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1 Introduction

Limit of Contract notes outline construction requirements and sequence of works to the constructor. These notes are to be read in conjunction with the SA Water Sewer Construction Manual.

1.1 Purpose

Provide consultants with standard notes to be included on reticulation network design drawings. These notes need to be ready in conjunction with the SA Water Sewer Construction Manual and included on design drawings in a sequence of works and with notes that are specific to the design drawing.

1.2 Glossary

The following glossary items are used in this document:

Term	Description
SA Water	South Australian Water Corporation
SCM	Sewer Construction Manual

1.3 References

The following table identifies the documents and/or articles that are referenced in this document:

Title/URL	Version	Date
Sewer Construction Manual	current	

2 Work by Constructor

2.1 General Note

2.1.1 Construct the reticulation network as shown

Construct the reticulation network as shown

- Install plunger* in new I.O. at 'A' to isolate it from live sewer and lay away with new sewer.
- Remove plunger* and cap I.O. fitting after testing and before C.P.C. issue.

*Constructor to be authorised by SA Water to undertake this work.

2.2 Link Up Notes

2.2.1 Ob. junction on live sewer

Provide the link up at 'A' (Ob. junction on live sewer).

- Excavate and expose live sewer and install new Ob. junction clamp* at 'A' and construct A-'B', including M.S. at 'B'.
- Install plunger* in M.S. at 'B' to isolate it from live sewer and lay away with new sewer.
- Remove plunger* from M.S. at 'B' after testing and before C.P.C. issue.

*Constructor to be authorised by SA Water to undertake this work.

2.2.2 Existing I.O. with stub

Provide the link-up at 'A' (Existing I.O. with stub).

- Install plunger* in existing stub to isolate it from live sewer.
- Excavate up to existing I.O. end, expose stub, remove cap, connect and lay away with new sewer.
- Remove plunger* after testing and before C.P.C. issue (I.O. riser to be cut down and capped).

*Constructor to be authorised by SA Water to undertake this work.

2.2.3 Existing I.O. end with no stub

Provide the link-up at 'A' (Existing I.O. end with no stub).

- Excavate and expose existing I.O. end assembly.
- Remove existing I.O. end* assembly and install a new I.O. assembly with stub and a plunger to isolate it from live sewer.
- Connect to new stub and lay away with new sewer.
- Remove plunger* after testing and before C.P.C. issue (I.O. riser to be cut down and capped).

*Constructor to be authorised by SA Water to undertake this work.

2.2.4 New I.O. on live sewer

Provide the link-up at 'A' (New I.O. on live sewer).

- Excavate and expose the existing sewer and break in* at 'A'.
- Install* an I.O. fitting at 'A'.
- Install plunger* in new I.O. to isolate it from live sewer and lay away with new sewer.
- Remove plunger* and cap I.O. fitting after testing and before C.P.C. issue.

*Constructor to be authorised by SA Water to undertake this work.

2.2.5 Existing M.S. with branch off riser – no stub

Provide the link-up at 'A' (Existing M.S. with branch off riser – no stub).

- Excavate and expose existing M.S. riser and install new 150mm. dia. stub* in riser at required level.
- Install plunger* in new stub to isolate works from live sewer and lay away with new sewer.
- Remove plunger* after testing and before C.P.C. issue.

*Constructor to be authorised by SA Water to undertake this work.

2.2.6 Existing M.S.J. with stub

Provide the link-up at 'A' (Existing M.S.J. with stub).

- Install plunger* in existing stub of the M.S.J. to isolate works from live sewer.
- Excavate up to existing M.S.J. end, expose stub, remove cap, connect, and lay away with new sewer.
- Remove plunger* after testing and before C.P.C. issue.

*Constructor to be authorised by SA Water to undertake this work.

2.2.7 Existing M.S.J. with stubs (downstream branch)

Provide the link-up at 'A' (Existing M.S.J. with stubs).

- Install plunger* in existing downstream branch of the M.S.J. to isolate works from live sewer.
- Excavate up to existing M.S.J. ends, expose stubs, remove caps, connect, and lay away with new sewer.
- Remove plunger* after testing and before C.P.C. issue.

*Constructor to be authorised by SA Water to undertake this work.

2.2.8 New M.S. over existing I.O. end

Provide the link-up at 'A' (New M.S. over existing I.O. end).

- Excavate, expose and remove existing I.O. riser and end assembly*.
- Install plunger* to isolate proposed M.S. from live sewer.
- Construct new M.S. on existing sewer, and lay away with new sewer.
- Remove plunger* after testing and before C.P.C. issue.

*Constructor to be authorised by SA Water to undertake this work.

2.2.9 New M.S.J. over existing I.O. end

Provide the link-up at 'A' (New M.S.J. over existing I.O. end).

- Excavate, expose and remove existing I.O. riser and end assembly*.
- Install plunger* to isolate proposed M.S.J. from live sewer.
- Construct new M.S.J. on existing sewer, and lay away with new sewer.
- Remove plunger* after testing and before C.P.C. issue.

*Constructor to be authorised by SA Water to undertake this work.

2.2.10 New M.S.T. over existing I.O. end

Provide the link-up at 'A' (New M.S.T. over existing I.O. end).

- Excavate, expose and remove existing I.O. riser and end assembly*.
- Install plunger* to isolate proposed M.S.T. from live sewer.
- Construct new M.S.T. on existing sewer, and lay away with new sewer.
- Remove plunger* after testing and before C.P.C. issue.

*Constructor to be authorised by SA Water to undertake this work.

2.2.11 New M.S. with branch on live sewer

Provide the link-up at 'A' (New M.S. with branch on live sewer).

- Install plunger* in existing M.H. at 'B' to isolate main from live sewer.
- Bypassing or temporary tankering from the M.H. at 'B' may be necessary during the installation of the new M.S. at the developer's expense.
- Excavate and expose live sewer and install new M.S. at 'A' with branch out of riser.
- Install plunger* in branch and lay away with new sewer.
- Remove plunger* from M.H. at 'B' to limit tankering time.
- Remove plunger* from M.S. at 'A' after testing and before C.P.C. issue.

*Constructor to be authorised by SA Water to undertake this work.

2.2.12 New M.S. with branch over existing I.O. on live sewer

Provide the link-up at 'A' (New M.S. with branch over existing I.O. on live sewer).

- Install plunger* in existing M.H. at 'B' to isolate main from live sewer.
- Bypassing or temporary tankering from the MH at 'B' may be necessary during the installation of the new M.S. at the developer's expense.
- Excavate, expose and remove existing I.O. and riser*.
- Install new M.S.* at 'A' with branch out of riser.
- Install plunger* in branch and lay away with new sewer.
- Remove plunger* from M.H. at 'B' to limit tankering time.
- Remove plunger* from M.S. at 'A' after testing and before C.P.C. issue.

*Constructor to be authorised by SA Water to undertake this work.

2.2.13 Existing M.H. with stub

Provide the link-up at 'A' (Existing M.H. with stub).

- Install plunger* in existing stub to isolate it from live sewer.
- Excavate up to existing M.H., expose stub, remove cap, connect, and lay away with new sewer.
- Remove plunger* after testing and before C.P.C. issue.

*Constructor to be authorised by SA Water to undertake this work.

2.2.14 Existing M.H. no stub

Provide the link-up at 'A' (Existing M.H. no stub).

- Excavate up to existing M.H., bore through M.H. wall and benching, install new stub* with plunger to isolate work from live sewer, connect and lay away with new sewer.
- Reform* new channel and benching.
- Remove plunger* after testing and before C.P.C. issue.

*Constructor to be authorised by SA Water to undertake this work.

2.2.15 Existing M.H. with large jump-up

Provide the link-up at 'A' (Existing M.H. with large jump-up).

- Install plungers* in existing branch sewer and rodding pipe to isolate work from live sewer.
- Excavate up to existing stub, connect and lay away with new sewer.
- Remove plungers* after testing and before C.P.C. issue.

*Constructor to be authorised by SA Water to undertake this work.

2.2.16 Existing M.H. with existing large jump up

Provide the link-up at 'A' (Existing M.H. with existing large jump up).

- Install plungers* in existing stubs to isolate work from live sewer.
- Excavate up to existing M.H., remove existing sewer, connect to existing lower branch and lay away with new sewer.
- Remove plunger* from upper rodding branch and seal from within MH with concrete.
- Remove plunger* from lower branch after testing and before C.P.C. issue.

*Constructor to be authorised by SA Water to undertake this work.

2.2.17 New M.H. on live sewer

Provide the link-up at 'A' (New M.H. on live sewer).

- Excavate and expose live sewer and leave it intact.
- Construct new M.H. around existing sewer, provide new channel with branch sewer and benching.
- Install plunger* in branch sewer and lay away with new sewer.
- Break out* existing sewer within M.H. and remove plunger* after testing and before C.P.C. issue.

*Constructor to be authorised by SA Water to undertake this work.

2.2.18 New MH on live sewer and large jump up

Provide the link-up at 'A' (New MH on live sewer and large jump up).

- Excavate and expose live sewer and leave it intact.
- Construct new M.H. around existing sewer, provide new channel with branch sewer and benching, including large jump up and rodding pipe.
- Install plungers* in branch sewer and rodding pipe, connect and lay away with new sewer.
- Break out* existing sewer within M.H. and remove plungers* after testing and before C.P.C. issue.

*Constructor to be authorised by SA Water to undertake this work.

2.2.19 New M.H. on live sewer and large internal jump up

Provide the link-up at 'A' (New M.H. on live sewer and large internal jump up).

- Excavate and expose live sewer and leave it intact.
- Construct new M.H. around existing sewer, including large internal jump up with new channel, branch sewer and benching.
- Install plunger* in branch sewer, connect and lay away with new sewer.
- Break out* existing sewer within M.H. and remove plunger* after testing and before C.P.C. issue.

*Constructor to be authorised by SA Water to undertake this work.

2.2.20 New M.H. on live sewer end

Provide the link-up at 'A' (New M.H. on live sewer end).

- Install plunger* in existing M.H. at 'B' to isolate any gases.
- Excavate and expose live sewer at 'A' and leave it intact.
- Construct new M.H. around existing sewer end, provide new channel with branch sewers and benching.
- Install plungers* in branch sewers (for testing purposes), connect and lay away with new sewers.
- Break out* existing sewer within M.H. at 'A' and remove all plungers* after testing and before C.P.C. issue.

*Constructor to be authorised by SA Water to undertake this work.

2.2.21 New M.H. on live sewer end and large jump up

Provide the link-up at 'A' (New M.H. on live sewer end and large jump up).

- Install plunger* in existing M.H. at 'C' to isolate any gases.
- Excavate and expose live sewer at 'A' and leave it intact.
- Construct new M.H. around existing sewer end, provide new channel with branch sewers and benching, including large jump up.
- Install plungers* in branch sewers (for testing purposes), connect and lay away with new sewers.
- Break out* existing sewer within M.H. at 'A' and remove all plungers* after testing and before C.P.C. issue.

*Constructor to be authorised by SA Water to undertake this work.

2.2.22 New M.H. over existing I.O. end

Provide the link-up at 'A' (New M.H. over existing I.O. end).

- Excavate and expose existing I.O. end assembly.
- Cut down* existing I.O. assembly to just above sewer.
- Install plunger* to isolate proposed M.H. from live sewer.
- Construct new M.H. over the cut-off sewer, form new channel and benching, and lay away with new sewer.
- Break out* existing sewer within M.H. at 'A' and remove plunger* after testing and before C.P.C. issue.

*Constructor to be authorised by SA Water to undertake this work.

2.2.23 Provide the link-up at 'A' (New M.H. over existing M.S.E.).

Provide the link-up at 'A' (New M.H. over existing M.S.E.).

- Excavate and expose existing M.S.E. assembly.
- Cut down* existing M.S.E. assembly to just above sewer*.
- Install plunger* in the remaining riser to isolate proposed M.H. from live sewer.
- Construct new M.H. over the cut-off riser, form new channel and benching, and lay away with new sewer.
- Break out* existing sewer within M.H. at 'A' and remove plunger* after testing and before C.P.C. issue.
- *Constructor to be authorised by SA Water to undertake this work.

2.2.24 Large external jump-up on existing M.H. no stub

Provide the link-up at 'A' (Large external jump-up on existing M.H. no stub).

- Excavate up to existing M.H. and bore through M.H. wall and benching.
- Bore through M.H. wall for rodding pipe.
- Install new stubs with plungers* at both boreholes, construct large external jump-up and lay away with new sewer.
- Remove plungers* after testing and before C.P.C. issue.

*Constructor to be authorised by SA Water to undertake this work.

2.2.25 Large external jump-up on existing M.H. with one stub

Provide the link-up at 'A' (Large external jump-up on existing M.H. with one stub).

- Install plunger* in existing stub to isolate work from live sewer.
- Excavate up to existing M.H., bore through M.H. wall for rodding pipe, install stub with plunger*, construct large external jump-up and lay away with new sewer.
- Remove plungers* after testing and before C.P.C. issue.

*Constructor to be authorised by SA Water to undertake this work.

2.2.26 Large external jump-up on existing M.H. with existing stubs

- **Provide the link-up at 'A' (Large external jump-up on existing M.H. with existing stubs).**
- Install plungers* in existing stub and rodding stub to isolate work from live sewer.
- Excavate up to existing stubs, construct large jump-up and lay away with new sewer.
- Remove plungers* after testing and before C.P.C. issue.

*Constructor to be authorised by SA Water to undertake this work.

2.2.27 Large internal jump-up on existing M.H. no stub

Provide the link-up at 'A' (Large internal jump-up on existing M.H. no stub).

- Excavate up to existing M.H. and bore through M.H. wall.
- Install new stub* and construct large internal jump up.
- Install plunger* at inspection opening at top of internal jump up to isolate new work from live sewer, connect to new stub and lay away with new sewer.
- Reform* new channel and benching.
- Remove plunger* after testing and before C.P.C. issue.

*Constructor to be authorised by SA Water to undertake this work.

2.2.28 Existing M.H. on trunk sewer** no stub

Provide the link-up at 'A' (Existing M.H. on trunk sewer** no stub).

- Excavate up to existing M.H., bore through M.H. wall and benching, install new stub with plunger** to isolate new work from live sewer and lay away with new sewer, including the water seal (refer S.C.M. 4005-20007-01).
- Reform** new channel and benching.
- Remove plunger** after testing and before C.P.C. issue.
- SA Water's Representative requires five working days notice in advance prior to the link-up to the trunk sewer being undertaken

NOTE:- W.H.S. requirements to cope with sewer gases in confined spaces shall be observed while making the connection to the trunk sewer.

** Constructor shall have appropriate authorization and accreditation by SA Water to undertake the link-up to the trunk main. Testing of the link-up sewer is to be performed under the direct supervision of the SA Water Representative.

2.2.29 Existing M.H. on trunk sewer** with stub

Provide the link-up at 'A' (Existing M.H. on trunk sewer** with stub).

- Install plunger** in existing stub to isolate it from live sewer.
- Excavate up to existing M.H., expose stub, remove cap, connect, and lay away with new sewer, including the water seal (refer S.C.M. 4005-20007-01).
- Remove plunger** after testing and before C.P.C. issue.

NOTE:- W.H.S. requirements to cope with sewer gases in confined spaces shall be observed while making the connection to the trunk sewer.

** Constructor to have appropriate authorization by SA Water to undertake the link-up to the trunk main. Testing of the link-up sewer is to be performed under the direct supervision of the SA Water Representative.

2.2.30 New M.H. on trunk sewer

Provide the link-up at 'A' (New M.H. on trunk sewer**) S.C.M. 4005-20007-01

- Excavate and expose live sewer and leave it intact.
- Construct new M.H. around existing sewer, provide new channel with branch sewer and benching.
- Install plunger** in branch sewer and lay away with new sewer, including the water seal (refer S.C.M. 4005-20007-01).
- Break out** existing sewer within M.H. and remove plunger** after testing and before C.P.C. issue.
- SA Water's Representative requires five working days notice in advance prior to the link-up to the trunk sewer being undertaken.

NOTE:- W.H.S. requirements to cope with sewer gases in confined spaces shall be observed while making the connection to the trunk sewer.

** Constructor to have appropriate authorization by SA Water to undertake the link-up to the trunk main. Testing of the link-up sewer is to be performed under the direct supervision of the SA Water Representative.

2.2.31 Riser off trunk sewer

Provide the link-up at 'A' (Riser off trunk sewer**) SCM 4005-20007-01 & K12

- Excavate up to and expose existing Trunk Sewer.
- Bore** through Trunk Sewer (ensure drill core does not fall into sewer).
- Install new stub** and I.O. riser with Ob. and plunger** to isolate from live sewer (I.O. riser not to extend to surface).
- Connect to new Ob. and construct new sewer 'A'-'B' (including water seal and M.H. at 'B').
- Constructor to arrange for partial C.P.C. ('A'-'B').
- Remove plunger** and cap I.O. riser after testing of new sewer ('A'-'B').
- SA Water's Representative requires five working days notice in advance prior to the link-up to the trunk sewer being undertaken.

NOTE:- W.H.S. requirements to cope with sewer gases in confined spaces shall be observed while making the connection to the trunk sewer.

** Constructor to have appropriate authorization by SA Water to undertake the link-up to the trunk main. Testing of the link-up sewer is to be performed under the direct supervision of the SA Water Representative.

2.2.32 Branch off trunk sewer

Provide the link up at 'A' (Branch off trunk sewer**) SCM 4005-20007-01 & K12

- Excavate up to and expose existing Trunk Sewer.
- Bore** through Trunk Sewer (ensure drill core does not fall into sewer).
- Install new stub** and construct new sewer 'A'-'B' (including water seal and M.H. at 'B').
- Install plunger** in MH at 'B' to isolate from live sewer and lay away with new sewer.
- Remove plunger** after testing and before C.P.C.
- SA Water's Representative requires five working days notice in advance prior to the link-up to the trunk sewer being undertaken.

NOTE:- W.H.S. requirements to cope with sewer gases in confined spaces shall be observed while making the connection to the trunk sewer.

** Constructor to have appropriate authorization by SA Water to undertake the link-up to the trunk main. Testing of the link-up sewer is to be performed under the direct supervision of the SA Water Representative.

2.2.33 New 1500 ID. tankering M.H

Provide the link-up at 'A' (New 1500 ID. tankering M.H.).

- Construct new tankering M.H. at 'A'.

2.2.34 Existing tankering M.H. with stub

Provide the link-up at 'A' (Existing tankering M.H. with stub).

- Install plunger* in existing stub to isolate it from live sewer.
- Excavate up to existing M.H., expose stub, remove cap, connect, and lay away with new sewer.
- Abandon the existing tankering M.H. at 'A'.
- Fill the existing tankering sump with concrete.
- Form* new channel and benching to match the design invert levels as shown on this sheet.
- Bypassing or temporary tankering may be necessary during the abandonment of the 'Tankering M.H.' at the developer's expense.
- Remove plunger* after testing and before C.P.C. issue.

*Constructor to be authorised by SA Water to undertake this work.

2.2.35 Construct new pumping station

Construct new pumping station at 'A'.

- Complete with all structures, pipework, electrical and mechanical plant and equipment, telemetry requirements, vehicle access and site works, in accordance with S.C.M. Section M, in readiness for commissioning. Note:- All telemetry requirements to be surveyed and installed by accredited SA Water Panel member.
- ⇒ # Pump Sump: = ???mm. ID.
- Pumps installed, one duty and one standby.
- ⇒ # Pump Duty: Max Q = ???L/s at H = ???m. (Preliminary duty only).
- Typical pump/s:
- *(State pump manufacturer/s, model number & power rating)*
-
- Switch Board Rating: = 2 x ???kW.
- ⇒ # Max Power (P): = ???kW. (???kW. per pump) (Preliminary power only).
- Required power supply to the Pump Station site
- ⇒ # 415 V @ 50 Hz.

- NOTE:
- Q, H and P are subject to final design.
- Valve Chamber pipework to be ???mm.
- Determine the electrical requirement and arrange with SA Power Networks for the provision of supply.

2.2.36 Abandon existing live pumping station at 'A'.

Abandon existing live pumping station at 'A'.

- After commissioning the new sewer 'A'-'B', the Constructor* shall:
- Decommission any Telstra and SA Power Networks' connections for the old pumping station.
- Remove* all mechanical and electrical plant and equipment and pipe fittings from the existing sump and valve chamber.
- Convert* the existing sump to a M.H. by filling the sump to the new design level.
- Form* new channels and benching and seal any existing penetrations (with concrete) that are no longer required.
- Remove the existing switchboard and concrete plinth and all associated wiring and reinstate the site.
- Remove the cover from the existing valve chamber, demolish the top 750 mm. of the walls and backfill with suitable material in accordance with S.C.M. Section 3 to match the existing site and conditions.
- NOTE- All abandoned equipment shall remain the property of SA Water and shall be delivered by the Constructor to the location determined by SA Water.
- *Constructor to be authorised by SA Water to undertake this work.

2.2.37 Abandon existing live M.H. pumping station

Abandon existing live M.H. pumping station at 'A'.

- After commissioning the new sewer 'A'-'B', the Constructor* shall:
- Decommission any Telstra and SA Power Networks' connections for the old pumping station.
- Remove* all mechanical and electrical plant and equipment and pipe fittings from the existing sump and valve chamber.
- Remove the existing switchboard and concrete plinth and all associated wiring and reinstate the site.
- Remove the cover from the existing valve chamber, demolish the top 750 mm. of the walls and backfill with suitable material in accordance with S.C.M. Section 3 to match the existing site and reinstate the roadway to the requirements of Local Council.
- Convert* the existing sump to a M.H. by filling the sump to the new design level.
- Form* new channels and benching and seal any existing penetrations (with concrete) that are no longer required.
- NOTE- All abandoned equipment shall remain the property of SA Water and shall be delivered by the Constructor to the location determined by SA Water.

*Constructor to be authorised by SA Water to undertake this work.

2.2.38 Construct the new pumping main (Link-up M.H. with stub)

**Construct the new pumping main 'A'-'B' (???)mm. ~ Class ??? pipe).
(Link-up to existing M.H. at 'B' with stub).**

- Install plunger* in existing stub to isolate it from live sewer.
- Excavate up to existing M.H., expose stub, remove cap, connect and lay away with new pumping main.
- Remove plunger* on commissioning of pumping station and pumping main.

*Constructor to be authorised by SA Water to undertake this work.

2.2.39 Construct the new pumping main (Link up M.H. with no stub)

**Construct the new pumping main 'A'-'B' (???)mm. ~ Class ??? pipe).
(Link-up to existing M.H. at 'B' with no stub).**

- Excavate up to existing M.H., bore through wall and benching, install new stub with plunger* to isolate new work from existing sewer and lay away with new pumping main.
- Reform* new channel and benching.
- Remove plunger* on commissioning of pumping station and pumping main.

*Constructor to be authorised by SA Water to undertake this work.

2.2.40 Link up new M.H. and abandoned existing pumping main

Provide the link-up at 'B' (New M.H.) and abandon the existing pumping main 'A'-'C'.

- After the commissioning the new sewer 'A'-'B', the Constructor* shall:
- Place an order with SA Water to arrange for the pumping to be suspended and tankering if required.
- All existing sewage within the abandoned pumping main is to be captured and removed from the site without any spillage.
- The Constructor* shall excavate and expose the existing pumping main at 'C'.
- Connect the existing pumping main to new M.H. at 'B'.
- Seal the open end on the severed pumping main at 'C'.
- Remove one metre length of pipe adjacent to the existing M.H. at 'A'.
- Seal* the original discharge pipe at 'A' within the M.H. wall.
- Reinstate the roadway to the requirements of Local Council.
- SA Water will recover all costs associated with the tankering from the developer including the cost for the provision of tankering access.
- SA Water requires five working days notice in advance prior to this work being undertaken. Contact the SA Water Major Land Development Account Manager.

*Constructor to be authorised by SA Water to undertake this work.

2.2.41 Prior to linking up to the existing pumping main

Prior to linking up to the existing pumping main.

- The Developer shall place an order with SA Water to arrange for the pumping to be suspended and tankering if required.
- All existing sewage within the abandoned pumping main is to be captured and removed from the site without any spillage.
- SA Water will recover all costs associated with the tankering from the developer including the cost for the provision of tankering access.
- SA Water requires five working days notice in advance prior to this work being undertaken. Contact the SA Water Major Land Development Account Manager.

2.2.42 Abandon existing pumping main 'A'-'B'

Abandon existing pumping main 'A'-'B'.

- The Constructor shall excavate down to the pumping main at the existing Pump Sump at 'A' and at existing M.H. at 'B'.
- Remove* one metre length of pipe adjacent to the sump at 'A' and M.H. at 'B'.
- Seal* the original discharge pipe at 'A' in the sump wall and at 'B' in the M.H. wall.
- Seal the open ends on the severed 100mm. dia. pumping main at points 'A' and 'B'.
- Reinststate the roadway to the requirements of Local Council.

*Constructor shall be accredited by SA Water to undertake this work.

2.2.43 Abandon existing pumping main 'A'-'C'

Abandon existing pumping main 'A'-'C'.

- The existing pumping main is to remain operational until new sewer is tested and passed for use.
- The Constructor shall excavate down to the pumping main at the existing M.H. at 'A' and the new M.H. at 'C'.
- All existing sewage within the abandoned pumping main is to be captured and removed from the site without any spillage.
- Seal* the original pumping main at 'A' and 'C' in the M.H. walls.
- Contractor to abandon the existing pumping main that is no longer required, the abandoned main is to be removed and the trench to be backfilled and compacted in accordance with S.C.M. Section 3.

Note: - SA Water accepts no responsibility for the abandoned main or the trench compaction.

*Constructor to be authorised by SA Water to undertake this work.

2.2.44 Abandon existing sewer 'X'-'Y'

Abandon existing sewer 'X'-'Y'.

Minimum SA WATER requirements:-

- Seal branch* of abandoned sewer from within M.H. at 'X'.
- Excavate and expose abandoned sewer main adjacent M.H. at 'X' and remove one metre of length of pipe.
- Remove all castings and the upper one metre of M.H. at 'Y' and fill to existing surface level with clean sand, compacted in accordance with S.C.M. Section 3.

Note: - SA Water accepts no responsibility for the abandoned sewer or the trench compaction.

*Constructor to be authorised by SA Water to undertake this work.

2.2.45 Abandon existing sewer 'X'-'Y'

Abandon existing sewer 'X'-'Y'.

- Excavate and remove entire sewer from 'X'-'Y'.
- Remove the entire I.O. including the castings and lid.

2.2.46 Abandon existing M.H.

Abandon existing M.H.

- Abandon the existing M.H. at XX.XXm.
- Remove the entire M.H. including the castings and lid.

2.2.47 Abandon existing M.H. at 'A'

Abandon existing M.H. at 'A'.

- Minimum SA WATER requirements:-
- Seal branches* of abandoned sewers from within M.H. at 'A'.
- Excavate and expose abandoned sewer mains adjacent M.H. at 'A' and remove one metre of length of pipe.
- Remove all castings and the upper one metre of M.H. at 'A' and fill to existing surface level with clean sand, compacted in accordance with S.C.M. Section 3.
- Note: - SA Water accepts no responsibility for the abandoned sewer or the trench compaction.

*Constructor to be authorised by SA Water to undertake this work.

2.2.48 Abandon existing tankering M.H

Abandon existing tankering M.H.

- Abandon the existing tankering M.H. at ????
- Fill the existing tankering sump with concrete.
- Form* new channel and benching to match the design invert levels as shown on drawing ????????
- Bypassing or temporary tankering may be necessary during the abandonment of the 'Tankering M.H.', at the developer's expense.

*Constructor to be authorised by SA Water to undertake this work.

2.2.49 Temporary effluent disposal (at Developer's Expense)

Temporary effluent disposal (at Developer's Expense).

- Temporary effluent disposal shall be provided to the existing house/building on Lot ??? during construction of the new sewer main,
- OR
- the existing private drain to remain operational during construction of the new sewer main.
- Connections to lots ??? & ??? to be reconnected into the new sewer.
- The Developer shall place an order with SA Water to arrange for the tankering. Allwater.
- SA Water will recover all costs associated with the tankering from the developer including the cost for the provision of tankering access.
- SA Water requires five working days notice in advance prior to tankering being required. Contact the SA Water Major Land Development Account Manager.

2.2.50 Internal drain alteration

Internal drain alteration to Lot ???.

- Contractor to provide temporary effluent disposal to the existing house/buildings during construction of the sewer main,
- OR
- Contractor to ensure the existing private drain remains operational during construction of the sewer main.
- Contractor to arrange for a Licensed Plumbing Contractor to reconnect the existing house/building into the new sewer connection after testing of the sewer main and connections.
- Contractor to abandon the internal drain that is no longer required. (*State method - ie. remove the abandoned drain, backfill and compact to ??? standards*)

Note:- SA Water accepts no responsibility for the abandoned internal drain or the trench compaction.

2.2.51 Tankering of effluent from M.H. at 'A' (at Developer's Expense)

Tankering of effluent from M.H. at 'A' (at Developer's Expense).

- The Developer shall place an order with SA Water to arrange tankering, from any stage or part of the development.
- SA Water to install monitoring equipment within the tankering M.H.
- SA Water will recover all costs associated with the tankering from the developer including the cost for the provision of tankering access and monitoring equipment.
- SA Water requires five working days notice in advance prior to tankering being required. Contact the SA Water Major Land Development Account Manager.
-

2.2.52 Construct new connections at 'X'

Construct new connections at 'X'.

- Contractor to provide new connections off the new sewer to service the existing dwellings/buildings on lots ???.
- Contractor to provide new connection I.P.'s. at the boundaries (at the standard connection positions in easements), on the existing internal drains, to lots ???.
- Temporary effluent disposal may be necessary during construction.

2.2.53 Construct new connection

Construct new connection to Lot ???.

- Remove the existing casting and cut down I.P. riser to a metre below the surface and cap.
- Excavate and expose existing connection, install plunger* in existing branch to isolate it from the live sewer and lay away with new connection.
- Construct new I.P. riser in standard location off boundary.
- Remove plunger* after testing.
- Reinstate the site by filling excavation with clean sand, compacted in accordance with S.C.M. Section 3.

Note:- SA Water accepts no responsibility for the abandoned internal drain or the trench compaction.

*Constructor to be authorised by SA Water to undertake this work.

2.2.54 Construct the new Y-connection at 'X'

Construct the new Y-connection at 'X'.

- Install plunger* in the existing I.P. at 'X'.
- Construct the new Y-connection off the existing sewer connection at 'X' after confirming the existing I.P. invert.
- Remove plunger* after testing and before C.P.C. issue.
- *Constructor to be authorised by SA Water to undertake this work.

2.2.55 Relocate the existing connections in new easement

Relocate the existing connections to lots ??? to the new easement requirements.

- Contractor to relocate the existing connections I.P.'s. to lots ??? (at the standard connection positions in easements) and provide temporary effluent disposal to the existing dwellings during the relocation.
- Contractor to arrange for a Registered Plumber to reconnect the existing dwellings into the new sewer connections after testing of the sewer connections.

2.2.56 Abandon the existing connection methods

Abandon the existing connection no longer required at 'X'.

- The alternative processes to be used are:
- The In-Branch Connection Cut Off Method – which uses the Scan Seal process to insert a resin impregnated fibreglass blind liner in the connection at the oblique junction with the sewer, or
- The In-Sewer Connection Cut Off Method (to be used only when the inspection point cannot be located) – this involves inserting a Scan Seal resin impregnated fibreglass patch liner along the sewer over the connection opening, or
- The Dig-up and Seal Method – This process involves digging down to the oblique junction between the sewer and the connection, removing* a section of pipe and sealing the connection off adjacent to the sewer.
- Remove the castings and cut down I.P. riser to one metre below the surface.
- Reinststate the site by filling excavation with clean sand, compacted in accordance with S.C.M. Section 3.
- Note: SA Water accepts no responsibility for the abandoned internal drain or the trench compaction.
- *Constructor to be authorised by SA Water to undertake this work.

2.2.57 Abandon the existing connection

Abandon the existing connection no longer required at 'X'.

- Excavate, expose, and remove existing connection adjacent to the main.
- Remove the castings and I.P. riser.
- Reinstatement the site by filling excavation with clean sand, compacted in accordance with S.C.M. Section 3.
- Note: SA Water accepts no responsibility for the abandoned internal drain or the trench compaction.

2.2.58 Abandon the existing connection in easement

Abandon the existing connection in the easement no longer required at 'X'.

- Excavate and expose existing connection, remove* a one metre section adjacent to the main and cap.
- Remove the castings and cut down I.P. riser to one metre below the surface.
- Reinstatement the site by filling excavation with clean sand, compacted in accordance with S.C.M. Section 3.
- Note: SA Water accepts no responsibility for the abandoned internal drain or the trench compaction.
- *Constructor to be authorised by SA Water to undertake this work.

2.2.59 Abandon the existing connection from M.H.

Abandon the existing connection no longer required at 'X' (from M.H.).

- Excavate and expose existing connection, remove* a one metre section behind the kerb and cap.
- Remove the castings and cut down I.P. riser to one metre below the surface.
- Seal the branch* from within the M.H. at 'B' with concrete.
- Reinstatement the site by filling excavation with clean sand, compacted in accordance with S.C.M. Section 3.
- Note: SA Water accepts no responsibility for the abandoned internal drain or the trench compaction.
- *Constructor shall be accredited by SA Water to undertake this work.

2.2.60 Abandon the existing “Y”

Abandon the existing “Y” connection no longer required.

- Excavate and expose existing connection at the “Y” branch, remove* a one metre section and cap.
- Remove the castings and cut down I.P. riser to one metre below the surface.
- Reinststate the site by filling excavation with clean sand, compacted in accordance with S.C.M. Section 3.

*Constructor to be authorised by SA Water to undertake this work.

2.3 Moving existing Educt/Induct Vents

Moving existing Educt/Induct Vents.

- Install new Educt and Induct vents at existing M.H’s. at ‘A’ and ‘B’.
- Excavate and expose the existing M.H. walls at ‘A’ and ‘B’.
- Bore through the M.H. walls and install* 300mm. dia. stubs.
- Install plungers* in stubs and lay away with new 300mm. dia. vent pipes.
- Install the new Educt and Induct vents.
- Remove plungers* after testing and before C.P.C. issue.

- Remove existing Educt and Induct vents at ‘E’ and ‘F’.
- Excavate and expose the existing vent pipes at the M.H’s. at ‘C’ and ‘D’ and the vents at ‘E’ and ‘F’.
- Remove* a one metre length of pipe adjacent to each of the M.H’s. and each of the existing vents.
- Seal both ends of each pipe.
- Seal* the existing branches in the M.H’s. walls with appropriate concrete.
- Remove* existing vents and all structures.

Note:- All abandoned equipment shall remain the property of SA Water and shall be delivered by the constructor to the location determined by SA Water.

*Constructor to be authorised by SA Water to undertake this work.

2.4 Work by Developer (at Developer's Expense)

2.4.1 Private Temporary Pumping Station

Private Temporary Pumping Station

- Construct* private temporary sewer pumping station at 'B', complete with all structures, pipes, monitoring equipment, vehicle access and site works in accordance with T.G.128.
- (*State pump type & model*) (complete with pumps, valves, pipework, telemetry and electrical controls), or similar approved. Pump Duty: ???L/s at ???m Head.
- Construct* private pumping main 'B'-'C'.
- If odours become a problem the main shall be flushed at the developer's expense, or venting of the system may be required.
- The use of the private temporary sewer pumping station and private pumping main is approved until {*enter date*} at the latest. All structures and appurtenances are to be removed* and the site restored in accordance with S.C.M. Section 3. Portion of the future road currently used for the location of the private temporary pumping station shall not be created as road until the private temporary pumping station has been abandoned and completely removed and the permanent sewer reticulation mains have been constructed and commissioned.

*Constructor to be authorised by SA Water to undertake this work.

2.4.2 For Private Temporary Tankering

For Private Temporary Tankering

- Construct* the private connection pipe 'A'-'B'.
- Construct* one private temporary tankering M.H. (??mm. dia. x ??m. deep) at 'B', complete with all structures, pipes, monitoring equipment, vehicle access and site works in accordance with T.G.128. Private temporary tankering to be arranged and funded by the developer to a discharge point nominated by SA Water. The tankering is to be performed by an accredited contractor approved by SA Water. The tankering frequency must be suitable to prevent odours from and the septicity of the sewage held in storage.
- The temporary tankering MH's and tankering is the responsibility of the developer and SA Water accepts no responsibility.
- If the flows from this stage of the development reach a point where the minimum 2 hour emergency storage reserve is not achievable, then an additional private tankering M.H. is to be constructed*.
- The use of the private temporary tankering is approved for this stage only and until (*enter date*) by which time the permanent SA Water pumping station must be commissioned. Following the commissioning of the permanent SA Water pumping station all private temporary tankering M.H's. and the private temporary connection pipe 'A'-'B' are to be abandoned and completely removed* and the site restored in accordance to S.C.M. Section 3. Any future stages of the development must include the abandonment of the tankering M.H's. and the commissioning of the permanent SA Water pumping station.
- Note:- SA Water accepts no responsibility for the provision of tankering.
- *Constructor to be authorised by SA Water to undertake this work.

3 Work by SA Water (at Developer's Expense)

Work by SA Water (at Developer's Expense)

- Supply, install and commission the telemetry system in accordance with S.C.M. Section M.
- Commission the Pumping Station on completion of the works by the Constructor.

NB: Connections off existing live sewer to be constructed by SA Water at Developer's cost now noted in Sewer Connections Table, see **Connections** below.

4 Connections

4.1.1 Sewer Connection Reference Table

Sewer Connection Reference		
SCM Drawing Ref.	Conn Type	Sewer Connection Detail
4005-20006-01	K1	Connection Standard Positioning
4005-20006-02	K2	Connection Inspection Point
4005-20006-03	K3/K4	Connection Standard Single & 'Y'
4005-20006-04	K5	Riser off Sewer Main (OB Up)
4005-20006-05	K6/K7	Connection with Riser- Bdy &/or Intermediate
4005-20006-06	K8	Connection through Embankment
4005-20006-07	K9/K10	Connection from Maintenance Hole
4005-20006-08	L18	Connection from Maintenance Shaft
4005-20006-09	K13/K14	Connection off existing Sewer Main
4005-20005-02	L3	Connection from Inspection Opening
4005-20007-02	K11	Connection with Water Seal
4005-20007-03	K12	Connection off Trunk Sewer $\geq 375\text{mm}$

NB: Sewer Connection Table on Layout Plan to be populated with Connection detail similar to example below

4.1.2 Sewer Connection Table (Example)

Sewer Connection Table				
SCM Drawing Ref.	Type	Sewer Connection Detail	Lot Numbers	Total
4005-20006-03	K3/K4	Connection Standard Single & 'Y'	1/2,3/4,5/6,7,8,9/10	10
4005-20006-04	K5	Riser off Sewer Main (OB Up)	11/12,13/14,15	5
4005-20006-05	K6	Connection with Riser at Boundary	16,17,18,19,20	5
4005-20006-06	K8	Connection thru Embankment	21,22,23	3
4005-20006-07	K9/K10	Connection from Maintenance Hole	24/25	2
4005-20006-08	L18	Connection from Maintenance Shaft	26/27,28	3
4005-20005-02	L3	Connection from Inspection Opening	29,30	2
4005-20007-02	K11	Connection with Water Seal	31	1
4005-20007-03	K12	Connection off Trunk Sewer $\geq 375\text{mm}$	32,33,34	3
4005-20006-04/05	K5/K6	Riser off Main & Bdy- Laid under SWD	35/36,37/38,39	5
4005-20005-02/6-05	L3/K6	Conn Ahd -Laid under SWD - Bdy Riser	40,41	2
4005-20006-08/05	L18/K6	MS Conn - Laid Under SWD - Bdy Riser	42,43	2
4005-20006-03	K3/K4 - \varnothing 150	Connection Standard Single & 'Y'	44	1
Work By SA Water (At Developer's Cost)				
4005-20006-09	K13/K14	Conn off Existing Live Sewer	45/46,47/48,49,50	6
			Total Connections	50

5 Notes

5.1 General Notes

5.1.1 Stormwater

- Stormwater pipe to be supported on concrete pads either side of the sewer trench. Gap between pipes to be packed with polystyrene foam.
- Stormwater pipe to be supported on concrete pads either side of the sewer connection trench to Lots ??? inclusive. Gap between underside of stormwater pipe and top of sewer connection pipe to be packed with polystyrene foam.

5.1.2 Mechanical Protections

- Where cover during construction is less than 600mm., pipe to be protected with concrete encasement or other approved method.

5.1.3 Damage to Footings and structures

- SA Water accepts no responsibility for any damage to the existing footings or structure due to the construction of the proposed internal sewer drain.

5.1.4 Rail Crossings

- Bore under train station, rails and access road to be constructed in accordance with AS/NZS 2566.1 and AS 4799-2000 and S.C.M. Section 8 4005-20008-02.

5.1.5 For “Limit of Contract” Notes

- Construction of Sewer by Directional Boring.
- After installation of each section of sewer by directional boring, the Contractor shall arrange for an internal inspection of the length by C.C.T.V. survey. The survey shall be carried out after water has been passed through the section, and shall be witnessed by the superintendent and recorded on videotape and provided to the superintendent for his scrutiny. Any backfall along the sewer length observed by standing water shall be rectified by open excavation and replacement of that section of pipe by the Contractor and the section re-surveyed by C.C.T.V.

5.1.6 For Layout Plan to be arrowed to section of P.E. pipe

- Boring and construction of P.E. pipe under road to be carried out before the laying of P.V.C. pipework. Contractor shall verify location and invert of sewer prior to commencing construction of the P.V.C. pipework and notify Engineer of any discrepancies. Refer also to “Limit of Contract” notes regarding C.C.T.V. inspection.

5.1.7 For Longitudinal Section to be arrowed to M.H.

- ??? mm. dia. P.E. pipe to be connected to M.H. in accordance with W.S.A.A. drawing SEW-1313.
- (Note for additional stages of a development linking into a previous stage with private temporary tankering).

5.1.8 Temporary Tankering

- The developer has entered into an agreement with SA Water as a requirement for approval of Stage 1 to manage the pumping out of the tankering chamber constructed as part of Stage 1 works (Vide Drg. ????-???-??). All costs are to be payable by the developer including, but not limited to, the cost of administration of the agreement.
- The use of this tankering chamber is to be of limited time. All structures and appurtenances are to be removed and the site returned to original state by either (*enter date stated in stage 1*) or the commissioning of the permanent SA Water pumping station.
- The operation of the tankering chamber and the tankering of effluent will be monitored and, if in the opinion of SA Water it is unsatisfactory, it may be a requirement for a submersible pump and pumping main to be installed. The pumping main discharge point would be as directed by SA Water and the cost of installing the pump and pumping main is to be borne by the developer.
- Any additional stages/lots of the development identified as requiring drainage to the temporary tankering chamber must obtain SA Water approval of the development and connections prior to draining to the tankering chamber.
- In the event that sewage spillage/ flooding does occur, the contractor must notify SA Water immediately who must then notify the E.P.A., local council and the catchment authority and fill in the environmental incident report form. Any clean up would be at developer's cost.

5.1.9 Laying Sewers in Proposed Earth Fill

- The proposed land fill in which the new sewer is to be laid is to be 'Engineered Fill' compacted to not less than 95% of its Standard Maximum Dry Density (AS 1289.5.1.1 – Version 2003).

5.1.10 Trench Fill (Using recycled on-site bitumen pavement material)

- Trench fill, in accordance with S.C.M. Section 3, shall be the existing pavement material on-site recycled to Department of Planning, Transport and Infrastructure's specification for P.M. 71 (equivalent to P.M. 21-20mm. quarry rubble).
- Trench fill placement and compaction shall conform to the normal SA Water Standard for trench fill in accordance with S.C.M. Section 3 4005-20003-01.
- The embedment zone to the top of the pipe overlay zone shall be the normal 10mm-7mm screenings required by SA Water.
- *Constructor shall be accredited by SA Water to undertake this work.

NOTE: - Where the alignment of the new sewer pipe overlaps the existing sewer and where the vertical separation between the top of the existing sewer and the invert of the new sewer is less than 200mm then the existing sewer shall be removed and the foundation reinstated in accordance with S.C.M. Section 3.