

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PROPOSED
HIGHWAY PLANS**

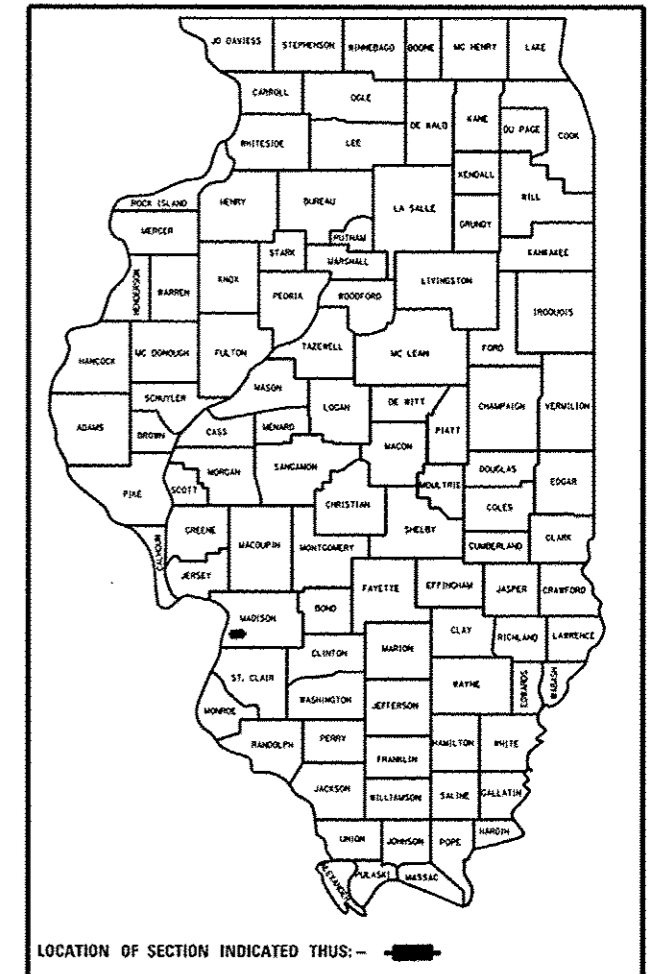
FAP ROUTE 310 (IL 255)
SECTION 60-9HB-4-P

BRIDGE PAINTING
MADISON COUNTY

C-98-019-15

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	60-9HB-4-P	MADISON	11	1
		ILLINOIS	CONTRACT NO. 76H66	

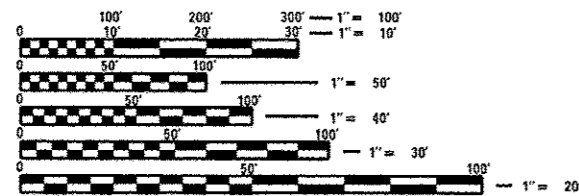
D-98-022-15



FOR INDEX OF SHEETS, SEE SHEET NO. 2

HIGHWAY CLASSIFICATION (SN 060-0232)

FAP 310 - IL 255
Functional Class: Freeway And Expressway
ADT: 29900
MU: 9.87% SU: 6.35%
Design Speed: 65 mph
Posted Speed: 65 mph

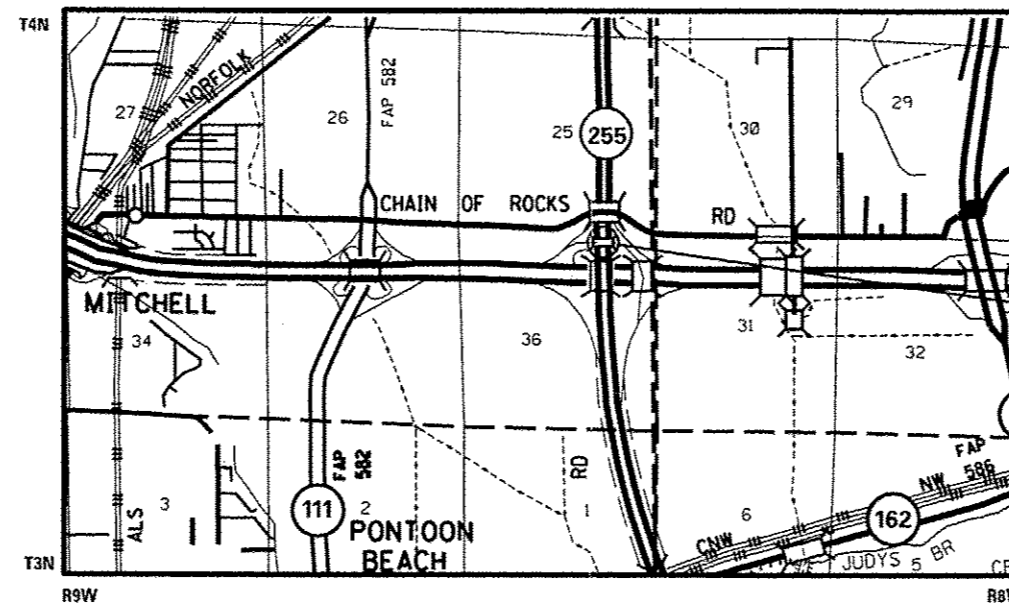


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

PROJECT ENGINEER: MICHAEL PRITCHETT (618) 346-3180
DESIGNER: ARNOLD DOSSEH-ADJANON (618) 346-3206

CONTRACT NO. 76H66



NOT TO SCALE

LOCATION MAP
CHOUTEAU TOWNSHIP

GROSS LENGTH = 96.50 FT. = 0.018 MILE
NET LENGTH = 96.50 FT. = 0.018 MILE

PROJECT LOCATION
SN 060-0232 (SB)
LATITUDE: 38.759526
LONGITUDE: -90.042226

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Dec 22 20 14
Jeffrey Z. Ke
DEPUTY DIRECTOR OF HIGHWAYS, REGION 5 ENGINEER

Mar 20 20 15
Jim D. Baranzelli, P.E.
ENGINEER OF DESIGN AND ENVIRONMENT

Mar 20 20 15
Omer Osman, P.E.
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

INDEX OF SHEETS

- 1 COVER SHEET
- 2 GENERAL NOTES, INDEX OF SHEETS & HIGHWAY STANDARDS
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- 9-10-11 DETAIL SHEET (SN 060-0232)

GENERAL NOTES

1. ILLINOIS STATE LAW REQUIRES A 48-HOUR NOTICE TO BE GIVEN TO UTILITIES BEFORE DIGGING. FIELD MARKING OF FACILITIES MAY BE OBTAINED BY CONTACTING J.U.L.L.E (1-800-892-0123 OR 811) OR FOR NON-MEMBERS, THE UTILITY COMPANY DIRECTLY.
2. THE SSPC-OP1 CERTIFICATION WILL BE REQUIRED FOR THE BRIDGE.
3. CLEANING AND PAINTING OF THE EXISTING STRUCTURAL STEEL SHALL BE AS SPECIFIED IN THE SPECIAL PROVISION FOR "CLEANING AND PAINTING EXISTING STEEL STRUCTURES". THE DESIGNATED AREAS AS SHOWN IN THE PLANS SHALL BE CLEANED PER NEAR WHITE BLAST CLEANING--SSPC-SP10. ALL CLEANED STEEL SHALL BE PAINTED ACCORDING TO THE REQUIREMENTS OF PAINT SYSTEM 1-OZ/E/U. THE COLOR OF THE FINAL FINISH COAT FOR ALL INTERIOR STEEL SURFACES SHALL BE REDDISH BROWN, MUNSELL NO 2.5YR 3/4. THE COLOR OF THE FINAL FINISH COAT FOR THE EXTERIOR AND BOTTOM FLANGE OF THE FASCIA BEAM SHALL BE REDDISH BROWN, MUNSELL NO 2.5YR 3/4.
4. CONTAINMENT OF CLEANING RESIDUE IS REQUIRED TO CONTROL NUISANCE DUST. SEE SPECIAL PROVISIONS.
5. ALL TURF AREA DISTURBED BY THE CONTRACTOR SHALL BE SEEDED WITH THE APPROPRIATE EROSION CONTROL AS DIRECTED BY THE RESIDENT ENGINEER/TECHNICIAN AT THE CONTRACTOR'S EXPENSE.
6. "ROAD CONSTRUCTION AHEAD" SIGNS SHALL BE PLACED AT EACH END OF THE PROJECT LOCATIONS AND ALL INTERSECTING SIDE ROADS AND WILL BE INCLUDED IN THE TRAFFIC CONTROL PAY ITEMS. ALL CONSTRUCTION SIGNS SHALL BE FLUORESCENT ORANGE, 48".
7. 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 COURSE WORK (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 FOR ASSISTANCE IN MEETING WORKFORCE AND TRAINEE GOALS.
8. FLAGGERS SHALL BE PRESENT DURING ALL CLOSURE HOURS, INCLUDING LUNCH HOUR, AND NO ADDITIONAL COMPENSATION SHALL BE APPLIED.
9. PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING PLANS ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. THE CONTRACTOR SHALL FIELD VERIFY EXISTING DIMENTIONS AND DETAILS AFFECTING CONSTRUCTION AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPESATION FOR A CHANGE IN SCOPE OF WORK, HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR WORK.

HIGHWAY STANDARDS

- 000001-06 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 001006 DECIMAL OF AN INCH AND OF A FOOT
- 701101-04 OFF-ROAD OPERATION, MULTILANE, 15' (4.5 m) TO 24' (600 mm) FROM PAVEMENT EDGE
- 701106-02 OFF-ROAD OPERATIONS, MULTILANE, MORE THAN 15' (4.5 m) AWAY
- 701400-08 APPROACH TO LANE CLOSURE, FREEWAY/EXPRESSWAY
- 701401-09 LANE CLOSURE, FREEWAY / EXPRESSWAY
- 701428 TRAFFIC CONTROL SETUP AND REMOVAL FREEWAY/EXPRESSWAY
- 701456-03 PARTIAL EXIT RAMP CLOSURE FREEWAY / EXPRESSWAY
- 701901-04 TRAFFIC CONTROL DEVICES

COMMITMENTS
NONE

FILE NAME =	USER NAME = #USER#	DESIGNED -	REVISD -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL NOTES, INDEX OF SHEETS & HIGHWAY STANDARDS	FILE	SECTION	COUNTY	TOTAL	SHEET	
#FILE#		DRAWN -	REVISD -			310	60-948-4-P	MADISON	11	2	
	PLDT SCALE = #SCALE#	CHECKED -	REVISD -			SCALE: HTS		SHEET NO. 1 OF 1 SHEETS		STA. _____ TO STA. _____	
	PLDT DATE = #DATE#	DATE -	REVISD -			CONTRACT NO. 76466					
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT											

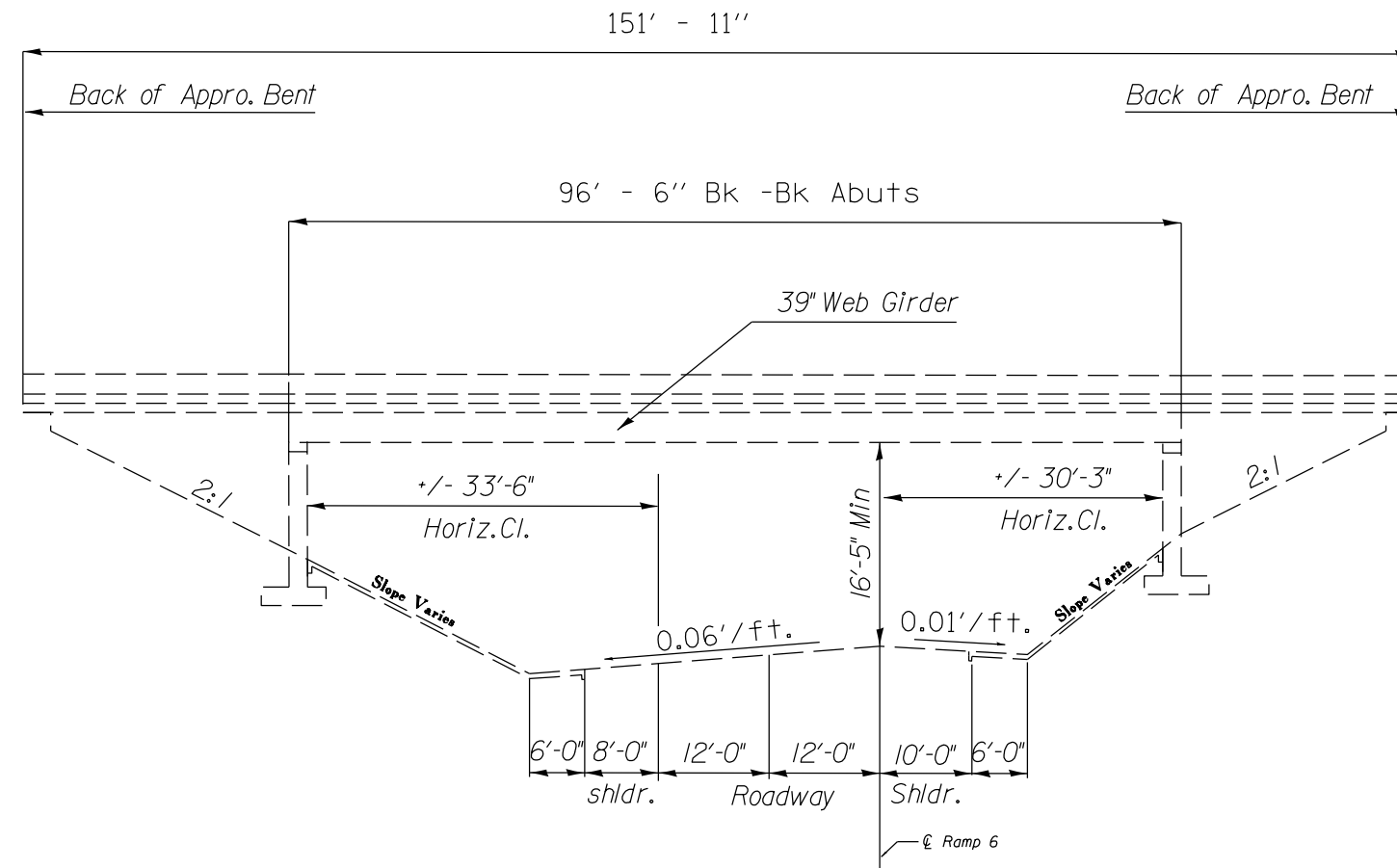
CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE	
				URBAN	100% STATE
				BRIDGE	
				0014	
				060-0232	
67100100	MOBILIZATION	L SUM	1		1
70100800	TRAFFIC CONTROL AND PROTECTION, STANDARD 701401	L SUM	1		1
70100825	TRAFFIC CONTROL AND PROTECTION, STANDARD 701456	L SUM	1		1
70106800	CHANGEABLE MESSAGE SIGN	CAL MO	3		3
X7010410	SPEED DISPLAY TRAILER	CAL MO	3		3
Z0007114	CONTAINMENT AND DISPOSAL OF NON-LEAD PAINT CLEANING RESIDUES	L SUM	1		1
Z0010501	CLEANING AND PAINTING STEEL BRIDGE NO. 1	L SUM	1		1

7

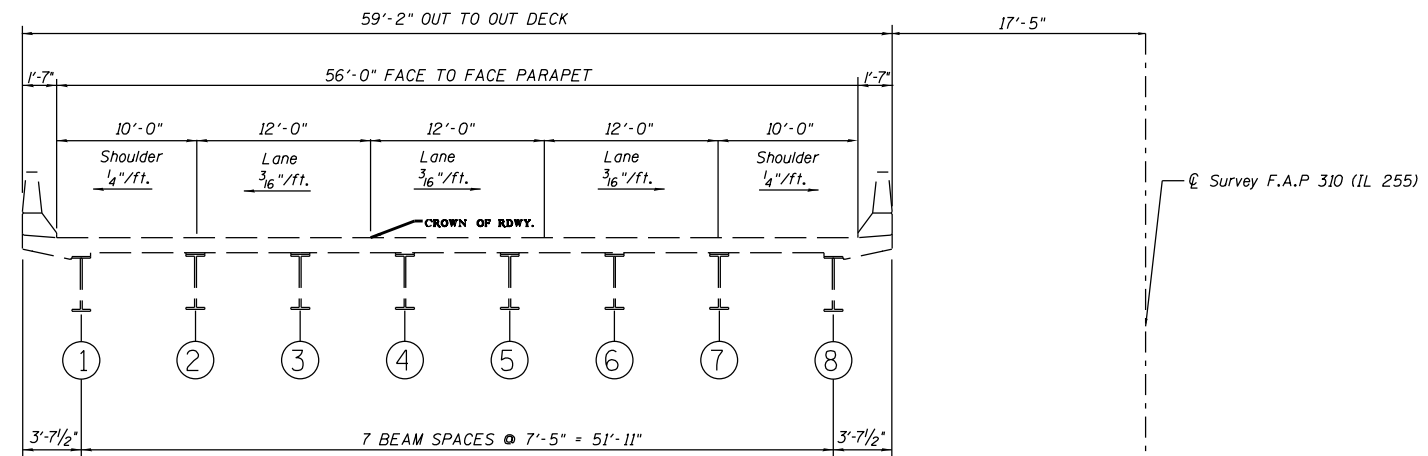
FILE NAME * *FILE#	USER NAME * #USER#	DESIGNED - ___	REVISED - ___	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUMMARY OF QUANTITIES			F.A.B. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE * #SCALE#	DRAWN - ___	REVISED - ___		SCALE: NTS	SHEET NO. 1 OF 1 SHEETS	STA. _____ TO STA. _____	310	60-9HB-4-P	MADISON	11	3
	PLOT DATE * #DATE#	DATE - ___	REVISED - ___					FED. ROAD DIST. NO. , ILLINOIS FED. AID PROJECT				

CONTRACT NO. 76H66

SN 060-0232 (SB)



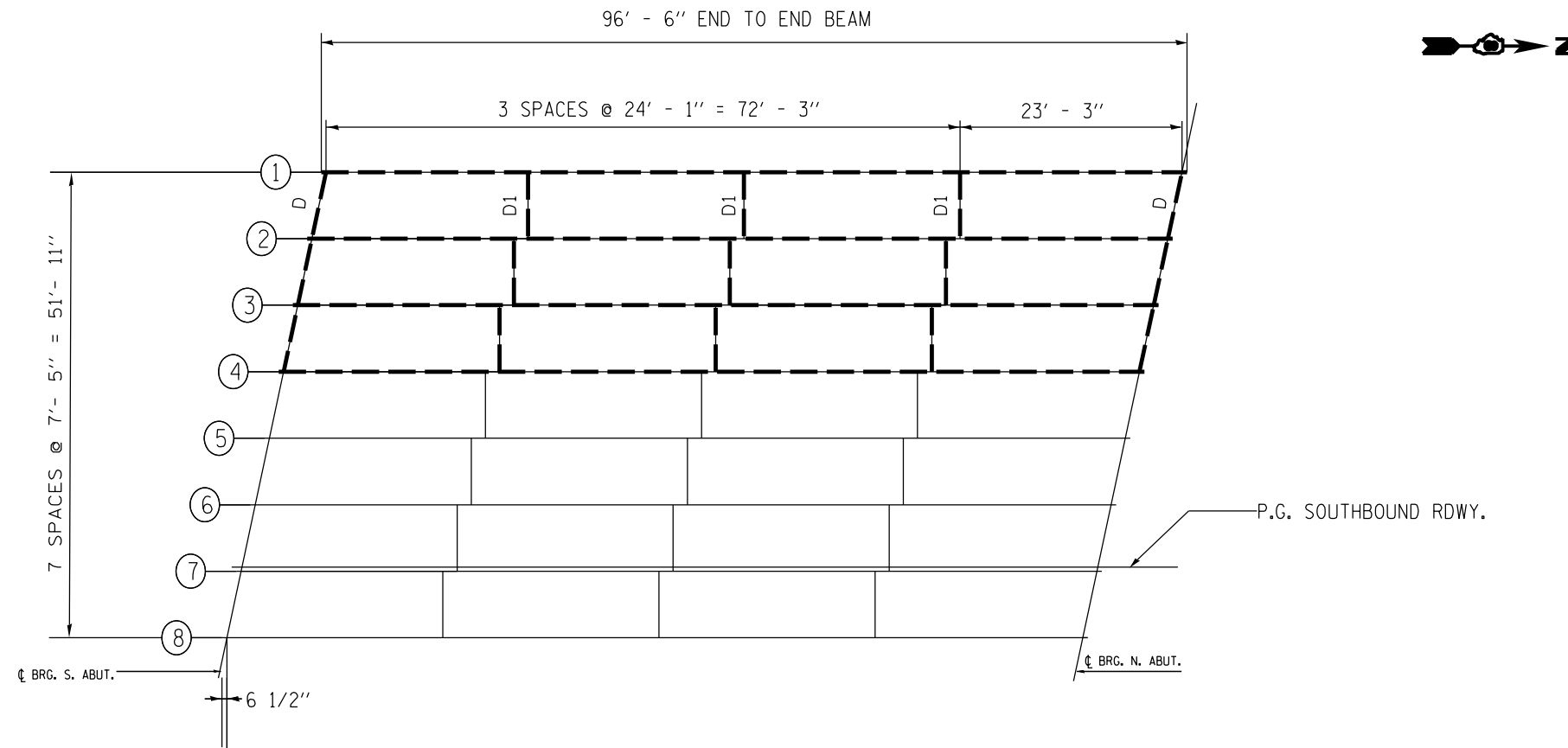
ELEVATION



CROSS SECTION
(Looking Upstation Southbound)

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	PLOT DATE = \$DATE\$	DATE -	REVISED -		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT								

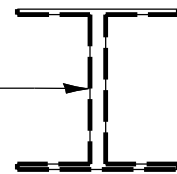
SN 060-0232 (SB)



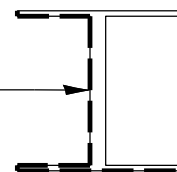
PAINTING AREA

NOTE: ALL DIAPHRAGMS, BEARINGS AND DECK DRAINS WITHIN THE LIMITS OF THE PAINTING AREA SHALL BE CLEANED PER NEAR WHITE BLAST CLEANING- SSPC-SPI0 AND PAINTED ACCORDING TO THE REQUIREMENTS OF PAINT SYSTEM 1-OZ/E/U. THE COLOR OF THE FINISH COATS SHALL BE REDDISH BROWN, MUNSELL NO 2.5YR 3/4.

PAINTING AREA, ALL SURFACES OF BEAMS 1, 2, 3.



PAINTING AREA, WEST FACE AND BOTTOM OF BOTTOM FLANGE OF BEAM 4.



FILE NAME = *FILEL*	USER NAME = *USER*	DESIGNED - ___	REVISED - ___	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PLAN SHEET			F.A.P. RTE. 310	SECTION 60-9HB-4-P	COUNTY MADISON	TOTAL SHEETS 11	SHEET NO. 8
	PLOT SCALE = *SCALE*	CHECKED - ___	REVISED - ___		SCALE: NTS	SHEET NO. 2 OF 2 SHEETS	STA. _____ TO STA. _____	CONTRACT NO. 76H66				
PLOT DATE = *DATE*	DATE - _____	REVISED - ___	REVISED - ___		FED. ROAD DIST. NO. _____ ILLINOIS FED. AID PROJECT							

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.P. RTE.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
310	*	MADISON	62	25
SHEET NO.: 15 SHEETS: 26				
STA.	TO STA.			
F.H.W.A. REGION 5 ILLINOIS PROJECT				
* 60-9HB-3 & HB-4				

BEAM	TOP OF WEB ELEV. @ BRG. S. ABUTMENT	TOP OF WEB ELEV. @ BRG. N. ABUTMENT
1	447.64	446.58
2	447.81	446.75
3	447.94	446.89
4	448.00	446.95
5	447.90	446.86
6	447.78	446.73
7	447.64	446.60
8	447.50	446.46
9	447.59	446.56
10	447.76	446.73
11	447.93	446.91
12	448.09	447.07
13	448.22	447.20
14	448.19	447.18
15	448.09	447.08
16	447.95	446.94

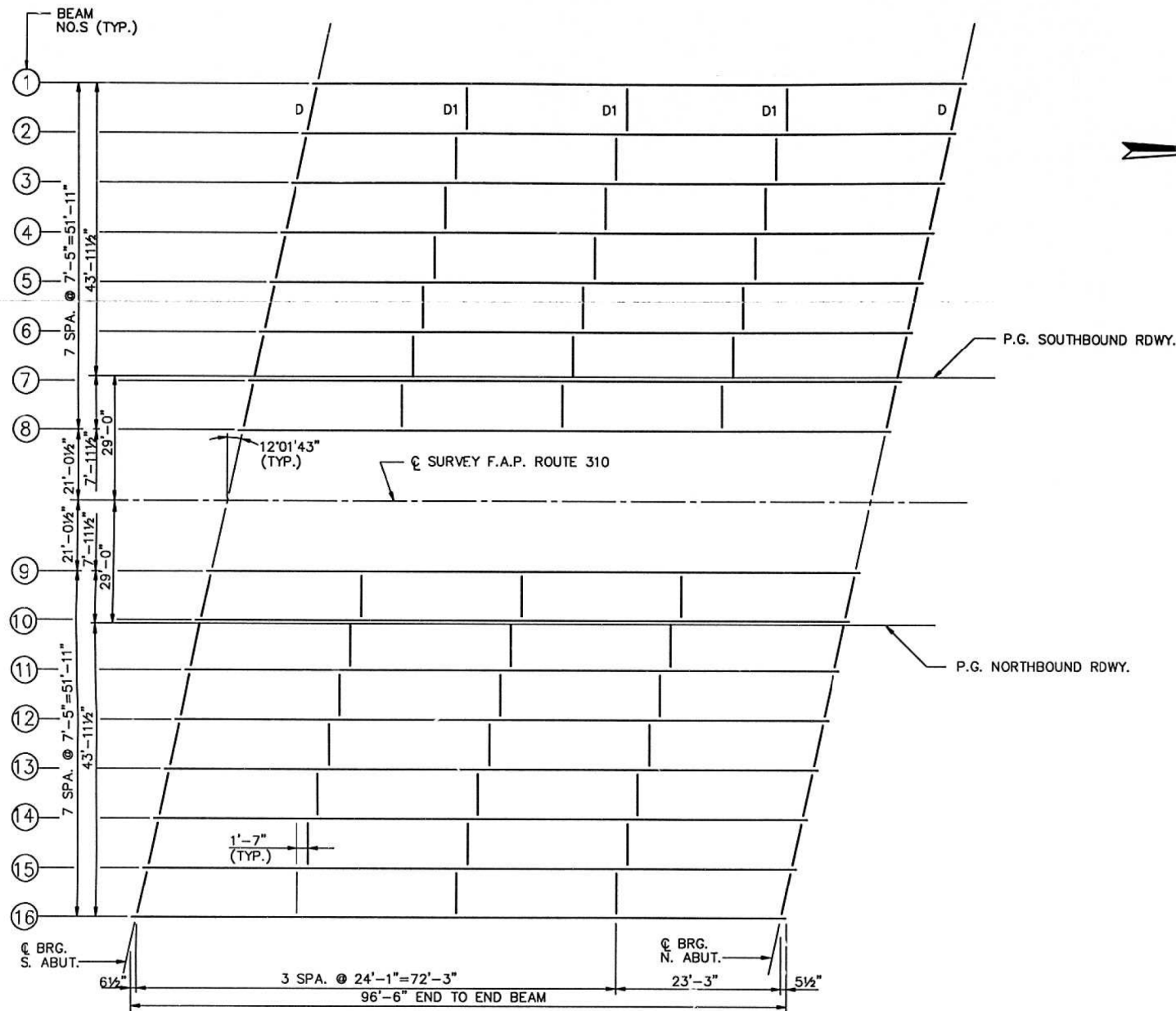
* FOR FABRICATION ONLY

I_s (IN. ⁴)	12675
I_c (IN. ⁴)	35420
S_s (IN. ³)	746
S_c (IN. ³)	1035
ρ (K/I)	.890
$M\bar{\rho}$ (K)	1015
$s\bar{\rho}$ (K/I)	0.292
$M_s \bar{\rho}$ (K)	333
$M \bar{\rho}$ (K)	973
M_{IMP} (K)	221
$5/3(M \bar{\rho} + I)(K)$	1990
M_o (K)	4339
M_u (K)	5314
$f_s \bar{\rho}$ NON-COMP (K.S.I.)	16.3
$f_s \bar{\rho}$ (COMP) (K.S.I.)	4.2
$f_s 5/3(\bar{\rho} + I)$ (K.S.I.)	23.1
f_s (OVERLOAD) (K.S.I.)	43.6
VR (K)	59.6

R $\bar{\rho}$ (K)	61.7
R $\bar{\rho}$ (K)	48.6
R IMP. (K)	11.0
R TOTAL (K)	121.3

MOMENT TABLE NOTES:

- ① I_s AND S_s ARE THE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL SECTION USED IN COMPUTING f_s (OVERLOAD).
- ② I_c AND S_c ARE THE MOMENT OF INERTIA AND SECTION MODULUS OF THE COMPOSITE SECTION USED IN COMPUTING f_s (OVERLOAD).
- ③ THE FULLY PLASTIC MOMENT CAPACITY (M_u) IS COMPUTED ACCORDING TO AASHTO 10.48.1 & 10.50.1.1.
- ④ f_s (OVERLOAD) IS THE SUM OF THE STRESSES DUE TO $[M\bar{\rho} + M_s\bar{\rho} + 5/3(M\bar{\rho} + I)]$
- ⑤ $M\bar{\rho}$ - MOMENT DUE TO DEAD LOADS ON NON-COMPOSITE SECTION.
- ⑥ $M_s\bar{\rho}$ - MOMENT DUE TO DEAD LOADS ON COMPOSITE SECTION.
- ⑦ $M \bar{\rho}$ - MOMENT DUE TO LIVE LOAD ON COMPOSITE SECTION.
- ⑧ I - LIVE LOAD IMPACT.
- ⑨ VR IS THE MAXIMUM $\bar{\rho} + I$ IMPACT SHEAR RANGE IN SPAN.
- ⑩ M_o (APPLIED MOMENT) = $1.3[M\bar{\rho} + M_s\bar{\rho} + 5/3(M\bar{\rho} + I)]$.



FRAMING PLAN

FRAMING PLAN
F.A.P. RTE. 310 OVER
RAMP 6
F.A.P. RTE. 310
SECTION 60-9HB-3
MADISON COUNTY
STATION 1628 + 38.17
STRUCTURE NO. 060-0231(N.B.)
STRUCTURE NO. 060-0232(S.B.)

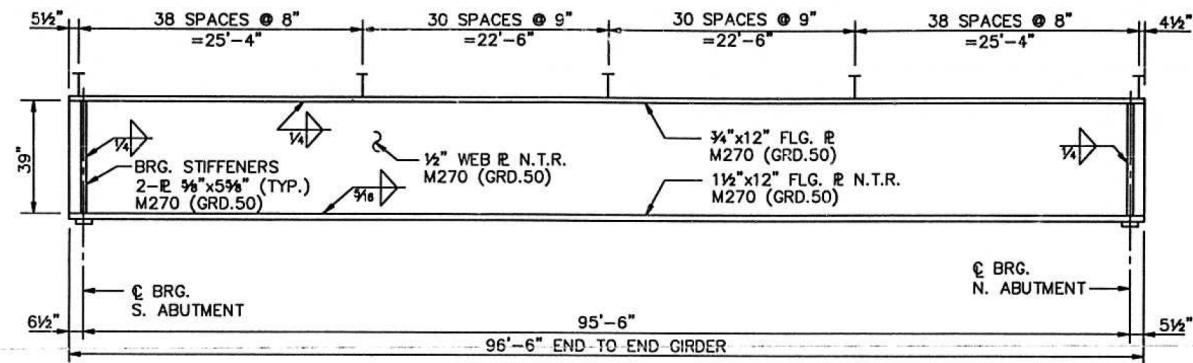
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	PLOT DATE = *DATE*	DATE -	REVISED -			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.P. RTE.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
310	*	MADISON	62	26
STA.		TO STA.		
F.H.W.A. REGION 5		ILLINOIS PROJECT		

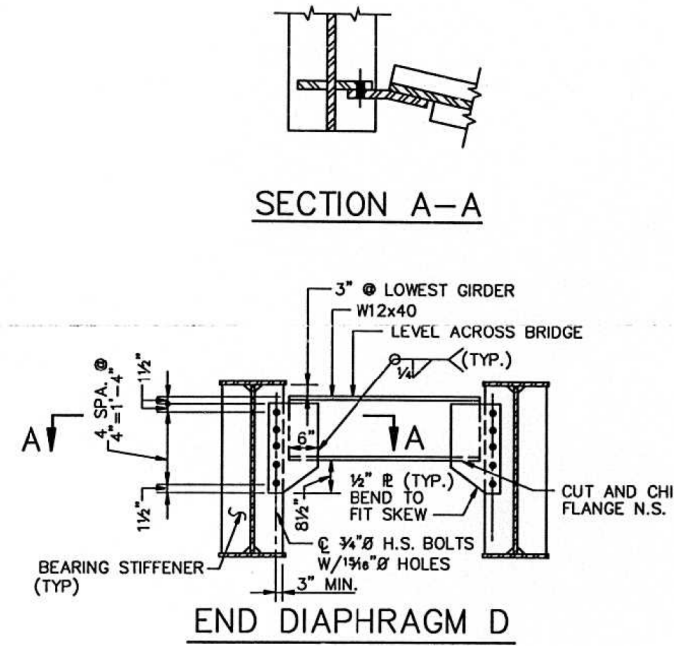
* 60-9HB-3 & HB-4

SHEET NO.: 16
SHEETS: 26

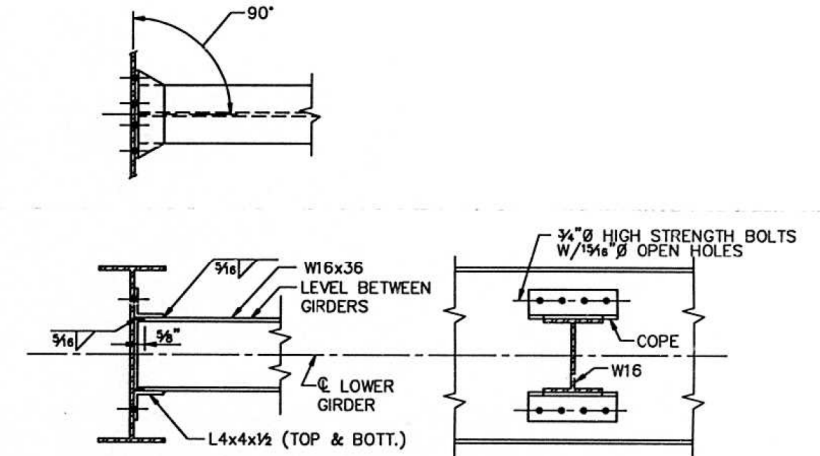


GIRDER ELEVATION

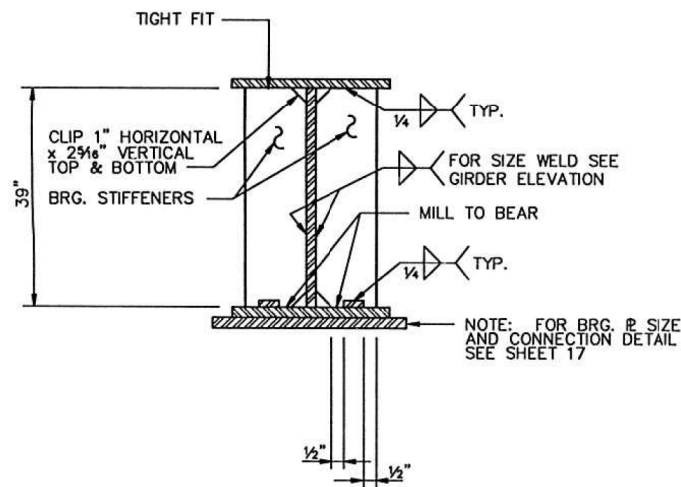
"N.T.R." DENOTES PLATES TO WHICH NOTCH TOUGHNESS REQUIREMENTS ARE APPLICABLE



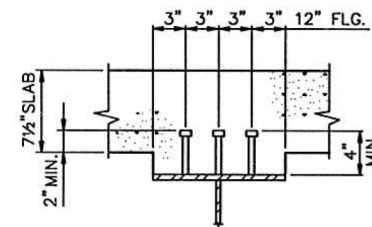
END DIAPHRAGM D



INTERIOR DIAPHRAGM D1



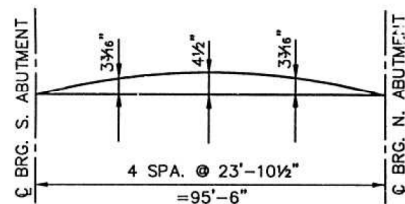
TYPICAL SECTION AT ABUTMENTS



TYPICAL SHEAR STUD DETAIL

NOTES:

- ALL SHEAR STUDS TO BE 3/4" Ø GRANULAR OR SOLID FLUX FILLED HEADED STUDS AUTOMATICALLY END WELDED TO FLANGE (TOTAL NO. 6576).
- USE TWO HARDENED WASHERS PER BOLT FOR ALL OVERSIZED HOLES.



CAMBER DIAGRAM

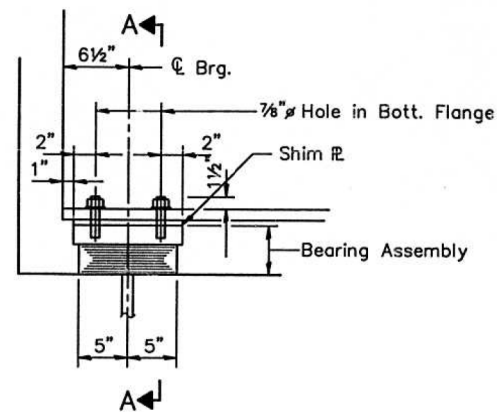
PLATE GIRDER DETAILS
F.A.P. RTE. 310 OVER
RAMP 6
F.A.P. RTE. 310
SECTION 60-9HB-3
MADISON COUNTY
STATION 1628 + 38.17
STRUCTURE NO. 060-0231(N.B.)
STRUCTURE NO. 060-0232(S.B.)

FILE NAME =	USER NAME = *USER*	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DETAIL SHEET	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
*FILE#		DRAWN -	REVISED -			310	60-9HB-4-P	MADISON	11	10	
	PLOT SCALE = *SCALE*	CHECKED -	REVISED -			SCALE: NTS		SHEET NO. 2 OF 3 SHEETS		STA. _____ TO STA. _____	FED. ROAD DIST. NO. _____ ILLINOIS FED. AID PROJECT
	PLOT DATE = *DATE*	DATE -	REVISED -			CONTRACT NO. 76H66					

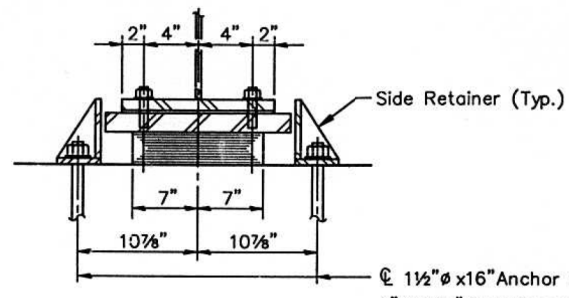
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.P. RTE.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
310		MADISON	62	27
STA. TO STA.				
F.H.W.A. REGION 5 ILLINOIS PROJECT				
*60-9HB-3 & HB-4				

SHEET NO.: 17
SHEETS: 26

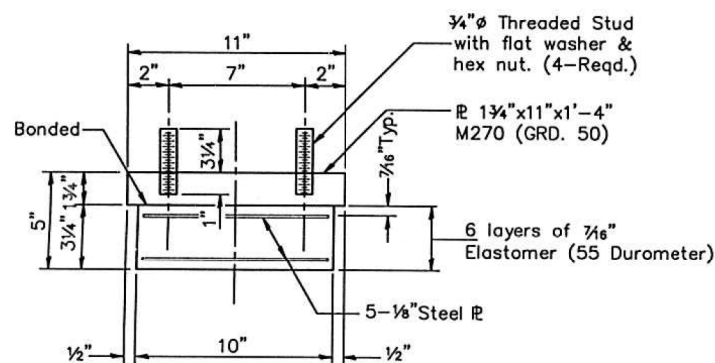


ELEVATION AT S. ABUT.



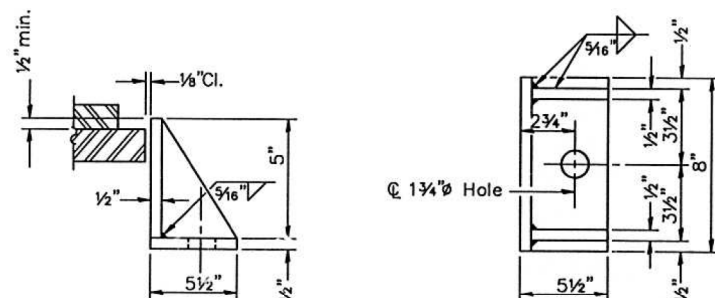
SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.



BEARING ASSEMBLY

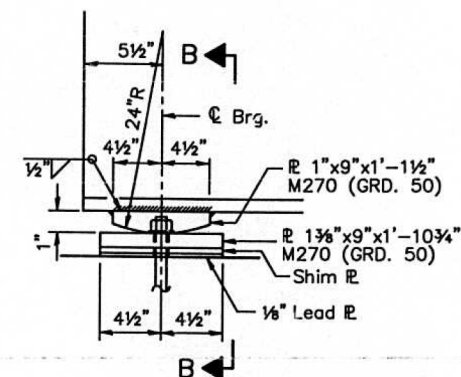
Note: Shim plates shall not be placed under Bearing Assembly.



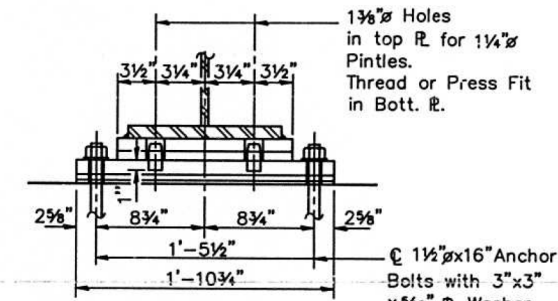
SIDE RETAINER

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

Notes: Anchor Bolts at fixed bearings may be built into the masonry. See Sheet 24 for Anchor Bolt installation.

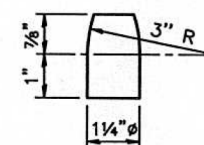


ELEVATION AT N. ABUTMENT



SECTION B-B

FIXED BEARING



PINTLE

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	16

BEARING DETAILS
F.A.P. RTE. 310 OVER
RAMP 6
F.A.P. RTE. 310
SECTION 60-9HB-3
MADISON COUNTY
STATION 1628 + 38.17
STRUCTURE NO. 060-0231(N.B.)
STRUCTURE NO. 060-0232(S.B.)