

GENERAL NOTES

1. GENERAL

- 1.1. ON SITE, USE ONLY PLANS SUBMITTED FOR CONSTRUCTION.
- 1.2. CONTRACTOR MUST CHECK ALL DIMENSIONS AND EXISTING CONDITIONS ON SITE BEFORE STARTING WORK. THE CONTRACTOR MUST REPORT TO THE DEPARTMENTAL REPRESENTATIVE OF ALL DISCREPANCIES OR OMISSIONS.
- 1.3. REFER ONLY TO THE DIMENSIONS SHOWN ON THE PLANS. DO NOT SCALE ON PLANS.
- 1.4. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
- 1.5. THE ELEVATIONS ARE IN METERS AND REFERENCE TO THE CHART DATUM (MEAN SPRING TIDE LOW WATER LEVEL).
- 1.6. CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH LAWS AND REGULATIONS ON ENVIRONMENTAL PROTECTION AND OCCUPATIONAL HEALTH AND SAFETY.
- 1.7. UNLESS OTHERWISE SPECIFIED, ALL EXPOSED SHARP EDGES MUST BE CHAMFERED 25mm x 25mm.

2. REFERENCES

- 2.1. USE THE MOST RECENT EDITION OF ALL CODES AND STANDARDS.
- 2.2. REFERENCE SPECIFICATIONS
- 2.2.1. SPECIFICATIONS PREPARED BY WSP CANADA INC. MUST BE READ IN CONJUNCTION WITH THE DRAWINGS. THESE SPECIFICATIONS HAVE PRIORITY OVER THE CCQG WHEN THERE IS CONTRADICTION.
- 2.2.2. QUEBEC CONSTRUCTION CODE-CHAPTER 1, BUILDING, AND NATIONAL BUILDING CODE CANADA

3. DESIGN CRITERIA

- 3.1. IN ADDITION TO THE CODES AND STANDARDS LISTED ABOVE, THE FOLLOWING REFERENCES HAVE BEEN USED FOR THE DESIGN :
- 3.1.1. CANADIAN FOUNDATION ENGINEERING MANUAL;
- 3.1.2. CANADIAN HIGHWAY BRIDGE DESIGN CODE (CAN/CSA.S6)
- 3.1.3. RECOMMENDATIONS OF THE COMMITTEE FOR WATERFRONT STRUCTURES : HARBOURS AND WATERWAYS (EAU 2012);
- 3.1.4. GUIDELINES FOR THE DESIGN OF FENDERS SYSTEMS (PIANC)
- 3.1.5. UNITED FACILITIES CRITERIA DESIGN :PIERS AND WHARVES UFC 4-152-01
- 3.2. HYDROGRAPHIC AND TIDAL DATA;
- 3.2.1. FOR ITS TEMPORARY WORKS AND SITE MANAGEMENT, THE CONTRACTOR MUST CONSIDER THE HYDRODYNAMIC CONDITIONS PRESENTED IN THE FOLLOWING SECTION, THE WATER LEVEL DATA USED COME FROM FISHING AND OCEANS CANADA FOR MEASURING STATION -NO. 1970 - CAP-AUX-MEULES (NO. 1970). THESE DATA ARE STATISTICAL AND MAY VARY IN THE FUTURE. THEY SHOULD BE USED FOR REFERENCE. THE CONTRACTOR WILL CONSULT THE WATER LEVELS AT THIS STATION IN REAL TIME BY CONSULTING THE FISHERIES AND OCEANS CANADA WEBSITE AT THE FOLLOWING ADDRESS: HTTPS://WWW.WATERLEVELS.GC.CA/ENG/STATION?SID=1970. THE CONTRACTOR MAYS ALSO GET THE WATER LEVEL AT ALL TIMES BY PHONE BY DIALING : 1-877-775-0790 AT NO CHARGE (FOR DETAILS, PLEASE SEE HTTP://WWW.TIDES.GC.CA/ENG/INFO/NEWSLETTER).
- 3.2.2. WATER LEVELS ARE SUMMERIZED IN THE TABLE SHOWN ON THIS SHEET (WATER LEVEL TABLE). WATER LEVELS ELEVATIONS IN THE TABLE SHOWN ARE IN METERS TO CHART DATUM.
- 3.2.3. NAVIGATION IS MAINTAINED AROUND THE SITE AT ALL TIMES (365/365, 7/7, 24/24). NAVIGATION CAN GENERATE WAVES AND CURRENTS. IT IS THEREFORE IMPORTANT TO TAKE INTO ACCOUNT THESE PHENOMENON AND THEIR DYNAMIC EFFECTS LEADING TO A POSSIBLE DEGRADATION OF THE TEMPORARY AND PERMANENT WORKS (REPEATED WAVE LOADINGS).
- 3.2.4. DESIGN WATER LEVEL
- A SEA LEVEL RISE ALLOWANCE (SLRA) OF 0,6 METERS IS CONSIDERED IN THE DESIGN, GIVEN THE DESIGN LIFE CONTEMPLATED FOR THE NEW TURNING DOLPHIN STRUCTURE (75 YEARS). THIS ALLOWANCE IS IN LINE WITH THE SITE-SPECIFIC CLIMATE CHANGE STUDY CARRIED OUT BY A THIRD PARTY FOR TRANSPORT CANADA.
- HIGH WATER LEVEL+ SLRA : + 2.0 M C.D.
- HIGH WATER LEVEL : + 1.4 M C.D.
- MEAN WATER LEVEL :+ 0.9 M C.D.
- LOW WATER LEVEL :+ 0.3 M C.D.

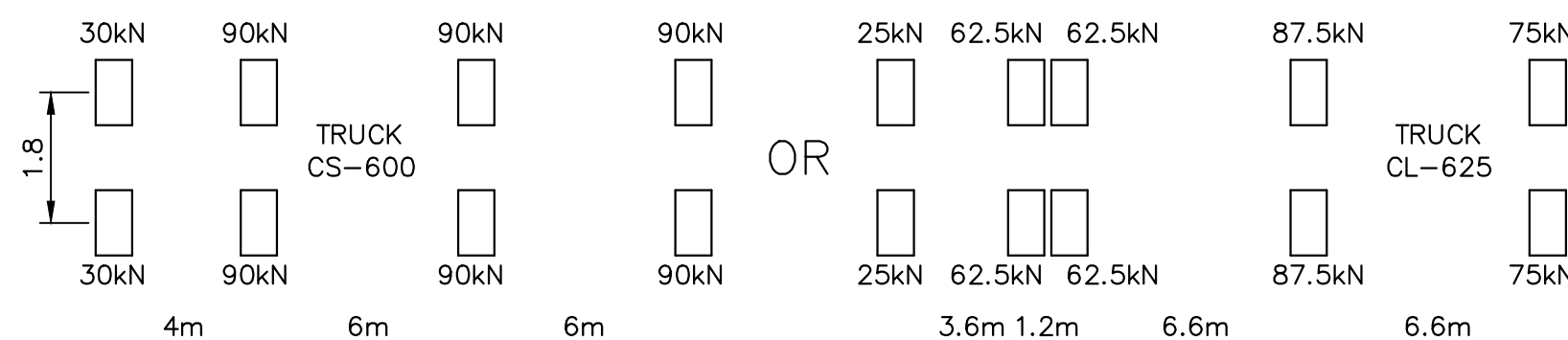
- 3.2.5 DESIGN SEABED LEVEL :
- FOR REINFORCING EXISTING WHARF PILES: -5,6 M (TO C.D.)
- FOR TURNING DOLPHIN PILES: -9.0 M (TO C.D.) TOLERANCE OF SCOURING INCLUDED
- SCOURING ALLOWANCE FOR NEW TURNING DOLPHIN PILES: 1M

3.3 GEOTECHNICAL INVESTIGATION REPORT: CAP-AUX-MEULES WHARF EXTENSION, REINFORCEMENTAND NEW FENDERS, JUNE 21, 2021, PREPARED BY "WSP"

3.4 PRINCIPAL DESIGN LOADS

3.4.1 DESIGN SUPERIMPOSED AND LIVE LOAD:

- 3.4.1.1 SUPERIMPOSED LIVE LOADS ON WHARF DECK
- A UNIFORMLY DISTRIBUTED LIVE LOAD (UDL) OF 20kPa OR WHEEL LOADS FROM CAN/CSA S6-88 CS-600 TRUCK OR CHBDC CL-625 TRUCK POSITIONED TO PRODUCE MOST SEVERE EFFORTS ON WHARF STRUCTURE ELEMENTS.



- A UNIFORMLY DISTRIBUTED LIVE LOAD (UDL) OF 4.8 kPa ON NEW TURNING DOLPHIN DECK
- 3.4.2 EARTHQUAKE (RETURN PERIOD 1: 2475 YEARS), MAXIMUM HORIZONTAL ACCELERATION (PGA): 0.048 G, SITE CLASSIFICATION "C"
- 3.4.3 WIND LOADS:
- WIND DATA FROM THE MAGDALEN ISLAND AIRPORT (ID. 705C2G9 & 7053250), MAXIMUM WIND SPEEDS RECORDED OVER 42 YEARS ARE IN THE RANGE OF 100 KM/H (WIND GUSTS)

3.4.4 DESIGN VESSEL

- 3.4.4.1 VESSEL CHARACTERISTICS TYPE:
- PASSENGER VEHICLE AND TRUCK FERRY ( MV VDT)
- LENGTH (LOA): 139.12m.
- BEAM: 22.0m
- MAXIMUM LOADED DRAFT: 5.90m.
- MINIMUM LOADED DRAFT: 5.41m
- DEAD WEIGHT TONNAGE (DWT): 2350 TONS
- LIGHT SHIP DISPLACEMENT: 7967 TONS.
- MAXIMUM DISPLACEMENT: 10317 TONS.
- BERTHING DIRECTION: STERN OR BOW
- 3.4.4.2 BERTHING IMPACT LOADS:
- FOR WHARF REINFORCEMENT AND NEW TURNING DOLPHIN:
- MAXIMUM APPROACH ANGLE: 6 DEGREES
- MAXIMUM NORMAL VELOCITY: 180mm/sec.
- MAXIMUM HORIZONTAL ABNORMAL BERTHING IMPACT (REACTION) NORMAL TO WHARF FACE (INCLUDING ALL MANUFACTURER AND DESIGN FACTORS): 1636 kN (SLS)
- DESIGN TEMPERATURE: +27°C, -25°C

3.5 DESIGN LIFE (DURABILITY) :

- 75 YEARS FOR NEW TURNING DOLPHIN STRUCTURE (35 YEARS WITH NO CATHODIC PROTECTION).
- 25 YEARS FOR NEW STRUCTURES DESIGNED TO STRUCTURALLY REINFORCE THE EXISTING PIER (WITH NO CATHODIC PROTECTION)

3.5.1 CORROSSION ALLOWANCE:

- 3.17mm FOR NEW PILES REINFORCING THE EXISTING PIER
- 7.00mm FOR NEW PILES OF TURNING DOLPHIN

3.6 MOORING BOLLARD CAPACITY:

- 735 kN (75 TONS) AND 590 kN (60 TONS) AT MOORING BOLLARDS ON WHARF.
- 590 kN (60 TONS) AT MOORING BOLLARDS ON TURNING DOLPHIN.

4. MATERIALS

- 4.1. MATERIALS AND WORK MUST BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE SPECIFICATIONS.
- 4.2. CONCRETE (TYPE AS PER CONCRETE TABLE SHOWN ON THIS SHEET).
- 4.2.1. CLEAR CONCRETE COVER 75mm UNLESS INDICATED OTHERWISE ON DRAWINGS.
- 4.3. REINFORCING STEEL
- 4.3.4. REINFORCING STEEL: CARBON STEEL BARS COMPLYING WITH CAN / CSA-G30.18-M (GRADE 400W).
- 4.3.5. 90 DEGREES STANDARD HOOK (U.N.O.)
- 4.3.6. BARS SPLICED JOINTS SHALL ALWAYS BE STAGGERED
- 4.3.7. REINFORCING BARS SPLICE LENGTH SHALL BE IN ACCORDANCE WITH CAN/CSA.S6. SEE TABLE ON THIS SHEET.
- 4.4. STRUCTURAL STEEL
- 4.4.1 PIPE PILES : WELDED STRAIGHT-SEAM OR SPIRAL WELDED STEEL TUBING CONFORMS TO ASTM A-252 GRADE 3 (MODIFIED) AND ASTM A-572 Gr. 55, Fy = 345 MPa.
- 4.4.2 CHANNEL, ANGLES, PLATES AND BARS: AS PER CAN/CSA-G40.21, GRADE 350W.
- 4.4.3 BOLTS, NUTS AND WASHERS : AS PER ASTM A-325
- 4.5. WELDING WORKS
- 4.5.1 MATERIALS AND WELDING: AS PER CSA W48 AND W59
- 4.5.2 CONTRACTOR SHALL BE CSA W47 CERTIFIED, AND WELDERS SHALL BE CWB CERTIFIED.
- 4.6. CHEMICAL ADHESIVE DOWELS : STANDARD REBAR DOWELS AS SHOWN ON DRAWINGS.
- 4.7. GALVANIZATION OF STEEL ELEMENTS, PLATES, BOLTS, GRATING AND ANCHORS: AS PER CSA-G164 STANDARD. WEIGHT OF THE COATING LAYER SHALL EXCEED 600 g PER SQUARE METER. SURFACES TO BE PAINTED WILL BE "PASSIVATED". PRIMER FOR GALVANIZED SURFACES: ZINC RICH PRIMER, COMPLYING WITH CGSB STANDARD 1-GP-181d.
- 4.8. ALUMINUM CATWALK, SEE THE SPECIFICATIONS OF SUPPLIER.

		WATER LEVEL TABLE								
		TIDAL RANGE		LARGE TIDE		MEAN TIDE		EXTREMES RECORDED		MEAN WATER LEVEL
LOCATION	STATION NO.	HIGH TIDE	AVERAGE TIDE	HHW	LLW	HHW	LLW	HIGH SEA	LOW SEA	
CAP-AUX-MEULES	1790	1.1	0.6	1.4	0.3	1.2	0.5	2.4	-0.5	0.9

CONCRETE TABLE		
ELEMENTS	28 DAYS (f'c) COMPRESSIVE STRENGTH	CONCRETE TYPE
UNDERWATER CONCRETE	35 MPA	XV (ANTI-WASHOUT)
PIPE PILE CONCRETE FILL	35 MPA	XV
CONCRETE FOR MOORING BOLLARD BASES AND CONCRETE REPAIRS AT FENDERS	35 MPA	XIV-R
CAP BEAM SLAB TURNING DOLPHIN	35 MPA	V-S

DEVELOPMENT LENGTH Ld(mm)		CONCRETE f'c =35MPa		
BAR DIAMETER	TYPE 1		TYPE 2	
	OTHER BARS	TOP BARS*	OTHER BARS	TOP BARS*
10M	250	320	350	450
15M	400	500	500	650
20M	500	650	650	850
25M	800	1000	1000	1300
30M	950	1200	1250	1600
35M	1100	1400	1450	1850
45M	1400	1800	1850	2400
55M	1700	2200	2250	2900

\* TOP BARS: HORIZONTAL BARS WITH MORE THAN 300mm OF FRESH CONCRETE CAST BELOW THE DEVELOPMENT LENGTH OR SPLICE (SEE ART.12.2.4 CSA A23.3-14).

TYPE 1: MEMBERS WITH TRANSVERSAL REINFORCING OVER THE LENGTH LD; SLABS AND WALLS HAVING CLEAR SPACING OF NOT LESS THAN 2d<sub>b</sub> BETWEEN BARS BEING DEVELOPED.

TYPE 2: OTHER CASES.

STRAIGHT DEVELOPMENT LENGTH Ld (mm) OF THE REINFORCING BARS IN TENSION (Fy = 400 MPa)

MINIMUM SPLICE LENGTH LENGTH (mm)		CONCRETE f'c =35MPa			
BAR DIAMETER	JUNCTION CLASS "B"				
	TYPE 1		TYPE 2		
	OTHER BARS	TOP BARS*	OTHER BARS	TOP BARS*	
10M	350	450	450	550	
15M	500	650	650	850	
20M	650	850	850	1100	
25M	100	1300	1350	1750	
30M	1200	1550	1600	2050	
35M	1400	1800	1900	2400	
45M	USE A MECHANICAL JOINT				
55M	USE A MECHANICAL JOINT				

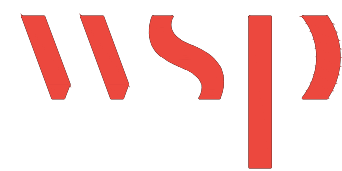
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TYPE 2: OTHER CASES.

\* THE MINIMUM LENGTH OF LAP FOR TENSION LAP SPLICES CLASS "A" IS 1.0 x Ld

SPLICE LENGTH OF THE REINFORCING BARS IN TENSION CLASS "B" (Fy = 400 MPa)



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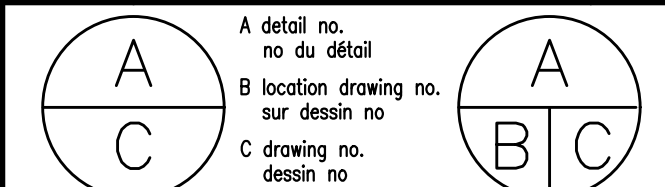
CAUTION

THIS SET OF DRAWING WAS DEVELOPED AS PART OF THE RS4 - DESIGN DEVELOPMENT STAGE OF THE PROJECT IT IS THEREFORE PRELIMINARY BY NATURE, AND SHALL NOT BE USED FOR CONSTRUCTION.

ATTENTION

CET ENSEMBLE DE DESSINS A ÉTÉ DÉVELOPPÉ DANS LE CADRE DE LA PHASE DE DÉVELOPPEMENT DE LA CONCEPTION DU PROJET RS4. IL EST DONC PRÉLIMINAIRE PAR NATURE, ET NE DOIT PAS ÊTRE UTILISÉ À DES FINS DE CONSTRUCTION.

0	ISSUED FOR TENDER POUR SOUMISSION	08 02 2021
revisions		date



project

**CAP-AUX-MEULES  
WHARF EXTENSION  
REINFORCEMENT AND NEW FENDERS  
EXTENSION DU QUAI  
RENFORCEMENT ET NOUVELLES DÉFENSES**

project

drawing

**GENERAL NOTES 1 OF 2  
NOTES GÉNÉRALES 1 DE 2**

dessin

designed	CHONG WANG, ing.	conçu
date		
drawn	CARL ELEMENT, tech.	dessiné
date		
approved	JHON PAEZ, ing.	approuvé
date		
Tender		Soumission
PWGSC Project Manager	Administrateur de projets TPSGC	
project number		no. du projet
<b>R.114048.001</b>		
drawing no.		no. du dessin
<b>553215-G03</b>		