

CONSULTANCY SERVICES FOR SURVEY, DESIGN AND EIA WORKS OF WATER SUPPLY AND  
SEWERAGE FACILITIES IN 7 ISLANDS, MALDIVES

PACKAGE 4

## **SEWERAGE SYSTEM OF ADH. DHIDHDHOO, MALDIVES**

For Ministry of National Planning, Housing and Infrastructure, Republic of Maldives

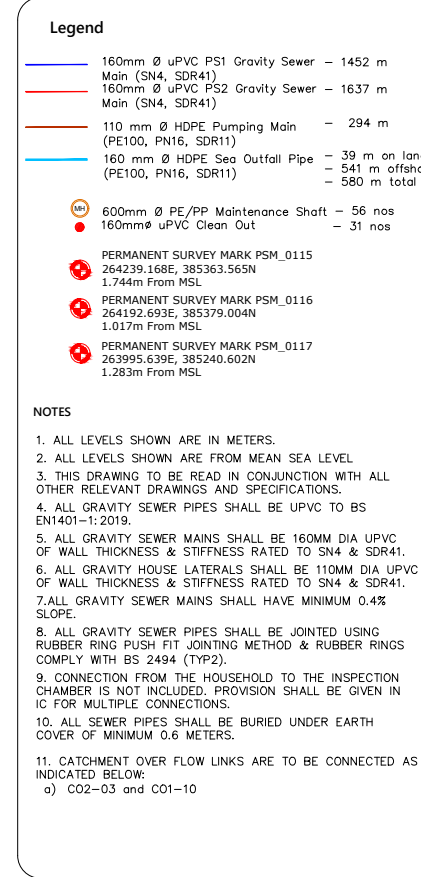


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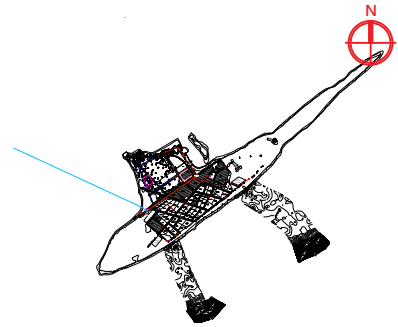
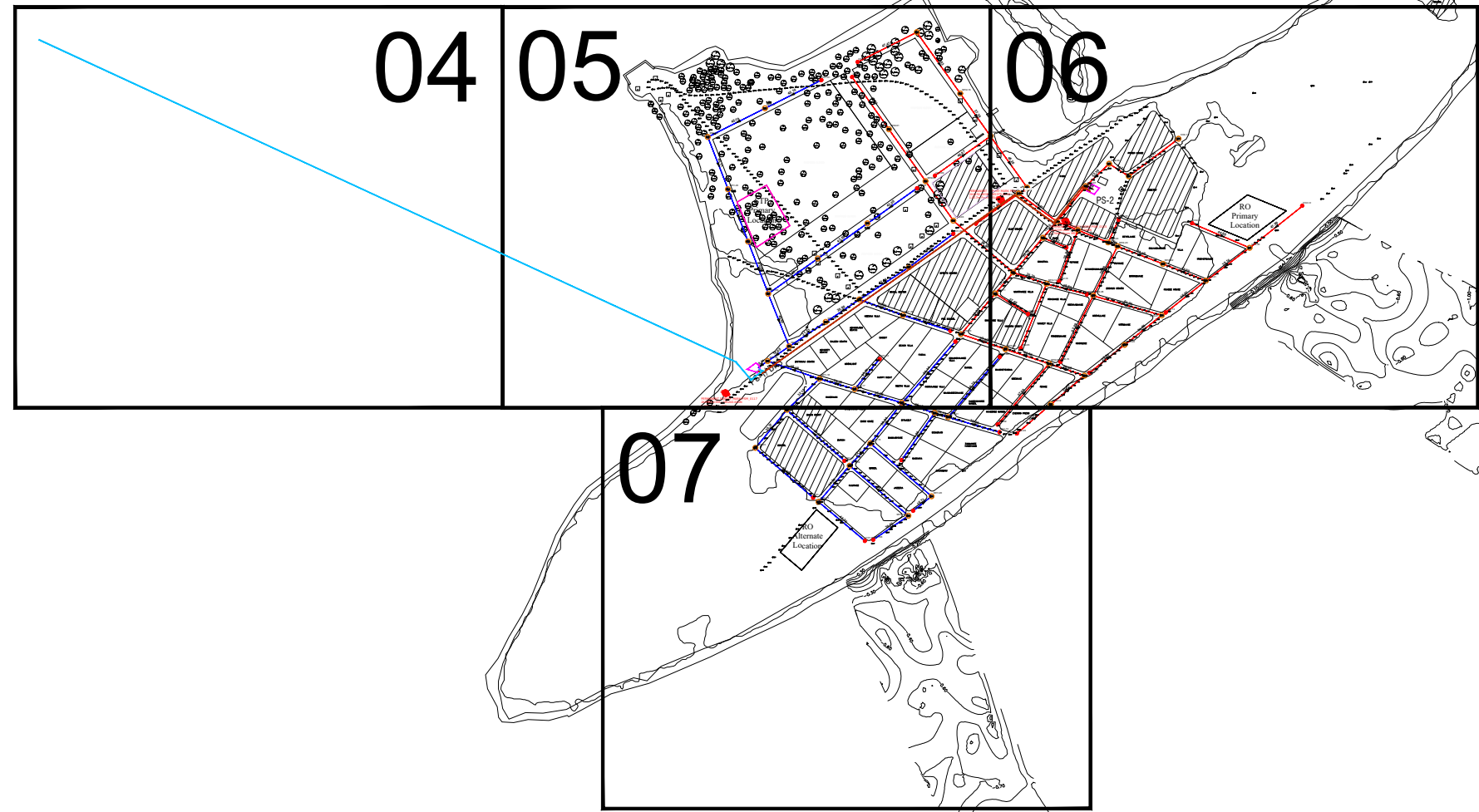
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| <p>Site Title:</p> <h1>Consultancy Services for Survey, Design and EIA works of Water Supply and Sewerage Facilities in 7 Islands, Maldives - Package 4</h1>   |  |
| <p>Sub Title:</p> <h2>Sewerage System in Adh. Dhidhdhoo</h2>   |  |
| <p>Client:</p> <h3>Ministry of National Planning, Housing and Infrastructure, Republic of Maldives</h3>  |  |
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| <p>Designed: F.I.A.</p>  | <p>Approved: I.W.</p>  |
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### Legend

- |   |   |                  |
|---|---|------------------|
|  | 160mm Ø uPVC PS1 Gravity Sewer - 1452 m       |                  |
|  | Main (SN4, SDR41)                             |                  |
|  | 160mm Ø uPVC PS2 Gravity Sewer - 1637 m       |                  |
|  | Main (SN4, SDR41)                             |                  |
|  | 110 mm Ø HDPE Pumping Main - 294 m            |                  |
|  | (PE100, PN16, SDR11)                          |                  |
|  | 160 mm Ø HDPE See Outfall Pipe - 39 m on land |                  |
|  | (PE100, PN16, SDR11)                          | - 541 m offshore |
|   |   | - 580 m total    |
|  | 600mm Ø PE/PP Maintenance Shaft - 56 nos      |                  |
|  | 160mm Ø uPVC Clean Out - 31 nos               |                  |
|  | PERMANENT SURVEY MARK PSM_0115                |                  |
|   | 264239.168E, 385363.565N                      |                  |
|   | 1.744m From MSL                               |                  |
|  | PERMANENT SURVEY MARK PSM_0116                |                  |
|   | 264192.693E, 385379.004N                      |                  |
|   | 1.017m From MSL                               |                  |
|  | PERMANENT SURVEY MARK PSM_0117                |                  |
|   | 263995.639E, 385240.602N                      |                  |
|   | 1.283m From MSL                               |                  |

## NOTES

1. ALL LEVELS SHOWN ARE IN METERS.
2. ALL LEVELS SHOWN ARE FROM MEAN SEA LEVEL
3. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS AND SPECIFICATIONS.
4. ALL GRAVITY SEWER PIPES SHALL BE UPVC TO BS EN401-1 TO CLASS 4.
5. ALL GRAVITY SEWER MAINS SHALL BE 160MM DIA UPVC OF WALL THICKNESS & STIFFNESS RATED TO SN4 & SDR41.
6. ALL GRAVITY HOUSE LATERALS SHALL BE 110MM DIA UPVC OF WALL THICKNESS & STIFFNESS RATED TO SN4 & SDR41.
7. ALL GRAVITY SEWER MAINS SHALL HAVE MINIMUM 0.4% SLOPE.
8. ALL GRAVITY SEWER PIPES SHALL BE JOINED USING RUBBER RING PUSH FIT JOINTING METHOD & RUBBER RINGS COMPLY WITH BS 2494 (TyP2).
9. CONNECTION FROM THE HOUSEHOLD TO THE INSPECTION CHAMBER IS NOT INCLUDED. PROVISION SHALL BE GIVEN IN THE HOUSEHOLD DRAWING.
10. ALL SEWER PIPES SHALL BE BURIED UNDER EARTH COVER OF MINIMUM 0.6 METERS.
11. CATCHMENT OVER FLOW LINKS ARE TO BE CONNECTED AS INDICATED BELOW:
  - a) C02-03 and C01-10

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Title

## Consultancy Services for Survey, Design and EIA works of Water Supply and Sewerage Facilities in 7 islands, Maldives - Package 4

Sub Title

## Sewerage System in ADh. Dhidhdhoo

Client

Ministry of National Planning, Housing and  
Infrastructure, Republic of Maldives



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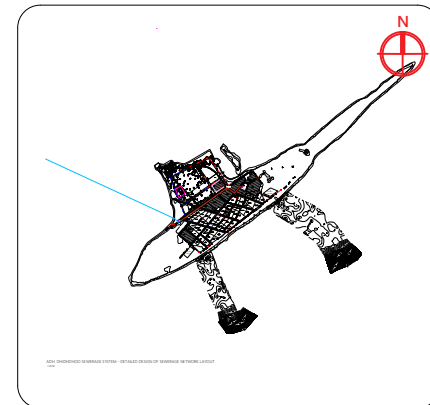
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**A-(2)**



 PS-1 Catchment Area  
 PS-2 Catchment Area

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2. ALL LEVELS SHOWN ARE FROM MEAN SEA LEVEL
3. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS AND SPECIFICATIONS.
4. ALL GRAVITY SEWER PIPES SHALL BE UPVC TO BS EN1401-1:2019.
5. ALL GRAVITY SEWER MAINS SHALL BE 160MM DIA UPVC OF WALL THICKNESS & STIFFNESS RATED TO SN4 & SDR41.
6. ALL GRAVITY HOUSE LATERALS SHALL BE 110MM DIA UPVC OF WALL THICKNESS & STIFFNESS RATED TO SN4 & SDR41.
7. ALL GRAVITY SEWER MAINS SHALL HAVE MINIMUM 0.4% SLOPE.
8. ALL GRAVITY SEWER PIPES SHALL BE JOINTED USING RUBBER RING PUSH FIT JOINTING METHOD & RUBBER RINGS COMPLY WITH BS 2494 (TYP2).
9. CONNECTION FROM THE HOUSEHOLD TO THE INSPECTION CHAMBER IS NOT INCLUDED. PROVISION SHALL BE GIVEN IN IC FOR MULTIPLE CONNECTIONS.
10. ALL SEWER PIPES SHALL BE BURIED UNDER EARTH COVER OF MINIMUM 0.6 METERS.

11. CATCHMENT OVER FLOW LINKS ARE TO BE CONNECTED AS INDICATED BELOW

(P)\_C02-03\_and\_C01-10

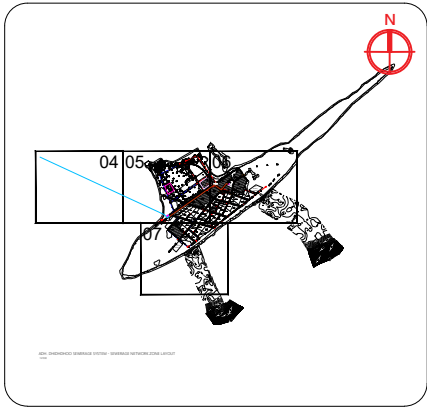
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Page: A-(3)



Legend

- 160mm Ø uPVC PS1 Gravity Sewer Main (SN4, SDR41)
- 160mm Ø uPVC PS2 Gravity Sewer Main (SN4, SDR41)
- 600mm Ø PE/PP Maintenance Shaft
- 160mm Ø uPVC Clean Out
- 110 mm Ø HDPE Pumping Main (PE100, PN16, SDR11)
- 160 mm Ø HDPE Sea Outfall Pipe (PE100, PN16, SDR11)

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Sub Title:  
**Sewerage System in ADh. Dhidhdhoo**

Client:  
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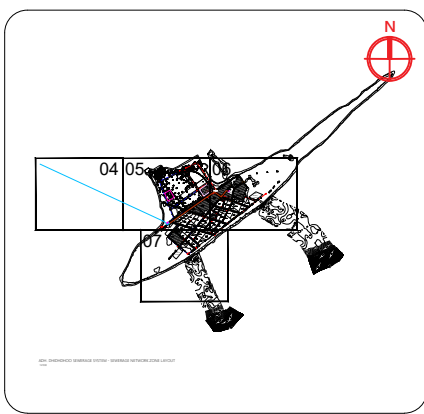
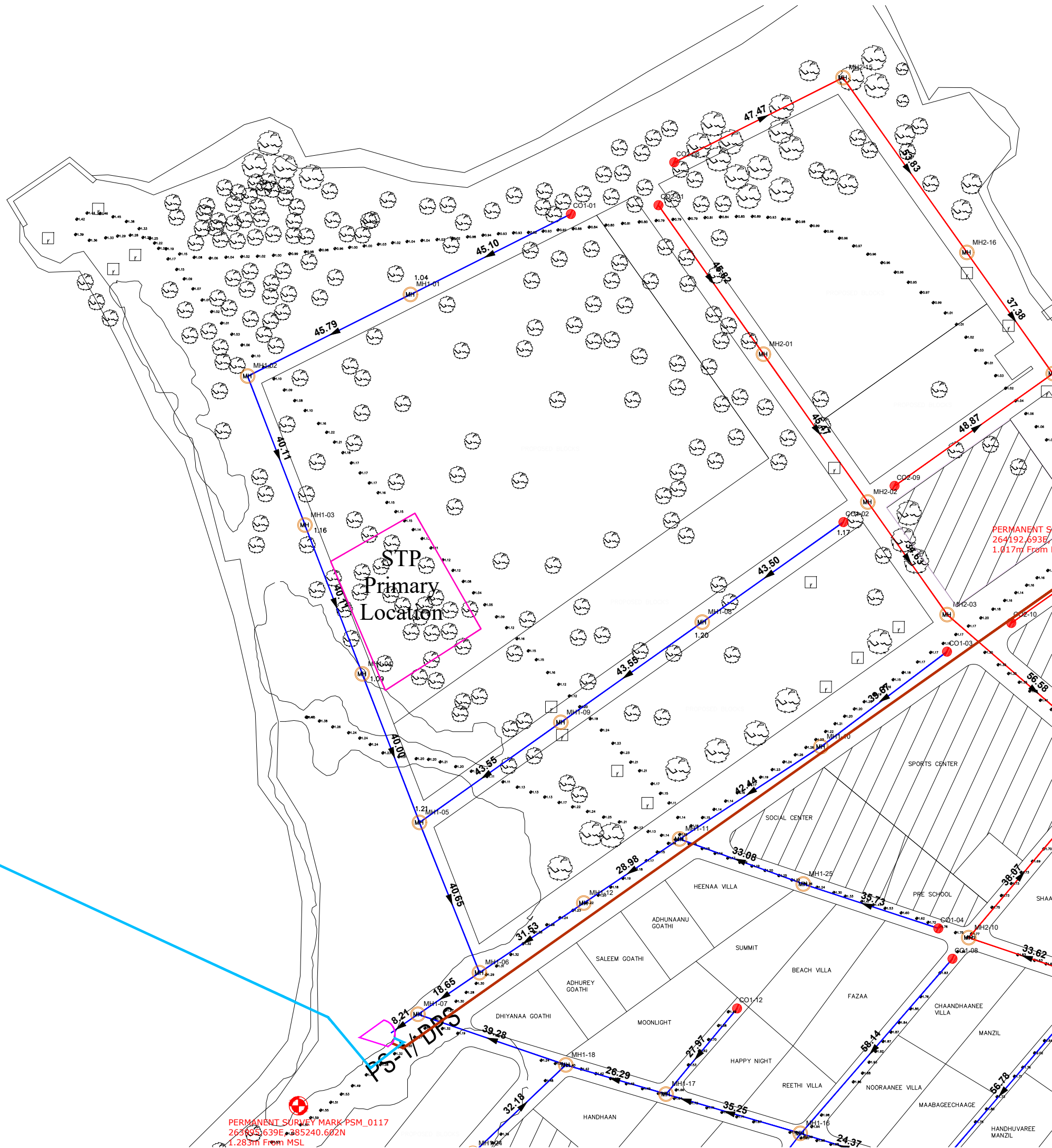
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**Legend**

- 160mm Ø uPVC PS1 Gravity Sewer Main (SN4, SDR41)
- 160mm Ø uPVC PS2 Gravity Sewer Main (SN4, SDR41)
- 600mm Ø PE/PP Maintenance Shaft
- 160mm Ø uPVC Clean Out
- 110 mm Ø HDPE Pumping Main (PE100, PN16, SDR11)
- 160 mm Ø HDPE Sea Outfall Pipe (PE100, PN16, SDR11)

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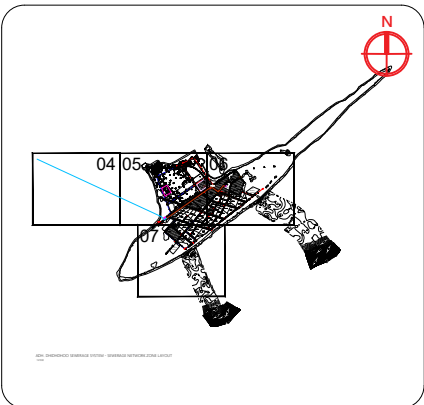
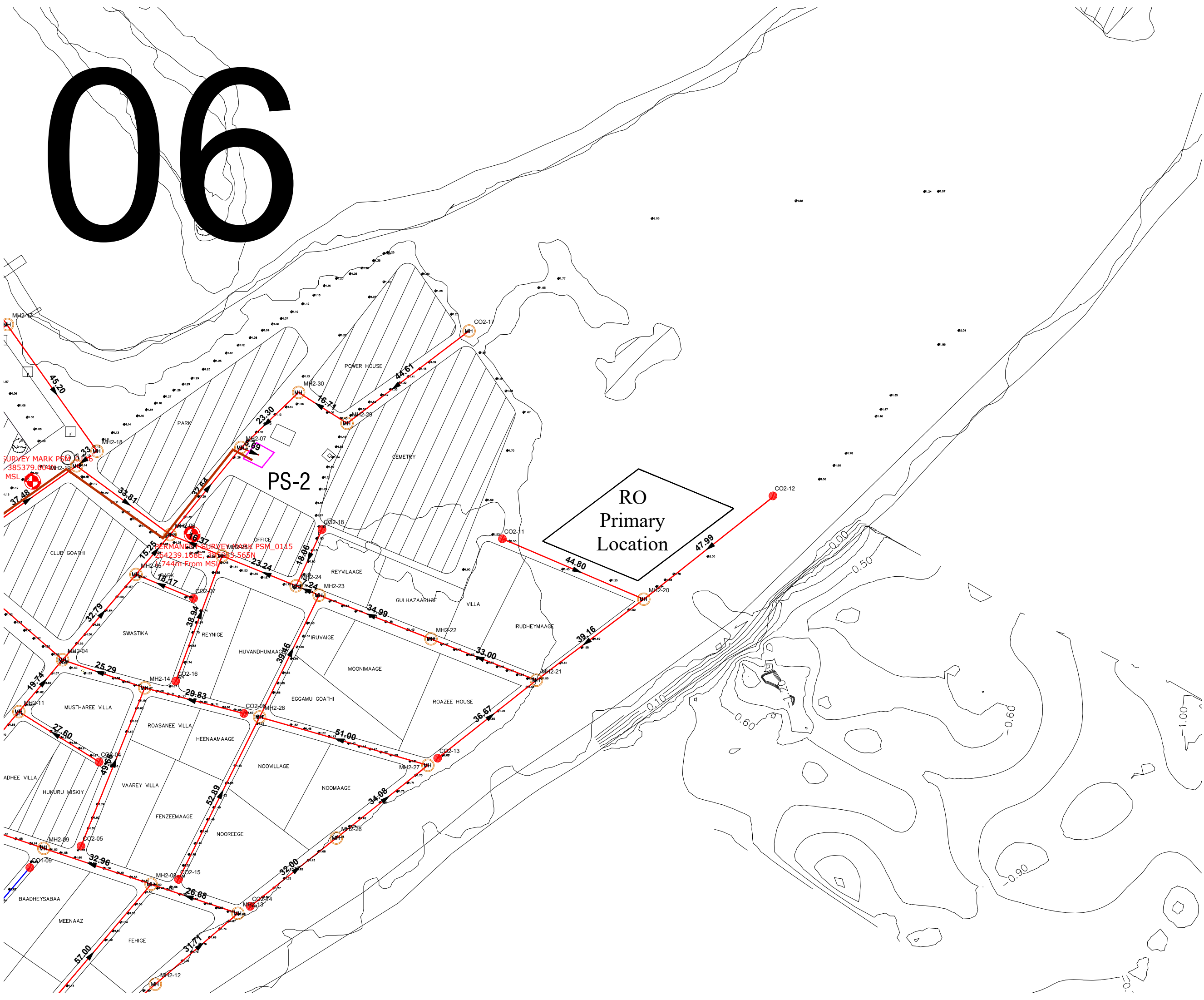
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06



- Legend**
- 160mm Ø uPVC PS1 Gravity Sewer Main (SN4, SDR41)
  - 160mm Ø uPVC PS2 Gravity Sewer Main (SN4, SDR41)
  - 600mm Ø PE/PP Maintenance Shaft
  - 160mm Ø uPVC Clean Out
  - 110 mm Ø HDPE Pumping Main (PE100, PN16, SDR11)
  - 160 mm Ø HDPE Sea Outfall Pipe (PE100, PN16, SDR11)

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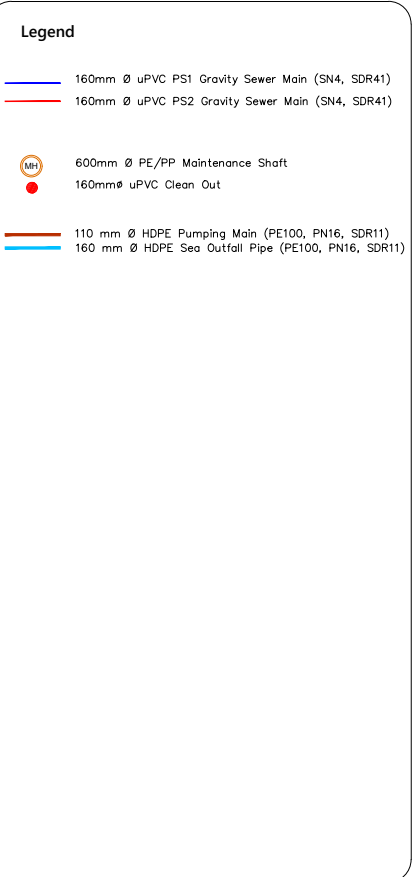
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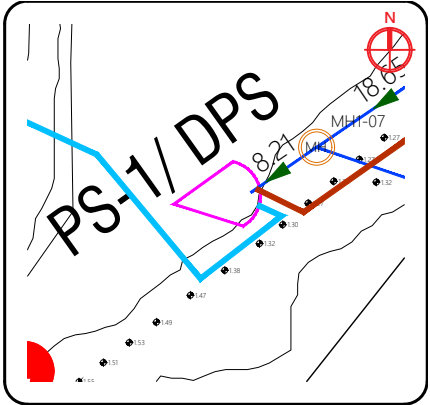
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| Sub Title:<br><b>Sewerage System in ADH. Dhidhdhoo</b>   |   |
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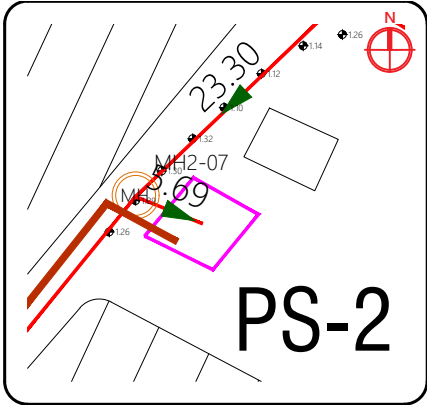
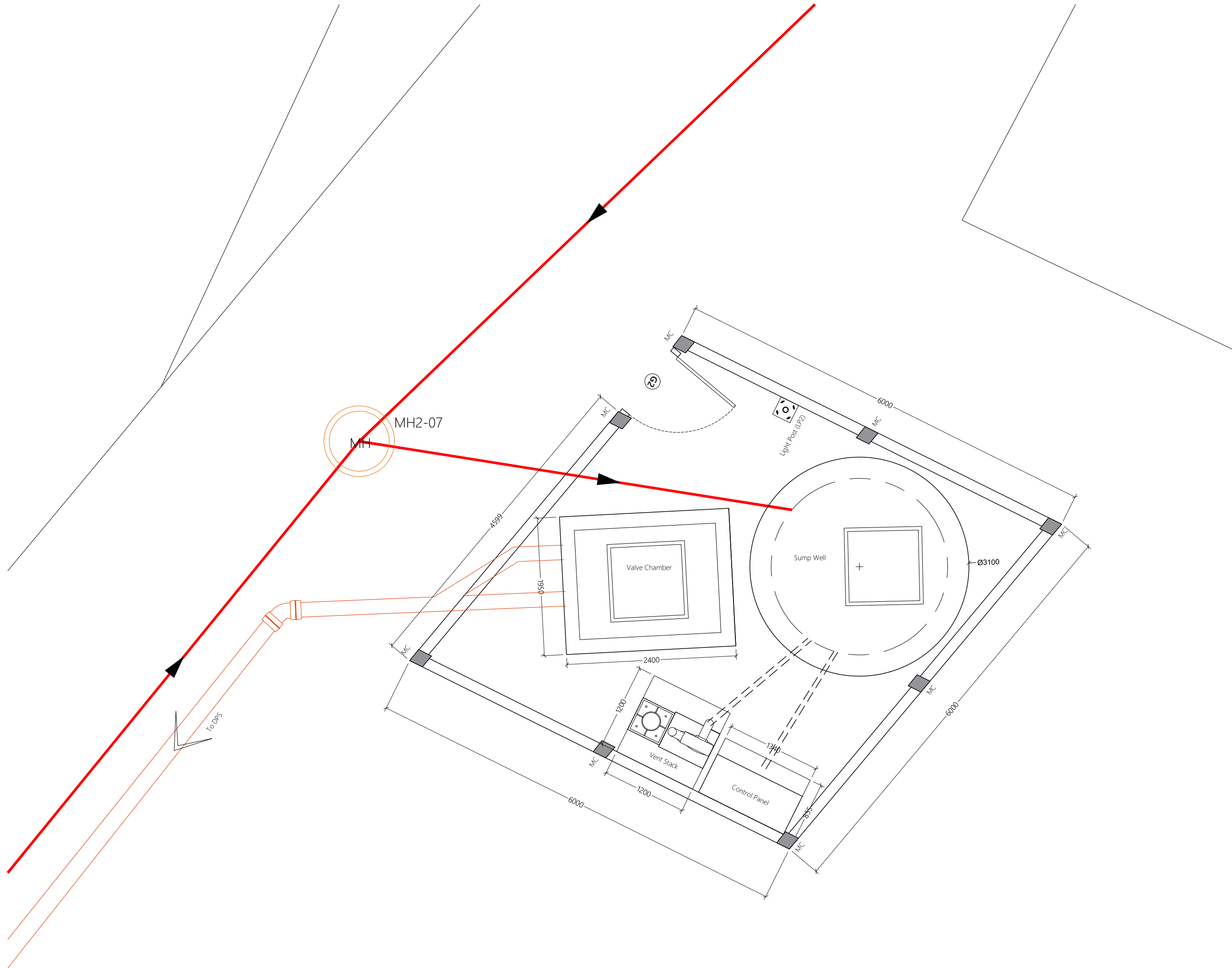


- 160mm Ø uPVC PS1 Gravity Sewer Main (SN4, SDR41)
- 110 mm Ø HDPE Pumping Main (PE100, PN16, SDR11)
- 160 mm Ø HDPE Sea Outfall Pipe (PE100, PN16, SDR11)

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**W-(1)**



Legend

- 160mm Ø uPVC PS1 Gravity Sewer Main (SN4, SDR41)
- 110 mm Ø HDPE Pumping Main (PE100, PN16, SDR11)
- 160 mm Ø HDPE Sea Outfall Pipe (PE100, PN16, SDR11)

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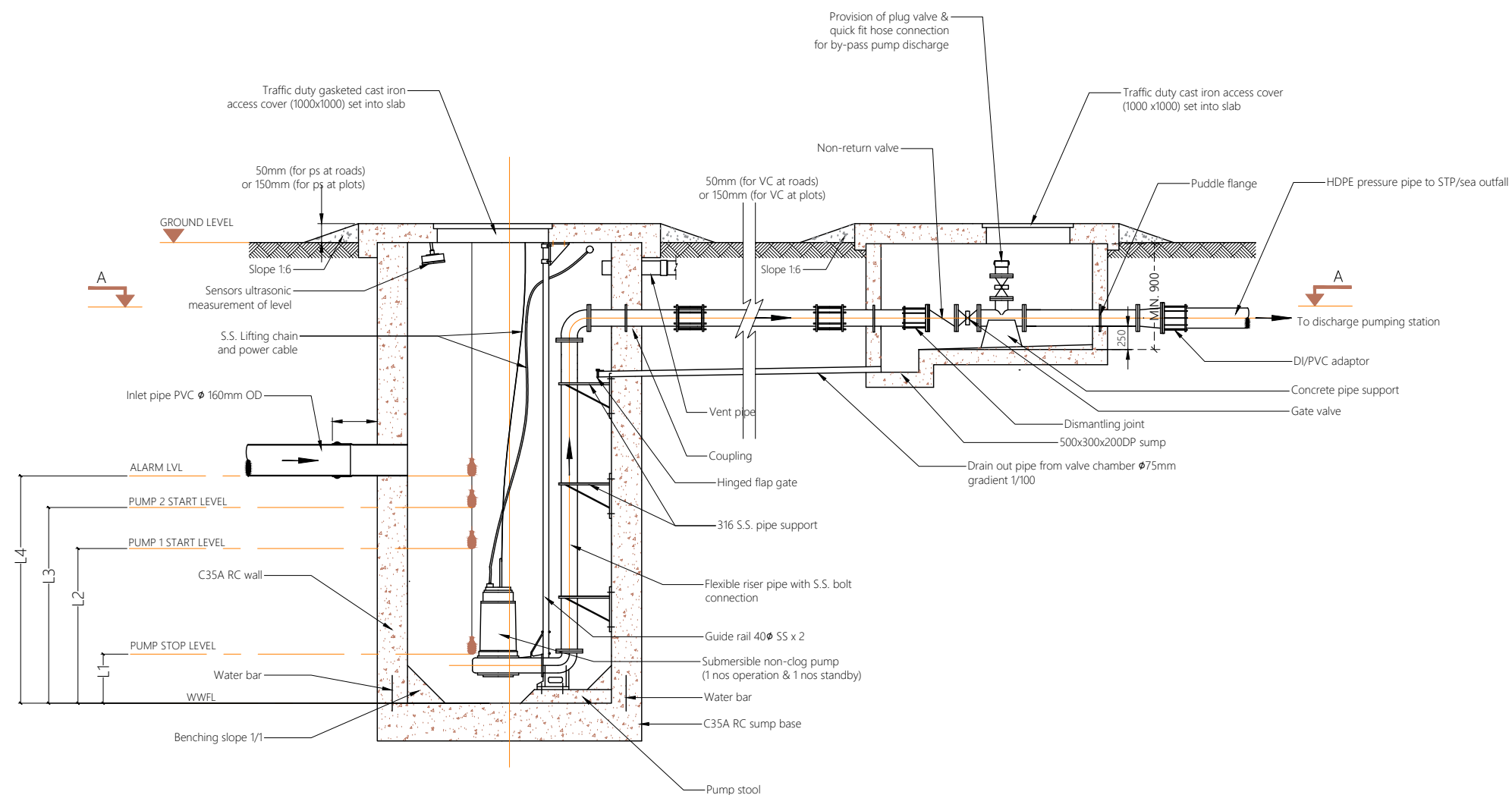
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W-(2)

PUMP STATION (PS2) LAYOUT  
1:50



### Legend

Notes:

- Pumps, pipe work, fittings and control panel shall be installed in accordance with manufacturers recommendations.
- Orientation of valve chamber pipework to suit location.
- All structural concrete shall be of grade C35A.
- All castings shall be done using sulphate resistant portland cement to BS 4027:1996.
- All structural reinforcement shall be epoxy coating of non-pre-stressed reinforcement to ASTM-A775/A775M.
- A cover of 75mm should be given for all reinforcements.
- Internal concrete surfaces to be coated with 5mm thickness of epoxy bonded glass fibre and finished with gel coat or 500 microns epoxy paint coating.
- External concrete surfaces to be painted with 3 coats of bitumen/rubber emulsion and protected by 500 micron polythene.

List of main instruments of pumping station:

1. Sewage pumps (1 duty & 1 standby)
2. Power cable
3. Auto-coupling with 400 SS guide rail
4. Stainless steel (316) suspension chain
5. Cable with float control and weight
6. Discharge pipe
7. Puddle flange
8. Bitumen emulsion and 500 micron polythene sheet protection to external concrete surfaces
9. Construction joint / water bars
10. Manhole cover double seal ductile heavy duty cast iron / SS 316 cover
11. Vent pipe with vent cowl

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Title:  
**Consultancy Services for Survey,  
Design and EIA works of Water  
Supply and Sewerage Facilities in  
7 islands, Maldives - Package 4**

Sub Title:  
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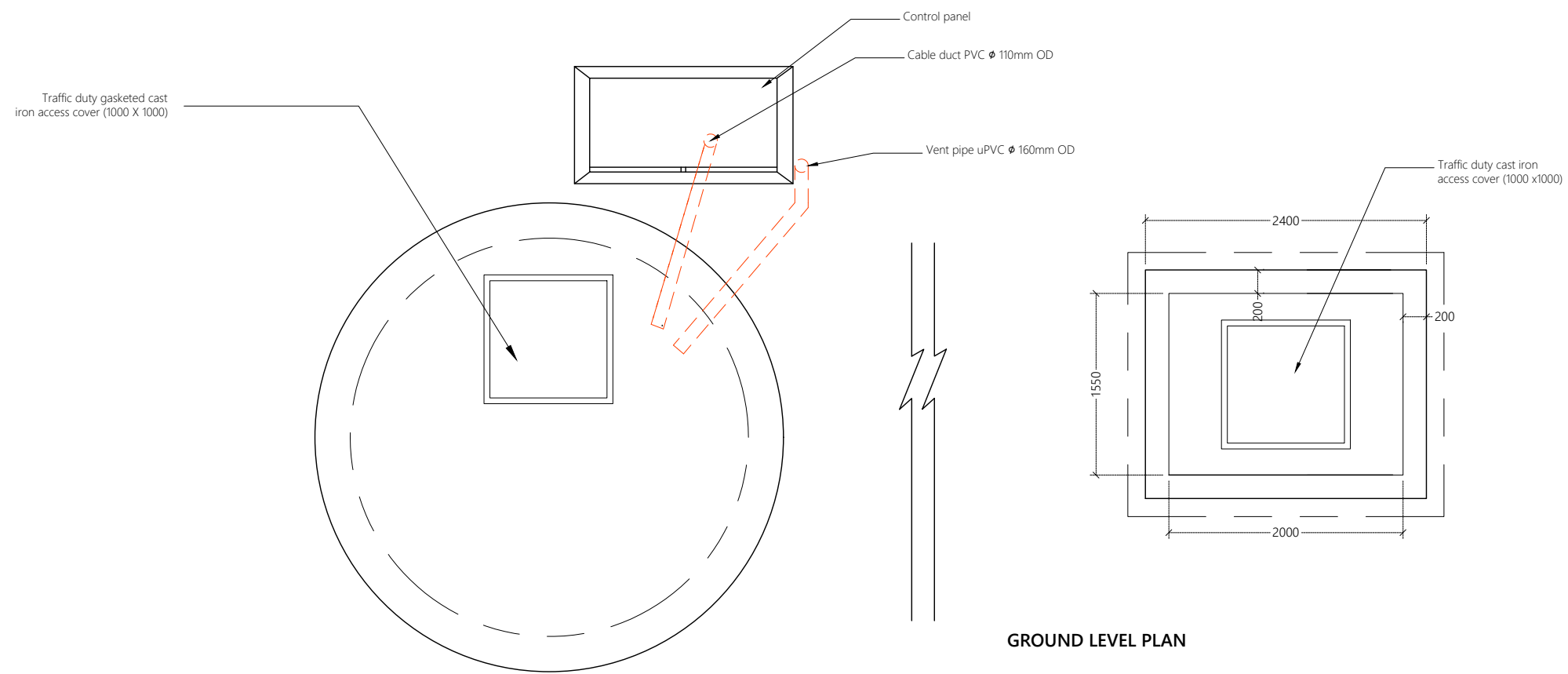
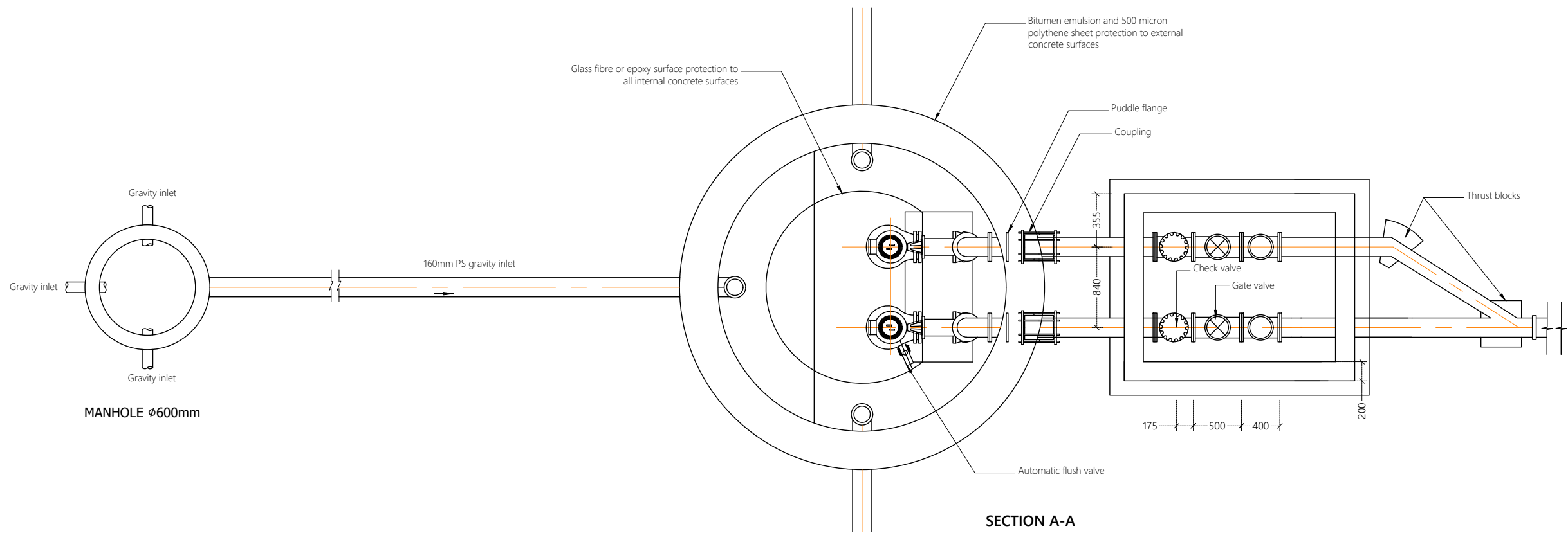


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PUMP STATION DETAILS - PLAN VIEW  
NTS



#### Legend

#### Notes:

- Pumps, pipe work, fittings and control panel shall be installed in accordance with manufacturers recommendations.
- Orientation of valve chamber pipework to suit location.
- All structural concrete shall be of grade C35A.
- All castings shall be done using sulphate resistant portland cement to BS 4027:1996.
- All structural reinforcement shall be epoxy coating of non-pre-stressed reinforcement to ASTM-A775/A775M.
- A cover of 75mm should be given for all reinforcements.
- Internal concrete surfaces to be coated with 5mm thickness of epoxy bonded glass fibre and finished with gel coat or 500 microns epoxy paint coating.
- External concrete surfaces to be painted with 3 coats of bitumen/rubber emulsion and protected by 500 micron polyethene.

- List of main instruments of pumping station:
1. Sewage pumps (1 duty & 1 standby)
  2. Power cable
  3. Auto-coupling with 400 SS guide rail
  4. Stainless steel (316) suspension chain
  5. Cable with float control and weight
  6. Discharge pipe
  7. Puddle flange
  8. Bitumen emulsion and 500 micron polythene sheet protection to external concrete surfaces
  9. Construction joint / water bars
  10. Manhole cover double seal ductile heavy duty cast iron / SS 316 cover
  11. Vent pipe with vent cowl

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Title:

**Consultancy Services for Survey, Design and EIA works of Water Supply and Sewerage Facilities in 7 islands, Maldives - Package 4**

Sub Title:

**Sewerage System in ADh. Dhidhdhoo**

Client:

**Ministry of National Planning, Housing and Infrastructure, Republic of Maldives**



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Designed: F.I.A. Approved: I.W.

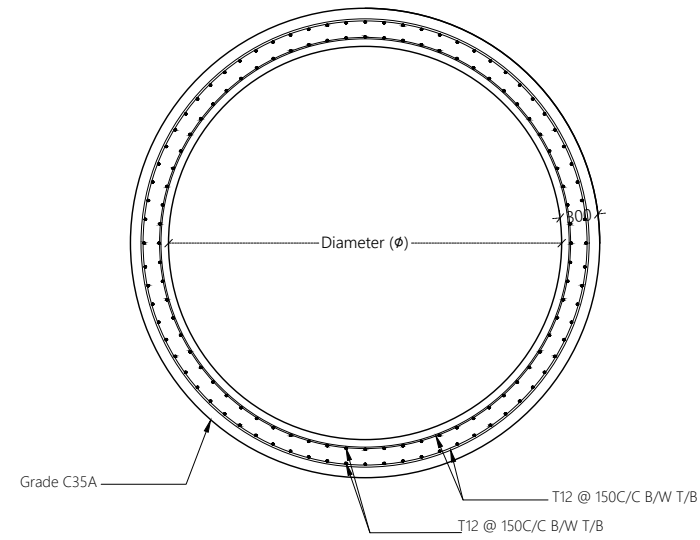
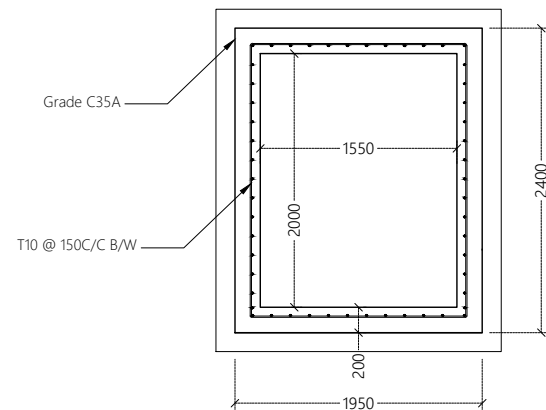
Date: Sep 2020 SCALE (A3): NTS

Project No: EP-WS/2019/04

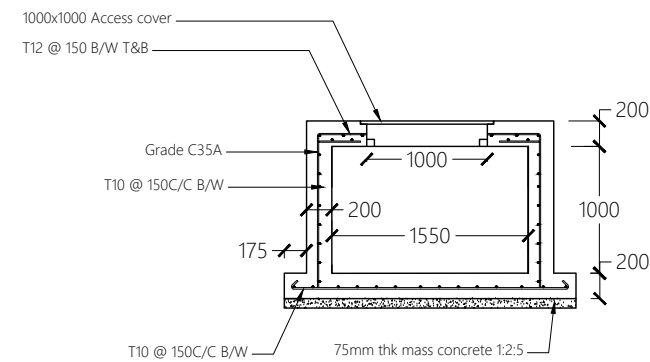
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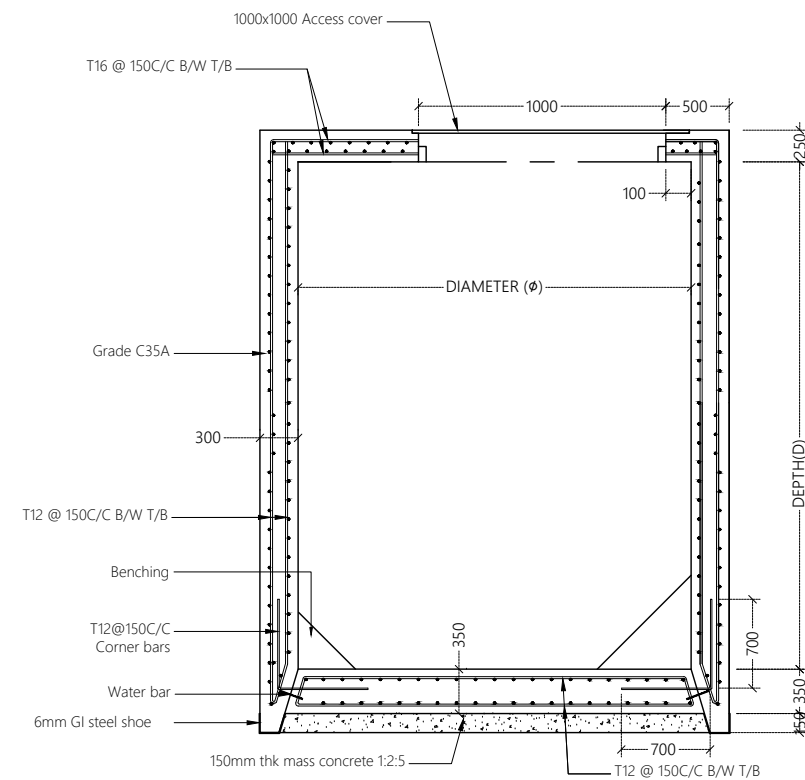
### PLAN VIEW



## SECTION



### VALVE CHAMBER DETAIL



### PUMP STATION DETAIL

| Pump Station | Diameter ( $\phi$ ) | Depth (D) | Inlet Depth |
|--------------|---------------------|-----------|-------------|
| PS1/DPS      | 2.5m                | 3.10m     | 2.213m      |
| PS2          | 2.5m                | 3.10m     | 2.155m      |

## PUMP STATION STRUCTURAL DETAILS

NTS

### Legend

Notes:

- Pumps, pipe work, fittings and control panel shall be installed in accordance with manufacturers recommendations.
- Orientation of valve chamber pipework to suit location.
- All structural concrete shall be of grade C35A.
- All castings shall be done using sulphate resistant portland cement to BS 4027:1996.
- All structural reinforcement shall be epoxy coating of non-pre-stressed reinforcement to ASTM-A775/A775M.
- A cover of 75mm should be given for all reinforcements.
- Internal concrete surfaces to be coated with 5mm thickness of epoxy bonded glass fibre and finished with gel coat or 500 microns epoxy paint coating.
- External concrete surfaces to be painted with 3 coats of bitumen/rubber emulsion and protected by 500 micron polythene.

List of main instruments of pumping station:

1. Sewage pumps (1 duty & 1 standby)
2. Power cable
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6. Discharge pipe
7. Puddle flange
8. Bitumen emulsion and 500 micron polyurethane sheet protection to external concrete surfaces
9. Construction joint / water bars
10. Manhole cover double seal ductile heavy duty cast iron / SS 316 cover
11. Vent pipe with vent cowl

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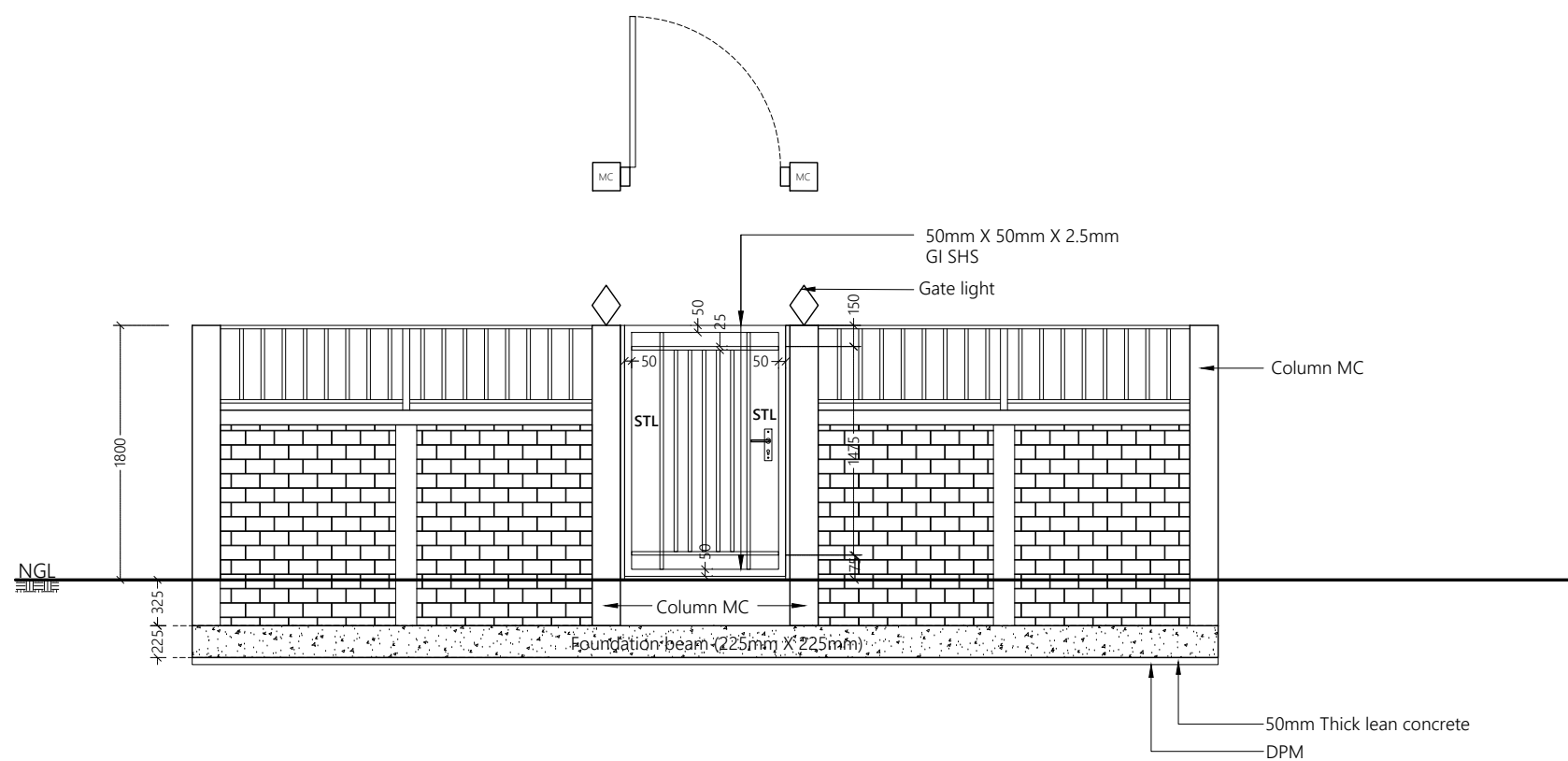
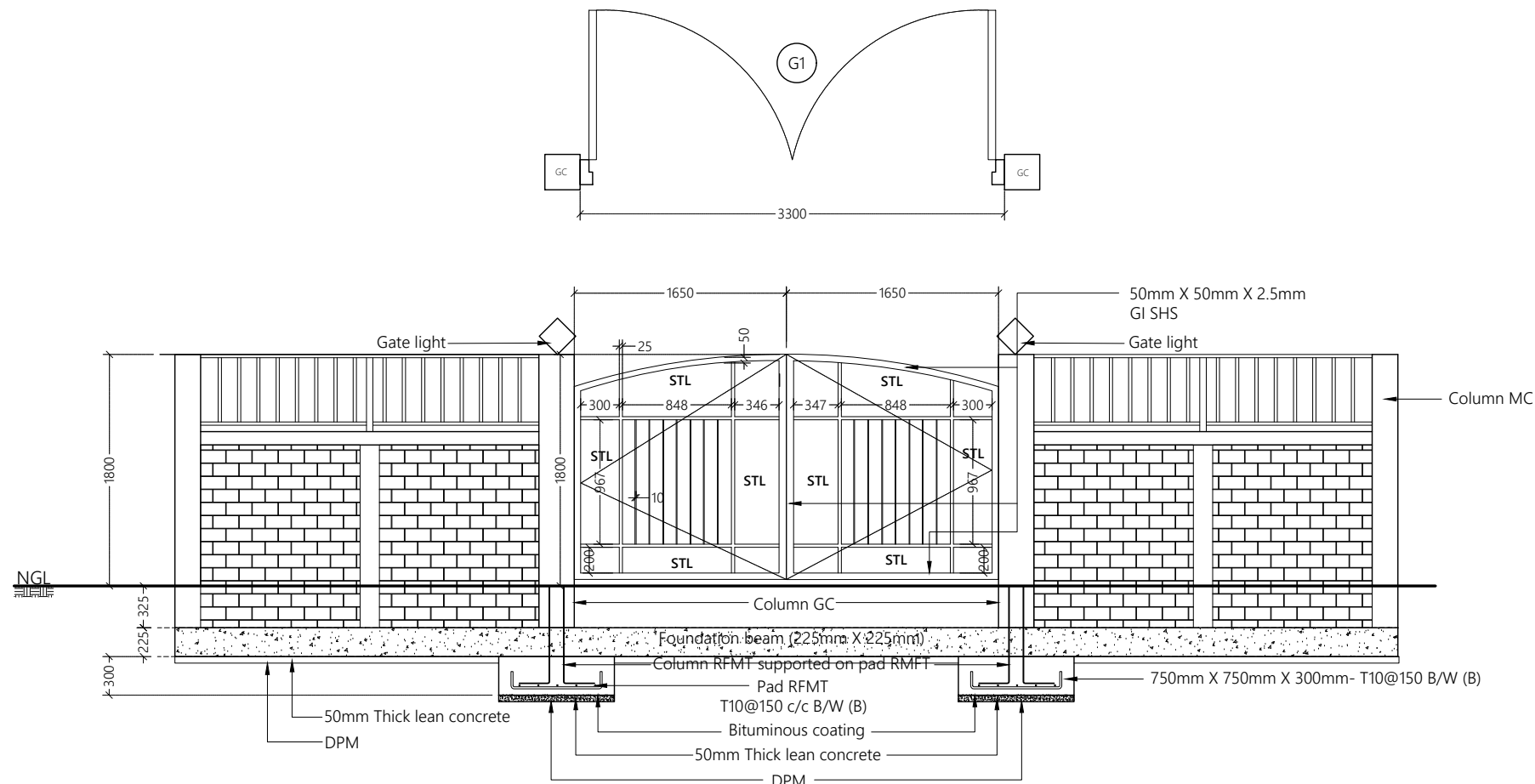
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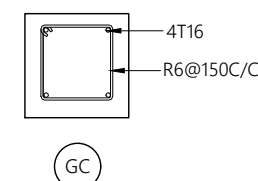
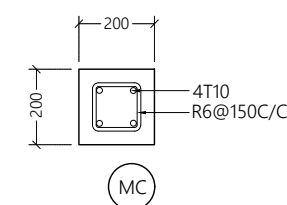
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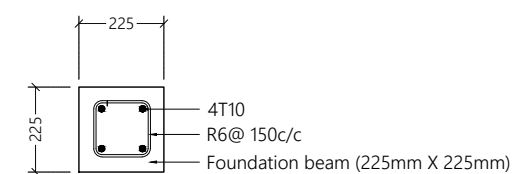
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**GATE DETAILS**  
1:50



**COLUMN DETAILS**  
1:20



**FOUNDATION BEAM DETAIL**  
1:20



#### Legend

#### Notes:

- FRAME MATERIAL : Steel gate frame 2.5mm thick GI sections RHS
- PANEL MATERIAL : Steel frame with steel panels (STL) as shown on elevation view
- All steel members and GI SHS to be applied with 2 coats of anti-corrosive paint with epoxy finishing paint
- Allowance shall be made to fix pad lock in Gates

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Title:  
**Consultancy Services for Survey, Design and EIA works of Water Supply and Sewerage Facilities in 7 islands, Maldives - Package 4**

Sub Title:  
**Sewerage System in ADh. Dhidhdhoo**

Client:  
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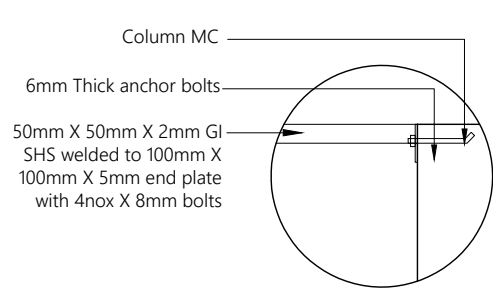
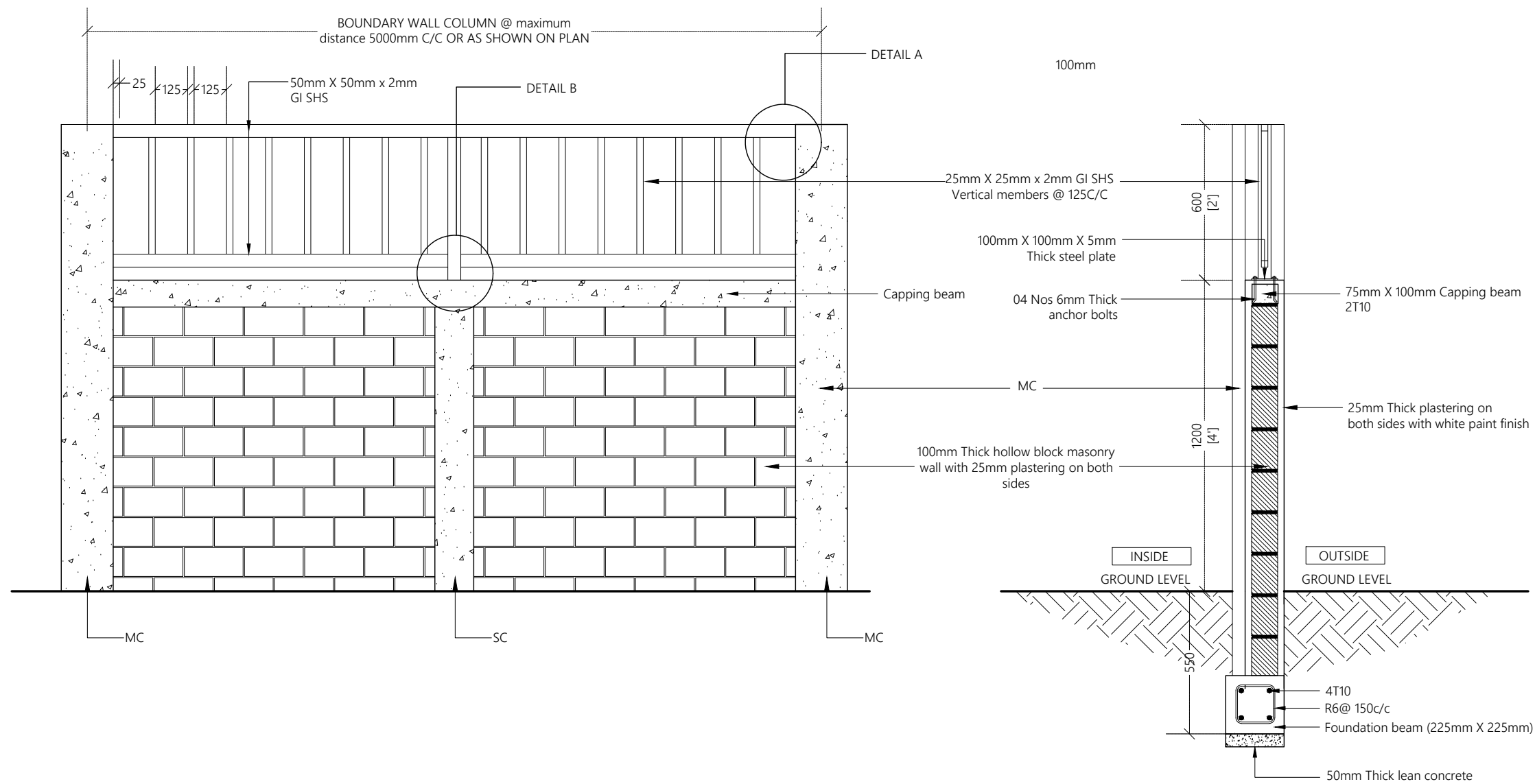
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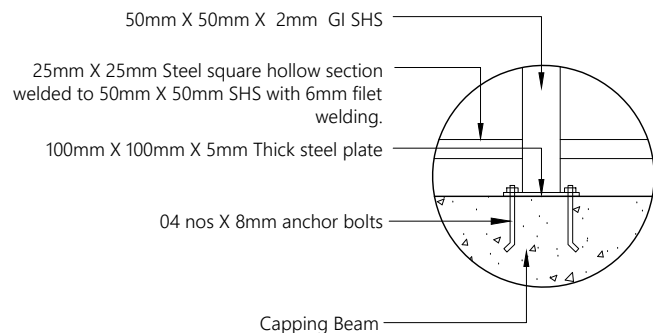
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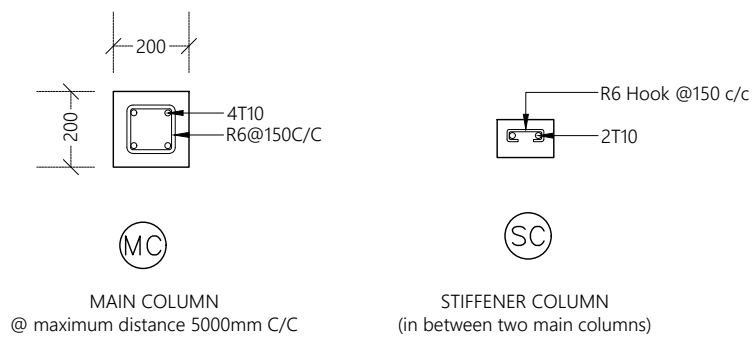
**DETAIL A**

1:10



**DETAIL B**

1:10



## BOUNDARY WALL AND FENCING DETAILS

1:20



### Legend

#### Notes:

- FRAME MATERIAL : Steel gate frame 2.5mm thick GI sections SHS
- All steel members and GI SHS to be applied with 2 coats of anti-corrosive paint with epoxy finishing paint
- Allowance shall be made to fix pad lock in Gates

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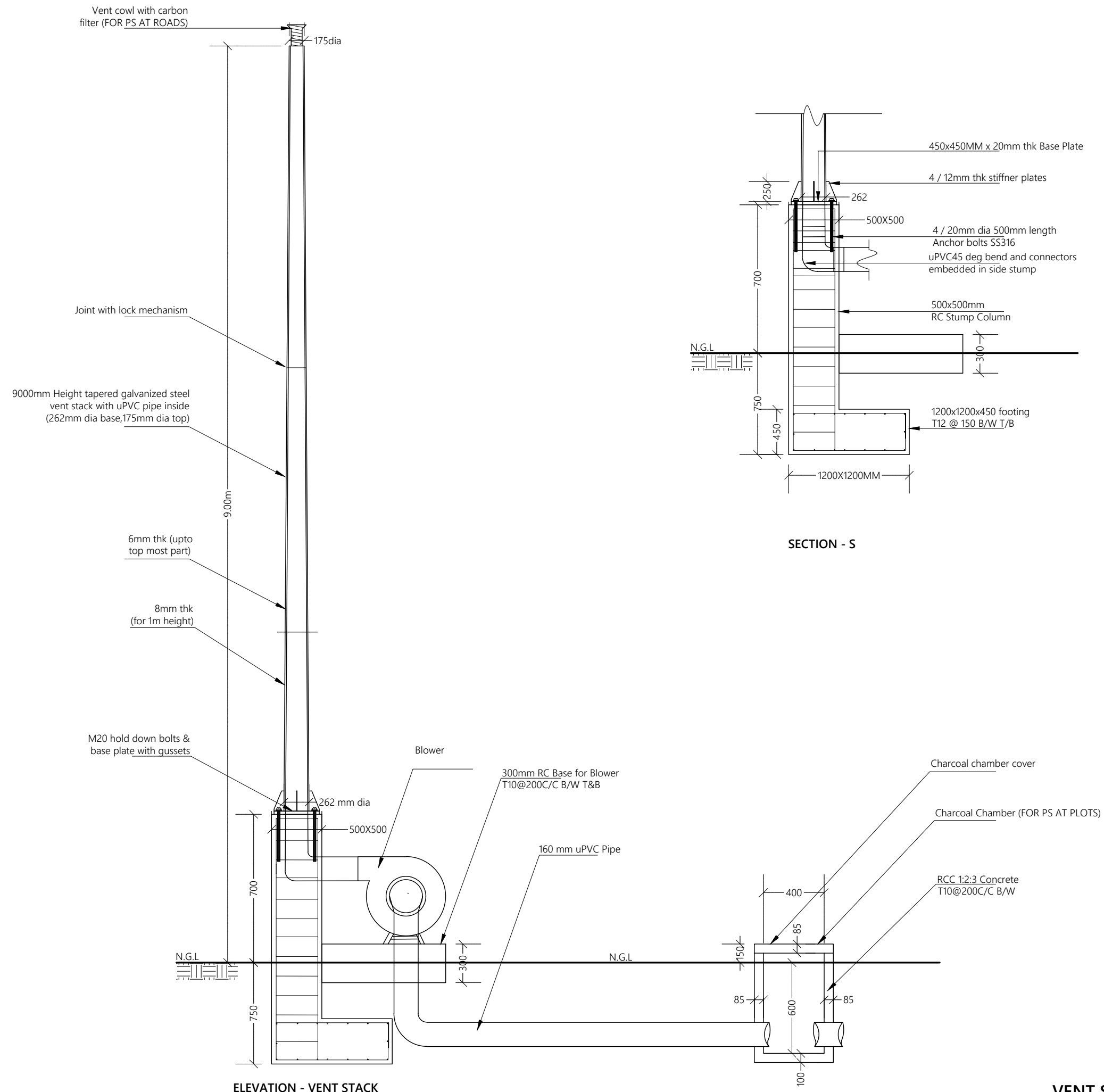
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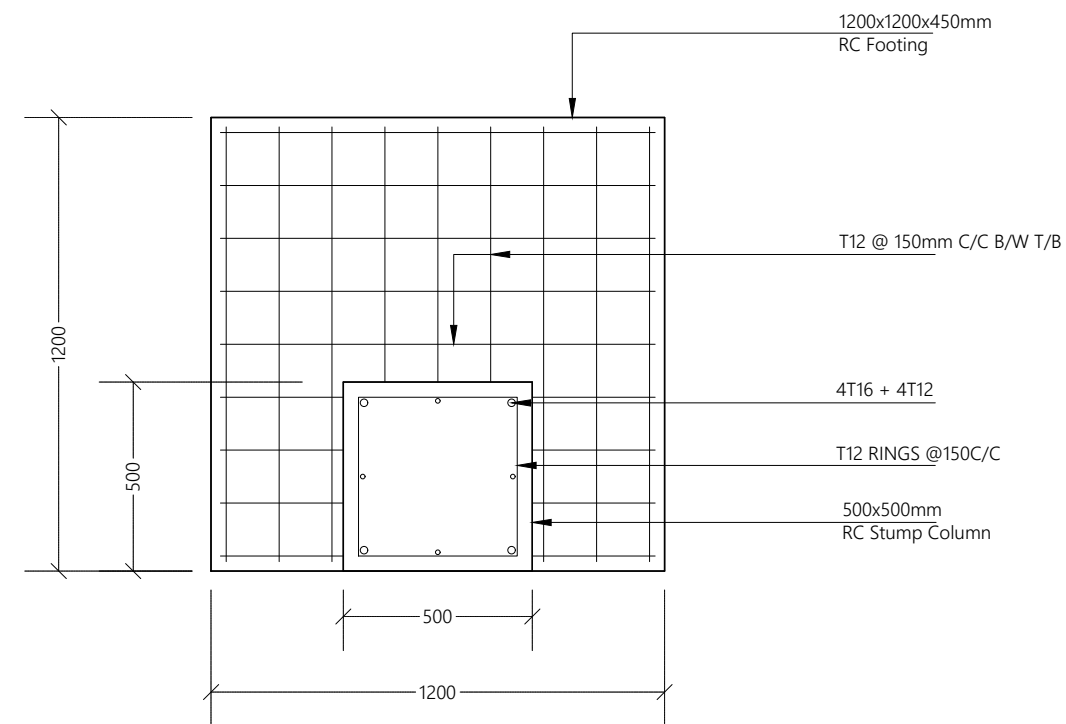
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## Sewerage System in ADh. Dhidhdhoo

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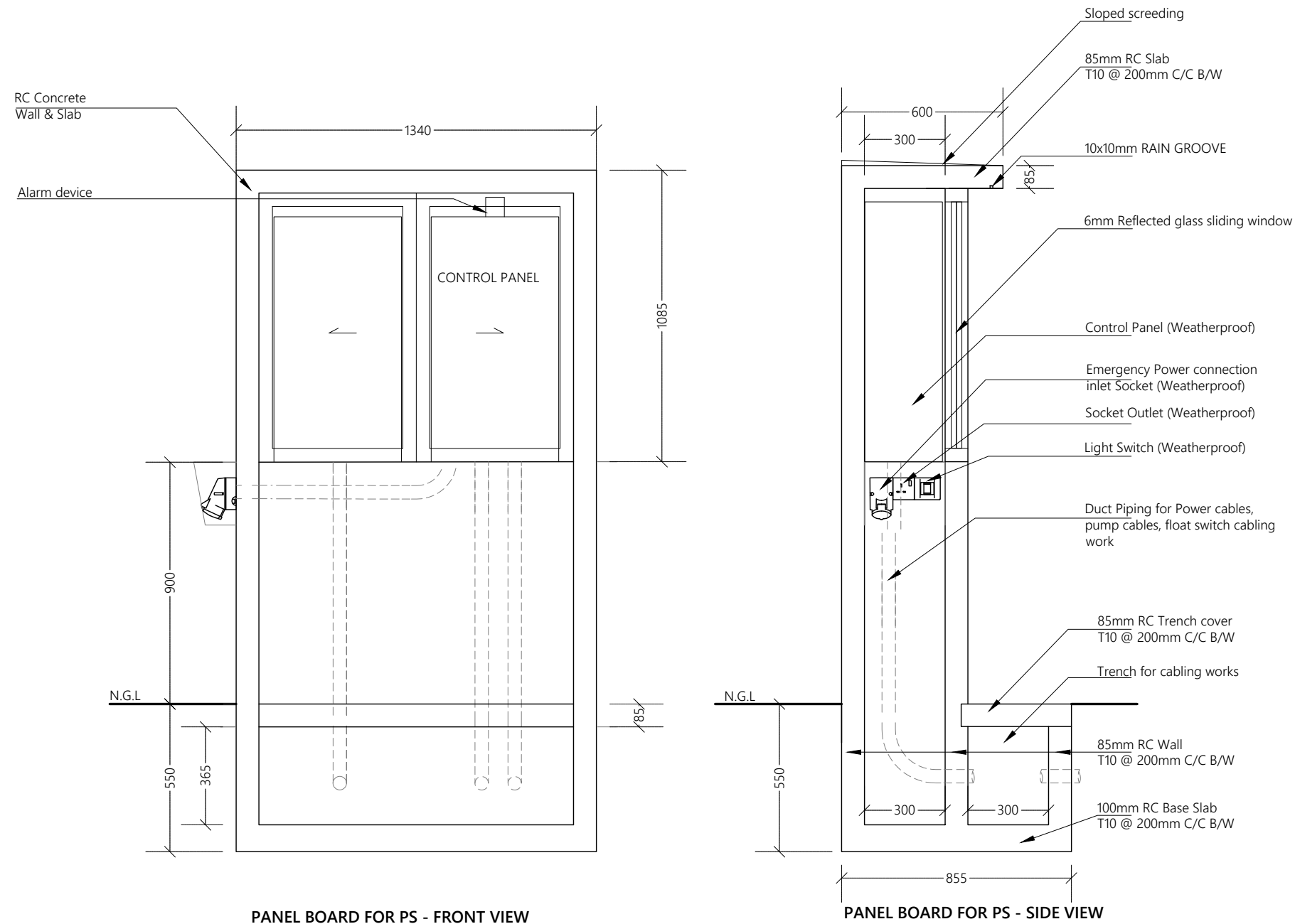
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Technical drawing of the Air Blower Assembly. The assembly consists of a Vent Stack, an Air Blower, a 300MM RC Base for Blower (T10@200C/C B/W T&B), a 160 mm uPVC Pipe, and a Charcoal Chamber (FOR PS AT PLOTS). The drawing shows the blower unit mounted on the RC base, with the vent stack connected to the top. The charcoal chamber is connected to the bottom of the blower unit via a uPVC pipe. Dimensions are indicated: 800 mm for the total length of the blower unit and base, 600 mm for the height of the blower unit, and 400 mm for the width and height of the charcoal chamber.

## VENT STACK AND AIR BLOWER DETAILS

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## CONTROL PANEL BOARD DETAILS

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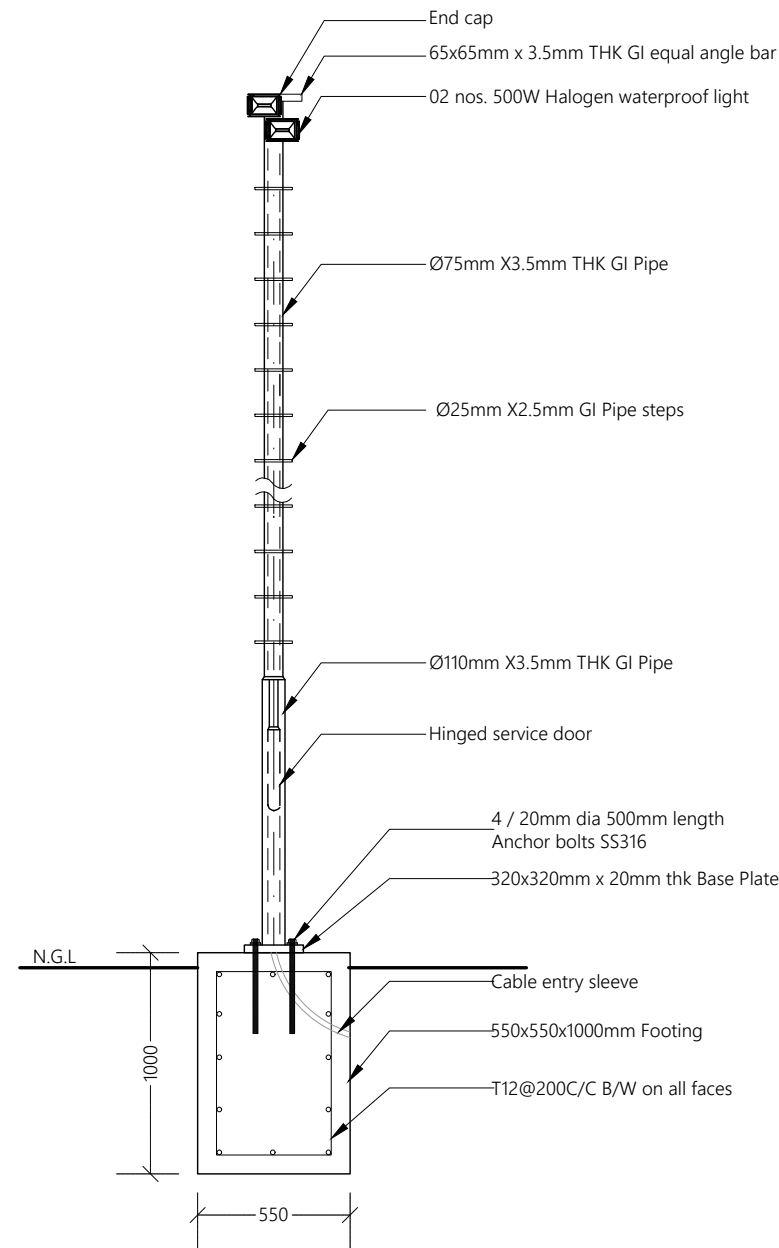
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**Sewerage System in Adh. Dhidhdhoo**

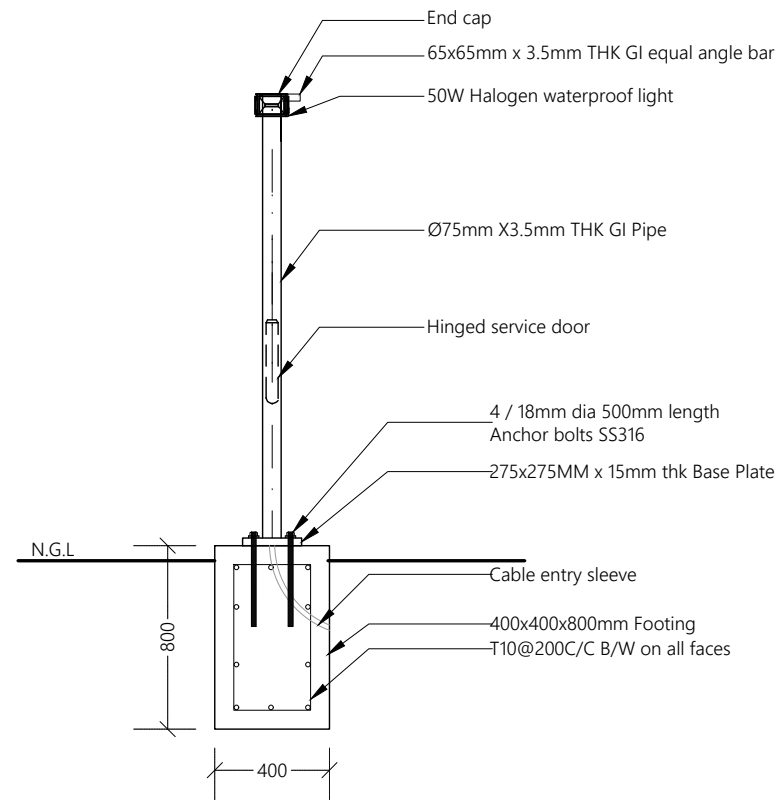
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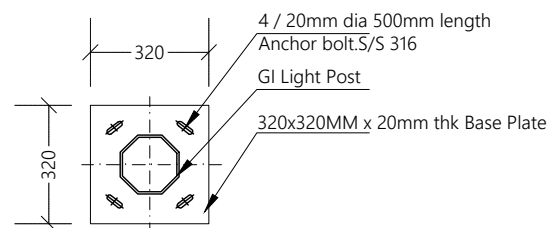
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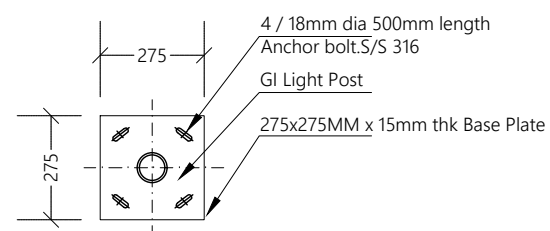
LIGHT POST DETAILS FOR STP COMPOUND (LP1)



LIGHT POST DETAILS FOR PUMP STATION (LP2)



BASE PLATE (LP1)



BASE PLATE (LP2)

NOTE:  
 - CONCRETE COVER :50mm  
 - All steel members and GI SHS to be applied with 2 coats of anti-corrosive paint with epoxy finishing paint

## LIGHT POST DETAILS

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### Legend

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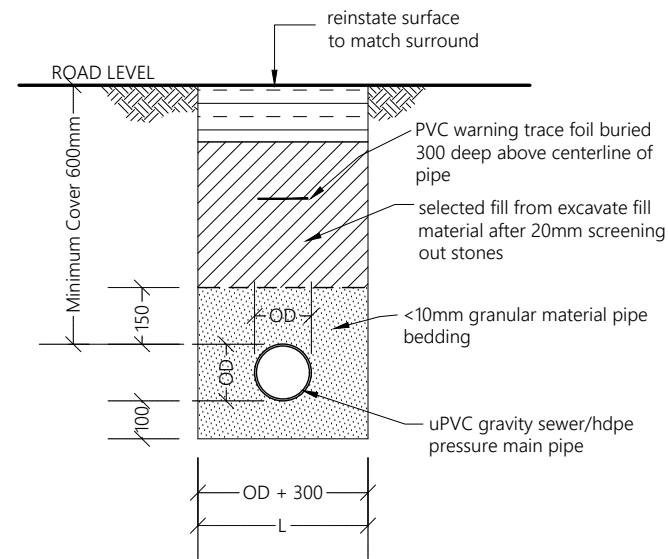


Diagram illustrating the cross-section of a road structure showing the placement of various utilities (cables and pipes) relative to the ROAD LEVEL and the buried line of pipe.

**Utilities and their relative positions (from top to bottom):**

- cable tv/telecom
- Power cable
- hdpe pipe for sewer pressure main
- uPVC pipe for sewer main
- HDPE pipe for water supply main
- HDPE/uPVC pipe for rain water collection

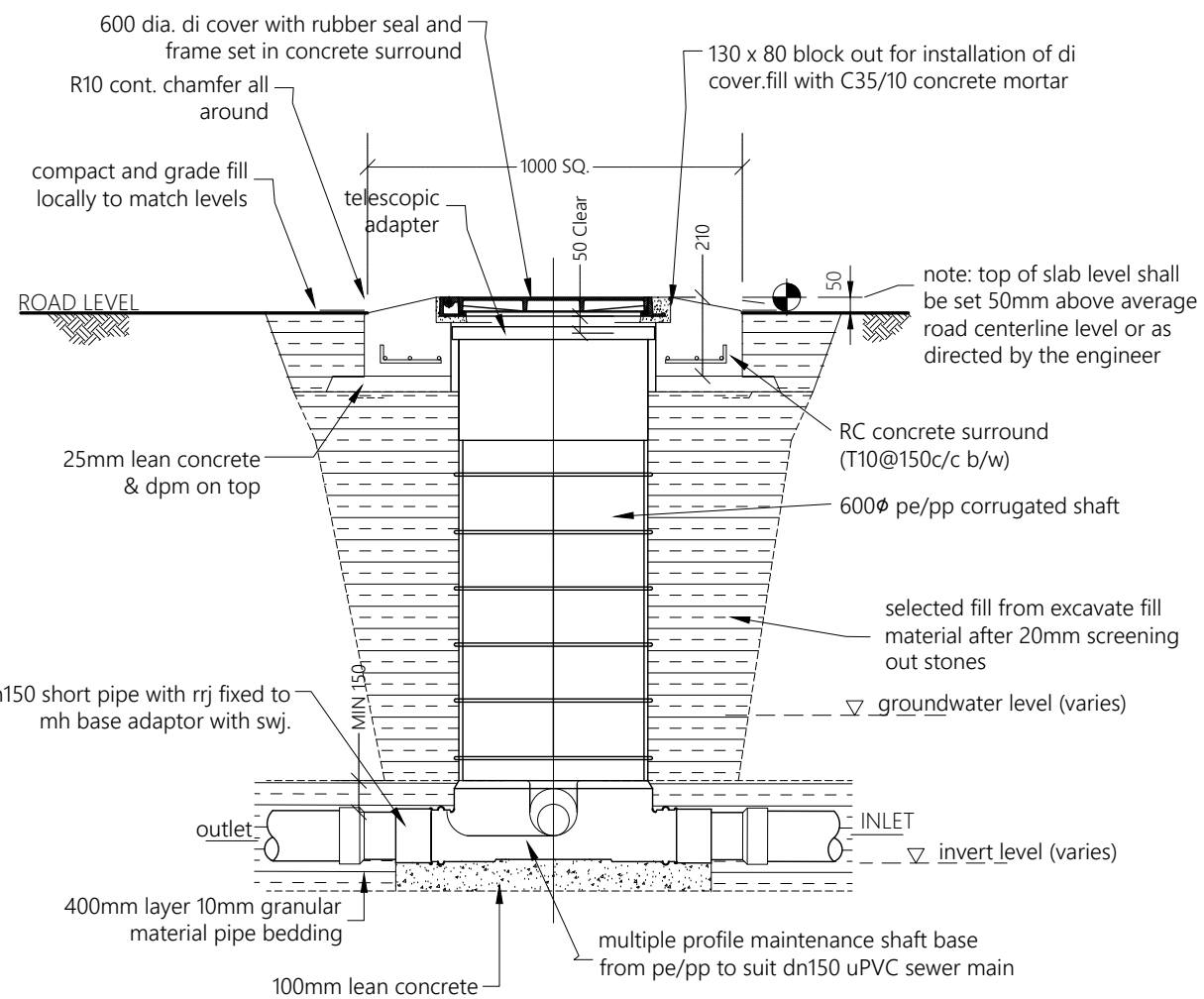
**Dimensions and Spacing:**

- Vertical Dimensions:**
  - 300 (from ROAD LEVEL to buried line of pipe)
  - VARIES (300-600) (from buried line of pipe to cable tv/telecom)
  - VARIES (MIN.600) (from buried line of pipe to power cable)
  - VARIES (MIN.600) (from buried line of pipe to hdpe pipe for sewer pressure main)
  - VARIES (MIN.600) (from buried line of pipe to uPVC pipe for sewer main)
  - VARIES (300-600) (from buried line of pipe to hdpe pipe for water supply main)
  - VARIES (300-600) (from buried line of pipe to hdpe/uPVC pipe for rain water collection)
- Horizontal Dimensions:**
  - 450-600 (from ROAD LEVEL to center of first pipe)
  - 300 (between center of first pipe and center of second pipe)
  - 1/3 X RL (from ROAD LEVEL to center of second pipe)
  - 1/2 X RL (from ROAD LEVEL to center of third pipe)
  - MIN.600 (between center of third pipe and center of fourth pipe)
  - 400 (between center of fourth pipe and center of fifth pipe)
  - 1/3 X RL (from ROAD LEVEL to center of fifth pipe)
  - 450-600 (from ROAD LEVEL to center of sixth pipe)

**Legend:**

- ROAD LEVEL
- buried line of pipe
- RL (Right of Way line)

W-(12)



600 dia. di cover with rubber seal and frame set in concrete surround

R10 cont. chamfer all around

600

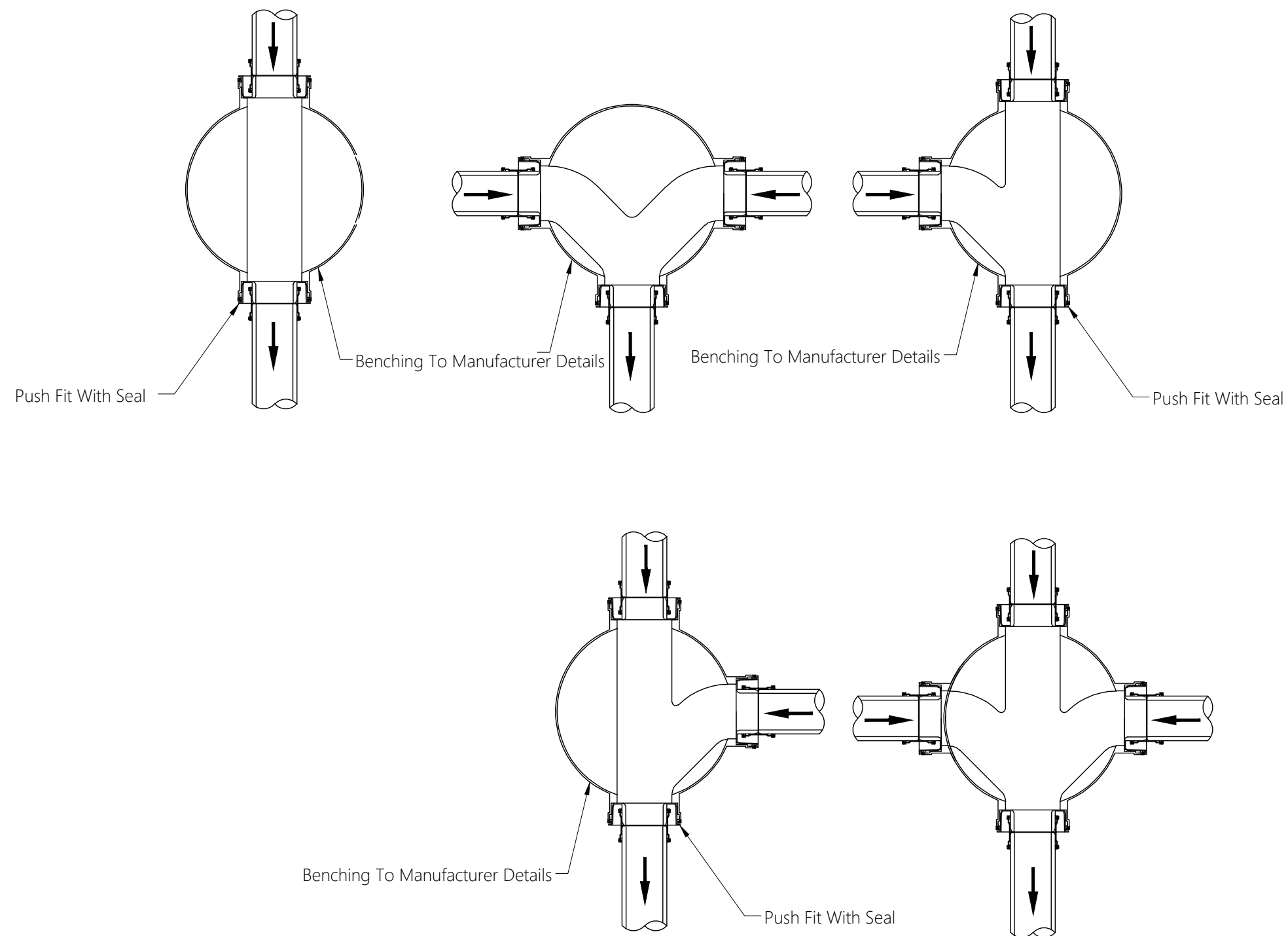
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## TYPICAL MANHOLE BASE DETAILS

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### Legend

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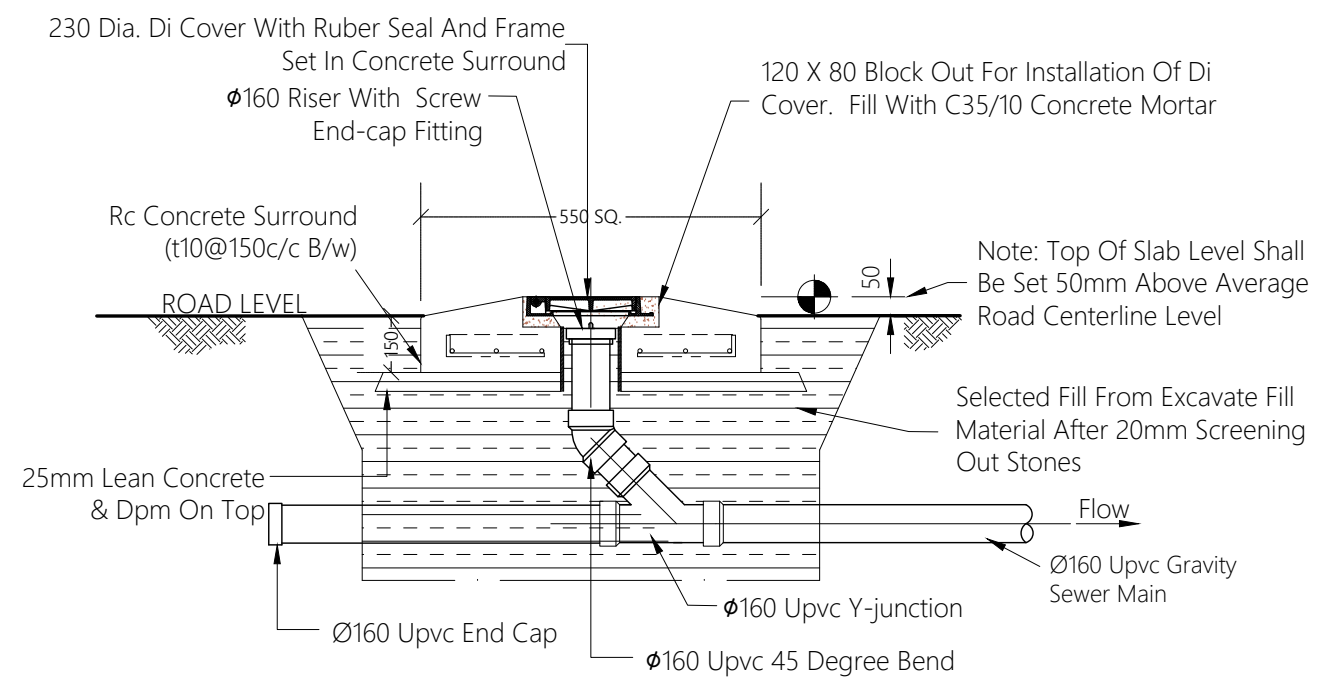
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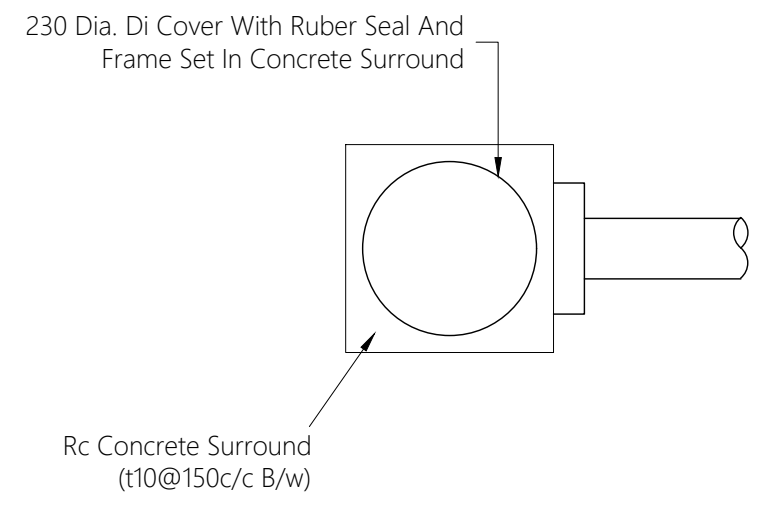
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V-(14)



ELEVATION - CLEANOUT (CO)



PLAN VIEW - CLEANOUT (CO)

## CLEAN OUT DETAILS

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**Legend**

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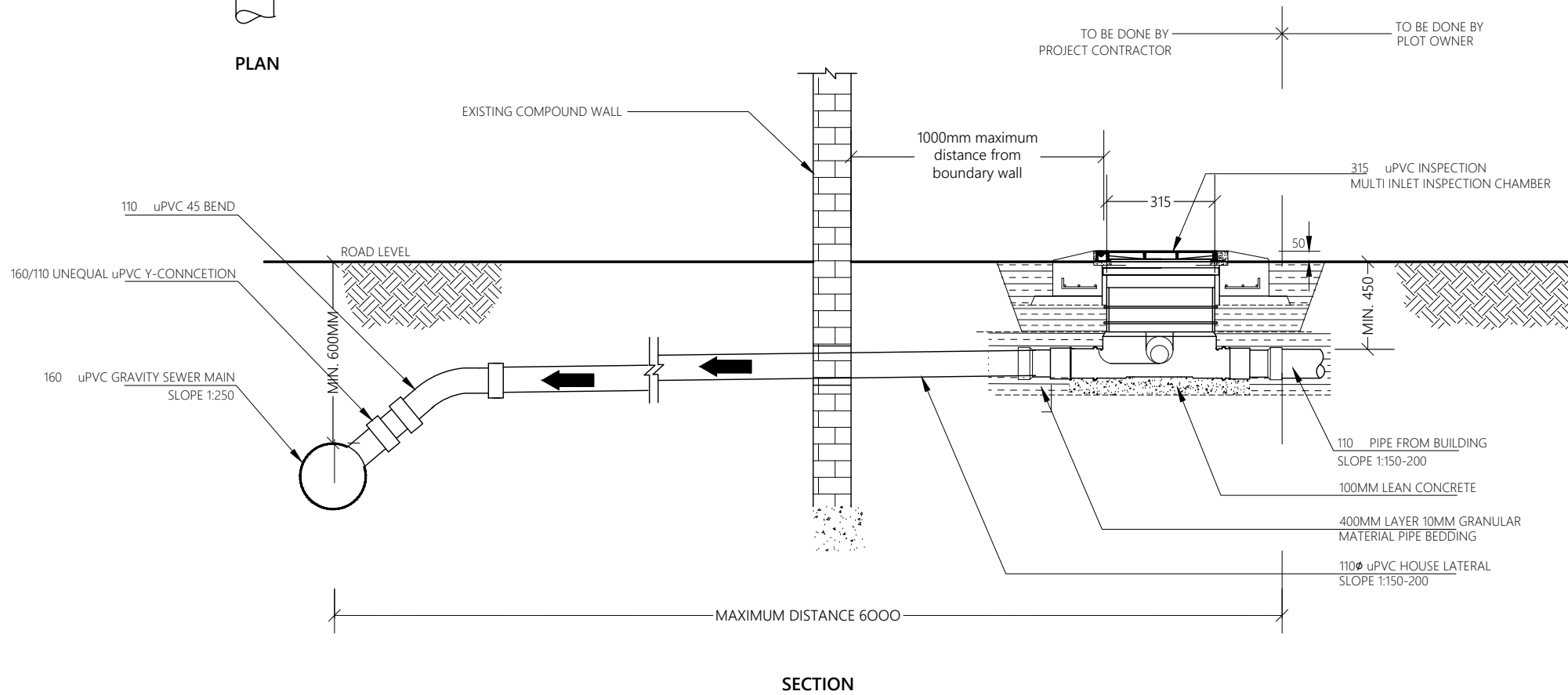
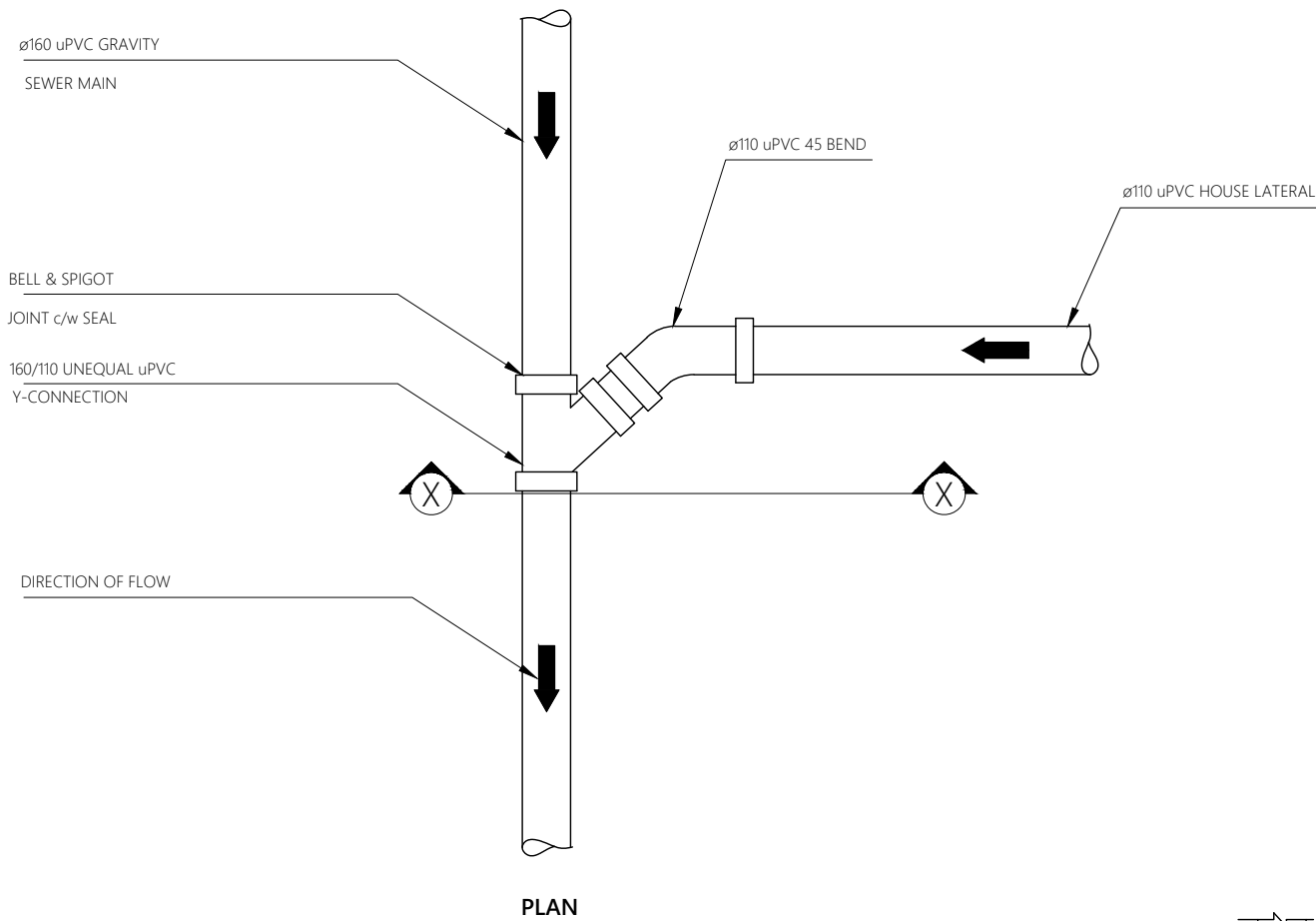
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TYPICAL HOUSE CONNECTION DETAIL

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Legend

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**Consultancy Services for Survey, Design and EIA works of Water Supply and Sewerage Facilities in 7 Islands, Maldives - Package 4**

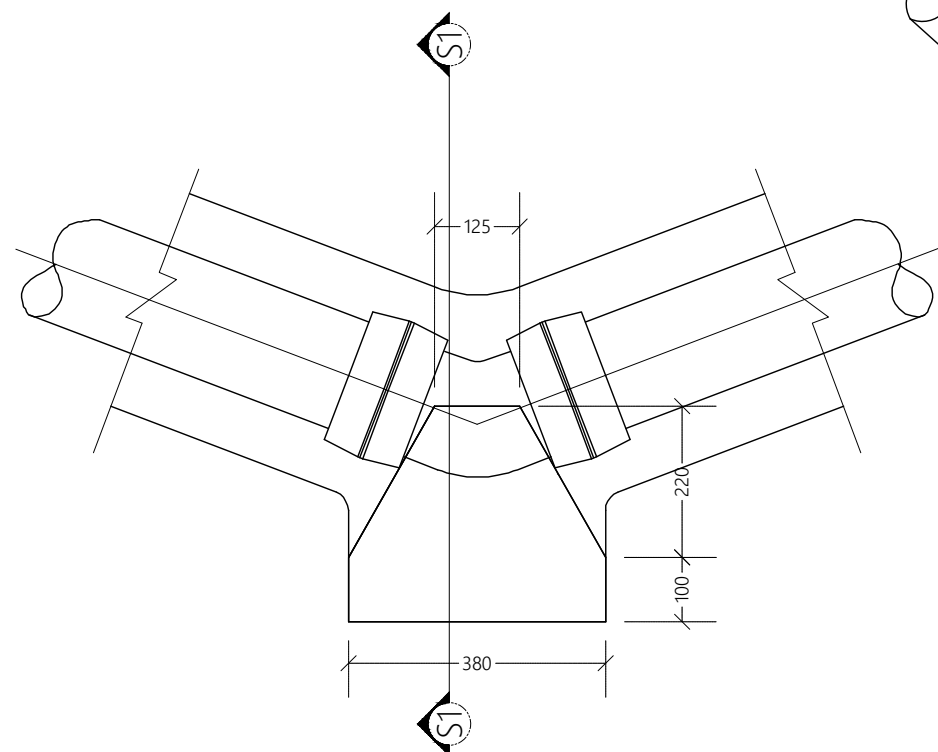
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Client:  
**Ministry of National Planning, Housing and Infrastructure, Republic of Maldives**

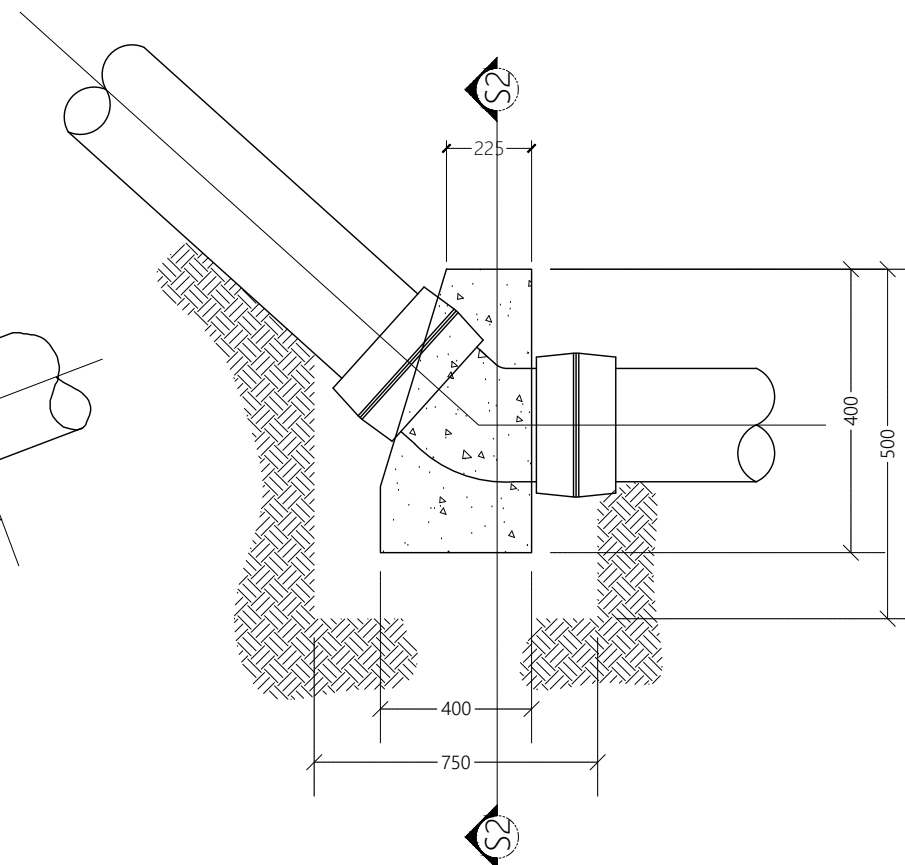
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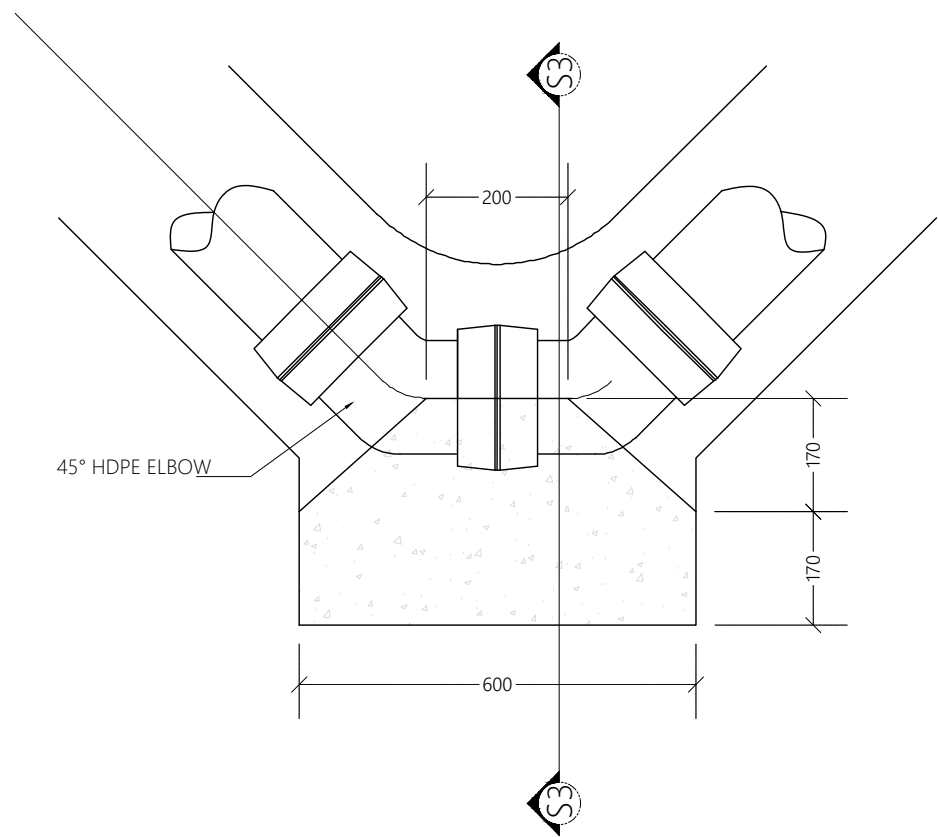
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| Designed: F.I.A.          | Approved: I.W.  |
| Date: Sep 2020            | SCALE (A3): NTS |
| Project No: EP-WS/2019/04 | Page: W-(16)    |



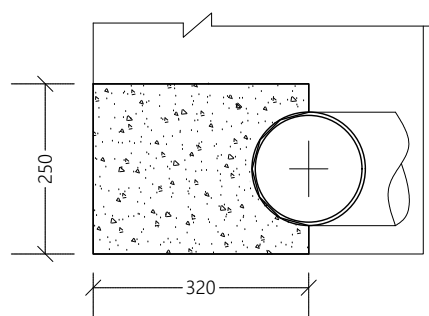
HORIZONTAL 45° BEND  
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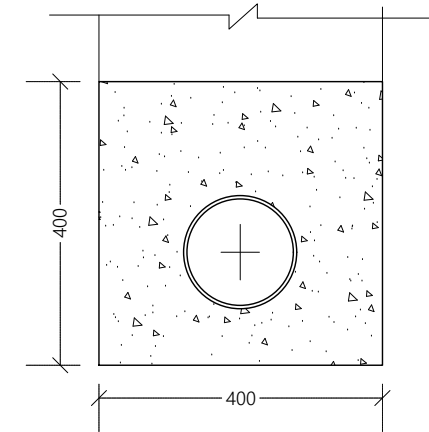
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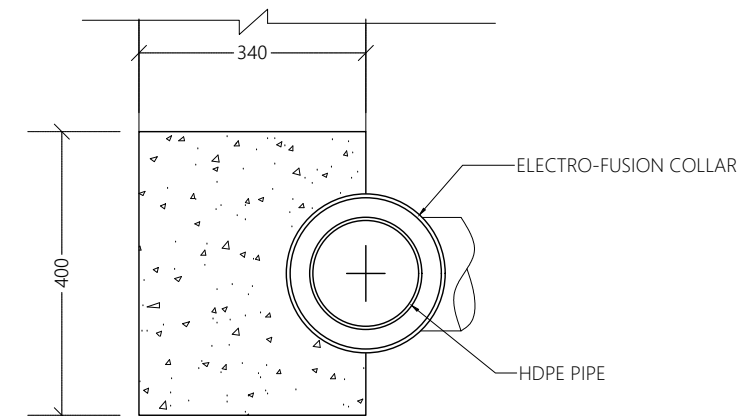
HORIZONTAL 90° BEND  
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SECTION S1-S1  
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SECTION S2-S2  
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SECTION S3-S3  
NTS

## THRUST BLOCK DETAILS

NTS

### Legend

| REV. NO. | Date | Revision Description | Drawn | Chkd | Appd. |
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Title:  
**Consultancy Services for Survey, Design and EIA works of Water Supply and Sewerage Facilities in 7 islands, Maldives - Package 4**

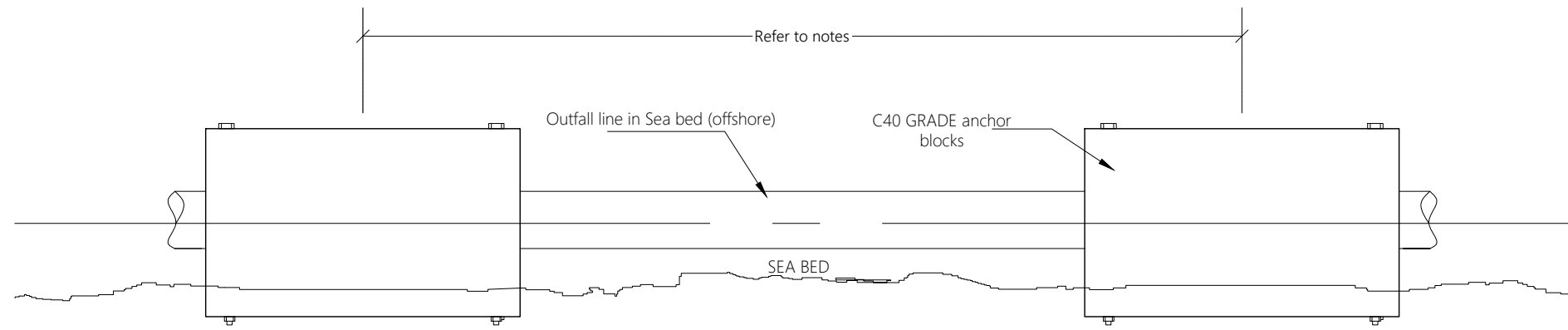
Sub Title:  
**Sewerage System in Adh. Dhidhdhoo**

Client:  
**Ministry of National Planning, Housing and Infrastructure, Republic of Maldives**

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| Date: Sep 2020            | SCALE (A3): NTS |
| Project No: EP-WS/2019/04 | Page: W-(17)    |



Technical drawing of a sea bed marker. The drawing shows a cross-section of a marker with a semi-circular top and a trapezoidal base. Dimensions are given in millimeters: total width 900, base width 600, top width 150, height 300, and base height 100. A circular hole with a hatched interior is centered on the top surface. The marker is shown resting on a stippled area labeled "SEA BED".

Technical drawing of a 1000mm diameter manhole structure, showing a cross-section and dimensions. The structure is composed of several parts:

- Top Section:** A semi-circular cover with a diameter of 1000mm. It is supported by **Anchor blocks C40A GRADE** and **4 nos. 25mm $\phi$  Threaded rod with bolts (SS316)**.
- Intermediate Section:** A horizontal pipe section labeled **Outfall pipe**.
- Bottom Section:** A trapezoidal structure with a **SEA BED** at the base. It is reinforced with **T12 @200c/c B/W** (top and bottom) and **T12 @200c/c B/W** (middle horizontal section).

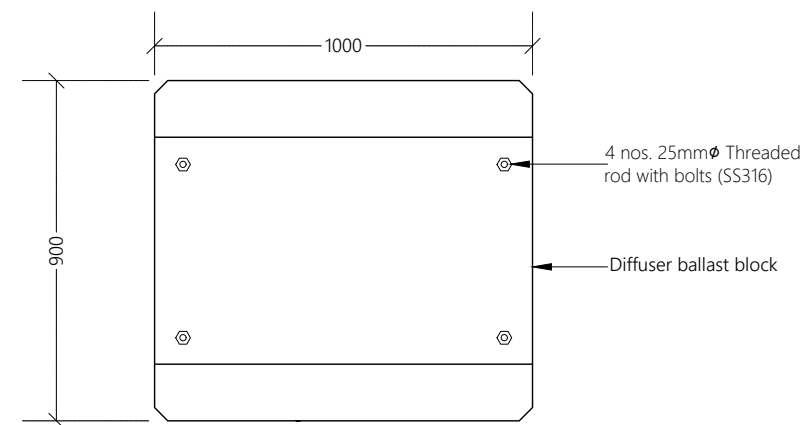
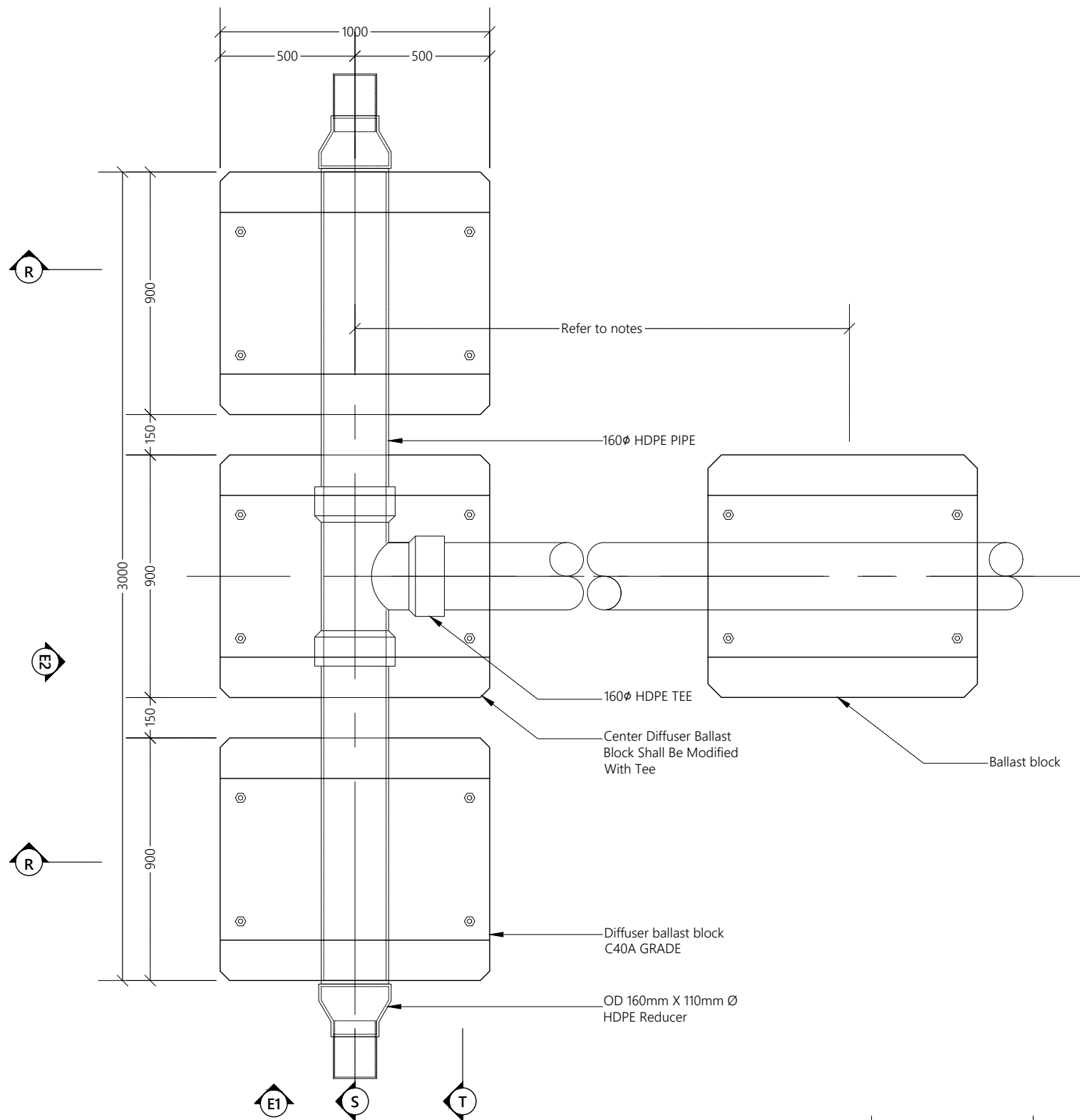
**Dimensions:**

- Horizontal Dimensions:** The total width at the base is 1000mm, divided into three sections: 150mm (left), 600mm (center), and 150mm (right).
- Vertical Dimensions:** The structure is divided into three vertical sections, each 300mm high, and a base section 100mm high.

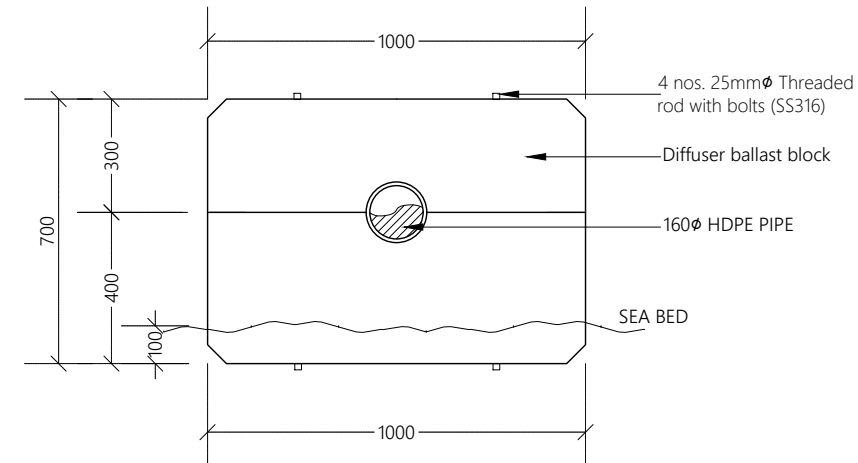
Technical drawing of a reinforced concrete slab showing reinforcement details. The slab is 1000mm wide and 150mm thick. It features 4 nos. of 25mm diameter threaded rods with bolts (SS316) for the main reinforcement. The drawing shows the top and bottom reinforcement bars, with dimensions indicating the spacing and placement of the rods and bolts. A 27mm diameter hole is shown for the bolts. The bottom reinforcement is shown with a 400mm spacing and a 600mm spacing for the top reinforcement.

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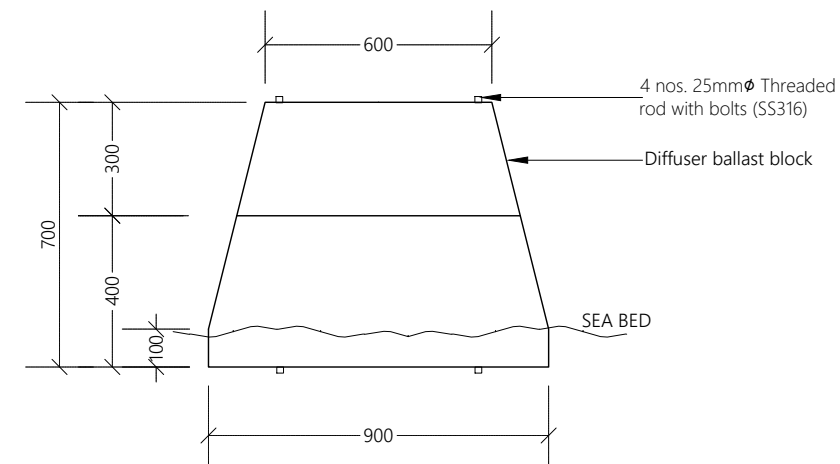
V-(18)



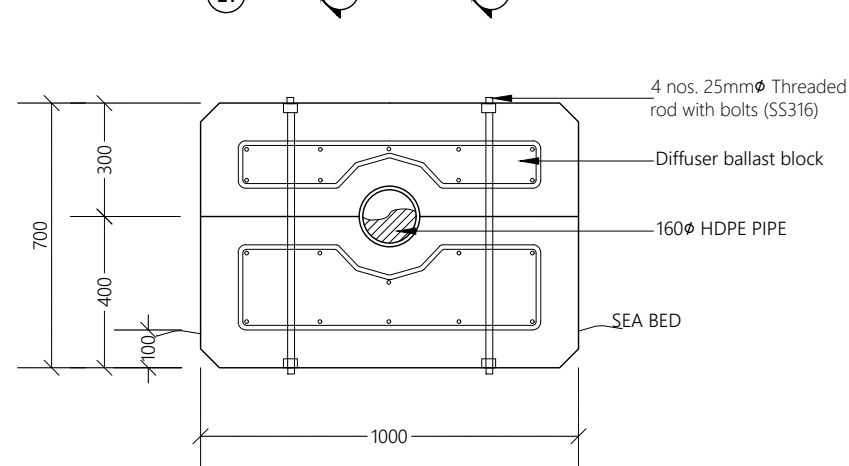
DIFFUSER BALLAST BLOCK PLAN



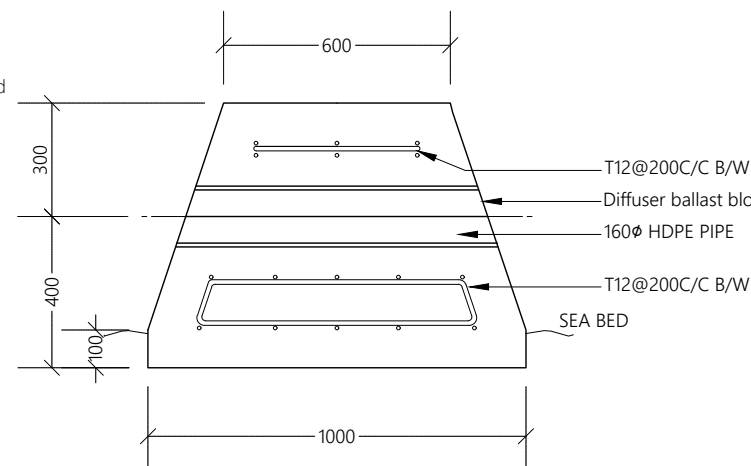
DIFFUSER BALLAST BLOCK FRONT ELEVATION - E1



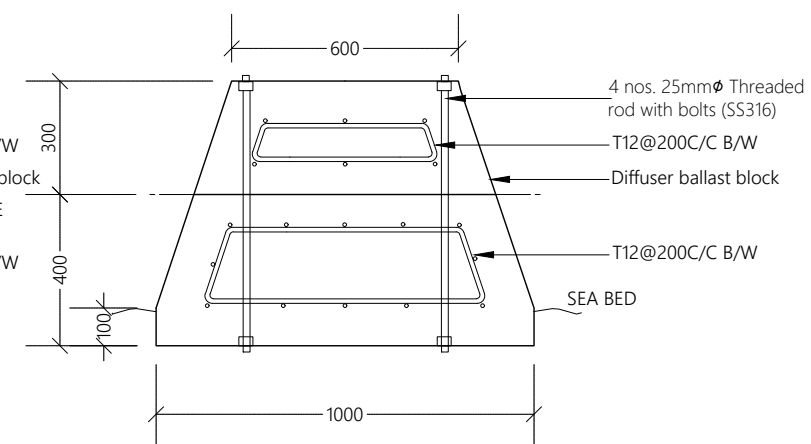
DIFFUSER BALLAST BLOCK FRONT ELEVATION - E2



DIFFUSER BALLAST BLOCK SECTION - R



DIFFUSER BALLAST BLOCK SECTION - S



DIFFUSER BALLAST BLOCK SECTION - T

## DIFFUSER DETAILS

NTS

### Legend

#### Notes:

1. All backing rings for stub flanges, nuts and bolts shall be grade 316 stainless steel.
2. All pipe work shall be bedded on 10mm thick neoprene rubber seat in semicircular recess matching the O.D. the pipe.
3. Fabricate specific pipe clamps to provide firm clamping action according to pipe O.D.
4. All structural concrete shall be of grade C40A.
5. All castings shall be done using sulphate resistant portland cement to BS 4027:1996.
6. All structural reinforcement shall be epoxy coating of non-pre-stressed reinforcement to ASTM-A775/A775M.
7. A cover of 75mm should be given for all reinforcements.
8. In shallow water (regions where the depth is less than 1m), the ballast block spacing is 3.5m. In deeper water (regions where the depth is greater than 1m), the ballast block spacing is 2.0m. All distances are from c/c of blocks.

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Title:  
**Consultancy Services for Survey, Design and EIA works of Water Supply and Sewerage Facilities in 7 Islands, Maldives - Package 4**

Sub Title:  
**Sewerage System in ADH. Dhidhdhoo**

Client:  
**Ministry of National Planning, Housing and Infrastructure, Republic of Maldives**

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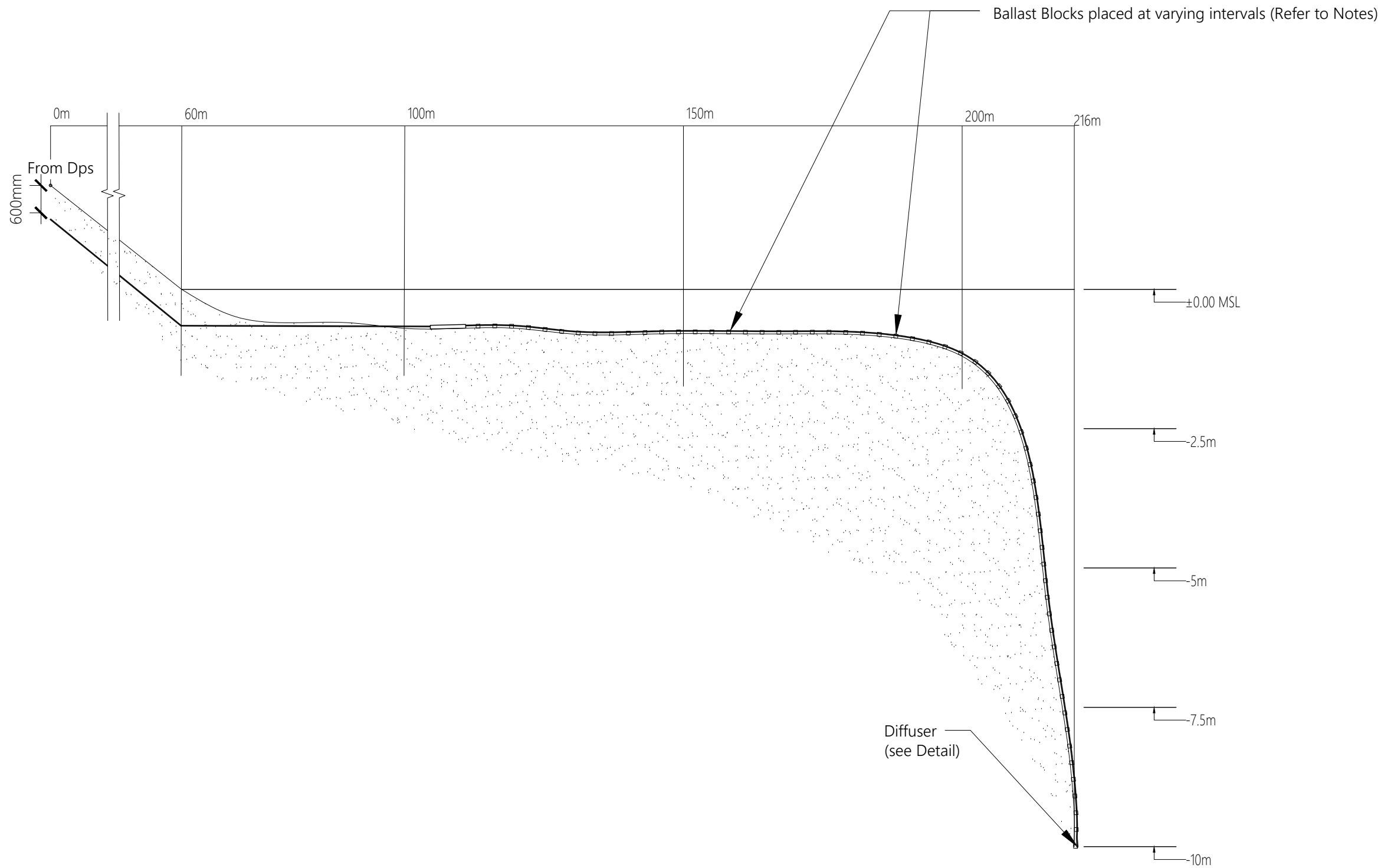
Designed: F.I.A. Approved: I.W.

Date: Sep 2020 SCALE (A3): NTS

Project No: EP-WS/2019/04

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W-(19)



Legend

Notes:

- THE CONTRACTOR TO UNDERTAKE A DETAILED INSPECTION OF THE OUTFALL SITE TO ASSESS THE PROFILE AND CONDITION OF THE REEF BELOW SEA LEVEL AND TO PREPARE HIS METHODOLOGY FOR INSTALLATION AND FIXING.
- IN SHALLOW WATER (REGIONS WHERE THE DEPTH IS LESS THAN 1M), THE BALLAST BLOCK SPACING IS 3.5M. IN DEEPER WATER (REGIONS WHERE THE DEPTH IS GREATER THAN 1M), THE BALLAST BLOCK SPACING IS 2.0M. ALL DISTANCES ARE FROM C/C OF BLOCKS.

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Title:  
**Consultancy Services for Survey, Design and EIA works of Water Supply and Sewerage Facilities in 7 islands, Maldives - Package 4**

Sub Title:  
**Sewerage System in ADh. Dhidhdhoo**

Client:  
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Maldiviyaa Shifaa Infrastructure Development

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Date: Sep 2020 SCALE (A3): NTS

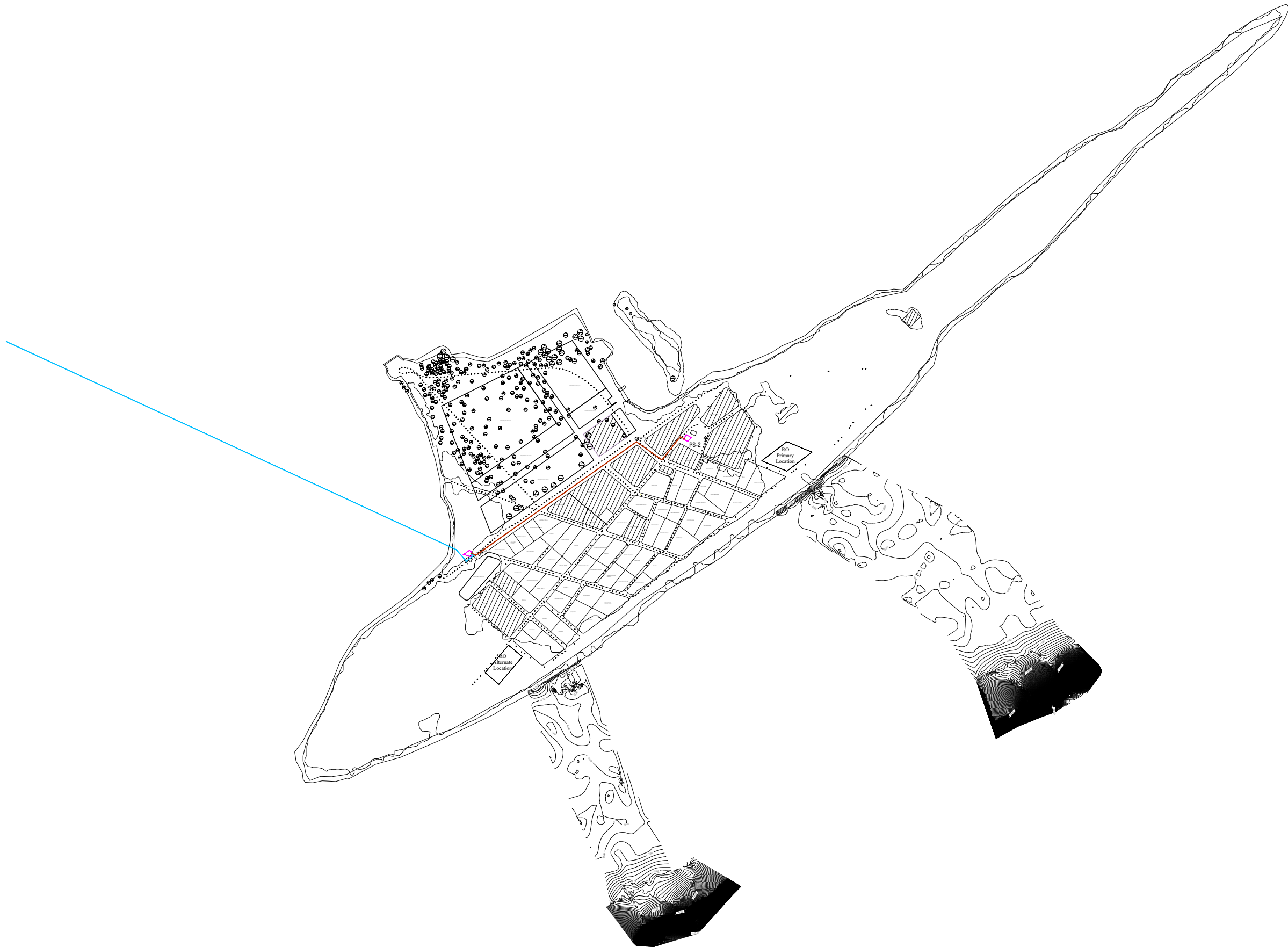
Project No: EP-WS/2019/04

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TYPICAL SEA OUTFALL DETAILS

NTS



ADH, DHIDHDHOO SEWERAGE SYSTEM - PRESSURE NETWORK LAYOUT  
1:4500



### Legend

#### Notes:

- THE CONTRACTOR TO UNDERTAKE A DETAILED INSPECTION OF THE OUTFALL SITE TO ASSESS THE PROFILE AND CONDITION OF THE REEF BELOW SEA LEVEL AND TO PREPARE HIS METHODOLOGY FOR INSTALLATION AND FIXING.
- IN SHALLOW WATER(REGIONS WHERE THE DEPTH IS LESS THAN 1M), THE BALLAST BLOCK SPACING IS 3.5M. IN DEEPER WATER (REGIONS WHERE THE DEPTH IS GREATER THAN 1M), THE BALLAST BLOCK SPACING IS 2.0M. ALL DISTANCES ARE FROM C/C OF BLOCKS.

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Title:  
**Consultancy Services for Survey, Design and EIA works of Water Supply and Sewerage Facilities in 7 islands, Maldives - Package 4**

Sub Title:  
**Sewerage System in ADH, Dhidhdhoo**

Client:  
**Ministry of National Planning, Housing and Infrastructure, Republic of Maldives**



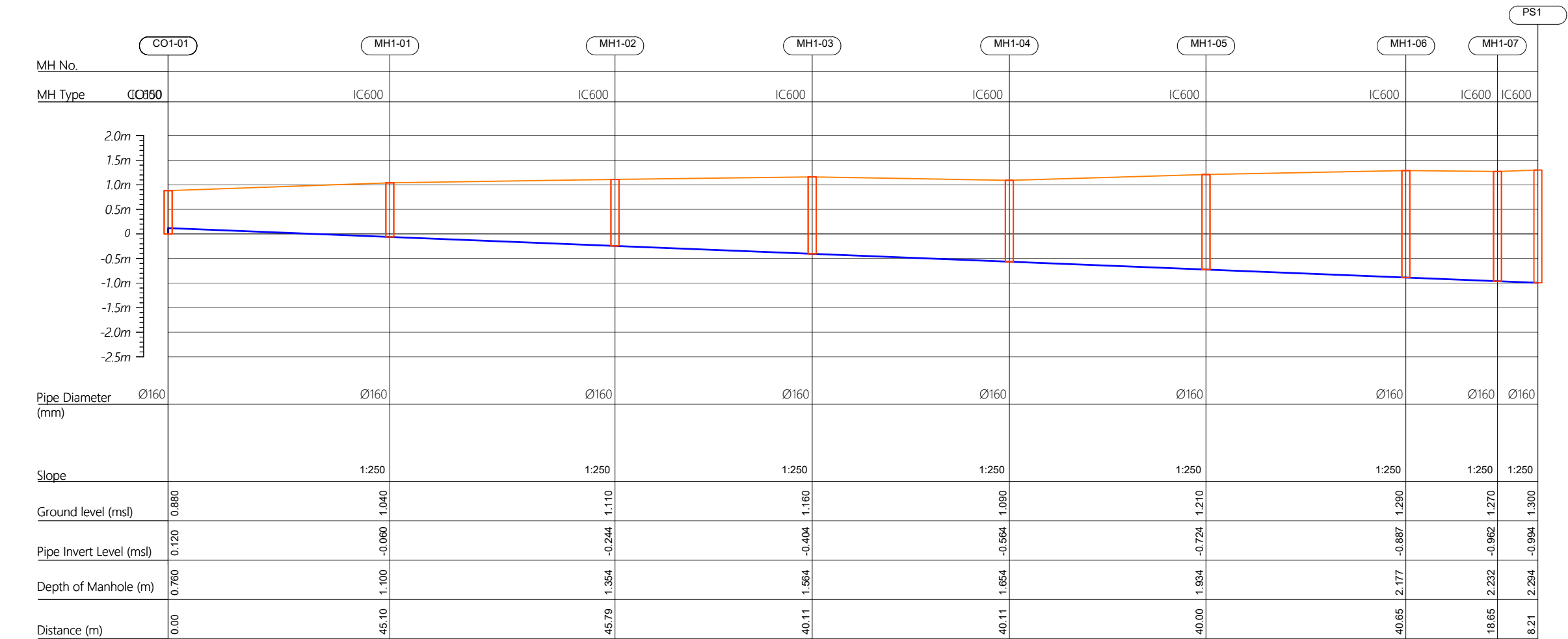
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| Date: Sep 2020            | SCALE (A3): 1:4500 |
| Project No: EP-WS/2019/04 | Page: W-(21)       |

Profile 01



CO160 — Cleanout Ø160  
IC600 — HDPE Manhole Ø600  
PS — Pump Station

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| R00      | JUNE 2020 | STAGE -1             | PD    | SBC  | SD    |
| REV. NO. | Date      | Revision Description | Drawn | Chkd | Appd. |

Title:  
**Consultancy Services for Survey, Design and EIA works of Water Supply and Sewerage Facilities in 7 islands, Maldives - Package 4**

Sub Title:  
**Sewerage System in Adh.Dhihdhoo**

Client:  
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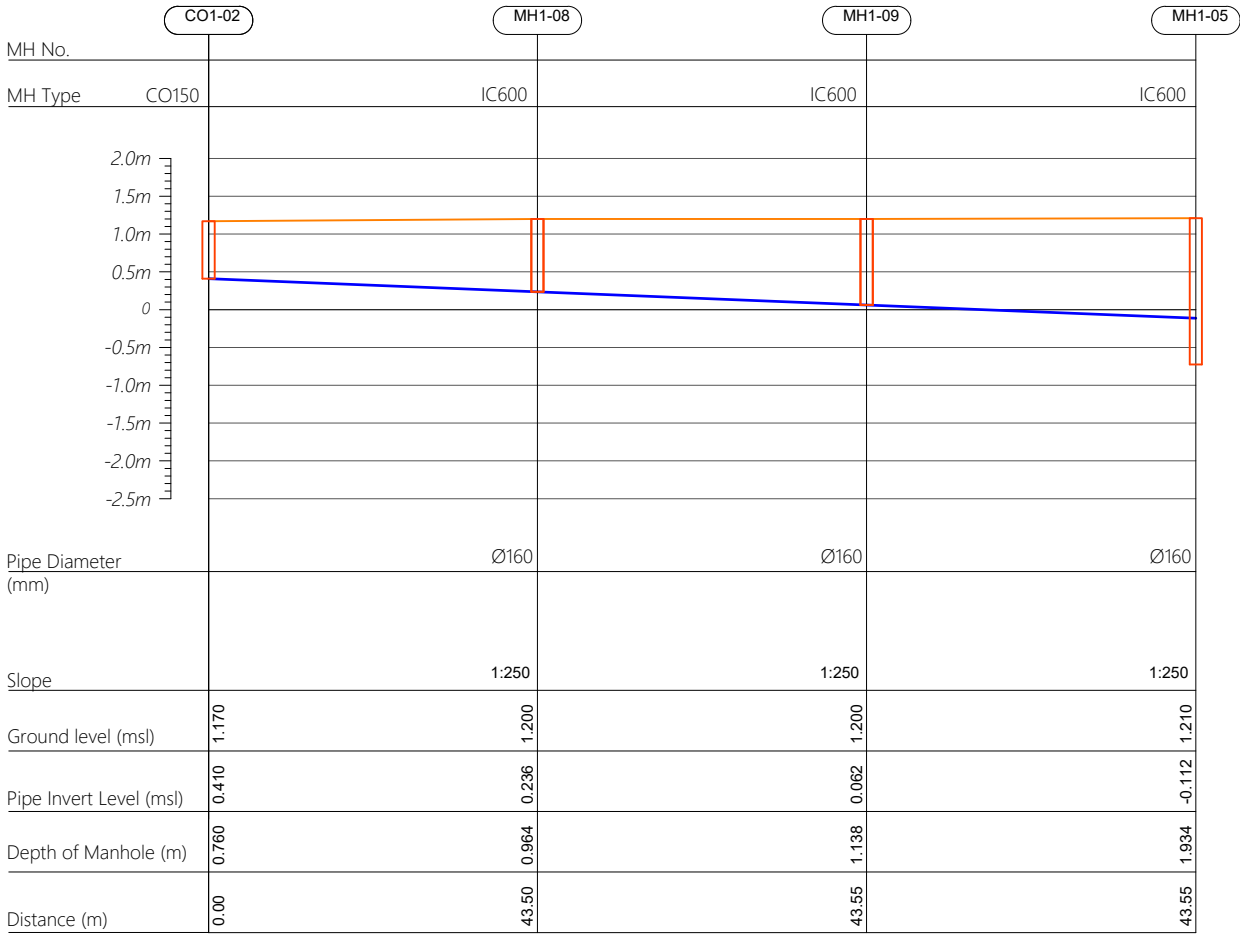
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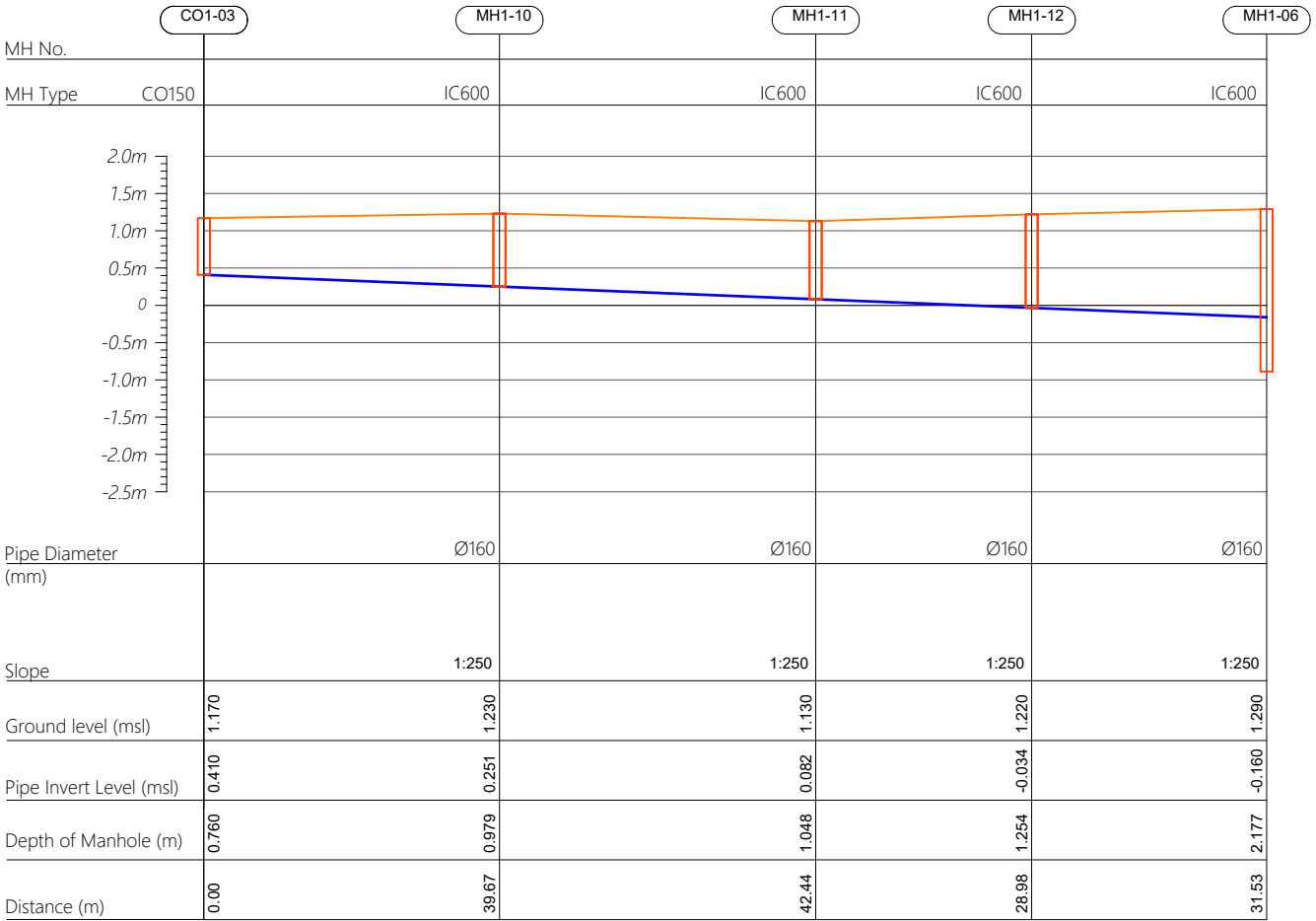
Project No: EP-WS/2019/04

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Profile 02



Profile 03



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Title:  
**Consultancy Services for Survey, Design and EIA works of Water Supply and Sewerage Facilities in 7 islands, Maldives - Package 4**

Sub Title:  
**Sewerage System in Adh.Dhihdhoo**

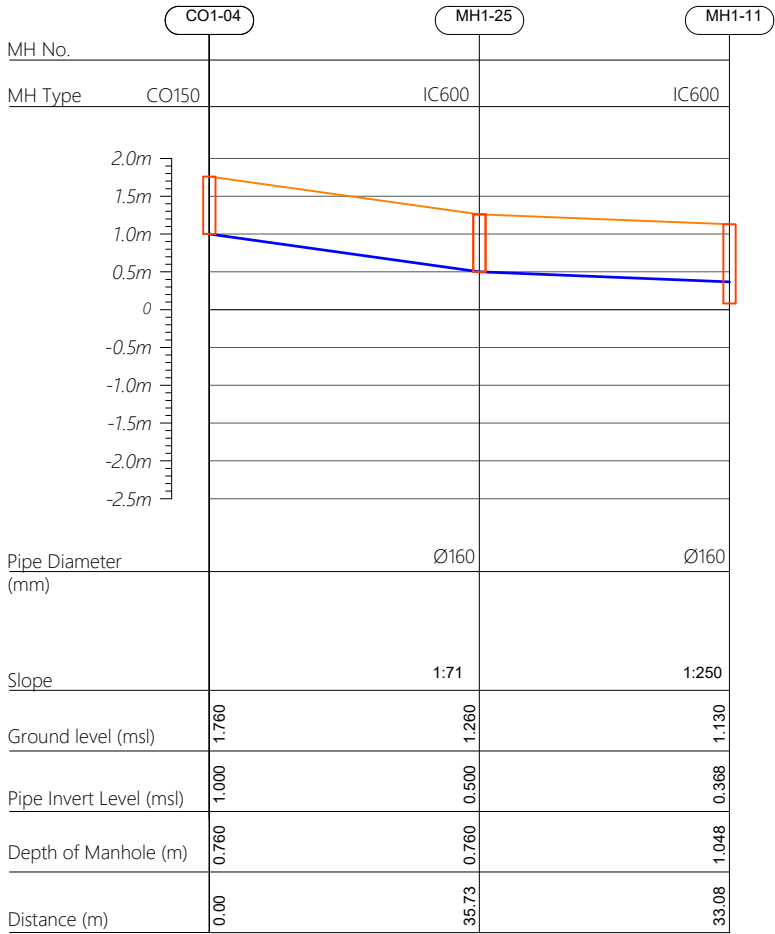
Client:  
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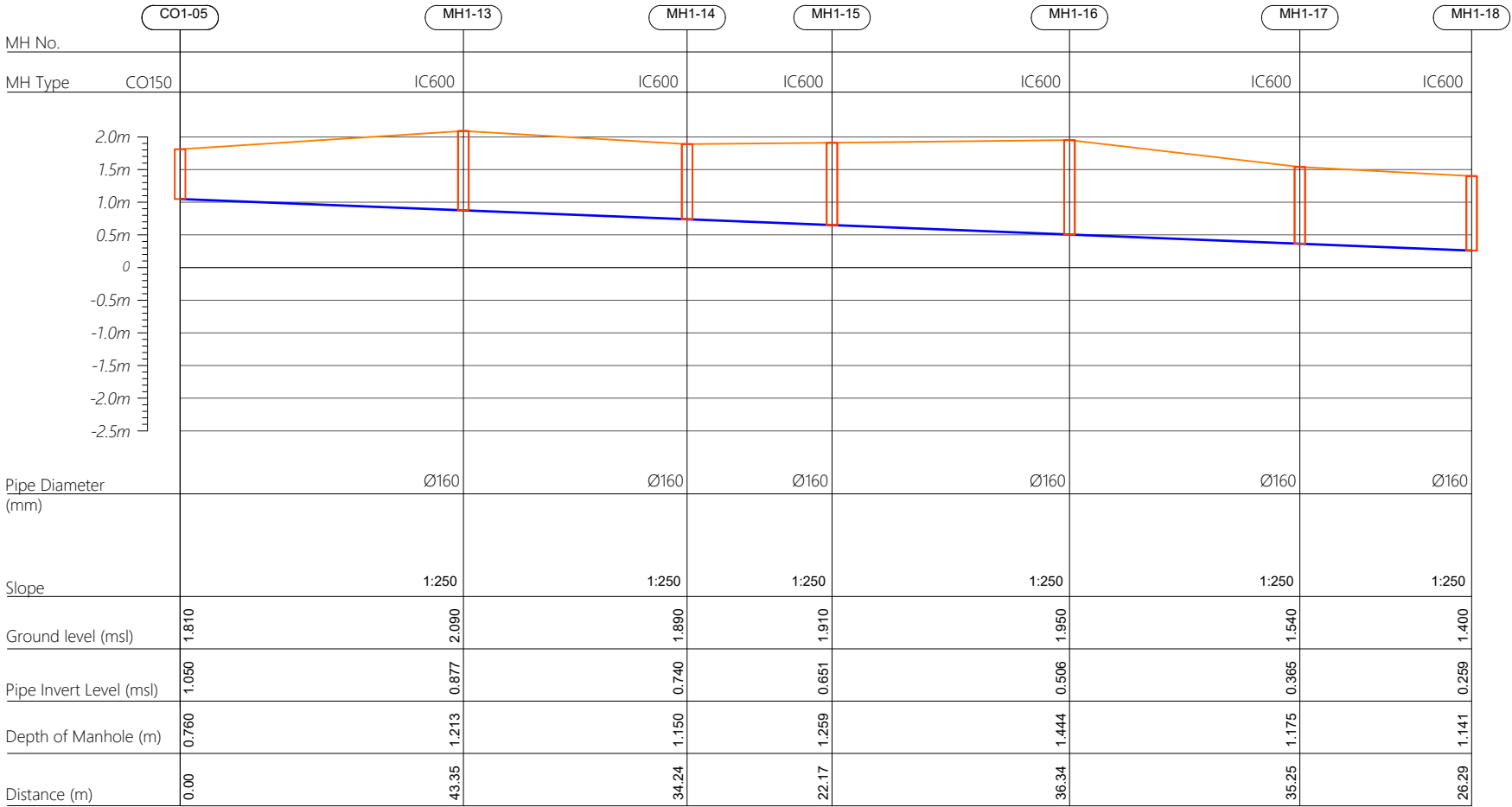
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| Rev: R-01                 | Page: PS1-02      |

Profile 04



Profile 05



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| REV. NO. | Date      | Revision Description | Drawn | Chkd | Appd. |

Title:  
**Consultancy Services for Survey,  
Design and EIA works of Water  
Supply and Sewerage Facilities in  
7 islands, Maldives - Package 4**

Sub Title:  
**Sewerage System in Adh.Dhihdhoo**

Client:  
**Ministry of National Planning, Housing and  
Infrastructure, Republic of Maldives**

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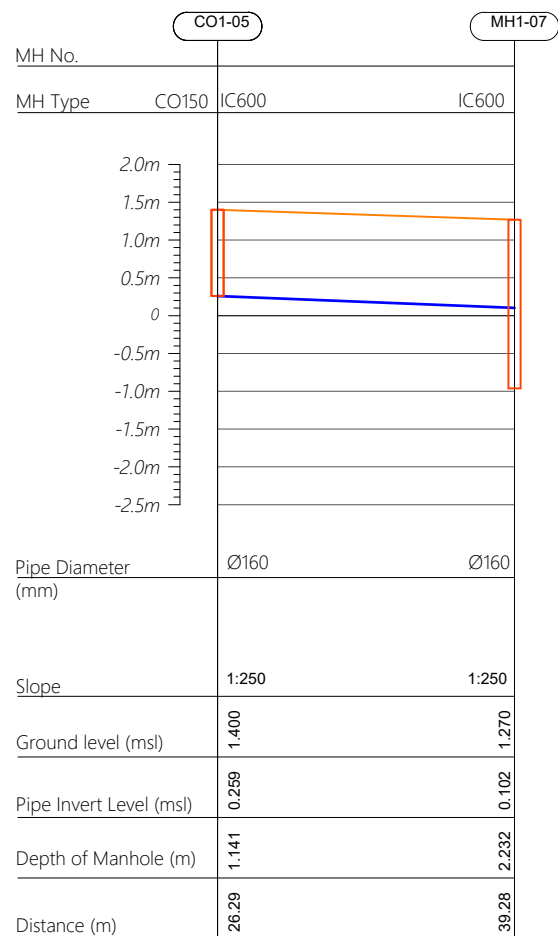
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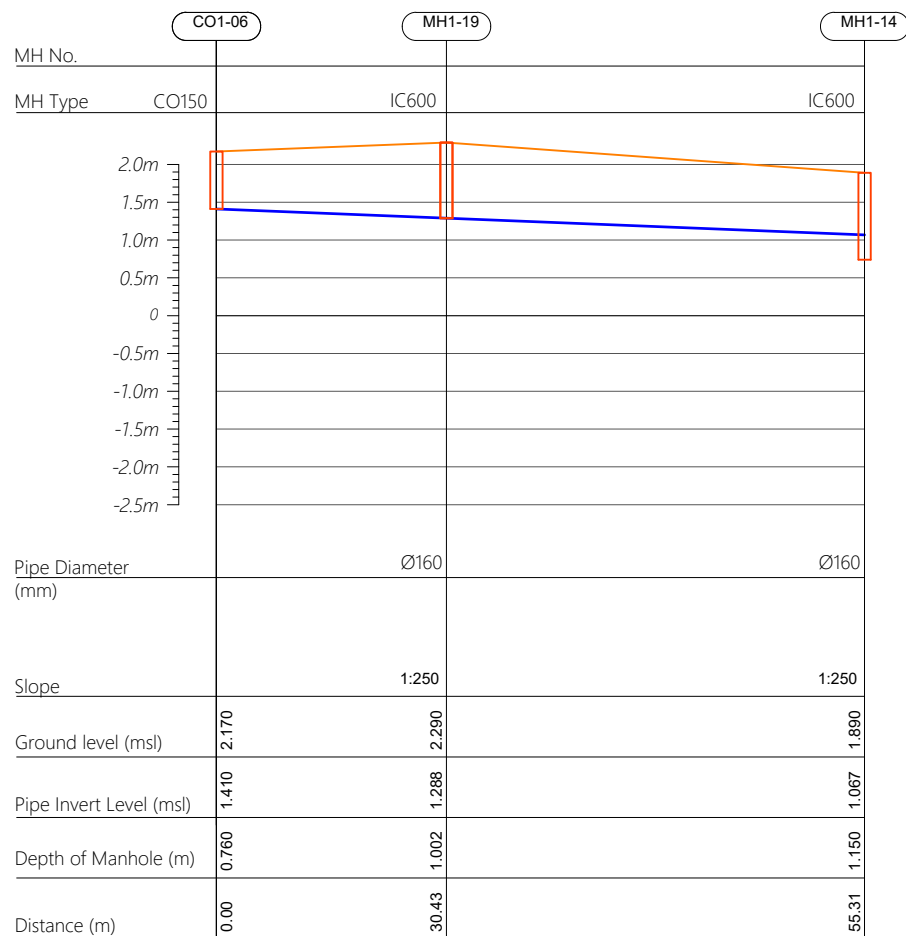
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Rev: R-01 Page: PS1-03

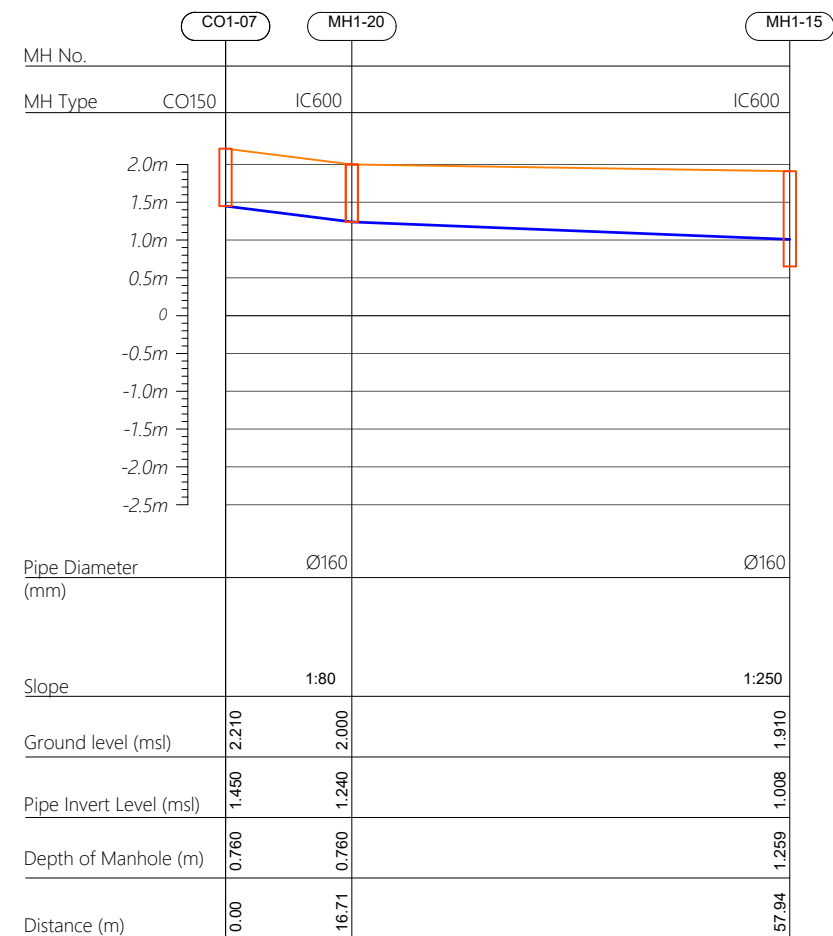
## Profile 05



## Profile 06



## Profile 07



CO160 — Cleanout Ø160  
IC600 — HDPE Manhole Ø600  
PS — Pump Station

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Title: **Consultancy Services for Survey, Design and EIA works of Water Supply and Sewerage Facilities in 7 islands, Maldives - Package 4**

Sub Title:  
***Sewerage System in Adh.Dhihdhoo***

Client:  
*Ministry of National Planning, Housing and  
Infrastructure, Republic of Maldives*



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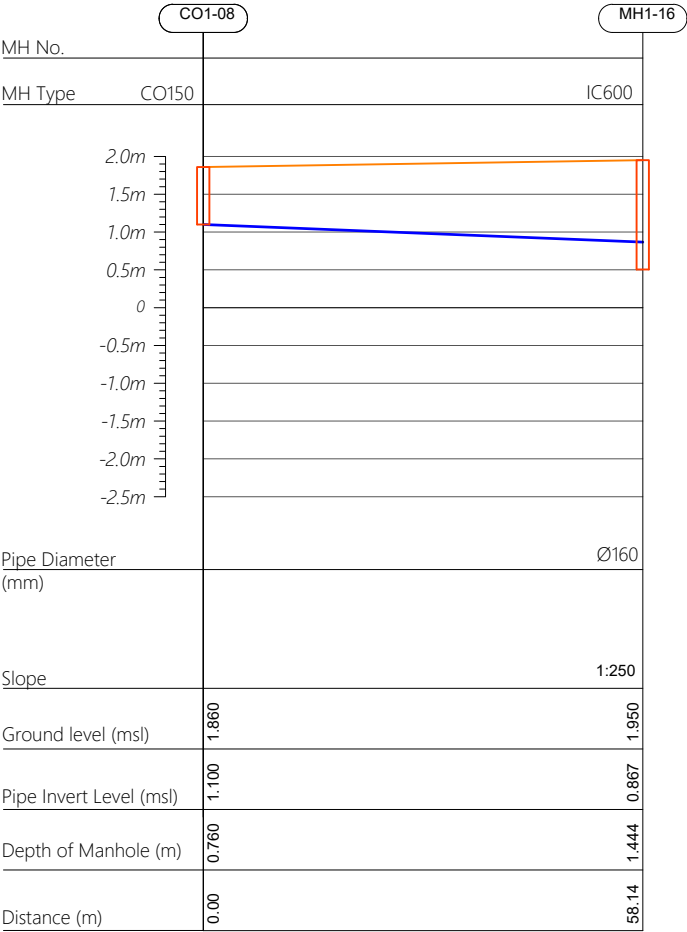
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Project No: EP-W/S/2019/04

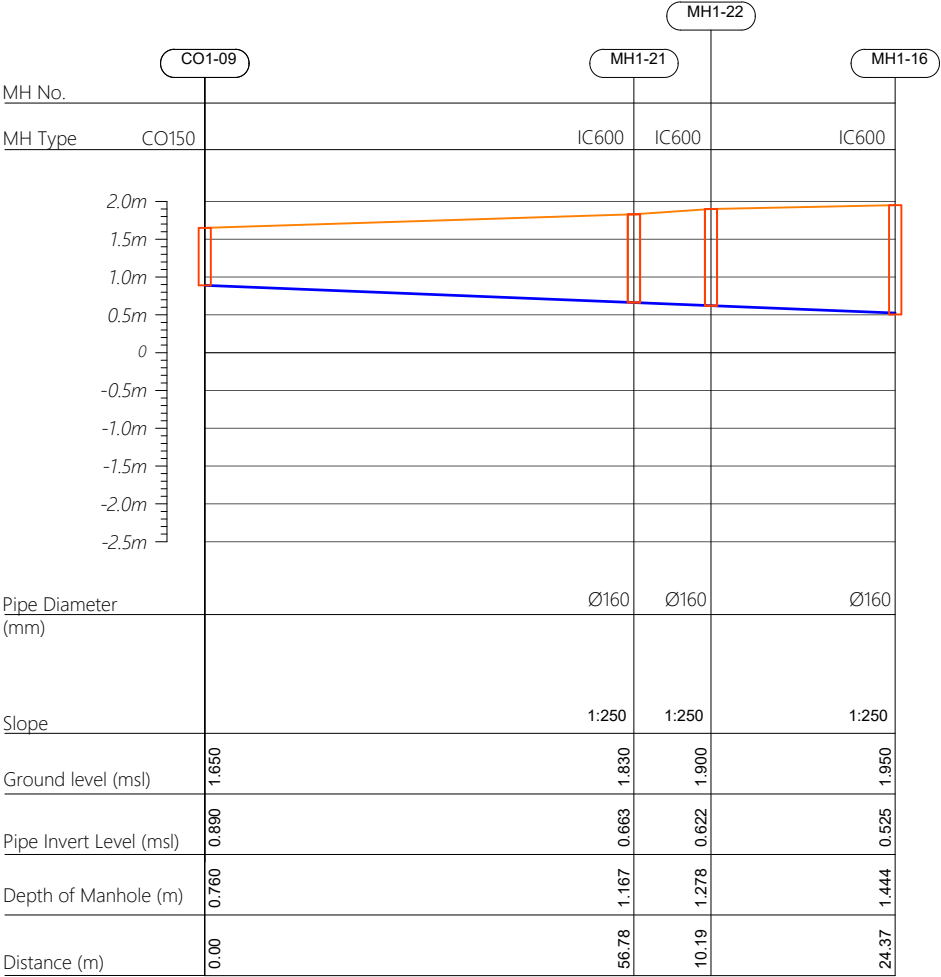
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R-01 PS1-04

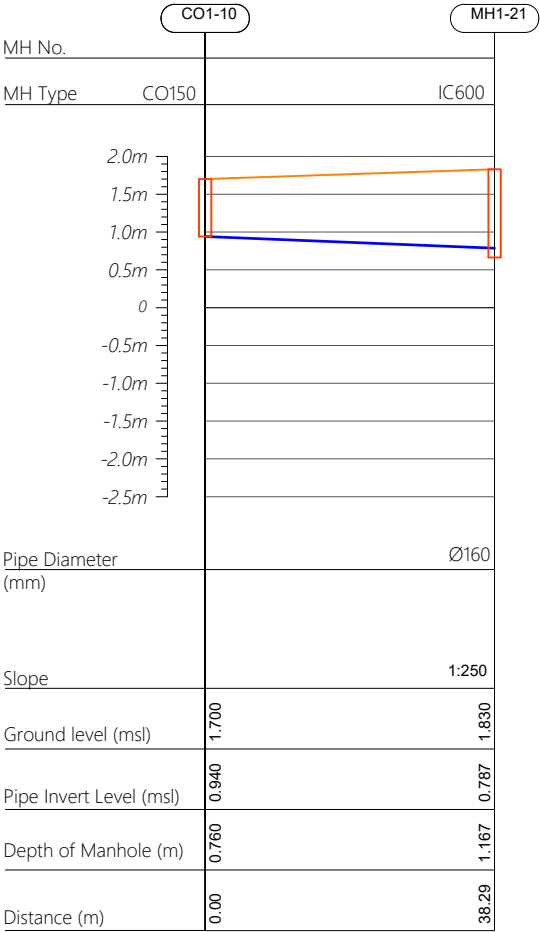
Profile 08



Profile 09



Profile 10



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| REV. NO. | Date      | Revision Description | Drawn | Chkd | Appd. |

Title:  
**Consultancy Services for Survey,  
Design and EIA works of Water  
Supply and Sewerage Facilities in  
7 islands, Maldives - Package 4**

Sub Title:  
**Sewerage System in Adh.Dhihdhoo**

Client:  
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Checked: M.S.S

Designed: F.I.A

Approved: I.W

Date: Sep 2020

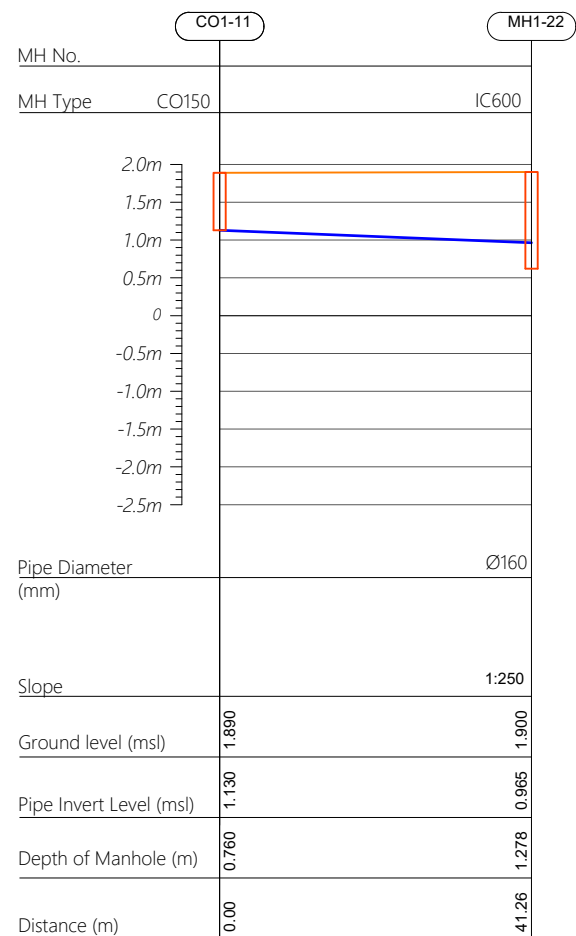
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Project No: EP-WS/2019/04

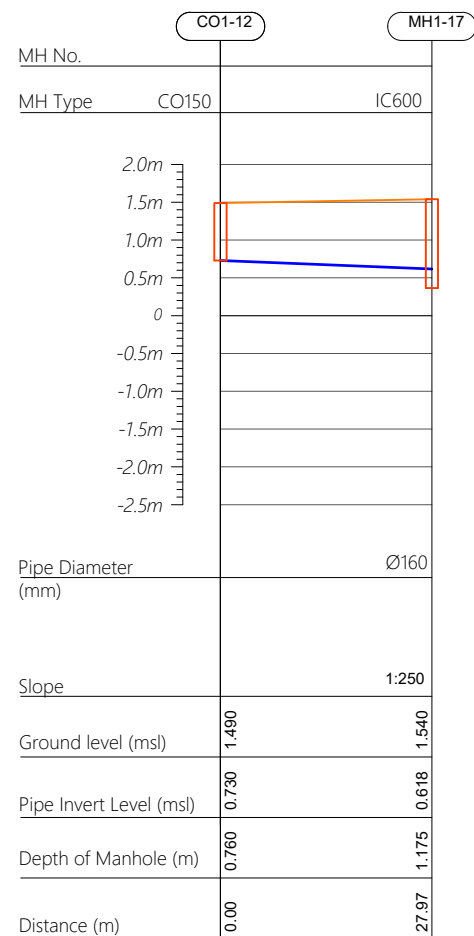
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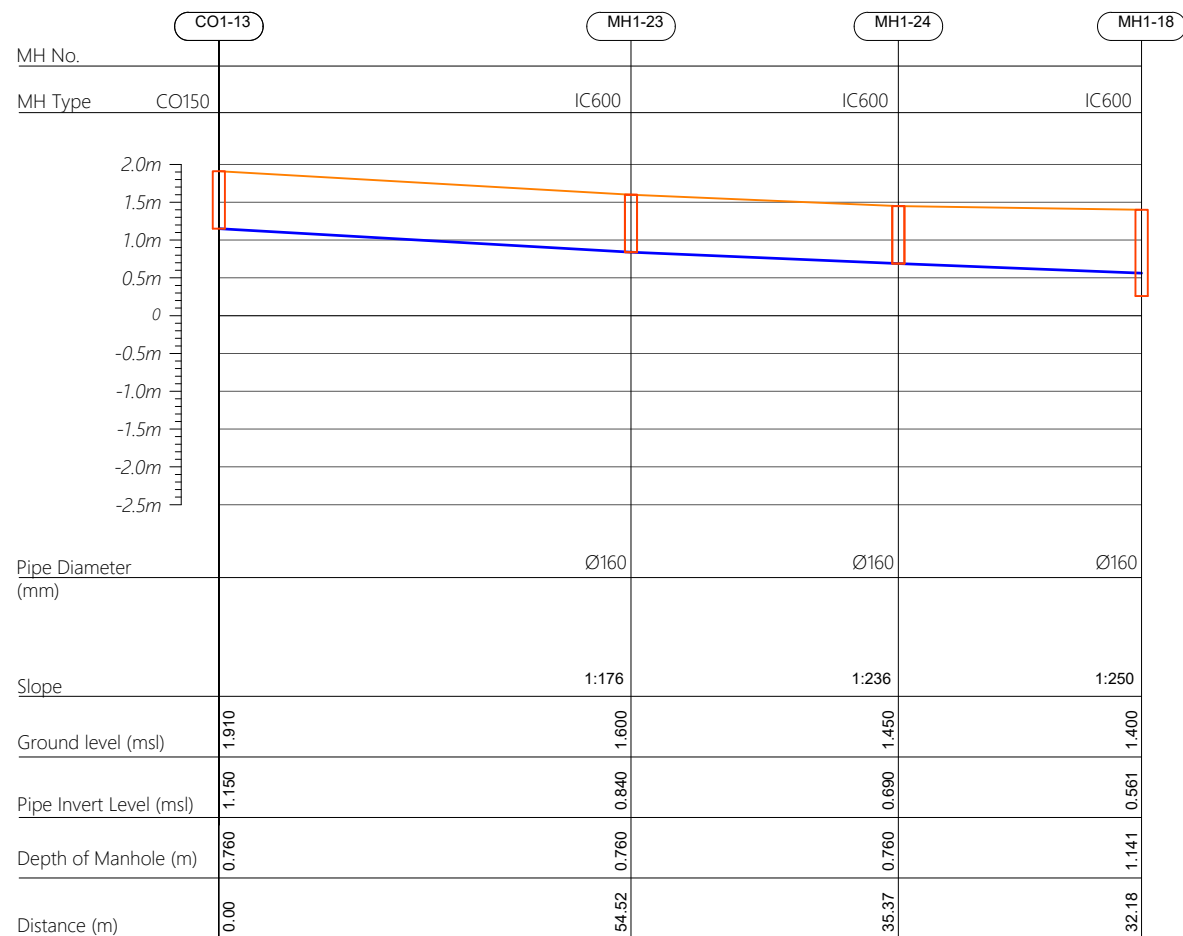
## Profile 11



## Profile 12



## Profile 13



CO160 — Cleanout Ø160  
IC600 — HDPE Manhole Ø600  
PS — Pump Station

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Title:  
**Consultancy Services for Survey,  
Design and EIA works of Water  
Supply and Sewerage Facilities in  
7 islands, Maldives - Package 4**

Sub Title:  
*Sewerage System in Adh.Dhihdhoo*

Client:  
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 Husnuheena Maqu, Male', Maldives



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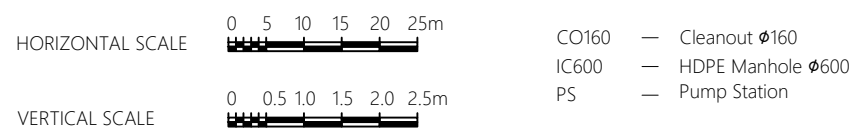
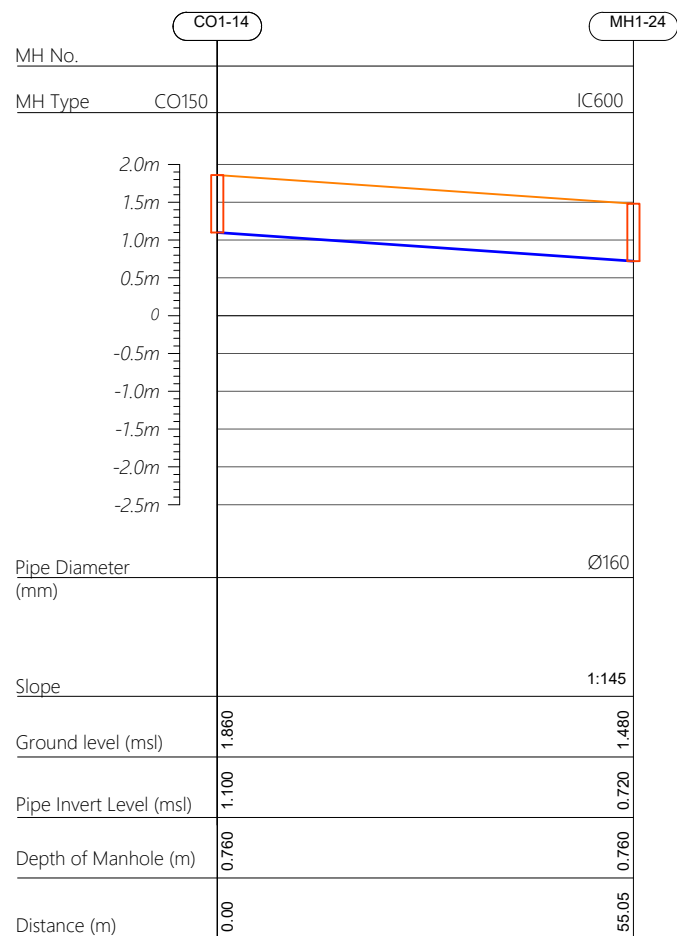
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| Designed: F.I.A | Approved: I.W |
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| Date: Sep 2020 | SCALE (A3): 1:100 |
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Project No: EP-WS/2019/04

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## Profile 14




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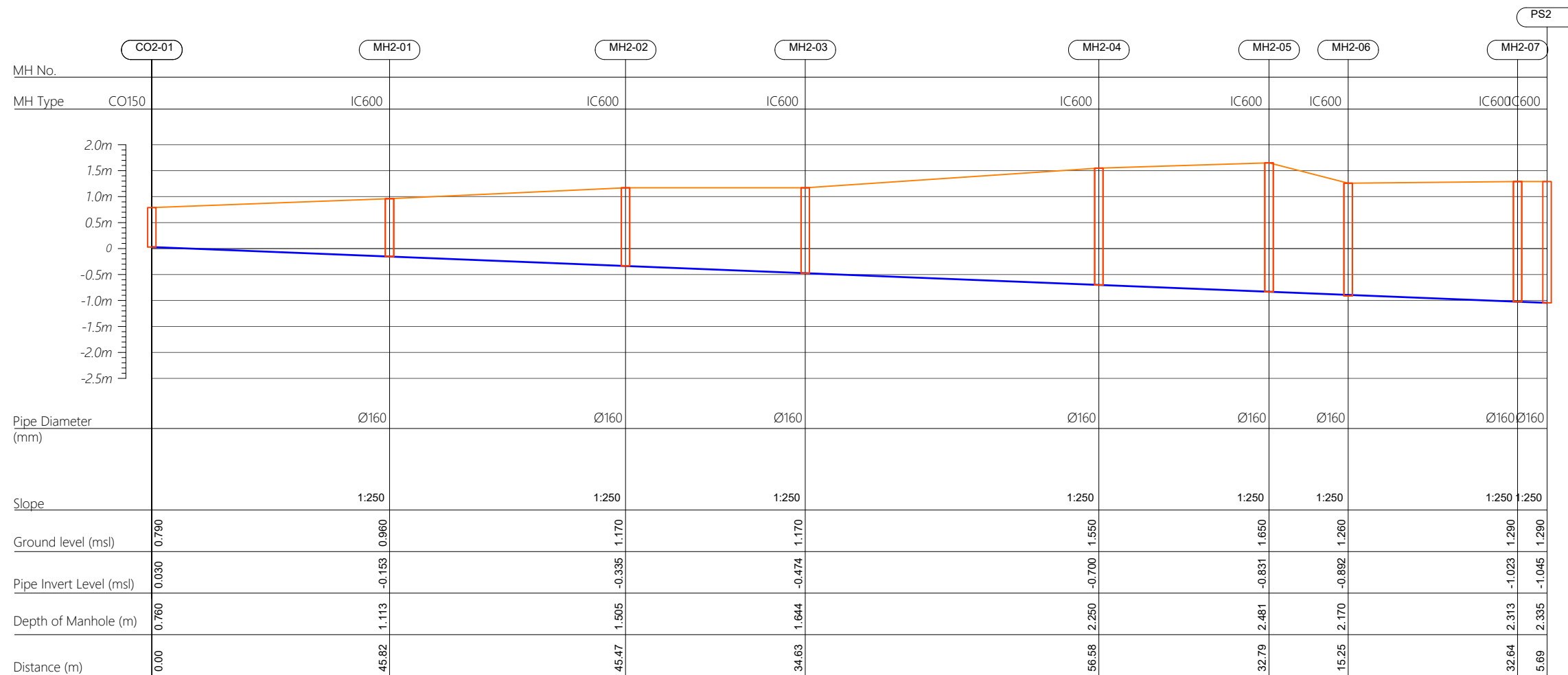
Title:  
***Consultancy Services for Survey,  
Design and EIA works of Water  
Supply and Sewerage Facilities in  
7 islands, Maldives - Package 4***

Sub Title:  
*Sewerage System in Adh.Dhihdhoo*

Client:  
*Ministry of National Planning, Housing and  
Infrastructure, Republic of Maldives*

|  |   |   |
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| <b>A:</b> G. Rosary West,<br>Huzumheenua Magu, Male', Maldives                               |   |   |
| Drawn: A.R   | Checked: M.S.S                            |   |
| Designed: F.I.A  | Approved: I.W                             |   |
| Date: Sep 2020   | SCALE (A3): 1:100                         |   |
| Project No: EP-WS/2019/04  |   |   |
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## Profile 01



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| R00         | JUNE 2020 | STAGE -1             | PD    | SBC  | SD    |
| REV.<br>NO. | Date      | Revision Description | Drawn | Chkd | Appd. |

Title:  
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Sub Title:  
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Client:  
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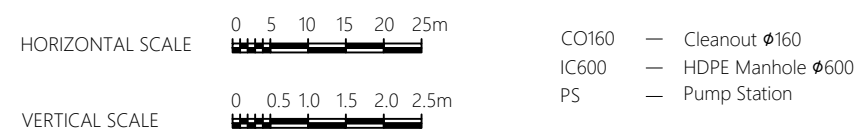
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| Designed: F.I.A | Approved: J.W |
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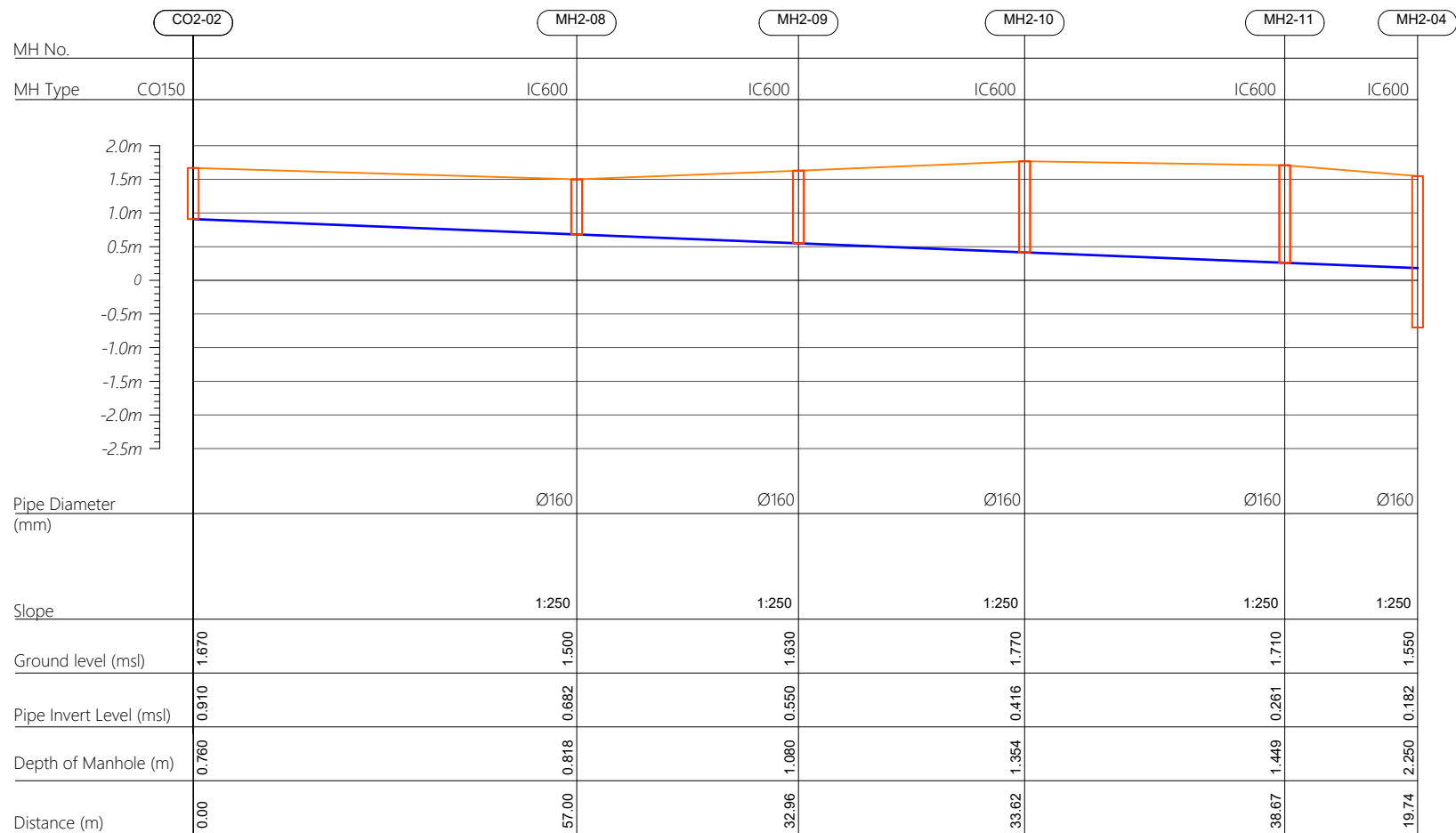
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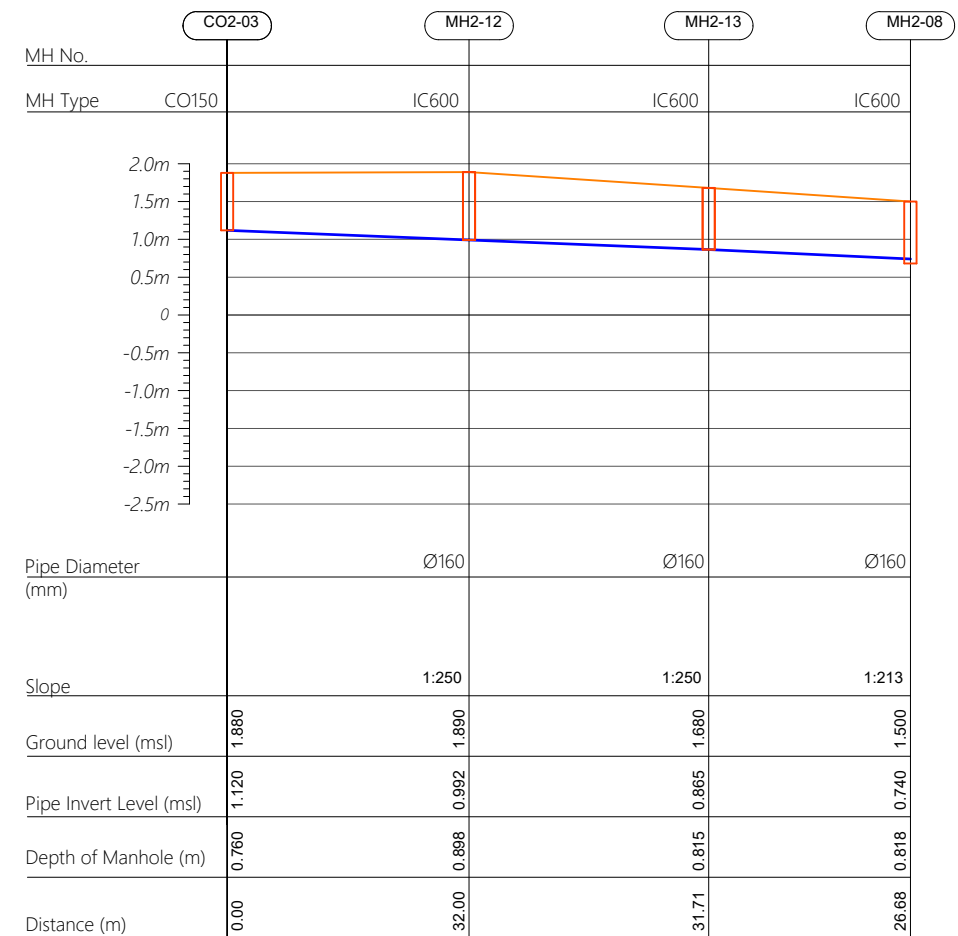
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## Profile 02



### Profile 03



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| R00         | JUNE 2020 | STAGE -1             | PD    | SBC  | SD    |
| REV.<br>NO. | Date      | Revision Description | Drawn | Chkd | Appd. |

Title: **Consultancy Services for Survey, Design and EIA works of Water Supply and Sewerage Facilities in 7 islands, Maldives - Package 4**

Sub Title:  
***Sewerage System in Adh.Dhihdhoo***

Client:  
*Ministry of National Planning, Housing and  
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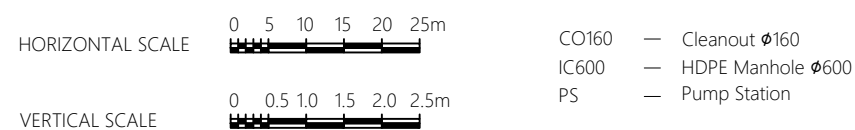
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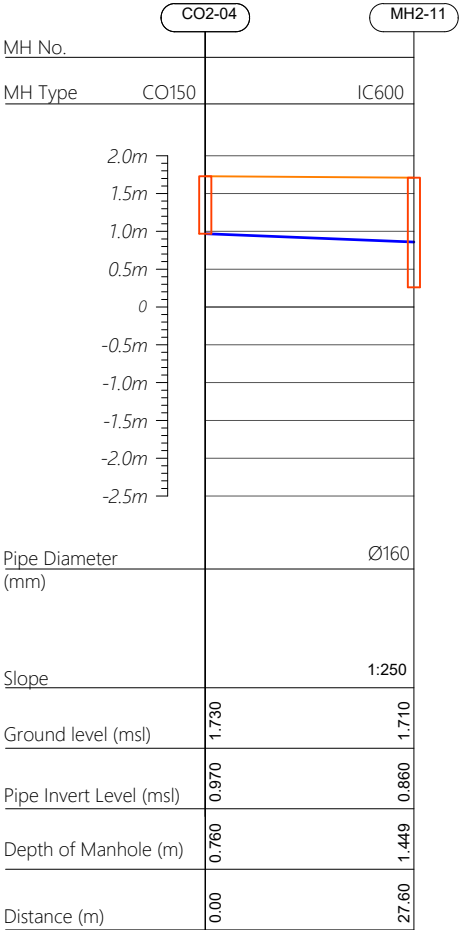
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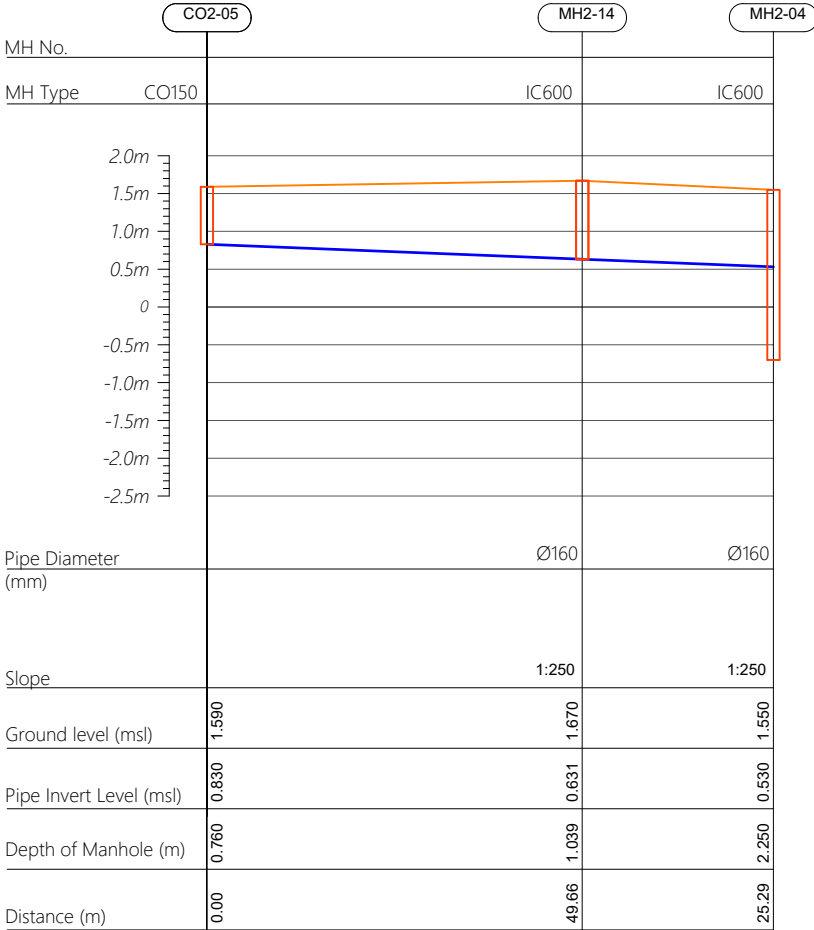
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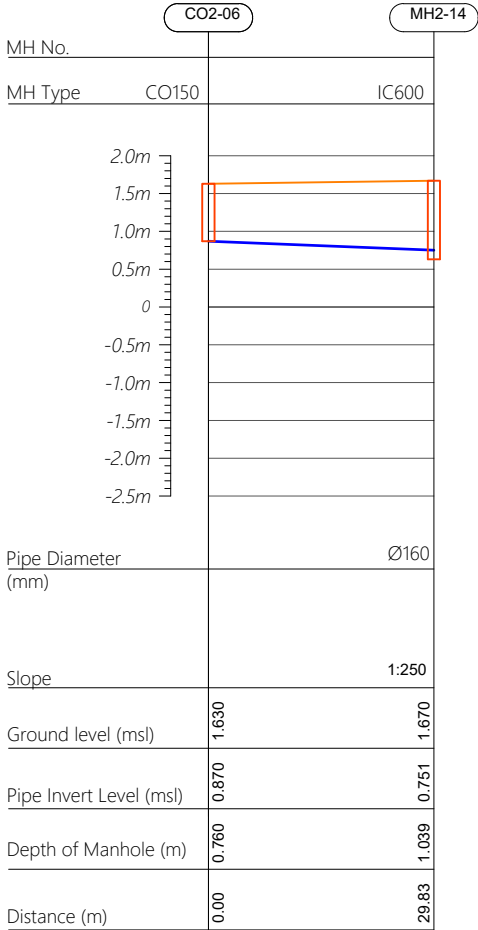
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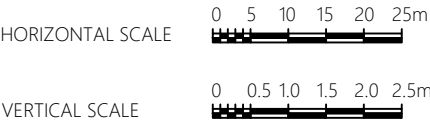
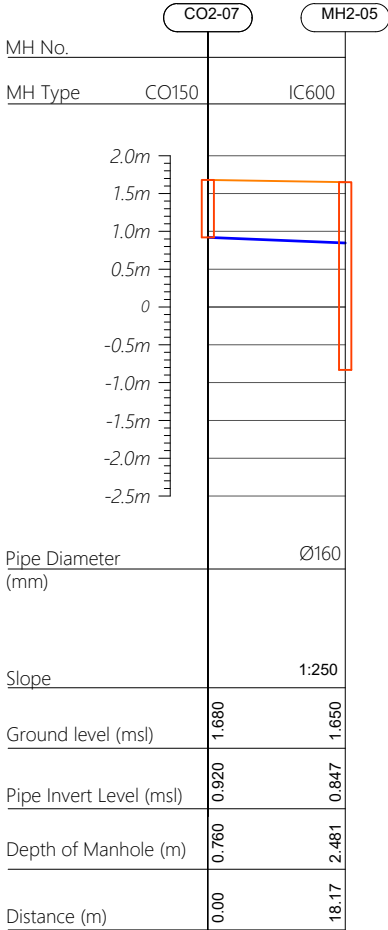
Profile 05



Profile 06



Profile 07



CO160 — Cleanout Ø160  
IC600 — HDPE Manhole Ø600  
PS — Pump Station

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| R00      | JUNE 2020 | STAGE -1             | PD    | SBC  | SD    |
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Title:  
**Consultancy Services for Survey, Design and EIA works of Water Supply and Sewerage Facilities in 7 islands, Maldives - Package 4**

Sub Title:  
**Sewerage System in Adh.Dhihdhoo**

Client:  
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A: G. Rosary West, Huseenuheemaa Magu, Male', Maldives



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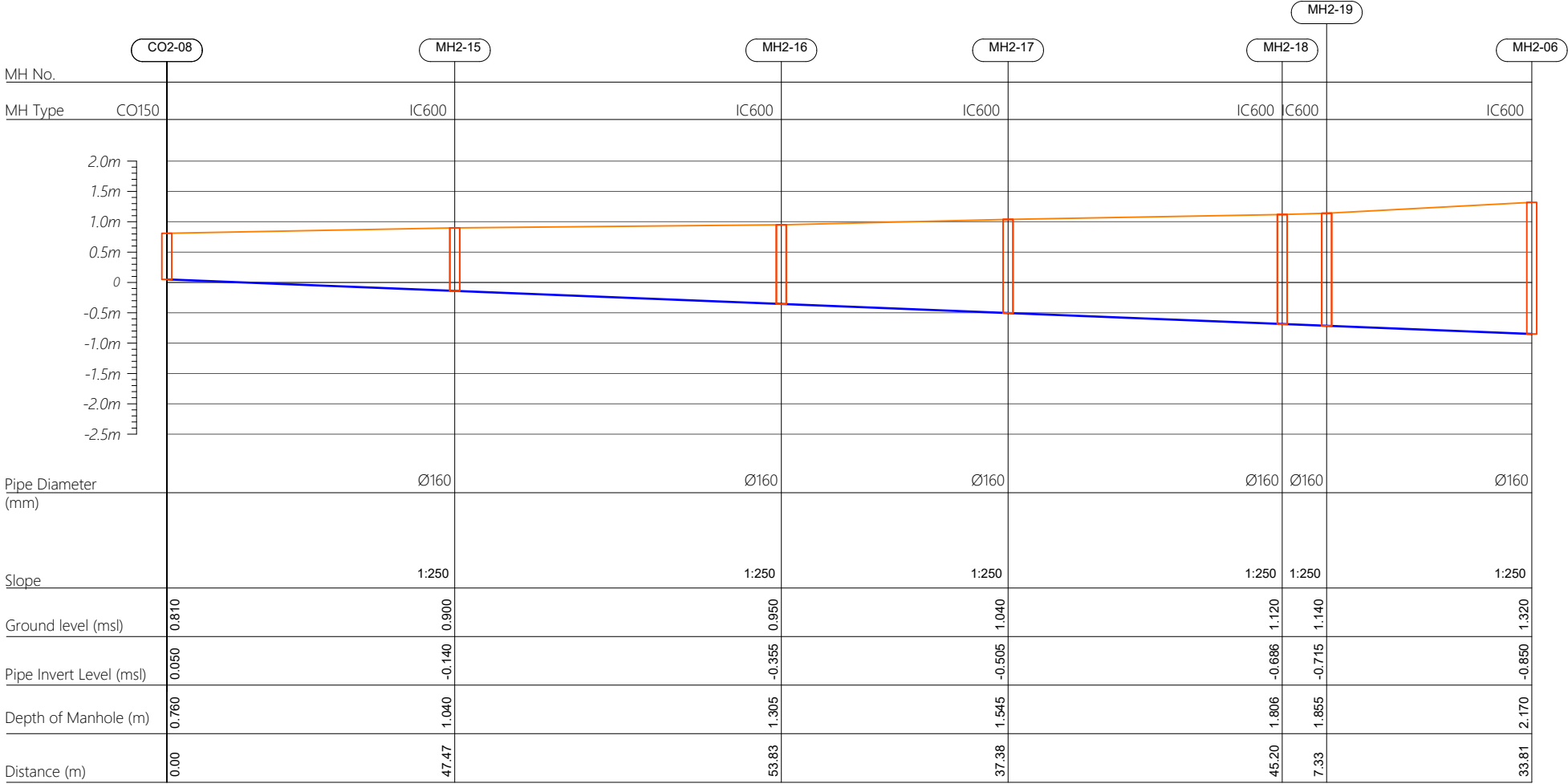
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Date: Sep 2020 SCALE (A3): 1:100

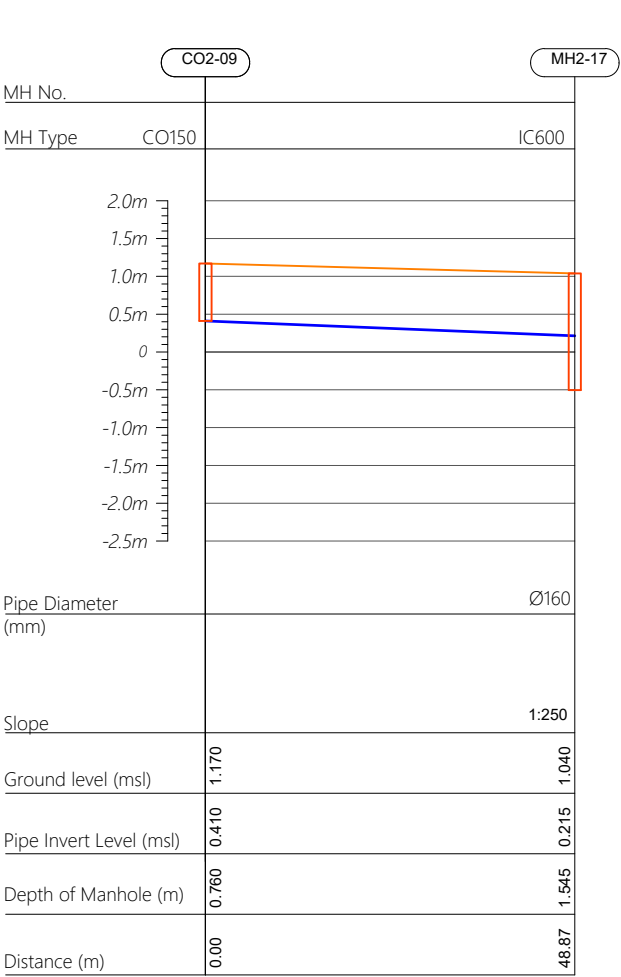
Project No: EP-WS/2019/04

Rev: R-01 Page: PS2-03

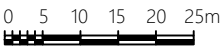
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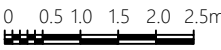
Profile 09



HORIZONTAL SCALE



VERTICAL SCALE



CO160 — Cleanout Ø160  
IC600 — HDPE Manhole Ø600  
PS — Pump Station

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| R00      | JUNE 2020 | STAGE -1             | PD    | SBC  | SD    |
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Sub Title:  
**Sewerage System in Adh.Dhihdhoo**

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A: G. Rosary West,  
Husnuheemaa Magu, Male', Maldives

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Designed: F.I.A. Approved: I.W.

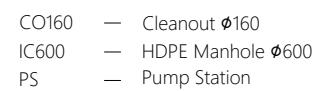
Date: Sep 2020 SCALE (A3): 1:100

Project No: EP-WS/2019/04

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| MH No.                  | CO2-10 | MH2-19 |
|-------------------------|--------|--------|
| MH Type                 | CO150  | IC600  |
|                         |        |        |
| Pipe Diameter (mm)      |        | Ø160   |
| Slope                   |        | 1:250  |
| Ground level (msl)      | 1.180  | 1.140  |
| Pipe Invert Level (msl) | 0.420  | 0.270  |
| Depth of Manhole (m)    | 0.760  | 1.855  |
| Distance (m)            | 0.00   | 37.48  |

| MH No.                  | CO2-11 | MH2-20 | MH2-21 | MH2-22 | MH2-23 | MH2-24 | MH2-25 | MH2-06 |
|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| MH Type                 | CO150  | IC600  | IC600  | IC600  | IC600  | IC600  | IC600  | IC600  |
|                         |        |        |        |        |        |        |        |        |
| Pipe Diameter (mm)      |        | Ø160   | Ø160   | Ø160   | Ø160   | Ø160   | Ø160   | Ø160   |
| Slope                   |        | 1:250  | 1:250  | 1:250  | 1:250  | 1:250  | 1:250  | 1:250  |
| Ground level (msl)      | 1.530  | 1.620  | 1.550  | 1.480  | 1.720  | 1.540  | 1.450  | 1.320  |
| Pipe Invert Level (msl) | 0.770  | 0.591  | 0.434  | 0.302  | 0.162  | 0.133  | 0.040  | -0.025 |
| Depth of Manhole (m)    | 0.760  | 1.029  | 1.116  | 1.178  | 1.558  | 1.407  | 1.410  | 2.170  |
| Distance (m)            | 0.00   | 44.80  | 39.16  | 33.00  | 34.99  | 7.24   | 23.24  | 16.37  |



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| R00         | JUNE 2020 | STAGE -1             | PD    | SBC  | SD    |
| REV.<br>NO. | Date      | Revision Description | Drawn | Chkd | Appd. |

Sub Title:  
***Sewerage System in Adh.Dhihdhoo***

Client:  
*Ministry of National Planning, Housing and  
Infrastructure, Republic of Maldives*



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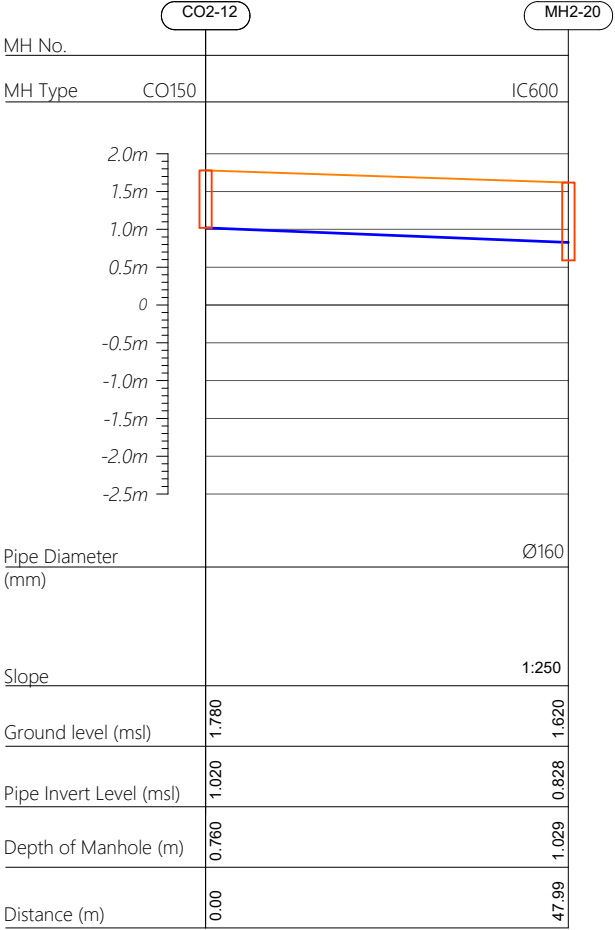
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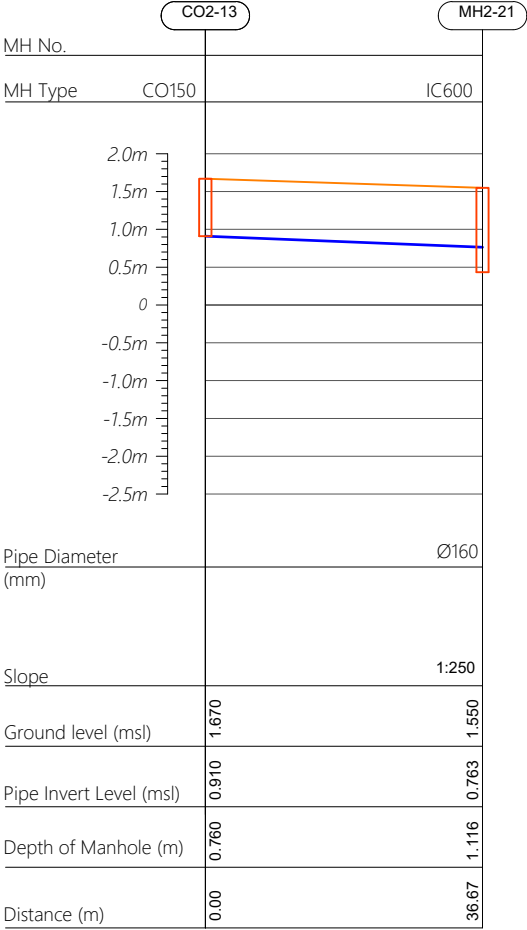
Project No: EP-WS/2019/04

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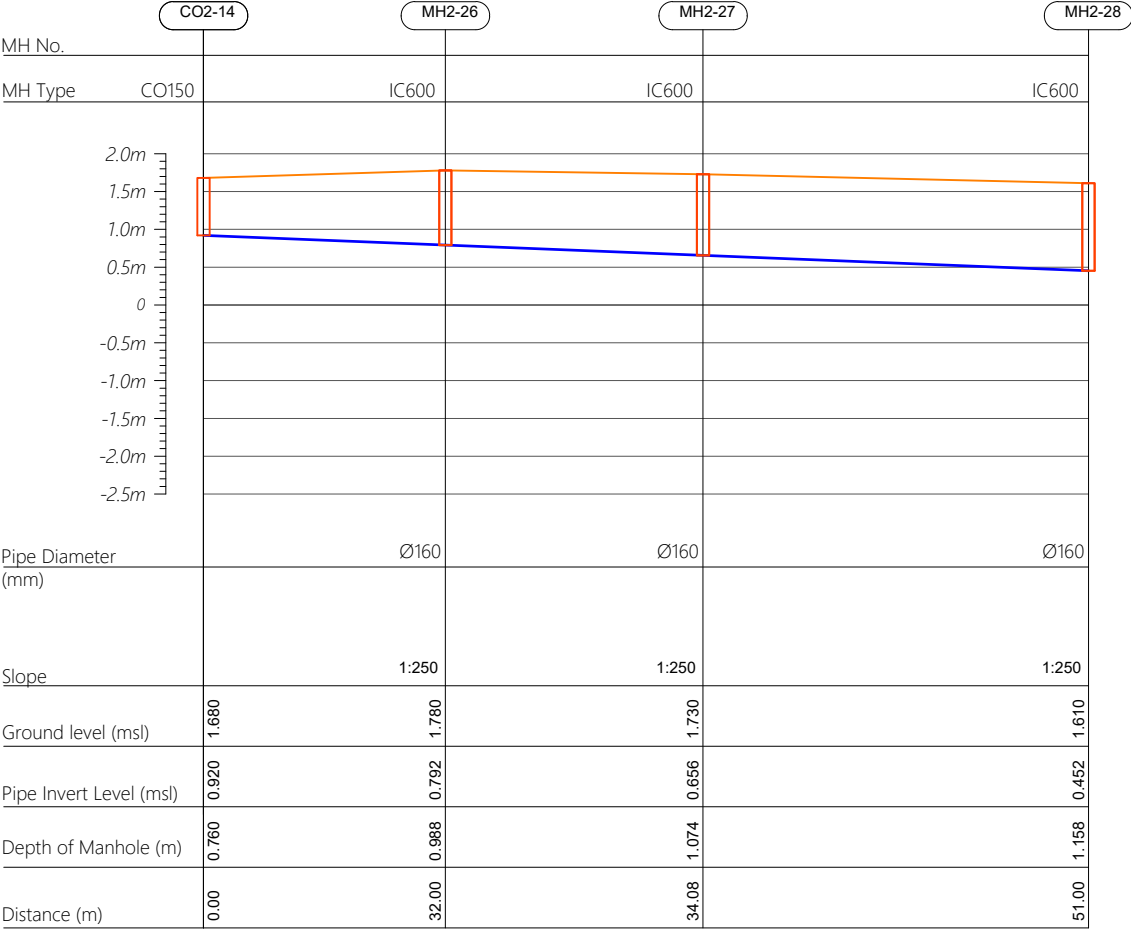
Profile 12



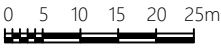
Profile 13



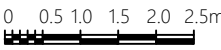
Profile 14



HORIZONTAL SCALE



VERTICAL SCALE



CO160 — Cleanout Ø160  
IC600 — HDPE Manhole Ø600  
PS — Pump Station

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| R00      | JUNE 2020 | STAGE -1             | PD    | SBC  | SD    |
| REV. NO. | Date      | Revision Description | Drawn | Chkd | Appd. |

Title:

**Consultancy Services for Survey, Design and EIA works of Water Supply and Sewerage Facilities in 7 islands, Maldives - Package 4**

Sub Title:

**Sewerage System in Adh.Dhihdhoo**

Client:

**Ministry of National Planning, Housing and Infrastructure, Republic of Maldives**

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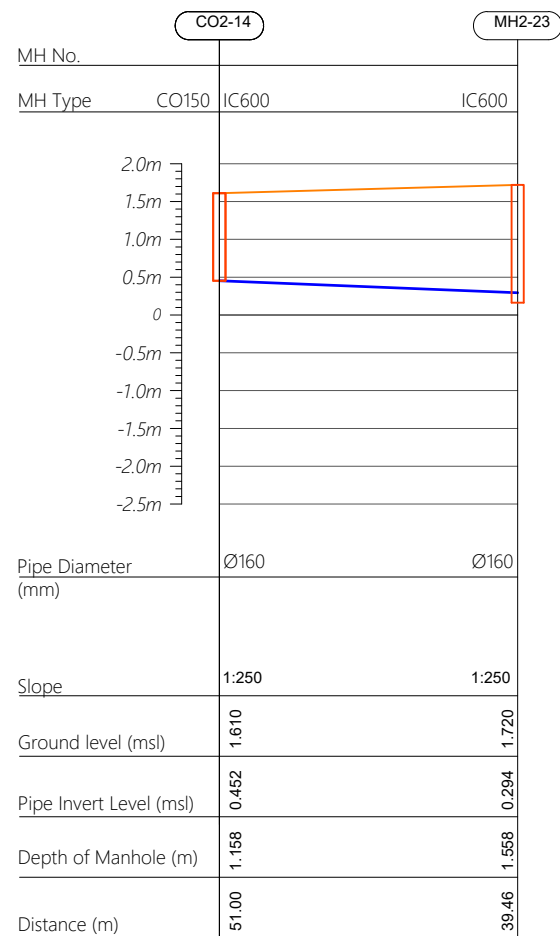
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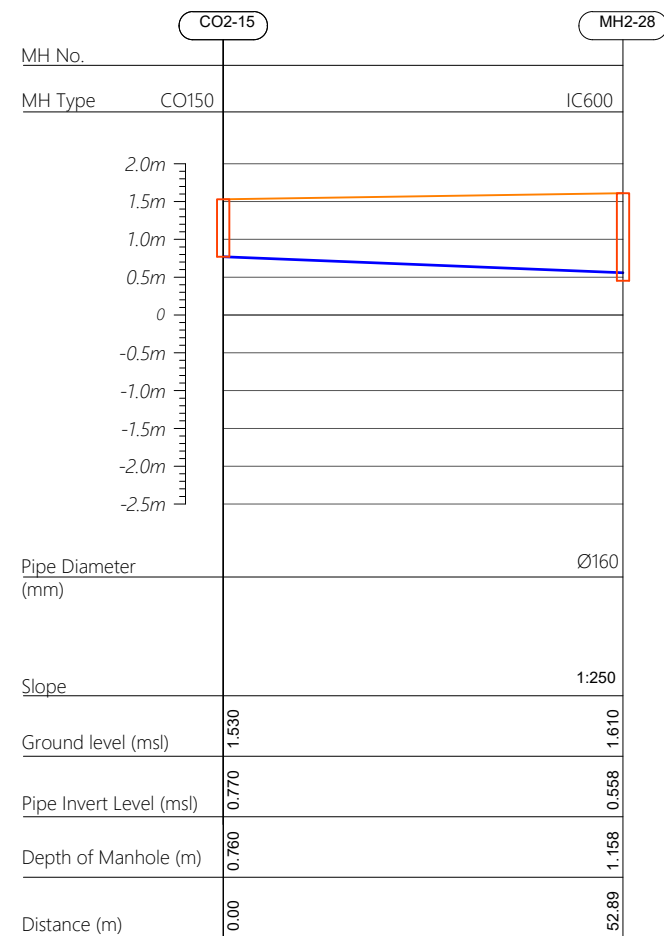
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| Date: Sep 2020            | SCALE (A3): 1:100 |
| Project No: EP-WS/2019/04 |                   |
| Rev: R-01                 | Page: PS2-06      |

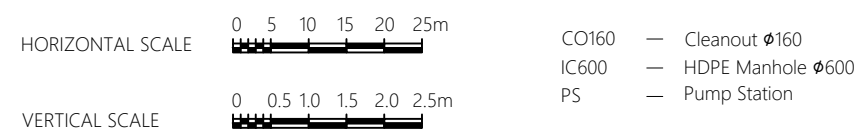
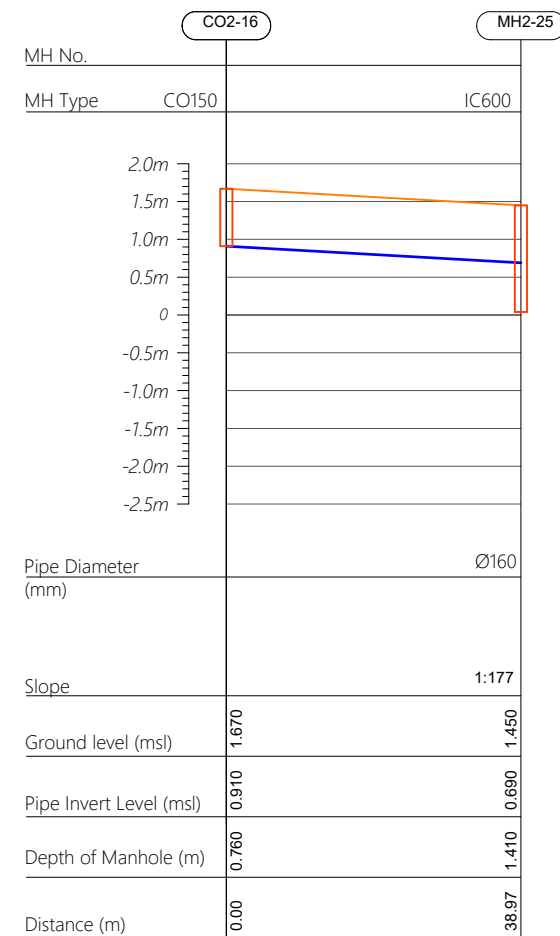
## Profile 14



## Profile 15



## Profile 16



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| R00         | JUNE 2020 | STAGE -1             | PD    | SBC  | SD    |
| REV.<br>NO. | Date      | Revision Description | Drawn | Chkd | Appd. |

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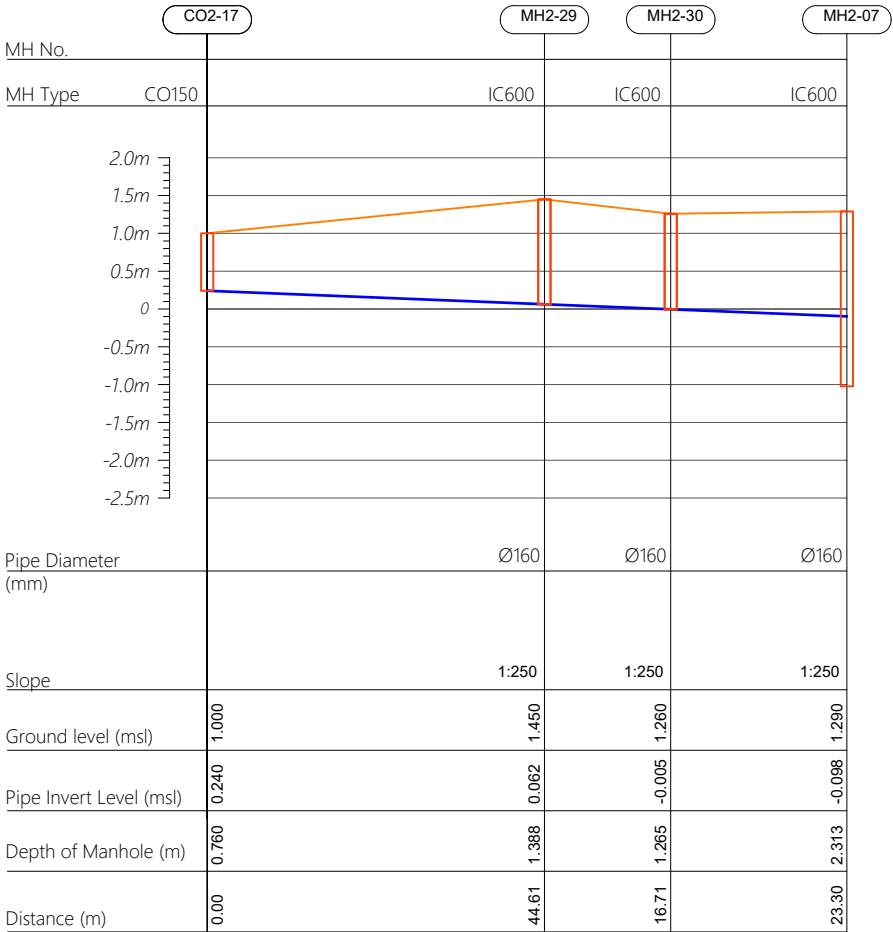
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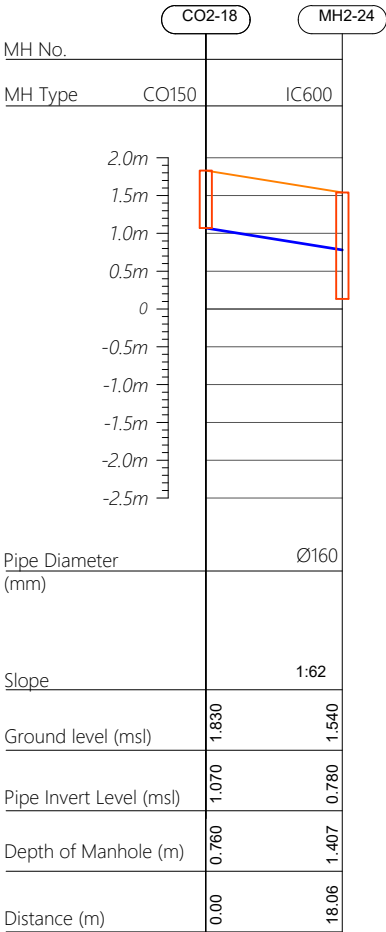
Project No: EP-WS/2019/04

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Profile 17



Profile 18



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| REV. NO. | Date      | Revision Description | Drawn | Chkd | Appd. |

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Rev: R-01 Page: PS2-08