

Notes:

- General**
 - Drawings to be read in conjunction with CDP structural design philosophy and specifications.
 - Drawing to be read in conjunction with all other Architects and Engineers drawings and specifications.
 - Do not scale from drawings.
 - All Setting out is to be in accordance with the Architects drawings.
 - All dimensions in millimetres unless noted otherwise.
 - Any discrepancies between structural and architectural setting out dimensions must be brought to the attention of the Architect and Engineers.
 - Abbreviations on drawings are defined below:

CDP	Clyde Design Partnership Ltd.
SSL	Structural Slab Level
FFL	Finished Floor Level
TOC	Top of Concrete Level
UNO	Unless noted otherwise
TBC	To be confirmed

- Loadings**
 - Design dead loads are calculated in accordance with BS EN 1991-1-1 and the selected form of construction and includes permanent partitions, floors, roofs, finishes, services and all other permanent construction items.
 - Design imposed loads are calculated in accordance with BS EN 1991-1-1 and BS EN 1991-1-3
 - Design wind loads are calculated in accordance with BS EN 1991-1-4.
 - During the construction the Contractor will be responsible for the temporary stability of the structure and allow for any temporary supporting structures necessary for the safe erection of works. The design of all temporary works is the responsibility of the Contractor.
 - Design imposed loadings. The structure has been designed for the following imposed loads:
 - Deck: 5.00kN/m²
 - Balustrade: 0.74kN/m

- Scope**
 - The Contractor is to provide to the Engineer a Method Statement indicating his proposals for all temporary works, propping details and dewatering proposals. This Method Statement has to be approved by the Engineer prior to any works commencing. Once the works commence on site, the main Contractor is to notify the Engineer immediately in order to assess the existing structures/foundations.
 - Refer to Architects drawings for all setting out dimensions. Contractor to verify validity of setting out dimensions once on site and notify the Design Team of any discrepancies.
 - The Contractor is responsible for the design of the elements listed below. The Contractor must provide a comprehensive set of calculations and drawings to the design time for approval a minimum of 3 weeks before manufacture.
 - Tanking
 - Gabion wall
 - Steelwork Connections
 - Rebar design

- Residual Risks**
 - Due to the proximity of the river the works to the revetment will be influenced by the tidal swell. The Contractor must provide a Method Statement highlighting the sequence and safe execution of the works. It is thought that the preparation, reinforcement installation and shuttering can be completed in a period of low tide with the concrete pour taking place the following day at the optimum time of low tide. The Contractor is to submit to the Engineer a Specification and Method Statement highlighting his proposals to carry out the work, in particular, with regards to safety, sequence and programme.
 - A visual inspection of the revetment has been conducted but intrusive works were not carried out. The structural proposals have been based on these observations. The Engineer should be informed of any discrepancies between the drawings and findings on site. The Engineer is to be provided with a copy of all surveys and reports carried out on site.
 - Due to the proximity of the works to the river, there is a high risk of workers falling into the river. The Contractor should allow for this in his Health and Safety Method Statement, which should be submitted the Engineer for review at least two weeks prior to the said works commencing.
 - The site/path is over looked by a retaining wall (approx. 2.5m in height). The Contractor should allow for the making good any part of the wall disturbed during the works and provide protection to the workers against falling objects. The Contractor should allow for this in his Health and Safety Method Statement, which should be submitted the Engineer for review at least two weeks prior to the said works commencing.
 - There may be existing services which cutting through the site. The Contractor should allow for an intrusive survey and the possibility of diverting and utilities/services encountered. The Engineer is to be provided with a copy of all surveys and reports carried out on site.
 - A Topographical Survey of the was conducted in August 2013 and forms the basis for all existing and proposed levels. However since this date the site has been extensively cleared of vegetation and the levels may have altered. The Contractor should allow for a further Topographical Survey of the site before works commence to verify the levels. The extent/scope of this survey shall be agreed with the Engineer and should be submitted the Engineer for review at least two weeks prior to the said works commencing.
 - The site was previously occupied by a Larger factory unit and other smaller buildings which have since been demolished. It is unknown if any below ground structure still remains. The Contractor should allow for the removal of any such material, the amount of which is to be agreed with the Engineer on site once any such structure has been encountered.
- Health and Safety**
 - All work carried out by the Contractor must be carried out to ensure that the requirements under the Health and Safety at Work Act, The Work at Height Regulations 2005, the CDM Regulations and all other relevant legislation, HSE Guidelines and recognized industry best practice are satisfied.
 - Clyde Design Partnership Limited, Consulting Engineers will not accept any claims relating to exposure of site personnel to the effect of vibration resulting from the use of equipment and plant. It is the Contractor's responsibility to ensure that all equipment is correctly and regularly calibrated and that personnel are not exposed to vibrations above the current guideline levels.
 - All Method Statements should be submitted to the Structural Engineer for review at least two weeks before carrying out the said works.
 - The Main Contractor is responsible for all aspects of health and safety associated with carrying out the works.

- Demolition**
 - Carry out demolition works in accordance with BS 6187 (1982) and Health and Safety at Work Act (1974).
 - Before commencing demolition of the existing structure ensure that all existing services in the area that will be affected by the works are disconnected and terminated.
- Temporary Works**
 - Temporary Works should be simple and capable of rapid erection during tidal access and have to be strong enough to protect immature concrete and resist high temporary loadings in adverse weather.
 - The temporary works should be easily fixed, grout tight, rigid and strong.

- Earthworks and Excavations**
 - The re-use of excavated material shall be determined on site by the Engineer.
 - All excavations shall be clean, accurately dug and adequately supported. All excavations shall be cleaned out for inspection and the Contractor shall provide the Structural Engineer with the facility to carry out such inspections in a safe manner.
 - Any over excavation must be backfilled with blinding concrete or Type 1 granular fill rolled and compacted as directed by the Engineer.
 - Trenches excavated for the installation of buried services and under ground drainage are to be back-filled with imported clean inert granular material as benching and surround in accordance with the relevant details and specifications.
- Revetment Ground Stabilisation – (If Required) Construction sequence**
 - Prepare a level foundation as required by the Contract.
 - Cut and position the base layer of grid. Adjacent lengths of grid are butt jointed at the slope face. In general, the grid reinforcement should not be folded up the face on slopes inclined up to 45° to the horizontal. Grids should be installed to the levels, lengths and orientations as shown on the drawings.
 - Place and compact the fill in layers to the Contract's specification incorporating primary reinforcement and secondary reinforcement as appropriate. Generally the vertical spacing between reinforcement layers should not exceed 0.5m. Fill should be placed by plant such as an excavator bucket or a dozer with an opening bucket which causes the fill to cascade onto the grids. A 150mm thick cover of fill must be maintained between the tracks of any plant and the grid to avoid damage.
 - Compaction plant may operate to the edge of the fill and the embankment may be overfilled and the face trimmed back in a conventional manner.
 - On completion of the filling operation the slope surface shall be covered in compliance with the landscaping requirements.
 - Surface protection for vegetated slopes shall then be provided by one of two methods.
 - Tensar Mat is rolled down the slope face lapping adjacent 4.5m wide rolls by a minimum of 100mm. Tensar Pegs shall be used to fix the mat at 1.0m centres along the laps. Roll ends shall be buried at the shoulder and toe respectively in shallow trenched approximately 450mm wide by 250mm deep. The Tensar Mat shall then be filled with a friable topsoil brushed into the mat and either sown with selected grass seed mix, or planted with ground cover species.
 - Contact Tensar International Limited if more specific advice is required.

- Compaction of 6F2**

The site should be cleared to formation level and the material adjacent to the retaining wall should be battered back at a safe angle of repose (approx. 30 degrees) and kept 1m away from the walls foundation. The Engineer should be invited to site to identify any weak zones or hard spots in the formation. The formation should be proof rolled and only once the Engineer has inspected and approved the entire formation level, can the embankment be constructed.

A layer of Tensar reinforcement should be installed on the subgrade to the manufacturers recommendations. Subsequently 6F2 should be laid in 150mm layers and compacted by a smooth wheeled roller in accordance with the Manual of Contract Documents for Highway Works Volume 1 Specification for Highway Works (please see table below). Primary and secondary Tensar reinforcement should be laid at 300mm c/c in the manner indicated and in accordance with the manufacturers guidelines.

Extract – Table 6/4: Method of Compaction for Earthworks Materials: Plant and Methods.

This table is to be read in conjunction with the Manual of Contract Documents for Highway Works Volume 1 Specification for Highway Works – Sub-Class 612.10.

Type of Compaction Plant	Ref. No.	Category	Method 6		
			N for D=110mm	N for D=150mm	N for D=200mm
Smoothed wheeled roller (or vibratory roller operating without vibration)	1	Mass per metre width of roll: over 2100kg up to 2700kg	Unsuitable	Unsuitable	Unsuitable
	2	over 2700kg up to 5400kg	16	Unsuitable	Unsuitable
	3	over 5400kg	8	8	16

D = Maximum depth of compaction layer, N = Minimum number of passes

- Construction**
 - The Contractor is responsible for all temporary works and their proposals must be submitted to the Structural Engineer sufficiently in advance of the works starting to permit comment. Under no circumstances will any structural alterations be carried out prior to the Structural Engineer commenting on the contractors temporary works proposals.
 - If an independent check on the temporary works is deemed to be necessary by the Engineer, the Contractor shall supply such information as is required by the checker to obtain approval.
 - No construction methodology that causes a modification of the permanent works will be accepted.
 - The Contractor shall prepare his own proposals for sequence of construction which he shall submit to the contract administrator prior to commencement of work on site. Where a sequence or method of construction is noted on a drawing it should be adhered to and any variation to this should be agreed in advance with the Engineer.
 - All specialist named materials and proprietary products are to be used and fully fixed in accordance with the manufacturers instructions. Alternative products to those named on the drawings are subject to approval by the Engineer and must be proven to be suitable by the Contractor, if requested.
 - The Contractor shall ensure that the stability of the wall, embankment, revetment and any adjoining structures, is maintained at all stages of the works.

- Concrete**
 - The concrete works must comply with BS EN 1992, BS 8500 and 6349.
 - Tolerances and Setting out:
 - Accuracy of construction: To National Structural Concrete Specification (NSCS)
 - Level of structural floors: ±6mm
 - Surface regularity: Tolerance class SR2 to BS 8204
 - On no account must high alumina cement be used.
 - Specification, production and assessment of compliance of concrete should be in accordance with BS 8500 and BS EN 206.
 - Silica Fume may be added to the cement in doses up to 10% of the cementitious content in order to enhance its resistance to salt water.
 - All structural concrete to be RC40 in accordance with table A.4 of BS 8500-1:2006. Concrete to comply with "XF4" classification.
 - Concrete to be produced in accordance with BS 8500-2. Concrete to be supplied from a production plant certified by a body accredited by UKAS to BS EN ISO/IEC 17065:2012 for product conformity certification of ready mix concrete.
 - All concrete works to be carried out in accordance with NSCS.
 - Where the dimensions of the foundation, as excavated exceed the dimensions shown on the drawings. The Contractor shall either:
 - Use formwork to limit the width to the value shown.
 - Provide additional reinforcement to the satisfaction of the Engineer, with no additional cost to the contract.
 - All formations to be inspected by the Engineer.
 - Ridge formwork to be used to prevent any distortion of the proposed foundation. The Contractor shall provide any remedial work required to the Engineers satisfaction with no additional cost to the contract.
 - No structural concrete is shall be poured prior to the reinforcement being inspected and approved by the Engineer. The Engineer shall give a minimum of Nominal concrete cover to reinforcement to be 75mm unless noted otherwise.
 - Due allowance must be made for the thickness of blinding where applicable.
 - Ribbed bar reinforcement to be grade B500C to BS 4449 and plain bar to be grade 250.
 - Fabric reinforcement to be grade B500C to BS 4483.
 - All reinforcement to be cut and bent in accordance with BS 8666.
 - Reinforcement to be supplied from companies holding valid certificates of approval for product conformity issued by UK Certification Authority for Reinforcing Steels (CARES)

Corrosion Induced by Chlorides From Sea Water (XS Classes). (where concrete containing reinforcement or other embedded metal is subject to contact with sea water or airborne salt originating from sea water).		
XS1	Exposed to airborne salt but not in direct contact with sea water.	External reinforced and prestressed concrete surfaces in coastal areas.
XS2	Permanently submerged.	Reinforced and prestressed concrete surfaces completely submerged or remaining saturated, e.g. concrete below mid-tide level.
>XS<	Tidal, splash and spray zones.	Reinforced and prestressed concrete surfaces in the upper tidal zones and the splash and spray zones, including exposed soffits above sea water.

Class Designation	Class Description	Information examples applicable in the United Kingdom
>XF4<	High water saturation with de-icing agent or sea water	Horizontal concrete surfaces, such as roads and pavements, exposed to freezing and de-icing salts either directly or as spray or run-off. Concrete surfaces subjected to frequent splashing with water containing de-icing agents and exposed to freezing.

- Masonry**
 - Masonry is designed in accordance with BS EN 1996.
 - Refer to Architects Masonry Specifications for full specification requirements.
 - Masonry requirements to EN 771 and EN 772 as follows:
 - Concrete Block : Solid, Block Strength Minimum 10N, Mortar Classification M6
 - Brick: Class 'B' Engineering brick, Mortar Classification M6
 - Wall ties to masonry walls to be Type 1 to DD140. Spacing and specification to be approved by the Engineer.
 - DPC/DFM: arrangement to Architect's details.
 - All masonry wall returns to be fully bonded unless noted.

- Steelwork**
 - Structural steelwork designed in accordance with EN 1993-1.
 - Structural steelwork to be supplied, fabricated and erected in accordance with BS EN1090-2.
 - Steel grades to be as follows.
 - Structural Hollow sections – S355 NH to BS EN 10210.
 - Plates, flats and rolled sections – S355 J2 to BS EN 10025.
 - Steel work protective coatings as follows:
 - External steelwork: Blast clean to Sa 3 and apply Corus system E11.
 - Any damage to the paintwork in transit or by power tool etc. shall be 'made good' on site by the Contractor. Contractor to submit proposals to the Design Team for approval.
 - All welds to be a minimum of 6mm fillet welds made with suitable electrodes to match steel grades.
 - All bolts to be Grade 8.8, minimum M16, sheradised black bolts to BS 4190 supplied with washers to suit the grade and bolt size.
 - Steel fabricator should submit fabrication drawings for approval not less than three weeks before the commencement of fabrication for review by the Design Team Members.

- Paint Specification**
 - Coating system durability given in the table is based on practical experience. It is the expected life, in years, before first major maintenance (see maintenance below), this is taken as degradation level R13 from ISO 4628 Part 3 (1% of surface area rusted). It should be noted that this does not imply a guarantee of life expectancy.
 - The durability of galvanized steelwork is derived from figures in BS EN ISO 14713.
 - Where painting of galvanized steelwork is required for aesthetic or other reasons: suitable systems from BS EN ISO 12944 may be used.
 - The thickness values given for primers are the total thickness used and may include a pre-fabricated primer. For example – 80µm can be in one coat or as 20µm pre-fabrication primer plus 60µm post-fabrication primer.
 - Costs given here are for guidance only. There will be considerable variation that may typically be ±50% for a variety of reasons. Quotations should be obtained before making the final selection of the protective treatment. The indicative costs given are for 2004. They include estimates for material and labour but exclude taxes. The average surface area / tonne is assumed to be 25m²/tonne.
 - It should be noted that the colour range of microcous iron oxide (MIO) is limited. In some counties, the use of sprayed zinc or alloys of zinc and aluminium may be preferred (BS EN 22063).
 - The zinc rich primer applied at 80µm would increase the durability of the system by approximately 5 years and increase the cost by £2.00/m².
 - For steelwork 6mm thick or greater, the minimum average coating thickness is 85µm.
- High Tide / Low Tide**
 - Due to the scale of works involved, it is thought that coissons may be required. It may be possible for the preparation, reinforcement installation and shuttering to be completed in a period of low tide with the concrete pour taking place the following day at the optimum time of low tide. The Contractor is to submit to the Engineer a Specification and Method Statement highlighting his proposals to carry out the work, in particular, with regards to safety, sequence and programme.

- Performance Specification/Contractor Designed Elements**
 - Contractor designed element should meet the required Performance Specifications.
 - The Contractor should submit proposals to the Design Team for approval a minimum of 3 weeks before manufacture.

		Environment Category C5		
System Number		E8	E9	E11
Anticipated durability of the coating system in years (notes 1 & 2)		15	20	20+
Nearest equivalent BS EN ISO 12944		–	SS.06	–
Surface Preparation (BS 7079: Part A1)		Blast clean to Sa 3	Blast clean to Sa 2½	–
Shop applied	Coatings (note 4)	Sprayed aluminium to BS EN 22063 (note 7).	Zinc rich epoxy primer (note 8).	Hot dip galvanized to BS EN ISO 1461 (note 9). Wax/rust wash.
		Zinc phosphate epoxy sealer coat High build epoxy MIO	High build epoxy MIO (one or two coats)	Epoxy primer High build epoxy MIO
Site applied	Coatings	Recoatable polyurethane finish	High solid aliphatic polyurethane finish	Recoatable polyurethane finish
Approximate cost £/m ² (note 5)		30.00	15.00	24.00

- Notes:**
- General
 - For Standard Specification Notes, refer to Drg.N(N00)01
 - Drawings to be read in conjunction with CDP Ltd structural design philosophy and specifications
 - © All Rights Reserved. Copyright in all documents and drawings prepared by Clyde Design Partnership Ltd and in any work executed from those documents and drawings shall remain the property of Clyde Design Partnership Ltd.
 - All dimensions are in millimetres u.n.o.
 - Do not scale from the drawings. Worked to figured dimensions only.
 - Any discrepancies in dimensions shall be referred to the Architect and Clerk of Works before any work is commenced.
 - Drawings to be read in conjunction with all relevant Architects, Service Engineers and Structural Engineers drawings and Specifications and any other written instructions issued by the Contract Administrator.

B	Client's Title Amended to Suit	RTH	01/02/23
A	Drawing updated	RTH	24/01/23

Rev.	Description	Int.	Date
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Client
Govan Heritage Trust

Job Title
**Govan Walkway
River Source Heat Pump**

Drawing Title
General Specification Notes

Scale	Drawn	Date
NA	RTH	11/01/2023
	Checked	Date Checked
	TM	11/01/2023

A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
///																	

E 2855 : N(00)11

This is one of the Drawings referred to in the Application. [Redacted]
Signed . . . pp CDP
Date . . 07 02 2023

