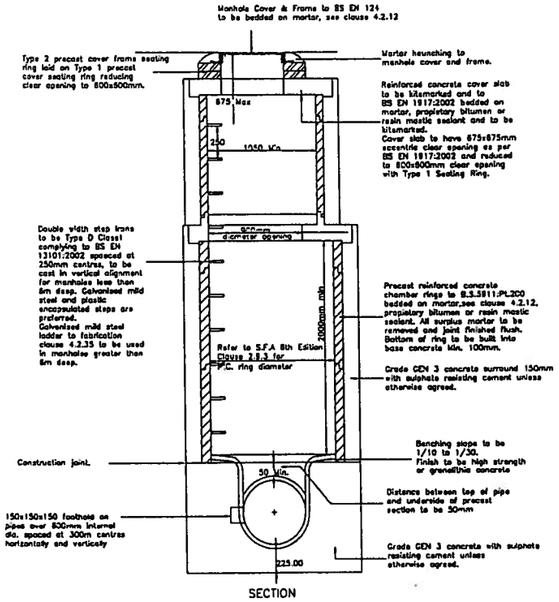
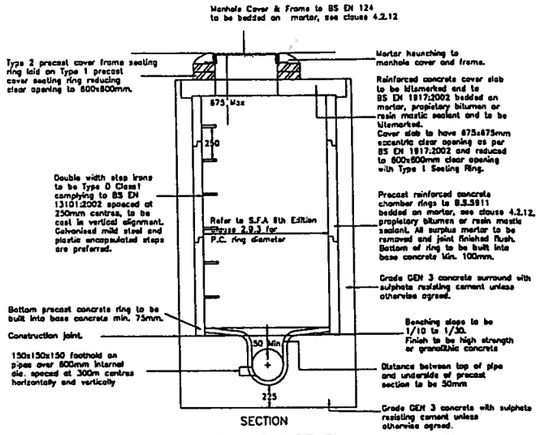


SECTION

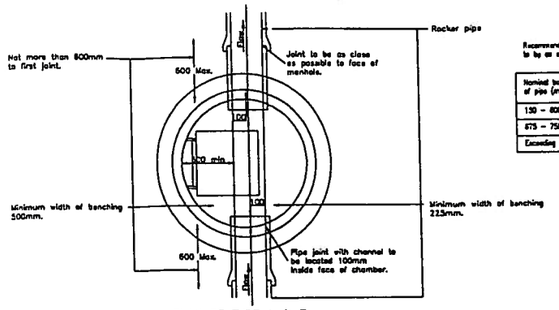
MANHOLE TYPE A.



SECTION

MANHOLE TYPE B.

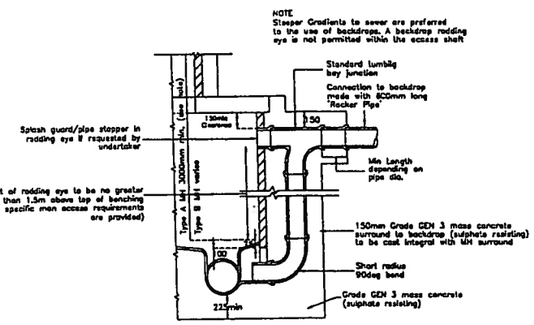
NOTE
Double width step irons required to all manholes up to 6m deep.



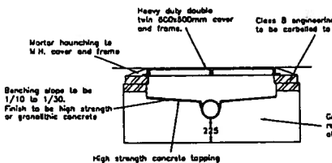
PLAN OF TYPE A & B
TYPICAL MANHOLE DETAIL
DEPTH TO CROWN < 3.0m (CHAMBER HEIGHT NOT LESS THAN 900mm)
TYPE 1 OR TYPE B IN W.A.A.
SEWERS FOR ADOPTION

Recommended length of rocker pipe to be as shown in table below

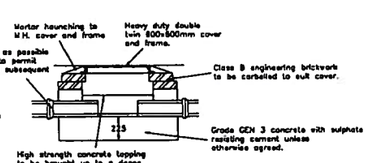
Nominal bore of pipe (mm)	Effective Length (m)
150 – 600	0.8
675 – 750	1.0
Exceeding 750	1.25



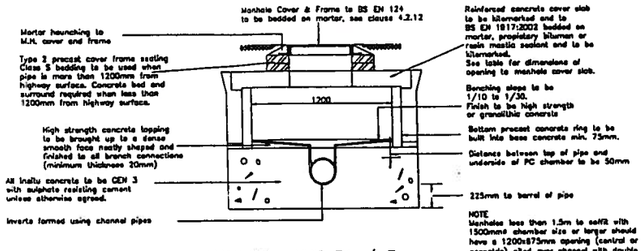
BACKDROP TO MANHOLE



MANHOLE TYPE S PLAN



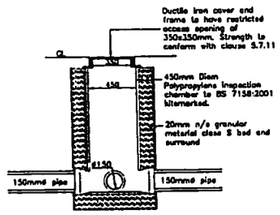
MANHOLE TYPE S PLAN



MANHOLE TYPE B1 / E

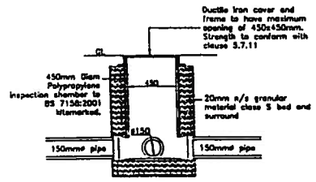
Depth from Ground level to soffit of pipe less than 1.5m

NOTE
Manholes less than 1.5m to soffit with 1500mm4 chamber size or larger should have a 1200x675mm opening (central or eccentric) sited over channel with double twin 600x600mm covers.



DEMARCATION CHAMBER DETAIL

Depth from cover level to invert level of pipe chamber greater than 1.2m. Maximum lateral drain diam 150mm



DEMARCATION CHAMBER DETAIL

Depth from cover level to invert level of pipe chamber less than 1.2m. Maximum lateral drain diam 150mm

Minimum depth of Lateral drains

Location	Minimum Depth (m)
Gardens	0.9
Agricultural/Open spaces	0.9
Highways (no footways)	1.2

Demarcation chamber covers & frames

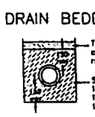
Surface	Class (Loading in kN)	Location
Road	D400	Vehicle Impact
Footway & Driveway	B125	Occasional vehicle loading
Gardens	A15	Pedestrian/cyclist

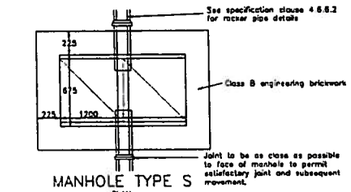
Pipes

Diameter (mm)	Gradient	
	Fall	S.W.
100	1:80	1:100
150	1:80	1:150
225	1:125	1:225

Vitrified clay pipes to BS EN 295 kitemarked.
Unplasticised PVC pipes to BS 4660:200 & BS EN 1401-1 kitemarked.
Structured Wall Unplasticised PVC pipes to WIS 4-35-01 kitemarked.

LATERAL DRAIN BEDDING DETAIL





MANHOLE TYPE S

PLAN

Depth from ground level to soffit of pipe <1.0m

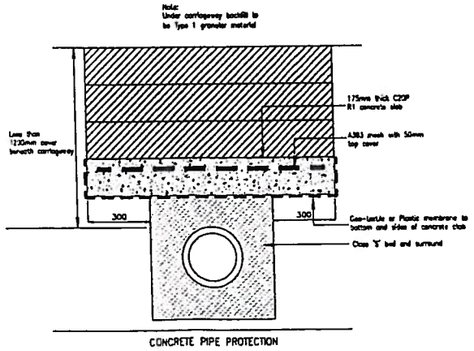
Note
All Drainage works and materials to conform with 'Sewers For Adoption' 6th Edition.

Chambers
Type C, D, E & F are non preferred chambers. For type 'B' chambers less than 1.2m from top of benching to the underside of the cover slab, shall have the cover fixed in the centre of the slab and the channels intersecting beneath the cover.

Covers
The minimum size for manhole covers is 600mm by 600mm. Manhole covers to be class D400 and have 150mm deep frames where located in the highway.

Step Irons / Ladders
All step irons shall be double rung and complying clause 4.2.31.
Step irons are required for all manholes, up to 6 metres deep.

Brickwork
All brickwork to be constructed using class B engineering solids.



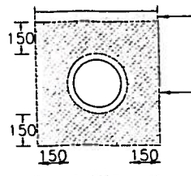
CONCRETE PIPE PROTECTION

Cover Slab	Hole size in cover slab	Cover frame seating ring on cover slab	Hole size in cover slab		Cover frame seating ring on cover slab	
Chamber Diameter	(MH's < 1.5m deep)	Double step access	(MH's > 1.5m deep)	Double step access	Ladder access	Feature Ladder access
1050mm	750x750mm c.o.	750x750mm c.o.	675x675mm e.o.	Type 1 – 600x500mm e.o.	Not applicable	Not applicable
1200mm	875x875mm e.o.	675x675mm c.o.	875x875mm e.o.	Type 1 – 600x500mm e.o.	Type 1 – 620x500mm e.o.	750x930mm opening
1500mm	1200x875mm e.o.	1200x675mm c.o.	875x875mm e.o.	Type 1 – 600x500mm e.o.	Type 1 – 920x500mm e.o.	750x930mm opening
1800mm	1200x875mm e.o.	1200x675mm c.o.	875x875mm e.o.	Type 1 – 600x500mm e.o.	Type 1 – 900x600mm e.o.	750x900mm opening
2100mm	1200x875mm e.o.	1200x675mm c.o.	875x875mm e.o.	Type 1 – 600x600mm e.o.	Type 1 – 630x600mm e.o.	750x900mm opening
2400mm	1200x875mm e.o.	1200x675mm c.o.	875x875mm e.o.	Type 1 – 800x600mm e.o.	Type 1 – 630x600mm e.o.	750x600mm opening
2700mm	1200x875mm e.o.	1200x675mm c.o.	875x875mm e.o.	Type 1 – 800x500mm e.o.	Type 1 – 820x500mm e.o.	750x600mm opening
3000mm	1200x875mm e.o.	1200x675mm c.o.	875x875mm e.o.	Type 1 – 800x500mm e.o.	Type 1 – 930x600mm e.o.	750x600mm opening

c.o. = central opening e.o. = eccentric opening
Note: For ladder access the Type 1 eccentric seating ring is turned through 180 degrees

1. ALL ADOPTABLE SEWER WORKS AND MATERIAL TO BE IN ACCORDANCE WITH 'SEWERS FOR ADOPTION' 6th EDITION, YORKSHIRE WATER AND KITEMARKED.
2. MANHOLE COVERS SHALL/MUST HAVE A CLEAR OPENING OF 600mm AND SHALL BE CLASS D400 TO BS EN 124 WITH 150mm DEEP FRAMES IN HIGHWAYS OR CLASS B 125 IN FOOTPATHS, PEDESTRIAN AREAS AND COMPARABLE LOCATIONS.
3. FILLED CHAMBERS MUST BE FILLED AND CONSOLIDATED UNDER THE SUPERVISION AND TO THE SATISFACTION OF YORKSHIRE WATER BEFORE ANY SEWER WORKS ARE CARRIED OUT.
4. YORKSHIRE WATER IS NOT OBLIGED TO ACCEPT FILTER DRAIN/LAND DRAINAGE RUNOFF INTO THE PUBLIC SEWER NETWORK OR ADOPTABLE DRAINAGE SYSTEM (DIRECTLY OR INDIRECTLY) AN ALTERNATIVE METHOD OF DISPOSAL OF THE LAND DRAINAGE RUNOFF WILL THEREFORE BE REQUIRED AND YOU WILL HAVE TO LIAISE WITH THE LOCAL AUTHORITY, LAND DRAINAGE SECTION WITH REGARD TO THE DISPOSAL OF THE FILTER DRAIN/LAND DRAINAGE RUNOFF.
5. COVER SLABS MUST CARRY THE BSI KITEMARK OR WILL BE REJECTED BY YORKSHIRE WATER INSPECTOR. WHERE THE CLEAR OPENING OF THE KITEMARKED PRODUCT IS DIFFERENT TO THAT OF THE COVER AND FRAME, A LOADING BEARING SLAB SHOULD BE FITTED ABOVE THE COVER SLAB TO BRING THE SIZE DOWN TO 600MM0MM FOR THE YORKSHIRE WATER SPECIFIED COVER SIZE. PLEASE REFER TO CONCRETE PIPE SYSTEMS ASSOCIATION (CPSA), TECHNICAL BULLETIN ISSUED AUTUMN 2004 FOR KITEMARKED COVER SLAB OPENING SIZES.
6. SULPHATE RESISTANT CEMENT AND PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED PROVING THAT SUCH PRECAUTIONS ARE NOT NECESSARY.
7. THE ADOPTABLE SEWERS SHOULD BE A MINIMUM OF 1m AND MANHOLES 0.5m FROM KERB FACES AND SERVICE MARKING.
8. SEWERS MUST HAVE 3m CLEARANCE FROM TREES AND HEDGES.
9. SEWERS TO BE LAID IN CLASS 'S' BEDDING (150mm GRANULAR BED AND SURROUND), MAXIMUM DEPTH OF COVER TO TOP OF PIPE SEWER IS LESS THAN 1.5m IN HIGHWAYS AND VERGES (OR LESS THAN 4m WHERE NO VEHICULAR ACCESS AREAS) THEN A 175mm CONCRETE SLAB OVER SEWER SHALL BE LAID.
10. ALL PIPEWORK 300mm DIAM. OR LESS TO BE VITRIFIED CLAY CONFORMING WITH BS 65. MINIMUM CRUSHING STRENGTHS TO BE AS FOLLOWS: 150mm DIA 40kN/m, 225mm DIA 48kN/m, 300mm DIA. 72kN/m.
11. ALL PIPEWORK 375mm DIAM. OR GREATER TO BE CONCRETE CLASS 120, 34kN/m MINIMUM CRUSHING STRENGTH.
12. THE CHAMBER SIZE OF MANHOLES WITH MORE THAN ONE CONNECTION IN THEM MAY NEED TO BE INCREASED AN INCREMENT TO ACCOMMODATE THE CONNECTIONS AND BENDS.
13. YORKSHIRE WATER POLICY IS NOT TO ACCEPT TYPE 'C' SHAFT MANHOLES AND 1200mm DIAM. MANHOLE RINGS, INSTEAD IT IS PREFERRED THAT YOU USE A TYPE 'B' MANHOLE WITH 1200mm DIAM. OR 1500mm DIAM. RINGS, WITH THE OPENING SIZETED OVER THE CHAMBER, WHERE DEPTH OF COVER TO PIPE SOFFIT IS 1–1.5m.
14. ALL MATERIAL WORKS AND MATERIAL TO CONFORM WITH BARNSLEY WSC SPECIFICATION
15. DUCTILE COVER AND FRAMES SHALL BE CLASS DUCTILE IRON AND COMPLY WITH EUROPEAN STANDARD BS EN 124, THOSE SIGHTED IN ACCESSWAYS AND MEWS COURTS MUST BE SUITABLE FOR USE IN PEDESTRIAN AREAS.
16. SULPHATE RESISTANT CEMENT(ISS–SCF) AND PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED PROVING THAT SUCH PRECAUTIONS ARE NOT NECESSARY

RISK ASSESSMENT: SIGNIFICANT RISKS THAT CANNOT BE DESIGNED OUT		
RISK	LEVEL OF RISK (H/M)	SUGGESTED ACTION
DEEP EXCAVATIONS ASSOCIATED WITH NEW DRAINAGE WORKS	HIGH	ENSURE ALL EXCAVATIONS HAVE ADEQUATE TRENCH SUPPORTS
HANDLING LARGE DIAMETER MANHOLE RINGS AND CIRCULAR PIPES	HIGH	USE CORRECT LIFTING EQUIPMENT AND ENSURE OPERATIVES WEAR APPROPRIATE PROTECTIVE CLOTHING/HARD HATS/CORRECT PPE
CONTACT WITH SEWAGE	MED	OPERATIVES TO USE CORRECT BREATHING EQUIPMENT/CORRECT PPE
NOISE	MED	OPERATIVES TO USE CORRECT EAR PROTECTION/CORRECT PPE
DRAINAGE EXCAVATIONS ADJACENT EXISTING BOUNDARY STRUCTURES	HIGH	ENSURE CORRECT SUPPORTS ARE PROVIDED TO TRENCHES AND BUILDINGS ARE SECURED
DRAINAGE EXCAVATION IN PUBLIC HIGHWAY	HIGH	ENSURE CORRECT USE OF TRENCH SUPPORTS IN EXCAVATION AND ACTIVELY SUPERVISE TO AFFECTIVE WORKINGS OF THE PLANT
MAINTAIN ACCESS TO ADJACENT PROPERTIES AND OCCUPIERS	HIGH	ENSURE WORKS ARE PROTECTED WITH BARRIERS AND SIGNS TO CLEARLY DEFINE AREA FROM THE WORKS
DRAINAGE EXCAVATIONS NEAR TO EXISTING SERVICES	HIGH	ENSURE WORKS ARE DEMARCATED WITH BARRIERS AND SIGNS TO CLEARLY WARN OF THE PUBLIC AWAY FROM THE AREA
WORKING IN CONFINED SPACES, WORKING IN DRAINS AND MAN-OLES	HIGH	CONFINED SPACES WORKING TRAINED PERSONNEL ONLY TO CARRY OUT WORKS UNDER A PERMIT TO WORK SYSTEM IMPLEMENTED BY CONTRACTOR. GAS TESTING TO TAKE PLACE BEFORE ALL ENTRIES TO CONFINED SPACES
WORKING IN HIGHWAYS / RISKS FROM VEHICLE AND PLANT	HIGH	ALL WORKS TO BE SIGNED AND FENCED FROM NORMAL VEHICULAR TRAFFIC. ALL WORKERS TO WEAR HIGH VISIBILITY CLOTHING. ALL PLANT TO HAVE VISUAL AND AUDIBLE WARNING SYSTEMS.
ROAD AND DRAINAGE CONSTRUCTION	HIGH	ALL EXCAVATIONS TO BE ADEQUATELY FENCED OFF AND SUPERVISED DURING CONSTRUCTION. ALL OPERATIVES TO BE TRAINED IN CORRECT METHODS OF LIFTING AND WORK IN ACCORDANCE WITH LOLER 1998.
OPEN WATERCOURSE ON SITE	HIGH	ADEQUATE SIGNAGE AND FENCING TO BE INSTALLED DURING CONSTRUCTION. SITE TRAFFIC TO BE DIRECTED AWAY FROM EDGE OF BANKING ON SITE. LIFEBUOYS TO BE PROVIDED A SAFE DISTANCE FROM WATER EDGE. ALL OPERATIVES TO BE TRAINED IN RESCUE PROCEDURE AND RAISING ALARM.
IT IS ASSUMED THAT WORKS ASSOCCIATED WITH THIS DESIGN WILL BE UNDERTAKEN BY A PERSON OR PERSONS WHO ARE COMPETENT AND HAVE THE REQUIRED LEVEL OF EXPERIENCE AND EXPERTISE		



Class S Bedding Factor 2.5
Scale 1:10

Nominal bore of pipe (mm)	Size mm Single Sized	Size mm Graded
100–125	10	–
150–200	10 or 14	14 to 5
225–300	10, 14 or 20	14 to 5 or 20 to 5
375–500	14 or 20	14 to 5 or 20 to 5
Exceeding 500	14, 20 or 40	14 to 5, 20 to 5 or 40 to 5

All granular material to be single sized or graded in accordance with BS 882: 1983, sintered pulverised-fuel ash to BS 3797: Part 2: 1976 and air-cooled blast furnace slags to BS 1047: 1983 are suitable.

Haigh Huddleston & Associates
Civil Structural Engineering Consultants
Firth Buildings, 89 - 101 Leeds Rd, Dewsbury, WF13 2BU t 01924 464342 f 01924 455
e trevor.haigh@haighhuddleston.co.uk

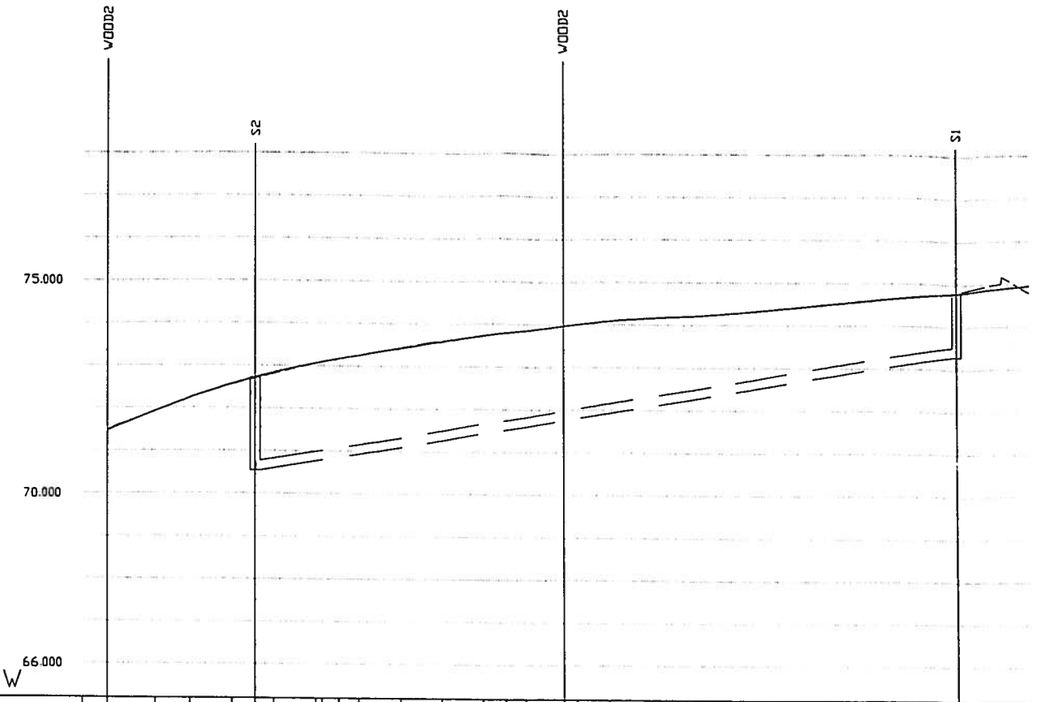
Client: Saul Construction

Project: Wood View, Elsecar

Detail: Standard Manhole Details

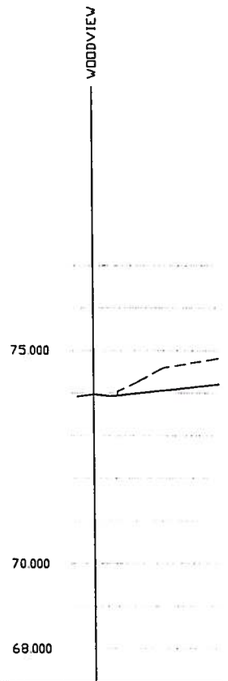
Drwn	Chkd	Date	Scale	Dwg No.
MD		Jul '11	1:20	E11/5351/15

D/r 5351 09



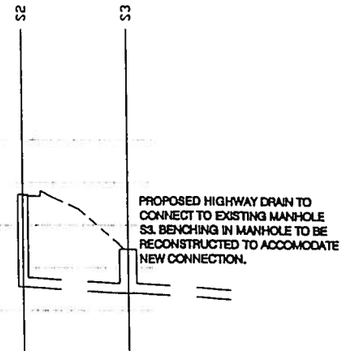
WOODVIEW

CHAINAGE	0.000	5.798	10.000	15.000	17.802	20.000	25.000	25.000	27.734	30.000	35.000	40.000	45.000	47.734	50.000	54.642	56.135	60.000	65.000	65.000	68.073	70.000	75.000	78.073	80.000	90.000	100.000	101.734	118.990
EXISTING GROUND LEVEL			72.225			72.804				73.258		73.613			73.867			74.101				74.213			74.370	74.560		74.761	74.845
ALIGNMENT LEVEL	71.472	71.927	72.239	72.565	72.840	73.062	73.062	73.170	73.255	73.430	73.588	73.729	73.799	73.854	74.005	74.088	74.162	74.162	74.194	74.214	74.283	74.338	74.375	74.569		74.762		74.956
VERTICAL ALIGNMENT	G= 7.854% 1: 12.7		L= 20.000 KF= -4.97478			3.834% 26.1		L= 20.000 KF= -14.48174					G= 2.453% 1: 40.8		L= 10.000 KF= -6.67271	0.954% 104.8			L= 10.000 KF= 10.18981		G= 1.935% 1: 51.7								
HORIZONTAL ALIGNMENT																													
STORMWATER COVER LEVEL					72.723																						74.789		
STORMWATER INVERT					70.550																						73.300		
STORMWATER DETAILS					Pipe 1.000 Dia 225 Circular CLAY 1 in 31																								
STORMWATER LENGTHS					63.931																								



WOOD2

CHAINAGE	-2.000	0.000	10.000	12.750
EXISTING GROUND LEVEL	73.976	73.939	74.717	74.815
ALIGNMENT LEVEL	73.918		74.139	74.200
VERTICAL ALIGNMENT		G= 2.212% 1: 45.2		
HORIZONTAL ALIGNMENT				



GROUND LEVEL	72.695	71.824
STORMWATER COVER LEVEL	72.723	71.435
STORMWATER INVERT	70.550	70.406
STORMWATER DETAILS	Pipe 1.001 Dia 225 Circular CLAY 1 in 87	
STORMWATER LENGTHS	12.597	

Haigh Huddleston & Associates

Civil Structural Engineering Consultants

Firth Buildings, 99 - 101 Leeds Rd, Dewsbury, WF12 7BU t 01924 464342 f 01924 450662

e trevor.haigh@haighhuddleston.co.uk

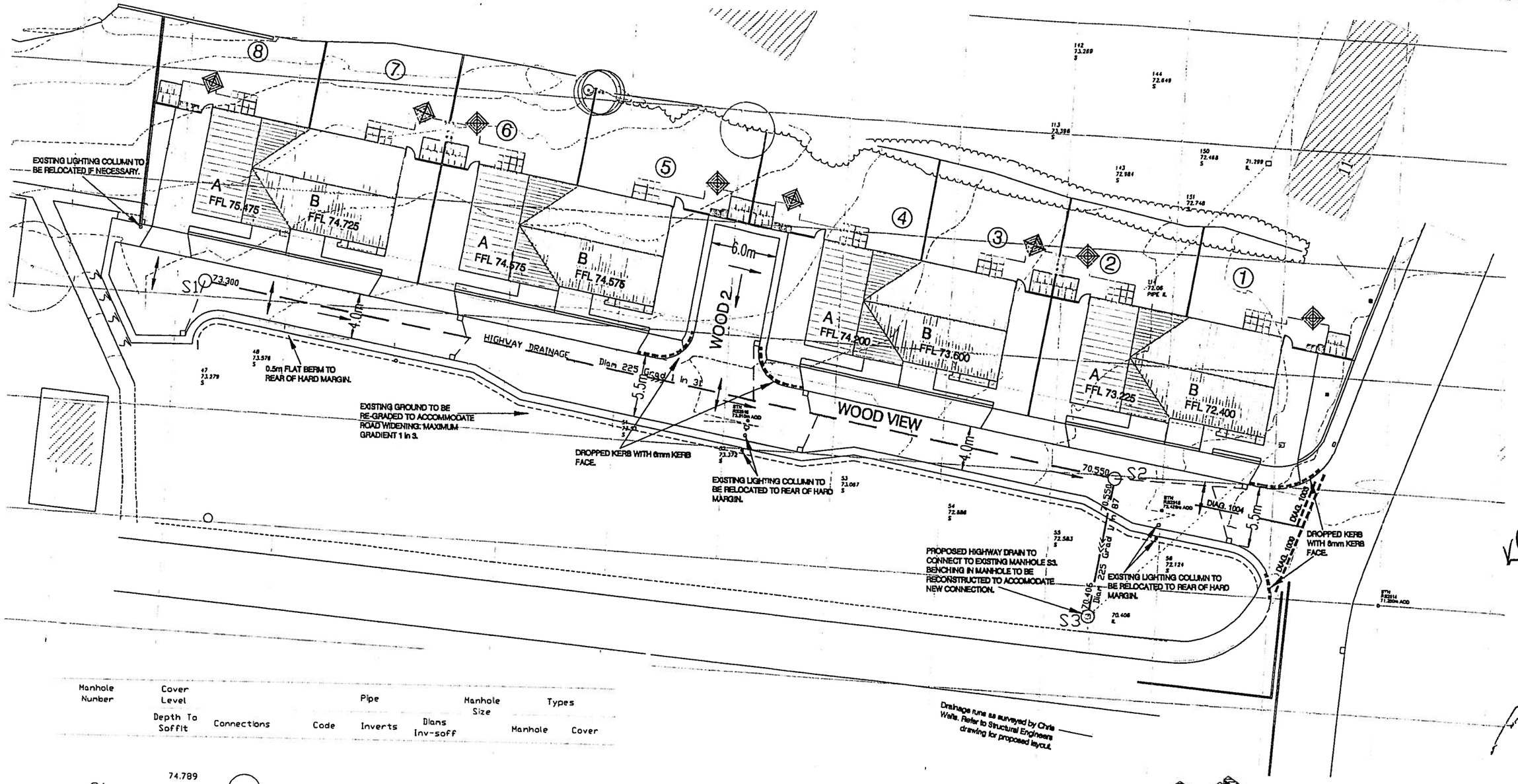
Client
Saul Construction

Project
Wood View, Elsecar

Detail
Road and Highway Drainage Long Sections

Dwn	Chkd	Date	Scale	Dwg No.
MD		May '11	Hor 1:500 Ver 1:100	E11/5351/09

DN - 5351 /03B



Manhole Number	Cover Level / Depth To Soffit	Connections		Pipe Code	Pipe Inverts	Pipe Diams Inv-soff	Manhole Size	Manhole Types	Cover Types
S1	74.789 1.264	0					1200	Type B1	D400
			0	1.000	73.300	225			
			1	1.000	70.550	225			
S2	72.723 1.948	1 0					1200	Type B	D400
			0	1.001	70.550	225			
			1	1.001	70.406	225			
S3 EXISTING MANHOLE	71.435 0.804	1					Existing	Existing	Existing

NOTE:
Proposed relocation of streetlighting columns to be confirmed by Barnsley MBC Streetlighting Department

Rev B White lining amended, manhole schedule added — 06.07.11 MD
Rev A Road hump removed, while lining added, junction radii amended — 14.06.11 MD

Haigh Huddleston & Associates
Civil Structural Engineering Consultants
Firth Buildings, 99 - 101 Leeds Rd, Dewsbury, WF12 7BU t 01924 464342 f 01924 450662
e trevor.haigh@haighhuddleston.co.uk

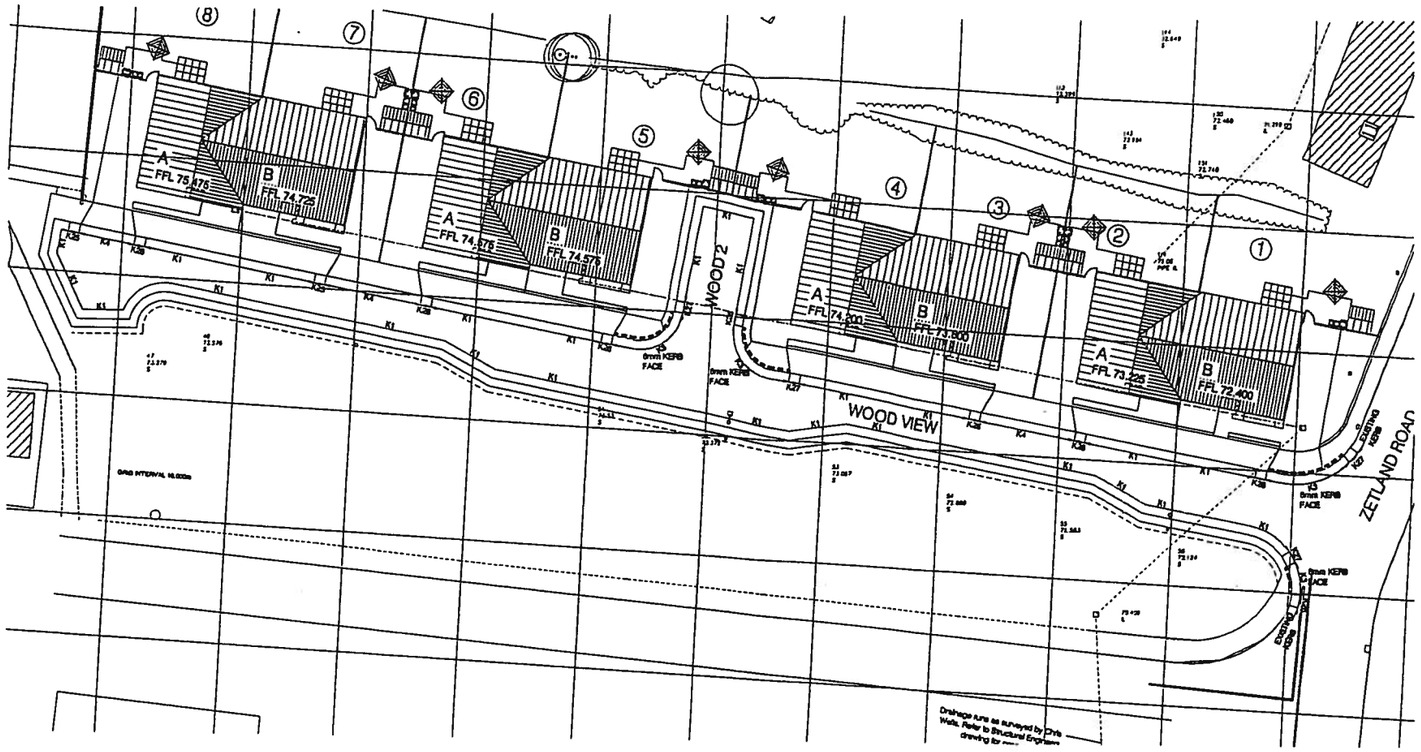
Client: Saul Construction

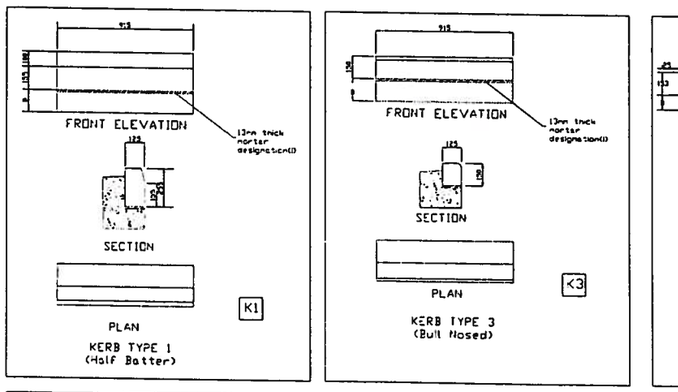
Project: Wood View, Elsecar

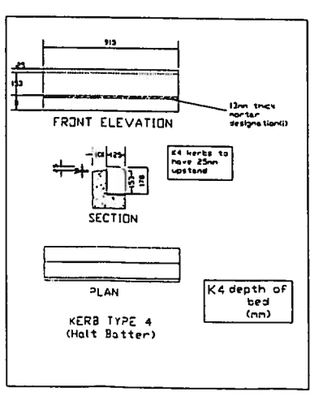
Detail: Highway Drainage Details

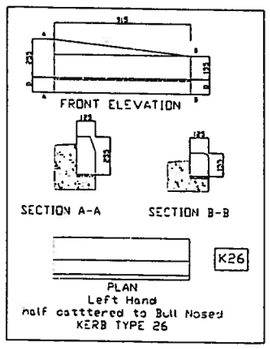
Dwn	Chkd	Date	Scale	Dwg No.
MD		Apr '11	1:250	E11/5351/03B

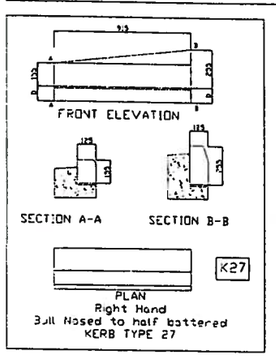
D/N - 5351, 11A

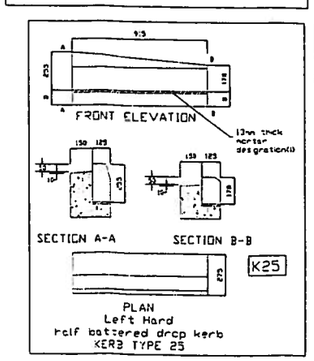


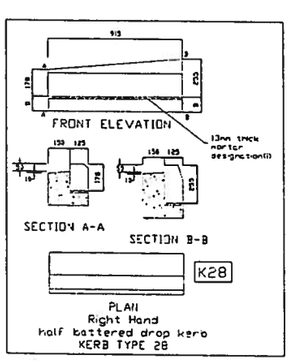












Rev A Dimension style amended 07.07.11 MD

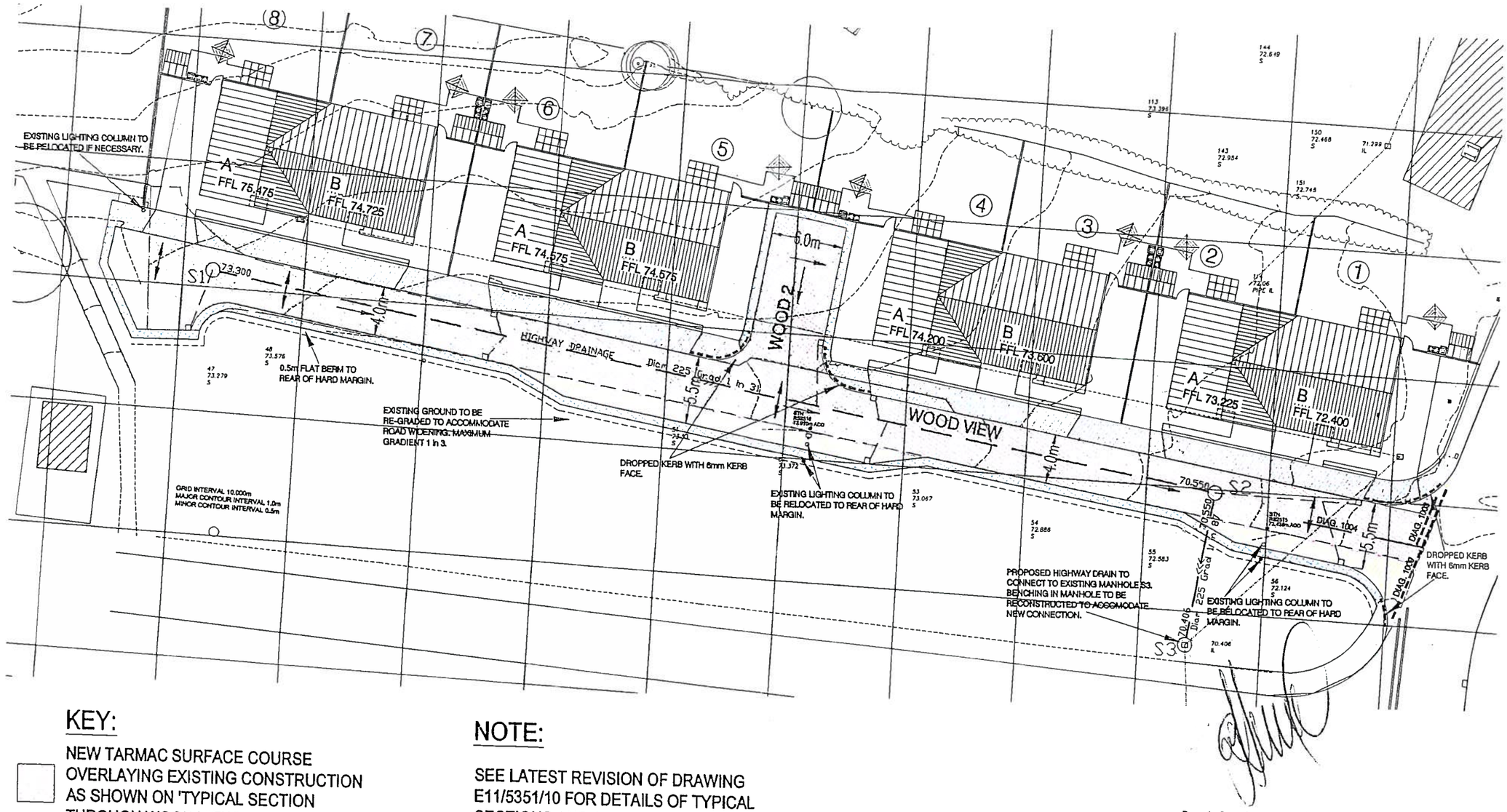
Haigh Huddleston & Associates
Civil Structural Engineering Consultants
Firth Buildings, 99 - 101 Leeds Rd, Dewsbury, WF12 7BU t 01924 464342 f 01924 450662
e trevor.haigh@haighhuddleston.co.uk

Client
Saul Construction

Project
Wood View, Elsecar

Detail
Kerb Type Plan

Drn	Chkd	Date	Scale	Dwg No.
MD		Jun '11	1:250	E11/5351/14A



KEY:

- NEW TARMAC SURFACE COURSE OVERLAYING EXISTING CONSTRUCTION AS SHOWN ON 'TYPICAL SECTION THROUGH WOOD VIEW'
- NEW CARRIAGEWAY CONSTRUCTION WITH TARMAC SURFACE COURSE AS SHOWN ON 'TYPICAL SECTION THROUGH ROAD WIDENING'
- NEW CARRIAGEWAY CONSTRUCTION WITH TARMAC SURFACE COURSE AS SHOWN ON 'TYPICAL SECTION THROUGH WOOD 2'
- NEW 2000mm WIDE TARMAC FOOTWAY
- NEW 700mm WIDE BLOCK PAVED HARD MARGIN

NOTE:

SEE LATEST REVISION OF DRAWING E11/5351/10 FOR DETAILS OF TYPICAL SECTIONS AND CONSTRUCTION .

Rev A Drawing re-scaled and additional notes added 07.07.11 MD

Haigh Huddleston & Associates
Civil Structural Engineering Consultants
Firth Buildings, 99 - 101 Leeds Rd, Dewsbury, WF12 7BU t 01924 464342 f 01924 450662
e trevor.haigh@haighhuddleston.co.uk

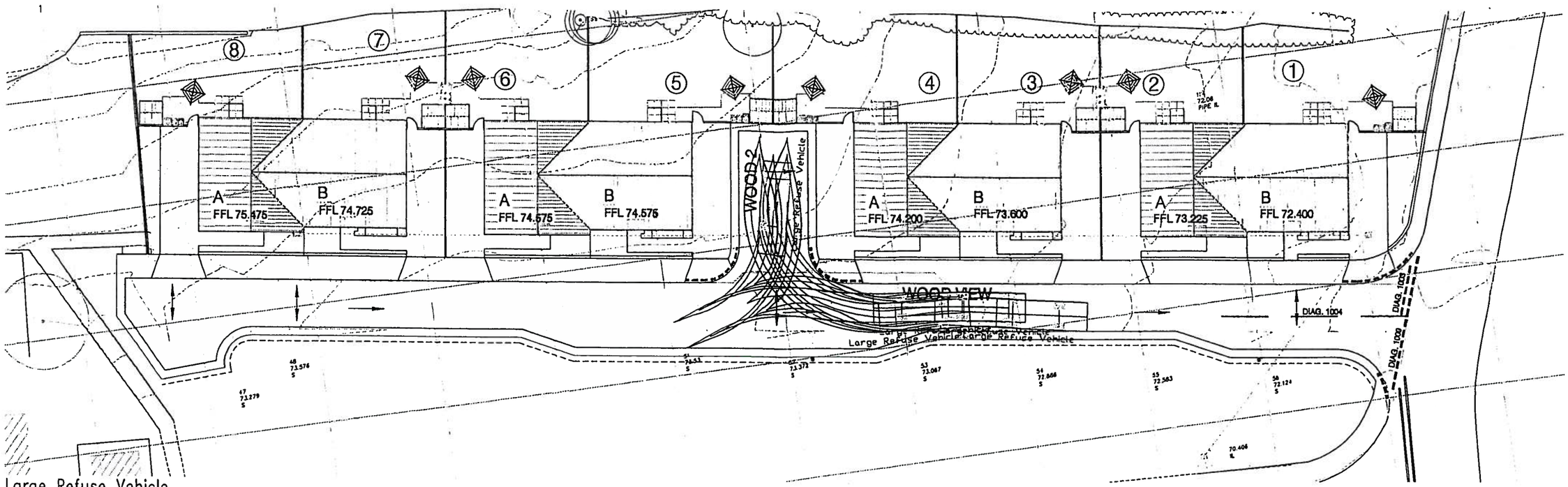
Client: Saul Construction

Project: Wood View, Elsecar

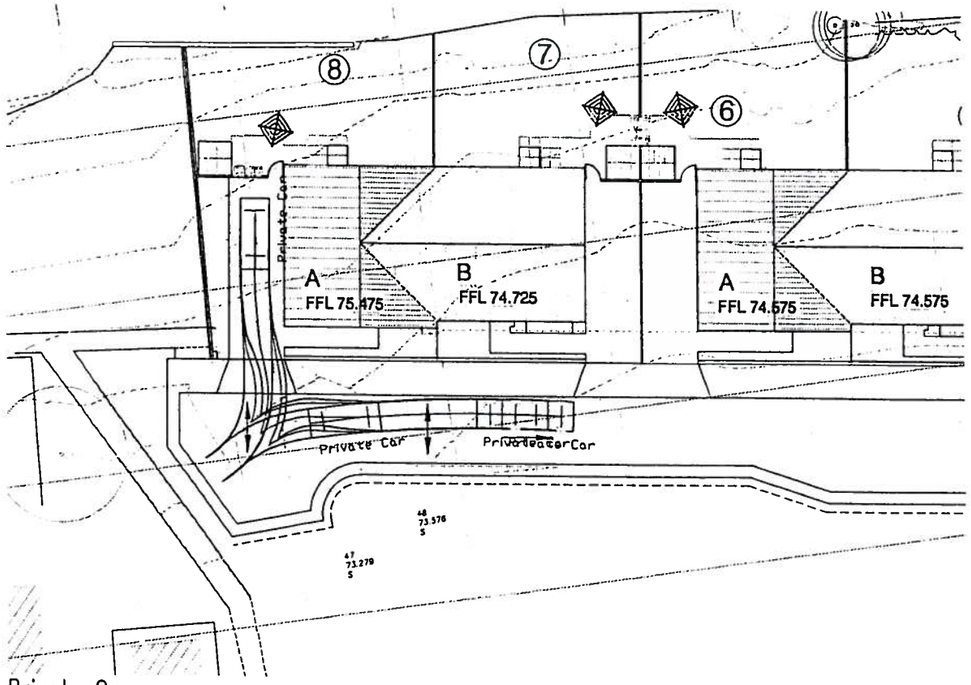
Detail: Section 278 Surfacing Plan

Dwn	Chkd	Date	Scale	Dwg No.
MD		Jun '11	1:250	E11/5351/13A

D/W - 5351 - 12



Large Refuse Vehicle
Three-point turn reversing into turning head.



Private Car
Reversing out of Driveway

Haigh Huddleston & Associates

Civil Structural Engineering Consultants

Firth Buildings, 99 - 101 Leeds Rd, Dewsbury, WF12 7BU t 01924 464342 f 01924 450662

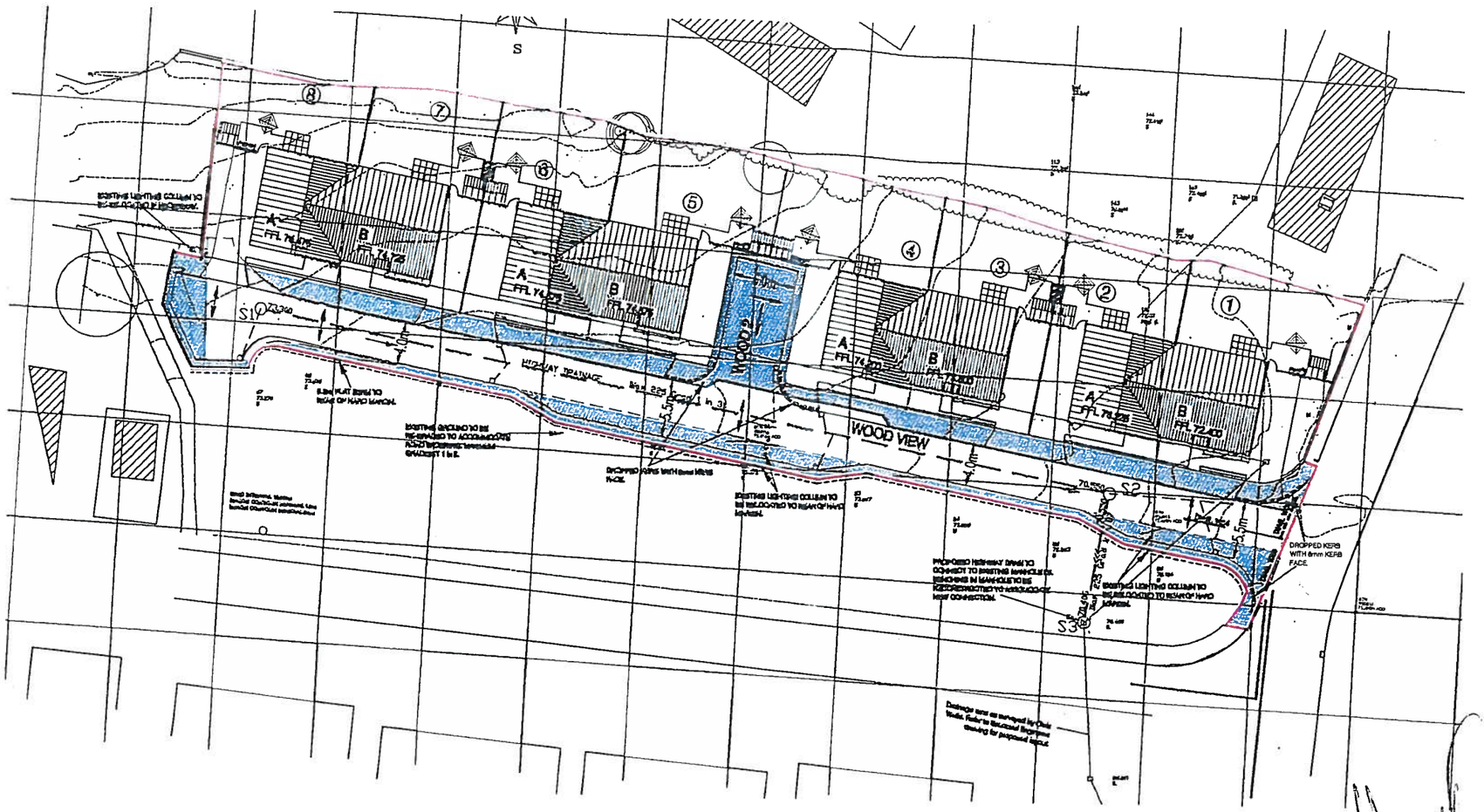
e trevor.haigh@haighhuddleston.co.uk

Client
Saul Construction

Project
Wood View, Elsecar

Detail
Vehicle Tracking Details

Dwn	Chkd	Date	Scale	Dwg No.
MD		Jun '11	1:250	E11/5351/12



KEY:

— PLANNING BOUNDARY

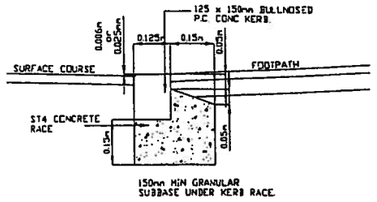
EXTENT OF LAND TO BE DEDICATED AS HIGHWAY.

Rev A Key added 06.07.11 MD

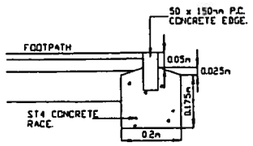
Haigh Huddleston & Associates
Civil Structural Engineering Consultants
Firth Buildings, 99 - 101 Leeds Rd, Dewsbury, WF12 7BU t 01924 484342 f 01924 420682
e trevor.haigh@haighhuddleston.co.uk

Client	Saul Construction
Project	Wood View, Elsecar
Detail	Section 278 Coloured Plan
Scale / Dwn / Chkd / Date / Dwg No.	1:500 / MD / / Jun '11 / E11/5351/11A

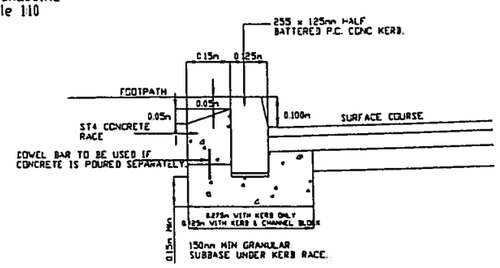
NOTE:
Proposed relocation of streetlighting columns to be confirmed by Barnsley MBC Streetlighting Department.



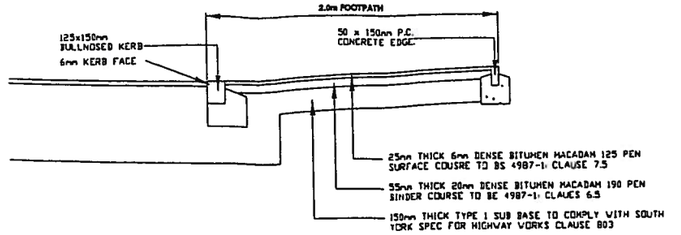
DROPPED/VEHICLE CROSSING KERB DETAIL. Scale 1:10



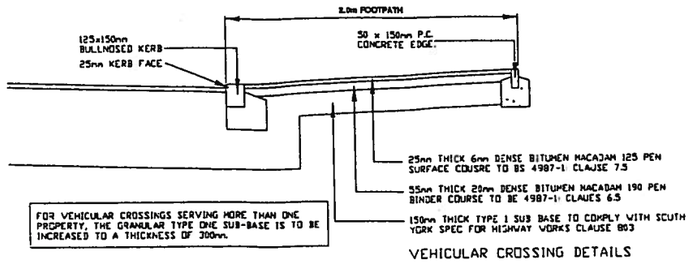
FOOTPATH EDGING DETAIL Scale 1:10



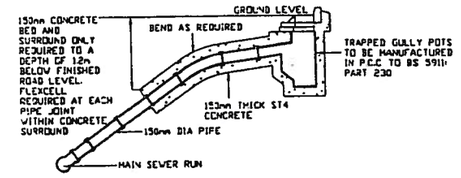
TYPE 5 ROAD KERB DETAIL. Scale 1:10



DROPPED CROSSING DETAILS

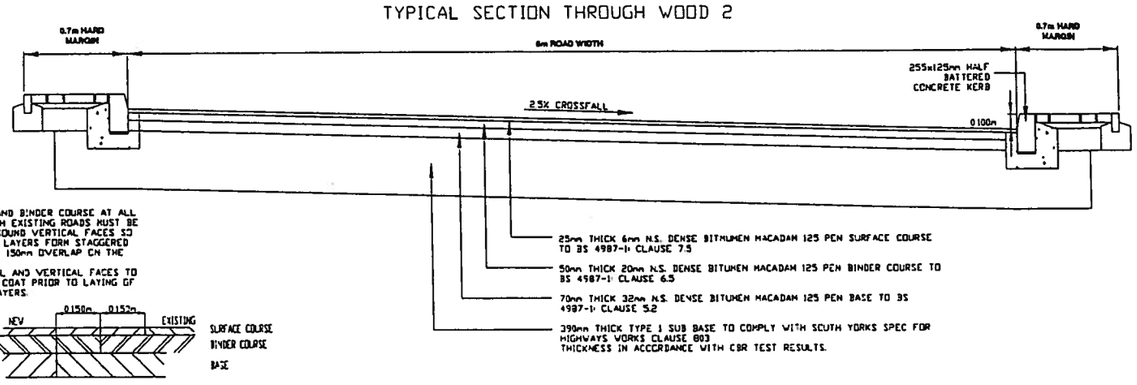


VEHICULAR CROSSING DETAILS



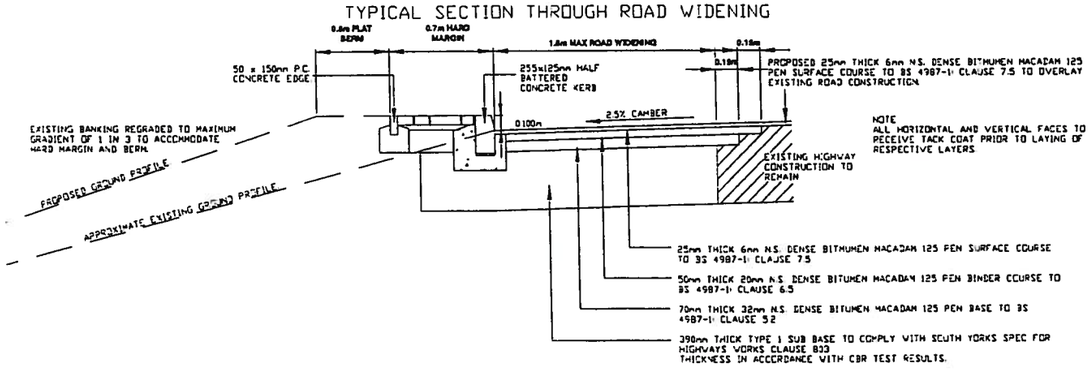
GULLEY CONNECTION (N.T.S.)

TYPICAL SECTION THROUGH WOOD 2

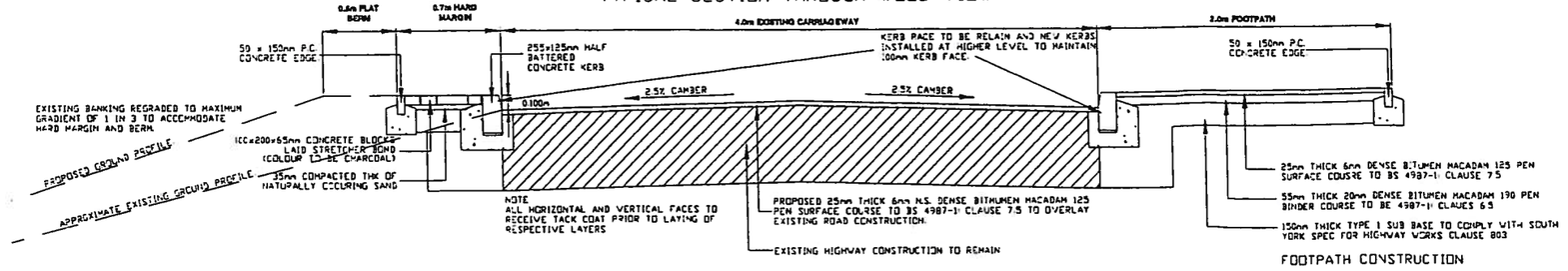


NOTE
THE SURFACE AND BINDER COURSE AT ALL JUNCTIONS WITH EXISTING ROADS MUST BE CUT BACK TO SOUND VERTICAL FACES SO THAT THE NEW LAYERS FORM STAGGERED JOINTS WITH A 150mm OVERLAP ON THE EXISTING.
ALL HORIZONTAL AND VERTICAL FACES TO RECEIVE TACK COAT PRIOR TO LAYING OF RESPECTIVE LAYERS.

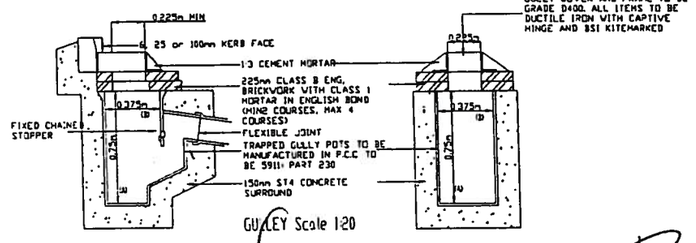
TYPICAL SECTION THROUGH ROAD WIDENING



TYPICAL SECTION THROUGH WOOD VIEW



FOOTPATH CONSTRUCTION



GULLEY Scale 1:20

Rev E	Gully cover and frame details amended	07.07.11 MD
Rev D	Hard margins amended, dropped kerb detail added	06.07.11 MD
Rev C	Additional notes added to road construction sections	16.06.11 MD
Rev B	Road hump details removed, dropped kerb detail added	15.06.11 MD
Rev A	Vehicle crossing and road hump details added	13.06.11 MD

Haigh Huddleston & Associates
Civil Structural Engineering Consultants
Firth Buildings, 99 - 101 Leeds Rd, Dewsbury, WF12 7BU t 01924 464342 f 01924 450682
e trevor.haigh@haighhuddleston.co.uk

Client: Saul Construction

Project: Wood View, Elsecar

Detail: Road Construction Details

Own	Chkd	Date	Scale	Dwg No.
MD		May '11		E11/5351/10E