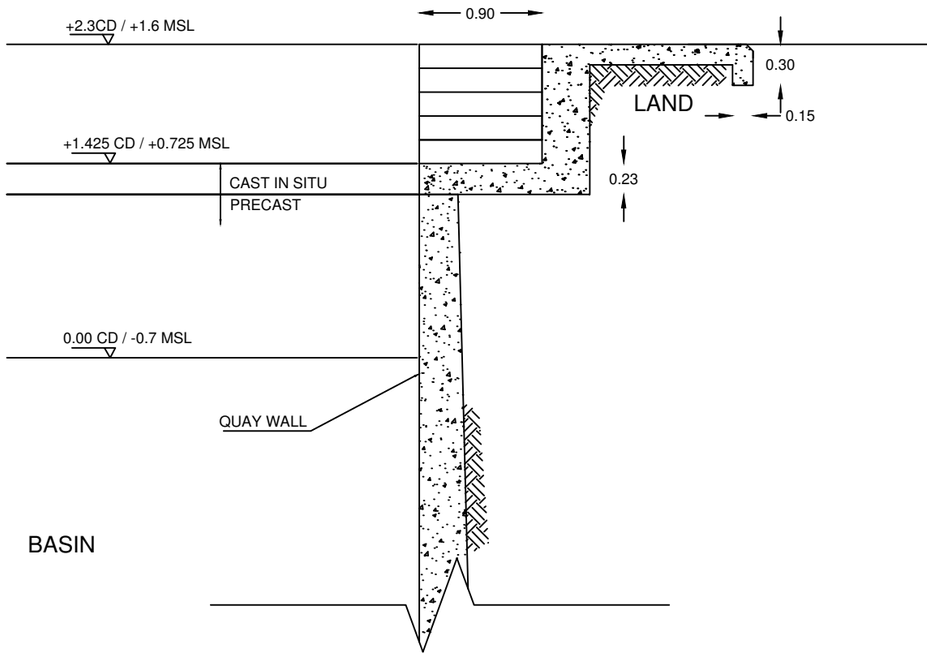
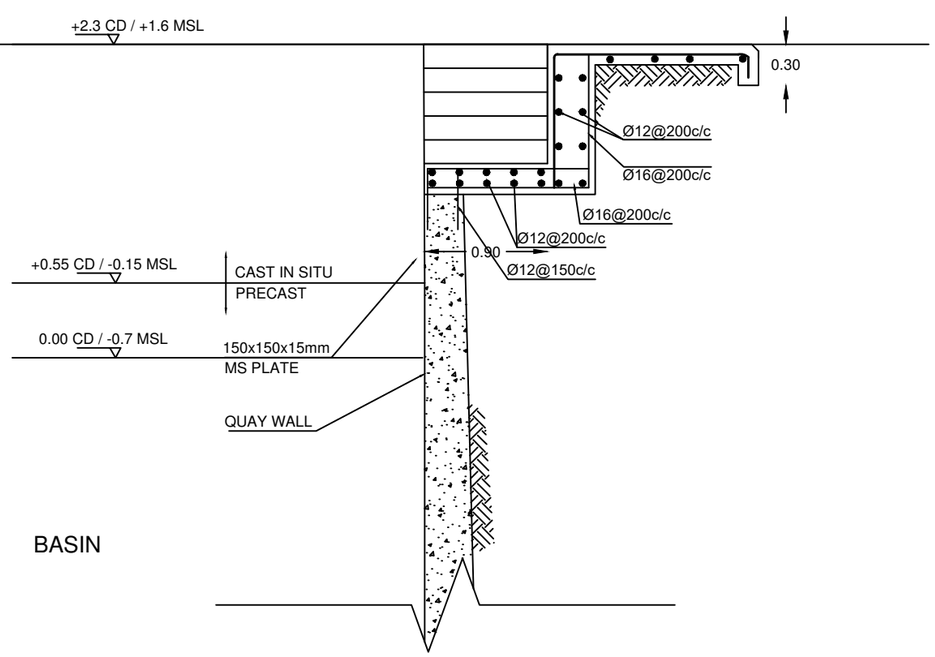


SECTION C-C (REFER PLATE 7)



RC DETAILS OF SECTION C-C

Notes:-

1. All dimensions are in meters.
2. This Plate should be read along with Plate 2 AND 7.
3. Net safe bearing capacity of soil = 100 kN/m^2 at the founding level.
4. N value at founding level is 12.
5. Grade of steel shall be of B500A conforming to BS 4449.
6. Grade of concrete shall be C40 conforming to BS 5328 PART 1 -1997.
7. Lap and development length for C 40 shall be 40 times the diameter of bar.
8. Type of cement shall be of Port Land Cement confirming to BS 12
9. Water from drain pipe is drained into sea using PVC pipe as shown in cross section.

CD - Chart Datum
MSL - Mean Sea Level

Tide Details:-

1. Highest Astronomical Tide	+1.25 MSL	+0.55 CD
2. Mean High High water level	+1.00 MSL	+0.30 CD
3. Mean Sea Level	+0.73 MSL	+0.00 CD
4. Mean Low Low Water	+0.30 MSL	-0.40 CD
5. Lowest Astronomical Tide	+0.00 MSL	-0.70 CD

ORIGINAL SIZE:A3

SCALE 1:45

CLIENT: MINISTRY OF HOUSING AND INFRASTRUCTURE, MALDIVES

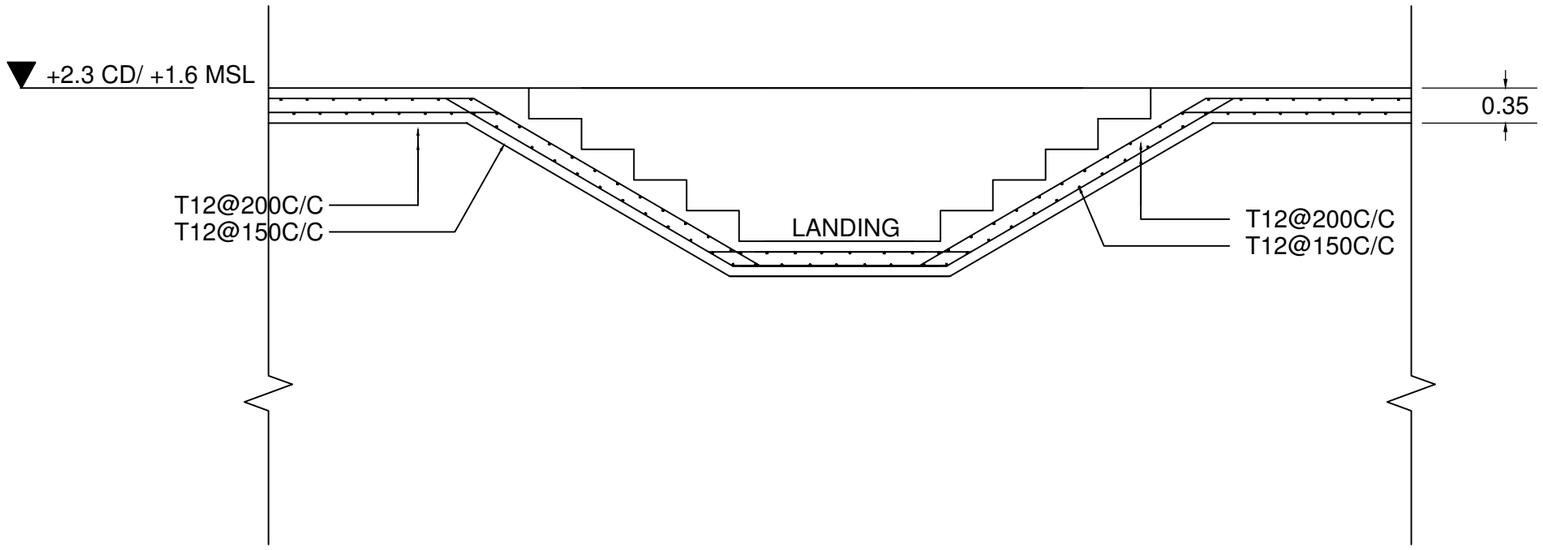
CONSULTANTS: WAPCOS LIMITED, INDIA

DEPARTMENT OF OCEAN ENGINEERING IIT MADRAS, INDIA.

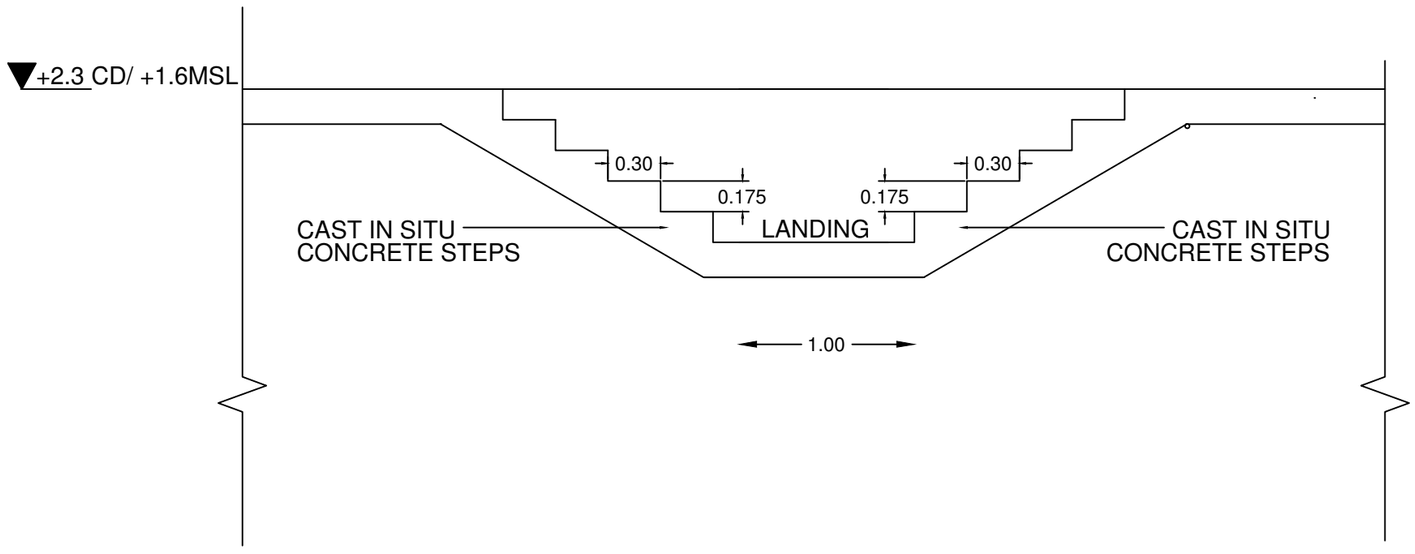
PROJECT:
KULHUDHUFFUSHI HARBOUR EXPANSION PROJECT

PLATE 10:

CROSS SECTION OF QUAY WALL AT STAIRCASE POSITION.



STAIRCASE REINFORCEMENT DETAILS



CD - Chart Datum
MSL - Mean Sea Level

Notes:-
1. All dimensions are in meters.
2. This Plate should be read along with Plate 2.
3. The Quarry stones should be used.
4. The density of quarry stones should be 2.65 t/m^3.
5. Porosity should not be more than 30%.
6. Bed preparation should be taken care at site.
7. Armour units are placed randomly.

Tide Details:-

1. Highest Astronomical Tide	+1.25 MSL	+0.55 CD
2. Mean High Water Level	+1.00 MSL	+0.30 CD
3. Mean Sea Level	+0.73 MSL	+0.00 CD
4. Mean Low Water	+0.30 MSL	-0.40 CD
5. Lowest Astronomical Tide	+0.00 MSL	-0.70 CD

ORIGINAL SIZE:A3

SCALE 1:35

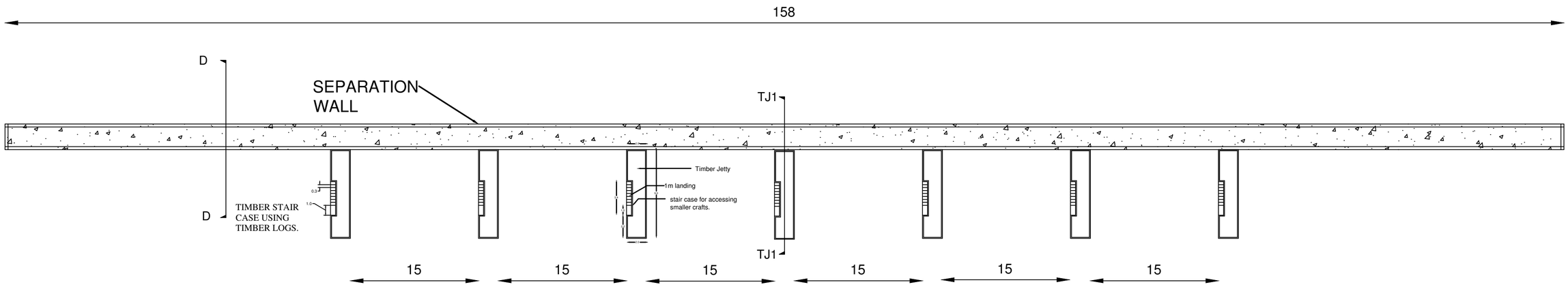
CLIENT: MINISTRY OF HOUSING AND INFRASTRUCTURE, MALDIVES

CONSULTANTS: WAPCOS LIMITED, INDIA

DEPARTMENT OF OCEAN ENGINEERING
IIT MADRAS, INDIA.

PROJECT:
KULHUDHUFFUSHI HARBOUR EXPANSION PROJECT

PLATE 11:
DETAILS OF STAIR CASE IN QUAY WALL



PLAN VIEW OF SEPARATION WALL WITH TIMBER JETTY

Notes:-

1. All dimensions are in meters.
2. This Plate should be read along with Plate 2.
3. Net safe bearing capacity of soil = 100 kN/m^2 at the founding level.
4. N value at founding level is 12.
5. Grade of steel shall be of B500A conforming to BS 4449.
6. Grade of concrete shall be C40 conforming to BS 5328 PART 1 -1997.
7. Lap and development length for C40 shall be 40 times the diameter of bar.
8. Type of cement shall be of Port Land Cement confirming to BS 12

CD - Chart Datum
MSL - Mean Sea Level

Tide Details:-

1. Highest Astronomical Tide	+1.25 MSL	+0.55 CD
2. Mean High High water level	+1.00 MSL	+0.30 CD
3. Mean Sea Level	+0.73 MSL	+0.00 CD
4. Mean Low Low Water	+0.30 MSL	-0.40 CD
5. Lowest Astronomical Tide	+0.00 MSL	-0.70CD

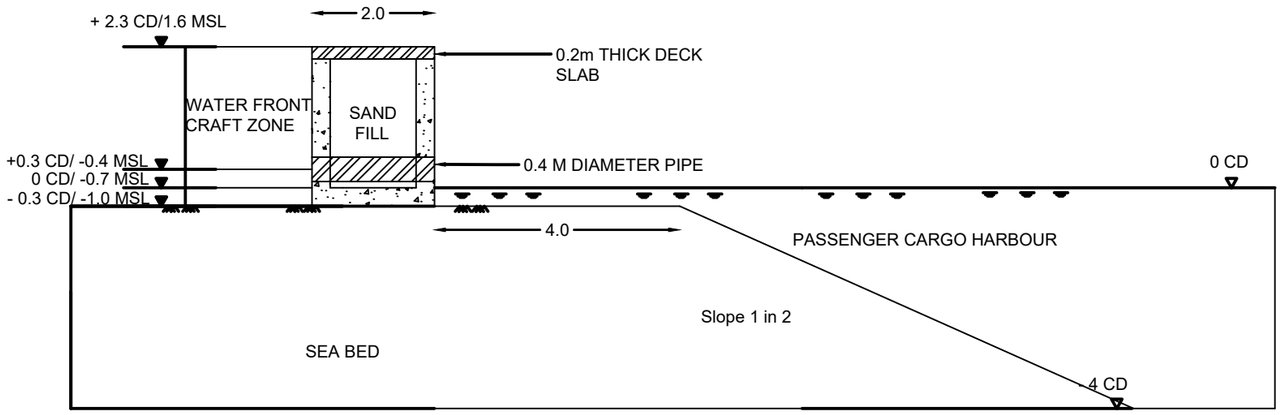
ORIGINAL SIZE:A2
SCALE 1:300

CLIENT: MINISTRY OF HOUSING AND INFRASTRUCTURE, MALDIVES

CONSULTANTS: WAPCOS LIMITED, INDIA
DEPARTMENT OF OCEAN ENGINEERING IIT MADRAS, INDIA.

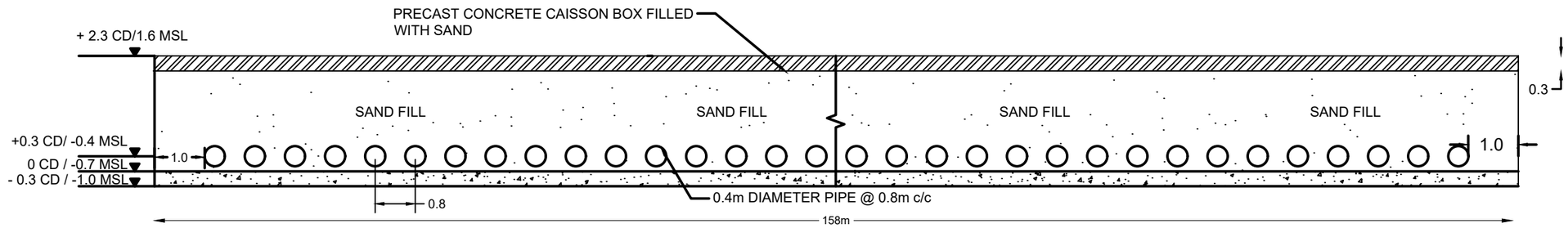
PROJECT: KULHUDHUFFUSHI HARBOUR EXPANSION PROJECT

PLATE 12: PLAN VIEW OF SEPARATION WALL AND TIMBER JETTY



CROSS SECTION OF HARBOUR SEPERATION WALL S2-S2

PRECAST CONCRETE CAISSON BOX FILLED WITH SAND.



LONGITUDINAL SECTION OF HARBOUR SEPERATION WALL S1 - S1

PRECAST CONCRETE CAISSON BOX FILLED WITH SAND.

Notes:-

1. **All dimensions are in meters.**
2. **This Plate should be read along with Plate 2.**
3. **Net safe bearing capacity of soil = 100 kN/m^2 at the founding level.**
4. **N value at founding level is 32.**
5. **Grade of concrete shall be C40 conforming to BS 5328 PART 1-1997.**
6. **Blocks should be made of C40 concrete.**
7. **Blocks are connected by cement mortar.**
8. **Type of cement shall be of Portland Cement confirming to BS12.**
9. **Minimum cement content is 320 - 330kg/m^{3}conforming to BS 5328:1997.**
10. **400mm precast concrete pipe should be used.**
11. **Proper maintenance should be carried out to prevent clogging.**

CD - Chart Datum
MSL - Mean Sea Level

Tide Details:-

1. Highest Astronomical Tide	**+1.25 MSL**	**+0.55 CD**
2. Mean High High water level	**+1.00 MSL**	**+0.30 CD**
3. Mean Sea Level	**+0.73 MSL**	**+0.00 CD**
4. Mean Low Low Water	**+0.30 MSL**	**-0.40 CD**
5. Lowest Astronomical Tide	**+0.00 MSL**	**-0.70 CD**

ORIGINAL SIZE:A3

SCALE: 1:100

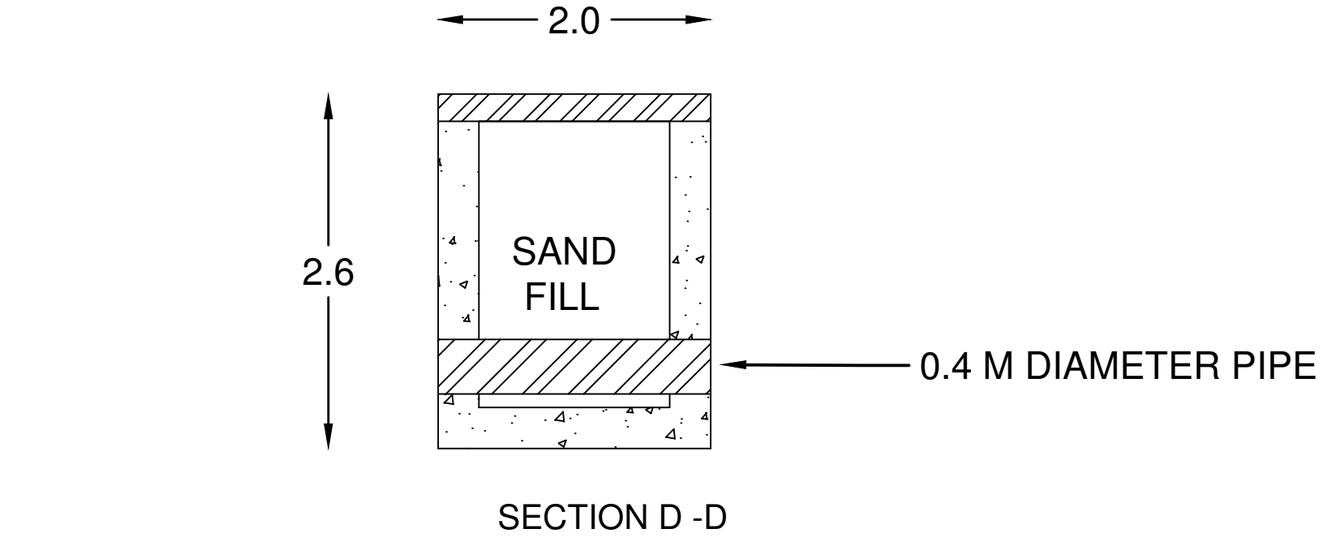
CLIENT: MINISTRY OF HOUSING AND INFRASTRUCTURE, MALDIVES

CONSULTANTS: WAPCOS LIMITED, INDIA

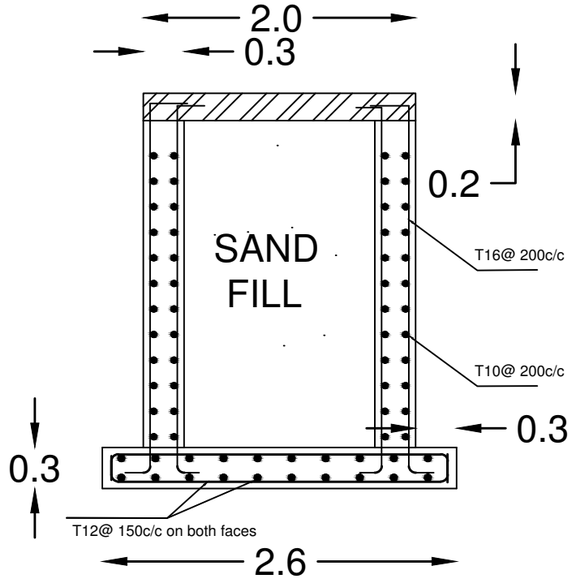
DEPARTMENT OF OCEAN ENGINEERING IIT MADRAS, INDIA.

PROJECT: KULHUDHUFFUSHI HARBOUR EXPANSION PROJECT

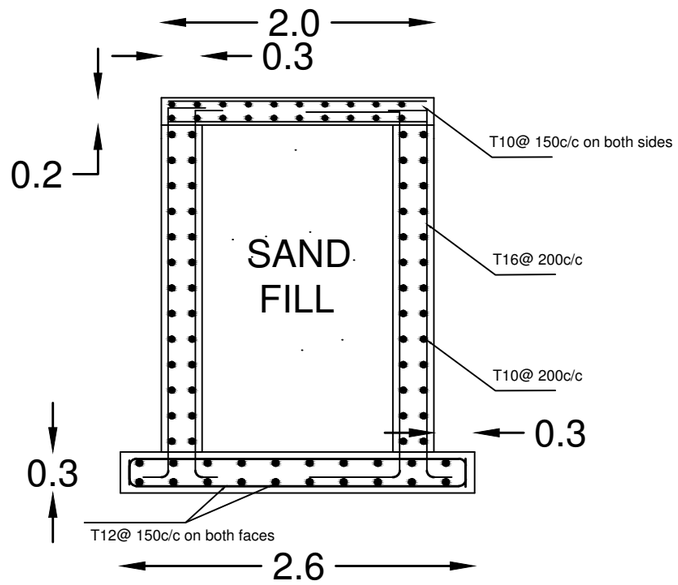
PLATE 13: SEPARATION WALL



SECTION D -D



PCC SLAB



REINFORCED SLAB

RC DETAILS OF PRECAST CONCRETE CAISSON BOX FILLED WITH SAND.

Notes:-

1. All dimensions are in meters.
2. This Plate should be read along with Plate 2.
3. Net safe bearing capacity of soil = 100 kN/m^2 at the founding level.
4. N value at founding level is 32.
5. Grade of concrete shall be C40 conforming to BS 5328 PART 1-1997.
6. Blocks should be made of C40 concrete.
7. Blocks are connected by cement mortar.
8. Type of cement shall be of Portland Cement confirming to BS12.
9. Minimum cement content is 320 - 330kg/m^3 conforming to BS 5328:1997.
10. 400mm precast concrete pipe should be used.
11. Proper maintenance should be carried out to prevent clogging.

CD - Chart Datum
MSL - Mean Sea Level

Tide Details:-

1. Highest Astronomical Tide	+1.25 MSL	+0.55 CD
2. Mean High High water level	+1.00 MSL	+0.30 CD
3. Mean Sea Level	+0.73 MSL	+0.00 CD
4. Mean Low Low Water	+0.30 MSL	-0.40 CD
5. Lowest Astronomical Tide	+0.00 MSL	-0.70 CD

ORIGINAL SIZE:A3

SCALE 1:45

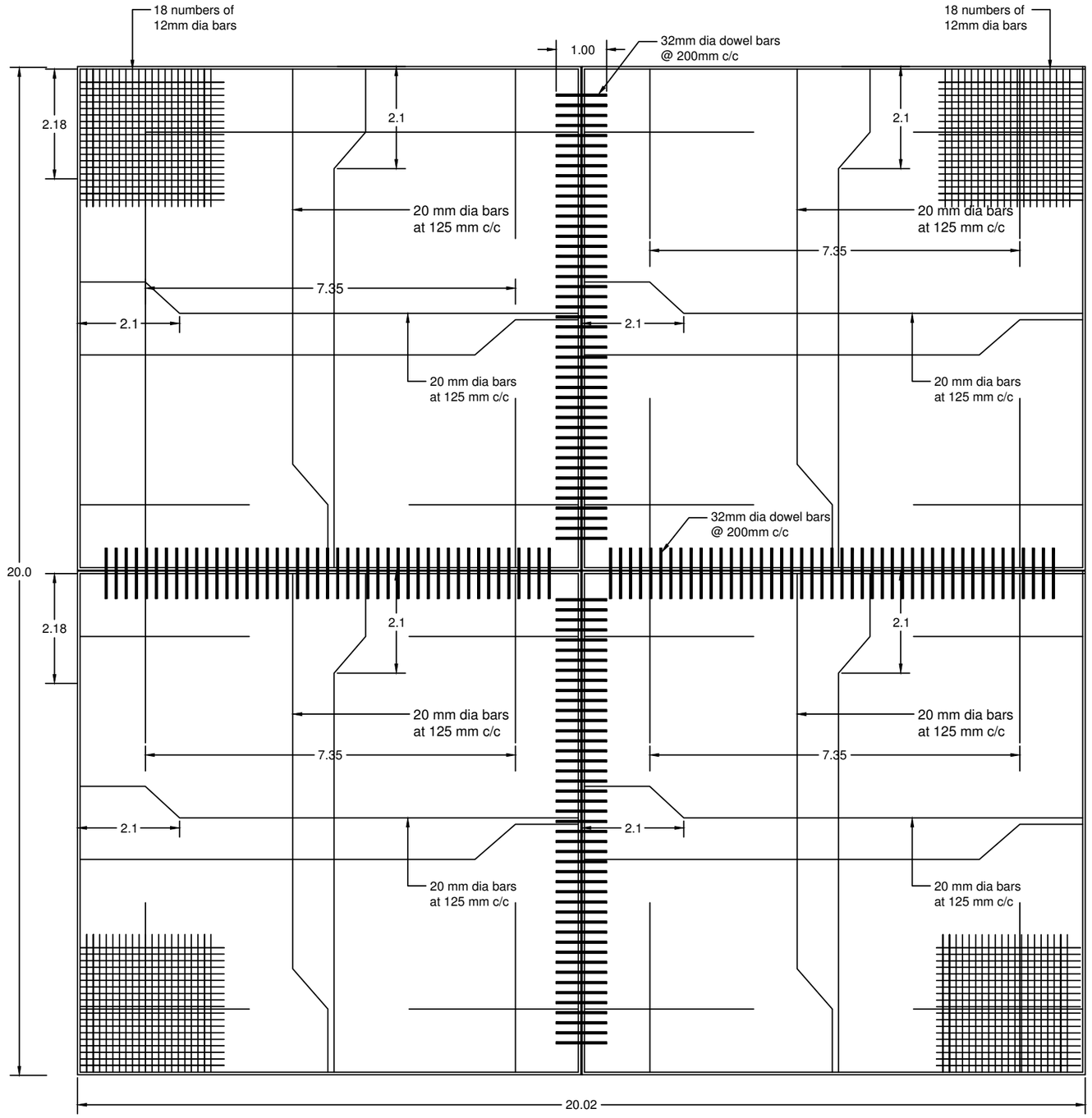
CLIENT: MINISTRY OF HOUSING AND INFRASTRUCTURE, MALDIVES

CONSULTANTS: WAPCOS LIMITED, INDIA

DEPARTMENT OF OCEAN ENGINEERING
IIT MADRAS, INDIA.

PROJECT:
KULHUDHUFFUSHI HARBOUR EXPANSION PROJECT

PLATE 14:
SECTIONAL DETAILS OF SEPARATION WALL



REINFORCEMENT DETAILING OF RAMP FOR LOADING CARGO (TWO WAY SLAB FOR 20m X 20m PLATFORM)

Notes:-

1. All dimensions are in meters.
2. This Plate should be read along with Plate 2.
3. Net safe bearing capacity of soil = 100 kN/m^2 at the founding level.
4. N value at founding level is 32.
5. Grade of concrete shall be C 40 conforming to BS 5328 PART 1-1997.
6. Type of cement shall be of Portland Cement confirming to BS12.
7. Minimum cement content is 320 - 330kg/m^3 conforming to BS 5328:1997
8. Grade of steel shall be of B500A conforming to BS 4449.
9. The depth of the slab is 0.3m.

CD - Chart Datum
MSL - Mean Sea Level

Tide Details:-

1. Highest Astronomical Tide	+1.25 MSL	+0.55 CD
2. Mean High High water level	+1.00 MSL	+0.30 CD
3. Mean Sea Level	+0.73 MSL	+0.00 CD
4. Mean Low Low Water	+0.30 MSL	-0.40 CD
5. Lowest Astronomical Tide	+0.00 MSL	-0.70 CD

ORIGINAL SIZE:A3

SCALE 1:100

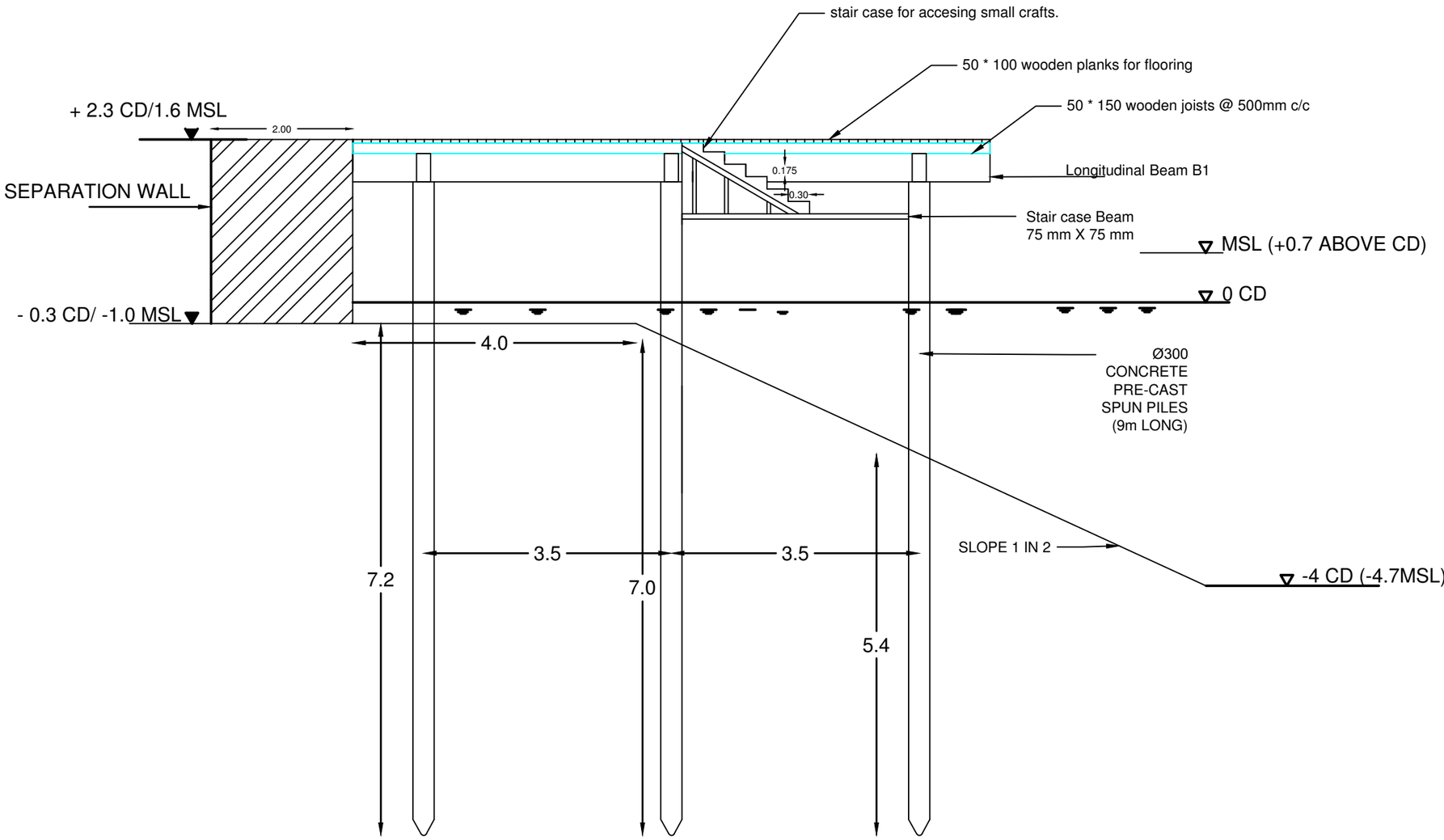
CLIENT: MINISTRY OF HOUSING AND INFRASTRUCTURE, MALDIVES

CONSULTANTS: WAPCOS LIMITED, INDIA

DEPARTMENT OF OCEAN ENGINEERING
IIT MADRAS, INDIA.

PROJECT:
KULHUDHUFFUSHI HARBOUR EXPANSION PROJECT

PLATE 15:
RC DETAILING OF RAMP



CD - Chart Datum
MSL - Mean Sea Level

Notes:-

1. All dimensions are in meters.
2. This Plate should be read along with Plate 2.
3. Dredging should not be made much closer to pile location.
4. Founding level of pile must be 9m.
5. 7 number of timber jetty is placed at 15m center to center.
6. Staircase is made of timber planks with 7 steps.
7. Tread and rise are 0.3m and 0.175m respectively.
8. Precast spun piles of 300mm dia and 9m length are used
9. Stair case beams are made of timber 75mm x 75mm
10. Longitudinal and cross beams are made of concrete 250mm x 450mm @500mm c/c.
11. Southern Pine type of wood is preferred.
12. Piles are C40 pre-stressed concrete spun type.

Tide Details:-

1. Highest Astronomical Tide	+1.25 MSL	+0.55 CD
2. Mean High Water Level	+1.00 MSL	+0.30 CD
3. Mean Sea Level	+0.73 MSL	+0.00 CD
4. Mean Low Water	+0.30 MSL	-0.40 CD
5. Lowest Astronomical Tide	+0.00 MSL	-0.70 CD

ORIGINAL SIZE:A3

SCALE 1:70

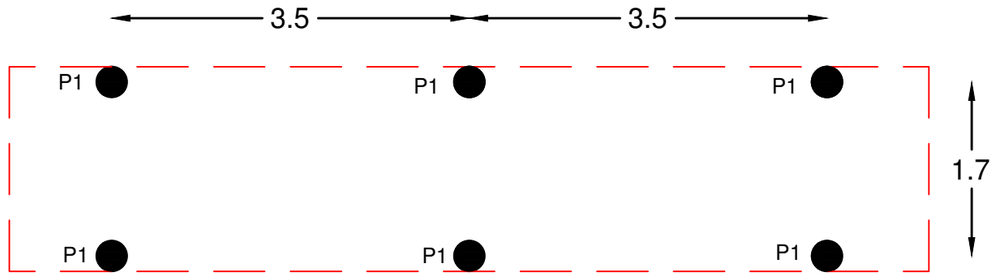
CLIENT: MINISTRY OF HOUSING AND INFRASTRUCTURE, MALDIVES

CONSULTANTS: WAPCOS LIMITED, INDIA

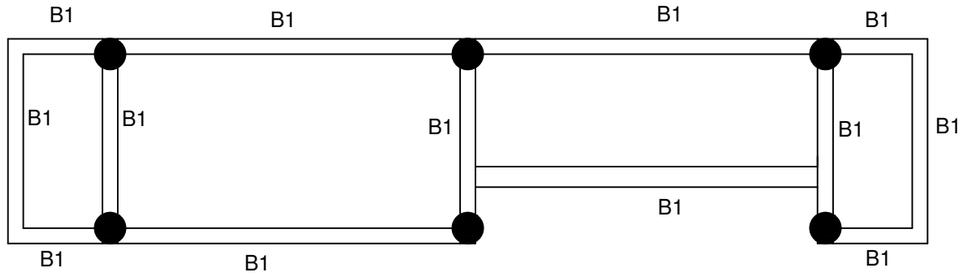
DEPARTMENT OF OCEAN ENGINEERING
IIT MADRAS, INDIA.

PROJECT:
KULHUDHUFFUSHI HARBOUR EXPANSION PROJECT

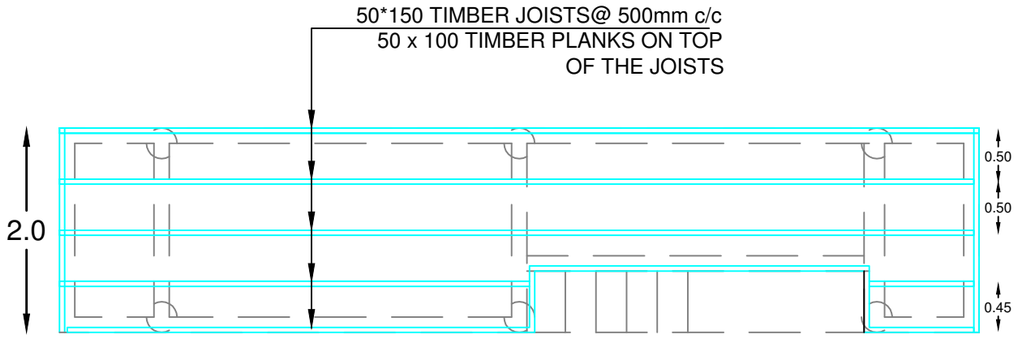
PLATE 16:
LONGITUDINAL SECTION OF TIMBER JETTY



FOUNDATION PLAN



BEAM PLAN



FLOOR STRUCTURE

CD - Chart Datum
MSL - Mean Sea Level

Notes:-

1. All dimensions are in meters.
2. This Plate should be read along with Plate 2.
3. Dredging should not be made much closer to pile location.
4. Founding level of pile must be 9m.
5. 7 number of timber jetty is placed at 15m center to center.
6. Staircase is made of timber planks with 7 steps.
7. Tread and rise are 0.3m and 0.175m respectively.
8. Precast spun piles of 300mm dia and 9m length are used
9. Stair case beams are made of timber 75mm x 75mm
10. Longitudinal and cross beams are made of concrete 250mm x 450mm @500mm c/c.

Tide Details:-

1. Highest Astronomical Tide	+1.25 MSL	+0.55 CD
2. Mean High Water Level	+1.00 MSL	+0.30 CD
3. Mean Sea Level	+0.73 MSL	+0.00 CD
4. Mean Low Water	+0.30 MSL	-0.40 CD
5. Lowest Astronomical Tide	+0.00 MSL	-0.70 CD

ORIGINAL SIZE:A3

SCALE 1:60

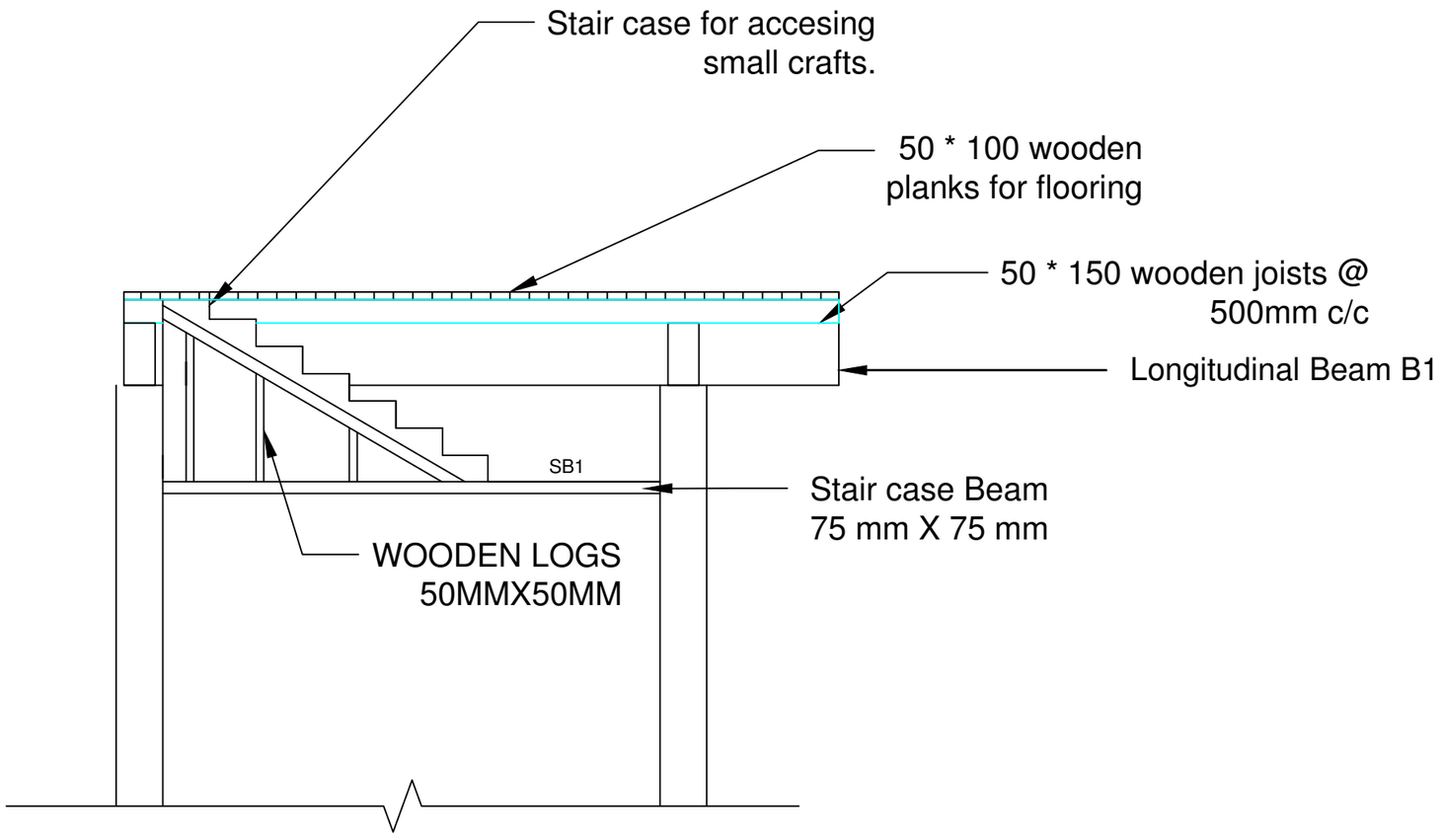
CLIENT: MINISTRY OF HOUSING AND INFRASTRUCTURE, MALDIVES

CONSULTANTS: WAPCOS LIMITED, INDIA

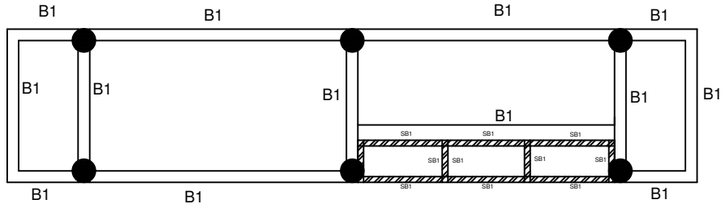
DEPARTMENT OF OCEAN ENGINEERING
IIT MADRAS, INDIA.

PROJECT:
KULHUDHUFFUSHI HARBOUR EXPANSION PROJECT

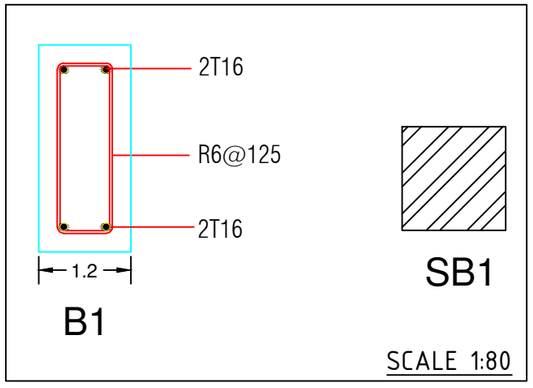
PLATE 17:
BEAM FLOOR AND FOUNDATION PLAN
OF TIMBER JETTY



STAIR CASE DETAILS
SCALE: NTS



STAIR CASE BEAM PLAN
SCALE 1:80



SCALE 1:80

CD - Chart Datum
MSL - Mean Sea Level

Notes:-

1. All dimensions are in meters.
2. This Plate should be read along with Plate 2.
3. Dredging should not be made much closer to pile location.
4. Founding level of pile must be 9m.
5. 7 number of timber jetty is placed at 15m center to center.
6. Staircase is made of timber planks with 7 steps.
7. Tread and rise are 0.3m and 0.175m respectively.
8. Precast spun piles of 300mm dia and 9m length are used
9. Stair case beams are made of timber 75mm x 75mm
10. Longitudinal and cross beams are made of concrete 250mm x 450mm @500mm c/c.

Tide Details:-

1. Highest Astronomical Tide	+1.25 MSL	+0.55 CD
2. Mean High Water Level	+1.00 MSL	+0.30 CD
3. Mean Sea Level	+0.73 MSL	+0.00 CD
4. Mean Low Water	+0.30 MSL	-0.40 CD
5. Lowest Astronomical Tide	+0.00 MSL	-0.70 CD

ORIGINAL SIZE:A3

SCALE 1:80

CLIENT: MINISTRY OF HOUSING AND INFRASTRUCTURE, MALDIVES

CONSULTANTS: WAPCOS LIMITED, INDIA

DEPARTMENT OF OCEAN ENGINEERING
IIT MADRAS, INDIA.

PROJECT:
KULHUDHUFFUSHI HARBOUR EXPANSION PROJECT

PLATE 18:
STAIR CASE DETAILS OF TIMBER JETTY