PORT METRO
vancouver

March 30th, 2015

PP# 2014-247
EMAIL & MAIL

Mr. Dave Link
Project Manager
Cargill Inc.
15407 McGinty Road West MS 63
Wayzata, Minnesota USA 55391

Dear Mr. Link,

RE: VFPA Project Permit No. 2014-247
Cargill Inc. – Rail Improvement Project

On behalf of the Vancouver Fraser Port Authority (VFPA) doing business as Port Metro Vancouver, I am pleased to advise that your Project Permit for the above-noted work has been approved. The enclosed VFPA Project Permit 2014-247 is valid until March 31st, 2017.

Prior to the commencement of works, confirmation of tenure arrangements is required. Cargill Inc. is responsible for carrying out the works in the manner described in your application and according to the conditions listed in the Project Permit. Please ensure that those involved in undertaking the approved works are aware of these conditions and that a copy of the Permit is maintained on site during the project.

Upon completion of your project, VFPA will require a record of the project including as constructed drawings to ensure an accurate record of all site improvements. Please submit these materials electronically in both in AutoCAD and PDF formats to port_planning@portmetrovancouver.com.

Should you have any questions, please contact me at 604-665-9637.

Sincerely,

Patrick Coates
Planner

Encl. Project Permit No. 2014-247

Cc: Lilian Chau, Planning, Port Metro Vancouver
Anika Calder, Environmental Programs, Port Metro Vancouver
Barb Yandel, Real Estate, Port Metro Vancouver
Gerry Dickie, Cargill Inc.

PORT METRO vancouver

PROJECT PERMIT NUMBER 2014-247

DATE OF APPROVAL	**March 30, 2015**
APPLICANT	**Cargill Inc.**
ADDRESS OF APPLICANT	**15407 McGinty Road West MS 63, Wayzata Minnesota, USA 55391**
PROJECT LOCATION	**801 Low Level Road, North Vancouver, Canada, V7L4J5**
PROJECT TITLE	**Cargill Rail Improvement Project**

PROJECT DESCRIPTION

For the purposes of this Permit, the Project is understood to include the following "Works" on Vancouver Fraser Port Authority property:

Proposed Works:

Rail:

- Expansion and reconfiguration of rail infrastructure including a third spur track, additional switches and associated installation of trackage allowing the applicant to unload two rail cars at a time;
- Installation of a dedicated lead track where the CN mainline tracks cross into the applicant's terminal area;
- Placement of fill for creation of a track base- the area of the proposed rail track work is approximately 1.16 km in length (3806.0ft), and will require approximately 2320 m^3 (81,930 cubic ft.) of fill;
- Excavation and clearing of existing trees and vegetation as well as earth berms to a depth of less than 1 metre (3.30ft);
- Construction of new concrete retaining walls to maintain railway safety clearances as a result of additional rail track construction;
- Modifications within existing track shed for improved employee access and installation of a new stairway and walkway over the Cargill rail tracks;
- Excavation of soil up to 1.2 metres deep (3.94ft) along with placement and compaction of fill for grade beam construction;
- Installation of new concrete and steel indexer grade beams for rail cars in the track shed;
- Install a new gate opener system for the third dumper;
- All earth works, surface excavation and clearing of trees and vegetation as noted above are to take place within areas of existing fill and previously disturbed soils; and
- Areas of onsite contamination are not anticipated to be affected by the proposed work.

Lighting System Improvements:

- Upgrading of the lighting system and addition of new lights on terminal buildings, new lighting to be in the form of roadway lighting, as well as mid-span and wall mounted lights.

Automation:

- Installation of a new rail car indexer system for Cargill's entire track shed to permit the control of up to a 24 car string without having to cut and release rail cars during unloading procedures;
- Installation of machinery in an existing below grade dumper pit within the existing track shed including a new hopper, automation and controls system, power cable and control station for motors, and a new conveyor system;
- Installation of a new Radio Frequency Identification System for automated car information management and;
- Upgrading of the current camera system and rail signal system including automated illumination to meet the requirements of the new dumper and spotting arrangements as well as associated electrical and control upgrades.

Access and Construction:

- All access to the site will be via the existing Low Level Road Overpass into the applicant's site and;
- An increase in construction related traffic is expected in the form of 100 additional trucks over 5 days to transport fill material to the site in the summer of 2015. All other construction materials and equipment are expected to be transported by rail.

GENERAL CONDITIONS OF APPROVAL:

1. This Permit is conditional on a valid tenure agreement with respect to the subject premises being in place. NO CONSTRUCTION MAY COMMENCE IN THE ABSENCE OF A VALID TENURE AGREEMENT.

2. This Permit is granted subject to the fulfillment of all other requirements of the Vancouver Fraser Port Authority (VFPA), doing business as Port Metro Vancouver, relating to the Project, and subject to all applicable laws and other necessary approvals being obtained. Prior to commencing construction the Applicant shall ensure that it has complied with all necessary legal requirements and that all necessary regulatory approvals have been obtained. Furthermore, the issuance of the VFPA Project Review Permit does not preclude compliance with the regulatory processes and requirements of any other applicable agencies;

3. This Permit in no way endorses or warrants the design, engineering, or construction of the construction works contemplated under this Permit and no person may rely upon this Permit for any purpose other than the fact that VFPA has permitted the contemplated construction works to commence, subsequent to the issuance of this Permit, in accordance with the terms and conditions of this Permit;

4. In consideration of the granting of this Permit by VFPA the Applicant agrees to indemnify and save harmless VFPA against any and all actions, claims, loss, damages or other expenses in any way arising or following from or caused by the granting of this Permit or the construction of any works as contemplated by this Permit;

5. Development shall be generally in accordance with the application submitted by Dave Link, Project Manager, on behalf of Cargill Inc. on November 10, 2014, February 19, 2015 and March 13, 2015 including the attached drawings titled, numbered and dated:
   - "Site Plan Layout- Cargill Terminal," No.02312-0, April 16, 2012, Rev.0;
   - "Cargill Yard Reconfiguration Rail Proposed CN Lead Comparison to SK-1002," No.332179-RW-100-SK-1013, December 18, 2013, Revision No. A;
   - Cargill Yard Reconfiguration Rail Space for Dual Indexers Cargill Option 1 and CN Option 2," December 18, 2013, No.332179-RW-100-SK-MO11, Revision No. B;
   - "Overview Survey Plan of Portions of Cargill Rail Yard, City of North Vancouver," No.H2788D, dated October 2, 2014, Revision No.0;
   - "Track Expansion Project General Electrical Area Lighting West," No.307071-00990-00-EL-DAL-0010, February 18, 2015, Revision. D;

- "Track Expansion Project General Electrical Area Lighting East," No.307071-00990-00-EL-DAL-0011, February 18, 2015, Revision. D;
- "Vancouver Terminal Track Expansion Rail North-East Retaining Wall Plan and Section," No.332179-RW-100-SO-1022, dated February 27, 2015, Revision No. A;
- "Vancouver Terminal Track Expansion Project Cover Sheet," Project No.140335, Drawing No. CS1, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Site Plan," Project No.140335, Drawing No. SP1, January 30th, 2015, Revision No. A;
- "Vancouver Terminal Track Expansion Project Flow Diagram," Project No.140335, Drawing No. F1, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Flow Diagram," Project No.140335, Drawing No. F1, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Track Shed Basement Plan View," Project No.140335, Drawing No. GA1, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Track Shed Basement Plan View," Project No.140335, Drawing No. GA2, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Section Looking North," Project No.140335, Drawing No. GA3, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Section Looking North @ Track 5," Project No.140335, Drawing No. GA4, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Section Looking North @ Track 1," Project No.140335, Drawing No. GA5, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Section Looking East @ RDC3B Discharge," Project No.140335, Drawing No. GA6, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Section Looking East @ Rail Receiving Hoppers," Project No.140335, Drawing No. GA7, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Section Looking West @ New Rail Crossover," Project No.140335, Drawing No. GA8, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Track Shed Basement Plan," Project No.140335, Drawing No. S1, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Track Shed Basement Plan," Project No.140335, Drawing No. S1, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Track Shed Enlarged Basement Plans," Project No.140335, Drawing No. S2, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Track Shed Enlarged Basement Plans," Project No.140335, Drawing No. S3, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Track Shed Hopper Framing Plan," Project No.140335, Drawing No. S4, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Track Shed Basement Wall Elevations/Hopper & Conveyor Support Elevation," Project No.140335, Drawing No. S5, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Hopper/Conveyor Support Elevation," Project No.140335, Drawing No. S6, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Hopper/Conveyor Support Elevation," Project No.140335, Drawing No. S7, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Conveyor/Hopper Support Sections," Project No.140335, Drawing No. S7A, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Conveyor/Hopper Support Sections," Project No.140335, Drawing No. S7B, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Conveyor/Hopper Support Details," Project No.140335, Drawing No. S8, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Hopper Plan & Sections," Project No.140335, Drawing No. S9, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Hopper Sections," Project No.140335, Drawing No. S10, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Conveyor/Hopper Support Details," Project No.140335, Drawing No. S10A, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Track Shed Enlarged Basement Plans

Sections & Details," Project No.140335, Drawing No. S10B, January 30th, 2015, Revision No. B;

- "Vancouver Terminal Track Expansion Project Conveyor/Hopper Support Details," Project No.140335, Drawing No. S10C, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Track Shed Exist First Floor Plan," Project No.140335, Drawing No. S11, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Track Shed New Plan at First Floor," Project No.140335, Drawing No. S12, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Track Shed Enlarged Plan," Project No.140335, Drawing No. S12A, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Track Shed Enlarged Plan," Project No.140335, Drawing No. S12B, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Track Shed Sections," Project No.140335, Drawing No. S16, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Track Shed Sections," Project No.140335, Drawing No. S17, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Track Shed Sections," Project No.140335, Drawing No. S17A, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Track Shed Sections," Project No.140335, Drawing No. S17B, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Track Shed Sections," Project No.140335, Drawing No. S18, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Track Shed Basement," Project No.140335, Drawing No. S19, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Track Shed Sections," Project No.140335, Drawing No. S20, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Track Shed Stairs Foundation Plan," Project No.140335, Drawing No. S31, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Track Shed Stairs Schematic Framing Plan at Existing Awnings," Project No.140335, Drawing No. S32, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Track Shed Stairs Framing Plan," Project No.140335, Drawing No. S33, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Track Shed Stairs Sections," Project No.140335, Drawing No. S34, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Track Shed Stairs Foundation Details," Project No.140335, Drawing No. S35, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Track Shed Stairs Framing Details," Project No.140335, Drawing No. S36, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Track Shed Stairs Bent & Tower Details," Project No.140335, Drawing No. S37, January 30th, 2015, Revision No. B;
- "Vancouver Terminal Track Expansion Project Typical Stair Details," Project No.140335, Drawing No. S38, January 30th, 2015, Revision No. B and;
- "Vancouver Terminal Track Expansion Project Typical Guardrail Details," Project No.140335, Drawing No. S39, January 30th, 2015, Revision No. B.

6. The Applicant shall adhere to the conditions listed on the attached VFPA Schedule of Environmental Conditions numbered 14-247;

7. The Applicant is responsible for locating all existing site services and utilities including any located underground and the Applicant shall ensure that these services and utilities are protected during construction and operation of the Project. The Applicant is responsible to employ best practices and meet applicable code requirements with respect to protection of existing site services and clearance between existing and proposed site services. The Applicant is responsible for repair or replacement of any damage to existing site services and utilities, to the satisfaction of VFPA, that result from construction and operation of the Project;

8. Details of any significant proposed changes to the Project or relating to the application must be submitted to VFPA for consideration of an amendment to this Permit;

9. Prior to commencement of construction of the proposed stair and walkway over the Applicant's rail tracks, the Applicant shall submit signed and sealed drawings and professional letters of assurance, and shall obtain a VFPA Building Permit;

10. Prior to commencement of construction, the Applicant shall submit signed and sealed drawings for proposed works approved for construction by a professional engineer licensed to practice in the Province of British Columbia;

11. Prior to commencement of construction, the applicant shall submit a Construction Parking and Traffic Management Plan for the duration of the construction period for VFPA review and approval;

12. Prior to commencement of construction, the Applicant shall submit a Construction Fire Safety Plan for the duration of the construction period for VFPA approval;

13. The Applicant shall provide VFPA with a construction schedule for approval prior to commencement of construction and shall provide VFPA with regular updates of the construction schedule throughout the duration of construction;

14. The Applicant shall notify VFPA upon commencement of construction of the approved works and upon completion of the Project;

15. A construction notice approved by VFPA shall be mailed to all surrounding residences in the area between Low Level Road, 4th Street East, St. David's Avenue and Heywood Street a minimum of (2) two weeks prior to the commencement of construction;

16. The Applicant shall notify VFPA at least three weeks prior to any works being conducted outside of normal construction hours, and obtain an approval from VFPA;

17. Should VFPA approval be given for works conducted outside of normal construction hours, an additional notification shall be mailed to surrounding residents a minimum of (1) one week prior to the commencement of the first day of the extended work period, content of the notice and circulation area is subject to VFPA approval;

18. All noise levels resulting from construction activities shall not exceed maximum levels stated in the City of North Vancouver Noise Control By-Law No. 5819 without prior approval from VFPA;

19. The Applicant may place temporary construction trailers on site while this permit remains in effect, provided that the Applicant shall not connect such trailers to any underground utilities without the prior written consent of VFPA which may include, without limitation and at VFPA's discretion, a VFPA Building Permit;

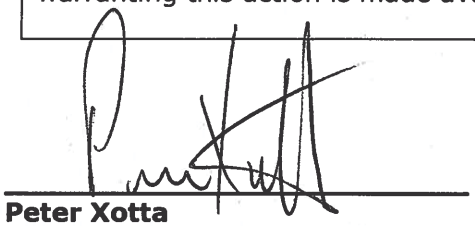
20. The Applicant shall provide an updated post-construction Fire Safety Plan for their site, in Adobe (PDF) format, within 60 days of completion of all works for VFPA approval;

21. The Applicant shall provide as-built drawings, in both AutoCAD and Adobe (PDF) format, within 60 days of completion of all works signed and sealed drawings for proposed works approved for construction by a professional engineer licensed to practice in the Province of British Columbia; and,

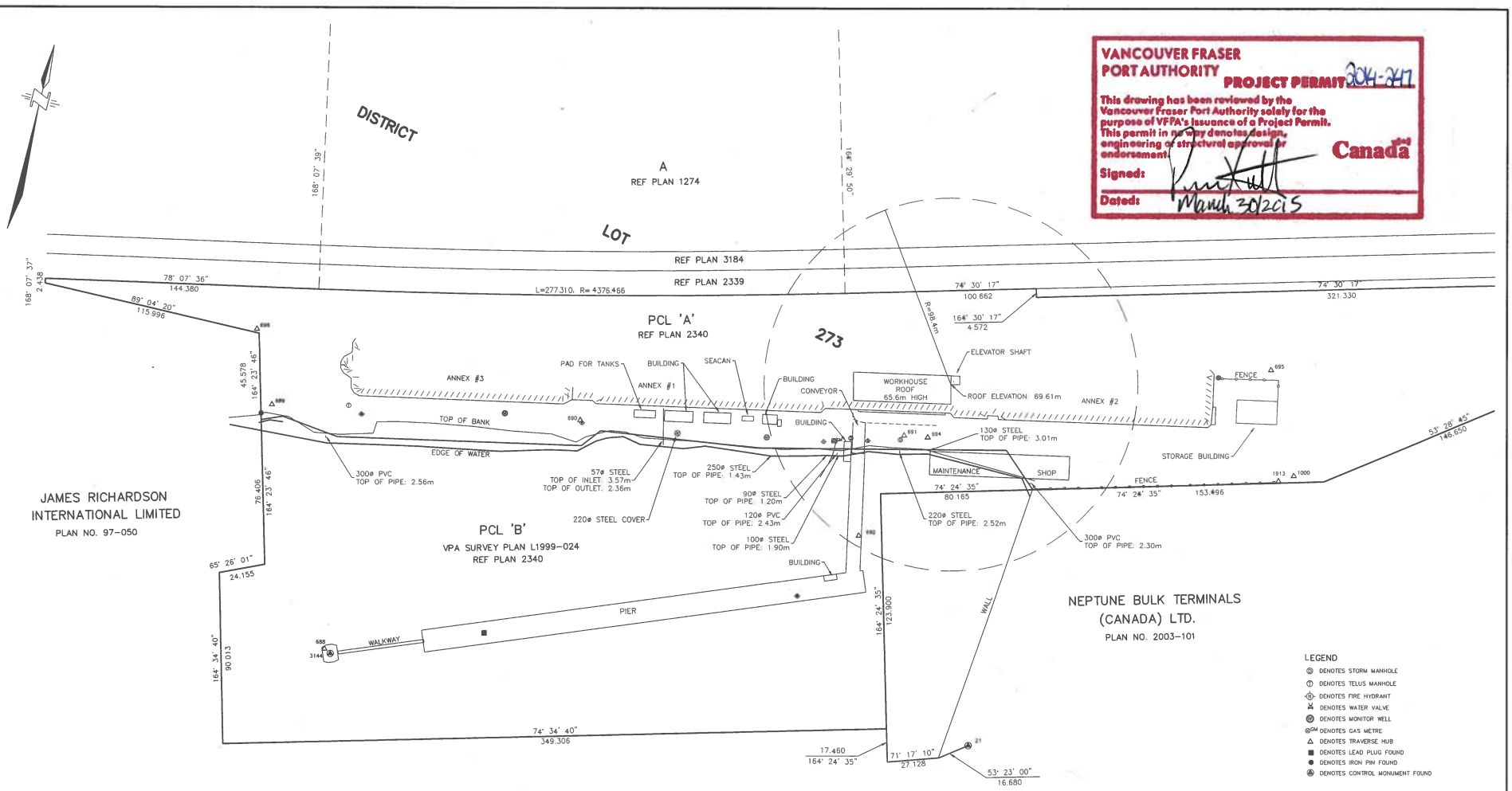
22. The approved works must commence by March 31, 2016 (the "Commencement Date") and be complete no later than March 31, 2017 (the "Completion Date"). For an extension to the Commencement Date, the Applicant must apply to VFPA in writing no later than 30

days following that date. For an extension to the Completion Date, the Applicant must apply in writing to VFPA no later than 30 days prior to that date. Failure to apply for an extension as required may, at the sole discretion of VFPA, result in termination of this approval.

VFPA reserves the right to rescind or revise these conditions at any time that new information warranting this action is made available to us.



Peter Xotta
Vice President Planning and Operations



VANCOUVER FRASER PORT AUTHORITY
PROJECT PERMIT 304-247
This drawing has been reviewed by the Vancouver Fraser Port Authority solely for the purpose of VFPA's issuance of a Project Permit. This permit in no way denotes design, engineering or structural approval or endorsement.
Canada
Signed:
Dated: March 30/2015

LEGEND
- DENOTES STORM MANHOLE
- DENOTES TELUS MANHOLE
- DENOTES FIRE HYDRANT
- DENOTES WATER VALVE
- DENOTES MONITOR WELL
- DENOTES GAS METRE
- DENOTES TRAVERSE HUB
- DENOTES LEAD PLUG FOUND
- DENOTES IRON PIN FOUND
- DENOTES CONTROL MONUMENT FOUND

LOT DIMENSIONS PER LEASE PLAN 2007-022

INFORMATION ON EXISTING UTILITIES MAY NOT BE COMPLETE OR ACCURATE. PRIOR TO CONSTRUCTION CONTRACTOR SHALL EXPOSE LOCATIONS OF ALL EXISTING UTILITIES AND ADVISE THE ENGINEER OF POTENTIAL CONFLICTS.

THIS DRAWING HAS BEEN PREPARED FOR THE CLIENT IDENTIFIED, TO MEET THE STANDARDS AND REQUIREMENTS OF THE APPLICABLE PUBLIC AGENCIES. McELHANNEY CONSULTING SERVICES LTD., ITS EMPLOYEES, SUBCONSULTANTS AND AGENTS ACCEPT NO RESPONSIBILITY TO ANY OTHER PARTY, INCLUDING CONTRACTORS, SUPPLIERS, CONSULTANTS AND STAKEHOLDERS, OR THEIR EMPLOYEES OR AGENTS, FOR LOSS OR LIABILITY INCURRED AS A RESULT OF THEIR USE OF THESE DRAWINGS.

No.	Date	Revision	Dr.

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McElhanney
McElhanney Consulting Services Ltd.
13160 88th AVENUE
SURREY B.C. V3W 3K3
PH (604) 596-0391
FAX (604) 596-8853

Designed: | Checked: | Date: 2012-04-16
Drawn: SR | Surveyed: FM
SCALE : 1:1000
0 10 20 30 40 50 60 70 80m
(ALL DIMENSIONS ARE IN METRES)

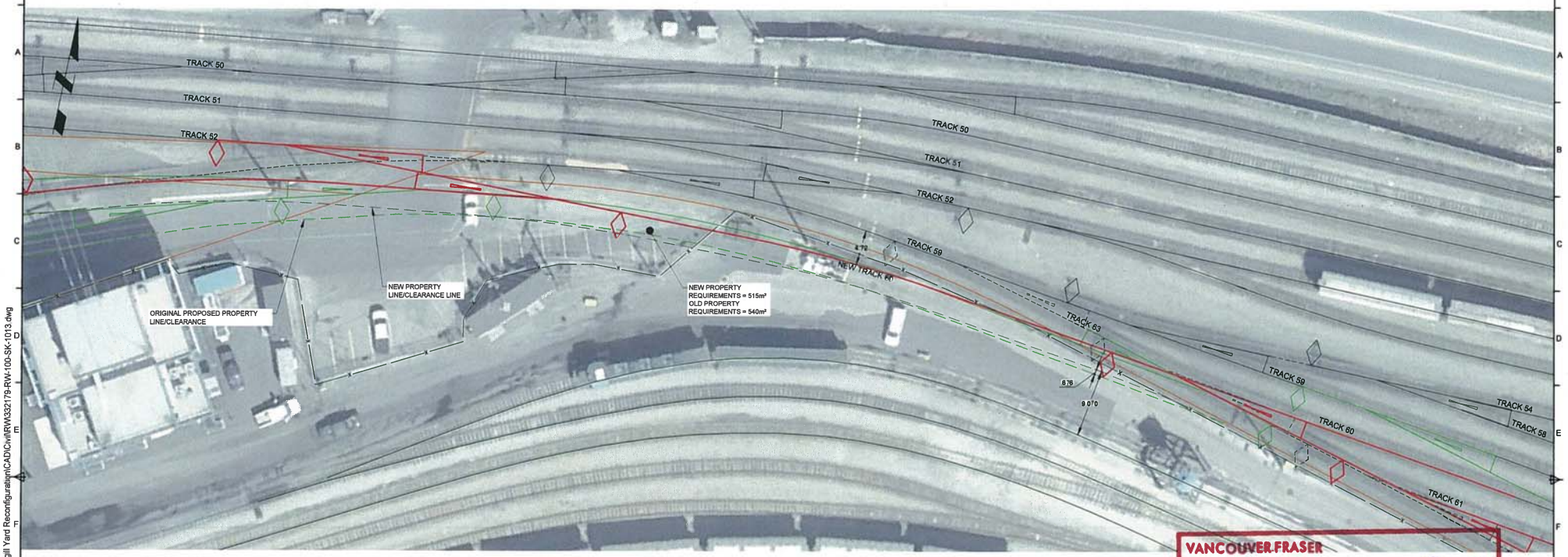
Approved Sealed

CARGILL VANCOUVER TERMINAL
801 LOW LEVEL ROAD, VANCOUVER, BC V7L-1A7

SITE PLAN LAYOUT
CARGILL TERMINAL
NORTH VANCOUVER, BC

Client Project No
Client Drawing No
MCSL Project No. 2113-02312-0
Drawing No. 02312-0
Sheet 1 of 1
Revision

Plotted: April 13, 2012 - 14:52:51
Filename: H:\Projects\2300 Series\02312-0 Cargill Site Plan Layout for Cargill Terminal North Vancouver\14-CSD\02312-0 dwg\MCSL D Size.tbl



VANCOUVER FRASER PORT AUTHORITY
PROJECT PERMIT 2014-267
This drawing has been reviewed by the Vancouver Fraser Port Authority solely for the purpose of VFPA issuance of a Project Permit. This permit in no way denotes design, engineering or structural approval or endorsement.
Signed:
Dated: March 30 2015
Canada

ISSUED FOR INFORMATION
2014.10.14

PRELIMINARY
DATE 2014.10.14

FILE NAME: P:\332179 - Cargill Yard Reconfiguration\CAD\Civil\RW332179-RW-100-SK-1013.dwg
USER NAME: Laidlaw, Aaron
PLOT DATE: 2014/11/20

REF	DRAWING NUMBER	DRAWING TITLE
2	H-556	TRACK PLAN OF THE SASKATCHEWAN WHEAT POOL CITY OF NORTH VANCOUVER
1	SKETCH PLAN No. S2010-181	CARGILL LIMITED LEASE BOUNADARY CITY OF NORTH VANCOUVER

REFERENCE DRAWINGS

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LEGEND
- EXISTING TRACK
- CURRENT OPTION
- CURRENT OPTION FROM SK-1002
- CN 2011 CLEARANCE REQUIREMENTS
- TRACK TO BE REMOVED OR REALIGNED
- PROPERTY LINE
- EXISTING FENCE
- PROPOSED FENCE

ENGINEER STAMP:

No.	DESCRIPTION	DWN	CHK	BY	YY/MM/DD
A	ISSUED FOR DISCUSSION	ABL	SR	JDS	14/11/20

REVISIONS

BAR SCALE: 2 m 0 1:250 10 m
DWG SCALE (FULL SIZE): 1:250

DESIGNED BY:	A. LAIDLAW	2013.12.18	ENG. CHECK:	S. RIDDICK	2013.12.18
DRAWN BY:	A. LAIDLAW	2013.12.18	APPROVED BY:	J. SUTCLIFFE	2013.12.18

STATUS: ISSUED FOR DISCUSSION

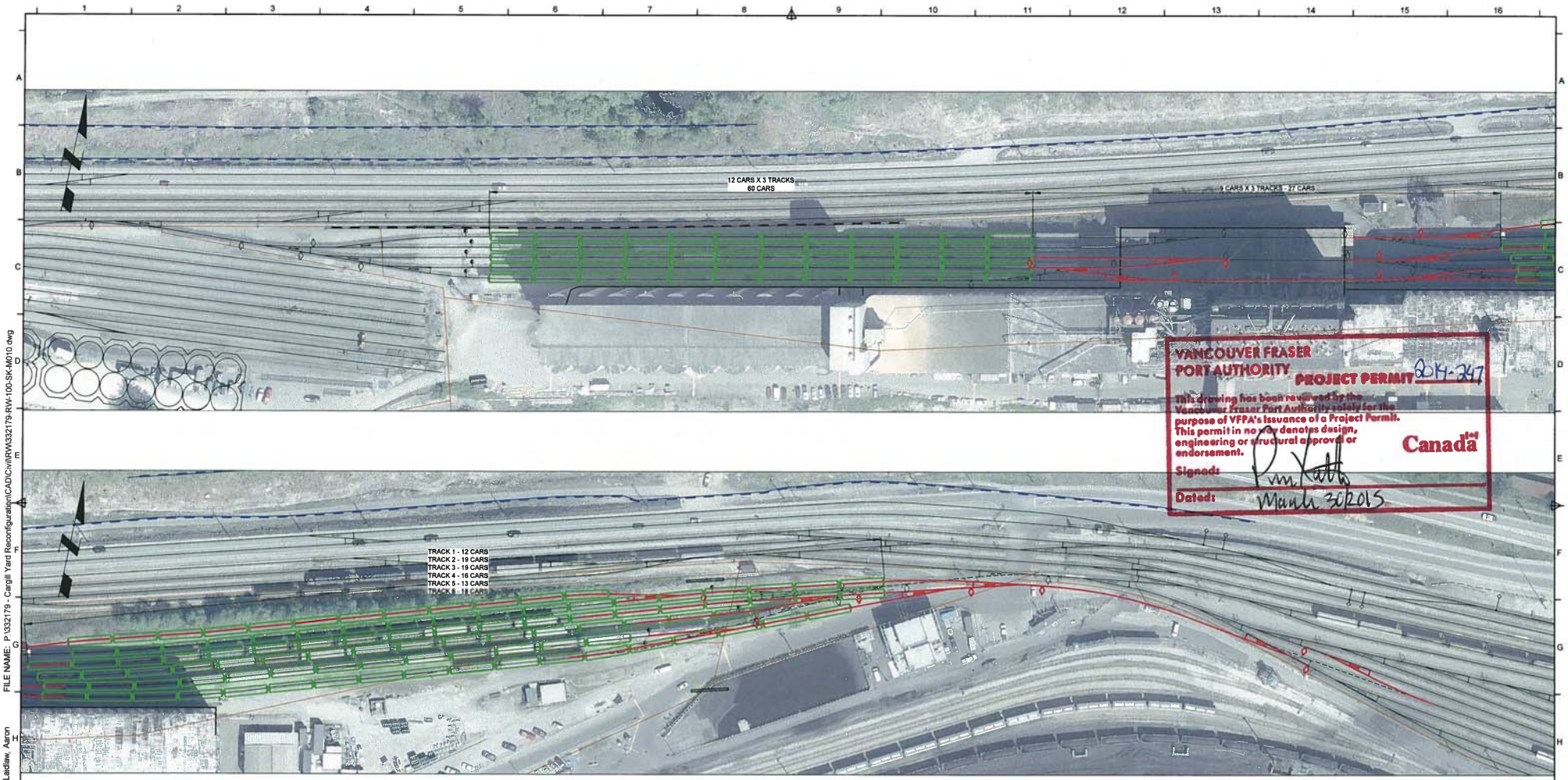
CLIENT REFERENCE DRAWING No.

Hatch Mott MacDonald

CLIENT: Cargill

CARGILL YARD RECONFIGURATION
RAIL
PROPOSED CN LEAD
COMPARISON TO SK-1002

PROJECT/DWG No: 332179-RW-100-SK-1013
REV No. A



VANCOUVER FRASER PORT AUTHORITY
PROJECT PERMIT 08-347
This drawing has been reviewed by the Vancouver Fraser Port Authority solely for the purpose of VFPA's issuance of a Project Permit. This permit in no way denotes design, engineering or structural approval or endorsement.
Canada
Signed: Pam Kath
Dated: March 30/2015

UNCONTROLLED 2014/04/30

DRAFT 2014/04/30

FILE NAME: P:\332179 - Cargill Yard Reconfiguration\CAD\Civil\RW\332179-RW-100-SK-M010.dwg
USER NAME: Laidlaw, Aaron
PLOT DATE: 2014/11/03

REF	DRAWING NUMBER	DRAWING TITLE

REFERENCE DRAWINGS

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LEGEND:
- STANDARD GOVERNMENT HOPPER
- EXISTING TRACK
- NEW TRACK
- TRACK TO BE REMOVED OR REALIGNED

ENGINEER STAMP:

No.	DESCRIPTION	DWN	CHK	BY	YY/MM/DD
B	UPDATED CROSSOVER LOCATION ON TRACK 4W TO T5	ABL	SR	JDS	14/11/03
A	ISSUED FOR DISCUSSION	ABL	SR	JDS	14/04/30

REVISIONS

BAR SCALE: 10 m 0 1:1250 50 m
DWG SCALE (FULL SIZE): 1:1250

DESIGNED BY:	A. LAIDLAW	2013.12.18	ENG. CHECK:	S. RIDDICK	2013.12.18
DRAWN BY:	A. LAIDLAW	2013.12.18	APPROVED BY:	J. SUTCLIFFE	2013.12.18

STATUS: ISSUED FOR DISCUSSION

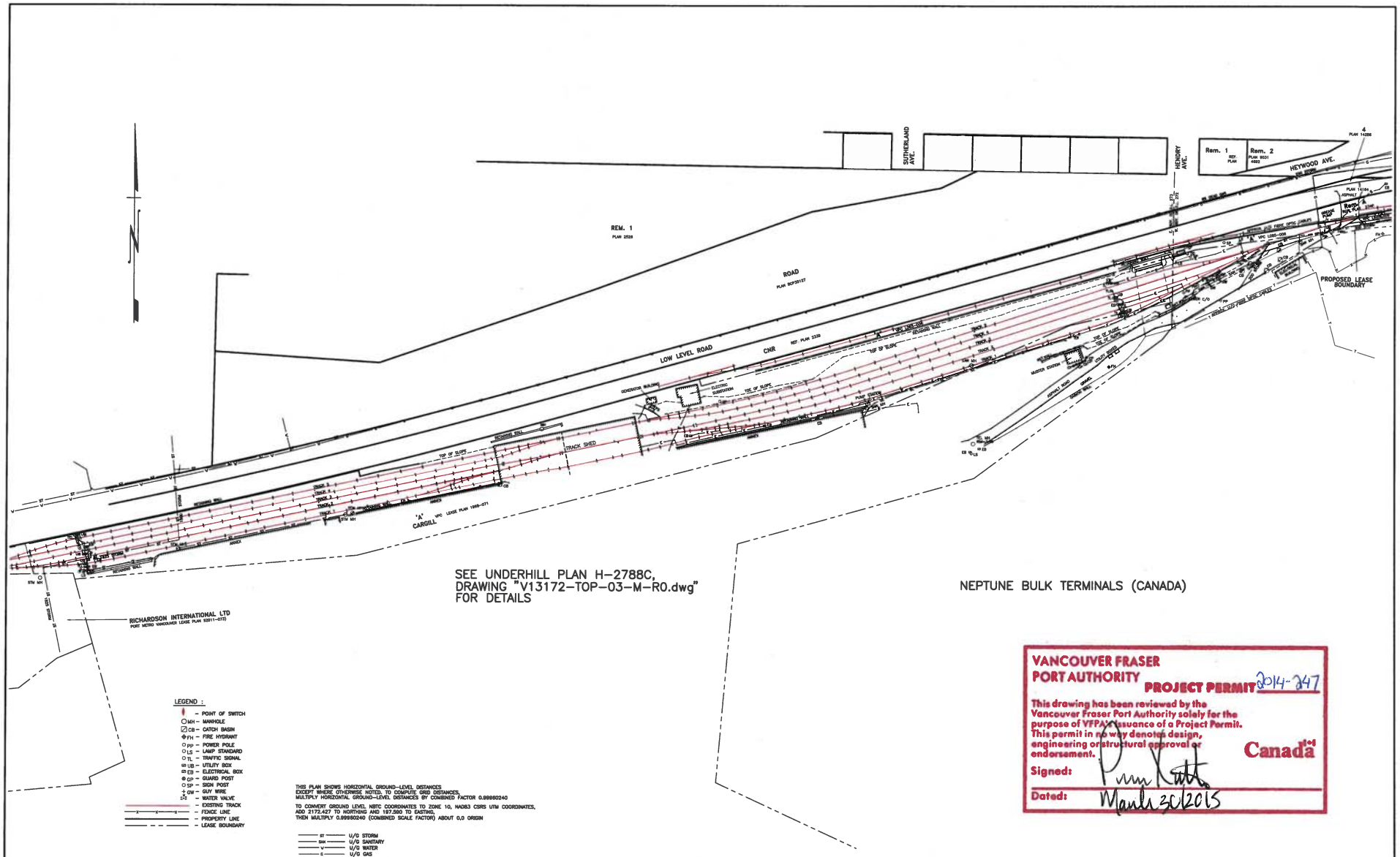
CLIENT REFERENCE DRAWING No.

Hatch Mott MacDonald

CLIENT: Cargill

CARGILL YARD RECONFIGURATION
RAIL
SPACE FOR DUAL INDEXERS
CARGILL OPTION 1 AND CN OPTION 2

PROJECT/DWG No: 332179-RW-100-SK-M011
REV No. B



VANCOUVER FRASER PORT AUTHORITY
PROJECT PERMIT 2014-347
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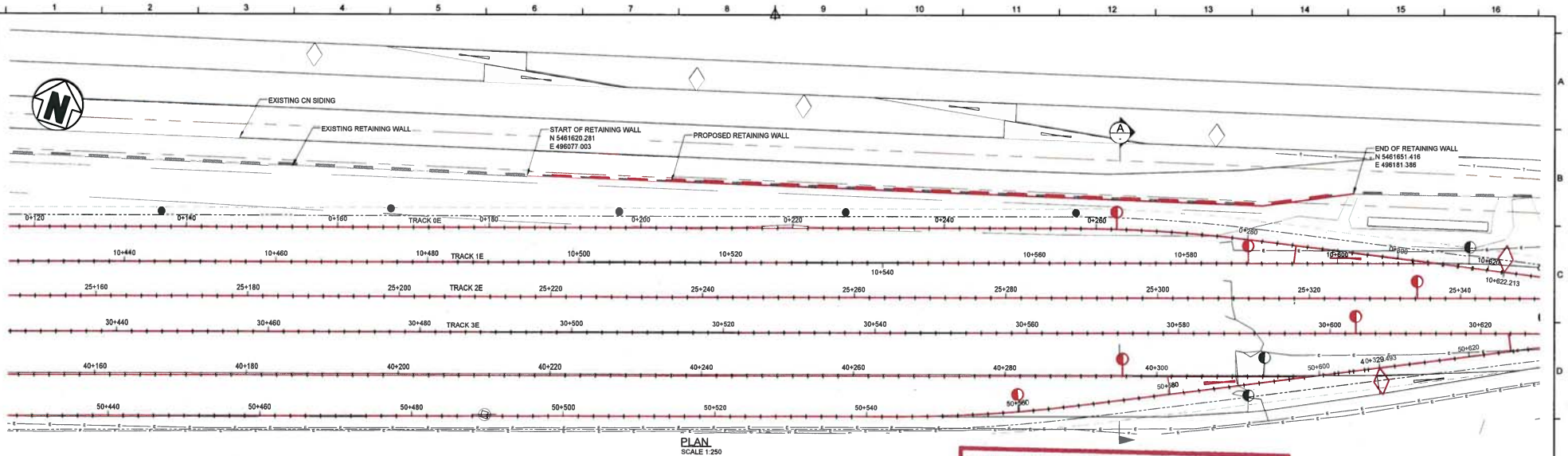
Canada
Signed:
Dated: March 30/2015

NO.	DD/MM/YY	REVISION	BY

UNDERHILL GEOMATICS LTD.
ENGINEERS & SURVEYORS
210A-3430 BRIGHTON AVENUE
BURNABY, B.C. V5A 3H4
TEL. (604) 732-3384 FAX (604) 732-4709

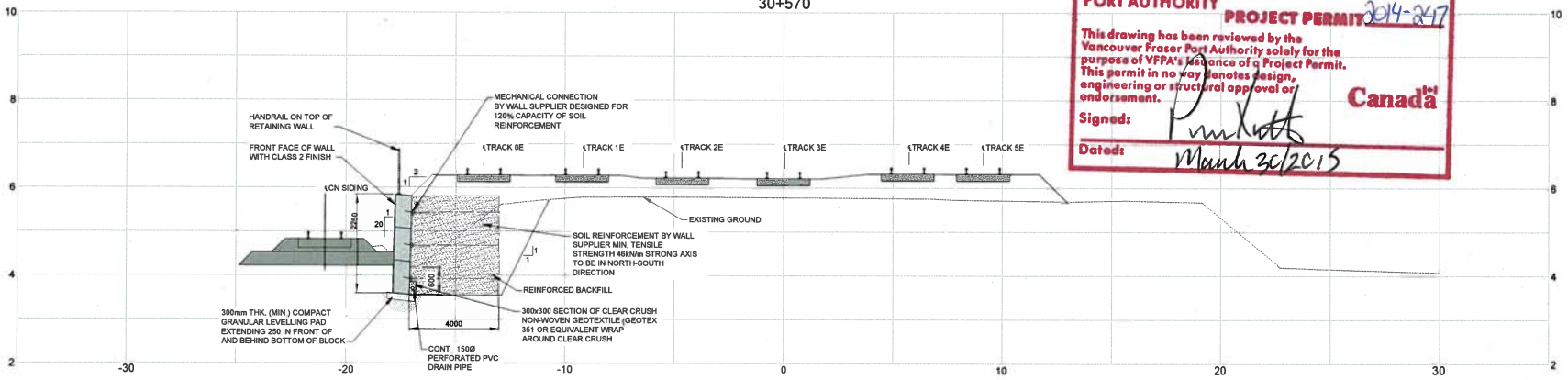
FILE No. V13172-TOP-03-M-Key-R0.dwg F.B. 1644 PG. 1-32

DRAWN BY	JOB NO.	TITLE	DRAWING NO.	REV.
AL\TH	V13172	OVERVIEW SURVEY PLAN OF PORTIONS OF CARGILL RAIL YARD, CITY OF NORTH VANCOUVER	H-2788D	0
SCALE 1:1500	DATE OCT. 02, 14	CLIENT CARGILL	SHEET 1 OF 7	



PLAN
SCALE 1:250

30+570



SECTION A
H = 1:100
V = 1:50

VANCOUVER FRASER PORT AUTHORITY
PROJECT PERMIT 2014-247
This drawing has been reviewed by the Vancouver Fraser Port Authority solely for the purpose of VFPA's issuance of a Project Permit. This permit in no way denotes design, engineering or structural approval or endorsement.
Signed:
Dated: March 30/2015

DRAFT
2015/02/27

NOT FOR CONSTRUCTION
DATE: 3/6/2015

REF.	DRAWING NUMBER	DRAWING TITLE
7	31 05 17	MMCD AGGREGATES AND GRANULAR MATERIALS SPECIFICATION
6	31 23 01	MMCD EXCAVATION, TRENCHING AND BACKFILLING SPECIFICATION
5	31 23 00	ROADWAY EXCAVATION, EMBANKMENT AND COMPACTION SPECIFICATION
4	31 32 19	MMCD GEOSYNTHETICS SPECIFICATION
3	31 36 00	RETAINING WALLS SPECIFICATION
2	H-2788C	SURVEY OF CARGILL AND CN NORTH VANCOUVER
1	307071-009900-00-EL-DAL-0007	AREA LIGHTING EAST/WEST

REFERENCE DRAWINGS

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LEGEND:
- EXISTING TRACK
- NEW TRACK
- EXISTING TRACK TO BE REMOVED
- PROPOSED RETAINING WALLS
- EXISTING RETAINING WALLS
- POINT OF SWITCH
- DERAIL

ENGINEER STAMP:

No.	DESCRIPTION	DWN	CHK	BY	YY/MM/DD
A	ISSUED FOR TENDER	ABL			

REVISIONS

BAR SCALE:
DWG SCALE (FULL SIZE): AS SHOWN

Hatch Mott MacDonald

CLIENT: Cargill

DESIGNED BY:	A. LAIDLAW		ENG. CHECK:		
DRAWN BY:	A. LAIDLAW		APPROVED BY:		

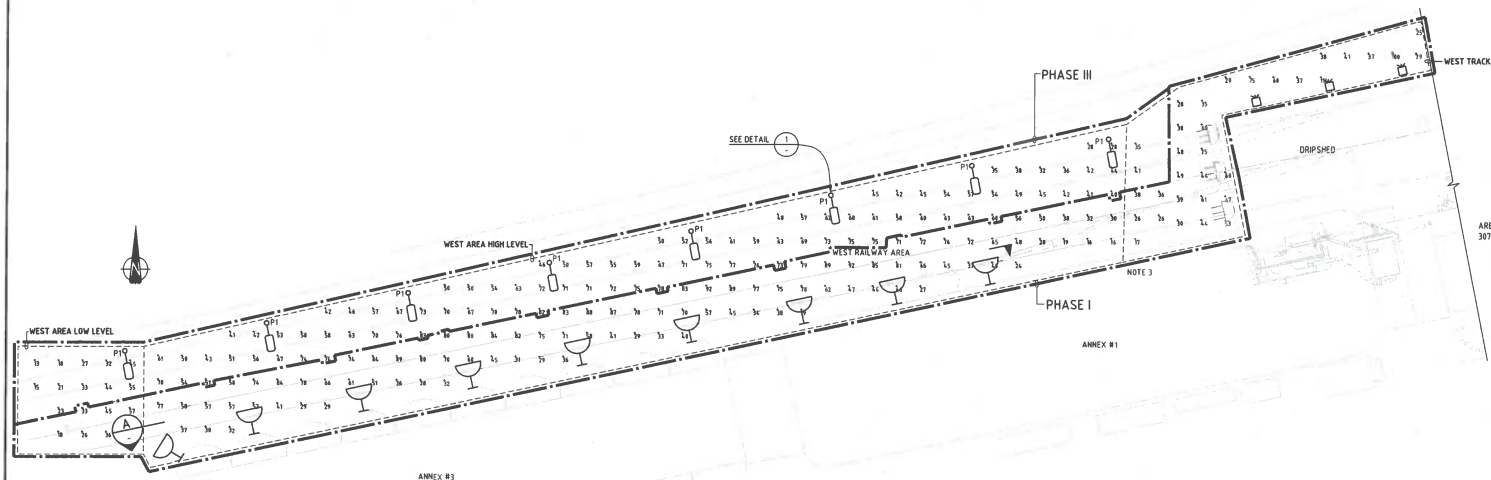
STATUS: ISSUED FOR TENDER

CLIENT REFERENCE DRAWING No. CLIENT_REF_No.

VANCOUVER TERMINAL TRACK EXPANSION
RAIL
NORTH-EAST RETAINING WALL
PLAN AND SECTION

PROJECT/DWG No: 332179-RW-100-S0-1022
REV No. A

FILE NAME:
USER NAME:
PLOT DATE:



PLAN
1:500

VANCOUVER FRASER PORT AUTHORITY
PROJECT PERMIT 2014-347
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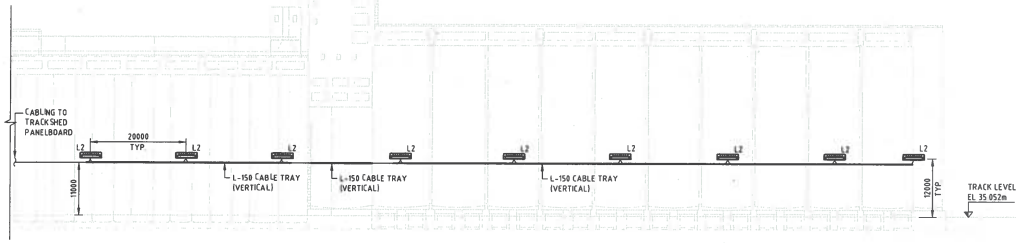
Signed:
Dated: March 30/2015

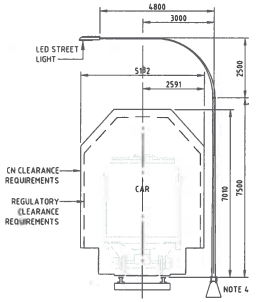
LIGHTING LEVELS (lux)				
AREA	AVERAGE	MAX	MAX/MIN	AVG/MIN
WEST RAIL LOW LEVEL	31.82	57	4.38	2.45
WEST RAIL HIGH LEVEL	56.53	92	5.75	3.53
WEST TRACKSHED AREA LEVEL	52.50	114	4.56	2.10

POLE SCHEDULE				
TYPE	MOUNTING HEIGHT	POLE SHAPE	POLE TYPE	POLE BASE
P1	10m	OCTAGONAL	GALVINIZED STEEL	TYPE C PRECAST

FIXTURE SCHEDULE						
TAG	SYMBOL	TYPE	DESCRIPTION	POWER	VOLTAGE	APPROVED MANUFACTURERS
L1		ROADWAY	LED, TYPE II DISTRIBUTION POLE MOUNTED ROADWAY LUMINAIRE FIXTURE MOUNTED AT A 10 DEGREE LUMINAIRE TILT.	162W	208V	COOPER LIGHTING, DIALIGHT
H1		INDUCTION (EXISTING)	HPS INDUCTION LUMINAIRE FIXTURE AT A MAXIMUM TILT OF 60 DEGREES, MOUNTED AT 10m ON TOP OF BUILDING.	400W	208V	EXISTING
L2		MID-SPAN	10 PANEL LED FIXTURE AT A MAXIMUM TILT OF 30 DEGREES, MOUNTED AT 12m ON 2.4m DAVIT ARMS FROM SIDE OF BUILDING.	510W	208V	COOPER LIGHTING, DIALIGHT
L3		WALL MOUNT	LED FIXTURE MOUNTED ON WALL AT 4.5m.	109W	208V	COOPER LIGHTING, DIALIGHT



SECTION 1:500 A — ANNEX #1, 3 LIGHTING ELEVATION



DETAIL 1 — REQUIRED TRACK CLEARENCES (TYP.)
NTS

PRELIMINARY
DO NOT USE FOR CONSTRUCTION
Last Saved: Feb 18/15 10:29am

m 0 5 10 15 20 25 m
1:500

NOTES:
1. "##" VALUES INDICATED ON PLAN VIEW ARE LIGHT LEVEL POINTS CALCULATED IN LUX.
2. LIGHTING LEVELS INDICATED HAVE BEEN DIVIDED INTO AREAS TO MEET THE MINIMUM SAFETY LIGHTING REQUIREMENTS WITHIN THE FEDERAL STANDARD SOR-86-304. THE MINIMUM LIGHTING LEVELS FOR THE INDIVIDUAL AREAS ARE AS FOLLOWS:
   - BUILDING ENTRANCES: 50 LUX
   - RAIL AREA THAT IS NOT USED BY PERSONS: 10 LUX
   - RAIL AREA THAT IS USED BY PERSONS OR AROUND SWITCHES: 30 LUX
3. PROVIDE ALL LIGHT FIXTURES AND POLES AS SHOWN COORDINATE INSTALLATION ON SITE WITH RAILWAY DESIGN.
4. REFER TO DUCT BANK DRAWING 307071-00990-00-EL-DAL-0020 FOR POLE BASE DETAILS.

REV	DATE	REVISION DESCRIPTION	DRAWN	DRAFT CHK	DESIGNED	ENG CHK	APPROVED	CUSTOMER	REF DRAWING No	REFERENCE DRAWING TITLE
D	18-FEB-15	RE-ISSUED FOR CLIENT REVIEW	WLR	-	WLR	-	DJOH	-		
C	03-FEB-15	RE-ISSUED FOR CLIENT REVIEW	WLR	-	WLR	-	DJOH	-		
B	07-NOV-14	ISSUED FOR CLIENT REVIEW	WLR	-	WLR	-	DJOH	-		
A	30-OCT-14	ISSUED FOR REVIEW	WLR	-	WLR	-	DJOH	-		

D SHEET | SCALE | SHOWN

OneWay to zero harm

WORLEYPARSONS PROJECT No 307071-00990

ENGINEERING AND PERMIT STAMPS (As Required)

CUSTOMER
Cargill
NORTH VANCOUVER TERMINAL

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WorleyParsons resources & energy

TRACK EXPANSION PROJECT
GENERAL
ELECTRICAL
AREA LIGHTING WEST

ORG No 307071-00990-00-EL-DAL-0010 | REV D

PLOT DATE & TIME 18/2/2015 10:30:59 AM
SAVE DATE & TIME 18/2/2015 10:29:06 AM
USER NAME wyatt.ritchie
LOCATION U:\VWA\307071\00990_CL_TRACKSHEDNDV1_DRAWINGS\03_ELEC\307071-00990-00-EL-DAL-0010.DWG

VANCOUVER FRASER PORT AUTHORITY
PROJECT PERMIT 2014-342
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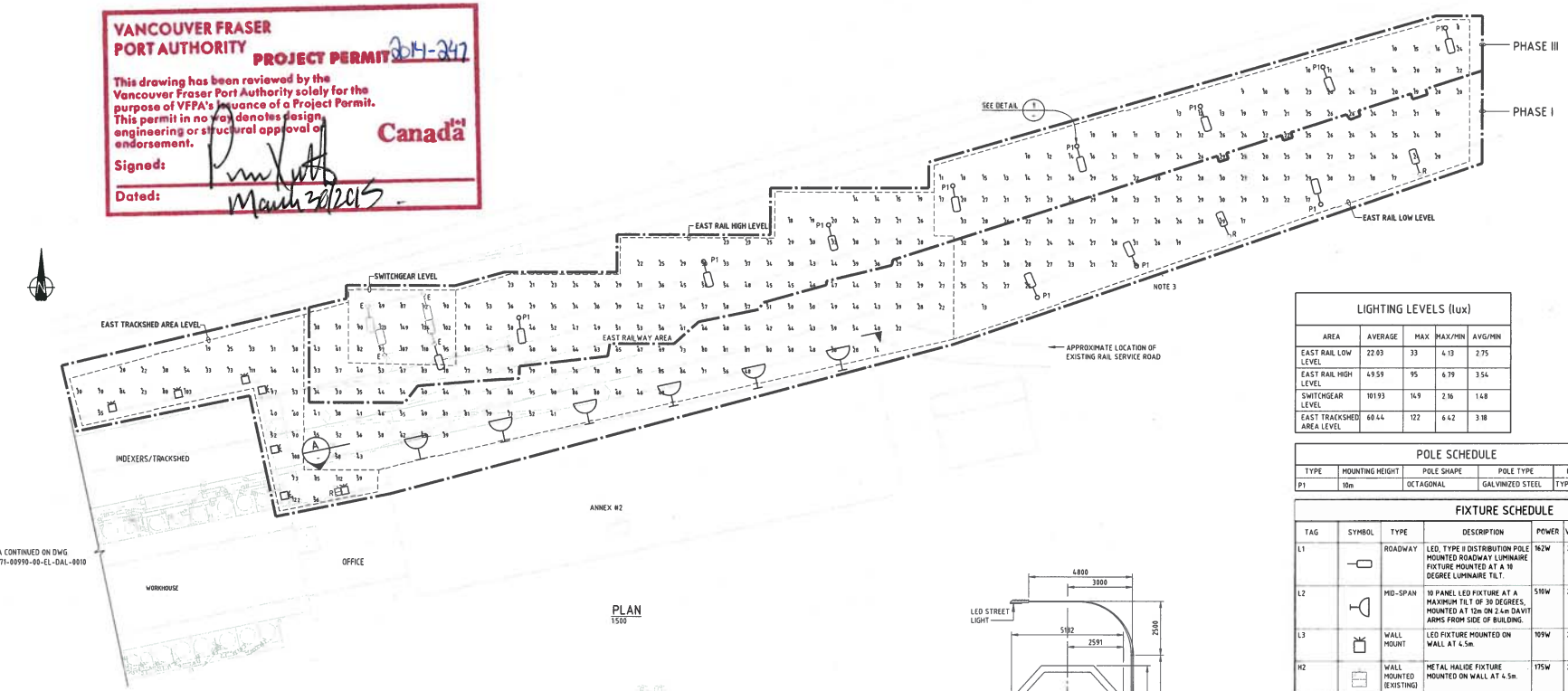
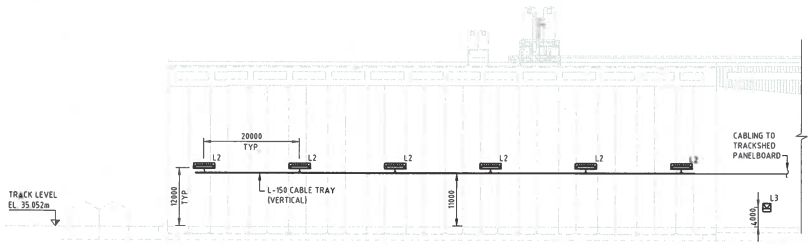
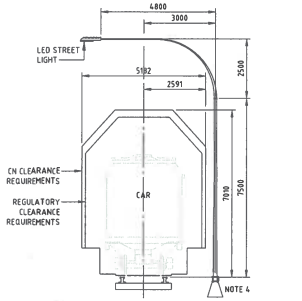
Canada
Signed:
Dated: March 30/2015



PLAN
1:500



SECTION A ANNEX #2 LIGHTING ELEVATION
1:500



DETAIL 1 REQUIRED TRACK CLEARENCES (TYP.)
NTS

LIGHTING LEVELS (lux)				
AREA	AVERAGE	MAX	MAX/MIN	AVG/MIN
EAST RAIL LOW LEVEL	22.03	33	4.13	2.75
EAST RAIL HIGH LEVEL	49.59	95	6.79	3.54
SWITCHGEAR LEVEL	101.93	149	2.16	1.48
EAST TRACKSHED AREA LEVEL	60.44	122	6.42	3.18

POLE SCHEDULE				
TYPE	MOUNTING HEIGHT	POLE SHAPE	POLE TYPE	POLE BASE
P1	10m	OCTAGONAL	GALVINIZED STEEL	TYPE C PRECAST

FIXTURE SCHEDULE						
TAG	SYMBOL	TYPE	DESCRIPTION	POWER	VOLTAGE	APPROVED MANUFACTURERS
L1		ROADWAY	LED, TYPE II DISTRIBUTION POLE MOUNTED ROADWAY LUMINAIRE FIXTURE MOUNTED AT A 10 DEGREE LUMINAIRE TILT.	162W	208V	COOPER LIGHTING, DIALIGHT
L2		MID-SPAN	10 PANEL LED FIXTURE AT A MAXIMUM TILT OF 30 DEGREES, MOUNTED AT 12m ON 2.4m DAVIT ARMS FROM SIDE OF BUILDING.	510W	208V	COOPER LIGHTING, DIALIGHT
L3		WALL MOUNT	LED FIXTURE MOUNTED ON WALL AT 4.5m.	109W	208V	COOPER LIGHTING, DIALIGHT
H2		WALL MOUNTED (EXISTING)	METAL HALIDE FIXTURE MOUNTED ON WALL AT 4.5m.	175W	208V	EXISTING

m 0 5 10 15 20 25 m
1:500

LEGEND:
E EXISTING, TO BE REMAIN
R EXISTING, TO BE REMOVED

NOTES:
1. "##" VALUES INDICATED ON PLAN VIEW ARE LIGHT LEVEL POINTS CALCULATED IN LUX.
2. LIGHTING LEVELS INDICATED HAVE BEEN DIVIDED INTO AREAS TO MEET THE MINIMUM SAFETY LIGHTING REQUIREMENTS WITHIN THE FEDERAL STANDARD SOR-86-304. THE MINIMUM LIGHTING LEVELS FOR THE INDIVIDUAL AREAS ARE AS FOLLOWS:
   - BUILDING ENTRANCES: 50 LUX
   - RAIL AREA THAT IS NOT USED BY PERSONS (LOW LEVEL): 10 LUX
   - RAIL AREA THAT IS USED BY PERSONS OR AROUND SWITCHES (HIGH LEVEL): 30 LUX
3. PROVIDE NEW LIGHT FIXTURES AND POLES AS SHOWN. COORDINATE INSTALLATION ON SITE WITH RAILWAY DESIGN.
4. REFER TO DUCT BANK DRAWING 307071-00990-00-EL-DAL-0021 FOR POLE BASE DETAILS

PRELIMINARY
DO NOT USE FOR CONSTRUCTION
Last Saved: Feb. 18/15 10:38am

REV	DATE	REVISION DESCRIPTION	DRAWN	DRAFT CHK	DESIGNED	ENG CHK	APPROVED	CUSTOMER	REF DRAWING No	REFERENCE DRAWING TITLE
D	18-FEB-15	RE-ISSUED FOR CLIENT REVIEW	WLR	-	WLR	-	DJOH	-		
C	03-FEB-15	RE-ISSUED FOR CLIENT REVIEW	WLR	-	WLR	-	DJOH	-		
B	07-NOV-14	ISSUED FOR CLIENT REVIEW	WLR	-	WLR	-	DJOH	-		
A	30-OCT-14	ISSUED FOR REVIEW	WLR	-	WLR	-	DJOH	-		

D SHEET | SCALE | SHOWN

OneWay to zero harm

WORLEYPARSONS PROJECT No
307071-00990

ENGINEERING AND PERMIT STAMPS (As Required)

CUSTOMER
Cargill
NORTH VANCOUVER TERMINAL

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WorleyParsons
resources & energy

TRACK EXPANSION PROJECT
GENERAL
ELECTRICAL
AREA LIGHTING PLAN EAST

DRG No 307071-00990-00-EL-DAL-0011
REV D

LOCATION: U:\VWK\307071\00990_CL_TRCKSHD\ISSUED\01_DRAWINGS\03_ELEC\307071-00990-00-EL-DAL-0011.DWG
USER NAME: wyatt.richie
PLOT DATE & TIME: 18/2/2015 10:39:01 AM
SAVE DATE & TIME: 18/2/2015 10:38:47 AM

SPOUT/TRANSITION NOTES:

1. SPOUTING SHOWN ON DRAWINGS HAS BEEN PROVIDED TO ILLUSTRATE SCOPE OF WORK. CONTRACTOR SHALL PROVIDE FINAL INSTALLATION DRAWINGS FOR REVIEW BY OWNER PRIOR TO FABRICATION/CONSTRUCTION.
2. ALL SLOPING SPOUTS SHALL BE SQUARE (UNLESS SHOWN OTHERWISE) & FABRICATED/INSTALLED STRAIGHT & TRUE.
3. ALL SPOUT JOINTS TO BE CAULKED DUST & WEATHER-TIGHT (INCLUDING COVERS).
4. SLOPING SPOUTS (SQUARE OR RECTANGULAR) SHALL BE MINIMUM 10 GA. BOTTOMS, 10 GA. SIDES & 12 GA. BOLTED COVERS.
5. ALL TRANSITIONS & DEADBOXES SHALL BE FABRICATED WITH 10 GA. BOTTOMS, 10 GA. SIDES & 12 GA. BOLTED COVERS. ALL ELBOWS TO BE FABRICATED COMPLETE WITH 10 GA. MATERIAL.
6. PROVIDE FRAMES/BRACES AS REQUIRED TO SUPPORT WEIGHT OF SPOUT IN PLUGGED CONDITION.
7. ALL STANDARD SPOUT CONNECTIONS TO BE L2x2x3/8 (MINIMUM THICKNESS) ANGLE FRAMES. NON-STANDARD CONNECTIONS (I.E. SPOUT TURNS, SQUARE TO ROUND & SQUARE TO SQUARE TRANSITIONS) TO BE ROLLED 2"x3/8" (MINIMUM THICKNESS) FLAT BAR. SPOUTS LESS THAN 30'-0" IN LENGTH SHALL HAVE JOINT CONNECTIONS WITH 3/8" DIAMETER GRADE 5 BOLTS @ 4" O.C. SPOUTS OVER 30'-0" IN LENGTH SHALL HAVE JOINT CONNECTIONS WITH 1/2" DIAMETER GRADE 8 BOLTS @ 4" O.C. COVER BOLTS SHALL BE OF INDUSTRY STANDARD.
8. SLOPING SPOUTS HANDLING CORN, WHEAT OR SOYBEANS TO BE INSTALLED AT 40 DEGREES MINIMUM SLOPE UNLESS SPECIFICALLY APPROVED OTHERWISE IN WRITING BY CARGILL. ENLARGE THROATS OF ALL ELBOWS (CHANGES IN DIRECTION OF FLOW). TRANSITIONS TO HAVE MINIMUM 40 DEGREE VALLEYS. ANY SPOUTS HANDLING GRAIN DUST, FINES OR SCALPINGS SHALL BE INSTALLED AT 55 DEGREES MINIMUM SLOPE UNLESS SPECIFICALLY APPROVED OTHERWISE IN WRITING BY CARGILL.
9. BUSHEL PER HOUR (BPH) FLOW RATES FOR SPOUTS:
   A. SLOPED SQ./RECT. SPOUTS SHALL BE SIZED BASED ON 60 BU/SQ. IN.
   B. VERTICAL SPOUTS (ROUND OR SQUARE) SHALL BE SIZED BASED ON 100 BU /SQ. IN
10. SPOUTS SHALL BE LINED W/ 1/4" COORS CERAMIC TILES AS FOLLOWS:
    A. SLOPING SPOUTS - BOTTOM & 2/3 UP THE SIDES
    B. TRANSITIONS, DEADBOXES & ELBOWS - BOTTOM & ALL WEAR/IMPACT POINTS
    C. VALVES - ALL WEAR SURFACES INCLUDING GATE SLIDE PLATES
    D. VERTICAL SPOUTS HAVING NO DIRECT GRAIN WEAR/IMPACT SURFACES DO NOT NEED TO BE LINED

NOTE: ADHERE TILE TO SANDBLASTED METAL SURFACES W/NON-ACID BASED RTV SILICONE.

DUCTING NOTES:

1. DUCTS HANDLING AIR WITH DUST SHALL BE CIRCULAR IN CROSS SECTION. RECTANGULAR DUCTS ARE PERMITTED FOR CLEAN AIR HANDLING. NON CIRCULAR DUCTS AND FITTINGS MUST BE CONSTRUCTED TO PREVENT EXCESSIVE DEFLECTION OF FLAT SURFACES. DESIGN ALL DUCTWORK TO MINIMIZE AIRFLOW RESISTANCE AND ABRASIVE WEAR.
2. DESIGN DUCTWORK SUPPORTS TO PREVENT EXCESSIVE LOAD TRANSFER TO CONNECTING EQUIPMENT. SUPPORT CAPACITY TO BE BASED ON DUCTWORK FILLED WITH MATERIAL OF 25 LB./CU.FT. DENSITY.
3. DUCTS AND FITTINGS TO BE ROLLED, FORMED OR DRAWN SHEET STEEL, GALVANIZED WITH ALL SEEMS CONTINUOUSLY WELDED, SOLDERED, OR ROLL-FORMED. SEAMS MUST BE AIR-TIGHT UNDER OPERATING PRESSURE. INNER SURFACES MUST BE SMOOTH.
4. MINIMUM THICKNESS FOR STEEL DUCTS AND FITTINGS:

DIAMETER OR LONGEST CROSS-SECTION DIMENSION	THICKNESS FOR STRAIGHT DUCTS	THICKNESS FOR FITTINGS
UP TO 18"	14 ga. (.0747")	12 ga. (.1046")
OVER 19" TO 42"	12 ga. (.1046")	10 ga. (.1345")
OVER 42"	10 ga. (.1345")	10 ga. (.1345")

5. INSTALL ALL HORIZONTAL DUCTWORK FOR PROPER MOISTURE DRAINAGE.
6. PROVIDE "NO TOOL" CLEANOUT OPENING AT MAXIMUM 50 ft. INTERVALS ON STRAIGHT DUCT RUNS, NEAR EACH FITTING IN HORIZONTAL BRANCH RUNS, AND NEAR EACH ELBOW IN HORIZONTAL MAINS AND SUB-MAINS.
7. ELBOWS TO HAVE CENTERLINE RADIUS OF 2.0 TIMES THE DUCT DIAMETER WHERE SPACE PERMITS, BUT IN NO CASE LESS THAN 1.5 TIMES THE DUCT DIAMETER.

GENERAL NOTES:

1. ALL NEW OR MODIFIED SERVICE PLATFORMS, WALKWAYS, GUARDRAILS, STAIRS, & LADDERS SHALL BE FABRICATED & INSTALLED IN ACCORDANCE WITH CCOHS AND/OR PREVAILING CODE REQUIREMENTS.
2. ALL STRUCTURES & MACHINERY INSTALLATIONS SHALL BE COMPLIANT W/ BRITISH COLUMBIA BUILDING CODE & APPLICABLE CODES/INDUSTRY STANDARDS.
3. CONTRACTOR SHALL VISIT SITE TO FIELD VERIFY EXISTING DIMENSIONS AND/OR CONDITIONS NOTED "FIELD VERIFY" OR "FV". NOTIFY CARGILL & ENGINEER OF ANY DISCREPANCIES AND/OR CONCERNS PRIOR TO SUBMITTING BID.

NOTES:

1. ALL MOTOR HORSEPOWERS (HP) SHOWN THUS ARE APPROXIMATE & BASED ON INFORMATION AVAILABLE.
2. (XX) CONTRACTOR SHALL VERIFY MOTOR HP SIZES WITH EQUIPMENT SUPPLIERS DURING BID PERIOD.
3. CONTRACTOR SHALL NOTIFY OWNER/ENGINEER OF ANY CHANGES IN MOTOR HP SIZES.

DRAWING INDEX

SHEET NO.	TITLE
	SITE PLAN
SP1	SITE PLAN
	FLOW DIAGRAM
F1	FLOW DIAGRAM
	GENERAL ARRANGEMENT DRAWINGS
GA1	TRACK SHED BASEMENT PLAN VIEW
GA2	TRACK SHED PLAN VIEW
GA3	SECTION LOOKING NORTH
GA4	SECTION LOOKING NORTH @ TRACK 5
GA5	SECTION LOOKING NORTH @ TRACK 1
GA6	SECTION LOOKING EAST @ RDC3B DISCHARGE
GA7	SECTION LOOKING EAST @ RAIL RECEIVING HOPPERS
GA8	SECTION LOOKING WEST @ NEW RAIL CROSSOVER
	DUST CONTROL DRAWINGS
DS1.0	FILTER SYSTEM H1 DEMO DUST FLOW SCHEMATIC
DS1.1	FILTER SYSTEM H1 NEW DUST FLOW SCHEMATIC
DS2.0	FILTER SYSTEM H2 DEMO DUST FLOW SCHEMATIC
DS2.1	FILTER SYSTEM H2 NEW DUST FLOW SCHEMATIC
DC1	DUST COLLECTION MODIFICATIONS TRACK SHED BASEMENT PLAN
DC2	HOPPER DUST COLLECTION TRACK SHED BASEMENT PLAN
DC3	HOPPER DUST COLLECTION TRACK SHED PLAN
DC4	HOPPER DUST COLLECTION ELEVATION
	STRUCTURAL DRAWINGS
S0	TRACK SHED BASEMENT STRUCTURAL NOTES
S1	TRACK SHED BASEMENT PLAN
S2	TRACK SHED ENLARGED BASEMENT PLANS
S3	TRACK SHED ENLARGED BASEMENT PLANS
S4	TRACK SHED HOPPER FRAMING PLAN
S5	TRACK SHED BASEMENT WALL ELEVATIONS
S6	HOPPER / CONVEYOR SUPPORT ELEVATION
S7	HOPPER / CONVEYOR SUPPORT ELEVATION
S7A	CONVEYOR / HOPPER SUPPORT SECTIONS
S7B	CONVEYOR / HOPPER SUPPORT SECTIONS
S8	CONVEYOR / HOPPER SUPPORT DETAILS
S9	HOPPER PLAN & SECTIONS
S10	HOPPER SECTIONS
S10A	CONVEYOR / HOPPER SUPPORT DETAILS
S10B	TRACK SHED ENLARGED BASEMENT PLANS
S10C	CONVEYOR / HOPPER SUPPORT DETAILS
S11	TRACK SHED EXISTING FIRST FLOOR PLAN
S12	TRACK SHED NEW PLAN AT FIRST FLOOR
S12A	TRACK SHED ENLARGED PLAN
S12B	TRACK SHED ENLARGED PLAN
S16	TRACK SHED SECTIONS
S17	TRACK SHED SECTIONS
S17A	TRACK SHED SECTIONS
S17B	TRACK SHED SECTIONS
S18	TRACK SHED SECTIONS
S19	TRACK SHED BASEMENT
S20	TRACK SHED SECTIONS
S31	TRACK SHED STAIRS FOUNDATION PLAN
S32	TRACK SHED STAIRS FRAMING PLAN AT EXISTING AWNINGS
S33	TRACK SHED STAIRS FRAMING PLAN
S34	TRACK SHED STAIRS SECTIONS
S35	TRACK SHED STAIRS FOUNDATION DETAILS
S36	TRACK SHED STAIRS FRAMING DETAILS
S37	TRACK SHED STAIRS BENT & TOWER DETAILS
S38	TYPICAL STAIR DETAILS
S39	TYPICAL GUARDRAIL DETAILS

VANCOUVER FRASER PORT AUTHORITY
PROJECT PERMIT 2014-247
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Canada
Signed:
Dated: March 30/2015

1 CS1 AERIAL VIEW
NOT TO SCALE

PRELIMINARY
NOT FOR CONSTRUCTION

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NO.	DATE	ISSUE/REVISION	DRWN	CHKD
A	1/30/15	ISSUED FOR REVIEW	JDM	JPR
B	3/6/15	ISSUED FOR BID	JDM	JPR

NO.	DATE	ISSUE/REVISION	DRWN	CHKD

DATE: 1/30/15
DRAWN: JDM
DESIGNED: VAA/CAH
CHECKED: JPR
APPROVED: JDM

Cargill™

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Planners and Engineers
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Plymouth, MN 55441
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www.vaaeng.com
info@vaaeng.com

PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT
CLIENT: CARGILL LIMITED VANCOUVER, B.C.
CLIENT PROJECT NO:

DRAWING TITLE: COVER SHEET
PROJECT NO: 140335
SCALE: AS NOTED
DRAWING NO: CS1

VANCOUVER FRASER PORT AUTHORITY

PROJECT PERMIT 2014-247

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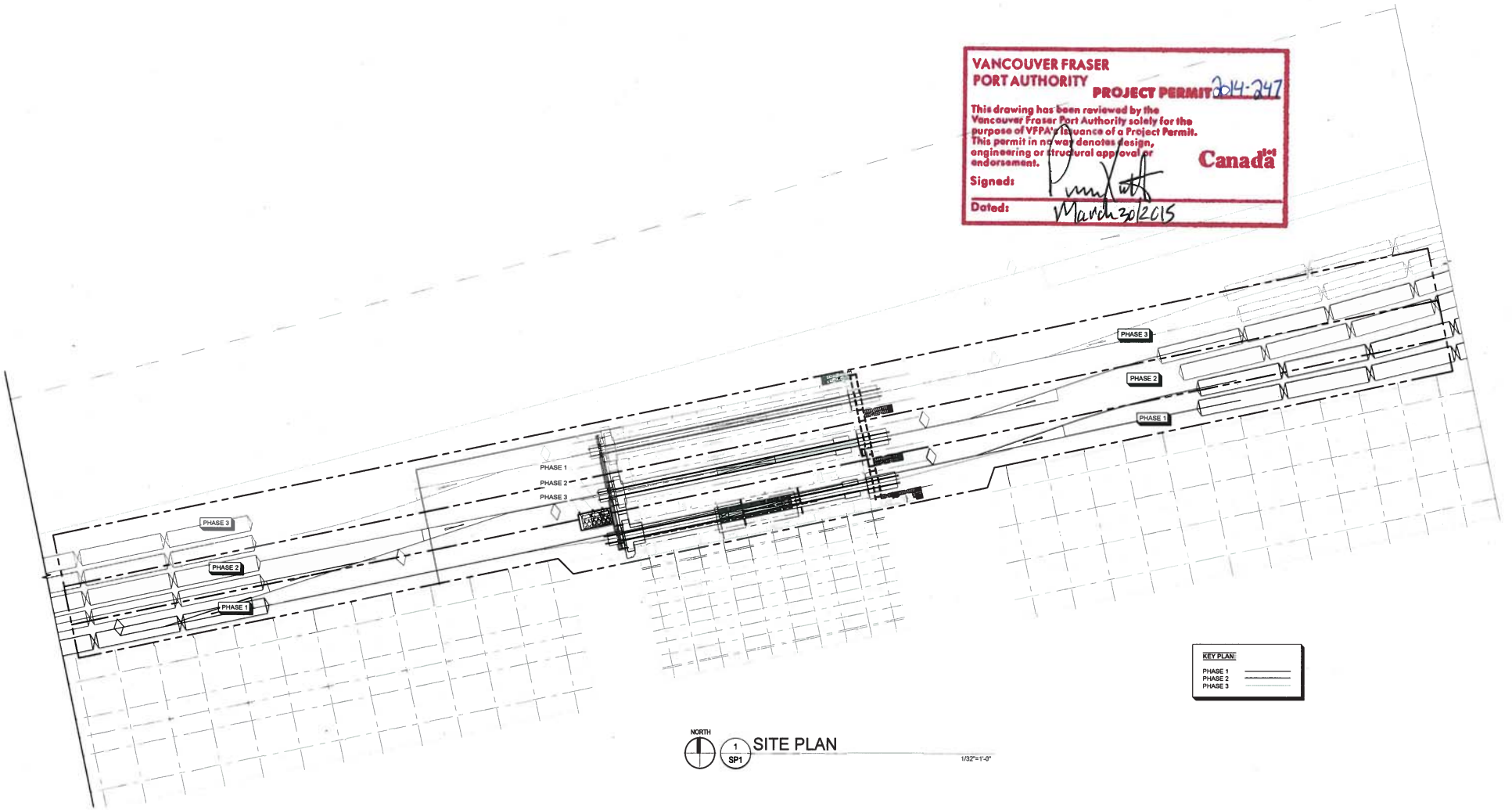
Canada

Signed:

Dated: March 30/2015



NORTH

1 SP1 SITE PLAN

1/32"=1'-0"

PRELIMINARY
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A	3/6/15	ISSUED FOR BID	SJT	JPR

NO	DATE	ISSUE/REVISION	DRWN	CHKD

DATE: 1/30/15
DRAWN: SJT
DESIGNED: VAA/CAH
CHECKED: JPR
APPROVED: JDM

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www.vaaeng.com
info@vaaeng.com

PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT

CLIENT: CARGILL LIMITED VANCOUVER, B.C.

CLIENT PROJECT NO.

DRAWING TITLE: SITE PLAN

PROJECT NO: 140335

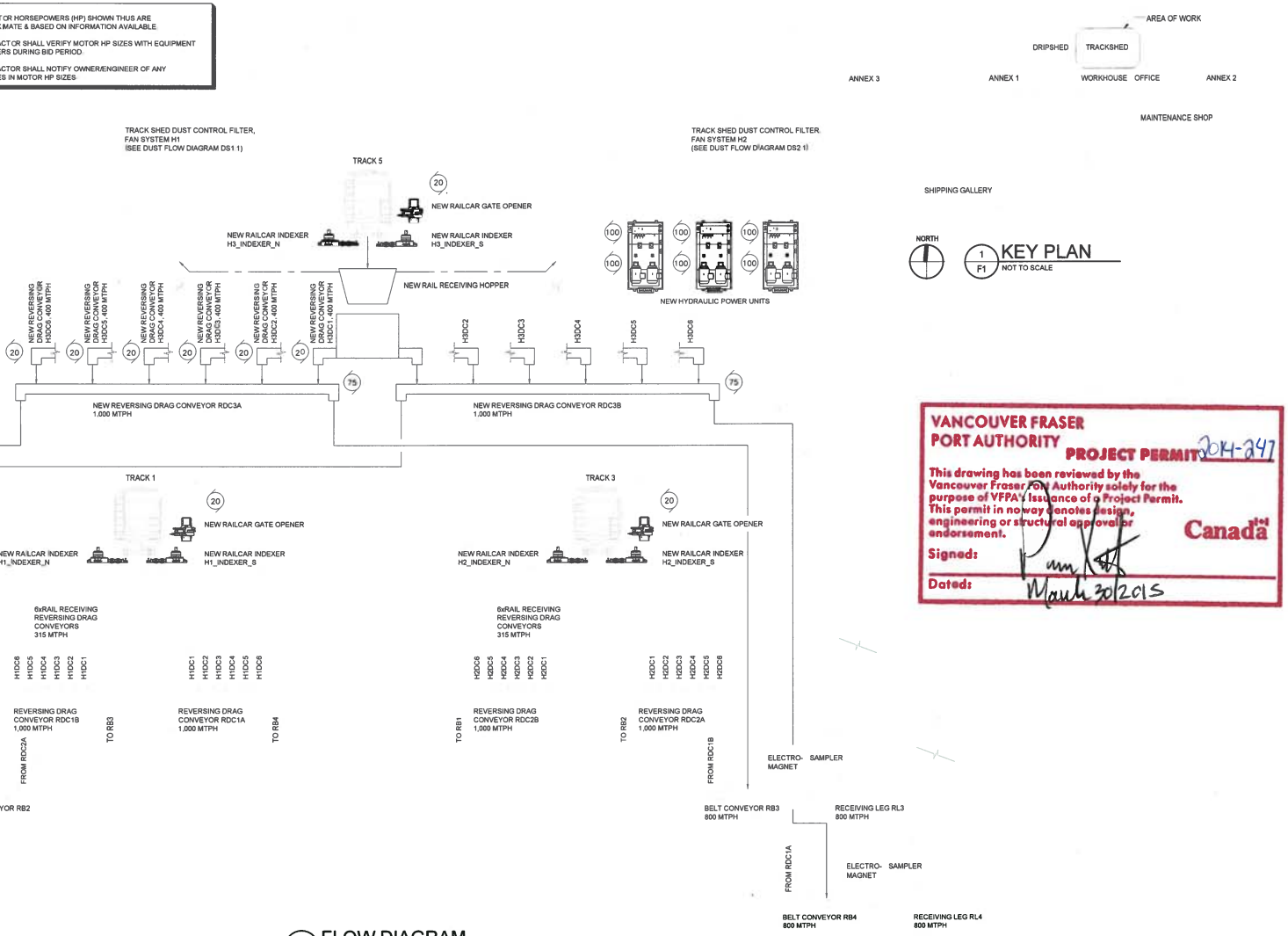
DRAWING NO: SP1

SCALE: AS NOTED

DRAWING KEY

- BELT CONVEYOR
- CHAIN CONVEYOR
- RAILCAR INDEXER
- RAILCAR GATE OPENER
- SPOUTING
- MOTOR HP (40)

NOTES:
1. ALL MOTOR HORSEPOWERS (HP) SHOWN THUS ARE APPROXIMATE & BASED ON INFORMATION AVAILABLE.
2. (XX) CONTRACTOR SHALL VERIFY MOTOR HP SIZES WITH EQUIPMENT SUPPLIERS DURING BID PERIOD.
3. CONTRACTOR SHALL NOTIFY OWNER/ENGINEER OF ANY CHANGES IN MOTOR HP SIZES.



2 / F1 FLOW DIAGRAM
NOT TO SCALE

NORTH

1 / F1 KEY PLAN
NOT TO SCALE

VANCOUVER FRASER PORT AUTHORITY
PROJECT PERMIT 2014-247
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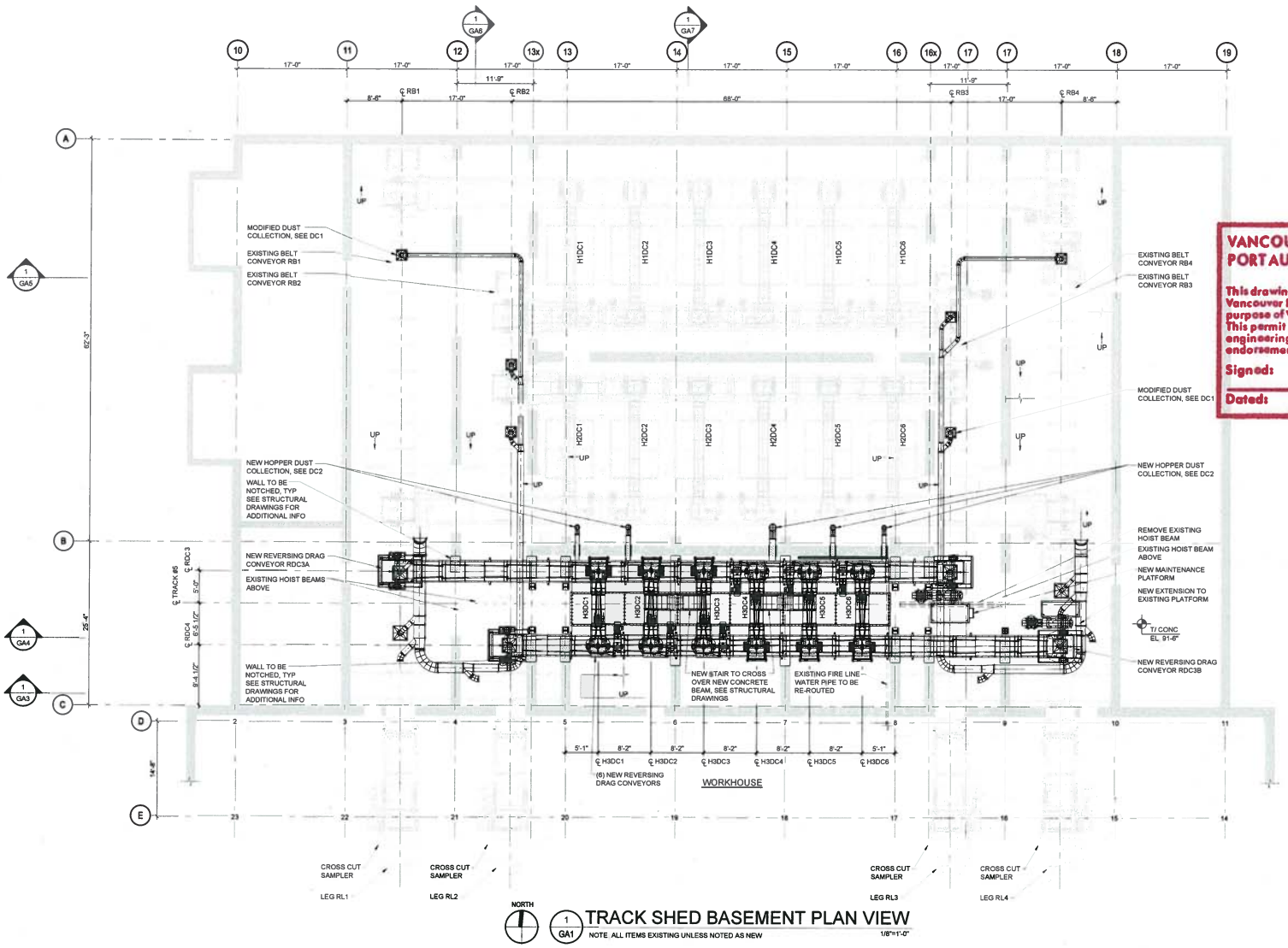
CLIENT: CARGILL LIMITED VANCOUVER, B.C.
CLIENT PROJECT NO.

DRAWING TITLE: FLOW DIAGRAM
PROJECT NO.: 140335
SCALE: AS NOTED
DRAWING NO.: F1



NORTH

1 GA1 TRACK SHED BASEMENT PLAN VIEW

NOTE: ALL ITEMS EXISTING UNLESS NOTED AS NEW

1/8"=1'-0"

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DRAWN: JDM
DESIGNED: VAA/CAH
CHECKED: JPR
APPROVED: JDM

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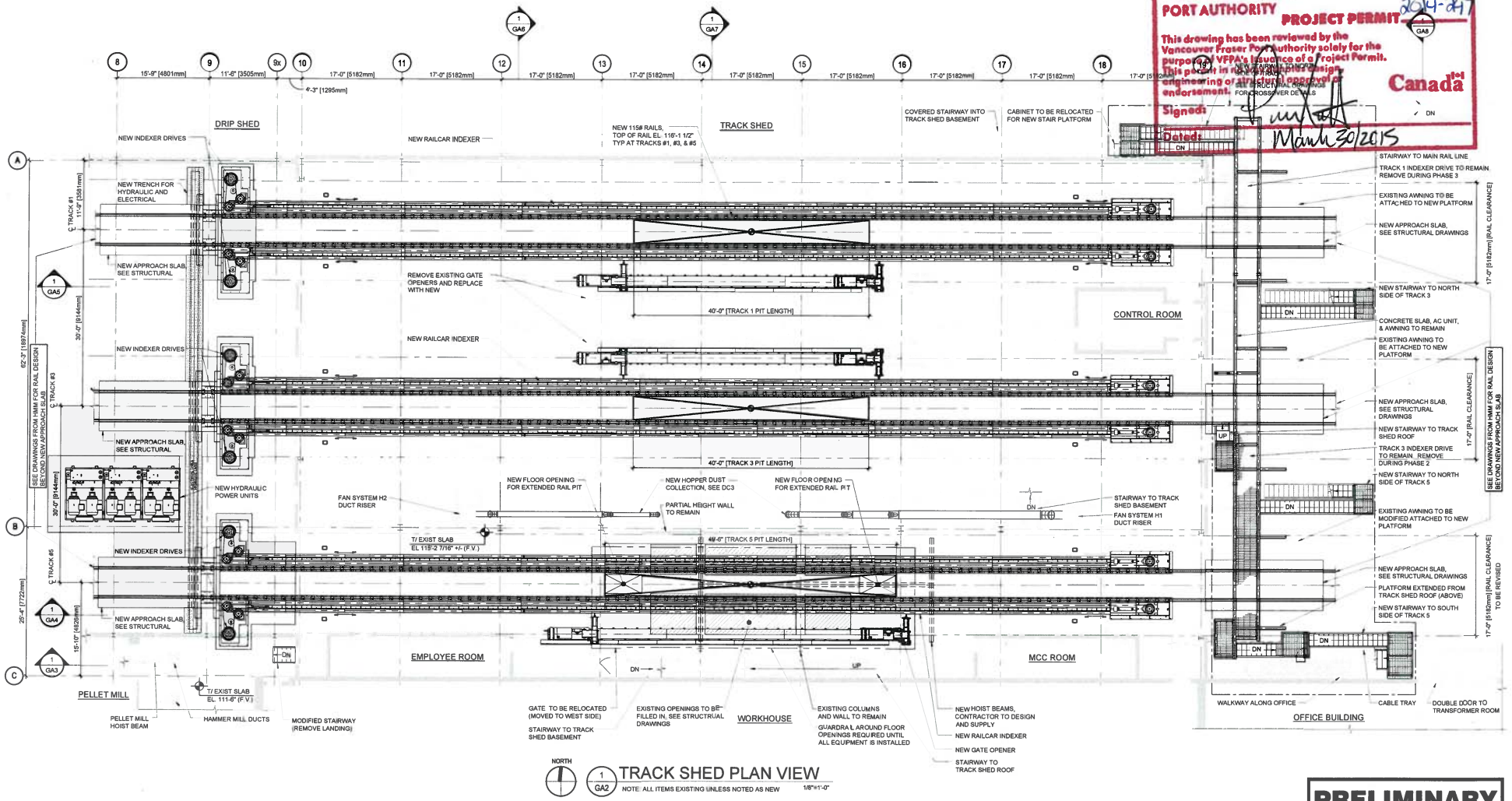
info@vaaeng.com

PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT
CLIENT: CARGILL LIMITED VANCOUVER, B.C.
CLIENT PROJECT NO.

DRAWING TITLE: TRACK SHED BASEMENT PLAN VIEW
PROJECT NO: 140335
DRAWING NO: GA1
SCALE: AS NOTED



VANCOUVER FRASER PORT AUTHORITY
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Signed:
Dated: March 30/2015

NORTH

1 GA2 TRACK SHED PLAN VIEW
NOTE: ALL ITEMS EXISTING UNLESS NOTED AS NEW
1/8"=1'-0"

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NO	DATE	ISSUE/REVISION	DRWN	CHKD

DATE: 1/30/15
DRAWN: JDM
DESIGNED: VAA/CAH
CHECKED: JPR
APPROVED: JDM

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PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT
CLIENT: CARGILL LIMITED VANCOUVER, B.C.
CLIENT PROJECT NO.

DRAWING TITLE: TRACK SHED PLAN VIEW
PROJECT NO. 140335
DRAWING NO. GA2
SCALE: AS NOTED

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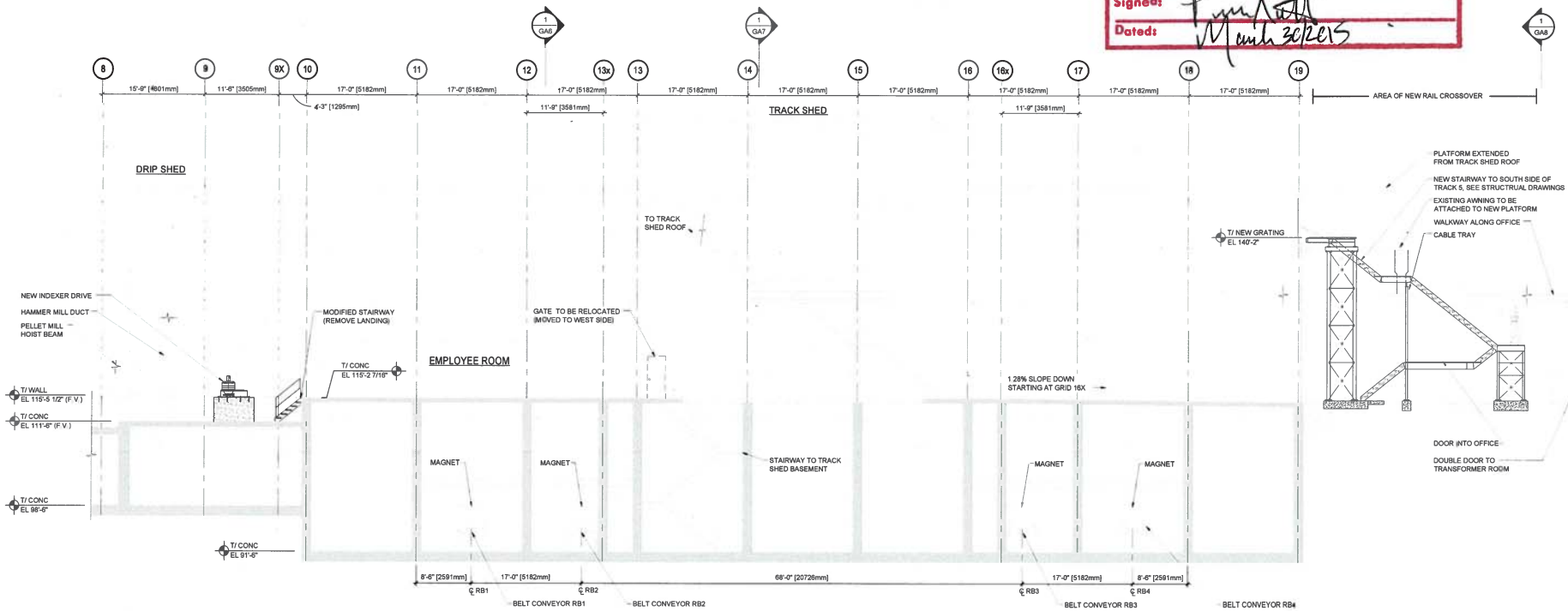

1 GA3 SECTION LOOKING NORTH

NOTE: ALL ITEMS EXISTING UNLESS NOTED AS NEW

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PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT
CLIENT: CARGILL LIMITED VANCOUVER, B.C.
CLIENT PROJECT NO.

DRAWING TITLE: SECTION LOOKING NORTH
PROJECT NO: 140335
DRAWING NO: GA3
SCALE: AS NOTED

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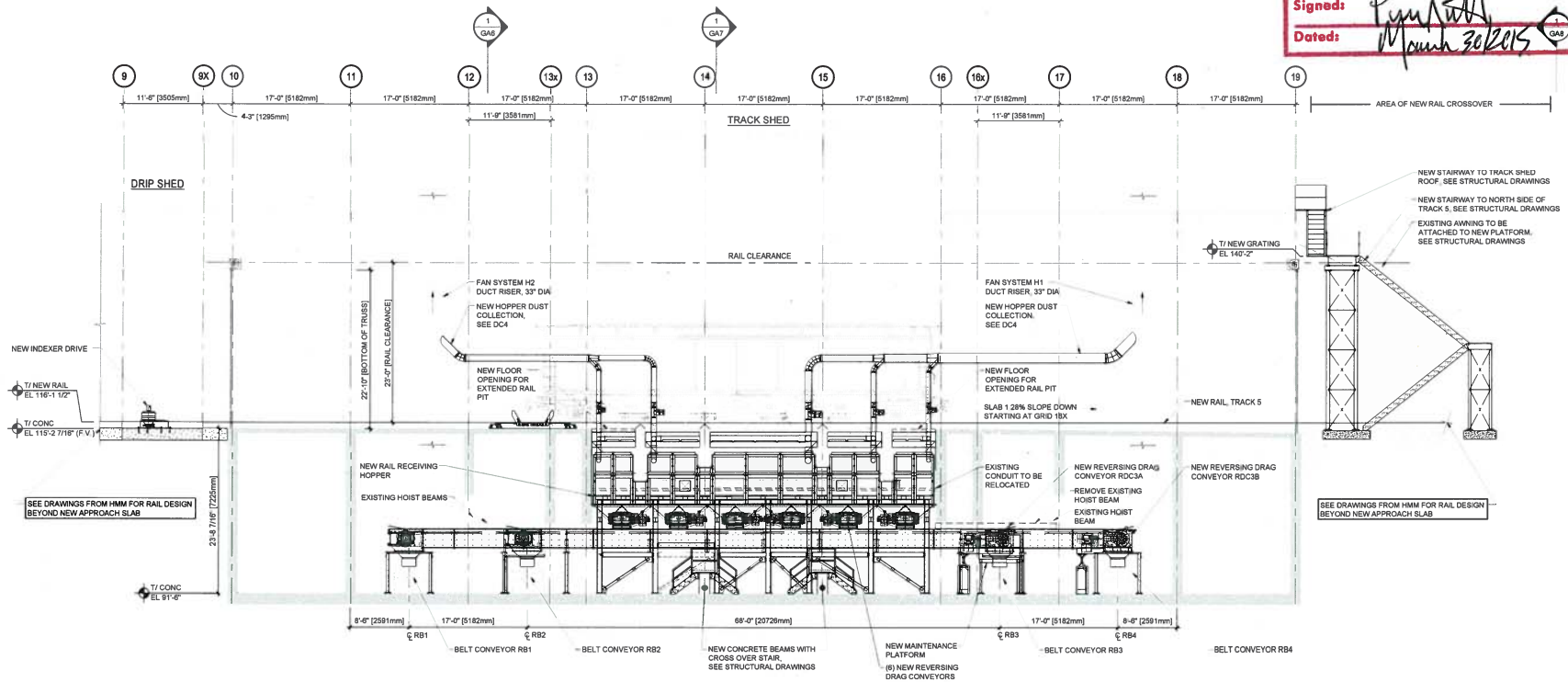

1 GA4 SECTION LOOKING NORTH @ TRACK 5

NOTE: ALL ITEMS EXISTING UNLESS NOTED AS NEW

1/8"=1'-0"

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CLIENT: CARGILL LIMITED VANCOUVER, B.C.
CLIENT PROJECT NO.

DRAWING TITLE: SECTION LOOKING NORTH @ TRACK 5
PROJECT NO: 140335
DRAWING NO: GA4
SCALE: AS NOTED

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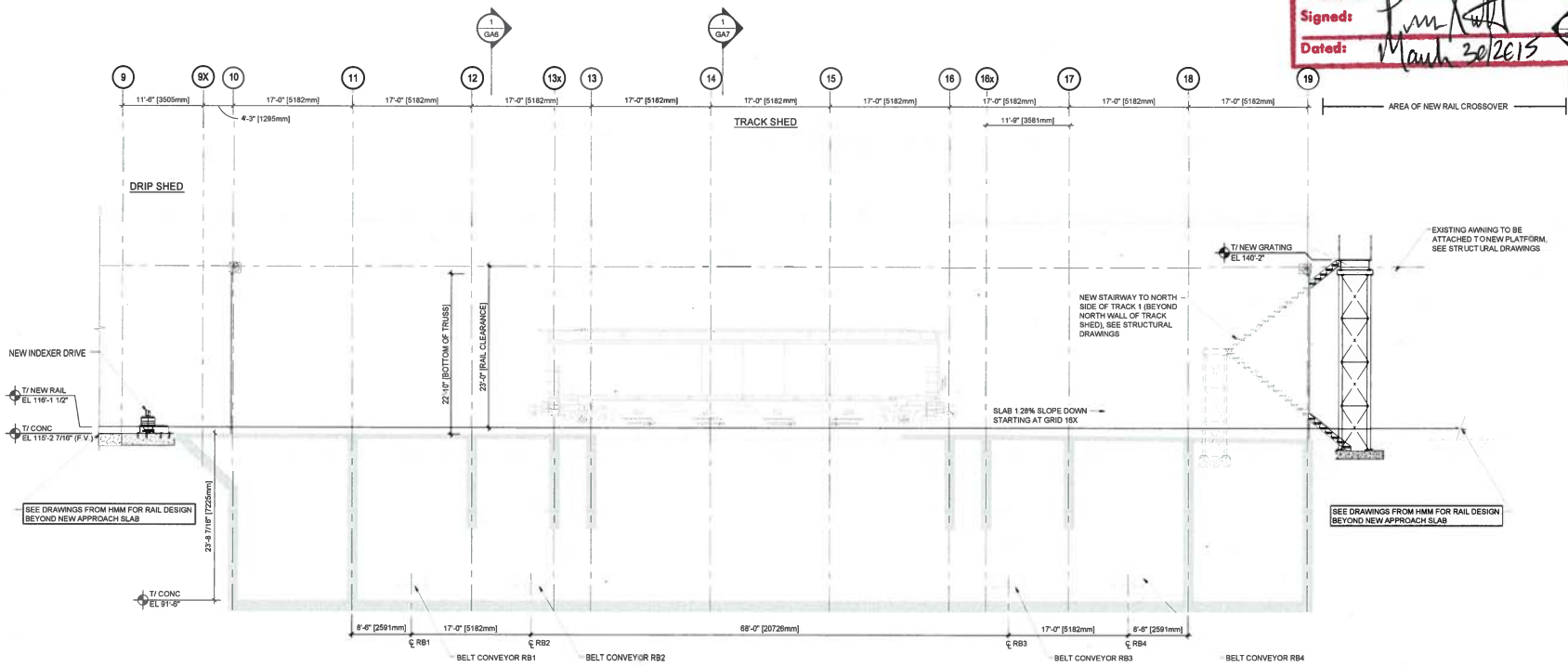

1 GA5 SECTION LOOKING NORTH @ TRACK 1

NOTE: ALL ITEMS EXISTING UNLESS NOTED AS NEW

1/8"=1'-0"

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PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT
CLIENT: CARGILL LIMITED VANCOUVER, B.C.
CLIENT PROJECT NO:

DRAWING TITLE: SECTION LOOKING NORTH @ TRACK 1
PROJECT NO: 140335
DRAWING NO: GA5
SCALE: AS NOTED

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Signed:

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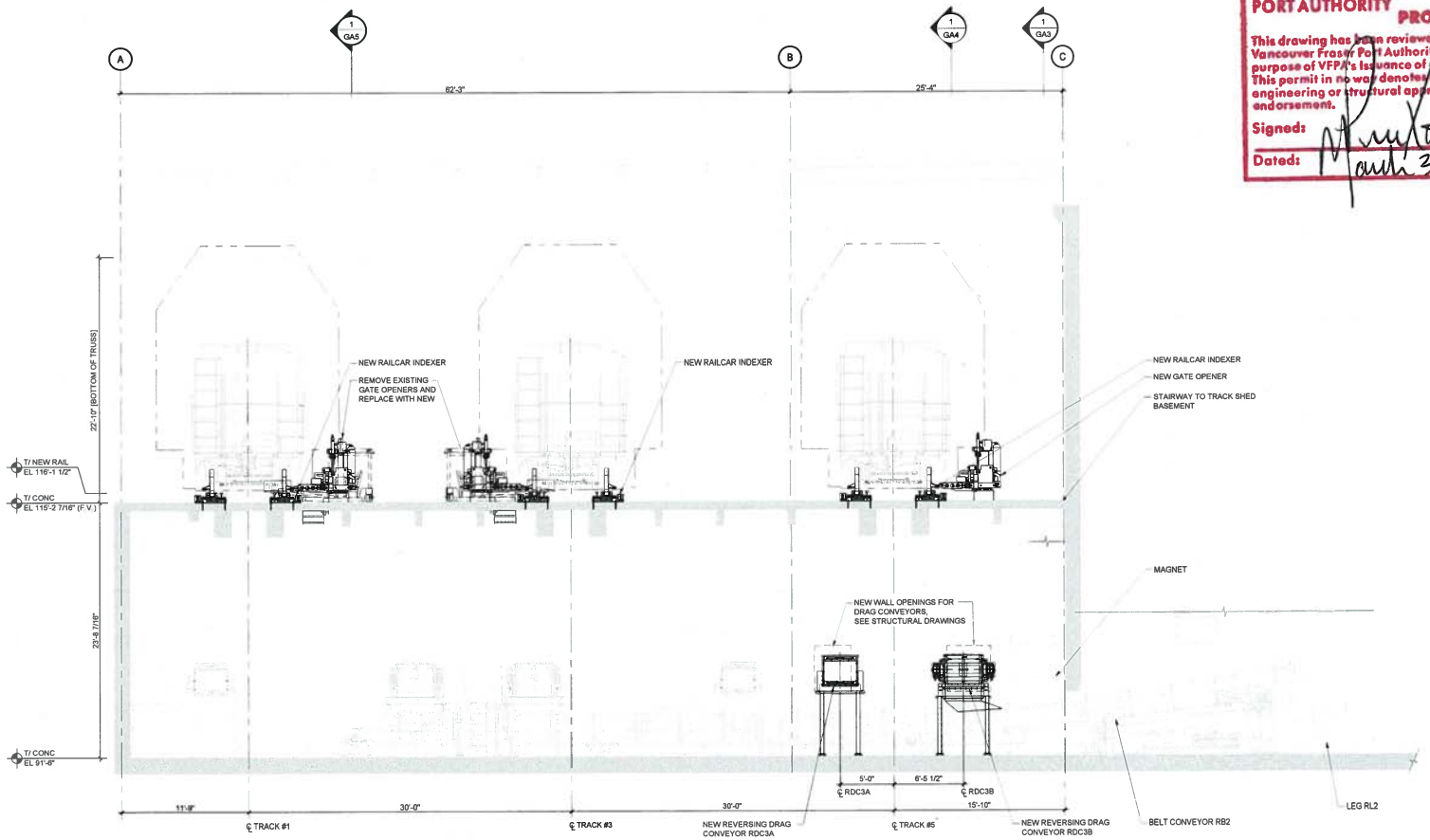

1 GA6 SECTION LOOKING EAST @ RDC3B DISCHARGE

NOTE: ALL ITEMS EXISTING UNLESS NOTED AS NEW

3/16"=1'-0"

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PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT

CLIENT: CARGILL LIMITED VANCOUVER, B.C.

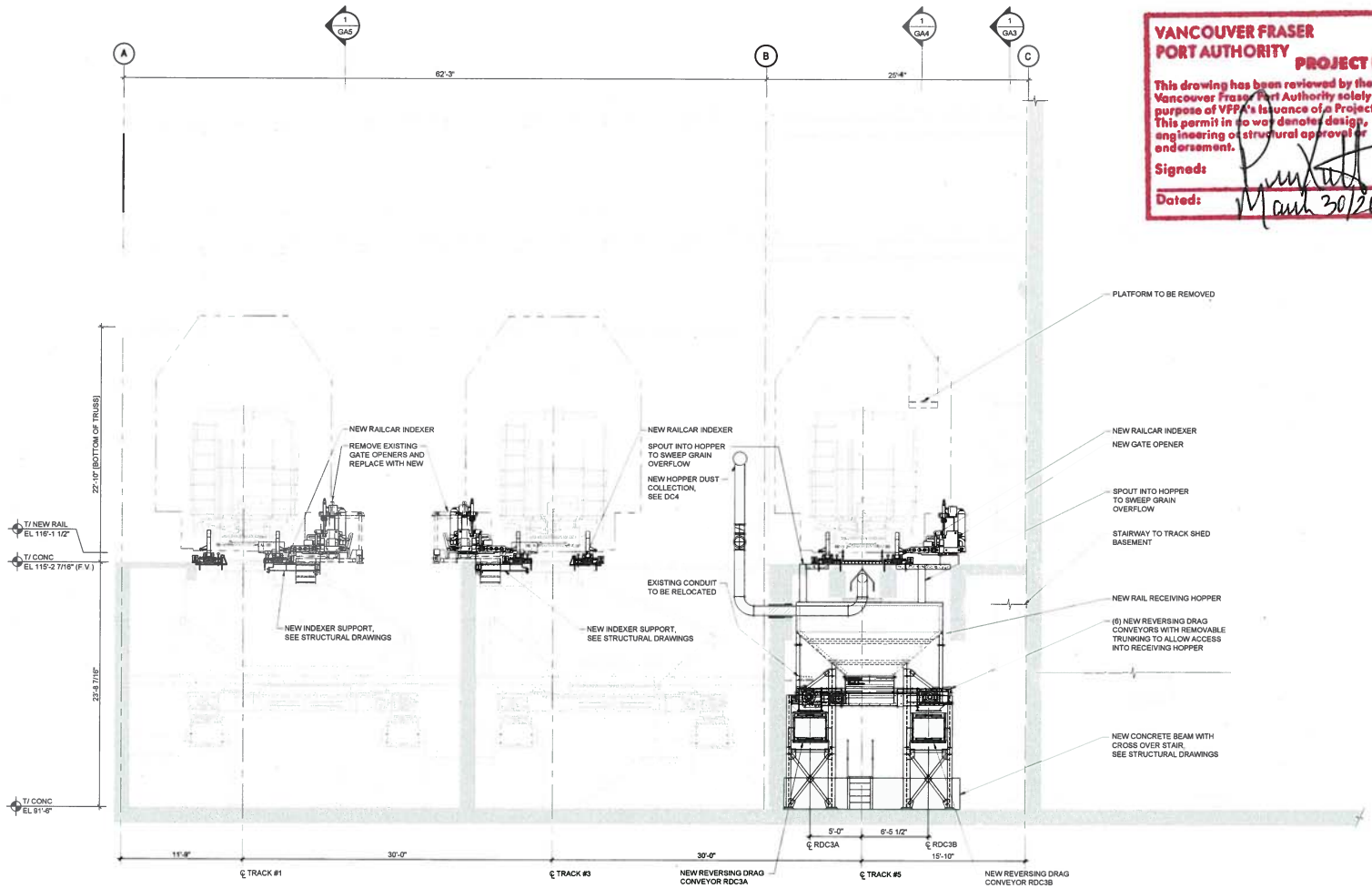
CLIENT PROJECT NO

DRAWING TITLE: SECTION LOOKING EAST @ RDC3B DISCHARGE

PROJECT NO: 140335

DRAWING NO: GA6

SCALE: AS NOTED



1 GA7 SECTION LOOKING EAST @ RAIL RECEIVING HOPPERS

NOTE: ALL ITEMS EXISTING UNLESS NOTED AS NEW

3/16"=1'-0"

VANCOUVER FRASER PORT AUTHORITY PROJECT PERMIT 2014-347

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CLIENT: CARGILL LIMITED VANCOUVER, B.C.

CLIENT PROJECT NO.

DRAWING TITLE: SECTION LOOKING EAST @ RAIL RECEIVING HOPPERS

PROJECT NO. 140335

DRAWING NO. GA7

SCALE: AS NOTED

VANCOUVER FRASER PORT AUTHORITY
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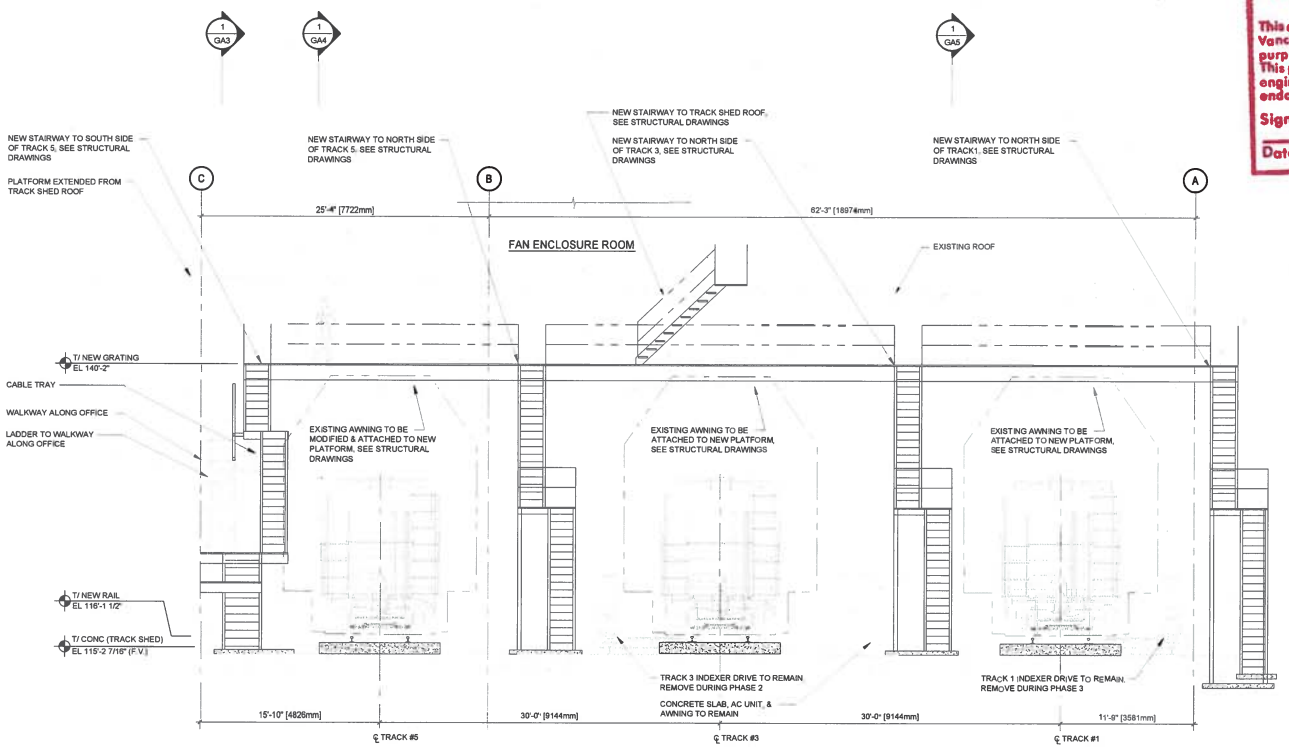

1 GA8 SECTION LOOKING WEST @ NEW RAIL CROSSOVER

NOTE: ALL ITEMS EXISTING UNLESS NOTED AS NEW

3/16"=1'-0"

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PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT
CLIENT: CARGILL LIMITED VANCOUVER, B.C.
CLIENT PROJECT NO.

DRAWING TITLE: SECTION LOOKING WEST @ NEW RAIL CROSSOVER
PROJECT NO: 140335
DRAWING NO: GA8
SCALE: AS NOTED

STRUCTURAL NOTES

I. BUILDING CODE:
A. BRITISH COLUMBIA BUILDING CODE 2012 DIVISION B, PART 4: STRUCTURAL DESIGN.

II. DESIGN LOADS:
A. ROOFS:
LIVE ..... 21 PSF
SNOW: GROUND SNOW LOAD Ss ..... 61 PSF
ASSOCIATED RAIN LOAD Sr ..... 15 PSF

B. CATWALKS, ACCESS PLATFORMS, STAIRS:
LIVE ..... 75 PSF

C. WIND:
HOURLY WIND PRESSURE:
1/10 YEAR PROBABILITY ..... 7.5 PSF
1/50 YEAR PROBABILITY ..... 9.8 PSF

D. SEISMIC:
HORIZONTAL SPECTRAL ACCELERATION VALUE Sa (0.2) 0.903
HORIZONTAL SPECTRAL ACCELERATION VALUE Sa (0.5) 0.619
HORIZONTAL SPECTRAL ACCELERATION VALUE Sa (1.0) 0.326
HORIZONTAL SPECTRAL ACCELERATION VALUE Sa (2.0) 0.170
PEAK GROUND ACCELERATION ..... 0.448 g
SITE CLASS ..... E

E. STORED MATERIALS: DENSITY ..... 52 PCF
K 0.578
μ' 0.420

F. VEHICLES (15% IMPACT PER ORIGINAL DESIGN):
RAIL CAR WITHOUT LOCOMOTIVE DL+LL ..... 286,000. LBS/CAR

III. FOOTINGS AND SOIL DATA:
A. GEOTECHNICAL INVESTIGATION BY THURBER ENGINEERING LTD FILE NO 19-5308-90 DATED JANUARY 29, 2015.
B. CONTRACTOR TO REVIEW GEOTECHNICAL REPORT FOR DETAILED BACKFILL, COMPACTION AND PILE INSTALLATION REQUIREMENTS.
C. APPROACH SLAB FOOTINGS FOUNDED ON GRANULAR, NON-FROST SUSCEPTIBLE FILL ARE DESIGNED FOR AN ULTIMATE GEOTECHNICAL RESISTANCE OF 4,180 PSF (200 KPa) WITH A GEOTECHNICAL RESISTANCE FACTOR OF 0.5.
D. SQUARE AND RECTANGULAR FOOTINGS LARGER THAN 3 FEET BY 3 FEET (0.9 METERS BY 0.9 METERS) ARE DESIGNED FOR AN ULTIMATE GEOTECHNICAL RESISTANCE OF 2090 PSF (100 KPa) WITH A GEOTECHNICAL RESISTANCE FACTOR OF 0.5.
E. FOOTINGS SHALL BE EXCAVATED TO FROST DEPTH AND BACKFILLED WITH GRANULAR, NON-FROST SUSCEPTIBLE FILL. ALL SUBGRADE SHALL BE PREPARED AND COMPACTED ACCORDING TO THE RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL REPORT.
F. ALL TOPSOIL, FILL AND OTHER UNSUITABLE BEARING MATERIAL SHALL BE REMOVED. A GEOTECHNICAL ENGINEER SHALL INSPECT THE EXCAVATED AREA TO ENSURE ALL MATERIALS REQUIRING REMOVAL HAVE BEEN REMOVED AND TO VERIFY THE SOIL BEARING CAPACITY USED FOR DESIGN.
G. FROST COVER FROM EXTERIOR GRADE TO BOTTOM OF FOOTING SHALL NOT BE LESS THAN 18" FOR UNHEATED STRUCTURES. BOTTOM OF FOOTING ELEVATION SHALL BE LOWERED AS REQUIRED TO MEET THIS MINIMUM.
H. PRIOR TO COMMENCING ANY FOUNDATION WORK, COORDINATE WORK WITH ANY EXISTING UTILITIES. FOUNDATIONS SHALL BE LOWERED WHERE REQUIRED TO AVOID UTILITIES.
I. NO FOOTINGS OR SLABS SHALL BE PLACED ONTO OR AGAINST SUBGRADE CONTAINING FREE WATER, FROST OR ICE. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT ANY FROST OR ICE FROM PENETRATING ANY FOOTING OR SLAB SUBGRADE BEFORE AND AFTER PLACING CONCRETE UNTIL SUCH SUBGRADES ARE FULLY PROTECTED BY THE PERMANENT BUILDING STRUCTURE OR PROPER DEPTH OF BURY.

IV. PILING:
A. PRIOR TO COMMENCING PILE OPERATIONS, THE CONTRACTOR SHALL SUBMIT A PILE LOCATION PLAN SHOWING THE LOCATION OF THE PILES AND SPECIFYING THE PILE CAPACITIES TO VAA.
B. ALL PILING SHALL BE INSTALLED TO A MAXIMUM TOLERANCE IN ANY DIRECTION OF 3" PER PILE WHERE AN INDIVIDUAL PILE IS INSTALLED OUT OF POSITION MORE THAN 3" IN ANY DIRECTION THE CONTRACTOR MAY BE REQUIRED TO DRIVE AN ADDITIONAL PILE OR PILES TO COMPENSATE FOR THE ECCENTRICITY OF THE PILE AND/OR PILE GROUP.
C. ALL PILE OPERATIONS, INCLUDING TEST PILES AND PRODUCTION PILES SHALL BE DONE UNDER THE SUPERVISION OF AN INDEPENDENT TESTING LABORATORY/AGENCY, DIRECTED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF BRITISH COLUMBIA.
D. UPON COMPLETION OF ALL PILE INSTALLATIONS, THE CONTRACTOR SHALL FURNISH THE ENGINEER A SURVEY OF AS-INSTALLED PILE LOCATIONS. THE SURVEY SHALL INDICATE THE MISALIGNMENT OF EACH PILE IN TWO PERPENDICULAR DIRECTIONS, GIVEN IN INCHES, AND THE ACTUAL CUT-OFF ELEVATION OF EACH PILE.

VII. REINFORCED CONCRETE:
A. CONCRETE MIXES SHALL BE DESIGNED PER ACI OR CANADIAN DESIGN CODES, USING PORTLAND CEMENT CONFORMING TO ASTM C-150 OR C-595, AGGREGATE CONFORMING TO ASTM C-33, AND ADMIXTURES CONFORMING TO ASTM C-494, C1017, C-618, C-989 AND C-260. CONCRETE SHALL BE READY-MIXED IN ACCORDANCE WITH ASTM C-94. MIX DESIGNS SHALL BE SUBMITTED TO ENGINEER FOR REVIEW. A SIGNED CERTIFICATION STATING COMPLIANCE WITH ACI 318, CHAPTER 5 OR CSA A23.1-04 SHALL BE SUBMITTED WITH EACH MIX DESIGN. MIX DESIGNS USING MATERIAL STANDARDS MEETING CANADIAN EQUIVALENCIES TO LISTED ASTM STANDARDS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR CONSIDERATION AND APPROVAL.
B. MATERIAL STRENGTHS:
1. CONCRETE COMPRESSIVE STRENGTH (f'c) AT 28 DAYS:
PILE CAP (5-7% ENTRAINED AIR) ..... 5000 PSI
FOOTINGS (5-7% ENTRAINED AIR) ..... 5000 PSI
EXTERIOR SLABS ON GRADE ..... 5000 PSI
2. REINFORCING STEEL:
WELDABLE BARS ..... ASTM A706, GR. 60
ALL OTHER BARS, STIRRUPS AND TIES ..... ASTM A615, GR. 60
WELDED WIRE FABRIC ..... ASTM A185

C. NOTES:
1. PLACEMENT OF CONCRETE AND REINFORCEMENT SHALL BE IN ACCORDANCE WITH CANADIAN STANDARDS.
2. PROVIDE ¾" CHAMFER AT ALL EXPOSED CORNERS.
3. FURNISH THE FOLLOWING CONCRETE COVER ON REINFORCING BARS UNLESS SHOWN OTHERWISE ON DRAWINGS:
SLABS ON GRADE ..... PLACE MESH OR BARS IN CENTER OF SLAB
FORMS ..... CENTER MESH OR BARS IN PORTION OF SLAB ABOVE METAL FORMS (PROVIDE "DRAPED" PROFILE PER SDI)
FOOTINGS, PILE CAP ..... 3" COVER ON BOTTOM AND SIDES
4. PROVIDE THE FOLLOWING CONCRETE PROPERTIES:
SLABS ON GRADE ..... ¾" MAX. AGGREGATE, 3"+-1" SLUMP
FOOTINGS, PILE CAP ..... 1 ½" MAX. AGGREGATE, 4"+-1" SLUMP
5. PROVIDE THE FOLLOWING MAXIMUM WATER TO CEMENT RATIOS (W/C):
SLABS AND SLABS ON GRADE 0.43
FOOTINGS, PILE CAP 0.45
THESE W/C RATIOS MAY BE HIGHER THAN IS NECESSARY TO PROVIDE THE SPECIFIED STRENGTHS.
6. WELDING (INCLUDING TACKING) OF BARS OTHER THAN ASTM A706 SHALL NOT BE ALLOWED. WELDING OF ASTM A706 BARS SHALL CONFORM TO AWS D1.4.
7. MAINTAIN CONCRETE IN A CONTINUOUSLY DAMP AND WET CONDITION FOR NOT LESS THAN 7 DAYS AFTER PLACING. PROTECT FROM MOISTURE LOSS WITH SHEETING OR SPRAY-ON MEMBRANE MEETING ASTM C309 AND COMPATIBLE WITH FLOOR COVERINGS.
8. FINISHING REQUIREMENTS ARE AS FOLLOWS (REFER TO ACI 301):
SMOOTH RUBBED FINISH ON EXPOSED FORM SURFACES.
WOOD FLOAT FINISH ON SLABS TO RECEIVE TOPPING.
STEEL TROWEL FINISH ON INTERIOR SLABS AND SLABS TO RECEIVE FINISH FLOORING.
BROOM FINISH ON WALKS, STAIRS AND EXTERIOR CONCRETE PEDESTRIAN PAVING.
NONSLIP FINISH SHALL BE APPLIED WITH ALUMINUM OXIDE TYPE SURFACE TREATMENT.
9. DO NOT FIELD BEND BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE UNLESS SPECIFICALLY INDICATED OR APPROVED BY THE ENGINEER.
10. COLD WEATHER CONCRETING SHALL FOLLOW PROCEDURES IN ACI 306. HOT WEATHER CONCRETING SHALL FOLLOW PROCEDURES IN ACI 305.
11. REFER TO SCHEDULE ON PLANS FOR REQUIRED LAP LENGTHS UNLESS NOTED OTHERWISE. PROVIDE CLASS B LAP SPLICES IN ACCORDANCE WITH ACI-318.
12. BAR SUPPORTS AND HOLDING BARS SHALL BE PROVIDED FOR ALL REINFORCING STEEL TO ENSURE COMPLIANCE WITH MINIMUM CONCRETE COVER. BAR SUPPORTS SHALL BE PLASTIC, PLASTIC TIPPED, EPOXY COATED OR STAINLESS STEEL FOR UNCOATED STEEL. BAR SUPPORTS FOR COATED STEEL SHALL BE PLASTIC, PLASTIC COATED OR EPOXY COATED.
13. FORMWORK SHALL REMAIN IN PLACE UNTIL CONCRETE HAS ATTAINED A MINIMUM OF 3,000 PSI 28 DAY COMPRESSIVE STRENGTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE ALL SHORING.
14. VERTICAL WALL CONSTRUCTION JOINTS SHALL BE FORMED WITH VERTICAL BULKHEADS AND KEYWAYS. WALL REINFORCING SHALL BE CONTINUOUS THROUGH THE JOINT OR SHALL BE DOWELED WITH AN EQUIVALENT AREA OF REINFORCEMENT.
15. PROVIDE CONTINUOUS WATERSTOPS (BULB TYPE ONLY) IN CONSTRUCTION JOINTS, IN PIT WALLS, IN JOINTS BETWEEN MONOLITHIC POURS BELOW GRADE, AND IN ALL OTHER WALLS ADJACENT TO BELOW GRADE SLABS.
16. SPECIAL ADDITIONAL REQUIREMENTS FOR SLABS ON GRADE:
a. REFER TO GEOTECHNICAL REPORT FOR VAPOR BARRIER, ENGINEERED FILL AND SUBGRADE COMPACTION REQUIREMENTS.
b. WALKWAYS AND OTHER EXTERIOR SLABS IF SHOWN ON THE STRUCTURAL DRAWINGS ARE FOR INFORMATION ONLY. SEE THE SITE PLAN, CIVIL DRAWINGS AND ARCHITECTURAL DRAWINGS FOR LOCATIONS, DIMENSIONS, ELEVATIONS, JOINTING DETAILS AND FINISH DETAILS. PROVIDE 4" WALKS REINFORCED WITH 6x6 -W1.4xW1.4 WWF UNLESS OTHERWISE NOTED.
c. SEE THE GENERAL ARRANGEMENT DRAWINGS FOR EXACT LOCATIONS OF DEPRESSED SLAB AREAS AND DRAINS. SLOPE SLAB TO DRAINS WHERE SHOWN.
d. FINISH TOLERANCE OF ALL SLABS SHALL BE IN ACCORDANCE WITH ACI 302.1 R.

VIII. STRUCTURAL STEEL:
A. MATERIAL SPECIFICATIONS (UNLESS NOTED OTHERWISE):
1. STRUCTURAL STEEL WIDE FLANGE & S SHAPES ..... ASTM A992
2. HOPPER PLATES ..... ASTM A572 GR. 50
3. OTHER STRUCTURAL STEEL ROLLED SHAPES, PLATES & BARS ..... ASTM A36
4. STRUCTURAL STEEL TUBING (HOLLOW STRUCTURAL SECTIONS) ..... ASTM A500, GR. B
5. STRUCTURAL STEEL PIPE (TYPE E) ..... ASTM A53, GR. B
6. CONNECTION BOLTS ..... ASTM A325 AND A490
7. HIGH STRENGTH ANCHOR RODS ..... ASTM F1554, GR. 105
8. WELDS (E70XX ELECTRODES) ..... ASTM A233
9. STUD ANCHORS (TYPE B) ..... ASTM A29 OR A108
10. EXPANSION BOLTS ..... KWIK TZ OR ENGINEER OF RECORD ACCEPTED ALTERNATE
11. RAISED PATTERN FLOOR PLATE (COMMERCIAL GRADE) ..... ASTM A786
12. NON-SHRINK GROUT (8,000 PSI) ..... ASTM C1107, GR. A

B. NOTES:
1. ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED ACCORDING TO THE SPECIFICATIONS OF CAN/CSA-S16, LATEST ADOPTION.
2. ALL COLUMNS, ANCHOR BOLTS, BASE PLATES, ETC. HAVE BEEN DESIGNED FOR THE FINAL COMPLETED CONDITION AND HAVE NOT BEEN INVESTIGATED FOR POTENTIAL LOADINGS ENCOUNTERED DURING STEEL ERECTION AND CONSTRUCTION. CONFORMANCE TO OR DEVIATION FROM ALLOWABLE CAPACITIES DURING ERECTION IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR (SEE GENERAL NOTES).
3. STEEL FABRICATOR SHALL BE CERTIFIED PER CSA-A660 AND SHALL MAINTAIN DETAILED QUALITY CONTROL PROCEDURES.
4. BEAMS SHALL BE FABRICATED FOR PLACEMENT WITH THE NATURAL CAMBER UP. PROVIDE CAMBERS AS INDICATED ON THE DRAWINGS. CAMBERS SHOWN ON THE DRAWINGS REFLECT THE IN-PLACE, ERECTED BEAM CONDITIONS. CAMBERS SHALL BE INCREASED ACCORDINGLY BY STRUCTURAL STEEL SUPPLIER TO ACCOUNT FO LOSS OF CAMBER DUE TO RELAXATION AFTER CAMBERING PROCESS, TRANSPORTATION AND HANDLING. BEAMS WITH CAMBERS SHALL COMPLY WITH A CAMBER TOLERANCE OF -0", + ¼". SINGLE POINT CAMBERING IS NOT ALLOWED.
5. STRUCTURAL STEEL SUPPLIER SHALL FURNISH BOLTS FOR O.S.H.A. BOLTED JOIST CONNECTIONS, ANGLE FRAMES FOR ROOF OPENING OR ROOFTOP UNIT SUPPORT AND COLUMN ANCHOR RODS.
6. ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH CSA 138, CSA-W59, CSA-W47.1 OR AWS D1.1, WHICHEVER IS APPLICABLE. UNLESS OTHERWISE NOTED, PROVIDE CONTINUOUS FILLET WELDS PER AISC REQUIREMENTS MEETING MINIMUM THICKNESSES ALLOWED PER THICKNESS OF MATERIAL WELDED. ALL FILLER MATERIAL SHALL HAVE A MINIMUM YIELD STRENGTH OF 58 KSI.
7. HOLES IN STEEL SHALL BE DRILLED OR PUNCHED. ALL SLOTTED HOLES SHALL BE PROVIDED WITH SMOOTH EDGES. BURNING OF HOLES AND TORCH CUTTING AT THE SITE IS NOT PERMITTED.
8. HEADED STUD LENGTHS INDICATED ON DRAWINGS ARE MINIMUM AFTER WELDING. WELD STUDS IN ACCORDANCE WITH AWS D1.1, SECTION F. STUDS MAY BE WELDED THROUGH THE DECK OR DIRECTLY TO THE STEEL MEMBER.
9. REFER TO SPECIFICATIONS FOR MATERIAL FINISH
10. ALL A325 STRUCTURAL BOLTS UNLESS NOTED OTHERWISE SHALL BE GALVANIZED. BROKEN-OFF ENDS OF TENSION CONTROL FASTENERS SHALL BE COATED WITH A MINIMUM OF 3 COATS OF A COLD GALVANIZED FINISH. A490 BOLTS SHALL NOT BE GALVANIZED.
11. ALL BOLTS NOTED AS FULLY TIGHTENED SHALL BE PRE-TENSIONED TO VALUES BELOW. BOLTS INDICATED AS SLIP-CRITICAL OR "SC" SHALL MEET THE REQUIREMENTS FOR SLIP-CRITICAL FAYING SURFACES W/ CLASS 'A' FAYING SURFACE.

PRETENSION SCHEDULE	
BOLT	PRETENSION (KIPS)
A325 3/4" DIA	28
A325 1" DIA	51

12. ALL BOLTS AND THREADED ROD NOT NOTED AS FULLY TIGHTENED OR SLIP-CRITICAL SHALL BE TIGHTENED TO THE SNUG TIGHT CONDITION, DEFINED AS THE TIGHTNESS THAT EXISTS WHEN ALL PLIES IN A JOINT ARE IN FIRM CONTACT. THIS MAY BE ATTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH.

IX. GENERAL NOTES:
A. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE MEANS AND MANNER OF CONSTRUCTION AND FOR THE SAFETY OF PERSONS AND PROPERTY. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL SAFETY PRECAUTIONS AND REGULATIONS DURING THE WORK. THE ENGINEER WILL NOT ADVISE ON NOR ISSUE DIRECTION AS TO SAFETY PRECAUTIONS AND PROGRAMS.
B. THE STRUCTURAL DRAWINGS HEREIN REPRESENT THE FINISHED STRUCTURE. DURING ERECTION OF THE STRUCTURE, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR TEMPORARY GUYING, SHORING, BRACING, FORMING, ETC. TO HOLD THE STRUCTURE IN PROPER ALIGNMENT AND TO WITHSTAND ALL LOADS TO WHICH THE STRUCTURE MAY BE SUBJECTED, INCLUDING LATERAL LOADS, TEMPERATURE DIFFERENTIALS, STOCKPILES OF MATERIAL AND EQUIPMENT. SUCH MEASURES SHALL BE LEFT IN PLACE AS LONG AS REQUIRED FOR SAFETY AND UNTIL ALL FRAMING AND CONNECTIONS INCLUDING ROOF DECK (AND SUPPORTING FLOORS) ARE IN PLACE. THE INVESTIGATION, DESIGN, SAFETY, ADEQUACY AND INSPECTION OF SUCH TEMPORARY MEASURES ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
C. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO APPROVAL BY THE ENGINEER.
D. ALL STRUCTURAL SYSTEMS WHICH ARE TO BE COMPOSED OF COMPONENTS TO BE FIELD ERECTED SHALL BE SUPERVISED BY THE SUPPLIER DURING MANUFACTURING, DELIVERY, HANDLING, STORAGE AND ERECTION IN ACCORDANCE WITH THE SUPPLIER'S INSTRUCTIONS AND REQUIREMENTS.
E. EXISTING CONSTRUCTION: WHEREVER APPLICABLE, PRIOR TO FABRICATION AND CONSTRUCTION, CONTRACTOR SHALL FIELD VERIFY ALL EXISTING ELEVATIONS, DIMENSIONS, DETAILS OF EXISTING STRUCTURAL CONNECTIONS AND OTHER CONDITIONS WHERE THEY AFFECT THIS CONSTRUCTION. NOTIFY THE ENGINEER IF THERE ARE ANY DEVIATIONS FROM THE CONTRACT DOCUMENTS. OBTAIN PRIOR APPROVAL FROM THE ENGINEER BEFORE MAKING ANY MODIFICATIONS TO THE EXISTING STRUCTURE NOT INDICATED ON THE CONTRACT DOCUMENTS. BEFORE PROCEEDING WITH ANY WORK WITHIN THE EXISTING FACILITY, THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE EXISTING STRUCTURE AND OTHER CONDITIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL NECESSARY BRACING, SHORING AND OTHER SAFEGUARDS TO MAINTAIN ALL PARTS OF THE EXISTING WORK IN A SAFE CONDITION DURING THE PROCESS OF DEMOLITION AND CONSTRUCTION AND TO PROTECT FROM DAMAGE THOSE PORTIONS OF THE EXISTING WORK WHICH ARE TO REMAIN. CONSIDER ALL HAZARDS DUE TO WELDING WITHIN THE EXISTING FACILITY, INCLUDING FIRE HAZARD, TOXIC SMOKE HAZARD AND LIQUEFACTION OF MEMBERS UNDER LOAD. VERIFY THE PRESENCE OF TOXIC MATERIALS PRIOR TO BIDDING THE WORK.
F. BAR GRATING SHALL BE ATTACHED TO BEAMS AND OTHER SUPPORTS AT 12" O.C. WITH MANUFACTURER'S CLIPS. TACK WELD BAR GRATING ONLY AS NECESSARY.
G. ARCHITECTURAL DRAWINGS, MECHANICAL AND ELECTRICAL DRAWINGS, FIRE PROTECTION, EQUIPMENT DRAWINGS AND RELATED ITEMS ARE BY OTHERS.
H. ALL OMISSIONS AND CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE CONSTRUCTION DRAWINGS AND/OR SPECIFICATIONS AND/OR EXISTING CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
I. CONTRACTOR SHALL REVIEW, STAMP, SIGN AND DATE ALL SHOP DRAWINGS PRIOR TO FORWARDING TO ARCHITECT/ENGINEER. THE ENGINEER'S REVIEW IS TO BE FOR CONFORMANCE WITH THE DESIGN CONCEPT AND GENERAL COMPLIANCE WITH THE RELEVANT CONTRACT DOCUMENTS. THE ENGINEER'S REVIEW DOES NOT RELIEVE THE CONTRACTOR OF THE SOLE RESPONSIBILITY TO REVIEW, CHECK AND COORDINATE THE SHOP DRAWINGS PRIOR TO SUBMISSION. THE CONTRACTOR REMAINS SOLELY RESPONSIBLE FOR ERRORS AND OMISSIONS ASSOCIATED WITH THE PREPARATION OF SHOP DRAWINGS AS THEY PERTAIN TO MEMBER SIZES, DETAILS, DIMENSIONS, ETC.
J. SUBMIT SHOP DRAWINGS IN THE FORM OF BLACKLINE PRINTS. IN NO CASE SHALL REPRODUCTION OF THE CONTRACT DRAWINGS BE USED AS SHOP DRAWINGS, AS A MINIMUM, SUBMIT THE FOLLOWING ITEMS FOR REVIEW:
1. CONCRETE MIX DESIGN(S).
2. REINFORCING STEEL SHOP DRAWINGS.
3. STRUCTURAL STEEL SHOP DRAWINGS.
OTHER SUBMITTALS MAY BE REQUIRED PER THE SPECIAL INSPECTIONS OR SEPARATE NOTES CONTAINED HEREIN.
K. COORDINATION WITH OTHER TRADES: THE CONTRACTOR SHALL COORDINATE ALL DEPRESSIONS, DIMENSIONS, ELEVATIONS, SLEEVES, CHASES, HANGERS, OPENINGS, INSERTS, ANCHORS, EQUIPMENT SUPPORTS, AND DETAILS WITH THE ENTIRE CONTRACT DOCUMENT PACKAGE, INCLUDING SPECIFICATIONS AND ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS. FOR CONCRETE AND MASONRY CONSTRUCTION THE INSERTS, EMBEDDED PLATES, ETC. SHALL NOT INTERFERE WITH REINFORCEMENT LOCATIONS.

SPECIAL INSPECTION:
L. SPECIAL INSPECTION IS REQUIRED IN ACCORDANCE WITH BRITISH COLUMBIA BUILDING CODE FOR THE FOLLOWING PORTIONS OF CONSTRUCTION:
1. PILING - DURING INSTALLATION
2. CONCRETE (EXCLUDING SLAB-ON-GRADE):
a. DURING TAKING OF TEST SPECIMENS.
b. REINFORCEMENT - PRIOR TO PLACING CONCRETE.
3. BOLTS INSTALLED IN CONCRETE.
4. STRUCTURAL WELDING:
a. ONLY APPROVED FABRICATORS IN ACCORDANCE WITH CSA-W47.1 SHALL BE USED.
b. FULL TIME INSPECTION IN ACCORDANCE WITH AISC 341 SHALL BE REQUIRED EXCEPT FOR THE FOLLOWING ITEMS WHICH REQUIRE PERIODIC INSPECTION, INCLUDING 100% VISUAL INSPECTION:
i. SINGLE-PASS FIELD-PERFORMED FILLET WELDS NOT EXCEEDING 5/16".
ii. FLOOR AND ROOF DECK WELDING.
iii. WELDED STUDS FOR STRUCTURAL DIAPHRAGM OR COMPOSITE SYSTEMS.
iv. GUARDRAILS
v. WELDED SHEET STEEL FOR COLD-FORMED STEEL FRAMING MEMBERS.
vi. WELDING OF STAIRS AND RAILING SYSTEMS.
vii. WELDING REINFORCING STEEL.
c. NON-DESTRUCTIVE TESTS ARE REQUIRED AS FOLLOWS:
i. ALL FULL PENETRATION WELDING
ii. ALL THRU-THICKNESS WELDS TO MATERIAL 1 ½" THICK OR GREATER.
d. WELDING OF REINFORCING STEEL.
e. VERIFICATION OF WELDER QUALIFICATIONS, WELDING PROCEDURES AND MATERIALS.
5. HIGH STRENGTH BOLTING (A325 AND A490)
a. VERIFICATION OF MATERIALS.
b. VERIFICATION OF TIGHTENING METHOD.
c. PERIODIC INSPECTION, INCLUDING RANDOM VERIFICATION OF PROPER TIGHTENING.
6. EXPANSION AND ADHESIVE ANCHORS.
7. MECHANICAL AND ELECTRICAL COMPONENTS:
a. PERIODIC INSPECTION DURING ANCHORAGE OF ALL ELECTRICAL EQUIPMENT.
b. PERIODIC INSPECTION DURING INSTALLATION OF PIPING OR UNITS CARRYING FLAMMABLE, COMBUSTIBLE OR HIGHLY TOXIC CONTENTS.
c. PERIODIC INSPECTION OF HVAC DUCTWORK CONTAINING HAZARDOUS MATERIALS.
d. INSTALLATION AND QA PROGRAM FOR THE FOLLOWING:
i. EQUIPMENT USING COMBUSTIBLE ENERGY SOURCES.
ii. ELECTRICAL MOTORS, TRANSFORMERS, SWITCHGEAR, AND MCC.
8. COMPONENT AND ATTACHMENT TESTING AND CERTIFICATION: REFER TO IBC SECTION 1708.2

M. REPORTS FOR THE ABOVE SHALL BE SUBMITTED TO THE ENGINEER. ALL REPORTS SHALL CLEARLY INDICATE COMPLIANCE OR NON-COMPLIANCE.
N. THE CONTRACTOR SHALL NOTIFY THE SPECIAL INSPECTOR AT LEAST 48 HOURS IN ADVANCE FOR WORK THAT WILL REQUIRE INSPECTION OR TESTING.
O. UPON COMPLETION OF EACH PHASE OF THE WORK, THE SPECIAL INSPECTOR SHALL SUBMIT A LETTER STATING COMPLIANCE WITH AND VARIANCES FROM THE PROJECT REQUIREMENTS (IF ANY).
P. UPON COMPLETION OF THE PROJECT, THE SPECIAL INSPECTOR SHALL SUBMIT A LETTER STATING COMPLIANCE WITH THE PROJECT REQUIREMENTS INCLUDING MEASURES TAKEN TO CORRECT PREVIOUSLY IDENTIFIED NON-COMPLYING ITEMS.

VANCOUVER FRASER PORT AUTHORITY
PROJECT PERMIT 304-047
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Signed:
Dated: March 30/2015

PRELIMINARY
NOT FOR CONSTRUCTION

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NO.	DATE	ISSUE/REVISION	DRWN	CHKD
A	1/30/15	ISSUED FOR REVIEW	PMA	CJB
B	3/09/15	ISSUE FOR BID	PMA	CJB

NO.	DATE	ISSUE/REVISION	DRWN	CHKD

DATE: 1/30/15
DRAWN: PMA
DESIGNED: WDH
CHECKED: CJB
APPROVED:

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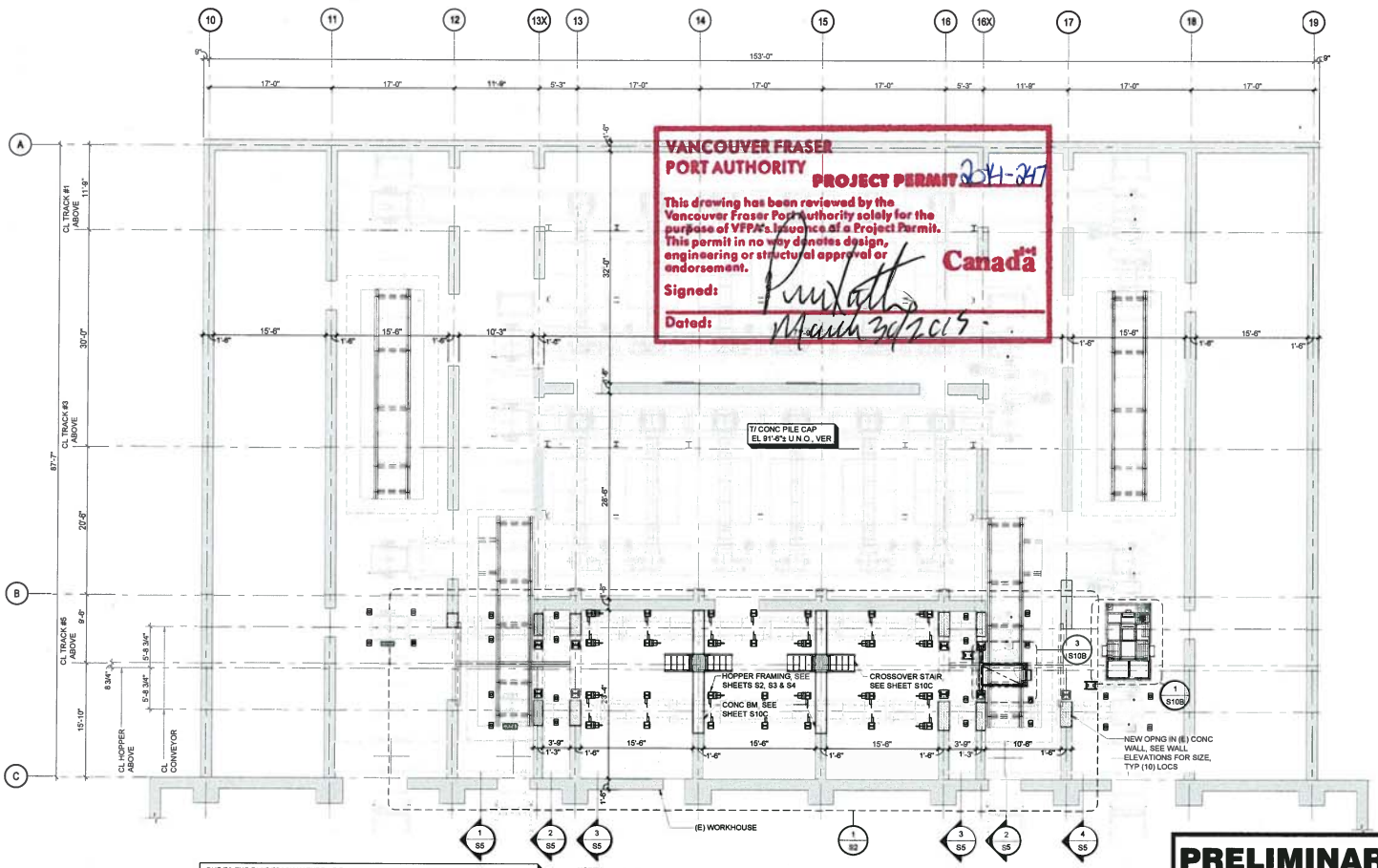
PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT
CLIENT: CARGILL LIMITED VANCOUVER, B.C.
CLIENT PROJECT NO

DRAWING TITLE: TRACK SHED BASEMENT STRUCTURAL NOTES
PROJECT NO: 140335
DRAWING NO: S0
SCALE: AS NOTED



VANCOUVER FRASER PORT AUTHORITY
PROJECT PERMIT 264-347
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Signed:
Dated: March 30/2015

BASEMENT PLAN

1/8" = 1'-0"

DUE TO THE FAST-TRACK NATURE OF ENGINEERING, MOST EQUIPMENT, TANKS AND PRE-ENGINEERED STRUCTURES IN THE ISSUE FOR BID DRAWINGS ARE PRELIMINARY. FINAL EQUIPMENT AND TANK DRAWINGS SHALL BE SUBMITTED TO VAA FOR APPROVAL PRIOR TO STEEL FABRICATION/ERECTION. EQUIPMENT DRAWINGS WILL BE USED BY VAA TO MODIFY/REVISE THE STRUCTURAL FRAMING AS NECESSARY, AND REVISED DRAWINGS WILL BE RE-ISSUED. CONTRACTOR IS RESPONSIBLE TO COORDINATE SHOP DRAWINGS WITH REVISED STRUCTURAL DRAWINGS PRIOR TO SUBMITTAL OF SHOP DRAWINGS. ALL SECONDARY FRAMING IS ON HOLD UNTIL FINAL EQUIPMENT DRAWINGS ARE RECEIVED AND STRUCTURAL DRAWINGS ARE RE-ISSUED. SECONDARY FRAMING INCLUDES ALL MEMBERS APART FROM COLUMNS, VERTICAL BRACES AND BEAMS ON PRIMARY STRUCTURAL GRIDLINES. CONTRACTOR WILL PROCEED AT THEIR OWN RISK IN THE ABSENCE OF FINAL COORDINATION BY VAA.

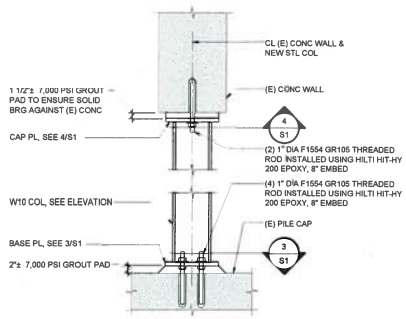
FINAL EQUIPMENT AND TANK DRAWINGS SHALL BE SUBMITTED TO VAA FOR APPROVAL PRIOR TO STEEL FABRICATION/ERECTION AND PRIOR TO PROCUREMENT OF CONCRETE CONSTRUCTION FOR FOUNDATIONS. EQUIPMENT DRAWING WILL BE USED BY VAA TO MODIFY/REVISE THE STRUCTURAL AND FOUNDATION FRAMING AS NECESSARY. SUCH REVISIONS INCLUDE BUT NOT LIMITED TO SIZE AND LOCATION OF STRUCTURAL MEMBERS, CONCRETE FOUNDATIONS, ANCHOR RODS, AND OTHER RELATED ITEMS WHICH DIRECTLY SUPPORT PROCESS EQUIPMENT, OR STRUCTURES THAT ARE AFFECTED BY IT. CONTRACTOR AND CONTRACTOR'S FABRICATOR OR SUBCONTRACTOR WILL PROCEED AT THEIR OWN RISK IN THE ABSENCE OF FINAL COORDINATION BY VAA.

ESTIMATING CONTRACTOR SHALL VISIT THE EXISTING FACILITY. CONTRACTOR SHALL USE ITS EXPERIENCE TO PROVIDE A REASONABLE ESTIMATE IN THEIR FINAL GMP FOR COORDINATION WITH AND MODIFICATION TO EXISTING CONDITIONS, AND VERIFY ALL EXISTING SITE CONDITIONS.

ALL DIMENSIONS AND ELEVATIONS OF EXISTING CONDITIONS INCLUDING STRUCTURES, FOUNDATIONS, EQUIPMENT AND GRIDLINES ARE BASED ON EXISTING DRAWINGS AND ARE FOR REFERENCE ONLY. CONTRACTOR TO PROVIDE DETAILED SURVEY TO VERIFY EXISTING CONDITIONS PRIOR TO FABRICATION AND CONSTRUCTION.

PRELIMINARY
NOT FOR CONSTRUCTION

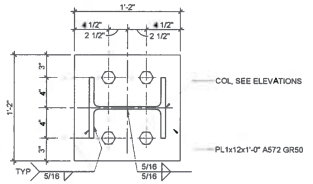
SHEET NOTES:
1. FOR STRUCTURAL NOTES SEE SHEETS S0.
2. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS, ELEVATIONS, CONDITIONS, ETC. PRIOR TO SUBMITTALS OF SHOP DRAWINGS (QC TO CLOUD AND POINT OUT REVISIONS ON SHOP DRAWINGS SUBMITTED). ANY SUCH FABRICATION, OR RELATING TO FITTED MEMBERS, OR ANY CONSTRUCTION PROCEEDING WITHOUT ALL VERIFICATION NOTED SHALL BE AT CONTRACTOR'S RISK AND EXPENSE, SUCH AS BUT NOT LIMITED TO, REPAIR, RECONSTRUCTION, REDESIGN, ETC.
3. CONTRACTOR TO VERIFY ALL DIMENSIONS AND EQUIPMENT SUPPORTS WITH MANUFACTURER PRIOR TO SUBMITTAL OF SHOP DRAWINGS.
4. CONTRACTOR TO SEQUENCE CONSTRUCTION TO ENSURE ADEQUATE CLEARANCE FOR INSTALLATION OF CONVEYORS.



NOTES:
1. CONTRACTOR TO SNUG TIGHTEN LEVELING NUTS AFTER INSTALLATION & CURING OF GROUT PAD AT TOP OF COLUMN.
2. CONTRACTOR TO GROUT BASE PL & CURE TO MIN 3,000 PSI COMPRESSIVE STRENGTH PRIOR TO CUTTING OF NEW OPENING IN CONCRETE WALL.

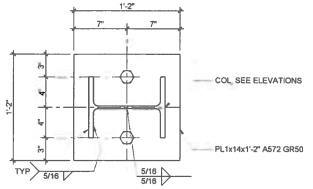
SECTION

3/4" = 1'-0"



PLAN VIEW DETAIL

1 1/2" = 1'-0"



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NO.	DATE	ISSUE/REVISION	DRWN	CHKD
A	1/30/15	ISSUED FOR REVIEW	CMB	CJB
B	3/05/15	ISSUE FOR BID	PMA	CJB

DATE: 1/30/15
DRAWN: CMB
DESIGNED: WDH
CHECKED: CJB
APPROVED:

Cargill™

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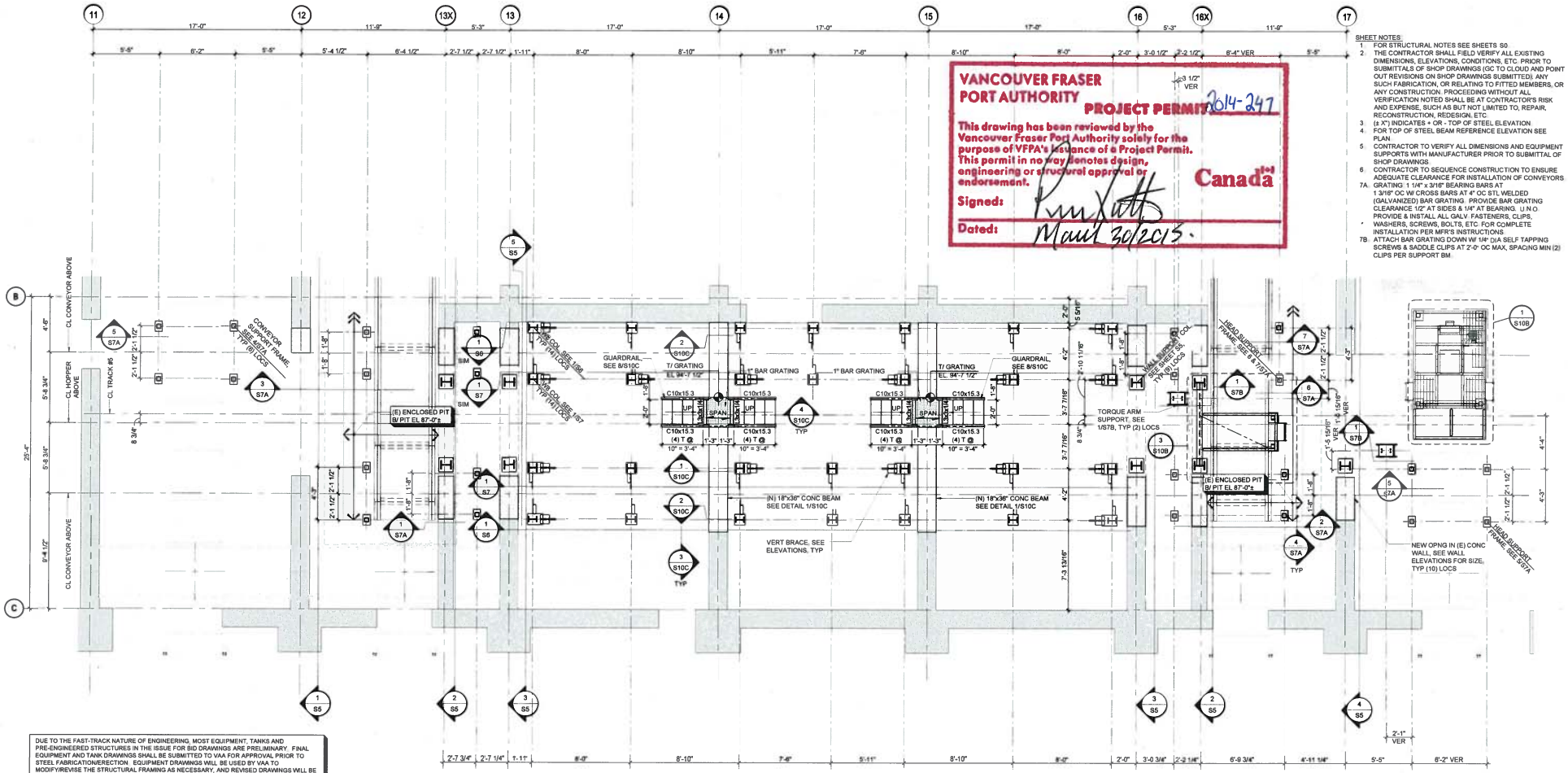
info@vaaeng.com

PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT
CLIENT: CARGILL LIMITED VANCOUVER, B.C.
CLIENT PROJECT NO.

DRAWING TITLE: TRACK SHED BASEMENT PLAN
PROJECT NO. 140335
DRAWING NO. S1
SCALE: AS NOTED



SHEET NOTES:

1. FOR STRUCTURAL NOTES SEE SHEETS S0.
2. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS, ELEVATIONS, CONDITIONS, ETC. PRIOR TO SUBMITTALS OF SHOP DRAWINGS (GC TO CLOUD AND POINT OUT REVISIONS ON SHOP DRAWINGS SUBMITTED). ANY SUCH FABRICATION, OR RELATING TO FITTED MEMBERS, OR ANY CONSTRUCTION. PROCEEDING WITHOUT ALL VERIFICATION NOTED SHALL BE AT CONTRACTOR'S RISK AND EXPENSE, SUCH AS BUT NOT LIMITED TO, REPAIR, RECONSTRUCTION, REDESIGN, ETC.
3. (± X") INDICATES + OR - TOP OF STEEL ELEVATION.
4. FOR TOP OF STEEL BEAM REFERENCE ELEVATION SEE PLAN.
5. CONTRACTOR TO VERIFY ALL DIMENSIONS AND EQUIPMENT SUPPORTS WITH MANUFACTURER PRIOR TO SUBMITTAL OF SHOP DRAWINGS.
6. CONTRACTOR TO SEQUENCE CONSTRUCTION TO ENSURE ADEQUATE CLEARANCE FOR INSTALLATION OF CONVEYORS.

7A. GRATING: 1 1/4" x 3/16" BEARING BARS AT 1 3/16" OC W/ CROSS BARS AT 4" OC STL WELDED (GALVANIZED) BAR GRATING. PROVIDE BAR GRATING CLEARANCE 1/2" AT SIDES & 1/4" AT BEARING. U.N.O. PROVIDE & INSTALL ALL GALV. FASTENERS, CLIPS, WASHERS, SCREWS, BOLTS, ETC. FOR COMPLETE INSTALLATION PER MFR'S INSTRUCTIONS.

7B. ATTACH BAR GRATING DOWN W/ 1/4" DIA SELF TAPPING SCREWS & SADDLE CLIPS AT 2'-0" OC MAX, SPACING MIN (2) CLIPS PER SUPPORT BM.

VANCOUVER FRASER PORT AUTHORITY
PROJECT PERMIT 2014-247
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Signed:
Dated: March 30/2015.

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1/S2 ENLARGED BASEMENT PLAN

T/ CONC PILE CAP EL 91'-6" U.N.O., VER

1/4" = 1'-0"

NORTH

PRELIMINARY
NOT FOR CONSTRUCTION

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NO	DATE	ISSUE/REVISION	DRWN	CHKD

DATE: 1/30/15
DRAWN: CMB
DESIGNED: WDH
CHECKED: CJB
APPROVED:

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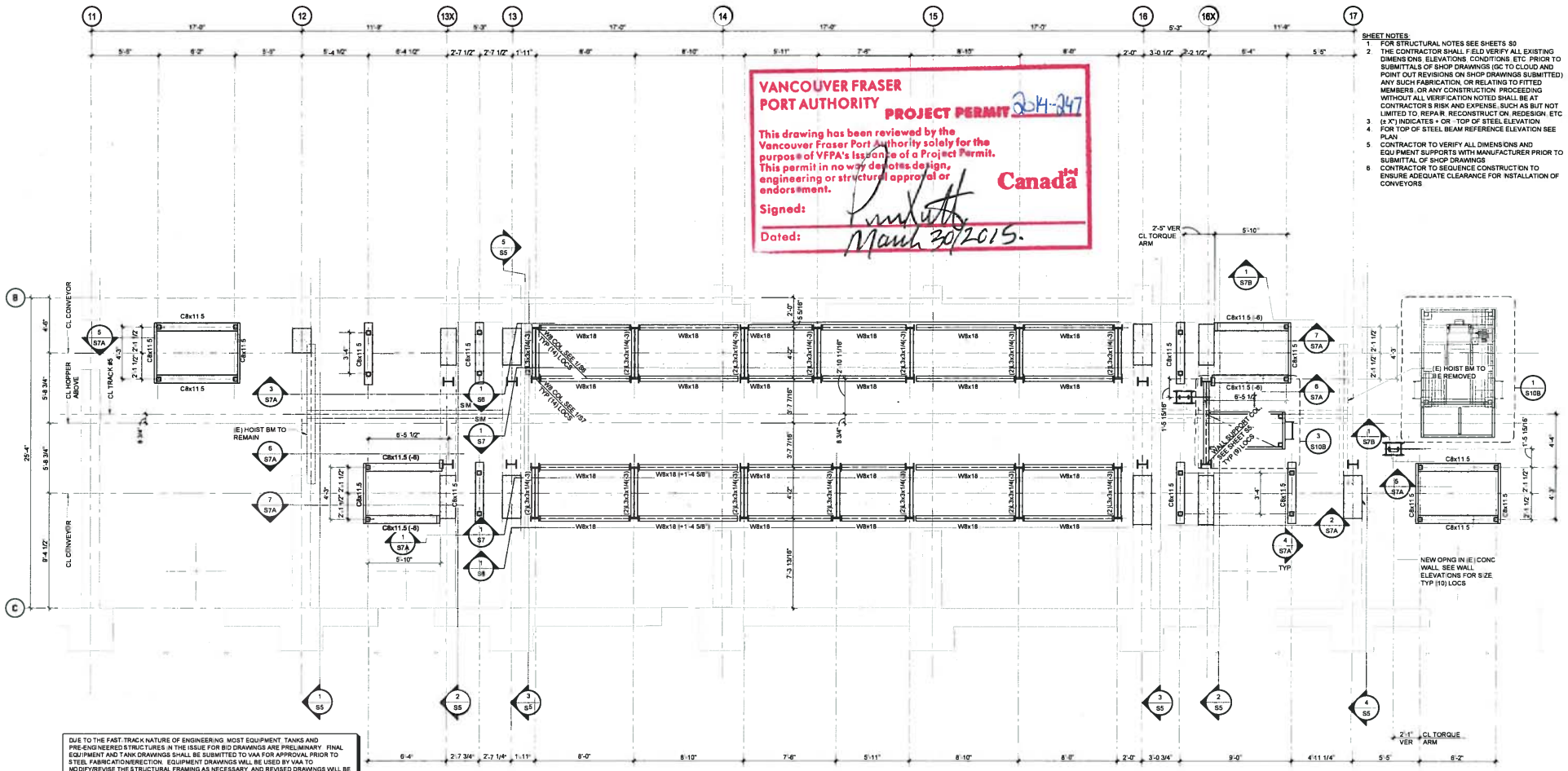
PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT
CLIENT: CARGILL LIMITED VANCOUVER, B.C.
CLIENT PROJECT NO.

DRAWING TITLE: TRACK SHED ENLARGED BASEMENT PLANS
PROJECT NO. 140335
DRAWING NO. S2
SCALE: AS NOTED



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VANCOUVER FRASER PORT AUTHORITY
PROJECT PERMIT 14-347
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Canada
Signed:
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NOTE: CONVEYOR MANUFACTURER TO COORDINATE FLANGE LOCATIONS AND FOOT LOCATIONS AND HEIGHTS WITH CONVEYOR SUPPORT LOCATIONS SHOWN ON THIS SHEET.

1 S3 ENLARGED BASEMENT FRAMING PLAN
T/ STL BM EL 97'-5 7/8" U.N.O.
1/4" = 1'-0"

NORTH

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NOT FOR CONSTRUCTION

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DATE 1/30/15
DRAWN CMB
DESIGNED WDH
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APPROVED

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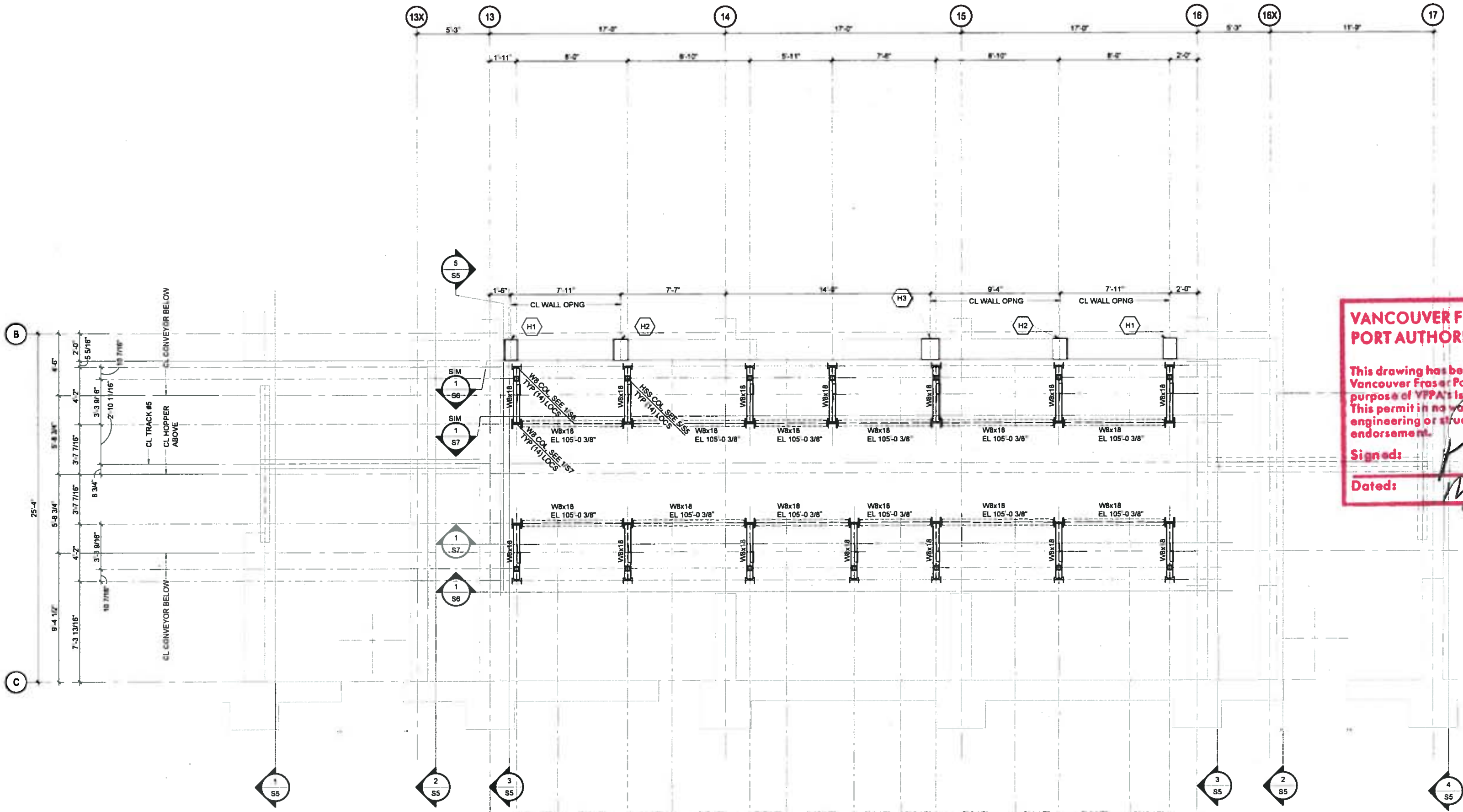
info@vaaeng.com

PROJECT
VANCOUVER TERMINAL
TRACK EXPANSION PROJECT

CLIENT
CARGILL LIMITED
VANCOUVER, B.C.
CLIENT PROJECT NO.

DRAWING TITLE
TRACK SHED
ENLARGED BASEMENT PLANS

PROJECT NO. 14|035
SCALE AS NOTED
DRAWING NO. S3



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VANCOUVER FRASER PORT AUTHORITY
PROJECT PERMIT 2014-247
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Signed: [signature]
Dated: March 30/2015
Canada

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1/S4 ENLARGED HOPPER FRAMING PLAN

T/ STL BM EL 102'-6 1/8" U.N.O. 1/4" = 1'-0"

NORTH

PLAN NOTES

- H1: 11" DIA HOLE CTR HOLE EL 110'-8" VERIFY SIZE & LOCATION PRIOR TO INSTALLATION
- H2: 1'-0" DIA HOLE CTR HOLE EL 110'-8" VERIFY SIZE & LOCATION PRIOR TO INSTALLATION
- H3: 1'-3" DIA HOLE CTR HOLE EL 110'-8" VERIFY SIZE & LOCATION PRIOR TO INSTALLATION

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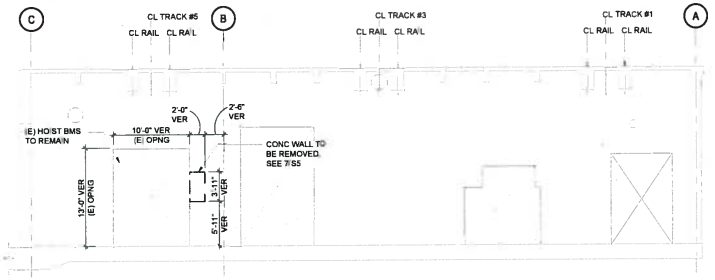
PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT
CLIENT: CARGILL LIMITED VANCOUVER, B.C.
CLIENT PROJECT NO

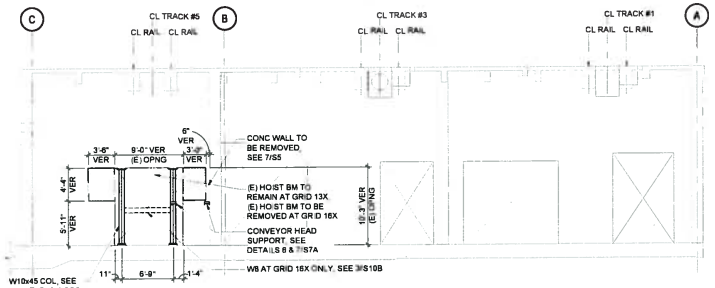
DRAWING TITLE: TRACK SHED HOPPER FRAMING PLAN
PROJECT NO 140335
SCALE AS NOTED
DRAWING NO S4



1 S5 WALL ELEVATION AT GRID 12

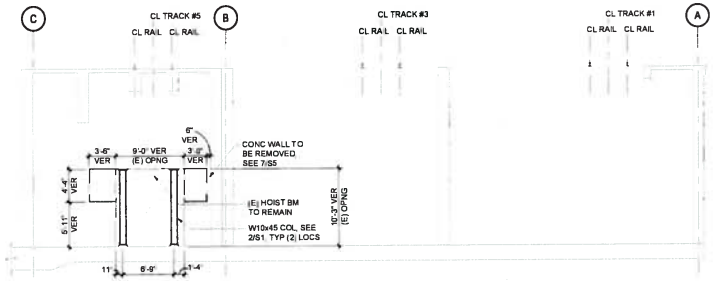
1/8" = 1'-0"

4 S5 WALL ELEVATION AT GRID 17



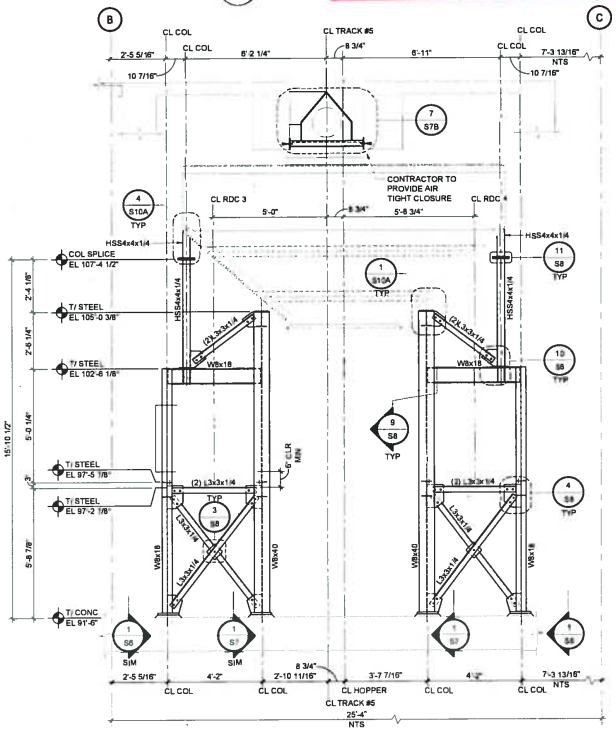
2 S5 WALL ELEVATION AT GRID 13X AND GRID 16X

1/8" = 1'-0"



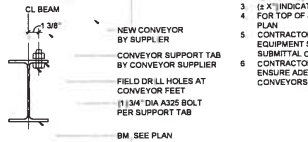
3 S5 WALL ELEVATION AT GRID 13 AND GRID 16

1/8" = 1'-0"



5 S5 HOPPER / CONVEYOR SUPPORT ELEVATION

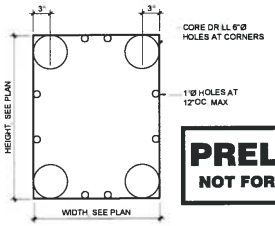
3/8" = 1'-0"



6 S5 CONVEYOR CONN DETAIL

1 1/2" = 1'-0"

NOTES
1. ADDITIONAL STRUCTURAL FRAMING NOT SHOWN FOR CLARITY
2. THE CONTRACTOR SHALL COORDINATE W THE CONVEYOR VENDOR REGARDING THE CONVEYOR SUPPORT LOCATIONS AND HEIGHTS



7 S5 NEW WALL OPNG DETAIL

3/4" = 1'-0"

NOTES FOR CUTTING MISC RECTANGULAR/SQUARE OPENINGS

1. CORE DRILL 6" DIA HOLES AT CORNERS, EACH SIDE OF SLIP-FORM WALL.
2. DRILL A SERIES OF 1" DIA. HOLES TANGENT TO THE CUT LINE, AS SHOWN, @ 12"OC MAX THIS IS A PREVENTATIVE MEASURE TO MINIMIZE CRACKS RELATED TO THE NEW OPENING
3. SAW CUT THE EDGES FROM CORE TO CORE EACH SIDE OF SLIP-FORM WALL
4. DO NOT CUT OPENINGS ANY LARGER THAN IS REQ'D
5. DO NOT SAW CUT BEYOND CORNERS OF OPENINGS

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NO	DATE	ISSUE/REVISION	DRWN	CHKD

DATE 1/30/15
DRAWN CMB
DESIGNED WDH
CHECKED CJB
APPROVED

Cargill™

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2300 Berkshire Lane N, Suite 200
Plymouth, MN 55441
763 559 9100
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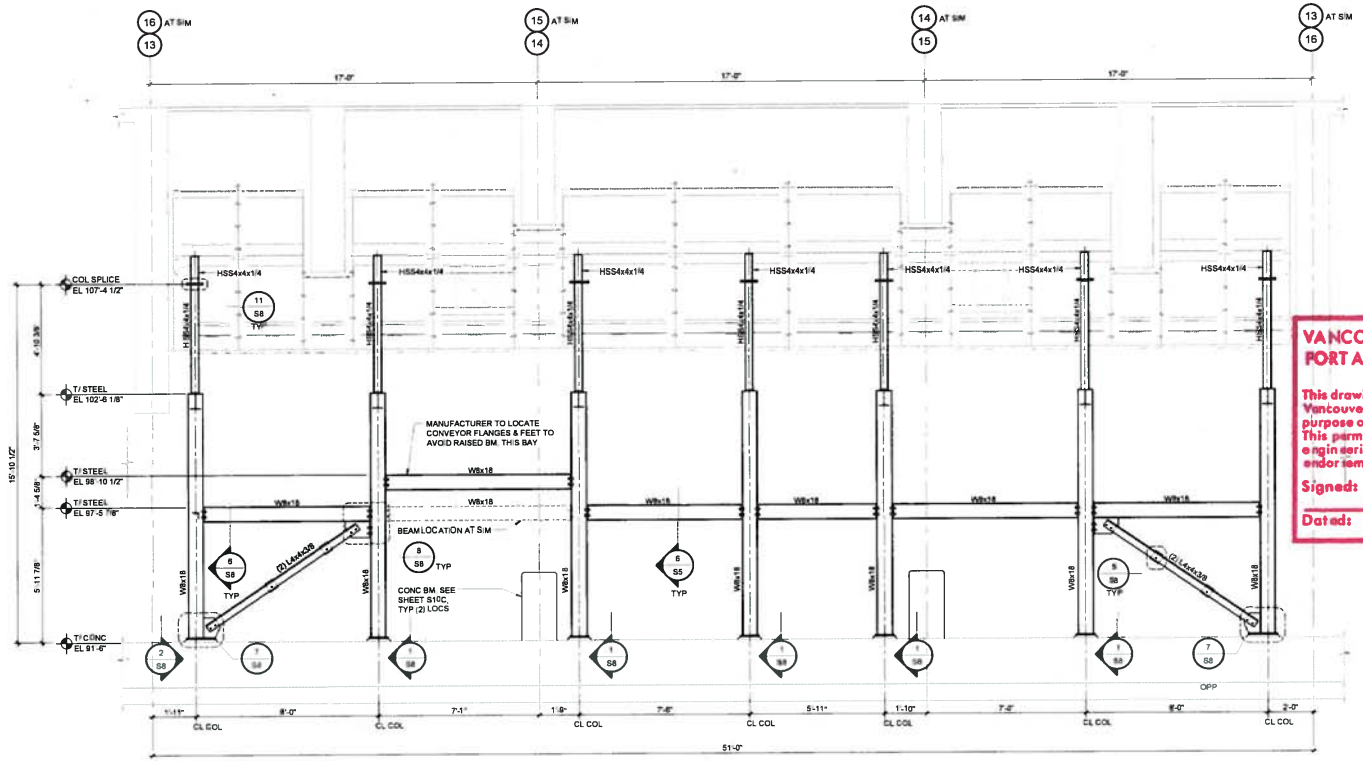
PROJECT
VANCOUVER TERMINAL
TRACK EXPANSION PROJECT

CLIENT
CARGILL LIMITED
VANCOUVER, B.C.
CLIENT PROJECT NO

DRAWING TITLE
TRACK SHED BASEMENT
WALL ELEVATIONS / HOPPER & CONVEYOR SUPPORT ELEVATION

PROJECT NO. 140335
DRAWING NO. S5
SCALE AS NOTED



1 S6 HOPPER / CONVEYOR SUPPORT ELEVATION

3/8" = 1'-0"

SHEET NOTES:
1. FOR STRUCTURAL NOTES SEE SHEETS S0
2. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS, ELEVATIONS, CONDITIONS, ETC. PRIOR TO SUBMITTALS OF SHOP DRAWINGS (GC TO CLOUD AND PO NT OUT REVISIONS ON SHOP DRAWINGS SUBMITTED). ANY SUCH FABRICATION OR RELATING TO FITTED MEMBERS, OR ANY CONSTRUCTION PROCEEDING WITHOUT ALL VERIFICATION NOTED SHALL BE AT CONTRACTOR'S RISK AND EXPENSE, SUCH AS BUT NOT LIMITED TO, REPAIR, RECONSTRUCTION, REDESIGN, ETC.
3. (±.X") INDICATES + OR - TOP OF STEEL ELEVATION
4. FOR TOP OF STEEL BEAM REFERENCE ELEVATION SEE PLAN
5. CONTRACTOR TO VERIFY ALL DIMENSIONS AND EQUIPMENT SUPPORTS WITH MANUFACTURER PRIOR TO SUBMITTAL OF SHOP DRAWINGS
6. CONTRACTOR TO SEQUENCE CONSTRUCTION TO ENSURE ADEQUATE CLEARANCE FOR INSTALLATION OF CONVEYORS

VANCOUVER FRASER PORT AUTHORITY
PROJECT PERMIT 2014-247
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Canada
Signed:
Dated: March 3/2015

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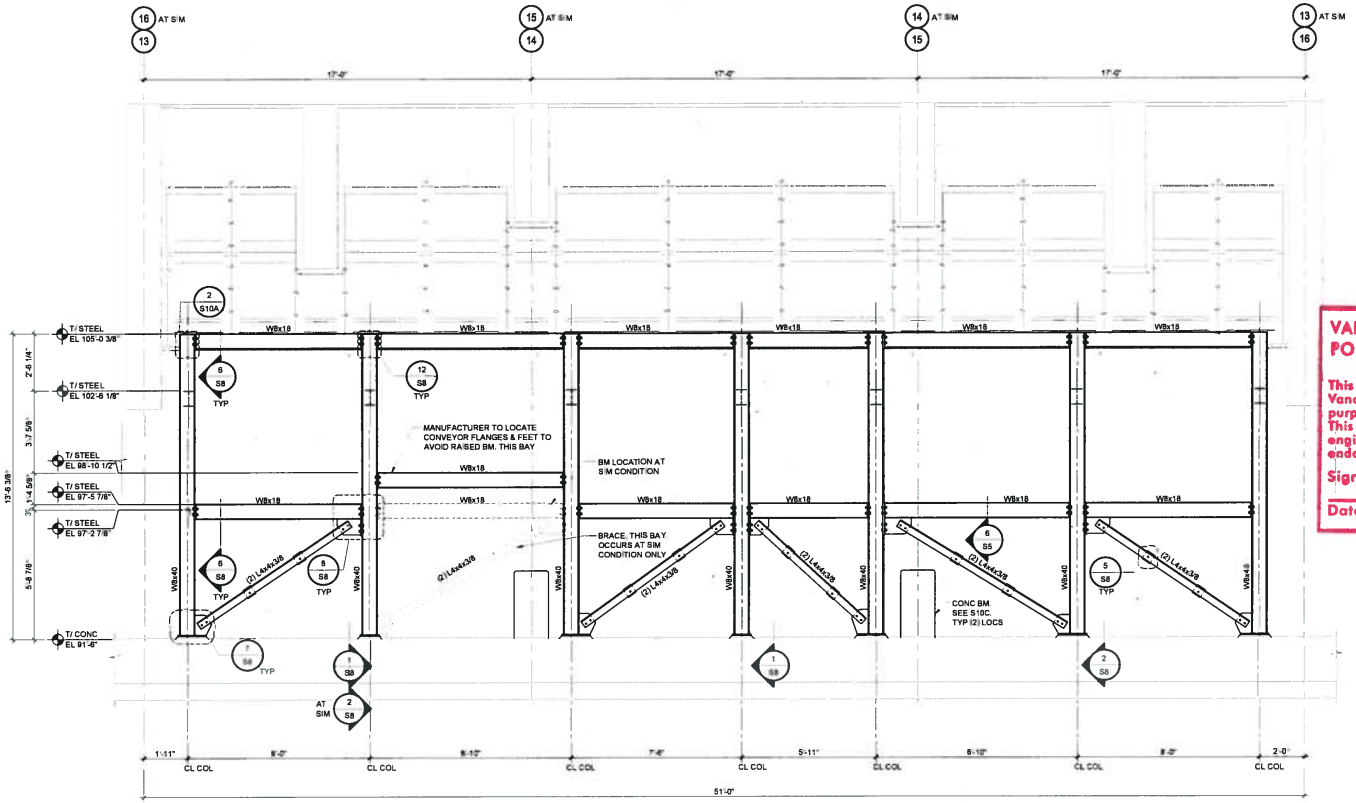
PROJECT
VANCOUVER TERMINAL TRACK EXPANSION PROJECT

CLIENT
CARGILL LIMITED
VANCOUVER, B.C.
CLIENT PROJECT NO.

DRAWING TITLE
HOPPER/CONVEYOR SUPPORT ELEVATION

PROJECT NO 140335
DRAWING NO S6
SCALE AS NOTED



1 S7 HOPPER / CONVEYOR SUPPORT ELEVATION

3/8" = 1'-0"

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VANCOUVER FRASER PORT AUTHORITY
PROJECT PERMIT 2014-247
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Dated: March 30/2015
Canada

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DATE: 1/30/15
DRAWN: CMB
DESIGNED: WDH
CHECKED: CJB
APPROVED:

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www.vaaeng.com
info@vaaeng.com

PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT
CLIENT: CARGILL LIMITED VANCOUVER, B.C.
CLIENT PROJECT NO:

DRAWING TITLE: HOPPER/CONVEYOR SUPPORT ELEVATION
PROJECT NO: 140335
DRAWING NO: S7
SCALE: AS NOTED

VANCOUVER FRASER PORT AUTHORITY
PROJECT PERMIT 2014-247
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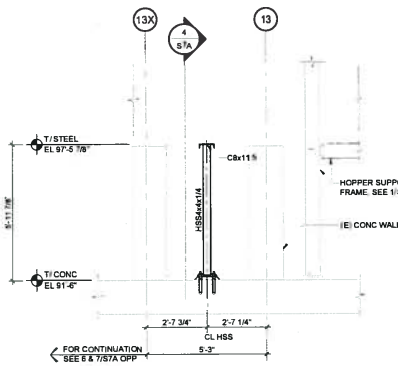
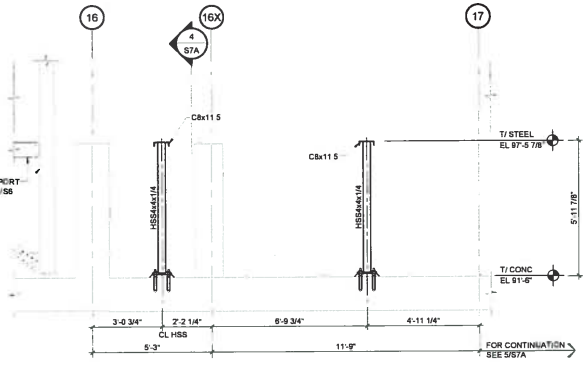
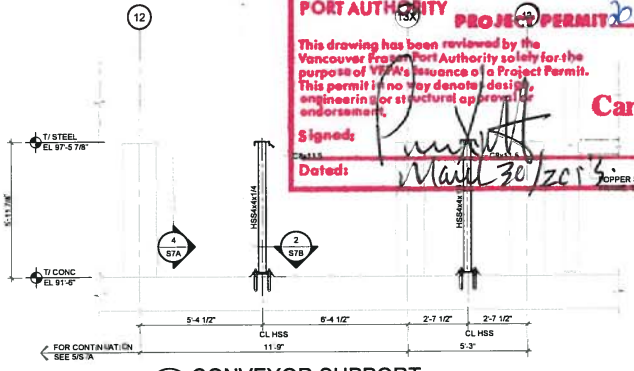


1 S7A CONVEYOR SUPPORT 3/8" = 1'-0"

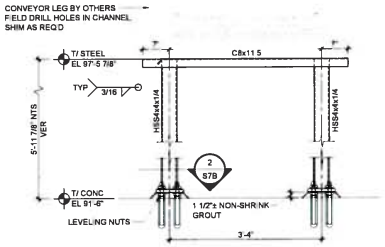
NOTE: CONVEYOR MANUFACTURER TO COORDINATE FLANGE LOCATIONS AND FOOT LOCATIONS & HEIGHTS WITH CONVEYOR SUPPORT LOCATIONS SHOWN ON THIS SHEET



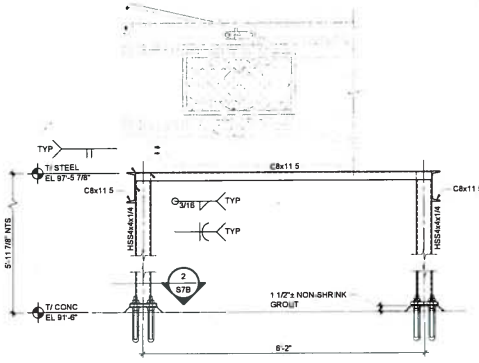
2 S7A CONVEYOR SUPPORT 3/8" = 1'-0"



3 S7A CONVEYOR SUPPORT 3/8" = 1'-0"

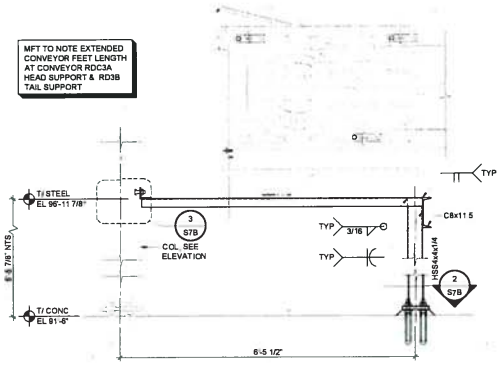


4 S7A CONVEYOR SUPPORT 3/4"=1'-0"



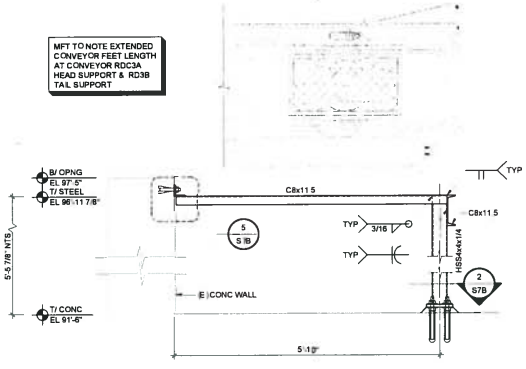
5 S7A CONVEYOR SUPPORT 3/4"=1'-0"

MFT TO NOTE EXTENDED CONVEYOR FEET LENGTH AT CONVEYOR RDC3A HEAD SUPPORT & RD3B TAIL SUPPORT



6 S7A CONVEYOR SUPPORT 3/4"=1'-0"

MFT TO NOTE EXTENDED CONVEYOR FEET LENGTH AT CONVEYOR RDC3A HEAD SUPPORT & RD3B TAIL SUPPORT



7 S7A CONVEYOR SUPPORT 3/4"=1'-0"

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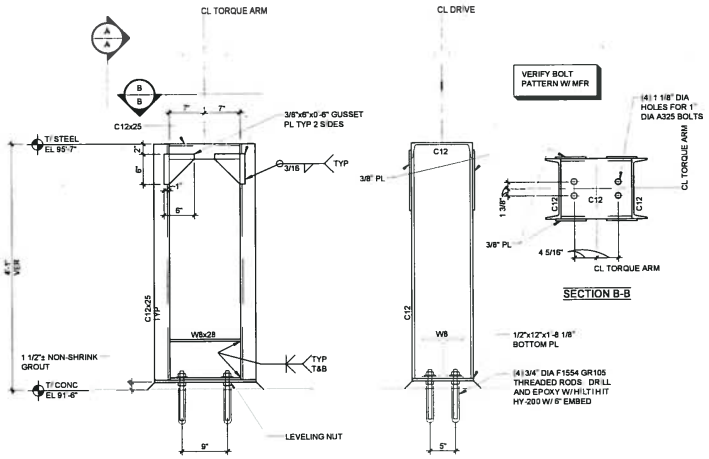
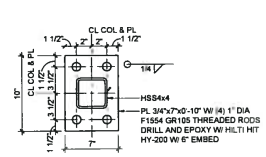
PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT
CLIENT: CARGILL LIMITED VANCOUVER, B.C.
CLIENT PROJECT NO

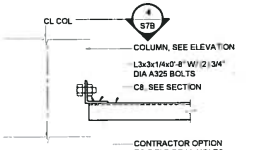
DRAWING TITLE: CONVEYOR/HOPPER SUPPORT SECTIONS
PROJECT NO M 13335
DRAWING NO: S7A
SCALE: AS NOTED



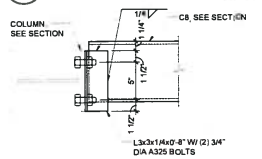
1 S7B CONVEYOR TORQUE ARM FRAME 1"=1'-0"



2 S7B DETAIL 1 1/2"=1'-0"

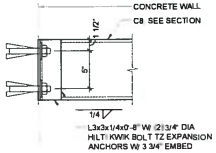


3 S7B DETAIL 1 1/2"=1'-0"

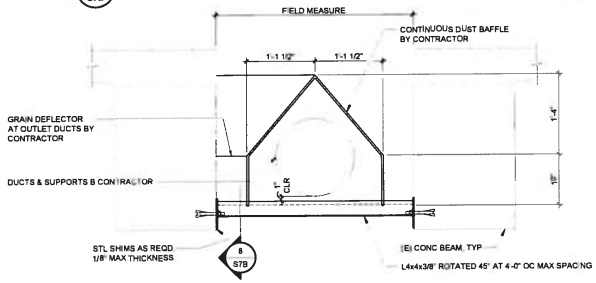


4 S7B PLAN VIEW DETAIL 1 1/2"=1'-0"

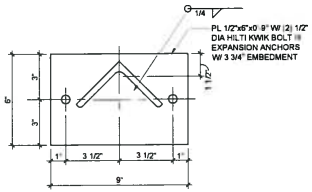
5 S7B DETAIL 1 1/2"=1'-0"



6 S7B PLAN VIEW DETAIL 1 1/2"=1'-0"



7 S7B DUST BAFFLE CONN DETAIL 1"=1'-0"



8 S7B DETAIL 3"=1'-0"

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VANCOUVER FRASER PORT AUTHORITY PROJECT PERMIT 2014-247

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1. FOR STRUCTURAL NOTES SEE SHEETS S0.
2. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS, ELEVATIONS, CONDITIONS, ETC. PRIOR TO SUBMITTALS OF SHOP DRAWINGS. GC TO CLOUD AND POINT OUT REVISIONS ON SHOP DRAWINGS SUBMITTED, ANY SUCH FABRICATION, OR RELATING TO FITTED MEMBERS, OR ANY CONSTRUCTION. PROCEEDING WITHOUT ALL VERIFICATION NOTED SHALL BE AT CONTRACTOR'S RISK AND EXPENSE, SUCH AS BUT NOT LIMITED TO, REPAIR, RECONSTRUCTION, REDESIGN, ETC.
3. CONTRACTOR TO VERIFY ALL DIMENSIONS AND EQUIPMENT SUPPORTS WITH MANUFACTURER PRIOR TO SUBMITTAL OF SHOP DRAWINGS.
4. CONTRACTOR TO SEQUENCE CONSTRUCTION TO ENSURE ADEQUATE CLEARANCE FOR INSTALLATION OF CONVEYORS.

PRELIMINARY
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NO	DATE	ISSUE/REVISION	DRWN	CHKD

DATE 1/30/15
DRAWN CMB
DESIGNED WDH
CHECKED CJB
APPROVED

Cargill™

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PROJECT
VANCOUVER TERMINAL TRACK EXPANSION PROJECT

CLIENT
CARGILL LIMITED
VANCOUVER, B.C.

CLIENT PROJECT NO

DRAWING TITLE
CONVEYOR/HOPPER SUPPORT SECTIONS

PROJECT NO 140335
DRAWING NO S7B
SCALE AS NOTED

VANCOUVER FRASER PORT AUTHORITY PROJECT PERMIT 2014-247

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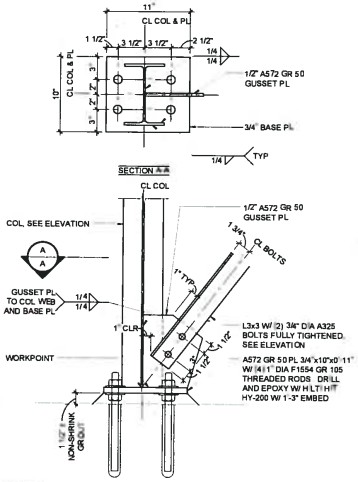
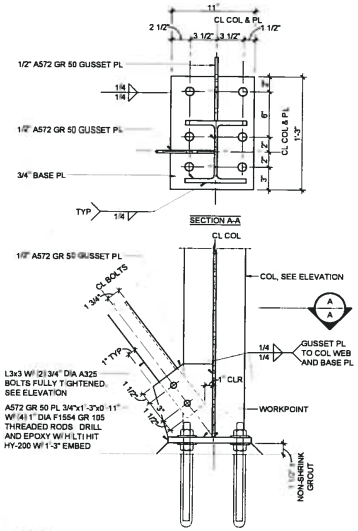
Signed:

Dated: March 30/2015



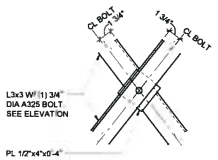
1 S8 BRACE CONN DETAIL

NOTE: FRONT COL FLANGE NOT SHOWN FOR CLARITY 1 1/2" = 1'-0"



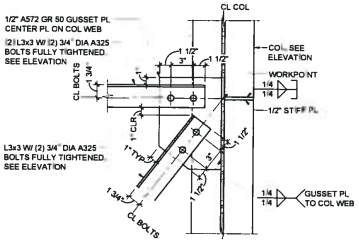
2 S8 BRACE CONN DETAIL

NOTE: FRONT COL FLANGE NOT SHOWN FOR CLARITY 1 1/2" = 1'-0"



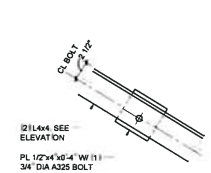
3 S8 SPACER PL DETAIL

1 1/2" = 1'-0"



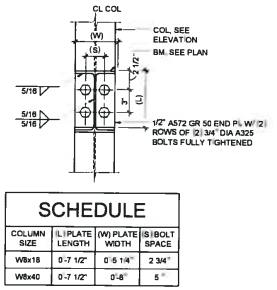
4 S8 BRACE CONN DETAIL

NOTE: FRONT COL FLANGE NOT SHOWN FOR CLARITY 1 1/2" = 1'-0"



5 S8 SPACER PL DETAIL

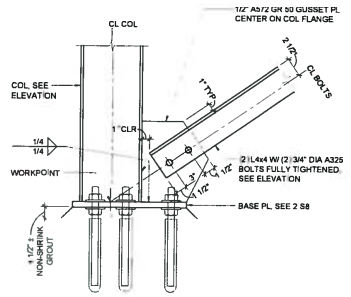
1 1/2" = 1'-0"



SCHEDULE			
COLUMN SIZE	(L) PLATE LENGTH	(W) PLATE WIDTH	(S) BOLT SPACE
W8x18	0'-7 1/2"	0'-5 1/4"	2 3/4"
W8x40	0'-7 1/2"	0'-8"	5"

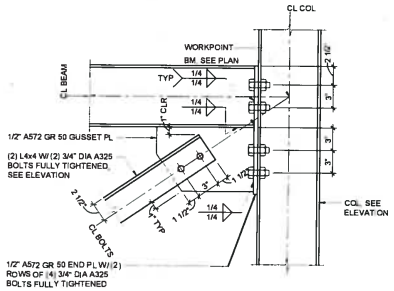
6 S8 BM TO COL CONN DETAIL

1 1/2" = 1'-0"



7 S8 BRACE CONN DETAIL

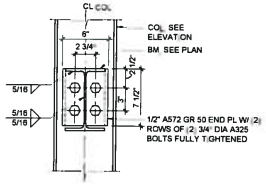
NOTE: ATSIM, OMIT BRACE CONNECTION 1 1/2" = 1'-0"



SCHEDULE			
COLUMN SIZE	PLATE LENGTH	PLATE WIDTH	BOLT SPACE
W8x18	1'-5"	0'-6"	2 3/4"
W8x40	1'-5"	0'-9"	5"

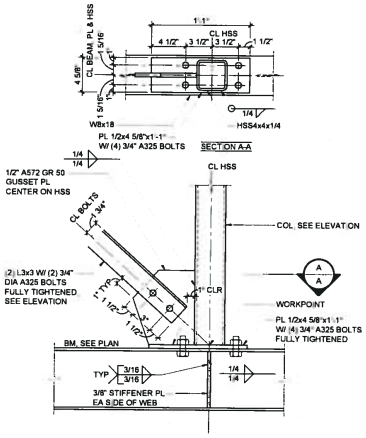
8 S8 BRACE CONN DETAIL

NOTE: AT SIM, OMIT BRACE ON ONE SIDE 1 1/2" = 1'-0"



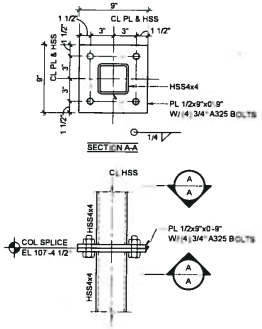
9 S8 BM TO COL CONN DETAIL

1 1/2" = 1'-0"



10 S8 BRACE CONN DETAIL

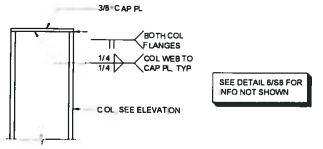
1 1/2" = 1'-0"



11 S8 COL SPLICE DETAIL

1 1/2" = 1'-0"

PRELIMINARY
NOT FOR CONSTRUCTION



12 S8 CAP PLATE DETAIL

1 1/2" = 1'-0"

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PROJECT
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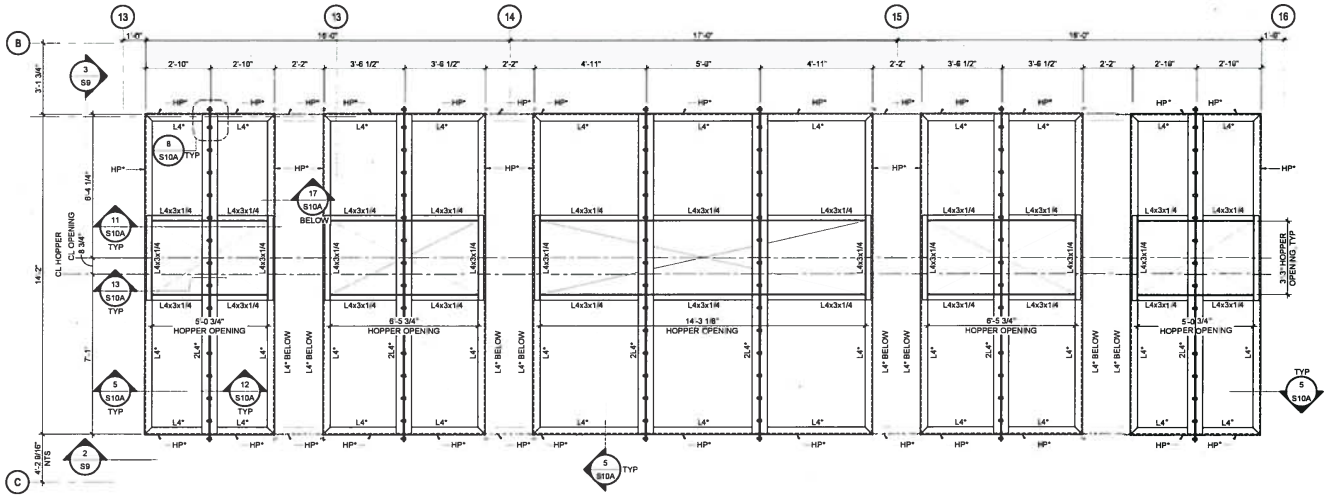
CLIENT
CARGILL LIMITED
VANCOUVER, B.C.

CLIENT PROJECT NO

DRAWING TITLE
CONVEYOR/HOPPER SUPPORT DETAILS

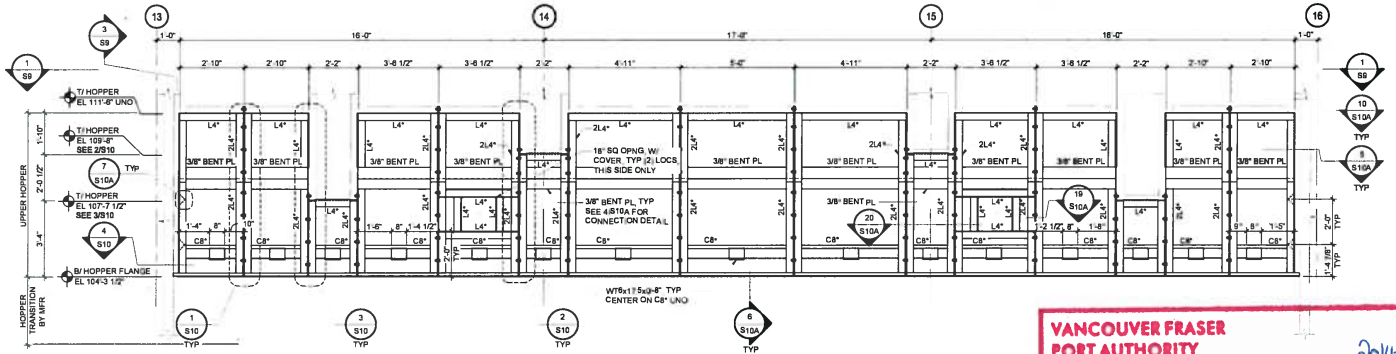
PROJECT NO 140335
DRAWING NO S8
SCALE AS NOTED



1/S9 HOPPER TOP FRAMING PLAN

3/8" = 1'-0"

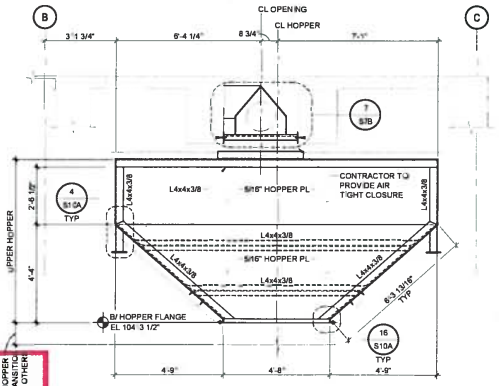
NOTES
1. HOPPER PLATE THICKNESS SHALL BE 5/16" U N O
2. HP* DENOTES 5/16" HOPPER PLATE
3. L4* DENOTES L4x4x3/8
4. 2L4* DENOTES (2) L4x4x3/8



2/S9 HOPPER SECTION

3/8" = 1'-0"

NOTES
1. THE CONVEYOR SUPPLIER SHALL BE RESPONSIBLE FOR PROVIDING THE HOPPER TRANSITION. THE CONVEYOR SUPPLIER SHALL COORDINATE W/ THE CONTRACTOR REGARDING THE FLANGE DETAILS BETWEEN THE UPPER HOPPER AND HOPPER TRANSITION
2. HOPPER PL THICKNESS SHALL BE 5/16" U N O
3. HP* DENOTES 5/16" HOPPER PLATE
4. C8* DENOTES C8x11.5
5. L4* DENOTES L4x4x3/8
6. 2L4* DENOTES (2) L4x4x3/8



3/S9 HOPPER SECTION

3/8" = 1'-0"

DUE TO THE FAST-TRACK NATURE OF ENGINEERING, MOST EQUIPMENT, TANKS AND PRE-ENGINEERED STRUCTURES IN THE ISSUE FOR BID DRAWINGS ARE PRELIMINARY. FINAL EQUIPMENT AND TANK DRAWINGS SHALL BE SUBMITTED TO VAA FOR APPROVAL PRIOR TO STEEL FABRICATION/ERECTION. EQUIPMENT DRAWINGS WILL BE USED BY VAA TO MODIFY/REVISE THE STRUCTURAL FRAMING AS NECESSARY, AND REVISED DRAWINGS WILL BE RE-ISSUED. CONTRACTOR IS RESPONSIBLE TO COORDINATE SHOP DRAWINGS WITH REVISED STRUCTURAL DRAWINGS PRIOR TO SUBMITTAL OF SHOP DRAWINGS. ALL SECONDARY FRAMING IS ON HOLD UNTIL FINAL EQUIPMENT DRAWINGS ARE RECEIVED AND STRUCTURAL DRAWINGS ARE RE-ISSUED. SECONDARY FRAMING INCLUDES ALL MEMBERS APART FROM COLUMNS, VERTICAL BRACES AND BEAMS ON PRIMARY STRUCTURAL GRIDLINES. CONTRACTOR WILL PROCEED AT THEIR OWN RISK IN THE ABSENCE OF FINAL COORDINATION BY VAA.

FINAL EQUIPMENT AND TANK DRAWINGS SHALL BE SUBMITTED TO VAA FOR APPROVAL PRIOR TO STEEL FABRICATION/ERECTION AND PRIOR TO PROCUREMENT OF CONCRETE CONSTRUCTION FOR FOUNDATIONS. EQUIPMENT DRAWING WILL BE USED BY VAA TO MODIFY/REVISE THE STRUCTURAL AND FOUNDATION FRAMING AS NECESSARY. SUCH REVISIONS INCLUDE BUT NOT LIMITED TO SIZE AND LOCATION OF STRUCTURAL MEMBERS, CONCRETE FOUNDATIONS, ANCHOR RODS, AND OTHER RELATED ITEMS WHICH DIRECTLY SUPPORT PROCESS EQUIPMENT, OR STRUCTURES THAT ARE AFFECTED BY IT. CONTRACTOR AND CONTRACTOR'S FABRICATOR OR SUBCONTRACTOR WILL PROCEED AT THEIR OWN RISK IN THE ABSENCE OF FINAL COORDINATION BY VAA.

ESTIMATING CONTRACTOR SHALL VISIT THE EXISTING FACILITY. CONTRACTOR SHALL USE ITS EXPERIENCE TO PROVIDE A REASONABLE ESTIMATE IN THEIR FINAL GMP FOR COORDINATION WITH AND MODIFICATION TO EXISTING CONDITIONS, AND VERIFY ALL EXISTING SITE CONDITIONS.

ALL DIMENSIONS AND ELEVATIONS OF EXISTING CONDITIONS INCLUDING STRUCTURES, FOUNDATIONS, EQUIPMENT AND GRIDLINES ARE BASED ON EXISTING DRAWINGS AND ARE FOR REFERENCE ONLY. CONTRACTOR TO PROVIDE DETAILED SURVEY TO VERIFY EXISTING CONDITIONS PRIOR TO FABRICATION AND CONSTRUCTION.

SHEET NOTES
1. FOR STRUCTURAL NOTES SEE SHEETS S0
2. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS, ELEVATIONS, CONDITIONS, ETC. PRIOR TO SUBMITTALS OF SHOP DRAWINGS (OR TO CLOUD AND POINT OUT REVISIONS ON SHOP DRAWINGS SUBMITTED) ANY SUCH FABRICATION, OR RELATING TO FITTED MEMBERS, OR ANY CONSTRUCTION PROCEEDING WITHOUT ALL VERIFICATION NOTED SHALL BE AT CONTRACTOR'S RISK AND EXPENSE, SUCH AS BUT NOT LIMITED TO, REPAIR, RECONSTRUCTION, REDESIGN, ETC
3. (± XX) INDICATES + OR - TOP OF STEEL ELEVATION
4. FOR TOP OF STEEL BEAM REFERENCE ELEVATION SEE PLAN
5. CONTRACTOR TO VERIFY ALL DIMENSIONS AND EQUIPMENT SUPPORTS WITH MANUFACTURER PRIOR TO SUBMITTAL OF SHOP DRAWINGS.

VANCOUVER FRASER PORT AUTHORITY
PROJECT PERMIT 2014-247
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Signed:
Dated: March 30/2015.

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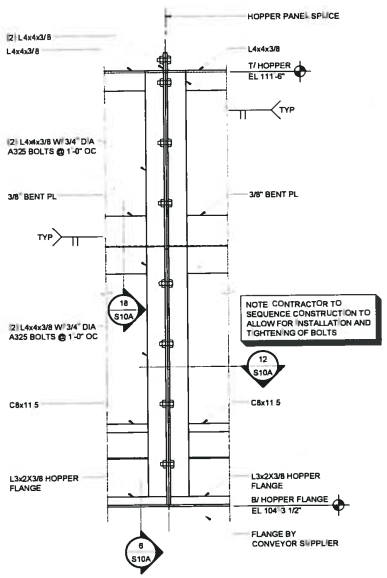
PROJECT
VANCOUVER TERMINAL TRACK EXPANSION PROJECT

CLIENT
CARGILL LIMITED
VANCOUVER, B.C.

CLIENT PROJECT NO

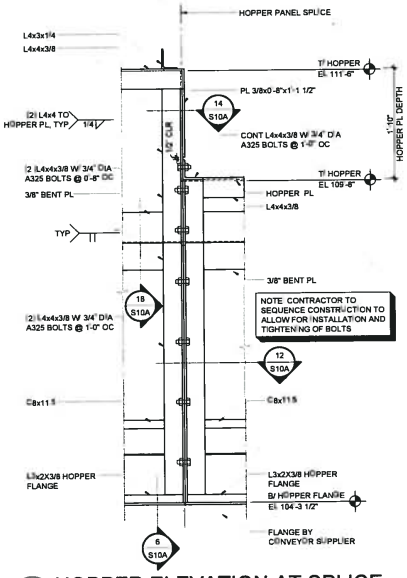
DRAWING TITLE
HOPPER PLAN & SECTIONS

PROJECT NO 140335
DRAWING NO S9
SCALE AS NOTED



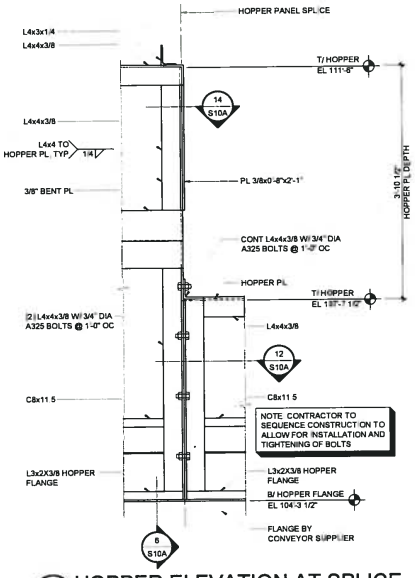
1 S10 HOPPER ELEVATION AT SPLICE

NOTE: TYP (6) LOCS EA SIDE OF HOPPER 1" = 1'-0"



2 S10 HOPPER ELEVATION AT SPLICE

NOTE: TYP (4) LOCS EA SIDE OF HOPPER 1" = 1'-0"



3 S10 HOPPER ELEVATION AT SPLICE

NOTE: TYP (4) LOCS EA SIDE OF HOPPER 1" = 1'-0"

VANCOUVER FRASER PORT AUTHORITY PROJECT PERMIT 2014-247

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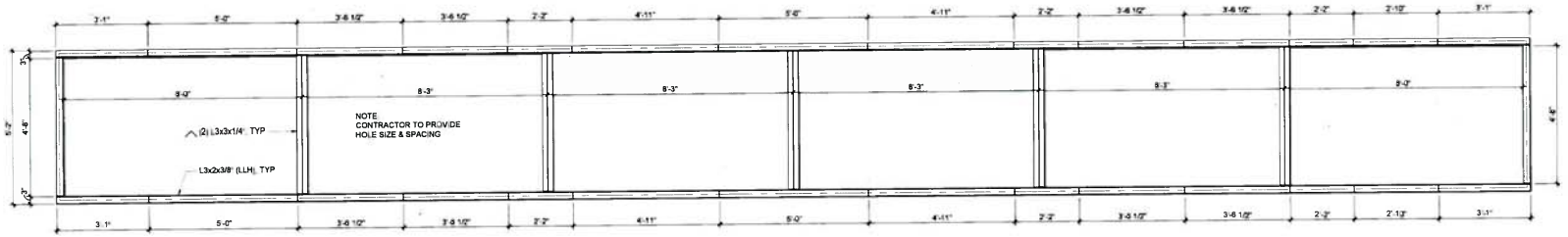
Canada

Signed:

Dated: March 30/2015



4 S10 HOPPER SECTION

1/2" = 1'-0"

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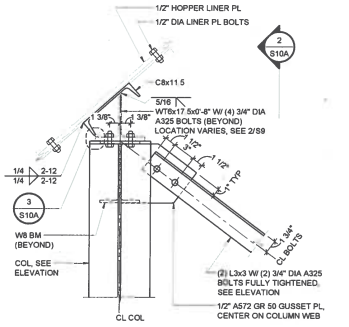
CLIENT PROJECT NO

DRAWING TITLE
HOPPER SECTIONS

PROJECT NO 140335

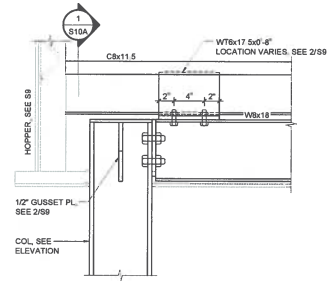
DRAWING NO S10

SCALE AS NOTED



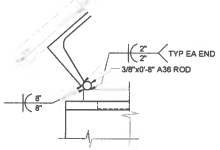
1 S10A **BRACE CONN DETAIL** 1 1/2" = 1'-0"

NOTES:
1. LINER PL SHALL BE 1/2" AR PLATE
2. LINER PL SHALL BE FASTENED W/ 1/2" DIA BOLTS @ 12" OC SPACING
3. FRONT FLANGE NOT SHOWN FOR CLARITY

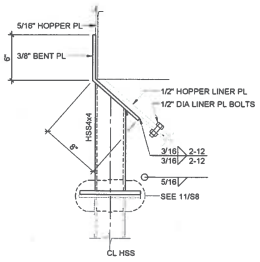


2 S10A **HOPPER CONN DETAIL** 1 1/2" = 1'-0"

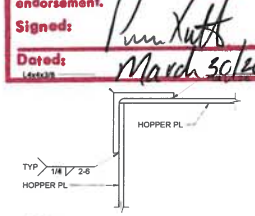
NOTE: SEE DETAILS 6 & 12/S8 FOR INFORMATION NOT SHOWN



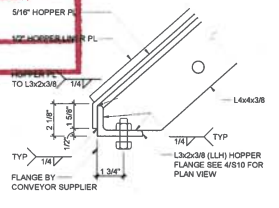
3 S10A **DETAIL** NOT TO SCALE



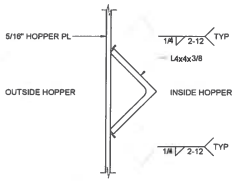
4 S10A **HOPPER SUPPORT DETAIL** 1 1/2" = 1'-0"



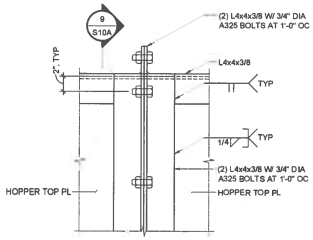
5 S10A **HOPPER CONN DETAIL** 3" = 1'-0"



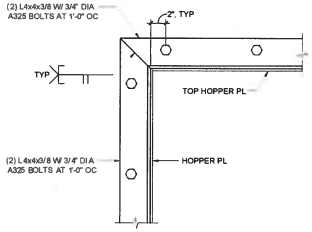
6 S10A **CONNECTION DETAIL** 3" = 1'-0"



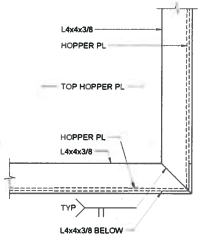
7 S10A **CONNECTION DETAIL** 3" = 1'-0"



8 S10A **DETAIL - PLAN VIEW** 1 1/2" = 1'-0"



9 S10A **SECTION** 1 1/2" = 1'-0"



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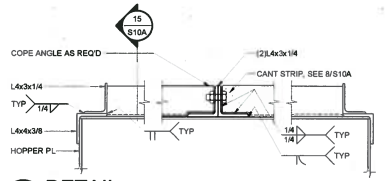

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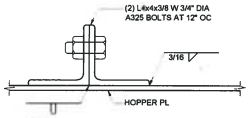
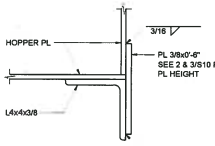


12 S10A **DETAIL** 3" = 1'-0"



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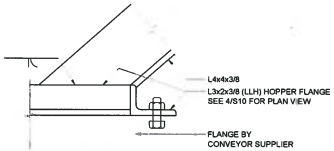

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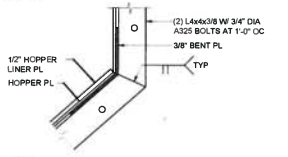

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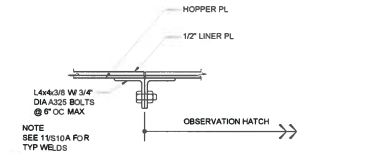

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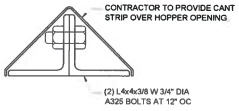

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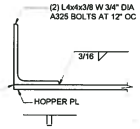

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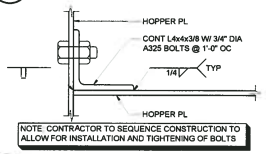

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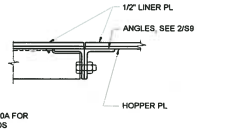

19 S10A **DETAIL** 1 1/2" = 1'-0"

VANCOUVER FRASER PORT AUTHORITY
PROJECT PERMIT 3614-247
This drawing has been reviewed by the Vancouver Fraser Port Authority solely for the purpose of VFPA's issuance of a Project Permit. This permit in no way denotes design, engineering or structural approval or endorsement.
Signed:
Dated: March 30/2015
Canada

PRELIMINARY
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NO	DATE	ISSUE/REVISION	DRWN	CHKD
A	1/30/15	ISSUED FOR REVIEW	CMB	CJB
B	3/06/15	ISSUE FOR BID	PMA	CJB

DATE: 1/30/15
DRAWN: CMB
DESIGNED: WDH
CHECKED: CJB
APPROVED:

Cargill

VAA
Planners and Engineers
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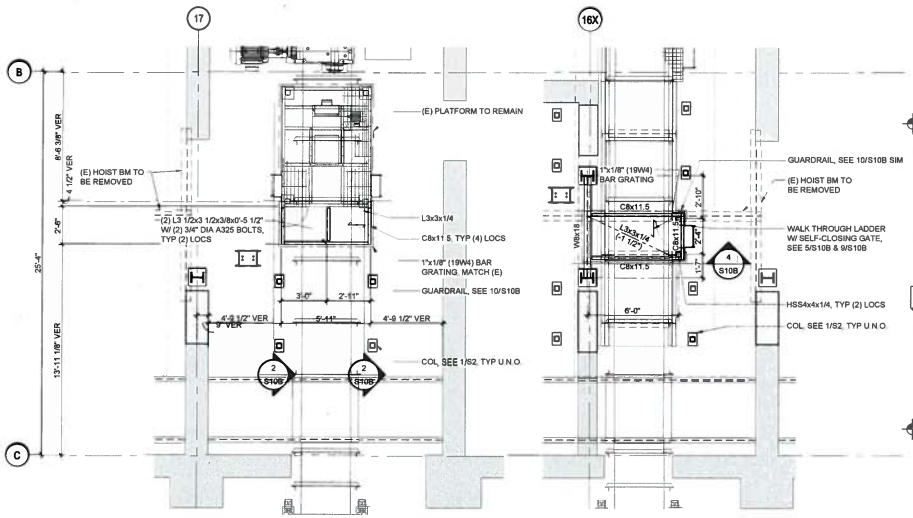
Plymouth, MN 55441
763.559.9100
www.vaaeng.com
info@vaaeng.com

PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT
CLIENT: CARGILL LIMITED VANCOUVER, B.C.
CLIENT PROJECT NO.

DRAWING TITLE: CONVEYOR/HOPPER SUPPORT DETAILS
PROJECT NO.: 140335
DRAWING NO.: S10A
SCALE: AS NOTED



1 S10B PLATFORM FRAMING PLAN

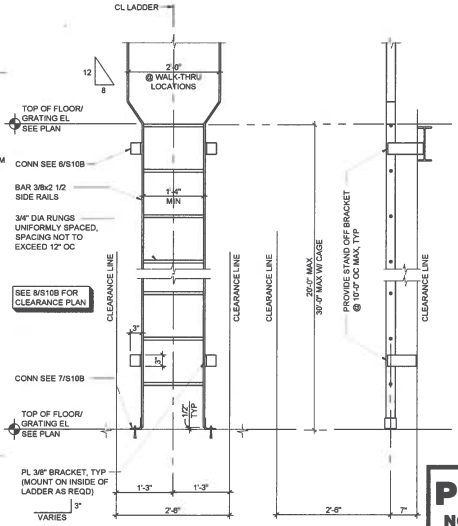
T/ GRATING EL 97'-0", VER
T/ STL BM EL 96'-11", VER

1/4" = 1'-0"

3 S10B PLATFORM FRAMING PLAN

T/ GRATING EL 96'-7", VER
T/ STL BM EL 96'-6", VER

1/4" = 1'-0"



5 S10B TYP LADDER DETAILS

3/8" = 1'-0"

ESTIMATING CONTRACTOR SHALL VISIT THE EXISTING FACILITY. CONTRACTOR SHALL USE ITS EXPERIENCE TO PROVIDE A REASONABLE ESTIMATE IN THEIR FINAL GMP FOR COORDINATION WITH AND MODIFICATION TO EXISTING CONDITIONS, AND VERIFY ALL EXISTING SITE CONDITIONS.

SHEET NOTES:

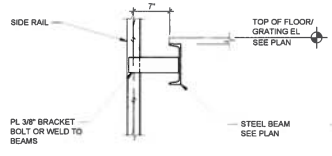
1. FOR STRUCTURAL NOTES SEE SHEET S0.
2. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS, ELEVATIONS, CONDITIONS, ETC. PRIOR TO SUBMITTALS OF SHOP DRAWINGS (QC TO CLOUD AND POINT OUT REVISIONS ON SHOP DRAWINGS SUBMITTED). ANY SUCH FABRICATION, OR RELATING TO FITTED MEMBERS, OR ANY CONSTRUCTION PROCEEDING WITHOUT ALL VERIFICATION NOTED SHALL BE AT CONTRACTOR'S RISK AND EXPENSE, SUCH AS BUT NOT LIMITED TO, REPAIR, RECONSTRUCTION, REDESIGN, ETC.
3. (± X") INDICATES + OR - TOP OF STEEL ELEVATION.
4. CONTRACTOR TO VERIFY ALL DIMENSIONS AND EQUIPMENT SUPPORTS WITH MANUFACTURER PRIOR TO SUBMITTAL OF SHOP DRAWINGS.

DUE TO THE FAST-TRACK NATURE OF ENGINEERING, MOST EQUIPMENT, TANKS AND PRE-ENGINEERED STRUCTURES IN THE ISSUE FOR BID DRAWINGS ARE PRELIMINARY. FINAL EQUIPMENT AND TANK DRAWINGS SHALL BE SUBMITTED TO VAA FOR APPROVAL PRIOR TO STEEL FABRICATION/ERECTION. EQUIPMENT DRAWINGS WILL BE USED BY VAA TO MODIFY/REVISE THE STRUCTURAL FRAMING AS NECESSARY, AND REVISED DRAWINGS WILL BE RE-ISSUED. CONTRACTOR IS RESPONSIBLE TO COORDINATE SHOP DRAWINGS WITH REVISED STRUCTURAL DRAWINGS PRIOR TO SUBMITTAL OF SHOP DRAWINGS. ALL SECONDARY FRAMING IS ON HOLD UNTIL FINAL EQUIPMENT DRAWINGS ARE RECEIVED AND STRUCTURAL DRAWINGS ARE RE-ISSUED. SECONDARY FRAMING INCLUDES ALL MEMBERS APART FROM COLUMNS, VERTICAL BRACES AND BEAMS ON PRIMARY STRUCTURAL GRIDLINES. CONTRACTOR WILL PROCEED AT THEIR OWN RISK IN THE ABSENCE OF FINAL COORDINATION BY VAA.

FINAL EQUIPMENT AND TANK DRAWINGS SHALL BE SUBMITTED TO VAA FOR APPROVAL PRIOR TO STEEL FABRICATION/ERECTION AND PRIOR TO PROCUREMENT OF CONCRETE CONSTRUCTION FOR FOUNDATIONS. EQUIPMENT DRAWING WILL BE USED BY VAA TO MODIFY/REVISE THE STRUCTURAL AND FOUNDATION FRAMING AS NECESSARY. SUCH REVISIONS INCLUDE BUT NOT LIMITED TO SIZE AND LOCATION OF STRUCTURAL MEMBERS, CONCRETE FOUNDATIONS, ANCHOR RODS, AND OTHER RELATED ITEMS WHICH DIRECTLY SUPPORT PROCESS EQUIPMENT, OR STRUCTURES THAT ARE AFFECTED BY IT. CONTRACTOR AND CONTRACTOR'S FABRICATOR OR SUBCONTRACTOR WILL PROCEED AT THEIR OWN RISK IN THE ABSENCE OF FINAL COORDINATION BY VAA.

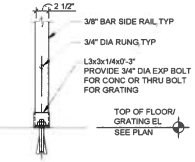
ALL DIMENSIONS AND ELEVATIONS OF EXISTING CONDITIONS INCLUDING STRUCTURES, FOUNDATIONS, EQUIPMENT AND GRIDLINES ARE BASED ON EXISTING DRAWINGS AND ARE FOR REFERENCE ONLY. CONTRACTOR TO PROVIDE DETAILED SURVEY TO VERIFY EXISTING CONDITIONS PRIOR TO FABRICATION AND CONSTRUCTION.

PRELIMINARY
NOT FOR CONSTRUCTION



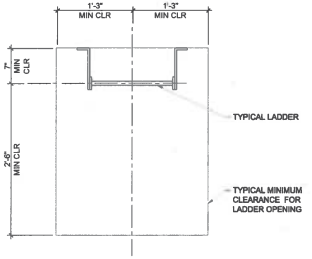
6 S10B CONN DETAIL

1" = 1'-0"



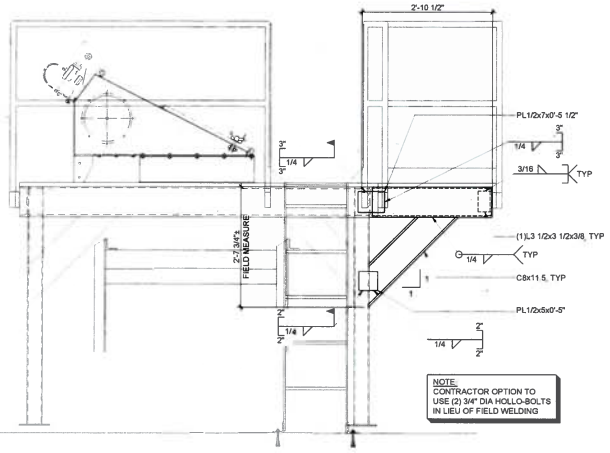
7 S10B CONN DETAIL

1" = 1'-0"



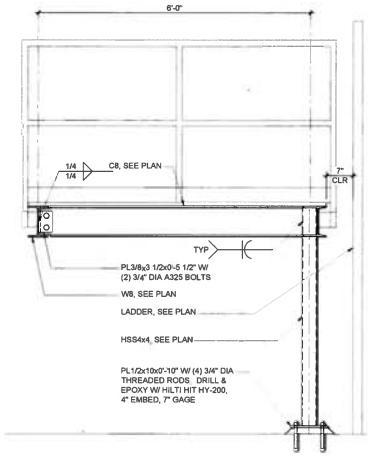
8 S10B LADDER CLEARANCE PLAN

1" = 1'-0"



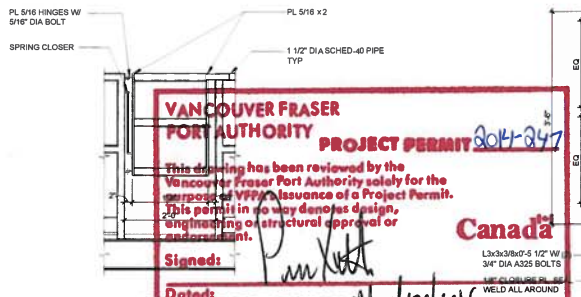
2 S10B ELEVATION

3/4"=1'-0"



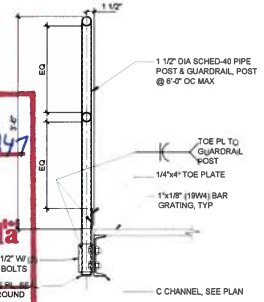
4 S10B ELEVATION

3/4"=1'-0"



9 S10B SELF CLOSING GATE DETAIL

3/4"=1'-0"



10 S10B GUARDRAIL DETAIL

1" = 1'-0"

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NO.	DATE	ISSUE/REVISION	DRWN	CHKD
A	1/30/15	ISSUED FOR REVIEW	PMA	CJB
B	3/06/15	ISSUE FOR BID	PMA	CJB

DATE: 1/30/15
DRAWN: PMA
DESIGNED: WDH
CHECKED: CJB
APPROVED:

Cargill™

VAA
Planning and Engineering
2300 Berkshire Lane N, Suite 200
Plymouth, MN 55441
763.559.9100
www.vaaeng.com
info@vaaeng.com

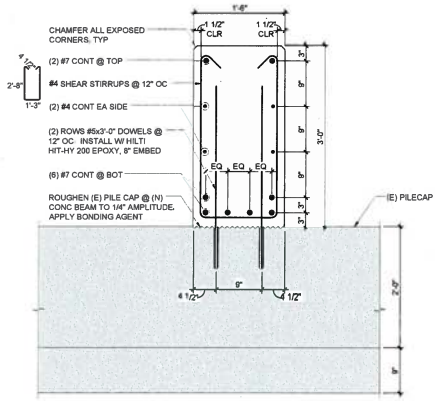
PROJECT:
VANCOUVER TERMINAL
TRACK EXPANSION PROJECT

CLIENT:
CARGILL LIMITED
VANCOUVER, B.C.

CLIENT PROJECT NO.

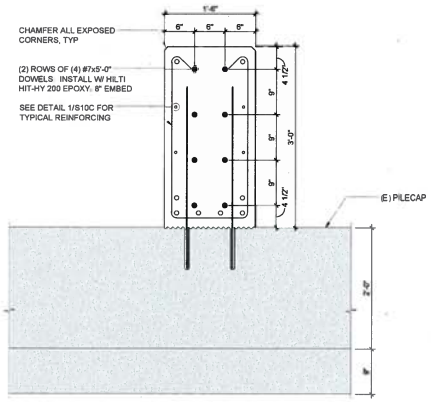
DRAWING TITLE:
TRACK SHED
ENLARGED BASEMENT PLANS
SECTIONS & DETAILS

PROJECT NO: 140335
DRAWING NO: S10B
SCALE: AS NOTED



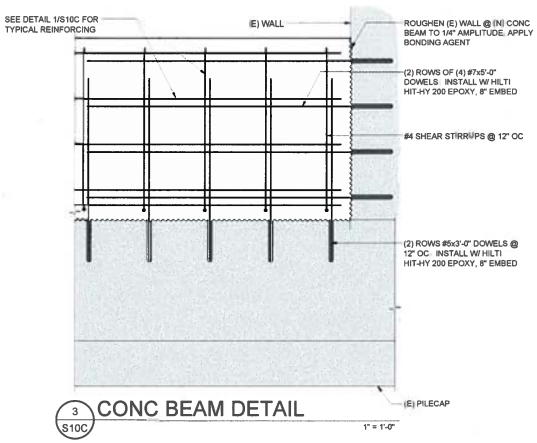
1 S10C CONC BEAM DETAIL

1" = 1'-0"



2 S10C BM TO COL CONN DETAIL

1" = 1'-0"



3 S10C CONC BEAM DETAIL

1" = 1'-0"

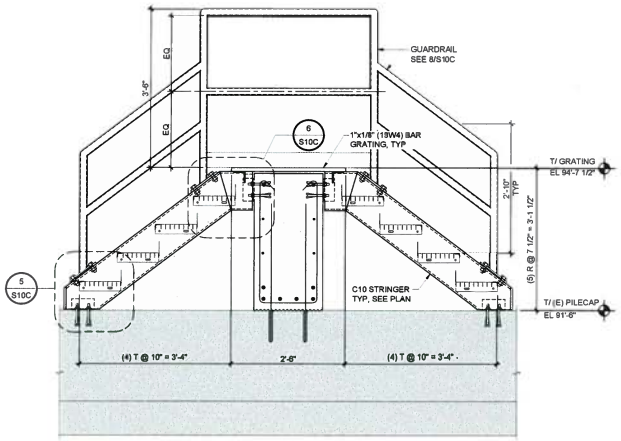
BAR LAP SCHEDULE	
BAR SIZE	MIN. LAP LENGTH
#10	6'-8"
#9	5'-10"
#8	5'-2"
#7	4'-6"
#6	3'-0"
#5	2'-6"
#4	2'-0"

SHEET NOTES:

1. FOR STRUCTURAL NOTES SEE SHEETS S0
2. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS, ELEVATIONS, CONDITIONS, ETC. PRIOR TO SUBMITTALS OF SHOP DRAWINGS (GC TO CLOUD AND POINT OUT REVISIONS ON SHOP DRAWINGS SUBMITTED). ANY SUCH FABRICATION, OR RELATING TO FITTED MEMBERS, OR ANY CONSTRUCTION PROCEEDING WITHOUT ALL VERIFICATION NOTED SHALL BE AT CONTRACTOR'S RISK AND EXPENSE, SUCH AS BUT NOT LIMITED TO, REPAIR, RECONSTRUCTION, REDESIGN, ETC.
3. (± X") INDICATES + OR - TOP OF STEEL ELEVATION.
4. FOR TOP OF STEEL BEAM REFERENCE ELEVATION SEE PLAN
5. CONTRACTOR TO VERIFY ALL DIMENSIONS AND EQUIPMENT SUPPORTS WITH MANUFACTURER PRIOR TO SUBMITTAL OF SHOP DRAWINGS.

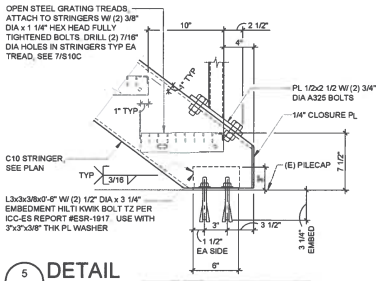
6A. GRATING: 1 1/4" x 3/16" BEARING BARS AT 1 3/16" OC W/ CROSS BARS AT 4" OC STL WELDED (GALVANIZED) BAR GRATING. PROVIDE BAR GRATING CLEARANCE 1/2" AT SIDES & 1/4" AT BEARING. U.N.O. PROVIDE & INSTALL ALL GALV. FASTENERS, CLIPS, WASHERS, SCREWS, BOLTS, ETC. FOR COMPLETE INSTALLATION PER MFR'S INSTRUCTIONS.

6B. ATTACH BAR GRATING DOWN W/ 1/4" DIA SELF TAPPING SCREWS & SADDLE CLIPS AT 2'-0" OC MAX, SPACING MIN (2) CLIPS PER SUPPORT BM.



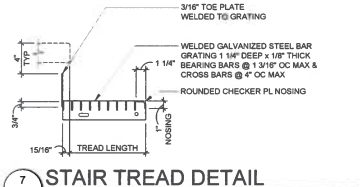
4 S10C STAIR DETAIL

3/4" = 1'-0"



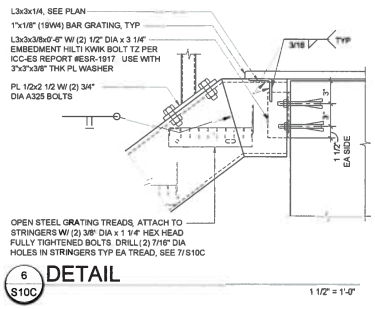
5 S10C DETAIL

1 1/2" = 1'-0"



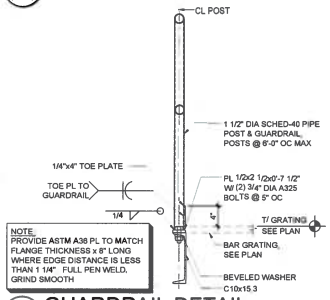
7 S10C STAIR TREAD DETAIL

1 1/2" = 1'-0"



6 S10C DETAIL

1 1/2" = 1'-0"



8 S10C GUARDRAIL DETAIL

1" = 1'-0"

VANCOUVER FRASER PORT AUTHORITY PROJECT PERMIT 2014-247

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Canada

Signed:

Dated: March 30/2015.

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NOT FOR CONSTRUCTION

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B	3/09/15	ISSUE FOR BID	PMA	CJB

DATE: 1/30/15
DRAWN: CMB
DESIGNED: WDH
CHECKED: CJB
APPROVED:

Cargill™

VAA
Planning and Engineers
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Plymouth, MN 55441
763 559 9100
www.vaaeng.com
info@vaaeng.com

PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT

CLIENT: CARGILL LIMITED VANCOUVER, B.C.

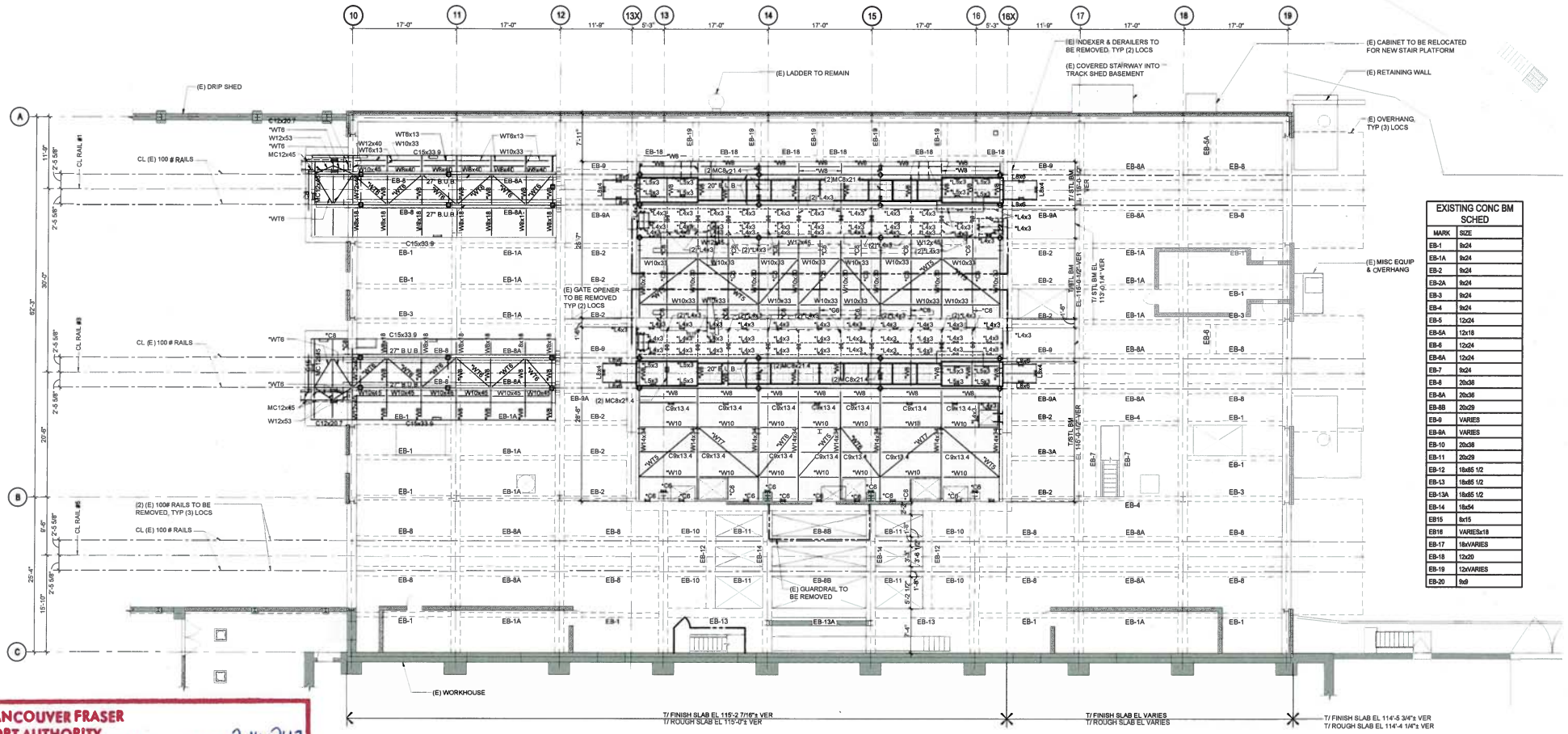
CLIENT PROJECT NO:

DRAWING TITLE: CONVEYOR/HOPPER SUPPORT DETAILS

PROJECT NO: 140335

DRAWING NO: S10C

SCALE: AS NOTED



EXISTING CONC BM SCHED	
MARK	SIZE
EB-1	9x24
EB-1A	9x24
EB-2	9x24
EB-2A	9x24
EB-3	9x24
EB-4	9x24
EB-5	12x24
EB-5A	12x18
EB-6	12x24
EB-6A	12x24
EB-7	9x24
EB-8	20x36
EB-8A	20x36
EB-8B	20x29
EB-9	VARIES
EB-9A	VARIES
EB-10	20x36
EB-11	20x29
EB-12	18x85 1/2
EB-13	18x85 1/2
EB-13A	18x85 1/2
EB-14	18x54
EB15	8x15
EB18	VARIES8x18
EB-17	18xVARIES
EB-18	12x20
EB-19	12xVARIES
EB-20	9x9

VANCOUVER FRASER PORT AUTHORITY
PROJECT PERMIT 2014-347
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Signed:
Dated: March 30/2015

ESTIMATING CONTRACTOR SHALL VISIT THE EXISTING FACILITY. CONTRACTOR SHALL USE ITS EXPERIENCE TO PROVIDE A REASONABLE ESTIMATE IN THEIR FINAL GMP FOR COORDINATION WITH AND MODIFICATION TO EXISTING CONDITIONS, AND VERIFY ALL EXISTING SITE CONDITIONS.

ALL DIMENSIONS AND ELEVATIONS OF EXISTING CONDITIONS INCLUDING STRUCTURES, FOUNDATIONS, EQUIPMENT AND GRADELINES ARE BASED ON EXISTING DRAWINGS AND ARE FOR REFERENCE ONLY. CONTRACTOR TO PROVIDE DETAILED SURVEY TO VERIFY EXISTING CONDITIONS PRIOR TO FABRICATION AND CONSTRUCTION.

NORTH

1 / S11 EXISTING FIRST FLOOR PLAN

TOP (E) ROUGH SLAB EL VARIES, SEE PLAN
TOP (E) FINISH SLAB VARIES, SEE PLAN
TOP (E) 100# RAIL EL 115'-8 1/2" (DEMO)
TOP (E) STL BM VARIES

1/8" = 1'-0"

PRELIMINARY
NOT FOR CONSTRUCTION

PLAN NOTES:
*W8 INDICATES (E) W8x31
*W10 INDICATES (E) W10x26
*L4x3 INDICATES (E) L4x3x1/4
*L5x3 INDICATES (E) L5x3x1/4
*C8 INDICATES (E) C8x8.2
*C8 INDICATES (E) C8x11.5
*WT4 INDICATES (E) WT4x9
*WT5 INDICATES (E) WT5x11
*WT6 INDICATES (E) WT6x13
*WT7 INDICATES (E) WT7x19

SHEET NOTES:
1. SEE SHEET S0 FOR STRUCTURAL NOTES
2. EXISTING PLAN IS BASED ON EXISTING DRAWINGS & IS FOR REFERENCE ONLY.
3. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS, ELEVATIONS, CONDITIONS, ETC. PRIOR TO SUBMITTALS OF SHOP DRAWINGS (OC TO CLOUD AND POINT OUT REVISIONS ON SHOP DRAWINGS SUBMITTED). ANY SUCH FABRICATION, OR RELATING TO FITTED MEMBERS, OR ANY CONSTRUCTION PROCEEDING WITHOUT ALL VERIFICATION NOTED SHALL BE AT CONTRACTOR'S RISK AND EXPENSE, SUCH AS BUT NOT LIMITED TO, REPAIR, RECONSTRUCTION, REDESIGN, ETC.
4. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO EXCAVATION.
5. SEE S12 FOR NEW PLAN AT EL 115'-2 7/16"

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DATE: 1/30/15
DRAWN: PMA
DESIGNED: WDH
CHECKED: CJB
APPROVED:

Cargill

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Plymouth, MN 55441
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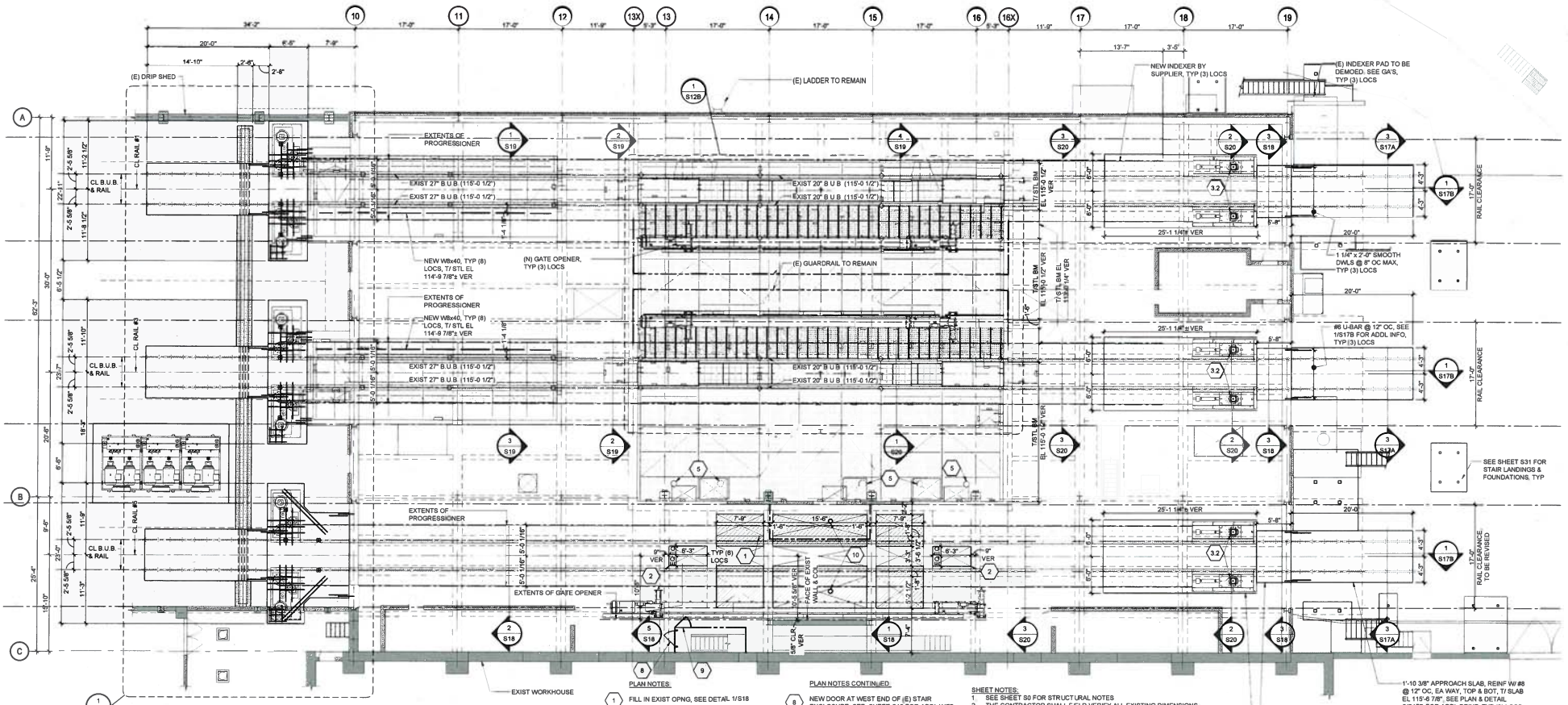
info@vaaeng.com

PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT
CLIENT: CARGILL LIMITED VANCOUVER, B.C.
CLIENT PROJECT NO:

DRAWING TITLE: TRACK SHED EXIST FIRST FLOOR PLAN
PROJECT NO: 140335
DRAWING NO: S11
SCALE: AS NOTED



PLAN NOTES:

1. FILL IN EXIST OPNG, SEE DETAIL 1/S18
2. NEW 6'-3" x 3'-3" OPNG IN EXIST SLAB, SEE DETAIL 4/S18
3.2 1'-0"x1'-0x0'-3" RECESS, VERIFY SIZE & LOCATION W/ INDEXER SUPPLER PRIOR TO INSTALLATION, SEE SHEET NOTE 6
5 FIELD CUT OPNG IN (E) GRATING FOR NEW DUCTING, PROVIDE NEW TOE PL. VERIFY OPNG SIZE PRIOR TO INSTALLATION

PLAN NOTES CONTINUED:

8 NEW DOOR AT WEST END OF (E) STAIR ENCLOSURE, SEE SHEET S16 FOR ADDL INFO
9 REMOVE (E) GATE & SEAL (E) OPNG TO MATCH (E) MATERIALS
10 CONTRACTOR TO PROVIDE 8" DIA OPNG FROM TOP OF (E) SLAB TO HOPPER BELOW PROVIDE AIR TIGHT SEAL & SPOUTING INTO HOPPER

SHEET NOTES:

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2. THE CONTRACTOR SHALL F.IELD VERIFY ALL EXISTING DIMENSIONS, ELEVATIONS, CONDITIONS, ETC PRIOR TO SUBMITTALS OF SHOP DRAWINGS (GC TO CLOUD AND POINT OUT REVISIONS ON SHOP DRAWINGS SUBMITTED), ANY SUCH FABRICATION, OR RELATING TO FITTED MEMBERS, OR ANY CONSTRUCTION PROCEEDING WITHOUT ALL VERIFICATION NOTED SHALL BE AT CONTRACTOR'S RISK AND EXPENSE, SUCH AS BUT NOT LIMITED TO, REPAIR, RECONSTRUCTION, REDESIGN, ETC
3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO EXCAVATION
4. [illegible] FOR SUBBASE PREPARATION AND INSPECTION PRIOR TO PLACEMENT OF CONCRETE
5. FOR (E) TYPES & SIZES SEE 1/S11
6. CONTRACTOR TO COORDINATE REQUIREMENTS FOR WEEP HOLE & CONSTRUCTION OF FLUIDS W/ Covey [illegible] SUPPLIER

DUE TO THE FAST-TRACK NATURE OF ENGINEERING, MOST EQUIPMENT, TANKS AND PRE-ENGINEERED STRUCTURES IN THE ISSUE FOR BID DRAWINGS ARE PRELIMINARY. FINAL EQUIPMENT AND TANK DRAWINGS SHALL BE SUBMITTED TO VAA FOR APPROVAL PRIOR TO STEEL FABRICATION/ERECTION. EQUIPMENT DRAWINGS WILL BE USED BY VAA TO MODIFY/REVISE THE STRUCTURAL FRAMING AS NECESSARY, AND REVISED DRAWINGS WILL BE RE-ISSUED. CONTRACTOR IS RESPONSIBLE TO COORDINATE SHOP DRAWINGS WITH REVISED STRUCTURAL DRAWINGS PRIOR TO SUBMITTAL OF SHOP DRAWINGS. ALL SECONDARY FRAMING IS ON HOLD UNTIL FINAL EQUIPMENT DRAWINGS ARE RECEIVED AND STRUCTURAL DRAWINGS ARE RE-ISSUED. SECONDARY FRAMING INCLUDES ALL MEMBERS APART FROM COLUMNS, VERTICAL BRACES AND BEAMS ON PRIMARY STRUCTURAL GRIDLINES. CONTRACTOR WILL PROCEED AT THEIR OWN RISK IN THE ABSENCE OF FINAL COORDINATION BY VAA.

NOTE:
EQUIPMENT SUPPLIER TO PROVIDE ANCHOR BOLT SETTING PLAN PRIOR TO INSTALLATION

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NORTH

1/S12 NEW PLAN AT FIRST FLOOR

TOP EXIST ROUGH SLAB EL VARIES, SEE 1/S11
TOP EXIST FINISH SLAB VARIES, SEE 1/S11
TOP EXIST STL BM VARIES, SEE 1/S11
TOP NEW RAIL EL 116'-1 1/2"
TOP (E) 100# RAIL EL 115'-8 1/2" (DEMO)

BAR LAP SCHEDULE

BAR SIZE	MIN. LAP LENGTH
#10	6'-8"
#9	5'-10"
#8	5'-2"
#7	4'-6"
#6	3'-0"
#5	2'-5"
#4	2'-0"

PRELIMINARY
NOT FOR CONSTRUCTION

VANCOUVER FRASER PORT AUTHORITY
PROJECT PERMIT
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Signed:
Dated: [illegible] 2015.

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APPROVED:

Cargill

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PROJECT:
VANCOUVER TERMINAL
TRACK EXPANSION PROJECT

CLIENT:
CARGILL LIMITED
VANCOUVER, B.C.

CLIENT PROJECT NO:

DRAWING TITLE:
TRACK SHED
NEW PLAN AT FIRST FLOOR

PROJECT NO: 140335
DRAWING NO: S12
SCALE: AS NOTED

VANCOUVER FRASER PORT AUTHORITY
PROJECT PERMIT 14-347
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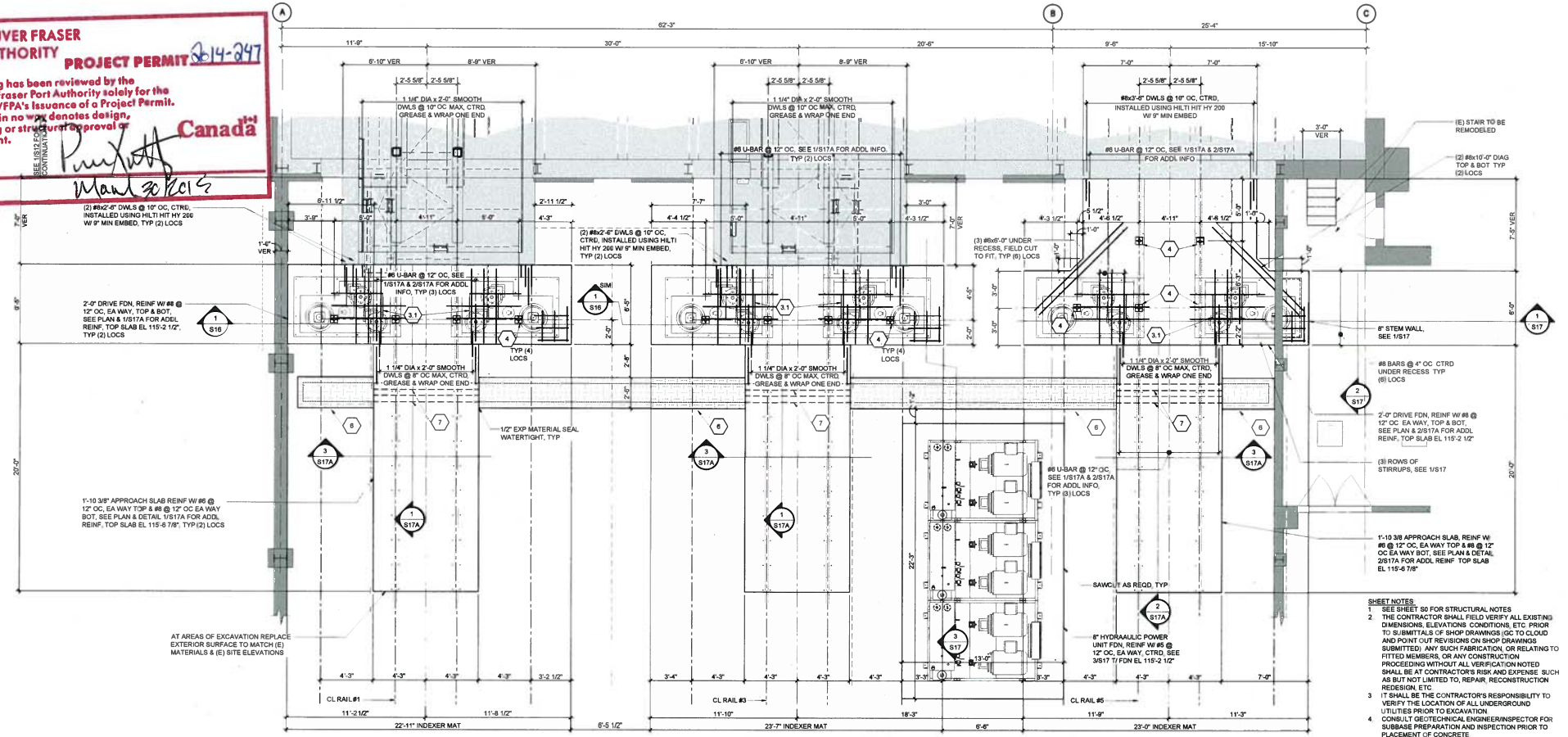

NORTH

1 S12A ENLARGED PLAN

1/4" = 1'-0"

PLAN NOTES
3.1 2'-0"x2'-4"x0'-3" RECESS, SEE 1/S16 FOR ADDL REINF, VERIFY SIZE & LOCATION W/ INDEXER SUPPLIER PRIOR TO INSTALLATION, SEE SHEET NOTE 6
4 HELICAL PILE BY CONTRACTOR

PLAN NOTES CONTINUED
6 CONDUIT TRENCH SEE 3/S17 FOR DETAIL
7 (2) 6" SCHED-40 PIPE, SEE SECTIONS FOR LOCATION

CONTRACTOR TO COORDINATE SITE DRAINAGE & FINISH GRADE ELEVATION W/ OWNER

HELICAL PILE REQUIRED CAPACITIES *ALL LOADS ARE FACTORED
P_{COMP} = 88 K/PILE
NOTE: VAA HAS ASSUMED AN 8" SQ HELICAL PILE CAP PL

SHEET NOTES:
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4. CONSULT GEOTECHNICAL ENGINEER/INSPECTOR FOR SUBBASE PREPARATION AND INSPECTION PRIOR TO PLACEMENT OF CONCRETE.
5. FOR (E) TYPES & SIZES SEE 1/S11
6. CONTRACTOR TO COORDINATE REQUIREMENTS FOR WEEP HOLE & COLLECTION OF FLUIDS W/ OWNER & EQUIPMENT SUPPLIER

BAR LAP SCHEDULE	
BAR SIZE	MIN. LAP LENGTH
#10	6'-8"
#9	5'-10"
#8	5'-2"
#7	4'-5"
#6	3'-0"
#5	2'-6"
#4	2'-0"

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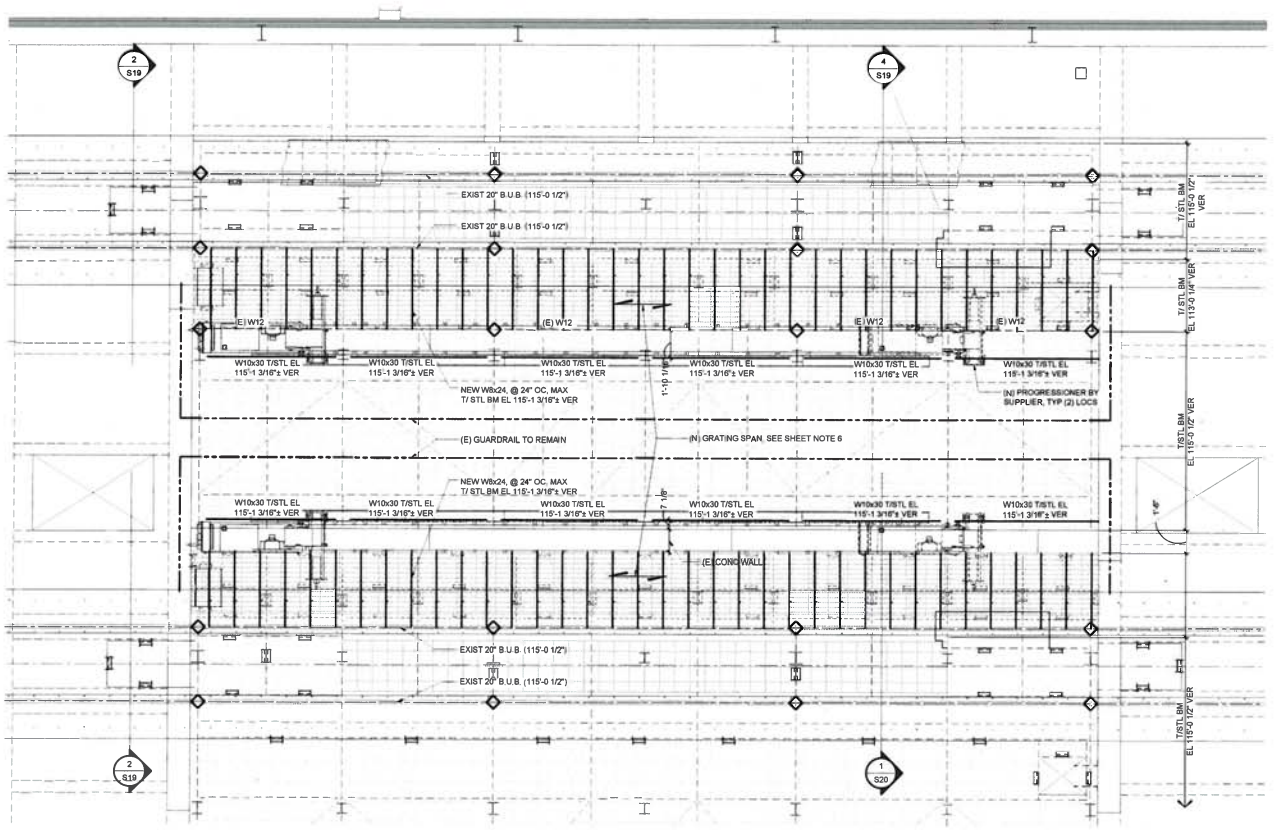
PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT
CLIENT: CARGILL LIMITED VANCOUVER, B.C.
CLIENT PROJECT NO.

DRAWING TITLE: TRACK SHED ENLARGED PLAN
PROJECT NO. 140335
DRAWING NO. S12A
SCALE: AS NOTED



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1 S12B ENLARGED FRAMING PLAN

1/4" = 1'-0"

TOP EXIST ROUGH SLAB EL VARIES, SEE 1/S11
TOP EXIST FINISH SLAB VARIES, SEE 1/S11
TOP EXIST STL BM VARIES, SEE 1/S11
TOP NEW RAIL EL 118'-1 1/2"

NORTH

SHEET NOTES:
1. SEE SHEET S0 FOR STRUCTURAL NOTES.
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5. FOR (E) TYPES & SIZES SEE 1/S11
6. GRATING: 1 1/4"x3/16" BEARING BARS AT 1 3/16" OC W/ CROSS BARS AT 4" OC STL WELDED (GALVANIZED) BAR GRATING. PROVIDE BAR GRATING CLEARANCE 1/2" AT SIDES & 1/4" AT BEARING. UNO PROVIDE & INSTALL ALL GALVANIZED FASTENERS, CLIPS, WASHERS, SCREWS, BOLTS, ECT FOR COMPLETE INSTALLATION PER MANUFACTURER'S INSTRUCTIONS.
   6.1. BAR GRATING TO HAVE A 4"x3/16" TOE PLATE AT ALL INTERIOR OPENINGS 4" OR LARGER.
   6.2. ATTACH BAR GRATING DOWN W/ 1/4" DIA SELF TAPPING SCREWS & SADDLE CLIPS AT 2'-0" OC MAX, SPACING MIN (2) SLIPS PER SUPPORT BEAM.
   6.3. ALL OPENINGS W/ NO TOE PLATE (LESS THAN 4") ARE TO BE BANDED W/ 1 1/4"x3/16" PLATE. BANDING IS TO BE WELDED TO CUT PORTIONS OF GRATING.

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NOTE:
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PROJECT PERMIT 2014-270
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Signed:
Dated: March 30/2015

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A	3/09/15	ISSUE FOR BID	PMA	CJB

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CLIENT: CARGILL LIMITED VANCOUVER, B.C.
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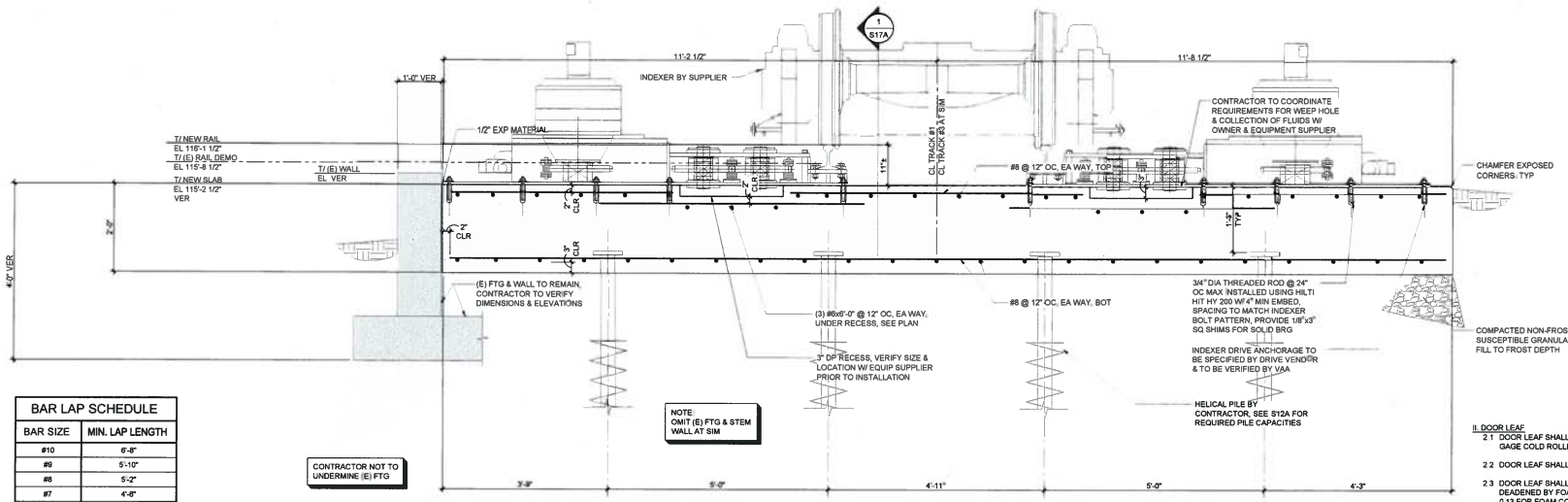
PROJECT NO: 140335
SCALE: AS NOTED
DRAWING NO: S12B



1 S16 INDEXER MAT FDN SECTION

3/4" = 1'-0"

BAR LAP SCHEDULE	
BAR SIZE	MIN. LAP LENGTH
#10	6'-8"
#9	5'-10"
#8	5'-2"
#7	4'-6"
#6	3'-0"
#5	2'-6"
#4	2'-0"

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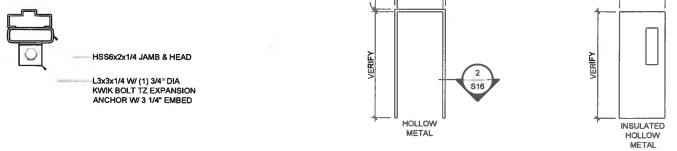

2 S16 PLAN VIEW DETAIL-JAMB (HEAD SIM)

1 1/2" = 1'-0"

3 S16 FRAME TYPE

1/4" = 1'-0"

4 S16 DOOR TYPE

1/4" = 1'-0"

HARDWARE
3 PAIR BUTT HINGES
2 CLOSER
1 EXIT DEVICE, CLASSROOM FUNCTION

DOOR SPECIFICATIONS
PERSONNEL DOORS SHALL BE GALVANIZED INSULATED HOLLOW METAL TYPE, PRIME PAINTED. DOOR FRAME SHALL BE GALVANIZED STEEL WITH FINISH. HINGES, LOCKSET, WEATHERSTRIP, AND METAL THICKNESS SHALL BE AS SPECIFIED FOR QUALITY LEVEL SELECTED. DOORS SHALL PROVIDE PROTECTION FROM AIR INFILTRATION AND WATER INFILTRATION.

I. GENERAL
1.1 PERSONNEL DOORS SHALL BE STANDARD DUTY TYPE.
1.2 PERSONNEL DOORS SHALL MEET THE REQUIREMENTS OF COMMERCIAL STANDARDS PS-4-66 AND CS242-62 AS ISSUED BY THE U.S. DEPARTMENT OF COMMERCE.
1.3 PERSONNEL DOORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
1.4 AIR INFILTRATION SHALL MEET THE REQUIREMENTS OF ASTM E283-04. WATER INFILTRATION SHALL MEET THE REQUIREMENTS OF ASTM E331-00.
1.5 SPECIFICATION OF HARDWARE FUNCTIONS SHALL BE SUBJECT TO APPLICABLE BUILDING CODE AND OSHA REQUIREMENTS.

NOTE:
COORDINATE KEYING FUNCTIONS W/ OWNER.

II. DOOR LEAF
2.1 DOOR LEAF SHALL BE 1 3/4" THICK, CONSTRUCTED OF 16 GAGE COLD ROLLED GALV. STEEL.
2.2 DOOR LEAF SHALL BE FULL FLUSH (PLAIN).
2.3 DOOR LEAF SHALL BE STIFFENED AND SOUND DEADENED BY FOAM CORE. CALCULATED "U" VALUE IS 0.13 FOR FOAM CORE.
2.4 DOOR LEAF SHALL BE FINISHED WITH A COAT OF PRIMER PAINT. FINISH PAINT COLOR IS SELECTED BY OWNER.

III. DOOR FRAME
3.1 DOOR FRAME SHALL CONSIST OF DOOR JAMBS, DOOR HEADER, HEADER REINFORCEMENT, SILL PLATE, CLIPS AND EXTENSIONS AS REQUIRED.
3.2 DOOR FRAME SHALL BE WELDED TYPE WITH UPPER ENDS OF MEMBERS BUTTED TO PROVIDE SQUARE AND SOLID JOINTS FOR THREADED FASTENER ATTACHMENT.
3.3 DOOR JAMBS SHALL BE 5 3/4" DEEP WITH UNEQUAL RABBETS (1 15/16", 1 9/16"). FACE WIDTH SHALL BE 2" WITH DOUBLE RETURN. JAMBS SHALL BE RETAINED AT FLOOR LINE BY A SILL PLATE WITH CLIPS WELDED AT EACH END.
3.4 FRAMES FOR DOORS SHALL BE 14 GAGE COLD ROLLED GALV. STEEL.
3.5 DOOR FRAMES SHALL BE PRIMED. FINISH PAINT COLOR IS SELECTED BY OWNER.

IV. HINGES
4.1 4 1/2" x 4 1/2" STEEL HINGES, FULL MORTISE, 1 3/4" THICK, BALL BEARING ACTION, WITH ONE NON-REMOVABLE BUTTON-TIP PIN. HINGES FOR DOORS SHALL HAVE A 26-D FINISH.
4.2 CONTINUOUS HINGE SHALL BE FULL HEIGHT PIN, BARREL TYPE 14 GA STAINLESS STEEL WITH 2" KNUCKLE. MARKER FM300 FOR SUPPORT OF DOORS UP TO 600 LBS.

V. EXIT DEVICE
5.1 EXIT DEVICE (PANIC DEVICE) SHALL BE UL LISTED AS ACCIDENT HAZARD & UL LISTED FOR FIRE EXIT DEVICE AND SHALL BE VON DUPRIN 88 SERIES OR APPROVED SUBSTITUTION.

VI. CYLINDRICAL LOCKSET
6.1 CYLINDRICAL LOCKSET (HANDICAPPED) SHALL CONFORM TO ANSI SPECIFICATIONS 156.2, SERIES 4000, GRADE 1 AND SHALL BE SARGENT 10 SERIES OR APPROVED SUBSTITUTE. LOCKSET FUNCTION SHALL BE PER HARDWARE GROUP.

VII. MORTISE LOCKSET
7.1 MORTISE LOCKSET TO CONFORM TO ANSI SPECIFICATIONS 156.2, SERIES 4000, GRADE 1 AND SHALL BE SCHLAGE L9080 OR APPROVED SUBSTITUTION.

VIII. CLOSER
8.1 DOOR CLOSURE SHALL CONFORM TO FEDERAL SPECIFICATION FF H 21, TYPE 3099V AND TYPE 3230V (MOD), NORTON 7500 SERIES. CLOSURE REINFORCEMENT SHALL BE 12 GAGE GALVANIZED STEEL OR APPROVED SUBSTITUTION, FIELD INSTALLED IN DOOR HEADER.

IX. OVERHEAD STOPS
9.1 GLYNN-JOHNSON 78 SERIES

X. SMOKE GASKET
10.1 FURNISH AT HEAD/JAMB AND EDGE STILE ASTRAGALS FOR FIRE LABELED OPENINGS TO COMPLY WITH UL 10C. PEMKO HSS2000x544BL, REESE 797B OR APPROVED EQUAL.

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DATE: 1/30/15
DRAWN: PMA
DESIGNED: WDH
CHECKED: CJB
APPROVED:

Cargill™

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Plymouth, MN 55441
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PROJECT:
VANCOUVER TERMINAL
TRACK EXPANSION PROJECT

CLIENT:
CARGILL LIMITED
VANCOUVER, B.C.

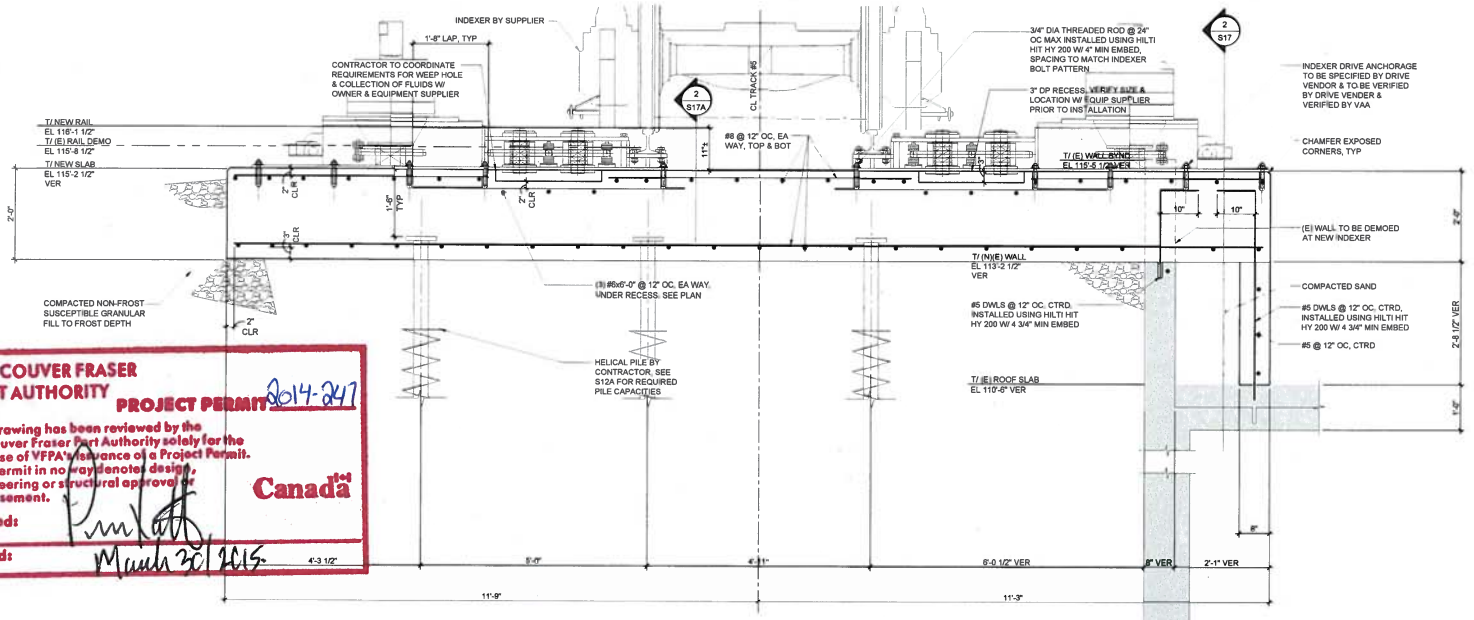
CLIENT PROJECT NO:

DRAWING TITLE:
TRACK SHED SECTIONS

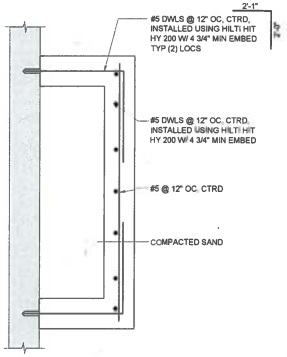
PROJECT NO: 140335

DRAWING NO: S16

SCALE: AS NOTED



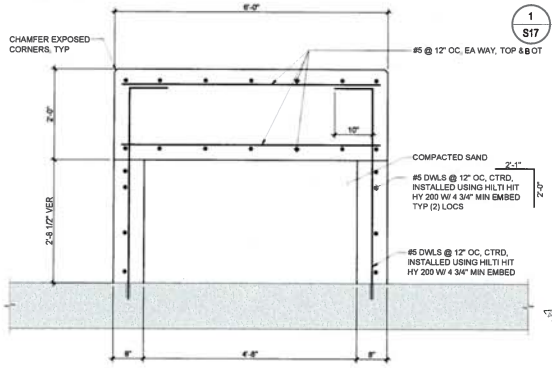
1 S17 **INDEXER MAT FDN SECTION**
3/4" = 1'-0"



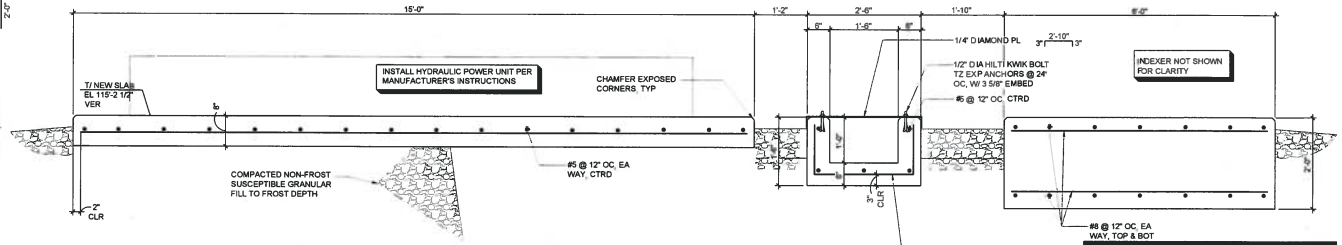
4 S17 **PLAN VIEW DETAIL**
3/4" = 1'-0"

NORTH

BAR LAP SCHEDULE	
BAR SIZE	MIN. LAP LENGTH
#10	6'-8"
#9	5'-10"
#8	5'-2"
#7	4'-6"
#6	3'-0"
#5	2'-6"
#4	2'-0"



2 S17 **SECTION**
3/4" = 1'-0"



3 S17 **SECTION**
3/4" = 1'-0"

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PROJECT PERMIT 2014-247
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Canada
Signed:
Dated: March 31/ 2015

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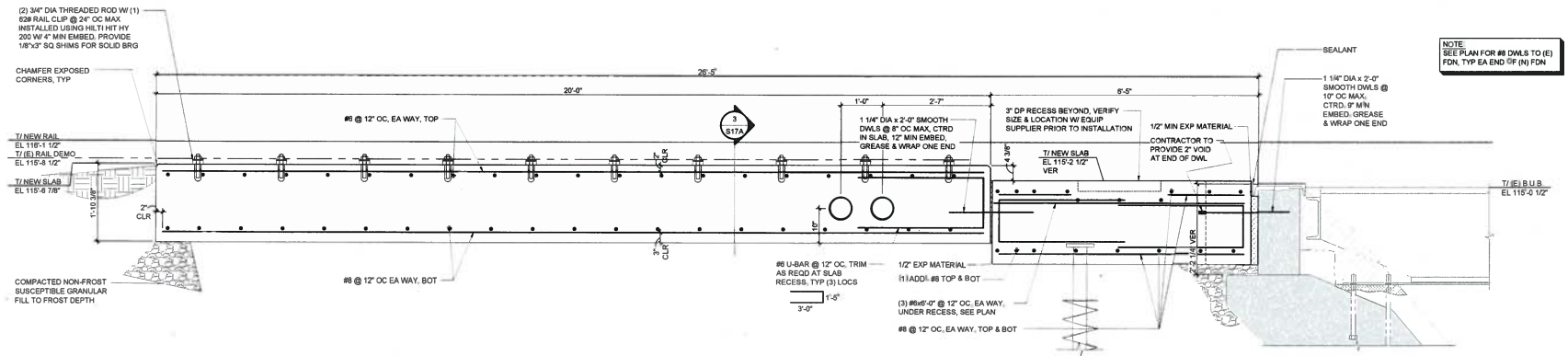
PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT
CLIENT: CARGILL LIMITED VANCOUVER, B.C.
CLIENT PROJECT NO.

DRAWING TITLE: TRACK SHED SECTIONS
PROJECT NO. 140335
DRAWING NO. S17
SCALE: AS NOTED



BAR LAP SCHEDULE	
BAR SIZE	MIN. LAP LENGTH
#10	6'-8"
#9	5'-10"
#8	5'-2"
#7	4'-6"
#6	3'-0"
#5	2'-8"
#4	2'-0"

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CLIENT PROJECT NO.

DRAWING TITLE: TRACK SHED SECTIONS
PROJECT NO.: 140335
SCALE: AS NOTED
DRAWING NO.: S17A

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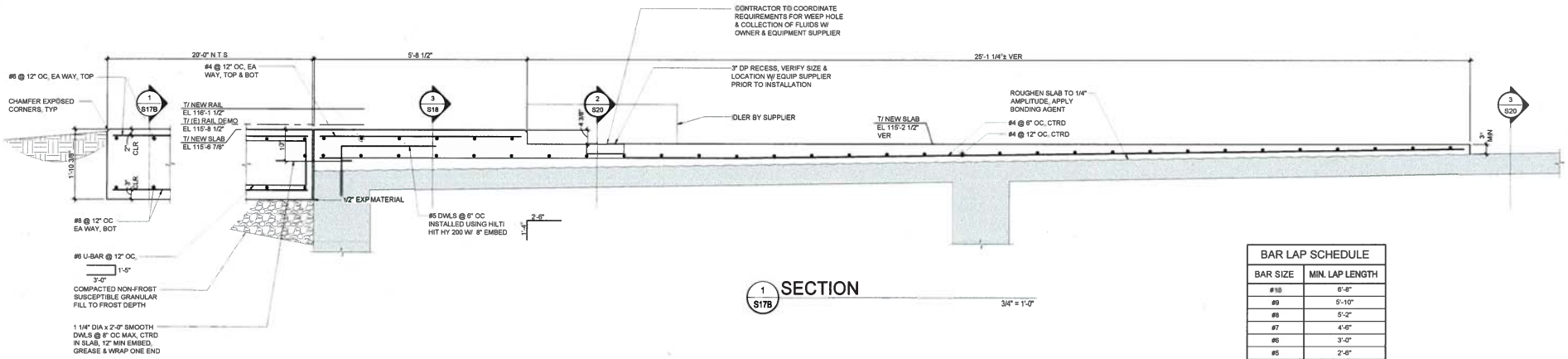

1 S17B SECTION
3/4" = 1'-0"

BAR LAP SCHEDULE	
BAR SIZE	MIN. LAP LENGTH
#10	6'-8"
#9	5'-10"
#8	5'-2"
#7	4'-6"
#6	3'-0"
#5	2'-6"
#4	2'-0"

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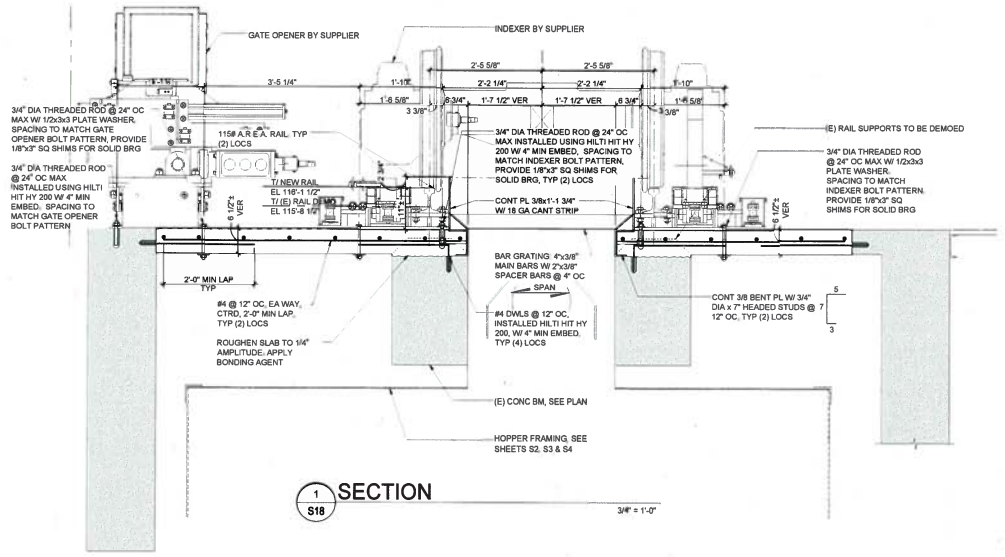
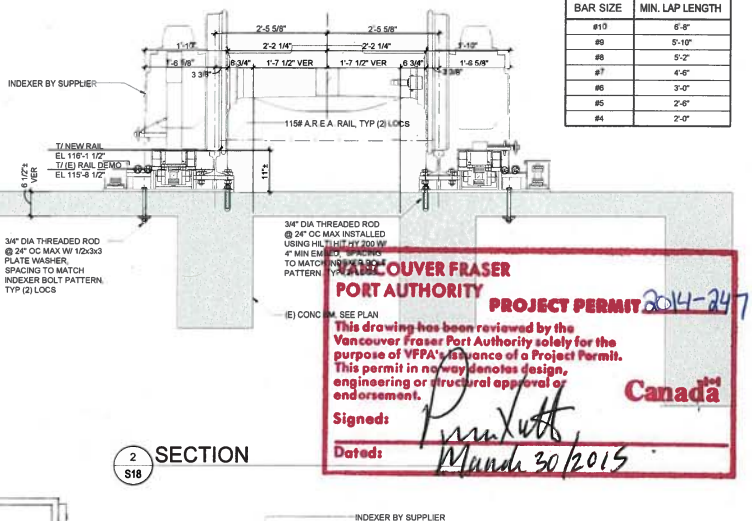
DRAWING TITLE: TRACK SHED SECTIONS
PROJECT NO: 140335
DRAWING NO: S17B
SCALE: AS NOTED



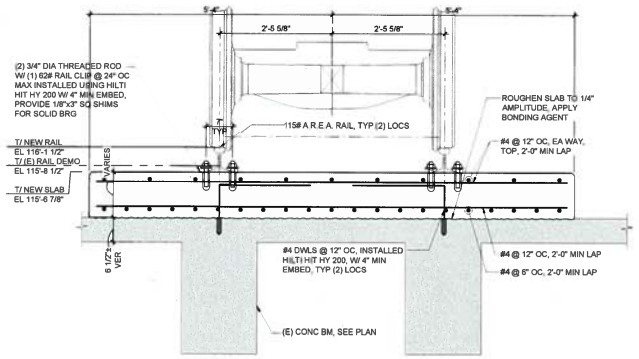
1 S18 SECTION

3/4" = 1'-0"

BAR LAP SCHEDULE	
BAR SIZE	MIN. LAP LENGTH
#10	6'-8"
#9	5'-10"
#8	5'-2"
#7	4'-6"
#6	3'-0"
#5	2'-6"
#4	2'-0"

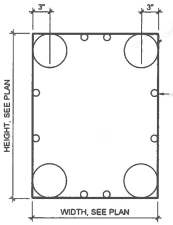


2 S18 SECTION



3 S18 SECTION

3/4" = 1'-0"

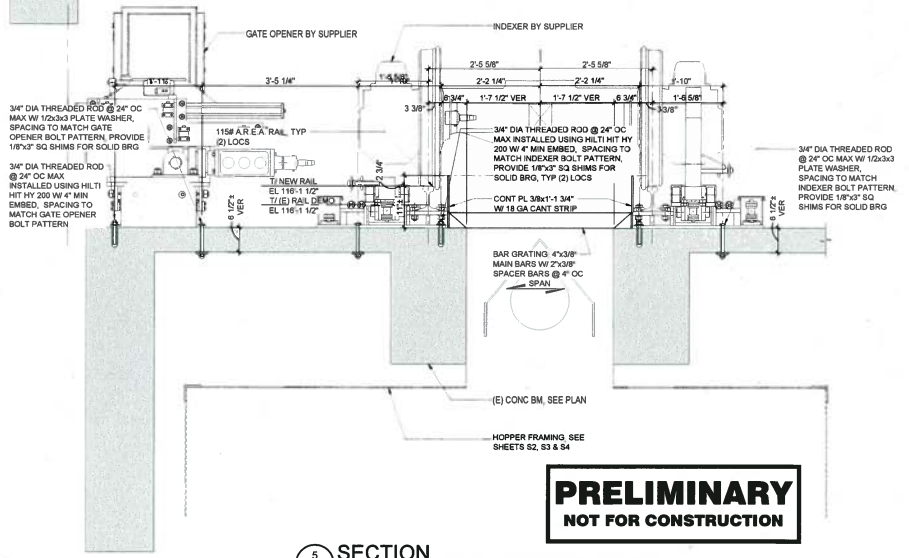


NOTES FOR CUTTING MISC RECTANGULAR/SQUARE OPENINGS:

1. CORE DRILL 6" DIA HOLES AT CORNERS, EACH SIDE OF SLIP-FORM WALL.
2. DRILL A SERIES OF 1" DIA. HOLES TANGENT TO THE CUT LINE, AS SHOWN, @ 12"OC MAX THIS IS A PREVENTATIVE MEASURE TO MINIMIZE CRACKS RELATED TO THE NEW OPENING.
3. SAW CUT THE EDGES FROM CORE TO CORE EACH SIDE OF SLIP-FORM WALL.
4. DO NOT CUT OPENINGS ANY LARGER THAN IS REQ'D
5. DO NOT SAW CUT BEYOND CORNERS OF OPENINGS

4 S18 NEW FLOOR OPNG DETAIL

3/4" = 1'-0"



5 S18 SECTION

3/4" = 1'-0"

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DRAWN: PMA
DESIGNED: WDH
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APPROVED:

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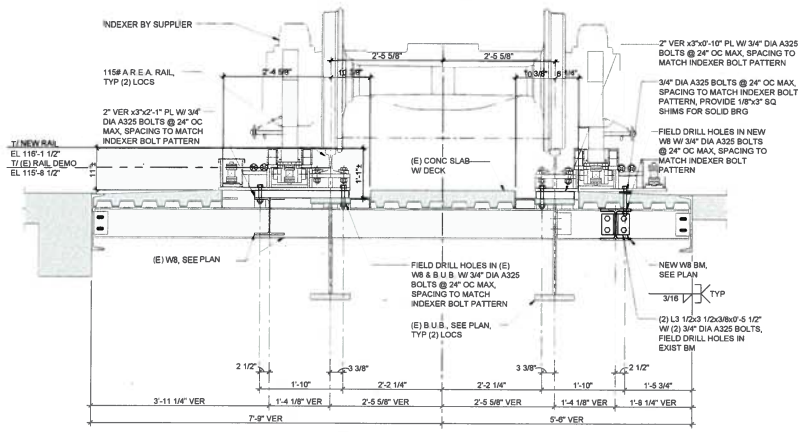
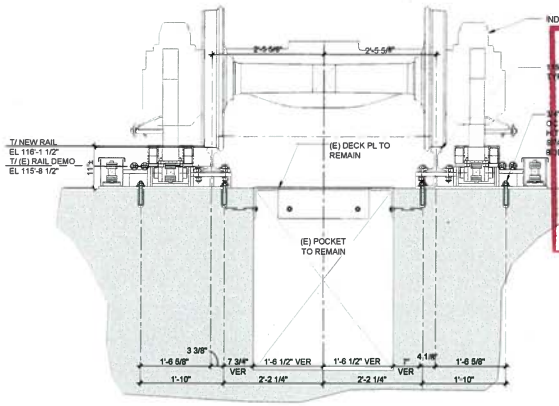
PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT
CLIENT: CARGILL LIMITED VANCOUVER, B.C.
CLIENT PROJECT NO:

DRAWING TITLE: TRACK SHED SECTIONS
PROJECT NO: 140335
DRAWING NO: S18
SCALE: AS NOTED



1 S19 SECTION

3/4" = 1'-0"



2 S19 SECTION

3/4" = 1'-0"

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Dated: March 30/2015.

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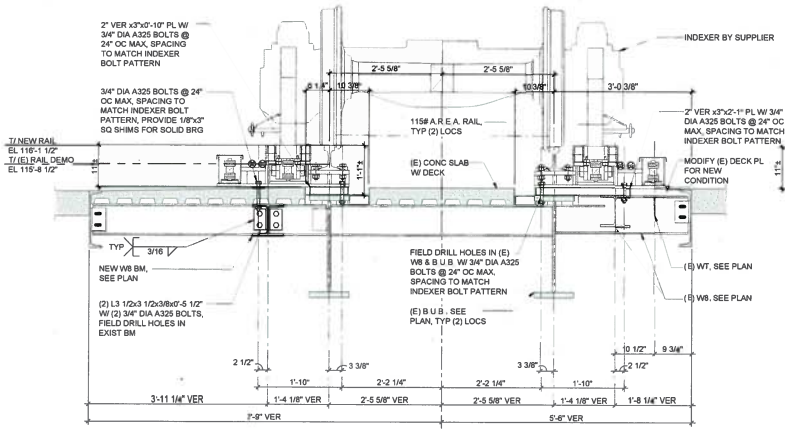
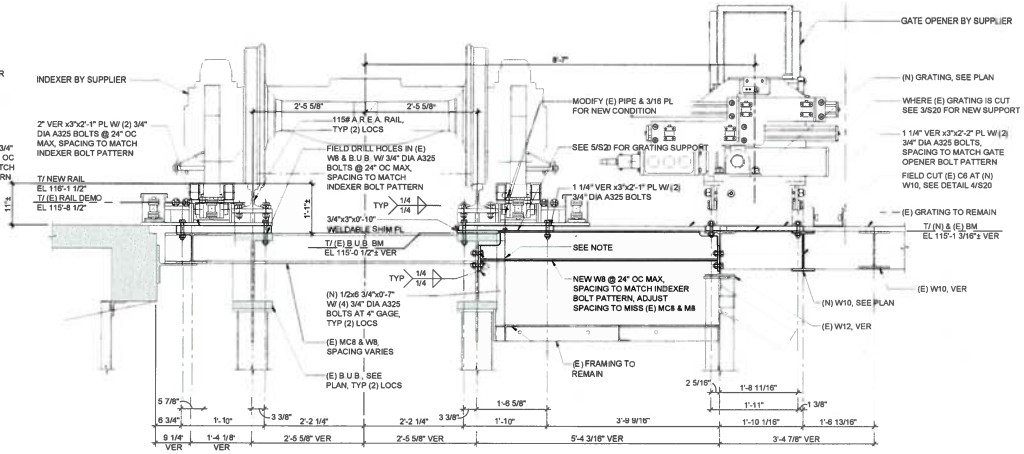


3 S19 SECTION

3/4" = 1'-0"



4 S19 SECTION

3/4" = 1'-0"

NOTE:
FIELD CUT OPNG IN (E) DECK PL FOR BM INSTALLATION. PROVIDE 1/4" DECK & CLOSE OPNG WHEN BM IS INSTALLED, SEAL WELD

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PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT

CLIENT: CARGILL LIMITED VANCOUVER, B.C.

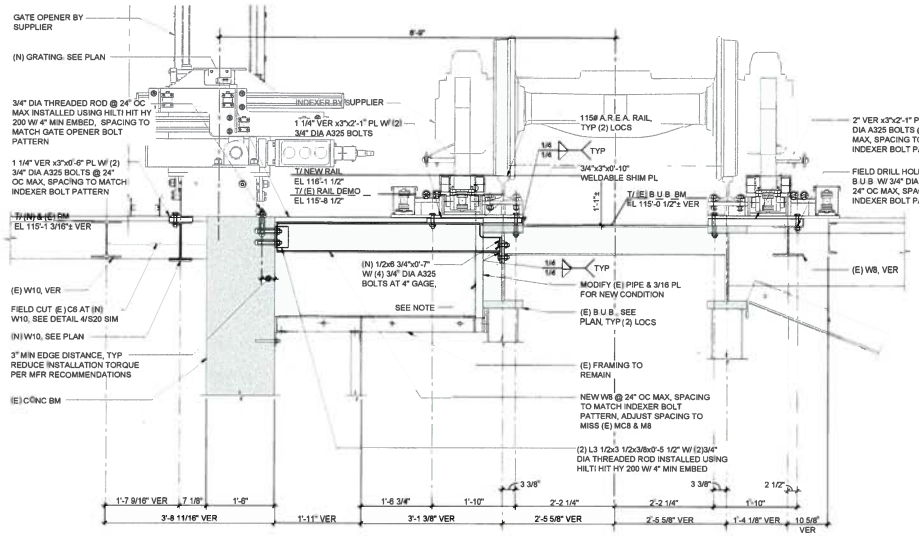
CLIENT PROJECT NO.

DRAWING TITLE: TRACK SHED BASEMENT

PROJECT NO. 140335

DRAWING NO. S19

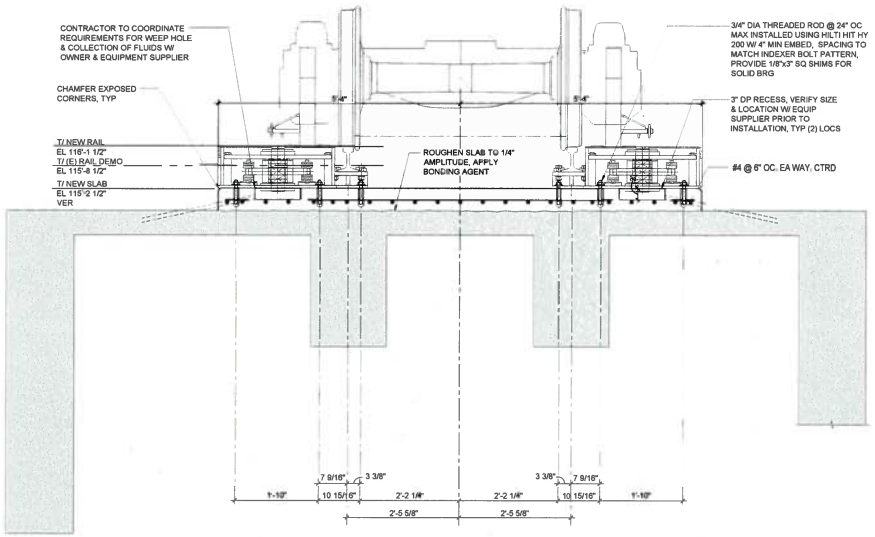
SCALE AS NOTED



NOTE:
FIELD CUT OPNG IN (E) DECK PL FOR BM INSTALLATION. PROVIDE 1/4" DECK & CLOSE OPNG WHEN BM IS INSTALLED. SEAL WELD

1 S20 SECTION

3/4" = 1'-0"



2 S20 SECTION

3/4" = 1'-0"

BAR LAP SCHEDULE	
BAR SIZE	MIN. LAP LENGTH
#10	6'-8"
#9	5'-10"
#8	5'-2"
#7	4'-6"
#6	3'-0"
#5	2'-6"
#4	2'-0"

VANCOUVER FRASER PORT AUTHORITY
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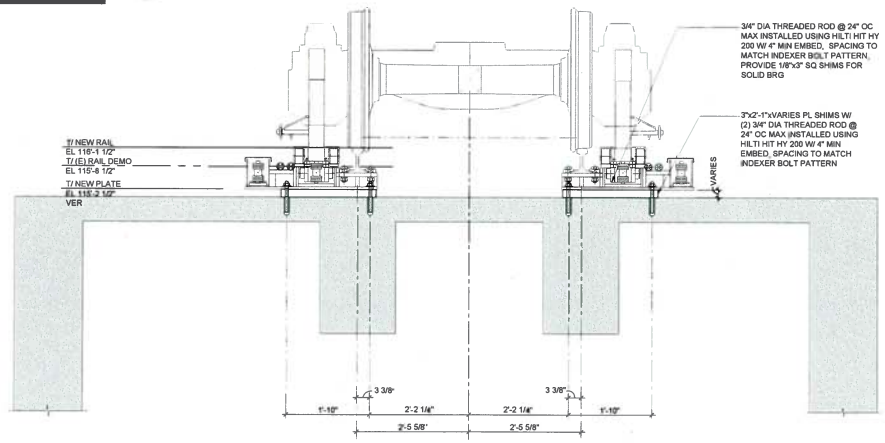
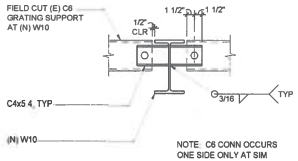


3 S20 SECTION

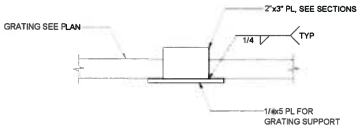
3/4" = 1'-0"



NOTE: C6 CONN OCCURS ONE SIDE ONLY AT SIM

4 S20 DETAIL

1" = 1'-0"



5 S20 DETAIL

3" = 1'-0"

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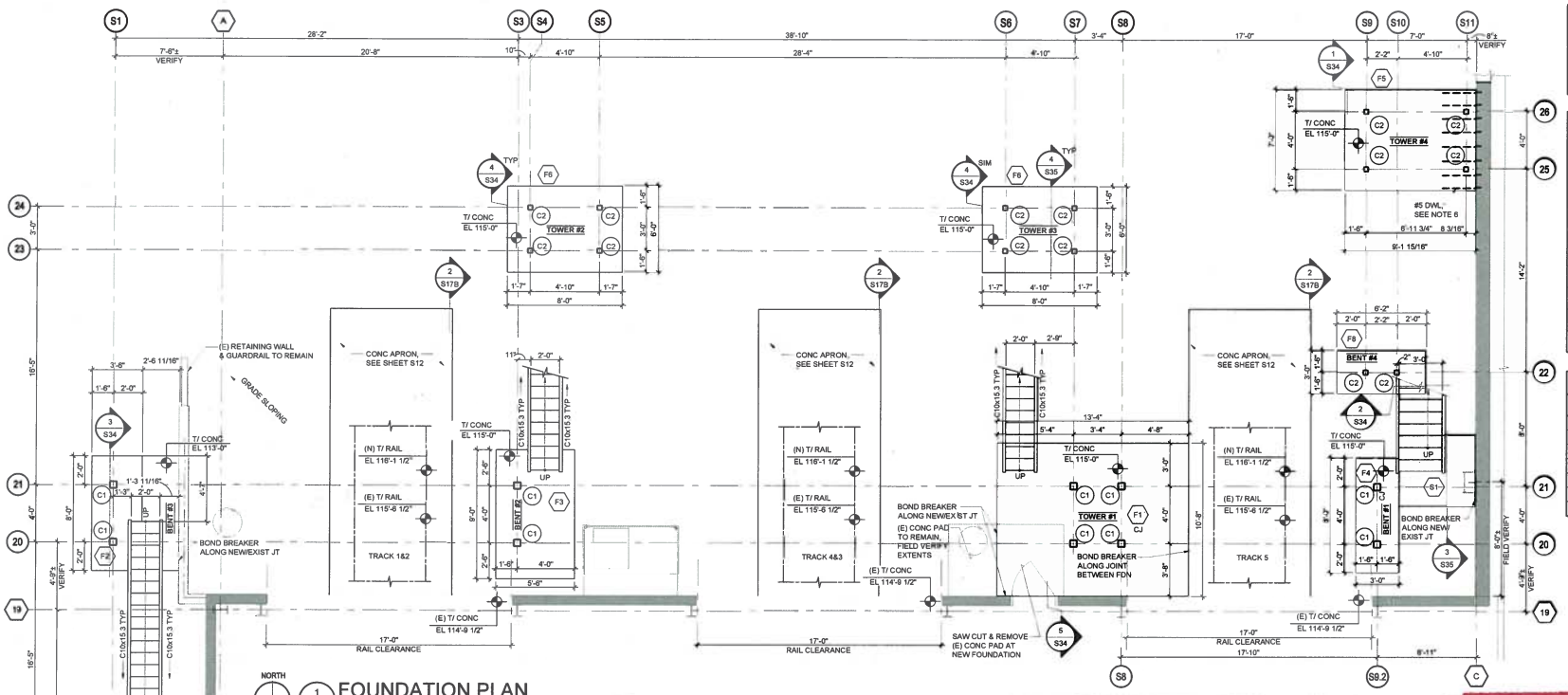
CLIENT: CARGILL LIMITED VANCOUVER, B.C.
CLIENT PROJECT NO:

DRAWING TITLE: TRACK SHED SECTIONS
PROJECT NO: 140335
DRAWING NO: S20
SCALE: AS NOTED



FOUNDATION PLAN

COLUMN SCHEDULE		
MARK	SIZE	BASE PL TYPE
C1	HSS 6x6x1/4	TYPE 'A' - 1/S35
C2	HSS 4x4x1/4	TYPE 'B' - 1/S35

SLAB SCHEDULE			
MARK	SIZE	DEPTH	REINF
S1	5'-4"x5'-0"	12"	#4 @ 12"OC T&B
F1	10'-8"X12'-4"	48"	#7 @ 12"OC EW T&B
F2	8'-0"x3'-6"	36"	#6 @ 12"OC EW T&B
F3	9'-0"x5'-6"	36"	#6 @ 12"OC EW T&B
F4	8'-0"x3'-0"	36"	#6 @ 12"OC EW T&B
F5	7'-0"x9'-1 15/16"	24"	#6 @ 12"OC EW T&B
F6	6'-0"x8'-0"	24"	#6 @ 12"OC EW T&B
F7	6'-0"x6'-10"	24"	#6 @ 12"OC EW T&B
F8	3'-0"x6'-2"	24"	#6 @ 12"OC EW T&B

BAR LAP SCHEDULE	
BAR SIZE	MIN. LAP LENGTH
#10	6'-8"
#9	5'-10"
#8	5'-2"
#7	4'-6"
#6	3'-0"
#5	2'-6"
#4	2'-0"

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ESTIMATING CONTRACTOR SHALL VISIT THE EXISTING FACILITY. CONTRACTOR SHALL USE ITS EXPERIENCE TO PROVIDE A REASONABLE ESTIMATE IN THEIR FINAL GMP FOR COORDINATION WITH AND MODIFICATION TO EXISTING CONDITIONS, AND VERIFY ALL EXISTING SITE CONDITIONS.

NOTE:
CONTRACTOR TO COORDINATE SITE DRAINAGE & FINISH GRADE W/ OWNER

FOUNDATION NOTES:
1. FOR STRUCTURAL NOTES SEE SHEET S0.
2. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, CONDITIONS, ETC. PRIOR TO SUBMITTALS OF SHOP DRAWINGS (GC TO CLOUD AND POINT OUT REVISIONS ON SHOP DRAWINGS SUBMITTED), ANY SUCH FABRICATION, OR RELATING TO FITTED MEMBERS, OR ANY CONSTRUCTION. PROCEEDING WITHOUT ALL VERIFICATION NOTED SHALL BE AT CONTRACTOR'S RISK AND EXPENSE, SUCH AS BUT NOT LIMITED TO, REPAIR, RECONSTRUCTION, REDESIGN, ETC.
3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO EXCAVATION
4. CONSULT GEOTECHNICAL ENGINEER/INSPECTOR FOR SUBBASE PREPARATION AND INSPECTION PRIOR TO PLACEMENT OF CONCRETE.
5. "CJ" DENOTES CONTROL JOINT LOCATION, SEE DETAIL 3/S35.
6. #5x3'-2" DWL @ 12"OC LAP w/ TYP REINF. INSTALL USING HILTI HIT-HY 200 AND EMBED 4" INTO EXIST CONC WALL.
7. FOR TYPICAL FOUNDATION DETAILS SEE S35.

VANCOUVER FRASER PORT AUTHORITY PROJECT PERMIT 2014-247
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Signed:
Dated: March 30/2015

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NO.	DATE	ISSUE/REVISION	DRWN	CHKD
A	01/30/2015	ISSUED FOR REVIEW	PAA	CJB
B	3/06/15	ISSUE FOR BID	PMA	CJB

DATE: 01/30/2015
DRAWN: PA
DESIGNED: WH
CHECKED: CJB
APPROVED: CJB

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www.vaaeng.com
info@vaaeng.com

PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT
CLIENT: CARGILL LIMITED VANCOUVER, B.C.
CLIENT PROJECT NO

DRAWING TITLE: TRACK SHED STAIRS FOUNDATION PLAN
PROJECT NO: 140335
DRAWING NO: S31
SCALE: AS NOTED

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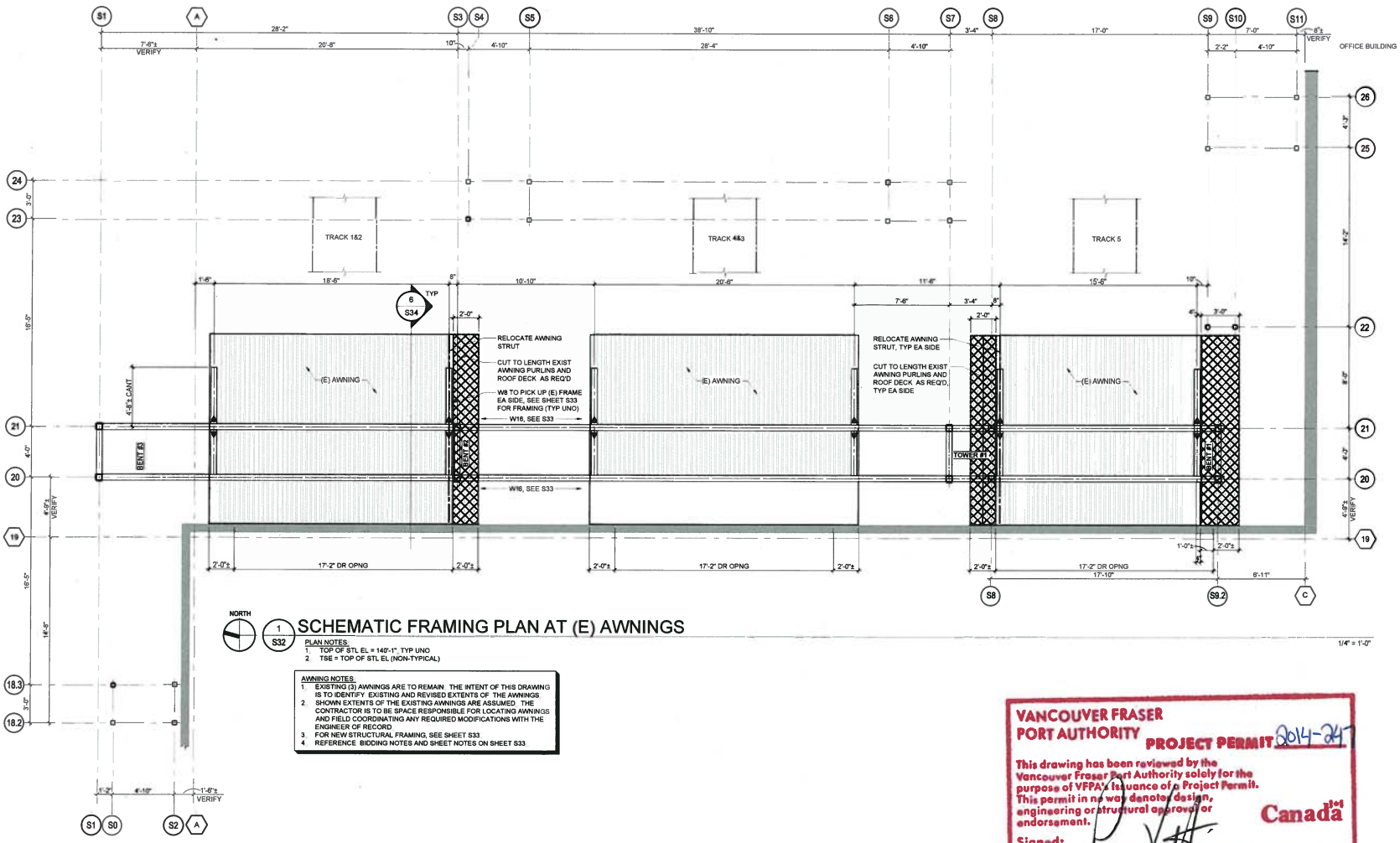

NORTH

1 / S32 SCHEMATIC FRAMING PLAN AT (E) AWNINGS

1/4" = 1'-0"

PLAN NOTES:
1. TOP OF STL EL = 140'-1", TYP UNO
2. TSE = TOP OF STL EL (NON-TYPICAL)

AWNING NOTES:
1. EXISTING (3) AWNINGS ARE TO REMAIN. THE INTENT OF THIS DRAWING IS TO IDENTIFY EXISTING AND REVISED EXTENTS OF THE AWNINGS.
2. SHOWN EXTENTS OF THE EXISTING AWNINGS ARE ASSUMED. THE CONTRACTOR IS TO BE SPACE RESPONSIBLE FOR LOCATING AWNINGS AND FIELD COORDINATING ANY REQUIRED MODIFICATIONS WITH THE ENGINEER OF RECORD.
3. FOR NEW STRUCTURAL FRAMING, SEE SHEET S33.
4. REFERENCE BIDDING NOTES AND SHEET NOTES ON SHEET S33.

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REFERENCE ONLY

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NO.	DATE	ISSUE/REVISION	DRWN	CHKD

DATE: 01/30/2015
DRAWN: PA
DESIGNED: WH
CHECKED: CJB
APPROVED: CJB

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VAA
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Plymouth, MN 55441
763.559.9100
www.vaaeng.com
info@vaaeng.com

PROJECT:
VANCOUVER TERMINAL
TRACK EXPANSION PROJECT

CLIENT:
CARGILL LIMITED
VANCOUVER, B.C.

CLIENT PROJECT NO:

DRAWING TITLE:
TRACK SHED STAIRS
SCHEMATIC FRAMING PLAN AT EXISTING AWNINGS

PROJECT NO: 140335
DRAWING NO: S32
SCALE: AS NOTED

VANCOUVER FRASER PORT AUTHORITY
PROJECT PERMIT 2014-247
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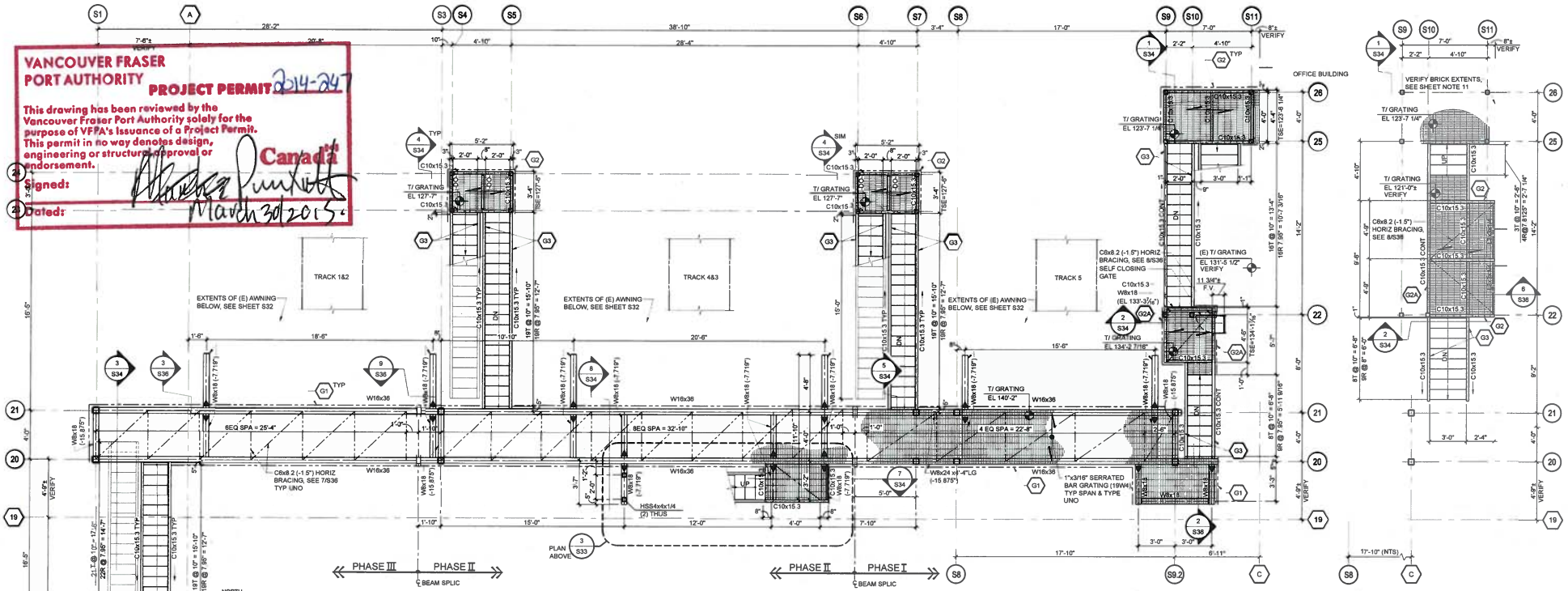
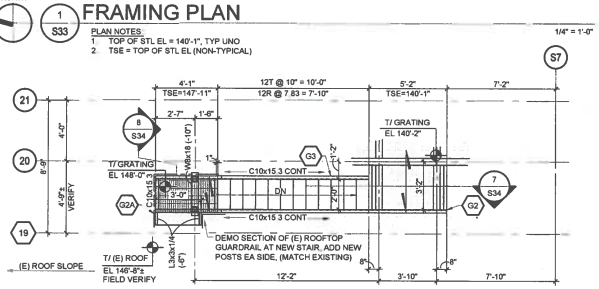


FRAMING PLAN (S33)

PLAN NOTES:
1. TOP OF STL EL = 140'-1", TYP UNO
2. TSE = TOP OF STL EL (NON-TYPICAL)

1/4" = 1'-0"



FRAMING PLAN (S33)

PLAN NOTES:
1. TOP OF STL EL = 147'-11", TYP UNO

1/4" = 1'-0"

FRAMING PLAN (S33)

PLAN NOTES:
1. TOP OF STL EL = 120'-11", TYP UNO

1/4" = 1'-0"

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SHEET NOTES:
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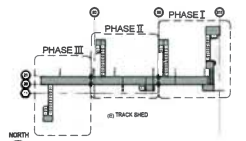
3. (x' X") INDICATES + OR - TOP OF STEEL ELEVATION.
4. FOR TOP OF STEEL BEAM REFERENCE ELEVATION SEE PLAN.
5. FOR TYP BEAM CONNECTION DETAILS SEE S36.
6. FOR TYP BENT AND TOWER FRAMING SEE S37.
7. ALL GUARDRAIL TO BE 1 1/2" SCHED 40 PIPE W/ 1/4" x 5" (ABOVE TOP OF GRATING) TOE PL. SEE S39 FOR TYPICAL DETAILS.
8. ALL STAIR STRINGER TO BE C10x15.3, SEE DETAILS ON S38 FOR ADDL INFO.
9. **STAIR STRINGER DIMENSIONS ARE FROM STRINGER TO CHANNEL FACE, OR STRINGER TO CL BM.**
10. **FOR STAIR FRAMING SEE S34.**
11. **CONTRACTOR TO VERIFY EXISTING BRICK EXTENTS AT FACE OF OFFICE BUILDING. PLATFORM AT ELEVATION 121'-0"± FRAMES INTO EXISTING CONC WALL, NOTIFY ENGINEER OF ANY DISCREPANCIES. DO NOT ANCHOR INTO BRICK, SEE DETAIL S/S36.**

SHEET SYMBOLS:
1. ▼ INDICATES MOMENT CONNECTION; AT AWNING SUPPORT SEE 3/S36, AT BRACKETED CATWALK EXTENSION SEE 4/S36.
2. (6x) INDICATES GUARDRAIL CONNECTION DETAIL, SEE S39

SEQUENCE OF STEEL ERECTION:
OWNER IS DIRECTING CONTRACTOR TO SEQUENCE STEEL ERECTION IN (3) PHASES. PHASES CORRESPOND TO EACH SIDE OF BEAM SPLICES IN THE PRIMARY W16x36 MEMBERS. REFERENCE PLAN 1/S33 AND BELOW PHASING KEY PLAN FOR CLARITY.



PHASING KEY PLAN
N.T.S.

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DESIGNED: WH
CHECKED: CJB
APPROVED: CJB

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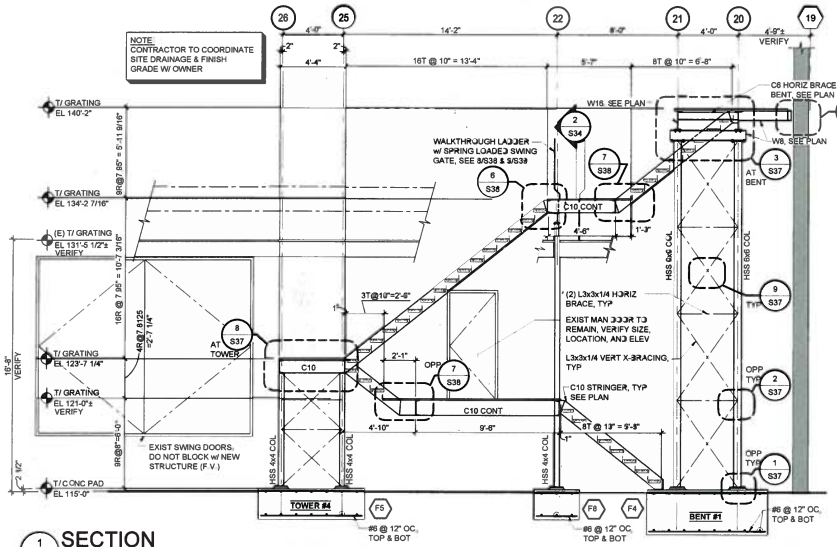
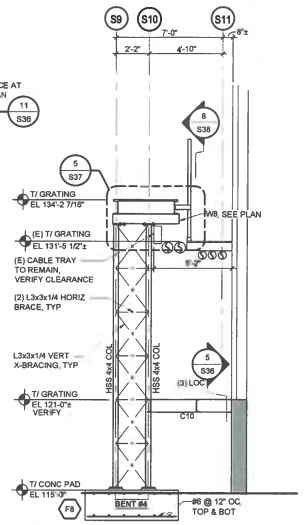
info@vaaeng.com

PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT
CLIENT: CARGILL LIMITED VANCOUVER, B.C.
CLIENT PROJECT NO:

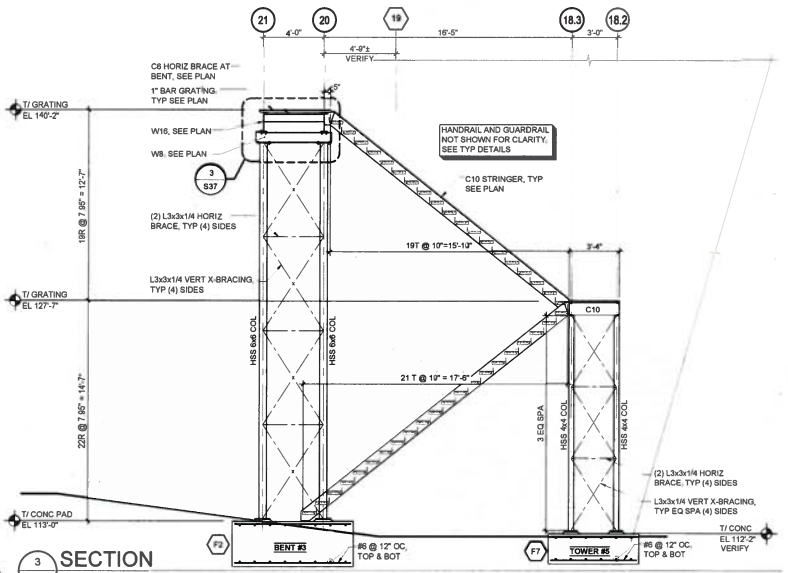
DRAWING TITLE: TRACK SHED STAIRS FRAMING PLAN
PROJECT NO: 140335
DRAWING NO: S33
SCALE: AS NOTED



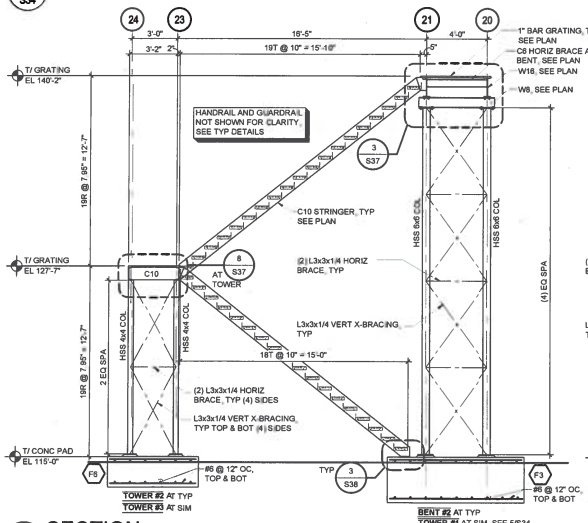
1 S34 SECTION



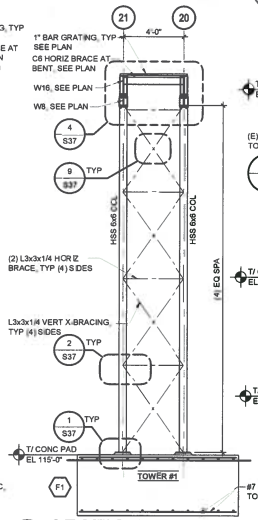
2 S34 SECTION



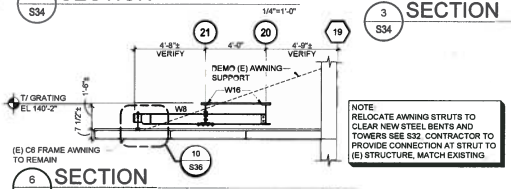
3 S34 SECTION



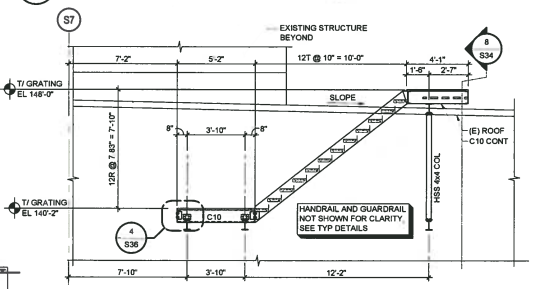
4 S34 SECTION



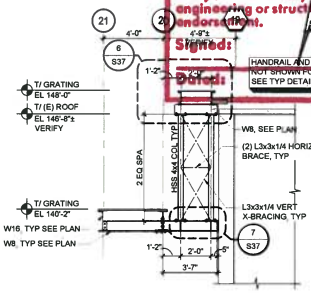
5 S34 SECTION



6 S34 SECTION



7 S34 SECTION



8 S34 SECTION

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PROJECT PERMIT 2014-247
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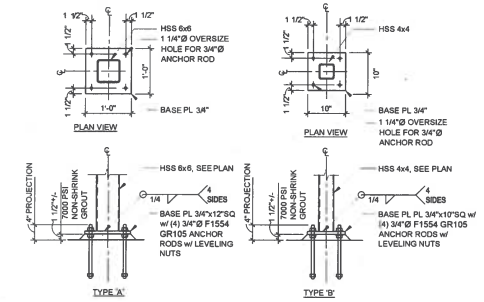
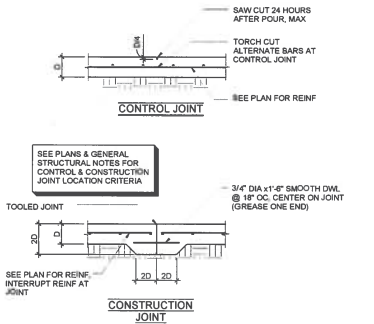
PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT
CLIENT: CARGILL LIMITED VANCOUVER, B.C.
CLIENT PROJECT NO.

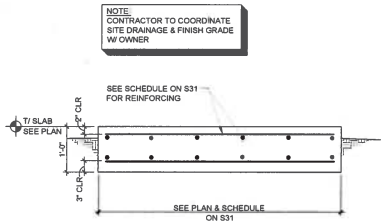
DRAWING TITLE: TRACK SHED STAIRS SECTIONS
PROJECT NO. 140335
DRAWING NO. S34
SCALE: AS NOTED



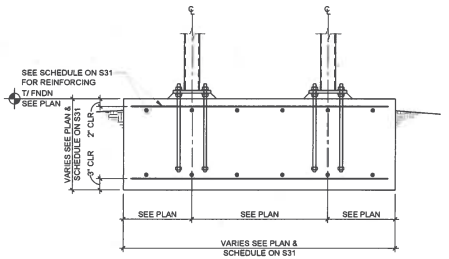
1 S35 TYP BASE PLATE TYPES 3/4"=1'-0"



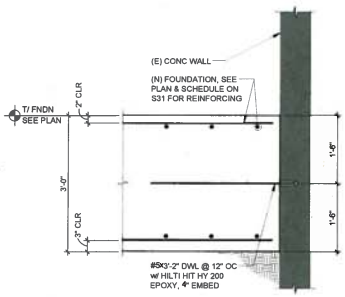
2 S35 CONTROL/CONST JT DETAIL 1/2" = 1'-0"



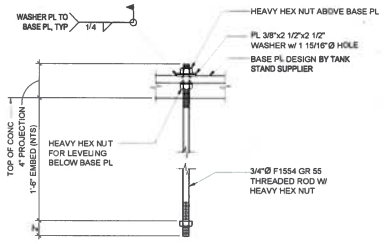
3 S35 TYP SLAB 3/4"=1'-0"



4 S35 TYP FOUNDATION 3/4"=1'-0"



4 S35 FOUNDATION MAT 3/4"=1'-0"



6 S35 THREADED ROD DETAIL 1 1/2"=1'-0"

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PROJECT PERMIT 3014-247
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NO.	DATE	ISSUE/REVISION	DRWN	CHKD
A	3/06/15	ISSUE FOR BID	PMA	CJB

NO.	DATE	ISSUE/REVISION	DRWN	CHKD

DATE: 01/30/2015
DRAWN: PA
DESIGNED: WH
CHECKED: CJB
APPROVED: CJB

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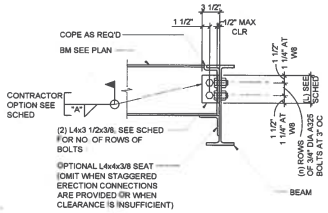
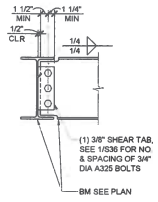
PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT
CLIENT: CARGILL LIMITED VANCOUVER, B.C.
CLIENT PROJECT NO.

DRAWING TITLE: TRACK SHED STAIRS FOUNDATION DETAILS
PROJECT NO. 140335
DRAWING NO. S35
SCALE: AS NOTED



1/S36

TYPICAL BEAM TO BEAM FRAMING



1A/S36

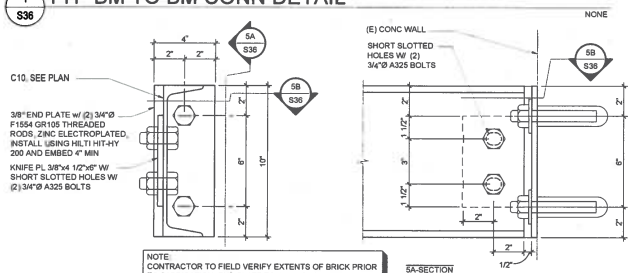
BEAM TO BEAM FRAMING

CONNECTION SCHEDULE

FRAMING BEAM	(L) DOUBLE ANGLE LENGTH	(n) NO. OF ROWS OF BOLTS	WELD SIZE "A"
W16	1'-0"	4	1/4
W8	0'-5 1/2"	2	3/16
C10	0'-8"	2	3/16

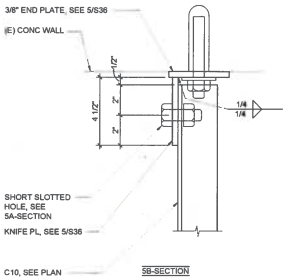
NOTES:
1. ALL BOLTS ARE TO BE GALVANIZED WITH A563-DH GALVANIZED NUTS.
2. USE 3/8" BENT PLATES FOR SKEWED BEAM TO BEAM OR BEAM TO COLUMN CONNECTIONS.

1 S36 TYP BM TO BM CONN DETAIL



NOTE:
CONTRACTOR TO FIELD VERIFY EXTENTS OF BRICK PRIOR TO FABRICATION, END PLATE TO CONNECT TO (E) CONC STEM WALL w/ MINIMUM 5" EDGE DISTANCE AT EPOXY ANCHORS, NOTIFY ENGINEER OF ANY DISCREPANCY

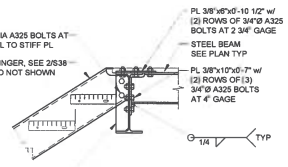
5A-SECTION



5B-SECTION

3" = 1'-0"

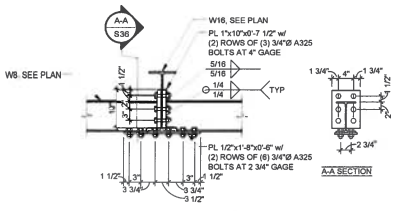
2 S36 MOMENT CONN



NOTE:
NO STRINGER AT SIM.

3/4" = 1'-0"

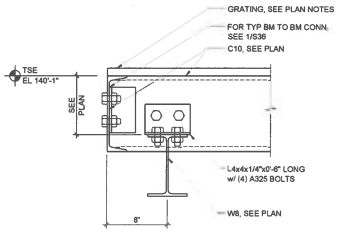
3 S36 MOMENT CONN



CONTRACTOR OPTION TO FIELD WELD PL'S TO W16 IN LIEU OF BOLTING, NOTIFY ENGINEER

3/4" = 1'-0"

4 S36 DETAIL



1 1/2" = 1'-0"

VANCOUVER FRASER PORT AUTHORITY
PROJECT PERMIT 2014-247
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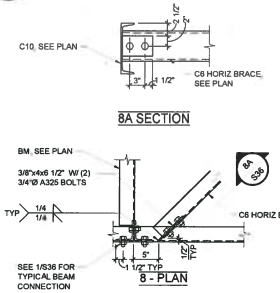
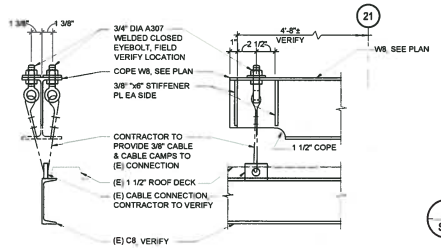
Signed:
Dated: March 20/2015

5 S36 DETAIL



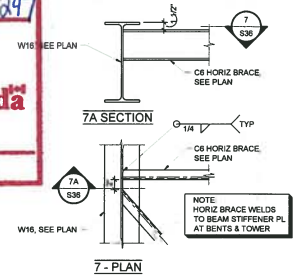
3" = 1'-0"

6 S36 DETAIL



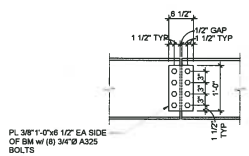
1 1/2" = 1'-0"

7 S36 HORIZ BRACING CONN



1" = 1'-0"

8 S36 HORIZ BRACING CONN



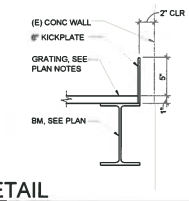
1" = 1'-0"

9 S36 TYP BM SPLICE

3/4" = 1'-0"

10 S36 DETAIL

1 1/2" = 1'-0"



11 S36 DETAIL

1 1/2" = 1'-0"

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NO.	DATE	ISSUE/REVISION	DRWN	CHKD

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DRAWN: PA
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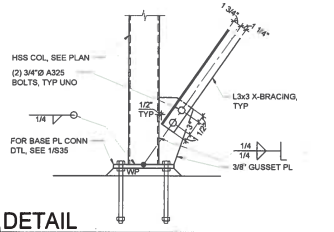
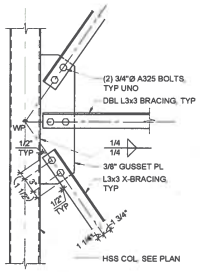
PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT
CLIENT: CARGILL LIMITED VANCOUVER, B.C.
CLIENT PROJECT NO.

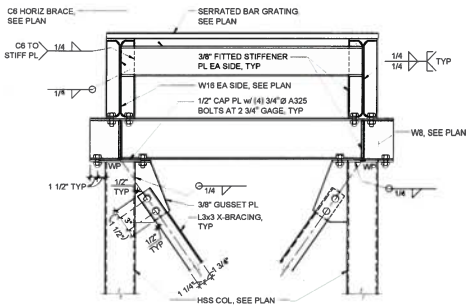
DRAWING TITLE: TRACK SHED STAIRS FRAMING DETAILS
PROJECT NO: 140335
DRAWING NO: S36
SCALE: AS NOTED



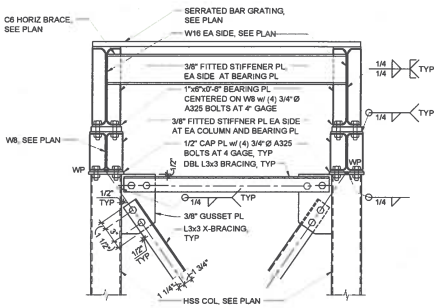
1 S37 DETAIL 1" = 1'-0"



2 S37 DETAIL 1" = 1'-0"

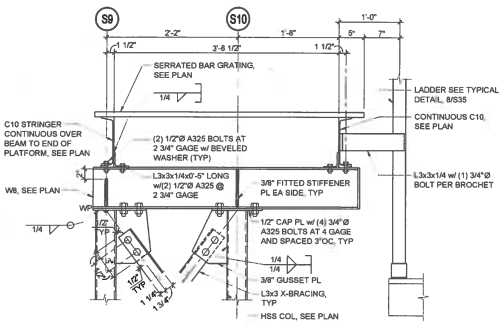


3 S37 DETAIL 1" = 1'-0"



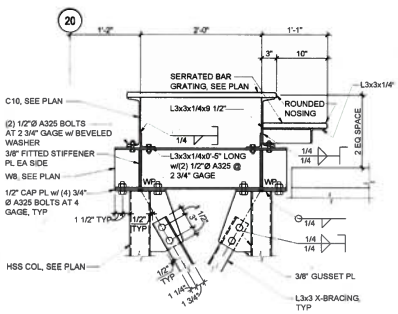
4 S37 DETAIL 1" = 1'-0"

NOTE: GUARDRAIL & KICK PL NOT SHOWN FOR CLARITY

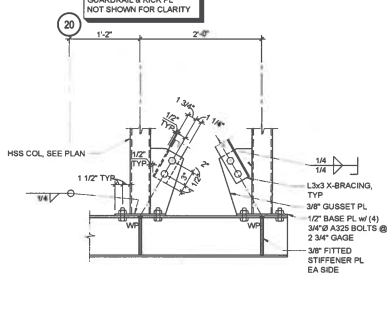


5 S37 DETAIL 1" = 1'-0"

NOTE: GUARDRAIL & KICK PL NOT SHOWN FOR CLARITY

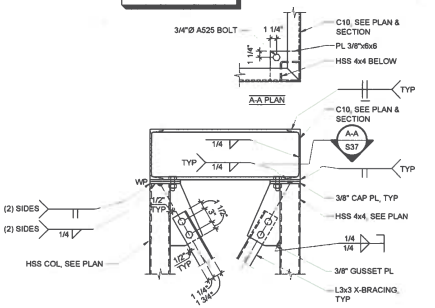


6 S37 DETAIL 1" = 1'-0"



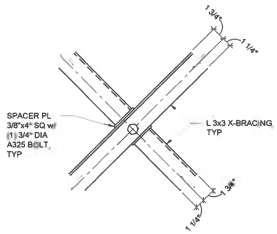
7 S37 DETAIL 1" = 1'-0"

NOTE: GUARDRAIL & KICK PL NOT SHOWN FOR CLARITY



8 S37 DETAIL 1" = 1'-0"

NOTE: GUARDRAIL & KICK PL NOT SHOWN FOR CLARITY



9 S37 DETAIL 1 1/2" = 1'-0"

NOTE: GUARDRAIL & KICK PL NOT SHOWN FOR CLARITY

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Canada

Signed:

Dated: March 30/2015

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DESIGNED: WH
CHECKED: CJB
APPROVED: CJB

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info@vaaeng.com

PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT

CLIENT: CARGILL LIMITED VANCOUVER, B.C.

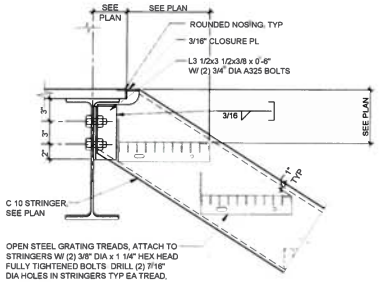
CLIENT PROJECT NO:

DRAWING TITLE: TRACK SHED STAIRS BENT & TOWER DETAILS

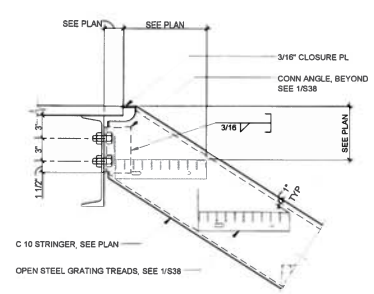
PROJECT NO: 140335

DRAWING NO: S37

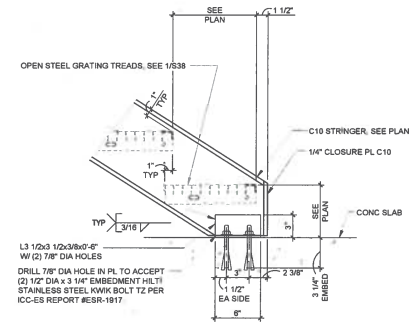
SCALE: AS NOTED



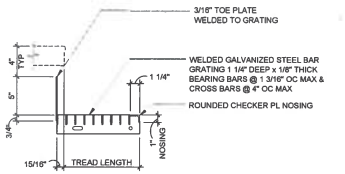
1 S38 DETAIL 1 1/2"=1'-0"



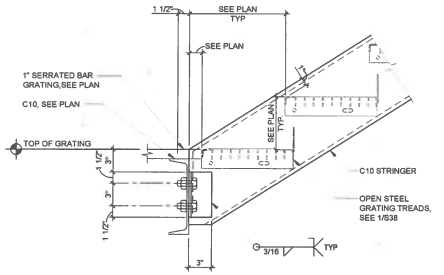
2 S38 DETAIL 1 1/2"=1'-0"



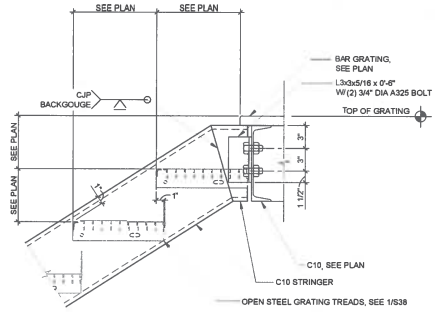
3 S38 DETAIL 1 1/2"=1'-0"



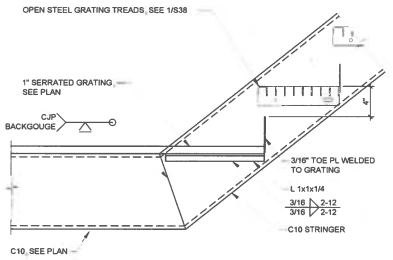
4 S38 TYPICAL STAIR TREAD DETAIL 1 1/2"=1'-0"



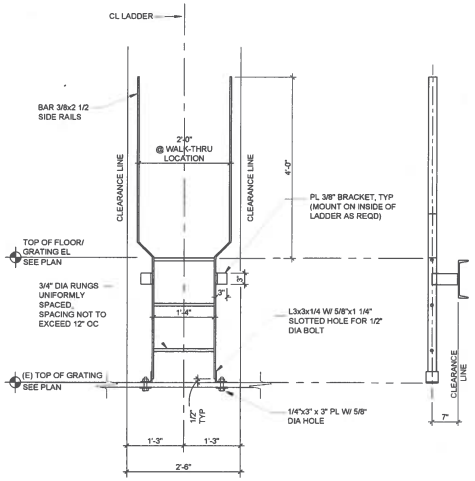
5 S38 DETAIL 1 1/2"=1'-0"



6 S38 DETAIL 1 1/2"=1'-0"



7 S38 DETAIL 1 1/2"=1'-0"



8 S38 TYPICAL LADDER AND CAGE 3/4"=1'-0"

VANCOUVER FRASER PORT AUTHORITY PROJECT PERMIT 214-247

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NO.	DATE	ISSUE/REVISION	DRWN	CHKD

DATE: 1/30/15
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DESIGNED: WH
CHECKED: CJB
APPROVED:

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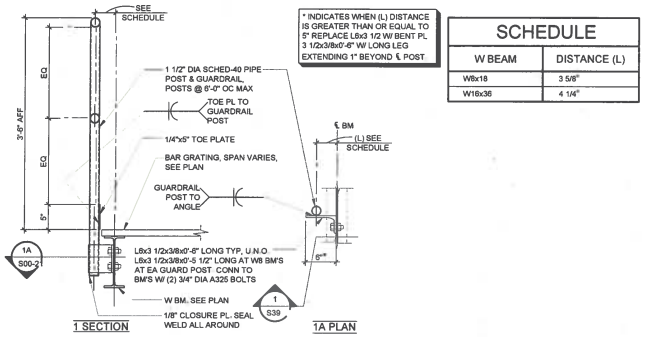
www.vaaeng.com
info@vaaeng.com

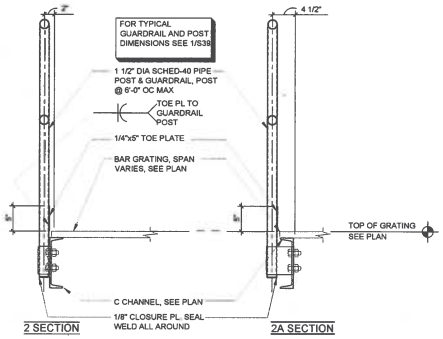
PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT
CLIENT: CARGILL LIMITED VANCOUVER, B.C.
CLIENT PROJECT NO:

DRAWING TITLE: TYPICAL STAIR DETAILS
PROJECT NO: 140335
DRAWING NO: S38
SCALE: AS NOTED



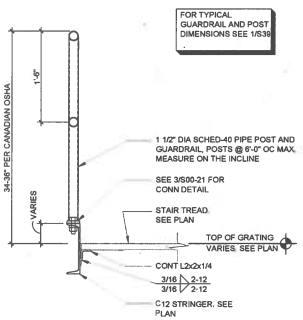
1 S39 / 1A S39 GUARDRAIL DETAIL (G1)

1"=1'-0"



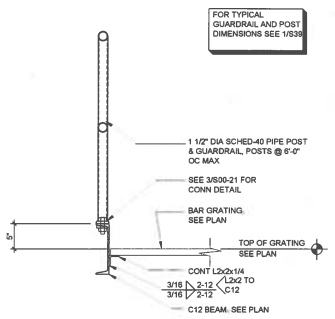
2 S39 / 2A S39 GUARDRAIL DETAIL (G2) (G2A)

1"=1'-0"



3 S39 GUARDRAIL DETAIL (G3)

1"=1'-0"

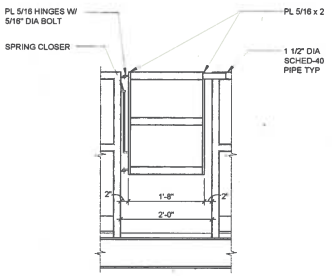


4 S39 GUARDRAIL DETAIL (G4)

1"=1'-0"

5 S39 NOT USED

NO SCALE



6 S39 SELF CLOSING GATE DETAIL

3/4"=1'-0"

VANCOUVER FRASER PORT AUTHORITY PROJECT PERMIT 2014-247

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Dated: March 30/2015

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PROJECT: VANCOUVER TERMINAL TRACK EXPANSION PROJECT
CLIENT: CARGILL LIMITED VANCOUVER, B.C.
CLIENT PROJECT NO:

DRAWING TITLE: TYPICAL GUARDRAIL DETAILS
PROJECT NO: 140335
DRAWING NO: S39
SCALE: AS NOTED

Project:	**Rail Improvement Project**	Location:	**801 Low Level Road, North Vancouver, BC**
		VFPA Site/Area No.:	**CNV073**
Proponent(s):	**Cargill Ltd.**		

Project Description

In this Schedule, "Project" means the physical activities authorized by VFPA to be carried out pursuant to Review Number 14-247, as described below.

- Cargill Ltd. (the "Proponent") proposes to reconfigure rail track and commission a third dumper to improve efficiency of rail car movement and increase capacity of commodity handling facilities.
- Cargill currently handles the following commodities: wheat, canola, peas and barley.
- The proposed work will increase track space for loaded rail cars from 70 to 112, and will increase the average daily cars that can be unloaded from 125 to 175, with a maximum of 200 cars per day. With an additional receiving pit commissioned, Cargill will be able to unload 2 cars at a time.
- The proposed project anticipates a reduction in noise and exhaust emissions, due to fewer rail shunts.
- The proposed work includes:
  - Rail works:
    - Reconfigure existing rail track infrastructure with additional switches and trackage;
    - Install a dedicated lead track where the CN tracks cross into Cargill's terminal area to improve access to spot cars on the Cargill rail tracks;
    - Place fill for creation of a track base;
    - Remove existing vegetation; and
    - Demolish and excavate portions of existing earth berm and retaining walls to a depth of less than 1 metre, and install new or re-install existing retaining walls alongside track yard.
  - Modifications within existing track shed:
    - Excavate soil in Indexer grade beams up to 1.2 metres, place and compact fill, form and place new concrete Indexer grade beams in trackshed;
    - Re-commission a third dumper pit within existing trackshed (with new hopper, automation and controls system, power cable and control station for motors, new conveyor, new crossover walkway and track upgrades); and
    - Install a new gate opener system for third dumper.
  - Automation:
    - Install a new car indexing system for entire trackshed;
    - Install a radio-frequency identification (RFID) system for automated car information management;
    - Upgrade rail signal system; and
    - Upgrade current camera system.
  - Lighting system:
    - Upgrade exterior lighting system.
- All earth works, surface excavation and clearing of trees and vegetation as noted above are to take place within areas of existing fill and previously disturbed soils.

- The area of the proposed rail track work is approximately 1.16 km in length, and will require approximately 2320 m^3 of fill.
- Areas of onsite contamination are not anticipated to be affected by the proposed work.
- It is estimated that this project would start construction in March 2015 and be complete by June 2016.

Information Sources

VFPA has relied upon the following sources of information in its assessment of the potential adverse environmental effects of the Project:

- Project Review Application Form, completed by Dave Link, Cargill Inc., dated November 10, 2014.
- Cargill Project Overview, dated October 27, 2014.
- Email from Robert Sewell at CN to Ray Kroeker at Cargill, dated November 5, 2014.
- Environmental Incident/Emergency plan, dated May 31, 2011, with attached Chemical Spill, Decontamination, and Fuel and Oil Spills Procedures, dated November 5, 2014.
- Project Execution Plan Package, which included the following: Project Overview, Safety and Environment, Major Construction Work Plans, Site Logistics, Schedule and Communications, no date.
- The drawings included:
  - Site Plan Layout, Prepared by McElhanney Consulting Services Ltd., drawing no. 02312-0, dated April 16, 2012.
  - Terminal Layout General Arrangement Plan and Elevation, Prepared by Westmar Consulting Engineers, drawing no. 100-M-1002, dated April 26, 2007.
  - Uncontrolled draft Cargill Yard Reconfiguration Rail Space for Dual Indexers Cargill Option 1 and CN Option 2, Prepared by Hatch Mott MacDonald, drawing no. 332179-RW-100-SK-M011, issued November 3, 2014.
  - Track Expansion Project General Electrical Area Lighting West, Prepared by WorleyParsons, drawing no. 307071-00990-00-EL-DAL-0010, Rev. D, dated February 18, 2015.
  - Track Expansion Project General Electrical Area Lighting Plan East, Prepared by WorleyParsons, drawing no. 307071-00990-00-EL-DAL-0011, dated February 18, 2015.
  - Preliminary Cargill Yard Reconfiguration Rail Proposed CN Lead Comparison to SK-1002, Prepared by Hatch Mott MacDonald, drawing no. 332179-RW-100-SK-1013, issued November 20, 2014.
  - Cargill Yard Reconfiguration Rail Proposed Retaining Wall – East Yard Plan and Sections Section, Prepared by Hatch Mott MacDonald, drawing no. 332179-RW-120-S0-1016, dated January 27, 2015.
  - Track Shed Sections, Prepared by VAA Planners and Engineers, drawing no. S17A and S17B, dated January 30, 2015.
  - Track Shed Stairs Foundation Plan, Prepared by VAA Planners and Engineers, drawing no. S31, dated January 30, 2015.
  - Track Shed Stairs Framing Plan at (E) Awnings, Prepared by VAA Planners and Engineers, drawing no. S32, dated January 30, 2015.

  - Track Shed Stairs Framing Plan, Prepared by VAA Planners and Engineers, drawing no. S33, dated January 30, 2015.
  - Track Shed Stairs Sections, Prepared by VAA Planners and Engineers, drawing no. S34, dated January 30, 2015.
- Cargill Emission Inventory - DRAFT, Prepared by Envirochem Services Inc., dated March 26, 2015.
- Environmental Noise Assessment Report, Prepared by BKL Consultants Ltd., dated February 2015.
- Vegetation Removal, no date.
- Soil Disposal Management Plan, Vancouver Track Expansion Project, dated January 30, 2015.

Environmental Effects Summary

Referrals to Government Agencies and Responses

- The proposed Project application was forwarded to the City of North Vancouver for review. The City of North Vancouver provided VFPA with comments on planning, engineering, building and fire considerations. Planning considerations were related to lighting design, aesthetic enhancements, and replacement vegetation. No outstanding issues remain.
- No other government agencies were identified that had germane information or expertise that was not already otherwise available to the assessment.

First Nations Consultation

- Project information was provided to Musqueam Indian Band, Tsleil-Waututh Nation and Squamish Nation on January 22, 2015 with comments requested by February 23, 2015.
- No comments were received and no issues or concerns were identified by the requested response date.

Referrals to Community and Public, and Responses

Public consultation on this proposed Project was undertaken by Cargill.

- For a summary of Cargill's public engagement activities on the Rail Improvement Project, please refer to the Engagement Summary Report available on the PMV website: http://www.portmetrovancouver.com/en/projects/OngoingProjects/Tenant-Led-Projects/cargill-rail-expansion-project

Environmental Effects Summary

The following table summarises the potential environmental effects the project could have on the identified environmental components.

Project: **Rail Improvement Project**

Location: **801 Low Level Road, North Vancouver, BC**

VFPA Site/Area No.: **CNV073**

Proponent(s): **Cargill Ltd.**

Environmental Component	Potential Adverse Effects?			Residual Effects?		Mitigation Measures / Comments
	Yes	No	Unc	Yes	No	
Species/habitat with special status	☐	■	☐	☐	■	Species with special status are not found in the project area.
Vegetation	■	☐	☐	☐	■	Some upland vegetation removal will be required to construct the project. Vegetation removal will include one native tree (Balsam Poplar), and non-native trees and shrubs, including Mountain Ash and blackberry. Cargill Ltd. will complete vegetation replanting, and are currently discussing Spirit Trail as a suitable offsite location with the City of North Vancouver. Suitable mitigation, acceptable to VFPA will be required as a condition of approval of this project. If replacement planting is completed offsite, VFPA will need to receive a copy of landowner permission.
Wildlife / wildlife habitat	■	☐	☐	☐	■	No bird nests were identified during survey. As the nesting survey was conducted in advance of construction activities, another nesting survey will be conducted shortly before the work proceeds to confirm the absence of bird nests.
Aquatic species / fish habitat	☐	■	☐	☐	■	No in-water work will be conducted, and works are more than 75 metres from high water line. Mitigation measures will be employed during construction to prevent and minimize adverse impacts to fishery resources from upland activities. Heavy construction equipment will be regularly inspected for hydrocarbon leaks and a spill prevention and response plan implemented. An appropriate spill prevention, containment, and clean-up contingency plan for hydrocarbon products (e.g., fuel, oil, hydraulic fluid, etc.) and other deleterious substances will be put in place prior to work commencing.
Other marine resources	☐	■	☐	☐	■	None were identified that were susceptible to project-related effects as no in-water work will be conducted.

Project: **Rail Improvement Project**

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Environmental Component	Potential Adverse Effects?			Residual Effects?		Mitigation Measures / Comments
	Yes	No	Unc	Yes	No	
Soils	■	□	□	□	■	An appropriate spill prevention, containment, and clean-up contingency plan for hydrocarbon products (e.g., fuel, oil, hydraulic fluid, etc.) and other deleterious substances will be put in place prior to work commencing. Any soils excavated during construction will be handled in a manner that will prevent their release into the aquatic environment, either directly or indirectly as silt in storm runoff. Water that has contacted uncured or partly cured concrete will be contained and will not be discharged to the aquatic environment. Materials brought onto the property for use as fill, backfill, or for site preparation must be from sources known to be clean and free of contamination. Contaminated soils that may be encountered during project excavation will be segregated and disposed of in an appropriate manner. Soil and groundwater handling activities will adhere to the soil disposal management plan.
Sediments	□	■	□	□	■	None were identified that were susceptible to project-related effects.
Ground water	■	□	□	□	■	An appropriate spill prevention, containment, and clean-up contingency plan for hydrocarbon products (e.g., fuel, oil, hydraulic fluid, etc.) and other deleterious substances will be put in place prior to work commencing. No excavation dewatering is anticipated from this project. Should groundwater be encountered during excavation works, contaminated groundwater will be collected and disposed of in an appropriate manner. The soil disposal management plan addresses this issue.

Project: **Rail Improvement Project**

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Environmental Component	Potential Adverse Effects?			Residual Effects?		Mitigation Measures / Comments
	Yes	No	Unc	Yes	No	
Surface water and water bodies	■	□	□	□	■	The proposed outside works will include removing vegetation and soils from the Project area, placing fill, installing rail track, reconfigure existing rail track, removing and re-installing retaining walls and earth berm, and installing track lighting. The work will be carried out in the upland, well above the high water mark (more than 75 metres) and care will be taken to prevent any materials from entering Burrard Inlet. Any soils excavated during construction will be handled in a manner that will prevent their release into the aquatic environment, either directly or indirectly as silt in storm runoff. Discharges of substances deleterious to aquatic life will not be permitted. The soil disposal management plan will be adhered during construction. An appropriate spill prevention, containment, and clean-up contingency plan for hydrocarbon products (e.g., fuel, oil, hydraulic fluid, etc.) and other deleterious substances will be put in place prior to work commencing. Care will be taken to prevent the release of deleterious substances to the receiving environment. Heavy construction equipment will be regularly inspected for hydrocarbon leaks and a spill prevention and response plan implemented.
Wetlands	□	■	□	□	■	No wetlands were identified in the project area that will be effected.
Air quality	■	□	□	□	■	An air quality assessment was conducted to estimate potential impacts as a result of the project and predicts a neutral effect on local air quality. Impacts to air quality from increased terminal throughput and supply chain activity are expected to be offset by a number of air quality improvement programs that are being implemented internationally and within Canada, the decommissioning of the diesel shuttle wagon, and terminal operational efficiencies.
Lighting	□	■	□	□	■	Lighting plan includes high-efficiency lighting for the majority of the lighting installation: LED roadway, mid-span, and wall mount, and metal halide wall mount. Only three existing HPS induction lights will remain. The mounting height and 30 degree tilt should minimize light spilling.

Project: **Rail Improvement Project**

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Environmental Component	Potential Adverse Effects?			Residual Effects?		Mitigation Measures / Comments
	Yes	No	Unc	Yes	No	
Noise	■	□	□	□	■	A noise assessment was conducted to measure existing community noise levels and predict changes in noise levels as a result of the project. The noise assessment predicts a 1 to 3 dBA decrease in Cargill-generated noise throughout the surrounding community. The noise prediction was based on the assumptions that empty cars will no longer roll down the hill and impact stationary cars, the shuttle wagon will be decommissioned, rail service efficiency will improve and deliver more cars at a time (resulting in fewer shunting impacts per car serviced), track shed and shipboard generator noise emissions will increase in proportion to the proposed throughput increase, and fixed equipment noise above the track shed (e.g. blower noise) will not change. No further noise mitigation is required.
Archaeological/heritage resources	□	□	■	□	■	There are no known archaeological features. Nevertheless, in the event that suspected archaeological materials are encountered during Project construction, the Proponent shall immediately cease construction activities that may disturb the potential materials and notify VFPA. The BC Archaeology Branch and an individual with appropriate archaeological qualifications shall also be contacted immediately.
First Nations interests	□	■	□	□	■	No concerns were raised by First Nations during consultation.
Recreational interests	□	□	■	□	■	The project area is an industrial zone and recreational interests are not expected to be impacted by the proposed project.
Accidents and malfunctions	□	■	□	□	■	Mitigation measures to address impacts from accidents and malfunctions were considered during the review. The project has been designed to meet appropriate standards and environmental management plans and accident and spill response plans will be in place during project implementation.

Effects of the Environment on the Project

In addition to evaluating the effects of the proposed Project on the environment, changes to the proposed Project that may arise as a result of the environment have also been considered. The assessment of the effects of the environment on the Project included identifying the environmental factors deemed to have possible consequences on the proposed Project, the likelihood and severity of their occurrence and mitigation measures planned to minimize their impact.

The Project is not expected to create adverse environmental events beyond those that will be addressed with mitigation.

Cumulative Effects Summary

This environmental assessment has determined that residual adverse environmental effects are unlikely if readily available and practical mitigation measures are applied during the implementation of the project.

Follow-up Program

It has been determined that a follow-up monitoring program will be required for this Project. Post-construction follow-up will include noise monitoring to confirm the effectiveness of noise mitigation and low noise initiatives.

Conditions for the Mitigation of Adverse Environmental Effects

In addition to the mitigation measures designed into the project (as indicated in the documents listed in the "Information Sources" section above), the Proponent is required to apply the following conditions to the project:

1. The Proponent shall undertake and deliver the Project to total completion in a professional, timely and diligent manner in accordance with the applicable standards and specifications set out in the sections above entitled "Project Description" and "Information Sources". The Proponent shall not carry out any other physical activities unless expressly authorized by VFPA.
2. The Proponent shall at all times and in all respects comply with and abide by all applicable federal, provincial and municipal laws, statutes, by-laws, regulations, orders and policies from time to time in force and effect including, without limiting the generality of the foregoing, all rules and directions established by VFPA from time to time (collectively, "Applicable Law"). Any reference below to a specific law, statute, by-law, regulation, order or policy is for clarity only and in no way limits the generality of the foregoing.
3. The Proponent shall not, directly or indirectly: (i) deposit or permit the deposit of a deleterious substance of any type in water frequented by fish in a manner contrary to Section 36(3) of the Fisheries Act; or (ii) adversely affect fish or fish habitat in a manner contrary to Section 35(1) of the Fisheries Act.
4. No in-water works or works below the high water level shall be conducted as part of the Project.
5. In addition to the conditions listed in this Schedule of Environmental Conditions, the Proponent shall carry out the Project in compliance with the environmental incident/emergency plan, and soil disposal management plan referenced in the Information Sources section above, and in compliance with appropriate best construction industry environmental codes of practice. Where those conditions and codes of practice are in conflict with any listed in this Schedule the latter shall prevail. VFPA Environmental Programs should be consulted for clarifications where appropriate.
6. The Project shall be monitored by an appropriately qualified environmental professional. The monitor shall be empowered in writing to direct works to ensure compliance with this Schedule. Monitoring events shall occur when the environmental monitor deems it appropriate.

7. The environmental monitor shall provide monitoring reports to VFPA when the environmental monitor deems it appropriate. In addition, a summary report for the whole monitoring period shall be forwarded to the VFPA within six weeks of the conclusion of the monitoring period.
8. The Proponent shall contain in the immediate working area all debris and waste materials resulting from the Project and remove such debris and waste material as soon as possible.
9. The Proponent shall ensure that debris and waste material resulting from the Project are contained, collected, and disposed of at suitable upland locations using standards, practices, methods and procedures to a good commercial standard, conforming to Applicable Law and using that degree of skill and care, diligence, prudence and foresight which would be reasonably and ordinarily expected from a qualified, skilled and experienced person engaged in a similar type of undertaking under the same or similar circumstances. The Proponent shall have due regard for the applicable prohibitions and restrictions for burning a wide range of materials in British Columbia, such as creosote-treated wood.
10. The Proponent shall handle any soils excavated during the Project in a manner that prevents their release into an aquatic environment, either directly or indirectly as silt in storm runoff.
11. The Proponent shall dispose of any soils excavated from the site that are not suitable for backfill at appropriate off-site facilities in accordance with applicable legislation, guidelines and best management practices.
12. Should contaminated materials be encountered, the Proponent shall ensure that all contaminated materials are removed, contained, and disposed of at appropriate off-site facilities using standards, practices, methods and procedures to a good commercial standard, conforming to Applicable Law and using that degree of skill and care, diligence, prudence and foresight which would be reasonably and ordinarily expected from a qualified, skilled and experienced person engaged in a similar type of undertaking under the same or similar circumstances. Suspect materials should be treated as contaminated or stockpiled until their environmental quality has been determined.
13. Should contaminated material be encountered, the Proponent shall immediately notify VFPA Environmental Programs at EnvironmentalPrograms@portmetrovancouver.com.
14. Materials brought onto the property to be used for backfilling, site preparation, or other uses shall be from sources demonstrated to be clean and free of environmental contamination.
15. In the event that evidence of what is suspected to be an archaeological resource is encountered, the Proponent shall:
    a. immediately stop any activities that might disturb the archaeological resource or the site in which it is contained ("Site");
    b. not move or otherwise disturb the artifacts or other remains present at the Site;
    c. stake or flag off the Site to prevent additional disturbances; and,
    d. immediately notify VFPA Environmental Programs at EnvironmentalPrograms@portmetrovancouver.com.
16. Intrusive investigations which extend beyond the modern fill layer to native soils shall be monitored by an individual with appropriate archaeological qualifications.

17. The Proponent shall conduct all work associated with the Project involving the use of concrete, cement, mortars and other Portland cement or lime-containing construction materials so as to ensure that sediments, debris, concrete (cured or uncured), and concrete fines are not deposited into the aquatic environment, either directly or indirectly. Water that has contacted uncured or partly cured concrete or Portland cement or lime-containing construction materials, such as the water that may be used for exposed aggregate wash-off, wet curing, equipment and truck washing, etc. shall not be permitted to enter the aquatic environment. The Proponent shall provide containment facilities at the site for the wash-down water from concrete delivery trucks, concrete pumping equipment, and other tools and equipment, as required.
18. The Proponent shall not dewater excavations unless a dewatering plan has been reviewed and accepted by VFPA Environmental Programs.
19. Prior to commencing any physical activities, the Proponent shall establish a spill prevention, containment and clean-up plan for hydrocarbon products (including fuel, oil and hydraulic fluid) and any other deleterious substances using standards, practices, methods and procedures to a good commercial standard, conforming to Applicable Law and using that degree of skill and care, diligence, prudence and foresight which would be reasonably and ordinarily expected from a qualified, skilled and experienced person engaged in a similar type of undertaking under the same or similar circumstances. The Proponent shall ensure that appropriate spill containment and clean-up supplies are available on site at all times and that all personnel working on the Project are familiar with the spill prevention, containment and clean-up plan.
20. The Proponent shall not conduct refuelling or maintenance activities within 30 metres of any watercourse, or in an area where there is potential for run-off to reach surface water bodies. Fuel and other hydrocarbon inventories shall not be stored in such areas, temporarily or otherwise.
21. Equipment shall be in good mechanical condition and shall be maintained free of fluid leaks, invasive species, and noxious weeds.
22. The Proponent shall manage stormwater and surface runoff using standards, practices, methods and procedures to a good commercial standard, conforming to Applicable Law and using that degree of skill and care, diligence, prudence and foresight which would be reasonably and ordinarily expected from a qualified, skilled and experienced person engaged in a similar type of undertaking under the same or similar circumstances.
23. The Proponent shall carry out all works in a manner that prevents the release of sediment, sediment-laden waters, and turbid waters to the aquatic environment. Sediment and erosion control measures should be installed and should meet or surpass the standards outlined in the Fisheries and Oceans Canada (DFO) “Land Development Guidelines for the Protection of Aquatic Habitat”.
24. The Proponent shall not permit sediment, sediment-laden waters, or other deleterious substances to enter the water during the Project. The Proponent shall carry out all physical activities in a manner that prevents induced sedimentation of foreshore and near shore areas and induced turbidity of local waters, and the release of sediment, sediment-laden waters, and turbid waters to

the aquatic environment. All physical activities shall be in compliance with the following water quality criteria:

- When background is less than or equal to 50 nephelometric turbidity units (NTU) or 100 milligrams per litre (mg/L) non-filterable residue (NFR), induced turbidity should not exceed 5 NTU or 10 mg/L NFR above the background values.
- When background is greater than 50 NTU or 100 mg/L NFR, induced turbidity should not exceed the background values by more than 10% of the background value.

For the purposes of this Section, "background" means the level at an appropriate adjacent reference site (as determined to the satisfaction of VFPA) that is affected neither by physical activities at the site, nor sediment-laden or turbid waters resulting from physical activities at the site.

25. The Proponent shall have due regard to the potential application of the Migratory Birds Convention Act and/or the Wildlife Act of British Columbia. To reduce the risk of Project-related harm to birds and/or their active nests and eggs, the Proponent may wish to avoid certain physical activities during the general bird breeding season, which falls between April 1 and July 31. If potentially harmful activities must be undertaken during this period, the Proponent shall exercise all due diligence to avoid causing harm to birds and/or their active nests and eggs. The Proponent shall also have due regard to nests of those species of birds protected by Applicable Law at all times of the year, regardless of the time of year or whether or not the nests are occupied. The Proponent should, where circumstances warrant, retain the services of qualified environmental professionals to assist in developing and undertaking appropriate bird nest surveys immediately prior to the start of tree and vegetation clearing.
26. Within three months of Project Permit issuance, Cargill will submit to VFPA Environmental Programs for approval a stand-alone, vegetation removal mitigation plan. The plan content shall be determined in consultation with VFPA. Within three months of plan approval, Cargill shall implement the mitigation plan. Replanting with species native to the southern BC coast and likely to survive in the conditions existing at the planting site shall be conducted as soon as practical and within 12 months after the commencement of the works, in a manner that maximizes the likely success of the plantings.
27. Within six months of Project Permit issuance, Cargill shall prepare and submit, to the satisfaction of VFPA Environmental Programs, a Stormwater Pollution Prevention Plan. The plan content shall be determined in consultation with VFPA.
28. Trees shall be felled by an appropriate professional.
29. Invasive plants, including blackberry, shall be handled in a manner that will prevent their spread and shall be appropriately contained, collected and disposed of.
30. Dust, noise and air emissions associated with construction and operation shall be minimized.
31. Air emissions such as vehicle/equipment exhaust, dust and vapours, associated with Project deconstruction, demolition and/or construction as applicable shall be minimized and managed to avoid adverse health, safety, nuisance and other environmental effects on and off site. In this

regard, emission control measures shall be implemented as required and may include but are not limited to the following:

a) No visible dust or track out beyond the lease boundary; and,
b) Onsite speed limit.

More detailed guidance is available in *Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities* prepared for Environment Canada (Cheminfo Services Inc. March 2005).

32. The Proponent shall also:

a) Make reasonable efforts to ensure that heavy duty diesel powered road licensed vehicles and engines are model year 2007 or newer;
b) Make reasonable efforts to ensure that diesel-powered non-road or off-road equipment is Tier 3 or better, or equivalent for emissions;
c) Ensure the use of well-maintained engines and exhaust systems, in good operating order; and,
d) Ensure that vehicle and equipment idling are limited to the greatest practical and safe extent.

33. Noise monitoring shall be conducted within a year of project completion to confirm the effectiveness of noise mitigation and low noise initiatives. A copy of the results of the noise monitoring shall be submitted to VFPA.

34. Air emissions, primarily fugitive dust associated with the Project and terminal operations shall be managed to prevent adverse impacts. In this regard, the Proponent shall prepare and submit, to the satisfaction of VFPA, an Air Emissions Management Plan (AEMP). The Proponent shall fully implement the AEMP upon completion of the Project and prior to commencement of operations. The plan shall include, but not be limited to the following components:

a. Management Plan Scope – outlining the general approach, objectives, intent, and responsibilities;

b. Emissions Site Inventory – characterization of sites and activities, including as an appendix an approved air assessment report;

c. Impact Assessment – identifying issues of concern, sources, and receivers;

d. Mitigation Measures – identification of operational plans, complaint management, standard operating procedures and policies;

e. Monitoring Methodology – detailing, as appropriate, the types of monitoring, equipment, locations, and methods; and

f. Reporting – detailing data management, report types, content and frequency.

35. The Proponent shall take photographs of the Project area prior to the start of physical works and upon completion of the Project. The pre- and post-Project photographs shall be submitted to VFPA Environmental Programs no later than one week following completion of the works.

36. The Proponent shall cooperate fully with VFPA in respect of any review by VFPA of the Proponent's compliance with these conditions including, without limitation, providing any information or documentation required by VFPA.
37. The Proponent shall provide a copy of this Schedule to all employees, agents, contractors, licensees and invitees prior to commencing any physical activities. The Proponent shall be solely responsible for ensuring that all such employees, agents, contractors, licensees and invitees contractors, comply with these conditions.
38. The Proponent shall make available upon request by any regulatory authority (such as a Fishery Officer) a copy of this Schedule.

The above conditions are based solely upon VFPA's review of the Project and in no way limits the authority of, or constitutes any form of permit, authorization or approval by, any other governmental authority having jurisdiction. The Proponent is solely responsible for obtaining any and all required permits, authorizations and approvals from any other governmental authority having jurisdiction.

Assessment Determination

The likelihood of adverse residual effects occurring is expected to be negligible if the project is implemented as outlined in the documents listed in the "Information Sources" section above (including mitigation measures designed into the project) and the mitigation measures listed above are applied appropriately.