

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

PACKAGE 6

SEWERAGE SYSTEM OF GA. NILANDHOO ,MALDIVES

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

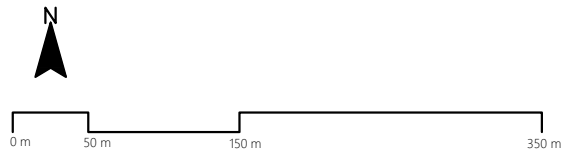


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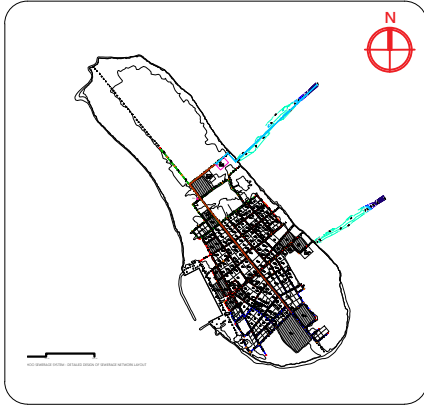


CONTENTS

| | |
|---|-------------------|
| OVERALL LAYOUT | |
| Sewerage Network Layout | A-(1) |
| Sewerage Network Catchment Areas | A-(2) |
| Sewerage Network Zone Layout | A-(3) |
| Sewerage Network Layout - Zone 01 | 04 |
| Sewerage Network Layout - Zone 02 | 05 |
| Sewerage Network Layout - Zone 03 | 06 |
| Sewerage Network Layout - Zone 04 | 07 |
| Sewerage Network Layout - Zone 05 | 08 |
| Sewerage Network Layout - Zone 06 | 09 |
| Sewerage Network Layout - Zone 07 | 10 |
| | |
| DETAILED DRAWINGS FOR SPECIFIC COMPONENTS | |
| PUMP STATION 1 LAYOUT | W-(1) |
| PUMP STATION 2 LAYOUT | W-(2) |
| PUMP STATION 3 LAYOUT | W-(3) |
| STP LAYOUT | W-(4) |
| PUMP STATION DETAILS | W-(5), W(6), W(7) |
| GATE DETAILS | W-(8) |
| PUMP STATION BOUNDARY WALL DETAILS | W-(9) |
| VENT STACK DETAILS | W-(10) |
| VENT STACK AND AIR BLOWER DETAILS | W-(11) |
| CONTROL PANEL BOARD DETAILS | W-(12) |
| LIGHT POST DETAILS | W-(13) |
| TRENCH & BEDDING DETAILS | W-(14) |
| MAINTENANCE SHAFT (MH) DETAILS | W-(15) |
| TYPICAL MANHOLE BASE DETAILS | W-(16) |
| CLEANOUT DETAILS | W-(17) |
| TYPICAL HOUSE CONNECTION DETAILS | W-(18) |
| THRUST BLOCK DETAILS | W-(19) |
| BALLAST BLOCK DETAILS | W-(20) |
| T-HEAD DIFFUSER DETAILS | W-(21) |
| SEA OUTFALL DETAILS | W-(22) |
| PRESSURE NETWORK LAYOUT | W-(23) |
| PROFILE DIAGRAMS - PUMP STATION 01 | PS1-01-PS1-12 |
| PROFILE DIAGRAMS - PUMP STATION 02 | PS2-01-PS2-20 |
| PROFILE DIAGRAMS - PUMP STATION 03 | PS3-01-PS-06 |



GA, NILANDHOO SEWERAGE SYSTEM - DETAILED DESIGN OF SEWERAGE NETWORK LAYOUT
1:5000



Legend

- 160mm Ø uPVC PS1 Gravity Sewer Main (SN4, SDR41) - 2395 m
- 160mm Ø uPVC PS2 Gravity Sewer Main (SN4, SDR41) - 4042 m
- 160mm Ø uPVC PS3 Gravity Sewer Main (SN4, SDR41) - 1486 m
- 160 mm Ø HDPE Pumping Main (PE100, PN16, SDR11) - 1570 m
- 160 mm Ø HDPE Sea Outfall Pipe (PE100, PN16, SDR11) - 122 m on land, 456 m offshore, 578 m total
- 600mm Ø PE/PP Maintenance Shaft - 127 nos
- 160mmØ uPVC Clean Out - 74 nos
- PERMANENT BENCH MARK 1: 327149.526E, 70041.431N, 1.031m From MSL
- PERMANENT BENCH MARK 2: 327175.055E, 70057.839N, 1.306m From MSL

NOTES

- ALL LEVELS SHOWN ARE IN METERS.
- ALL LEVELS SHOWN ARE FROM MEAN SEA LEVEL.
- THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS AND SPECIFICATIONS.
- ALL GRAVITY SEWER PIPES SHALL BE UPVC TO BS EN1401-1:2019.
- ALL GRAVITY SEWER MAINS SHALL BE 160MM DIA UPVC OF WALL THICKNESS & STIFFNESS RATED TO SN4 & SDR41.
- ALL GRAVITY HOUSE LATERALS SHALL BE 110MM DIA UPVC OF WALL THICKNESS & STIFFNESS RATED TO SN4 & SDR41.
- ALL GRAVITY SEWER MAINS SHALL HAVE MINIMUM 0.4% SLOPE.
- ALL GRAVITY SEWER PIPES SHALL BE JOINTED USING RUBBER RING PUSH FIT JOINTING METHOD & RUBBER RINGS COMPLY WITH BS 2494 (TYP2).
- CONNECTION FROM THE HOUSEHOLD TO THE INSPECTION CHAMBER IS NOT INCLUDED. PROVISION SHALL BE GIVEN IN IC FOR MULTIPLE CONNECTIONS.
- ALL SEWER PIPES SHALL BE BURIED UNDER EARTH COVER OF MINIMUM 0.6 METERS.
- CATCHMENT OVER FLOW LINKS ARE TO BE CONNECTED AS INDICATED BELOW:
 - a) C02-12 and MH3-12
 - b) C02-36 and MH2-14
 - c) C02-27 and C02-37
 - d) C01-02 and MH2-36
 - e) C01-15 and MH1-11
 - f) C01-19 and MH1-16
 - g) C01-23 and MH1-34

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Consultancy Services for Survey, Design and EIA works of Water Supply and Sewerage Facilities in 7 islands, Maldives - Package 6

Sub Title:
Water Supply System in GA, Nilandhoo

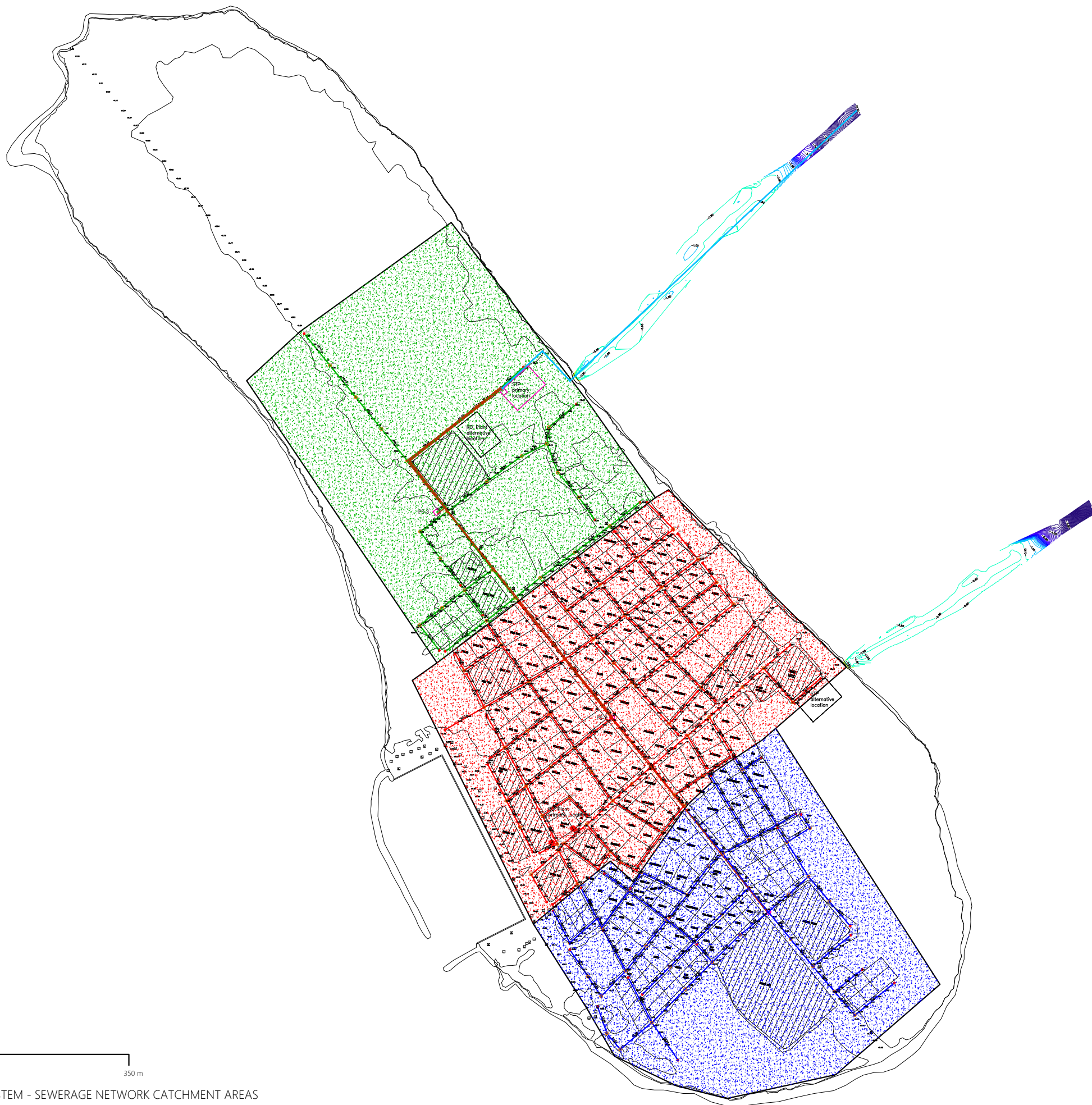
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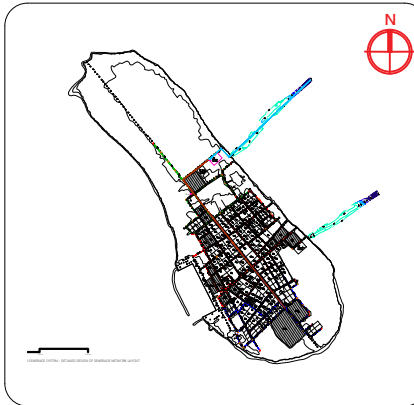
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GA. NILANDHOO SEWERAGE SYSTEM - SEWERAGE NETWORK CATCHMENT AREAS
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Legend

- PS-1 Catchment Area
- PS-2 Catchment Area
- PS-3 Catchment Area

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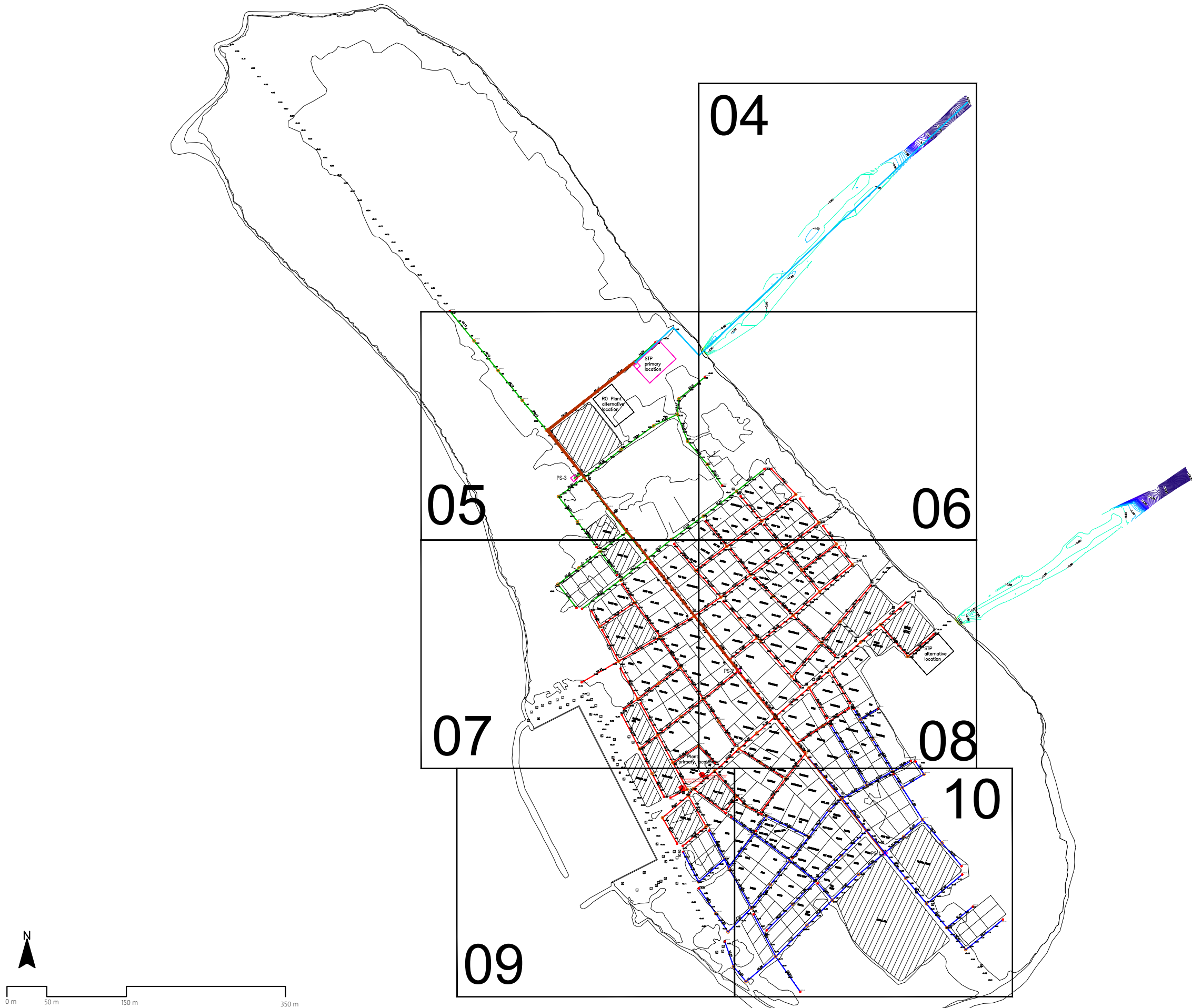
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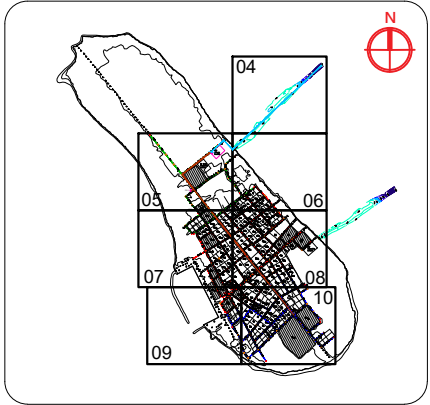
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GA. NILANDHOO SEWERAGE SYSTEM - SEWERAGE NETWORK ZONE LAYOUT
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Legend

- 160mm Ø uPVC PS1 Gravity Sewer Main (SN4, SDR41)
- 160mm Ø uPVC PS2 Gravity Sewer Main (SN4, SDR41)
- 160mm Ø uPVC PS3 Gravity Sewer Main (SN4, SDR41)
- 600mm Ø PE/PP Maintenance Shaft
- 160mmØ uPVC Clean Out
- 160 mm Ø HDPE Pumping Main (PE100, PN16, SDR11)
- 160 mm Ø HDPE Sea Outfall Pipe (PE100, PN16, SDR11)

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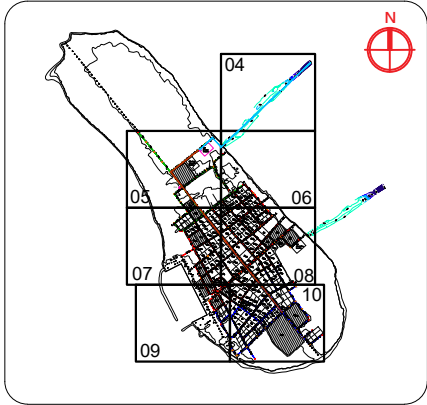
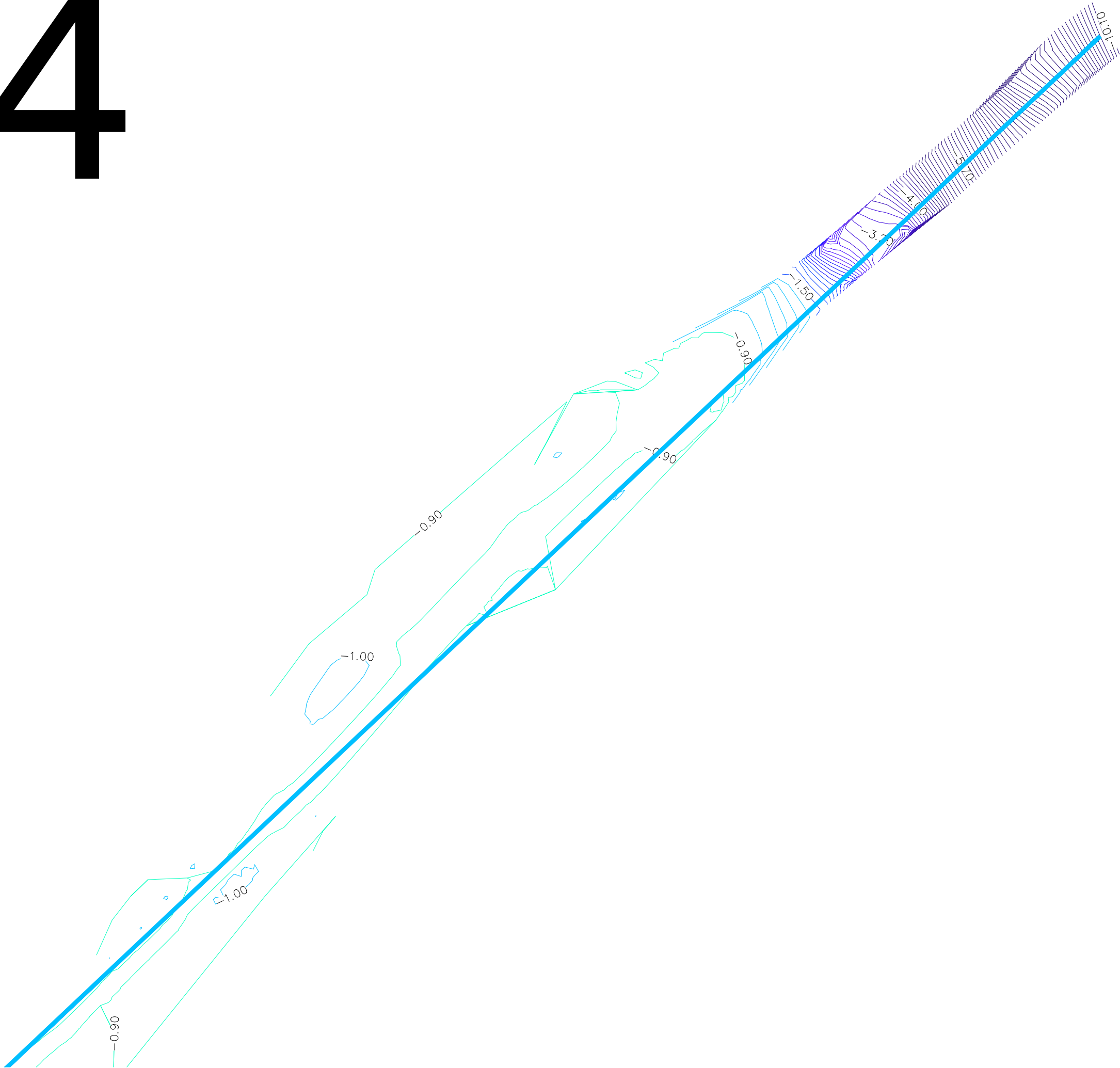
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Legend

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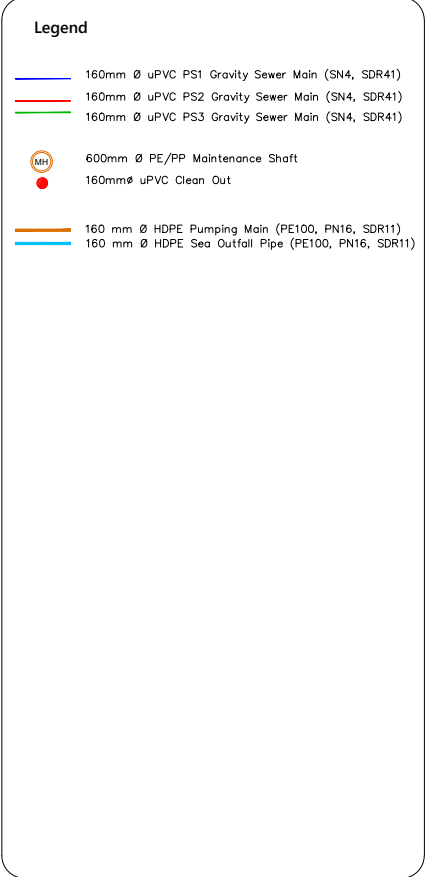
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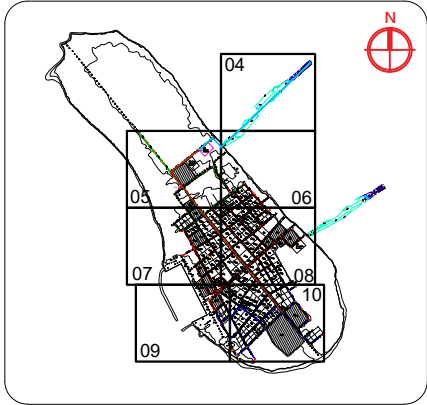
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Legend

- 160mm Ø uPVC PS1 Gravity Sewer Main (SN4, SDR41)
- 160mm Ø uPVC PS2 Gravity Sewer Main (SN4, SDR41)
- 160mm Ø uPVC PS3 Gravity Sewer Main (SN4, SDR41)
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- 160 mm Ø HDPE Pumping Main (PE100, PN16, SDR11)
- 160 mm Ø HDPE Sea Outfall Pipe (PE100, PN16, SDR11)

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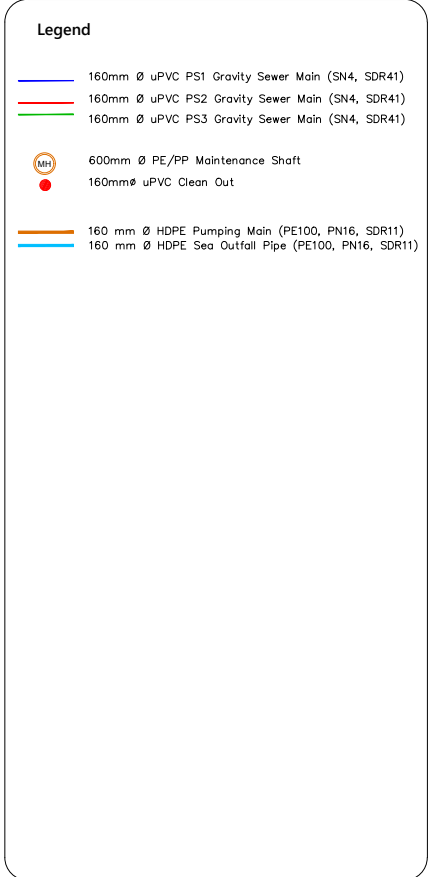
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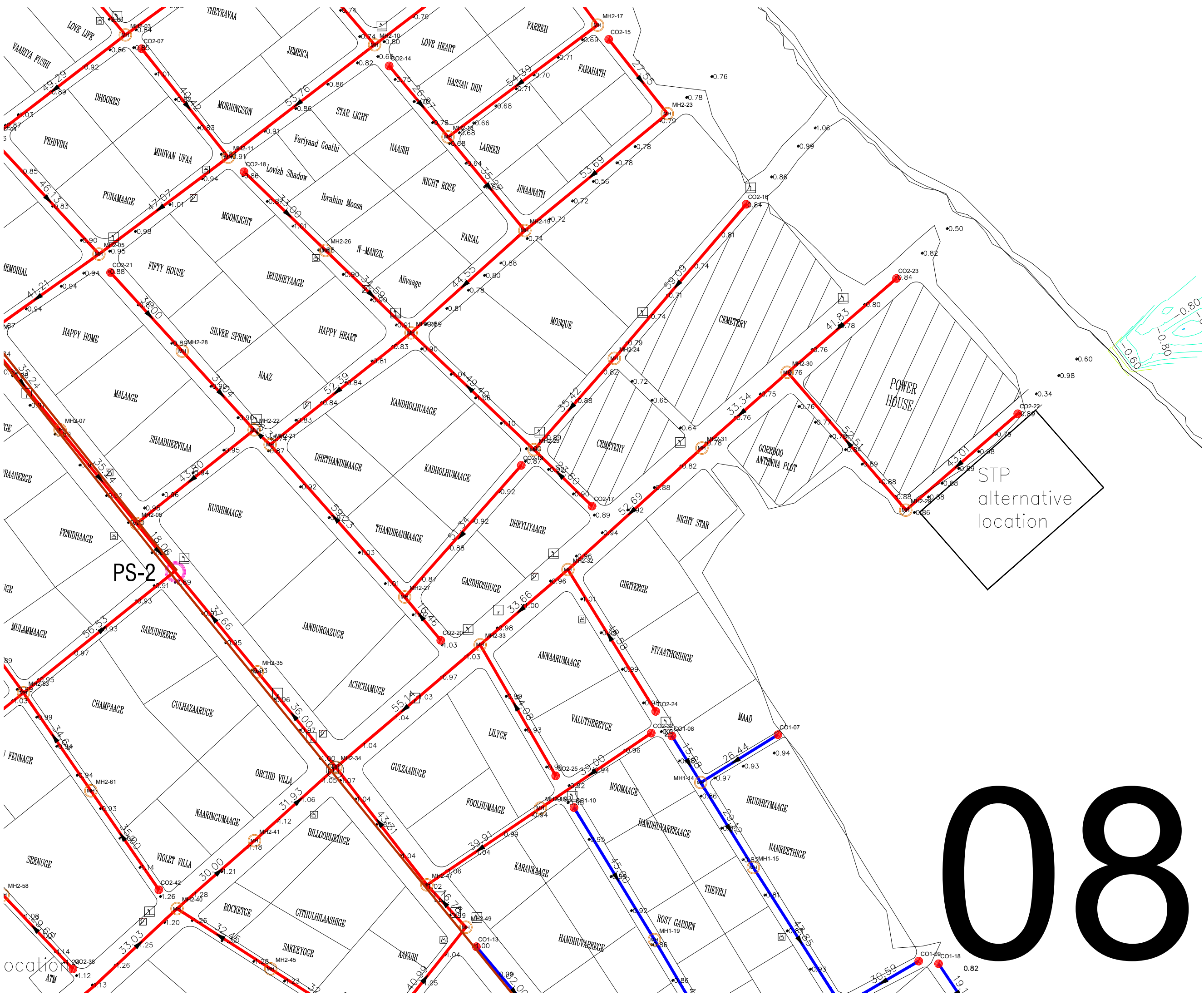
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Legend

- 160mm Ø uPVC PS1 Gravity Sewer Main (SN4, SDR41)
- 160mm Ø uPVC PS2 Gravity Sewer Main (SN4, SDR41)
- 160mm Ø uPVC PS3 Gravity Sewer Main (SN4, SDR41)
- 600mm Ø PE/PP Maintenance Shaft
- 160mmØ uPVC Clean Out
- 160 mm Ø HDPE Pumping Main (PE100, PN16, SDR11)
- 160 mm Ø HDPE Sea Outfall Pipe (PE100, PN16, SDR11)

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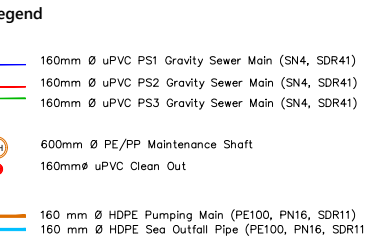
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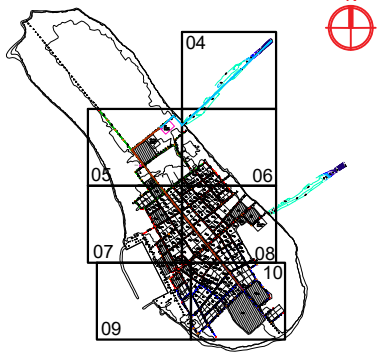
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Supply and Sewerage Facilities in
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Sub Title:
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Legend

- 160mm Ø uPVC PS1 Gravity Sewer Main (SN4, SDR41)
- 160mm Ø uPVC PS2 Gravity Sewer Main (SN4, SDR41)
- 160mm Ø uPVC PS3 Gravity Sewer Main (SN4, SDR41)
- 600mm Ø PE/PP Maintenance Shaft
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- 160 mm Ø HDPE Pumping Main (PE100, PN16, SDR11)
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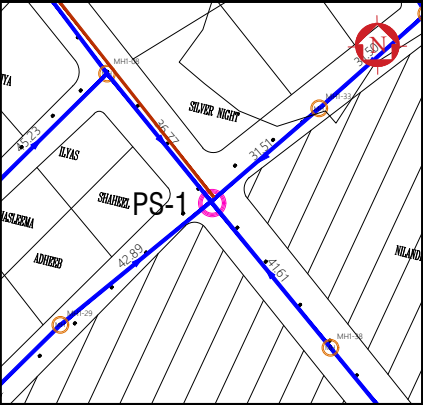
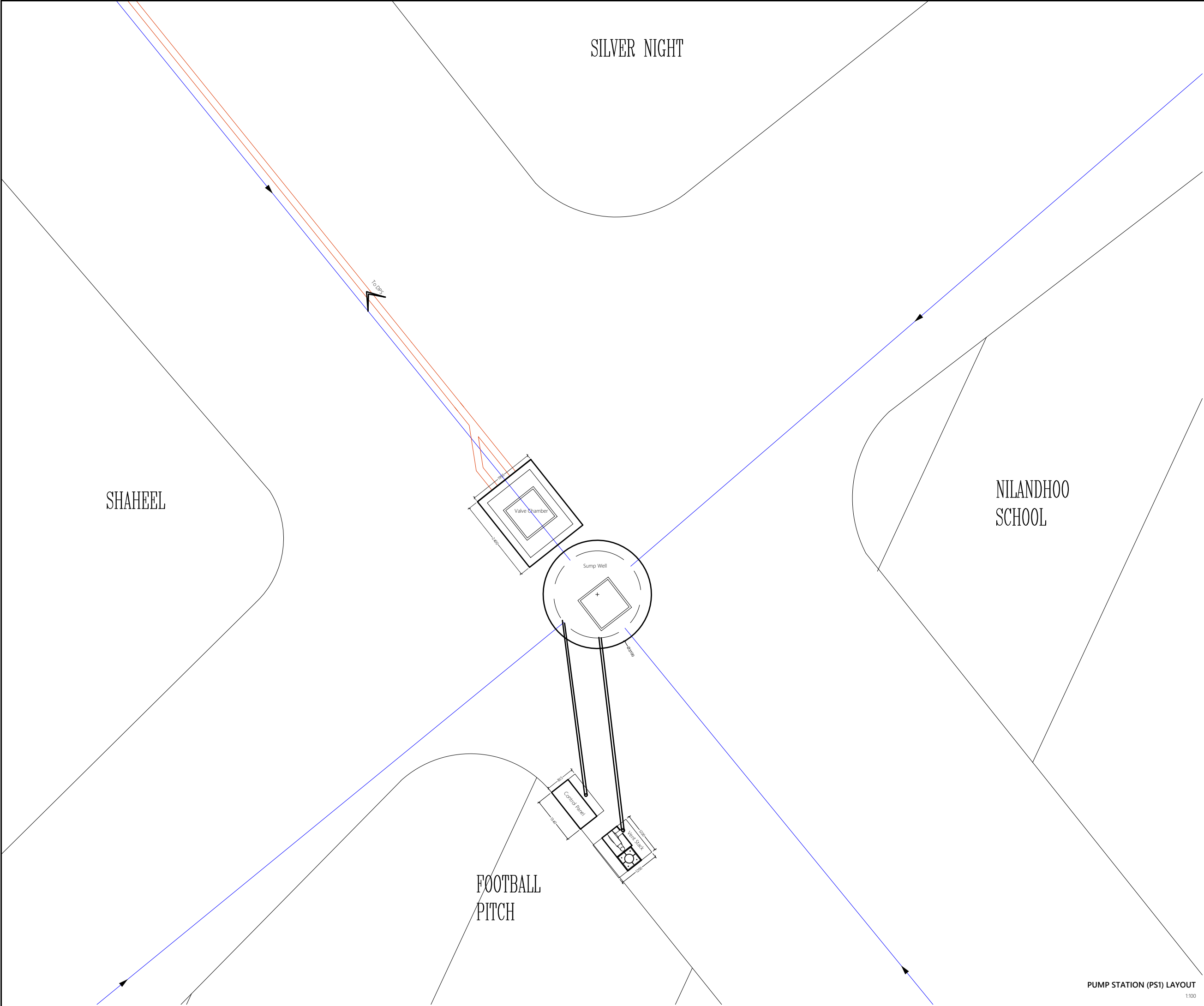
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| Legend | |
|-------------------------------------|--|
| — | 160mm Ø uPVC PS1 Gravity Sewer Main (SN4, SDR41) |

Note:

-Contractor should carry out a buried utility survey for the proposed area and revise the layout and present a shop drawing for layouts

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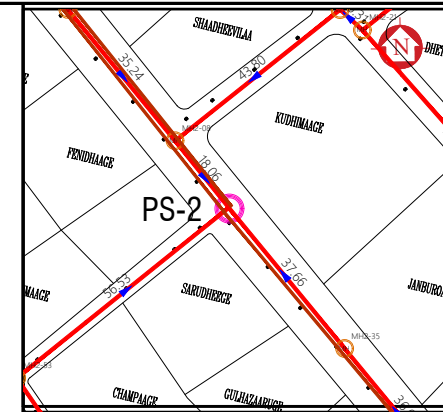
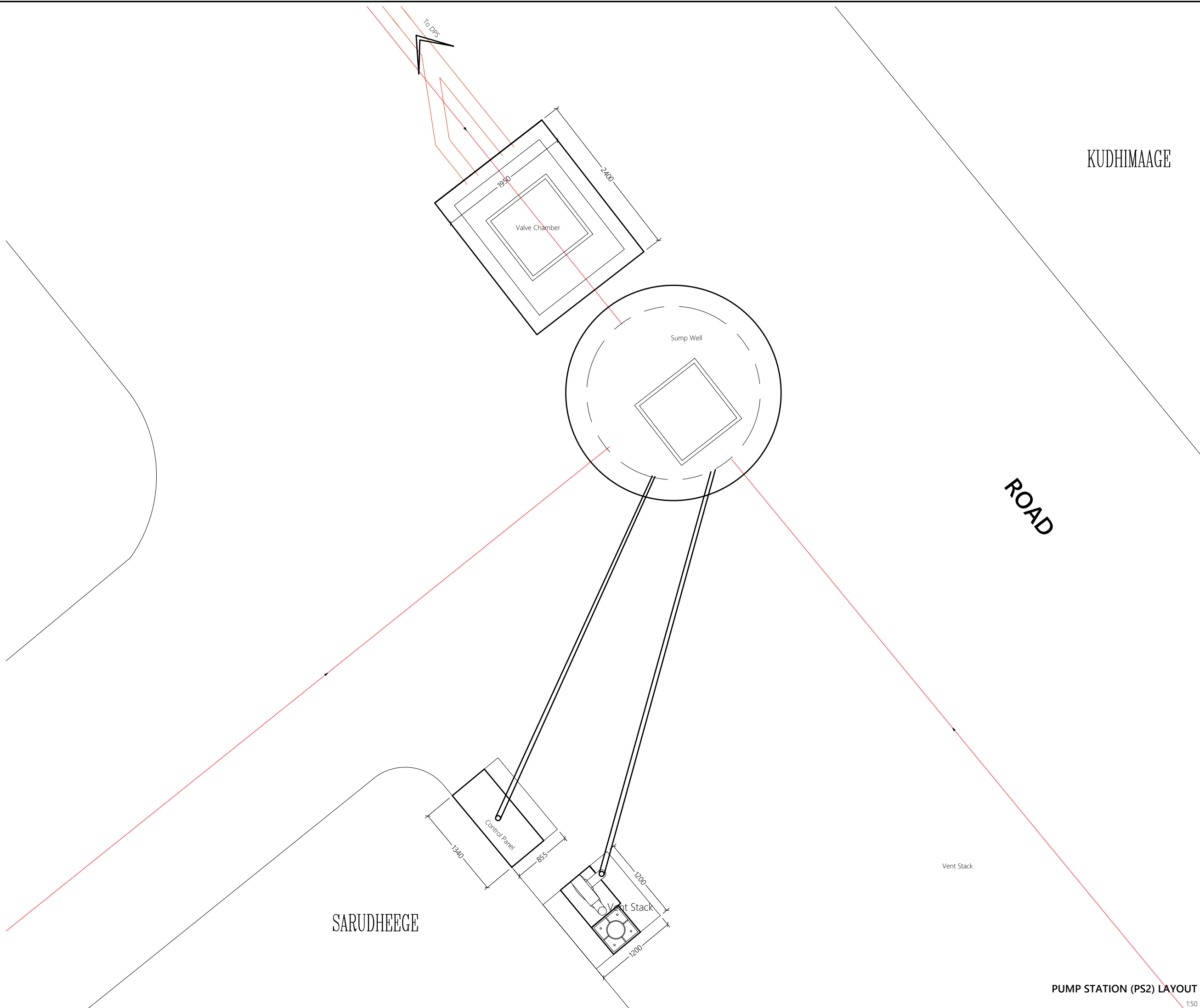
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Legend

— 160mm Ø uPVC PS2 Gravity Sewer Main (SN4, SDR41)

Note:

- Contractor should carry out a buried utility survey for the proposed area and revise the layout and present a shop drawing for layouts

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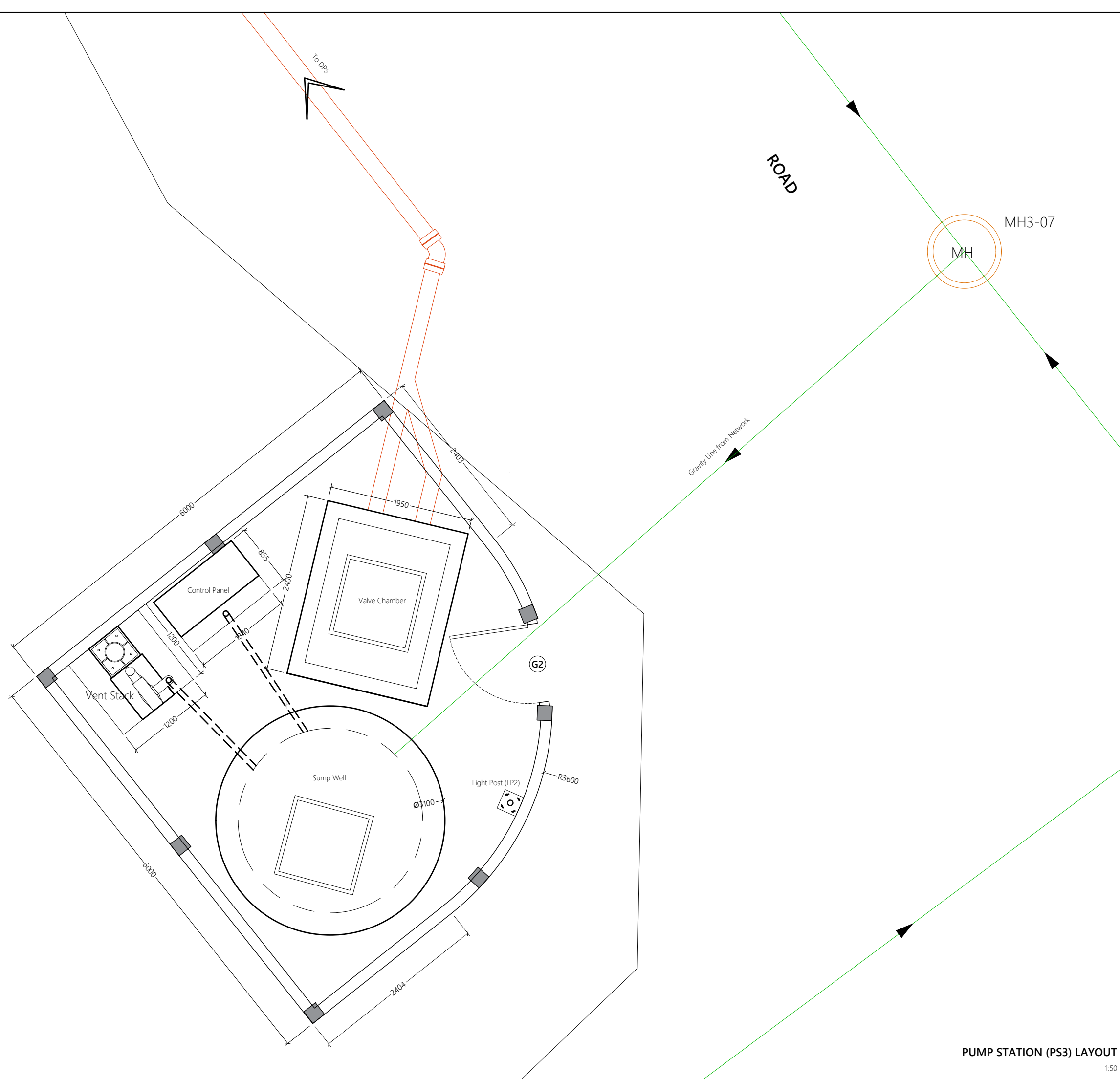
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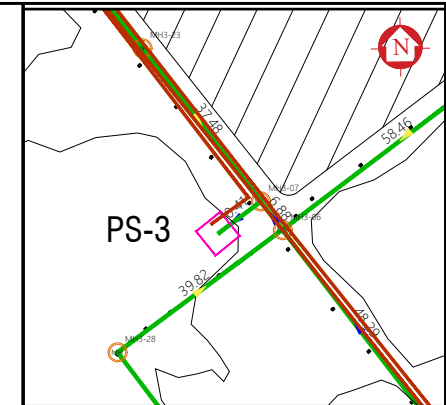
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PUMP STATION (PS3) LAYOUT

1:50



| Legend | |
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| — | 160mm Ø uPVC PS3 Gravity Sewer Main (SN4, SDR41) |

Note:

-Contractor should carry out a buried utility survey for the proposed area and revise the layout and present a shop drawing for layouts

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Title:
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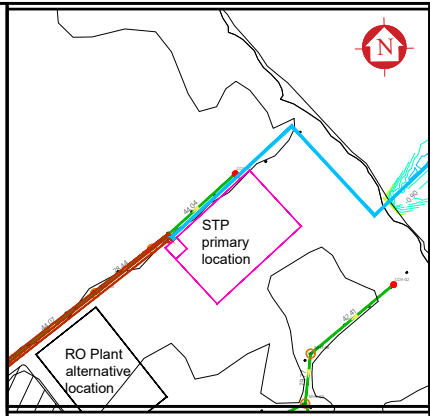
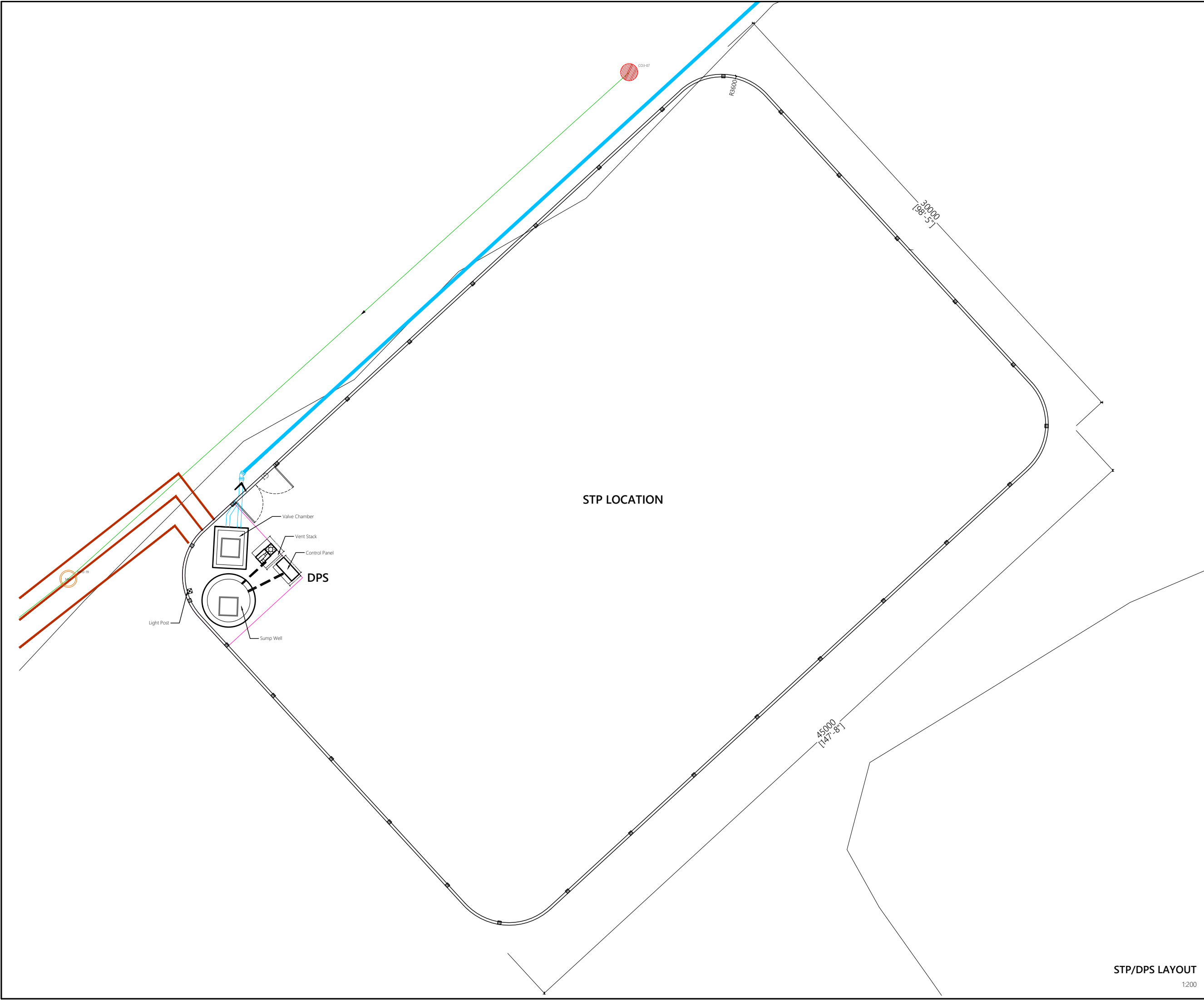
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Client:
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| Rev: | Page: W-(3) |



Note:

- The contract should carry out the site clearing works for future STP plot
- The boundary wall for the STP should be constructed as per the detail
- Discharge pump station structures to be constructed as per the detail layout given

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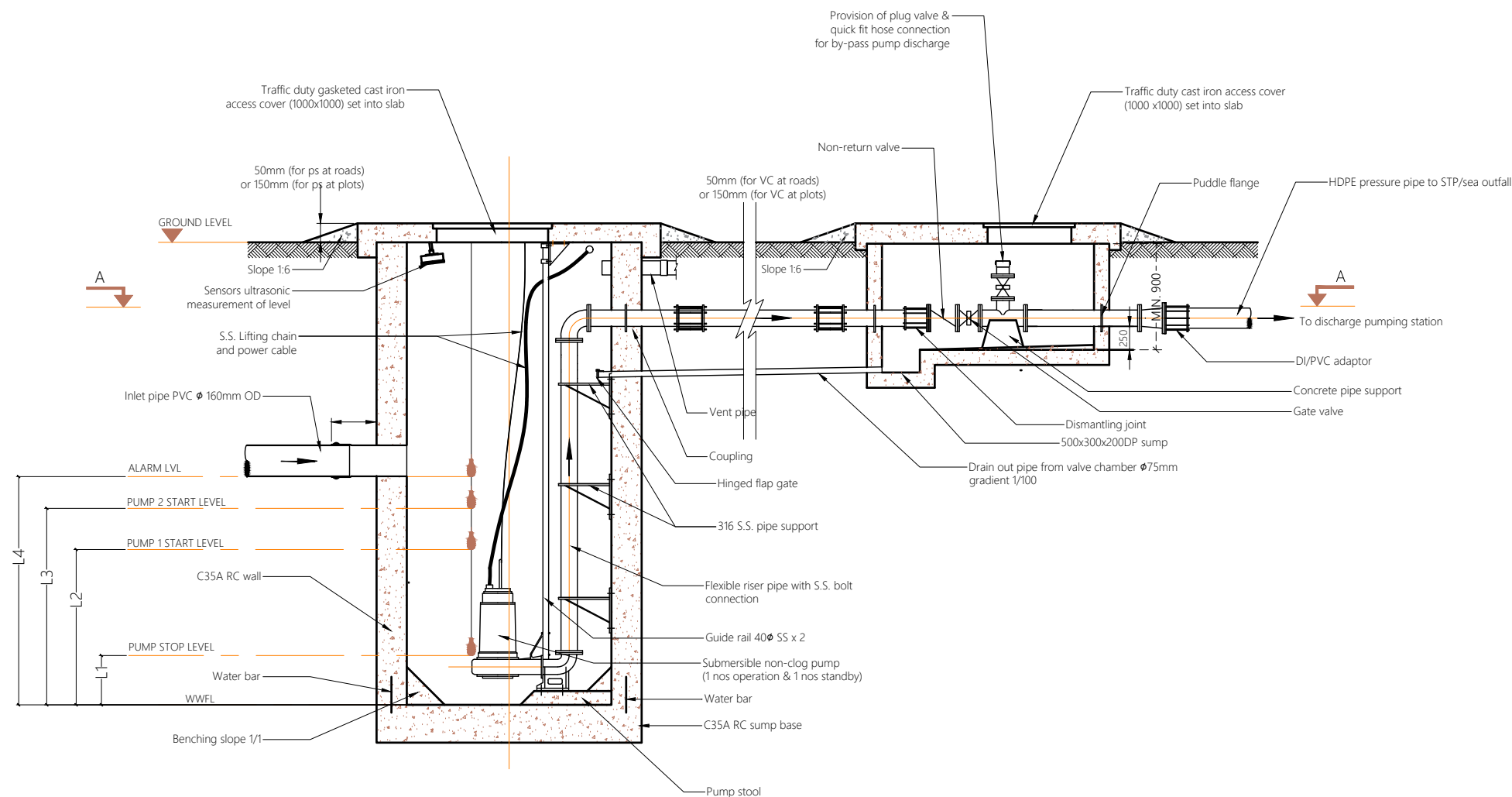
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NTS

Note:

- 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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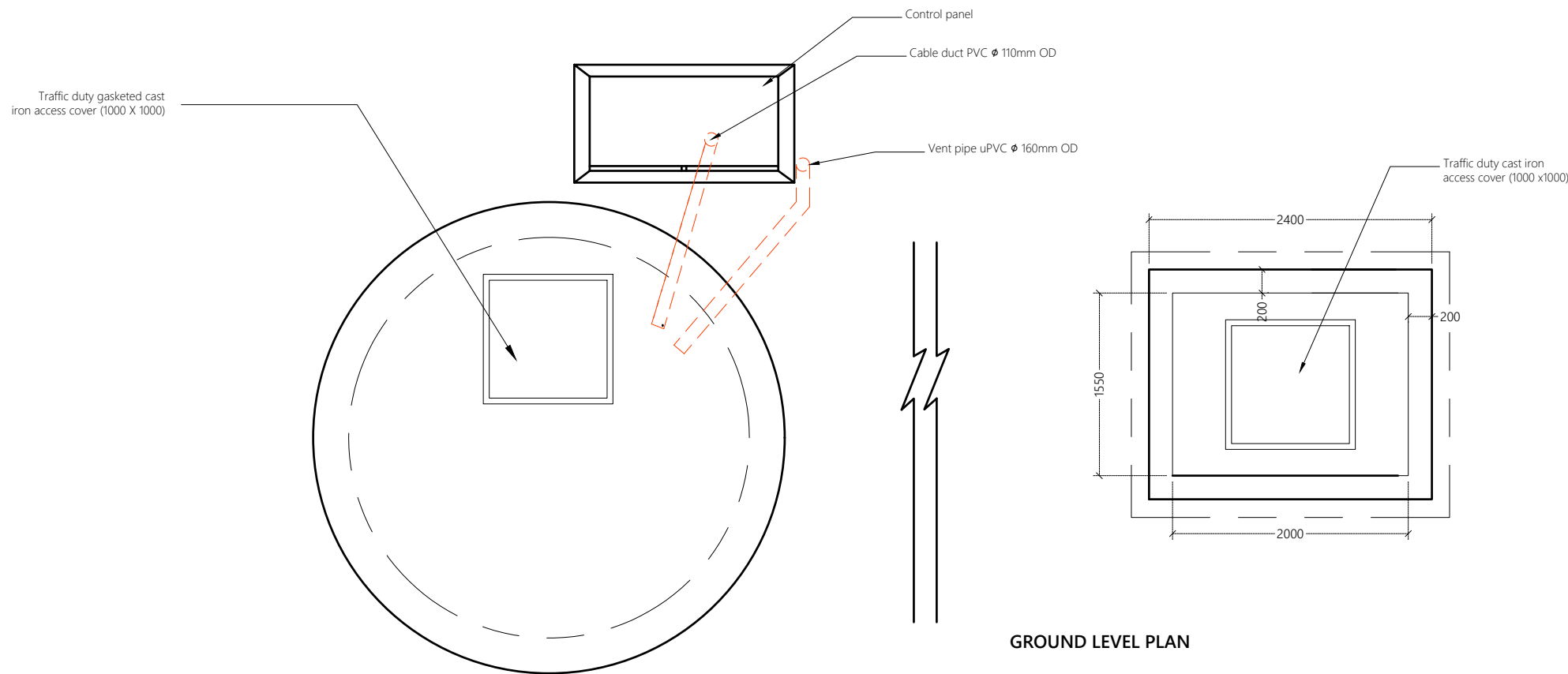
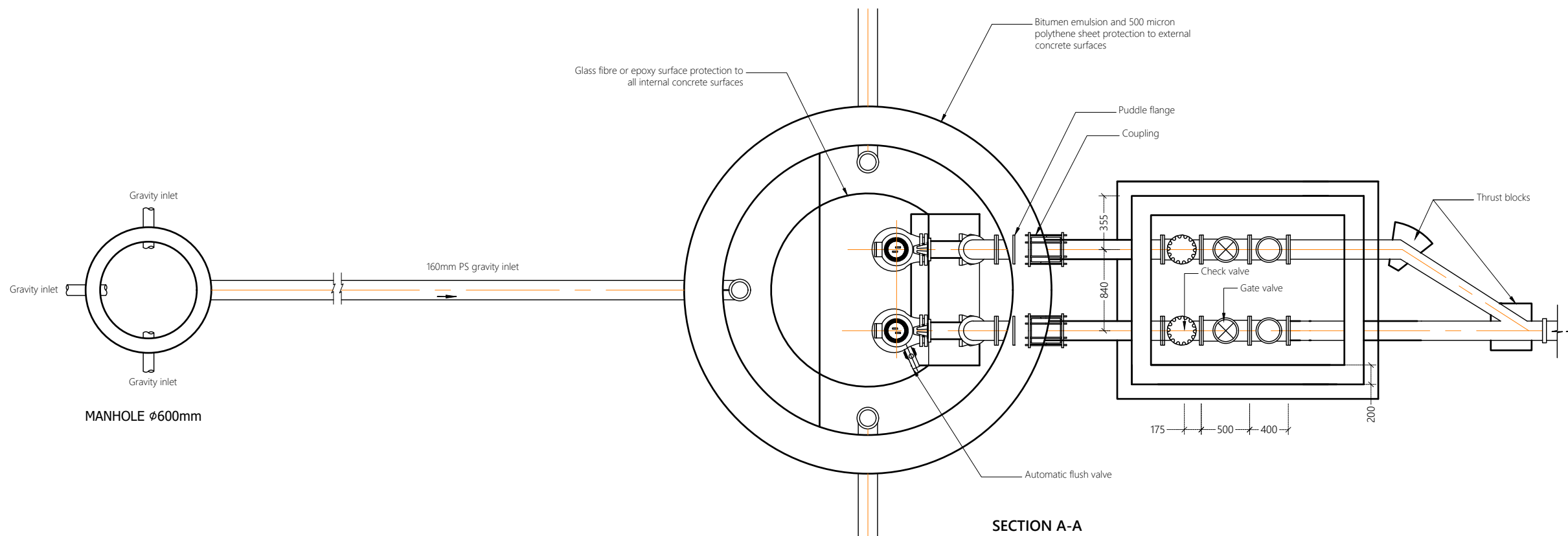
Title:
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Sub Title:
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Client:
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Legend

- Note:
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 10. Manhole cover double seal ductile heavy duty cast iron / SS 316 cover
 11. Vent pipe with vent cowl

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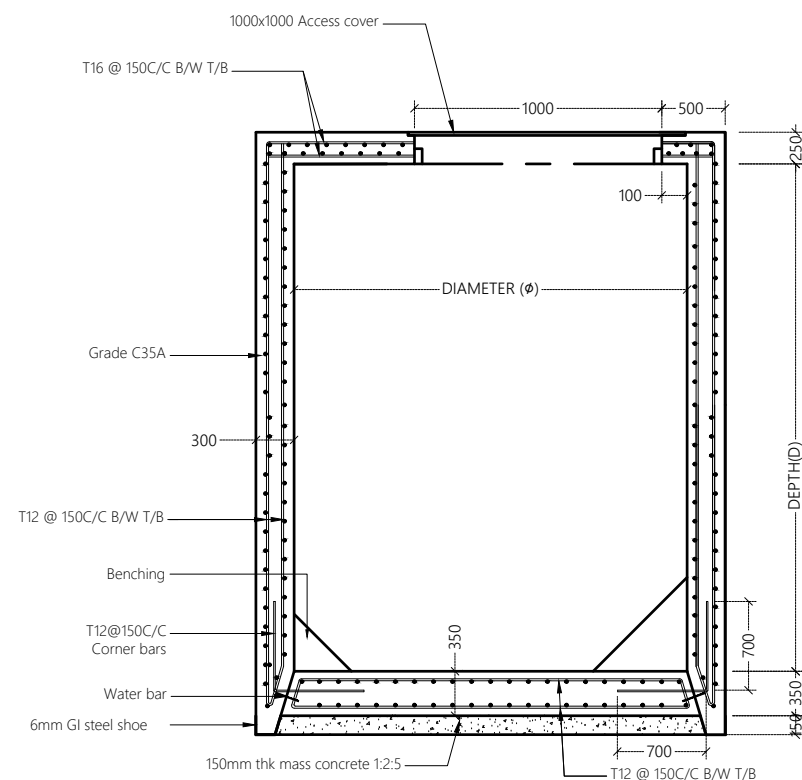
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PUMP STATION DETAIL

| Pump Station | Diameter (ϕ) | Depth (D) | Inlet Depth |
|--------------|---------------------|-----------|--------------------------------|
| PS1 | 2.5m | 3.10m | 2.332m, 1.876m, 1.338m, 1.463m |
| PS2 | 2.5m | 3.10m | 2.254m, 2.136m, 1.874m |
| PS3 | 2.5m | 3.00m | 2.177m |
| DPS | 2.5m | 3.00m | 0.8m |

PUMP STATION STRUCTURAL DETAILS



Legend

Note:

- Pumps, pipe work, fittings and control panel shall be installed in accordance with manufacturers recommendations.
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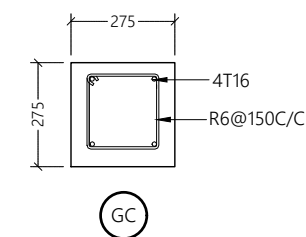
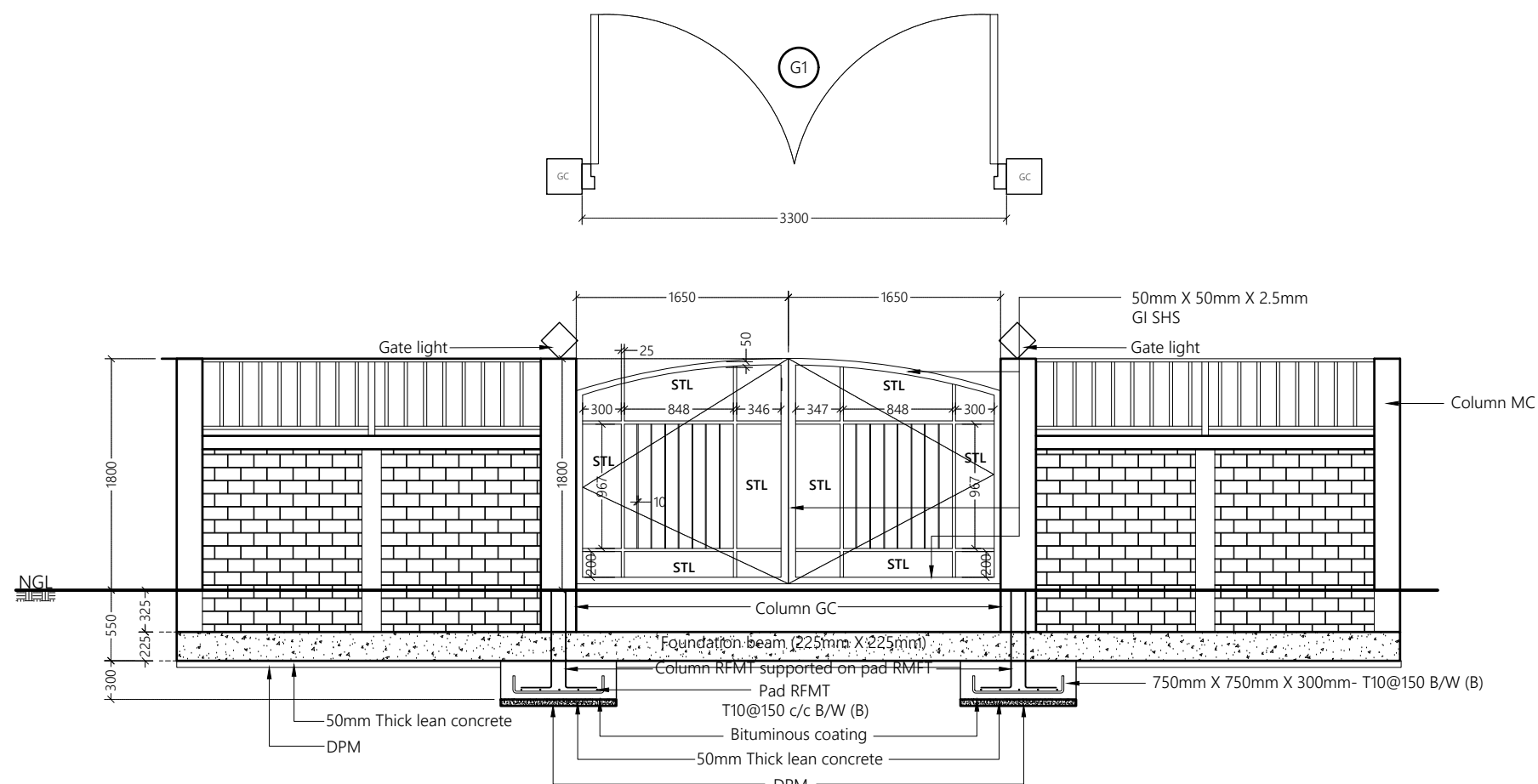
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| Rev: | Page: W-(7) |

Page: **W-(7)**



225

225

4T10

R6@ 150c/c

Foundation beam (225mm X 225mm)

The drawing consists of two parts: a side elevation and a plan view.

Side Elevation: Shows a gate structure with a total height of 1800mm. The gate is divided into three vertical sections. The central section is a gate leaf with a width of 1200mm, featuring a gate light and a diamond-shaped handle. The side sections are fixed panels. The gate is supported by two columns, each labeled "Column MC". The base of the gate is a "Foundation beam (225mm X 225mm)". The ground level is marked "NGL" (Natural Ground Level). The gate is constructed with a brickwork pattern on the lower half and a vertical ribbed pattern on the upper half. The gate leaf has a width of 1200mm and a height of 1800mm. The gate light is 150mm high. The gate leaf has a width of 1200mm and a height of 1800mm. The gate leaf has a width of 1200mm and a height of 1800mm.

Plan View: Shows the gate structure from above. The gate is 1200mm wide and 1800mm deep. The gate is supported by two columns, each labeled "Column MC". The gate is constructed with a brickwork pattern on the lower half and a vertical ribbed pattern on the upper half. The gate leaf has a width of 1200mm and a height of 1800mm. The gate light is 150mm high. The gate leaf has a width of 1200mm and a height of 1800mm. The gate leaf has a width of 1200mm and a height of 1800mm.

Material Specifications:

- 50mm X 50mm X 2.5mm GI SHS
- Gate light
- Column MC
- Foundation beam (225mm X 225mm)
- 50mm Thick lean concrete
- DPM

Legend

Note:

- 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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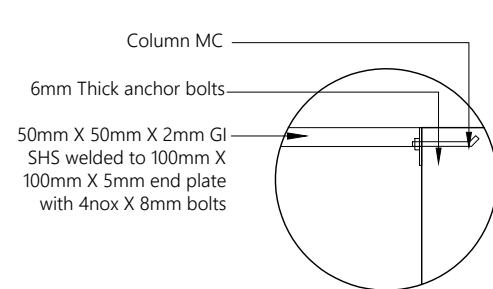
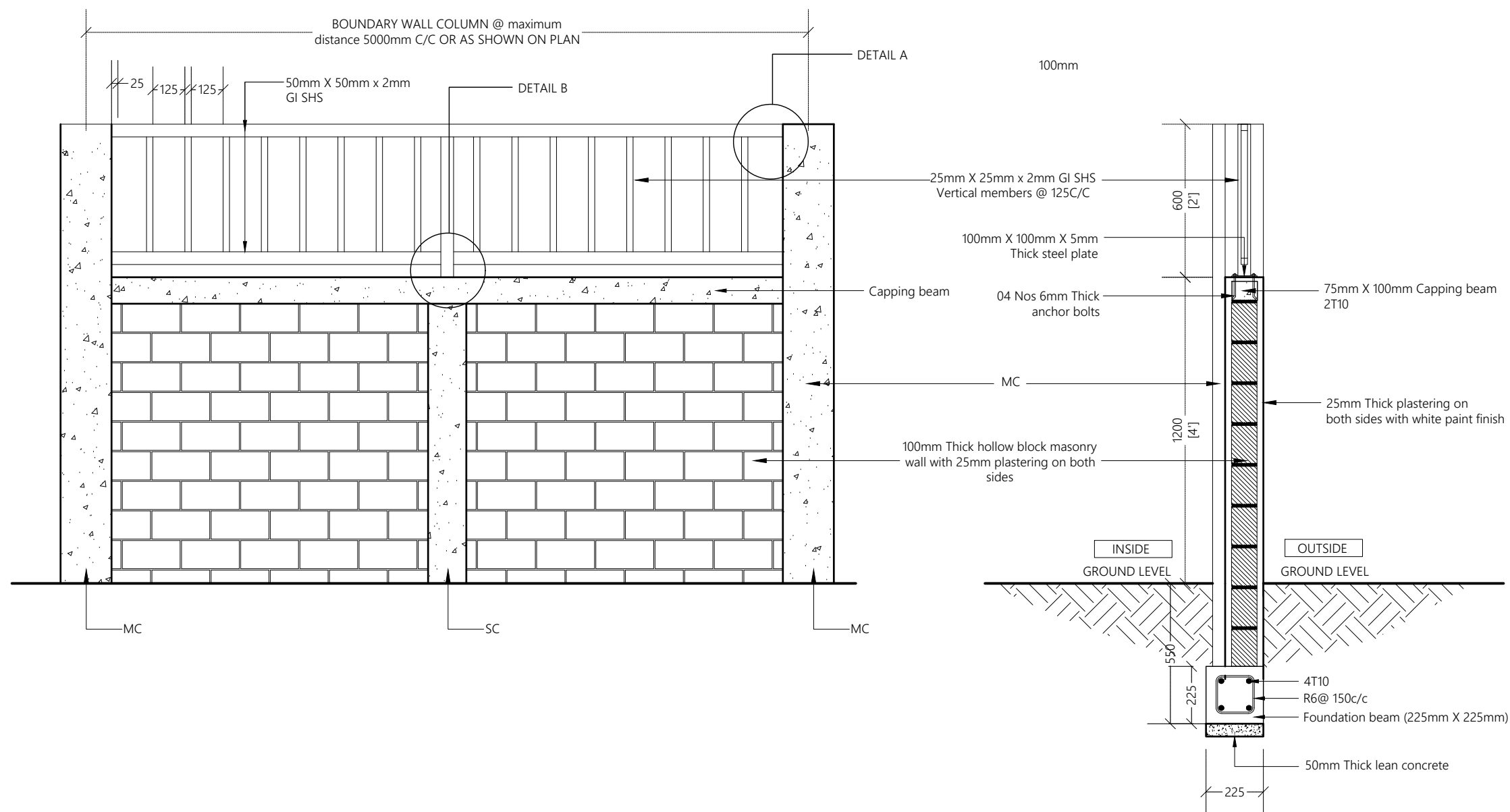
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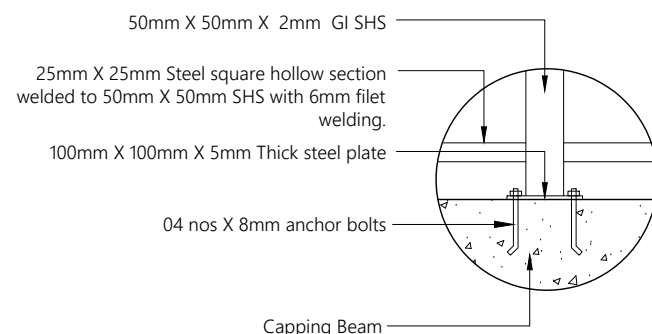
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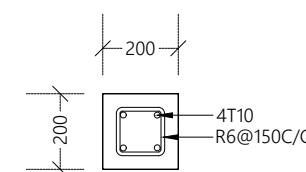
DETAIL A

1:10

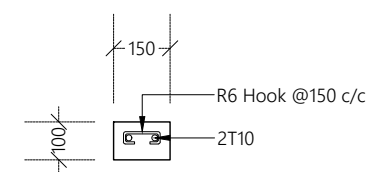


DETAIL B

1:10



MAIN COLUMN
@ maximum distance 5000mm C/C



STIFFENER COLUMN
(in between two main columns)

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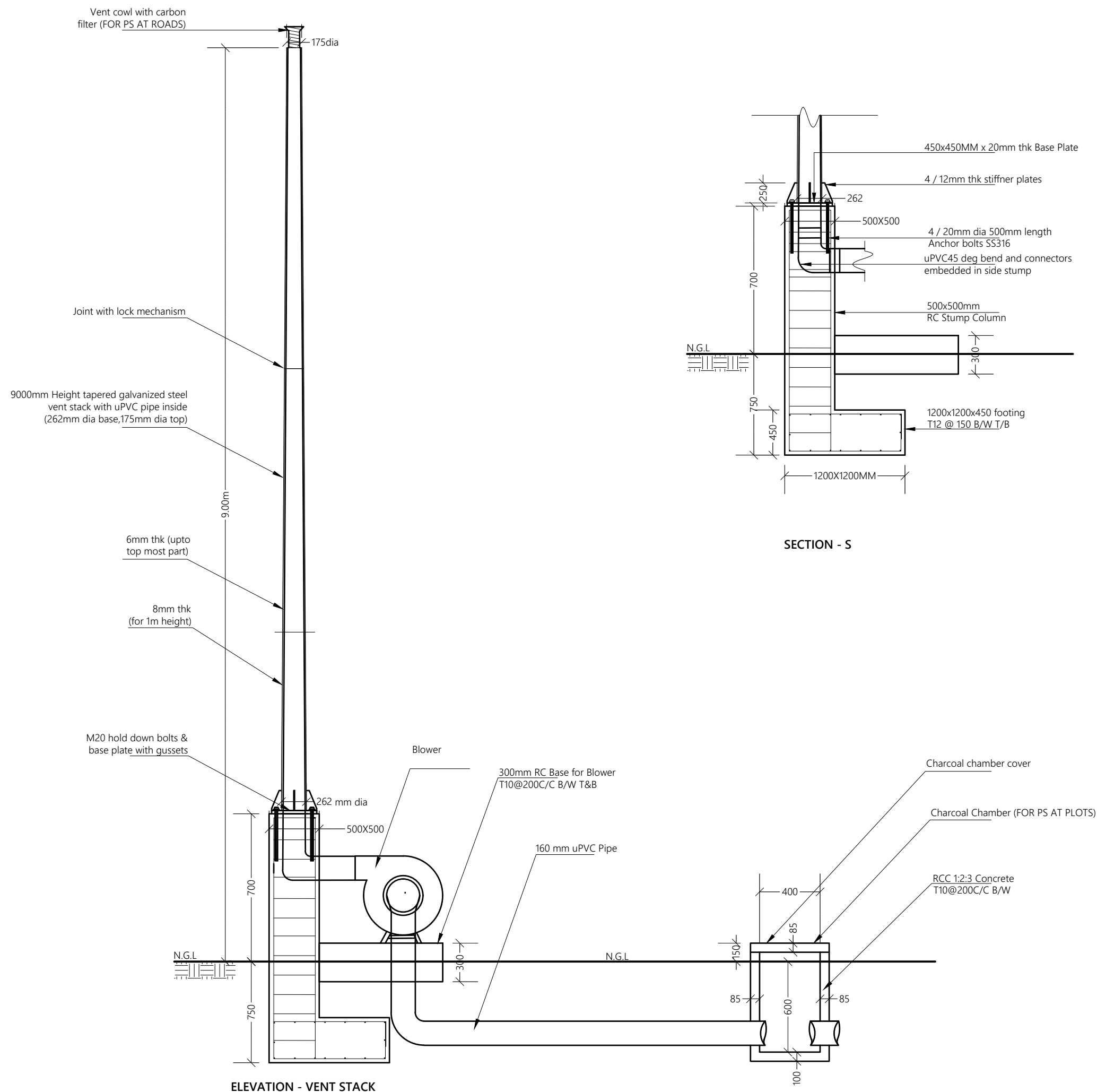
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ELEVATION - VENT STACK

NTS

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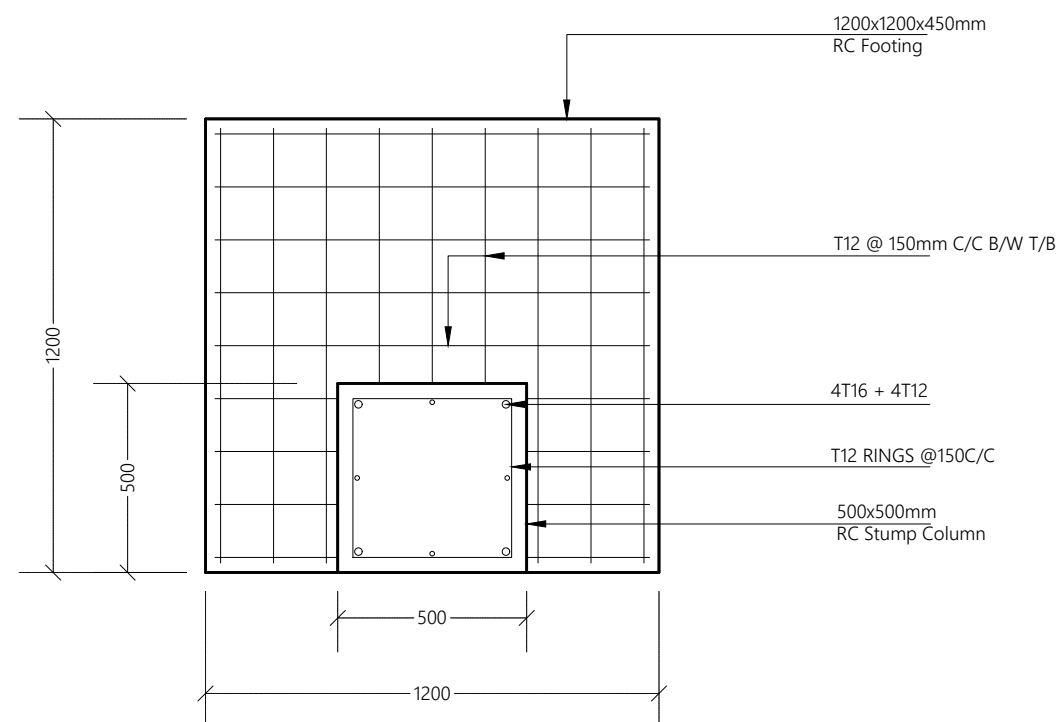
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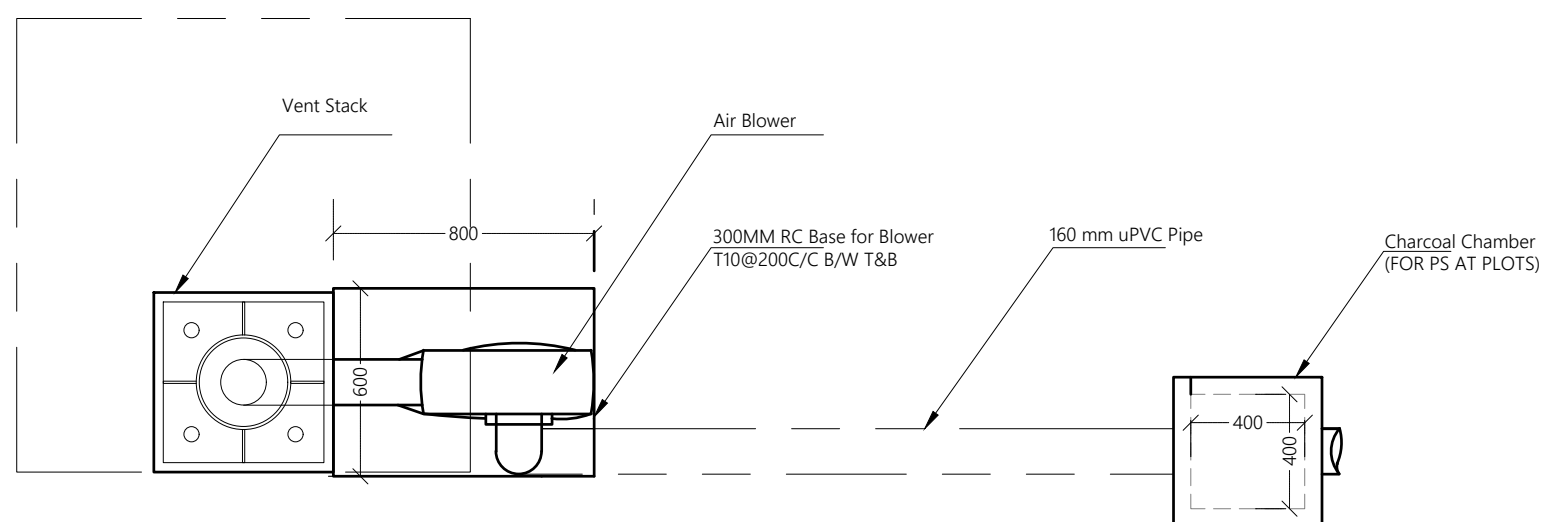


Legend

Note:



FOOTING & STUMP DETAILS OF VENT STACK



AIR BLOWER DETAILS (Plan View)

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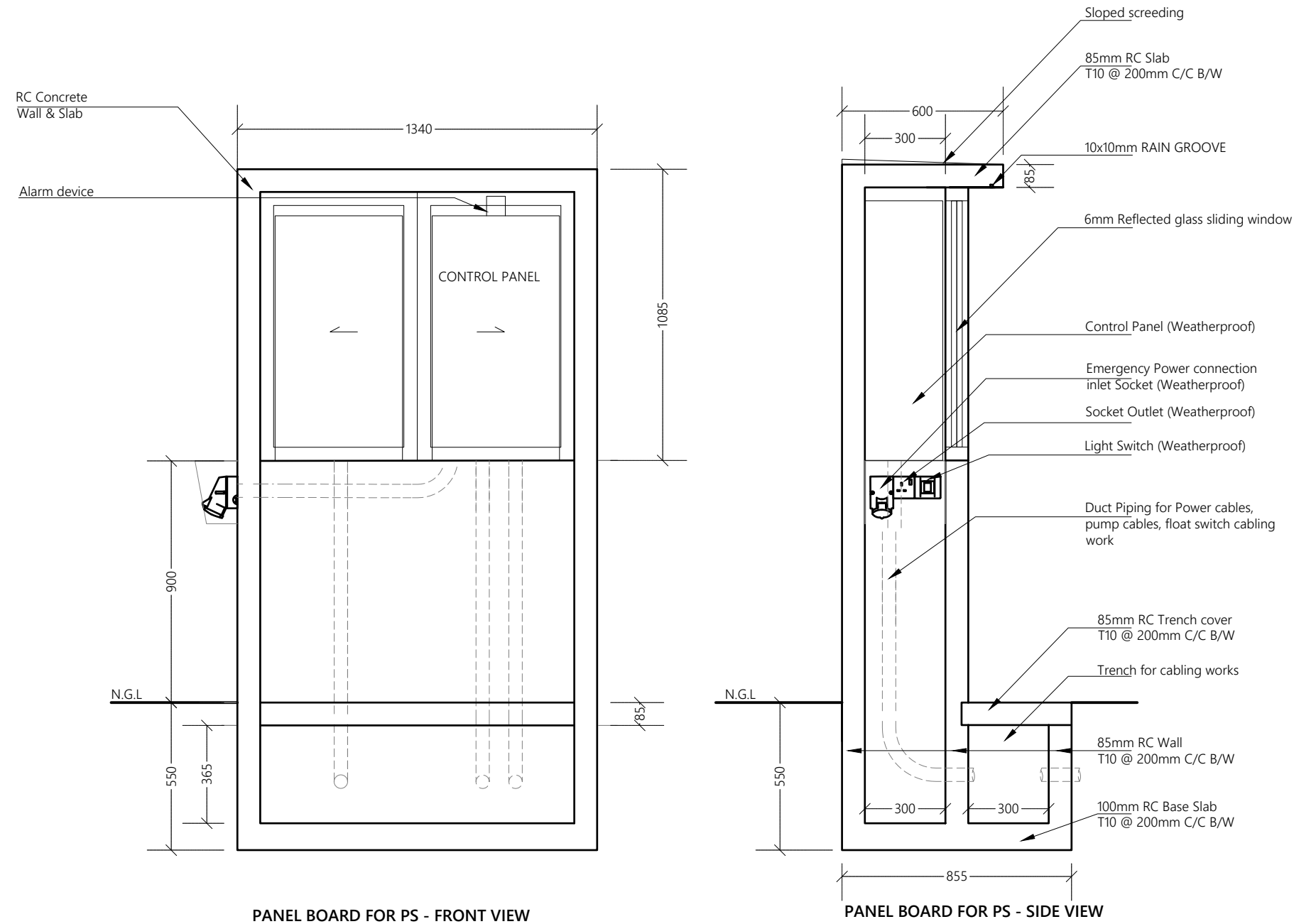
VENT STACK AND AIR BLOWER DETAILS

NTS



Legend

Note:



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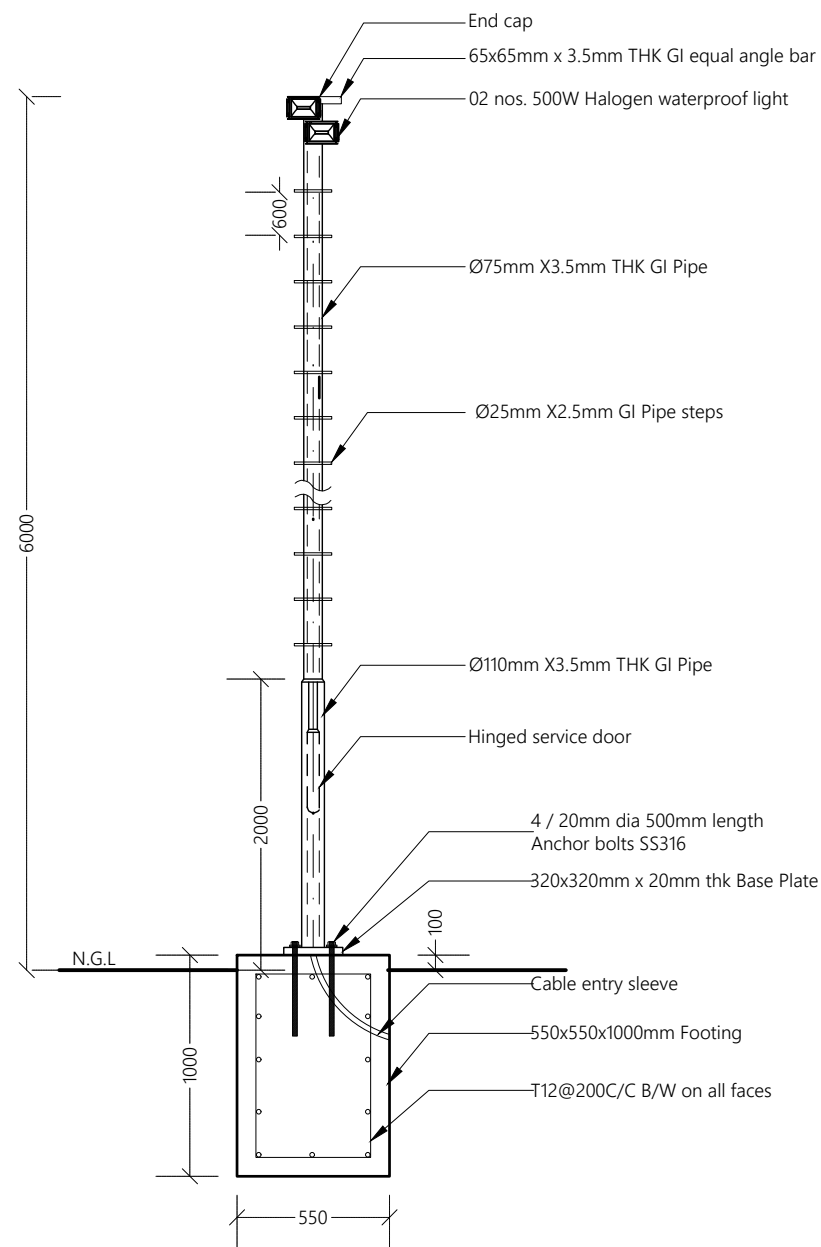
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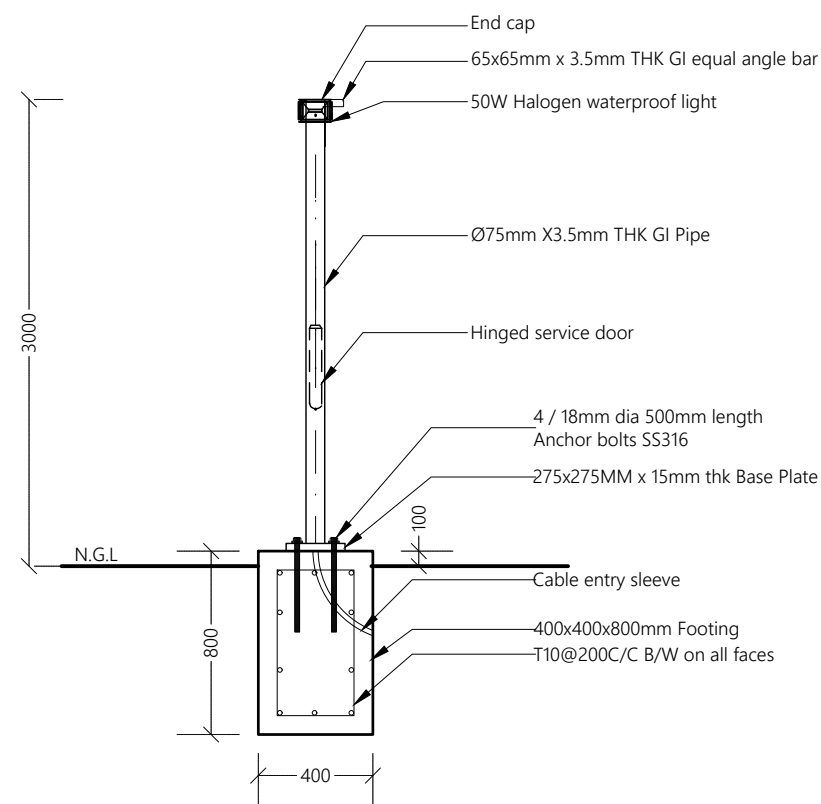
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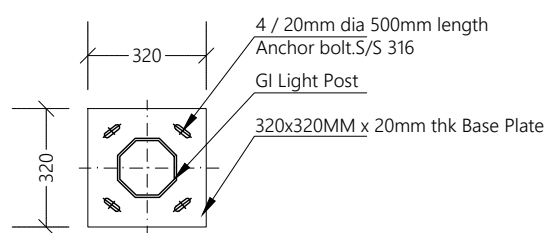
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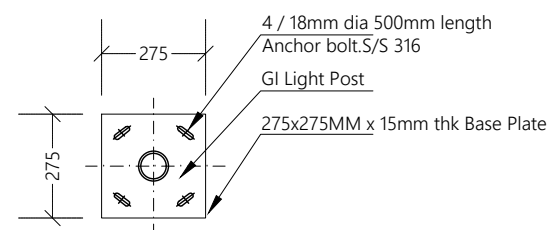
LIGHT POST DETAILS FOR STP COMPOUND (LP1)



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

Legend

Note:

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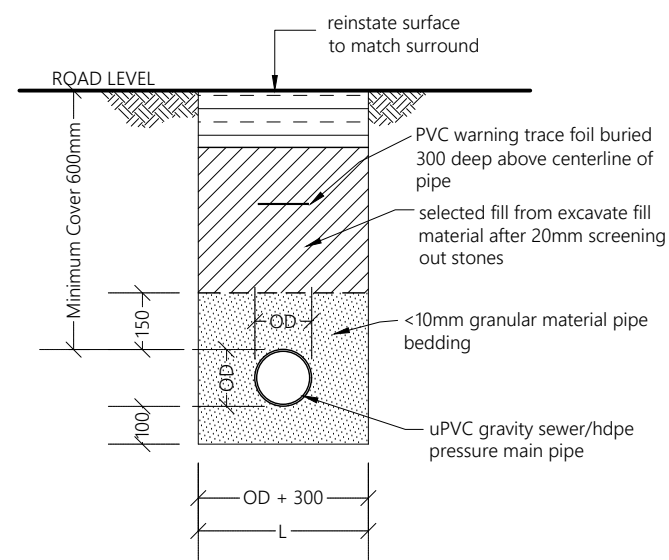
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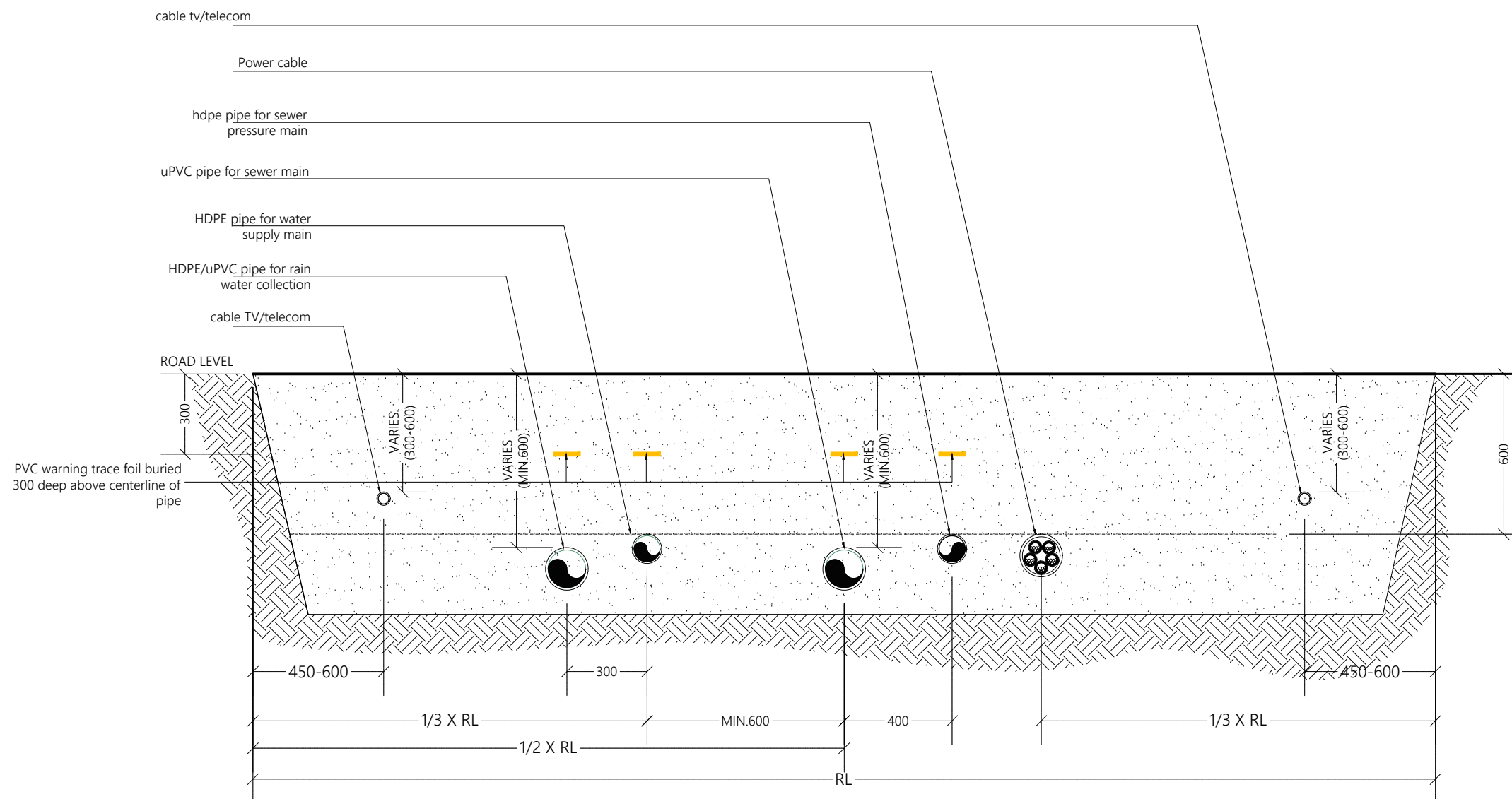
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TRENCH & BEDDING DETAILS



TYPICAL ROAD SECTION

Legend

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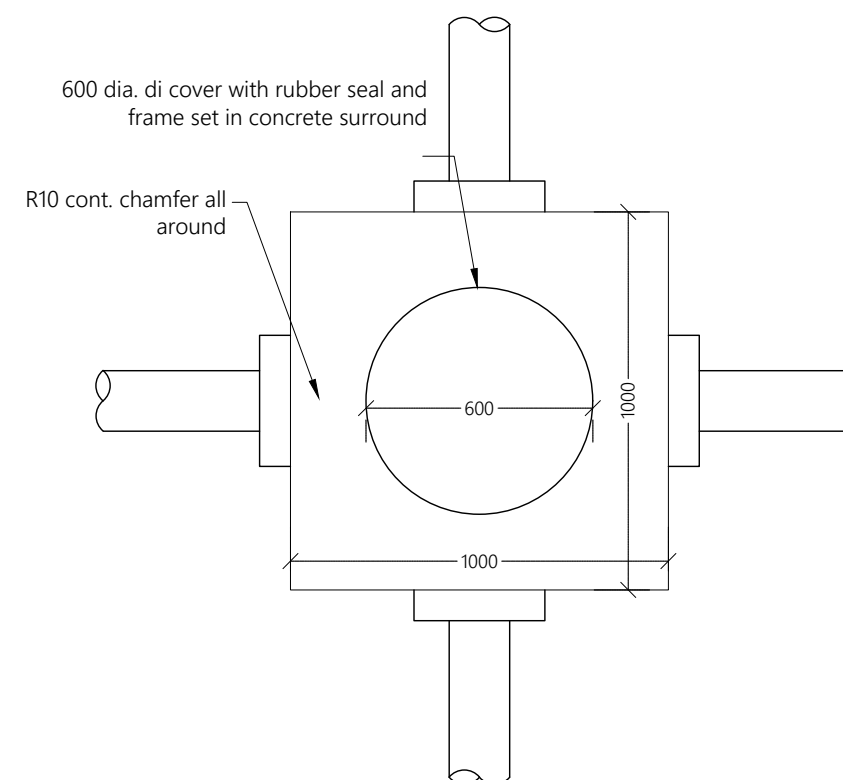
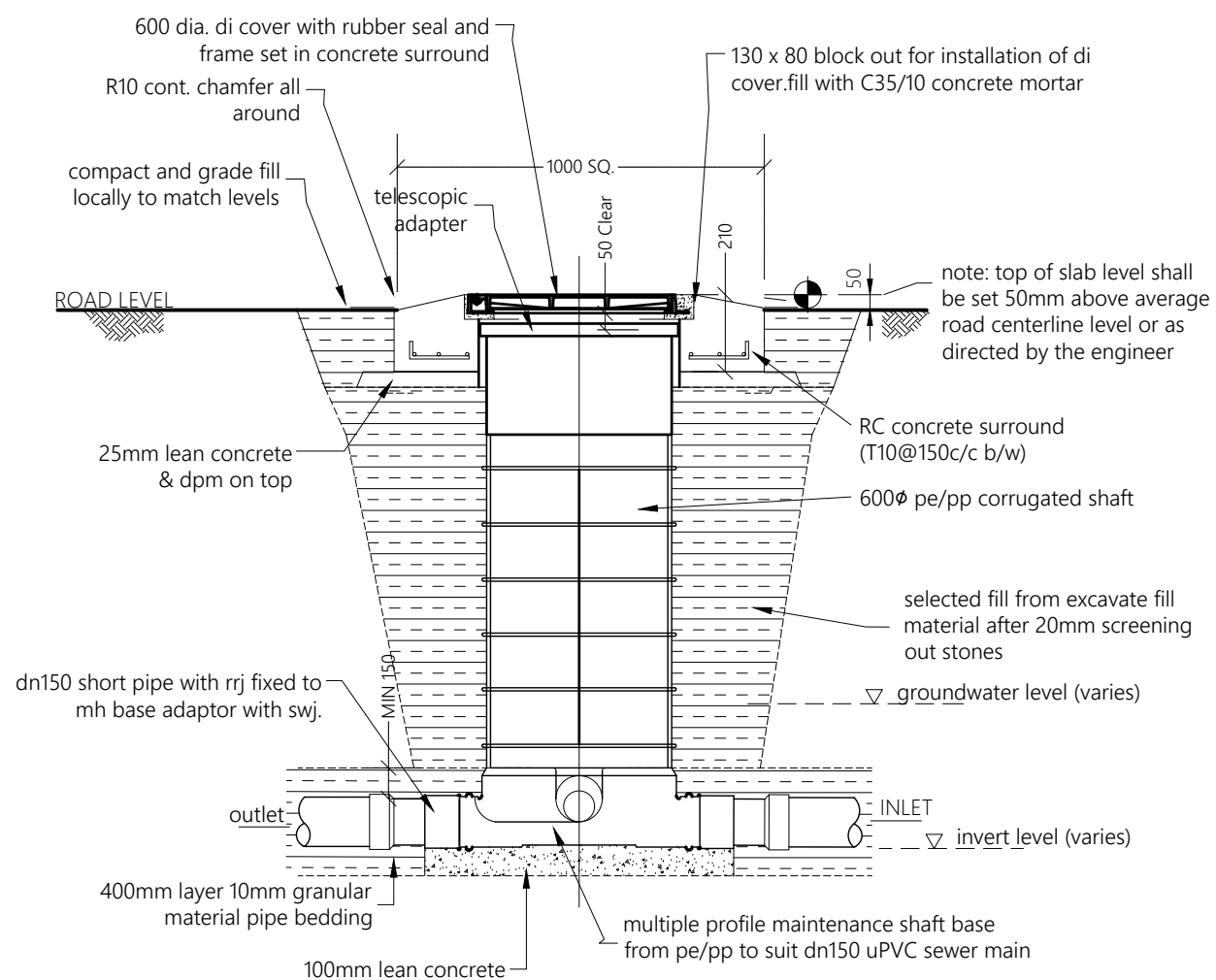
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| Date: Sep 2020 | SCALE (A3): 1:20 |
| Project No: EP-WS/2019/06 | Page: W-(14) |

TRENCH AND BEDDING DETAILS

1:20



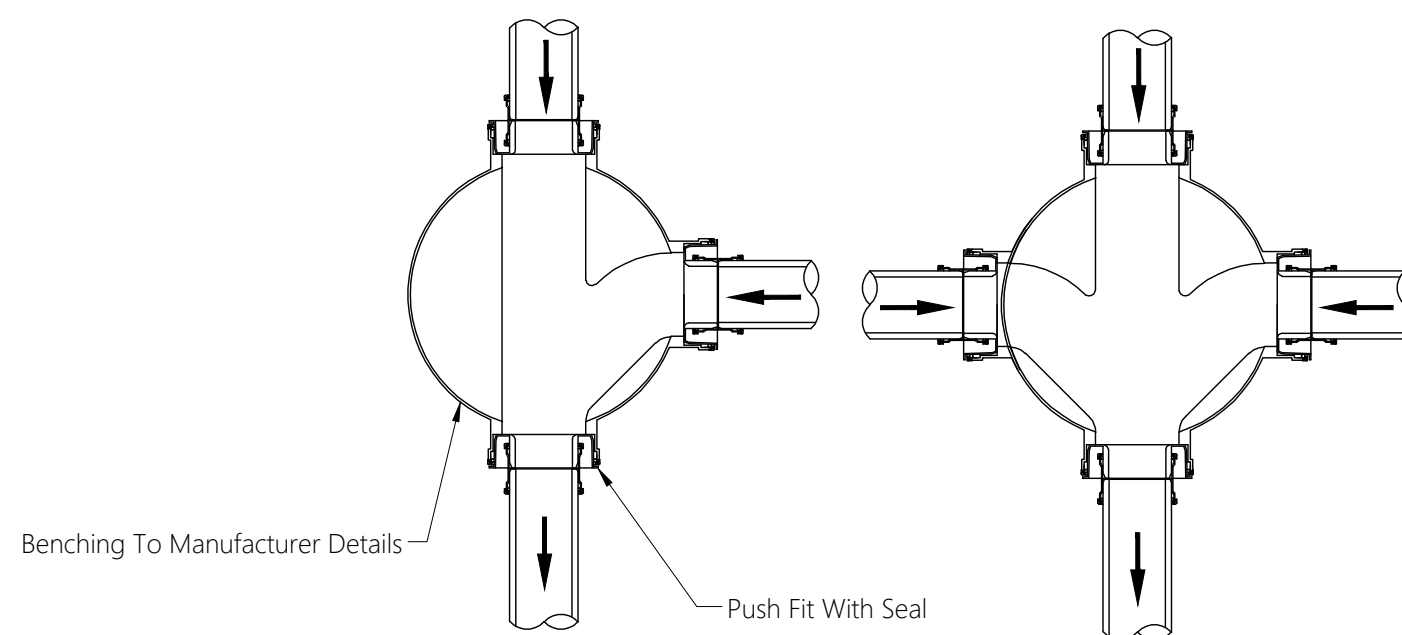
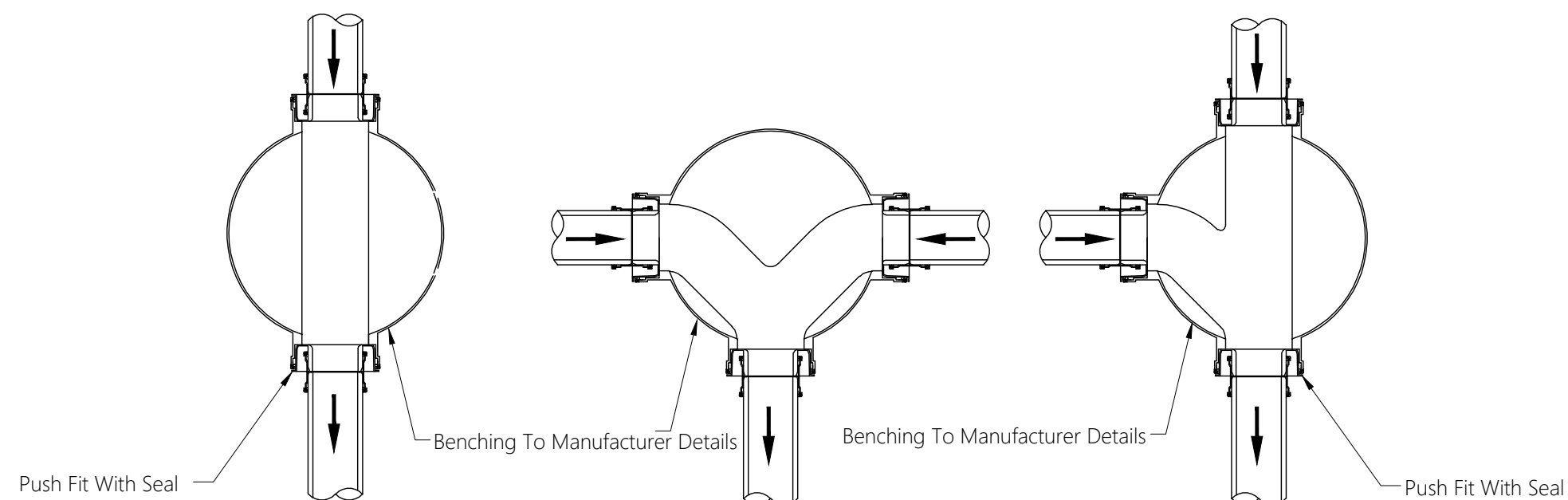
Legend

Title:
**Consultancy Services for Survey,
Design and EIA works of Water
Supply and Sewerage Facilities in
7 islands, Maldives - Package 6**



Legend

Note:



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| NO. | | | | | |

Title:
**Consultancy Services for Survey,
Design and EIA works of Water
Supply and Sewerage Facilities in
7 islands, Maldives - Package 6**

Sub Title:
Sewerage System in GA. Nilandhoo

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

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A: G. Rosary West,
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Maldives Engineering & Construction

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| Date: Sep 2020 | SCALE (A3): NTS |
| Project No: EP-WS/2019/06 | |
| Rev: | Page: W-(16) |

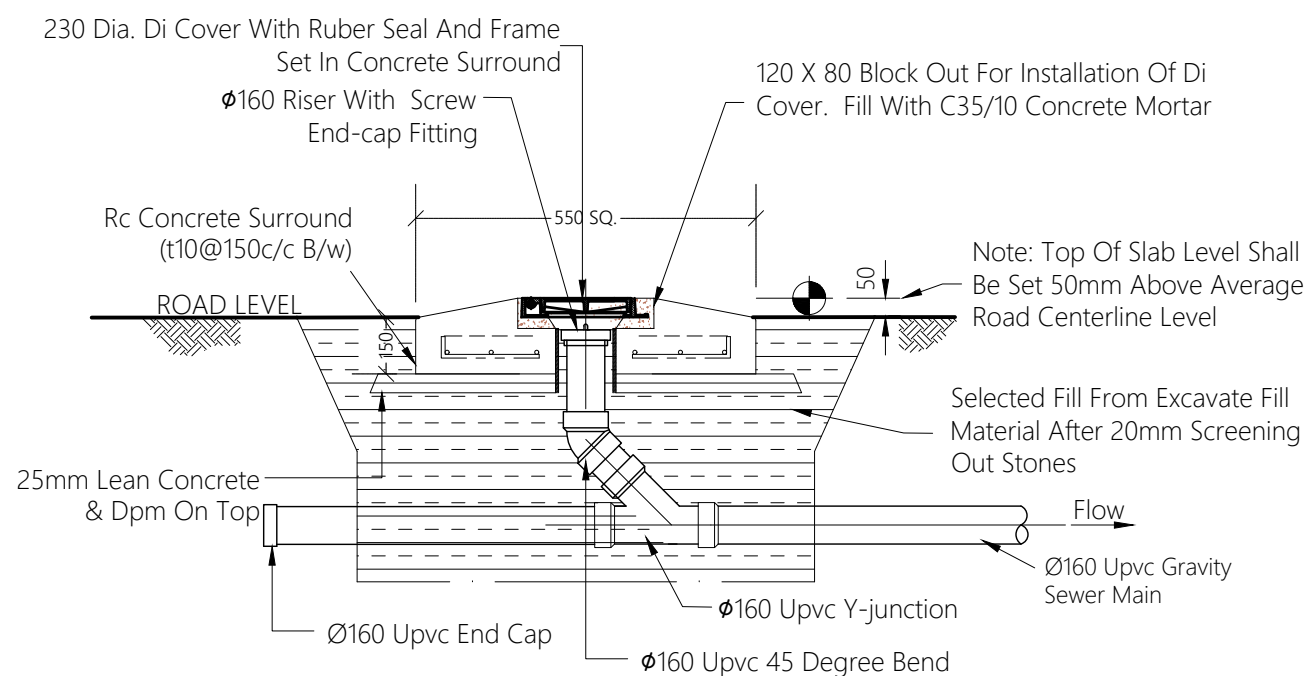
TYPICAL MANHOLE BASE DETAILS

NTS

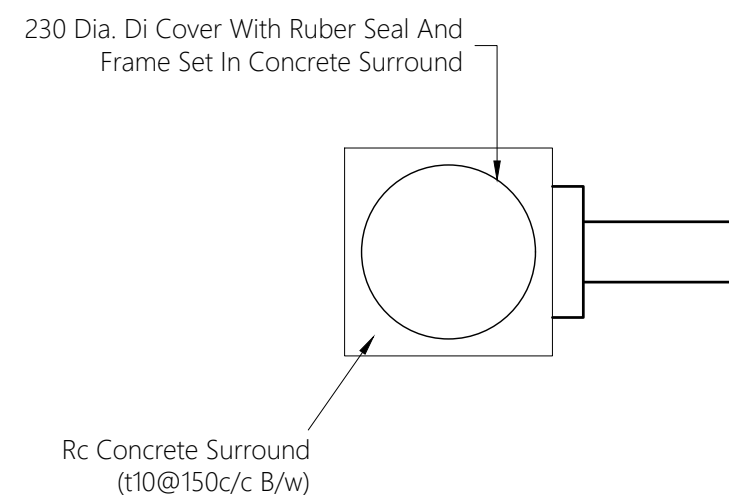


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Note:



ELEVATION - CLEANOUT (CO)



PLAN VIEW - CLEANOUT (CO)

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| REV. | Date | Revision Description | Drawn | Chkd | Appd. |

Title:
**Consultancy Services for Survey,
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Supply and Sewerage Facilities in
7 islands, Maldives - Package 6**

Sub Title:
Sewerage System in GA. Nilandhoo

Client:
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Infrastructure, Republic of Maldives**

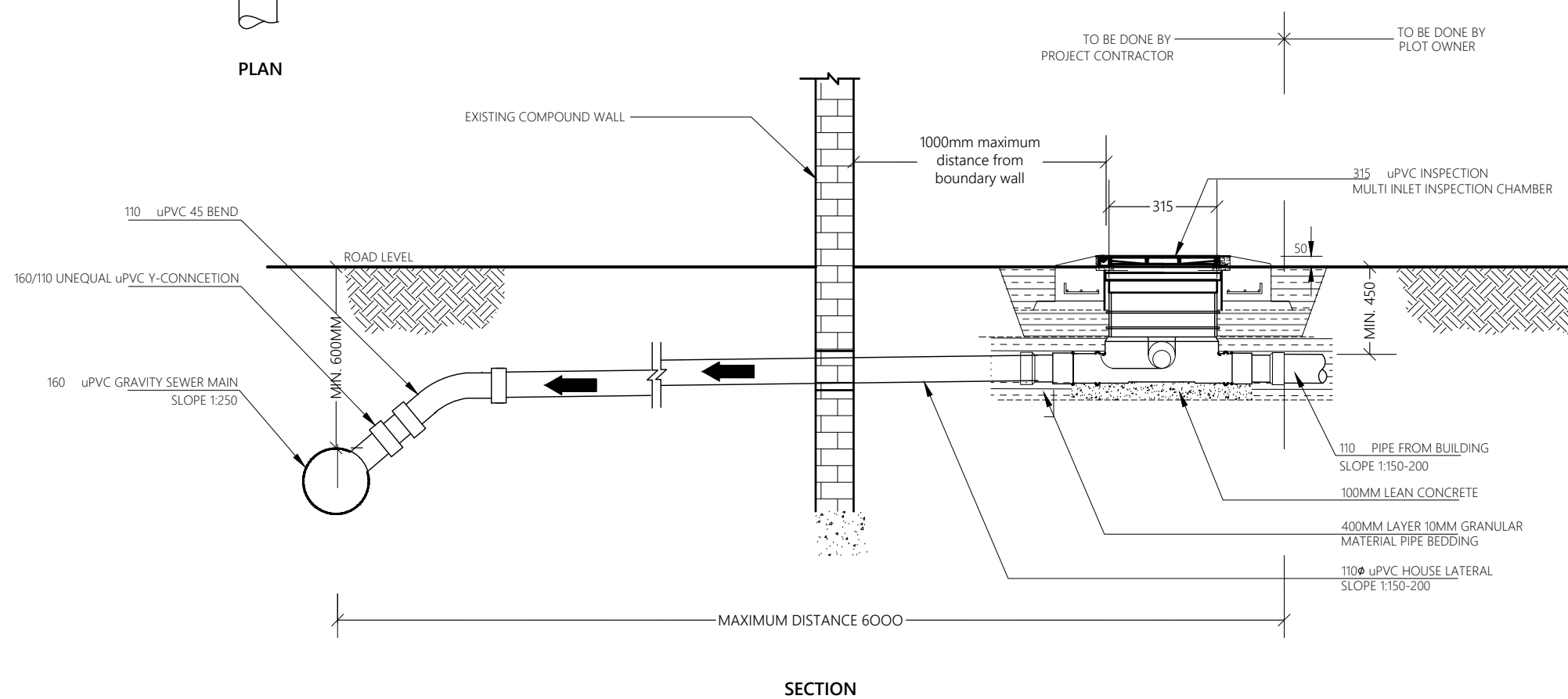
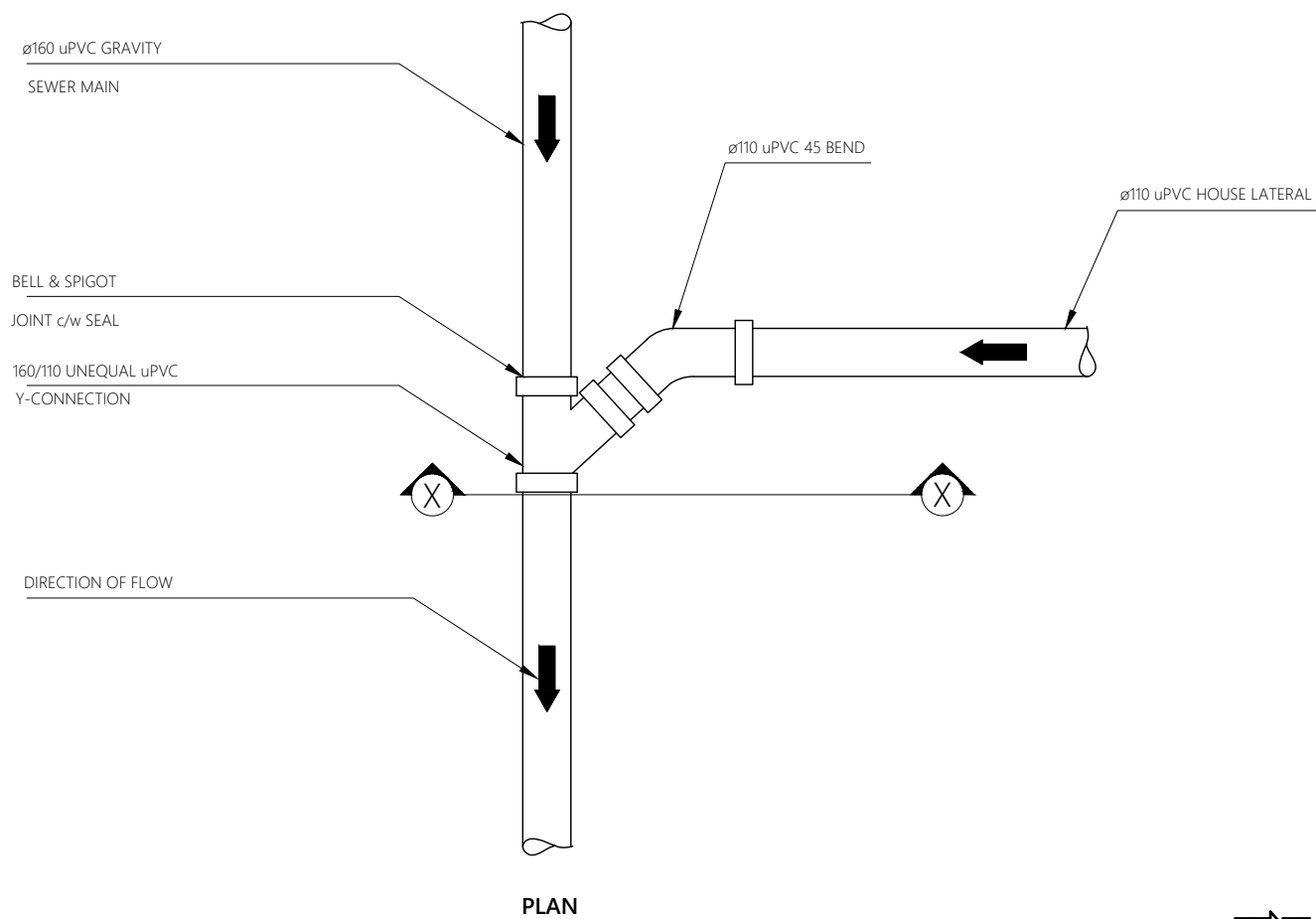
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| Date: Sep 2020 | SCALE (A3): NTS |
| Project No: EP-WS/2019/06 | |
| Rev: | Page: W-(17) |

CLEAN OUT DETAILS

NTS



TYPICAL HOUSE CONNECTION DETAIL

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Legend

Notes:

1. Invert level at house inspection chamber and invert level of the sewer main on the road should be checked during the house connection survey and invert level should be adjusted in order to facilitate gravity flow from house inspection chamber to sewer main.

| 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 6

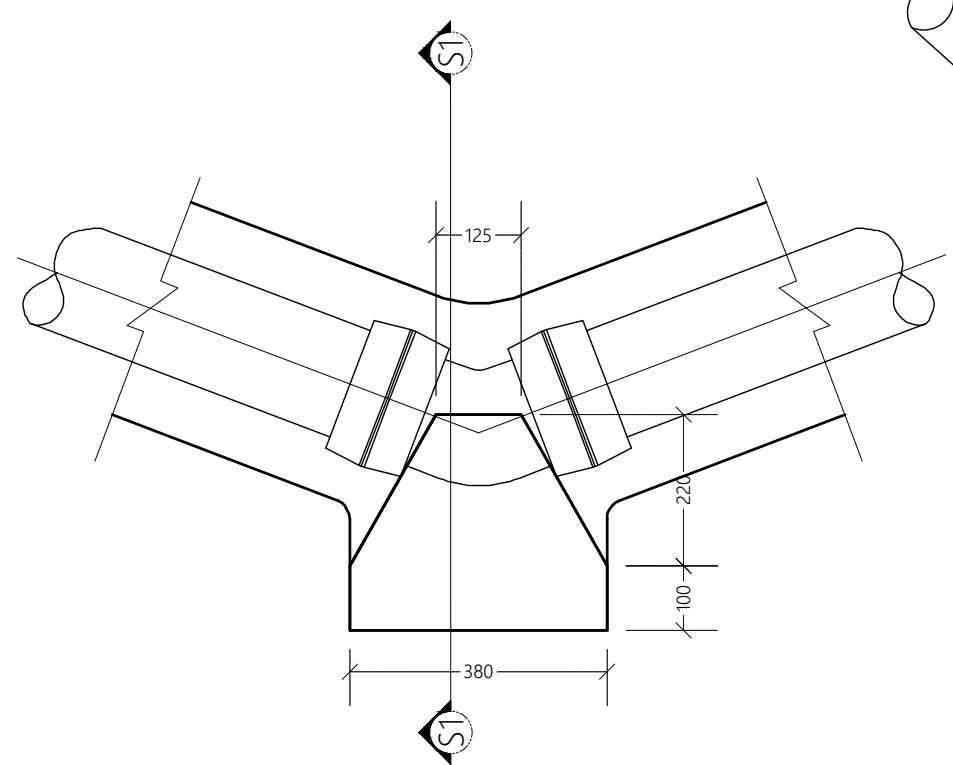
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Sewerage System in GA. Nilandhoo

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

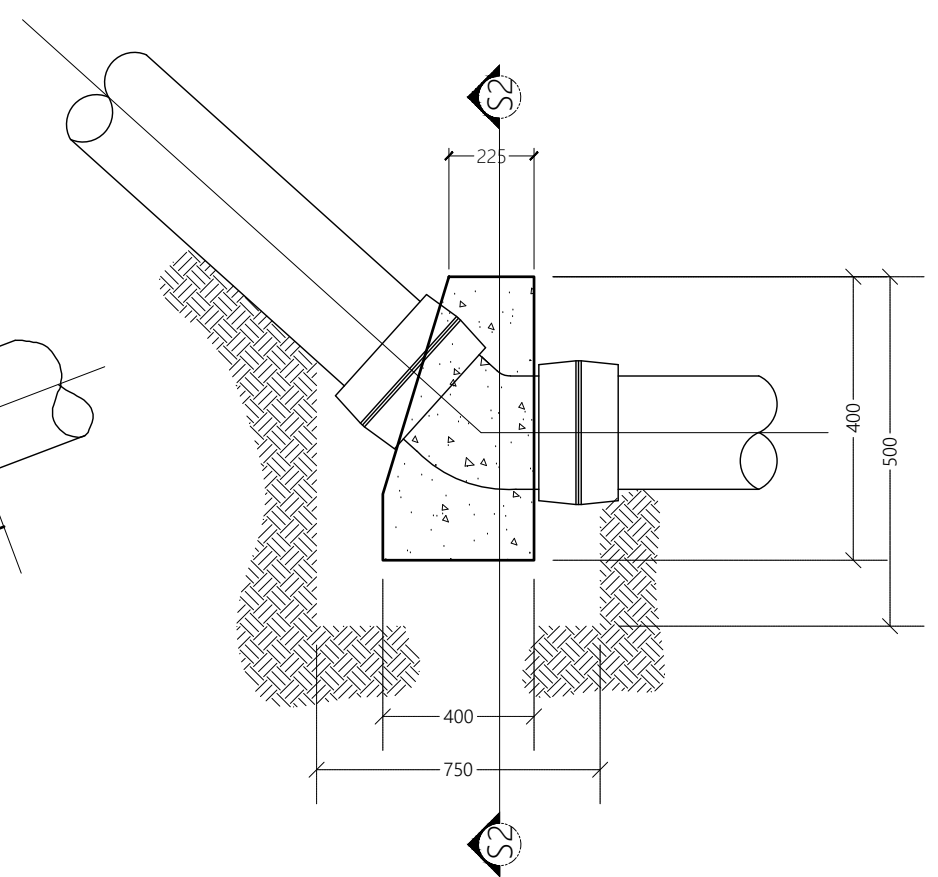
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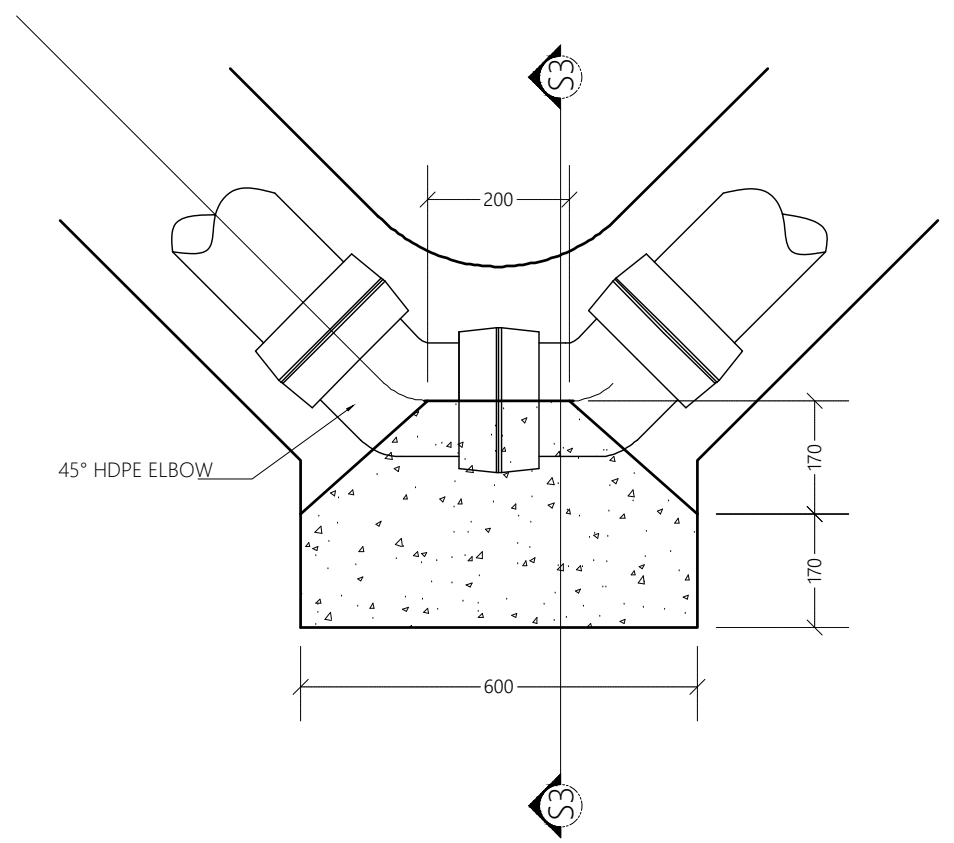
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| Project No: EP-WS/2019/06 | Page: W-(18) |



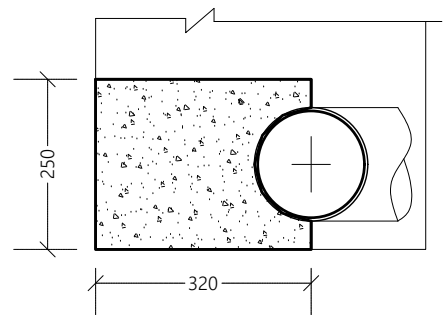
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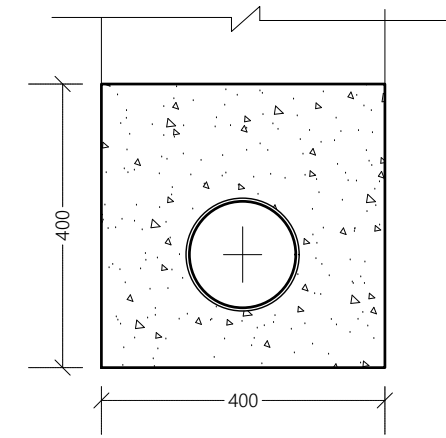
VERTICAL 45° BEND
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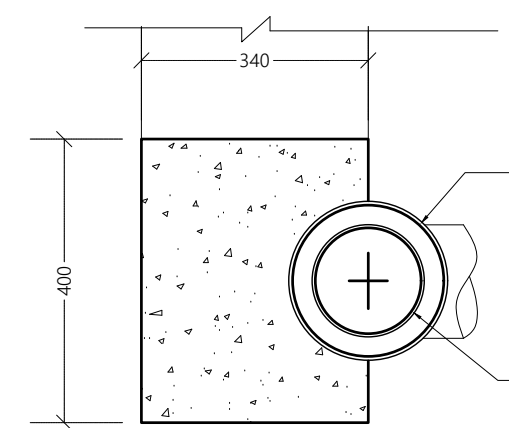
HORIZONTAL 90° BEND
NTS



SECTION S1-S1
NTS



SECTION S2-S2
NTS



SECTION S3-S3
NTS

ELECTRO-FUSION COLLAR
HDPE PIPE

THRUST BLOCK DETAILS
NTS

Legend

Note:

| 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 6

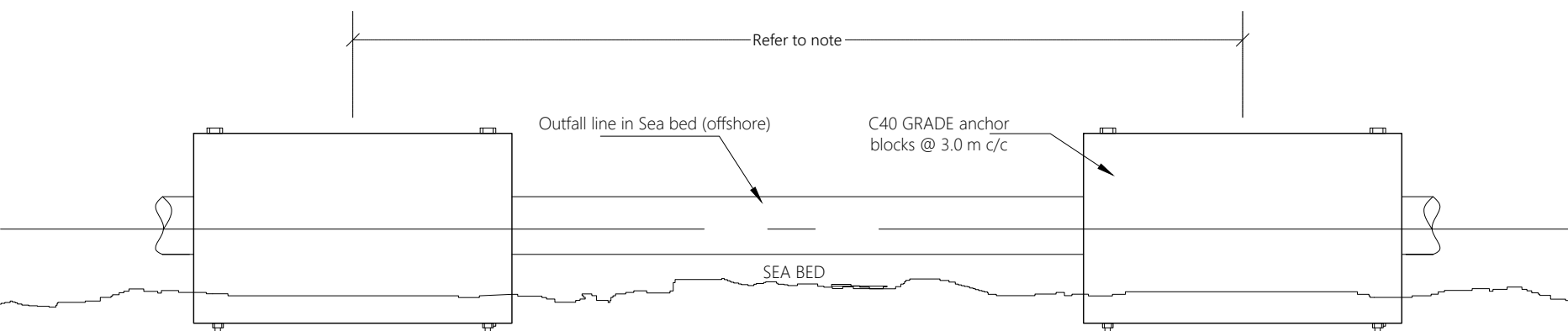
Sub Title:
Sewerage System in GA. Nilandhoo

Client:
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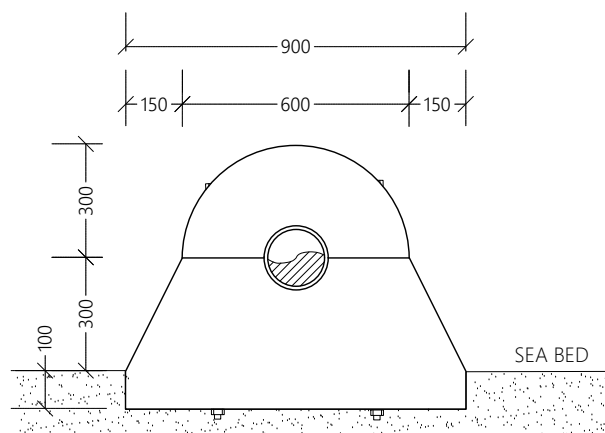
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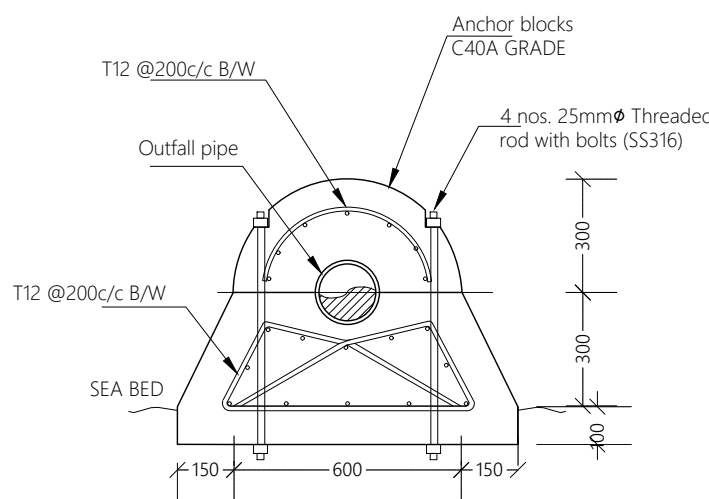
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| Project No: EP-WS/2019/06 | |
| Rev: | Page: W-(19) |



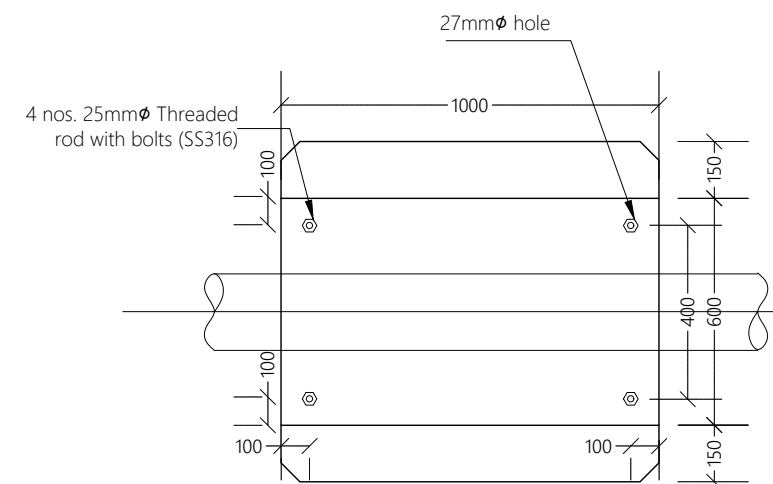
BALLAST BLOCK SIDE ELEVATION



BALLAST BLOCK FRONT ELEVATION



BALLAST BLOCK SECTION



BALLAST BLOCK PLAN

Legend

Note:

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.

| 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 6

Sub Title:
Sewerage System in GA. Nilandhoo

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

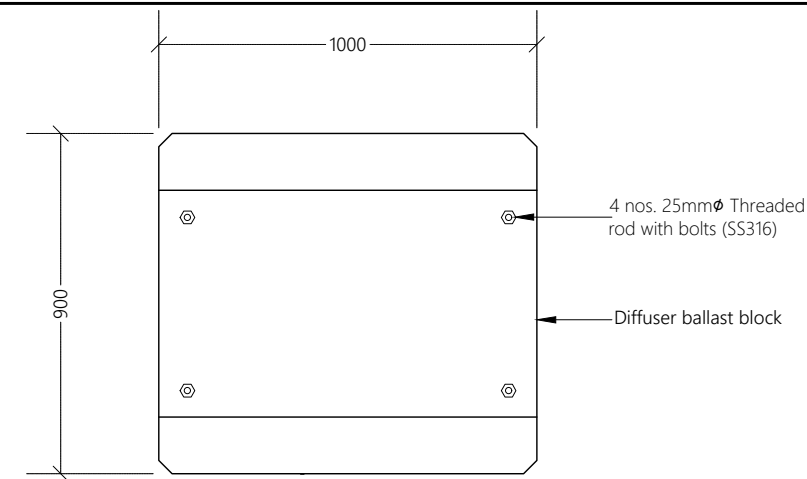
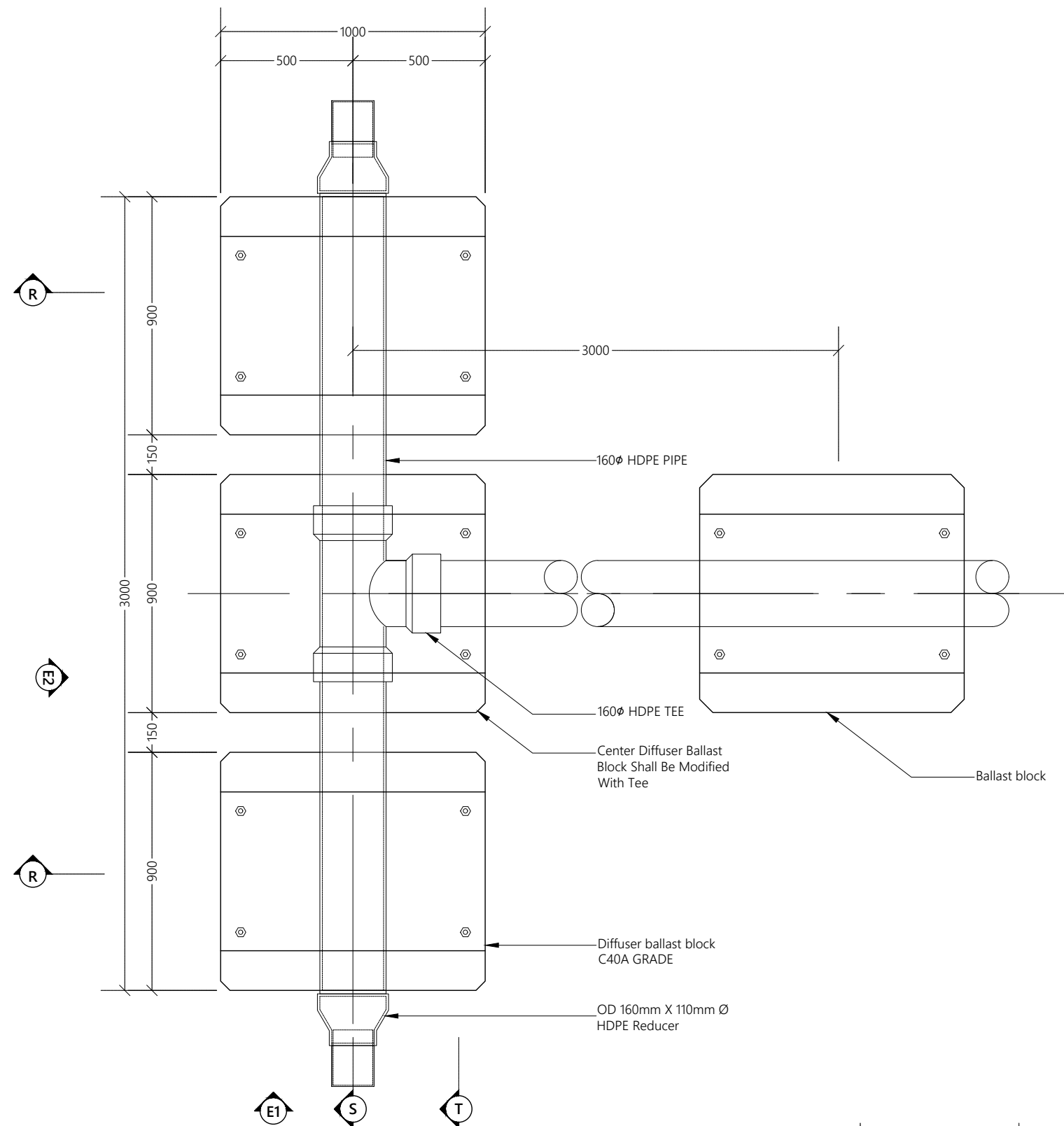


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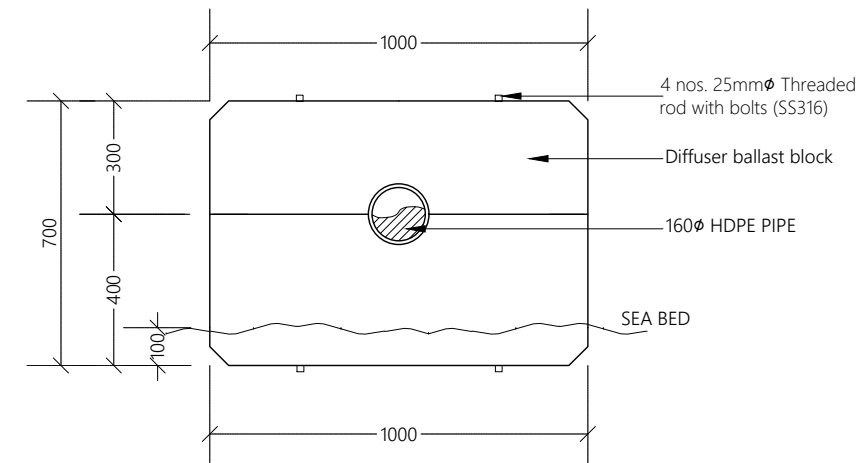


Maldiviya Shiyasathuwa Alayana

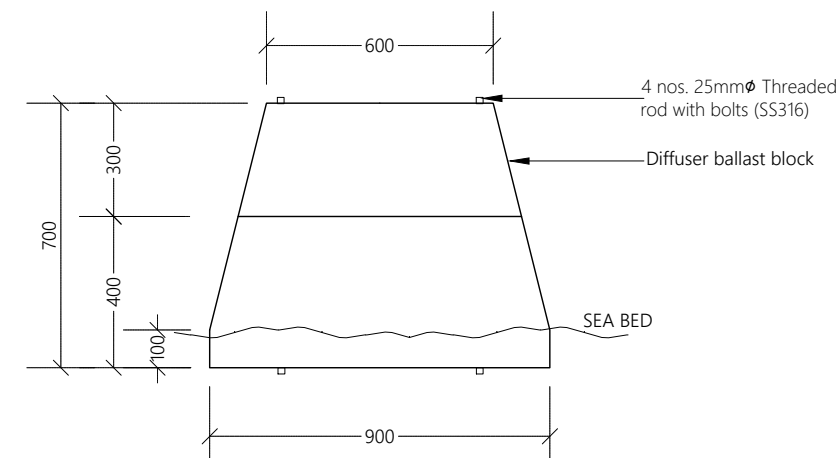
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| Project No: EP-WS/2019/06 | Page: W-(20) |



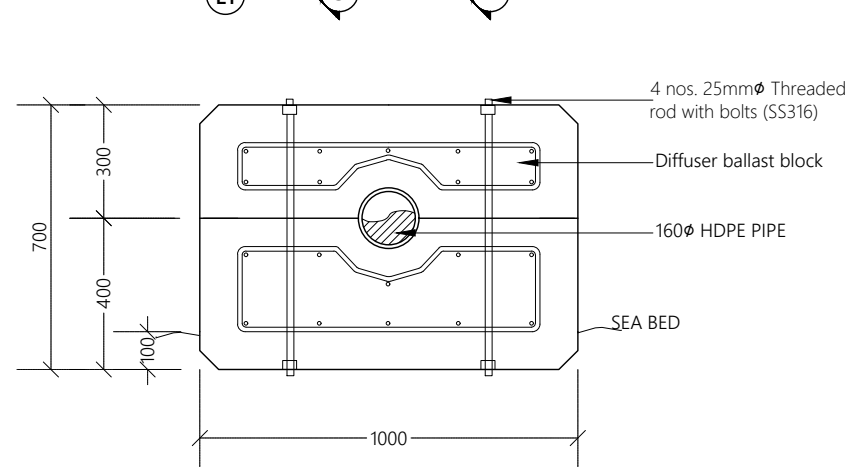
DIFFUSER BALLAST BLOCK PLAN



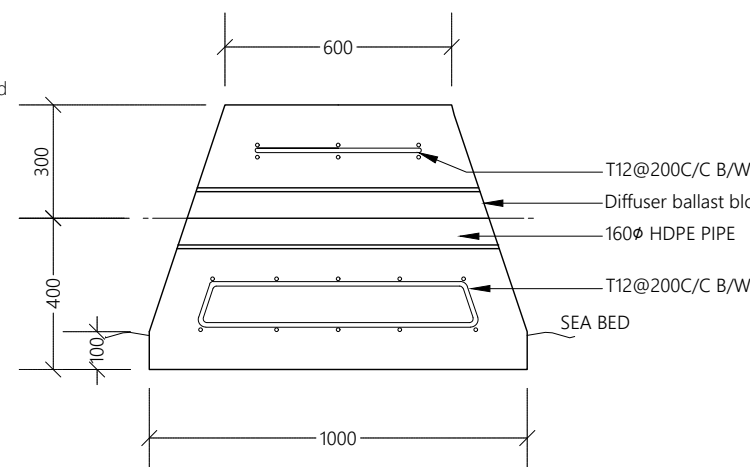
DIFFUSER BALLAST BLOCK FRONT ELEVATION - E1



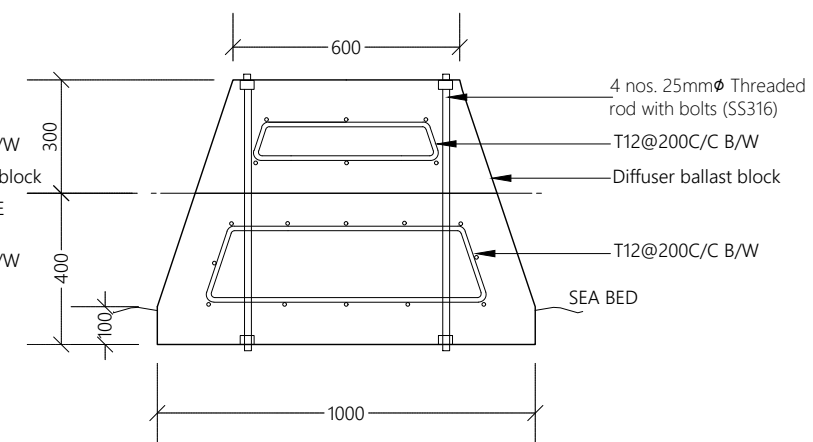
DIFFUSER BALLAST BLOCK FRONT ELEVATION - E2



DIFFUSER BALLAST BLOCK SECTION - R



DIFFUSER BALLAST BLOCK SECTION - S



DIFFUSER BALLAST BLOCK SECTION - T

DIFFUSER DETAILS

NTS



Legend

Note:

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.
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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 6

Sub Title:
Sewerage System in GA. Nilandhoo

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



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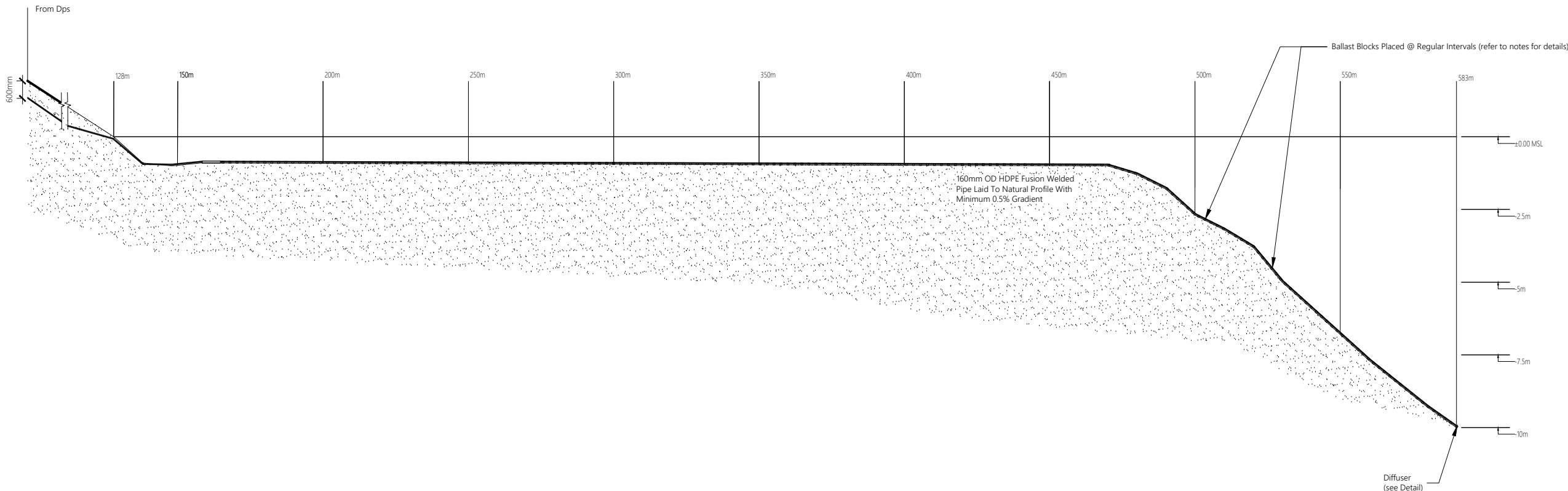
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| Project No: EP-WS/2019/06 | Page: W-(21) |



Legend

Notes:

1. Contractor should carry out a detailed bathymetric survey for the proposed area, revise and present a shop drawing for the outfall layout prior to commencement of outfall works.
2. 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 6

Sub Title:
Sewerage System in GA. Nilandhoo

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

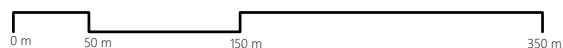


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| Date: Sep 2020 | SCALE (A3): NTS |
| Project No: EP-WS/2019/06 | |
| Rev: | Page: W-(22) |



GA. NILANDHOO SEWERAGE SYSTEM - PRESSURE NETWORK LAYOUT
1:5000

Legend

- 110 mm Ø HDPE Pumping Main (PE100, PN16, SDR11)
- 160 mm Ø HDPE Sea Outfall Pipe (PE100, PN16, SDR11)

Note:

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Title:
**Consultancy Services for Survey,
Design and EIA works of Water
Supply and Sewerage Facilities in
7 islands, Maldives - Package 6**

Sub Title:
Sewerage System in GA. Nilandhoo

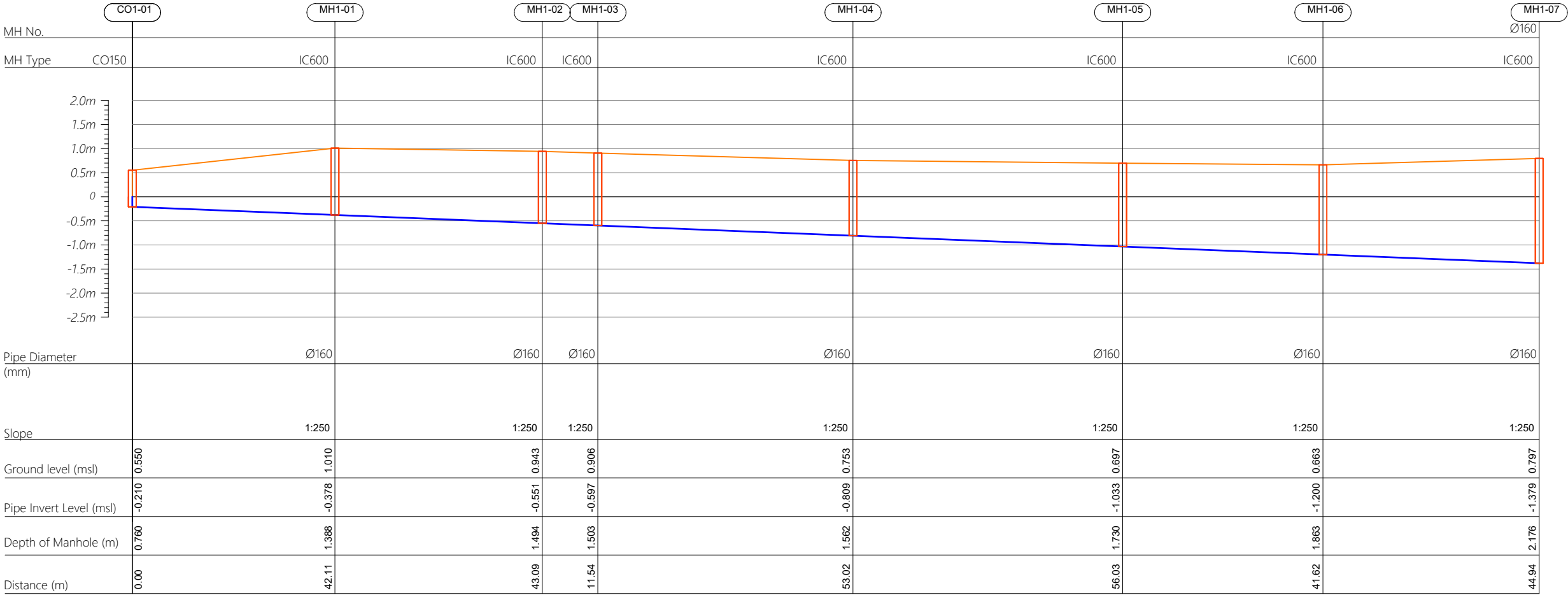
Client:
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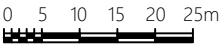
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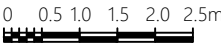
Profile 01



HORIZONTAL SCALE



VERTICAL SCALE



- 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
5 islands, Maldives - Package 6

Sub Title:
Sewerage System in GA.Nilandhoo

Client:
Ministry of National Planning, Housing and
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FBACK INFRA
Making Infrastructure Happen

Drawn: A.R.W Checked: M.S.S

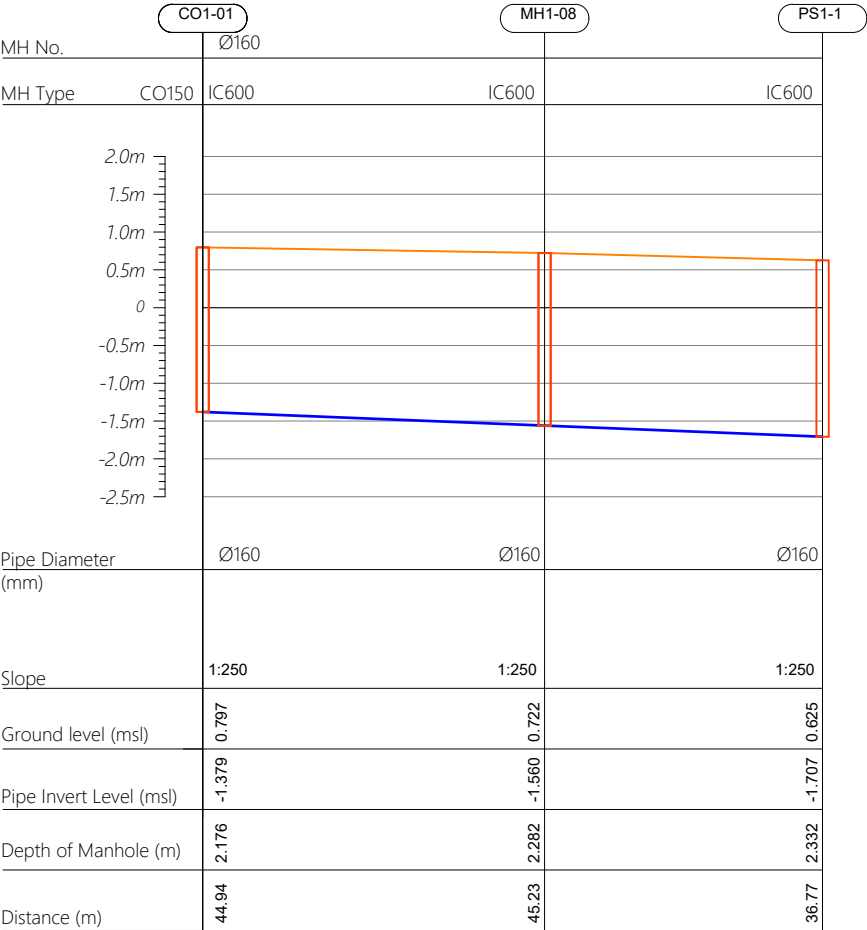
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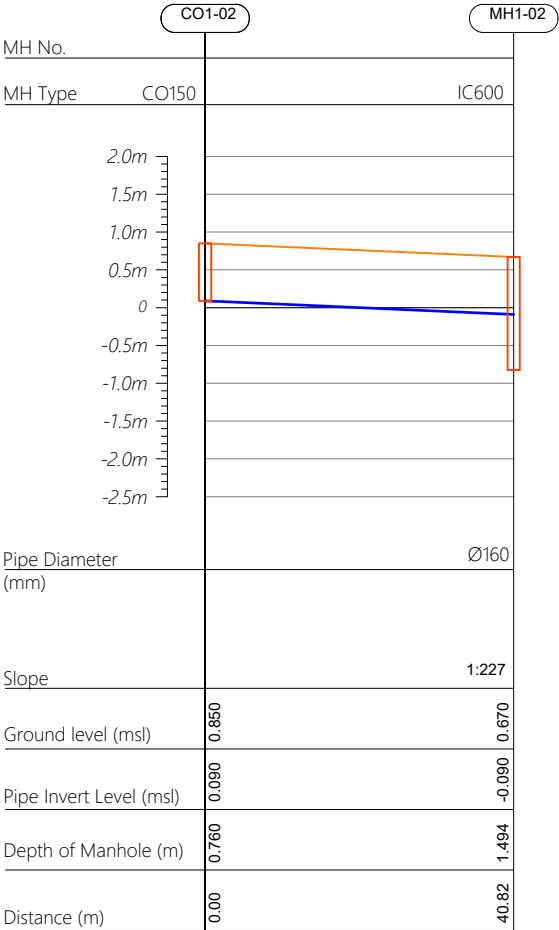
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Rev: R-01 Page: PS1-01

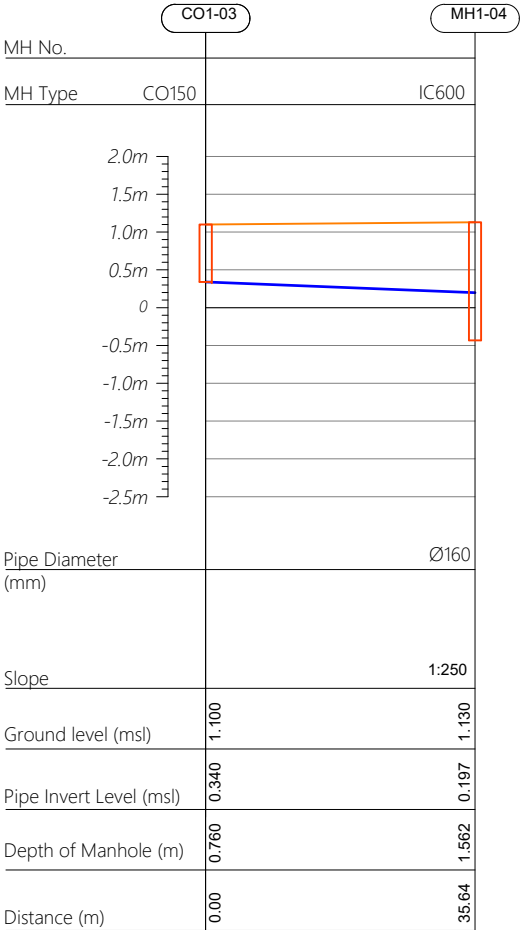
Profile 01



Profile 02



Profile 03



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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,
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5 islands, Maldives - Package 6

Sub Title:
Sewerage System in GA.Nilandhoo

Client:
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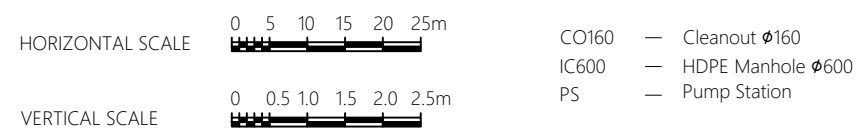
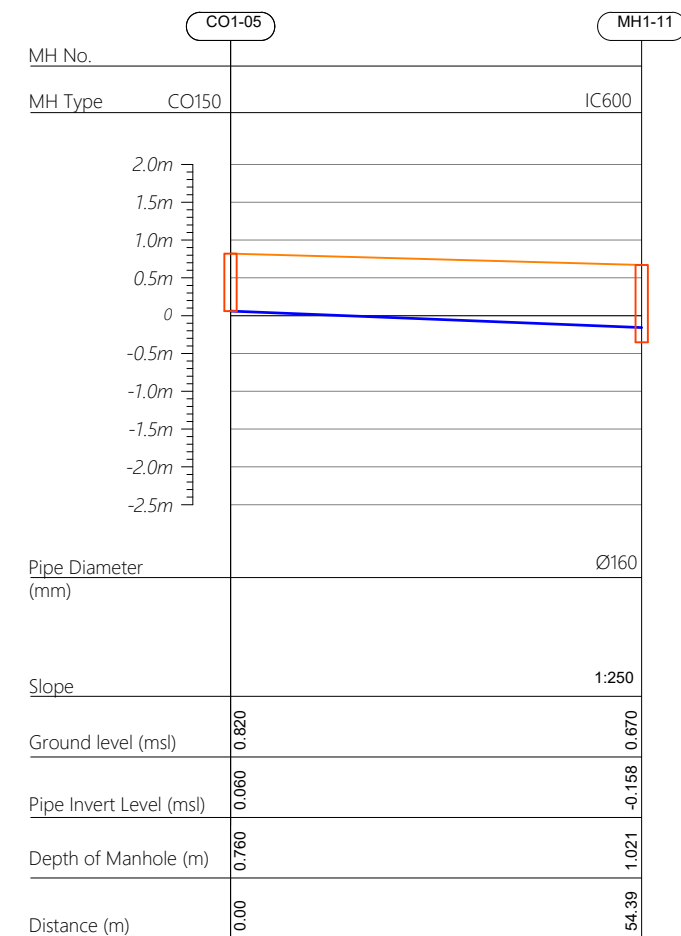
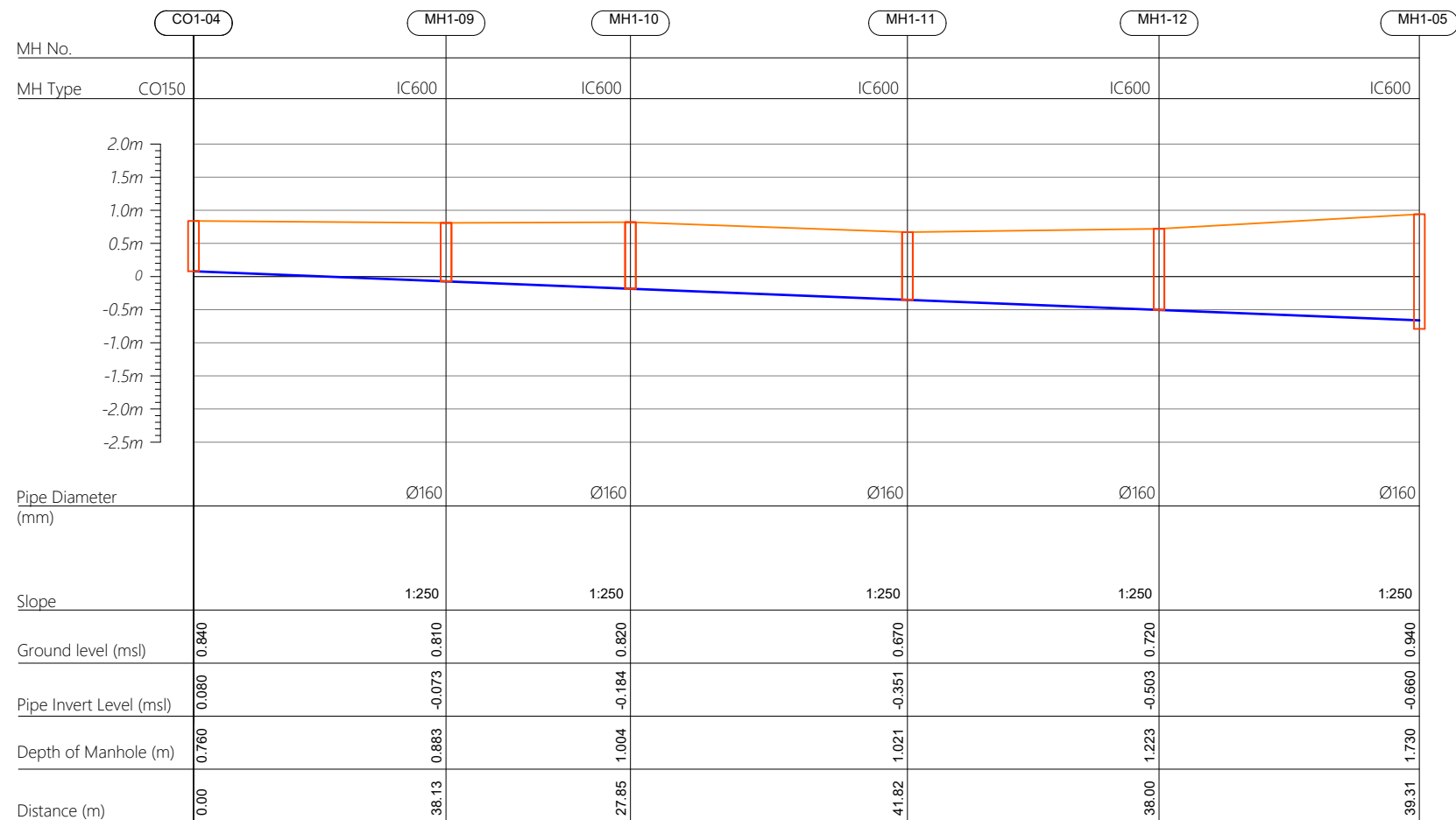
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Date: Aug 2020 SCALE (A3): 1:100

Project No: 01010101

Rev: R-01 Page: PS1-02

Profile 04



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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
5 islands, Maldives - Package 6*

Sub Title:
Sewerage System in GA.Nilandhoo

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



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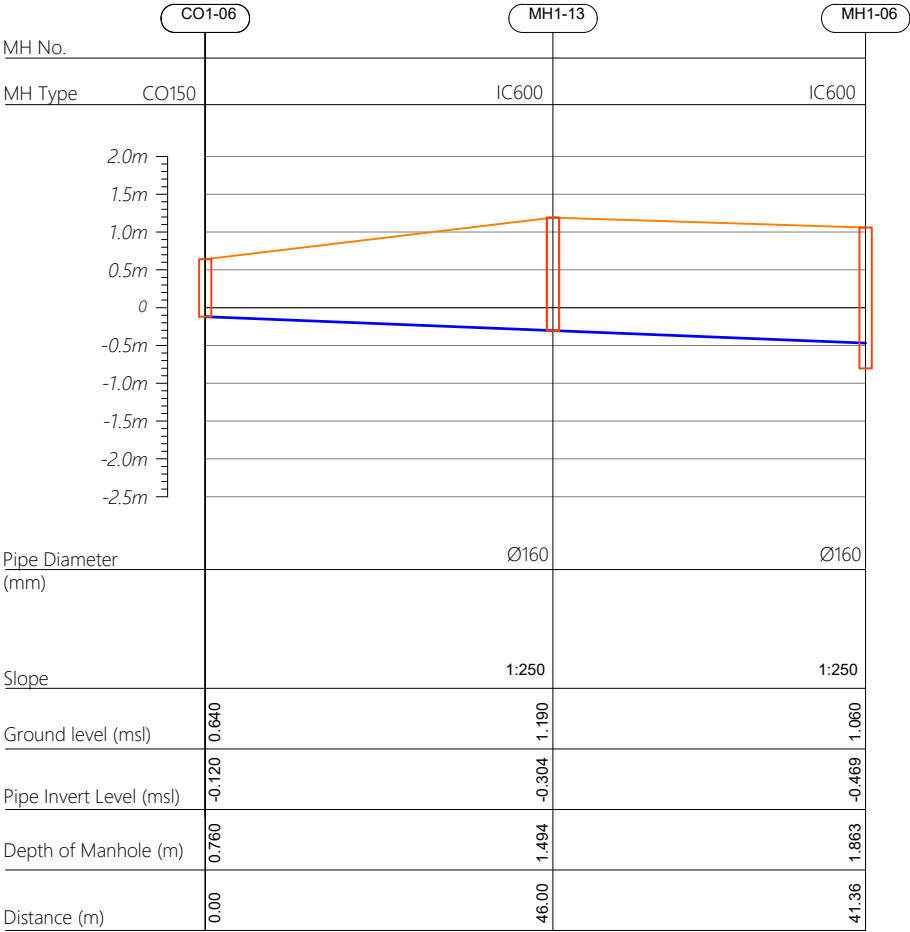
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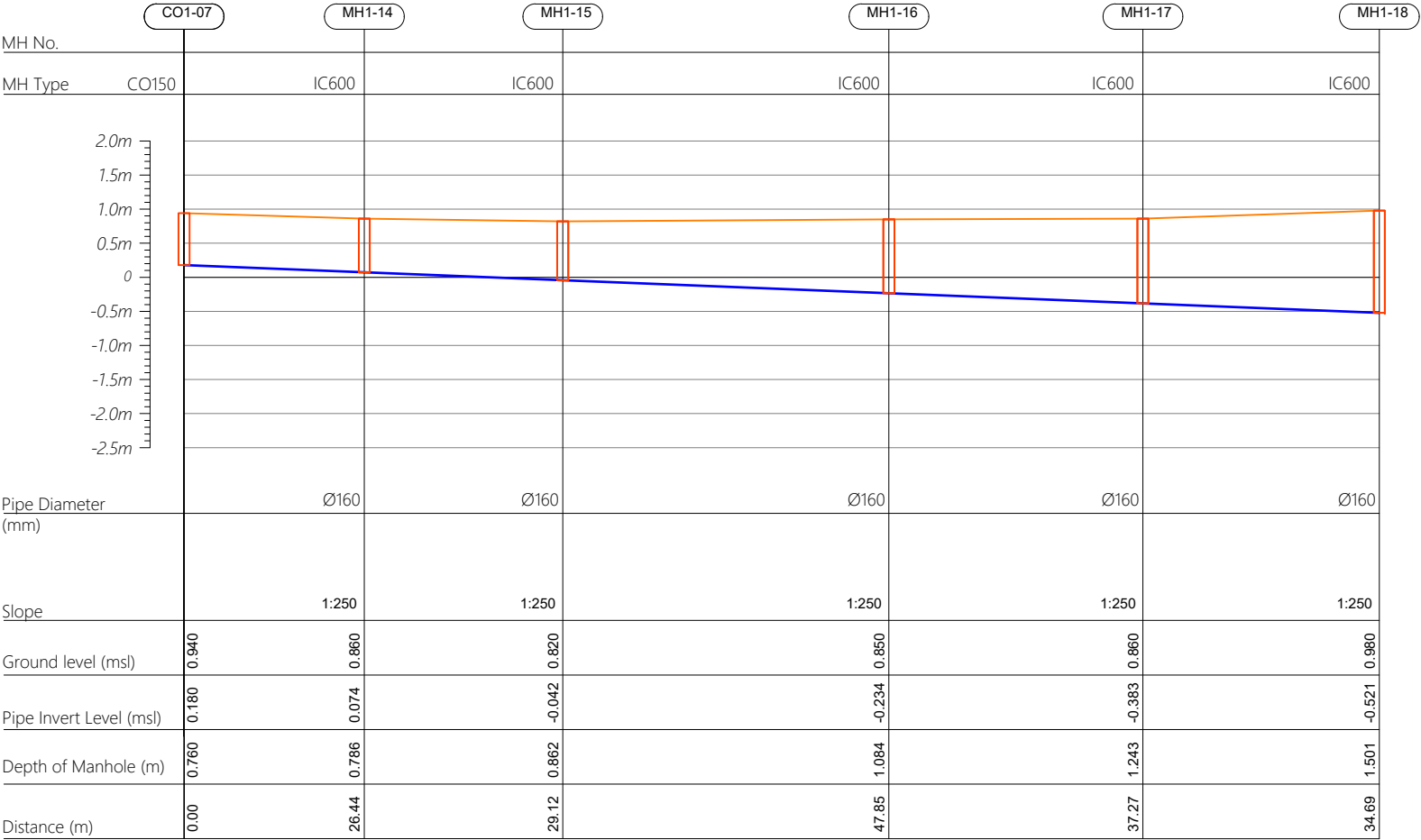
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| R-01 | PS1-03 |

Profile 06



Profile 07



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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 5 islands, Maldives - Package 6

Sub Title:
Sewerage System in GA.Nilandhoo

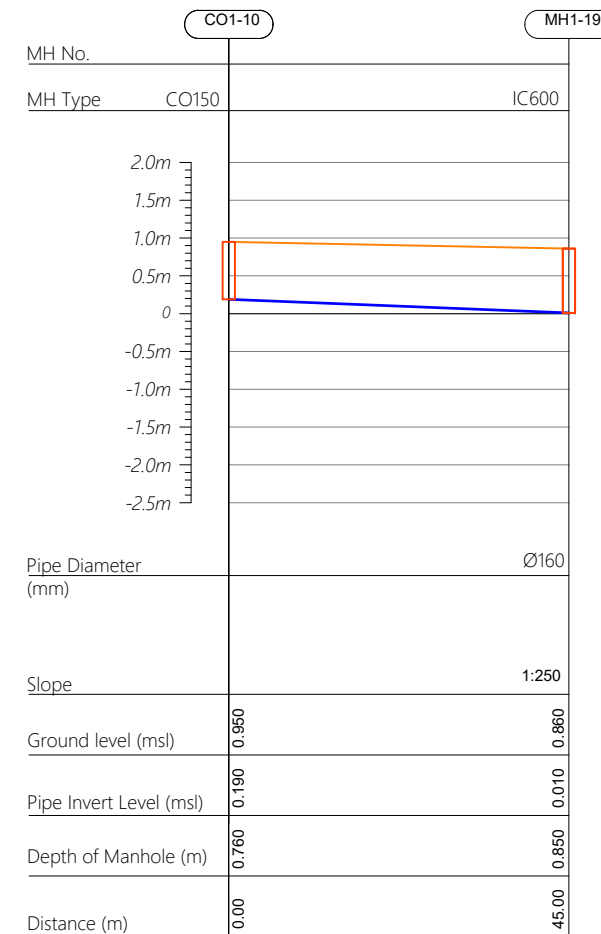
Client:
Ministry of National Planning, Housing and Infrastructure, Republic of Maldives

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W: www.epoch.associates
A: G. Rosary West,
Husnuheemaa Magu, Male', Maldives

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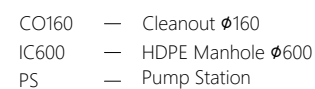
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| Drawn: A.R.W | Checked: M.S.S |
| Designed: F.I.A | Approved: I.W |
| Date: Aug 2020 | SCALE (A3): 1:100 |
| Project No: | 01010101 |

Profile 10

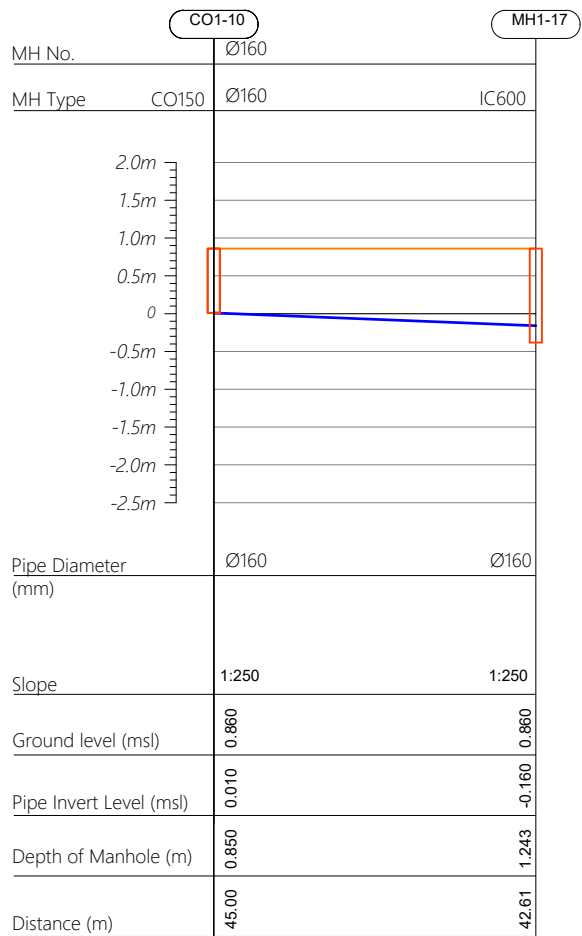


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| R00 | JUNE 2020 | STAGE -1 | PD | SBC | SD |
| REV. NO. | Date | Revision Description | Drawn | Chkd | Appd. |

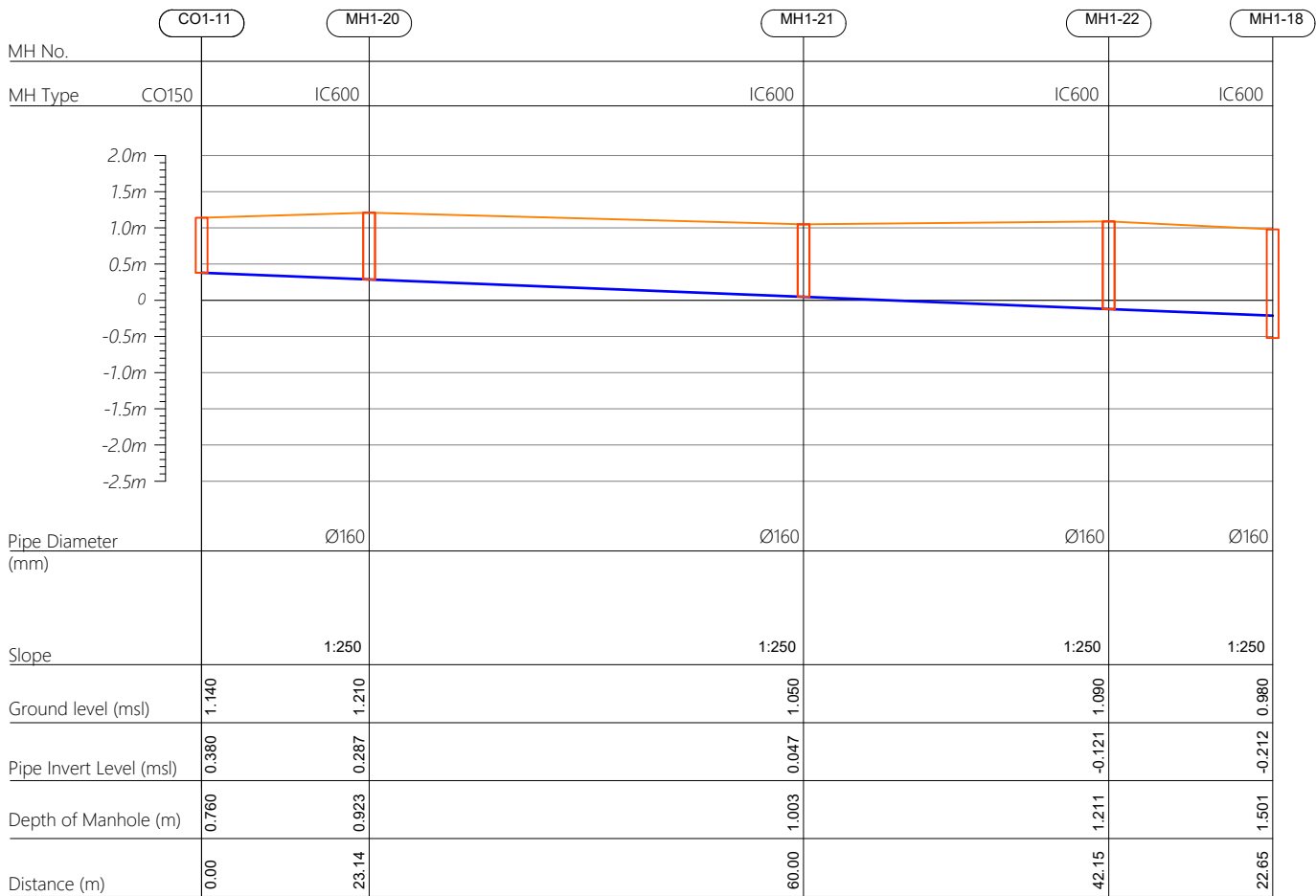
PS1-05



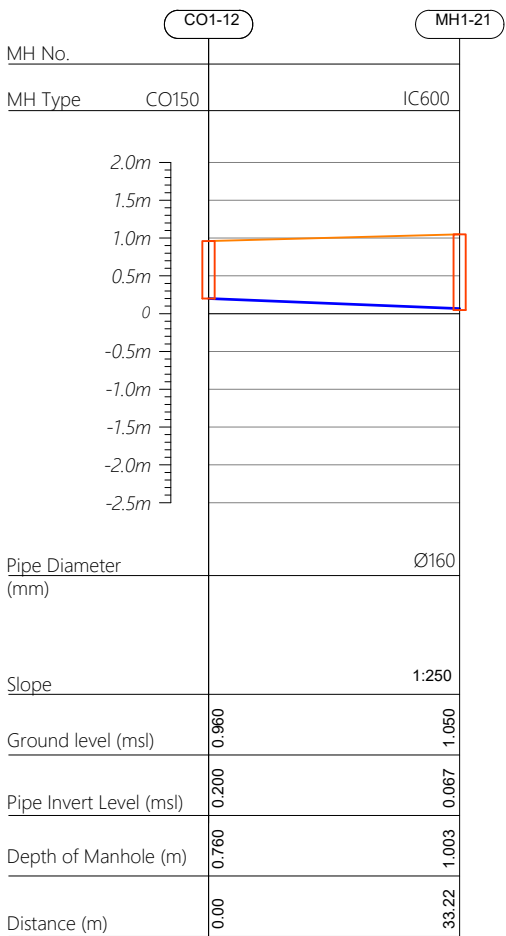
Profile 10



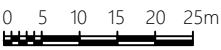
Profile 11



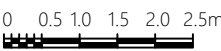
Profile 12



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
5 islands, Maldives - Package 6**

Sub Title:
Sewerage System in GA.Nilandhoo

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



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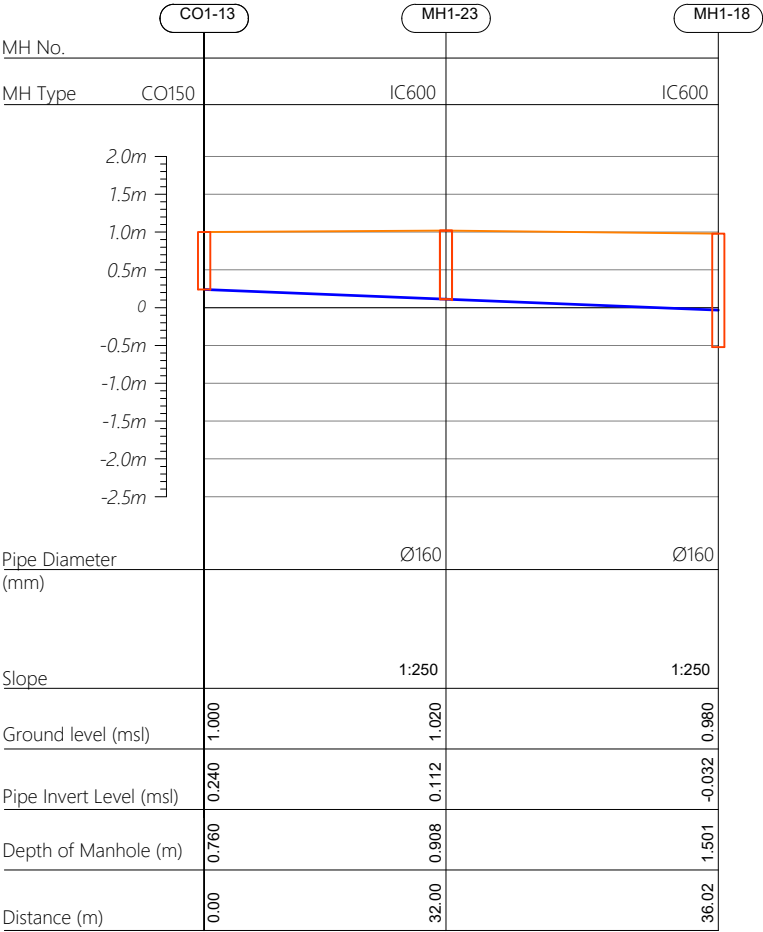
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Date: Aug 2020 SCALE (A3): 1:100

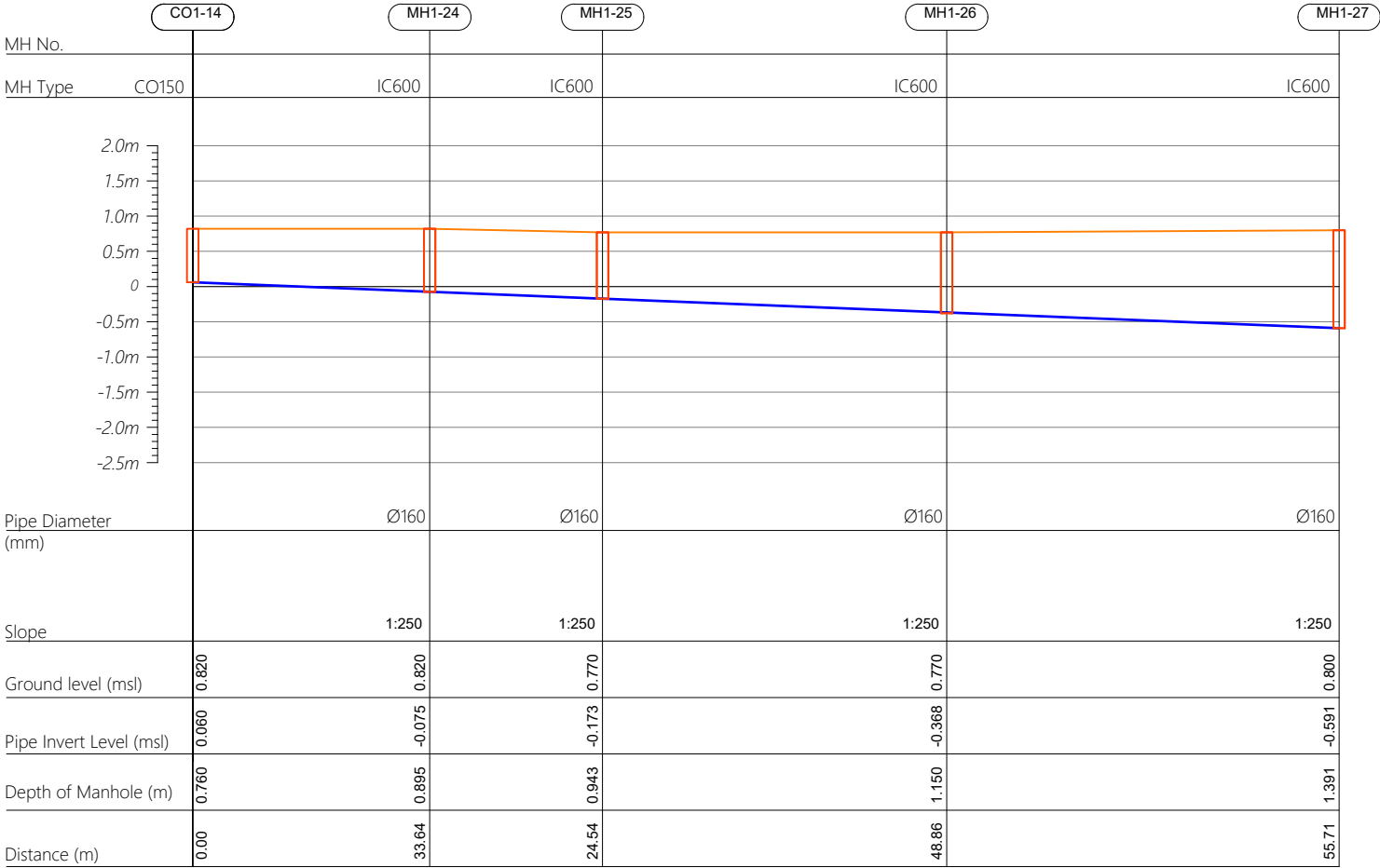
Project No: 01010101

Rev: R-01 Page: PS1-06

Profile 13



Profile 14



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

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Consultancy Services for Survey, Design and EIA works of Water Supply and Sewerage Facilities in 5 islands, Maldives - Package 6

Sub Title:
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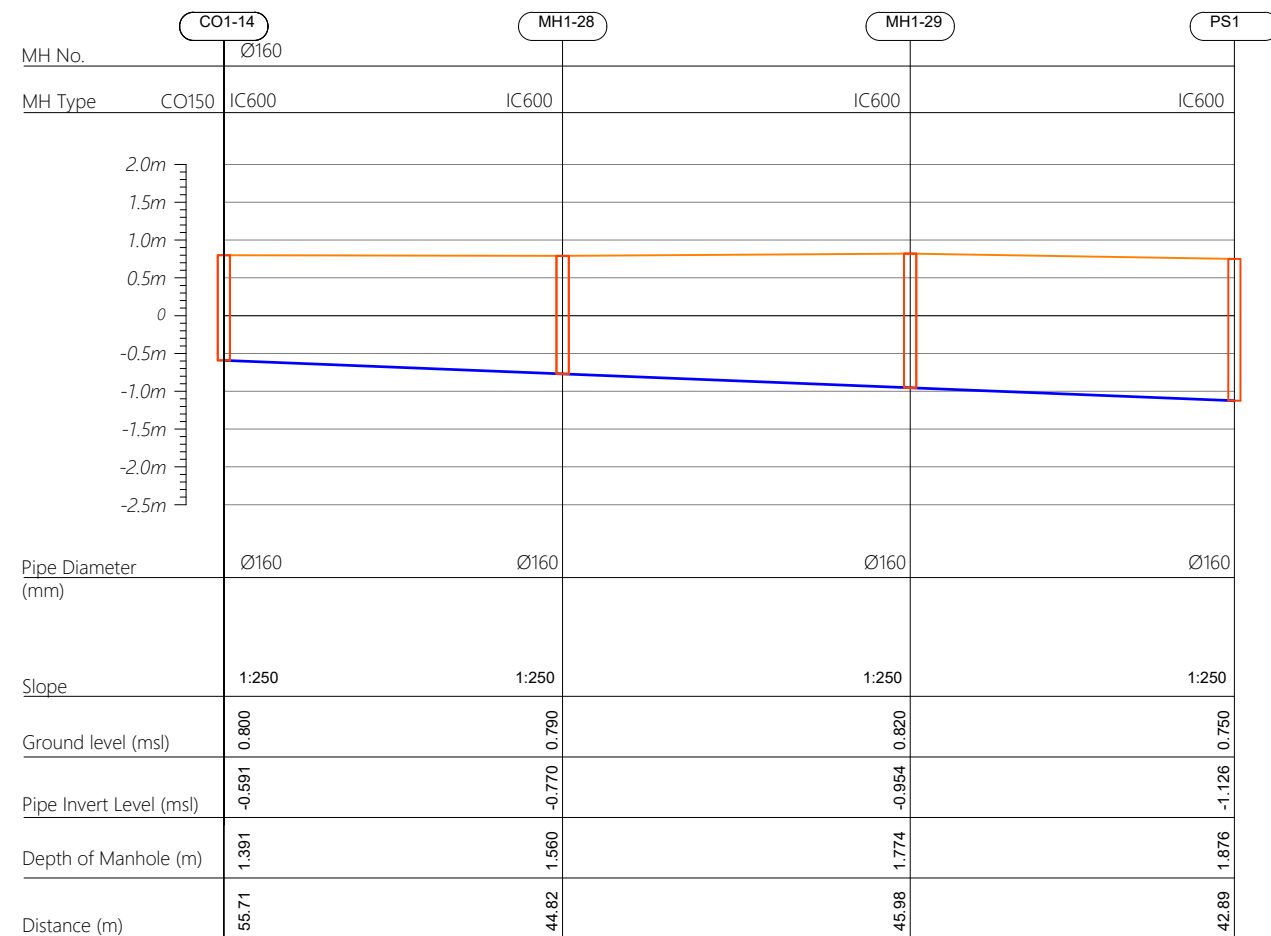
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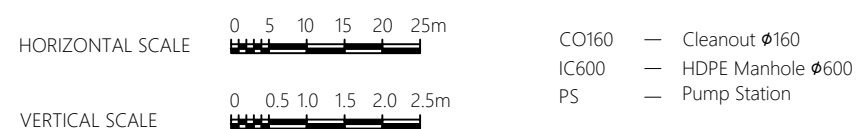
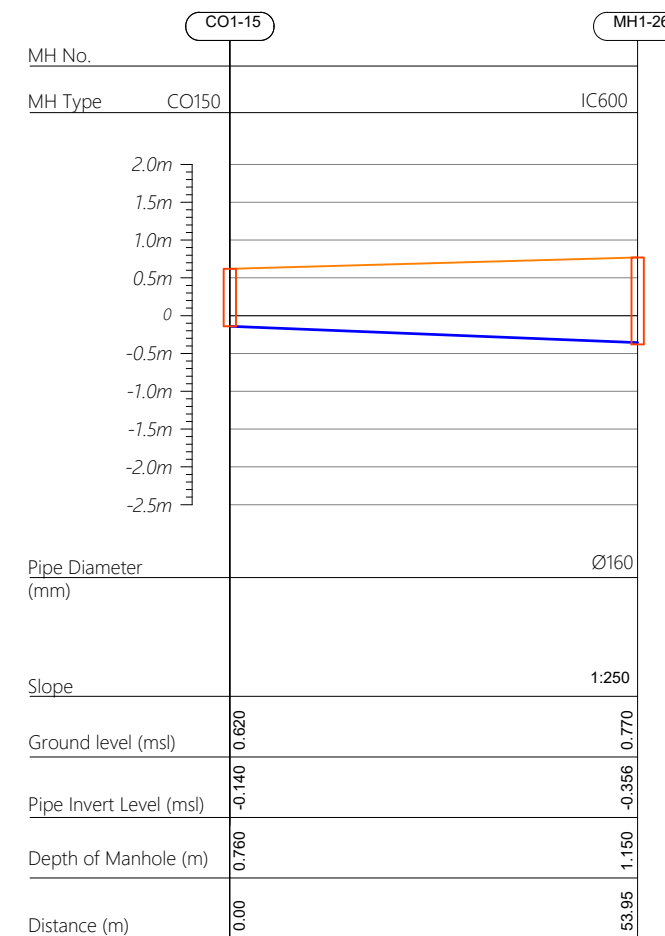
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| Drawn: A.R.W | Checked: M.S.S |
| Designed: F.I.A | Approved: I.W |
| Date: Aug 2020 | SCALE (A3): 1:100 |
| Project No: 01010101 | |
| Rev: R-01 | Page: PS1-07 |

Profile 14



Profile 15



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

Title:
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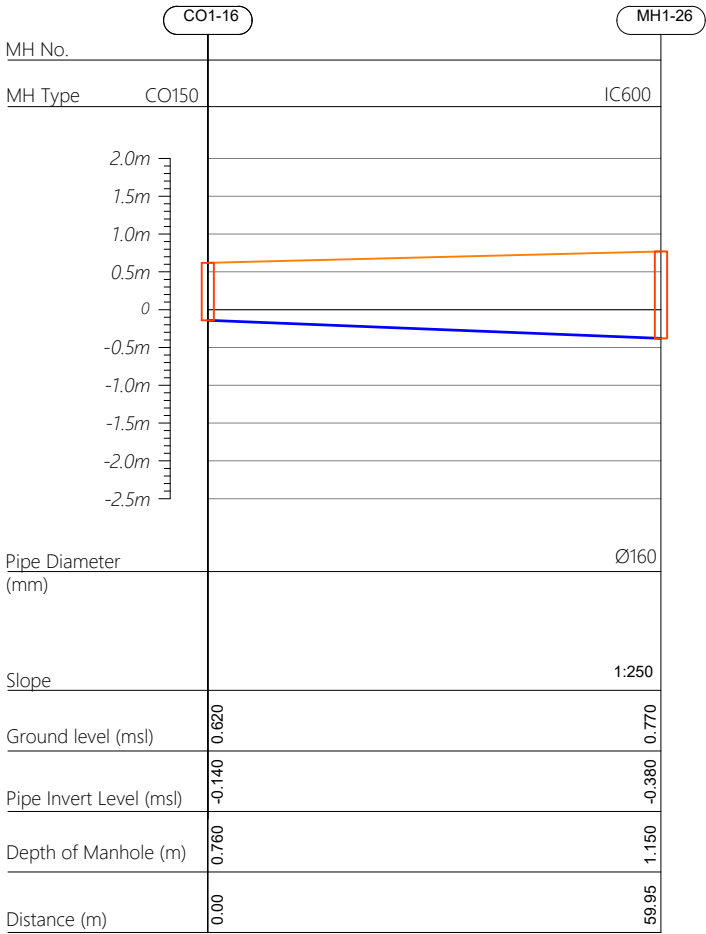
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| Designed: F.J.A | Approved: J.W |
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| Date: Aug 2020 | SCALE (A3): 1:100 |
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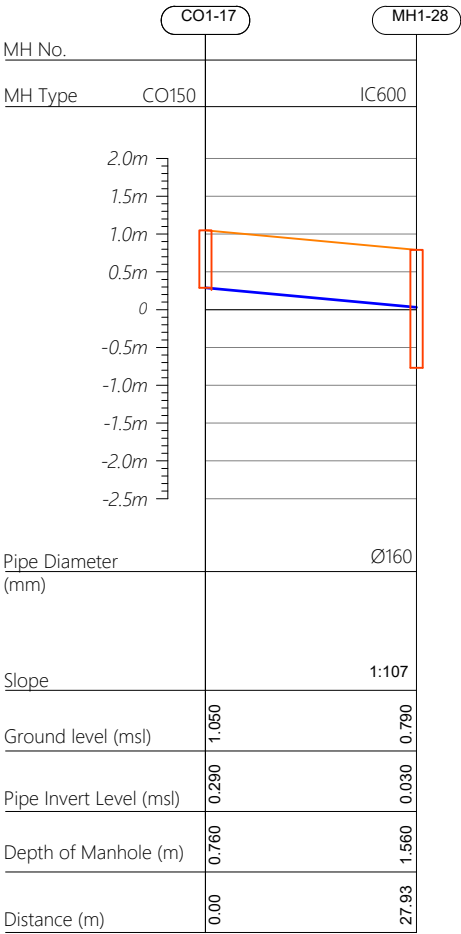
Project No: 01010101

Rev: **R-01** Page: **PS1-08**

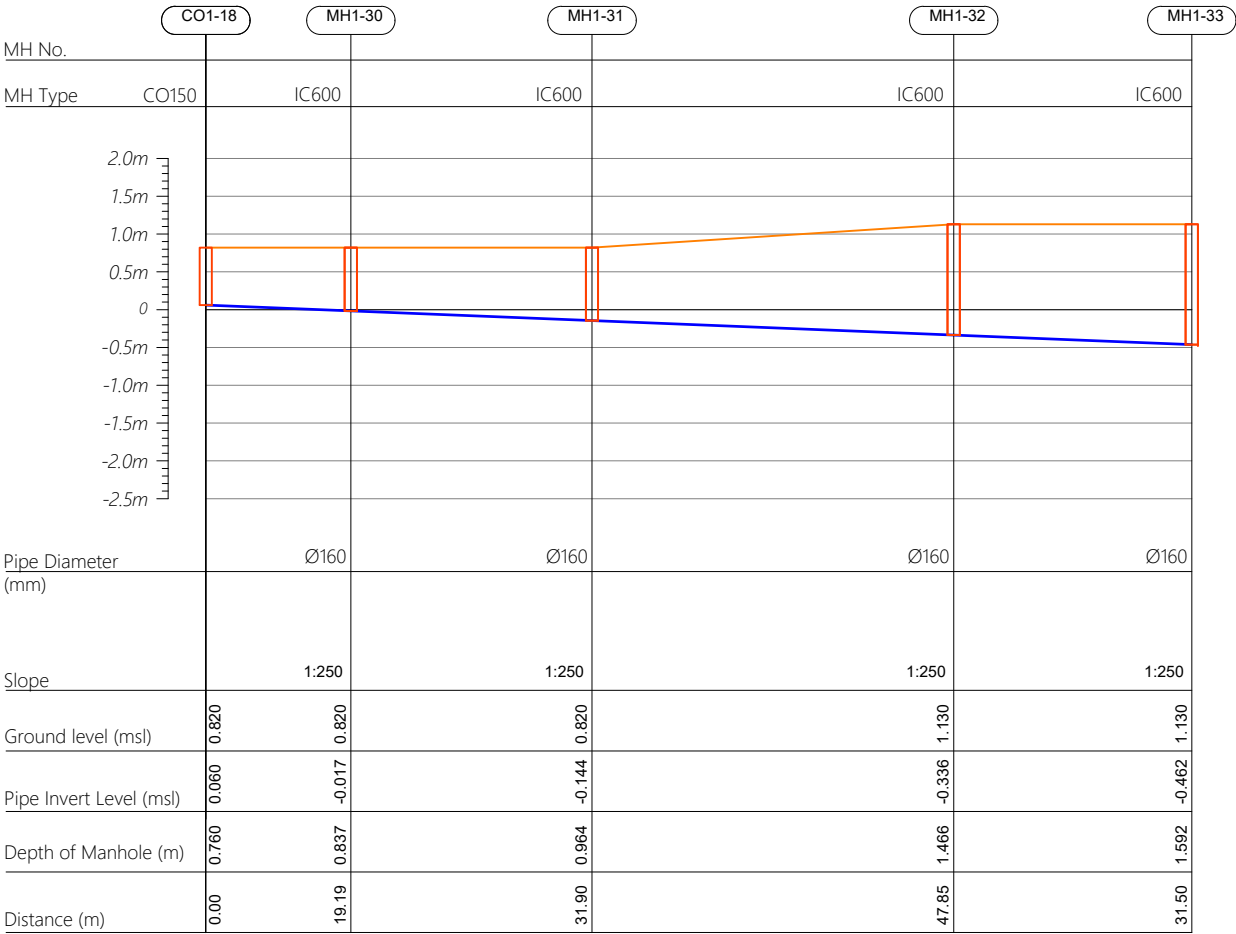
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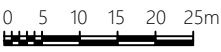
Profile 17



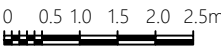
Profile 18



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. |

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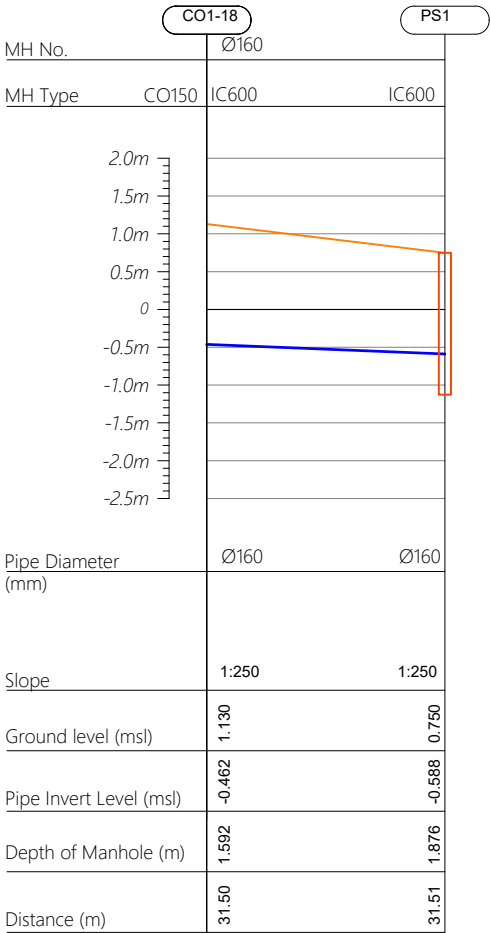
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Designed: F.I.A
Date: Aug 2020
Project No: 01010101

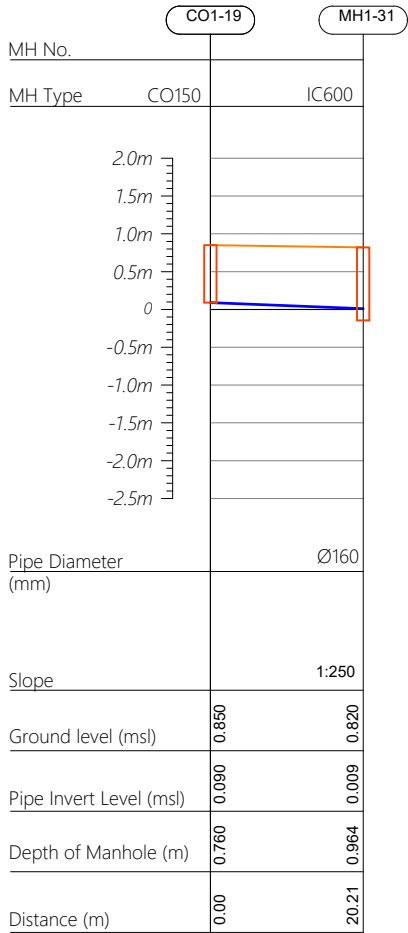
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SCALE (A3): 1:100

Rev: R-01
Page: PS1-09

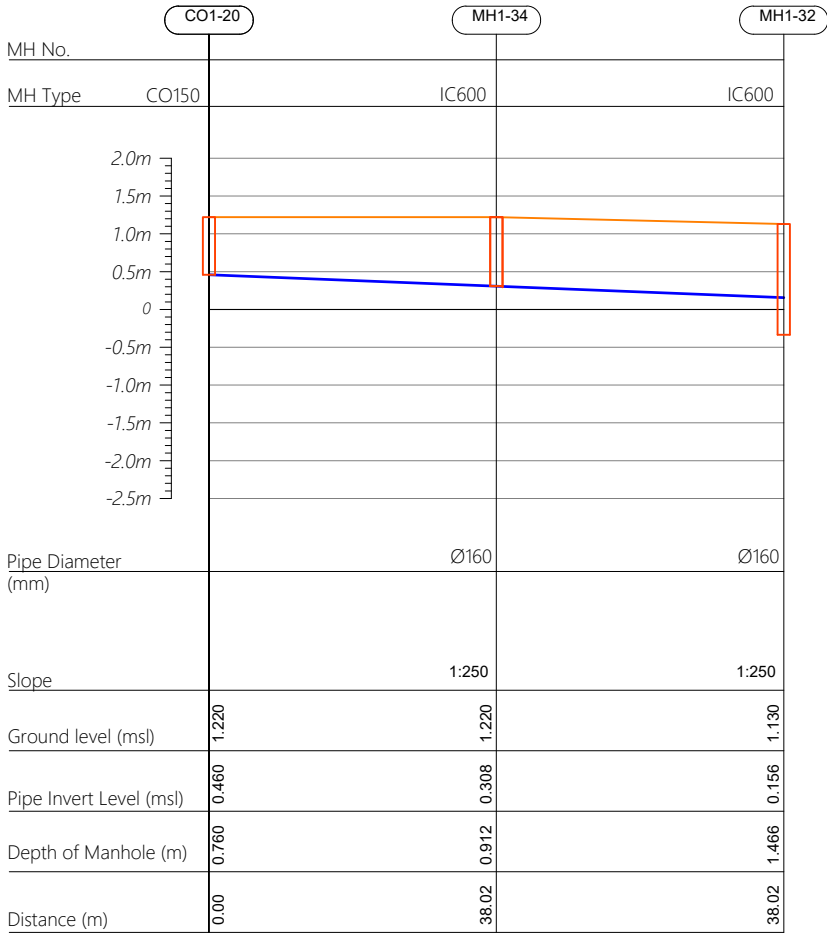
Profile 18



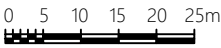
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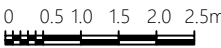
Profile 20



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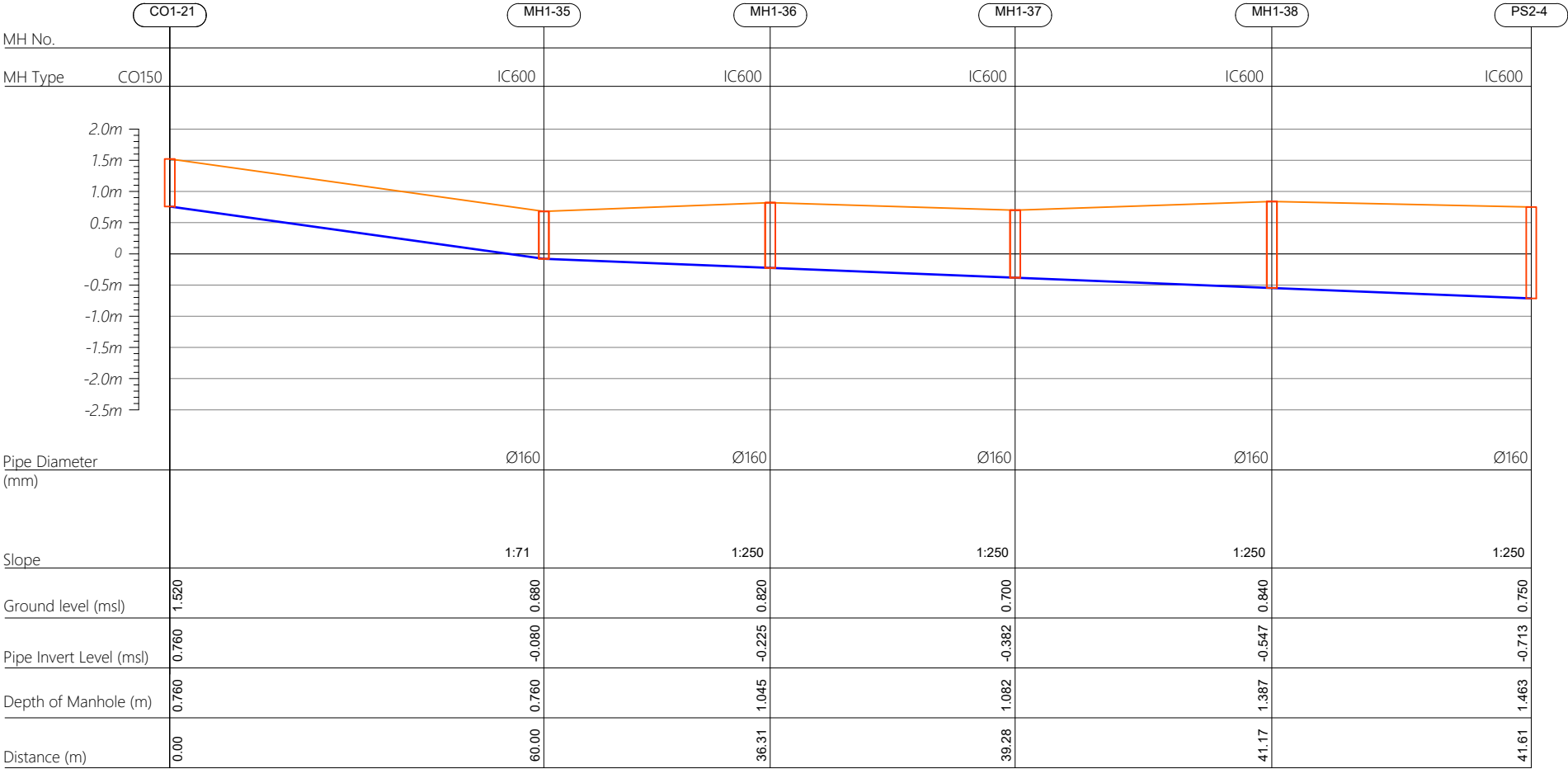
Designed: F.I.A Approved: I.W

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

Project No: 01010101

Rev: R-01 Page: PS1-10

Profile 21



- 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. |

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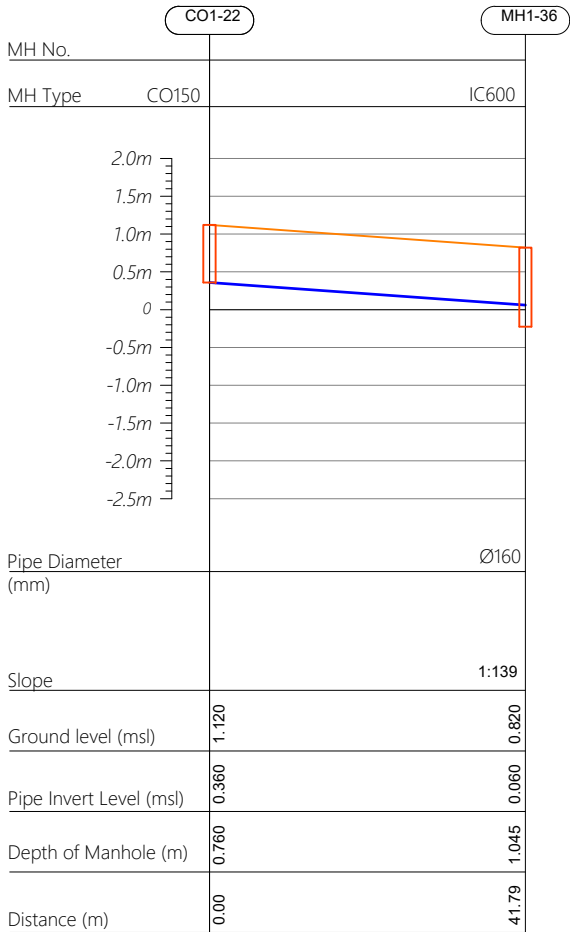
Designed: F.I.A Approved: I.W

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

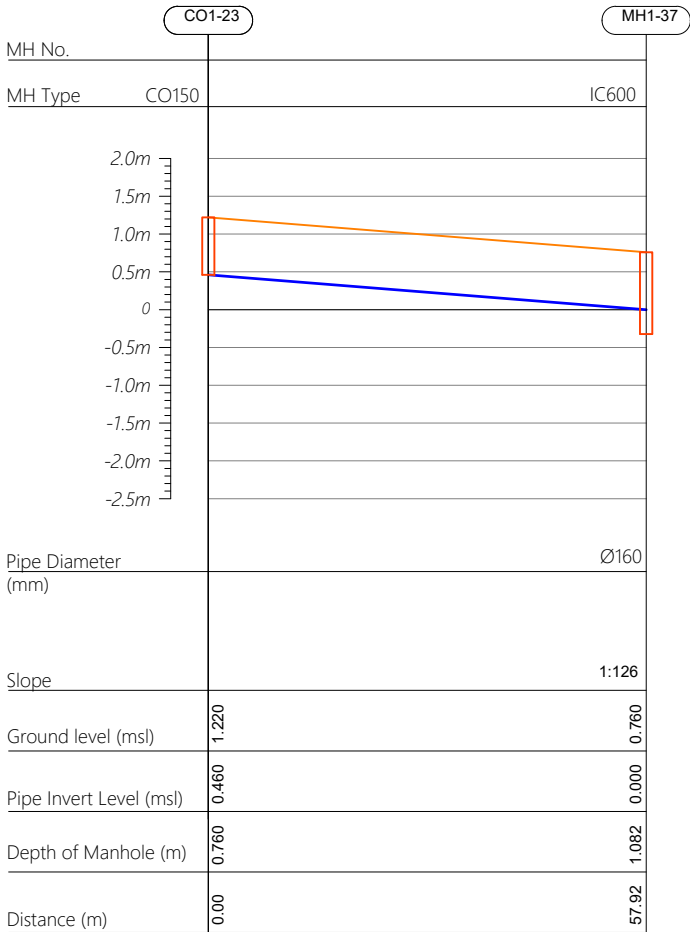
Project No: 01010101

Rev: R-01 Page: PS1-11

Profile 22



Profile 23



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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,
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Supply and Sewerage Facilities in
5 islands, Maldives - Package 6

Sub Title:
Sewerage System in GA.Nilandhoo

Client:
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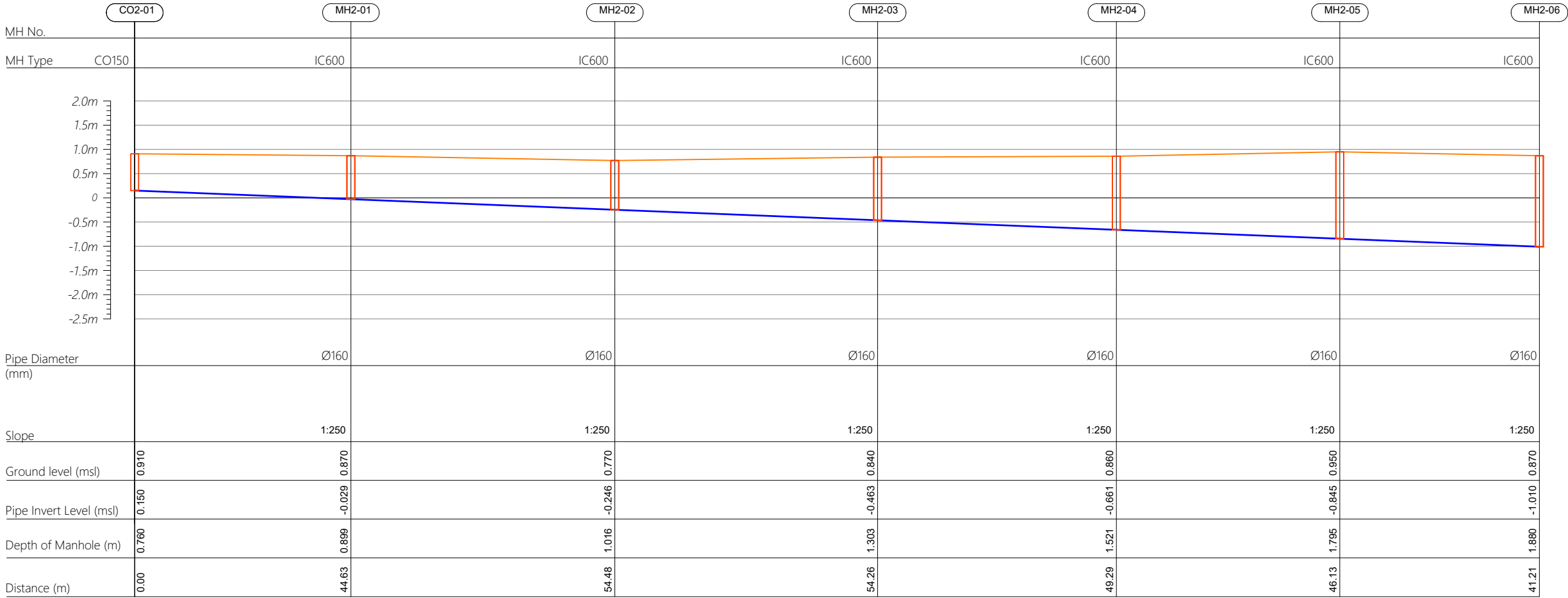
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| Drawn: A.R.W | Checked: M.S.S |
| Designed: F.I.A | Approved: I.W |
| Date: Aug 2020 | SCALE (A3): 1:100 |
| Project No: 01010101 | |
| Rev: R-01 | Page: PS1-12 |

Profile 01



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| R00 | JUNE 2020 | STAGE -1 | PD | SBC | SD |
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Sub Title:
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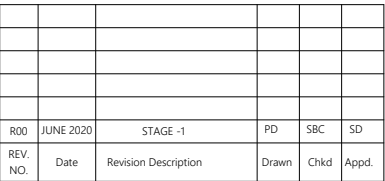
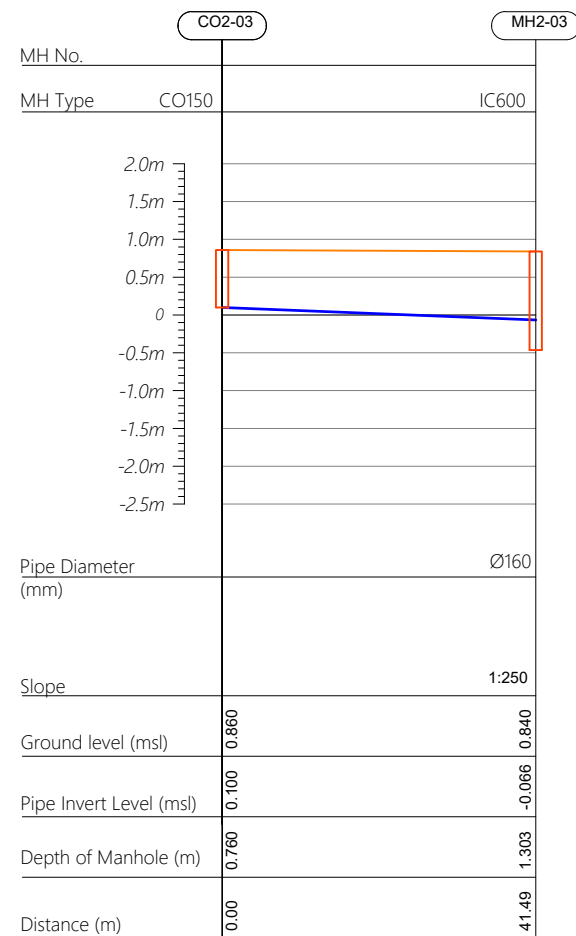
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| Drawn: A.R.W | Checked: M.S.S |
| Designed: F.I.A | Approved: I.W |
| Date: Aug 2020 | SCALE (A3): 1:100 |
| Project No: 01010101 | |
| Rev: R-01 | Page: PS2-01 |

Profile 03




Sub Title:

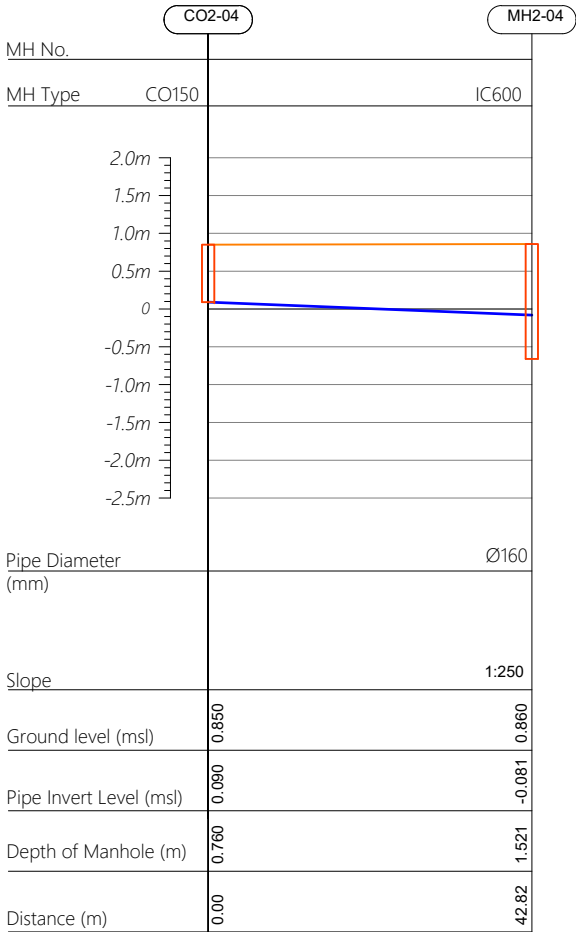
Sewerage System in GA.Nilandhoo

Client:

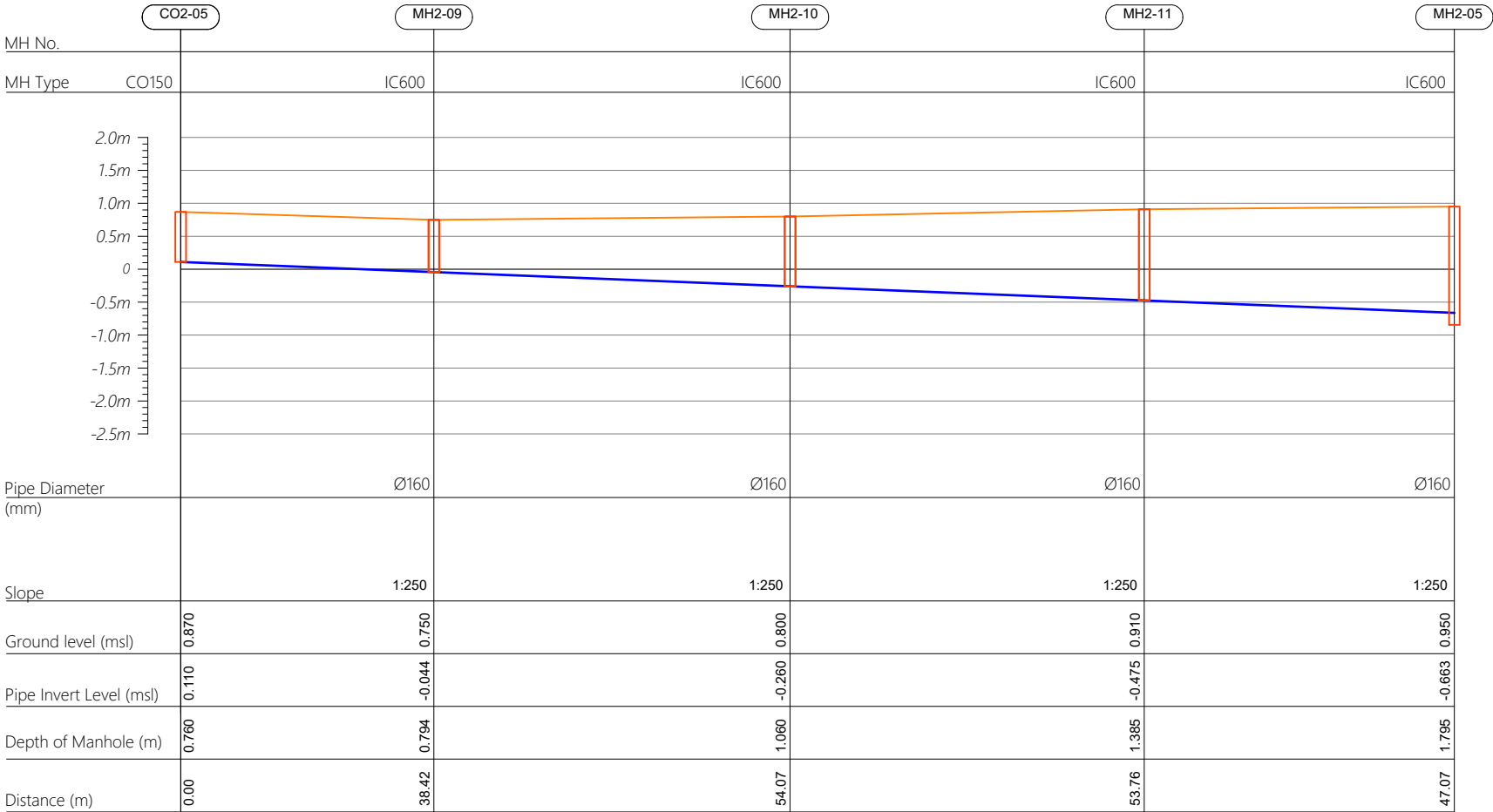
*Ministry of National Planning, Housing and
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|  <p>EPOCH ASSOCIATES</p> <p>T : +960 333 3528 E : info@epochassociates W : www.epochassociates A : G. Rosary West, Huzuntheenaa Magu, Male', Maldives</p> | <p>FEEDBACK INFRA <i>Making Infrastructure Happen</i></p> |
| <p>Drawn: A.R.W</p> | <p>Checked: M.S.S</p> |
| <p>Designed: F.I.A</p> | <p>Approved: I.W</p> |
| <p>Date: Aug 2020</p> | <p>SCALE (A3): 1:100</p> |
| <p>Project No: 01010101</p> | |
| <p>Rev: R-01</p> | <p>Page: PS2-02</p> |

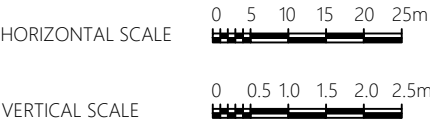
Profile 04



Profile 05



Profile 04



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 5 islands, Maldives - Package 6

Sub Title:
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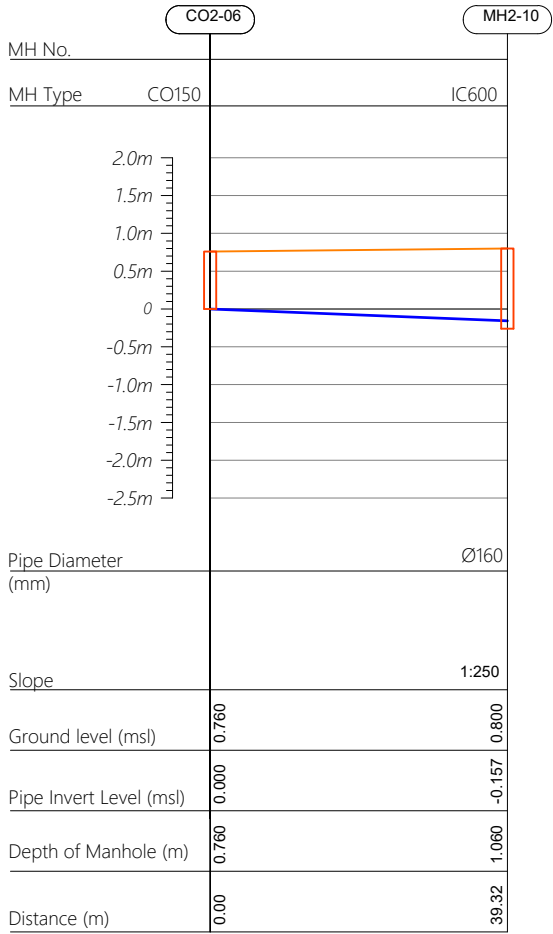
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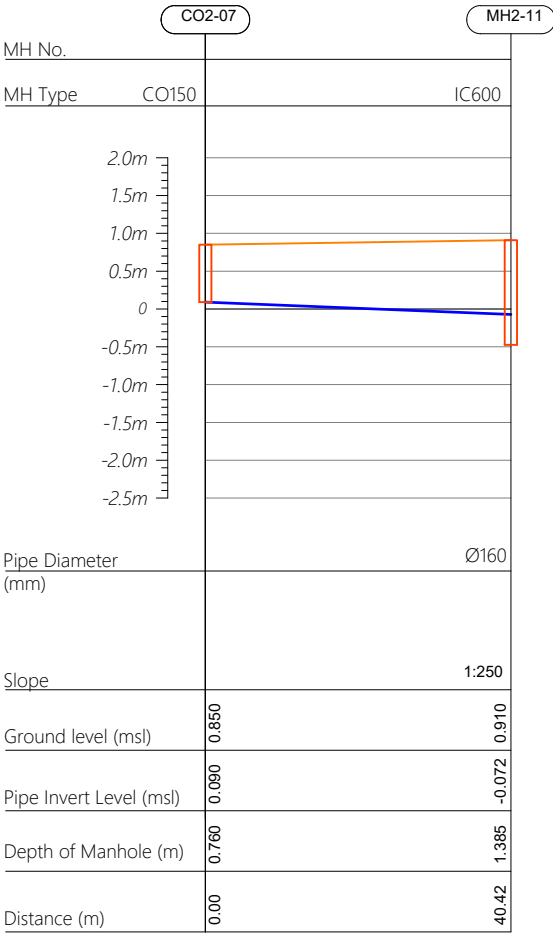
Project No: 01010101

Rev: R-01 Page: PS2-03

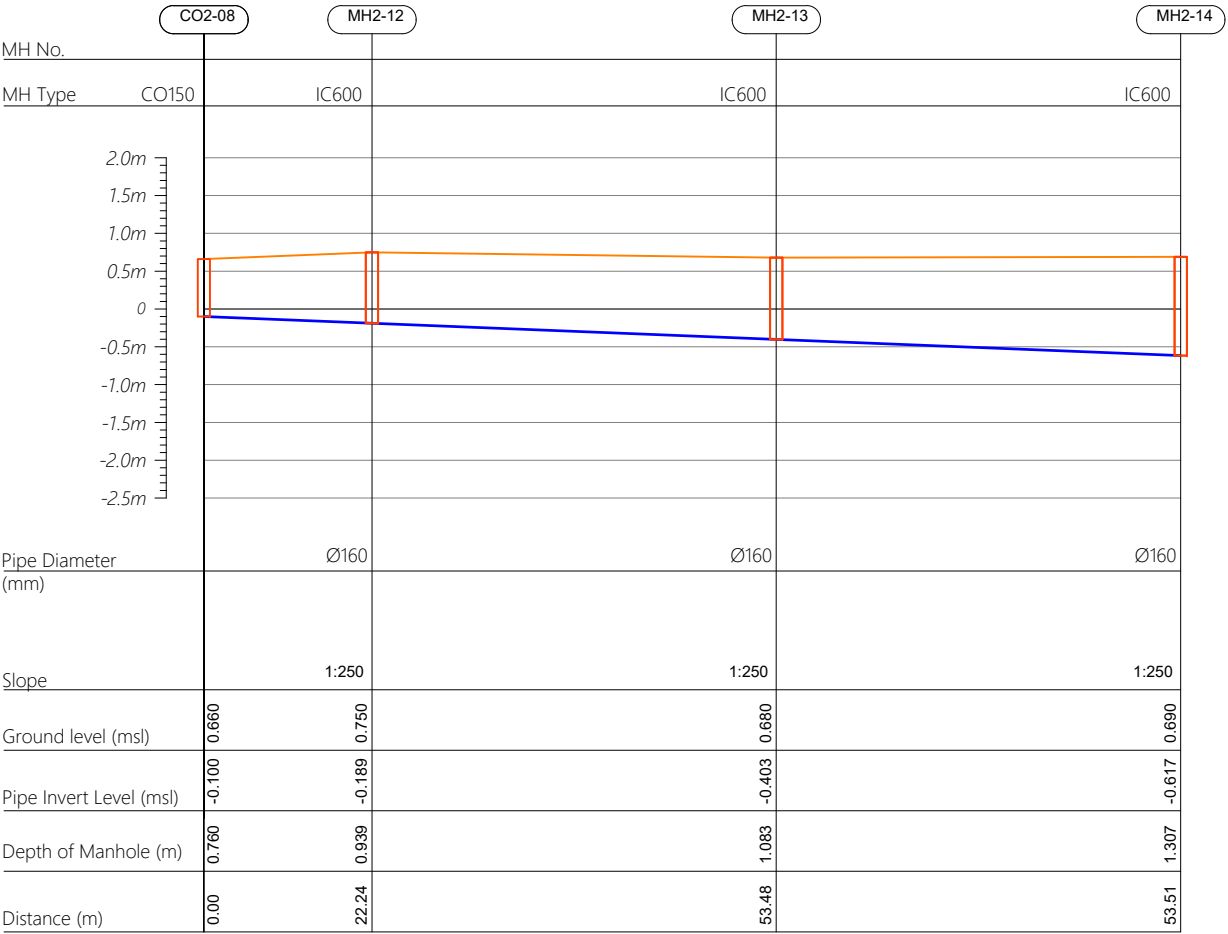
Profile 06



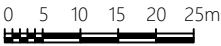
Profile 07



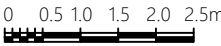
Profile 08



HORIZONTAL SCALE



VERTICAL SCALE



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

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Drawn: A.R.W Checked: M.S.S

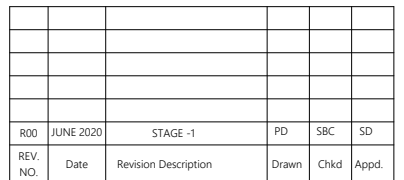
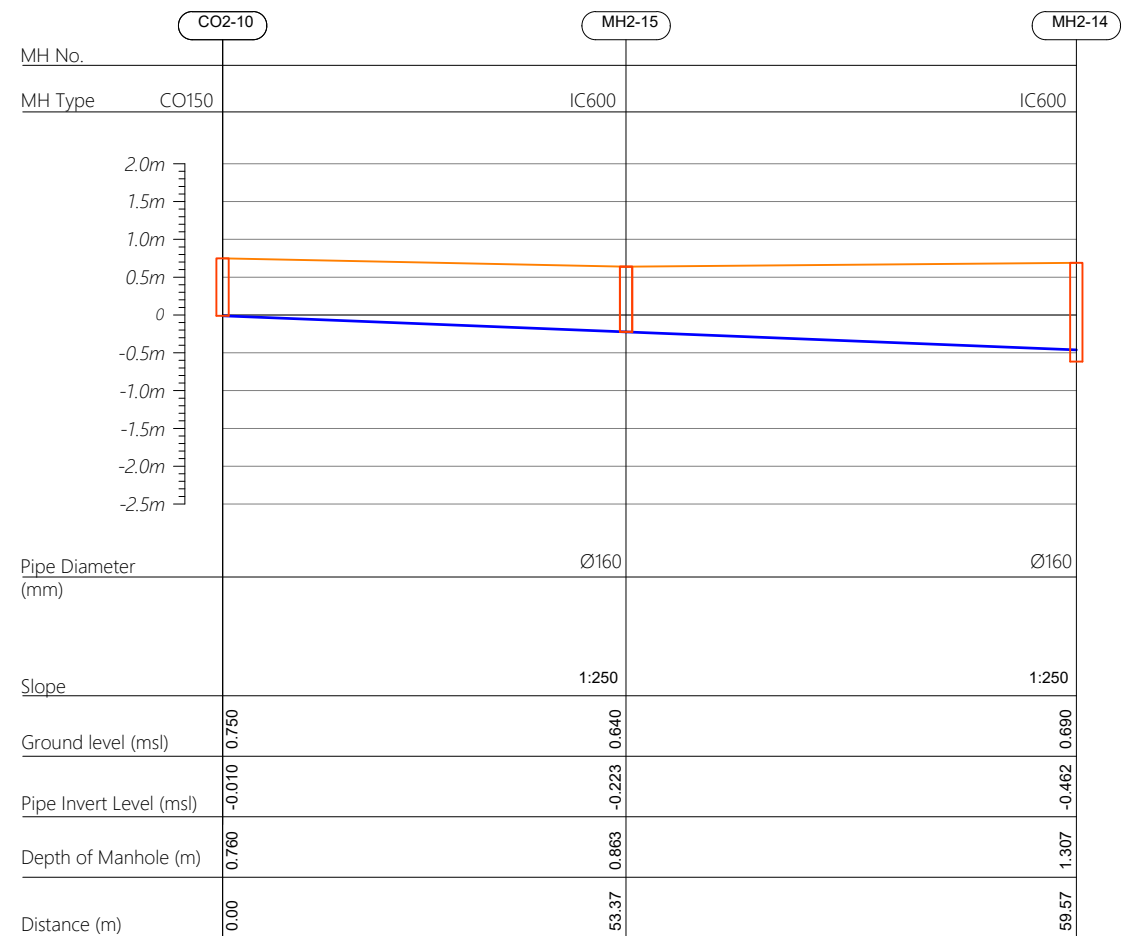
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Project No: 01010101

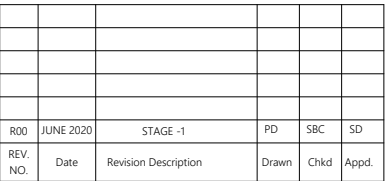
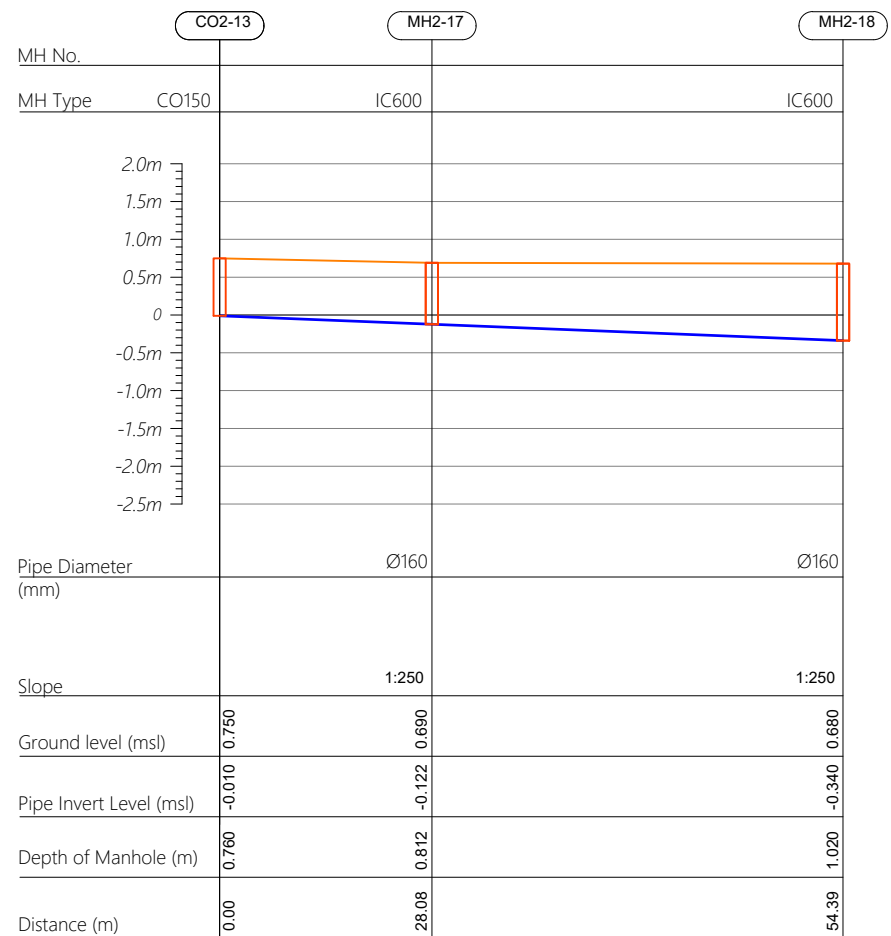
Rev: R-01 Page: PS2-04

Profile 10



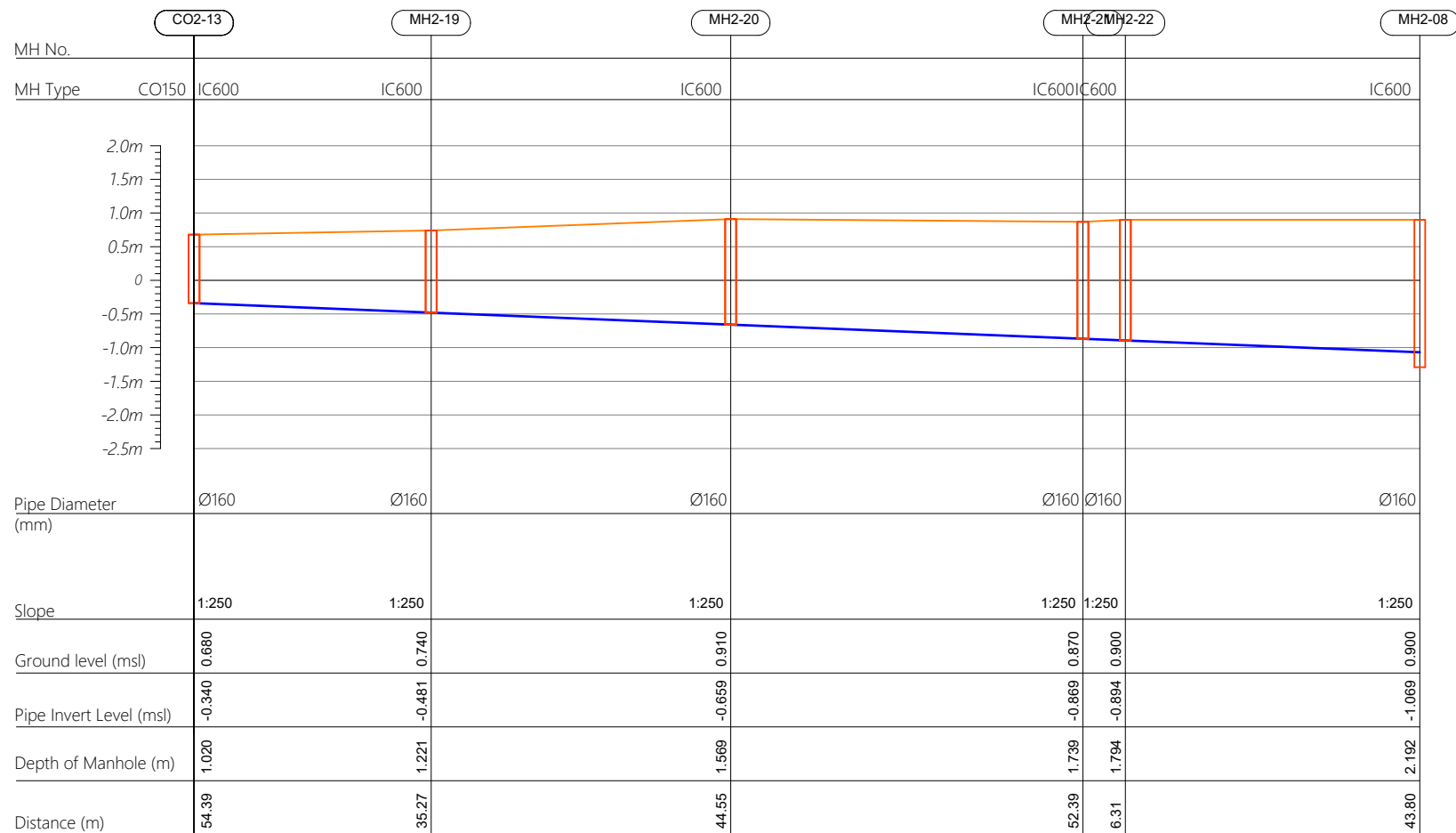
PS2-05

Profile 13

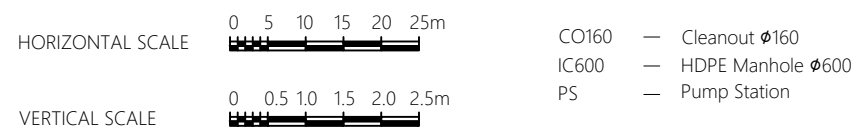
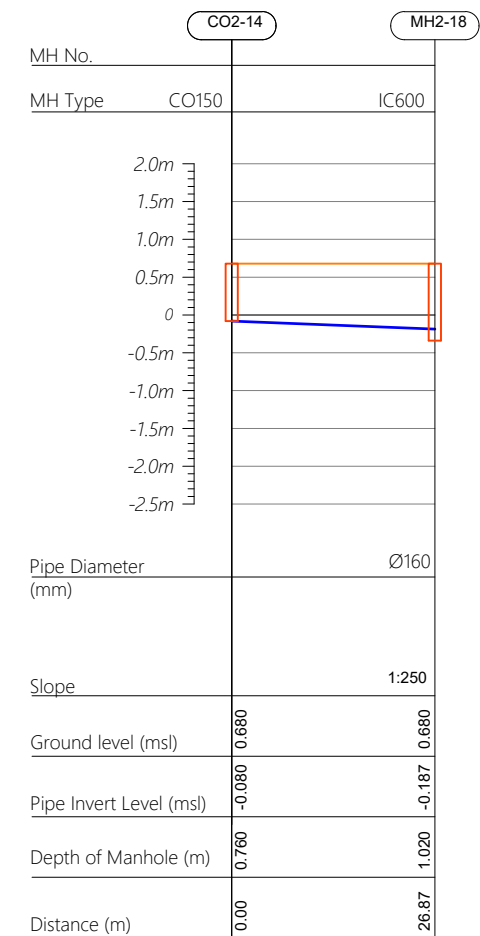


PS2-06

Profile 13



Profile 14



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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
5 islands, Maldives - Package 6*

Sub Title:
Sewerage System in GA.Nilandhoo

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



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| Drawn: A.R.W | Checked: M.S.S |
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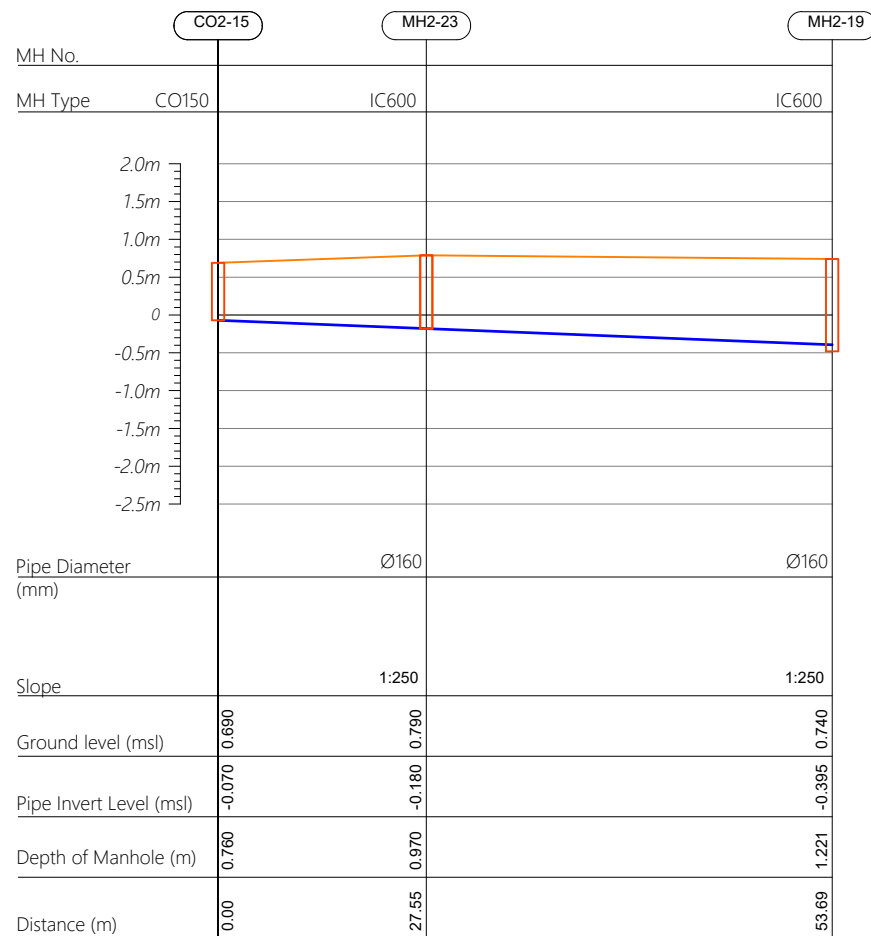
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| Designed: F.I.A | Approved: I.W |
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| Date: Aug 2020 | SCALE (A3): 1:100 |
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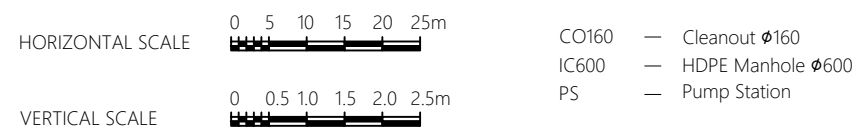
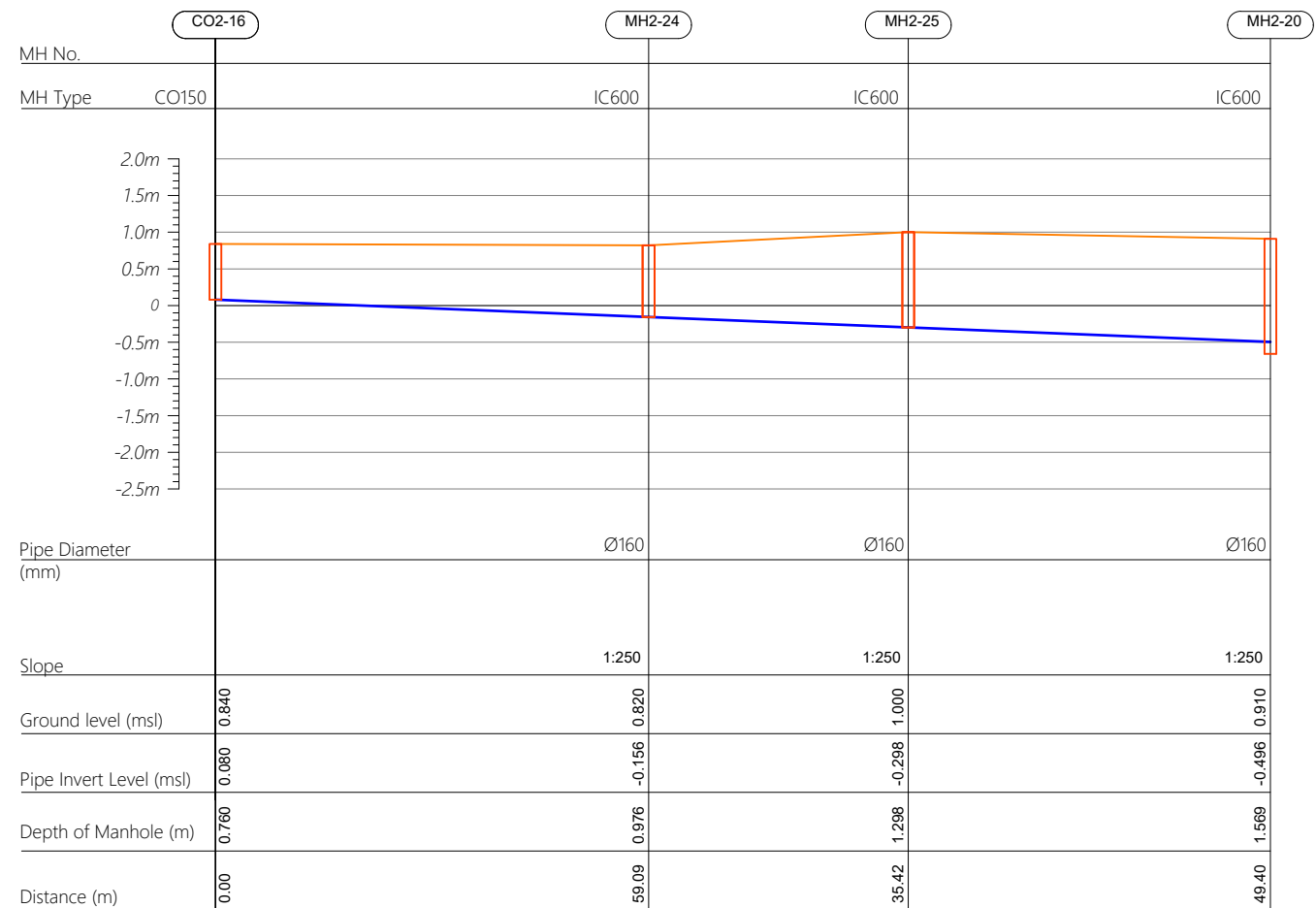
Project No: 01010101

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| Rev: <i>R-01</i> | Page: <i>PS2-07</i> |
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Profile 15



Profile 16



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

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| Drawn: A.R.W | Checked: M.S.S |
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| Designed: F.I.A | Approved: I.W |
|-----------------|---------------|

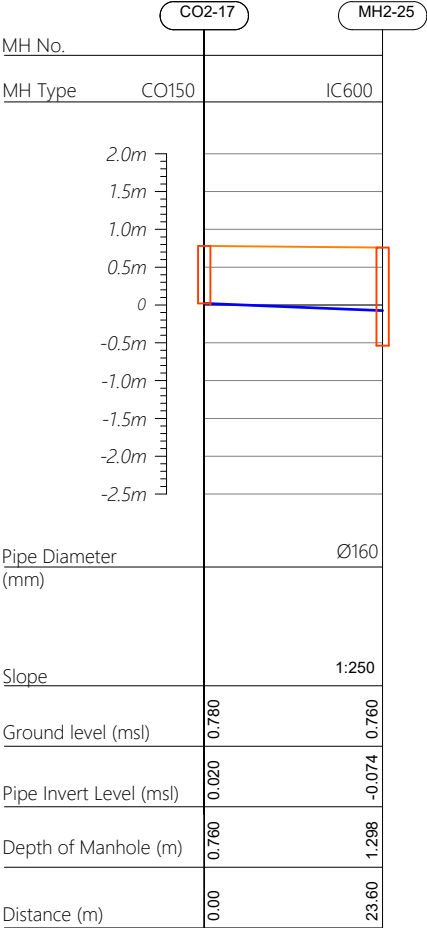
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| Date: Aug 2020 | SCALE (A3): 1:100 |
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Project No: 01010101

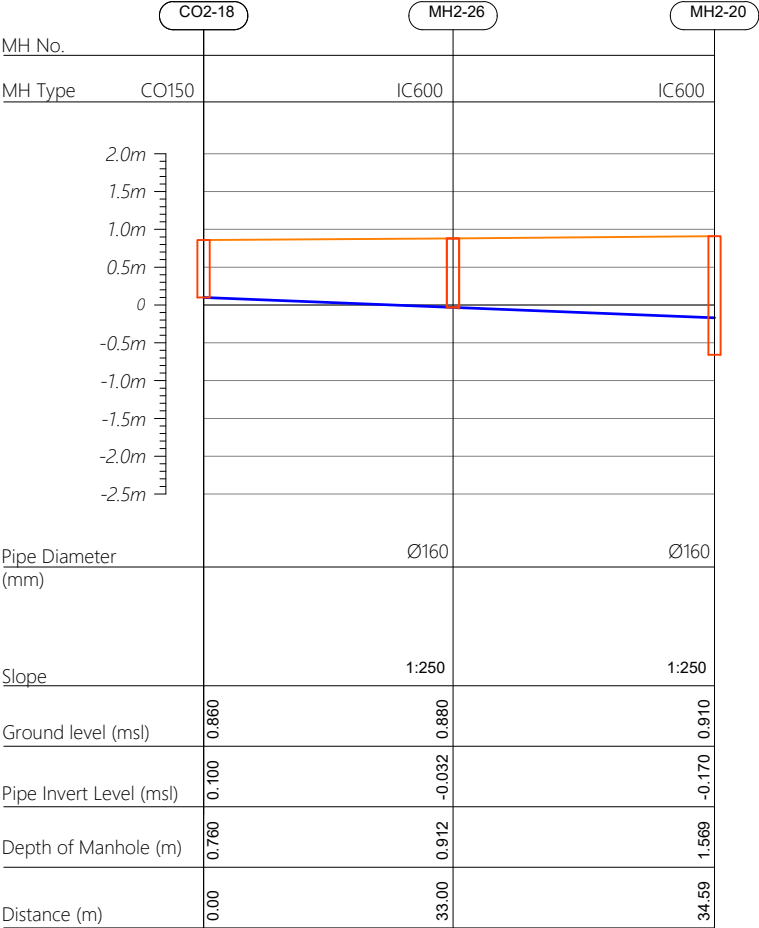
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R-01 PS2-08

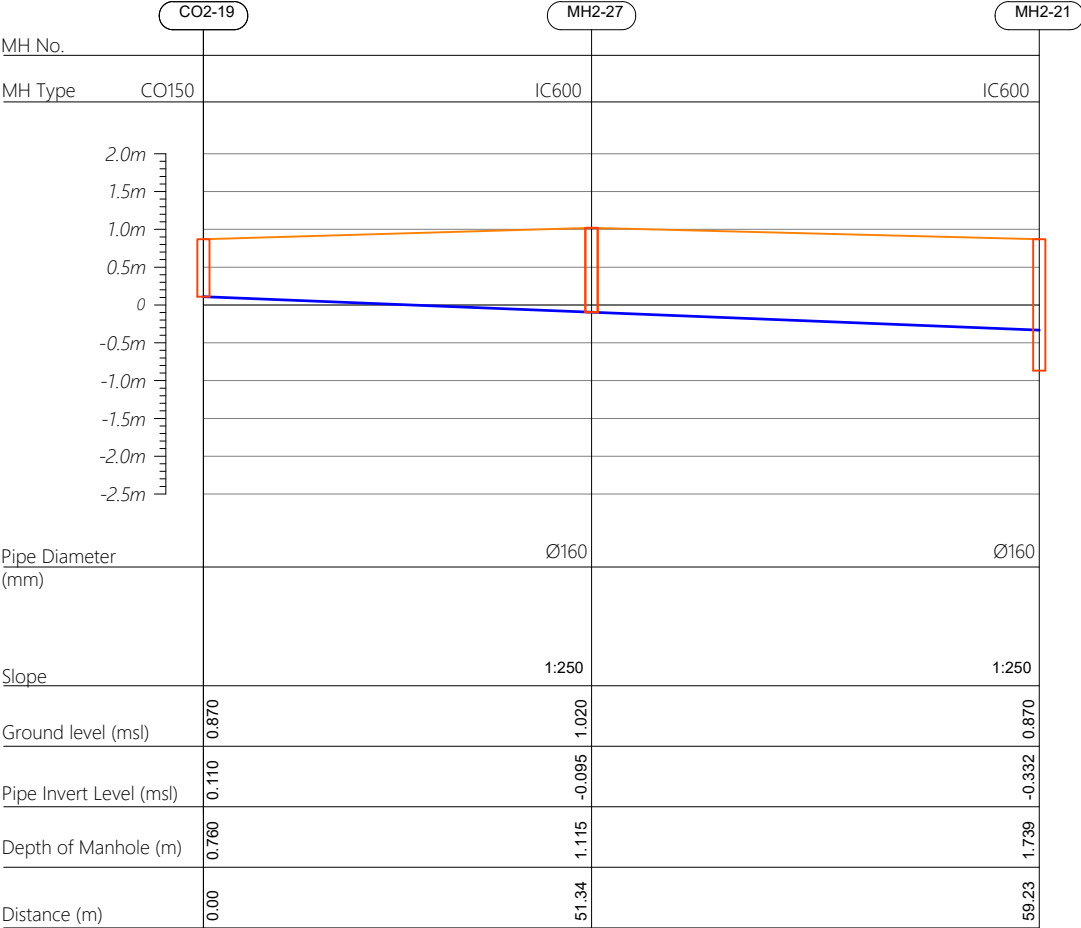
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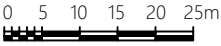
Profile 18



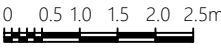
Profile 19



HORIZONTAL SCALE



VERTICAL SCALE



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

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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 5 islands, Maldives - Package 6

Sub Title:

Sewerage System in GA.Nilandhoo

Client:

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

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

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Designed: F.I.A

Date: Aug 2020

Project No: 01010101

Checked: M.S.S

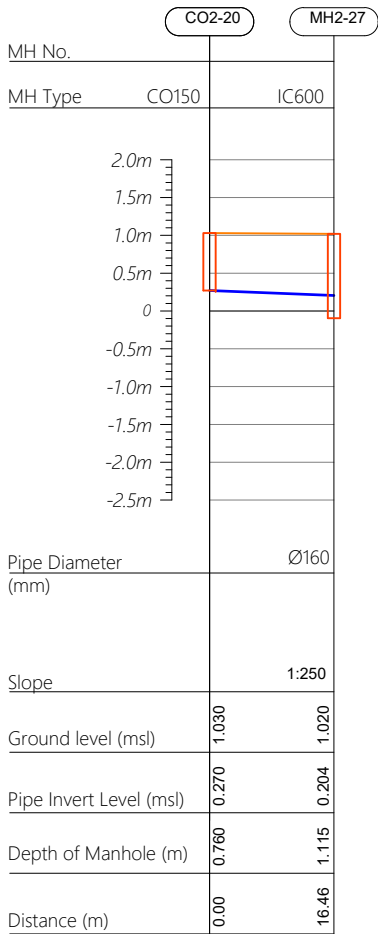
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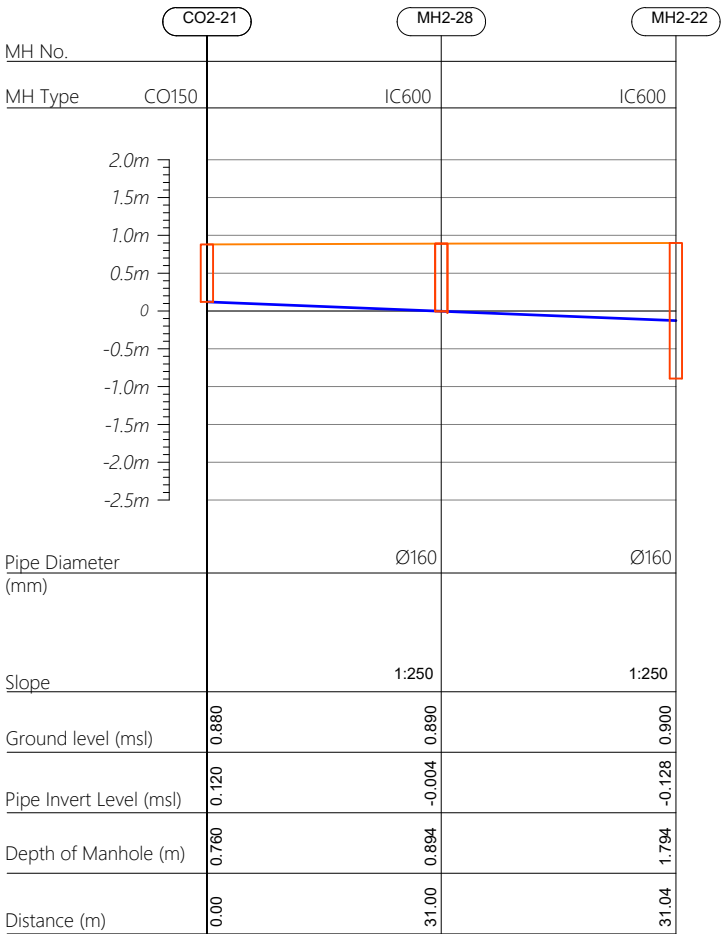
Rev: R-01

Page: PS2-09

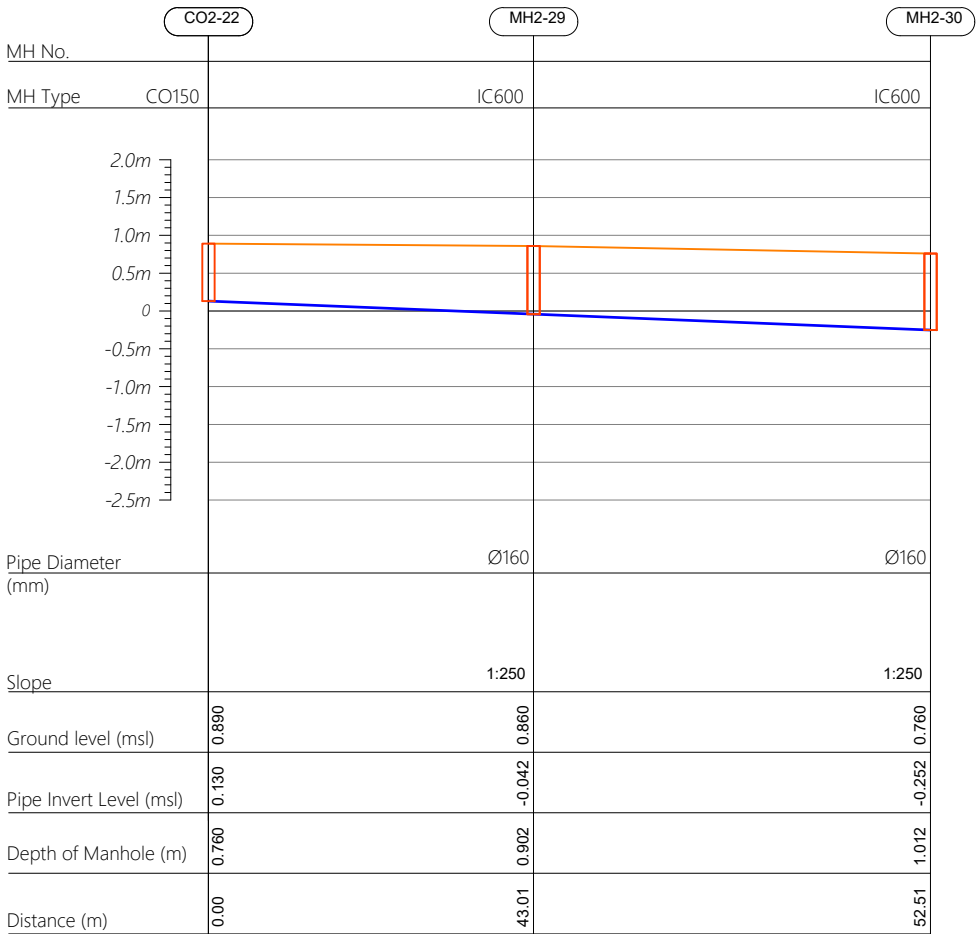
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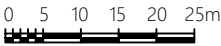
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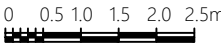
Profile 22



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
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Sub Title:
Sewerage System in GA.Nilandhoo

Client:
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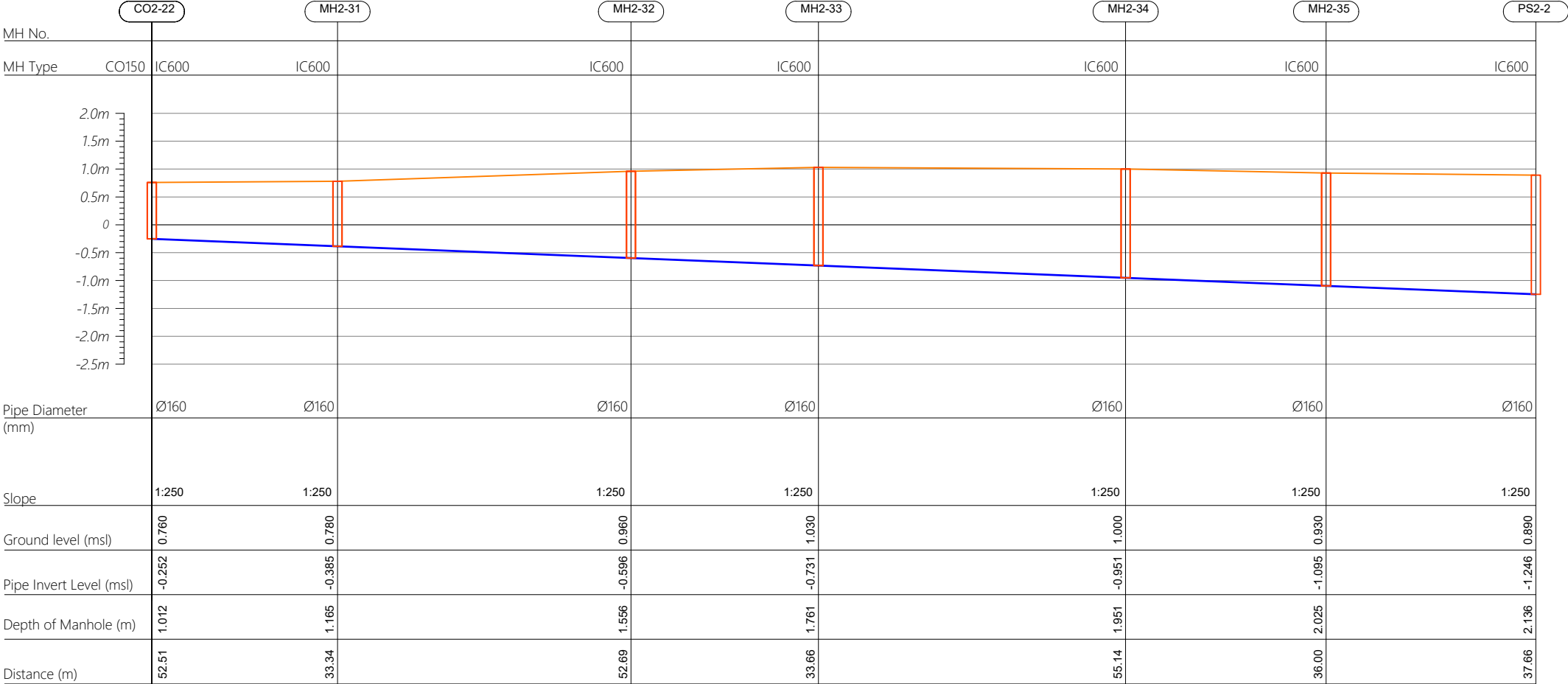
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Date: Aug 2020 SCALE (A3): 1:100

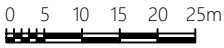
Project No: 01010101

Rev: R-01 Page: PS2-10

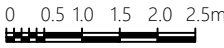
Profile 22



HORIZONTAL SCALE



VERTICAL SCALE



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

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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 5 islands, Maldives - Package 6

Sub Title:
Sewerage System in GA.Nilandhoo

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

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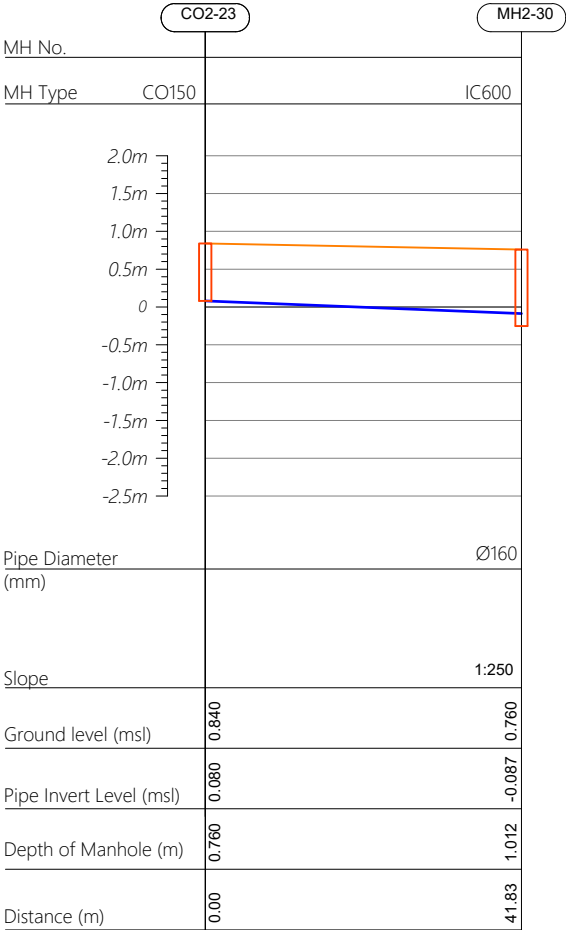
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Date: Aug 2020 SCALE (A3): 1:100

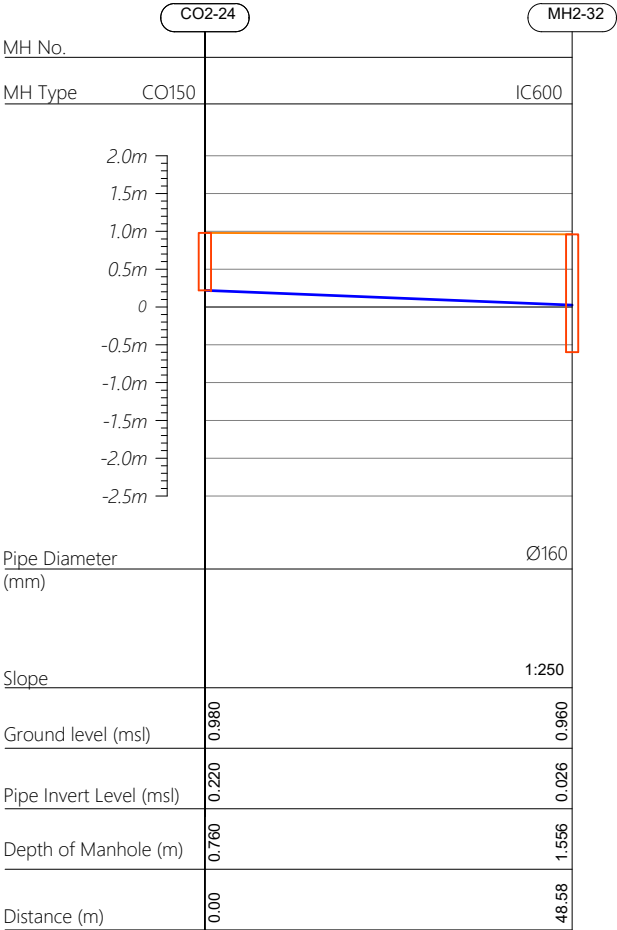
Project No: 01010101

Rev: R-01 Page: PS2-11

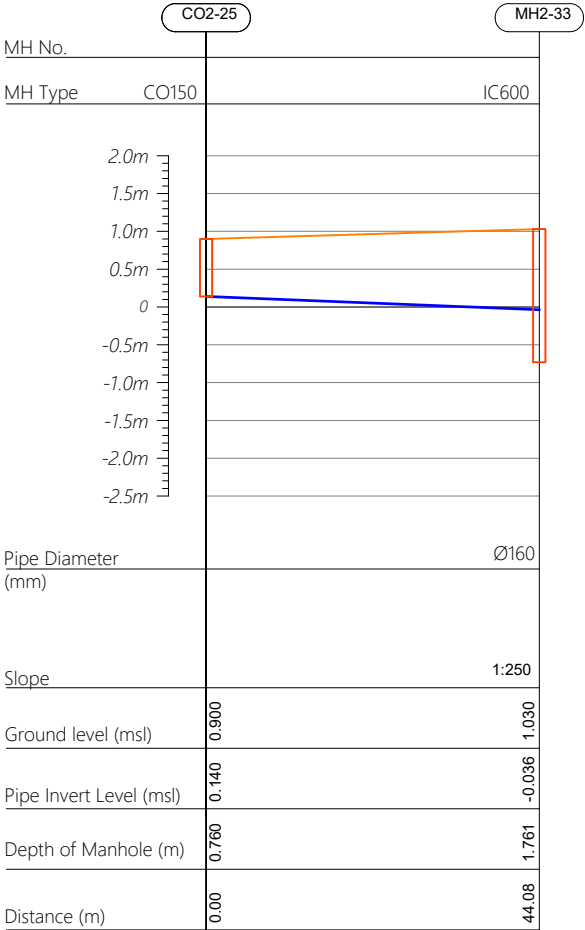
Profile 23



Profile 24



Profile 25



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

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5 islands, Maldives - Package 6

Sub Title:
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Client:
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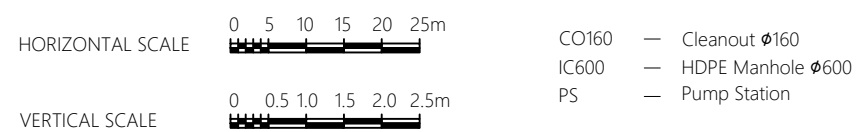
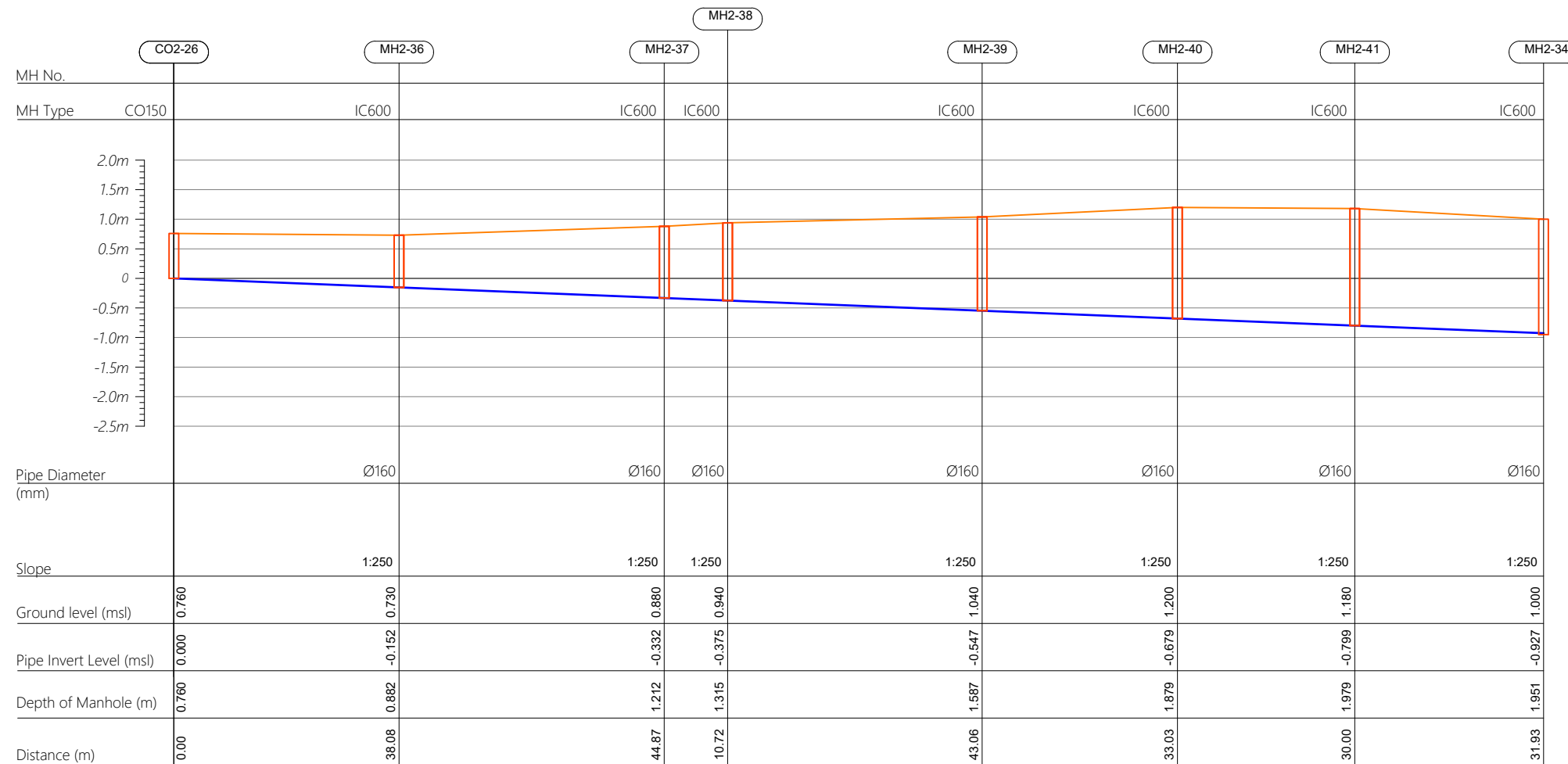
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| Designed: F.I.A | Approved: I.W |
| Date: Aug 2020 | SCALE (A3): 1:100 |
| Project No: 01010101 | |
| Rev: R-01 | Page: PS2-12 |

Profile 26



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

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Sub Title:
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Client:
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Infrastructure, Republic of Maldives*



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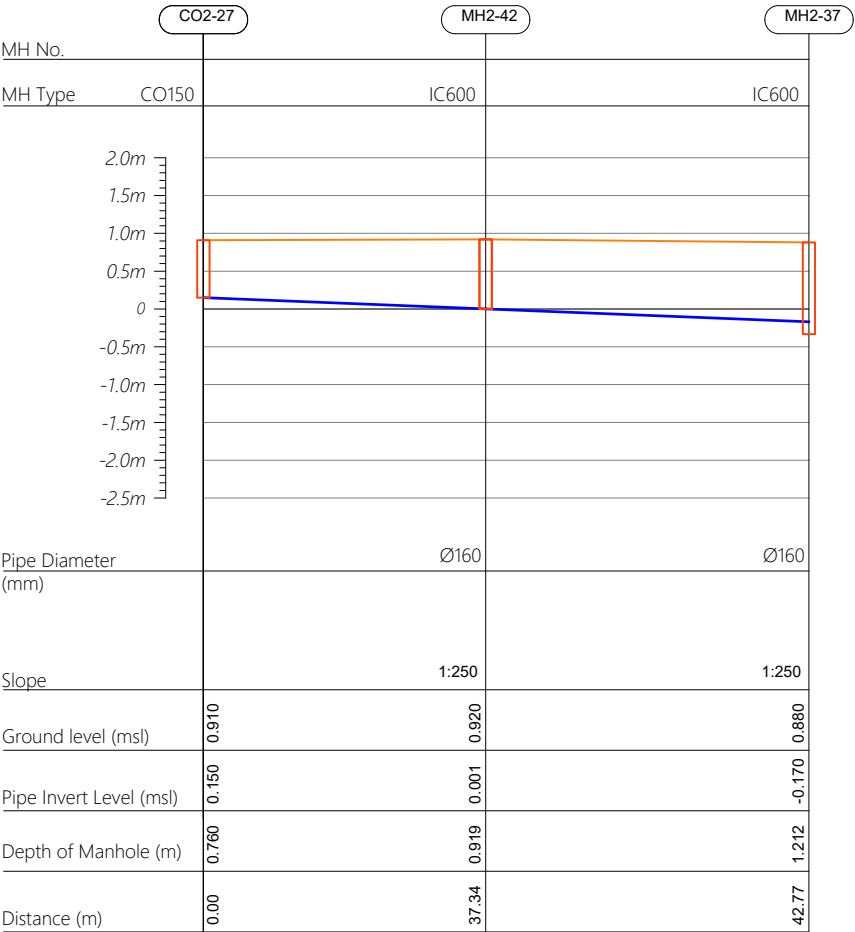
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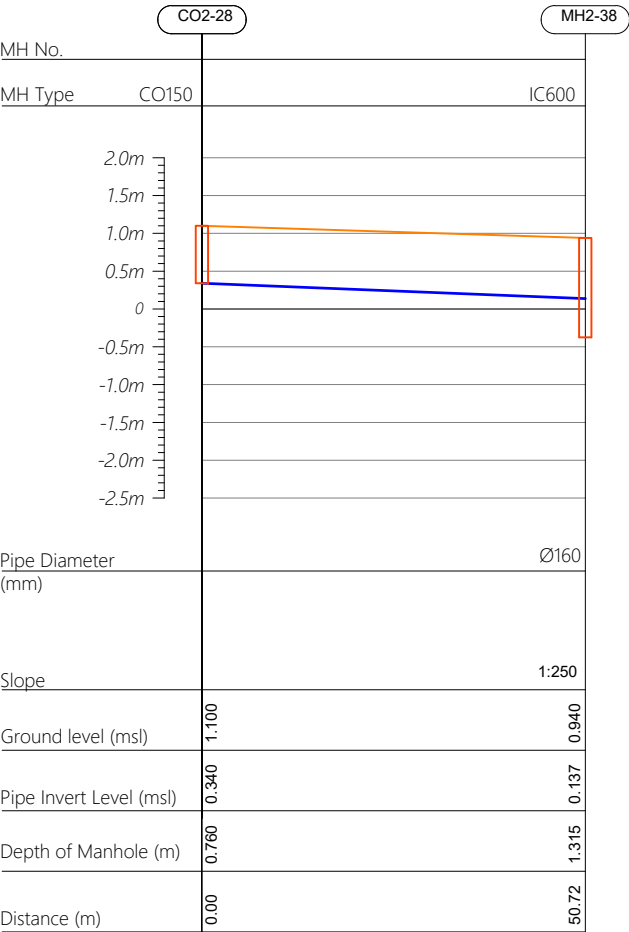
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| R-01 | PS2-13 |

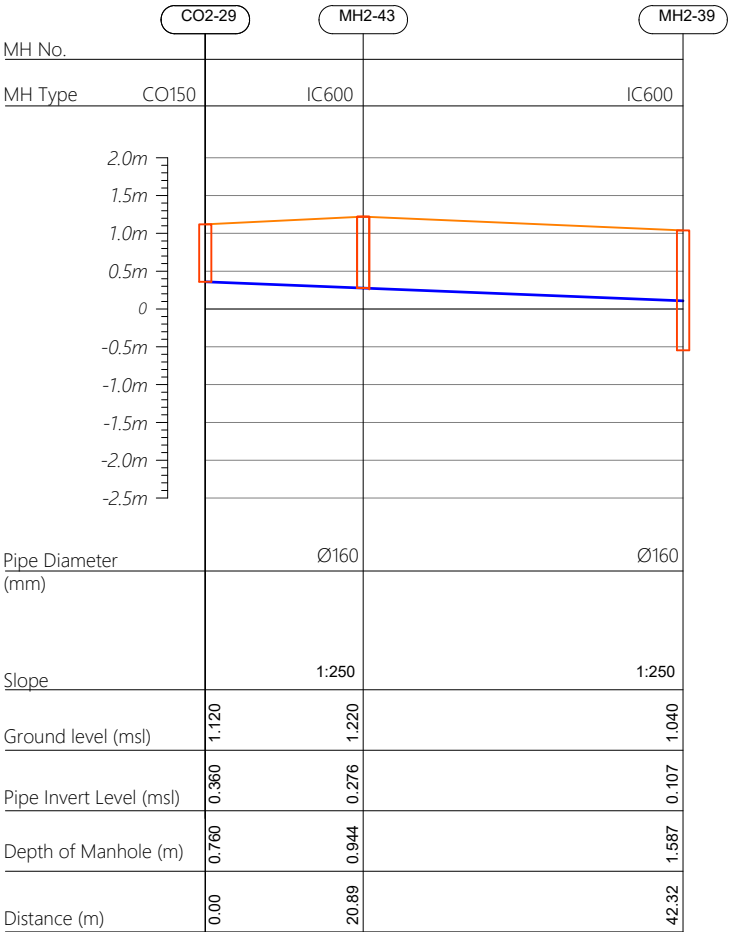
Profile 27



Profile 28



Profile 29



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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 5 islands, Maldives - Package 6

Sub Title:
Sewerage System in GA.Nilandhoo

Client:
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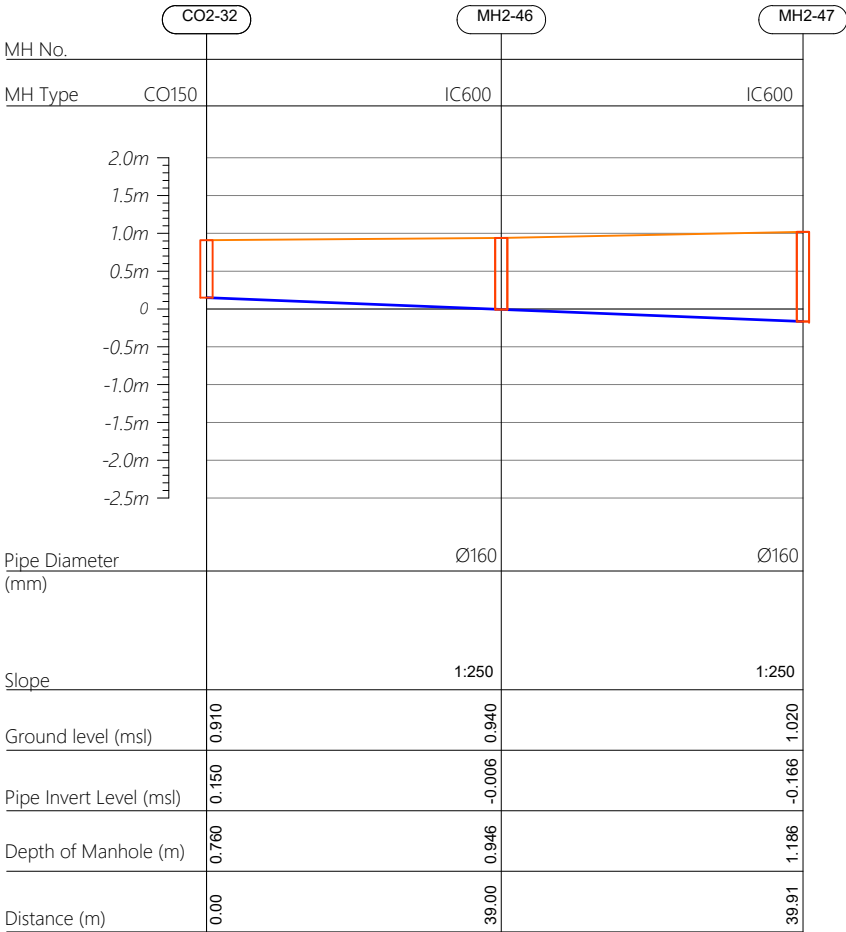
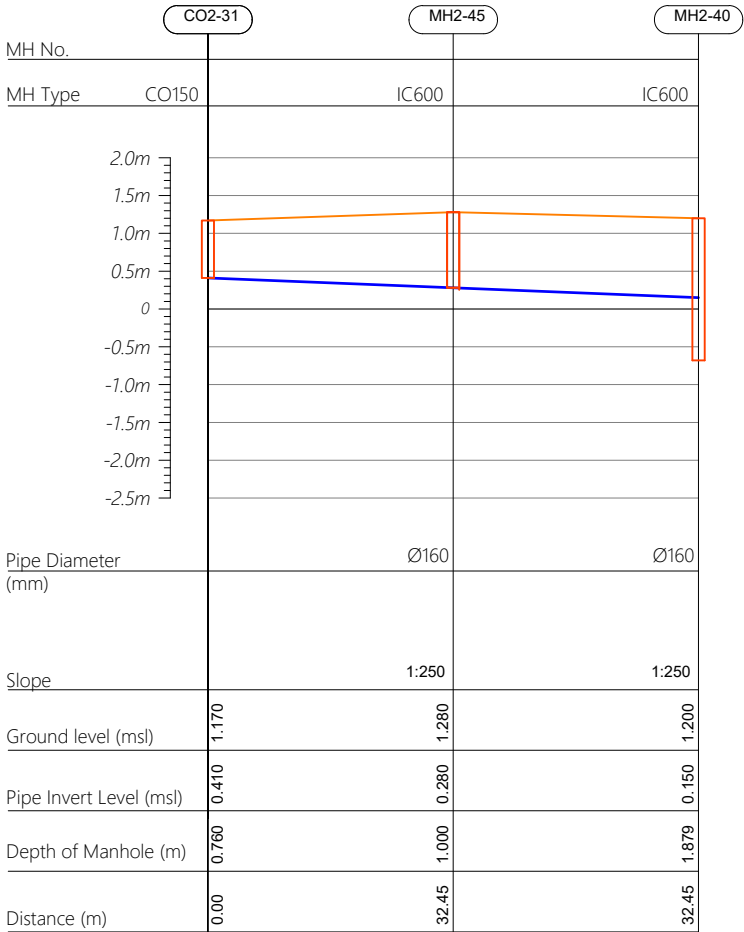
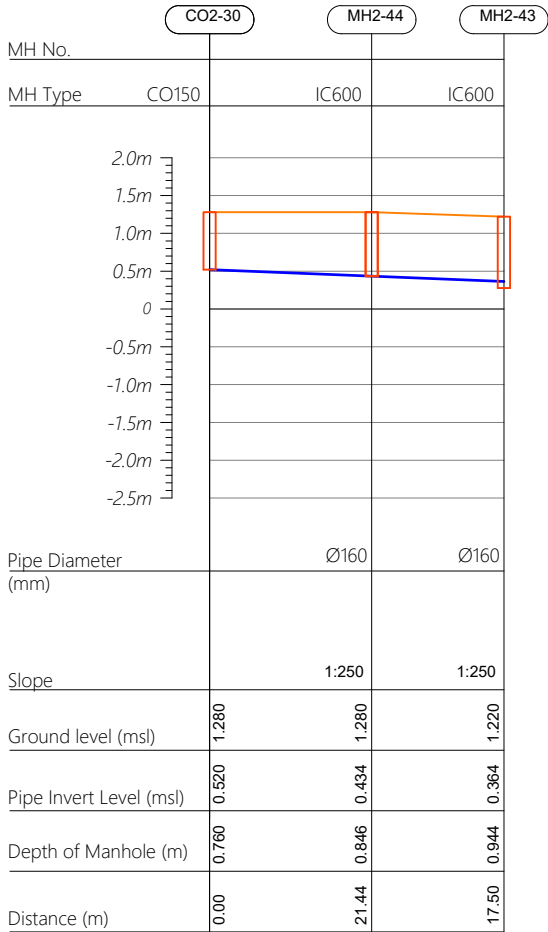
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| Designed: F.I.A | Approved: I.W |
| Date: Aug 2020 | SCALE (A3): 1:100 |
| Project No: | 01010101 |

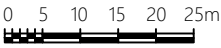
Profile 30

Profile 31

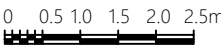
Profile 32



HORIZONTAL SCALE



VERTICAL SCALE



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

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

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

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

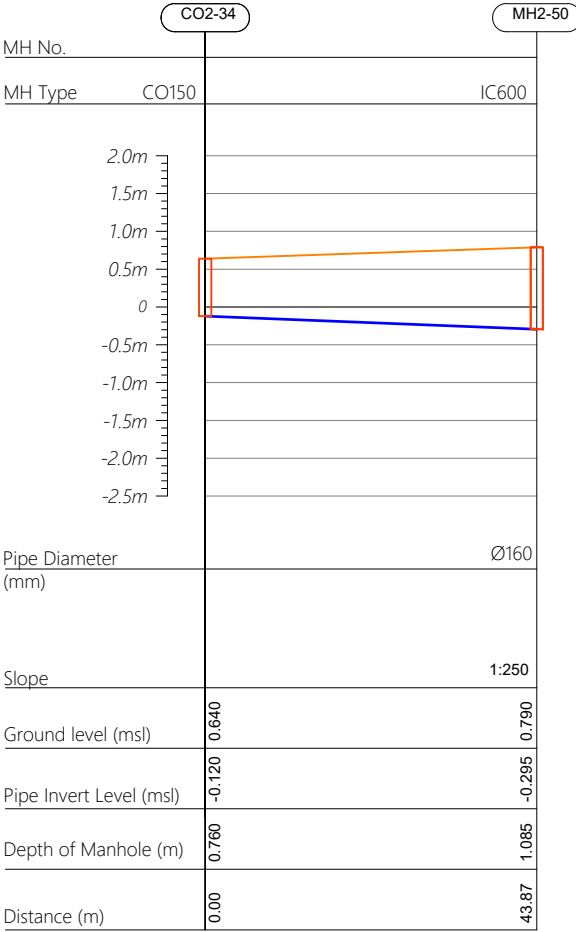
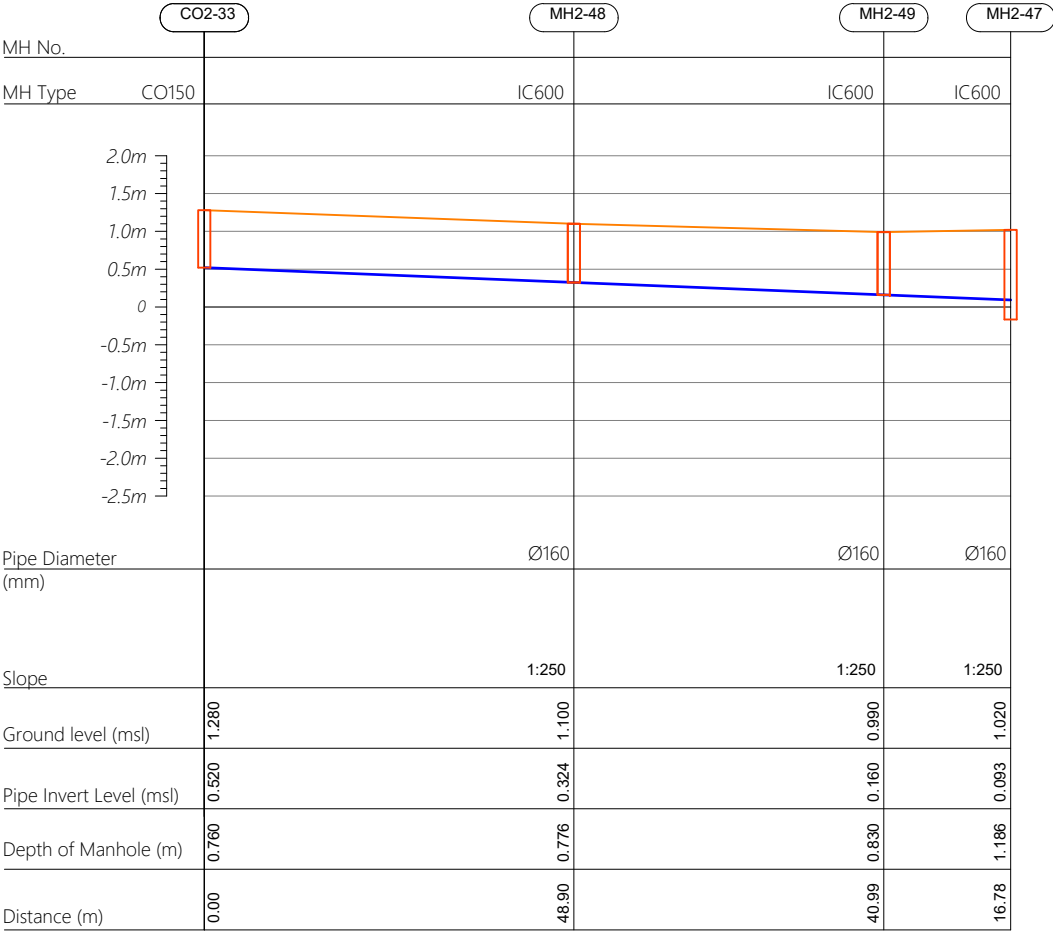
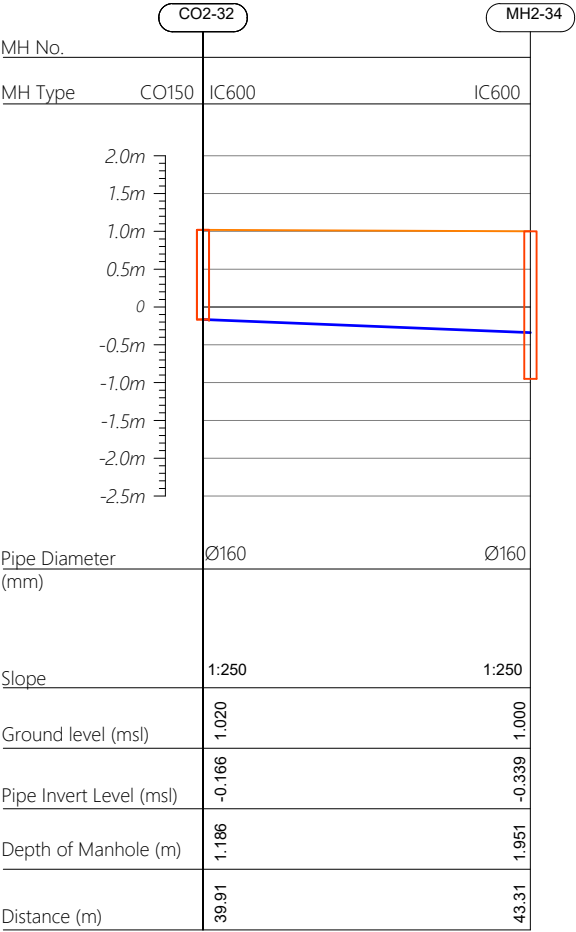
Project No: 01010101

Rev: R-01 Page: PS2-15

Profile 32

Profile 33

Profile 34



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:
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Husnuheemaa Magu, Male', Maldives

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Drawn: A.R.W

Designed: F.I.A

Date: Aug 2020

Project No: 01010101

Checked: M.S.S

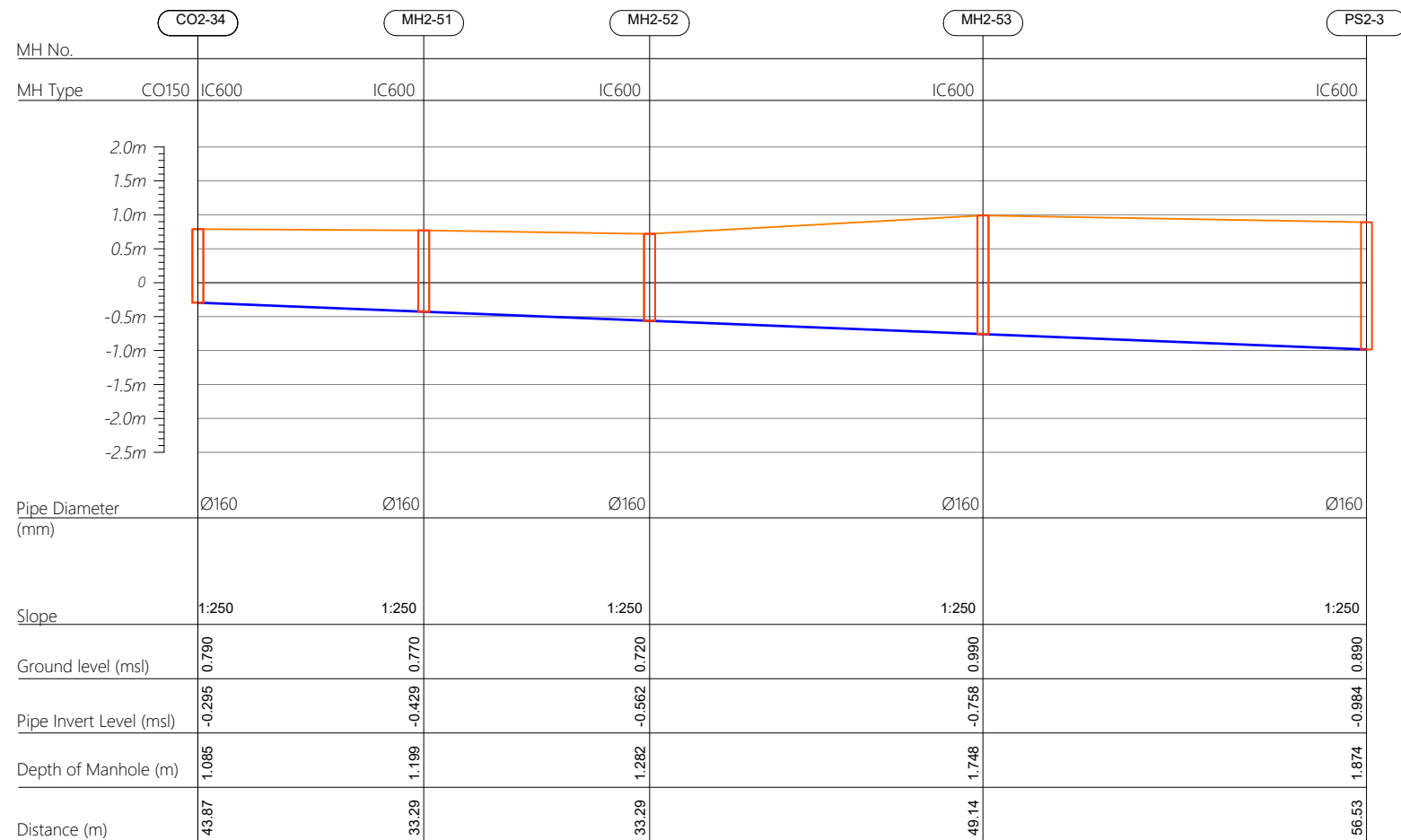
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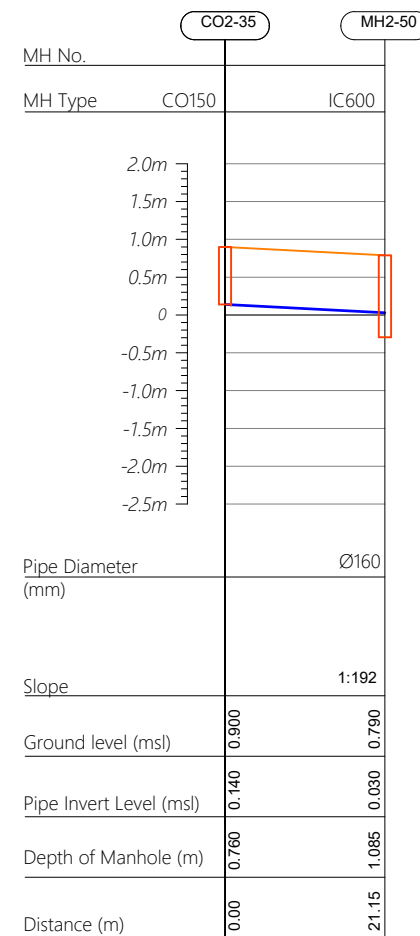
Rev:
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Page:
PS2-16

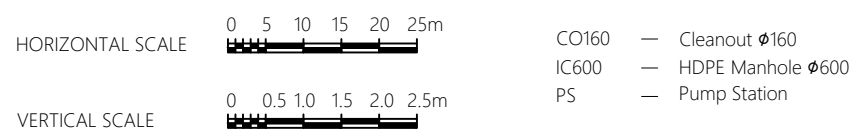
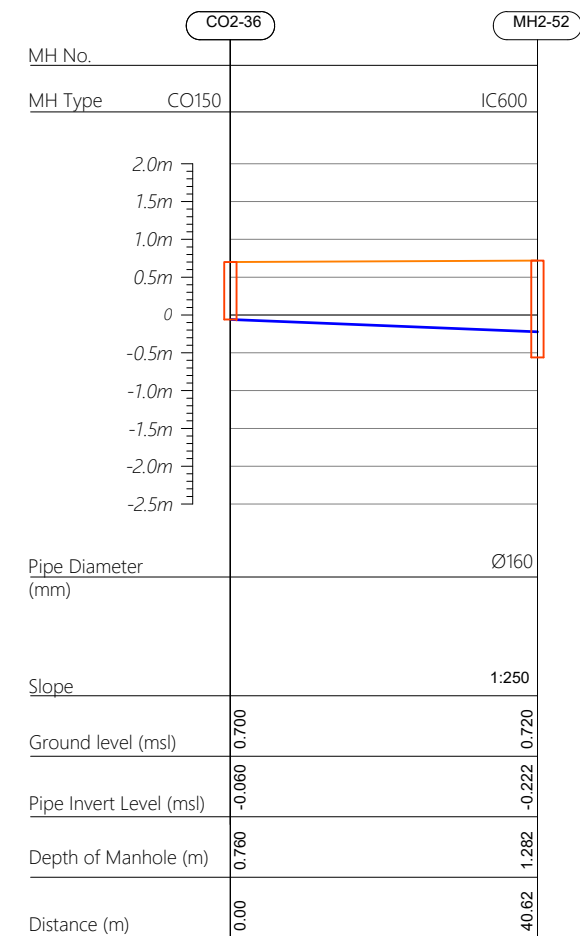
Profile 34



Profile 35



Profile 36



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

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Client:
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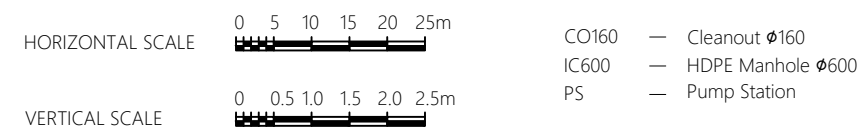
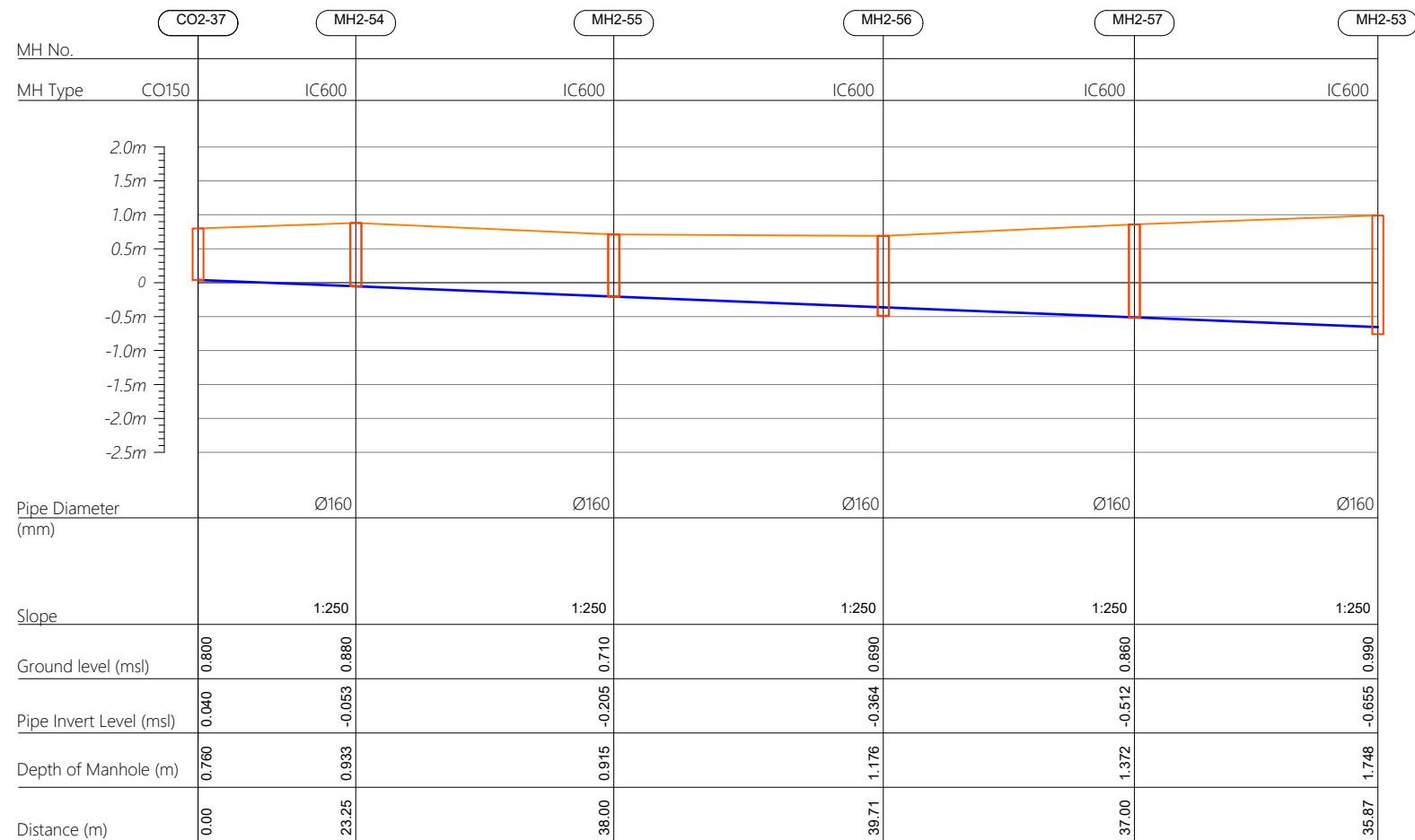
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| Designed: F.I.A | Approved: J.W |
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Date: Aug 2020 SCALE (A3): 1:100

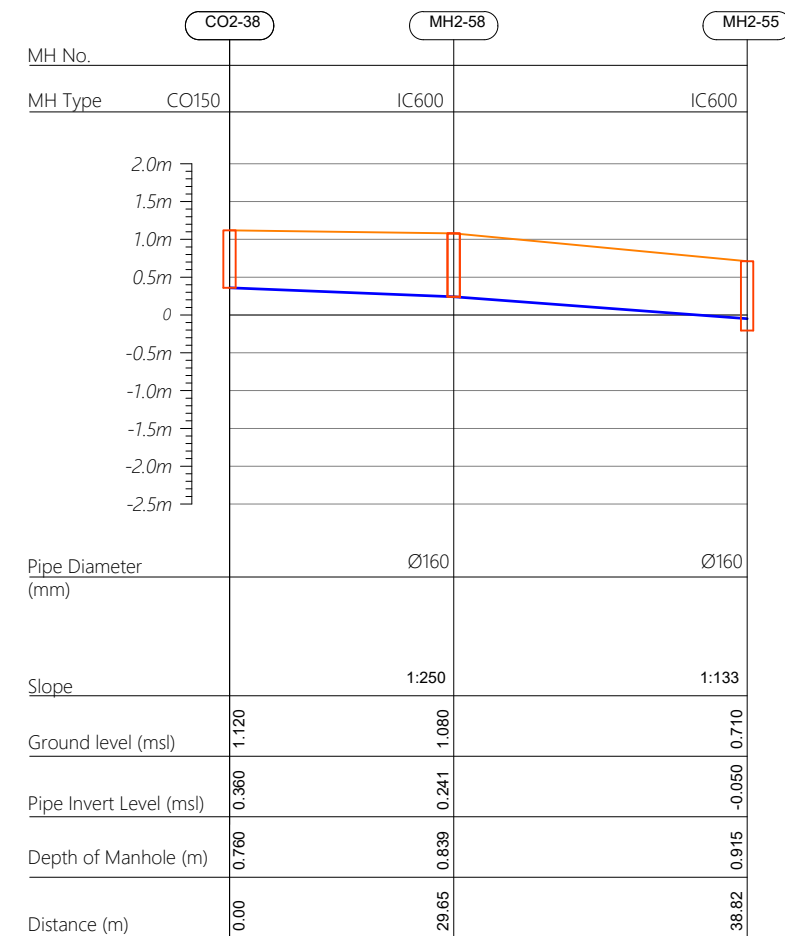
Project No: 01010101

Rev: *R-01* Page: *PS2-17*

Profile 37



Profile 38



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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 5 islands, Maldives - Package 6*

Sub Title:
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Client:
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| Drawn: A.R.W | Checked: M.S.S |
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| Designed: F.I.A | Approved: J.W |
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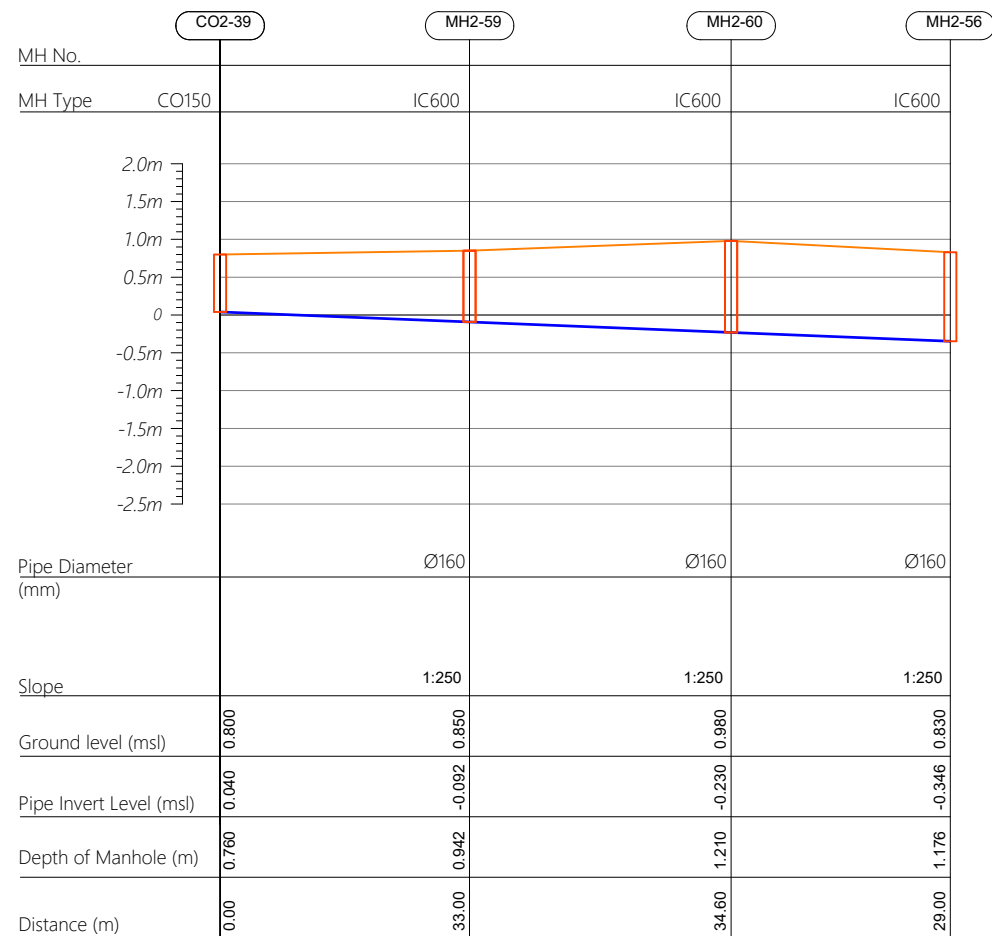
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| Date: Aug 2020 | SCALE (A3): 1:100 |
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Project No: 01010101

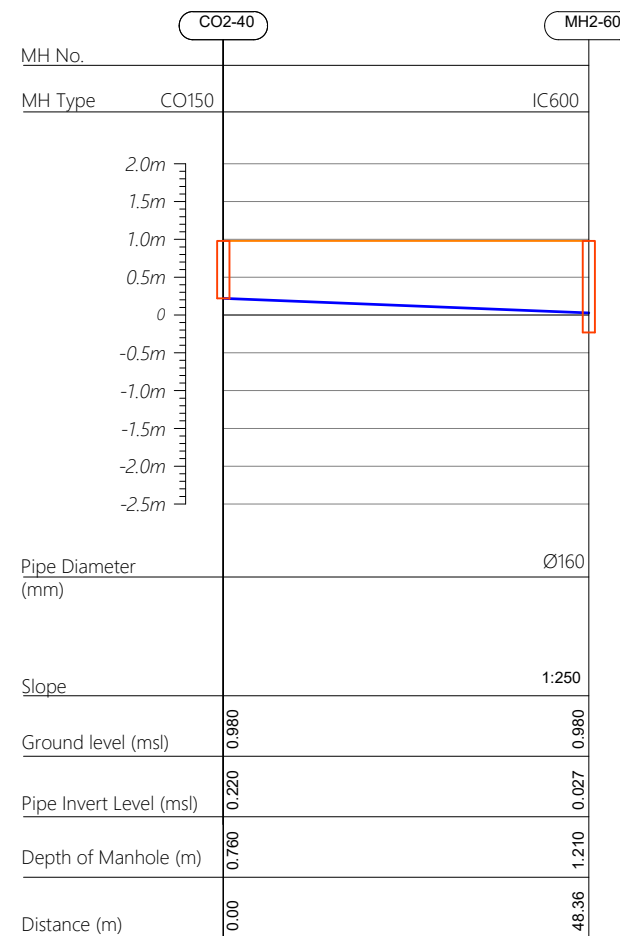
Rev: _____ Page: _____

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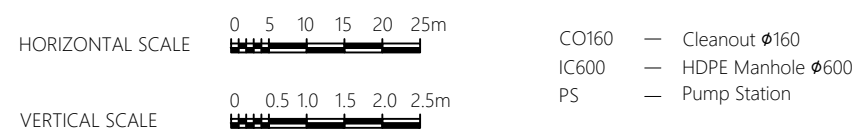
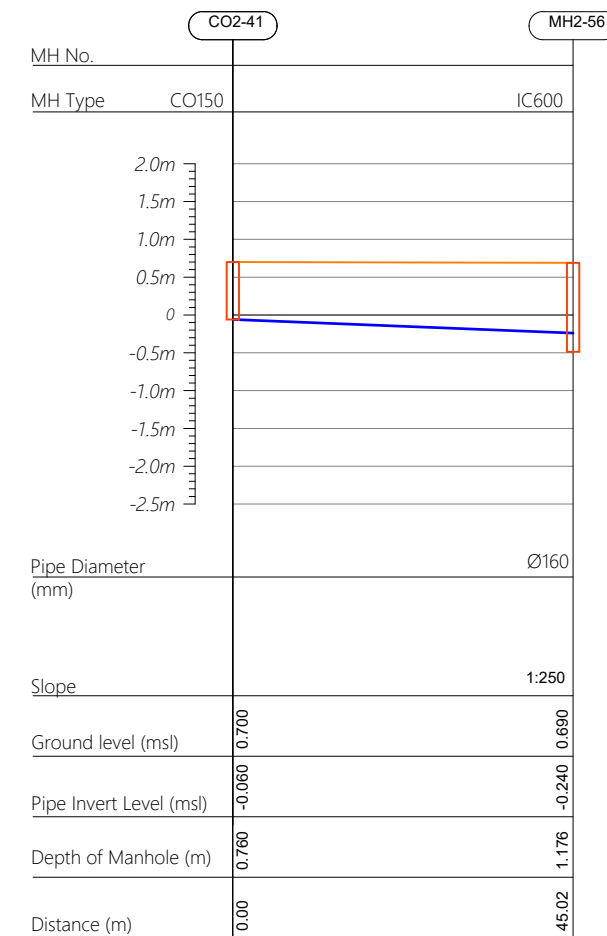
Profile 39



Profile 40



Profile 41



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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
5 islands, Maldives - Package 6*

Sub Title:
Sewerage System in GA.Nilandhoo

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



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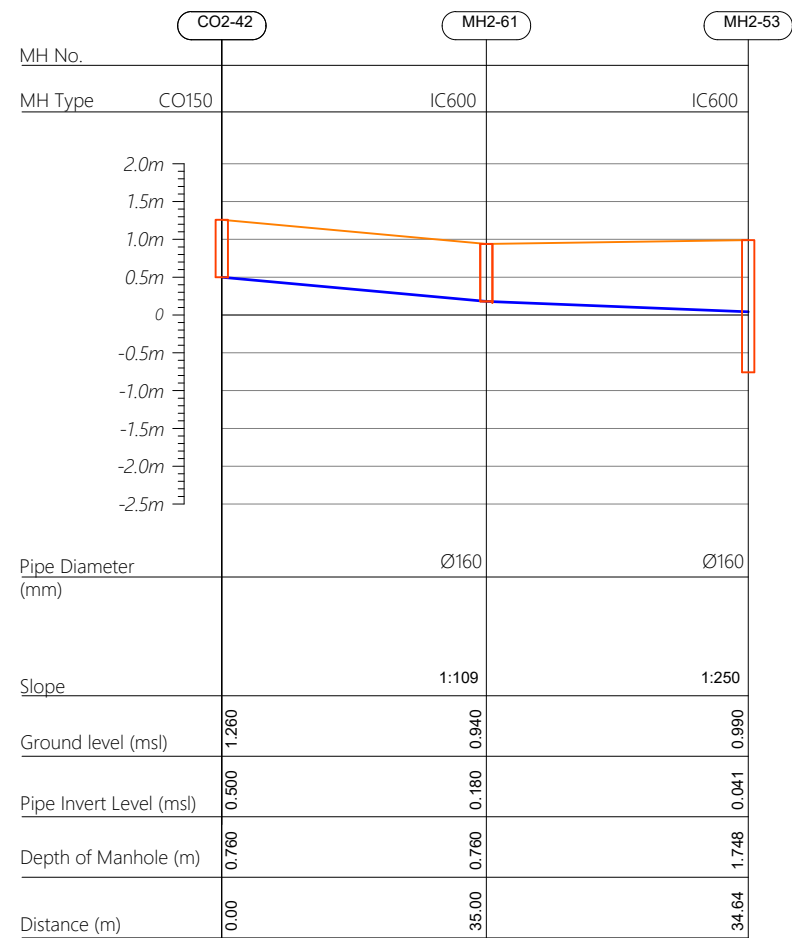
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| Designed: F.I.A | Approved: I.W |
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| Date: Aug 2020 | SCALE (A3): 1:100 |
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Project No: 01010101

Rev: *R-01* Page: *PS2-19*

Profile 42



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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 5 islands, Maldives - Package 6

Sub Title:
Sewerage System in GA.Nilandhoo

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



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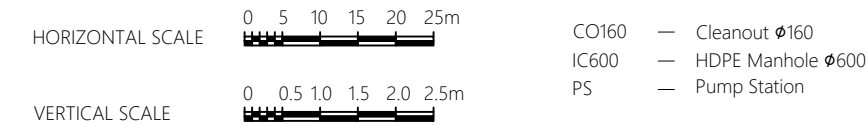
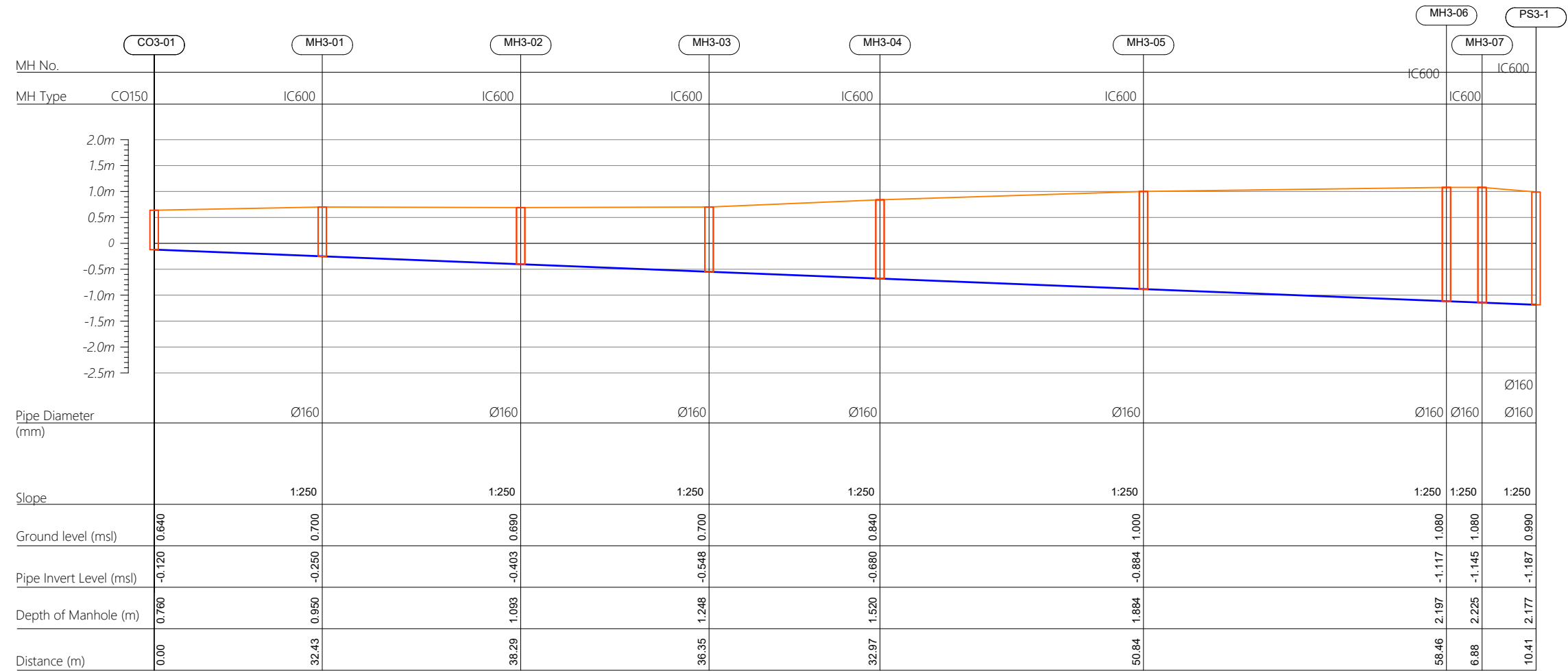
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| Drawn: A.R.W | Checked: M.S.S |
| Designed: F.I.A | Approved: I.W |
| Date: Aug 2020 | SCALE (A3): 1:100 |
| Project No: 01010101 | |
| Rev: R-01 | Page: PS2-20 |



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

Profile 01



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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
5 islands, Maldives - Package 6

Sub Title:

Sewerage System in GA.Nilandhoo

Client:

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

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Checked: M.S.S

Designed: F.I.A

Approved: I.W

Date: Aug 2020

SCALE (A3): 1:100

Project No: 01010101

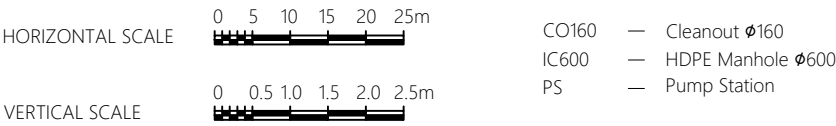
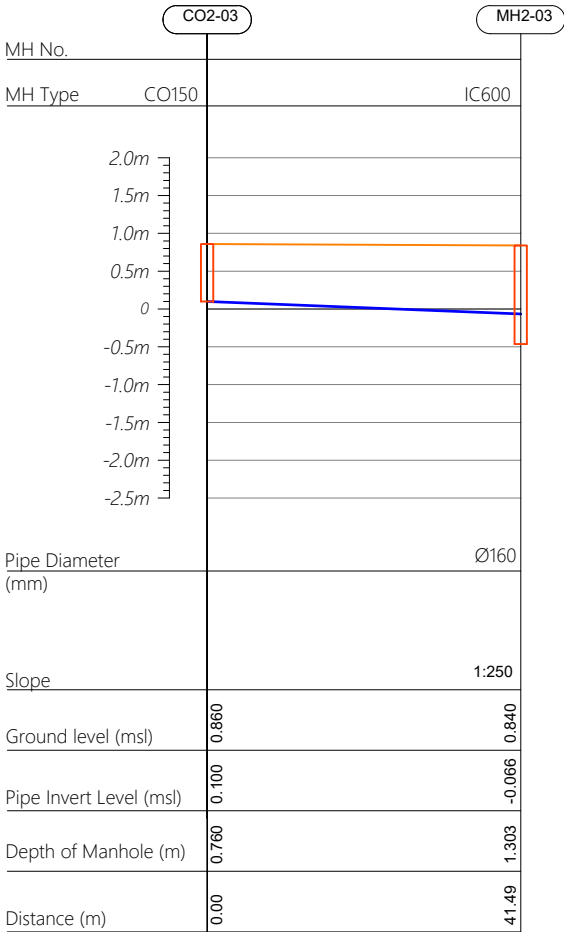
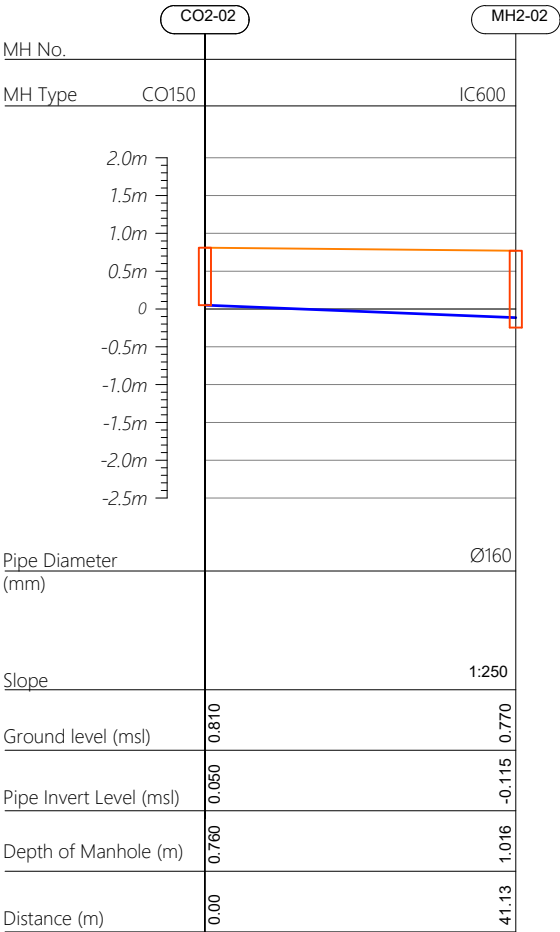
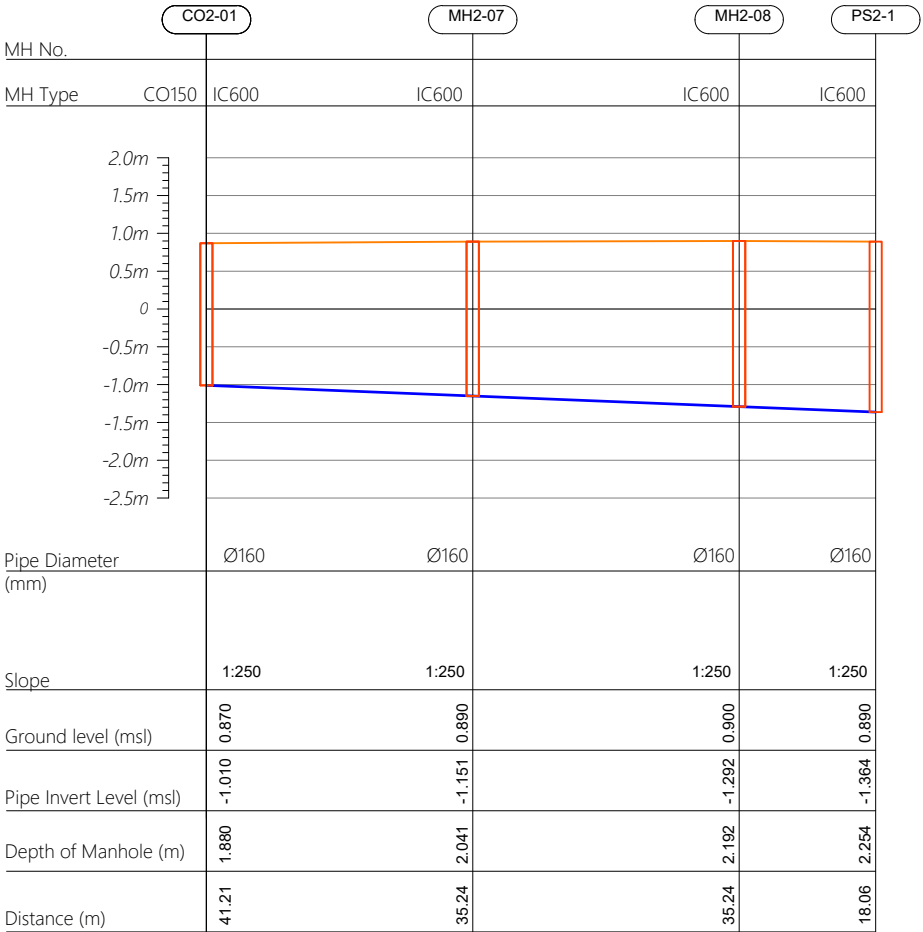
Rev: R-01

Page: PS3-01

Profile 01

Profile 02

Profile 03



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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
5 islands, Maldives - Package 6

Sub Title:
Sewerage System in GA.Nilandhoo

Client:
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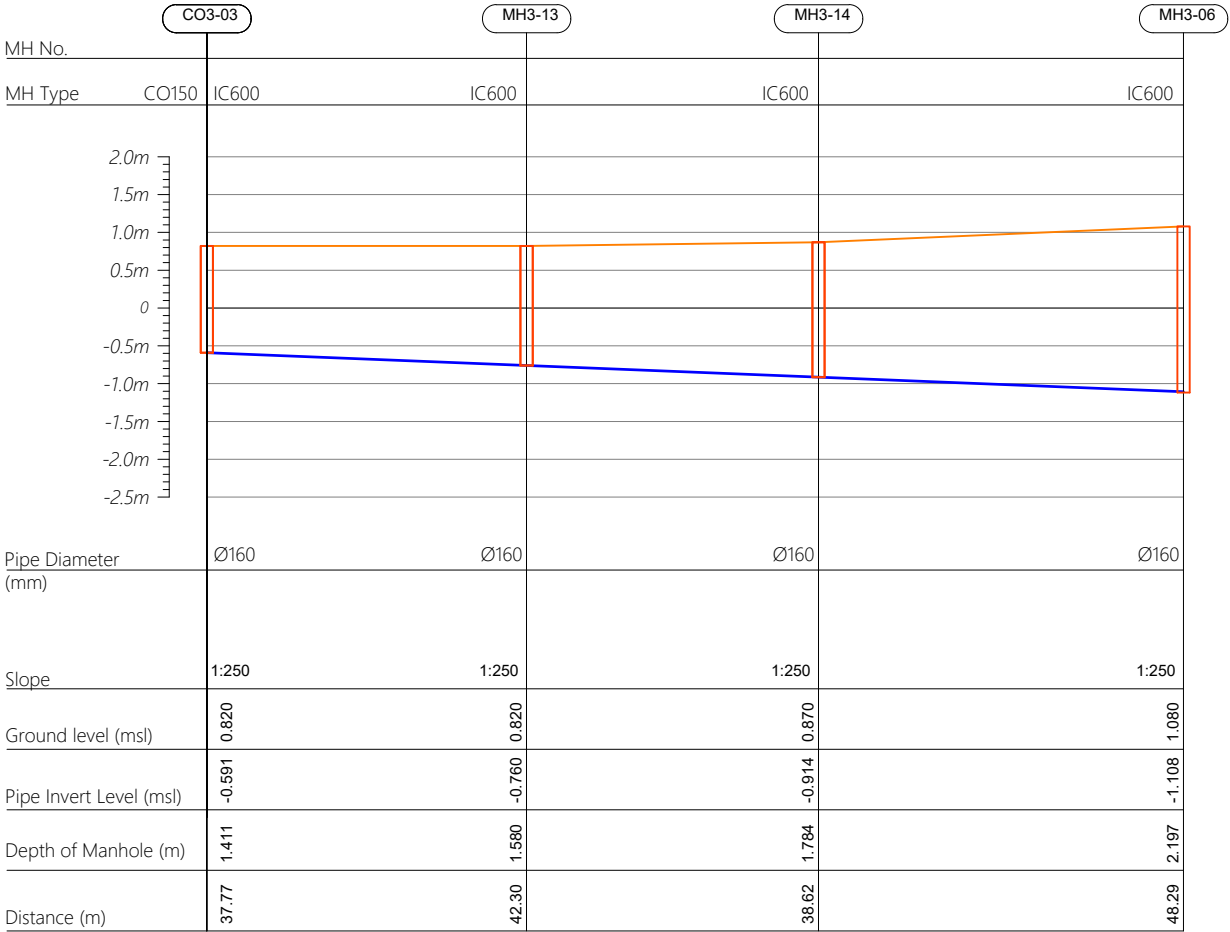
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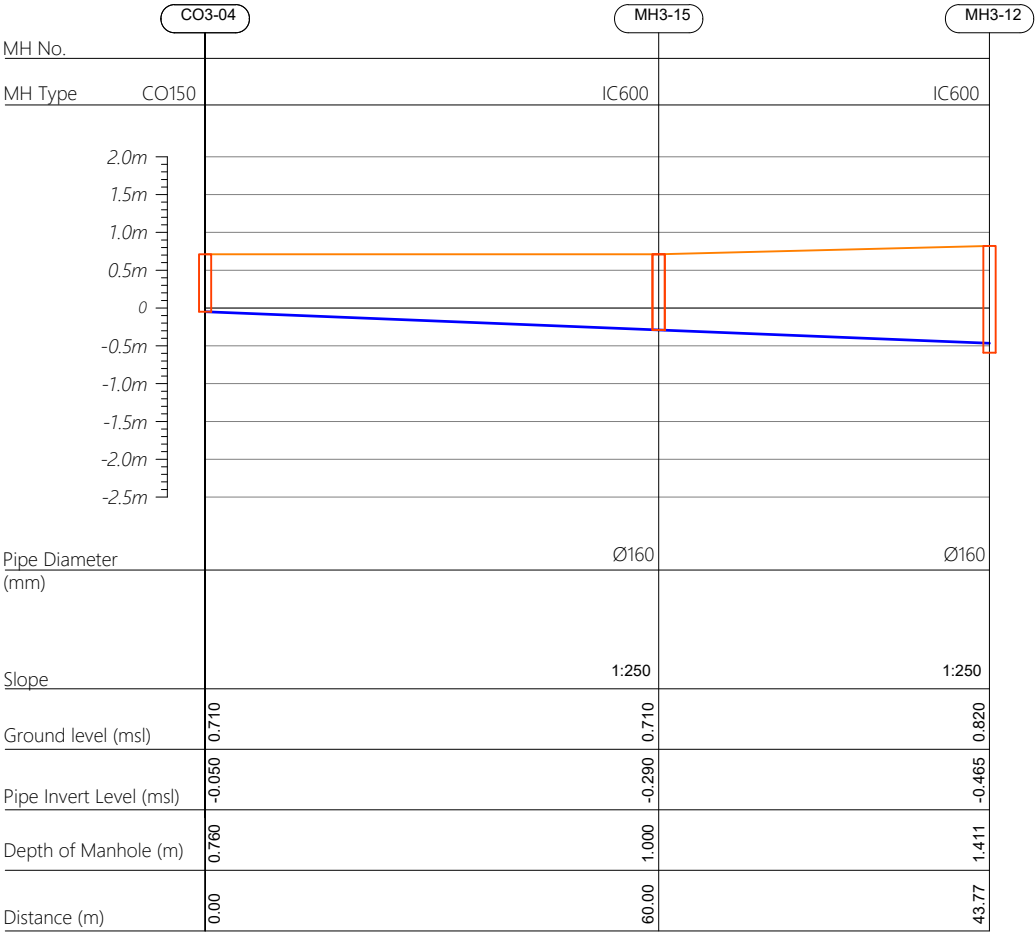
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| Designed: F.I.A | Approved: I.W |
| Date: Aug 2020 | SCALE (A3): 1:100 |
| Project No: 01010101 | |
| Rev: R-01 | Page: PS3-02 |

Profile 03



Profile 04



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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
5 islands, Maldives - Package 6**

Sub Title:
Sewerage System in GA.Nilandhoo

Client:
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Maldivu Infrastructure Develop

Drawn: A.R.W Checked: M.S.S

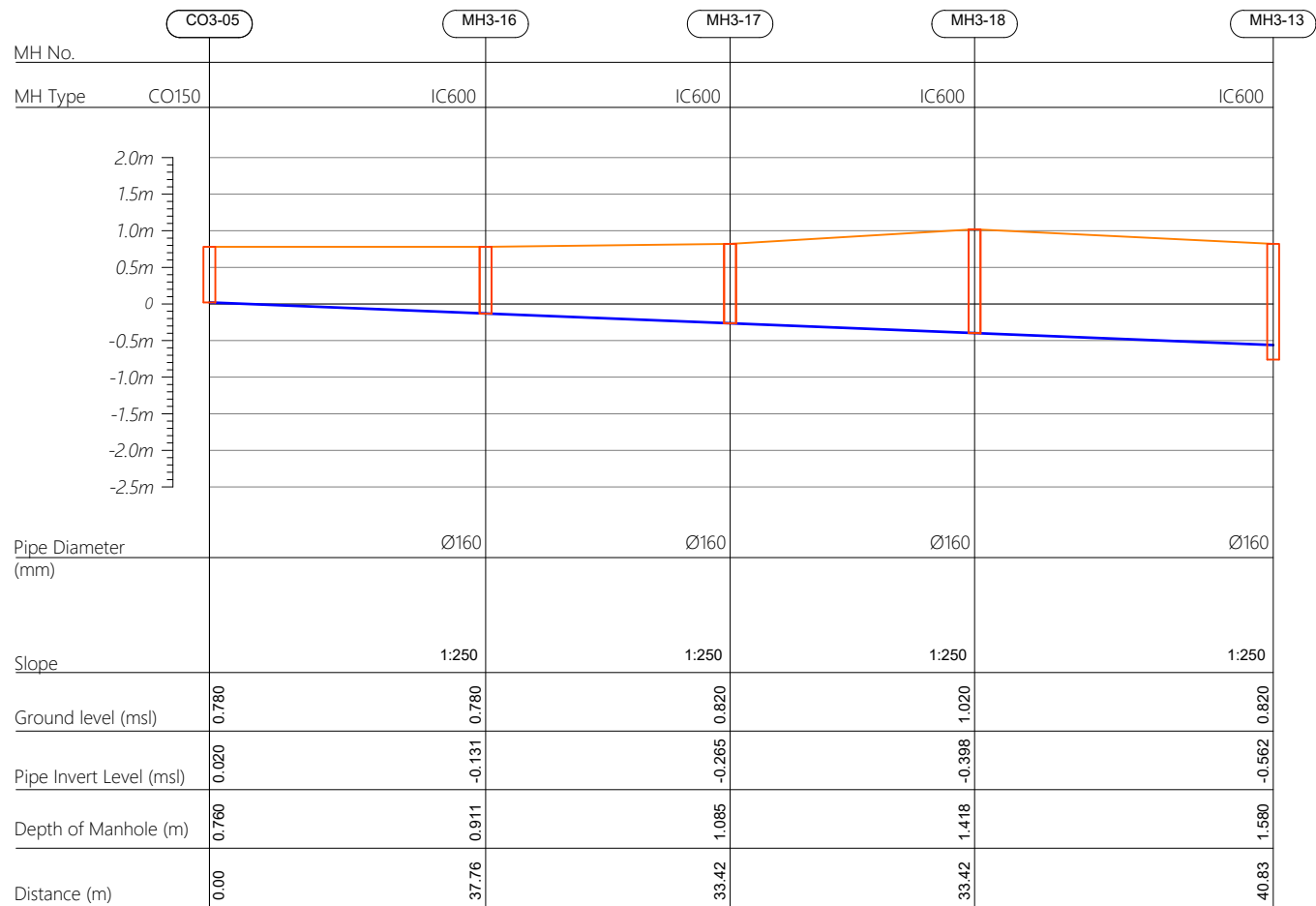
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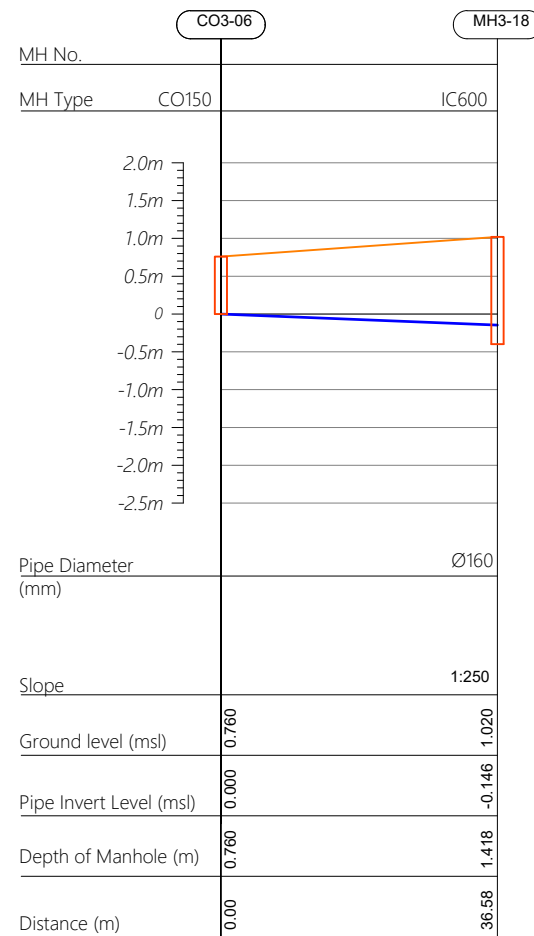
Project No: 01010101

Rev: R-01 Page: **PS3-03**

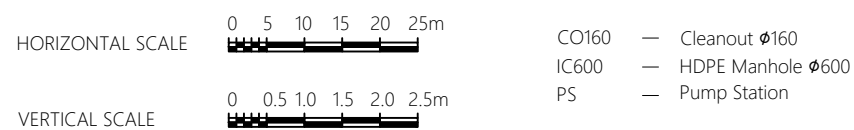
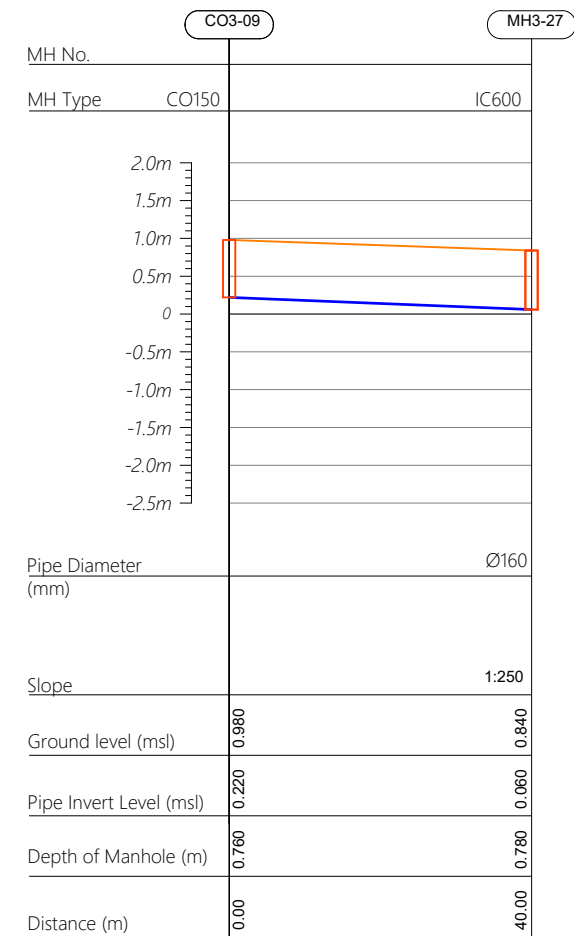
Profile 05



Profile 06



Profile 09



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Title:
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Design and EIA works of Water
Supply and Sewerage Facilities in
5 islands, Maldives - Package 6*

Sub Title:
Sewerage System in GA.Nilandhoo

Client:
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Infrastructure, Republic of Maldives*



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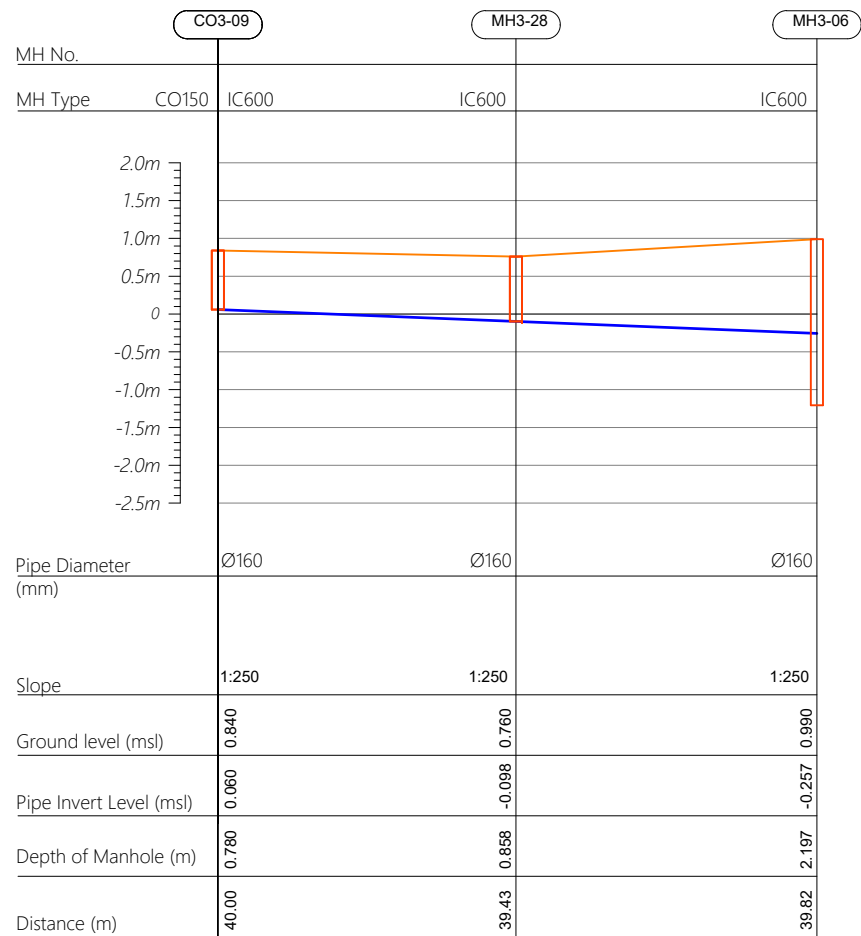
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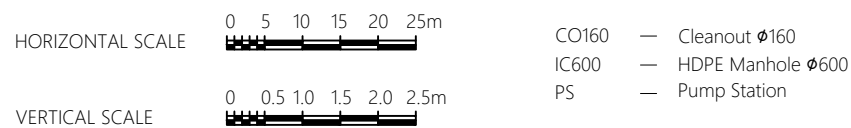
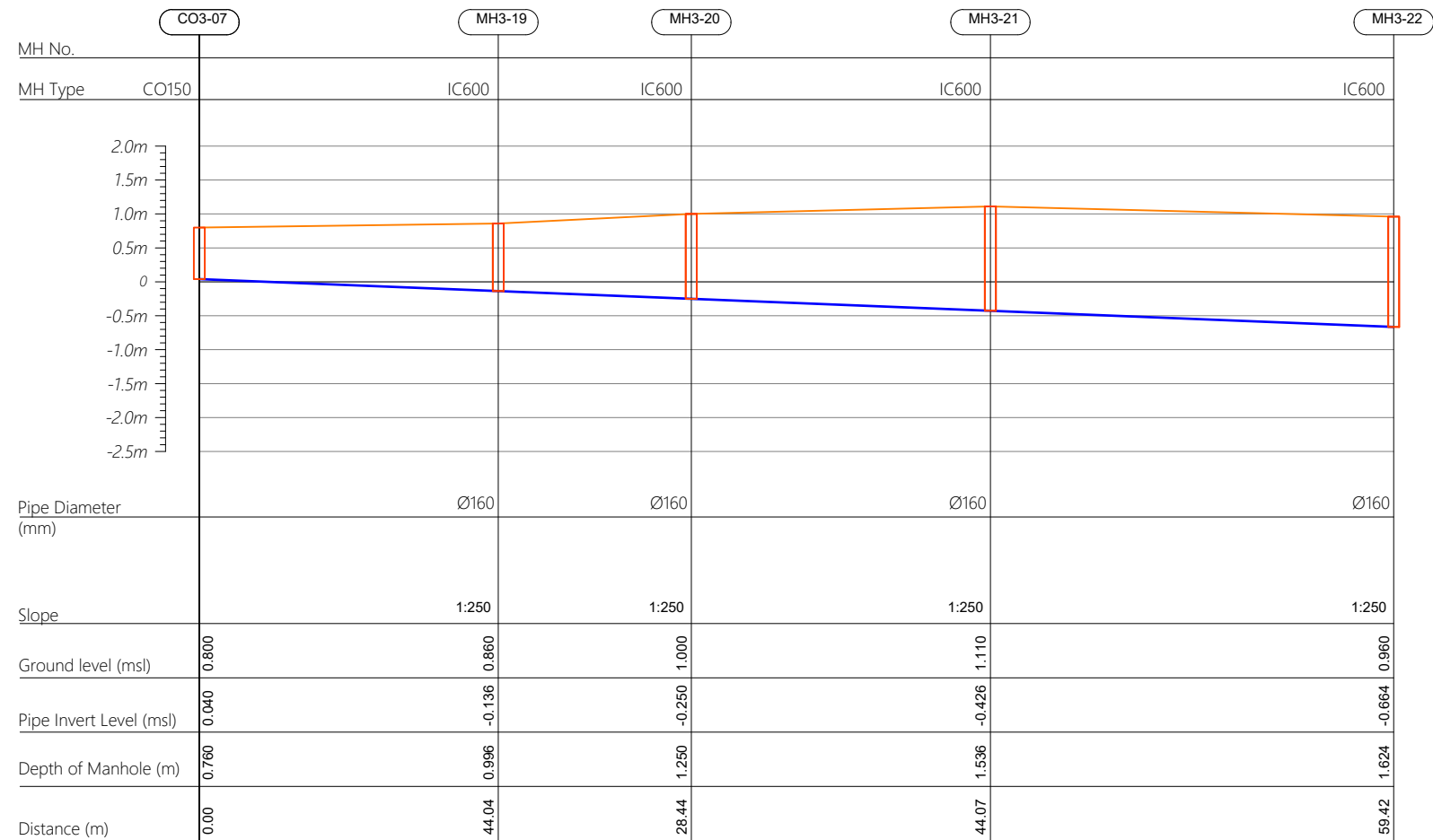
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Profile 09



Profile 07



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Title:
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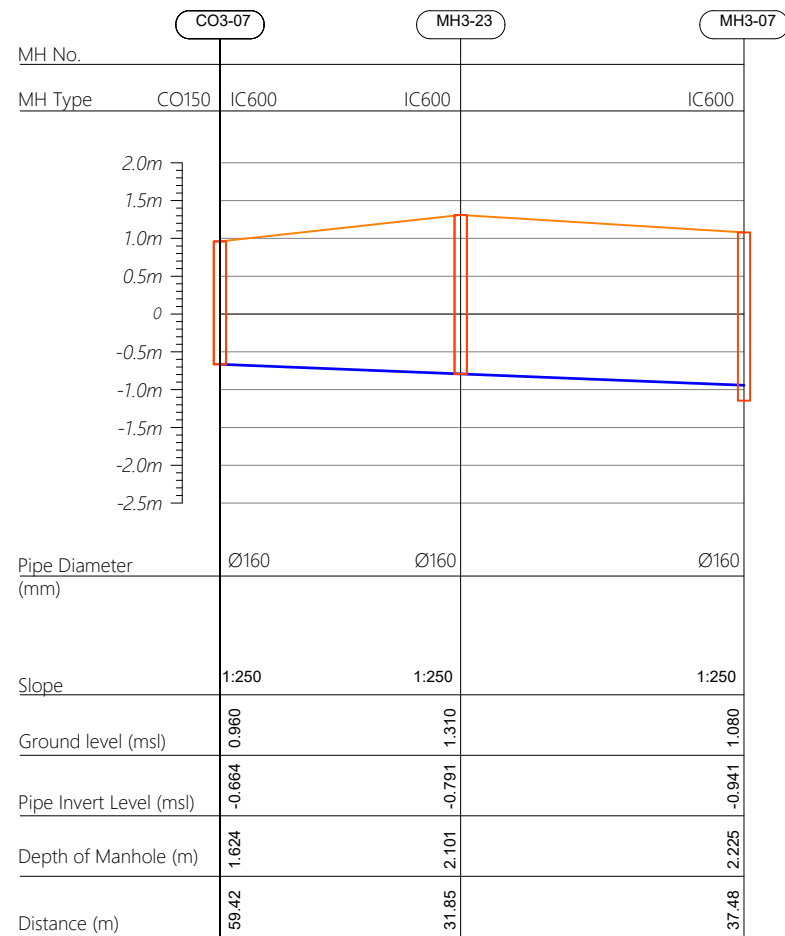
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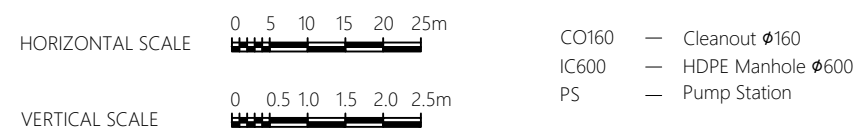
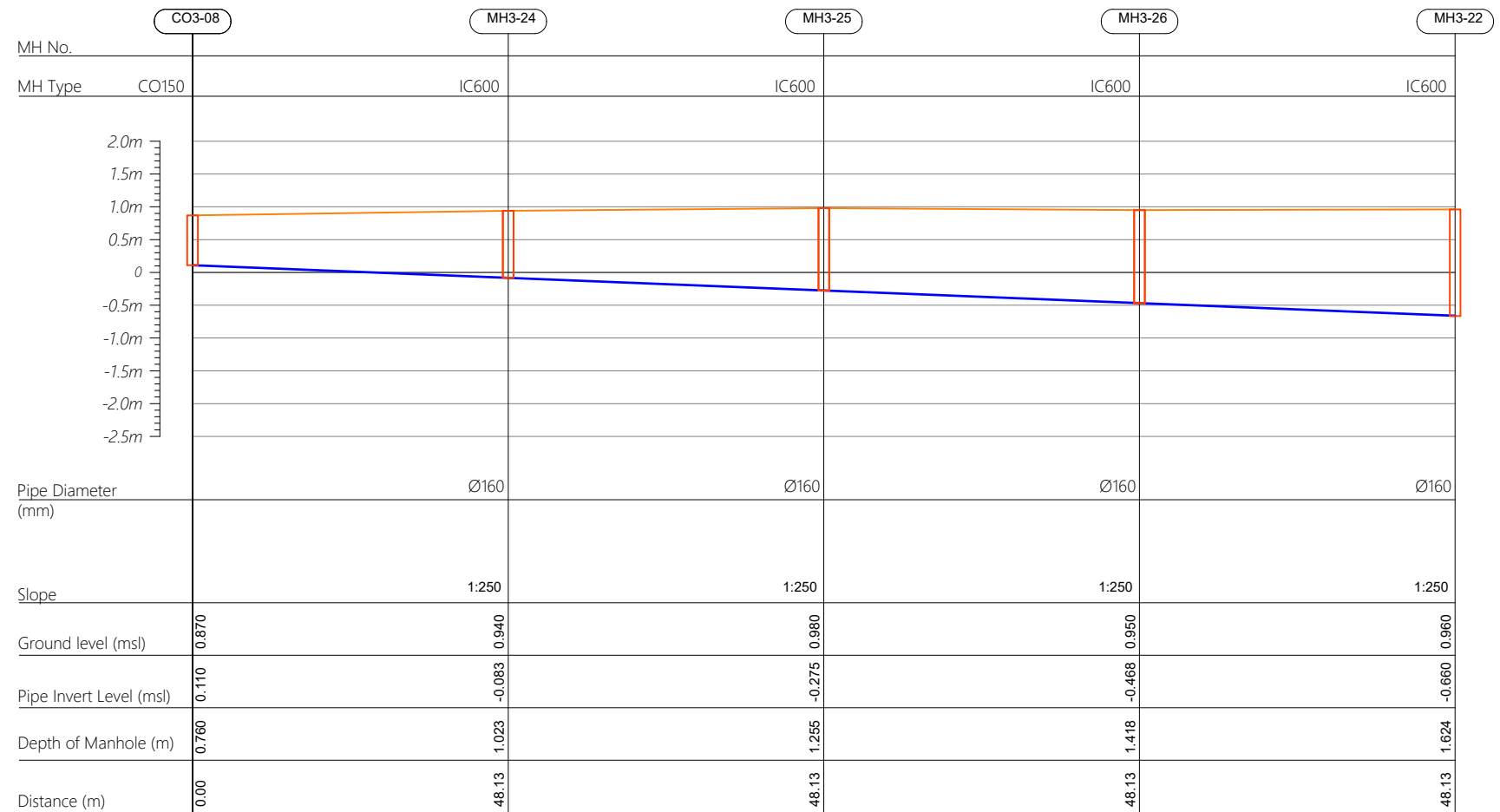
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R-01 PS3-05

Profile 07



Profile 08



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| Rev: <i>R-01</i> | Page: <i>PS3-06</i> |
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