BLOCK A

EX ST
157.42 sqm
1694 sqft

UNIT 7
90.21 sqm
971 sqft

UNIT 1
112.56 sqm
1212 sqft

UNIT 2
112.56 sqm
1212 sqft

UNIT 3
111.84 sqm
1204 sqft

EX ST
98.7 sqm
942 sqft

DRAIN

NEW WALL AND GATES

TARMAC ROAD SURFACE WITH CONCRETE KERBS

REFUSE AREA

UNIT 4
141.60 sqm
1524 sqft

UNIT 5
143.36 sqm
1543 sqft

UNIT 6
184.07 sqm
1981 sqft

BLOCK B

GRASS AREA

EX ST
73.7 sqm
793 sqft

Elec. Substation

DRAIN

Notes

Dimensions to be verified on site. Figured dimensions to take preference to those scaled; do not scale from drawings. All discrepancies to be clarified with project Architect.

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Revisions

Rev	Date	Text
A	07/01/2010	Boundary and planting information added

SURFACES & BOUNDARIES

FOOTWAY SURFACE
Concrete Flag Paving
Marshall Saxon

PRIVATE DRIVEWAY SURFACE
Tarmac

1800MM BOUNDARY WALL
1800mm Facing brickwork Buff stock type with Blue Eng. Brick headers

BOUNDARY FENCE
2400mm Jacksons EuroGuard Security Fence

REFUSE AREA FENCE
1800mm Pre-treated Timber Close Boarded Fence
Breaam A Rated

CAR PARKING SPACE

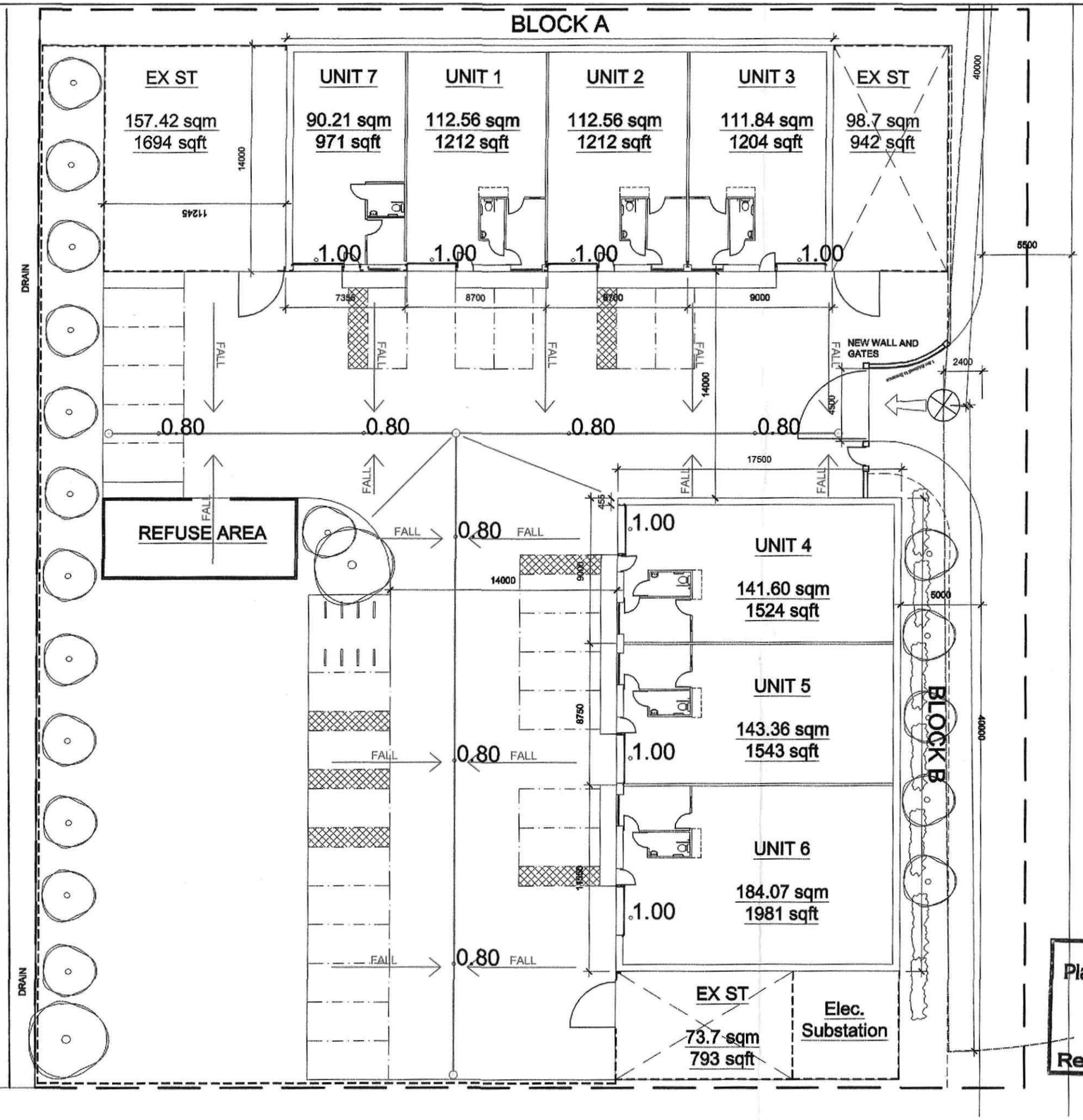
HAWTHORNE HEDGING
Bare root 13 plants per metre x 30 metres

NEW TREES
20nr 3-3.5 metres
Species as schedule

Client	South Holland DC
Project	Crease Drove, Crowland
Drawing	Site Plan - Phase 1 Surface Treatment
Date	June 2009
Scale	1:250 @ A3
Dwg. no.	P391 - P02A

SHDC
Planning & Development
13 JAN 2010
Ref: 0027-10

place : architecture
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Notes

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Revisions

Rev	Date	Text

Key to drainage symbols

Surface water drainage

-----	NEW DRAIN 100 dia. EXCEPT AS NOTED
— — —	EXISTING DRAIN RETAINED
-----	EXISTING DRAIN REMOVED
RWP ○	RAIN WATER PIPE
○RE	RODDING EYE
MH	MANHOLE
IC	INSPECTION CHAMBER
CL	COVER LEVEL
IL	INVERT LEVEL
.0.80	FINISHED SPOT LEVELS METRE AOD

Client	South Holland DC
Project	Crease Drove, Crowland
Drawing	Site Plan - Phase 1 Site Levels

SHDC
Planning & Development
13 JAN 2010
Ref: 0027-10

Date	December 2009
Scale	1:250 @ A3
Dwg. no.	P391 - P04

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Setting Out Coordinates

Location	Chainage	Coordinates	
		Easting	Northing
1	0.000	753056	622910
2	10.000	743556	626034
3	20.000	734057	629158
4	30.000	724558	632283
5	40.000	715058	635407
6	50.000	705559	638531
7	60.000	696059	641656
8	70.000	686560	644780
9	80.000	677061	647905
10	90.000	667561	651029
11	100.000	658062	654153
12	110.000	648562	657278
13	120.000	639063	660402
14	130.000	629564	663526
15	140.000	620064	666651
16	150.000	610565	669775
17	158.535	602457	672442
18	0.000	682008	646278
19	9.749	678961	637016
20	0.000	604609	671734
21	10.000	601474	662238
22	14.797	599970	657683
23	TP1	742075	629415
24	TP2	740641	624095
25	TP3	688768	641154
26	TP4	681411	637263
27	TP5	673307	646252
28	TP6	611356	666622
29	TP7	603999	662730

SHDC
Planning & Development
13 JAN 2010
Ref: 0027-10

Rev	Amendments	Rev'd by	Date
A	Gully locations amended to suit revised road levels and drainage layout.	SDG	Dec 09

Client
Trent Valley Construction

Project
Crease Drove, Crowland, Peterborough, Cambridge

Title
Highways Layout

Job No 09-0511

Drawing No 09-0511-A1-300 Rev A

Status Preliminary

Scale 1:250 Date Nov 09

Project Engineer MO Drawn By SDG Checked By TC

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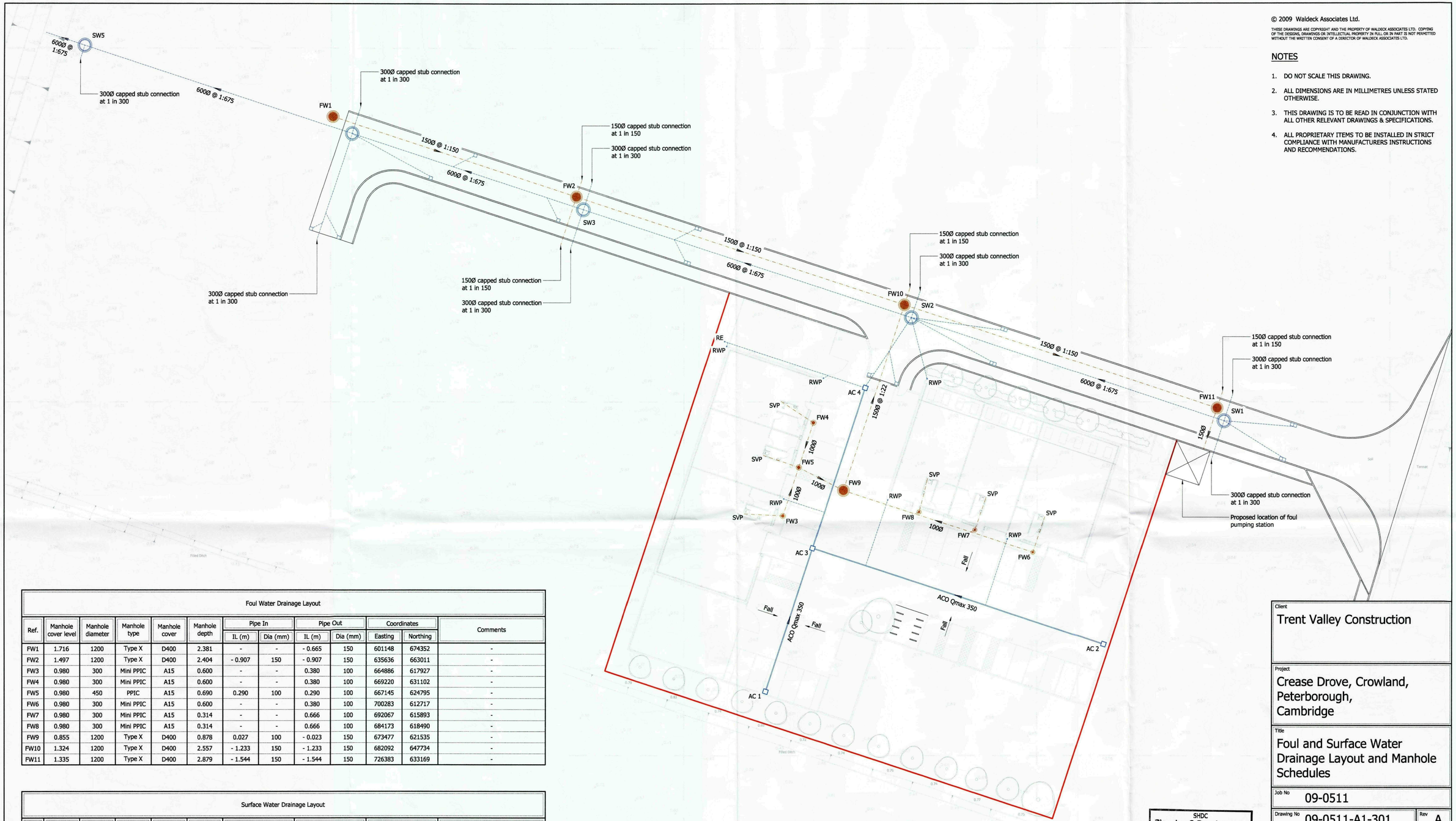
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Foul Water Drainage Layout

Ref.	Manhole cover level	Manhole diameter	Manhole type	Manhole cover	Manhole depth	Pipe In		Pipe Out		Coordinates		Comments
						IL (m)	Dia (mm)	IL (m)	Dia (mm)	Easting	Northing	
FW1	1.716	1200	Type X	D400	2.381	-	-	- 0.665	150	601148	674352	-
FW2	1.497	1200	Type X	D400	2.404	- 0.907	150	- 0.907	150	635636	663011	-
FW3	0.980	300	Mini PPIC	A15	0.600	-	-	0.380	100	664886	617927	-
FW4	0.980	300	Mini PPIC	A15	0.600	-	-	0.380	100	669220	631102	-
FW5	0.980	450	PPIC	A15	0.690	0.290	100	0.290	100	667145	624795	-
FW6	0.980	300	Mini PPIC	A15	0.600	-	-	0.380	100	700283	612717	-
FW7	0.980	300	Mini PPIC	A15	0.314	-	-	0.666	100	692067	615893	-
FW8	0.980	300	Mini PPIC	A15	0.314	-	-	0.666	100	684173	618490	-
FW9	0.855	1200	Type X	D400	0.878	0.027	100	- 0.023	150	673477	621535	-
FW10	1.324	1200	Type X	D400	2.557	- 1.233	150	- 1.233	150	682092	647734	-
FW11	1.335	1200	Type X	D400	2.879	- 1.544	150	- 1.544	150	726383	633169	-

Surface Water Drainage Layout

Ref.	Manhole cover level	Manhole diameter	Manhole type	Manhole cover type	Manhole depth	Pipe In		Pipe Out		Coordinates		Comments
						IL (m)	Dia (mm)	IL (m)	Dia (mm)	Easting	Northing	
SW1	1.324	1500	Type B	D400	1.284	0.340	300	0.040	600	727369	631365	Capped stub connection
AC1	0.800	600 x 600	ACO access	D400	0.735	-	-	0.220	350	662449	593076	ACO Qmax Access Chamber - shallow
AC2	0.800	600 x 600	ACO access	D400	0.735	-	-	0.220	350	710282	599742	ACO Qmax Access Chamber - shallow
AC3	0.800	600 x 600	ACO access	D400	0.735	0.220	350	0.220	350	669098	613289	ACO Qmax Access Chamber - shallow
AC4	0.800	600 x 600	ACO access	D400	0.735	0.220	350	0.220	350	676571	636006	ACO Qmax Access Chamber - shallow
SW2	1.351	1500	Type B	D400	1.380	- 0.029	600	- 0.029	600	683078	645930	-
-	-	-	-	-	-	0.271	300	-	-	-	-	Capped stub connection
SW3	1.338	1500	Type B	D400	1.440	- 0.102	600	- 0.102	600	636622	661207	-
-	-	-	-	-	-	0.198	300	-	-	-	-	Capped stub connection
SW4	1.683	1500	Type B	D400	1.440	- 0.152	600	- 0.152	600	603882	671973	-
-	-	-	-	-	-	0.148	300	-	-	-	-	Capped stub connection
SW5	1.992	1500	Type B	D400	2.203	- 0.211	600	- 0.211	600	566004	684429	-
-	-	-	-	-	-	0.089	300	-	-	-	-	Capped stub connection
HW1	2.007	1500	Type B	D400	2.159	- 0.152	600	- 0.152	600	560522	686231	Outfall into open watercourse

Rev	Amendments	Rev'd by	Date
A	Foul and surface water drainage amended to suit revised road levels. On site surface water drainage layout amended. Manhole schedules revised inline with revised drainage.	SDG	Dec 09

SHDC
Planning & Development
13 JAN 2010
Ref: 0027/10

Client
Trent Valley Construction

Project
Crease Drove, Crowland, Peterborough, Cambridge

Title
Foul and Surface Water Drainage Layout and Manhole Schedules

Job No 09-0511

Drawing No 09-0511-A1-301 | Rev A

Status Preliminary

Scale 1:250 | Date Nov 09

Project Engineer MO | Drawn By SDG | Checked By TC

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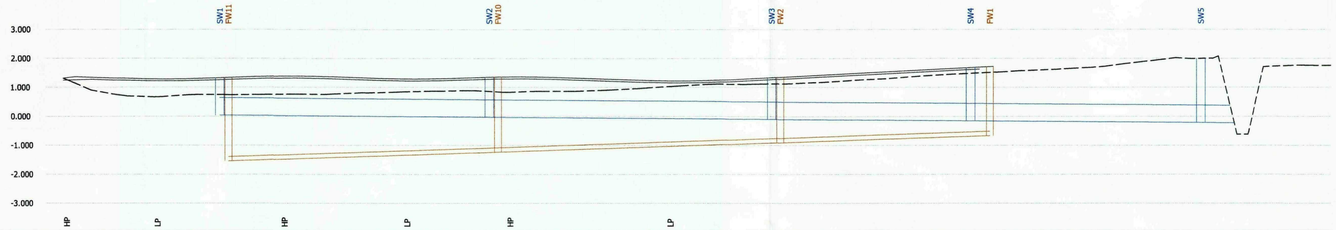
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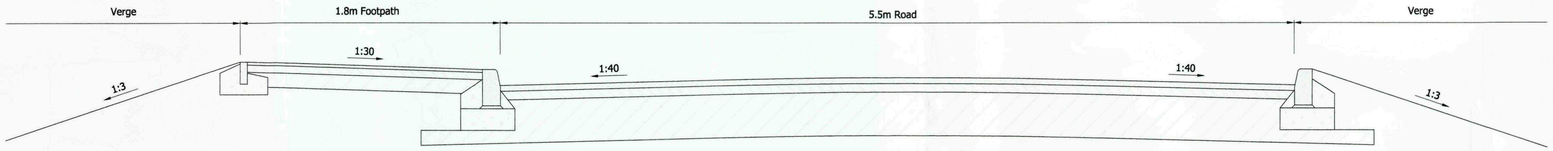
Chainage	0.000	2.000	10.000	11.627	15.000	17.630	20.000	23.633	30.000	32.917	35.000	40.000	45.000	50.000	55.000	60.000	65.000	66.795	70.000	71.985	74.792	80.000	85.000	90.000	100.000	105.000	110.000	115.000	120.000	130.000	140.000	150.000	156.270	158.535	160.000	170.000	180.000	190.000	200.000	210.000	219.376
Existing Ground Level	1.316	1.189	0.905	0.745	0.695	0.665	0.673	0.736	0.742	0.758	0.748	0.765	0.765	0.755	0.788	0.810	0.868	0.868	0.889	0.889	0.834	0.832	0.864	0.864	0.864	0.868	0.899	0.914	1.091	1.038	1.052	1.105	1.113	1.105	1.110	1.115	1.130	1.145	1.180	1.227	1.257	1.290	1.318	1.275	1.405	1.449	1.471	1.509	1.527	1.571	1.590	1.621	1.651	1.689	1.720	1.813	1.873	1.949	2.020	1.992	2.082	2.082	-0.620	-0.620	1.710	1.756	1.766	1.798	1.753
Alignment Level	1.316	1.366	1.313	1.302	1.286	1.282	1.285	1.302	1.345	1.364	1.376	1.386	1.372	1.339	1.307	1.288	1.297	1.307	1.329	1.342	1.357	1.364	1.344	1.311	1.244	1.222	1.229	1.263	1.313	1.413	1.513	1.613	1.698
Vertical Alignment	G= 2.500% 1: 40	G= -0.667% 1: -150	KF= 9.0 L= 12.000	G= 0.667% 1: 150	L= 13.340 KF= -10.0	G= -0.667% 1: -150	KF= 9.0 L= 12.000	G= 0.667% 1: 150	L= 13.340 KF= -10.0	G= -0.667% 1: -150	KF= 9.0 L= 15.000	G= 1.000% 1: 100
Horizontal Alignment		

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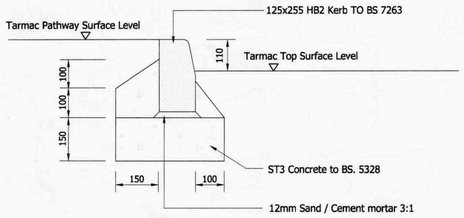
Footway / Service Margin Construction

Surface Course:	25mm of 6mm size dense 100/150 or 160/220 surface course compacted to a void content within the range 2%-10%.
Binder Course:	50mm of 20mm size dense 40/60 or 100/150 binder course compacted to a void content within the range 2%-10%.
Sub-Base:	100mm of type 1 sub-base.

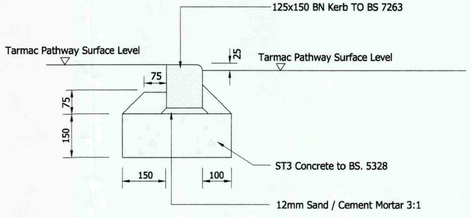
Road Construction:

	Sub-Base and capping must extend a minimum of 275mm beyond face/edge of carriageway
Surface Course:	40mm of 10mm close graded surface course. it must be compacted to a void content within the range 2% - 10%.
Binder Course:	60mm thickness of binder course materials shall be 20mm size recipe mix dense binder course and shall be laid in layers not less than 50mm in thickness nor greater than 110mm in thickness. Compaction must be to a void content within the range 2%-8% and all layers must be bonded together.
Sub-Base:	300mm of Type 1 sub-base.

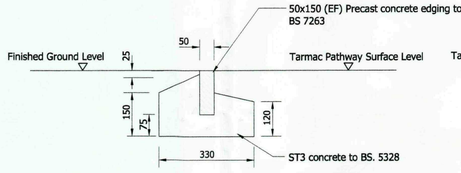
Section Through Highway
(Scale 1:20)



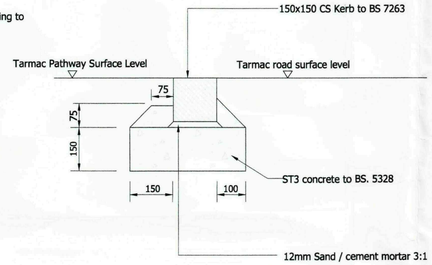
Half Battered Kerb (125 x 255 HB2)
(Scale 1:10)



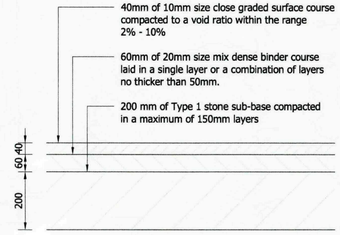
Dropped Kerb (125 x 150 BN)
(Scale 1:10)



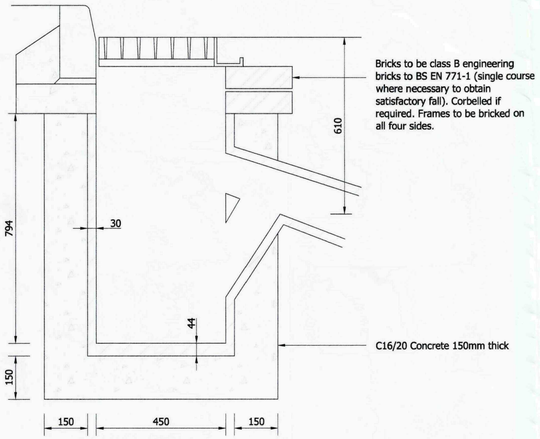
Footway Edging (50 x 150 EF)
(SCALE 1:10)



Flush Kerb (150 x 150 CS)
(Scale 1:10)



Carpark Construction Detail
(1:10)



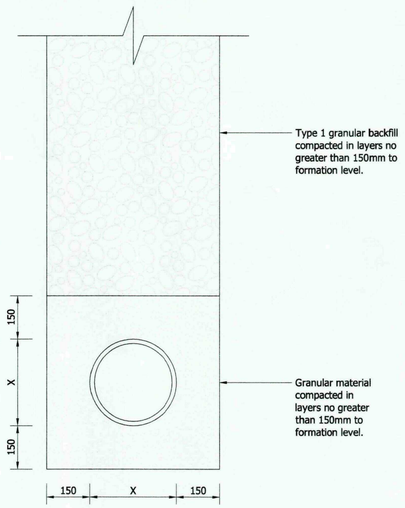
Notes

All in SITU concrete to be C16/20 with sulphate resisting cement unless agreed otherwise.

In SITU C16/20 Concrete 150mm thick surround outlet pipe for first one metre under verge or total length if under carriageway.

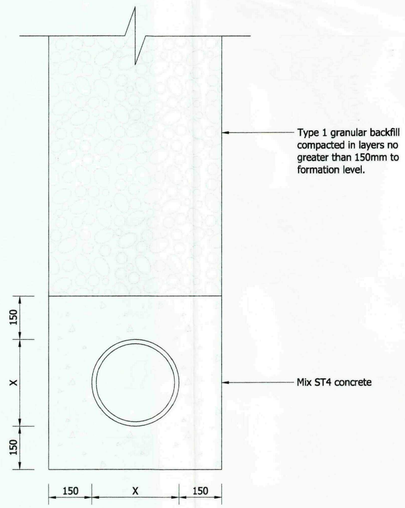
Where grating is to be trafficked or laid against within 24 hours of frame being placed in position, then a suitable ultra rapid hardening mortar and concrete (monoset 241 or similar) shall be used to bed cover and frame.

Trapped Road Gully
(Scale 1:10)



Type S Bedding
(Scale 1:10)

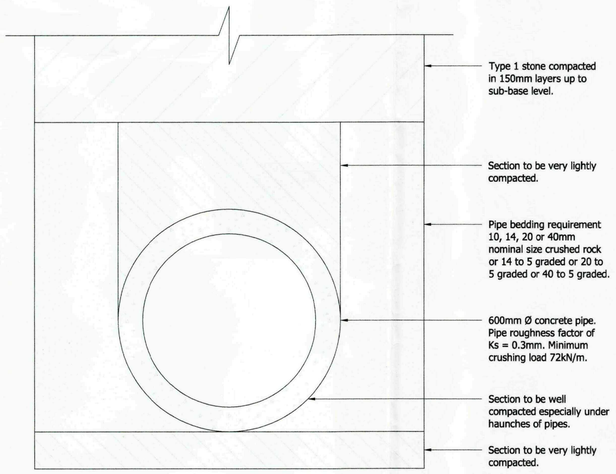
Vitrified Clay pipes to BS 65: 1988 to Classes S Standard Strength; ES Extra Strength and SS Super Strength.



Type Z Bedding
(Scale 1:10)

Surround to be used for gully and kerb drainage outlets

Vitrified Clay pipes to BS 65: 1988 to Classes S Standard Strength; ES Extra Strength and SS Super Strength



Type S 600 Ø Concrete Pipe - 360° Granular Bed and Surround
(SCALE 1:10)

Maintain pipeline flexibility by leaving gaps at pipe joints filled with compressible material.

Bedding beneath and at sides of pie to be well compacted.

Bedding/backfill directly above pipe to be lightly compacted.

SHDC
Planning & Development
13 JAN 2010
Ref: 0527-10

Rev	Amendments	Rev'd by	Date
A	Carpark construction detail added	SDG	Dec 09

Client: Trent Valley Construction

Project: Crease Drove, Crowland, Peterborough, Cambridgeshire

Title: Construction Details - Sheet 1 of 3

Job No: 09-0511

Drawing No: 09-0511-A1-303 Rev: A

Status: Preliminary

Scale: As Shown Date: Nov 09

Project Engineer: MO Drawn By: SDG Checked By: TC

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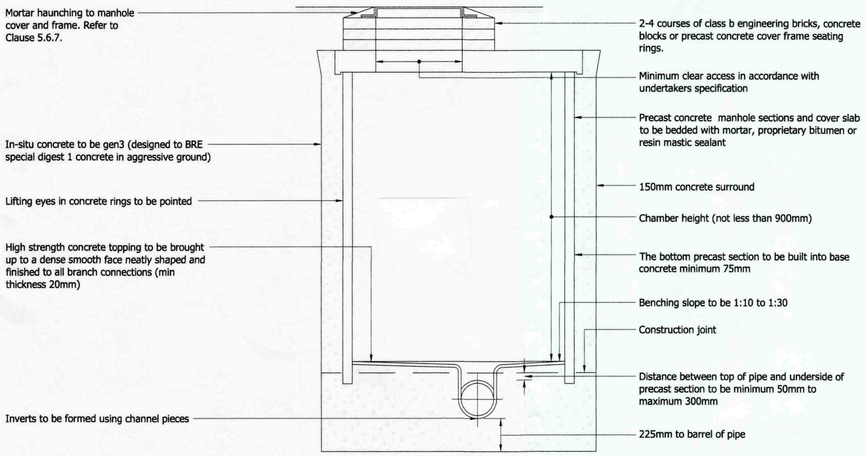
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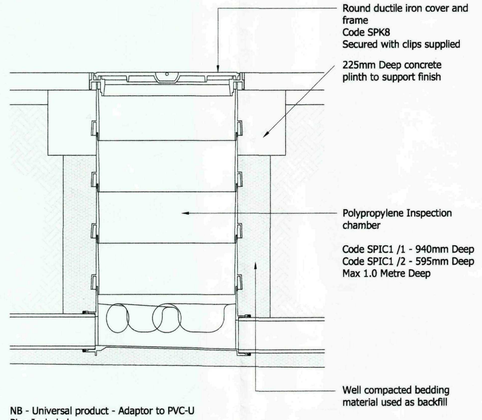
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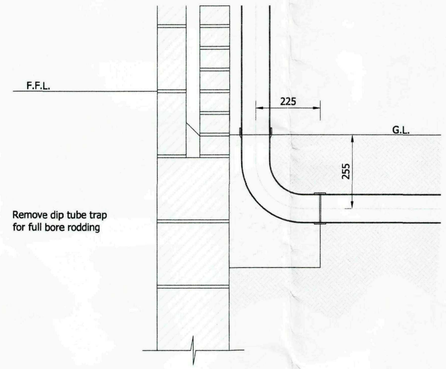




NB - Universal product - Adaptor to PVC-U Pipe Included

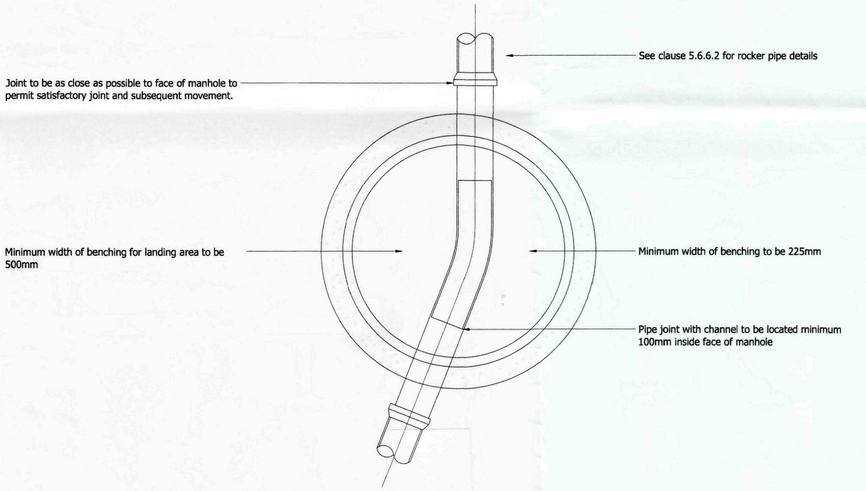
Polyproprene Inspection Chamber

(Scale 1:10)



Swept Bend RWP

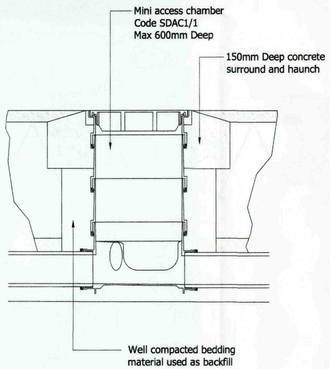
(Scale 1:10)



Typical Manhole Detail - Type B

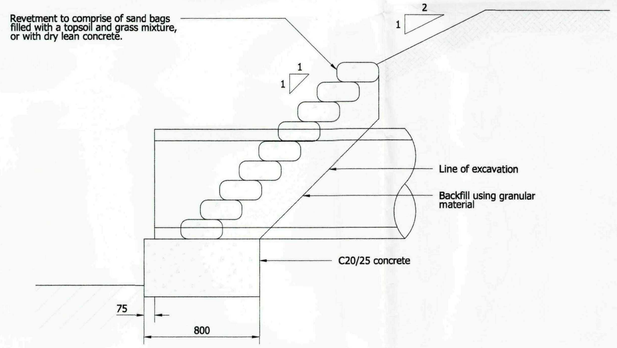
(Scale 1:20)

Maximum depth from cover level to soffit of pipe 3.0m
for steps and access arrangements see table 2.3



Mini PPIC

(Scale 1:10)



Reveted Headwalls - Section

(Scale 1:20)

SHDC
Planning & Development
13 JAN 2010
Ref: 0027.10

Rev	Amendments	Rev'd by	Date
A	Back inlet gully detail replaced with swept bend detail.	SDG	Dec 09

Client: Trent Valley Construction

Project: Crease Drove, Crowland, Peterborough, Cambridgeshire

Title: Construction Details - Sheet 2 of 3

Job No: 09-0511

Drawing No: 09-0511-A1-304 Rev: A

Status: Preliminary

Scale: As Shown | Date: Nov 09

Project Engineer: MO | Drawn By: SDG | Checked By: TC

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ACO Construction Notes

1. Ground Conditions: The long term performance of a channel installation to sustain vertical and lateral wheel loads depends upon:
   a) ground conditions
   b) stability of the adjacent pavement and
   c) a durable concrete bed and surround.
   NOTE that the stability of any channel/concrete surround to resist lateral loads from manoeuvring vehicles should be checked. The dimensions shown on ACO channel installation sketches are those of the laboratory test block and customers should ensure that these minimum dimensions are suitable for the existing ground and service loading conditions. Engineering advice may be necessary.

2. Surface Cracks: Alternate crack control and movement joints transversely within an exposed concrete bed and haunch may reduce unsightly surface cracking. As the design and layout of such joints is a function of the concrete mix design, the concrete curing regime and the contractor's programme (daywork joints for example) then engineering/contractor advice may be required.

3. Joint Sealant: Where ACO Drain channel joints/fittings and channel/concrete/pavement interfaces are to be sealed (where used in foul water or chemical applications for instance) contact a sealant specialist for guidance on the appropriate compound. It should be noted that the preparation of ACO resin concrete channels to receive a sealant does not vary from that required of cement concrete. Guidance on the necessary surface preparation and/or priming should be sought from the sealant manufacturer.

4. Surface protection: With asphalt pavements avoid contact between compaction equipment and channel/grating. This may be achieved by ensuring that the finished surface level lies above the grating level (by at least 3mm). Stones should be removed from grating prior to laying/rolling wearing course. Covering or protecting the grating, before concreting the haunch or laying asphalt, removes the time, and cost, of cleaning the channel and grating of cement/asphalt material and embedded stones.

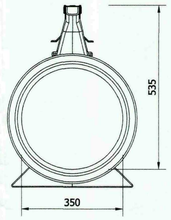
5. Movement Joints: The channel must be isolated from lateral loads resulting from thermal movement of concrete slabs. A joint may be positioned up to 1.0/1.5m from the channel (UK external installations). In internal applications where temperatures are controlled, possibly within a low range of extremes, joints may not be required. Engineering advice may be necessary. If joints are doweled then it is imperative that the dowels are aligned correctly in relation to the joint in both vertical and horizontal planes; that they are effectively debonded (with a proprietary sleeve and capping). Cutting of the joint material (to allow dowel fixing for example) must be made good to prevent the passage of concrete through a joint.

6. Temporary Installation: A channel installation is not complete until the final surfacing is laid. In any temporary condition, i.e. with the channel walls projecting above an asphalt base course or concrete sub-base, site traffic should not cross channels. Loose boards; stone fill or cover plates will not protect the channel walls or grating. A temporary channel crossing should be formed by raising the asphalt base course locally, to 3 - 5mm above grating level, either side of a channel for a distance of 750 to 1000mm say, to form ramps. Concrete ramps should be formed in other pavements. NOTE that the channel LOAD CLASS should be adequate to carry the site traffic.

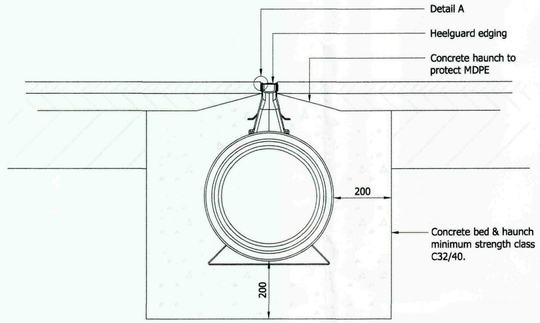
7. Surface Cracks: Alternate crack control and movement joints transversely within an exposed concrete bed and haunch may reduce unsightly surface cracking. As the design and layout of such joints is a function of the concrete mix design, the concrete curing regime and the contractor's programme (daywork joints for example) then engineering/contractor advice may be required.

8. Overlay Grating: The longitudinal edges of an overlay grating, which is designed to sit on top of a channel, are not protected by channel edge rails. Overlay gratings are designed principally for block or paving slab installations. Installed within a concrete or an asphalt pavement it is important to ensure that the grating edges are isolated from the concrete or asphalt to facilitate grating fixing/removal.

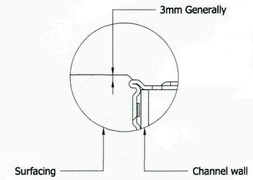
9. Further Advice: Refer to ACO Technical and Installation Manuals for further information and advice concerning:
   a) Handling
   b) Health and Safety
   c) Maintenance and
   d) Detailed installation guidance etc., etc.
   Advice, on any aspect of ACO channel systems, may also be obtained from ACO Drain Technical Department.



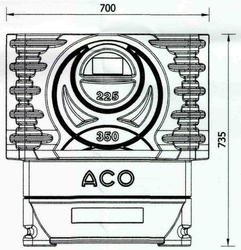
ACO Qmax 350 With Heelguard Edge
(Scale 1:10)



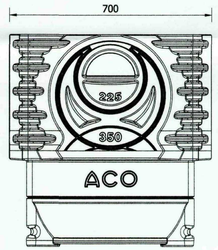
ACO Qmax Installation Detail
(Scale 1:10)



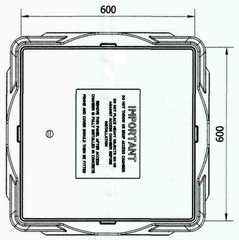
Detail A



Section A - A

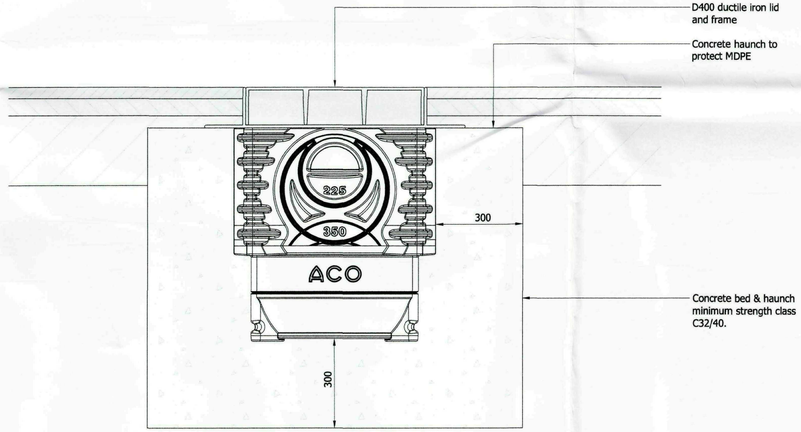


Section B - B



Plan

ACO Qmax Access Chamber (Shallow)
(Scale 1:10)



ACO Qmax Access Chamber (Shallow) - Installation Detail
(Scale 1:10)

Remove the appropriate ACO Qmax Access Chamber circular connection panel(s) with padsaw or similar.

Excavate a 200mm bed and surround (minimum 200mm Class A 15 to C 250, or minimum 300mm Class D 400 to F 900), blind where necessary. Allowance must be made for the access chamber, cover and frame.

Backfill the ACO Qmax Access Chamber with concrete to a depth of 300mm to fix the unit in place.

Connect the channels; for ACO Qmax 225 and 350 female channel connections, the seal must be removed to connect to the ACO Qmax Access Chamber. Male channels can connect directly. For connection of ACO Qmax 600 and 900 channels to ACO Qmax Access Chamber, a universal Access Chamber Connector must be used. The ACO Qmax Access Chamber Connector must be cut and the pipe connection detail removed as shown in fig. 3, to enable connection to the ACO Qmax Access Chamber.

Install and backfill access chamber and channels with concrete as per ACO Installation detail. Remove ACO Qmax Access Chamber top panel prior to installation of frame and cover.

Ground Conditions and Reinforcement: The customer should ensure that the minimum dimensions shown below are suitable for the existing ground conditions. The structural design / reinforcement of the concrete surround is to be determined by the client. Engineering advice may be necessary.

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NOTES

1. DO NOT SCALE THIS DRAWING.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.
3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS & SPECIFICATIONS.
4. ALL PROPRIETARY ITEMS TO BE INSTALLED IN STRICT COMPLIANCE WITH MANUFACTURERS INSTRUCTIONS AND RECOMMENDATIONS.

Rev	Amendments	Rev'd by	Date
A	ACO Qmax 225 channel drain detail omitted. Qmax installation detail amended.	SDG	Dec 09

Client: Trent Valley Construction

Project: Crease Drove, Crowland, Peterborough, Cambridgeshire

Title: Construction Details - Sheet 3 of 3

Job No: 09-0511

Drawing No: 09-0511-A1-305 Rev: A

Status: Preliminary

Scale: As Shown Date: Nov 09

Project Engineer: MO Drawn By: SDG Checked By: TC

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13 JAN 2010
Ref: 0027-10