TRANSNET

delivering on our commitment *to you*

COMMODITY FLOW DIAGRAMS

Richards Bay Terminal – Premium Berths

Compiled by: Theo Naidoo

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Richards Bay Terminal: Premium Berths

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Key

- Preferred Conveyor Route
- Client (Private) Conveyor Route
- Alternate Conveyor Route
- Transfer Point Between Conveyors
- 702 Berth Number
- X Dust Units

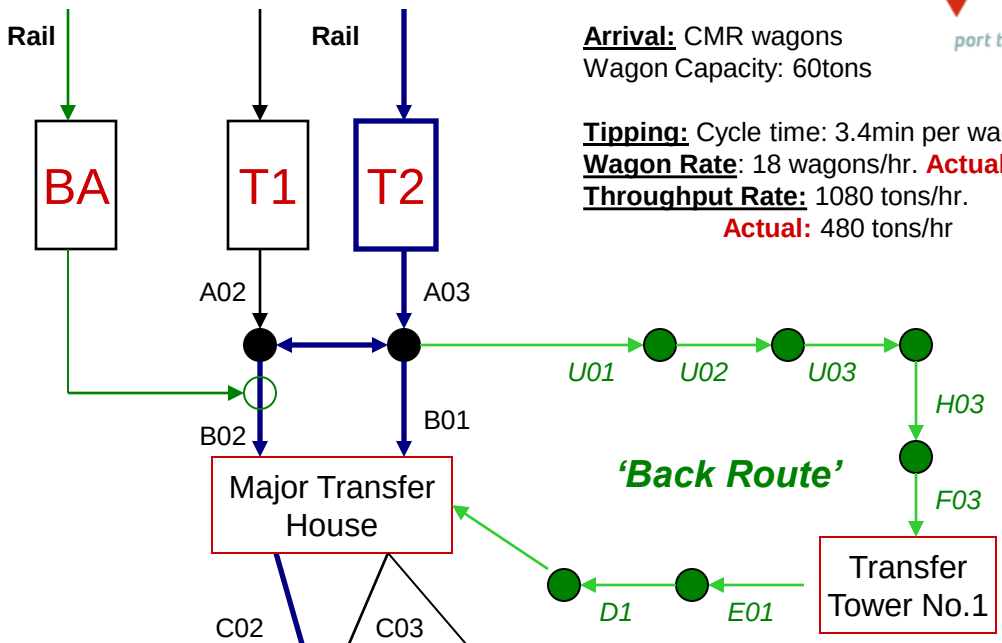
By: T. Naidoo

MAGNETITE

Grades:
1) Export Magnetite, 2) Iron Oxide
3) Coal Wash

Magnetite Density:
3.0 tons/m^3

Back Actor
Cycle Time: 8.6min
Actual Rates
Wagon Rate: 7 /hr
Throughput Rate: 420 tons/hr



Arrival: CMR wagons
Wagon Capacity: 60tons

Tipping: Cycle time: 3.4min per wagon.
Wagon Rate: 18 wagons/hr. **Actual**: 8 W/hr
Throughput Rate: 1080 tons/hr.
Actual: 480 tons/hr

Backstacking Operation

Number of Payloaders	1	4	6	8
Trips/Hr	15	60	90	120
Tons/Hr	91	364	546	728

Reclamation Operation

Payloaders:
Capacity: 6–8 Tons/scoop

Payloaders ***'Backstack'*** Commodity

Capacities
Area A: 96'700 tons
Area B: 80'850 tons
Area C: 80'850 tons
258'400 tons

Payloaders ***'Reclaim'*** Commodity

KRUPP Loader
2500 tons/hr

CAILLARD Loaders
(Shared with 703/704)
2500 tons/hr

IMG MANN
(Shared with 704/705)
2500 tons/hr

Mantekraft Loader
2500 tons/hr

Commodity Flow Diagram: Magnetite

By: T. Naidoo

30/03/2011 rev.4

CHROME

Chrome Density:
2.67 tons/m^3

Back Actor
Cycle Time: 8.6min
Actual Rates
Wagon Rate: 7 /hr
Throughput Rate: 420 tons/hr

Arrival: CFR (68 tons) and CR (63 tons) wagons

Tipping: Cycle time: 3.4min per wagon.
Wagon Rate: 18 -20 wagons/hr.
Actual: 11 W/hr
Throughput Rate: 1080 tons/hr.
Actual: 715 tons/hr

GRADES

1. UG2 - 4PL
2. CR - BY - C06
3. CR - BY - C04
4. CR - BY - C01
5. OR GA1
6. DL - A10 / DL A00
7. CR - RP - U01
8. CR - RP - U02
9. CROCODILE
10. CR - CG - A22
11. CR - CN - A69
12. CR - CM - A44
13. CR - CG - A23
14. CR - CN - A34

Rail
Rail
BA
T1
T2
A02
A03
U01
U02
U03
B02
B01
Major Transfer House
'Back Route'
D02
D03
H03
Transfer Tower No.1
F03
J01
J02
J03
K02
Stacker Machine
Open Storage Area A/B/C West
Hoppers
K01
K03
N02
N03
O02
O03
P01/P02
P01/P02
P01/P02
Quayside Berths

KRUPP Loader
2500 tons/hr
703

CAILLARD Loaders
(Shared with 703/704)
2500 tons/hr

IMG MANN Loader
2500 tons/hr
704

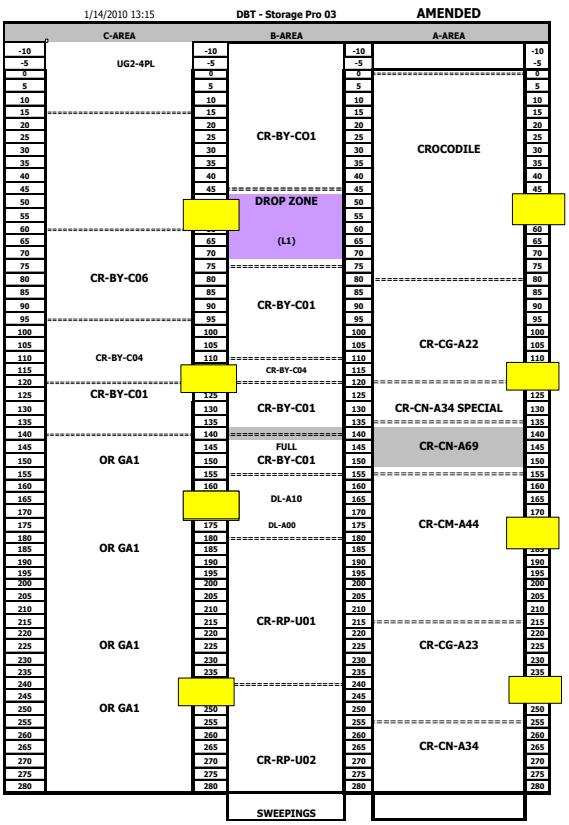
Payloaders:
Capacity: 6–8 Tons/scoop

Payloaders '***Backstack***' Commodity

Capacities
Area A: ± 75'000 – 90'000 tons
Area B: ± 80'000 tons
Area C: ± 75'000 tons

Payloaders '***Reclaim***' Commodity

Open Stack Area Layout



Grades:
1. Anthracite Coal

Coal Density:
0.95 tons/m^3

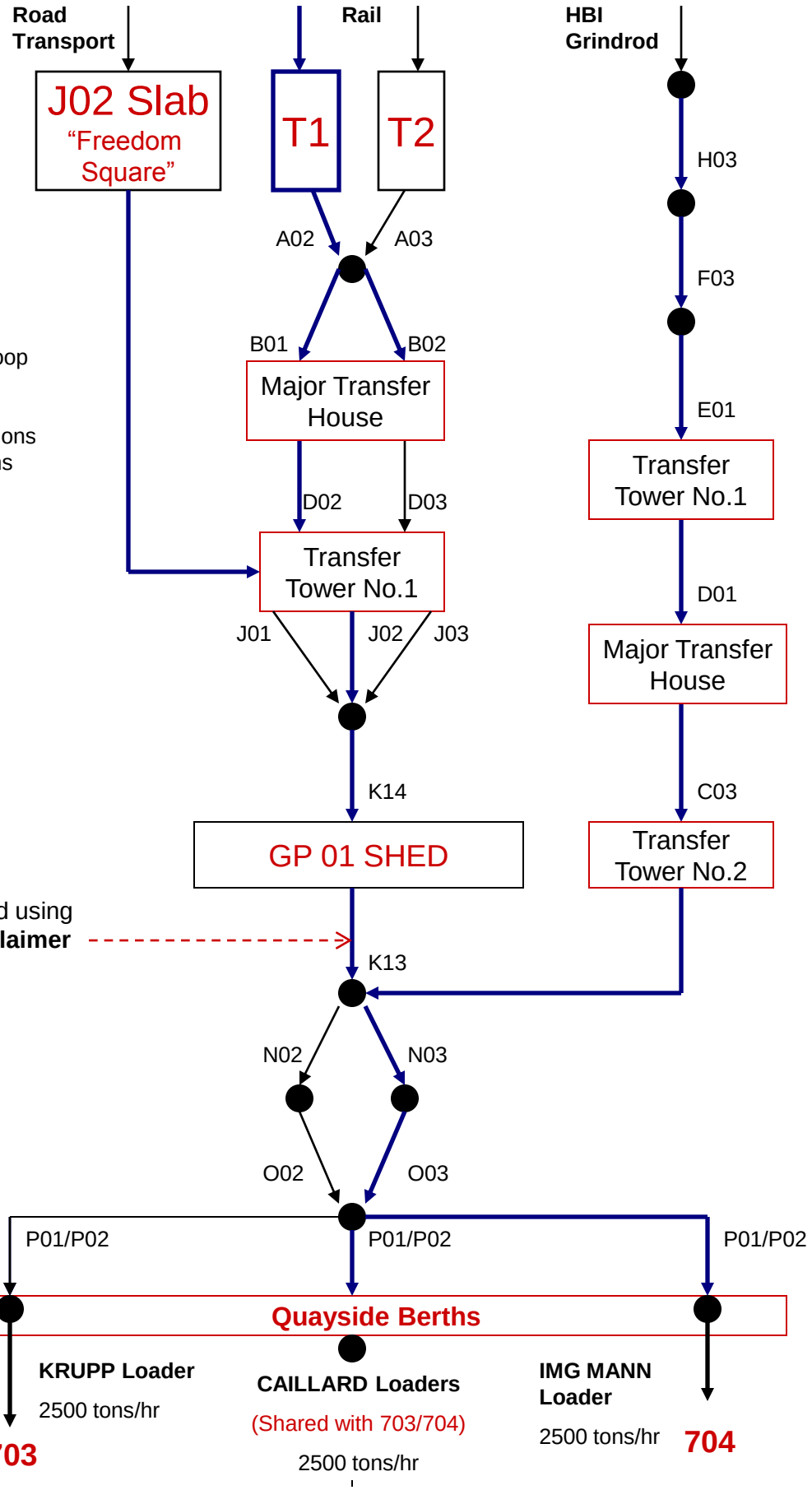
COAL / ANTHRACITE

Road Truck Arrival
Capacity: 32 Tons

J02 slab
Capacity: 3000 tons
2 x Payloaders (6-8 Tons/scoop)
Rate: 600 tons/hr

Payloaders:
Capacity: 6–8 Tons/scoop

Rail Arrival: CFR Wagons
Wagon Capacity: 68tons



Commodity reclaimed using **Export Scraper Reclaimer**

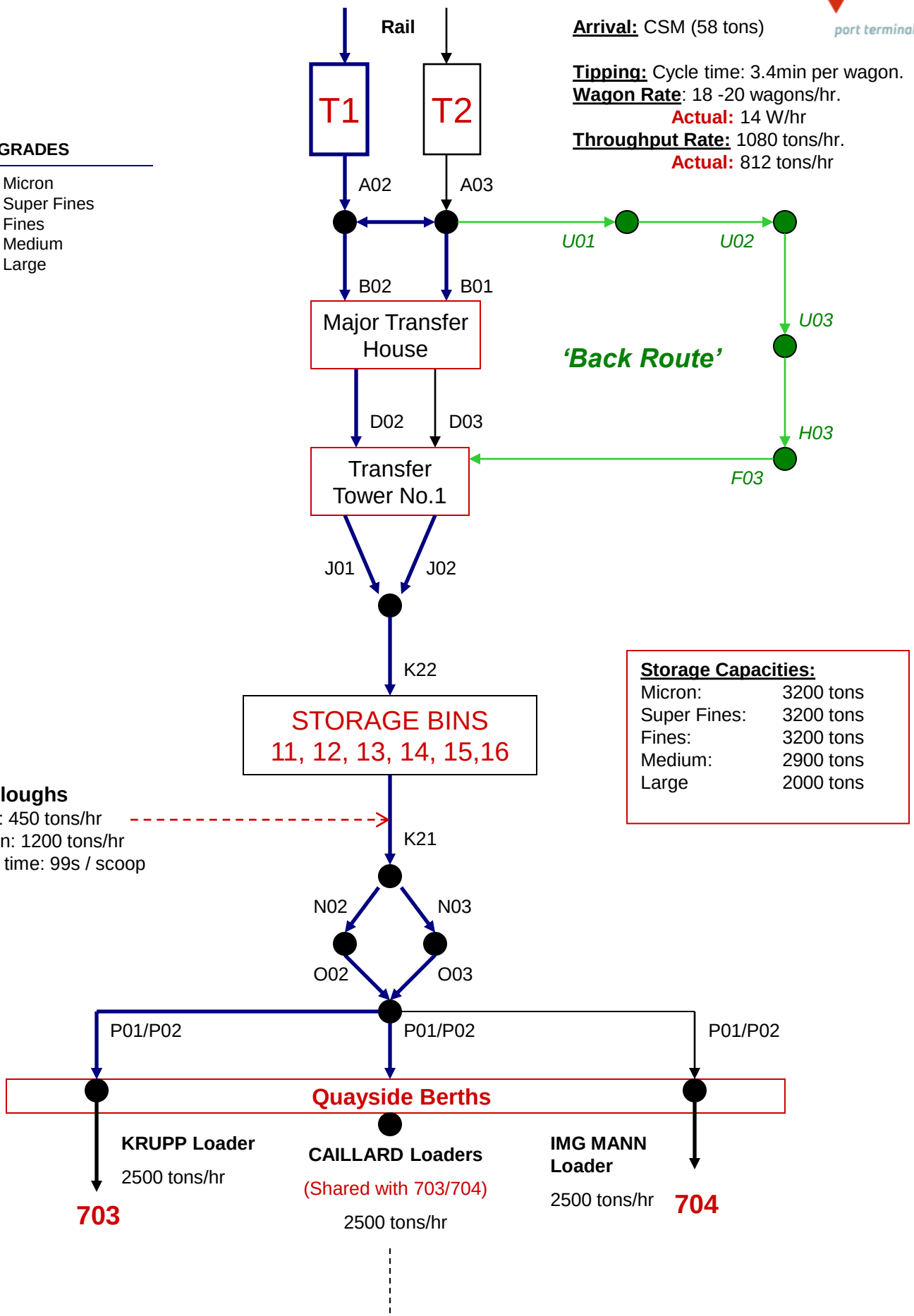
Rate:
Capacity: 800 tons/hr
Norm: 500 tons/hr

VERMICULITE

Vermiculite Density:
0.6 – 1.05 tons/m^3

GRADES

1. Micron
2. Super Fines
3. Fines
4. Medium
5. Large



Arrival: CSM (58 tons)

Tipping: Cycle time: 3.4min per wagon.
Wagon Rate: 18 -20 wagons/hr.
Actual: 14 W/hr
Throughput Rate: 1080 tons/hr.
Actual: 812 tons/hr

Storage Capacities:

Micron:	3200 tons
Super Fines:	3200 tons
Fines:	3200 tons
Medium:	2900 tons
Large	2000 tons

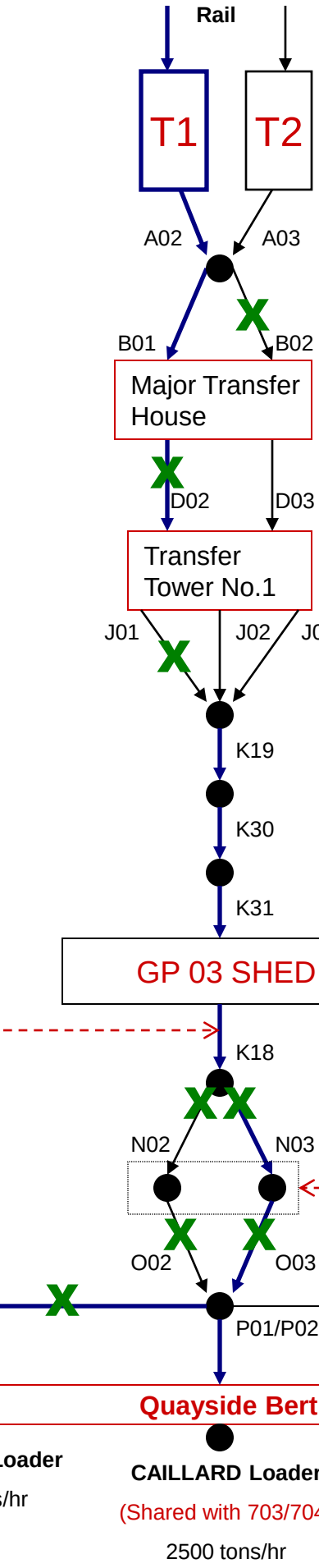
2 x Ploughs
Norm: 450 tons/hr
Design: 1200 tons/hr
Cycle time: 99s / scoop

ROCK PHOSPHATE

Grades:
> Single Grade

Coal Density:
1.88 tons/m^3

X - Dust Units



Arrival: Wagons (58 tons)

Tipping: Cycle time: 3.5min per wagon.
Wagon Rate: 18 -20 wagons/hr.
Actual: 14 W/hr
Throughput Rate: 1080 tons/hr.
Actual: 812 tons/hr

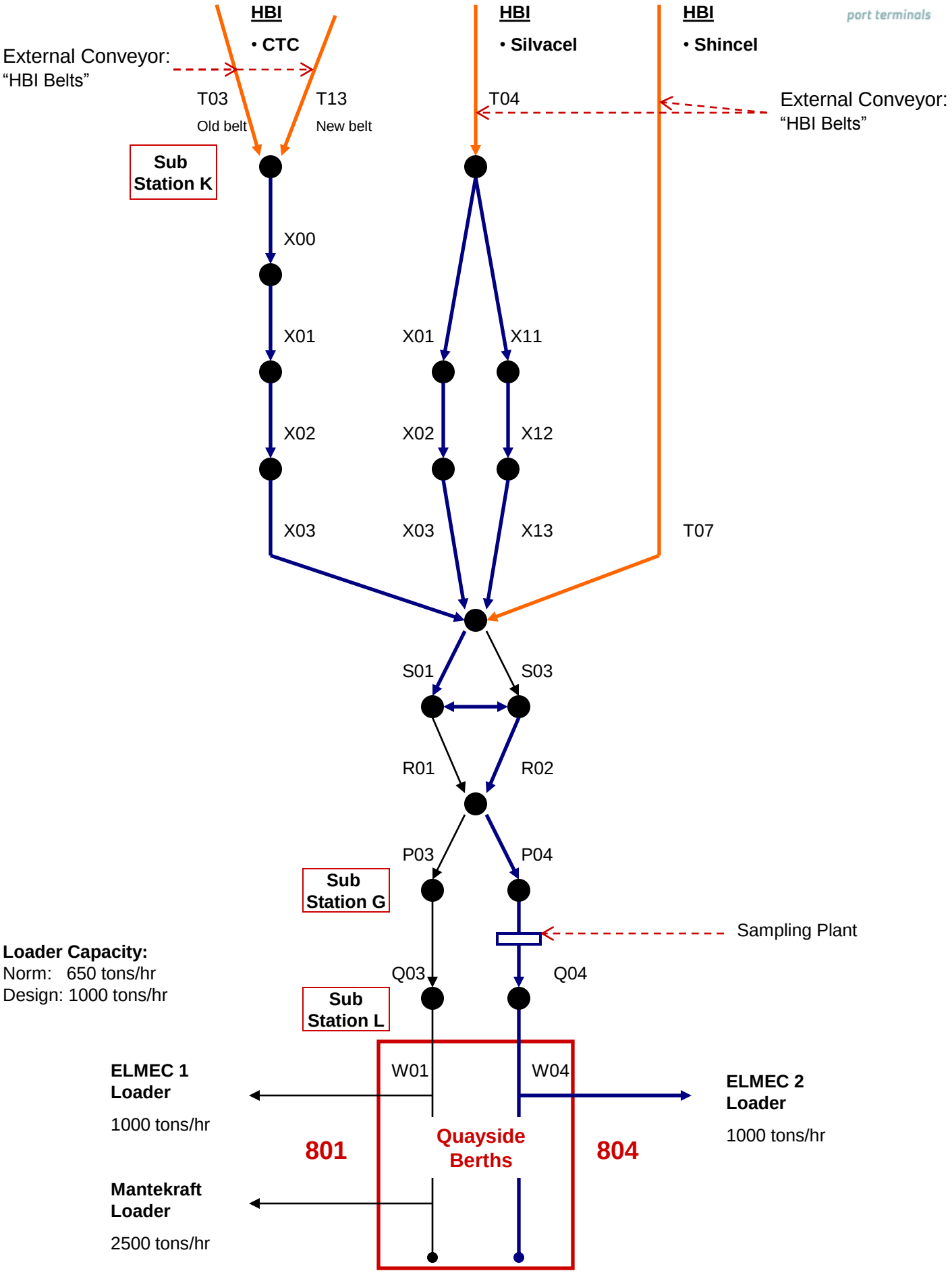
Commodity reclaimed using
Export Scraper Reclaimer

Rate:
Capacity: 800 tons/hr
Norm: 500 tons/hr

By: T. Naidoo

WOODCHIPS

W/C Density:
0.3 tons/m^3



Loader Capacity:
Norm: 650 tons/hr
Design: 1000 tons/hr

CHLORIDE

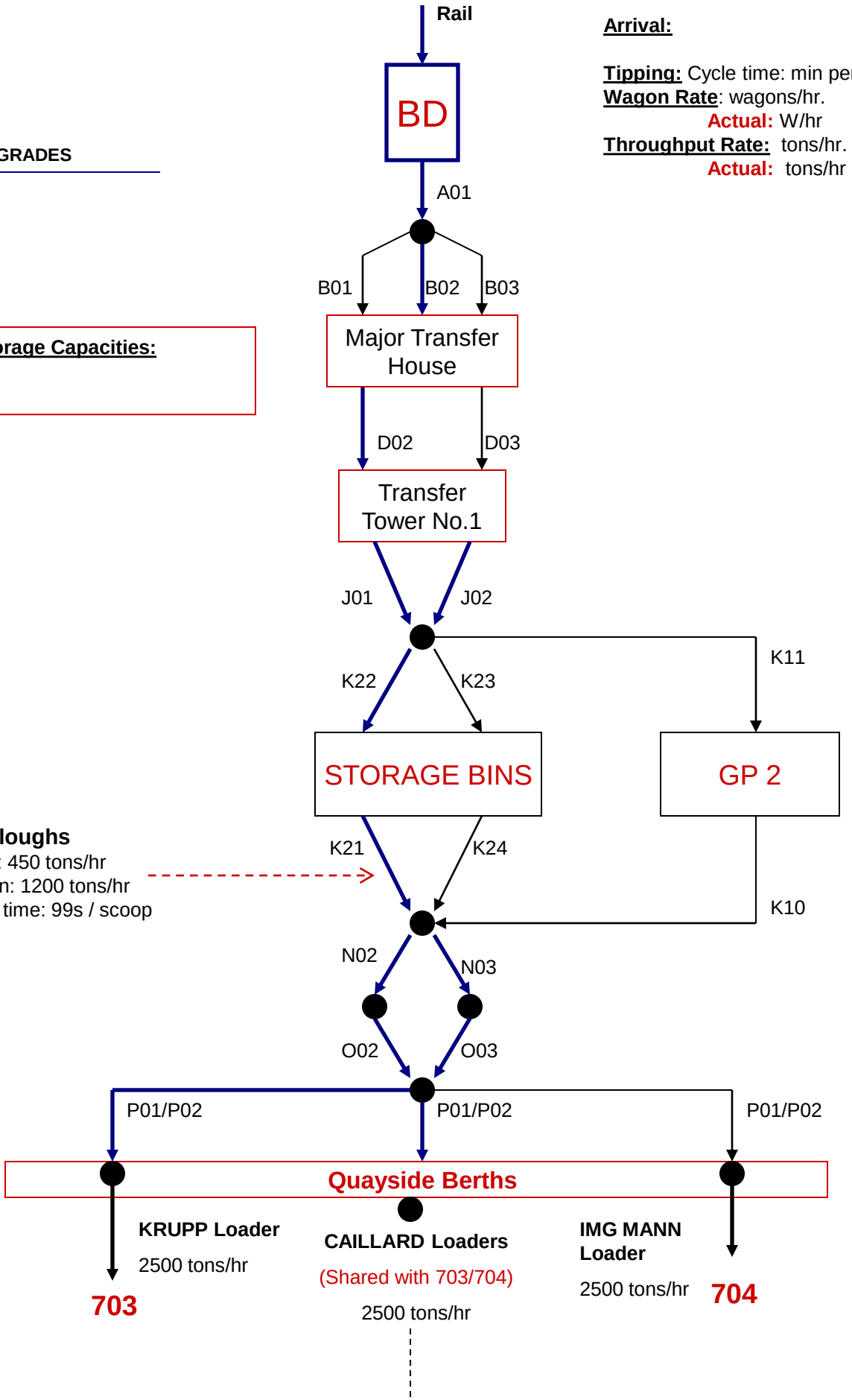
Vermiculite Density:
2.12 tons/m^3

Arrival:

Tipping: Cycle time: min per wagon.
Wagon Rate: wagons/hr.
Actual: W/hr
Throughput Rate: tons/hr.
Actual: tons/hr

GRADES

Storage Capacities:



2 x Ploughs
Norm: 450 tons/hr
Design: 1200 tons/hr
Cycle time: 99s / scoop

ANDALUSITE

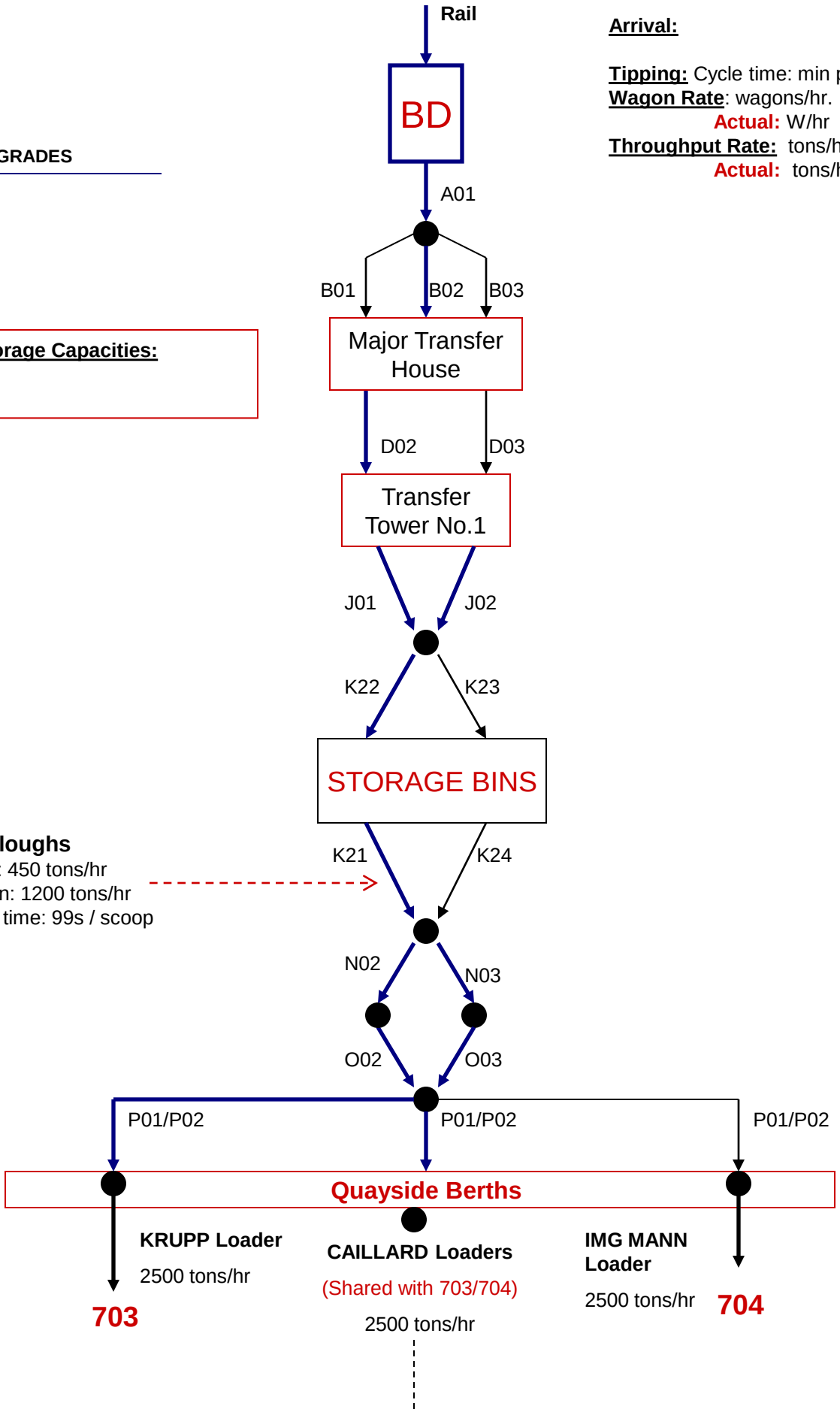
Vermiculite Density:
1.6 tons/m^3

Arrival:

Tipping: Cycle time: min per wagon.
Wagon Rate: wagons/hr.
Actual: W/hr
Throughput Rate: tons/hr.
Actual: tons/hr

GRADES

Storage Capacities:



2 x Ploughs
Norm: 450 tons/hr
Design: 1200 tons/hr
Cycle time: 99s / scoop

Grades:
1. Worseley
2. Alcoa

Density:
1.0 tons/m^3

ALUMINA

609

Liebherr 1300 Off-Loader
Norm: 350 tons/hr
Design: 1500 tons/hr

Alesa Off-Loader
Norm: 350 tons/hr
Design: 350 tons/hr

Hitachi Off-Loader
Norm: 300 tons/hr
Design: 500 tons/hr

Quayside Berth

M00

L00

Sub Station J

T00

T01

BHP - Hillside

BHP Silo Storage

Alumina Offloading Rates:
Norm: 500 tons/hr
Target: 865 tons/hr

Alumina Tri-Fluorite (ATF) Offloading Rates:
Norm: 250 tons/hr
Target: 1200 tons/hr

ATF Offloading Rates:
Norm: 350 tons/hr
Target: 800 tons/hr

Density:
0.85 tons/m^3

PETCOKE

Offloading Rates:
Norm: 350 tons/hr
Target: 540 tons/hr

609

Liebherr 1300 Off-Loader
Norm: 350 tons/hr
Design: 1500 tons/hr

Alesa Off-Loader
Norm: 350 tons/hr
Design: 350 tons/hr

Hitachi Off-Loader
Norm: 300 tons/hr
Design: 500 tons/hr

Quayside Berth

M00

L00

Sub Station J

T00

T01

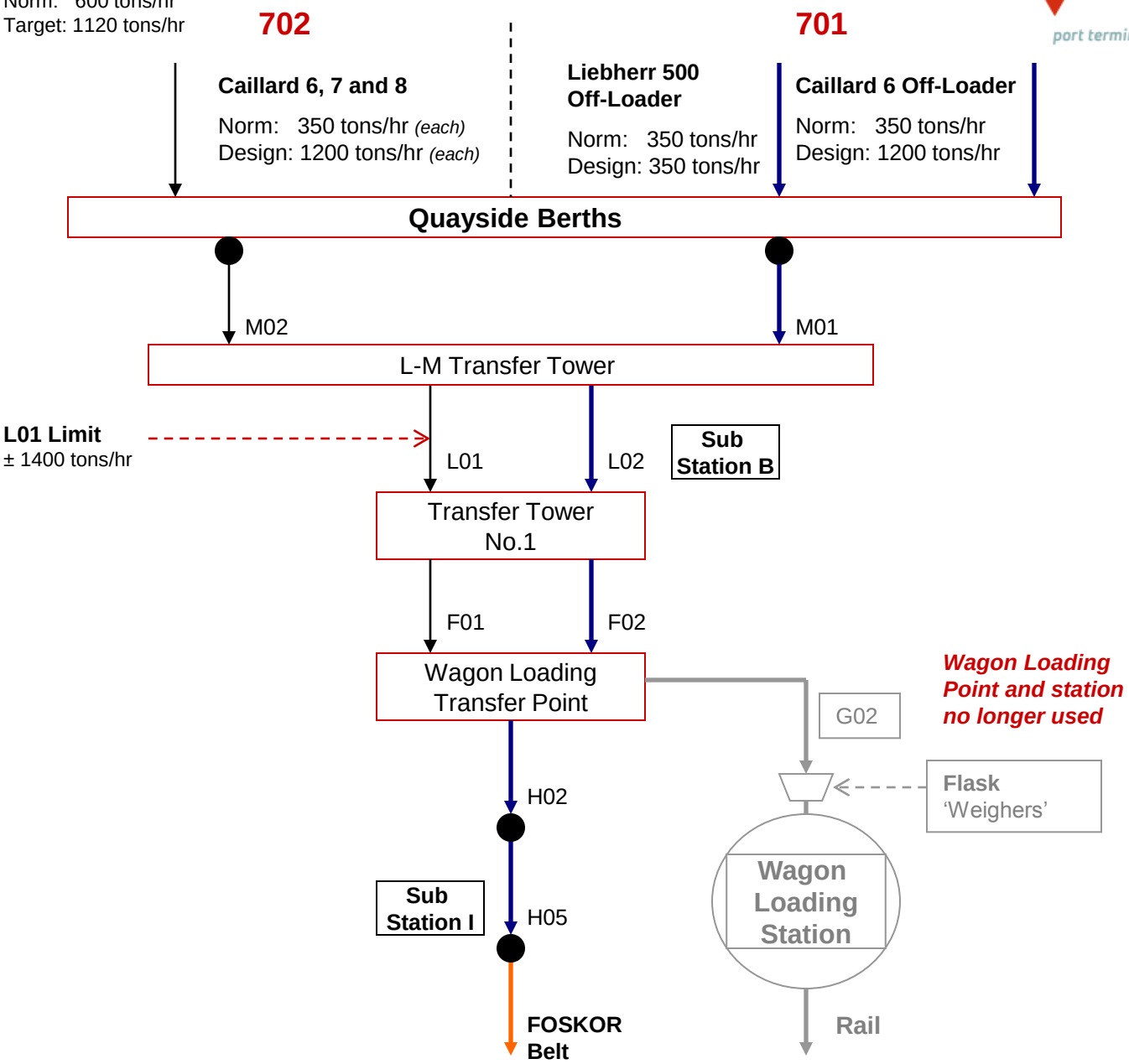
BHP

BHP Silo Storage

Density:
1.2 tons/m³

SULPHUR

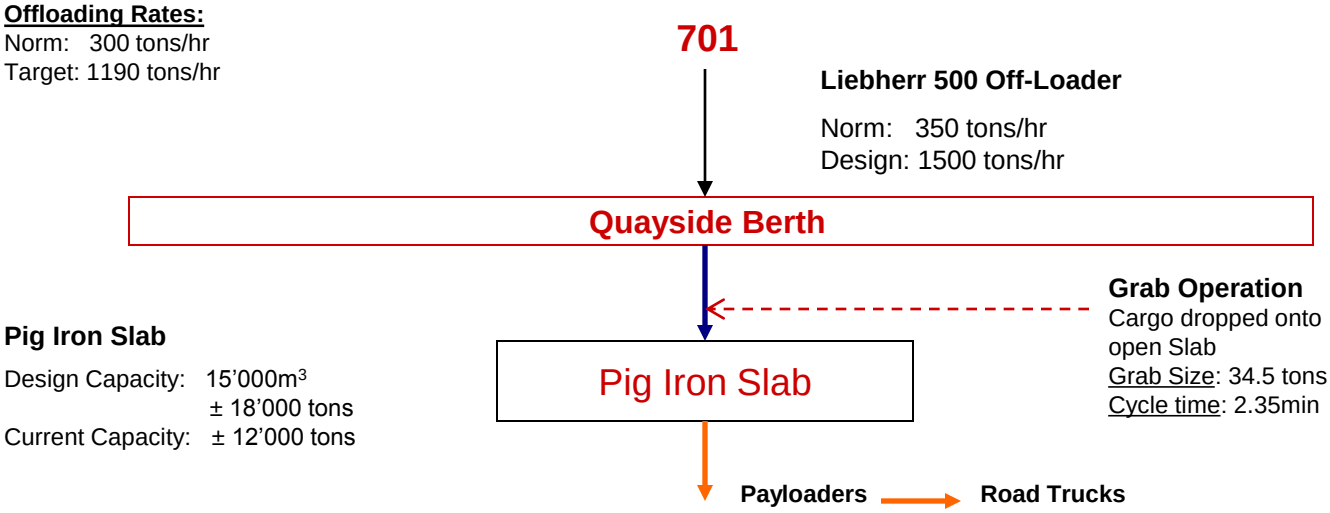
Offloading Rates:
Norm: 600 tons/hr
Target: 1120 tons/hr



Density:
1.2 tons/m³

METCOKE

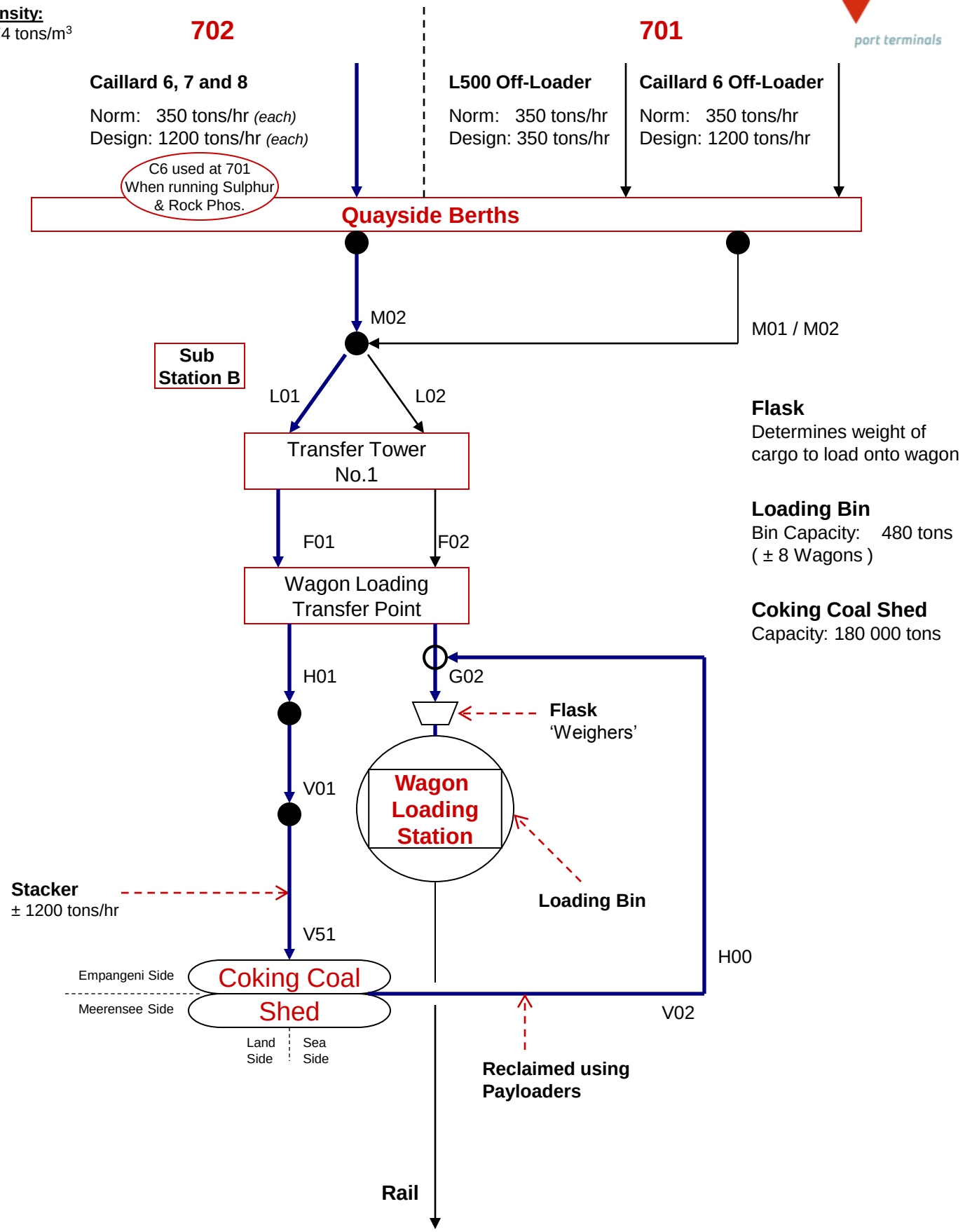
Offloading Rates:
Norm: 300 tons/hr
Target: 1190 tons/hr



COKING COAL

Offloading Rates:
Norm: 750 tons/hr
Target: 1100 tons/hr

Density:
0.74 tons/m^3



Flask
Determines weight of cargo to load onto wagon

Loading Bin
Bin Capacity: 480 tons
(± 8 Wagons)

Coking Coal Shed
Capacity: 180 000 tons