# SPREP DRAINAGE WORK

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## Structural Notes

**Concrete:**
1. All workmanship and materials shall be in accordance with AS 4600 and AS 3600, and the concrete specification.
2. Concrete quality:

<table>
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<th>ELEMENT</th>
<th>slump</th>
<th>Max size agg</th>
<th>Concrete Grade (MPa)</th>
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<tr>
<td>all concretes</td>
<td>80</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>box drain</td>
<td>80</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>spoon drain</td>
<td>80</td>
<td>20</td>
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3. Construction joints where not shown shall be located at the approval of the contract manager.
4. The finished concrete shall be a dense homogenous mass, completely filling the forms and embedding the reinforcement, and free of voids, pockets, or cracks. All concrete shall be compacted with mechanical vibrators.
5. Curing of all concrete shall be achieved by keeping surfaces continuously wet for a period of 3 days, and protection of loss of moisture for a total of 7 days, followed by a gradual drying out. Approved curing compounds may be used where no floor finishes are proposed. Polyethylene sheeting or wet sheeting may be used if subjected to wind and traffic.
6. The contract manager shall be given a minimum of 24 hours notice for reinforcement inspection and concrete shall not be delivered until final approval is obtained.
7. Conduits, pipes, etc. shall only be located in the middle one third of slab depth and spaced at not less than 300mm.
8. Reinforcement symbols:
   - (d) (diameter)
   - (B) (bar grade and type)
   - (N) (nominal bar size in mm)
9. The figure following the fabric symbol is the reference number for fabric to AS 1397.
10. Reinforcement is represented diagrammatically and not necessarily in true projection.
11. Spaces in reinforcement shall be made in position shown or otherwise approved by the contractor.
12. Welding of reinforcement shall not be permitted unless shown on the structural drawings or approved by the contract manager.
13. Joggles to bars shall be 1 bar diameter over a length of 12 bar diameters unless noted otherwise.
14. Fabric shall be lapped 2 transverse wires plus 6mm.
15. Concrete below ground in walls, beams, or foundations shall be placed into properly constructed forms, if approved by the contractor. Concrete may be placed against an earth face, but the concrete dimensions shown on the drawings shall be increased by 20mm additional cover to the reinforcement face against the earth face.
16. A bond breaking material shall be placed between reinforcing bars at the joint. Reinforcement shall not be continuous through the joint.
17. At penetrations in slabs, reinforcement detail is shown, but it shall be given by the designer.
18. Lap lengths for starter bars is to be 800mm unless otherwise noted.

**Structural Steel:**
1. All structural steel shall be mild steel grade 250 to AS 1163, A36 and AS 3679 unless noted otherwise on the drawings.
2. Steel drawbars shall be submitted to the contract administrator for approval before fabrication commences.
3. Castings, connections, holes, lugs, flanges and any other miscellaneous steelwork shall be provided as required by the architect or other consultants or drawings or specifications.
4. All steelwork shall be sand blasted to Class 2.5 and shop primed with one coat of Inorganic zinc silicate in accordance with specifications and field coats as specified by the contract administrator.
5. Where steelwork is permanently enclosed in ceiling space, steelwork can be prepared and shop primed with one coat of zinc silicate primer to AS 2862.
6. Where noted on details, exposed steelwork is to be coated with a tarr epoxy paint over the Inorganic zinc silicate primer.
7. Roof sheeting is to be custom 0.6mm CRIB with rust proofed with cycloone wipers to manufacturer's specifications. Flashings and cappings shall be 0.6mm CRIB, fastened at 600mm maximum.

**General:**
1. These drawings shall be read in conjunction with all architectural and other consultant's drawings and specifications, and with such other written instructions as may be issued during the course of the contract. Any discrepancies shall be referred to the contract manager before proceeding with the work.
2. All materials and workmanship shall be in accordance with the relevant and current AS standards and with the by-laws and ordinances of the relevant building authorities except where varied by the project specifications.
3. Setting out dimensions and notes of structural members shall not be obtained by using the structural drawings. Any setting out dimensions shown in the structural drawings shall be checked by the contractor before construction commences. Any discrepancies in the documents must be resolved before ordering or placing any materials.
4. During construction, the structure shall be maintained in a safe and stable condition and no work shall be commenced, and temporary bracing provided by the contractor unless required to keep the works and excavations safe at all times.
5. Unless noted otherwise, all levels are in metres and all dimensions are in millimetres.
6. Wind loads are in accordance with AS 1170.2 as follows:
   - Basic wind velocity (Vw) = 90kmh
   - Terrain category = 2
   - Region = C

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**Drawings:**
- **Engineering & Project Managers:**
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  - **Email Add:** pale.sucon@gmail.com
  - **MobNo:** 751 9517

**Drawings Title:**
- **SREP DRAINAGE WORKS**

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**Design Data:**
- **Title:** SREP DRAINAGE WORKS
- **Location:** Apia, Samoa
- **Drawn by:** [Name]
- **Checked by:** [Name]
- **Date:** [Date]
- **Drawing Number:** S - 01
CON. U-DRAIN DETAIL

1. PLACE 100mm TOPSOIL ACROSS SWALE LENGTH AND CHANNEL WIDTH.
2. TOP SOIL MUST BE FREE OF CLAY TO ALLOW FREE DRAINING.
3. SOW GRASS DENSELY SOW TO COVER ENTIRE SWALE LENGTH AND WIDTH.
4. FENCE OFF UNTIL GRASS ESTABLISHED, AND WATER REGULARLY EARLY ON TO ESTABLISH DENSE GRASS GROWTH.

SWALE DRAIN

1. PLACE 100mm TOPSOIL ACROSS SWALE LENGTH AND CHANNEL WIDTH.
2. TOP SOIL MUST BE FREE OF CLAY TO ALLOW FREE DRAINING.
3. SOW GRASS DENSELY SOW TO COVER ENTIRE SWALE LENGTH AND WIDTH.
4. FENCE OFF UNTIL GRASS ESTABLISHED, AND WATER REGULARLY EARLY ON TO ESTABLISH DENSE GRASS GROWTH.
NEW LEVEL OF RAMP TO BE 100MM FROM CROWN OF ROAD

FALL FROM NEW LEVEL HEIGHT TO SUIT LENGTH OF RAMP LAYOUT

ENTRANCE

655 MESH WITH 50MM CONCRETE COVER ON 98% COMPACTED FILL

0.3 PIPE

SLOPE TO SUIT ESTABLISHED HEIGHT

450MM LAP

150MM THICK RC RAMP WITH 655 MESH

D12 LAP BAR @ 600 CRS

DPM ON TOP OF 20MM SAND BLINDING

98% MDD, COMPACTED FILL

2-D12 BAR TIE WITH R6 @ 300 CRS

250

110

200

70

SWALE DRAIN

SECTION DETAIL "A"

DETAIL "A"

RAMP SLAB THICKENING

150MM THICK RC RAMP WITH 655 MESH

D12 LAP BAR @ 600 CRS

DPM ON TOP OF 20MM SAND BLINDING

98% MDD, COMPACTED FILL

USE CONCRETE MORTAR TO FILL AND HOLD PIPE IN PLACE

0.30 RC PIPE
SWALE DRAIN TO BE 1500MM WIDE AND 1:3 SLOPE EITHER SIDES

- PLACE 100mm TOPSOIL ACROSS SWALE LENGTH AND CHANNEL WIDTH.
- TOP SOIL MUST BE FREE OF CLAY TO ALLOW FREE DRAINING.
- SOW GRASS DENSELY SOW TO COVER ENTIRE SWALE LENGTH AND WIDTH.
- FENCE OFF UNTIL GRASS ESTABLISHED, AND WATER REGULARLY EARLY ON TO ESTABLISH DENSE GRASS GROWTH.

CALL-OUT PLAN (DET. 07)

CALL-OUT PLAN (DET. 09)

EARTH BUN

CHANNEL GEOMETRY TO CONVEY WIDE RANGE OF FLOWS
CALL-OUT PLAN (DET. 08)

DRAIN CONNECTION AND END WALL DETAIL

CONCRETE BOX DRAIN DETAIL

BOX DRAIN CONNECTION AND END WALL DETAIL

NEW GRATING MECALINEA INSTALL DIRECTLY INTO CONCRETE REBATE TO MATCH EXISTING

D12 LAP BAR DRILLED INTO EXISTING RC WITH EPOXY GROUT @ 300MM CRS

25MPa RC BOX DRAIN

50X50X5MM STEEL ANGLE

D16 BAR @ 50MM O.C WELDED TO 50X50X5MM STEEL ANGLE

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