

K. HULHUMALE'  
CONSTRUCTION OF 10,000 M<sup>3</sup> TANK FOUNDATION

DESIGNED BY:  
PLANNING AND DESIGN DEPARTMENT

MALE' WATER AND SEWERAGE COMPANY  
AMEENEEMAGU, MACHANGOALHI, MALE' 20375, REPUBLIC OF MALDIVES

2020



CONTENT

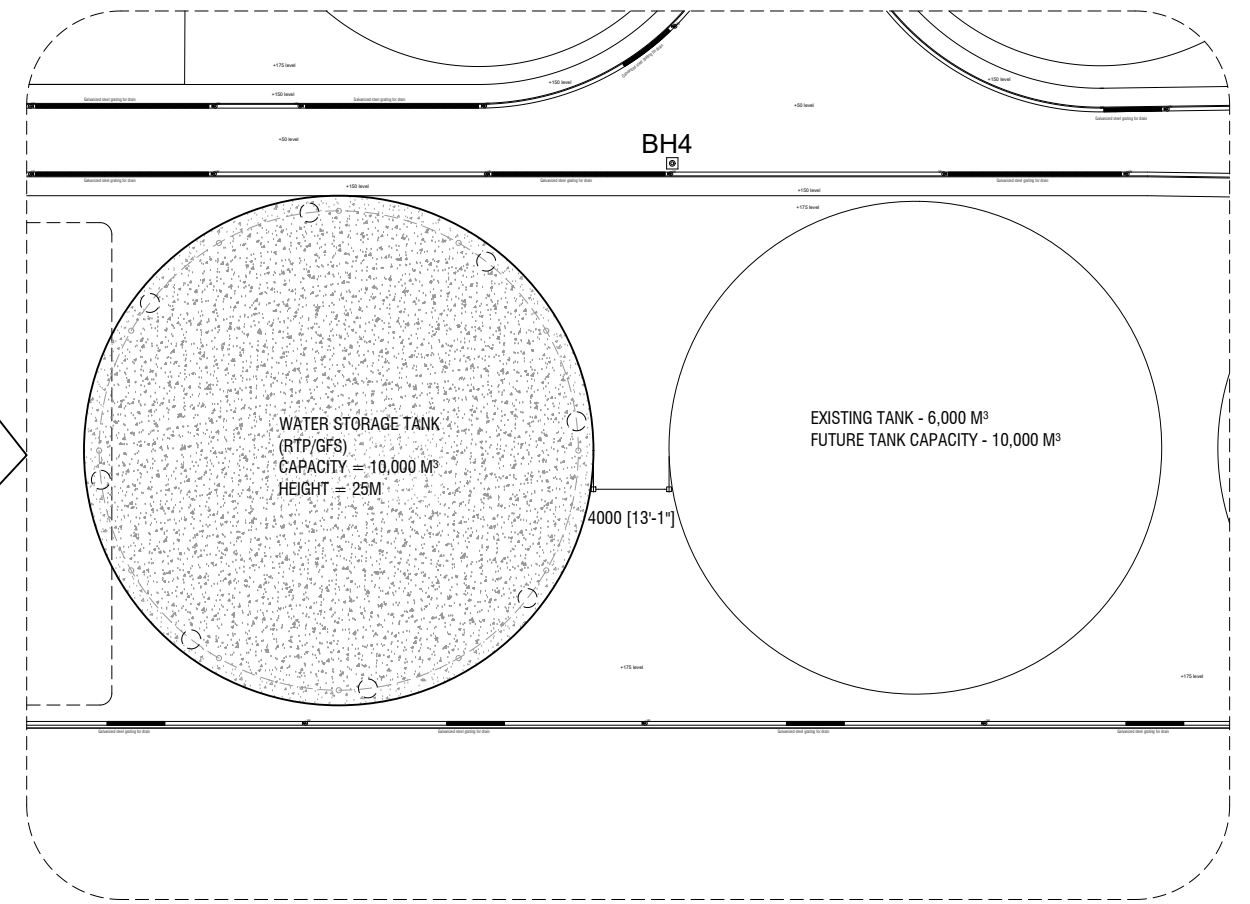
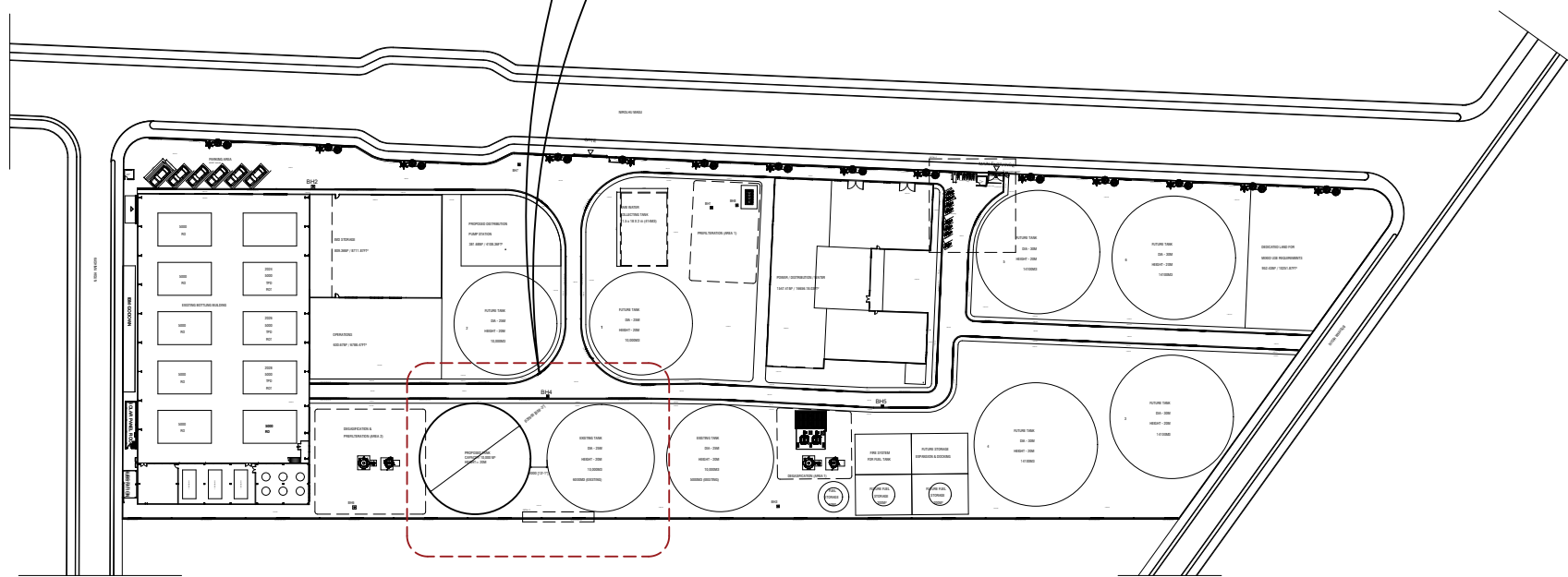
ARCHITECTURAL DRAWINGS

<u>TITLE</u>	<u>DWG NO.</u>	<u>PAGE NO.</u>	<u>DATE</u>	<u>REVISED DATE</u>
SITE PLAN	20-185-HML-TF-A0-01	01	03.12.2020	17.04.2022
FOUNDATION PLAN	20-185-HML-TF-A1-01	02	03.12.2020	17.04.2022
EXISTING PILE LAYOUT	20-185-HML-TF-A1-02	03	03.12.2020	17.04.2022
TANK FOUNDATION ELEVATION	20-185-HML-TF-A1-03	04	03.12.2020	17.04.2022

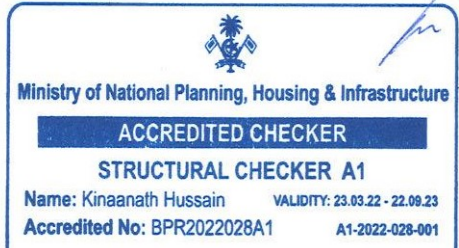

STRUCTURAL DRAWINGS

<u>TITLE</u>	<u>DWG NO.</u>	<u>PAGE NO.</u>	<u>DATE</u>	<u>REVISED DATE</u>
STRUCTURAL DETAILS	20-185-HML-TF-C1-01	05	03.12.2020	17.04.2022

VERIFIED BY	CLIENT APPROVAL	MD's APPROVAL	PROJECT
NAME: MOHAMED ALI	NAME:	NAME:	PROJECT NAME
DESIGNATION: MANAGER, PROJECTS	DESIGNATION:	DESIGNATION:	ISLAND
DATE:	DATE:	DATE:	YEAR
SIGNATURE:	SIGNATURE:	SIGNATURE:	

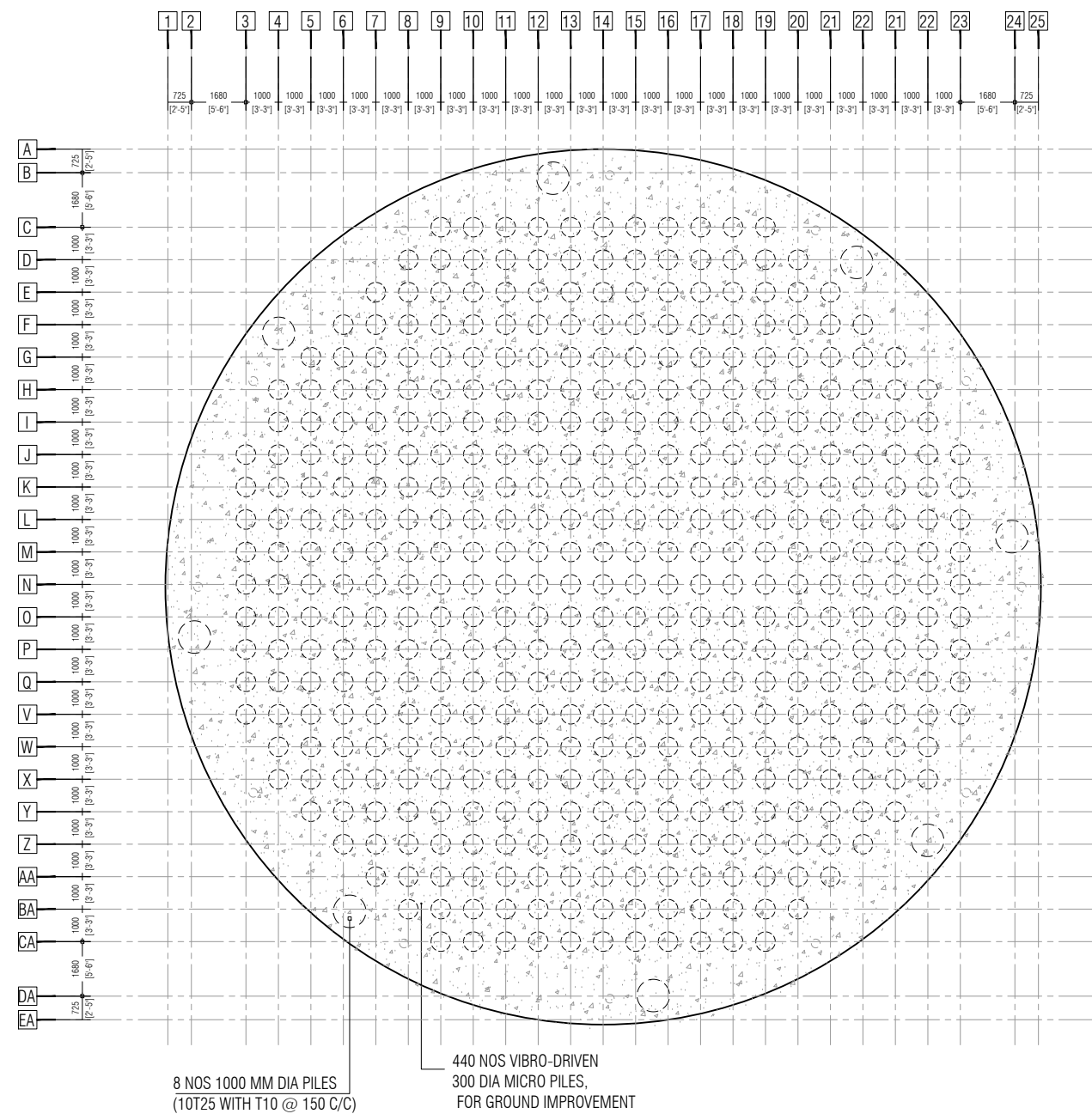


SITE LAYOUT  
SCALE: 1/400

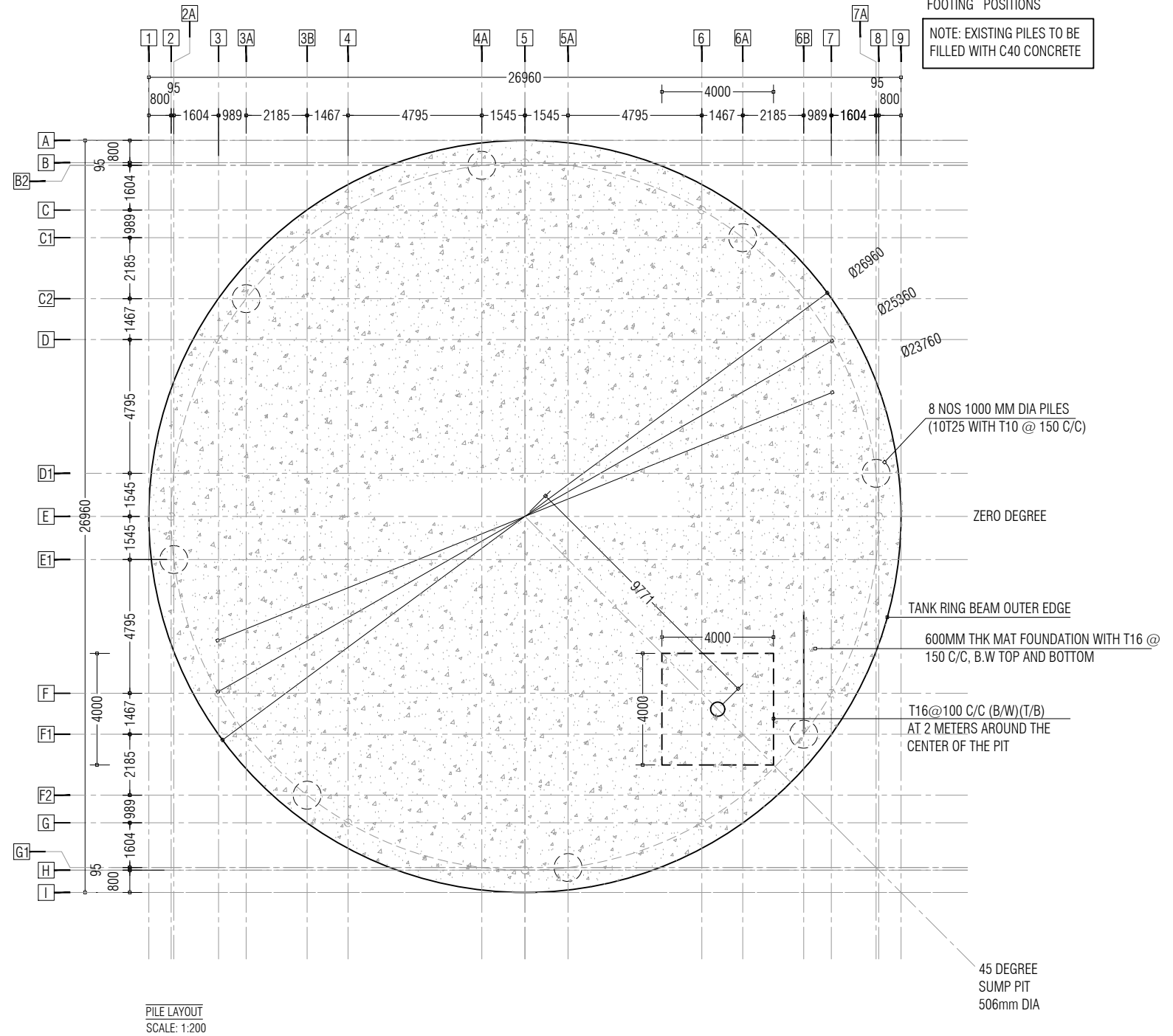
ARCHITECTURAL CHECKER	STRUCTURAL CHECKER 	APPROVED BY	PROJECT K. HULHUMALE' CONSTRUCTION OF 10,000 M <sup>3</sup> TANK FOUNDATION TITLE SITE LAYOUT CLIENT DEPARTMENT OPERATIONS DEPARTMENT DESIGN CONTRACTOR PLANNING AND DESIGN DEPARTMENT PAPER SIZE A3	DESIGN BY MAANIH UMAR STRUCTURE BY KINAANATH HUSSAIN DRAWN BY MOHAMED NAHAAS SCALE 1:100 DWG 20-185-HML-TF-A0-01 DATE 03.12.2020 REVISED DATE 17.04.2022	AMENDMENTS 1. FOUNDATION DESIGN CHANGED [17.04.2022]. 
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- NOTE:
- GRID (1- 9) - EXISTING FOOTING POSITIONS ( TO BE FILLED USING C40 CONCRETE
  - GRID (A-B)- EXISTING FOOTING POSITIONS ( TO BE FILLED USING C40 CONCRETE
  - GRID (2A- 7A) - PROPOSED FOOTING POSITIONS
  - GRID (B2-G1)- PROPOSED FOOTING POSITIONS

NOTE: EXISTING PILES TO BE FILLED WITH C40 CONCRETE

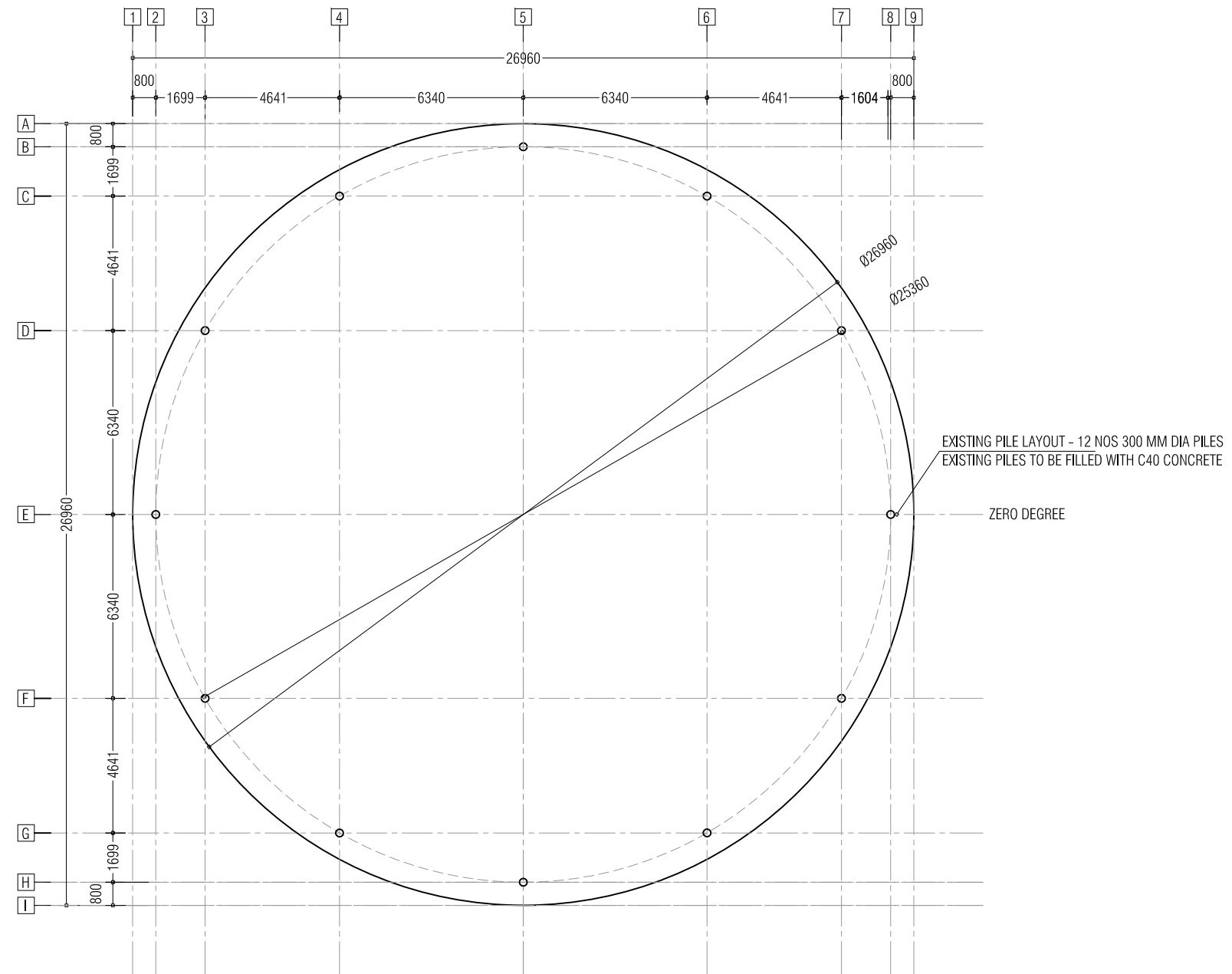


MICRO PILE LAYOUT  
SCALE: 1:200

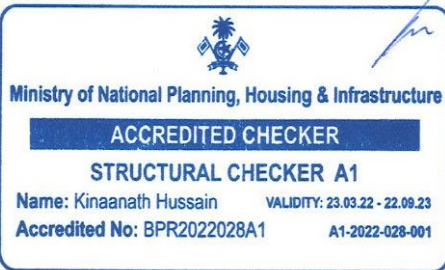



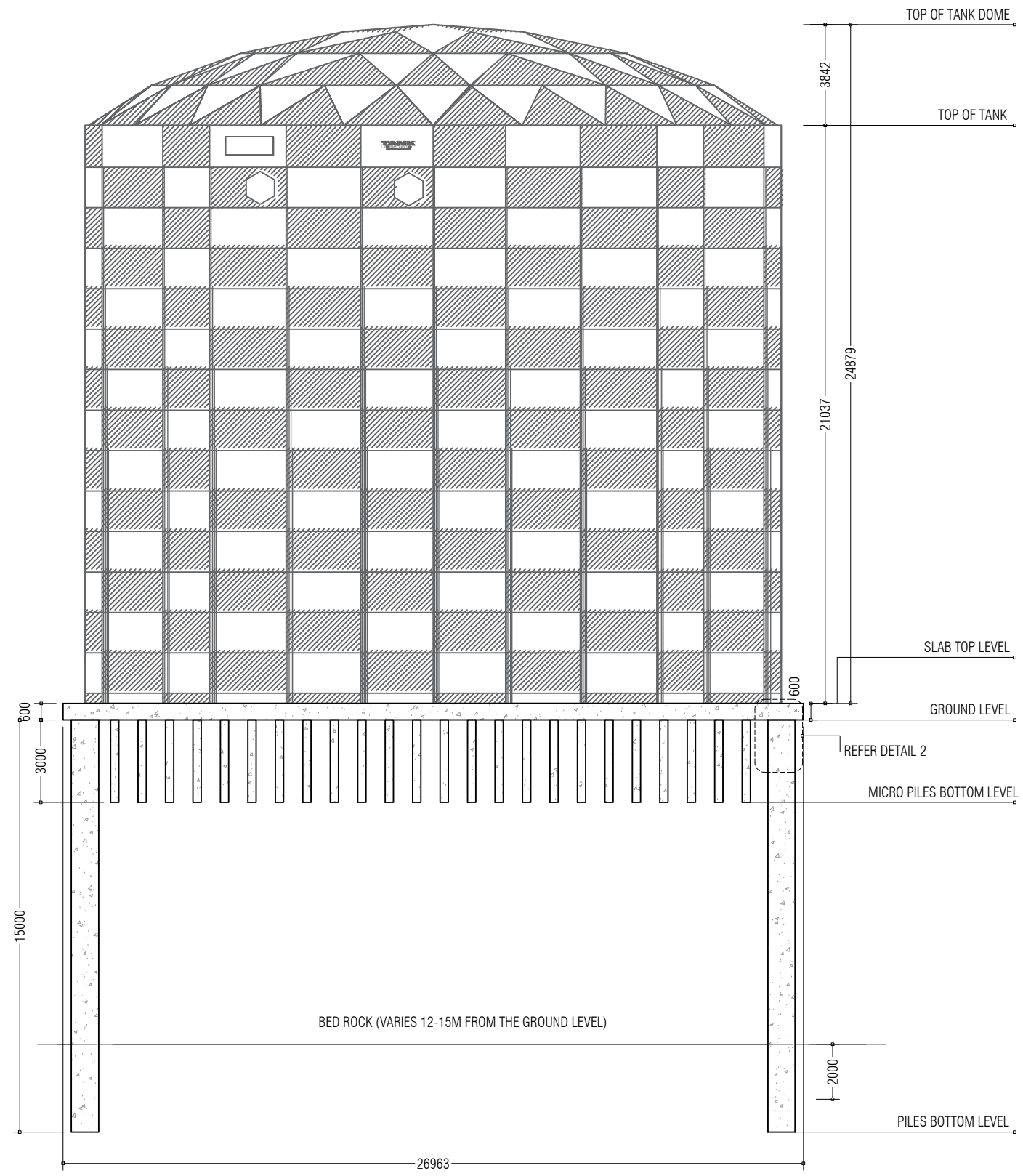
ARCHITECTURAL CHECKER	STRUCTURAL CHECKER	APPROVED BY	PROJECT	DESIGN BY	AMENDMENTS
	 <b>Ministry of National Planning, Housing &amp; Infrastructure</b> <b>ACCREDITED CHECKER</b> <b>STRUCTURAL CHECKER A1</b> Name: Kinaanath Hussain    VALIDITY: 23.03.22 - 22.09.23 Accredited No: BPR2022028A1    A1-2022-028-001		K. HULHUMALE CONSTRUCTION OF 10,000 M <sup>3</sup> TANK FOUNDATION	MAANIH UMAR	1. FOUNDATION DESIGN CHANGED [17.04.2022].
			TITLE	STRUCTURE BY	FOUNDATION PILE DIAMETER, DEPTH AND QUANTITY CHANGED WITH CHANGE IN RAFT DESIGN
			FOUNDATION PLAN	KINAANATH HUSSAIN	
			CLIENT DEPARTMENT	DRAWN BY	
			OPERATIONS DEPARTMENT	MOHAMED NAHAAS	
			DESIGN CONTRACTOR	SCALE	1:200
			PLANNING AND DESIGN DEPARTMENT	DWG	20-185-HML-TF-A1-02
			PAPER SIZE A3	PAGE NO. 01	DATE 03.12.2020    REVISED DATE 17.04.2022







EXISTING PILE LAYOUT  
SCALE: 1:200

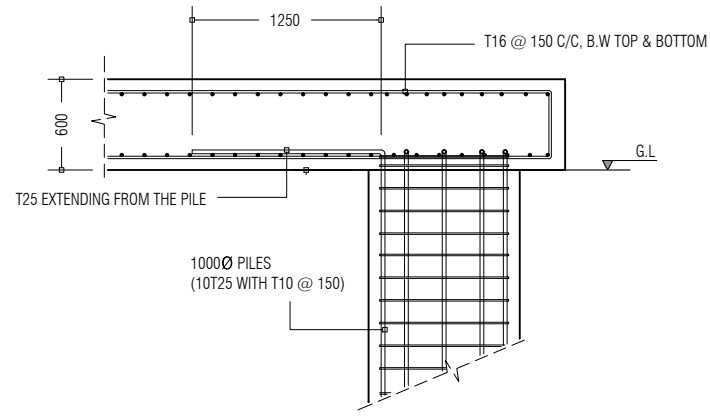
ARCHITECTURAL CHECKER	STRUCTURAL CHECKER 	APPROVED BY	PROJECT K. HULHUMALE CONSTRUCTION OF 10,000 M <sup>3</sup> TANK FOUNDATION TITLE EXISTING PILE LAYOUT CLIENT DEPARTMENT OPERATIONS DEPARTMENT DESIGN CONTRACTOR PLANNING AND DESIGN DEPARTMENT PAPER SIZE A3	DESIGN BY MAANIH UMAR STRUCTURE BY KINAANATH HUSSAIN DRAWN BY MOHAMED NAHAAS SCALE 1:200 DWG 20-185-HML-TF-A1-01 DATE 03.12..2020 REVISED DATE 17.04.2022	AMENDMENTS 1. FOUNDATION DESIGN CHANGED [17.04.2022]. FOUNDATION PILE DIAMETER, DEPTH AND QUANTITY CHANGED WITH CHANGE IN RAFT DESIGN 
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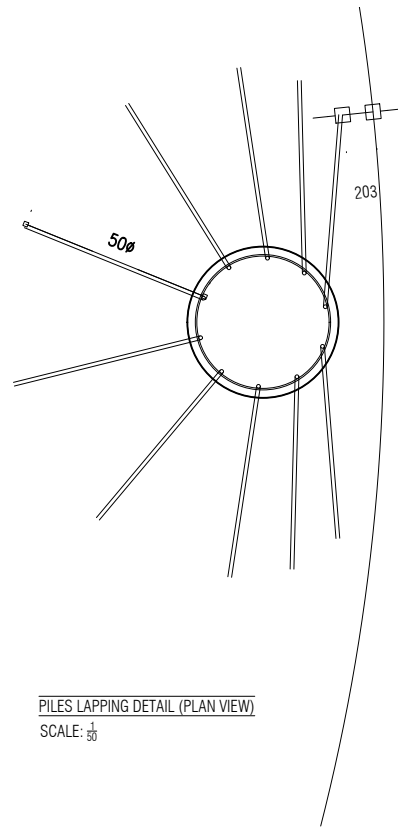
TANK ELEVATION  
SCALE: 1:250

ARCHITECTURAL CHECKER	STRUCTURAL CHECKER 	APPROVED BY	PROJECT K. HULHUMALE CONSTRUCTION OF 10,000 M <sup>3</sup> TANK FOUNDATION TITLE TANK FOUNDATION ELEVATION CLIENT DEPARTMENT OPERATIONS DEPARTMENT DESIGN CONTRACTOR PLANNING AND DESIGN DEPARTMENT PAPER SIZE A3	DESIGN BY MAANIH UMAR STRUCTURE BY KINAANATH HUSSAIN DRAWN BY MOHAMED NAHAAS SCALE 1:250 DWG 20-185-HML-TF-A1-03 DATE 13.12.2020 REVISED DATE 17.04.2022 PAGE NO.04	AMENDMENTS 1. FOUNDATION DESIGN CHANGED [17.04.2022], FOUNDATION PILE DIAMETER, DEPTH AND QUANTITY CHANGED WITH CHANGE IN RAFT DESIGN  <small>REGISTERED SOCIAL WORKERS ASSOCIATION MALAYSIA (RSWM) REPUBLIC OF MALAYSIA          TEL: 03-89232208, FAX: 03-89232208, E-MAIL: RSWM@RSWM.COM.MY</small> MWSC-C1-F-14
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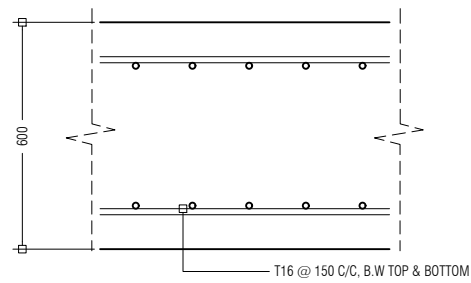




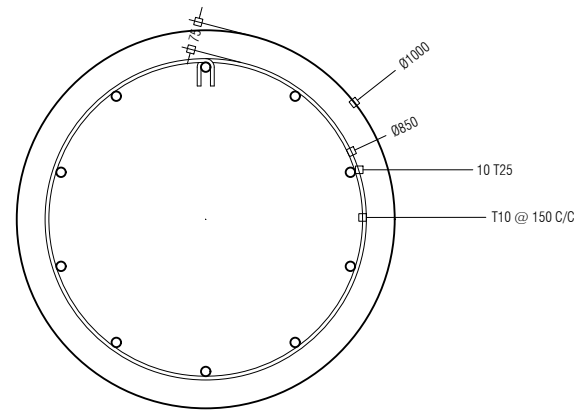
DETAIL 01 (MAT FOUNDATION AND PILE DETAIL)  
SCALE: 1:50



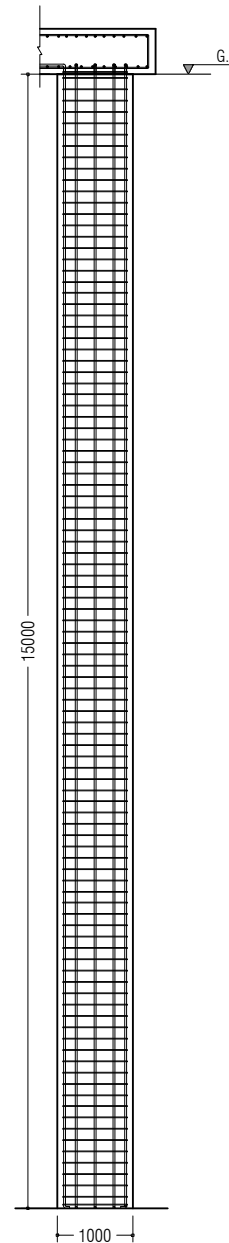
PILES LAPPING DETAIL (PLAN VIEW)  
SCALE: 1:50



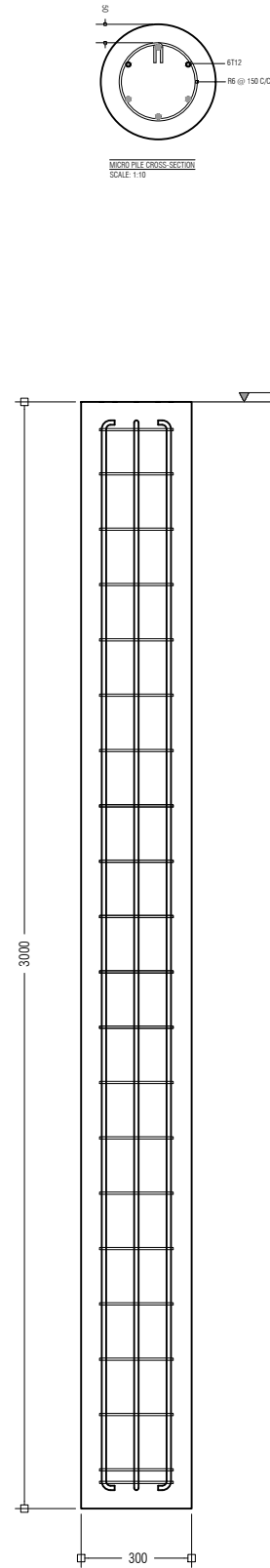
DETAIL 01 (MAT FOUNDATION AND PILE DETAIL)  
SCALE: 1:20



PILE CROSS-SECTION  
SCALE: 1:20

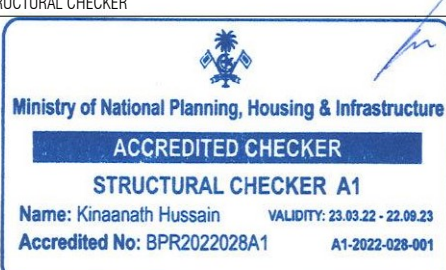


PILE DETAILS  
SCALE: 1:100



MICRO PILE CROSS-SECTION  
SCALE: 1:10

- FOUNDATION IS DESIGNED BASED ON GEOTECHNICAL INVESTIGATION REPORTS.
- THE LOAD BEARING STRATUM IS TO BE CORAL SAND WITH CRUSHED STONE TO INCREASE THE GROUND BEARING CAPACITY. THE SAND BELOW THE FOUNDATION IS TO BE COMPACTED IN 3 LAYERS OF 150MM TOTAL DEPTH OF 450MM. THE COMPACTION TO BE CARRIED OUT AFTER SPRAYING OF WATER AND WITH A 26TONNE ROLLER VIBRATING COMPACTOR. THE SETTLEMENT DIFFERENCE OF THE LAST 2 ROLLING VIBRATING COMPACTION SHOULD NOT BE MORE THAN 10mm. ROLLING SPLICING WIDTH SHALL NOT BE MORE THAN 500mm. SUGGEST TO ROLL MINIMUM 10 TIMES. THE ACTUAL NUMBER OF COMPACTION CONSULTING ENGINEER BASED ON SETTLEMENT LEVEL BETWEEN TWO COMPACTION ROUNDS.
- AFTER ROLLER COMPACTION, DPT AND DRY DENSITY TESTING SHALL BE CARRIED OUT. TESTED DRY DENSITY TO BE MORE THAN 1600kg/m<sup>3</sup> AND MAXIMUM TESTING DEPTH IS 500MM OF THE BACKFILL COURSE. THE DPT TAMPING TIMES N63.5 SHALL NOT BE LESS THAN 4 TIMES.
- BEFORE CONSTRUCTION, SURFACE WASTE AND VEGETATION TO BE REMOVED.
- ALL CONCRETE WORKS SHALL CONFORM TO THE BS8110-1-1998.
- CONCRETE GRADE OF FOUNDATION IS C40, INDICATING THAT CONCRETE SHALL HAVE A F<sub>cu</sub> COMPRESSIVE STRENGTH OF 40MPa ESTABLISHED FROM TEST CUBES AT 28 DAYS.
- 100mm LEAN CONCRETE OF GRADE C15 IS LAID BELOW THE FOUNDATION.
- CONCRETE MIX DESIGN SHALL COMPLY WITH BS8500-1:2006.
- CONTRACTOR SHALL IMPLEMENT A TRIAL MIX IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS & AUTHORITY REQUIREMENTS. TRIAL MIX RESULTS SHALL BE SUBMITTED FOR ENGINEER'S REVIEW & APPROVAL PRIOR TO COMMENCING CONCRETING. CONTRACTOR SHALL SUBMIT THE DETAILS OF ADDITIVES, PLASTICIZERS, MICRO SILICA, CURING COMPOUNDS, WATERPROOFING AGENTS, ETC. APPLICATION SHOULD FOLLOW STRICTLY THE MANUFACTURER RECOMMENDATION. IT IS CONTRACTORS RESPONSIBILITY TO ENSURE THAT ALL CONSTITUENTS OF CONCRETE ARE COMPATIBLE TO EACH OTHER.
- CONCRETE SHALL BE CURED BY AN APPROVED MEANS IN ACCORDANCE WITH THE SPECIFICATIONS.
- AGGREGATES SHALL BE FROM APPROVED SOURCE AND IN ACCORDANCE WITH THE SPECIFICATIONS.
- RING BEAM SURFACE THAT COMES IN CONTACT WITH SOIL SHALL BE APPLIED WITH EPOXY ASPHALT (MINIMUM THICKNESS OF 500 MICRO-M
- CONTRACTOR IS TO PROVIDE POST STRIP JOINTS FOR SEGMENTED CASTING. THE POST STRIP JOINTS SHALL NOT BE MORE THAN 800mm AND THE REINFORCING BARS OF THE FOUNDATION TO BE CONTINUOUS. ONLY AFTER 30 DAYS, THE POST STRIP SEGMENT IS TO BE CONCRETED AFTER THE CONCRETE SURFACE IS ROUGHENED FOR BETTER BONDING. POST STRIP CONCRETE SHALL BE SEALED WITH C45 SLIGHTLY EXPANSIVE CONCRETE.
- THE REINFORCEMENT USED IN THE REINFORCED CONCRETE SHALL BE ROUND, DEFORMED TYPE 2 BARS MARKED AS (T) TO INDICATE HIGH YIELD STRENGTH OF 460N/mm<sup>2</sup> TO BS4449 OR TYPE 500B TO EC-EN. THE CARBON EQUIVALENT OF REINFORCEMENT BARS SHOULD NOT EXCEED 0.51 FOR GRADE 460.

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			CLIENT DEPARTMENT OPERATIONS DEPARTMENT	DRAWN BY MOHAMED NAHAAS	
			DESIGN CONTRACTOR PLANNING AND DESIGN DEPARTMENT	SCALE DWG	AS GIVEN 20-185-HML-TF-C1-01
			PAPER SIZE A3	DATE 13.12.2020	REVISED DATE 17.04.2022

