NORTH SOMERSET COUNCIL STRUCTURES SCHEMES 2020 – 2021

Project information			
Project Title	Marine Hill Retaining Wall – Masonry Repairs 2020		
Structure Ref.	47W034		
Location	340301, 172035	**Nearest Postcode**	BS21 7PW
NSC Supervisor	Chandan Bhumpelly	**Contact Number**	01275 888293

Description of the Works

These works comprise the supply of all labour, materials and supervision to carry out general repairs and maintenance to Marine Hill Retaining Wall. The tasks required as part of this maintenance programme are laid out in the works specification below and are detailed on drawing number 47W034/NSC/C/2020/101. For ease of reference the sections of the retaining wall have been split into 3 panels. See enclosed drawing for details of panels. The works are split into two phases which should be priced separately.

Works Specification:

1. Set up suitable work area and site compound including installation of traffic management.

Phase 1

2. Vegetation Clearance - Clear vegetation from areas of Panels 1 and 2 to be repaired (tree to be felled by NSC prior to commencement of works.
3. Rebuild section of facing wall damage due to tree growth at southern end of panel 1
    a. Install scaffolding to allow access to wall face.
    b. Carefully dismantle damaged section of Panel 1 of retaining wall facing affected by the roots of the tree and remove tree roots. Final extent to be agreed on site with NSC supervising engineer.
    c. Clean all stones for reuse, removing all existing mortar.
    d. Clean all open joints and exposed wall face of all mortar, plant growth and loose materials.
    e. Drill holes in face of wall behind removed facing wall for installation of stainless-steel reinforcement tie bars (approx. 300mm spacing)
    f. Install stainless steel reinforcement tie bars into drilled holes and fix using epoxy grout.
    g. Rebuild the facing wall using the existing stone in lifts not exceeding 450mm incorporating the tie bars in accordance with SHW clause 2413.
    h. Backfill any voids behind the facing wall with site mixed concrete once mortar has gained sufficient strength. Each lift of the new facing wall lift should be back filled with concrete before commencing the next lift.
4. Re-bed stones on Panel 2 above crack in lower buttress wall
    a. Remove coping stones above crack in panel 2 for 5m length running from interface with Panel 1
    b. Clean removed stone and exposed joint of all existing mortar, plant growth debris etc for reuse
    c. Re-bed stones including reinstatement of mortar haunch
5. Local re-pointing in Panels 1 and 2
    a. Re-pointing to be carried out at local locations of vegetation damage and defective mortar for full length of panel 1 and 10m length of panel 2 from interface with panel 1
    b. Remove vegetation roots and rake out all defective mortar to a minimum depth of 1.2 times the joint width or 20mm whichever is greater until clear of dust and loose particles.
    c. Remove all deposits and lichen/moss from the surfaces to be repointed.
    d. Carefully repoint raked out areas of mortar ensuring no voids are present

6. All newly built or repointed masonry to be protected from rain and frost
7. Repair end 4.2m of guardrail at north end of panel 1
    a. Break out concrete foundations of existing two end posts and remove posts and connecting rails.
    b. Assess condition of rails for reuse and identify extent of new rails required.
    c. Clean all excess concrete from coping stones on top of the retaining wall.
    d. Diamond core drill holes for installation of new guardrail posts and clean to remove drilling debris.
    e. Install new guardrail posts to match existing into drilled holes and fix using epoxy resin mortar.
    f. Install new or existing rails depending upon condition of the existing.
8. Paint/repaint existing guardrails (total length approx. 20m)
    a. Guardrails to be repainted in accordance with MCHW SHW series 5000.
    b. Guardrail to be prepared in accordance with MCHW SHW clauses 5002 to 2004 with all non-sound paint removed.
    c. All areas of corrosion or exposed steel are to be hand/mechanically cleaned to ST3 in accordance with BS EN ISO 8501-1. All areas of sound paint are to be lightly abraded by hand, ensuring any defective paint is removed and any loose edges are feathered back to a tight and firm edge.
    d. Apply new paint system coats to existing and new guardrail elements in accordance with MCHW SHW clause 5012 and manufacturers specification.

Phase 2

9. Re-point full height and re-bed loose coping stones to 10m length of Panel 3.
    a. Clear vegetation from section of retaining wall to be repaired
    b. Remove loose coping stones and clean for reuse, removing all existing mortar.
    c. Remove vegetation roots from joints and rake out defective mortar to a depth of 1.2 times the joint width or 20mm whichever is greater until clear of dust and loose particles
    d. Remove all deposits and lichen/moss from the surfaces to be repointed.
    e. Carefully repoint raked out areas or mortar ensuring no voids are present
    f. Reset coping stones
    g. All newly re-pointed and rebuilt sections of stonework to be protected from rain and frost.

Materials Specification:

Masonry Repairs

- Existing stone should be reused for the repair of the wall where possible. If additional stone to that on site is required, stone matching the existing should be used. If additional stone is required a sample should be provided to the NSC supervising engineer for approval prior to use.
- Mortar specification for masonry repairs to be agreed on site with NSC engineer.
- Site mixed concrete for filling voids behind new facing wall to be minimum C12/15.
- Grout for fixing tie bars in facing repair and new guardrail posts to be non-shrink, free-flowing, epoxy grout with a minimum compressive strength of 45MPa.
- Reinforcement for tying new facing wall to exiting wall stem to be 500mm long 16mm diameter stainless steel reinforcing bars (Approx. 15No. required)

Guardrail Repair

- New guardrail posts to match the existing. Product to be agreed with NSC prior to

installation.

- New guardrail posts and replacement rails to be hot-dipped galvanised.
- New guardrail posts and rails to be supplied with suitable paint system in black (00 E 53 in accordance with BS4800:2011).

Guardrail Re-painting

- HBA HAPAS certified paint system products to be used
- Paint coatings as follows, item numbers in accordance with MCHW SHW series 5000 (protection system type I(M)) (for paint specification see appendix 50/1 included in the contract documents) :
    - Primer: Item 115 (High build aluminium epoxy (two pack)), 100 microns min dry film thickness (Only applied to areas exposed to bare steel)
    - Undercoat: Item 116 (High build epoxy (two pack), 100 microns min dry film thickness
    - Surface Coat: Item 168 (Polyurethane (two-pack)), 50 microns min dry film thickness
    - Total min dry film thickness is 300 micros over bare steel and 175 microns over sound paint
- Colour of finish Back (00 E 53)
- Stripe coat to be applied to appropriate areas

The contractor is responsible of the design, provision and maintenance of all temporary works including scaffolding, working platforms and temporary supports to the retaining wall during works.

Site Information

Location map

Site Boundaries

Extents of retaining wall and areas required on highway for working/storage.

Contractor to inform NSC Structures of any lane closures or TM required for working/storage so the relevant notices can be issued.

Secure fencing to be provided by the contractor to prevent unauthorised access to the site.

Site Specific Risks

- Working adjacent to live traffic and in the carriageway under traffic management on Marine Hill and Marine Parade.
- Use of scaffold tower or raised access platform to access upper sections of retaining wall.
- Working at height.
- Falling debris.
- Exposure to hazardous materials.
- Interaction with members of the public
- Contractor to determine if the existing paint to guardrail contains lead

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Additional Works Information	
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Drawings

A drawing showing the site layout and images of the works to be completed have been included in the works information.

Access to the site

Scaffolding or raised access platform will be required to access the upper sections of the retaining wall.

Specialist access plant requires a permit application, to be authorised by NSC Streetworks.

Contractor to provide NSC with any details of MEWPs or scaffolding to enable the permit application to be filled in.

Contractor to inform NSC Structures of any road space required in order to undertake the works

Contractor responsible for design and supply of any TM required.

Working Hours

The hours of operation of the site shall be restricted to 0730 to 1800 hours Monday to Friday and 0800 to 1300 Saturday. No work shall be permitted outside of these hours without the permission of the Project Manager.

Parking

Contractor parking to be within agreed site area or on-street in accordance with parking regulations.

Storage of materials, fuels or chemicals

The contractor is to make their own arrangements for the storage of materials.

Materials should be stored in a safe manner at a location agreed with the North Somerset Council Structures team.

Materials are not to be stored on the highway without an NSC approved "Application to deposit building materials on the highway" permit. Contractor to confirm if a permit will be required.

All materials and equipment to be store securely over night.

Pollution, Ecological or Environmental Impacts

Drip trays and spill kits to be available and used where required.

Measures to be taken to ensure all works, and detritus arising from the works, are removed from site.

Access to Information following Completion

Any relevant product/contractor guarantees and QA/Materials Site Record sheets to be submitted to the NSC Engineer following completion of the works.

Programme

Start date and duration to be defined by contractor.

Services and Other things provided by NSC

NSC Structures to apply for specialist access permits if required (TBC by contractor).

Tree and shrubs along the top of panel 3 to be cut down by NSC prior to commencement of works.

Submission of documentation to NSC following completion of works

Product information, specification and any relevant certification to be sent to NSC (HA/P1 paint sheet [MCHW, Vol 2, Series 1900], mortar, grout and replacement elements for railings.

Photographs

General and defect pictures of the structure included.

Historic Drawings

None Available

Utility Plans

N/A

Prepared by	A. Meilton	**Date**	20/05/2019
Checked by	C. Bhumpelly	**Date**	10/02/2021