

# Safety Committee

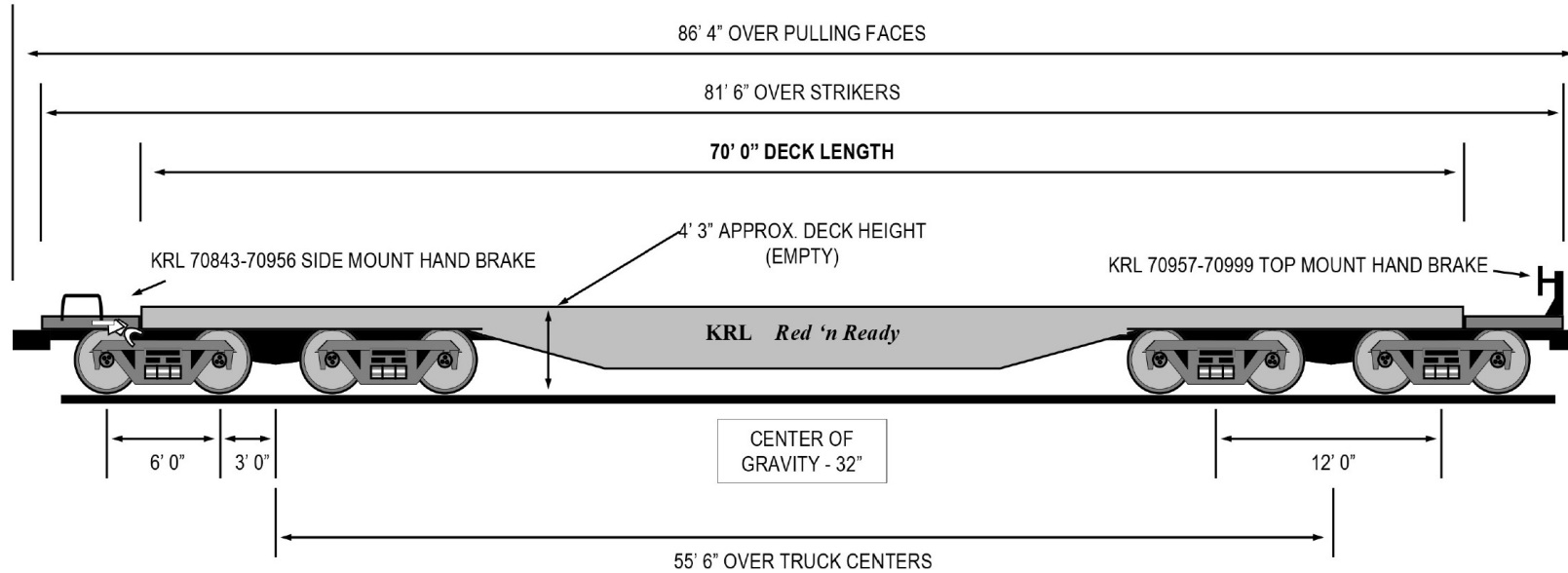
RICA Conference – 2024

Savannah, GA

# Topics of discussion

- Railcar loading patterns
- Open top loading rule updates

# KRL 70000 - 70999



LENGTH OF LADING (ft)	LOAD LIMITS (lbs)	CAR NUMBERS	LOAD LIMITS (lbs)	LIGHT WEIGHTS	MAXIMUM GROSS (lbs)	SPRING TRAVEL (in)	DECK LENGTH (ft)	DECK HEIGHT (ft-in)	JOURNAL SIZE			
0	315,000	<b>70843-70999</b>	460,610	169,390	630,000	3 11/16"	70' 0"	4' 3"	7" X 12" ROLLER			
2	383,930					WHEEL DIAMETER	DECK WIDTH (ft-in)	DRAFT GEAR				
8	406,290					38"	10' 0"	15" EOC				
14	431,420											
20	459,870											
26 & OVER	LOAD LIMIT											

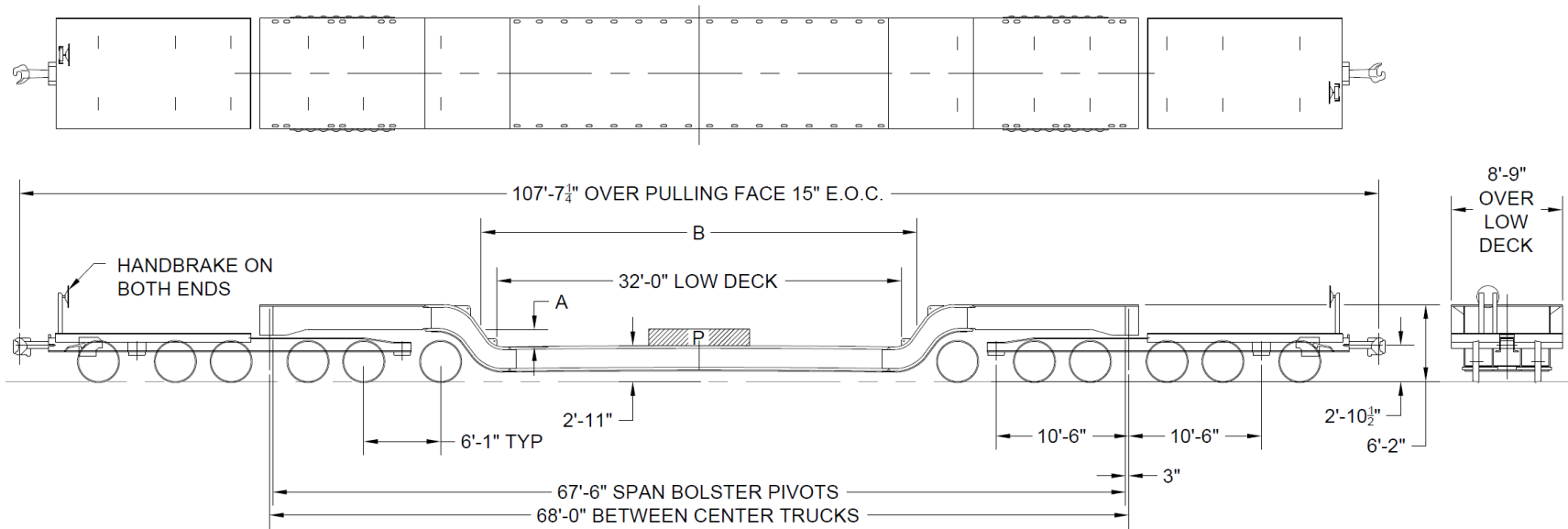
**KRL 70843 - 70999**  
**230 Ton - 70' Flat Deck Car**  
**Drawing No. A19616 Rev. C**

**GENERAL NOTES:**

- \* KRL 70843-70956 Side Mount Hand Brake
- \* KRL 70957-70999 Top Mount Hand Brake

Cars 70000- 70069

2'-11" DECK HEIGHT ABOVE RAIL IS MEASURED AT CENTER OF CARBODY, INCLUDING CAMBER, WITH A LOAD EQUAL TO 50% OF LOAD LIMIT UNIFORMLY DISTRIBUTED OVER FULL LENGTH OF LOAD DECK.



MAXIMUM WEIGHT OF PARTIAL LENGTH LOADS

LOAD LENGTH (FT) (b)	LOAD (1000) (LBS) (P)
0	445.2*
4	282.0
8	520.2
12	564.8
16	618.0
18 & OVER	LOAD LIMIT

\* MAX. CONCENTRATED LOAD

CENTER OF GRAVITY - EMPTY = 30.2" ATR  
CLEARANCE PROFILE WITHIN AAR PLATE "C"

BOTTOM OF LOAD ABOVE DECK A	MAX. LENGTH OF LOAD B
12"	33'-11"
18"	34'-8"
24"	35'-5"

CAR NUMBERS QTTX 130650-130655

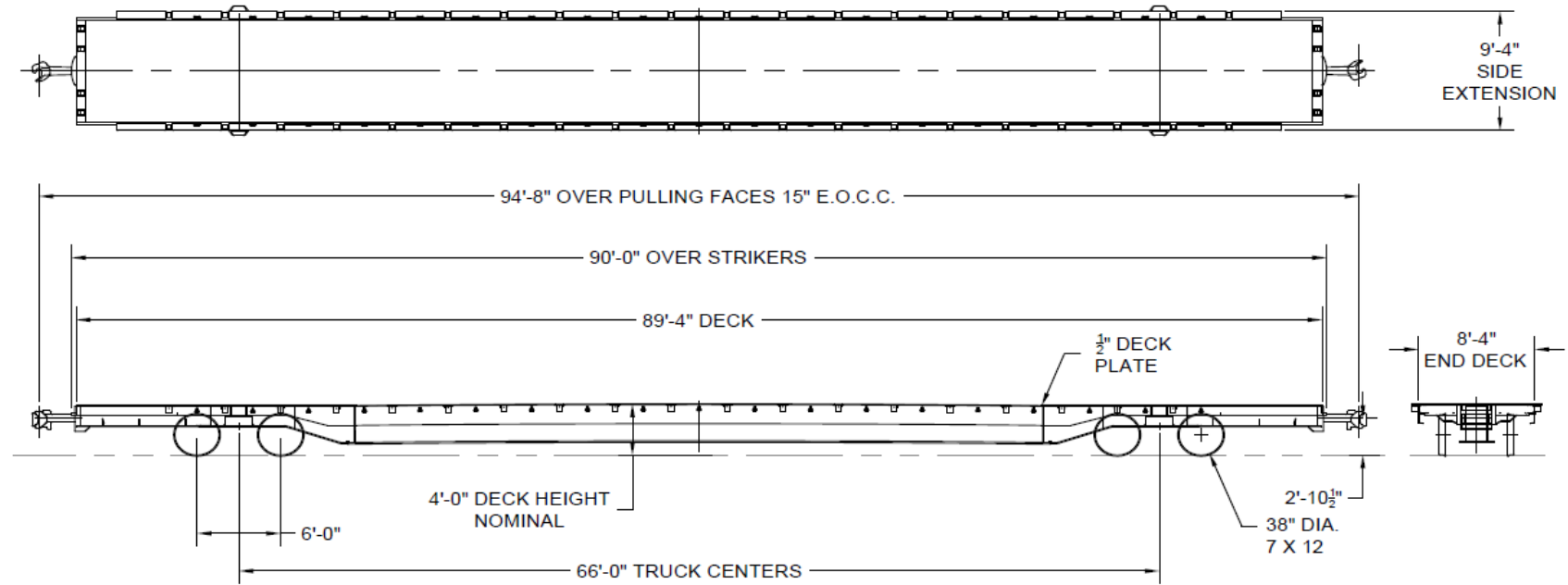
CAR SERIES	LOAD LIMIT LBS.	LIGHT WEIGHT LBS.
130650-130655	665,000	280,000

**TTX** TTX COMPANY  
CHICAGO, ILLINOIS

330 TON, 32 FOOT DECK  
DEPRESSED CENTER FLAT CAR

CLASS KDH32A	DATE 06-01-02	REV F	11626
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4'-0" DECK HEIGHT ABOVE RAIL IS EMPTY CAR MEASUREMENT.



**MAXIMUM WEIGHT OF PARTIAL LENGTH LOADS**

LOAD LENGTH (FT) (b)	LOAD (1000) (LBS) (P)
5	118.0
20	135.0
40	165.0
66	230.0

CENTER OF GRAVITY - EMPTY = 30.1" ATR  
CLEARANCE PROFILE WITHIN AAR PLATE "C"

CAR SERIES	LOAD LIMIT LBS.	LIGHT WEIGHT LBS.
132000-132049	231,000	84,000

CAR NUMBERS QTTX 132000-132049

<b>TTX</b>		TTX COMPANY CHICAGO, ILLINOIS	
115 TON, 89 FOOT DECK FLAT CAR			
CLASS HSH89	DATE 06-01-02	REV E	12365

## 5.2 Load Restraint Applications

**5.2.1** Floor blocking must be attached to a sound floor free from defects that could hinder solid application of securement. For maximum restraint, all fasteners must be perpendicular, or at 90° to the floor, because by definition, floor blocking is designed for lateral and longitudinal restraint. If plate welded to the car is used for floor blocking, provide a vertical component by adding a lip or catch to the securement to prevent any vertical movement. The lip is parallel to the car floor. Provide filler as needed for solid or full contact. When the plane of the load does not act through the weld (eccentrically loaded weld), the length of the plate and floor weld must be minimum 2 ½ times the height of the point of contact between first piece and load. Any load in which the first vertical point of contact is over 1 in. above railcar floor is considered an eccentrically loaded weld (see Fig. 5.2). For eccentrically loaded weld, plate welded to the car floor used for blocking shall consist of two pieces, one piece placed flat against the load (vertically) and welded to the car floor along with a backup piece placed perpendicular to the first piece.

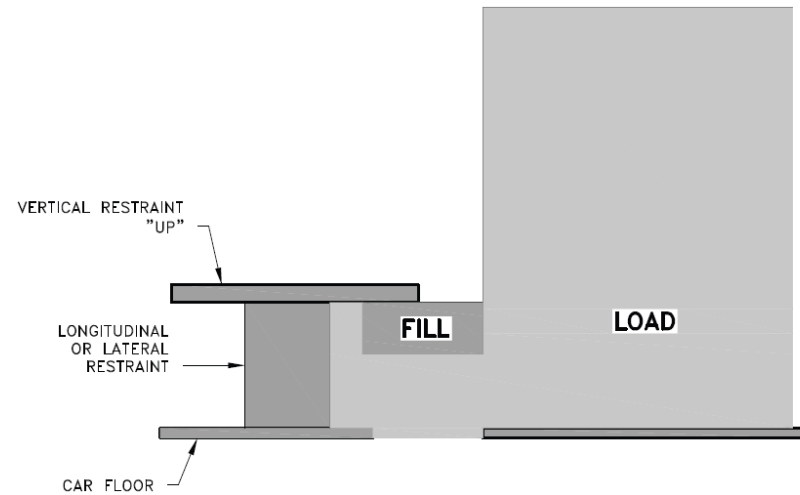


Fig. 5.1 Floor blocking with vertical restraint

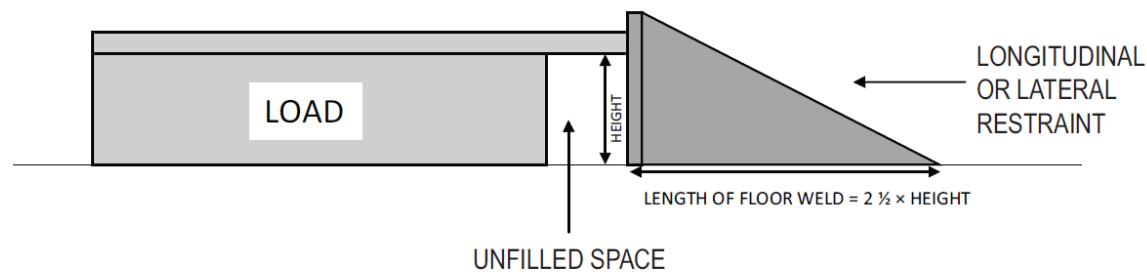


Fig. 5.2 Eccentrically loaded weld

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IMPLEMENTED 06/2023

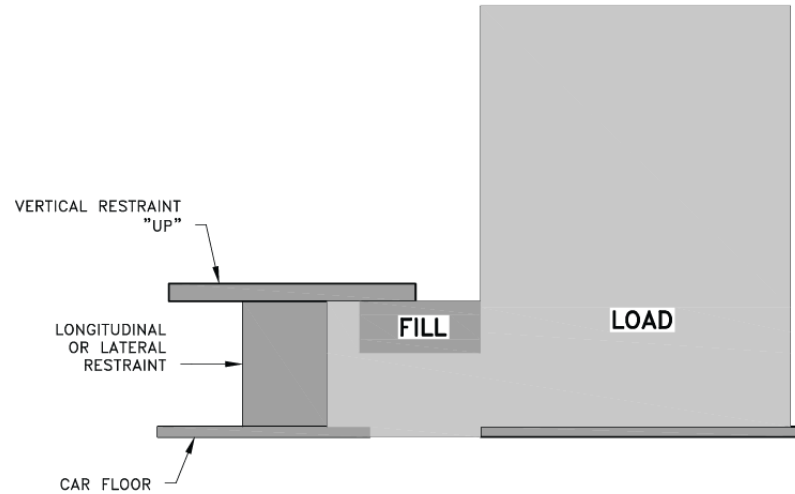


Fig. 5.1 Floor blocking with vertical restraint

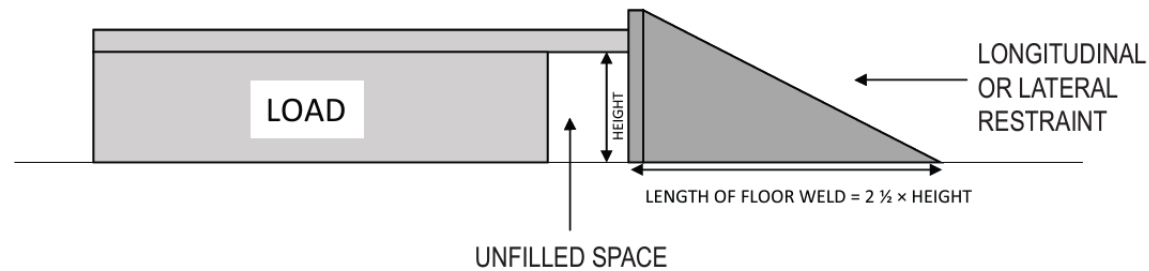


Fig. 5.2 Eccentrically loaded weld

Table D.3.1 Eccentrically Loaded Welds

Height of the Point of Contact	Weight of Load	Lateral		Longitudinal	
		Restraint Type	Quantity	Restraint Type	Quantity
1 in. to 4 in.	200,000 lbs.	T1	2	T1	3
	250,000 lbs.	T1	3	T1	4
	300,000 lbs.	T1	3	T1	4
	350,000 lbs.	T1	3	T2	2
	400,000 lbs.	T1	4	T2	3
	450,000 lbs.	T1	4	T2	3
	500,000 lbs.	T2	2	T2	3
Over 4 in. to 6 in.	200,000 lbs.	T1	3	T1	4
	250,000 lbs.	T1	3	T2	2
	300,000 lbs.	T1	4	T2	2
	350,000 lbs.	T1	4	T2	3
	400,000 lbs.	T2	2	T2	3
	450,000 lbs.	T2	2	T2	3
	500,000 lbs.	T2	3	T2	4
Over 6 in. to 8 in.	200,000 lbs.	T1	3	T1	4
	250,000 lbs.	T1	4	T2	2
	300,000 lbs.	T1	4	T2	3
	350,000 lbs.	T2	2	T2	3
	400,000 lbs.	T2	3	T2	4
	450,000 lbs.	T2	3	T2	4
	500,000 lbs.	T2	3	T2	4
Over 8 in. to 10in.	200,000 lbs.	T1	4	T2	2
	250,000 lbs.	T2	2	T2	3
	300,000 lbs.	T2	2	T2	3
	350,000 lbs.	T2	3	T2	4
	400,000 lbs.	T2	3	T2	4
	450,000 lbs.	T2	3	T2	5
	500,000 lbs.	T2	4	T2	5

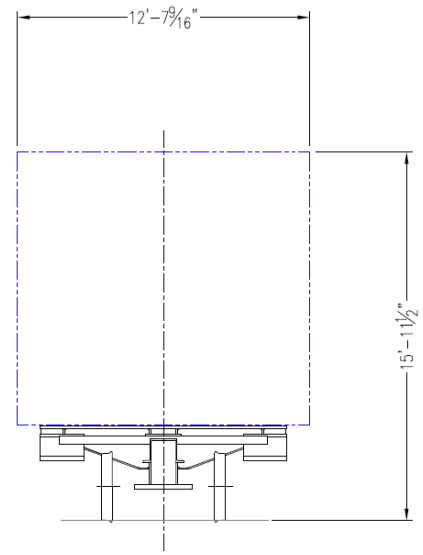
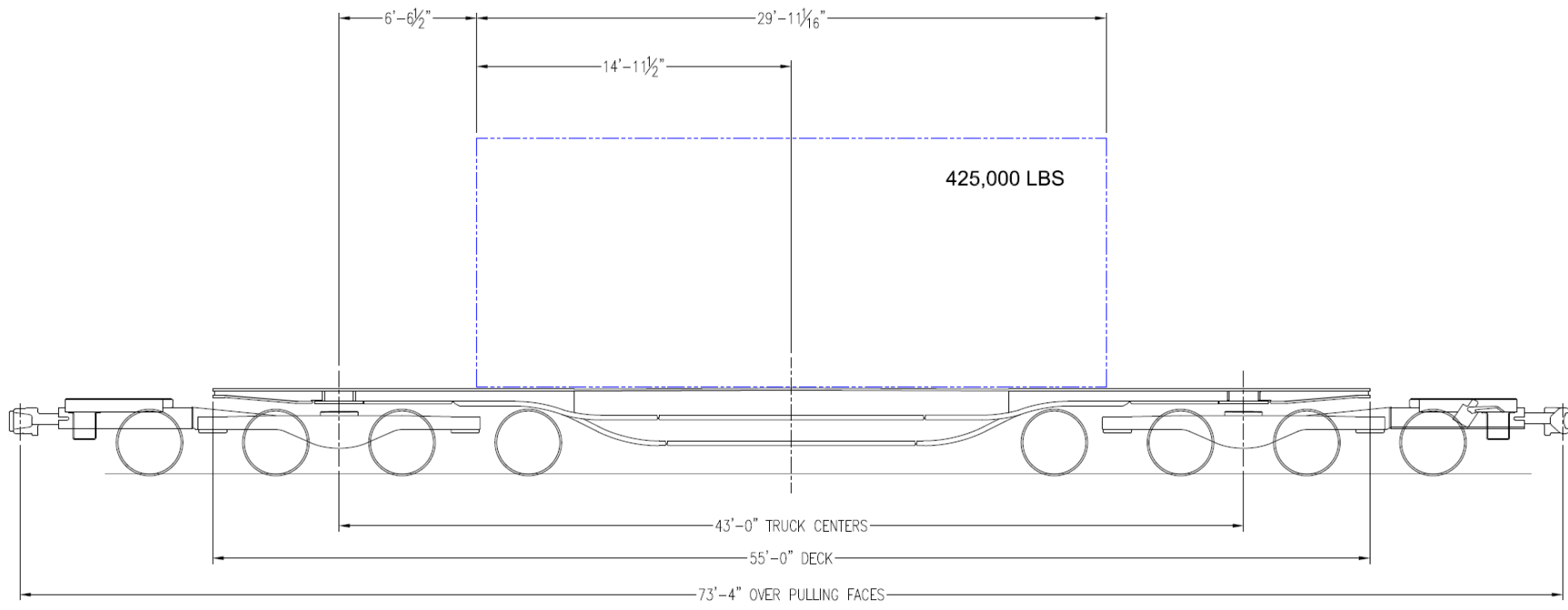
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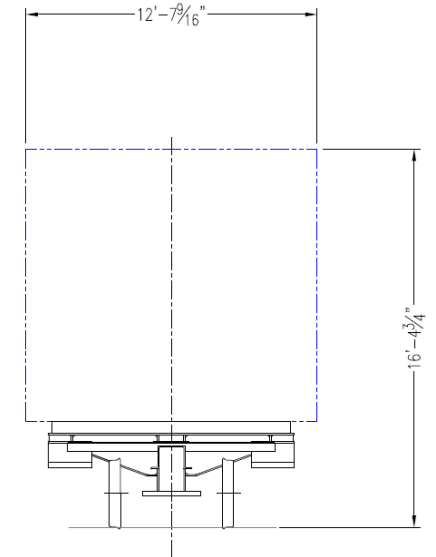
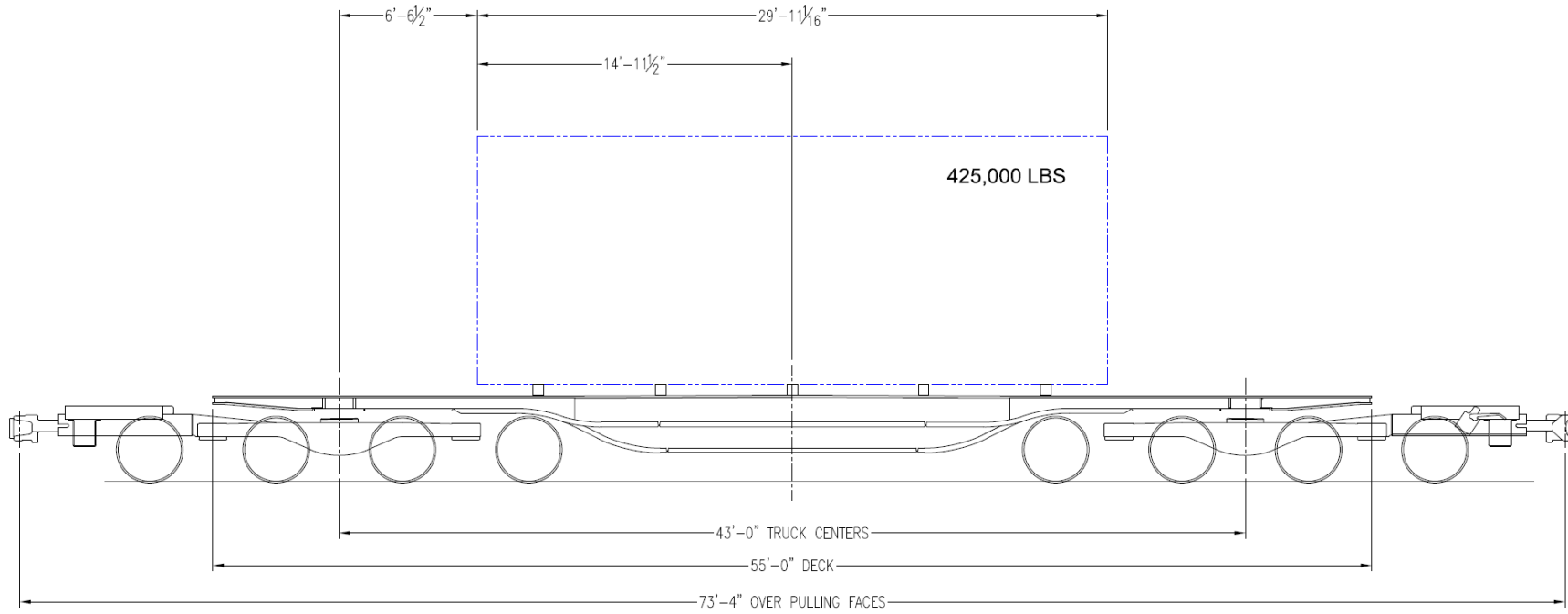
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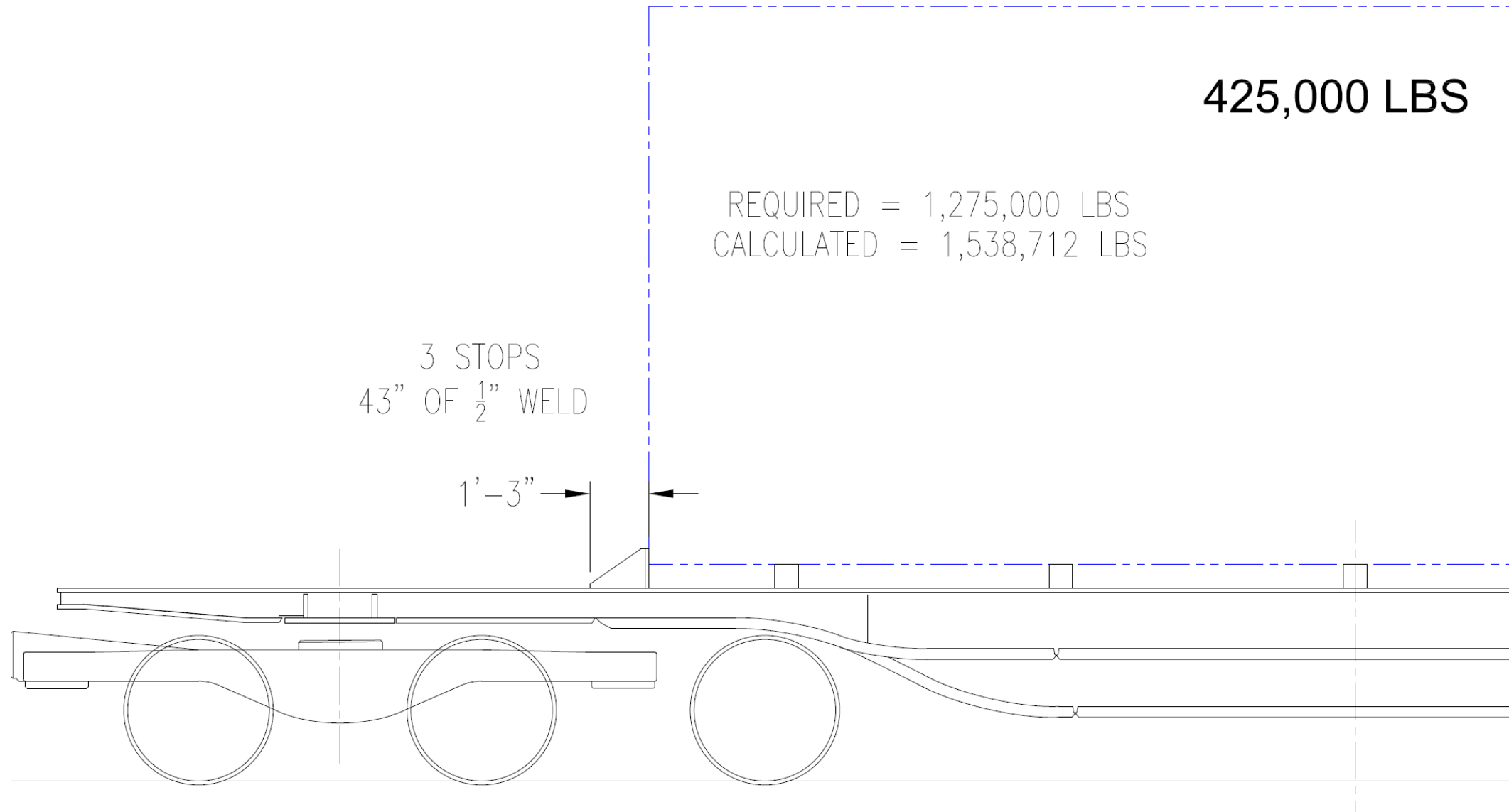
Height of the Point of Contact	Weight of Load	Lateral		Longitudinal	
		Restraint Type	Quantity	Restraint Type	Quantity
Over 10 in. to 12 in.	200,000 lbs.	T1	4	T2	3
	250,000 lbs.	T2	2	T2	3
	300,000 lbs.	T2	3	T2	4
	350,000 lbs.	T2	3	T2	4
	400,000 lbs.	T2	3	T2	5
	450,000 lbs.	T2	4	T2	5
	500,000 lbs.	T2	4	T2	6
	Over 12 in. to 14 in.	200,000 lbs.	T2	2	T2
250,000 lbs.		T2	2	T2	3
300,000 lbs.		T2	3	T2	4
350,000 lbs.		T2	3	T2	5
400,000 lbs.		T2	4	T2	5
450,000 lbs.		T2	4	T2	6
500,000 lbs.		T2	4	T2	6
Over 14 in. to 16 in.		200,000 lbs.	T2	2	T2
	250,000 lbs.	T2	3	T2	4
	300,000 lbs.	T2	3	T2	4
	350,000 lbs.	T2	4	T2	5
	400,000 lbs.	T2	4	T2	6
	450,000 lbs.	T2	4	T2	6
	500,000 lbs.	T2	4	T2	7
	T1 - Front Plate 1" x 8" Gusset Plate 1" x 12"				
T2- Front Plate 1" x 8" Gusset Plate 1" x 24"					
a/ T-Stops are calculated using 1/2" fillet weld. Welded all the way around minus the front side of the front plate.					







# Old Rules



# New Rules

425,000 LBS

REQUIRED = 1,275,000 LBS  
CALCULATED = 2,254,392 LBS

3 STOPS  
63" OF  $\frac{1}{2}$ " WELD

2'-1"

