

ROAD DESIGN PRESENTATION STANDARDS

DP006 – DRAINAGE

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Document Revision: 4
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DEPARTMENT OF
PLANNING, TRANSPORT
AND INFRASTRUCTURE



Government of South Australia
Department of Planning,
Transport and Infrastructure

Document Amendment Record

Rev	Change Description	Date	Author	Checked	Authorised
1	Initial Issue	29 July 2009	Anthony Crotty	Natasha Stone	Noel O'Callaghan
2	General review of text and example drawings	14 September 2009	John Hastie Alison Freer		Noel O'Callaghan
3	General review of text and example drawings	23 December 2011	Natasha Stone Alison Freer	Jeremy Champion	Noel O'Callaghan
4	Culvert label and legend updated	15 February 2013	Natasha Stone	Jeremy Champion	Noel O'Callaghan

Document Management

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To be read in conjunction with CAD Manual & Presentation Guidelines DP001
(Master Specification PC-EDM7)

DP006 DRAINAGE

1 Purpose

- 1.1 The 'Drainage' drawing is used to show the location and orientation of new drainage structures, drains, scour protection treatments and existing drainage structures and drains that are to remain. The drawing is also used to show specific construction/maintenance details for the above items using various schedules.
- 1.2 For examples of this standard see attached drawings.
- 1.3 The details listed below can be arranged on the General Construction drawing provided they do not cause the drawing to become congested.

2 Content

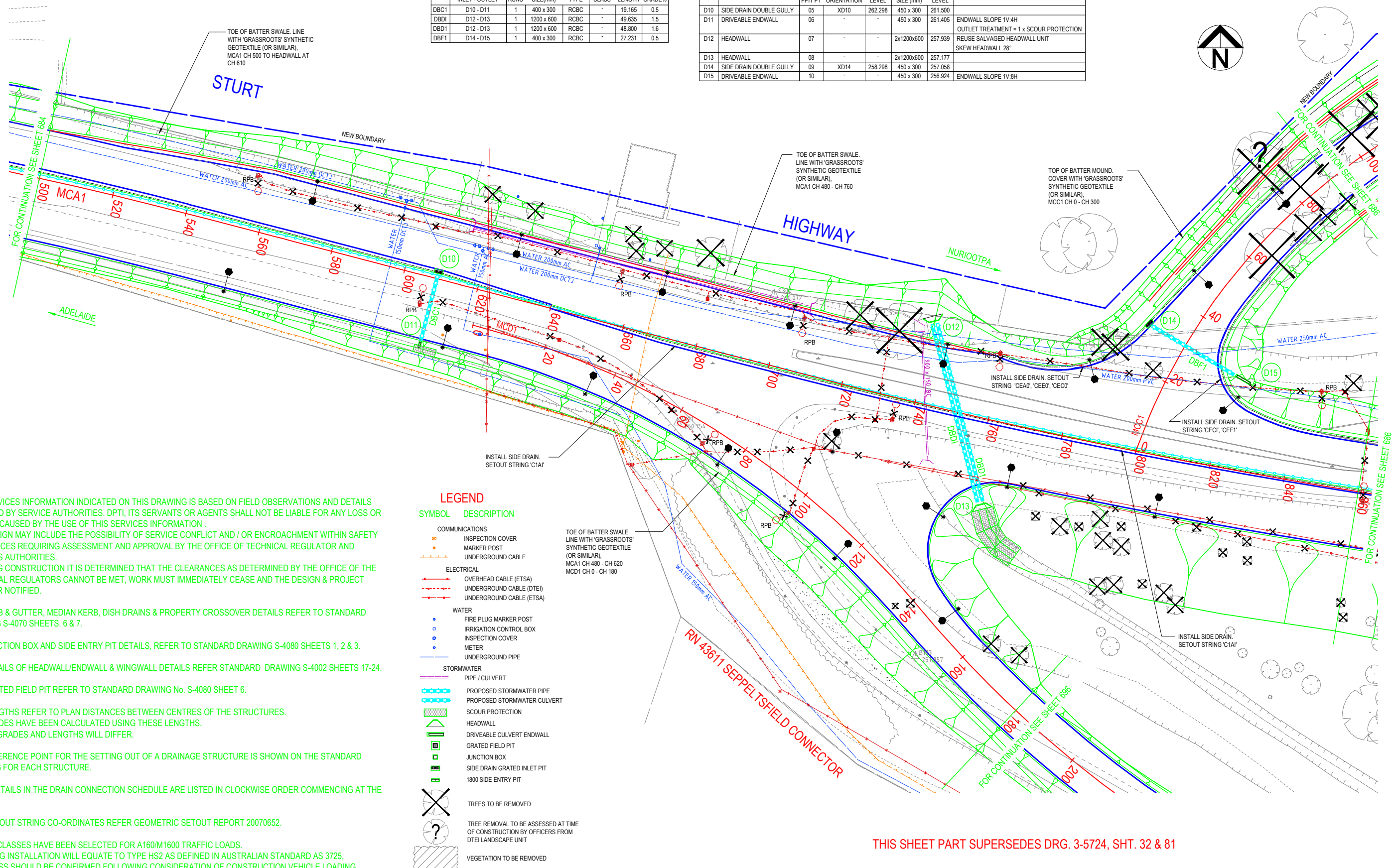
- 2.1 Layers to be shown as per the DPTI Layer Matrix (DP 001, Appendix A)
- 2.2 The following CAD entities are required:
 - a) All information in DP 001 - General Requirements.
 - b) Symbols showing new drainage structures. (layer = "D-DRAI-Drainage Structure", block provided)
 - c) Drainage Structure ID numbers identifying new drainage structures and existing drainage structures to remain. (layer = "D-ENHA-General Notes", block provided)
 - d) Lines showing new stormwater pipes (layer = "D-DRAI-DI-Pipe Invert", line style provided)
 - e) Lines showing new stormwater culverts (layer = "D-DRAI-DB-Box culvert Invert", line style provided)
 - f) Text identifying new drains by their string name. (layer = "D-DRAI-Drainage Structure ID Label", block provided) (PS text height = 3.5mm)
 - g) Symbols showing new scour protection treatments. (layer = "D-DRAI-Drainage Structure", block provided).
 - h) Appropriate completed schedules. (Drain, Drain Connection, Levees, Drop Structure). (layer = "D-ENHA-Schedules", block provided)
 - i) Text describing specific drainage requirements. (layer = "D-ENHA-General Notes") (PS text height = 2.5mm)
- 2.3 Survey on the Drainage Drawing shall be untrimmed. (ie survey detail should extend across the design area)

DRAIN DETAILS

ID	STRUCTURE	DESCRIPTION	DETAILS
DBC1	D10 - D11	1 400 x 300 RCBC	19 165 0.5
DBD1	D12 - D13	1 1200 x 600 RCBC	49 635 1.5
DBD1	D12 - D13	1 1200 x 600 RCBC	48 800 1.6
DBF1	D14 - D15	1 400 x 300 RCBC	27 231 0.5

DRAIN CONNECTION DETAILS

ID	DESCRIPTION	SET OUT LOCATION	DRAIN	COMMENTS
D10	SIDE DRAIN DOUBLE GULLY	05 XD10 262.298	450 x 300 261.500	
D11	DRIVEABLE ENDWALL	06 - -	450 x 300 261.405	ENDWALL SLOPE 1V:4H
D12	HEADWALL	07 - -	2x1200x600 257.939	OUTLET TREATMENT = 1 x SCOUR PROTECTION REUSE SALVAGED HEADWALL UNIT SKEW HEADWALL 28°
D13	HEADWALL	08 - -	2x1200x600 257.177	
D14	SIDE DRAIN DOUBLE GULLY	09 XD14 258.298	450 x 300 257.058	
D15	DRIVEABLE ENDWALL	10 - -	450 x 300 256.924	ENDWALL SLOPE 1V:8H



NOTES:

- THE SERVICES INFORMATION INDICATED ON THIS DRAWING IS BASED ON FIELD OBSERVATIONS AND DETAILS PROVIDED BY SERVICE AUTHORITIES. DPTI, ITS SERVANTS OR AGENTS SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE CAUSED BY THE USE OF THIS SERVICES INFORMATION. THIS DESIGN MAY INCLUDE THE POSSIBILITY OF SERVICE CONFLICT AND / OR ENCROACHMENT WITHIN SAFETY CLEARANCES REQUIRING ASSESSMENT AND APPROVAL BY THE OFFICE OF TECHNICAL REGULATOR AND SERVICES AUTHORITIES. IF DURING CONSTRUCTION IT IS DETERMINED THAT THE CLEARANCES AS DETERMINED BY THE OFFICE OF THE TECHNICAL REGULATORS CANNOT BE MET, WORK MUST IMMEDIATELY CEASE AND THE DESIGN & PROJECT MANAGER NOTIFIED.
- FOR KERB & GUTTER, MEDIAN KERB, DISH DRAINS & PROPERTY CROSOVER DETAILS REFER TO STANDARD DRAWING S-4070 SHEETS. 6 & 7.
- FOR JUNCTION BOX AND SIDE ENTRY PIT DETAILS, REFER TO STANDARD DRAWING S-4080 SHEETS 1, 2 & 3.
- FOR DETAILS OF HEADWALL/ENDWALL & WINGWALL DETAILS REFER STANDARD DRAWING S-4002 SHEETS 17-24.
- FOR GRATED FIELD PIT REFER TO STANDARD DRAWING No. S-4080 SHEET 6.
- PIPE LENGTHS REFER TO PLAN DISTANCES BETWEEN CENTRES OF THE STRUCTURES. THE GRADES HAVE BEEN CALCULATED USING THESE LENGTHS. ACTUAL GRADES AND LENGTHS WILL DIFFER.
- THE REFERENCE POINT FOR THE SETTING OUT OF A DRAINAGE STRUCTURE IS SHOWN ON THE STANDARD DRAWING FOR EACH STRUCTURE.
- DRAIN DETAILS IN THE DRAIN CONNECTION SCHEDULE ARE LISTED IN CLOCKWISE ORDER COMMENCING AT THE OUTLET.
- FOR SET OUT STRING CO-ORDINATES REFER GEOMETRIC SETOUT REPORT 20070652.
- RC PIPE CLASSES HAVE BEEN SELECTED FOR A160M/1600 TRAFFIC LOADS. ASSUMING INSTALLATION WILL EQUATE TO TYPE HS2 AS DEFINED IN AUSTRALIAN STANDARD AS 3725. PIPE CLASS SHOULD BE CONFIRMED FOLLOWING CONSIDERATION OF CONSTRUCTION VEHICLE LOADING.

LEGEND

SYMBOL	DESCRIPTION
[Symbol]	COMMUNICATIONS
[Symbol]	INSPECTION COVER
[Symbol]	MARKER POST
[Symbol]	UNDERGROUND CABLE
[Symbol]	ELECTRICAL
[Symbol]	OVERHEAD CABLE (ETSA)
[Symbol]	UNDERGROUND CABLE (DTEI)
[Symbol]	UNDERGROUND CABLE (ETSA)
[Symbol]	WATER
[Symbol]	FIRE PLUG MARKER POST
[Symbol]	IRRIGATION CONTROL BOX
[Symbol]	INSPECTION COVER
[Symbol]	METER
[Symbol]	UNDERGROUND PIPE
[Symbol]	STORMWATER
[Symbol]	PIPE / CULVERT
[Symbol]	PROPOSED STORMWATER PIPE
[Symbol]	PROPOSED STORMWATER CULVERT
[Symbol]	SCOUR PROTECTION
[Symbol]	HEADWALL
[Symbol]	DRIVEABLE CULVERT ENDWALL
[Symbol]	GRATED FIELD PIT
[Symbol]	JUNCTION BOX
[Symbol]	SIDE DRAIN GRATED INLET PIT
[Symbol]	1800 SIDE ENTRY PIT
[Symbol]	TREES TO BE REMOVED
[Symbol]	TREE REMOVAL TO BE ASSESSED AT TIME OF CONSTRUCTION BY OFFICERS FROM DTEI LANDSCAPE UNIT
[Symbol]	VEGETATION TO BE REMOVED

THIS SHEET PART SUPERSEDES DRG. 3-5724, SHT. 32 & 81

<p>2 CULVERT LABEL CHANGED TO DB, NOTES UPDATED</p> <p>1 GENERAL REVIEW OF DRAWING</p>		<p>NKS AEF</p>	<p>NKS NKS</p>	<p>J.LANE J.LANE</p>	<p>10.1.13 23.12.11</p>		<p>Department of Planning, Transport and Infrastructure</p>	<p>PROJECT No: 14669</p> <p>DESIGN No: 20070652</p> <p>PROJECT START ROAD RUNNING DISTANCE: MCA1; CH 0000 = 54.89 km</p> <p>PROJECT END ROAD RUNNING DISTANCE: MCA1; CH 4560 = 59.45 km</p> <p>FILE No: 07/04422</p> <p>SURVEY No: 20070774</p>	<p>ROAD No. 7200</p> <p>STURT HIGHWAY</p> <p>SEPPELTSFIELD ROAD - GREENOCK ROAD</p> <p>MCA1; CH 500 - CH 863</p> <p>DRAINAGE</p>	<p>DESIGNED: ANC</p> <p>CHECKED: DSNE</p>	<p>DRAFTED: AEF</p> <p>CHECKED: NKS</p>	<p>ACCEPTED FOR USE: A.SMITH</p> <p>TITLE: MANAGER</p> <p>DATE: 30/02/2010</p>	<p>ACCEPTANCE FORM KNET No: 12345678</p> <p>IN ACCORDANCE WITH DP013</p>	<p>DRAWING No: 5933</p>	<p>SHEET No: 685</p>	<p>AMEND No: 2</p>	<p>SHEET LATITUDE -34.46728</p> <p>SHEET LONGITUDE 138.91454</p>
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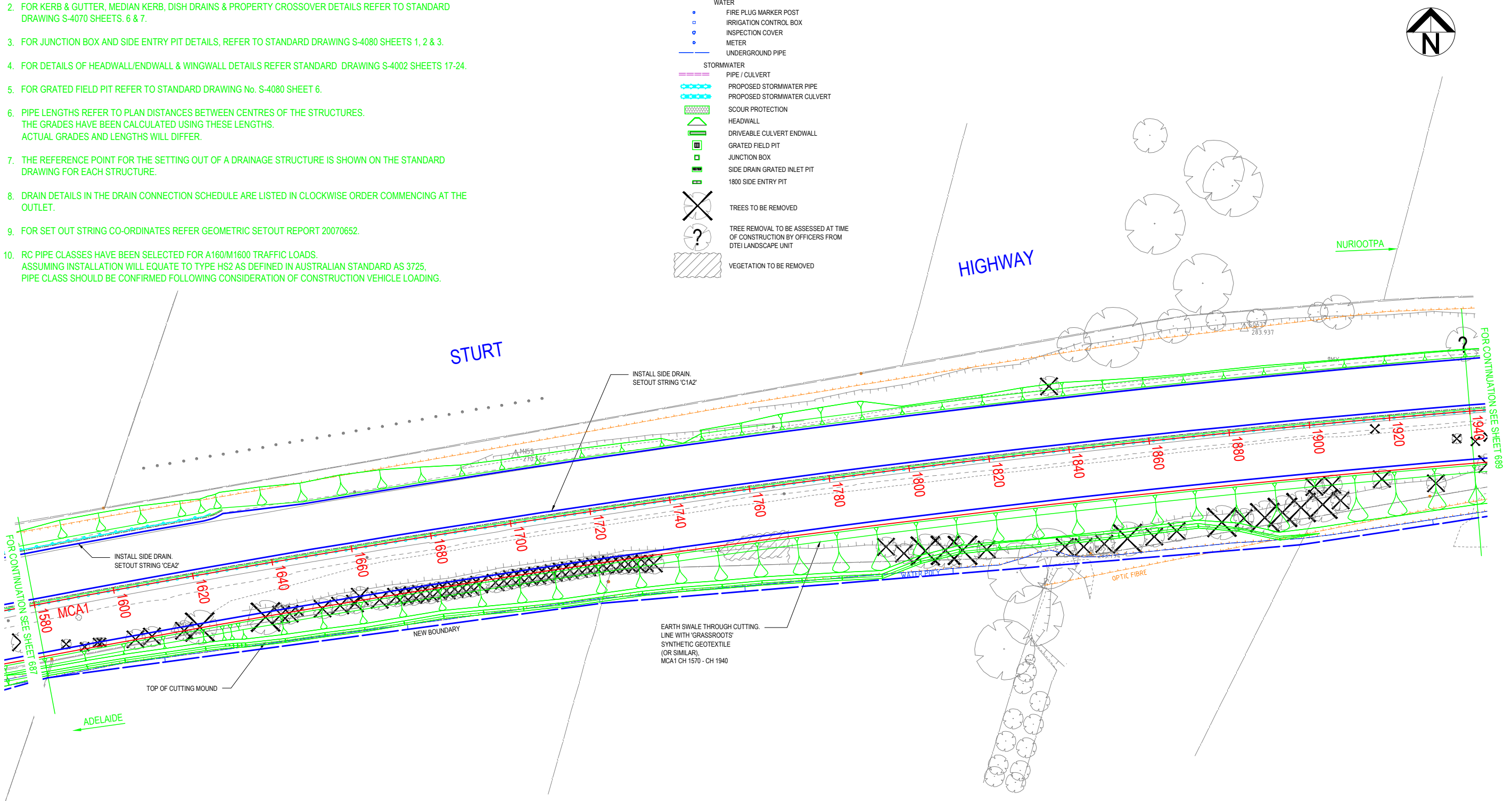
CAD FILE NAME: DP013 EXAMPLE.TDWG

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	FIRE PLUG MARKER POST
	IRRIGATION CONTROL BOX
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	METER
	UNDERGROUND PIPE
STORMWATER	
	PIPE / CULVERT
	PROPOSED STORMWATER PIPE
	PROPOSED STORMWATER CULVERT
	SCOUR PROTECTION
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	TREES TO BE REMOVED
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	VEGETATION TO BE REMOVED



THIS SHEET PART SUPERSEDES DRG. 3-65033, SHTS. 3 & 4

No.	AMENDMENT DESCRIPTION	BY	CHECK	ACCEPTANCE	DATE
1	GENERAL REVIEW OF DRAWING	AEF	NKS	J.LANE	23.12.11

REFERENCE MAP:

100 MILLIMETRES ON ORIGINAL DRAWING

ALL DIMENSIONS ARE IN METRES UNLESS SHOWN OTHERWISE

Government of South Australia
Department of Planning, Transport and Infrastructure

PROJECT No.: 14669	FILE No.: 07/04422
DESIGN No.: 20070652	SURVEY No.: 20070774
PROJECT START ROAD RUNNING DISTANCE: MCA1; CH 0000 = 54.89 km	
PROJECT END ROAD RUNNING DISTANCE: MCA1; CH 4560 = 59.45 km	

SCALES: 10 0 5 10 15 20

ROAD No. 7200 STURT HIGHWAY
SEPPELTSFIELD ROAD - GREENOCK ROAD
MCA1; CH 1580 - CH 1943
DRAINAGE

DESIGNED: ANC	DRAFTED: AEF	ACCEPTED FOR USE: A.SMITH	ACCEPTANCE FORM KNET No.: 12345678	DRAWING No.: 5933	SHEET No.: 688	AMEND No.: 1
CHECKED: DSNE	CHECKED: NKS	TITLE: MANAGER	DATE: 30/02/2010	UNCONTROLLED COPY WHEN PRINTED		

CAD FILE NAME: DP0106 EXAMPLE 2.DWG