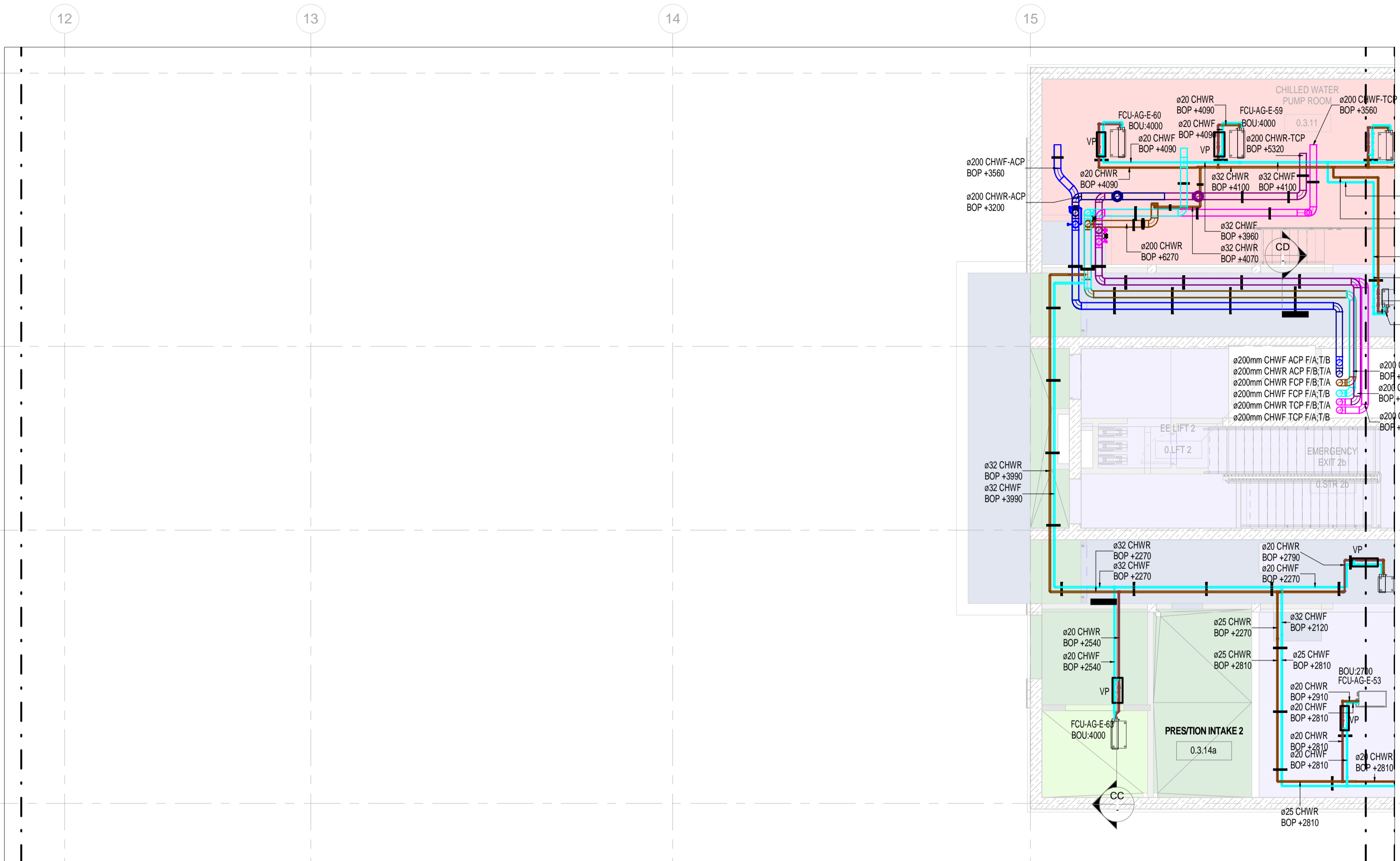
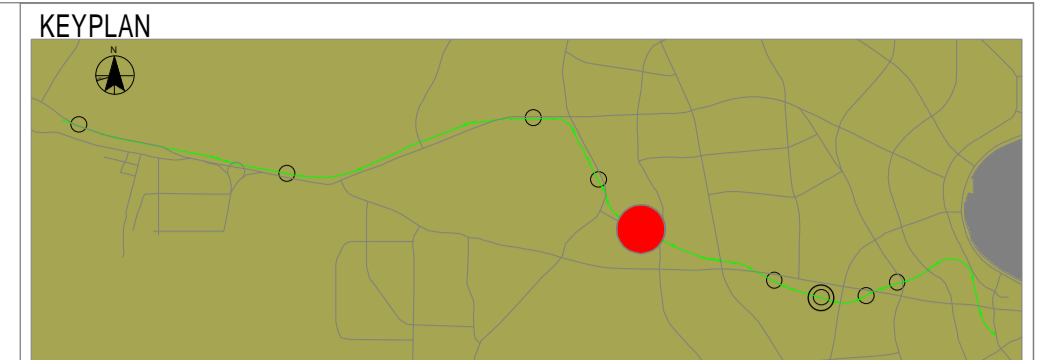
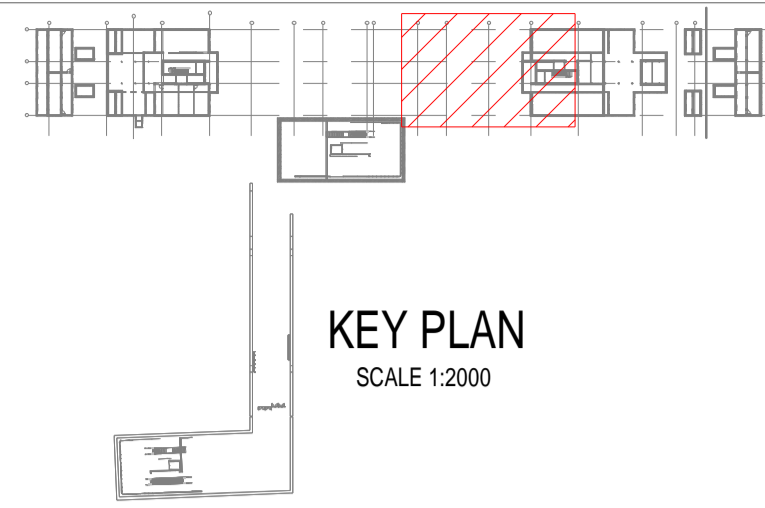
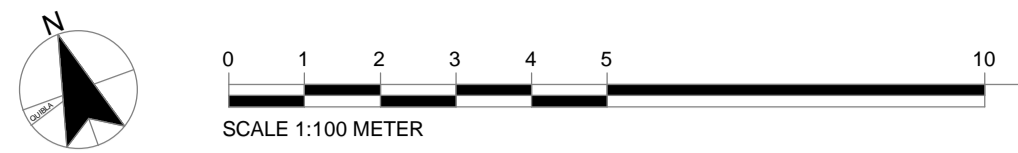
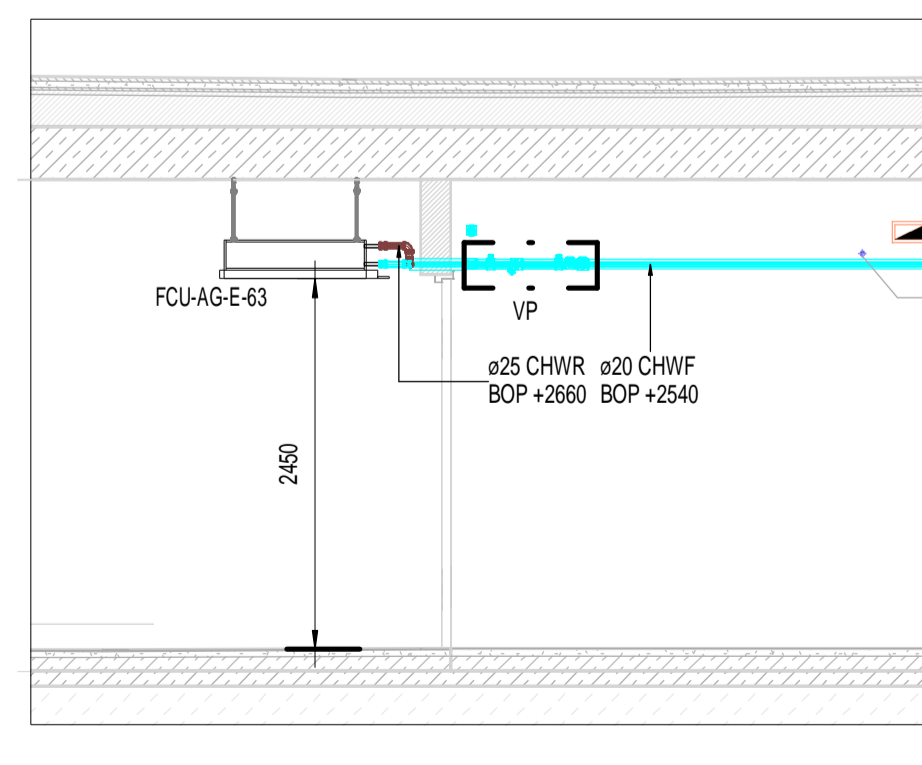


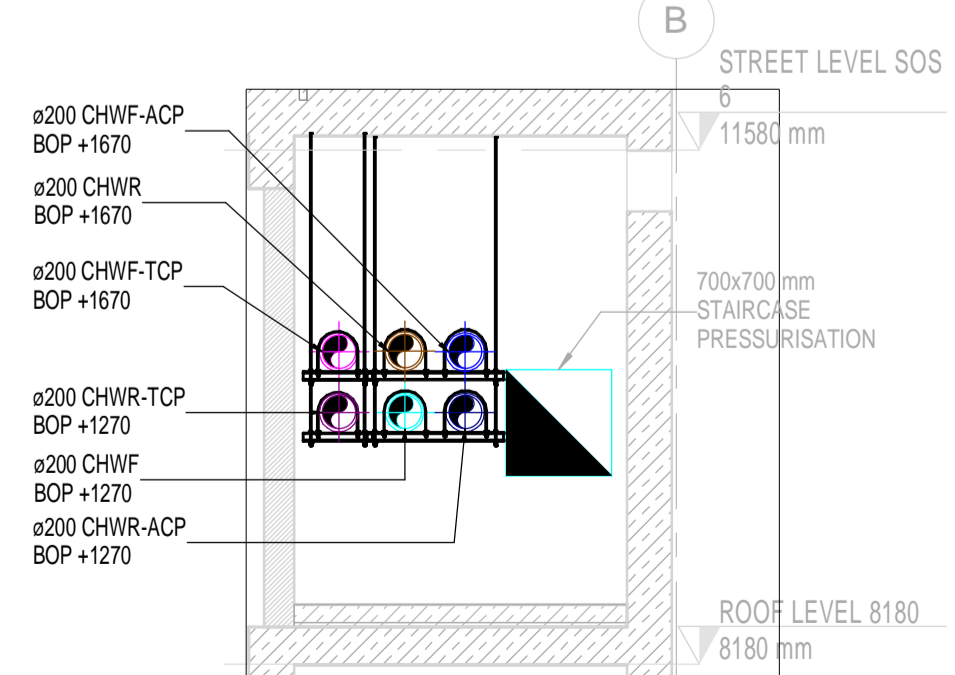
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SHOP DRAWINGS STATION AL RAYYAN / AL QADEEM AT GRADE/STREET LEVEL  
CHILLED WATER LAYOUT (STATION CENTRAL EAST)  
SCALE : 1:100



SECTION-CC  
SCALE : 1:50



SECTION-CD  
SCALE : 1:50

LEGENDS AND ABBREVIATION	
SYMBOLS	DESCRIPTION
[Symbol]	FAN COIL UNIT
[Symbol]	SECTION CUTTING LINE
[Symbol]	CHILLED WATER SUPPLY PIPE
[Symbol]	CHILLED WATER RETURN PIPE
[Symbol]	FLOW DIRECTION
[Symbol]	TEE UP
[Symbol]	PIPE REDUCER
[Symbol]	ELBOW UP
[Symbol]	ELBOW DOWN
[Symbol]	PIPE RISER
[Symbol]	ELBOW 90°
[Symbol]	ISOLATION VALVE
[Symbol]	PIPE SUPPORT
[Symbol]	PIPE WITH INSULATION
[Symbol]	VALVE PACKAGE

ABBREVIATION	DESCRIPTION
CHWF	COOLING WATER FLOW
CHWR	COOLING WATER RETURN
BOP	BOTTOM OF PIPE
DN	PIPE OFFSET DOWN
UP	PIPE OFFSET UP
T/A	TO ABOVE
T/B	TO BELOW
F/B	FROM BELOW
FCU	FAN COIL UNIT
TYP	TYPICAL
mm	MILLIMETER
FFL	FINISH FLOOR LEVEL
IV	ISOLATION VALVE
TP	TEST POINT
DC	DRAIN COCK
STR	STRAINER

CHILLED WATER PIPE INSULATION SCHEDULE			
S.NO.	PIPE SIZE IN mm	INSULATION THICKNESS	TYPE
1.	6mm to 100mm	25 mm	TUBE
2.	125mm to 600mm	40 mm	SHEET

CHILLED WATER PIPE - SUPPORT SPACING SCHEDULE

S.NO.	NOMINAL DIA. (DN)	EXT. DIA. (DE)	PIPE THICKNESS	INT. DIA. (DI)	PIPE SUPPORT SPACING		THREADED ROD SIZE
					HORIZONTAL	VERTICAL	
1	3/4"	20	2.7	20.9	2.0	3.0	M08
2	1"	25	3.4	26.6	2.4	3.0	M08
3	1 1/4"	32	4.2	35.1	2.4	3.0	M08
4	1 1/2"	40	4.8	40.8	2.7	3.6	M08
5	2"	50	6.0	52.5	3.0	3.6	M10
6	2 1/2"	65	7.3	62.8	3.3	4.5	M10
7	3"	80	8.9	77.9	3.7	4.5	M10
8	4"	100	11.4	102.3	3.7	4.6	M10
9	5"	125	14.3	121.3	3.7	5.0	M10
10	6"	150	16.8	154.1	4.5	5.4	M10
11	8"	200	21.9	202.7	5.0	6.0	M10
12	10"	250	27.3	254.4	5.0	6.0	M12
13	12"	300	32.8	303.2	6.1	10.0	M12

NOTE:  
13. CHILLED WATER PIPE MATERIAL SHALL BE ERW BLACK STEEL PIPE SCH40.  
14. THE CHILLED WATER PIPE SHALL BE WITH THREADED FITTING UPTO 50mm AND FROM 65mm THE FITTINGS SHALL BE WITH GROOVED COUPLING.  
15. THE INSULATION FOR CHILLED WATER PIPING SHALL BE 19MM THICKNESS UPTO 100MM DIAMETER (PIPE / TUBE INSULATION) AND 25MM THICKNESS ABOVE 100MM DIAMETER (SHEET INSULATION).  
16. FOR THE CHANGE OF DIRECTION AND LEVELS, APPLICATION OF CONCENTRATED LOADS, JOINTS POINTS, FITTINGS AND VALVES EXTRA SUPPORT SHALL BE PROVIDED AS PER THE SITE CONDITION.  
17. THREADED ROD SHALL BE HOT DIPPED GALVANIZED IRON.  
18. ALL THE SUPPORTS SHALL BE GALVANISED SUPPORTS

- NOTES:
- All pipework shall be installed around piers and other obstructions and minor modifications shall be made as per site difficulties and conditions.
  - All pipework to be adequately supported. All support installations shall be as per manufacturer recommendation and QCS 2010.
  - Vertical rising pipes shall be supported at the base and the support shall withstand the total weight of the pipe and fluid contained.
  - All chilled water pipework services shall be supported around the insulation and not directly around the pipework.
  - Anti-vibration supports shall be fitted at all locations where pipework vibration is likely to be a problem.
  - Pipes shall not be enclosed in a common insulating covering.
  - All open ends shall be capped with the appropriate pipework fittings.
  - Wooden plugs and the like shall not be used.
  - Valves fitted in the ends of pipe work shall not be accepted as a means of preventing the ingress of foreign materials.
  - Circ units and Fan coil units dimensions are only indicative.
  - Pipe work shall be installed so as to give the following minimum clearances between adjacent services as follows:
    - walls 25 mm
    - ceilings 50 mm
    - adjacent pipes both insulated 25 mm
    - insulated pipes to adjacent conduit or trunking 100mm
    - adjacent electrical cables not in conduit or trunking 150mm
 The clearance between pipeworks / services shall comply to QCS 2010, Section 22 - 05-6.3.1.3 which is based on the pipework Outer Diameter and the thickness of the insulation with its support clearance.
  - High level services should not be installed any lower than 3000mm AFFL.
  - AAV shall be installed at all high points in supply and return piping.

- REFERENCE DRAWINGS NUMBER:
- M008-ARE-ARC-MD3-GWST050-CL-00101.S4.P7
  - M008-ARE-ARC-MD3-GWST050-ZZ-00101.S4.P11
  - M008-HLQ-MEP-MD3-GWST050-PL-00101.RVT
  - M008-SSF-ARC-MD3-GWST050-CL-00301.S3.P16
  - M008-SSF-ARC-MD3-GWST050-ZZ-00101.S3.P19
  - M008-SSF-STR-MD3-GWST050-CL-00301.S3.P14
  - M008-SSF-STR-MD3-GWST050-ZZ-00101.S3.P24
- SCHEMATICS AND DETAIL INSTALLATION REFERENCES:
- M008-HLQ-MEC-DWG-GWST050-AA-10001
  - M008-HLQ-MEC-DWG-GWST050-AA-10002
  - M008-RGP-MEC-DWG-GWST050-AA-10041-42-46
  - M008-HLQ-MEC-DWG-6WAANN-AA-20001
  - M008-HLQ-MEC-DWG-6WAANN-AA-20002

C2	ISSUED FOR CONSTRUCTION	MH	30-12-2017	JF	30-12-2017	IM	30-12-2017
C1	ISSUED FOR CONSTRUCTION APPROVAL	NN	13-11-2016	IM	13-11-2016	MN	13-11-2016

SCALES @A1	ISSUING OFFICE	PROJECT NUMBER
1:100	DOHA	M008

CLIENT APPROVAL
A - APPROVED
B - APPROVED WITH COMMENTS
C - DO NOT USE

STATUS	PURPOSE OF ISSUE
S4	FOR CONSTRUCTION APPROVAL

CONTRACTOR  
**PORR - SBG - HBK JOINT VENTURE**  
 P.O. BOX 207471 DOHA  
 QATAR

CONSULTANT:  
 HOARE LEA QATAR LLC  
 P.O. BOX 201834 DOHA  
 QATAR

SUB CONTRACTOR  
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 Viale Scharovetti  
 2708 - 00173 ROMA  
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 FAX:06/72671393  
 Website: www.gruppops.com  
 QATAR - ITALY

PROJECT  
**DESIGN & BUILD PACKAGE 4  
 GREEN LINE UNDERGROUND**

TITLE  
**SHOP DRAWINGS  
 STATION AL RAYYAN / AL QADEEM  
 AT GRADE/STREET LEVEL  
 CHILLED WATER LAYOUT  
 (STATION CENTRAL EAST)**

CLIENT  
**QATAR RAILWAYS COMPANY**  
 P.O. BOX 29988 DOHA  
 QATAR

DRAWING NUMBER  
**M008-RGP-MEC-DWG-GWST050-AG-10006**

REV  
**C2**