City of Richmond

Report to Committee

To:	Parks, Recreation and Cultural Services Committee	**Date:**	June 13, 2024
From:	Marie Fenwick Director, Arts, Culture and Heritage Services Martin Younis, B. Eng., M. Eng. Director, Facilities and Project Development	**File:**	06-2050-20-BSYD-SB/Vol 01
Re:	**Heritage Alteration Permit Application (HA 24-012449) by the City of Richmond - 5180 Westwater Drive (Britannia Shipyard and Seine Net Loft buildings)**		

Staff Recommendation

That a Heritage Alteration Permit be issued to authorize alterations to the Britannia Shipyard and Seine Net Loft buildings at Britannia Shipyards, as outlined in the staff report titled, "Heritage Alteration Permit Application (HA 24-012449) by the City of Richmond - 5180 Westwater Drive (Britannia Shipyard and Seine Net Loft buildings)," dated June 13, 2024, from the Director, Arts, Culture and Heritage Services and the Director, Facilities and Project Development.

Marie Fenwick
Director, Arts, Culture and Heritage Services
(604-276-4288)

Martin Younis, B. Eng., M. Eng.
Director, Facilities and Project Development
(604-204-8501)

Att. 5

REPORT CONCURRENCE		
ROUTED TO:	**CONCURRENCE**	**CONCURRENCE OF DEPUTY CAO**
Policy Planning	☑	
SENIOR STAFF REPORT REVIEW	**INITIALS:**	**APPROVED BY CAO**
	CJ	

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Staff Report

Origin

Britannia Shipyards National Historic Site (the "Site"), located at 5180 Westwater Drive, is a 3.2 hectare historic cannery and shipyard site. It serves as a public heritage park, bounded by the Fraser River to the south, Westwater Drive and residential development to the north and west, and the Steveston Harbour Authority to the east. The site consists of a collection of 14 wooden buildings related to early fishing and boatbuilding operations (see Attachment 1).

In October 2020, building condition assessments were completed for multiple buildings at the Site, which identified necessary infrastructure and envelope repairs. On December 12, 2022 Council approved $5 million as part of the 2023 Capital Program to undertake repairs for the Britannia Shipyard and Seine Net Loft buildings. On December 11, 2023 Council approved an additional $7 million as part of the 2024 Capital Program to continue the work for the Britannia Shipyard building envelope and structural renewals.

The Site was designated a municipal heritage site in 1990 and is protected by Heritage Designation Bylaw 5585. Under the City's Heritage Procedures Bylaw 8400, any alterations to a heritage designated site are subject to a Heritage Alteration Permit (HAP). Issuance of a HAP is subject to Council authorization.

The City of Richmond is applying for a HAP (HA 24-012449) for structural and envelope renewals to the Britannia Shipyard and Seine Net Loft buildings. This HAP application includes roof replacement, siding replacement and repairs, window renewals and structural upgrades. These repairs are needed to preserve the buildings and maintain structural integrity.

The purpose of this report is to provide an overview of the proposed alterations, applicable policies and plans, recommending that Council authorize the issuance of a Heritage Alteration Permit.

Related Policies and Plans

Steveston Area Plan

Under the Official Community Plan 2041, the Site falls within the Steveston Area Plan (Area Plan), which seeks to "conserve significant heritage resources throughout the Steveston Area." Section 4.1 (h) of the Area Plan requires that the *Standards and Guidelines for the Conservation of Historic Places in Canada (*the "Standards and Guidelines"), prepared by Parks Canada, be used to guide the management of heritage resources.

The proposed alterations identified in this HAP were informed by the following:

- Prepared by Ance Building Services in 2024
  - Conservation Approach for Britannia Historic Site Shipyard Building (the "Conservation Approach") - Attachment 2

  - Memo for the Seine Net Loft Preliminary Conservation Approach for Piles - Attachment 3

- Prepared by Don Luxton and Associates in 2015
  - Excerpt from the Britannia Heritage Shipyard Conservation Review (the "Conservation Review") - Attachment 4

Recommendations put forward in these documents follow Parks Canada's Standards and Guidelines. The Conservation Review describes the heritage value of the site and each building along with the appropriate approach to alterations and recommends that repair and preservation of original fabric is preferred over replacement in any work undertaken to maintain and conserve buildings at Britannia Shipyards.

Stakeholder Consultation

The proposed alterations were reviewed by the Richmond Heritage Commission (RHC) at their regular meeting on June 12, 2024. An excerpt from the draft RHC meeting minutes is attached (Attachment 5) which supports the proposed alterations.

Members of the Britannia Shipyards National Historic Site Society were informed of the upcoming work at their Program and Planning Committee meeting on May 30, 2024 and were supportive of the proposed work.

A HAP notification sign outlining the proposed alterations was installed on the subject property. Prior to the commencement of construction, signage will be installed to inform public about the project and the associated building closures.

Proposed Scope of Work

This HAP application includes repairs and proposed alterations for the Seine Net Loft and Britannia Shipyard Building, as noted in Table 1 and 2 respectively.

Table 1: Proposed Repairs and Alterations at Seine Net Loft

Building Element	Condition	Repair/Alteration
Sub-structure	Deteriorated in multiple areas and requires stabilization to ensure continued safety to the public	Replace pile caps and cross-bracing structural supports, where required.

Table 2: Proposed Repairs and Alterations at Britannia Shipyard Building

Building Element	Condition	Repair/Alteration
Wood siding, fascia, and exterior trim boards	Significant deterioration, whereby materials are falling off the building and into the water	Repairs or like-for-like replacement of siding and exterior trim, as required, including the outhouse portion of the building.
Metal gutters and down spouts	Leaking and beyond repair	Like-for-like replacement of the gutters and down spouts, as required. Gutter placement will be extended around the building to reduce the amount of rain water coming into contact with the siding.
Exterior doors and windows	Significant deterioration	Repair to the wooden divided-light windows. Replacement of windows that do not conform to the time period the building is restored to. Replacement of windows where they are missing, or have been replaced with plexiglass, or are mismatched to the building. Repair or like-for-like replacement of exterior doors, as required.
Roof system	Failed and leaking in multiple places	Replace the corrugated metal roofing with corrugated metal roofing material to match existing as closely as possible. Installation of an additional membrane between roof sheathing and roofing cladding, including the outhouse, to provide additional water shedding surface that will not be visible. Installation of roof anchors for the entire building exterior, to ensure maintenance work can be done safely.
Sub-structure	Deteriorated in multiple areas and requires stabilization to ensure continued safety to the public	Replace the pile caps and cross-bracing structural supports, where required.

Should the work be approved, it will be supervised by City staff with the support from the project architect and heritage consultant through the duration of the project.

Financial Impact

None.

Conclusion

The proposed repairs to the envelope and structure of the Britannia Shipyard and Seine Net Loft buildings for Heritage Alteration Permit application (HA 24-012449) are required to maintain the heritage value and structural integrity of these buildings. The materials and approach of the proposed alterations are in keeping with the *Standards and Guidelines for the Conservation of Historic Places in Canada*.

It is recommended that the subject Heritage Alteration Permit for the Site be authorized.

Rebecca Clarke

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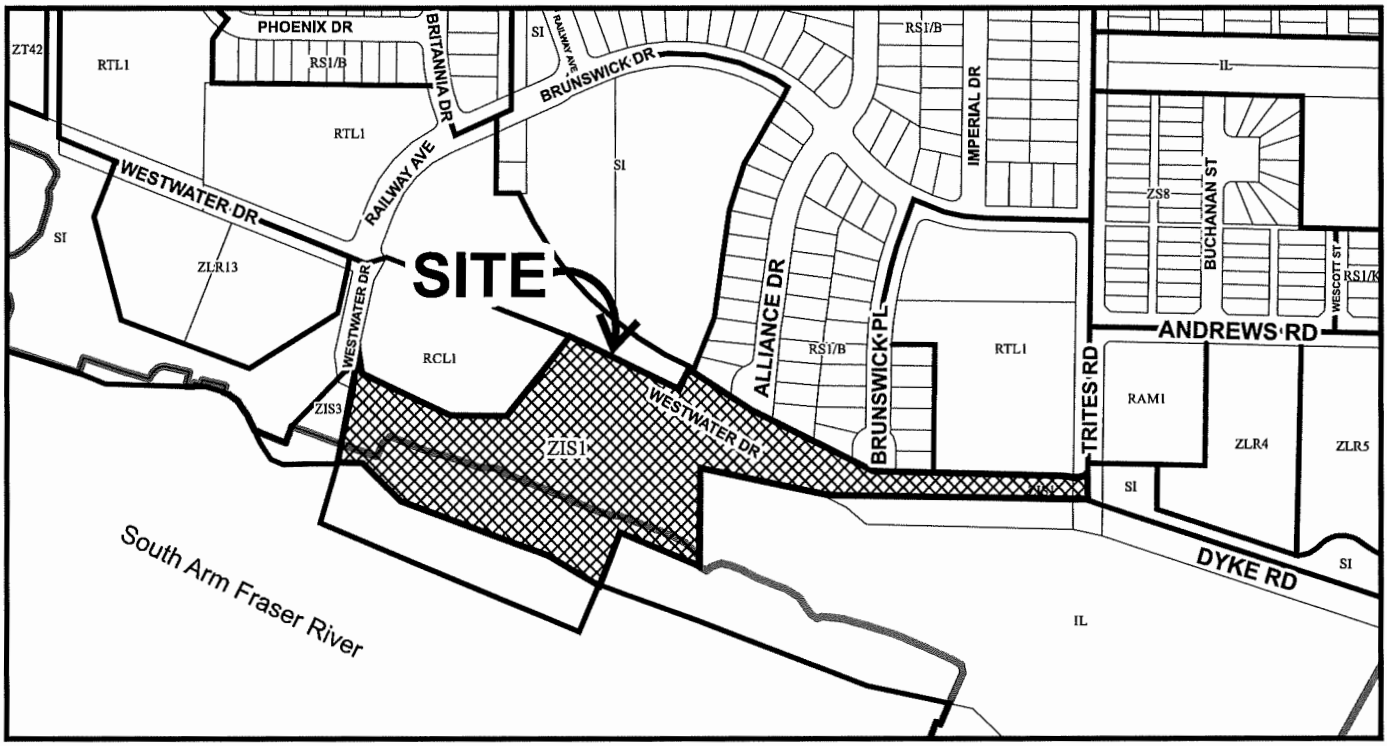
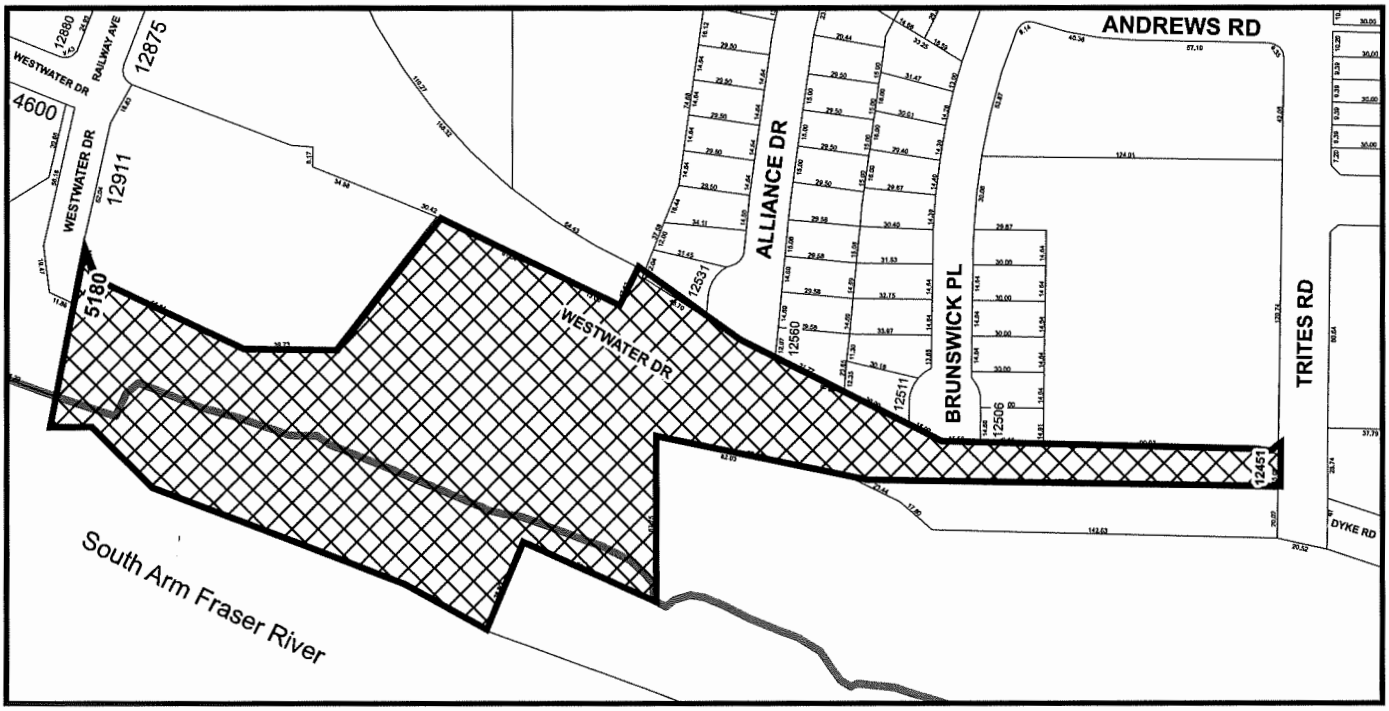
Att. 1: Britannia Shipyards Site Map
2: Conservation Approach for Britannia Historic Site Shipyard Building
3: Memo - Seine Net Loft – Preliminary Conservation Approach for Piles
4: Excerpt from Britannia Heritage Shipyard Conservation Review
5: Excerpt of the DRAFT Minutes of the Richmond Heritage Commission Meeting on June 12, 2024

Britannia Location Map

City of Richmond





N	HA 24-012449	Original Date:04/19/24 Revision Date: Note: Dimensions are in METRES

Conservation Approach for Britannia Historic Site Shipyard Building

Based on four separate site visits in late 2023 and early 2024, including three building visits and one boat-accessed review which gave the consultant team close-up access to the cladding, windows and pilings on all 4 sides, below are my observations and recommendations for the purpose of developing a Heritage Alteration Permit for the ongoing conservation, repair and maintenance of the Shipyard Building.

As articulated in its Statement of Significance, the Shipyard Building represents the many adaptations made over time to industry changes and technologies on the working waterfront. The Britannia Shipyard Building is essentially a converted early cannery building (constructed in 1890), which in 1918 transformed into a prolific shipyard that would operate until 1979. The range of structural and finishing interventions that survives on its exterior and interior speak to its adaptation over time to changes in marine vessel construction, power and fishing technology. The Shipyard produced gillnetters, purse seiners and tender boats that carried the catch back to the canneries. Gasoline, and later diesel engines accommodated the construction of larger boats with a wider range. The addition of drums and net winches and other changes in boat design and materials were some of the adaptations accommodated by the Shipyard.

The interior today operates as an interactive museum that tells the story of the Britannia Historic Site and the Shipyard Building operations specifically. The conservation and interpretation period is centred on the decades of operations as a Shipyards Building between 1918 and 1979 and for this reason the building and its exhibits illustrate a wide range of finishes, machinery and evidence of interventions. The conservation objective is not to make the building look new, nor to 'renew' it. It is simply to protect its heritage value through maintenance or stabilization with an approach of minimal intervention. As explained above, much of the structure's heritage value and character lie in the aged, worn, authentic patina of its materials and components. The conservation approach will thus be as minimally invasive as possible so as not to obliterate its age, its adaptations over time and its character as a working, industrial building.

This document aligns with the May 10th Iredale Architecture drawings which were developed closely with, and informed collaboratively by this firm.

Roof:

Chronology	Observations	Recommendations
Although originally clad in cedar shingles in 1890, the wood roof was replaced with metal sheets in phases, starting with the south plane in the mid-late 1950s. In 1974 the rest of the building was reroofed in corrugated metal, which was placed on top of the cedar shingles. In the year 2000 the metal sheets and cedar shingles were removed and some repairs and structural upgrades were carried out on the roof structure. Plywood was added on the roof structure and the current corrugated metal roof was installed.	Evidence of water ingress is visible on some but not all of the structural wood strapping that lay on the roof rafters. The age of the strapping boards varies - some appear to date from 2000 when the current roof was installed and many appear to be much earlier and perhaps even original. All iterations of the roof shared the same minimal overhang. To help shed water off the elevations, gutters have been installed along the north and south elevations. The installation of the 2000 roof was carried out in a manner that resulted in significant functional deficiencies. The fasteners are improperly placed, and the panels are not correctly overlapped, posing challenges for repair or reuse. Moreover, the excessive number of drill holes in the current panels makes salvaging nearly impossible.	New metal roof panels should be of a 22 (or higher) gauge of a similar corrugated profile or deeper. The new roof should be as textured as possible (7/8" or more), as the current 2000 roof profile is relatively flat, and earlier metal roofs featured deeper profiles. As metal roof options are scarce today, both the corrugated and mechanically seamed profiles (explored in renders in collaboration with project architects) would be appropriate choices. Ensure that all roof fasteners, anchors and nails should be of marine grade steel (and neoprene cap screws for top mount fasteners). It would be appropriate to introduce a discreet gutter along the east elevation, similar in colour and profile to the current gutters, thus adding a water shedding mechanism to the most exposed elevation which experiences the most weather damage.

Cladding:

Chronology	Observations	Recommendations
The Shipyard Building was added to and removed from over the decades. Sections of the board and batten cladding, which is a mix of fir and cedar boards based on samples removed, could be as old as the 1890s or date to later interventions such as the removal of an addition in 1936, as well as other later routine repairs overtime. The nail heads vary as well, some are square and some are more modern, suggesting that the cladding was repaired and replaced in certain areas over time. Much of the cladding below windows was replaced in 1994 when the windows were replaced. The cedar shingles on the south elevation were replaced in 1993.	The dimensions of the boards is not consistent on the building. Historic boards were measured at just under 12" wide and just under 1" deep. Battens were measured at just under 3" x 1". Boards of shorter widths have been installed more recently under the windows, especially on the west elevation. The condition of the boards and battens varies from good to poor depending on location, with isolated areas of failure such as large cracks, breakages, missing or detached boards or battens, and insect or bird damage. The south elevation is clad with cedar shingles which are in good condition. The condition of the entire east elevation cladding is deteriorated beyond repair.	Additional measurements and documentation of the cladding needs to be conducted to determine replacement specifications. As per pages 15 and 16 of the Morrison Hershfield Boat Review Memo titled - MH - Seine Net Loft Shipyard - 2024-01-16, I concur with the need to replace in-kind the entirety of the east elevation cladding which is beyond repair, as well as the sections below the windows on the north and west elevations. Restore the cladding to vertical board and batten where it was replaced with horizontal boards on the west elevation. More investigation will need to be carried out during construction to determine which sections require replacement and which can be repaired. Replacement boards and batten should be Appearance Grade A (and Better) Clear Cedar, yellow cedar knotty tight grade, or #1 (and Better) Douglas Fir with 3-5 coats of boiled linseed oil. Allow 3 days for linseed coating to cure indoors or in a dry, ventilated space before installing.

Windows and Sills:

Chronology	Observations	Recommendations
The earliest known photograph of the Shipyard Building showing a partial view of windows dates from the late 1890s. This photo indicates that the windows were painted, divided-light wood windows. The horizontal windows were fixed 6-lights, 8-lights or 10-lights, and the vertical windows were 4/4 in the machine shop attic and 6/6 elsewhere (for example on the east elevation). Subsequent photographs from the 1950s and 1970s show that most wood windows were still in place but by 1973 about 30% were missing, with some window openings completely unprotected. A 1980 photograph shows the windows of the east elevation boarded up and/or missing. In 1994 replica wood burgundy-painted sashes were installed on the west elevation, and salvaged single-light sashes were installed in the machine shop with either plexiglass or poly lights, and salvaged single-light sashes were installed on the south elevation single-storey extension.	The current windows are all single pane lights in wood sashes. The window lights are either glass, plexiglass or poly depending on the location. A few windows are missing completely and are simply open or covered with a board or a tarp. Some existing sashes are divided light, as per the original 1890s design and some are salvaged single lights, installed in the 1990s. Window frames and sills are deteriorated beyond their service life. All sills are either spongy and saturated with organic growth or brittle or missing (east elevation). Sashes are in poor to good condition. Most sealants are crazed or missing.	Some of the window sashes can be salvaged and re-installed after repair and maintenance (sanding, repainting, caulking). Each window frame will need to be investigated individually to determine the level or repair or replacement needed. New replica windows should all feature true divided-light sashes with glass panes as per archival photographs. All sashes, trim and sills should be painted in high-gloss paint. Restore trim where missing, as all windows were historically trimmed. All new or restored windows can be operationally fixed, as with the south elevation permanently open, they no longer need to provide ventilation. Archival photographs and on-site evidence suggest the sashes were white and the trim and sills were red. As we have documentation of major renovations of the shipyard building in the 1930s which involved the formalization of many elevations to their current configuration today, it would be appropriate to use historically researched, local 1930s colours such as Sherwin Williams Firewood (red) and Alabaster (white), which are precise matches to those colours from a 1930s General Paint colour palette. All window sills will likely require full replacement. Replacement sills should all be sloped, painted and feature a drip cap to help shed water.

Doors & Outhouse:

Chronology	Observations	Recommendations
The building's industrial wood doors and openings evolved as uses in the buildings changed or as repair and maintenance was required. When the site became a historic site, some of the doors became public entrances and exits and thus needed to change in operation from sliding loading doors to public access doors. Historically, the building had many outhouses for the cannery and shipyard workers, but today only one outhouse survives on the northeast corner of the building.	The front doors (N2-2) are large, double doors clad in board and batten which have been installed in the last two decades and are in good condition. A similar new set replaced the large back door (S2-3). Both these swinging door sets replaced sliding barn doors which still hang in situ: on the north elevation the old barn door hangs outside the opening and on the south side it hangs inside the opening. On the south elevation there are four additional door openings, only two of which are actively used. The active exits are both historic loading sliding barn doors (S2-1 and S2-2a) made up of vertical boards that were once painted. The inactive exits are the barn door on the southeast corner of the building (S2-4), and a set of plywood-clad swinging doors (now clocked) on the southwest corner (S2-2). The condition of the outhouse is poor.	The historic barn doors are important character-defining elements of the building and should be conserved in place even if they aren't used. For the active barn doors on the south elevation (S21 and S2-2a) and for S2-4, replicate the doors in-kind with new, painted boards and reinstall on historic tracks. The colour should be Firewood red (exterior) and grey (match existing) (interior) and the sheen should be high-gloss. The outhouse requires structural stabilization and recladding in-kind. Access and/or views of the outhouse both from the interior and exterior are an important components of the visitor experience and should be prioritized as should interpretation of the outhouse as part of the exhibit.

ANCE Building Services Co. Inc.
739 Campbell Ave. Vancouver BC V6A 3K7

June 5, 2024

MEMO - Seine Net Loft - Preliminary Conservation Approach for Piles

The April 30, 2024 CWMM Consulting Engineers structural assessment of the Seine Net Loft wood piles system under the building, concluded that the majority of the piles will need replacement or major reinforcement.

The visibility of the majority of these piles is very low. The piles below the centre of the building are not visible at all, nor are the perimeter piles on the south and west elevations. Some partial views of piles can be obtained from the front (northern) elevation but the piles at this elevation are also poorly visible. For this reason, hefty reinforcement that alters the look or shape of the original/early cylinder- shaped piles is acceptable in all locations except for the furthest east row of piles which are most visible to the public. These have already been reinforced in 2017 so perhaps less intervention is needed here. Or perhaps this single row of piles could be replaced with new wood cylindrical piles, which replicate the original.

Current view of front and east sides of the Seine Net Loft building. The east perimeter wood piles (and their 2017 added supports) are the only truly visible section of piles on the entire building.

In any case, the proposed reinforcement strategy as illustrated in section x of the preliminary structural plan is acceptable anywhere but at this single eastern row of piles. At the eastern elevation, such significant alteration to the pile form would obscure the original 1954 structural design which we are aiming to conserve.

Elana Zysblat, CAHP
heritage consultant

ELANA ZYSBLAT, HERITAGE CONSULTANT - CAHP : ANCE BUILDING SERVICES : ELANAZYSBLAT@SHAW.CA : 604.722.3074

4.2 CONSERVATION RECOMMENDATIONS: BRITANNIA SHIPYARD

RELEVANT POLICIES (from OCP):

- Enhance, preserve and celebrate the built, natural and cultural heritage of Richmond and ensure it is visible and accessible;
- Encourage the preservation and celebration of community heritage;
- Where possible, encourage the adaptive reuse of heritage buildings to maintain them for the future;
- Continue to engage the private and volunteer sectors and take advantage of partnership opportunities with senior levels of government to preserve and rehabilitate heritage assets;
- Integrate a broad interpretation of heritage into festivals and celebrations unique to Richmond.

RELEVANT POLICIES (from Steveston Area Plan):

- Continue the City's commitment to Steveston's existing City owned heritage resources and encourage them to be operated in an economically viable manner using a variety of methods;
- To assist in managing heritage resources apply the "Standards and Guidelines for the Conservation of Historic Places in Canada", Parks Canada, as a guideline;
- Promote the integration of the trail system with cycling routes, greenways, walkways, and existing park pathways;
- Provide opportunities along the trails and greenway system for interpretation and educational information about Steveston's natural and historical features.

1. Character-Defining Elements	2. Images	3. Heritage Value
Site and setting: • Location on pilings extending into the Fraser River • Landmark on the Steveston waterfront • Surrounding Fraser River foreshore environment • Relationship and bridge connection to boardwalk and bulkhead • Still-existing wooden pilings adjacent to the cannery building • Wharves, docks and walkways associated to the cannery building • Views of the Fraser River and foreshore		Retains the connection to the early maritime history of the area.
Building: • Part of original cannery/shipyard building cluster pattern • Wood building construction on wooden piling foundation • L-shaped plan and prominent massing • Opening on the south facade to allow the passage of boats • Gable roof including a cross-gable portion at the north side of the building and modified gable roof at the south side		The gabled roof and wooden elements of the Britannia Shipyard reflect the traditional building style and materials utilized in the area in the late nineteenth century.

BUILDING CODE AND LIFE AND SAFETY CONSIDERATIONS

Building Code upgrading is the most important aspect of heritage building rehabilitation, as it ensures life safety as well as long-term protection for the resource. It is essential to consider heritage buildings on a case-by-case basis, as the blanket application of Code requirements does not recognize the individual requirements and inherent strengths of each building. Over the past few years, a number of Code equivalencies have been added to the British Columbia Building Code, which facilitate heritage building upgrades. For example, the use of sprinklers in a heritage structure helps to satisfy fire separation and exiting requirements.

Please note that under the current Code, equivalencies are offered for interior rehabilitation. The one exception is for windows; the wording of the code requires "two sheets of glass" rather than double-glazing (as it is usually interpreted) and therefore Code requirements can be met through the use of interior or exterior storm windows, or exempted under the heritage definitions of the Energy Efficiency Act.

4. Conservation Recommendations

The Britannia Shipyard building has been situated in this location since its construction in 1890. The building should remain in this location, as its proximity to the Fraser River at the historic Steveston townsite is one of its most distinguishing character-defining elements and adds significantly to its heritage value.

Every effort should be made, when possible, to retain heritage resources in situ. Moving buildings not only compromises the heritage integrity of the site by removing it from its original, historic context, but also compromises the physical heritage integrity of sites and often puts buildings at risk of damage. Relocation should only be considered as an alternative to demolition.

The Character-Defining Elements of the building of the Britannia Shipyard add significantly to its heritage value; conserve and maintain these Character-Defining Elements. The following conservation recommendations should be kept in mind whenever any conservation work is required on the Britannia Shipyard in the future:

- Preserve all original elements, features, and materials of the building as defined in the character-defining elements section of the Statement of Significance.
- Repair is preferred over replacement. Original wood elements should be considered for restoration before replication is considered.
- Substitute materials, such as Hardie Board or combed or textured lumber, are not acceptable for replacement of any woodwork on the historic building.
- Substitute materials, such as asphalt shingles, are not acceptable for replacement of the roofing material on the historic building.

1. Character-Defining Elements	2. Images	3. Heritage Value
Building: • Board and batten exterior siding • Multi-paned wood windows • Large wooden entry doors • Winch, cables and ways installed when the building was converted to a shipyard		The building style and materials used in the construction of the Britannia Shipyard connect it to the past traditions of the area and separate it from the contemporary structures of the surrounding neighbourhood.
Interior: • Complex floor plan • Complex wood framed roof structure • Heavy square wooden posts with angled roof supports • Wood floors and ceilings • Internal wood doors • Multi-paned wood windows • Horizontal wood planked walls		Provides the public with a chance to explore the internal structure of the facility.
Interior: • Interior details such as benches, furnishings, brick chimney, hoists, cables and machinery • Tools and marine vessels • Exhibits and demonstrations, such as interpretive panels, tools and boat building displays		Provides the public with a chance to interact with the components used in the operation of the cannery and later, shipyard.
Intangible Cultural Features: • Historic usage as a cannery, and later, shipyard, with boat building/repair capabilities • Oral histories • Community uses such as interpretive tours, festivals, events and park use		Provides enhanced cultural awareness opportunities.

4. Conservation Recommendations

The Character-Defining Elements of the building of the Britannia Shipyard add significantly to its heritage value; conserve and maintain these Character-Defining Elements. The following conservation recommendations should be kept in mind whenever any conservation work is required on the Britannia Shipyard in the future:

- Preserve all original elements, features, and materials of the building as defined in the character-defining elements section of the Statement of Significance.
- Repair is preferred over replacement. Original wood elements should be considered for restoration before replication is considered.
- Substitute materials, such as Hardie Board or combed or textured lumber, are not acceptable for replacement of any woodwork on the historic building.
- Substitute materials, such as asphalt shingles, are not acceptable for replacement of the roofing material on the historic building.

Conserve and maintain the interior character defining elements of the Britannia Shipyard. Conserve the artifacts associated with the Britannia Shipyard.

The following conservation recommendations should be kept in mind whenever any conservation work is required on the Britannia Shipyard in the future:

- Preserve all original elements, features, and materials of the building as defined in the character-defining elements section of the Statement of Significance.
- Repair is preferred over replacement. Original wood elements should be considered for restoration before replication is considered.
- Substitute materials, such as Hardie Board or combed or textured lumber, are not acceptable for replacement of any woodwork on the historic building.

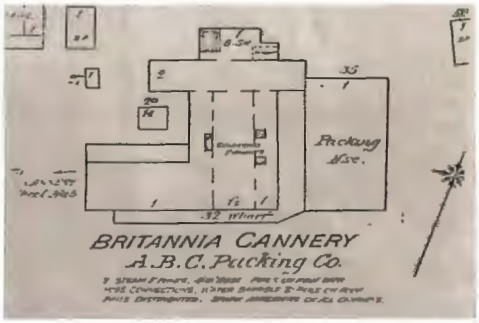
The conservation of the artifacts associated with the Britannia Shipyard should be based on 'Preventative Conservation', which emphasizes non-interventive actions to prevent damage to and minimize deterioration of artifacts in a collection. Such actions include:

- Monitoring and recording levels of environmental agents (e.g., light, relative humidity, temperature);
- Inspecting and recording the condition of objects;
- Controlling environmental agents;
- Establishing a pest management system;
- Practicing proper handling, storage, exhibit, and housekeeping techniques;
- Incorporating needed information and procedures regarding the collection in emergency management plans.

Conserve and maintain the use of Britannia Shipyard as an educational resource for the community. Should this use prove to be economically unviable, a historically compatible use should be identified.

Britannia Shipyard / Cannery Complex
Britannia Heritage Shipyard National Historic Site
Statement of Significance
1890
5180 Westwater Drive, Richmond, BC

Current images of the Britannia Shipyard.



Fire Insurance Plan of the Britannia Cannery, 1897.
(Richmond Archives)

Description

The Britannia Shipyard is a large, L-shaped wooden structure with a gable roof and board and batten siding standing on wood pilings in the tidal foreshore of the Fraser River near Steveston. The building ranges in height from one to one-and-a-half storeys. A wooden bridge connects the cannery to the Britannia boardwalk and a reconstructed wharf extends into the river. Remnants of wood wharf pilings are found adjacent to the building.

The cavernous interior of the building is constructed of wooden posts and beams with wood trusses supporting the gable roof. A large set of marine ways gives boats access from the river into the shipyard. The original internal layout of the building is evident, and along with the remains of the shipyard interior, tools, exhibits, marine vessels and other features reveal the complexity of the building.

The shipyard building is part of Britannia Heritage Shipyard National Historic site, which was declared a National Historic Site in 1991and opened as a city park in 1995.

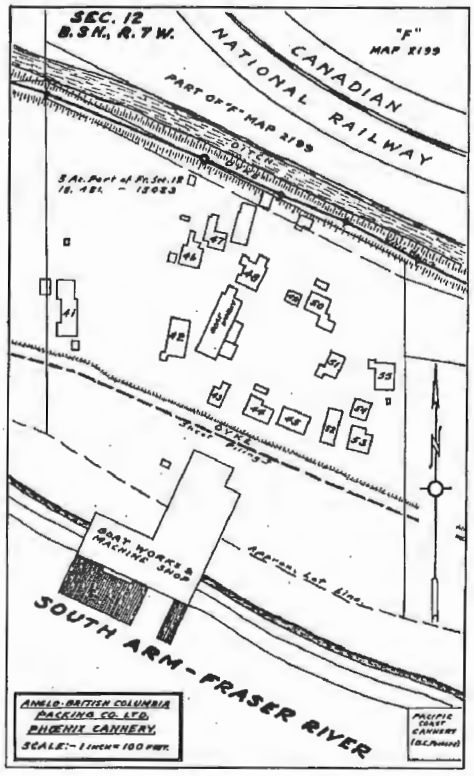
Values

The Britannia Cannery / Shipyard building is important for its historical, aesthetic, scientific, cultural and social values, particularly for its ability to tell the story of the technology, labour and working conditions at the Britannia cannery and later, the shipyard.

The Britannia Shipyard Complex is important a landmark of Steveston's canning, fishing and boatbuilding industries, the oldest surviving structure on the Steveston waterfront, and possibly the oldest cannery building in the province.

Constructed in 1890 by W.A. Duncan, J. Batchelor and Eli Harrison,

Britannia Shipyard/Cannery
Statement of Significance



ABC Packing Company map showing the Britannia Shipyard, 1930.
(Richmond Archives 1997-15-10)

Last Britannia Shipyard crew, 1979.
(Leif Birkedal photograph)

Britannia Cannery / Shipyard complex in the 1930s.
(Richmond Archives 1991-2-26)

Britannia Shipyard is valued for its historical association with the expansion of fishing and canning in Richmond and along the BC coast beginning in the late 1870s. Illustrating the liquidity of the industry, the cannery was purchased by Henry O. Bell-Irving's Anglo-British Columbia Canning Company in 1891, the same year ABC absorbed the adjacent Phoenix Cannery and the Garry Point Cannery.

The Britannia cannery's importance as an early industrial plant is evident in its first year of production, in which it supplied most of the fish exported in the first cargo of Fraser River salmon shipped directly to Britain. This shipment marked the beginning of the Fraser River as a major commercial centre.

The Britannia cannery adapted to changes in technology, particularly mechanization, in the first decades of the twentieth century, including electricity, the sanitary canning system and the Smith butchering machine.

The Britannia Shipyard building is significant for its ability to demonstrate the conversion of an early cannery building to a successful shipyard that would operate from 1918 until 1979. The decline in salmon stocks after 1913 due to the Hell's Gate slide, as well as American encroachment, Bell-Irving to make a shrewd decision to convert the cannery complex into a shipyard. It's primary purpose was to construct, repair and maintain the vessels which caught the salmon processed by the Anglo-British Columbia Packing Company fishing fleet, in particular the adjacent Phoenix Cannery.

The Shipyard is important for its adaptation over time to changes in the construction, power and fishing technology of vessels. The Shipyard

Interior of the Britannia Shipyard, 1990. (BHSS)

Rumrunner Fleetwood inside the Britannia Shipyard. No date. (BHSS)

produced gillnetters, purse seiners and tender boats that carried the catch back to the canneries. Gasoline, and later diesel engines accommodated the construction of larger boats with a wider range. The addition of drums and net winches and changes in boat design and materials were some of the adaptations accommodated by the Shipyard.

The Britannia Shipyard is important for the diversity and resiliency of its workers. The relocation of the Japanese in 1942 had high impact on the shipyard's work force. High demand encouraged the arrival of European and other workers who brought their own knowledge and techniques to the shipbuilding trade; the knowledge of both was integrated into new boat design after the return of the Japanese.

The building's aesthetic qualities, including its form and details from its first incarnation as a cannery, are evident in its L-shape which accommodated the canning lines, many windows for light, and high-ceilinged lofts for storing empty cans and nets.

Conversion to its new use as a shipyard required alterations to the exterior of the Britannia structure. A large opening for a boat slip was cut into the south wall allowing vessels to be hauled directly from the water into the building with the aid of a lift motor and the widening of the wharf at the south side of the structure. Interior adaptations accommodated diverse new trades, such as shipwrights, machinists, mechanics, carpenters, welders, painters and others in support of the fishing fleet.

The Britannia Shipyard building is significant for almost a century of use, adapting to social, technological and economic conditions, up until its, and the Phoenix Cannery's, purchase in 1968 by the Canadian Fishing Company leading up to its shutdown in 1979.

The Shipyard has significant social value through the oral histories and memories of many people who still remember working in the Shipyard, and for its permanent and temporary exhibits and the many regular and seasonal activities, including ongoing active use of the Shipyard facility for boat building and boat repair.

Character-defining Elements

Site and setting

- Location on pilings extending into the Fraser River
- Landmark on the Steveston waterfront
- Surrounding Fraser River foreshore environment
- Relationship and bridge connection to boardwalk and bulkhead
- Still-existing wooden pilings adjacent to the cannery building
- Wharves, docks and walkways associated with the building
- Views of the Fraser River and foreshore

Buildings and structures

- Part of original cannery / shipyard building cluster pattern

Britannia Shipyard/Cannery
Statement of Significance

- Wood building construction on wooden piling foundation
- L-shaped plan and prominent massing
- Opening on the south facade to allow the passage of boats
- Gable roof including a cross-gable portion at the north side of the building and modified gable roof at the south side
- Board and batten exterior siding
- Multi-paned wood windows
- Large wooden entry doors
- Winch, cables and ways installed when the building was converted to a shipyard
- Interior details such as:
  - Complex floor plan
  - Complex wood framed roof structure
  - Heavy square wooden posts with angled roof supports
  - Wood floors and ceilings
  - Internal wood doors
  - Multi-paned wood windows
  - Horizontal wood planked walls
  - Interior details such as benches, furnishings, brick chimney, hoists, cables and machinery
  - Tools and marine vessels
  - Exhibits and demonstrations, such as interpretive panels, tool and boatbuilding displays

Intangible cultural features

- Continued use for boat building and repair
- Oral histories
- Community uses such as interpretive tours, festivals, events and park use

Selected References

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4.12 CONSERVATION RECOMMENDATIONS: SEINE NET LOFT

RELEVANT POLICIES (from OCP):

- Enhance, preserve and celebrate the built, natural and cultural heritage of Richmond and ensure it is visible and accessible;
- Encourage the preservation and celebration of community heritage;
- Where possible, encourage the adaptive reuse of heritage buildings to maintain them for the future;
- Continue to engage the private and volunteer sectors and take advantage of partnership opportunities with senior levels of government to preserve and rehabilitate heritage assets;
- Integrate a broad interpretation of heritage into festivals and celebrations unique to Richmond.

RELEVANT POLICIES (from Steveston Area Plan):

- Continue the City's commitment to Steveston's existing City owned heritage resources and encourage them to be operated in an economically viable manner using a variety of methods;
- To assist in managing heritage resources apply the "Standards and Guidelines for the Conservation of Historic Places in Canada", Parks Canada, as a guideline;
- Promote the integration of the trail system with cycling routes, greenways, walkways, and existing park pathways;
- Provide opportunities along the trails and greenway system for interpretation and educational information about Steveston's natural and historical features.

1. Character-Defining Elements	2. Images	3. Heritage Value
Site and setting: • Location on pilings extending into the Fraser River • Landmark on the Steveston waterfront • Surrounding Fraser River foreshore • Wooden walkway connection to boardwalk • Remains of wood pilings to the east and west • Wharves on the west and south of the building		Retains the connection to the early maritime history of the area.
Building: • Large rectangular massing • Heavy timber construction • Gabled hip roof with asbestos cladding • Regularly spaced, 4-paned square windows • Wooden door • Exterior encapsulated asbestos siding		The building style and materials used in the construction of the Seine Net Loft reflect the cannery function of the facility, which dates to 1955, as part of the Phoenix Cannery.

BUILDING CODE AND LIFE AND SAFETY CONSIDERATIONS

Building Code upgrading is the most important aspect of heritage building rehabilitation, as it ensures life safety as well as long-term protection for the resource. It is essential to consider heritage buildings on a case-by-case basis, as the blanket application of Code requirements does not recognize the individual requirements and inherent strengths of each building. Over the past few years, a number of Code equivalencies have been added to the British Columbia Building Code, which facilitate heritage building upgrades. For example, the use of sprinklers in a heritage structure helps to satisfy fire separation and exiting requirements.

Please note that under the current Code, equivalencies are offered for interior rehabilitation. The one exception is for windows; the wording of the code requires "two sheets of glass" rather than double-glazing (as it is usually interpreted) and therefore Code requirements can be met through the use of interior or exterior storm windows, or exempted under the heritage definitions of the Energy Efficiency Act.

4. Conservation Recommendations

The Seine Net Loft building has been situated in this location since its construction in 1955. The building should remain in this location, as its relation to the Britannia Heritage Shipyard National Historic Site is one of its most distinguishing character-defining elements and adds significantly to its heritage value.

Every effort should be made, when possible, to retain heritage resources in situ. Moving buildings not only compromises the heritage integrity of the site by removing it from its original, historic context, but also compromises the physical heritage integrity of sites and often puts buildings at risk of damage. Relocation should only be considered as an alternative to demolition.

The Character-Defining Elements of the building of the Seine Net Loft add significantly to its heritage value; conserve and maintain these Character-Defining Elements. The following conservation recommendations should be kept in mind whenever any conservation work is required on the Seine Net Loft in the future:

- Preserve all original elements, features, and materials of the building as defined in the character-defining elements section of the Statement of Significance.
- Repair is preferred over replacement. Original wood elements should be considered for restoration before replication is considered.
- Substitute materials, such as Hardie Board or combed or textured lumber, are not acceptable for replacement of any woodwork on the historic building.
- Substitute materials, such as asphalt shingles, are not acceptable for replacement of the roofing material on the historic building.

1. Character-Defining Elements	2. Images	3. Heritage Value
Interior: • Massive interior volume • Wood floor • Wood posts with angled roof supports • Wood beams, rafters and ceiling • Wood staircase and mezzanine • Artifacts and exhibits		Provides the community with an opportunity to explore the actual stucture of a net loft.
Intangible Features: • Community uses such as interpretive tours, festivals, events, programs and exhibits		Provides the public with educational and interpretive opportunities.

4. Conservation Recommendations

Conserve and maintain the interior character defining elements of the Seine Net Loft. Conserve the artifacts associated with the Seine Net Loft.

The following conservation recommendations should be kept in mind whenever any conservation work is required on the Seine Net Loft in the future:

- Preserve all original elements, features, and materials of the building as defined in the character-defining elements section of the Statement of Significance.
- Repair is preferred over replacement. Original wood elements should be considered for restoration before replication is considered.
- Substitute materials, such as Hardie Board or combed or textured lumber, are not acceptable for replacement of any woodwork on the historic building.

The conservation of the artifacts associated with the Seine Net Loft should be based on 'Preventative Conservation', which emphasizes non-interventive actions to prevent damage to and minimize deterioration of artifacts in a collection. Such actions include:

- Monitoring and recording levels of environmental agents (e.g., light, relative humidity, temperature);
- Inspecting and recording the condition of objects;
- Controlling environmental agents;
- Establishing a pest management system;
- Practicing proper handling, storage, exhibit, and housekeeping techniques;
- Incorporating needed information and procedures regarding the collection in emergency management plans.

Conserve and maintain the use of Seine Net Loft as a community space. Should this use prove to be economically unviable, a historically compatible use should be identified.

Excerpt of the DRAFT Minutes of
the Richmond Heritage Commission meeting

Wednesday, June 12, 2024 - 7:00 pm
Microsoft Teams

Heritage Alteration Permit for 5180 Westwater Drive (Britannia Shipyards) - HA24-012449)

Rebecca Clarke, Manager, Museum and Heritage Services and Abbas Stancioff Clayton, Project Manager, Capital Buildings Project Development, and Heritage Consultant Elana Zysblat, Ance Building Services, provided a presentation about the application including the heritage status of the site, a brief history of the buildings, and an overview of the proposed work. This included the following information:

- The proposed work is part of the second phase in an envelope renewals program for the buildings at Britannia Shipyard and involves the two largest buildings on the site, the Britannia Shipyard building (built 1890) and the Seine Net Loft (built 1955).
- Britannia Shipyards is a National Historic Site of Canada and there are 13 buildings on the site. It is operated as a heritage park.
- The Shipyard building has seen many changes over its history including adaptation from a cannery to a boat repair facility in 1918, up until 1979 when it ceased operations. The interpretation of the building includes the different aspects of its history, and the proposed conservation work is in keeping with the interpretation.
- Some repair work was done in the 1990s and more recently and the roof was replaced in 2000. There is now a need to address roof leaks and siding deterioration as part of a large scope of work.
- The Seine Net Loft is the other large over-water building on the site. It was built to serve the fishing industry. Structural restoration was largely completed in 2013.
- The proposed work is to address structural and envelope issues, and includes the following:
  Britannia Shipyard building:
    - Roof replacement with a similar corrugated metal roof as current, new roof membrane, repairs to the roof structure and addition of roof anchors.
    - Cladding repairs and/or in-kind replacement. Wherever possible, existing board and batten cladding will be retained, some of which is original 1890 material. The highest quality material available in the quantity needed will be sourced but it is not possible to fully match the original old growth cedar and fir.
    - Windows restoration including reinstating replica single-pane, wood, divided-lite windows to match those shown in historic photos. Sash and sills will be painted red and white to match historic 1930s era colours. Rear doors to be repaired or replaced in kind and repainted.

  Seine Net Loft:
    - Repair and strengthening of the sub-structure beneath the building including replacement of many of the piles (above river bed).

In response to the Commission's questions, the following additional information was provided:

- Currently, there is no plan to elevate the buildings above potential rising water levels. The buildings are in a harsh marine environment. The Shipyard building accommodates occasional tidal flooding. Adaptations have been made for exhibits in this environment.
- The program for the buildings will continue as current. The Shipyard building is the keystone interpretive building of the site. The Seine Net Loft program includes venue rental.
- The roof on the Shipyard building was originally cedar shingles. Metal roofing was added from the 1950s onwards and the roof has been fully metal clad since the 1970s. The replacement roof will be metal. The material and profile is still to be fully confirmed but is likely to be corrugated material, galvalume or galvanized, to retain the appearance closest to the current roof. A standing seam roof has also been explored. Roof anchors are being added to enable servicing of the roof.
- The buildings both have sprinkler systems to provide fire protection.
- The repairs on the Shipyard building will be visible, at least initially. The aim is to retain as much of the existing material as possible. The new wood introduced where necessary for cladding repairs and replacement will be treated with boiled linseed oil. Stains will not be used on the new material. This traditional approach is recommended for the long-term protection of the wood and environmental considerations.
- Anticipating that the community may be concerned to see changes in the appearance of the buildings, a communication plan will inform the public about the work being done and how the building will look.

The Commission thanked the presenters for the presentation and expressed their appreciation for the efforts for conservation of the buildings and their history.

It was moved and seconded:

> ***That the Richmond Heritage Commission support the Heritage Alteration Permit application for 5180 Westwater Drive (Britannia Shipyards) (HA24-012449) as presented.***

CARRIED

City of Richmond

Heritage Alteration Permit

Development Applications Department
6911 No. 3 Road, Richmond, BC V6Y 2C1

File No.: HA 24-012449

To the Holder:	City of Richmond (c/o Abbas Stancioff Clayton)
Property Address:	5180 Westwater Drive & 12451 Trites Road (Britannia Shipyards)
Legal Description:	LOT 1 EXCEPT: FIRSTLY; PART SUBDIVIDED BY PLAN 72772, SECONDLY; PART SUBDIVIDED BY PLAN 77126, THIRDLY; PART SUBDIVIDED BY PLAN NWP87861, SECTION 11 AND 12 BLOCK 3 NORTH RANGE 7 WEST NEW WESTMINSTER DISTRICT PLAN 70037

(s.617, *Local Government Act*)

1. (Reason for Permit)
   - ☑ Designated Heritage Property (s.611)
   - ☐ Property Subject to Temporary Protection (s.609)
   - ☐ Property Subject to Heritage Revitalization Agreement (s.610)
   - ☐ Property in Heritage Conservation Area (s.615)
   - ☐ Property Subject to s.219 Heritage Covenant (Land Titles Act)
2. This Heritage Alteration Permit applies to and only to those lands shown cross-hatched in Schedule A.
3. This Heritage Alteration Permit is issued to authorize the proposed conservation work to the Britannia Shipyard Building and Seine Net Loft buildings at 5180 Westwater Drive and 12451 Trites Road as illustrated in the attached Plans #1 to #24.
4. This Heritage Alteration Permit is issued subject to compliance with all of the Bylaws of the City applicable thereto, except as specifically varied or supplemented by this Permit.
5. If the alterations authorized by this Heritage Alteration Permit are not completed within 24 months of the date of this Permit, this Permit lapses.
6. This is not a Building Permit.

AUTHORIZING RESOLUTION NO. <Resolution No.> ISSUED BY THE COUNCIL THE DAY OF <Date>

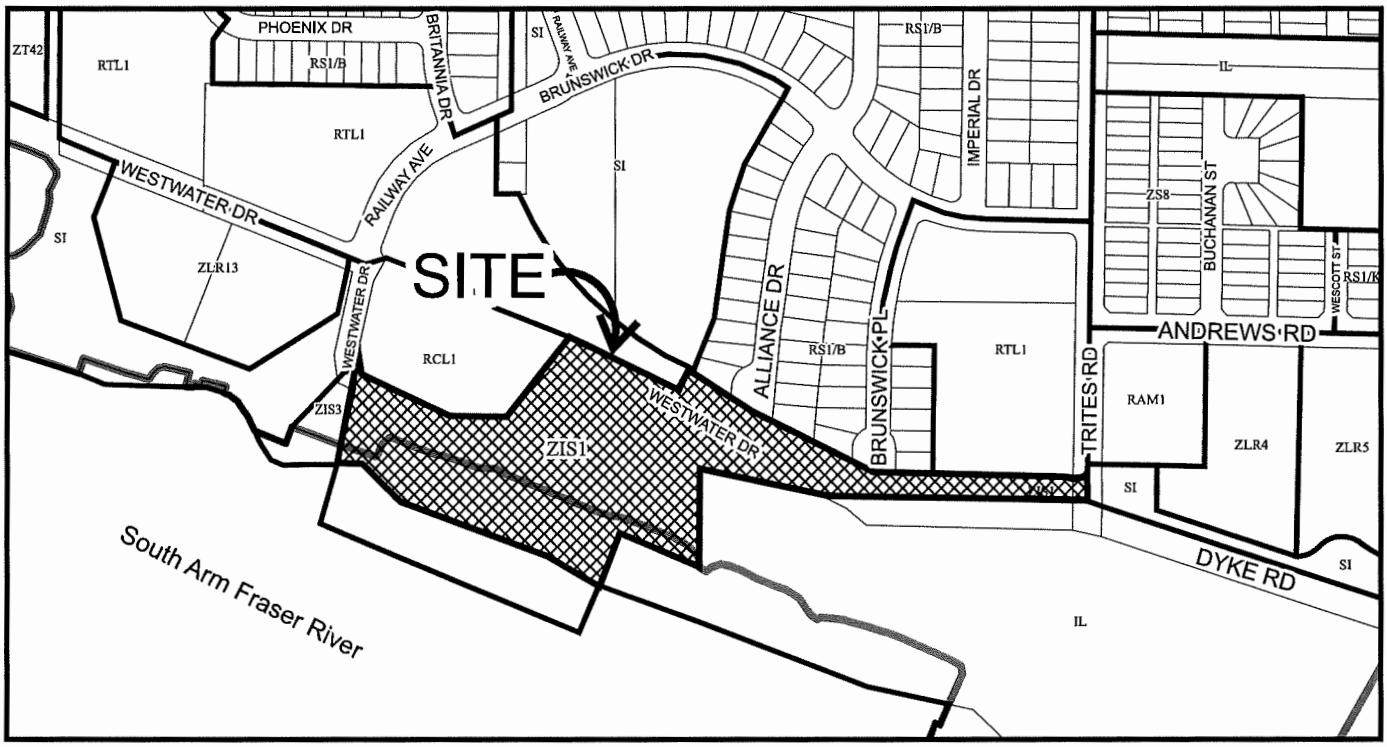
DELIVERED THIS <Day> DAY OF <Month>, <Year>

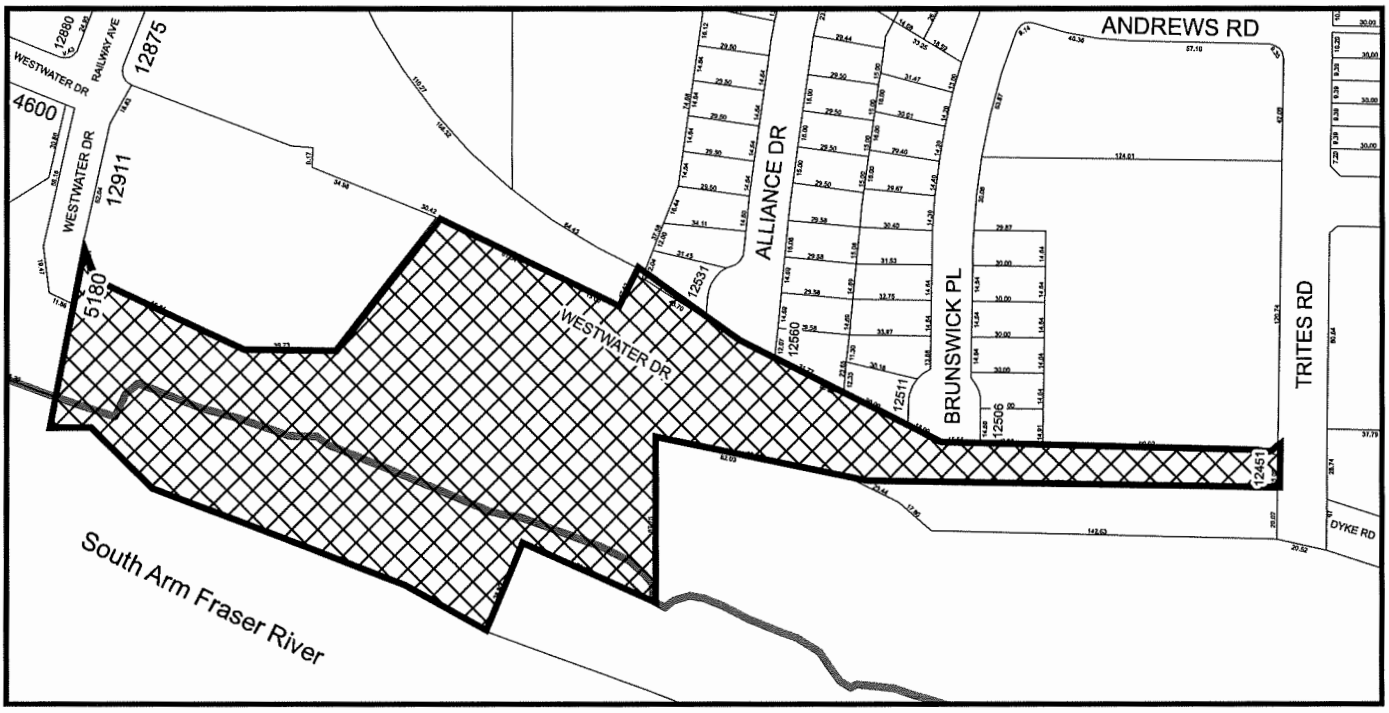
MAYOR

CORPORATE OFFICER

IT IS AN OFFENCE UNDER THE *LOCAL GOVERNMENT ACT*, PUNISHABLE BY A FINE OF UP TO $50,000 IN THE CASE OF AN INDIVIDUAL AND $1,000,000 IN THE CASE OF A CORPORATION, FOR THE HOLDER OF THIS PERMIT TO FAIL TO COMPLY WITH THE REQUIREMENTS AND CONDITIONS OF THE PERMIT.

City of
Richmond





HA 24-012449
SCHEDULE "A"

Original Date:04/19/24

Revision Date:

Note: Dimensions are in METRES

BRITANNIA - SHIPYARD BUILDING

BRITANNIA NATIONAL HISTORIC SITE STEVESTON, RICHMOND, BC
PROJECT No. 23059
PHASE 3 | 05/16/24 |

CLIENT

CITY OF RICHMOND

4th Floor, 6900 Minoru Blvd
Richmond, BC, V6Y 1Y3

t: 604.204.8519
c: 604.442.7821

Contact: **Abbas Stancioff Clayton,**
Project Coordinator
Email: aclayton@richmond.ca

A000	COVER SHEET
A100	SITE PLAN
A101	FIRE ACCESS PLAN
A102	BRITANNIA SHIPYARD PILING & FOUNDATION PLAN
A103	BRITANNIA SHIPYARD PLANS
A104	BRITANNIA SHIPYARD - CEILING & ROOF PLANS
A201	BRITANNIA SHIPYARD BUILDING ELEVATIONS
A202	BRITANNIA SHIPYARD BUILDING ELEVATIONS
A301	BUILDING LONG SECTIONS
A302	BUILDING SHORT SECTIONS
A400	WINDOWS & DOORS SCHEDULE
A401	WINDOWS & DOORS ELEVATIONS

CONSULTANT TEAM

Architect - Prime Consultant

Iredale Architecture
Suite 220 – 12 Water Street
Vancouver, BC V6B 1A5

TEL: 604.736.5581

Contact: **Albert Lam**
Email: albert@iredale.ca

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TEL:

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Contact: **Maria Continentino**
Email: mcontinentino@legacyenv.ca

Building Science Consultant

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Contact: **Jonathan Chow**
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BC V6C 1S4

TEL: 604.603.6220 x2261

Contact: **Derek Hui**
Email: derek.hui@introba.com

Construction Manager

Scott Construction Group
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Burnaby, BC V6G 4X8

TEL: 604.874 8228

Contact: **Mike Lake**
Email: mikel@scottconstructiongroup.com

GENERAL NOTES:

1.0 THE FOLLOWING GENERAL CONDITIONS TO ARE TO BE USED EXCLUSIVELY FOR <Project Name, Location>. PUBLICATION OF THESE NOTES IN PART, OR IN WHOLE, IS NOT PERMITTED WITHOUT WRITTEN APPROVAL FROM ELEMENTAL ARCHITECTURAL AND BUILDING SCIENCE SOLUTIONS.

2.0 THE CONTRACTOR SHOULD VERIFY ALL DIMENSIONS ON SITE PRIOR TO PROCEEDING WITH THE WORK.

3.0 THESE NOTES ARE TO BE READ IN CONJUNCTION WITH THE ARCHITECTURAL DETAILS AND SPECIFICATIONS. IF THERE IS A DISCREPANCY BETWEEN THE ARCHITECTURAL DETAILS, GENERAL REQUIREMENTS, OR SPECIFICATIONS, PLEASE NOTIFY THE ARCHITECT FOR DIRECTION PRIOR TO PROCEEDING WITH WORK.

4.0 ALL WORK REPLACING EXISTING WORK IS TO BE COMPLETED AS PER <BCBC 2024>

5.0 PROTECT ALL LANDSCAPING AND ROADWORK DURING CONSTRUCTION. PROTECT NATURAL HABITAT AND PREVENT EROSION OF SOILS DUE TO RUN OFF.

6.0 WHERE APPLICABLE, THE MANUFACTURER'S WRITTEN PRODUCT LITERATURE SHALL TAKE PRECEDENCE OVER THESE WRITTEN RECOMMENDATIONS.

7. THESE NOTES ARE NOT INTENDED TO ADDRESS OR CONFLICT WITH OTHER REQUIREMENTS OF THE NATIONAL BUILDING CODE INCLUDING LIFE AND FIRE SAFETY, OCCUPANCY, STRUCTURAL, MECHANICAL, ELECTRICAL, ACOUSTIC, AND ANY OTHERS.

8. TEMPORARY MEASURES, SITE SAFETY, MEANS, SEQUENCE, AND OVERALL PROJECT CO-ORDINATION REMAINS THE RESPONSIBILITY OF THE CONTRACTOR.

CONTRACTOR NOTES:

1.0 SCOTT CONSTRUCTION MUST ENSURE THAT ONLY EXPERIENCED PROFESSIONALS ARE ASSIGNED TO MANAGE AND SUPERVISE THE WORK CREWS.

2.0 SCOTT CONSTRUCTION TO SAVE SQUARE NAIL FROM BUILDING FOR EXHIBIT

NOTES: EXISTING LIGHT FIXTURES TO BE RETAINED ON THE BUILDING. IF REMOVAL IS REQUIRED DURING CONSTRUCTION, THEY SHOULD BE REINSTALLED IN THEIR ORIGINAL LOCATION AFTERWARDS.

SAMPLES TO BE PROVIDED TO THE PROJECT TEAM FOR REVIEW AND APPROVAL:

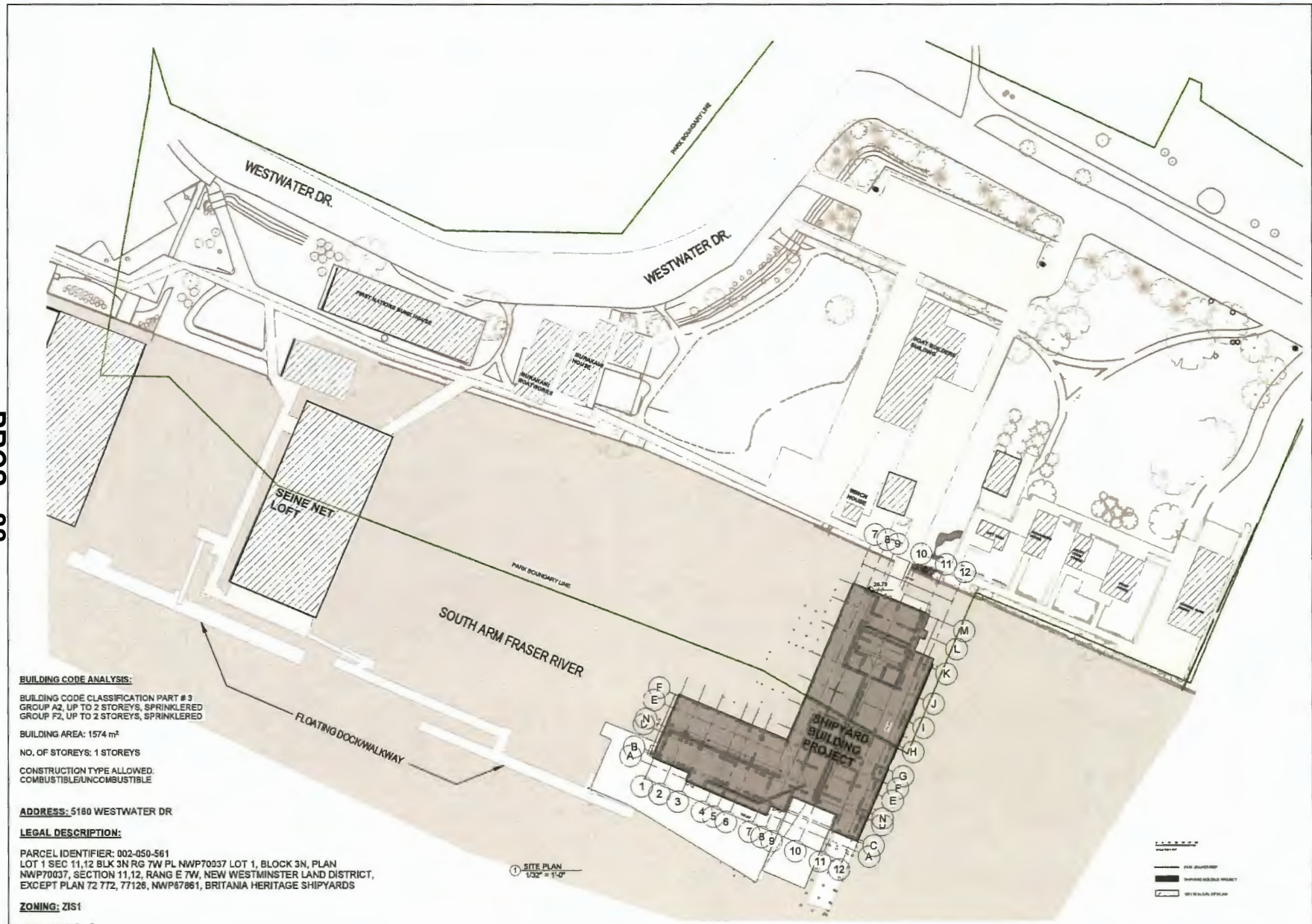
- **SIDING: YELLOW CEDAR "TIGHT KNOT" WITH 3-5 COATS ON LINSEED OIL**
- **WINDOW TRIM & BARN DOORS: YELLOW CEDAR "TIGHT KNOT" PAINTED SW 6328 (FIREWEED) IN SEMI-GLOSS**
- **WINDOW FRAME: D. FIR PAINTED SW 7008 (ALABASTER) IN HIGH-GLOSS**
- **PVDF PAINT FINISH FOR METAL ROOFING. COLOUR TBD**
- **7/8" CORRUGATED METAL PROFILE TO BE COMPARED AGAINST EXISTING ROOF**
- **2" MECHANICALLY SEAMED 12"W PANEL**

Plan #1

IREDALE ARCHITECTURE
220 - 12 Water Street Vancouver, BC V6B 1A5
604 - 736 - 5581 Vancouver Victoria

BRITANNIA - SHIPYARD BUILDING
BRITANNIA NATIONAL HISTORIC SITE STEVESTON, RICHMOND, BC
PROJECT No. 23059
PHASE 3 | 05/16/24 |

PRCS - 87



BUILDING CODE ANALYSIS:

BUILDING CODE CLASSIFICATION PART # 3
GROUP A2, UP TO 2 STOREYS, SPRINKLERED
GROUP F2, UP TO 2 STOREYS, SPRINKLERED

BUILDING AREA: 1574 m²

NO. OF STOREYS: 1 STOREYS

CONSTRUCTION TYPE ALLOWED:
COMBUSTIBLE/UNCOMBUSTIBLE

ADDRESS: 5180 WESTWATER DR

LEGAL DESCRIPTION:

PARCEL IDENTIFIER: 002-050-561
LOT 1 SEC 11,12 BLK 3N RG 7W PL NWP70037 LOT 1, BLOCK 3N, PLAN NWP70037, SECTION 11,12, RANG E 7W, NEW WESTMINSTER LAND DISTRICT, EXCEPT PLAN 72 772, 77126, NWP87861, BRITANIA HERITAGE SHIPYARDS

ZONING: ZIS1

AREA: 32,982 m²

Plan #2

1 | 15 Mar 2024 | Issued for HAP
No. | Date | Remarks

IREDALE
ARCHITECTURE

220 - 12 Water Street
Vancouver, BC V6B 1A5
604 - 736 - 5581

Vancouver Victoria
www.iredale.ca

BRITANNIA - SHIPYARD BUILDING

BRITANNIA NATIONAL HISTORIC SITE
STEVESTON, RICHMOND, BC

SITE PLAN

1/32" = 1'-0"

AL | JSE | JSE

N

23059

3 | A100

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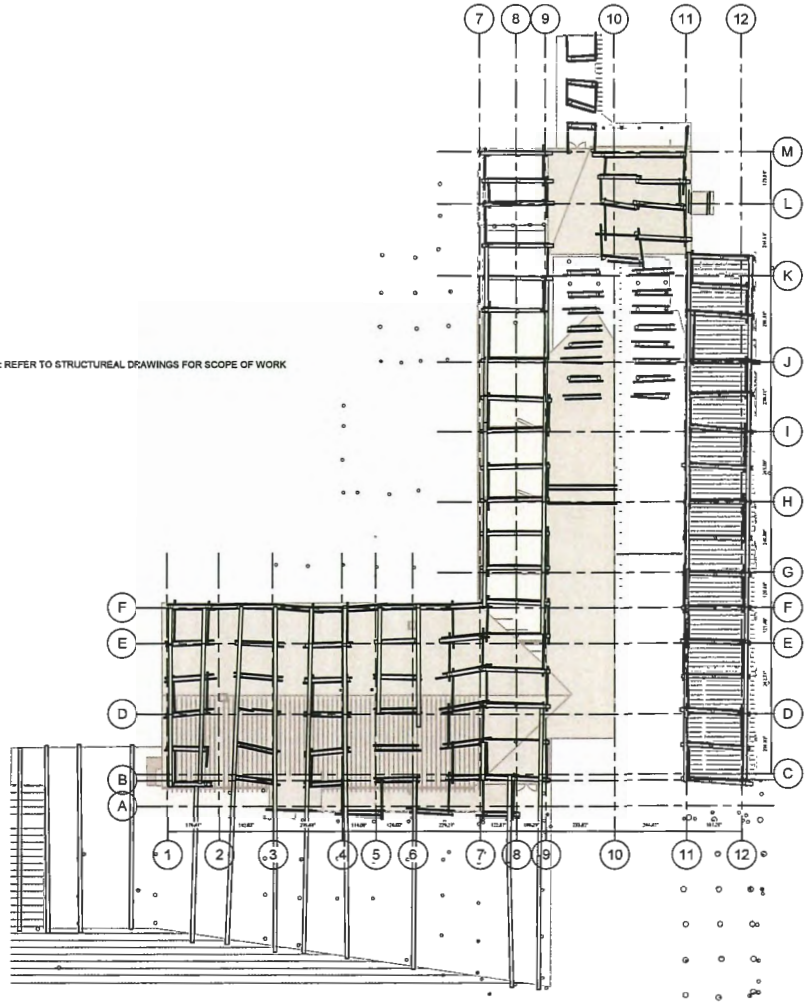
PRCS - 89

NOTE: REFER TO STRUCTUREAL DRAWINGS FOR SCOPE OF WORK



1 PILING & FOUNDATION LEVEL
1/16" = 1'-0"

Plan #3

IREDALE
ARCHITECTURE
220 - 12 Water Street
Vancouver, BC V6B 1A5
604 - 736 - 5581
Vancouver Victoria
www.iredale.ca

BRITANNIA - SHIPYARD BUILDING

BRITANNIA NATIONAL HISTORIC SITE
STEVESTON, RICHMOND, BC

BRITANNIA SHIPYARD PILING & FOUNDATION PLAN

1/16" = 1'-0"

GH | AL | JE

23059

3 | A102

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PRCS - 90

RATIONALE AND APPROACH TO HERITAGE RESTORATION

REFERENCE HISTORICAL BUILDING USE
THE SHIPYARD IS HISTORICALLY A UTILITARIAN BUILDING. MODIFICATIONS, REPAIRS AND ADDITIONS WERE MADE TO SUIT THE BUILDING'S PURPOSE AT DIFFERENT POINTS IN ITS HISTORY, WITH WHATEVER MATERIALS WERE AVAILABLE AT THE TIME. THERE'S EVIDENCE OF PREVIOUS REPAIRS AND THE RESULTING INCONSISTENCIES IN AREAS OF THE BUILDING'S FINISHES ARE VALUED CHARACTER DEFINING ELEMENTS OF THIS HISTORIC PLACE

PRACTICAL APPROACH
1. RESTORE AND/OR REPLACE IN-KIND MATERIALS, UTILIZING ASSEMBLIES (ROOFING, CLADDING, WINDOWS AND DOORS) AS THE PRIMARY WEATHER PROTECTION FOR THE SHIPYARD.
   - A. THE PROJECT INTENT IS NOT TO ATTEMPT RESTORING ASSEMBLIES TO A CONSISTENT FINISH. WHAT IS IN-PLACE WILL BE RESTORED OR REPLACED TO MATCH EXISTING WHERE POSSIBLE.
   - B. ASSEMBLIES WILL ALSO BE RESTORED/REPLACED WITH FUTURE REPAIRABILITY IN MIND USING THE HIGHEST QUALITY AND MOST DURABLE MATERIAL AVAILABLE. THE BUILDING WILL BE ALLOWED TO WEATHER NATURALLY, AS IT HAS BEEN FOR ITS ENTIRE LIFE TO DATE.
2. WEATHER PROTECTION IS CRITICAL FOR THE SHIPYARD AS A PUBLIC ASSET FOR HERITAGE EDUCATION USE FOR THE FOLLOWING REASONS:
   - A. PROTECT ARTIFACTS,
   - B. PROTECT STRUCTURE FROM WEATHER AND CLIMATE CHANGE, TO MAINTAIN STRUCTURAL INTEGRITY AND SAFETY,
   - C. ALLOW THE PUBLIC TO VISIT THE SITE.

CONSERVATION ASSESSMENT APPROACH
1. ERECT SCAFFOLDING TO ACCESS AND PROTECT THE SHIPYARD BUILDING FOR DURATION OF THE WORK.
2. INSPECT BOARD BY BOARD, DOORS AND WINDOWS, SCOTT CONSTRUCTION, IREDALE ARCHITECTURE AND ANCE TO REVIEW ON-SITE TO DETERMINE SPECIFIC HIERARCHY OF CONSERVATION/RESTORATION.
   - A. ENVELOPE DETAILS TO BE REVIEW BY MORRISON HERSHFIELD.
   - B. WINDOW CONSERVATION/RESTORATION WILL INCLUDE QUALIFIED WINDOW TRADE EXPERIENCED IN HERITAGE WINDOWS.
   - C. METICULOUS DOCUMENTATION OF EXISTING CONDITIONS, INCLUDING HOLES, MARKS, AND SIGNS OF WEAR SHALL BE KEPT. TO PRESERVE THE AUTHENTICITY AND HISTORICAL NARRATIVE OF THE BUILDING
   - D. SIDING THAT CAN'T BE SALVAGED MUST BE CHIPPED FOR USE IN COMPOST OR MULCH-DO NOT DISCARD IN LANDFILL
3. SELECTIVE RETENTION OF BOARDS REPLACEMENT SHOULD PRIORITIZE THOSE WITH INTACT AND STURDY CONNECTIONS TO MAINTAIN STRUCTURAL INTEGRITY. BOARDS EXHIBITING BRITTLENESS SHOULD BE REMOVED PERMANENTLY. BOARDS SHOWING MINOR SIGNS OF ROT WHILE MAINTAINING STRUCTURAL INTEGRITY CAN BE PRESERVED AND RESTORED IN PLACE

NOTE: LEAD PAINT HAS BEEN FOUND PRESENT IN SEVERAL INTERIOR LOCATION AND SHOULD REMAIN UNDISTURBED DURING THE SCOPE OF THIS PROJECT - QUALIFIED HAZARDOUS MATERIAL CONSULTANT TO BE RETAINED AS REQUIRED.

GENERAL CLADDING DESCRIPTION AND APPROACH:
STRUCTURAL NOTE - RETAIN EXISTING STRUCTURE AND TO BE REVIEWED BY THE STRUCTURAL TEAM, PATCH AND REPAIR FRAMING PER STRUCTURAL ENGINEER'S INSTRUCTIONS.

POOR CONDITION - REPLACEMENT, SIMILAR SPECIES AND SIZE AS EXISTING:
1. NORTH AND WEST ELEVATIONS, PRIORITY (IF POSSIBLE):
   - A. SALVAGE CLADDING FROM OTHER PARTS OF THE SHIPYARD
   - B. SALVAGE WOOD FROM OTHER SOURCES
   - C. REPLACE WITH NEW CEDAR WITH 3-5 COATS OF LINSEED OIL
2. EAST ELEVATION:
   - A. PRIMARY "DONOR" ELEVATION - SALVAGE EXISTING CLADDING BOARD FOR RE-USE ON OTHER ELEVATIONS.
   - B. REPLACE WITH NEW CEDAR WITH 3-5 COATS OF LINSEED OIL

MODERATE CONDITION - SELECTIVE RESTORATION OR REPLACEMENT AFTER REVIEW (BOARD BY BOARD). SAME SPECIES AND SIZE AS EXISTING. PRIORITY (IF POSSIBLE):
1. NORTH AND WEST ELEVATIONS
   - A. RESTORE MATERIALS IN-PLACE
   - B. SELECTIVE REPLACEMENT WITH SALVAGED MATERIAL AS PRIMARY 'RECEIVER'
   - C. SELECTIVE REPLACEMENT WITH CEDAR WITH 3-5 COATS OF LINSEED OIL

GOOD CONDITION - RESTORATION OF CLADDING MATERIAL IN-PLACE.
- A. CLEAN THE SURFACE
  - A. CLEAN SURFACE TO REMOVE DIRT, GRIME USING A STIFF BRUSH
  - B. SAND THE SURFACE
  - C. APPLY SEALANT (3-5 COATS OF LINSEED OIL)

MATERIAL CONSIDERATION FOR REPLACEMENT:
THE EXISTING BOARD AND BATTEN SIDING CONSISTS OF A BLEND OF FIR AND CEDAR. CEDAR, BEING RESISTANT TO BOTH ROT AND INSECTS, OFFERS SUPERIOR DURABILITY COMPARED TO FIR, ENSURING A LONGER LIFESPAN FOR THE SIDING. THE ENVIRONMENTALLY FRIENDLY OIL WILL HELP PROTECT THE WOOD FROM MOISTURE.

NOTES:
USE BOILED LINSEED OIL RATHER THAN RAW FOR COATING BOARDS, AS THIS CURES FASTER. ALLOW 3 DAYS FOR BOARDS TO CURE IN DRY/INDOOR CONDITIONS AFTER LAST COAT OF OIL APPLIED, BEFORE INSTALLING

X-X — REFERENCE EXAMPLE OF EXISTING CONDITION

0' 5' 10' 20' 30' 40' 80'
SCALE 1/16" = 1'-0"


W-A Moderate condition: Board & batten to be inspected and restored in place (note closed opening to remain)


W-B Poor condition: Remove horz. siding "patch" over board and batten. Board & batten to be inspected and restored if possible

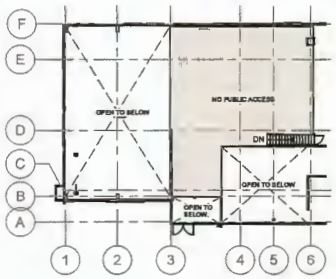

W-C Moderate condition: Board & batten at windows to be inspected and restored if possible

W-D Poor condition: Board and batten to be replaced at inside corner


N-C Poor condition: Board & batten at west corner to be replaced

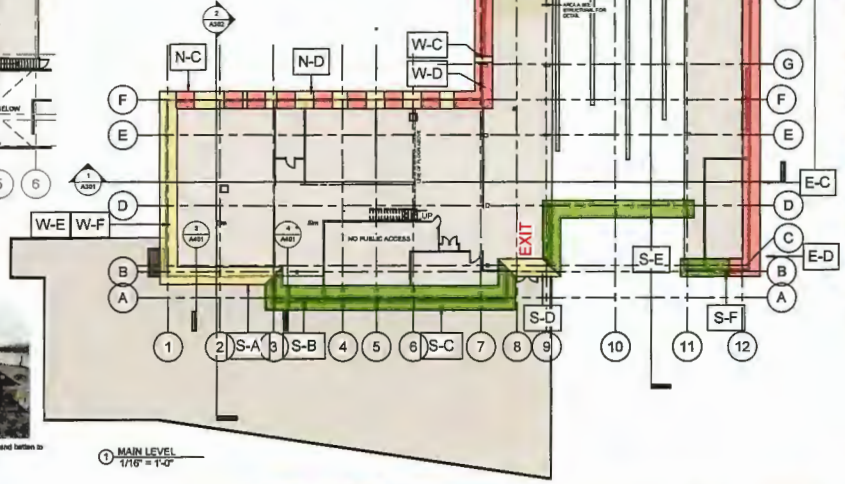

N-D Moderate condition: Board & batten around windows to be inspected and restored or replaced


W-F Moderate/good condition: Board and batten to be restored in-place if possible (e.g. upper portion of gable)



② MEZZANINE LEVEL
1/16" = 1'-0"


W-E Moderate/good condition: Board and batten to be restored in-place if possible



① MAIN LEVEL
1/16" = 1'-0"


N-A Poor condition : Lower portion of board & batten at gable over the water to be replaced as required


N-B Good condition: Board & batten near entrance



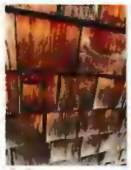
E-A Poor condition: Outhouse only board and batten to be replaced


E-C Poor condition: East exposure board and batten to be replaced


E-D Poor condition: Southeast corner board and batten to be replaced


S-A Board and batten to be replaced (as needed)


S-B Replicate/replace in kind this barn door made up of vertical painted door



S-C Office section siding to remain


S-D Moderate condition: Inspect and restore board and batten/plywood


S-E Good condition: Siding to remain


S-F Good condition: Siding to remain

Plan #4

1 | 19 Mar 2024 | Issued for IVAP
No. | Date | Revision

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BRITANNIA - SHIPYARD BUILDING

BRITANNIA NATIONAL HISTORIC SITE
STEVESTON, RICHMOND, BC

BRITANNIA SHIPYARD PLANS

As indicated

Drawn	Check	Approved
GH	AL	JE

Project No. 23059
Plan No. 3
Sheet No. A103

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GENERAL ROOF DESCRIPTION AND APPROACH

POOR CONDITION, LEAKING AT NUMEROUS LOCATIONS, FASTENERS ARE HEAVILY CORRODED AND INCORRECTLY LOCATED WITH THE NEOPRENE GASKET DRIED AND NO LONGER EFFECTIVE - REPLACEMENT RECOMMENDED AS PANELS CAN'T BE SALVAGED DUE TO INCORRECT FASTENERS PLACEMENT.

1. REPLACE EXISTING CORRUGATED METAL ROOF TO REFLECT THE HISTORICAL CONTEXT, CORRUGATED METAL ROOFS ORIGINATED FROM THE LATE 19TH CENTURY, WERE LIGHTWEIGHT, AFFORDABLE, AND EASY TO INSTALL AND WERE USED TO COVER EVERYTHING FROM BARNS AND SHEDS TO FACTORIES AND COMMERCIAL BUILDINGS.
2. UPDATE SHIPYARD ROOF DETAIL:
   - A. REPLACE ROOF MEMBRANE UNDER THE NEW METAL ROOF WITH HIGH TEMPERATURE UNDERLAYMENT ON EXISTING PLYWOOD OR BOARD ROOF TO PROTECT ARTIFACTS STORED IN THE SHIPYARD
   - B. REVISE FLASHING TO PROTECT EXISTING WOOD STRUCTURE, PARTICULARLY AT ROOF VALLEYS, PENETRATIONS, FASCIAS
   - C. ALL ROOF FASTENERS, ANCHORS AND NAILS SHOULD BE OF MARINE GRADE STEEL AND NEOPRENE CAP SCREWS FOR TOP MOUNT FASTENERS)
3. RETAIN EXISTING STRUCTURE: PATCH AND REPAIR PLYWOOD, BOARDS AND FRAMING PER STRUCTURAL ENGINEER'S INSTRUCTIONS
4. ADD ROOF ANCHORS TO PROVIDE THE SAFE MEANS TO INSPECT AND REPAIR THE ROOF IN THE FUTURE
5. REPLACE GUTTERS WITH ADEQUATE SLOPE TO ALLOW FOR DRAINAGE WITH A SIMILAR PROFILE AND FINISH AS EXISTING

GENERAL CEILING & ROOF FRAMING CONDITION DESCRIPTION AND APPROACH

RETAIN EXISTING STRUCTURE: PATCH AND REPAIR PLYWOOD, BOARDS AND FRAMING PER STRUCTURAL ENGINEER'S INSTRUCTIONS

- GUTTER TO BE ADDED ON EAST SIDE ONLY PROFILE TO MATCH EXISTING -NEW ROOF ANCHORS

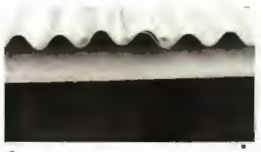
RESTORE OR REPLACE EXISTING GUTTER (SLOPE 1/4" / 10')

X-X REFERENCE EXAMPLE OF EXISTING CONDITION

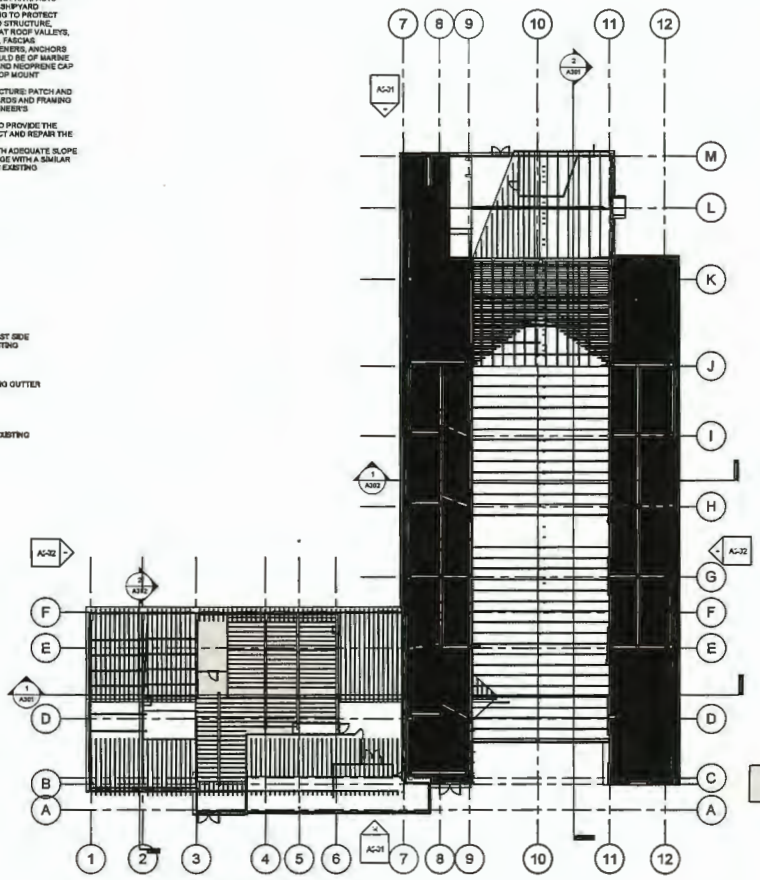
A The fasteners are incorrectly located in the gutter of the metal roofing, located at a position that will allow water ingress through the faulty fasteners

B Detail is exposed to water ingress

C Drip edge flashing to be heavily corroded



D Overlap of roofing corrugation is only set at 1 corrugation, whereas best practice is 2 corrugations



1 CEILING & ROOF FRAMING PLAN
1/16" = 1'-0"

2 ROOF PLAN
1/16" = 1'-0"

SCALE 1/16" = 1'-0"

Plan #5

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BRITANNIA - SHIPYARD BUILDING

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STEVESTON, RICHMOND, BC

BRITANNIA SHIPYARD - CEILING & ROOF PLANS

As indicated

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3 | A104

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PRCS - 92

GENERAL WINDOW AND DOOR DESCRIPTION AND APPROACH

WOOD WINDOW MISSING OR DESTROYED - REPLACEMENT:
1. INSPECT OPENING, SASH AND TRIMS, REPLACE WITH WOOD OF SAME SIZE & PAINT
2. WINDOW DETAIL TO INCLUDE NON-PERMANENT RAIN SEALS AT WINDOW FRAME, TRIM AND WINDOW, NEW SLOPED SILL WITH DRIP EDGE
3. REPRODUCE WINDOWS TO MATCH EXISTING/SURVIVING WINDOWS (SEE A400 & A401)

WOOD WINDOW IN MODERATE CONDITION - SELECTIVE RESTORATION OR REPLACEMENT:
1. INSPECT OPENING SASH AND TRIMS, RESTORE/REPLACE TO MATCH SURVIVING WINDOWS
2. WINDOW DETAIL TO INCLUDE NON-PERMANENT RAIN SEALS AT WINDOW FRAME, TRIM AND WINDOW, NEW WOOD SLOPED SILL WITH DRIP EDGE
3. RESTORE OR REPLACE COMPONENTS IN-PLACE (AS REQUIRED)
4. PAINT (SEE WINDOW/DOOR SCHEDULE)

WOOD WINDOW/DOOR IN GOOD CONDITION - RESTORATION IN-PLACE:
1. INSPECT OPENING SASH AND TRIMS:
   A. CLEAN SURFACE TO REMOVE DIRT, GRIME USING A STIFF BRUSH
   B. SAND THE SURFACE
   C. PAINT SEE WINDOW SCHEDULE

MATERIAL CONSIDERATION FOR WINDOWS AND DOORS REPLACEMENT:

1. WOOD WINDOW SPECIES: SOLID DOUGLAS FIR IS DIMENSIONALLY STABLE AND LESS PRONE TO SWELLING, SHRINKING, OR TWISTING. THE DOOR IS INTENDED TO BE FINISHED, WHICH WILL PROTECT THE WOOD AND ALSO REFLECT THE ARCHIVAL PHOTOS

2. PAINTED WOOD TO BE THE SAME WOOD AS BOARD & BATTEN

3.THE HISTORIC BARN DOORS ARE IMPORTANT CHARACTER DEFINING ELEMENTS OF THE BUILDING AND WILL BE FEATURED BY A DISTINCTIVE PAINTED COLOUR. THE TRACKS ARE TO BE RESTORED IN PLACE.

4. EXIT DOORS HAVE BEEN REFURBISHED RECENTLY AND WILL BE SEALED WITH LINSEED OIL TO PROTECT THE WOOD.

NOTE: REFER TO WINDOW & DOOR SCHEDULE A400 FOR FINISHES

N3 CHIMNEY (OUT OF SERVICE) DESCRIPTION AND APPROACH

POOR CONDITION - SALVAGE AND RE-BUILD:
1. SALVAGE BRICK FOR RE-BUILDING THE CHIMNEY
2. REBUILD CHIMNEY, MATCHING CONSTRUCTION AND MATERIALS FROM ORIGINAL CONSTRUCTION
3. USE RECLAIMED BRICK IF NEEDED
4. UPGRADE DESIGN AS NECESSARY FOR SAFETY

-NEW GUTTER TO BE ADDED, PROFILE TO MATCH EXISTING
-NEW ROOF ANCHORS & LIFELINES

X-X — REFERENCE EXAMPLE OF EXISTING CONDITION

MATERIAL LEGEND

EXISTING	REPLACEMENT
1. BOARD & BATTEN	
UNFINISHED VERT. BOARD AND BATTEN MIX OF FIR & CEDAR (INCONSISTENT SIZES THROUGHOUT) APX. 2"X12" BOARDS & 1"X3" BATTEN	2X12 BOARD & 1X3 BATTEN CEDAR FINISHED WITH 3-5 COATS OF LINSEED OIL
2. METAL ROOF	
24 GAUGE CORRUGATED METAL ROOF PANELS	7/8" CORRUGATED METAL
3. WOOD WINDOWS	
VARIED CONFIGURATION (MIX OF PLEXIGLASS & GLASS)	SOLID D. FIR, PRIMED & PAINTED, TRUE DIVIDED-LIGHT SASHES W/ SINGLE GLASS PANE SEE WINDOW SCHEDULE & A400
4. CEDAR SHINGLES	
UNFINISHED	TO BE RESTORED
5a. BARN WOOD DOORS	
CLADDED WITH BOARD & BATTEN	PAINTED GRADE WOOD PLUSH DOOR + B&B PAINTED SEE DOOR SCHEDULE & A401
5b. WOOD DOORS	
CLADDED WITH B&B	SEALED WITH LINSEED OIL
6. BRICK CHIMNEY	
GREY BRICK	SALVAGED BRICK & RE-INSTALL
7. PLYWOOD STORAGE BOX	
	RESTORE OR REPLACE WITH BOARD & BATTEN
8. HORIZONTAL WOOD BOARD	
UNKNOWN SIZE	KEEP & RESTORE
9. HORIZONTAL WOOD	
PLACED OVER BOARD & BATTEN	TO BE REMOVED, EXISTING BOARD & BATTEN BEHIND TO BE INSPECTED
10. GUTTER	
5.5" H BOX TYPE	SAME MATERIAL & FINISH AS ROOFING, PROFILE TO MATCH EXISTING
11. DOWNSPOUT	
CORRUGATED STEEL	SAME MATERIAL & FINISH AS ROOFING, PROFILE TO MATCH EXISTING

NOTE: REPLACEMENT WHEN NEED SEE PRIORITY SEQUENCE

0' 3' 10' 20' 30' 40' 50'

SCALE 1/8" = 1'-0"

WOOD DOOR IN POOR CONDITION - REPLACEMENT:
1. INSPECT OPENING & DOOR & BOARDS
2. REPLACE WITH WOOD TO MATCH BOARD & BATTEN
3. REPRODUCE DOORS TO MATCH RESTORED FRONT DOOR ON NORTH SIDE N3-3

WOOD DOOR IN MODERATE CONDITION - SELECTIVE RESTORATION OR REPLACEMENT:
1. INSPECT DOOR AND PANELS
2. RESTORE/REPLACE TO MATCH N3-3
3. RESTORE OR REPLACE COMPONENTS IN-PLACE (AS REQUIRED)
4. APPLY FINISH (SEE DOOR SCHEDULE A400)

WOOD DOOR IN GOOD CONDITION - RESTORATION IN-PLACE:
1. INSPECT DOOR & BOARDS:
   A. CLEAN SURFACE TO REMOVE DIRT, GRIME USING A STIFF BRUSH
   B. SAND THE SURFACE
   C. APPLY FINISH (SEE DOOR SCHEDULE A400)

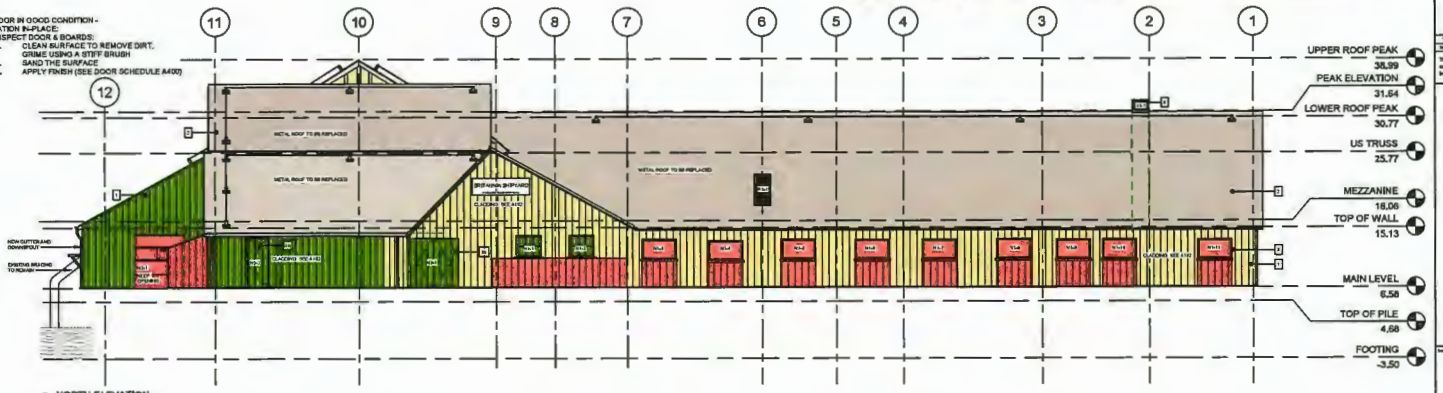

N2-1 Poor condition: Replace horizontal boards (opening to remain)


N3-1/2 Poor condition: Chimneys above roof plane require inspection and rebuilding

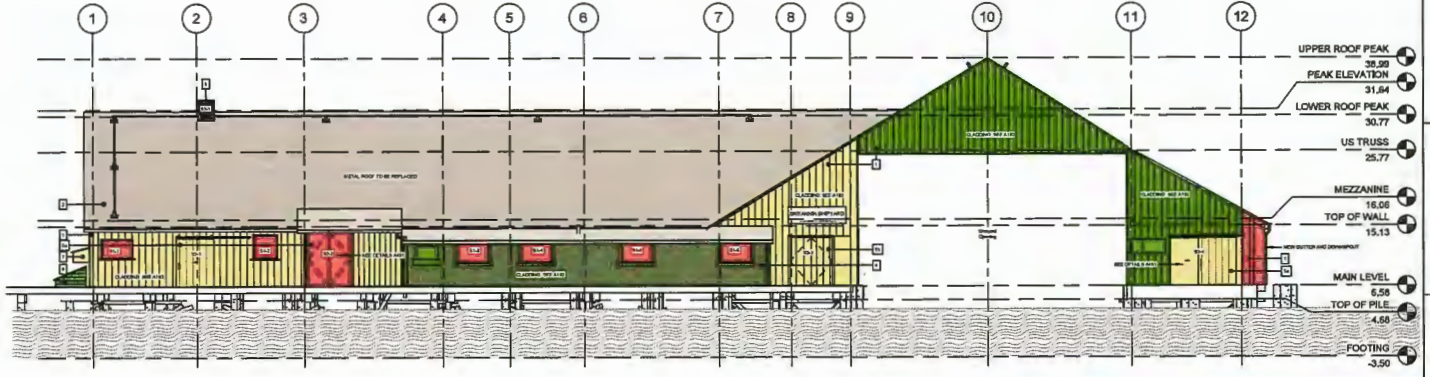

N3-1/2


North Elevation: Shipyard Entrance


North Elevation: Workshop windows – note many have modern Plexiglass windows



① NORTH ELEVATION
1/8" = 1'-0"



② SOUTH ELEVATION
1/8" = 1'-0"


S2-1 Poor condition: Barn door requires inspection and rebuilding


S2-2 Replicate/replace in kind this barn door made up of vertical painted door


S2-3 South Elevation: East Swing Doors


S2-4 South Elevation: Barn-type Sliding Door


South Elevation: Office Windows


South Elevation: Note windows replaced with modern Plexiglass windows

Plan #8

1 | 15 Mar 2024 | Issued for HAP

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BRITANNIA NATIONAL HISTORIC SITE
STEVESTON, RICHMOND, BC

BRITANNIA SHIPYARD BUILDING ELEVATIONS

1/8" = 1'-0"

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23059

3 | A201

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PRCS - 93

GENERAL WINDOW AND DOOR DESCRIPTION AND APPROACH

WOOD WINDOW MISSING OR DESTROYED - REPLACEMENT:
1. INSPECT OPENING, BASH AND TRIMS, REPLACE WITH WOOD OF SAME SIZE & PAINT
2. WINDOW DETAIL TO INCLUDE NON-PERMANENT RAIN SEALS AT WINDOW FRAME, TRIM AND WINDOW, NEW SLOPED SILL WITH DRIP EDGE
3. REPRODUCE WINDOWS TO MATCH EXISTING/SURVIVING WINDOWS (SEE A402 & A401)

WOOD WINDOW IN MODERATE CONDITION - SELECTIVE RESTORATION OR REPLACEMENT:
1. INSPECT OPENING BASH AND TRIMS, RESTORE/REPLACE TO MATCH SURVIVING WINDOWS
2. WINDOW DETAIL TO INCLUDE NON-PERMANENT RAIN SEALS AT WINDOW FRAME, TRIM AND WINDOW, NEW WOOD SLOPED SILL WITH DRIP EDGE
3. RESTORE OR REPLACE COMPONENTS IN-PLACE (AS REQUIRED)
4. PAINT (SEE WINDOW/DOOR SCHEDULE)

WOOD WINDOW/DOOR IN GOOD CONDITION - RESTORATION IN-PLACE:
1. INSPECT OPENING BASH AND TRIMS:
   A. CLEAN SURFACE TO REMOVE DIRT, GRIME USING A STIFF BRUSH
   B. SAND THE SURFACE
   C. PAINT SEE WINDOW SCHEDULE

MATERIAL CONSIDERATION FOR WINDOWS AND DOORS REPLACEMENT:

1. WOOD WINDOW SPECIES: SOLID DOUGLAS FIR IS DIMENSIONALLY STABLE AND LESS PRONE TO SWELLING, SHRINKING, OR TWISTING, THE DOOR IS INTENDED TO BE FINISHED, WHICH WILL PROTECT THE WOOD AND ALSO REFLECT THE ARCHIVAL PHOTOS

2. PAINTED WOOD TO BE THE SAME WOOD AS BOARD & BATTEN

3.THE HISTORIC BARN DOORS ARE IMPORTANT CHARACTER DEFINING ELEMENTS OF THE BUILDING AND WILL BE FEATURED BY A DISTINCTIVE PAINTED COLOUR, THE TRACKS ARE TO BE RESTORED IN PLACE.

4. EXIT DOORS HAVE BEEN REFURBISHED RECENTLY AND WILL BE SEALED WITH LINSEED OIL TO PROTECT THE WOOD.

NOTE: REFER TO WINDOW & DOOR SCHEDULE A400 FOR FINISHES

N3 CHIMNEY (OUT OF SERVICE) DESCRIPTION AND APPROACH

POOR CONDITION - SALVAGE AND RE-BUILD:
1. SALVAGE BRICK FOR RE-BUILDING THE CHIMNEY
2. REBUILD CHIMNEY, MATCHING CONSTRUCTION AND MATERIALS FROM ORIGINAL CONSTRUCTION
3. USE RECLAIMED BRICK IF NEEDED
4. UPGRADE DESIGN AS NECESSARY FOR SAFETY

-NEW GUTTER TO BE ADDED, PROFILE TO MATCH EXISTING
-NEW ROOF ANCHORS & LIFELINES

X-X — REFERENCE EXAMPLE OF EXISTING CONDITION

MATERIAL LEGEND

EXISTING	REPLACEMENT
1. BOARD & BATTEN	
UNFINISHED VERT. BOARD AND BATTEN MIX OF FIR & CEDAR (INCONSISTENT SIZES THROUGHOUT) APR. 2"X12" BOARDS & 1"X3" BATTEN	2X12 BOARD & 1X3 BATTEN CEDAR FINISHED WITH 3-5 COATS OF LINSEED OIL
2. METAL ROOF	
24 GAUGE CORRUGATED METAL ROOF PANELS	7/8" CORRUGATED METAL
3. WOOD WINDOWS	
VARIED CONFIGURATION (MIX OF PLEXIGLASS & GLASS)	SOLID D. FIR, PRIMED & PAINTED, TRUE DIVIDED-LIGHT SASHES W/ SINGLE GLASS PANE SEE WINDOW SCHEDULE & A400
4. CEDAR SHINGLES	
UNFINISHED	TO BE RESTORED
5a. BARN WOOD DOORS	
CLADDED WITH BOARD & BATTEN	PAINTED GRADE WOOD FLUSH DOOR + SAB PAINTED SEE DOOR SCHEDULE & A401
5b. WOOD DOORS	
CLADDED WITH SAB	SEALED WITH LINSEED OIL
6. BRICK CHIMNEY	
GREY BRICK	SALVAGED BRICK & RE-INSTALL
7. PLYWOOD STORAGE BOX	
	RESTORE OR REPLACE WITH BOARD & BATTEN
8. HORIZONTAL WOOD BOARD	
UNKNOWN SIZE	KEEP & RESTORE
9. HORIZONTAL WOOD	
PLACED OVER BOARD & BATTEN	TO BE REMOVED, EXISTING BOARD & BATTEN BEHIND TO BE INSPECTED
10. GUTTER	
5.5" H BOX TYPE	SAME MATERIAL & FINISH AS ROOFING, PROFILE TO MATCH EXISTING
11. DOWNSPOUT	
CORRUGATED STEEL	SAME MATERIAL & FINISH AS ROOFING, PROFILE TO MATCH EXISTING

NOTE: REPLACEMENT WHEN NEEDS SEE PRIORITY SEQUENCE

0' 5' 10' 20' 30' 40' 50'

SCALE 1/8" = 1'-0"

WOOD DOOR IN POOR CONDITION- REPLACEMENT:
1. INSPECT OPENING & DOOR & BOARDS REPLACE WITH WOOD TO MATCH BOARD & BATTEN
2. REPRODUCE DOORS TO MATCH RESTORED FRONT DOOR ON NORTH SIDE N3-3

WOOD DOOR IN MODERATE CONDITION- SELECTIVE RESTORATION OR REPLACEMENT:
1. INSPECT DOOR AND PANELS
2. RESTORE OR REPLACE COMPONENTS IN-PLACE (AS REQUIRED)
3. APPLY FINISH (SEE DOOR SCHEDULE A400)

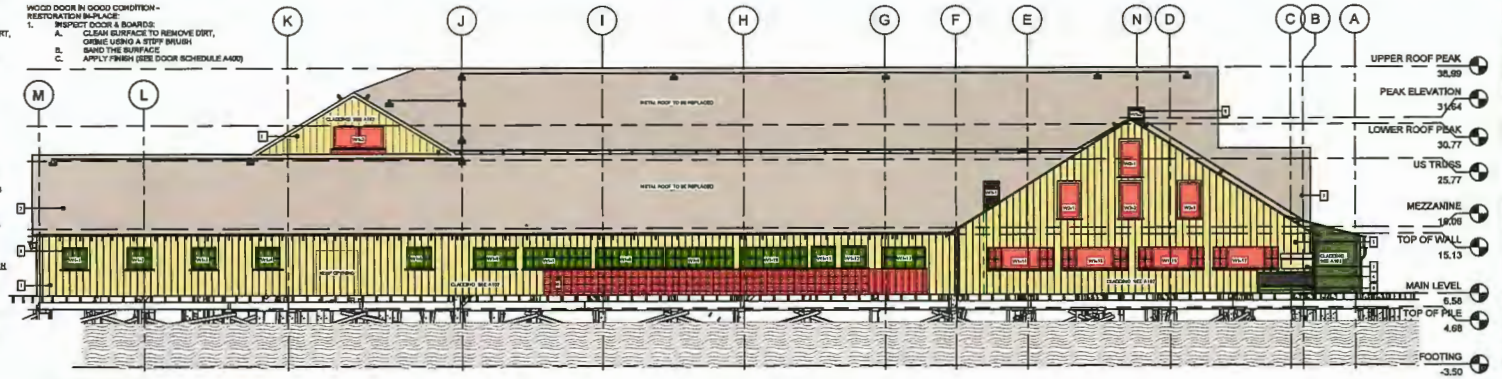
WOOD DOOR IN GOOD CONDITION - RESTORATION IN-PLACE:
1. INSPECT DOOR & BOARDS:
   A. CLEAN SURFACE TO REMOVE DIRT, GRIME USING A STIFF BRUSH
   B. SAND THE SURFACE
   C. APPLY FINISH (SEE DOOR SCHEDULE A400)


S3-1

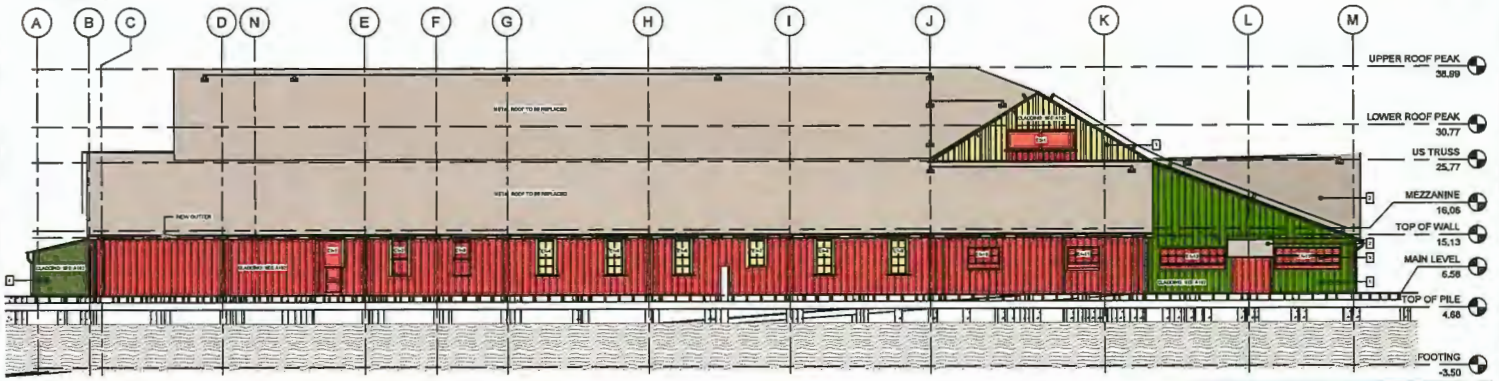

S3-2


West Elevation: Shipyard windows


West Elevation: Workshop gable and window - note missing windows and Plexiglass replacements



1 WEST ELEVATION
1/8" = 1'-0"



2 EAST ELEVATION
1/8" = 1'-0"


West Elevation: Note missing windows at the south end of the elevation

Plan #7

No.	Date	Revision
1	15 Mar 2024	Issued for HAP

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BRITANNIA - SHIPYARD BUILDING

BRITANNIA NATIONAL HISTORIC SITE
STEVESTON, RICHMOND, BC

BRITANNIA SHIPYARD BUILDING ELEVATIONS

1/8" = 1'-0"

Drawn	Check	Review
AL	JE	JE

Project No. 23059

Drawing No. 3 | A202

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PRCS - 94

RATIONALE AND APPROACH TO HERITAGE RESTORATION

REFERENCE HISTORICAL BUILDING USE
THE SHIPYARD IS HISTORICALLY A UTILITARIAN BUILDING. MODIFICATIONS, REPAIRS AND ADDITIONS WERE MADE TO SUIT THE BUILDING'S PURPOSE AT DIFFERENT POINTS IN ITS HISTORY, WITH WHATEVER MATERIALS WERE AVAILABLE AT THE TIME. THERE'S EVIDENCE OF PREVIOUS REPAIRS AND THE RESULTING INCONSISTENCIES IN AREAS OF THE BUILDING'S FINISHES ARE VALUED CHARACTER DEFINING ELEMENTS OF THIS HISTORIC PLACE

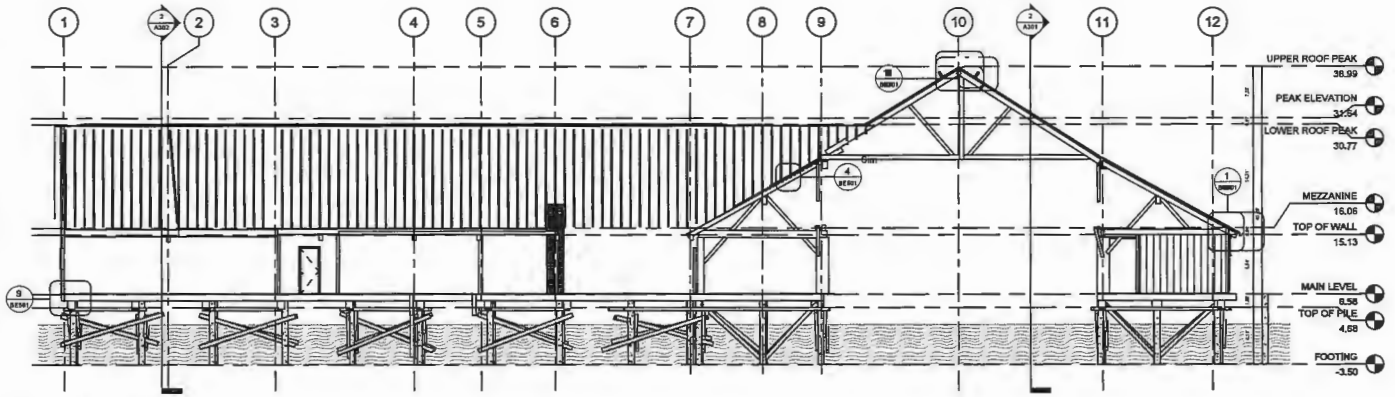
PRACTICAL APPROACH

1. RESTORE AND/OR REPLACE IN-KIND MATERIALS, UTILIZING ASSEMBLIES (ROOFING, CLADDING, WINDOWS AND DOORS) AS THE PRIMARY WEATHER PROTECTION FOR THE SHIPYARD.
   - A. THE PROJECT INTENT IS NOT TO ATTEMPT RESTORING ASSEMBLIES TO A CONSISTENT FINISH. WHAT IS IN-PLACE WILL BE RESTORED OR REPLACED TO MATCH EXISTING WHERE POSSIBLE.
   - B. ASSEMBLIES WILL ALSO BE RESTORED/REPLACED WITH FUTURE REPAIRABILITY IN MIND USING THE HIGHEST QUALITY AND MOST DURABLE MATERIAL AVAILABLE. THE BUILDING WILL BE ALLOWED TO WEATHER NATURALLY, AS IT HAS BEEN FOR ITS ENTIRE LIFE TO DATE.
2. WEATHER PROTECTION IS CRITICAL FOR THE SHIPYARD AS A PUBLIC ASSET FOR HERITAGE EDUCATION USE FOR THE FOLLOWING REASONS:
   - A. PROTECT ARTIFACTS,
   - B. PROTECT STRUCTURE FROM WEATHER AND CLIMATE CHANGE, TO MAINTAIN STRUCTURAL INTEGRITY AND SAFETY,
   - C. ALLOW THE PUBLIC TO VISIT THE SITE.

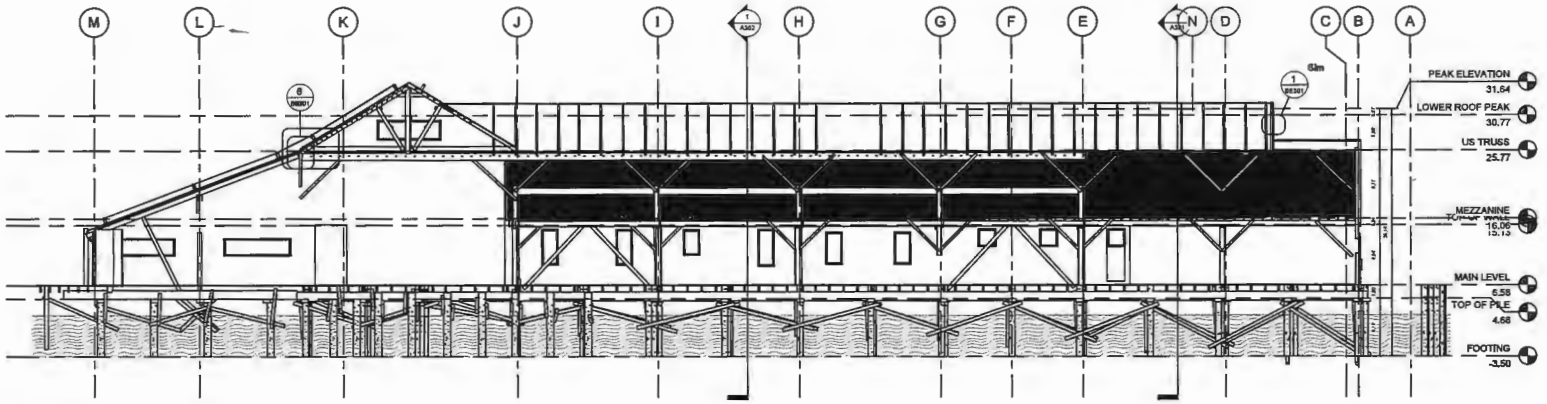
CONSERVATION ASSESSMENT APPROACH

1. ERECT SCAFFOLDING TO ACCESS AND PROTECT THE SHIPYARD BUILDING FOR DURATION OF THE WORK.
2. INSPECT BOARD BY BOARD, DOORS AND WINDOWS, SCOTT CONSTRUCTION, IREDALE ARCHITECTURE AND ANCE TO REVIEW ON-SITE TO DETERMINE SPECIFIC HIERARCHY OF CONSERVATION/RESTORATION.
   - A. ENVELOPE DETAILS TO BE REVIEW BY MORRISON HERSHFIELD.
   - B. WINDOW CONSERVATION/RESTORATION WILL INCLUDE QUALIFIED WINDOW TRADE EXPERIENCED IN HERITAGE WINDOWS.
   - C. METICULOUS DOCUMENTATION OF EXISTING CONDITIONS, INCLUDING HOLES, MARKS, AND SIGNS OF WEAR SHALL BE KEPT TO PRESERVE THE AUTHENTICITY AND HISTORICAL NARRATIVE OF THE BUILDING
   - D. SIDING THAT CAN'T BE SALVAGED MUST BE CHIPPED FOR USE IN COMPOST OR MULCH-DO NOT DISCARD IN LANDFILL
3. SELECTIVE RETENTION OF BOARDS REPLACEMENT SHOULD PRIORITIZE THOSE WITH INTACT AND STURDY CONNECTIONS TO MAINTAIN STRUCTURAL INTEGRITY. BOARDS EXHIBITING BRITTLENESS SHOULD BE REMOVED PERMANENTLY. BOARDS SHOWING MINOR SIGNS OF ROT WHILE MAINTAINING STRUCTURAL INTEGRITY CAN BE PRESERVED AND RESTORED IN PLACE

NOTE: LEAD PAINT HAS BEEN FOUND PRESENT IN SEVERAL INTERIOR LOCATION AND SHOULD REMAIN UNDISTURBED DURING THE SCOPE OF THIS PROJECT - QUALIFIED HAZARDOUS MATERIAL CONSULTANT TO BE RETAINED AS REQUIRED.



① EXTENSION E-W SECTION
1/8" = 1'-0"



② MAIN BLDG N-S SECTION
1/8" = 1'-0"

0' 5' 10' 20' 30' 40' 50'
SCALE 1/8" = 1'-0"

Plan #8

IREDALE ARCHITECTURE
220 - 12 Water Street
Vancouver, BC V6B 1A5
604 - 736 - 5581
Vancouver Victoria
www.iredale.ca

BRITANNIA - SHIPYARD BUILDING

BRITANNIA NATIONAL HISTORIC SITE
STEVESTON, RICHMOND, BC

BUILDING LONG SECTIONS

1/8" = 1'-0"

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PRCS - 95

RATIONALE AND APPROACH TO HERITAGE RESTORATION

REFERENCE HISTORICAL BUILDING USE
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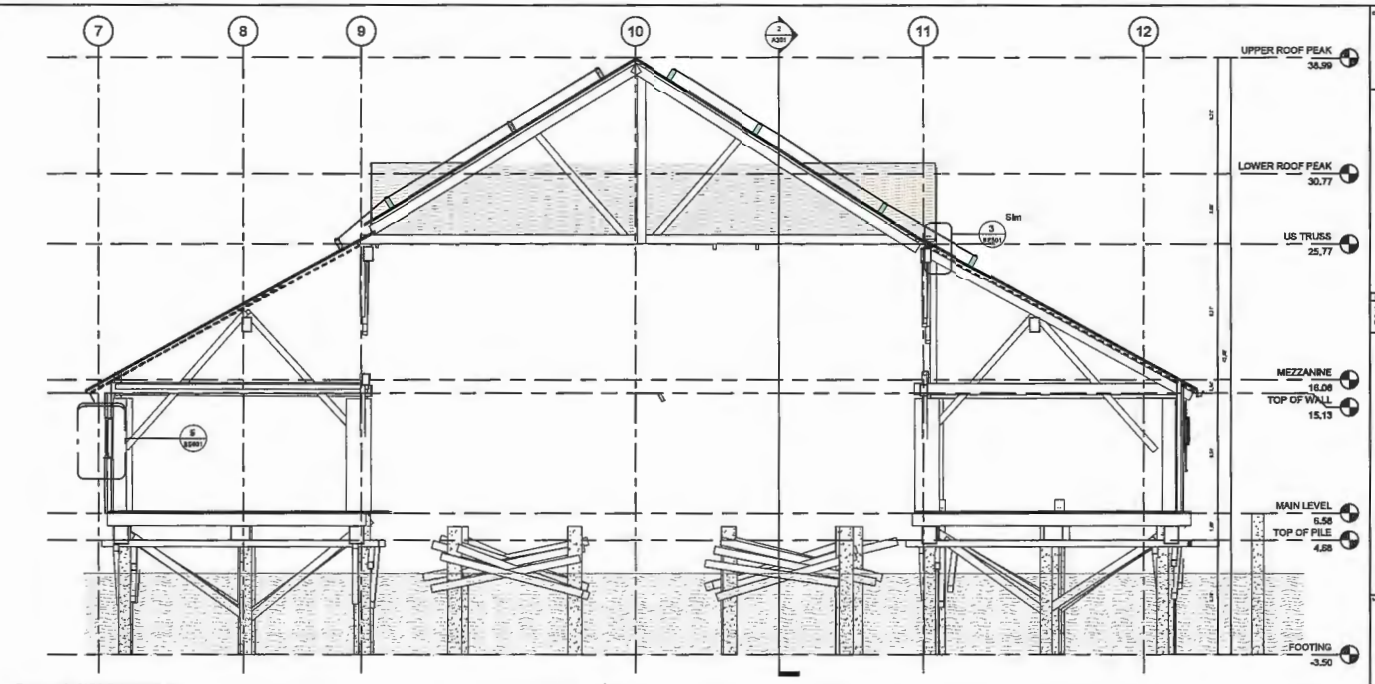
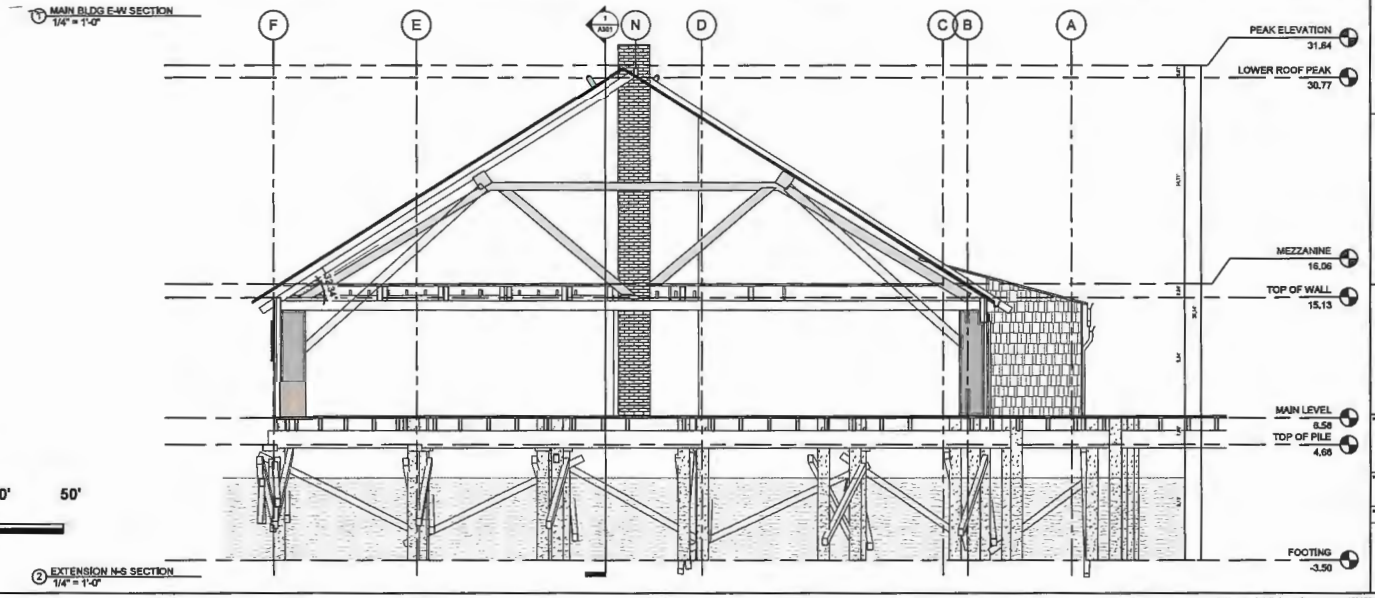


① MAIN BLDG E-W SECTION
1/4" = 1'-0"



② EXTENSION N-S SECTION
1/4" = 1'-0"

0' 5' 10' 20' 30' 40' 50'

SCALE 1/4" = 1'-0"

Plan #9

IREDALE ARCHITECTURE
220 - 12 Water Street
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BRITANNIA - SHIPYARD BUILDING

BRITANNIA NATIONAL HISTORIC SITE
STEVESTON, RICHMOND, BC

BUILDING SHORT SECTIONS

As indicated

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PRCS - 96

WINDOW SCHEDULE		
TAG	EXISTING	PROPOSED
E1-1	MISSING WINDOW	REPLACE WITH 8 LIGHT REPLICA WINDOW (SAME SIZE AS E1-6)
E1-2	BURGUNDY WOOD 4 LIGHTS FROM 1993	REPLACE WITH 8 LIGHT REPLICA WINDOW (SAME SIZE AS E1-4)
E1-3	MISSING WINDOW	REPLACE WITH 8 LIGHT REPLICA WINDOW (SAME SIZE AS E1-4)
E1-4	BURGUNDY WOOD 8 LIGHT FROM 1993	RESTORE OR REPLACE WITH 8 LIGHT REPLICA WINDOW
E1-5	BURGUNDY WOOD 8 LIGHT FROM 1993	RESTORE OR REPLACE WITH 8 LIGHT REPLICA WINDOW
E1-6	BURGUNDY WOOD 8 LIGHT FROM 1993	RESTORE OR REPLACE WITH 8 LIGHT REPLICA WINDOW
E1-7	BURGUNDY WOOD 8 LIGHTS FROM 1993	RESTORE OR REPLACE WITH 8 LIGHT REPLICA WINDOW
E1-8	BURGUNDY WOOD 8 LIGHT FROM 1993	RESTORE OR REPLACE WITH 8 LIGHT REPLICA WINDOW
E1-9	BURGUNDY WOOD 8 LIGHT FROM 1993	RESTORE OR REPLACE WITH 8 LIGHT REPLICA WINDOW
E1-10	BURGUNDY WOOD 8 LIGHTS FROM 1993	REPLACE WITH 8 LIGHT REPLICA WINDOW THAT FILLS ENTIRE OPENING
E1-11	PLEXIGLASS	REPLACE WITH 8 LIGHT REPLICA WINDOW THAT FILLS ENTIRE OPENING
E1-12	WOOD WINDOWS FROM 2009	REPLACE WITH 16 LIGHT REPLICA WINDOW THAT FILLS ENTIRE OPENING
E1-13	WOOD WINDOWS FROM 2009	REPLACE WITH 16 LIGHT REPLICA WINDOW THAT FILLS ENTIRE OPENING
E2-1	PLEXIGLASS	REPLACE WITH 2X 8 LIGHT REPLICA WINDOW
N1-1	BURGUNDY WOOD 6 LIGHT FROM 1993	RESTORE
N1-2	BURGUNDY WOOD 6 LIGHT FROM 1993	RESTORE
N1-3	PLEXIGLASS	REPLACE WITH 10 LIGHT REPLICA WINDOW (BASED ON ARCHIVAL IMAGES OF MACHINE SHOP)
N1-4	PLEXIGLASS	REPLACE WITH 10 LIGHT REPLICA WINDOW (BASED ON ARCHIVAL IMAGES OF MACHINE SHOP)
N1-5	PLEXIGLASS	REPLACE WITH 10 LIGHT REPLICA WINDOW (BASED ON ARCHIVAL IMAGES OF MACHINE SHOP)
N1-6	PLEXIGLASS	REPLACE WITH 10 LIGHT REPLICA WINDOW (BASED ON ARCHIVAL IMAGES OF MACHINE SHOP)
N1-7	PLEXIGLASS	REPLACE WITH 10 LIGHT REPLICA WINDOW (BASED ON ARCHIVAL IMAGES OF MACHINE SHOP)
N1-8	PLEXIGLASS	REPLACE WITH 10 LIGHT REPLICA WINDOW (BASED ON ARCHIVAL IMAGES OF MACHINE SHOP)
N1-9	PLEXIGLASS	REPLACE WITH 10 LIGHT REPLICA WINDOW (BASED ON ARCHIVAL IMAGES OF MACHINE SHOP)
N1-10	PLEXIGLASS	REPLACE WITH 10 LIGHT REPLICA WINDOW (BASED ON ARCHIVAL IMAGES OF MACHINE SHOP)
N1-11	PLEXIGLASS	REPLACE WITH 10 LIGHT REPLICA WINDOW (BASED ON ARCHIVAL IMAGES OF MACHINE SHOP)
S1-1	PLEXIGLASS	REPLACE WITH 10 LIGHT REPLICA WINDOW (BASE ON 1986 ARCHIVAL PHOTO)
S1-2	PLEXIGLASS	REPLACE WITH 6 LIGTH REPLICA WINDOW
S1-3	PLEXIGLASS	REPLACE WITH 10 LIGHT REPLICA WINDOW (BASE ON 1986 ARCHIVAL PHOTO)
S1-4	PLEXIGLASS	REPLACE WITH 10 LIGHT REPLICA WINDOW (BASE ON 1986 ARCHIVAL PHOTO)
S1-5	PLEXIGLASS	REPLACE WITH 10 LIGHT REPLICA WINDOW (BASE ON 1986 ARCHIVAL PHOTO)
S1-6	PLEXIGLASS	REPLACE WITH 10 LIGHT REPLICA WINDOW (BASE ON 1986 ARCHIVAL PHOTO)
W1-1	BURGUNDY WOOD 6 LIGHT FROM 1993	RESTORE
W1-2	BURGUNDY WOOD 6 LIGHT FROM 1993	RESTORE
W1-3	BURGUNDY WOOD 6 LIGHT FROM 1993	RESTORE
W1-4	BURGUNDY WOOD 6 LIGHT FROM 1993	RESTORE
W1-5	BURGUNDY WOOD 6 LIGHT FROM 1993	RESTORE
W1-6	BURGUNDY WOOD 8 LIGHT FROM 1993	RESTORE
W1-7	BURGUNDY WOOD 3X6 LIGHT FROM 1993	RESTORE
W1-8	BURGUNDY WOOD 3X6 LIGHT FROM 1993	RESTORE
W1-9	BURGUNDY WOOD 3X6 LIGHT FROM 1993	RESTORE
W1-10	BURGUNDY WOOD 3X6 LIGHT FROM 1993	RESTORE
W1-11	BURGUNDY WOOD 6 LIGHT FROM 1993	RESTORE
W1-12	BURGUNDY WOOD 8 LIGHT FROM 1993	RESTORE
W1-13	BURGUNDY WOOD 8 LIGHT FROM 1993	RESTORE
W1-14	PLEXIGLASS	REPLACE WITH 2X 10 LIGHT REPLICA WINDOW (BASED ON 1971 ARCHIVAL PHOTO)
W1-15	PLEXIGLASS	REPLACE WITH 2X 10 LIGHT REPLICA WINDOW (BASED ON 1971 ARCHIVAL PHOTO)
W1-16	PLEXIGLASS	REPLACE WITH 2X 10 LIGHT REPLICA WINDOW (BASED ON 1971 ARCHIVAL PHOTO)
W1-17	PLEXIGLASS	REPLACE WITH 2X 10 LIGHT REPLICA WINDOW (BASED ON 1971 ARCHIVAL PHOTO)
W2-1	PLEXIGLASS	REPLACE WITH 2 X8 LIGHT REPLICA WINDOW
W2-2	PLEXIGLASS	REPLACE WITH 2 X8 LIGHT REPLICA WINDOW
W2-3	PLEXIGLASS	REPLACE WITH 2 X6 LIGHT REPLICA WINDOW
W3-1	PLEXIGLASS	REPLACE WITH 2 X8 LIGHT REPLICA WINDOW
W3-2	PLEXIGLASS	REPLACE WITH 2X 6 LIGHT REPLICA WINDOW

Grand total: 53

NOTE:

FINISH FOR REPLICA WINDOWS:
SILL & TRIM : SW 6328 (FIREWEED) IN SEMI-GLOSS
FRAME : SW 7008 (ALABASTER) IN HIGH-GLOSS

SIZES FOR REPLICA WINDOWS:
SAME SIZE AS EXISTING (WINDOW & TRIM)

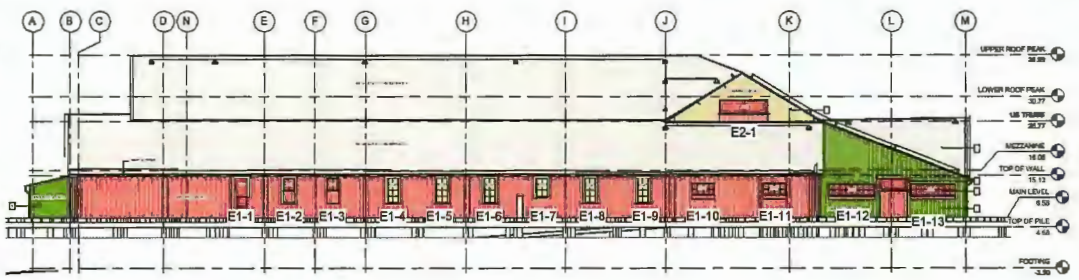
**ALL WINDOWS TO HAVE CASING , SEE A402 FOR DETAILS

** SINGLE GLAZED; CLEAR GLASS
** FIXED- NOT OPERATIONAL

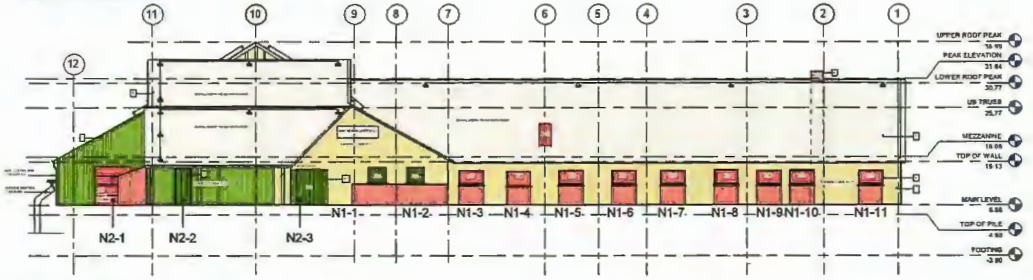
DOOR SHCEDULE	
TAG	PROPOSED
N2-1	REPLACE BOARDS AS REQUIRED (KEEP OPENING)
N2-2	RESTORE
N2-3	RESTORE
S2-1	RESTORE OR REPLACE
S2-2	REPLICATE/ REPLACE (SEE A401)
S2-3	RESTORE
S2-4	REPLICATE/ REPLACE (SEE A401)

NOTE:

FINISH FOR S2-1,S2-2 & S2-4 DOORS
EXTERIOR : SW 6328 (FIREWEED) IN SEMI-GLOSS
INTERIOR : GREY TO MATCH EXISTING WOOD FLOOR IN THE MEZZANINE IN HIGH-GLOSS

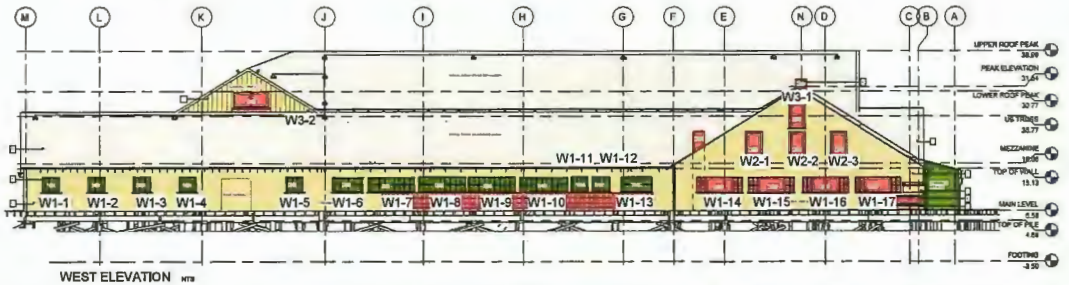


EAST ELEVATION



NORTH ELEVATION

SOUTH ELEVATION



WEST ELEVATION

Plan #10

IREDALE ARCHITECTURE
220 - 12 Water Street
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Vancouver Victoria
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BRITANNIA - SHIPYARD BUILDING

BRITANNIA NATIONAL HISTORIC SITE
STEVESTON, RICHMOND, BC

WINDOWS & DOORS SCHEDULE

GH | JE | AL

23059

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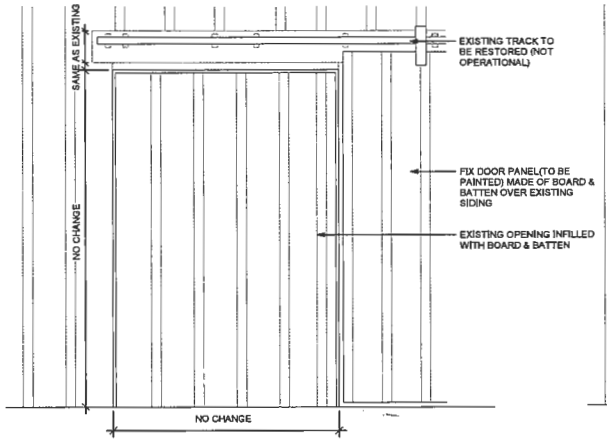
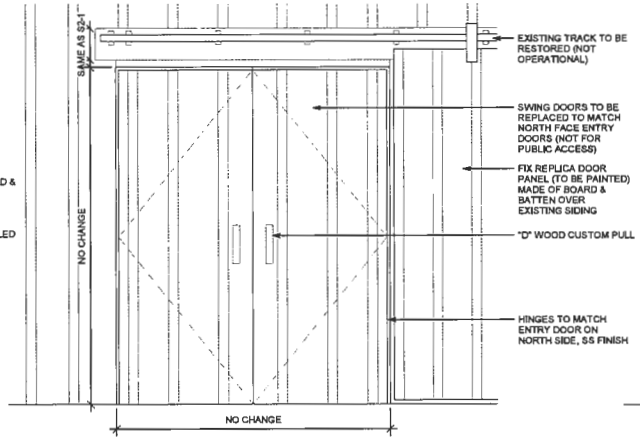
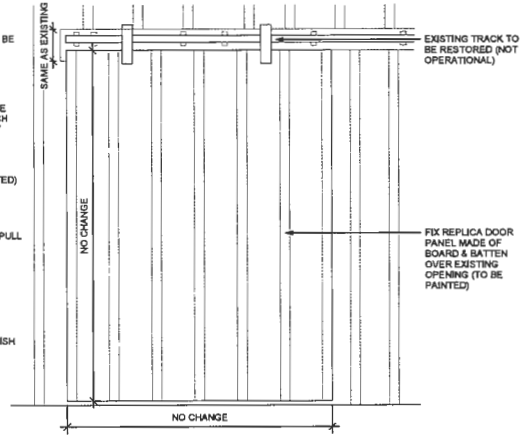


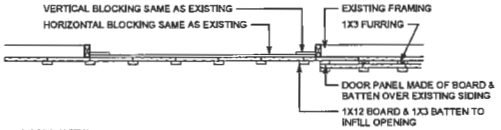
S2-1 EXTERIOR ELEVATION



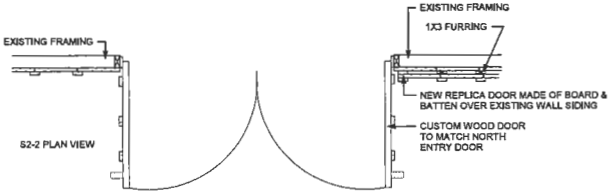
S2-2 EXTERIOR ELEVATION



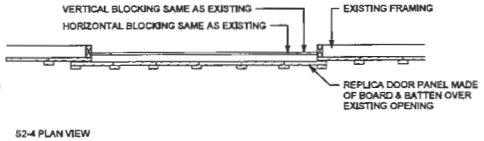
S2-4 EXTERIOR ELEVATION



S2-1 PLAN VIEW



S2-2 PLAN VIEW

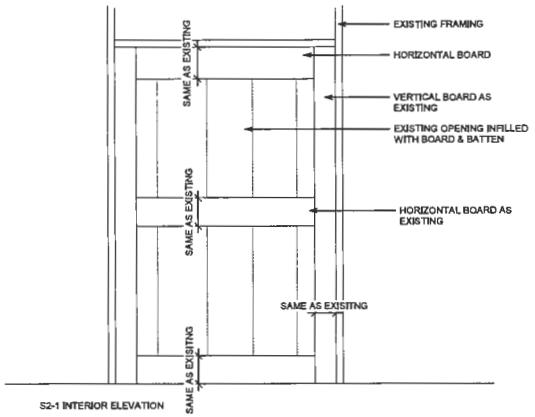


S2-4 PLAN VIEW

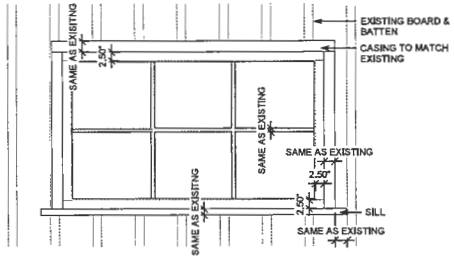
S2-1 DOOR RESTORATION/REPLACEMENT
3/4" = 1'-0"

S2-2 DOOR REPLICATE/REPLACEMENT
3/4" = 1'-0"

S2-4 DOOR REPLICATE/REPLACEMENT
3/4" = 1'-0"



S2-1 INTERIOR ELEVATION



1 WINDOW ELEVATION (EXTERIOR)
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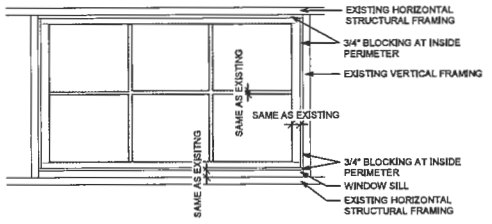

NOTE: 6 LIGHT WINDOW SHOWN, REFER TO WINDOW SCHEDULE FOR ACCURATE PANE QUANTITY
NOTE: REFER TO DOOR SCHEDULE FOR PAINT COLOURS

2 WINDOW ELEVATION (INTERIOR)
3/4" = 1'-0"

PRCS - 97

Plan # 11

IREDALE
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BRITANNIA - SHIPYARD BUILDING

BRITANNIA NATIONAL HISTORIC SITE
STEVESTON, RICHMOND, BC

WINDOWS & DOORS ELEVATIONS

3/4" = 1'-0"

Drawn	Check	Partner
GH	JE	AL

Project No. 23059

Sheet No. 3 A401

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PRCS - 98

GENERAL

1. THIS SET OF DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE STRUCTURAL SPECIFICATIONS AND WITH THE DRAWINGS AND SPECIFICATIONS FROM ALL OTHER CONSULTANTS. ANY DISCREPANCIES NOTED SHALL BE REPORTED IMMEDIATELY FOR CLARIFICATION.
2. THIS SET OF DRAWINGS SHOWS THE COMPLETED STRUCTURE AND DOES NOT SHOW WORK WHICH MAY BE REQUIRED FOR SAFETY DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR GENERAL SAFETY ON AND ABOUT THE JOB SITE DURING THE CONSTRUCTION PERIOD AND FOR DESIGN AND ERECTION OF ALL FALSEWORK, SHORING, BRACING ETC. TO ENSURE THE SAFETY OF ALL CONSTRUCTION TEMPORARY LOADS AND TO COMPLETE THE WORK. ALL TEMPORARY WORKS AND SHORING ETC. SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN BRITISH COLUMBIA, ADHERE STRICTLY TO ALL REQUIREMENTS OF THE WORKSAFE BRITISH COLUMBIA.
3. ALL CODE REFERENCES ARE TO LATEST EDITIONS REFERENCED IN THE BC BUILDING CODE 2018

FIELD REVIEW:

1. CWMM CONSULTING ENGINEERS LTD. PROVIDES FIELD REVIEW FOR THE WORK SHOWN ON THE STRUCTURAL DRAWINGS PREPARED BY CWMM CONSULTING ENGINEERS LTD. THIS REVIEW IS A PERIODIC REVIEW AT THE PROFESSIONAL JUDGMENT OF CWMM CONSULTING ENGINEERS LTD. THE PURPOSE IS TO ASCERTAIN THAT THE WORK IS IN GENERAL CONFORMANCE WITH THE PLANS AND SUPPORTING DOCUMENTS PREPARED BY CWMM CONSULTING ENGINEERS LTD. AND TO FULFILL THE REQUIREMENTS FOR THE COMPLETION OF LETTERS OF ASSURANCE REQUIRED BY THE APPLICABLE BUILDING CODE.
2. ALL NON-CONFORMING WORKS THAT REQUIRE REMEDIAL ACTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ANY EXTRA TIME OR COST INCURRED TO CWMM CONSULTING ENGINEERS LTD. TO ASSIST OR ADVISE THE CONTRACTOR IN RECTIFYING THE WORK SHALL BE BORNE BY THE CONTRACTOR.
3. ENSURE THAT WORK TO BE INSPECTED IS COMPLETE AT THE TIME OF INSPECTION AND IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. ADDITIONAL INSPECTIONS REQUIRED DUE TO THE INCOMPLETE WORK OR POORLY EXECUTED WORK, AS JUDGED BY CWMM CONSULTING ENGINEERS LTD., AS WELL AS ADDITIONAL DESIGN OR REMEDIAL WORK CAUSED BY DEVIATIONS FROM THESE DRAWINGS MAY BE CHARGED TO THE GENERAL CONTRACTOR AT THE DISCRETION OF CWMM CONSULTING ENGINEERS LTD.
4. A MINIMUM 24 HOURS NOTICE SHALL BE GIVEN BY THE CONTRACTOR FOR ANY INSPECTION TO BE CARRIED OUT BY CWMM CONSULTING ENGINEERS LTD.

SHOP DRAWINGS:

1. DESIGNERS & MANUFACTURERS OF ALL STRUCTURAL ELEMENTS/COMPONENTS/CONNECTIONS SHALL SUBMIT COMPLETE SHOP DRAWINGS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF BRITISH COLUMBIA TO THE ARCHITECT AND CWMM CONSULTING ENGINEERS LTD. FOR REVIEW PRIOR TO FABRICATION. SUBMIT SHOP DRAWINGS IN ACCORDANCE WITH SPECIFICATIONS AND TO ALLOW MINIMUM TWO WEEKS FOR REVIEW. THIS SUBMISSION OR ITS REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR PROVIDING PROPER ENGINEERING DESIGN, METHODS, EQUIPMENT, WORKMANSHIP, SAFETY PRECAUTION AND PRIOR REVIEW OF THESE ELEMENTS. THE PROFESSIONAL ENGINEER RESPONSIBLE FOR THE SHOP DRAWINGS SHALL PROVIDE TO THE CONSULTANT A COMPLETED SCHEDULE B-B "ASSURANCE OF PROFESSIONAL DESIGN AND COMMITMENT FOR FIELD REVIEW BY SUPPORTING REGISTERED PROFESSIONAL" AT THE TIME OF SUBMISSION OF SHOP DRAWINGS. THE SAME ENGINEER SHALL ALSO BE RESPONSIBLE FOR INSPECTING THE INSTALLATION OF THE WORK FOR CONFORMANCE WITH THE DESIGN AND THE SHOP DRAWINGS, AND SHALL, UPON COMPLETION OF THE WORK, PROVIDE TO THE CONSULTANT A COMPLETED SCHEDULE B-C: "ASSURANCE OF PROFESSIONAL FIELD REVIEW AND COMPLIANCE BY SUPPORTING REGISTERED PROFESSIONAL".
2. THE CONTRACTOR AND ITS SUBCONTRACTORS SHALL CONFIRM AND COORDINATE DIMENSIONS, LOCATIONS AND NUMBER OF THE STRUCTURAL ELEMENTS FOR WHICH SHOP DRAWINGS ARE TO BE PRODUCED.

EXISTING STRUCTURES:

1. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL VERIFY ALL RELEVANT DIMENSIONS TO AND OF EXISTING STRUCTURES. NOTIFY CWMM CONSULTING ENGINEERS LTD. IMMEDIATELY IF DISCREPANCIES ARE NOTED.
2. THE CONTRACTOR SHALL AT HIS OWN EXPENSE REPAIR AND MAKE GOOD ANY DAMAGE TO THE EXISTING STRUCTURE, EQUIPMENT AND FINISHES CAUSED BY THE CONSTRUCTION ACTIVITIES. REPAIRS SHALL BE TO THE SATISFACTION OF THE ARCHITECT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TEMPORARY SUPPORT OF ANY ADJACENT EXISTING STRUCTURES DURING CONSTRUCTION. UNDERPINNING OR BRACING SHALL BE DESIGNED BY A QUALIFIED PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF BRITISH COLUMBIA. 4 COPIES OF SIGNED AND SEALED DESIGN DRAWINGS TO ARCHITECT AND CWMM CONSULTING ENGINEERS LTD. FOR REVIEW OF CONFORMANCE WITH GENERAL DESIGN CRITERIA.

CONSTRUCTION LOADS:

1. CONSTRUCTION LOADS ON COMPLETED FLOORS MUST NOT EXCEED THE LOAD CARRYING CAPACITY OF FLOOR AT THE TIME OF THE LOADING UNLESS IT IS PROPERLY SHORED TO SUPPORT THE INTENDED LOAD. MOVING OF HEAVY EQUIPMENT AND PILING UP OF MATERIAL SHALL NOT BE PERMITTED UNLESS DESIGNED SHORING IS IN PLACE.
2. SHORING DESIGN BY CONTRACTOR. INFORM DEPARTMENTAL REPRESENTATIVE PRIOR TO LOAD APPLICATION.

WOOD PRODUCTS:

1. REFER TO SPECIFICATIONS FOR TIMBER GRADE, CODE REFERENCES AND OTHER REQUIREMENTS.
2. PROVIDE 2x BLOCKING AT MIDHEIGHT OF STUDS OVER 2400 IN HEIGHT.
2. 2x SOLID BLOCK SHALL BE PLACED BETWEEN ALL JOISTS AND RAFTERS AT SUPPORTS.
4. PLACE 2x SOLID BLOCK OR METAL CROSS BRIDGING OF EQUAL STRENGTH AS FOLLOWS: - FLOOR JOIST OVER 185 NOMINAL DEPTH AND OVER 3000 SPAN, SPACE BRIDGING AT 3000 O/C OR PLACE AT MIDSPAN IF SPAN LESS THAN 6000.
5. DOUBLE UP ALL TRIMMER JOISTS AROUND ALL ROOF & FLOOR OPENINGS, I.E., CHIMNEY ETC.
6. ALL FLUSH FRAMED MEMBERS TO BE SECURED WITH APPROVED METAL JOIST HANGER.
7. NAILS SHALL BE PLACED NOT LESS THAN 8mm FROM THE PANEL EDGE AND SHALL NOT BE OVER-DRIVEN MORE THAN 10% OF THE PANEL THICKNESS.

STRUCTURAL STEEL

1. CODE CONFORMANCE:

GENERAL STEELWORK AND DESIGN	CAN/CSA-S16
GENERAL REQUIREMENTS	CSA-G40.20
STEEL QUALITY	CSA-G40.21
SHOP PRIMER	CISC/CPMA 1-73A
STEEL DECKING	CSA-S136
WELDING	CSA-W59
GROUT FOR BASEPLATES	SEE SPECIFICATION

2. GRADES OF MATERIALS:

W SHAPES	350W (ASTM A992, A572 GRADE 50)
C SHAPES AND ANGLES	300W
HOLLOW STRUCTURAL STEEL (HSS)	350W, CLASS C (ASTM A500)
STRUCTURAL PIPE	ASTM A53, CLASS B
OTHER STRUCTURAL STEEL AND MISC. METAL	300W
BOLTS, NUTS AND WASHERS	ASTM A325
ANCHOR BOLTS	ASTM A307

3. DRAWINGS FROM ALL CONSULTANTS SHALL BE EXAMINED FOR EXACT LOCATIONS, DIMENSIONS AND ELEVATIONS.
4. CONFIRM ALL LOCATIONS, DIMENSIONS AND ELEVATIONS WITH ACTUAL SITE MEASUREMENTS BEFORE FABRICATION.

CONNECTIONS:

1. ALL STRUCTURAL STEEL CONNECTIONS SHALL BE DESIGNED BY THE FABRICATOR FOR FORCES, MOMENTS AND SHEARS RESULTING FROM THE SPECIFIED LOAD AND SELF WEIGHT OF THE SUPPORTING ELEMENTS AND ALL FORCES AS SHOWN ON THE DRAWINGS, UNLESS NOTED OTHERWISE. ALL MAIN CONNECTION BOLTS SHALL BE MINIMUM M20. USE MINIMUM TWO BOLTS
2. WHERE BEAM SHEARS ARE NOT INDICATED ON THE DRAWINGS, DESIGN CONNECTIONS TO SUPPORT THE REACTION FROM 125% MAXIMUM UNIFORMLY DISTRIBUTED FACTORED LOAD THAT THE BEAM CAN SAFELY SUPPORT IN BENDING (50% EACH END) PROVIDED NO POINT LOADS ACT ON THE BEAM. FOR BEAMS SUPPORTING POINT LOADS, DESIGN CONNECTION TO SUPPORT (50)% OF THE FACTORED SHEAR RESISTANCE OF THE BEAM, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
3. FACTORED LATERAL LOADS FOR MOMENT FRAMES AND CROSS-BRACING SHOWN ON THE DRAWINGS DO NOT INCLUDE THE REQUIREMENTS FOR CONNECTION DESIGN AS REQUIRED BY CLAUSE 27 OF CSA-S16.1. CONNECTION PLATES AND DOUBLER PLATES TO BE PROVIDED AS REQUIRED BY DESIGN.
4. PROVIDE SPLICES AS INDICATED ON DRAWINGS, UNLESS NOTED OTHERWISE, ALL CONTINUOUS ELEMENTS CALLED UP ON THE DRAWINGS SHALL BE PROVIDED WITH FULL STRENGTH SPLICE EITHER BY FULL STRENGTH GROOVE WELD OR BY FULL STRENGTH SPLICE PLATES ON EACH END OF THE CONNECTING ELEMENTS.

SHOP DRAWINGS:

1. SUBMIT SHOP DRAWINGS IN ACCORDANCE WITH GENERAL NOTES ON THESE DRAWINGS AND WITH SPECIFICATIONS. SHOP DRAWINGS FOR ANCHOR BOLT LAYOUT AND EMBEDDED PLATE LAYOUT SHALL ALSO BE SUBMITTED FOR REVIEW.
2. NO FABRICATION OR WORK SHALL BE COMMENCED UNTIL THE REVIEW AND APPROVAL OF THE SHOP DRAWINGS. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY FABRICATION AND WORK DONE PRIOR TO REVIEW AND APPROVAL OF THE SHOP DRAWINGS.
3. STEEL FABRICATOR AND THE CONTRACTOR SHALL CO-ORDINATE AND VERIFY ALL DIMENSIONS AND LOCATIONS PRIOR TO PRODUCTION OF THE DRAWINGS.

FABRICATION:

1. WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS. FABRICATION SHOPS SHALL BE APPROVED BY THE CANADIAN WELDING BUREAU TO CSA-W47.1 (DIVISION 1 OR 2). CERTIFICATIONS SHALL BE SUPPLIED TO THE ENGINEER UPON REQUEST.
2. UNLESS NOTED OTHERWISE, CAMBER ALL BEAMS WITH SPAN OVER 6 METERS AS SPECIFIED ON THE DRAWINGS. INSTALL ALL OTHER ROLLED STEEL SECTIONS WITH MILL CAMBER UPWARDS.
3. IMPERIAL SIZE BOLTS AND PLATE PRODUCTS ARE ACCEPTABLE ON AN EQUAL SIZE - EQUAL STRENGTH BASIS.
4. PROVIDE WEEP HOLES FOR ALL EXPOSED HSS MEMBERS.
5. GALVANIZING OF STRUCTURAL MEMBERS AND PLATE MEMBERS, IF REQUIRED, SHALL BE IN ACCORDANCE WITH CSA-G164 AND RELATED STANDARDS. G210 MINIMUM COATING (610 GRAMS PER SQUARE METER). ALL AREAS OF GALVANIZED PARTS SHALL BE GROUNDED OFF PRIOR TO WELDING. PAINT 2 COATS MINIMUM OF ZINC RICH PRIMER READY MIX TO CAN/CGSB-1.181 AFTER WELDING.
6. UNLESS NOTED OTHERWISE, ALL STRUCTURAL STEEL SHALL BE SHOP PRIMED ACCORDING TO THE SPECIFICATION REQUIREMENT.

ERECTION:

1. GROUT FOR COLUMN BASE PLATES SHALL BE SIKA N-SED STANDARD, MASTERBUILDER'S MASTERFLOW 713 OR APPROVED EQUAL AND SHALL HAVE MINIMUM STRENGTH OF 50MPa AT 28 DAYS MIX TO FLUID CONSISTENCY.
2. INSTALL AND TORQUE ALL BOLTS AND DRILLED ANCHORS IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND PROCEDURES.
3. ANY MISFIT OR MISALIGNMENT MUST BE REPORTED TO CWMM CONSULTING ENGINEERS LTD. THE CONTRACTOR SHALL PROVIDE PROPOSED REMEDIAL MEASURES TO CWMM CONSULTING ENGINEERS LTD. FOR REVIEW AND APPROVAL. ANY REMEDIAL WORK ON CONNECTIONS MUST BE REVIEWED AND/OR REDESIGNED BY THE CONNECTION ENGINEER. COSTS OF REMEDIAL WORK ARE AT THE EXPENSE OF THE CONTRACTOR.
4. BOLTS, WELDS AND BURNED OR SCRATCHED SURFACES SHALL BE TOUCHED UP WITH SHOP PRIMER AT COMPLETION OF ERECTION.
5. DO NOT NOTCH OR CUT OPENINGS IN ANY OF THE FRAMING MEMBERS AND CONNECTIONS WITHOUT PRIOR APPROVAL FROM CWMM CONSULTING ENGINEERS LTD.
6. PROVIDE TEMPORARY BRACING TO STRUCTURE FOR STABILITY AND SAFETY UNTIL ALL LATERAL RESISTING ELEMENTS AND DIAPHRAGMS ARE INSTALLED.

SITE PLAN
NTS

SITE PHOTO
NTS

ABBREVIATIONS

A.BOLT	ANCHOR BOLT	L.V.	LENGTH VARIES
ALT.	ALTERNATE	LG.	LONG
ARCH.	ARCHITECTURAL	LL	LOW LEVEL
BLDG.	BUILDING	LLV	LONG LEG VERTICAL
BOT.	BOTTOM	LLH	LONG LEG HORIZONTAL
BTW.	BETWEEN	LONG.	LONGITUDINAL
C/C	CENTER TO CENTER	MAX.	MAXIMUM
C/W	COMPLETE WITH	MECH.	MECHANICAL
C.I.P.	CAST IN PLACE	MIN.	MINIMUM
CANT.	CANTILEVER	N/A	NOT AVAILABLE
CL.	CLEAR	N.S.	NEAR SIDE
COL.	COLUMN	N.STUD	NELSON STUD
CONC.	CONCRETE	N.T.S.	NOT TO SCALE
CONT.	CONTINUOUS	O/C	ON CENTRES
DL	DEAD LOAD	OPP.	OPPOSITE HAND
DN	DOWN	OWSJ	OPEN WEB STEEL JOIST
DO.	DITTO	P.C.	PRECAST CONCRETE
DP.	DEEP	PL	PLATE
DWG.	DRAWING	PLY.	PLYWOOD
E.W.	EACH WAY	PROJ.	PROJECTION
E.F.	EACH FACE	RAW	REINFORCED WITH
ELEC.	ELECTRICAL	R/C	REINFORCED CONCRETE
ELEV.	ELEVATION	S.O.G.	SLAB ON GRADE
EXIST.	EXISTING	SIM.	SIMILAR
EXT.	EXTERIOR	STAGG.	STAGGERED
FL	FLOOR	T&B	TOP AND BOTTOM
F.S.	FAR SIDE	T&G	TONGUED & GROOVED
FDN.	FOUNDATION	T.O.C/S	TOP OF CONCRETE/STEEL
FTG.	FOOTING	THK.	THICK
G.L.	GRID LINE	TJ	TIE JOIST
GALV.	GALVANIZED	TRAN.	TRANSVERSE
HSC	HOOK ONE END	TYP.	TYPICAL
HSE	HOOK TWO ENDS	UL	UPPER LEVEL
HL	HIGH LEVEL	U/S	UNDERSIDE
HORIZ.	HORIZONTAL	U.N.O.	UNLESS NOTED OTHERWISE
INT.	INTERIOR	VERT.	VERTICAL

NOTES:

1. CONTRACTOR TO CONFIRM MEMBER SIZES OF ALL RELEVANT EXISTING TRELLIS, MECH. ENCLOSES COLUMNS & BEAMS INCLUDING WELD SIZES AND REPORT TO CWMM FOR REVIEW. UPGRADE STRUCTURAL ELEMENTS TO SUIT FINAL LOADS AT CONTRACTOR'S COST.
2. ALL NEW BEAM, POSTS AND OUTRIGGER AND THEIR CONNECTION ACCESSORIES SHALL BE HOT DIPPED GALVANIZED TO 610 G/M2.
3. SUBMIT SIGN AND SEALED SHOP DRAWINGS FOR CONNECTION DESIGN OF NEW STEEL BEAMS, COLUMNS, AND BRACES FOR REVIEW AND APPROVAL.
4. REFER TO ARCH DRAWINGS FOR EXACT LOCATION OF ROOF ANCHORS ACCESSORIES. SUPPORT BEAM SPACING SHALL BE ADJUSTED ACCORDINGLY TO SUIT LOCATION.
5. CONTRACTOR TO PROVIDE TEMPORARY WORK ENGINEERING ON TRELLIS TO SPREAD LOADS OF TEMPORARY WORKS ON ROOF AND PAY COST.
6. CONTRACTOR TO ENSURE PROTECTION OF EXISTING CONCRETE DECK DURING INSTALLATION WORKS.
7. CONTRACTOR SHALL PROVIDE SCAFFOLDING FOR TEMPORARY WORK AS REQUIRED AND PAY COST.

DRAWING LIST (STRUCTURAL)

100% PROGRESS SET
2024-04-30
13376

Plan #12

No.	Date	Revision

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iredale.ca

CWMM CONSULTING ENGINEERING LTD.
EGBC Permit to Practice #1000918

BRITANNIA-SHIPYARD BUILDING

5180 WESTWATER DR.
RICHMOND
B.C. V7E 6P3

GENERAL NOTES & SITE PLAN

As indicated

Drawn	Check	Design
SK	LL	LL

Project No. 13376

Sheet No. S1

PRCS - 99

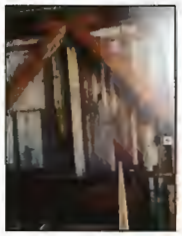

PHOTO (1)

PHOTO (2)

PHOTO (3)

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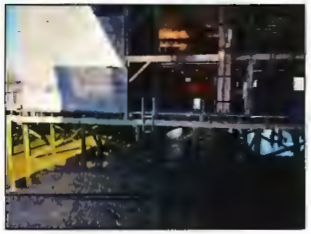

PHOTO (13)

PHOTO (14)

PHOTO (15)

PHOTO (16)

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Plan #13

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BRITANNIA-SHIPYARD BUILDING

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PHOTOS

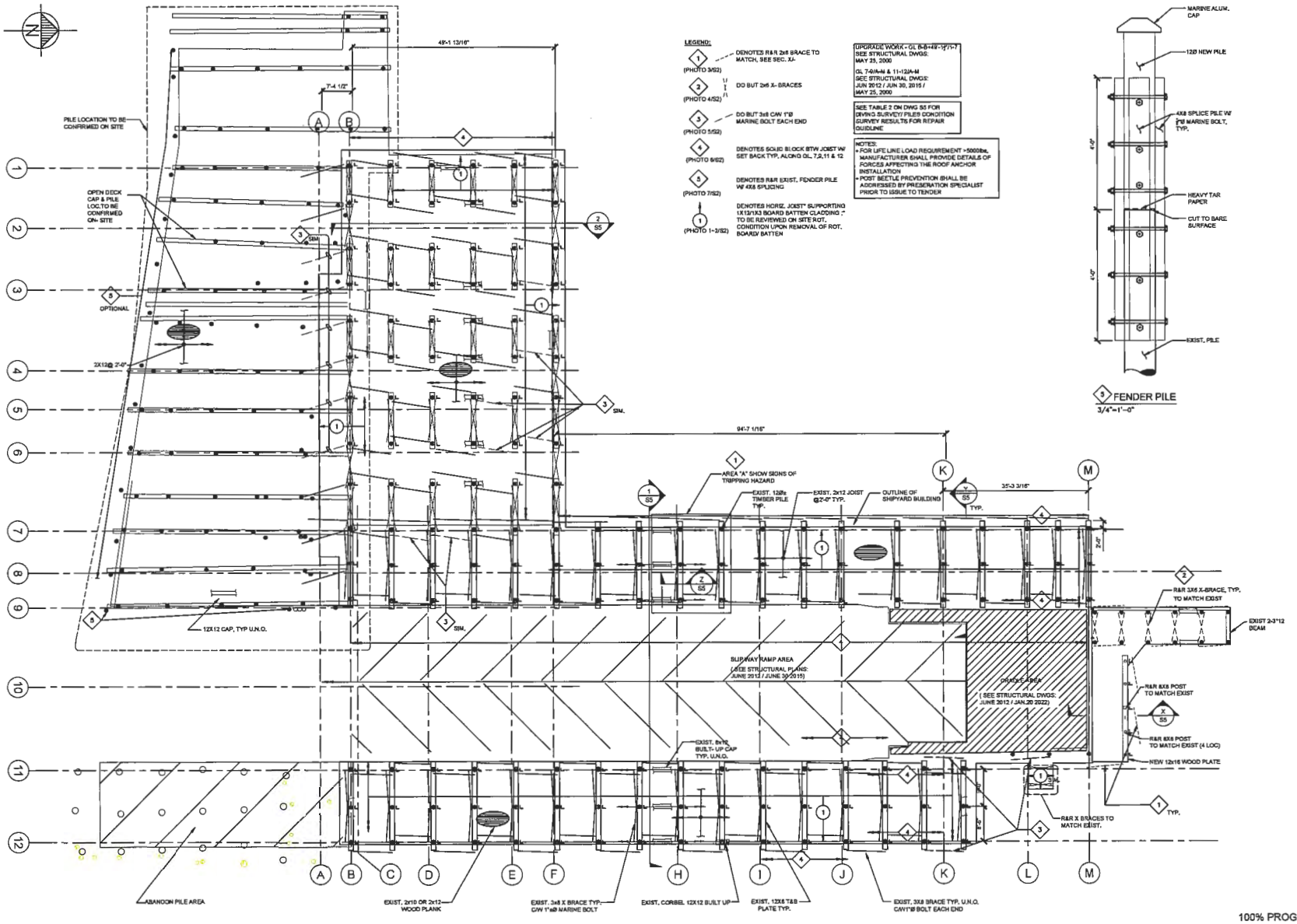
As indicated

Drawn	Check	Design
SK	LL	LL

13376

S2

PRCS - 100



PILE / DECK PLAN
3/32"=1'-0"

FENDER PILE
3/4"=1'-0"

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2024-04-30

13376

Plan #14

No. | Date | Revision

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BRITANNIA-SHIPYARD BUILDING

5180 WESTWATER DR.
RICHMOND
B.C. V7E 6P3

BRITANNIA SHIPYARD BUILDING - PILE / DECK PLAN & DETAIL

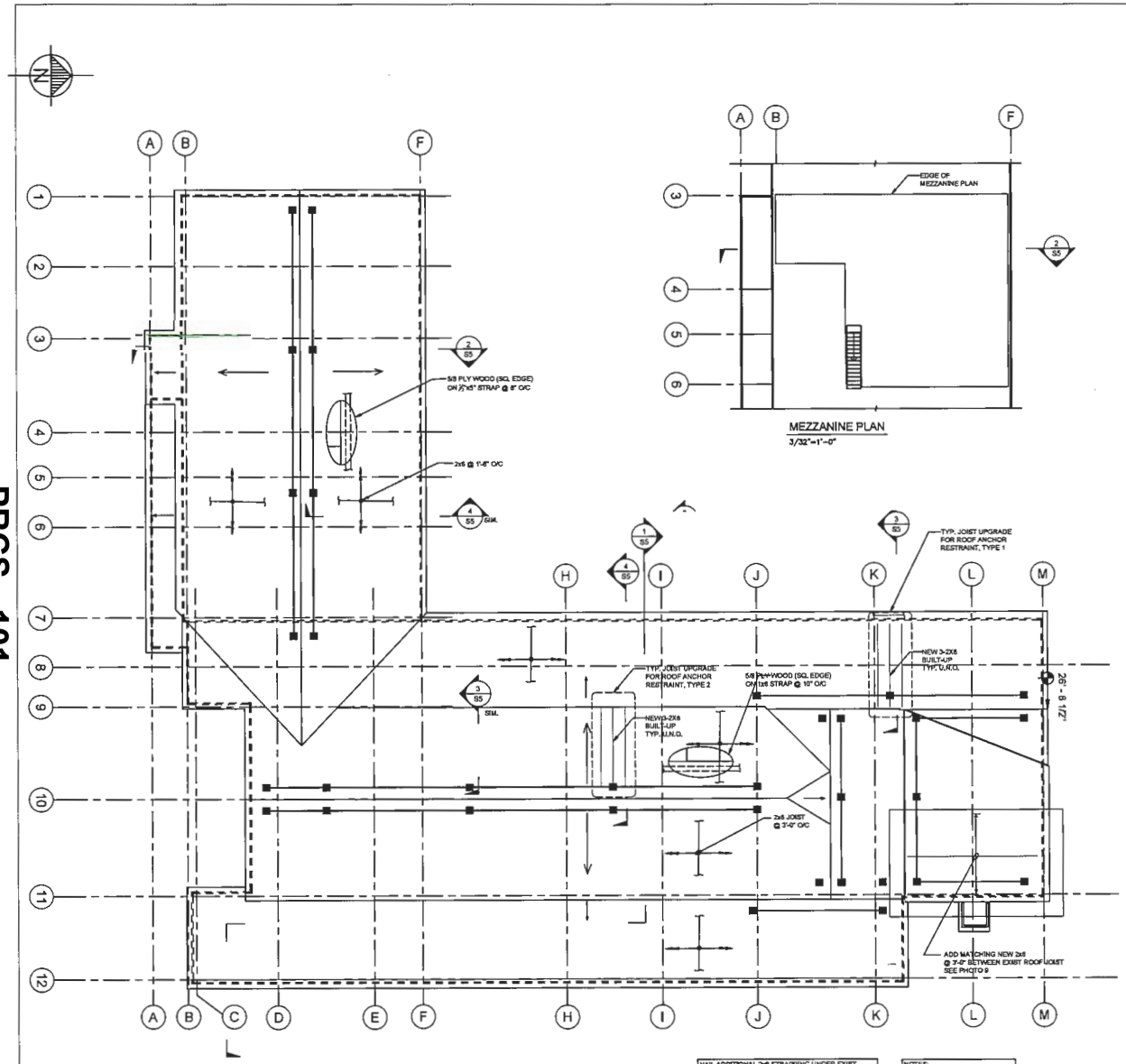
As indicated

SK | LL | LL

13376

S3

PRCS - 101



ROOF DECK PLAN
3/32"=1'-0"

MEZZANINE PLAN
3/32"=1'-0"

NAIL ADDITIONAL 2x6 STRAPPING UNDER EXIST. PLYWOOD AT SQUARE EDGE LOCATION, TYP.

NOTES:
ROOF WORK -
SEE EXIST. STRUCTURAL DWGS:
MAY 23, 2000

LEGEND:
- 3 DENOTES R&R 3X6 BRACE C/W 1"Ø MARINE BOLT EACH END (SEE PHOTO 5/S3)
- ENERGY ABSORBING H.L. FALL PROTECTION ANCHORS X 34
- HORIZONTAL LIFE LINES

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Plan #15

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BRITANNIA-SHIPYARD BUILDING

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BRITANNIA SHIPYARD BUILDING ROOF PLAN & MEZZANINE PLAN

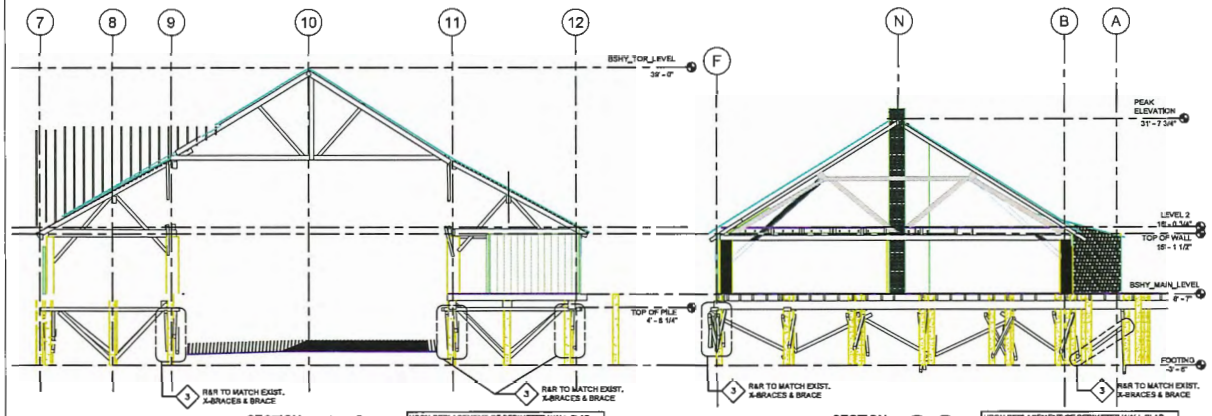
As indicated

Drawn	Check	Design
SK	LL	LL

Project No. 13376

Sheet No. S4

PRCS - 102

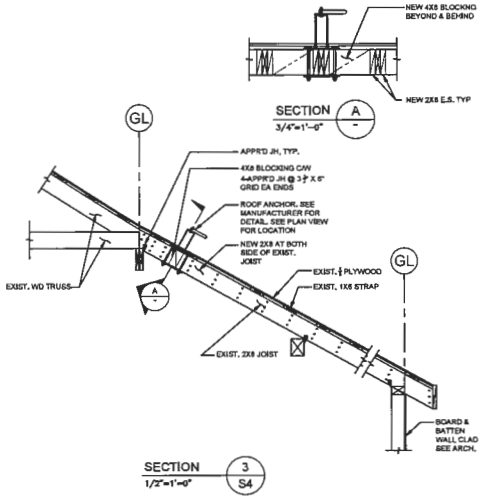


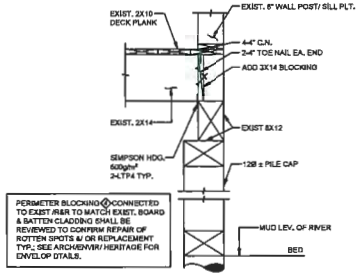
SECTION 1/8" : 1'-0" (1/S3 1/S4)

UPON REPLACEMENT OF PERIMETER WALL CLAD, CALL CWMM TO REVIEW ROT CONDITION ON EXIST. POST/BEAM AND T&B PLT; ALLOW COST OF 25% REPLACEMENT OF ROT ELEMENTS TO MATCH EXIST.

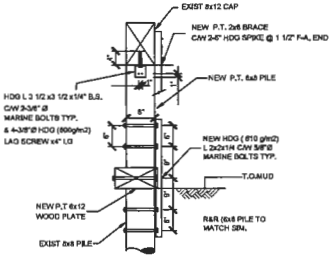
SECTION 1/8" : 1'-0" (2/S3 2/S4)

UPON REPLACEMENT OF PERIMETER WALL CLAD, CALL CWMM TO REVIEW ROT CONDITION ON EXIST. POST/BEAM AND T&B PLT; ALLOW COST OF 25% REPLACEMENT OF ROT ELEMENTS TO MATCH EXIST.

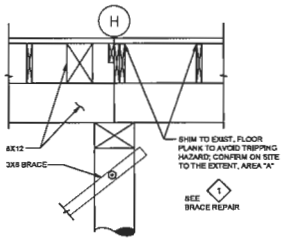




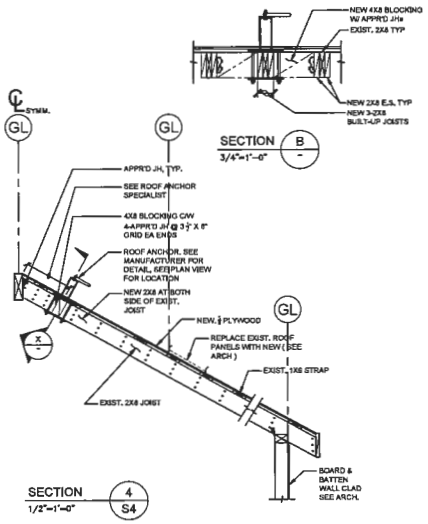
TYPICAL SECTION 3/4"=1'-0" (Y/S3)



SECTION 3/4"=1'-0" (X/S3)



SECTION 3/4"=1'-0" (Z/S3)



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Plan #16

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BRITANNIA-SHIPYARD BUILDING

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SECTIONS

As indicated

Design	Drawn	Checked
SK	LL	LL

Project No. 13376

Sheet No. S5

PRCS - 103

Table 2: Diving Survey / Piles Condition Survey Results for Shipyard Building, BHSY, Richmond, BC .

Logged by: Bourton Scott, Diver, Emerald Sea and F. Sverre, ENTECH Date: 26-2-2024

Pile			Inspection Analysis				Picture		Comments	Remarks
Coordi- nates.	DD (in.)	Pile Condition (Decay %)	#	Pile caps	Bracing	Corbels / Joists	App. Photo #	File Ref.		
A1	12 to14"	10% abrasion		Replace aluminium					Creosote pile	Replace PC
A2	12 to14"	10% abrasion		"					Creosote pile	Replace PC
A3	12 to14"	10% abrasion		"					Creosote pile	Replace PC
A4	12 to14"	10% abrasion		"					Creosote pile	Replace PC
A5	12 to14"	10% abrasion		"					Creosote pile	Replace PC
A6	12 to14"	10% abrasion		"					Creosote pile	Replace PC
A7	12 to14"	10% abrasion		W side PC 75%					Creosote pile	Replace PC
A8	12 to14"	10% abrasion		A8 to A9					Creosote pile	Replace PC
A9	12 to14"	10% abrasion		Replace (?) A8 to A9		COR / J	030	Bent ~9	Creosote pile	Replace PC+COR+J
B1	12 to14"	10% abrasion		A1 to B1 West side			054	Bent 1-2	Creosote pile – split 2 ft / bolt connection	Replace PC
B2	12 to14"	10% abrasion		"					Creosote pile	Replace PC
B3	12 to14"	10% abrasion		"					Creosote pile	Replace PC
B4	12 to14"	10% abrasion		"					Creosote pile	Replace PC
B5	12 to14"	10% abrasion		"					Creosote pile	Replace PC
B6	12 to14"	10% abrasion		"					Creosote pile	Replace PC
B7	12 to14"	10% abrasion		"		Top of Corbel 3" decayed			Creosote pile	Replace PC+COR
B8	12 to14"	10% abrasion		"	E side diag- onal broken				Creosote pile	Replace PC+E side Diag. Bracing
B9	12 to14"	10% abrasion		"		A9 / B9 ?	055		Creosote pile	Replace PC+COR
B11	12 to14"	10% abrasion		"					Creosote pile	Replace PC
B12	12 to14"	10% abrasion		"					Creosote pile	Replace PC
C1	12 to14"	10% abrasion		"					Creosote pile	Replace PC
C2	12 to14"	10% abrasion		"					Creosote pile	Replace PC
C3	12 to14"	10% abrasion		"					Creosote pile	Replace PC
C4	12 to14"	10% abrasion		"					Creosote pile	Replace PC
C5	12 to14"	10% abrasion		"					Creosote pile	Replace PC
C8	12 to14"	10% abrasion		"					Creosote pile	Replace PC
D1	12 to14"	10% abrasion		D1 to B1 inspect ?		COR ?			Creosote pile	Replace PC+COR
D2	12 to14"	10% abrasion		D2 to B2 Inspect ?		COR ?			Creosote pile	Replace PC+COR
D3	12 to14"	10% abrasion							Creosote pile	
D4	12 to14"	10% abrasion							Creosote pile	
A1 to A9				S		?	006	1-9 A9	Creosote piles S	Replace COR
1-9 to A9									Cedar piles decayed non-structural 9A	
A1 to A -8				S				1-9 A -8	Creosote piles S	
1-9 to A-8	12 to14"	10% abrasion							Cedar piles non- structural	
A1 to A -7	12 to14"	10% abrasion		S				1-9 A -7	Creosote piles S	
1-9 to A-7									Cedar piles non- structural	
A1 to A -8	12 to14"	10% abrasion		S?		8 -A7 check check	051	1-9 A -8	Creosote piles S	Replace PC+COR
1-9 to A-6							038 039		Cedar piles non- structural	
A1 to A -5	12 to14"	10% abrasion		S		?	028	9 A -5	Creosote piles S	Replace COR
1-9 to A-5							009 010	029	Cedar piles non- structural	

P = Pile PC = Pile Cap COR = Corbel D = Decay S = Solid M = Mulch H = Hollow J = Joist FH = Fresh Head Core = Core Sample Analysis App = Appendix A photo index

Notes. All piles capped with aluminum foil are deteriorated – especially the building perimeter piles like Bent – L survey by diver
Exposing topof most piles to extensive moisture conditions and decay. Sub-structure Coordinates (Bents 1 to 3, and of Piles A 1o F), with Bents numbered from West to East, and Piles from North to South. Replace aluminum with heavy Duroid material or heavy black plastic caps.

Note:
Floating dock situated on south side of South Dock of Shipyard Building. It has two creosote piles on N side of floating dock situated at Bent ~1 and ~7. Abrasions of both piles rated at 10 to 20%. All Cedar piles may need FH with extension

Plan #17

No.	Date	Revision

IREDALE
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BRITANNIA-SHIPYARD BUILDING

5180 WESTWATER DR.
RICHMOND
B.C. V7E 6P3

REFERENCE TABLE

As indicated

SK | LL | LL

13376

S6

100% PROGRESS SET
2024-04-30

PRCS - 104

GENERAL

1. THIS SET OF DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE STRUCTURAL SPECIFICATIONS AND WITH THE DRAWINGS AND SPECIFICATIONS FROM ALL OTHER CONSULTANTS. ANY DISCREPANCIES NOTED SHALL BE REPORTED IMMEDIATELY FOR CLARIFICATION.
2. THIS SET OF DRAWINGS SHOWS THE COMPLETED STRUCTURE AND DOES NOT SHOW WORK WHICH MAY BE REQUIRED FOR SAFETY DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR GENERAL SAFETY ON AND ABOUT THE JOB SITE DURING THE CONSTRUCTION PERIOD AND FOR DESIGN AND ERECTION OF ALL FALSEWORK, SHORING, BRACING ETC. TO ENSURE THE SAFETY OF ALL CONSTRUCTION TEMPORARY LOADS AND TO COMPLETE THE WORK. ALL TEMPORARY WORKS AND SHORING ETC. SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN BRITISH COLUMBIA, ADHERE STRICTLY TO ALL REQUIREMENTS OF THE WORKSAFE BRITISH COLUMBIA.
3. ALL CODE REFERENCES ARE TO LATEST EDITIONS REFERENCED IN THE BC BUILDING CODE 2018

FIELD REVIEW:

1. CWMM CONSULTING ENGINEERS LTD. PROVIDES FIELD REVIEW FOR THE WORK SHOWN ON THE STRUCTURAL DRAWINGS PREPARED BY CWMM CONSULTING ENGINEERS LTD. THIS REVIEW IS A PERIODIC REVIEW AT THE PROFESSIONAL JUDGMENT OF CWMM CONSULTING ENGINEERS LTD. THE PURPOSE IS TO ASCERTAIN THAT THE WORK IS IN GENERAL CONFORMANCE WITH THE PLANS AND SUPPORTING DOCUMENTS PREPARED BY CWMM CONSULTING ENGINEERS LTD. AND TO FULFILL THE REQUIREMENTS FOR THE COMPLETION OF LETTERS OF ASSURANCE REQUIRED BY THE APPLICABLE BUILDING CODE.
2. ALL NON-CONFORMING WORKS THAT REQUIRE REMEDIAL ACTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, ANY EXTRA TIME OR COST INCURRED TO CWMM CONSULTING ENGINEERS LTD. TO ASSIST OR ADVISE THE CONTRACTOR IN RECTIFYING THE WORK SHALL BE BORNE BY THE CONTRACTOR.
3. ENSURE THAT WORK TO BE INSPECTED IS COMPLETE AT THE TIME OF INSPECTION AND IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. ADDITIONAL INSPECTIONS REQUIRED DUE TO THE INCOMPLETE WORK OR POORLY EXECUTED WORK, AS JUDGED BY CWMM CONSULTING ENGINEERS LTD., AS WELL AS ADDITIONAL DESIGN OR REMEDIAL WORK CAUSED BY DEVIATIONS FROM THESE DRAWINGS MAY BE CHARGED TO THE GENERAL CONTRACTOR AT THE DISCRETION OF CWMM CONSULTING ENGINEERS LTD.
4. A MINIMUM 24 HOURS NOTICE SHALL BE GIVEN BY THE CONTRACTOR FOR ANY INSPECTION TO BE CARRIED OUT BY CWMM CONSULTING ENGINEERS LTD.

SHOP DRAWINGS:

1. DESIGNERS & MANUFACTURERS OF ALL STRUCTURAL ELEMENTS/COMPONENTS/CONNECTIONS SHALL SUBMIT COMPLETE SHOP DRAWINGS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF BRITISH COLUMBIA TO THE ARCHITECT AND CWMM CONSULTING ENGINEERS LTD. FOR REVIEW PRIOR TO FABRICATION. SUBMIT SHOP DRAWINGS IN ACCORDANCE WITH SPECIFICATIONS AND TO ALLOW MINIMUM TWO WEEKS FOR REVIEW. THIS SUBMISSION OR ITS REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY FOR PROVIDING PROPER ENGINEERING DESIGN, METHODS, EQUIPMENT, WORKMANSHIP, SAFETY PRECAUTION AND PRIOR REVIEW OF THESE ELEMENTS, THE PROFESSIONAL ENGINEER RESPONSIBLE FOR THE SHOP DRAWINGS SHALL PROVIDE TO THE CONSULTANT A COMPLETED SCHEDULE S-B: "ASSURANCE OF PROFESSIONAL DESIGN AND COMMITMENT FOR FIELD REVIEW BY SUPPORTING REGISTERED PROFESSIONAL" AT THE TIME OF SUBMISSION OF SHOP DRAWINGS, THE SAME ENGINEER SHALL ALSO BE RESPONSIBLE FOR INSPECTING THE INSTALLATION OF THE WORK FOR CONFORMANCE WITH THE DESIGN AND THE SHOP DRAWINGS, AND SHALL, UPON COMPLETION OF THE WORK, PROVIDE TO THE CONSULTANT A COMPLETED SCHEDULE S-C: "ASSURANCE OF PROFESSIONAL FIELD REVIEW AND COMPLIANCE BY SUPPORTING REGISTERED PROFESSIONAL".
2. THE CONTRACTOR AND ITS SUBCONTRACTORS SHALL CONFIRM AND COORDINATE DIMENSIONS, LOCATIONS AND NUMBER OF THE STRUCTURAL ELEMENTS FOR WHICH SHOP DRAWINGS ARE TO BE PRODUCED.

EXISTING STRUCTURES:

1. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL VERIFY ALL RELEVANT DIMENSIONS TO AND OF EXISTING STRUCTURES. NOTIFY CWMM CONSULTING ENGINEERS LTD. IMMEDIATELY IF DISCREPANCIES ARE NOTED.
2. THE CONTRACTOR SHALL AT HIS OWN EXPENSE REPAIR AND MAKE GOOD ANY DAMAGE TO THE EXISTING STRUCTURE, EQUIPMENT AND FINISHES CAUSED BY THE CONSTRUCTION ACTIVITIES. REPAIRS SHALL BE TO THE SATISFACTION OF THE ARCHITECT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TEMPORARY SUPPORT OF ANY ADJACENT EXISTING STRUCTURES DURING CONSTRUCTION. UNDERPINNING OR BRACING SHALL BE DESIGNED BY A QUALIFIED PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF BRITISH COLUMBIA. 4 COPIES OF SIGNED AND SEALED DESIGN DRAWINGS TO ARCHITECT AND CWMM CONSULTING ENGINEERS LTD. FOR REVIEW OF CONFORMANCE WITH GENERAL DESIGN CRITERIA.

CONSTRUCTION LOADS:

1. CONSTRUCTION LOADS ON COMPLETED FLOORS MUST NOT EXCEED THE LOAD CARRYING CAPACITY OF FLOOR AT THE TIME OF THE LOADING UNLESS IT IS PROPERLY SHORED TO SUPPORT THE INTENDED LOAD. MOVING OF HEAVY EQUIPMENT AND PILING UP OF MATERIAL SHALL NOT BE PERMITTED UNLESS DESIGNED SHORING IS IN PLACE.
2. SHORING DESIGN BY CONTRACTOR. INFORM DEPARTMENTAL REPRESENTATIVE PRIOR TO LOAD APPLICATION.

WOOD PRODUCTS:

1. REFER TO SPECIFICATIONS FOR TIMBER GRADE, CODE REFERENCES AND OTHER REQUIREMENTS.
2. PROVIDE 2x BLOCKING AT MIDHEIGHT OF STUDS OVER 2400 IN HEIGHT.
3. 2x SOLID BLOCK SHALL BE PLACED BETWEEN ALL JOISTS AND RAFTERS AT SUPPORTS.
4. PLACE 2x SOLID BLOCK OR METAL CROSS BRIDGING OF EQUAL STRENGTH AS FOLLOWS: - FLOOR JOIST OVER 185 NOMINAL DEPTH AND OVER 3000 SPAN, SPACE BRIDGING AT 3000 O/C OR PLACE AT MIDSPAN IF SPAN LESS THAN 6000.
5. DOUBLE UP ALL TRIMMER JOISTS AROUND ALL ROOF & FLOOR OPENINGS, I.E., CHIMNEY ETC.
6. ALL FLUSH FRAMED MEMBERS TO BE SECURED WITH APPROVED METAL JOIST HANGER.
7. NAILS SHALL BE PLACED NOT LESS THAN 8mm FROM THE PANEL EDGE AND SHALL NOT BE OVER-DRIVEN MORE THAN 15% OF THE PANEL THICKNESS.

STRUCTURAL STEEL

1. CODE CONFORMANCE:

GENERAL STEELWORK AND DESIGN	CAN/CSA-S16
GENERAL REQUIREMENTS	CSA-G40.20
STEEL QUALITY	CSA-G40.21
SHOP PRIMER	CISC/CPMA 1-73A
STEEL DECKING	CSA-S136
WELDING	CSA-W59
GROUT FOR BASEPLATES	SEE SPECIFICATION

2. GRADES OF MATERIALS:

W SHAPES	350W (ASTM A992, A572 GRADE 50)
C SHAPES AND ANGLES	300W
HOLLOW STRUCTURAL STEEL (HSS)	350W, CLASS C (ASTM A500)
STRUCTURAL PIPE	ASTM A53, CLASS B
OTHER STRUCTURAL STEEL AND MISC. METAL	300W
BOLTS, NUTS AND WASHERS	ASTM A325
ANCHOR BOLTS	ASTM A307

3. DRAWINGS FROM ALL CONSULTANTS SHALL BE EXAMINED FOR EXACT LOCATIONS, DIMENSIONS AND ELEVATIONS.
4. CONFIRM ALL LOCATIONS, DIMENSIONS AND ELEVATIONS WITH ACTUAL SITE MEASUREMENTS BEFORE FABRICATION.

CONNECTIONS:

1. ALL STRUCTURAL STEEL CONNECTIONS SHALL BE DESIGNED BY THE FABRICATOR FOR FORCES, MOMENTS AND SHEARS RESULTING FROM THE SPECIFIED LOAD AND SELF WEIGHT OF THE SUPPORTING ELEMENTS AND ALL FORCES AS SHOWN ON THE DRAWINGS, UNLESS NOTED OTHERWISE. ALL MAIN CONNECTION BOLTS SHALL BE MINIMUM M20. USE MINIMUM TWO BOLTS
2. WHERE BEAM SHEARS ARE NOT INDICATED ON THE DRAWINGS, DESIGN CONNECTIONS TO SUPPORT THE REACTION FROM 120% MAXIMUM UNIFORMLY DISTRIBUTED FACTORED LOAD THAT THE BEAM CAN SAFELY SUPPORT IN BENDING (60% EACH END) PROVIDED NO POINT LOADS ACT ON THE BEAM. FOR BEAMS SUPPORTING POINT LOADS, DESIGN CONNECTION TO SUPPORT 80% OF THE FACTORED SHEAR RESISTANCE OF THE BEAM, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
3. FACTORED LATERAL LOADS FOR MOMENT FRAMES AND CROSS-BRACING SHOWN ON THE DRAWINGS DO NOT INCLUDE THE REQUIREMENTS FOR CONNECTION DESIGN AS REQUIRED BY CLAUSE 27 OF CSA-S16.1. CONNECTION PLATES AND DOUBLER PLATES TO BE PROVIDED AS REQUIRED BY DESIGN.
4. PROVIDE SPLICES AS INDICATED ON DRAWINGS. UNLESS NOTED OTHERWISE, ALL CONTINUOUS ELEMENTS CALLED UP ON THE DRAWINGS SHALL BE PROVIDED WITH FULL STRENGTH SPLICE EITHER BY FULL STRENGTH GROOVE WELD OR BY FULL STRENGTH SPLICE PLATES ON EACH END OF THE CONNECTING ELEMENTS.

SHOP DRAWINGS:

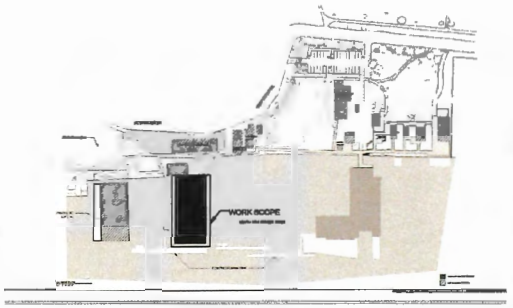
1. SUBMIT SHOP DRAWINGS IN ACCORDANCE WITH GENERAL NOTES ON THESE DRAWINGS AND WITH SPECIFICATIONS. SHOP DRAWINGS FOR ANCHOR BOLT LAYOUT AND EMBEDDED PLATE LAYOUT SHALL ALSO BE SUBMITTED FOR REVIEW.
2. NO FABRICATION OR WORK SHALL BE COMMENCED UNTIL THE REVIEW AND APPROVAL OF THE SHOP DRAWINGS. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY FABRICATION AND WORK DONE PRIOR TO REVIEW AND APPROVAL OF THE SHOP DRAWINGS.
3. STEEL FABRICATOR AND THE CONTRACTOR SHALL CO-ORDINATE AND VERIFY ALL DIMENSIONS AND LOCATIONS PRIOR TO PRODUCTION OF THE DRAWINGS.

FABRICATION:

1. WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS. FABRICATION SHOPS SHALL BE APPROVED BY THE CANADIAN WELDING BUREAU TO CSA-W47.1 (DIVISION 1 OR 2). CERTIFICATIONS SHALL BE SUPPLIED TO THE ENGINEER UPON REQUEST.
2. UNLESS NOTED OTHERWISE, CAMBER ALL BEAMS WITH SPAN OVER 6 METERS AS SPECIFIED ON THE DRAWINGS. INSTALL ALL OTHER ROLLED STEEL SECTIONS WITH MILL CAMBER UPWARDS.
3. IMPERIAL SIZE BOLTS AND PLATE PRODUCTS ARE ACCEPTABLE ON AN EQUAL SIZE - EQUAL STRENGTH BASIS.
4. PROVIDE WEEP HOLES FOR ALL EXPOSED HSS MEMBERS.
5. GALVANIZING OF STRUCTURAL MEMBERS AND PLATE MEMBERS, IF REQUIRED, SHALL BE IN ACCORDANCE WITH CSA-G164 AND RELATED STANDARDS. G210 MINIMUM COATING (610 GRAMS PER SQUARE METER). ALL AREAS OF GALVANIZED PARTS SHALL BE GROUNDED OFF PRIOR TO WELDING. PAINT 2 COATS MINIMUM OF ZINC RICH PRIMER READY MIX TO CAN/CGSB-1.181 AFTER WELDING.
6. UNLESS NOTED OTHERWISE, ALL STRUCTURAL STEEL SHALL BE SHOP PRIMED ACCORDING TO THE SPECIFICATION REQUIREMENT.

ERECTION:

1. GROUT FOR COLUMN BASE PLATES SHALL BE SIKA M-BED STANDARD, MASTERBUILDER'S MASTERFLOW 713 OR APPROVED EQUAL AND SHALL HAVE MINIMUM STRENGTH OF 60MPa AT 28 DAYS MIX TO FLUID CONSISTENCY.
2. INSTALL AND TORQUE ALL BOLTS AND DRILLED ANCHORS IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND PROCEDURES.
3. ANY MISFIT OR MISALIGNMENT MUST BE REPORTED TO CWMM CONSULTING ENGINEERS LTD. THE CONTRACTOR SHALL PROVIDE PROPOSED REMEDIAL MEASURES TO CWMM CONSULTING ENGINEERS LTD. FOR REVIEW AND APPROVAL. ANY REMEDIAL WORK ON CONNECTIONS MUST BE REVIEWED AND/OR REDESIGNED BY THE CONNECTION ENGINEER. COSTS OF REMEDIAL WORK ARE AT THE EXPENSE OF THE CONTRACTOR.
4. BOLTS, WELDS AND BURNED OR SCRATCHED SURFACES SHALL BE TOUCHED UP WITH SHOP PRIMER AT COMPLETION OF ERECTION.
5. DO NOT NOTCH OR CUT OPENINGS IN ANY OF THE FRAMING MEMBERS AND CONNECTIONS WITHOUT PRIOR APPROVAL FROM CWMM CONSULTING ENGINEERS LTD.
6. PROVIDE TEMPORARY BRACING TO STRUCTURE FOR STABILITY AND SAFETY UNTIL ALL LATERAL RESISTING ELEMENTS AND DIAPHRAGMS ARE INSTALLED.



SITE PLAN
NTS

SITE PHOTO
NTS

ABBREVIATIONS

A.BOLT	ANCHOR BOLT	L.V.	LENGTH VARIES
ALT.	ALTERNATE	LG.	LONG
ARCH.	ARCHITECTURAL	LL	LOW LEVEL
BLDG.	BUILDING	LLV	LONG LEG VERTICAL
BOT.	BOTTOM	LLH	LONG LEG HORIZONTAL
BTWN.	BETWEEN	LONG.	LONGITUDINAL
C/C	CENTER TO CENTER	MAX.	MAXIMUM
C/W	COMPLETE WITH	MECH.	MECHANICAL
C.I.P.	CAST IN PLACE	MIN.	MINIMUM
CANT.	CANTILEVER	N/A	NOT AVAILABLE
CL.	CLEAR	N.S.	NEAR SIDE
COL.	COLUMN	N.STUD	NELSON STUD
CONC.	CONCRETE	N.T.S.	NOT TO SCALE
CONT.	CONTINUOUS	O/C	ON CENTRES
DL	DEAD LOAD	OPP.	OPPOSITE HAND
DN	DOWN	OWSJ	OPEN WEB STEEL JOIST
DO.	DITTO	P.C.	PRECAST CONCRETE
DP.	DEEP	PL	PLATE
DWG.	DRAWING	PLY.	PLYWOOD
EA.	EACH WAY	PROJ.	PROJECTION
E.F.	EACH FACE	RAW	REINFORCED WITH
ELEC.	ELECTRICAL	R/C	REINFORCED CONCRETE
ELEV.	ELEVATION	S.O.G.	SLAB ON GRADE
EXIST.	EXISTING	SIM.	SIMILAR
EXT.	EXTERIOR	STAGG.	STAGGERED
FL	FLOOR	T&B	TOP AND BOTTOM
F.S.	FAR SIDE	T&G	TONGUED & GROOVED
FDN.	FOUNDATION	T.O.C/S	TOP OF CONCRETE/STEEL
FTG.	FOOTING	THK.	THICK
G.L.	GRID LINE	TJ	TIE JOIST
GALV.	GALVANIZED	TRAN.	TRANSVERSE
H1E	HOOK ONE END	TYP.	TYPICAL
H2E	HOOK TWO ENDS	UL	UPPER LEVEL
HL	HIGH LEVEL	U/S	UNDERSIDE
HORIZ.	HORIZONTAL	U.N.O.	UNLESS NOTED OTHERWISE
INT.	INTERIOR	VERT.	VERTICAL

NOTES:

1. CONTRACTOR TO CONFIRM MEMBER SIZES OF ALL RELEVANT EXISTING TRELLIS, MECH. ENCLOSURE COLUMNS & BEAMS INCLUDING WELD SIZES AND REPORT TO CWMM FOR REVIEW, UPGRADE STRUCTURAL ELEMENTS TO SUIT FINAL LOADS AT CONTRACTOR'S COST.
2. ALL NEW BEAM, POSTS AND OUTRIGGER AND THEIR CONNECTION ACCESSORIES SHALL BE HOT DIPPED GALVANIZED TO 610 G/M2.
3. SUBMIT SEAL AND SEALED SHOP DRAWINGS FOR CONNECTION DESIGN OF NEW STEEL BEAMS, COLUMNS, AND BRACES FOR REVIEW AND APPROVAL.
4. REFER TO ARCH DRAWINGS FOR EXACT LOCATION OF ROOF ANCHORS ACCESSORIES. SUPPORT BEAM SPACING SHALL BE ADJUSTED ACCORDINGLY TO SUIT LOCATION.
5. CONTRACTOR TO PROVIDE TEMPORARY WORK ENGINEERING ON TRELLS TO SPREAD LOADS OF TEMPORARY WORKS ON ROOF AND PAY COST.
6. CONTRACTOR TO ENSURE PROTECTION OF EXISTING CONCRETE DECK DURING INSTALLATION WORKS.
7. CONTRACTOR SHALL PROVIDE SCAFFOLDING FOR TEMPORARY WORK AS REQUIRED AND PAY COST.

DRAWING LIST (STRUCTURAL)

100% PROGRESS SET
2024-04-30

13377

Plan #16

No.	Date	Revision

IREDALE
ARCHITECTURE
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CWMM CONSULTING ENGINEERING LTD.
EGBC Permit to Practice #1000918

SEINE NET LOFT

5180 WESTWATER DR.
RICHMOND
B.C. V7C 4P3

GENERAL NOTES
, SITE PLAN & PHOTO

As indicated

Drawn	Design
SK	LL

Project No.
13377

Sheet No.
S1

PRCS - 105

PHOTO (1)

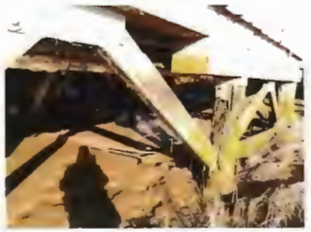
PHOTO (2)

PHOTO (3)

PHOTO (4)

PHOTO (5)

PHOTO (6)



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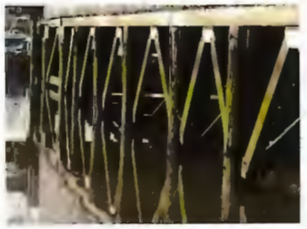

PHOTO (8)

PHOTO (9)

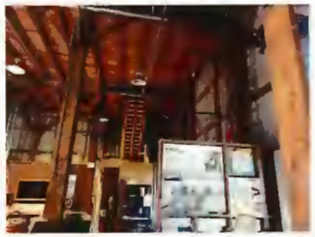

PHOTO (10)

PHOTO (11)

PHOTO (12)

PHOTO (13)

100% PROGRESS SET
2024-04-30

13377

Plan #19

No.	Date	Remarks

IREDALE
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SEINE NET LOFT

8180 WESTWATER DR.
RICHMOND
B.C. V7E 6P3

PHOTOS

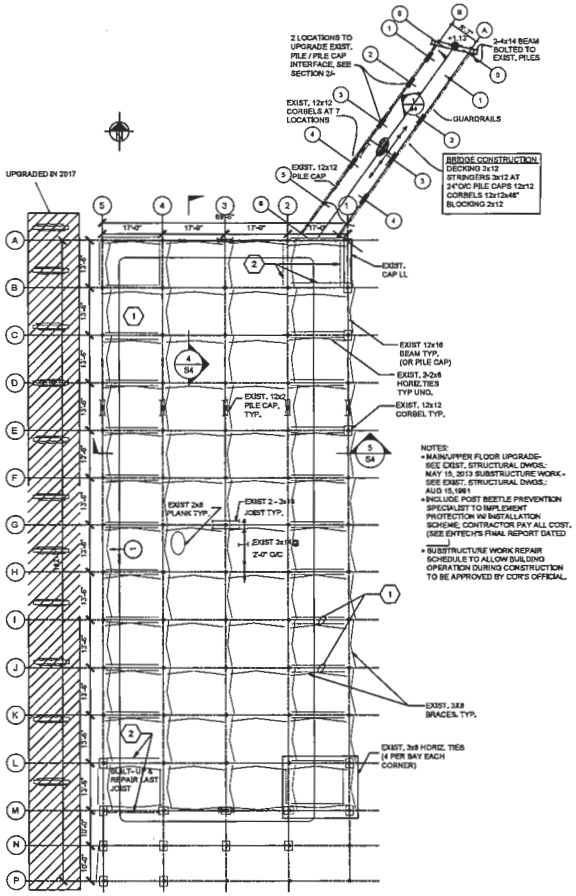
As indicated

Drawn	Design	Checked
SK	LL	LL

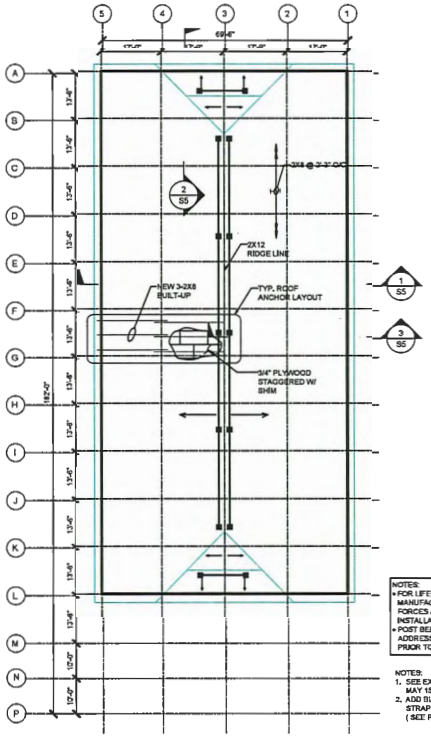
Project No. 13377

Sheet No. S2

PRCS - 106



SNL PILE-BRACE-TIE PLAN
1/16"=1'-0"



ROOF PLAN
1/16"=1'-0"

LEGEND
- DENOTES R&R DOUBLE 2x6 HORIZONTAL TIE TO MATCH (PHOTO 5/S2)
- DO BUT 3x8 (PHOTO 8~7/S2)
- DO BUT 3x8 BRACING (PHOTO 8/S2)
- INVESTIGATE HORZ. WALL PANEL JOIST FOR ROT SURFACE RECEIVING NEW CLADDING DURING CONSTR. (PHOTO 9~10/S2)

LEGEND:
- ENERGY ABSORBING FALL PROTECTION ANCHORS
- HORIZONTAL LIFELINES

100% PROGRESS SET
2024-04-30

13377

Plan #20

No.	Date	Revision

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BRITANNIA SHIPYARD
BUILDING - PILE DECK PLAN & ROOF PLAN

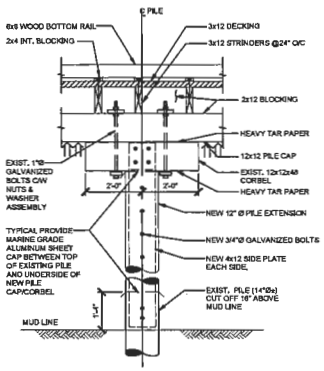
As indicated

Drawn:	Reviewed:	Checked:
SK	LL	LL

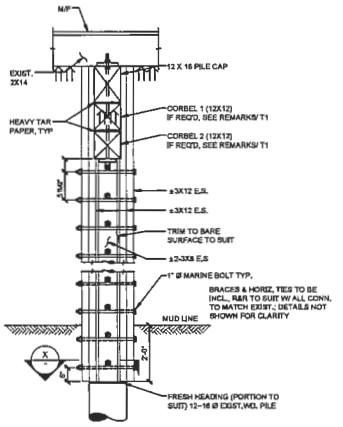
Project No. 13377

Drawing No. S3

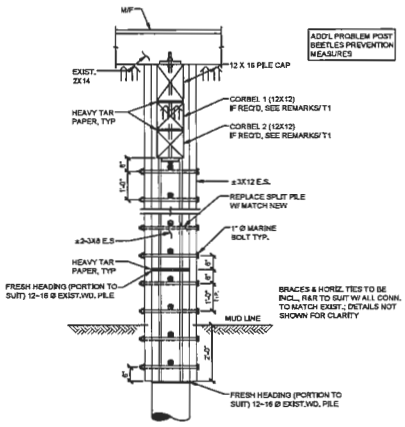
PRCS - 107



SECTION 1 S3
1/2"=1'-0"

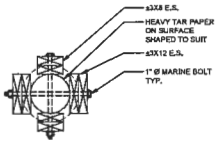


SECTION 2 S3
1/2"=1'-0"

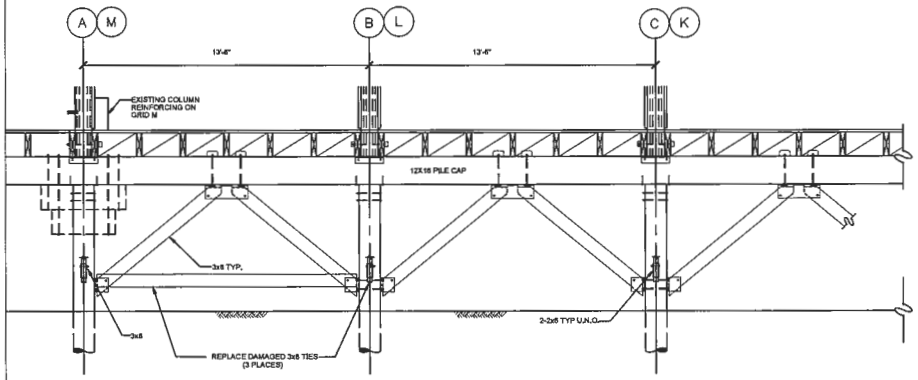


SECTION 3 S3
1/2"=1'-0"

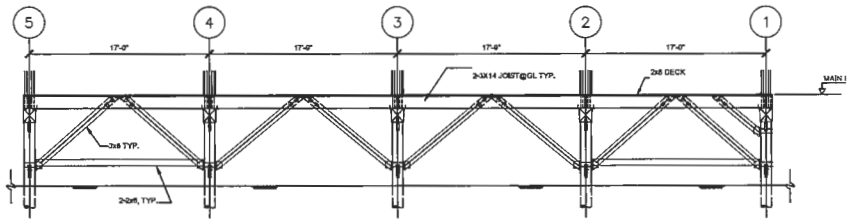
LEGEND:
DENOTES TEMPORARY SHORING TO WSB REQUIREMENT DURING CONSTRUCTION



SECTION X
3/4"=1'-0"



TYPICAL EXIST. GABLE END FRAMING SECTION 4 S3
3/8"=1'-0"



TYPICAL EXIST. BUILDING CROSS SECTION 5 S3
3/16"=1'-0"

100% PROGRESS SET
2024-04-30

13377

Plan #21

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ARCHITECTURE
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SEINE NET LOFT

5160 WESTWATER DR.
RICHMOND
B.C. V7E 6P3

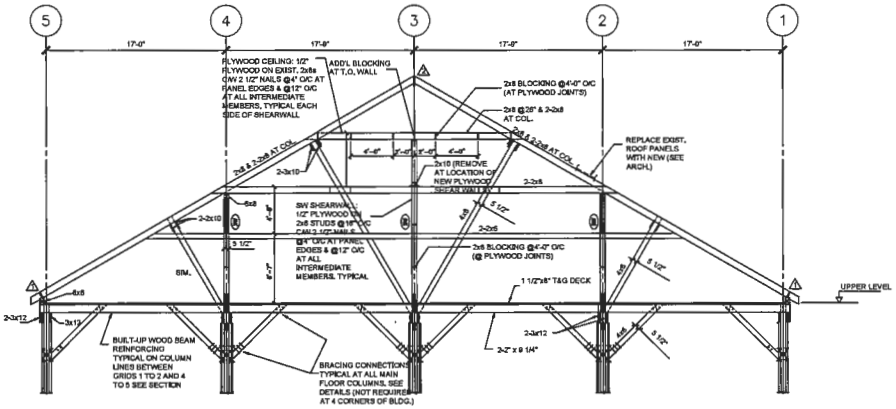
SECTIONS 1

As indicated

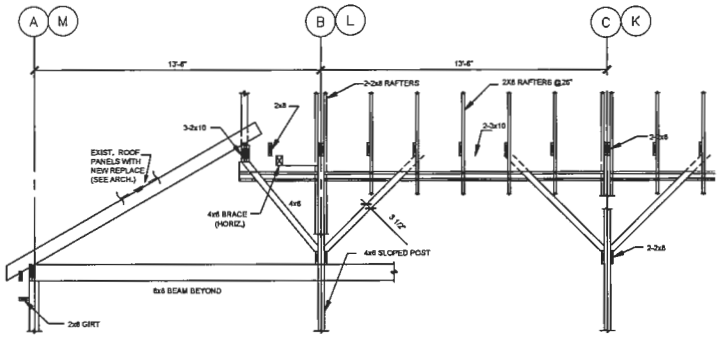
SK | LL | LL

13377

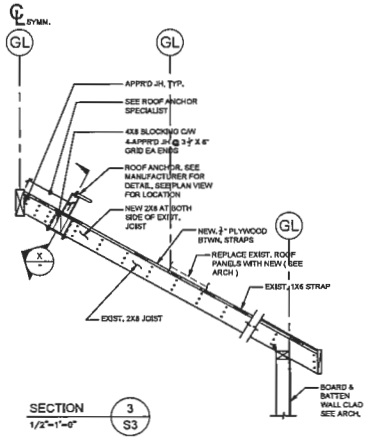
S4



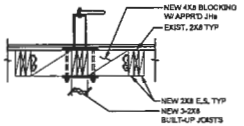
TYPICAL EXIST. BUILDING CROSS SECTION 1/S3
3/16"=1'-0"



TYPICAL EXIST. GABLE END FRAMING SECTION 2/S3
3/8"=1'-0"



SECTION 3/S3
1/2"=1'-0"



SECTION X
3/4"=1'-0"

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13377

PRCS - 108

Plan #22

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SEINE NET LOFT

5160 WESTWATER DR.
RICHMOND
B.C. V7E 6P3

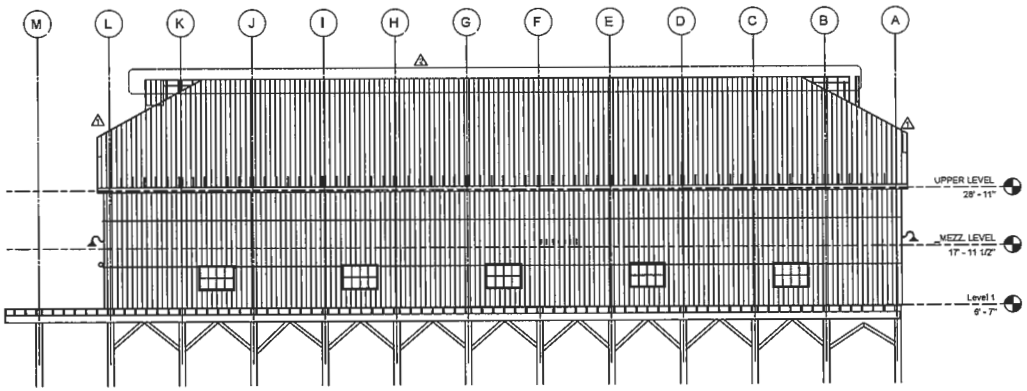
SECTIONS 2

As Indicated

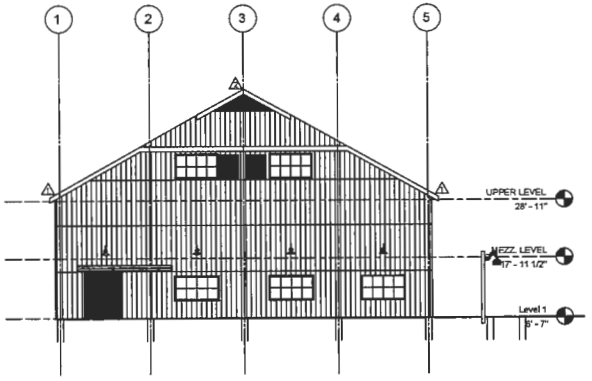
Drawn	Check	Design
SK	LL	LL

Project No. 13377

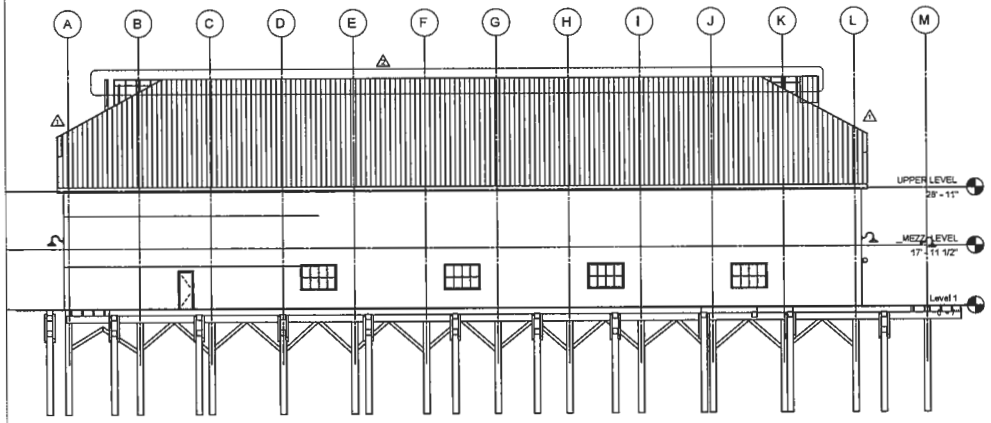
Sheet No. S5



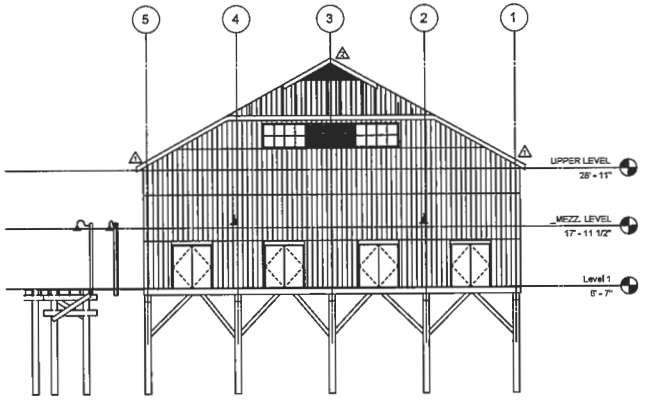
EAST ELEVATION
3/32"=1'-0"



NORTH ELEVATION
3/32"=1'-0"



WEST ELEVATION
3/32"=1'-0"



SOUTH ELEVATION
3/32"=1'-0"

UPON REPLACEMENT OF PERIMETER WALL CLADDING AND ROOFING, CALL CWMM TO REVIEW ROT CONDITION OF POST/WIND JOIST/T&B PLTS AND ROOF STRAPS; ALLOW 25% COST OF R&R WITH NEW TO MATCH EXIST.

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2024-04-30

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Plan #23

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SEINE NET LOFT

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RICHMOND
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ELEVATIONS

As indicated

Drawn	Check	Design
SK	LL	LL

13377

S6

PRCS - 110

Table 1: Condition Survey Results for Seine Net Loft, BHSY, Richmond, BC.

Logged by: N. Yazdani and F. Sverre SEINE NET LOFT

Date: March 14, 2024

Pile			Inspection Analysis				Comments	Remarks
Coordinates	OD (in.)	Pile % decay	#	Pile Cap % decay	Bracing	Corbel % decay		
A1	16	60		70	A-B Horizontal	40	Wet Cedar	Sec2/34+Horz Tie
B1	16	70			Broken		Wet Cedar	Sec2/34+Bracing
C1	12	10					Old Cedar	No Upgrade
D1	14	10					Cedar	No Upgrade
E1	16	50				40	Cedar	Sec2/34+COR
F1	14	30		10			Cedar	Sec2/34
G1	14	FH 3 ft					Cedar	Sec2/34
H1	14	30					Cedar	Sec2/34
I1	14	50					Cedar	Sec2/34
J1	16	50					Cedar	Sec2/34
K1	10	FH 2 ft 50					Cedar	Sec2/34
L1	14	Split 40				40	Cedar	Sec3/34+COR
M1	14	40					Cedar	Sec2/34
N1	12	10					Creosote	No Upgrade
P1	12	10					Creosote	No Upgrade
A2	18	60					Wet Cedar	Sec2/34
B2	16	40		A-B 50	Horizontal A-B 1+2	50	Cedar	Sec2/34+COR
C2	14	40					Cedar	Sec2/34
D2	16	40					Cedar	Sec2/34
E2	14	50					Cedar	Sec2/34
F2	16	Split 50					Cedar	Sec3/34
G2	14	40					Cedar	Sec2/34
H2	14	Split 50					Cedar	Sec3/34
I2	12	30					Cedar	Sec2/34
J2	16	10					Cedar	No Upgrade
K2	16	30					Cedar	Sec2/34
L2	16	FH 40			Diagonal	10	FH Cedar	Sec2/34+Diag. Brace
M2	14	40					Cedar	Sec2/34
N2	12	10					Creosote	
P2	12	10					Creosote	
A3		40					Cedar	Sec2/34
B3	14	40					Cedar end	Sec2/34
C3	12	40					Cedar	Sec2/34
D3	10	40				Split 20	Cedar	Sec3/34
E3	14	40					Cedar	Sec2/34
F3	12	50					Cedar	Sec2/34
G3	12	50					Cedar	Sec2/34
H3	12	50					Cedar	Sec2/34
I3	10	H – 60 top					Cedar	Sec2/34
J3	16	40					Cedar	Sec2/34
K3	16	Split 60					Cedar	Sec3/34
L3	12	40				30	Cedar	Sec2/34+COR
M3	14	10				10	Cedar	No Upgrade
N3	12	10					Creosote	No Upgrade
P3	12	10					Creosote	No Upgrade

P = Pile PC = Pile Cap COR = Corbel D = Decay S = Solid M = Mulch H = Hollow FH = Fresh Head Core = Core Sample Analysis
App = Appendix A photo index

Notes: All piles capped with aluminum foil are deteriorated –
Exposing top of most piles to extensive moisture conditions and decay. Sub-structure Coordinates
(Bents 1 to 5, and of Piles A to P), with Bents numbered from West to East, and Piles from North to South.

TABLE 1 CONT'D

TABLE 1 CONT'D

Pile			Inspection Analysis				Comments	Remarks
Coordinates	OD (in.)	Pile % decay	#	Pile Cap % decay	Bracing	Corbel % decay		
A4		40					Cedar	Sec 2/34
B4	16	50					Cedar	Sec 2/34
C4	14	40					Cedar	Sec 2/34
D4	14	30				Split West 70	Cedar	Sec 2/34+Bracing
E4	14	40					Cedar	Sec 2/34
F4	10	50					Cedar	Sec 2/34
G4	14	40					Cedar	Sec 2/34
H4	14	40					Cedar	Sec 2/34
I4	14	Split 50, FH		Middle of Pile			Cedar	Sec 3/34
J4	14	40					Cedar	Sec 2/34
K4	16	30					Cedar	Sec 2/34
L4	16	40					Cedar	Sec 2/34
M4	16	30		PC – 10°		20	Cedar	Sec 2/34+PC
N4	12	10					Creosote	No Upgrade
P4	12	10					Creosote	No Upgrade
A5	16	40		A-B 80		A-B 40	Cedar	Sec 2/34+PC+COR
B5	14	30		A-B 50%		A-B 50	Cedar	Sec 2/34+PC+COR
C5	12	20			Horizontal	B-C 40 Split	Cedar	Sec 2/34+Horz Tie+COR
D5	12	40				60 Split	Cedar	Sec 2/34+COR
E5	12	70 FH				50 – Split	FH Cedar	Sec 2/34+COR
F5	12	60				Split 50	FH Cedar	Sec 2/34+COR
G5	10	50					Cedar	Sec 2/34
H5	12	50 – Split			Horizontal	50 Split	Cedar	Sec 3/34+Horz Tie
I5	10	Split 40		30 – 40		40	Cedar	Sec 3/34+PC+COR
J5	10	50- Split		30 – 40		40	FH enclosed	Sec 3/34+PC+COR
K5	12	50 – Split		30 – 40		Split 30	Cedar	Sec 3/34+PC+COR
L5	12	40				1-20-40	Cedar	Sec 2/34+COR
M5	14	40					Cedar	Sec 2/34
N5	12	10					Creosote	No Upgrade
P5	12	10					Creosote	No Upgrade
A0		Bolted to					Bolted to Creosote Pile	No Upgrade
A1	16	60					Cedar	Sec 2/34
A2	16	Split 30				(2) 60/10	Cedar	Sec 3/34+COR×2
A3		Split 60				10	Cedar	Sec 3/34+COR
A4		10					Cedar	No Upgrade
A5		10					Cedar	No Upgrade
A6	16	60					Cedar	Sec 2/34
B0		Bolted to					Bolted to Creosote Pile	
B1		50					Cedar	Sec 2/34
B2	10	80				40	Cedar	Sec 2/34+COR
B3	10	80				2 x 20	Cedar	Sec 2/34+COR×2
B4		30				20	Cedar	Sec 2/34+COR
B5		40					Cedar	Sec 2/34

P = Pile PC = Pile Cap COR = Corbel D = Decay S = Solid M = Mulch H = Hollow FH = Fresh Head Core = Core Sample Analysis
App = Appendix A photo index

Notes: All piles capped with aluminum foil are deteriorated –
Exposing top of most piles to extensive moisture conditions and decay. Sub-structure Coordinates
(Bents 1 to 5, and of Piles A to P), with Bents numbered from West to East, and Piles from North to South.

100% PROGRESS SET
2024-04-30

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Plan #24

No.	Date	Revision

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EGBC Permit to Practice #1000918

SEINE NET LOFT

5160 WESTWATER DR.
RICHMOND
B.C. V7E 6P3

COLUMN CONDITION TABLE

As indicated

Drawn	Check	Design
SK	LL	LL

Project No. 13377

Sheet No. S7