



Orano Federal Services  
Title: Design and Prototype Fabrication of Railcars for Transport of  
High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery  
Appendix E

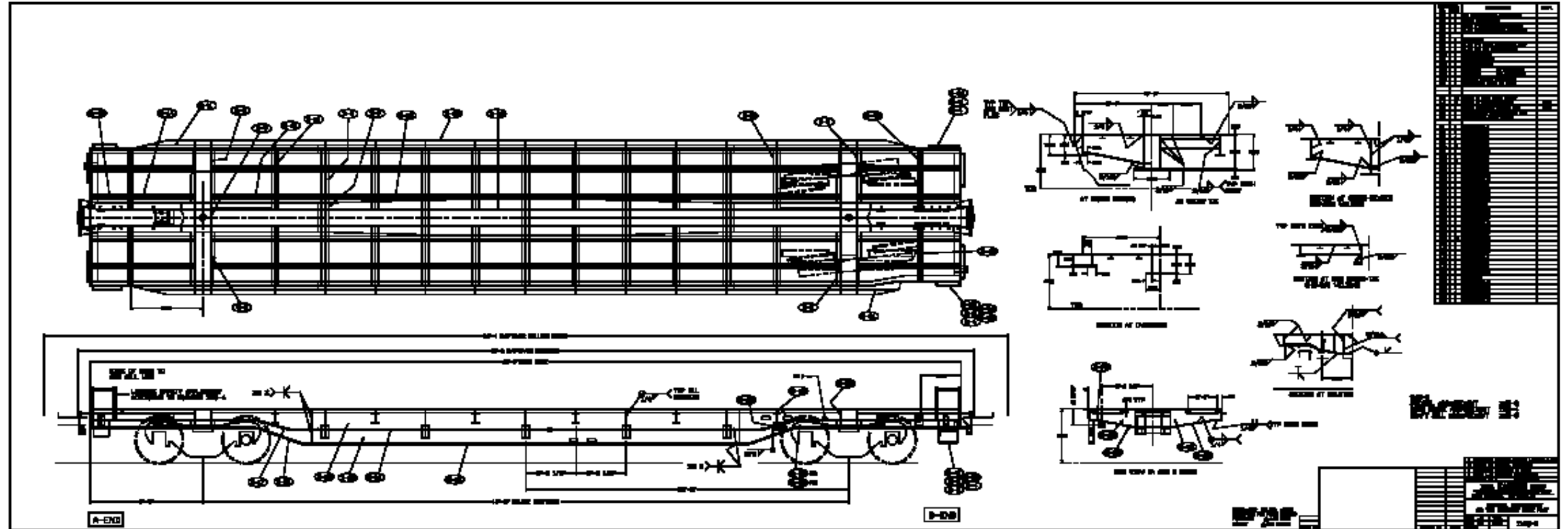
Doc./Rev.: EIR-3021970-000  
Project: 00225.03.0050 DOE Atlas Project

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## Appendix E

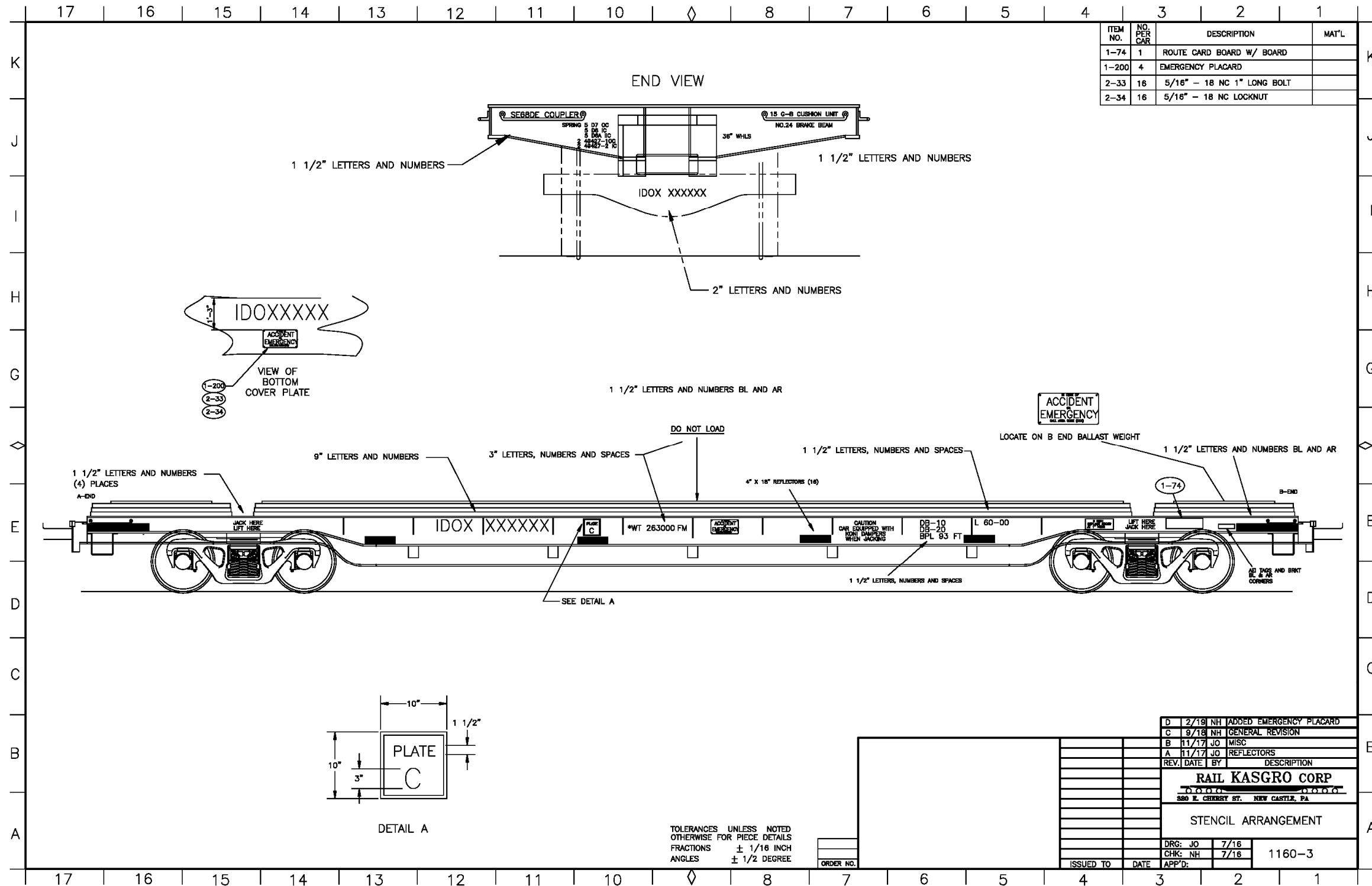
# Buffer Railcar As-Built Fabrication Drawings

## APPENDIX E.1 GENERAL ARRANGEMENT





### APPENDIX E.3 STENCIL ARRANGEMENT



ITEM NO.	NO. PER CAR	DESCRIPTION	MAT'L
1-74	1	ROUTE CARD BOARD W/ BOARD	
1-200	4	EMERGENCY PLACARD	
2-33	16	5/16" - 18 NC 1" LONG BOLT	
2-34	16	5/16" - 18 NC LOCKNUT	

REV.	DATE	BY	DESCRIPTION
D	2/19	NH	ADDED EMERGENCY PLACARD
C	9/18	NH	GENERAL REVISION
B	11/17	JO	MISC
A	11/17	JO	REFLECTORS

**RAIL KASGRO CORP**  
 280 E. CHESTNUT ST. NEW CASTLE, PA

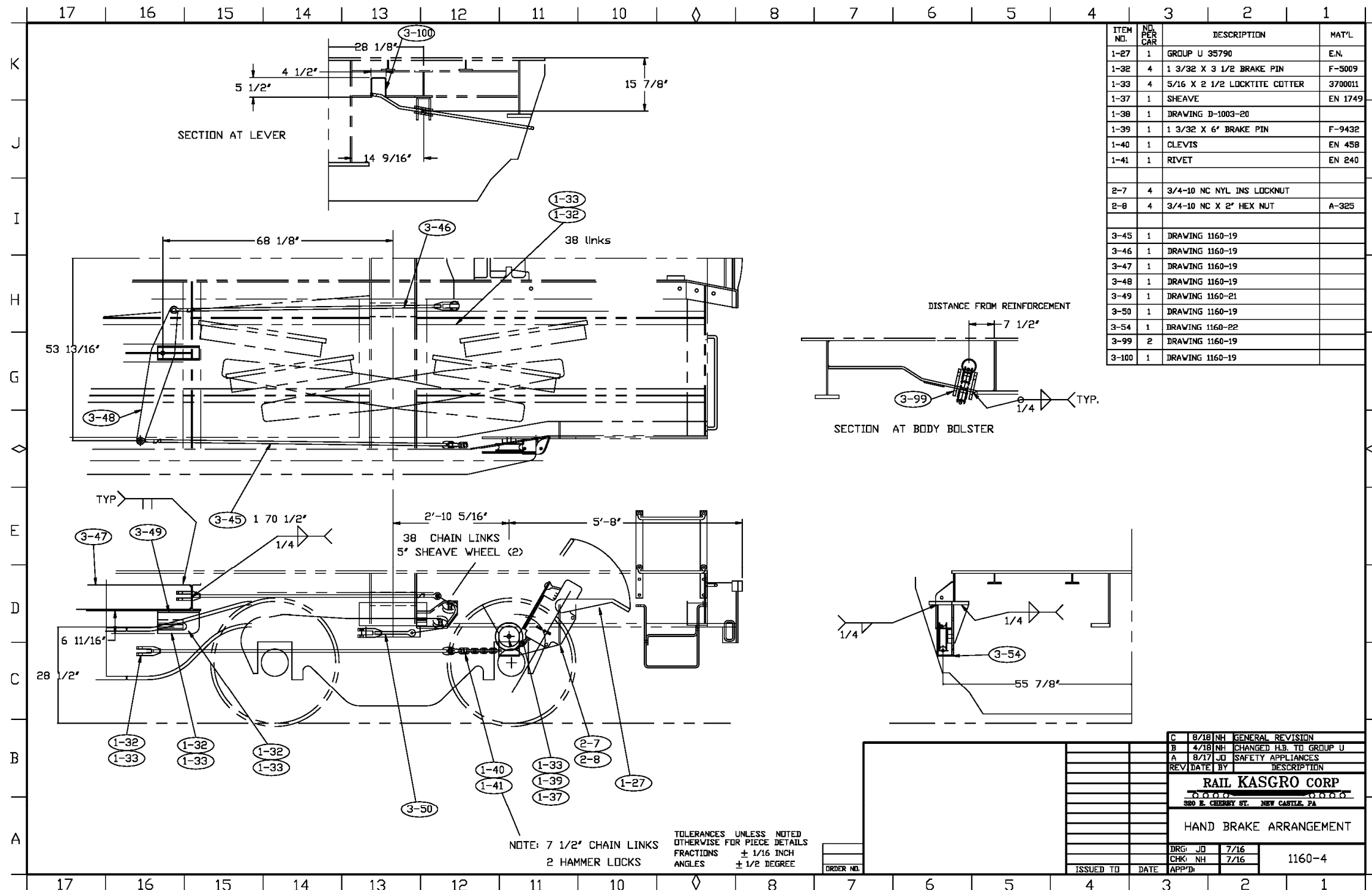
STENCIL ARRANGEMENT

DRG: JO	7/18	1160-3
CHK: NH	7/18	
APP'D:		

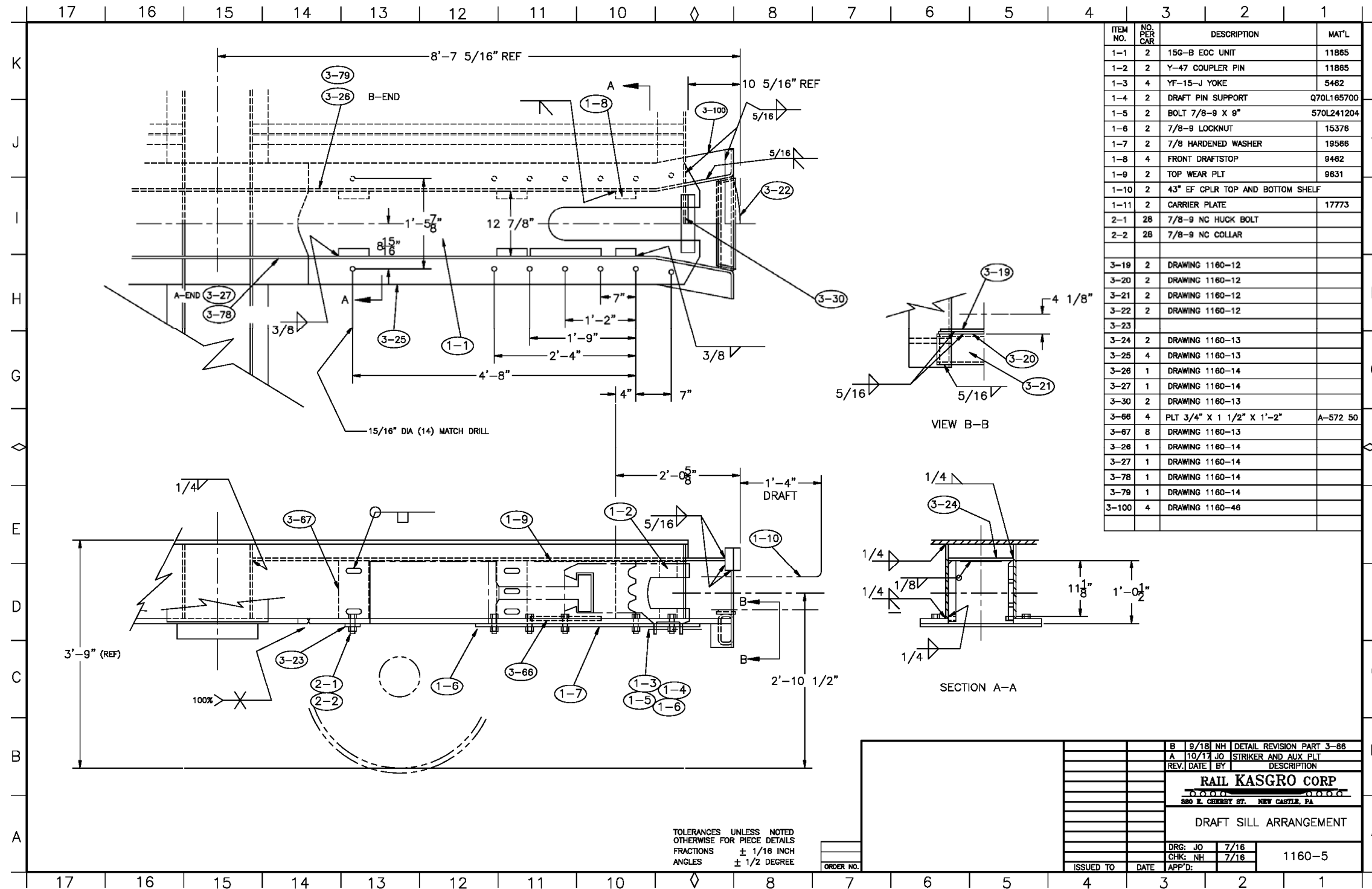
TOLERANCES UNLESS NOTED OTHERWISE FOR PIECE DETAILS  
 FRACTIONS ± 1/16 INCH  
 ANGLES ± 1/2 DEGREE

ORDER NO.	
ISSUED TO	
DATE	

## APPENDIX E.4 HB (HAND BRAKE) ARRANGEMENT



## APPENDIX E.5 DRAFT SILL ARRANGEMENT

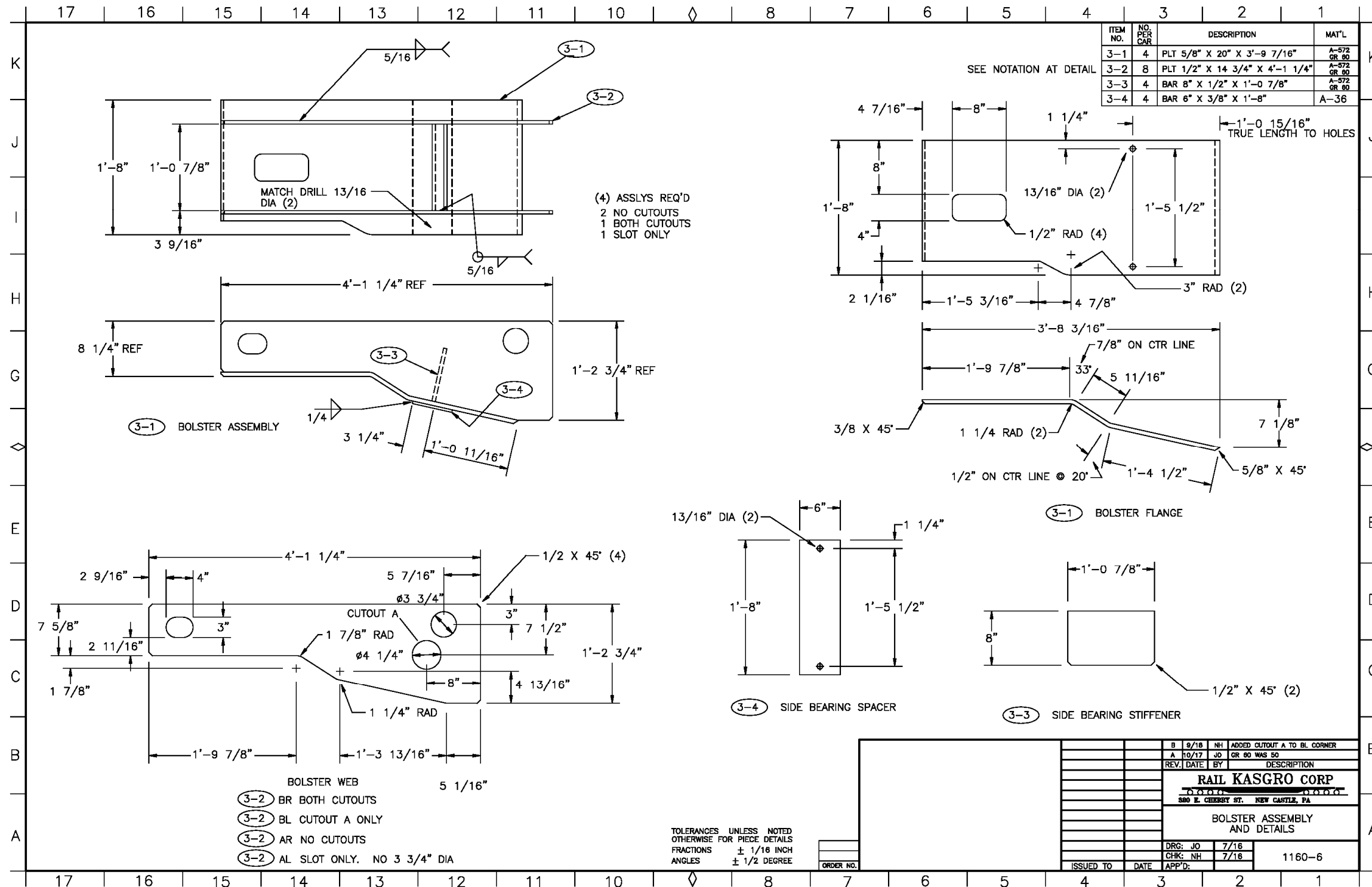


ITEM NO.	NO. PER CAR	DESCRIPTION	MAT'L
1-1	2	15G-B EOC UNIT	11885
1-2	2	Y-47 COUPLER PIN	11885
1-3	4	YF-15-J YOKE	5482
1-4	2	DRAFT PIN SUPPORT	Q70L165700
1-5	2	BOLT 7/8-9 X 9"	570L241204
1-6	2	7/8-9 LOCKNUT	15376
1-7	2	7/8 HARDENED WASHER	19586
1-8	4	FRONT DRAFTSTOP	9482
1-9	2	TOP WEAR PLT	9631
1-10	2	43" EF CPLR TOP AND BOTTOM SHELF	
1-11	2	CARRIER PLATE	17773
2-1	28	7/8-9 NC HUCK BOLT	
2-2	28	7/8-9 NC COLLAR	
3-19	2	DRAWING 1160-12	
3-20	2	DRAWING 1160-12	
3-21	2	DRAWING 1160-12	
3-22	2	DRAWING 1160-12	
3-23			
3-24	2	DRAWING 1160-13	
3-25	4	DRAWING 1160-13	
3-26	1	DRAWING 1160-14	
3-27	1	DRAWING 1160-14	
3-30	2	DRAWING 1160-13	
3-66	4	PLT 3/4" X 1 1/2" X 1'-2"	A-572 50
3-67	8	DRAWING 1160-13	
3-68	1	DRAWING 1160-14	
3-69	1	DRAWING 1160-14	
3-70	1	DRAWING 1160-14	
3-71	1	DRAWING 1160-14	
3-72	1	DRAWING 1160-14	
3-73	1	DRAWING 1160-14	
3-74	1	DRAWING 1160-14	
3-75	1	DRAWING 1160-14	
3-76	1	DRAWING 1160-14	
3-77	1	DRAWING 1160-14	
3-78	1	DRAWING 1160-14	
3-79	1	DRAWING 1160-14	
3-100	4	DRAWING 1160-46	

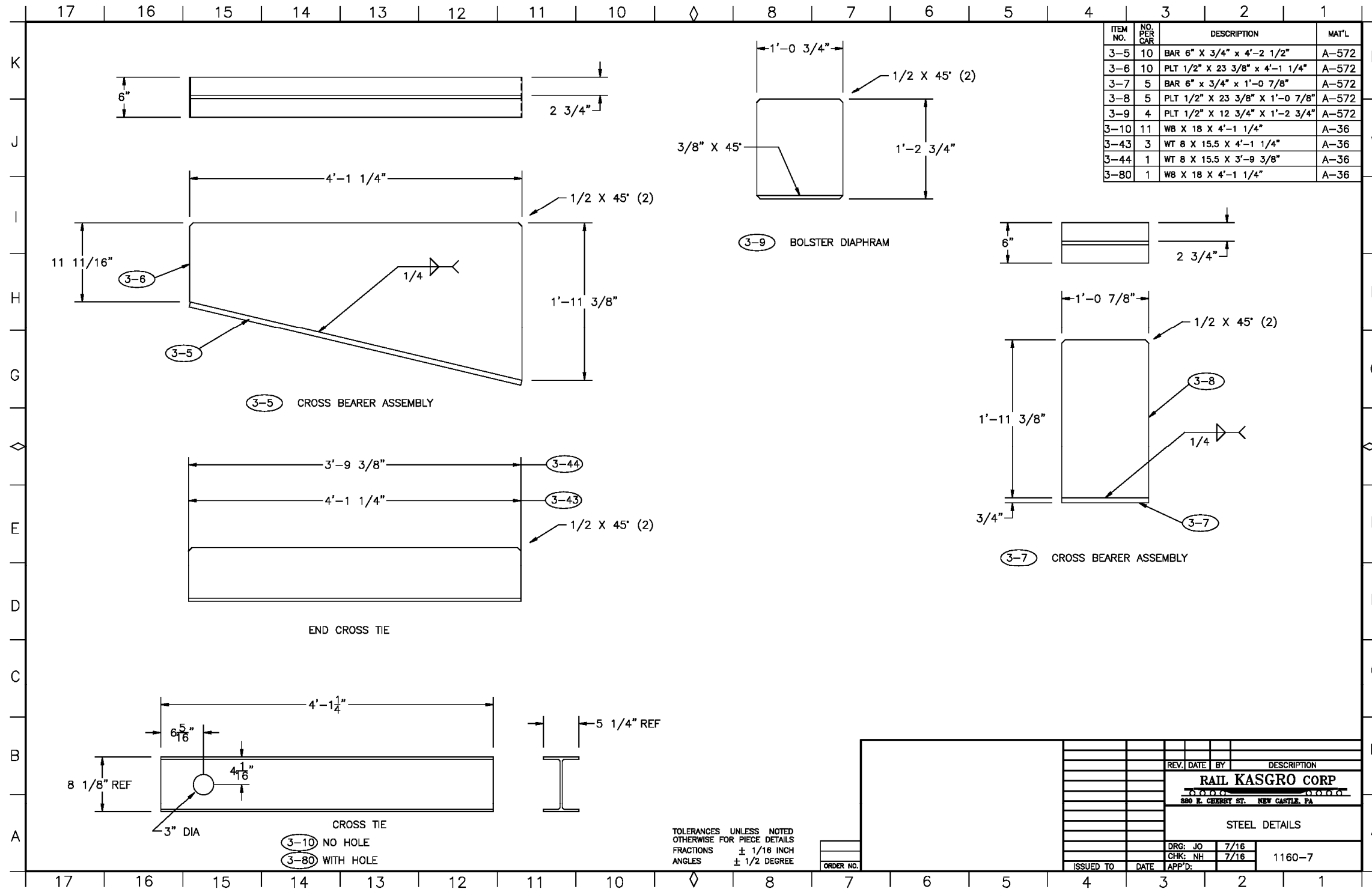
REV.	DATE	BY	DESCRIPTION
B	9/18	NH	DETAIL REVISION PART 3-66
A	10/17	JO	STRIKER AND AUX PLT
<b>RAIL KASGRO CORP</b> 6000 580 E. CHESTNUT ST. NEW CASTLE, PA			
DRAFT SILL ARRANGEMENT			
DRG:	JO	7/16	
CHK:	NH	7/16	1160-5
ISSUED TO	DATE	APP'D:	

TOLERANCES UNLESS NOTED  
 OTHERWISE FOR PIECE DETAILS  
 FRACTIONS ± 1/16 INCH  
 ANGLES ± 1/2 DEGREE

## APPENDIX E.6 BOLSTER ASSEMBLY AND DETAILS



## APPENDIX E.7 STEEL DETAILS



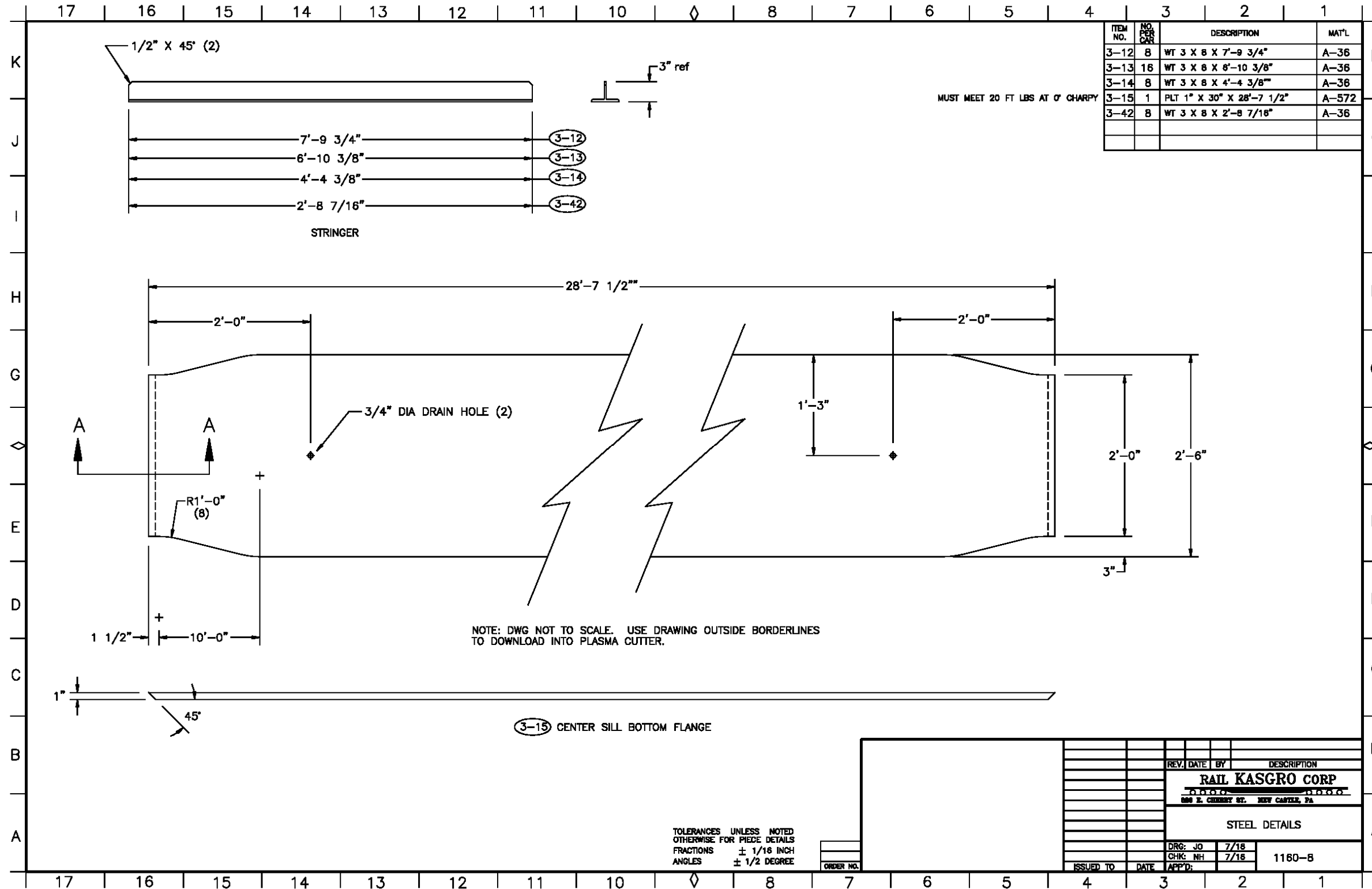




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APPENDIX E.8 STEEL DETAILS

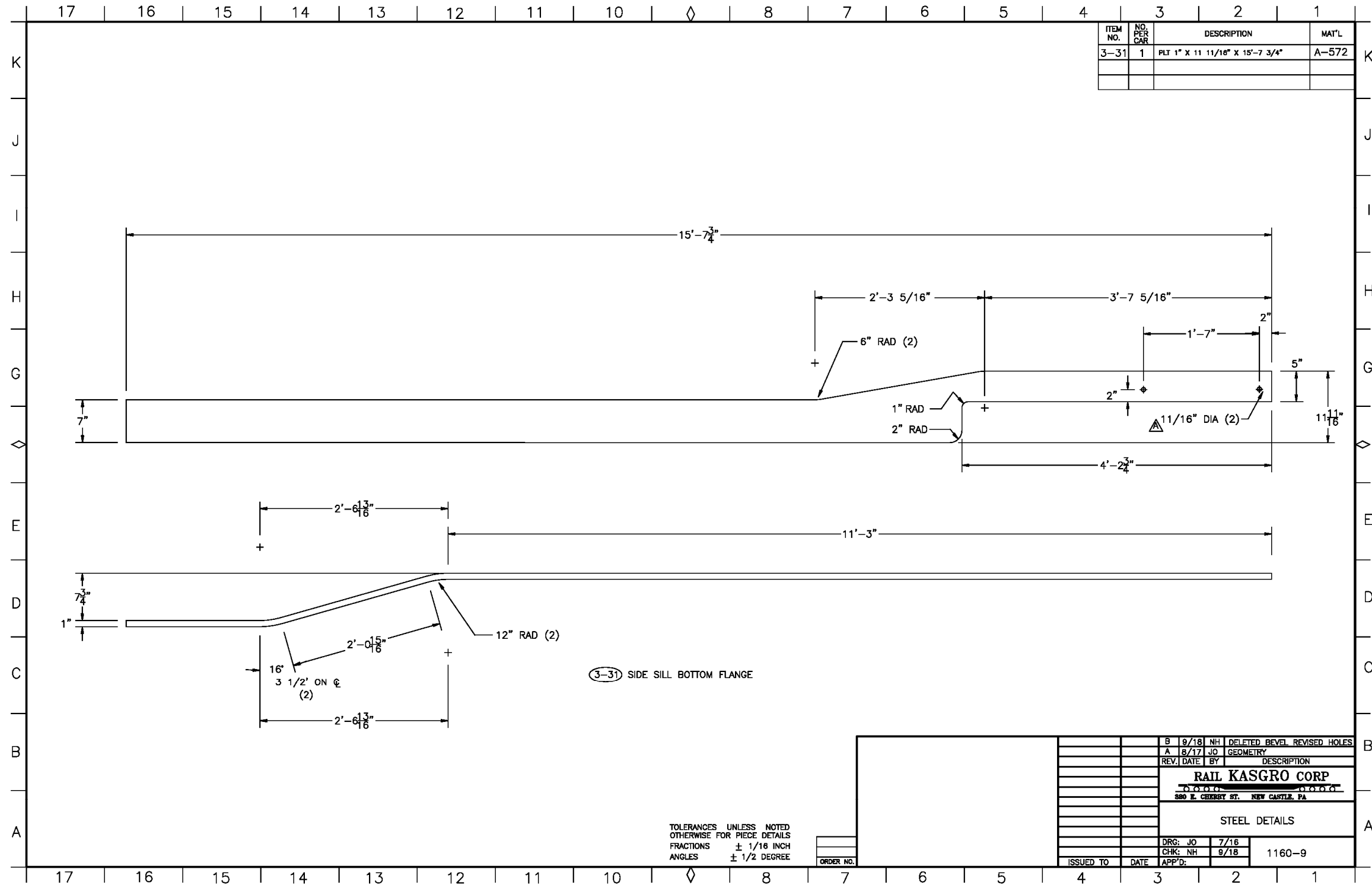




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**APPENDIX E.9 STEEL DETAILS**

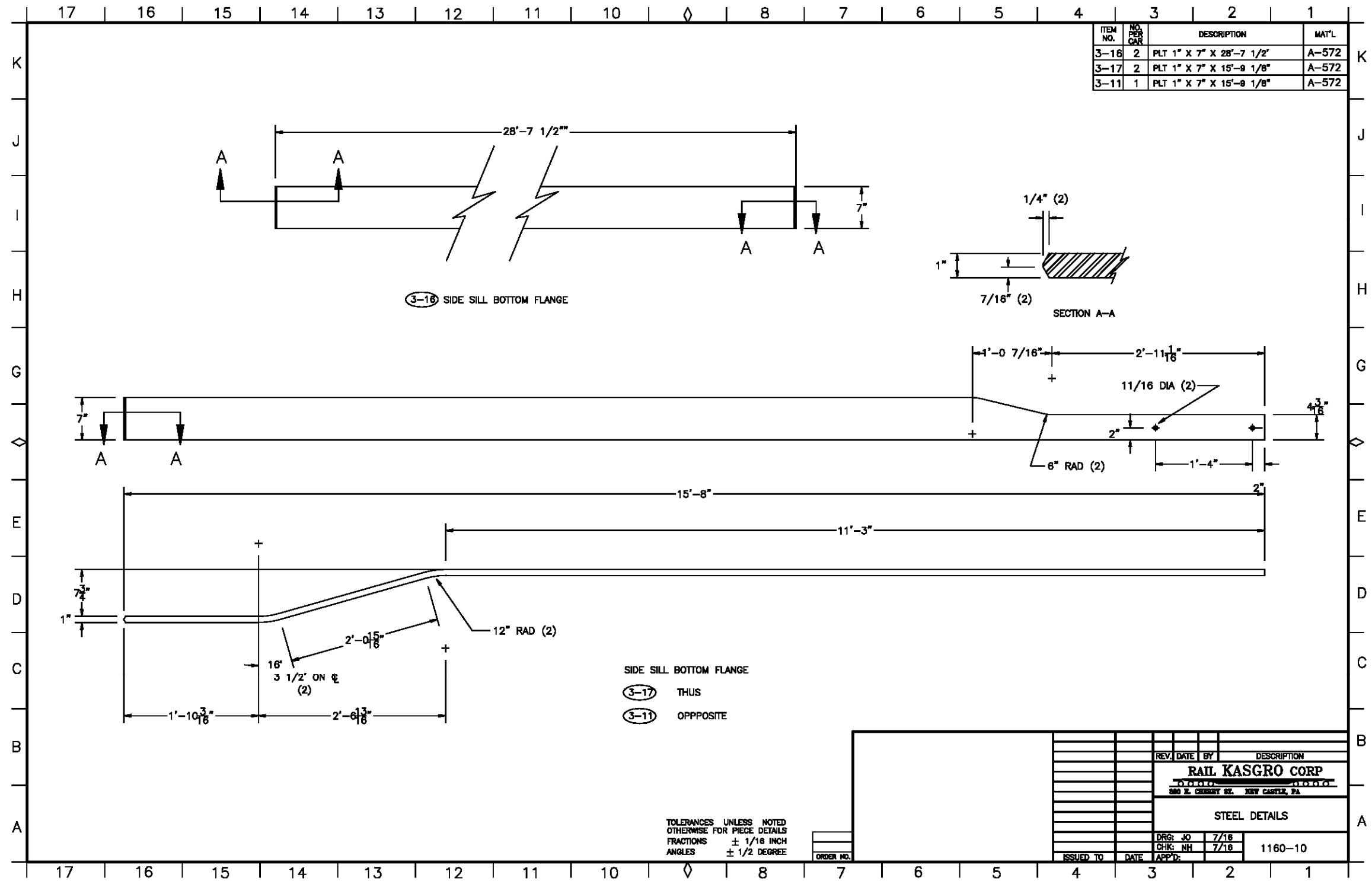




Orano Federal Services  
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APPENDIX E.10 STEEL DETAILS

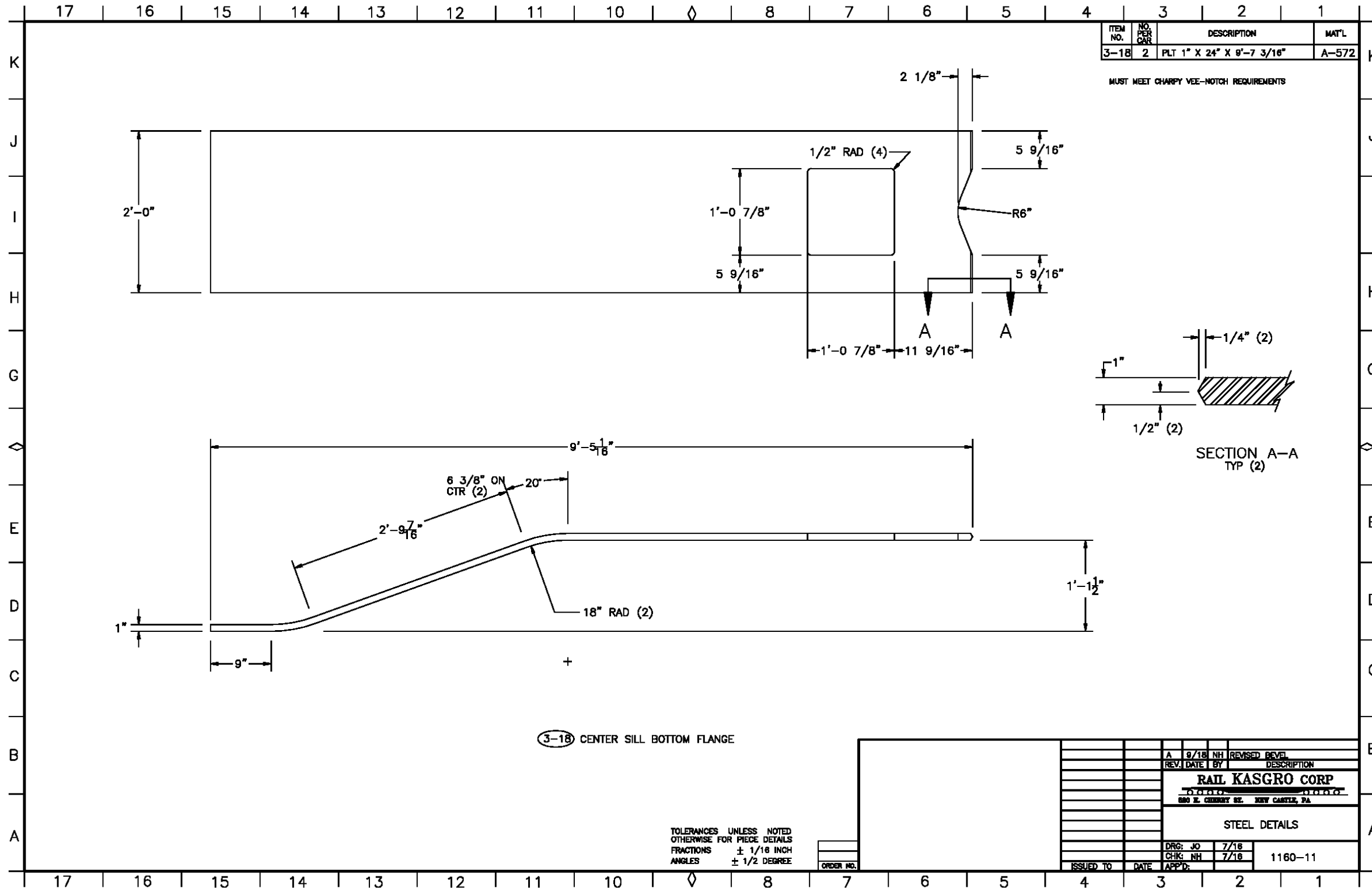




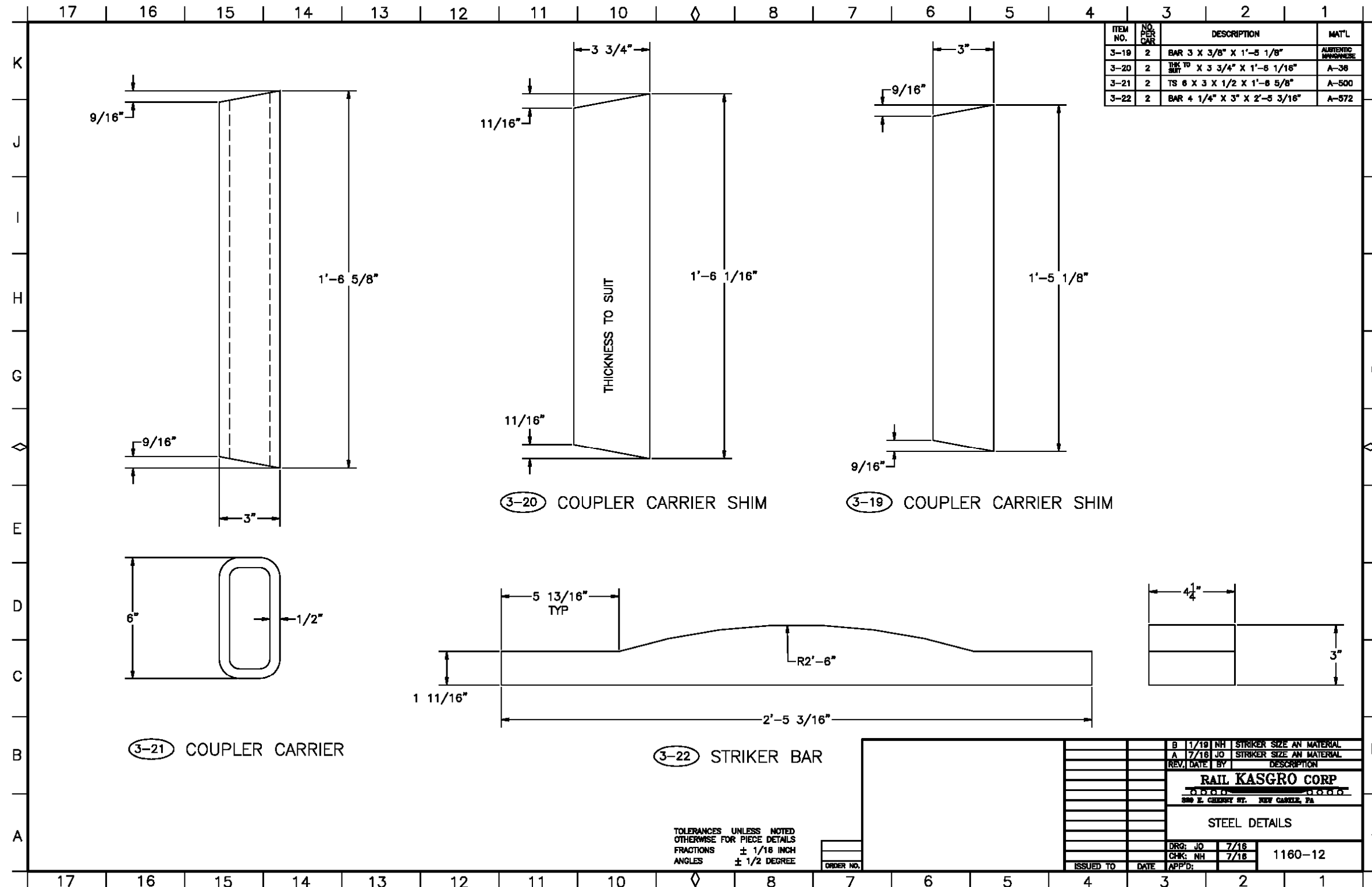
**Orano Federal Services**  
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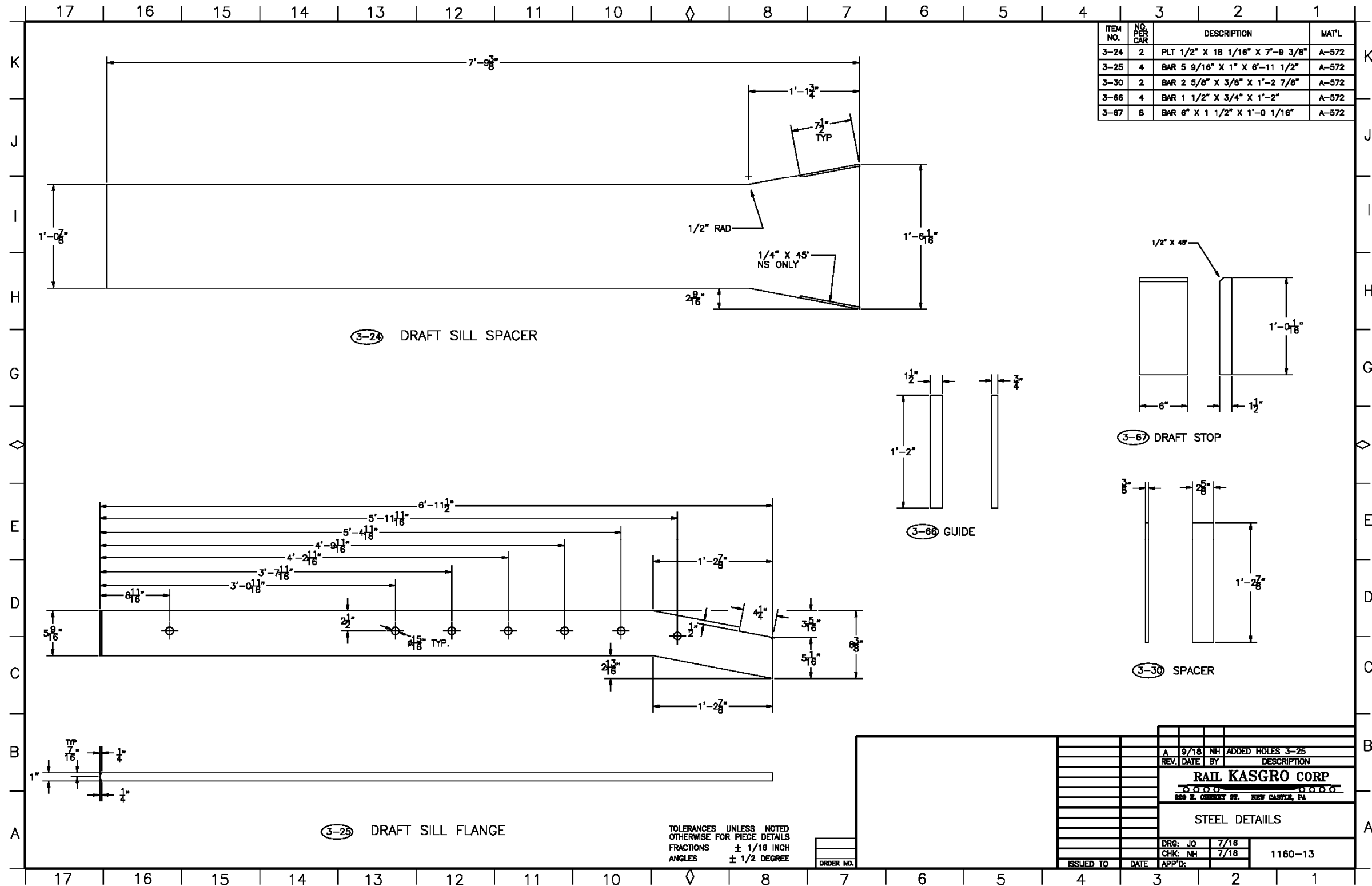
**APPENDIX E.11 STEEL DETAILS**



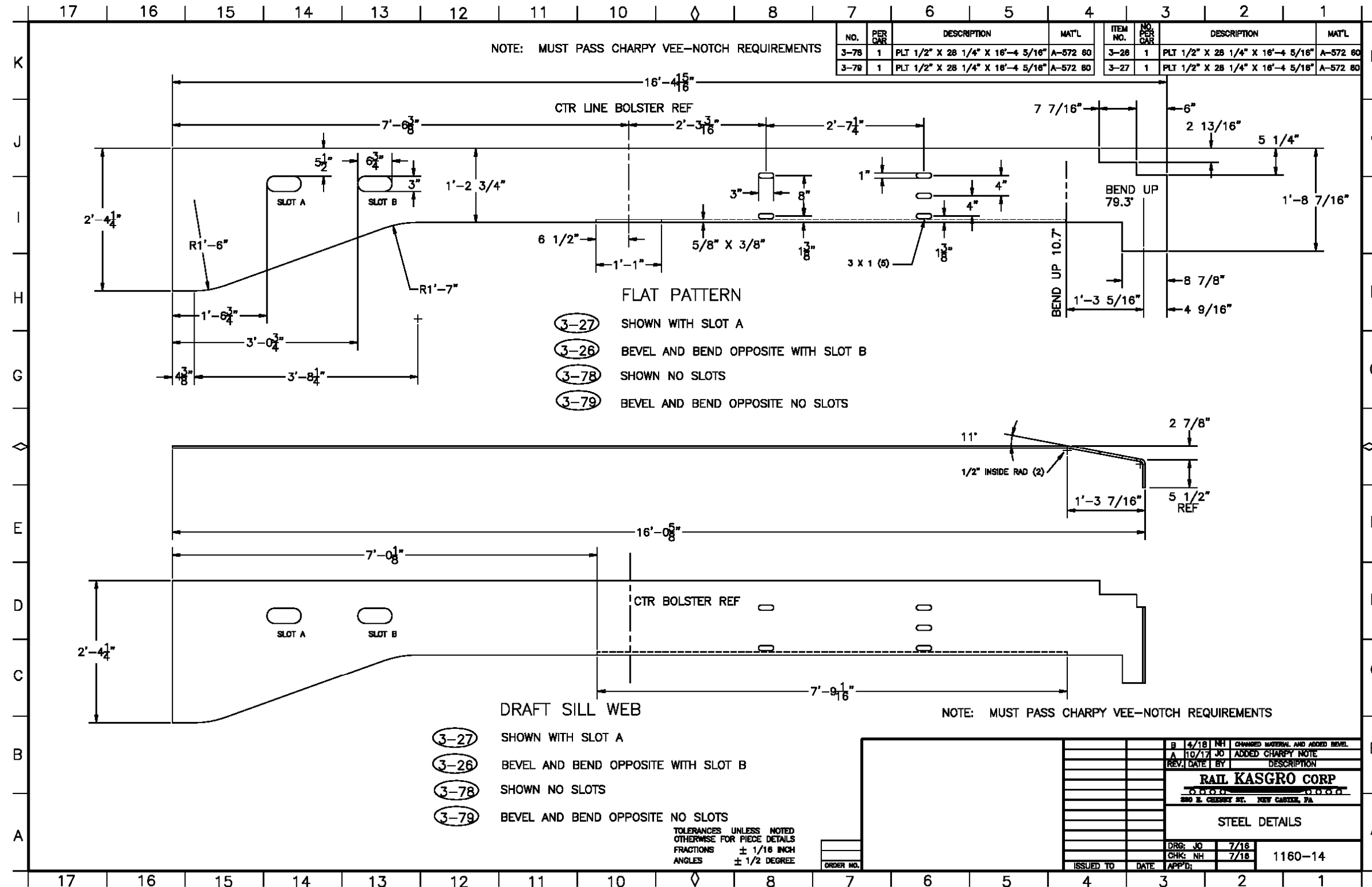
APPENDIX E.12 STEEL DETAILS



### APPENDIX E.13 STEEL DETAILS



### APPENDIX E.14 STEEL DETAILS

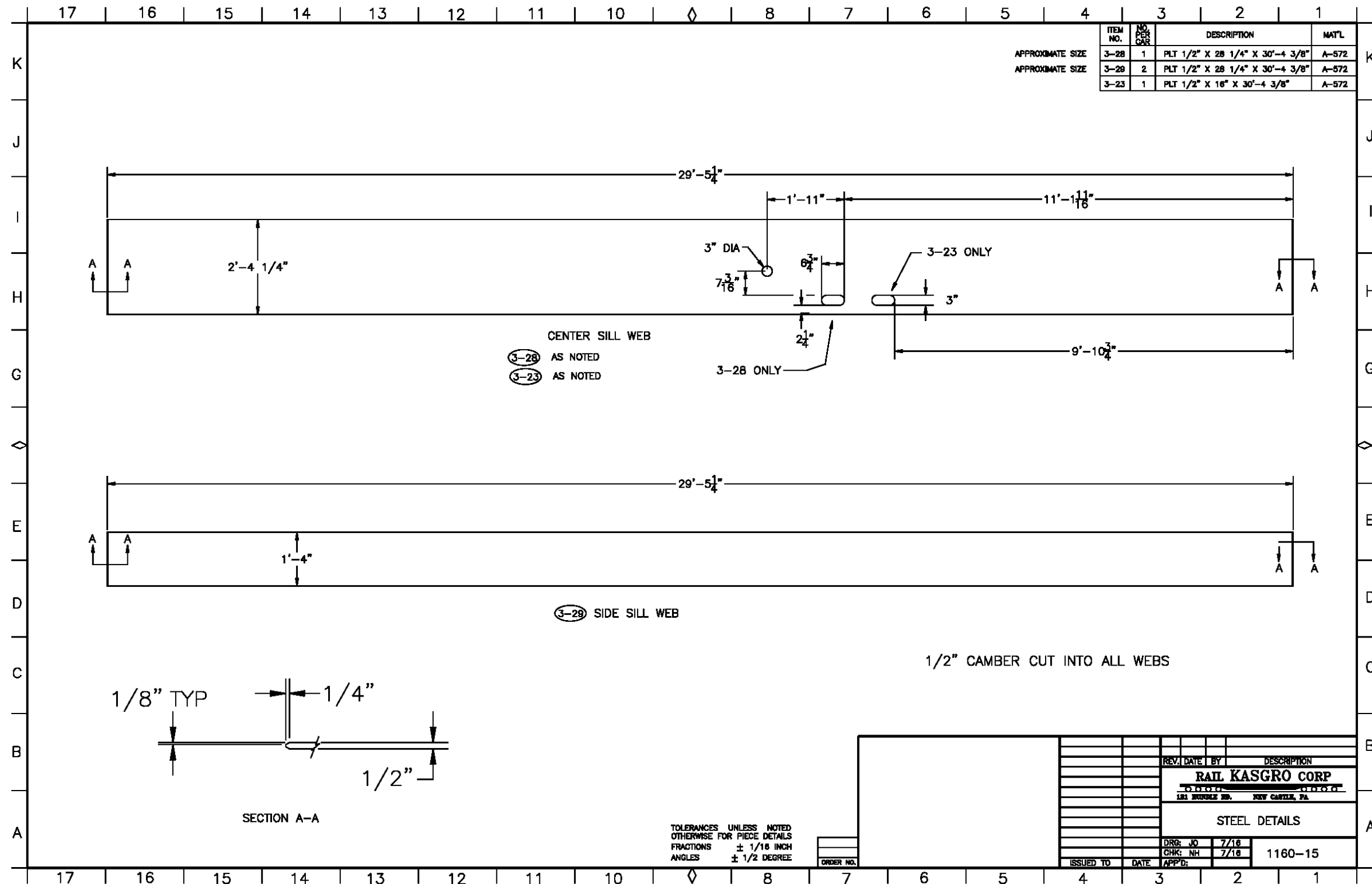




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APPENDIX E.15 STEEL DETAILS



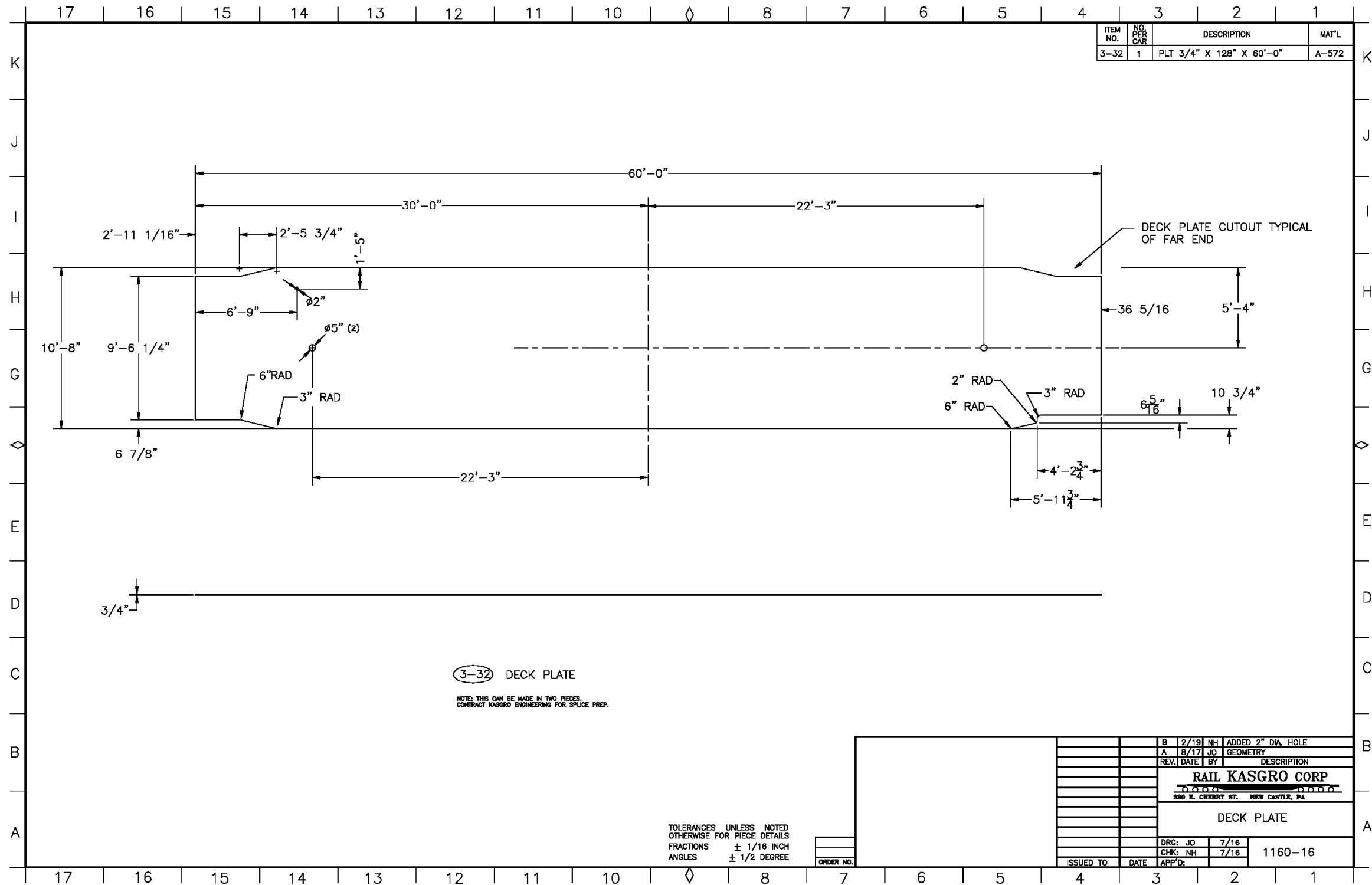




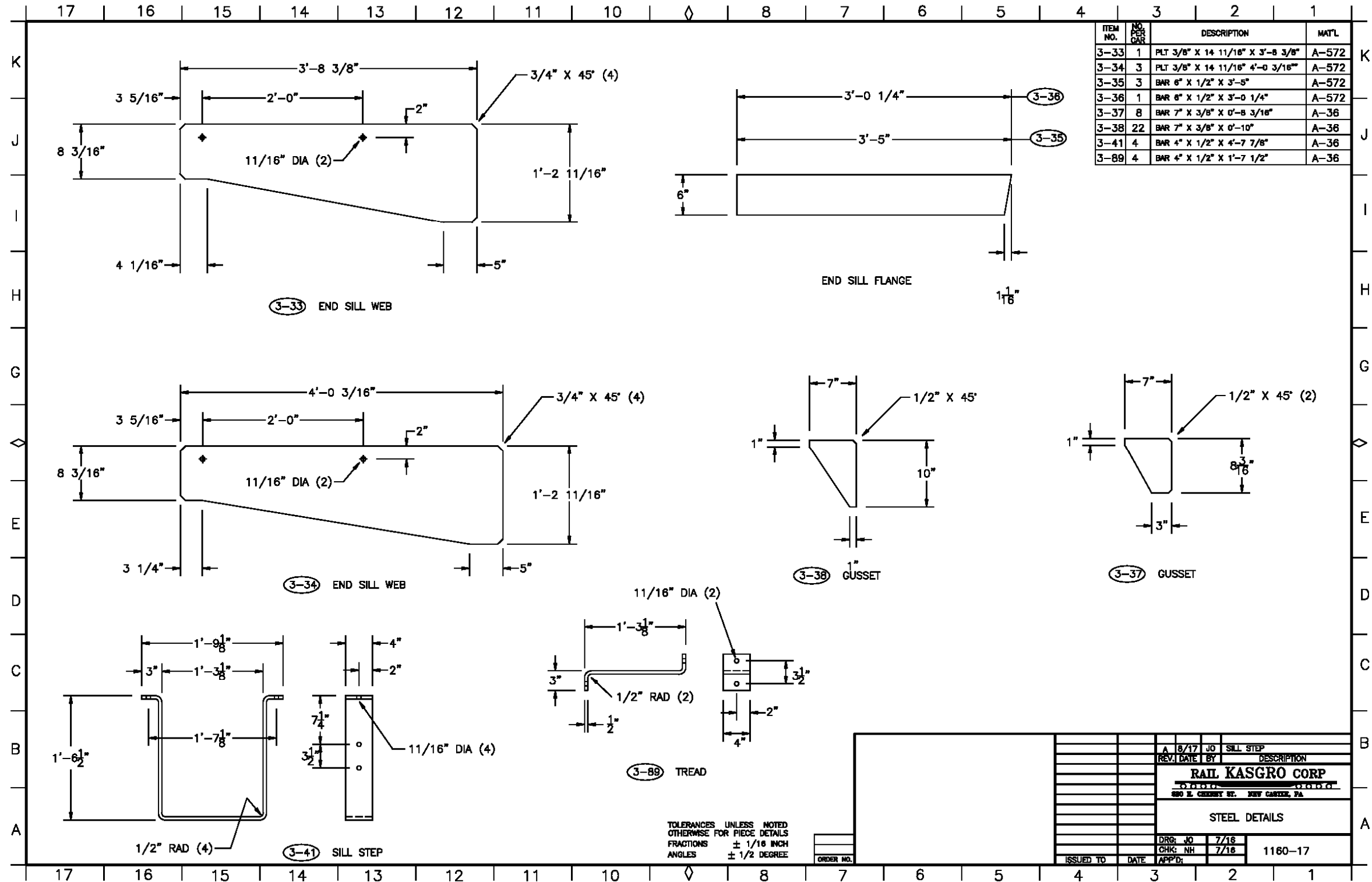
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**APPENDIX E.16 DECK PLATE**



## APPENDIX E.17 STEEL DETAILS

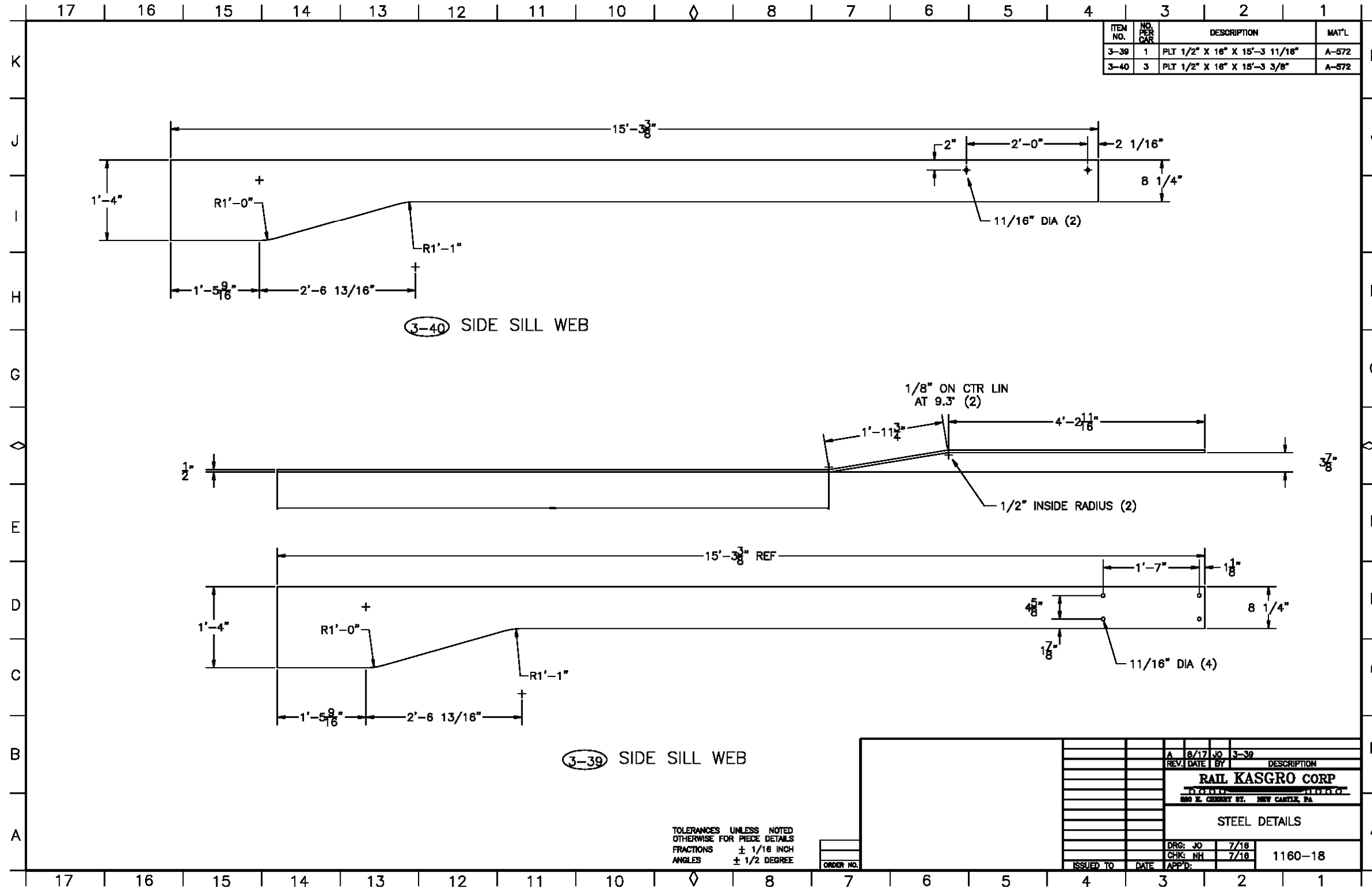




Orano Federal Services  
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**APPENDIX E.18 STEEL DETAILS**

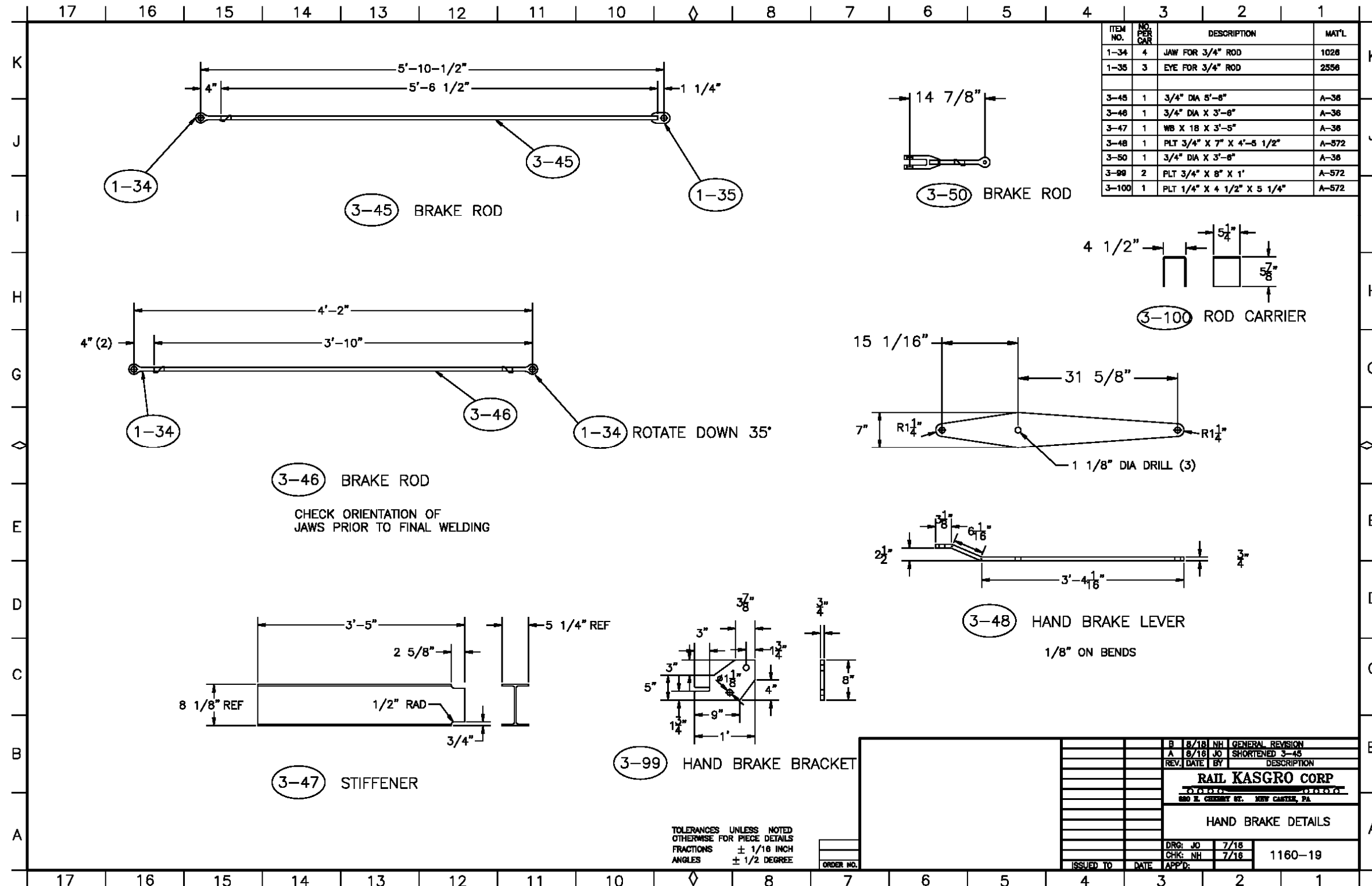


ITEM NO.	NO. PER CAR	DESCRIPTION	MAT'L
3-39	1	PLT 1/2" X 16" X 15'-3 11/16"	A-572
3-40	3	PLT 1/2" X 16" X 15'-3 3/8"	A-572

TOLERANCES UNLESS NOTED  
 OTHERWISE FOR PIECE DETAILS  
 FRACTIONS ± 1/16 INCH  
 ANGLES ± 1/2 DEGREE

REV. DATE	BY	DESCRIPTION
A 8/17	JO	3-39
<b>RAIL KASGRO CORP</b>		
600 E. CHERRY ST. NEW CASTLE, PA		
STEEL DETAILS		
DRG:	JO	7/18
CHK:	NH	7/18
ISSUED TO:	DATE:	APP'D:
		1160-18

## APPENDIX E.19 HAND BRAKE DETAILS

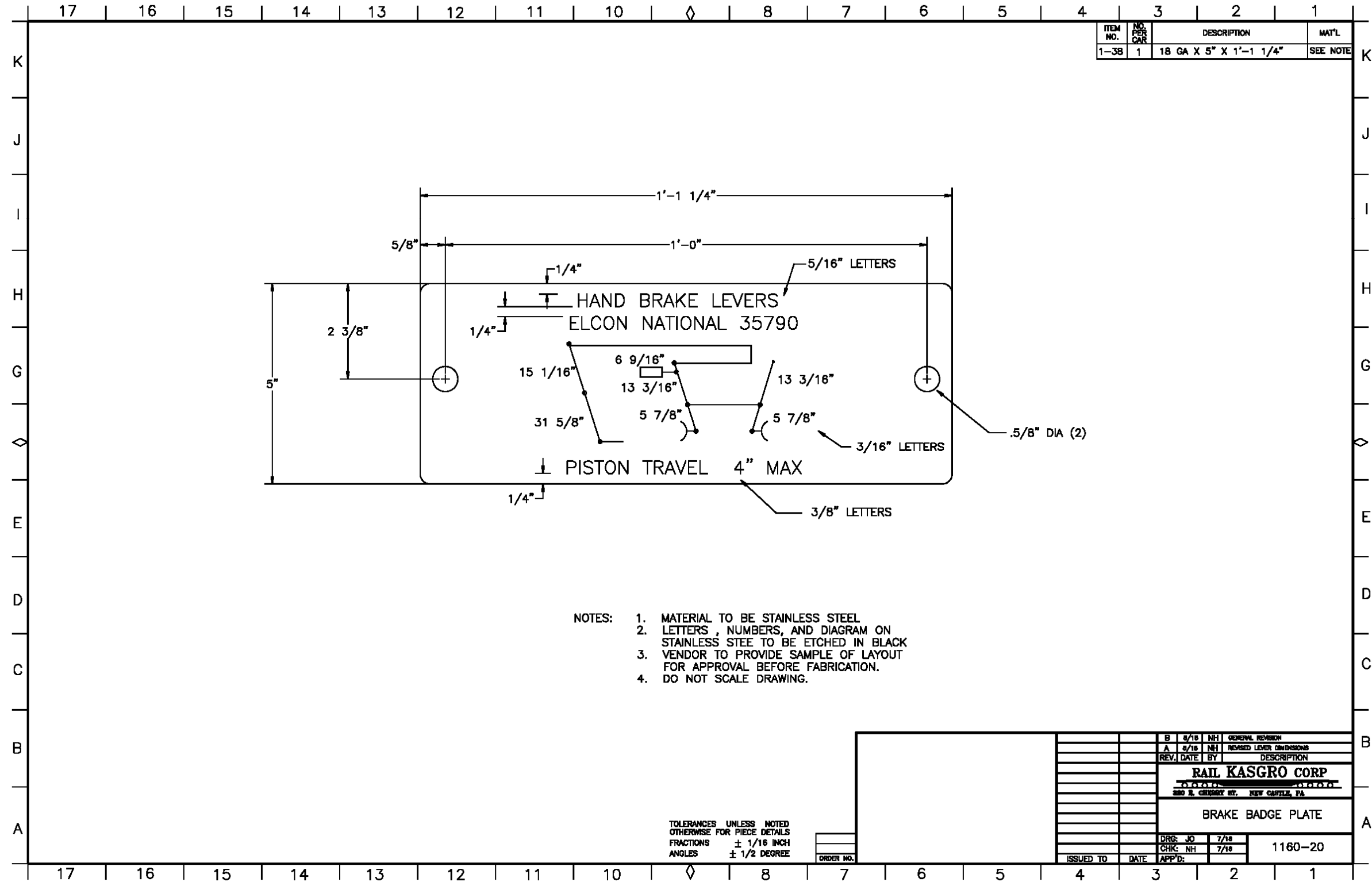




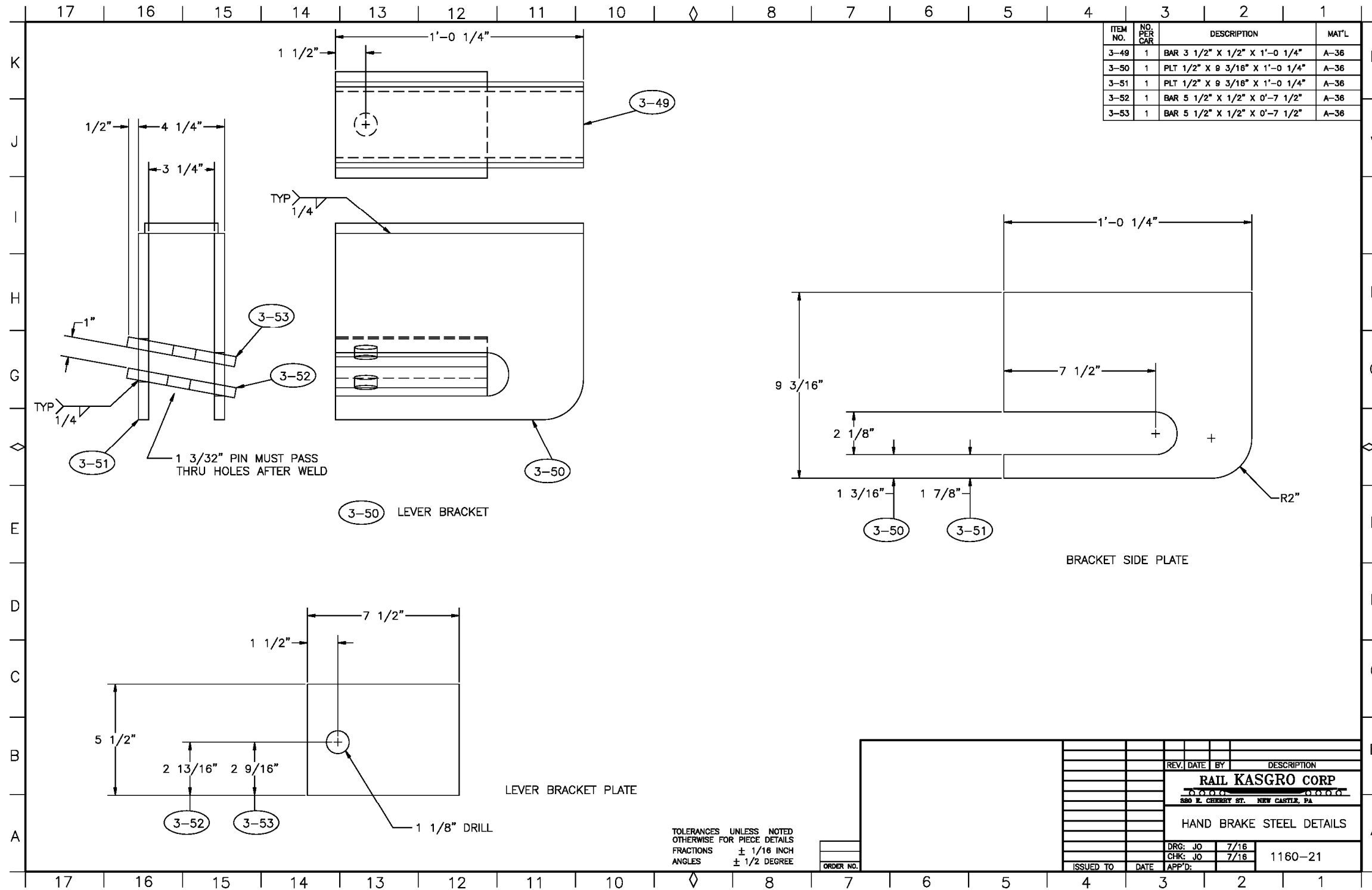
Orano Federal Services  
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 Project: 00225.03.0050 DOE Atlas Project

APPENDIX E.20 BRAKE BADGE PLATE

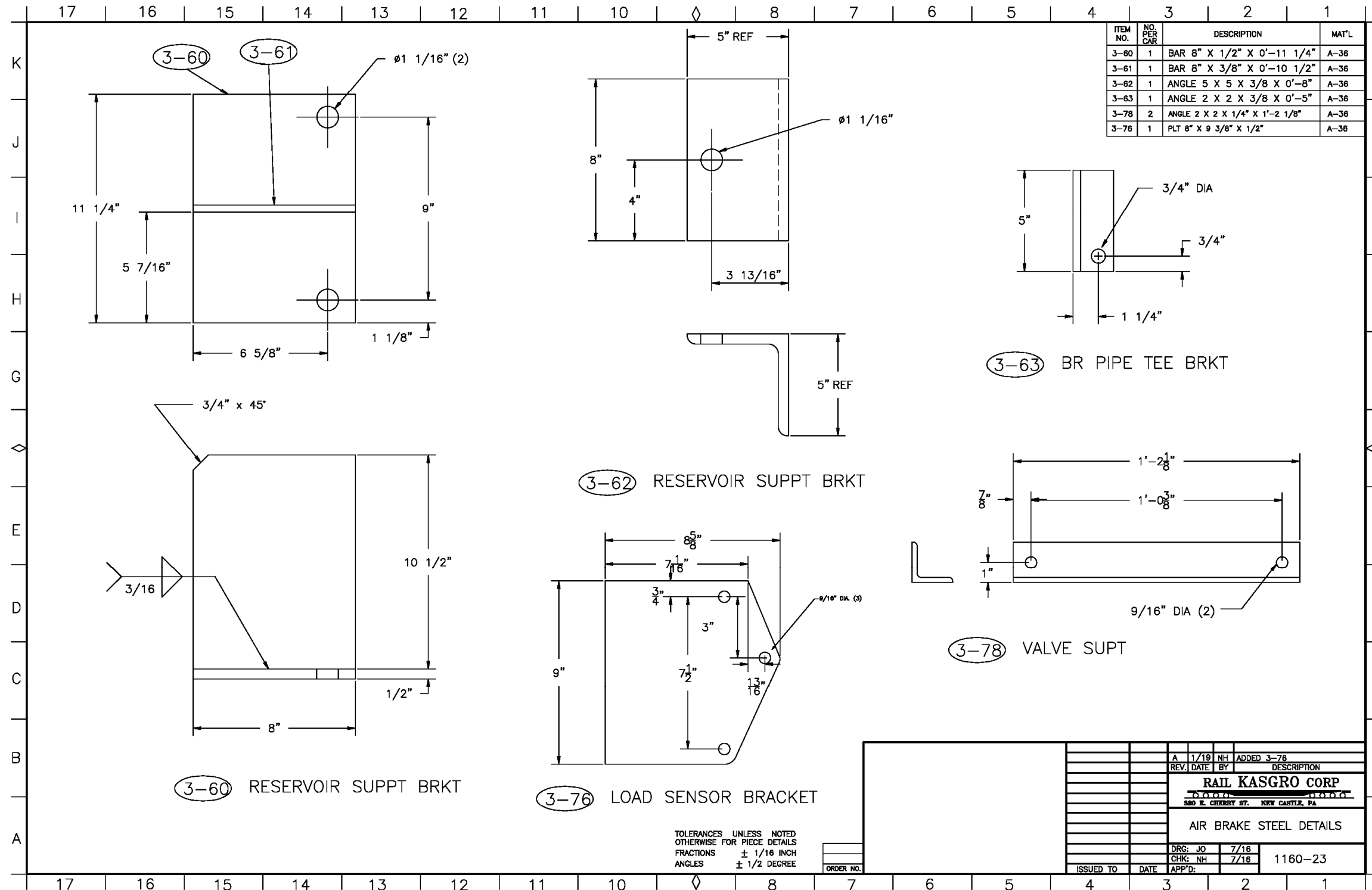


## APPENDIX E.21 HAND BRAKE STEEL DETAILS





## APPENDIX E.23 AIR BRAKE STEEL DETAILS





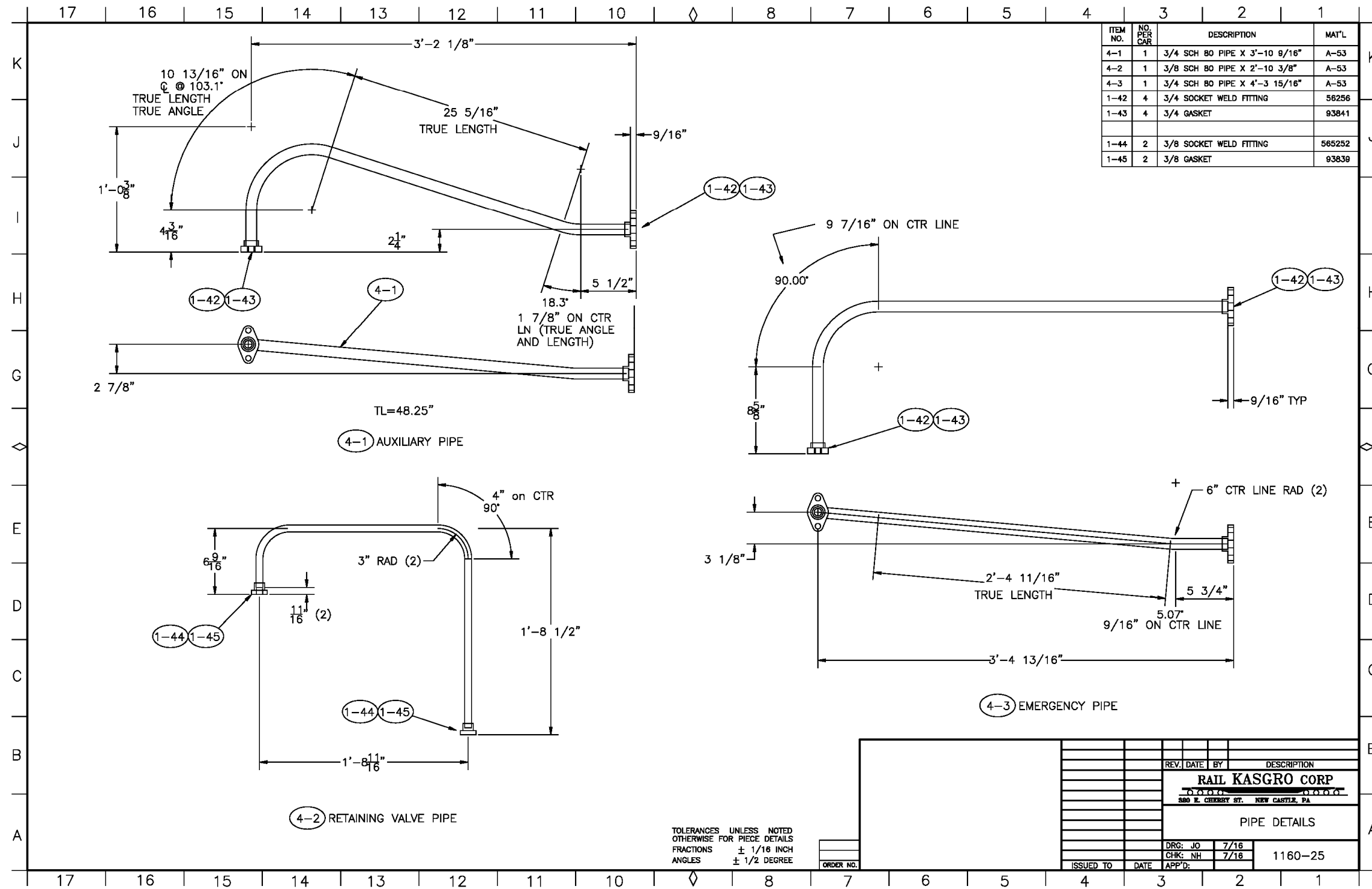




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**APPENDIX E.25 PIPE DETAILS**



TOLERANCES UNLESS NOTED OTHERWISE FOR PIECE DETAILS  
 FRACTIONS ± 1/16 INCH  
 ANGLES ± 1/2 DEGREE

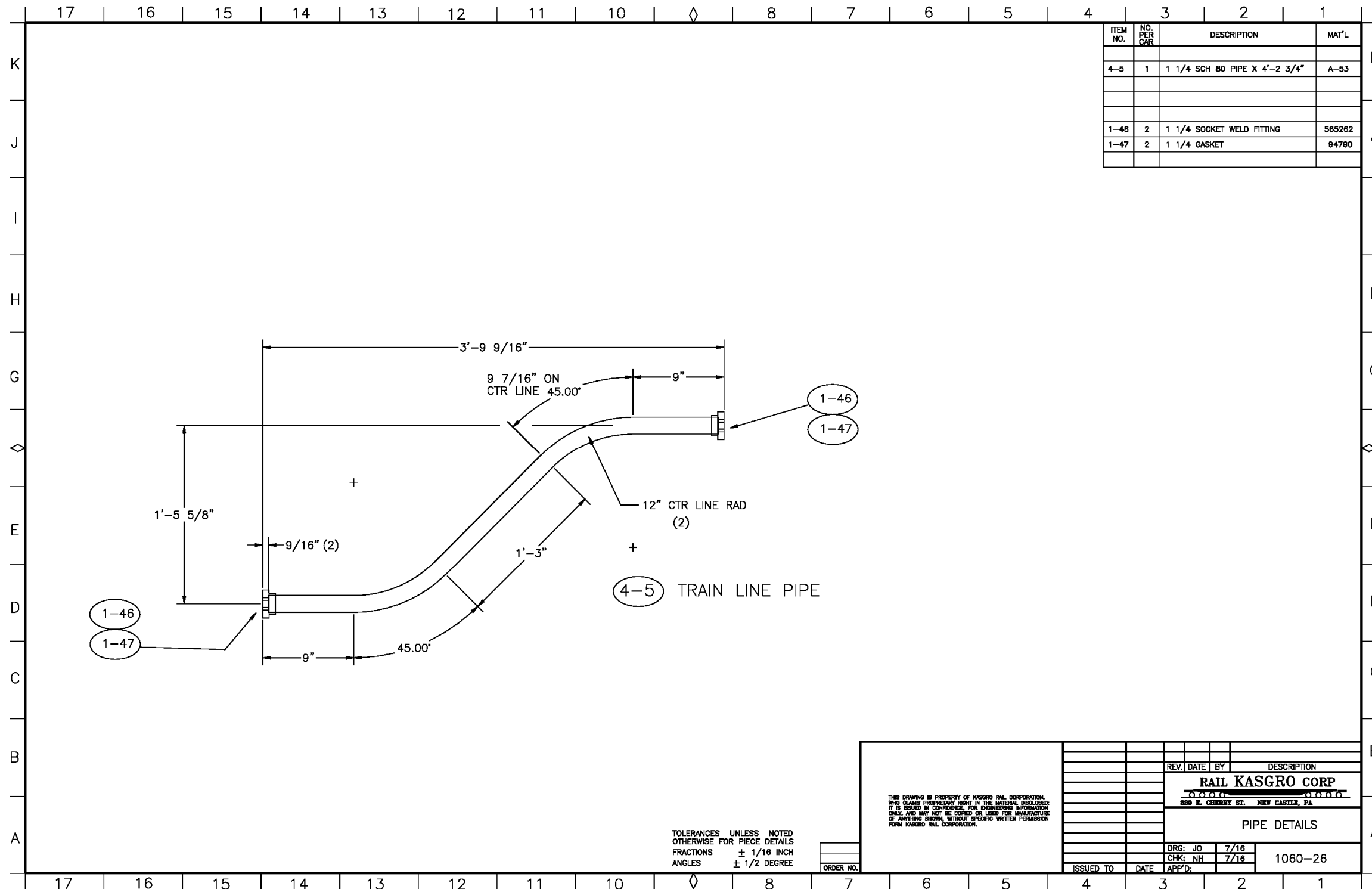
REV.	DATE	BY	DESCRIPTION
<b>RAIL KASGRO CORP</b>			
200 E. CHESTNUT ST. NEW CASTLE, PA			
PIPE DETAILS			
DRG:	JO	7/16	
CHK:	NH	7/18	
ISSUED TO	DATE	APP'D:	1160-25



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**APPENDIX E.26 PIPE DETAILS**

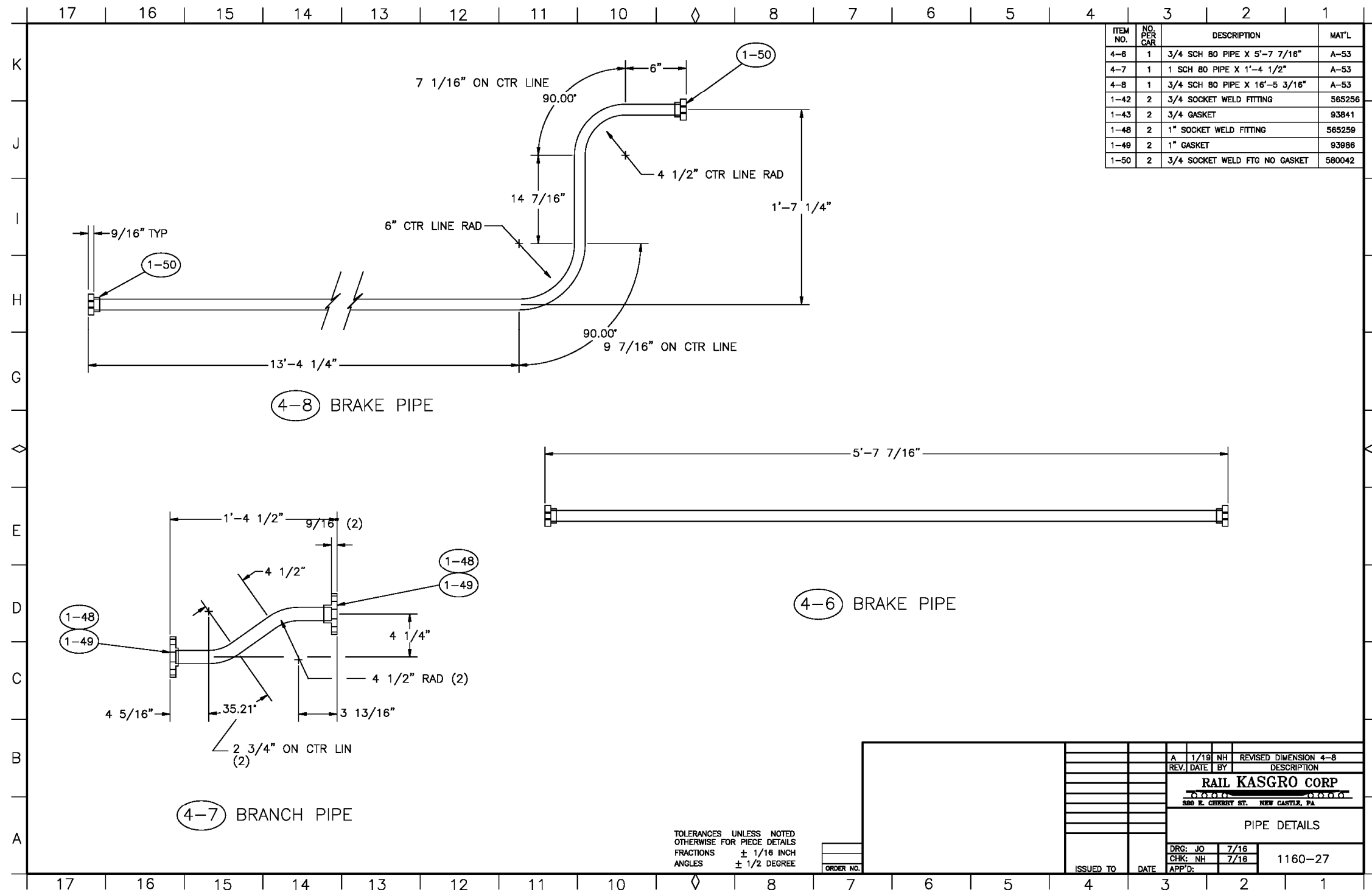




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 Project: 00225.03.0050 DOE Atlas Project

**APPENDIX E.27 PIPE DETAILS**

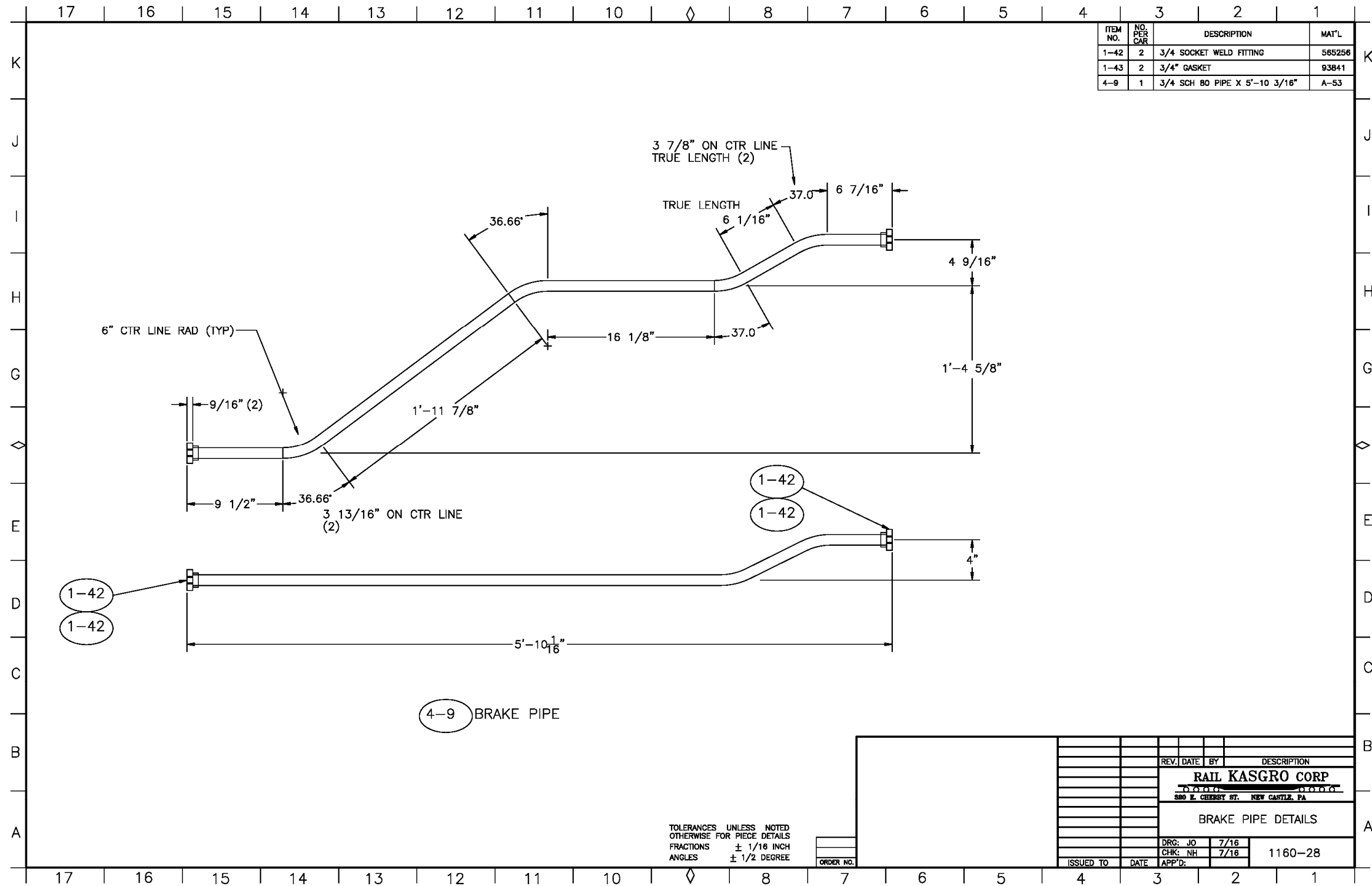




**Orano Federal Services**  
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 Project: 00225.03.0050 DOE Atlas Project

**APPENDIX E.28 BRAKE PIPE DETAILS**

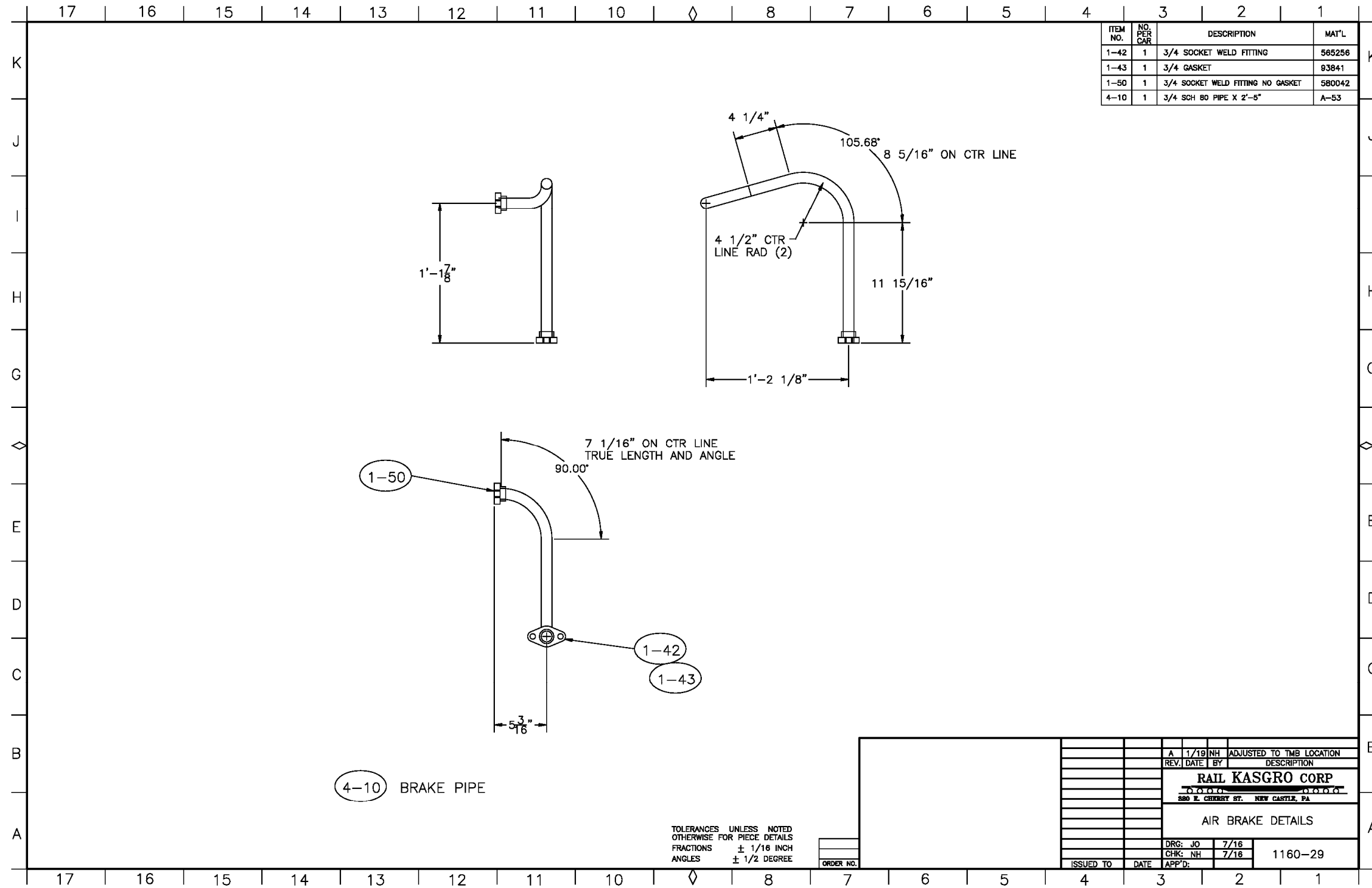




**Orano Federal Services**  
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**APPENDIX E.29 AIR BRAKE DETAILS**



ITEM NO.	NO. PER CAR	DESCRIPTION	MAT'L
1-42	1	3/4 SOCKET WELD FITTING	565256
1-43	1	3/4 GASKET	93841
1-50	1	3/4 SOCKET WELD FITTING NO GASKET	580042
4-10	1	3/4 SCH 80 PIPE X 2'-5"	A-53

4-10 BRAKE PIPE

TOLERANCES UNLESS NOTED OTHERWISE FOR PIECE DETAILS  
 FRACTIONS ± 1/16 INCH  
 ANGLES ± 1/2 DEGREE

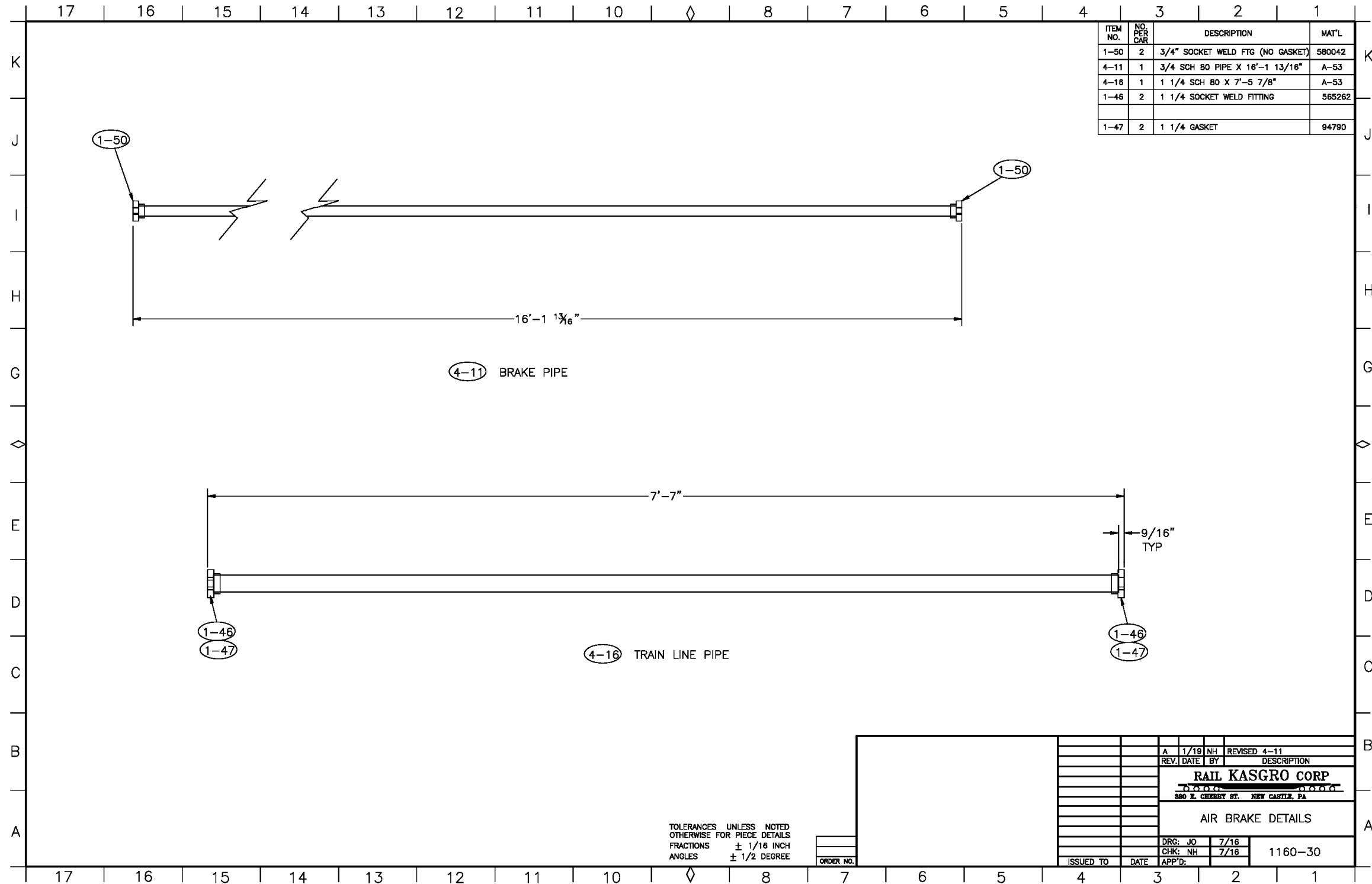
REV.	DATE	BY	DESCRIPTION
A	1/19/18	NH	ADJUSTED TO TMB LOCATION
<b>RAIL KASGRO CORP</b>			
6000 0000			
280 E. CHERRY ST. NEW CASTLE, PA			
AIR BRAKE DETAILS			
DRG:	JO	7/16	
CHK:	NH	7/16	1160-29
ISSUED TO	DATE	APP'D:	



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 Project: 00225.03.0050 DOE Atlas Project

**APPENDIX E.30 AIR BRAKE DETAILS**

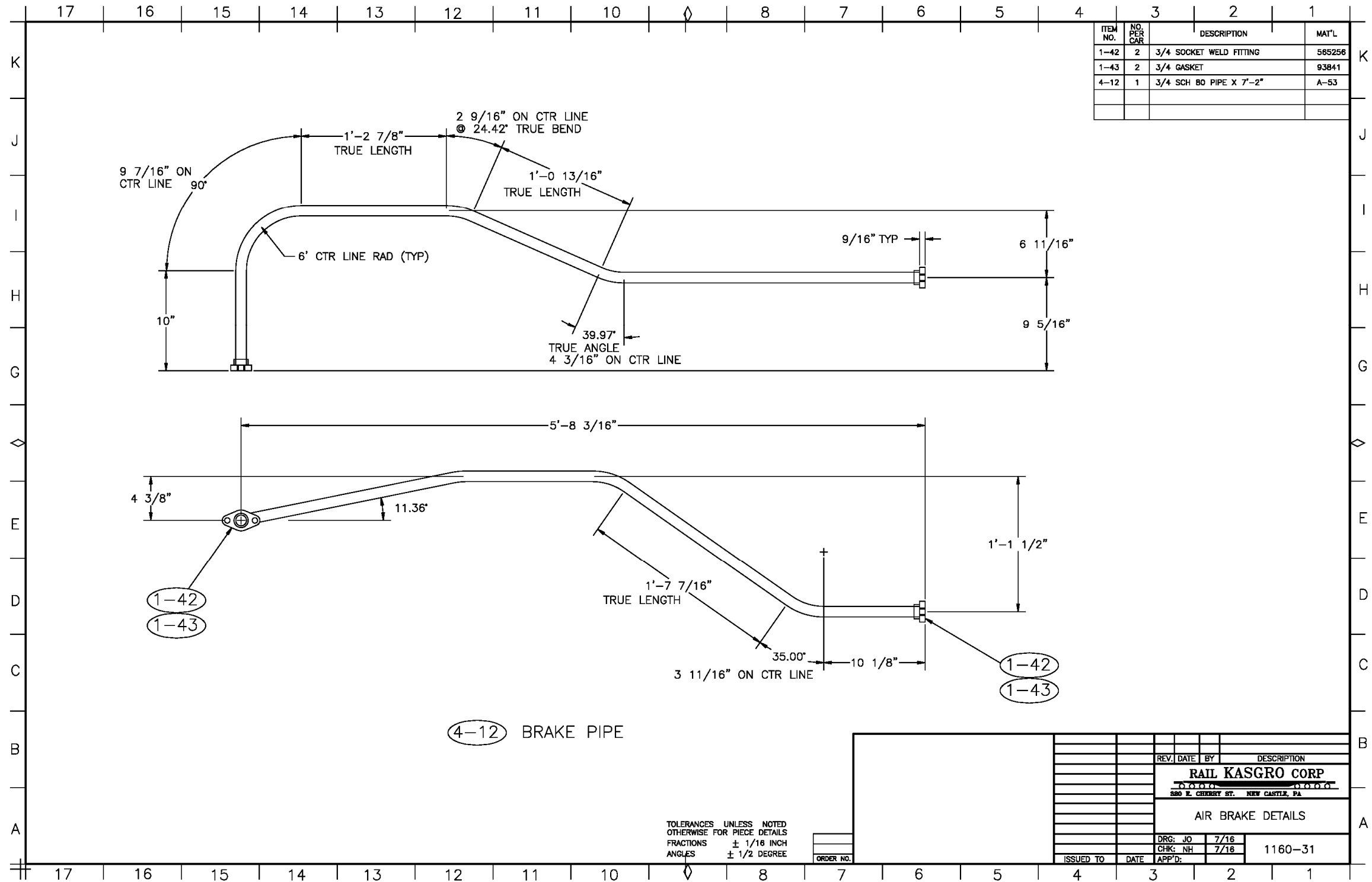




**Orano Federal Services**  
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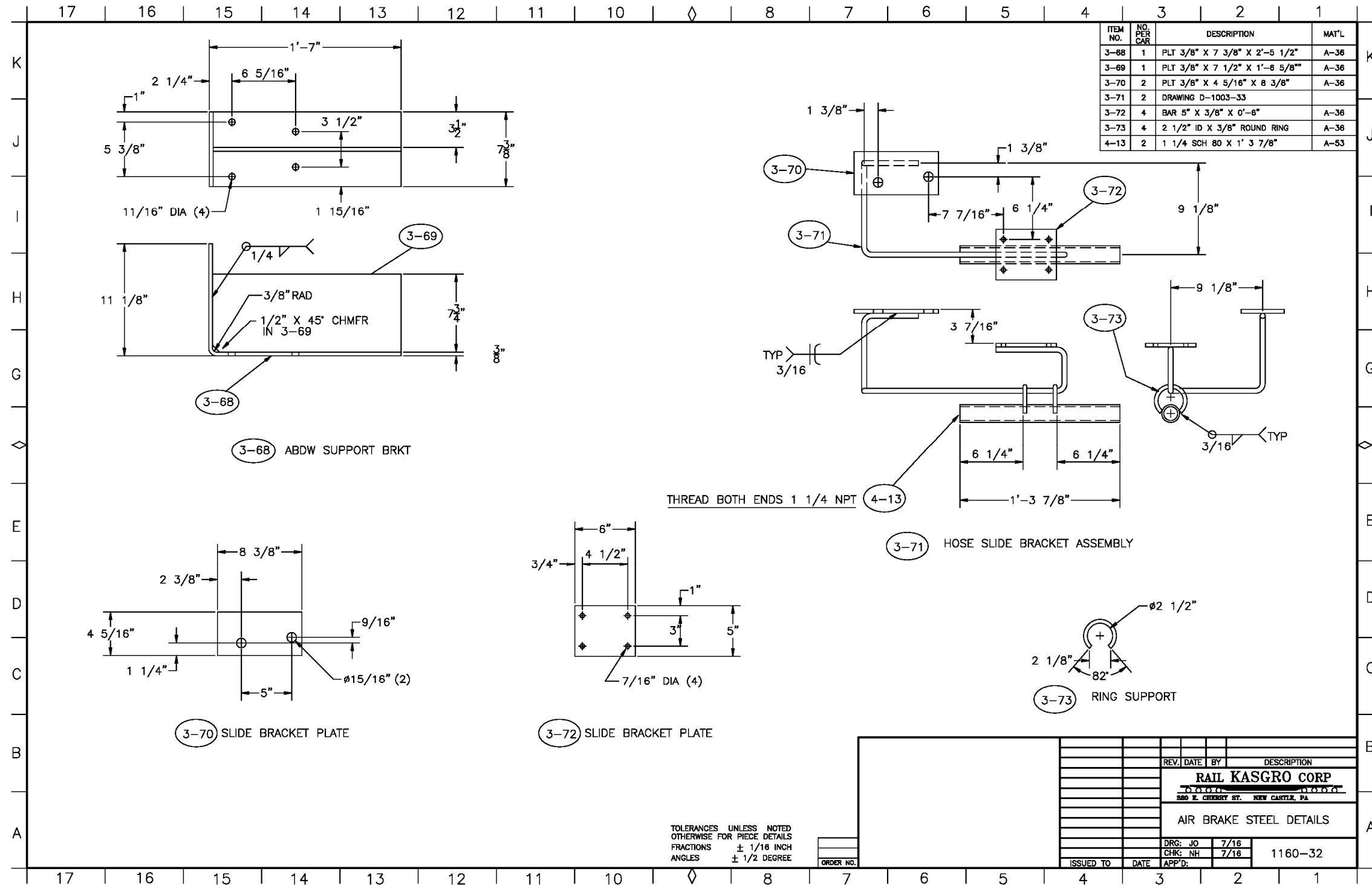
Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**APPENDIX E.31 AIR BRAKE DETAILS**





## APPENDIX E.32 AIR BRAKE STEEL DETAILS





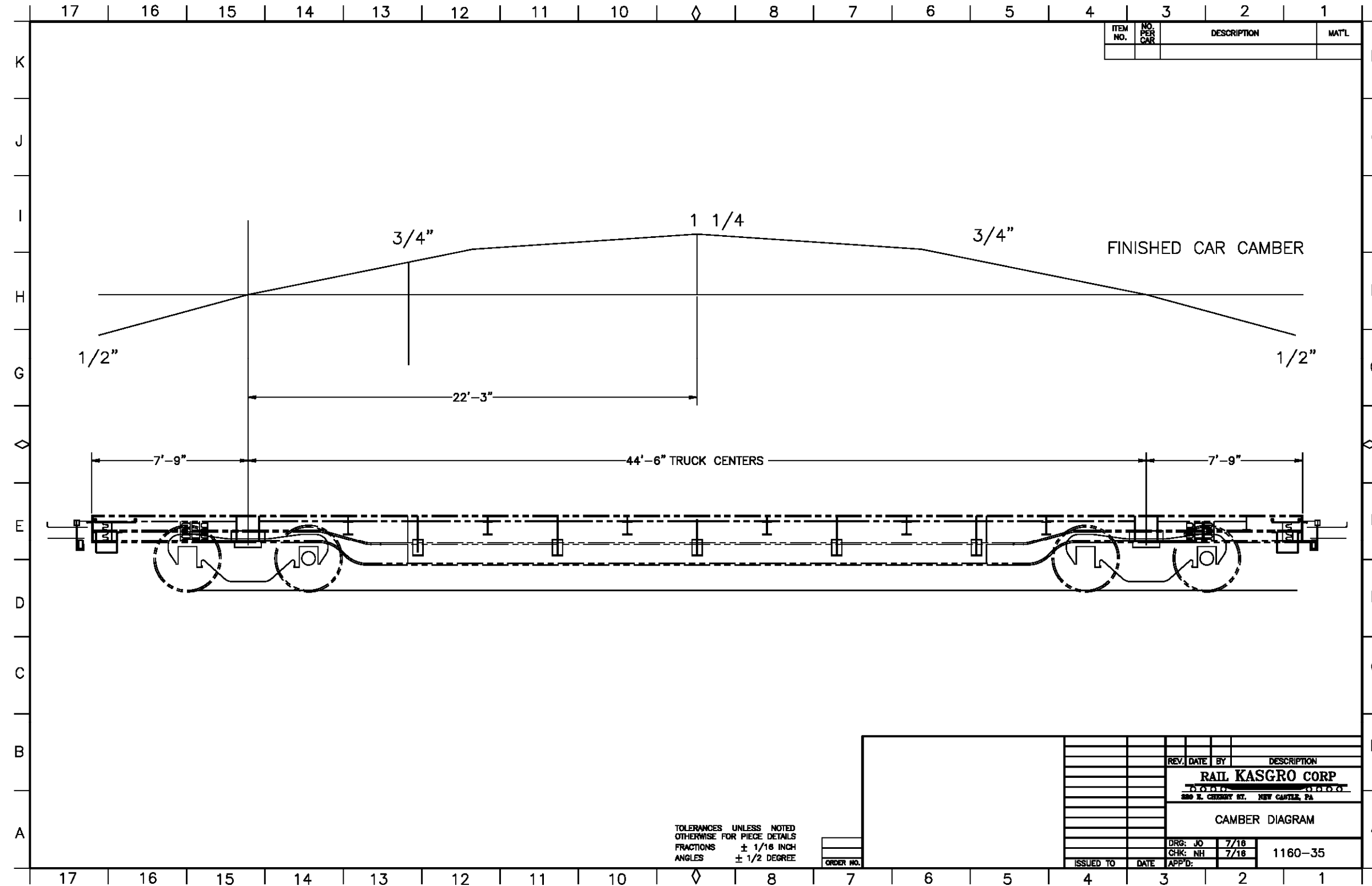




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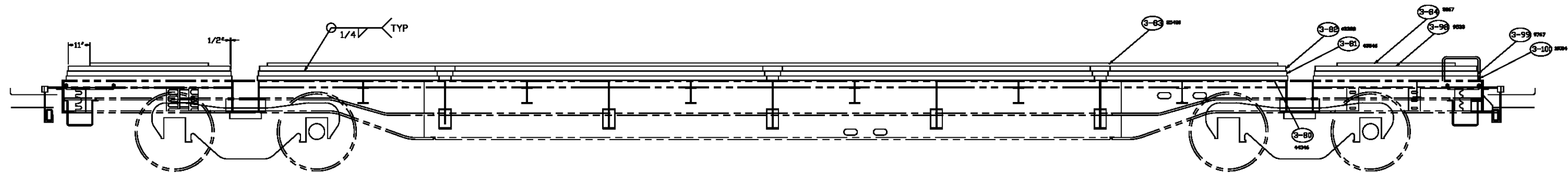
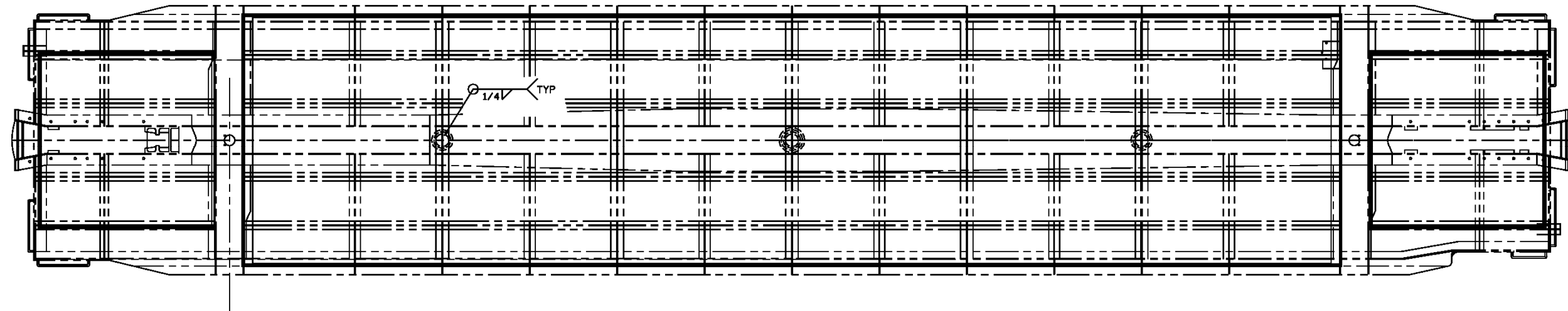
APPENDIX E.35 CAMBER DIAGRAM





APPENDIX E.37 BALLAST WT (WEIGHT) ARRANGEMENT

ITEM NO.	QTY	DESCRIPTION	MAT'L
3-88	1	BRACKET 3-88-01	
3-89	1	BRACKET 3-89-01	
3-90	1	BRACKET 3-90-01	
3-91	1	PLT 1/4" X 1/2" X 1/2"	A-36
3-92	1	PLT 1/4" X 1/2" X 1/2"	A-36
3-93	1	PLT 1/4" X 1/2" X 1/2"	A-36
3-94	1	PLT 1/4" X 1/2" X 1/2"	A-36
3-95	1	PLT 1/4" X 1/2" X 1/2"	A-36
3-96	1	PLT 1/4" X 1/2" X 1/2"	A-36
3-97	1	PLT 1/4" X 1/2" X 1/2"	A-36
3-98	1	PLT 1/4" X 1/2" X 1/2"	A-36
3-99	1	PLT 1/4" X 1/2" X 1/2"	A-36
3-100	1	PLT 1/4" X 1/2" X 1/2"	A-36



TOLERANCES UNLESS NOTED  
 OTHERWISE FOR PIECE DETAILS  
 FRACTIONS ± 1/16 INCH  
 ANGLES ± 1/2 DEGREE

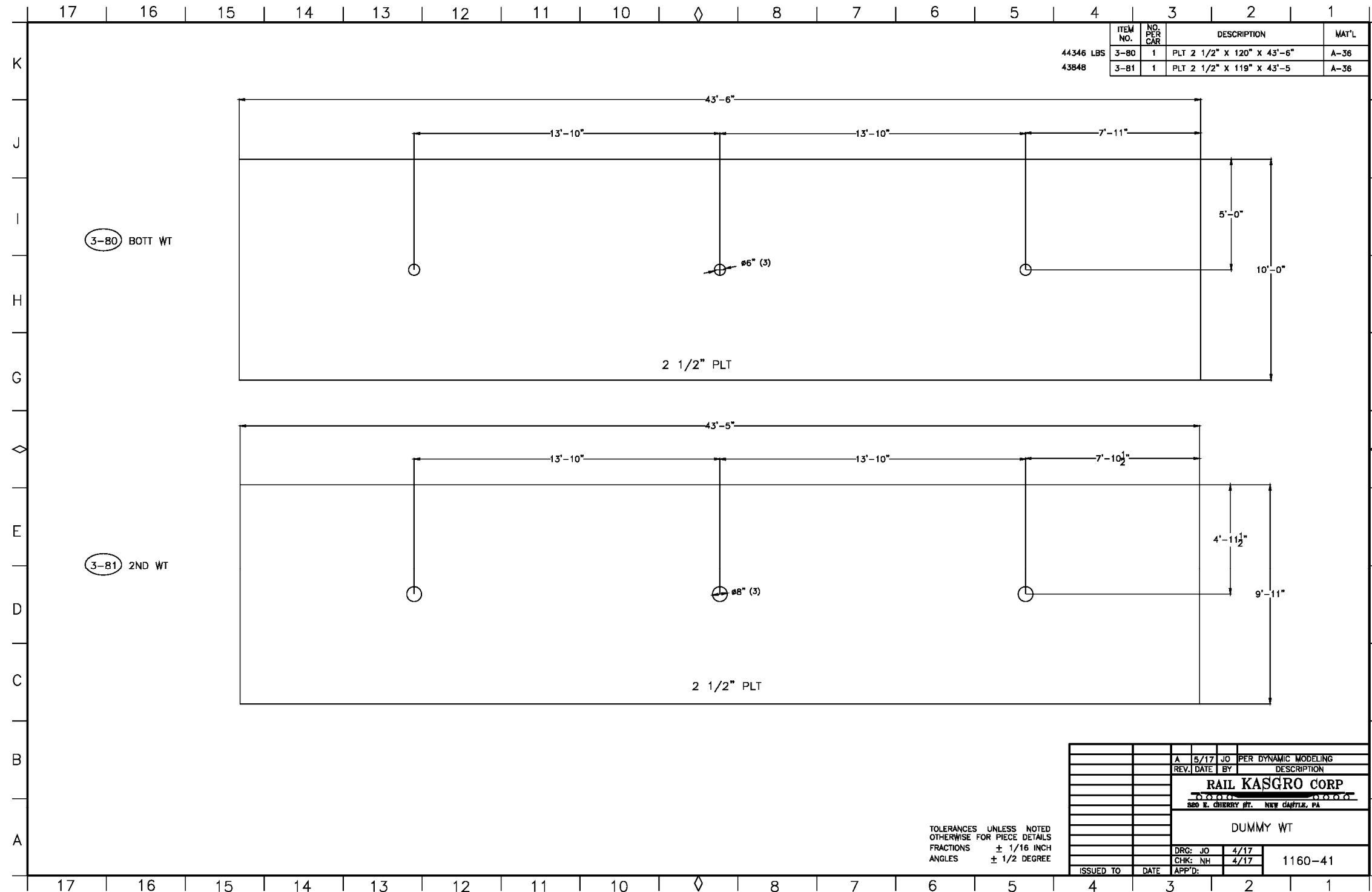
REV	DATE	BY	CHKD	DESCRIPTION
C	8/17	NH		WEIGHTS
B	8/17	JS		NUMBERING
A	8/17	JS		PER DRAWING REVISION
				DESCRIPTION
<b>RAIL KASGRO CORP</b>				
1160 S. GARDNER ST. WYOMING, PA.				
BALLAST WT ARRANGEMENT				
BRG	JD	4/17		
CHK	NH	4/17		
ISSUED TO	DATE	APP'D		1160-40



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**APPENDIX E.38 DUMMY WT (WEIGHT)**

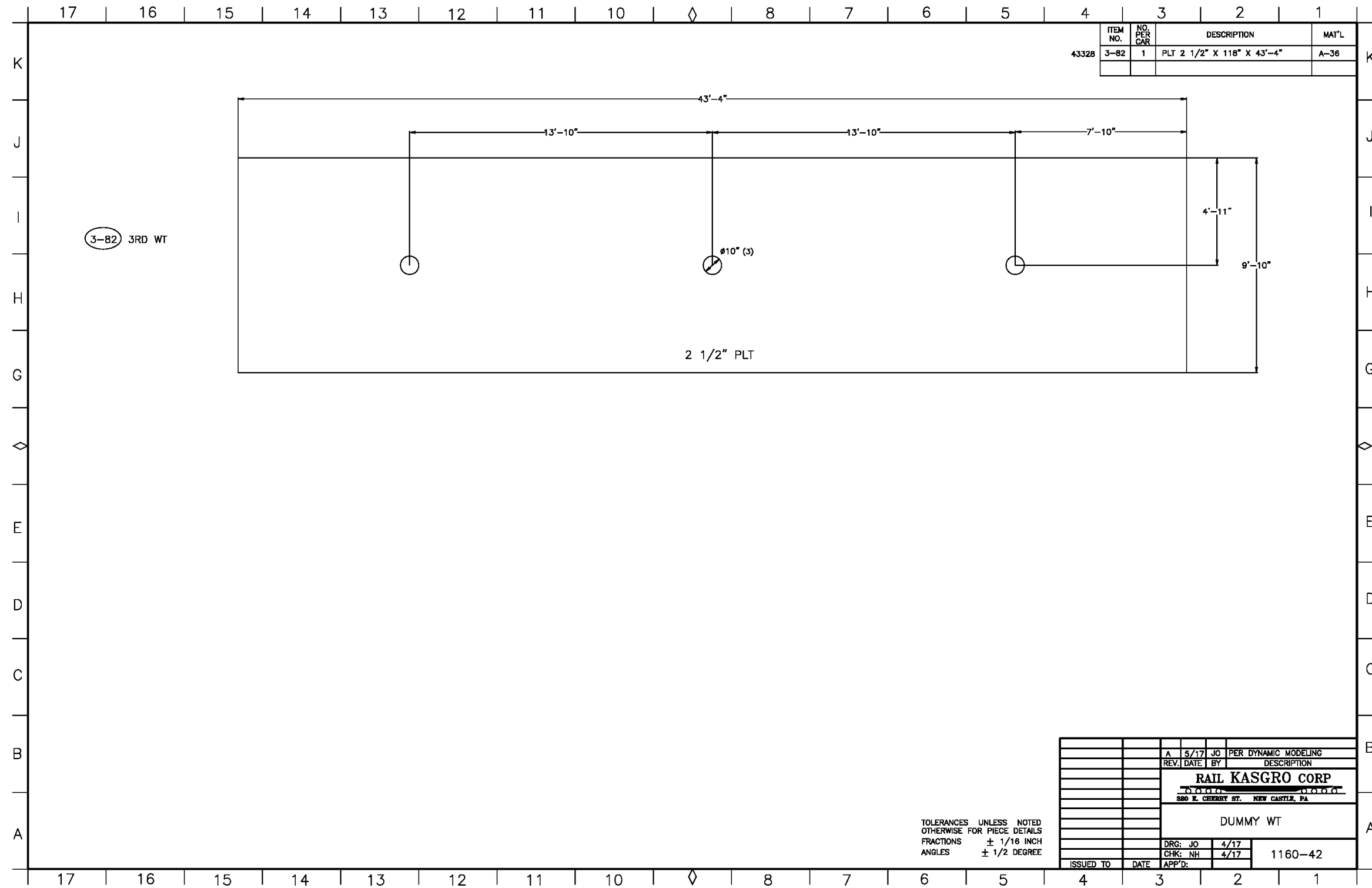




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**APPENDIX E.39 DUMMY WT (WEIGHT)**



ITEM NO.	NO. PER CAR	DESCRIPTION	MAT'L	
43328	3-82	1	PLT 2 1/2" X 118" X 43'-4"	A-36

REV.	DATE	BY	DESCRIPTION
A	5/17	JO	PER DYNAMIC MODELING

**RAIL KASGRO CORP**  
 880 E. CHEROKEE ST. NEW CASTLE, PA

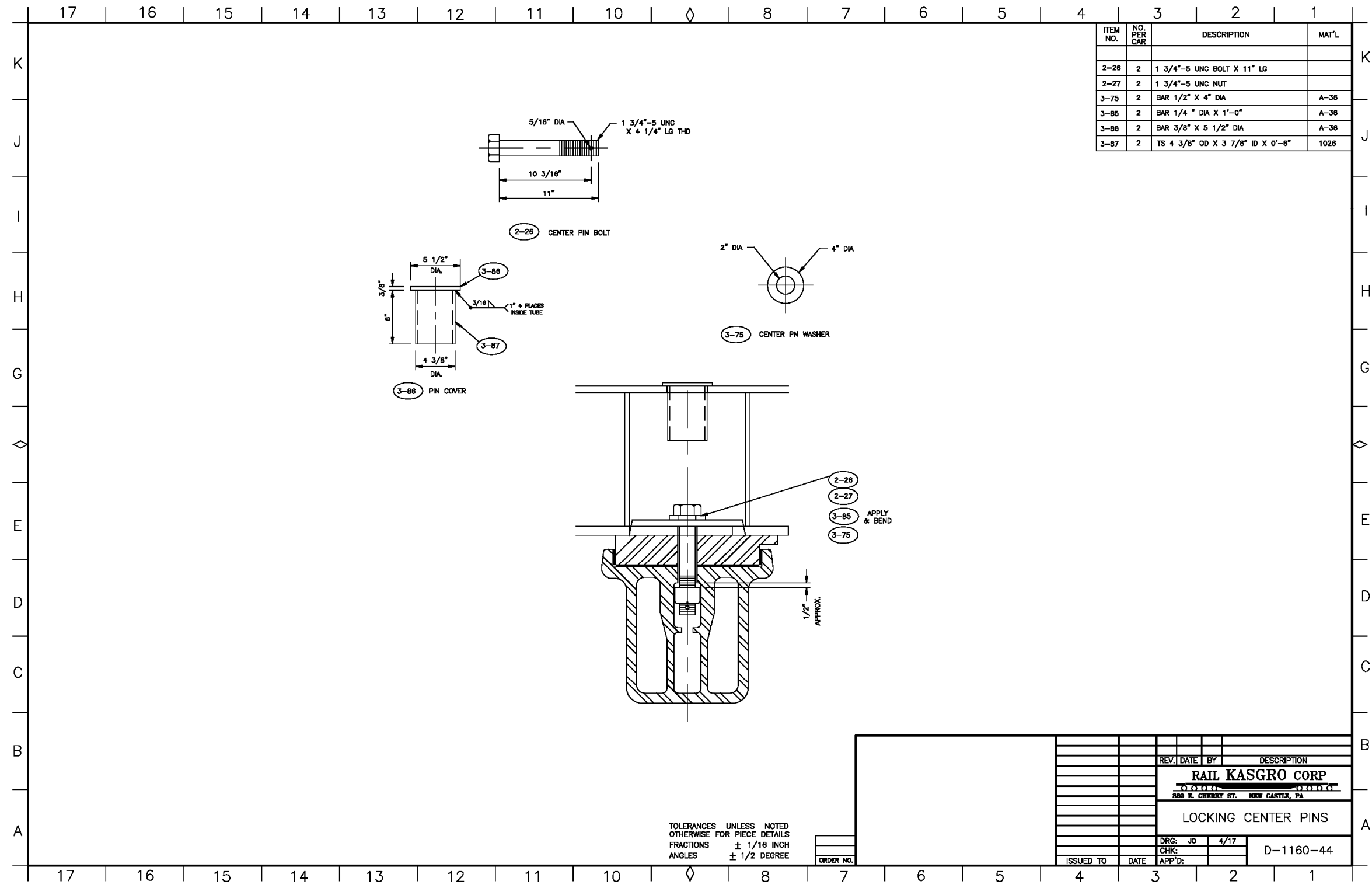
**DUMMY WT**

DRG: JO	4/17	1160-42
CHK: NH	4/17	
ISSUED TO	DATE	

TOLERANCES UNLESS NOTED OTHERWISE FOR PIECE DETAILS  
 FRACTIONS ± 1/16 INCH  
 ANGLES ± 1/2 DEGREE



## APPENDIX E.40 LOCKING CENTER PINS



ITEM NO.	NO. PER CAR	DESCRIPTION	MAT'L
2-26	2	1 3/4"-5 UNC BOLT X 11" LG	
2-27	2	1 3/4"-5 UNC NUT	
3-75	2	BAR 1/2" X 4" DIA	A-36
3-85	2	BAR 1/4" DIA X 1'-0"	A-36
3-86	2	BAR 3/8" X 5 1/2" DIA	A-36
3-87	2	TS 4 3/8" OD X 3 7/8" ID X 0'-6"	1026

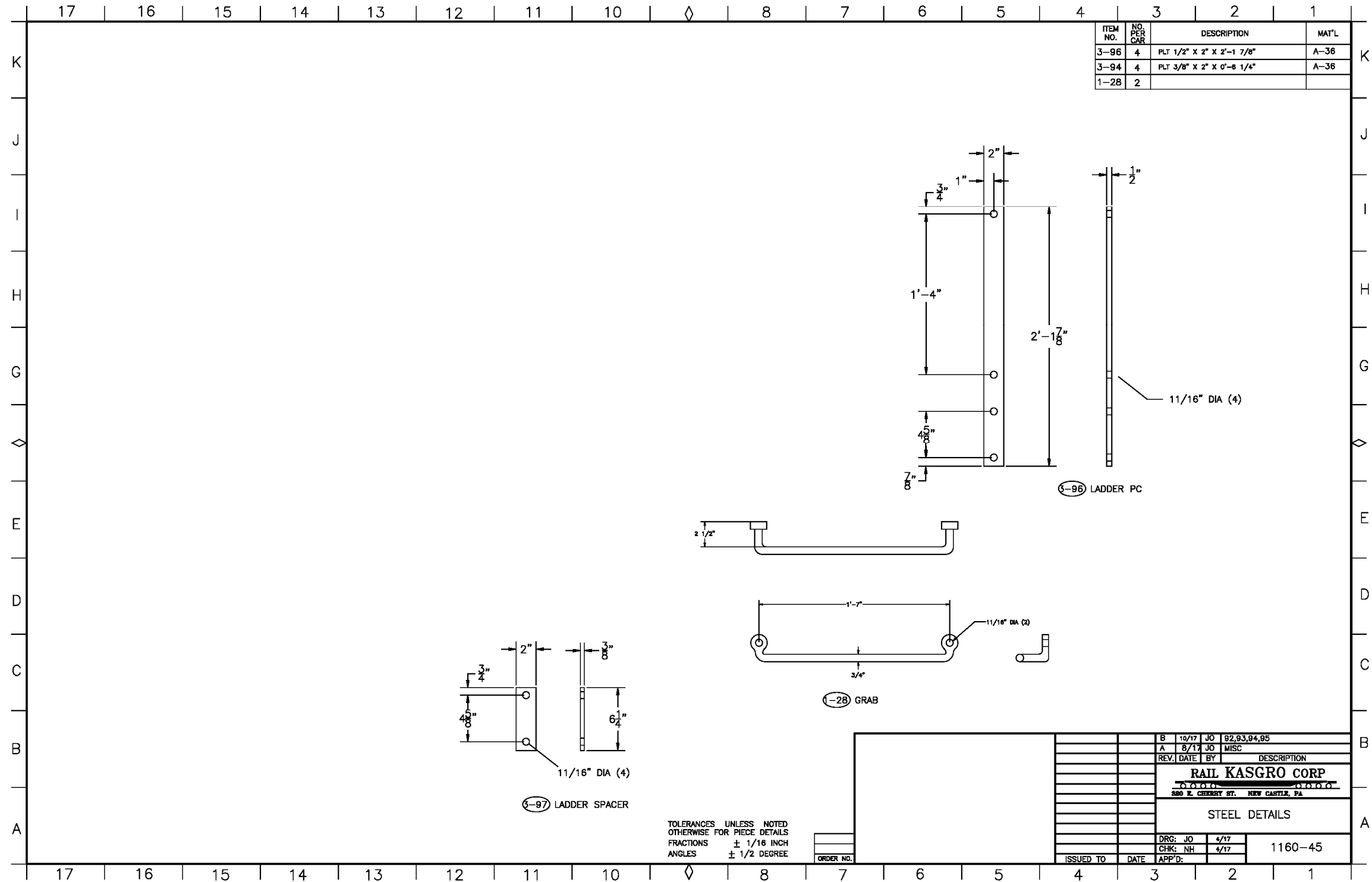
REV.	DATE	BY	DESCRIPTION
<b>RAIL KASGRO CORP</b> <small>380 E. CHESTNUT ST. NEW CASTLE, PA</small>			
<b>LOCKING CENTER PINS</b>			
DRG:	JD	4/17	
CHK:			D-1160-44
ISSUED TO:	DATE	APP'D:	



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**APPENDIX E.41 STEEL DETAILS**





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**High-Level Radioactive Material Phase 3 – Prototype Fabrication and Delivery**  
**Appendix E**

Doc./Rev.: EIR-3021970-000  
 Project: 00225.03.0050 DOE Atlas Project

**APPENDIX E.42 STEEL DETAILS**

