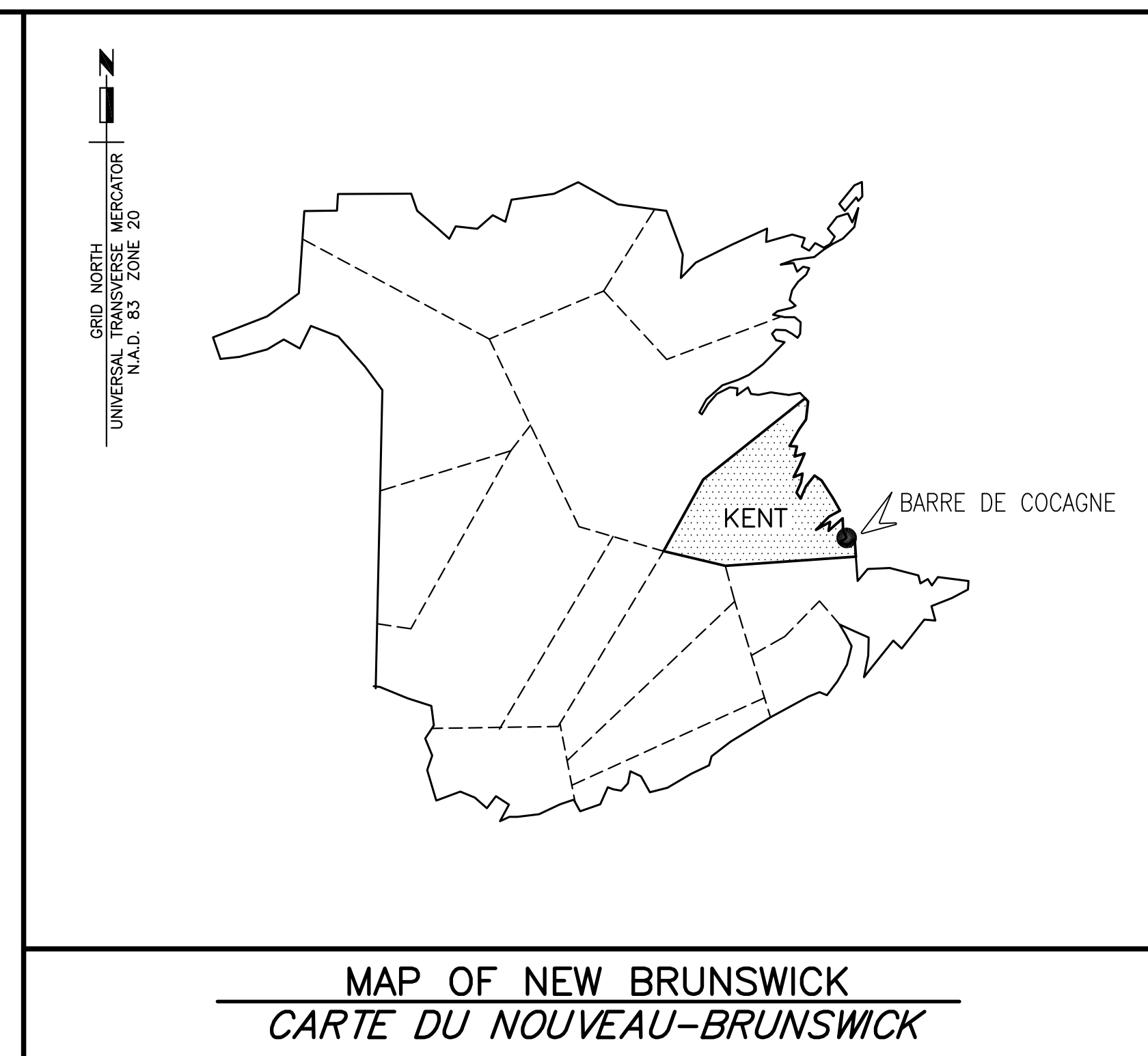


**Fisheries and Oceans  
Canada**

**Small Craft Harbours  
Maritimes / Gulf Region**

**Pêches et Océans  
Canada**

**Ports pour Petits Bateaux  
Région des Maritimes / Golfe**



**NEW MARGINAL WHARF**  
**NOUVEAU QUAI MARGINAL**  
**STRUCTURE 407**  
**BARRE DE COCAGNE**  
**N.B./N.-B.**

**PROJECT NO. 721986**

**DRAWING LIST/LISTE DE DESSINS**

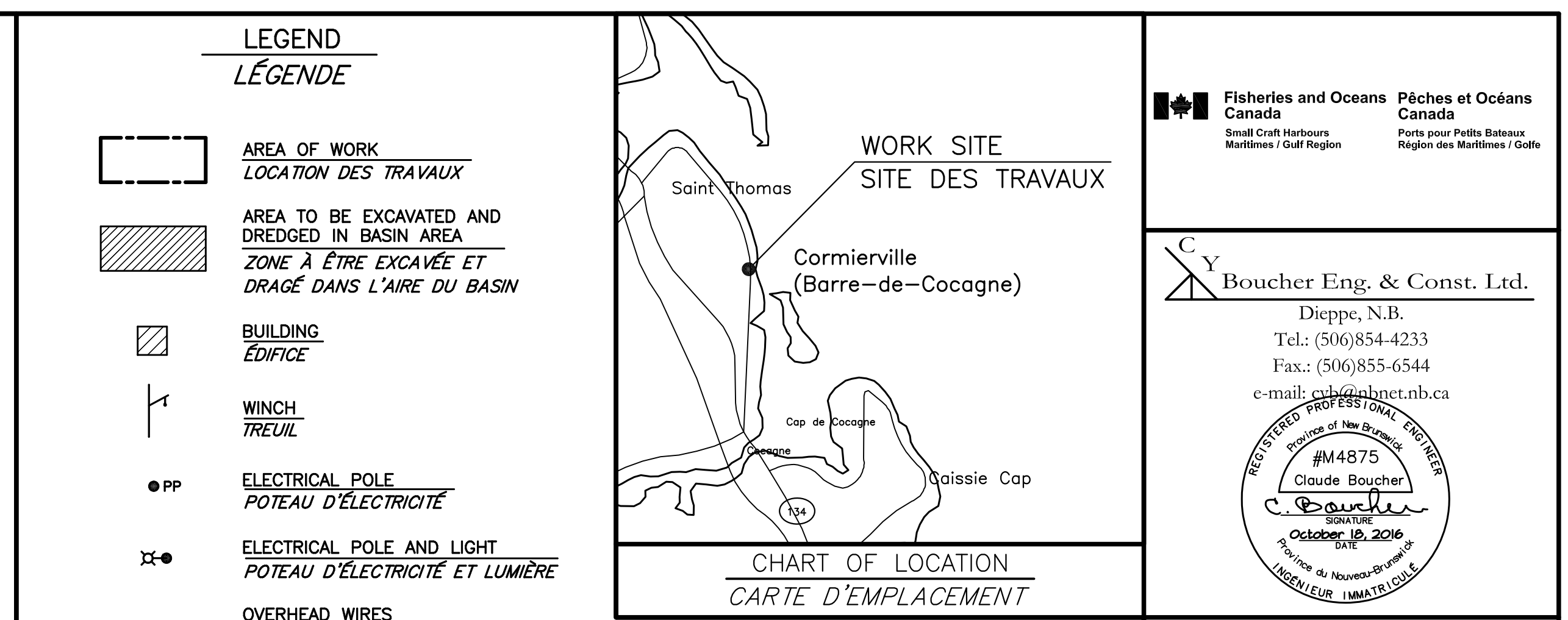
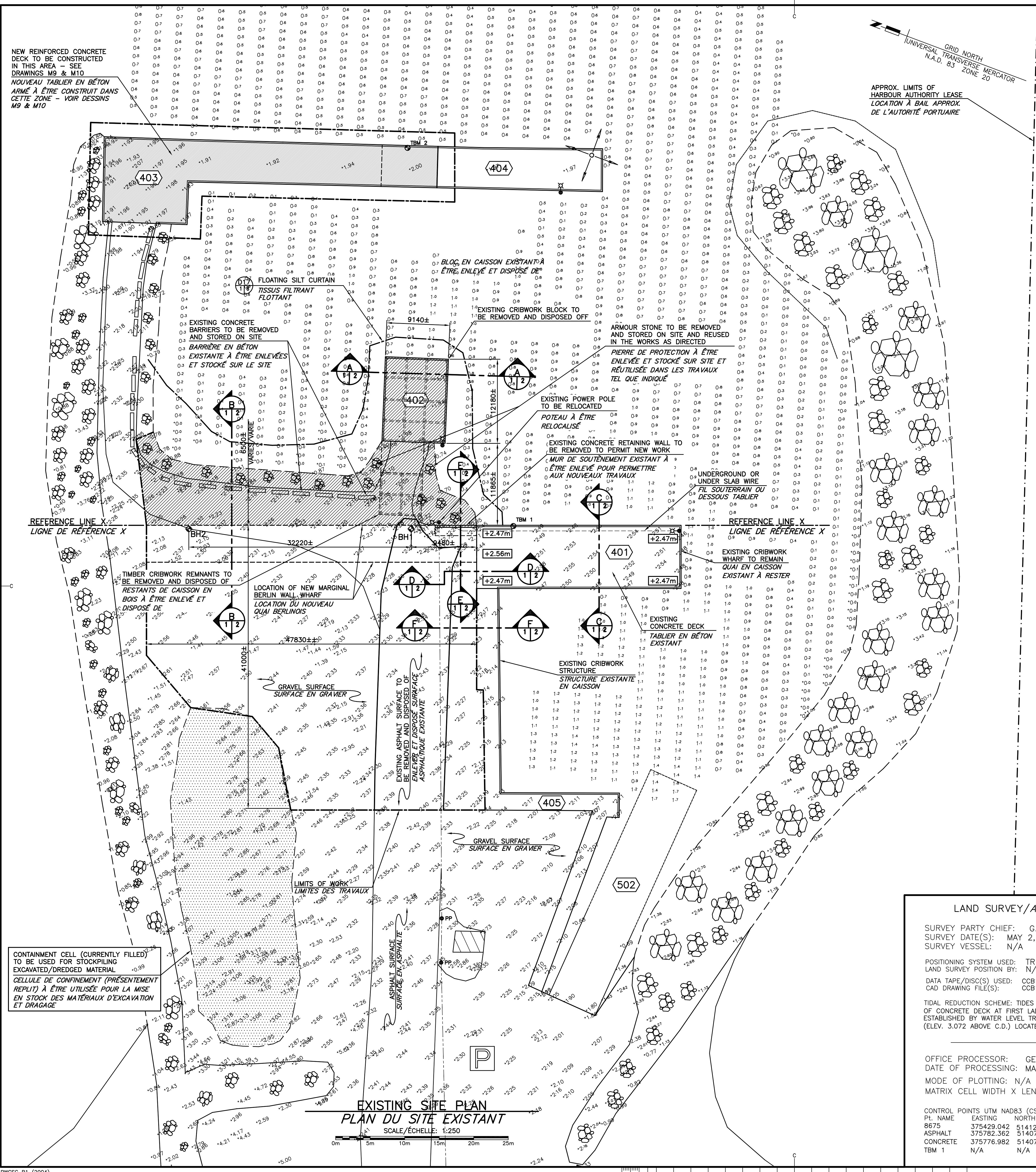
CIVIL/CIVIL

- M1 EXISTING SITE PLAN  
*PLAN DE SITE EXISTANT*
- M2 EXISTING SECTIONS  
*COUPES EXISTANTES*
- M3 PLAN OF NEW WORK  
*PLAN DES NOUVEAUX TRAVAUX*
- M4 PLAN OF PILE LAYOUT AND ELEVATION  
*PLAN DE L'ALIGNEMENT DES PIEUX ET ÉLEVATION*
- M5 SECTIONS AND DETAILS  
*COUPES ET DÉTAILS*
- M6 SECTIONS AND DETAILS  
*COUPES ET DÉTAILS*
- M7 REINFORCING SECTIONS AND DETAILS  
*COUPES ET DÉTAILS D'ARMATURE*
- M8 BOREHOLE RECORD, SECTIONS AND DETAILS  
*RECORD DE FORAGE, COUPES ET DÉTAILS*
- M9 PLAN OF NEW WORK 402 & 403, SECTION AND DETAILS  
*PLAN DES NOUVEAUX TRAVAUX 402 & 403, ET COUPE ET DÉTAILS*
- M10 SECTIONS AND DETAILS  
*COUPES ET DÉTAILS*

ELECTRICAL/ÉLECTRIQUE

- E1 ELECTRICAL NEW & EXISTING LAYOUTS & DETAILS
- E2 LIGHT POLE, TRENCH & POWER CENTER LAYOUTS AND DETAILS
- E3 ELECTRICAL LIGHTING CONTROL, POWER RISER & SERVICE CALCULATIONS

**Canada**



**Fisheries and Oceans Canada**  
 Pêches et Océans Canada  
 Small Craft Harbours / Ports pour Petits Bateaux  
 Maritimes / Gulf Region

**Boucher Eng. & Const. Ltd.**  
 Dieppe, N.B.  
 Tel.: (506)854-4233  
 Fax.: (506)855-6544  
 e-mail: c.boucher@bnet.nb.ca

**REGISTERED PROFESSIONAL ENGINEER**  
 #4875  
 Claude Boucher  
 October 16, 2016  
 Ingénieur (Matériau)

**NEW REINFORCED CONCRETE DECK TO BE CONSTRUCTED IN THIS AREA - SEE DRAWINGS M9 & M10**  
**NOUVEAU TABLIER EN BÉTON ARMÉ À ÊTRE CONSTRUIT DANS CETTE ZONE - VOIR DESSINS M9 & M10**

**APPROX. LIMITS OF HARBOUR AUTHORITY LEASE**  
**LOCATION À BAIL APPROX. DE L'AUTORITÉ PORTUAIRE**

**UNIVERSAL GRID NORTH**  
**N.A.D. 83 ZONE 20**

**LEGEND**  
**LÉGENDE**

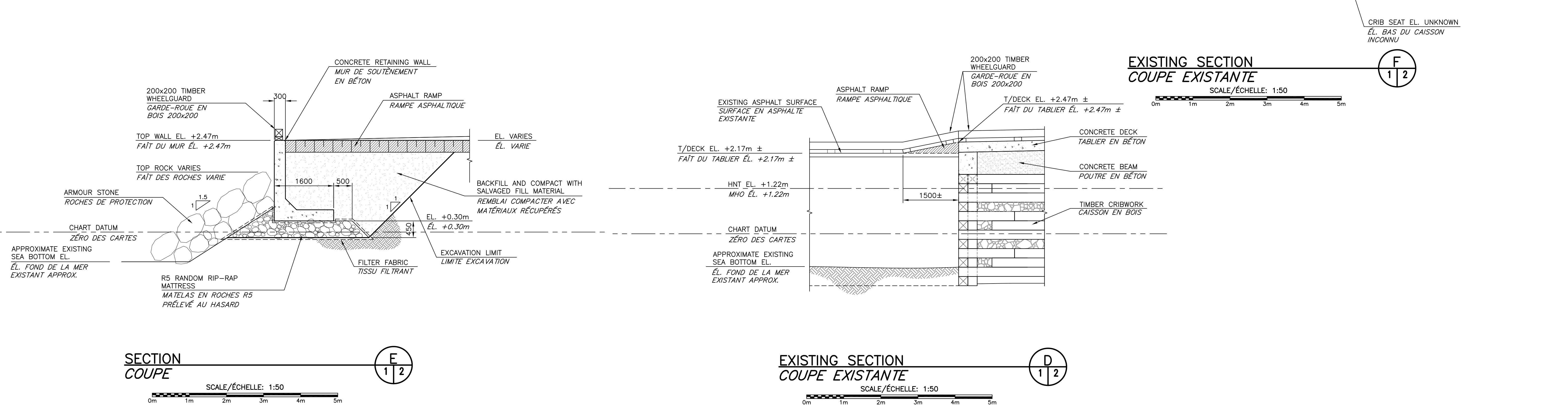
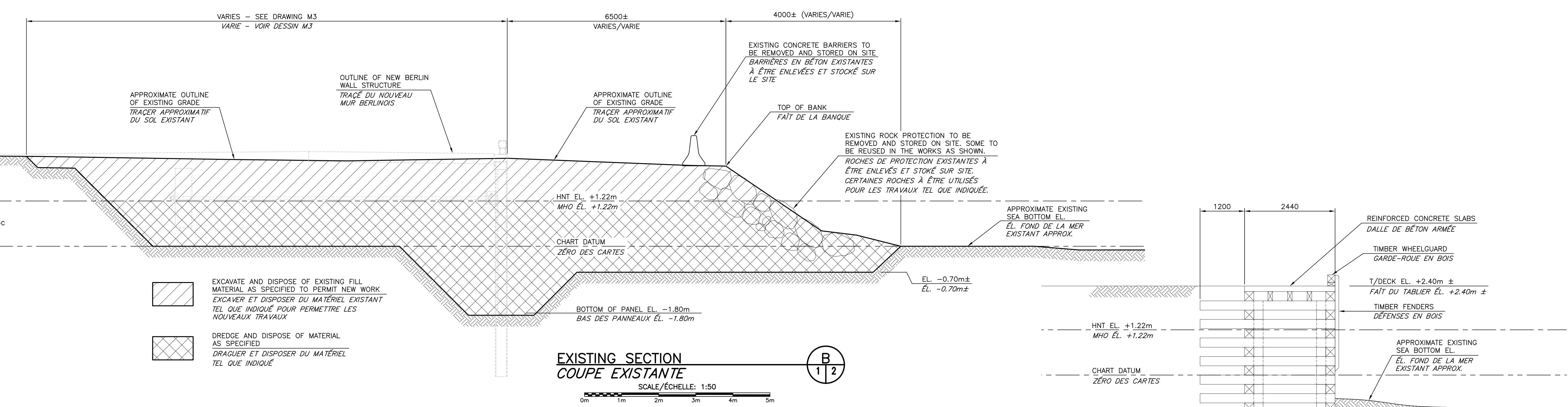
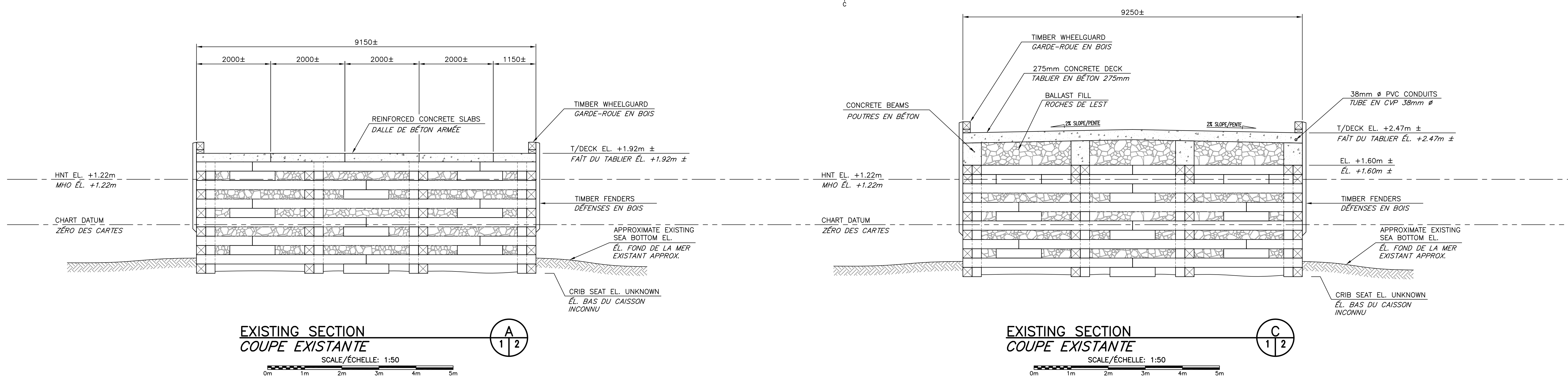
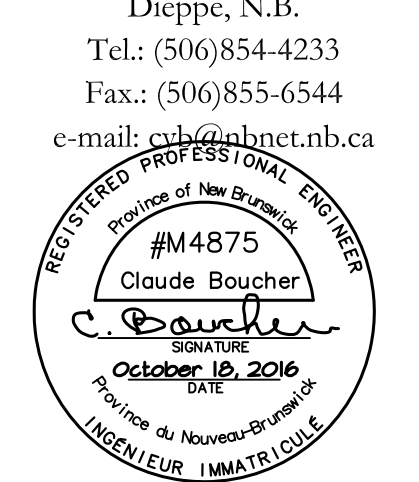
- AREA OF WORK / LOCATION DES TRAVAUX
- AREA TO BE EXCAVATED AND DREDGED IN BASIN AREA / ZONE À ÊTRE EXCAVÉE ET DRAGÉ DANS L'AIRE DU BASIN
- BUILDING / ÉDIFICE
- WINCH / TREUIL
- ELECTRICAL POLE / PÔTEAU D'ÉLECTRICITÉ
- ELECTRICAL POLE AND LIGHT / PÔTEAU D'ÉLECTRICITÉ ET LUMIÈRE
- OVERHEAD WIRES / FIL ÉLECTRIQUE AÉRIEN
- BENCHMARK / BORNE RÉPÈRE
- BH2 BOREHOLE - SEE M8 FOR INFORMATION / FORAGE - VOIR M8 POUR INFORMATION
- NAVIGATIONAL LIGHT / FEU DE NAVIGATION
- ARMOUR STONE / PIERRE DE PROTECTION

**NOTES / NOTES**

- EXISTING PLAN AND SECTIONS ARE APPROXIMATE ONLY. THE ACTUAL CONSTRUCTION CONFIGURATION AND DETAILS MAY DIFFER THAN SHOWN.  
 1 - PLAN ET COUPES EXISTANTS SONT APPROXIMATIFS SEULEMENTS. LES CONDITIONS DE CONSTRUCTIONS RÉELLES ET DÉTAILS PEUVENT ÊTRE DIFFÉRENTS TEL QUE MONTRER.
- CONTRACTOR TO DETERMINE SUITABILITY OF ALL ACCESS STRUCTURES FOR INTENDED LOADS. ENSURE NO PART OF STRUCTURES ARE SUBJECTED TO LOADS THAT WILL ENDANGER ITS SAFETY OR CAUSE DAMAGE.  
 2 - L'ENTREPRENEUR DOIT S'ASSURER QUE TOUTES LES STRUCTURES D'ACCÈS SONT ADÉQUATES POUR SUPPORTER LES CHARGES PROPOSÉES. IL FAUT ASSURER QU'AUCUNE PARTIE DES STRUCTURES SONT SOUMISE À DES CHARGEMENTS QUI POURRAIT METTRE EN DANGER LA SÉCURITÉ OU CAUSER DES DOMAGES.
- CONDUITS, POWER POLES AND ELECTRICAL COMPONENTS TO BE REMOVED IN AREAS OF WORK.  
 3 - ENLEVER LES LIGNES ET CONDUITS, PÔTEAUX ET INSTALLATIONS ÉLECTRIQUES DANS LES ZONES DE TRAVAUX.
- THE CONTRACTOR IS ADVISED THAT THE LOBSTER FISHERY WILL BE IN EFFECT FROM EARLY AUGUST TO MID-OCTOBER. FISHERMEN, FISH BUYERS, TRAFFIC WILL BE UTILIZING THESE STRUCTURES ON A REGULAR BASIS. VARIOUS FISHERY ACTIVITIES WILL BE IN EFFECT AT VARIOUS TIMES FROM SPRING TO FALL. COORDINATE WORK ACCORDINGLY.  
 4 - L'ENTREPRENEUR EST AVISÉ QUE LA PÊCHE AUX HOMARDS SERA EN VIGUEUR À PARTIR DU DÉBUT AOÛT JUSQU'À LA MI-OCTOBRE. LES PÊCHEURS, ACHETEURS, EN PLUS DE LA CIRCULATION VONT EMPLOYER CES STRUCTURES RÉGULIÈREMENT. AUTRES ACTIVITÉS DES PÊCHES SERONT EN VIGUEUR À DIFFÉRENTES PÉRIODES DU PRINTEMPS JUSQU'À L'AUTOMNE. COORDONNER LES TRAVAUX EN CONSÉQUENCES.

1	FOR TENDER / POUR SOUMISSION	10/13 2016
revisions		date
project	<b>NEW MARGINAL WHARF</b>	
project	<b>NOUVEAU QUAI MARGINAL</b>	
project	<b>STRUCTURE 407</b>	
project	<b>BARRE-DE-COCAGNE, NB</b>	
project	COMTE DE KENT COUNTY	
drawing	dessin	
drawing	<b>EXISTING SITE PLAN</b>	
drawing	<b>PLAN DU SITE EXISTANT</b>	
designed by	CY BOUCHER CONSTRUCTION LTD/consu	
date	OCTOBER/OCTOBRE 2016	
drawn by	P. LEBLANC	
date	OCTOBER/OCTOBRE 2016	
approved	approuvé	
date		
Tender	Soumission	
PWSC Project Manager	Administrateur de projets TPSC	
project number	no. du projet	
	<b>721986</b>	
drawing no.	no. du dessin	
	<b>M1 of/de M10</b>	



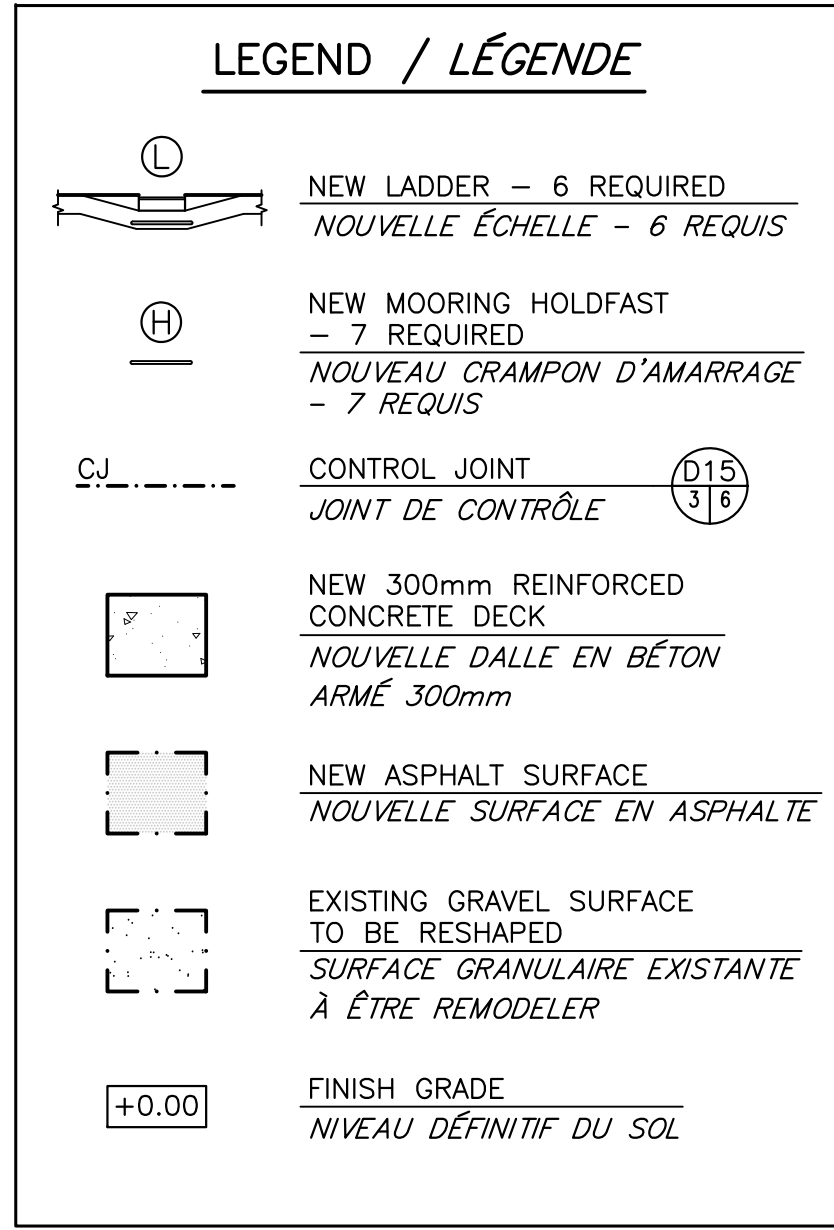
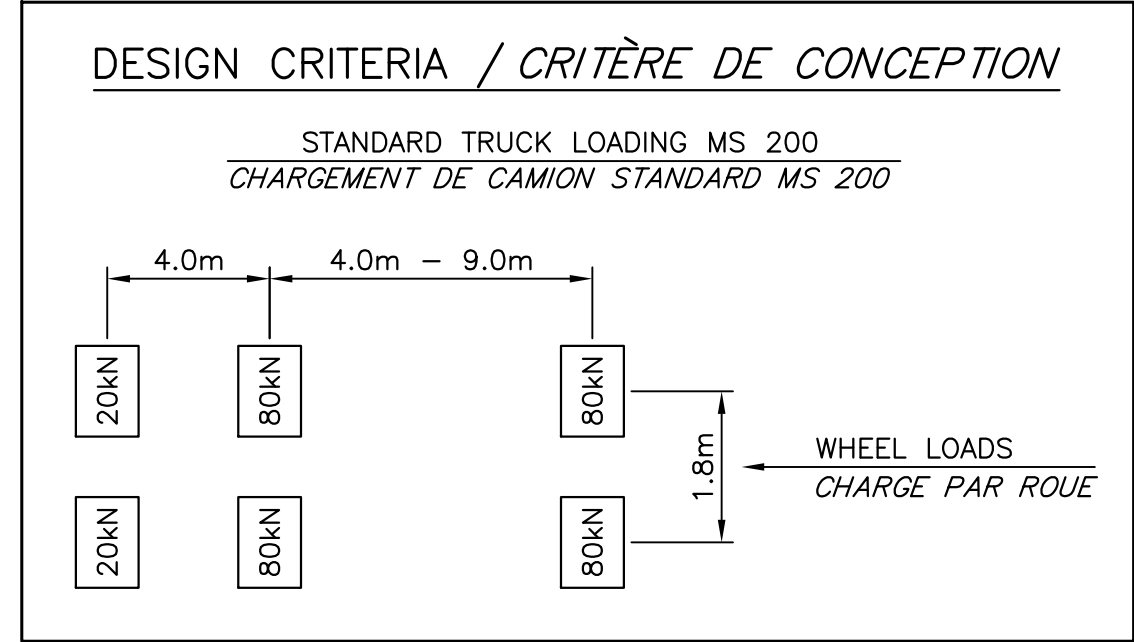
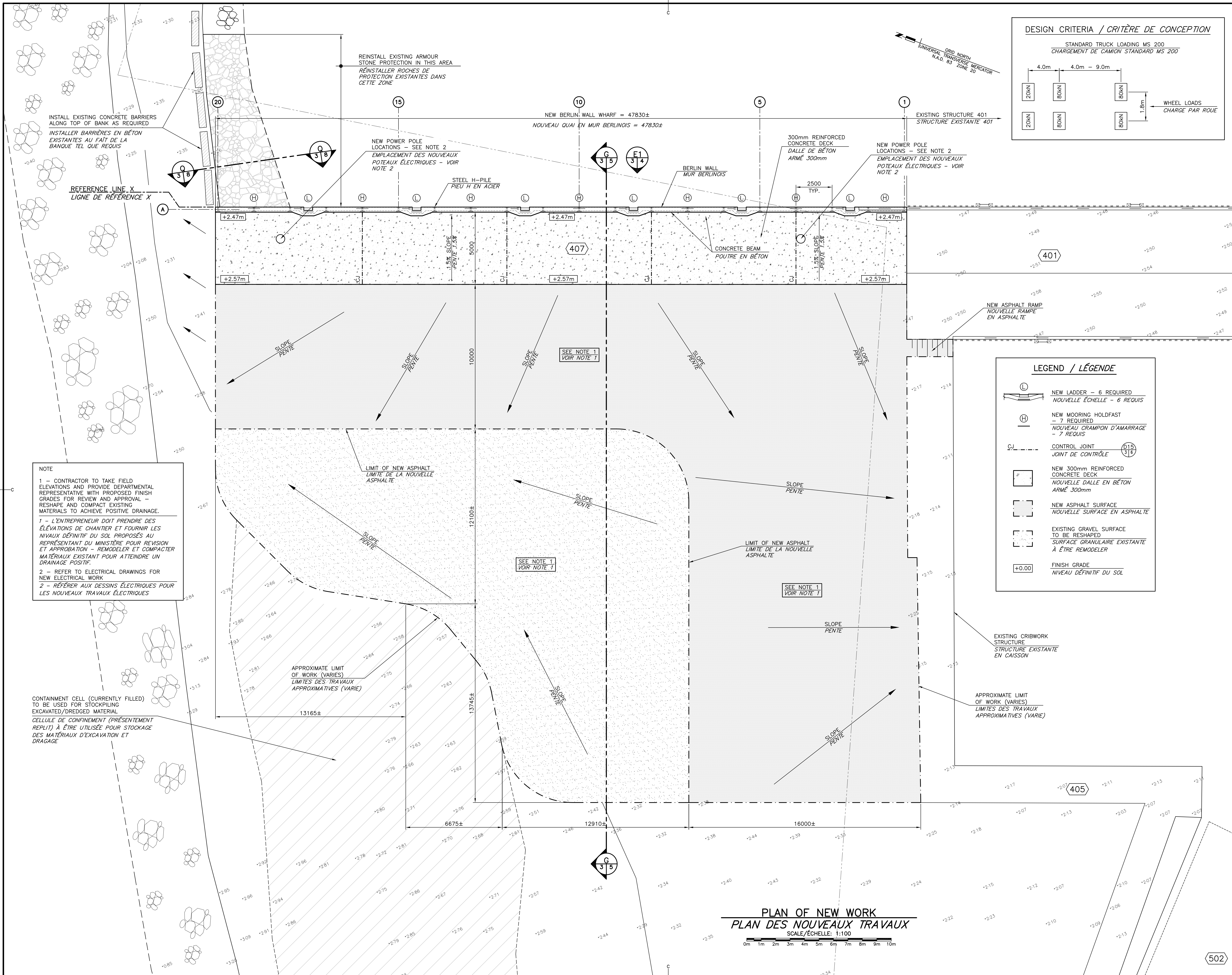


1	FOR TENDER / POUR SOUMISSION	10/13/2016
revisions		date

project / projet  
**NEW MARGINAL WHARF**  
**NOUVEAU QUAI MARGINAL**  
 STRUCTURE 407  
 BARRE-DE-COCAGNE, NB  
 COMTE DE KENT COUNTY

drawing / dessin  
**EXISTING SECTIONS**  
**COUPES EXISTANTES**

designed by / conçu par	CY BOUCHER CONSTRUCTION LTD
date	OCTOBER/OCTOBRE 2016
drawn by / dessiné par	P. LEBLANC
date	OCTOBER/OCTOBRE 2016
approved / approuvé	
date	
Tender / soumission	
PWSC Project Manager / Administrateur de projets TPSC	
project number / no. du projet	721986
drawing no. / no. du dessin	M2 of/de M10



**NOTE**

1 - CONTRACTOR TO TAKE FIELD ELEVATIONS AND PROVIDE DEPARTMENTAL REPRESENTATIVE WITH PROPOSED FINISH GRADES FOR REVIEW AND APPROVAL - RESHAPE AND COMPACT EXISTING MATERIALS TO ACHIEVE POSITIVE DRAINAGE.

1 - L'ENTREPRENEUR DOIT PRENDRE DES ÉLEVATIONS DE CHANTIER ET FOURNIR LES NIVEAUX DÉFINITIF DU SOL PROPOSÉS AU REPRÉSENTANT DU MINISTÈRE POUR REVISION ET APPROBATION - REMODELER ET COMPACTER MATÉRIAUX EXISTANT POUR ATTEINDRE UN DRAINAGE POSITIF.

2 - REFER TO ELECTRICAL DRAWINGS FOR NEW ELECTRICAL WORK

2 - RÉFÉRER AUX DESSINS ÉLECTRIQUES POUR LES NOUVEAUX TRAVAUX ÉLECTRIQUES

CONTAINMENT CELL (CURRENTLY FILLED) TO BE USED FOR STOCKPILING EXCAVATED/DREDGED MATERIAL

CELLULE DE CONFINEMENT (PRÉSENTEMENT REPLI) À ÊTRE UTILISÉE POUR STOCKAGE DES MATÉRIAUX D'EXCAVATION ET DRAGAGE

**PLAN OF NEW WORK**  
**PLAN DES NOUVEAUX TRAVAUX**  
SCALE/ÉCHELLE: 1:100

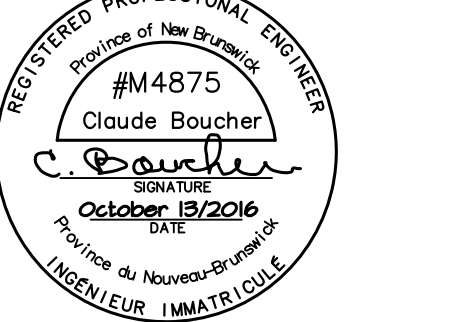
**Fisheries and Oceans Canada / Pêches et Océans Canada**  
Small Craft Harbours / Ports pour Petits Bateaux  
Maritimes / Gulf Region

**Boucher Eng. & Const. Ltd.**  
Dieppe, N.B.  
Tel.: (506)854-4233  
Fax.: (506)855-6544  
e-mail: cy@bouchernet.nb.ca

REGISTERED PROFESSIONAL ENGINEER  
#4875  
Claude Boucher  
October 13/2016  
Ingénieur (IMATRI) Q.C.

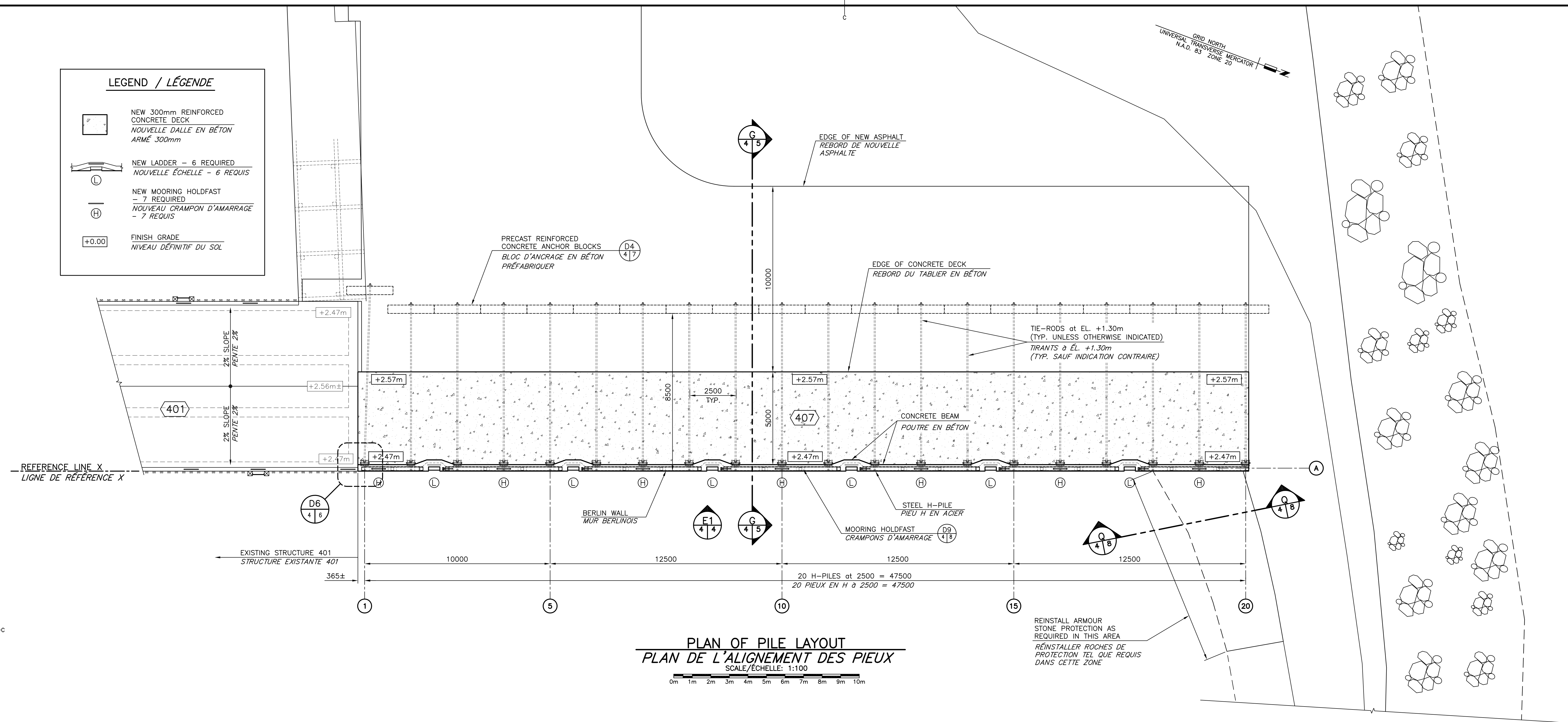
1	FOR TENDER / POUR SOUMISSION	10/13 2016
revisions		date
project	NEW MARGINAL WHARF / NOUVEAU QUAI MARGINAL	
structure	STRUCTURE 407	
location	BARRE-DE-COCAGNE, NB	
county	COMTE DE KENT COUNTY	
drawing	desain	
<b>PLAN OF NEW WORK / PLAN DES NOUVEAUX TRAVAUX</b>		
designed	CY BOUCHER CONSTRUCTION LTD/CONQU	
date	OCTOBER/OCTOBRE 2016	
drawn	P. LEBLANC	
date	OCTOBER/OCTOBRE 2016	
approved	approuvé	
date		
Tender	Soumission	
Project Manager	Administrateur de projets	
project number	no. du projet	
	721986	
drawing no.	no. du dessin	
	M3 of/de M10	



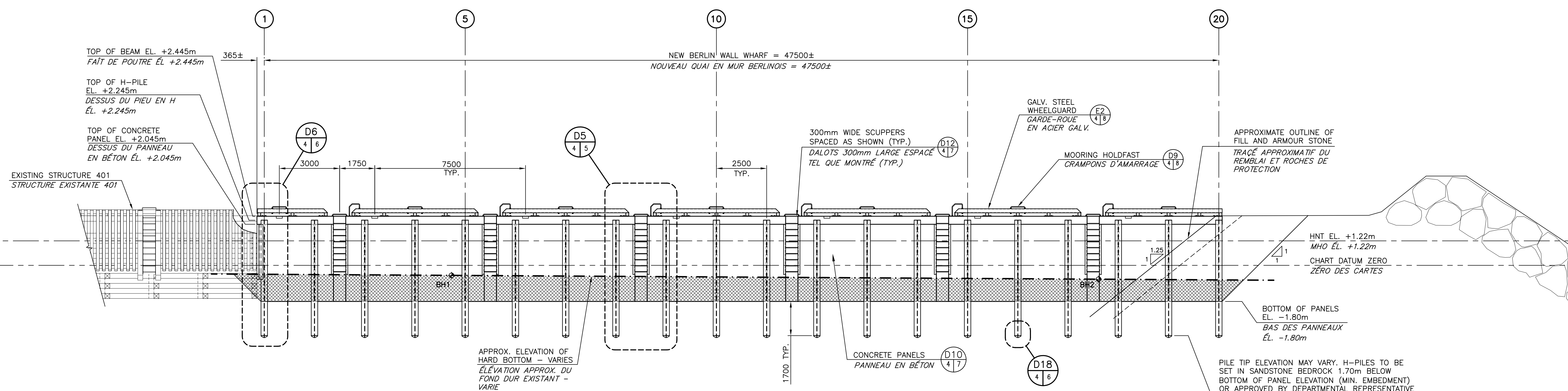


**LEGEND / LÉGENDE**

- NEW 300mm REINFORCED CONCRETE DECK  
NOUVELLE DALLE EN BÉTON ARMÉ 300mm
- NEW LADDER - 6 REQUIRED  
NOUVELLE ÉCHELLE - 6 REQUIS
- NEW MOORING HOLDFAST - 7 REQUIRED  
NOUVEAU CRAMPON D'AMARRAGE - 7 REQUIS
- FINISH GRADE  
NIVEAU DÉFINITIF DU SOL



**PLAN OF PILE LAYOUT  
PLAN DE L'ALIGNEMENT DES PIEUX**  
SCALE/ECHELLE: 1:100



**LEGEND / LÉGENDE**

- APPROXIMATE SANDSTONE BEDROCK ELEVATION  
(VARIES) SEE BOREHOLE LOGS ON SHEET M8  
ÉLEVATION APPROXIMATIF DU SUBSTRAT EN GRÈS  
(VARIE) VOIR TROUS DE FORAGE SUR DESSIN M8
- SANDSTONE BEDROCK EXCAVATION AS REQUIRED  
FOR EVEN BOTTOM PANEL EL. OF -1.80m (TYP.)  
EXCAVATION DU SUBSTRAT EN GRÈS TEL QUE  
REQUIS POUR MAINTENIR L'ÉLEVATION DU BAS DES  
PANNEAUX À ÉL. -1.80m (TYP.)

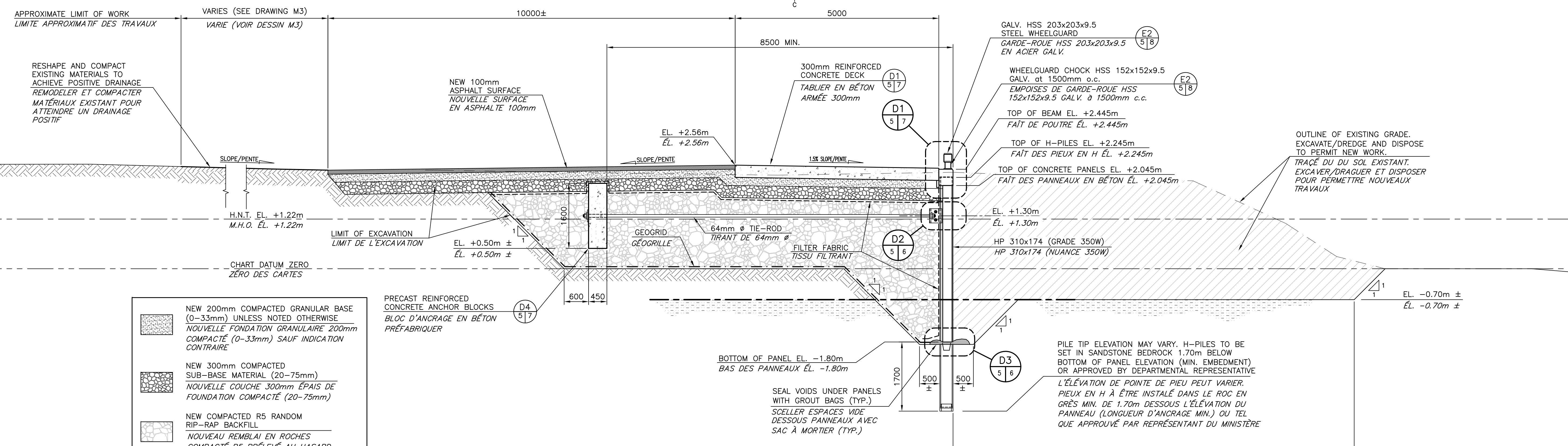
**ELEVATION OF WORK FACE  
ÉLEVATION DE LA SURFACE DES TRAVAUX**  
SCALE/ECHELLE: 1:100

1	FOR TENDER / POUR SOUMISSION	10/13 2016
revisions		date

project  
**NEW MARGINAL WHARF  
NOUVEAU QUAI MARGINAL**  
STRUCTURE 407  
BARRE-DE-COCAGNE, NB  
COMTE DE KENT COUNTY

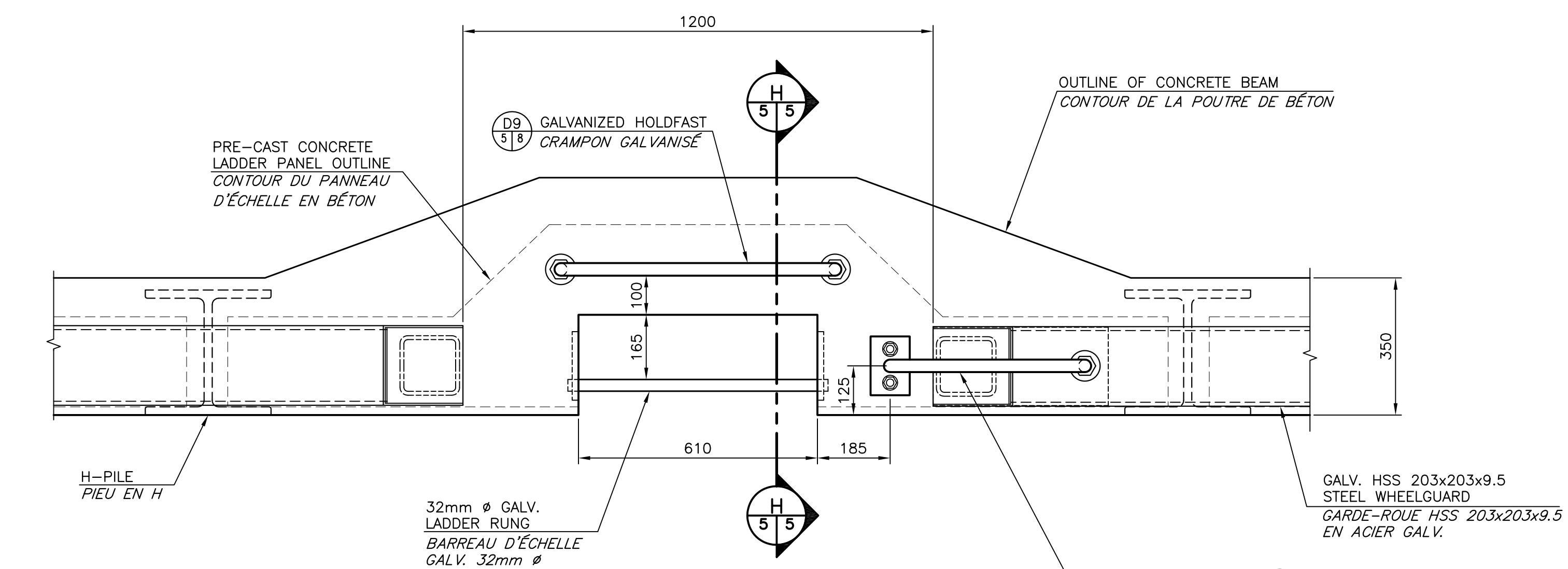
**PLAN OF PILE LAYOUT  
AND ELEVATION  
PLAN DE L'ALIGNEMENT  
DES PIEUX ET ÉLEVATION**

designed	CY BOUCHER CONSTRUCTION LTD/CONQ	date	OCTOBER/OCTOBRE 2016
drawn	P. LEBLANC	date	OCTOBER/OCTOBRE 2016
approved		date	
Tender		Project Manager	Administrateur de projets
Project number	721986	no. du projet	
drawing no.	M4 of/de M10	no. du dessin	

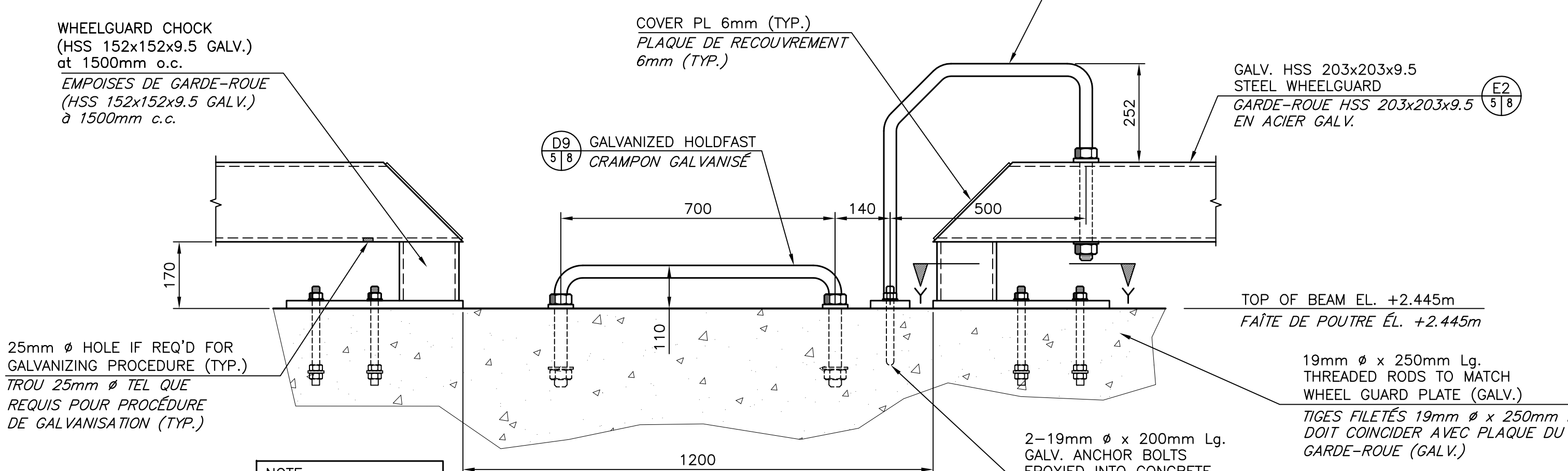


**TYPICAL NEW SECTION**  
**NOUVELLE COUPE TYPIQUE**  
SCALE/ÉCHELLE: 1:50

- NEW 200mm COMPACTED GRANULAR BASE (0-33mm) UNLESS NOTED OTHERWISE  
NOUVELLE FONDATION GRANULAIRE 200mm COMPACTÉ (0-33mm) SAUF INDICATION CONTRAIRE
- NEW 300mm COMPACTED SUB-BASE MATERIAL (20-75mm)  
NOUVELLE COUCHE 300mm ÉPAIS DE FONDATION COMPACTÉ (20-75mm)
- NEW COMPACTED R5 RANDOM RIP-RAP BACKFILL  
NOUVEAU REMBLAI EN ROCHES COMPACTÉ R5 PRÉLEVÉ AU HASARD



**PLAN VUE**  
**VUE DU DESSUS**

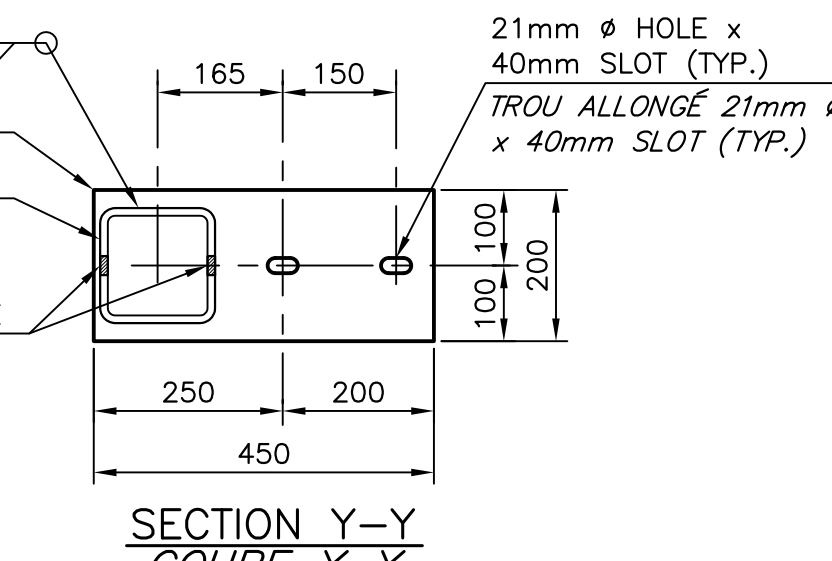


**FRONT VUE**  
**VUE DU DEVANT**

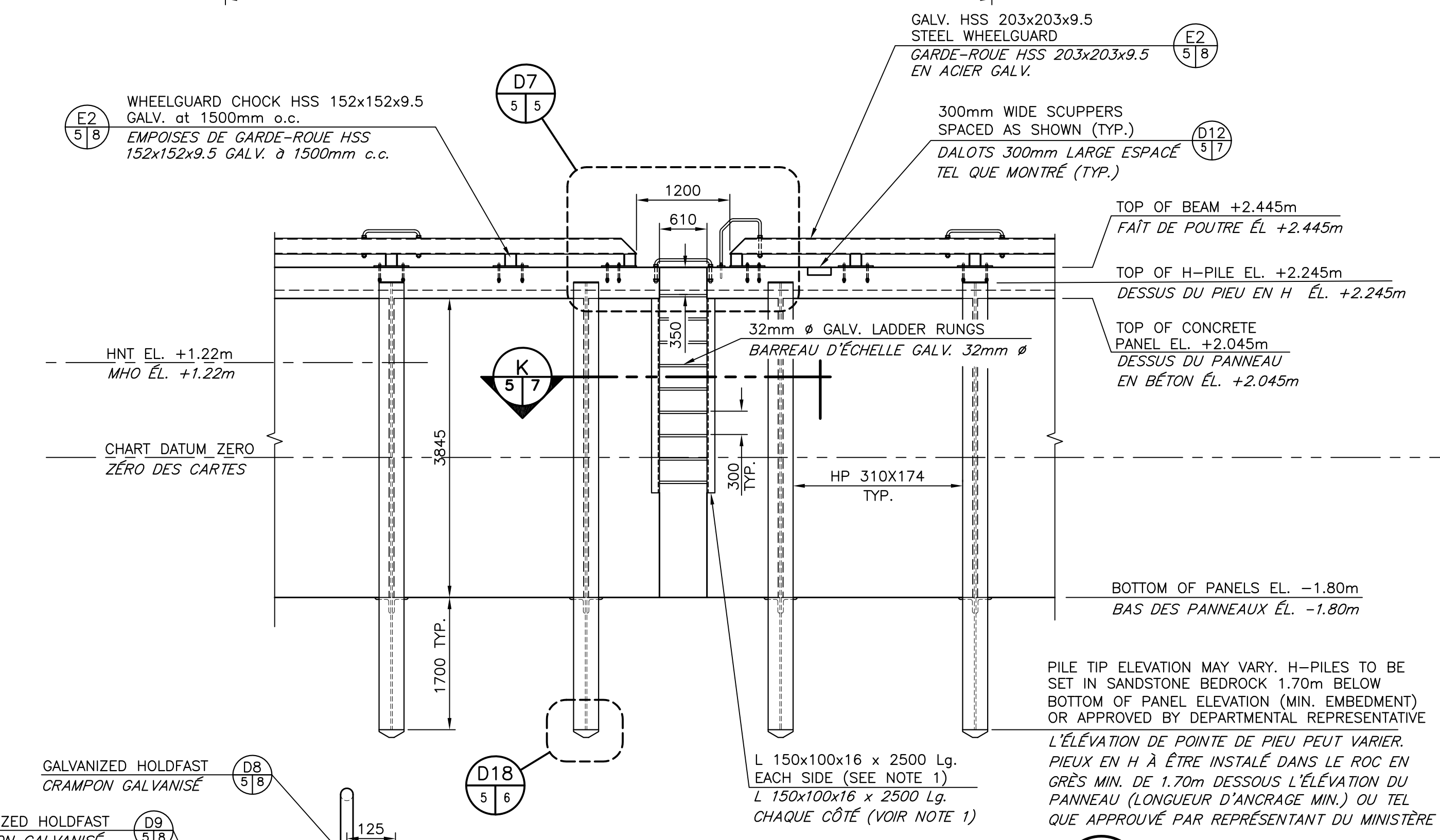
NOTE  
LADDER RUNGS NOT SHOWN FOR CLARITY. BARREAUX D'ÉCHELLE PAS MONTRÉS POUR CLARITÉ.

**HOLDFAST DETAIL AT LADDERS**  
**DÉTAIL DE CRAMPON AUX ÉCHELLES**

SCALE/ÉCHELLE: 1:10



**SECTION Y-Y**  
**COUPE Y-Y**



**ELEVATION OF LADDER PANEL**  
**ÉLÉVATION DU PANNEAU D'ÉCHELLE**

SCALE/ÉCHELLE: 1:50

NOTE  
REINFORCING NOT SHOWN FOR CLARITY. ARMATURE PAS MONTRÉE POUR CLARITÉ.

**SECTION**  
**COUPE**

SCALE/ÉCHELLE: 1:10

1	FOR TENDER / POUR SOUMISSION	10/13 2016
revisions		date

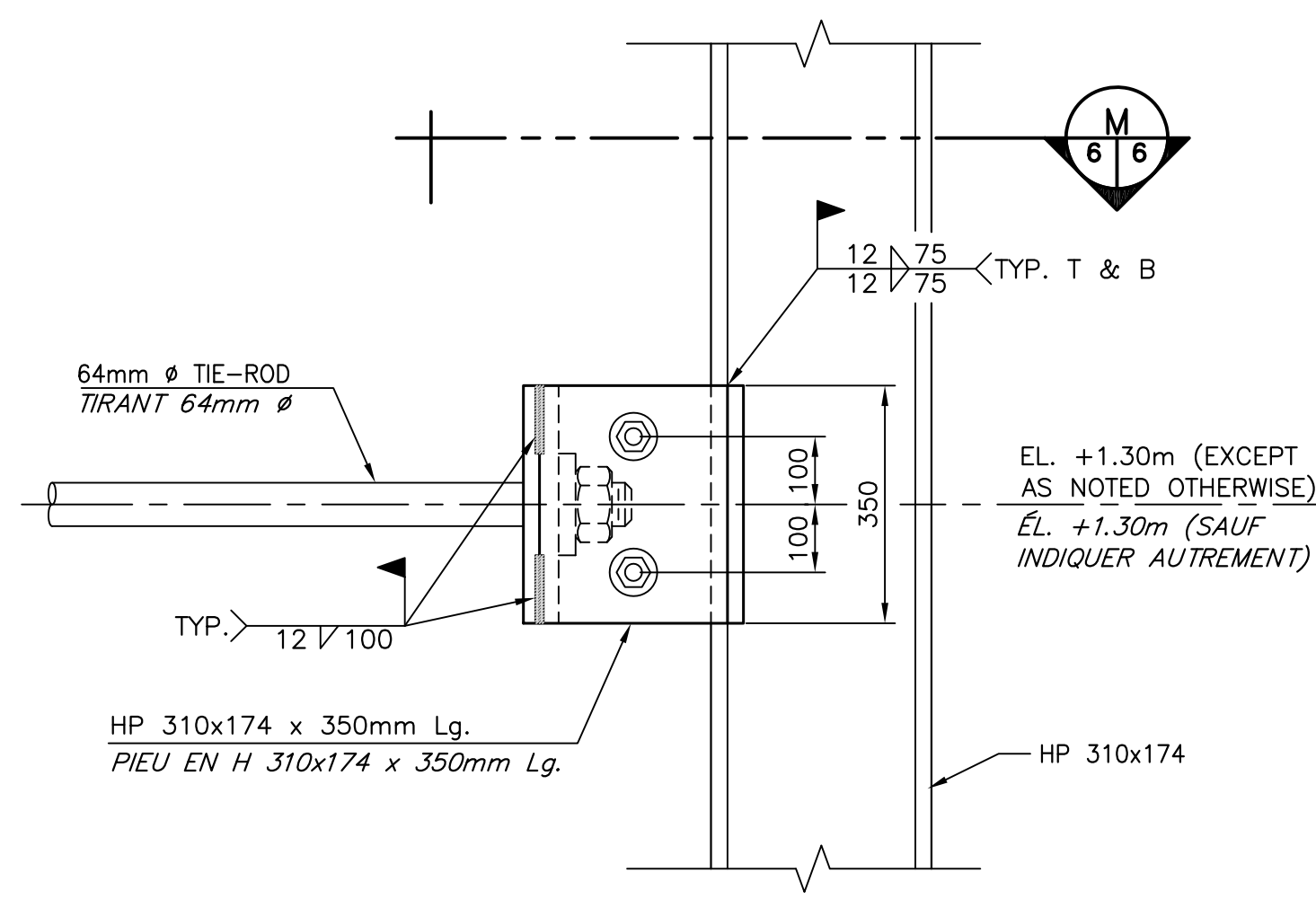
project  
**NEW MARGINAL WHARF**  
**NOUVEAU QUAI MARGINAL**  
STRUCTURE 407  
BARRE-DE-COAGNE, NB  
COMTE DE KENT COUNTY

drawing design

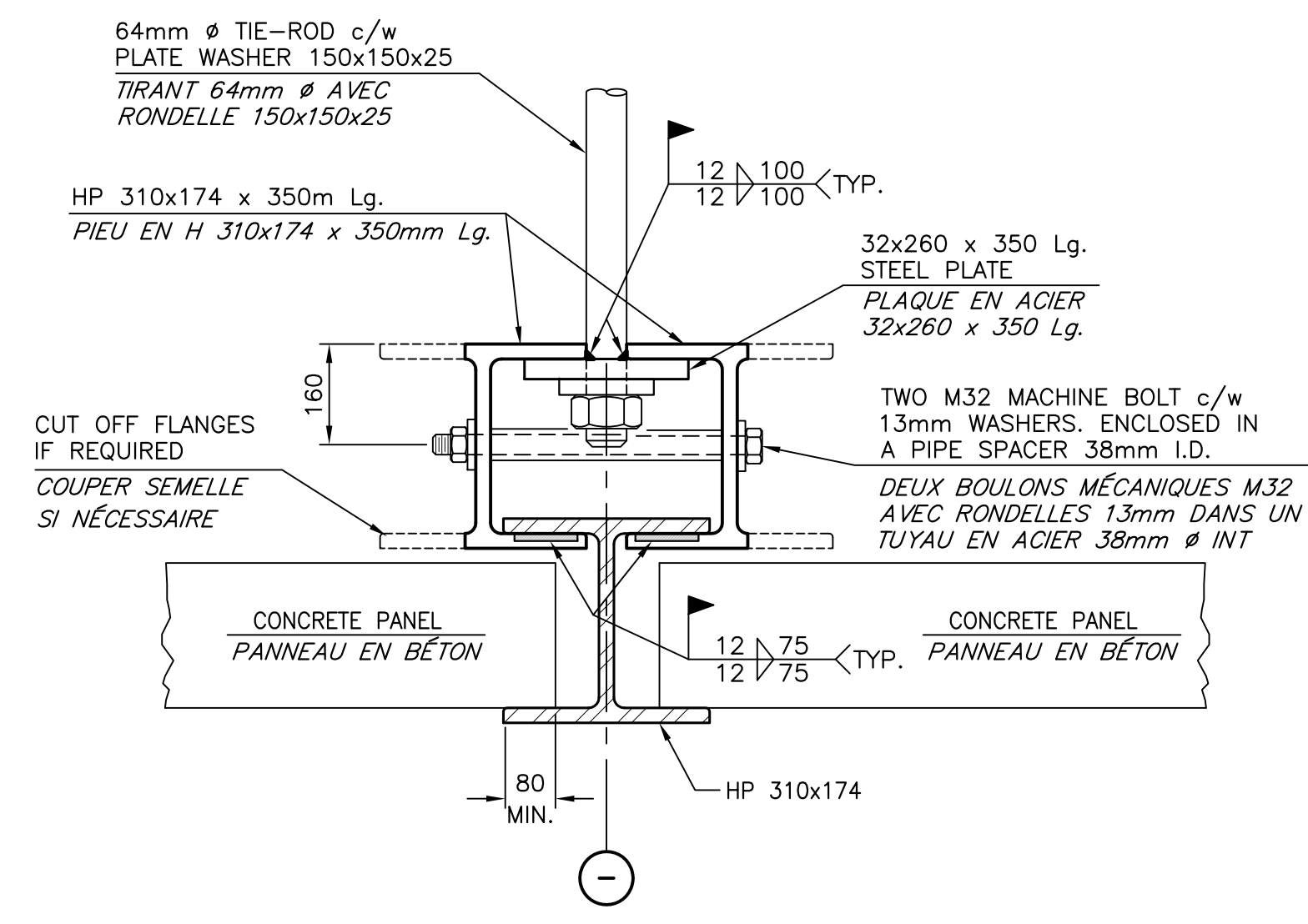
**SECTIONS AND DETAILS**  
**COUPES ET DÉTAILS**

designed by BOUCHER CONSTRUCTION LTD/CONQU  
date OCTOBER/OCTOBRE 2016  
drawn P. LEBLANC  
date OCTOBER/OCTOBRE 2016  
approved  
date  
Tender  
Project Manager Administrateur de projets  
project number no. du projet  
**721986**  
drawing no. no. du dessin  
**M5 of/de M10**

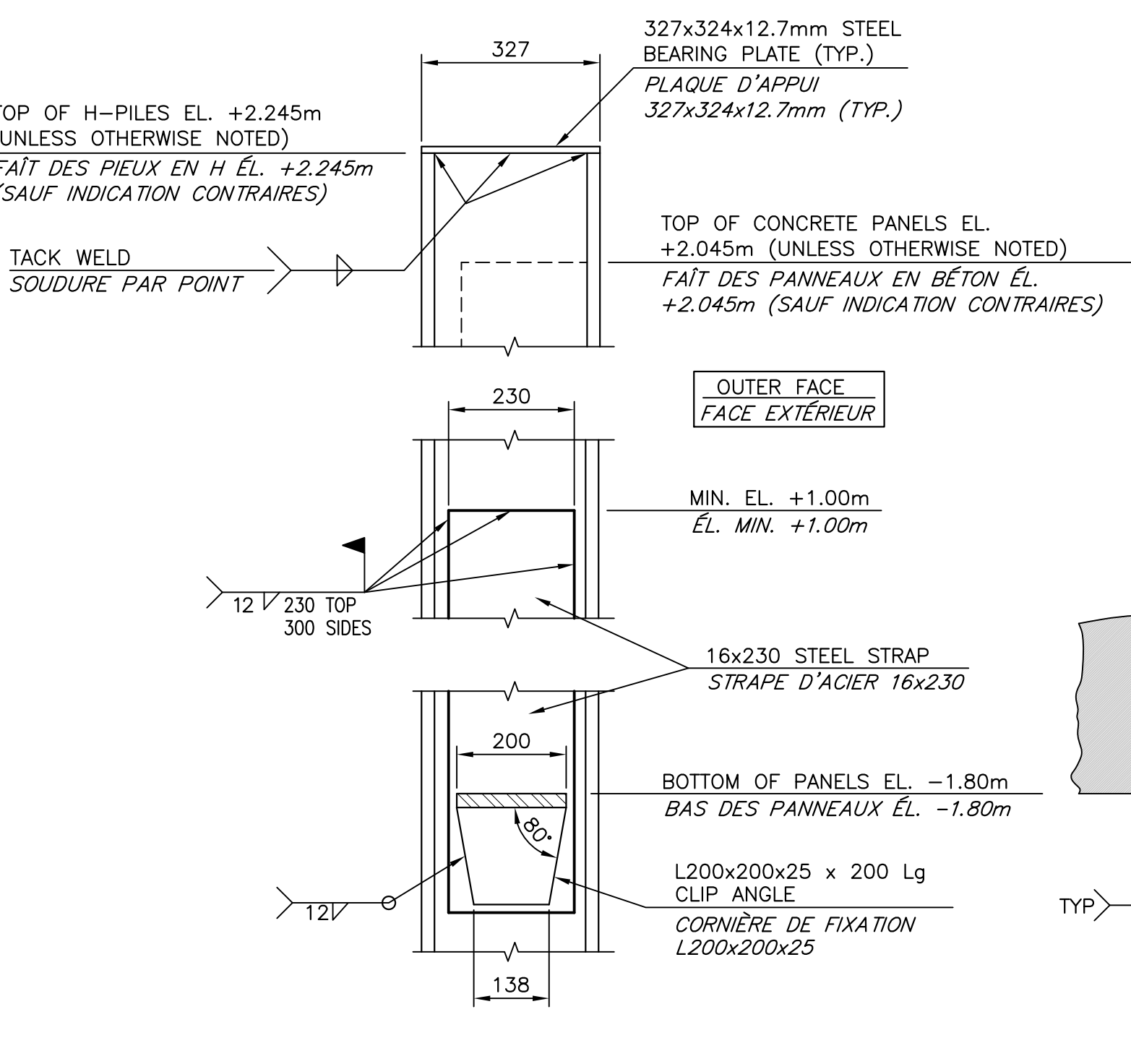




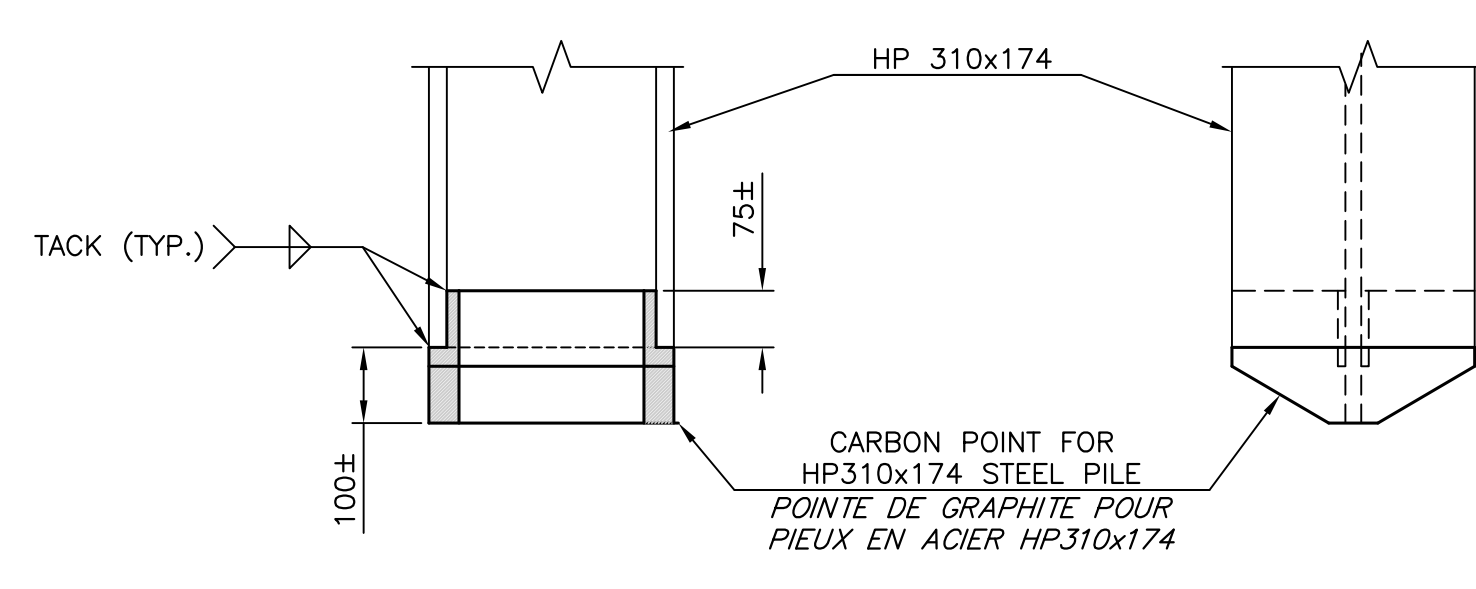
**TIE-ROD TO H-PILE CONNECTION DETAIL**  
**DÉTAIL DE CONNECTION DE TIRANT AU PIEU EN H**  
 SCALE/ÉCHELLE: 1:10



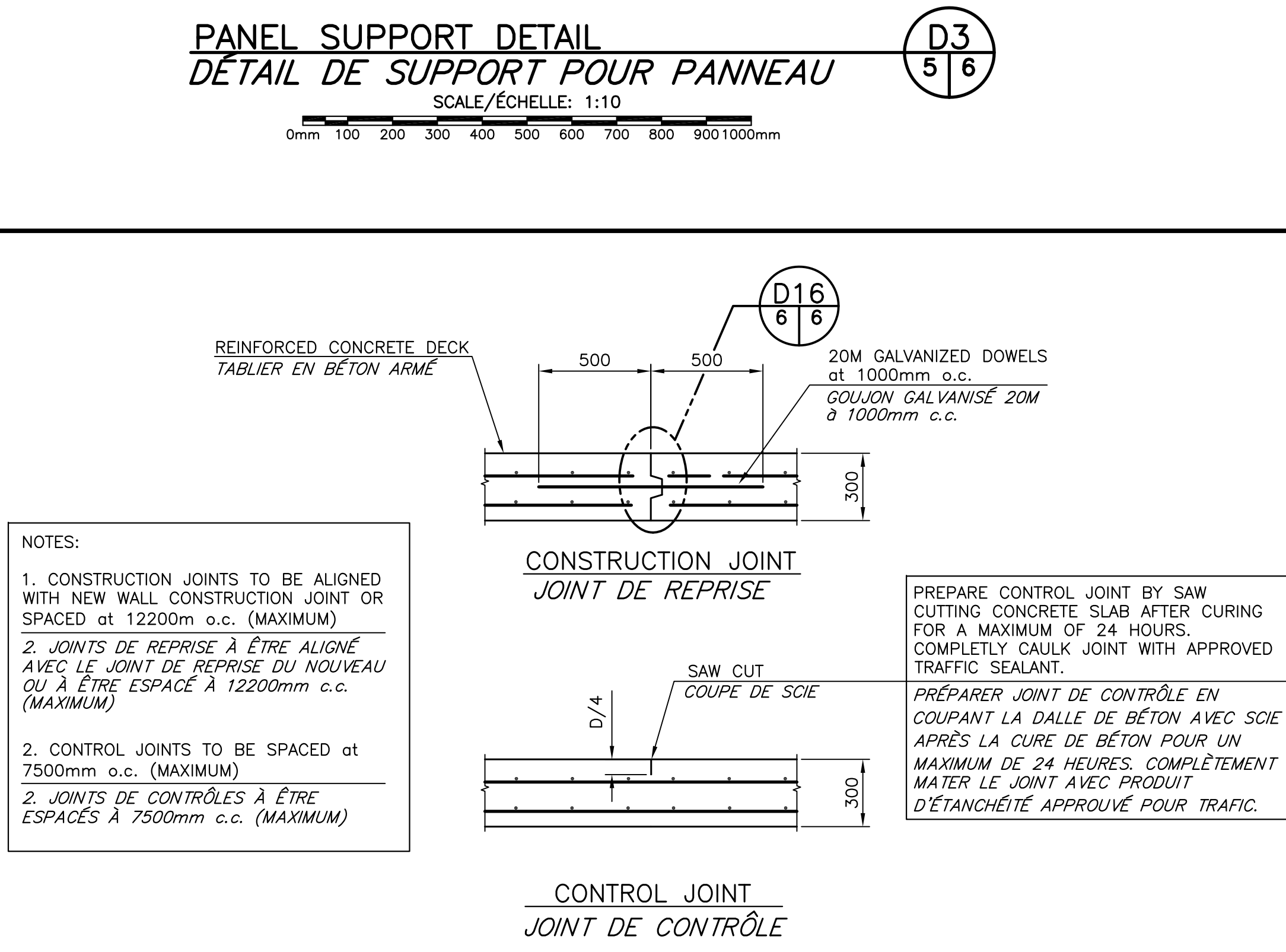
**TYPICAL SECTION**  
**COUPE TYPIQUE**  
 SCALE/ÉCHELLE: 1:10



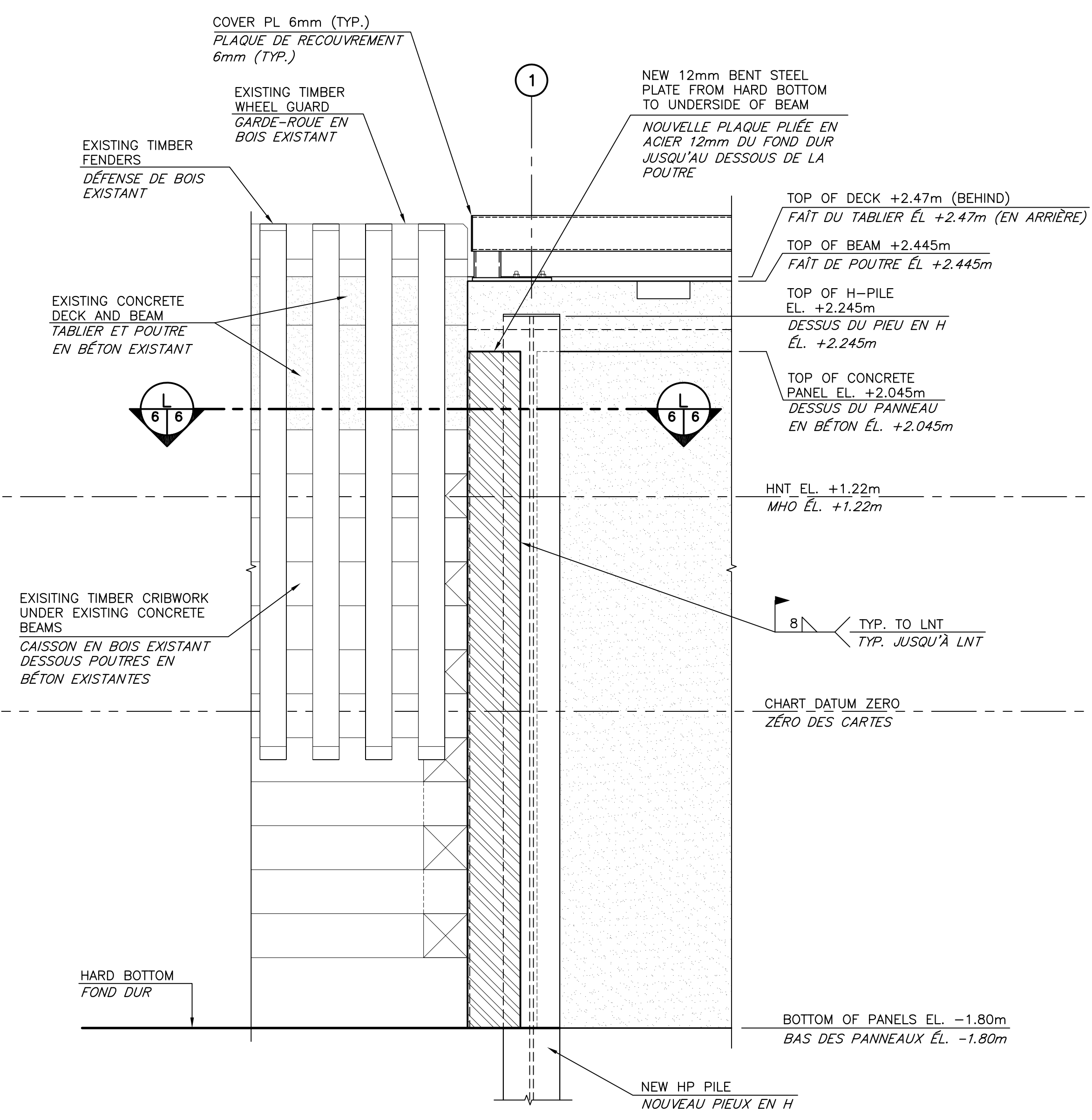
**PANEL SUPPORT DETAIL**  
**DÉTAIL DE SUPPORT POUR PANNEAU**  
 SCALE/ÉCHELLE: 1:10



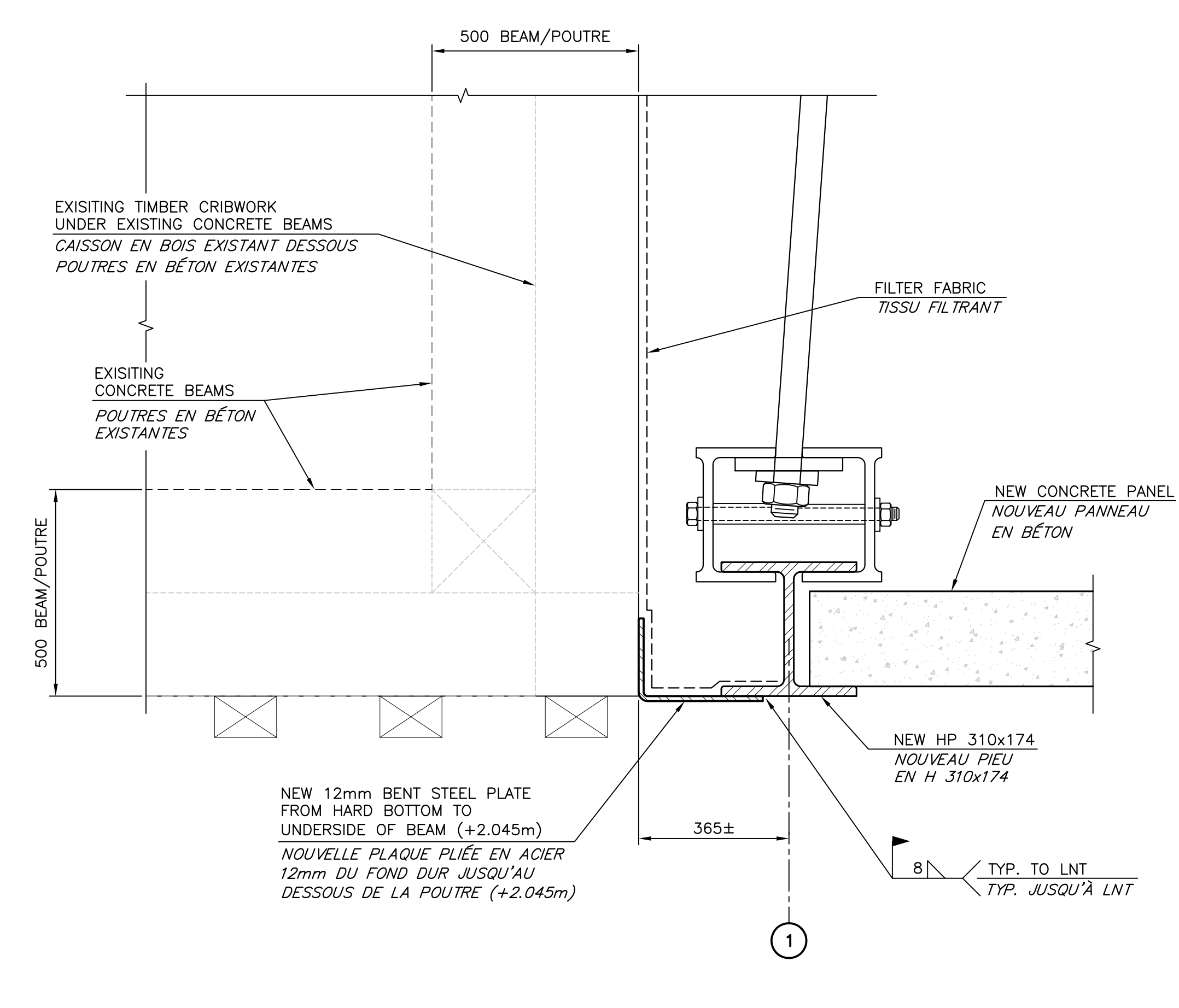
**H-PILE BEARING POINT DETAIL**  
**DÉTAIL DE SABOT DE PIEU**  
 SCALE/ÉCHELLE: 1:10



**TYPICAL JOINT DETAILS FOR DECK**  
**DÉTAILS DE JOINTS POUR TABLIER TYPIQUE**  
 SCALE/ÉCHELLE: 1:20



**CORNER ELEVATION DETAIL**  
**DÉTAIL D'ÉLEVATION DE COIN**  
 SCALE/ÉCHELLE: 1:20



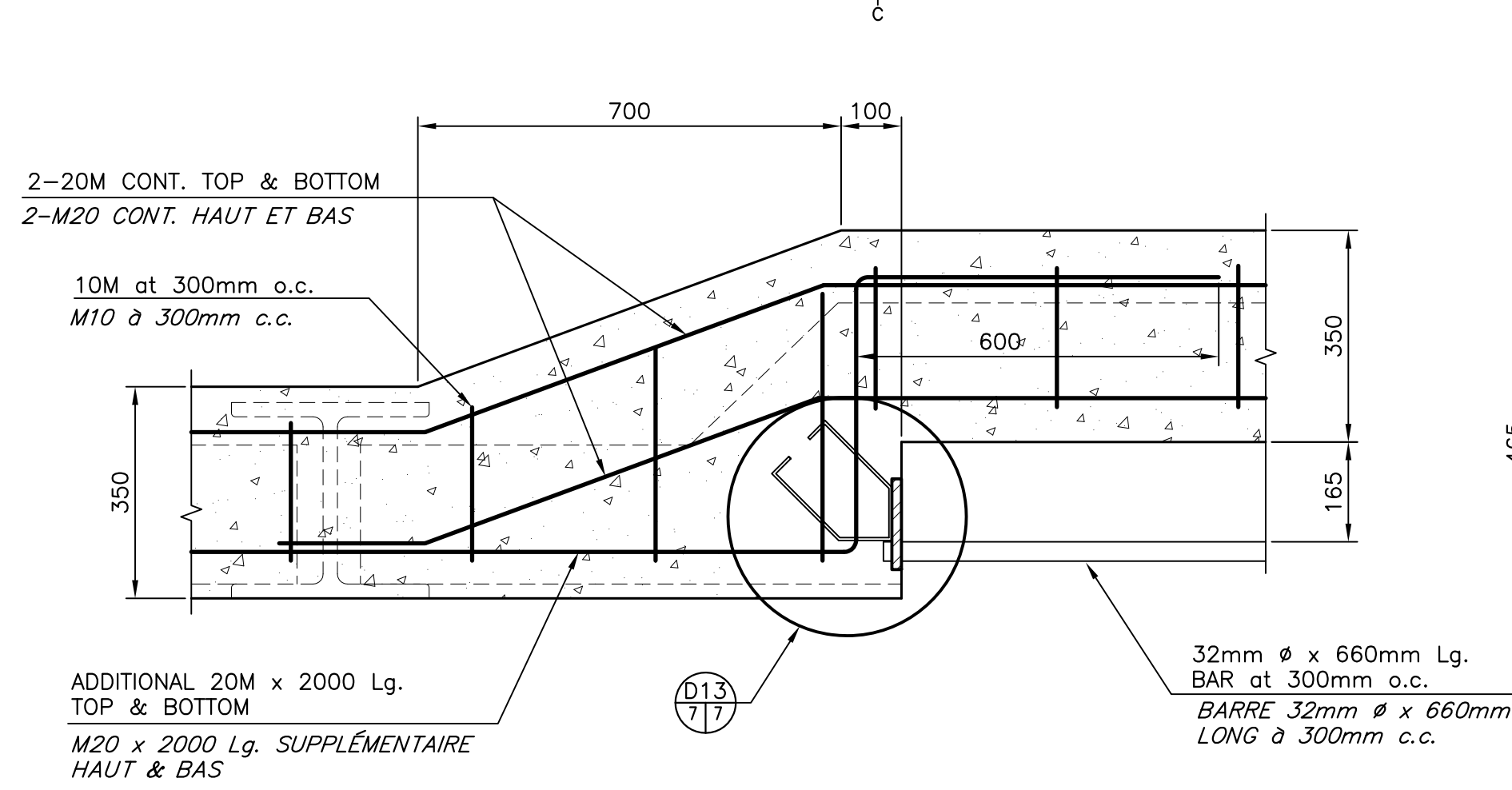
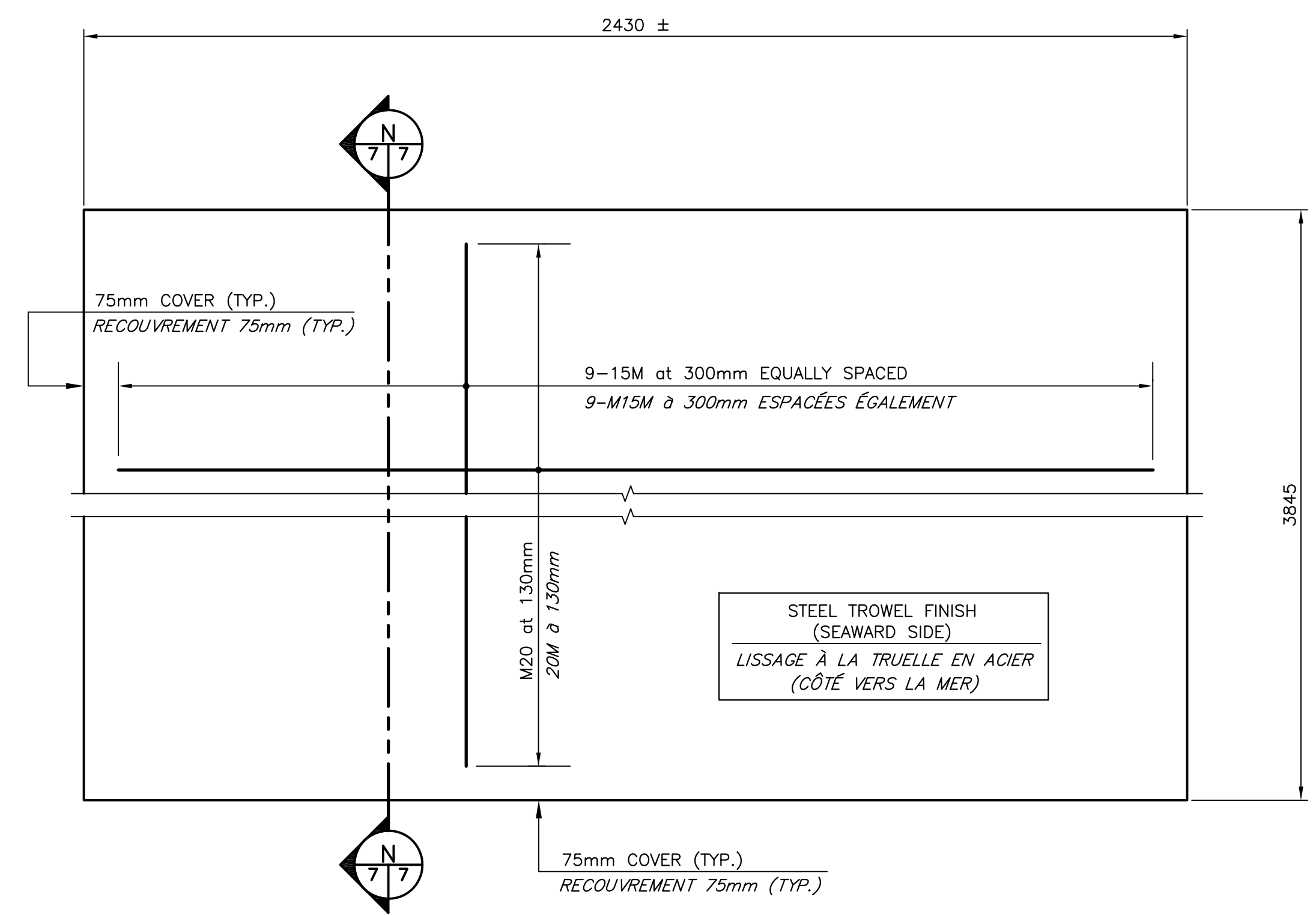
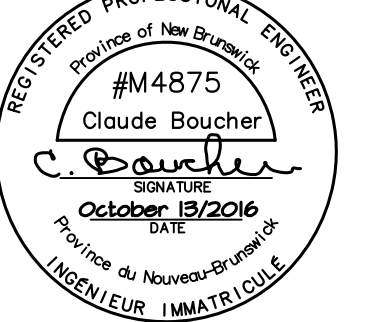
**SECTION AT CORNER**  
**COUPE AU COIN**  
 SCALE/ÉCHELLE: 1:10

Fisheries and Oceans Canada / Pêches et Océans Canada  
 Small Craft Harbours / Ports pour Petits Bateaux  
 Maritimes / Gulf Region / Région des Maritimes / Goffs

**Boucher Eng. & Const. Ltd.**  
 Dieppe, N.B.  
 Tel: (506)854-4233  
 Fax: (506)855-6544  
 e-mail: cyb@bnet.nb.ca

REGISTERED PROFESSIONAL ENGINEER  
 #M4875  
 Claude Boucher  
 October 19/2016  
 Ingénieur (IMATRI) O.C.

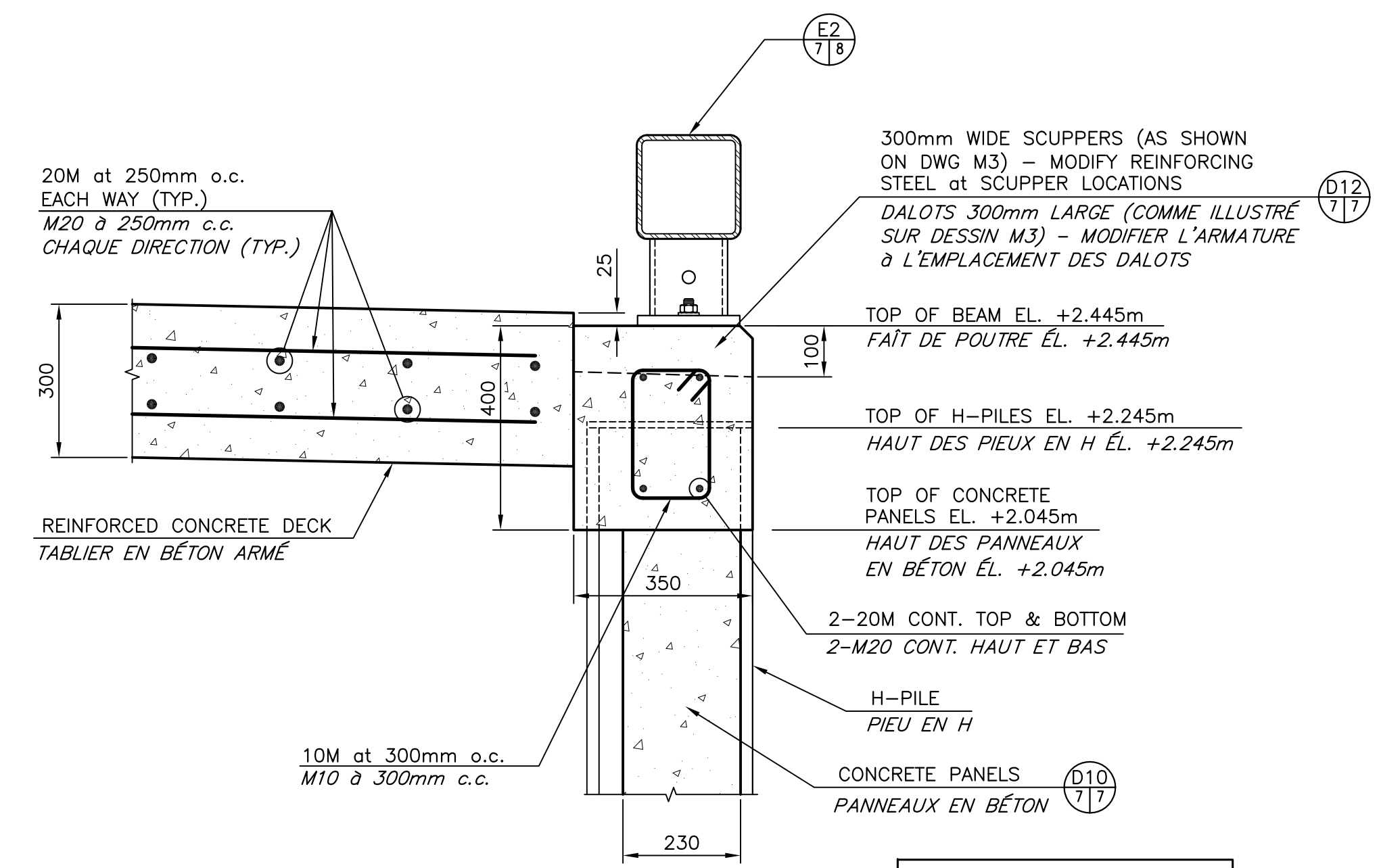
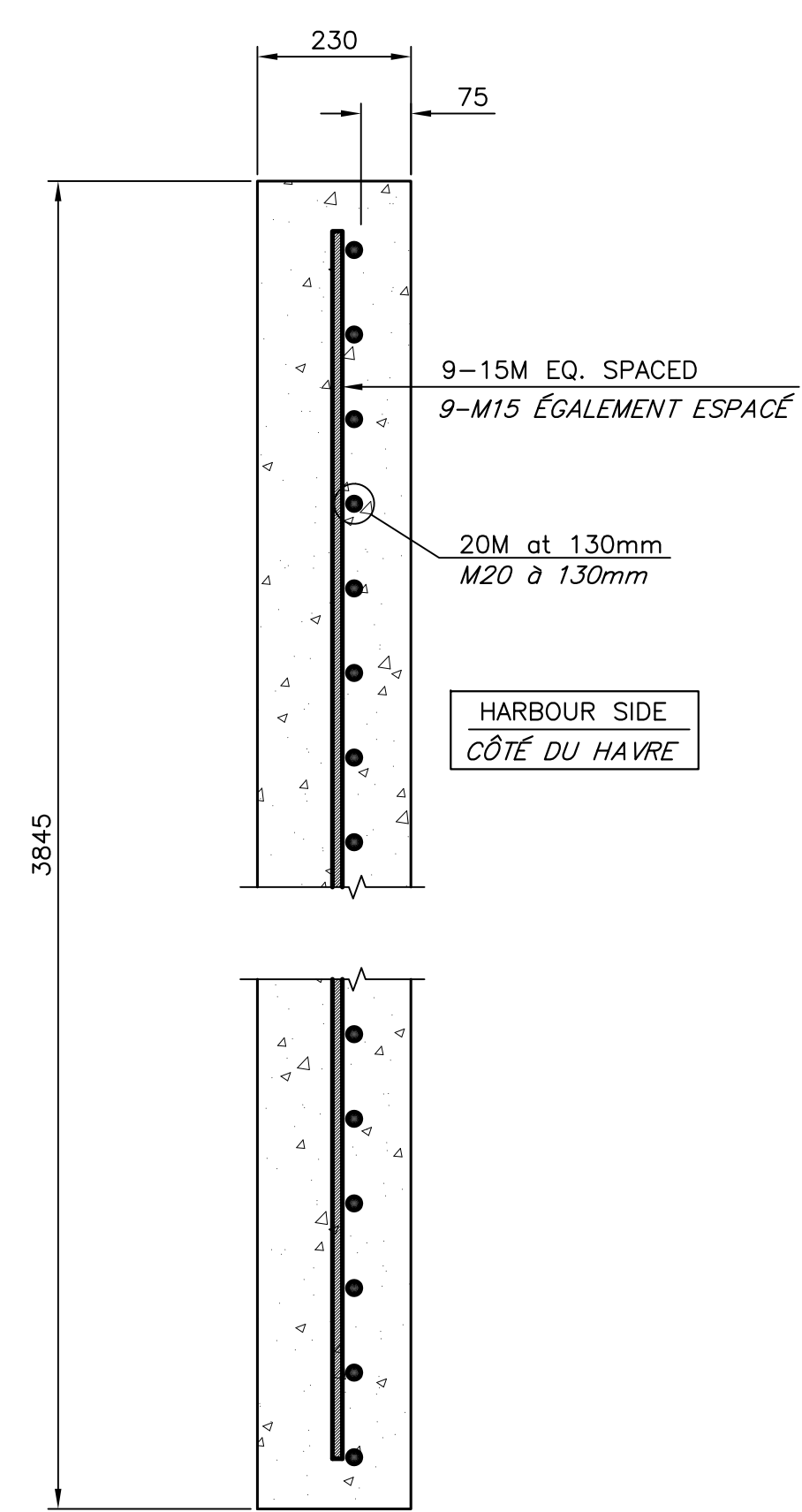
1	FOR TENDER / POUR SOUMISSION	10/13/2016
revisions		date
project	NEW MARGINAL WHARF / NOUVEAU QUAI MARGINAL	
project	STRUCTURE 407 BARRE-DE-COCAGNE, NB	
project	COMTE DE KENT COUNTY	
drawing		dessin
<b>SECTIONS AND DETAILS / COUPES ET DÉTAILS</b>		
designed	CY BOUCHER CONSTRUCTION LTD/ conçu	
date	OCTOBER/OCTOBRE 2016	
drawn	P. LEBLANC	
date	OCTOBER/OCTOBRE 2016	
approved	approuvé	
date		
Tender	Soumission	
Project Manager	Administrateur de projets	
project number	no. du projet	
	721986	
drawing no.	no. du dessin	
	M6 of/de M10	



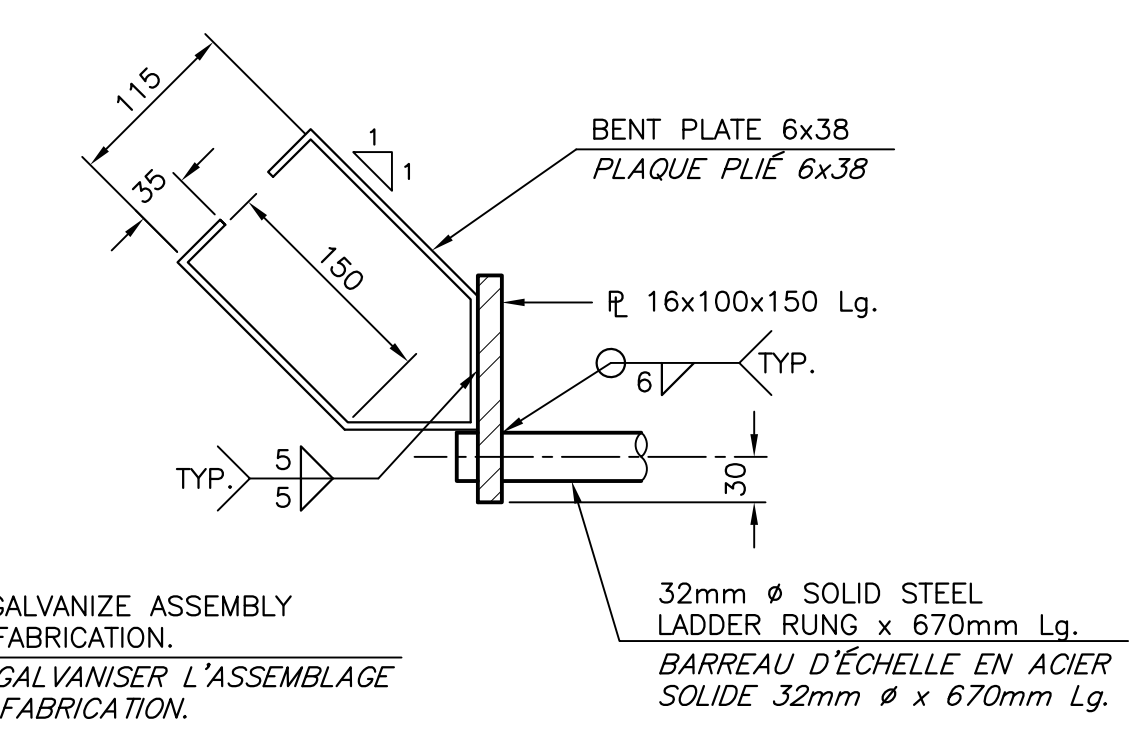
SECTION AT BEAM ELEVATION  
COUPE À L'ÉLEVATION DE LA POUTRE

SECTION THRU LADDER PANEL  
COUPE AU TRAVERS D'UN PANNEAU AVEC ÉCHELLE

PANEL DETAIL  
DÉTAIL DU PANNEAU

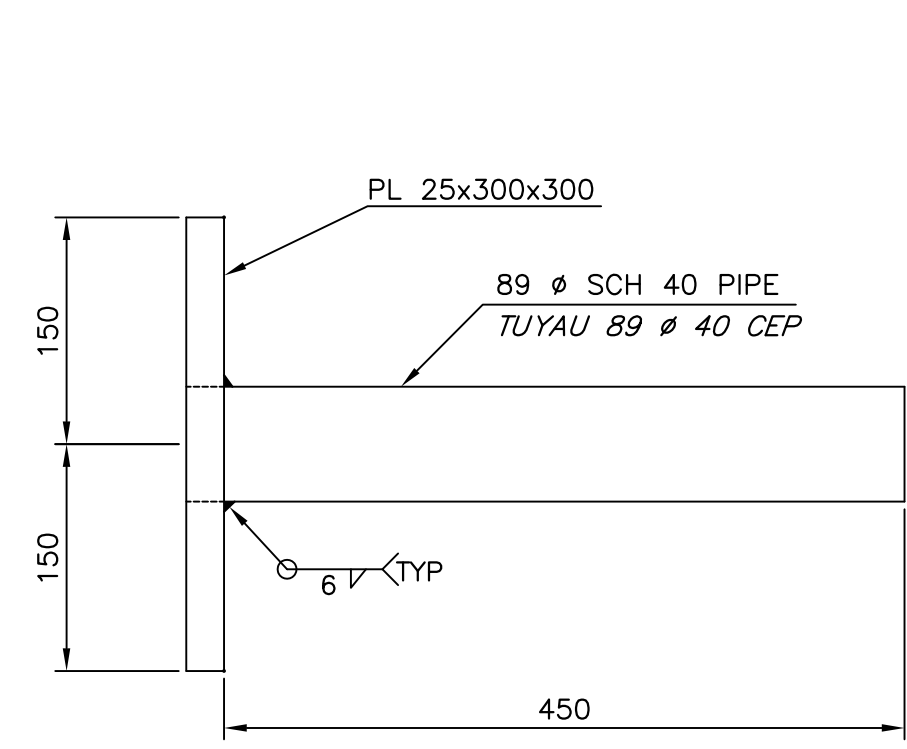


DETAIL  
DÉTAIL

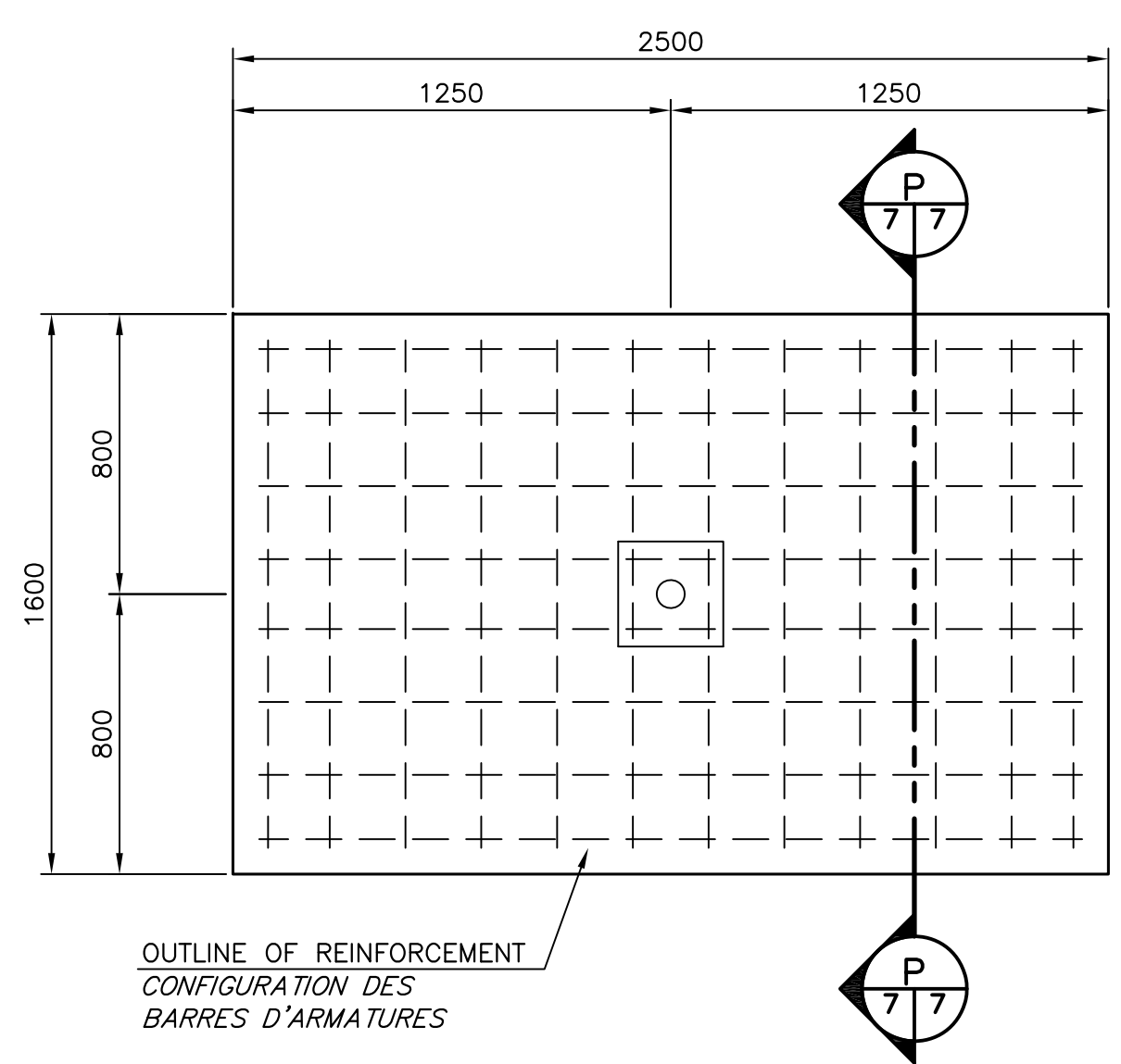


DETAIL  
DÉTAIL

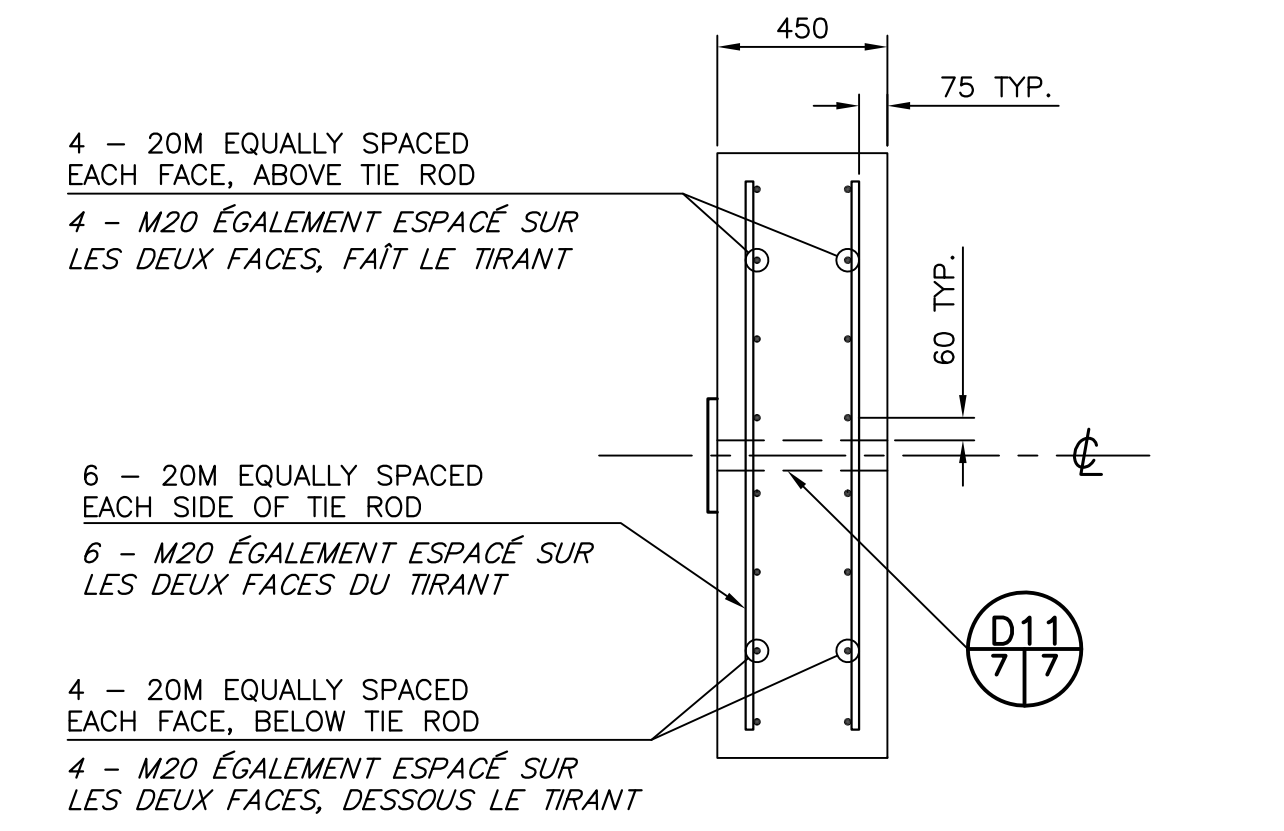
SECTION  
COUPE



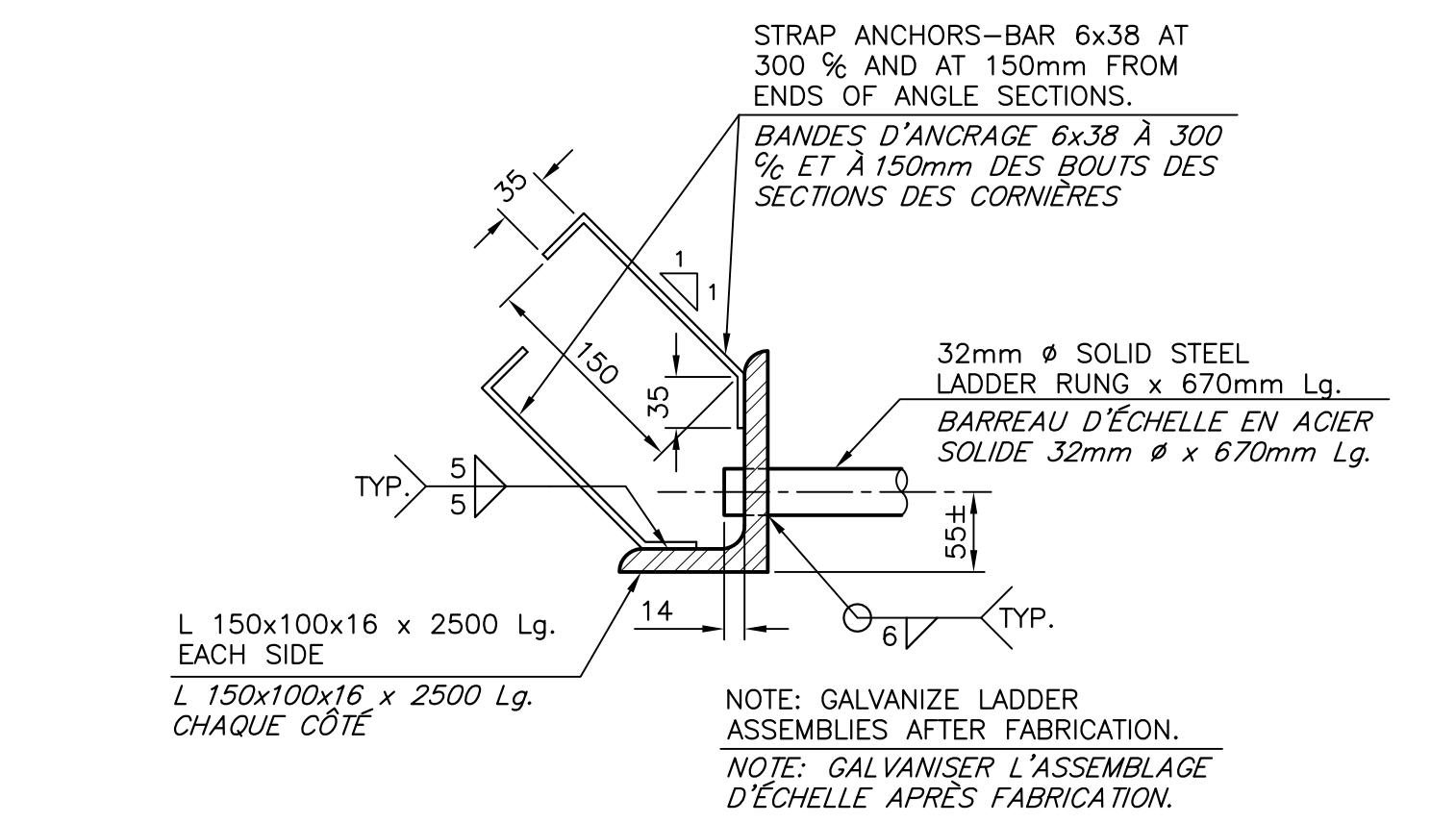
DETAIL  
DÉTAIL



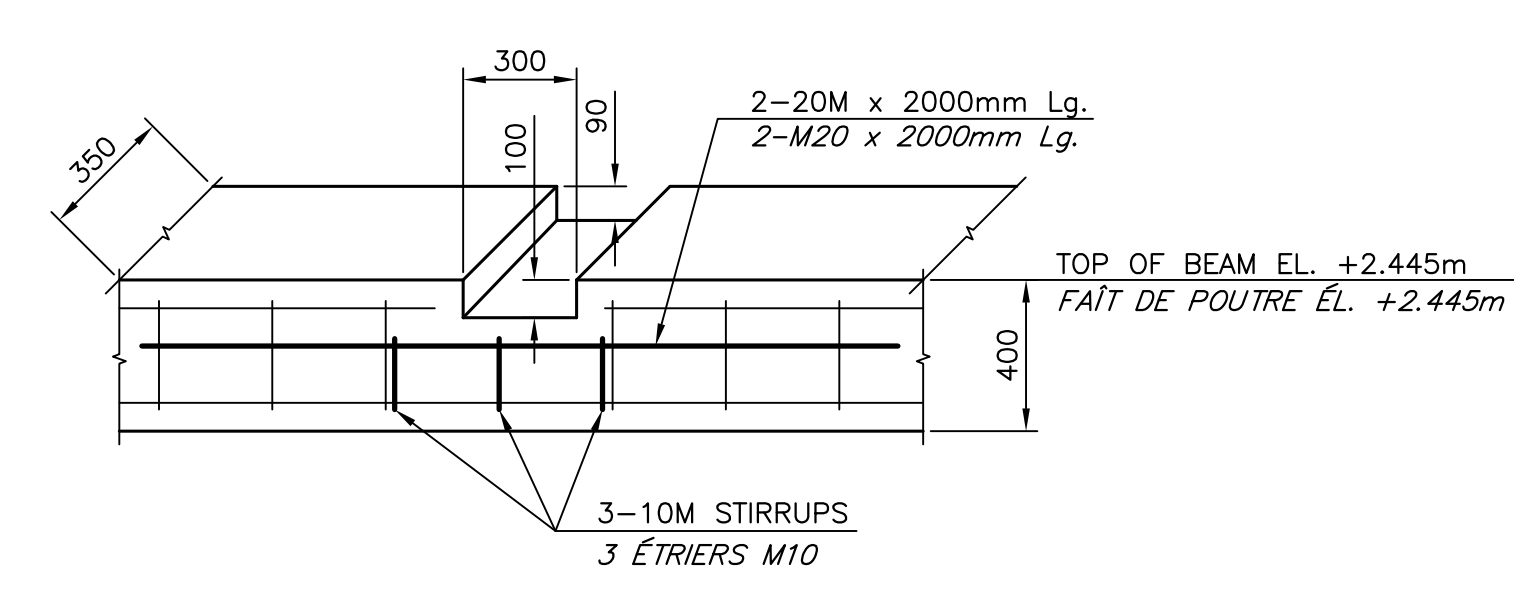
PRECAST REINFORCED CONCRETE ANCHOR BLOCK DETAIL  
BLOC D'ANCRAGE EN BÉTON ARMÉ PRÉFABRIQUÉ



SECTION  
COUPE



DETAIL  
DÉTAIL



REINFORCING DETAIL AT SCUPPERS  
DÉTAIL D'ARMATURE AUX DALOTS

1	FOR TENDER / POUR SOUMISSION	10/13 2016
revisions		date

project  
NEW MARGINAL WHARF  
NOUVEAU QUAI MARGINAL  
STRUCTURE 407  
BARRE-DE-COAGNE, NB  
COMTE DE KENT COUNTY

drawing  
desain  
REINFORCING SECTIONS AND DETAILS  
COUPES ET DÉTAILS D'ARMATURE

designed by BOUCHER CONSTRUCTION LTD/ conçu  
date OCTOBER/OCTOBRE 2016  
drawn P. LEBLANC  
date OCTOBER/OCTOBRE 2016

approved  
date  
Tender  
Project Manager  
project number  
721986

drawing no.  
M7 of/de M10

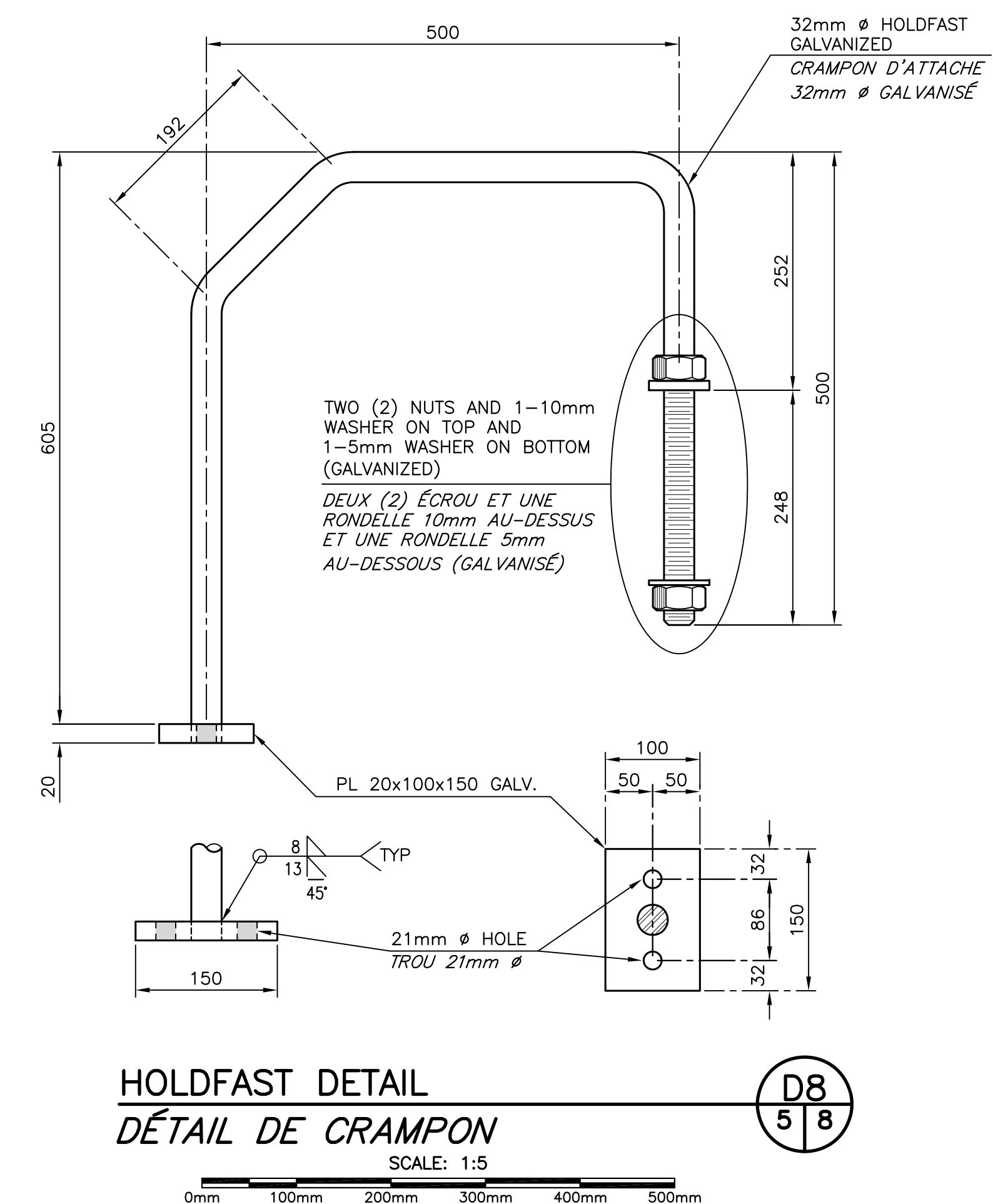
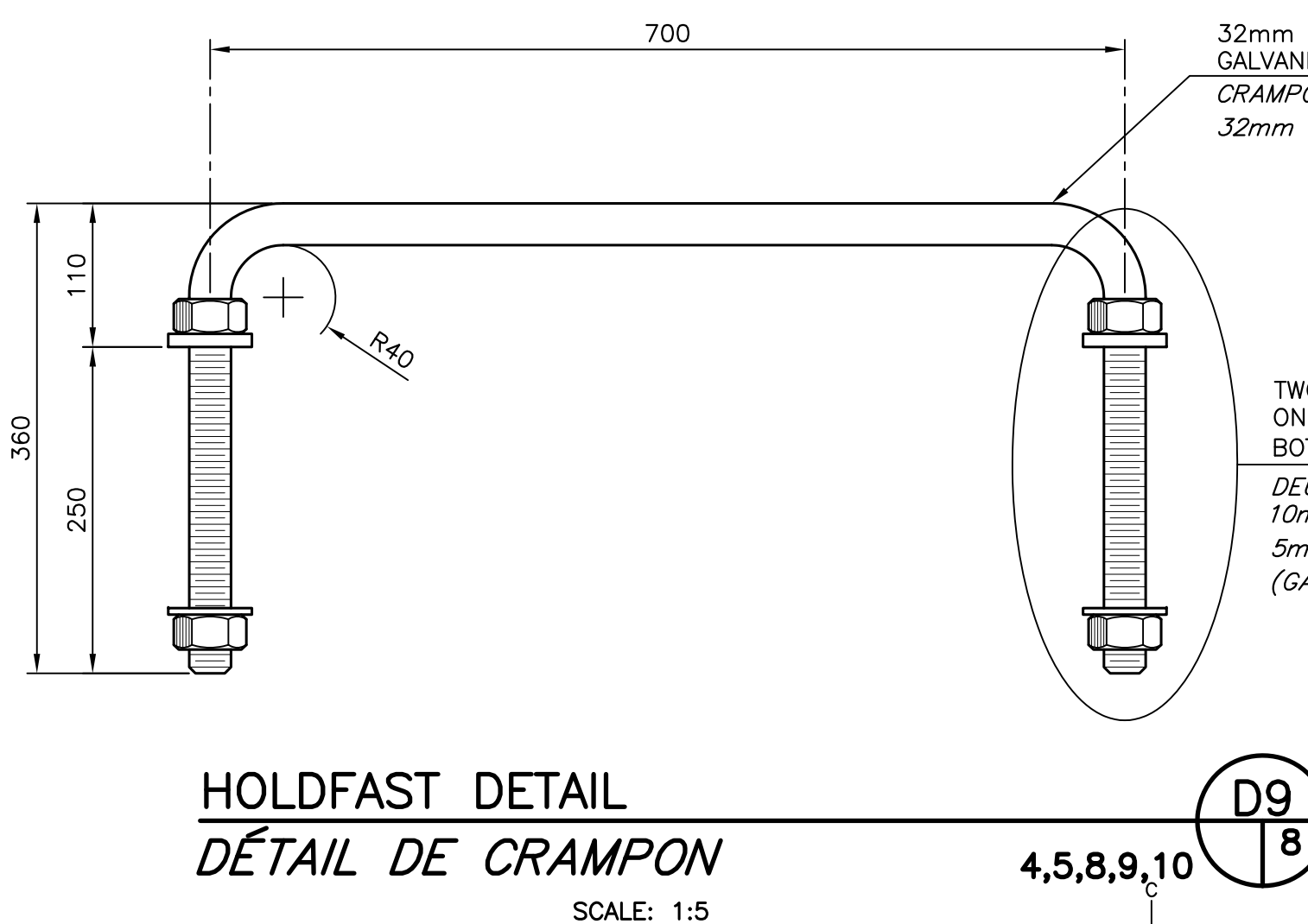
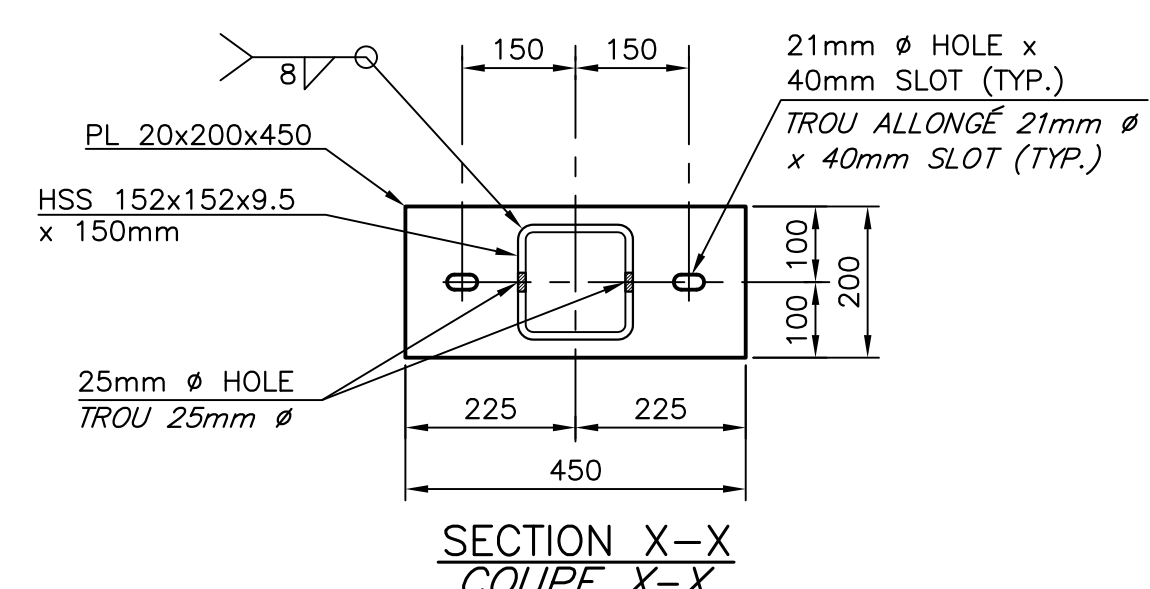
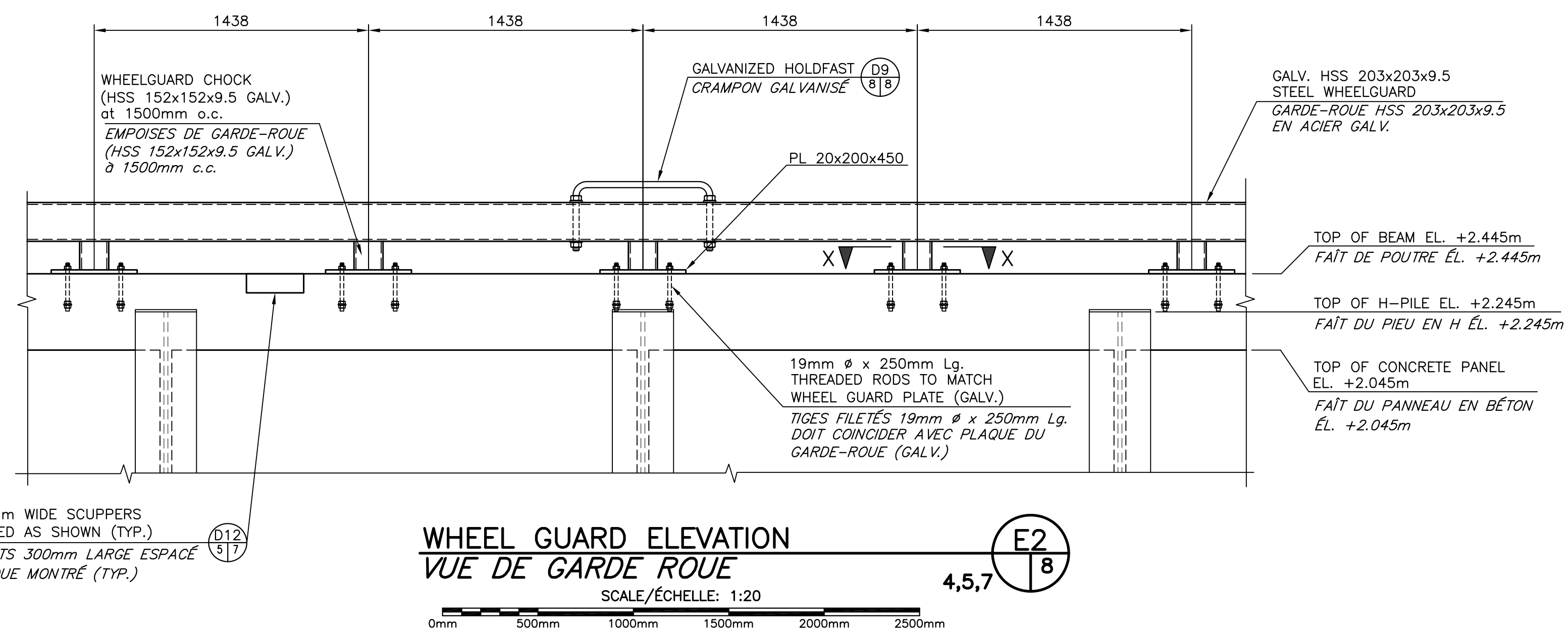
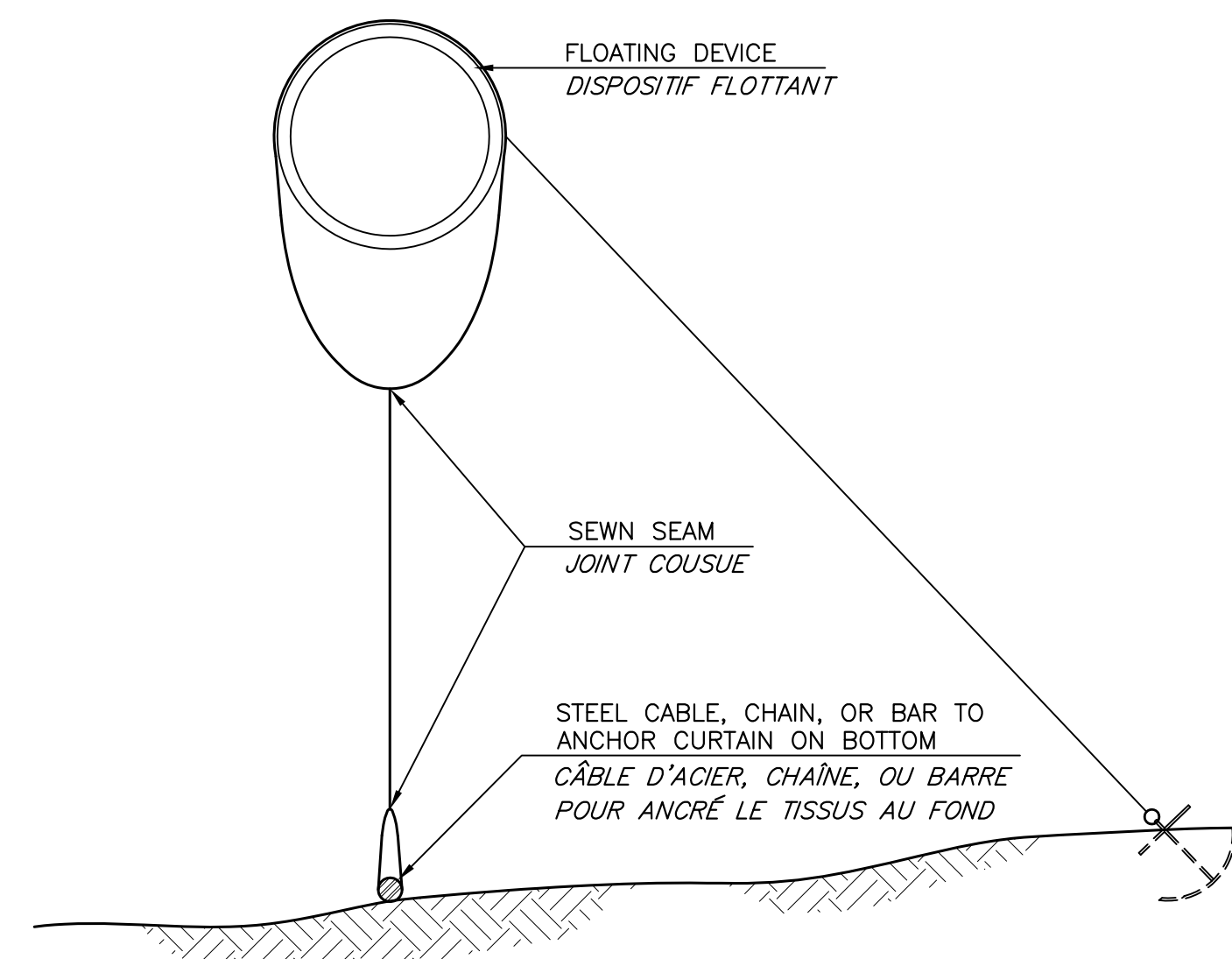
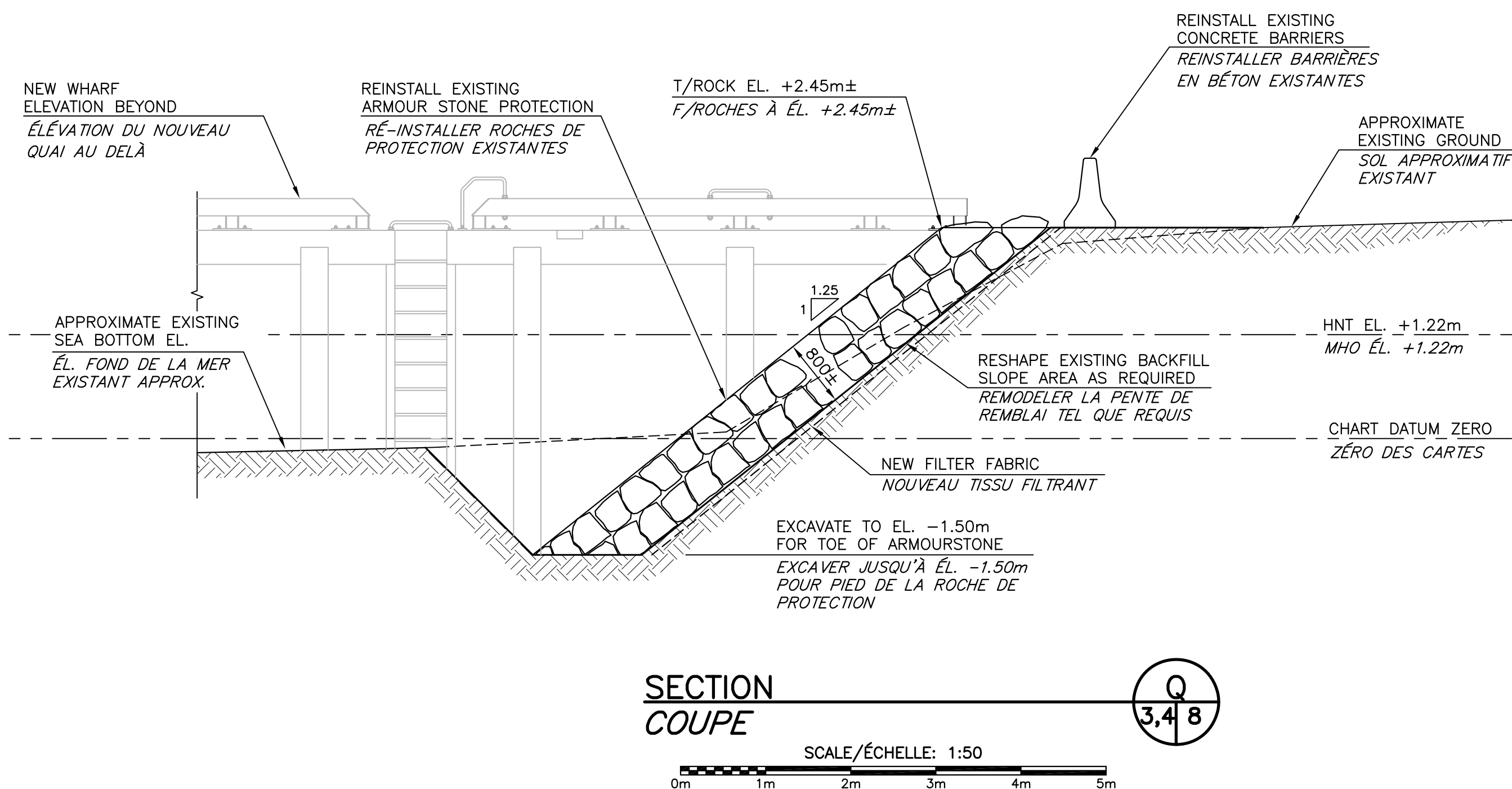


**BOREHOLE LOGS**

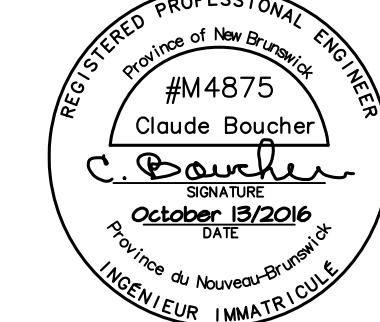
Client		Public Works & Government Services Canada		Proj No.	4735.99	BOREHOLE	BH1
Project		Geotechnical Investigation, Barre De Cocagne Wharf		Date Drilled	2 February 2016	Page 1 of 1	
Location		Cocagne, New Brunswick		Underground Shag String			
Ground Level, m	2.40	Datum:		Logged By:	MHB		
DEPTH	SAMPLE NO.	TYPE	REC (mm)	LOG DESCRIPTION	Chart		
0	1	S	62	116 ASPHALT			
0	2	S	25	Sand and Gravel FILL			
1	3	S	19	280 Brown SAND, some gravel			
1	4	S	4	390 Gravelly sand, trace silt (AASHTO A-1-b)			
2	5	S	100	340 Brown SANDSTONE BEDROCK			
3	6	S	100	370			
4	7	NG	39%	530			
5	8	NG	63%	1450			
6	9	NG	55%	1475			
7							

**BOREHOLE LOGS**

Client		Public Works & Government Services Canada		Proj No.	4735.99 <th>BOREHOLE</th> <td>BH2</td>	BOREHOLE	BH2
Project		Geotechnical Investigation, Barre De Cocagne Wharf		Date Drilled	2 February 2016	Page 1 of 1	
Location		Cocagne, New Brunswick		Underground Shag String			
Ground Level, m	2.46	Datum:		Logged By:	MHB		
DEPTH	SAMPLE NO.	TYPE	REC (mm)	LOG DESCRIPTION	Chart		
0	1	S	52	610 Crushed rock FILL			
0	2	S	21	440 Sand and Gravel FILL			
1	3	S	77	450 Brown grey Gravelly SAND, some cobbles			
1	4	S	39	390 Gravelly sand, some silt (AASHTO A-2-4)			
2	5	S	77	450 Grey SAND, some gravel			
2	6	S	100	200 Black SANDY SILT, some gravel			
3	7	NG	10%	1375 Brown SANDSTONE BEDROCK			
4	8	NG	30%	1330			
5							
6							
7							



Dieppe, N.B.  
Tel: (506) 854-4233  
Fax: (506) 855-6544  
e-mail: [info@bouchernet.nb.ca](mailto:info@bouchernet.nb.ca)



1	FOR TENDER / POUR SOUMISSION	10/13/2016
revisions		date

project  
**NEW MARGINAL WHARF**  
NOUVEAU QUAI MARGINAL  
STRUCTURE 407  
BARRE-DE-COCCAGNE, NB  
COMTE DE KENT COUNTY

drawing  
**BOREHOLE RECORD, SECTIONS AND DETAILS**  
RECORD DE FORAGE  
COUPES ET DÉTAILS

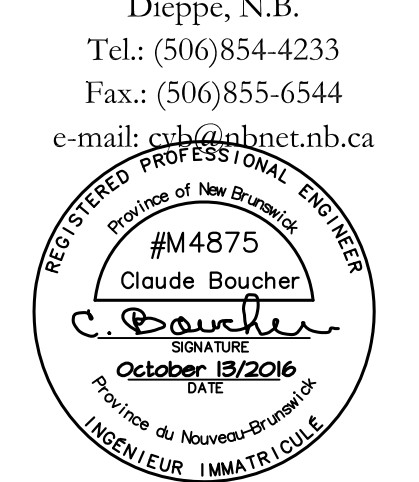
designed by CY BOUCHER CONSTRUCTION LTD/ conçu par  
date  
OCTOBER/OCTOBRE 2016  
drawn by P. LEBLANC  
date  
OCTOBER/OCTOBRE 2016

approved  
date  
Tender  
Submission

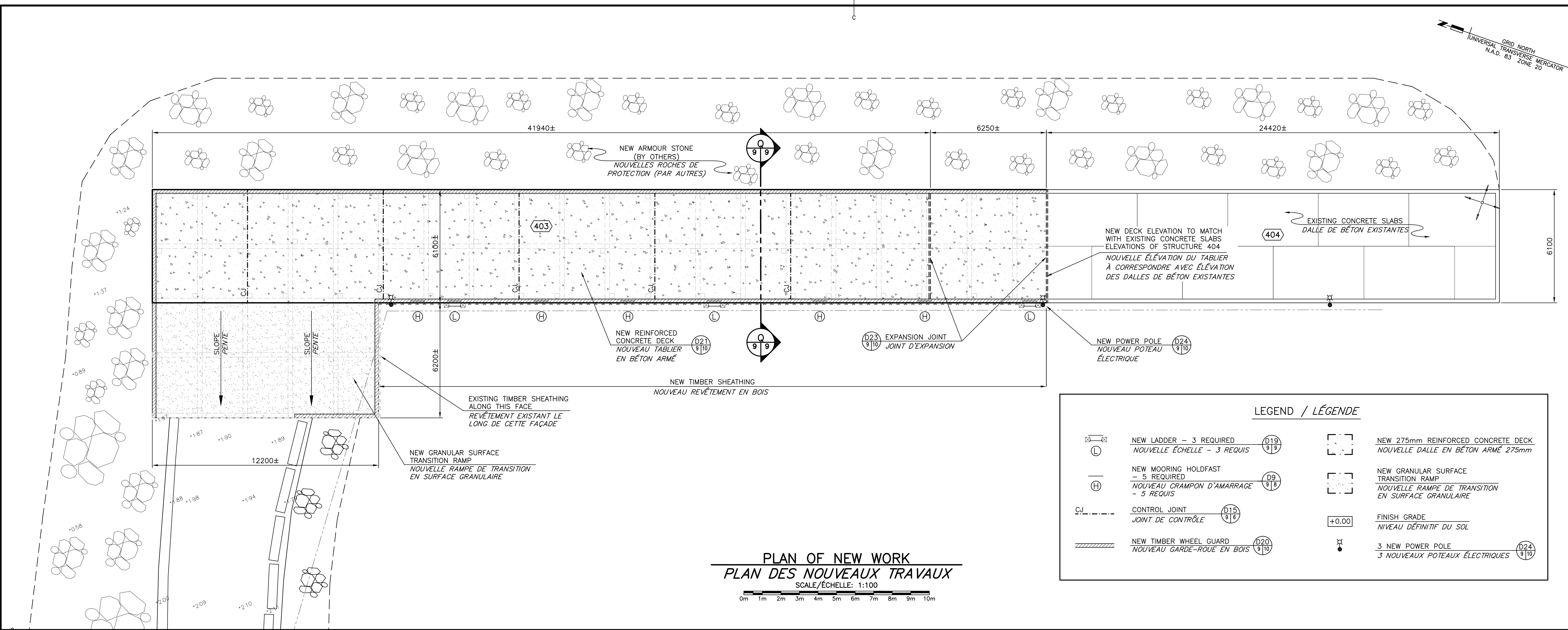
Project Manager  
Administrateur de projets  
project number  
721986

drawing no.  
M8 of/de M10





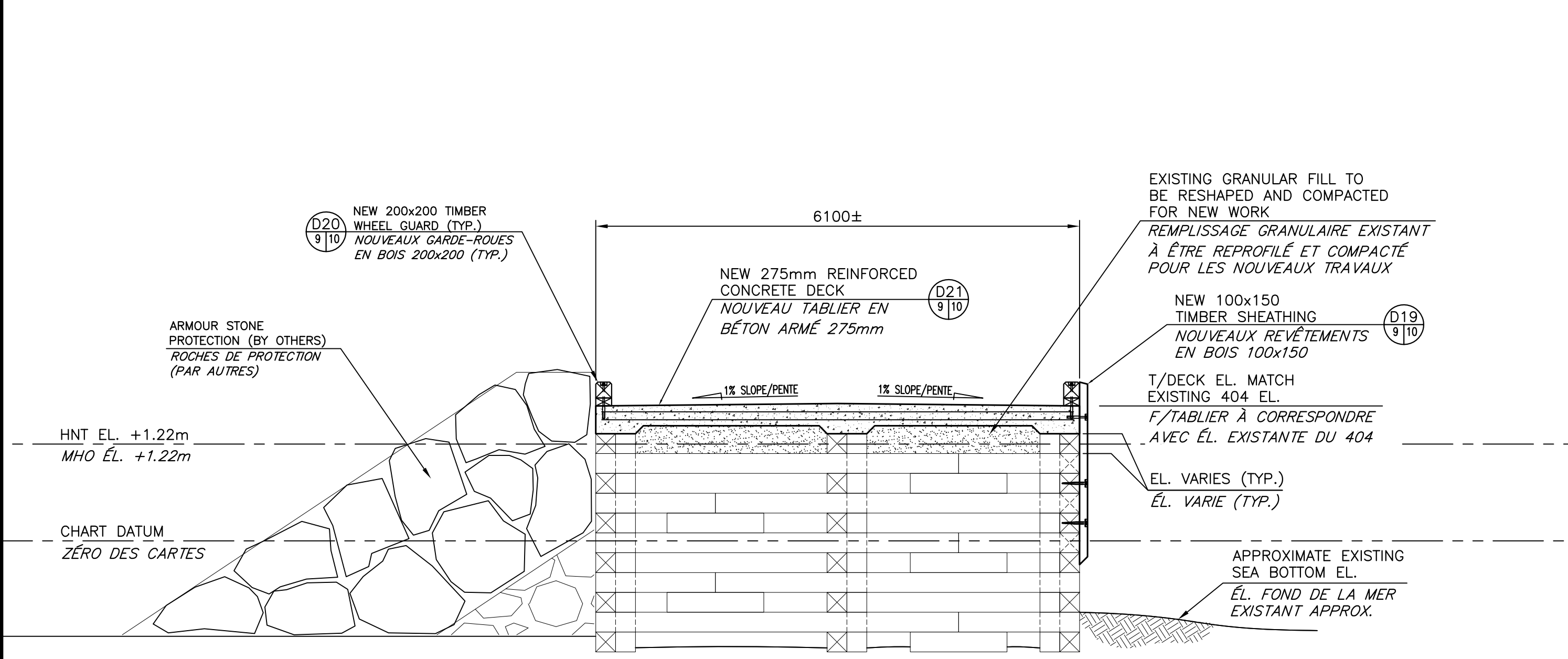
GRID NORTH  
 UNIVERSAL TRANSVERSE MERCATOR  
 N.A.D. 83 ZONE 20



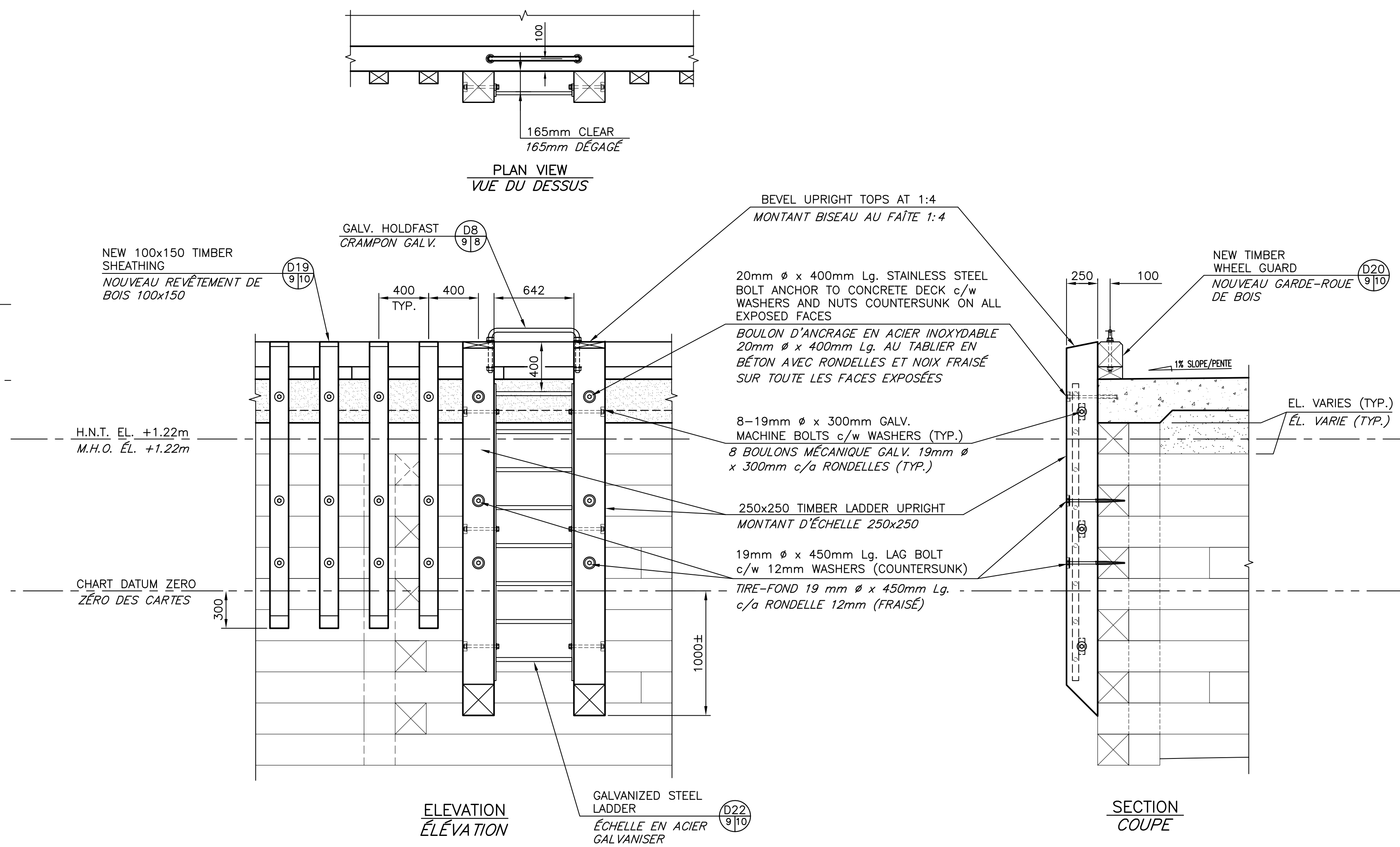
**LEGEND / LÉGENDE**

	NEW LADDER - 3 REQUIRED NOUVELLE ÉCHELLE - 3 REQUIS		NEW 275mm REINFORCED CONCRETE DECK NOUVELLE DALLE EN BÉTON ARMÉ 275mm
	NEW MOORING HOLDFAST - 5 REQUIRED NOUVEAU CRAMPON D'AMARRAGE - 5 REQUIS		NEW GRANULAR SURFACE TRANSITION RAMP NOUVELLE RAMPE DE TRANSITION EN SURFACE GRANULAIRE
	CONTROL JOINT JOINT DE CONTRÔLE		FINISH GRADE NIVEAU DÉFINITIF DU SOL
	NEW TIMBER WHEEL GUARD NOUVEAU GARDE-ROUE EN BOIS		3 NEW POWER POLE 3 NOUVEAUX POTEAUX ÉLECTRIQUES

**PLAN OF NEW WORK  
 PLAN DES NOUVEAUX TRAVAUX**  
 SCALE/ÉCHELLE: 1:100



**SECTION SHOWING REINFORCED CONCRETE DECK  
 STRUCTURE 402 & 403  
 COUPE MONTRANT ARMATURE DANS TABLIER EN BÉTON STRUCTURE 402 & 403**  
 SCALE/ÉCHELLE: 1:50



**LADDER DETAIL  
 DÉTAIL D'ÉCHELLE**  
 SCALE/ÉCHELLE: 1:25

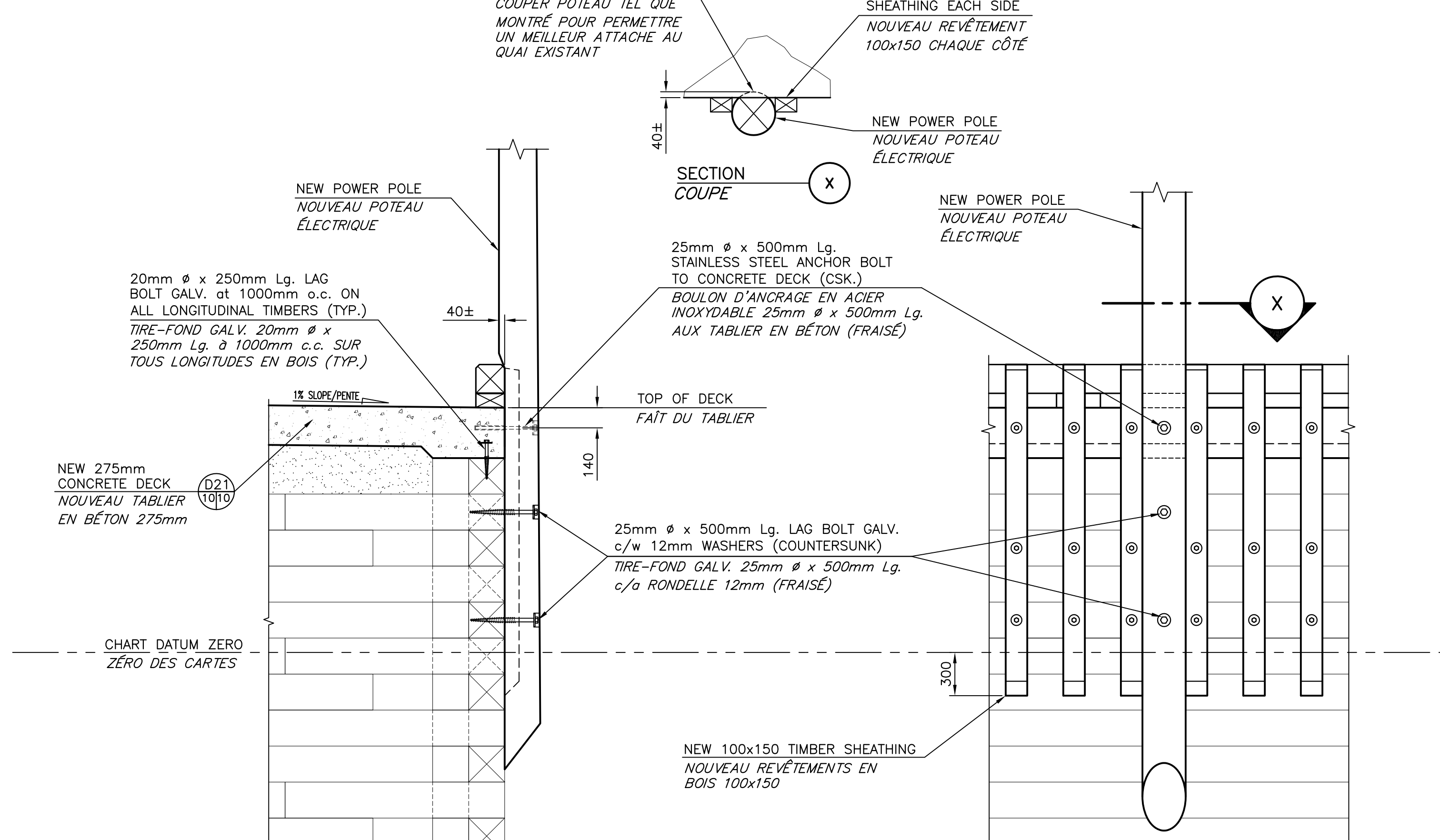
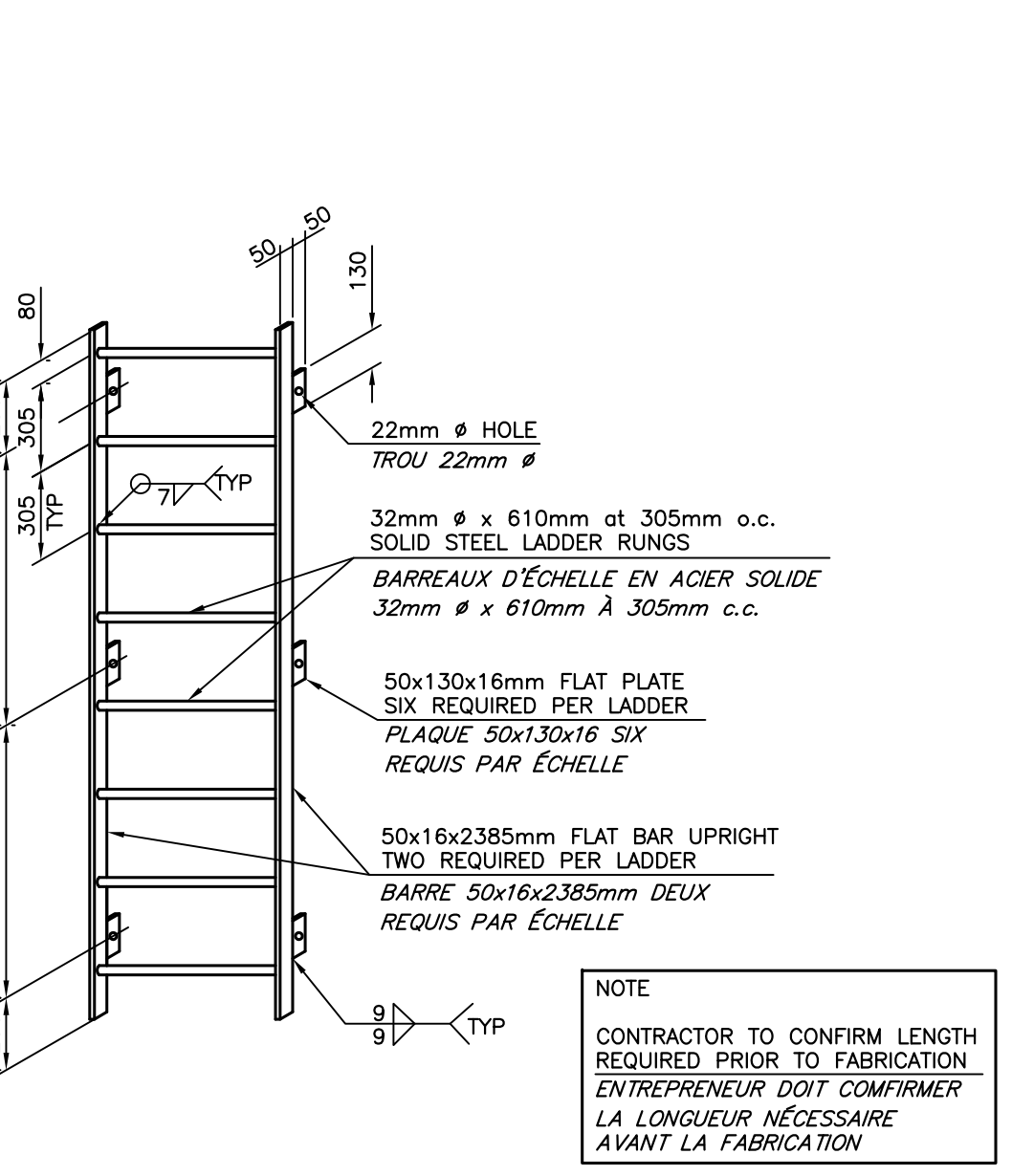
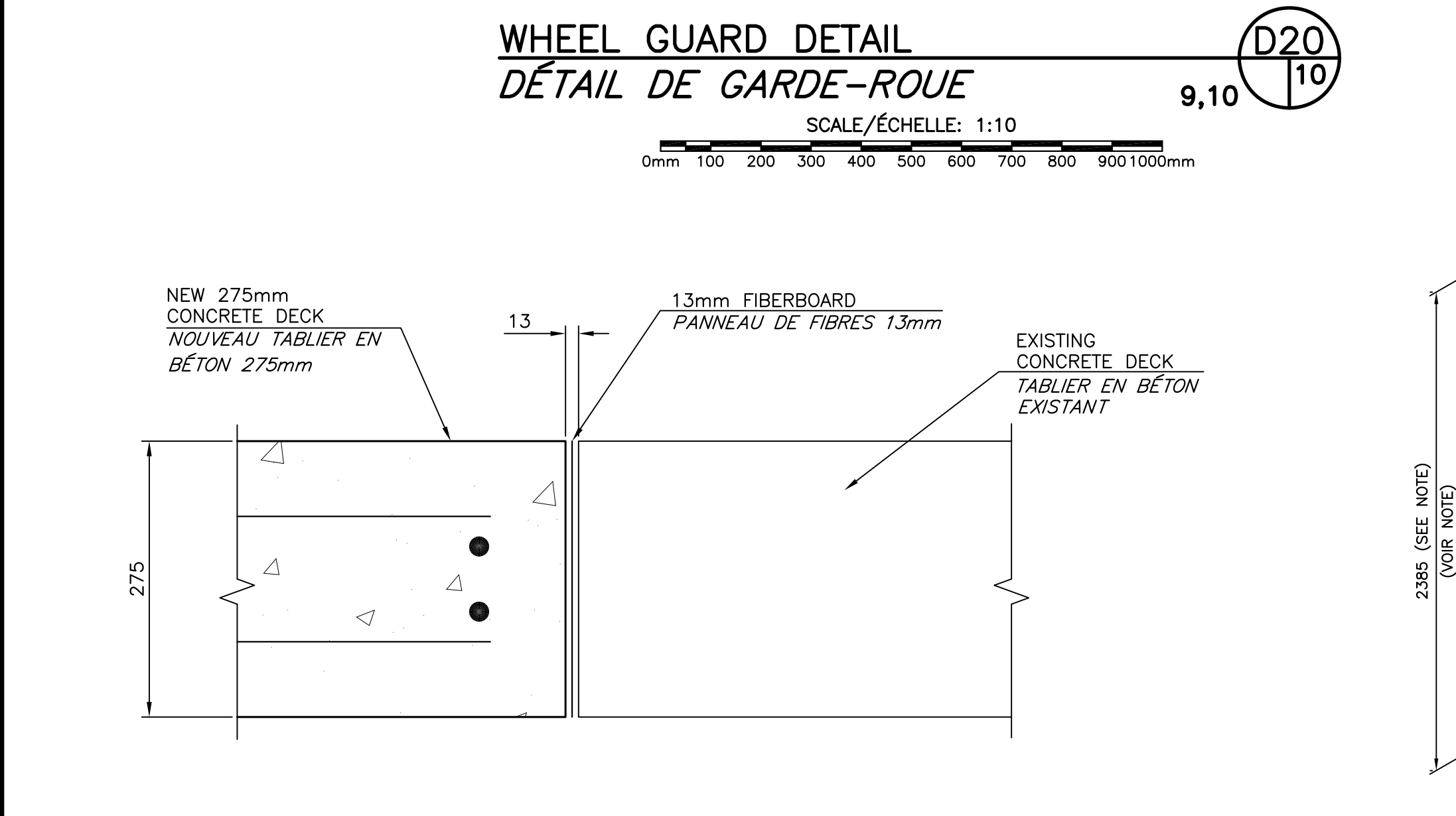
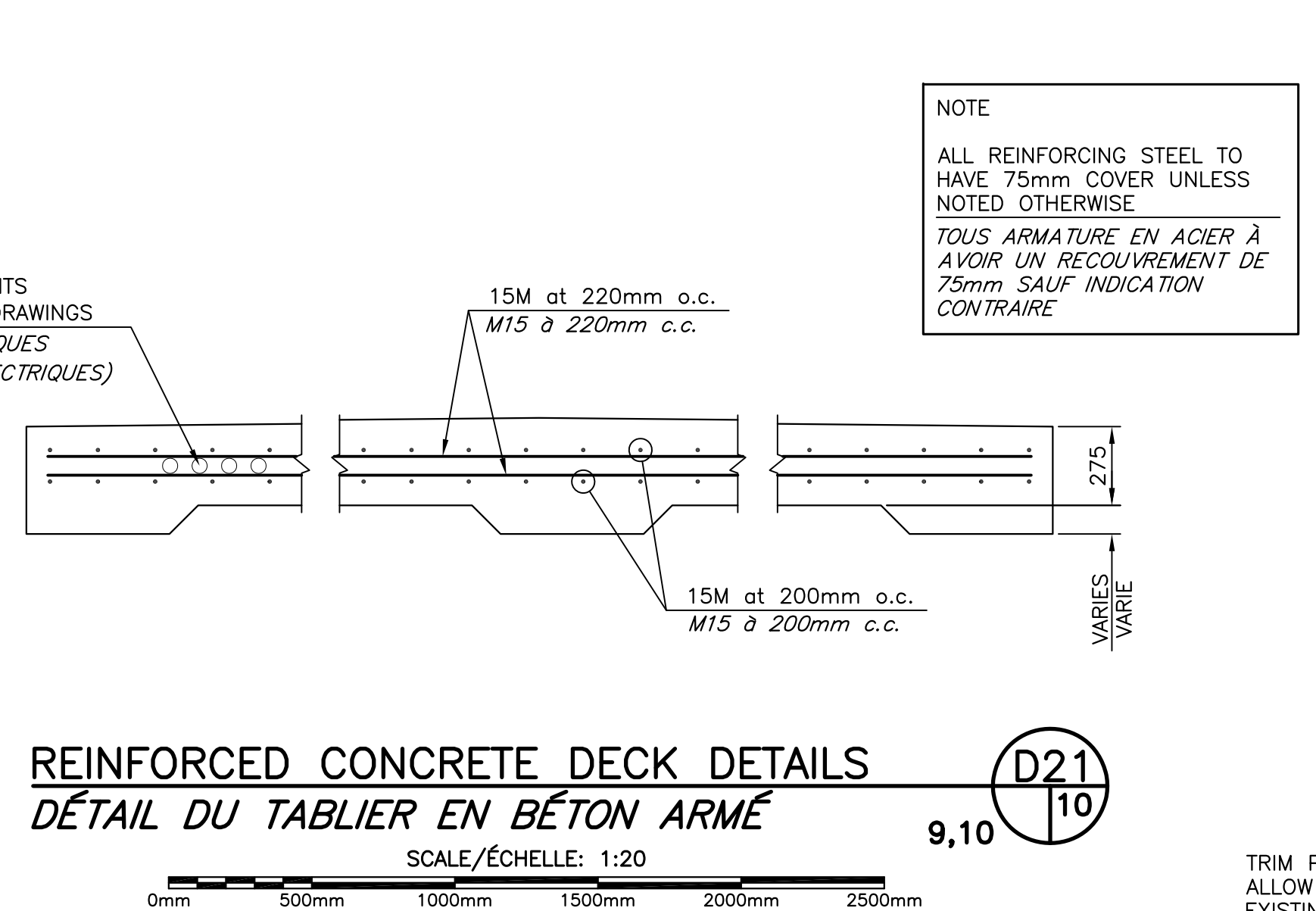
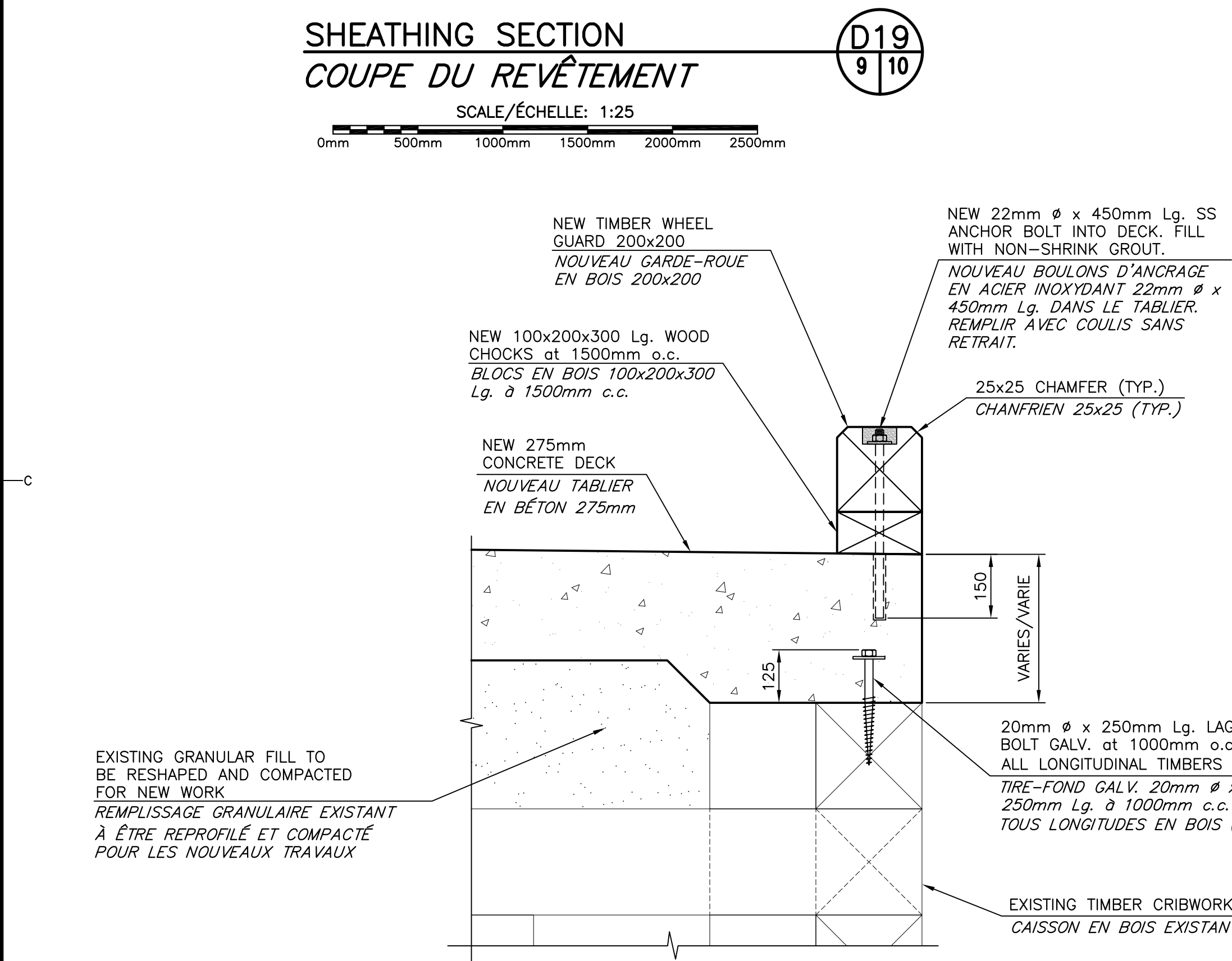
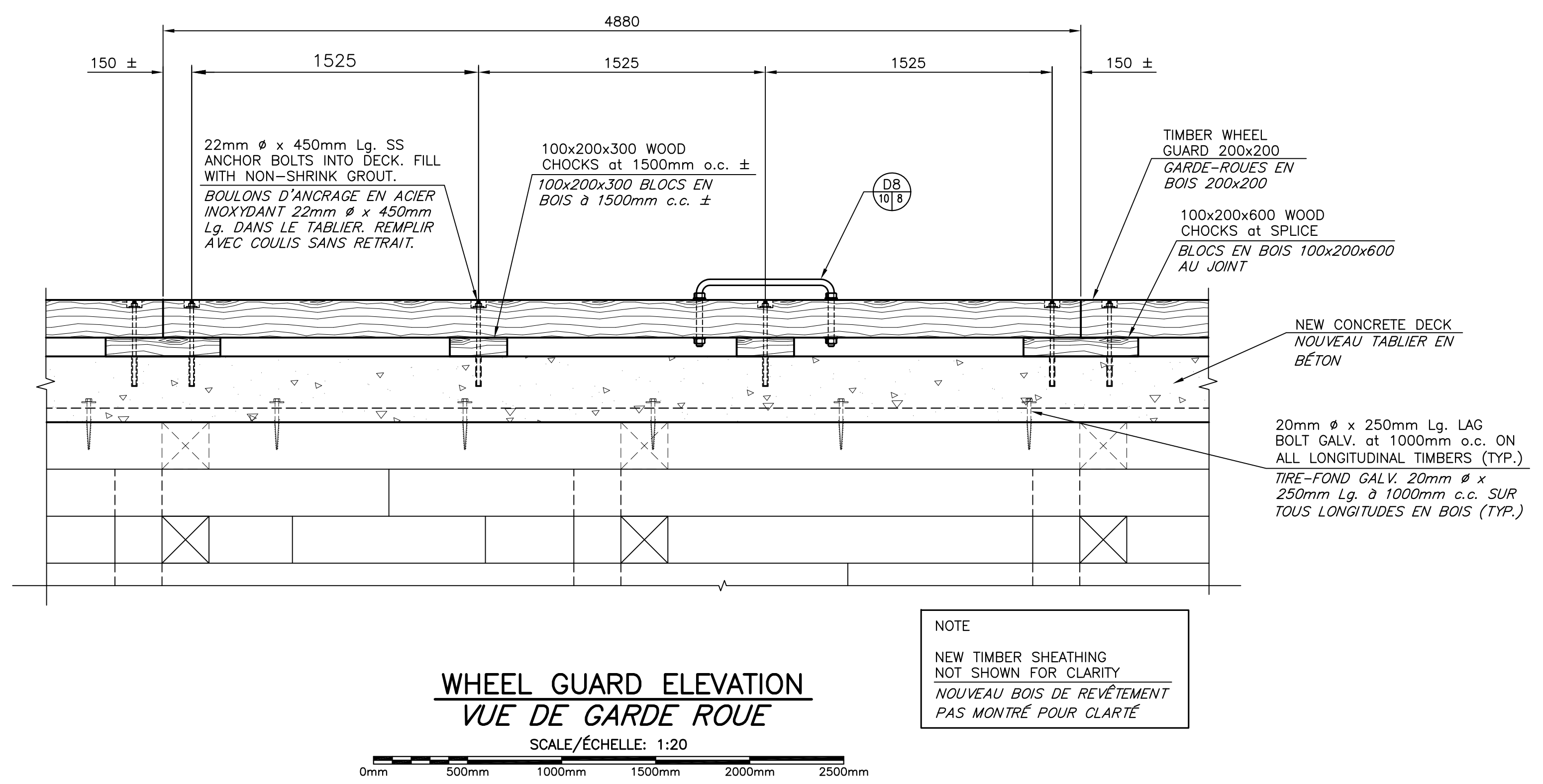
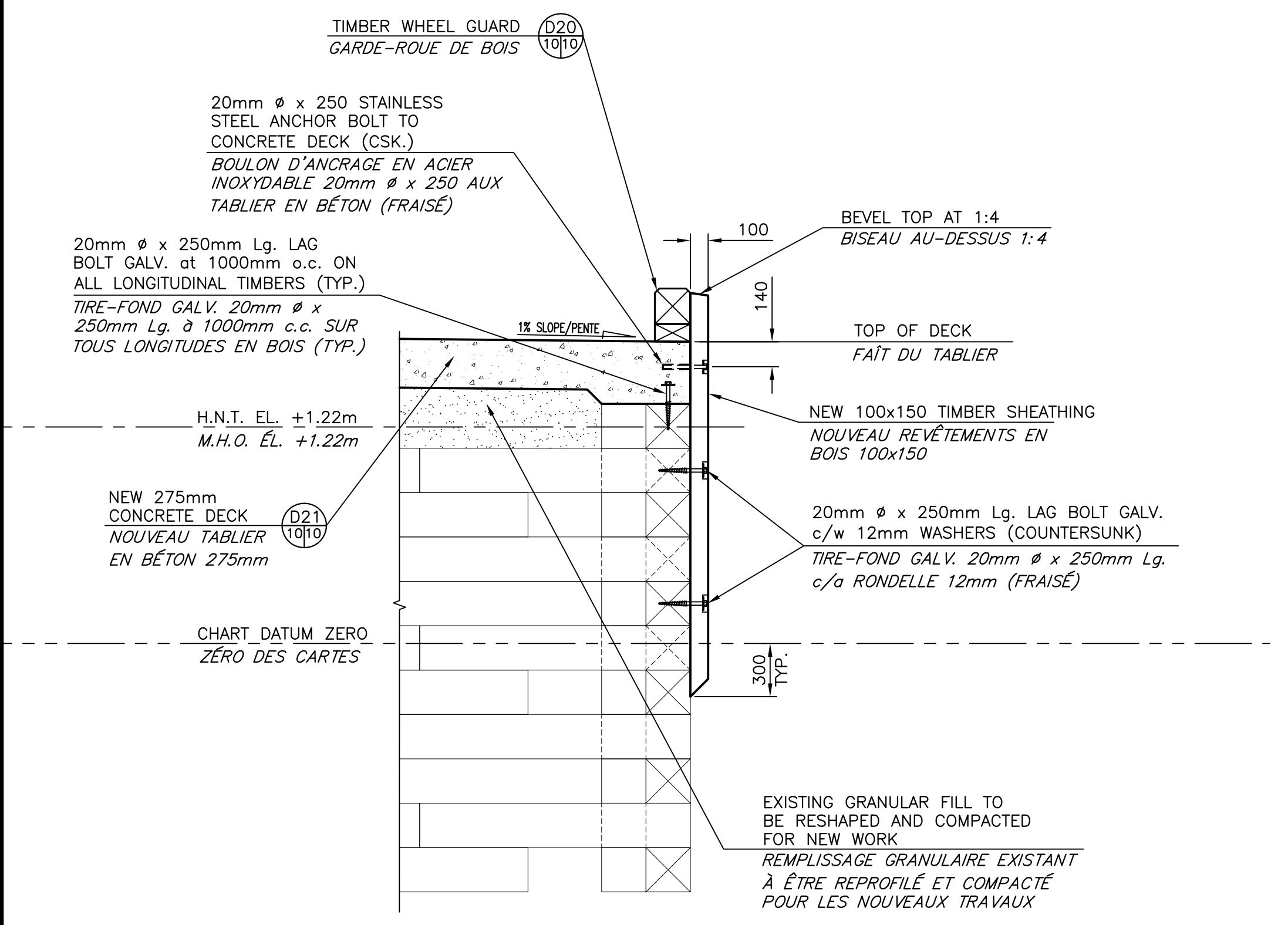
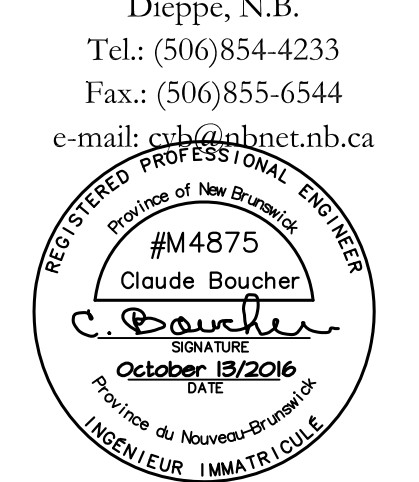
1	FOR TENDER / POUR SOUMISSION	10/13 2016
revisions		date

project  
**NEW MARGINAL WHARF  
 NOUVEAU QUAI MARGINAL**  
 STRUCTURE 407  
 BARRE-DE-COCAGNE, NB  
 COMTE DE KENT COUNTY

drawing  
**PLAN OF NEW WORK,  
 SECTION AND DETAIL  
 PLAN DES NOUVEAUX TRAVAUX, COUPE ET DÉTAIL**  
 STRUCTURE 402 & 403

designed	CY BOUCHER CONSTRUCTION LTD	conçu
date	OCTOBER/OCTOBRE 2016	date
drawn	P. LEBLANC	dessiné
date	OCTOBER/OCTOBRE 2016	date
approved		approuvé
date		date
Tender		Submission
Project Manager	Administrateur de projets	no. du projet
project number	721986	no. du projet
drawing no.	M9 of/de M10	no. du dessin





1	FOR TENDER / POUR SOUMISSION	10/13/2016
revisions		date

project  
**NEW MARGINAL WHARF  
 NOUVEAU QUAI MARGINAL**  
 STRUCTURE 407  
 BARRE-DE-COAGNE, NB  
 COMTE DE KENT COUNTY

drawing  
 dessin

**SECTIONS AND DETAILS  
 COUPES ET DÉTAILS**

designed by CY BOUCHER CONSTRUCTION LTD/ conçu par  
 date  
 drawn by P. LEBLANC  
 date  
 approved  
 approved

Project Manager  
 Administrateur de projets  
 project number  
 no. du projet  
**721986**

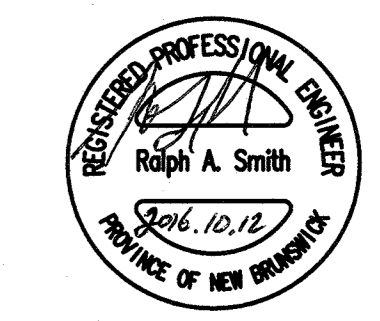
drawing no.  
 no. du dessin  
**M10 of/de M10**

electrical consultant

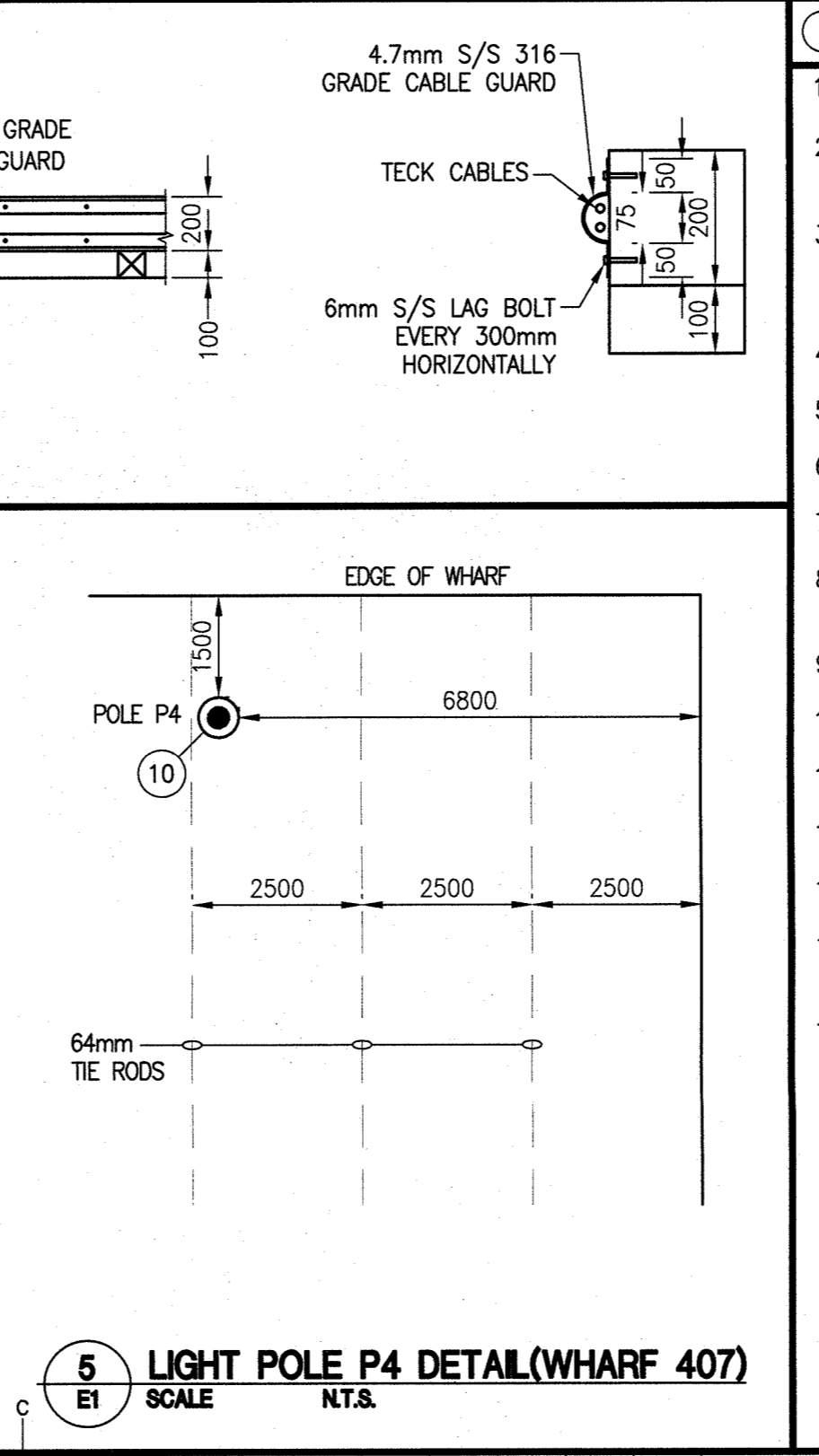
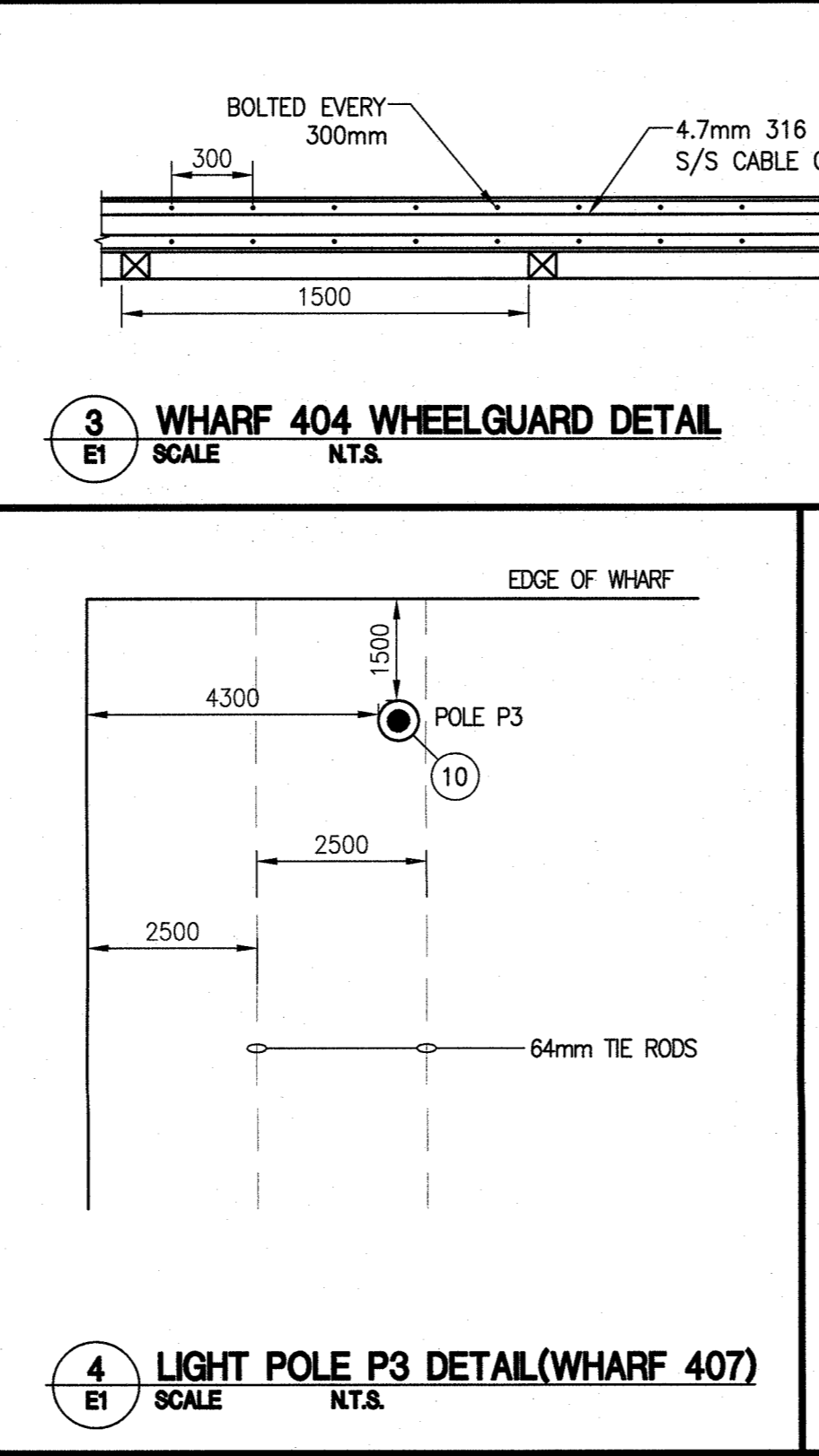
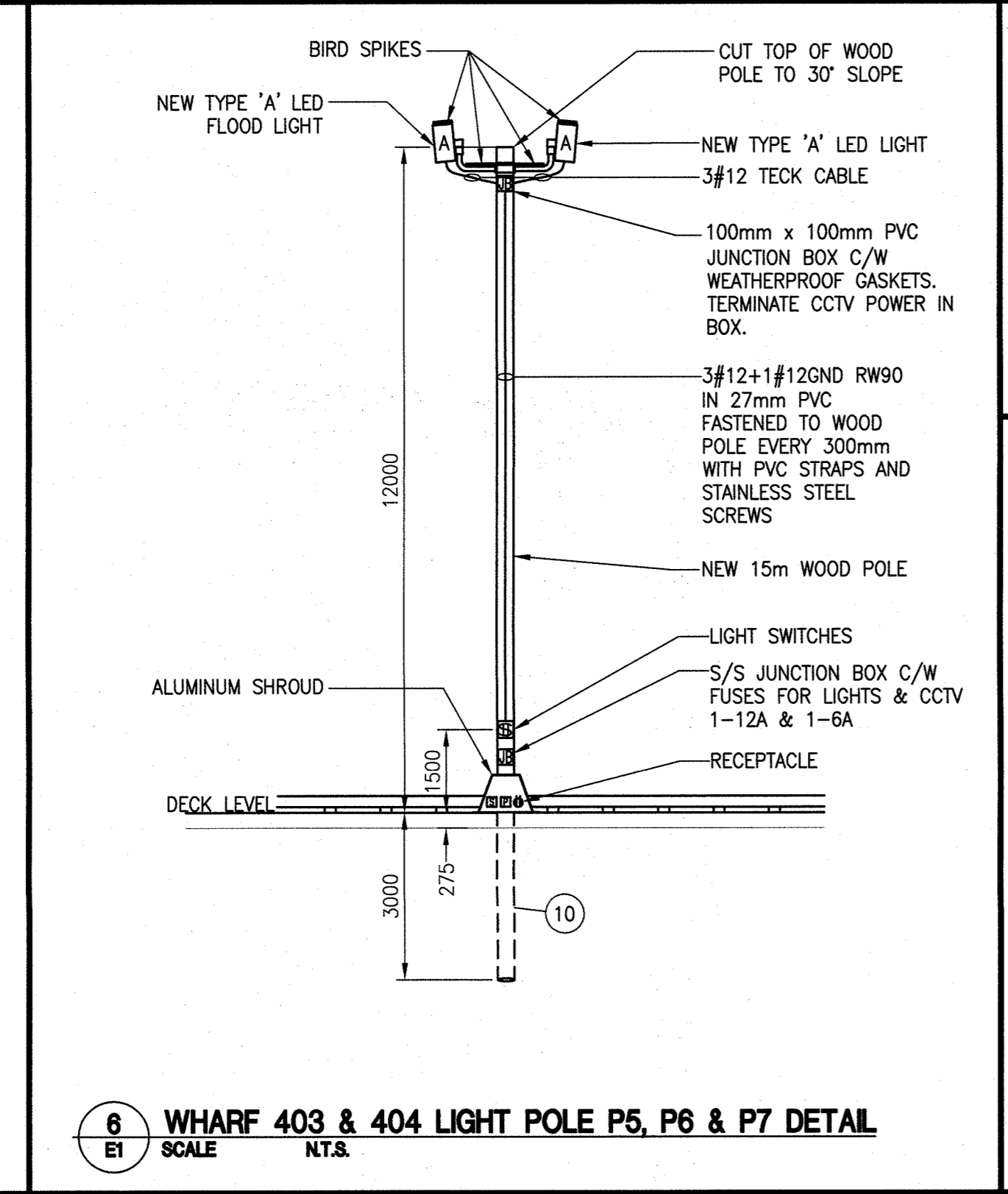
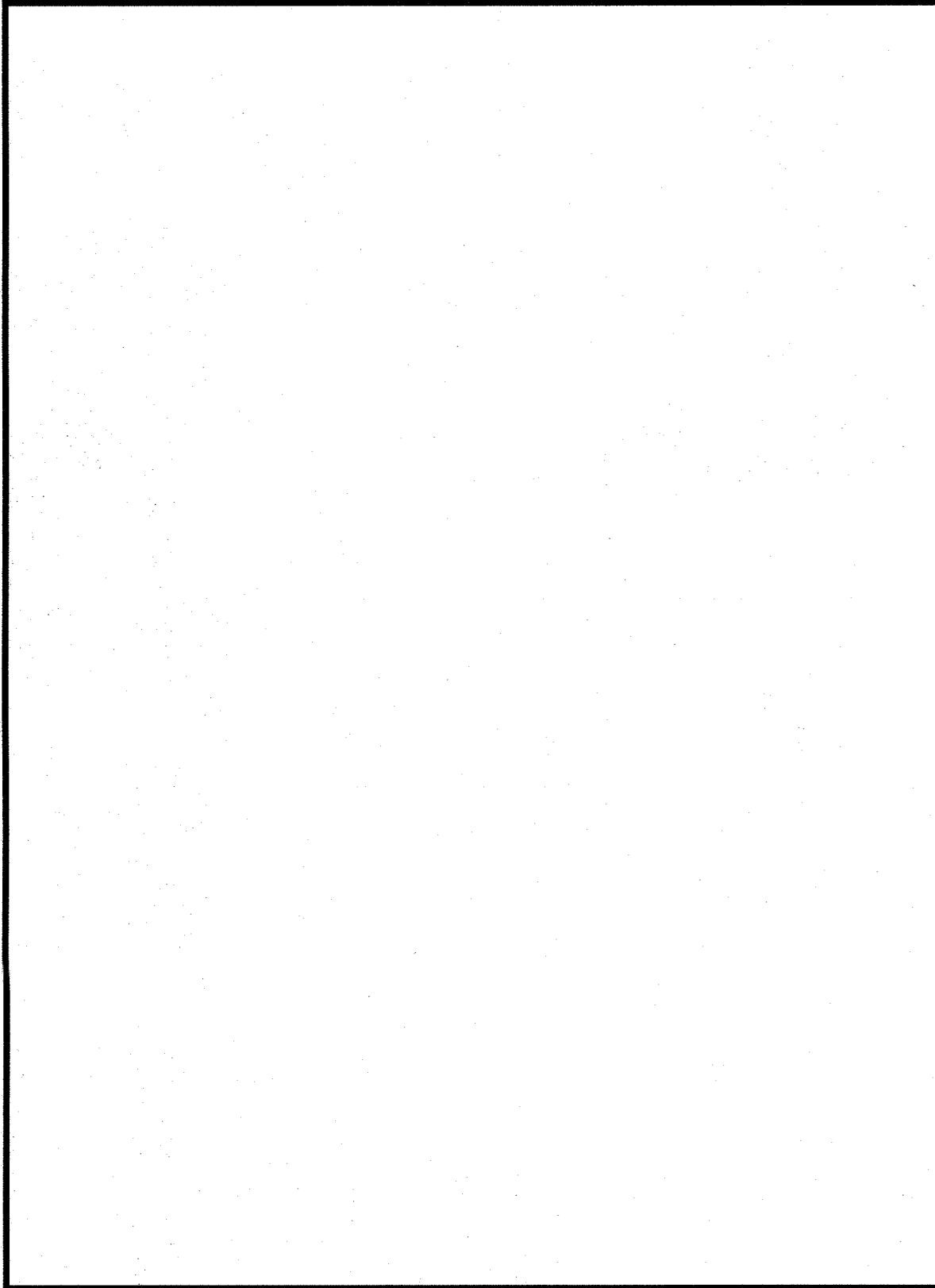
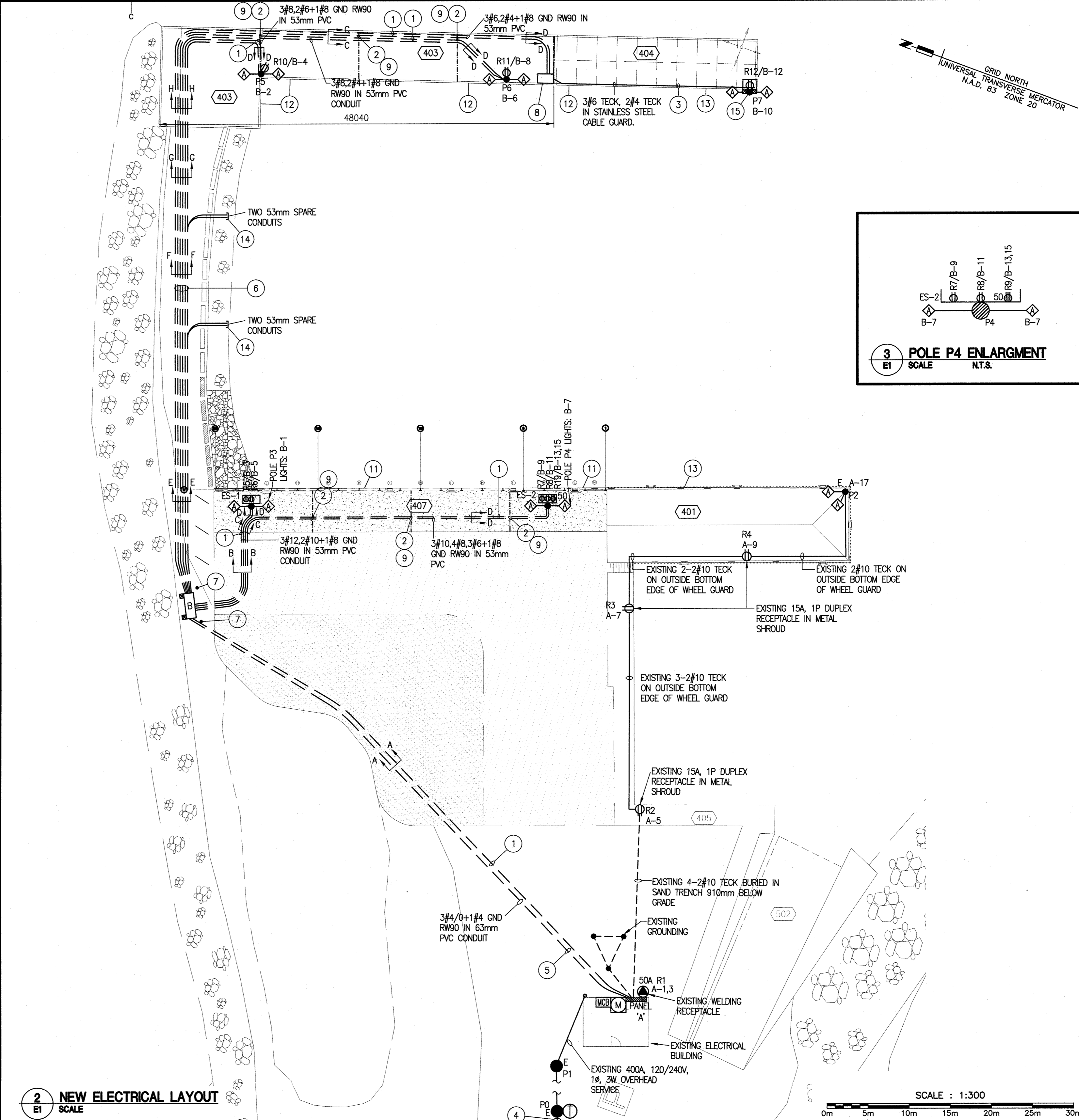
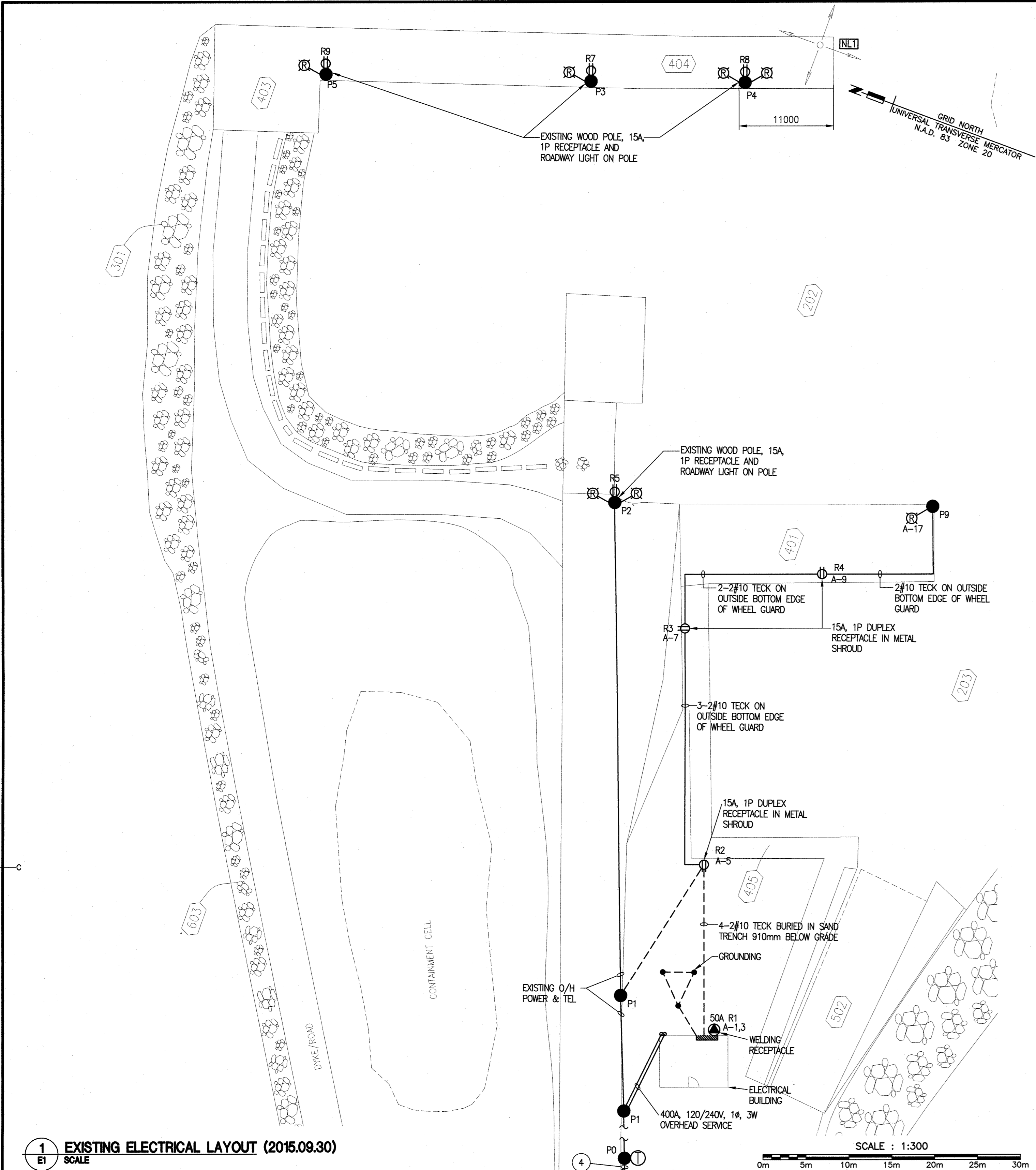
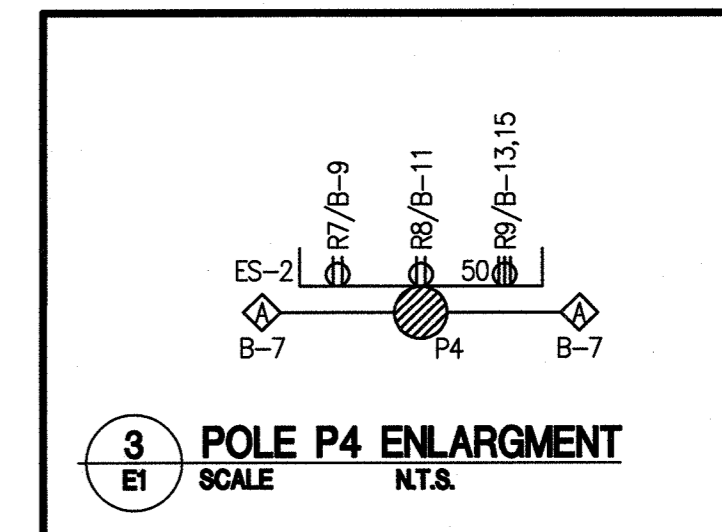
**RASAL**  
ELECTRICAL CONSULTING ENGINEERING

R.A. SMITH & ASSOC. LIMITED  
1400 SOUTHERN DRIVE  
FREDERICTON, NB E3A 5P3  
TEL: (506) 478-8044

Stamp / Estampe



ramith@resl.nb.ca



- NOTES**
- 4#8+1#8 GND RW90 IN 53mm PVC FOR POLE P2 LIGHT CONTROL.
  - INSTALL PVC EXPANSION JOINT FOR EACH PVC CONDUIT (DETAIL 2 ON DWG E2).
  - NEW TECK CABLE FEEDS TO POLE P7 RUN ALONG WHARF SIDE OF WHEELGUARD AND COVER WITH FLANKED S/S CABLE GUARD AND FASTENED EVERY 300mm WITH S/S LAG BOLTS.
  - 7200V FEED FROM NB POWER.
  - 240V FEED INTO PANEL B.
  - TRENCH TO FOLLOW FAR SIDE OF ROAD NEXT TO BREAKWATER.
  - BOLLARDS IN FRONT OF PANEL B ENCLOSURE.
  - ALUMINUM SHROUD WITH 150x150mm JUNCTION BOXES. SEE DETAIL 5 ON SHEET E2.
  - LOCATION OF WHARF CONSTRUCTION JOINTS.
  - 600mm DIAMETER STEEL PIPE.
  - NEW GALVANIZED WHEEL GUARD.
  - NEW WOOD WHEEL GUARD.
  - EXISTING WOOD WHEEL GUARD.
  - INSTALL 6mm NYLON FULL ROPE IN ALL SPARE CONDUITS AND CAP CONDUITS WITH PVC CAPS WHERE NOT TERMINATED IN PVC JUNCTION BOX.
  - NEW WOOD POLE MOUNTED ON THE OUTSIDE OF THE WHARF FACE WITH 250x250mm BRIDALS ON EACH SIDE.

**SYMBOL**

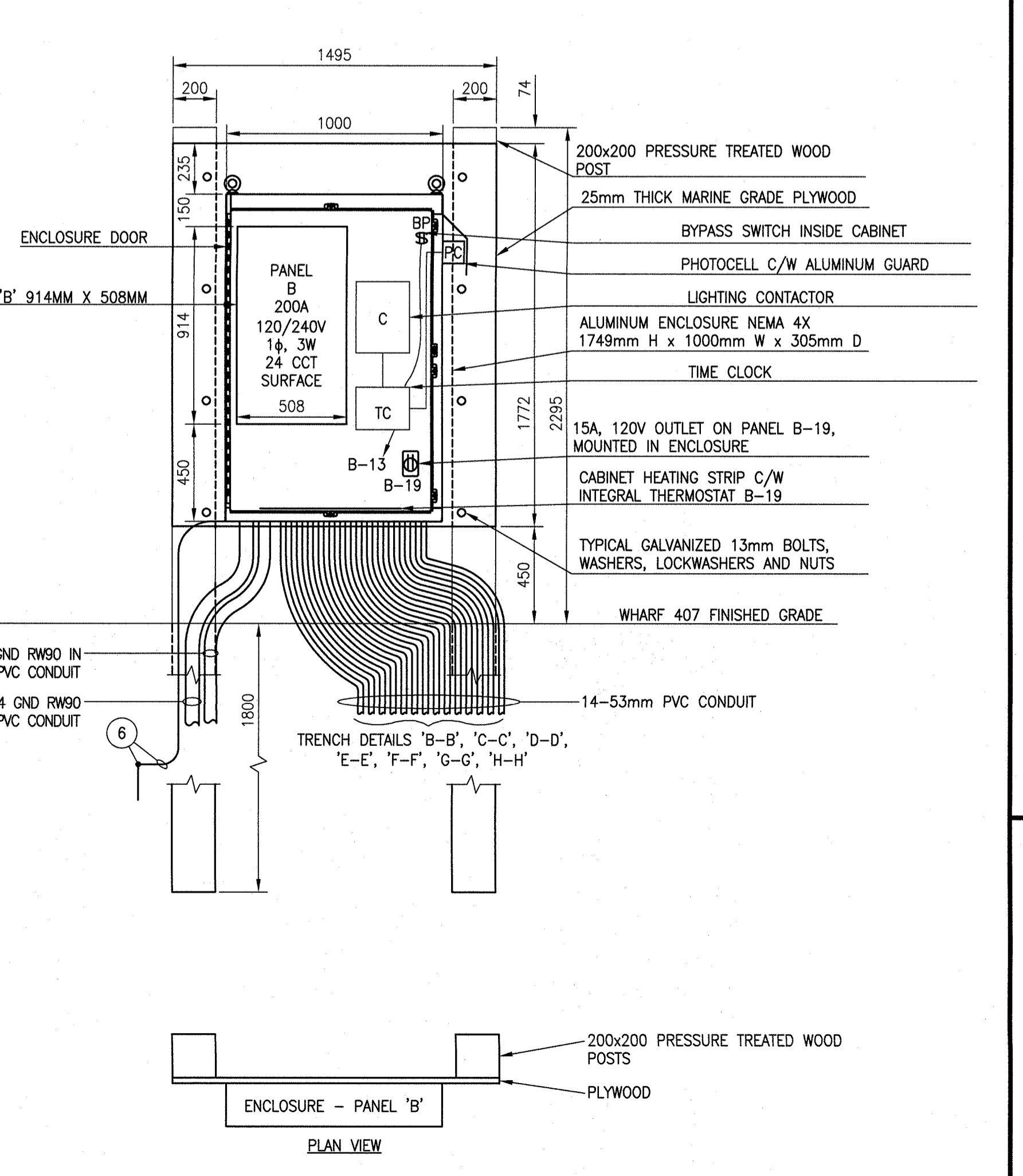
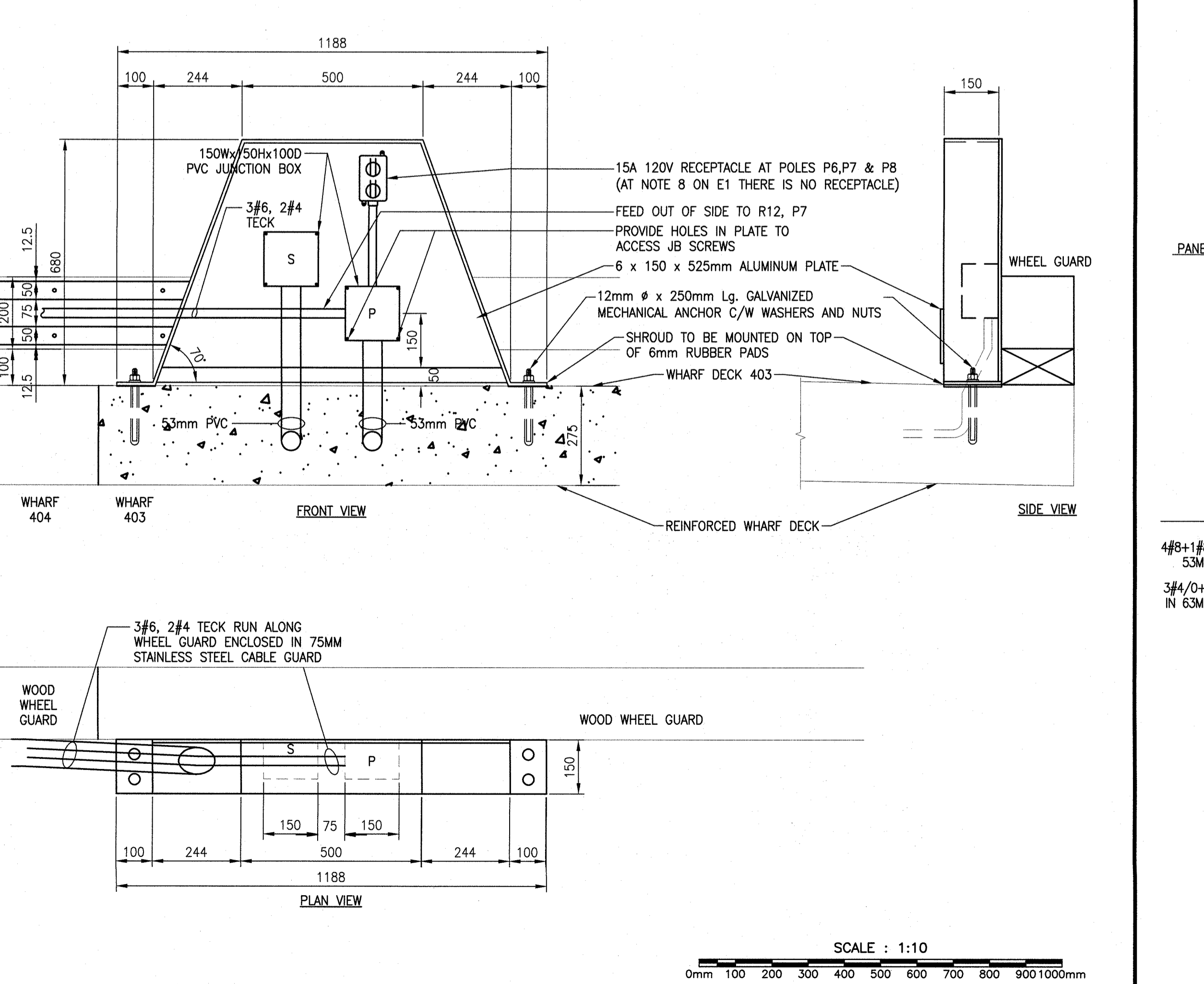
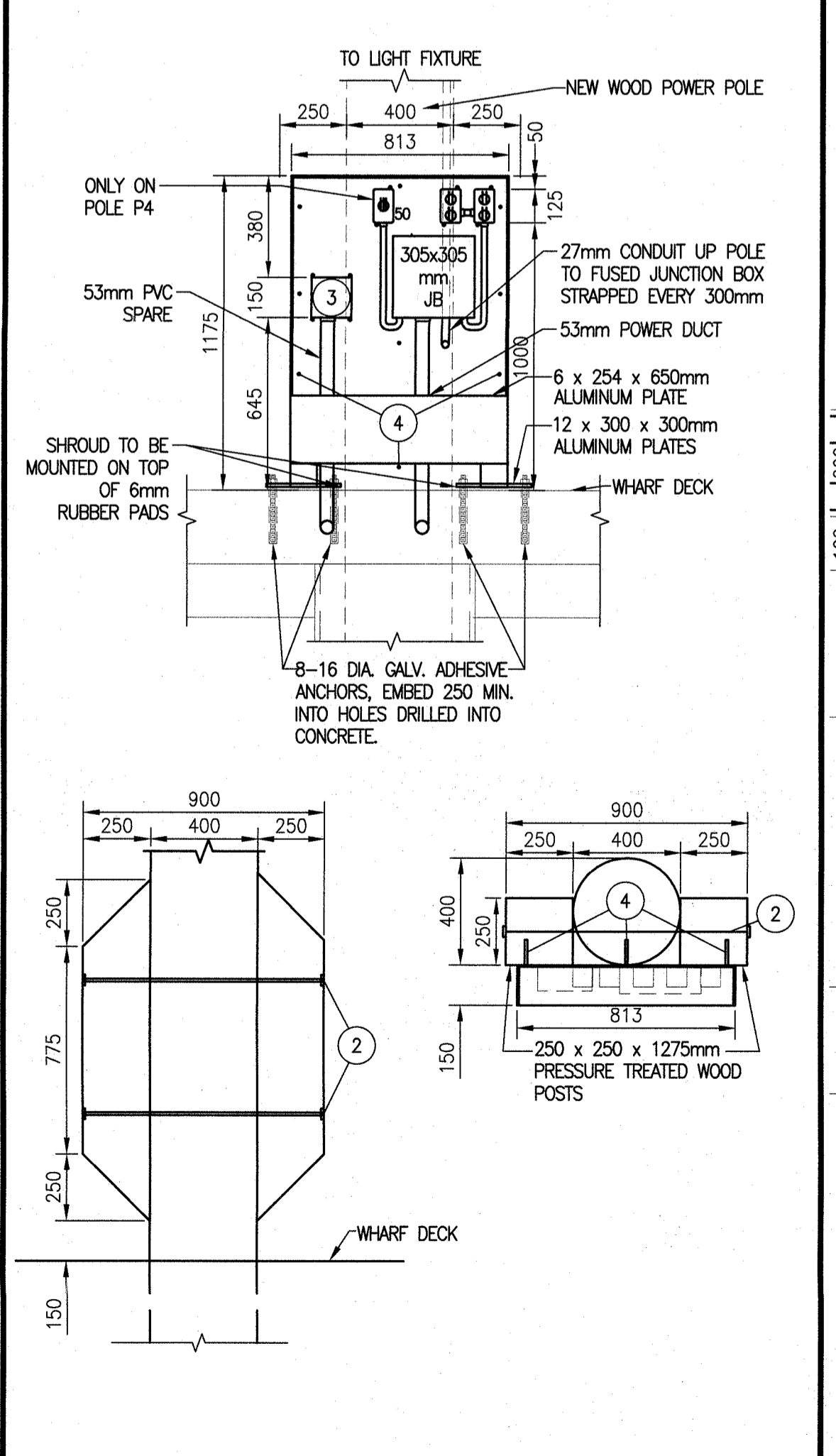
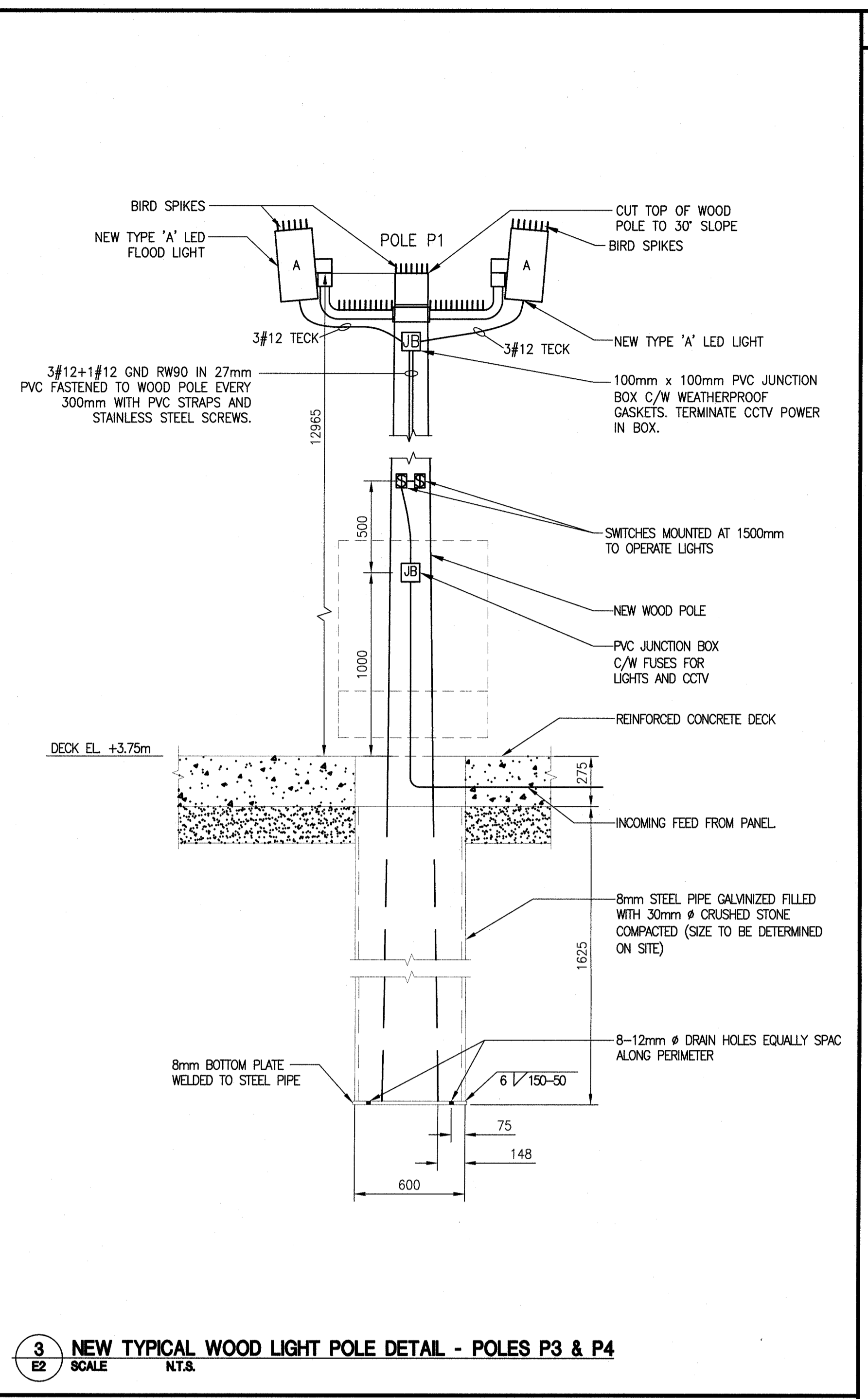
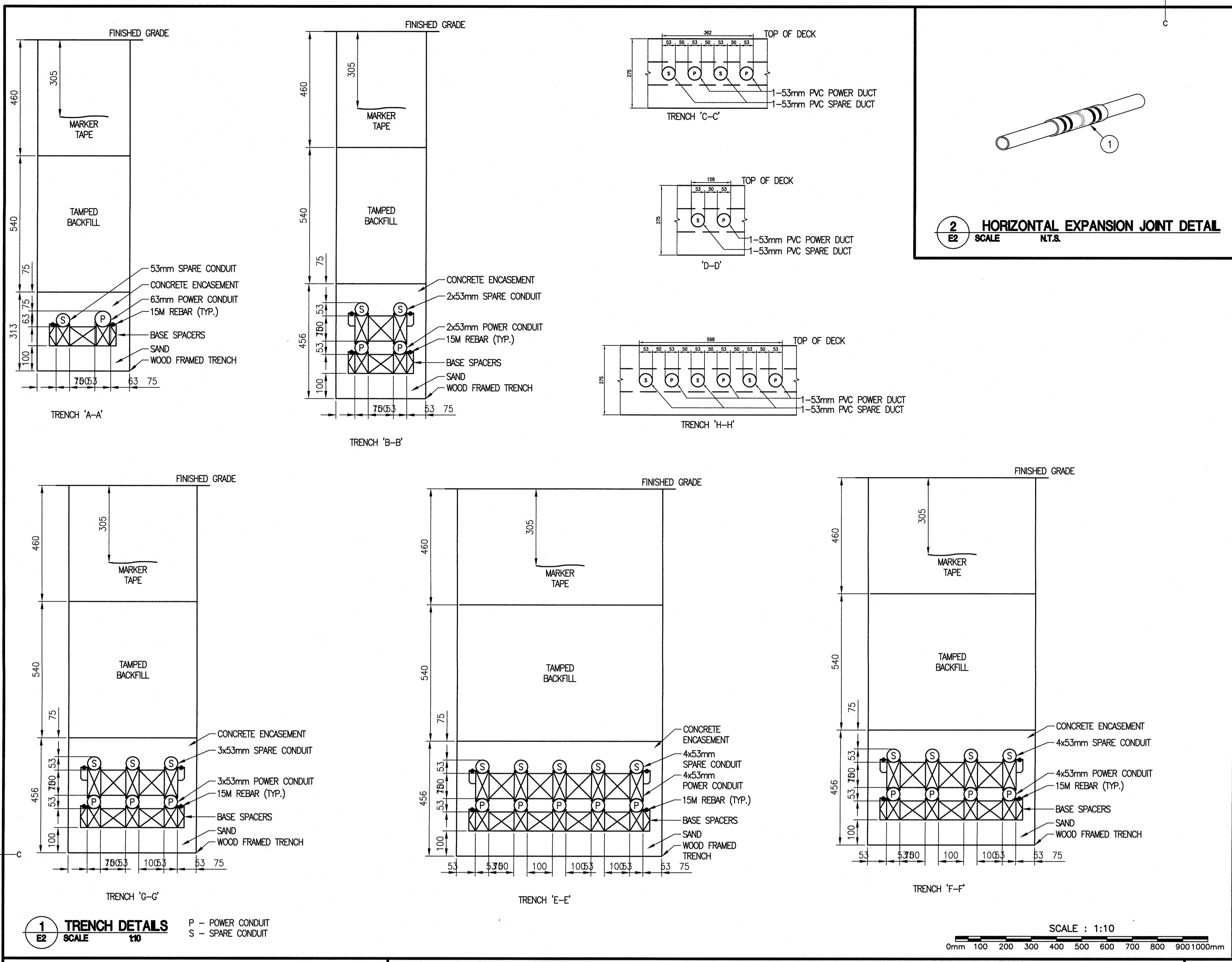
	POLE P2
	POLE P3
	POLE P4
	POLE P5
	POLE P6
	POLE P7
	POLE P8
	POLE P9
	POLE P10
	POLE P11
	POLE P12
	POLE P13
	POLE P14
	POLE P15
	POLE P16
	POLE P17
	POLE P18
	POLE P19
	POLE P20
	POLE P21
	POLE P22
	POLE P23
	POLE P24
	POLE P25
	POLE P26
	POLE P27
	POLE P28
	POLE P29
	POLE P30
	POLE P31
	POLE P32
	POLE P33
	POLE P34
	POLE P35
	POLE P36
	POLE P37
	POLE P38
	POLE P39
	POLE P40
	POLE P41
	POLE P42
	POLE P43
	POLE P44
	POLE P45
	POLE P46
	POLE P47
	POLE P48
	POLE P49
	POLE P50
	POLE P51
	POLE P52
	POLE P53
	POLE P54
	POLE P55
	POLE P56
	POLE P57
	POLE P58
	POLE P59
	POLE P60
	POLE P61
	POLE P62
	POLE P63
	POLE P64
	POLE P65
	POLE P66
	POLE P67
	POLE P68
	POLE P69
	POLE P70
	POLE P71
	POLE P72
	POLE P73
	POLE P74
	POLE P75
	POLE P76
	POLE P77
	POLE P78
	POLE P79
	POLE P80
	POLE P81
	POLE P82
	POLE P83
	POLE P84
	POLE P85
	POLE P86
	POLE P87
	POLE P88
	POLE P89
	POLE P90
	POLE P91
	POLE P92
	POLE P93
	POLE P94
	POLE P95
	POLE P96
	POLE P97
	POLE P98
	POLE P99
	POLE P100

**LEGEND**

- 15A MARINE GRADE DUPLEX RECEPTACLE 120V 1# C/W MARINE GRADE IN-USE COVER ON 15A, 1P GFI CIRCUIT BREAKER. R2-RECEPTACLE 2. A-5-PANEL A CIRCUIT #5.
- NEW 15M CLASS 3 PRESSURE TREATED WOOD POLE. E-EXISTING.
- NEW 353W LED FLOODLIGHT C/W MOUNTING BRACKET.
- ELECTRICAL PANEL B IN ALUMINUM ENCLOSURE MOUNTED ON 25mm MARINE GRADE PLYWOOD 400mm ABOVE GRADE ON 2-200x200x3658 PRESSURE TREATED SUPPORT POST 1823mm BELOW GRADE. PROVIDE #3 GREEN GROUND IN 27mm PVC CONDUIT AND GROUND ROD.
- TECK CABLE OR RW90 CONDUIT UNDERGROUND OR IN DECK IN PVC CONDUIT AS INDICATED.
- OVERHEAD POWER SUPPLY LINE.
- EXISTING ROADWAY STYLE LUMINAIRE.
- 50A MARINE GRADE SINGLE THUMB LOCK RECEPTACLE 240V, 1# 2P, 4W C/W MARINE GRADE WEATHER PROOF COVER. 50-50 AMPS.
- SOLAR POWER NAVIGATIONAL LIGHT.
- EXISTING NB POWER METER SOCKET.
- MAIN CIRCUIT BREAKER.
- ELECTRICAL PANEL.
- CONTACTOR 30A, 6 POLE.
- PHOTOELECTRIC CELL.
- TIME CLOCK.
- EXISTING POLE MOUNTED TRANSFORMER.
- PVC JUNCTION BOX.
- 2 WEATHERPROOF LIGHT SWITCHES.

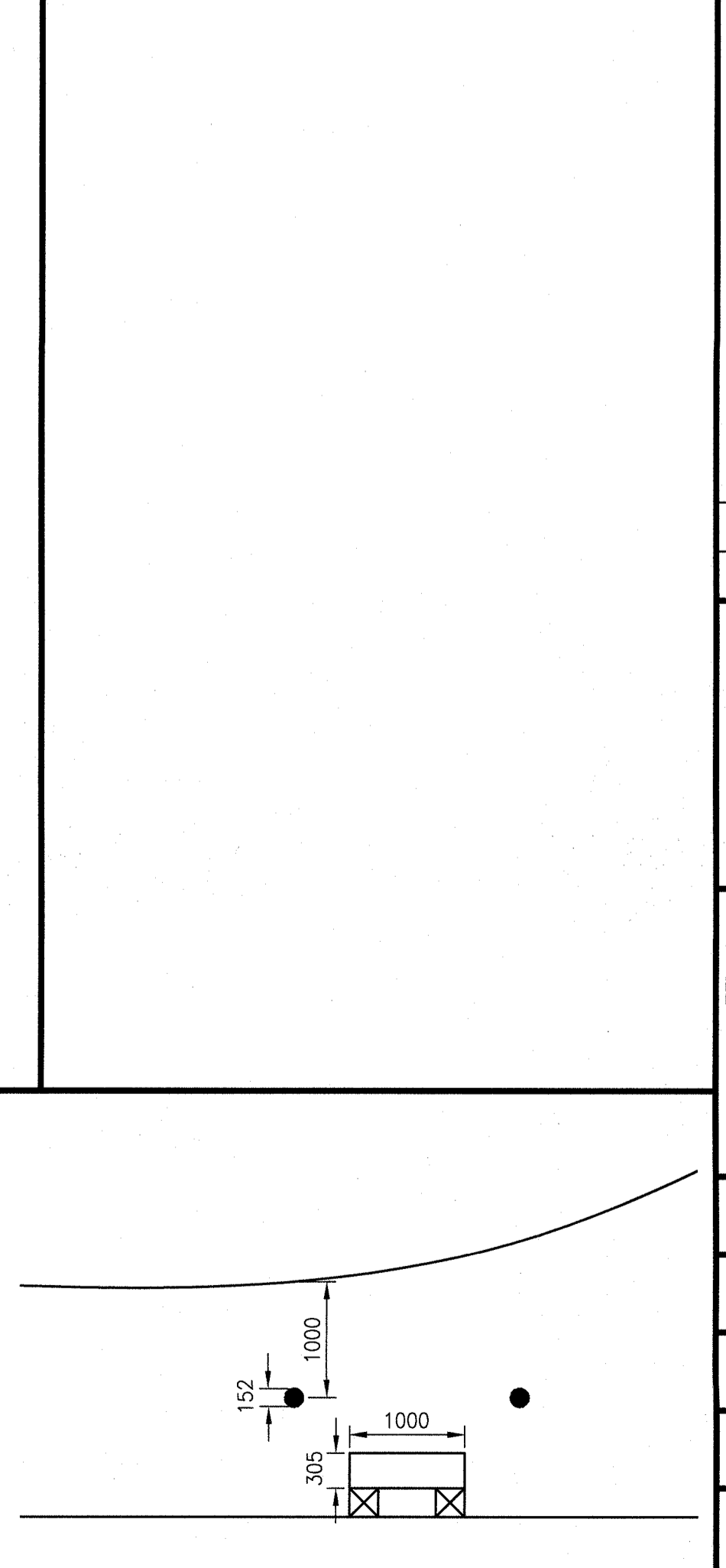
1	ISSUED FOR TENDER	2016.10.12
revisions		date
project		project
<b>NEW MARGINAL WHARF STRUCTURE 407 BARRE-DE-COAGNE, NB</b>		
drawing		desain
<b>EXISTING &amp; NEW ELECTRICAL LAYOUTS AND DETAILS</b>		
designed	RALPH SMITH, L.C., P.ENG.	conçu
date	2016.09.07	
drawn	WILLIAM GOURLER	dessiné
date	2016.09.07	
approved	RALPH SMITH, L.C., P.ENG.	approuvé
date	2016.09.07	
Tender		Submission
Project Manager	Administrateur de projets	
project number		no. du projet
	<b>721986</b>	
drawing no.		no. du dessin
	<b>E1 of 3</b>	





**NOTES**

- REFER TO DETAIL 2 ON DRAWING E1 NOTES 2 AND 9 FOR CONSTRUCTION JOINT LOCATIONS WHERE EACH 53mm PVC CONDUIT IS TO HAVE A HORIZONTAL EXPANSION JOINT.
- 2 x 13mm DIA x 900mm LONG GALVANIZED BOLTS, WASHERS AND NUTS COUNTER SUNK TO BE FLUSH WITH EDGE OF WOOD POST.
- NEW 150 x 150 x 100mm PVC JUNCTION BOX FOR SPARE PVC CONDUIT TERMINATION.
- THREE 150mm STAINLESS STEEL LAG BOLTS TO FASTEN SHROUD TO WOOD POSTS AND POLE AT 3 LOCATIONS (TOTAL NINE).
- VERTICAL EXPANSION JOINTS.
- #3 GREEN RW90 GROUND WIRE IN 25mm PVC TO GRADE THEN #3 SHRE COPPER WIRE TO 19x3000mm COOPER GROUND ROD DRIVEN TO 1000mm BELOW GRADE.



**Fisheries and Oceans Canada / Pêches et Océans Canada**  
Small Craft Harbours / Ports pour Petits Bateaux  
Maritimes / Gulf Region

**RASAL**  
ELECTRICAL CONSULTING ENGINEERING  
R.A. SMITH & ASSOCIATES  
1-465 SERRINGTON LANE  
FREDERICTON, NB B3A 5V3  
TEL: (506) 457-8064

Stamp: Stamp Etampe

Stamp: RALPH A. SMITH  
PROFESSEUR D'INGÉNIEUR ÉLECTRICIEN  
DATE: 14.12.2016  
PROVINCE OF NEW BRUNSWICK

1	ISSUED FOR TENDER	2016.10.12
revisions		date
project	NEW MARGINAL WHARF STRUCTURE 407 BARRE-DE-COGAGNE, NB	
drawing	ELECTRICAL LIGHTING, SHROUD, SERVICE LAYOUTS & DETAILS	
designed	RALPH SMITH, L.C., P.ENG. concep.	
date	2016.09.07	date
drawn	WILLIAM GOURLEY dessin	
date	2016.09.07	date
approved	RALPH SMITH, L.C., P.ENG. approuvé	
date	2016.09.07	date
Tender	Soumission	
Project Manager	Administrateur de projets	
project number	721986	no. du projet
drawing no.	E2	no. du dessin
E2 of 3		



**PANEL A - EXISTING**  
 POWER SUPPLY: 120/240V, 1PH, 3W  
 MAINS: 400A  
 NUMBER OF CIRCUITS: 32  
 LOCATED IN MS1 SURFACE MOUNTED

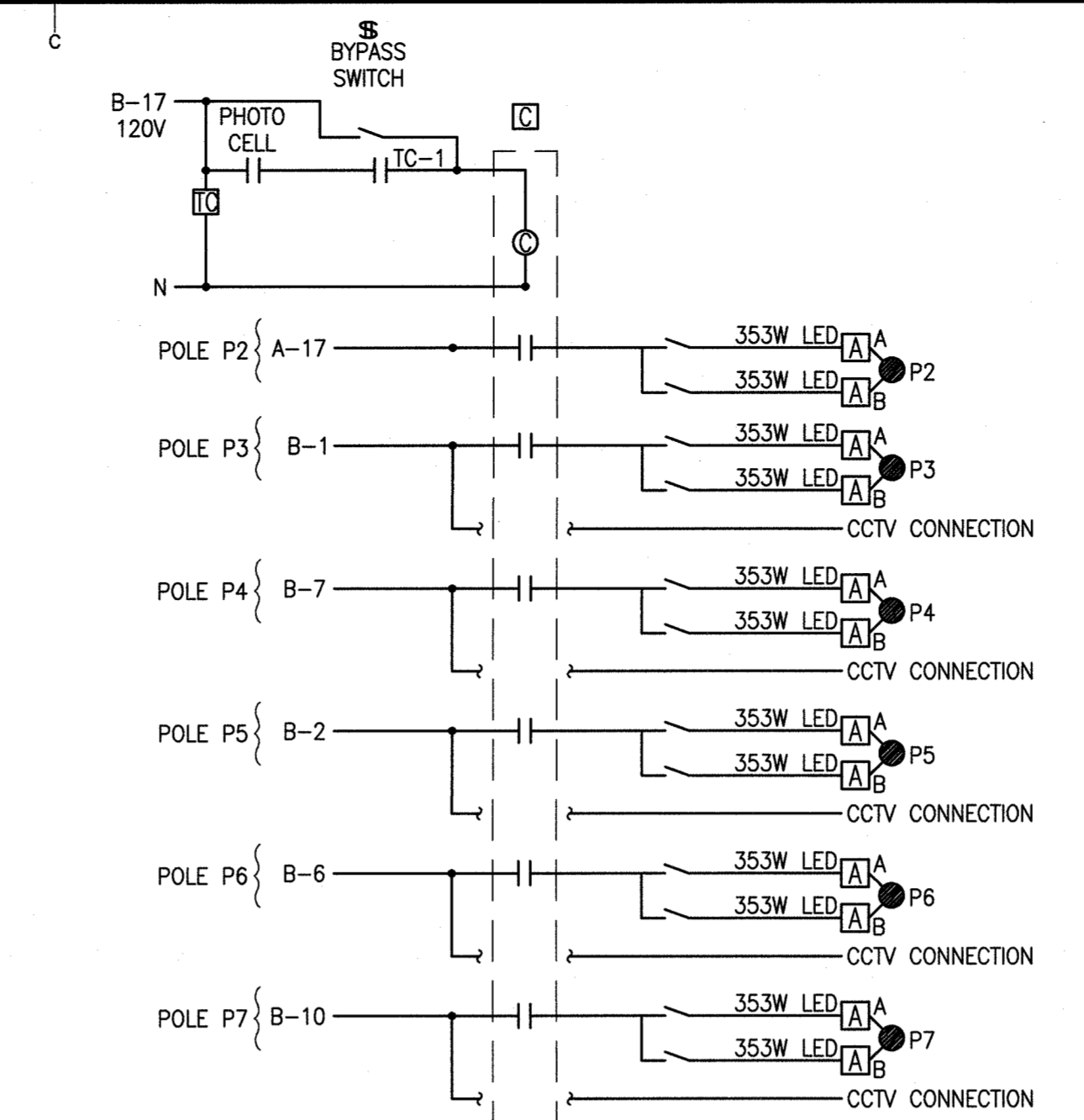
DESCRIPTION	WATTAGE		#	CIRCUIT	BKR #	AMP	P	WATTAGE		DESCRIPTION
	A	B						A	B	
RECEPTACLE R1	4800		2	1	a	2	30	1	2010	NON-METERED SERVICE NS2
RECEPTACLE R2	4800		2	5	b	4	30	1	2010	NON-METERED SERVICE NS3
RECEPTACLE R3	1440		1	15	a	6	30	1	2010	NON-METERED SERVICE NS4
RECEPTACLE R4	1440		1	15	7	b	8	1		
NON-METERED SERVICE NS1	5840		2	7	11	b	12	15	1	SPARE
LIGHT P9			1	15	9	a	10	15	1	SPARE
			19	b	20					SPARE
			21	a	22					SPARE
			23	b	24					SPARE
			25	a	26					SPARE
			27	b	28					SPARE

**PANEL A - EXISTING CIV NEW 200A 2P CB**  
 POWER SUPPLY: 120/240V, 1PH, 3W  
 MAINS: 400A  
 NUMBER OF CIRCUITS: 30

DESCRIPTION	WATTAGE		#	CIRCUIT	BKR #	AMP	P	WATTAGE		DESCRIPTION
	A	B						A	B	
RECEPT R1	4800		2	50	1	a	2	30	1	SPARE
RECEPT R2	1440		1	15	3	b	4	30	1	SPARE
RECEPT R3	1440		1	15	7	b	8	30	1	SPARE
RECEPT R4	1440		1	15	9	a	10	15	1	SPARE
SPARE			2	70	11	b	12	15	1	SPARE
SPARE			1	15	13	a	14	15	1	SPARE
SPARE			1	15	17	a	18	15	1	SPARE
SPARE			1	19	b	20				SPARE
SPARE			1	21	a	22				SPARE
SPARE			1	23	b	24				SPARE
SPARE			1	25	a	26				SPARE
SPARE			1	27	b	28				SPARE
SPARE			1	29	a	30				SPARE
PHASE LOADS	7680	6948						10504	12708	PANEL B
TOTAL LOAD	37808									
TOTAL PHASE LOADS	13164	11952								(*)- NEW 200A 2P CIRCUIT BREAKER
+/- 5%	12011	11243								(GFI)- GROUND FAULT INTERRUPTING
CURRENT (A) @ 240V:	91									(+)-

**PANEL B - NEW**  
 POWER SUPPLY: 120/240V, 1PH, 3W  
 MAINS: 200A, 200A, 2P MCB  
 NUMBER OF CIRCUITS: 24

DESCRIPTION	WATTAGE		#	CIRCUIT	BKR #	AMP	P	WATTAGE		DESCRIPTION
	A	B						A	B	
POLE P3 LED L'S	708		1	15	3	b	4	15	1	POLE P3 RECEPT R10
POLE P5 RECEPT R6	1440		1	15	5	a	6	15	1	POLE P5 LED L'S
POLE P4 LED L'S	708		1	15	7	b	8	15	1	POLE P4 RECEPT R11
POLE P6 RECEPT R7	1440		1	15	9	a	10	15	1	POLE P6 LED L'S
POLE P8 RECEPT R8	1440		1	15	11	b	12	15	1	POLE P8 RECEPT R12
POLE P4 RECEPT R9	4800		2	50	13	a	14	15	1	SPARE
POLE P4 RECEPT R8	4800		2	50	15	b	16	15	1	SPARE
LIGHTING CONTROL	100		1	15	17	a	18	15	1	SPARE
CABINET RECEPT & HEATER	300		1	15	19	b	20	15	1	SPARE
			1	21	a	22	30	2		SPARE
			23	b	24	30	2			SPARE
PHASE LOADS	6488	8888						2118	4320	
TOTAL LOAD	22610									
TOTAL PHASE LOADS	10904	13006								
+/- 5%	7495	8284								(GFI)-
CURRENT (A) @ 240V:	57									(+)-



**5 WHARF LIGHTING CONTROL DETAIL**  
 SCALE 5/8 N.T.S.

**PANEL B - VOLTAGE DROP WIRE SIZE CALCULATIONS**

RECEPTACLE	RATING AMPS	VOLTS	CIRCUIT CURRENT	DISTANCE METERS	VOLTAGE DROP	WIRE SIZE
RECEPT R3	15	120	B-3	12A	25	< 3% 2#10
RECEPT R6	15	120	B-9	12A	25	< 3% 2#10
RECEPT R7	15	120	B-11	12A	60	< 3% 2#8
RECEPT R8	15	120	B-11	12A	60	< 3% 2#8
RECEPT R9	90	240	B-3,13	60A	60	< 3% 2#6
RECEPT R10	15	120	B-4	12A	80	< 3% 2#6
RECEPT R11	15	120	B-8	12A	115	< 3% 2#4
RECEPT R12	15	120	B-12	12A	160	< 3% 2#4
POLE P3	15	120	B-1	6A	38	< 3% 2#12
POLE P4	15	120	B-7	6A	73	< 3% 2#10
POLE P5	15	120	B-2	6A	93	< 3% 2#8
POLE P6	15	120	B-6	6A	128	< 3% 2#8
POLE P7	15	120	B-10	6A	153	< 3% 2#6
PANEL B FEEDER	200	240	A-28,30	160	75	< 2% 3#40

**2 VOLTAGE DROP CALCULATION**  
 SCALE 5/8 N.T.S.

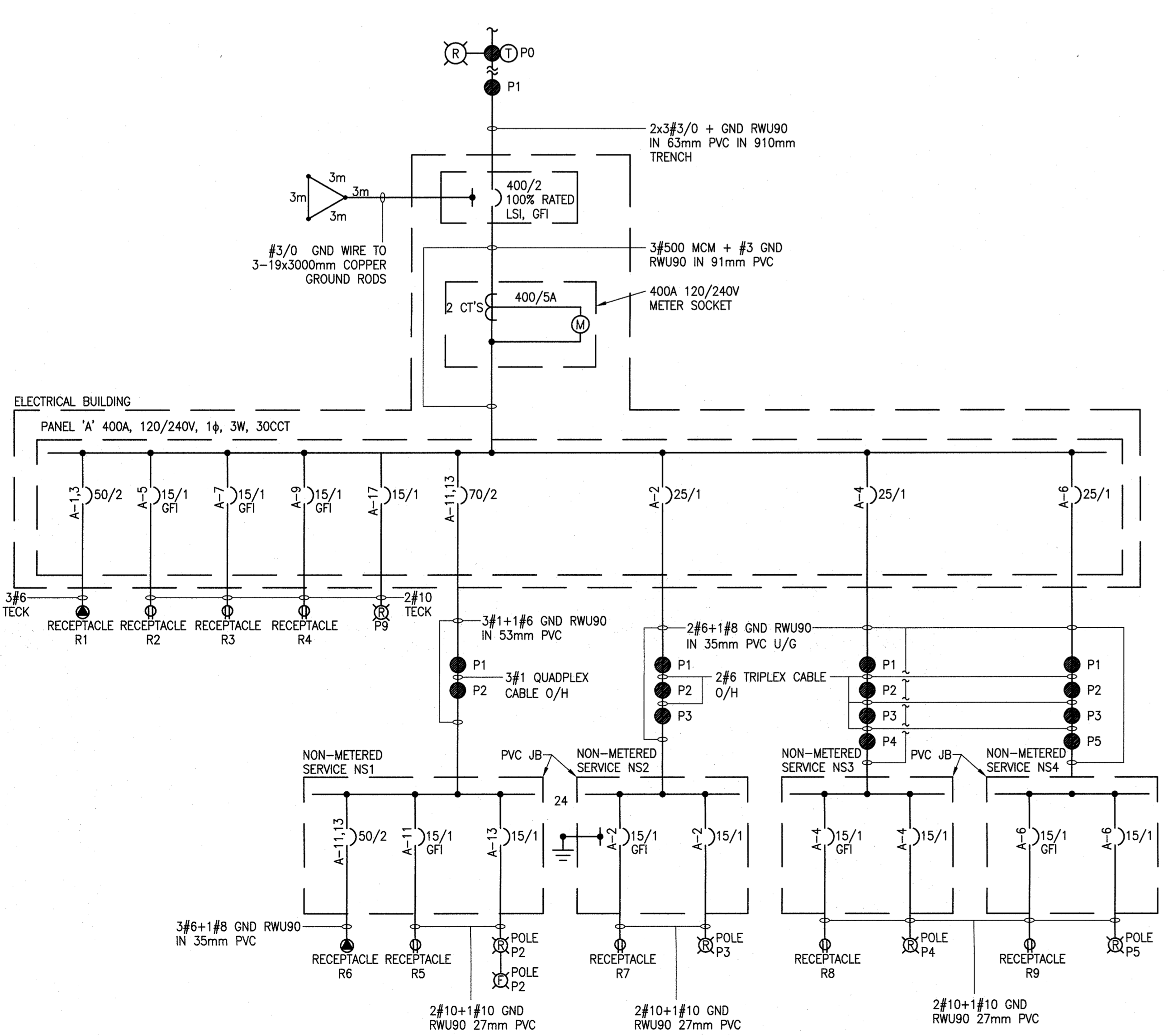
**SERVICE CALCULATION (CEC RULE 78)**

ITEM	DESCRIPTION	LOAD WATTS	TOTAL LOAD WATTS
1	<b>DETERMINE LOADS</b> 10-15A, 120V RECEPTS: 12Ax120V 12-35W LED FLOODLIGHT: 353Wx12 2-50A, 2P WELDES: 40Ax240V 1-LIGHT CONTROL: 100W	1440W 353W 7200W 100W	= 14,400 W = 4,236 W = 19,200 W = 100 W
	TOTAL CONNECTED LOAD		= 37,936 W
2	<b>FEEDER LOADS FOR PANEL A</b> 1. 4 HIGHEST RATED RECEPTACLES AT 100% 2-50A RECEPT: 40x240x2x100% 2-15A RECEPT: 12x120x100%	19,200 2,880	= 22,080 W
2	NEXT 4 HIGHEST RATED RECEPTACLES AT 65% 4-15A RECEPT: 12x120x65%	3,744	= 3,744 W
3	NEXT 5 HIGHEST RATED RECEPTACLES AT 50% 4-15A RECEPTACLES: 4x12x120x.5	2,880	= 2,880 W
4	LIGHT FIXTURES 12-353W LED LIGHTS +100W CONTROL	4,236	= 4,236 W
	TOTAL DEMAND LOAD		= 32,940 W
3	ADDITIONAL 25% SPARE CAPACITY FOR FUTURE LOADS 32,940x1.25		= 41,175 W
4	<b>DETERMINE SERVICE SIZE OF EXISTING PANEL 'A'</b> 51,375W/240V=178A.1.25=213A		
	SERVICE FOR EXISTING PANEL 'A' TO BE 400A, 120/240V, 1Ø, 3W		
	2 RUNS OF 3#3/0 + 1#3 GND RW90 IN 63mm PVC U/G TO SERVICE MAST		
5	<b>FEEDER LOADS FOR PANEL B</b> 1. 4 HIGHEST RATED RECEPTACLES AT 100% 1-50A RECEPT: 40Ax240Vx1x100% 3-15A RECEPT: 12Ax120Vx3x100%	9,600 4,320	= 13,920 W
2	NEXT 4 HIGHEST RATED RECEPTACLES AT 65% 4-15A RECEPT: 12Ax120Vx4x65%	3,744	= 3,744 W
3	LIGHT FIXTURES 10-353W LED LIGHT FIXTURES	3,530	= 3,530 W
	TOTAL DEMAND		= 21,194 W
6	ADDITIONAL 25% SPARE CAPACITY FOR FUTURE LOADS 21,194x1.25		= 26,493 W
7	<b>DETERMINE SERVICE SIZE OF EXISTING PANEL 'B'</b> 26,493W/240V=110.4Ax1.25=138A		
	SERVICE FOR NEW PANEL 'B' TO BE 200A, 120/240V, 1Ø, 3W		
	1 RUN OF 3#4/0+1#4 GND IN 63mm PVC U/G DUE TO VOLTAGE DROP		

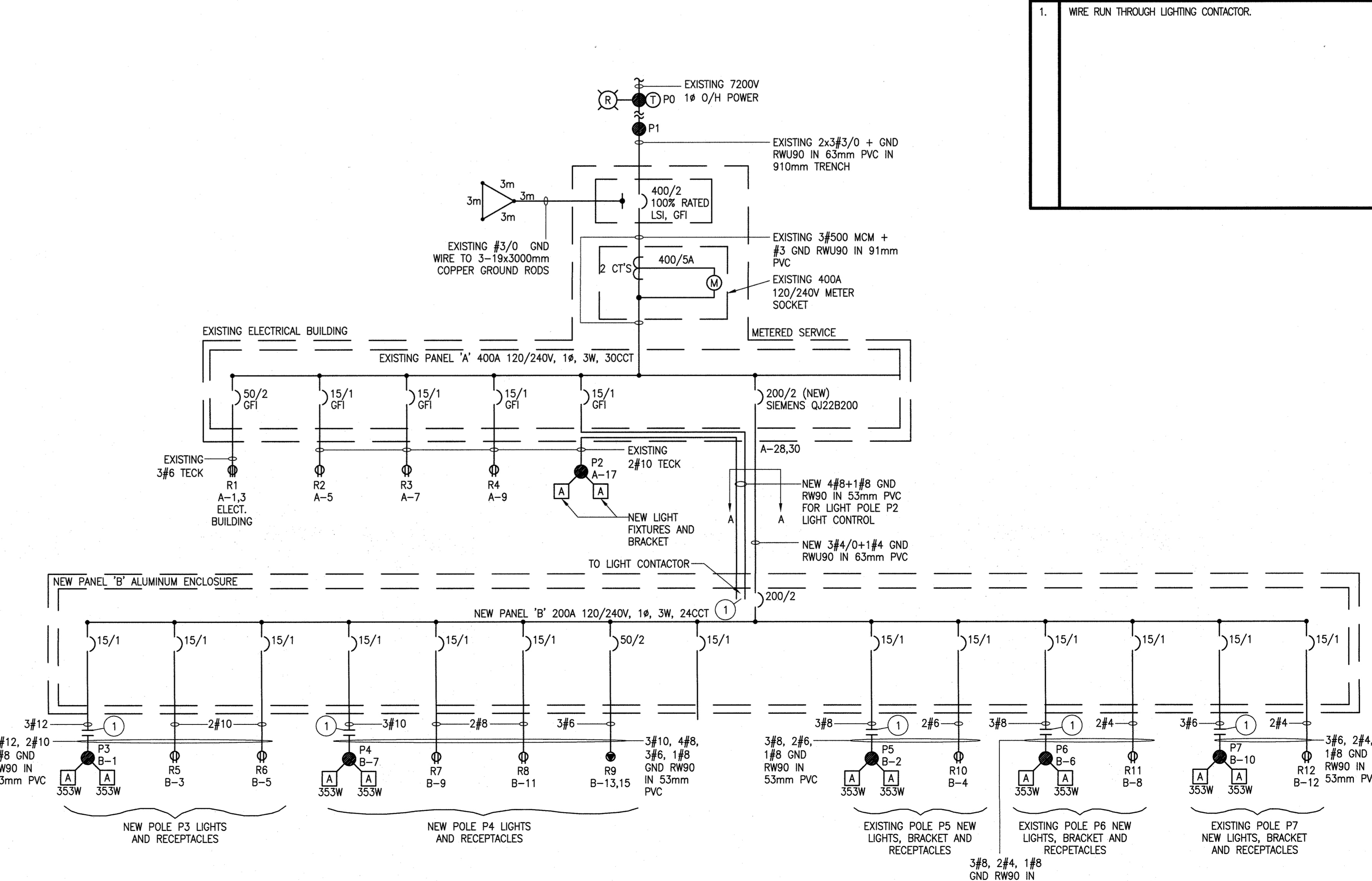
**3 SERVICE CALCULATION**  
 SCALE 5/8 N.T.S.

- NOTES**
- WIRE RUN THROUGH LIGHTING CONTACTOR.

**1 PANEL SCHEDULES**  
 SCALE 5/8 N.T.S.



**5 EXISTING SINGLE LINE RISER DIAGRAM**  
 SCALE 5/8 N.T.S.



**4 NEW SINGLE LINE RISER DIAGRAM**  
 SCALE 5/8 N.T.S.

NO.	REVISION	DATE
1	ISSUED FOR TENDER	2016.10.12

**NEW MARGINAL WHARF STRUCTURE 407  
 BARRE-DE-COGANNE, NB**

**ELECTRICAL LIGHTING CONTROL, PANELS, POWER RISER & SERVICE CALCULATIONS**

designed RALPH SMITH, L.C., P. ENG. concepu  
 date 2016.09.07  
 drawn WILLIAM GOURLEY dessiné  
 date 2016.09.07  
 approved RALPH SMITH, L.C., P. ENG. approuvé  
 date 2016.09.07  
 Tender Soumission  
 Project Manager Administrateur de projets  
 project number no. du projet  
**721986**  
 drawing no. no. du dessin  
**E3 of 3**