Mechanical Handling Data Sheet

Top Running, Double Girder

CM

Data Sheet No.	
24590-HLW-M0D-HEH-00021	
Tag No.	Rev.
24590-HLW-MJ-HEH-CRN-00001	5

R10864330

Project	RPP-WTP	Description	Cask Handling Crane
Project No	24590	Supporting Calculation No.	CCN 068118
Planning Area	9B	Associated Drawing No.	24590-HLW-M0K-340-00001002,24590-HLW-M7-HEH-00001005
System No.	HEH	Associated Specification No.	24590-HLW-3PS-MJKG-T0001
Building No.	30	Associated MR No.	24590-QL-MRA-MJKH-00001
Quality Level	Commercial (CM)		
Seismic Criteria	SC-II		
Function	Transfer product canister cask to/from cask transporter and SSW cask to/from transporter; support HLW facility.		

~~ISSUED BY RPP-WTP PDC~~

DESIGN CRITERIA

Design Life	40 years	Safety Classification	Additional Protection Class (APC)

OPERATING ENVIRONMENT			In-Cave	Rm #	N/A	Out-Cave	Rm #	H-0127	List All Special Conditions
Temperature		deg F	N/A	N/A		59	101		N/A
Relative Humidity		%	N/A	N/A		10	85		
Radiological Equip. Dose	gamma	rad/ 40 yrs	N/A	N/A		87.5	175		
	neutron	rad/ 40 yrs	N/A	N/A		Negligible	Negligible		
Radiological Classification			N/A	N/A		R1	R2		
Contamination Classification			N/A	N/A		C1	C2		

CRANE REQUIREMENTS

Type of Crane	Top Running, Double Girder, IWRC & Powered rotate hook for main hoist.		Tons
Service Information	Heavy Service	Capacity	60/15
Crane Operation Indoors?	Yes	Main Hoist	60
Material Handled	Filled product canister cask	Auxiliary Hoist	15
Class Information	CMAA Class 70 Type D, HST-H4 or See Note 1	Trolley	60
No of Cranes Required	1	Bridge	60
ASCE Rail Type or Beam Size	Bethlehem 175# Crane Rail [Buyer (CSA) supplied]		

Lifts	Symbol	(ft)	(in)		Quantity	Main Speed		Creep Speed	
Maximum Lift - Main Hoist	A	46	9	Lifts/day	2	10-12	(ft/min)	1-4	(ft/min)
Maximum Lift - Aux. Hoist	K	40	3	Lifts/day	2	10-12	(ft/min)	1-4	(ft/min)
Average Moves - Bridge	N/A	90	0	Moves/day	4	1-40	(ft/min)	1-4	(ft/min)
Average Moves - Trolley	N/A	34	0	Moves/day	4	1-40	(ft/min)	1-4	(ft/min)

Rail Lengths	Symbol	(ft)	(in)
Runway Length	B	114	3
Hook Approach - hook C/L to end walls (Maximum)	C	See note 9	See note 9
Span	D	32	4 △5
Hook Approach - hook C/L to Rail C/L (Maximum)	E	See note 10	See note 10

Date	REV	Revisions	By	Checked	Supervisor	Approved	E&NS
1/18/08	5	TN-24590-06-03113--Mod to HLW Cranes to Meet OSHA 2" Running Clearance. Added EN&S safety screening note.	WA Frier	D. Adams	S. Winsel	J. Hancock	J. Cook
N/A	0-4	See Page 3	N/A	N/A	N/A	N/A	

Doc Number	24590-HLW-M0D-HEH-00021	REV	5	Page 1 of 4

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24590-HLW-M0D-HEH-00021	
Tag No.	Rev.
24590-HLW-MJ-HEH-CRN-00001	5

Rail Positions	Symbol	(ft)	(in)
Top of Rail to Ceiling	F	16	0
Floor to Top of Rail	G	43	0
Rail Centerline to side wall	H	1'-1" (E)	1'-0" (W) 5
Bridge end to wall	N/A	N/A	N/A
Top of Rail to Lowest Obstruction	J	12	0

Drives	Volts	Phase	Hz	Control Type
Hook Rotate Drive Type	460	3	60	2-spd multi-step variable frequency drive
Main Hoist Drive Type	460	3	60	5-spd multi-step flux vector drive, closed loop
Aux. Hoist Drive Type	460	3	60	5-spd multi-step flux vector drive, closed loop
Bridge Drive Type	460	3	60	5-spd multi-step variable frequency drive
Trolley Drive Type	460	3	60	5-spd multi-step variable frequency drive
Slewing Drive Type	N/A	N/A	N/A	N/A

CONDUCTOR TYPE

Bridge	Festoon
Trolley	Festoon

CONTROLS

Method of Control	Digital radio
Location of Control	Provide all controls in electrical panel that is to be mounted on the wall or at floor level by the buyer in a C2 (clean) environment
Type of Control Enclosure	NEMA Type 12
Main Hoist	Digital radio
Auxiliary Hoist	Digital radio
Bridge	Digital radio
Trolley	Digital radio
Slewing Drive	N/A
Rotating Hook	Digital radio

MATERIALS

Item	Material	Grade/Type
N/A	Carbon Steel	N/A
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ELECTRICAL REQUIREMENTS

Item		HP		HP		HP		HP		HP
Motor	Main Hoist	50	Aux. Hoist	15	Bridge	(2) 3	Trolley	(2) 2	Slewing	N/A
	Hook Rotate	2								

Special Wiring Conditions or Codes	National Electric Code (NEC)

Motor horsepower estimated for plant electrical load sizing. Seller to provide.

Mechanical Handling Data Sheet Top Running, Double Girder	Data Sheet No. 24590-HLW-M0D-HEH-00021	
	Tag No. 24590-HLW-MJ-HEH-CRN-00001	Rev. 5

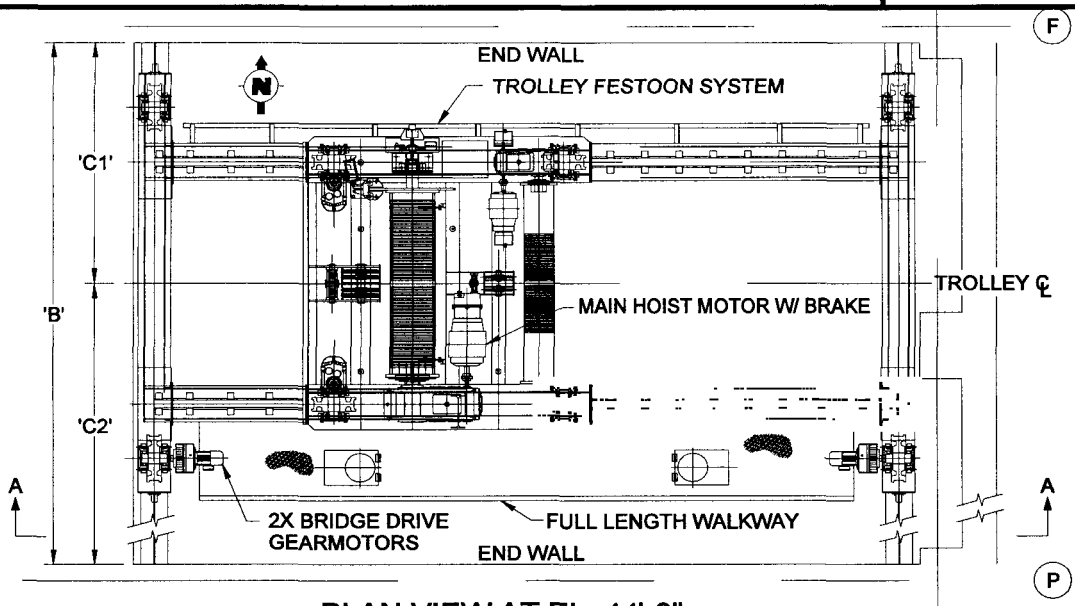
MAINTENANCE REQUIREMENTS

Retrieval	N/A
Decontamination	N/A

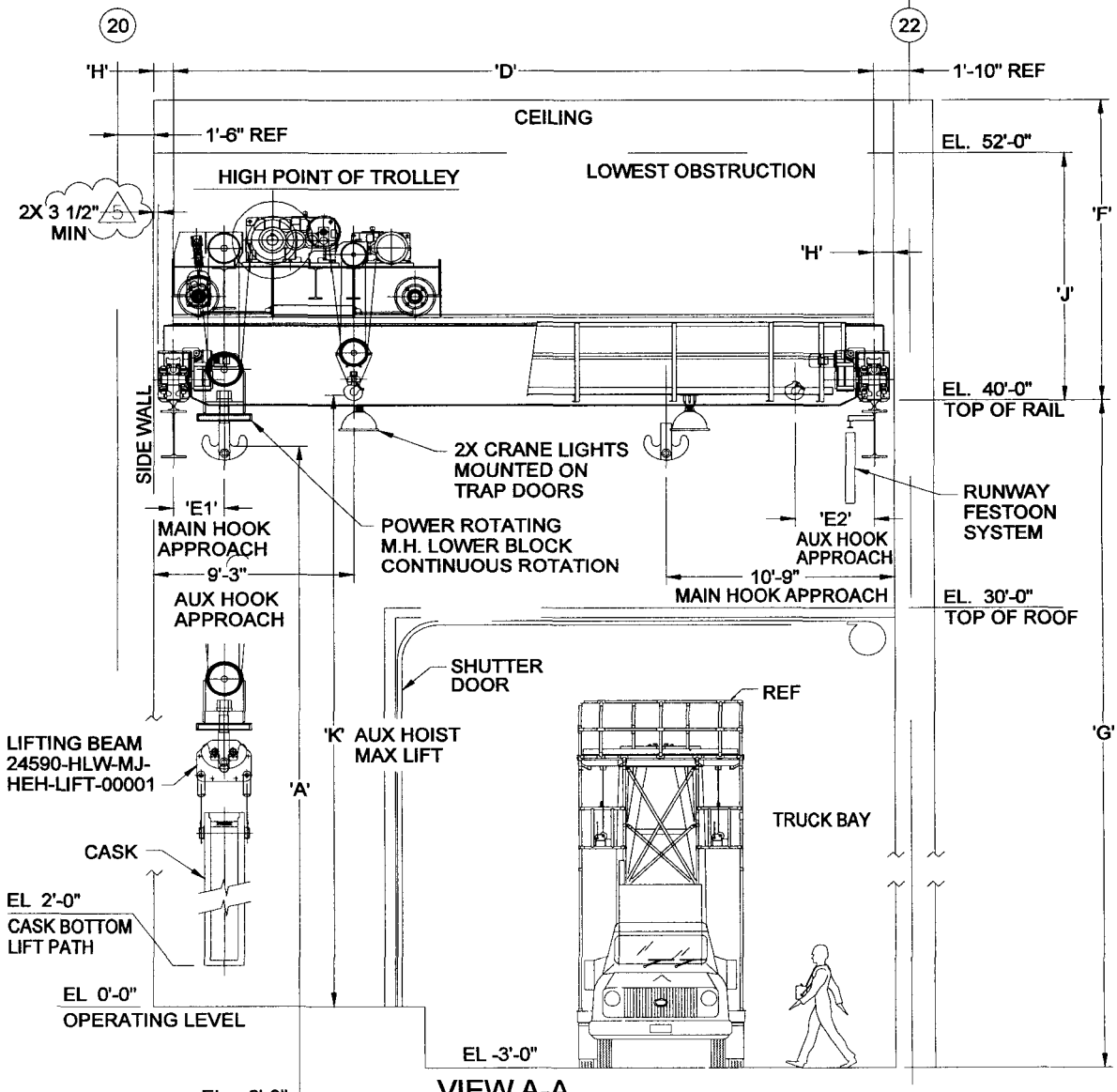
ADDITIONAL REQUIREMENTS

1. Bridge and trolley bearings shall be CMAA70, Class F. This note supersedes 24590-WTP-3PS-M000-T0002 Sec. 4.3.3.
2. Provide shank hook with swivel for auxiliary hoist
3. Provide emergency stop switch, pull to reset.
4. Provide high-high limit switch for main and auxiliary hoist with keyed over-ride switch located in control panel.
5. Provide bridge and trolley slowdown travel limit switches.
6. Main hoist hook shall move to -9'-0" elevation.
7. Main hoist hook shall be a Crosby/McKissick Duplex Hook Assembly.
8. Omit important to safety requirements from auxiliary hoist unless noted otherwise.
9. C1 =10'-2"; C2 = 10'-2"
10. E1 = 2'-3" ; E2 = 9'-8" (For Main hoist); E1 = 8'-3" (For Aux Hoist); E2 = 3'-8" (For Aux hoist) 5
11. The 175# crane rail will be acceptable provided that seller can provide calculations that the crane frequency in the transverse direction (i.e., perpendicular to the runway) will be 16 Hz. minimum.
12. This data sheet provides basic outlines design objectives and bounding dimensions to contracted design or fabrication supplier(s) and shall not be used to confirm the as built WTP structure system or component identified herein. See vendor information for final configuration provided in conformance to purchase order 24590-QL-POA-MJKH-00001.
13. Seller shall provide a second high speed brake on the auxiliary hoist.
14. Power feed shall be supplied at the north end to Seller supplied festoon junction boxes.
15. 24590-HLW-M0D-HEH-00021 is a lead document in accordance with 24590-WTP-GPP-SANA-001 and 24590-WTP-RPT-ENS-07-001; requires a safety screening. 5

Date	REV	Revisions	By	Checked	Supervisor	Approved
6/12/2007	4	24590-HLW-P1-P01T-00002	WA Frier	D. Adams	S. Winsel	P. Snider
10/27/2005	3	24590-WTP-SE-ENS-04-0127 revised safety classification to APC and QL to CM. Corrected dimension IAW 24590-CM-POA-MJKH-00001-05-00003.	WA Frier	N. Darwen	S. Winsel/P. Snider	D. Wilsey
6/21/2005	2	24590-HLW-SS-S15T-00418; (2) Revised Aux Hoist Drive IAW vendor standard policy; (3) Revised HP, C dim & main hook	WA Frier	N. Darwen	S. Winsel/P. Snider	D. Wilsey
4/22/2004	1	accordance with CCN 091566	WA Frier	G. Marr	L. Harrison/P. Snide	D. Wilsey
2/2/2004	0	Issue for Procurement	WA Frier	E. Szavay	J. Weamer/J. Browe	D. Wilsey



PLAN VIEW AT EL. 44'-0"



VIEW A-A

LOOKING NORTH