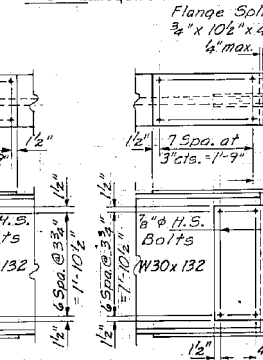
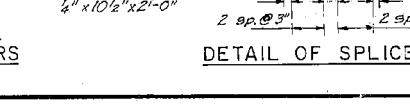
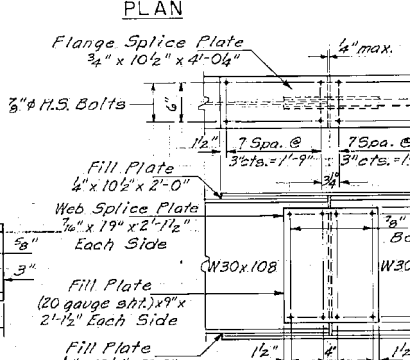
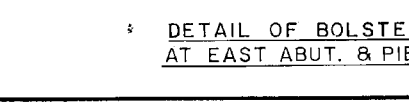
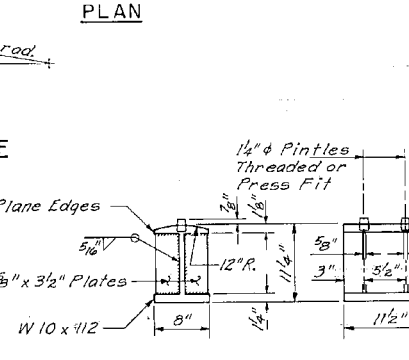
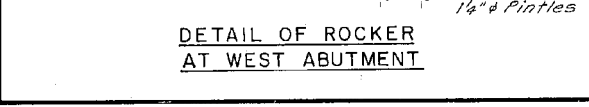
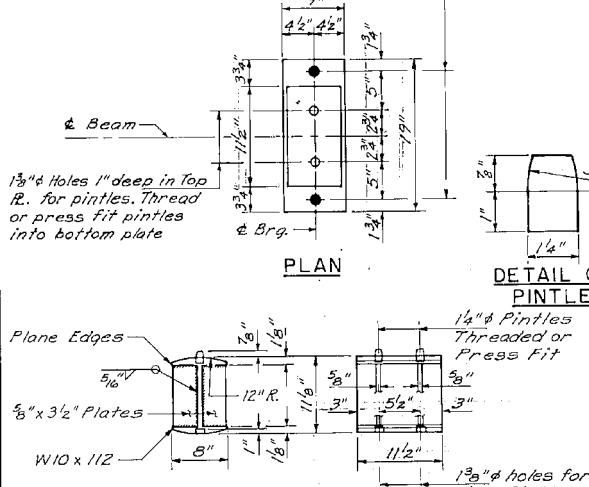
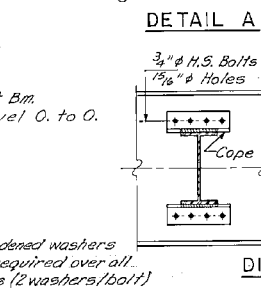
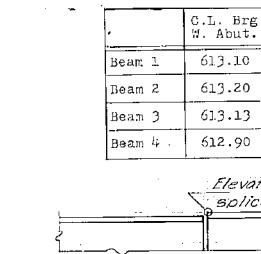
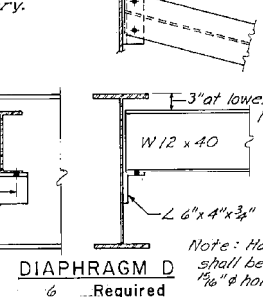
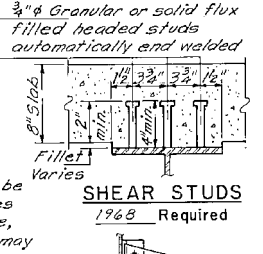
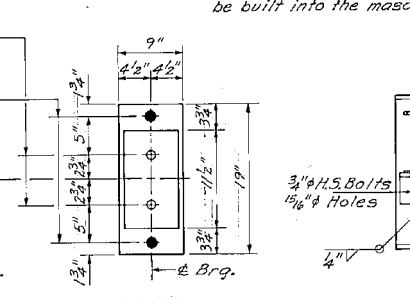
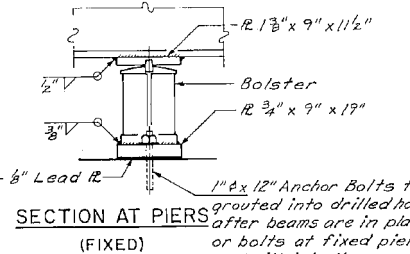
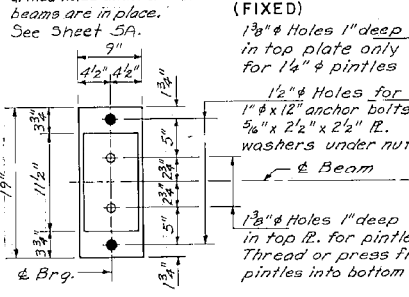
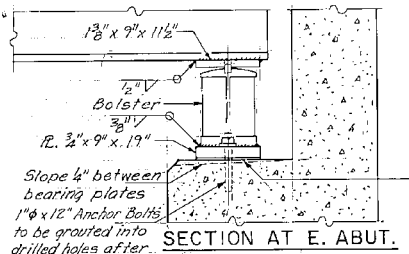
* Weight of bearing assemblies with lead plates and anchor bolts are included as Structural Steel.
 Estimated Weight = 3,772 pounds
 Calculated Weight of Structural Steel is 92,460 pounds
 Note: N.T.R. indicates Notch Toughness Requirements are applicable.
 All contact surface of joints for the diaphragms shall be free of paint or lacquer.

STRUCTURAL STEEL & DETAILS
 FAP 685 (ILL. RTES. 9 & 94)
 SECTION 116 BR
 LAMOINE RIVER
 HANCOCK COUNTY
 STATION 880 + 71

aubynoglesby & bartolomucci consulting engineers
 land surveyors
 planners
 1323 south first street / springfield, illinois 62704
 DRAWN H.C.B. DATE 4-4-84 JOB NO. 83-34 SHEET NO. 5 of 7
 CHECKED XEG



SECTION AT W. ABUT. (EXPANSION)
 *D = 6"/100 ft. of exp. for every 15° below the normal temp. of 50° F.
 D** = 6"/100 ft. of exp. for every 15° above the normal temp. at 50° F.



All splice plates shall conform to N.T.R.

MODEL: Defaut
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USER NAME = dudleybm
 DESIGNED -
 DRAWN -
 PLOT SCALE = 100,0000' / in.
 CHECKED -
 PLOT DATE = 10/10/2019

DESIGNED -
 DRAWN -
 CHECKED -
 DATE -

REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING PLANS, SN 034-0063
 (FOR INFORMATION ONLY)
 SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO.
 VAR. D6 BRIDGE PAINTING 2020 VARIOUS 22 10
 CONTRACT NO. 72L42
 ILLINOIS FED. AID PROJECT

BENCHMARK:

"□" ON CONCRETE BASE FOR STEEL
POST 140" LT. STA. 179+60, IL.RTE.79
ELEV. 461.65

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
W.B.36/ F.A.408	75-1HB-3	PIKE	239	65

SHEET 1 OF 23 SHEETS

HORIZONTAL CURVE DATA

W.B.RTE.36

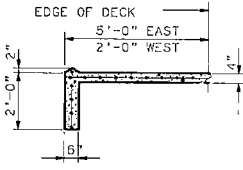
P.I. STA. 732+57.25
Δ = 157'-17"-34"
D = 4'-15"-00"
R = 1348.14
T = 6714.06
L = 3701.0'
E = 5499.94
P.C. STA. 665+43.20
P.T. STA. 702+44.21
S.E. = 11/16"/FT.

GENERAL NOTES

- SEE PROPOSAL FOR BORING DATA.
- FASTENERS SHALL BE HIGH STRENGTH BOLTS (AASHTO M 164). BOLTS 7/8"Ø, OPEN HOLES 15/16"Ø UNLESS OTHERWISE NOTED.
- CALCULATED WEIGHT OF STRUCTURAL STEEL IS: 1. M 183 = 111,680 LBS.
2. M 223, GR. 50 = 105,250 LBS.
TOTAL = 216,930 LBS.
- THE ZINC-SILICATE AND VINYL PAINT SYSTEM SHALL BE USED FOR SHOP AND FIELD PAINTING OF STRUCTURAL STEEL EXCEPT WHERE OTHERWISE NOTED. **
- FIELD WELDING OF CONSTRUCTION ACCESSORIES WILL NOT BE PERMITTED TO THE BOTTOM FLANGE OF 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 MAIN LOAD CARRYING MEMBER COMPONENTS SUBJECT TO TENSILE STRESS SHALL CONFORM TO THE SUPPLEMENTAL REQUIREMENTS FOR NOTCH TOUGHNESS ZONE 2. THESE COMPONENTS ARE THE TENSION FLANGES, WEBS AND ALL SPLICE PLATE MATERIAL OF THE STEEL GIRDERS.
- REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 31/M 42 OR M 53, GRADE 60.
- BEARING SEAT SURFACES SHALL BE CONSTRUCTED OR ADJUSTED TO THE DESIGNATED ELEVATIONS WITHIN A TOLERANCE OF 1/8". ADJUSTMENTS SHALL BE MADE EITHER BY GRINDING THE SURFACE OR BY SHIMMING THE BEARING. TWO 1/8" ADJUSTING SHIMS OF THE DIMENSIONS OF THE BOTTOM BEARING PLATE, SHALL BE PROVIDED FOR EACH BEARING IN ADDITION TO ALL OTHER PLATES OR SHIMS. FOR TYPE I ELASTOMERIC BEARINGS, SHIMS OF THE DIMENSIONS OF THE TOP PLATE SHALL BE PROVIDED AND PLACED AS DETAILED.
- ** THE COLOR OF THE FINISH COAT SHALL BE MUNSELL STANDARD 7.5 G4/B INTERSTATE GREEN.
- SLOPEWALL SHALL BE REINFORCED WITH WELDED WIRE FABRIC: 6" X 6" - W4.0 X W4.0 WEIGHING 58 LBS. PER 100 SQ. FT.
- THE EMBANKMENT CONFIGURATION SHOWN SHALL BE THE MINIMUM EMBANKMENT THAT MUST BE CONSTRUCTED PRIOR TO CONSTRUCTION OF ABUTMENTS.
- CONCRETE PILES AT THE APPROACH BENTS SHALL BE DRIVEN IN HOLES PRECURRED THROUGH THE EMBANKMENT IN ACCORDANCE WITH ARTICLE 513.09(c) OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL DRIVE THREE (3) CONCRETE TEST PILES IN PERMANENT LOCATIONS, ONE AT EACH ABUTMENT AND ONE AT THE PIER AS DIRECTED BY THE ENGINEER BEFORE ORDERING THE REMAINDER OF PILES.

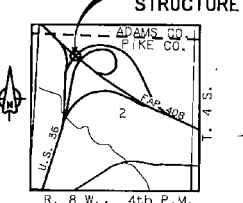
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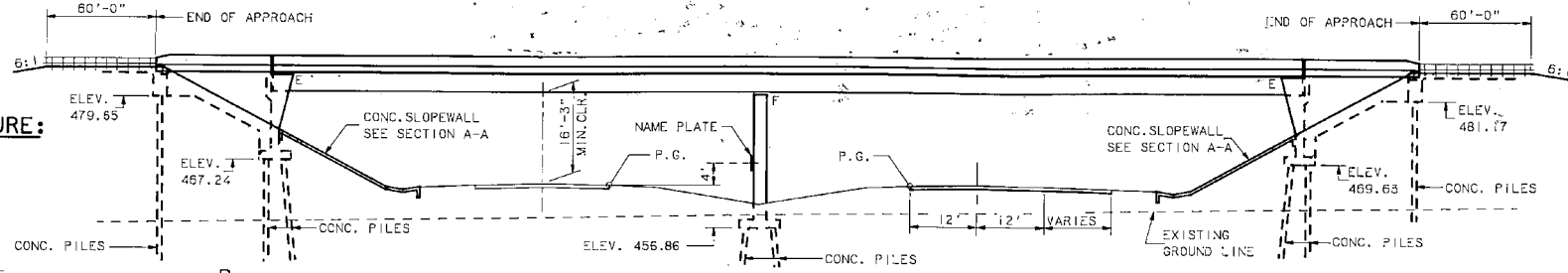


SECTION B-B

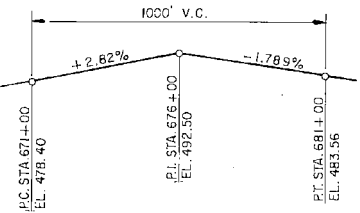
PROPOSED STRUCTURE



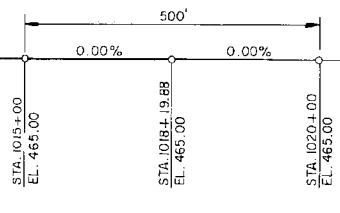
LOCATION SKETCH



ELEVATION

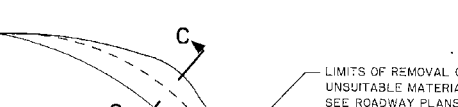


PROFILE GRADE W.B.36

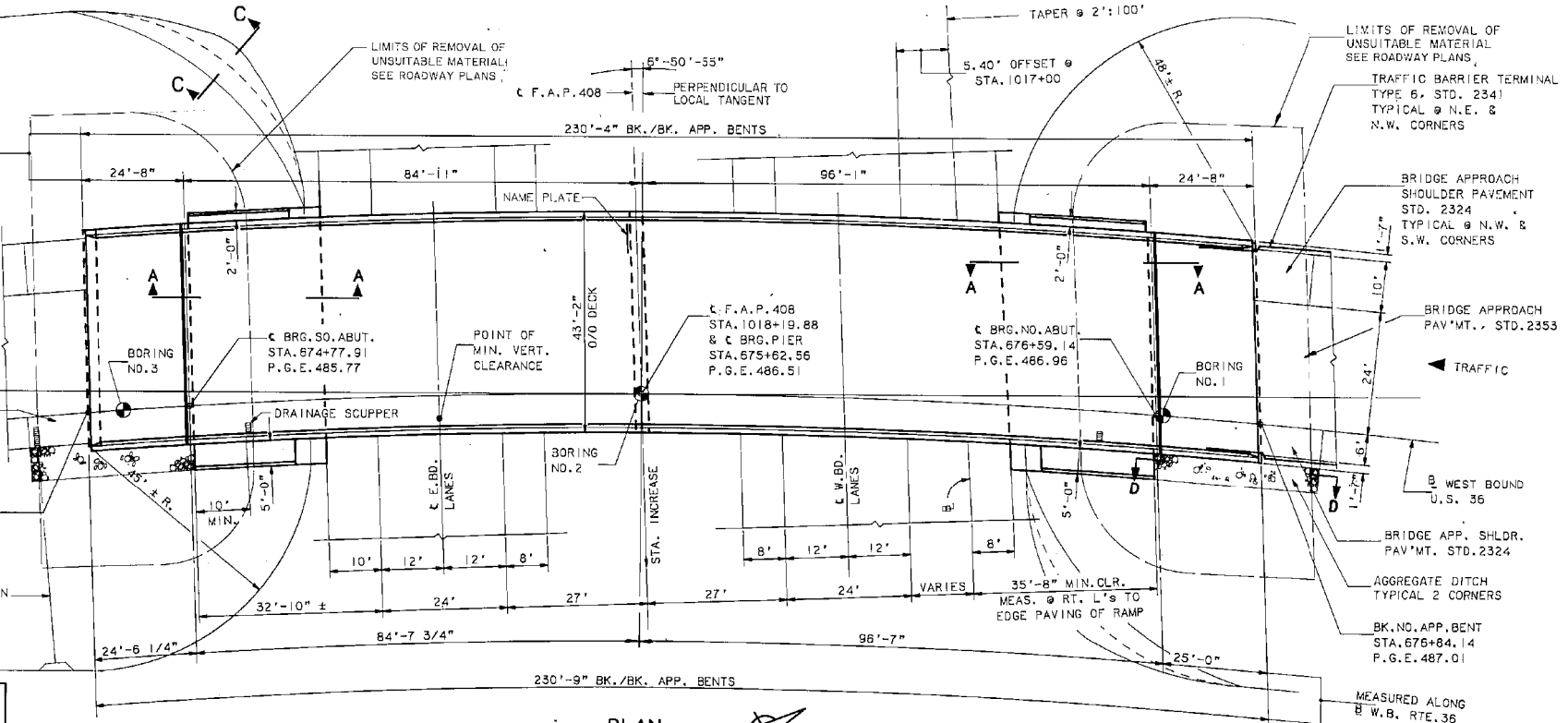
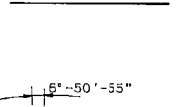


PROFILE GRADE F.A.P. 408

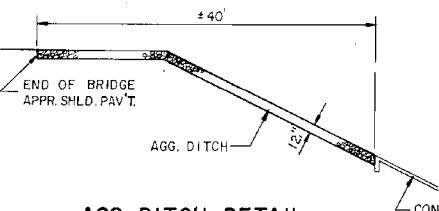
SLOPEWALL DETAIL - SECTION A-A



SECTION C-C



PLAN



AGG. DITCH DETAIL SECTION D-D

DESIGN STRESSES

STRUCTURAL STEEL

HYBRID GIRDER:
F_y = 50,000 p.s.i. AASHTO M-223
F_y = 36,000 p.s.i. AASHTO M-183

CAST IN PLACE CONCRETE

f'_c = 3,500 p.s.i.
f_y = 60,000 p.s.i. (REINF.)

LOADING HS 20-44

ALLOW 25 PSF FOR FUTURE WEARING SURFACE
DESIGN SPECIFICATIONS: 1989 AASHTO

ITEM	UNIT	SUPER.	SUB.	TOTAL
STRUCTURE EXCAVATION	C.Y.		540	540
CLASS X CONCRETE	C.Y.		249.4	249.4
STRUCTURAL STEEL	L.S.	.59		.59
STUD SHEAR CONNECTORS	E.A.	2,592		2,592
REINFORCEMENT BARS	LBS.	11,720	35,360	47,080
REINFORCEMENT BARS (EPOXY COATED)	LBS.	65,010		65,010
DRAINAGE SCUPPER	E.A.	2		2
ELASTOMERIC BEARING ASSEMBLY, TYPE I	E.A.	12		12
TEST PILE CONCRETE	E.A.		3	3
CONCRETE PILES	L.F.		4,027	4,027
NAME PLATES	E.A.		1	1
PROTECTIVE COAT	S.Y.	1211		1211
SLOPEWALL 4"	S.Y.		311	311
CLASS X CONCRETE SUPERSTRUCTURE	C.Y.	329.6		329.6
SAND BACKFILL	C.Y.		320	320
PREFORMED JOINT SEAL (4")	L.F.		88	88
BRIDGE SEAT SEALER	L.SUM			

* CALCULATED QUANTITY 280 SQ. FT.

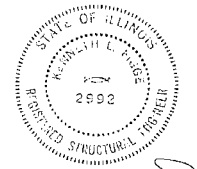
GENERAL PLAN & ELEVATION

W.B.U.S.RTE.36 OVER F.A.P.RTE.408
F.A.P.RTE.408, SEC. 75-1HB-3
PIKE COUNTY
STA. 1018+19.88
STRUCTURE NO. 075-0130

STA. 675+62.56
BUILT 19 BY
STATE OF ILLINOIS
F.A.P. RTE. 408, SEC. 75-1HB-3
LOADING HS20
STR. NO. 075-0130

NAME PLATE
(SEE STD. 211.3)

DESIGNED: D.H.C./V.S.N.
CHECKED: K.L.F.
DRAWN: K.H.L.
CHECKED: K.L.F.



APPROVED
FOR STRUCTURAL ADEQUACY ONLY
John W. Clark
Registered Structural Engineer

DATE: 7.29.88

KENNETH L. FIGGE
REGISTERED STRUCTURAL ENGINEER
IN ILLINOIS NO. 2992

Rev 1-23-90

Revised 1-8-90

Rev. 12-28-89 by H.L.C. Added Bridge Seat Sealer | Lump Sum

MODEL: Default
FILE NAME: \\CENTRALDB\OPERATIONS\Bridges\Bridgplans_CAD\72L42 - beam end paint west_F220\planstruct.dgn

USER NAME = dudleybm	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED -
PLOT DATE = 10/10/2019	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

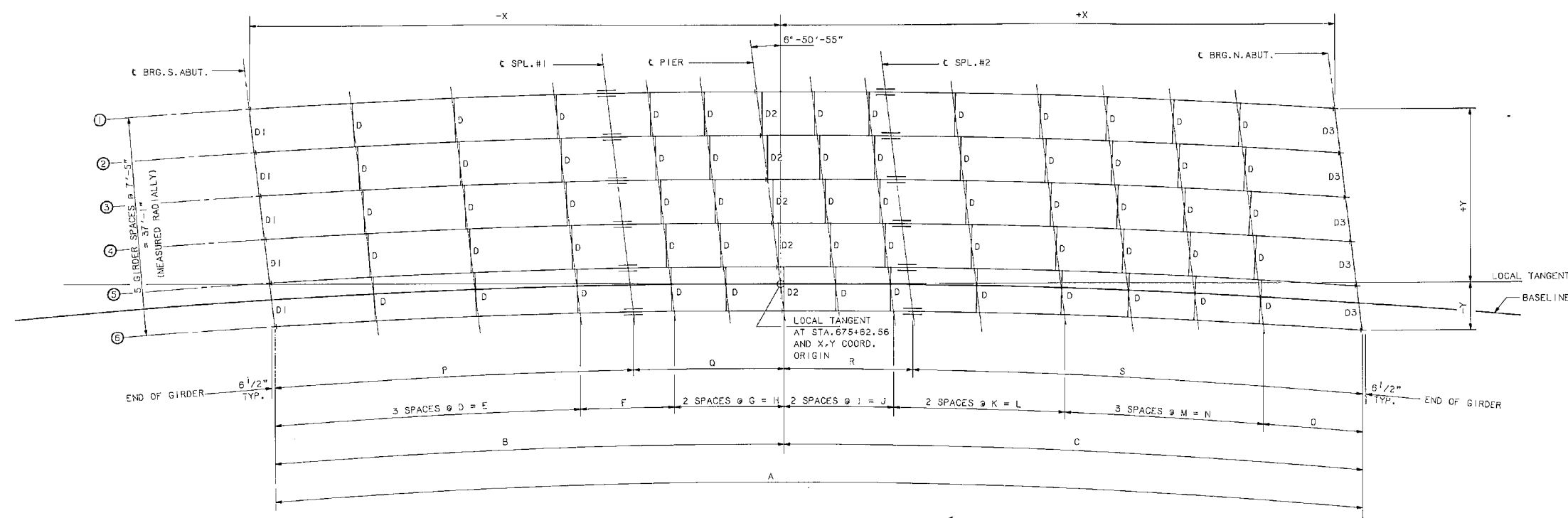
EXISTING PLANS, SN 075-0130
(FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BRIDGE PAINTING 2020	VARIOUS	22	11
CONTRACT NO. 72L42				
ILLINOIS FED. AID PROJECT				

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
W.B. 36/ F.A. 408	75-1HB-3	PIKE	239	78

SHEET NO. 14 OF 23 SHEETS



FRAMING PLAN

LONGITUDINAL DIMENSIONS FOR FRAMING PLAN

GIRDER NO.	RADIUS IN FEET	TOTAL LENGTH OF GIRDER ALONG C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	1360.682	182'-2 15/16"	181'-1 15/16"	84'-7 5/8"	96'-6 5/16"	16'-11 1/8"	50'-9 3/8"	15'-8 7/16"	9'-0 15/16"	18'-1 13/16"	9'-1 13/16"	18'-3 9/16"	14'-3 1/4"	28'-6 1/2"	11'-0 15/16"	33'-2 7/8"	16'-5 3/8"	59'-7 3/4"	24'-11 7/8"	21'-5 7/8"	75'-0 7/16"
2	1373.265	182'-3 1/8"	181'-2 1/8"	84'-7 11/16"	96'-6 7/16"	16'-11 1/8"	50'-9 7/16"	15'-8 7/16"	9'-0 15/16"	18'-1 13/16"	9'-1 13/16"	18'-3 9/16"	14'-3 1/4"	28'-6 1/2"	11'-1"	33'-2 15/16"	16'-5 7/16"	59'-7 3/4"	24'-11 15/16"	21'-5 7/8"	75'-0 9/16"
3	1365.848	182'-3 5/16"	181'-2 5/16"	84'-7 11/16"	96'-6 5/8"	16'-11 1/8"	50'-9 7/16"	15'-8 7/16"	9'-0 15/16"	18'-1 13/16"	9'-1 13/16"	18'-3 5/8"	14'-3 1/4"	28'-6 1/2"	11'-1"	33'-3"	16'-5 1/2"	59'-7 13/16"	24'-11 15/16"	21'-5 15/16"	75'-0 11/16"
4	1358.432	182'-3 1/2"	181'-2 1/2"	84'-7 3/4"	96'-6 3/4"	16'-11 1/8"	50'-9 7/16"	15'-8 1/2"	9'-0 15/16"	18'-1 13/16"	9'-1 13/16"	18'-3 5/8"	14'-3 5/16"	28'-6 9/16"	11'-1"	33'-3 1/16"	16'-5 1/2"	59'-7 13/16"	24'-11 15/16"	21'-5 15/16"	75'-0 13/16"
5	1351.015	182'-3 3/4"	181'-2 3/4"	84'-7 13/16"	96'-6 15/16"	16'-11 1/8"	50'-9 7/16"	15'-8 1/2"	9'-0 15/16"	18'-1 7/8"	9'-1 13/16"	18'-3 5/8"	14'-3 5/16"	28'-6 5/8"	11'-1 1/16"	33'-3 1/8"	16'-5 9/16"	59'-7 13/16"	25'-0"	21'-6"	75'-0 15/16"
6	1343.598	182'-3 15/16"	181'-2 15/16"	84'-7 7/8"	96'-7 1/16"	16'-11 3/16"	50'-9 1/2"	15'-8 1/2"	9'-0 15/16"	18'-1 7/8"	9'-1 13/16"	18'-3 11/16"	14'-3 5/16"	28'-6 5/8"	11'-1 1/16"	33'-3 3/16"	16'-5 9/16"	59'-7 7/8"	25'-0"	21'-6"	75'-1 1/16"

NOTE: ALPHA DIMENSIONS, I.E. A-B-C, ETC., ARE MEASURED ON CURVE ALONG CENTERLINE OF RESPECTIVE GIRDERS. ALL INTERMEDIATE DIAPHRAGMS AND DIAPHRAGMS AT PIER ARE ON RADIAL LINES.

X AND Y COORDINATE DIMENSIONS

GIRDER NO.	C BRG. S. ABUTMENT		C SPLICE #1		C BRG. PIER		C SPLICE #2		C BRG. N. ABUTMENT	
	X	Y	X	Y	X	Y	X	Y	X	Y
1	-88.484	29.703	-28.898	32.239	-3.908	32.536	17.583	32.430	92.548	29.436
2	-87.598	22.328	-28.010	24.839	-3.017	25.121	18.476	25.001	93.448	21.942
3	-86.713	14.953	-27.121	17.439	-2.127	17.706	19.366	17.571	94.348	14.446
4	-85.827	7.577	-26.232	10.039	-1.236	10.291	20.261	10.141	95.249	6.948
5	-84.941	0.202	-25.343	2.637	-0.345	2.875	21.153	2.709	96.150	-0.551
6	-84.055	-7.174	-24.454	-4.764	0.546	-4.542	22.046	-4.723	97.050	-8.052

TOP OF WEB ELEVATIONS *

GIRDER NO.	C BRG. S. ABUT.	C SPL. 1	C BRG. PIER	C SPL. 2	C BRG. N. ABUT.
1	486.862	487.328	487.509	487.655	488.064
2	486.441	486.909	487.090	487.236	487.642
3	486.021	486.490	486.671	486.817	487.221
4	485.600	486.070	486.252	486.398	486.800
5	485.180	485.651	485.833	485.979	486.378
6	484.759	485.232	485.414	485.560	485.957

*1. ELEVATIONS ABOVE ARE TOP OF GIRDER WEB BEFORE ANY DEFLECTION.
2. TOP OF WEB ELEVATIONS HAVE BEEN ADJUSTED FOR CAMBER.
3. ELEVATIONS ARE FOR FABRICATION ONLY.

DESIGNED: K.L.F.
CHECKED: V.S.N.
DRAWN: K.H.L.
CHECKED: K.L.F.

FRAMING PLAN
W.B.U.S.RTE.36 OVER F.A.P.RTE.408
F.A.P.RTE.408, SEC. 75-1HB-3
PIKE COUNTY
STA. 1018+19.88

REVISED: JAN. 8, 1990

MODEL: Default
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H.M. & C. NO. 2609-23

USER NAME = dudleybm	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100.0000' / in.	CHECKED -	REVISED -
PLOT DATE = 10/10/2019	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS, SN 075-0130
(FOR INFORMATION ONLY)

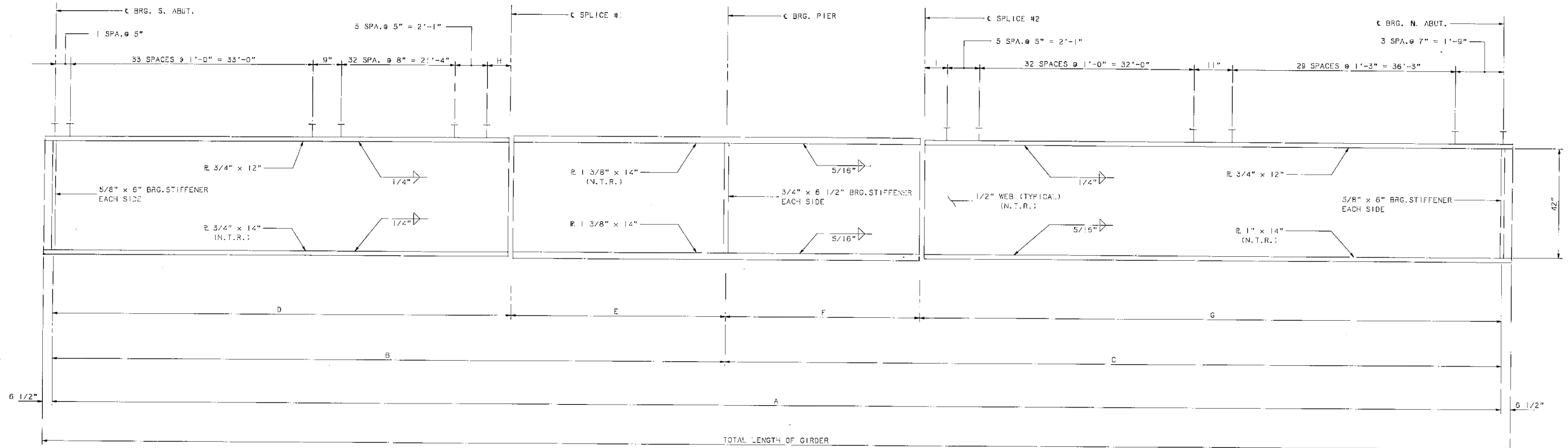
SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BRIDGE PAINTING 2020	VARIOUS	22	12
CONTRACT NO. 72L42				
ILLINOIS		FED. AID PROJECT		

JULY, 1988

ROUTE NO.	SECTION	COUNTY	TOTAL SHEET SHEETS NO.
W.B. 36/ FAP 408	75-1H3-3	PIKE	239 79

SHEET NO. 15 OF 23 SHEETS



GIRDER ELEVATION

- NOTES:
 1. "N.T.R." DESIGNATES PLATES TO WHICH NOTCH TOUGHNESS REQUIREMENTS ARE APPLICABLE.
 2. ALL GIRDER FLANGES SHALL BE AASHTO M 223 (GR. 50) STEEL.

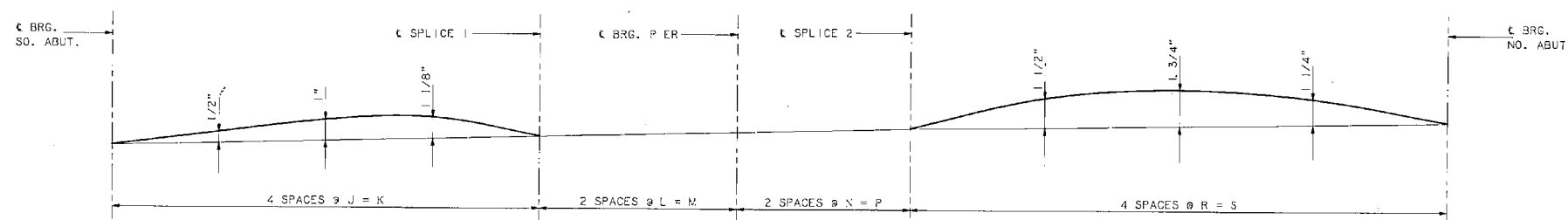
DIMENSIONS FOR CAMBER DIAGRAM

GIRDER NO.	J	K	L	M	N	P	R	S
1	14'-10 15/16"	59'-7 3/4"	12'-5 15/16"	24'-11 7/8"	10'-8 15/16"	21'-5 7/8"	18'-9 7/64"	75'-0 7/16"
2	14'-10 15/16"	59'-7 3/4"	12'-5 31/32"	24'-11 15/16"	10'-8 15/16"	21'-5 7/8"	18'-9 9/64"	75'-0 9/16"
3	14'-10 61/64"	59'-7 13/16"	12'-5 31/32"	24'-11 15/16"	10'-8 31/32"	21'-5 15/16"	18'-9 11/64"	75'-0 11/16"
4	14'-10 61/64"	59'-7 13/16"	12'-5 31/32"	24'-11 15/16"	10'-8 31/32"	21'-5 15/16"	18'-9 13/64"	75'-0 13/16"
5	14'-10 61/64"	59'-7 13/16"	12'-6"	25'-0"	10'-9"	21'-6"	18'-9 15/64"	75'-0 15/16"
6	14'-10 31/32"	59'-7 7/8"	12'-6"	25'-0"	10'-9"	21'-6"	18'-9 17/64"	75'-1 1/16"

GIRDER DIMENSIONS

GIRDER NO.	RADIUS IN FEET	TOTAL LENGTH OF GIRDER ALONG C	A	B	C	D	E	F	G	H	I
1	1380.662	182'-2 15/16"	181'-1 15/16"	84'-7 5/8"	96'-6 5/16"	59'-7 3/4"	24'-11 7/8"	21'-5 7/8"	75'-0 7/16"	2'-0 3/4"	2'-0 7/16"
2	1373.265	182'-3 1/8"	181'-2 1/8"	84'-7 11/16"	96'-6 7/16"	59'-7 3/4"	24'-11 15/16"	21'-5 7/8"	75'-0 9/16"	2'-0 3/4"	2'-0 9/16"
3	1365.848	182'-3 3/8"	181'-2 3/8"	84'-7 3/4"	96'-6 5/8"	59'-7 13/16"	24'-11 15/16"	21'-5 15/16"	75'-0 11/16"	2'-0 13/16"	2'-0 11/16"
4	1358.432	182'-3 1/2"	181'-2 1/2"	84'-7 3/4"	96'-6 3/4"	59'-7 13/16"	24'-11 15/16"	21'-5 15/16"	75'-0 13/16"	2'-0 13/16"	2'-0 13/16"
5	1351.015	182'-3 3/4"	181'-2 3/4"	84'-7 13/16"	96'-6 15/16"	59'-7 13/16"	25'-0"	21'-6"	75'-0 15/16"	2'-0 13/16"	2'-0 15/16"
6	1343.598	182'-3 15/16"	181'-2 15/16"	84'-7 7/8"	96'-7 1/16"	59'-7 7/8"	25'-0"	21'-6"	75'-1 1/16"	2'-0 7/8"	2'-1 1/16"

DESIGNED: D.H.C./V.S.N.
 CHECKED: K.L.F.
 DRAWN: K.H.L.
 CHECKED: K.L.F.



CAMBER DIAGRAM

NOTE: ALL GIRDER DIMENSIONS THIS SHEET ARE MEASURED ALONG THE CURVED C OF GIRDER.

GIRDER DETAILS
 W.B.U.S.RTE. 36 OVER F.A.P.RTE. 408
 F.A.P.RTE. 408, SEC. 75-1H3-3
 PIKE COUNTY
 STA. 1018+19.88

MODEL: Default
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H.M. & G. NO. 2809-23

USER NAME = dudleybm	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100.0000' / in.	CHECKED -	REVISED -
PLOT DATE = 10/10/2019	DATE -	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

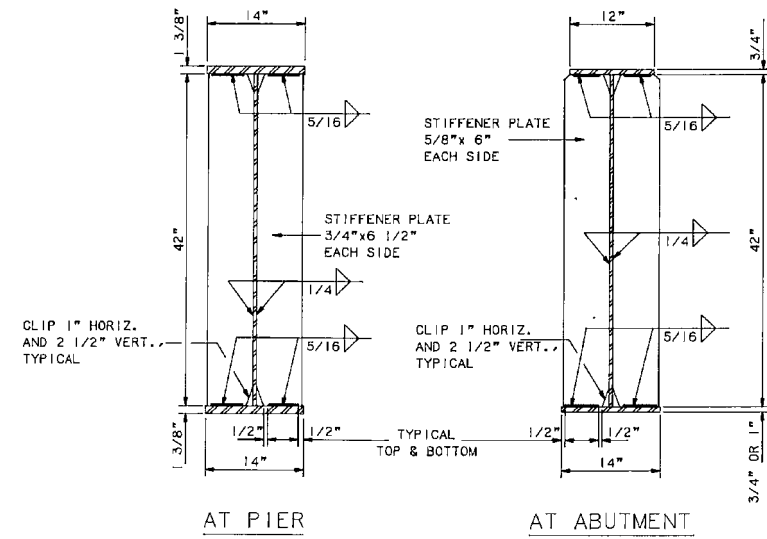
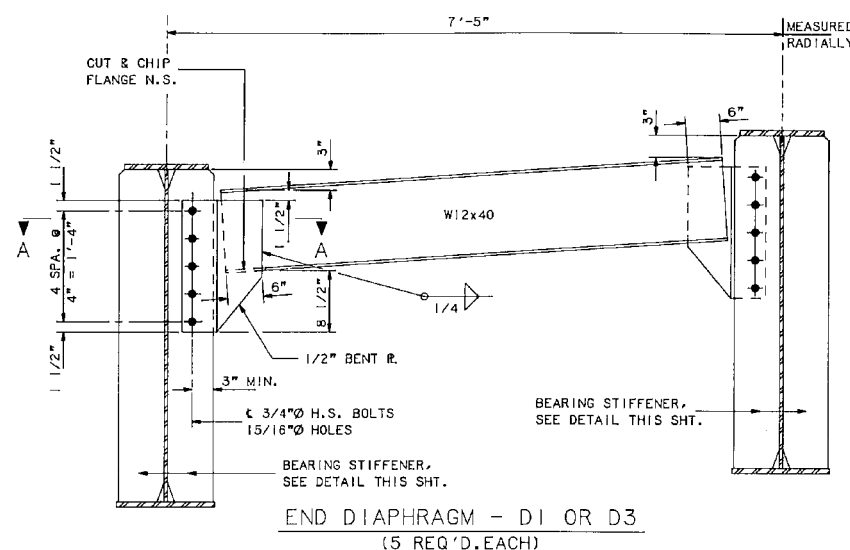
**EXISTING PLANS, SN 075-0130
 (FOR INFORMATION ONLY)**

SCALE: SHEET OF SHEETS STA. TO STA.

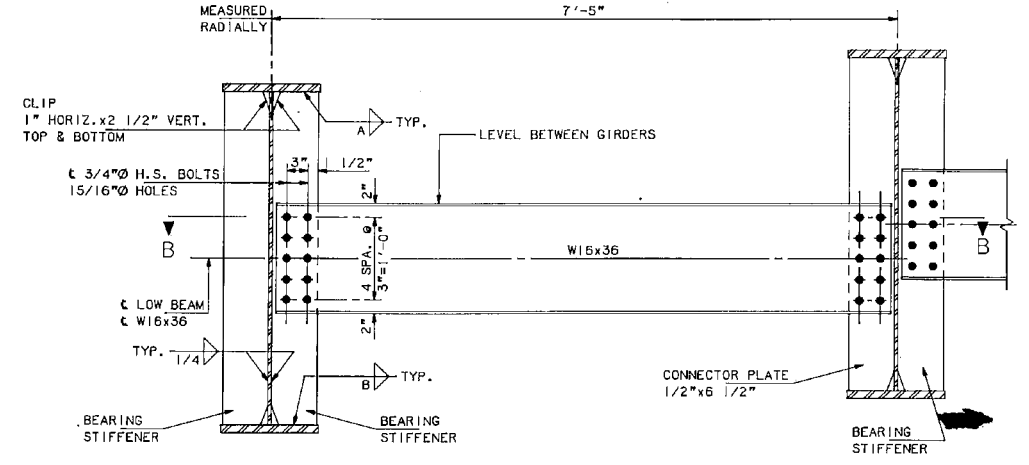
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BRIDGE PAINTING 2020	VARIOUS	22	13
			CONTRACT NO. 72L42	
ILLINOIS FED. AID PROJECT				

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
W.B. 36/ FAP 408	75-1HB-3	PIKE	239	80

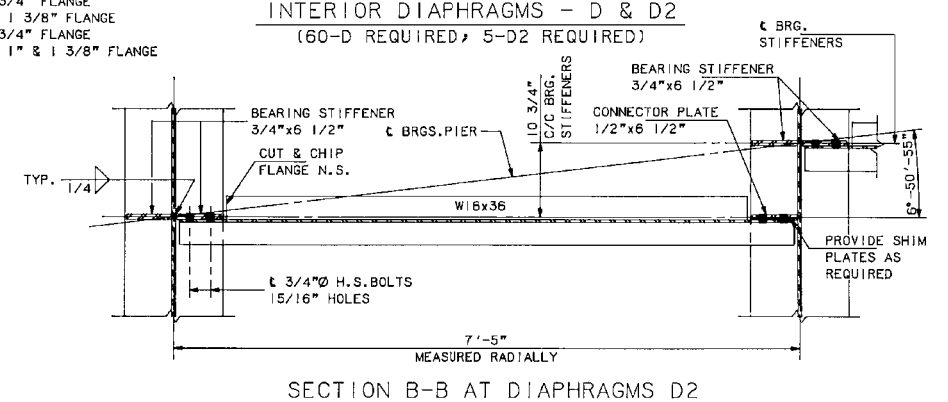
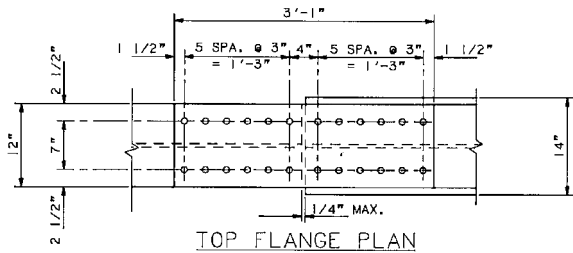
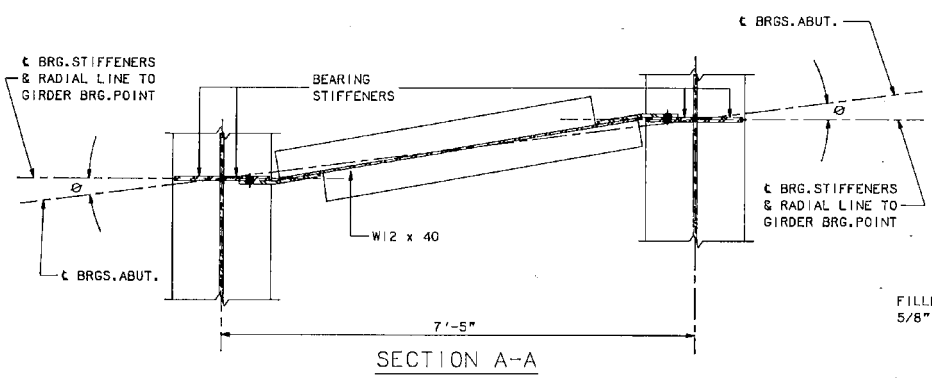
SHEET NO. 16 OF 23 SHEETS



NOTE: HARDENED WASHERS ARE REQUIRED OVER ALL 15/16" HOLES.

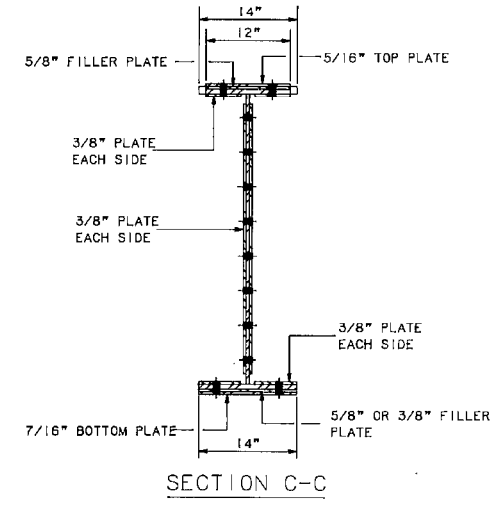


A = 1/4" FOR 3/4" FLANGE
 = 5/16" FOR 1 3/8" FLANGE
 B = 1/4" FOR 3/4" FLANGE
 = 5/16" FOR 1" & 1 3/8" FLANGE

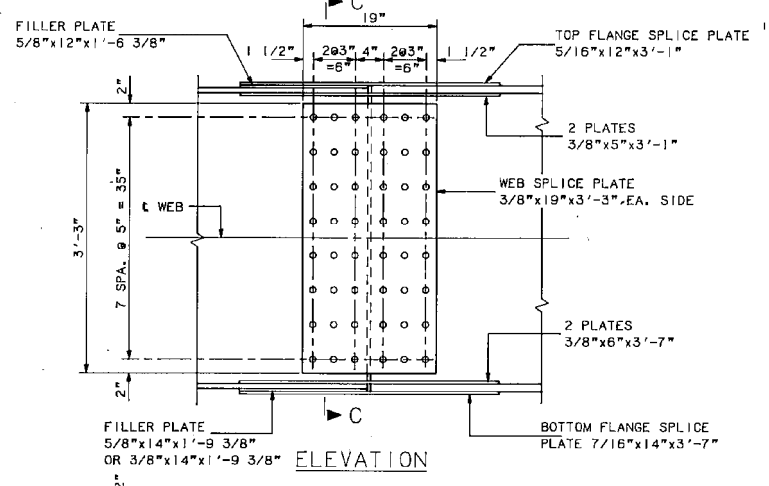


SECTION B-B AT DIAPHRAGMS D2

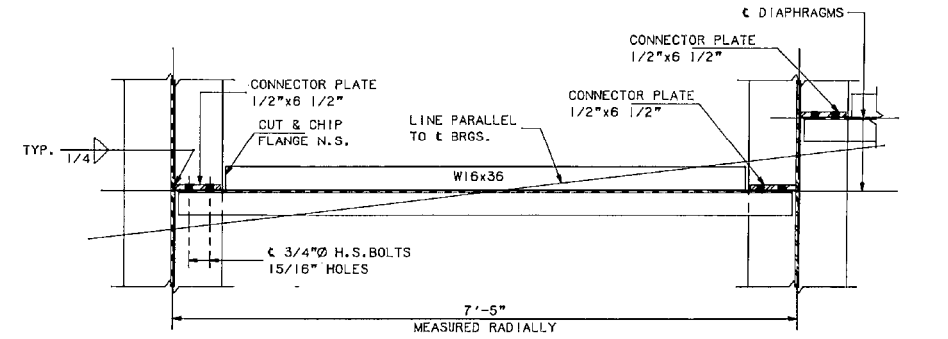
SECTION A-A



SECTION C-C

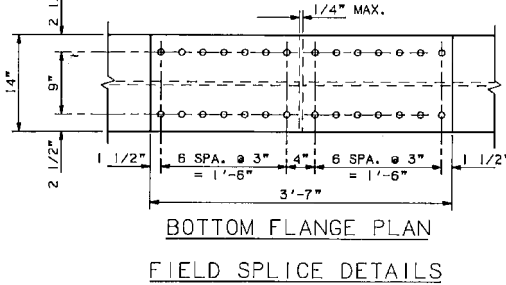


ELEVATION

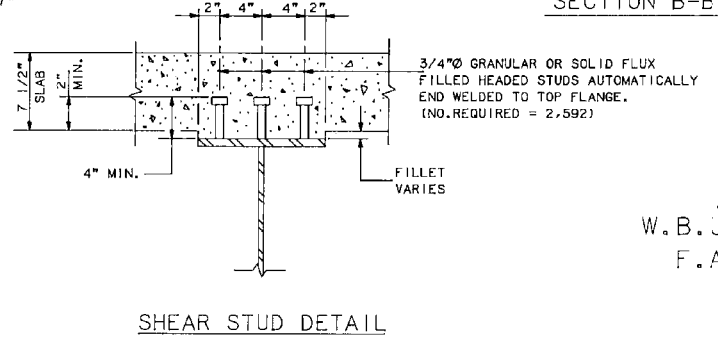


SECTION B-B AT DIAPHRAGMS D

- NOTES:
- ALL SPLICE BOLTS ARE 7/8" Ø HIGH STRENGTH BOLTS AASHTO M164 STEEL, 15/16" Ø OPEN HOLES.
 - ALL SPLICE PLATE MATERIALS ARE SUBJECT TO NOTCH TOUGHNESS REQUIREMENTS.
 - ALL FLANGE AND WEB SPLICE PLATES SHALL BE AASHTO M223, GR. 50 STEEL.
 - ALL DIAPHRAGMS AND CONNECTING PLATES ARE SUBJECT TO NOTCH TOUGHNESS REQUIREMENTS.
 - TWO HARDENED WASHERS OVER ALL BOLTED DIAPHRAGM CONNECTIONS.



BOTTOM FLANGE PLAN



SHEAR STUD DETAIL

DESIGNED:	D.H.C.
CHECKED:	K.L.F.
DRAWN:	K.H.L.
CHECKED:	K.L.F.

	GIRDER #1	GIRDER #2	GIRDER #3	GIRDER #4	GIRDER #5	GIRDER #6
S. ABUT.	3'-10'-27"	3'-11'-29"	3'-12'-31"	3'-13'-34"	3'-14'-38"	3'-15'-42"
N. ABUT.	10'-41'-32"	10'-45'-02"	10'-48'-35"	10'-52'-10"	10'-55'-47"	10'-59'-27"

STRUCTURAL STEEL DETAILS
 W.B. J.S. RTE. 36 OVER F.A.P. RTE. 408
 F.A.P. RTE. 408, SEC. 75-1HB-3
 PIKE COUNTY
 STA. 1018+19.88

REVISED: JAN. 8, 1990

MODEL: Default FILE NAME: \\CENTRAL\BID\OPERATIONS\Bridges\BridgPlans_CAD\72L42 - beam end part west_F220\plansteel.dgn

H.M. & G. NO. 2609-23

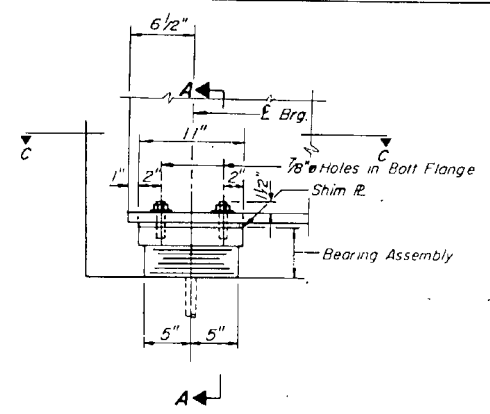
USER NAME = dudleybm	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100.0000' / in.	CHECKED -	REVISED -
PLOT DATE = 10/10/2019	DATE -	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING PLANS, SN 075-0130
 (FOR INFORMATION ONLY)

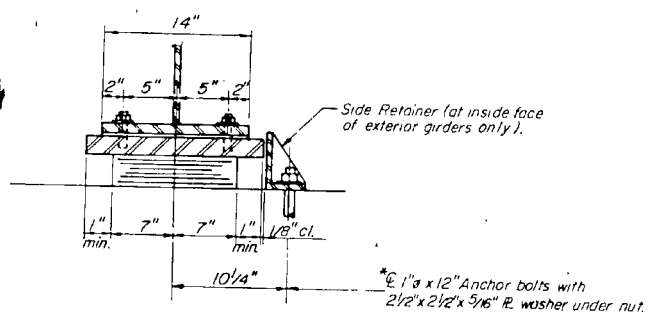
SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BRIDGE PAINTING 2020	VARIOUS	22	14
			CONTRACT NO. 72L42	
		ILLINOIS	FED. AID PROJECT	



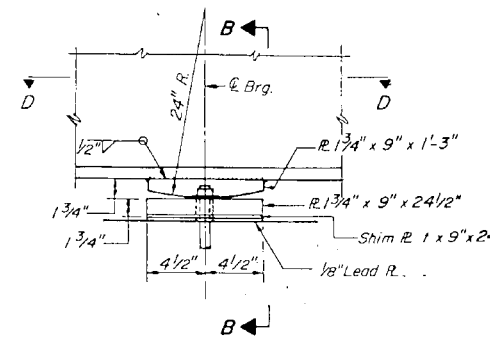
ELEVATION AT ABUT.

TYPE I ELASTOMERIC EXP. BRG.



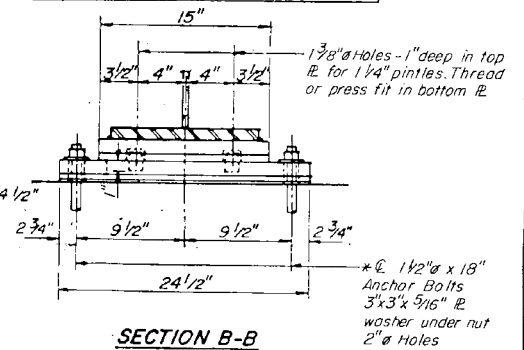
SECTION A-A

- NOTES:
1. After Girders have been erected holes at expansion bearings shall be drilled and anchor bolts grouted in place.
 2. Anchor Bolts at fixed bearings may be built into the masonry.
 3. See sheet #18 for Anchor Bolt installation.
 4. All steel plates shall be of AASHTO M 223, Grade 50 Steel.
 5. No shim plates will be required at Abutments or Pier. If constructed to bearing seat elevations shown on the plans.

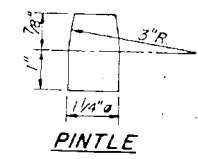


ELEVATION AT PIER

FIXED BEARING



SECTION B-B



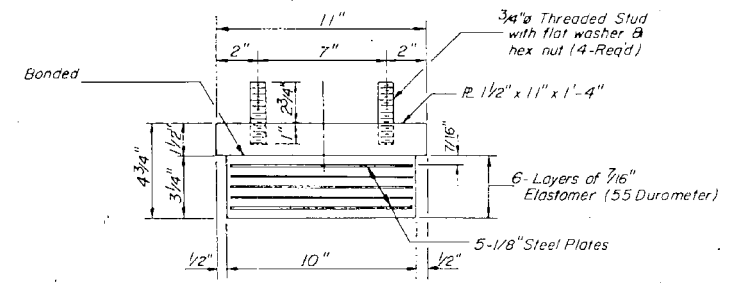
PINTLE

MAXIMUM GIRDER REACTION TABLE (GIRDER 1)

	S. ABUT.	PIER	N. ABUT.
R _Q (k)	38.1	146.8	49.0
R _L (k)	40.0	60.7	40.7
R _{Imp} (k)	9.5	14.1	9.2
R _{Total} (k)	87.6	221.6	98.9

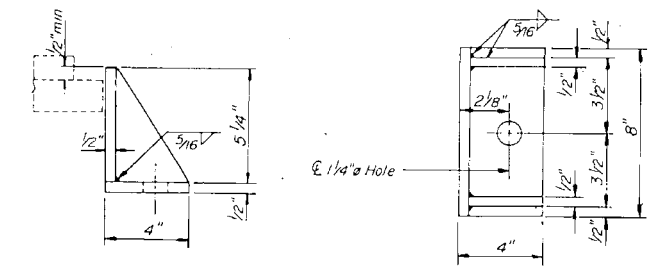
INTERIOR GIRDER MOMENT TABLE

	0.4 SPAN 1	PIER	0.6 SPAN 2
I _s (in ⁴)	11,971	21,201	13,402
I _c (in ⁴)	31,830		36,925
S _s (in ³)	571.2	948	686.2
S _c (in ³)	824.4		979.1
S _{bi} (in ³)	24.5	44.9	32.7
Q (K)	0.87	1.20	0.88
M _Q (K)	351.1	1419.2	661.7
S _Q (K)	0.32		0.32
M _{sQ} (K)	159.2		252.5
M _L (K)	716.3	-507.7	811.3
M _{imp} (K)	170.5	-117.8	183.3
M ₃ (M _L + I) (K)	1478.0	1042.5	1657.7
M ₀ (K)	2584.8	3200.2	3343.5
M _{bi} (K)	12.5	4.5	6.9
f _{sQ} non-comp (ksi)	7.4	18.0	11.6
f _{sQ} (comp) (ksi)	2.3		3.1
f _{s3} (L + I) (ksi)	21.5	13.2	20.3
f _w (ksi)	6.2	1.2	2.5
(f _s + f _w) (Overload) (ksi)	36.0	32.1	36.9
f _s (Total) (ksi)	40.6	40.6	45.5
f _s (Total) + f _w (ksi)	46.8	41.8	48.0
VR (K)	57.6		57.1
F _b (ksi)	48.0	47.0	48.4



BEARING ASSEMBLY

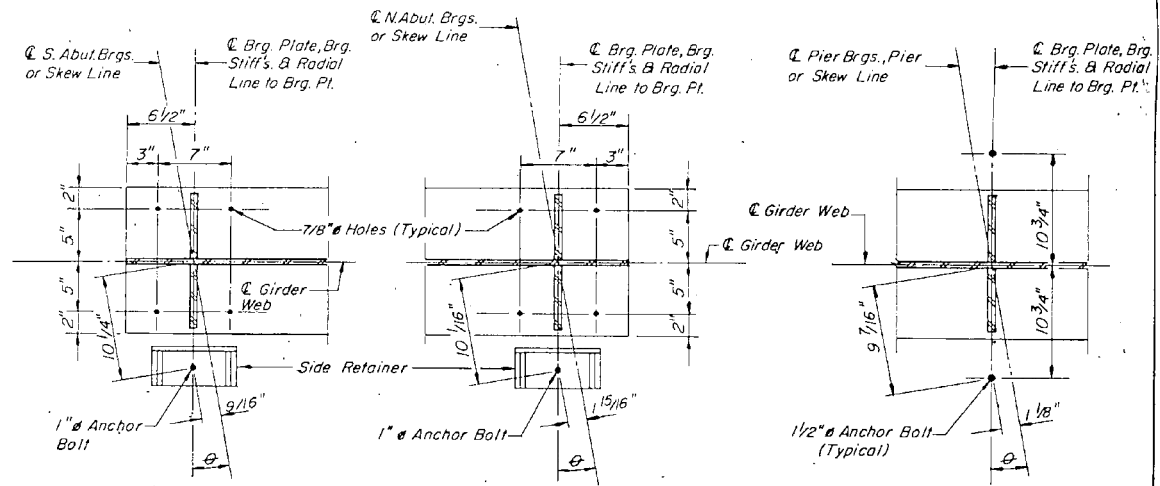
Note: Shim plates shall not be placed under Bearing Assembly.



SIDE RETAINER (4 Req'd.)

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

DESIGNED	D.H.C./V.S.N.
CHECKED	K.L.F.
DRAWN	K.H.L.
CHECKED	K.L.F.



AT S. ABUT.

AT N. ABUT.

SECTION D-D AT PIER

SECTION C-C

VALUE OF φ

	Girder #1	Girder #2	Girder #3	Girder #4	Girder #5	Girder #6
S. Abut.	3°-10'-27"	3°-11'-29"	3°-12'-31"	3°-13'-34"	3°-14'-38"	3°-15'-42"
Pier	6°-41'-11"	6°-43'-22"	6°-45'-34"	6°-47'-47"	6°-50'-02"	6°-52'-19"
N. Abut.	10°-41'-32"	10°-45'-02"	10°-48'-35"	10°-52'-10"	10°-55'-47"	10°-59'-27"

ABUTMENT AND PIER BEARING DETAILS

WBUS. RTE. 36 OVER FAP. RTE. 408
FAP. RTE. 408, SEC. 75-IHB-3
PIKE COUNTY
STA. 1018+19.88

MODEL: Default
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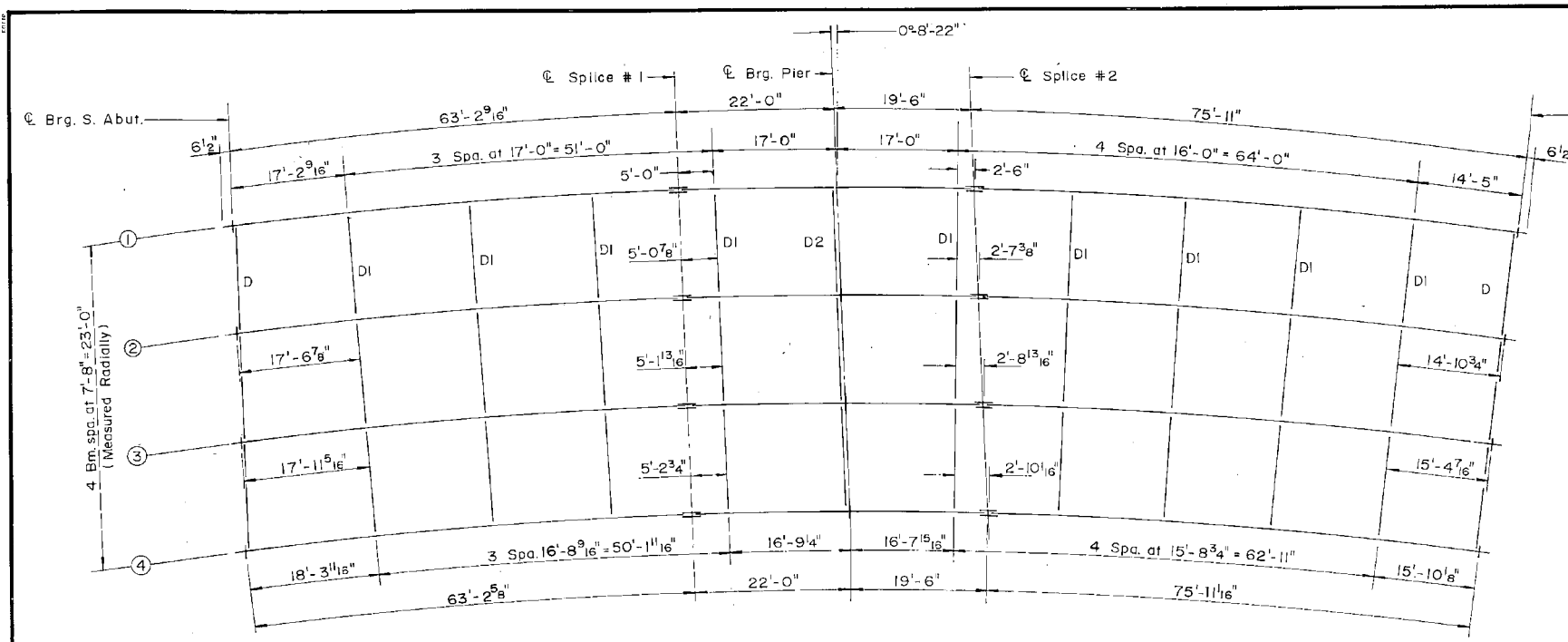
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	DRAWN -	REVISED -
PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED -
PLOT DATE = 10/10/2019	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS, SN 075-0130
(FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

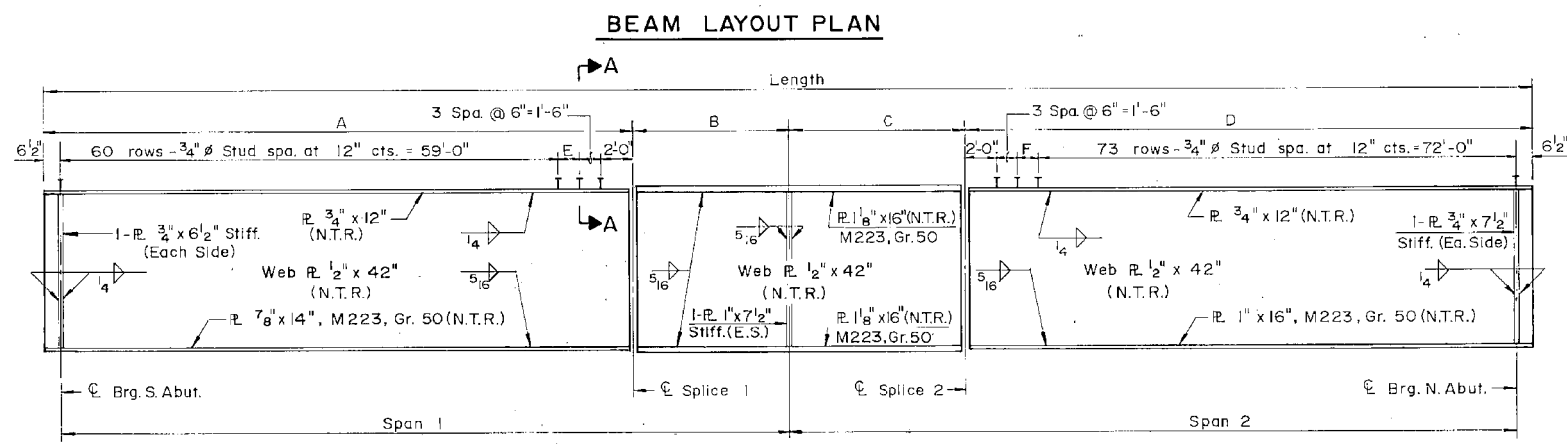
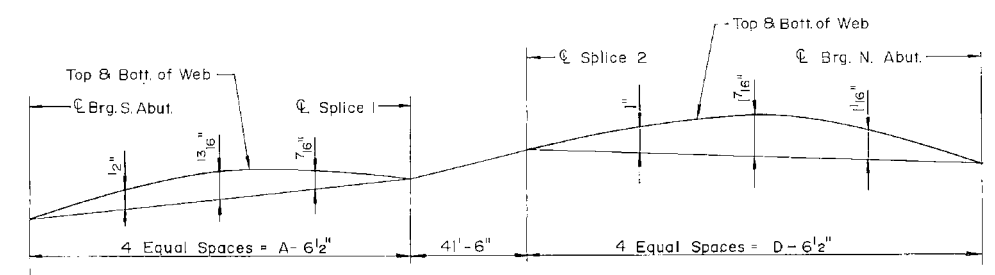
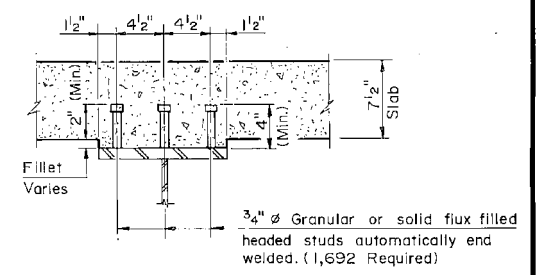
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BRIDGE PAINTING 2020	VARIOUS	22	15
CONTRACT NO. 72L42				
ILLINOIS		FED. AID PROJECT		



ELEVATIONS—TOP OF WEB
(For Fabrication Only)

	℄ Brg. S. Abut.	Splice 1	℄ Brg. Pier	Splice 2	℄ Brg. N. Abut.
Bm. 1	486.35	486.44	486.48	486.51	486.47
Bm. 2	485.89	485.98	486.02	486.05	486.01
Bm. 3	485.43	485.52	485.56	485.59	485.55
Bm. 4	484.97	485.06	485.10	485.13	485.09

Elevations at splices have been adjusted for camber.



BEAM DIMENSIONS

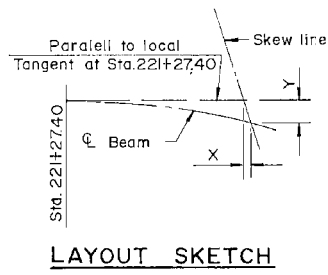
BEAM	RADIUS	A	B	C	D	LENGTH
1	1366.64	63'-9 1/16"	22'-0"	19'-6"	76'-5 1/2"	181'-8 9/16"
2	1358.97	63'-9 1/16"	22'-0"	19'-6"	76'-5 9/16"	181'-8 5/8"
3	1351.31	63'-9 1/8"	22'-0"	19'-6"	76'-5 9/16"	181'-8 11/16"
4	1343.64	63'-9 1/8"	22'-0"	19'-6"	76'-5 9/16"	181'-8 11/8"

LAYOUT DIMENSIONS IN FEET

BEAM	SOUTH ABUT.		SPLICE 1		PIER		SPLICE 2		NORTH ABUT.	
	X	Y	X	Y	X	Y	X	Y	X	Y
1	.0065	2.6587	.0004	.1778	0	0	.0003	.1385	.0081	3.3266
2	.0065	2.6726	.0004	.1785	0	0	.0003	.1395	.0081	3.3467
3	.0065	2.6866	.0004	.1792	0	0	.0003	.1406	.0082	3.3671
4	.0066	2.7008	.0004	.1799	0	0	.0003	.1417	.0082	3.3876

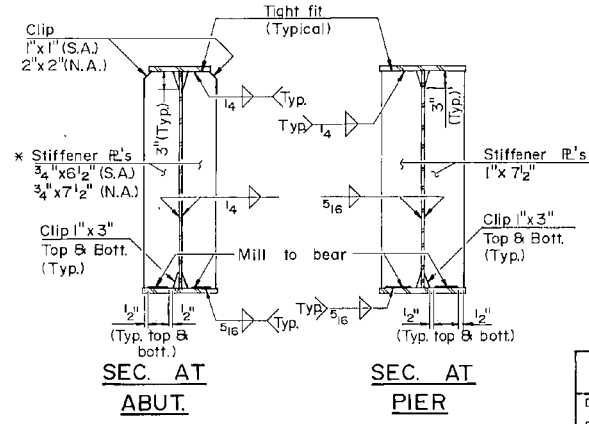
VALUE OF E & F

Bm.	E	F
Bm. 1	8 9/16"	5"
Bm. 2	8 9/16"	5 1/16"
Bm. 3	8 9/16"	5 1/16"
Bm. 4	8 9/16"	5 1/16"



BEAM SPACING AT ABUTMENT & PIER

	S. Abut.	Pier	N. Abut.
Bm. 1 - Bm. 2	7'-8 1/8"	7'-8"	7'-8 1/4"
Bm. 2 - Bm. 3	7'-8 3/8"	7'-8"	7'-8 1/4"
Bm. 3 - Bm. 4	7'-8 3/8"	7'-8"	7'-8 1/4"



FRAMING PLAN
F.A.P. RTE. 408, SEC. 75 - IHB - 4
PIKE COUNTY
STA. 1019+98.91

HSIONG ASSOCIATES LTD.
DESIGNED: G.J.G. CHECKED: W.H.
DRAWN: R.H.H. DATE: NO. H-044

MODEL: Default
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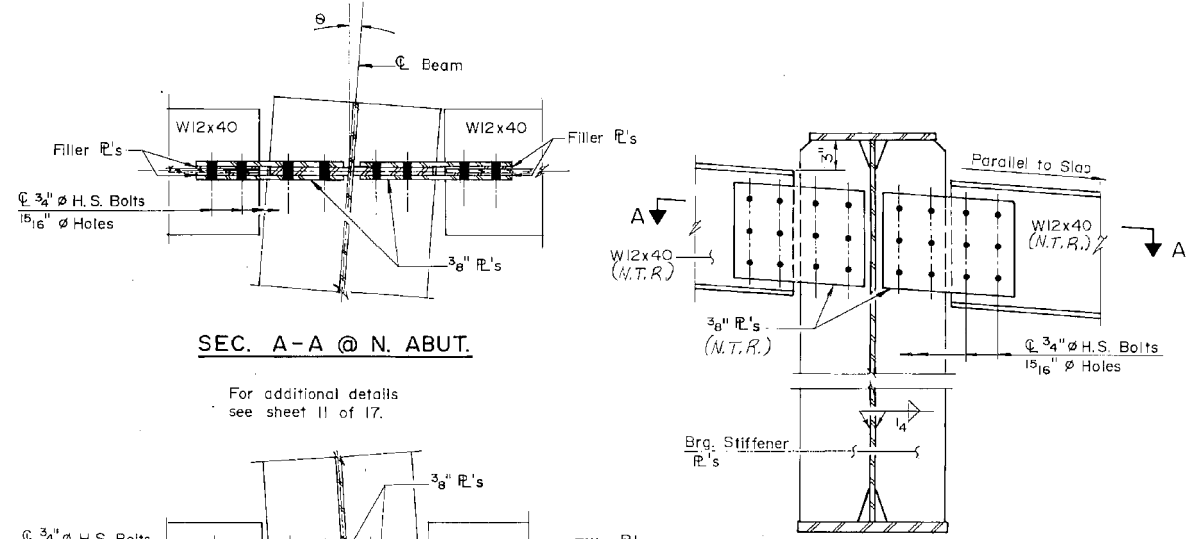
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	DRAWN -	REVISED -
PLOT SCALE = 100.0000' / in.	CHECKED -	REVISED -
PLOT DATE = 10/10/2019	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS, SN 075-0131
(FOR INFORMATION ONLY)

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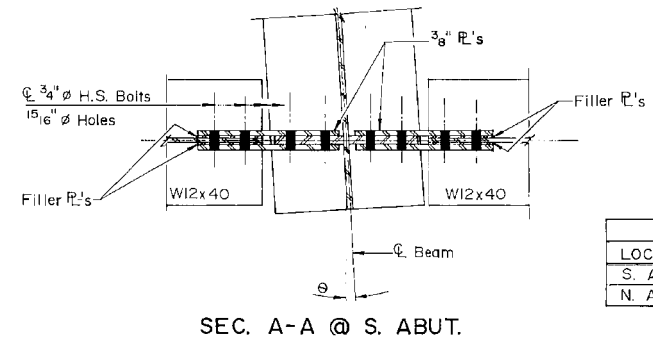
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR. D6 BRIDGE PAINTING 2020		VARIOUS	22	17
ILLINOIS FED. AID PROJECT			CONTRACT NO. 72L42	



A = 1/4" for 3/4" flange
 = 5/16" for 1 1/8" flange

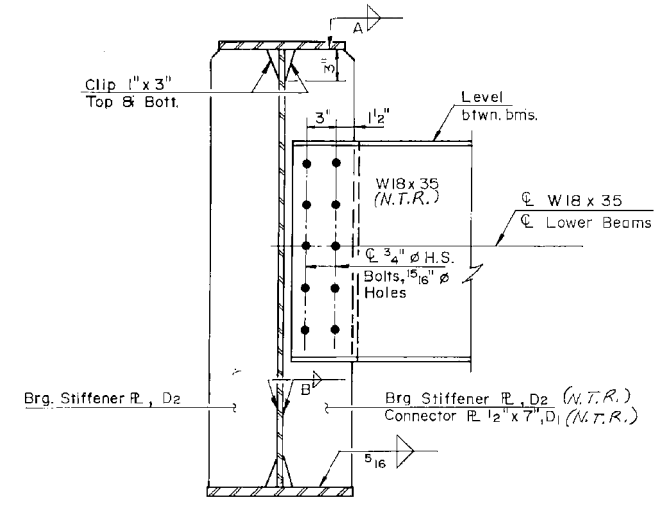
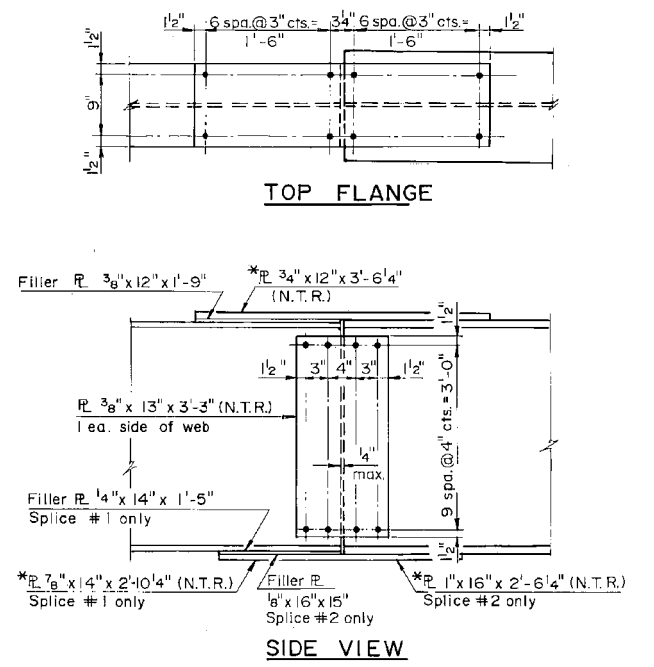
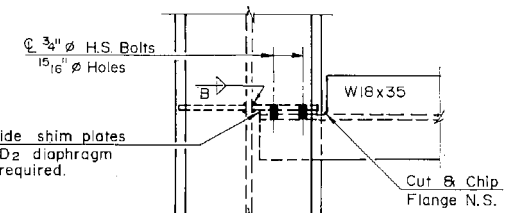
B = 1/4" D1
 = 5/16" D2

NOTE: For all diaphragm connections, use 5/16" ϕ holes and two hardened washers over holes.



LOCATION	VALUE OF ϕ			
	Bm. 1	Bm. 2	Bm. 3	Bm. 4
S. Abut.	3°-26'-06"	3°-27'-16"	3°-28'-27"	3°-29'-38"
N. Abut.	4°-08'-17"	4°-09'-41"	4°-11'-06"	4°-12'-32"

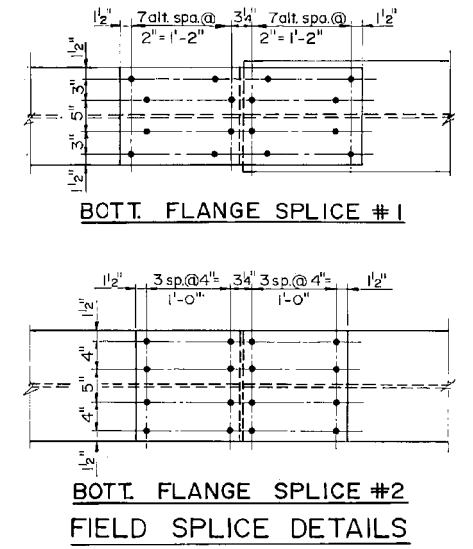
DETAIL OF DIAPHRAGM D
 (6 Required)



	INTERIOR BEAM MOMENT TABLE		
	0.4 Span 1	Pier	0.6 Span 2
Is (in. ⁴)	12,713	19,829	14,097
Ic (in. ⁴)	34,252	---	39,259
Ss (in. ³)	628.7	896	753.7
Sc (in. ³)	898.3	---	1,061.3
Sbi (in. ³)	28.6	48.0	42.7
ϕ (K/ft.)	0.92	0.92	0.92
M ϕ (ft. K)	396	1,061	598
s ϕ (K/ft.)	0.40	0.40	0.40
Ms ϕ (ft. K)	216	338	308
M ϕ (ft. K)	770	552	876
Mimp. (ft. K)	185	128	199
ϕ_3 (M ϕ + I)(ft.K)	1,592	1,133	1,792
Mbi (ft. K)	9.3	10.7	11.3
Ma (ft.K)	2,865	3,292	3,507
fs ϕ non-comp (ksi)	7.6	14.2	9.5
fs ϕ (comp) (ksi)	2.9	4.5	3.5
fs ϕ_3 (k+1) (ksi)	21.3	15.2	20.3
fw (ksi)	3.9	2.7	3.2
fs(Overload) (ksi)	31.8	33.9	33.3
fs(Total) (ksi)	46.4	47.6	47.5
Rx Fy	48.2	49.1	48.6
VR (K)	59.1	---	58.7

	INTERIOR BEAM REACTION TABLE		
	S. Abut.	Pier	N. Abut.
R ϕ (K)	39.8	150.3	48.4
R ϕ (K)	43.7	66.7	44.4
Imp. (K)	10.4	15.5	10.1
R TOTAL (K)	93.9	232.5	102.9

** Non-compact section
 M ϕ (Applied Moment) = 1.3 [M ϕ + Ms ϕ + ϕ_3 (M ϕ + I)]
 fw = Calculated normal stress at the edge of the flange due to lateral flange bending, under overload.
 Sbi = Section Modulus for one flange plate for lateral flange bending.
 Mbi = Lateral bending moment for flange plate.
 fs (Total) is the sum of the stresses due to 1.3 [M ϕ + Ms ϕ + ϕ_3 (M ϕ + I)]
 Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total and Overload)
 Ic and Sc are the moment of inertia and section modulus of the composite section used in computing fs (Total and Overload)
 VR is the maximum ϕ + impact shear range in span.
 fs(Overload) is the sum of the stresses due to M ϕ + Ms ϕ + ϕ_3 (M ϕ + I)
 M ϕ Moment due to dead loads on non-composite section.
 Ms ϕ Moment due to dead loads on composite section.
 M ϕ Moment due to live load on composite section.
 I Live load impact.
 Rx Fy = Reduced yield strength for Hybrid Beam.



*A.A.SHTO. M 223, Grade 50 Steel
 N.T.R. = Notch Toughness Requirement

SPLICE & DIAPHRAGM DETAILS
 F.A.R. RTE. 408, SEC. 75-IHB-4
 PIKE COUNTY
 STA. 1019+98.91

HSIONG ASSOCIATES LTD.
 DESIGNED: W.H. CHECKED: G.J.G.
 DRAWN: CSL DATE: NO. H-044

USER NAME = dudleybm	DESIGNED -	REVISED -
PLOT SCALE = 100,0000' / in.	DRAWN -	REVISED -
PLOT DATE = 10/10/2019	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING PLANS, SN 075-0131
 (FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR. D6 BRIDGE PAINTING 2020		VARIOUS	22	18
ILLINOIS FED. AID PROJECT			CONTRACT NO. 72L42	

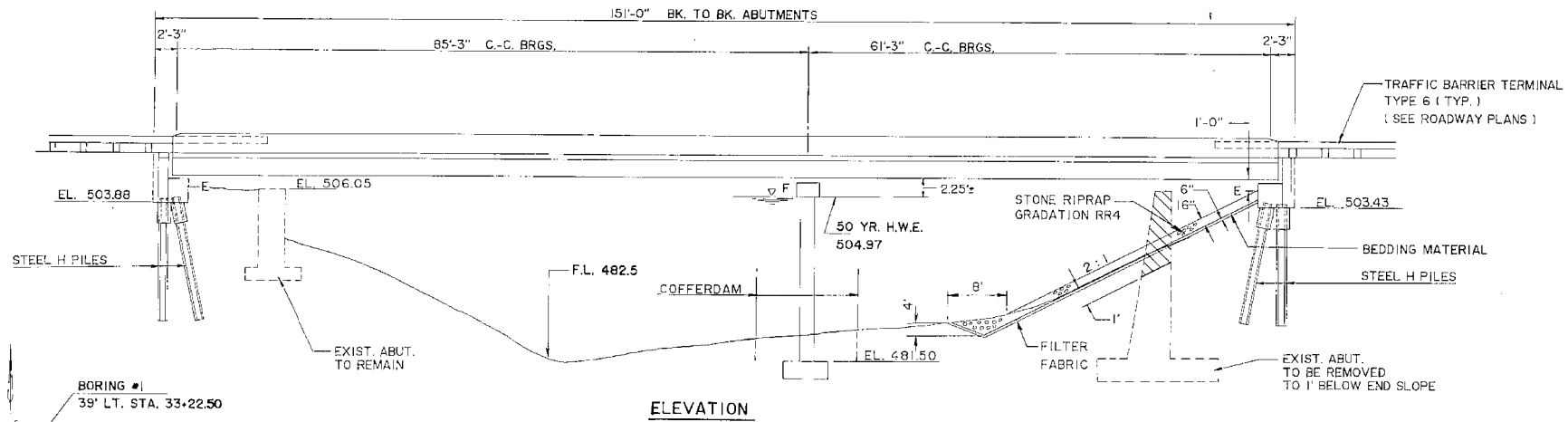
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EXISTING STRUCTURE :
 1 SPAN SIMPLE PRATT TRUSS, CLOSED CONCRETE ABUTMENTS.
 BK. - BK. ABUT. = 123'-6" ROADWAY WIDTH = 24'-0"
 S.N. 086-0011
 THE CONTRACTOR SHALL REMOVE THE EXISTING STRUCTURE, UTILIZING
 THE EXISTING TRUSS AS A TEMPORARY STRUCTURE ON THE RUNAROUND AND
 BUILD A NEW 2-SPAN WIDE FLANGE STRUCTURE WITH A 7 1/2" REINFORCED
 CONCRETE DECK.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
SB-106 FAP. 566	IB-1	SCOTT	38	16
FED. RD. DIST. NO.	ILLINOIS	FED. AID PROJECT		

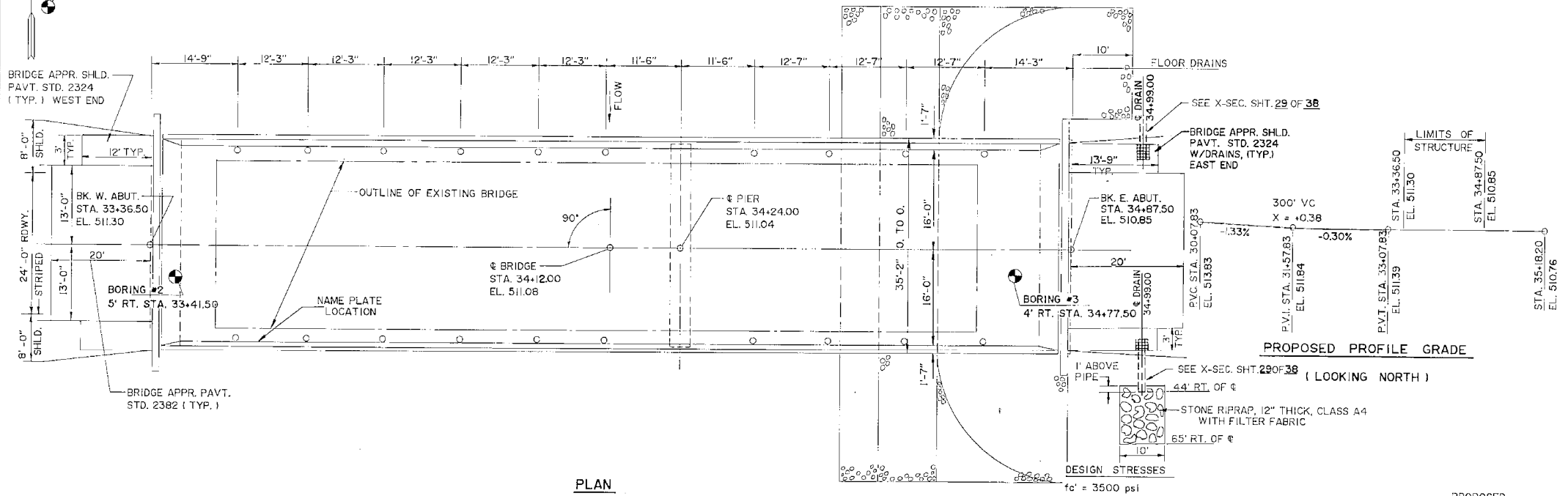
GENERAL NOTES SHEET NO. 1
SHEETS 11

- SEE PROPOSAL FOR BORING DATA.
- FASTENERS SHALL BE HIGH STRENGTH BOLTS 3/4" Ø, OPEN HOLES 1 1/4" Ø, UNLESS OTHERWISE NOTED.
- CALCULATED WEIGHT OF STRUCTURAL STEEL = 133,344 LBS.
- THE ZINC-SILICATE AND VINYL PAINT SYSTEM SHALL BE USED FOR SHOP AND FIELD PAINTING OF STRUCTURAL STEEL EXCEPT WHERE OTHERWISE NOTED. THE COLOR OF THE VINYL FINISH COAT SHALL BE MUNSSELL NO. 7.5 G 4/8.
- FIELD WELDING OF CONSTRUCTION ACCESSORIES WILL NOT BE PERMITTED TO THE BOTTOM FLANGE OF BEAMS NOR TO THE TOP FLANGE FOR A DISTANCE EQUAL TO ONE-FOURTH THE SPAN LENGTH EACHWAY 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 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.
- REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31, M-42, OR M53 GRADE 60.
- BEARING SEAT SURFACES SHALL BE CONSTRUCTED OR ADJUSTED TO THE DESIGNATED ELEVATIONS WITHIN A TOLERANCE OF 1/8" INCH. ADJUSTMENTS SHALL BE MADE EITHER BY GRINDING THE SURFACE OR BY SHIMMING THE BEARING. TWO 1/8" INCH ADJUSTING SHIMS OF THE DIMENSIONS OF THE BOTTOM BEARING PLATE SHALL BE PROVIDED FOR EACH BEARING IN ADDITION TO ALL OTHER PLATES OR SHIMS. FOR TYPE I ELASTOMERIC BEARINGS, SHIMS OF THE DIMENSIONS OF THE TOP PLATE SHALL BE PROVIDED AND PLACED AS DETAILED.
- THE CONTRACTOR SHALL DRIVE 2 STEEL TEST PILES IN PERMANENT LOCATIONS ONE EACH AT THE EAST AND WEST ABUTMENTS AS DIRECTED BY THE ENGINEER BEFORE ORDERING THE REMAINDER OF THE PILES.
- THE STRUCTURAL STEEL BEARING PLATES OF THE ELASTOMERIC BEARING ASSEMBLY SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M223 GRADE 50.
- LAYOUT OF SLOPE PROTECTION SYSTEM MAY BE VARIED IN THE FIELD TO SUIT GROUND CONDITIONS AS DIRECTED BY THE ENGINEER.
- BRIDGE SEAT SEALER SHALL BE APPLIED TO THE SEAT AREA OF THE ABUTMENTS, ESTIMATED QUANTITY = 200 SQ. FT.



STATION 34+12.00
 SANDY CREEK
 BUILT 199...
 F.A. RT. 566 SEC. 1B-1
 LOADING HS20 STR. NO. 086-0045

LETTERING FOR NAME PLATE
 LOCATE NAME PLATE ON SOUTHWEST CORNER OF STRUCTURE, SEE STD. 2113



TOTAL BILL OF MATERIALS

ITEM	UNIT	SUPER	SUB	TOTAL
REMOVAL OF EXISTING STRUCTURES	L. SUM			1
TEMPORARY BRIDGE COMPLETE				
TRUSS RELOCATION	EACH			1
PROTECTIVE COAT	SQ. YD.	646		646
CLASS X CONCRETE	CU. YD.		146.9	146.9
CLASS X CONCRETE SUPERSTRUCTURE	CU. YD.	161.2		161.2
STRUCTURAL STEEL	L. SUM			1
STUD SHEAR CONNECTORS	EACH	2600		2600
REINFORCEMENT BARS	LBS		400	400
REINFORCEMENT BARS EPOXY COATED	LBS	40010	8820	48830
STEEL PILES HP10x42	LIN. FT.		296	296
TEST PILES HP10x42	EACH		2	2
NAME PLATES	EACH			1
NEOPRENE EXPANSION JOINT (2 1/2")	LIN. FT.	35		35
NEOPRENE EXPANSION JOINT (4")	LIN. FT.	35		35
STONE RIPRAP CLASS A-4	TON	768		768
ELASTOMERIC BEARING ASSEMBLY - TYPE I	EACH	10		10
STRUCTURE EXCAVATION	CU. YD.		128	128
SEAL COAT CONCRETE	CU. YD.		8.1	8.1
ROCK EXCAVATION FOR STRUCTURES	CU. YD.		32	32
FLOOR DRAINS	EACH	20		20
BRIDGE SEAT SEALER	L. SUM			1
FILTER FABRIC FOR USE WITH RIP RAP	SQ. YD.		1048	1048
COFFERDAMS	EACH			1
COFFERDAM EXCAVATION	CU. YD.		136	136

* INCLUDES CONCRETE DECK

WATERWAY INFORMATION

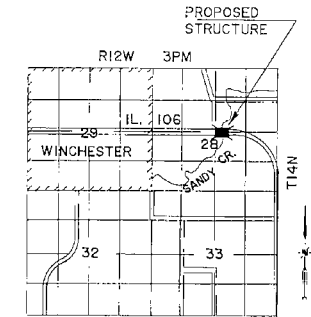
DRAINAGE AREA = 67.4 SQ. MI. LOW GRADE ELEV. 510.72 AT STA. 36+00

FLOOD	FREQ. YR.	Q C.F.S.	OPENING SQ. FT.		NAT. H.W.E.	HEAD FT.		HEADWATER EL.	
			EXIST.	PROP.		EXIST.	PROP.	EXIST.	PROP.
DESIGN	50	10,605	1927	1796	504.97	0.52	0.46	505.49	504.97
BASE	100	12,114	2057	1947	506.06	0.60	0.50	506.66	506.56
OVERTOPPING									
MAX. CALC.	500	15,604	2162	2075	508.39	1.26	1.38	509.64	509.72

APPROVED FOR STRUCTURAL DESIGN ONLY
 Ralph E. Anderson
 Engineer at Bridge



Robert D. Owen
 April 2, 1990
 Nov. 30, 1990



LOCATION PLAN

GENERAL PLAN & ELEVATION
 IL-106 OVER SANDY CREEK
 FAP 566 SECTION 1B-1
 STATION 34+12.00
 SCOTT COUNTY
 STRUCTURE NO. 086-0045

MODEL: Default
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	DRAWN	REVISED
	-	-
PLOT SCALE = 100,0000' / in.	CHECKED	REVISED
	-	-
PLOT DATE = 10/10/2019	DATE	REVISED
	-	-

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

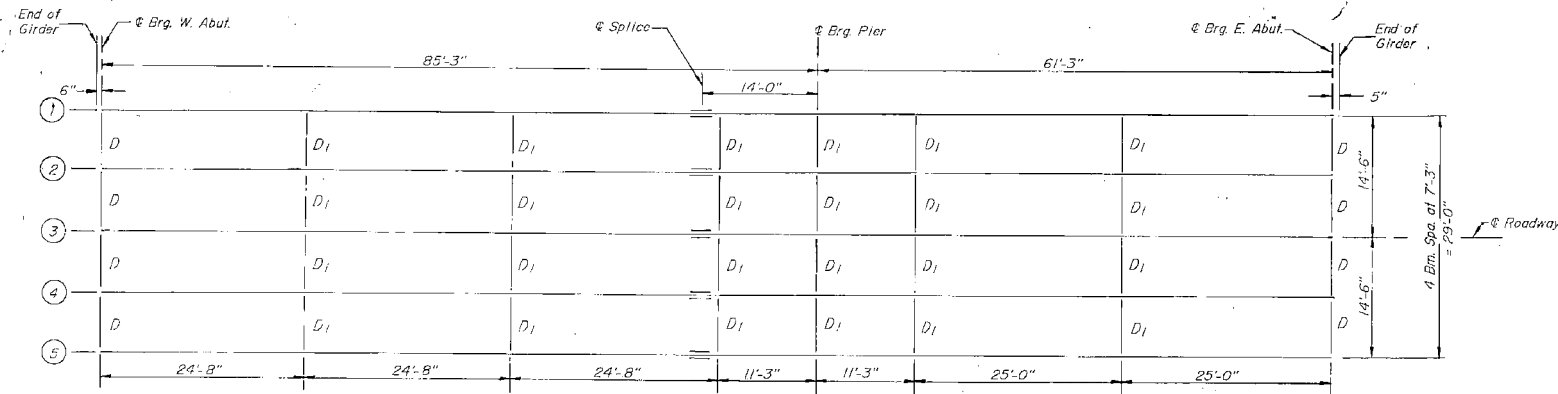
EXISTING PLANS, SN 086-0045
 (FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

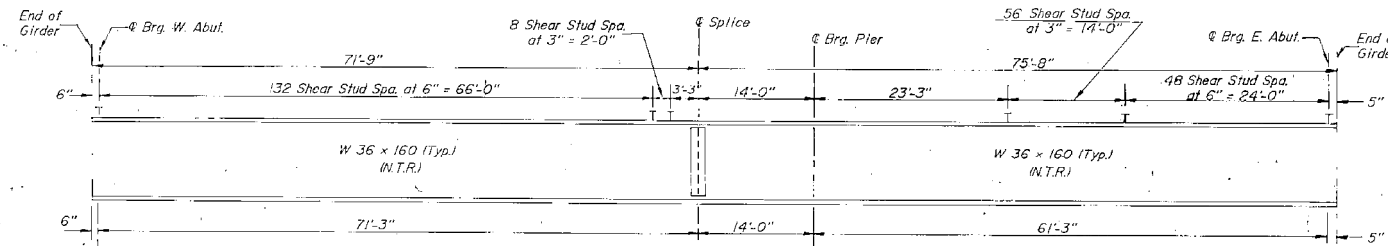
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BRIDGE PAINTING 2020	VARIOUS	22	20
			CONTRACT NO. 72L42	
		ILLINOIS	FED. AID PROJECT	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-106	IB-1	SCOTT	38	20
F.A. 566				
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		



PLAN
All Beams W 36 x 160



BEAM ELEVATION

M_{DL} is the moment due to dead loads on non-composite section.
 M_{SDL} is the moment due to dead loads on composite section.
 M_{LL} is the moment due to live loads on non-composite or composite section.
 M_a (Applied Moment) = $1.3M_{DL} + M_{SDL} + \frac{5}{8}M_{LL} + I$
 I_s and S_s are the moment of Inertia and Section Modulus of the steel section.
 I_c and S_c are the moment of Inertia and Section Modulus of the composite section.
 VR is the maximum LL + Impact shear range in the span.
 The load factor $1.3 DL + SDL + \frac{5}{8} LL + Imp$ is used in computing moments and shears.
 The Reactions are service load reactions.
 f_s (Total) is the sum of the stresses due to $1.3M_{DL} + M_{SDL} + \frac{5}{8}M_{LL} + I$
 f_s (Overload) is the sum of the stresses due to $M_{DL} + M_{SDL} + \frac{5}{8}M_{LL} + I$

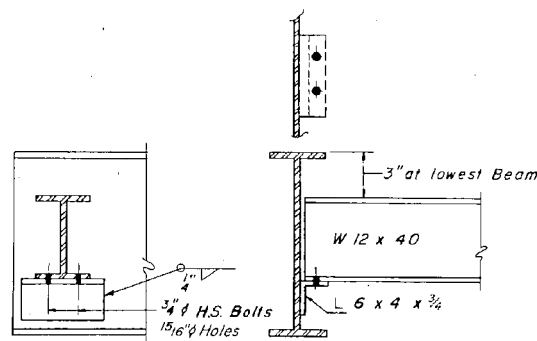
Note: All beams and splice plate material shall conform to the supplemental requirements for Notch Toughness Zone 2.

	0.4 Pt. Span 1	Pier	0.6 Pt. Span 2
I_s (in ⁴)	9750	9750	9750
I_c (in ⁴) n=9	23585		23585
I_c (in ⁴) n=27	17416		17416
S_s (in ³)	542	542	542
S_c (in ³) n=9	755		755
S_c (in ³) n=27	685		685
DL (K/ft)	.872	1.221	.872
M_{DL} (F-K)	508	816.0	140
SDL (K/ft)	.349		.349
M_{SDL} (F-K)	227		82
LL (F-K)	705.9	356.0	469
M_{LL} (F-K)	168.0	90.1	126
$\frac{5}{8} M_{LL} + I$ (F-K)	1456.5	743.5	932
M_a (F-K)	2849	2027.4	1578
M_u (F-K)	4196		4196
f_s DL (non-comp.) ksi	11.2	18.1	3.1
f_s DL (comp.) ksi	4.0		1.4
f_s $\frac{5}{8} (M_{LL} + I)$ ksi	23.1	16.5	15.8
f_s (overload) ksi	38.3	34.6	20.3
f_s (Total) ksi	54.4	45.0	55.8
VR (K)			

	W. Abut.	Pier	E. Abut.
RDL	29.8	81.6	16.4
R Super DL	12.5	30.4	7.6
RL L	41.3	54.5	39.2
R Imp.	9.8	13.7	10.5
Total	93.4	180.2	73.7

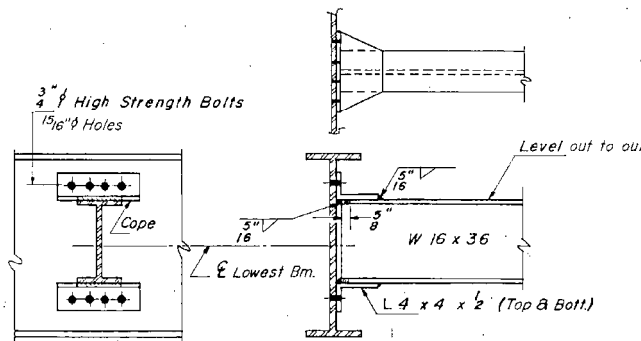
	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5
Brig. W. Abut.	510.32	510.44	510.56	510.44	510.32
Splice	510.11	510.23	510.35	510.23	510.11
Brig. Pier	510.06	510.18	510.30	510.18	510.06
Brig. E. Abut.	509.88	510.00	510.12	510.00	509.88

For Fabrication Only



DIAPHRAGM D

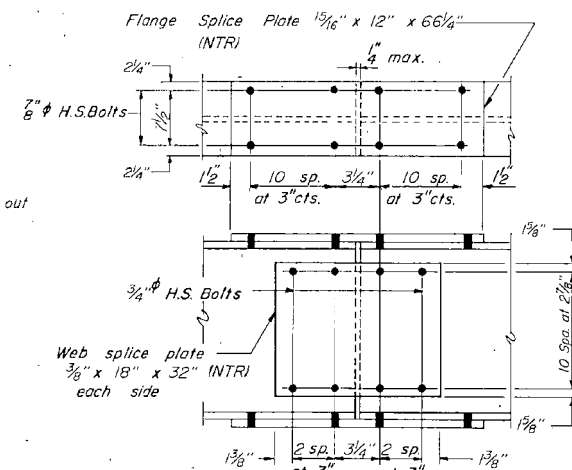
B Required



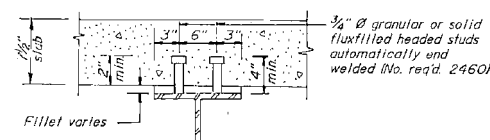
DIAPHRAGM D1

24 Required

Note: Two hardened washers shall be required over all oversize holes for diaphragms.



SPICE



SHEAR STUDS

DESIGNED	
CHECKED	
DRAWN	DBC.
CHECKED	R.D.O.

I-2-D 6-1-89

STRUCTURAL STEEL

ILL. RTE. 106 OVER SANDY CREEK
F.A.P. 566 SECTION IB-1
STATION 34+12.00
SCOTT COUNTY
STRUCTURE NO. 086-0045

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS, SN 086-0045
(FOR INFORMATION ONLY)

USER NAME = dudleybm	DESIGNED -	REVISED -
PLOT SCALE = 100,0000' / in.	DRAWN -	REVISED -
PLOT DATE = 10/10/2019	CHECKED -	REVISED -
	DATE -	REVISED -

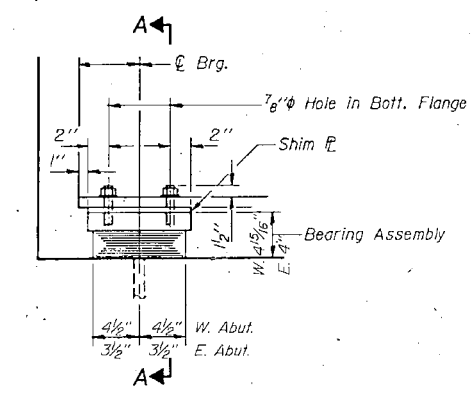
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							VAR.	D6 BRIDGE PAINTING 2020	VARIOUS	22	21
										CONTRACT NO. 72L42	
							ILLINOIS	FED. AID PROJECT			

MODEL: Default
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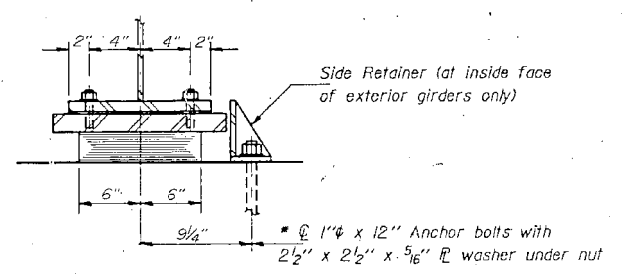
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-55	IB-1	SCOTT	38	21
F.A.P. NO.	PROJECT			
566	ILLINOIS			

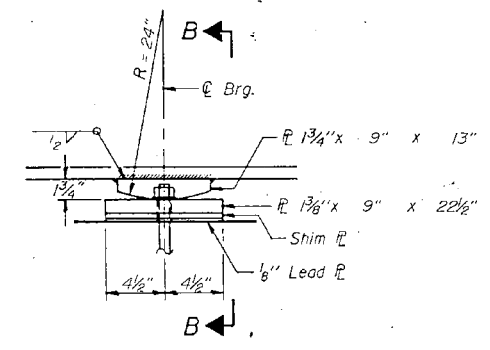
SHEET NO. 6
SHEETS 11



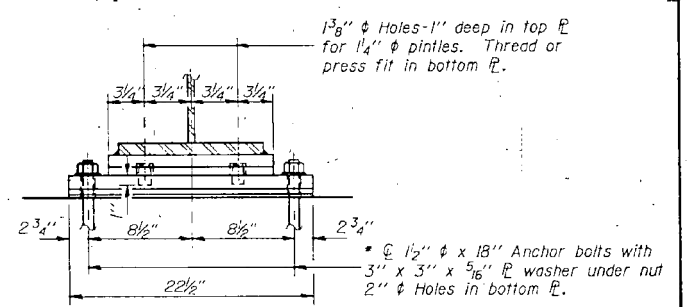
ELEVATION AT ABUT.



SECTION A-A



ELEVATION AT PIER

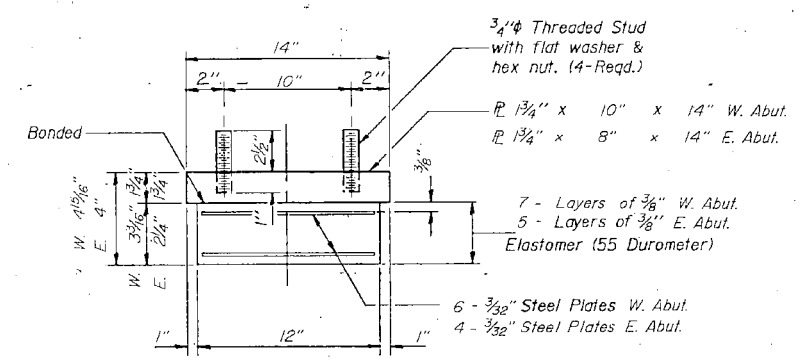


SECTION B-B

TYPE I ELASTOMERIC EXP. BRG.

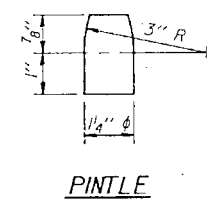
* Notes: Anchor bolts at fixed bearings may be built into the masonry.
See sheet # 11 of 11 for Anchor Bolt Installation.

FIXED BEARING

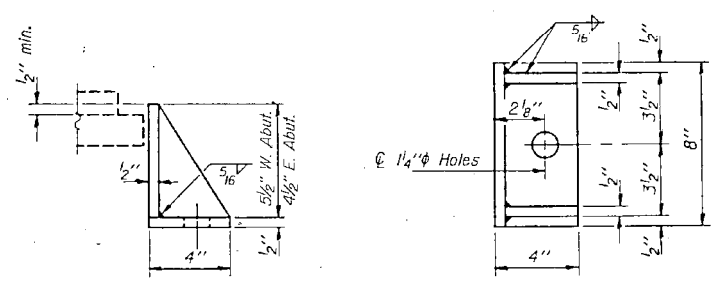


BEARING ASSEMBLY

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



PINTLE



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

DESIGNED	
CHECKED	
DRAWN	M.G.M.
CHECKED	R.D.O.

I-2-EI 12-1-B3

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	10

BEARING DETAILS
ILLINOIS ROUTE 106 OVER SANDY CREEK
FAP 566 SECTION IB-1
STATION 34+12.00
SCOTT COUNTY
STRUCTURE NO. 086-0045

MODEL: Default
FILE NAME: C:\CONTRACTS\OPERATIONS\Bridges\Bridges\CAD\72L42 - beam end paint west_F120\plan\elec.dgn

USER NAME = dudleybm	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED -
PLOT DATE = 10/10/2019	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS, SN 086-0045
(FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
VAR.	D6 BRIDGE PAINTING 2020	VARIOUS	22	22
			CONTRACT NO. 72L42	
		ILLINOIS	FED. AID PROJECT	