DESIGN CRITERIA

LOCATION: SEATTLE, WA

ASCE/SEI 7-16 CODE:

OSHA 1910 SUBPART D

OCCUPANCY CATEGORY:

LOAD:

DEAD LOAD

TRACK LIVE LOAD

55 LBS/FT

LIVELOAD

GANGWAYLIVELOAD

500 LBS

SNOW LOAD

GROUND SNOW LOAD

15 PSF

WIND LOAD

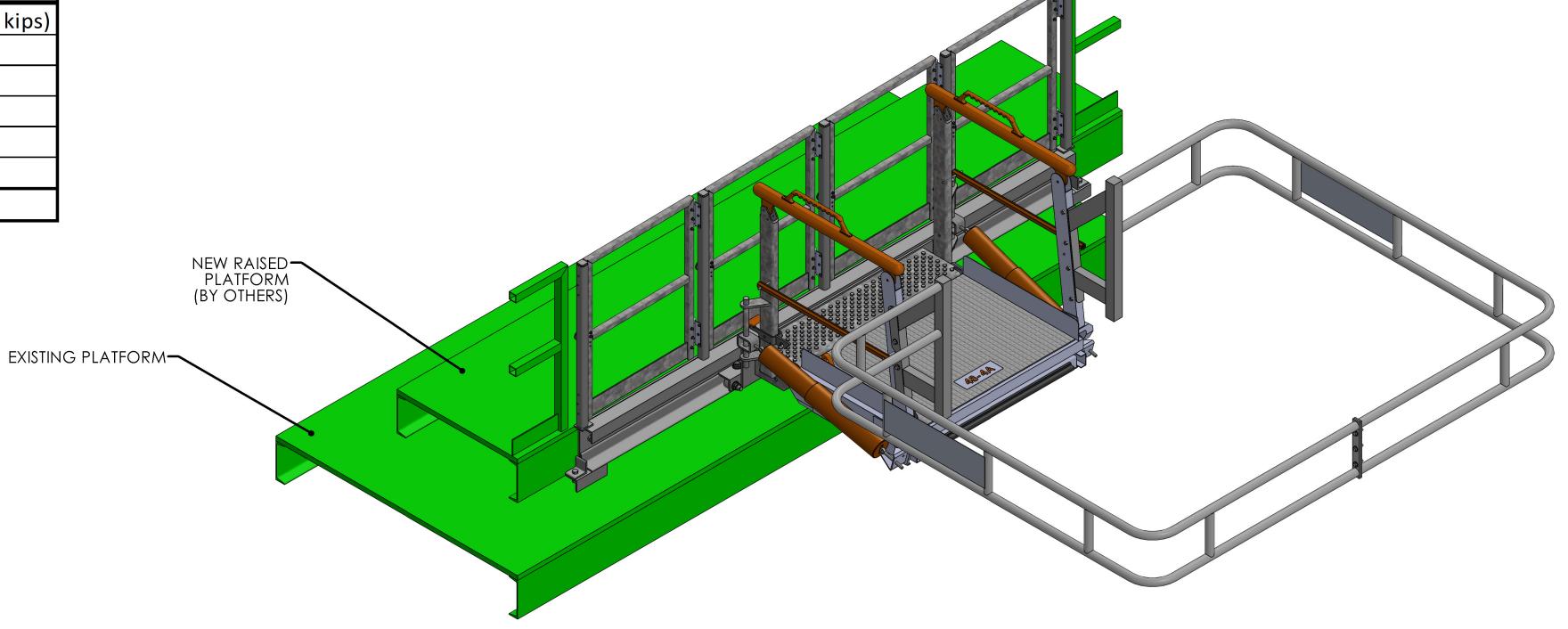
BASIC WIND SPEED (EXP C)

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	s are +/-							

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.
- ALL GANGWAY HARDWARE SHALL BE STAINLESS STEEL.
 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
- 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.



ISOMETRIC VIEW

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 STAN SEAL WELD UNLESS OTHERWISE NO USE FILLETS LISTED BELOW UNLESS OTHER	OTED
				PROJECTION:	LINEAR: X'-Y" = $\frac{1}{16}$ " X" = $\frac{1}{32}$ "	Material Thickness of M Thinner Part Joined (inch) S	Minimum Fillet Size - S (inch)
0	APPROVED AS NOTED 260144 A1 THRU A5 ISSUED FOR CONSTRUCTION	11/25/24	ASN	PROJECTION.	.X = ± .1 .XX = ± .03 .XXX = ± .010	∽ To 1/4"	1/8" 3/16"
#	DESCRIPTION	DATE	BY	THIRD ANGLE	ANGULAR: $+/-\frac{1}{2}^{\bullet}$	Over 1/2" to 3/4" Over 3/4"	1/4" 5/16"

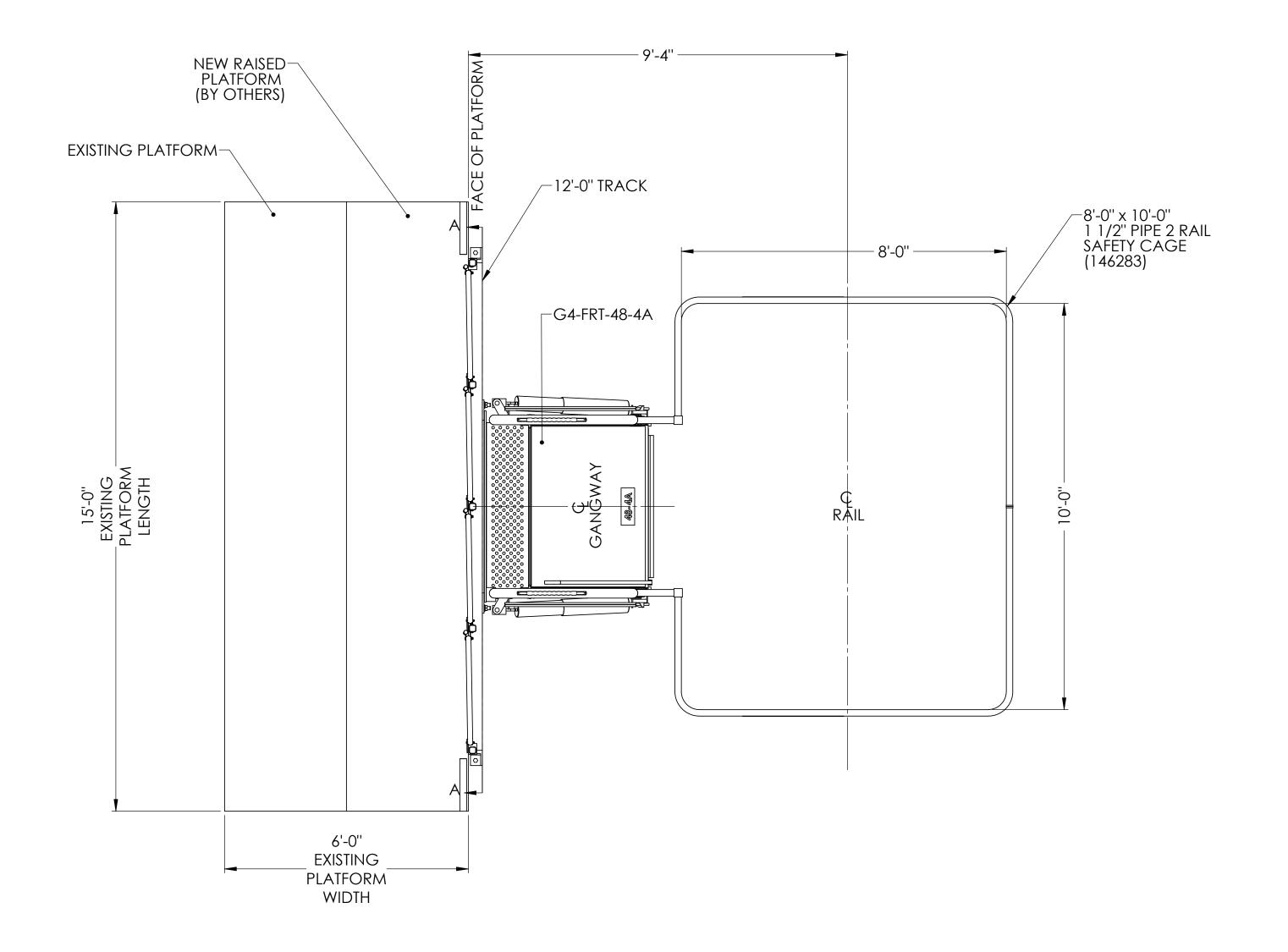
ALL INFORMATION
CONTAINED HEREIN
IS CONFIDENTIAL
AND PROPRIETARY
AND MAY NOT BE Minimum Fillet ch) Size - S (inch) DISCLOSED IN ANY FORM WITHOUT PRIOR WRITTEN CONSENT OF SAFERACK LOADING RACK TECHNOLOGIES PLANT:



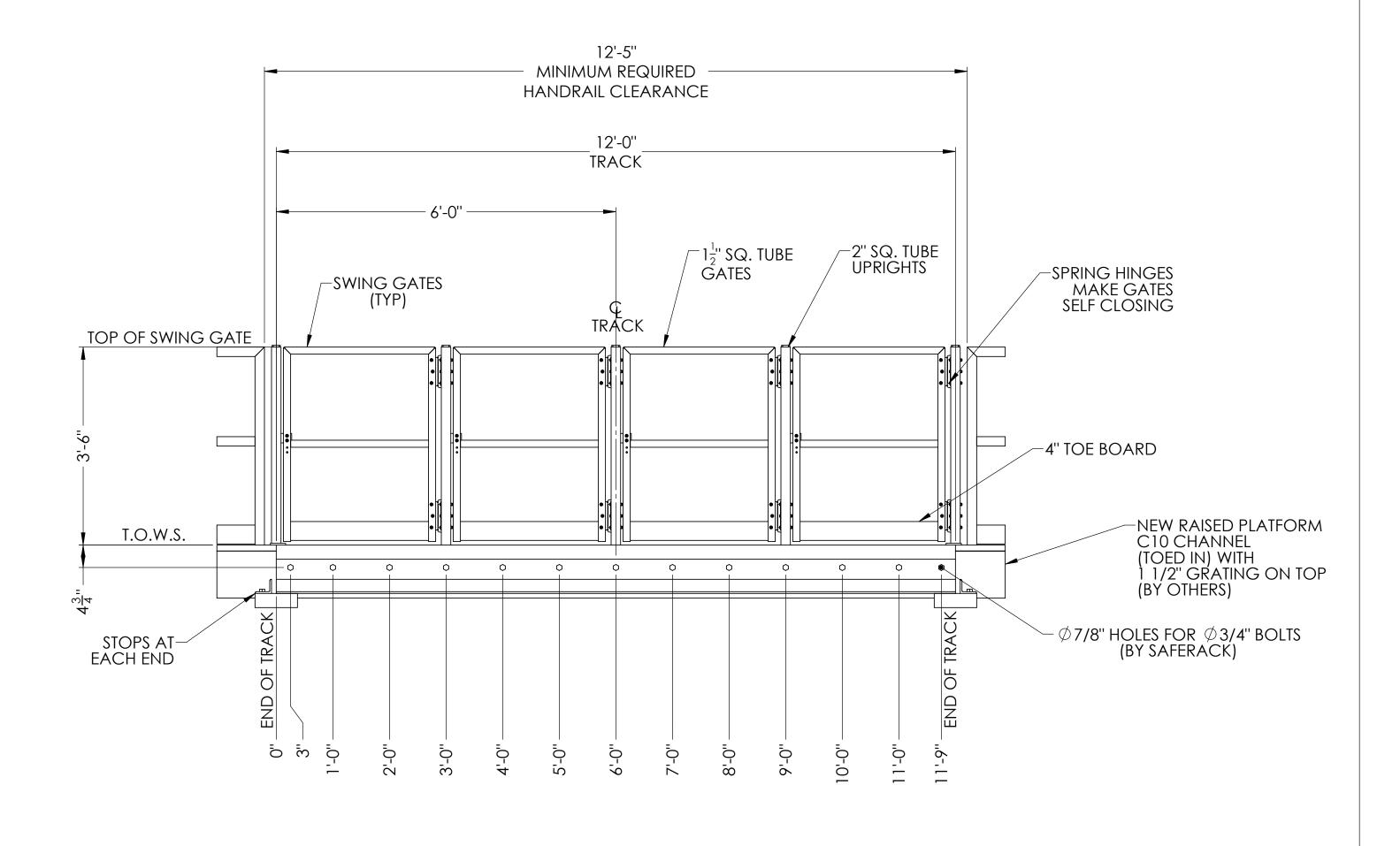
	CUSTOMER INFORMATION:
	CUSTOMER INFORMATION: SHELL OIL HARBOR ISLAND TERMINAL 2555 13TH AVE SW SEATTLE WA 98134
,	2555 13TH AVE SW
	SEATTLE WA 98134
١.	USA

DESCRIPTION: GENERAL ARRANGEMENT HOME OFFICE: 730 ELECTRIC DRIVE, SUMTER, SC 29153 RETROFIT GANGWAY AND PLANT: 219 SAFETY AVENUE, ANDREWS, SC 29510 CAGE

RAWN:	ASN	10/14/24			
HECK:	вок	10/14/24	ABAS #:	SHEE	ET:
NG:	вок	10/14/24	FINISH:	1 OF	5
PVL:			SCALE: 1:18	SIZE:	D
.0.#		667794-00	DWG#: 260144-C1	REV:	0



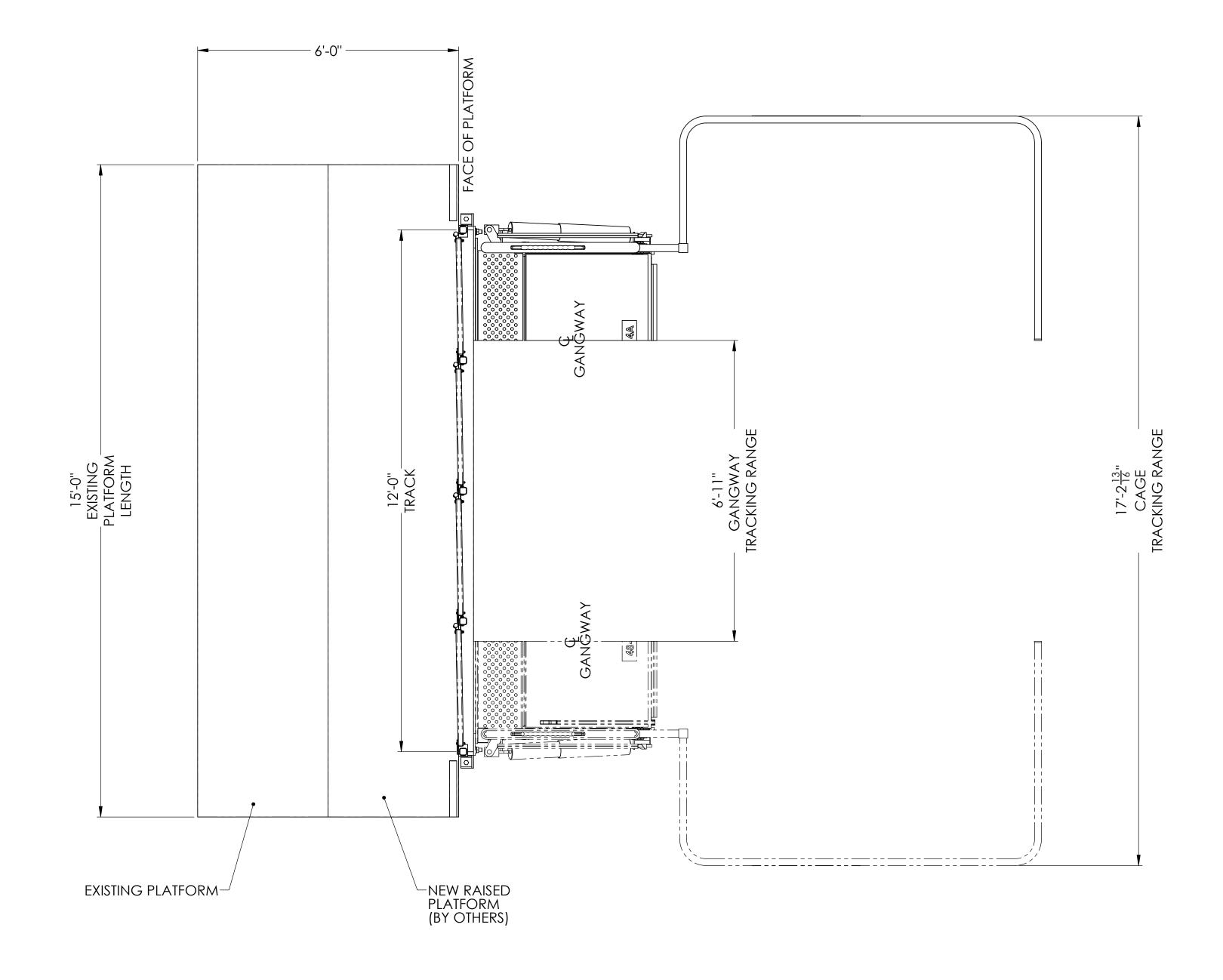
PLAN VIEW
GANGWAY SHOWN IN HORIZONTAL POSITION



SECTION A-A SCALE_1:18

ISSUED FOR CONSTRUCTION

				DO NOT SCALE	TOLERANCES: UNLESS OTHERWISE SPECIFIED	SAFERACK WELDING ST SEAL WELD UNLESS OTHERS OF	TANDARDS ISE NOTED	ALL INFORMATION CONTAINED HEREIN		CUSTOMER INFORMATION: SHELL OIL HARBOR ISLAND TERMINAL	DRAWN: ASN	10/14/24	4		
				JUALL	LINEAR: $X'-Y'' = \pm \frac{1}{1.6}''$	Material Thickness of		IS CONFIDENTIAL AND PROPRIETARY	SafeRack	2555 13TH AVE SW SEATTLE WA 98134	CHECK: BOK	10/14/24	4 ABAS #:	SH	SHEET:
0	APPROVED AS NOTED 260144 A1 THRU A5	11/25/24	IAZA	PROJECTION:	$X'' = \pm \frac{1}{32}''$ $X = \pm .1$ $XX = \pm .03$	Thinner Part Joined (inch To 1/4"	n)	AND MAY NOT BE DISCLOSED IN ANY	LOADING RACK TECHNOLOGIES	1 03/	ENG: BOK	10/14/24	4 FINISH:	2 0	OF 5
	ISSUED FOR CONSTRUCTION	11/20/24	7.511	-	$.XXX = \pm .010$	Over 1/4" to 1/2"	3/16"	WRITTEN CONSENT OF		DESCRIPTION: GENERAL ARRANGEMENT	APVL:		SCALE:	1:24 SIZE	.E: D
#	DESCRIPTION	DATE	BY	THIRD ANGLE	ANGULAR: $+/-\frac{1}{2}^{\circ}$	Over 3/4"	5/16"	RACK TECHNOLOGIES	ce: 730 electric drive, sumter, sc 29153 219 Safety Avenue, andrews, sc 29510	RETROFIT GANGWAY AND CAGE	P.O.#	667794-00	0 DWG#:	260144-C2 REV	V: 0



PLAN VIEW GANGWAY SHOWN IN HORIZONTAL TRACKING POSITIONS

ISSUED FOR CONSTRUCTION

				DO NOT	AFERACK WELDING STANDARDS SEAL WELD UNLESS OTHERWISE NOTED FILLETS LISTED BELOW UNLESS OTHERWISE NOTED	ALL INFORMATION CONTAINED HEREIN	
				PROJECTION: LINEAR: $X'-Y'' = \pm \frac{1}{16}''$ $X''' = \pm \frac{1}{32}''$	Material Thickness of Minimum Fille Thinner Part Joined (inch) Size - S (inch)		SafeRack
0	APPROVED AS NOTED 260144 A1 THRU A5 ISSUED FOR CONSTRUCTION	11/25/24	ASN	.X = ±.1 .XX = ±.03 .XXX = ±.010	To 1/4" 1/8"	DISCLOSED IN ANY FORM WITHOUT PRIOR WRITTEN CONSENT OF	LOADING RACK TECHNOLOGIES
#	DESCRIPTION	DATE	ВҮ	THIRD ANGLE ANGULAR: +/- 1/2° S	Over 1/2" to 3/4" 1/4" Over 3/4" 5/16"	SAFERACK LOADING RACK TECHNOLOGIES	HOME OFFICE: 730 ELECTRIC DRIVE, SUMTER, SC 2915

CUSTOMER INFORMATION: SHELL OIL HARBOR ISLAND TERMINAL 2555 13TH AVE SW SEATTLE WA 98134

3	DESCRIPTION: GENERAL ARRANGEMENT
53	RETROFIT GANGWAY AND
ın l	CAGE

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DRAWN:	ASN	10/14/24					
CHECK:	ВОК	10/14/24	ABAS #:			SHEE	ET:
ENG:	ВОК	10/14/24	FINISH:			3 OF	5
APVL:			SCALE:	1:2	20	SIZE:	D
P.O.#		667794-00	DWG#:	260144-0	23	REV:	0

TOP OF SWING GATE NEW TOP OF WALK SURFACE NEW RAISED PLATFORM (BY OTHERS) **I EXISTING TOP OF WALK SURFACE** EXISTING PLATFORM T.O.R.

DATE

DESCRIPTION

6'-2" TO 6'-10"

P.O.#

667794-00 DWG#:

ISSUED FOR CONSTRUCTION

SHEET:

4 OF 5

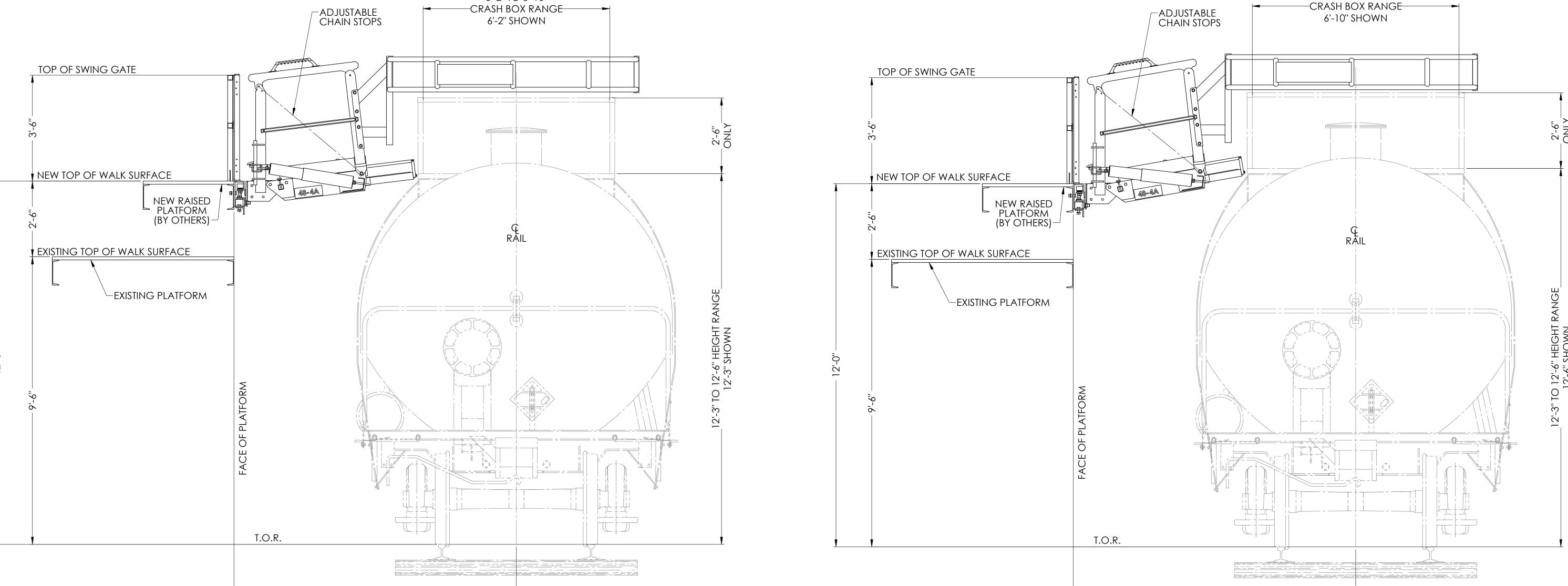
260144-C4 REV: 0

6'-2" TO 6'-10"

ELEVATION VIEW GANGWAY SHOWN IN LOW WORKING POSITION

Over 3/4"

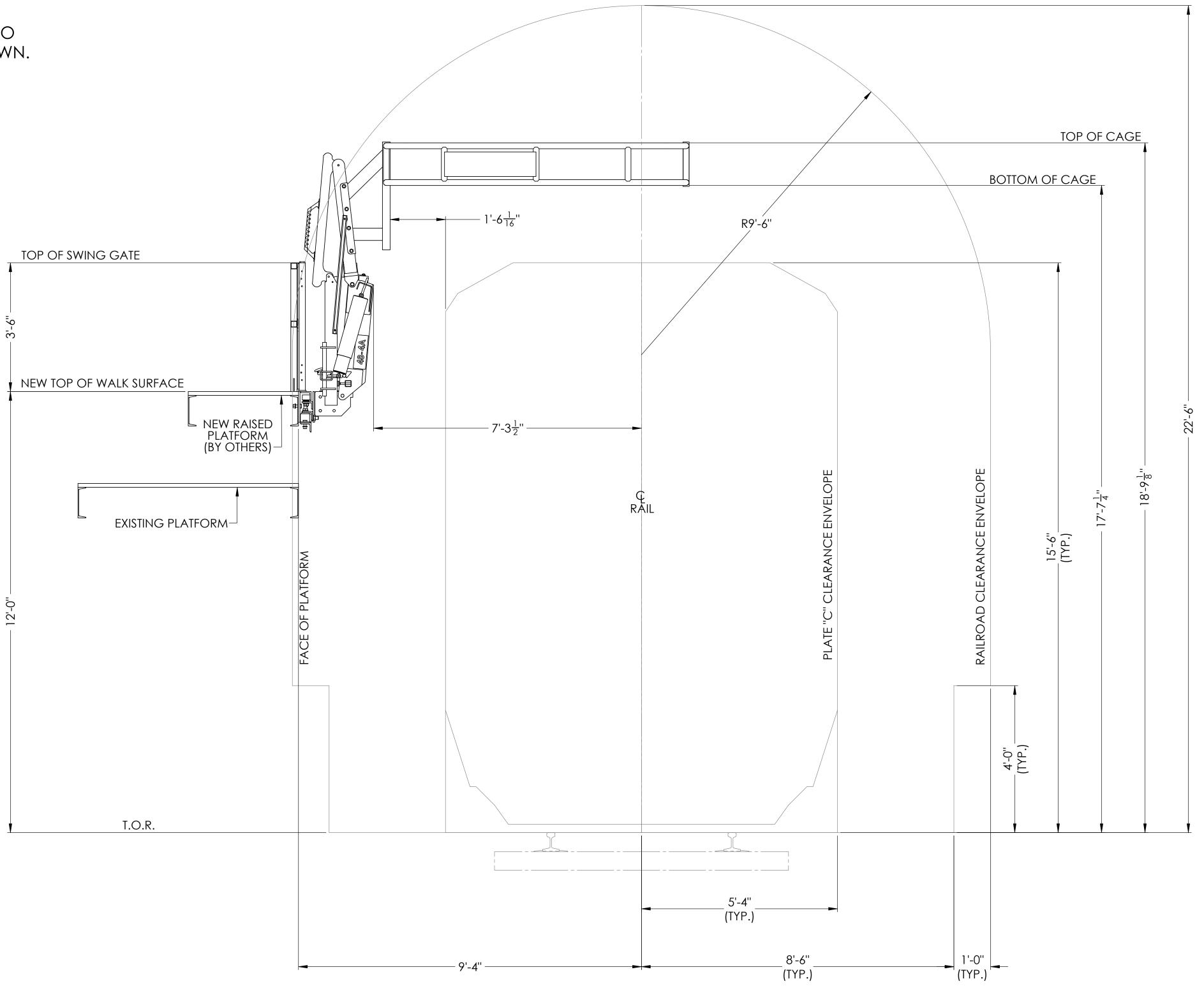
ELEVATION VIEW GANGWAY SHOWN IN HIGH WORKING POSITION



SAFERACK WELDING STANDARDS
SEAL WELD UNLESS OTHERWISE NOTED
USE FILLETS LISTED BELOW UNLESS OTHERWISE NOTED **CUSTOMER INFORMATION:** DO NOT SCALE TOLERANCES: 10/14/24 ALL INFORMATION DRAWN: ASN CONTAINED HEREIN
IS CONFIDENTIAL
AND PROPRIETARY
AND MAY NOT BE
DISCLOSED IN ANY
FORM WITHOUT PRIOR SHELL OIL HARBOR ISLAND TERMINAL UNLESS OTHERWISE SPECIFIED CHECK: BOK 10/14/24 ABAS #: LINEAR: $X'-Y'' = \pm \frac{1}{16}''$ Material Thickness of Minimum Fillet | SEATTLE WA 98134 $X'' = \pm \frac{1}{32}''$ $X = \pm .1$ $XX = \pm .03$ Thinner Part Joined (inch) Size - S (inch) PROJECTION: ENG: BOK 10/14/24 FINISH: APPROVED AS NOTED 260144 A1 THRU A5
ISSUED FOR CONSTRUCTION 11/25/24 ASN LOADING RACK TECHNOLOGIES DESCRIPTION: GENERAL ARRANGEMENT 1:20 | SIZE: D 3/16" WRITTEN CONSENT OF SAFERACK LOADING RACK TECHNOLOGIES PLANT: 219 SAFETY AVENUE, ANDREWS, SC 29151 CAGE .XXX =±.010 | <u>↓</u> Over 1/4" to 1/2" SCALE: APVL: 1/4" THIRD ANGLE ANGULAR: $+/-\frac{1}{2}^{\circ}$ Over 1/2" to 3/4"

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 STA SEAL WELD UNLESS OTHERWISE USE FILLETS LISTED BELOW UNLESS OTHE	NOTED	Al C
0	APPROVED AS NOTED 260144 A1 THRU A5	11/25/24	ASN	PROJECTION:	LINEAR: $X'-Y'' = \pm \frac{1}{16}$ $X'' = \pm \frac{1}{32}$ $X'' = \pm .1$	Material Thickness of Thinner Part Joined (inch)		1A 1A DI
	ISSUED FOR CONSTRUCTION				$.XX = \pm .03$ $.XXX = \pm .010$	Over 1/4" to 1/2" Over 1/2" to 3/4"	3/14"	FC W SA
#	DESCRIPTION	DATE	BY	THIRD ANGLE	ANGULAR: $+/-\frac{1}{2}^{\circ}$	S Over 3/4"	·	RA

ALL INFORMATION
CONTAINED HEREIN
IS CONFIDENTIAL
AND PROPRIETARY
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DISCLOSED IN ANY
FORM WITHOUT PRIOR
WRITTEN CONSENT OF
SAFERACK LOADING
RACK TECHNOLOGIES



CUSTOMER INFORMATION:
SHELL OIL HARBOR ISLAND TERMINAL
2555 13TH AVE SW
SEATTLE WA 98134

FORM WITHOUT PRIOR WRITTEN CONSENT OF SAFERACK LOADING RACK TECHNOLOGIES PLANT: 219 SAFETY AVENUE, ANDREWS, SC 29153 CAGE

DESCRIPTION: GENERAL ARRANGEMENT RETROFIT GANGWAY AND CAGE

drawn: asn	10/14/24			
CHECK: BOK	10/14/24	ABAS #:	SHEE	T:
eng: bok	10/14/24	FINISH:	5 OF	5
APVL:		SCALE: 1:20	SIZE:	D
P.O.#	667794-00	DWG#: 260144-C5	REV:	0