CITY OF PORT MOODY

TEMPORARY USE PERMIT NO. TUP00024

ISSUED BY: CITY OF PORT MOODY
A municipal corporation pursuant to the *Community Charter*, S.B.C. 2003, c26 with offices at 100 Newport Drive, Port Moody, BC V3H 5C3
(the "City")

TO: 1443120 B.C. LTD.
3201 - 1111 ALBERNI STREET
VANCOUVER, BC
V6E 4V2
(the "Applicant")

WHEREAS:

A. City of Port Moody, Official Community Plan Bylaw, 2014, No. 2955 includes a provision whereby Council may consider temporary commercial and industrial use permit applications; and

B. The Applicant has submitted an application for a temporary use permit to allow for a temporary commercial daycare centre for up to 36 children at 2901 St. Johns Street on the property described as:

LOT 14 BLOCK 20 DISTRICT LOT 201 GROUP 1 NEW WESTMINSTER DISTRICT PLAN 72

PID: 011-452-609

NOW THEREFORE, the Council for the City hereby issues a Temporary Use Permit in respect of the lands, as follows:

1. This Temporary Use Permit is issued subject to all requirements contained in the City's Bylaws, except where specifically supplemented by this Temporary Use Permit.

2. The Applicant shall comply with all Permits applicable to the Lands, and with all applicable building regulations.

3. Whenever the singular or masculine is used in this Permit, the same shall be deemed to include the plural, or the feminine, or the body politic, or corporate as the context so requires, and every reference to each party shall be deemed to include the heirs, executors, administrators, successors, and assigns of such party whenever the context or the parties so require.

4. The following Zoning Bylaw regulations are varied under section 490(1)(a) of the *Local Government Act*:

   a.) section 6.3.1, by reducing the parking from nine to four spaces;

   b.) section 6.11.2, by exempting the requirement for an energized outlet that charges electric vehicles; and

   c.) section 10.1, by reducing the front lot line setbacks from 6m to 3.45m.

5. The Applicant has agreed to comply with the following conditions of Temporary Use Permit TUP00024 (2901 St. Johns Street):

   (a) The temporary use allowed includes a temporary commercial daycare centre.

   (b) The uses shall generally be in accordance with the architectural and landscape plans in Schedule A, attached to and forming part of this permit.

   (c) The uses shall be in accordance with the geotechnical report that addresses the hazardous lands for soil liquefaction in Schedule B, attached to and form part of this permit.

   (d) A tree protection covenant shall be registered on title prior to the issuance of a building permit for the temporary use.

   (e) All required engineering plans relating to this application shall be prepared in compliance with the requirements of the City of Port Moody Subdivision and Development Servicing Bylaw (SDSB) 2010, No. 2831, and applicable Engineering Standards and must be signed and sealed by a Professional Engineer, certifying that all of the proposed works comply with the City's standards.

   (f) The property should be regularly maintained during the period of the permit.

   (g) Prior to the time of expiration of the Temporary Use Permit, the Applicant

will undertake to either apply for an extension to the permit, or remove the temporary use.

(h) Prior to the start of the temporary use, a security of $5,000 must be submitted to the City for removal of the temporary use, and a landscape security in the amount of $6,610.

(i) The expiry date of this permit is three years from issuance.

AUTHORIZED BY COUNCIL RESOLUTION _____.

CITY OF PORT MOODY, by its authorized signatories:

_____ _____

M. Lahti, Mayor S. Lam, City Clerk

Schedule A

TEMPORARY CHILD CARE

2901 St. Johns Street, Port Moody, B.C.

Consultants

Client
1446649 B.C.LTD
Acompramo Early Learning centre Inc.
928 Beatty St, Vancouver, BC.
Contact: Leila Fahimi Safa
Email: ali@acornedu.ca
Tel: 778-980-1112

Architect
Ankenman Marchand Architects
1645 West 5th Avenue
Vancouver, BC V6J 1N5
Contact: Stefan Larose
Email: stefan@amarchitects.com
Tel: 604-872-2595

Structural
Canstruct Engineering Group
Suite 201-14439 104th Avenue
Surrey, BC, V3R 1M1
Contact: Martin Waibel
Email:mcwaibel@telus.net
Tel: 604-307-3009

Landscape
SSLA Susie Sziklai Landscape Architect
2263 West 14th Avenue
Vancouver, BC, V6K 2V9
Contact: Suzie Sziklai
Email: suzieSLArch@gmail.com
Tel: 604-970-9894

Civil
Civil Teck Engineering
336 West Keith Road
North Vancouver, BC, V7M 1M1
Contact: Kazem Eskoch
Email:kaz@civilteck.ca
Tel: 604-985-3216

Surveyor
Papove Professional Land Surveying Inc.
202 - 1120 Westwood Street
Coquitlam, BC, V3B 7K8
Contact: Bill Papove
Email: landsurveyors@telus.net
Tel: 604-464-5199

Modular
CIP Modular
1868 Fielding Road
Nanaimo, BC, V9X 1T5
Contact: Bailey Callihoo
Email: bailey@cipmodular.ca
Tel: 205-753-8550

Arborist
Mike Fadum and Associates Ltd.
#105, 8277 -129 Street
Surrey, BC
Contact: Mike Fadum
Email: office@fadum.ca
Tel: 778-593-0300

Mechanical
Rocky Point Engineering LTD.
301-17 Church Street
Nanaimo, BC, V9R 5H5
Contact: Aaron Mullaley
Email: aaron.mullaley@rpeng.ca
Tel: 250-585-0222

Geotech
Geo Pacific
2nd Floor 3351 Douglas Street
Victoria , BC, V8Z 3L4
Contact: Wyatt Johnson
Email: wjohnson@geopacific.ca
Tel: 205-753-8550

Electrical
Opal Engineering
1523 Derby Road
Victoria, BC, V8P 1T6
Contact: Kevin Zirul
Email: kevin@opaleng.com
Tel: 640-507-8521

Drawing List

SHEET NUMBER	SHEET NAME
A001	COVER PAGE & DRAWING LIST
A003	GENERAL NOTES
A004	GENERAL NOTES
A010	CONSTRUCTION ASSEMBLIES
A020	DOOR AND WINDOW SCHEDULE
A100	SITE PLAN (Ground)
A101	FLOOR PLAN
A110	ROOF PLAN
A200	ELEVATIONS
A201	ELEVATIONS
A500	DETAILS
A501	DETAILS
A600	3D REPRESENTATIONS
A601	3D REPRESENTATIONS

Grand total: 14

Submission/Permitting History

Issued for Temporary Use Permit (TUP)	2024-02-22
Re-Issued for TUP	2024-06-12

Building Code Summary

Project Name	Temporary Child Care (Acorn Early Education)
Civic Address	2901 St Johns Street, Port Moody
Applicable Building Code	British Columbia Building Code 2024
Part 3 or Part 9	Part 3
Major Occupancy	Group A, Division 2 - Daycare Facilities for Children (3.1.2.8.)
Building Size and Construction Relative to Occupancy	Group A, Division 2, up to 2 Storeys (3.2.2.25.)
Building Area (metric units)	268 m2
Building Grade (metric units)	20.73 m
Number of Storeys	1 (no storeys below ground level)
Number of Streets Facing	2 (corner site)
Sprinkler System	Not required (3.3.2.18.)
Fire Alarm	Not required (3.3.2.18.)
Permitted Construction	Combustible construction
Roof Assembly	Fire-resistance rating waived if roof system is constructed with a fire-retardant-treated wood roof system
Wall Assembly of Loadbearing Exterior Walls	Fire-resistance rating not less than that required for supported assembly. No fire resistance rating required.
Spatial Separation	Per 3.2.3.1.(4) Refer to depiction and calculation on the spatial separation elevation pages. No limitations for facades facing streets.
Smoke Alarm	Smoke alarms to comply with 3.2.4.20.

Statistics

LEGAL DESCRIPTION:
Lot 14, Block 20, District Lot 201, Group 1, New Westminster District, Plan 72

CIVIC ADDRESS:
2901 St. Johns Street, Port Moody, B.C.

ZONING:
Current: RS-1

PROPOSED USE:
Temporary Use - Childcare Facility

SURVEY INFORMATION:
Based on survey information by Papove Professional Land Surveying Inc.,
202-1120 Westwood Street, Coquitlam, BC, V3B 7K8
Telephone: 604-464-5199
File Number: 8076
Dated: January 3, 2024

Development Data Summary

SITE AREA: 809.37 m² (8,713 FT²)

BUILDING FOOTPRINT: 268.4 m² (2,889 FT²)

PERMITTED FSR:
Per RS-1 = 0.5 — 809.37 m² / 0.5 = 404.68 m² ; 8,713 FT² / 0.5 = 4,356 FT²

PROPOSED FSR:
Proposed = 0.33 — 268.4 m² / 809.37 m² = 0.33

Permitted Site Coverage:
Per RS-1 = 40% — 809.37 m² X 0.40 = 323.75 m²
Proposed Site Coverage:
Proposed = 33% — 268.4 m² / 809.37 m² = 0.33

HEIGHT:

Permitted Height:
Per RS-1, FLAT ROOF — 9.0 M (29' 6")

Proposed Height:
Proposed per RS-1 — 4.3 m (14'-0") - AVERAGE GRADE = 20.1m TOP OF ROOF = 24.4m

SETBACKS:

Required per RS-1:

Front lot line	min.	6.0m
Rear lot line	min.	7.5m
Side lot line	min.	1.5m
Flanking lot line	min.	3.0m

Proposed per RS-1:

Front lot line-	St. Johns Street	3.45m
Rear lot line-	Lane	18.4m
Side lot line-		1.89m
Flanking lot line	Hugh Street	3.50m

BICYCLE PARKING:

SHORT TERM BICYCLE STALLS REQUIRED: N/A

SHORT TERM BICYCLE STALLS PROPOSED: 3 SPACES

PARKING:

PARKING REQUIRED:
Per 6.3.1 of the zoning bylaw:

SPACES REQUIRED:
3 spaces per 93m² of floor area: 270.5m² / 93m² = 2.91 = 3 spaces x 3 = 9

PARKING PROPOSED:
Anticipated staff = 6
Anticipated # of children = 36

Standard parking spaces:	4 stalls
Disability parking spaces:	1 stalls
Total spaces provided:	**5 stalls**

SPACIAL SEPARATION:

	LIMITING DISTANCE:	AREA EXPOSING BUILDING FACE	% OPENING ALLOWED:
NORTH:			
SOUTH:			
EAST:			
WEST:			

Area Tables

Indoor Child Area	3.7		m	m	m2			
Indoor Area	**Current Name**	**Rename**	**length**	**width**	**area**	**Child Ratio**	**# Child / Group**	**Total Child**
Group Daycare	Big Common Room	Group Daycare Room	10.63	7.32	77.81	21.0	21.0	21.0
Group Daycare	OFFICE	Group Daycare Art Studio	3.31	4.04	13.37	3.6	**21.6**	24.6
Group Daycare	Storage	Storage	1.53	1.95	2.98	N/A		24.6
Group Daycare	Mech	Mech	3.31	2.08	6.88	N/A		24.6
Infant Toddler	Common Room	IT Common Room	6.00	6.74	40.04	11.0	11.0	36.6
Infant Toddler	Nap Room	IT Nap Room	3.31	3.86	12.78	3.5	**15.3**	40.0
Infant Toddler	Storage	Storage	1.83	2.77	5.07	N/A		40.0
Common Area	Laundry	Laundry	1.61	1.95	3.14	N/A		40.0
Common Area	Staff Room	Staff Room	3.32	3.55	11.79	N/A		40.0
Common Area	Kitchen	Kitchen	3.27	3.98	13.01	N/A		40.0
Common Area	Washroom	Washroom (incl. Mech)	3.27	3.98	13.01	N/A		40.0
Common Area	Hall	Hall	3.33	6.24	14.59	N/A		40.0
Common Area	Universal Washroom	Universal Washroom	3.32	1.64	5.44	N/A		40.0
Common Area	Office	Office	3.33	4.17	13.89	N/A		40.0
Totals					237.71	m2		40.0
					2558.68	sf		

Oudoor Child Area	6		s	m2			
Outdoor Play Area	**Current Name**	**Rename**	**total area**	**Total Area**	**Child Ratio**	**# Child / Group**	**Total Child**
Group Daycare	Covered Area	Group Daycare Playground	1734.50	161.14	26.9		

ARCHITECTS
ANKENMAN MARCHAND
1645 West 5th Avenue
Vancouver, BC V6J 1N5
Tel: (604) 872-2595 Fax: (604) 872-2505
Email: office@AMarchitects.com

Project:
2408
-
Temporary Child Care
2901 St. Johns Street

Drawing:
COVER PAGE & DRAWING LIST

Project Status:
BP

SUBMISSION

Date (YYYY-MM-DD)	Description
2024-06-12	Issued for TUP

REVISION

No.	Date	Description

Scale:

DWG. NO:
A001

Plot Date: 2024-06-12 Wed 12:56:56 PM
C:\Users\MICHELANGELO\Documents\2408_01_MAIN_R23_CF_BP_2901 St Johns Street_slarose.rvt

1.0-DIMENSIONS AND VERIFICATION:

1. ALL DIMENSIONS ARE FROM EXTERIOR FACE OF SHEATHING TO CENTRE OF PARTY WALL AND / OR FACE OF CONCRETE OR CONCRETE BLOCK AS INDICATED. INTERIOR PARTITIONS ARE DIMENSIONED TO FACE OF STUD AND OPENINGS ARE DIMENSIONED TO THE CENTRE LINE.

2. DO NOT SCALE DRAWINGS. DIMENSIONS TAKE PRECEDENCE OVER SCALED DRAWINGS. THE CONTRACTOR SHALL CHECK DIMENSIONS AND CONDITIONS ON SITE. VERIFY ALL PROPERTY LINE BEARINGS AND DIMENSIONS WITH LEGAL SURVEY AND NOTIFY THE ARCHITECT OF ANY DISCREPANCY OR MISSING AND CONFLICTING DIMENSIONS FOR CLARIFICATION.

3. VERIFY SUBSTRATES AND OTHER CONDITIONS REQUIRED FOR INSTALLATIONS. REPORT UNACCEPTABLE CONDITIONS TO THE ARCHITECT BEFORE STARTING WORK.COMMENCEMENT OF WORK MEANS ACCEPTANCE OF SUBSTRATE CONDITIONS.

4. READ ALL REPORTS, DRAWINGS AND SPECIFICATIONS INCLUDING BUT NOT LIMITED TO GEOTECHNICAL, ARCHITECTURAL, INTERIORS, LANDSCAPE, CIVIL, STRUCTURAL, ENVELOPE CONSULTANT, SURVEYOR, CODE CONSULTANT, TRAFFIC ENGINEER, ACOUSTICAL CONSULTANT, RADON CONSULTANT, SPRINKLER CONSULTANT, MECHANICAL CONSULTANT AND ELECTRICAL CONSULTANT AS ONE INTEGRATED SET IN CONJUNCTION WITH EACH OTHER. REPORT CONFLICTING INFORMATION TO THE ARCHITECT.

2.0-PROJECT DISCRIPTION AND REQUIREMENTS:

1 **THE CURRENT BCBC 2024:** ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE BRITISH COLUMBIA BUILDING CODE (BCBC) - 2024 AND TO THE REQUIREMENTS AND ORDINANCE OF THE LOCAL AUTHORITIES HAVING JURISDICTION (LAHJ). THE WORK SHALL CONFORM TO LOCAL BYLAW AND DEVELOPMENT PERMIT REQUIREMENTS. ALSO REFER TO AND CONFORM TO THE REQUIREMENTS OF THE BUILDING CODE REPORT PREPARED BY THE CODE CONSULTANT. ALSO CONFORM TO PREVAILING OCCUPATIONAL AND SAFETY REGULATIONS PLUS WORK-SAFE-BC (WCB) REGULATIONS.

- PROVIDE DRAWINGS, SCHEDULE INSPECTIONS AND OBTAIN CONSTRUCTION/OTHER PERMITS, AS REQUIRED BY THE AUTHORITIES.
- REFER AND CONFORM TO CODE CONSULTANT'S REPORT OR TO BCBC 2024 CODE ANALYSIS.

3.0-ACCESS FOR REVIEW BY ARCHITECT/CONSULTANTS/LAHJ:

1 ALLOW THE ARCHITECT, OTHER NAMED CONSULTANTS ON THE DRAWINGS AND LAHJ OR THEIR REPRESENTATIVES ACCESS TO THE CONSTRUCTION SITE TO PREPARE REQUIRED LETTER OF ASSURANCES/SCHEDULES, REVIEW SITE FOR CONFORMANCE TO THE DRAWINGS AND OTHER CERTIFICATION/COMPLIANCE REQUIREMENTS.

2 ARRANGE FOR REVIEW/INSPECTIONS BY THE LAHJ OR THEIR REPRESENTATIVES. AND GET CONFIRMATION/APPROVAL OF REVIEW/INSPECTION FROM THE LAHJ.

3 DO NOT CLOSE UP BEFORE THE REQUIRED REVIEW AND APPROVAL BY THE ARCHITECT, CONSULTANTS AND THE LAHJ.

4 WORK SHALL MEET THE APPROVAL OF THE ARCHITECT, CONSULTANTS AND THE LAHJ.

5 WORK SHALL MEET/CONFORM TO THE STANDARDS OF THE GOVERNING TRADE ASSOCIATIONS OF THE PROVINCE OF BRITISH COLUMBIA AND CANADA, WHICHEVER IS MORE STRINGENT.

4.0- GENERAL CONTRACTOR'S (GC) SUBCONTRACTOR'S RESPONSIBILITY:

1 SUBCONTRACTOR SHALL FIELD VERIFY DIMENSIONS AFFECTING HIS TRADE AND REPORT ANY DISCREPANCY TO THE ARCHITECT AND THE GENERAL CONTRATOR.

2 SUBCONTRACTOR SHALL FIELD VERIFY SUB-STRATES AFFECTING THE TRADE'S WORK AND REPORT UNACCEPTABLE CONDITIONS TO THE ARCHITECT AND THE GENERAL CONTRACTOR. (GC)

3 STARTING WORK BY A SUBCONTACTOR MEANS THAT THE SUBCONTRACTOR HAS REVIEWED THE SUB-STRATES AND IT WAS DEEMED ACCEPTABLE TO THE SUBCONTRACTOR. CLAIMS FOR EXTRA COST FOR SUB-STRATE CONDITIONS WILL NOT BE ACCEPTED.

4 SUBCONTRACTOR IS RESPONSIBLE FOR SITE SAFETY FOR THE TRADES AND TO MEET THE REQUIREMENTS OF THE WORKER'S COMPENSATION BOARD (WCB). THE GENERAL CONTRACTOR (GC) SHALL BE RESPONSIBLE FOR THE GENERAL SAFETY OF THE CONSTRUCTION.

5 SUBCONTRACTOR SHALL ACKNOWLEDGE COMPLIANCE OF CONDITIONS BY SIGNING A LETTER STATING THEY WOULD MEET THE CONDITIONS STATED HEREIN. THIS LETTER SHALL ACCOMPANY THEIR QUOTATIONS.

6 THE GC SHALL RECORD INSPECTIONS, KEEP THE INSPECTION SLIPS AND PROVIDE THE ARCHITECT WITH A COPY OF THE INSPECTION CERTIFICATES.

7 THE GC SHALL INFORM THE ARCHITECT 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.

8 THE GC SHALL OBTAIN NECESSARY PERMITS AND NOTIFY UTILITY COMPANIES BEFORE INTERRUPTIONS.

9 THE GC SHALL DO NOISE GENERATING WORK OR ARRANGE DELIVERY DURING HOURS AS REQUIRED BY LAHJ ORDINANCES, REQUIREMENTS AND LIMITATIONS.

10 BOTH THE GC AND SUBCONTRACTOR SHALL PROTECT ADJACENT/SURROUNDING SURFACES/ITEMS AND AREAS LEADING TO THE SITE, INCLUDING BUT NOT LIMITED TO BUILDINGS, PAVEMENTS, POLES, HYDRANTS, TREES AND OTHER CULTIVATED AREAS FROM DAMAGE. RESTORE AND MAKE GOOD ANY DAMAGED SURFACES/ITEMS TO ORIGINAL CONDITION OR COMPENSATE THE OWNER FOR THE COST. THE ARCHITECT'S DECISION WILL BE FINAL AND BINDING.

11 THROUGHOUT THE DURATION OF THE WORK THE GC SHALL PROVIDE, MAINTAIN AND KEEP IN ACCEPTABLE CONDITION ALL SANITARY FACILITIES FOR THE USE OF PERSONNEL WORKING ON THE SITE.

12 THE GC SHALL BE RESPONSIBLE FOR PROVIDING OVERALL SECURITY AND PAY FOR PERIMETER FENCING AND SECURITY PERSONNEL. THE SUBCONTRACTOR SHALL COORDINATE WITH THE GC AND ENSURE THE SECURITY OF THEIR OWN EQUIPMENT AND MATERIALS. THE GC WILL INDEMNIFY THE OWNER, ARCHITECT AND CONSULTANTS FROM THEFT, BURGLARY OR ANY DAMAGE TO EQUIPMENT.

5.0-DAMPPROOFING AND WATERPROOFING:

1 USE THE LATEST EDITION OF CODES AND STANDARDS IN EFFECT AT THE TIME OF APPLICATION FOR BUILDING PERMIT.

2 UNDER CONCRETE FLOOR SLAB ON GRADE, PROVIDE MINIMUM 10 MIL POLY VAPOUR BARRIERS OF APPROVED QUALITY. [Not Applicable]

3 REFER TO GEOTECHNICAL ENGINEER'S SOIL REPORT, ARCHITECTURAL DRAWINGS, BUILDING ENVELOPE DETAILS, MECHANICAL DRAWINGS, SPECIFICATIONS AND INSTALL DRAINAGE STRUCTURE AS INDICATED AND AS REQUIRED.

4 SLOPE ALL EXTERIOR PAVED AREAS (A MINIMUM 2% AND MAXIMUM 5%) AWAY FROM THE BUILDING OR AS NOTED OTHERWISE.

5 APPLY TWO COATS OF SPRAYED BITUMINOUS DAMPROOFING ON THE EXTERIOR FACE OF THE PERIMETER WALLS BELOW GRADE UNLESS NOTED OTHERWISE ON DRAWINGS AND CONSTRUCTION ASSEMBLIES.

6.0-STAIRS AND RAMPS:

1 BEFORE STARTING WORK ON STAIRS AND RAMPS, VERIFY DIMENSIONS OF STAIRS AND CONFIRM THAT TREADS, RISERS, LANDINGS, RUNS AND CLEARANCES MEET THE REQUIREMENTS OF THE BCBC 2024 AND AS NOTED BELOW. REPORT ANY DISCREPANCY TO THE ARCHITECT FOR CLARIFICATION.

2 STAIRS SHALL CONFORM TO SECTION 3.3.1.14, 3.3.4.7, 3.4.3.2. 8), 3.4.3.3, 3.4.3.4, 3.4.6.1, 3.4.6.2, 3.4.6.3, 3.4.6.4, 3.4.6.5, 3.4.6.6, 3.4.6.7, 3.4.6.8, 3.4.6.9, 3.4.6.11.1), 9.8.2, 9.8.3, 9.8.4, 9.8.5, 9.8.6, 9.8.7, 9.8.9, 9.8.10 OF THE BCBC 2024.

3 NOSING: FOR PUBLICLY ACCESSIBLE STAIRS NOSING SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 9.8.4.8 OF THE BCBC 2024

4 PROVIDE CONTRASTING COLOURS FOR LEADING EDGES OF TREADS AND LANDINGS TO PUBLICLY ACCESSIBLE STAIRS AND RAMPS AS PER SECTION 3.4.6.1 OF BCBC 2024.

5 CONFORM WITH REQUIREMENTS OF BCBC 2024

6 FOR BOTH GUARDRAILS AND HANDRAILS IN ACCORDANCE WITH SECTIONS 3.4.6.5, 3.4.6.6, 9.8.7 AND 9.8.8 OF BCBC 2024.

7 FOR ALL RAILINGS INCLUDING BUT NOT LIMITED TO BALCONY RAILING, GUARDRAILS AND HANDRAILS PROVIDE SHOP DRAWINGS DESIGNED UNDER THE DIRECT SUPERVISION OF AND SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF BRITISH COLUMBIA. THE ENGINEER SHALL PROVIDE CALCULATIONS, SCHEDULES, LETTERS OF ASSURANCES AND OTHER DOCUMENTS REQUIRED BY THE LAHJ TO THE ARCHITECT, INCLUDING BUT NOT LIMITED TO ASSURANCE OF PROFESSIONAL DESIGN AND COMMITMENT TO FIELD REVIEW AND ASSURANCE TO PROFESSIONAL FIELD REVIEW AND COMPLIANCE AS REQUIRED BY THE BCBC 2024.

8 PROVIDE A SLIP RESISTANT SURFACE IN PUBLICLY ACCESSIBLE STAIRS AND EXIT STAIRS IN ACCORDANCE WITH SECTION 3.4.6.1 OF THE BCBC 2024.

9 FOR RAMPS CONFORM TO SECTIONS 3.4.6.7 AND 9.8.5 OF BCBC 2024.

7.0-LOBBY AND EXITS – FLAME SPREAD RATING: [Not Applicable]

1 CONFORM TO BCBC 2024, SECTION 3.1.13.2. FOR FLAME SPREAD RATING OF INTERIOR FINISHES.

8.0- WOOD FRAMING

1. REFER TO STRUCTURAL DRAWINGS FOR WOOD FRAMING AND STRUCTURAL WOOD REQUIREMENTS.

2. SEE "CONSTRUCTION ASSEMBLY DETAILS" FOR ARCHITECTURAL FRAMING REQUIREMENTS.

3. USE PRESSURE TREATED WOOD OR APPLY FOAM SILL GASKETS OF THE SAME WIDTH AS THE WOOD STUDS TO SEPARATE BOTTOM PLATE IN CONTACT WITH CONCRETE. TO SEPARATE OTHER WOOD MEMBERS FROM A CONCRETE SURFACE, APPLY 45 LB WATERPROOFING OR CONTINUOUS POLYETHYLENE GASKET.

4. FOR DOOR AND WINDOW HEAD HEIGHTS AND DIMENSIONS REFER TO DOOR AND WINDOW SCHEDULES AND BUILDING ELEVATIONS.

5. FLOOR JOIST/ENGINEERED JOIST SHOP DRAWINGS SHALL BE STAMPED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF BRITISH COLUMBIA.

6. BEFORE STARTING, FIELD VERIFY DIMENSIONS AND CONFIRM ROUGH OPENING SIZE OF DOORS, WINDOWS, BATHTUB AND SHOWER STALLS. FOR BATHTUBS AND SHOWERS TAKE INTO CONSIDERATION THE THICKNESS OF WATER-RESISTANT BOARD.

7. INSTALL SOLID BLOCKING IN JOISTS AND STUD WALLS BETWEEN SUITES IN ALL FLOOR AND WALL SYSTEMS. IN ALL FLOORS AND ROOVES, INSTALL DOUBLE BLOCKING OVER DEMISING PARTITIONS.

8. PROVIDE BLOCKING FOR WALL AND CEILING MOUNTED FIXTURES INCLUDING BUT NOT RESTRICTED TO HANDRAILS GRAB-BARS AND RAILINGS.

9. USE ONLY APPROVED FASTENERS. EXTERIOR FASTENERS SHALL BE HOT DIPPED GALVANIZED.

9.0-STEEL STUD FRAMING: [Not Applicable]

1 STEEL FRAMING: SHOP DRAWINGS SHALL BE STAMPED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF BRITISH COLUMBIA. INSTALL FLOOR AND CEILING TRACKS AND U – SHAPED DEFLECTION TRACKS WITH WIDTHS TO MATCH STUD SIZES. INSTALL 36 X 38 METAL CHANNEL STIFFENERS MADE FROM 16 GAUGE (1.41 MM) METAL.

2 MINIMUM REQUIREMENTS UNLESS INDICATED OTHERWISE BY STRUCTURAL:
- FURRING CHANNELS: HAT TYPE, 24 GAUGE (0.55 MM) COLD ROLLED GALVANIZED STEEL CHANNELS, 19 MM DEEP WITH 32 MM KNURLED FACE.
- STEEL STUDS: 24 GAUGE (0.55 MM) THICK COLD ROLLED GALVANIZED STEEL WITH KNOCK-OUT SERVICE HOLES AT 460 MM. 32 MM WIDE X 92 MM OR 152 MM DEPTH AS INDICATED.
- STUDS IN TILED AREA FROM 20 GAUGE (0.91 MM) AT 305 MM O.C. THICK METAL WITH KNOCK-OUT SERVICE HOLES AT 460 MM. ON CENTRES.
- PARTITION RUNNERS: 24 GAUGE (0.55 MM) THICK WITH 22 MM FLANGES.
- BRACING CHANNELS: 18 GAUGE (1.2 MM) THICK, 38 MM DEEP X 19 MM WIDE COLD ROLLED GALVANIZED STEEL CHANNELS.

3 EXAMINE WORK BEFORE COMMENCING INSTALLATIONS. ENSURE THAT:
- ALL SERVCES HAVE BEEN INSTALLED., INSPECTED AND APPROVED BY LAHJ.
- WORK BY OTHERS: CONDUITS, PIPES, CABLES AND OUTLETS ARE PLUGGED CAPPED OR COVERED.
- FASTENERS AND SUPPORTS INSTALLED BY OTHERS ARE IN PLACE.
- WORK OF OTHERS DOES NOT TOUCH BACK OF WALL BOARD.

4 TOLERANCES: INSTALL WORK WITHIN 3.2 MM MAXIMUM IN 3 METERS AND 1.6 MM MAXIMUM IN IN ANY RUNNING 300 MM.

5 INSTALL DRYWALL WITH TAPED JOINTS ON STUDS.

6 FRAMING AND FURRING SHOWN IS INDICATIVE. DO NOT CONSIDER IT EXACT AND COMPLETE. CONSTRUCT WORK TO WITHSTAND STRESSES WITHOUT EITHER DISTORTION OR DIMENSIONAL CHANGES.

7 DO FURRING AND LATHING WORK TO CSA A82.31-M91 EXCEPT WHERE SPECIFIED OTHERWISE.

8 SECURELY ATTACH TRIM, CASING AND ACCESSORIES. DO NOT INSTALL IF DENTED OR DEFORMED.

9 FRAME OPENINGS ON EVERY SIDE. PROVIDE REQUIRED CLEARANCES AND REINFORCED SUPPORTS FOR INSTALLATION OF HARDWARE AND ACCESSORIES. FOR ACCESS DOORS AND PLASTER RINGS: REFER TO MECHANICAL AND ELECTRICAL DRAWINGS.

10 METAL STUD PARTITIONS: SECURE RUNNER CHANNELS AT FLOOR AND AT TOP OF PARTITIONS WITH CONCRETE NAILS. TOGGLE BOLTS OR SHEET METAL SCREWS AS APPLICABLE FOR BASE MATERIAL. DO NOT MITRE FLOOR RUNNERS AT INTERSECTIONS AND CORNERS. LAP AND SCREW THEM TOGETHER AT CEILINGS.

11 INSTALL RUNNER CHANNELS AT HEAD AND SILL OF OPENINGS SECURED TO STUDS AT 400 MM O.C. BY BENDING UP WEBS AND SCREWING TO STUDS.

12 SPACE STUDS AT 400MM (TYPICAL) AND AT A DISTANCE NO GREATER THAN 50 MM FROM ABUTTING WALLS, PARTITIONS AND CORNERS.

13 SECURE STUDS TO RUNNERS AS RECOMMENDED BY MANUFACTURER FOR TYPE INSTALLED.

14 PROVIDE DOUBLE STUDS AT DOOR JAMBS AND TRIPLE STUDS AT CORNERS AND INTERMEDIATE INTERSECTIONS.

15 INSTALL HORIZONTAL BRACING AT 1200 MM O.C. FOR PARTITIONS OVER 2440 MM HIGH.

16 BRACE ABOVE DOORS ACROSS TWO FULL STUD FACES AT EACH SIDE OF OPENINGS IN PARTITIONS OVER 3000 MM HIGH.

17 COORDINATE WORK TO INCORPORATE HORIZONTAL SERVICE LINES. WHERE HOLES ARE TOO SMALL FOR SERVICES, NOTCH STUDS AND SPLICE NOTCHED FLANGES WITH PIECES 300 MM LONGER THAN NOTCHES, EACH FASTENED WITH TWO SCREWS.

18 SECURE FRAMES TO PREVENT MOVEMENT WITHIN PARTITION FRAMING.

19 PROVIDE SLIP JOINTS AT JUNCTIONS OF STUDS AND CEILING RUNNERS THAT ARE SECURE TO FLOOR FRAMING OR STRUCTURE ABOVE TO ALLOW FOR DEFLECTION OF STRUCTURE.

20 EXTEND PARTITIONS C/W GYPSUM BOARD TO STRUCTURE ABOVE WHERE INDICATED ON DRAWINGS. ALLOW 25 MM DEFLECTION SPACE. PROVIDE LATERAL SUPPORT ON BOTH SIDES OF TOP RUNNER.

21 INSULATE INTERIOR WALL CAVITIES WHERE SHOWN FROM FLOOR LEVEL TO 200 MM ABOVE UNDERSIDE OF FINISHED CEILING WITH ACOUSTICAL BATT INSULATION WHERE NOTED ON DRAWINGS.

10.0- GYPSUM BOARD WALLS, PARTITIONS, BULKHEADS AND CEILINGS:

1 PROVIDE PLAIN AND FIRE RATED GYPSUM BOARD TO WALLS, PARTITIONS, BULKHEADS AND CEILINGS AS INDICATED ON DRAWINGS UNDER CONSTRUCTION ASSEMBLIES.

2 APPLY GYPSUM WALLBOARD ON WALLS WITH LONG DIMENSION PARALLEL TO STUDS.

3 BACK ALL JOINTS WITH FRAMING MEMBERS. LOCATE EDGE JOINTS AT OPPOSITE SIDES OF PARTITIONS ON DIFFERENT STUDS AND AT LEAST 305 MM (12") FROM OPENING JAMB.

4 INSTALL GYPSUM WALLBOARD IN FULL LENGTHS EXCEPT IN SITUATIONS WHERE THE DIMENSION IS LESS THAN THE FULL RUN.

5 SECURE WALL BOARDS TO METAL FRAMING WITH SCREWS. APPLY TWO COATS OF FILLER TO FILL SCREW HOLES.

6 PROVIDE LEVELS OF GYPSUM WALLBOARD FINISH AS FOLLOWS:
- LEVEL 1 – PLENUM AND NON-FINISHED AREAS CONCEALED FROM VIEW.
- LEVEL 2 – AREAS COVERED WITH TILES
- LEVEL 3 – FINISH IN COMMON AREAS AND INTERIOR WALLS TO BE PAINTED
- LEVEL 4 – BATHROOM, LOBBIES AND INTERIOR WALLS.
- LEVEL 5 – NOT USED.

7 INSTALL BULKHEADS AS INDICATED ON DRAWINGS. PROVIDE REQUIRED SUPPORTS, LATERAL BRACING AND DIAGONAL BRACING.

8 SUSPENDED BULKHEADS SHALL BE ADEQUTELY FRAMED AND SUPPORTED COMPLETELY WITH DIAGONAL BRACING ETC., IN ACCORDANCE WITH LAHJ REQUIREMENTS.

11.0- INSULATION:

1 SEE "CONSTRUCTION ASSEMBLY DETAILS" FOR INSULATION REQUIREMENTS.

2 INSULATE ALL SPACES AROUND EXTERIOR DOORS AND WINDOW FRAMES.

3 PROVIDE 6 MIL. POLY VAPOUR BARRIER ON THE WARM SIDE OF ROOF AND WALLS U.N.O. VAPOUR BARRIER SHALL BE CONTINUOUS. CONTROL AIR-LEAKAGE AND SOIL GAS IN FLOORS AND GROUND IN ACCORDANCE WITH SECTIONS 9.25.4 OF THE BCBC 2024.

4 TYPES OF RIGID INSULATION: LOCATIONS, THICKNESS AND R VALUE AS INDICATED:
- ROOVES: TWO LAYERS OF POLYISOCYANURATE INSULATION WITH STAGGERED JOINTS.
- EXTRUDED POLYSTYRENE (XPS): MANUFACTURER: DOW CHEMICALS OR APPROVED EQUAL.
- CEMENT FACED XPS: MANUFACTURER: TECHCRETE - CFI PANELS OR APPROVED EQUAL.
- EXPANDED POLYSTYRENE (EPS): ONLY WHERE THERE IS NO MOISTURE AND IN BUILT-UP VOID SPACE. MANUFACTURER: MASONVILLE PLASTICS, STYROFOAM OR APPROVED EQUAL

5 TYPES OF BATT INSULATION: LOCATIONS, THICKNESS AND R VALUE AS INDICATED:
- FIRE: MINERAL WOOL. MANUFACTURER: ROXUL ROCKWOOL OR APPROVED EQUAL.
- THERMAL: MANUFACTURERS: OWENS CORNING – FIBREGLASS PINK, JOHNS MANVILLE OR APPROVED EQUAL.
- ACOUSTIC: MANUFACTURERS: OWENS CORNING, JOHNS MANVILLE OR APPROVED EQUAL.

6 CLOSED CELL 2 LBS (0.907 KG.) POLYURETHANE SPRAYED INSULATION, USED AS AIR BARRIER AND THERMAL INSULATION. MANUFACTURERS: WALLTITE ECO BY BASF, PROSEAL BY ICYNENE OR APPROVED EQUAL.

7 SPRAYED, NON-COMBUSTIBLE INSULATION. MONOGLASS OR APPROVED EQUAL.

8 USE NON-COMBUSTIBLE INSULATION IN PARKADES AND EXITS. PROTECT FOAMED PLASTIC WITH THERMAL BARRIER IN AREAS WHERE PERMISSIBLE.

12.0 – CAST-IN-PLACE CONCRETE:

1 CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF THE FOLLOWING STANDARDS UNLESS OTHERWISE REQUIRED BY THE SPECIFICATIONS:
- BCBC 2024.
- CAN/CSA-A23.1 - CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION.
- CAN/CSA-A23.2 - METHODS OF TEST FOR CONCRETE.
- CAN/CSA-A23.3 - CODE FOR THE DESIGN OF CONCRETE STRUCTURES FOR BUILDINGS.
- CAN/CSA-S413 - PARKING STRUCTURES.

2 WHERE THE STANDARD IS REFERRED TO IN THIS SPECIFICATION IT SHALL MEAN THE DOCUMENTS SPECIFIED IN THIS CLAUSE AND THEIR REFERENCED DOCUMENTS.

3 A COPY OF THE STANDARD SHALL BE KEPT BY THE CONTRACTOR ON SITE FOR THE DURATION OF THE WORK AND BE MADE AVAILABLE FOR REFERENCE.

4 ALL CONCRETE WALLS TO HAVE BOTH HORIZONTAL AND VERTICAL JOINTS TREATED WITH A SLURRY OF CRYSTALLINE WATERPROOFING SUCH AS "XYPEX FCM" OR APPROVED EQUAL.

5 THE CONTRACTOR SHALL BE RESPONSIBLE FOR MIX DESIGNS AS DETAILED IN CAN/CSA-A23.1 TABLE 11, ALTERNATE 1. THE PROPERTY REQUIREMENTS ARE SHOWN ON THE STRUCTURAL DRAWINGS.

6 THE PROPOSED MIXES SHALL BE SUBMITTED TO THE ENGINEER AND TESTING AGENCY FOR REVIEW.

7 REFER TO STRUCTURAL DRAWINGS AND SPECIFICATIONS.

13.0 – FIRESTOPPING, FIRE PREVENTION AND SAFETY SYSTEMS AND ACCESSORIES:

1 CONFORM WITH THE REQUIREMENTS OF (LATEST EDITION): CAN/ULCS101. CAN/ULC S102, CAN /ULC S115, NFPA-LIFE SAFETY CODE AND CANADIAN ELECTRIC CODE. APPLY FIRE STOPPING AND PROVIDE THE REQUIRED RATING OF SURFACE/WALL/FLOOR IN ACCORDANCE WITH THE REQUIREMENTS OF SECTIONS 3.1.9 AND 3.1.11 OF BCBC 2024.

2 ALTERNATIVE SOLUTIONS: SUBMIT MANUFACTURER'S DETAILS. FOR EACH CUSTOM APPLICATION SUBMIT TO THE ARCHITECT AND LAHJ ENGINEERED ALTERNATIVE DETAILS SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER SPECIALIZING IN FIRE STOP ASSEMBLIES.

3 FIRE STOPPING APPLICATOR SHALL HAVE NO LESS THAN THREE YEARS EXPERIENCE IN APPLYING FIRE STOPPING AND SHALL BE ACCREDITED BY THE FIRE-STOP MANUFACTURER.

4 PENETRATIONS THROUGH CONCRETE SLABS, CONCRETE SLAB ABOVE PARKADE AND VERTICAL CONCRETE WALLS SHALL HAVE A MINIMUM 2 HOUR RATING IN COMFORMANCE WITH ASTM E-814, UL 1479 AND CAN/ULC S115-M95.

5 CAULK AND SEAL AROUND ALL DUCTS, PIPES PASSING THROUGH FIRE RATED PARTITIONS AND FLOOR ASSEMBLIES WITH APPROVED ULC COMPLIANT MASTIC CAULKING.

6 FIRE STOPPING MATERIAL SHALL ALLOW FOR NO FUNGAL GROWTH.

7 MANUFACTURER: USE PRODUCTS OF ONE MANUFACTURER. BASIS OF DESIGN: HILTI CANADA, OTHER APPROVED MANUFACTURERS: 3M – FIRE PROTECTION SYSTEMS, TREMCO, GRACE PRODUCTS AND A/D FIRE PROTECTION SYSTEMS INC..

8 RATED ASSEMBLIES (BETWEEN SUITES & BETWEEN SUITES AND CORRIDORS) TO EXTEND FULL HEIGHT TO U/S OF FLOOR / CEILING.

9 ALL SUPPORTING COLUMNS AND BEAMS MUST MAINTAIN AN EQUIVALENT OR GREATER FIRE RESISTANCE RATING THAN THE FIRE ASSEMBLY RATING THEY SUPPORT. PROVIDE SHOP DRAWINGS SIGNED AND SEALED BY AN ENGINEER SPECIALIZING IN THE DESIGN OF FIRE RATED SYSTEMS FOR REVIEW. DO NOT START WORK UNTIL THE SHOP DRAWINGS HAVE BEEN REVIEWED BY THE ARCHITECT.

10 THE FOLLOWING SYSTEMS BY HILTI CANADA ARE APPROVED SYSTEMS. SUBMIT SYSTEMS FOR THE ARCHITECT'S REVIEW PRIOR TO INSTALLATION:

SCHEDULES OF HILTI THROUGH PENETRATION FIRESTOP SYSTEMS

TYPE OF PENETRANT	F-RATING (HRS)	cUL/ULC-CLASSIFIED SYSTEM
CONCRETE FLOORS		
SINGLE METAL PIPES OR CONDUIT	2	CAJ1291,CAJ1382,CAJ1421
	2 (FT)	FB1010, FA1108, FA1135, CAJ1597
SINGLE NON- METALLIC PIPE OR CONDUIT	2	SPC16,SPC57, FA2005, CAJ2170
	2 (FT)	FB2006, FA2092, FB2033
SINGLE OR BUNDLED CABLES	2(FT)	CBJ8020, HI/PHV 120-05
	2	FA3007,CAJ3180, CAJ3181,CAJ3193
SINGLE INSULATED PIPES	2(FT)	CAJ5048, FA5018, FA2142
	2	FA5015, CAJ5090,CAJ5091
CONCRETE OR BLOCK WALLS		
SINGLE METAL PIPES OR CONDUIT	1	CAJ1372,CAJ1382,CAJ1421
	2	CAJ1291 CAJ1372,CAJ1382,CAJ1421
	2 (FT)	CAJ1610, CAJ1517
SINGLE NON-METALLIC PIPE OR CONDUIT	1	CAJ2170,SPC16,WJ2072
(I.E. PVC, CPVC, ABS, FRP, ENT)	2	CAJ2170,SPC16,WJ2072
	2 (FT)	CAJ2053, CAJ2678a
SINGLE OR BUNDLED CABLES	1	CAJ3181,WJ3060,WJ3061
	2	CAJ3181,WJ3060,WJ3061
	2(FT)	CBJ8020, HT/PHV 120-05
SINGLE INSULATED PIPES	1	WJ5042,CAJ5048,CAJ5090 CAJ5091,WJ5066
	2	WJ5042,CAJ5048,CAJ5090 CAJ5091,WJ5066
	2 (FT)	CAJ5048, WJ5150
WOOD FLOORS (CONSEALED SPACES)		
SINGLE METAL PIPES OR CONDUIT	1	FC 1259, SP 717
SINGLE NON-METALLIC PIPE OR CONDUIT	1	SP8 46, SPC 44, SPC 45
(I.E. PVC, CPVC, ABS, FRP, ENT)	1	FC 3012, FC 3044
SINGLE OR BUNDLED CABLES	1	CAJ3181,WJ3060, WJ3061
GYPSUM WALLS		
SINGLE METAL PIPES OR CONDUIT	1	SP731, WL1164
SINGLE NON-METALLIC PIPE OR CONDUIT	1	SP734, SP809, WL2078
(I.E. PVC, CPVC, ABS, FRP, ENT)	1	WL3065, WL3111
SINGLE OR BUNDLED CABLES		

SCHEDULES OF HILTI JOINTS FIRESTOP SYSTEMS

JOINT TYPE	RATING	cUL/ULC TESTED FIRESTOP SYSTEM (Width of Joint)
CONCRETE OR BLOCK WALL TO	1	HW-D-0097(Up to 2"), HW-D-1009 (Up to 3 ¾"), HW-D-0268 (Up to 1")
FLAT CONCRETE SLAB FLOOR	2	HW-D-0097(Up to 2"), HW-D-1009 (Up to 3 ¾"), HW-D-0268 (Up to 1")
(TOP OF WALL)		
GYPSUM WALL TO FLAT CONCRETE	1	HW-D-0209 (Up to ¾"), HW-D-0082 (Up to ¾"), HW-D-0083 (Up to ¾")
SLAB FLOOR (TOP-OF-WALL)	2	HW-D-0209 (Up to ¾"), HW-D-0082 (Up to ¾"), HW-D-0083 (Up to ¾")
CONCRETE WALL-TO- WALL	1	WW-D-0017(Up to 2"), WW-D-0011(Up to 3 ½"),WW-D-0012(Up to 3 ¾"),
	2	WW-D-0017(Up to 2"), WW-D-0011(Up to 3 ½"),WW-D-0012(Up to 3 ¾"),

Notes
1. Jobsite conditions of each construction joint configuration firestop system must meet ALL details of the cUL/ULC-Classified System selected
2. If jobsite conditions do not match any cUL/ULC -classified systems in the schedules above, contact Hilti for alternative systems or Engineering Judgement Drawings(1-800-363-4458)
3. Where more than one applicable cUL/ULC -Classified System is listed in the schedules, choose the cUL/ULC System which is most economical.
4. OMEGA POINT LABS DRAWING For other configurations contact 1-800-363-4458.
5. Confirm that movement capabilities of the selected system meet or exceed the specified movement range of the particular joint.

14.0-WINDOWS AND SKYLIGHTS:

1 REFER TO WINDOW SCHEDULES, ARCHITECTURAL DRAWINGS AND WINDOW AND DOOR NOTES UNDER MOISTURE CONTROL.

2 WINDOWS AND SKYLIGHTS SHALL BE SHOP FABRICATED AND SHALL CONFORM TO:
- AAMA/WDMA/CSA 101/I.S.2/A440, "NAFS – North American Fenestration Standard/Specification for Windows, Doors, and Skylights" (Harmonized Standard),
- A440S1, "Canadian Supplement to AAMA/WDMA/CSA 101/I.S.2/A440, NAFS – North American Fenestration Standard/Specification for Windows, Doors, and Skylights".

3 BEFORE STARTING WORK ON WINDOWS:
- FIELD VERIFY DIMENSIONS/SIZE BEFORE STARTING MANUFACTURING.
- SUBMIT SHOP DRAWINGS SIGNED AND SEALED BY A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN BC FOR REVIEW BY ARCHITECT AND ENVELOPE CONSULTANT BEFORE INSTALLATION BEGINS.

4 EXTERIOR WINDOWS SHALL BE ENERGY STAR RATED, DOUBLE GLAZED 9.(MINIMUM), VACUUM SEALED, ARGON FILLED, LOW E COATED ON SECOND LAYER, BUILT IN THERMALLY BROKEN FRAMES.

5 COMPLY WITH THE REQUIREMENTS OF SECTION 9.7.4 AND 9.7.6 OF BCBC 2024 AND FOR BUILDING SECURITY COMPLY WITH SECTION 9.7.5. OF THE BCBC 2024.

6 TESTING IS REQUIRED ON A MINIMUM OF 1% OF THE WINDOWS. THE INDUSTRY STANDARD FOR NAFS TESTING IS 330 PA. SHOULD ANY OF THE WINDOWS FAIL; ENVELOPE CONSULTANT WILL REQUIRE THE WINDOW(S) BE REPAIRED AND RE-TESTED, PLUS TWO ADDITIONAL WINDOWS. PLEASE NOTE THAT ALL TESTING MUST BE DONE TO THE WINDOWS AS SUPPLIED WITH NO TEMPORARY MODIFICATIONS TO THE ASSEMBLY, I.E. BLOCKING THE DRAINAGE HOLES.

7 THE WINDOW HEAD FLASHINGS (C/W A 4" HIGH BACK LEG) MUST BE PLACED SO THAT THE END DAMS RUN PAST OUTER EDGES OF THE WINDOW BY 3/8".

8 PLACE THE WINDOWS ON 2"X1/8" PLASTIC SHIMS AT 8" O/C. DO NOT TEAR OR PUNCTURE THE SAM MEMBRANE. APPLY URETHANE CAULKING BETWEEN THE INTERIOR OF THE WINDOW FRAME AND THE SAM MEMBRANE AT THE SILL AND 2" UP THE JAMB TO PROVIDE A BACK DAM.

15.0-SAFETY GLASS:

1 REFER TO DOOR AND WINDOW SCHEDULES.

2 ALL GLASS IN DOORS SHALL BE TEMPERED SAFETY GLASS.

3 SAFETY GLASS OF THE LAMINATED OR TEMPERED TYPE TO CONFORM TO CAN/CGSB-12.1-M, "TEMPERED OR LAMINATED SAFETY GLASS".

4 WIRED GLASS TO CONFORM TO CAN/CGSB-12.11M, "WIRED SAFETY GLASS".

16.0-DOORS:

1. REFER TO DOOR SCHEDULES AND DOOR NOTES IN CATEGORY 22.0 - MOISTURE CONTROL.

2. COMPLY WITH THE REQUIREMENTS OF SECTION 9.7.2.1, 9.7.3.3., 9.7.4. AND 9.7.6 OF THE BCBC 2024.

3. GLAZING IN RATED DOORS TO BE WIRED GLASS (OR APPROVED EQUIVALENT) AS PER SECTION 3.1.8.16, 3.1.8.17 & 3.1.8.18. OF THE BCBC 2024.

4. RESIDENTIAL ENTRY DOORS TO SUITES TO COMPLY WITH SECTION 9.7.2.1 & 9.7.5.2 OF BCBC 2024 FOR SECURITY AND FORCED ENTRY. SLIDING DOORS TO COMPLY WITH SECTION 9.7.5.1

5. ALL DOORS & GATES TO COMPLY WITH SECTIONS 9.7.5.2 OF BCBC 2024 FOR BUILDING SECURITY.

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Drawing:
GENERAL NOTES

Project Status:
BP

SUBMISSION

Date (YYYY-MM-DD)	Description
2024-06-12	Issued for TUP

REVISION

No.	Date	Description

Scale:

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6. DOORS SHALL BE SHOP FABRICATED AND EXTERIOR DOORS SHALL CONFORM TO:
   - AAMA/WDMA/CSA 101/I.S.2/A440, "NAFS – North American Fenestration Standard/Specification for Windows, Doors, and Skylights" (Harmonized Standard),
   - A440S1, "Canadian Supplement to AAMA/WDMA/CSA 101/I.S.2/A440, NAFS – North American Fenestration Standard/Specification for Windows, Doors, and Skylights".
7. SITE BUILT DOORS (SUCH AS SERVICE DOORS, WINDOW WALL DOORS AND CURTAIN WALL DOORS) MUST MEET A3 STANDARDS AND CONFORM TO CAN/CSA A 440S1 AND ASTM E 1105. FIELD DETERMINATION OF WATER PENETRATION OF INSTALLED EXTERIOR CURTAIN WALLS AND DOORS, BY UNIFORM OR CYCLIC AIR PRESSURE DIFFERENCE, BY USING AAMA 502-02, VOLUNTARY SPECIFICATION FOR FIELD TESTING OF WINDOWS TEST METHOD B WITH A RESISTANCE TEST PRESSURE OF 330 PA.
8. SUBMIT SHOP DRAWINGS SIGNED AND SEALED BY A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN BC FOR REVIEW BY ARCHITECT. EXTERIOR DOORS WILL ALSO BE REVIEWED BY ENVELOPE CONSULTANT BEFORE INSTALLATION BEGINS.
9. ALL EXTERIOR DOORS SHALL HAVE THERMALLY BROKEN FRAMES. SHALL BE INSULATED (U.N.O.), WEATHER-STRIPPED & C/W THRESHOLDS & SHALL BE PROVIDED WITH A VINYL CAP TO DOOR HEADS.
10. ALL EXTERIOR DOORS SHALL BE SET INTO 2 CONTINUOUS BEADS OF URETHANE CAULK AT THE SILL AND 2" UP THE JAMB. THE DOOR FRAME BRICK MOULDS MUST ALSO BE BACK CAULKED.
11. HARDWARE SUPPLIER SHALL EMPLOY THE SERVICES OF A HARDWARE CONSULTANT TO PREPARE AND SUBMIT HARDWARE & KEYING SCHEDULE FOR ARCHITECT'S REVIEW.
12. RATED DOORS TO HAVE SELF-CLOSERS AND ALL DOORS TO BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY.

17.0-FINISHES:

1 PROVIDE WATER RESISTANT MOUNTING SURFACES FOR ALL CERAMIC TILED SURFACES AT TUBS AND SHOWERS.

2 FOR RATED WALLS: 5/8" TYPE 'X' GWB MUST BE CONTINUOUS BEHIND WATER-RESISTANT BOARDS TO MAINTAIN RATED ASSEMBLY.

3 FLAME SPREAD RATING FOR INTERIOR FINISHES TO CONFORM TO BCBC 2024.

4 ARCHITECTURAL CONCRETE: FINISH AS NOTED. VIBRATE CONCRETE ADEQUATELY TO PRODUCE SURFACE CLEAR OF ANY VISIBLE HONEYCOMBING AND HAVE A SMOOTH EVEN TEXTURED FINISH.

5 REFER TO INTERIOR DESIGN DRAWINGS AND SPECIFICATIONS FOR INTERIOR RELATED ITEMS, INTERIOR FINISH SCHEDULES, MATERIALS AND COLOUR SCHEMES.

18.0-MILLWORK:

1. REFER TO INTERIOR DESIGN DRAWINGS AND SPECIFICATIONS FOR INTERIOR RELATED MILLWORK ITEMS.
2. SUPPLY AND INSTALL CASEWORK INCLUDING BUT NOT LIMITED TO SHOP FABRICATED TRIMS, SHELVINGS, PANELLING, COUNTER TOPS, CABINETS, CASEWORK AND HARDWARE AS SHOWN ON ARCHITECTURAL AND INTERIOR DRAWINGS AND SCHEDULES AND AS INSTRUCTED.

19.0-PATIOS AND WALKWAYS

1. SLOPE ALL EXTERIOR PAVED AREAS (A MINIMUM 2% AND MAXIMUM 5%) AWAY FROM THE BUILDING OR AS NOTED OTHERWISE.
2. REFER TO NOTES AND DRAWINGS PREPARED BY THE LANDSAPE ARCHITECT/ARCHITECT FOR LOCATION AND ASSEMBLIES AND PATIO FINISH.

20.0-PLUMBING/BATHROOM/KITCHEN FIXTURES, ACCESSORIES AND GRAB BARS

1. ITEMS SPECIFIED/INDICATED BY THE INTERIOR DESIGNER TAKE PRECEDENCE OVER ITEMS INDICATED IN ARCHITECTURAL SPECIFICATIONS.
2. PROVIDE GRAB-BARS AS INDICATED ON DRAWINGS. REFER TO EQUIPMENT SCHEDULE, ELEVATIONS AND DETAILS.
3. PROVIDE ADEQUATE BLOCKING/BACKING PLATES TO SUPPORT GRAB BARS AND ACCESSORIES AS REQUIRED.
4. INSTALL ACCESSORIES TO MEET BARRIER FREE REQUIREMENTS WHERE INDICATED ON DRAWINGS.
5. REFER TO INTERIOR DESIGN DRAWINGS, SCHEDULES AND NOTES FOR ACCESSORIES.
6. REFER TO MECHANICAL DRAWINGS, SCHEDULES AND NOTES FOR FIXTURES.
7. CONFORM WITH PLUMBING REQUIREMENTS OF BCBC 2024.

21.0-ELEVATORS: [Not Applicable]

1. ELEVATORS TO CONFORM TO BCBC 2024, SECTIONS 3.5.2.1, 3.5.3.1 AND 3.5.4
2. DESIGN ELEVATOR TO FORM THE MOST ECONOMICAL SOLUTION WITH SMOOTH EFFICIENT OPERATIONS.
3. MANUFACTURER: RICHMOND ELEVATORS OR APPROVED EQUAL
4. FIVE YEARS OF MAINTAINENCE SERVICE SHALL BE PROVIDED BY THE ELEVATOR MANUFACTURER.
5. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION OF SINGLE SIDED OPENINGS AND DOUBLE-SIDED OPENINGS.
6. CONFIRM ELEVATOR SPECIFICATIONS AND DIMENSIONS WITH SUPPLIER PRIOR TO FRAMING AND POURING OF CONCRETE.
7. INTERIOR OF CAB FINISHES AND COLOURS TO BE CHOSEN BY THE INTERIOR DESIGNER. REFER ALSO TO INTERIOR DESIGN SPECIFICATIONS.
8. LIGHTING: 4 LOW VOLTAGE POTLIGHTS IN SUSPENDED CEILING DIVIDED IN FOUR PANELS (ONE OF WHICH SERVES AS AN EMERGENCY EXIT). ONE (1) OF THE POTLIGHTS TO SERVE AS THE BATTERY OPERATED EMERGENCY LIGHT.
9. PROVIDE ONE SET OF MOVERS PAN C/W HANGING PINS IN CAB.
10. PROVIDE SHOP DRAWINGS FOR REVIEW BY CONSULTANTS PRIOR TO FABRICATION.

22.0 – MOISTURE CONTROL:

1 ROOFING - AS PER ARCHITECTURAL DRAWINGS - BUILD TO RCABC WARRANTY REQUIREMENTS.

2 2-PLY SBS – ROOFING:
   - APPROVED MANUFACTURER: SOPREMA, APPROVED PRODUCTS INCLUDING BUT NOT LIMITED TO: CAP SHEET: SOPRAPLY TRAFFIC CAP 560, TORCH APPLIED 4 MM CAP/SHEET MEMBRANE COLOUR/GRANULES AS SELECTED BY ARCHITECT. BASE SHEET: SOPRAFIX BASE 520. HIGH-PERFORMANCE HEAT WELDED 2.5 MM BASE SHEET. VAPOUR BARRIER: SOPRAPLY-SOPRAVAP. PRIMER: ELASTOCOL STICK, 3/16" (5 MM) SOPRABOARD OVERLAYMENT. ADHERED WITH DUOTACK.

3 APPLICATION OF SBS ROOFING:
   - ENSURE THAT ADEQUATE AMOUNTS OF PRIMER IS APPLIED TO CLEAN DRY SUBSTRATE PRIOR TO BASE SHEET APPLICATION.
   - POSITIVELY LAP BASE SHEET AND CAP SHEET TO SLOPE TOWARDS DRAINAGE POINTS.
   - BASE SHEET SHALL RUN 8" UP VERTICAL FACES OF WALLS. GRANULATED CAP SHEET SHALL RUN MINIMUM 10" UP VERTICAL FACE OF WALLS. AND FOR ROOF PARAPETS TO THE OUTER EDGE
   - PROVIDE A LOOSE SBS MEMBRANE FLAP (TO LAP THE BUILDING WRAP UNDER) AT ALL ROOF EDGES TO VERTICAL WALL INTERFACES.
   - CONFORM TO THE REQUIREMENTS OF CAN/CSA-A123.21 OR FACTORY MUTUAL 1-90 WIND UPLIFT. USE THE STRINGENT REFERANCE DOCUMENT.
   - ALL ROOF TO WALL FLASHINGS AND STEP FLASHING SHALL HAVE A 6" VERTICAL BACK LEG.

4 WINDOWS, DOORS AND OTHER EXTERIOR OPENINGS:
   - ALSO REFER TO CATEGORIES 14 & 16 - WINDOW AND DOOR NOTES, FOR MORE REQUIREMENTS.
   - PROVIDE CAULKING AROUND ALL EXTERIOR OPENINGS.
   - REFER TO STAGES OF WINDOW INSTALLATION DRAWINGS AND DETAILS.
   - EXTEND 4" HIGH BACK LEG FLASHING END DAMS BY 3/8" (10 MM) ON EITHER SIDE OF THE OUTER EDGE OF OPENINGS TO ALLOW FOR CAULKING BETWEEN WINDOW FRAME AND WALLS.
   - PLACE WINDOWS ON 2" x 1/8" (25 x 3 MM) SHIMS AT 6" (200 MM) O.C. DO NOT TEAR OR PUNCTURE THE PEEL AND STICK (SELF-ADHESIVE) MEMBRANE. AT SILLS APPLY URETHANE CAULKING BETWEEN WINDOW FRAME INTERIOR AND THE P & S MEMBRANE. AT JAMBS, APPLY P & S 2" UP THE JAMB. USE MANUFACTURER RECOMMENDED PRIMER FOR P & S.
   - INSTALL CAULKING AROUND ALL OPENINGS TO THE EXTERIOR.
   - INSTALL PREFINISHED METAL FLASHING AND CAULKING OVER THE HEAD OF ALL OPENINGS AND AT HORIZONTAL AND OBLIQUE CHANGES OF PLANES OR MATERIALS TO THE EXTERIOR.

5 SLOPED ROOVES:
   - PROVIDE DIVERTER FLASHING AT THE BOTTOM OF SLOPED ROOF AND VERTICAL INTERACTIONS. REFER TO BUILDING ENVELOPE CONSULTANT'S DETAILS.
   - BEHIND ROOF-TO-WALL FLASHING AND STEP FLASHING PROVIDE ADEQUATE FLASHING PAPER OR ROOF FELT. ALSO REFER TO CATEGORY 35.0 -SHEET METAL FLASHING.

6 NAIL BOTTOM EDGE OF ALL ROOF AND MECHANICAL VENT FLASHING TO ELIMINATE UPLIFT. CAULK EXPOSED NAIL HEADS.

7 BUILD ROOF TO RCABC REQUIREMENTS. PROVIDE A FIVE (5) YEAR RCABC WARRANTY FOR ROOVES.

8 PROVIDE ADEQUATE AMOUNTS OF FLASHING (OR FELT PAPER) BEHIND ALL ROOF TO WALL FLASHING AND STEP FLASHINGS. SEE BUILDING ENVELOPE CONSULTANT'S DETAILS. PROVIDE 6" VERTICAL BACK LEG.

9 VERTICAL SURFACES AND WALLS: WEATHER BARRIER MEMBRANE OR BUILDING WRAP MUST BE PROVIDED UNDER ALL CLADDING. VERTICAL LAPS MUST BE BACK SEALED WITH A COMPATIBLE ASPHALTIC CAULKING. HORIZONTAL JOINTS ARE TO BE POSITIVELY LAPPED TO SHED WATER. WEATHER BARRIER SHEATHING MEMBRANE: TYVEK COMMERCIAL GRADE OR APPROVED EQUAL. AIR BARRIER PROVIDED BY INTERIOR 6MIL POLY AIR/ VAPOUR BARRIER.

10 ALL EXTERIOR DOORS SHALL BE SET INTO 2 CONTINUOUS BEADS OF URETHANE SEALANT (TO RUN UP THE SIDE JAMBS 4") PRIOR TO INSTALLING THE DOORS. THE DOOR FRAME BRICK MOLDS SHALL ALSO BE BACK CAULKED.

11 ALL WOOD CLADDING PRODUCTS (I.E. KNEE BRACES, TRIM BOARDS) MUST BE BACK-PRIMED.

12 A THROUGH WALL FLASHING IS REQUIRED AT ALL HORIZONTAL EXPANSION JOINTS AND BUILDING BANDS & TRIM. ALL THROUGH WALL FLASHINGS MUST HAVE A 4" BACK LEG. ALL HORIZONTAL LAPS MUST BE 6" MIN. AND CAULKED.

13 ALL WALL VENTS (DRYERS & FANS) SHALL BE BACK CAULKED AT THE TOP & SIDE FLANGES TO A PIECE OF 2'X2' 60 MINUTE FLASHING PAPER PLACED BEHIND THE VENT. PLACE THE FIELD MEMBRANE OVER THE TOP AND SIDE VENT FLANGES ONLY. LAP THE BOTTOM OF THE 2'X2' FLASHING PAPER OVER THE FIELD MEMBRANE (SHINGLE STYLE). PROVIDE FLASHING C/W END DAMS OVER ALL VENTS. CAULK THE SIDE OF THE VENTS TO THE CLADDING. ALL VENTS MUST BE APPROVED BEFORE INSTALLING.

14 ALL EXTERIOR ELECTRICAL BOXES MUST HAVE FLANGES AND BE SEALED. A 16"X16" PIECE OF FLASHING PAPER MUST BE SEALED TO THE BACK SIDE OF THE FLANGE AND THE FIELD MEMBRANE MUST BE SEALED TO THE BACK SIDE OF THE FLANGE AS WELL AS TO THE TOP AND SIDES OF THE FRONT OF THE FLANGE. LAP THE BOTTOM OF THE FLASHING PAPER UNDER THE FLANGE & OVER THE FIELD MEMBRANE (SHINGLE STYLE). ALL SURFACE MOUNTED LIGHT PANS MUST BE ON A 16"X16" PIECE OF FLASHING PAPER LAPPED ONTO THE FIELD MEMBRANE (SHINGLE STYLE). SEAL THE WIRE TO THE PAPER BEFORE INSTALLING THE PAN. PLACE ALL EXTERIOR HOSE BIBS THROUGH A A 1" HOLE IN THE CENTRE OF A 12" x 12" PIECE OF EPDM ROOFING. THIS SHALL BE LAPPED SHINGLE STYLE ONTO THE WEATHER BARRIER MEMBRANE.

15 ALL PENETRATIONS MUST HAVE AN APPROVED VINYL TRIM KIT.

16 COORDINATION OF ALL PENETRATIONS THROUGH THE BUILDING ENVELOPE INCLUDING SECURITY WIRING IS REQUIRED. ALL ROUGH IN WIRING SHOULD BE COMPLETED PRIOR TO THE ENVELOPE BEING COMPLETED. UNDER NO CIRCUMSTANCES ARE WINDOW FRAMES OR ENVELOPE MEMBRANES TO BE COMPROMISED TO INSTALL SECURITY, CABLE, TELEPHONE OR ANY OTHER TYPE OF WIRING.

17 ALL EXTERIOR STRUCTURAL WOOD ELEMENTS SHALL BE PRESSURE TREATED OR HAVE AN APPROVED EXTERIOR PAINT OR STAIN APPLIED.

18 ENSURE THAT THE STANDARD BUILDING ENVELOPE DETAIL SHEETS ARE PROVIDED TO THE CREWS AT THE TIME OF WINDOW INSTALLATION AND INCLUDED IN THE CONSTRUCTION DOCUMENTS.

19 ENSURE THAT ALL PRE-FINISHED METAL CAPPING TO THE WOOD FASCIAS, DECK TRIMS AND BAND BOARDS C/W POSITIVE DRAINAGE LAPS.

20 ALL MEMBRANES AND SEALANTS MUST BE APPROVED AND SAMPLES OF ALL VENTS, CAPS OR DUCTS THAT PENETRATE THE ENVELOPE OR ROOF MUST BE PROVIDED BEFORE INSTALLATION BEGINS. USE ONLY APPROVED PRIMERS WITH ALL PEEL-N-STICK PRODUCTS.

23.0-FIREPLACES: [Not Applicable]

1. PREFABRICATED ZERO-CLEARANCE GAS FIREPLACES MUST BE ULC LISTED AND INSTALLED AS PER MANUFACTURER'S INSTRUCTIONS AND IN CONFORMANCE WITH BCBC 2024 SECTION 9.22.
2. REFER TO ARCHITECTURAL/INTERIOR DESIGN DRAWINGS, SCHEDULES AND NOTES.
3. FIELD VERIFY DIMENSIONS.

24.0-SIGNAGE

1. PROVIDE APPROPRIATE SIGNAGE FOR THE FUNCTIONS OF THE BUILDINGS, INCLUDING BUT NOT LIMITED TO: STREET ADDRESS AT THE ENTRANCE, SUITE NUMBERS, EXIT STAIRS, EXIT SIGNS, PARKING MARKINGS AND NUMBERING, PIPING, & CLEARANCE SIGNS. ADD DIRECTIONAL SIGNAGE FOR FIRE FIGHTERS, UNIVERSALLY ACCEPTED SYMBOLS AND OTHER SIGNS AS INDICATED AND INSTRUCTED BY THE ARCHITECT, INTERIOR DESIGNER AND OTHER CONSULTANTS.
2. OTHER IMPORTANT SIGNAGE WITH UNIVERSALLY ACCEPTED GRAPHICS/SYMBOLS:
   - "FIRE DOOR - KEEP CLOSED" AT ALL FIRE DOORS
   - GRAPHIC PLAN AT ANNUNCIATOR PANEL
   - STAIRWELL AND FLOOR NUMBERING FOR FIREFIGHTERS
   - "IN CASE OF FIRE TAKE STAIRS" SAFETY WARNING AT ELEVATORS

25.0-FIRE SAFETY PLAN

1. PROVIDE A FIRE SAFETY PLAN AS REQUIRED BY BCBC 2024. FIRE SAFETY PLANS MUST CONFORM TO SECTION 2.8 OF DIVISION B OF THE BC FIRE CODE.
2. ALSO REFER UNDER "FIRE STOPPING, FIRE SAFETY SYSTEMS AND ACCESSORIES" REQUIREMENTS IN 3.1.9 AND 3.1.11 OF THE BCBC 2024.

26.0- ENERGY EFFICIENCY REQUIREMENTS COMPLIANCE:

1. COMPLY WITH BCBC 2024 BASED ON PROJECT LOCATION AND CLIMATIC ZONE AS NOTED BY ENVELOPE CONSULTANT AND INDICATED IN THERMAL CALCULATIONS.
2. COMPLY WITH SECTIONS 9.36.2 TO 9.36.4 OF BCBC 2024.
3. CONFORM WITH SECTION 10.2.2 OF BCBC 2024 AND COMPLY WITH ANSI/ASHRAE/IES 90.1/NECB.

27.0- ACCOUSTICAL REQUIREMENTS: [Not Applicable]

1. CONFORM WITH BCBC 2024 FOR ALL ACCOUSTIC REQUIREMENTS.
2. PROVIDE ACCOUSTICAL SEALANTS AT JUNCTIONS OF SOUND RATED PARTITIONS.
3. STAGGER ELECTRICAL AND OTHER OUTLETS IN SOUND RATED PARTITIONS A MINIMUM TWO STUD SPACES APART. PROVIDE ACOUTICAL SEALANTS ALL AROUND THE OUTLETS.
4. REFER TO NOTES AND DRAWINGS PREPARED BY THE ACCOUSTICAL CONSULTANT FOR MAXIMIZING ACCOUSTICAL PERFORMANCE (IF AVAILABLE).

28.0- SHOP DRAWINGS AND OTHER DRAWINGS REQUIRED:

1. SURVEYOR'S DRAWINGS WITH BUILDING LAYOUT TO CONFIRM FOUNDATIONS IN RELATION TO PROPERTY LINE AND APPROVED PERMIT PRIOR TO CONSTRUCTION.
2. METAL RAILINGS, METAL FENCE, WOOD RAILINGS AND WOOD FENCE.
3. PREFABRICATED STRUCTURAL WOOD TJI FLOOR SYSTEM, ROOF TRUSSES, WOOD BEAMS AND ENGINERED WOOD PRODUCTS.
4. THERMAL AND MOISTURE PROTECTION PRODUCTS.
5. WINDOWS, DOORS AND FRAMES, CURTAIN WALLS, ALUMINUM DOORS, FRAMES AND SCREENS, WINDOW WALLS AND HARDWARE SCHEDULES.
6. SIGNAGE, ROOF HATCH, ROOF HATCH SAFETY RAILING/GUARD SYSTEM, ROOF ACCESS LADDER, ROOF ANCHORAGE CONNECTORS.
7. ELEVATOR(S).
8. MECHANICAL - HVAC UNITS.
9. ELECTRICAL – LIGHT FIXTURES, FIRE ALARM SYSTEM, SECURITY SYSTEM AND COMMUNICATION SYSTEM.
10. FIRE PROTECTION – FIRE STOPPING SYSTEMS AND SPRINKLER SYSTEM.
11. ALLOW MINIMUM 10 WORKING DAYS FOR REVIEW OF SHOP-DRAWINGS.
12. SUBMIT SHOP DRAWINGS IN ACCORDANCE WITH STANDARD INDUSTRY PRACTICE.
13. PRIOR TO SUBMITTING SHOP DRAWINGS *FOR REVIEW* THE GC SHALL *REVIEW* THE SHOP DRAWINGS AND STAMP INDICATING CONFORMANCE WITH THE CONTRACT DOCUMENTS. THE GC SHALL REJECT SHOP DRAWINGS NOT CONFORMING WITH CONTRACT DOCUMENTS.
14. DO NOT START WORK THAT REQUIRES SUBMISSION OF SHOP DRAWINGS OR SAMPLES UNTIL THE SUBMISSION HAS BEEN REVIEWED BY THE ARCHITECT.
15. THE SUBCONTRACTOR SHALL NOTIFY GC AND THE ARCHITECT OF ANY DEVIATIONS FROM CONTRACT DOCUMENTS AND IDENTIFY ANY DEVIATIONS IN WRITING.
16. REVIEW OF DRAWINGS BY THE ARCHITECT DOES NOT RELIEVE THE GC AND SUBCONTRACTOR FROM ERRORS AND OMMISSIONS OR DEVIATIONS FROM THE CONTRACT DOCUMENTS.

29.0- PAINT AND COATINGS

1. PREPARE SURFACE TO BE PAINTED IN ACCORDANCE WITH MASTER PAINTER'S INSTITUTE (MPI) PAINTING MANUAL – LATEST EDITION.
2. PAINT AND COATINGS AND OTHER MATERIAL USED FOR PAINTING SHALL BE LEAD AND MERCURY FREE AND SHALL HAVE LOW OR NO VOC AND CONFORM TO THE MPI "GREEN PERFORMANCE" REQUIREMENT.
3. REFER TO FINISH SCHEDULE AND INTERIOR DRAWINGS FOR PAINT MANUFACTURERS, COLOURS, TINTS AND PRODUCTS.
4. MULTIPLE COLOURS MAY BE REQUIRED IN INDIVIDUAL ROOMS.
5. CLEAN AND PREPARE SURFACE TO BE PAINTED AS RECOMMENDED BY THE MANUFACTURER AND THE MPI PAINTING MANUAL.
6. LIGHTLY SAND SURFACES BETWEEN COATS AND REMOVE DUST.
7. DO NOT APPLY PAINT IN UNSUITABLE CONDITIONS INCLUDING BUT NOT LIMITED TO DUSTY, RAINY, OR FOGGY CONDITIONS.
8. PRIOR TO PAINTING ENSURE THAT THE SURFACE IS CLEAN. BROOM CLEAN SURFACE TO BE PAINTED.
9. APPLY BY BRUSH, ROLLER OR SPRAY AS RECOMMENDED BY THE CONSULTANT AND IN ACCORDANCE WITH THE MPI PAINTING MANUAL.
10. APPLY THREE (3) COATS OF PAINT HAVING CONSISTENCY AS RECOMMENDED BY MANUFACTURER AND MPI PREMIUM GRADE REQUIREMENTS.
11. PRIOR TO APPLYING COATS ENSURE THAT EACH COAT HAS DRIED AND HARDENED UNLESS INSTRUCTED OTHERWISE BY THE PAINT MANUFACTURER.
12. TINT FILLER TO MATCH WOOD FOR CLEAR FINISH.
13. FILL SURFACE FLAWS INCLUDING BUT NOT LIMITED TO CRACKS, SCRATCHES, DENTS AND ABRASIONS WITH JOINT COMPOUND, SAND SMOOTH AND FINISH FLUSH WITH ADJACENT SURFACES.
14. ALL FINAL PAINT SURFACES WILL BE FREE OF DEFECTS INCLUDING BUT NOT LIMITED TO MARKS, DUST AND INSECTS LIABLE TO IMPAIR THE FINISH.
15. FINISH SHALL BE UNIFORM IN SHEEN, COLOUR AND TEXTURE.
16. MATCH COLOUR OF CONDUITS, PIPES, HANGERS AND OTHER MECHANICAL AND ELECTRICAL ITEMS WITH ADJACENT SURFACE UNLESS NOTED OTHERWISE OR INSTRUCTED BY THE ARCHITECT.
17. DO NOT PAINT PREFINISHED PANELS, FIRE ALARMS OR PULL STATIONS.

30.0- MIRRORS:

1. PROVIDE MIRRORS IN PUBLIC AND PRIVATE WASHROOMS IN SIZES NOTED IN EQUIPMENT LIST OR AS DETAILED ON DRAWINGS. CENTRE MIRRORS ABOVE VANITIES AND SURFACE MOUNT MIRRORS ON WALL FINISH.
2. MIRRORS TO BE MINIMUM 5 MM. CLEAR FLOAT GLASS WITH "J" CHANNELS WITH MITRED CORNERS UNLESS NOTED OTHERWISE ON DRAWINGS.
3. BOTTOM AND ONE VERTICAL SIDE FRAME SHALL BE PRE-DRILLED AND SCREWED TO THE WALL.
4. ADHERE UNFRAMED MIRRORS WITH APPROVED MIRROR ADHESIVE RECOMMENDED BY THE MIRROR MANUFACTURER.

31.0- RECESSED FLOOR MATS (WHERE NOTED ON DRAWINGS IF REQUIRED):

1. PROVIDE RECESSED, SHOP MANUFACTURED AND FINISHED ALUMINUM FOOT GRILLES AS INDICATED ON DRAWINGS WITH NEATLY MITRED CORNERS, HELD TOGETHER WITH CORNER CLIPS.
2. PROVIDE ADEQUATE ANCHORS, BOLTS, INSERTS AND PIPE SLEEVES FOR COMPLETE INSTALLATION.
3. ATTACH WITH NON-CORROSIVE SCREWS IN LEAD SHEILDS FOR MASONRY OR COUNTERSUNK WOOD SCREWS FOR WOOD.
4. INSTALL WORK PLUMB, TRUE, SQUARE AND FITTED TIGHTLY AND ACCURATELY TO ADJACENT WALLS.

32.0- WIRE SHELVING: [Not Applicable]

1. PROVIDE WIRE SHELVING AS INDICATED ON INTERIOR DRAWINGS.
2. INSTALL AS PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
3. PROVIDE ADEQUATE BLOCKING/BACKING PLATES TO SUPPORT AS REQUIRED.
4. PROVIDE BLOCKING/BACKING IN CEILING TO SUPPORT CEILING HUNG WALL AND WALL BRACED SHELVING.

33.0- BACKFILLING:

1. DO BACKFILLING WORK ONLY AFTER AREAS OF WORK TO BE BACKFILLED HAVE BEEN INSPECTED, PIPE AND CONDUITS HAVE BEEN JOINT TESTED AND APPROVED BY THE OWNER/CONSULTANT.
2. ALL BACKFILL SHALL BE FREE FROM DEBRIS, SNOW, ICE, WATER OR FROZEN GROUND. DO NOT USE FROZEN BACK FILL MATERIAL.
3. PRIOR TO BACK-FILLING WORK COMPACT EXPOSED SUB-GRADE AS REQUIRED BY AND TO THE SATISFACTION OF GEO-TECHNICAL ENGINEER.

34.0- BOLLARDS (WHERE REQUIRED):

1. PROVIDE 150 MM. (6") DIAMETER CONCRETE FILLED, STEEL PIPE BOLLARDS WHERE INDICATED ON DRAWINGS.
2. SET MINIMUM 310 MM. (12") IN CONCRETE TO INDUSTRY STANDARDS. FINISH CONCRETE TO SLOPE AWAY FROM PIPE INSET.
3. COLOUR: TRAFFIC YELLOW OR AS INDICATED BY THE ARCHITECT.

35.0- SHEET METAL FLASHING:

1. INSTALL SHEET METAL FLASHING IN ACCORDANCE WITH SMACNA – ARCHITECTURAL MANUAL REQUIREMENTS AND WITH MANUFACTURER'S RECOMMENDATIONS.
2. DRY JOINTS SHALL BE TIGHT BUT NOT DENTED TO PERMIT SLIGHT ADJUSTMENTS IN SHEET METAL FLASHING AND MUST REMAIN WATERTIGHT.
3. LOCK SEAMS AT ALL CORNERS & CAULK PRIOR TO INSTALLATION.
4. PROVIDE DRY SEPARATION SHEETING UNDER METAL FLASHING.

36.0- ROOF HATCH (WHERE SHOWN ON DRAWINGS): [Not Applicable]

1. HATCH TO BE NOT LESS THAN 550MMX900MM C/W A FIXED LADDER.
2. PROVIDE MINIMUM 14 GAUGE (1.63 MM.) SHOP PRIMED, GALVANIZED STEEL AND NEATLY WELDED ROOF HATCH COMPLETE WITH MINIMUM 12" BEADED FLANGE. MINIMUM 1" (25 MM.) R -6 (RSI – 1.06) POLYISOCYANURATE INSULATION FULLY COVERED BY PRIMER COATED METAL LINER. MINIMUM 22 GAUGE (0.64 MM.) - PROVIDE 305 MM (12") HIGH MINIMUM 14 GAUGE (1.63 MM.) GALVANIZED STEEL CURB COMPLETE WITH INTEGRAL CAP FLASHING.
3. USE CADMIUM PLATE HARDWARE OR APPROVED EQUIVALENT.
4. SAFETY RAILING COATED WITH 20 MIL (0.508 MM.) PVC TO BE MOUNTED ON COUNTERFLASH OF ROOF HATCH WITHOUT IMPEDING DOOR OPERATIONS. 1070 MM (3'-6") SAFETY RAILINGS ON TWO SIDES TO INCLUDE CORNER POSTS, BRACKETS, CENTRE POSTS, TOP RAIL AND MIDDLE RAIL. PROVIDE A MATCHING SELF-CLOSING GATE ON THE FRONT AS PER MANUFACTURER'S RECOMMENDATIONS AND OSHA REQUIREMENTS.
5. INSTALL IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS.

37.0- LADDERS (WHERE INDICATED ON DRAWINGS): [Not Applicable]

1. PROVIDE ROOF ACCESS LADDERS, ELEVATOR PIT LADDERS & ANY OTHER INTERIOR LADDERS AS INDICATED.

38.0- CLEANING:

1. KEEP JOB SITE CLEAN AND ORDERLY. KEEP WORK AREA CLEAN. REMOVE RUBBISH AND SURPLUS MATERIAL.
2. CLEAN AREA AT THE END OF EACH DAY DURING THE CONSTRUCTION PERIOD.
3. CLEAN ALL SURFACES COMPLETELY PRIOR TO INSPECTION FOR SUBSTANTIAL COMPLETION AND FINAL INSPECTION BY THE OWNER.

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Project:
2408
-
Temporary Child Care
2901 St. Johns Street

Drawing:
GENERAL NOTES

Project Status:
BP

SUBMISSION

Date (YYYY-MM-DD)	Description
2024-06-12	Issued for TUP

REVISION

No.	Date	Description

Scale:

DWG. NO:
A004

Plot Date: 2024-06-12 Wed 12:56:56 PM
C:\Users\MICHELANGELO\Documents\2408_01_MAIN_R23_CF_BP_2901 St Johns Street_slarose.rvt

CONSTRUCTION ASSEMBLIES

W5 - EXTERIOR WOOD STUD WALLS

W5a **Exterior Wall, 2x6 Wood Studs, Loadbearing**

FRR:1 hr (Ref: BCBC 2018, Div. B, App. D, Table D-2.3.4. A&E)
STC:51 (Ref: BCBC 2018 Table 9.10.3.1 wall type W4a)

1" Variable Plank Cladding
Tyvek building paper
1/2" fir plywood sheathing
2x6 SPF studs @ 16" o.c.
R22 Fiberglass insulation
6 Mil. polyurethane vapour barrier
5/8" Type 'X' GWB; tape and fill joints; Paint to suit

W5b **Exterior Wall, 2x6 Wood Studs, Loadbearing**

FRR:1 hr (Ref: BCBC 2018, Div. B, App. D, Table D-2.3.4. A&E)
STC:51 (Ref: BCBC 2018 Table 9.10.3.1 wall type W4a)

1" Variable Plank Cladding
Tyvek building paper
1/2" fir plywood sheathing
2x6 SPF studs @ 16" o.c.
R22 Fiberglass insulation
6 Mil. polyurethane vapour barrier
1/2" fir plywood sheathing
5/8" Type 'X' GWB; tape and fill joints; Paint to suit

W6 - INTERIOR WOOD STUD WALLS

W6a **Interior Wall, 2x6 Wood Studs, Loadbearing**

FRR:1 hr (Ref: BCBC 2018, Div. B, App. D, Table D-2.3.4. A&E)
STC:51 (Ref: BCBC 2018 Table 9.10.3.1 wall type W4a)

5/8" Type 'X' GWB; tape and fill joints; paint to suit
2x6 SPF studs @ 16" o.c.
5/8" Type 'X' GWB; tape and fill; paint to suit

W6b **Interior Wall, 2x6 Wood Studs, Loadbearing**

FRR:1 hr (Ref: BCBC 2018, Div. B, App. D, Table D-2.3.4. A&E)
STC:51 (Ref: BCBC 2018 Table 9.10.3.1 wall type W4a)

Tyvek building paper
1/2" Fir plywood sheathing
2x6 SPF studs @ 16" o.c.
R22 Fiberglass insulation
6 Mil. polyurethane vapour barrier
5/8" Type 'X' GWB; tape and fill joints; paint to suit

F1 - CONCRETE FLOORS

F1a **Concrete Slab-on-Grade, Uninsulated**

FRR:Not Required
STC:Not Required

- Floor finish
- Cast-in-place reinforced concrete slab-on-grade (refer to structural drawings for reinforcement and thickness)
- 6mil poly vapour barrier
- 6" Compact gravel
- Refer to Geotechnical for substrate

F3 - WOOD FLOORS

F3a **Wood Floor Above Exterior Space**

FRR :1hr (Ref, VBBL 2014, Table D-2.3.12)
STC:Not required

Tarkett 2.5mm vinyl sheet flooring
3/8" Plywood underlayment
5/8" T&G fir plywood sheathing
2x10 SPF joist @ 16" o.c.
R32 Mineral wool insulation
1/2" Pressure treated under sheathing

F3b **Wood Deck Floor Above Exterior Space**

FRR :1hr (Ref, VBBL 2014, Table D-2.3.12)
STC:Not required

Tarkett 2.5mm vinyl sheet flooring
3/8" Plywood underlayment
5/8" T&G fir plywood sheathing
2x10 SPF joist @ 16" o.c.
R32 Mineral wool insulation
1/2" Pressure treated under sheathing

R1 - WOOD Roofs

R1a **Sloped Roof over Interior Space**

?

0.45 EPDM Membrane roofing
5/8" T&G fir plywood sheathing
2x8" SPF Tapers; 1/4" per foot slope
2x10" SPF joists @ 16" o.c.
4 1/2" Closed cell spray foam (RS2)
5/8" Type 'X' GWB; tape and fill joints; Paint to suit

R1b **Sloped Roof over Canopy**

?

0.45 EPDM Membrane roofing
5/8" T&G fir plywood sheathing
2x8 SPF Tapers; 1/4" per foot slope
2x10" SPF joists @ 16" o.c.
5/8" Type 'X' GWB; tape and fill joints; Paint to suit

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SUBMISSION

Date (YYYY-MM-DD)	Description
2024-06-12	Issued for TUP

REVISION

No.	Date	Description

Scale: 1 : 25

DWG. NO: **A010**

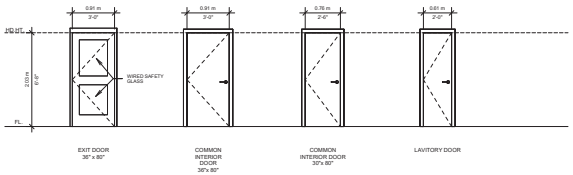
REVISION

Plot Date: 2024-06-12 Wed 12:56:57 PM C:\Users\MICHELANGELO\Documents\2408_01_MAIN_R23_CF_BP_2901 St Johns Street_slarose.rvt

DOOR SCHEDULE:

DOOR SCHEDULE									
						FRAME			
ID	WIDTH	HEIGHT	DOOR TYPE	RATED	FINISH	TYPE	FINISH	HARDWARE DESCRIPTION	NOTES
	0.91 m	2.03 m	Hollow Core Steel Flush		Prefinished	Steel	Refer to Interior Design	<varies>	
1a	0.91 m	2.03 m	Hollow Core Steel Flush	Unrated	Prefinished	Steel	Refer to Interior Design	LH Out-Swing, Entry Set w/ deadbolt	Weatherstripping, theshold, sweep, chain check
4a	0.91 m	2.03 m	Hollow Core Wood Flush	Unrated	Painted	Wood	Painted	RH In-Swing, Entry Set	Door stop
4ab	0.76 m	2.03 m	Hollow Core Wood Flush	Unrated	Painted	Wood	Painted	LH In-Swing, Privacy Set	Door stop
4ac	0.76 m	2.03 m	Hollow Core Wood Flush	Unrated	Painted	Wood	Painted	RH Out-Swing, Privacy Set W/R Entry Set	Door stop
4ad	0.76 m	2.03 m	Hollow Core Wood Flush	Unrated	Painted	Wood	Painted	LH Out-Swing, Passage Set	Door stop
4b	0.91 m	2.03 m	Hollow Core Wood Flush	Unrated	Painted	Wood	Painted	RH In-Swing, Entry Set	Door stop
4bb	0.91 m	2.03 m	Hollow Core Wood Flush	Unrated	Painted	Wood	Painted	LH In-Swing, Privacy Set	Door stop
4c	0.61 m	2.03 m	Hollow Core Wood Flush	Unrated	Painted	Wood	Painted	LH In-Swing, Privacy Set	Toilet stall door

VINYL DOORS



1. GENERAL DOOR NOTES:

1.1 ALL DOORS TO BE OPERABLE FROM INSIDE WITHOUT A KEY.
1.2 HARDWARE & KEYING SCHEDULE TO BE PROVIDED BY HARDWARE SUPPLIER.
1.3 ALL RATED DOORS TO HAVE SELF CLOSERS AND RATED HARDWARE
1.4 ALL DOORS TO HAVE LEVER TYPE HANDLES IN COMPLIANCE WITH BCBC 2018, 3.8.3.6.4) AND 3.8.3.6. 8)
1.5 ALL THRESHOLDS TO BE MAXIMUM 13MM HIGH (0.5") WITH BEVELED EDGES.
1.6 ALL DOORS IN AN ACCESSIBLE PATH OF TRAVEL TO PROVIDE MINIMUM DOORWAY CLEARANCE (WHEN DOOR IS OPEN) OF 850 MM (33.5") BETWEEN FACE OF DOOR AND OPPOSITE FRAME, IN COMPLIANCE WITH BCBC 2018 3.8.3.6 2)
1.7 ALL GLAZING WITHIN DOORS TO BE TEMPERED SAFETY GLASS OR WIRE GLASS AS SHOWN ON SCHEDULE.

2. EXTERIOR DOORS AND WINDOWS NOTES:

2.1 ALL PREMANUFACTURED EXTERIOR DOORS AND WINDOWS SHALL CONFORM TO:
2.1.1 AAMA/WDMA/CSA 101/I.S.2/A440, "NAFS-North Amercian Fenestration Standard/Specification for windows, doors and skylights" (harmonized standard) or Part 5 of the BCBC 2018
2.1.2 A440S1, "Canadian Supplements to AAMA/WDMA/CSA 10101.S.2/A440, NAFS - North American Fenestration Standard./Specification for Window, Doors and Skylights"

2.2 ALL SITE BUILT EXTERIOR DOORS AND WINDOWS (SUCH AS STOREFRONT, SKYLIGHTS AND CURTAIN WALLS WHERE APPLICABLE) SHALL CONFORM TO:
2.2.1 A3, B3, AND C3 STANDARDS and CAN/CSA A440,ASTM E 1105, FIELD DETERMINATION OF WATER PENETRATION OF INSTALLED EXTERIOR CURTAIN WALLS AND DOORS, BY UNIFORM OR CYCLIC AIR PRESSURE DIFFERENCE,
2.2.2 AAMA 502-90, VOLUNTARY SPECIFICATION FOR FIELD TESTING OF WINDOWS TEST METHOD B BY USING UNIFORM OR CYCLIC AIR PRESSURE DIFFERENCE.

2.3 TESTING IS REQUIRED ON A MINIMUM OF 1% OF THE RESIDENTIAL WINDOWS. INDUSTRY STANDARD FOR B-3 TESTING IS 400 PA. SHOULD ANY OF THE WINDOWS FAIL; ARCHITECTS AND ENVELOPE CONSULTANT WILL REQUIRE WINDOW(S) TO BE REPAIRED AND RE-TESTED, PLUS TWO ADDITIONAL WINDOWS. PLEASE NOTE THAT ALL TESTING MUST BE DONE TO WINDOWS AS SUPPLIED - WITH NO TEMPORARY MODIFICATIONS TO THE ASSEMBLY, I.E. BLOCKING THE DRAINAGE HOLES.

2.4 ALL WINDOWS & HARDWARE TO MEET THE REQUIREMENTS OF BCBC 2018 EDITION
2.5 OPENING WINDOWS TO BE PROVIDED WITH RESTRICTOR TO LIMIT OPENING TO 100mm (4") WHEN LOCATED LESS THAN 1070mm (3'-6") ABOVE INTERIOR FLOOR LEVEL AND FLOOR LEVEL IS MORE THAN 800mm (2'-0") ABOVE GROUND.
2.6 ALL GLAZING IS REQUIRED TO BE VACUUM SEALED AND DOUBLE GLAZED WITH MINIMUM 3mm EXTERIOR AND 3mm INTERIOR PANE U.N.O., LOW-E GLASS, ARGON FILLED. TINTED GLASS REQUIRED AS NOTED ON SCHEDULE.
2.7 GLAZING WITHIN 1'-0" OF FLOOR TO BE TEMPERED SAFETY GLASS - AS SHOWN ON SCHEDULE
2.8 REFER TO CODE COMPLIANCE DRAWINGS AND ALTERNATE SOLUTIONS DOCUMENTATION PREPARED BY MORRISON HERSHFIELD FOR WINDOWS OR DOORS REQUIRING SPECIAL SPRINKLER PROTECTION
2.9 PROVIDE FLASHING TO HEADERS OF ALL WINDOW OPENINGS
2.10 PLACE WINDOWS ON 2" X 3/8" PLASTIC SHIMS AT 8" O.C. DO NOT TEAR OR PUNCTURE THE P&S MEMBRANE. APPLY THERMOPLASTIC CAULKING BETWEEN INTERIOR OF WINDOW FRAME AND P&S MEMBRANE AT SILL AND 3" UP JAMB TO PROVIDE BACK DAM.
2.11 ELEVATION DRAWINGS ON WINDOW SCHEDULE ARE AS VIEWED FROM EXTERIOR
2.12 DIMENSIONS ON WINDOW SCHEDULE DRAWINGS SHOW ROUGH OPENINGS.
2.13 CONFIRM ALL WINDOW SIZES ON SITE PRIOR TO FABRICATION, ACTUAL WINDOW SIZE MAY VARY DEPENDING ON SELECTED MANUFACTURER

3. SPECIALTY DOOR TYPES:

4. WINDOW TYPES:
NOTE: SUPPLIERS NOTED BELOW WHERE USED AS A MIN. STANDARD, ALTERNATE SUPPLIERS ARE ALLOWED SUBJECT TO APPROVAL BY ARCHITECT AND ENVELOPE CONSULTANT

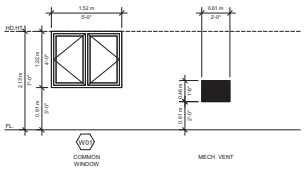
4.1 RESIDENTIAL WINDOWS:
4.1.1 VINYL FRAME WINDOWS - AWNING - STARLINE 7100 SERIES, NAIL-ON. FRAME COLOUR, STANDARD SILVER. U-VALUE REQUIREMENT: 0.27 (1.53 metric), INTERIOR COLOUR : WHITE.
4.1.2 VINYL FRAME BALCONY SLIDING DOOR - STARLINE 8500 SERIES, NAIL-ON. COLOUR: STANDARD SILVER. U-VALUE REQUIREMENT: 0.27 (1.59 metric), INTERIOR COLOUR : WHITE
4.1.3 VINYL FRAME SWING DOOR, STARLINE SERIES 2501. COLOUR: STANDARD SILVER, INTERIOR COLOUR: WHITE. U-VALUE REQUIREMENT: 0.31 SHGC-0.40
4.1.4 ALUMINUM CURTAIN WALL WINDOWS - ALUMICOR, THERMALL WALL 2600, CAPPED SYSTEM, DOUBLE GLAZED, 5 1/4" DEEP MULLIONS, 1" PRESSURE PLATES, AWNING OPENINGS (SERIES 1350), COLOR: CLEAR ANODIZED (BOTH SIDES), U-VALUE REQUIREMENT: 0.27 (2.27 metric)
SPANDREL PANELS: BACK PAINTED CLEAR CLASS, PAINT COLOUR: SILVER METALLIC;
NOTE: FENESTRATION PERFORMANCE TO BE IN ACCORDANCE WITH MH SCHEMATIC DESIGN REPORT OF JUNE 03,2021, INCLUDING THE FOLLOWING: TYPE:LC, AIR LEAKAGE: A3, WATER TEST PRESSURE: 290 Pa (TEST SHOULD BE TO 400), DESIGN PRESSURE: 1470 Pa, PERFORMANCE GRADE: 35, CONDENSATION RESISTANCE: 63, MAX SOLAR HEAT GAIN COEFF: 30.

6. SUBMITTALS

6.1 PROVIDE SHOP DRAWINGS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN BC, FOR REVIEW BY ARCHITECT AND CONSULTANTS BEFORE INSTALLATION BEGINS.
6.2 PROVIDE LETTERS OF ASSURANCE BY A PROFESSIONAL ENGINEER REGISTERED IN BC, IN COMPLIANCE WITH BCBC 2018 REQUIREMENTS
6.3 PROVIDE SAMPLE OF ALL FRAME FINISHES, TINTED GLASS AND BACK PAINTED SPANDREL GLASS FOR APPROVAL BY THE ARCHITECT.
6.4 ON-SITE INSTALLATION MOCK-UP OF EACH WINDOW TYPE IS REQUIRED FOR REVIEW BY THE ENVELOPE CONSULTANT.

WINDOW SCHEDULE:

VINYL WINDOWS



ARCHITECTS
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Project:
2408
-
Temporary Child Care
2901 St. Johns Street

Drawing:
DOOR AND WINDOW SCHEDULE

Project Status:
BP

SUBMISSION

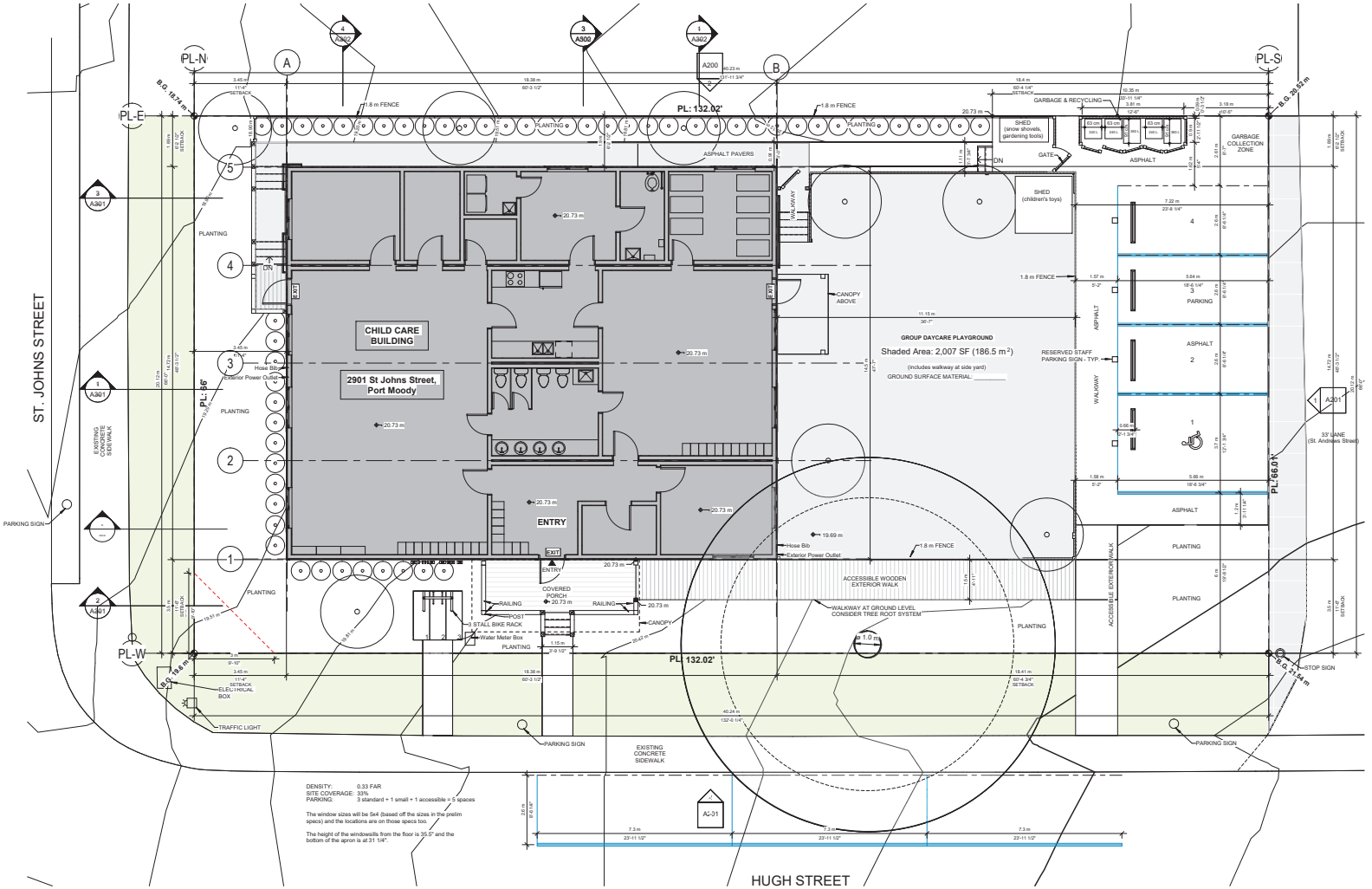
Date (YYYY-MM-DD)	Description
2024-06-12	Issued for TUP

REVISION

No.	Date	Description

Scale: 1 : 50

DWG. NO: **A020**



1 SITE PLAN (Ground)
1 : 75

ARCHITECTS
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N

Project:
2408
-
Temporary Child Care
2901 St. Johns Street

Drawing:
SITE PLAN (Ground)

Project Status:
BP

SUBMISSION

Date (YYYY-MM-DD)	Description
2024-02-23	Issued for TUP

REVISION

No.	Date	Description

Scale: 1 : 75

DWG. NO: **A100**

Plot Date: 2024-07-05 4:56:06 PM
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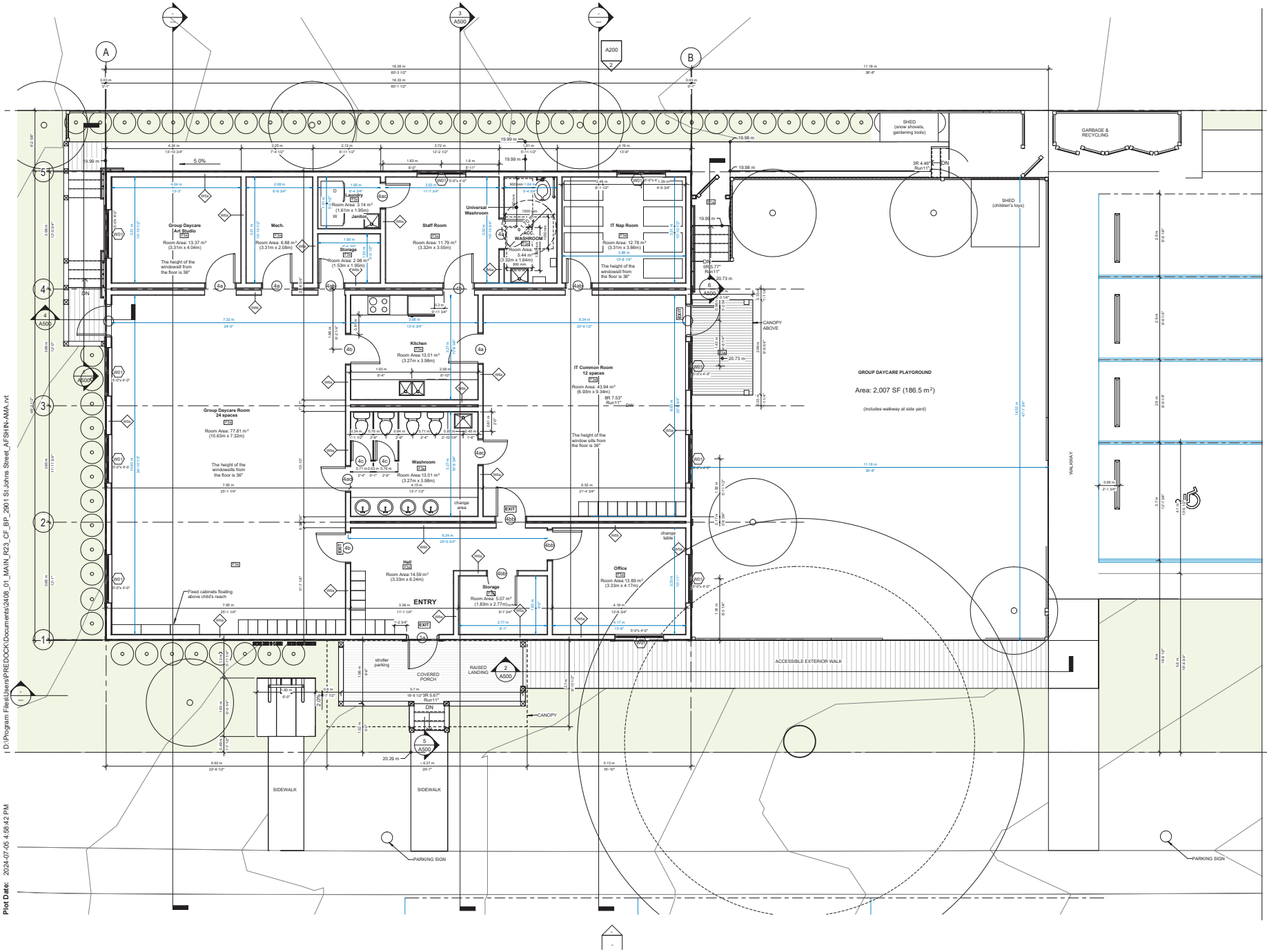
Attachment 4



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Project:
2408
-
Temporary Child Care
2901 St. Johns Street

Drawing:
FLOOR PLAN

Project Status:
BP

SUBMISSION

Date (YYYY-MM-DD)	Description

REVISION

No.	Date	Description

Scale: 1 : 50

DWG. NO: **A101**

Plot Date: 2024-07-05 4:58:42 PM

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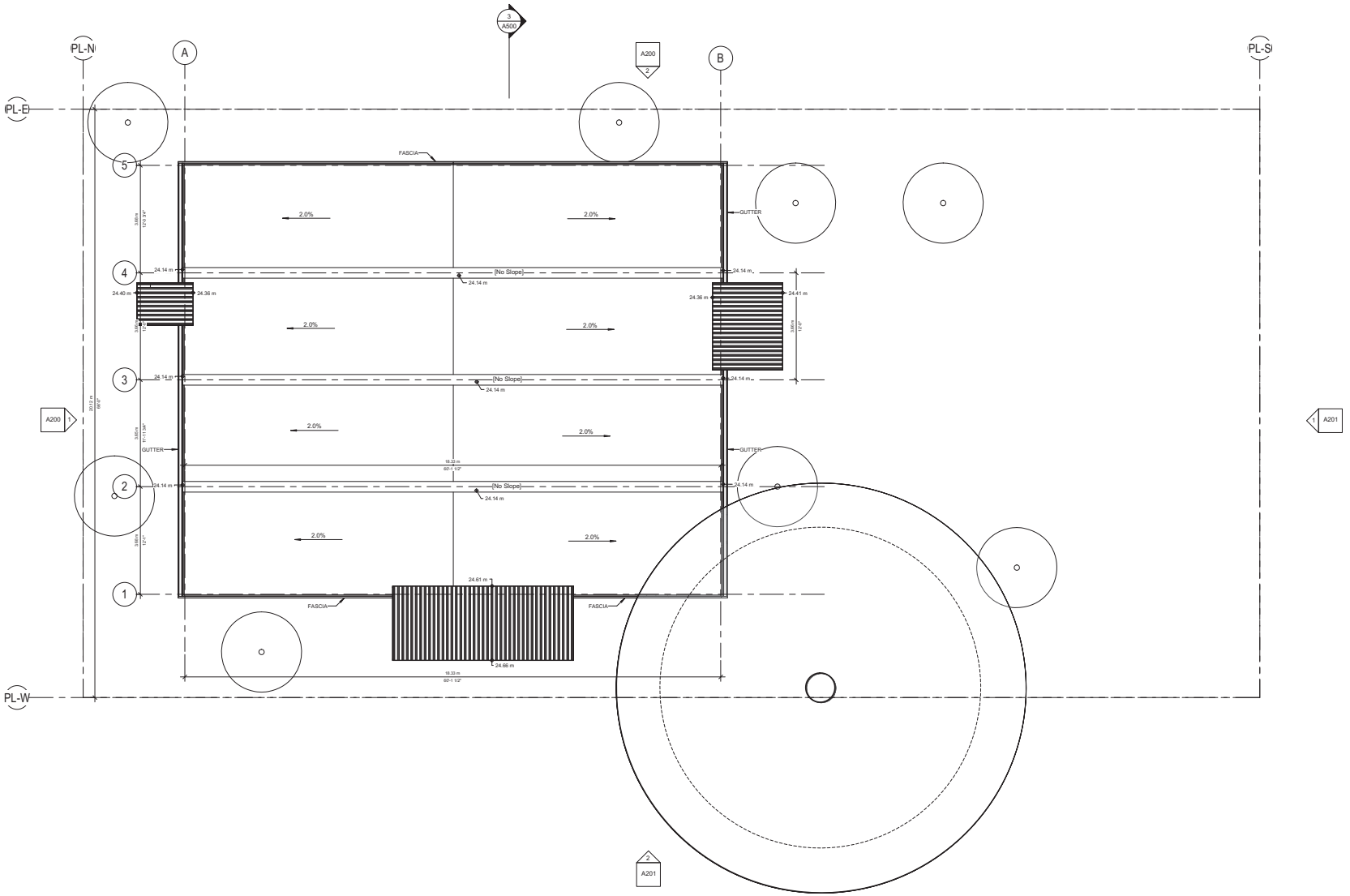
Attachment 4



1 ROOF PLAN
1 : 64

ARCHITECTS
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Project:
2408
-
Temporary Child Care
2901 St. Johns Street

Drawing:
ROOF PLAN

Project Status:
BP

SUBMISSION

Date (YYYY-MM-DD)	Description
2024-06-12	Issued for TUP

REVISION

No.	Date	Description

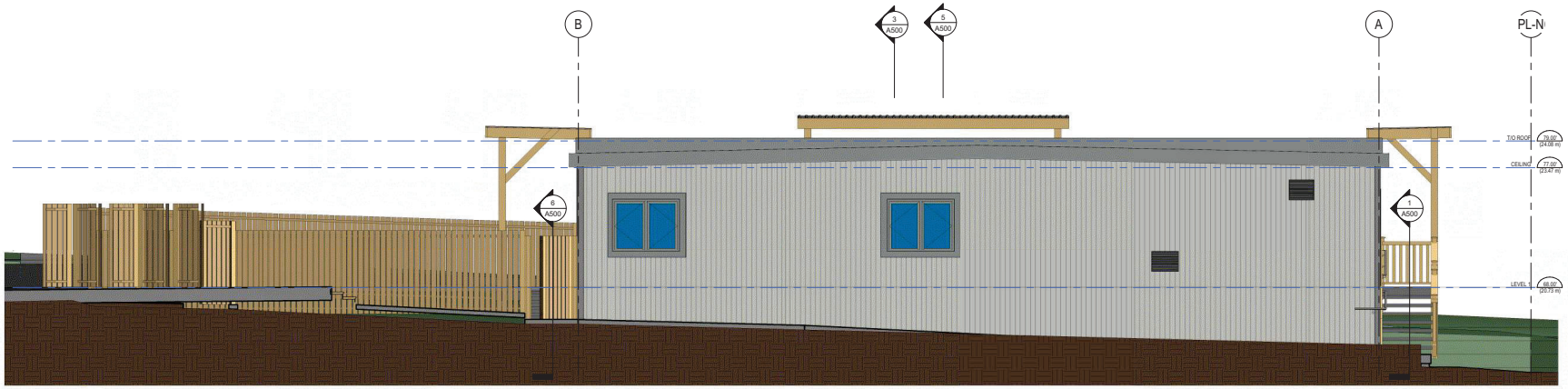
Scale: 1 : 64

DWG. NO: **A110**

Plot Date: 2024-06-12 Wed 12:57:08 PM
C:\Users\MICHELANGELO\Documents\2408_01_MAIN_R23_CF_BP_2901 St Johns Street_slarose.rvt

Attachment 4

1 NORTH ELEVATION BP
1 : 48



2 EAST ELEVATION BP
1 : 48

ARCHITECTS
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Project:
2408
-
Temporary Child Care
2901 St. Johns Street

Drawing:
ELEVATIONS

Project Status:
BP

SUBMISSION

Date (YYYY-MM-DD)	Description
2024-06-12	Issued for TUP

REVISION

No.	Date	Description

Scale:
1 : 48

DWG. NO:
A200

Plot Date: 2024-06-12 Wed 12:57:10 PM
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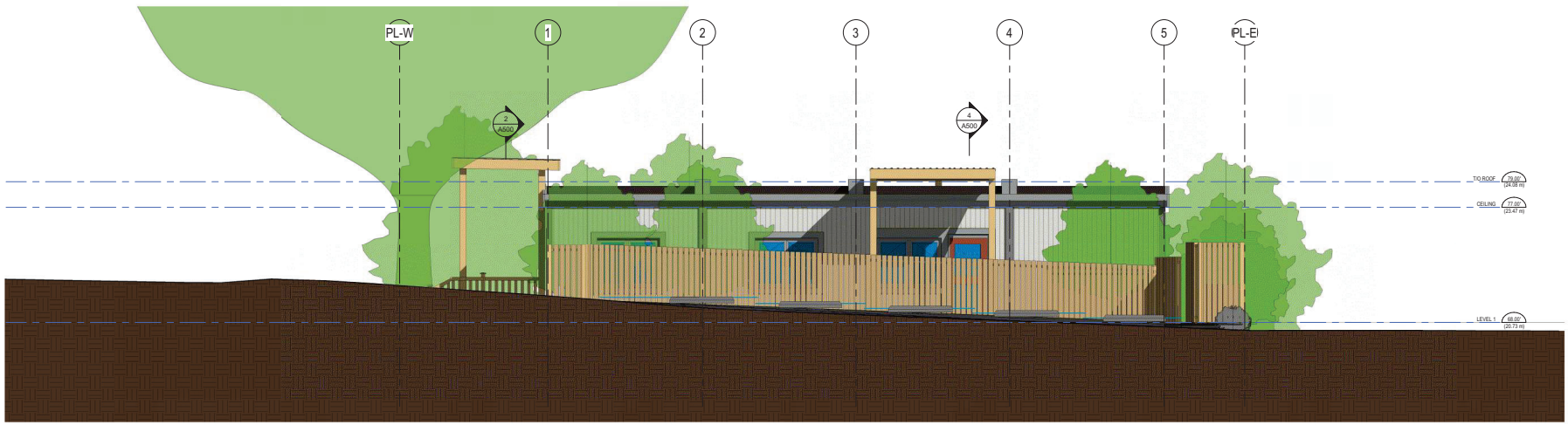
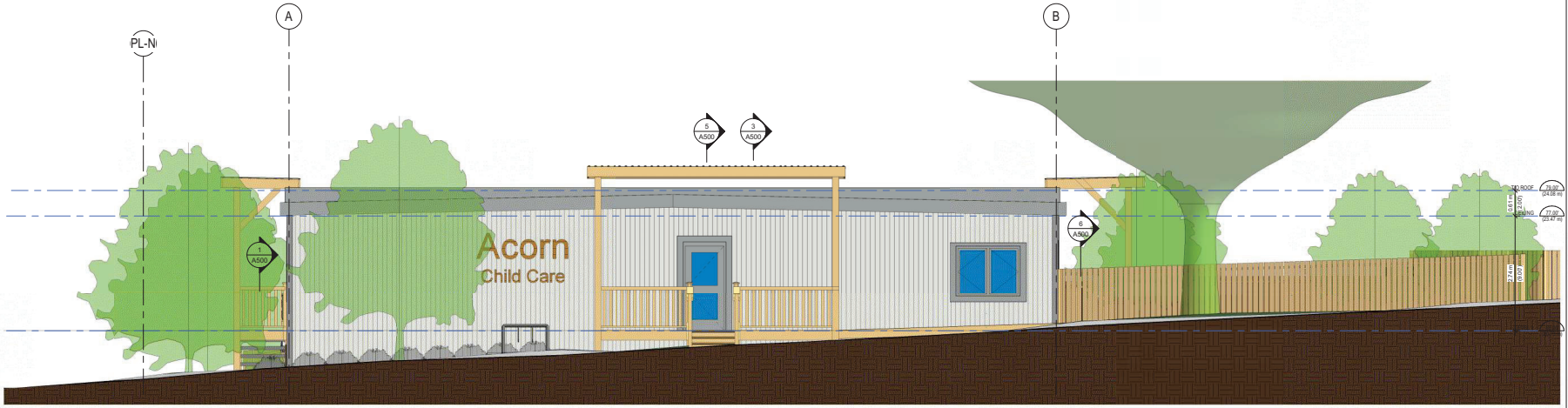
Attachment 4



1 SOUTH ELEVATION BP
1 : 48



2 WEST ELEVATION BP
1 : 48

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Project:
2408
-
Temporary Child Care
2901 St. Johns Street

Drawing:
ELEVATIONS

Project Status:
BP

SUBMISSION

Date (YYYY-MM-DD)	Description
2024-06-12	Issued for TUP

REVISION

No.	Date	Description

Scale: 1 : 48

DWG. NO: **A201**

Plot Date: 2024-06-12 Wed 12:57:13 PM

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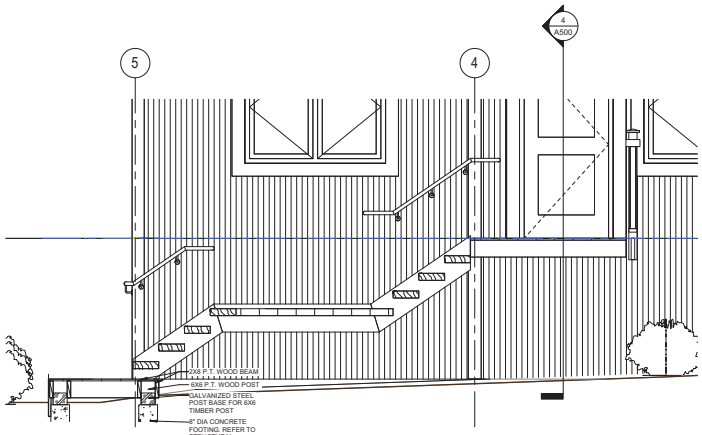
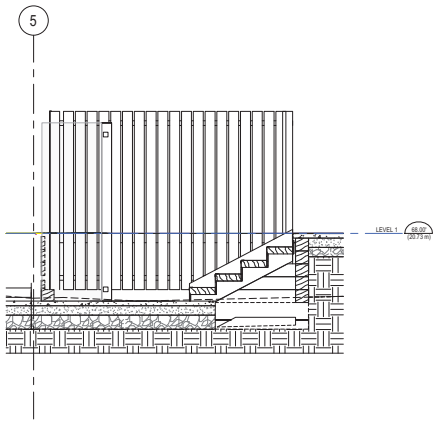
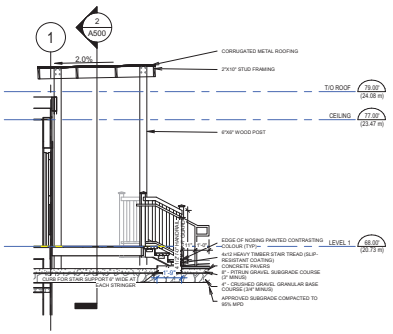


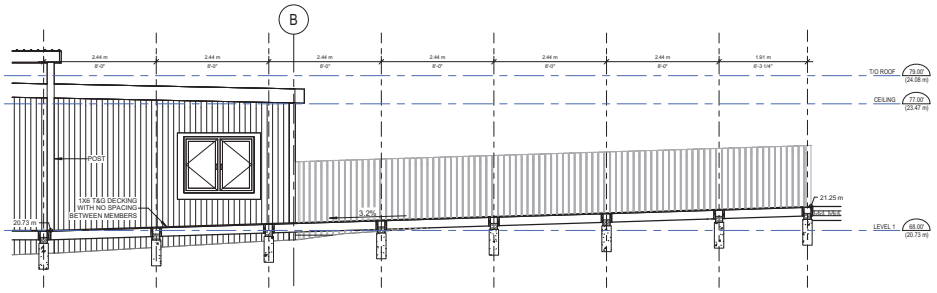
1 RAMP SECTION DETAIL
1 : 25



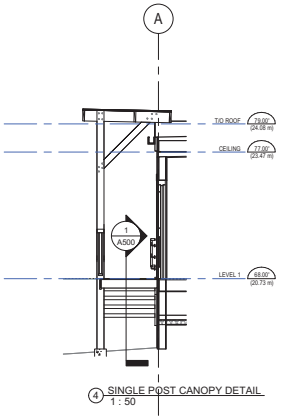
6 RAMP SECTION DETAIL1
1 : 25



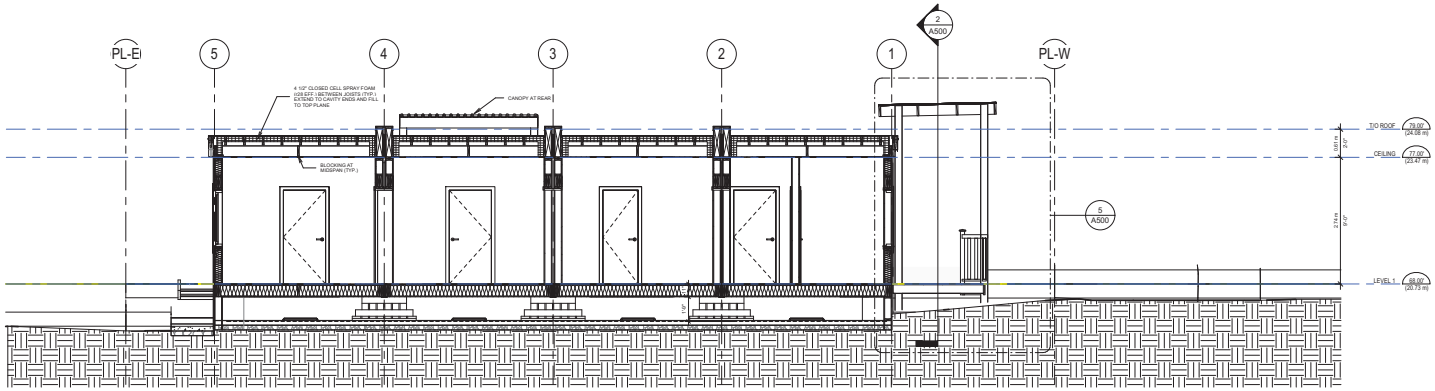
5 SECTION DETAIL AT ENTRY DECK
1 : 50



2 SECTION THROUGH RAMP
1 : 50



4 SINGLE POST CANOPY DETAIL
1 : 50



3 SECTION 6 BP
1 : 50

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Project:
2408
-
Temporary Child Care
2901 St. Johns Street

Drawing:
DETAILS

Project Status:
BP

SUBMISSION

Date (YYYY-MM-DD)	Description
2024-06-12	Issued for TUP

REVISION

No.	Date	Description

Scale: As indicated

DWG. NO: **A500**

Plot Date: 2024-06-12 Wed 12:57:14 PM
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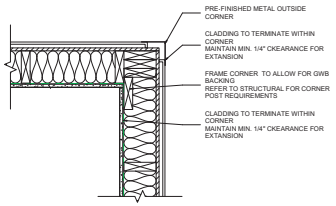
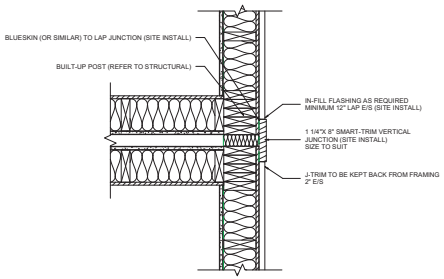
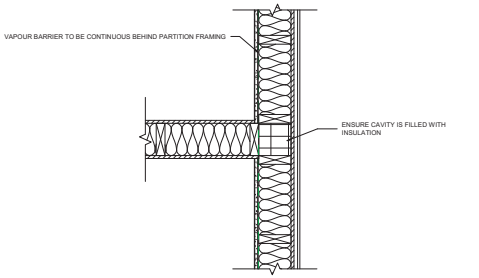
Attachment 4



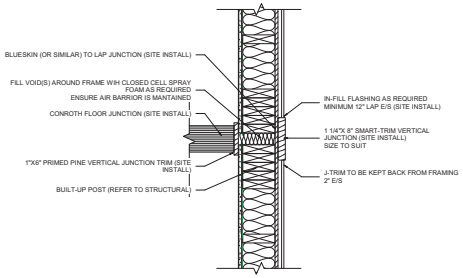
1 TYPICAL CORNER SECTION
1 : 10



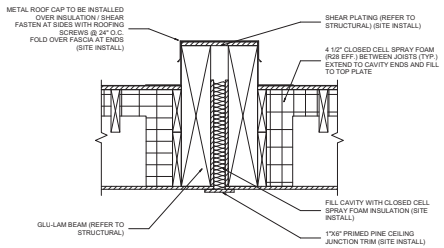
2 TYPICAL EXTERIOR MATE WALL JUNCTION
1 : 10



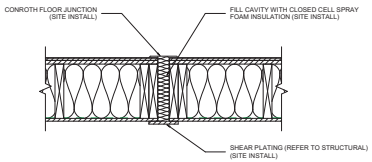
3 TYPICAL INTERIOR PARTITION CONNECTION
1 : 10



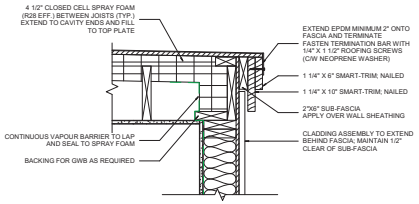
4 TYPICAL EXTERIOR WALL JUNCTION
1 : 10



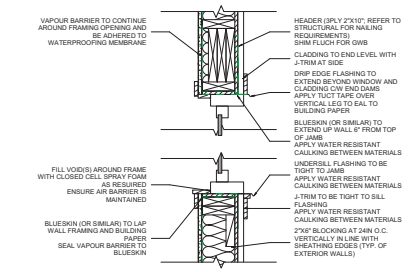
6 TYPICAL ROOF JUNCTION
1 : 10



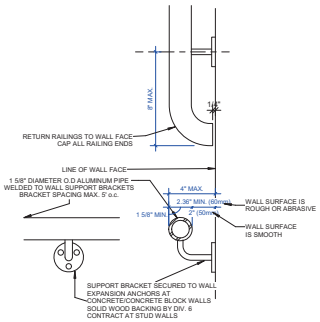
5 TYPICAL FLOOR JUNCTION
1 : 10



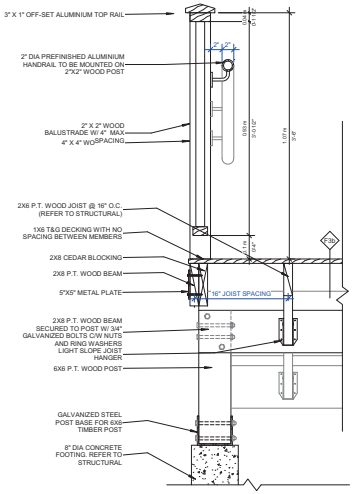
7 FASCIA SECTION
1 : 10



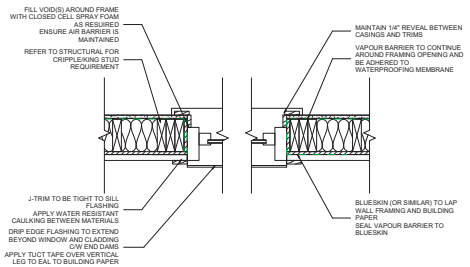
10 TYPICAL WALL SECTION (VT.)
1 : 10



8 WALL MOUNTED HANDRAIL DETAILS
1 : 5



9 HANDRAIL AND RAMP CONSTRUCTION
1 : 10



11 TYPICAL WALL SECTION (HZ.)
1 : 10

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Project:
2408
-
Temporary Child Care
2901 St. Johns Street

Drawing:
DETAILS

Project Status:
BP

SUBMISSION

Date (YYYY-MM-DD)	Description
2024-06-12	Issued for TUP

REVISION

No.	Date	Description

Scale: As indicated

DWG. NO: **A501**

Plot Date: 2024-06-12 Wed 12:57:15 PM
C:\Users\MICHELANGELO\Documents\2408_01_MAIN_R23_CF_BP_2901 St Johns Street_slarose.rvt

1 3D VIEW FROM NORTH WEST

2 NORTH EAST 3D VIEW

ARCHITECTS
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Project:
2408
-
Temporary Child Care
2901 St. Johns Street

Drawing:
3D REPRESENTATIONS

Project Status:
BP

SUBMISSION

Date (YYYY-MM-DD)	Description
2024-06-12	Issued for TUP

REVISION

No.	Date	Description

Scale:

DWG. NO:
A600

Plot Date: 2024-06-12 Wed 12:57:24 PM
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Attachment 4

BIORETENTION PLANT LIST

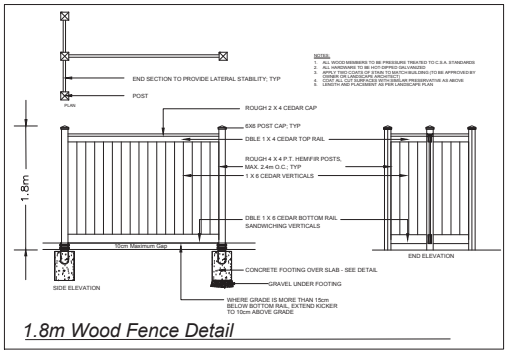
Sym	Qty	Botanical Name	Common Name	Spacing	Size
		Shrubs/Perennials/Grasses			
c	16	Carex obnupta	Slough Sedge	18" oc	4"pot
i	9	Iris douglasiana	Douglas Iris	15" oc	4"pot
s	13	Gaultheria shallon	Salal	36" oc	#2pot
p	7	Polystichum munitum	Western Sword Fern	48" oc	#2pot

NOTES:
1. All materials, installation and maintenance of landscape works shall conform to the BCSLA/BCLNA Landscape Standards.
2. Minimum planting medium/soil depths: See CIVILTECK (Civil Engineer) Section/Detail
   shrubs-24"/600mm
   trees-24"/600mm (around and beneath root ball)
3. Trenching for utility connections to be coordinated with City of Port Moody Engineering Department.

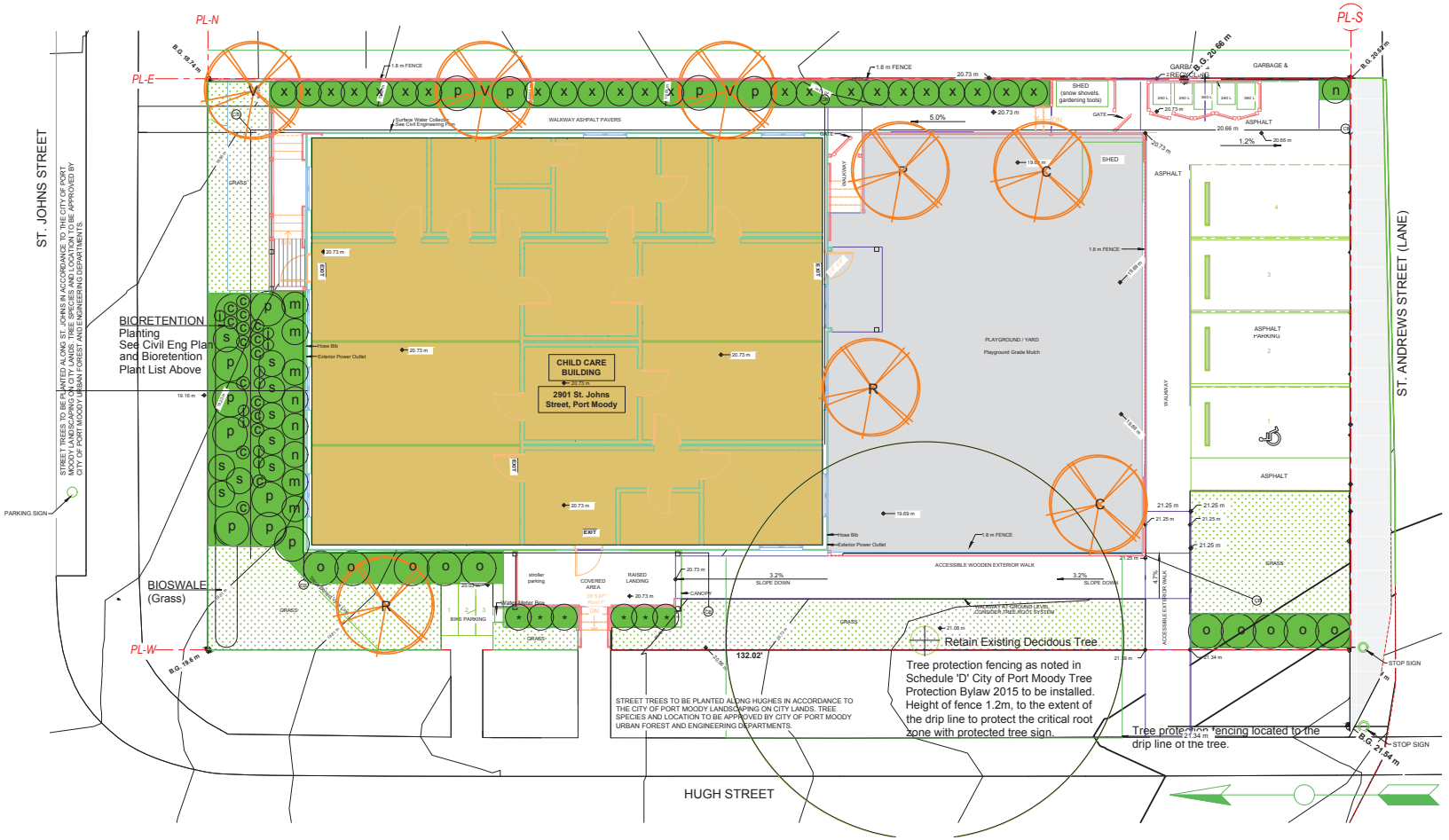
PLANT LIST

Sym	Qty	Botanical Name	Common Name	Size
		Trees All proposed trees taken from Urban Tree List for Metro Vancouver **VS**-Very Suitalbe **S**=Suitable		
V	3	Acer griseum **S**	Paperbark Maple	5cm
R	3	Cersis canadensis **vs**	Eastern Redbud	5cm
C	2	Cornus nuttallii **vs**	Pacific Dogwood	5cm
		Shrubs (56 Proposed Shrubs-Bioretention Tree and Shrubs Not Included in Total)		
m	7	Mahonia aquifolium	Tall Oregon Grape	#2pot
n	4	Mahonia nervosa	Low Oregon Grape	#2pot
o	10	Philadelphus lewisii	Mock Orange	#2pot
p	5	Polystichum munitum	Western Sword Fern	#2pot
*	6	Rosa nutkana	Nootka Rose	#2pot
x	23	Thuja occidentalis 'Smaragd'	Emerald Cedar	1.5m

NOTES:
1. All materials, installation and maintenance of landscape works shall conform to the BCSLA/BCLNA Landscape Standards.
2. Minimum planting medium/soil depths:
   lawn-12"/300mm
   ground cover-12"/300mm
   shrubs-24"/600mm
   trees-24"/600mm (around and beneath root ball)
3. All plant material (exception - Thuja occidentalis 'Smaragd') are included on City of Port Moody Preferred Plant List
4. Trenching for utility connections to be coordinated with City of Port Moody Engineering Department.



1.8m Wood Fence Detail



SSLA
Susie Sziklai
Landscape Architect
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Vancouver, BC V6K 2V9
604 970 9894
susieSLArch@gmail.com

Project:
Temporary Child Care
2901 St. Johns Street

Drawing:
Landscape Plan

Submission

Date	Description
2024-Feb-20	TUP Submission
2024-Jun-12	Response to First Review Letter Revisions
2024-Jul-09	Port Moody Revision Requests

Revision

No.	Date	Description

Scale: 3/16" = 1'-0"

DWG. NO: **L1**

Schedule B

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#1510 – 475 Howe Street
Vancouver, BC
V6C 2B3

June 17, 2024
File: 23724
R1

Attention: Amin Eskooch

Re: Geotechnical Investigation Report – Modular Daycare Facility Development
2901 St. Johns Street, Port Moody, BC

1.0 INTRODUCTION

We understand that a new modular daycare facility is proposed at the above referenced site. Architectural drawings, prepared by CIP Modular, indicate a grade supported single storey modular daycare facility is proposed to be founded on wooden cribbing foundations and to be situated in the north portion of the site. We expect wood framed modular construction so that loading would be relatively light. The development would be further improved with a playground area to the south of the daycare facility and a asphalt paved parking area within the south portion o of the site.

This report presents the results of our geotechnical investigation of the soil and groundwater conditions at the site and provides recommendations for the design and construction of the proposed development. The report has been prepared exclusively for the client, for their use, the use of others on their design and construction team. We expect this report will be relied upon by the City of Port Moody during their permitting process. No other use of this report is permitted without written consent of GeoPacific.

2.0 SITE DESCRIPTION

The site is located along the south of side of St. Johns Street in Port Moody south of Moody Centre Station which is part of the TransLink Evergreen Line Rapid Transit (EGRT) and Westcoast Express rail line. The site is bounded by St. Johns Street to the north, private property to the east, St. Andrews Street to the south, and Hugh Street to the west. The site is currently improved with a small single level garage/shed in the southeast corner of the site and otherwise vegetated with grasses and sparse trees and mainly surfaced with gravel. The site slopes down gently from southwest to northeast with elevations of approximately +21 to +19 m geodetic, according to the City of Port Moody GIS.

The location of the site relative to the surrounding improvements is shown on our Drawing No. 23724-01, following the text of this report.

3.0 FIELD INVESTIGATION

The subsurface ground conditions were investigated on January 25, 2024, using a track mounted auger drill rig that was supplied by Southland Drilling Co. Ltd of Delta, BC. A total of 3 Dynamic Cone Penetration Test (DCPT) soundings, 5 solid stem auger holes, and 3 Cone Penetration Test (CPT) soundings, and 2 Dilatometer (DMT) sounding was completed at the site; however, DMT24-02 was unable to advance due to refusal. Additionally, shear wave velocity measurements were collected during a Seismic CPT (SCPT) sounding. The auger test holes were drilled to depths of up to 9.1 m below grade, CPT soundings were advanced up to 16.7 m below grade, and DMT soundings were advanced up to 9.8 m below grade.

The investigation was supervised by a member of our geotechnical staff who logged and sampled the soils encountered. Prior to our investigation, a BC one call was placed and Municon West Coast Monitoring Ltd was on site to clear the test locations of buried services. All test holes were backfilled and sealed in accordance with provincial abandonment requirements following classification, sampling and logging.

The CPT is an in-situ testing device which is pushed into the ground employing a hydraulic ram on the drill rig. The cone penetrometer records measurements of tip resistance, sleeve resistance, dynamic pore water pressure, temperature, and inclination in 50 mm increments. Shear wave velocities can also be collected in 1 m intervals when required. The data obtained may be correlated to engineering parameters such as shear strength, relative density, soil behaviour type, and consolidation coefficients. The stratigraphic interpretation was verified with the auger test holes as described above.

The DMT is an in-situ testing device which is pushed or lightly hammered into the ground by employing a hydraulic ram or drop hammer on the drill rig. The DMT determines the soil in-situ lateral stress and soil lateral stiffness and to estimate some other engineering properties of subsurface soils. The data obtained may be correlated to engineering parameters such as shear strength, friction angle, soil behavior type, and consolidation coefficients. DMT results have been interpreted and correlated with other soil properties and used as the basis for some engineering design methodologies.

The auger test hole logs are presented in Appendix A and the results of the CPT soundings are presented in Appendix B. The interpreted soil strength and relative density indices, based on the CPT data, are presented in Appendix C, Liquefaction Assessment in Appendix D. Geotechnical parameters calculated from the DMT results are presented in Appendix E of this report. Shear Wave Velocity data is presented in Appendix F.

The approximate locations of the test holes, DCPT, CPT, and DMT soundings are shown on our Drawing 23724-01, following the text of this report.

4.0 SUBSURFACE CONDITIONS

4.1 Soil Conditions

The general geology of the region under investigation is described as marine shore and fluvial sand up to 8 m thick according to the Geological Survey of Canada map l484A. A detailed description of the soils encountered is presented below.

SILT AND SAND (Topsoil)

At the southwest corner of the site, TH24-02, dark brown soft to firm silt and sand with trace organics was encountered at the surface extending to 0.6 m below existing grade. This material is underlain by silty sand as described below.

SILTY SAND (Surficial)

At the south and central portion of the site, TH24-02, TH24-03, and inferred at TH24-05, light brown to tan silty sand was encountered extending up to 3.0 m below existing grades at test hole locations. DCPT blow counts at TH24-03 and TH24-05 indicate the silty sand and gravel is loose. Interpreted indices of CPT24-02, completed at TH24-02, indicate the material is compact. Trace organics were noted at TH24-02 at 1.9 to 2.1 m below grade.

SILTY SAND AND GRAVEL (Surficial)

At the north portion of the site at TH24-01 and TH24-04, silty sand and gravel with occasional cobbles was encountered at the surface and extends 3.4 m below grade at TH24-01 and 7.6 m below grade at TH24-04. DCPT blow counts indicate the silty sand and gravel is generally compact.

At TH24-01, the silty sand and gravel is underlain by 0.6 m thick layer of soft to firm sandy silt.

SILTY SAND and GRAVEL to SILTY SAND (Colluvium)

The above soils are underlain by colluvial deposits consisting of interbedded silty sand and gravel to silty sand/sandy silt. The sand was noted to be medium grained with some silt. The colluvium was found to be compact to dense. These deposits may contain occasional cobbles and boulders. Localized stiff silt lenses were encountered within the colluvium deposits. Laboratory testing indicates the fines content of the colluvium deposit ranges from 14.2% to 72.9%. Localized wood fragments were observed at TH24-03 between 4.6 and 6.1 m below existing grade. An approximate 1 to 1.5 m thick deposit of loose to compact interbedded silty sand to sandy silt is observed between 12 to 14 m at CPT locations. Based on CPT sounding refusal, we expect the layer extends to approximately 16 m below existing grades.

GLACIAL TILL

Based on our experience with nearby sites, the colluvium deposit is expected to be underlain by glacial till at depth, expected around 15 to 16 m below existing grades based on our CPT refusal depths.

For a more detailed description of the subsurface conditions refer to the appendices, following the text of this report.

4.2 Groundwater Conditions

The static groundwater level was measured at around 2.2 m below current site grades based on CPT pore pressure measurement. Note that perched groundwater should be expected to occur in the upper stratum during wetter periods. Groundwater levels are expected to vary seasonally with generally higher levels following sustained precipitation.

5.0 DISCUSSION

5.1 General

Architectural drawings, prepared by CIP Modular, indicate a grade supported single storey modular daycare facility is proposed to be founded on wooden cribbing foundations and to be situated in the north portion of the site. Structural drawings, prepared by CanStruct Engineering Group, indicate wooden cribbing foundations which are braced in two directions to prevent footings from spreading should a seismic event occur. We expect wood framed modular construction so that loading would be relatively light.

The development would be further improved with a playground area to the south of the daycare facility and an asphalt paved parking area within the south portion of the site. Site grading, as indicated on the Civil Teck Engineering drawings, indicates up to approximately 1 m of fill to be placed above existing grades, and we envision a retaining wall would be constructed to retain the grading fill soils where required.

In general, the site is underlain by loose to compact surficial soils underlain by compact to dense colluvial deposits. The colluvial deposits are expected to be underlain by dense to very dense glacial till at depth. The structure is intended to be supported at/near existing grades with up to 1 m of grading fill. The subsurface conditions at underside of foundation are expected to be variable surficial soils and may require some over-excavation and replacement or compaction below foundation areas. We expect it would be feasible to support the structure on conventional pad and strip foundations directly supported on engineered fill placed and compacted above undisturbed compact native soils or compacted native soils.

Based on the OCP of the City of Port Moody (Hazardous Lands – MAP 14), the subject site is within the mapped area for potentially moderate to high risk of earthquake soil liquefaction.

As part of the Port Moody DPA 5, based on our review of the design of the proposed development and proposed grading of the site, it is our opinion the construction of the proposed development and any soil improvement or grading completed on-site would not affect the level of risk to other nearby properties.

We confirm from a geotechnical point of view that the proposed development is feasible and safe for the use intended provided the following recommendations are implemented in the design and construction of the development.

5.2 Seismic Analysis

It is generally accepted that loose to compact and saturated non-plastic silts and sands are prone to liquefaction or strain softening during cyclic loading caused by large magnitude long duration earthquakes. The strength reduction caused by soil liquefaction can cause foundations to punch. Furthermore, once liquefaction has been triggered, experience has shown that significant, permanent vertical and horizontal movements may be experienced.

We have conducted a liquefaction assessment based on the 1:2,475-year earthquake, as defined in the 2018 British Columbia Building Code (BCBC). In the Port Moody area, this earthquake is expected to measure 7.0 on the moment magnitude scale and generate a maximum horizontal "firm ground" acceleration of 0.33g (Natural Resources Canada). The results of our analysis are provided in Appendix ‘D’.

The analysis indicates that there are limited thin zones that could liquefy within 2.5 and 15 m below existing site grades. The significance of ground liquefaction at the depths predicted can be grouped into two principal effects:

1. Reduction in shear strength at depth and thus reduction in bearing capacity - possible punching failure.

2. Post liquefaction vertical and horizontal ground movements - possible structural distress to the building.

Considering the depth below grade where of potentially liquefiable soil zones are present in conjunction with the limited thickness of liquefiable layers and the anticipated light weight of the proposed new structure, the risk of punching of foundations in the event of ground liquefaction is considered negligible.

Our analyses indicate post liquefaction permanent ground settlements and horizontal displacements will be in the range of up to 75 mm. The predicted movements are based on empirical observations from other earthquake sites around the world on relatively flat ground away from the influence of surrounding structures and should not be taken as exact calculations of movement but rather order of magnitude estimates. Our calculations of ground movements are based on Tokimatsu & Seed, 1987 and Youd et al., 2002. Differential settlements due to liquefaction should be expected to be in the range of 50% of the total liquefaction settlements.

We expect that the structure may be designed to tolerate the post liquefaction settlements, rather than undertake the cost of deep soil densification to reduce post liquefaction ground movements. We do not anticipate foundation punching due to the depth to liquefiable soils, proposed increase grading for portions of the site, and light loading of the proposed grade supported modular structure. The structural engineer should review these seismic induced movements and confirm that they are acceptable.

6.0 RECOMMENDATIONS

6.1 Site Preparation for Building

Prior to construction of foundations or floor slabs, all vegetation, topsoil, organic material, debris, refuse, and loose or otherwise disturbed soils must be removed from the construction areas to expose a subgrade of compact to dense silty sand to silty sand and gravel. The stripped subgrade should be evaluated under the review of the geotechnical engineer. Any loose, soft, or disturbed zones should be removed to expose undisturbed native subgrade.

- We recommend over-excavation and replacement with engineered fill to extend minimum 0.3 m below the underside of wooden cribbing foundation locations (not required where grading fill extends over 0.3 m above grade). Over-excavation and replacement with “engineered fill” 75 mm minus meeting MMCD specifications should extend beyond the foundation dimensions at 2H:1V from outside of foundation.

- We recommend the subgrade soils below cribbing foundation locations should be compacted in place with a large excavator mounted hoe-pack under GeoPacific review, and the compaction area should extend a minimum of 1 m outside of each wooden cribbing foundation footprint. Hoe-packing works are expected to be best completed in the dryer summer and fall months, if feasible with project schedule. Vibration monitoring of neighbouring property to the east should be considered prior to and during compaction works.

The substratum soils are likely susceptible to disturbance at the excavated surface due to groundwater seepage, precipitation, personnel, and vehicular traffic. We expect for these conditions all undisturbed subgrades should be blinded with a minimum thickness of 100 mm clear crushed gravel, increasing to 600 mm crushed rock in areas where vehicular traffic must traverse the site. Subgrades should be graded to inhibit ponding of water. Any water softened/disturbed soils must be excavated to expose undisturbed subgrade.

In the event over-excavation is required due to poor quality soils near the excavated surface, reinstatement of subgrade should be completed with compacted “engineered fill”. In the context of this report, engineered fill is defined as clean sand or sand and gravel, compacted in 300 mm loose lifts to a minimum of 98% Standard Proctor dry density (ASTM D698), at a moisture content that is within 2% of its optimum for compaction.

Any grade reinstatement below foundations should be completed with 75 mm minus material meeting MMCD specifications.

The geotechnical engineer shall be contacted for the review of stripping, engineered fill placement and compaction.

6.2 Buildings Foundations

Once the recommended site preparation has been undertaken, the proposed structure can be founded on conventional strip and pad footings, founded on well compacted 75 mm minus engineered fill placed and compacted above approved undisturbed native subgrade soil.

Footings founded on engineered fill placed and compacted above well compacted “engineered fill” and hoe-pack compacted native soils consisting of compact silty sand to silty sand and gravel can be designed using a Serviceability Limit States (SLS) bearing pressure of 50 kPa, as indicated in the CanStruct Engineering Group Structural drawings. The factored Ultimate Limit States (ULS) bearing pressures may be taken at 1.5 times the SLS bearing pressures provided.

We expect that the settlement of footings designed as recommended should be within the normally acceptable limits of 25 mm total and up to 2 mm per metre span of differential. Irrespective of SLS bearing pressures, footings should not be less than 450 mm in width for strip footings and not less than 600 mm in width for square or rectangular footings. Footings should also be buried a minimum of 450 mm below the surface for frost protection.

The geotechnical engineer shall be contacted for the review of all foundation subgrades.

6.3 Seismic Design of Foundations

For structures to be constructed at the above referenced site and on native ground, the Site Classification to be used for estimating the seismic site response as defined in Table 4.1.8.4.A. of the 2018 British Columbia Building Code, should be assumed to be "Site Class F". For buildings with structural period of 0.5 second or less, Class E spectrum can be used.

6.4 Slab-On-Grade Floors Preparation

The structure floor slab may be raised /suspended from existing grades, and in this case, a slab-on-grade floor is not anticipated; however, to provide suitable support for slab-on-grade floors we recommend that any fill placed under the slab should be “engineered fill” as described in Section 6.1 above.

We expect the undisturbed native soils consisting of silty sand to silty sand and gravel would be suitable to support the slab-on-grade loading pending minimum 0.3 m of engineered fill is placed and compacted below the slab area. Furthermore, the floor slab should be directly underlain by a minimum of 150 mm of compacted 19 mm clear crushed gravel fill to inhibit upward migration of moisture beneath the slab. A moisture barrier should underlie the slab directly above the free draining granular material.

The geotechnical engineer shall be contacted for the review of the slab-on-grade subgrade soil and under-slab fill materials review and compaction.

6.5 Site and Foundation Drainage Systems

For at-grade structures, provided that the site grading directs surficial flows away from the buildings, a perimeter drainage system intended to control subsurface groundwater is not required.

6.6 Temporary Excavation and Shoring

All excavations and trenches must conform to the latest Occupational Health and Safety Regulation supplied by the Work Safe BC. Any excavation in excess of 1.2 metres in depth requiring worker entry must be reviewed by a professional geotechnical engineer. Temporary excavations in the fill soils and native soils can be cut at a slope angle of 1H:1V above the water table. All slopes should be covered with poly sheeting.

The geotechnical engineer shall be contacted for the review of shoring installation and temporary excavations.

6.7 New On-Site Pavement

Following the recommended site preparation, it is our opinion that our recommended pavement section, given in Table 1, is sufficient to carry the vehicle loads induced by conventional automobile and light truck traffic.

Table 1: Recommended Minimum Pavement Structure

Material	Thickness (mm)
Asphaltic Concrete	75
19 mm minus crushed gravel base course	200
75 mm minus, well graded, clean, sand and gravel subbase course	300

The stripped subgrade of compact silty sand to silty sand and gravel should be proof-rolled with a fully loaded tandem axle truck to locate any soft zones, which would require re-compaction to 95% Modified Proctor (ASTM D1557) maximum dry density or removal and replacement with engineered fill prior to pavement construction.

All base and sub-base fills should be compacted to a minimum of 95% Modified Proctor dry density with a moisture content within 2% of optimum for compaction. The base and sub-base materials should meet municipal requirements for gradation and density. Density testing should be conducted on the base and subbase materials to confirm that they have been compacted to the required standard. The density testing results should be forwarded to the geotechnical engineer for review. GeoPacific should observe proof rolling of the pavement area with a fully loaded dump truck on the exposed subgrade or compacted sub-base prior to base course and asphalt course.

6.8 Utility Installations

We recommend that any trenches be sloped or shored as per the latest Work Safe B.C. regulations. The maximum temporary cut slope angles will depend upon the effectiveness of the contractors de-watering program. We anticipate that typical excavations would be sloped at 1H:1V, though we expect that the slopes may need to be flattened where groundwater seepage exists.

We recommend that all service trenches be backfilled with clean granular material, which conforms to municipal standards, compacted to 95% “Modified Proctor” dry density (ASTM D1557) with a moisture content within 2% of optimum for compaction.

If any organic and/or weak soils are identified in utility trenches, these may require local over-excavation and replacement with engineered fill as noted in Section 6.1. In general, we would expect normal post construction settlements of utilities (25 mm total and 20 mm over a 10 metres span differential).

Any excavation in excess of 1.2 metres (4 feet) in depth requiring worker-entry must be reviewed by a geotechnical engineer.

6.9 Retaining Wall

We understand that a retaining wall is proposed around the grading fill areas, which may extend up to approximately 1 m above existing grades. We envision that cast-in-place reinforced concrete retaining walls may be utilized. Alternatively, a modular retaining wall system, utilizing Lock Block or Valleystone block (or approved alternatives), reinforced with geogrid can be utilized.

6.9 Methane Abatement

All surficial topsoil would be removed during the construction of the foundation areas, and no significant organic soils which could generate methane were observed within the soil substratum during our investigation. Furthermore, the structure is raised above grade on wooden cribbing which permits airflow below the floor slab. Therefore, in our opinion, no methane abatement system is required.

7.0 DESIGN REVIEWS AND CONSTRUCTION INSPECTIONS

The preceding sections make recommendations for the design and construction of the proposed development. We have recommended that we be retained for the review of certain aspects of the design and construction. It is important that these reviews are carried out to ensure that our intentions have been adequately communicated. It is also important that any contractors working on the site review this document prior to commencing their work.

It is the responsibility of the contractors working on-site to inform GeoPacific a minimum of 24 hours in advance that a field review is required. In summary, reviews are required by geotechnical engineer for the following portions of the work.

1. Review of site stripping
2. Review of temporary cut slopes
3. Review of foundation subgrade prior to footing construction and playground systems.
4. Review of slab-on-grade fill compaction prior to slab construction
5. Review of the compaction of engineered fill
6. Review of excavation in excess of 1.2 metres in height requiring worker-entry
7. Review of compaction of pavement base and subbase

8.0 CLOSURE

This report has been prepared exclusively for our client for the purpose of providing geotechnical recommendations for the design and construction of the proposed development and related earthworks. The report remains the property of GeoPacific Consultants Ltd. and unauthorized use of, or duplication of, this report is prohibited.

We are pleased to assist you with this project, and we trust this information is helpful and sufficient for your purposes at this time. However, please do not hesitate to call if you should require any clarification.

For:
GeoPacific Consultants Ltd.

Wyatt Johnson, B.Eng., P.Eng.
Project Engineer

Matt Kokan, M.A.Sc., P.Eng.
Principal

LEGEND:

- SCPT#-# – SEISMIC CONE PENETRATION TEST (SCPT) LOCATION
- CPT#-# – CONE PENETRATION TEST (CPT) LOCATION
- DCPT#-# – DYNAMIC CONE PENETRATION TEST (DCPT) LOCATION
- TH#-# – TEST HOLE (TH) LOCATION

SITE PLAN

*TEST LOCATIONS ARE APPROXIMATE

REFERENCE: Google Maps

ORIGINAL PAPER SIZE 8.5"x11"

GEOPACIFIC CONSULTANTS
1779 West 75th Ave.
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P 604.439.0922
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DATE:	2024-01-25	
DRAWN BY: BE	APPROVED BY: WJ	REVIEWED BY: N/A
SCALE: NOT TO SCALE		

GRADE SUPPORTED DAYCARE DEVELOPMENT

2901 ST JOHNS ST, PORT MOODY, BC

TEST HOLE SITE PLAN

FILE NO.: 23724

DWG. NO.: 23724-01

REVISIONS:
A.
B.
C.

APPENDIX A – TEST HOLE LOGS

Test Hole Log: TH24-01 / CPT24-01

File: 23724
Project: PROPOSED GRADE SUPPORTED DAYCARE DEVELOPMENT
Client: 1446649 B.C. LTD.
Site Location: 2901 ST JOHNS ST, PORT MOODY, B.C.

GEOPACIFIC CONSULTANTS
1779 West 75th Avenue, Vancouver, BC, V6P 6P2
Tel: 604-439-0922 Fax:604-439-9189

Depth (ft / m)	Symbol	SOIL DESCRIPTION	Depth (m)/Elev (m)	Moisture Content (%)	DCPT (blows per foot) 20 40 60 80	Groundwater / Well	Remarks
0 / 0		Ground Surface					
0 / 0		***SILTY SAND AND GRAVEL*** Brown, compact to dense, SILTY SAND AND GRAVEL; moist, medium to coarse grained sand, gravels up to 75mm in size, trace cobbles	0.0	12.6%			Groundwater observed at ~2m
11 / 3.4		***SANDY SILT*** Light brown, soft to firm, SANDY SILT; wet, fine grained sand	3.4	23.7%			
13 / 4		***SILTY SAND*** Light brown, compact, SILTY SAND; wet, medium to coarse grained sand	4.0	18.3%			Some gravels up to 25mm in size between ~4.9m-5.2m
19 / 5.6		***SILTY SAND AND GRAVEL*** Brown to grey, dense to very dense, SILTY SAND AND GRAVEL; wet, medium to coarse grained sand, gravels up to 75mm in size, trace cobbles	5.6	14.7%			
22 / 6.6		***SILTY SAND*** Light brown, compact, SILTY SAND; wet, medium to coarse grained sand, trace gravels up to 25mm in size	6.6	20.7%			
30 / 9.1		End of Borehole	9.1				

Logged: TL
Method: SOLID STEM AUGER
Date: JAN 25, 2024

Datum: GROUND ELEVATION
Figure Number: A.01

Test Hole Log: TH24-02 / CPT24-02

File: 23724
Project: PROPOSED GRADE SUPPORTED DAYCARE DEVELOPMENT
Client: 1446649 B.C. LTD.
Site Location: 2901 ST JOHNS ST, PORT MOODY, B.C.

GEOPACIFIC CONSULTANTS
1779 West 75th Avenue, Vancouver, BC, V6P 6P2
Tel: 604-439-0922 Fax:604-439-9189

INFERRED PROFILE

Depth (ft / m)	Symbol	SOIL DESCRIPTION	Depth (m)/Elev (m)	Moisture Content (%)	DCPT (blows per foot) 20 40 60 80	Groundwater / Well	Remarks
0 / 0		Ground Surface					
		SILT AND SAND Dark brown, soft to firm, SILT AND SAND; moist, fine to medium grained sand, trace gravels up to 25mm in size, trace cobbles, trace organics	0.0	31.3%			
1 / 1			0.6				
2 / 2		***SILTY SAND*** Light brown, loose to compact, SILTY SAND; moist, fine to medium grained sand		26.5%			Trace organics between ~1.9m-2.1m Groundwater observed at ~2.1m
3 / 3		***SILTY SAND AND GRAVEL*** Brown, compact to dense, SILTY SAND AND GRAVEL; wet, fine to medium grained sand, gravels up to 75mm in size	2.6	13.9%			
4 / 4		***SILTY SAND*** Light brown, compact, SILTY SAND; wet, fine to medium grained sand, trace gravels up to 25mm in size	3.4				
5 / 5		***SILTY SAND AND GRAVEL*** Brown, compact to dense, SILTY SAND AND GRAVEL; wet, fine to medium grained sand, gravels up to 75mm in size	4.3				
6 / 6		***SILTY SAND*** Light brown, compact, SILTY SAND; wet, fine to medium grained sand, trace gravels up to 25mm in size	5.0				
7 / 7							
8 / 8				21.2%			
9 / 9							
		End of Borehole	9.1				

Logged: TL
Method: SOLID STEM AUGER
Date: JAN 25, 2024

Datum: GROUND ELEVATION
Figure Number: A.02

Test Hole Log: TH24-03 / DMT24-01

File: 23724
Project: PROPOSED GRADE SUPPORTED DAYCARE DEVELOPMENT
Client: 1446649 B.C. LTD.
Site Location: 2901 ST JOHNS ST, PORT MOODY, B.C.

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Tel: 604-439-0922 Fax:604-439-9189

INFERRED PROFILE

Depth (ft / m)	Symbol	SOIL DESCRIPTION	Depth (m)/Elev (m)
0 / 0		Ground Surface	
0 / 0 – 10 / 3		***SILTY SAND*** Beige to orange, very loose to loose, SILTY SAND; wet, medium grained sand	0.0
10 / 3 – 30 / 9		***SILTY SAND AND GRAVEL*** Beige, compact to dense, SILTY SAND AND GRAVEL; wet, medium to coarse grained sand gravels up to 75mm in size	3.0
30 / 9		End of Borehole	9.1

Moisture Content (%): 34.8% (at ~1 m); 16.2% (at ~3.7 m); 20.2% (at ~7.6 m)

DCPT (blows per foot) 20 40 60 80: 5, 3, 1, 5, 11, 10, 3, 1, 5, 2, 1, 1, 4, 14

Groundwater / Well

Remarks:
- Some wood fragments between ~4.6m-6.1m
- Some gravels up to 50mm in size between ~6.1m-7.6m

Logged: BE
Method: SOLID STEM AUGER
Date: JAN 25, 2024

Datum: GROUND ELEVATION
Figure Number: A.03

Test Hole Log: TH24-04 / CPT24-03 / DMT24-02

File: 23724
Project: PROPOSED GRADE SUPPORTED DAYCARE DEVELOPMENT
Client: 1446649 B.C. LTD.
Site Location: 2901 ST JOHNS ST, PORT MOODY, B.C.

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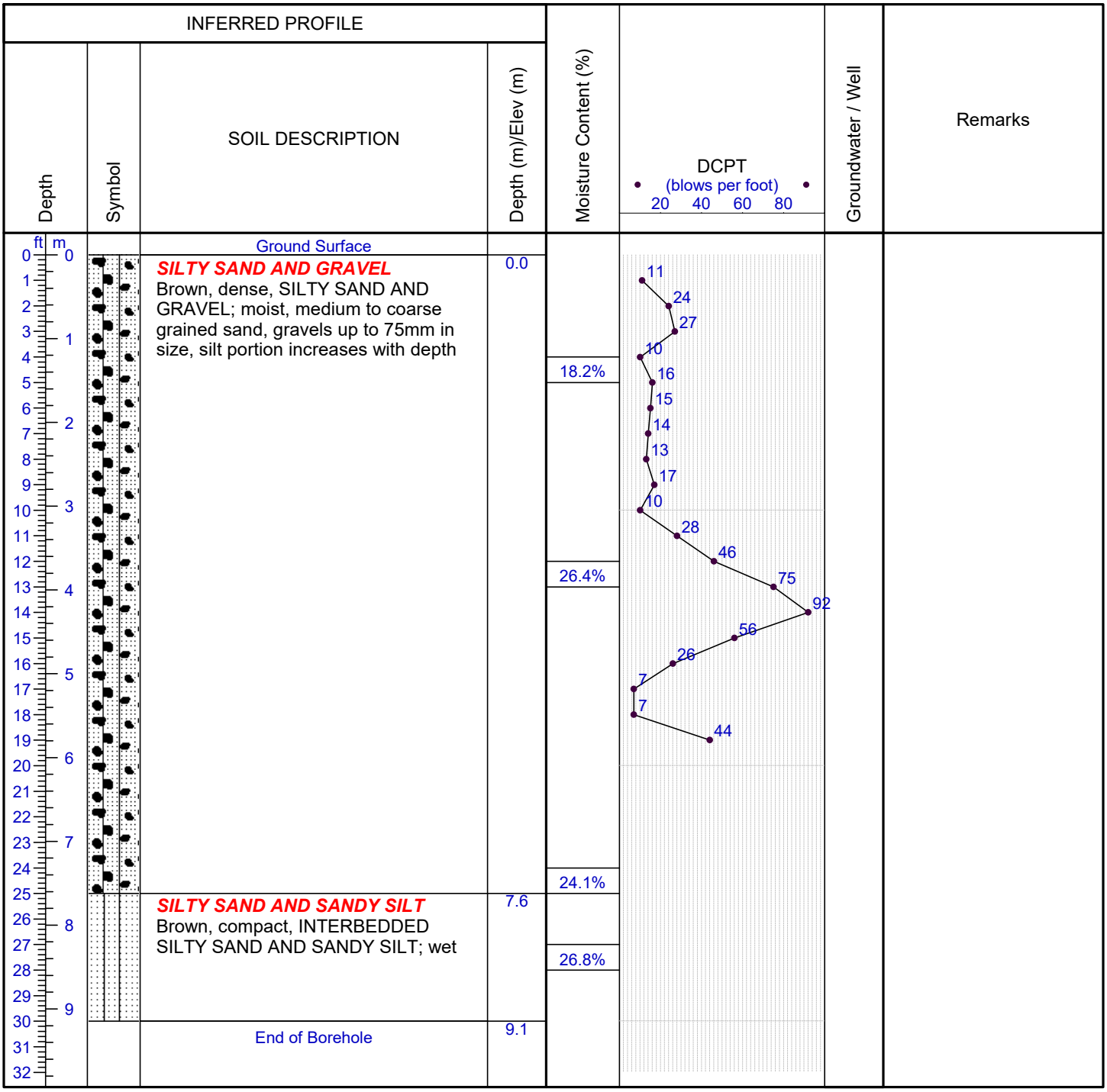

Logged: BE
Method: SOLID STEM AUGER
Date: JAN 25, 2024

Datum: GROUND ELEVATION
Figure Number: A.04

Test Hole Log: DCPT24-05

File: 23724
Project: PROPOSED GRADE SUPPORTED DAYCARE DEVELOPMENT
Client: 1446649 B.C. LTD.
Site Location: 2901 ST JOHNS ST, PORT MOODY, B.C.

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Tel: 604-439-0922 Fax:604-439-9189

INFERRED PROFILE

Depth (ft / m)	Symbol	SOIL DESCRIPTION	Depth (m)/Elev (m)
0 / 0		Ground Surface	
		NOT SAMPLED	0.0
15 / 4.6		End of Borehole	4.6

Moisture Content (%)

DCPT (blows per foot) 20 40 60 80

3 2 1 2 7 10 1 3 7 33 18 1 2 34

Groundwater / Well

Remarks

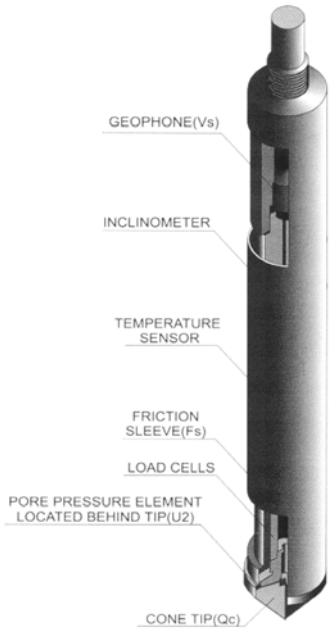
Logged: TL
Method: SOLID STEM AUGER
Date: JAN 25, 2024

Datum: GROUND ELEVATION
Figure Number: A.05

APPENDIX B - ELECTRONIC CONE PENETRATION RESULTS

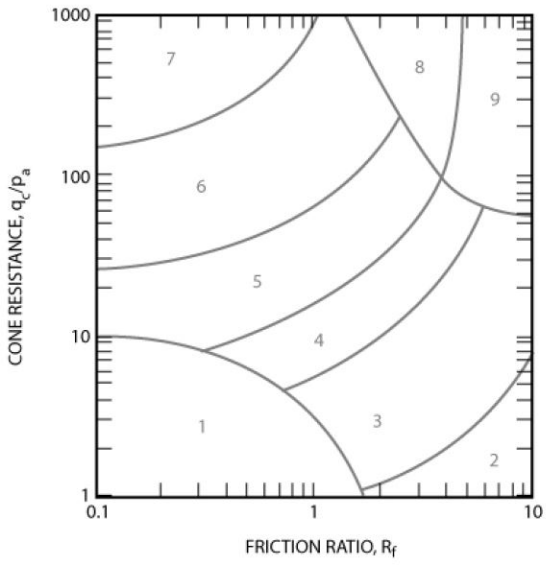
The system used is owned and operated by GeoPacific and employs a 35.7 mm diameter cone that records tip resistance, sleeve friction, dynamic pore pressure, inclination and temperature at 5 cm intervals on a digital computer system. The system is a Hogentogler electronic cone system and the cone used was a 10 ton cone with pore pressure element located behind the tip and in front of the sleeve as shown on the adjacent figure.

Electronic Cone Penetrometer



In addition to the capabilities described above, the cone can be stopped at specified depths and dissipation tests carried out. These dissipation tests can be used to determine the groundwater pressures at the specified depth. This is very useful for identifying artesian pressures within specific layers below the ground surface.

Interpretation of the cone penetration test results are carried out by computer using the interpretation chart presented below by Robertson[1]. Raw data collected by the field computer includes tip resistance, sleeve friction and pore pressure. The tip resistance is corrected for water pressure and the friction ratio is calculated as the ratio of the sleeve friction on the side of the cone to the corrected tip resistance expressed as a percent. These two parameters are used to determine the soil behaviour type as shown in the chart below. The interpreted soil type may be different from other classification systems such as the Unified Soil Classification that is based upon grain size and plasticity.

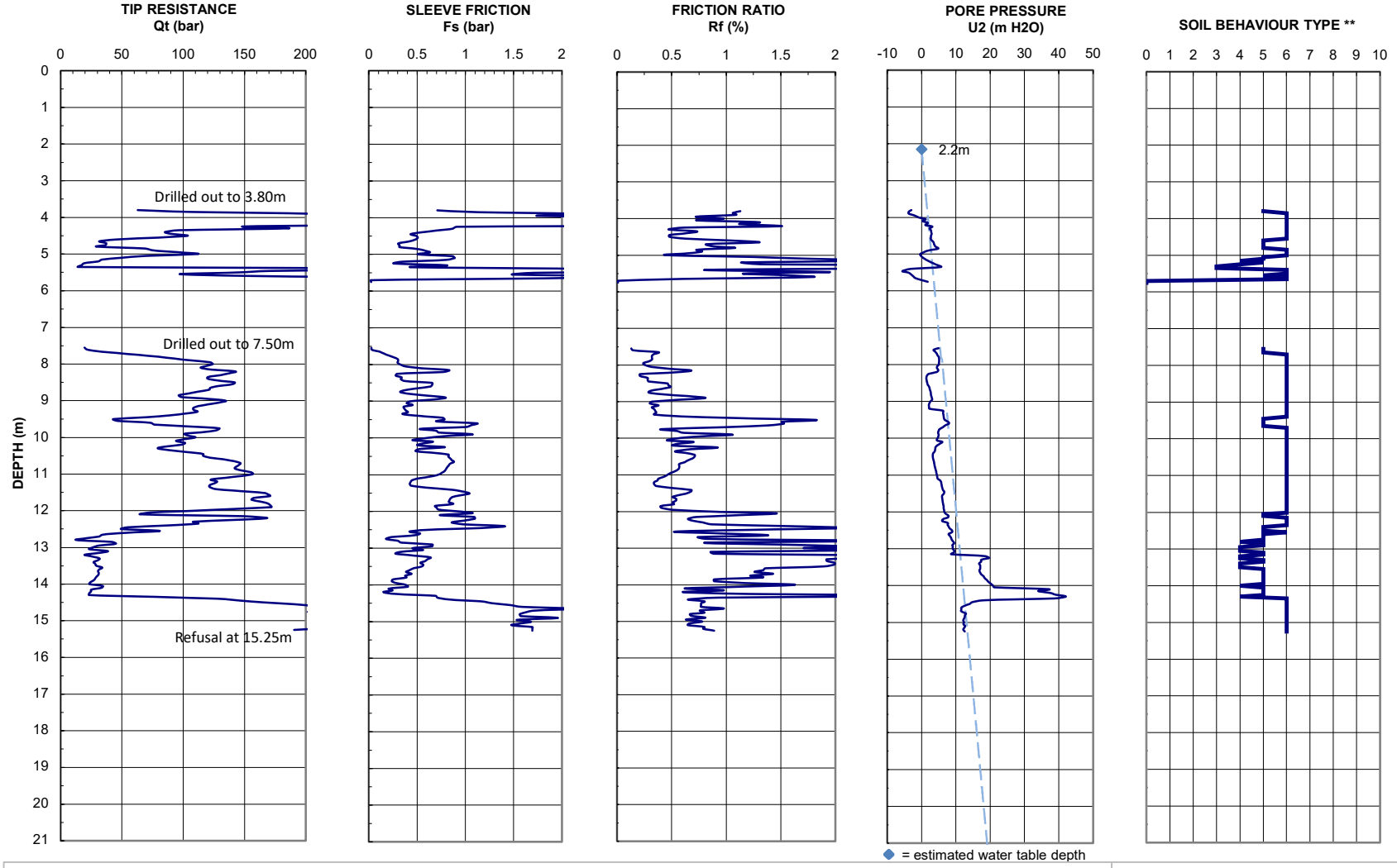


Zone	*Soil Behavior Type*
1	*Sensitive, fine grained*
2	*Organic soils - clay*
3	*Clay – silty clay to clay*
4	*Silt mixtures – clayey silt to silty clay*
5	*Sand mixtures – silty sand to sandy silt*
6	*Sands – clean sand to silty sand*
7	*Gravelly sand to dense sand*
8	*Very stiff sand to clayey sand**
9	*Very stiff fine grained**

** Heavily overconsolidated or cemented*

[1] Robertson, P.K., 2010, "Soil behaviour type from the CPT: an update.", 2nd *International Symposium on Cone Penetration Testing*, CPT'10, Huntington Beach, CA, USA.

GEOPACIFIC CONSULTANTS	2024-Jan-25	1446649 BC LTD	GeoPacific Project #: 23724
	Sounding: CPT24-01	2901 ST. JAMES STREET, PORT MOODY	Figure: B.01

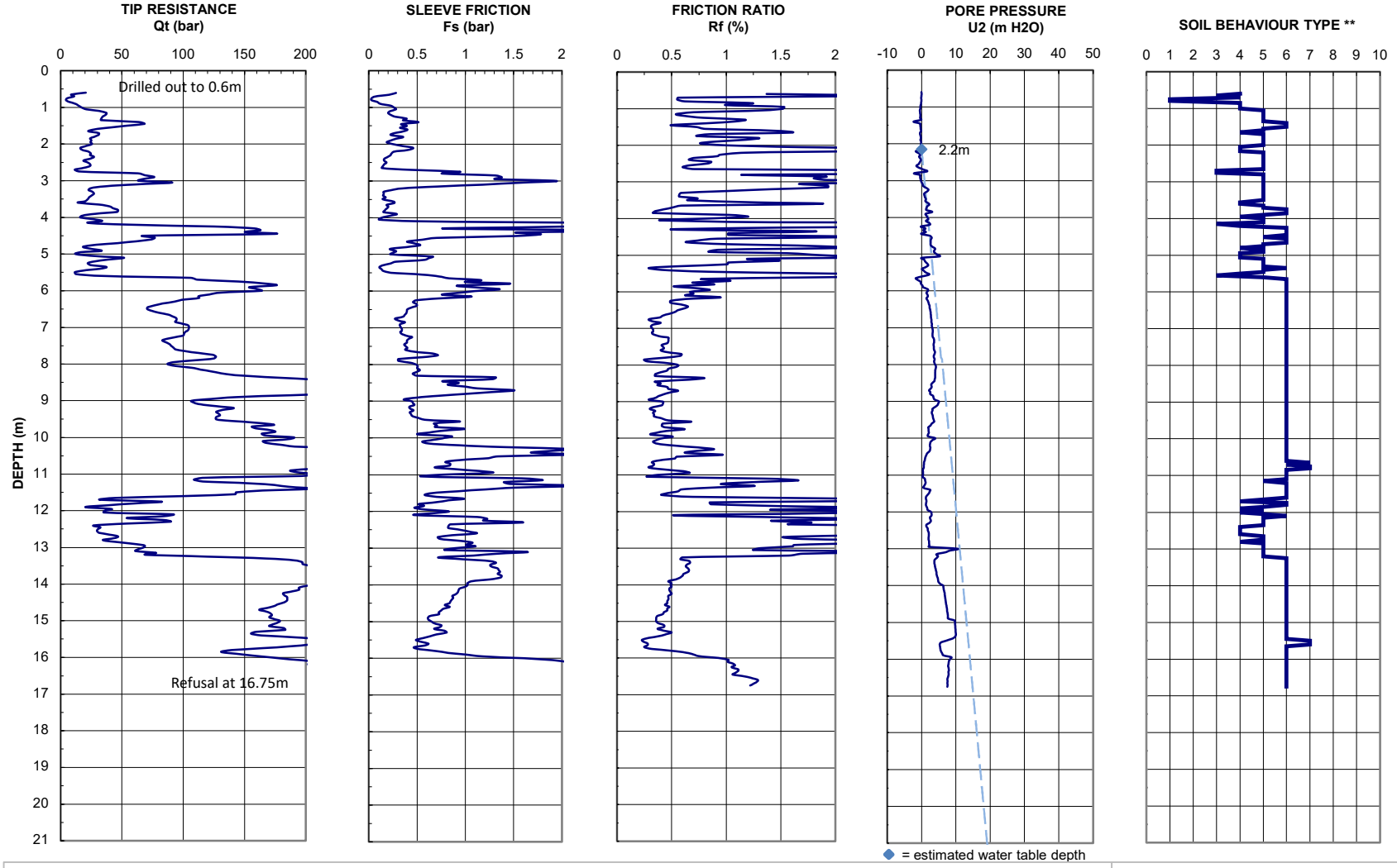


1: Sensitive, Fine Grained
2: Organic Soils - Clay
3: Clay - Silty Clay to Clay
4: Silt Mixtures - Clayey Silt to Silty Clay
5: Sand Mixtures - Silty Sand to Sandy Silt
6: Sands - Clean Sand to Silty Sand
7: Gravelly Sand to Dense Sand
8: Very Stiff Sand to Clayey Sand**
9: Very Stiff Fine Grained**

* Based on Robertson, 2010

** Heavily overconsolidated or cemented

GEOPACIFIC CONSULTANTS	2024-Jan-25	1446649 BC LTD	GeoPacific Project #: 23724
	Sounding: CPT24-02	2901 ST. JAMES STREET, PORT MOODY	Figure: B.02

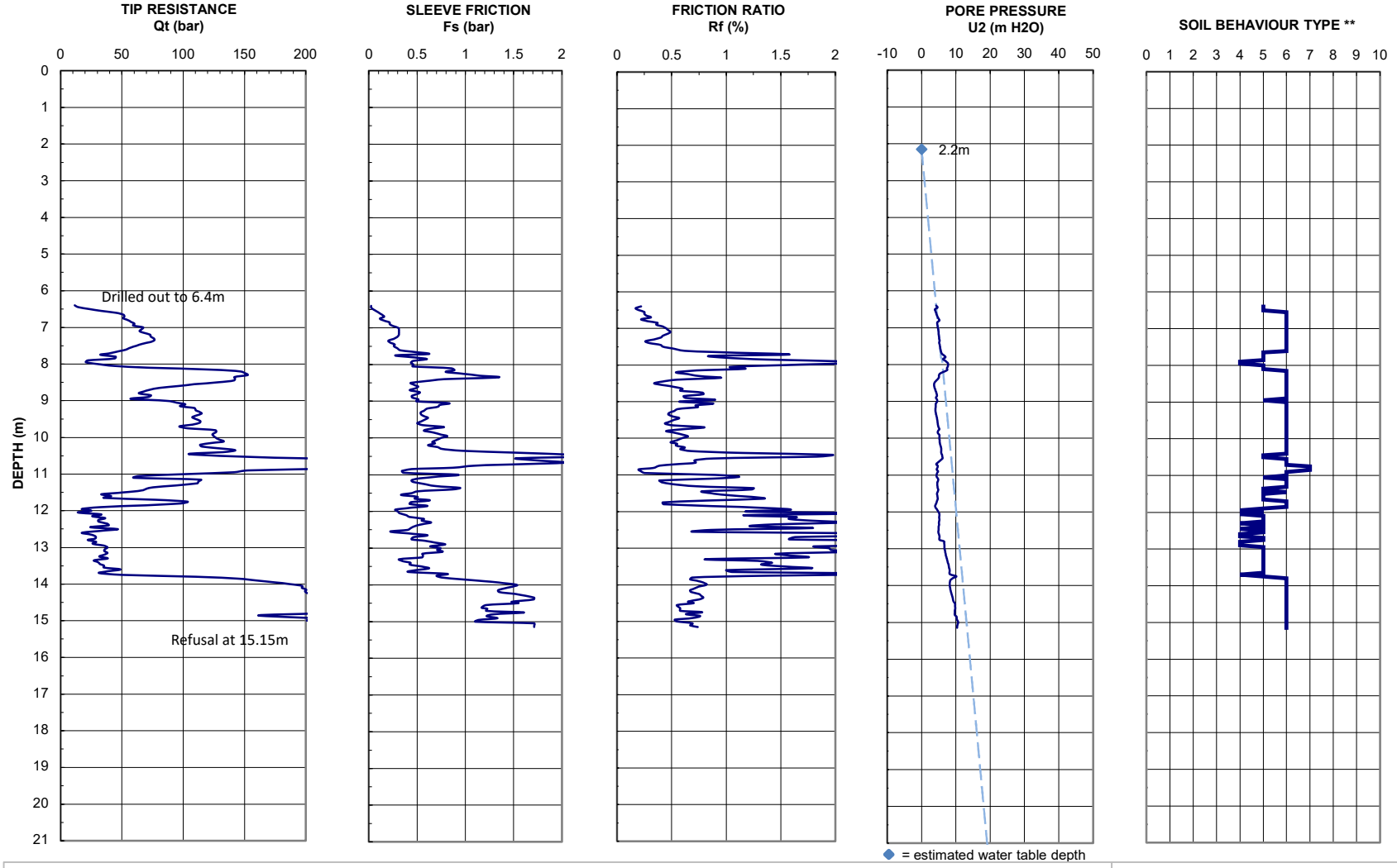


1: Sensitive, Fine Grained
2: Organic Soils - Clay
3: Clay - Silty Clay to Clay
4: Silt Mixtures - Clayey Silt to Silty Clay
5: Sand Mixtures - Silty Sand to Sandy Silt
6: Sands - Clean Sand to Silty Sand
7: Gravelly Sand to Dense Sand
8: Very Stiff Sand to Clayey Sand**
9: Very Stiff Fine Grained**

* Based on Robertson, 2010

** Heavily overconsolidated or cemented

GEOPACIFIC CONSULTANTS	2024-Jan-25	1446649 BC LTD	GeoPacific Project #: 23724
	Sounding: CPT24-03	2901 ST. JAMES STREET, PORT MOODY	Figure: B.03



1: Sensitive, Fine Grained
2: Organic Soils - Clay
3: Clay - Silty Clay to Clay
4: Silt Mixtures - Clayey Silt to Silty Clay
5: Sand Mixtures - Silty Sand to Sandy Silt
6: Sands - Clean Sand to Silty Sand
7: Gravelly Sand to Dense Sand
8: Very Stiff Sand to Clayey Sand**
9: Very Stiff Fine Grained**

* Based on Robertson, 2010

** Heavily overconsolidated or cemented

APPENDIX C - OVER CONSOLIDATION RATIO ANALYSIS

The over consolidation ratio (OCR) is defined as the ratio between the maximum past vertical pressure on the soil versus the current in-situ vertical pressure. The maximum past vertical pressure is typically caused by the presence of excess overburden which is removed by either natural or man-made reasons. Soil ageing and other chemical precipitation affects can also cause a soil to behave as if it has a higher maximum past pressure, which is sometimes described as pseudo-overconsolidation.

Research by Schmertmann (1974) showed the following equation reasonably approximates the OCR of medium plastic to clayey soils:

$$OCR = \left(\frac{\left(\frac{Su / p'oc}{Su / p'nc} \right)^{5/3} + 0.82}{1.82} \right)$$

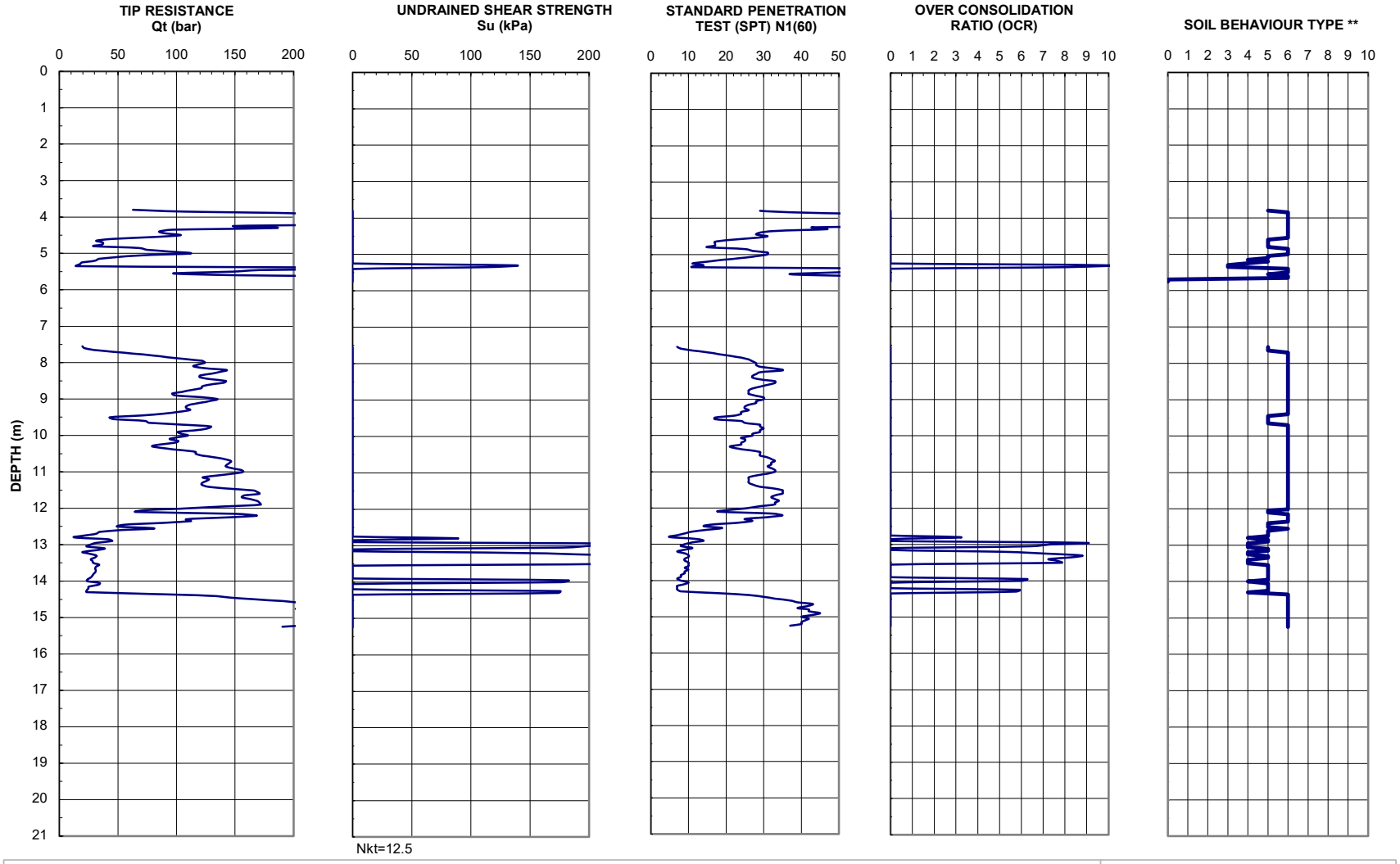
Su/p'oc = The undrained shear strength to effective stress ratio of the over consolidated soil

Su/p'nc = The undrained shear strength to effective stress ratio of a normally consolidated soil (OCR = 1). Typically = ~0.2

Soils which are subject to loads less than the maximum past pressure of the soil are typically subject to relatively small elastic settlements. Loads which exceed the maximum past pressure on the soil typically cause consolidation which is the gradual settlement of the ground as a result of expulsion of water from the pores of the soil. The rate of settlement and the time to complete consolidation is a function of the permeability of the soil.

The Schmertman equation has been employed to estimate the OCR of the soils with depth employing the CPT data provided in Appendix B and C.

GEOPACIFIC CONSULTANTS	2024-Jan-25	1446649 BC LTD	GeoPacific Project #: 23724
	Sounding: CPT24-01	2901 ST. JAMES STREET, PORT MOODY	Figure: C.01

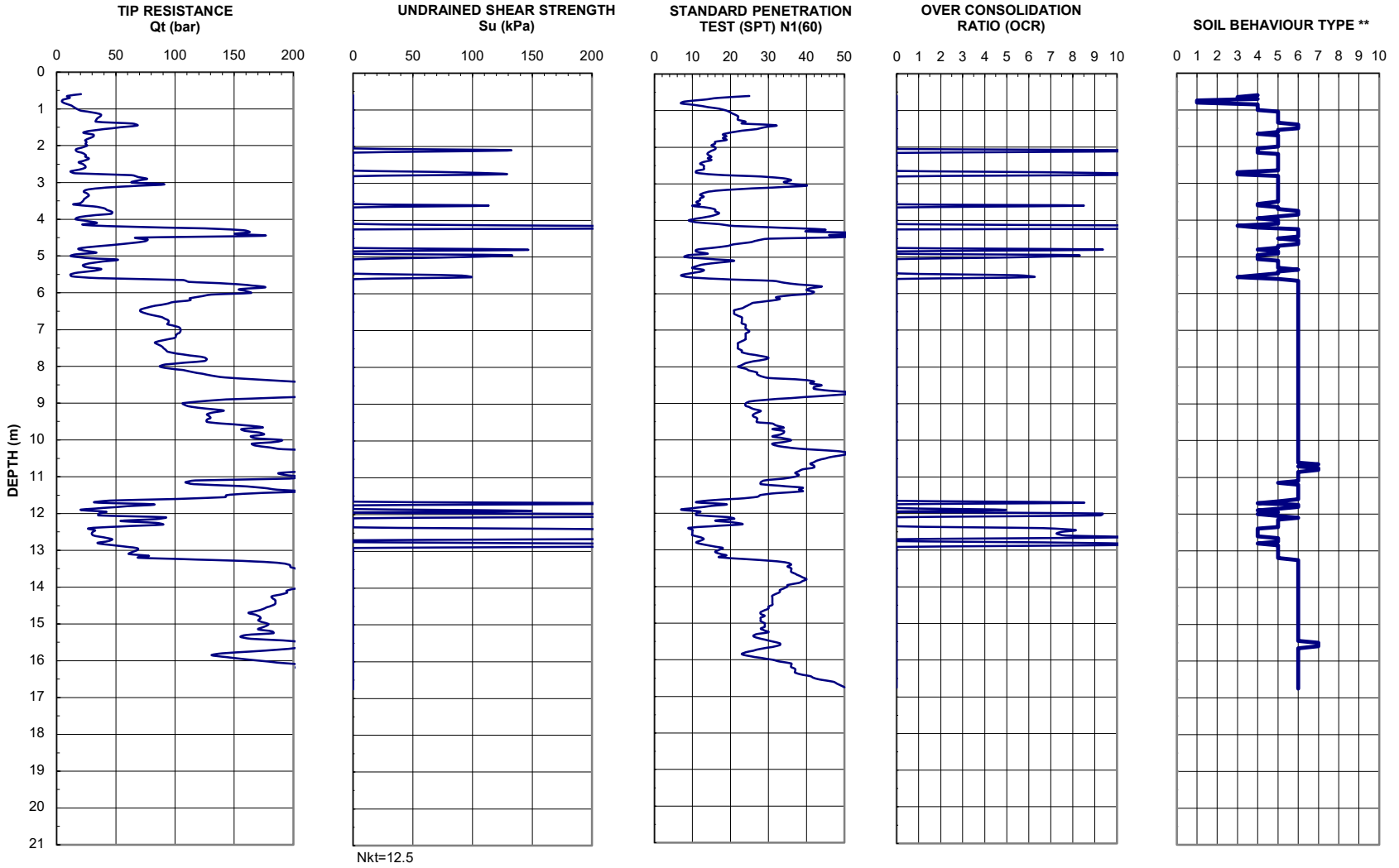


1: Sensitive, Fine Grained
2: Organic Soils - Clay
3: Clay - Silty Clay to Clay
4: Silt Mixtures - Clayey Silt to Silty Clay
5: Sand Mixtures - Silty Sand to Sandy Silt
6: Sands - Clean Sand to Silty Sand
7: Gravelly Sand to Dense Sand
8: Very Stiff Sand to Clayey Sand**
9: Very Stiff Fine Grained**

* Based on Robertson, 2010

** Heavily overconsolidated or cemented

GEOPACIFIC CONSULTANTS	2024-Jan-25	1446649 BC LTD	GeoPacific Project #: 23724
	Sounding: CPT24-02	2901 ST. JAMES STREET, PORT MOODY	Figure: C.02

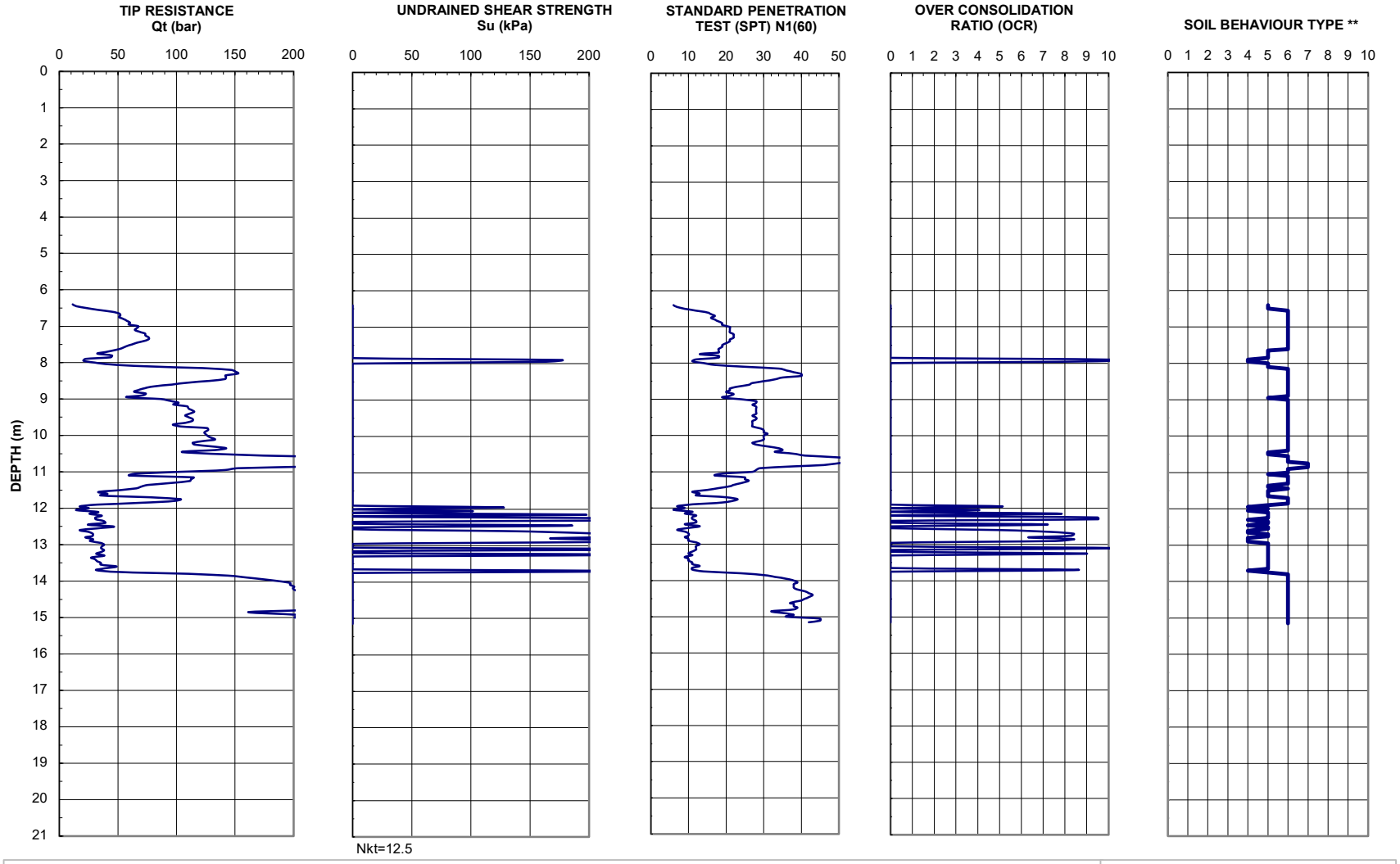


1: Sensitive, Fine Grained
2: Organic Soils - Clay
3: Clay - Silty Clay to Clay
4: Silt Mixtures - Clayey Silt to Silty Clay
5: Sand Mixtures - Silty Sand to Sandy Silt
6: Sands - Clean Sand to Silty Sand
7: Gravelly Sand to Dense Sand
8: Very Stiff Sand to Clayey Sand**
9: Very Stiff Fine Grained**

* Based on Robertson, 2010

** Heavily overconsolidated or cemented

GEOPACIFIC CONSULTANTS	2024-Jan-25	1446649 BC LTD	GeoPacific Project #: 23724
	Sounding: CPT24-03	2901 ST. JAMES STREET, PORT MOODY	Figure: C.03



1: Sensitive, Fine Grained
2: Organic Soils - Clay
3: Clay - Silty Clay to Clay
4: Silt Mixtures - Clayey Silt to Silty Clay
5: Sand Mixtures - Silty Sand to Sandy Silt
6: Sands - Clean Sand to Silty Sand
7: Gravelly Sand to Dense Sand
8: Very Stiff Sand to Clayey Sand**
9: Very Stiff Fine Grained**

* Based on Robertson, 2010

** Heavily overconsolidated or cemented

APPENDIX D - LIQUEFACTION ANALYSIS

Assessment of the liquefaction potential of the ground has been determined by the Cone Penetration Test (CPT). The method of analysis is presented in the following sections.

FACTOR OF SAFETY AGAINST LIQUEFACTION

The factor of safety against liquefaction calculated here is the ratio of the cyclic resistance of the soil (CRR) to the cyclic stresses induced by the design earthquake (CSR). Where the ratio of CRR/CSR is greater than unity the soils ability to resist cyclic stresses is greater than the cyclic stresses induced by the earthquake and liquefaction will be unlikely. Where the CRR/CSR is less than unity then liquefaction could occur. This ratio is presented as the FOS against Liquefaction. Calculation of the factor of safety is based on (Robertson and Wride, 1998) [1] which evaluates the CRR directly from cone penetration test sounding data. (Robertson and Wride, 1998) [1] suggest an integrated CPT-based approach to estimate liquefaction-induced ground settlements for estimating vertical settlements as a result of earthquake induced accelerations. The method of Robertson and Wride (1998)[1] is used to evaluate the liquefaction resistance as on step in the proposed CPT-based approach to estimate liquefaction-induced ground settlements. This method the important parameters are the soil behaviour type index (I_C), the correction factor for the grain characteristics of the soils (Kc), and the equivalent clean sand normalization CPT penetration resistance, $(q_{c1N})_{CS}$. The soil behaviour type index I_C is a function of the normalized CPT penetration resistance (Q) and the normalized friction ratio (F). The CRR profile for an earthquake of magnitude (M) equal to 7.5 denoted as $CRR_{7.5}$, can be estimated directly from CPT sounding. The value of the cyclic stress ratio has been calculated based on peak horizontal ground acceleration of the National Building Code (NBC) of Canada 2020 seismic design requirements.

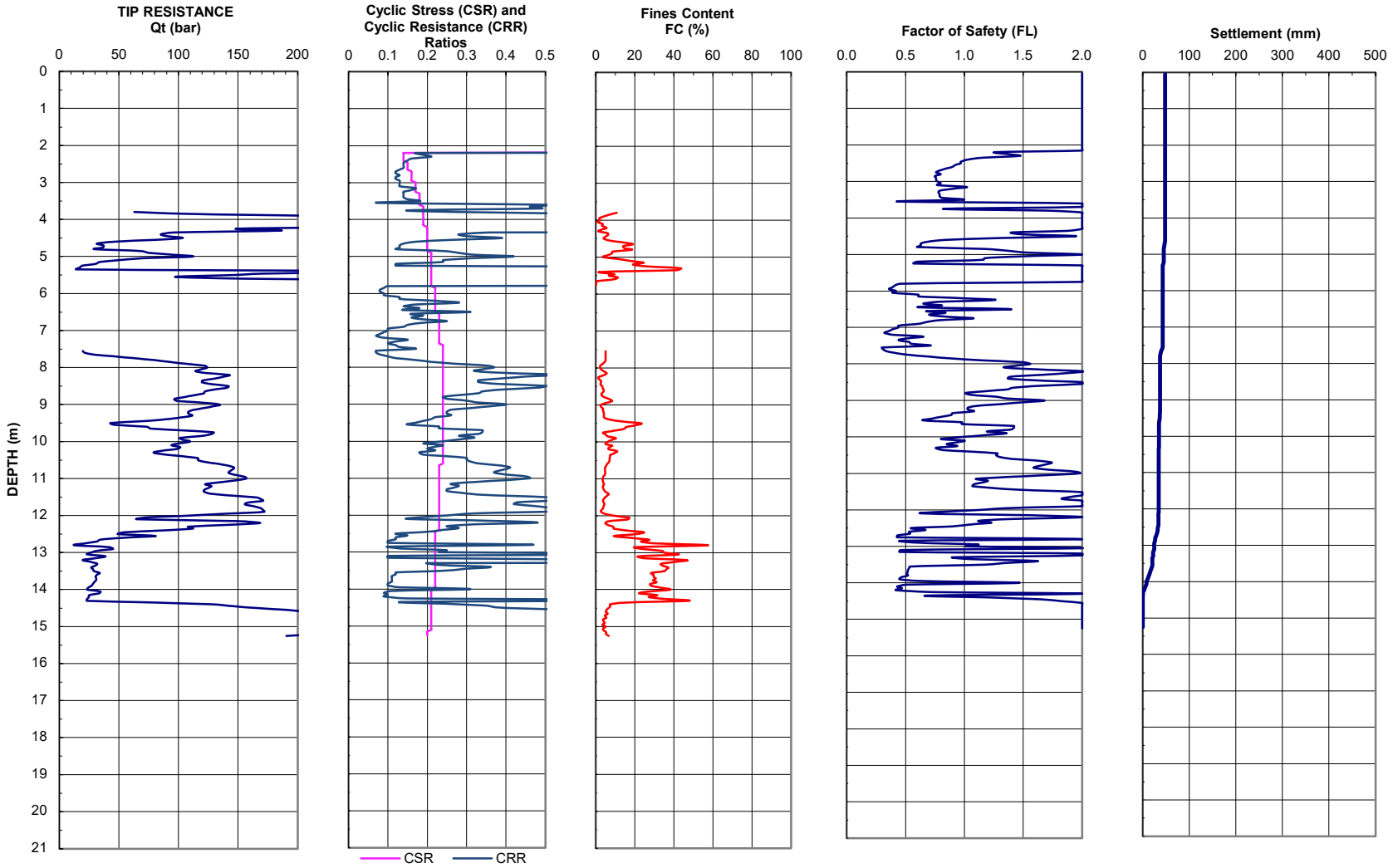
SEISMIC INDUCED SETTLEMENT

In the event of a significant earthquake, settlement of the ground surface could occur as a result of densification of the looser soil layers as a result of liquefaction or due to the expulsion of sand in the form of sand dykes or sills from beneath the site. Tokimatsu and Seed (1987)[2] suggest a method of analysis for estimating vertical settlements as a result of earthquake induced accelerations. In this method the normalized standard penetration blow counts ($N_{1(60)}$) derived from CPT-based method of Robertson and Wride (1998)[1] is compared with the cyclic stress ratio for the induced earthquake to determine the volumetric strain resulting from the earthquake shaking. The volumetric strain is assumed to result in only vertical settlement. The vertical settlement is summed for each depth at which settlement is predicted to occur and accumulated from the bottom of the test hole. The results are presented on the following charts labeled as Settlement.

1 Robertson P.K., and Wride (1998) Evaluating cyclic liquefaction potential using the cone penetration test. Canadian Geotechnical Journal, 35 (3): 442-459.

2 Tokimatsu, K.A.M. and Seed, H.B., 1987. "Evaluation of Settlement in Sands Due to Earthquake Shaking", Journal of Geotechnical Engineering, ASCE, Vol. 113, No. 8, pp. 861-878.

GEOPACIFIC CONSULTANTS	2024-Jan-25	1446649 BC LTD	GeoPacific Project #: 23724
	Sounding: CPT24-01	2901 ST. JAMES STREET, PORT MOODY	Figure: D.01

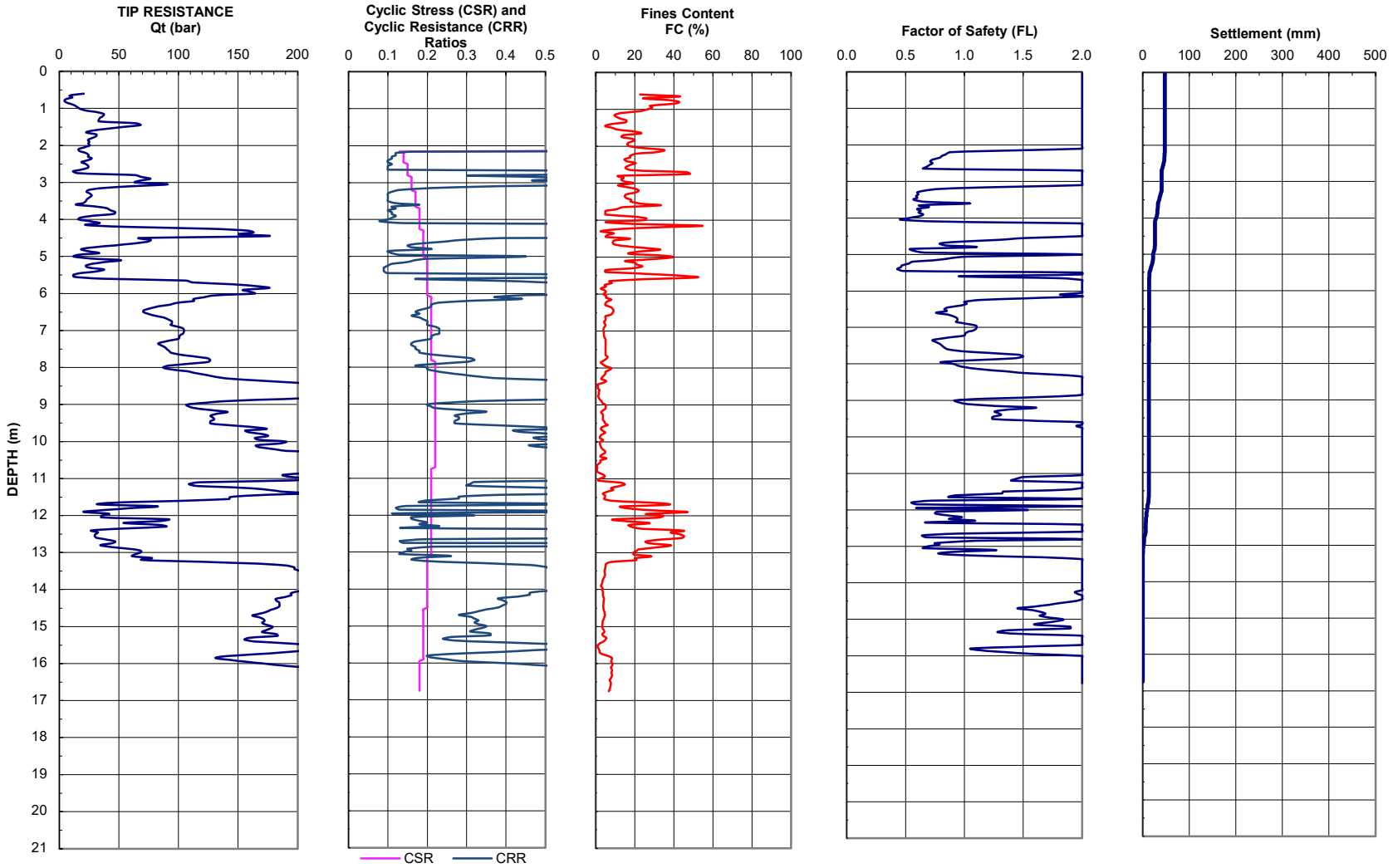


Liquefaction interpretation: PGA = 0.25

magnitude = 7.0

settlement accumulation max depth = 15m

GEOPACIFIC CONSULTANTS	2024-Jan-25	1446649 BC LTD	GeoPacific Project #: 23724
	Sounding: CPT24-02	2901 ST. JAMES STREET, PORT MOODY	Figure: D.02

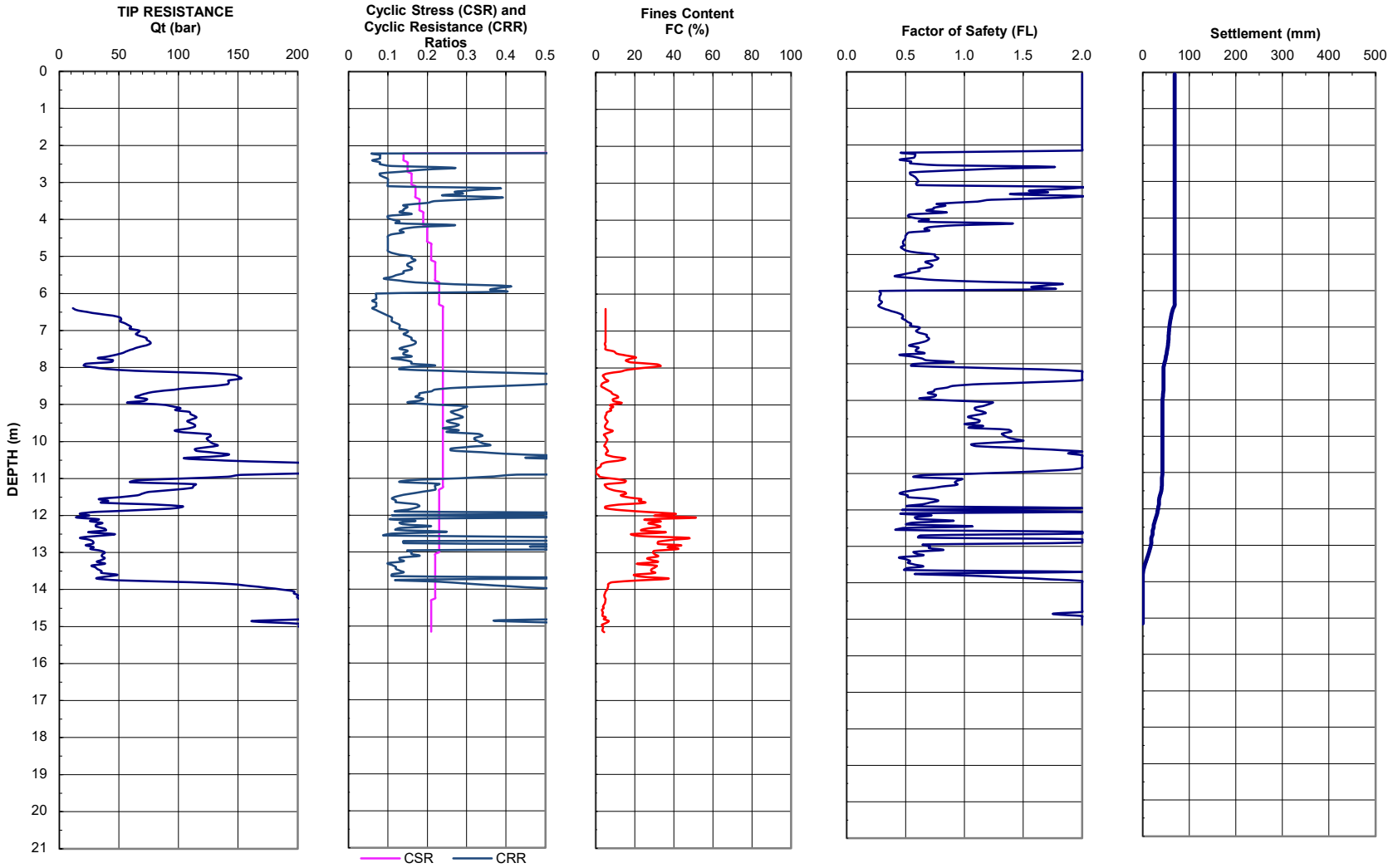


Liquefaction interpretation: PGA = 0.25

magnitude = 7.0

settlement accumulation max depth = 15m

GEOPACIFIC CONSULTANTS	2024-Jan-25	1446649 BC LTD	GeoPacific Project #: 23724
	Sounding: CPT24-03	2901 ST. JAMES STREET, PORT MOODY	Figure: D.03



Liquefaction interpretation: PGA = 0.25

magnitude = 7.0

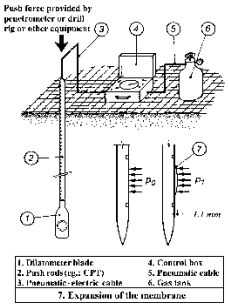
settlement accumulation max depth = 15m

APPENDIX E – DMT (Dilatometer Modulus Test)

The system used is owned and operated by GeoPacific Consultants. The flat dilatometer is a stainless steel blade having a flat, circular steel membrane mounted flush on one side. The blade is connected to a control unit on the ground surface by a pneumatic-electrical tube (transmitting gas pressure and electrical continuity) running through the insertion rods. A gas tank, connected to the control unit by a pneumatic cable, supplies the gas pressure required to expand the membrane.

The general layout of the dilatometer test is shown in the below figure. The test starts by inserting the dilatometer into the ground and by use of the control unit, the operator inflates the membrane and takes two readings:

1) The *A-pressure*, required to just begin to move the membrane against the soil ("lift-off")
2) The *B-pressure*, require to move the membrane 1.1 mm against the soil



UNDRAINED SHEAR STRENGTH CORRELATION

The correlation for determining Su from DMT (Marchetti 1980) is the following:

$$Su = 0.22\ \sigma'_{v0}\,(0.5\ K_D)^{1.25}$$

Where σ'_{v0} = pre-insertion in situ overburden stress, K_D = horizontal stress index

OVER CONSOLIDATION RATIO (OCR)

The over consolidation ratio (OCR) is defined as the ratio between the maximum past vertical pressure on the soil versus the current in-situ vertical pressure. The maximum past vertical pressure is typically caused by the presence of excess overburden which is either removed by either natural or man-made reasons. Soil aging and other chemical precipitation effects can also cause a soil to behave as if it has a higher maximum past pressure, which I sometimes described as a pseudo-over consolidation.

The correlation for deriving the over consolidation ratio *OCR* from the horizontal stress index K_D was proposed by Marchetti (1980) (based on data only for uncemented clays).

$$OCR_{DMT} = (0.5K_D)^{1.56}$$

MATERIAL INDEX I_D (SOIL TYPE)

The material index I_D is defined as follows:

$$I_D = \frac{p_1 - p_0}{P_0 - u_0}$$

According to Marchetti (1980), the soil type can be identified as follows:

clay $0.1 < I_D < 0.6$

silt $0.6 < I_D < 1.8$

sand $1.8 < I_D < (10)$

In general, I_D provides an expressive profile of soil type, and, in 'normal' soils, a reasonable soil description.

HORIZTONAL STRESS INDEX K_D

The horizontal stress index K_D is defined as follows:

$$K_D = \frac{p_0 - u_0}{\sigma'_{v0}}$$

K_D provides the basis for several soil parameter correlations and is a key result of the dilatometer test. The horizontal stress index K_D can be regarded as K_0 amplified by the penetration. The K_D profile is similar in shape to the *OCR* profile, hence generally helpful for "understanding" the soil deposit and its stress history (Marchetti 1980, Jamiolkowski et al. 1988).

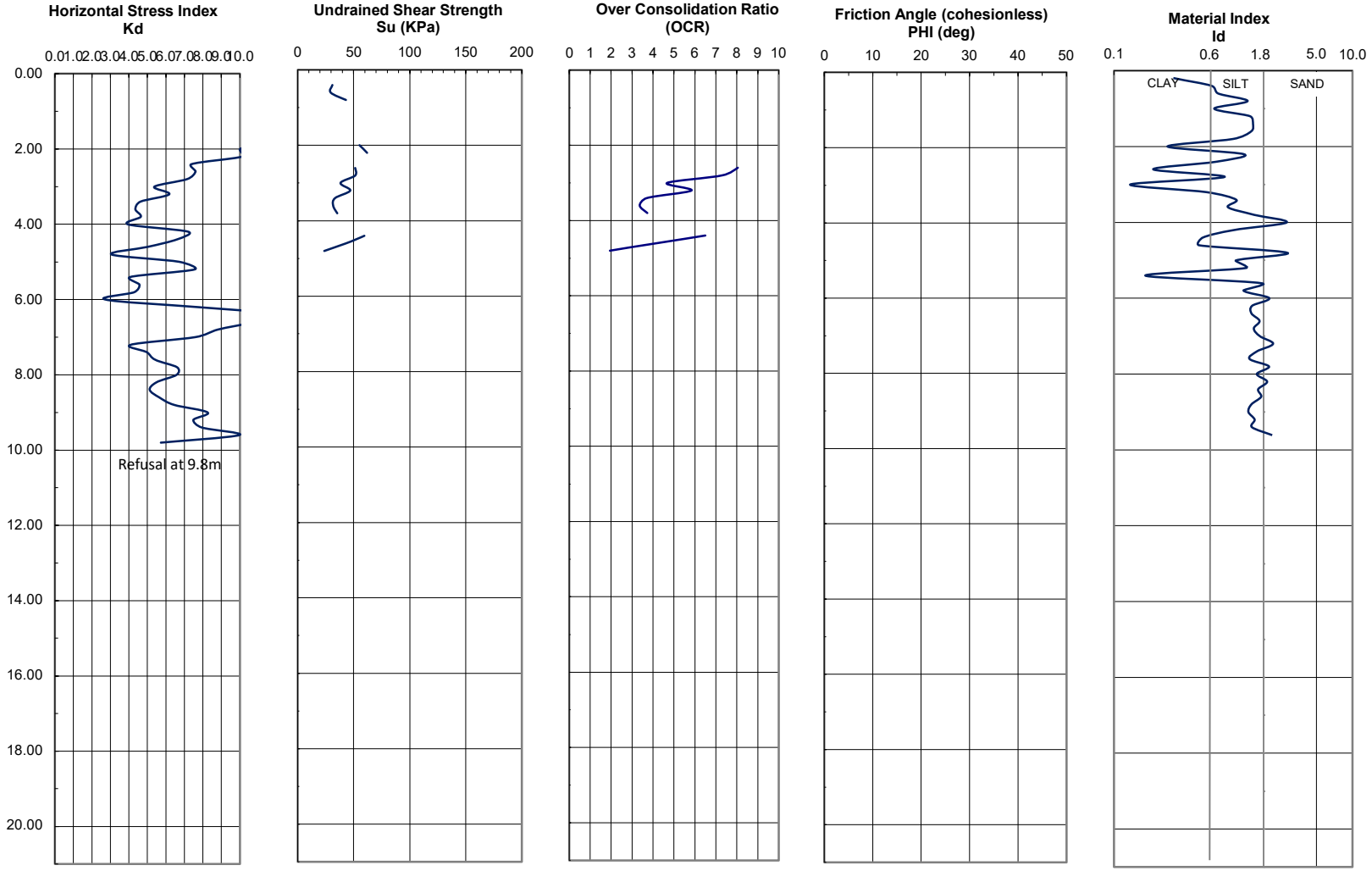
CONSTRAINED MODULUS *M*

The modulus *M* determined from DMT (M_{DMT}) is the vertical drained confined (one-dimensional) tangent modulus at σ'_{v0} and is the same modulus which, when obtained by oedometer, is called $E_{oed} = 1/m_V$.

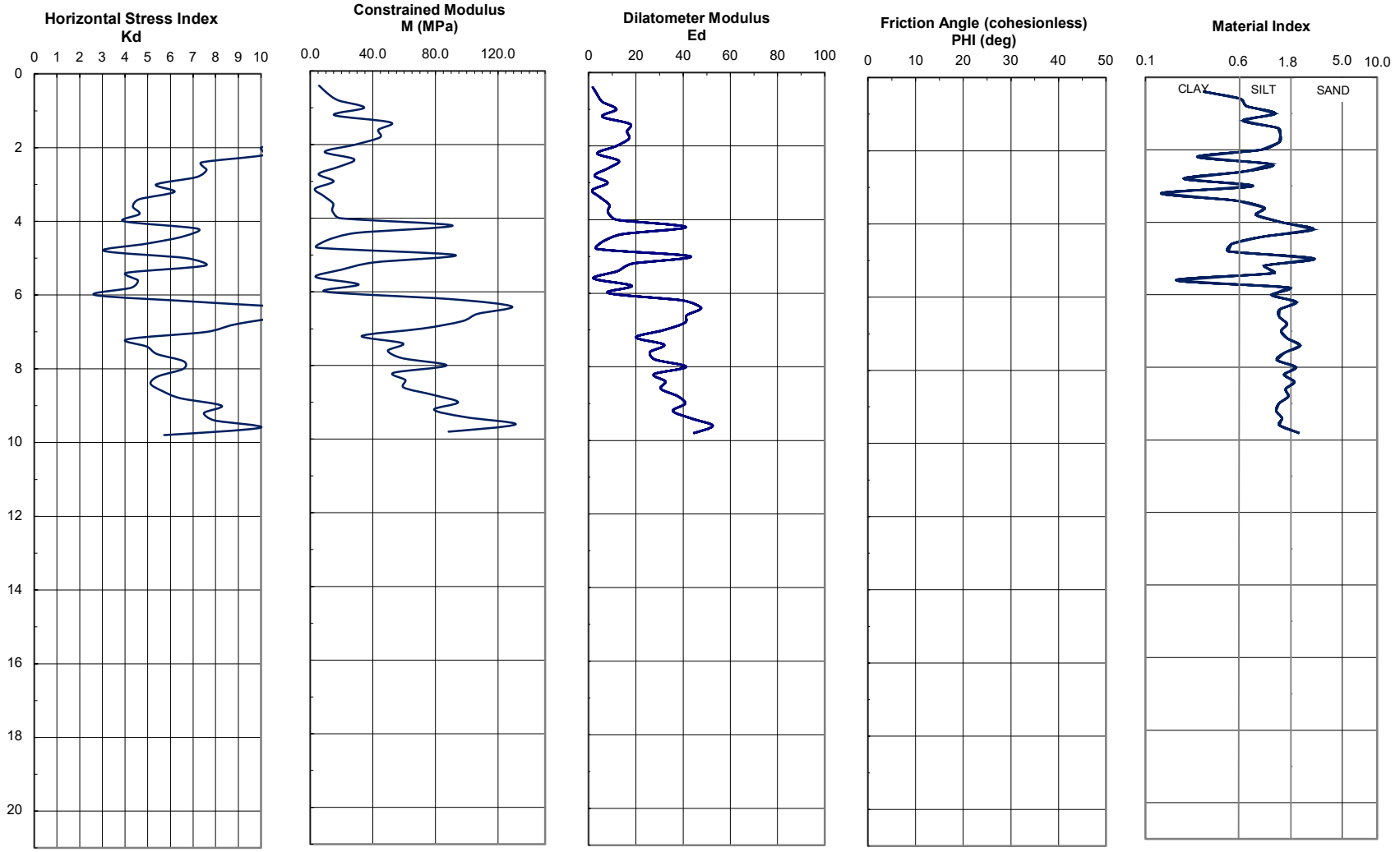
M_{DMT} is obtained by applying to E_D the correction factor R_M according to the following formula:

$$M_{DMT} = R_M E_D$$

GEOPACIFIC VANCOUVER KAMLOOPS CALGARY	2024-Jan-25	1446649 BC LTD	GeoPacific Project #: 23724
	Sounding: DMT24-01	2901 ST. JAMES STREET, PORT MOODY	Figure: E.01



GEOPACIFIC VANCOUVER KAMLOOPS CALGARY	2024-Jan-25	1446649 BC LTD	GeoPacific Project #: 23724
	Sounding: DMT24-01	2901 ST. JAMES STREET, PORT MOODY	Figure: F.01



APPENDIX F – SHEAR WAVE VELOCITY (Vs)

GEOPACIFIC
VANCOUVER KAMLOOPS CALGARY

File: 23724
Project: GRADE SUPPORTED DAYCARE DEVELOPMENT
Client: 1446649 BC LTD
Location: 2901 ST. JAMES STREET, PORT MOODY

Sounding: SCPT24-01
Date: 2024-Jan-25

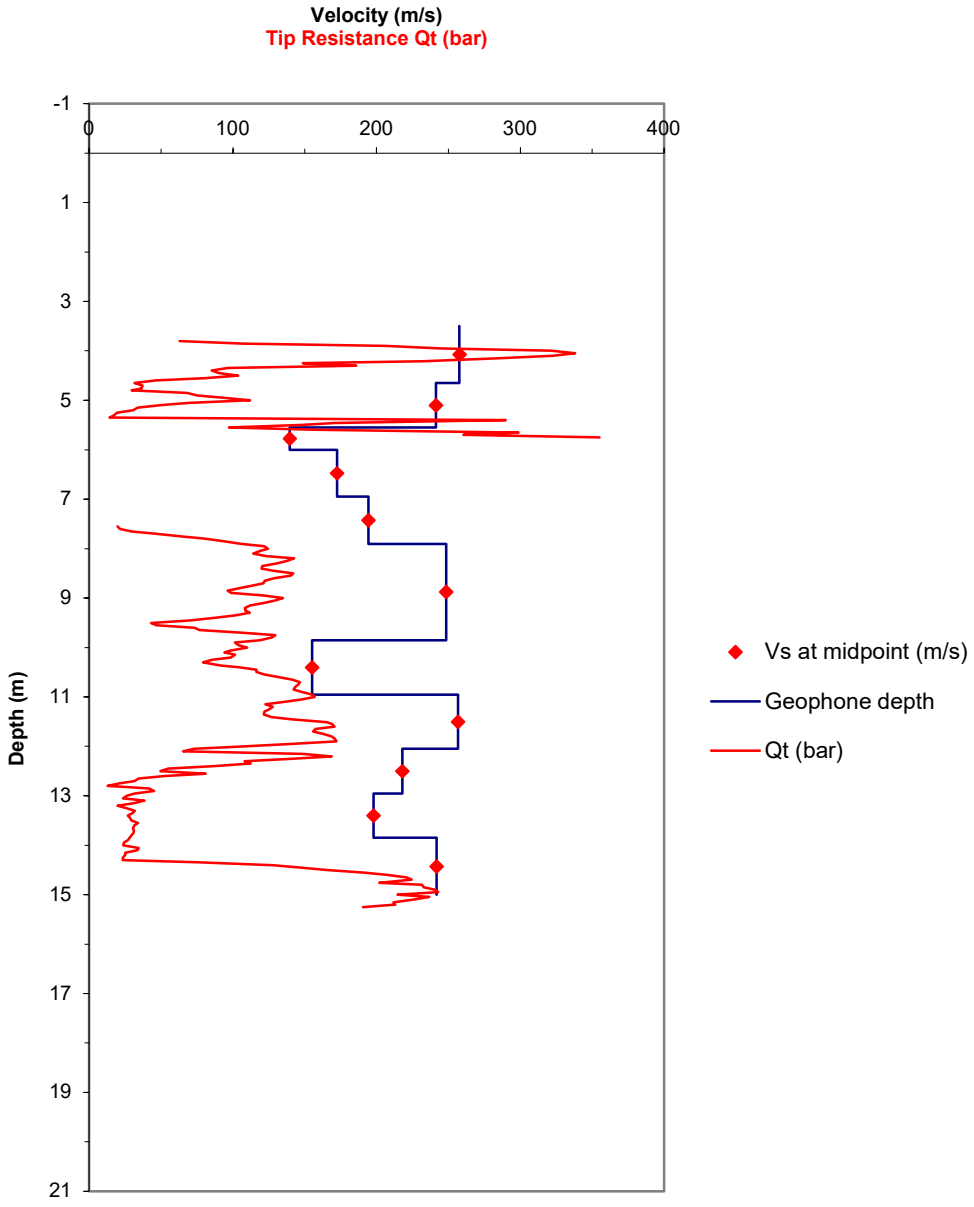
Seismic Source: Beam
Source to cone (m): 1.0

Shear Wave Velocity Data (Vs)

Depth (m)	Geophone Depth (m)	Ray Path (m)	Ray Path Difference d (m)	Midpoint (m)	Time Difference (ms)	Shear Wave Velocity Vs (m/s)	d/Vs
3.70	3.50	3.64	3.64	1.75			
4.85	4.65	4.76	1.12	4.08	4.33	258	0.0043
5.75	5.55	5.64	0.88	5.10	3.66	241	0.0037
6.20	6.00	6.08	0.44	5.78	3.18	140	0.0032
7.15	6.95	7.02	0.94	6.48	5.44	172	0.0054
8.10	7.90	7.96	0.94	7.43	4.85	194	0.0049
10.05	9.85	9.90	1.94	8.88	7.80	248	0.0078
11.15	10.95	11.00	1.09	10.40	7.06	155	0.0071
12.25	12.05	12.09	1.10	11.50	4.27	257	0.0043
13.15	12.95	12.99	0.90	12.50	4.12	218	0.0041
14.05	13.85	13.89	0.90	13.40	4.54	198	0.0045
15.20	15.00	15.03	1.15	14.43	4.74	242	0.0047
						Σ(d/Vs)	0.0540
						average Vs = Σd / Σ(d/Vs)	278

File: 23724
Project: GRADE SUPPORTED DAYCARE DEVELOPMENT
Client: 1446649 BC LTD
Location: 2901 ST. JAMES STREET, PORT MOODY

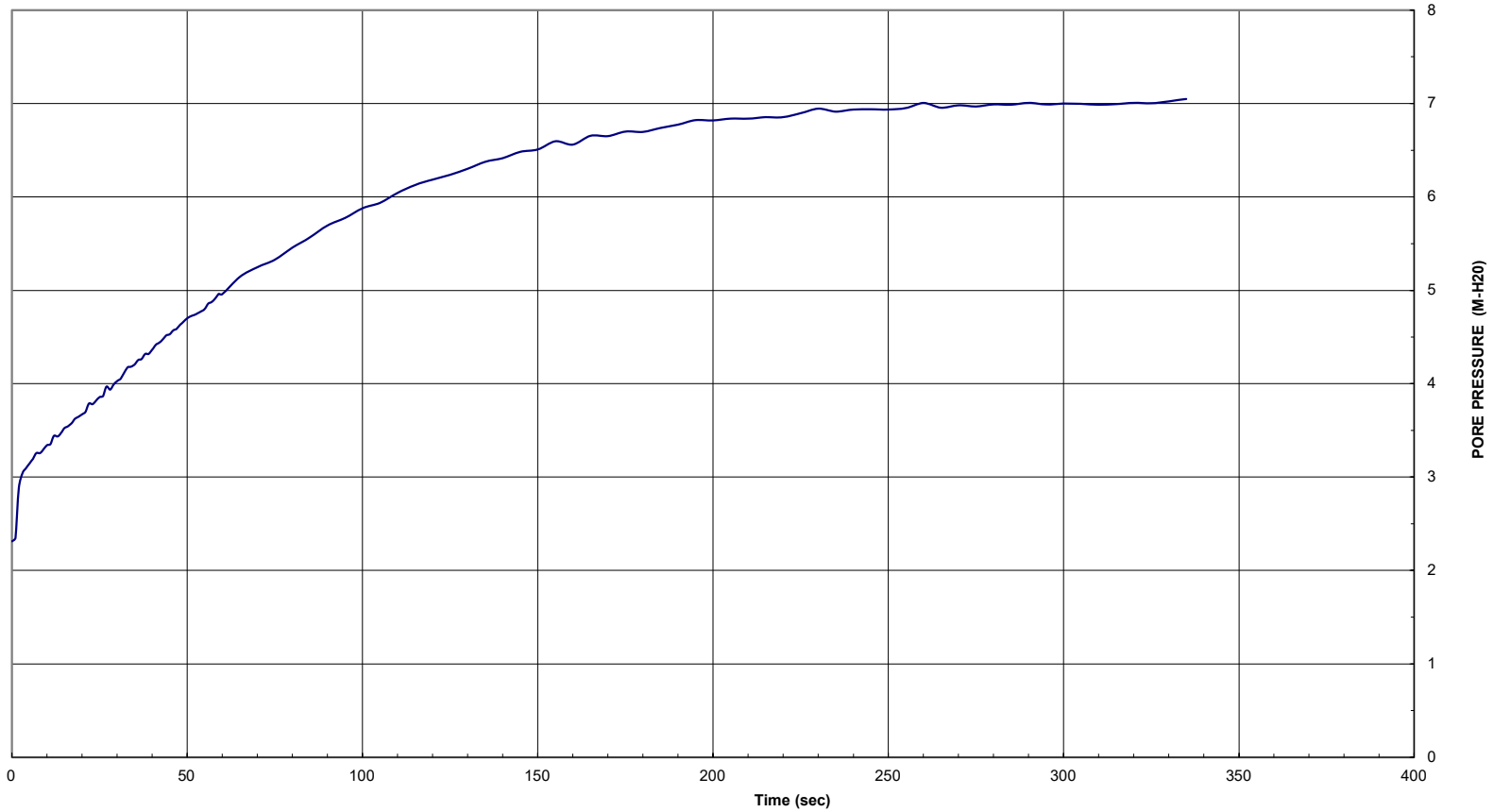
Sounding: SCPT24-01
Date: 2024-Jan-25



APPENDIX G – DISSIPATION TEST RESULTS

GEOPACIFIC VANCOUVER KAMLOOPS CALGARY	2024-Jan-25	1446649 BC LTD	GeoPacific Project #: 23724
	Sounding: CPT24-01	2901 ST. JAMES STREET, PORT MOODY	Figure: G.01

PORE PRESSURE DISSIPATION TEST



Test depth:	**9.20** m
Final pore pressure:	**7.05** m-H2O
Estimated water table depth:	**2.15** m