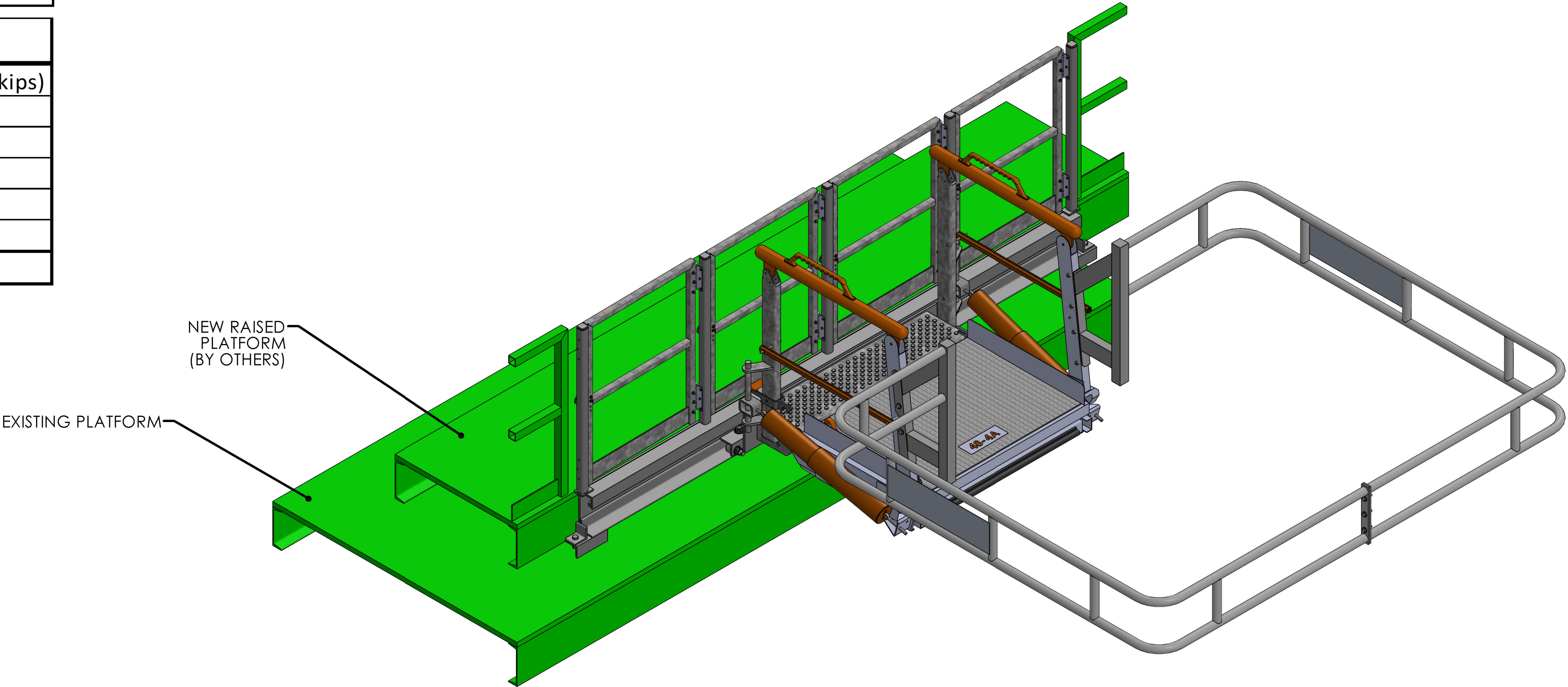


DESIGN CRITERIA

LOCATION: SEATTLE,WA			
CODE:	ASCE/SEI 7-16		
	OSHA 1910 SUBPART D		
OCCUPANCY CATEGORY:	II		
LOAD:			
	DEAD LOAD		
		TRACK LIVE LOAD	55 LBS/FT
	LIVE LOAD		
		GANGWAY LIVE LOAD	500 LBS
	SNOW LOAD		
	GROUND SNOW LOAD	15 PSF	
WIND LOAD			
	BASIC WIND SPEED (EXP C)	98 MPH	

Gangway Reactions

Load Case	Horizontal (kips)	Vertical (kips)	Moment (ft * kips)
Dead Load (Stored)	--	0.6	0.7
Dead Load (Deployed)	--	0.6	1.1
Live Load (Deployed)	--	0.5	2.9
Wind Load (Stored)	0.8	--	2.1
Snow Load (Stored)	--	0.2	0.8
Wind reactions are +/-			






ISOMETRIC VIEW

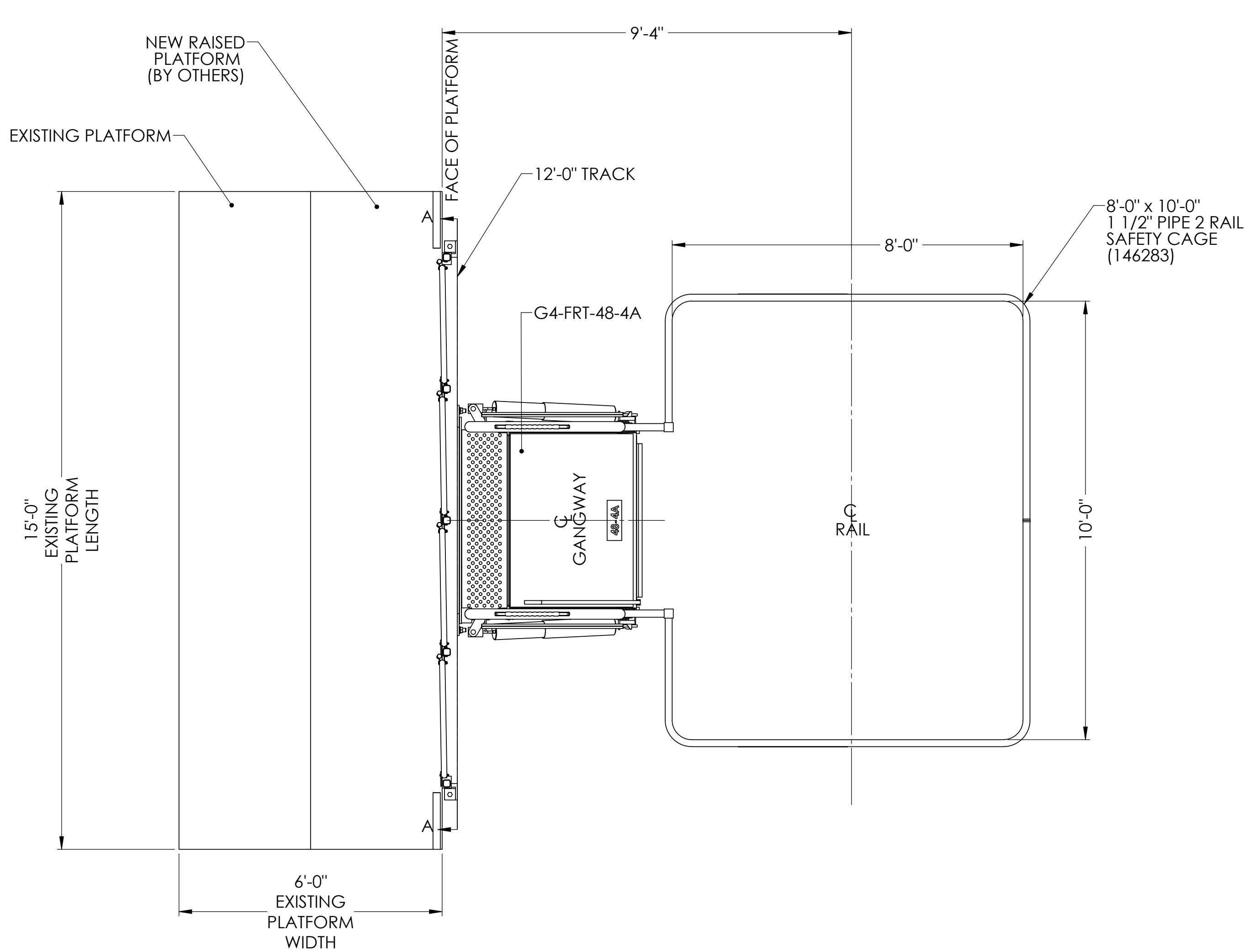
NOTES

1. TRACK AND CARRIAGE WILL BE OF STEEL CONSTRUCTION AND HOT DIPPED GALVANIZED PER ASTM-A123.
2. GANGWAY BASETREAD & UPRIGHTS TO BE STEEL CONSTRUCTION & HOT DIPPED GALVANIZED PER ASTM-A123.
3. GANGWAY BODY & CAGE SHALL BE OF ALUMINUM CONSTRUCTION.
4. GANGWAY SHALL BE SPRING COUNTER BALANCED & SELF SUPPORTING WITH ADJUSTABLE CHAIN STOPS.
5. ALL GANGWAY LOAD BEARING PIVOT POINTS SHALL CONTAIN SLEEVE BEARINGS.
6. ALL GANGWAY HARDWARE SHALL BE STAINLESS STEEL.
7. OPERATING RANGE OF SAFERACK FRT AND SFR GANGWAYS ARE 15° ABOVE TO 15° BELOW HORIZONTAL.
8. ALL WELDS SHALL CONFORM TO AWS D1.1-D1.6.
9. IT IS THE RESPONSIBILITY OF THE CUSTOMER TO ENSURE THAT THE EXISTING STRUCTURE CAN SUPPORT THE LOADS OF THE NEW EQUIPMENT PROVIDED BY SAFERACK.
10. IF THIS PROJECT REQUIRED PERMITS AND/OR SPECIAL INSPECTION, THE INSPECTION SHALL BE PER CHAPTER 17 OF THE IBC.
11. FOR SAFERACK EQUIPMENT ATTACHING TO EXISTING COMPONENTS, SHIM OR MINOR MODIFICATIONS MAY BE NEEDED FOR PROPER ALIGNMENT. THIS RESPONSIBILITY WILL FALL TO THE CONTRACTED INSTALLER OF THE EQUIPMENT.

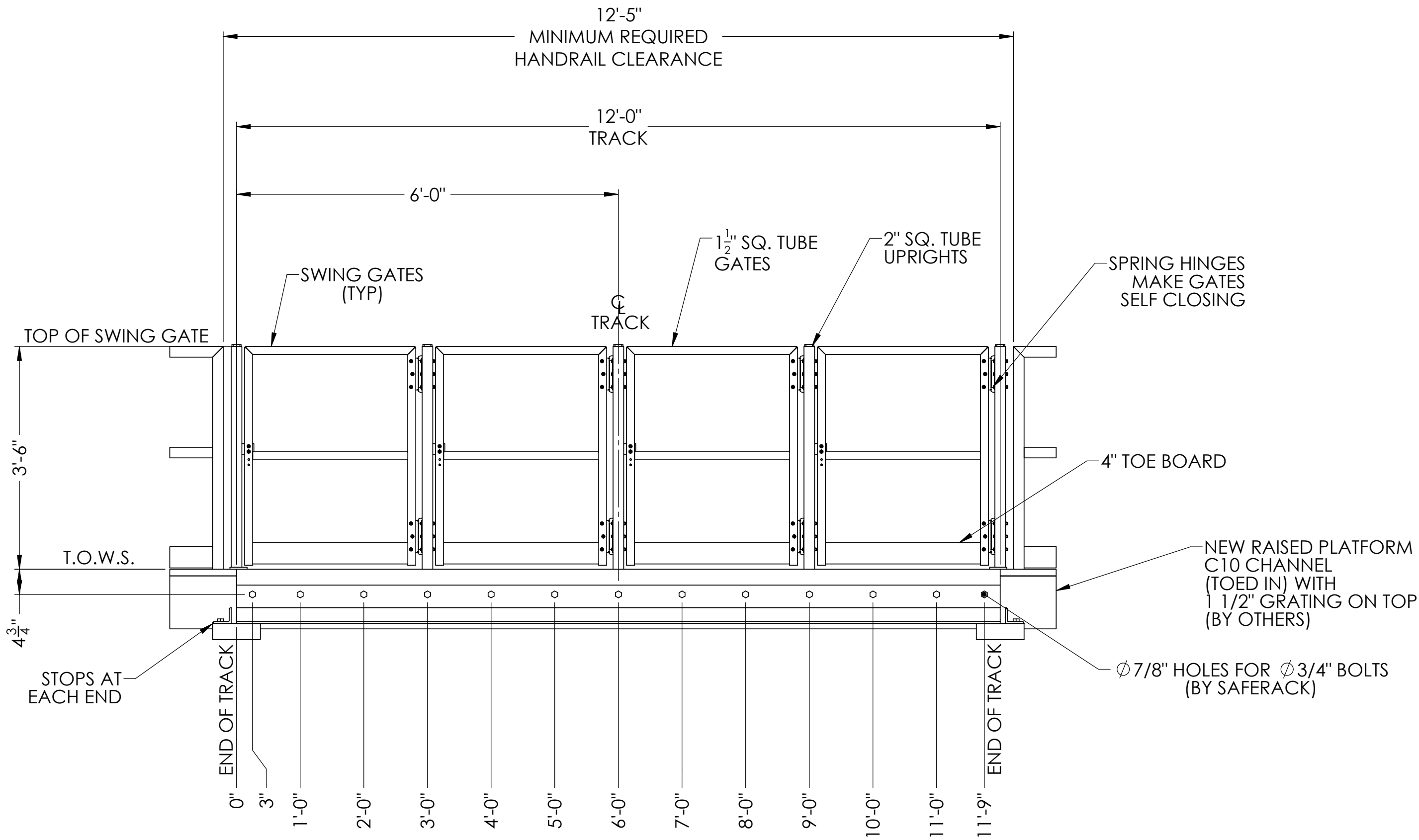
THE SOLUTION PROVIDED IN THIS PROPOSAL WILL MEET FORM, FIT, AND FUNCTION FOR THE SOLUTION REQUESTED. OUR COMPANY IS DEDICATED TO THE CONTINUOUS IMPROVEMENTS OF OUR PRODUCTS WE MANUFACTURE. ALL SOLUTIONS PROVIDED WILL BE TO THE LATEST MANUFACTURING AND DESIGN TECHNOLOGY.

ISSUED FOR CONSTRUCTION

				DO NOT SCALE	TOLERANCES: UNLESS OTHERWISE SPECIFIED	SAFERACK WELDING STANDARDS SEAL WELD UNLESS OTHERWISE NOTED USE FILLETS LISTED BELOW UNLESS OTHERWISE NOTED	ALL INFORMATION CONTAINED HEREIN IS CONFIDENTIAL AND PROPRIETARY AND MAY NOT BE DISCLOSED IN ANY FORM WITHOUT PRIOR WRITTEN CONSENT OF SAFERACK LOADING RACK TECHNOLOGIES	 SafeRack LOADING RACK TECHNOLOGIES	CUSTOMER INFORMATION: SHELL OIL HARBOR ISLAND TERMINAL 2555 13TH AVE SW SEATTLE WA 98134 USA DESCRIPTION: GENERAL ARRANGEMENT RETROFIT GANGWAY AND CAGE	DRAWN: ASN 10/14/24		
0	APPROVED AS NOTED 260144 A1 THRU A5 ISSUED FOR CONSTRUCTION	11/25/24	ASN	PROJECTION: 	LINEAR: X"-Y" = $\pm \frac{1}{16}$ " X" = $\pm \frac{1}{32}$ " .X = $\pm \frac{1}{16}$ " .XX = $\pm \frac{1}{32}$ " .XXX = $\pm \frac{1}{64}$ "	 Material Thickness of Thinner Part Joined (inch) Minimum Fillet Size - S (inch) To 1/4" 1/8" Over 1/4" to 1/2" 3/16" Over 1/2" to 3/4" 1/4" Over 3/4" 5/16"				CHECK: BOK 10/14/24	ABAS #:	SHEET: 1 OF 5
				THIRD ANGLE	ANGULAR: $\pm \frac{1}{2}^\circ$	ENG: BOK 10/14/24				FINISH:		
#	DESCRIPTION	DATE	BY							APVL:	SCALE: 1:18	SIZE: D
							HOME OFFICE: 730 ELECTRIC DRIVE, SUMTER, SC 29153 PLANT: 219 SAFETY AVENUE, ANDREWS, SC 29510			P.O.# 667794-00	DWG#: 260144-C1	REV: 0






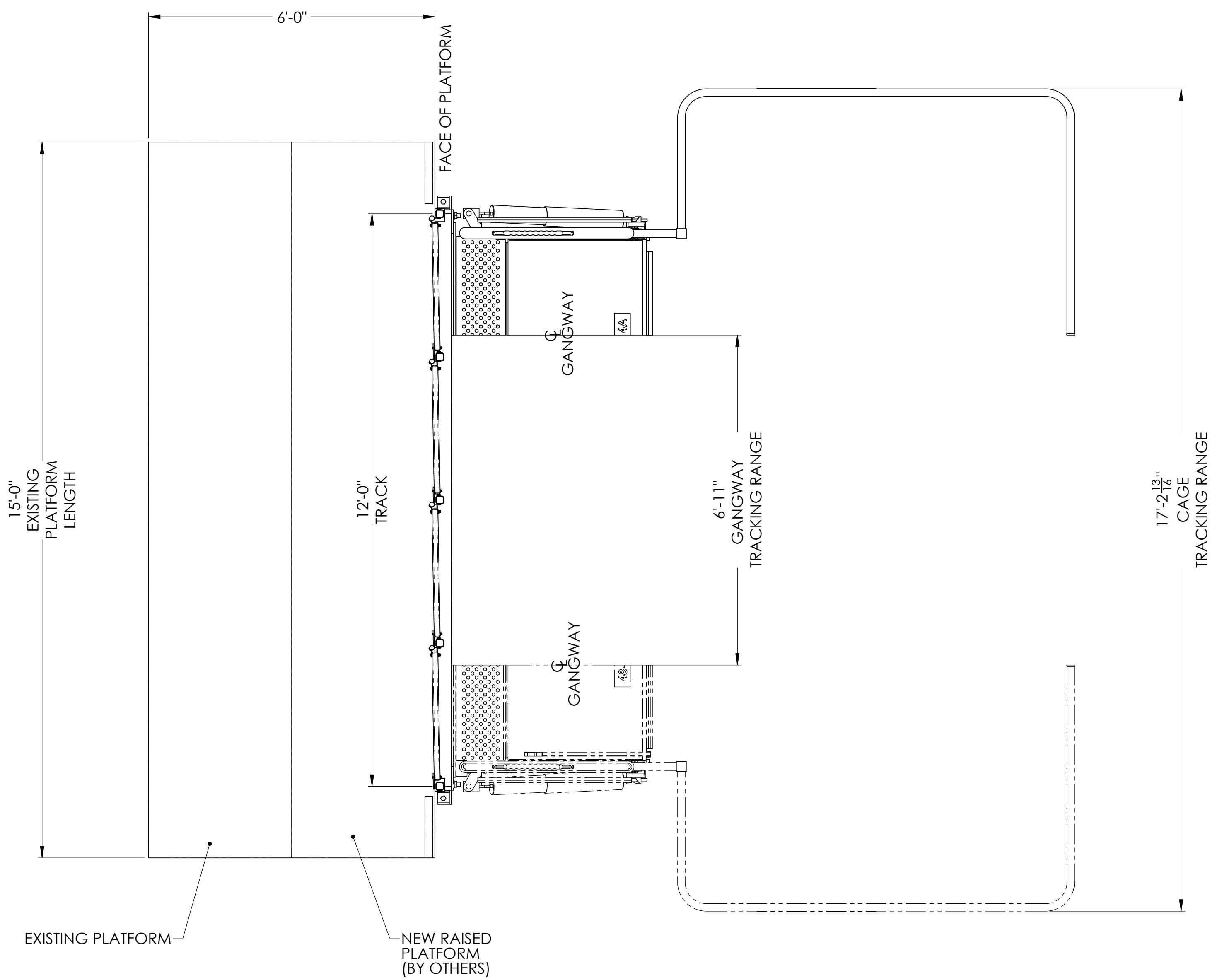
PLAN VIEW
GANGWAY SHOWN IN HORIZONTAL POSITION



SECTION A-A
SCALE_1 : 18

ISSUED FOR CONSTRUCTION

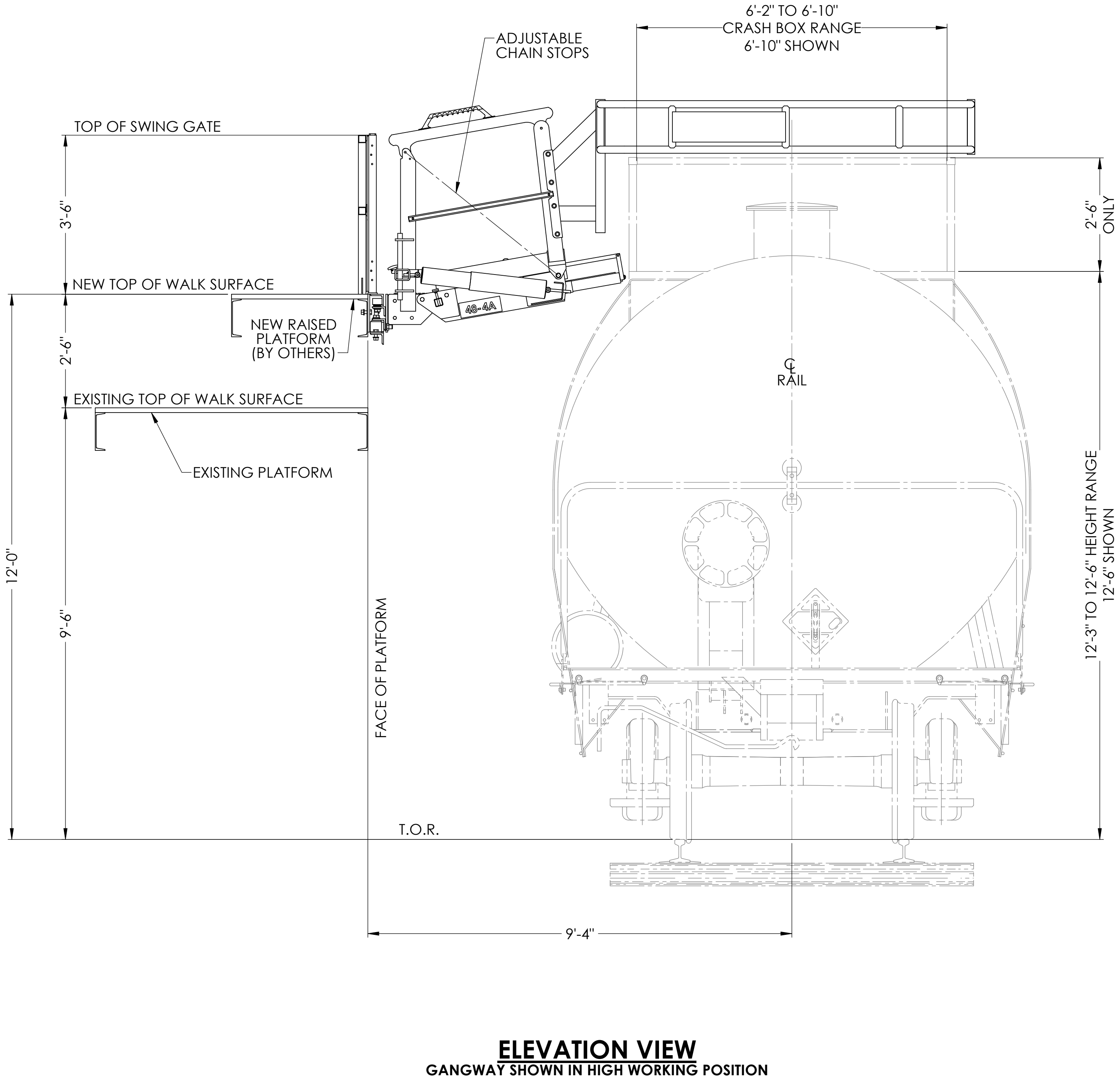
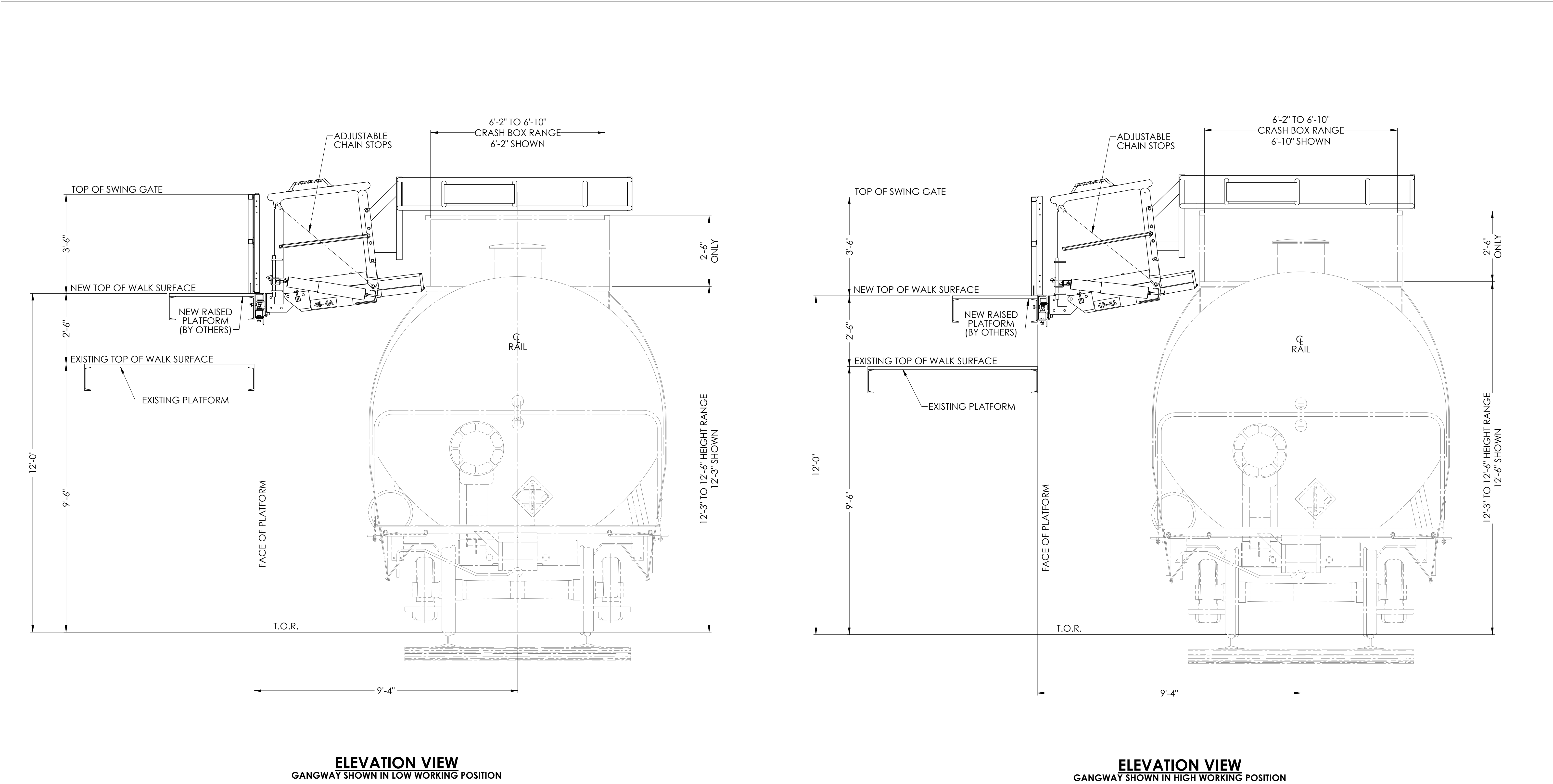
				DO NOT SCALE	TOLERANCES: UNLESS OTHERWISE SPECIFIED	SAFERACK WELDING STANDARDS SEAL WELD UNLESS OTHERWISE NOTED USE FILLETS LISTED BELOW UNLESS OTHERWISE NOTED	<div><div>SafeRack LOADING RACK TECHNOLOGIES</div></div> <div>HOME OFFICE: 730 ELECTRIC DRIVE, SUMTER, SC 29153 PLANT: 219 SAFETY AVENUE, ANDREWS, SC 29510</div>	CUSTOMER INFORMATION: SHELL OIL HARBOR ISLAND TERMINAL 2555 13TH AVE SW SEATTLE WA 98134 USA		DRAWN: ASN	10/14/24			
0	APPROVED AS NOTED 260144 A1 THRU A5 ISSUED FOR CONSTRUCTION			11/25/24	ASN	PROJECTION: 		LINEAR: X"-Y" = ± ¹ / ₁₆ " X" = ± ¹ / ₃₂ " .X = ±.1 .XX = ±.03 .XXX = ±.010	Material Thickness of Thinner Part Joined (inch) To 1/4" 1/8" Over 1/4" to 1/2" 3/16" Over 1/2" to 3/4" 1/4" Over 3/4" 5/16"	ALL INFORMATION CONTAINED HEREIN IS CONFIDENTIAL AND PROPRIETARY AND MAY NOT BE DISCLOSED IN ANY FORM WITHOUT PRIOR WRITTEN CONSENT OF SAFERACK LOADING RACK TECHNOLOGIES	CHECK: BOK	10/14/24	ABAS #:	SHEET:
											ENG: BOK	10/14/24	FINISH:	2 OF 5
#	DESCRIPTION			DATE	BY	THIRD ANGLE		ANGULAR: +/ - ¹ / ₂ °		DESCRIPTION: GENERAL ARRANGEMENT RETROFIT GANGWAY AND CAGE	APVL:		SCALE: 1:24	SIZE: D
											P.O.#	667794-00	DWG#:	260144-C2




PLAN VIEW
GANGWAY SHOWN IN HORIZONTAL TRACKING POSITIONS

ISSUED FOR CONSTRUCTION

				DO NOT SCALE	TOLERANCES: UNLESS OTHERWISE SPECIFIED	SAFERACK WELDING STANDARDS SEAL WELD UNLESS OTHERWISE NOTED USE FILLETS LISTED BELOW UNLESS OTHERWISE NOTED	ALL INFORMATION CONTAINED HEREIN IS CONFIDENTIAL AND PROPRIETARY AND MAY NOT BE DISCLOSED IN ANY FORM WITHOUT PRIOR WRITTEN CONSENT OF SAFERACK LOADING RACK TECHNOLOGIES	<div><div></div><div>SafeRack</div><div>LOADING RACK TECHNOLOGIES</div></div> <div>HOME OFFICE: 730 ELECTRIC DRIVE, SUMTER, SC 29153 PLANT: 219 SAFETY AVENUE, ANDREWS, SC 29510</div>	CUSTOMER INFORMATION: SHELL OIL HARBOR ISLAND TERMINAL 2555 13TH AVE SW SEATTLE WA 98134 USA		DRAWN: ASN	10/14/24							
0	APPROVED AS NOTED 260144 A1 THRU A5 ISSUED FOR CONSTRUCTION			11/25/24	ASN	PROJECTION: <div></div>					CHECK: BOK	10/14/24	ABAS #:	SHEET:					
#	DESCRIPTION			DATE	BY	THIRD ANGLE <div></div>					ENG: BOK	10/14/24	FINISH:	3 OF 5					
											APVL:		SCALE: 1:20	SIZE: D					
						ANGULAR: $\pm \frac{1}{2}^{\circ}$	<div><div></div><div>s</div><div>S</div></div>	Material Thickness of Thinner Part Joined (inch) To 1/4" Over 1/4" to 1/2" Over 1/2" to 3/4" Over 3/4" Minimum Fillet Size - S (inch) 1/8" 3/16" 1/4" 5/16"	DESCRIPTION: GENERAL ARRANGEMENT RETROFIT GANGWAY AND CAGE		P.O.#	667794-00	DWG#:	260144-C3	REV: 0				

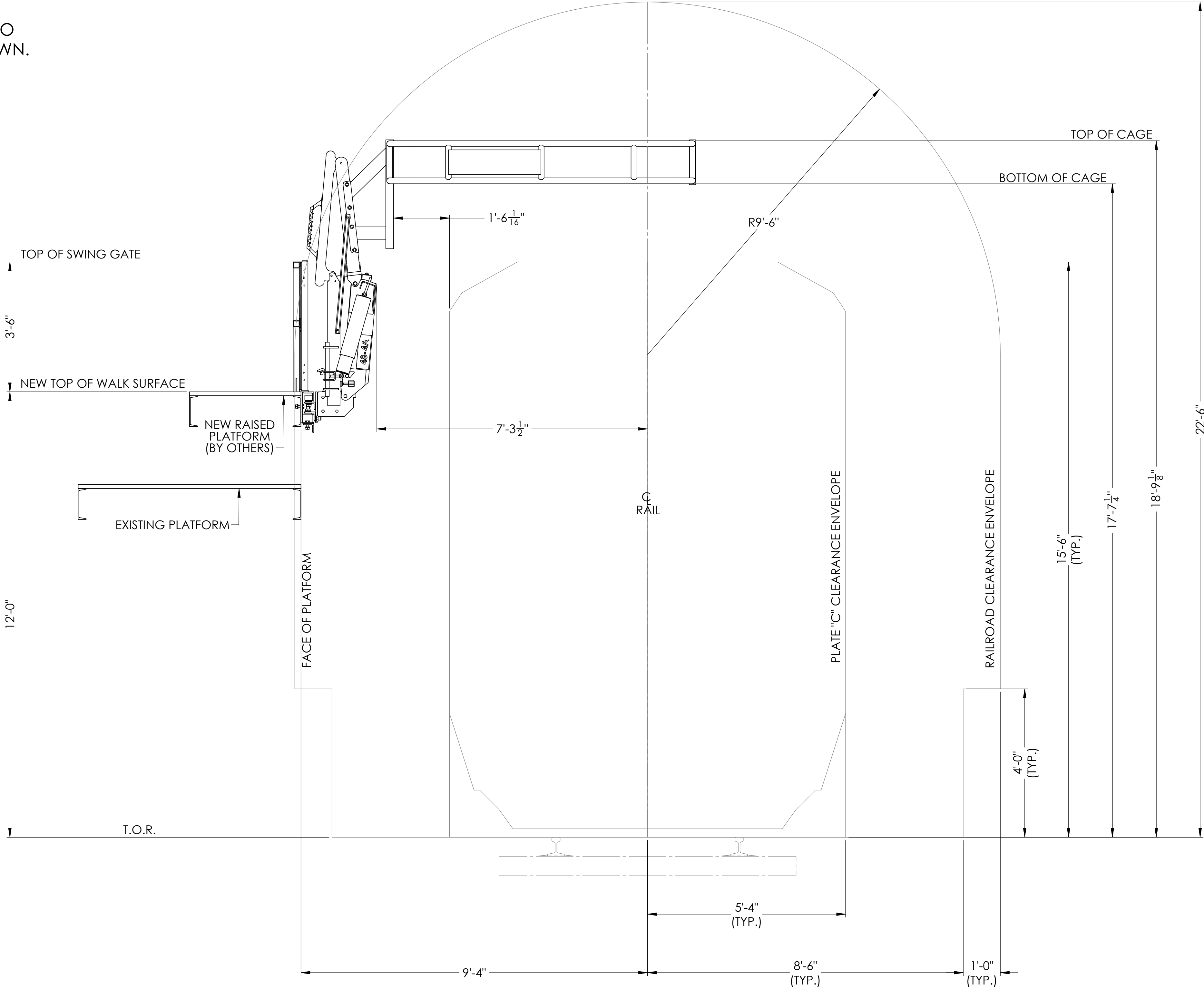


ISSUED FOR CONSTRUCTION

0				APPROVED AS NOTED 260144 A1 THRU A5 ISSUED FOR CONSTRUCTION		11/25/24		ASN		DO NOT SCALE		TOLERANCES: UNLESS OTHERWISE SPECIFIED		SAFERACK WELDING STANDARDS SEAL WELD UNLESS OTHERWISE NOTED USE FILLETS LISTED BELOW UNLESS OTHERWISE NOTED		ALL INFORMATION CONTAINED HEREIN IS CONFIDENTIAL AND PROPRIETARY AND MAY NOT BE DISCLOSED IN ANY FORM WITHOUT PRIOR WRITTEN CONSENT OF SAFERACK LOADING RACK TECHNOLOGIES		<div><div><div></div></div><div>SafeRack</div><div>LOADING RACK TECHNOLOGIES</div></div> <div>HOME OFFICE: 730 ELECTRIC DRIVE, SUMTER, SC 29153 PLANT: 219 SAFETY AVENUE, ANDREWS, SC 29510</div>		CUSTOMER INFORMATION: SHELL OIL HARBOR ISLAND TERMINAL 2555 13TH AVE SW SEATTLE WA 98134 USA DESCRIPTION: GENERAL ARRANGEMENT RETROFIT GANGWAY AND CAGE		DRAWN: ASN		10/14/24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
										PROJECTION:		LINEAR: X"-Y" = ± ¹ / ₁₆ " X" = ± ¹ / ₃₂ " .X = ±.1 .XX = ±.03 .XXX = ±.010		Material Thickness of Thinner Part Joined (inch)								Minimum Fillet Size - S (inch)		CHECK: BOK		10/14/24		ABAS #:		SHEET:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
#				DESCRIPTION		DATE		BY		THIRD ANGLE		ANGULAR: +/- ¹ / ₂ °																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															


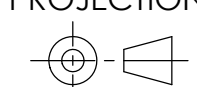
ATTENTION:
SAFERACK EQUIPMENT PROTRUDES INTO
RAILCAR CLEARANCE ENVELOPE SHOWN.
CHECK WITH LOCAL RAILROAD FOR
CLEARANCE REQUIREMENTS.

**CLEARANCE IS LESS THAN THE STATE
REQUIRED 8'-6". THERE IS A CLOSE
CLEARANCE BETWEEN SAFERACK
EQUIPMENT AND CL OF RAIL**



ELEVATION VIEW
GANGWAY SHOWN STORED AT 85° ABOVE HORIZONTAL

ISSUED FOR CONSTRUCTION

				DO NOT SCALE	TOLERANCES: UNLESS OTHERWISE SPECIFIED	SAFERACK WELDING STANDARDS SEAL WELD UNLESS OTHERWISE NOTED USE FILLETS LISTED BELOW UNLESS OTHERWISE NOTED	ALL INFORMATION CONTAINED HEREIN IS CONFIDENTIAL AND PROPRIETARY AND MAY NOT BE DISCLOSED IN ANY FORM WITHOUT PRIOR WRITTEN CONSENT OF SAFERACK LOADING RACK TECHNOLOGIES	 SafeRack LOADING RACK TECHNOLOGIES	CUSTOMER INFORMATION: SHELL OIL HARBOR ISLAND TERMINAL 2555 13TH AVE SW SEATTLE WA 98134 USA DESCRIPTION: GENERAL ARRANGEMENT RETROFIT GANGWAY AND CAGE	DRAWN: ASN	10/14/24											
0	APPROVED AS NOTED 260144 A1 THRU A5 ISSUED FOR CONSTRUCTION			PROJECTION: 	LINEAR: X"-Y" = ± 1/16" X" = ± 1/32" .X = ± .1 .XX = ± .03 .XXX = ± .010 ANGULAR: +/- 1/2°	<table><tr><td>Material Thickness of Thinner Part Joined (inch)</td><td>Minimum Fillet Size - S (inch)</td></tr><tr><td>To 1/4"</td><td>1/8"</td></tr><tr><td>Over 1/4" to 1/2"</td><td>3/16"</td></tr><tr><td>Over 1/2" to 3/4"</td><td>1/4"</td></tr><tr><td>Over 3/4"</td><td>5/16"</td></tr></table>			Material Thickness of Thinner Part Joined (inch)	Minimum Fillet Size - S (inch)	To 1/4"	1/8"	Over 1/4" to 1/2"	3/16"	Over 1/2" to 3/4"	1/4"	Over 3/4"	5/16"	HOME OFFICE: 730 ELECTRIC DRIVE, SUMTER, SC 29153 PLANT: 219 SAFETY AVENUE, ANDREWS, SC 29510	RETOFIT GANGWAY AND CAGE	CHECK: BOK	10/14/24
Material Thickness of Thinner Part Joined (inch)	Minimum Fillet Size - S (inch)																					
To 1/4"	1/8"																					
Over 1/4" to 1/2"	3/16"																					
Over 1/2" to 3/4"	1/4"																					
Over 3/4"	5/16"																					
#	DESCRIPTION			THIRD ANGLE	ENG: BOK	10/14/24	FINISH:	5 OF 5	APVL:		SCALE: 1:20	SIZE: D										
				DATE	BY				P.O.#	667794-00	DWG#:	260144-C5	REV: 0									