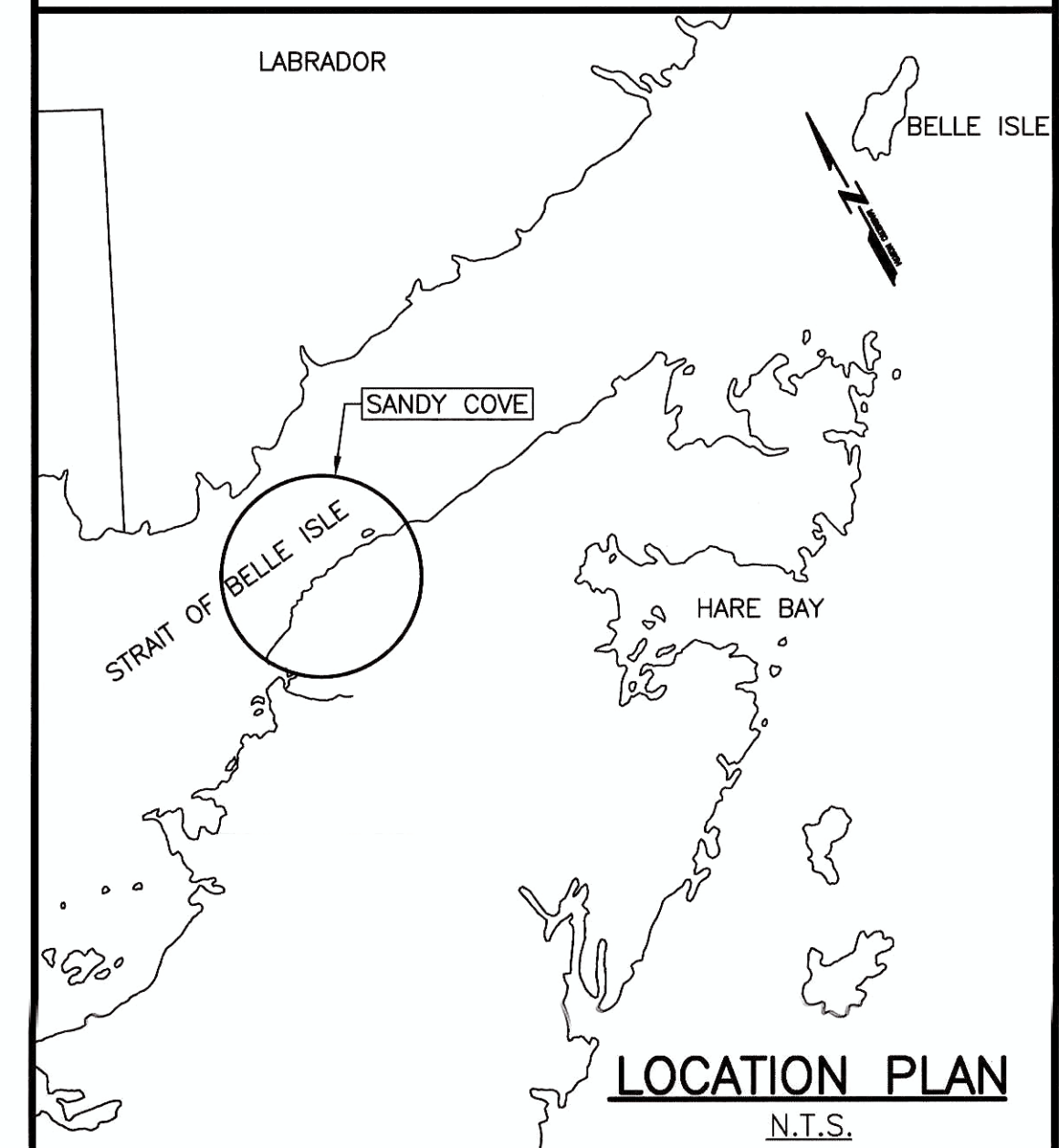
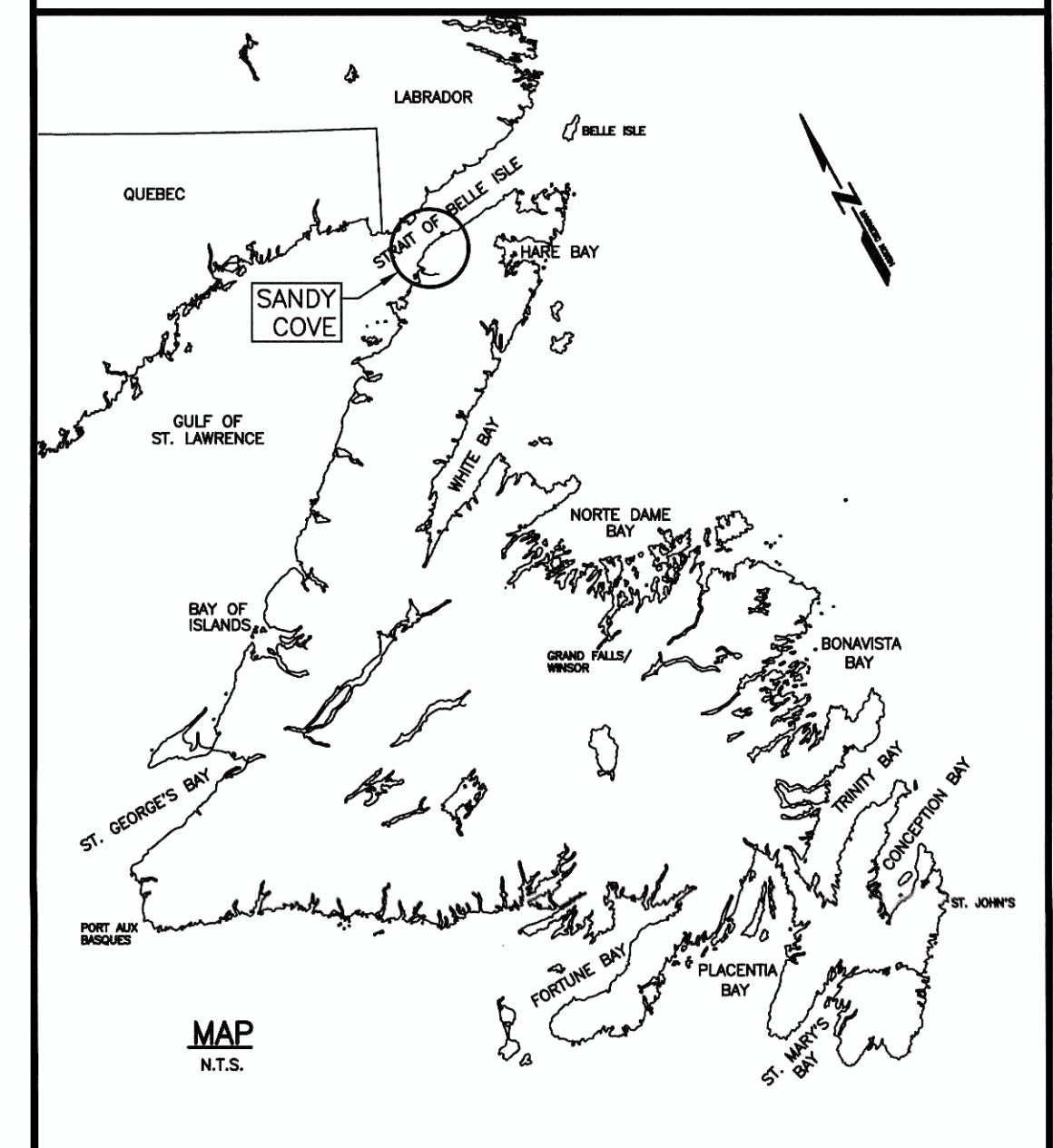


FISHERIES AND OCEANS  
CANADA

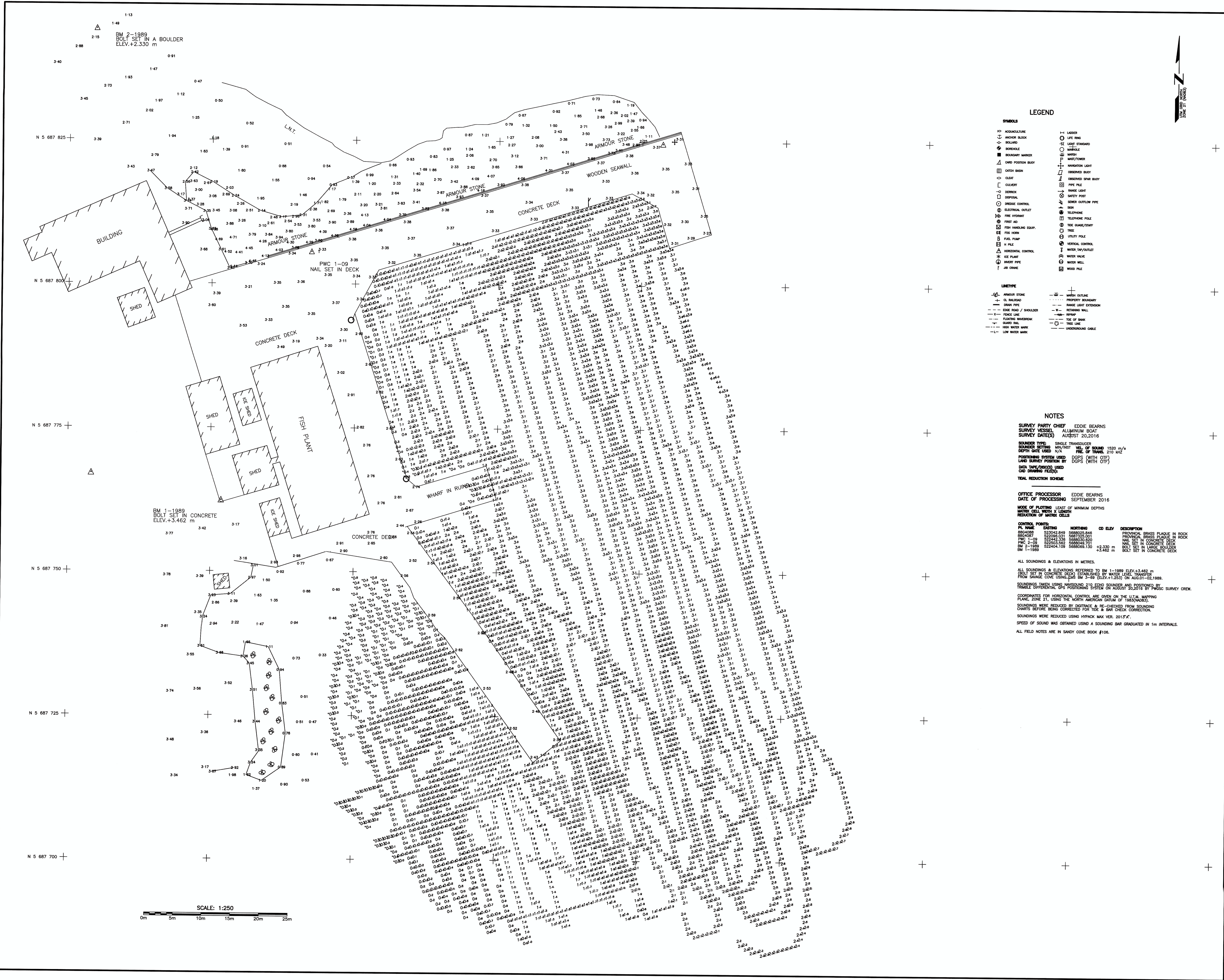
**BASIN MAINTENANCE DREDGING  
SANDY COVE  
NEWFOUNDLAND AND LABRADOR**

**PROJECT No. 722063  
ISSUED FOR TENDER**

SMALL CRAFT HARBOURS







### SMALL CRAFT HARBOURS

**NOTES:**

- ALL ELEVATIONS ARE IN METRES UNLESS OTHERWISE NOTED.
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

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**PROVINCE OF NEWFOUNDLAND**  
**PERMIT HOLDER**  
 This Permit Allows  
**AFN ENGINEERING INC.**

To practice Professional Engineering in Newfoundland and Labrador, Permit No. as issued by APFSDN, F0882 which is valid for the year 2017.

---

**REGISTERED PROFESSIONAL ENGINEER**  
**NEIL C. HUNT**  
 REGISTRAR  
 NEWFOUNDLAND & LABRADOR

---

**NOTES**

**SURVEY PARTY CHIEF** EDDIE BEARNS  
**SURVEY VESSEL** ALUMINUM BOAT  
**SURVEY DATE(S)** AUGUST 20, 2016

**SCANDER TYPE** SINGLE TRANSDUCER  
**SCANDER SETTING** MIN/VST WLL OF SOUND 1520 m/s  
**DEPTH SITE USED** N/A FINE OF TIDE 210 m/LZ

**POSITIONING SYSTEM USED** DGPS (WITH C/T)  
**LAND SURVEY POSITION BY** DGPS (WITH C/T)  
**DATA INPUT/OUTPUT USED** (SEE DRAWING FILE(S))

**TIDAL REDUCTION SCHEME**

**OFFICE PROCESSOR** EDDIE BEARNS  
**DATE OF PROCESSING** SEPTEMBER 2016

**MODE OF PLOTTING** LEAST OF MINIMUM DEPTHS  
**MATRIX CELL WIDTH & LENGTH**  
**REDUCTION OF MATRIX CELLS**

CONTROL POINT	PL NAME	EASTING	NORTHING	CD ELEV	DESCRIPTION
8604289	523042.849	5880232.848			PROVINCIAL BRASS PLAQUE IN ROCK
8604287	523042.811	5880232.811			PROVINCIAL BRASS PLAQUE IN ROCK
PWC 1-09	523442.339	5880302.520			NAIL SET IN CONCRETE DECK
PWC 2-09	523552.532	5880304.711			NAIL SET IN CONCRETE DECK
BM 1-1989	522494.109	5880069.130	+3.320 m		BOLT SET IN LARGE BOLLARD
BM 1-1989			+3.462 m		BOLT SET IN CONCRETE DECK

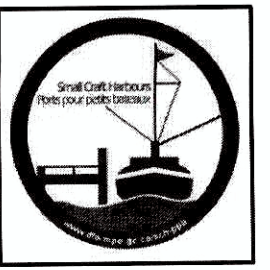
ALL SOUNDINGS & ELEVATIONS IN METRES.  
 ALL SOUNDINGS & ELEVATIONS REFERRED TO BM 1-1989 ELEV. 3.462 m (BOLT SET IN CONCRETE DECK ESTABLISHED BY WATER LEVEL TRANSFER FROM SWAGE COW USNA-PHS BM 3-89 (ELEV. 1.253) ON AUGUST-02-1989).  
 SOUNDINGS TAKEN USING NAUTICUS 2110 ECHO SOUNDER AND POSITIONING TRIMBLE DIFFERENTIAL GPS POSITIONING SYSTEM ON AUGUST 20, 2016 BY PHS SURVEY CREW.  
 COORDINATES FOR HORIZONTAL CONTROL ARE OVEN ON THE UTM MAPPING PLANE ZONE 21, USING THE NORTH AMERICAN DATUM OF 1983 (NAD83).  
 SOUNDINGS WERE REDUCED BY DOUTFACE & RE-CHECKED FROM SOUNDING CHARTS BEFORE BEING CORRECTED FOR TIDE & BAR CHECK CORRECTION.  
 SOUNDINGS WERE REDUCED USING HYPACK MAX VER. 2013.7.  
 SPEED OF SOUND WAS OBTAINED USING A SOUNDING BAR GRADUATED IN 1m INTERVALS.  
 ALL FIELD NOTES ARE IN SANDY COVE BOOK #106.

---

B	ISSUED FOR TENDER	5/27/17
A	ISSUED FOR 33% REVIEW	5/1/17
revisions		date
project		project
<b>BASIN MAINTENANCE DREDGING SANDY COVE, NL</b>		
drawing		design
<b>SOUNDING AND TOPOGRAPHIC SURVEY</b>		
designed	N.H.	concu
date	MAY 27, 2017	
drawn	P.H.	design
date	MAY 27, 2017	
approved		approve
Tender	<i>Paul Curran</i>	Submission
DFO Project Manager		
project number		no. du projet
		<b>722063</b>
drawing no.		no. du dessin
		<b>C1</b>



SMALL CRAFT HARBOURS



- NOTES:
1. ALL ELEVATIONS ARE IN METRES UNLESS OTHERWISE NOTED.
  2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

PROVINCE OF NEWFOUNDLAND  
PERMIT HOLDER  
This Permit Allows  
APN ENGINEERING INC.

To practice Professional Engineering in Newfoundland and Labrador.  
Permit No. as issued by APENRNL\_00282  
which is valid for the year 2017.

STAMP

PROFESSIONAL ENGINEER  
NEIL C. HUNT  
NEWFOUNDLAND & LABRADOR  
DATE 08/08/17

B	ISSUED FOR TENDER	5/27/17
A	ISSUED FOR 33% REVIEW	5/1/17
revisions		date
project		project

BASIN MAINTENANCE  
DREDGING  
SANDY COVE, NL

DREDGE SITE PLAN

designed N.H.	concu
date MAY 27, 2017	
drawn P.H.	dessine
date MAY 27, 2017	
approved	approuve
Tender <i>Paul Hunt</i>	Source/mission
DFD Project Manager	no. du projet
project number	722063
drawing no.	no. du dessin
	C2

- LEGEND
- SYMBOLS**
- ASQUACULTURE
  - ANCHOR BLOCK
  - BOLARD
  - BURDLE
  - BOUNDARY MARKER
  - CARD POSITION BODY
  - CATCH BASIN
  - CLEAT
  - COUVERT
  - DERRICK
  - DISHPAL
  - DREDGE CONTROL
  - ELECTRICAL OUTLET
  - FIRE HYDRANT
  - FRESH AIR
  - FISH HANDLING EQUIP.
  - FUEL TANK
  - H PILE
  - HORIZONTAL CONTROL
  - ICE PLANT
  - INLET PIPE
  - JOB GRAVE
  - LADDER
  - LEVEE BOND
  - LIGHT STANDING
  - MARBLE
  - MOUND
  - NAVIGATION LIGHT
  - OBSERVED BRADY
  - OBSERVED SWAY BRADY
  - PIPE PILE
  - RAVINE LIGHT
  - SAFETY POST
  - SOUND OUTFLOW PIPE
  - TELEPHONE
  - TELEPHONE POLE
  - WATER GATE/STAMP
  - UTILITY POLE
  - VERTICAL CONTROL
  - WATER IN/OUTLET
  - WATER WELL
  - WOOD PILE
- LINE TYPE**
- ARMOUR STONE
  - CL BUILDING
  - DRINK PIPE
  - EDGE ROAD / SHOULDER
  - FENCE LINE
  - FLOODING WATERMARK
  - GRAVE PILE
  - HIGH WATER MARK
  - LOW WATER MARK
  - PROPOSED BOUNDARY
  - RAVINE LIGHT EXTENSION
  - RETAINING WALL
  - SETUP
  - TOE OF BANK
  - TREE LINE
  - UNDERGROUND CABLE

NOTES

SURVEY PARTY CHIEF EDDIE BEARNS  
SURVEY VESSEL ALUMINUM BOAT  
SURVEY DATE(S) AUGUST 20, 2016

SOUNDING TYPE SINGLE TRANSDUCER  
SOUNDING SETTING MIN/MAX 1500 m/30  
DEPTH DATE USED N/A  
POSITIONING SYSTEM USED DGPS (WITH RTK)  
LAND SURVEY POSITION BY DGPS (WITH OTF)  
DATA TYPE/DIGITIZED OLD DRAWING FILED

TOTAL REDUCTION SCHEME

OFFICE PROCESSOR EDDIE BEARNS  
DATE OF PROCESSING SEPTEMBER 2016

MODE OF PLOTTING LEAST OF MINIMUM DEPTHS  
MATRIX CELL WIDTH X LENGTH  
REDUCTION OF MATRIX CELLS

CONTROL POINTS:

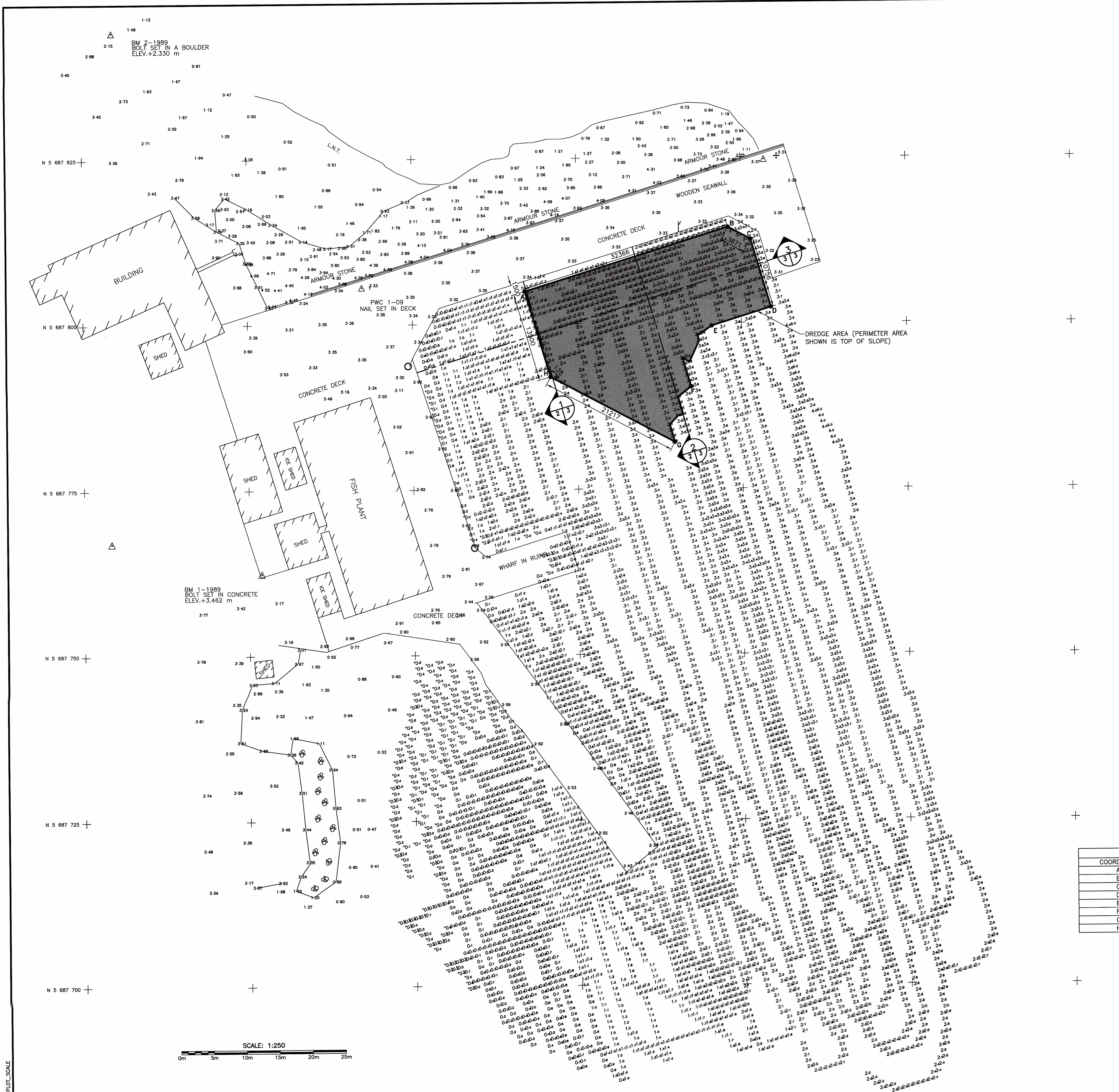
PL NAME	EASTING	NORTHING	CD ELEV	DESCRIPTION
BS04088	523242.849	5688028.848	3.81	PROVINCIAL BRASS PLAGUE IN ROCK
BS04089	523242.851	5688028.851	3.81	PROVINCIAL BRASS PLAGUE IN ROCK
PWC 1-00	522442.338	5688030.520		NAIL SET IN CONCRETE DECK
PWC 2-00	522442.338	5688030.520		NAIL SET IN CONCRETE DECK
BM 2-1889	522441.109	5688069.130	+2.330 m	BOLT SET IN LARGE BOLLARD
BM 1-1889			+3.462 m	BOLT SET IN CONCRETE DECK

ALL SOUNDINGS & ELEVATIONS IN METRES.  
ALL SOUNDINGS & ELEVATIONS REFERRED TO BM 1-1889 ELEV.+3.462 m (BOLT SET IN CONCRETE DECK ESTABLISHED BY WATER LEVEL TRANSFER FROM SAWAGE COVE USING CAS BM 3-89 (ELEV.+1.253) ON AUGUST-02,1989).  
SOUNDINGS TAKEN USING MASSONNO 341 EQUID SOUNDINGS AND POSTERIOR BY TRIMBLE DIFFERENTIAL GPS POSITIONING SYSTEM ON AUGUST 20,2016 BY PASCAL SURVEY CORP.  
COORDINATES FOR HORIZONTAL CONTROL ARE GIVEN ON THE UTM MAPPING PLANE, ZONE 21, USING THE NORTH AMERICAN DATUM OF 1983(NAD83).  
SOUNDINGS WERE REDUCED BY DISTANCE & RE-CHECKED FOR SOUNDING CHARTS BEFORE BEING CORRECTED FOR TIDE & BAR CHECK CORRECTION.  
SOUNDINGS WERE REDUCED USING HYPACK MAX VER. 2013\*.  
SOUNDING OF SOUND WAS OBTAINED USING A SOUNDING BAR GRADUATED IN 1m INTERVALS.  
ALL FIELD NOTES ARE IN SANDY COVE BOOK #106.

GPS COORDINATES FOR DREDGE LAYOUT

COORDINATE	EASTING	NORTHING
A	522467.1039	5688029.9118
B	522498.0324	5688039.4504
C	522501.4491	5688037.6317
D	522504.4998	5688027.3176
E	522495.4470	5688024.5256
F	522492.2612	5688015.3683
G	522489.6911	5688007.0505
H	522470.9332	5688016.9654

- LEGEND:
- INDICATES DREDGE AREA
  - INDICATES GPS COORDINATE





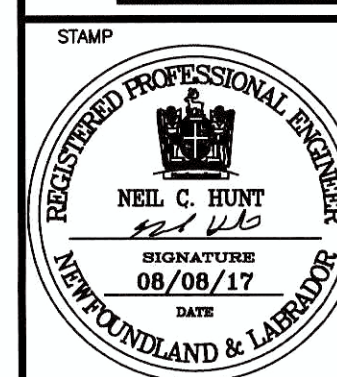
SMALL CRAFT HARBOURS



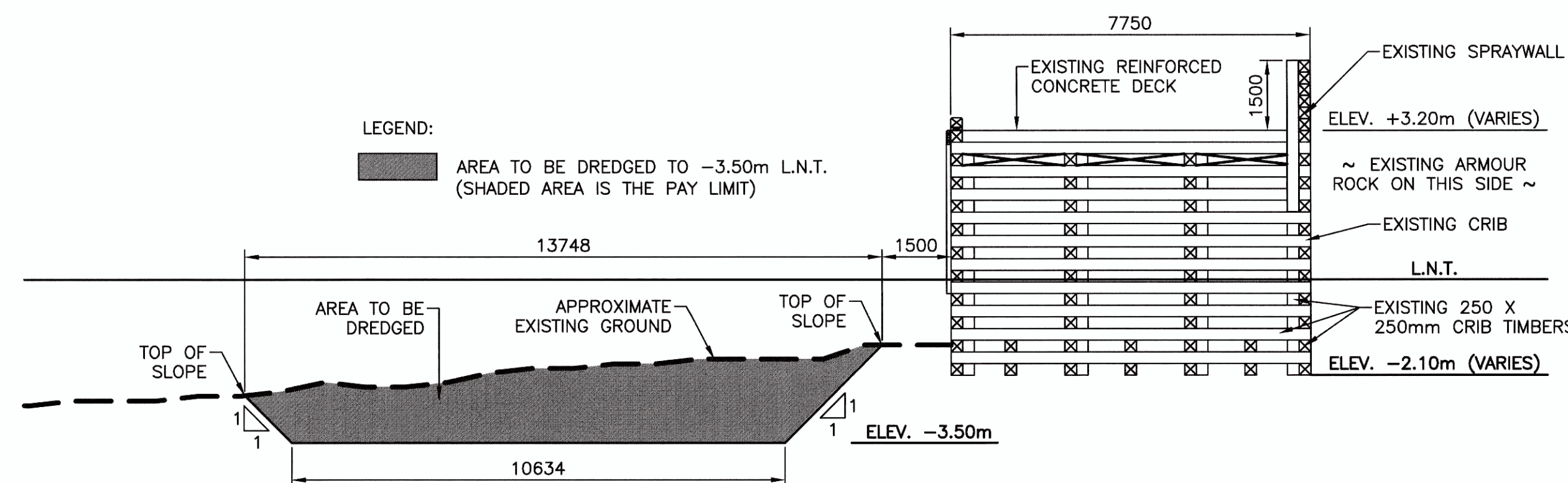
NOTES:

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2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

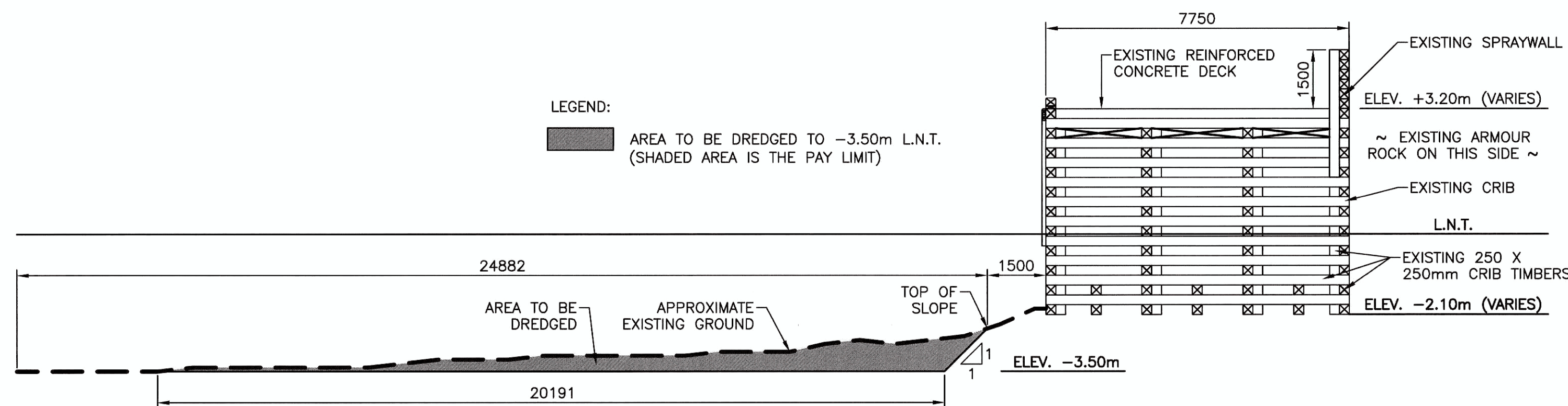
PROVINCE OF NEWFOUNDLAND  
**PERMIT HOLDER**  
 This Permit Allows  
 APN ENGINEERING INC.  
 To practice Professional Engineering in Newfoundland and Labrador.  
 Permit No. as issued by APBONL F0882.  
 which is valid for the year 2017.



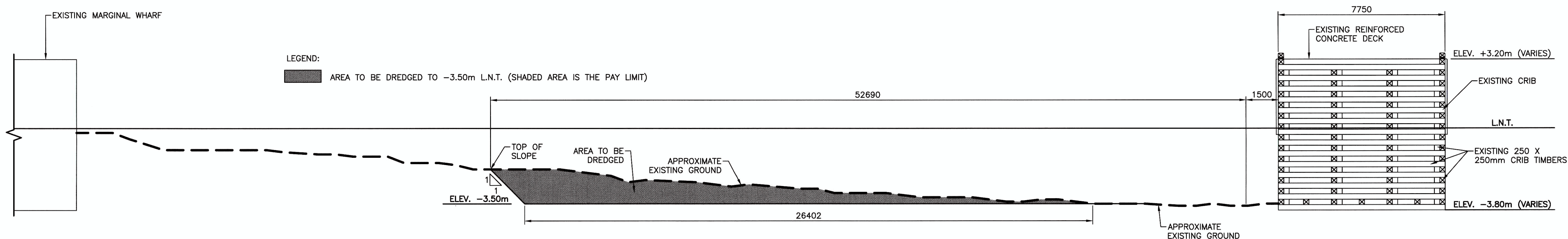
GENERAL NOTE:  
 1. NO DREDGING FROM EXISTING WHARF.



SECTION 1  
 SCALE : 1:100



SECTION 2  
 SCALE : 1:100



SECTION 3  
 SCALE : 1:100

B	ISSUED FOR TENDER	5/27/17
A	ISSUED FOR 33% REVIEW	5/1/17
revisions		date
project		project

**BASIN MAINTENANCE DREDGING**  
**SANDY COVE, NL**

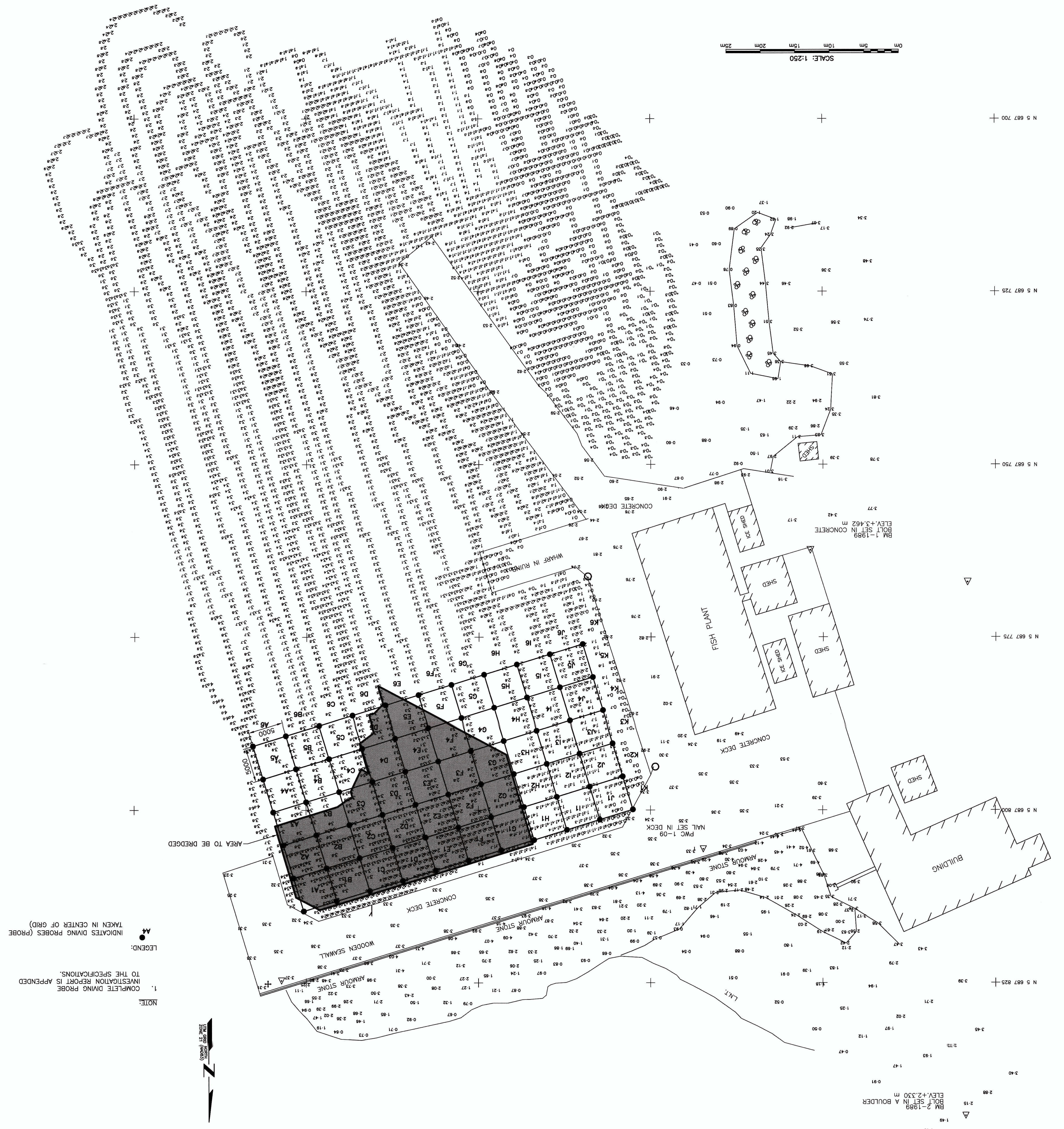
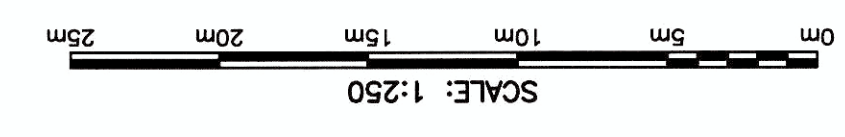
drawing design  
**SECTIONS**

designed N.H. concu  
 date MAY 27, 2017  
 drawn P.H. deslin  
 date MAY 27, 2017  
 approved approve

Tender Paul Curran Soumission  
 DFO Project Manager  
 project number 722063 no. du projet

drawing no. C3 no. du dessin





NOTE:  
 1. COMPLETE DIVING PROBE INVESTIGATION REPORT IS APPENDED TO THE SPECIFICATIONS.  
 2. INDICATES DIVING PROBES (PROBE TAKEN IN CENTER OF GRID) AREA TO BE REDDED.

LOCATION #	DEPTH OF PENETRATION	OVERBURDEN TYPE
A1	1M+	SAND, KELP AND SMALL BEACH ROCK
A2	300mm	SAND, KELP AND SMALL BEACH ROCK
A3	500mm	SAND, KELP AND SMALL BEACH ROCK
A4	500mm	SAND, KELP AND SMALL BEACH ROCK
A5	500mm	SAND, KELP AND SMALL BEACH ROCK
A6	1M+	SAND, KELP AND SMALL BEACH ROCK
B1	1M+	SAND, KELP AND SMALL BEACH ROCK
B2	600mm	SAND, KELP AND SMALL BEACH ROCK
B3	900mm	SAND, KELP AND SMALL BEACH ROCK
B4	300mm	SAND, KELP AND SMALL BEACH ROCK
B5	500mm	SAND, KELP AND SMALL BEACH ROCK
B6	1M+	SAND, KELP AND SMALL BEACH ROCK
C1	1M+	SAND, KELP AND SMALL BEACH ROCK
C2	600mm	SAND, KELP AND SMALL BEACH ROCK
C3	100mm	SAND, KELP AND SMALL BEACH ROCK
C4	400mm	SAND, KELP AND SMALL BEACH ROCK
C5	700mm	SAND, KELP AND SMALL BEACH ROCK
C6	1M+	SAND, KELP AND SMALL BEACH ROCK
D1	1M+	SAND, KELP AND SMALL BEACH ROCK
D2	200mm	SAND, KELP AND SMALL BEACH ROCK
D3	400mm	SAND, KELP AND SMALL BEACH ROCK
D4	550mm	SAND, KELP AND SMALL BEACH ROCK
D5	700mm	SAND, KELP AND SMALL BEACH ROCK
D6	1M+	SAND, KELP AND SMALL BEACH ROCK
E1	700mm	SAND, KELP AND SMALL BEACH ROCK
E2	300mm	SAND, KELP AND SMALL BEACH ROCK
E3	200mm	SAND, KELP AND SMALL BEACH ROCK
E4	100mm	SAND, KELP AND DENSELY SPREAD ROCKS
E5	100mm	SAND, KELP AND 400-800mm ROCK
E6	600mm	SAND, KELP AND 400-800mm ROCK
F1	200mm	SAND, KELP AND SMALL BEACH ROCK
F2	300mm	SAND, KELP AND SMALL BEACH ROCK
F3	0mm	SAND, KELP AND DENSELY SPREAD ROCKS
F4	0mm	SAND, KELP AND DENSELY SPREAD ROCKS
F5	100mm	SAND, KELP AND DENSELY SPREAD ROCKS
F6	800mm	SAND AND KELP
G1	100mm	SAND, SMALL AMOUNTS OF SEAWED AND 400-600mm ROCK
G2	200mm	SAND, SMALL AMOUNTS OF SEAWED AND 400-600mm ROCK
G3	100mm	SAND, SMALL AMOUNTS OF SEAWED AND 400-600mm ROCK
G4	100mm	SAND, SMALL AMOUNTS OF SEAWED AND 400-600mm ROCK
G5	300mm	SAND, SMALL AMOUNTS OF SEAWED AND 400-600mm ROCK
G6	500mm	SAND, SMALL AMOUNTS OF SEAWED
H1	0mm	SAND, SMALL AMOUNTS OF SEAWED AND 300-600mm ROCK
H2	0mm	SAND, SMALL AMOUNTS OF SEAWED AND 300-600mm ROCK
H3	100mm	SAND, SMALL AMOUNTS OF SEAWED AND 300-600mm ROCK
H4	300mm	SAND, SMALL AMOUNTS OF SEAWED AND 300-600mm ROCK
H5	500mm	SAND, SMALL AMOUNTS OF SEAWED AND 300-600mm ROCK
H6	600mm	SAND, SMALL AMOUNTS OF SEAWED AND 300-600mm ROCK
I1	0mm	SAND, SMALL AMOUNTS OF SEAWED AND 300-600mm ROCK
I2	0mm	SAND, SMALL AMOUNTS OF SEAWED AND 300-600mm ROCK
I3	0mm	SAND, SMALL AMOUNTS OF SEAWED AND 300-600mm ROCK
I4	100mm	SAND, SMALL AMOUNTS OF SEAWED AND 300-600mm ROCK
I5	150mm	SAND, SMALL AMOUNTS OF SEAWED AND 300-600mm ROCK
I6	500mm	SAND, SMALL AMOUNTS OF SEAWED AND 300-600mm ROCK
J1	0mm	SAND, SMALL AMOUNTS OF SEAWED AND 300-600mm ROCK
J2	100mm	SAND, SMALL AMOUNTS OF SEAWED AND 300-600mm ROCK
J3	100mm	SAND, SMALL AMOUNTS OF SEAWED AND 300-600mm ROCK
J4	100mm	SAND, SMALL AMOUNTS OF SEAWED AND 300-600mm ROCK
J5	200mm	SAND, SMALL AMOUNTS OF SEAWED AND 300-600mm ROCK
J6	200mm	SAND, SMALL AMOUNTS OF SEAWED AND 300-600mm ROCK
K1	0mm	SAND, SMALL AMOUNTS OF SEAWED AND 300-600mm ROCK
K2	0mm	SAND, SMALL AMOUNTS OF SEAWED AND 300-600mm ROCK
K3	100mm	SAND, SMALL AMOUNTS OF SEAWED AND 300-600mm ROCK
K4	0mm	SAND, SMALL AMOUNTS OF SEAWED AND 300-600mm ROCK
K5	100mm	SAND, SMALL AMOUNTS OF SEAWED AND 300-600mm ROCK
K6	300mm	SAND, SMALL AMOUNTS OF SEAWED AND 300-600mm ROCK

**SMALL CRAFT HARBOURS**

Province of Newfoundland  
 PERMIT HOLDER  
 This Permit Allows  
 to practice Professional Engineering  
 in Newfoundland and Labrador, 2022  
 until the end of the year 2022.  
 REGISTRATION BOARD  
 NEWFOUNDLAND & LABRADOR  
 PROFESSIONAL ENGINEERS  
 REGISTRATION BOARD

AM ENGINEERING INC.  
 1100 WATERLOO STREET  
 ST. JOHN'S, NL A1B 4X6

ISSUED FOR TENDER 5/27/17  
 ISSUED FOR 33% REVIEW 5/1/17

DESIGNED BY: N.H.  
 DATE: MAY 27, 2017

DRAWN BY: P.H.  
 DATE: MAY 27, 2017

APPROVED BY: [Signature]  
 DATE: MAY 27, 2017

Project: BASIN MAINTENANCE SANDY COVE, NL  
 Drawing: DIVING PROBES

Project number: 722063  
 no. du projet: 722063

no. du dessin: C4

1. ALL ELEVATIONS ARE IN METRES, UNLESS OTHERWISE NOTED.  
 2. ALL DIMENSIONS ARE IN MILLIMETRES, UNLESS OTHERWISE NOTED.