Phase 1, North Horsham, West Sussex

SuDS Verification Report

East-West Green Space Attenuation Basins

On behalf of **Legal & General (Strategic Land North Horsham) Ltd**

Project Ref: 25216 | Rev: 01| Date: March 2023

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Project Ref: **25216**

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For and on behalf of Stantec UK Limited				

Revision	Date	Description	Prepared	Reviewed	Approved
01	07/03/24	First issue	JPS	PJG	PK
02	24/04/24	Minor Amendments	JPS	PJG	PK

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1 Introduction

1.1.1 Stantec UK has been appointed to prepare a SuDS verification report in relation to Condition 37 (surface water drainage) for the proposed development at North Horsham. The Condition relates to all SuDS features on the development site, but these have been divided up into separate packages based on catchment and construction programme.

1.1.2 For reference, the wording for Condition 37 is as follows:

C37 Pre-Occupation Condition:

Prior to the occupation of any building within the application site, a Verification Report demonstrating that the SuDS drainage system for the SuDS catchment area within which that building lies has been constructed in accordance with the approved design drawings for that particular catchment area shall be submitted to and approved, inwriting, by the Local Planning Authority.

1.1.3 This report verifies the SuDS construction details of the East-West Green Space including attenuation basins, Pond L and Pond M. These basins are centrally located in Phase 1 near the Southern Loop Road. This construction is a part of Phase 1 of the overall development.

2 SuDS Strategy

2.1.1 A Drainage Strategy for the two new East-West Green Space basins was prepared and submitted by Stantec UK as part of a Reserve Matters Application DC/16/1677 and approved on 18th June 2021, containing Drainage Strategy (ref. 25216/2001/MLC/P/DS) - dated July 2021 and a Drainage Plan (ref. 25216/2001/MLD/005 & 25216/2001/MLD/006).

2.1.2 As described in the agreed drainage strategy an unnamed watercourse enters the Moat from the north via a short section of 300Ø pipe. The flows entering the watercourse greatly exceed the capacity of the 300Ø pipe. It is assumed that water regularly overtops the bank and flows overland both to the west and also bypassing the pipe into the moat.

2.1.3 The agreed proposed drainage strategy retains the 300Ø pipe and adds a flow diversion weir wall which routes surface water through two attenuations basins (Ponds L and M) which outfall at a controlled rate into the existing watercourse downstream of the Moat. Water is controlled through a flow control slot weir (and cascade) between the two basins and a v-notch weir and orifice at the outfall back into the existing ditch.

2.1.4 Pond L has a design volume of 244m³ and Pond M has a design volume of 808m³. The attenuation volume of the moat is 508m³, therefore the total attenuation volume available in the system is designed to be 1,560m³.

2.1.5 The proposed design drawings for the East-West Green Space are included within Appendix A. The basins have partially wet bases.

2.1.6 The East-West Green Space attenuation basins are shown in Figures 1 and 2 below.

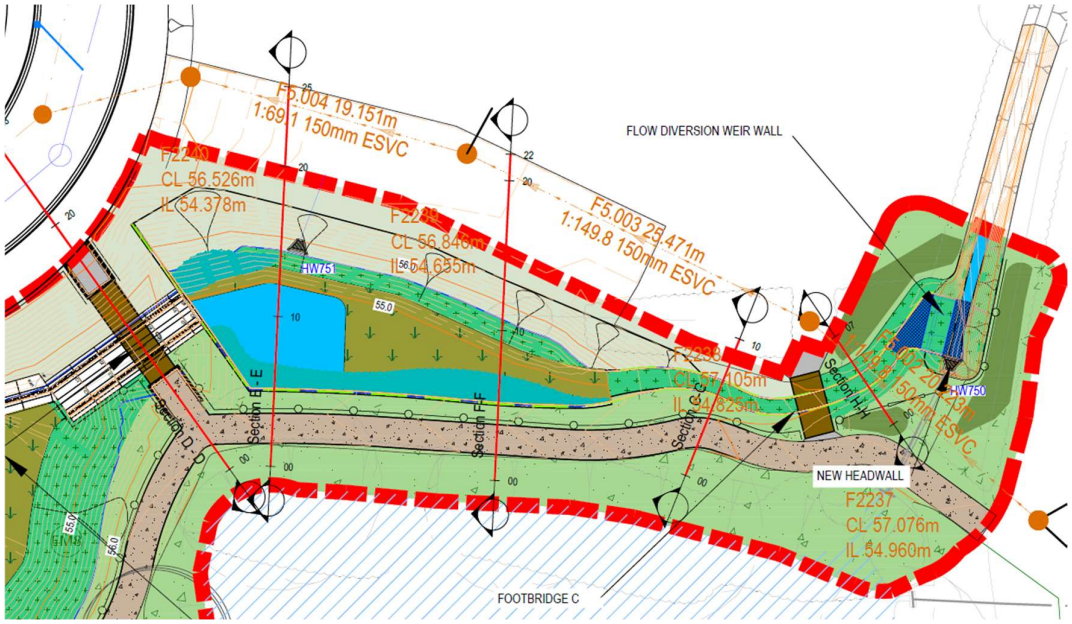


Figure 1: Pond L Proposed Drainage Plan

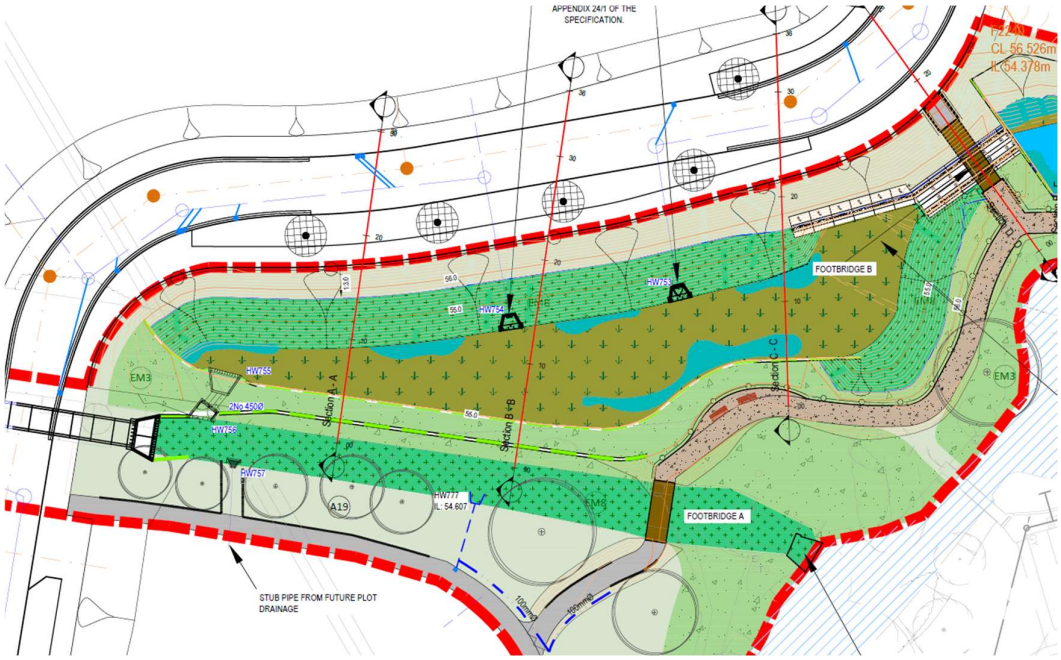


Figure 2: Pond M Proposed Drainage Plan

3 Site Information

3.1.1 Stantec UK have been provided with a number of photographs of the attenuation basins which have been installed as part of the SuDS strategy. Photos that included aspects of the East-West Green Space Attenuation Basins are reproduced below;



Figure 3: Channel upstream of Pond L



Figure 4: Pond L



Figure 5: Embankment and path adjacent to Pond L



Figure 6: Pond M



Figure 7: Pond M



Figure 8: Pond M

4 Evidence

4.1.1 We requested the following information from the contractor:

- As built survey of the attenuation basins
- As built survey of the drainage network
- Site Photographs of the basin during the construction works
- Flow control device information.

4.1.2 Information received is as follows:

- As built survey of the attenuation basins
- As-built survey of the pond including cross sections are included in Appendix B.
- Site photographs of basin during construction.

4.1.3 An as-built drawing showing the photo locations, and photos taken of attenuation basins and features received from the contractor can be seen below;



Figure 9: Flow Diversion Weir Wall upstream of Pond L

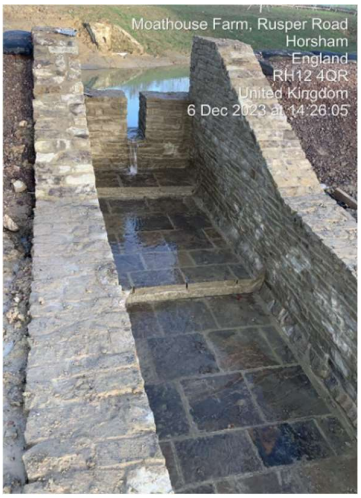


Figure 10: Flow control slot weir and cascade between Ponds L and M.

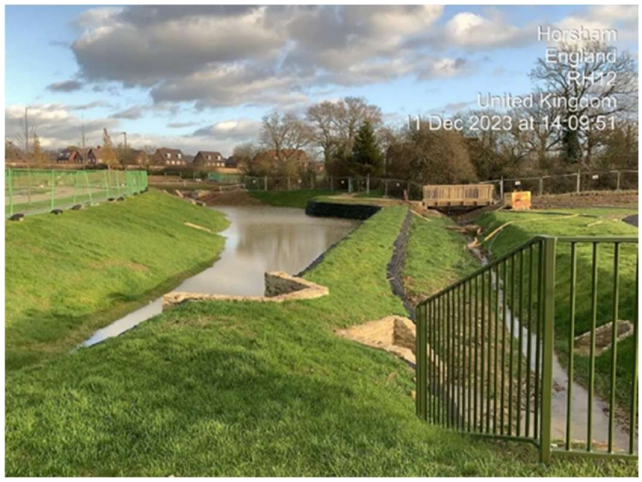


Figure 11: Pond M



Figure 12: HW 754, Headwall entering Pond M.



Figure 13: HW755, Flow Control Outfall from Pond M



Figure 14: HW756, Outfall to existing watercourse

5 Assessment

5.1.1 An as built survey has been completed for the two attenuation basins and the As-Built Attenuation Volumes have been calculated based on this survey which are contained in Table 1. The as-built survey is provided in Appendix B.

Pond	Static water Level	Design Max Flood level	Design Attenuation Volume	As-Built Attenuation Volume
Pond L	**55.3**	**56.1**	**244m³**	**216m³**
Pond M	**54.4**	**55.6**	**808m³**	**1100m³**

Table 1: Attenuation Volumes

5.1.2 As shown in Table 1, the as-built attenuation volume for Pond L is slightly less than the design attenuation volume, this was due to minor adjustments to the sustainable vegetated wall system due to site constraints. However, this is considerably offset by Pond M being significantly greater than the design volume. Including the volume of the existing moat (508m³), the total as-built attenuation volume of the system 1,824m³ which is greater than the design volume of 1,560m³.

5.1.3 It is therefore considered that the as-built East-West Green Space Basins have the required capacity as outlined in the agreed drainage strategy.

6 Maintenance Strategy

6.1.1 This section of the report sets out the maintenance strategy for the piped surface water drainage network and East-West Green Space. These pipes and the basins will be maintained by a management company on behalf of Legal & General (Strategic Land North Horsham) Ltd.

6.1.2 The main surface water sewer runs are being adopted by Southern Water under a S104 Agreement, and hence the ongoing maintenance will be completed by Southern Water.

Piped Network / Inspection Chambers / Catchpits

6.1.3 Piped network components require regular inspection and maintenance to ensure that the individual components continue to operate as designed, both in terms of hydraulic capacity and potential pollutant removal. All the gullies, inspection chambers and catchpits will therefore be inspected and cleaned regularly.

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Inspect and identify any features that are not operating correctly. If required take remedial action	Monthly for three months, then six monthly
	Debris removal from catchment surface / gratings (where may cause risks to performance)	Quarterly (and after large storms)
	Remove sediment from trapped sumps, manholes and catchpits.	Annually or as required
Remedial Maintenance	Repair / rehabilitation of gratings, inlets and outlets	As required
Monitoring	Inspect / check all gratings, trapped sumps, manholes and catchpits to ensure that they are in good condition and operating as designed	Annually and after large storm events
Structure Rehabilitation / Repair	Regular Maintenance and Monitoring to identify if repair and / or replacement of features or pipework is required.	As required

Table 2: Piped Network / Inspection Chambers operation and maintenance

Attenuation Basin

6.1.4 The attenuation basins are landscaped depressions in which surface water is attenuated within before it is discharged to the adjacent watercourse. The basins are designed to have permanently wet bases with water constantly present at the bottom of each basin.

Maintenance Schedule	Required Action	Frequency
Regular Maintenance	Remove litter and debris	Monthly
	Mow grass access paths and verges surrounding basins, ponds and wetlands areas at 35mm-50mm minimum and 75mm maximum	Monthly (during growing season), or as required
	Mow rough grass areas for occasional access or habitat reasons at 100mm and maximum 150mm with cuttings removed to wildlife piles	As required 4-6 times annually (spring – before nesting season, and autumn)
	Manage other vegetation and remove nuisance plants	Monthly (at start, then as required)
	Inspect inlets, outlets and overflow for blockages, and clear if required	Quarterly
	Inspect inlets and pre-treatment systems for silt accumulation; establish appropriate silt removal frequencies	Monthly (for first year), then annually or as required
	Wetland vegetation - Cut (strim) at 100mm with cuttings removed September - October	Annually
	Reseed areas of poor vegetation growth	As required
	Prune and trim any trees and remove cuttings	Every 2 years, or as required
Occasional Maintenance	Where silt accumulates on apron or area in front of inlet or outlet then remove and spread above design profile of SuDS. Where silt accumulates more than 150mm in base of pond or reed beds undertake a phased removal of silt subject to Client approval. Remove silt but not more than 30% of pond or wetland area at any one time and to an agreed depth. Retain as much representative existing vegetation as possible to ensure rapid re-colonisation of open areas. Stack excavated material adjacent to wetland to allow de-watering of silt. Undertake silt removal during September-October to minimise damage to protected wildlife and ensure re-growth of aquatic vegetation before winter. Spread excavated material on site above SUDS design profile.	Every 3 years, or as required (likely to be minimal requirements where effective upstream source control is provided)
Remedial Actions	Repair erosion or other damage by reseeding or re-turfing	As required

Table 3: Operation and Maintenance Requirements for Attenuation Basin

Inlets, outlets, controls and inspection chambers

6.1.5 The headwalls, flow control chambers and outfalls direct the flow in and control the flow rate out of the basins.

Maintenance Schedule	Required Action	Frequency
Regular Maintenance	Inspect surface structures for physical damage	Quarterly
	Remove obstructions and silt as necessary	Quarterly
	Strim vegetation for 1m minimum from the surround to structures.	Half yearly (spring – before nesting season, and autumn)
	Keep hard headwall aprons free from debris and silt.	Monthly (at start, then as required)
	Inspect and clear headwall grills	Quarterly
	Remove cover to control chambers and ensure water is flowing freely and that the exit route for the water is unobstructed.	Quarterly
	Undertake general inspection after Autumn leaf fall	Annually
Occasional Maintenance	Check topsoil levels are 20mm above chamber edges to avoid mower damage	As required
Remedial Actions	Repair physical damage or replace missing grills or controls.	As required

Table 4: Operation and Maintenance Requirements for Flow Controls

7 Conclusions

7.1.1 Based on the site inspection and the information provided by the contractor, we can confirm that the surface water drainage system has been installed in accordance with the approved SuDS Strategy and that the collective basins has the required volume.

7.1.2 This report has been prepared at the request of Legal & General (Strategic Land North Horsham) Ltd, to address Planning Condition 37 and has been based on site inspections undertaken and information provided to Stantec UK by the contractor.

Appendix A Stantec Design Drawings



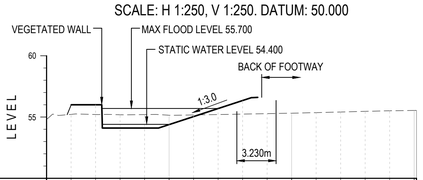
NOTES

1. DRAWING TO BE READ IN CONJUNCTION WITH THE DRAINAGE STRATEGY REPORT FOR THE MOAT LOCAL CATCHMENT FOR THE EAST-WEST GREENWAY, DATED JULY 2021.
2. MOAT CATCHMENT CHANGES TO BE CONSIDERED IN CONJUNCTION WITH WESSEX ARCHAEOLOGY'S HERITAGE REPORT REF EAST WEST GREENSPACE RMA, NORTH HORSHAM - HERITAGE STATEMENT: WESSEX ARCHAEOLOGY
3. FOR LANDSCAPING DETAILS REFER TO DAVIS JARVIS ASSOCIATES DRG NO 2898-5-2-7-DR-1001 REF P4.
4. THE DIVERSION OF FLOWS FROM THE WATERCOURSE FEEDING THE MOAT TO BE VIA A NEW HEADWALL WITH A SPILLWAY ADJACENT TO THE HEADWALL. THE SIZING OF THE SPILLWAY TO ALLOW FOR 1 IN 100YR + 40% CLIMATE CHANGE FLOWS ABOVE THE EXISTING CAPACITY OF THE 300MM CULVERT LEADING TO THE MOAT.
5. THE WEIR OUTLET FROM THE MOAT APPEARS TO HAVE BEEN MODIFIED TO FILL IN THE ORIGINAL RECTANGULAR SLOT TO INCREASE MOAT WATER LEVELS. IT IS PROPOSED TO REMOVE THE BRICKWORK INFILL TO ALLOW FOR A RESTORATION OF THE ORIGINAL MOAT WATER LEVEL.
6. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER CONSTRUCTION DRAWINGS AND DOCUMENTS.
7. FOR BRIDGE, CASCADE AND SPILLWAY CONSTRUCTION DETAIL SEE DRAWING NO. 25216-2001-MLD-1701, 25216-2001-MLD-1710, 25216-2001-MLD-1711, 25216-2001-MLD-1711-SCH, 25216-2001-MLD-1720, 25216-2001-MLD-1721, 25216-2001-MLD-1721-SCH, 25216-2001-MLD-1730, 25216-2001-MLD-1731, 25216-2001-MLD-1731-SCH

KEY:

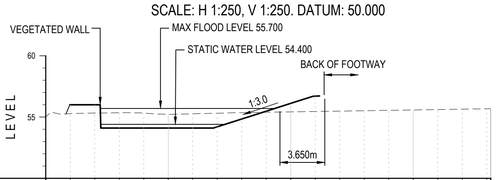
- SITE BOUNDARY
- 100Ø PERFORATED LAND DRAIN
- SURFACE WATER SEWER
- FOUL WATER SEWER
- HEADWALLS EITHER BAGWORK OR BRICK TO WSCC STANDARD DETAILS. HORSHAM STONE FACING WHERE INDICATED AT DETAIL DESIGN STAGE
- PROPOSED GULLY & CONNECTOR
- REDUNDANT SURFACE WATER DRAINAGE
- EXISTING SURFACE WATER DRAINAGE
- EXISTING FOUL WATER DRAINAGE
- PROPOSED VEGETATED WALL
- PROPOSED REINFORCED CONCRETE RETAINING WALL
- PROPOSED HEADWALL TYPE SP16G
- POST & RAIL FENCE

SECTION A - A
SCALE: H 1:250, V 1:250. DATUM: 50.000



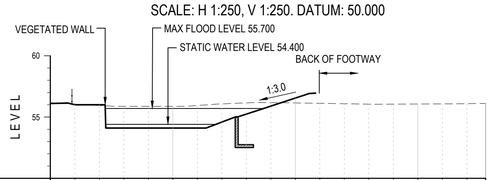
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EXISTING LEVELS	54.864	55.218	55.306	55.188	55.200	55.150	55.169	55.204	55.238	55.276	55.314	55.360	55.412	55.463	55.509	55.540
PROPOSED LEVELS		56.000	54.100	54.100	54.100	54.383	55.037	55.691	56.345							

SECTION B - B
SCALE: H 1:250, V 1:250. DATUM: 50.000



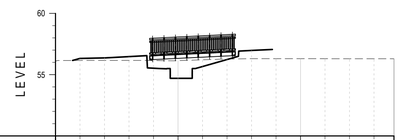
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EXISTING LEVELS	55.014	55.272	55.322	55.349	55.323	55.219	55.264	55.312	55.362	55.391	55.419	55.451	55.482	55.514	55.546	55.577	55.609	55.641	55.677
PROPOSED LEVELS		56.000	56.000	54.100	54.100	54.100	54.100	54.202	54.839	55.477	56.115	56.705							

SECTION C - C
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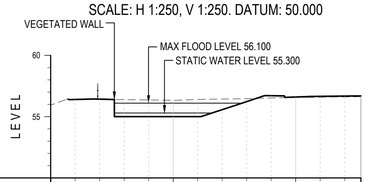
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EXISTING LEVELS	56.156	56.063	55.943	55.876	55.875	55.875	55.938	56.072	56.154	56.174	56.149	56.117	56.085	56.052	56.051	56.062	56.072	56.091	56.113
PROPOSED LEVELS	56.106	56.004	56.000	54.100	54.100	54.100	54.100	54.588	55.239	55.893	56.548								

SECTION D - D
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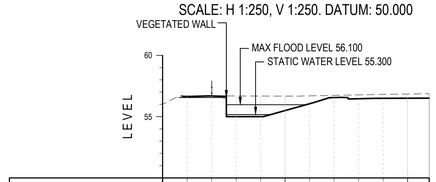
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EXISTING LEVELS	56.100	56.158	56.159	56.161	56.153	56.143	56.211	56.268	56.325	56.304	56.302	56.301	56.300	56.299	56.299
PROPOSED LEVELS		56.327	56.368	56.472	55.525	54.700	55.663	56.233	56.977						

SECTION E - E
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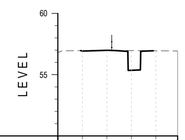
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EXISTING LEVELS	55.939	56.420	56.414	56.362	56.366	56.339	56.405	56.426	56.467	56.371	56.614	56.653		
PROPOSED LEVELS		56.601	56.430	55.000	55.000	55.000	55.000	55.571	56.229	56.710	56.605	56.655	56.677	56.692

SECTION F-F
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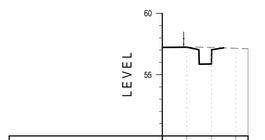
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EXISTING LEVELS	56.009	56.686	56.688	56.687	56.683	56.678	56.696	56.737	56.778	56.818	56.848	56.870
PROPOSED LEVELS		56.647	56.683	55.000	55.000	55.465	56.054	56.561	56.462	56.468	56.504	56.509

SECTION G-G
SCALE: H 1:250, V 1:250. DATUM: 50.000



CHAINAGE	00.000	02.000	04.000	06.000	08.000	09.776
EXISTING LEVELS	56.799	56.965	56.988	56.968	56.949	56.932
PROPOSED LEVELS		56.923	56.985	55.357		

SECTION H-H
SCALE: H 1:250, V 1:250. DATUM



CHAINAGE	00.000	02.000	04.000	07.002	07.102
EXISTING LEVELS	57.217	57.243	57.222	57.115	57.113
PROPOSED LEVELS	57.226	57.243	55.867		

Mark	Revision	Date	Drawn	Chkd	Appd
J	CLIENT COMMENTS ADDED	27.03.23	JR	PJG	PJG
I	CLIENT COMMENTS ADDED	18.01.23	JR	PJG	PJG
H	FOR CONSTRUCTION	29.07.22	RMLM	PJG	PJG
G	BOUNDARY UPDATED. PONDS L & M REVISED.	10.06.22	RMLM	IJF	PJG
F	CASCADE RELOCATED SOUTHWARDS	31.05.22	RMLM	IJF	PK
E	CROSS SECTIONS AMENDED	24.03.22	JLW	IJF	PK
D	HEADWALL NUMBERING AMENDED	13.01.22	RMLM	IJF	PK
C	LAYOUT UPDATED	17.11.21	JHW	IJF	SPR
B	DRAINAGE PHASE 3 UPDATED. RETAINING WALL ADDED	27.09.21	RMLM	IJF	
A	AMENDED FOLLOWING LEGAL AND GENERAL COMMENTS	20.08.21	JLW	IJF	

SCALING NOTE: Do not scale this drawing - any errors or omissions shall be reported to Stantec without delay.
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Drawing Issue Status
FOR CONSTRUCTION

NORTH HORSHAM
PHASE 1
EAST WEST GREEN SPACE
PROPOSED POND CONTOURS & SECTIONS

Client
Legal & General
STRATEGIC LAND NORTH HORSHAM LTD

Date of 1st Issue	Designed	Drawn
28.07.22	IJF	JHW
A1 Scale	Checked	Approved
1:250	IJF	

Drawing Number: 25216/2001/MLD/007
Revision: J

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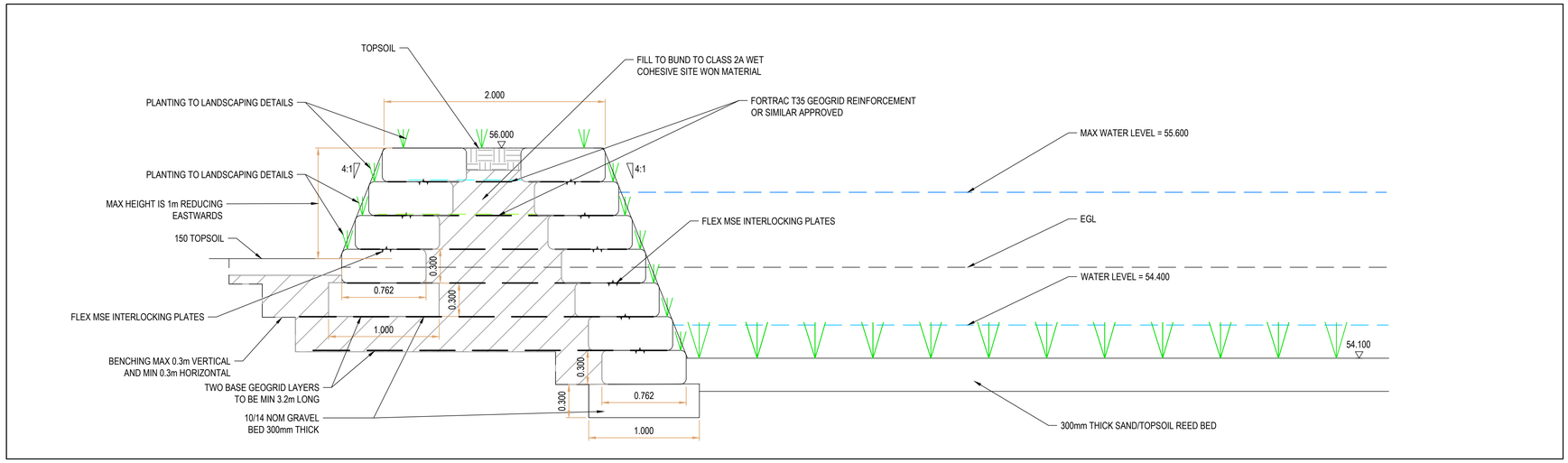
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user name: romero, john

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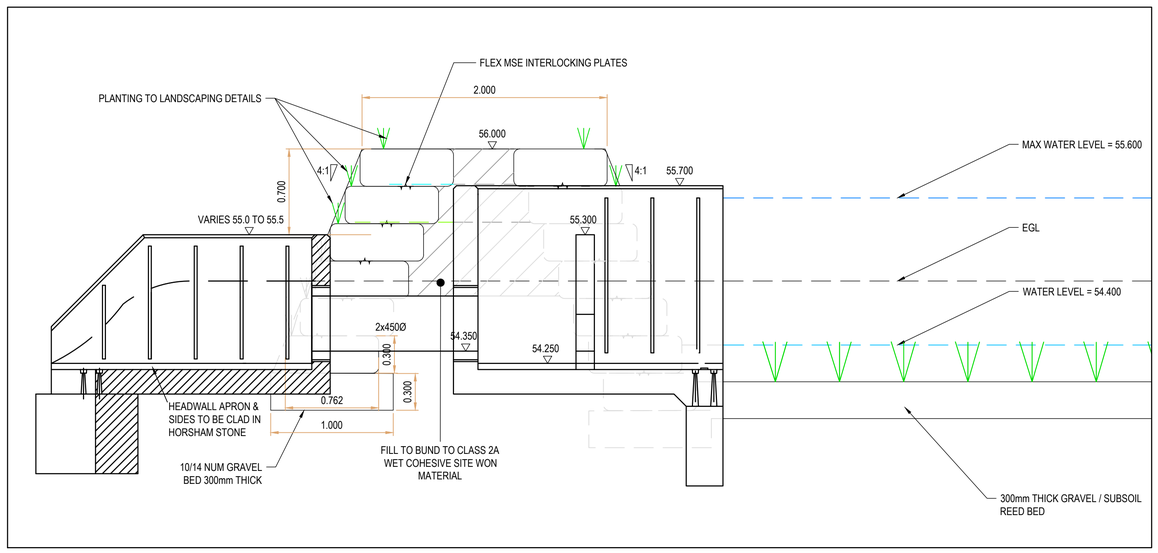
NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED
2. FOR HEADWALL NOTES REFER TO DWG NO 25216/2001/MLD/008-03
3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER CONSTRUCTION DRAWINGS AND DOCUMENTS.
4. FOR LOCATION OF HEADWALLS SEE DRAWING NO. 25216/2001/MLD/007



VEGETATED WALL SOUTH OF MOAT WEST POND M

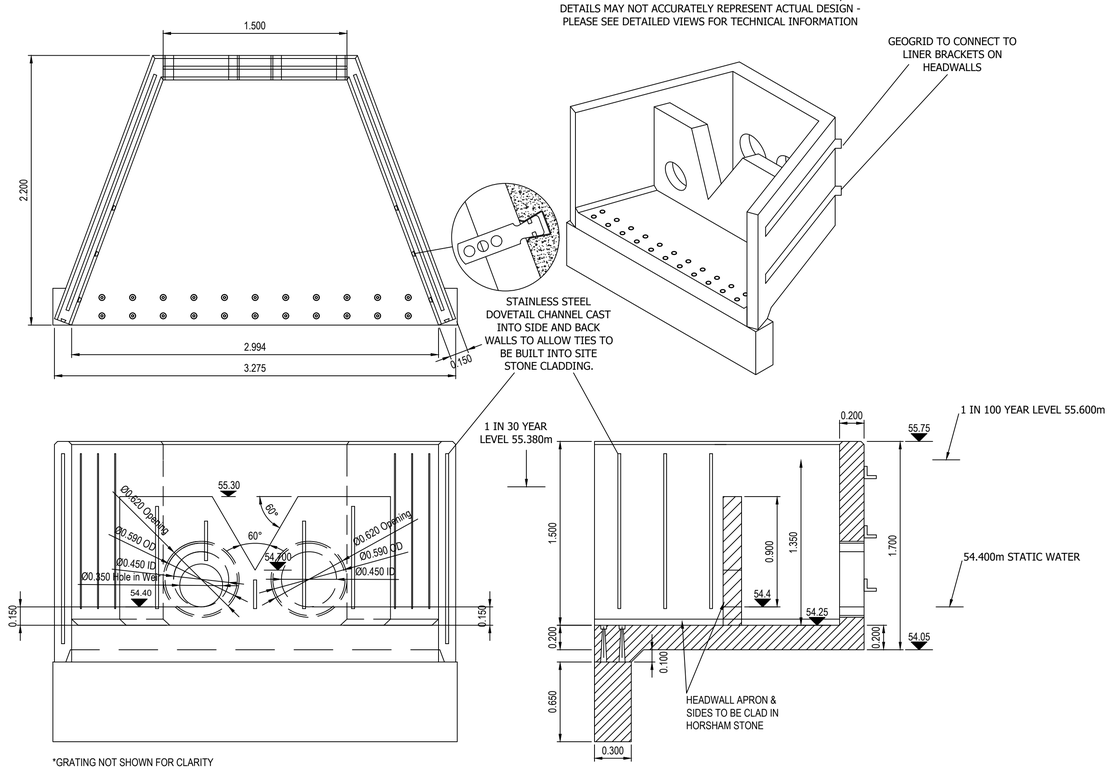
1:25



VEGETATED WALL & HEADWALL 755 & 756

1:25

NOTE: ISOMETRIC DRAWING IS FOR REFERENCE ONLY, DETAILS MAY NOT ACCURATELY REPRESENT ACTUAL DESIGN - PLEASE SEE DETAILED VIEWS FOR TECHNICAL INFORMATION



HEADWALL SP16G - HW755

BASED ON ALTHON DRAWING NAME ALT-231121-200-01 A

1:25

Mark	Revision	Date	Drawn	Chkd	Appd
E	MINOR AMENDMENT	18.01.23	JR	PJG	PJG
D	FOR CONSTRUCTION	29.07.22	RMLM	PJG	PJG
C	POND M DETAIL AMENDED. HW755 DETAIL ADDED	27.05.22	RMLM	IJF	PK
B	WATER LEVELS ADDED	18.02.22	RMLM	IJF	PK
A	HEADWALL TYPE SP16G ADDED	13.01.22	RMLM	IJF	PK

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Drawing Issue Status

FOR CONSTRUCTION

NORTH HORSHAM
PHASE 1
EAST WEST GREEN SPACE
CONSTRUCTION DETAILS (SHEET 1 OF 3)

Client

Legal & General
STRATEGIC LAND NORTH HORSHAM LTD

Date of 1st Issue	Designed	Drawn
19.08.2021	IJF	RMLM
A1 Scale	Checked	Approved
AS SHOWN	IJF	

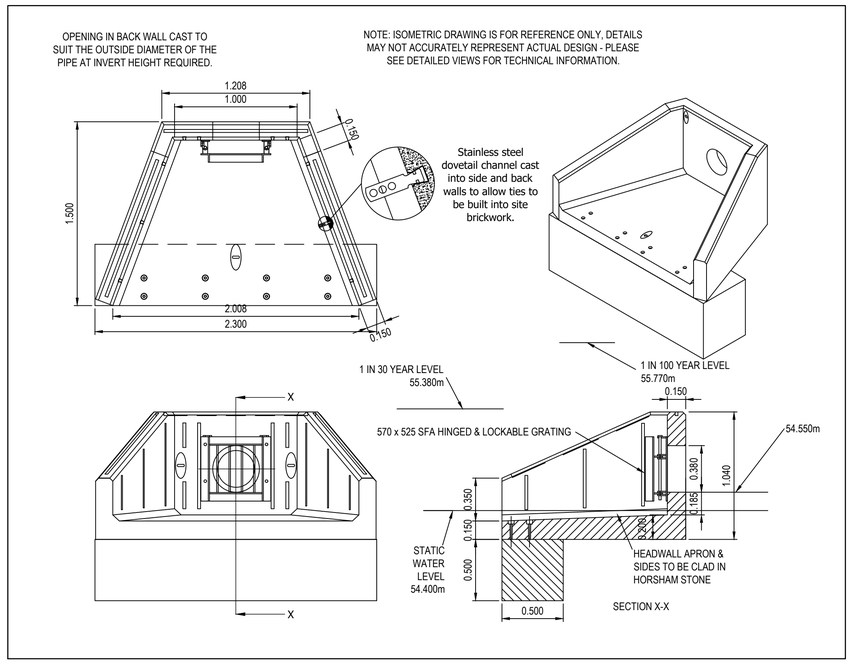
Drawing Number: 25216/2001/MLD/008-01
Revision: E

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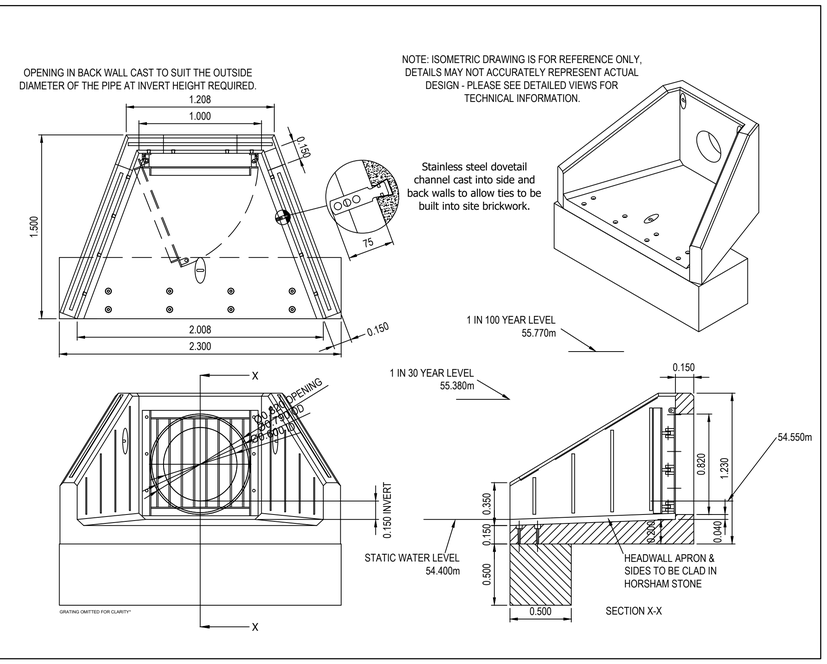
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HEADWALL BESPOKE - HW754

SFA10B + 500 x 500 TOE - SFA1 300 OUTFALL SAFETY GRILLE + CAST IN DOVETAIL TIE-IN STRIPS

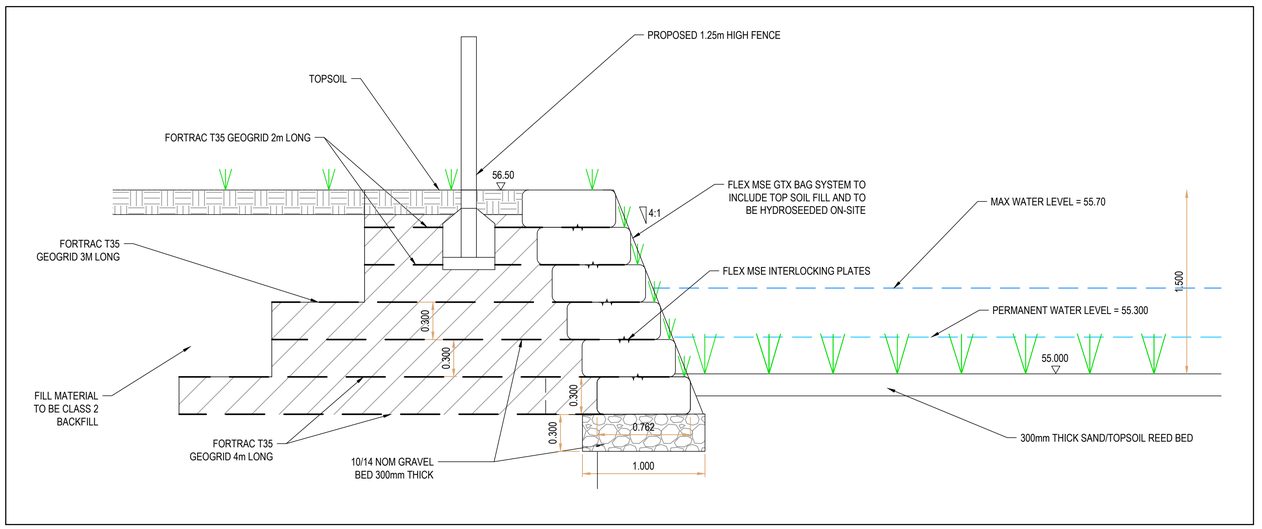
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HEADWALL BESPOKE - HW753

SFA10C HEADWALL + 750 x 500 TOE + CAST IN DOVETAIL TIE-IN STRIPS SFA1 600 OUTFALL SAFETY GRILLE

1:25



TYPICAL SECTION FOR FLEX MSE EAST POND

1:25

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. FOR HEADWALL NOTES REFER TO DWG NO 25216/2001/MLD/008-03.
3. ALL HEADWALLS SHOWN ARE BASED ON ALTHON DESIGN DRAWINGS.
4. FOR LOCATION OF HEADWALLS SEE DRAWING NO. 25216/2001/MLD/007
5. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER CONSTRUCTION DRAWINGS AND DOCUMENTS.

Mark	Revision	Date	Drawn	Chkd	Appd
F	TYPICAL SECTION FOR EAST POND ADDED	27.03.23	JR	PJG	PJG
E	MINOR AMENDMENT	18.01.23	JR	PJG	PJG
D	FOR CONSTRUCTION	29.07.22	RMLM	PJG	PJG
C	HW754 & HW753 AMENDED	10.06.22	RMLM	IJF	PJG
B	WATER LEVELS ADDED	18.02.22	RMLM	IJF	PK
A	MINOR REVS FOR PLANNING	13.01.22	RMLM	IJF	PK

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Drawing Issue Status

FOR CONSTRUCTION

NORTH HORSHAM
PHASE 1
EAST WEST GREEN SPACE
CONSTRUCTION DETAILS (SHEET 2 OF 3)

Client

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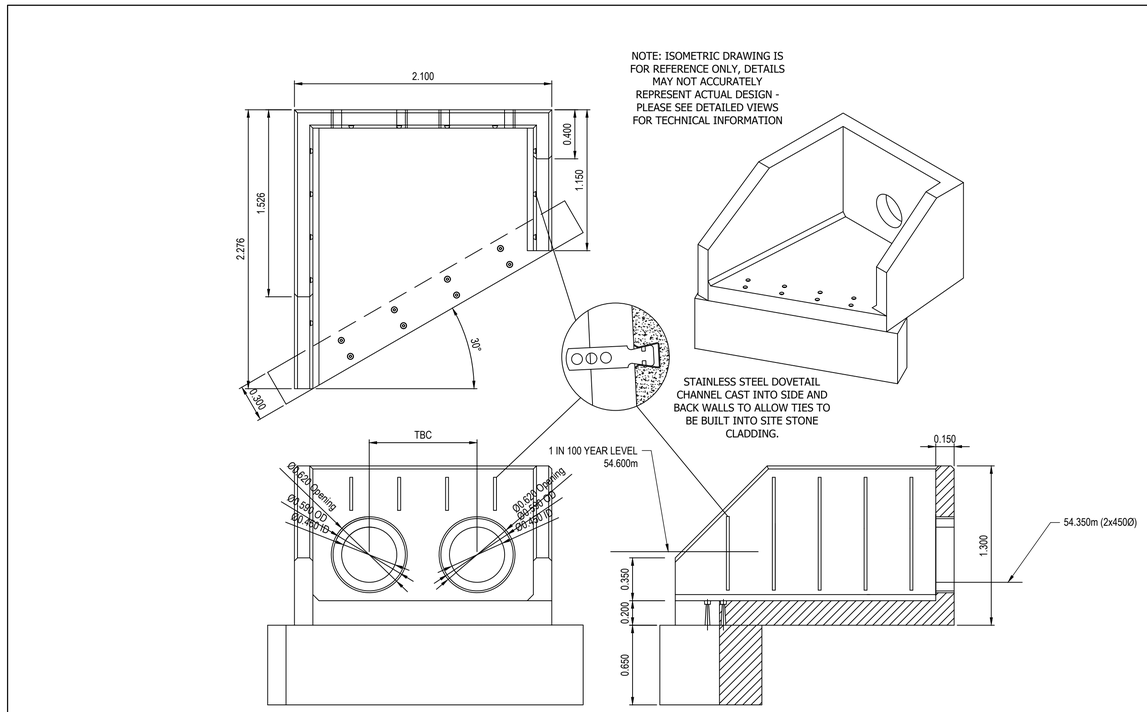
Date of 1st Issue	Designed	Drawn
17.11.2021	IJF	RMLM
A1 Scale	Checked	Approved
AS SHOWN	IJF	

Drawing Number	Revision
25216/2001/MLD/008-02	F

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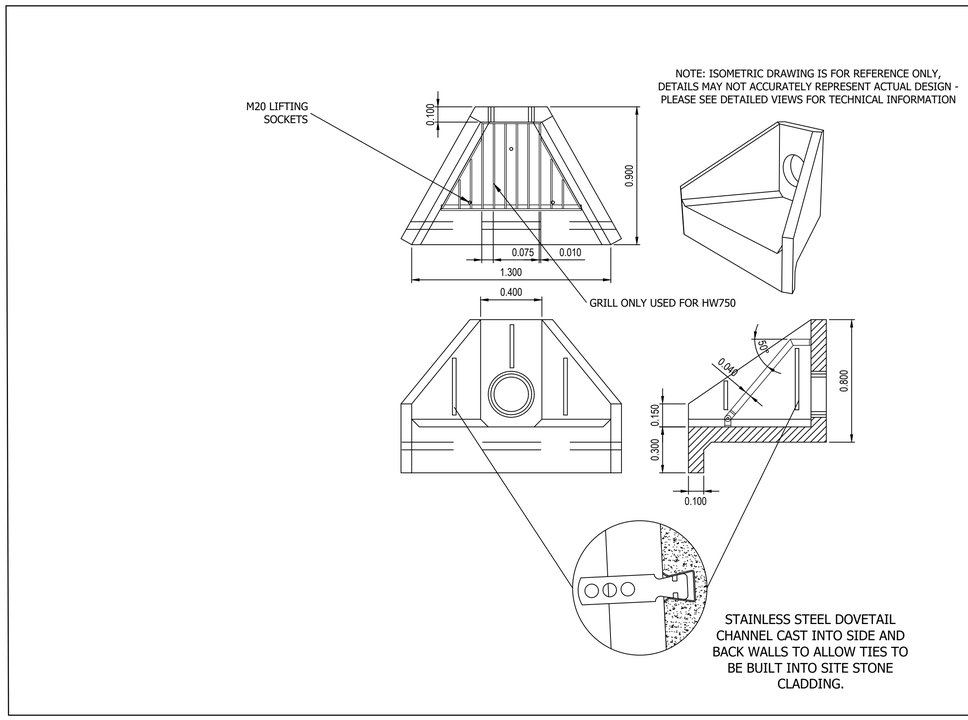
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HEADWALL R18B 01 2270LH - HW756

BASED ON ALTHON DRAWING NAME ALT-231121-200-02

1:25



HEADWALL H3C - HW750 / 751 / 757 / 758 / 772 / 777 / 779

1:20

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER CONSTRUCTION DRAWINGS AND DOCUMENTS.

HEADWALL SPECIFICATIONS

- ALL DIMENSIONS IN MM
- ALL MEASUREMENTS ± 1mm

SPECIFICATION INFORMATION

- OPENING IN BACK WALL CAST TO SUIT OUTSIDE DIAMETER OF THE PIPEWORK
- INVERT LEVEL OF PIPE CAN BE SET TO YOUR SPECIFICATION
- IT IS TO BE ASSUMED THAT THE HEIGHT OF THE BRICKWALLS WILL BE UP TO 500mm HIGHER THAN INDICATED ON THE DETAILS SHOWN. DETAILS TO BE CONFIRMED WITH THE SUPPLIER.

HEADWALL INSTALLATION

UNITS SHOULD BE BEDDED ON MINIMUM 150mm THICK WELL COMPACTED CLASS 6N OR 6K* WELL GRADED GRANULAR MATERIAL WITH A 50mm TOPPING OF FINE MATERIAL (CLASS 6L*) TO ENSURE UNITS ARE LEVEL AND STABLE.
*MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORKS: VOLUME (MCHW1) SPECIFICATION FOR HIGHWAY WORKS, SERIES 600 (NOV 09).

HANDLING

A. WEIGHT OF CONCRETE IS BASED ON 2.4 TONNE/m³+5% IS RECOMMENDED FOR SIZING LIFTING EQUIPMENT.
B. ALL LIFTING POINTS SHALL BE USED AS SPECIFIED BELOW
C. UNIT TO BE LIFTED AS PER LIFTING DIAGRAM

CONCRETE

A. MIX REF: SELF-COMPACTING DC4/DS4 MIX
B. LIFTING STRENGTH BASED ON 2 CUBES = 20N/mm²
C. CHARACTERISTIC 28 DAY CUBE STRENGTH = 50N/mm²
D. CONCRETE PROVIDES DESIGN CHEMICAL CLASS 4 (DC4) TO SPECIAL DIGEST 1, TABLE F2.

REINFORCEMENT

A. REINFORCEMENT TO BS EN 13369
B. SCHEDULING, DIMENSIONING, BENDING & CUTTING TO BS8666
C. CAGE TO BE MACHINE TIED WITH STEEL WIRE

MANUFACTURE

A. MANUFACTURE TO BS EN 15258:2008 PRECAST CONCRETE PRODUCTS - RETAINING WALL ELEMENTS, FACTORY PRODUCTION CONTROL CERTIFICATE NUMBER: 0086-CPR-650448 & BS EN 13369
B. TOLERANCES TO BS EN 13369 CLAUSE 4.3.1.1
C. FINISHING:

	TOP	SIDES	BASE	REAR OF BACK WALL
CLASS	A	A	A	SELF - LEVELLED

D MARKING: UNITS SHALL BE INDELIBLY MARKED TO SHOW:

- MOULD REFERENCE CODE
- DE-MOULD DATE
- JOB REFERENCE NUMBER & UNIQUE PRODUCT NUMBER
- UNIT WEIGHT (KG)

DESIGN

A. CONCRETE DESIGN TO EC2
B. ALTHON HAVE DESIGNED THE CONCRETE UNITS ONLY, THE SITE CONDITIONS SHOULD BE ASSESSED FOR SUITABILITY BY THE SCHEME DESIGNER
C. UNITS ARE DESIGNED TO WITHSTAND A VERTICAL LIVE LOAD SURCHARGE OF 10kN/M²
D. WEIGHT OF SOIL = 18kN/M²
E. ANGLE OF INTERNAL FRICTION = 30 DEG.
F. DESIGN LIFE: >120 YEARS

MIN COVER	COVER BLOCK SIZE (mm)	MIN COVER SIZE (mm)	MAX COVER SIZE (mm)
ALL FACES	55	50	60

EXPOSURE CLASSIFICATION	EXPOSURE INDUCED BY CARBONATION	CORROSION INDUCED BY CHLORIDE	FREEZE/THAW ATTACK	CHEMICAL ATTACK
All Faces	XC3/4	XD3	XF4	XA3

FABRICATION SPECIFICATION

A. MANUFACTURE IAW EN 1090-2 EXC CLASS 1
B. MATERIAL GRADE IS TO BE: BS EN 10025 S275
C. WELDING CARRIED OUT IAW EN 1090-2 PARA 7.5.4 - 7.5.18
D. ALL FILLET AND BUTT WELDS TO HAVE A MINIMUM THROAT THICKNESS OF 6MM & JOINTS TO BE FULLY WELDED WHERE POSSIBLE.
E. ENSURE VERTICAL FLATS ARE FULLY WELDED BOTH SIDES WHERE POSSIBLE.
F. ALL SHARP EDGES AND BURRS ARE TO BE REMOVED.
G. REMOVE ALL WELD SPLATTER.
H. HOLES BY PUNCHING ARE PERMITTED WITH REAMING.
I. GALVANISING IS CARRIED OUT AFTER FABRICATION TO BS EN ISO 1461

HANDRAIL SPECIFICATION

A. HANDRAILING TO BE 3 RAIL SPLIT TIMBER FENCE H15. 2.2m WIDTH AT TOP, WITH 1.5m MIN. DOWN LH SIDE SLOPE.

STONE CLADDING

ALL EXPOSED CONCRETE FACES TO BE CLAD IN HORSHAM STONE MAXIMUM STONE THICKNESS 60mm TO INCLUDE CAPPING STONES. REFER TO STANTEC SPECIFICATION

Mark	Revision	Date	Drawn	Chkd	Appd
D	MINOR AMENDMENT	18.01.23	JR	PJG	PJG
C	FOR CONSTRUCTION	29.07.22	RMLM	PJG	PJG
B	GRATING REMOVED FROM HW756	12.07.22	RMLM	IJF	PK
A	WATER LEVEL ADDED AT HW756	18.02.22	RMLM	IJF	PK

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Drawing Issue Status

FOR CONSTRUCTION

NORTH HORSHAM
PHASE 1
EAST WEST GREEN SPACE
CONSTRUCTION DETAILS (SHEET 3 OF 3)

Client

Legal & General
STRATEGIC LAND NORTH HORSHAM LTD

Date of 1st Issue	Designed	Drawn
14.01.2022	IJF	RMLM
A1 Scale	Checked	Approved
AS SHOWN	IJF	

Drawing Number: 25216/2001/MLD/008-03
Revision: D

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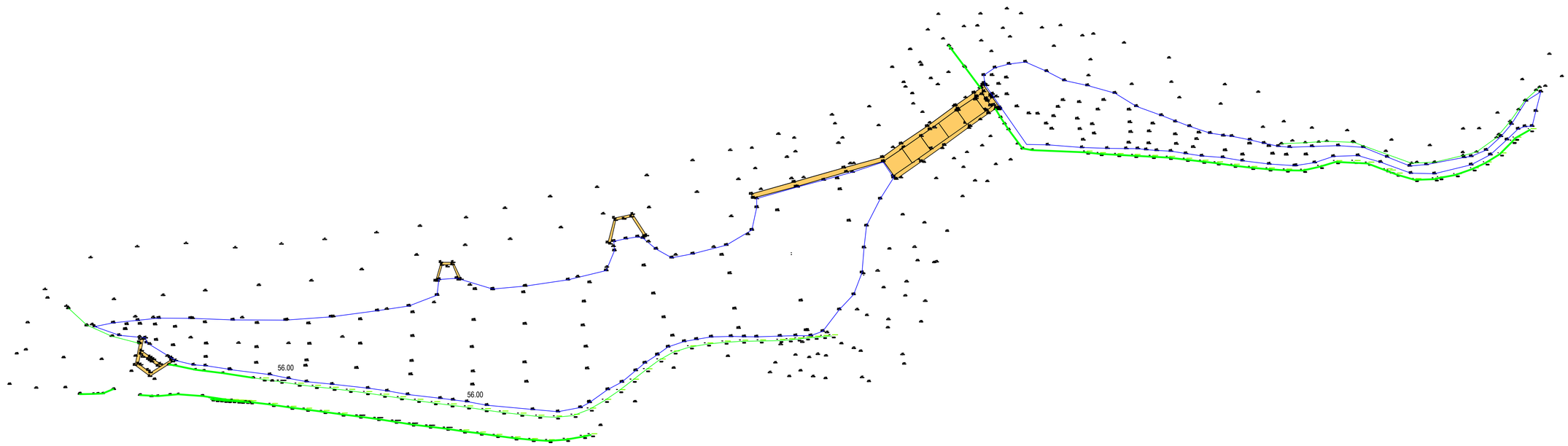
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user name: romero, john

Appendix B As-Built Drawings

N



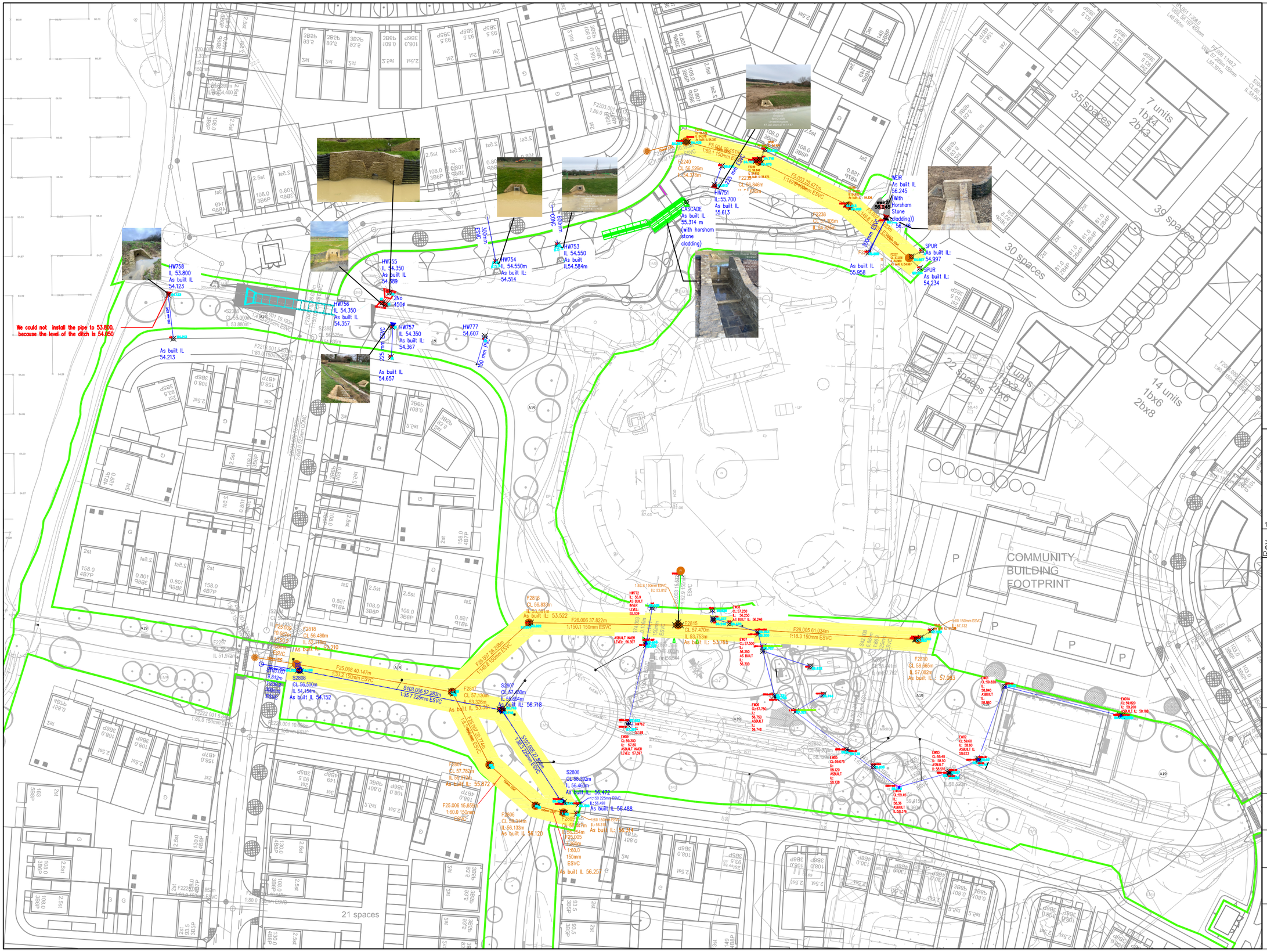
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SCALE 1:200

NORTH HORSHAM,
EAST-WEST GREEN SPACE,
BASINS AS-BUILT SURVEY

NATTA

DATE: 02/02/2024



Notes / Key:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELATED NATTA, ARCHITECTS AND SUB-CONTRACTORS DRAWINGS. IN CASE OF DISCREPANCIES BETWEEN DRAWINGS REFER TO NATTA FOR CLARIFICATION.

2. DO NOT SCALE FROM THIS DRAWING.

3. ALL DIMENSIONS SHOULD BE CHECKED ON SITE.

4. NATTA SHALL HAVE NO RESPONSIBILITY FOR ANY USE MADE OF THIS DOCUMENT OTHER THAN FOR THAT WHICH IT WAS PREPARED AND ISSUED.

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6. ANY DRAWING ERRORS OR DIVERGENCES SHOULD BE BROUGHT TO THE ATTENTION OF NATTA IMMEDIATELY.

KEY:

Legend:

- SURFACE WATER SEWER
- FOUL WATER SEWER
- PROPOSED GULLY & CONNECTOR
- PROPOSED EASEMENT (6m WIDE)
- OWNERSHIP BOUNDARY
- ASBUILT INVER LEVEL OF PIPE (54.997 m)

Rev	Date	Description	Drawn	Checked
1	12.12.12	Issued	AB	CD

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modern thinking traditional values

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Project
EWGS

Drawing Title
Storm Drainage Asbuilt

Date	Paper Size	Revision
13/02/24	A3	A
Scale	**Drawn By**	**Checked By**
N.T.S	FL	-

Drawing Number
NATTA-C6325-AB-EWGS-016