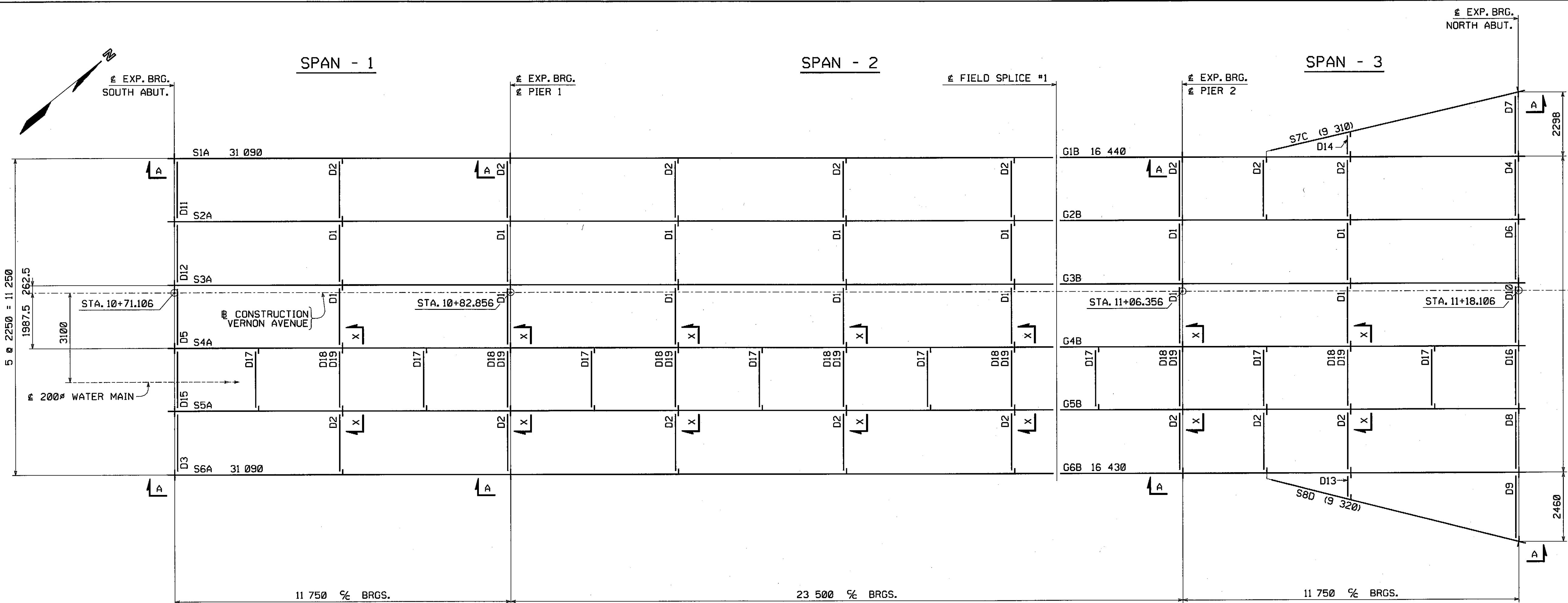


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SHIPMENT 01

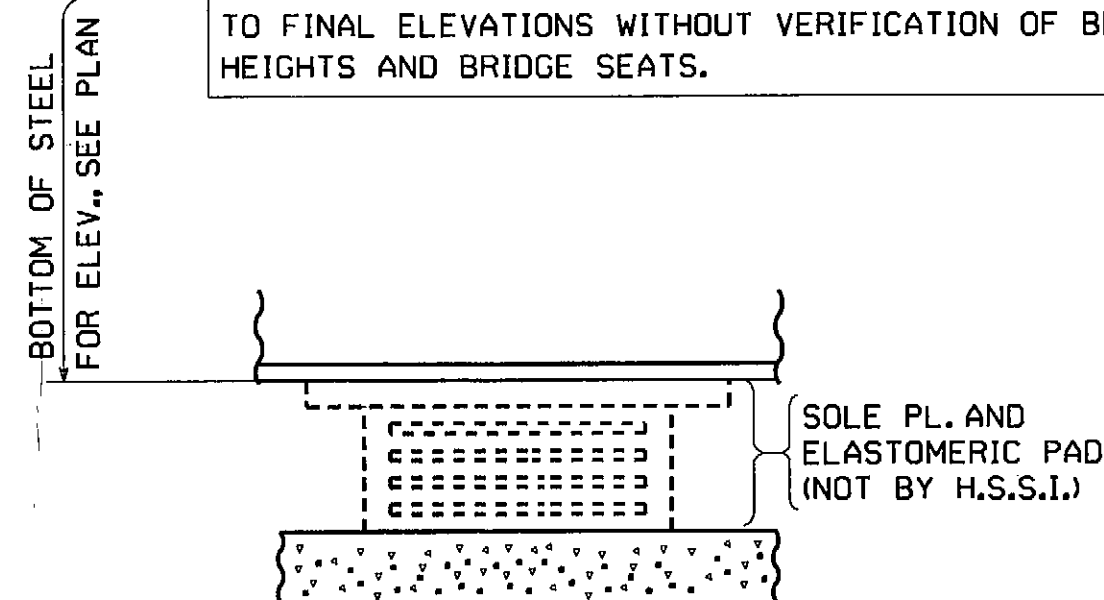
BY: MK:ende1

PLOTTED: 4/24/2008



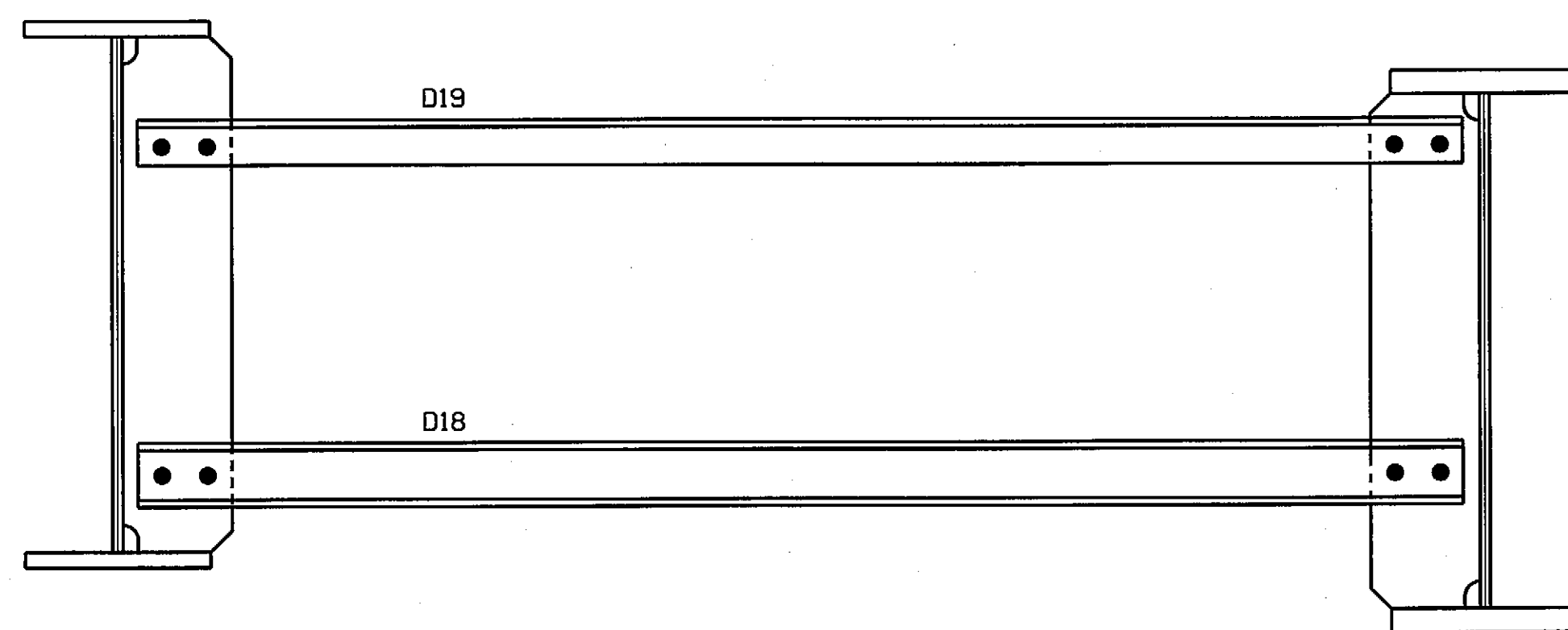
ERECTION FRAMING PLAN

CONTRACTOR NOTE:
ELEVATIONS ARE GIVEN TO BOTTOM OF STEEL - DO NOT POUR TO FINAL ELEVATIONS WITHOUT VERIFICATION OF BEARING HEIGHTS AND BRIDGE SEATS.



SECTION A

ELEVATIONS					
LINE	SOUTH ABUT.	PIER 1	LINE	PIER 2	WEST ABUT.
S1	190.648	191.056	G1	191.932	192.545
S2	190.721	191.129	G2	192.005	192.600
S3	190.766	191.174	G3	192.050	192.627
S4	190.732	191.139	G4	192.015	192.547
S5	190.687	191.094	G5	191.970	192.452
S6	190.614	191.021	G6	191.897	192.329
			S8		192.266



SECTION X-X

NOTES:

NO CREDIT WILL BE ALLOWED FOR WORK PERFORMED BY OTHERS IN REPLACING OR CORRECTING MATERIALS OR WORKMANSHIP COVERED BY THIS DRAWING UNLESS EXPRESSLY AUTHORIZED BY HIGH STEEL STRUCTURES, INC.

HIGH STEEL STRUCTURES, INC. DOES NOT SUPPLY STUD SHEAR CONNECTORS, ROD HANGERS OR HARDWARE AT UTILITIES, BEARINGS, BEARING PADS, ANCHOR BOLTS, OR FIELD TOUCHUP PAINT

NOTICE TO ERECTOR & CONTRACTOR: THIS STRUCTURAL STEEL IS BEING DELIVERED WITH THE FINAL FINISH COAT APPLIED. USE EXTREME CARE AND APPROPRIATE EQUIPMENT FOR HANDLING DURING ERECTION AND SUBSEQUENT FIELD OPERATIONS. HIGH STEEL STRUCTURES, INC. WILL NOT BE RESPONSIBLE FOR ANY TOUCH-UP REQUIRED DUE TO YOUR FAILURE TO PROPERLY PROTECT FINISH PAINT.

NOTICE: WEIGHTS OF MEMBERS LISTED ON THESE DRAWINGS ARE ESTIMATED WEIGHTS AND ACTUAL WEIGHTS WILL VARY. HIGH STEEL STRUCTURES, INC. WILL NOT BE RESPONSIBLE FOR ANY ERECTION PROCEDURES, SHIPPING PROCEDURES, ETC. DEVELOPED USING ESTIMATED WEIGHTS AS SHOWN.

ALL DIMENSIONS ARE GIVEN HORIZONTALLY (U.N.).

ALL ELEVATIONS AND STATIONS ARE GIVEN IN METERS.

DIMENSIONS GIVEN THUS: (31 090) ARE THE SHIPPING LENGTHS OUT TO OUT OF FASCIA GIRDERS.

ERECTOR NOTE: ALL FIELD CONNECTIONS TO BE MADE IN ACCORDANCE WITH THE FIELD BOLT SUMMARY AND LIST OF FIELD CONNECTIONS. HIGH STEEL STRUCTURES WILL NOT BE RESPONSIBLE FOR FURNISHING ADDITIONAL BOLTS OR FOR ANY OTHER RELATED COSTS OR DAMAGES RESULTING FROM IMPROPER LOCATION OF BOLTS.

ALL FIELD BOLTS THRU WEB OF FASCIA GIRDERS ARE TO HAVE HEADS ON OUTSIDE OF WEB.

ALL FIELD BOLTS THRU BOTTOM FLANGE ARE TO HAVE HEADS UP.

(RCT) INDICATES ROTATIONAL CAPACITY TESTED BOLTS. DO NOT MIX NUTS, BOLTS AND WASHERS FROM DIFFERENT CONTAINERS UNLESS ALL NUTS, BOLTS AND WASHERS HAVE THE SAME LOT NUMBER.

WORK THIS DRAWING WITH DRAWING E2.

INSPECTION FOR MASS. DEPT. OF PUBLIC WORKS TO BE DONE BY: PITTSBURG TESTING LAB.

SHIPPING PIECES			SHIPPING GROUP A1		SHIPPING GROUP B1	
SHIPPING PIECE MARK	WEIGHT (KG)	DWG NO.	SHIPPING PIECE MARK	QUANTITY	SHIPPING PIECE MARK	QUANTITY
G1B	6,104	7	S1A	1	G1B	1
G2B	4,366	8	S2A	1	G2B	1
G3B	4,349	9	S3A	1	G3B	1
G4B	4,354	10	S4A	1	G4B	1
G5B	4,369	11	S5A	1	G5B	1
G6B	6,100	12	S6A	1	G6B	1
S1A	10,859	1	D1	10	S7C	1
S2A	7,594	2	D2	10	S8D	1
S3A	7,594	3	D3	1	D1	4
S4A	7,604	4	D5	1	D2	6
S5A	7,604	5	D11	1	D4	1
S6A	10,859	6	D12	1	D6	1
S7C	1,917	13	D15	1	D7	1
S8D	1,918	14	D17	5	D8	1
D1	139	15	D18	5	D9	1
D2	138	15	D19	5	D10	1
D3	99	15			D13	1
D4	98	15			D14	1
D5	99	15			D16	1
D6	98	15			D17	3
D7	100	15			D18	2
D8	99	15			D19	2
D9	108	15				
D10	99	15				
D11	99	15				
D12	99	15				
D13	57	15				
D14	54	15				
D15	337	15				
D16	337	15				
D17	42	15				
D18	42	15				
D19	23	15				

* SEE 1/20/09 REVISIONS TO SHOTS GNI & 1-14 OF 15 FOR REVISION TO PAINT SYSTEM.

SHEETS SAI 22, 1-5 REV. TO FILL PLATES.

APPROVED FOR CONFORMANCE WITH CONSTRUCTION CONTRACT REQUIREMENTS.

REVISION AND RESUBMIT.

FAY, SPOFFORD & THORNDIKE ENGINEERS

By: SP Date: 6/20/08

Shop drawings have been reviewed to ascertain that they represent conformance and general compliance with contract documents, quantities, weights, details of fabrication and dimensions. The contractor is responsible for the construction and coordination of field and substructure in the responsibility of the general contractor.

NOTE:
THE PURPOSE OF THIS DRAWING IS TO COORDINATE GEOMETRIC CONTROL INFORMATION. THIS DRAWING IS SUBMITTED FOR INFORMATION ONLY AND IS NOT INTENDED FOR SHOP FABRICATION. THIS DRAWING IS FOR REFERENCE ONLY. APPROVAL IS NOT REQUIRED.

NO.	REVISION	BY	CHK'D	DATE
HOLES				
BOLTS				
COATING				
CODE(S)				
SCALE				
N.T.S.				
SHPMT	1	DRAWING MANAGER	KREIDER (IH)	MADE BY
STATE	MA	PROJECT NUMBER	S-1080005	STRUCT. D
		GENERAL CONTRACTOR	E.T. & L. CORPORATION	PROJ. MGR
				HSS PROJ. MGR
				KEN GLIDDEN
				CS
				DATE 4-22-08
				E1 OF E2

METRIC

Scale = 0.012500 of full size.

0
1
3

60

SHIPPED 4/24/2008

BY: Mkrandel

SHIPMENT 01

PWK ENG: 5003501 PWD: 5003502 SUPERECT: 5003503

LIST OF FIELD CONNECTIONS											ONE WASHER PER BOLT UNLESS NOTED OTHERWISE	
LINE	ACTUAL NUMBER REQ'D	BOLT DIAM.	BOLT LENGTH	BOLTS PER CONN.	NO. OF CONN.	GRIP	THICKNESS OF PIECES JOINED				PIECES CONNECTED AND REMARKS	
1	120	7/8	3 1/4	60	2	50.6	14.3	22.0	14.3			FS#1 WEB SPLICE @ LINES 1 & 6
2	64	7/8	4 3/4	32	2	86.0	20.6	40.0	25.4			FS#1 TOP FLG. SPLICE @ LINES 1 & 6
3	64	7/8	5	32	2	90.8	25.4	40.0	25.4			FS#1 BOTT.FLG. SPLICE @ LINES 1 & 6
4	240	7/8	3 1/4	60	4	45.6	14.3	17.0	14.3			FS#1 WEB SPLICE @ LINES 2, 3, 4 & 5
5	128	7/8	4 1/4	32	4	72.0	20.6	26.0	25.4			FS#1 TOP FLG. SPLICE @ LINES 2, 3, 4 & 5
6	128	7/8	4 1/4	32	4	76.8	25.4	26.0	25.4			FS#1 BOTT.FLG. SPLICE @ LINES 2, 3, 4 & 5
7												
8	640	7/8	2 1/4	10	64	23.7	12.7	11.0				BRG. STIFF. OR CONN. PL. TO MC460
9	120	7/8	2 1/4	6	20	25.7	12.7	13.0				BRG. STIFF. TO C310
10	32	7/8	2 1/4	2	16	22.9	15.9	7.0				CONN. PL. TO W100
11	28	7/8	2	2	14	19.7	12.7	7.0				BRG. STIFF. OR CONN. PL. TO W100
12	28	7/8	2 1/4	2	14	22.2	12.7	9.5				BRG. STIFF. OR CONN. PL. TO L76
13	40	7/8	2 1/4	10	4	24.7	12.7	12.0				BRG. STIFF. TO V690
14	40	7/8	2 1/2	20	2	27.7	15.0	12.7				STGR V690 TO CONN.PL.

FIELD BOLT SUMMARY - SHIP. #1	
(2% ADDITIONAL BOLTS ADDED + 3 EA. FOR TESTING)	
AASHTO M164 TYPE 3 (RCT); W/HVY HEX HD	
69	- 7/8"Ø HIGH STRENGTH BOLTS x 0'-5
69	- 7/8"Ø HIGH STRENGTH BOLTS x 0'-4 3/4
264	- 7/8"Ø HIGH STRENGTH BOLTS x 0'-4 1/4
370	- 7/8"Ø HIGH STRENGTH BOLTS x 0'-3 1/4
45	- 7/8"Ø HIGH STRENGTH BOLTS x 0'-2 1/2
880	- 7/8"Ø HIGH STRENGTH BOLTS x 0'-2 1/4
33	- 7/8"Ø HIGH STRENGTH BOLTS x 0'-2
AASHTO M291 GRADE DHB (RCT); HVY HEX	
1,730	- NUTS FOR 7/8"Ø BOLT
AASHTO M293 WEATHERING (RCT); ROUND & FLAT	
1,730	- STD WASHERS FOR 7/8"Ø BOLT

WORK THIS DRAWING WITH DRAWING E1.

INSPECTION FOR MASS. DEPT. OF
PUBLIC WORKS TO BE DONE BY:
PITTSBURG TESTING LAB.

TO: E. T. L. Corporation

••NOTE••
THE PURPOSE OF THIS DRAWING IS TO COORDINATE
GEOMETRIC CONTROL INFORMATION. THIS DRAWING IS
SUBMITTED FOR INFORMATION ONLY AND IS NOT
INTENDED FOR SHOP FABRICATION. THIS DRAWING IS
FOR REFERENCE ONLY, APPROVAL IS NOT REQUIRED.

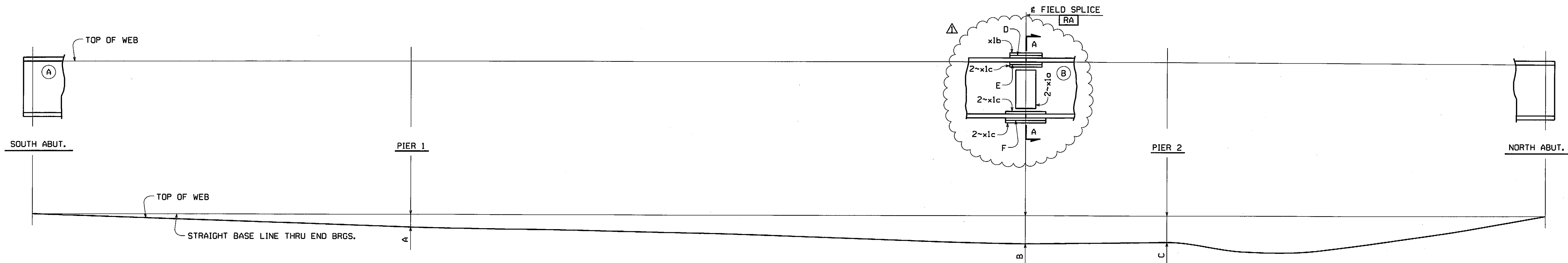
△			
△			
△			
NO.	REVISION		BY CHK'D DATE
HOLES			
BOLTS			
COATING			
CODE(S)			
SCALE			
N.T.S.			
SHIPMT	1	DRAWING MANAGER	KREIDER (IH)
STATE	MA	HSSI PROJECT NUMBER	S-1080005
		MADE BY	MAF
		CHK'D BY	CS
		DATE	4-22-08
		HSSI STRUCT. ID	A
		DRAWING NUMBER	E2 OF E2

1080005A X1-1 4/25/08

4/25/08Approval

RECORD COPY

METRIC



LINE	A	B	C	D	E	F
S1 & G1	-66	-146	-138	--	--	2~z2ak
S2 & G2	-62	-133	-125	--	2~z2ag	2~z2ah
S3 & G3	-57	-120	-111	z2af	--	2~z2ak
S4 & G4	-47	-92	-78	z2af	--	2~z2ak
S5 & G5	-34	-59	-40	z2af	--	2~z2ak
S6 & G6	-22	-29	-3	--	--	--

LINE ASSEMBLY DIAGRAM

NOTES:

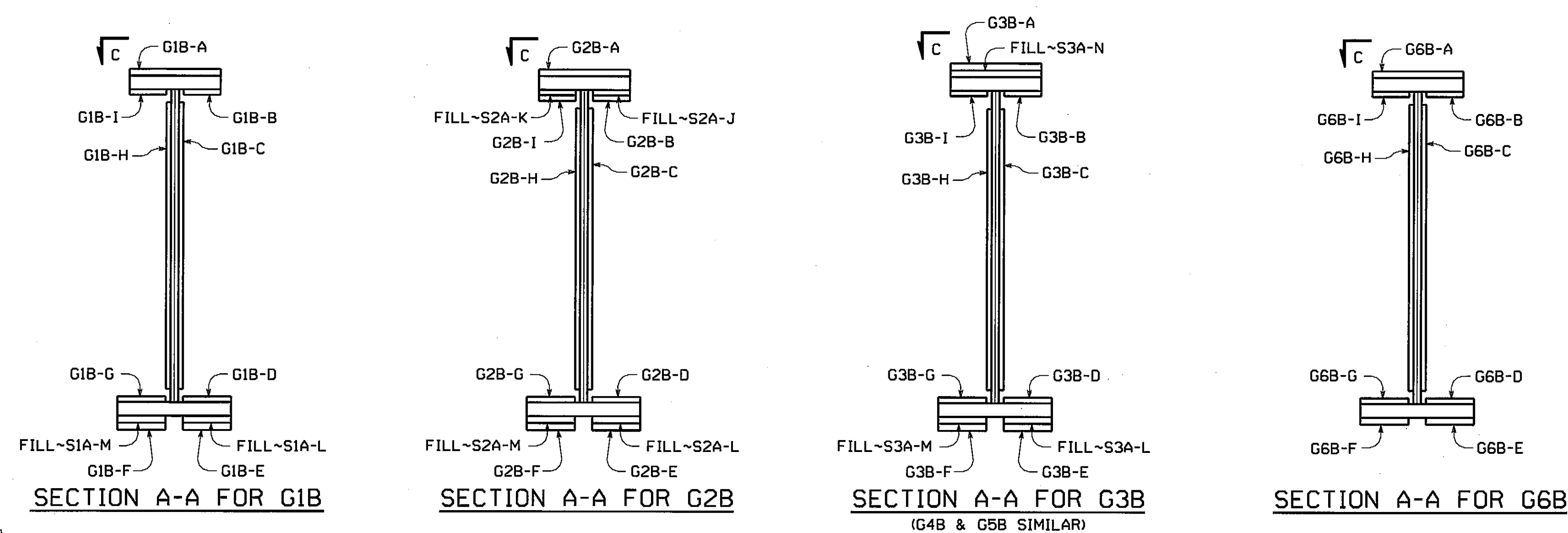
ALL SPLICE PLATES ARE MATCH MARKED AFTER REAMING AS SHOWN IN SECTION A-A. THE MATCH MARKS ON THE SPLICE MATERIAL CONSIST OF THE MARK OF THE GIRDER THEY ARE SHIPPED WITH AND A SUFFIX. THE MARKINGS ARE LOCATED ON THE STEEL AT THE END OF THE SPLICE MATERIAL WHICH IS ON THE GIRDER IT IS SHIPPED WITH. MATCH MARKING MARKS WILL APPEAR ON EDGES OF PLATES. THE CORRESPONDING SUFFIX (A, B, C, ETC.) IS MARKED NEAR THE SPLICE PLATE ON THE GIRDER (SEE VIEW C.) FOR STRINGER & GIRDER MARKS, SEE THE ERECTION FRAMING PLAN DRAWINGS. HOLES MARKED [RA] ARE TO BE SUB-PUNCHED/SUB-DRILLED 6.4# (1/4") UNDER SIZE AND REAMED TO FULL SIZE OR DRILLED FROM SOLID WITH CONNECTING PARTS ASSEMBLED AND MATCH MARKED. HOLES TO BE 1 5/16".

(A) INDICATES SUFFIX MARK OF SHIPPING PIECE.

NEGATIVE CAMBER ORDINATES INDICATE THAT TOP OF WEB IS BELOW BASE LINE.

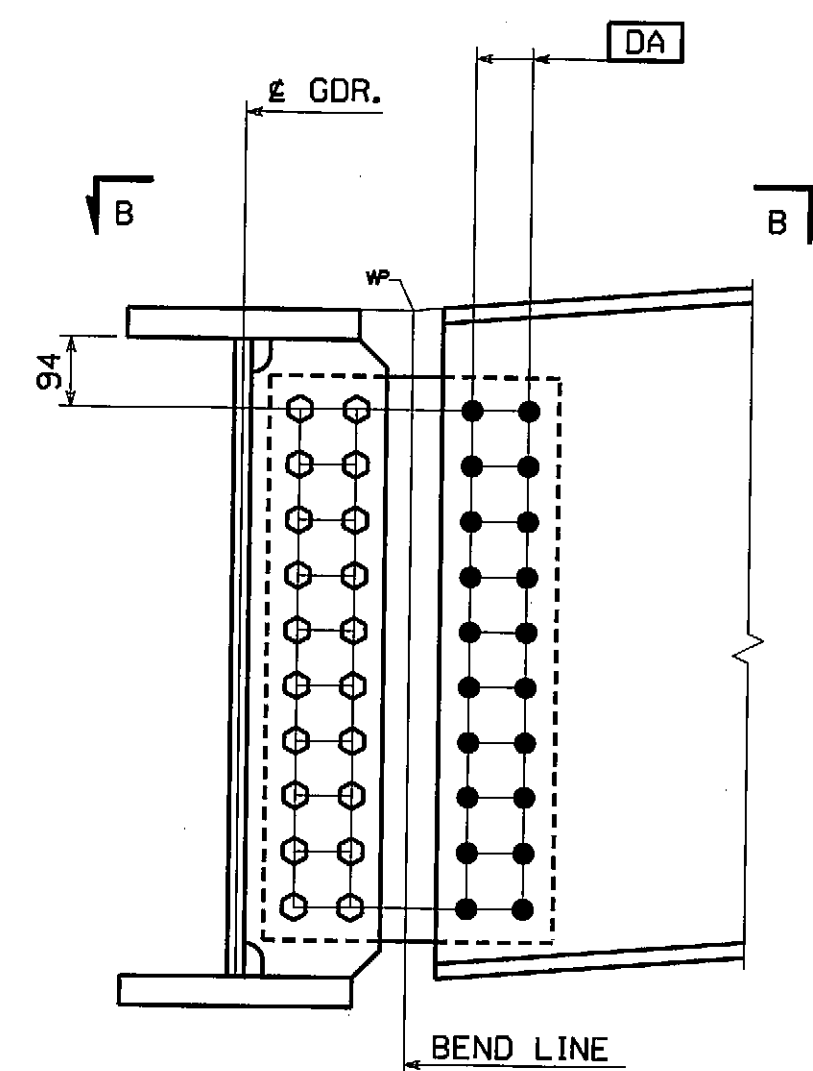
APPROVED FOR CONFORMANCE WITH CONSTRUCTION CONTRACT REQUIREMENTS.	
APPROVED FOR CONFORMANCE SUBJECT TO COMMENTS NOTED.	
REVISE AND RESUBMIT.	
FAY, SPOFFORD & THORNDIKE ENGINEERS	
ES	Date 3/6/09

These drawings have been reviewed to ascertain that they represent the design and construction of the project as shown on the drawings. The engineer's responsibility is limited to the design and construction of the project as shown on the drawings. The engineer does not assume any responsibility for the construction of the project or the safety of the project.

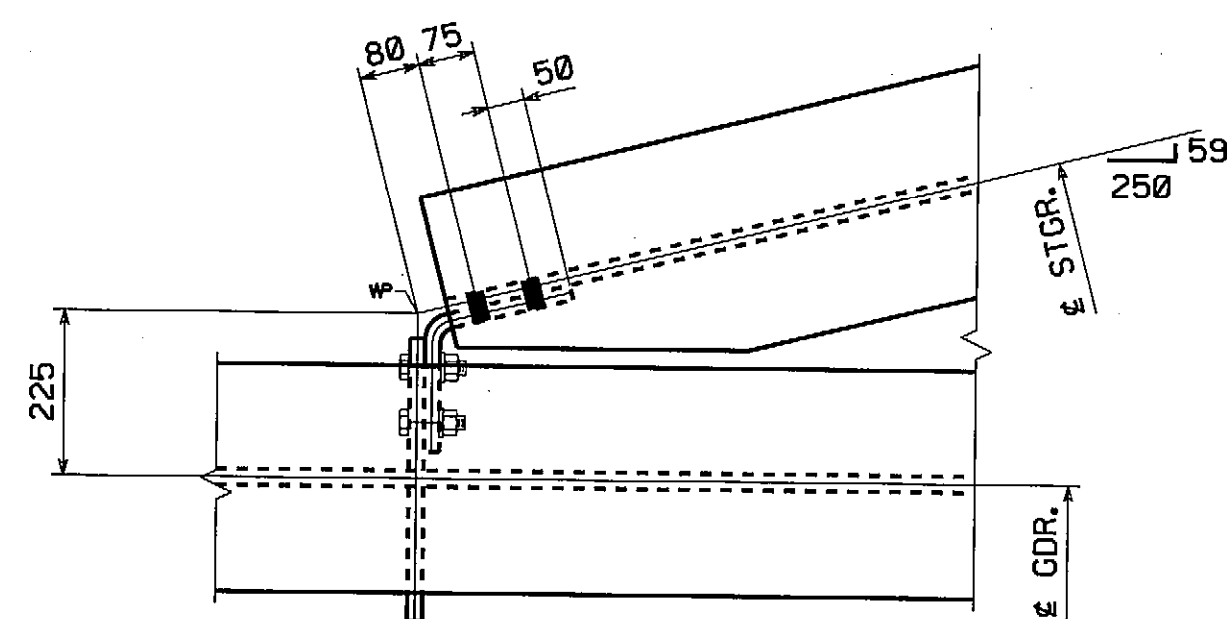


INSPECTION FOR MASS. DEPT. OF PUBLIC WORKS TO BE DONE BY: PITTSBURGH TESTING LAB.

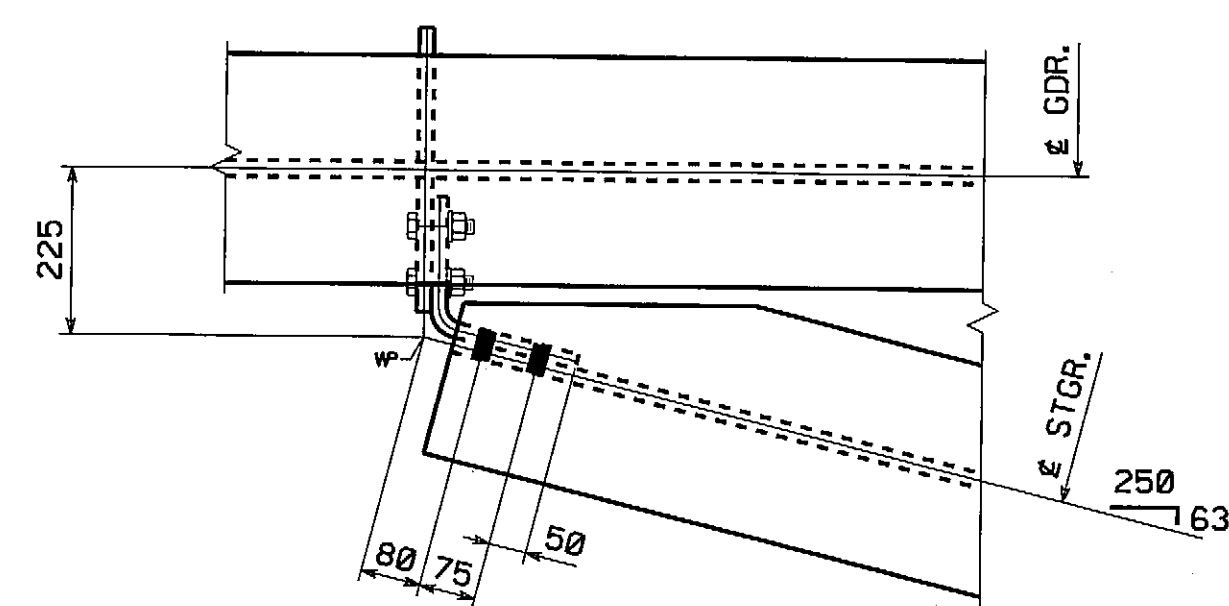
ADDED FILL PLS z2af, z2ag, z2ah & z2ak TO MATCH AS BUILT CONDITION		MGK	WBW	2-13-09
REVISION		BY	CHK'D	DATE
NO.	1			
HOLES	15 1/16" (U.N.)	Lancaster Facility 195 Old Philadelphia Pike Lancaster, PA 17602-0008 Phone (717) 299-5211		
BOLTS		Williamsport Facility 3501 N. 4th Street Williamsport, PA 17701 Phone (717) 325-3051		
SHOP ASSEMBLY DIAGRAM				
VERNON AVENUE OVER WARE RIVER				
VERNON AVENUE STA. 10+71.106 TO STA. 11+18.106				
BRIDGE NO. B-02-012 IN THE TOWN OF BARRE, WORCESTER COUNTY				
COMMONWEALTH OF MASSACHUSETTS				
MASSACHUSETTS HIGHWAY DEPARTMENT				
SCALE	N.T.S.	STATE CONT. OR REF. NO.	PROJECT FILE NO. 60356	FED. AID PROJ. NO. BR-001S(714)X
GENERAL CONTRACTOR		E.T. & L. CORPORATION		HSSI PROJ. MGR. KEN GLIDDEN
SHPMT	1	DRAWING MANAGER	KREIDER (IH)	MADE BY
STATE	MA	HSSI PROJECT NUMBER	S-1080005	HSSI STRUCT. ID
DRAWING NUMBER		SA1 OF SA2		



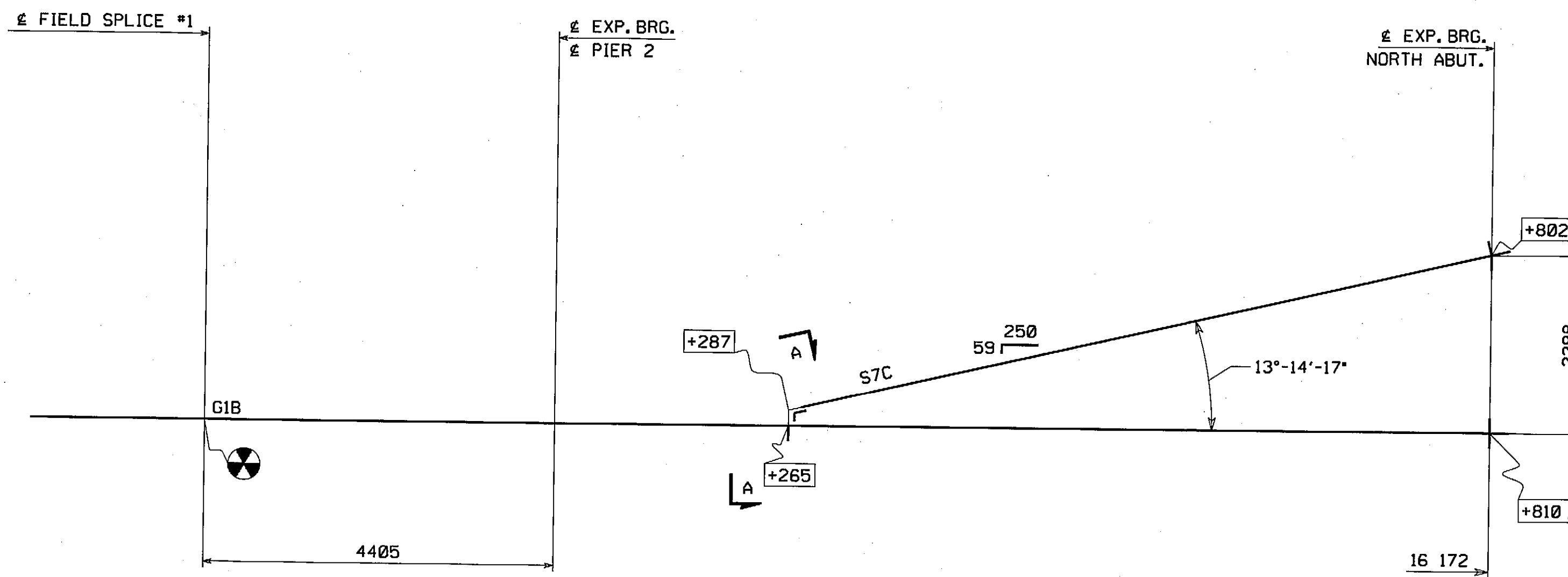
SECTION A-A
(DEVELOPED)



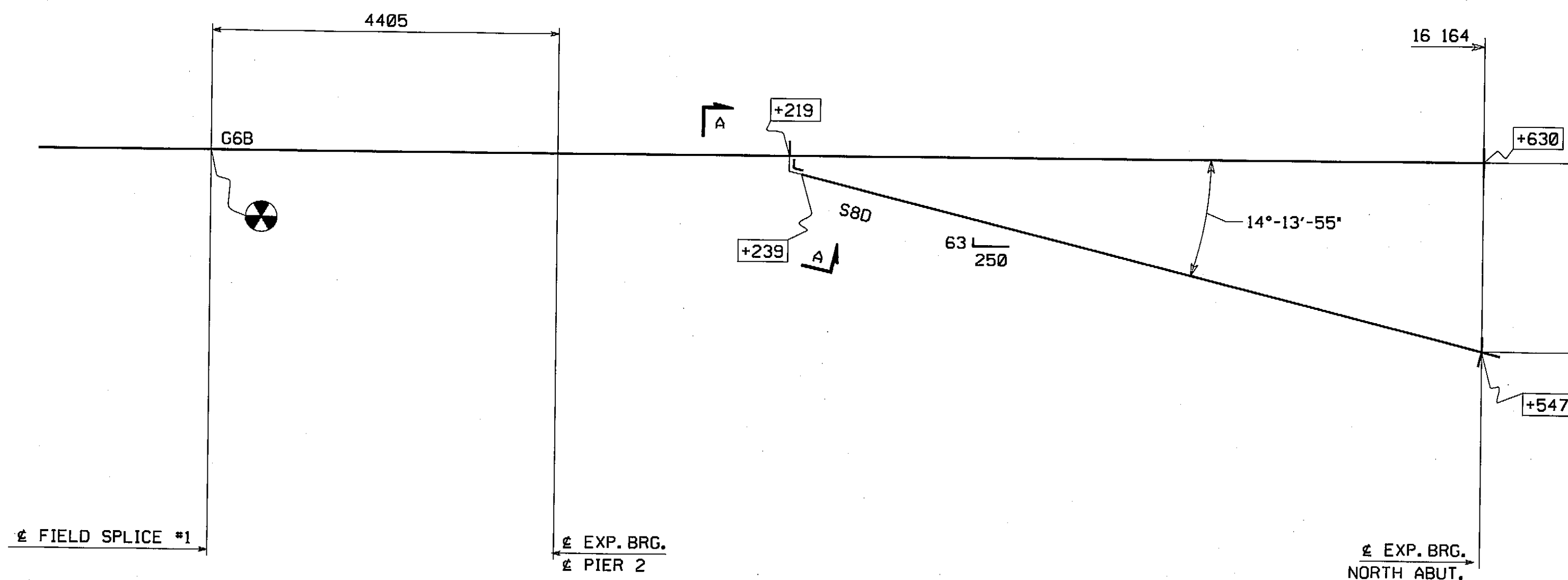
S7C TO G1B B-B SECTION



S8D TO G6B B-B SECTION



UNIT ASSEMBLY DIAGRAM FOR S7C TO G1B



UNIT ASSEMBLY DIAGRAM FOR S8D TO G6B

NOTES:

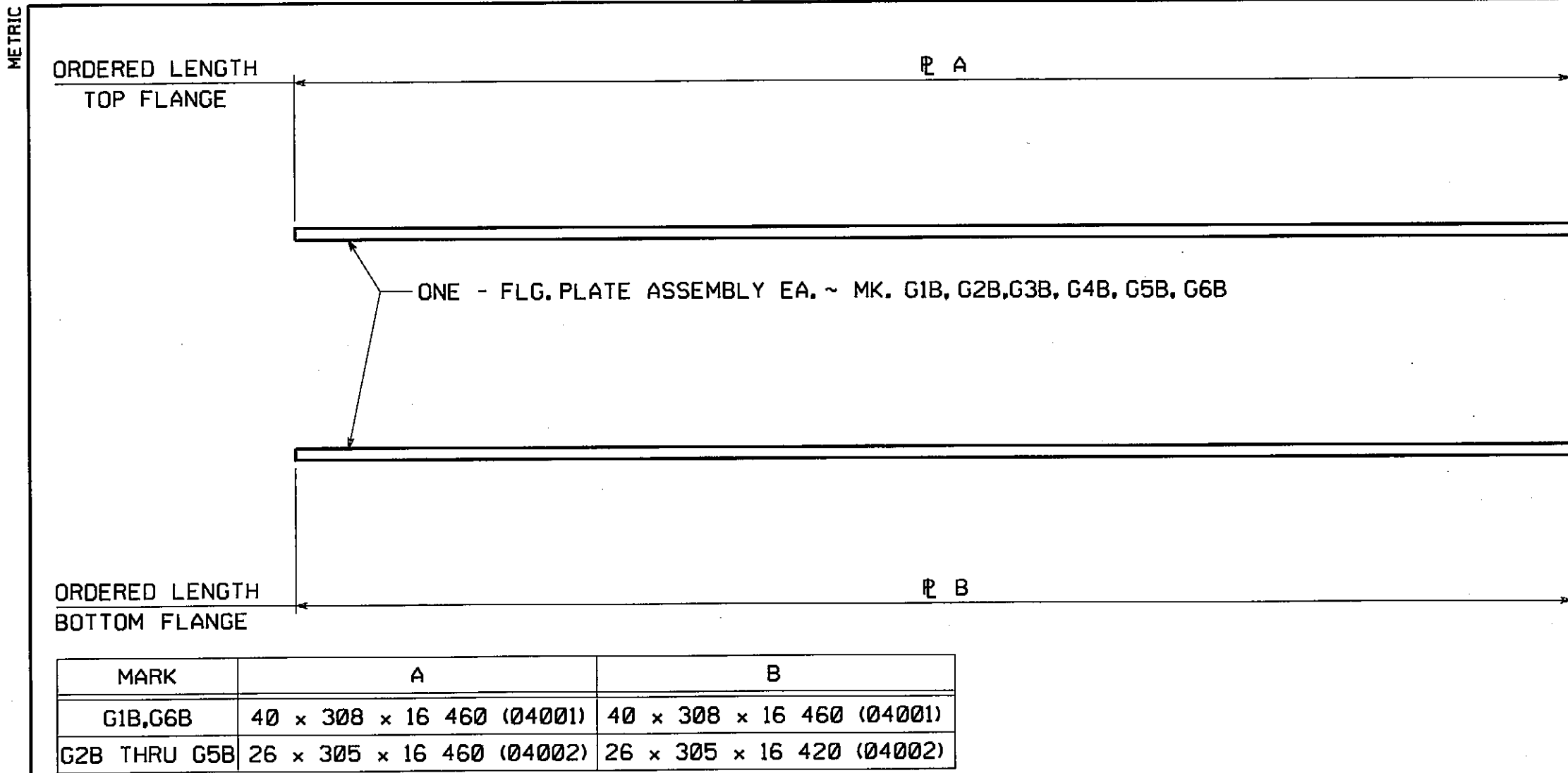
- INDICATES ZERO POINT.
- FIGURES GIVEN THUS: +239 ARE THE DIFFERENCES IN ELEVATIONS ABOVE THE ZERO POINT MARKED •. ELEVATIONS ARE GIVEN AT THE TOP OF GIRDER WEB/TOP OF STRINGER AT THE • OF BEARING OR FIELD SPLICE.
- PLAN DIMENSIONS ARE GIVEN HORIZONTALLY FROM THE TOP OF WEB PLATE/ TOP OF GIRDER/STRINGER IN FULLY CAMBERED POSITION.
- HOLES MARKED [DA] ARE TO BE DRILLED FULL SIZE FROM SOLID WHILE ASSEMBLED, USING STRINGER S7C OR S8D AS A TEMPLATE ONE TIME ONLY.
- FINAL HOLE SIZE TO BE 15/16".

INSPECTION FOR MASS. DEPT. OF
PUBLIC WORKS TO BE DONE BY:
PITTSBURG TESTING LAB.

APPROVED FOR CONFORMANCE WITH CONSTRUCTION CONTRACT REQUIREMENTS.	
REVISE AND RESUBMIT	
FAY, SPOFFORD & THORNDIKE ENGINEERS	
By: <i>ES</i>	Date: 6/22/08
Shop drawings have been reviewed to ascertain that they represent conformance and general compliance with contract documents. Dimensions, quantities, weights, details of fabrication and construction and coordination of pieces and subcomponents are the responsibility of the general contractor.	

NO.	REVISION	BY	CHK'D	DATE
<div style="display: flex; justify-content: space-between;"> <div> <p>HOLES</p> <p>BOLTS</p> <p>COATING</p> <p>CODE(S)</p> <p>SCALE</p> <p>STATE CONT. OR REF. NO.</p> <p>GENERAL CONTRACTOR</p> <p>SHPMT</p> <p>STATE</p> </div> <div> <p>MASSACHUSETTS HIGHWAY DEPARTMENT</p> <p>PROJECT FILE NO. 60356</p> <p>E.T. & L. CORPORATION</p> <p>KREIDER (IH)</p> <p>MA</p> </div> <div> <p>FED. AID PROJ. NO.</p> <p>BR-001S(714)X</p> <p>PROJ. MGR</p> <p>DRJ</p> <p>MADE BY</p> <p>STRUCT. ID</p> </div> <div> <p>DATE</p> <p>4-23-08</p> <p>SA2 OF SA2</p> </div> </div>				

SHIPMENT 01 PWAENG: 5003511 PRD: 5003512 SHIP/PROJECT: 5003513 BY: MKreidel PLOTTED: 4/24/2008 50



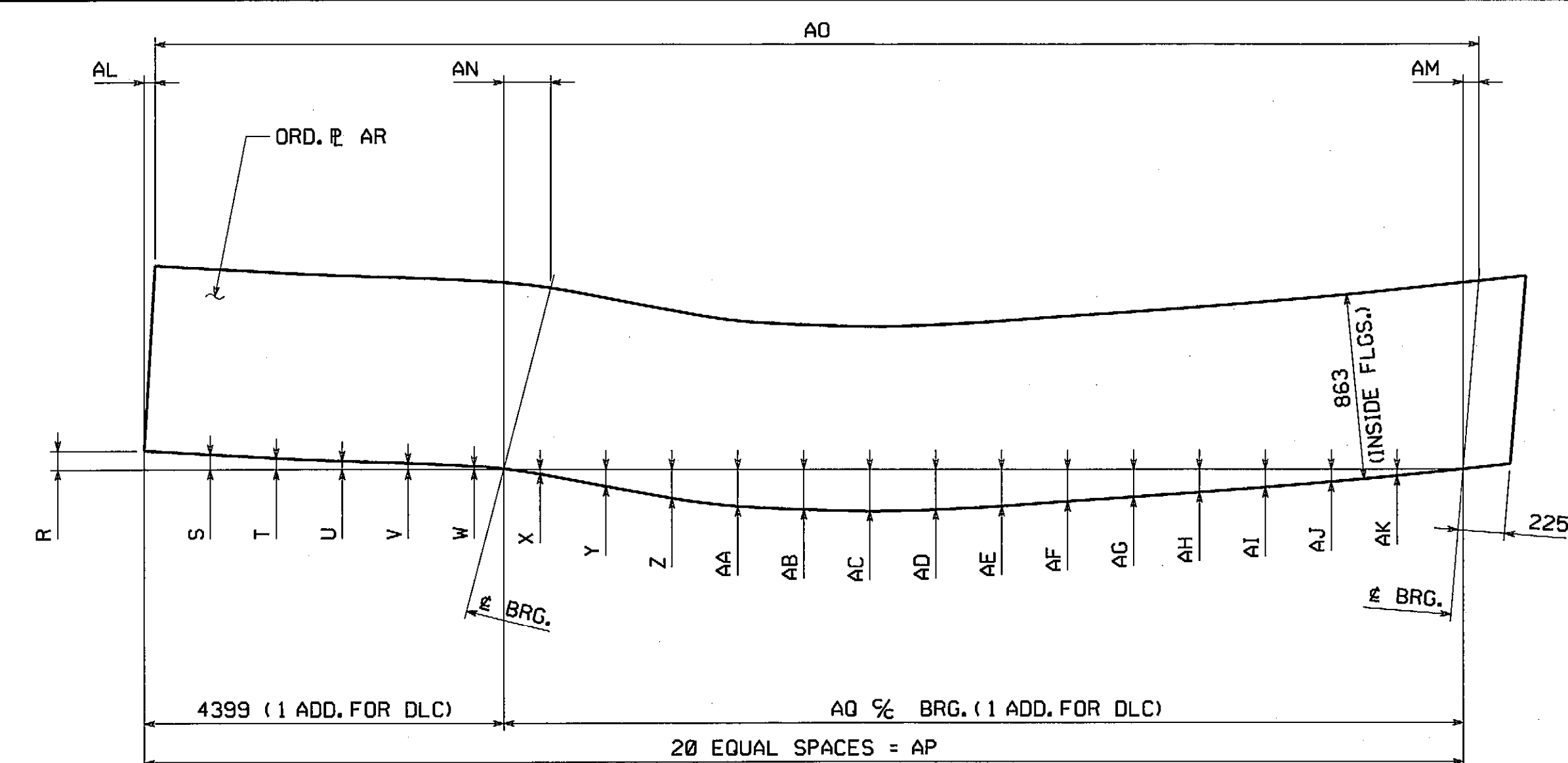
NOTES:
FOR GENERAL SHOP NOTES, SEE DRAWING G01.
ALL FLANGE PLATES REQUIRE CHARPY V-NOTCH TEST.

APPROVED FOR CONFORMANCE WITH
CONSTRUCTION CONTRACT REQUIREMENTS.
REVISE AND RESUBMIT
FAY, SPOFFORD & THORNDIKE
ENGINEERS
By ES Date 4/25/08
Shop drawings have been reviewed to ascertain that they represent
performance and general compliance with contract documents.
Dimensions, quantities, weights, details of fabrication and
construction and coordination of trades and subcontractors are the
responsibility of the general contractor.

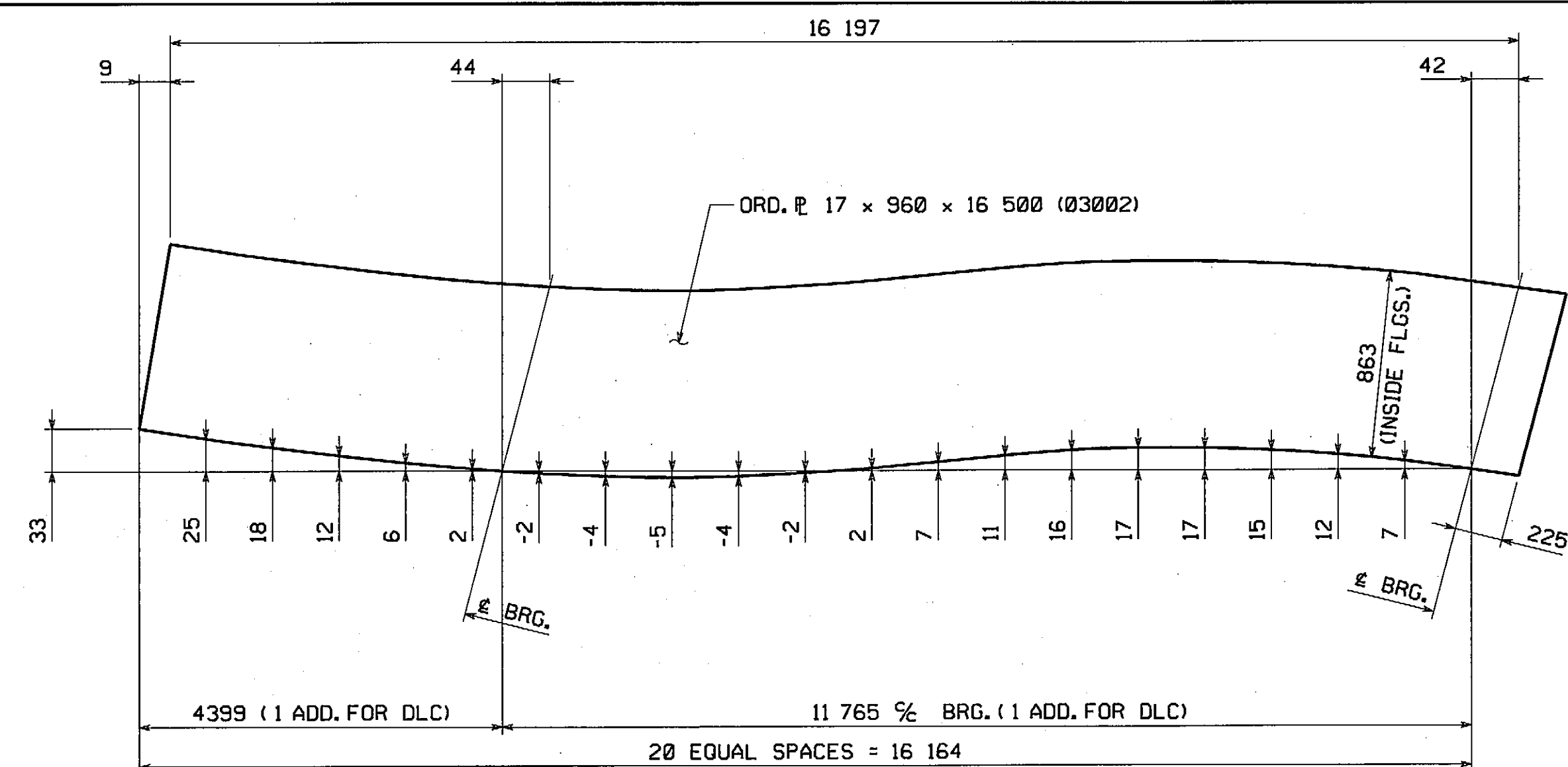
INSPECTION FOR MASS. DEPT. OF
PUBLIC WORKS TO BE DONE BY:
PITTSBURG TESTING LAB.

△						
△						
△						
NO.	REVISION			BY	CHK'D	DATE
HOLES	<div>FLANGE SPLICE DETAILS VERNON AVENUE OVER WARE RIVER VERNON AVENUE STA. 10+71.106 TO STA. 11+18.106 BRIDGE NO. B-02-012 IN THE TOWN OF BARRE, WORCESTER COUNTY COMMONWEALTH OF MASSACHUSETTS MASSACHUSETTS HIGHWAY DEPARTMENT</div>					
BOLTS	STATE CONT. OR REF. NO. PROJECT FILE NO. 603561 FED. AID PROJ. NO. BR-001S(714)X GENERAL CONTRACTOR E.T. & L. CORPORATION HSSI PROJ. MGR KEN GLIDDEN					
COATING	SCALE N.T.S.					
CODE(S)	30					
SHPMT	1	DRAWING MANAGER KREIDER (IH)	MADE BY KMA	CHK'D BY JSA	DATE	4-8-08
STATE	MA	HSSI PROJECT NUMBER S-1080005	HSSI STRUCT. ID A	DRAWING NUMBER FS1	OF FS1	

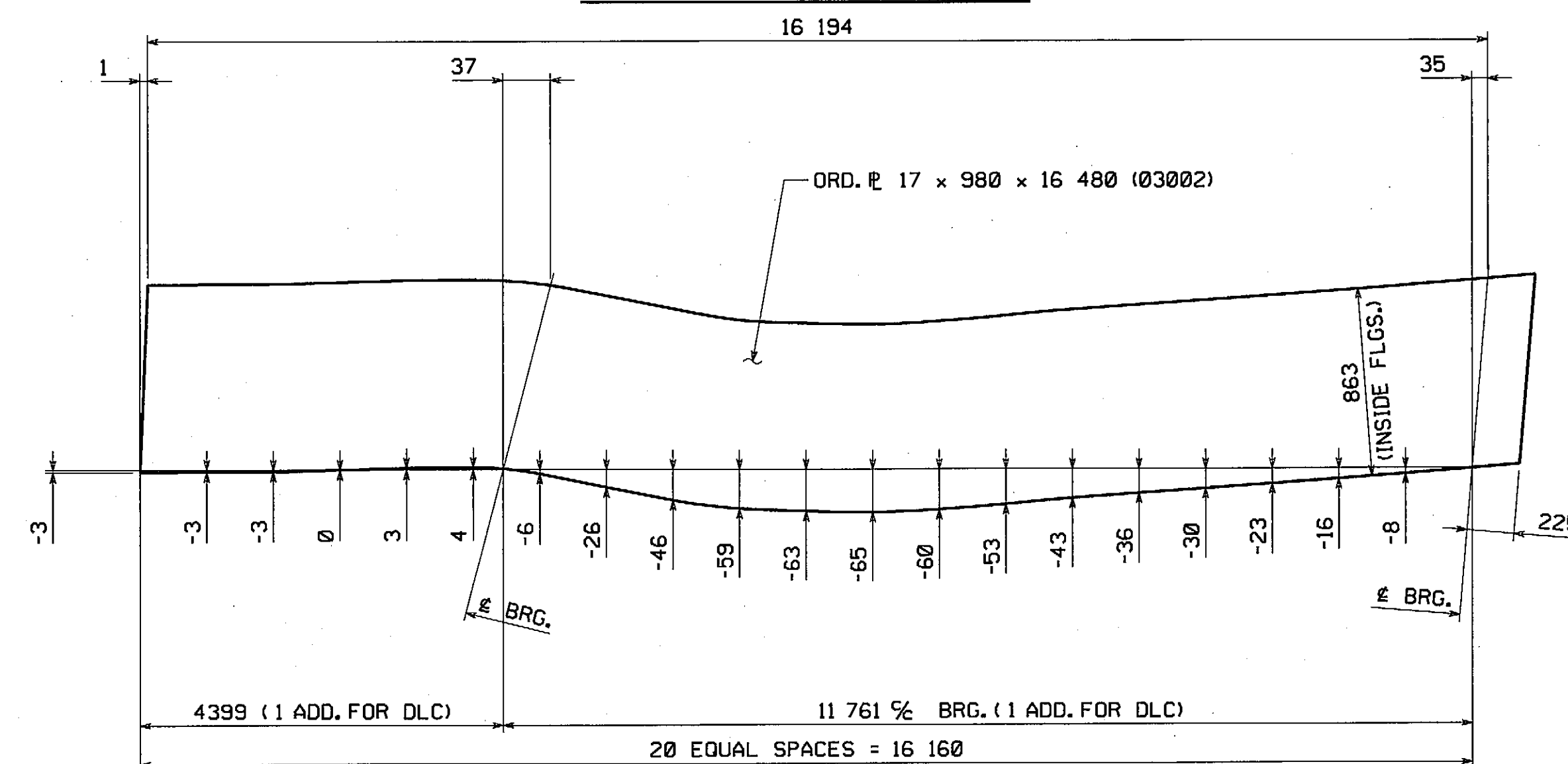
RECORD COPY



MARK	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
G1B	44	35	26	20	15	8	-11	-41	-68	-87	-95	-99	-96	-87	-76	-66	-55	-43	-30	-16	11	45	46	16 200	16 166	11 767	22 x 1020 x 16 500 (03001)
G2B	39	31	23	16	11	5	-7	-23	-37	-46	-49	-49	-44	-38	-30	-24	-19	-14	-10	-5	11	44	45	16 198	16 165	11 766	17 x 960 x 16 500 (03002)
G4B	15	11	8	6	4	2	-4	-13	-22	-27	-27	-26	-22	-16	-10	-6	-3	-1	0	0	6	39	41	16 195	16 162	11 763	17 x 940 x 16 480 (03002)



CAMBER DIAGRAM - G3B



CAMBER DIAGRAM - G5B

NOTES:

FOR GENERAL SHOP NOTES, SEE DRAWING GNI.
ALL WEB PLATES REQUIRE CHARPY V-NOTCH TEST.
NEGATIVE CAMBER ORDINATES INDICATE CURVE IS BELOW BASELINE.

☒ APPROVED FOR CONFORMANCE WITH
CONSTRUCTION CONTRACT REQUIREMENTS.

☐ REVISE AND RESUBMIT

**FAY, SPOFFORD & THORNDIKE
ENGINEERS**

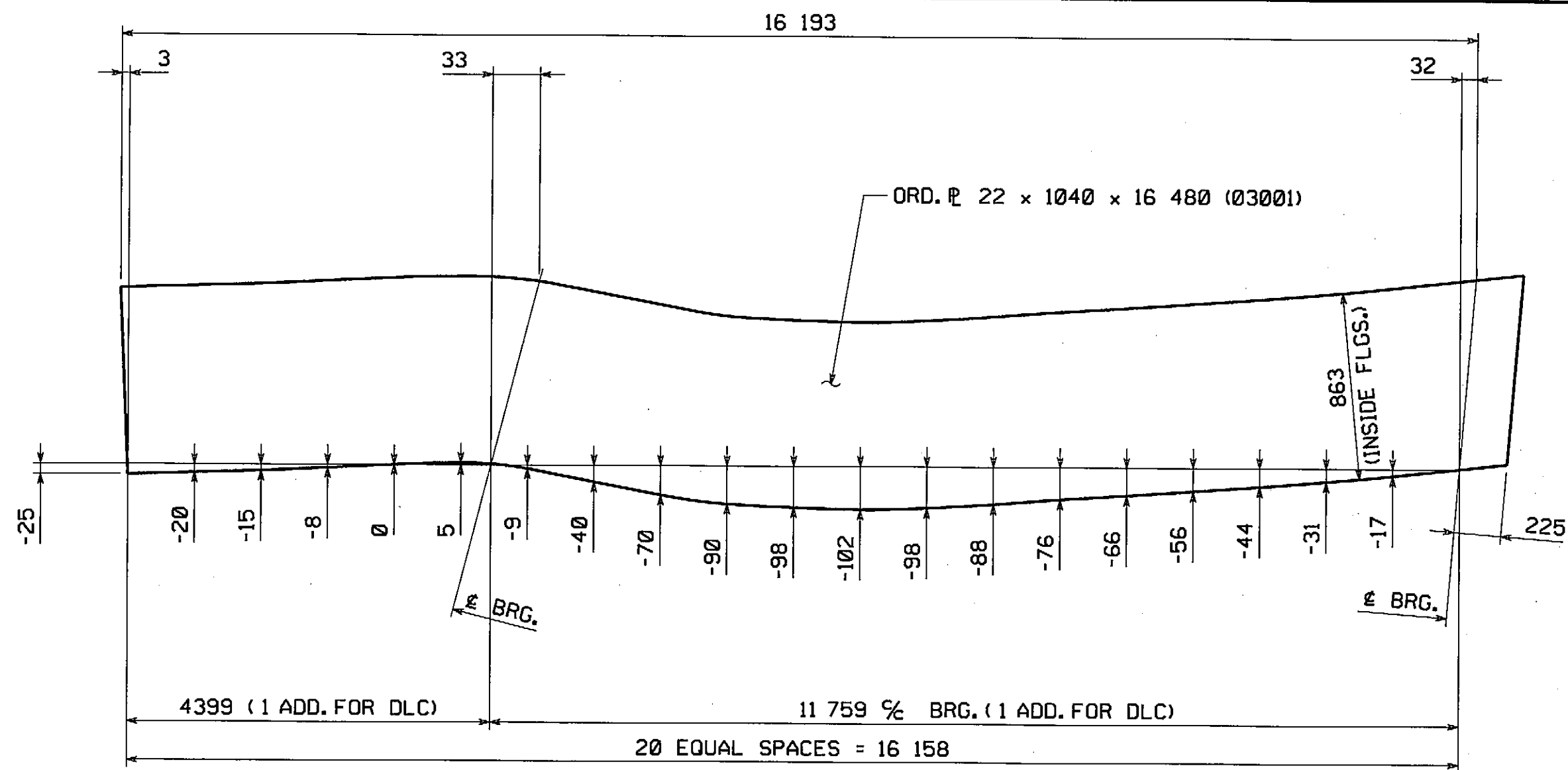
By ES Date 6/25/68

Shop drawings have been reviewed to ascertain that they represent
conformance and general compliance with contract documents.
Dimensions, quantities, weights, details of fabrication and
construction and component materials and subcomponents are the
responsibility of the general contractor.

INSPECTION FOR MASS. DEPT. OF
PUBLIC WORKS TO BE DONE BY:
PITTSBURG TESTING LAB.

[illegible]

RECORD COPY



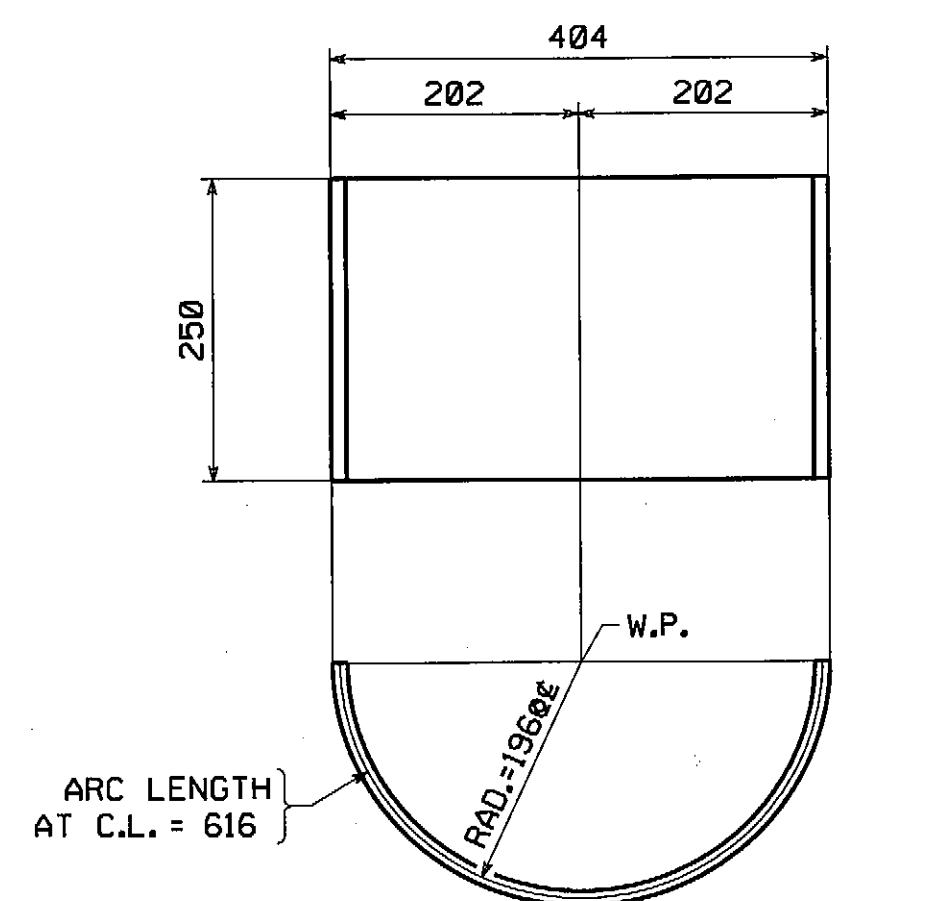
CAMBER DIAGRAM - G6B

NOTES:
FOR NOTES, SEE DWG. WC1.

APPROVED FOR CONFORMANCE WITH
CONSTRUCTION CONTRACT REQUIREMENTS.
REVIEW AND RESUBMIT
FAY, SPOFFORD & THORNDIKE
ENGINEERS
By: SS Date: 6/25/08
Shop drawings have been reviewed to ascertain that they represent
conformance and general compliance with contract documents.
Dimensions, quantities, weights, details of fabrication and
construction and coordination of trades and subcontractors are the
responsibility of the general contractor.

INSPECTION FOR MASS. DEPT. OF
PUBLIC WORKS TO BE DONE BY:
PITTSBURG TESTING LAB.

NO.	REVISION	BY	CHK'D	DATE
HOLES				
BOLTS				
COATING				
CODE(S)				
SCALE				
N.T.S.				
STATE CONT. OR REF. NO.	PROJECT FILE NO. 60356	FED. AID PROJ. NO.	BR-001S(714)X	
GENERAL CONTRACTOR	E.T. & L. CORPORATION	HSSI PROJ. MOR	KEN GLIDDEN	
SHPMT	1	DRAWING MANAGER	KREIDER (IH)	MADE BY KMA
STATE	MA	HSSI PROJECT NUMBER	S-1080005	HSSI STRUCT. ID A
		DRAWING NUMBER	WC2	OF WC2



BENT PLATE ~ MK. m1a

[illegible]

☒ APPROVED FOR CONFORMANCE WITH
CONSTRUCTION CONTRACT REQUIREMENTS.

REVISE AND RESUBMIT

**FAY, SPOFFORD & THORNDIKE
ENGINEERS**

By ES Date 6/25/08

Shop drawings have been reviewed to ascertain that they represent conformance and general compliance with contract documents. Dimensions, quantities, weights, details of fabrication and construction and coordination of trades and subcontractors are the responsibility of the general contractor.

NOTES:
FOR NOTES, SEE DRAWING GN1.

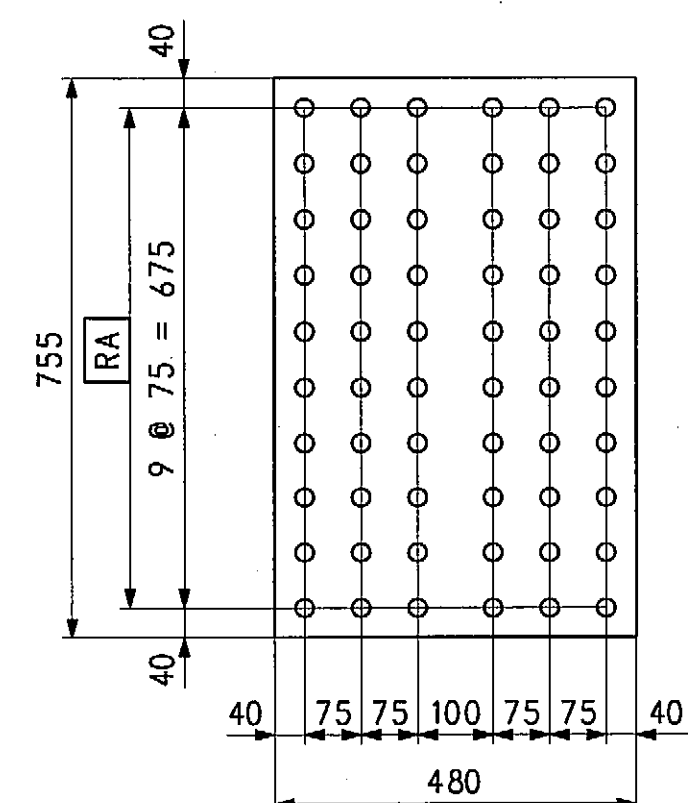
INSPECTION FOR MASS. DEPT. OF
PUBLIC WORKS TO BE DONE BY:
PITTSBURG TESTING LAB.

[illegible]

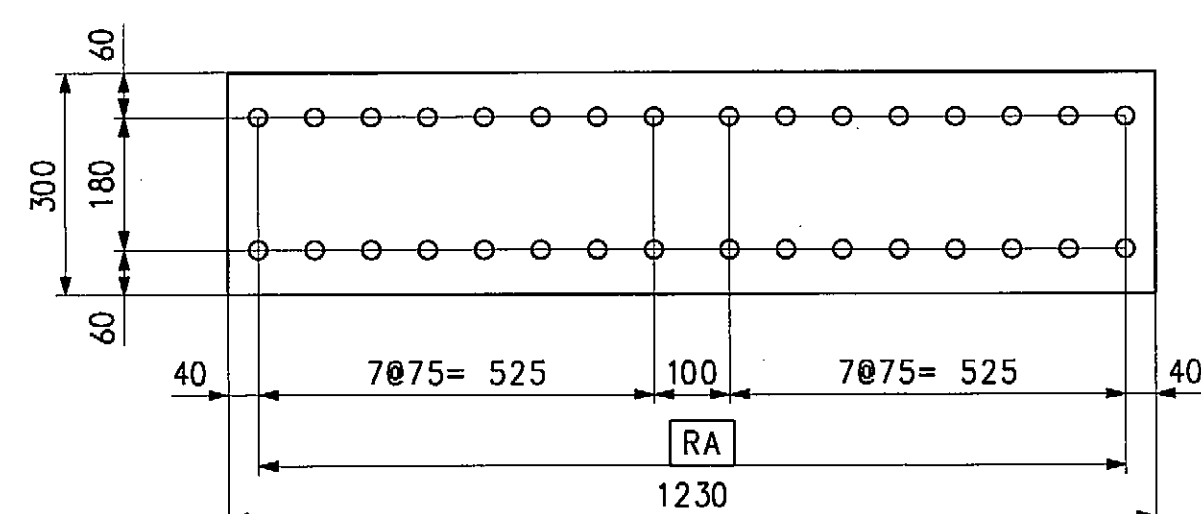
RECORD COPY

SHIPMENT I

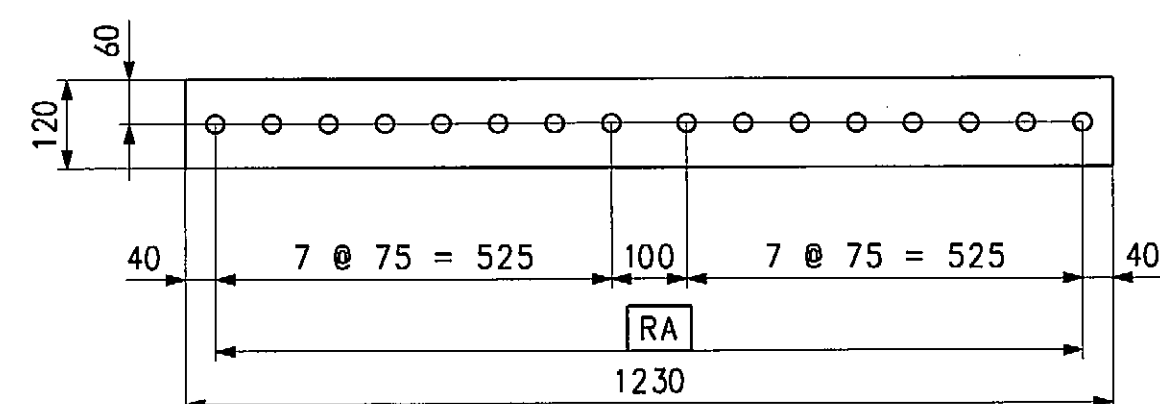
—PLOTTED: 04/24/08 14:02:03—BY: SLaudeng



SPLICE PL. - MK. x1a



SPLICE PL. - MK. x1b



SPLICE PL. - MK. x1c

[illegible]







☒ APPROVED FOR CONFORMANCE WITH
CONSTRUCTION CONTRACT REQUIREMENTS.

☐ REVISE AND RESUBMIT.

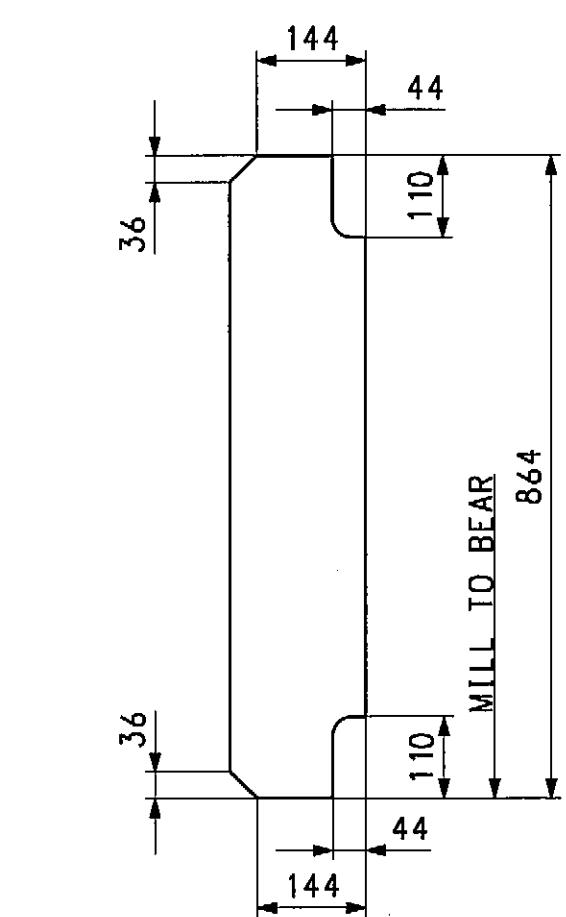
FAY, SPOFFORD & THORNDIKE
ENGINEERS

By ES Date 6/26/08

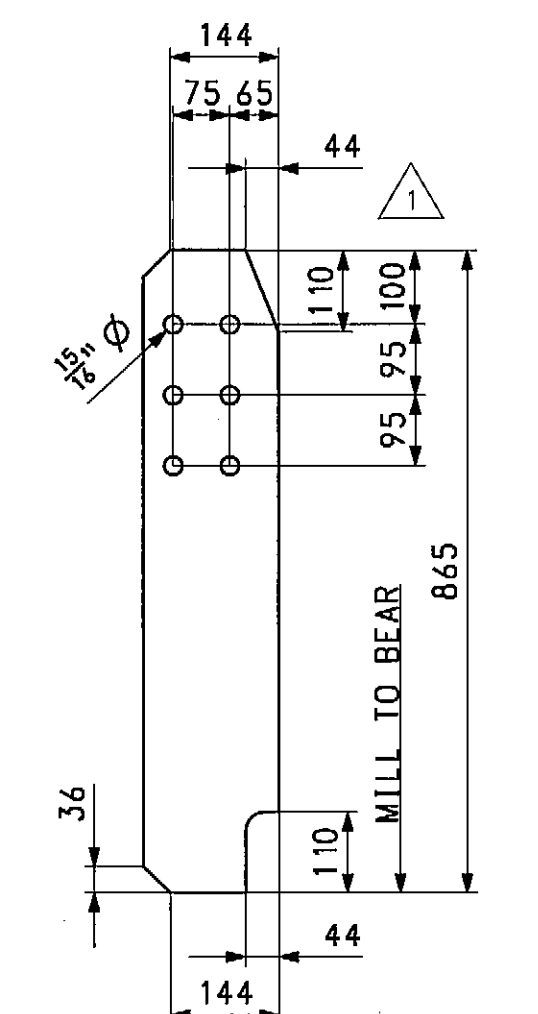
Shop drawings have been reviewed to ascertain that they represent
conformance and complete compliance with contract documents
Dimensions, quantities, weights, details of fabrication and
Dismantlement and coordination of trades and subcontractors are in
responsibility of the general contractor.

										
										
										
NO.	REVISION						BY	CHK'D	DATE	
HOLDS 15 (U.N.)	  		1915 Old Philadelphia Pike Lancaster, PA 17605-0009 Phone (717) 299-5211 www.highsteel.com							
BOLTS NONE	An ISO 9001:2000 Certified Company		An Affiliate of High Industries Inc.							
GIRDER JOIST STANDARDS										
VERNON AVENUE OVER WARE RIVER										
VERNON AVENUE STA. 10+71.106 TO STA. 11+18.106										
BRIDGE NO. B-02-012 IN THE TOWN OF BARRE, WORCESTER COUNTY										
COMMONWEALTH OF MASSACHUSETTS										
MASSACHUSETTS HIGHWAY DEPARTMENT										
SCALE N.T.S.	STATE CONTRACT OR REF. NO.	PROJECT FILE NO. 603566				FED. AID PROJ. NO.	S BR-001S17141X			
	GENERAL CONTRACTOR	E.T. & L. CORPORATION				HSSI PROJ. VGR	KEN GLIDDEN			
SHIPMT 1	DRAWING MANAGER	BILL BRITIGAN			MADE BY	SSL	CHK'D BY	CS	DATE	4-11-01
STATE MA	HSSI PROJECT NUMBER	S-1080005			HSSI ID STRUCT. ID	A	DRAWING NUMBER	X1 OF X2		

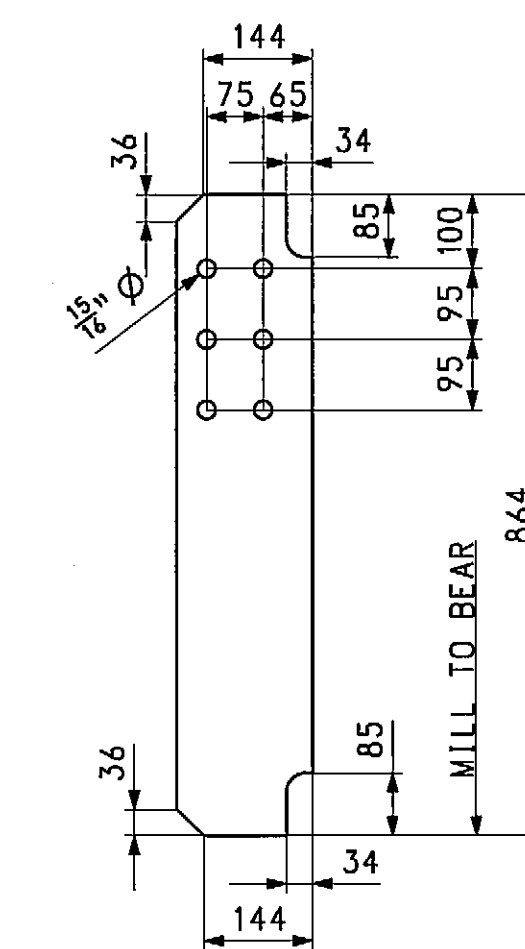
RECORD COPY



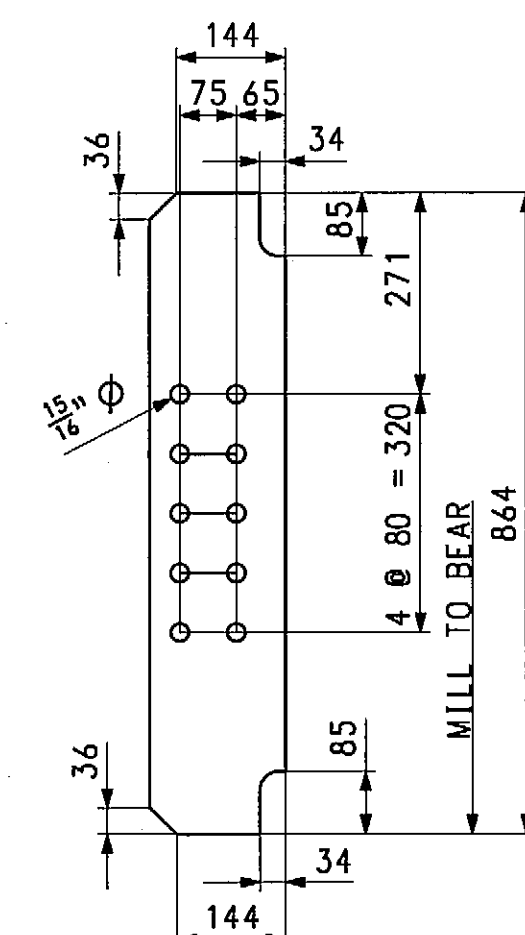
BRG. STIFF. MK. x2a



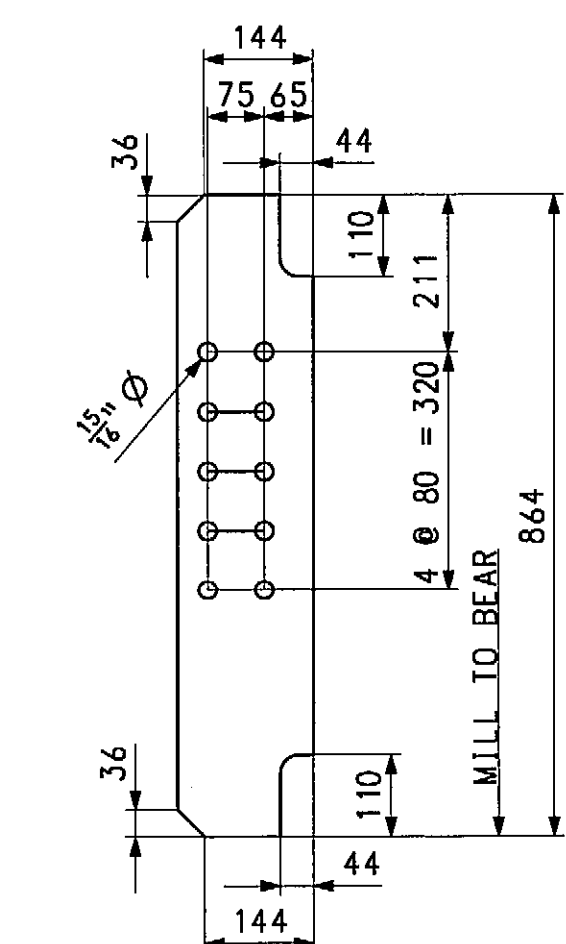
CONN. PL. MK. x2b
(CG)



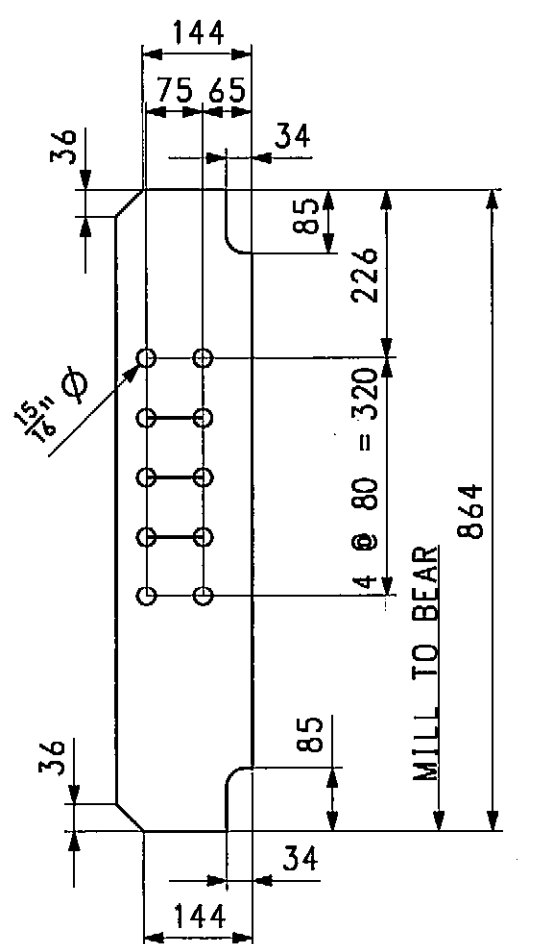
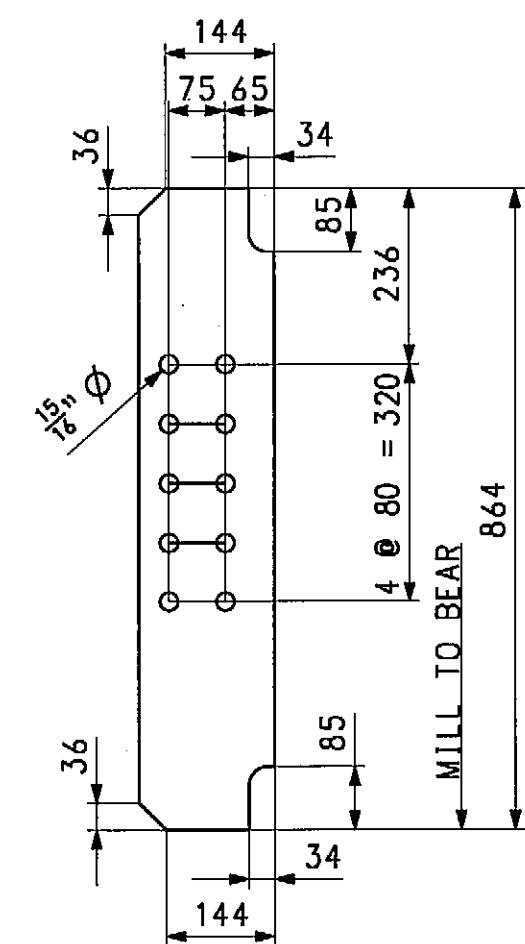
BRG. STIFF. MK. x2c
(CG)



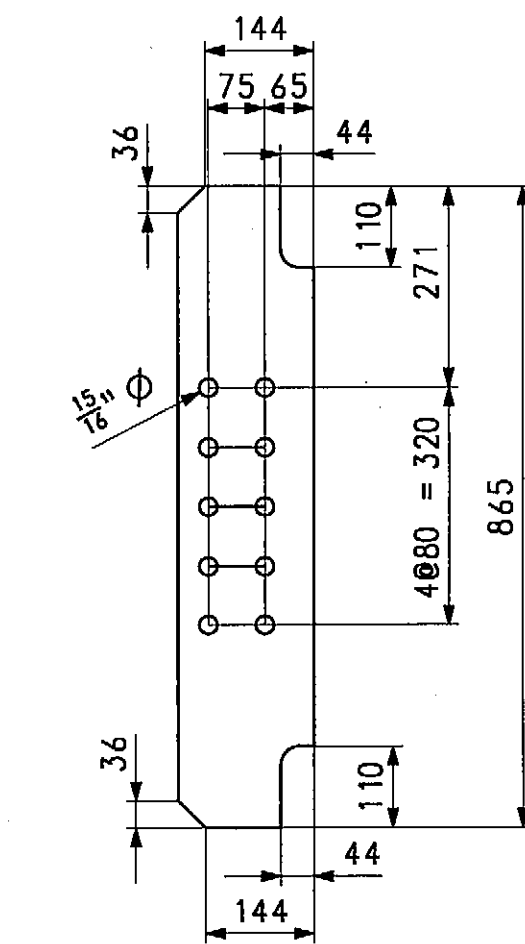
BRG. STIFF. MK. x2g



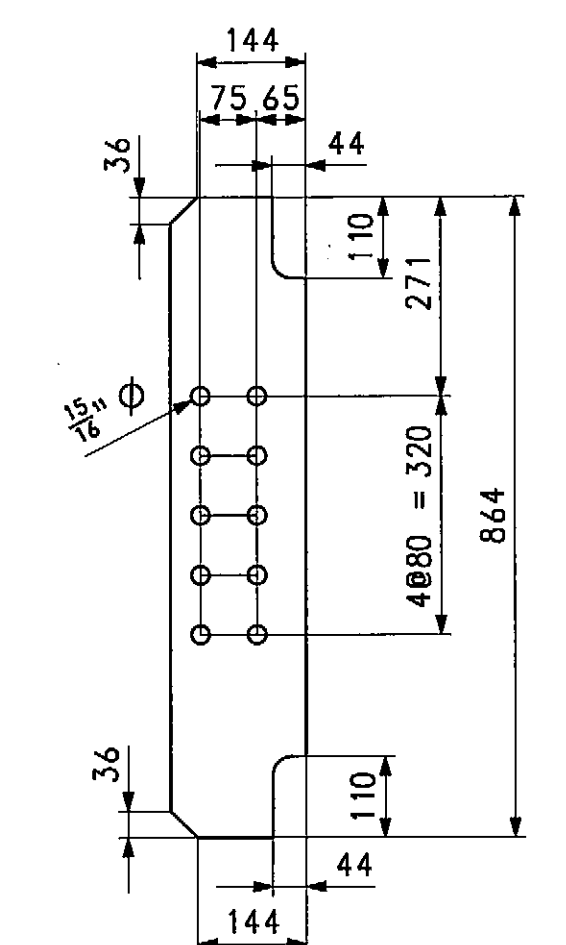
BRG. STIFF. MK. x2h

BRG. STIFF. MK. x2k

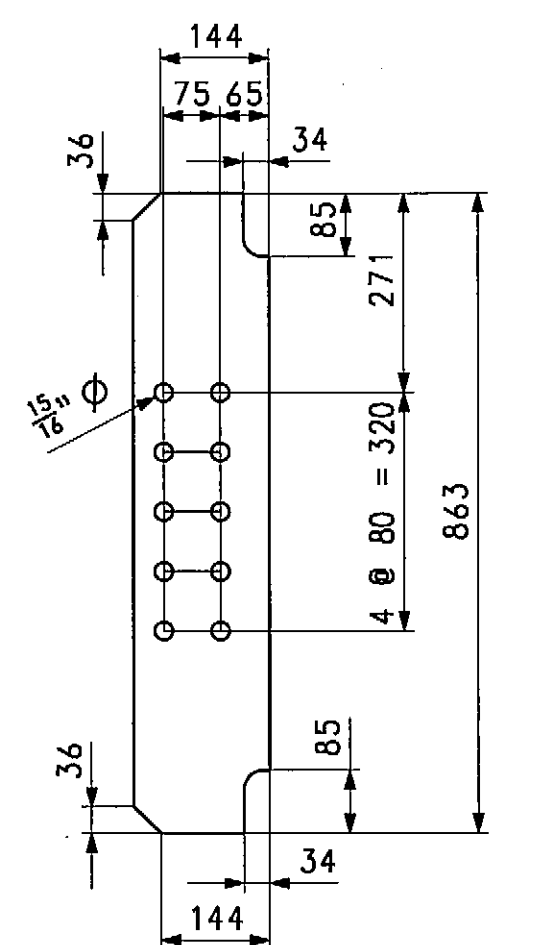
BRG. STIFF. MK. x2m



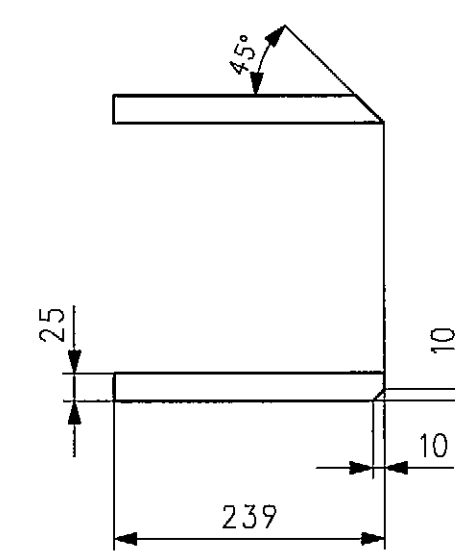
CONN. PL. MK. x2p



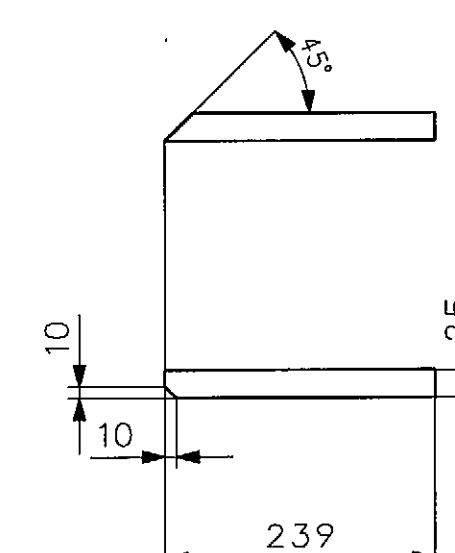
CONN. PL. MK. x2s



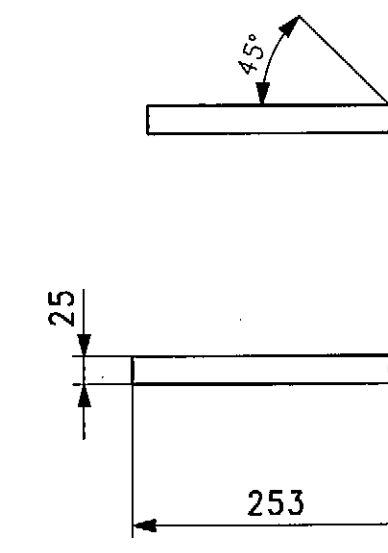
CONN. PL. MK. x2t



DRIP BAR MK. x2aa



DRIP BAR MK. x2ab



DRIP BAR MK. x2ac

[illegible]

RECORD COPY

☒ APPROVED FOR CONFORMANCE WITH
CONSTRUCTION CONTRACT REQUIREMENTS.

☐ APPROVED FOR CONFORMANCE SUBJECT
TO COMMENTS NOTED.







DATE AND SIGNATURE

FAIR, SPOFFORD & THORNDIKE
ENGINEERS

By ES Date 11/8/09

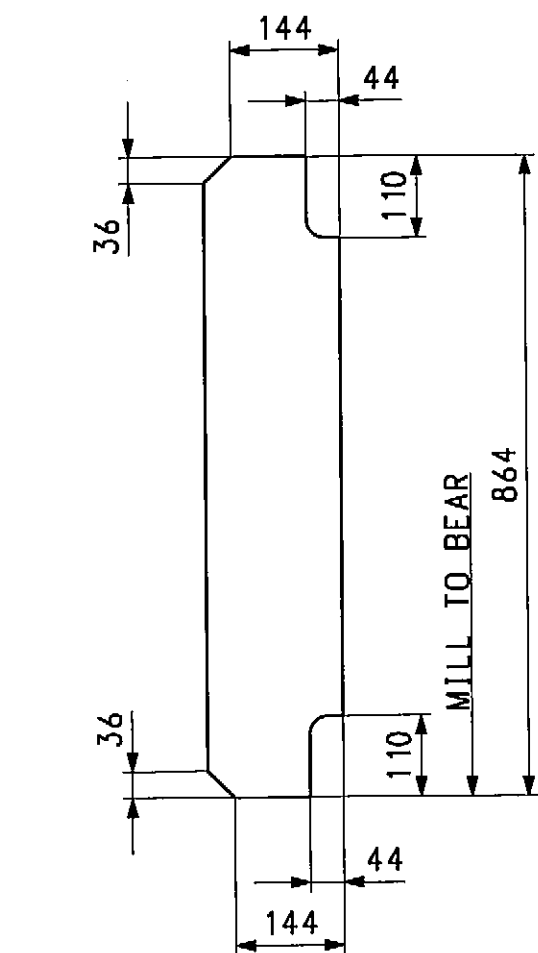
The undersigned have been reviewed to ascertain that they represent
compliance with general compliance with contract documents.
Materials, quantities, weights, details of fabrication and
construction and coordination of trades and subcontractors are the
responsibility of the undersigned engineer.

FOR GENERAL SHOP NOTES, SEE DWG. GN1.

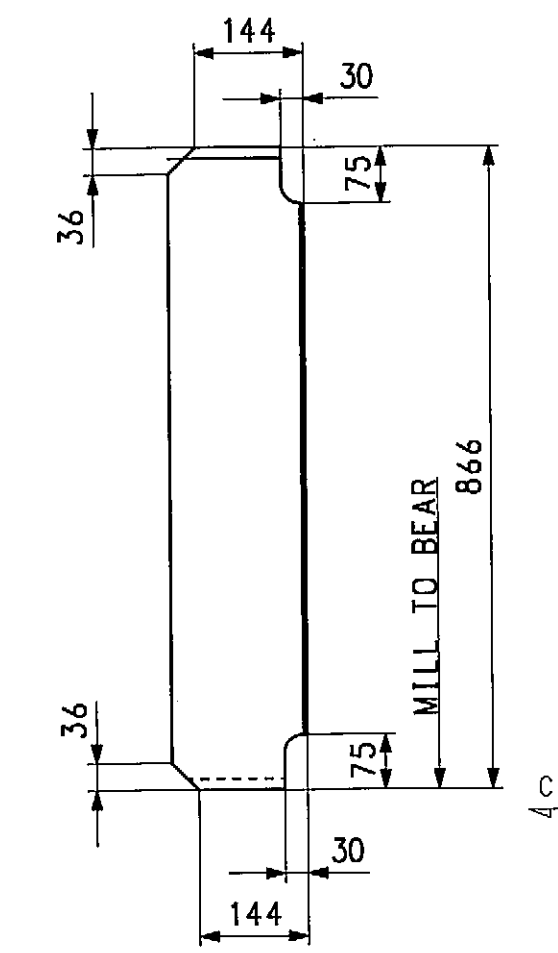
									
									
	REVISED CLIP ON x2b.		MAF	MGK	12-9-08				
NO.	REVISION		BY	CHK'D	DATE				
<u>HOLDS</u> 15/16" Ø	  		(915 Old Philadelphia Pike Lancaster, PA 17605-0009 Phone (717) 209-5211 www.highsteel.com						
<u>BOLTS</u> NONE	An ISO 9001:2000 Certified Company		An Affiliate of High Industries Inc.						
<u>COATING</u> NONE	GIRDER JOIST STANDARDS								
<u>CODE(S)</u> 30	VERNON AVENUE OVER WARE RIVER VERNON AVENUE STA. 10+71.106 TO STA. 11+18.106 BRIDGE NO. B-02-012 IN THE TOWN OF BARRE, WORCESTER COUNTY COMMONWEALTH OF MASSACHUSETTS MASSACHUSETTS HIGHWAY DEPARTMENT								
<u>SCALE</u> N.T.S.	STATE CONT. OR REF. NO.	PROJECT FILE NO. 603566		FED. AID PROJ. NO.	# 8 BR-0015(714)X				
	GENERAL CONTRACTOR	E.T. & L. CORPORATION		HSSI MGR	KEN GLIDDEN				
SHIPMT	1	DRAWING MANAGER	BILL BRITGAN	MADE BY	MAF	CHK'D BY	CS	DATE	4-21-08
STATE	MA	HSSI PROJECT NO.	S-1080005	HSSI STRUCT. ID	A	DRAWING NUMBER	X2 OF X3		

SHIPMENT 1 PWAENG: XXXXXXXX PRO: XXXXXXXX SHIPPERECT: XXXXXXXX

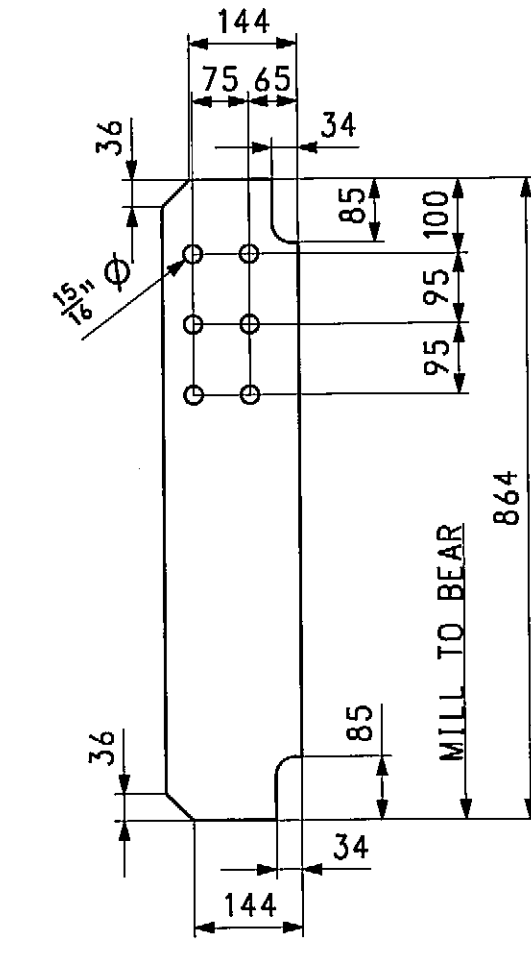
PLOTTED: 12/11/08 08:34:39 BY: mkreidol



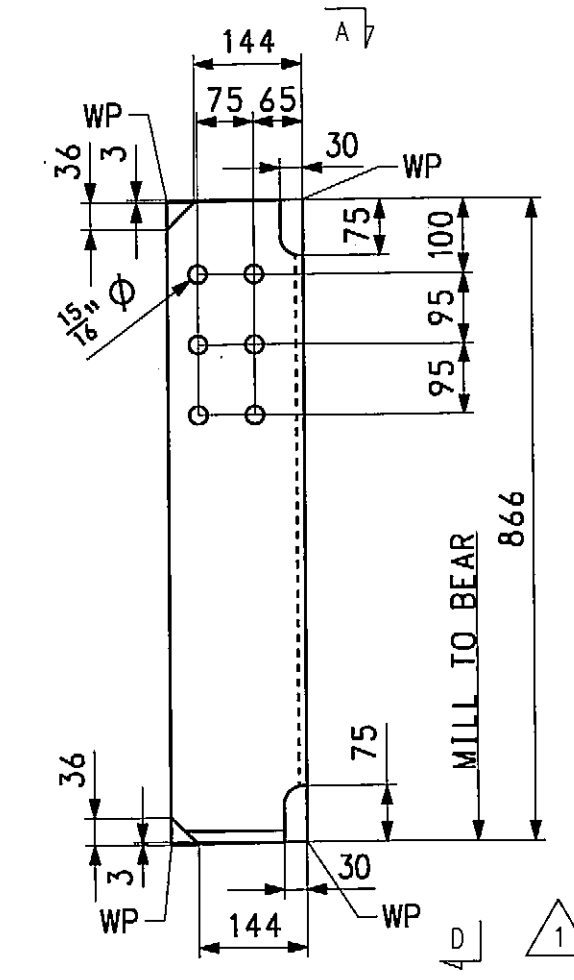
BRG. STIFF. MK. z1a
(CG)



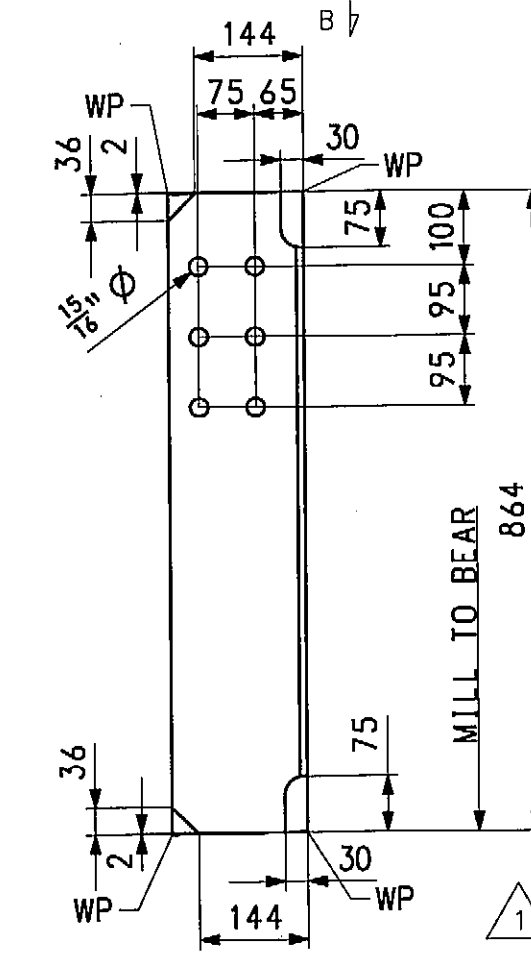
BRG. STIFF. MK. z1b
(CG)



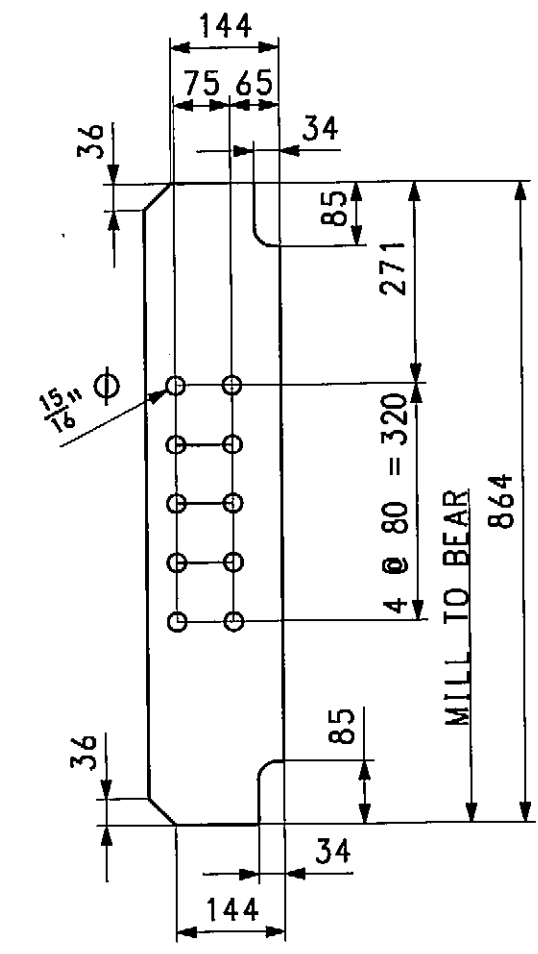
BRG. STIFF. MK. z1c
(CG)



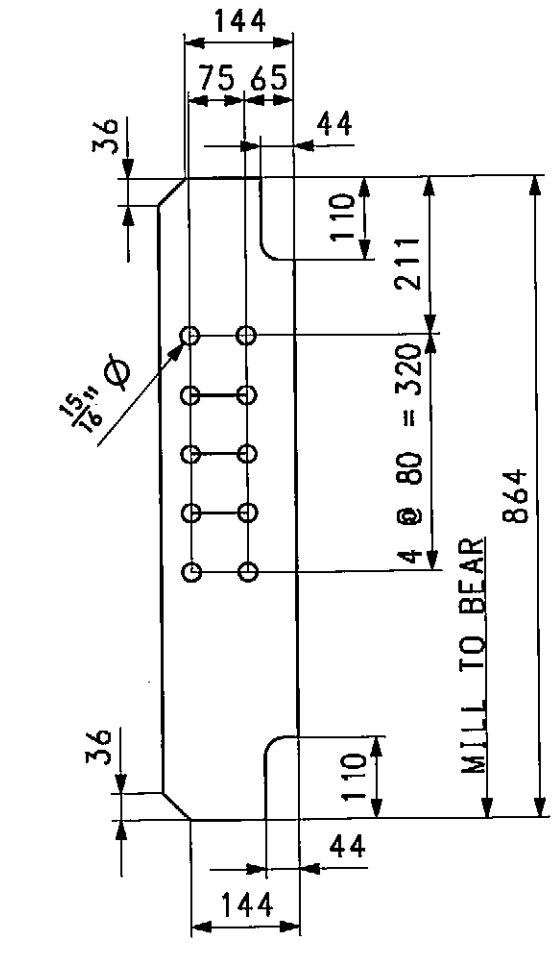
BRG. STIFF. MK. z1d
(CG)



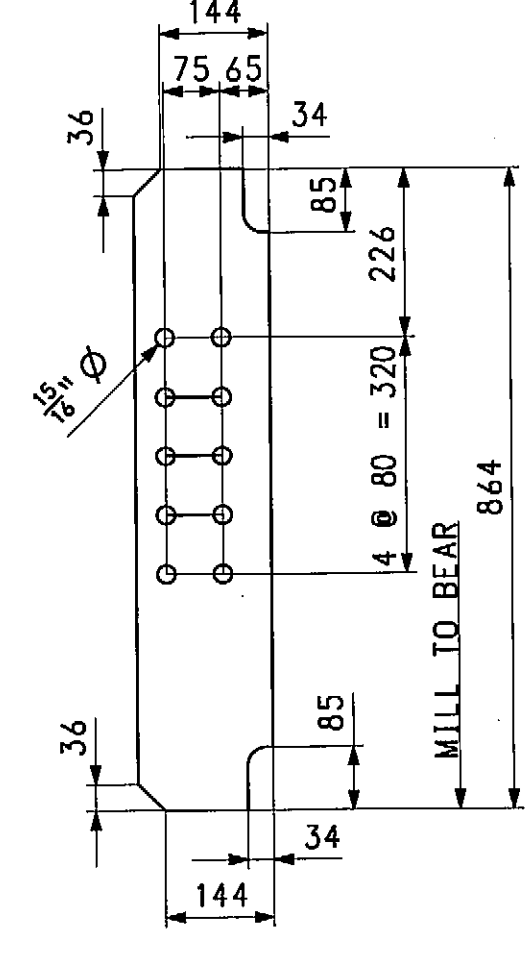
BRG. STIFF. MK. z1f
(CG)



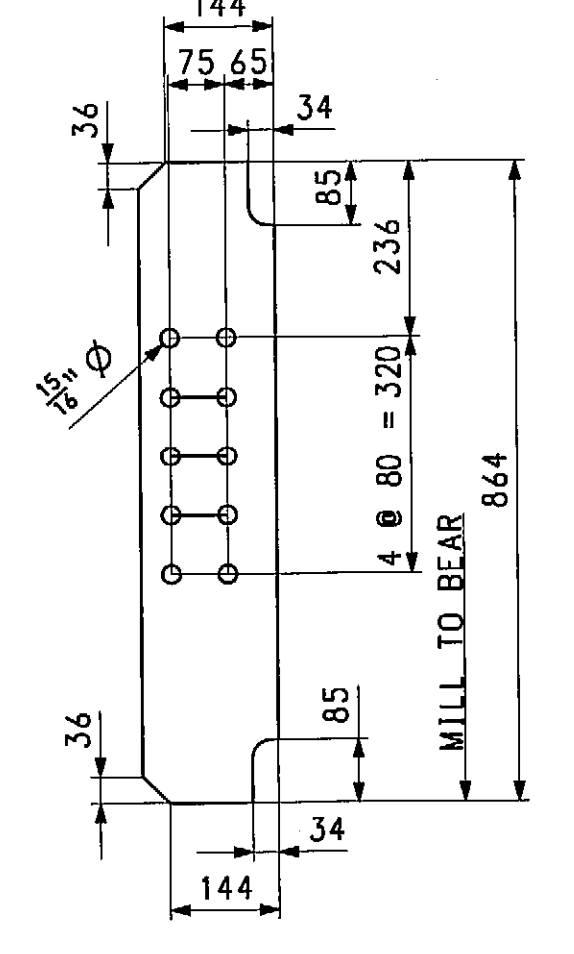
BRG. STIFF. MK. z1g



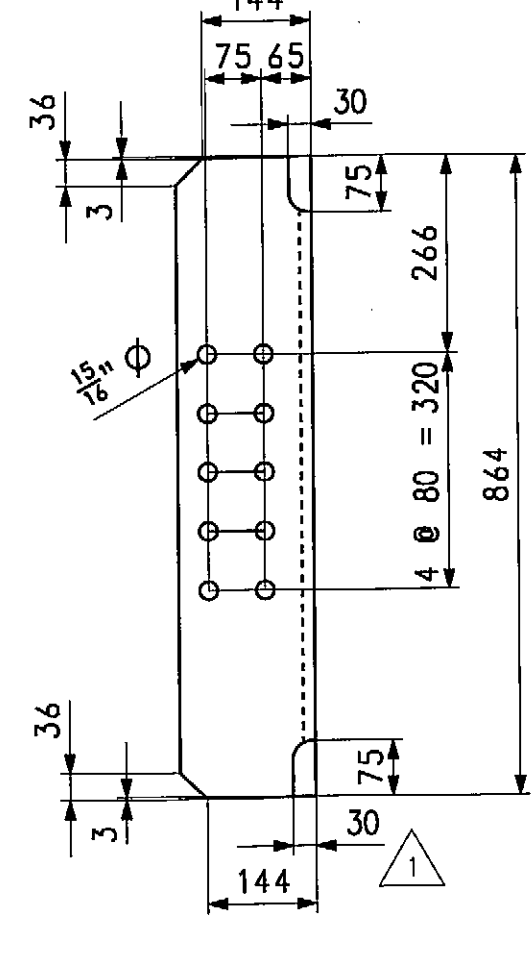
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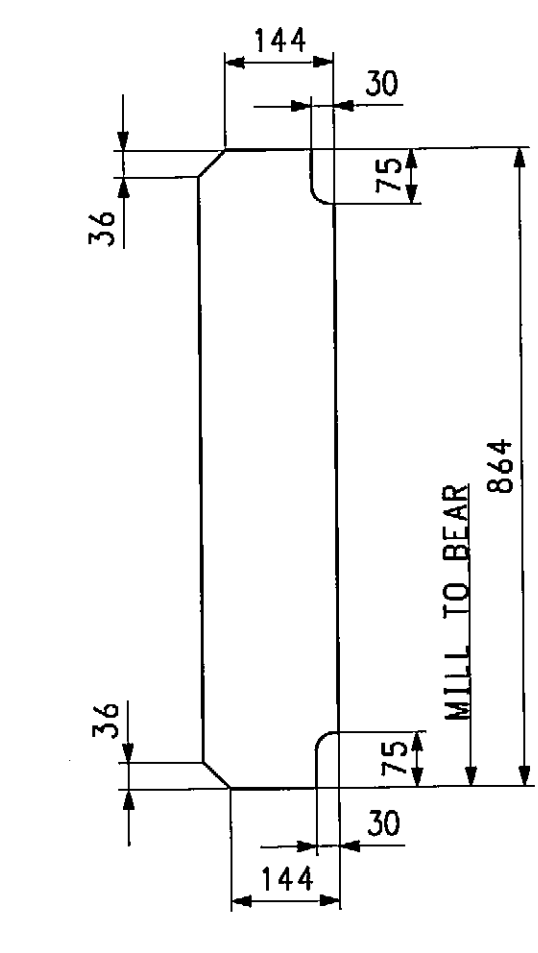
BRG. STIFF. MK. z1k



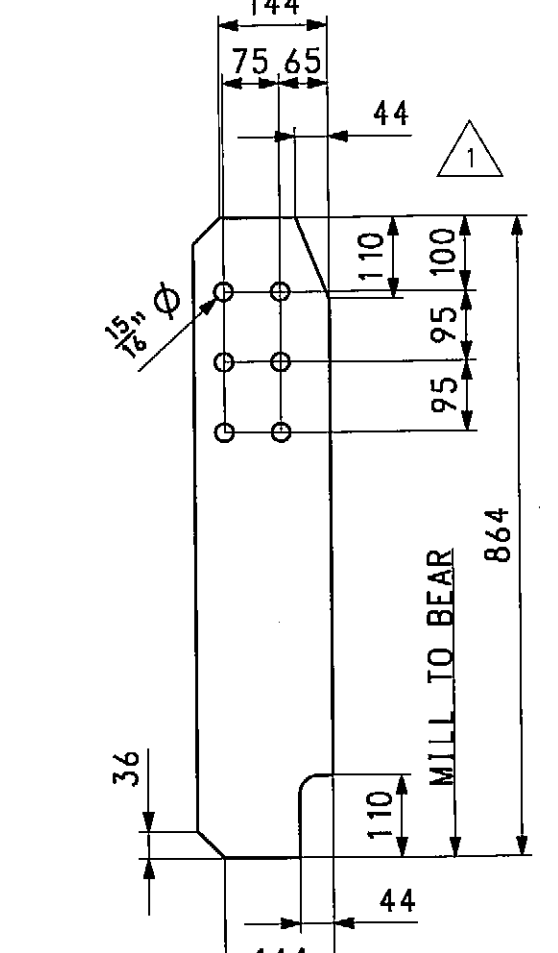
BRG. STIFF. MK. z1m



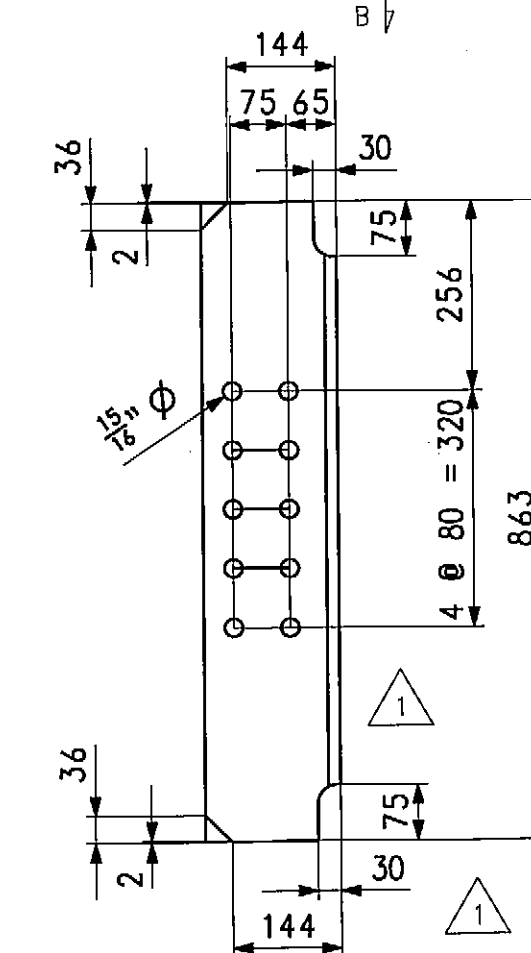
CONN. PL. MK. z1n



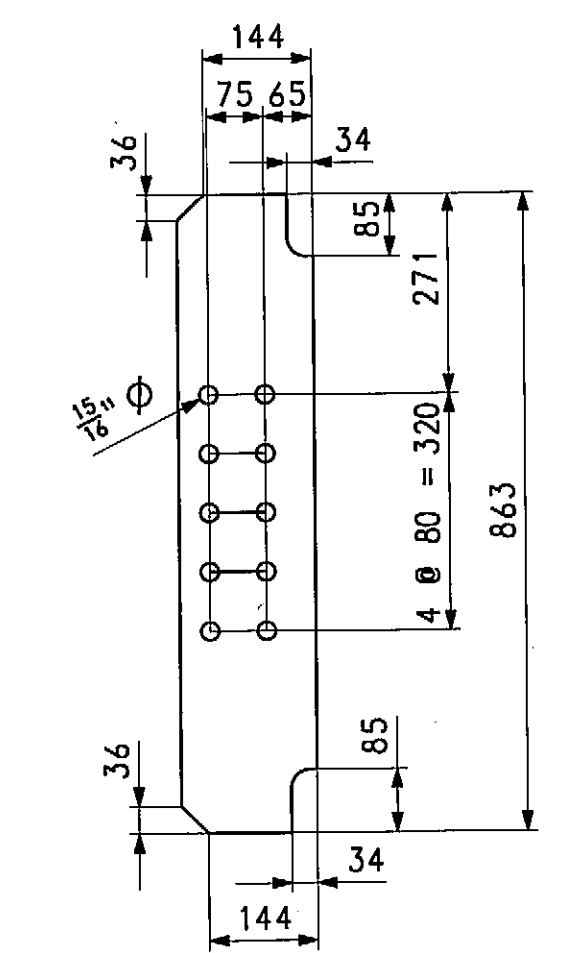
BRG. STIFF. MK. z1p
(CG)



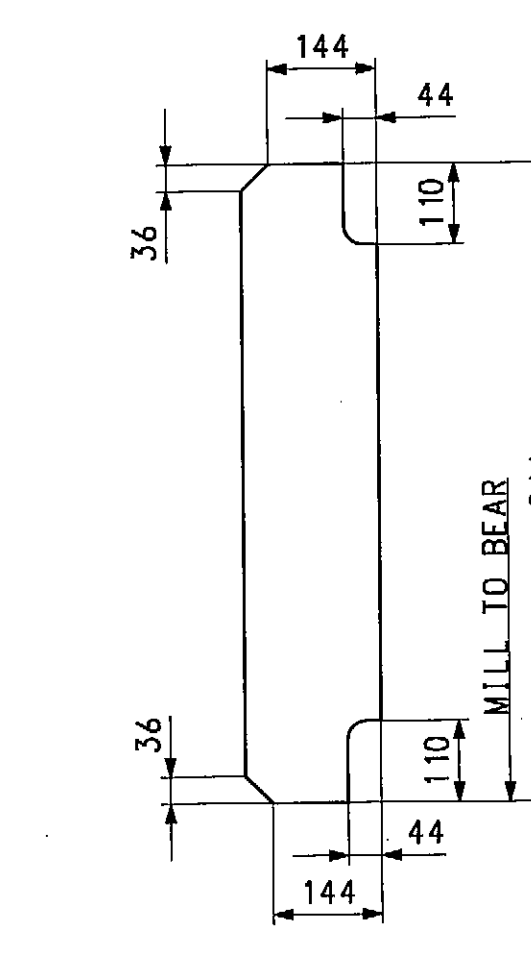
CONN. PL. MK. z1s
(CG)



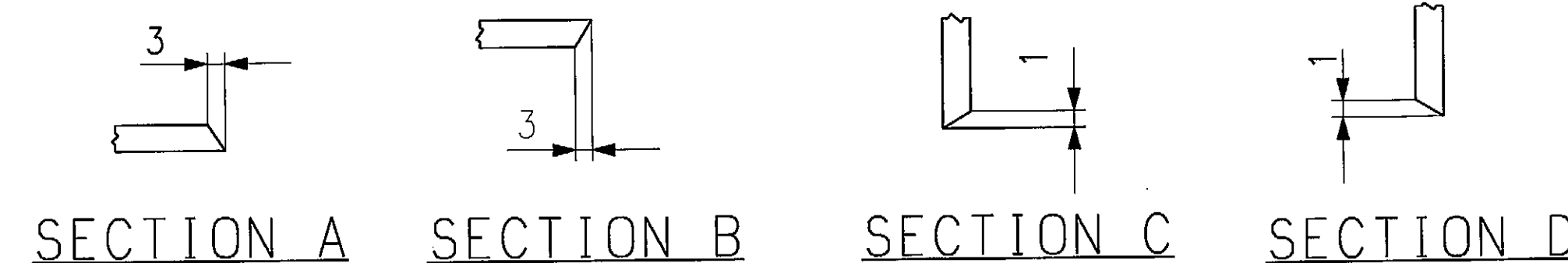
CONN. PL. MK. z1t



CONN. PL. MK. z1w



BRG. STIFF. MK. z1y



SECTION A

SECTION B

SECTION C

SECTION D

RECORD COPY

APPROVED FOR CONFORMANCE WITH
CONSTRUCTION CONTRACT REQUIREMENTS.
APPROVAL FOR CONFORMANCE SUBJECT
TO COMMENTS NOTED.
FAY, SPOFFORD & THORNDIKE
ENGINEERS
Date: 11/8/09

NO.	REVISED CLIP ON z1s AND BOTT. CUTS & SECTION MARKS ON z1d, z1f, z1n & z1t.	MAF	MGK	12-9-08
NO.	REVISION	BY	CHK'D	DATE
HOLES	15/16" Ø			
BOLTS	NONE			
COATING	NONE			
CODE/IS	50			
SCALE	N.T.S.			
SHPMNT	1			
STATE	MA			

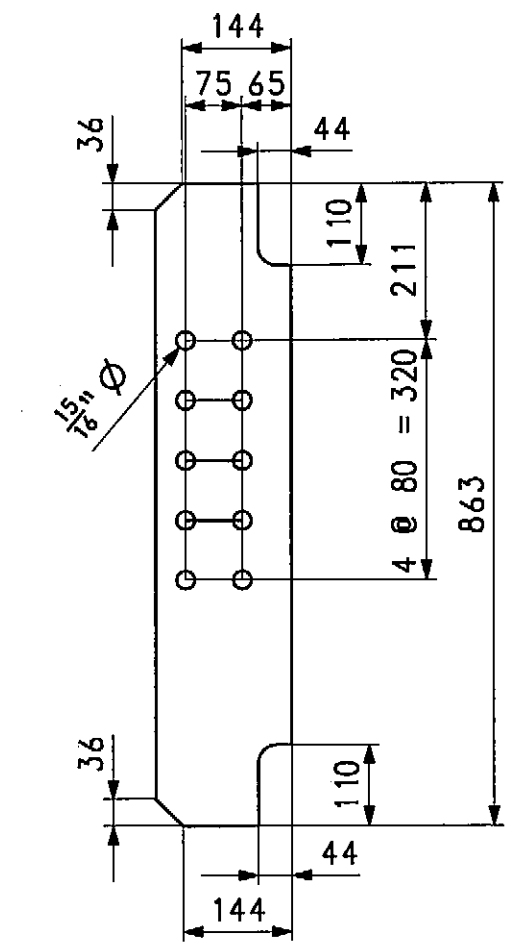
1915 Old Philadelphia Pike
Lancaster, PA 17606-5008
Phone (717) 299-5211
www.highsteel.com

HIGH STEEL STRUCTURES INC.
An ISO 9001:2000 Certified Company
An Affiliate of High Industries Inc.

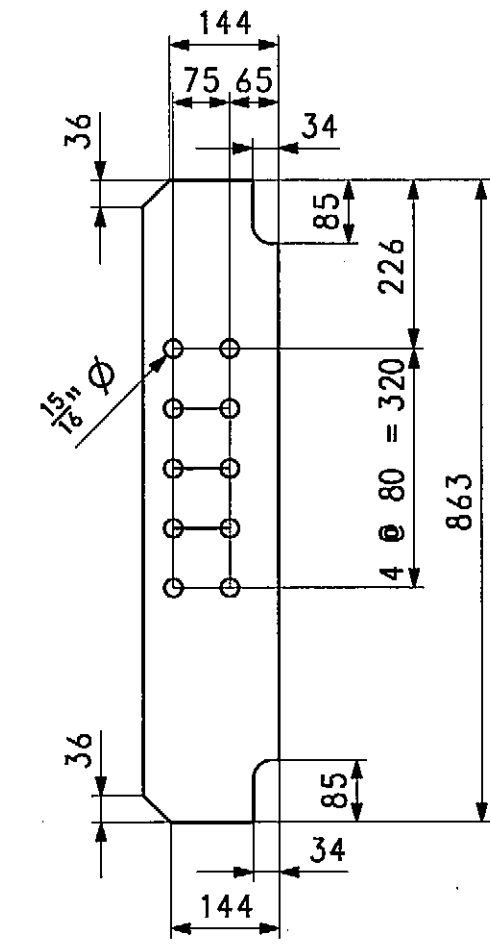
STRINGER JOB STANDARDS
VERNON AVENUE OVER WARE RIVER
VERNON AVENUE STA. 10+71.106 TO STA. 11+18.106
BRIDGE NO. B-02-012 IN THE TOWN OF BARRE, WORCESTER COUNTY
COMMONWEALTH OF MASSACHUSETTS
MASSACHUSETTS HIGHWAY DEPARTMENT

STATE CONT. OR REF. NO. PROJECT FILE NO. 603566 FED. AID PROJ. NO. S BR-001S(714)X
GENERAL CONTRACTOR E.T. & L. CORPORATION HSSI PROJ. MGR KEN GLIDDEN
DRAWING MANAGER BILL BRITIGAN MADE BY MAF CHK'D BY CS DATE 4-16-08
HSSI PROJECT NUMBER S-1080005 HSSI STRUCT. ID A DRAWING NUMBER Z1 OF 22

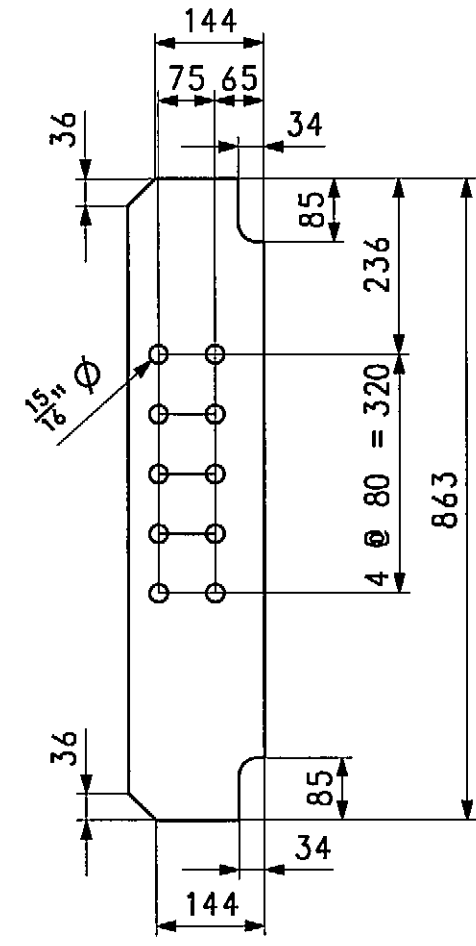
FOR GENERAL SHOP NOTES, SEE DWG. GN1.



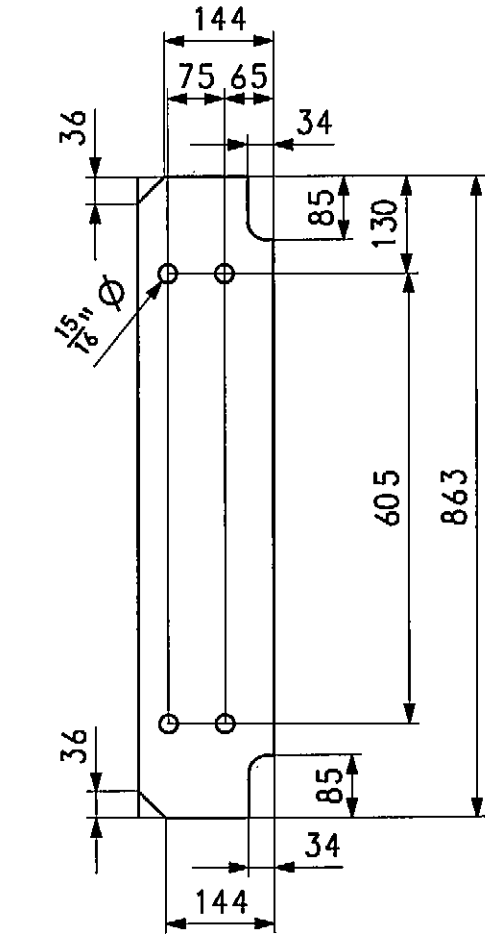
CONN. PL. MK. z2a



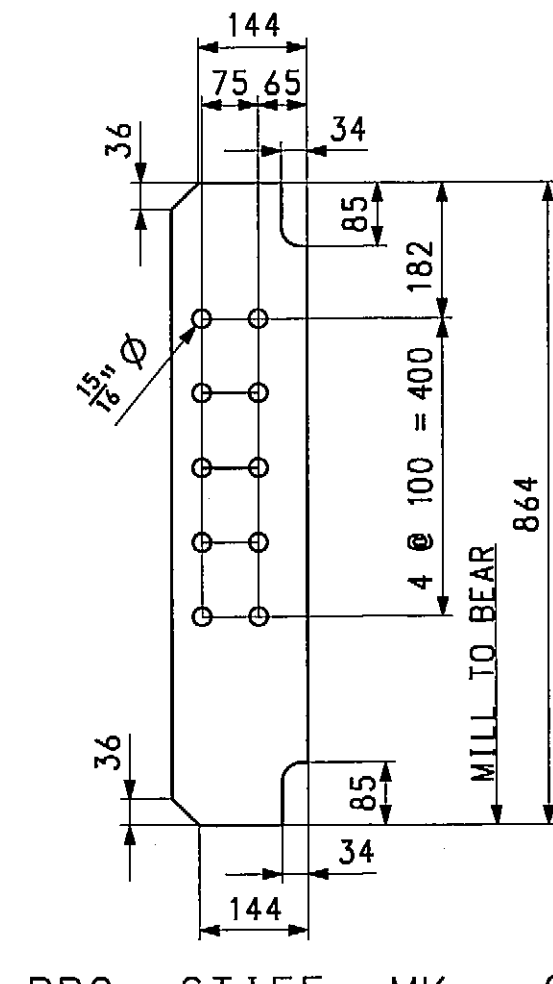
CONN. PL. MK. z2b



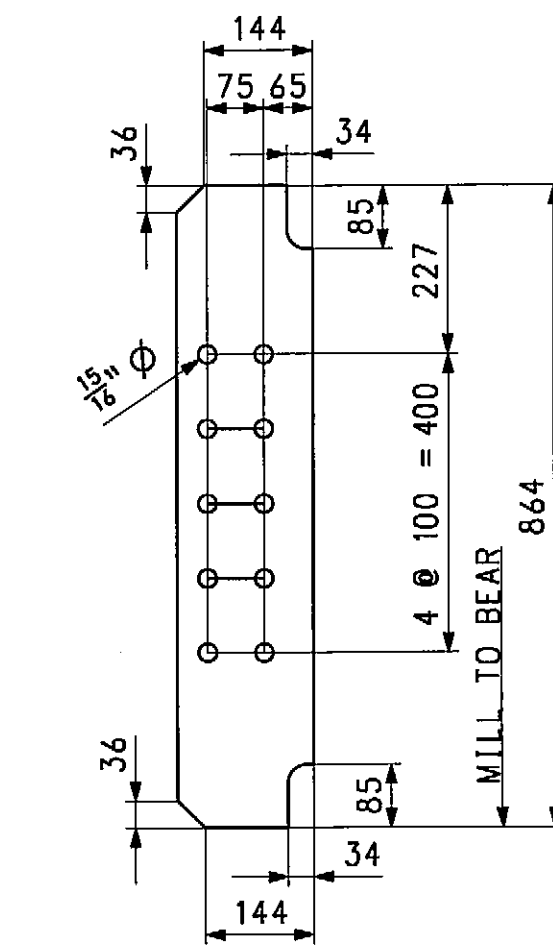
CONN. PL. MK. z2c



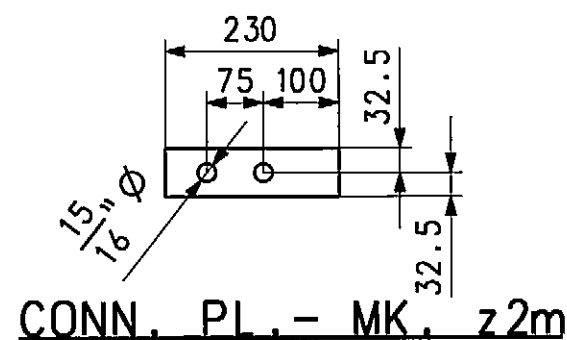
CONN. PL. MK. z2d



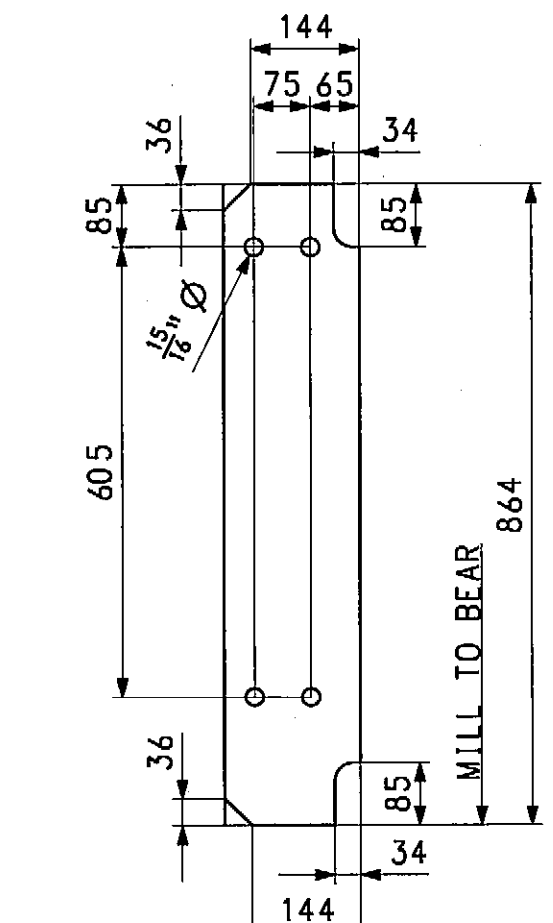
BRG. STIFF. MK. z2f
(CG)



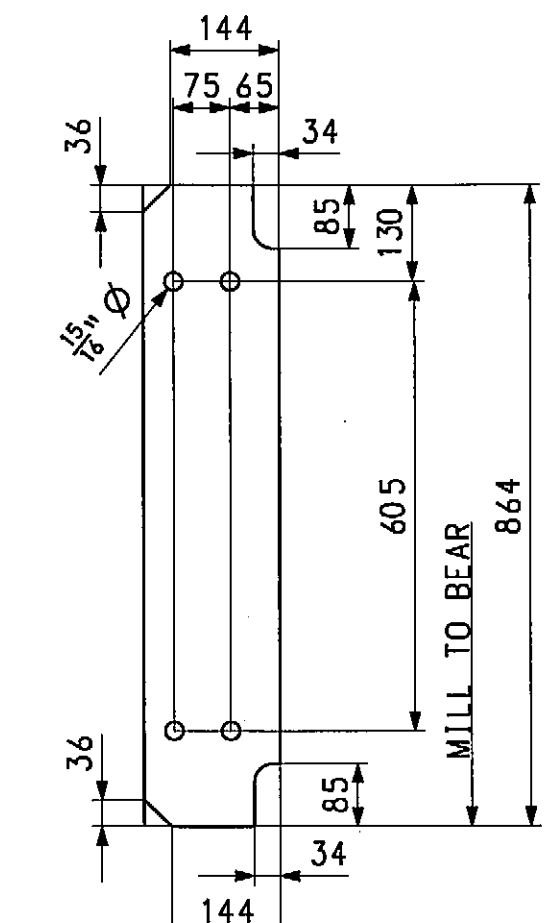
BRG. STIFF. MK. z2g
(CG)



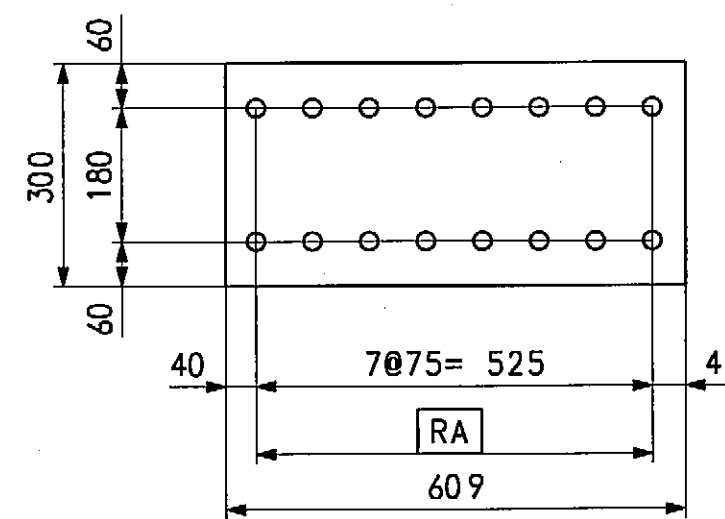
CONN. PL. - MK. z2m



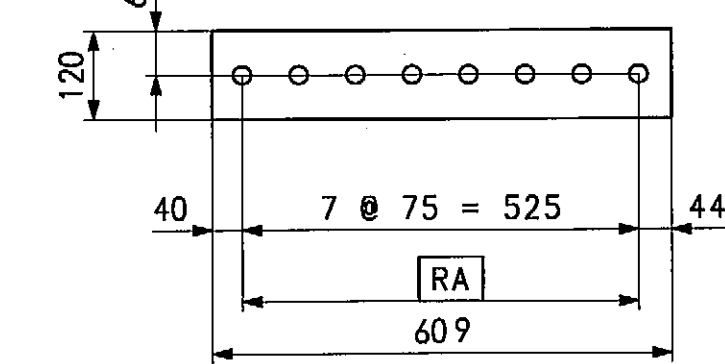
BRG. STIFF. MK. z2t



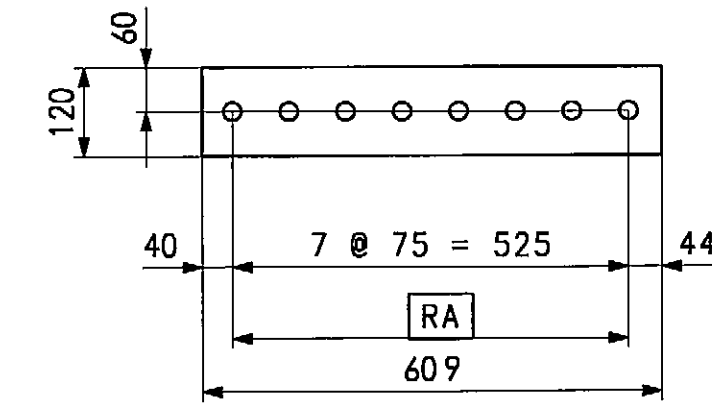
BRG. STIFF. MK. z2w



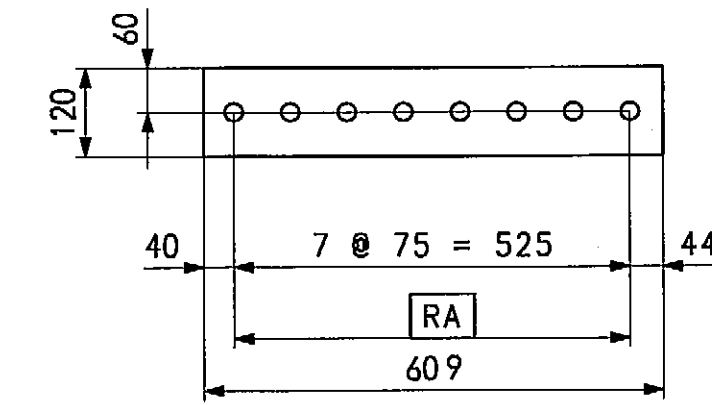
FILL PL. - MK. z2af



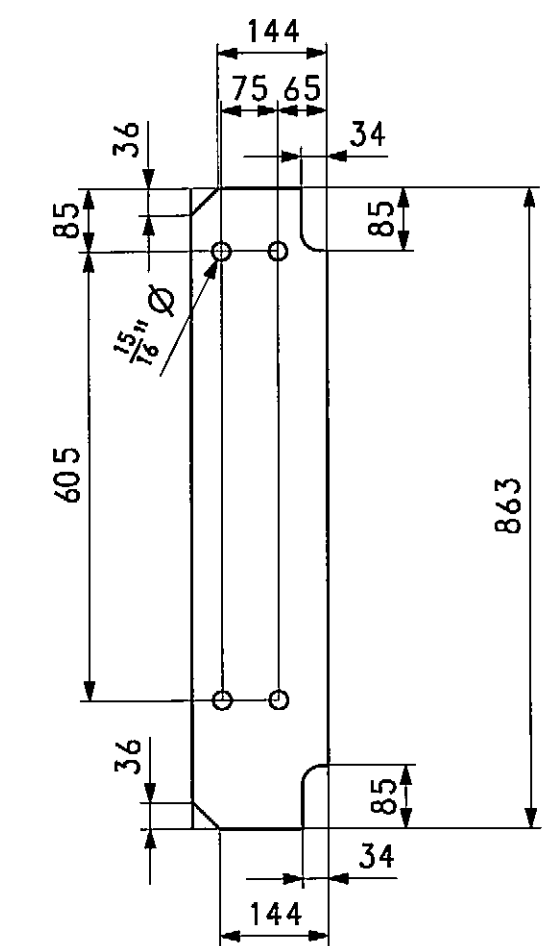
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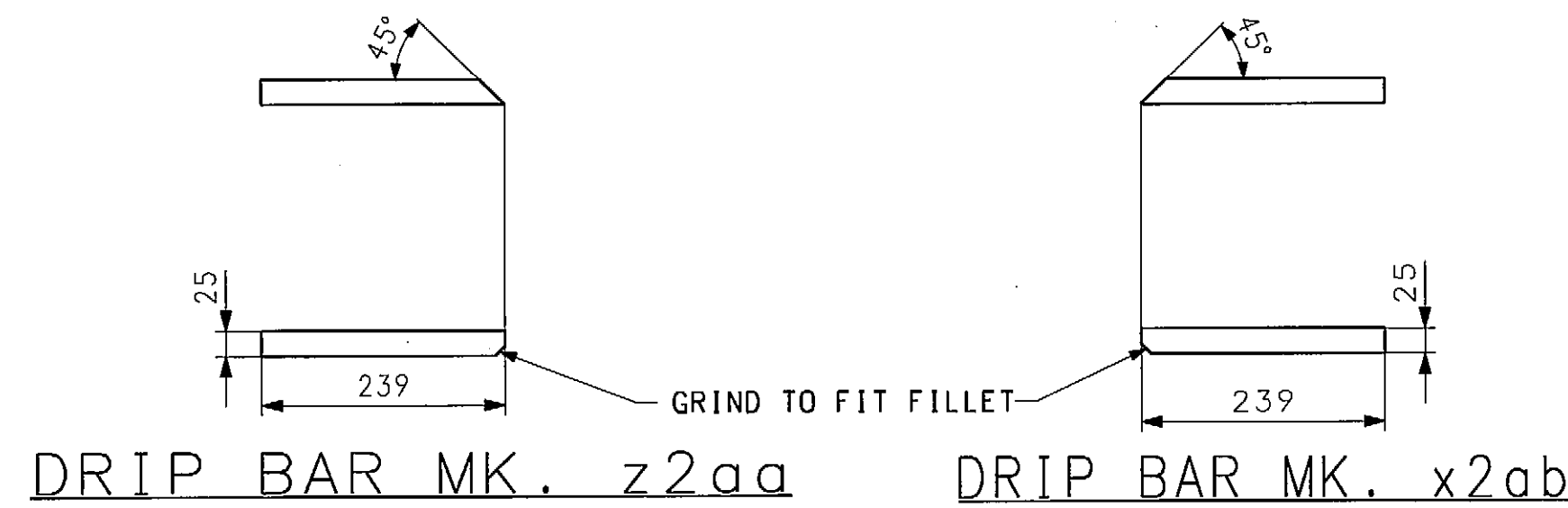
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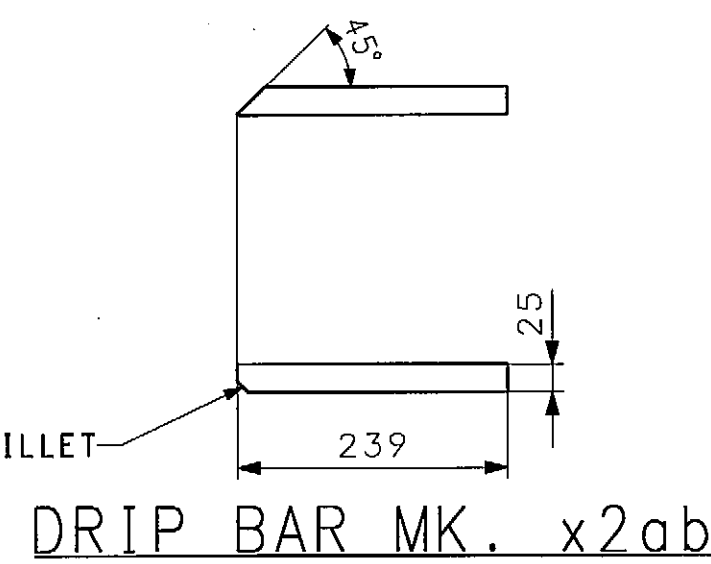
FILL PL. - MK. z2ak



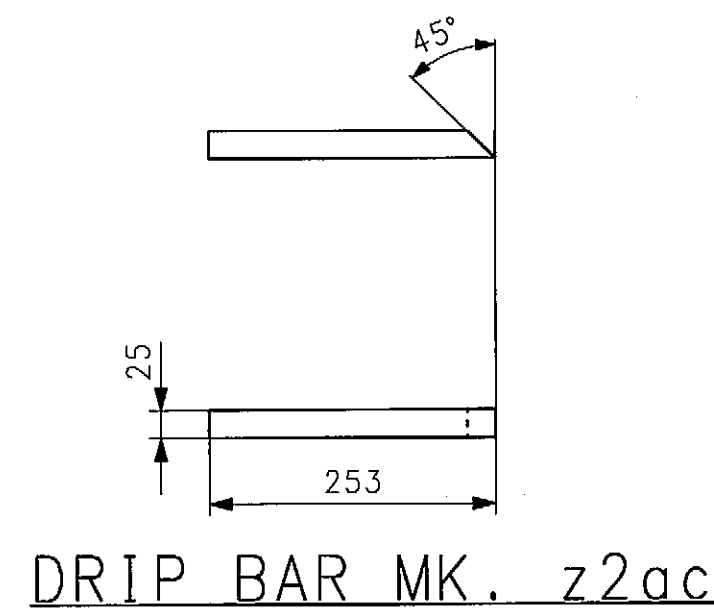
CONN. PL. MK. z2y



DRIP BAR MK. z2aa



DRIP BAR MK. x2ab



DRIP BAR MK. z2ac

BILL OF MATERIAL

QTY	MARK	COMM.	DESCRIPTION	LENGTH	SPEC	GRADE	TEST	REMARKS	ITEM	WEIGHT EA. (KG)
8	z2a	PL	12.7 x 180	863	M270M	345W			08001	15
4	z2b	PL	12.7 x 180	863	M270M	345W			08001	15
4	z2c	PL	12.7 x 180	863	M270M	345W			08001	15
4	z2d	PL	12.7 x 180	863	M270M	345W			08001	15
1	z2e	PL	12.7 x 180	864	M270M	345W			08001	16
1	z2f	PL	12.7 x 180	864	M270M	345W			08001	16
10	z2m	PL	15.9 x 65	230	M270M	345W			08002	2
1	z2t	PL	12.7 x 180	864	M270M	345W			08001	16
1	z2w	PL	12.7 x 180	864	M270M	345W			08001	16
4	z2y	PL	12.7 x 180	863	M270M	345W			08001	15
12	z2aa	PL	25.4 x 25	239	M270M	345W			08003	1
12	z2ab	PL	25.4 x 25	239	M270M	345W			08003	1
24	z2ac	PL	25.4 x 25	253	M270M	345W			08003	1
3	z2af	SHT	10ga MIN 1/8" THICK	300	A606	TYPE 4			08004	3
2	z2ag	SHT	10ga MIN 1/8" THICK	120	A606	TYPE 4			08005	2
2	z2ah	SHT	10ga MIN 1/8" THICK	120	A606	TYPE 4			08006	3
8	z2ak	SHT	10ga MIN 1/8" THICK	120	A606	TYPE 4			08007	1

APPROVED FOR CONFORMANCE WITH CONSTRUCTION CONTRACT REQUIREMENTS.
 APPROVED FOR CONFORMANCE SUBJECT TO DOCUMENTS NOTED.
 REVISION AND RESUBMIT.
 FAY, SPOFFORD & THORNDIKE ENGINEERS
 By: ES Date: 2/6/09
 Shop drawings have been reviewed to ascertain that they represent conformance and general compliance with contract documents. Dimensions, quantities, weights, details of fabrication and construction and coordination of trades and subcontractors are the responsibility of the general contractor.

NO.	REVISION	BY	CHK'D	DATE
1	ADDED FILL PLATES z2af, z2ag, z2ah & z2ak.	MAF	WBW	2/13/09
HOLES	15/16" Ø (U.N.)			
BOLTS	NONE			
COATING	NONE			
CODE(S)	50			
SCALE	N.T.S.			
SHPMT	1			
STATE	MA			

STATE CONT. OR REF. NO.	PROJECT FILE NO. 603566	FED. AID PROJ. NO.	BR-001S(714)X
GENERAL CONTRACTOR	E. T. & L. CORPORATION	HSSI PROJ. MGR	KEN GLIDDEN
DRAWING MANAGER	BILL BRITIGAN	MADE BY	MAF
PROJECT NUMBER	S-1080005	HSSI STRUCT. ID	A
		DRAWING NUMBER	22 OF 22

STRINGER JOB STANDARDS
 VERNON AVENUE OVER WARE RIVER
 VERNON AVENUE STA. 10+71.106 TO STA. 11+18.106
 BRIDGE NO. B-02-012 IN THE TOWN OF BARRE, WORCESTER COUNTY
 COMMONWEALTH OF MASSACHUSETTS
 MASSACHUSETTS HIGHWAY DEPARTMENT

FOR GENERAL SHOP NOTES, SEE DWG. GN1.

METRIC

1
2
3
4
5
6
7

SHIPMENT 01

BY: McCreid1

60

4/24/2008

SPECIFICATIONS:
MASSACHUSETTS DEPARTMENT OF HIGHWAYS, STANDARD SPECIFICATIONS FOR HIGHWAYS
AND BRIDGES DATED 1995, THE SUPPLEMENTAL SPECIFICATIONS, DATED JUNE 6, 2006 AND THE
SPECIAL PROVISIONS.

MATERIAL:
UNLESS NOTED OTHERWISE, ALL STEEL TO BE AASHTO M270M GRADE 345W.
(T) INDICATES ZONE 2 CHARPY V-NOTCH TESTING REQUIRED.

SHOP PROCEDURE:
ALL FLANGE AND WEB PLATE SPLICES TO BE MADE BEFORE FINAL FITTING AND WELDING
INTO GIRDER.
CAMBER TOLERANCE: -0 mm TO +19 mm FOR GIRDERS, -0 mm, +28 mm, FOR S1A THRU S6A.
AND -0 mm, +12 mm FOR S7C AND S8D.
ALL RE-ENTRANT CUTS TO HAVE 25 MIN. RADIUS.

BEARING AREA, AS NOTED ON GIRDER DETAILS, INDICATES AREA THAT MUST BE FLAT AND
TRUE TO RECEIVE SOLE PLATE.
HEAT NUMBERS MUST BE TRANSFERRED IN THE INSPECTOR'S PRESENCE ON MAIN MEMBER
MATERIAL.

DOR INDICATES DIRECTION OF ROLLING.
(CG) INDICATES CORNER GRINDING.
CORNER GRINDING IS REQUIRED FOR ALL MAIN MEMBER FLANGE PLATES, FIELD SPlice
PLATES AND SECONDARY MEMBERS IN PAINTED AREAS.

INSPECTION:
SHOP INSPECTION BY MASSACHUSETTS HIGHWAY DEPARTMENT DESIGNATED
REPRESENTATIVE.

WELDING:
ALL WELDING IS TO CONFORM TO AWS D1.5-02.
FOR WELDING STIFFENERS AND CONNECTION PLATES TO GIRDERS AND STRINGERS, SEE
TYPICAL WELDING DETAIL.

IDENTIFICATION OF HOLE PLACEMENT:
UNLESS NOTED OTHERWISE, BOLT HOLES IN MATERIAL 16mm OR LESS IN THICKNESS MAY BE
CNC (COMPUTER NUMERICALLY CONTROLLED) PUNCHED OR CNC DRILLED FULL SIZE
UNASSEMBLED. ALL MATERIAL THICKER THAN 16mm IS TO BE DRILLED.

GENERAL SHOP NOTES

NON-DESTRUCTIVE TESTING:

MAGNETIC PARTICLE INSPECTION IS REQUIRED ON AT LEAST 300 mm OF EVERY 3000 mm LENGTH
OF FILLET WELD AND 300 mm OF SUCH WELDS LESS THAN 3000 mm IN LENGTH ON GIRDER WEB
TO FLANGE AND CONNECTION PLATE TO WEB AND FLANGE. TESTING PER THE YOKE METHOD,
USING DC.
ALL NON-DESTRUCTIVE TESTING MUST BE WITNESSED BY THE INSPECTOR.

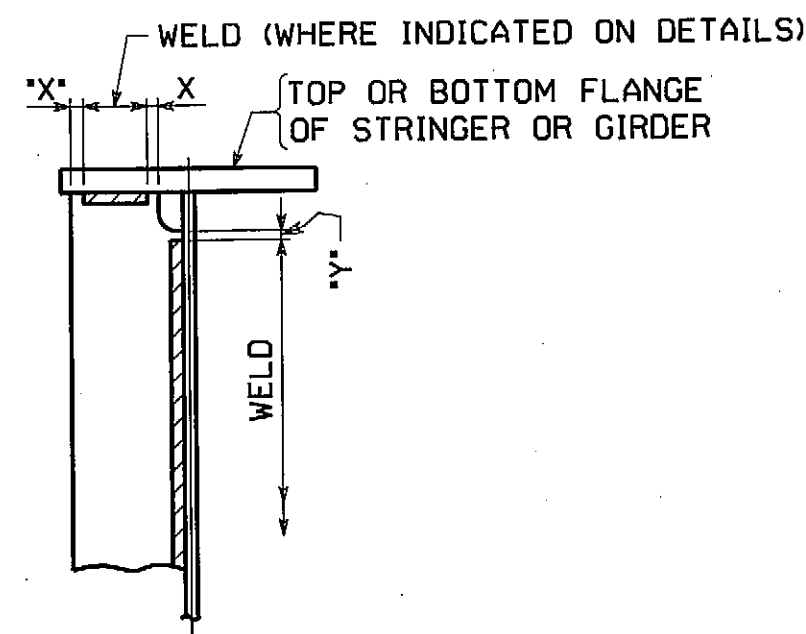
[RA] NOTE:
HOLES MARKED [RA] ON DETAIL DRAWINGS TO BE SUB-PUNCHED/SUB-DRILLED 6# UNDER
SIZE AND REAMED TO FULL SIZE, USING MECHANICALLY GUIDED REAMERS, OR DRILLED FROM
SOLID, WITH CONNECTING PARTS ASSEMBLED AND MATCH MARKED.

CLEANING:
SSPC-SP10 BEFORE FABRICATION AND AGAIN BEFORE PAINTING.

PAINTING:
PAINT (U.N.) WITHIN 800mm OF THE END OF THE GIRDERS AND STRINGERS AT
ABUTMENTS WITH ONE PRIME COAT OF MASS. APPROVED CARBOZINC 859 (ORGANIC ZINC)
@ 75 MICROMETERS MIN. D.F.T. (NO DIAPHS.).
PAINT TOP FLANGE OF GIRDERS OR STRINGERS, AS SHOWN IN 'TYPICAL PAINT SECTION', WITH A LIGHT
RUST PREVENTIVE COATING OF ORGANIC ZINC (25 TO 40 MICROMETERS D.F.T.).

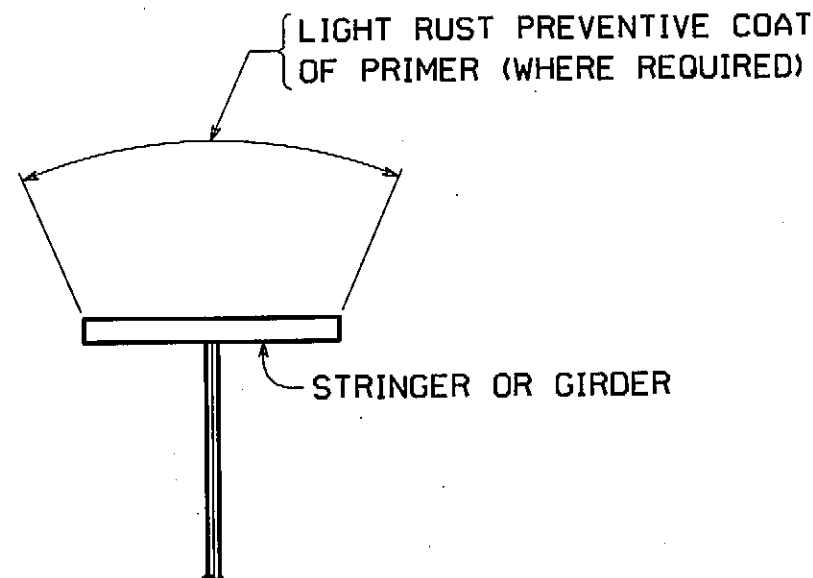
DRAWING REFERENCE:
FLANGE SPLICES -PREFIXED 'FS'
WEB CAMBERS -PREFIXED 'WC'
GIRDER JOB STANDARDS -PREFIXED 'X'
STRINGER JOB STANDARDS -PREFIXED 'Z'
CROSSFRAME JOB STDS. -PREFIXED 'M'
SHOP ASSEMBLY -PREFIXED 'SA'
WELDING PROCEDURE -PREFIXED 'WP'

MINIMUM COLD-BENDING RADII				
THICKNESS mm (t)	UP TO 19.1	OVER 19.1 TO 25.4, INCL.	OVER 25.4 TO 50.8, INCL.	OVER 50.8
ASTM A709M/ AASHTO M270M GRADE				
250	1.5t	1.5t	1.5t	2.0t
345	1.5t	1.5t	2.0t	2.5t
345W	1.5t	1.5t	2.0t	2.5t
HPS485W	1.5t	1.5t	2.5t	3.0t
690	1.75t	2.25t	4.5t	5.5t
690W	1.75t	2.25t	4.5t	5.5t

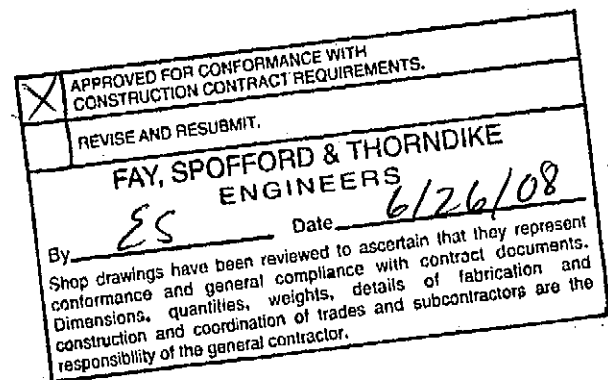


"X" = 6±3
"Y" = 12±6

STIFFENER WELDING DETAIL

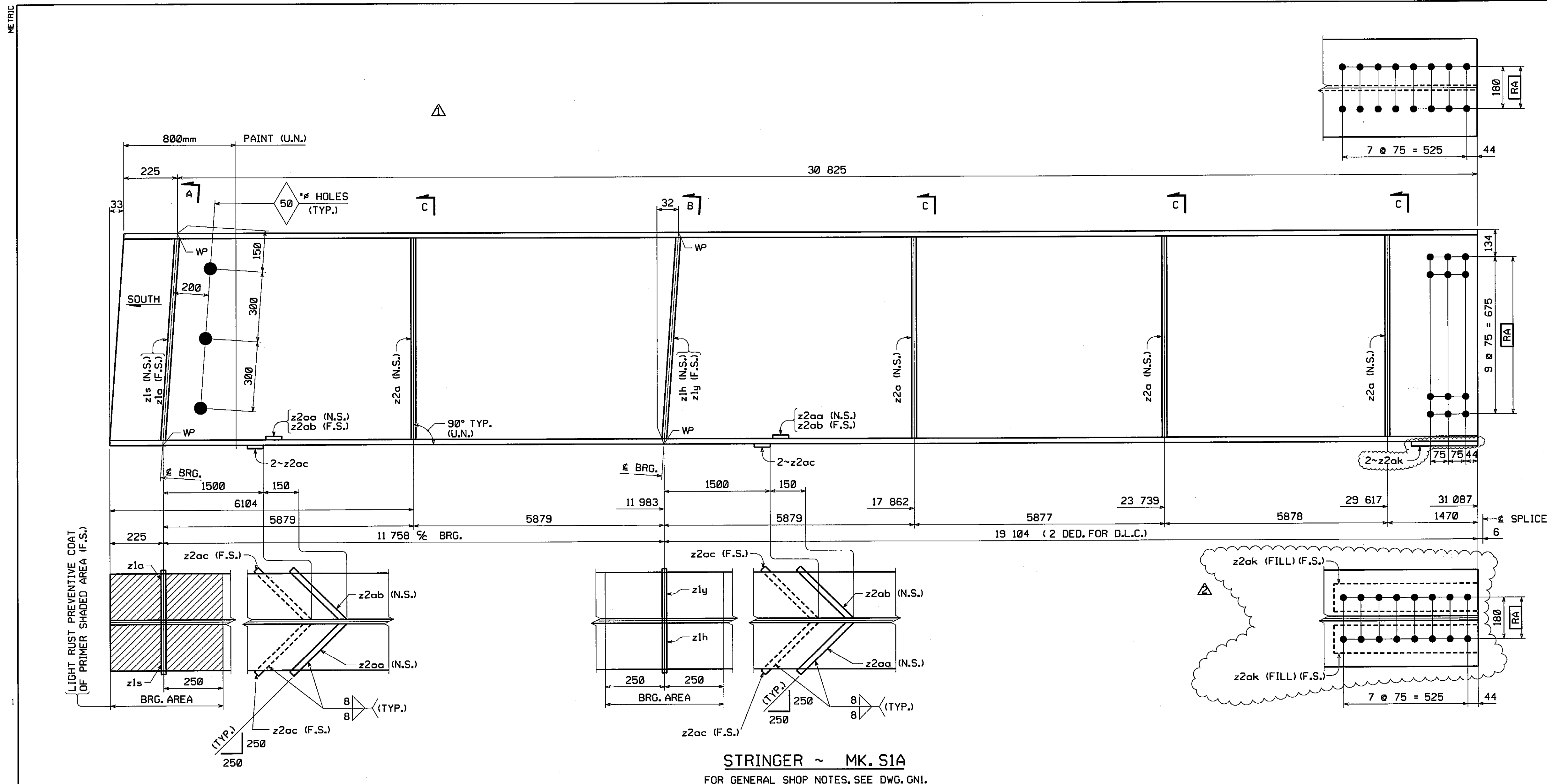


TYP. PAINT SECTION



INSPECTION FOR MASS. DEPT. OF
PUBLIC WORKS TO BE DONE BY:
PITTSBURG TESTING LAB.

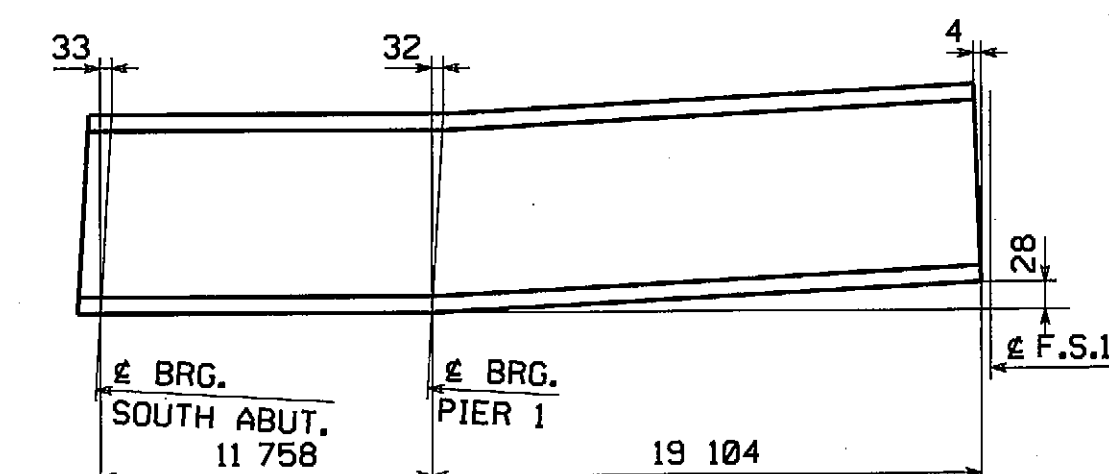
NO.	REVISION	BY	CHK'D	DATE
HOLES				
BOLTS				
COATING				
CODE(S)				
SCALE	STATE CONT. OR REF. NO.	PROJECT FILE NO. 60356	FED. AID PROJ. NO.	BR-001S/714IX
N.T.S.	GENERAL CONTRACTOR	E.T. & L. CORPORATION	HSSI PROJ. MGR	KEN GLIDDEN
SHIPMT	1	DRAWING MANAGER	KREIDER (IH)	MADE BY
STATE	MA	HSSI PROJECT NUMBER	S-1080005	HSSI STRUCT. ID
		DRAWING NUMBER	GN1 OF GN1	



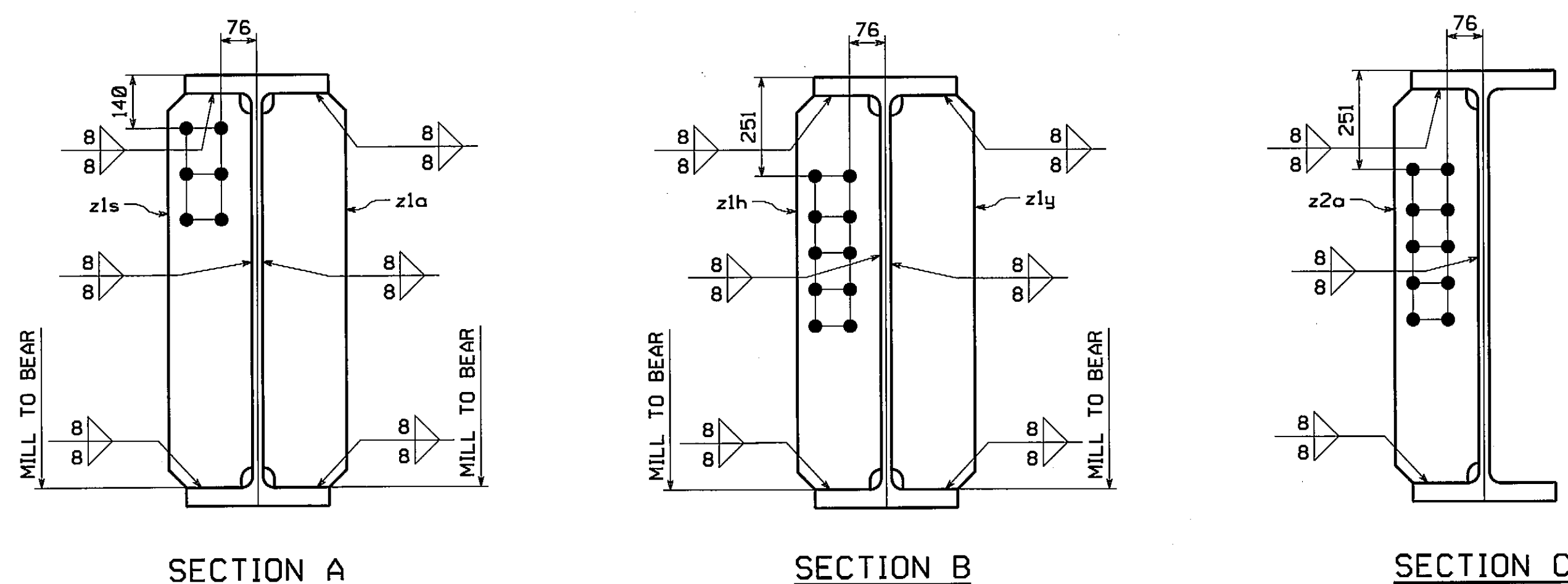
BILL OF MATERIAL										
QTY EA.	MARK	COMM	DESCRIPTION	LENGTH	SPEC	GRADE	TEST	REMARKS	ITEM	SHIP WT. EA. (KG)
1	S1A		STRINGER							#VALUE!
1	a	W	920 x 345	31 087	M270M	345W	T		05001	
1	z1a	PL	12.7 x 180	864	M270M	345W			08001	
1	z1h	PL	12.7 x 180	864	M270M	345W			08001	
1	z1s	PL	12.7 x 180	864	M270M	345W			08001	
1	z1y	PL	12.7 x 180	864	M270M	345W			08001	
4	z2a	PL	12.7 x 180	863	M270M	345W			08001	
2	z2aa	PL	25.4 x 25	239	M270M	345W			08003	
2	z2ab	PL	25.4 x 25	239	M270M	345W			08003	
4	z2ac	PL	25.4 x 25	253	M270M	345W			08003	
2	z2ak	SHT	10ga x 120	609	A606	TYPE 4	FILL		06007	

10 ga, MIN 1/8" THICK

APPROVED FOR CONFORMANCE WITH CONSTRUCTION CONTRACT REQUIREMENTS.
 APPROVED FOR CONFORMANCE SUBJECT TO COMMENTS NOTED.
 DESIGN AND SUBMIT.
 FAY, SPOFFORD & THORNDIKE ENGINEERS
 Date 3/6/09
 Shop drawings have been reviewed to ascertain that they represent performance and general compliance with contract documents. Dimensions, quantities, weights, details of fabrication and construction and coordination of trades and subcontractors are the responsibility of the general contractor.

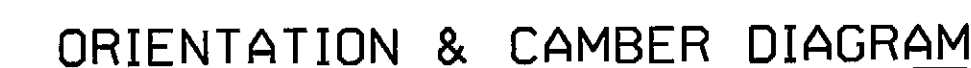
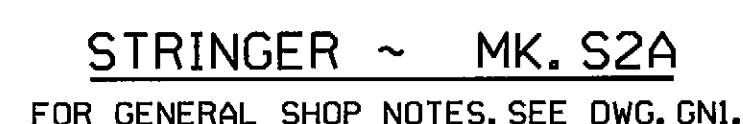


ORIENTATION & CAMBER DIAGRAM



INSPECTION FOR MASS. DEPT. OF PUBLIC WORKS TO BE DONE BY: PITTSBURG TESTING LAB.

ADDED FILL PL z2ak TO MATCH AS BUILT CONDITION	MAF	WBW	2/13/09
REVISED PAINT NOTE	DH	MGK	1/20/09
NO.	REVISION	BY	CHK'D DATE
HOLDS 15/16" (U.N.)	STRINGER	SIA	
BOLTS NONE	VERNON AVENUE OVER WARE RIVER		
COATING SEE GNI	BRIDGE NO. B-02-012 IN THE TOWN OF BARRE, WORCESTER COUNTY		
CODE(S) 50	COMMONWEALTH OF MASSACHUSETTS		
SCALE N.T.S.	MASSACHUSETTS HIGHWAY DEPARTMENT		
STATE CONT. OR REF. NO.	PROJECT FILE NO. 60356	FED. AID PROJ. NO.	BR-001S(714)X
GENERAL CONTRACTOR	E.T. & L. CORPORATION	HSI PROJ. MGR	KEN GLIDDEN
SHPM 1	DRAWING MANAGER KREIDER (IH)	MADE BY DRJ	CHK'D BY CS
STATE MA	HSI PROJECT NUMBER S-1080005	HSI STRUCT. ID A	DRAWING NUMBER 1 OF 15



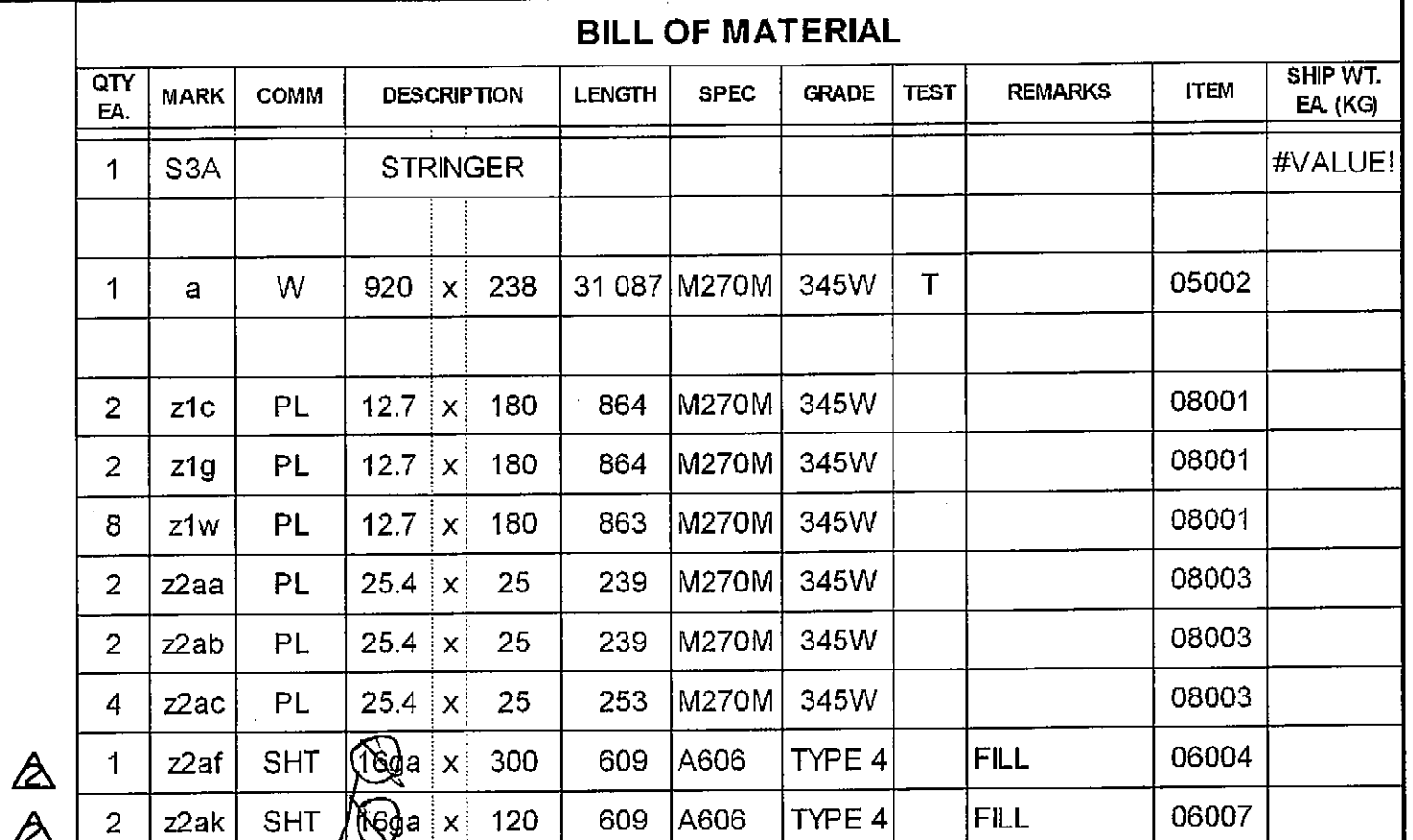
<input checked="" type="checkbox"/>	APPROVED FOR CONFORMANCE WITH CONSTRUCTION CONTRACT REQUIREMENTS.
<input type="checkbox"/>	APPROVED FOR CONFORMANCE SUBJECT TO COMMENTS NOTED.
<input type="checkbox"/>	REVISE AND RESUBMIT

FAY, SPOFFORD & THORNDIKE
ENGINEERS

By ES Date 3/6/09

Shop drawings have been reviewed to ascertain that they represent
conformance and general compliance with contract documents.
Dimensions, quantities, weights, details of fabrication
construction and coordination of trades and subcontractors are
responsibility of the general contractor.

	ADDED FILL PL'S z2ag & z2ah TO MATCH AS BUILT CONDITION	MAF	BWB	2/13/07
	REVISED PAINT NOTE	DH	MCK	1/20/07
NO.	REVISION	BY	CHK'D	DATE
Holes 196 ¹⁸ (U.N.)	 High Steel Structures An ISO 9001:2000 Certified Company An Affiliate of High Industries Inc. INC.	Lancaster Facility 195 Old Philadelphia Road Lancaster, PA 17606 Phone (717) 299-5211 Wilmington Facility 3530 W. 4th Street Wilmington, PA 17101 Phone (610) 326-9501 www.HighSteel.com		
BOLTS				
NONE				
COATING	STRINGER			S2A
GNE	VERNON AVENUE OVER WARE RIVER			
	VERNON AVENUE STA. 10+71.106 TO STA. 11+110.6			
CODING	BRIDGE NO. B-02-012 IN THE TOWN OF BARRE, WORCESTER COUNTY			
50	COMMONWEALTH OF MASSACHUSETTS			
	MASSACHUSETTS HIGHWAY DEPARTMENT			
SCALE	STATE CONT. OR REF. NO.	PROJECT FILE NO. 60356	FED. AID PROJ. NO.	BR-00IS(714)X
N.T.S.	GENERAL CONTRACTOR	E.T. & L. CORPORATION	HSSI PROJ. MGR	KEN GLIDDEN
SHIPMT	DRAWING MANAGER	KREIDER (IH)	MADE BY	DRJ
1	HSSI PROJECT	S-10800005	HSSI STRUCT.	A
STATE	MA		DRAWING NUMBER	2 OF 15
OF 15			CS	DATE 4-17-07



11 ga, MIN 1/8" THICK

☐ APPROVED FOR CONFORMANCE WITH CONSTRUCTION CONTRACT REQUIREMENTS.

☒ APPROVED FOR CONFORMANCE SUBJECT TO COMMENTS NOTED.

☐ REVISE AND RESUBMIT.

**FAY, SPOFFORD & THORNDIKE
ENGINEERS**

By ES Date 3/6/09

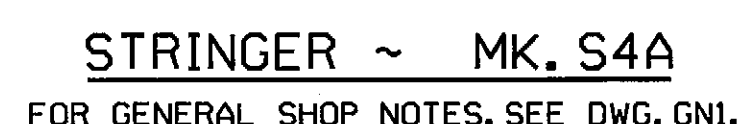
Shop drawings have been reviewed to ascertain that they represent performance and general compliance with contract documents. Dimensions, quantities, weights, details of fabrication and construction and coordination of trades and subcontractors are the responsibility of the general contractor.

32 30 3 30

BRG. SOUTH ABUT. 11 758 BRG. PIER 1 19 104 F.S.I.

[illegible]

SHPM	1	DRAWING MANAGER	KREIDER (IH)	MADE BY	DRJ	CHECK BY	CS	DATE	4-17-08
STATE	MA	HSSI PROJECT NUMBER	S-1080005	HSSI STRUCT. ID	A	DRAWING NUMBER	3 OF 15		



11 ga MIN 1/8" THICK

☒ APPROVED FOR CONFORMANCE WITH
CONSTRUCTION CONTRACT REQUIREMENTS.

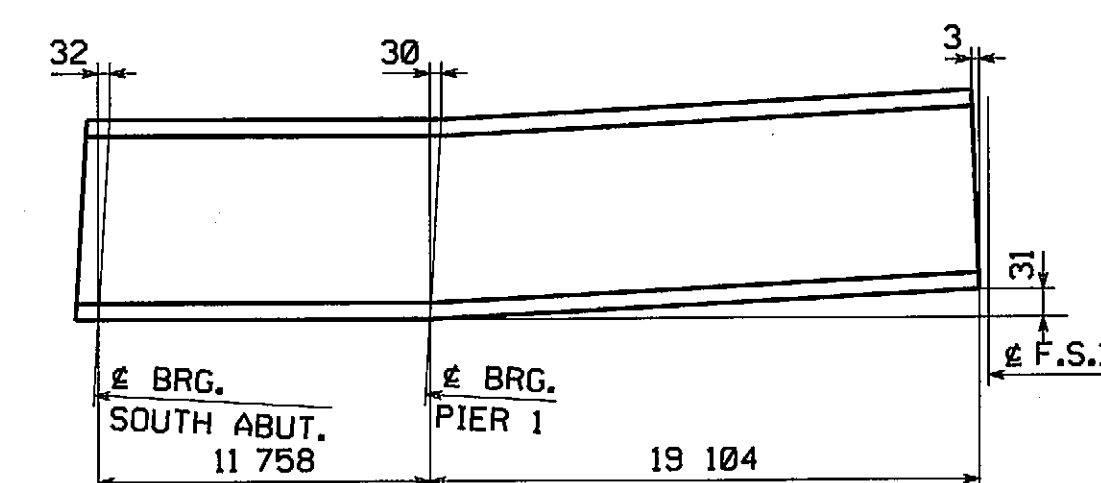
☒ APPROVED FOR CONFORMANCE SUBJECT
TO COMMENTS NOTED.

REVISE AND RESUBMIT.

FAY, SPOFFORD & THORNDIKE
ENGINEERS

By ES Date 3/6/09

Shop drawings have been reviewed to ascertain that they represent
performance and general compliance with contract documents.
Dimensions, quantities, weights, details of fabrication and
construction and coordination of trades and subcontractors are
comprehensibility of the general contractor.

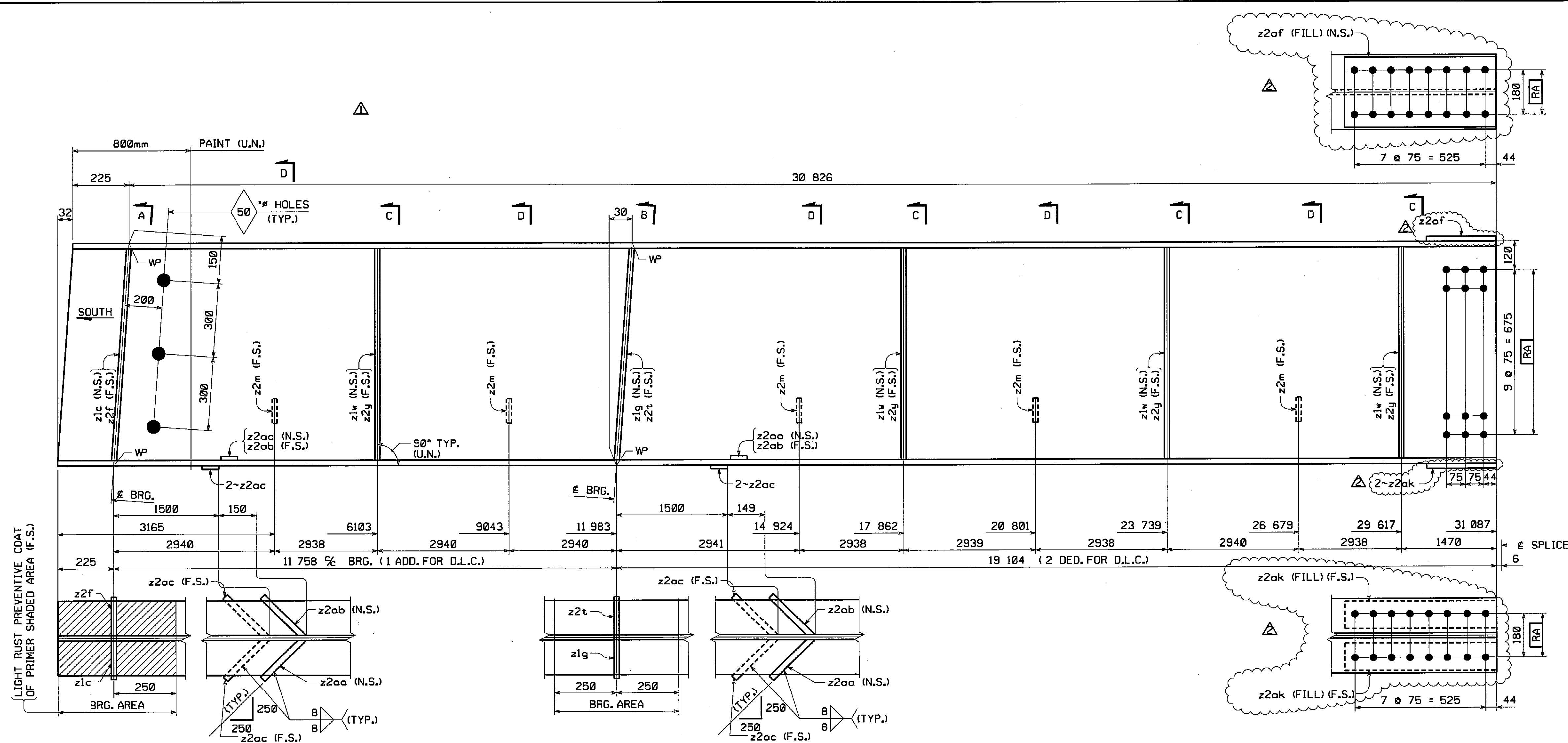


ORIENTATION & CAMBER DIAGRAM



INSPECTION FOR MASS. DEPT. OF
PUBLIC WORKS TO BE DONE BY:
PITTSBURG TESTING LAB.

	ADDED FILL PL'S z2af & z2ak TO MATCH AS BUILT CONDITION	MAF	WBW	2/13/06
	REVISED PAINT NOTE	DH	MGK	1/20/07
NO.	REVISION	BY	CHK'D	DATE
HOLES 1 1/8" @ (U.N.)	 I-HIGH STEEL STRUCTURES INC. An Affiliates of High Industries Inc. AN ISO 9001:2000 Certified Company	Lancaster Facility 195 Old Philadelphia Pike Lancaster, PA 17601-50 Phone (717) 299-5231 Wilkesport Facility 250 E. 4th Street Wilkesport, PA 17101 Phone (810) 326-0651 www.i-high.com		
BOLTS				
NONE		STRINGER S4A		
COATING	VERNON AVENUE OVER WARE RIVER			
SEE GNI	VERNON AVENUE STA. 10+71.106 TO STA. 11+18.106			
CODE(S)	BRIDGE NO. B-02-012 IN THE TOWN OF BARRE, WORCESTER COUNTY			
50	COMMONWEALTH OF MASSACHUSETTS			
	MASSACHUSETTS HIGHWAY DEPARTMENT			
SCALE N.T.S.	STATE CONT. OR REF. NO.	PROJECT FILE NO. 60356	FED. AID PROJ. NO.	BR-001S(714)X
	GENERAL CONTRACTOR	E.T. & L. CORPORATION	HSSI PROJ. MGR.	KEN GLIDDEN
SHPMT 1	DRAWING MANAGER PROJECT	KREIDER (IH)	Made BY	DRJ CHK'D BY CS DATE 4-17-06
STATE MA	HSSI PROJECT NUMBER	S-1080005	HSSI STRUCT. NO.	A DRAWING NUMBER 4 OF 15

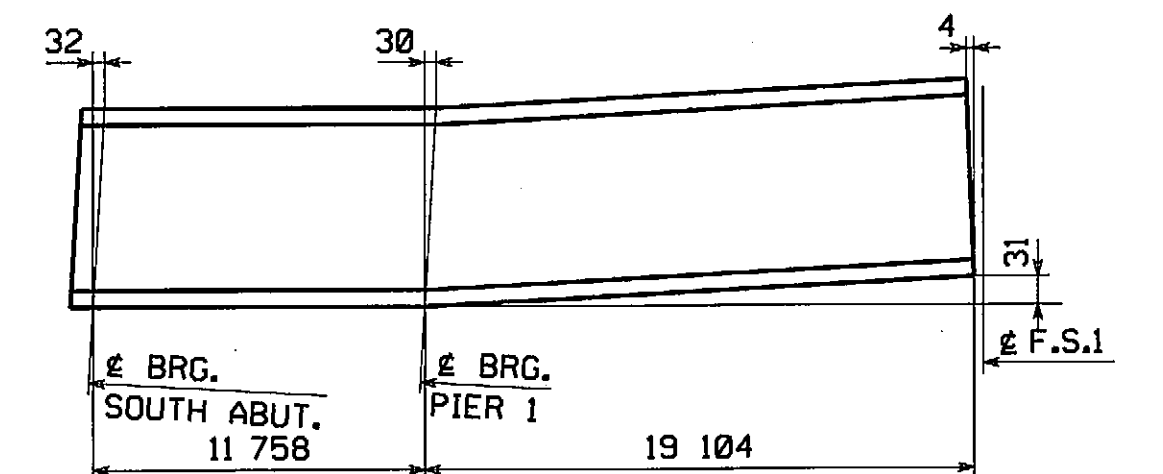


STRINGER ~ MK. S5A
FOR GENERAL SHOP NOTES, SEE DWG. GNI.

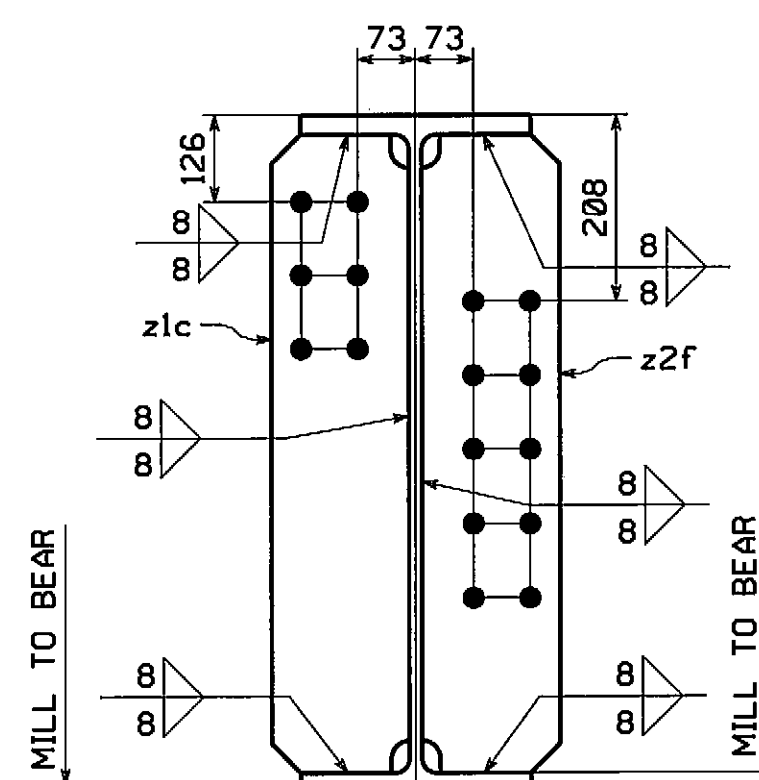
BILL OF MATERIAL											
QTY	EA	MARK	COMM	DESCRIPTION	LENGTH	SPEC	GRADE	TEST	REMARKS	ITEM	SHIP WT. EA (KG)
1		S5A		STRINGER							#VALUE!
1	a	W	920	x 238	31 087	M270M	345W	T		05002	
1	z1c	PL	12.7	x 180	864	M270M	345W			08001	
1	z1g	PL	12.7	x 180	864	M270M	345W			08001	
4	z1w	PL	12.7	x 180	863	M270M	345W			08001	
1	z2f	PL	12.7	x 180	864	M270M	345W			08001	
5	z2m	PL	15.9	x 65	230	M270M	345W			08002	
1	z2t	PL	12.7	x 180	864	M270M	345W			08001	
4	z2y	PL	12.7	x 180	863	M270M	345W			08001	
2	z2aa	PL	25.4	x 25	239	M270M	345W			08003	
2	z2ab	PL	25.4	x 25	239	M270M	345W			08003	
4	z2ac	PL	25.4	x 25	253	M270M	345W			08003	
1	z2af	SHT	10ga	x 300	609	A606	TYPE 4	FILL		06004	
2	z2ak	SHT	10ga	x 120	609	A606	TYPE 4	FILL		06007	

10ga, MIN 1/8" THICK

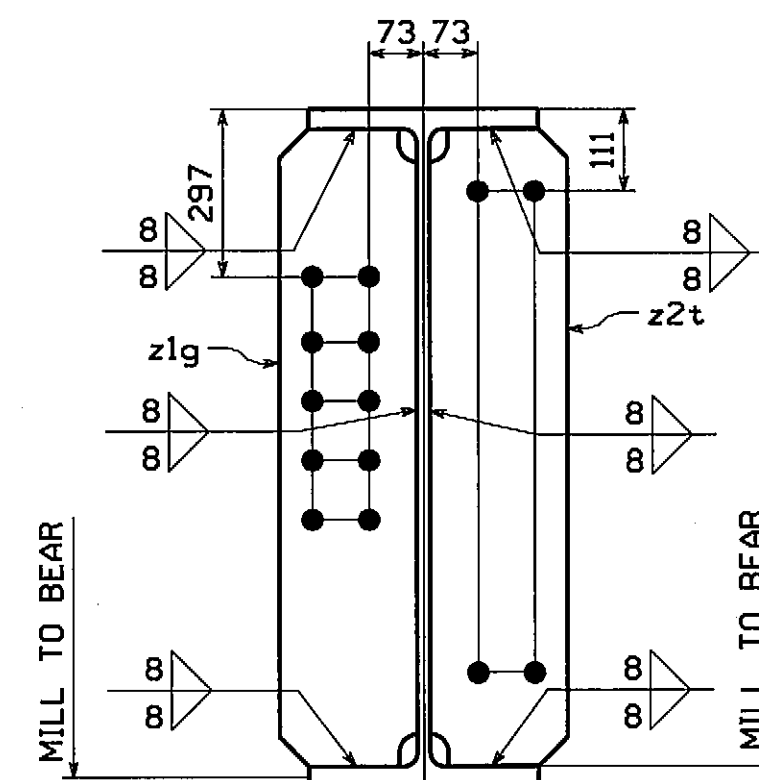
APPROVED FOR CONFORMANCE WITH CONSTRUCTION CONTRACT REQUIREMENTS.	
APPROVED FOR CONFORMANCE SUBJECT TO COMMENTS NOTED.	
REVISED AND RESUBMIT.	
FAY, SPOFFORD & THORNDIKE ENGINEERS	
By <u>ES</u> Date <u>3/6/09</u>	
Shop drawings have been reviewed to ascertain that they represent performance and general compliance with contract documents. Dimensions, quantities, weights, details of fabrication and construction and coordination of trades and subcontractors are the responsibility of the general contractor.	



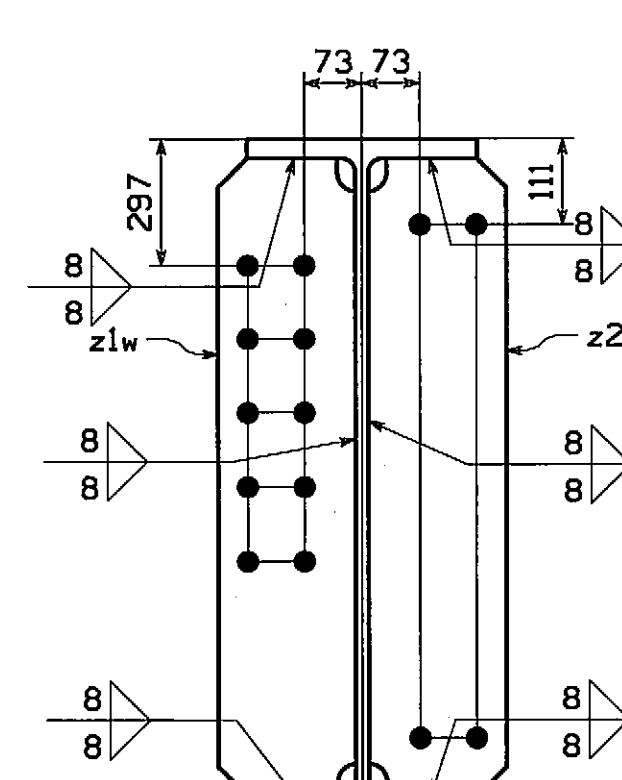
ORIENTATION & CAMBER DIAGRAM



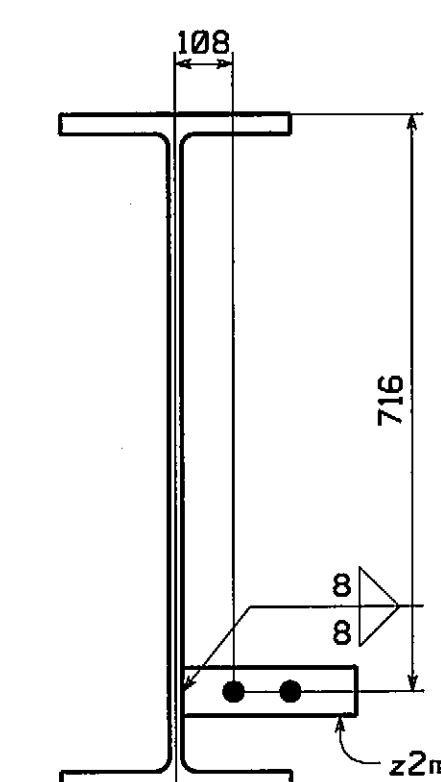
SECTION A



SECTION B



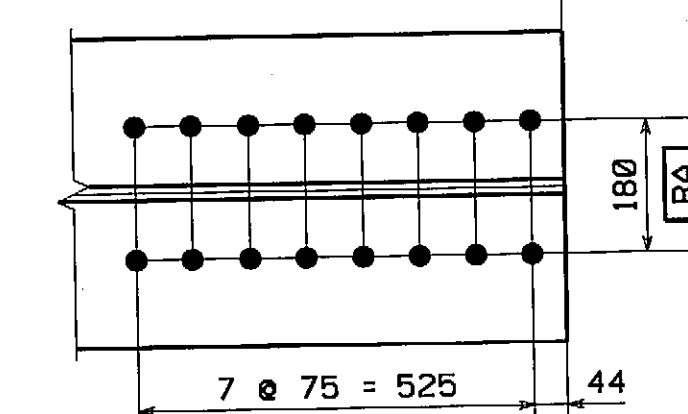
SECTION C



SECTION D

INSPECTION FOR MASS. DEPT. OF PUBLIC WORKS TO BE DONE BY: PITTSBURG TESTING LAB.

ADDED FILL PL'S z2af & z2ak TO MATCH AS BUILT CONDITION	MAF	W/BW	2/13/09
REVISED PAINT NOTE	DH	MCK	1/20/09
NO.	REVISION	BY	CHK'D DATE
Holes 15/16" (U.N.)			
BOLTS NONE			
COATING SEE GNI			
CODE(S) 50			
SCALE N.T.S.			
STATE CONT. OR REF. NO.	PROJECT FILE NO. 60356	FED. AID PROJ. NO.	BR-001S(714)X
GENERAL CONTRACTOR	E.T. & L. CORPORATION	HSSI PROJ. MGR	KEN GLIDDEN
SHPMT 1	DRAWING MANAGER KREIDER (IH)	MADE BY DRJ	CHK'D BY CS
STATE MA	HSSI PROJECT NUMBER S-1080005	HSSI STRUCT. ID A	DRAWING NUMBER 5 OF 15



33 32 5

BRG. SOUTH ABUT. 11 758


BRG. PIER 1

19 104

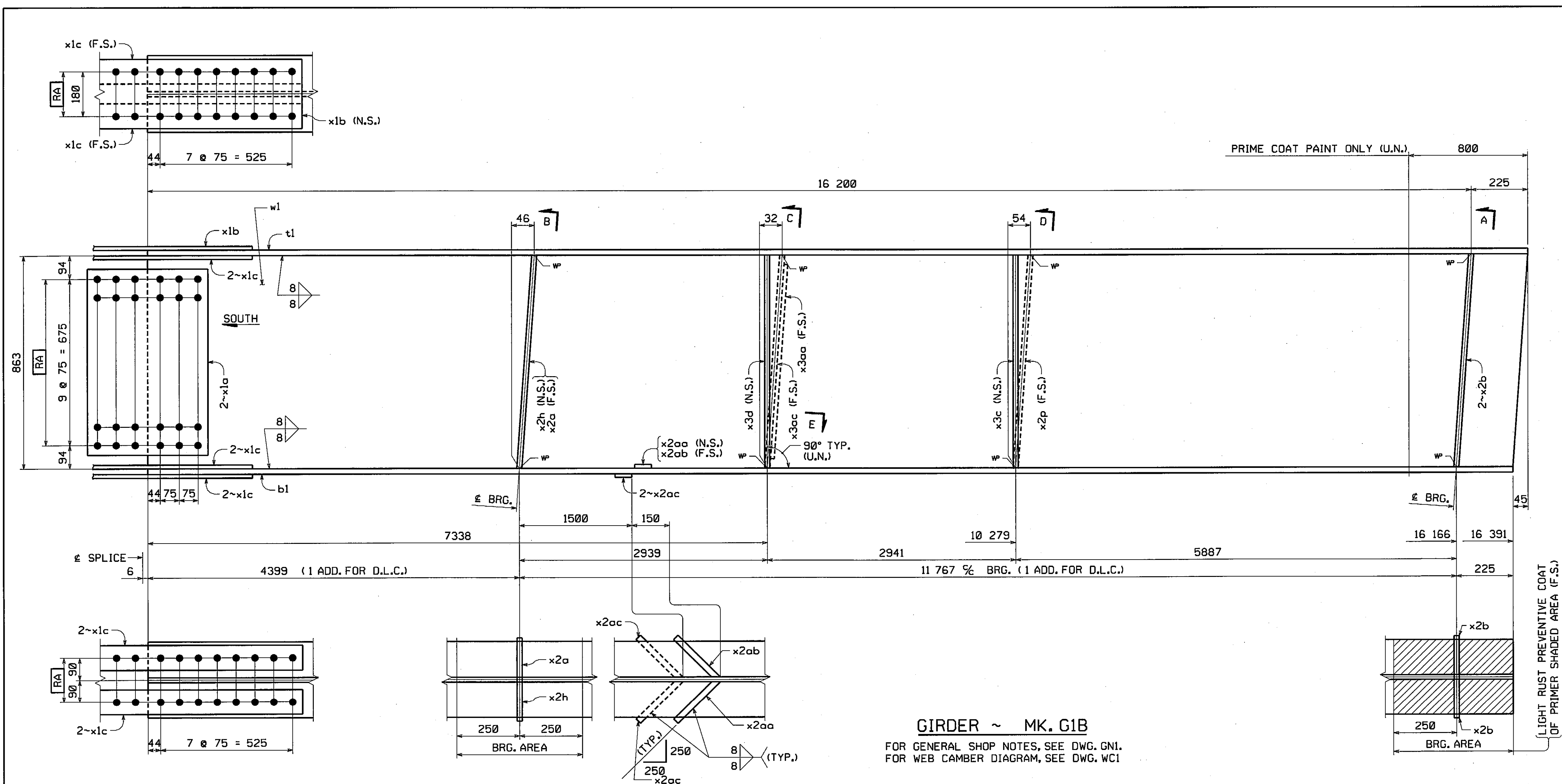
20 2

F.S.

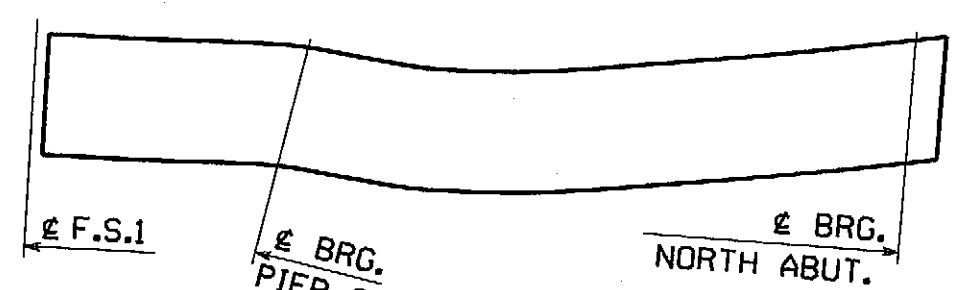
INSPECTION FOR MASS. DEPT. OF
PUBLIC WORKS TO BE DONE BY:
PITTSBURG TESTING LAB.

																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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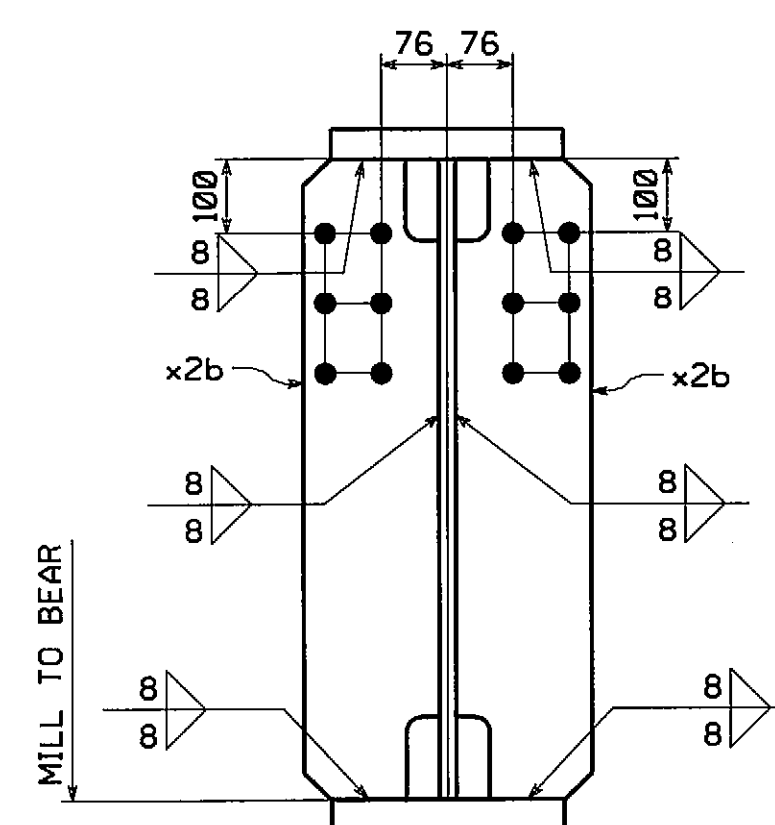
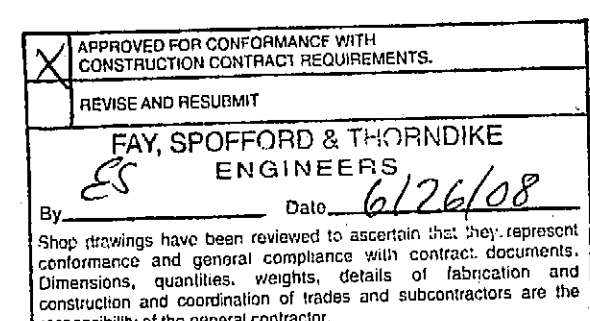
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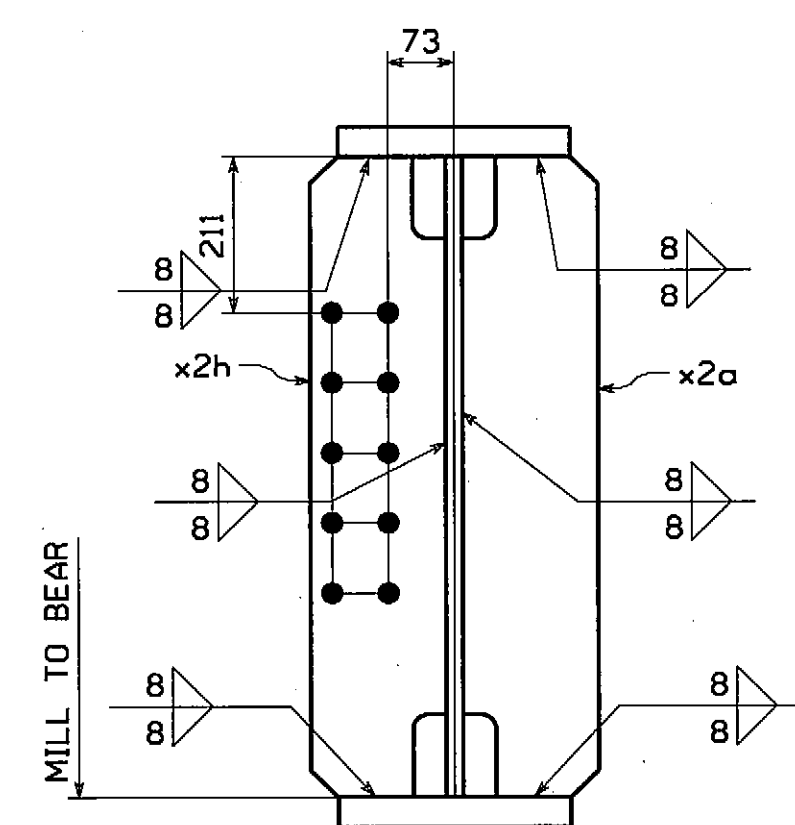
BILL OF MATERIAL												
QTY EA	MARK	COMM	DESCRIPTION			LENGTH	SPEC	GRADE	TEST	REMARKS	ITEM	SHIP WEIGHT EA
1	G1B		GIRDER									6 104
												13,457
1	w1	PL	22	x	863	16 434	M270M	345W	T		03001	
1	t1	PL	40	x	308	16 427	M270M	345W	T		04001	
1	b1	PL	40	x	308	16 393	M270M	345W	T		04001	
2	x1a	PL	14.3	x	755	480	M270M	345W	T		06001	
1	x1b	PL	20.6	x	300	1 230	M270M	345W	T		06002	
6	x1c	PL	25.4	x	120	1 230	M270M	345W	T		06003	
1	x2a	PL	12.7	x	180	864	M270M	345W			07001	
2	x2b	PL	12.7	x	180	865	M270M	345W			07001	
1	x2h	PL	12.7	x	180	863	M270M	345W			07001	
1	x2p	PL	12.7	x	180	865	M270M	345W			07001	
1	x2aa	PL	25.4	x	25	239	M270M	345W			08003	
1	x2ab	PL	25.4	x	25	239	M270M	345W			08003	
2	x2ac	PL	25.4	x	25	253	M270M	345W			08003	
1	x3c	PL	12.7	x	180	863	M270M	345W			07001	
1	x3d	PL	12.7	x	180	863	M270M	345W			07001	
1	x3aa	PL	12.7	x	765	366	M270M	345W		BENT	07003	
1	x3ac	PL	12.7	x	180	864	M270M	345W			07001	
20	140204	HS Bolt	7/8			0'-2 1/4	M164	TYPE 3			17001	
20	W14	Std Wash	7/8				M293	WEATH			17003	
20	N14	Nut	7/8				M291	DHB			17002	



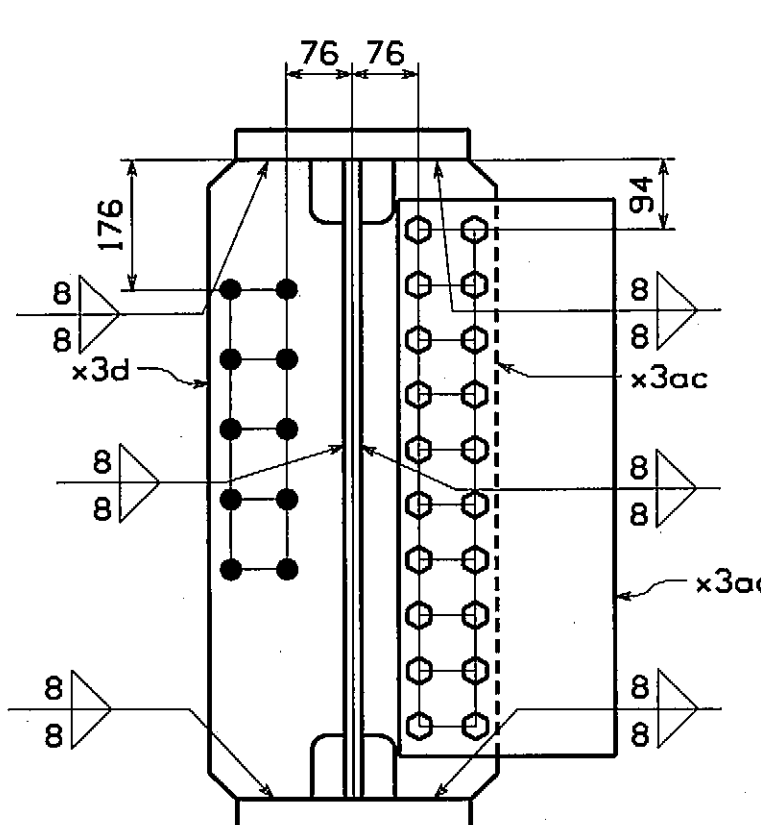
ORIENTATION DIAGRAM



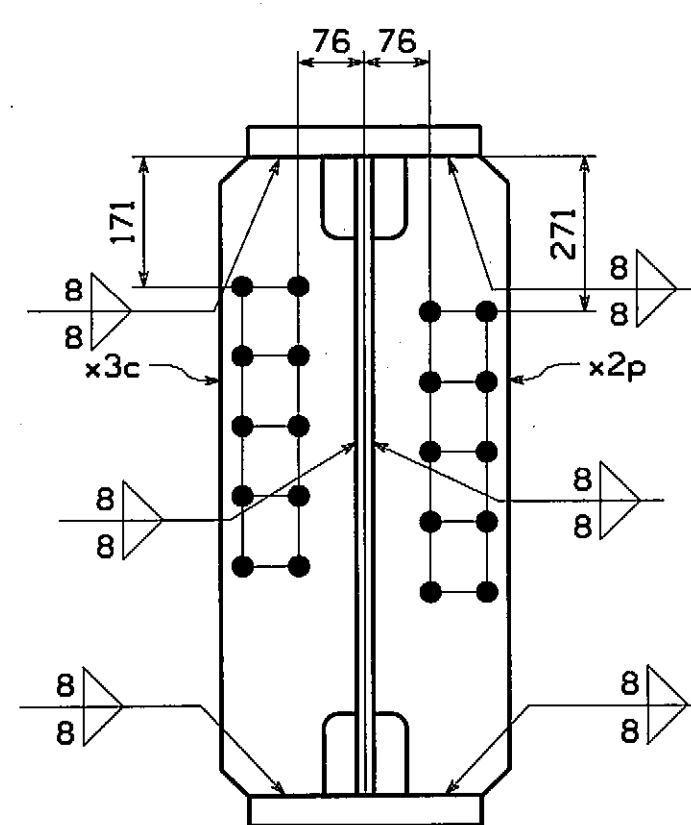
SECTION A



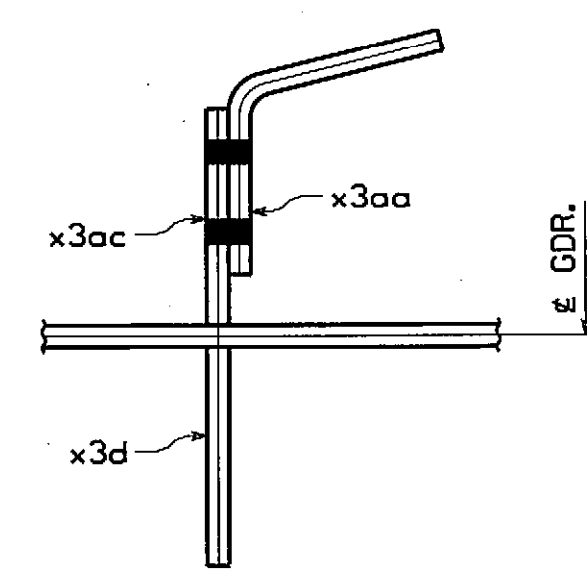
SECTION B



SECTION C






SECTION D

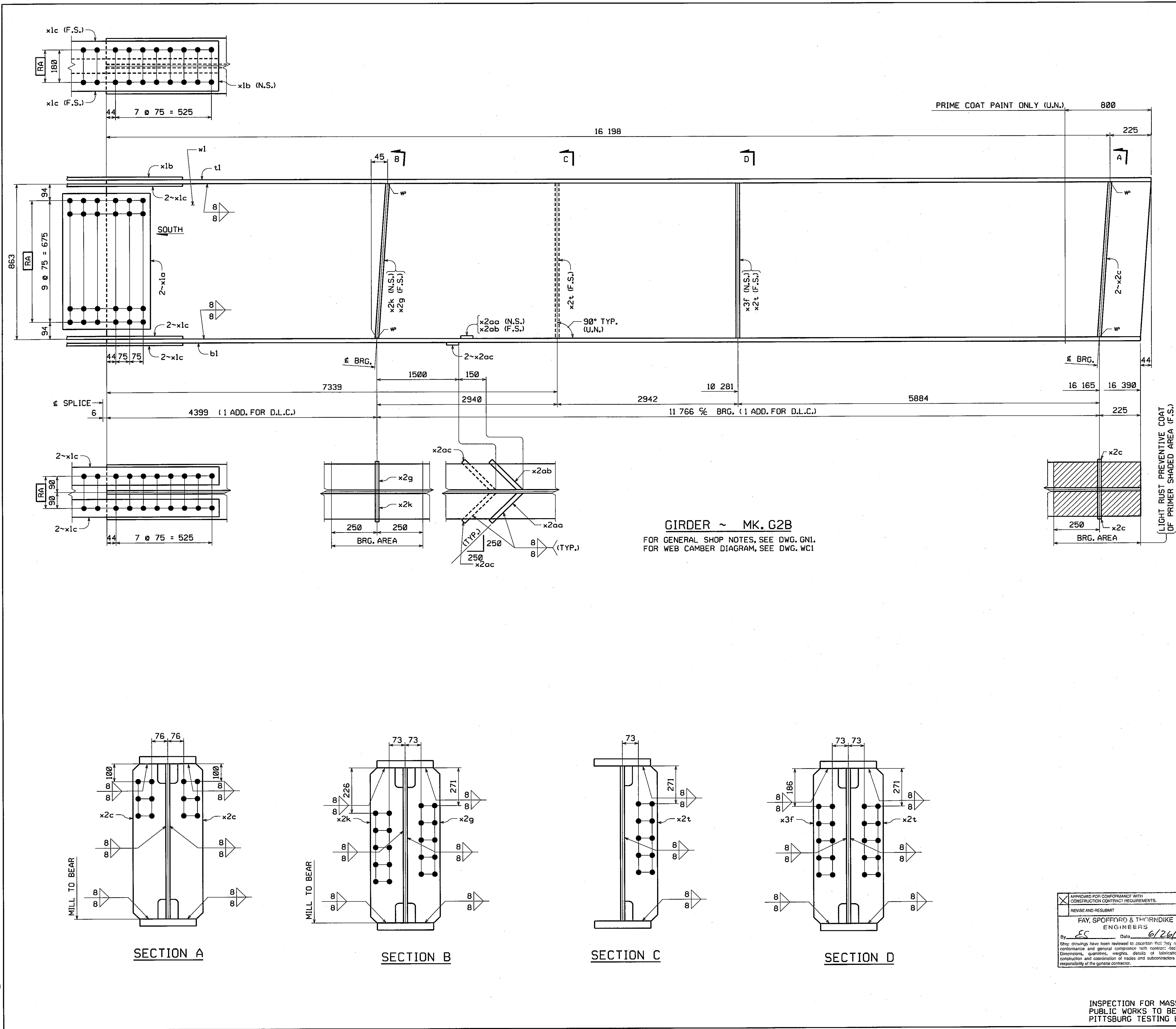


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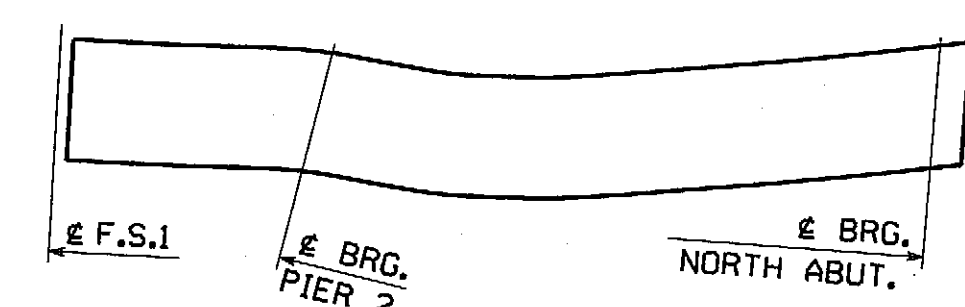
INSPECTION FOR MASS. DEPT. OF
PUBLIC WORKS TO BE DONE BY:
PITTSBURG TESTING LAB.

NO.		REVISION		BY	CHK'D	DATE
HOLES 15/16" ø (U.N.)		  		Lancaster Facility 565 Old Philadelphia Pike Lancaster, PA 17605-0008 Phone: (717) 299-5201 Williamsport Facility 350 W. 4th Street Williamsport, PA 17701 Phone: (570) 356-9291 www.HighSteel.com		
BOLTS		An ISO 9000:2000 Certified Company		An Affiliate of High Industries Inc.		
NONE		GIRDER		GIB		
COATING		VERNON AVENUE OVER WARE RIVER				
SEE GNI		VERNON AVENUE STA. 10+71.106 TO STA. 11+18.106				
CODE(S)		BRIDGE NO. B-02-012 IN THE TOWN OF BARRE, WORCESTER COUNTY MASSACHUSETTS				
30		COMMONWEALTH OF MASSACHUSETTS MASSACHUSETTS HIGHWAY DEPARTMENT				
SCALE		STATE CONT. OR REF. NO.		FED. AID PROJ. NO.		BR-001S(714)X
N.T.S.		GENERAL CONTRACTOR E.T. & L. CORPORATION		HSSI PROJ. MGR KEN GLIDDEN		
SHIPMT	1	DRAWING MANAGER KREIDER (IH)	MADE BY DRJ	CHK'D BY CS	DATE 4-22-08	
STATE	MA	HSSI PROJECT NUMBER S-1080005	HSSI STRUCT. ID A	DRAWING NUMBER 7	OF 15	

RECORD COPY



BILL OF MATERIAL										
QTY	MARK	COMM	DESCRIPTION	LENGTH	SPEC	GRADE	TEST	REMARKS	ITEM	SHIP WEIGHT EA
1	G2B		GIRDER							4 366
										(9627 #)
1	w1	PL	17 x 863	16 432	M270M	345W	T		03002	
1	t1	PL	26 x 305	16 424	M270M	345V	T		04002	
1	b1	PL	26 x 305	16 391	M270M	345V	T		04002	
2	x1a	PL	14.3 x 755	480	M270M	345V	T		06001	
1	x1b	PL	20.6 x 300	1 230	M270M	345V	T		06002	
6	x1c	PL	25.4 x 120	1 230	M270M	345V	T		06003	
2	x2c	PL	12.7 x 180	864	M270M	345V			07001	
1	x2g	PL	12.7 x 180	864	M270M	345V			07001	
1	x2k	PL	12.7 x 180	864	M270M	345V			07001	
2	x2t	PL	12.7 x 180	863	M270M	345V			07001	
1	x2aa	PL	25.4 x 25	239	M270M	345V			08003	
1	x2ab	PL	25.4 x 25	239	M270M	345V			08003	
2	x2ac	PL	25.4 x 25	253	M270M	345V			08003	
1	x2f	PL	12.7 x 180	863	M270M	345V			07001	



ORIENTATION DIAGRAM

NO.	REVISION	BY	CHK'D	DATE
1				
HOLD	15' 16" (U.N.)			
BOLTS	NONE			
COATING	SEE GNI			
CODE(S)	30			
SCALE	N.T.S.			
SHPM	1			
STATE	MA			

VERNON AVENUE OVER WARE RIVER
BRIDGE NO. B-02-012 IN THE TOWN OF BARRE, WORCESTER COUNTY
COMMONWEALTH OF MASSACHUSETTS
MASSACHUSETTS HIGHWAY DEPARTMENT
PROJECT FILE NO. 60356
E.T. & L. CORPORATION
KREIDER (IH)
S-1080005

INSPECTION FOR MASS. DEPT. OF PUBLIC WORKS TO BE DONE BY: PITTSBURG TESTING LAB.

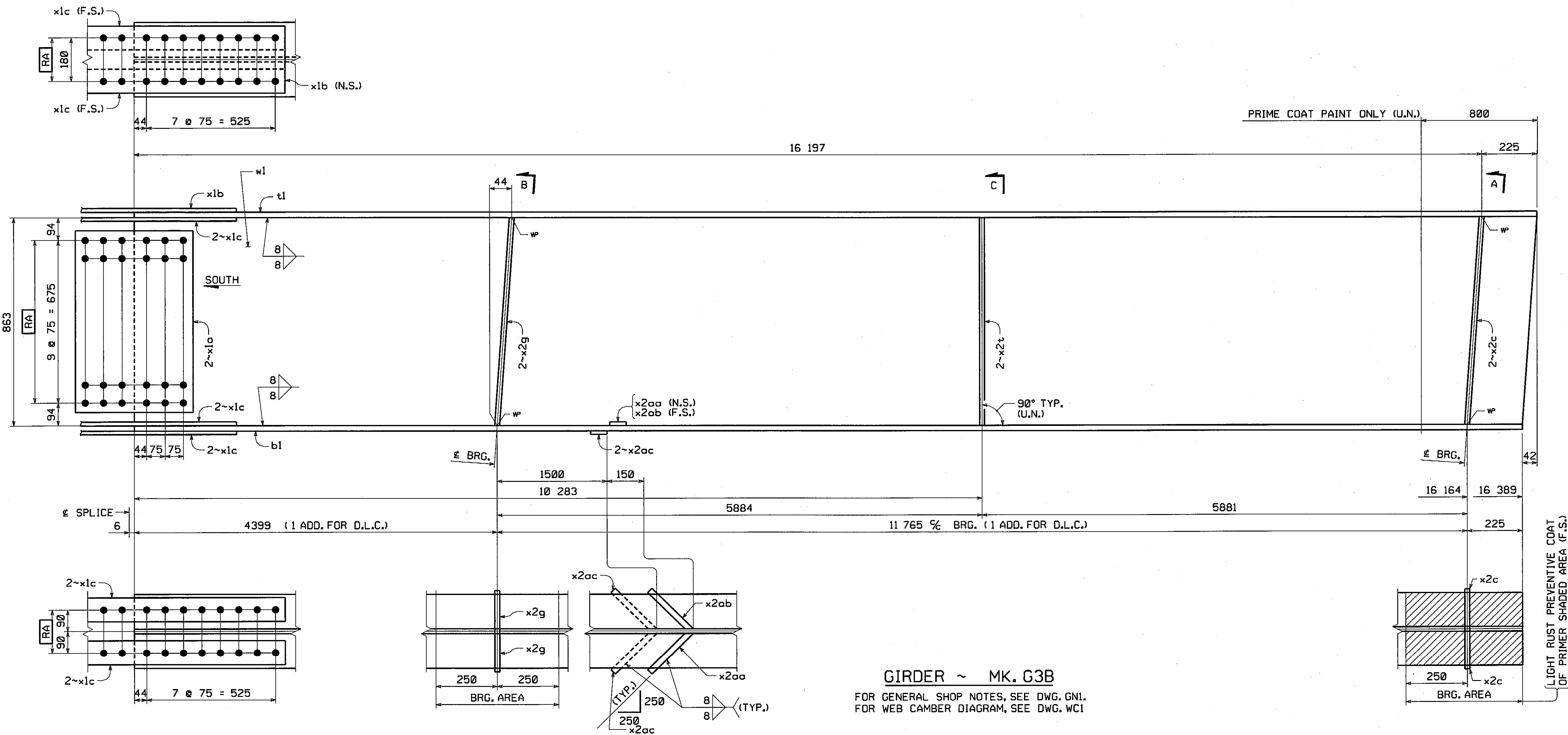
METRIC

SHIPMENT 01 PAKING 5003311 PPD 5003312 SHIPPERCT 5003313

BY: MK:etel

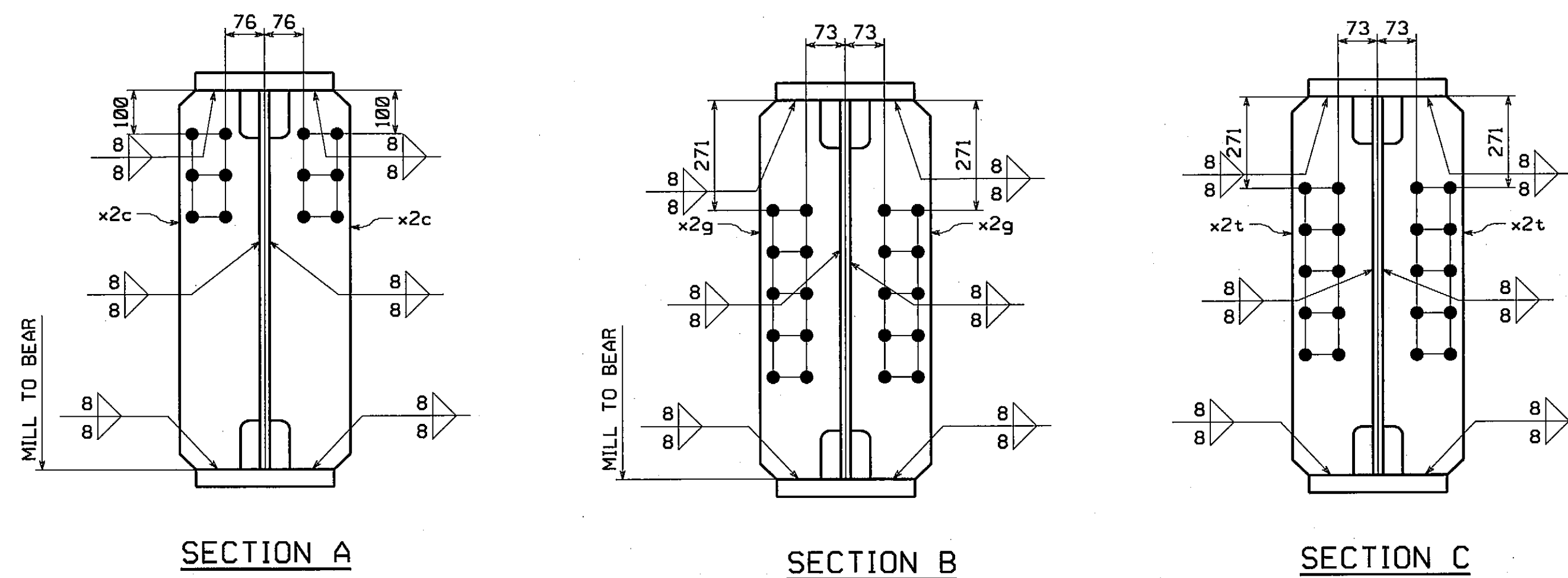
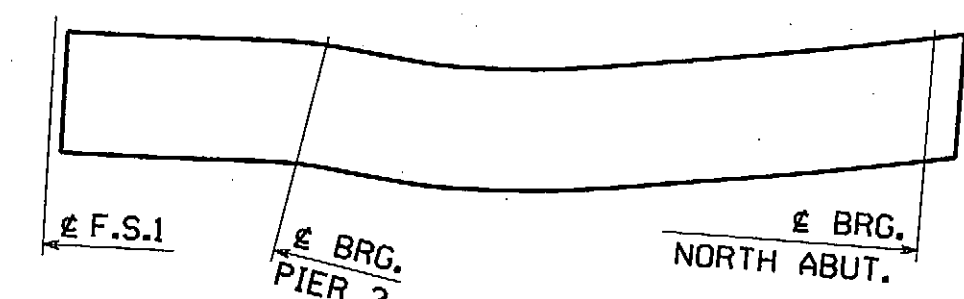
PLOTTED: 4/24/2008

60



GIRDER ~ MK. G3B
FOR GENERAL SHOP NOTES, SEE DWG. GNI.
FOR WEB CAMBER DIAGRAM, SEE DWG. WCI

BILL OF MATERIAL											
QTY	MARK	CONV	DESCRIPTION	LENGTH	SPEC	GRADE	TEST	REMARKS	ITEM	SHIP	WEIGHT
1	G3B		GIRDER								4 350
											9592 #
1	w1	PL	17 x 863	16 429	M270M	345VW	T		03002		
1	t1	PL	26 x 305	16 422	M270M	345VW	T		04002		
1	b1	PL	26 x 305	16 389	M270M	345VW	T		04002		
2	x1a	PL	14.3 x 755	480	M270M	345VW	T		08001		
1	x1b	PL	20.6 x 300	1 230	M270M	345VW	T		08002		
6	x1c	PL	25.4 x 120	1 230	M270M	345VW	T		08003		
2	x2c	PL	12.7 x 180	864	M270M	345VW			07001		
2	x2g	PL	12.7 x 180	864	M270M	345VW			07001		
2	x2t	PL	12.7 x 180	863	M270M	345VW			07001		
1	x2aa	PL	25.4 x 25	239	M270M	345VW			08003		
1	x2ab	PL	25.4 x 25	239	M270M	345VW			08003		
2	x2ac	PL	25.4 x 25	253	M270M	345VW			08003		

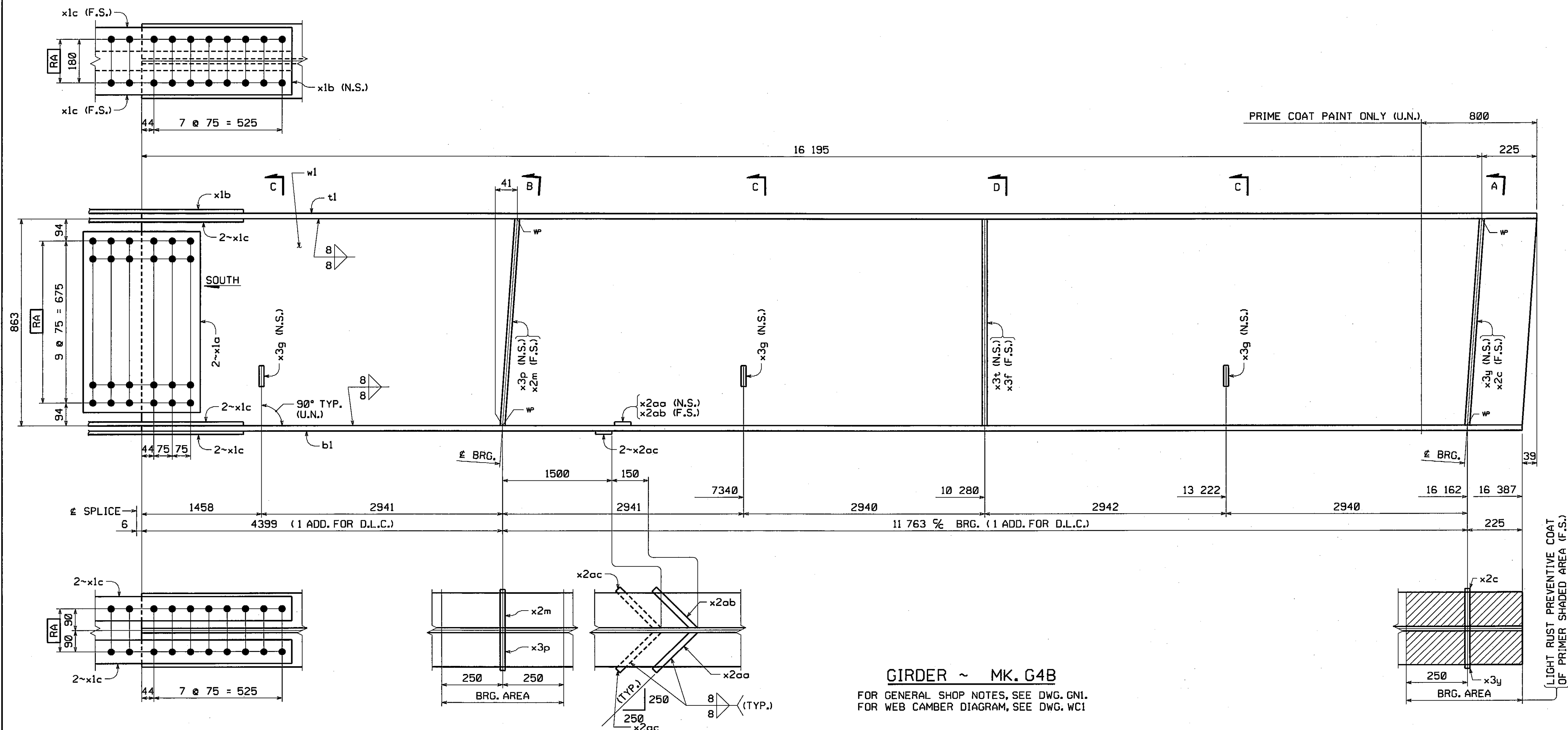


APPROVED FOR CONFORMANCE WITH
CONSTRUCTION CONTRACT REQUIREMENTS.
REVISE AND RESUBMIT
FAY, SPOFFORD & THORNDIKE
ENGINEERS
By: *ES* Date: *6/26/08*
Shop drawings have been reviewed to ascertain that they represent
performance and general compliance with contract documents.
Dimensions, quantities, weights, details of fabrication and
construction and coordination of trades and subcontractors are the
responsibility of the general contractor.

INSPECTION FOR MASS. DEPT. OF
PUBLIC WORKS TO BE DONE BY:
PITTSBURG TESTING LAB.

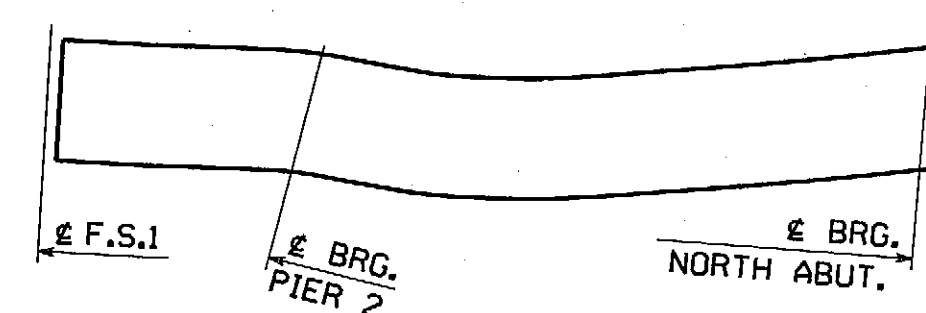
NO.	REVISION	BY	CHK'D	DATE						
1										
HOLES	196" (U.N.)									
BOLTS	NONE									
COATING	VERNON AVENUE OVER WARE RIVER									
SEE	VERNON AVENUE STA. 10+71.106 TO STA. 11+18.106									
GNI	BRIDGE NO. B-02-012 IN THE TOWN OF BARRE, WORCESTER COUNTY									
CODES	COMMONWEALTH OF MASSACHUSETTS									
30	MASSACHUSETTS HIGHWAY DEPARTMENT									
SCALE	STATE CONT. PROJECT FILE NO. 60356									
N.T.S.	FED. AID PROJ. NO. BR-001S(714)X									
GENERAL	E.T. & L. CORPORATION									
CONTRACTOR	HSSI PROJ. MGR KEN GLIDDEN									
SHPM	1	DRAWING	KREIDER (IH)	MADE	DRJ	CHK'D	BY	C5	DATE	4-22-08
STATE	MA	HSSI	S-1080005	STRUCT. ID	A	DRAWING	9	OF	15	

RECORD COPY

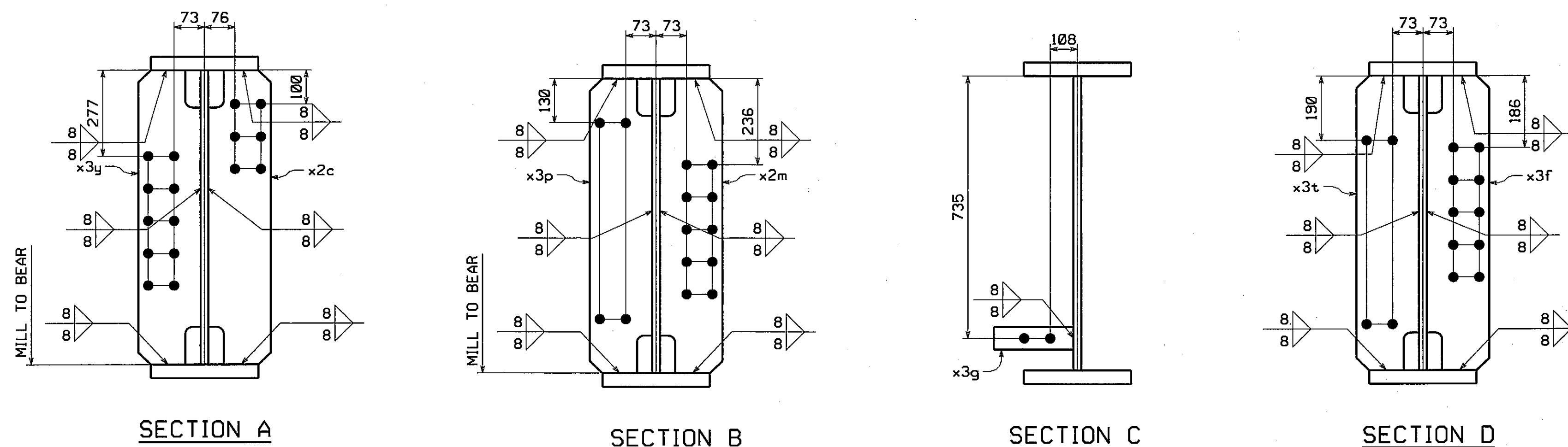


GIRDER ~ MK. G4B

FOR GENERAL SHOP NOTES, SEE DWG. GNI.
FOR WEB CAMBER DIAGRAM, SEE DWG. WC1



ORIENTATION DIAGRAM



☒ APPROVED FOR CONFORMANCE WITH
CONSTRUCTION CONTRACT REQUIREMENTS.

☐ REVISE AND RESUBMIT

FAY, SPOFFORD & THORNDIKE
ENGINEERS

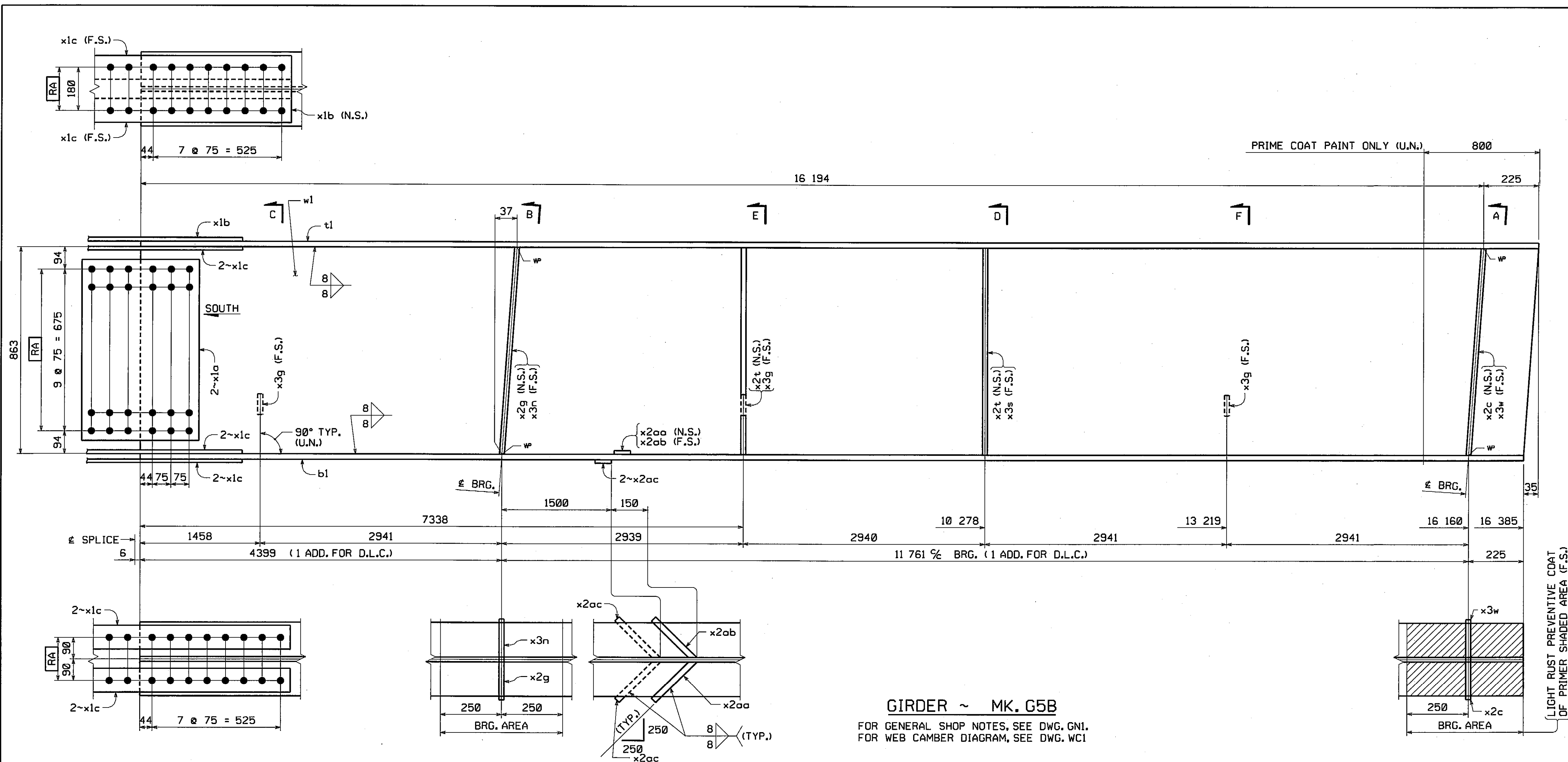
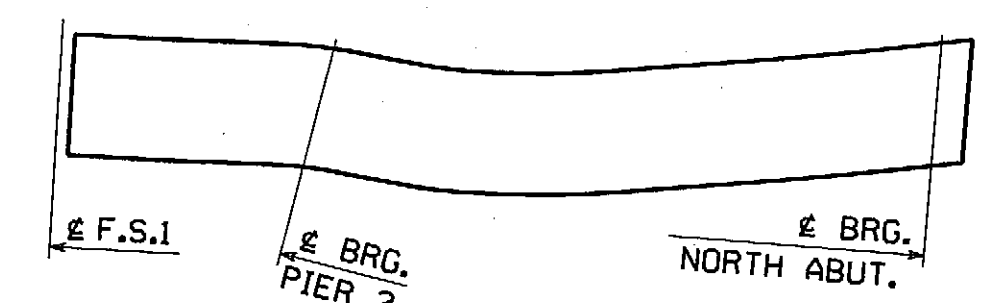
By: ES Date: 6/26/08

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Dimensions, quantities, weights, details of fabrication and
construction and coordination of trades and subcontractors are the
responsibility of the regional contractor.

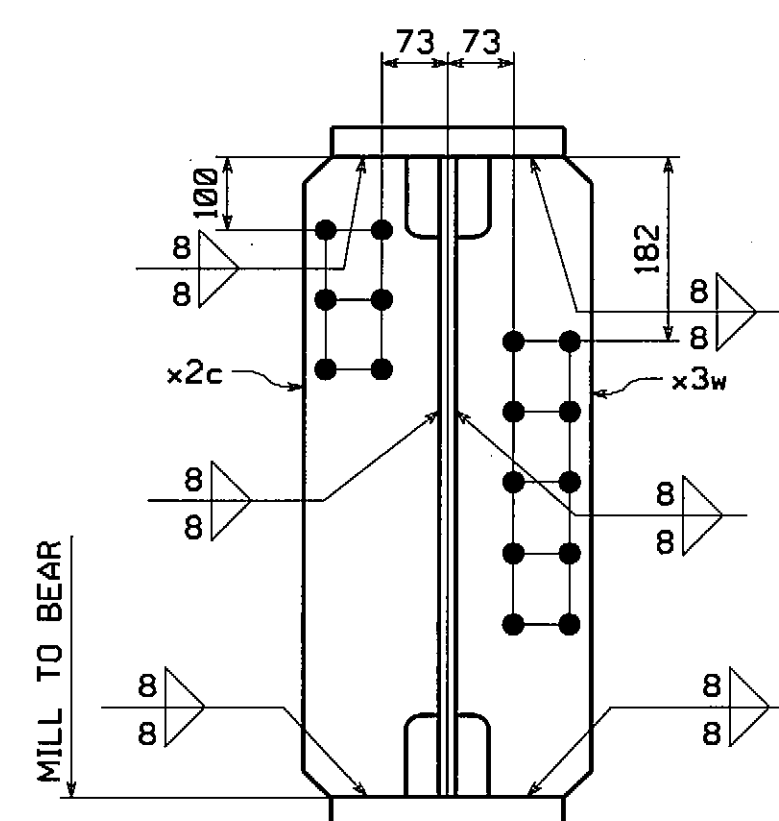
INSPECTION FOR MASS. DEPT. OF
PUBLIC WORKS TO BE DONE BY:
PITTSBURG TESTING LAB.

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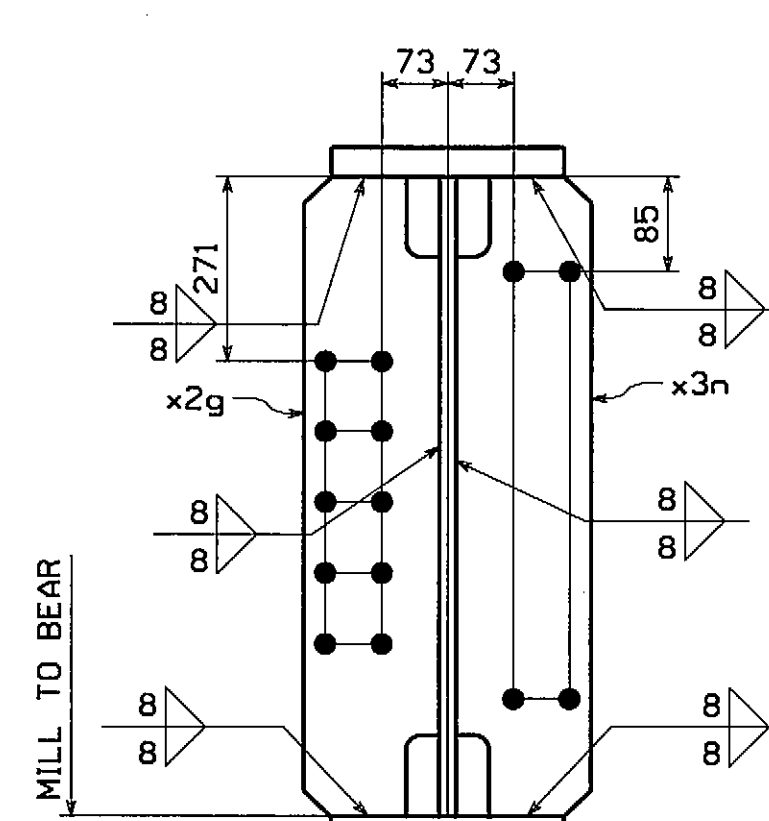
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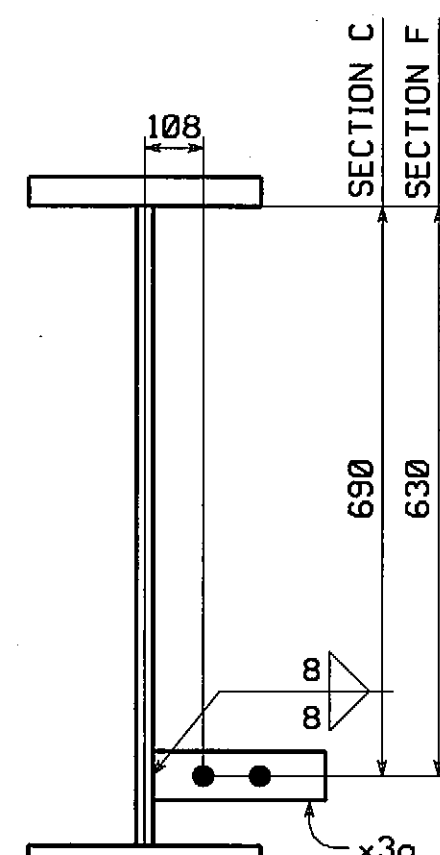
ORIENTATION DIAGRAM



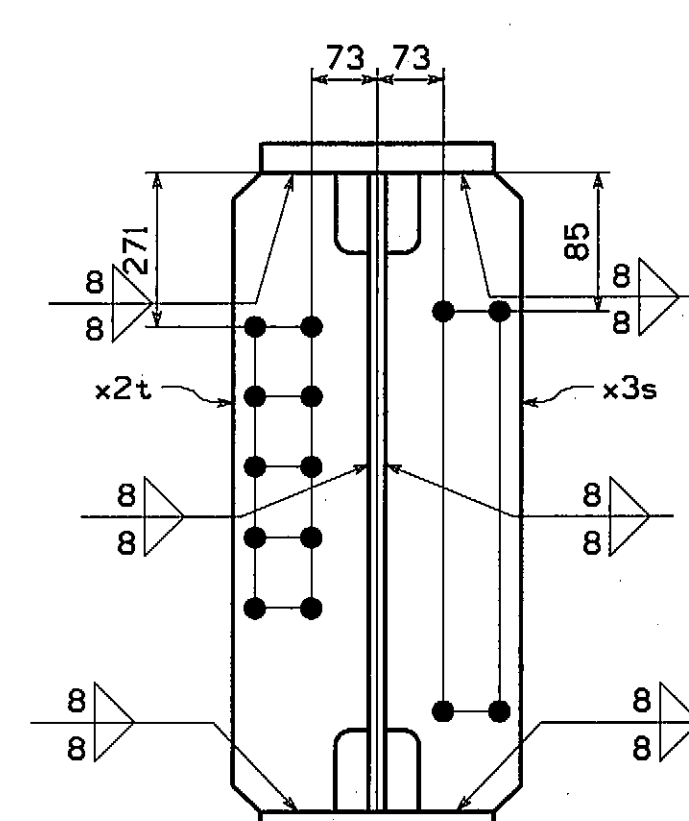
SECTION A



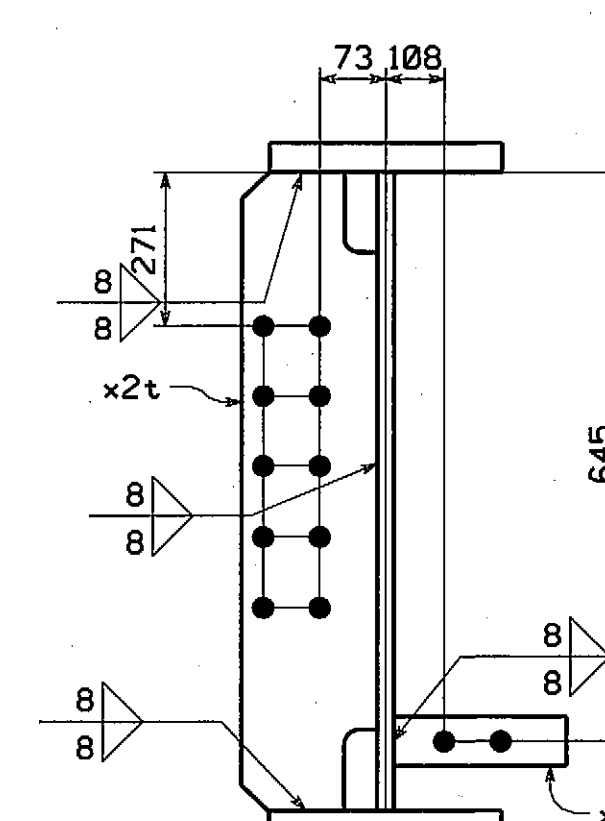
SECTION B



SECTION C & F






































SECTION D



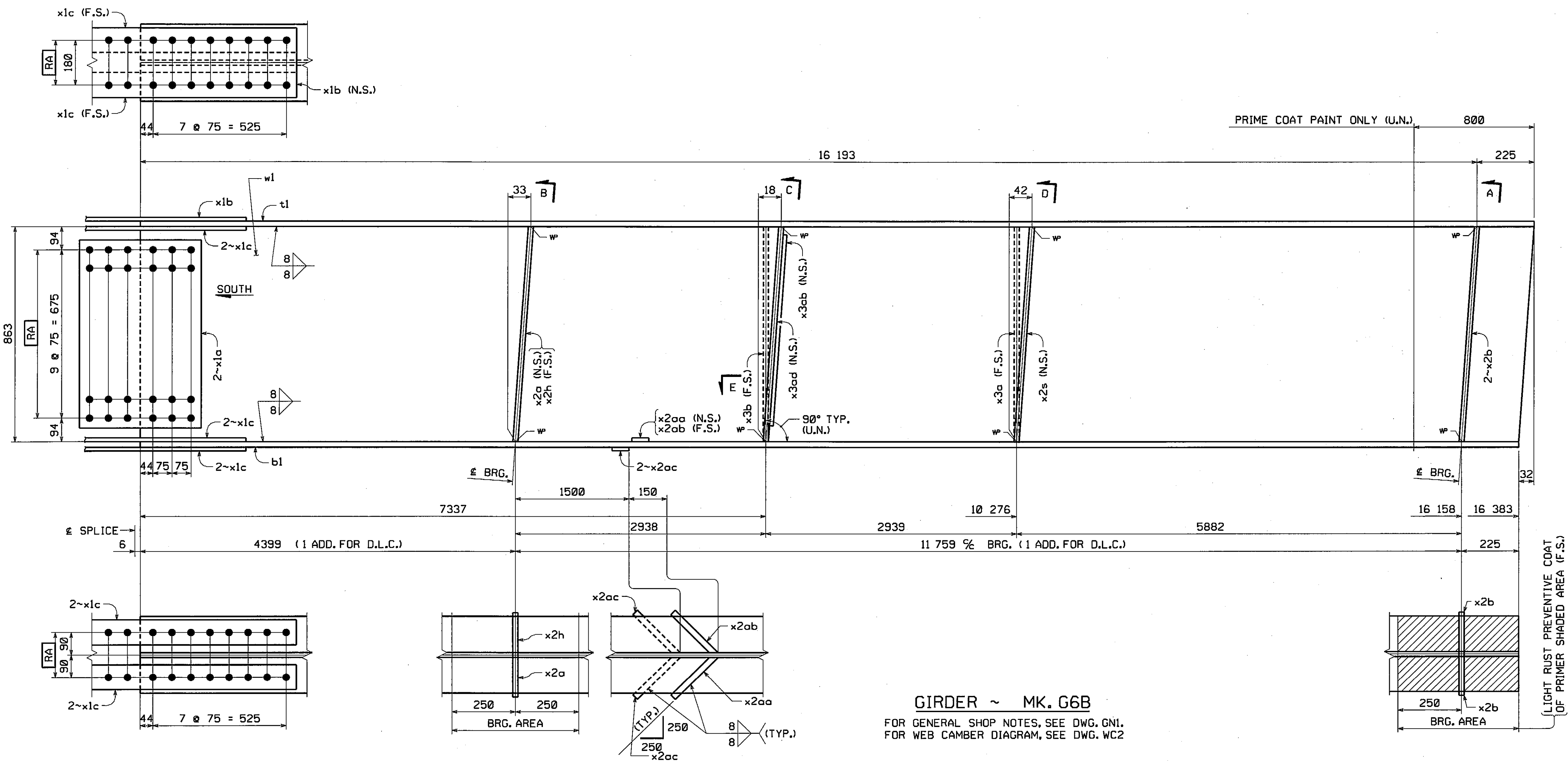
SECTION E

☒ APPROVED FOR CONFORMANCE WITH
 CONSTRUCTION CONTRACT REQUIREMENTS.
 REVISE AND RESUBMIT
 FAY, SPOFFORD & THORNDIKE
 ENGINEERS
 By ES Date 6/26/68
 Shop drawings have been reviewed to ascertain that they represent
 conformance and general compliance with contract documents
 dimensions, quantities, weights, details of fabrication and
 construction and coordination of trades and subcontractors are the
 responsibility of the general contractor.

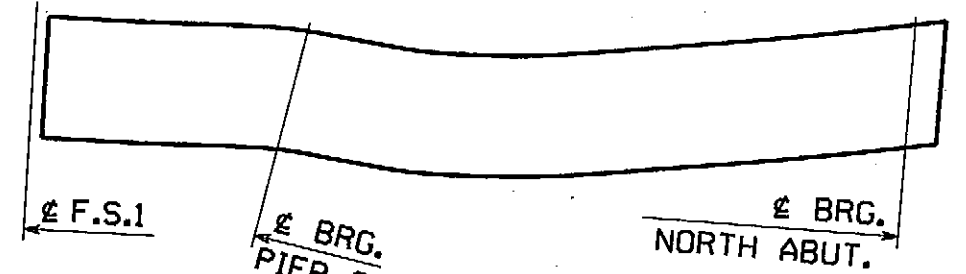
INSPECTION FOR MASS. DEPT. OF
PUBLIC WORKS TO BE DONE BY:
PITTSBURG TESTING LAB.

															
															
NO.	REVISION										BY	CHK'D	DATE		
HOLES 1/6" (U.N.)	 				Concorster Facility 195 Old Philadelphia Pike Lancaster, PA 17605-0008 Phone (717) 299-1221 Wilsonsport Facility 3501 N. 41st Street Williamsport, PA 17701 Phone (517) 828-9051 www.hstnet.com										
BOLTS	An ISO 9001:2000 Certified Company														
NONE	An Affiliate of High Industries Inc.														
GIRDER C5B															
VERNON AVENUE OVER WARE RIVER															
VERNON AVENUE STA. 10+71.106 TO STA. 11+18.106															
BRIDGE NO. B-02-012 IN THE TOWN OF BARRE, WORCESTER COUNTY															
COMMONWEALTH OF MASSACHUSETTS															
30 MASSACHUSETTS HIGHWAY DEPARTMENT															
SCALE N.T.S.		STATE CONT. OR REF. NO.				PROJECT FILE NO. 603566				FED. AID PROJ. NO.		BR-001S1714X			
		GENERAL CONTRACTOR				E.T. & L. CORPORATION				HSSI PROJ. MGR		KEN GLIDDEN			
SPHMT	1	DRAWING KREIDER (IH)				MADE BY		DRJ		CHK'D BY		CS		DATE	4-22-08
STATE	MA	HSSI PROJECT S-1080005				HSSI STRUCT. ID		A		DRAWING NUMBER		11		OF	15

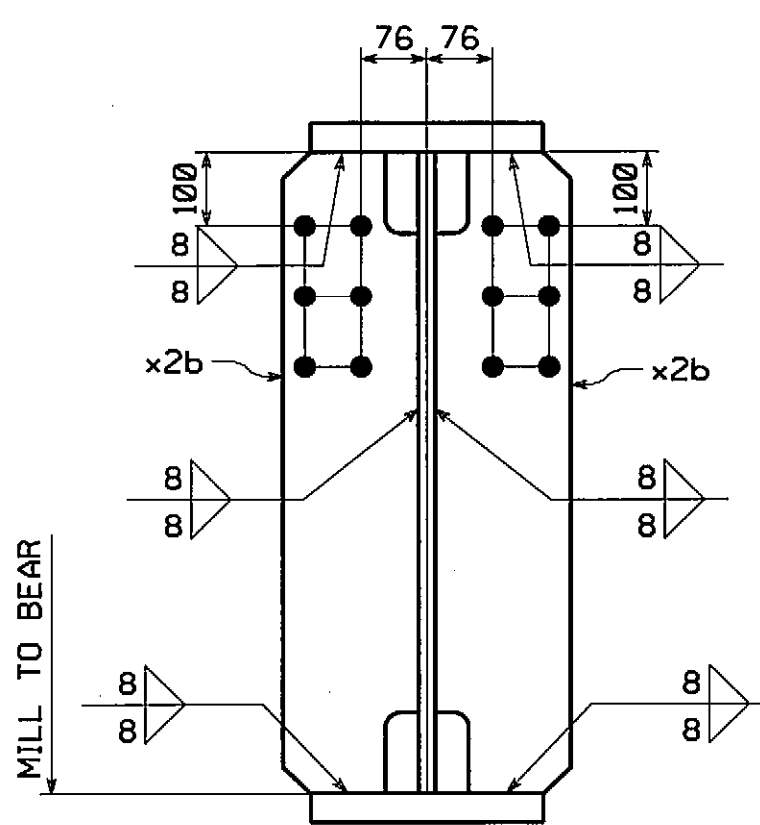
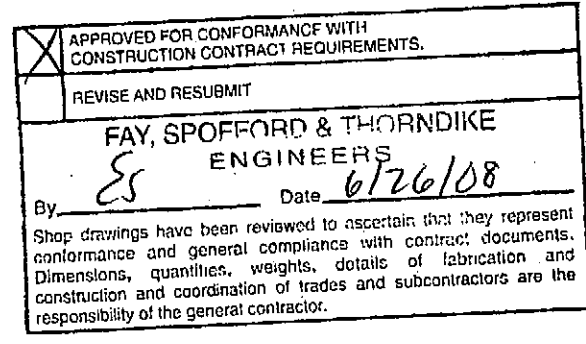
RECORD COPY



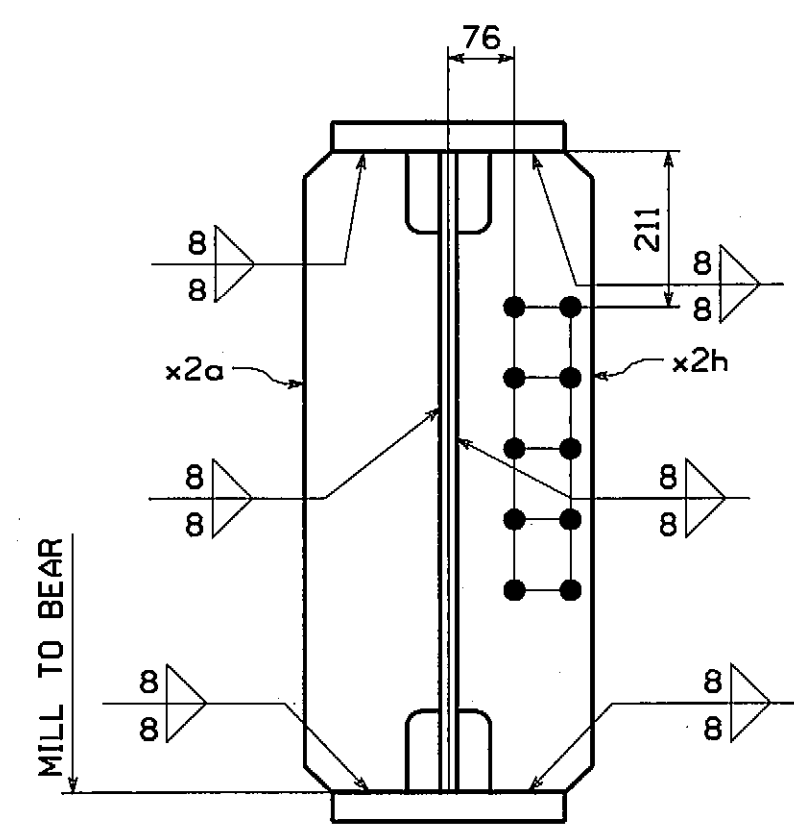
BILL OF MATERIAL											
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1	G8B		GIRDER								6 101
											13,453
1	w1	PL	22	x 863	16 418	M270M	345V	T		03001	
1	t1	PL	40	x 308	16 420	M270M	345VV	T		04001	
1	b1	PL	40	x 308	16 385	M270M	345VV	T		04001	
2	x1a	PL	14.3	x 755	480	M270M	345VV	T		06001	
1	x1b	PL	20.6	x 300	1 230	M270M	345VV	T		06002	
6	x1c	PL	25.4	x 120	1 230	M270M	345VV	T		06003	
1	x2a	PL	12.7	x 180	864	M270M	345VV			07001	
2	x2b	PL	12.7	x 180	865	M270M	345VV			07001	
1	x2h	PL	12.7	x 180	863	M270M	345VV			07001	
1	x2s	PL	12.7	x 180	864	M270M	345VV			07001	
1	x2aa	PL	25.4	x 25	239	M270M	345VV			08003	
1	x2ab	PL	25.4	x 25	239	M270M	345VV			08003	
2	x2ac	PL	25.4	x 25	253	M270M	345VV			08003	
1	x3a	PL	12.7	x 180	863	M270M	345VV			07001	
1	x3b	PL	12.7	x 180	863	M270M	345VV			07001	
1	x3ab	PL	12.7	x 765	367	M270M	345VV		BENT	07003	
1	x3ad	PL	12.7	x 180	863	M270M	345VV			07001	
20	140204	HS Bolt	7/8		0'-2 1/4	M164	TYPE 3			17001	
20	W14	Std Wash	7/8			M293	WEATH			17003	
20	N14	Nut	7/8			M291	DH3			17002	



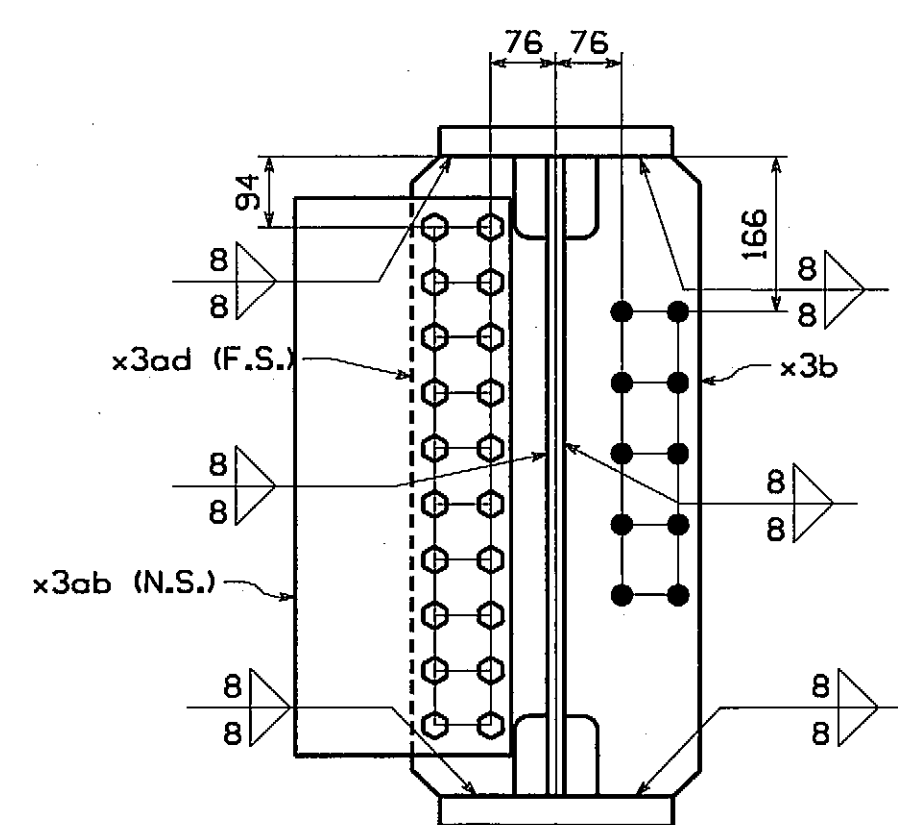
ORIENTATION DIAGRAM



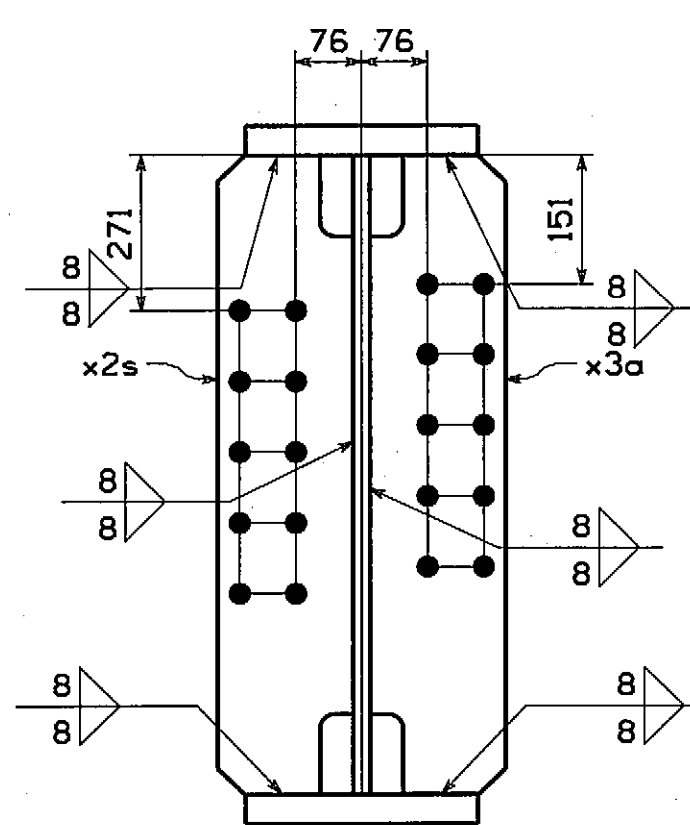
SECTION A



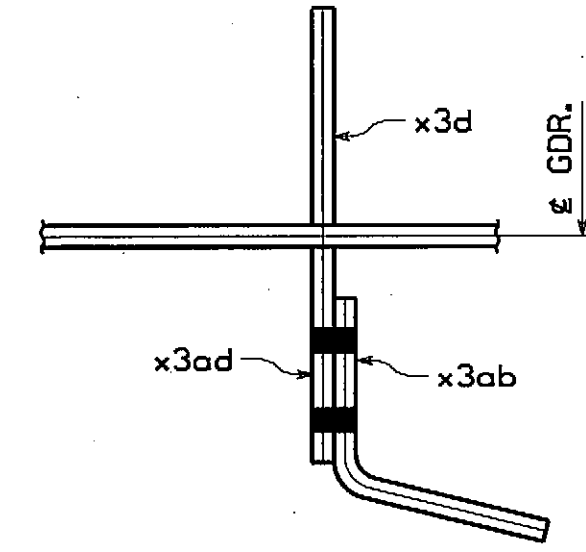
SECTION B



SECTION C






SECTION D

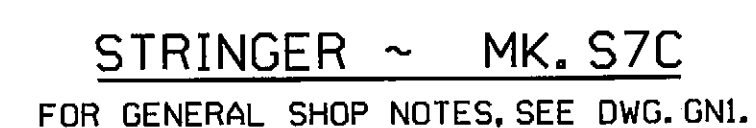


SECTION E

INSPECTION FOR MASS. DEPT. OF
PUBLIC WORKS TO BE DONE BY:
PITTSBURG TESTING LAB.

NO.		REVISION		BY		CHK'D		DATE	
HOLES 1/4" x 1/4" (U.N.) BOLTS NONE		  		Lancaster Facility 995 Old Philadelphia Pike Lancaster, PA 17609-0009 Phone (717) 299-5021 Williamsport Facility 3501 W. 44th Street Williamsport, PA 17701 Phone (610) 350-5091 www.HIGHsteel.com					
An ISO 9001:2000 Certified Company		An Affiliate of High Industries Inc.							
COATING		GIRDER							
SEE GNI		GGB							
CODE(S)		VERNON AVENUE OVER WARE RIVER							
30		VERNON AVENUE STA. 10+71.106 TO STA. 11+18.106							
SCALE		BRIDGE NO. B-02-012 IN THE TOWN OF BARRE, WORCESTER COUNTY							
N.T.S.		COMMONWEALTH OF MASSACHUSETTS							
		MASSACHUSETTS HIGHWAY DEPARTMENT							
STATE CONT. OR REF. NO.		PROJECT FILE NO. 603566				FED. AID PROJ. NO.		BR-001S/7141X	
GENERAL CONTRACTOR		E.T. & L. CORPORATION				HSSI PROJ. MGR		KEN GLIDDEN	
SHPMT		1		DRAWING MAKE BY		DRJ		CHK'D BY CS	
STATE		MA		PROJECT NO.		HSSI STRUCT. ID		A	
		S-1080005		DRAWING NUMBER		12		OF 15	

RECORD COPY



<input checked="checked" type="checkbox"/>	APPROVED FOR CONFORMANCE WITH CONSTRUCTION CONTRACT REQUIREMENTS.
<input type="checkbox"/>	REVISE AND RESUBMIT

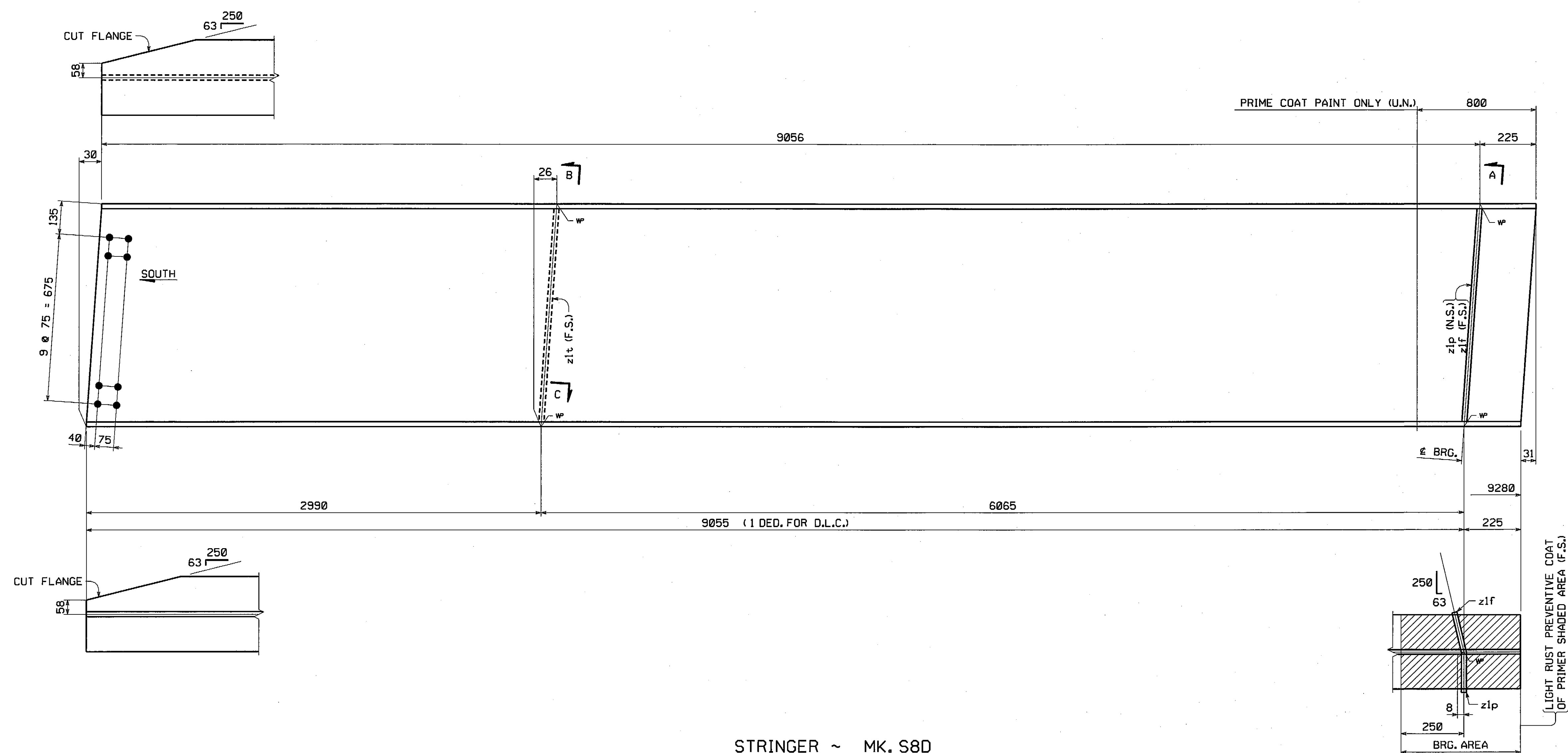
**FAY, SPOFFORD & THORNDIKE
ENGINEERS**

By ES Date 6/26/01

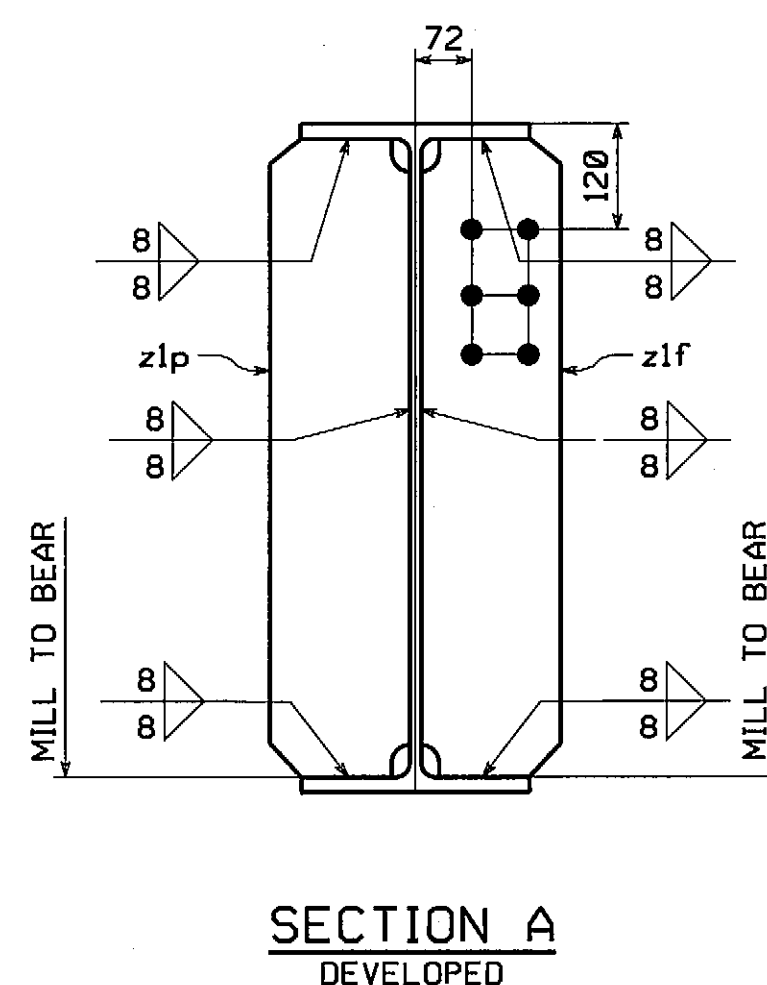
Shop drawings have been reviewed to ascertain that they represent conformances and general compliance with contract documents. Dimensions, quantities, weights, details of fabrication, construction and coordination of trades and subcontractors are responsible for the design conformity.

INSPECTION FOR MASS. DEPT. OF
PUBLIC WORKS TO BE DONE BY:
PITTSBURG TESTING LAB.

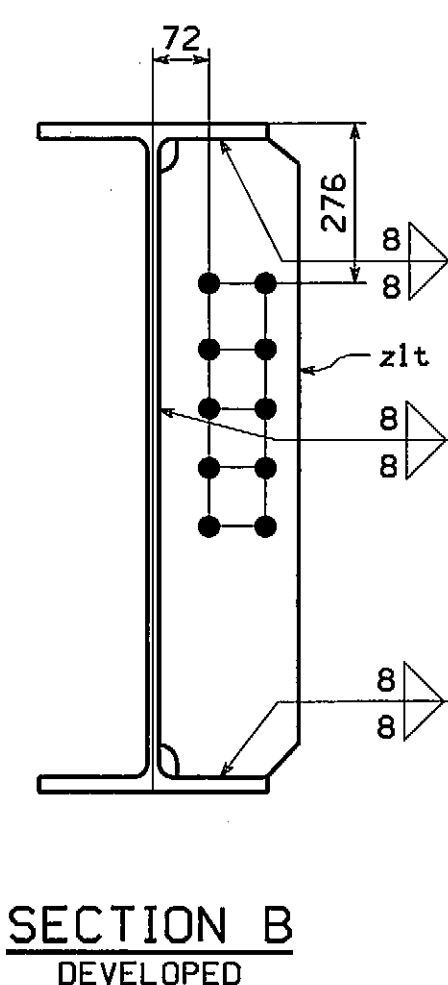
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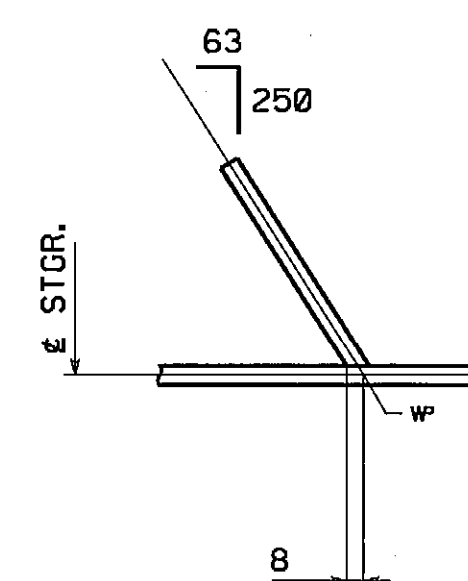
STRINGER ~ MK. S8D
FOR GENERAL SHOP NOTES, SEE DWG. GNI.



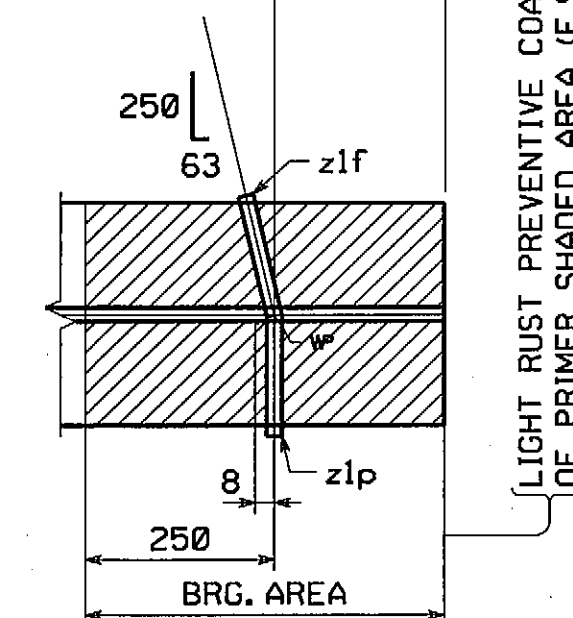
SECTION A
DEVELOPED



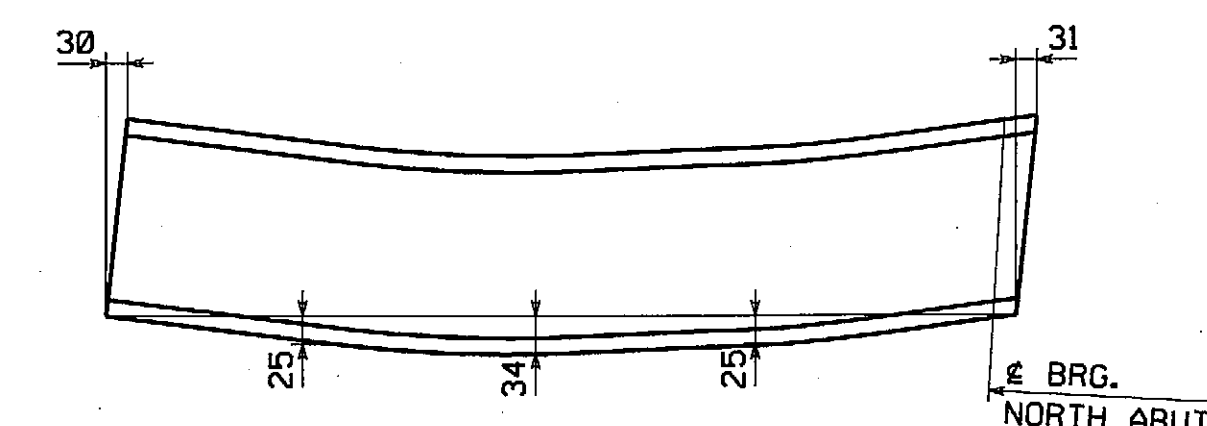
SECTION E
DEVELOPED



SECTION C









LIGHT RUST PREVENTIVE COAT
OF PRIMER SHAFED AREA (F.S.)



ORIENTATION & CAMBER DIAGRAM

[illegible]

									
									
									
NO.	REVISION					BY	CHK'D	DATE	
HOLE 1/8" x 1/8"	 				LANCOSTER FACILITY 815 Old Philadelphia Pike Lancaster, PA 17605-0008 Phone (717) 293-5211 WILLOWPORT FACILITY 300 W. 4th Street Willowport, PA 17101 Phone (670) 330-0651 www.NgIntest.com				
BOLTS NONE	An ISO 9001:2000 Certified Company		An Affiliate of High Industries Inc.		S8D				
STRINGER									
VERNON AVENUE OVER WARE RIVER									
VERNON AVENUE STA. 10+71.106 TO STA. 11+18.106									
BRIDGE NO. B-02-012 IN THE TOWN OF BARRE, WORCESTER COUNTY									
COMMONWEALTH OF MASSACHUSETTS									
MASSACHUSETTS HIGHWAY DEPARTMENT									
CODE(S) 50	STATE CONT. OR REF. NO.		PROJECT FILE NO. 603566		FED. AID PROJ. NO.		BR-001S7141X		
SCALE N.T.S.	GENERAL CONTRACTOR		E.T. & L. CORPORATION		HSSI PROJ. MGR		KEN GLIDDEN		
SHWPT 1	DRAWING MANAGER		KREIDER (IH)		MADE BY		CHK'D BY		CS 4-21-08
STATE MA	HSSI PROJECT NUMBER		S-1080005		HSSI STRUCT. ID		A DRAWING NUMBER		14 OF 15

INSPECTION FOR MASS. DEPT. OF
PUBLIC WORKS TO BE DONE BY:
PITTSBURG TESTING LAB.

RECORD COPY

METRIC

Scale = 0.012500 of full size.

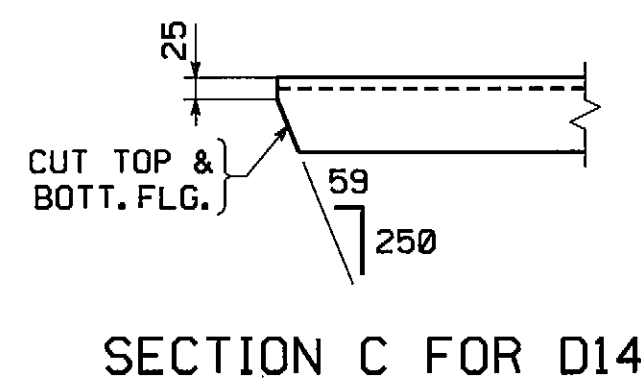
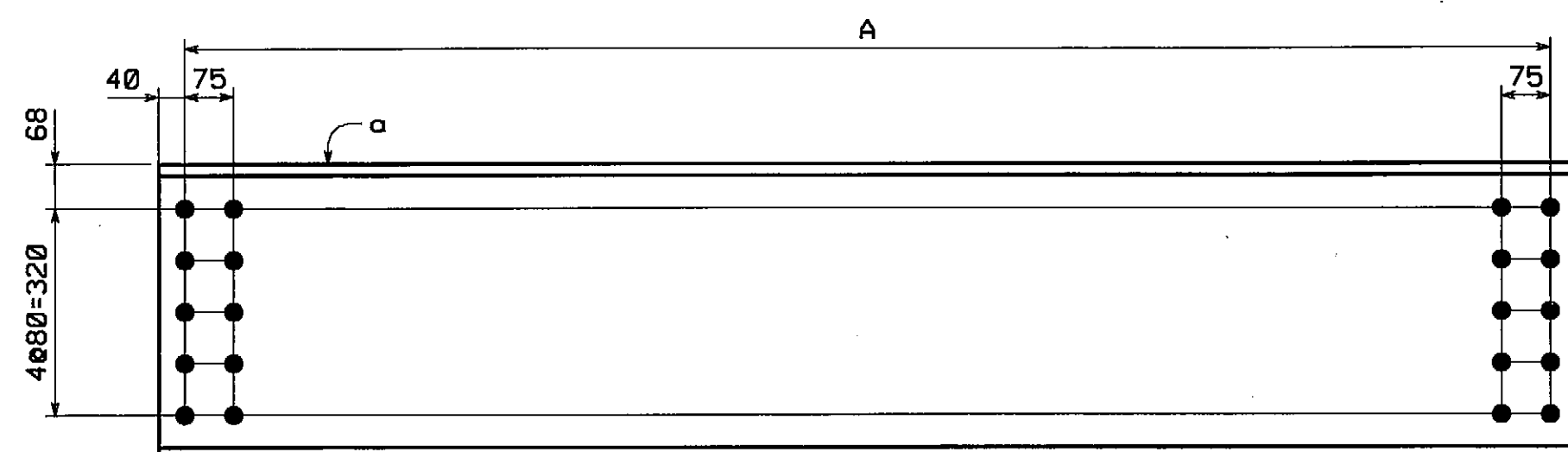
1
2
3

SHIPMENT 01 PM&ENG: 5/20/2011 PFG: 5/20/2012 SHIP&RECT: 5/20/2013

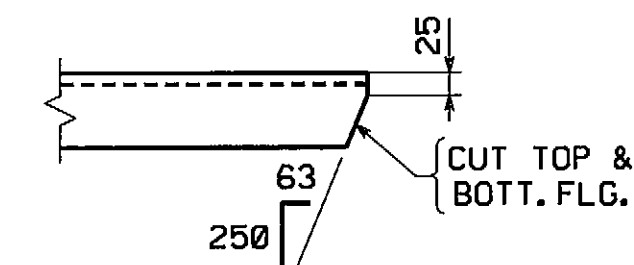
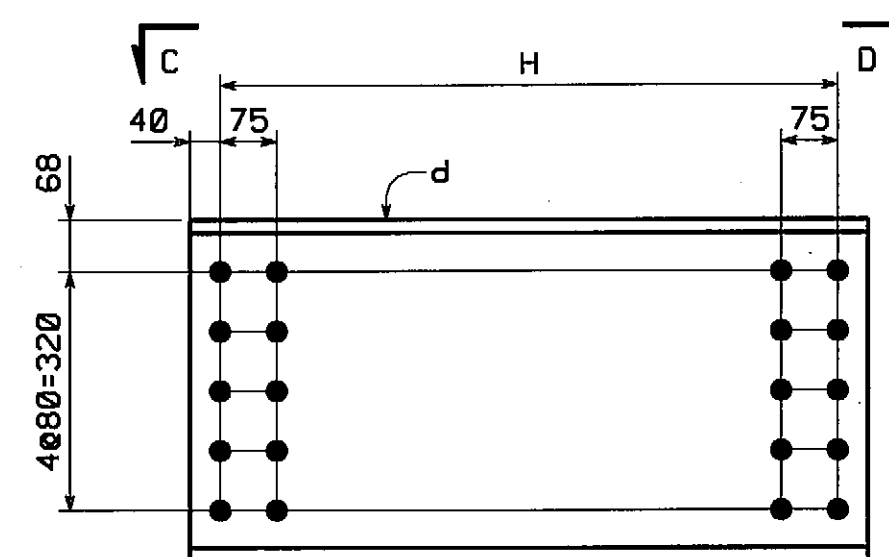
BY: MCR/aud

PLOTTED: 7/7/2008

50



SECTION C FOR D14



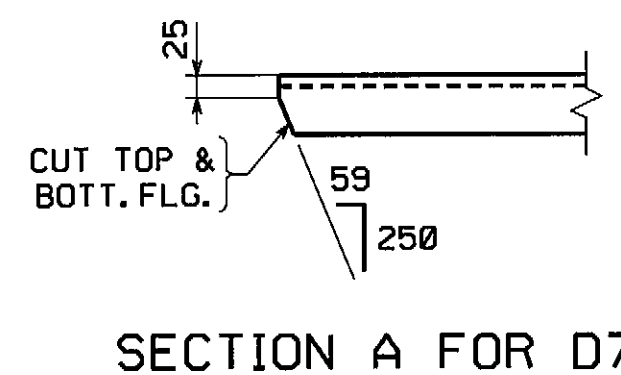
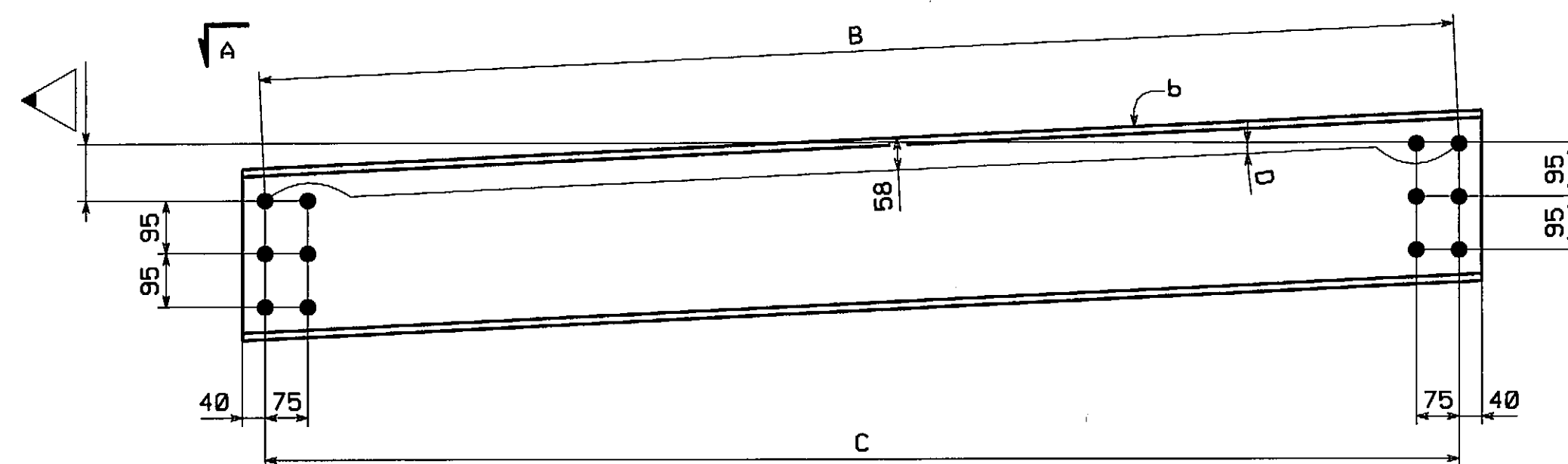
SECTION D FOR D13

DIAPHRAGMS

MARK	A
D1	2104
D2	2101

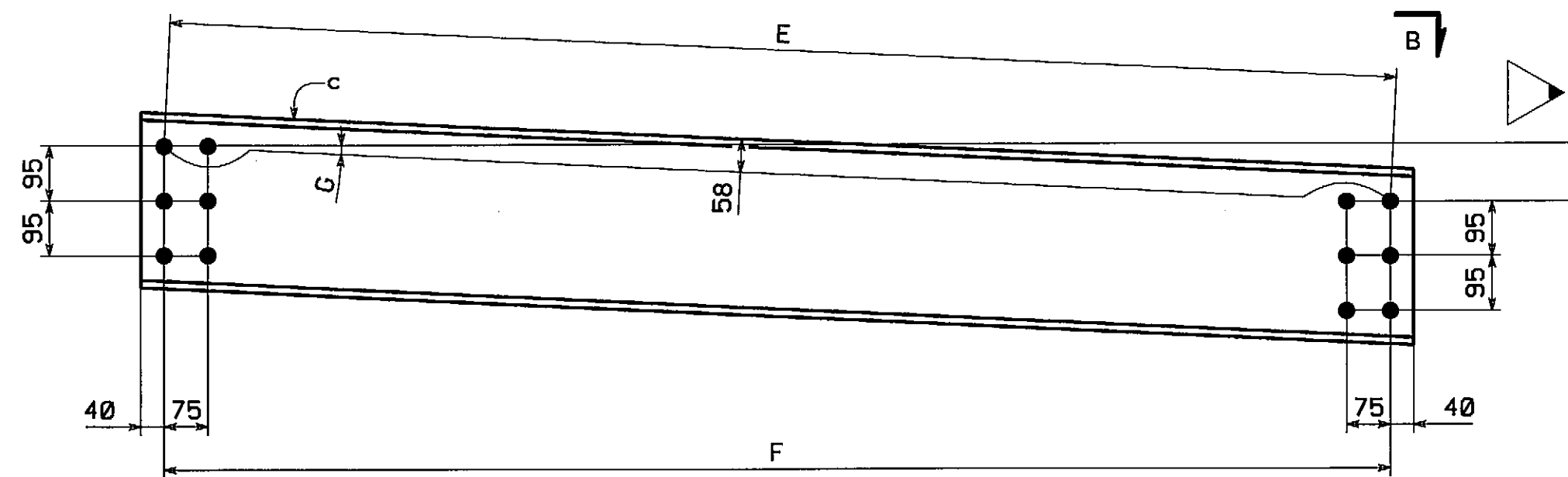
DIAPHRAGMS

MARK	H
D13	822
D14	768



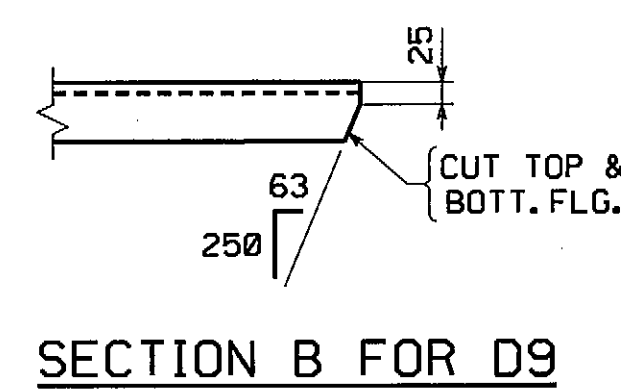
DIAPHRAGMS

MARK	A	B	C	D
D3	60	2102	2101	1.64
D4	40	2101	2101	1.09
D5	35	2104	2104	.95
D6	25	2104	2104	.68
D7	10	2150	2150	.27

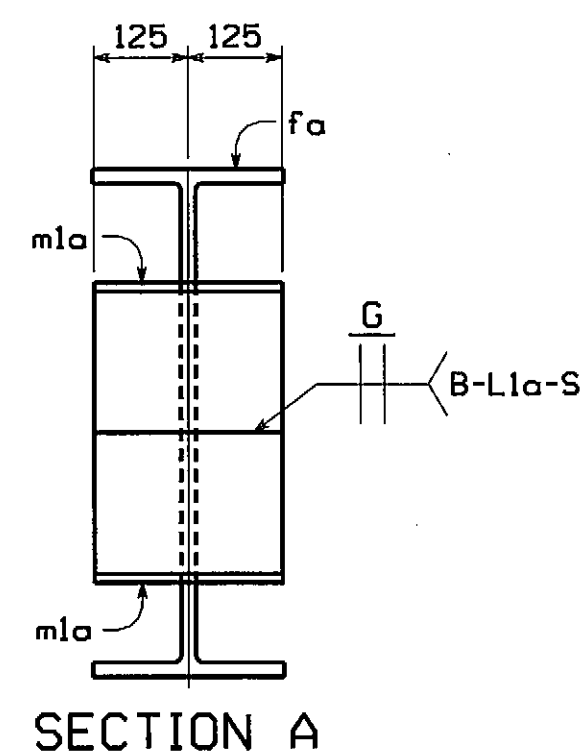
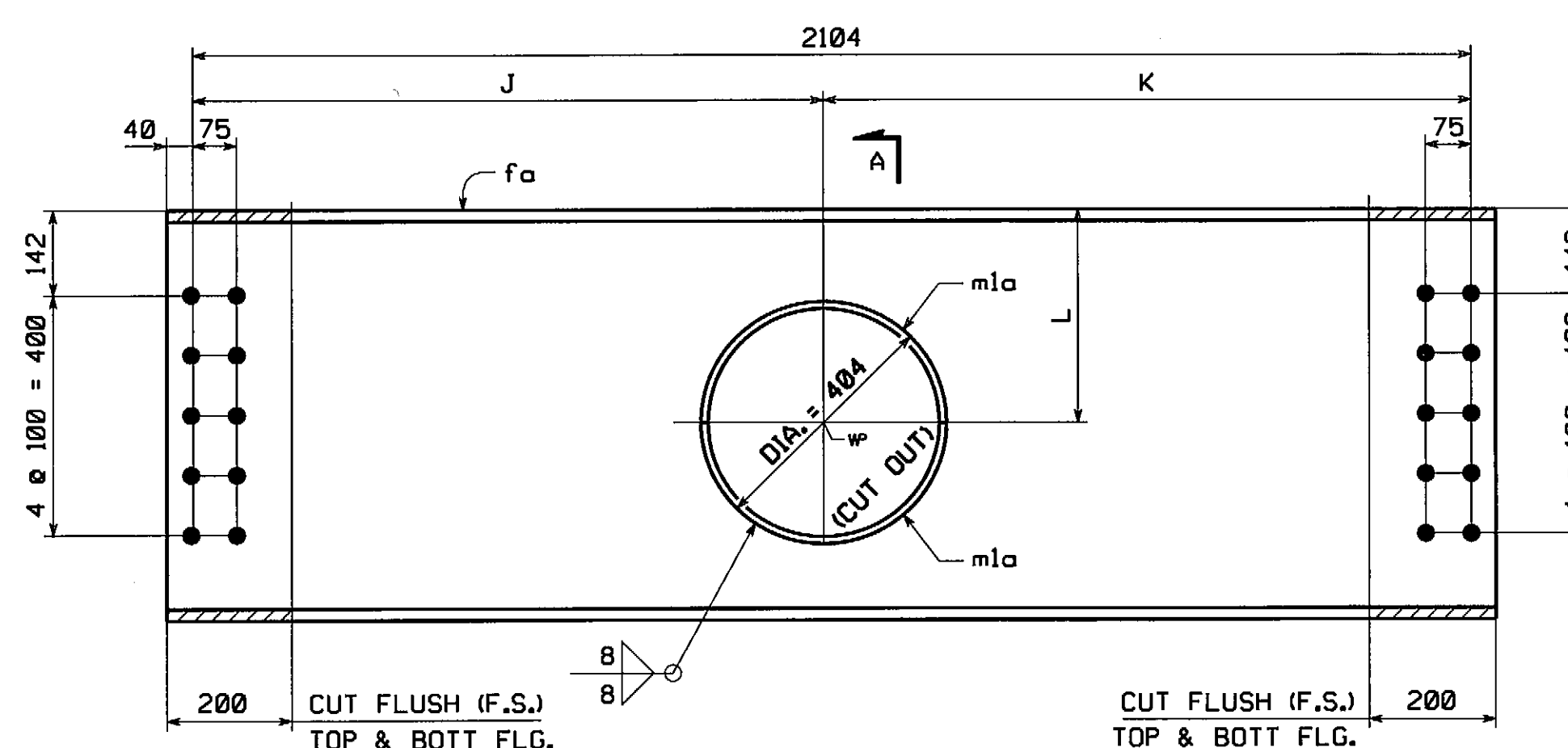


DIAPHRAGMS

MARK	E	F	G
D8	110	2104	2101
D9	85	2314	2312
D10	80	2106	2104
D11	60	2102	2101
D12	45	2104	2104

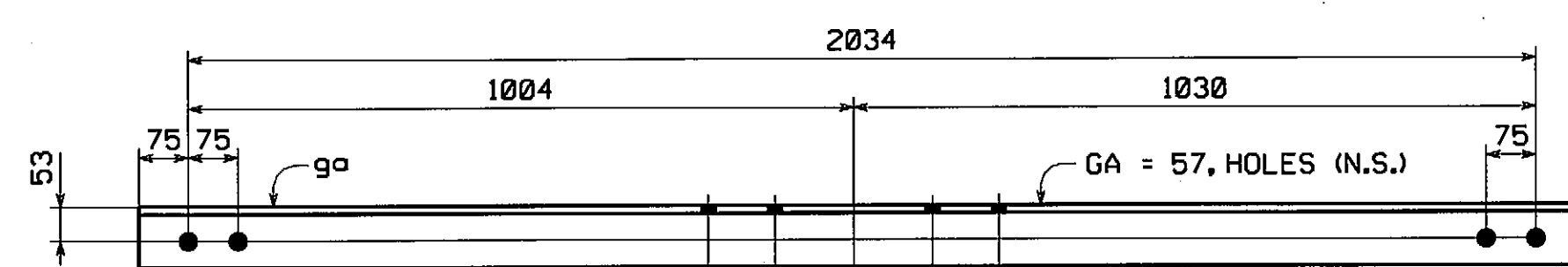


SECTION B FOR D9

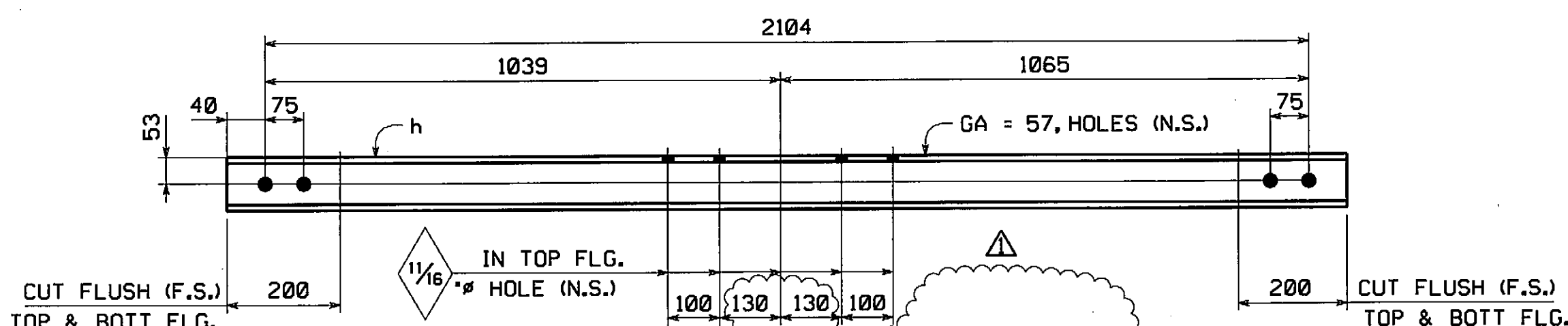


DIAPHRAGMS

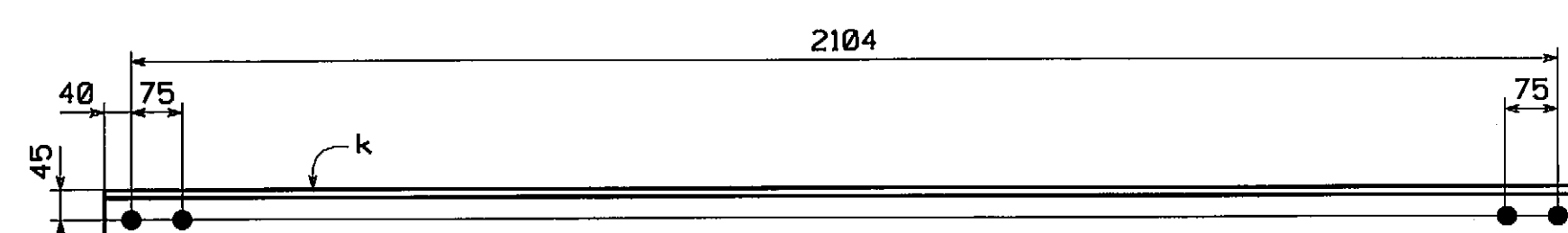
MARK	J	K	L
D15	1065	1039	251
D16	1039	1065	297



DIAPHRAGM ~ MK. D17



DIAPHRAGM ~ MK. D18



DIAPHRAGM ~ MK. D19

APPROVED FOR CONFORMANCE WITH CONSTRUCTION CONTRACT REQUIREMENTS.

REVISION AND RESUBMIT.

FAY, SPOFFORD & THORNDIKE ENGINEERS

By: *ES* Date: *7/24/08*

Shop drawings have been reviewed to ascertain that they represent conformance and general compliance with contract documents, conditions, quantities, weights, details of fabrication and construction and coordination of trades and subcontractors are the responsibility of the general contractor.

NOTES:
FOR NOTES, SEE DRAWING GNI.

INSPECTION FOR MASS. DEPT. OF PUBLIC WORKS TO BE DONE BY: PITTSBURG TESTING LAB.

BILL OF MATERIAL

QTY	MARK	COMM	DESCRIPTION	LENGTH	SPEC	GRADE	TEST	REMARKS	ITEM	SHIP WEIGHT
14	D1		DIAPHRAGMS							139
1	a	MC	460 x 63.5	2 184	M270M	345W		(MC 18 x 42.7)	10003	
16	D2		DIAPHRAGMS							138
1	a	MC	460 x 63.5	2 181	M270M	345W		(MC 18 x 42.7)	10003	
1	D3		DIAPHRAGM							99
1	b	C	310 x 45	2 191	M270M	345W		(C 12 x 30)	10004	
1	D4		DIAPHRAGM							98
1	b	C	310 x 45	2 187	M270M	345W		(C 12 x 30)	10004	
1	D5		DIAPHRAGM							99
1	b	C	310 x 45	2 189	M270M	345W		(C 12 x 30)	10004	
1	D6		DIAPHRAGM							98
1	b	C	310 x 45	2 188	M270M	345W		(C 12 x 30)	10004	
1	D7		DIAPHRAGM							100
1	b	C	310 x 45	2 231	M270M	345W		(C 12 x 30)	10004	
1	D8		DIAPHRAGM							99
1	c	C	310 x 45	2 200	M270M	345W		(C 12 x 30)	10004	
1	D9		DIAPHRAGM							108
1	c	C	310 x 45	2 405	M270M	345W		(C 12 x 30)	10004	
1	D10		DIAPHRAGM							99
1	c	C	310 x 45	2 197	M270M	345W		(C 12 x 30)	10004	
1	D11		DIAPHRAGM							99
1	c	C	310 x 45	2 191	M270M	345W		(C 12 x 30)	10004	
1	D12		DIAPHRAGM							99
1	c	C	310 x 45	2 191	M270M	345W		(C 12 x 30)	10004	
1	D13		DIAPHRAGM							57
1	d	MC	460 x 63.5	902	M270M	345W		(MC 18 x 42.7)	10003	
1	D14		DIAPHRAGM							54
1	d	MC	460 x 63.5	848	M270M	345W		(MC 18 x 42.7)	10003	
1	D15		DIAPHRAGM							337
1	fa	W	660 x 140	2 184	M270M	345W		(W/27 x 94)	10001	
2	ma	PL	12.7 x 250	635	M270M	345W		(BENT)	10009	
1	D16		DIAPHRAGM							337
1	fa	W	660 x 140	2 184	M270M	345W		(W/27 x 94)	10001	
2	ma	PL	12.7 x 250	635	M270M	345W		(BENT)	10009	
8	D17		DIAPHRAGM							42
1	ga	W	100 x 19.3	2 184	M270M	345W		(W/4 x 13)	10002	
7	D18		DIAPHRAGMS							42
1	h	W	100 x 19.3	2 184	M270M	345W		(W/4 x 13)	10002	
7	D19		DIAPHRAGMS							23
1	k	L	76 x 76 x 9.5	2 184	M270M	345W		(L3x3x3/8)	10005	

REMOVED CONTRACTOR VERIFY AND REVISED DIMENSIONS AS PER CONTRACTOR INFO

NO. 15

REVISION

BY CHK'D DATE

HOLES 15/16" (U.N.)

BOLTS NONE

COATING NONE

CODE(S) 56

SCALE N.T.S.

STATE CONT. OR REF. NO.

GENERAL CONTRACTOR

SHRMT 1

STATE MA

PROJECT FILE NO. 60356

E.T. & L. CORPORATION

KREIDER (IH)

MADE BY SSL

CHK'D BY C5

DATE 4-11-08

FED. AID PROJ. NO. BR-001S(714)X

FED. AID PROJ. NO. BR-001S(714)X

HSI PROJECT NUMBER S-1080005

HSI STRUCT. ID A

DRAWING NUMBER 15 OF 15

VERNON AVENUE OVER WARE RIVER

VERNON AVENUE STA. 10+71.06 TO STA. 11+18.06

BRIDGE NO. B-02-012 IN THE TOWN OF BARRE, WORCESTER COUNTY

COMMONWEALTH OF MASSACHUSETTS

MASSACHUSETTS HIGHWAY DEPARTMENT

High Structures Inc.

3501 W. 4th Street

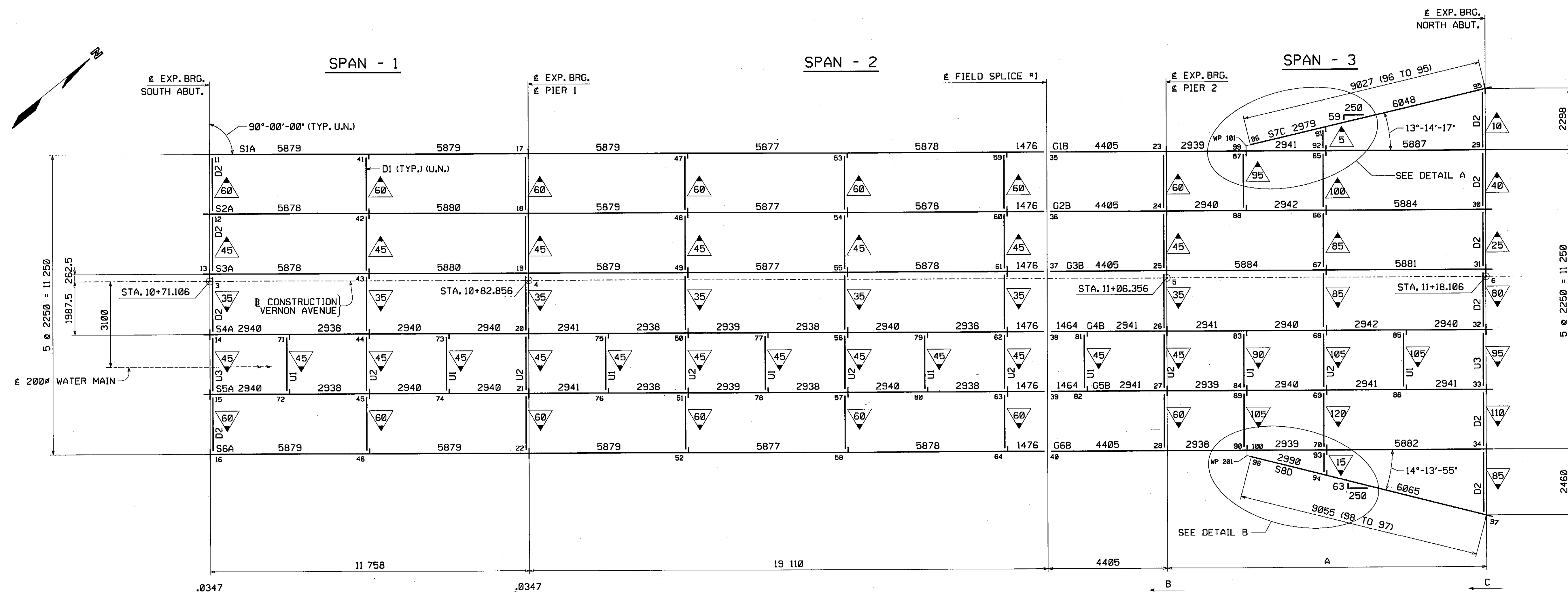
Wilmington, MA 01891

Phone (508) 326-9031

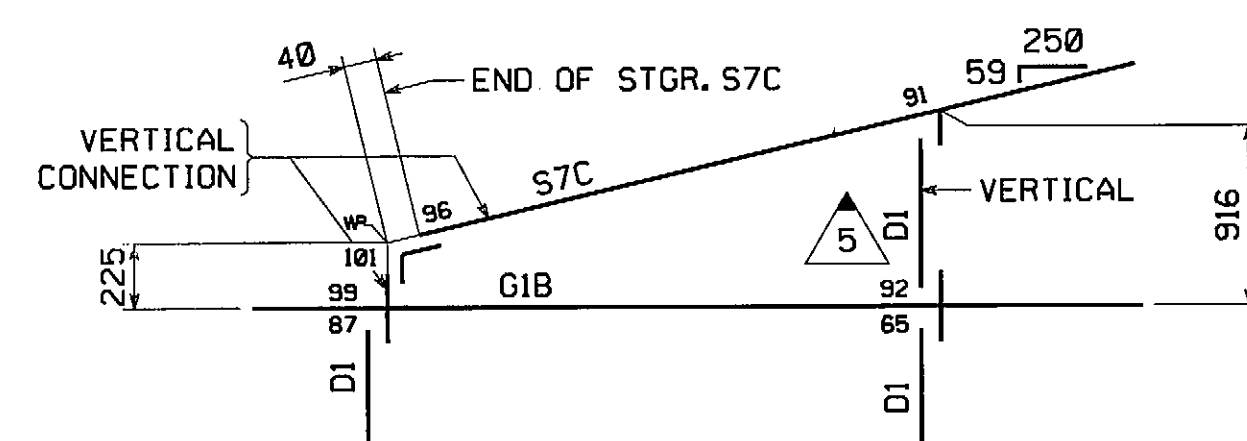
www.HighStructures.com

An ISO 9001:2000 Certified Company

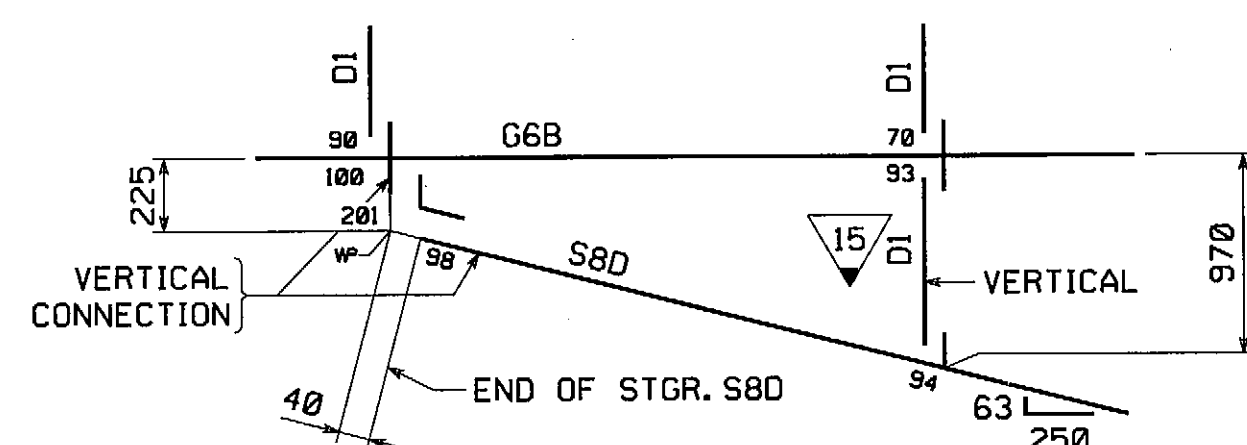
Affiliate of High Industries Inc.



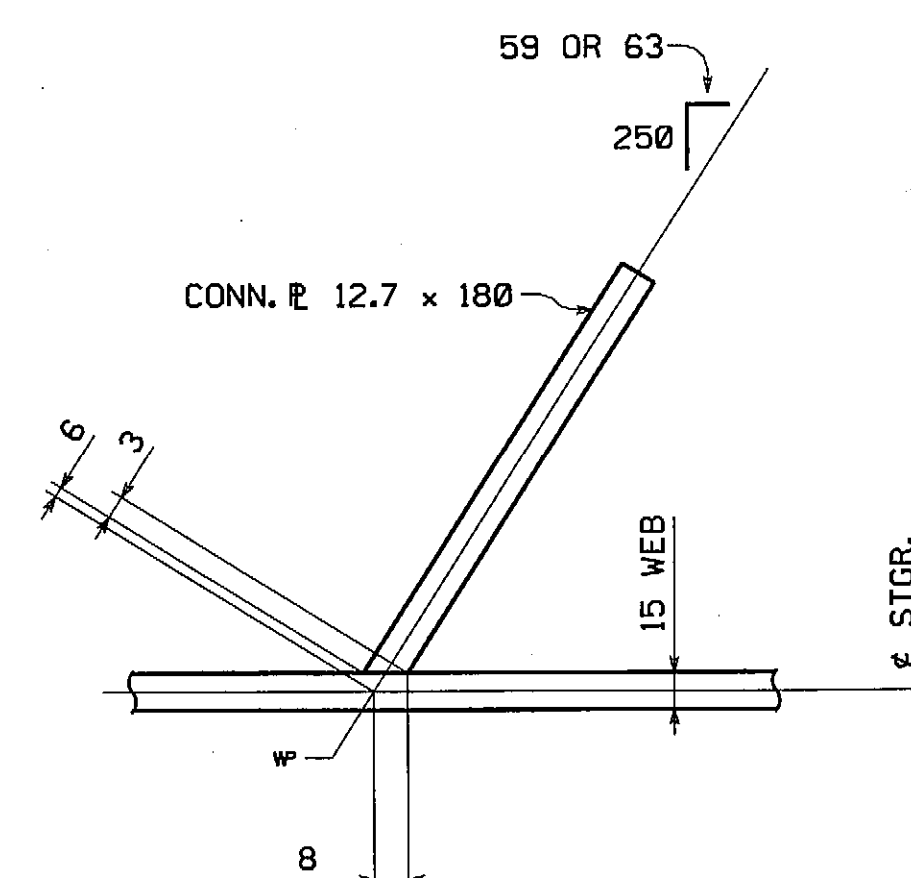
CALCULATION PLAN



DETAIL A
(WING STRINGER TO GIRDER LINE CONNECTION)



DETAIL B
(WING STRINGER TO GIRDER LINE CONNECTION)



SKEWED STIFF.LAYOUT
(ORIENTATION VARIES - SEE PLAN)




LINE	A	B	C
S1/G1	11 767	.0305	.072
S2/G2	11 766	.0384	.056
S3/G3	11 765	.0464	.039
S4/G4	11 763	.0397	.044
S5/G5	11 761	.0308	.051
S6/G6	11 759	.0217	.058
S7	--	--	.080
S8	--	--	.049

E.T.&L. Corp.

APR 30 2008

RECEIVED

THE PURPOSE OF THIS DRAWING IS TO COORDINATE GEOMETRIC CONTROL INFORMATION. THIS DRAWING IS SUBMITTED FOR INFORMATION ONLY AND IS NOT INTENDED FOR SHOP FABRICATION. THIS DRAWING IS FOR REFERENCE ONLY. APPROVAL IS NOT REQUIRED.

NO.		REVISION				BY		CHK'D	DATE	
HOLES		 				Lancaster Facility 195 Old Philadelphia Pl. Lancaster, PA 17603-0 Phone (717) 293-520 Williamsport Facility 5016 4th Street Williamsport, PA 17701 Phone (509) 326-9001 www.higsteel.com				
BOLTS		An ISO 9004:2000 Certified Company		An Affiliate of High Industries Inc.						
COATING		WORKSHEET ~ CALCULATION PLAN VERNON AVENUE OVER WARE RIVER VERNON AVENUE STA. 10+71.106 TO STA. 11+18.105 BRIDGE NO. B-02-012 IN THE TOWN OF BARRE, WORCESTER COUNTY COMMONWEALTH OF MASSACHUSETTS MASSACHUSETTS HIGHWAY DEPARTMENT								
CODE(S)		STATE CONT. OR REF. NO.		PROJECT FILE NO. 60356		FED. AID PROJ. NO.		BR-0015(714)X		
SCALE N.T.S.		GENERAL CONTRACTOR		E.T. & L. CORPORATION		HSSI PROJ. MGR		KEN GLIDDEN		
SHIPMT	1	DRAWING MANAGER		KREIDER (IH)		MADE BY	JSA	CHK'D BY	CS	DATE 4-8-01
STATE	MA	HSSI PROJECT		S-1080005		HSSI STRUCT. ID	A	DRAWING NUMBER		WS1 OF WS1

NOTES:

DIMENSIONS ON PLAN ALONG STRINGER/GIRDER ARE GIVEN TO THE CHORD AT THE BOTTOM OF WEB IN FULLY CAMBERED POSITION. ALL OTHER DIMENSIONS ARE GIVEN HORIZONTALLY.

DIMENSIONS PLACED ON THE STGR/GDR LINES REPRESENT DIAPH/UTILITY SUPPORT SPACING. FIGURES GIVEN THUS: Δ_{247} ARE THE GRADES OF THE STGR/GDR AT THE BEARINGS IN FINAL POSITION; ARROW POINTS DOWNGRADE.

ALL STIFFENER AND CONNECTION PLATE SPACINGS ARE GIVEN TO \pm PLATE. ENDS OF STGR/GDR AND ALL BEARING STIFFENERS TO BE VERTICAL IN FINAL POSITION.

ALL STEEL TO BE AASHTO M270M GRADE 345W (U.N.).

ALL FIELD CONNECTIONS TO BE MADE WITH $\frac{7}{8}"$ H.S. (AASHTO M164 TYPE 3) BOLTS IN $1\frac{1}{2}"$ HOLES (U.N.).

FIGURES GIVEN THUS: Δ ARE THE DIFFERENCES IN ELEVATIONS OF STGR/GDR (MEASURED AT TOP OF WEB IN THE PLANE OF THE DIAPHRAGM IN ERECTED POSITION) AT DIAPHRAGMS; ARROW POINTS TOWARD LOW STRINGER/GIRDER (U.N.).

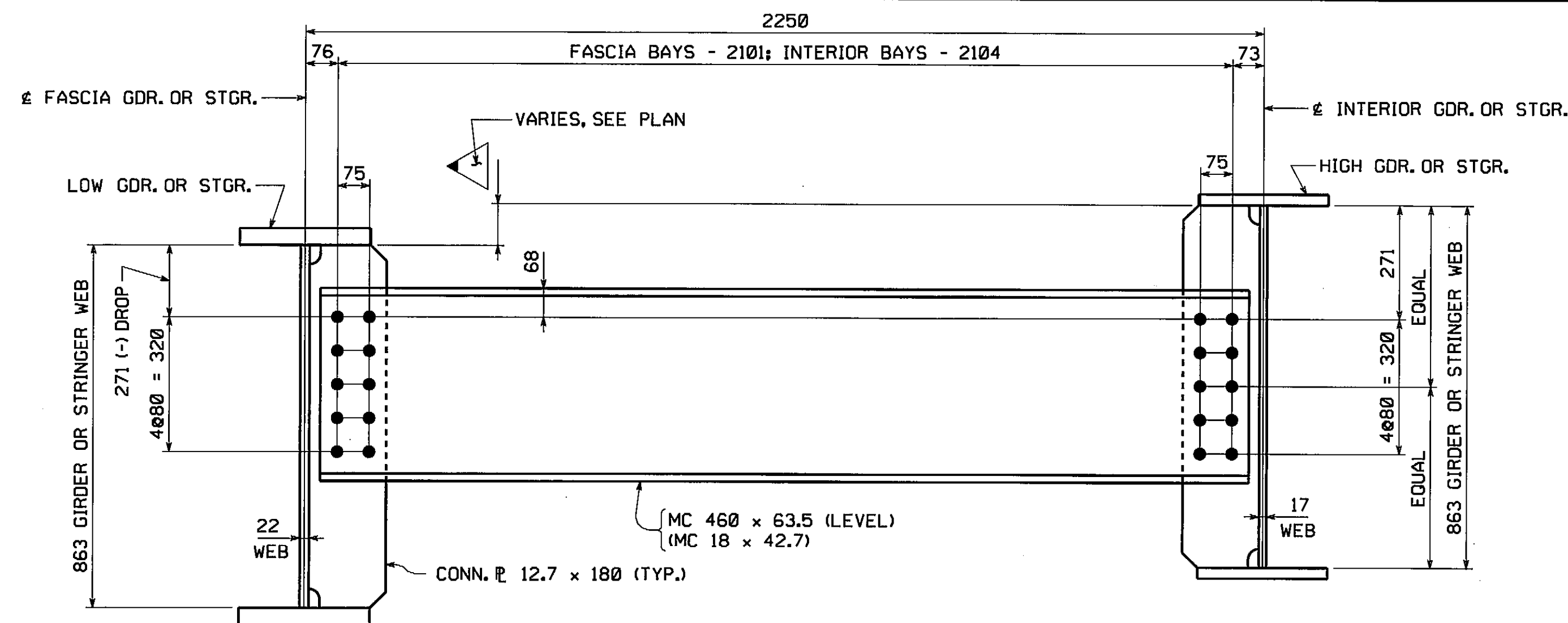
FOR TYPICAL DETAIL LAYOUTS, SEE DRAWINGS PREFIXED "TD".

DIAPHRAGM/UTILITY SUPPORT MARKS SHOWN ON THE PLAN REFER TO THE DESIGN DRAWING MARKS, NOT THE HIGH STEEL STRUCTURES INC. MARKS.

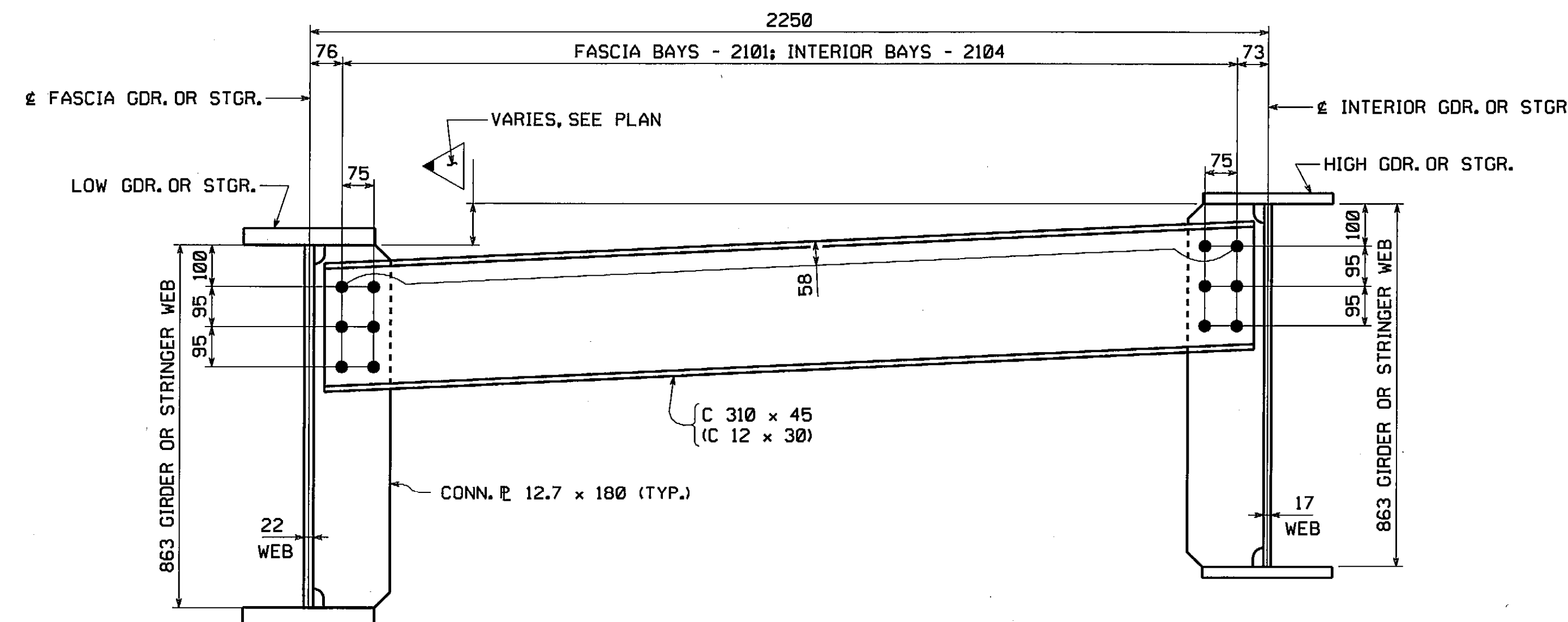
ALL STATIONS ARE GIVEN IN METERS.

INSPECTION FOR MASS. DEPT. OF
PUBLIC WORKS TO BE DONE BY:
PITTSBURG TESTING LAB.

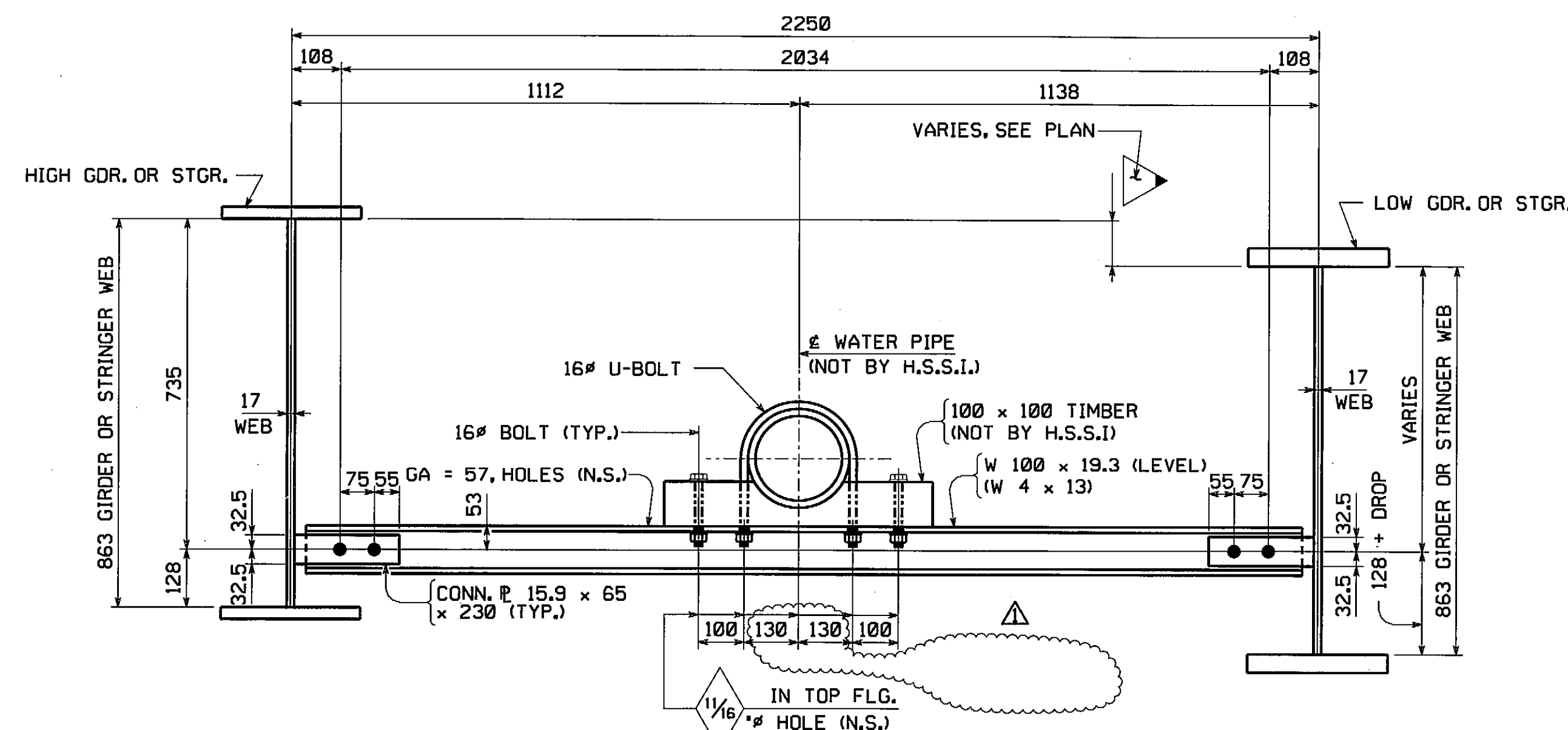
METRIC
Scale = 0.012500 of full size.
SHIPMENT 01
PITTSBURG TESTING LAB. PROJ. 50030012 SHIPASPECT 4 5003013
BY: Krcenda
PLOTED: 7/7/2008



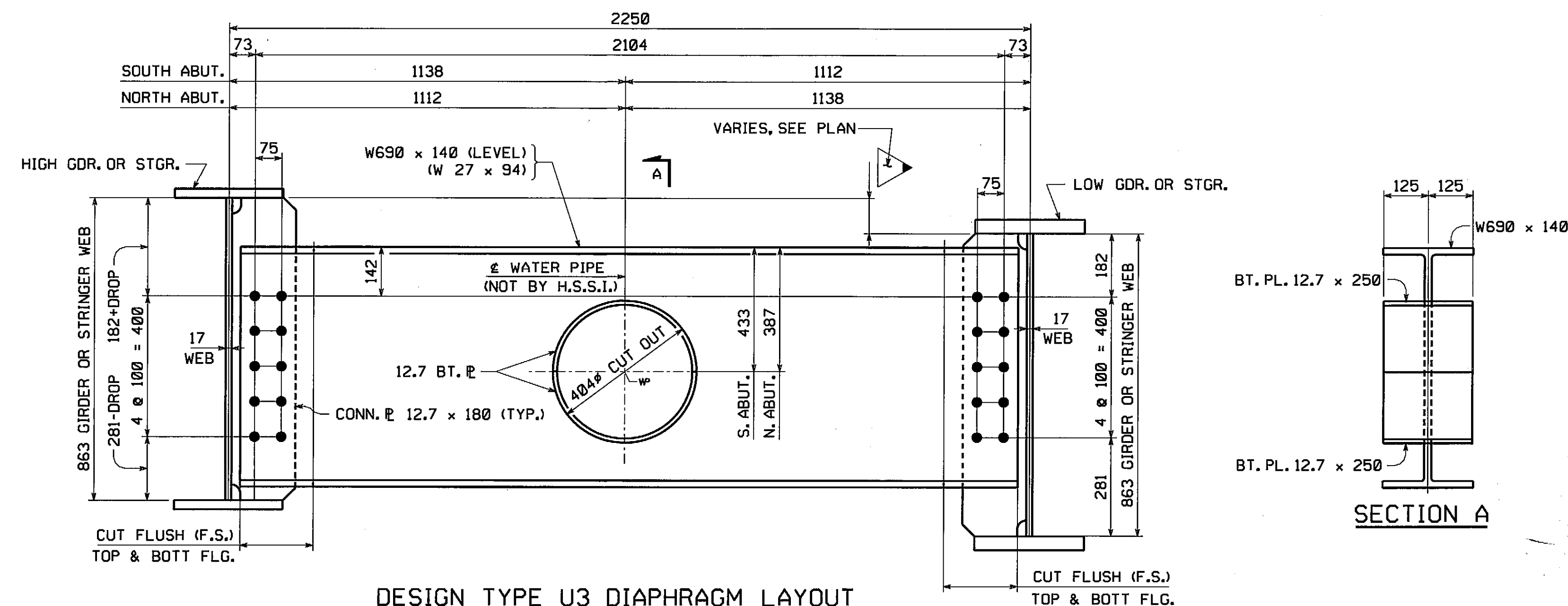
DESIGN TYPE D1 DIAPHRAGM LAYOUT
(LOOKING STATIONS AHEAD)



DESIGN TYPE D2 DIAPHRAGM LAYOUT
(LOOKING TOWARD BACK WALL AT NORTH ABUT.
SOUTH ABUT. SIMILAR.)



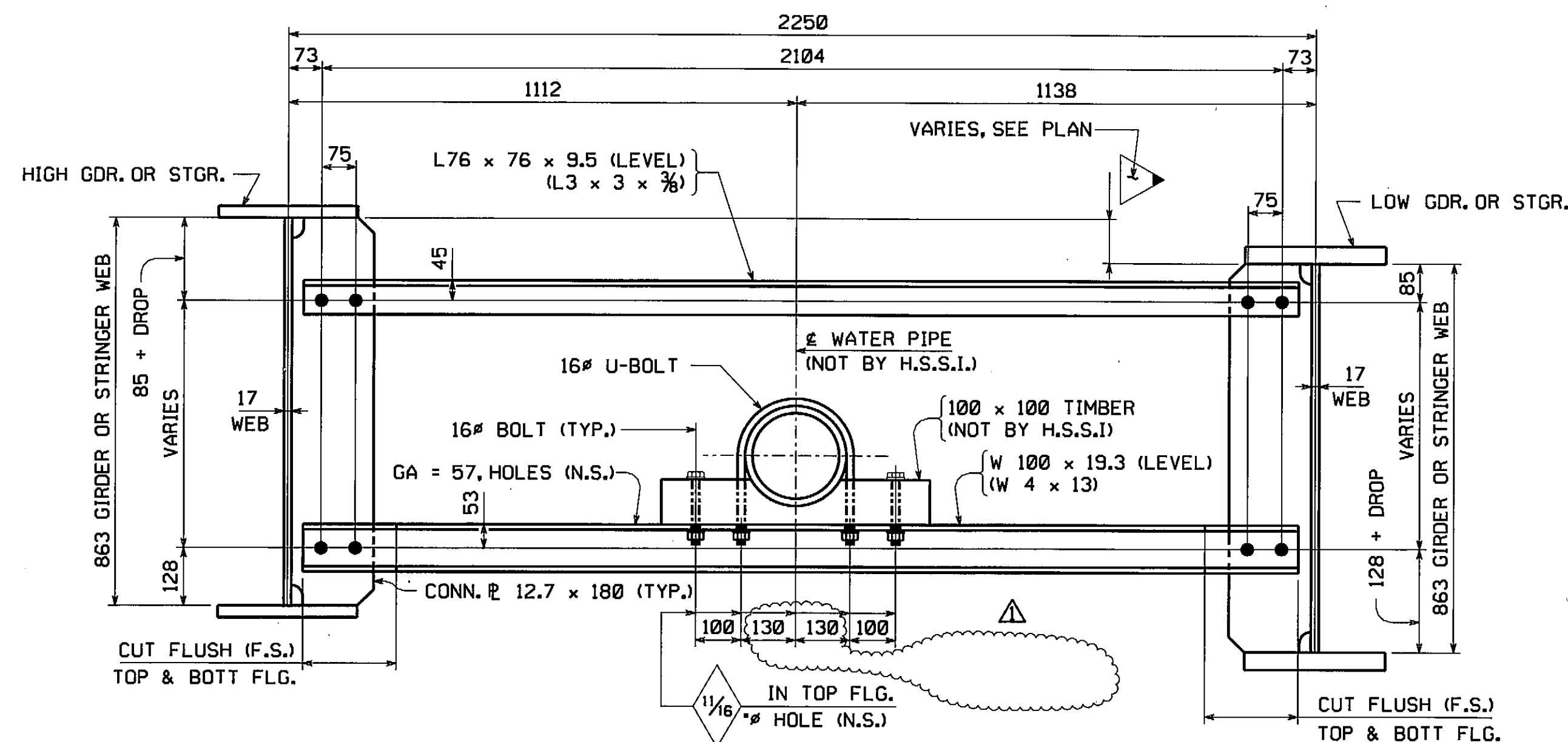
DESIGN TYPE U1 DIAPHRAGM LAYOUT
(LOOKING STATIONS AHEAD)



DESIGN TYPE U3 DIAPHRAGM LAYOUT
(LOOKING TOWARD BACK WALL AT NORTH ABUT.
SOUTH ABUT. SIMILAR.)

APPROVED FOR CONFORMANCE WITH CONSTRUCTION CONTRACT REQUIREMENTS.	
REVIEW AND RESUBMIT	
FAY, SPOFFORD & THORNDIKE ENGINEERS	
By: <i>ES</i>	Date: <i>12/4/08</i>
Shop drawings have been reviewed to ascertain that they represent conformance and general compliance with contract documents. Dimensions, quantities, weights, details of fabrication and construction and coordination of trades and subcontractors are the responsibility of the general contractor.	

••NOTE••
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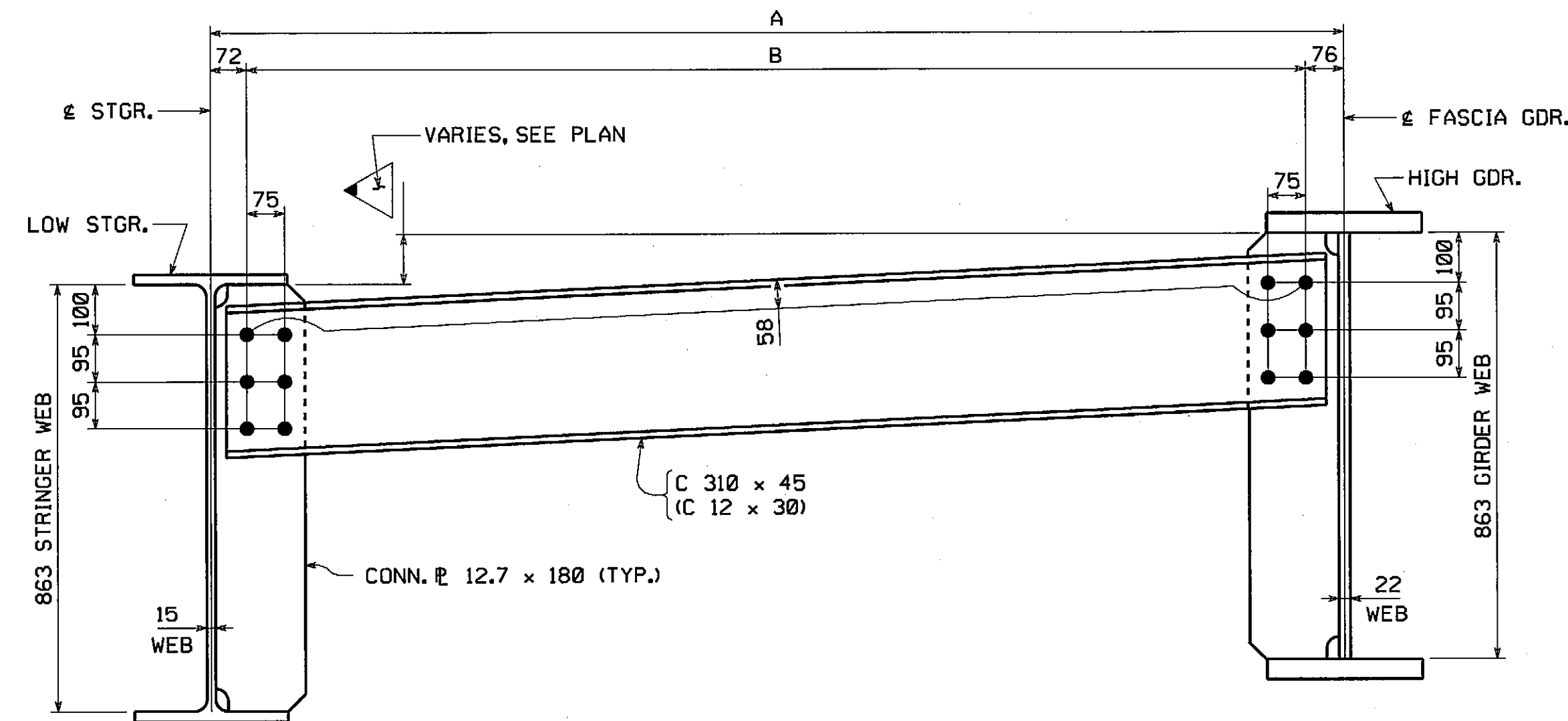
DESIGN TYPE U2 DIAPHRAGM LAYOUT
(LOOKING STATIONS AHEAD)

RECORD COPY

NOTES:
FOR NOTES, SEE DRAWING WS1.
WORK THIS DRAWING WITH WS1.

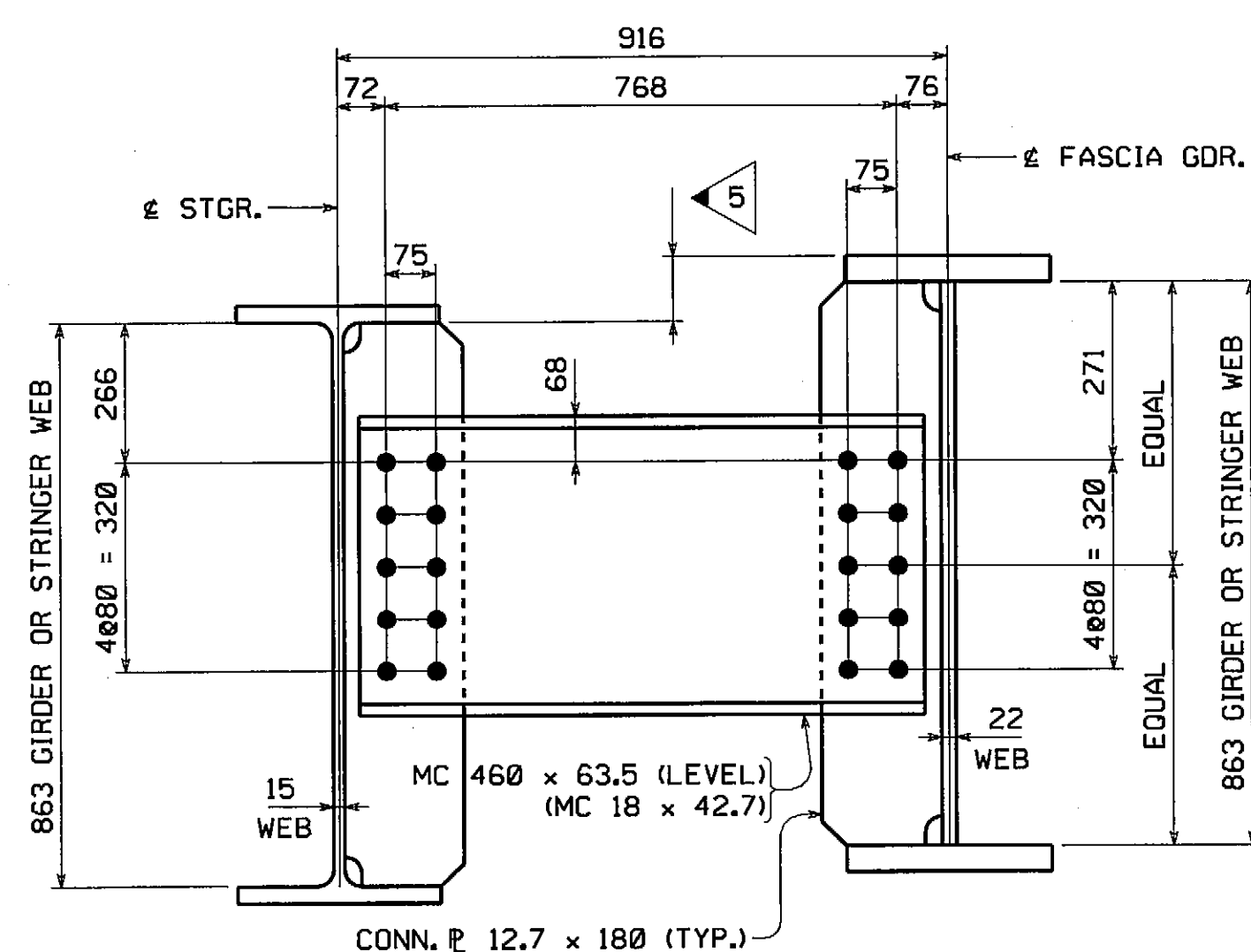
INSPECTION FOR MASS. DEPT. OF
PUBLIC WORKS TO BE DONE BY:
PITTSBURG TESTING LAB.

REMOVED CONTRACTOR VERIFY AND REVISED DIMENSIONS AS PER CONTRACTOR INFO		MGK	KGM	7/7/08
REVISION		BY	CHK'D	DATE
NO.				
HOLES				
BOLTS				
COATING				
CODE(S)				
SCALE				
N.T.S.				
GENERAL CONTRACTOR				
E.T. & L. CORPORATION				
HSSI PROJ. MGR				
KEN GLIDDEN				
STATE CONT. OR REF. NO.				
PROJECT FILE NO. 60356				
FED. AID PROJ. NO.				
BR-001S(714)X				
DRAWING MANAGER				
KREIDER (IH)				
MADE BY				
MAF				
CHK'D BY				
CS				
DATE				
4-10-08				
HSSI PROJECT NUMBER				
S-1080005				
HSSI STRUCT. ID				
A				
DRAWING NUMBER				
TD1 OF TD2				

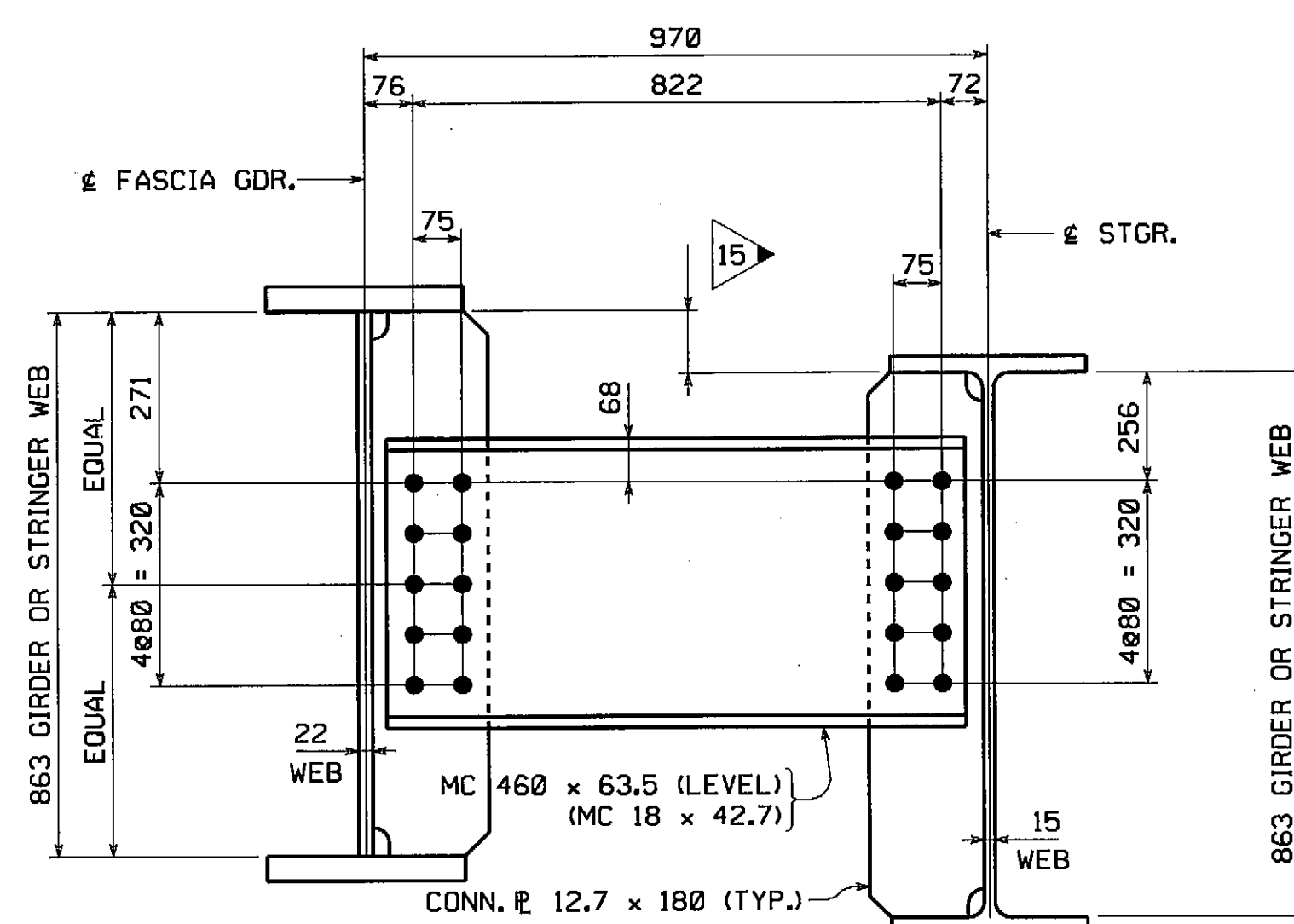


DESIGN TYPE D2 DIAPHRAGM LAYOUT
(LOOKING TOWARD BACK WALL AT NORTH ABUT.
PTS. 95 AND 29 SHOWN, PTS. 34 AND 97 SIMILAR.)

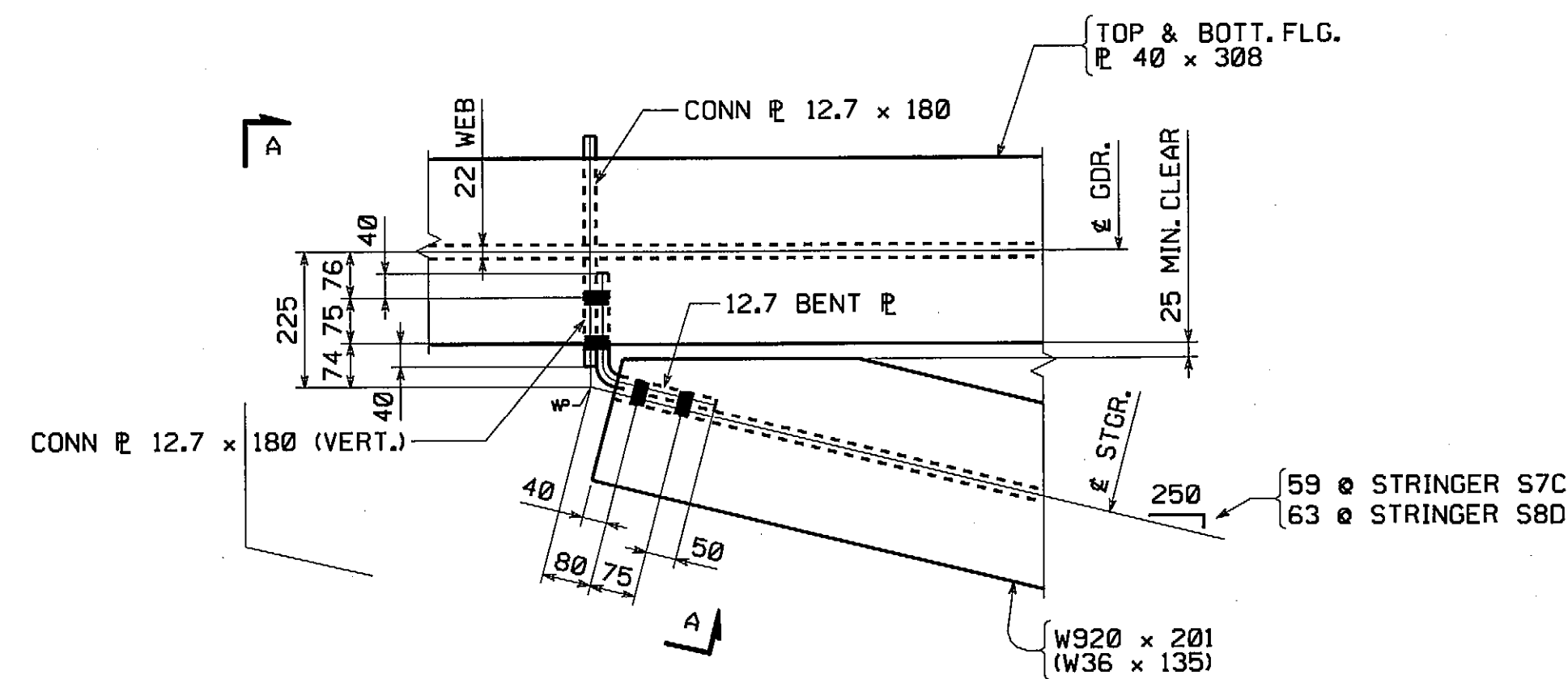
PT. TO PT.	A	B
95 AND 29	2298	2150
34 AND 97	2460	2312



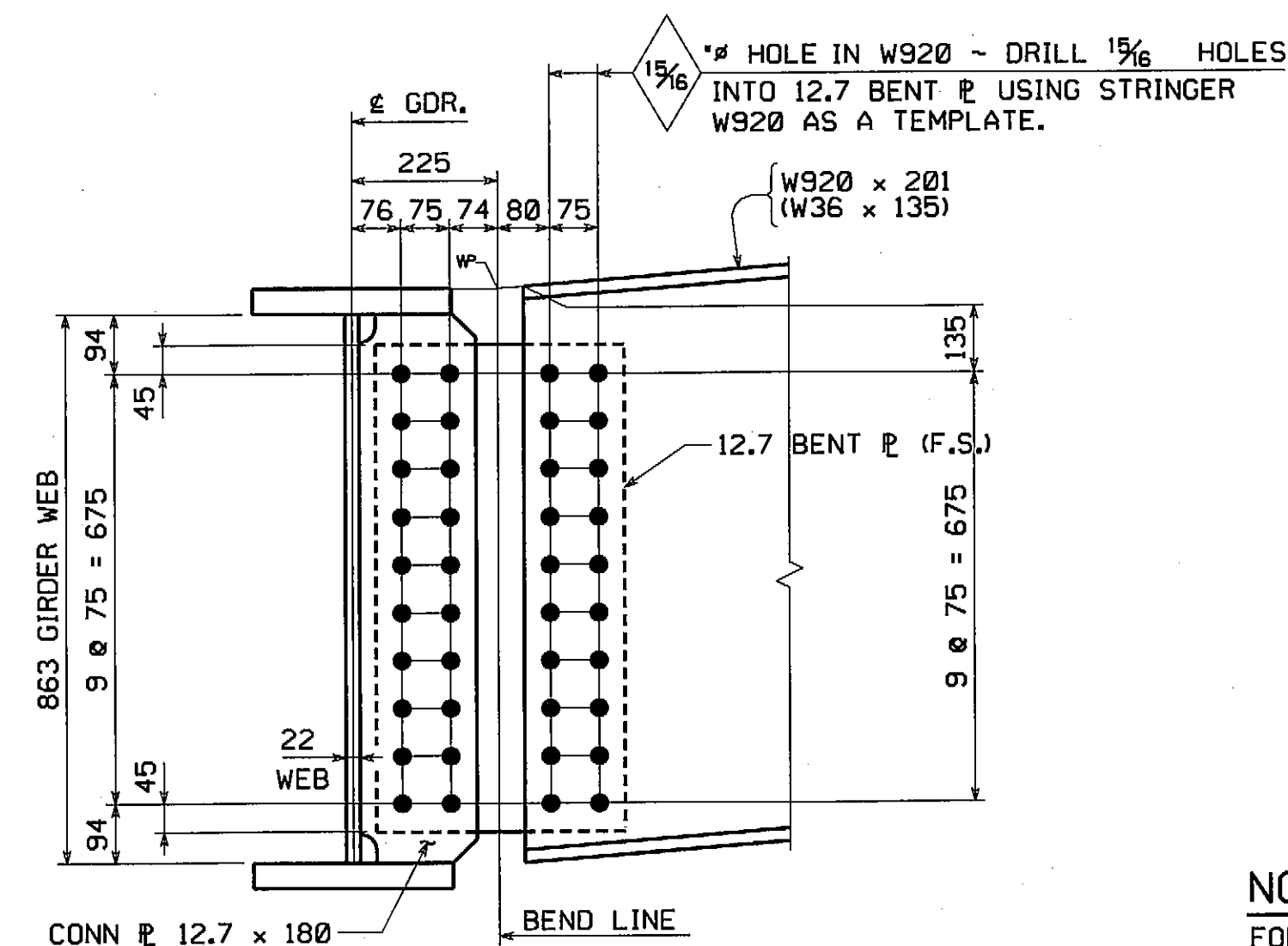
DESIGN TYPE D1 DIAPHRAGM LAYOUT
(LOOKING TOWARD BACK WALL AT NORTH ABUT. &
PTS. 91 AND 92.)



DESIGN TYPE D1 DIAPHRAGM LAYOUT
(LOOKING TOWARD BACK WALL AT NORTH ABUT. &
PTS. 93 AND 94.)



STRINGER TO GIRDER CONNECTION LAYOUT
(GIRDER G6B SHOWN - GIRDER G1B SIMILAR)



SECTION A-A
(DEVELOPED)

NOTES:
FOR NOTES, SEE DRAWING WS1.
WORK THIS DRAWING WITH WS1.

APPROVED FOR PERFORMANCE WITH CONSTRUCTION CONTRACT REQUIREMENTS.
REVISION AND RESUBMIT
FAY, SPOFFORD & THORNDIKE ENGINEERS
By: <i>SS</i> Date: <i>6/25/08</i>
Shop drawings have been reviewed to ascertain that they represent maintenance and general compliance with contract documents. Dimensions, quantities, weights, details of fabrication and construction and coordination of trades and subcontractors are the responsibility of the fabricator.

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NO.	REVISION	BY	CHK'D	DATE
HOLES 15/16" (U.N.)				
BOLTS				
COATING				
CODE(S)				
SCALE N.T.S.				
SHPMT 1	DRAWING MANAGER KREIDER (IH)	MADE BY MAF	CHK'D BY CS	DATE 4-10-08
STATE MA	HSSI PROJECT NUMBER S-1080005	HSSI STRUCT. ID A	DRAWING NUMBER TD2 OF TD2	

VERNON AVENUE OVER WARE RIVER

VERNON AVENUE STA. 10+71.106 TO STA. 11+18.106

BRIDGE NO. B-02-012 IN THE TOWN OF BARRE, WORCESTER COUNTY

COMMONWEALTH OF MASSACHUSETTS

MASSACHUSETTS HIGHWAY DEPARTMENT

PROJECT FILE NO. 60356

FED. AID PROJ. NO.

BR-001S(714)X

GENERAL CONTRACTOR

E.T. & L. CORPORATION

HSSI PROJ. MGR

KEN GLIDDEN

INSPECTION FOR MASS. DEPT. OF
PUBLIC WORKS TO BE DONE BY:
PITTSBURG TESTING LAB.