

## **1. PART 1 – GENERAL**

### **1.1 Description**

- .1 This section covers the preservative treatment by pressure impregnation of new timber piles and new timber components, and field preservative treatment of new and re-used timber components.

### **1.2 Related Sections**

- .1 Section 01 33 00 (Submittal Procedures)
- .2 Section 31 62 19 (Timber Piling)
- .3 Section 35 20 23.01 (Offloading, Material Processing, Upland Transportation, and Disposal)

### **1.3 Measurement and Payment Procedures**

- .1 Wood treatment will not be measured separately, but considered incidental to the work. All costs in connection with wood treatment, including quality control inspection and testing, shall be included in the prices tendered for the associated items of work.
- .2 Timber piles will be measured to Section 31 62 19 (Timber Piling), and payment shall include all costs in connection with timber piles as specified in that section.

### **1.4 References**

- .1 Canadian Standards Association (CSA):
  - .1 CAN/CSA-O80 Series-08, Standard for Wood Preservation.
- .2 Wood Preservation Canada (WPC): “Best Management Practices for the use of Treated Wood in Aquatic and Wetland Environments (2012)”.
- .3 Canadian Wood Preservation Certification Authority (CWPCA).

### **1.5 Definitions – Not Used**

### **1.6 Submittals**

- .1 Submit name and credentials of testing firm to be used for quality control testing of treated wood products, in accordance with the requirements of Section 01 33 00 (Submittal Procedures), to the Departmental Representative prior to commencing quality control testing. Provide evidence that the Contractor’s testing firm has certification from CWPCA.

- .2 Submit certificates, in accordance with the requirements of Section 01 33 00 (Submittal Procedures), to the Departmental Representative at time of delivery of treated wood products to the Work Site. For products treated with preservative by pressure impregnation, submit the following information certified by authorized signing officer of treatment plant:
  - .1 Information specified in CAN/CSA-O80 Series applicable to specified treatment.
  - .2 Moisture content after drying following treatment with waterborne preservative.
  - .3 Confirmation that the products meet the specified Use Category.
- .3 Provide certification that the pressure treated timbers comply with the “Best Management Practices for the Use of Treated Wood in Aquatic and Wetland Environments” published by WPC.

## **1.7 Quality Control**

- .1 Quality control inspection and testing of pressure-treated timbers are to be carried out by a qualified testing firm proposed by the Contractor and accepted by the Departmental Representative. Plant inspection of products treated with preservative by pressure impregnation shall be carried out by the Contractor’s designated testing firm to CSA O80 Series requirements. The Contractor is responsible for all costs associated with such inspection and testing.
- .2 The Departmental Representative may elect to have additional tests, including core sampling, performed by the Departmental Representative’s testing firm as a quality assurance measure. Data from such tests will be made available to the Contractor for information only. The Departmental Representative will pay for all costs associated with these additional tests. Inspection and/or testing by the Departmental Representative for quality assurance purposes will not augment or replace the requirement for the Contractor’s quality control nor relieve him of his contractual responsibility. Notwithstanding any aforementioned quality assurance inspection and/or testing, the Departmental Representative reserves the right to reject materials on site.

## **2. PART 2 – PRODUCTS**

### **2.1 Materials**

- .1 Copper naphthenate: To contain 2% minimum copper, per CAN/CSA-O80 Series.
- .2 Preservative for new timber piles and for new timber components: Creosote to CAN/CSA-O80 Series.

### **3. PART 3 – EXECUTION**

#### **3.1 Application: Preservative**

- .1 Treat all new timber piles and new timber components in accordance with the “Best Management Practices for the use of Treated Wood in Aquatic and Wetland Environments” published by WPC.
- .2 Treat new timber piles and new timber components to CAN/CSA-O80 Series for Use Category UC5A (continuous salt water exposure) using creosote preservative by the full cell process to obtain minimum net retention of 290 kilograms per cubic metre (kg/m<sup>3</sup>) of wood. Creosote treatment of new timber piles and new timber components to be applied off site before delivery to site.

#### **3.2 Application: Field Treatment**

- .1 Comply with CAN/CSA-O80 Series requirements.
- .2 Surfaces of re-used timber components that are exposed by cutting, trimming, or boring, cracks, and holes shall be treated promptly with three (3) separate coats of copper naphthenate (2% minimum copper). Allow enough time between coats for full absorption. Alternatively, creosote field-treatment of creosoted timber piles in accordance with CAN/CSA-O80 Series will be allowed.
- .3 Take all reasonable precautions to minimize the amount of field preservative treatment from escaping into the marine environment.

#### **3.3 Waste Management and Disposal**

- .1 Place materials defined as hazardous or toxic in designated containers.
- .2 Dispose of removed materials at Disposal Facility in accordance with Section 35 20 23.01 (Offloading, Material Processing, Upland Transportation, and Disposal), and in accordance with federal, provincial, state (as applicable), and local jurisdiction regulations.
- .3 Dispose of creosoted or preservative-treated timber components, end pieces, wood scraps, and sawdust in accordance with federal, provincial, state, and local jurisdiction regulations.
- .4 Dispose of unused wood preservative at official hazardous material collections site that is permitted to accept such materials.
- .5 Do not dispose of unused preservative material into sewer system, streams, or lakes; onto ground; or in other locations where they will pose health or environmental hazards.

**END OF SECTION**



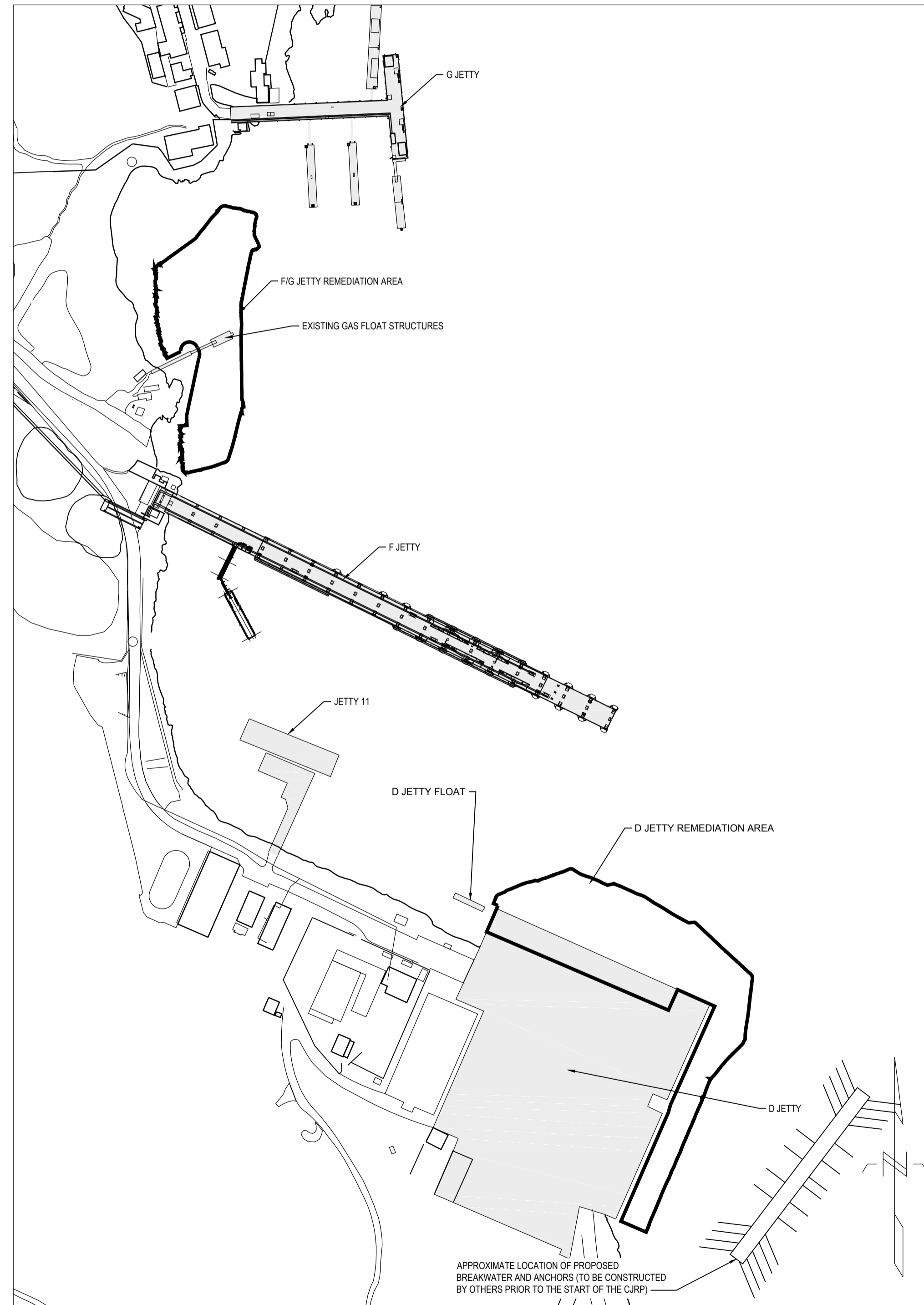
720 OLIVE WAY, SUITE 1900  
SEATTLE, WASHINGTON 98101  
PHONE: 1 (206) 287-9130



2955 VIRTUAL WAY #500  
VANCOUVER, BRITISH COLUMBIA V5M 4X6  
PHONE: 1 (604) 669-3800



**VICINITY MAP**  
SCALE: 1:15000



**SITE PLAN**  
SCALE: 1:2000

**LIST OF DRAWINGS - LISTE DES DESSINS**

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CIVIL

DWG. #	NO.	SUBJECT	DWG. #	NO.	SUBJECT
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3	T-3	BATHYMETRIC SURVEY INFORMATION, DATUM CONVERSIONS, AND CONTROL MONUMENTS	22	C-15	BACKFILL CROSS SECTIONS - D JETTY EAST ZONE (2 OF 2)
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SET NO. - SÉRIE NO.	
DATE	2016/07/12
PW/SC NO.	150553-11.05
WBS NO. - NO. OTR	N/A
PF NO. - NO. DP	R.081525.001/R.081526.001
JOB NO.	150553-11.05

**COLWOOD JETTIES REMEDIATION PROJECT**

Esquimalt | British Columbia  
Esquimalt | Colombie-Britannique

LEVEL OF SECURITY | NIVEAU DE SÉCURITÉ  
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**Government of Canada**  
**Gouvernement du Canada**

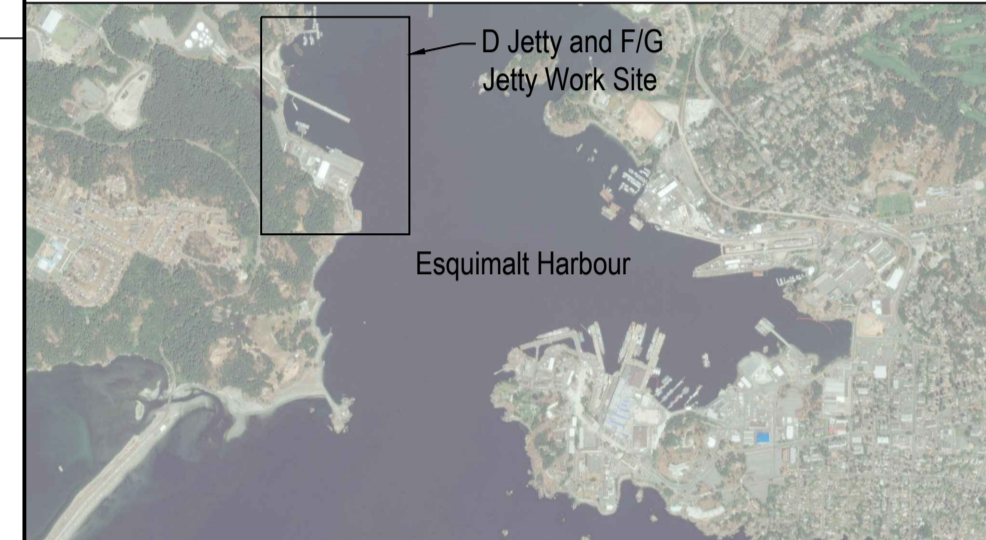


**Canada**

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SOURCE: BATHYMETRY FROM PWGSC SURVEYORS, DATED OCTOBER 2015.  
HORIZONTAL DATUM: UTM ZONE 10N, NAD83.  
VERTICAL DATUM: CHART DATUM (CD).

- NOTES:
1. ALL SAMPLE LOCATIONS SHOWN INCLUDE ALL CORES, SURFACE GRABS, JET PROBES, AND GEOTECHNICAL BORINGS USED TO DETERMINE THE EXTENT OF REMEDIATION.
  2. DATA ASSOCIATED WITH THE CORES AND BORINGS ARE PROVIDED AS AN APPENDIX TO THE SPECIFICATIONS.
  3. A DIVER RECONNAISSANCE SURVEY PERFORMED ON JANUARY 21, 2016 IDENTIFIED THE VISUAL EXTENTS OF NEARSHORE BEDROCK OUTCROPPING. ADDITIONAL BEDROCK OUTCROPPING MAY BE PRESENT THAT WAS NOT VISIBLE BY DIVERS.
  4. SEE DRAWINGS S-11 THROUGH S-14 FOR F/G JETTY STRUCTURAL DETAILS.

2016/09/15	ADDENDUM NO. 1		
2016/08/01	ISSUED FOR TENDER		
NO.	DATE	REVISION	APPR.

SCALE | ÉCHELLE  
1:500

LOCATION | EMPLACEMENT  
**D JETTY AND F/G JETTY  
CFB ESQUIMALT COLWOOD**

PROJECT | PROJET  
**COLWOOD JETTIES  
REMEDATION PROJECT**

TRADE | MÉTIER  
**CIVIL/ENVIRONMENTAL**

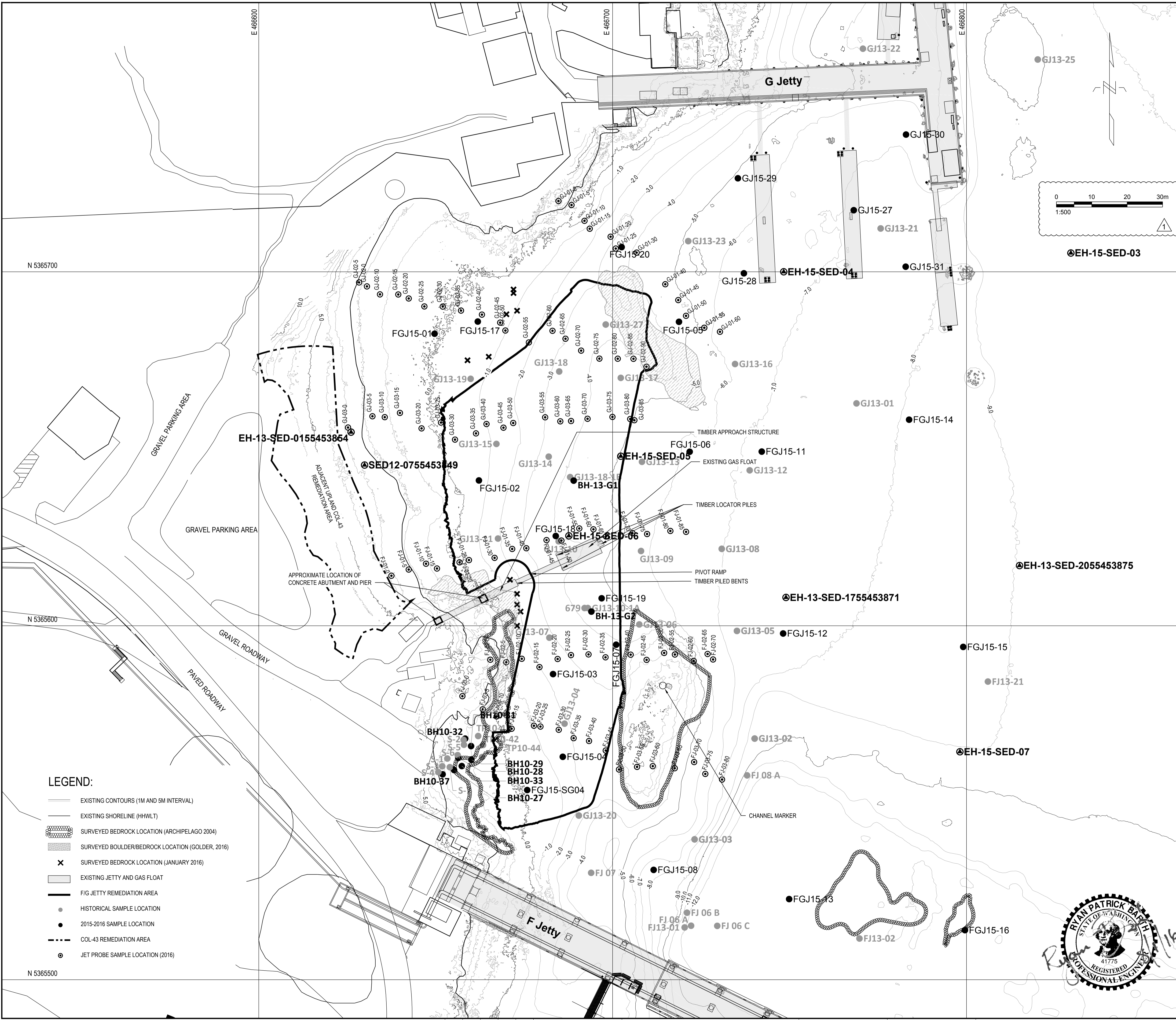
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2016/07/12

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F/G JETTY**

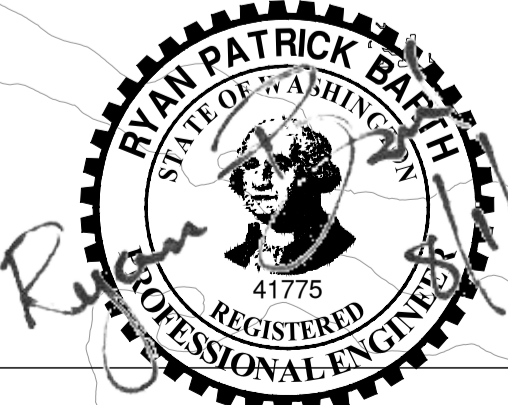
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R. BARTH	XX   XX	
DRAWN   DESSINÉ		PROJ MGR   GEST PROJ
C. HEWETT		
CHECKED   VÉRIFIÉ		DES MGR   GEST CONC
T. WANG		
COORDINATION		FIRE   INCENDIE

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PF NO. | NO. DP  
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DWG. NO. | NO. DESSIN  
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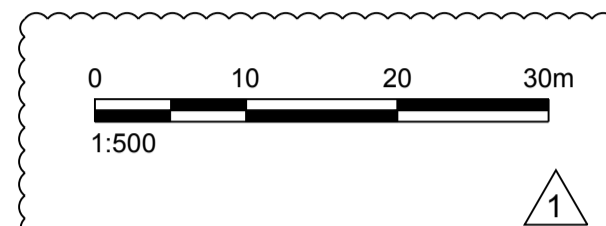
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- EXISTING CONTOURS (1M AND 5M INTERVAL)
  - EXISTING SHORELINE (HHWL)
  - SURVEYED BEDROCK LOCATION (ARCHIPELAGO 2004)
  - SURVEYED BOULDER/BEDROCK LOCATION (GOLDER, 2016)
  - SURVEYED BEDROCK LOCATION (JANUARY 2016)
  - EXISTING JETTY AND GAS FLOAT
  - F/G JETTY REMEDIATION AREA
  - HISTORICAL SAMPLE LOCATION
  - 2015-2016 SAMPLE LOCATION
  - COL-43 REMEDIATION AREA
  - JET PROBE SAMPLE LOCATION (2016)



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- LEGEND:**
- EXISTING CONTOURS (1M AND 5M INTERVAL)
  - EXISTING SHORELINE
  - SURVEYED BEDROCK LOCATION (ARCHIPELAGO 2004)
  - SURVEYED BEDROCK LOCATION (FEBRUARY 2016)
  - EXISTING JETTY AND GAS FLOAT
  - EXTENT OF REQUIRED DREDGING
  - REQUIRED 2H:1V SLOPE DREDGING
  - DREDGING CONTROL POINT

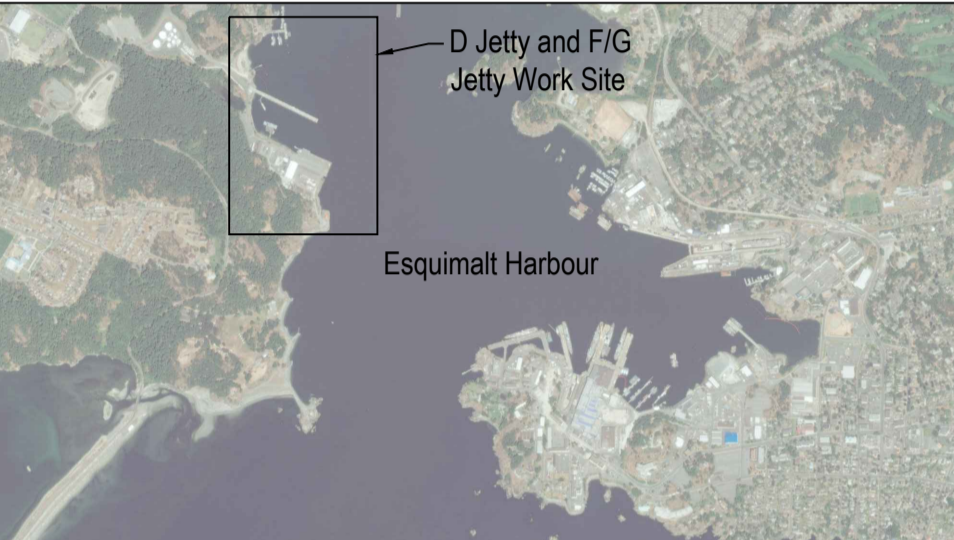
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26	5365660.35	466655.31
27	5365676.16	466678.60
28	5365694.16	466693.00
29	5365691.59	466708.95
30	5365641.84	466699.40
31	5365580.87	466699.40
32	5365550.66	466692.10
33	5365545.55	466671.28
34	5365570.06	466670.44
35	5365575.80	466670.25
36	5365609.12	466677.31



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SOURCE: BATHYMETRY FROM PWGSC SURVEYORS, DATED OCTOBER 2015.  
HORIZONTAL DATUM: UTM ZONE 10N, NAD83.  
VERTICAL DATUM: CHART DATUM (CD).

- NOTES:**
- CONTRACTOR SHALL COMPLETE DREDGING ACTIVITIES ACCORDING TO SEQUENCING REQUIREMENTS DESCRIBED IN SPECIFICATIONS AND SHEET G-3.
  - NO IN-WATER STOCKPILING OF SEDIMENT OR DEBRIS IS ALLOWED.
  - CONTRACTOR MEANS AND METHODS TO ACCOUNT FOR SHALLOW WATER DEPTHS UNDER RANGE OF TIDAL CONDITIONS AND PROTECTION OF EXISTING STRUCTURES.
  - THE F/G JETTY STRUCTURES REQUIRED TO BE REMOVED ARE SHOWN ON SHEET S-12. CONTRACTOR TO STORE REMOVED LOCATOR PILES, PIVOT RAMP, AND GAS FLOAT AT TEMPORARY STORAGE LOCATION IDENTIFIED IN CONSTRUCTION WORK PLAN.

1	2016/09/15	ADDENDUM NO. 1	
0	2016/08/01	ISSUED FOR TENDER	
NO.	DATE	REVISION	APPR.

SCALE | ÉCHELLE  
1:500

LOCATION | EMPLACEMENT  
**D JETTY AND F/G JETTY  
CFB ESQUIMALT COLWOOD**

PROJECT | PROJET  
**COLWOOD JETTIES  
REMEDIAION PROJECT**

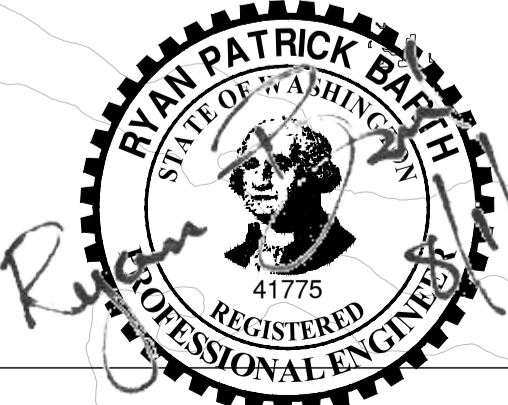
TRADE | MÉTIER  
**CIVIL/ENVIRONMENTAL**      DATE  
2016/07/12

SUBJECT | SUJET  
**REQUIRED DREDGING PLAN -  
F/G JETTY**

PRODUCTION	DESIGNED   ÉTUDIÉ	REVIEWED   REVU	DES O   AGENT CONC
R. BARTH	XX   XX	X.X.	
C. HEWETT			PROJ MGR   GEST PROJ
T. WANG			DES MGR   GEST CONC
COORDINATION			FIRE   INCENDIE

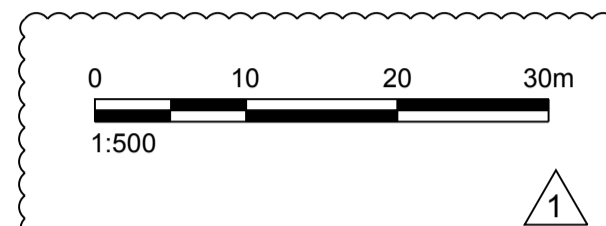
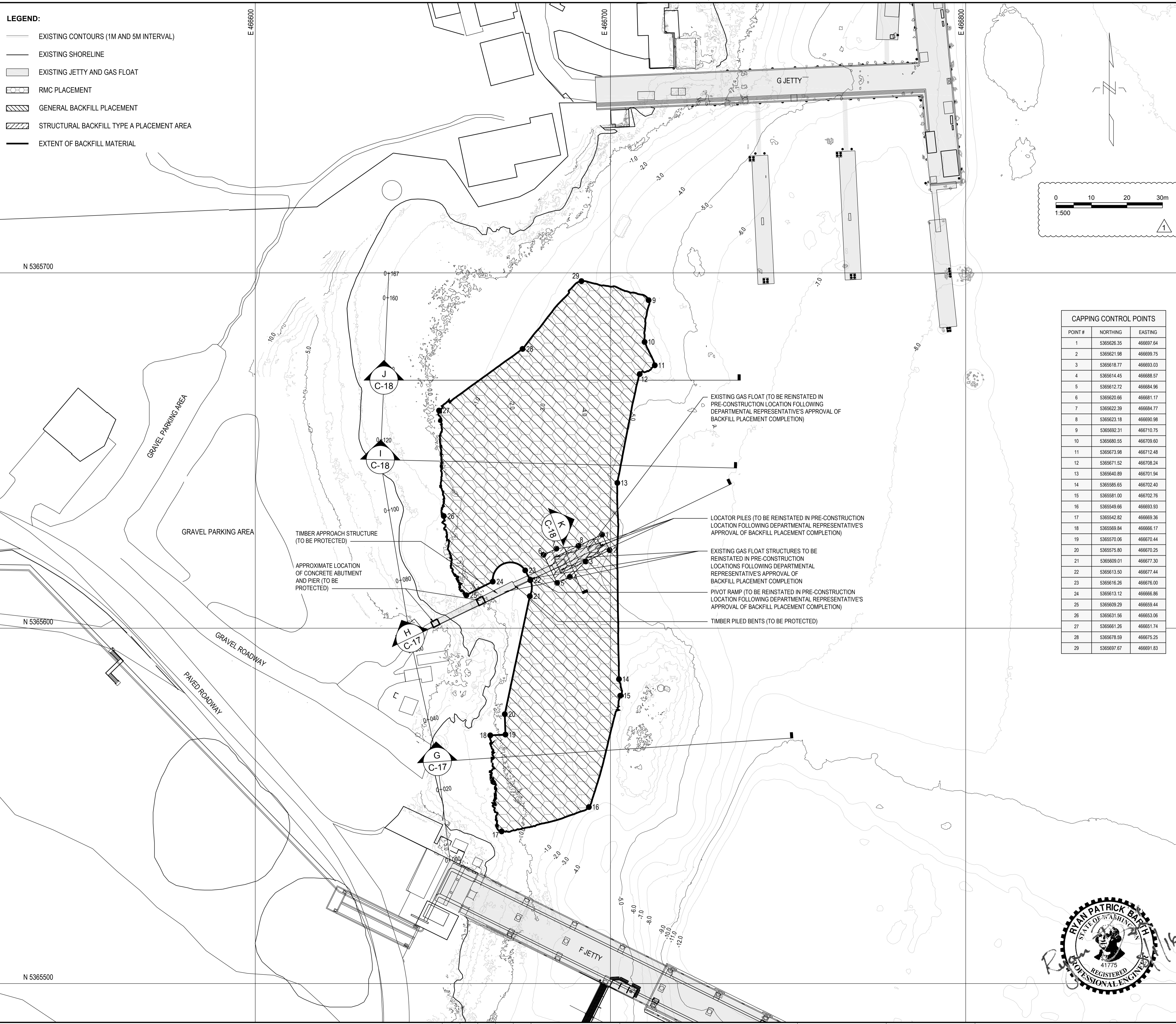
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R.081525.001/R.081526.001

DWG. NO. | NO. DESSIN      **C-6**



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- LEGEND:**
- EXISTING CONTOURS (1M AND 5M INTERVAL)
  - EXISTING SHORELINE
  - ▭ EXISTING JETTY AND GAS FLOAT
  - ▨ RMC PLACEMENT
  - ▩ GENERAL BACKFILL PLACEMENT
  - ▧ STRUCTURAL BACKFILL TYPE A PLACEMENT AREA
  - EXTENT OF BACKFILL MATERIAL

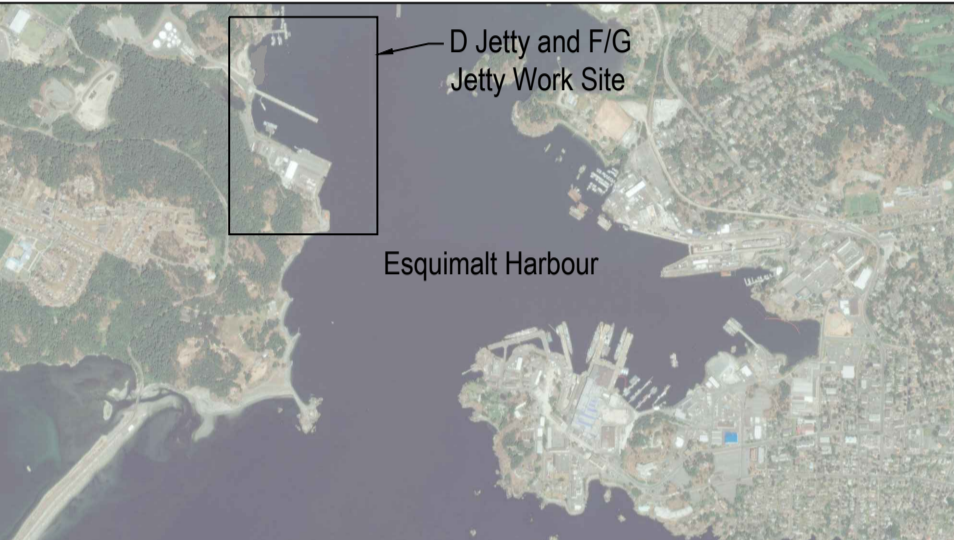


CAPPING CONTROL POINTS		
POINT #	NORTHING	EASTING
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3	5365618.77	466693.03
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6	5365620.66	466681.17
7	5365622.39	466684.77
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9	5365692.31	466710.75
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11	5365673.98	466712.48
12	5365671.52	466708.24
13	5365640.89	466701.94
14	5365585.65	466702.40
15	5365581.00	466702.76
16	5365549.66	466693.93
17	5365542.82	466689.96
18	5365569.84	466686.17
19	5365570.06	466670.44
20	5365575.80	466670.25
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22	5365613.50	466677.44
23	5365616.26	466676.00
24	5365613.12	466666.86
25	5365609.29	466659.44
26	5365631.56	466653.06
27	5365661.26	466651.74
28	5365678.59	466675.25
29	5365697.67	466691.83

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SOURCE: BATHYMETRY FROM PWGC SURVEYORS, DATED OCTOBER 2015.  
HORIZONTAL DATUM: UTM ZONE 10N, NAD83.  
VERTICAL DATUM: CHART DATUM (CD).

- NOTES:
- CONTRACTOR SHALL COMPLETE BACKFILL MATERIAL PLACEMENT ACTIVITIES ACCORDING TO SEQUENCING REQUIREMENTS DESCRIBED IN SPECIFICATIONS AND SHEET G-3.
  - WHEN PLACING BACKFILL MATERIALS ON SLOPES, ALL BACKFILL MATERIAL SHALL BE PLACED IN LIFTS THAT ALLOW FOR THE COMPLETE COVERAGE OF THE DESIGNATED AREA AND MINIMIZES DISTURBANCE TO THE EXISTING DREDGED SEDIMENT SURFACE.
  - CONTRACTOR MEANS AND METHODS TO ACCOUNT FOR SHALLOW WATER DEPTHS UNDER RANGE OF TIDAL ELEVATIONS.

NO.	DATE	REVISION	APPR.
1	2016/09/15	ADDENDUM NO. 1	
0	2016/08/01	ISSUED FOR TENDER	

SCALE | ÉCHELLE  
1:500

LOCATION | EMPLACEMENT  
**D JETTY AND F/G JETTY  
CFB ESQUIMALT COLWOOD**

PROJECT | PROJET  
**COLWOOD JETTIES  
REMIEDIATION PROJECT**

TRADE | MÉTIER  
**CIVIL/ENVIRONMENTAL**

DATE  
2016/07/12

SUBJECT | SUJET  
**REQUIRED BACKFILL PLAN -  
F/G JETTY**

PRODUCTION	DESIGNED   ÉTUDIÉ	REVIEWED   REVU	DES O   AGENT CONC
R. BARTH	XX   XX	X.X.	
C. HEWETT			PROJ MGR   GEST PROJ
T. WANG			DES MGR   GEST CONC
			FIRE   INCENDIE

WBS NO. | NO. OTP  
PF NO. | NO. DP  
R.081525.001/R.081526.001

DWG. NO. | NO. DESSIN  
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