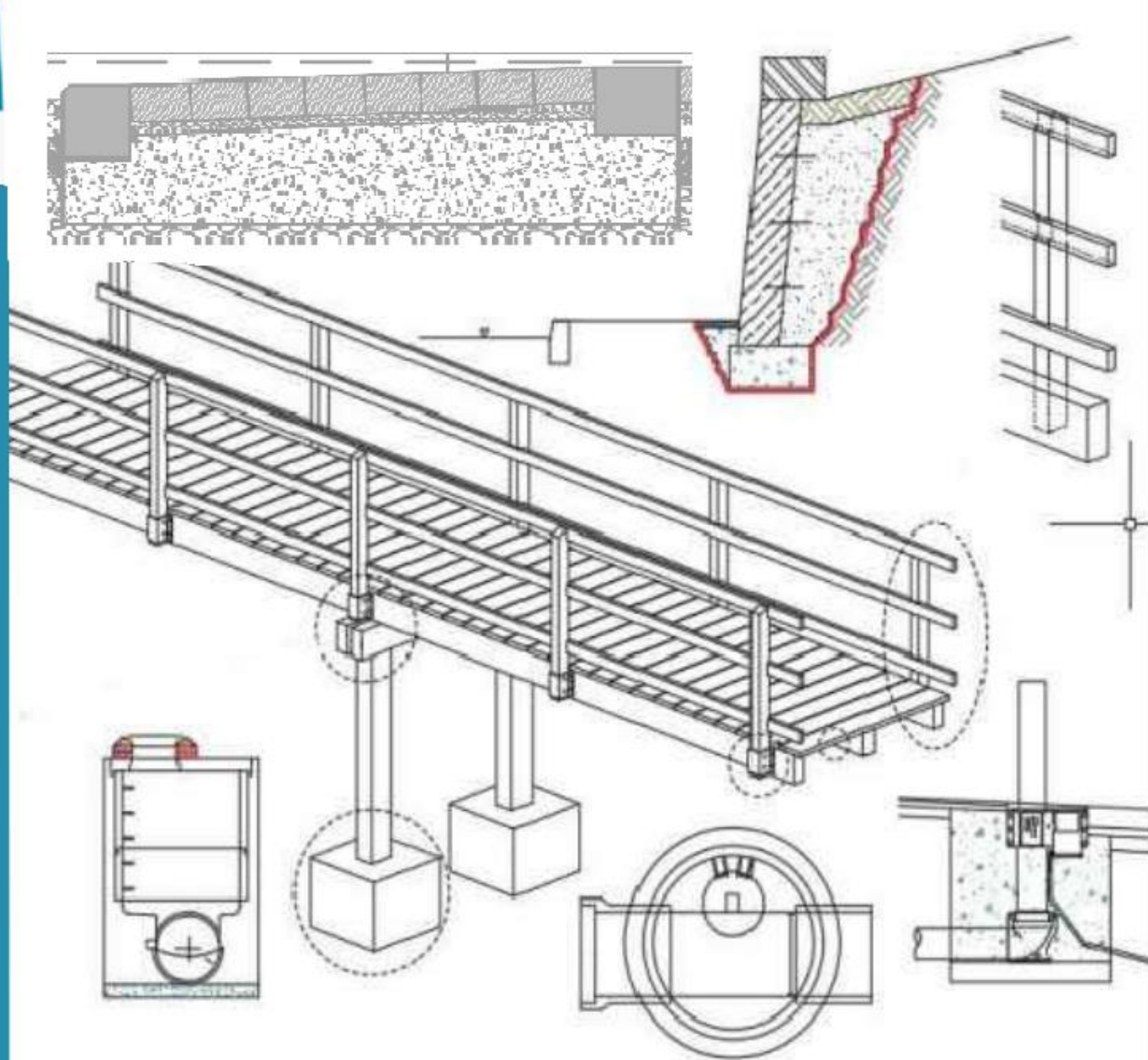


We're Kirklees

2022 - 24 STANDARD DETAIL DRAWINGS



Economy & Infrastructure
Operational Services
Highway
Flint Street, Fartown
Huddersfield, HD1 6LG
Head of Highway: Mark Scarr



INTRODUCTION

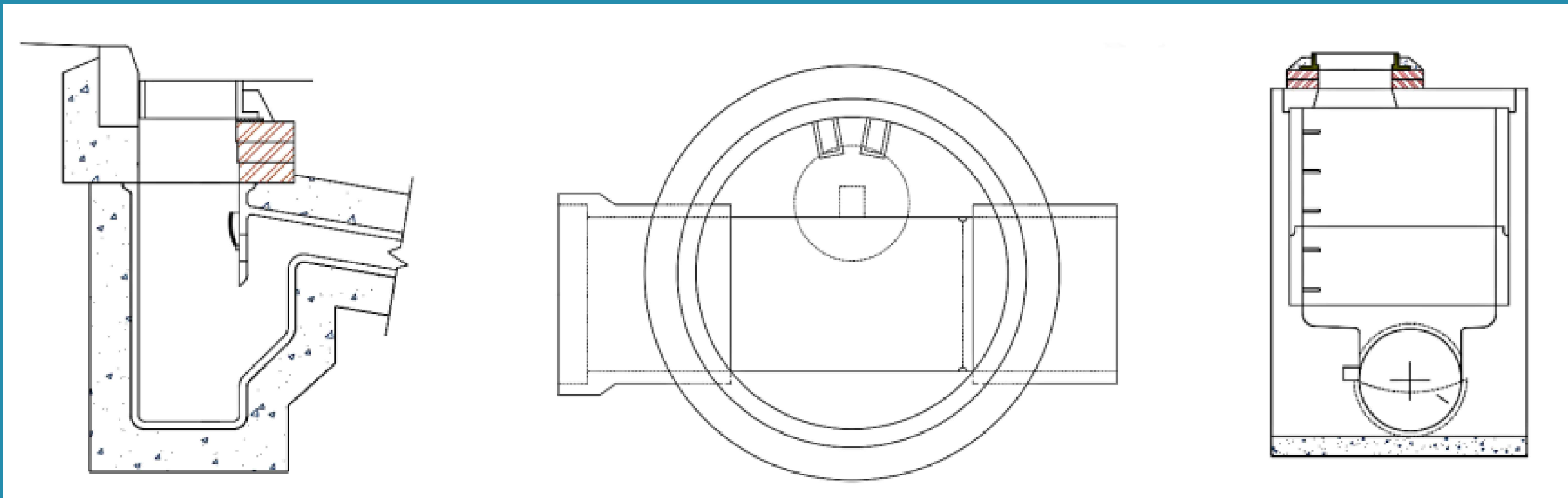
Our standard detail drawings are based from Volume 4 (Bills of quantities for highway works) of the Manual of Contract. Documents for Highway Works (MCHW) alongside the Design Manual for Roads and Bridges (DMRB). Each series have separate items with drawing numbers which contain sizes – alongside relevant information in which relates to the specific design.

Standard details should only be referenced from the scheme construction drawings rather than being recreated within the scheme drawings themselves.

The Standard details drawings are copyright of Kirklees Council and shall not be changed in any way without prior approval of the Overseeing Organisations.

Any variations to the Standard detail drawings shall be approved by the Overseeing Organisation before construction.

The use of these standards allow consistent, safe and acceptable design and implementation with any work done. The use of recycled materials is encouraged and shall be approved by the Overseeing Organisation.



INDEX

SERIES	DRAWING NUMBER	TITLE
300	HD/SD/03/01B	HEDGES
	/02B	STOCKPROOFING
	/03B	CHAIN LINK FENCE
	/04B	ANTI-INTRUDER CHAIN LINK FENCE
	/05B	CLEFT CHESTNUT PALE FENCE
	/06B	WIRE MESH NETTING FENCE
	/08B	CLOSE BOARDED FENCE
	/09B	WODDEN PALISADE FENCE
	/10B	WOVEN WOOD FENCE
	/11B	ONE RAIL FENCE
	/12B	TEMPORARY FENCE TYPE 1 & 2
	/13B	TEMPORARY FENCE TYPE 3 & 4
	/14B	TIMBER PEDESTRIAN GUARDRAIL
400	HD/SD/04/01B	ADJUSTABLE PEDESTRIAN GUARDRAIL
	/02B	ADJUSTABLE PEDESTRIAN GUARDRAIL
	/03B	ADJUSTABLE PEDESTRIAN GUARDRAIL
	/04B	ADJUSTABLE PEDESTRIAN GUARDRAIL
	/05B	ADJUSTABLE PEDESTRIAN GUARDRAIL
	/06B	PEDESTRIAN GUARDRAIL
	/07B	PEDESTRIAN BARRIER SYSTEM
	/08B	50mm DIAMETER HANDRAIL

SERIES	DRAWING NUMBER	TITLE
500	HD/SD/05/01B	SERVICE DUCT
	/02B	TRANSITION DETAIL FOR CHANGE IN DUCT LEVEL
	/03B	CONNECTION TO EXISTING DRAIN GULLY CONNECTION
	/04B	COMBINED DRAINAGE AND KERB BLOCKS
	/05B	COMBINED DRAINAGE AND KERB BLOCKS
	/06B	COMBINED DRAINAGE AND KERB BLOCKS
	/07B	COMBINED DRAINAGE AND KERB BLOCKS
	/08B	COMBINED DRAINAGE AND KERB BLOCKS
	/09B	COMBINED DRAINAGE AND KERB BLOCKS
	/10B	COMBINED DRAINAGE AND KERB BLOCKS
	/11C	MANHOLES (PRECAST CONCRETE) DESIGN GROUP 1, 2 & 3
	/12B	MANHOLES (BRICKWORK) DESIGN GROUP 1, 2 & 3

SERIES	DRAWING NUMBER	TITLE
500	HD/SD/13B	INSPECTION CHAMBER
	/14B	CATCHPIT PERMITTED DESIGN GROUP 1
	/15B	CATCHPIT PERMITTED DESIGN GROUP 2 (BRICKWORK)
	/16B	CATCHPIT PERMITTED DESIGN GROUP 2 (PRECAST CONCRETE)
	/17B	CATCHPIT PERMITTED DESIGN GROUP 3
	/18B	SOAKWAY
	/19B	CONNECTION IN MAHOLES
	/20B	GULLIES PERMITTED DESIGN GROUP 1
	/21B	GULLIES PERMITTED DESIGN GROUP 2
	/22B	GULLIES PERMITTED DESIGN GROUP 3 & 4
700	HD/SD/07/1B	DETAIL OF JOINT AT JUNCTION OF NEW AND EXISTING CONSTRUCTION
	/02B	TRENCH REINSTATEMENTS
	/03C	PAVEMENT AND FOOTWAY CONSTRUCTION
	/05B	BLACKTOP ROAD HUMP
	/06B	BLACKTOP CUSHIONS
	/07B	MINI ROUNDABOUT
	/08B	BLACKTOP ROAD PLATEAU
	/09B	ROAD HUMPS AND THERMOPLASTIC SPEED HUMPS (THUMPS)
S38 HIGHWAY PAVEMENT CONSTRUCTION		
	/10A	INDUSTRIAL/COMMERCIAL ROAD [TYPE CB] WITH SEGREGATED CYCLEWAY

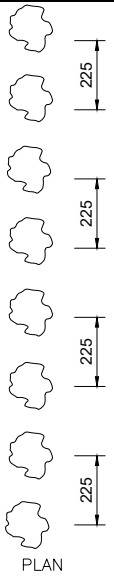
SERIES	DRAWING NUMBER	TITLE
S38 HIGHWAY PAVEMENT CONSTRUCTION		
700	/11A	RESIDENTIAL CONNECTOR STREET [TYPE A] WITH VERGE
	/12A	LOCAL RESIDENTIAL STREET/TRADITIONAL ESTATE ROAD [TYPE B] WITH FOOTWAY
	/13A	SHARED SURFACE STREET/MEWS COURT [TYPE C] (BLOCK PAVED)
	/14A	SHARED SURFACE STREET/MEWS COURT [TYPE C] (ASPHALT PAVED)
	/15A	JUNCTION/PAVEMENT AND KERB LAYOUT WITH TIE-IN PLAN DETAIL
	/16A	HARD MARGIN DETAIL CROSS SECTION A - A
	/17A	RAMP DETAIL CROSS SECTION B - B
	/18A	CARRIAGEWAY TIE-IN SECTION C - C
	/19A	FOOTWAY TIE-IN DETAIL SECTION D - D
1000	HD/SD/10/1B	BUS BAY AND LAY-BY DETAILS
	/02B	BUS BAYS
	/03B	LAY-BYS
	/04B	COMBINED LAY-BY AND BUS BAY
	/05B	CONTRACTION JOINT DETAIL
	/06B	EXPANSION JOINT DETAIL

SERIES	DRAWING NUMBER	TITLE
1100	HD/SD/11/01B	KERBS 01
	/02B	KERBS 02
	/03B	KERBS 03
	/04B	KERBS 04
	/05B	CHANNELS AND EDGING
	/06B	KERB TYPE PC &VC
	/07B	DROPPED CROSSING- RADIUS CROSSING TYPE PC
	/08B	VEHICULAR SETT PAVING
	/09B	SETT PAVED AREAS
	/10B	SETT PAVED AREAS (TYPICAL APPLICATION)
	/11B	TEXTURED FOOTWAY SURFACES AT UNCONTROLLED PEDESTRIAN CROSSING
	/12C	PEDESTRIAN REFUGE DETAILS
	/13B	PRE-FORMED REFUGE ISLAND
	/14B	PEDESTRIAN CROSSING POINT (SIGNAL CONTROLLED) TACTILE LAYOUT
	/15B	STAGGERED PEDESTRIAN REFUGE DETAIL
	/16B	GUIDANCE ON THE USE OF TACTILE PAVING AT UNCONTROLLED CROSSINGS
	/17B	STANDARD LAYOUT FOR RAISED KERBS- GUIDED AND NON-GUIDED BUS STOPS
1200	HD/SD/12/01B	BOLLARDS
	/02B	BOLLARD- BELL BOLLARDS
	/03B	SHEFFIELD PARKING STAND TYPE 1, 2, 1/S AND 2/S
	/04B	SIGNPOST DETAIL
	/05B	MARKER BEACON & BELISHA BEACON
	/06B	COMBINED BELISHA / ZEBRA LANTERN COLUMN
	/07B	TRAFFIC SIGNS: ILLUMINATION (STUB POST)

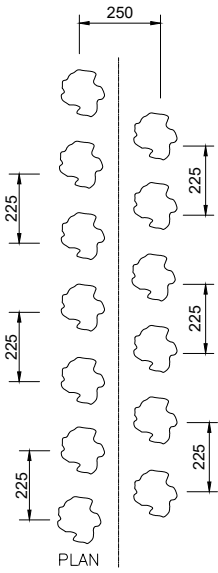
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1200	HD/SD/12/07B	TRAFFIC SIGNS: ILLUMINATION (STUB POST)	
	/08B	TRAFFIC SIGNS: CIRCULAR MS POSTS	
	/09B	SIGN ATTACHMENT BRACKET FOR TRAFFIC SIGNAL POLES	
	/10B	SCHOOL CROSSING PATROL WARNING LIGHT	
	/11B	OFFSET SIGN POLES DETAILS	
	/12B	H-BRACKETS	
	/13B	ROAD MARKINGS- RUMBLE STRIPS	
	/14B	ROAD MARKINGS- GATEWAY DETAIL (DRAGON TEETH)	
	/15B	ROADWORK INFORMATION SIGN (SIGN FOR PEDESTRIAN)	
	/16B	ADVANCED SCHEME INFORMATION SIGN	
	1300	HD/SD/13/01B	LIGHTING COLUMNS 5 & 6m
		/02B	LIGHTING COLUMN 8, 10 & 12m
		/03B	10m & 12m TWIN ARM LIGHTING COLUMNS
		/04B	FEEDER PILLARS TYPE 1, 2 & 3
		/05B	FEEDER PILLAR EQUIPMENT LAYOUT TYPE 1 & 2
		/06B	FEEDER PILLAR EQUIPMENT LAYOUT TYPE 3 & 4
/07B		TRAFFIC SIGNAL POLE RETENTION SOCKET	
/08B		OVERHEAD LINE LAYOUT	

SERIES	DRAWING NUMBER	TITLE
1300	HD/SD/13/09B	TYPICAL BASE COMPARTMENT ELECTRICAL ARRANGEMENT INCLUDING CONNECTION DETAILS OF LOOP SUPPLY
	/10B	BASE WIRING TO LIGHTING COLUMN OR SIGN POST WITH ELECTRICITY COMPANY PME SUPPLY
	/11B	STREET LIGHTING COLUMN FOUNDATION
	/12A	5m FOREST COLUMN
1400	HD/SD/14/01B	UNDERGROUND SERVICE CABLE TERMINATION TYPES
	/02B	CABLE TERMINATION (Y.E. SUPPY) WITH OUTGOING U/G COUNCIL CABLES
	/03B	TRENCH FOR CABLES / DUCTS LAID DIRECT IN GROUND
	/04B	FEEDER PILLARS TYPE 1, 2 & 3
	/05B	FEEDER PILLAR EQUIPMENT LAYOUT TYPE 1 & 2
	/06B	FEEDER PILLAR EQUIPMENT LAYOUT TYPE 3 & 4
	/07B	TRAFFIC SIGNAL POLE RETENTION SOCKET
	/08B	OVERHEAD LINE LAYOUT
	/09B	EARTH ELECTRODE
	/10B	INSPECTION LABEL
	/11B	FEEDER PILLAR EQUIPMENT LAYOUT UNMETERED TYPE (TRAFFIC SIGNALS)
	/12B	FEEDER PILLAR LAYOUT TYPE WITH METER (TRAFFIC SIGNALS)
	/13B	TYPICAL FEEDER PILLAR ARRANGEMENT INCLUDING CONNECTION DETAILS FOR OUT GOING LOW VOLTAGE SUPPLY

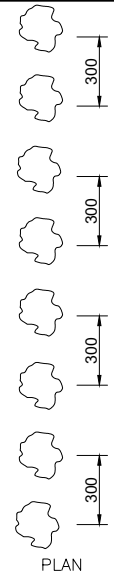
SERIES	DRAWING NUMBER	TITLE
1400	HD/SD/14/14B	CABLE TERMINATION HOUSING LAYOUT
	/15B	STREET LIGHTING INVENTORY
	/16B	CONTROLLER BASE INSTALLATION DETAIL
	/17B	TYPES OF PAVEMENT BOXES
	/18B	PAVEMENT INSPECTION BOX TYPES PB1 & PB2 AND INDUCTION LOOP DUCT INSTALLATION TYPES ILD1 & ILD1B
	/19B	SLOT
	/20B	MODULAR ACCESS CHAMBER
	/21B	ADAPTIVE TRAFFIC SIGNAL CONTROLLER BASE
2400	HD/SD/24/01B	NON-RETAINING BRICK BOUNDARY WALLS
	/02B	NON-RETAINING BOUNDARY STONE WALLS
	/03B	DRY STONE STYLE RETAINING WALL RECONSTRUCTION (1.35m RETAINED HEIGHT)
3000	HD/SD/30/1B	STANDARD TREE WITH DOUBLE STAKE AND GRILLE
	/02B	STANDARD TREE WITH UNDERGROUND GUYING SYSTEM
	/03B	STANDARD TREE WITH ROOT BARRIER AND GUYING SYSTEM
	/04B	STANDARD TREE WITH ROOT BARRIER, GUYING SYSTEMS AND CELLULAR ROOT PROTECTION MODULE SYSTEM
	/05B	STANDARD TREE WITH SHALLOW CELLULAR ROOT PROTECTION SYSTEM
	/06B	STANDARD TREE WITH SINGLE STAKE AND TIES AND IRRIGATION SYSTEM



PLAN



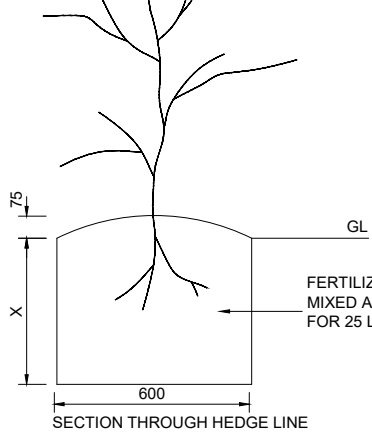
PLAN



PLAN

NOTES

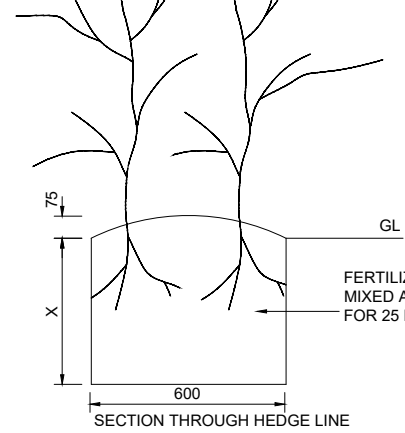
1. ALL PLANTS TO BE 450 - 600mm HIGH.
2. ALL DIMENSIONS IN MILLIMETRES.
3. DEPTH OF TRENCH 'X' TO BE MIN. 450mm OR TO BE IN ACCORDANCE WITH CLAUSE 301 OF THE SPECIFICATION.



SECTION THROUGH HEDGE LINE

HAWTHORN HEDGE [QH]
(CRATEAGUS MONOGYNA)
(PLANTS 225MM APART)

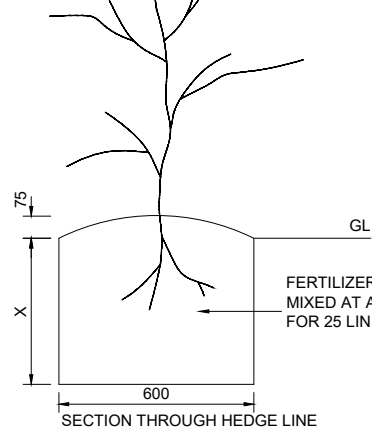
FERTILIZER SHALL BE MIXED AT A RATE OF 1kg FOR 25 LIN m OF TRENCH



SECTION THROUGH HEDGE LINE

DOUBLE HAWTHORN HEDGE [DQH]
(CRATEAGUS MONOGYNA)
(PLANTS 225MM APART)

FERTILIZER SHALL BE MIXED AT A RATE OF 1kg FOR 25 LIN m OF TRENCH



SECTION THROUGH HEDGE LINE

BEECH HEDGE [BH] (FAGUS SYLVATICA)
PRIVET HEDGE [PH] (LIGUSTRUM OVALIFOLIUM)
HORNBEAM HEDGE [HH] (CARPINUS BETULUS)
(PLANTS 300MM APART)

FERTILIZER SHALL BE MIXED AT A RATE OF 1kg FOR 25 LIN m OF TRENCH



Project
STANDARD DETAILS

Scale
NOT TO SCALE

Commercial Regulatory and Operational Service
Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title
HEDGES

Drawn
AKKV


Checked
Date
DEC 21

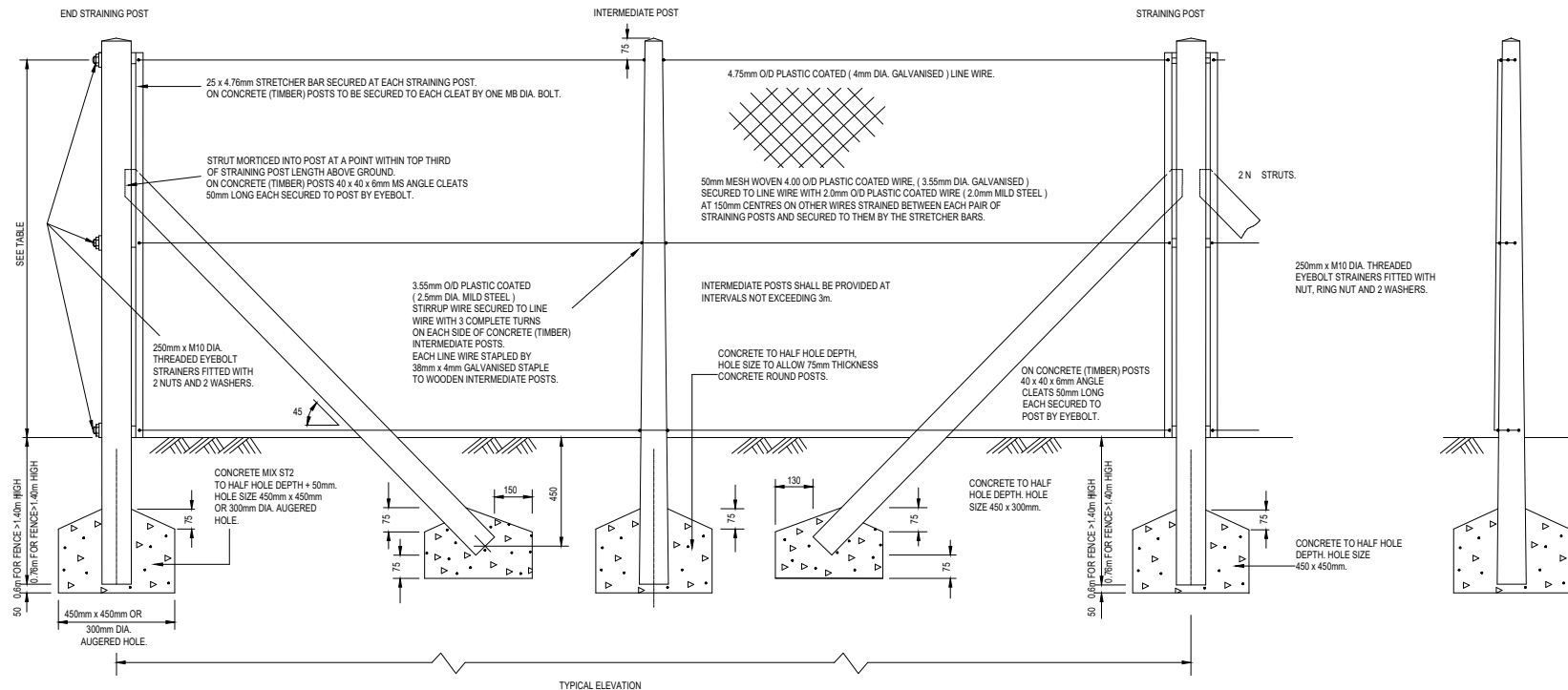
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TYPE OF STOCKPROOFING

MAIN FENCE		1BW	2BW	3BW	1PW	2PW	3PW	1BW 1PW	1BW 2PW	2BW 1PW	SPN OR CWM OR NW																		
TYPE	TYPE OF POSTS	ONE STRAND BARBED WIRE	TWO STRANDS BARBED WIRE	THREE STRANDS BARBED WIRE	ONE STRAND PLAIN WIRE	TWO STRANDS PLAIN WIRE	THREE STRANDS PLAIN WIRE	ONE STRAND BARBED AND ONE STRAND PLAIN WIRE	ONE STRAND BARBED AND TWO STRANDS PLAIN WIRE	TWO STRANDS BARBED AND ONE STRAND PLAIN WIRE	STOCKPROOF NETTING CHICKEN WIRE MESH OR NETTING WIRE.																		
RAIL	TIMBER	STAPLED TO TOP OF EACH POST	STAPLED TO EACH POST AND ONE BETWEEN BOTTOM TWO RAILS.	STAPLED TO EACH POST ONE STRAND AT TOP, ONE BETWEEN BOTTOM TWO RAILS AND ONE BELOW BOTTOM RAIL.	AS FOR BARBED WIRE			STAPLED TO EACH POST BARBED WIRE AT TOP, PLAIN WIRE BETWEEN BOTTOM TWO RAILS.	STAPLED TO EACH POST, BARBED WIRE AT TOP, ONE PLAIN WIRE BETWEEN BOTTOM TWO RAILS AND ONE BELOW BOTTOM RAIL.	STAPLED TO EACH POST PLAIN WIRE AT TOP, ONE BARBED WIRE BETWEEN BOTTOM TWO RAILS, AND ONE BELOW BOTTOM RAIL.	STOCKPROOF NETTING CHICKEN WIRE MESH OR NETTING WIRE.																		
MILD STEEL OR WROUGHT IRON BAR		N/A									FIXED TO EACH POST AT TOP, BOTTOM AND MID HEIGHT BY 2.50mm GALVANISED WIRE TO BS. 4102 TRIPLE TWISTED.																		
	TIMBER	STAPLED TO TOP OF EACH POST	STAPLED TO EACH POST ONE STRAND AT TOP AND ONE AT MID HEIGHT	STAPLED TO EACH POST ONE STRAND AT TOP, ONE AT ONE THIRD AND ONE AT TWO THIRDS HEIGHT.				N/A			STAPLED TO TOP, BOTTOM AND MIDDLE TO EACH POST POSITION IMMEDIATELY ABOVE GROUND																		
WIRE MESH NETTING AND STRAINED WIRE	CONCRETE MILD STEEL	POSITIONED AS FOR TIMBER POSTS BUT FASTENED IN ACCORDANCE WITH BS EN 1722. PART 2.						N/A			FIXED TO EACH POST AT TOP, BOTTOM AND MID HEIGHT TO WOVEN WIRE BY 2.50mm GALVANISED WIRE TO BS. 4102 TRIPLE TWISTED.																		
	TIMBER	STAPLED TO TOP OF EACH POST			STAPLED AT MID HEIGHT OF FENCE TO EACH POST & TO EVERY SIXTH BOARD.			BARBED WIRE STAPLED TO TOP OF EACH POST, PLAIN WIRE STAPLED TO EVERY SIXTH BOARD/PALISADE AT MID HEIGHT.																					
CLOSE BOARDED AND WOODEN PALISADE	CONCRETE	EXTENSION ARMS TO POSTS TO BE PROVIDED AND BARBED WIRE FIXED AT 150mm CENTRES ABOVE BOARD PALISADES			STAPLED AT MID HEIGHT OF FENCE TO EVERY SIXTH BOARD.		N/A	BARBED WIRE FIXED AS FOR ONE STRAND BARBED WIRE PLAIN WIRE AS ABOVE.	N/A	BARBED WIRE FIXED AS FOR TWO STRANDS OF BARBED WIRE PLAIN WIRE FIXED AS FOR ONE STRAND PLAIN WIRE.	ON WOODEN PALISADE FENCES ONLY FIXED AT TOP, BOTTOM AND MID HEIGHT BY STAPLING TO PALISADES AT 1.5m CENTRES																		
CHAIN LINK	CONCRETE OR TIMBER	TOP LINE WIRE DOUBLED ONE WIRE IN FRONT OR THREADED THROUGH THE FENCING, AND ONE BEHIND THE BARBS NOT THREADED.	EXTENSION ARMS TO POSTS OR CRANKED TOP POSTS TO BE PROVIDED, FIXING IN ACCORDANCE WITH BS EN1722. PART 1 CLAUSE 6.7			<p align="center">STOCKPROOFING MATERIALS</p> <table border="1"> <thead> <tr> <th></th> <th>BARBED WIRE (BW)</th> <th>PLAIN WIRE (PW)</th> <th>STOCKPROOF NETTING</th> <th>CHICKEN WIRE MESH</th> <th>NETTING WIRE</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SPECIFICATION</td> <td>BARBED WIRE SHALL BE OF THE MILD STEEL GRADE SPECIFIED IN BS 4102 : 1998 GALVANISED.</td> <td>PLAIN WIRE SHALL BE MILD STEEL 3.15mm DIA. HIGH TENSILE SPECIFIED IN BS 4102 : 1998 GALVANISED</td> <td>100mm MESH 14 WIRE DESIG. (BS.EN10223.2) WITH CENTRE STRAND AND 3PLY SELVEDGE (BS.EN10223.2) MADE FROM MILD STEEL WIRE TO BS.1052 & GALVANISED TO BS EN 10244 - 2001 900mm WIDE.</td> <td>25mm MESH 19 WIRE DESIG. (BS. EN10223.2) MADE FROM MILD STEEL WIRE TO BS. 1052 AND GALVANISED TO BS EN 10244 - 2001 900mm WIDE.</td> <td>50mm MESH 17 WIRE DESIG. (BS.EN10223.2) MADE FROM MILD STEEL WIRE TO BS. 1052 & GALVANISED TO BS EN 10244 - 2001 900mm WIDE.</td> </tr> </tbody> </table>							BARBED WIRE (BW)	PLAIN WIRE (PW)	STOCKPROOF NETTING	CHICKEN WIRE MESH	NETTING WIRE							SPECIFICATION	BARBED WIRE SHALL BE OF THE MILD STEEL GRADE SPECIFIED IN BS 4102 : 1998 GALVANISED.	PLAIN WIRE SHALL BE MILD STEEL 3.15mm DIA. HIGH TENSILE SPECIFIED IN BS 4102 : 1998 GALVANISED	100mm MESH 14 WIRE DESIG. (BS.EN10223.2) WITH CENTRE STRAND AND 3PLY SELVEDGE (BS.EN10223.2) MADE FROM MILD STEEL WIRE TO BS.1052 & GALVANISED TO BS EN 10244 - 2001 900mm WIDE.	25mm MESH 19 WIRE DESIG. (BS. EN10223.2) MADE FROM MILD STEEL WIRE TO BS. 1052 AND GALVANISED TO BS EN 10244 - 2001 900mm WIDE.	50mm MESH 17 WIRE DESIG. (BS.EN10223.2) MADE FROM MILD STEEL WIRE TO BS. 1052 & GALVANISED TO BS EN 10244 - 2001 900mm WIDE.
	BARBED WIRE (BW)	PLAIN WIRE (PW)	STOCKPROOF NETTING	CHICKEN WIRE MESH	NETTING WIRE																								
SPECIFICATION	BARBED WIRE SHALL BE OF THE MILD STEEL GRADE SPECIFIED IN BS 4102 : 1998 GALVANISED.	PLAIN WIRE SHALL BE MILD STEEL 3.15mm DIA. HIGH TENSILE SPECIFIED IN BS 4102 : 1998 GALVANISED	100mm MESH 14 WIRE DESIG. (BS.EN10223.2) WITH CENTRE STRAND AND 3PLY SELVEDGE (BS.EN10223.2) MADE FROM MILD STEEL WIRE TO BS.1052 & GALVANISED TO BS EN 10244 - 2001 900mm WIDE.	25mm MESH 19 WIRE DESIG. (BS. EN10223.2) MADE FROM MILD STEEL WIRE TO BS. 1052 AND GALVANISED TO BS EN 10244 - 2001 900mm WIDE.	50mm MESH 17 WIRE DESIG. (BS.EN10223.2) MADE FROM MILD STEEL WIRE TO BS. 1052 & GALVANISED TO BS EN 10244 - 2001 900mm WIDE.																								
CLEFT CHESTNUT PALE	CONCRETE OR TIMBER	POSTS TO BE PROVIDED WITH HEIGHT INCREASED BY 150mm																											
	TIMBER	BARBED WIRE TO BE FIXED AS LINE WIRES 150mm ABOVE PALES.	ONE WIRE 150mm ABOVE PALES, ONE AT MID HEIGHT OF PALES.	ONE WIRE 150mm ABOVE PALES, ONE AT ONE THIRD AND ONE AT TWO THIRDS HEIGHT OF PALES.																									
WOVEN WOOD	CONCRETE	STAPLED TO TOP OF EACH POST.	EXTENSION ARMS TO POSTS TO BE PROVIDED AND BARBED WIRE FIXED AT 150mm CENTRES ABOVE FENCING.																										

NOTES
 STAPLING TO BE 38mm x 4mm GALVANISED STAPLES.
 STOCKPROOFING SHALL BE FIXED IN THE POSITIONS AND MANNER SHOWN ABOVE AND IN ACCORDANCE WITH THE PROVISIONS OF BS EN 1722 WHERE APPROPRIATE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

	Project	STANDARD DETAILS		Scale	NOT TO SCALE		
				Drawn	AKKV	Checked	
Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG	Title	STOCKPROOFING		Section	HD	Date	DEC 21
				Drawing No.	HD/SD/03/02B		



- NOTES**
- FENCING SHALL BE IN ACCORDANCE WITH B.S EN1722 PART 1 AND THE SPECIFICATION.
 - HEIGHT OF FENCE ABOVE GROUND IS NOMINAL AND SHALL BE VARIED TO ACHIEVE A SATISFACTORY VERTICAL ALIGNMENT.
 - GROUND SHALL BE TRIMMED WHERE NECESSARY FOR BOTTOM OF FENCE.
 - POSTS ON LANDOWNERS SIDE OF FENCE.
 - TIMBER INTERMEDIATE POSTS ON FENCES NOT EXCEEDING 1.40m HIGH TO BE DRIVEN TO DEPTHS SHOWN.
 - CONCRETE BACKFILLING SHALL BE OMITTED FOR TIMBER POSTS.
 - TOPS OF POSTS SHALL BE ROUNDED OR PYRAMIDAL RIDGED OR CHAMFERED 25mm.
 - STRAINING POSTS SHALL BE PROVIDED AT ENDS (SINGLE STRUTTED) AND AT INTERVALS NOT EXCEEDING 69m AND AT ALL CORNERS AND CHANGES OF DIRECTION EXCEEDING 15° VERTICALLY AND/OR 30° HORIZONTALLY. (ALL DOUBLE STRUTTED.)
 - THE HEAVIEST PATTERN QUOTED FOR THE SPECIFIED IN TABLE 1 OR TABLE 2 OF BS EN 1722 PART 1 IS ALWAYS TO BE USED.
 - ALL WIRES SHALL BE TO B.S.4102. PLASTIC COATED WIRES TO BE GRADE A.

CHAIN LINK FENCES	
GALVANISED CHAIN LINK WITH TIMBER POSTS.	(HEIGHT) GCLF/T
WITH CONCRETE POSTS.	(HEIGHT) GCLF/C
PLASTIC COATED CHAIN LINK WITH TIMBER POSTS.	(HEIGHT) POLF/T
WITH CONCRETE POSTS.	(HEIGHT) POLF/C

GENERAL CHARACTERISTICS OF FENCE TYPES											
HEIGHT OF FENCING AT POSTS	No. OF LINE WIRES	POST LENGTH			POST SECTION						WIDTH OF ROLL
		INTERMEDIATE	STRAINING	STRUTS	TIMBER			CONCRETE			
					INTERMEDIATE	STRAINING	STRUTS	INTERMEDIATE	STRAINING	STRUTS	
0.90	2	1.60	1.60	1.50	75 x 75	100 x 100	75 x 50	100 x 100	125 x 125	100 x 75	0.09
1.20	3	1.87	1.87	1.82	75 x 75	100 x 100	75 x 50	125 x 125	125 x 125	100 x 75	1.20
1.40	3	2.07	2.07	1.98	75 x 100	100 x 100	75 x 100	125 x 125	125 x 125	100 x 75	1.40
1.80	3	2.63 CONCRETE 2.67 TIMBER	2.63 CONCRETE 2.67 TIMBER	2.59 CONCRETE 2.60 TIMBER	100 x 125	125 x 125	75 x 100	125 x 125	125 x 125	100 x 85	1.80

* TAPERING TO 75 x 75 AT TOP.



Project

STANDARD DETAILS

Scale
NOT TO SCALE

Drawn
AKKV

Checked

Commercial Regulatory and Operational Service
Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

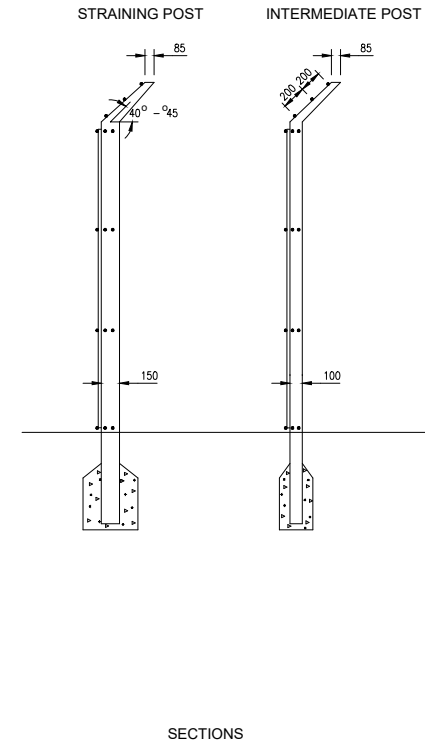
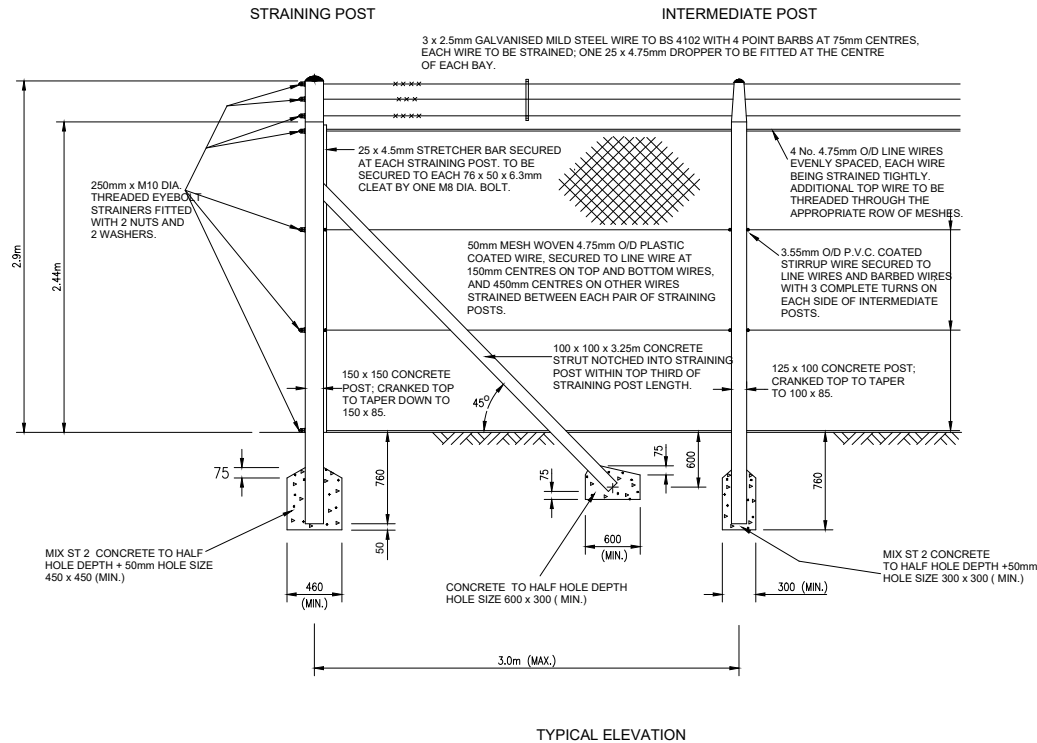
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CHAIN LINK FENCE

Section
HD

Date
DEC 21

Drawing No.
HD/SD/03/03B




GENERAL REQUIREMENTS

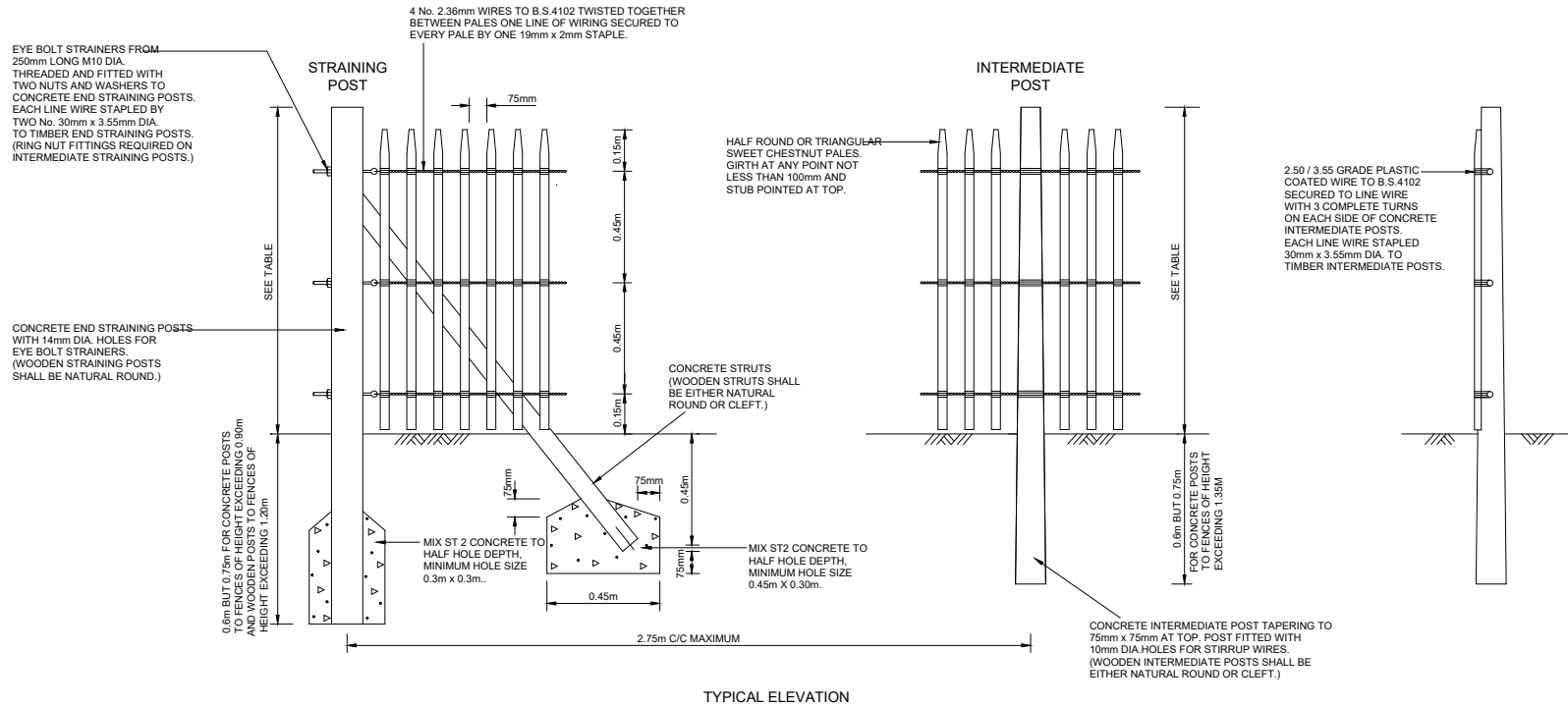
- FENCING SHALL BE IN ACCORDANCE WITH BS EN 1722 PART 10.
- HEIGHT OF FENCE ABOVE GROUND IS NOMINAL AND SHALL BE VARIED TO ACHIEVE A SATISFACTORY VERTICAL ALIGNMENT.
- GROUND SHALL BE TRIMMED WHERE NECESSARY FOR BOTTOM OF FENCE.
- POSTS SHALL BE ON LANDOWNERS SIDE OF FENCE.
- STRAINING POSTS SHALL BE PROVIDED AT ENDS (SINGLE STRUTTED) AND AT INTERVALS NOT EXCEEDING 66 METRES, AND AT ALL CORNERS AND CHANGES OF DIRECTION EXCEEDING 15° VERTICALLY AND / OR 30° HORIZONTALLY (ALL DOUBLE STRUTTED).

ANTI-INTRUDER CHAIN LINK FENCE

WITH CONCRETE POSTS (HEIGHT) AICLFC

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 <p>Kirklees COUNCIL</p>	Project	<p>STANDARD DETAILS</p>		Scale	
				NOT TO SCALE	
<p>Commercial Regulatory and Operational Service</p> <p>Highway Design Flint Street, Fartown Huddersfield, HD1 6LG</p>	Title	<p>ANTI-INTRUDER CHAIN LINK FENCE</p>		Drawn	Checked
				AKKV	
				Section	Date
		HD	DEC 21		
		Drawing No.	HD/SD/03/04B		



GENERAL REQUIREMENTS	CLEFT CHESTNUT PALE FENCE	STANDARD FENCE DIMENSIONS																
		HEIGHT OF FENCING AT POSTS	No. OF LINES OF WIRING	SPACING BETWEEN PALES	CONCRETE POSTS						TIMBER POSTS							
					INTERMEDIATE		STRAINING		STRUTS		INTERMEDIATE		STRAINING		STRUTS			
					MAX. POST SPACING	LENGTH	BASE DIMENSION	LENGTH	SECTION	LENGTH	SECTION	MAX. POST SPACING	LENGTH	GIRTH AT MID HEIGHT	LENGTH	GIRTH AT TOP	LENGTH	GIRTH AT TOP
m		mm	m	m	mm	m	mm	m	mm	m	m	mm	m	mm	m	mm		
1. FENCING SHALL BE IN ACCORDANCE WITH BS EN1722 PART 4 AND THE SPECIFICATION.	WITH CONCRETE POSTS. (HEIGHT) C C P F / C	0.90	2	75	3.00	1.50	100 x 100	1.50	125 x 125	1.50	100 x 75	2.50	1.52	190 x 230	1.52	230 x 250	1.52	190 x 230
2. HEIGHT OF FENCE ABOVE GROUND IS NOMINAL AND SHALL BE VARIED TO ACHIEVE A SATISFACTORY VERTICAL ALIGNMENT.		1.05	2	75	3.00	1.65	100 x 100	1.80	125 x 125	1.65	100 x 75	2.50	1.67	190 x 230	1.67	230 x 250	1.67	190 x 230
3. GROUND SHALL BE TRIMMED WHERE NECESSARY FOR BOTTOM OF FENCE.	WITH TIMBER POSTS. (HEIGHT) C C P F / T	1.20	3	75	2.75	1.87	125 x 125	1.95	125 x 125	1.82	100 x 75	2.25	1.82	190 x 230	1.82	230 x 250	1.82	190 x 230
4. POSTS SHALL BE ON LANDOWNERS SIDE OF FENCE LINE.		1.35	3	75	2.75	1.95	125 x 125	2.10	125 x 125	1.90	100 x 75	2.25	1.95	190 x 230	2.10	250 x 290	1.95	230 x 250
5. CONCRETE BACKFILLING REQUIRED TO HALF HOLE DEPTH TO GIVE 75mm THICKNESS ON ALL SIDES OF CONCRETE, INTERMEDIATE POSTS ON FENCES EXCEEDING 1.2m HIGH.		1.50	3	50	2.25	2.25	125 x 125	2.25	125 x 125	2.20	100 x 85	2.0	2.10	230 x 250	2.25	250 x 290	2.10	230 x 250
6. TOPS OF POSTS SHALL BE ROUNDED OR PRISMOIDAL, RIDGED OR CHAMFERED 25mm.		1.80	3	50	2.25	2.63	125 x 125	2.63	125 x 125	2.59	100 x 85	2.0	2.43	230 x 250	2.58	280 x 350	2.43	250 x 290
7. STRAINING POSTS SHALL BE PROVIDED AT ENDS (SINGLE STRUTTED) AND AT INTERVALS NOT EXCEEDING 9m AND AT ALL CORNERS AND CHANGES OF DIRECTION EXCEEDING 15° VERTICALLY AND /OR 30° HORIZONTALLY. (ALL DOUBLE STRUTTED.)																		

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Huddersfield, HD1 6LG

Project

STANDARD DETAILS

Title

CLEFT CHESTNUT PALE FENCE

Scale

NOT TO SCALE

Drawn

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Section

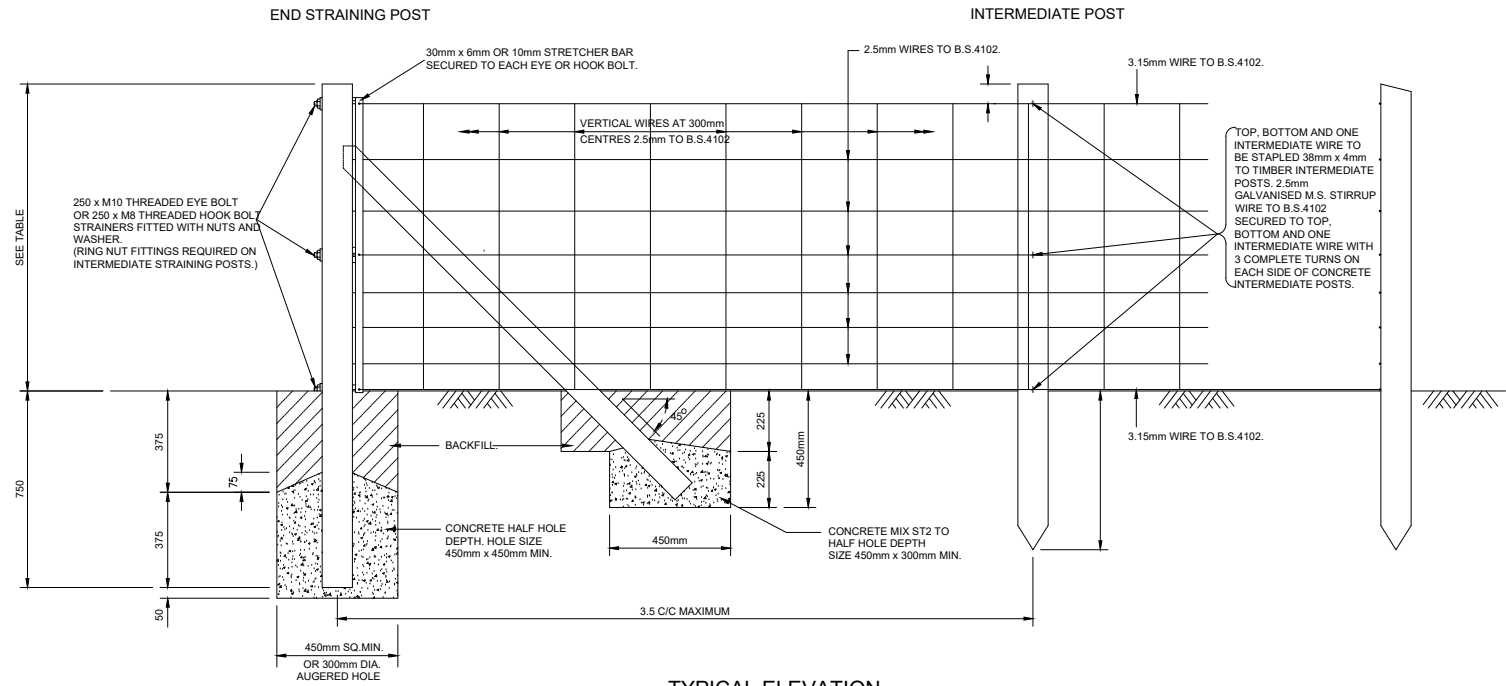
HD

Date

DEC 21

Drawing No.

HD/SD/03/05B



TYPICAL ELEVATION

NOTES

- FENCING SHALL BE IN ACCORDANCE WITH B.S.1722 PART 2 AND THE SPECIFICATION.
- HEIGHT OF FENCE ABOVE GROUND IS NOMINAL AND SHALL BE VARIED TO ACHIEVE A SATISFACTORY VERTICAL ALIGNMENT.
- GROUND SHALL BE TRIMMED WHERE NECESSARY FOR BOTTOM OF FENCE.
- POSTS ON LANDOWNERS SIDE OF FENCE LINE.
- CONCRETE BACKFILLING SHALL BE OMITTED FOR TIMBER POSTS ON FENCES NOT EXCEEDING 0.93m HIGH.
- CONCRETE BACKFILLING REQUIRED TO HALF HOLE DEPTH TO GIVE 75mm THICKNESS ON ALL SIDES OF CONCRETE INTERMEDIATE POSTS ON FENCES EXCEEDING 0.93m HIGH.
- TOPS OF POSTS SHALL BE ROUNDED OR PRISMOIDOL, RIDGED OR CHAMFERED 1 INCH (25mm.)
- STRAINING POSTS SHALL BE PROVIDED AT ENDS (SINGLE STRUTTED) AND AT INTERVALS NOT EXCEEDING 150m AND AT ALL CORNERS AND CHANGES OF DIRECTION EXCEEDING 15° VERTICALLY AND / OR 30° HORIZONTALLY (ALL DOUBLE STRUTTED.)

WOVEN WIRE FENCE

WITH TIMBER POSTS.
 (HEIGHT) WMNF/T

WITH CONCRETE POSTS.
 (HEIGHT) WMNF/C

STANDARD FENCE DIMENSIONS

HEIGHT OF FENCING AT POST	No.	HORIZONTAL WIRES		POST LENGTH			POST SECTION					
		SPACING FROM TOP WIRE		INTERMEDIATE	STRAINING	STRUTS	TIMBER (SAWN)			CONCRETE		
		(m)	(ft)				(mm)	(mm)	(mm)	INTERMEDIATE	STRAINING	STRUTS
.780	5	230,209	180,150	1.45	1.60	1.40	75 x 75	100 x 100	75 x 50	100 x 100	125 x 125	100 x 75
.830	8	150,140,130,115,100,90,75.		1.50	1.70	1.45	75 x 75	100 x 100	75 x 50	100 x 100	125 x 125	100 x 75
.930	6	230,200,180,150,140.		1.60	1.75	1.50	75 x 75	100 x 100	75 x 75	100 x 100	125 x 125	100 x 75
1.180	8	230,200,180,150,140,130,115.		1.80	2.00	1.75	100 x 75	125 x 125	100 x 75	125 x 125	125 x 125	100 x 75

* TAPERED TO 75mm x 75mm AT THE TOP.



Project
STANDARD DETAILS

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Title
WIRE MESH NETTING FENCE

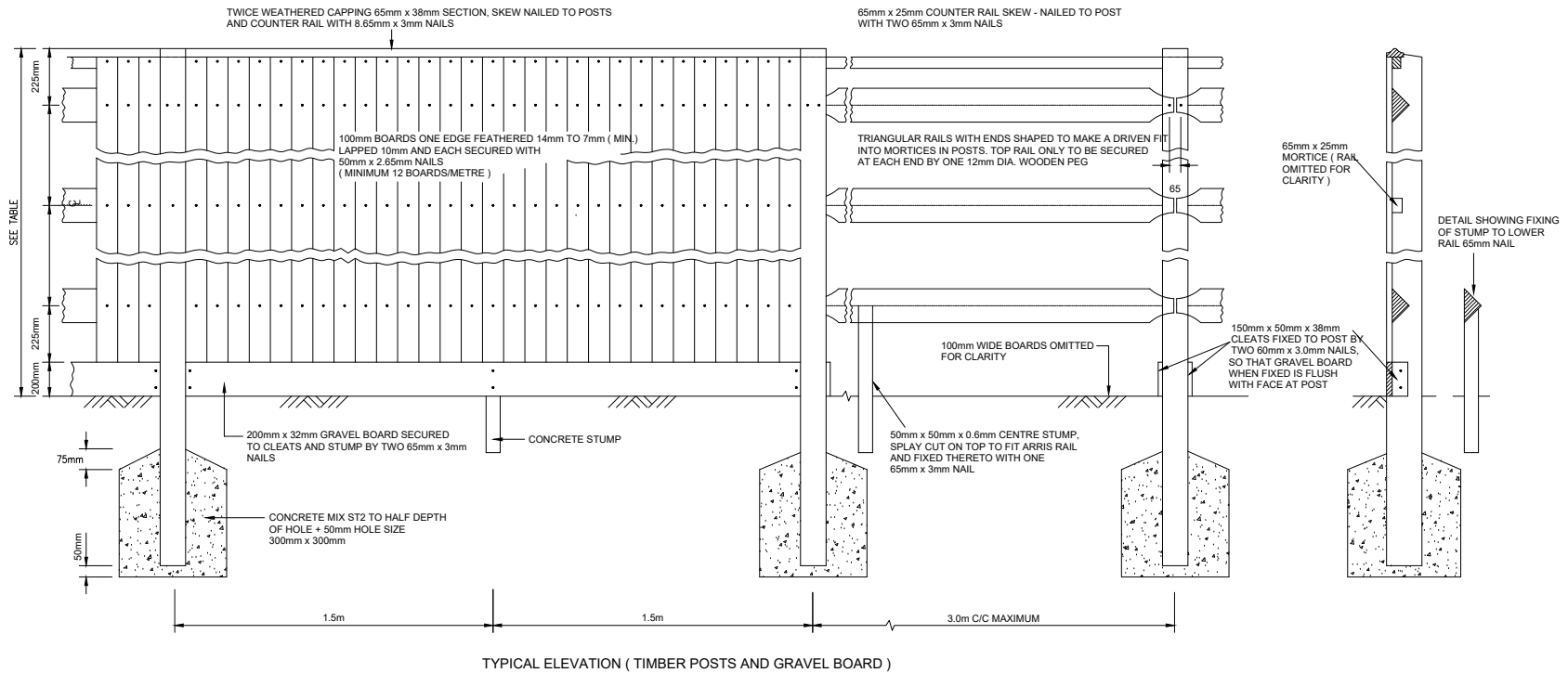
Drawn
 AKKV

Checked

Section
 HD

Date
 DEC 21

Drawing No. HD/SD/03/06B



NOTES

1. FENCING SHALL BE IN ACCORDANCE WITH BS EN 1722 PART 5 AND THE SPECIFICATION.
2. HEIGHT OF FENCE ABOVE GROUND IS NOMINAL AND SHALL BE VARIED TO ACHIEVE A SATISFACTORY, VERTICAL ALIGNMENT.
3. GROUND SHALL BE TRIMMED WHERE NECESSARY FOR BOTTOM OF FENCE.
4. POSTS AND RAILS SHALL BE CHAMFERED AS NECESSARY AT CHANGES IN DIRECTION.
5. EXCEPT ON A MOTORWAY, POSTS ON LANDOWNERS SIDE OF FENCE.
6. CONCRETE BACK FILLING SHALL BE OMITTED FOR TIMBER POSTS ON FENCES NOT EXCEEDING 1.08m HIGH.
7. TOPS OF POSTS SHALL BE ROUNDED OR PRISMOIDAL RIDGED OR CHAMFERED 25mm.
8. WHERE GRAVEL BOARDS AND / OR CAPPINGS ARE REQUIRED, CONCRETE POSTS ARE SHALL BE MORTICED.

CLOSE BOARDED FENCE

WITH CONCRETE POSTS

(HEIGHT) CBF/C

WITH TIMBER POSTS

(HEIGHT) CBF/T

STANDARD FENCE DIMENSIONS

HEIGHT OF FENCING AT POSTS	RAILS		POST LENGTH			POST SECTION	
	NUMBER	TRIANGULAR SECTION	TIMBER	CONCRETE (RECESSED)	CONCRETE (MORTICED)	TIMBER	CONCRETE
m		mm	m	m	m	mm	mm
1.00	2	75 x 75	1.67	1.525	1.65	100 x 100	140 x 115
1.20	2	75 x 75	1.87	1.725	1.90	100 x 125	140 x 115
1.40	3	75 x 75	2.07	1.925	2.08	100 x 125	140 x 115
1.60	3	75 x 75	2.42	2.275	2.45*	100 x 125	150 x 115
1.80	3	87 x 87	2.62	2.475	2.65	100 x 125	150 x 115

* FOR USE WITHOUT CAPPINGS



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Title

CLOSE BOARDED FENCE

Section

HD

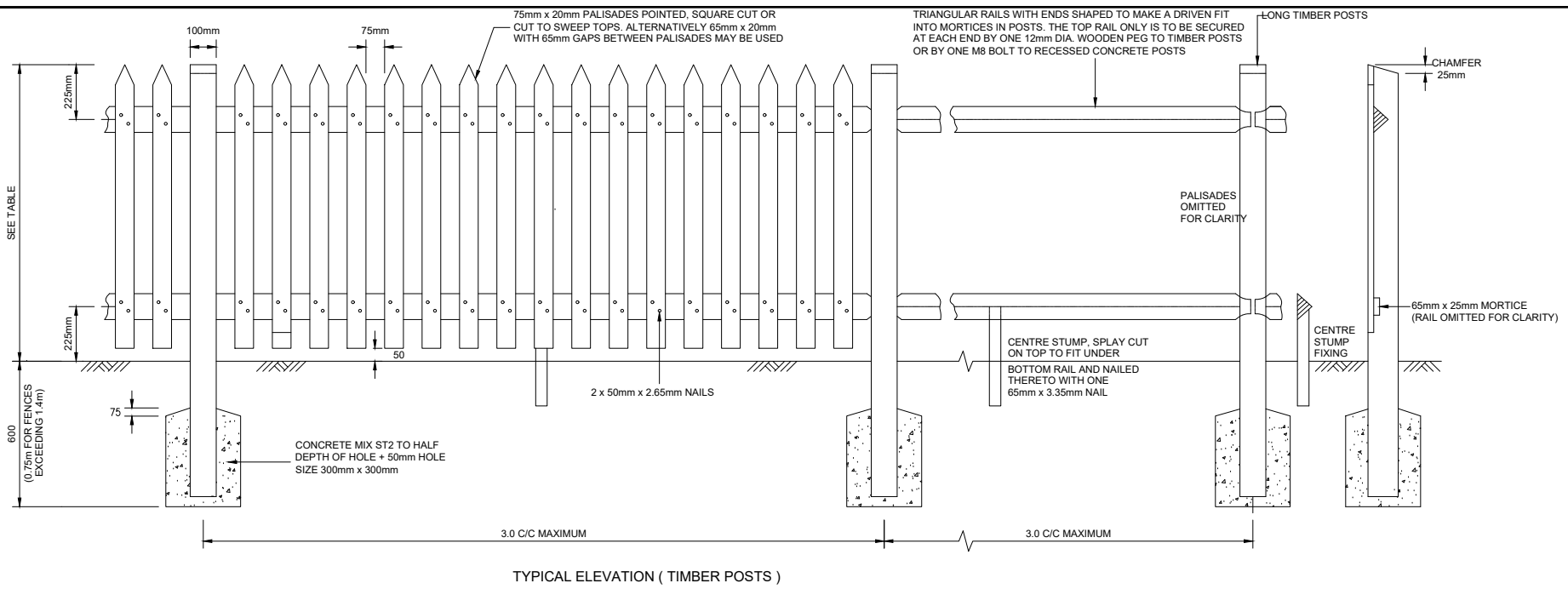
Date

DEC 21

Drawing No.

HD/SD/03/08B

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG



NOTES

- FENCING SHALL BE IN ACCORDANCE WITH BS EN 1722 PART 5 AND THE SPECIFICATION
- HEIGHT OF FENCE ABOVE GROUND IS NOMINAL AND SHALL BE VARIED TO ACHIEVE A SATISFACTORY VERTICAL ALIGNMENT
- GROUND SHALL BE TRIMMED WHERE NECESSARY FOR BOTTOM OF FENCE
- POSTS AND RAILS SHALL BE PURPOSE CUT AND MORTICED TO FACILITATE CHANGES IN DIRECTION
- POSTS SHALL BE ON LANDOWNERS SIDE OF FENCELINE
- CONCRETE BACKFILLING SHALL BE OMITTED FOR TIMBER POSTS ON FENCES NOT EXCEEDING 1'0" HIGH
- TOPS OF POSTS SHALL BE ROUNDED OR PRISMOIDAL, RIDGED OR CHAMFERED 1 INCH (25mm)

WOODEN PALISADE FENCE

WITH CONCRETE POSTS
 (HEIGHT) WPF/C

WITH TIMBER POSTS
 (HEIGHT) WPF/T

STANDARD FENCE DIMENSIONS

HEIGHT TO TOP OF PALES	NO.	RAILS		POST SECTION		
		TRIANGULAR SECTION	LENGTH OF POST		TIMBER	CONCRETE * (RECESSED)
			TIMBER	CONCRETE		
m		mm	m	m	mm	mm
1.00	2	75 x 75	1.60	1.525	125 x 100	140 x 115
1.20	2	75 x 75	1.80	1.725	125 x 100	140 x 115
1.40	3	75 x 75	2.00	1.925	125 x 100	140 x 115
1.60	3	75 x 75	2.45	2.275	125 x 100	140 x 115
1.80	3	87 x 87	2.65	2.475	150 x 100	140 x 115

* TAPERING TO 100mm x 115mm

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 Flint Street, Fartown
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STANDARD DETAILS

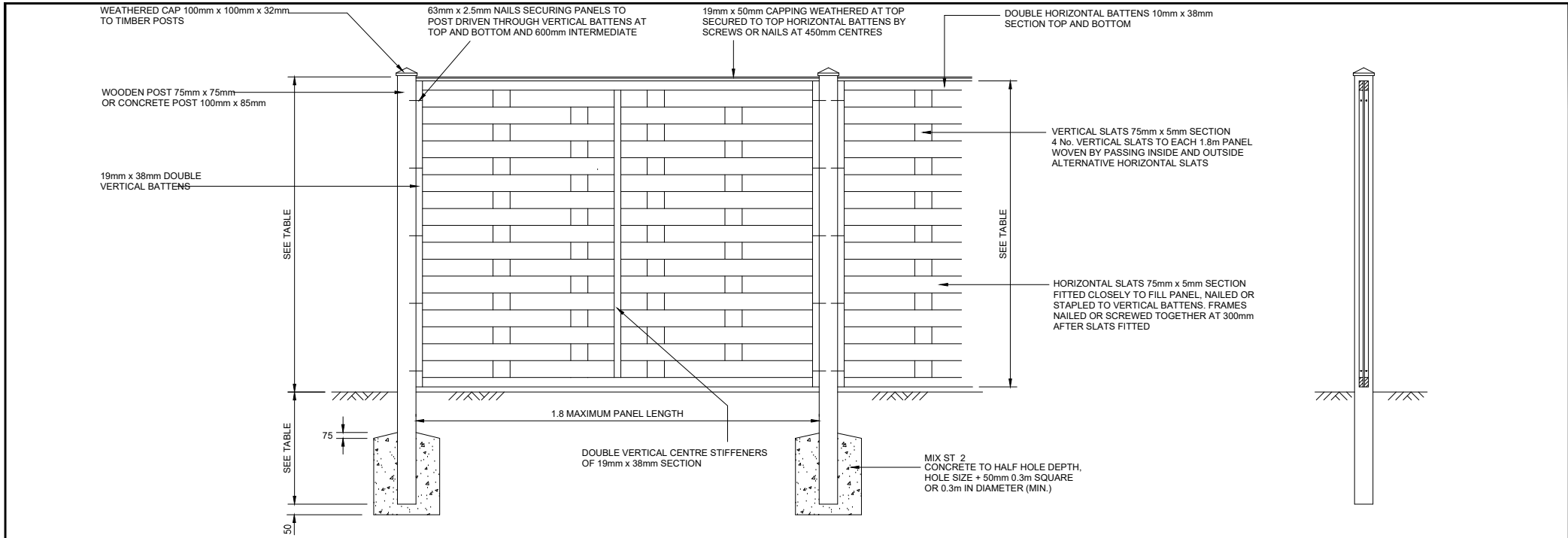
Title

WOODEN PALISADE FENCE

Scale

NOT TO SCALE

Drawn	Checked
AKKV	
Section	Date
HD	DEC 21
Drawing No. HD/SD/03/09B	



NOTES

- FENCING TO BE IN ACCORDANCE WITH BS EN 1722 PART 11 AND THE SPECIFICATION. ALL NAILS TO BE 63mm x 2.65mm
- FENCES OF HEIGHT EXCEEDING 1.5m ARE TO BE STRUTTED AT RIGHT ANGLES TO LINE OF FENCE. TO ALTERNATIVE POSTS AT 2/3 HEIGHT, STRUTTING AT 45 TO HORIZONTAL, STRUTS SET INTO GROUND 450mm DEEP, IN CONCRETE MIX ST2 TO HALF HOLE DEPTH, HOLE SIZE TO ALLOW 75mm THICKNESS CONCRETE ROUND STRUTS
- HEIGHT OF FENCE ABOVE GROUND IS NOMINAL AND SHALL BE VARIED TO ACHIEVE A SATISFACTORY VERTICAL ALIGNMENT
- GROUND SHALL BE TRIMMED WHERE NECESSARY FOR BOTTOM OF FENCE
- POSTS AND PANELS SHALL BE CHAMFERED AS NECESSARY AT CHANGES IN DIRECTION

WOVEN WOOD FENCE

WITH TIMBER POSTS

HEIGHT WWF/T

WITH CONCRETE POSTS

HEIGHT WWF/C

STANDARD FENCE DIMENSIONS

HEIGHT OF FENCE m	LENGTH OF POST m	HEIGHT OF PANEL m
0.6	1.2	0.55
0.9	1.6	0.85
1.2	1.8	1.15
1.5	2.1	1.45
1.8	2.5	1.75



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STANDARD DETAILS

Scale

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Title

WOVEN WOOD FENCE

Section

HD

Date

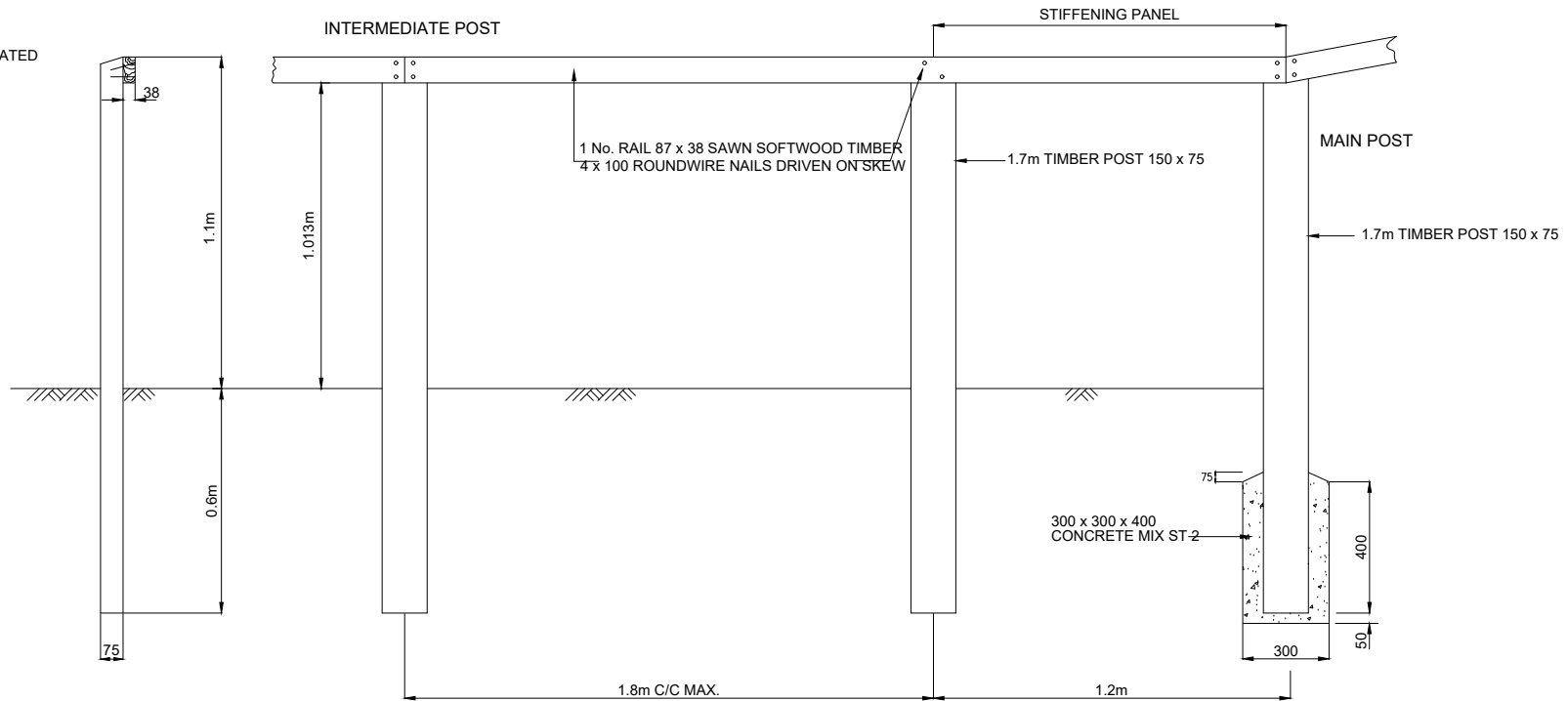
DEC 21

Drawing No.

HD/SD/03/10B

NOTES

ALL DIMENSIONS IN mm
UNLESS OTHERWISE STATED



NOTES

- FENCE SHALL BE IN ACCORDANCE WITH BS EN1722 PART 7 AND THE SPECIFICATION
- HEIGHT OF FENCE ABOVE GROUND IS NOMINAL AND SHALL BE VARIED TO ACHIEVE A SATISFACTORY VERTICAL ALIGNMENT
- POSTS AND RAILS SHALL BE CHAMFERED AS NECESSARY AT CHANGES IN DIRECTION
- POSTS ON OWNER'S SIDE OF FENCELINE
- WHERE APPROVED BY THE ENGINEER TIMBER INTERMEDIATE POSTS MAY BE DRIVEN IN SUITABLE GROUND TO DEPTHS SHOWN USING "ARROW" OR SIMILAR APPROVED EQUIPMENT, IN WHICH CASE THE LENGTH OF THE POINT TO THE POST SHALL NOT EXCEED 225mm
- TOPS OF POSTS SHALL BE CHAMFERED 25mm
- MAIN POSTS AND STIFFENING PANEL TO BE PROVIDED AT ENDS (ONE PANEL) AND AT ALL CHANGES OF DIRECTION EXCEEDING 15° VERTICALLY AND / OR 30° HORIZONTALLY (ONE PANEL AT EACH SIDE OF MAIN POST)
- DOUBLE POSTS SHALL BE PROVIDED AS REQUIRED TO FACILITATE FENCING AROUND RADII

FENCE - 1 RAIL

PAINTED P1RF

UNPAINTED 1RF



Project

STANDARD DETAILS

Scale

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Highway Design
Flint Street, Fartown
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Title

ONE RAIL FENCE

Section

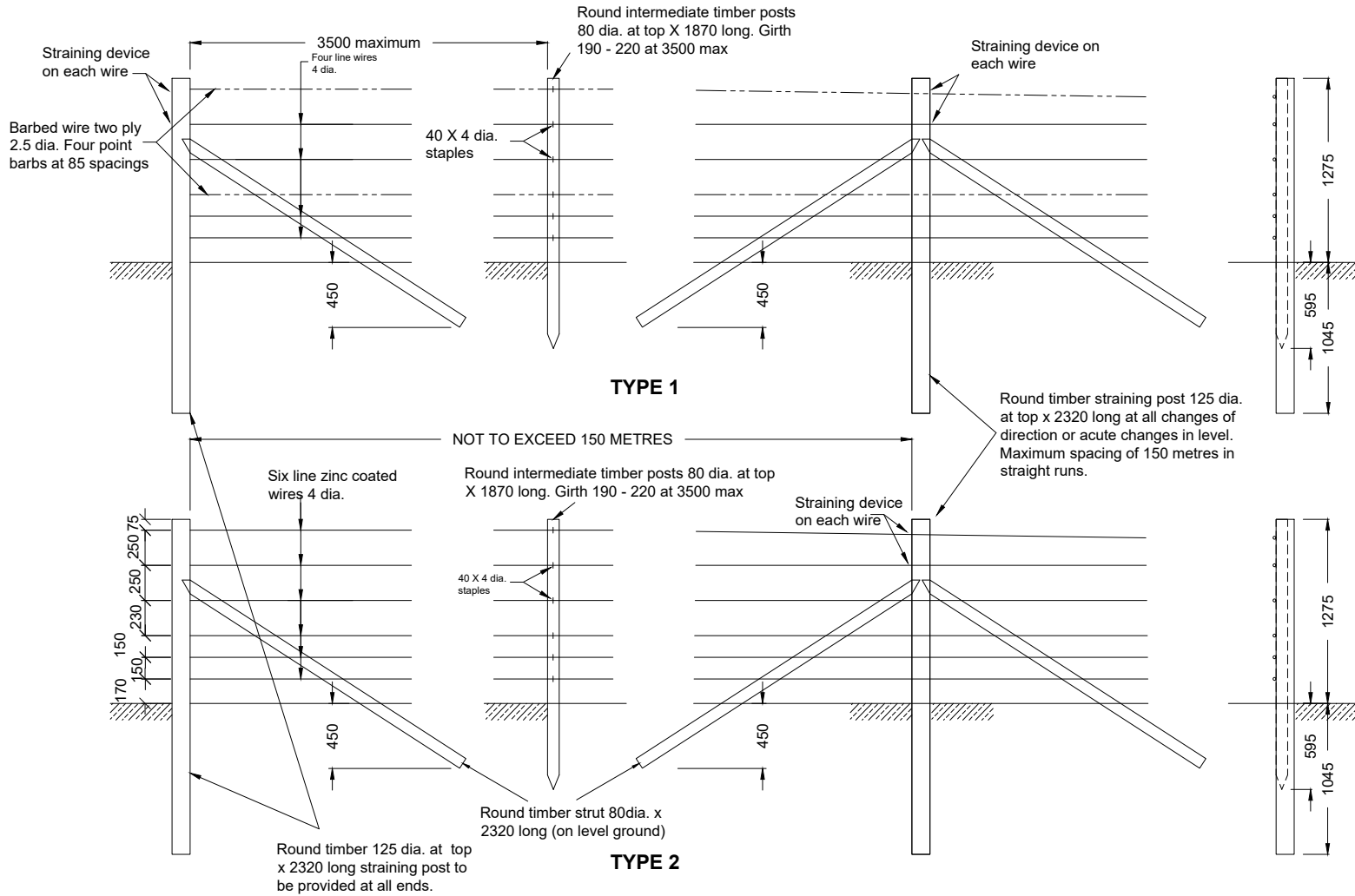
HD

Date

DEC 21

Drawing No.

HD/SD/03/11B



NOTES

- The following are two of the four standard temporary fences that are suggested for highway works and the type required or any variations of these details shall be as shown on the Drawings:

 Type 1 - BS 1722 Part 2 Type SW120 with mild steel barbed wire complying with BS4102 fixed to the top line wire and the third line wire from the ground and as shown on this detail;

 Type 2 - BS 1722 Part 2 and as shown on this details
- All line wire, stirrup wire and barded wire shall be zinc coated to comply with BS EN 10244-2.
- When these type fences or variation of these are used for accommodation work fences, the requirements are included in Appendix 1/15 and on the Drawings.
- Posts on landowners side of the fence line.
- Straining posts to be provided at ends (single strutted) and at intervals not exceeding 150m and at all corners and changes of direction exceeding 15° vertically and / or 30° horizontally (all double strutted).
- ALL DIMENSION ARE IN MILLIMETRES.

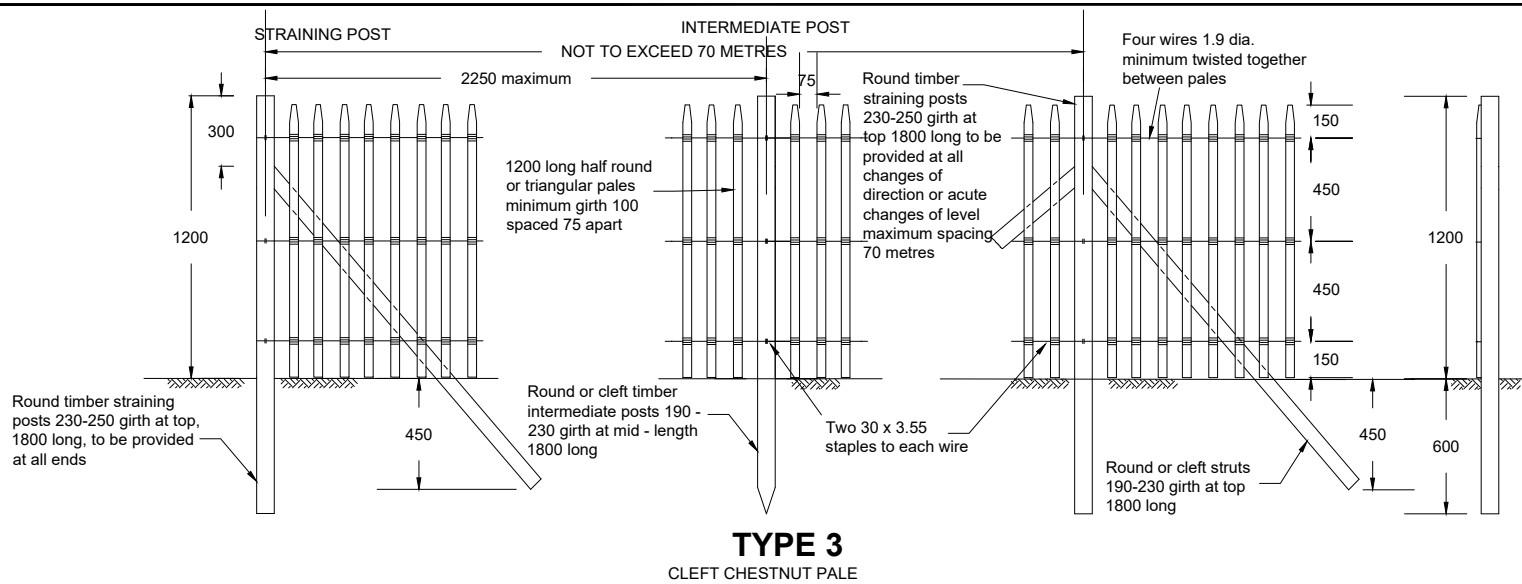


STANDARD DETAILS

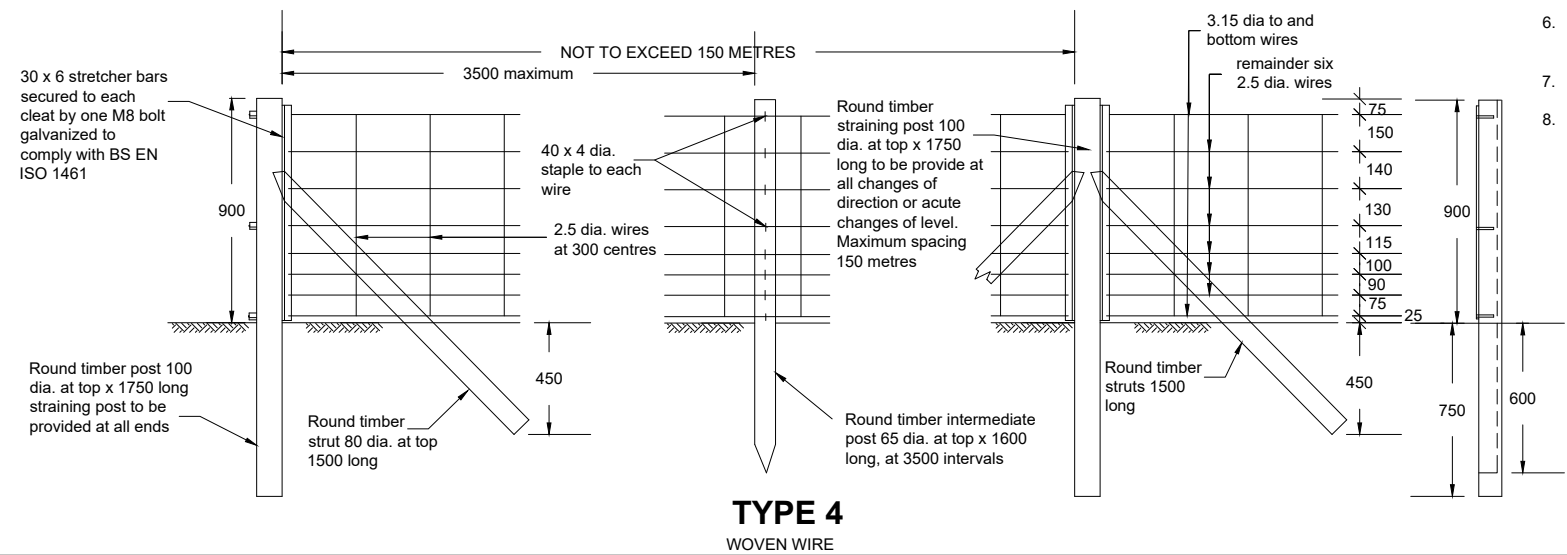
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Section HD	Date DEC 21
Drawing No. HD/SD/03/12B	

Commercial Regulatory and Operational Service
 Highway Design
 Flint Street, Fartown
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Project	
Title	TEMPORARY FENCE TYPE 1 & 2



TYPE 3
CLEFT CHESTNUT PALE



TYPE 4
WOVEN WIRE

NOTES

- The following are two of the four standard temporary fences that are suggested for highway works and variations of these details shall be as shown on the Drawings:

Type 3 - BS 1722 Part 4 Type CW120 and as shown on this details;

Type 4 - BS 1722 Part 2 Type C8/80/30 and as shown on this detail.
- All line wire, stirrup wire and barbed wire shall be zinc coated to comply with BS EN 10244-2
- If posts are to be driven then bottom end shall be pointed for 225.
- When these type of fences or variations of these are used for accommodation works fences the requirements are included in Appendix 1/15 and on the Drawings.
- Straining posts to be provided at ends [single strutted] and at intervals not exceeding 150m. and at all corners and changes of direction exceeding 15° vertically and/or 30° horizontally [all double strutted]
- Ground shall be trimmed where necessary for bottom of fence.
- Posts on landowner side of fence line.
- ALL DIMENSIONS ARE IN MILLIMETRES.



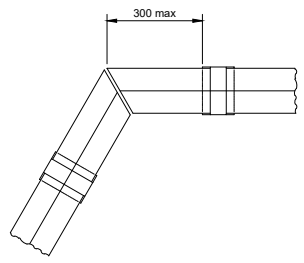
Project
STANDARD DETAILS

Scale
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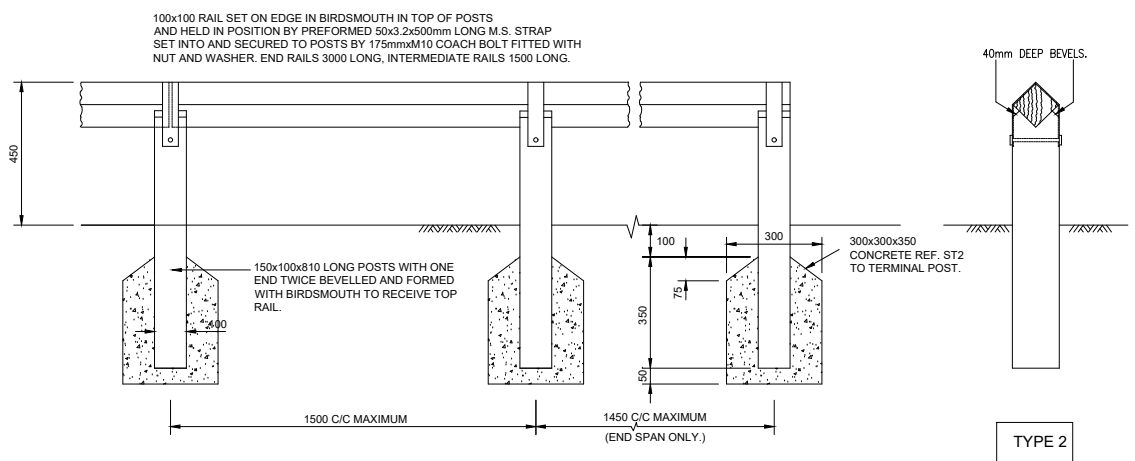
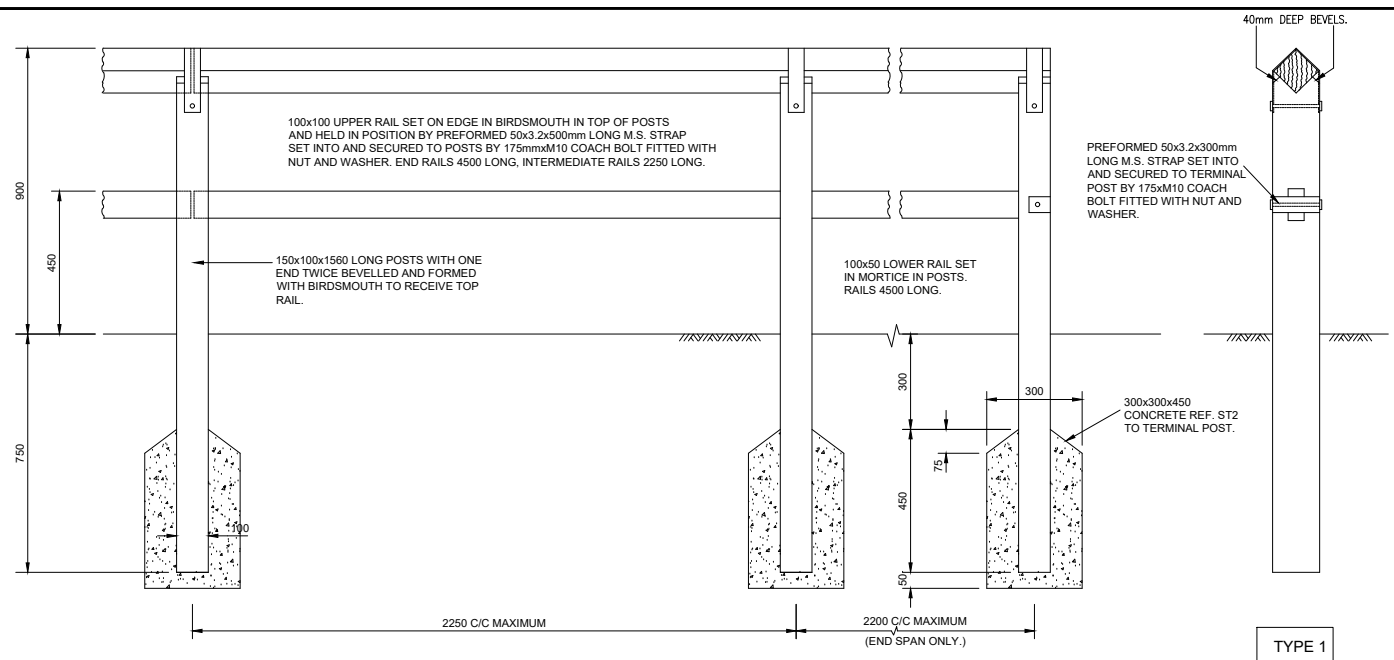
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Title
TEMPORARY FENCE TYPE 3 & 4

Drawn AKKV	Checked
Section HD	Date DEC 21
Drawing No. HD/SD/03/13B	



DETAIL A
 TO BE USED AT CHANGE OF DIRECTION >10°. RAILS TO BE CONTINUOUS THROUGH POSTS AND BEVELLED. RAILS TO EXTEND NO MORE THAN 300mm FROM POSTS. POSTS TO BE CONCRETED IN ACCORDANCE WITH NOTE 6.



- NOTES**
1. ~~POSTS AND RAILS SHALL~~ BE IN ACCORDANCE WITH THE SPECIFICATION EXCEPT THAT CREOSOTE PRESERVATION
 2. ALL TIMBER SHALL BE OF PLANED SOFTWOOD.
 3. AT CHANGES OF DIRECTION LESS THAN 10°, POSTS, RAILS AND BIRDSMOUTHS TO BE CHAMFERED AS NECESSARY. AT CHANGES IN DIRECTION GREATER THAN 10° DETAIL A SHALL BE USED.
 4. EXCEPT FOR CONCRETE BACKFILL, POSTS TO BE ERECTED IN SMALLEST HOLE PRACTICABLE.
 5. BACKFILL, OTHER THAN CONCRETE TO BE IN SUITABLE MATERIAL WELL RAMMED.
 6. POSTS TO BE BACKFILLED IN CONCRETE AS SHOWN AT ALL CHANGES IN DIRECTION EXCEEDING 15° VERTICALLY AND/OR 30° HORIZONTALLY AND AT 70 METRE CENTRES ALONG FENCELINE.
 7. WHERE TIMBER IS TO BE PAINTED PRESERVATION SHALL BE WATER BORNE SALTS, AFTER WHICH IT SHALL BE ALLOWED TO DRY TO A MOISTURE CONTENT OF 25% BEFORE PAINTING IN ACCORDANCE WITH THE SPECIFICATION.
 8. ALL FERROUS METALS TO BE GALVANISED TO BS EN ISO 1461.
 9. ~~FOR CONTRACTS NOT UNDER HIGHWAYS AGENCY SPECIFICATION FOR HIGHWAY WORKS,~~ CONCRETE REFERENCE SHALL BE USED.



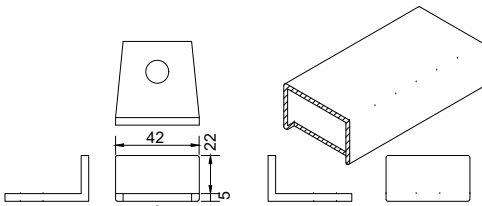
Project
STANDARD DETAILS

Scale
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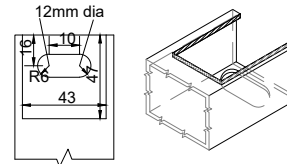
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Title
TIMBER PEDESTRIAN GUARDRAIL
 TIMBER KNEE-RAIL

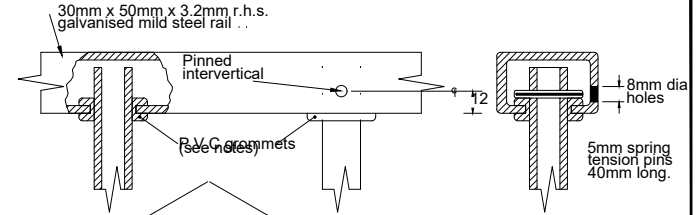
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Section HD	Date DEC 21
Drawing No. HD/SD/03/14B	



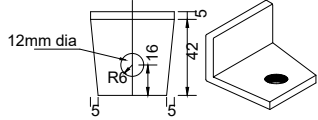
5mmx45mm section cut from rail to accommodate bracket type 'A' at one end of rail only



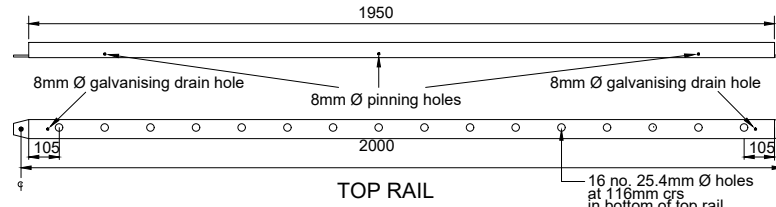
BOTTOM RAIL CUT-OUTS FOR BRACKET TYPE 'C'



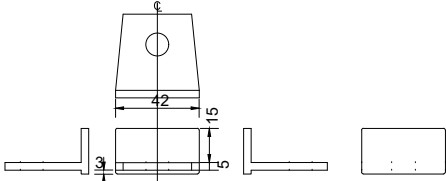
TOP & BOTTOM PINNING ARRANGEMENT.



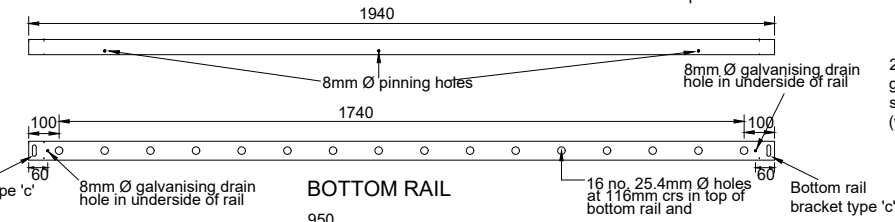
UPPER RAIL BRACKET TYPE 'A'



TOP RAIL



UPPER RAIL BRACKET TYPE 'B'



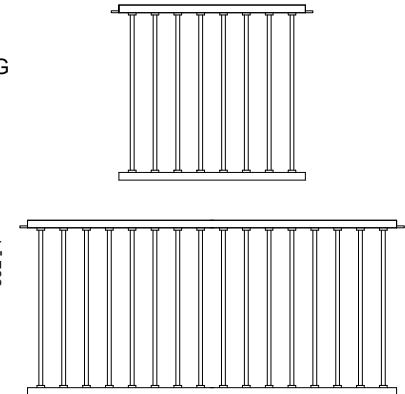
BOTTOM RAIL

21.3mm outside diameter galvanised medium duty steel tube to bs.1387 (wall thickness 2.65mm.)

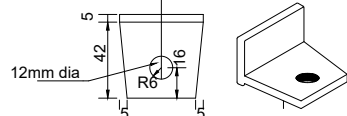


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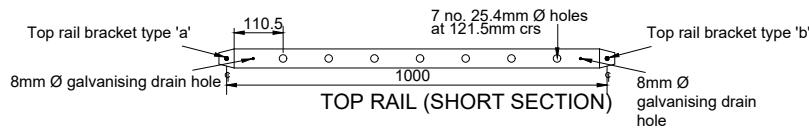
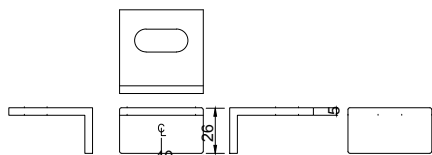
INTERVERTICAL



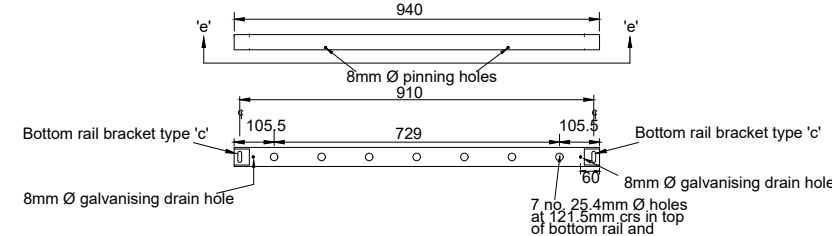
STANDARD PANEL ASSEMBLED.



UPPER RAIL BRACKET TYPE 'C'



TOP RAIL (SHORT SECTION)



BOTTOM RAIL (SHORT SECTION)

NOTES.

1. STEEL TO BE GRADE S275J0H TO BS EN ISO 10025, 10113, 10210-1
2. TOP, INTERMEDIATE & BOTTOM RAILS TO BE GALVANISED TO BS EN ISO 1461 FOLLOWING FABRICATION AND PRIOR TO FINAL ASSEMBLY. MINIMUM THICKNESS TO BE 120µm.
3. EACH PANEL TO BE SUPPLIED WITH 4 x M10 SET SCREWS AND NUTS PLUS 8 x 21mm OUTSIDE DIAMETER WASHERS OF NON-RUSTING MATERIAL. (NON-RUSTING INCLUDES STAINLESS STEEL AND ZINC PLATED.)
4. PANELS TO BE HARD STAMPED CLEARLY IDENTIFYING MANUFACTURER.
5. GROMMETS TO BE BLACK E.P.D.M. RUBBER 25.4mm (1") DIAMETER BASE OF GROOVE x 20.6mm (13/16") HOLE x 3.2mm (1/8") WIDTH OF GROOVE, 60/70° SHORE HARDNESS.
6. ALL DIMENSIONS IN MILLIMETRES.



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV

Checked

Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

ADJUSTABLE PEDESTRIAN GUARDRAIL
FLEXIRAIL TYPE WITH STANDARD PANEL

Section

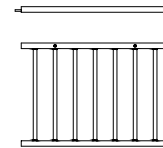
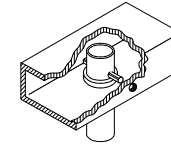
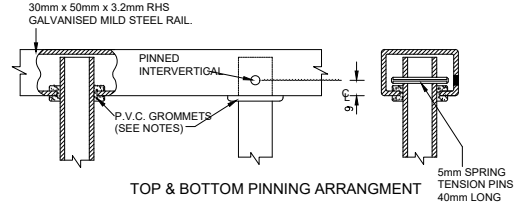
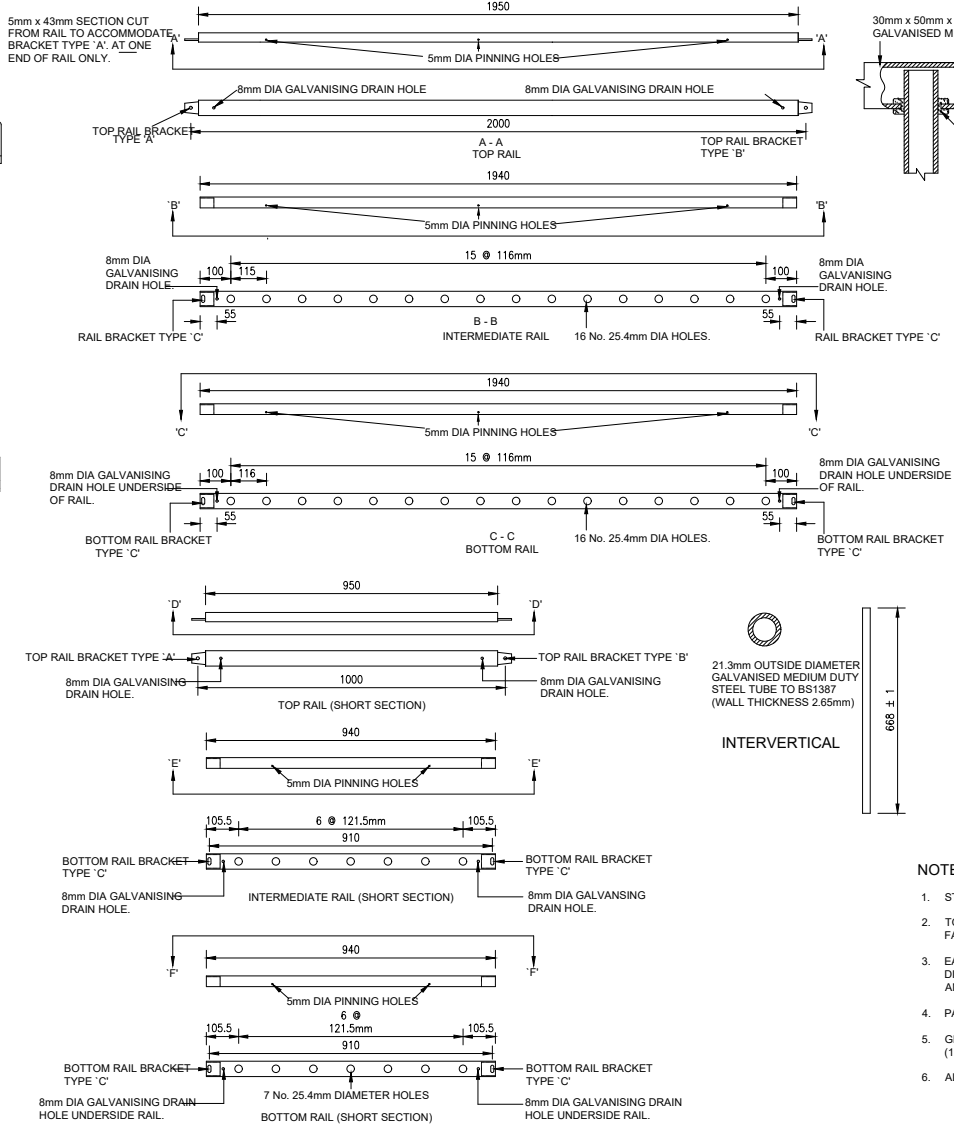
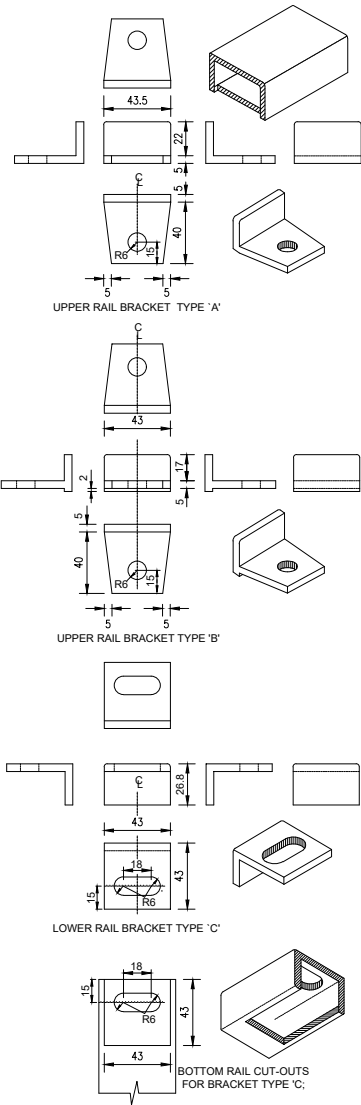
HD

Date

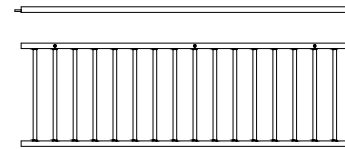
AUG 22

Drawing No.

HD/SD/04/01B



PINNING TO BE ARRANGED SO THAT IT ALL APPEARS ON THE SAME SIDE OF THE ERECTED GUARDRAIL.



VISIBILITY PANEL ASSEMBLED

NOTES

1. STEEL TO BE GRADE S275J0H TO BS EN ISO 10025, 10113, 10210-1
2. TOP, INTERMEDIATE & BOTTOM RAILS TO BE GALVANISED TO BS EN ISO 1461 FOLLOWING FABRICATION AND PRIOR TO FINAL ASSEMBLY. MINIMUM THICKNESS TO BE 120 μ m.
3. EACH PANEL TO BE SUPPLIED WITH 4 x M10 SET SCREWS AND NUTS PLUS 8 x 21mm OUTSIDE DIAMETER WASHERS OF NON-RUSTING MATERIAL. (NON-RUSTING INCLUDES STAINLESS STEEL AND ZINC PLATED.)
4. PANELS TO BE HARD STAMPED CLEARLY IDENTIFYING MANUFACTURER.
5. GROMMETS TO BE BLACK E.P.D.M. RUBBER 25.4mm (1") DIAMETER BASE OF GROOVE x 20.6mm (13/16") HOLE x 3.2mm (1/8") WIDTH OF GROOVE, 60/70" SHORE HARDNESS.
6. ALL DIMENSIONS IN MILLIMETRES.



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV

Checked

Commercial Regulatory and Operational Service

Title

ADJUSTABLE PEDESTRIAN GUARDRAIL
FLEXIRAIL TYPE WITH VISIBILITY PANEL

Section

HD

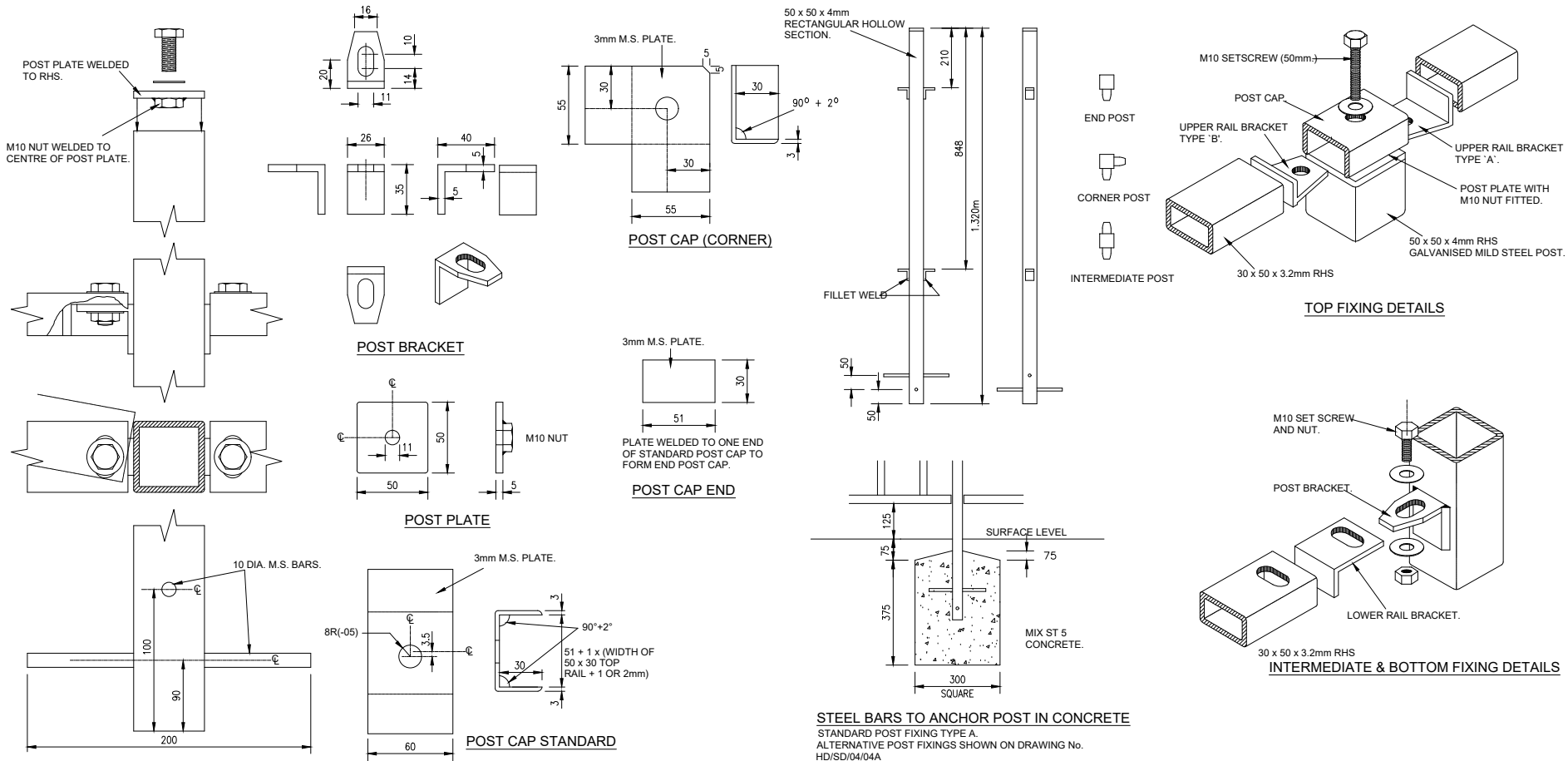
Date

DEC 21

Drawing No.

HD/SD/04/02B

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG



DESIGN CRITERIA FOR GUARDRAIL
STANDARD GUARDRAIL WILL ACCOMMODATE (WITHOUT MODIFICATION)

1. CURVES OF 5m RADIUS.
2. GRADIENTS OF 1 IN 10.

WITH A SLIGHT LOSS OF VERTICAL ALIGNMENT CURVES LESS THAN 5m RADIUS AND GRADIENTS GREATER THAN 1 IN 10 CAN BE ATTAINED.

AN ALTERNATIVE PROPRIETARY GUARDRAIL MAY BE USED SUBJECT TO THE APPROVAL OF THE ENGINEER.

NOTES

1. STEEL TO BE GRADE S275JOH TO BS EN ISO 10025, 10113, 10210-1
2. POSTS TO BE GALVANISED TO BS EN ISO 1461 FOLLOWING FABRICATION AND PRIOR TO FINAL ASSEMBLY. MINIMUM THICKNESS TO BE 120µm.
3. POSTS TO BE HARD STAMPED CLEARLY IDENTIFYING THE MANUFACTURER.
4. EACH POST TO BE SUPPLIED WITH 1 x M10 BOLT PLUS 1 x 21mm OUTSIDE DIAMETER WASHER OF NON-RUSTING (NON-RUSTING INCLUDES STAINLESS STEEL AND ZINC PLATED.)
5. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED.



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Commercial Regulatory and Operational Service
Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

**ADJUSTABLE PEDESTRIAN GUARDRAIL
STANDARD POST**

Drawn

AKKV

Checked

Section

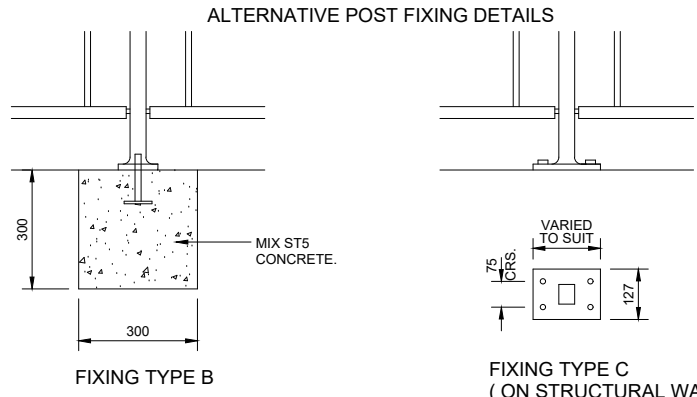
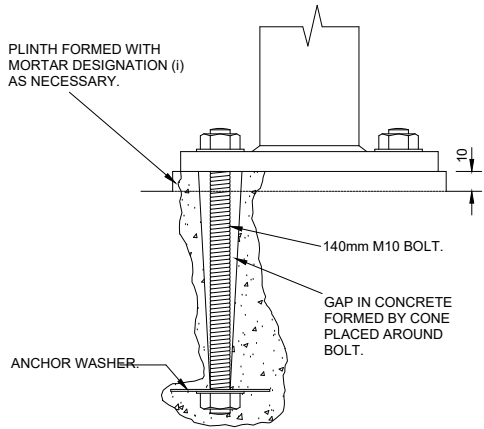
HD

Date

DEC 21

Drawing No.

HD/SD/04/03B



DESIGN CRITERIA FOR GUARDRAIL

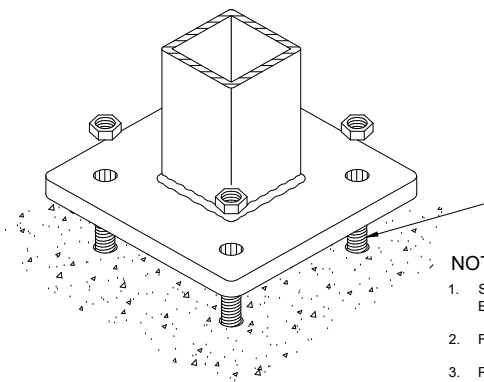
STANDARD GUARDRAIL WILL ACCOMMODATE (WITHOUT MODIFICATION.)

1. CURVES OF 5m RADIUS.
2. GRADIENTS OF 1 IN 10.

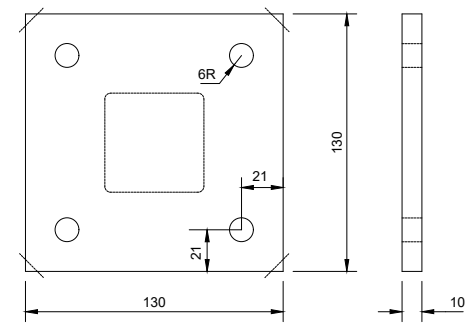
WITH SLIGHT LOSS OF VERTICAL ALIGNMENT CURVES LESS THAN 5m RADIUS AND GRADIENTS GREATER THAN 1 IN 10 CAN BE ATTAINED.



POST BRACKET ORIENTATION



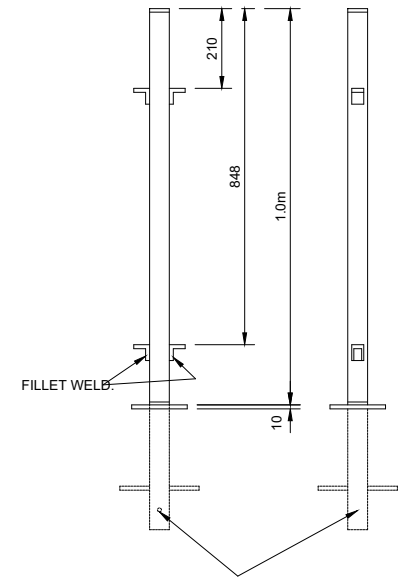
BASE PLATE FIXING DETAILS



BASE PLATE

NOTES

1. STEEL TO BE GRADE S275J0H TO BS EN ISO 10025, 10113, 10210-1 1. POSTS TO BE GALVANISED TO BS EN ISO 1461
2. FOLLOWING FABRICATION AND PRIOR TO FINAL ASSEMBLY - MINIMUM THICKNESS TO BE 120µm.
3. POSTS TO BE HARD STAMPED CLEARLY IDENTIFYING THE MANUFACTURER.
4. EACH POST TO BE SUPPLIED WITH 1 x M10 BOLT PLUS 1 x 21mm OUTSIDE DIAMETER WASHER OF NON-RUSTING MATERIAL. (NON-RUSTING INCLUDES STAINLESS STEEL AND ZINC PLATED.)
5. FOR CONTRACTS NOT UNDER HIGHWAYS AGENCY SPECIFICATION FOR HIGHWAY WORKS CONCRETE REFERENCE C25 AND 1:3 CEMENT MORTAR SHALL BE USED.
6. ALL DIMENSIONS IN MILLIMETRES



ALTERNATIVE BASE ARRANGEMENT FOR FIXED POST.

(SEE DRAWING No. HD/SD/04/05A)



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

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Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

**ADJUSTABLE PEDESTRIAN GUARDRAIL
ALTERNATIVE POST FIXINGS**

Section

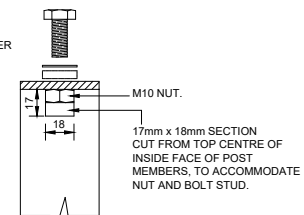
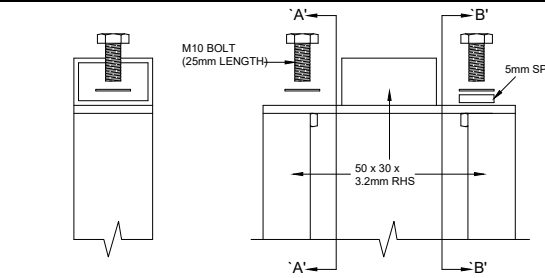
HD

Date

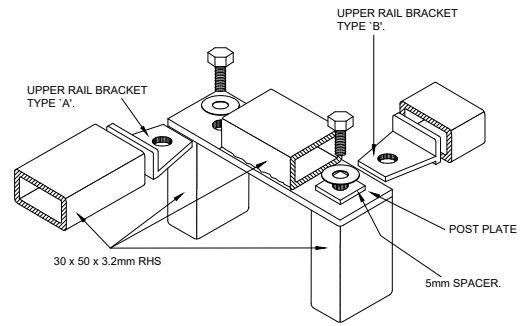
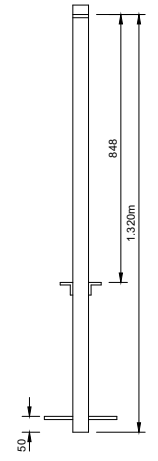
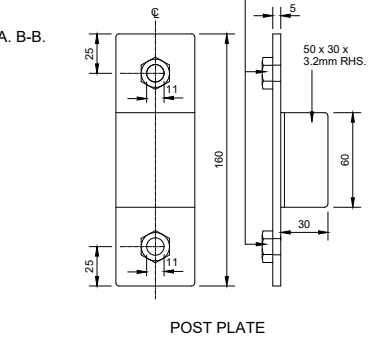
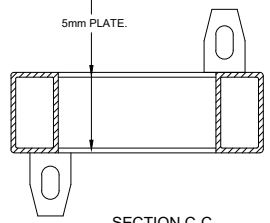
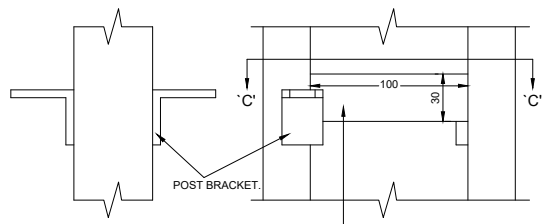
DEC 21

Drawing No.

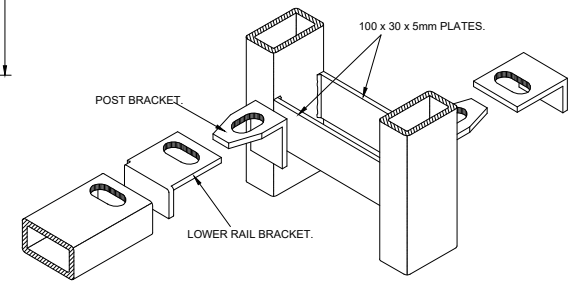
HD/SD/04/04B



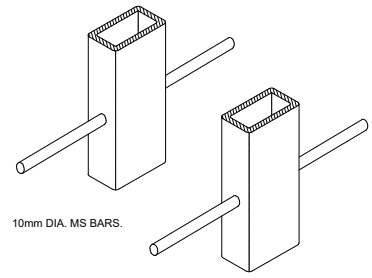
M10 NUTS WELDED BELOW POST PLATE HOLES WITH FLATS PARALLEL TO LONG SIDES OF POST PLATE.



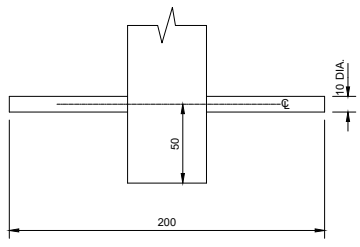
TOP FIXING DETAILS



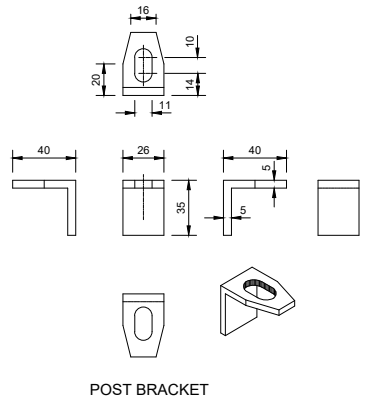
BOTTOM FIXING DETAILS



STEEL BARS TO ANCHOR POST IN CONCRETE



ANCHOR BARS



POST BRACKET

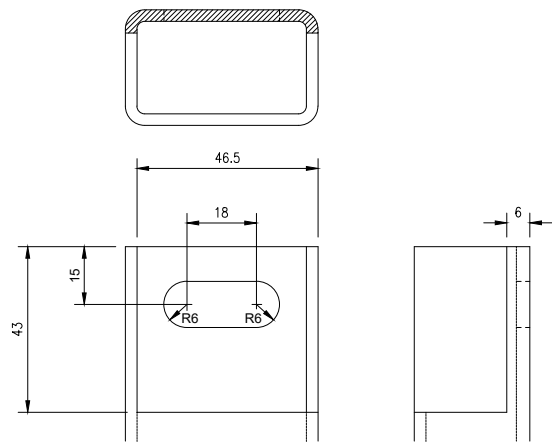
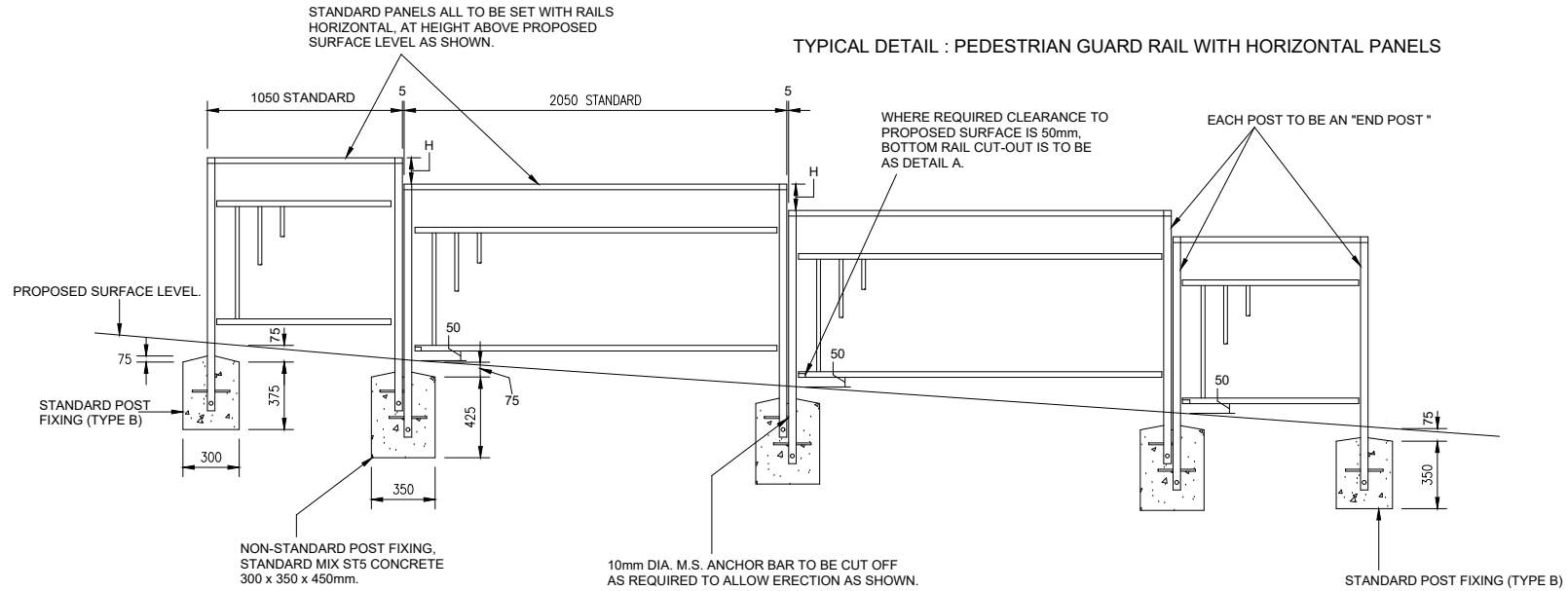
- NOTES**
1. STEEL TO BE GRADE S275J0H TO BS EN ISO 10025, 10113, 10210-1
 2. POSTS TO BE GALVANISED TO BS EN ISO 1461 FOLLOWING FABRICATION AND PRIOR TO FINAL ASSEMBLY. MINIMUM THICKNESS TO BE 120µm.
 3. POSTS TO BE HARD STAMPED CLEARLY IDENTIFYING THE MANUFACTURER.
 4. EACH POST TO BE SUPPLIED WITH 2 x M10 SETSCREWS PLUS 1 x 21mm OUTSIDE DIAMETER WASHERS OF NON-RUSTING MATERIAL. (NON-RUSTING INCLUDES STAINLESS STEEL AND ZINC PLATED.)
 5. All dimensions in millimetres unless otherwise stated.

Commercial Regulatory and Operational Service
 Highway Design
 Flint Street, Fartown
 Huddersfield, HD1 6LG

Project
STANDARD DETAILS

Title
**ADJUSTABLE PEDESTRIAN GUARDRAIL
 FLEXIRAIL SPECIAL POST**

Scale NOT TO SCALE	
Drawn AKKV	Checked
Section HD	Date DEC 21
Drawing No. HD/SD/04/05B	



DETAIL A : SPECIAL CUT-OUT FOR BOTTOM RAIL

NOTES

- EXCEPT FOR DETAILS SHOWN HERE, THE GUARD RAIL IS TO BE FABRICATED AND ASSEMBLED IN ACCORDANCE WITH STANDARD DRGS. NOS. HD/SD/04/02
HD/SD/04/03
HD/SD/04/04
HD/SD/04/05
- FOR CONTRACTS NOT UNDER HIGHWAYS AGENCY SPECIFICATION FOR HIGHWAY WORKS CONCRETE REFERENCE C25 SHOULD BE USED.



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV

Checked

Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

PEDESTRIAN GUARDRAILS
WITH HORIZONTAL PANELS

Section

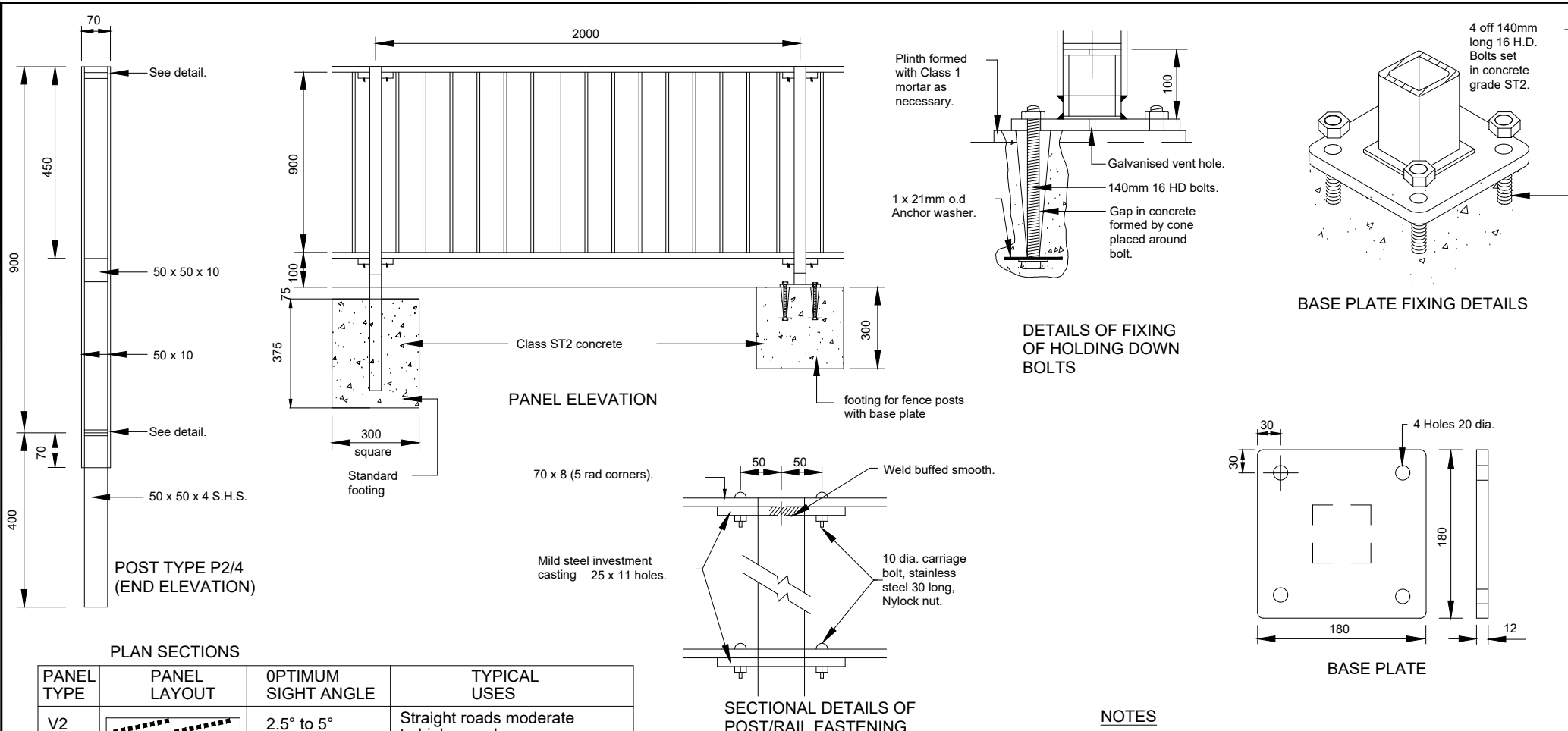
HD

Date

DEC 21

Drawing No.

HD/SD/04/06B



DETAILS OF FIXING OF HOLDING DOWN BOLTS

BASE PLATE FIXING DETAILS

BASE PLATE

PLAN SECTIONS

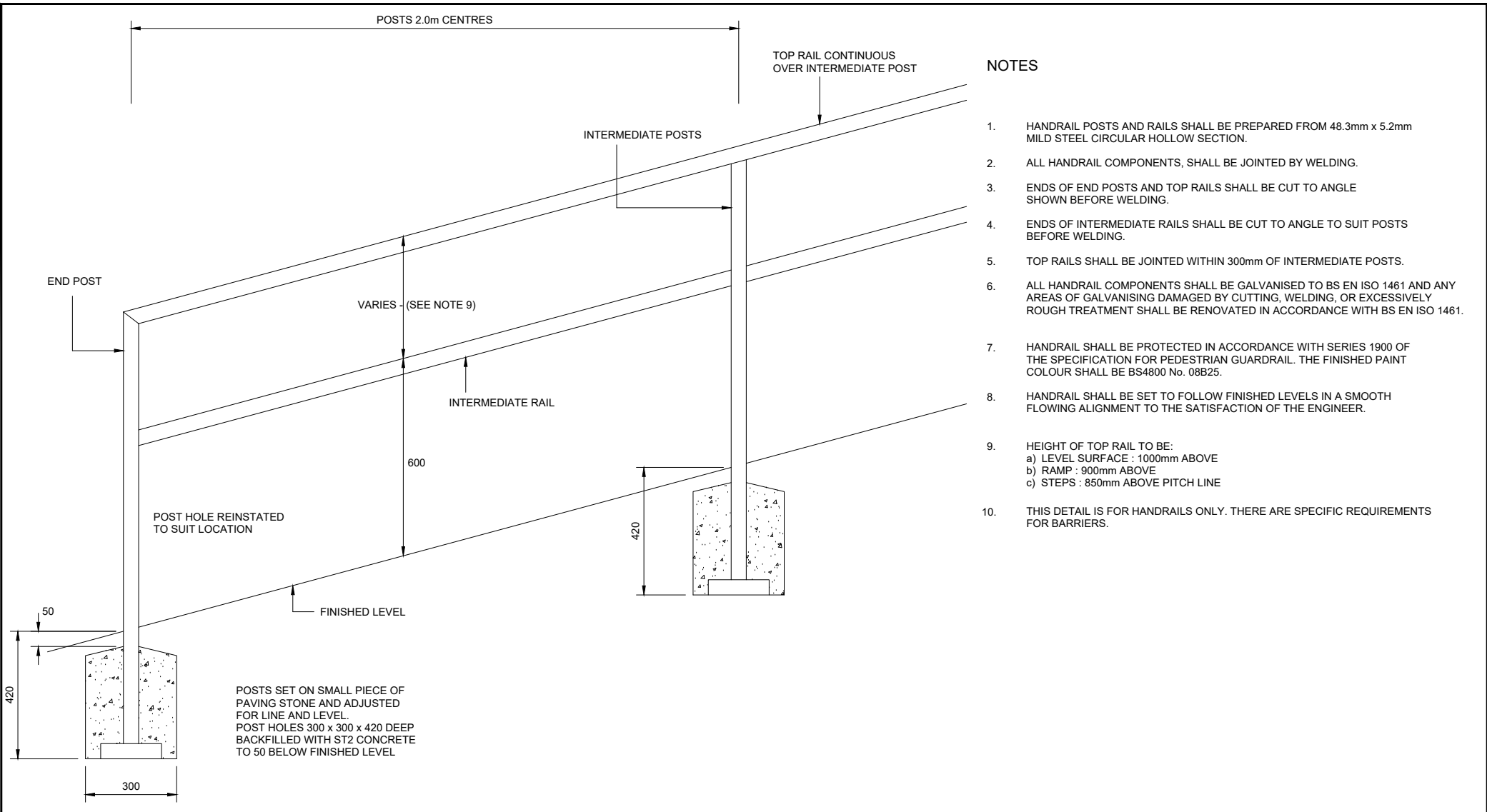
PANEL TYPE	PANEL LAYOUT	OPTIMUM SIGHT ANGLE	TYPICAL USES
V2		2.5° to 5°	Straight roads moderate to high speed.
V4		5° to 14°	Straight roads, low to moderate speed, curves
V8		more than 14°	Curves less than 15m radius, e.g. bellmouth.

Code	Infill
V2 V4 V8	12 \varnothing
	113 \varnothing

NOTES

1. Steel to be grade S275JOH to BS EN 10025,10113, 10210-1
2. Welds to be 5-fillet welds to BS EN 948.
3. Design and construction to BS 7818.
4. Standard finish hot dip galvanised BS EN ISO 1461

<p>Kirklees COUNCIL</p>	Project	<h1>STANDARD DETAILS</h1>		Scale		NOT TO SCALE	
	Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG			Title	<h1>PEDESTRIAN BARRIER SYSTEM</h1>		Drawn
AKKV							
Section		Date					
		HD		DEC 21			
		Drawing No.		HD/SD/04/07B			



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV

Checked

Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

50mm DIAMETER HANDRAIL

Section

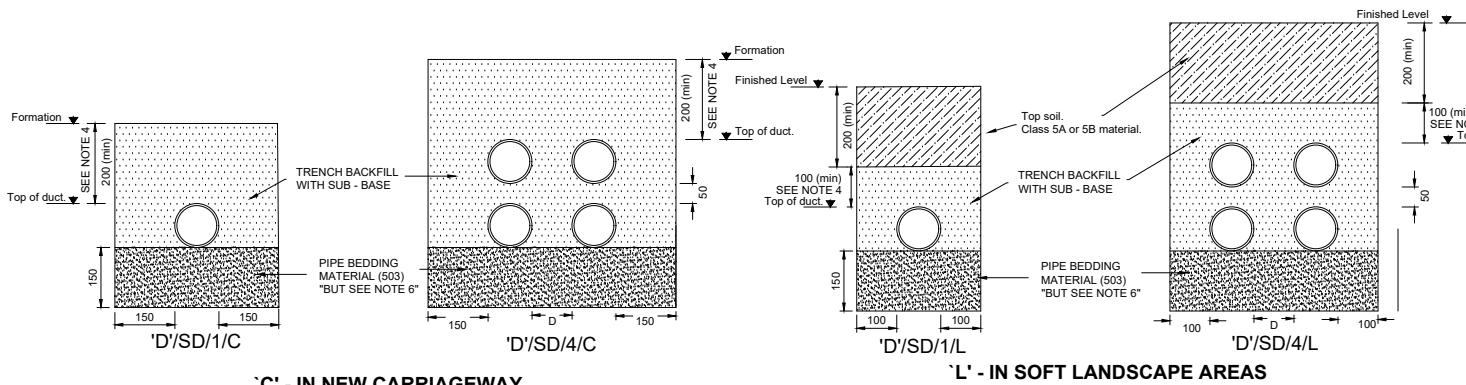
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Date

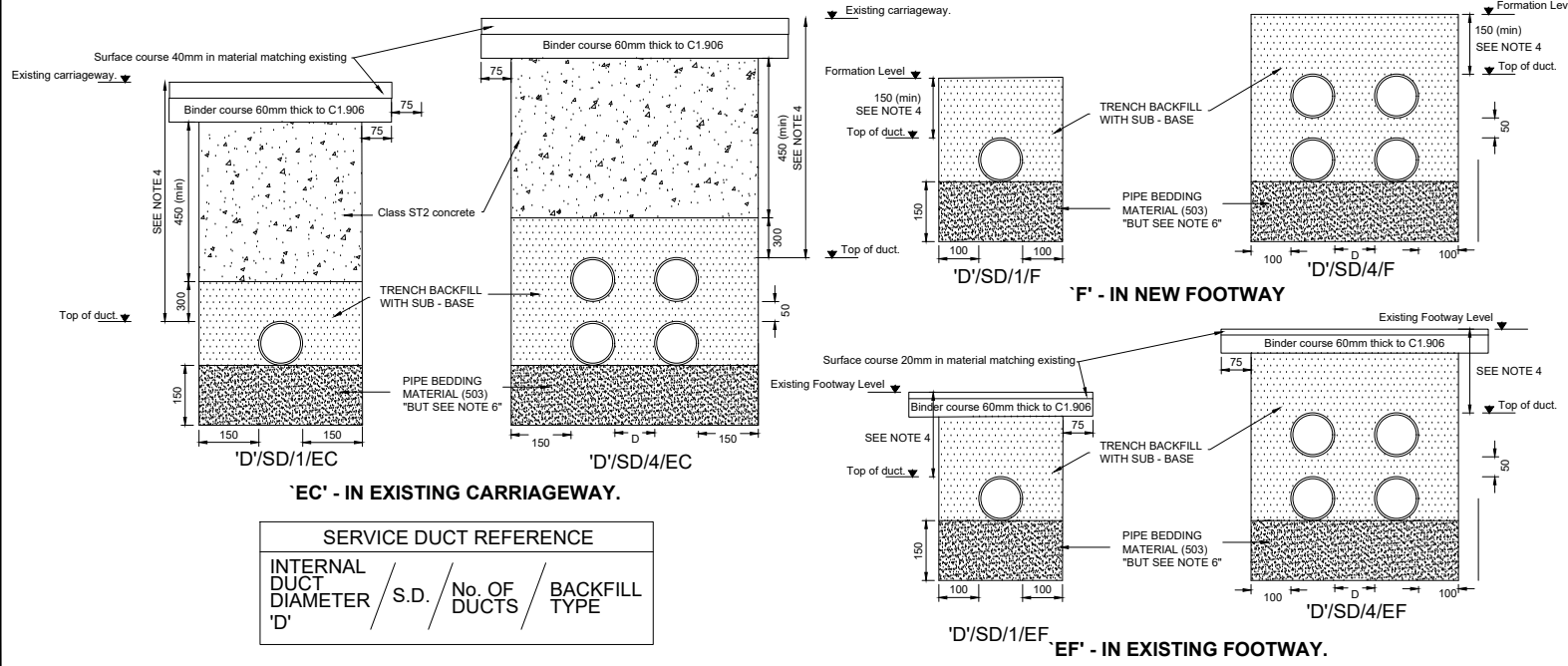
DEC 21

Drawing No.

HD/SD/04/08B



- GENERAL REQUIREMENTS**
- All ducts to be provided with draw ropes as specified in Clause 501.8.
 - Pipes for service ducts shall be in accordance with Clause 501.8 and Table 5/2 of the specification.
 - Any reinstatement to existing carriageway and footway is to be measured separately.
 - Ducts laid transversely across carriageway, shall extend 600mm beyond the kerb face.
 - All ducts shall be laid to a uniform grade except when traversing between existing and new carriageway where a transition grade of 1:10 shall be used, the transition starting in the existing carriageway and finishing at the interface between existing and new carriageways.
 - The colour of ducting pipes for Utilities shall be in accordance with Sub Clauses 518.4 of the specification.
 - Ducts for Street Lighting and UTC are to be high or medium density polyethylene of smooth bore with a minimum wall thickness of 5mm.
 - Ducts for UTC are to be brown and marked 'UTC' at intervals not exceeding 1m.
 - Ducts for Street Lighting are to be orange and marked 'Street Lighting' at intervals not exceeding 1m.



- NOTES:**
- The trench width is determined by the width of the Duct Combination.
 - Marker tape is to be located at least 100mm above the top of the duct or in accordance with Note 6 of the general requirements.
 - 100mm minimum depth of sub-base backfill to be laid prior to compaction.
 - The minimum dimension is to be increased as necessary to ensure a finish depth of cover shall be in accordance with National Joint Utilities Group publication "Guidelines on the positioning & colour coding of utilities' Apparatus". Any variation described in Appendix 5/2.
 - D denotes internal duct diameter.
 - Where p.v.c. ducts are provided the whole bedding shall be standard mix st2 concrete
 - For contracts not under the highways agency specification for highway works concrete reference c10 shall be used.

SERVICE DUCT REFERENCE			
INTERNAL DUCT DIAMETER 'D'	/ S.D.	/ No. OF DUCTS	/ BACKFILL TYPE

Commercial Regulatory and Operational Service
Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Project
STANDARD DETAILS

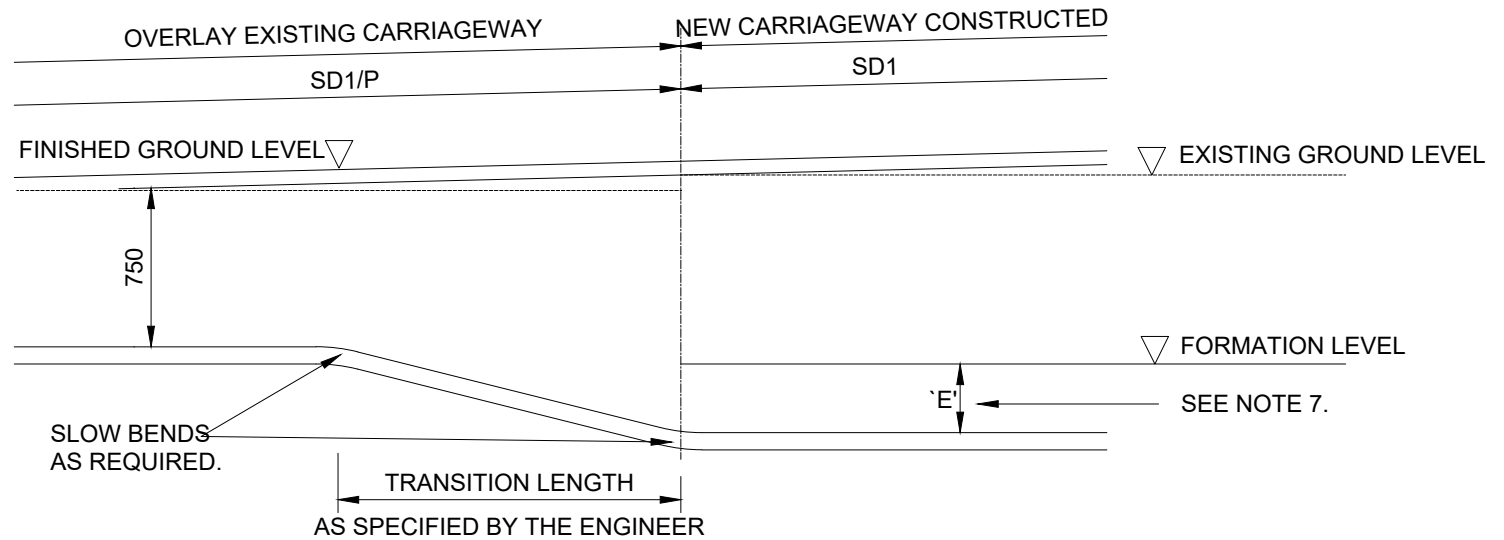
Title
SERVICE DUCTS


Scale NOT TO SCALE	
Drawn AKKV	Checked DB
Section HD	Date JULY 21
Drawing No.	HD/SD/05/01B

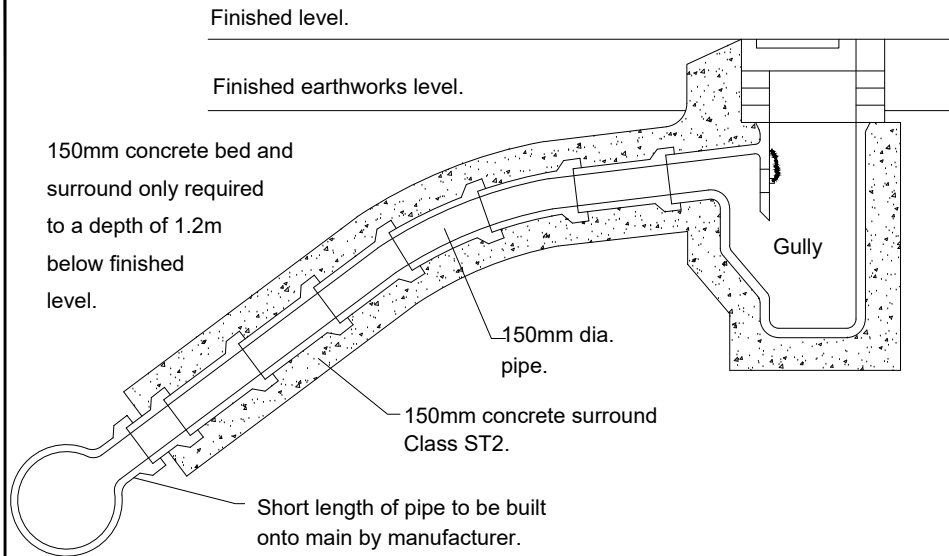
NOTES

1. FOR GENERAL NOTES REFER TO DRAWING No. H/SD/05/01
2. ALL DIMENSIONS IN MILLIMETRES UNLESS SPECIFIED OTHERWISE
3. WHERE MORE THAN 4 DUCTS ARE SPECIFIED WITH SUFFIX F, OR P THE DESIGN GROUP SHALL BE AS FOR SD6-SD12 WITH COVER FROM THE TOP OF THE DUCTS TO FORMATION LEVEL/EXISTING GROUND LEVEL, BACKFILL AND REINSTATEMENT AS SHOWN FOR SD1/F, AND SD1/P.
4. D DENOTES INTERNAL DUCT DIAMETER.
5. WHEN DUCT IS LAID WITHIN RETAINED EXISTING CONSTRUCTIONS DEPTH OF COVER 'C' = 500mm.
6. FOR CONTRACTS NOT UNDER THE HIGHWAYS AGENCY SPECIFICATION FOR HIGHWAY WORKS CONCRETE REFERENCE C10 SHALL BE USED.
7. 'E' HAS A MINIMUM DIMENSION OF 300mm AND IS TO BE INCREASED AS NECESSARY TO ENSURE A FINISH DEPTH OF COVER OF 750mm BELOW FINISHED CARRIAGEWAY SURFACE.
8. MARKER TAPE WITH LEGEND "ELECTRICITY CABLES". TO BE 150mm WIDTH

**TRANSITION DETAIL
FOR CHANGE IN
DUCT LEVEL.
EXAMPLE SHOWN
SD1/EC TO SD1/C.**



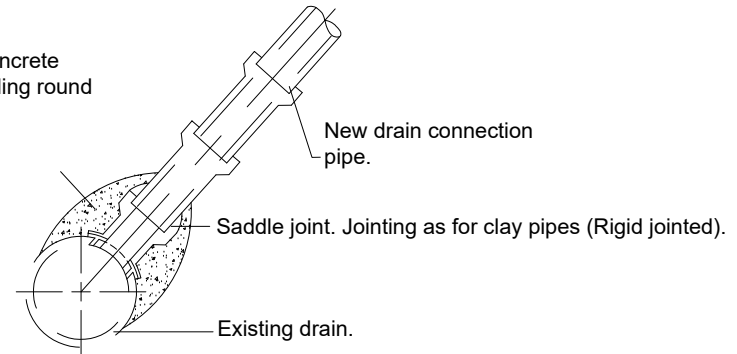
	Project	STANDARD DETAILS		Scale	NOT TO SCALE	
	Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG	Title	TRANSITION DETAIL FOR CHANGE IN DUCT LEVEL		Drawn	Checked
AKKV					DB	
Section					Date	
				HD	JULY 21	
				Drawing No.	HD/SD/05/02B	



GULLY CONNECTION

Titles 4.3mm
Labels - 3.08mm

150mm ST2 concrete surround including round saddle joints.



GENERAL REQUIREMENTS:- Joint not to be made within 300mm of existing pipe joint.

NOTE

This type of connection is only acceptable in exceptional circumstances and with the written permission of the Manager Junction are preferred

CONNECTION OF EXISTING DRAIN

 <p>Kirklees COUNCIL</p>	Project	<h1>STANDARD DETAILS</h1>		Scale	NOT TO SCALE	
	<p>Commercial Regulatory and Operational Service</p> <p>Highway Design Flint Street, Fartown Huddersfield, HD1 6LG</p>			Title	Drawn	Checked
<h2>CONNECTION TO EXISTING DRAIN GULLY CONNECTION</h2>		Section	Date			
		Drawing No.	HD/SD/05/03B			


COMBINED DRAINAGE AND KERB BLOCKS

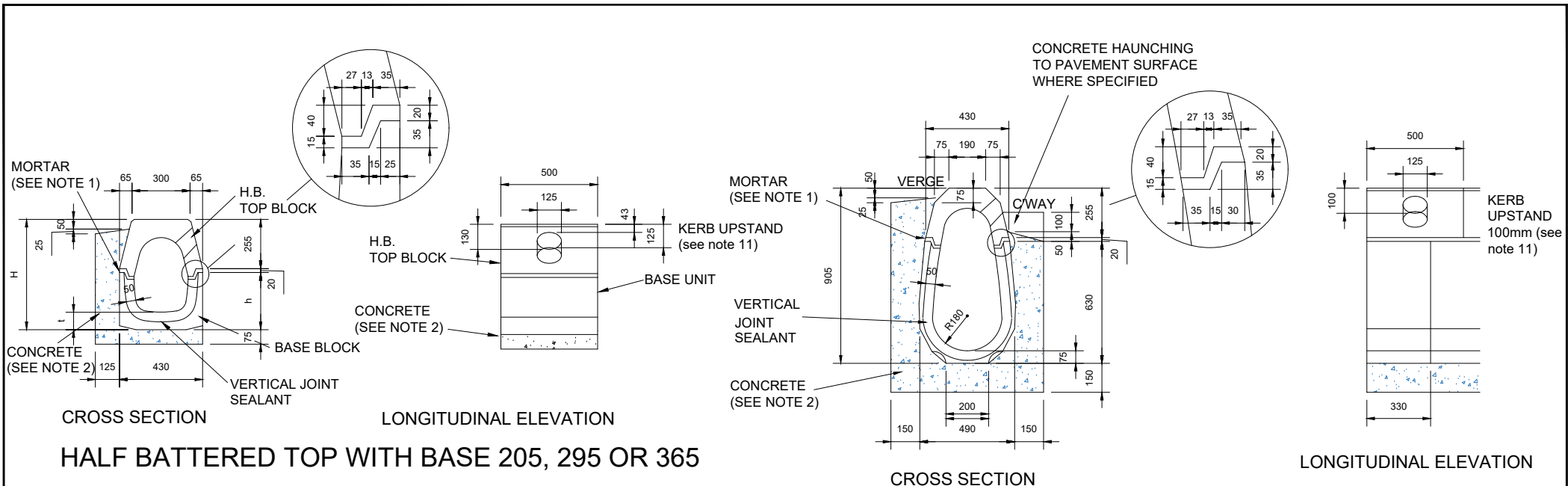
GENERAL REQUIREMENTS

1. Combined drainage and kerb block (CDKB) systems shall be designed and installed in accordance with the Highways Agency MCDHW Specification Clause 516 and the manufacturer's instructions.
2. CDKB systems shall also comply with the following basic design criteria, whether or not these details are referred to in the manufacturer's instructions
3. Silt traps are to be provided at 50 metre maximum intervals, and also at the upstream end of sections of base-only units exceeding 10 metres in length and adjacent to all outfalls. Suitable silt traps are those indicated in the Marshall's Beany system literature, or untrapped gully pots with the outfall blocked with an ST2 concrete plug. All silt traps shall have metal access covers.
4. Consideration shall be given to relocating silt traps up to 5 metres upstream of outfalls, in order that service vehicles do not block the passage of traffic when cleaning them out.
5. An access cover shall be provided to at least one end of every length "base-only" units, e.g. side road bellmouths, drop crossings for accesses or lengths kerbed for other reasons such as raised bus boarders.
6. Junctions between lengths of "base-only" CDKB shall not be permitted under carriageway surfacing unless a suitable grating is used.
7. To be discussed with a drainage engineer before implementation

NOTES FOR DRAWINGS NUMBERS HD/SD/05/05B -10B

1. Mortars shall be;
 - i) A Mortar class 12 cement mortar to BS EN 998-2 for bedding the Top Blocks
 - ii) Marshalls' M-Flex for bedding Base Block Outfalls onto the Beany Trapped Gully Unit
 - iii) Marshalls' M-Flex for bedding the sections of the Marshalls' Trapped Gully Unit sections
2. Concrete bed, haunch and surround shall be;
 - i) A mix ST1 concrete to BS 8500-1&2 and BS EN 206-1 for Base Blocks used in the normal kerb application.
 - ii) A mix ST4 concrete to BS 8500-1&2 and BS EN 206-1 for Base Blocks used within the carriageway (i.e. where Base Block are used with cover plates and are trafficked)
 - iii) A mix ST4 concrete to BS 8500-1&2 and BS EN 206-1 for Beany Trapped Gully, Silt Traps, Catch Pits and outfall details
 - iv) The specification for carrier pipe concrete surround is by others
3. Marshalls' vertical joint sealant, M-Seal, shall be applied to all Base Blocks.
4. For Base 630 applications, all Outfalls, Silt Traps and junctions should be formed by a brick Catch Pit structure;
 - i) The outfall pipe diameter, gradient, depth to invert, depth of trap shall be by others
 - ii) The internal dimensions of the catch pit shall be 540 wide x 1000 long for Base 630 applications
 - iii) Corbelled brickwork with a maximum of 22mm steps shall be used to support the Access Cover and Frames
5. Beany Block Access Covers and Frames are hinged and handed to the direction of the traffic, specified "nearside" and "offside".
6. Movement joint details that fully isolate the Beany Block whilst maintaining restraint shall be provided adjacent to all concrete slabs, even when the slab is covered by other materials.
7. Stop End Top Blocks Units are available as left hand (LH) or right hand (RH) for use at transitions to half battered kerbs.
8. For Beany Block with cover plate a minimum of 50mm concrete cover (d) and 100mm of surfacing (D) will be required.
9. All dimensions are in millimetres.

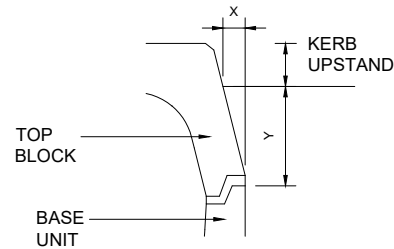
 Kirklees COUNCIL	Project	<h2>STANDARD DETAILS</h2>		Scale NOT TO SCALE	
	Title	<h3>COMBINED DRAINAGE AND KERB BLOCKS</h3> <p>GENERAL REQUIREMENTS NOTES</p>		Drawn AKKV/AA	Checked
Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG		Section HD	Date JAN 22		
		Drawing No. HD/SD/05/04B			



HALF BATTERED TOP WITH BASE 205, 295 OR 365

45° SPLAYED TOP WITH BASE 630

BASE UNIT	H	h	t	DEPTH: c/way CHANNEL TO INVERT (125 KERB UPSTAND)
BASE 205	480	205	70	285
BASE 295	570	295	90	355
BASE 365	640	365	90	425
BASE 630	905	630	75	705



	75	100	110	120	125	150
KERB UPSTAND	75	100	110	120	125	150
X	46	40	37	34	33	27
Y	200	175	165	155	150	125

(*) FOR BASE 630 ADD 5 TO X VALUES

BASE UNIT SETTING OUT DETAIL

FOR NOTES, REFER TO DRAWING NO. HD/SD/05/04B



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV/AA

Checked

Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

COMBINED DRAINAGE AND KERB BLOCKS
SHEET 1 OF 6

Section

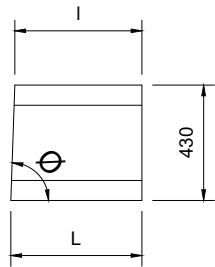
HD

Date

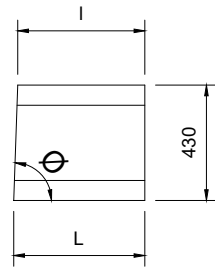
JAN 22

Drawing No.

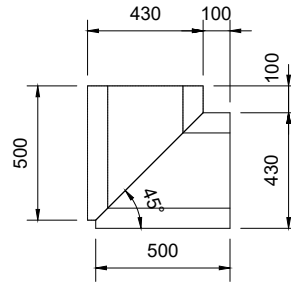
HD/SD/05/05B



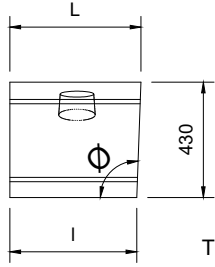
BASE 205, 295 OR 365
(EXT. OR INT. RADIUS)



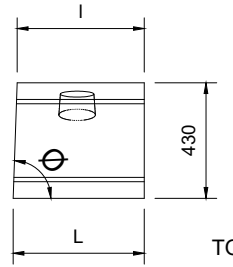
BASE 630
(EXT. OR INT. RADIUS)



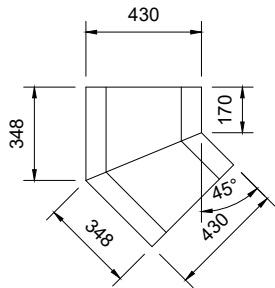
90° TOP AND BASE
(EXT. OR INT. RADIUS)



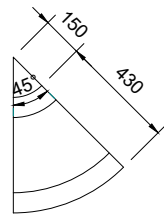
TOP
(EXT. RADIUS)



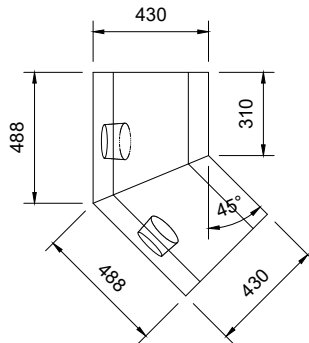
TOP
(INT. RADIUS)



45° TOP AND BASE
(INTERNAL)



BASE UNIT BEND



45° TOP AND BASE
(EXTERNAL)

TYPE OF BLOCK	RADIUS	L	I	Ø°
50/20 - BASE 205, 295 OR 365 (EXT. & INT. RAD.)	50.0 - 19.1	488	481	89
19/11 " " "	19.0 - 10.8	488	473	88
10/8 " " "	10.7 - 7.7	488	464	87
7/6 " " "	7.6 - 6.0	488	457	86
50/20 - BASE 630 (EXT. & INT. RAD.)	50.0 - 19.1	330	324	89
19/11 " " "	19.0 - 10.8	330	318	89
10/8 " " "	10.7 - 7.7	330	312	88
7/6 " " "	7.6 - 6.0	330	306	87
50/20 - TOP (EXT. RAD.)	50.0 - 19.1	488	481	91
19/11 " "	19.0 - 10.8	488	473	92
10/8 " "	10.7 - 7.7	488	464	93
7/6 " "	7.6 - 6.0	488	457	94
50/20 - TOP (INT. RAD.)	50.0 - 19.1	488	481	89
19/11 " "	19.0 - 10.8	488	473	89
10/8 " "	10.7 - 7.7	488	464	87
7/6 " "	7.6 - 6.0	488	457	86

COVER PLATE DIMENSIONS:

- STRAIGHT: 500 x 340.
- 50/11, 10/8, 7/6 AND 90°
- SUPPLIED TO MATCH
- RESPECTIVE BASES.
- ALL 12.5 THICK.

FOR NOTES, REFER TO DRAWING NO. HD/SD/05/04B



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV/AA

Checked

Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

COMBINED DRAINAGE AND KERB BLOCKS
SHEET 02 OF 06

Section

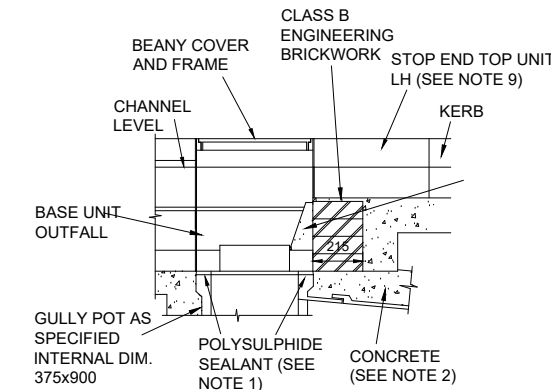
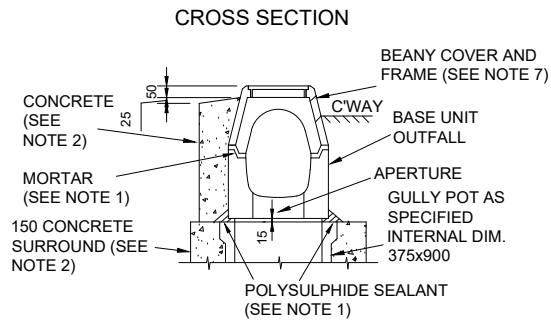
HD

Date

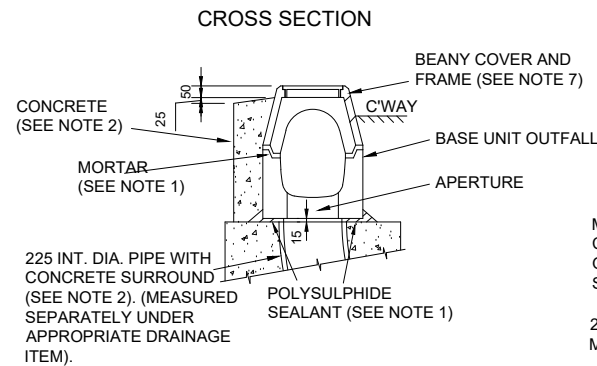
JAN 22

Drawing No.

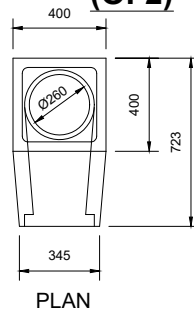
HD/SD/05/06B



LONGITUDINAL SECTION
OUTFALL TYPE 1 (OF 1)

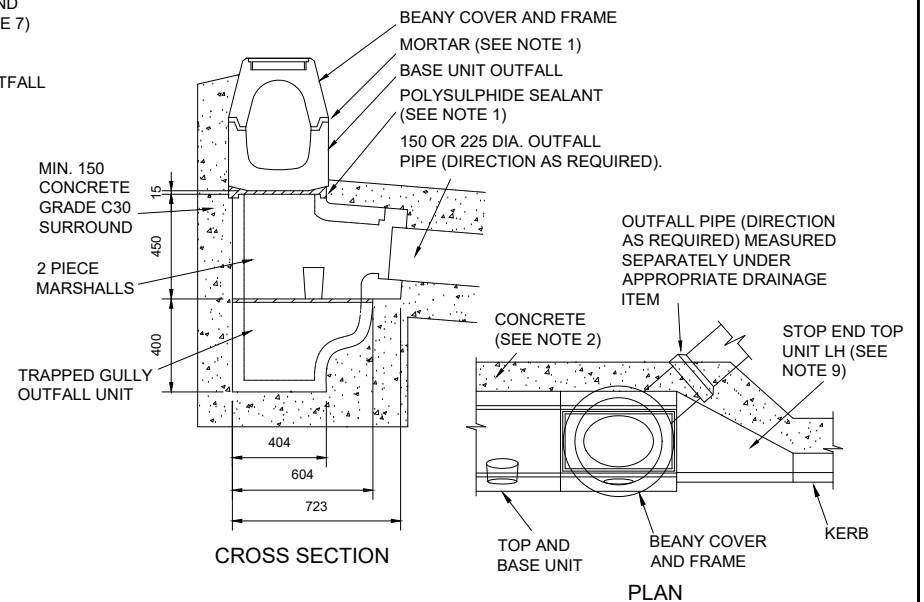


OUTFALL TYPE 2 (OF2)



INSITU CONCRETE BENCHING GRADE ST4
STOP END TYPE 1 (SE1)
(AT CHANGE FROM TOP AND BASE UNIT TO KERB)

(BEANY COVER & FRAME, BASE UNIT OUTFALL & CONCRETE SURROUND OMITTED)



OUTFALL TYPE 3 (OF 3)
(OF 3 - 150 WITH 150 DIA OUTLET)
(OF 3 - 225 WITH 225 DIA OUTLET)

FOR NOTES, REFER TO DRAWING NO. HD/SD/05/04B



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV/AA

Checked

Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

COMBINED DRAINAGE AND KERB BLOCKS
SHEET 3 OF 6

Section

HD

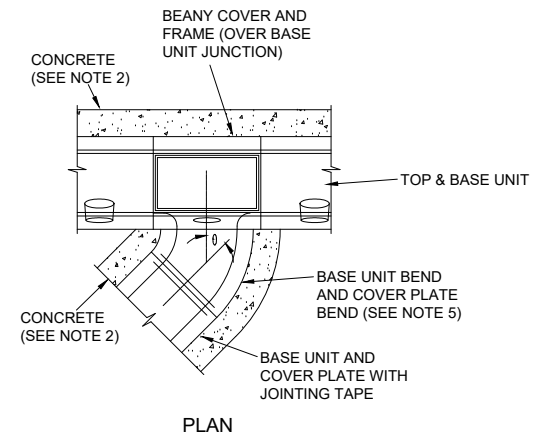
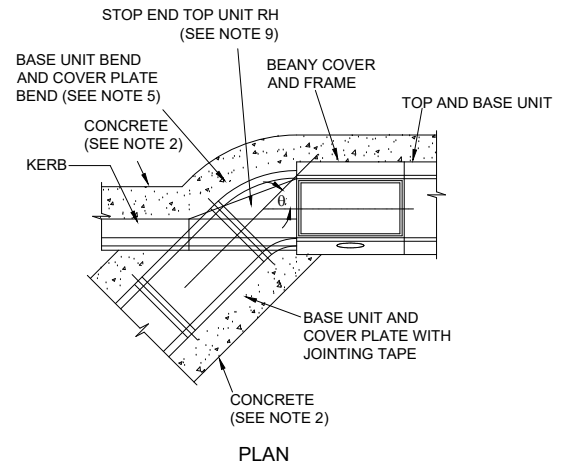
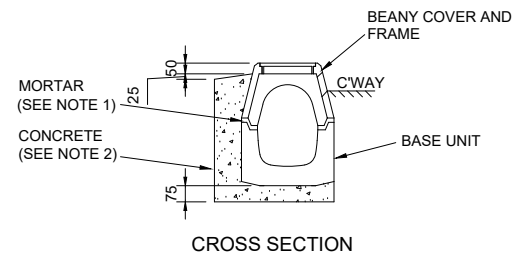
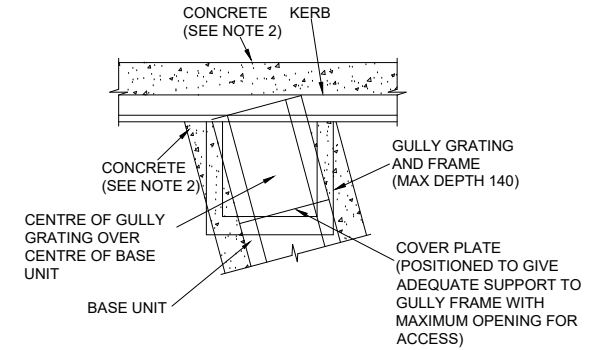
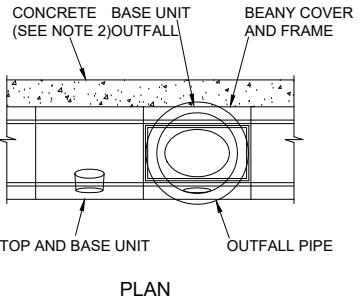
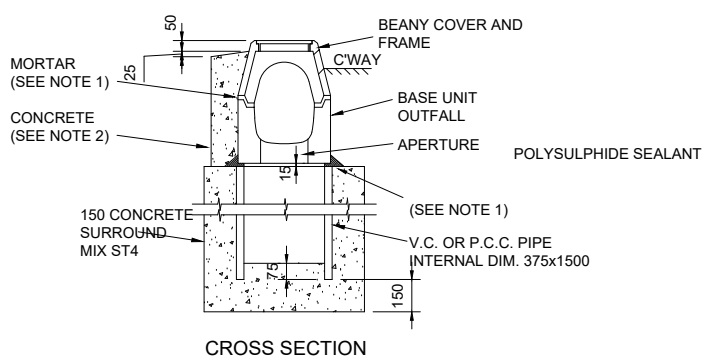
Date

JAN 22

Drawing No.

HD/SD/05/07B

SILT TRAP TYPE 1 (ST1)



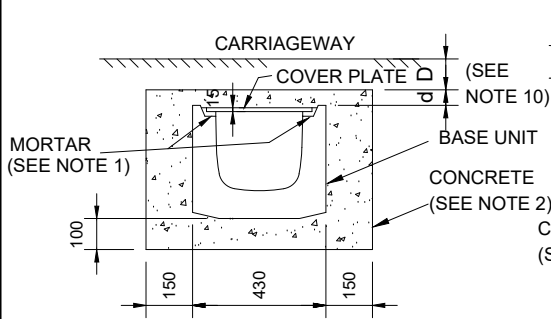
ACCESS COVER TYPE 1 (AC1)

ACCESS COVER TYPE 1 (AC1)
(SHOWING BEND DETAIL)

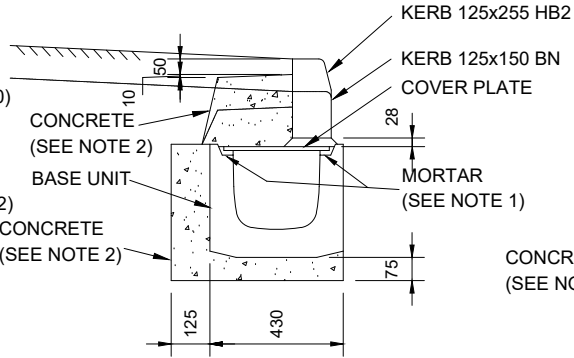
ACCESS COVER TYPE 1J (AC1J)
(SHOWING BEND DETAIL)

FOR NOTES, REFER TO DRAWING NO. HD/SD/05/04B

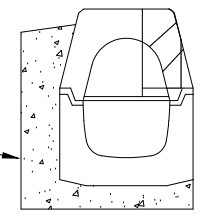
<p>Kirklees COUNCIL</p>	Project	<h1>STANDARD DETAILS</h1>	Scale	NOT TO SCALE	
	<p>Commercial Regulatory and Operational Service</p> <p>Highway Design Flint Street, Fartown Huddersfield, HD1 6LG</p>		Title	Drawn	AKKV/AA
Section		HD			
Date		JAN 22			
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			<p>COMBINED DRAINAGE AND KERB BLOCKS</p> <p>SHEET 04 OF 06</p>		



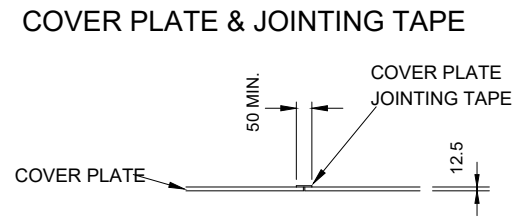
CROSS SECTION
BASE UNIT & COVER PLATE
TYPE A



CROSS SECTION
BASE UNIT & COVER PLATE
TYPE B

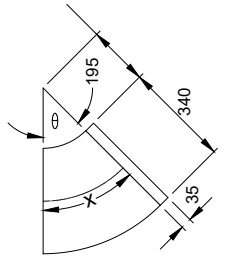


CROSS SECTION



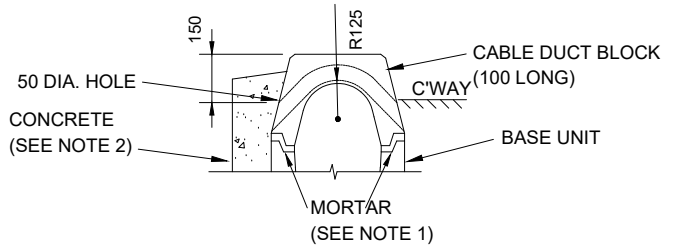
LONGITUDINAL SECTION

NOTE: KERBS (INCLUDING BEDDING AND BACKING) MEASURED SEPARATELY UNDER APPROPRIATE KERBING ITEM.

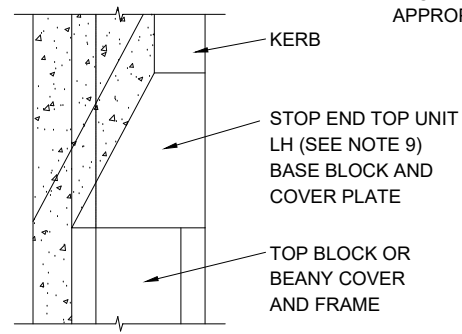


$x = 6.37 \theta^\circ$
 $\theta^\circ =$ ANGLE AS SHOWN IN 'BEND' OR 'JUNCTION' DETAIL AND SPECIFIED IN BEANY BLOCK SCHEDULE. STANDARD COVER PLATE BEND $= 45^\circ$, $x = 287$

COVER PLATE BEND




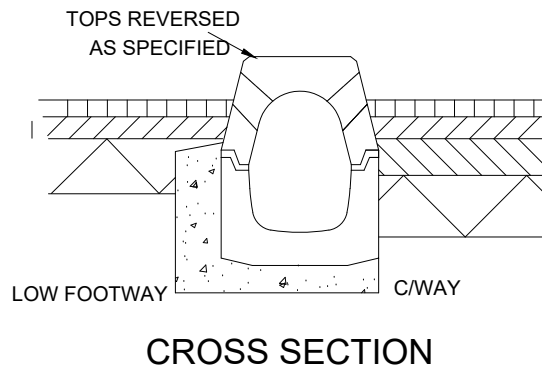
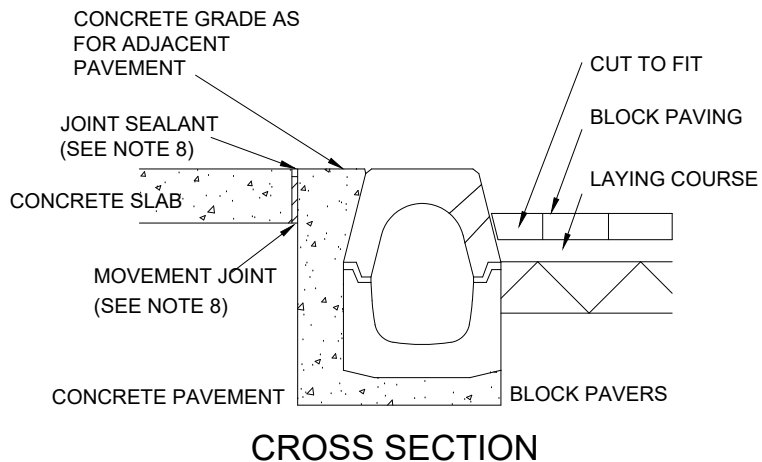
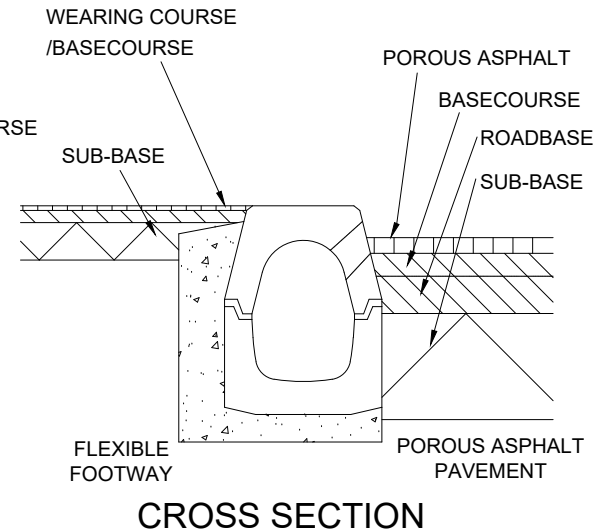
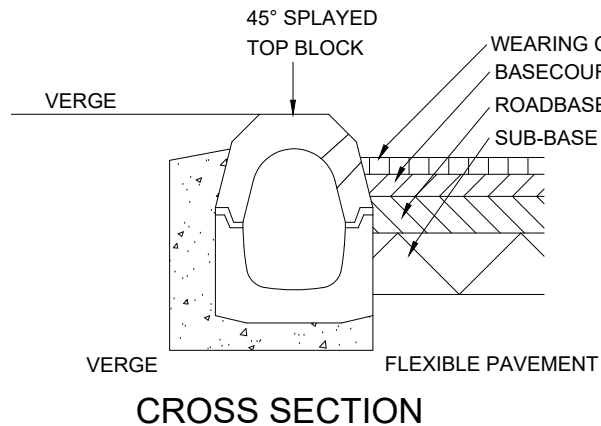
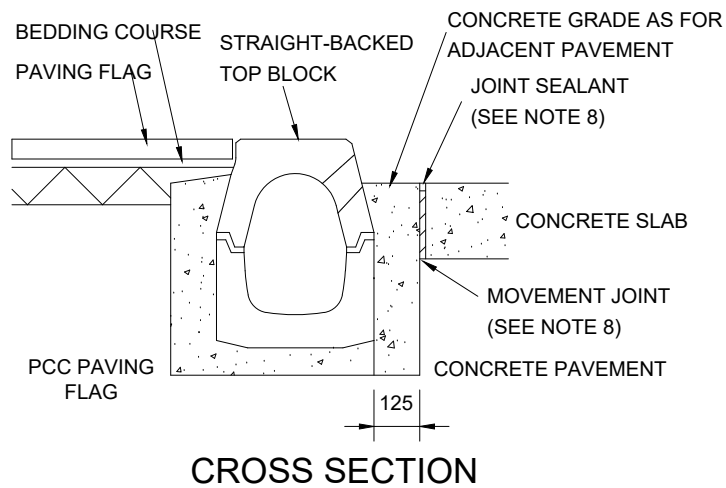
CROSS SECTION
CABLE DUCT BLOCK
(ALSO SUPPLIED TO SUIT 45° SPLAYED TOP PROFILES)



PLAN
STOP END TYPE 2 (SE2) (AT CHANGE FROM TOP AND BASE UNIT TO BASE UNIT, COVER PLATE AND KERB)

FOR NOTES, REFER TO DRAWING NO. HD/SD/05/04B

 <p>Kirklees COUNCIL</p>	Project	<h1>STANDARD DETAILS</h1>		Scale	NOT TO SCALE		
	<p>Commercial Regulatory and Operational Service</p> <p>Highway Design Flint Street, Fartown Huddersfield, HD1 6LG</p>			Title	Drawn	AKKV	
Section		HD			Date	JAN 22	
Drawing No.		HD/SD/05/09B					
		<p>COMBINED DRAINAGE AND KERB BLOCKS</p> <p>SHEET 05 OF 06</p>					



FOR NOTES, REFER TO DRAWING NO. HD/SD/05/04B



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV

Checked

Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

COMBINED DRAINAGE AND KERB BLOCKS
SHEET 06 OF 06

Section

HD

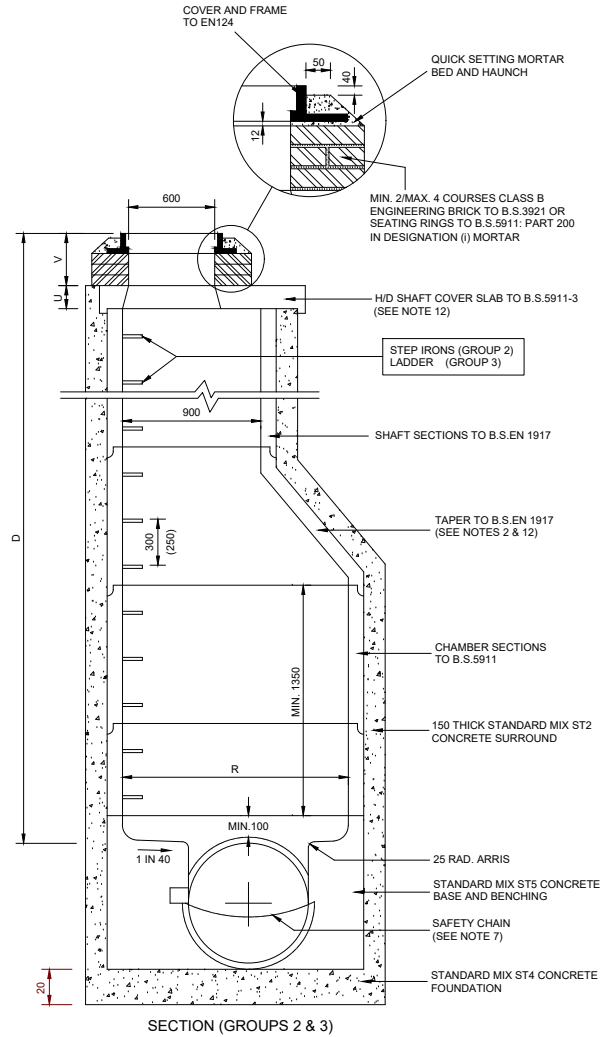
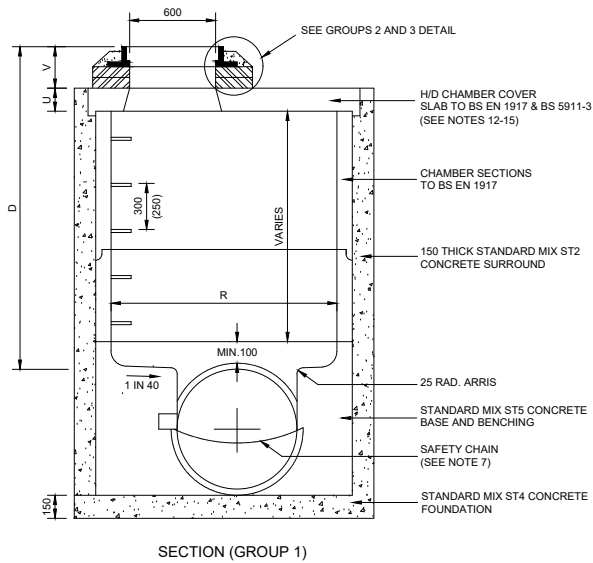
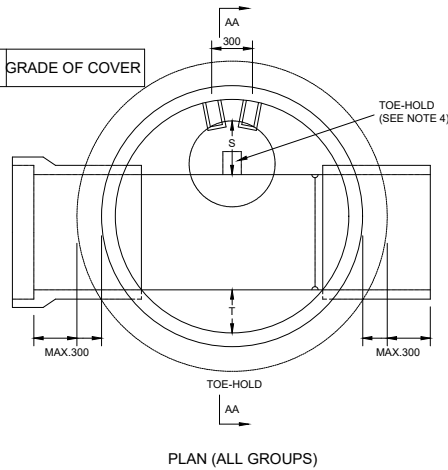
Date

JAN 22

Drawing No.

HD/SD/05/10B

REFERENCE	MH	DESIGN GROUP	OUTLET DIA.	GRADE OF COVER
-----------	----	--------------	-------------	----------------



DESIGN GROUP	DEPTH TO SOFFIT OF OUTLET PIPE (D)	DIA. OF OUTLET PIPE	MIN. DIMENSIONS				
			R	S	T	U	V
1	≥ 2900	150	1200			125	300
		225	1200			125	300
		300	1200			125	300
		375	1200			125	300
		450	1200			125	300
		525	1350	450	250	125	300
		600	1350			125	300
		675	1500			150	300
		750	1500			150	300
		825	1800			150	300
900	1800			150	300		
2	> 2900 ≥ 5000	AS GROUP 1		450	250	125	300
		AS GROUP 1		450	250	125	300
3	> 5000 ≥ 8000	AS GROUP 1		450	250	125	300
		AS GROUP 1		450	250	125	300

DIMENSION 'R' SHALL BE INCREASED AS NECESSARY TO ACCOMMODATE BENDS OR CONNECTIONS.

NOTES

- ALL UNITS IN MILLIMETERS UNLESS STATES OTHERWISE.
- UNLESS WITH THE PRIOR AGREEMENT OF THE ENGINEER, MANHOLES WILL BE CONSTRUCTED IN PRECAST CONCRETE. FOR MEASUREMENT PURPOSES CONCRETE CONSTRUCTION WILL BE ASSUMED.
- A H/D REDUCING SLAB TO B.S. 5911-3 MAY BE USED IN PLACE OF THE TAPER SUBJECT TO A MINIMUM CHAMBER HEIGHT OF 2000 ABOVE SOFFIT OF OUTLET PIPE.
- ALL PRECAST MANHOLE COMPONENTS SHALL BE FULLY BEDDED ON 'TOKSTRIP' OR EC EQUIVALENT.
- CHANNELS MAY BE CONSTRUCTED AS FOR BENCHING, OR OF PRE-FORMED HALF-CIRCLE CHANNELS; BENCHING SHALL BE FORMED OF CONCRETE FINISHED SMOOTH OR WITH A 20 THICK FACING 1:3 CEMENT MORTAR. A TOE-HOLD 150W x 150d x 100h SHALL BE PROVIDED IN LINE WITH STEP IRONS/LADDER WHERE OUTLET DIA > 600.
- UNLESS SHOWN OTHERWISE IN THE CONTRACT, THE SOFFITS OF INCOMING PIPES SHALL BE LEVEL WITH THE SOFFIT OF THE OUTLET PIPE. CONNECTIONS 0-45 TO THE MAIN FLOW SHALL BE EXECUTED AS STRAIGHT CHANNELS; CONNECTIONS OVER 45 TO THE MAIN FLOW SHALL BE TURNED BY MEANS OF CHANNEL BENDS.
- STEP IRONS SHALL BE TO B.S.1247, FIGURE 2; LADDERS SHALL COMPLY WITH THE RELEVANT REQUIREMENTS OF B.S.4211.
- A REMOVABLE SAFETY CHAIN SHALL BE SECURELY FIXED TO THE BENCHING ACROSS OUTLET PIPES > 600 DIA. CHAINS SHALL BE MILD STEEL 10mm NOMINAL SIZE, SHORT LINK, SMOOTH WELDED CHAIN, COMPLYING WITH B.S.4842, PART 2.
- STEP IRONS, LADDERS, SAFETY CHAINS AND ALL FIXINGS FOR METAL WORK SHALL BE HOT DIP GALVANISED IN ACCORDANCE WITH B.S. EN ISO 1461 AFTER MANUFACTURE OR FABRICATION.
- FOR CONTRACTS NOT UNDER THE HIGHWAY AGENCY SPECIFICATION FOR HIGHWAY WORKS. REFERENCES SHALL BE READ AS :- ST1 = C7.5 ST4 = C20 DESIGNATION (i) = 1 : 0.14 : 3 (Cement : Lime : Sand)
- QUICK SETTING MORTAR TO HAVE A MINIMUM CUBE STRENGTH OF 20N/mm² @ 2 HOURS AND 50N/mm² @ 28 DAYS
- THE GRADE OF COVER SPECIFIED AS THE EN124 REFERENCE, EG. D400.
- ALL PCC MANHOLES AND COMPONENTS INCLUDING RC COVER SLABS WITH INTERNAL DIAMETER EXCEEDING 900MM ARE CLASSED AS HIGHWAY STRUCTURES AND AS SUCH THEIR DESIGN IN ADDITION TO THE REQUIREMENT FOR STRICT COMPLIANCE WITH THE DETAILS SHOWN ON THIS DRAWING WILL ALSO BE SUBJECT TO A CERTIFICATION PROCESS IN ACCORDANCE WITH C6300.
- PRECAST CONCRETE MANHOLE SHAFT UNITS, CIRCULAR COVER, REDUCING, LANDING AND CORBEL SLABS TOGETHER WITH ALL OTHER ANCILLARY CONCRETE UNITS INTENDED FOR INSTALLATION IN THE HIGHWAY ARE TO BE DESIGNED AND MARKED WITH 'BS EN 1917' & 'BS 5911-3' R TO CONFIRM THAT THE PRODUCTS REPRESENT A MANUFACTURE'S DECLARATION THAT THEIR PRODUCTS MEET THE REQUIREMENT OF THESE STANDARDS.
- ALL PRECAST CONCRETE UNITS TO HAVE A DESIGN CHEMICAL CLASS OF DC-4 (AS PER BRE SPECIAL DIGEST 1) TO ENSURE 100 YEAR INTENDED WORKING LIFE.
- ALL RC COVER SLABS SHALL BE INSTALLED WITH A MINIMUM OF 300 MM COVER TO FINISHED LEVELS TO COMPLY WITH NATIONAL SPECIFICATIONS.



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV/RS

Checked

FK

Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

**MANHOLES (PRECAST CONCRETE)
DESIGN GROUP 1, 2 & 3**

Section

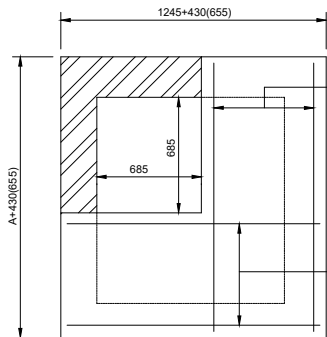
HD

Date

Mar 22

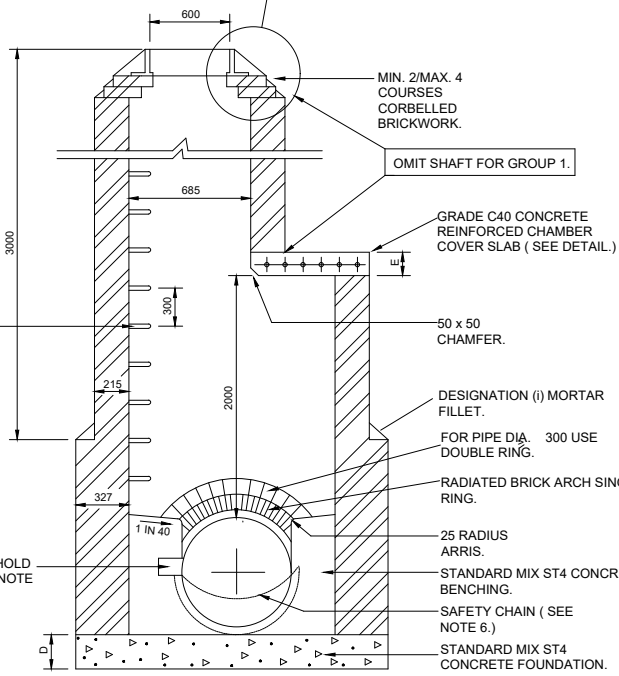
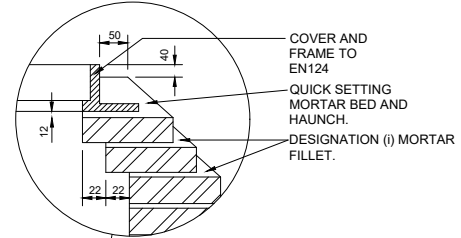
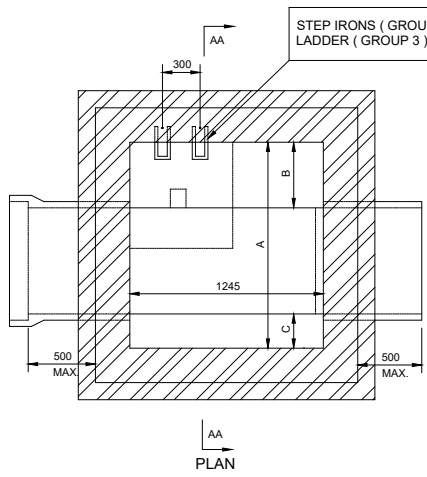
Drawing No.

HD/SD/05/11C



REINFORCEMENT TO BE FIXED IN BOTTOM OF SLAB WITH MINIMUM 40mm COVER.
16 DIA. M.S. BARS AT 100 CENTRES.
DISTRIBUTION STEEL (NOT SHOWN) 8 DIA. M.S. BARS AT 200 CENTRES.
16 DIA. M.S. BARS AT 100 CENTRES.

CHAMBER COVER SLAB.
(REINFORCEMENT DETAIL.)



SECTION A - A

REFERENCE

MH	DESIGN GROUP	OUTLET DIA.	GRADE OF COVER
----	--------------	-------------	----------------

DESIGN GROUP	DEPTH TO SOFFIT OF OUTLET PIPE	DIA. OF OUTLET PIPE	MINIMUM DIMENSIONS				
			A	B	C	D	E
1	≠ 2500	150	795	350	150	150	150
		225	910				
		300	910				
		375	1020				
		450	1135				
		525	1135				
		600	1245				
		675	1360				
		750	1360				
		825	1470				
900	1585						
2	> 2500 ≠ 5000	AS GROUP 1		350	150	225	150
		AS GROUP 1		450	150	225	225
3	> 5000 ≠ 8000	AS GROUP 1		450	150	225	225
		AS GROUP 1		450	150	225	225

DIMENSION 'A' SHALL BE INCREASED AS NECESSARY TO ACCOMMODATE BENDS OR CONNECTIONS.

NOTES

- MANHOLES MAY BE CONSTRUCTED IN BRICKWORK AS SHOWN, OR IN PRECAST CONCRETE IN ACCORDANCE WITH DRG. No. HD/SD/05/11A. FOR MEASUREMENT PURPOSES CONCRETE CONSTRUCTION WILL BE ASSUMED.
- BRICKWORK SHALL BE BUILT IN ENGLISH BOND OF SOLID TYPE CLASS B ENGINEERING BRICKS TO B.S. 3921 SET IN DESIGNATION (i) MORTAR WITH ALL BED AND VERTICAL JOINTS FILLED SOLID; EXPOSED WORK SHALL BE FLUSH JOINTED AS WORK PROCEEDS.
- CHANNELS MAY BE CONSTRUCTED AS FOR BENCHING OR OF PRE-FORMED HALF-CIRCLE CHANNELS; BENCHING SHALL BE FORMED OF CONCRETE FINISHED SMOOTH OR WITH A 20 THICK FACING OF DESIGNATION (i) CEMENT MORTAR. A TOE-HOLD 150W x 150d x 100h SHALL BE PROVIDED IN LINE WITH STEP-IRONS/LADDER WHERE OUTLET DIA. 600.
- UNLESS SHOWN OTHERWISE IN THE CONTRACT THE SOFFITS OF INCOMING PIPES SHALL BE LEVEL WITH THE SOFFIT OF THE OUTLET PIPE. CONNECTIONS 0-45deg TO THE MAIN FLOW SHALL BE EXECUTED AS STRAIGHT CHANNELS; CONNECTIONS OVER 45deg TO THE MAIN FLOW SHALL BE TURNED BY MEANS OF CHANNEL BENDS.
- STEP IRONS SHALL BE TO B.S. 1247 FIG. 1, WITH 115 TAILS; LADDERS SHALL COMPLY WITH THE RELEVANT REQUIREMENTS OF B.S. 4211.
- A REMOVABLE SAFETY CHAIN SHALL BE SECURELY FIXED TO THE BENCHING ACROSS OUTLET PIPES > 600 DIA. CHAINS SHALL BE MILD STEEL 10mm NOMINAL SIZE, SHORT LINK, SMOOTH WELDED CHAIN.
- STEP IRONS, LADDERS, SAFETY CHAINS AND ALL FIXINGS FOR METALWORK SHALL BE HOT DIP GALVANISED IN ACCORDANCE WITH B.S. EN 150 1461 AFTER MANUFACTURE OR FABRICATION.
- FOR CONTRACTS NOT ADMINISTERED UNDER THE SPECIFICATION FOR HIGHWAY WORKS, REFERENCES TO BE READ AS:-
ST4 = C20
DESIGNATION (i) = 1 : 0-1/4 : 3 (Cement : Lime : Sand)
- QUICK SETTING MORTAR TO HAVE A MINIMUM CUBE STRENGTH OF 20N/mm² @ 2 HOURS AND 50N/mm² @ 28 DAYS
- THE GRADE OF COVER SPECIFIED AS THE EN124 REFERENCE, EG. D400.
- ALL PCC MANHOLES AND COMPONENTS INCLUDING RC COVER SLABS WITH INTERNAL DIAMETER EXCEEDING 900MM ARE CLASSED AS HIGHWAY STRUCTURES AND AS SUCH THEIR DESIGN IN ADDITION TO THE REQUIREMENT FOR STRICT COMPLIANCE WITH THE DETAILS SHOWN ON THIS DRAWING WILL ALSO BE SUBJECT TO A CERTIFICATION PROCESS IN ACCORDANCE WITH CG300.
- PRECAST CONCRETE MANHOLE SHAFT UNITS, CIRCULAR COVER, REDUCING, LANDING AND CORBEL SLABS TOGETHER WITH ALL OTHER ANCILLARY CONCRETE UNITS INTENDED FOR INSTALLATION IN THE HIGHWAY ARE TO BE DESIGNED AND MARKED WITH "BS EN 1917" & "BS 5911-3" R TO CONFIRM THAT THE PRODUCTS REPRESENT A MANUFACTURE'S DECLARATION THAT THEIR PRODUCTS MEET THE REQUIREMENT OF THESE STANDARDS.
- ALL PRECAST CONCRETE UNITS TO HAVE A DESIGN CHEMICAL CLASS OF DC-4 (AS PER BRE SPECIAL DIGEST 1) TO ENSURE 100 YEAR INTENDED WORKING LIFE.
- ALL RC COVER SLABS SHALL BE INSTALLED WITH A MINIMUM OF 300 MM COVER TO FINISHED LEVELS TO COMPLY WITH NATIONAL SPECIFICATIONS.



Project
STANDARD DETAILS

Scale
NOT TO SCALE

Drawn
AKKV/RS

Checked
FK

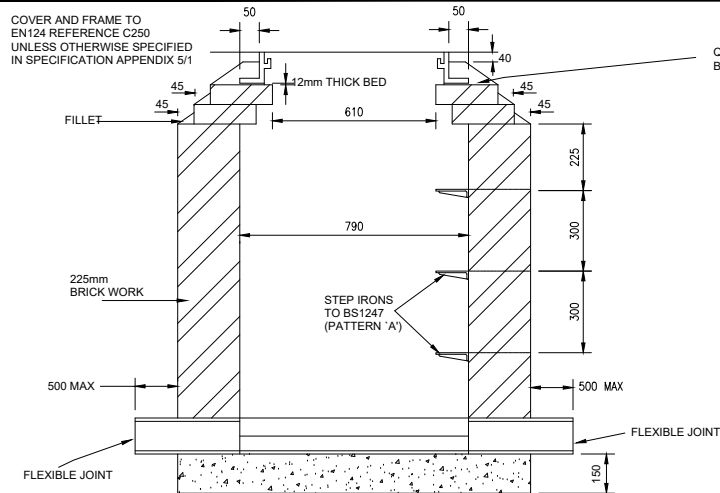
Commercial Regulatory and Operational Service
Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title
**MANHOLES (BRICKWORK)
DESIGN GROUP 1, 2 & 3**

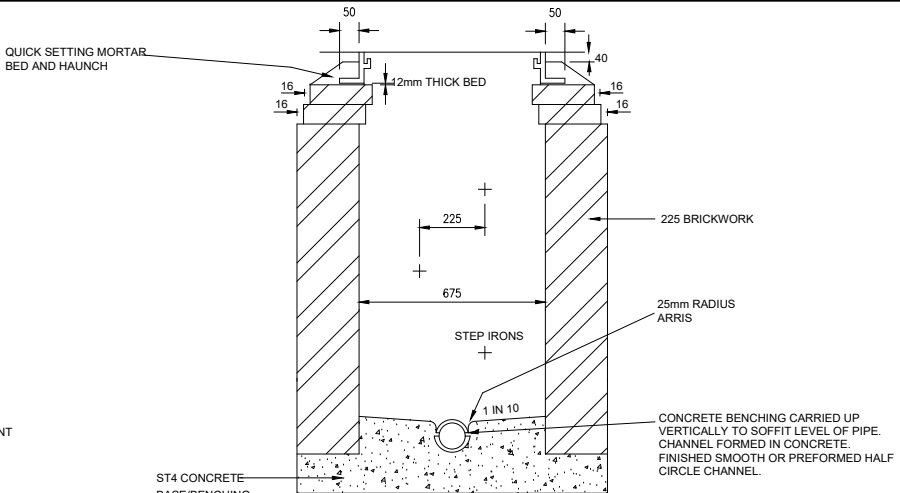
Section
HD

Date
Mar 22

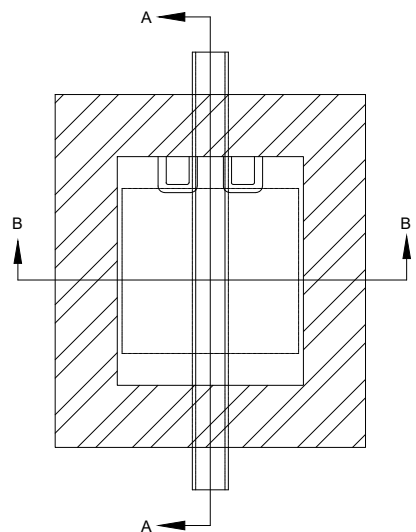
Drawing No. HD/SD/05/12B



SECTION A-A



SECTION B-B



NOTES

1. BRICKWORK SHALL BE BUILT IN ENGLISH BOND OF SOLID TYPE CLASS B ENGINEERING BRICKS TO B.S. 3921 SET IN DESIGNATION (i) MORTAR WITH ALL BED AND VERTICAL JOINTS FILLED SOLID; EXPOSED WORK SHALL BE FLUSH JOINTED AS WORK PROCEEDS.
 2. DESIGNATION (i) CEMENT MORTAR SHALL BE USED FOR ALL BRICKWORK INCLUDING FILLETS.
 3. CHANNELS MAY BE CONSTRUCTED AS FOR BENCHING OR OF PRE-FORMED HALF-CIRCLE CHANNELS; BENCHING SHALL BE FORMED OF CONCRETE FINISHED SMOOTH OR WITH A 20 THICK FACING OF DESIGNATION (i) CEMENT MORTAR.
 4. UNLESS SHOWN OTHERWISE IN THE CONTRACT THE SOFFITS OF INCOMING PIPES SHALL BE LEVEL WITH THE SOFFIT OF THE OUTLET PIPE. CONNECTIONS 0-45deg TO THE MAIN FLOW SHALL BE EXECUTED AS STRAIGHT CHANNELS; CONNECTIONS OVER 45deg TO THE MAIN FLOW SHALL BE TURNED BY MEANS OF CHANNEL BENDS.
 5. STEP IRONS SHALL BE TO B.S. 1247 FIG. 1, WITH 115 TAILS AND SHALL BE GALVANISED TO BS EN ISO 1461 AFTER FABRICATION
- DESIGNATION (i) CEMENT MORTAR SHALL BE USED FOR ALL BRICKWORK INCLUDING FILLETS.
- FOR CONTRACTS NOT ADMINISTERED UNDER THE SPECIFICATION FOR HIGHWAY WORKS, REFERENCES TO BE READ AS :-
ST4 = C20
- FOR MORTAR DESIGNATION - REFER SERIES SHW 2400, TABLE 24/1.
7. QUICK SETTING MORTAR TO HAVE A MINIMUM CUBE STRENGTH OF 20N/mm² @ 2 HOURS AND 50N/mm² @ 28 DAYS
 8. THE GRADE OF COVER SPECIFIED AS THE EN124 REFERENCE, EG. D400.



Project

STANDARD DETAILS

Scale
NOT TO SCALE

Drawn
AKKV

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Highway Design
Flint Street, Fartown
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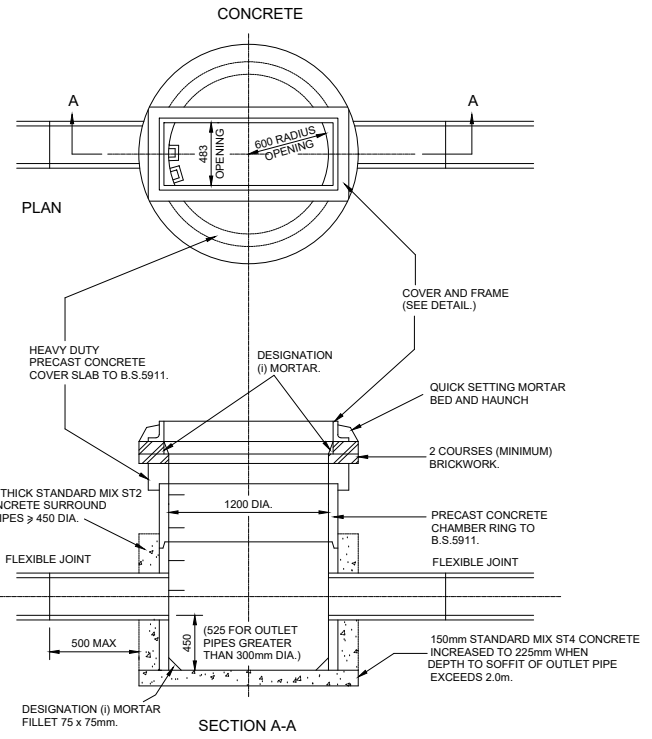
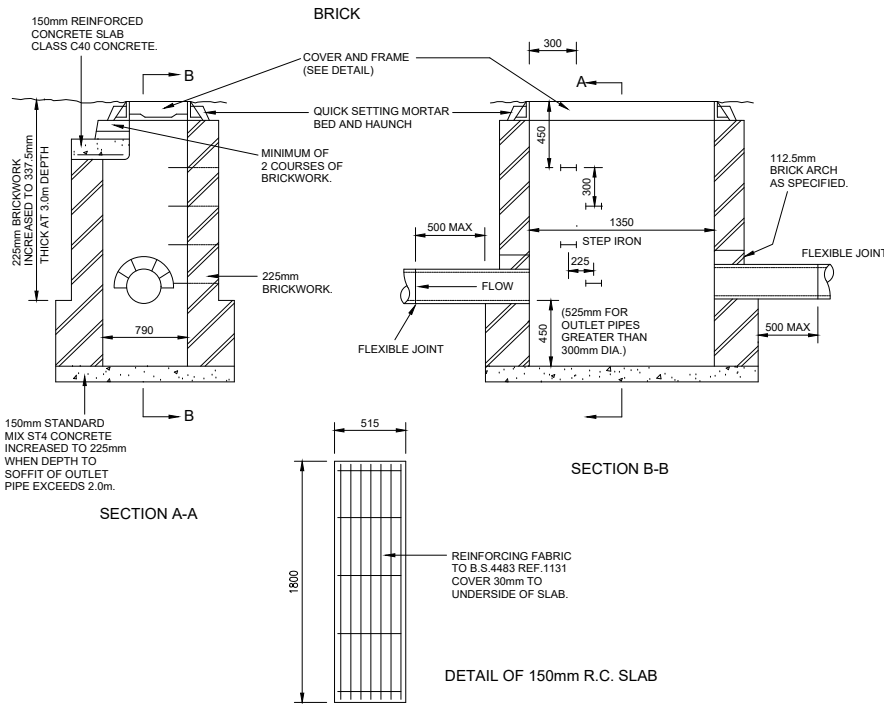
Title

INSPECTION CHAMBER

Section
HD

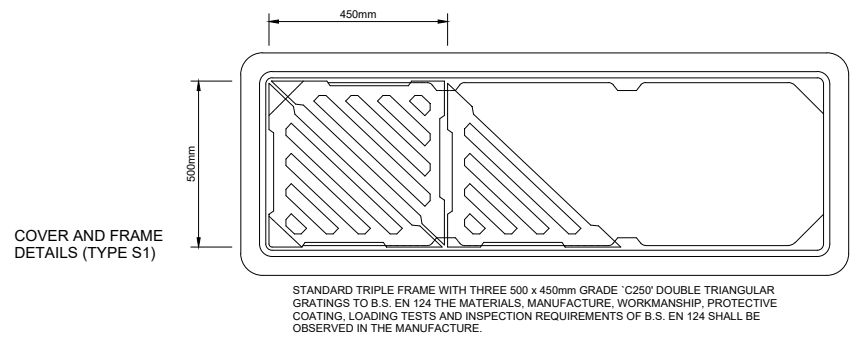
Date
JAN 22

Drawing No. HD/SD/05/13B



NOTES

- FOR CONTRACTS NOT ADMINISTERED UNDER THE SPECIFICATION FOR HIGHWAY WORKS, REFERENCES SHALL BE READ AS :-
DESIGNATION (i) = 1 : 0-1/4 : 3 (Cement : Lime : Sand)
ST1 = C7.5
ST4 = C20
- BRICKWORK SHALL BE BUILT IN ENGLISH BOND OF SOLID TYPE CLASS B ENGINEERING BRICKS TO B.S. 3921 SET IN DESIGNATION (i) MORTAR WITH ALL BED AND VERTICAL JOINTS FILLED SOLID; EXPOSED WORK SHALL BE FLUSH JOINTED AS WORK PROCEEDS.
- STEP IRONS SHALL BE TO B.S. 1247 FIG. 1, WITH 115 TAILS AND SHALL BE GALVANISED TO BS EN ISO 1461 AFTER FABRICATION
- LEVEL OF INVERT OF INCOMING PIPE SHALL BE 50mm (MIN) ABOVE INVERT LEVEL OF OUTGOING PIPE
- QUICK SETTING MORTAR TO HAVE A MINIMUM CUBE STRENGTH OF 20N/mm² @ 2 HOURS AND 50N/mm² @ 28 DAYS
- ALL PCC MANHOLES AND COMPONENTS INCLUDING RC COVER SLABS WITH INTERNAL DIAMETER EXCEEDING 900MM ARE CLASSED AS HIGHWAY STRUCTURES AND AS SUCH THEIR DESIGN IN ADDITION TO THE REQUIREMENT FOR STRICT COMPLIANCE WITH THE DETAILS SHOWN ON THIS DRAWING WILL ALSO BE SUBJECT TO A CERTIFICATION PROCESS IN ACCORDANCE WITH CG300.
- PRECAST CONCRETE MANHOLE SHAFT UNITS, CIRCULAR COVER, REDUCING, LANDING AND CORBEL SLABS TOGETHER WITH ALL OTHER ANCILLARY CONCRETE UNITS INTENDED FOR INSTALLATION IN THE HIGHWAY ARE TO BE DESIGNED AND MARKED WITH "BS EN 1917" & "BS 5911-3" R TO CONFIRM THAT THE PRODUCTS REPRESENT A MANUFACTURE'S DECLARATION THAT THEIR PRODUCTS MEET THE REQUIREMENT OF THESE STANDARDS.
- ALL PRECAST CONCRETE UNITS TO HAVE A DESIGN CHEMICAL CLASS OF DC-4 (AS PER BRE SPECIAL DIGEST 1) TO ENSURE 100 YEAR INTENDED WORKING LIFE.



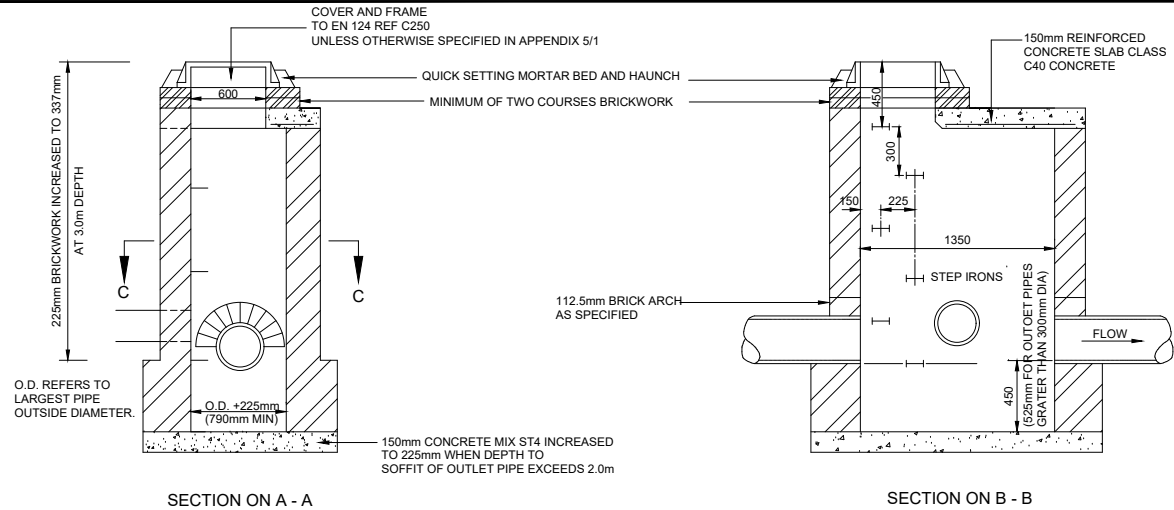
Project
STANDARD DETAILS

Scale
NOT TO SCALE

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Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

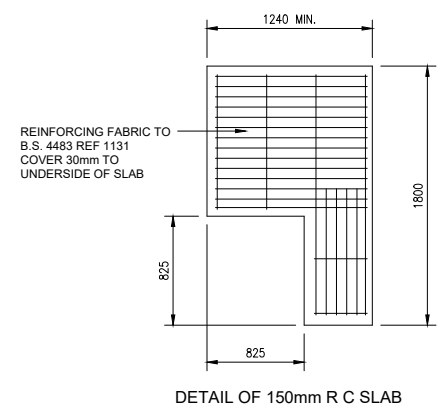
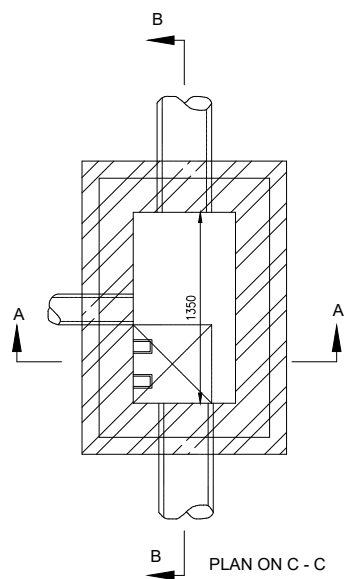
Title
CATCHPIT PERMITTED DESIGN GROUP 1

Drawn AKKV/RS	Checked FK
Section HD	Date Mar 22
Drawing No. HD/SD/05/14B	



CATCHPIT GROUP 2
DEPTH NOT EXCEEDING 4m WITH CLOSED COVER BRICKWORK

2/ DIA. OF PIPE / GRADE OF COVER OF COVER



NOTES

- BRICKWORK SHALL BE BUILT IN ENGLISH BOND OF SOLID TYPE CLASS B ENGINEERING BRICKS TO B.S. 3921 SET IN DESIGNATION (i) MORTAR WITH ALL BED AND VERTICAL JOINTS FILLED SOLID; EXPOSED WORK SHALL BE FLUSH JOINTED AS WORK PROCEEDS.
 - STEP IRONS SHALL BE TO B.S. 1247 FIG. 1, WITH 115 TAILS; LADDERS SHALL COMPLY WITH THE RELEVANT REQUIREMENTS OF B.S. 4211.
 - STEP IRONS, LADDERS, SAFETY CHAINS AND ALL FIXINGS FOR METALWORK SHALL BE HOT DIP GALVANISED IN ACCORDANCE WITH B.S. EN 150 1461 AFTER MANUFACTURE OR FABRICATION.
- DESIGN FOR CONTRACTS NOT ADMINISTERED UNDER THE SPECIFICATION FOR HIGHWAY WORKS, REFERENCES TO BE READ AS :-
ST4 = C20
- FOR MORTAR DESIGNATION - REFER SERIES SHW 2400, TABLE 24/1.
- QUICK SETTING MORTAR TO HAVE A MINIMUM CUBE STRENGTH OF 20N/mm² @ 2 HOURS AND 50N/mm² @ 28 DAYS



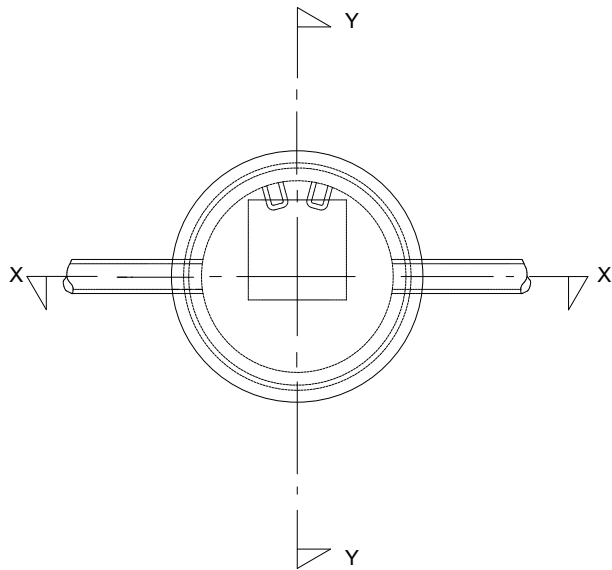
Project
STANDARD DETAILS

Scale
NOT TO SCALE

Commercial Regulatory and Operational Service
Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title
CATCHPIT PERMITTED DESIGN GROUP 2 (BRICKWORK)

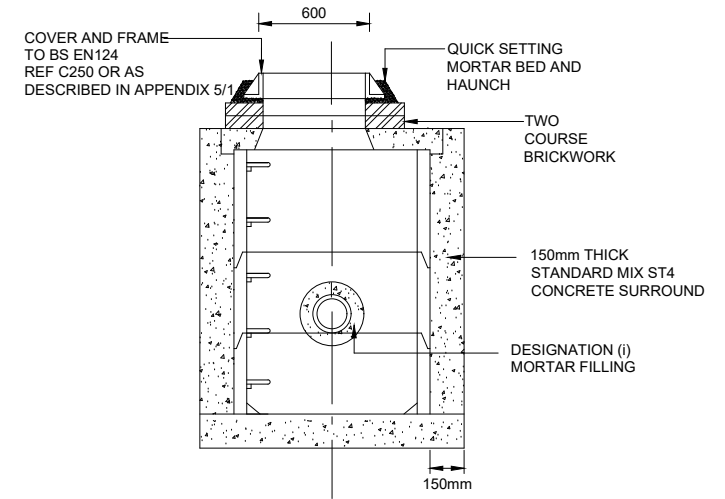
Drawn AKKV	Checked
Section HD	Date JAN 22
Drawing No. HD/SD/05/15B	



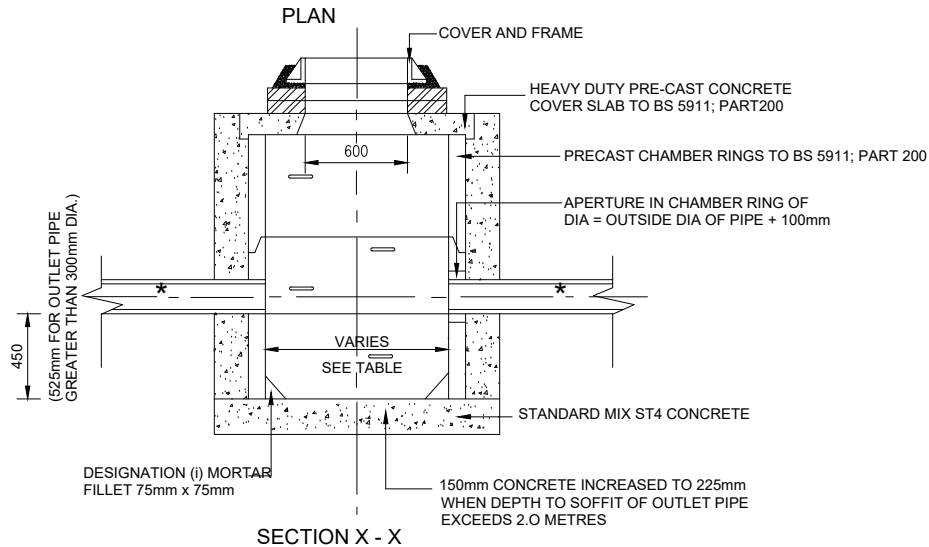
DESIGN GROUP NO.	INT. DIA P.C. RING
2/150	1050
2/225	1200
2/300	1350
2/375	1350
2/450	1350
2/525	1350

2 / DIA OF PIPE / GRADE OF COVER

DEPTH NOT EXCEEDING 4m WITH CLOSED COVER IN PRE-CAST CONCRETE



SECTION Y - Y



SECTION X - X

NOTES

1. A FLEXIBLE JOINT SHALL BE PROVIDED AS CLOSE AS IS FEASIBLE TO THE OUTSIDE FACE OF ANY STRUCTURE INTO WHICH IT IS BUILT, COMPATIBLE WITH THE SATISFACTORY COMPLETION AND SUBSEQUENT MOVEMENT OF THE JOINT.
2. THE LENGTH OF THE NEXT PIPE (ROCKER PIPE) AWAY FROM THE STRUCTURE SHALL NOT EXCEED 0.75 METRE FOR PIPES UP TO 450mm, NOMINAL BORE AND 1 METRE FOR PIPES UP TO 750mm NOMINAL BORE.
3. ALL DIMENSIONS IN MILLIMETRES
4. POSITION SIZE AND DEPTH OF APERTURES IN CHAMBER RINGS TO SUIT PIPE CONNECTIONS SHOWN ON SCHEME DRAWINGS.
5. FOR CONTRACTS NOT ADMINISTERED UNDER THE SPECIFICATION FOR HIGHWAY WORKS, REFERENCES SHALL BE READ AS:- ST4 = C20 DESIGNATION (i) = 1 : 0-1/4 : 3 (Cement : Lime : Sand)
6. LEVEL OF INVERT OF INCOMING PIPE SHALL BE 50mm (MIN) ABOVE INVERT LEVEL OF OUTGOING PIPE
7. QUICK SETTING MORTAR TO HAVE A MINIMUM CUBE STRENGTH OF 20N/mm² @ 2 HOURS AND 50N/mm² @ 28 DAYS
8. ALL PCC MANHOLES AND COMPONENTS INCLUDING RC COVER SLABS WITH INTERNAL DIAMETER EXCEEDING 900MM ARE CLASSED AS HIGHWAY STRUCTURES AND AS SUCH THEIR DESIGN IN ADDITION TO THE REQUIREMENT FOR STRICT COMPLIANCE WITH THE DETAILS SHOWN ON THIS DRAWING WILL ALSO BE SUBJECT TO A CERTIFICATION PROCESS IN ACCORDANCE WITH CG300.
9. PRECAST CONCRETE MANHOLE SHAFT UNITS, CIRCULAR COVER, REDUCING, LANDING AND CORBEL SLABS TOGETHER WITH ALL OTHER ANCILLARY CONCRETE UNITS INTENDED FOR INSTALLATION IN THE HIGHWAY ARE TO BE DESIGNED AND MARKED WITH "BS EN 1917" & "BS 5911-3" R TO CONFIRM THAT THE PRODUCTS REPRESENT A MANUFACTURE'S DECLARATION THAT THEIR PRODUCTS MEET THE REQUIREMENT OF THESE STANDARDS.
10. ALL PRECAST CONCRETE UNITS TO HAVE A DESIGN CHEMICAL CLASS OF DC-4 (AS PER BRE SPECIAL DIGEST 1) TO ENSURE 100 YEAR INTENDED WORKING LIFE.



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV/RS

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Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

CATCHPIT PERMITTED DESIGN GROUP 2 (PRECAST CONCRETE)

Section

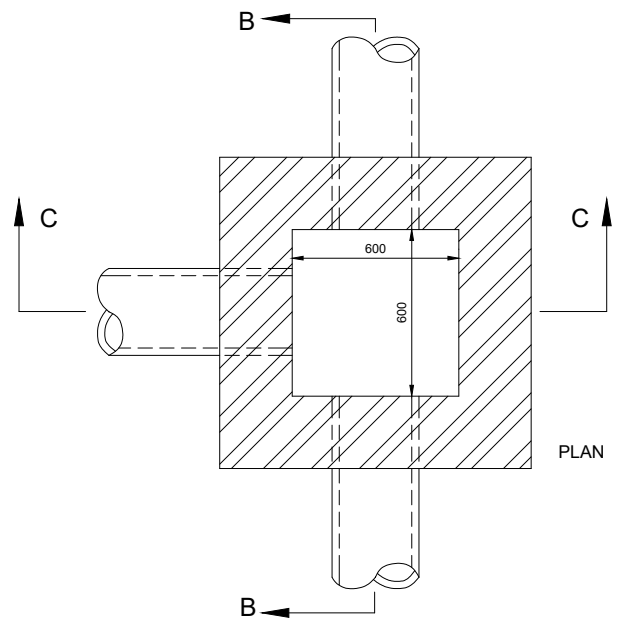
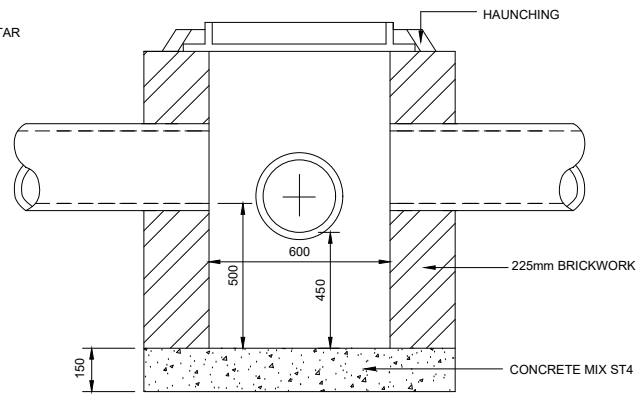
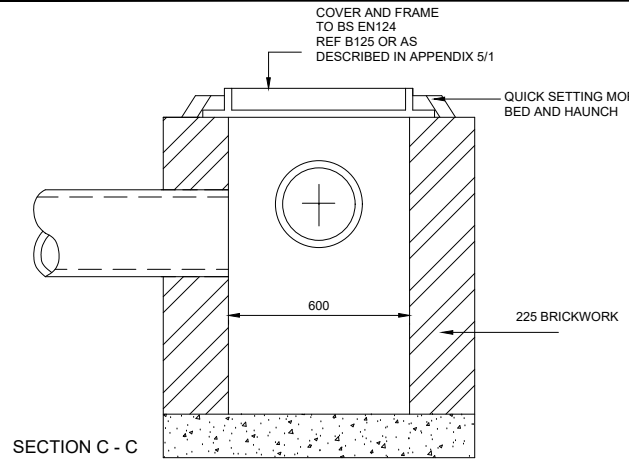
HD

Date

Mar 22

Drawing No.

HD/SD/05/16B




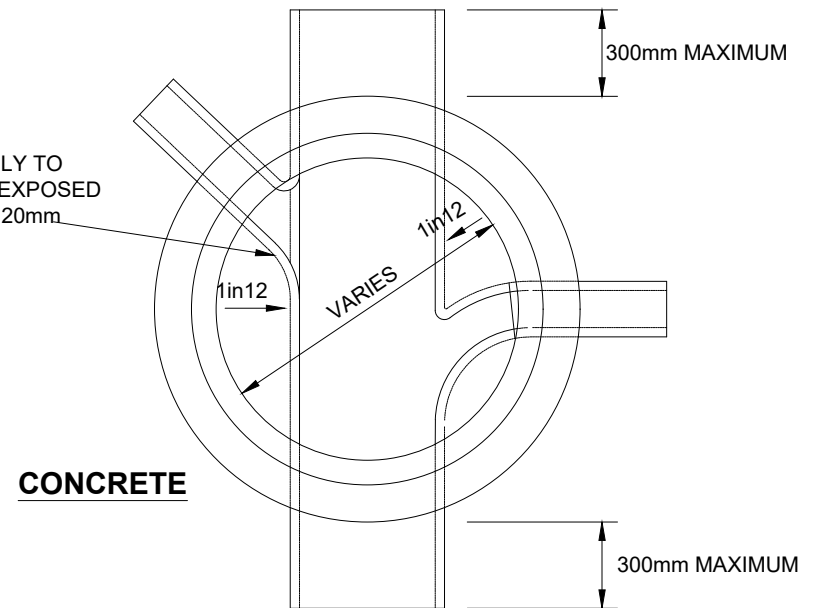
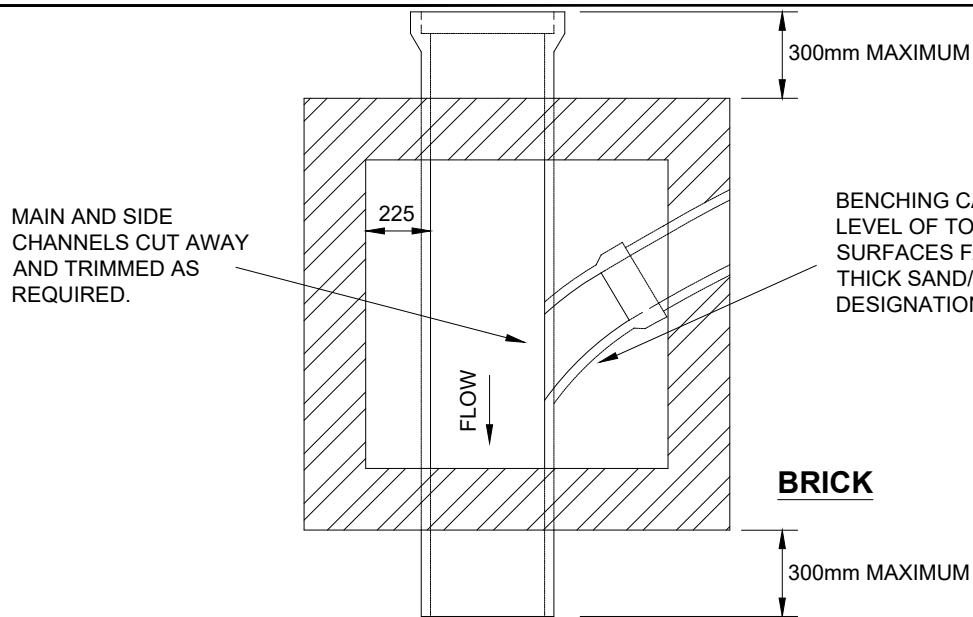
NOTES

- BRICKWORK SHALL BE BUILT IN ENGLISH BOND OF SOLID TYPE CLASS B ENGINEERING BRICKS TO B.S. 3921 SET IN DESIGNATION (i) MORTAR WITH ALL BED AND VERTICAL JOINTS FILLED SOLID; EXPOSED WORK SHALL BE FLUSH JOINTED AS WORK PROCEEDS.
- DESIGN CONTRACTS NOT ADMINISTERED UNDER THE SPECIFICATION FOR HIGHWAY WORKS. REFERENCES TO BE READ AS :-
ST4 = C20
FOR MORTAR DESIGNATION - REFER SERIES SHW 2400, TABLE 24/1.
- QUICK SETTING MORTAR TO HAVE A MINIMUM CUBE STRENGTH OF 20N/mm² @ 2 HOURS AND 50N/mm² @ 28 DAYS

CATCHPIT GROUP 3
(BERM DRAIN CATCHPIT)

3/ DIA. OF
OUTLET PIPE /B

	Project	<h1>STANDARD DETAILS</h1>		Scale		NOT TO SCALE	
	Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG			Title	<h2>CATCHPIT PERMITTED DESIGN GROUP 3</h2>		Drawn
AKKV							
Section		Date					JAN 22
				Drawing No.	HD/SD/05/17B		




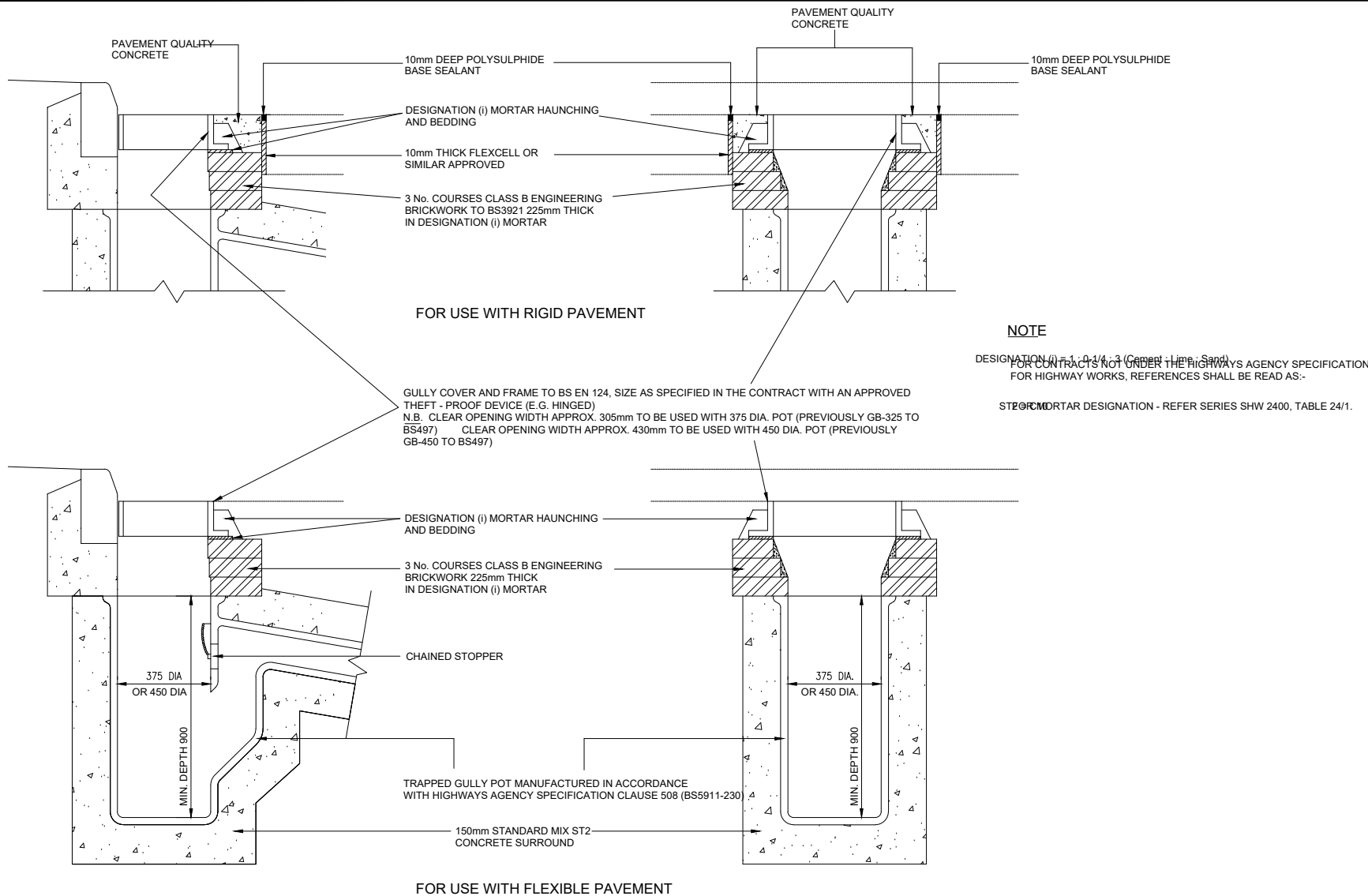
NOTES

1. CONNECTION 0 - 45° TO MAIN FLOW TO BE EXECUTED AS STRAIGHT CHANNEL.
 CONNECTION OVER 45° TO MAIN FLOW TO BE EXECUTED AS BEND.
 ALL CONNECTIONS TO INCLUDE ADDITIONAL TRIMMING OF PIPES AND BENCHING.
 UNLESS OTHERWISE REQUIRED BY THE CONTRACT SOFFIT OF SIDE CONNECTION (S) TO BE LEVEL WITH SOFFIT TO MAIN INLET PIPE.

DESIGNATION (i) = 1 : 0-1/4 : 3 (Cement : Lime : Sand) MORTAR SHALL BE USED FOR ALL WORKS NOT ADMINISTERED UNDER THE SPECIFICATION FOR HIGHWAYS WORKS.

FOR MORTAR DESIGNATION - REFER SERIES SHW 2400, TABLE 24/1.

	Project	<h1>STANDARD DETAILS</h1>		Scale	
				NOT TO SCALE	
Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG	Title	<h2>CONNECTION IN MANHOLES</h2>		Drawn	Checked
				Section	Date
				Drawing No. HD/SD/05/19B	



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV

Checked

Commercial Regulatory and Operational Service

Highway Design
 Flint Street, Fartown
 Huddersfield, HD1 6LG

Title

GULLIES PERMITTED DESIGN GROUP 1

Section

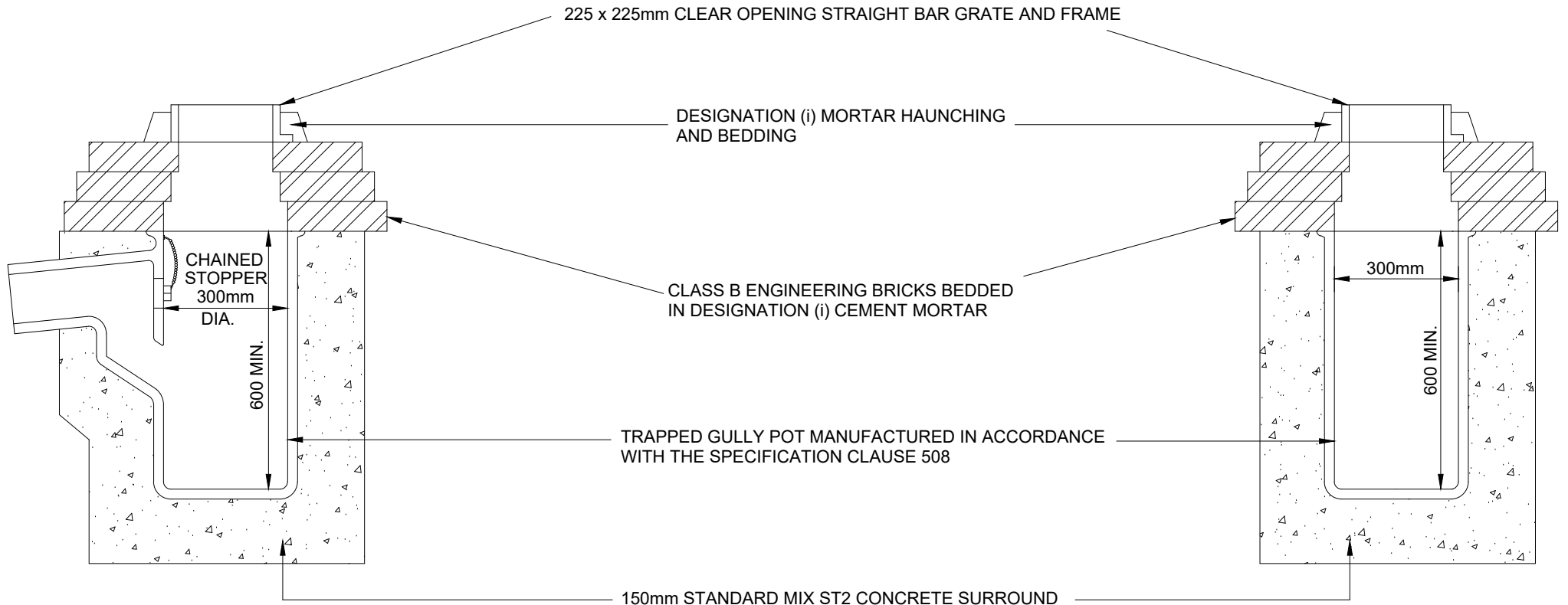
HD

Date

JAN 22


Drawing No.

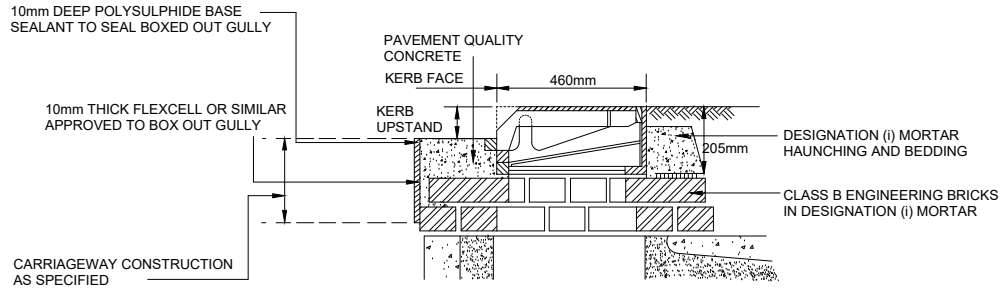
HD/SD/05/20B



NOTES

FOR CONTRACTS NOT UNDER THE HIGHWAYS AGENCY SPECIFICATION
 FOR HIGHWAY WORKS, REFERENCES SHALL BE READ AS :-
 DESIGNATION (i) = 1 : 0 : 1/4 : 3 (Cement : Lime : Sand)

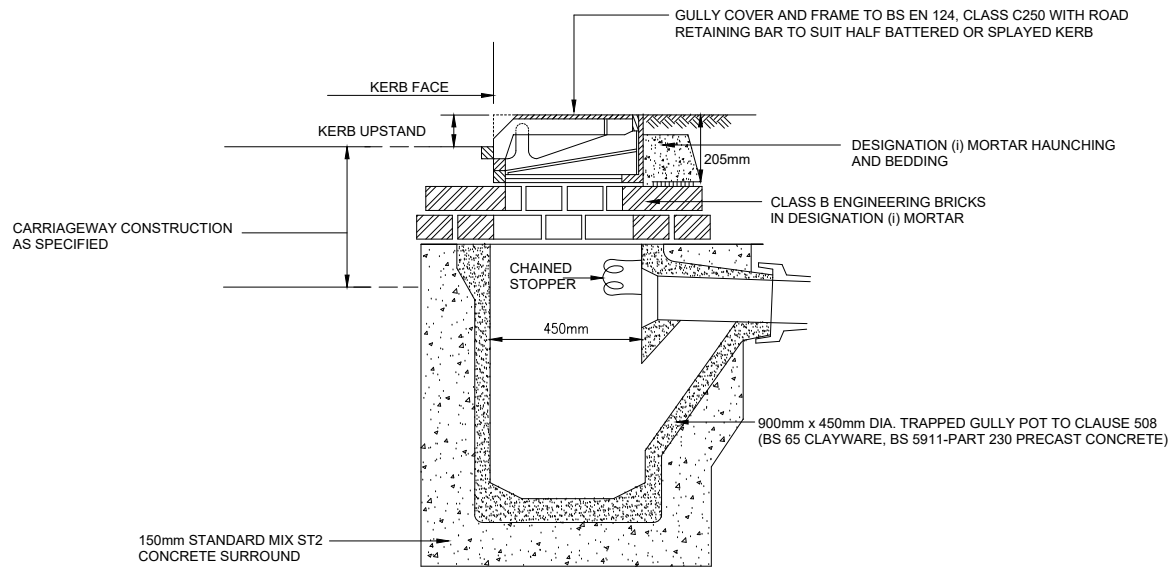
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Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG	Title	<h2>GULLIES PERMITTED DESIGN GROUP 2</h2>		Drawn	Checked
				Section	Date
				Drawing No. HD/SD/05/21B	



FOR USE WITH RIGID PAVEMENT


NOTES

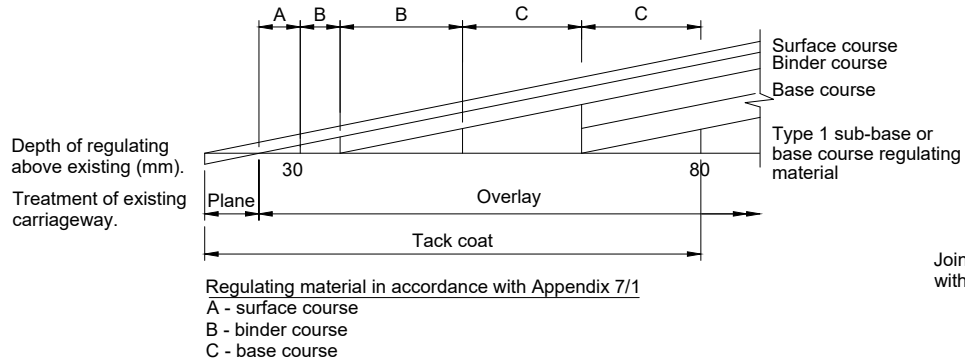
DESIGNATION (i) OF 14.3 (UNDER THE HIGHWAY AGENCY SPECIFICATION FOR CONTRACTS NOT UNDER THE HIGHWAY AGENCY SPECIFICATION FOR HIGHWAY WORKS, REFERENCES SHALL BE READ AS :-



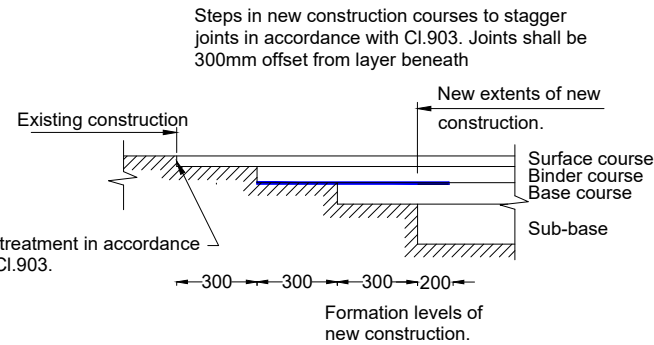
FOR USE WITH FLEXIBLE PAVEMENT

**GROUP 3 (SPLAY KERB)
GROUP 4 (HALF BATTER KERB)**

 <p>Kirklees COUNCIL</p>	Project	<h1>STANDARD DETAILS</h1>		Scale		NOT TO SCALE	
	<p>Commercial Regulatory and Operational Service</p> <p>Highway Design Flint Street, Fartown Huddersfield, HD1 6LG</p>			Title	<h2>GULLIES PERMITTED DESIGN GROUP 3 AND 4</h2>		Drawn
Section		Date					
Drawing No.		HD/SD/05/22B					



OVERLAY



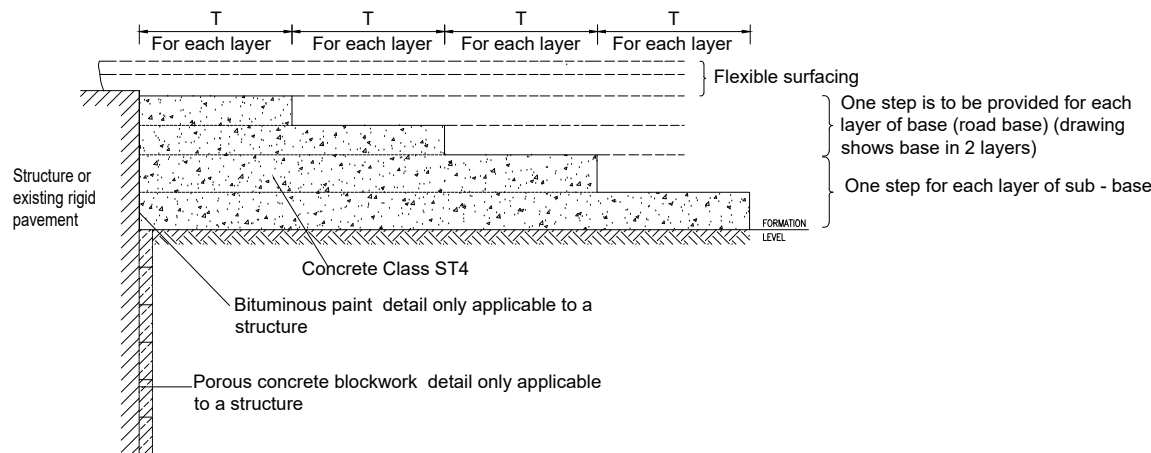
INLAY

NOTES:

1. Joints shall not coincide with the wheel path. Ref CI 903.21
2. Where sub-base is to be laid over existing bituminous surface course adequate drainage shall be provided.
3. (Stress Absorbing Membrane Interlayer) at the base course to delay / stop a longitudinal reflective cracking appear in the future. Total width = 300+300+200=800mm

GENERAL REQUIREMENTS

1. Rolling blocks are to be provided in sub - base and base layers wherever these layers abut against a structure, and/or existing rigid pavement. They are to extend for the full widths and depths of the sub - base and base (roadbase) in carriageways, hard shoulders and hard strips, and of the sub - base in central reserves.
2. Where top of base (roadbase) and top of structure and/or existing rigid pavement are at same level, the top step is to be omitted and all other dimensions adjusted accordingly.
3. Dimension 'T' to be in accordance with the following:-



ROLLING BLOCK & PAVEMENT ADJACENT TO STRUCTURE

SKEW OF STRUCTURE AND/OR EXISTING RIGID PAVEMENT	T (m)
> 1°	0.500
> 1° > 6°	0.650
> 6° > 11°	0.800
> 11° > 16°	0.950
> 16° > 21°	1.100
> 21° > 26°	1.250
> 26° > 31°	1.400
> 31° > 37°	1.550

For a structure and/or existing rigid pavement of skew greater Than 37 degrees the rolling block is to be as shown on the drawings.



Project

STANDARD DETAILS

Scale

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Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

DETAIL OF JOINT AT JUNCTION OF NEW AND EXISTING CONSTRUCTION

Section

HD

Date

OCT 22

Drawing No.

HD/SD/07/01B

TABLE 1 - PERMANENT TRENCH REINSTATEMENT OUTSIDE LIMIT OF NEW SURFACING

LAYER	PERMITTED MATERIALS	SPEC. CLAUSE	COURSE THICKNESS (MIN) FOR REINSTATEMENT					RIGID
			TYPE 1a (>30 TO 125 MSA)	TYPE 1 (>10 TO 30 MSA)	TYPE 2 (2.5 TO 10 MSA)	TYPE 3 (0.5 TO 2.5 MSA)	TYPE 4 (UP TO 0.5 MSA)	
BASE (ROAD-BASE)	ROLLED ASPHALT BASE	SHW CLAUSE 904	315	250	185	90	50	AS STATED IN THE CONTRACT
	DENSE BASE	SHW CLAUSE 903	315	250	185	90	50	
	WET LEAN CONCRETE 4	SHW CLAUSE 1030	210*	210*	210*	170	150	
SUB BASE	GRANULAR SUB-BASE (TYPE 1)	SHW CLAUSE 803	300	280	260	260**	300**	
	WET LEAN CONCRETE 4	SHW CLAUSE 1030						

* For roads designed to carry more than 25msa, the binder course materials should be increased by a minimum of 8mm.

** Thickness of sub-base to be increased to ensure minimum reinstatement depth of 450mm.

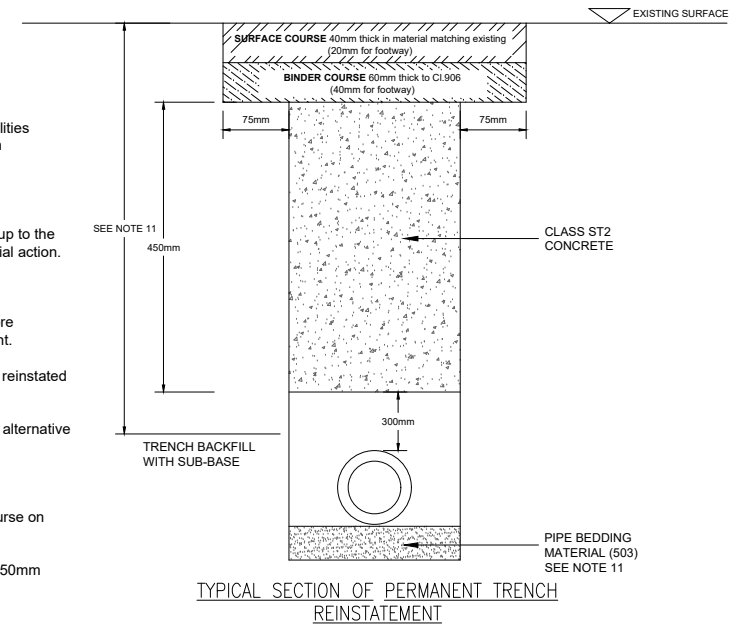
GENERAL NOTES

- Reinstatement of openings in highways shall comply with the 'specification for the reinstatement of openings in highways - April 2010' issued by the highways authorities and utilities committee (hauc). The minimum dimension is to be increased as necessary to ensure a finish depth of cover shall be in accordance with Natural Joint Utilities Group publication "*Guidelines on the positioning and colour codes and positioning of utilities' Apparatus*". Any variation described in appendix 5/2
- The guarantee period shall begin on completion of the permanent reinstatement and shall run for two years, or three years in the case of deep openings.
- The contractor shall be responsible for inspecting and ensuring that the reinstatement complies with the required performance criteria throughout the interim reinstatement and up to the end of the guarantee period. The quality of the reinstatement shall be assessed relative to the adjacent surfaces when determining whether a reinstatement requires any remedial action.
- Reinstatement of service duct suffixed 'E' comprised flexible surfacing only.
- Base and edge preparation shall be in accordance with section s6.5.1 and s6.5.2 of 'NRSWA 1991 specification for the reinstatement of opening in highways. Immediately before bituminous layers are reinstated, edges of existing material shall be cleaned of all loose material and be coated with an appropriate hot bituminous binder or equivalent treatment.
- If any part of the reinstatement is within 250mm of an adjacent patch, ironwork or pavement edge, then the existing surface course needs to be trimmed back to the feature and reinstated as part of the works.
- Where existing road surfaces have been treated or constructed using specialist applied surfacing, the surface shall be permanently reinstated using like materials, or an agreed alternative in accordance with sections s6.4.5.1 to s6.4.5.5 of 'NRSWA 1991 specification for the reinstatement of opening in highways.
- Where the reinstatement falls within carriageway which is to be overlaid, the surface and binder course may be replaced with a single layer of dense material to BS EN 13108
- Where the reinstated surface is to be subsequently excavated or abandoned, the interim reinstatement shall consist of a minimum of 100mm of single course dense surface course on 150mm sub-base.
- Other areas, verges, grassed areas, unpaved footpaths, shall be reinstated to match the the existing surface, after backfilling with acceptable material to a depth not less than 150mm below the finished surface.
- Where p.v.c ducts are provided the whole bedding shall be standard mix ST2 concrete.

TREATMENT OF STATUTORY UNDERTAKER'S APPARATUS

Any Statutory Undertaker's Apparatus that is exposed during excavation of trenches shall be treated in manner described below unless otherwise described in the Contract:

- Exposed services shall received 150mm sand surround
- no service shall be directly encased in concrete



Project

STANDARD DETAILS

Scale

NOT TO SCALE

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Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

TRENCH REINSTATEMENTS

Section

HD

Date

JAN 22

Drawing No.

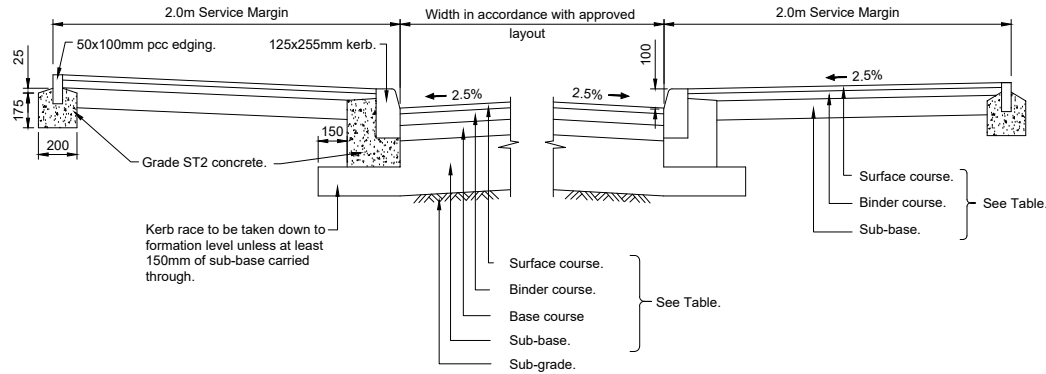
HD/SD/07/02B

PAVEMENT DESIGN

ROAD LAYER	MATERIAL	MATERIAL CHOICES	LOCAL RESIDENTIAL STREET (msa- 3-) in mm	CONNECTOR STREET (msa- 4.5-) in mm	INDUSTRIAL ROAD (msa- 11-) in mm
SURFACE COURSE	10mm stone mastic asphalt surface course SMA 10 surf 40 /60	SMA, Thin Surface Course Systems, AC, HRA	50	50	50
BINDER COURSE	0 /20, AC 20 HDM bin 40 /60	AC (DBM 50, HDM 50), HRA	60	60	60
BASE COURSE	0 /32, AC 32 HDM base 40 /60	AC	130	150	170

msa - Traffic in Million Standard Axles for 40 year period.

1. Total Asphalt thickness depends on the traffic (msa)
2. The total Asphalt thickness for Key routes and New roads shall be designed using actual / forecast traffic (msa) using DMRB Standards
3. All longitudinal joints in all layers shall be situated outside wheel track zones, refer MCHW CI 903.21.
4. The joints in different pavement layers should not coincide. Transverse joints shall have an overlap not wider than 300mm. The longitudinal joint overlap width may be extended to a maximum of 300mm, refer MCHW C 920.10.



LOCAL RESIDENTIAL STREET, CONNECTOR STREETS AND INDUSTRIAL ROADS. TYPICAL CROSS SECTION.

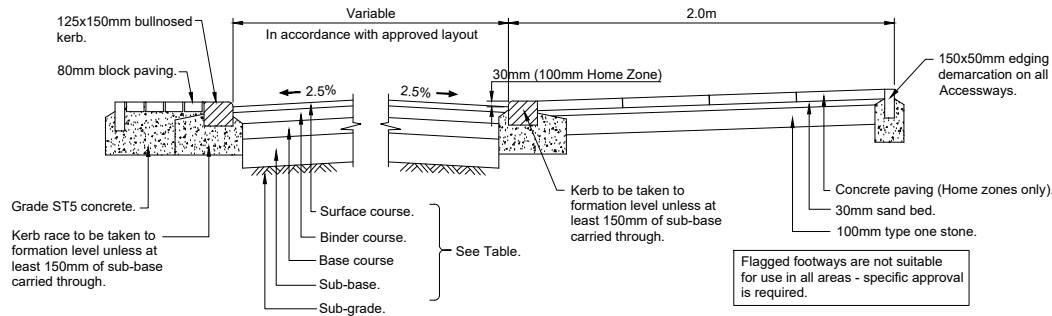
PAVEMENT FOUNDATION DESIGN

CBR%	SUBBASE ON CAPPING		OR	SUBBASE ONLY
	CAPPING (mm) + SUB-BASE (mm)			SUB-BASE (mm)
<2.5	Ground improvement will need to be considered to improve the subgrade CBR			
2.5	430	250		420
3	380	230		370
4	320	220		320
5-15	260 - 160	200		280 - 210
>15	150	200*		200*

* Minimum required type 1 subbase thickness to achieve 450mm (from the designed final surface) of non-frost susceptible material

FOOTWAY AND CYCLEWAY PAVEMENT DESIGN

TYPE	CBR	SUB-BASE (mm)	BASE (mm) AC 32 dense base 100 / 150	BINDER COURSE (mm) AC 20 dense bin 100 /150	SURFACE COURSE (mm) AC 6 dense surf 100 /150 or 15/10F HRA Surf 100/150
Pedestrian only Footway / Cycleway or Footpath	≥ 2.5%	100	0	50	20
Vehicular Footway Crossing or Light-Vehicle footways / cycleways	≥ 2.5%	225	0	50	20
Heavy-vehicle footways / cycleways	≥ 2.5%	320	90	0	25
	≥ 2.5% & ≤ 4%	210	90	0	25



SHADED SURFACE AND HOME ZONE STANDARD TYPICAL DETAIL

Alternative footway construction - Home Zones and Conservation Areas.

Standard 80mm concrete block paviers.

Flags or small unit paving - (Not suitable for footway vehicular crossings or other area vulnerable to vehicular traffic).



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV/AA

Checked

DB

Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

PAVEMENT AND FOOTWAY CONSTRUCTION

Section

HD

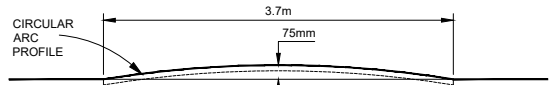
Date

NOV 22

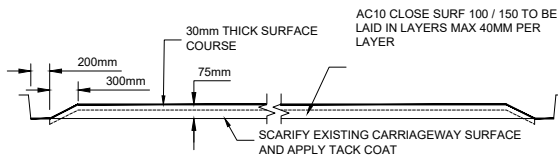
Drawing No.

HD/SD/07/03C

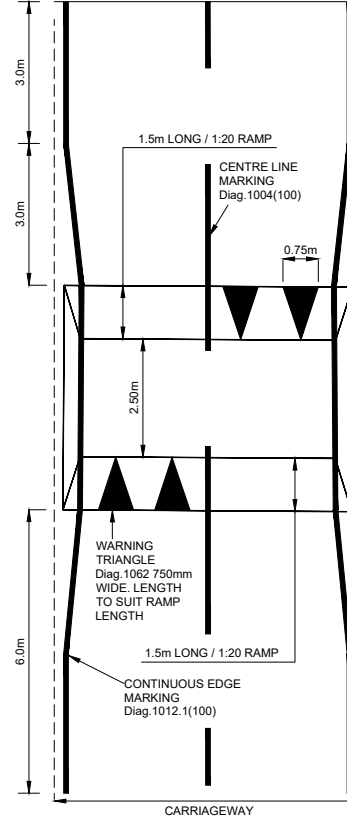
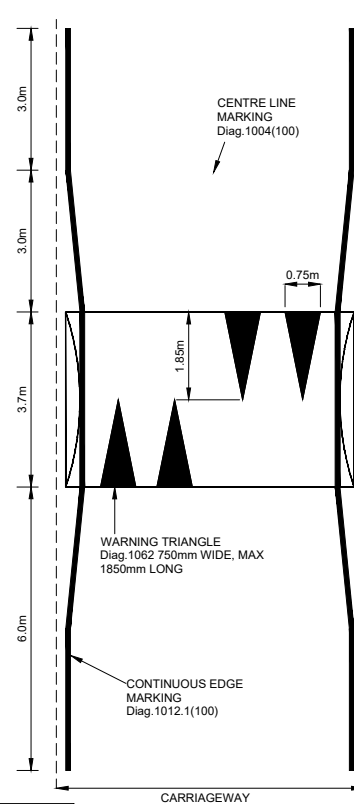
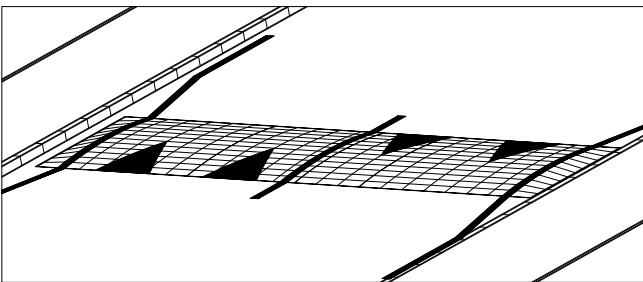
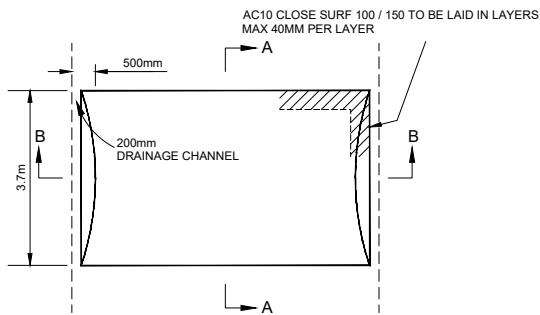
ROUNDTOP ROAD HUMP DETAIL



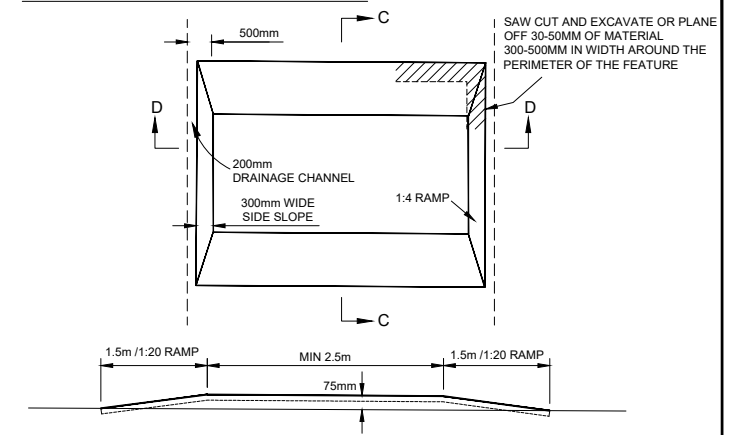
LONGITUDINAL SECTION A-A
VERTICAL SCALE EXAGGERATED



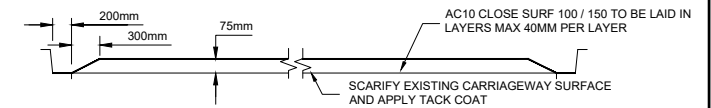
TRANSVERSE SECTION B-B
VERTICAL SCALE EXAGGERATED



FLATTOP ROAD HUMP DETAIL



LONGITUDINAL SECTION C-C
VERTICAL SCALE EXAGGERATED



TRANSVERSE SECTION D-D
VERTICAL SCALE EXAGGERATED

NOTES

1. SAW CUT AND EXCAVATE OR PLANE OFF 30-50MM OF MATERIAL 200 - 500MM IN WIDTH AROUND THE PERIMETER OF THE FEATURE
2. SCARIFY SURFACE WHERE ROAD HUMPS ARE TO BE CONSTRUCTED AND APPLY TACK COAT TO BOND NEW HUMPS WITH EXISTING CARRIAGEWAY.
3. HUMPS SHALL BE CONSTRUCTED IN LAYERS OF AC10 CLOSE SURF 100 / 150 TO BE LAID IN LAYERS MAX 40MM PER LAYER
4. EACH HUMP SHALL HAVE 4 WARNING TRIANGLE MARKERS AS SHOWN ON THE TYPICAL DETAILS, OR AS SHOWN ON THE SCHEME DRAWINGS. ALL ROAD MARKINGS SHALL BE IN WHITE THERMOPLASTIC SCREED WITH APPLIED BALLOTINI.
5. HUMPS SHALL BE MARKED WITH TEMPORARY WARNING TRIANGLES IN WHITE SPRAY PAINT IF THEY ARE TO BE TRAFFICKED BEFORE PERMANENT MARKINGS ARE APPLIED.
6. FLAT TOP ROAD HUMPS ARE ONLY SUITABLE FOR ROADS 6.50m WIDE, OR GREATER, TO MAINTAIN 2.75m WIDE LANES.
7. REFER TO SCHEME DRAWING DRAWINGS FOR DRAINAGE AND KERBING REQUIREMENTS.
8. ALL ROAD MARKINGS SHALL COMPLY WITH THE TRAFFIC SIGNS REGULATIONS AND GENERAL DIRECTIONS 2016.
9. ALL RAMPS ON THE FLAT TOP HUMPS TO BE HAND LAID



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV/AA

Checked

PW

Commercial Regulatory and Operational Service

Title

BLACKTOP ROAD HUMP

Section

HD

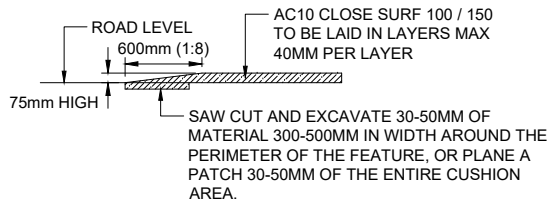
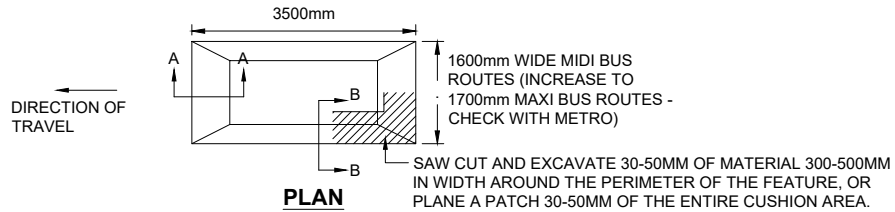
Date

APRIL 21

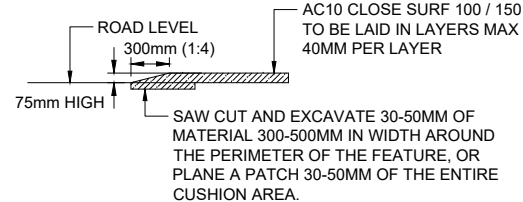
Drawing No.

HD/SD/07/05B

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG



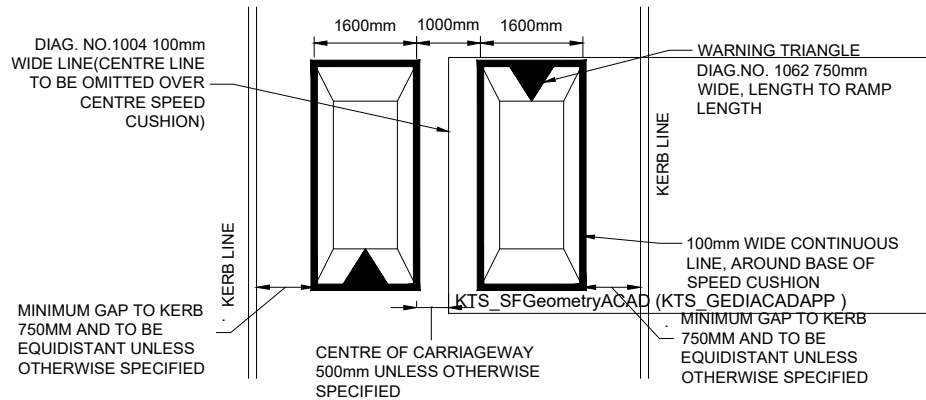
SECTION A-A



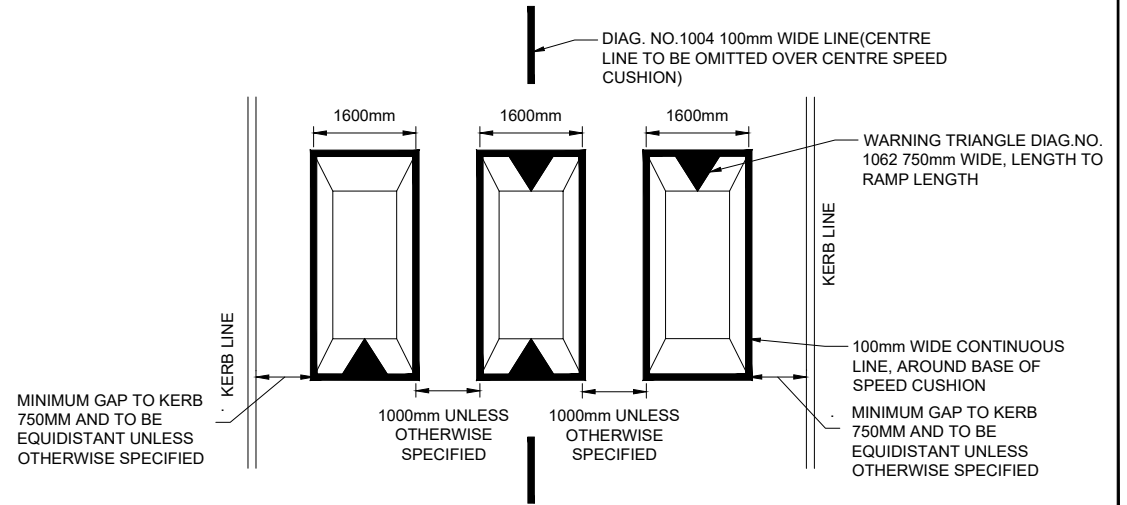
SECTION B-B

NOTE

1. SCARIFY SURFACE WHERE ROAD CUSHIONS ARE TO BE CONSTRUCTED AND APPLY TACK COAT TO BOND NEW HUMPS WITH EXISTING CARRIAGEWAY.
2. CUSHIONS SHALL BE CONSTRUCTED IN LAYERS MAXIMUM DEPTH OF AC10 CLOSE SURF 100 / 150, COMPACTED WITHIN METAL FRAME WITH A VIBRATING WHACKER PLATE. SPACES LEFT AFTER REMOVAL OF FRAME TO BE FILLED WITH BITUMEN HOT POURED. FINISHED SURFACE LEVEL OF CUSHION TO BE 75mm AFTER COMPACTION. TOLERANCE IN FINISHED SURFACE LEVEL OF CUSHION IS ± 10 mm.
3. EACH CUSHION SHALL HAVE WARNING TRIANGLE MARKINGS AS SHOWN ON THE TYPICAL DETAILS, OR AS SHOWN ON THE SCHEME DRAWINGS. ALL ROAD MARKINGS SHALL BE IN WHITE THERMOPLASTIC SCREED WITH APPLIED BALLOTINI.
4. CUSHIONS SHALL BE MARKED WITH TEMPORARY WARNING TRIANGLES IN WHITE SPRAY PAINT IF THEY ARE TO BE TRAFFICKED BEFORE PERMANENT MARKINGS ARE APPLIED.
5. ALL ROAD MARKINGS SHALL COMPLY WITH THE TRAFFIC SIGNS REGULATIONS AND GENERAL DIRECTIONS 2016.
6. MINIMUM DISTANCE TO KERB 750MM OR TO OTHER CUSHION 1000MM
7. MAXIMUM GAP BETWEEN SPEED CUSHIONS AND KERBS/SPEED CUSHIONS NOT TO EXCEED 1.20m
8. EXACT LOCATION OF CUSHIONS AND SIGNS TO BE AGREED JOINTLY WITH THE ENGINEER.
9. TRAFFIC AND PEDESTRIAN MOVEMENTS ON ALL AFFECTED ROADS TO BE MAINTAINED AT ALL TIMES.
10. ALL GULLY GRATE AND FRAMES AFFECTED BY CUSHIONS SHOULD BE CHANGED TO A CYCLE FRIENDLY TYPE.



DOUBLE LAYOUT



TRIPLE LAYOUT



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV/AA

Checked

PW

Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

BLACKTOP CUSHIONS

Section

HD

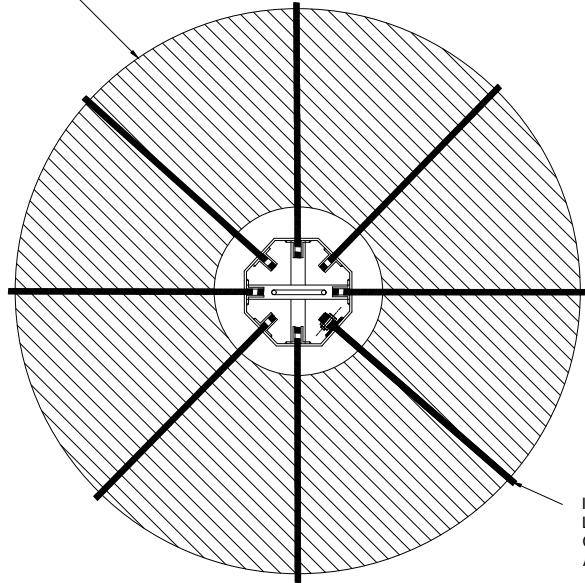
Date

APRIL 21

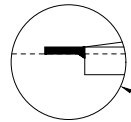
Drawing No.

HD/SD/07/06B

SEE NOTE 1

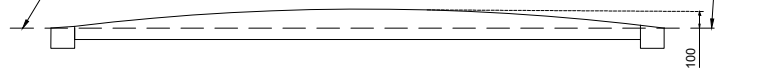


ISLAND TO BE HAND LAID TO 100MM IN THE CENTRE AND 0-1MM AROUND THE EDGE.



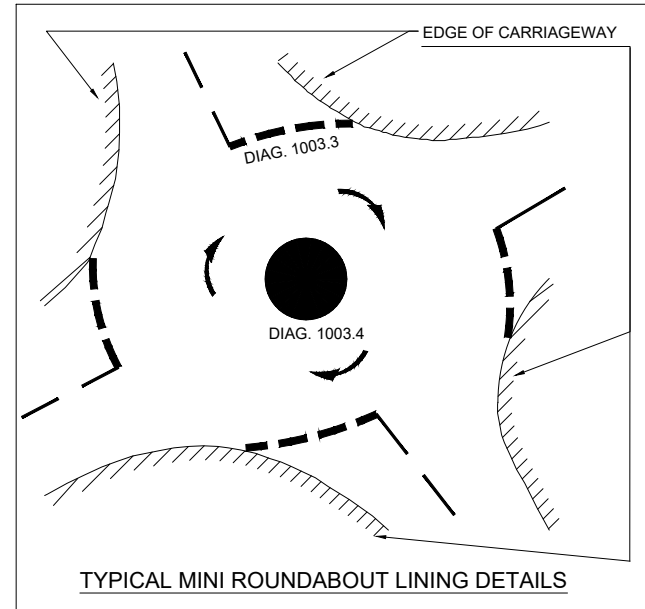
FOOT DETAIL
SEE DRG. H/SD/07/10A
FOR FRAME DETAILS
(SCALE N.T.S)

EXISTING
CARRIAGEWAY
LEVEL



EXISTING
CARRIAGEWAY
LEVEL

TYPICAL ELEVATION OF MINI ROUNDABOUT



TYPICAL MINI ROUNDABOUT LINING DETAILS

NOTES

1. SAW CUT AND EXCAVATE 30-50MM OF MATERIAL 300-500MM IN WIDTH AROUND THE PERIMETER
2. SCARIFY SURFACE WHERE ROUNDABOUT IS TO BE CONSTRUCTED AND APPLY TACK COAT.
3. ISLAND SHALL BE CONSTRUCTED IN LAYERS OF AC10 CLOSE SURF 100/150 TO BE LAID IN LAYERS MAX 40MM PER LAYER
4. MINI ROUNDABOUTS SHALL HAVE ROAD MARKINGS AS SHOWN ON THE TYPICAL DETAILS, OR AS SHOWN ON THE SCHEME DRAWINGS. ALL ROAD MARKINGS SHALL BE IN WHITE THERMOPLASTIC SCREED WITH APPLIED BALLOTINI.
5. MINI ROUNDABOUTS SHALL BE MARKED WITH TEMPORARY MARKINGS IN WHITE SPRAY PAINT IF THEY ARE TO BE TRAFFICKED BEFORE PERMANENT MARKINGS ARE APPLIED, IN AGREEMENT WITH THE ENGINEER.

GENERAL NOTES

1. EXACT LOCATION OF MINI ROUNDABOUT AND SIGNS TO BE AGREED JOINTLY WITH THE ENGINEER.
2. TRAFFIC AND PEDESTRIAN MOVEMENT ON ALL AFFECTED ROADS TO BE MAINTAINED AT ALL TIMES.
3. ALL SIGNS AND ROAD MARKINGS MUST COMPLY WITH THE TRAFFIC SIGNS REGULATIONS AND GENERAL DIRECTIONS 2016.



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV/AA

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PW

Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

MINI ROUNDABOUT

Section

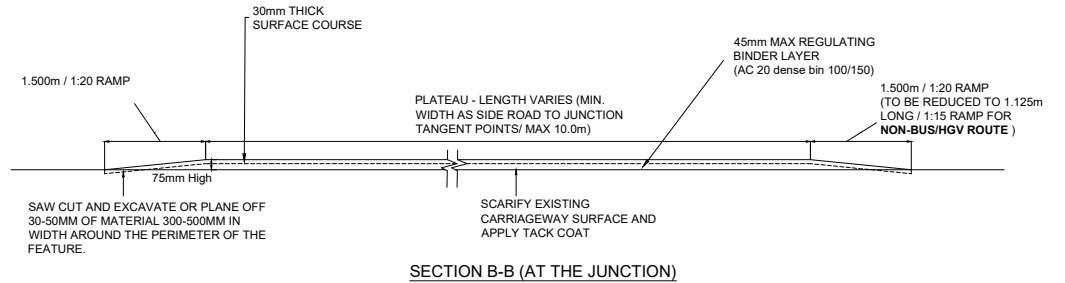
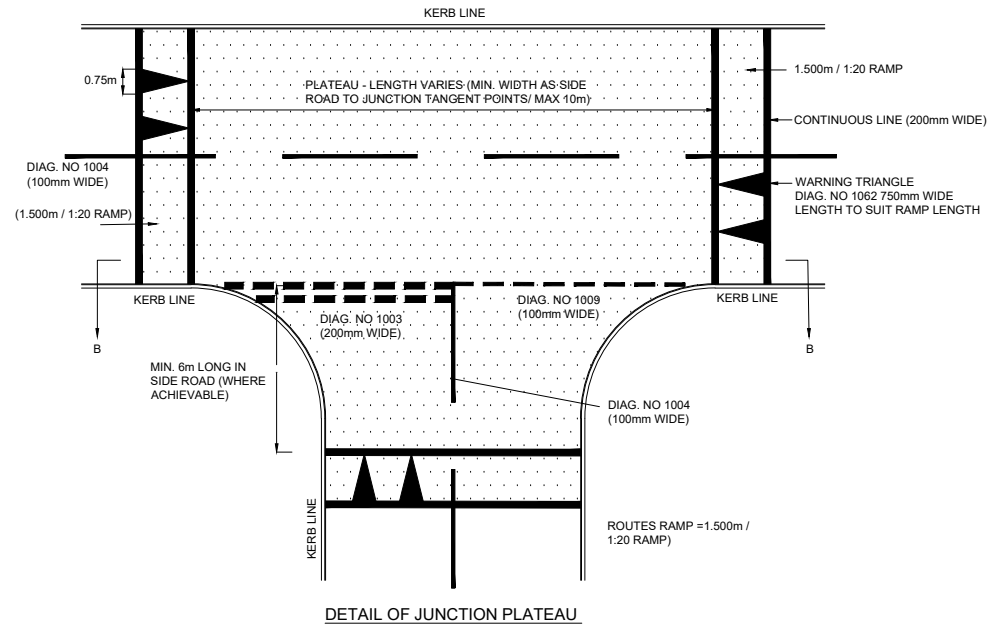
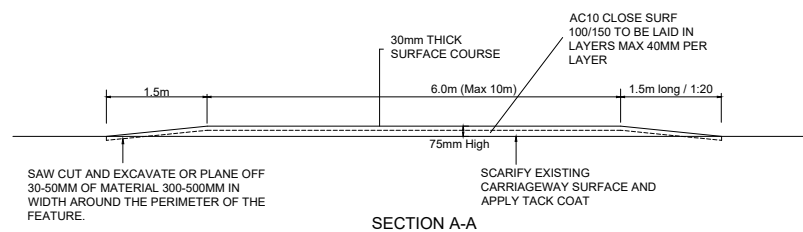
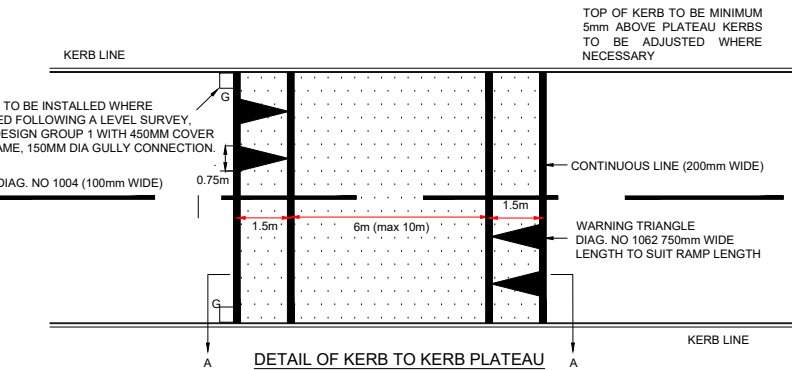
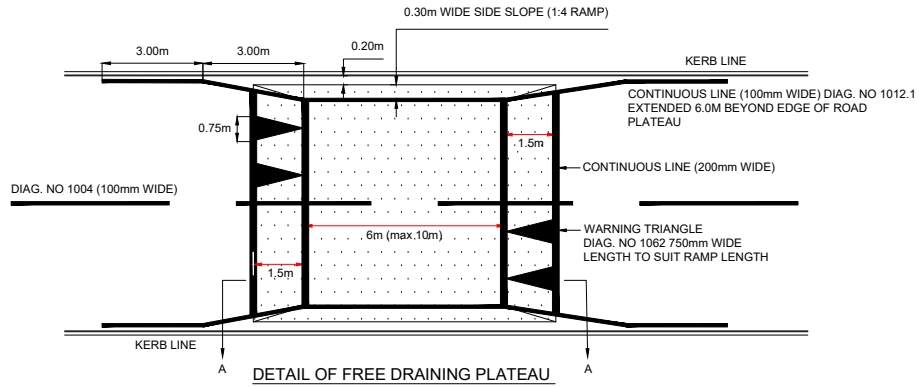
HD

Date

APRIL 21

Drawing No.

HD/SD/07/07B



NOTE

1. ROAD PLATEAU WITH 6M TOP TO BE USED WHEN THE MEASURES ARE IMPLEMENTED ON BUS OR HIGH HGV ROUTES
2. ALL DESIGNERS SHOULD REFER TO SCHEME DRAWINGS FOR DRAINAGE AND KERBING REQUIREMENTS.
3. EXISTING CARRIAGEWAY SURFACE AND TIE-INS TO BE SCARIFY AND TACK COATED BEFORE CONSTRUCTION.
4. HEIGHT TOLERANCE TO BE +/- 10mm, EXCEPT AT DIFFICULT SITES, I.E. WITH STEEP CARRIAGEWAY CROSSFAL/BARRELLED PROFILES ETC., WHICH SHOULD BE AGREED ON AN INDIVIDUAL BASIS WITH THE CONTRACTOR.
5. ALL ROAD HUMPS (PLATEAU) ARE TO BE SIGNED IN ACCORDANCE WITH THE HIGHWAYS (ROAD HUMPS) REGULATION 1996.



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV/AA

Checked

PW

Commercial Regulatory and Operational Service

Title

BLACKTOP ROAD PLATEAU

Section

HD

Date

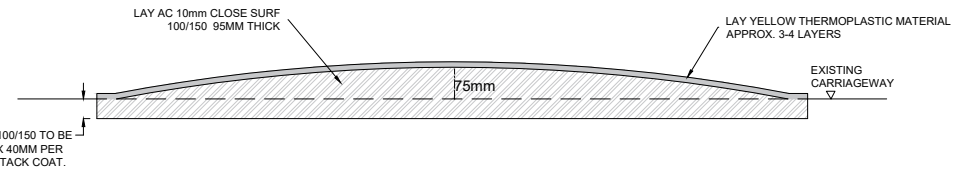
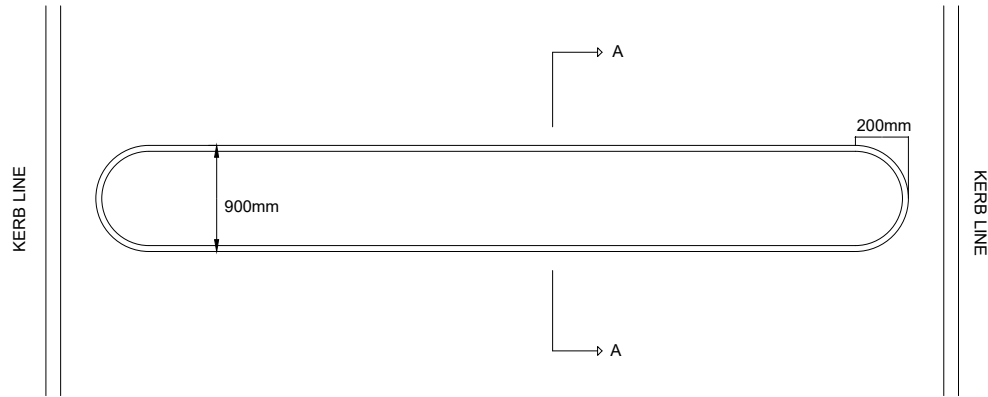
Nov 21

Drawing No.

HD/SD/07/08B

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

ROAD HUMPS



SECTION A-A

NOTES

1. REFER TO SCHEME DRAWINGS FOR DRAINAGE AND KERBING REQUIREMENTS.
2. EXISTING CARRIAGEWAY SURFACE TO BE TACK COATED PRIOR TO CONSTRUCTION.
3. ALL ROAD HUMPS TO BE SIGNED IN ACCORDANCE WITH THE HIGHWAYS (ROAD HUMPS) REGULATIONS 1996.
4. ALL DIMENSION ARE IN MILLIMETRES



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV/AA

Checked

PW

Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

ROAD HUMPS

Section

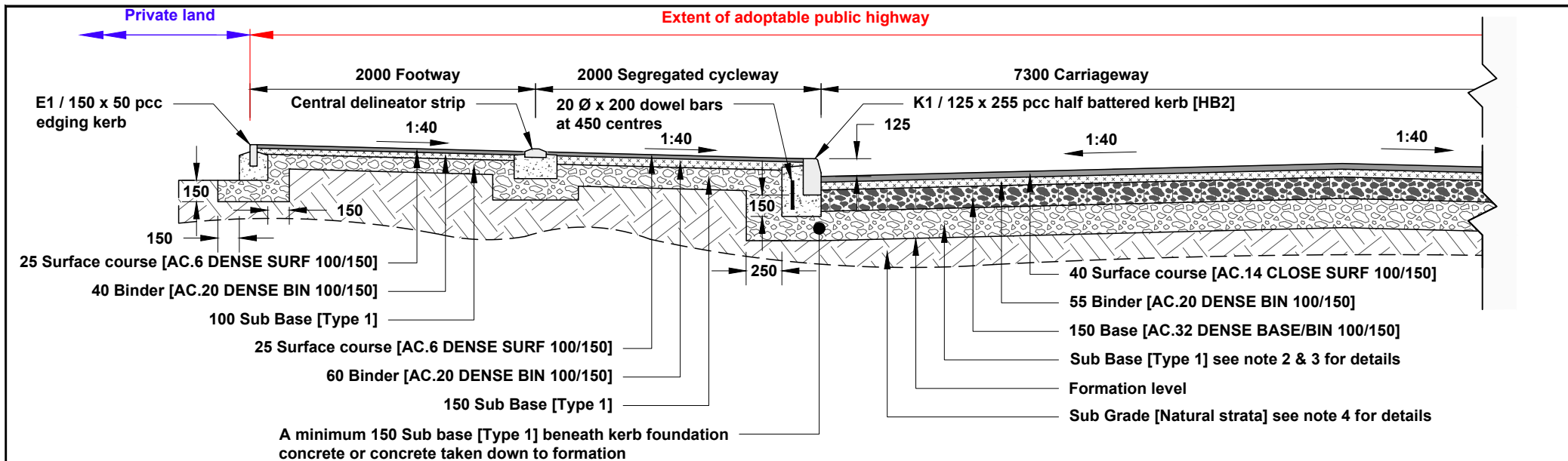
HD

Date

NOV 21

Drawing No.

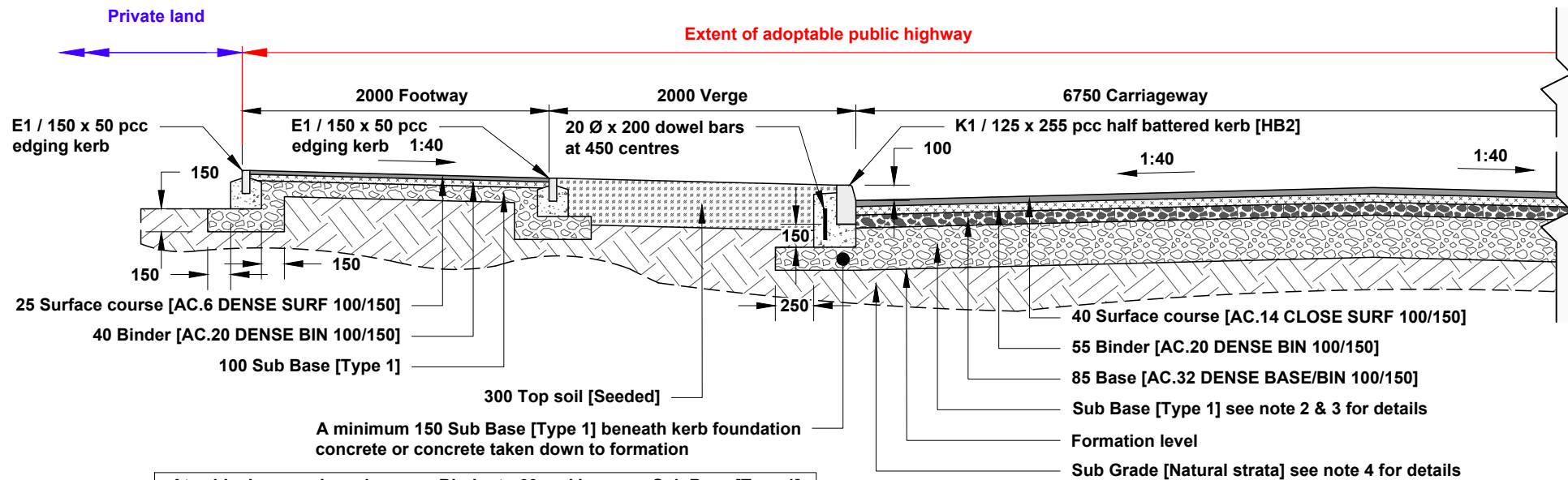
HD/SD/07/09B



1. Unless stated otherwise all dimensions are in millimetres.
2. For pavement foundation design, there are two options:
 - (i) Sub Base only
 - (ii) Sub Base and Capping
 - (iii) See adjacent pavement design table for layer thickness.
3. For pavement foundation design the total pavement construction buildup from final design surface to the foundation, is to be 450mm in depth, such that the materials shall not be frost susceptible in accordance with [MCHW Vol 1 Series 801 Clause 7].
4. All made ground to be removed to a depth of 3m.
5. All kerbs to be laid upon 10mm mortar bed.
6. All K1 kerbs require dowel bars.
7. For kerb details refer to Kirklees Standard Details Drawing No. HD / SD / 11 / 01B,02B,03B,04B,05B.

PAVEMENT FOUNDATION DESIGN INDUSTRIAL / COMMERCIAL ROAD [TYPE CB]						
CBR %		< 2.5	2.5 to 3.0	3.0 to 4.0	4.0 to 5.0	5.0 to >15.0
SUB BASE ONLY	SUB BASE [TYPE 1] DEPTH	Ground remediation required to improve sub grade CBR	450	420	370	330
OR			OR			
SUB BASE ON CAPPING	SUB BASE [TYPE 1] DEPTH		350	320	270	240
	CAPPING DEPTH	250	240	230	210	150
* Minimum required type 1 sub base depth to achieve 450mm of non-frost susceptible material.						

	Project	<h1>STANDARD DETAILS</h1>		Scale		1:40		
				Drawn	MWN	Checked	JMH	
Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG	Title	<h2>INDUSTRIAL / COMMERCIAL ROAD [TYPE CB] WITH SEGREGATED CYCLEWAY</h2>				Section	Date	
						HD	MAY 2022	
		Drawing No.		HD-SD-07-10A				



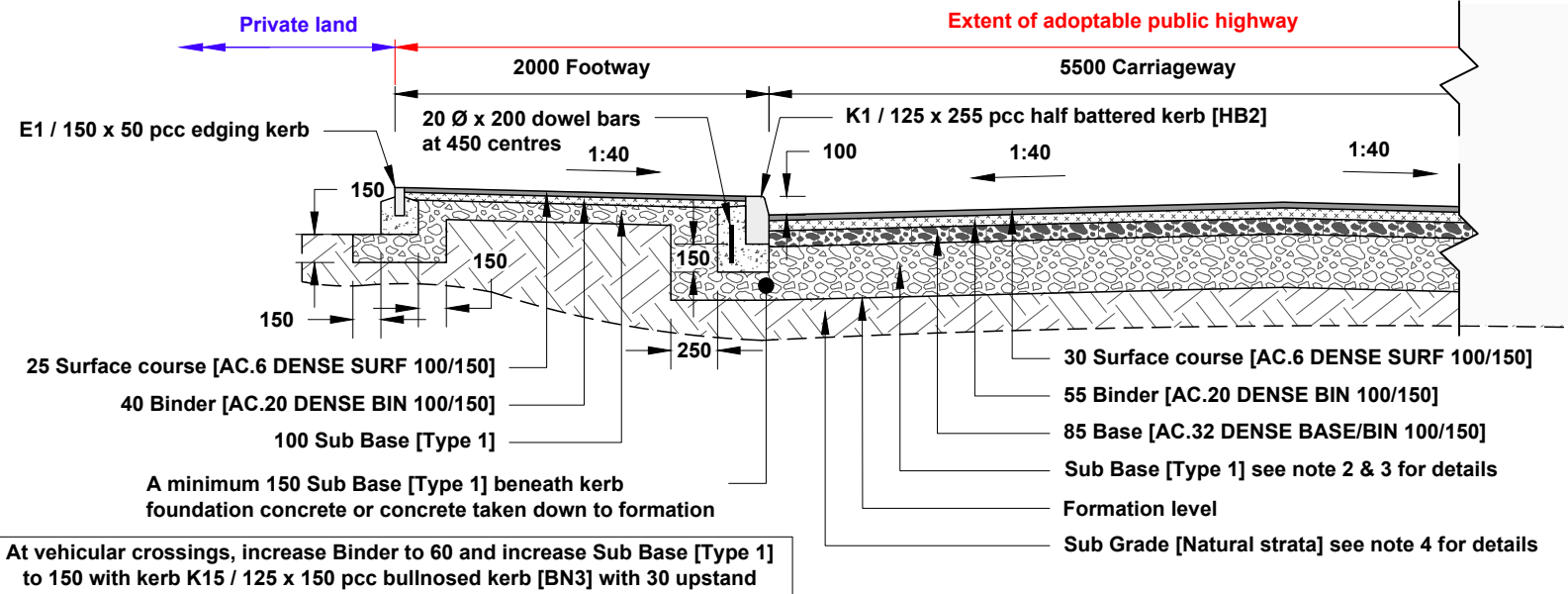
At vehicular crossings, increase Binder to 60 and increase Sub Base [Type 1] to 150 with kerb K15 / 125 x 150 pcc bullnosed kerb [BN3] with 30 upstand

1. Unless stated otherwise all dimensions are in millimetres.
2. For pavement foundation design, there are two options:
 - (i) Sub Base only
 - (ii) Sub Base and Capping
 - (iii) See adjacent pavement design table for layer thickness.
3. For pavement foundation design the total pavement construction buildup from final design surface to the foundation, is to be 450mm in depth, such that the materials shall not be frost susceptible in accordance with [MCHW Vol 1 Series 801 Clause 7].
4. All made ground to be removed to a depth of 3m.
5. All kerbs to be laid upon 10mm mortar bed.
6. All K1 kerbs require dowel bars.
7. For kerb details refer to Kirklees Standard Details Drawing No. HD / SD / 11 / 01A,02A,03A,04A,05A.

PAVEMENT FOUNDATION DESIGN RESIDENTIAL CONNECTOR STREET [TYPE A]							
CBR %		< 2.5	2.5 to 3.0	3.0 to 4.0	4.0 to 5.0	5.0 to 15.0	>15.0
SUB BASE ONLY	SUB BASE [TYPE 1] DEPTH	Ground remediation required to improve sub grade CBR	450	420	370	330	270*
OR			OR				
SUB BASE ON CAPPING	SUB BASE [TYPE 1] DEPTH		350	320	270	270*	270*
	CAPPING DEPTH	250	240	230	210	150	

* Minimum required type 1 sub base depth to achieve 450mm of non-frost susceptible material.

	Project	<h1>STANDARD DETAILS</h1>		Scale		1:40	
	Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG			Title	RESIDENTIAL CONNECTOR STREET [TYPE A] WITH VERGE		Drawn
MWN		JMH					
Section		Date					
				HD	MAY 2022		
				Drawing No.	HD-SD-07-11A		

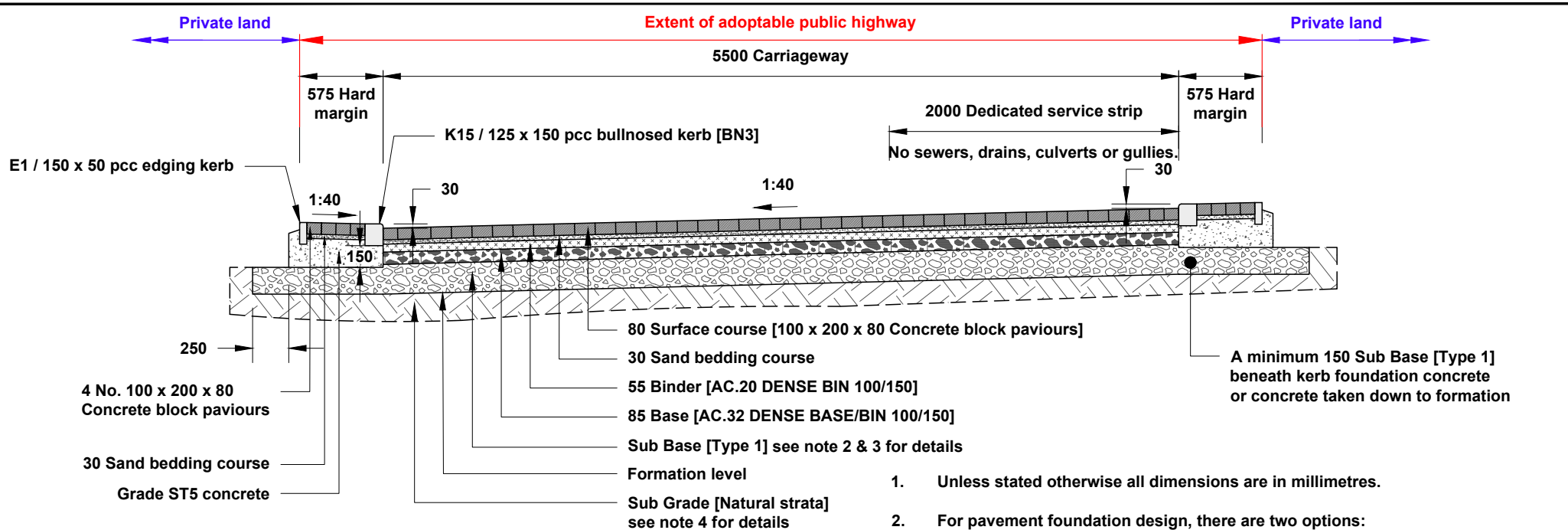


1. Unless stated otherwise all dimensions are in millimetres.
2. For pavement foundation design, there are two options:
 - (i) Sub Base only
 - (ii) Sub Base and Capping
 - (iii) See adjacent pavement design table for layer thickness.
3. For pavement foundation design the total pavement construction buildup from final design surface to the foundation, is to be 450mm in depth, such that the materials shall not be frost susceptible in accordance with [MCHW Vol 1 Series 801 Clause 7].
4. All made ground to be removed to a depth of 3m.
5. All kerbs to be laid upon 10mm mortar bed.
6. All K1 kerbs require dowel bars.
7. For kerb details refer to Kirklees Standard Details Drawing No. HD / SD / 11 / 01A,02A,03A,04A,05A.

PAVEMENT FOUNDATION DESIGN LOCAL RESIDENTIAL STREET / TRADITIONAL ESTATE ROAD [TYPE B]							
CBR %		< 2.5	2.5 to 3.0	3.0 to 4.0	4.0 to 5.0	5.0 to 15.0	>15.0
SUB BASE ONLY	SUB BASE [TYPE 1] DEPTH	Ground remediation required to improve sub grade CBR	450	420	370	330	280*
	OR		OR				
SUB BASE ON CAPPING	SUB BASE [TYPE 1] DEPTH		350	320	280*	280*	280*
	CAPPING DEPTH		250	240	230	210	150

* Minimum required type 1 sub base depth to achieve 450mm of non-frost susceptible material.

	Project	STANDARD DETAILS		Scale		1:40		
				Drawn	MWN	Checked	JMH	
Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG	Title	LOCAL RESIDENTIAL STREET / TRADITIONAL ESTATE ROAD [TYPE B] WITH FOOTWAY				Section	Date	
						HD	MAY 2022	
					Drawing No.	HD-SD-07-12A		

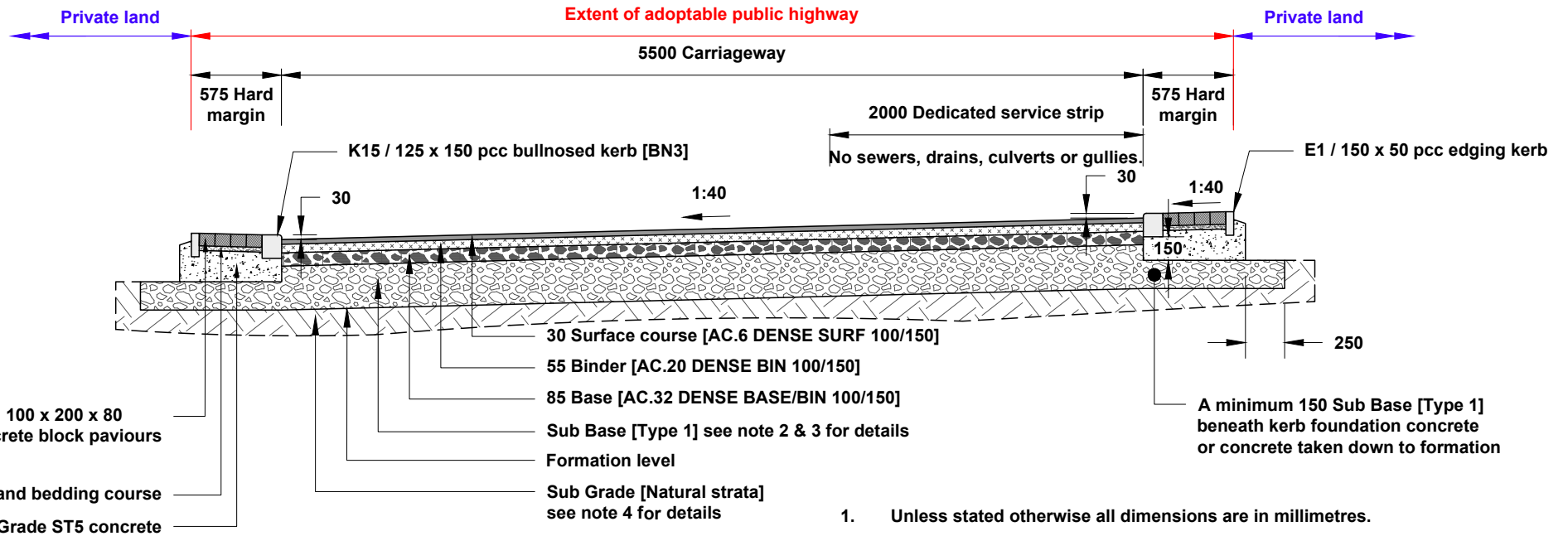


1. Unless stated otherwise all dimensions are in millimetres.
2. For pavement foundation design, there are two options:
 - (i) Sub Base only
 - (ii) Sub Base and Capping
 - (iii) See adjacent pavement design table for layer thickness.
3. For pavement foundation design the total pavement construction buildup from final design surface to the foundation, is to be 450mm in depth, such that the materials shall not be frost susceptible in accordance with [MCHW Vol 1 Series 801 Clause 7].
4. All made ground to be removed to a depth of 3m.
5. All kerbs to be laid upon 10mm mortar bed.
6. All K1 kerbs require dowel bars.
7. For kerb details refer to Kirklees Standard Details Drawing No. HD / SD / 11 / 01A,02A,03A,04A,05A.

PAVEMENT FOUNDATION DESIGN SHARED SURFACE STREET [TYPE C] / MEWS COURT (BLOCK PAVED)							
CBR %		< 2.5	2.5 to 3.0	3.0 to 4.0	4.0 to 5.0	5.0 to 15.0	>15.0
SUB BASE ONLY	SUB BASE [TYPE 1] DEPTH	Ground remediation required to improve sub grade CBR	450	420	370	330	200*
OR			OR				
SUB BASE ON CAPPING	SUB BASE [TYPE 1] DEPTH		350	320	270	240	200*
	CAPPING DEPTH	250	240	230	210	150	


* Minimum required type 1 sub base depth to achieve 450mm of non-frost susceptible material.

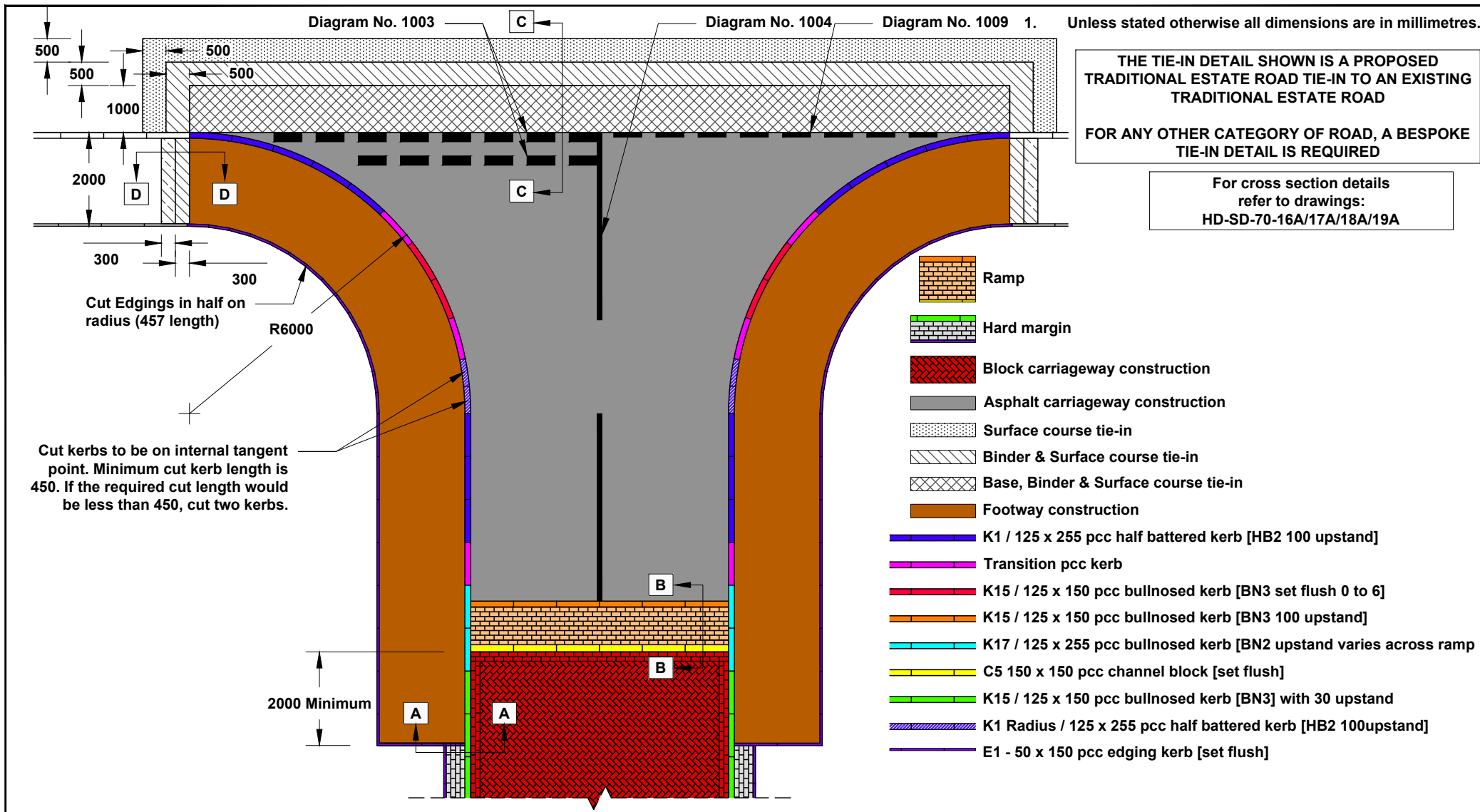
	Project	STANDARD DETAILS		Scale	1:40
		Drawn	MWN	Checked	JMH
Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG	Title	SHARED SURFACE STREET [TYPE C] / MEWS COURT (BLOCK PAVED)		Section	HD
		Date	MAY 2022		Drawing No.



1. Unless stated otherwise all dimensions are in millimetres.
2. For pavement foundation design, there are two options:
 - (i) Sub Base only
 - (ii) Sub Base and Capping
 - (iii) See adjacent pavement design table for layer thickness.
3. For pavement foundation design the total pavement construction buildup from final design surface to the foundation, is to be 450mm in depth, such that the materials shall not be frost susceptible in accordance with [MCHW Vol 1 Series 801 Clause 7].
4. All made ground to be removed to a depth of 3m.
5. All kerbs to be laid upon 10mm mortar bed.
6. All K1 kerbs require dowel bars.
7. For kerb details refer to Kirklees Standard Details Drawing No. HD / SD / 11 /01A,02A,03A,04A,05A.

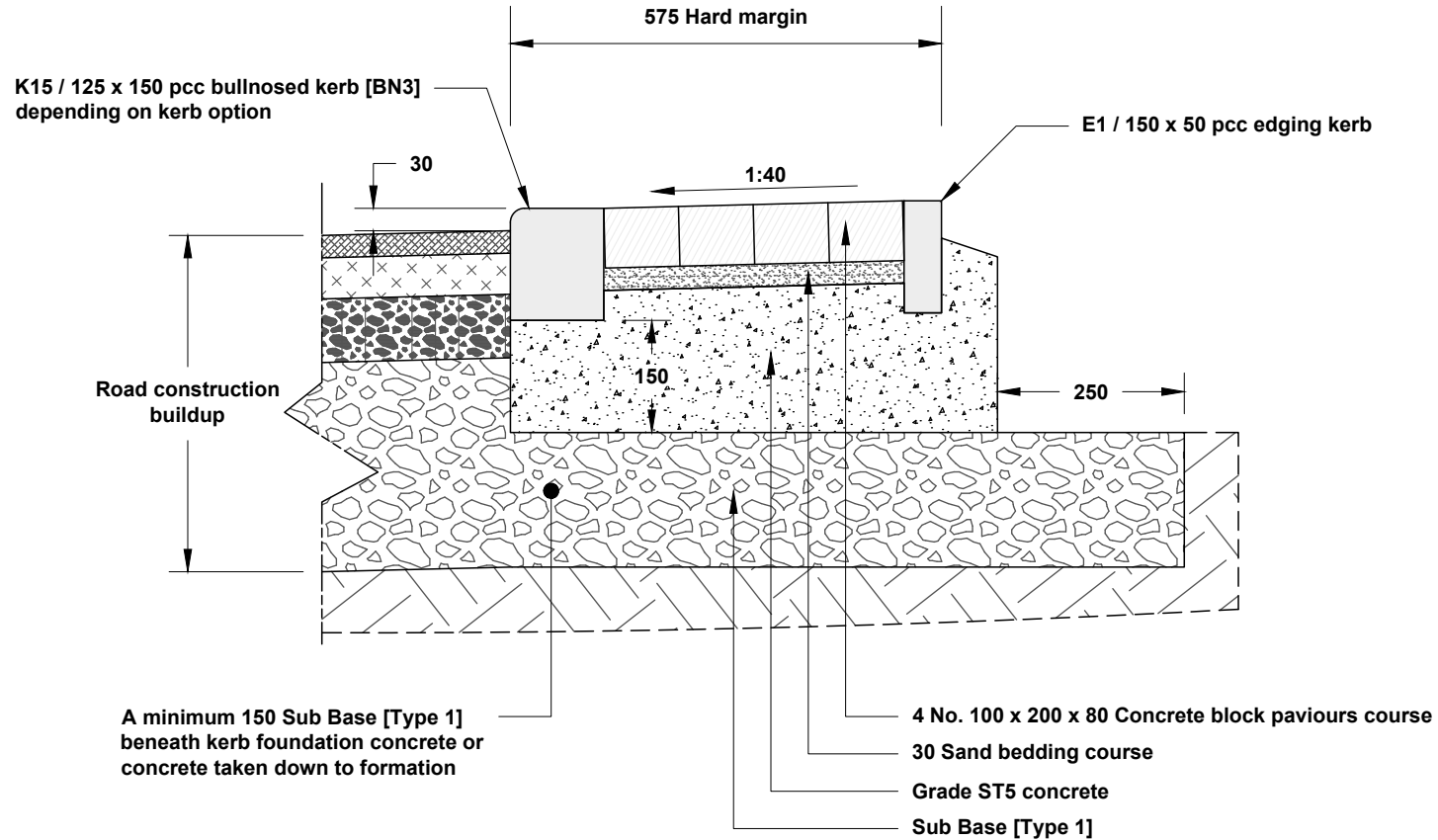
PAVEMENT FOUNDATION DESIGN SHARED SURFACE STREET [TYPE C] / MEWS COURT (ASPHALT PAVED)							
CBR %		< 2.5	2.5 to 3.0	3.0 to 4.0	4.0 to 5.0	5.0 to 15.0	>15.0
SUB BASE ONLY	SUB BASE [TYPE 1] DEPTH	Ground remediation required to improve sub grade CBR	450	420	370	330	280*
	OR		OR				
SUB BASE ON CAPPING	SUB BASE [TYPE 1] DEPTH		350	320	280*	280*	280*
	CAPPING DEPTH		250	240	230	210	150
* Minimum required type 1 sub base depth to achieve 450mm of non-frost susceptible material.							

	Project	STANDARD DETAILS		Scale 1:40	
	Drawn MWN		Checked JMH		
Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG	Title			Section	
	SHARED SURFACE STREET [TYPE C] / MEWS COURT (ASPHALT PAVED)			Date MAY 2022	
				Drawing No. HD-SD-07-14A	



	Project	<h1>STANDARD DETAILS</h1>		Scale	NOT TO SCALE	
	Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG			Title <h2>JUNCTION / PAVEMENT AND KERB LAYOUT WITH TIE-IN PLAN DETAIL</h2>	Drawn	MWN
Section		HD	Date		MAY 2022	
Drawing No.		HD-SD-07-15A				

1. Unless stated otherwise all dimensions are in millimetres



Project

STANDARD DETAILS

Scale

1:10

Drawn

MWN

Checked

JMH

Commercial Regulatory and Operational Service
Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

**HARD MARGIN DETAIL
CROSS SECTION A - A**

Section

HD

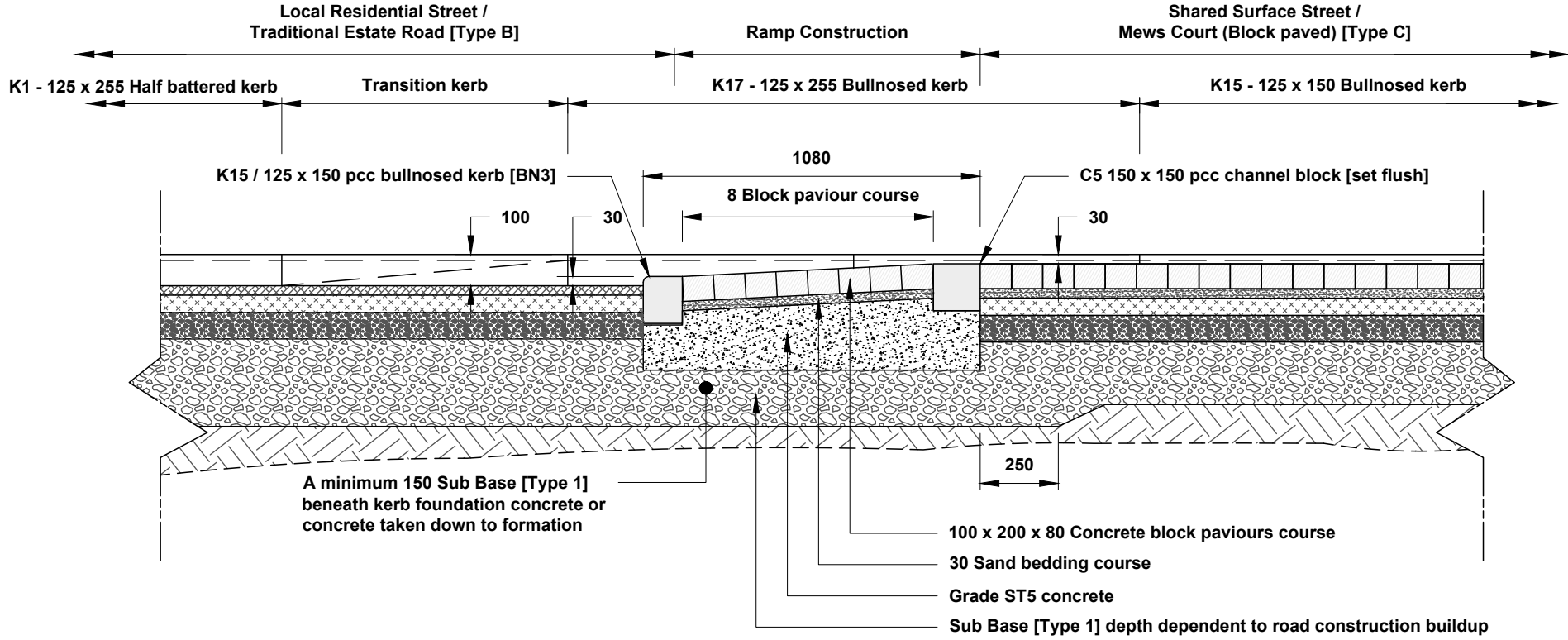
Date


MAY 2022

Drawing No.

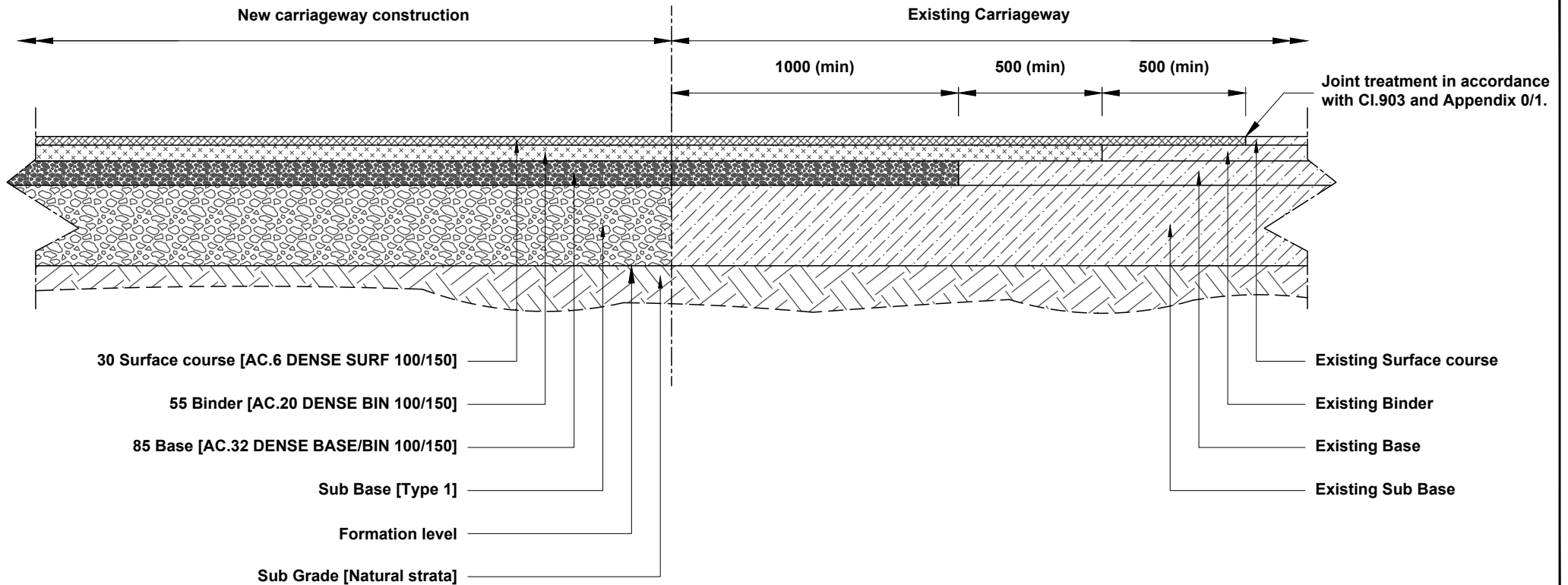
HD-SD-07-16A

1. Unless stated otherwise all dimensions are in millimetres.




	Project	<h1 style="text-align: center;">STANDARD DETAILS</h1>		Scale	1:20	
	Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG			Title	Drawn	MWN
Section		HD	Date		MAY 2022	
Drawing No.		HD-SD-07-17A				
Title <h2 style="text-align: center;">RAMP DETAIL CROSS SECTION B - B</h2>						

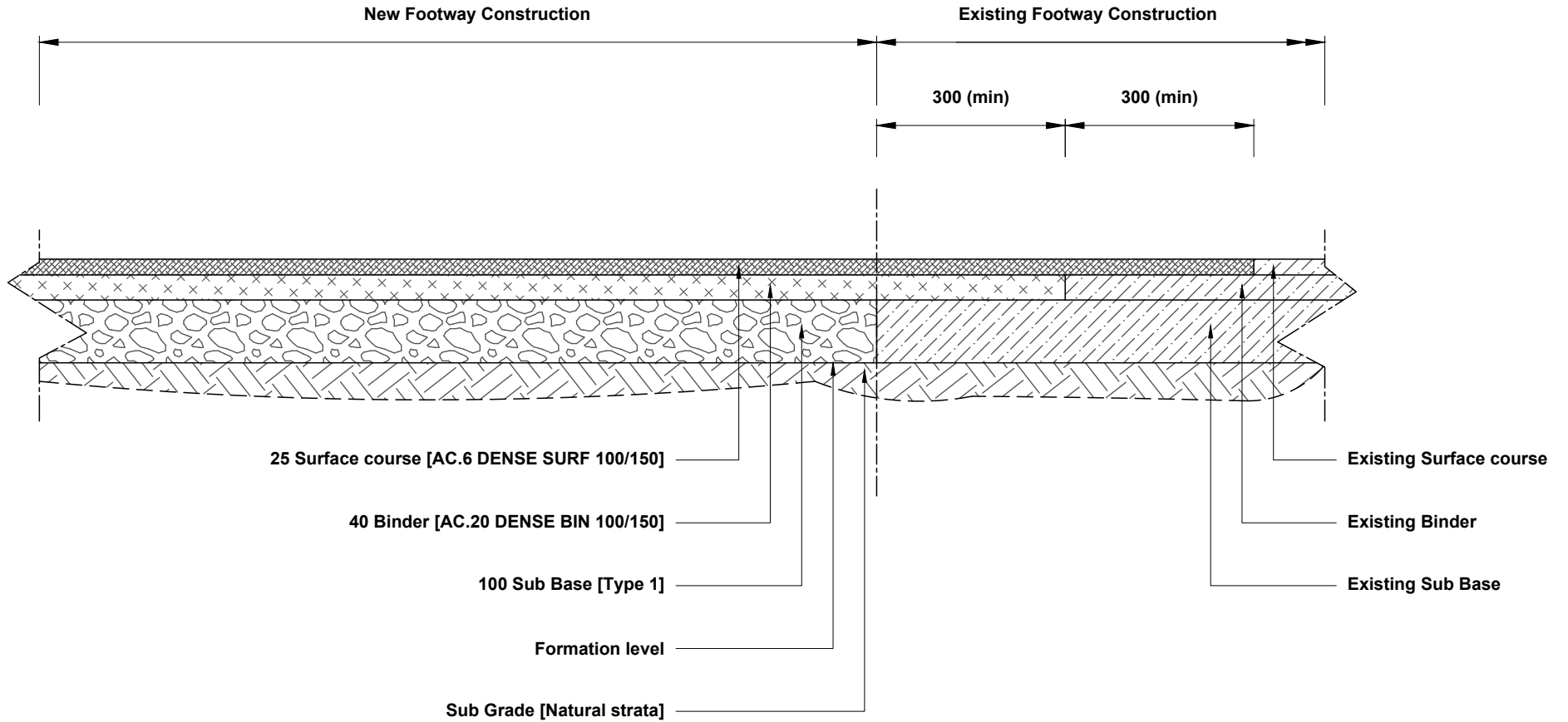
1. Unless stated otherwise all dimensions are in millimetres.




THIS DETAIL SHOWS NEW TO NEW & NEW TO EXISTING, TRADITIONAL ESTATE ROAD TO AN EXISTING TRADITIONAL ESTATE ROAD TIE-IN DETAILS
 FOR ANY OTHER CATEGORY OF ROAD, A BESPOKE TIE-IN DETAIL IS REQUIRED

	Project	<h1 style="text-align: center;">STANDARD DETAILS</h1>		Scale	1:20	
	Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG			Title	<h2 style="text-align: center;">CARRIAGEWAY TIE-IN SECTION C-C</h2>	Drawn
Section		HD	Date			MAY 2022
Drawing No.		HD-SD-07-18A				

1. Unless stated otherwise all dimensions are in millimetres.



	Project	<h1>STANDARD DETAILS</h1>		Scale	1:10		
	Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG			Title	FOOTWAY TIE-IN DETAIL SECTION D - D		Drawn
Section		HD	Date				MAY 2022
Drawing No.		HD/SD/07/19A					

GENERAL REQUIREMENTS

All dimensions are in millimeters.

CONCRETE

- Concrete shall comply with the requirements of clauses 1001 - 1005 and shall have a minimum compressive strength at 28 days of 28 N/mm²
- An air entraining agent shall be used in at least the top 50mm of the slab, and the air content shall comply with Clauses 1002 of the Specification.

SLAB THICKNESS AND REINFORCEMENT

TRAFFIC CATEGORY (MILLIONS OF STANDARD AXLES)	EQUIVALENT BUS SERVICE FREQUENCY	SLAB THICKNESS	REINFORCEMENT (STANDARD LONG MESH)	MAX. JOINT SPACING (NON STANDARD BAYS)
< 0.4msa	< 4 PER HOUR (eg INTER-URBAN ROUTES)	150mm	2.61kg/m ²	16.5m
0.4 TO 4.5msa	4 OR MORE PER HOUR (eg PRIMARY URBAN ROUTES)	200mm	3.41kg/m ²	21.0m

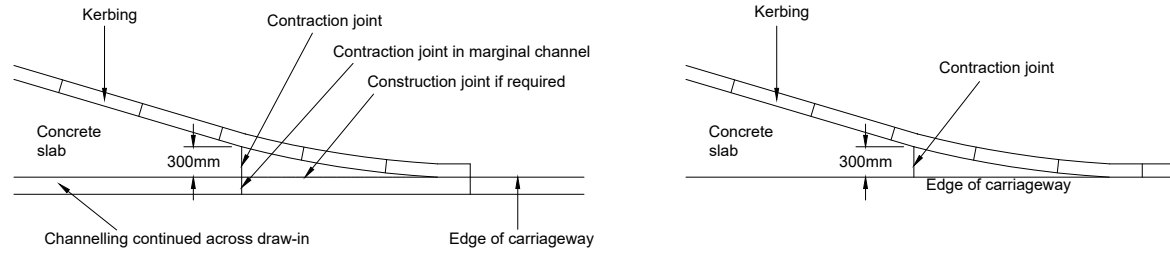
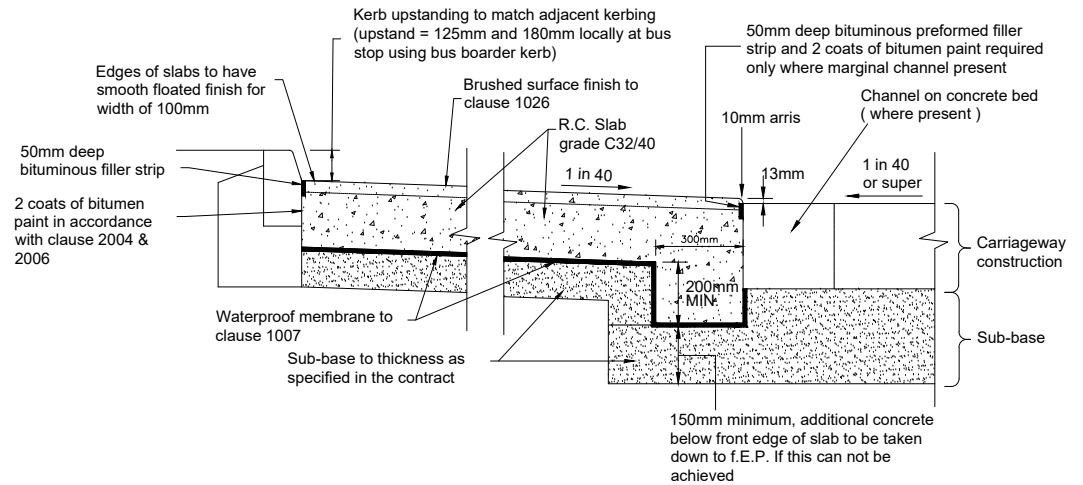
REINFORCEMENT

- Reinforcement shall comply with the requirements of clause 1008
- All reinforced fabric shall overlap one complete mesh in all directions

JOINTS

- The location and type of joint shall be as shown on bus bay and lay-by layouts
- Joints shall be constructed as hcd series c drawings except that
 - (i) Expansion joint
 - (a) Dowel bar shall be 20mm dia. 600mm long
 - (b) Filler board shall be 14mm thick
 - (ii) Contraction joint
 - (a) Dowel bar shall be 20mm dia. 600mm long

TYPICAL CROSS SECTION OF BUS BAY OR LAY-BY



DETAILS OF END OF BUS BAY OR LAY-BY



Project
STANDARD DETAILS

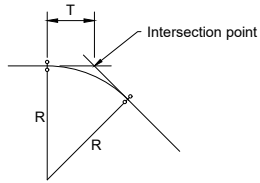
Scale
NOT TO SCALE

Commercial Regulatory and Operational Service
Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title
BUS BAY AND LAY-BY DETAILS

Drawn AKKV	Checked
Section HD	Date JAN 22
Drawing No. HD/SD/10/01B	

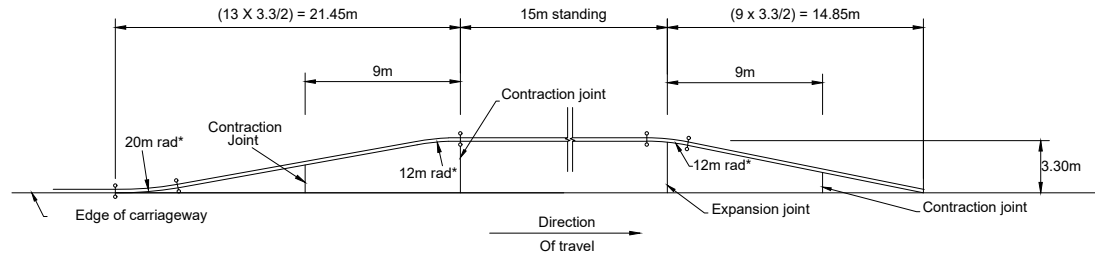
SETTING OUT INFORMATION



R	T	
12m	1.14m	
20m	1.90m	
30m	2.40m	25m TAPER
30m	1.11m	45m TAPER

TO BE READ IN CONJUNCTION WITH BUS STOP INFRASTRUCTURE GUIDANCE BY WEST YORKSHIRE COMBINED AUTHORITY NOV 2020

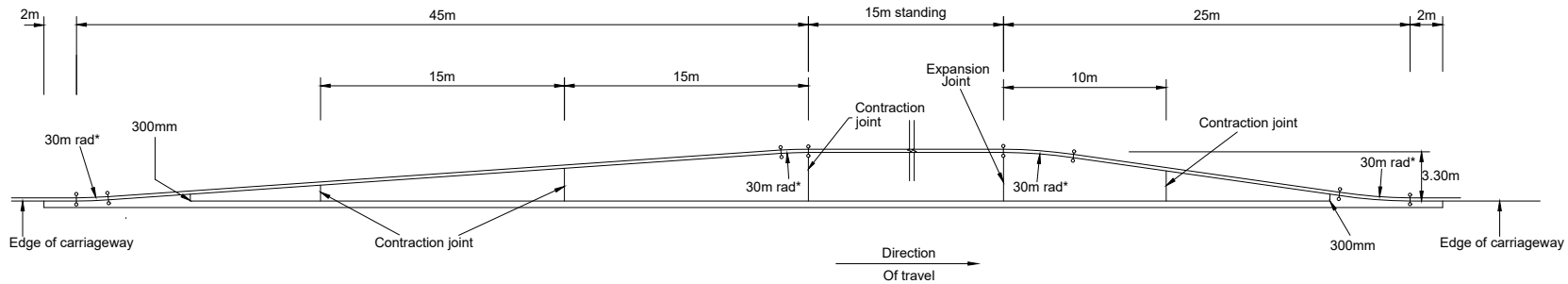
NOTE
 THE ADDITION OF A SUFFIX 'S' TO THE TYPE NUMBER SIGNIFIES THAT DIMENSIONS VARY FROM THOSE SHOWN ABOVE AND ARE INDICATED ON THE CONTRACT DRAWINGS
 NUMBER AND SPACING OF EXPANSION /CONSTRUCTION JOINTS MAY VARY ALSO
 DETAILS OF TIE-INS ARE SHOWN ON DRAWING NUMBER HD/SD/10/01



BUS BAY TYPE 1

BB/1/SLAB THICKNESS/SUB-BASE THICKNESS

BB/1S/SLAB THICKNESS/SUB-BASE THICKNESS



BUS BAY TYPE 2

BB/2/SLAB THICKNESS/SUB-BASE THICKNESS



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV

Checked

Commercial Regulatory and Operational Service

Title

BUS BAYS

Section

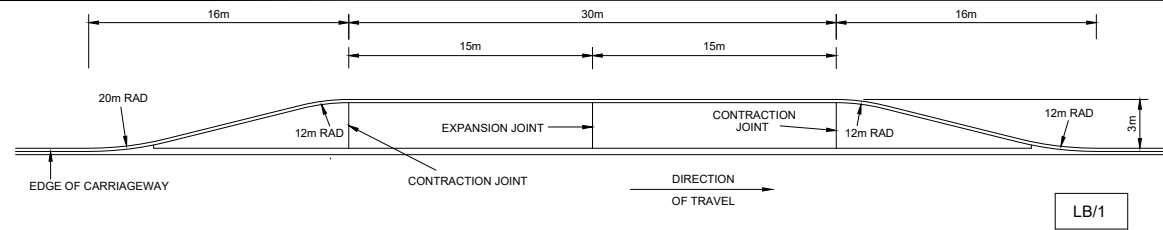
HD

Date

JAN 22

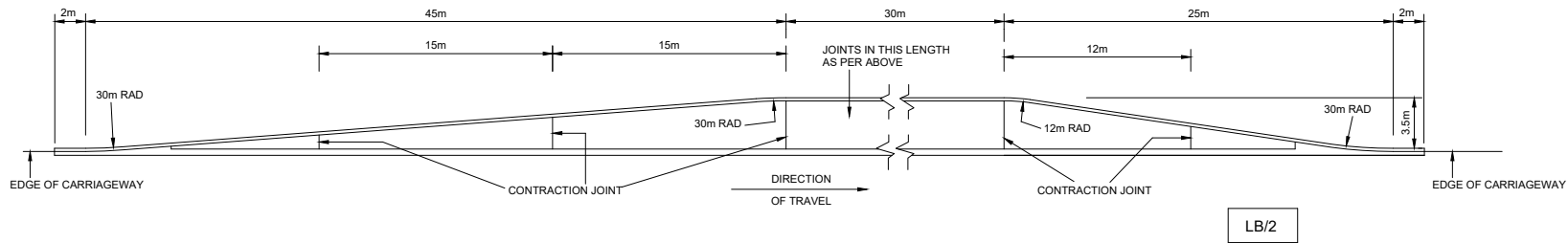
Highway Design
 Flint Street, Fartown
 Huddersfield, HD1 6LG

Drawing No. HD/SD/10/02B

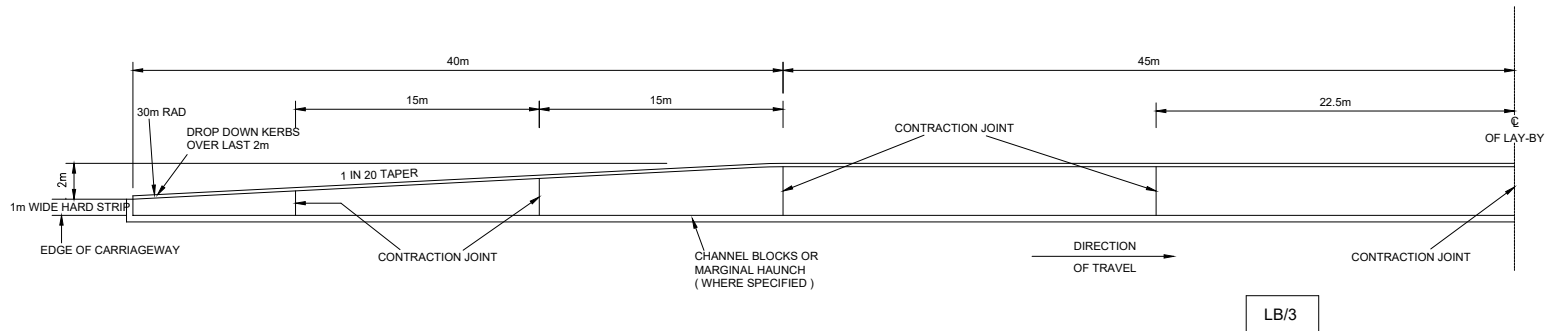


NOTES
 Details of tie-ins are shown on Drawing Number
 HD/SD/10/01

LAY - BY TYPE 1



LAY - BY TYPE 2



LAY - BY TYPE 3



Commercial Regulatory and Operational Service
 Highway Design
 Flint Street, Fartown
 Huddersfield, HD1 6LG

Project

STANDARD DETAILS

Title

LAY-BYS

Scale

NOT TO SCALE

Drawn

AKKV

Checked

Section

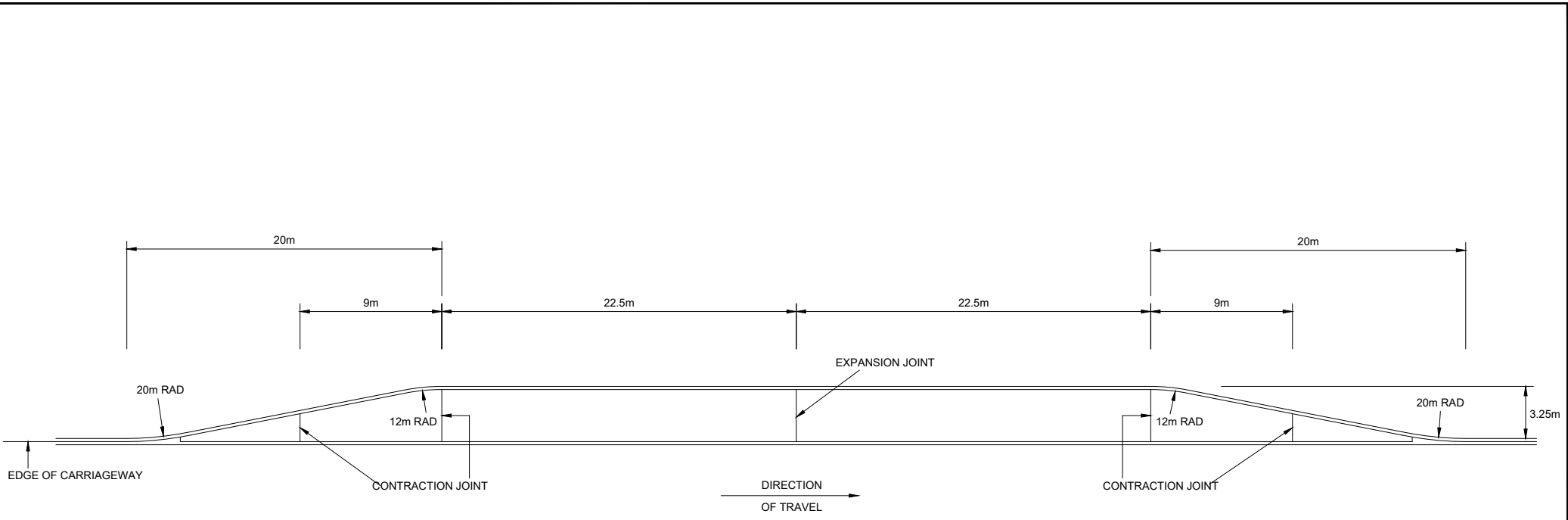
HD

Date

JAN 22

Drawing No.

HD/SD/10/03B




COMBINED LAY - BY AND BUS - BAY

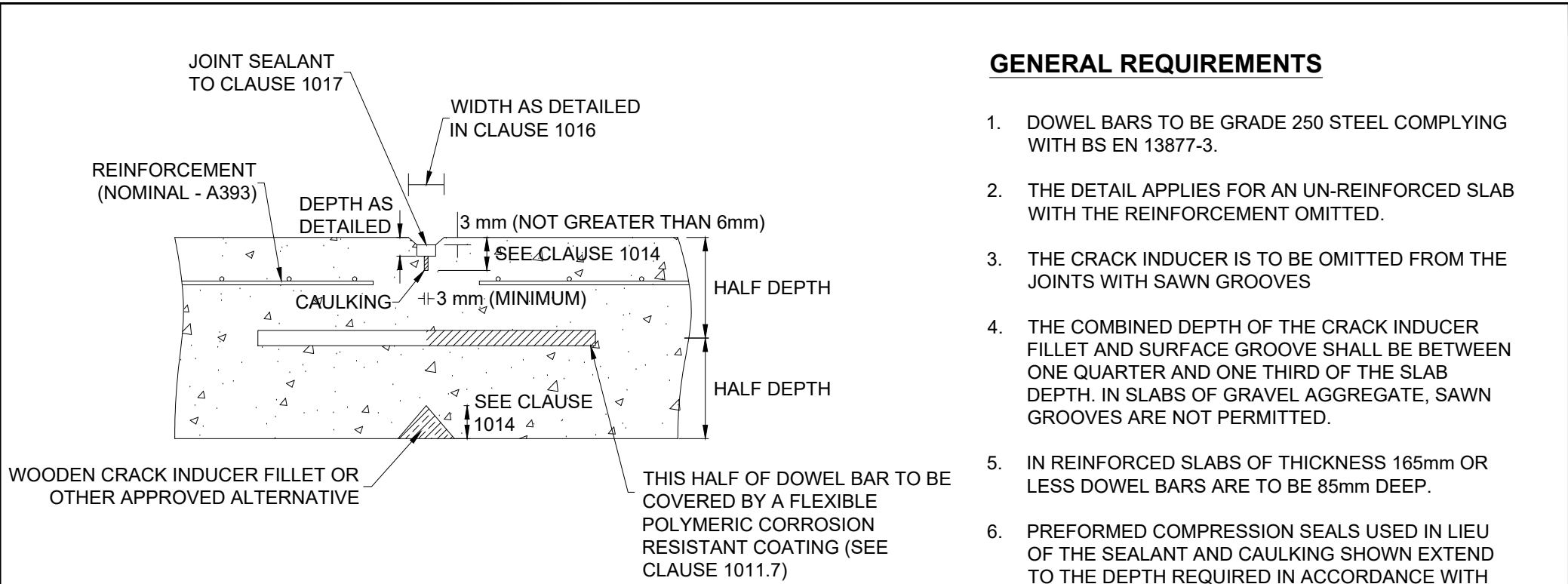
LB/BB

NOTES

Details of tie-ins are shown on Drawing Number
HD/SD/10/01

TO BE READ IN CONJUNCTION WITH BUS STOP
INFRASTRUCTURE GUIDANCE BY WEST YORKSHIRE
COMBINED AUTHORITY NOV 2020

	Project	<h1>STANDARD DETAILS</h1>		Scale	NOT TO SCALE	
	Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG			Title	<h2>COMBINED LAY-BY AND BUS BAY</h2>	
Section		Date				
Drawing No. HD/SD/10/04B						




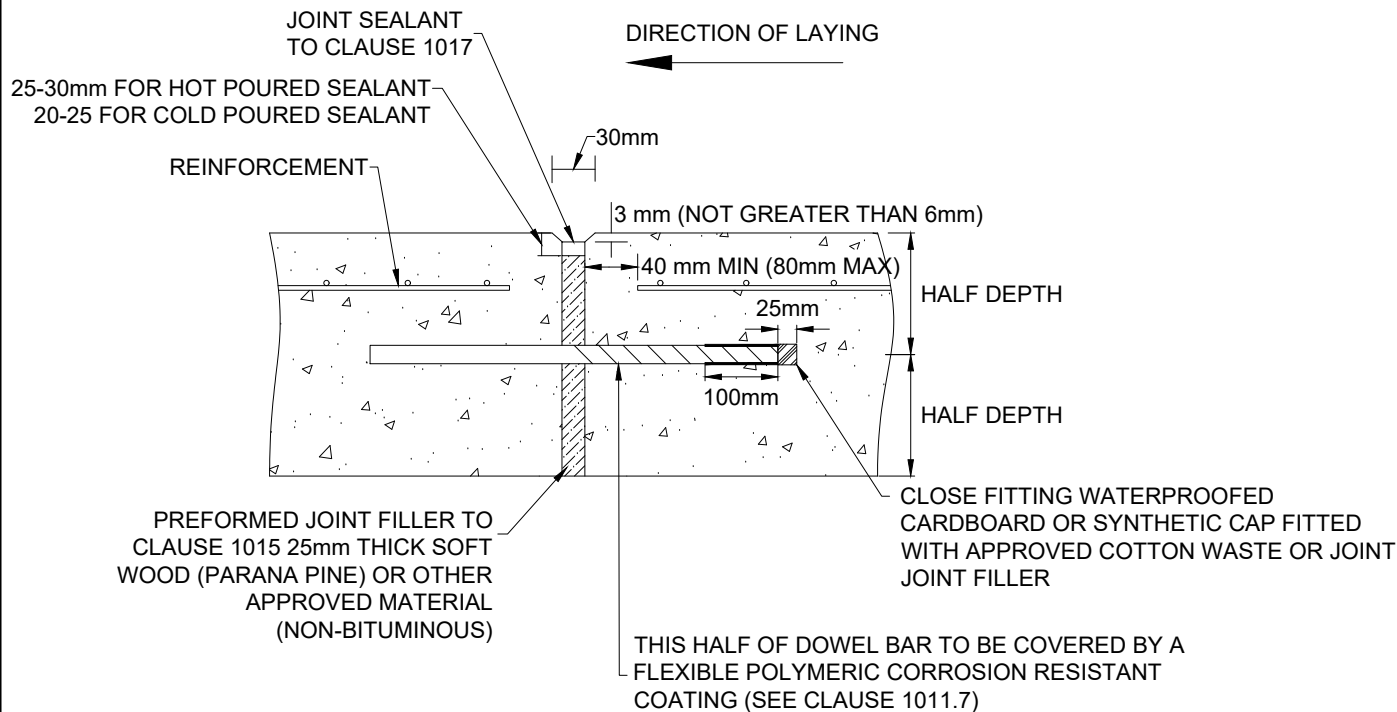
GENERAL REQUIREMENTS

1. DOWEL BARS TO BE GRADE 250 STEEL COMPLYING WITH BS EN 13877-3.
2. THE DETAIL APPLIES FOR AN UN-REINFORCED SLAB WITH THE REINFORCEMENT OMITTED.
3. THE CRACK INDUCER IS TO BE OMITTED FROM THE JOINTS WITH SAWN GROOVES
4. THE COMBINED DEPTH OF THE CRACK INDUCER FILLET AND SURFACE GROOVE SHALL BE BETWEEN ONE QUARTER AND ONE THIRD OF THE SLAB DEPTH. IN SLABS OF GRAVEL AGGREGATE, SAWN GROOVES ARE NOT PERMITTED.
5. IN REINFORCED SLABS OF THICKNESS 165mm OR LESS DOWEL BARS ARE TO BE 85mm DEEP.
6. PREFORMED COMPRESSION SEALS USED IN LIEU OF THE SEALANT AND CAULKING SHOWN EXTEND TO THE DEPTH REQUIRED IN ACCORDANCE WITH CLAUSE 1016.

DIMENSIONS OF DOWEL BAR AT 300mm CENTRES

SLAB THICKNESS (mm)	DIAMETER (mm)	PROPOSITIONED BAR LENGTH (mm)	BARS VIBRATED INTO CONCRETE LENGTH (mm)
LESS THAN 150	NIL	NIL	NIL
150 >190	16	400	400
190 >240	20	550	400
240 AND OVER	25	650	400

 <p>Kirklees COUNCIL</p>	Project	<h1>STANDARD DETAILS</h1>		Scale	NOT TO SCALE	
	<p>Commercial Regulatory and Operational Service</p> <p>Highway Design Flint Street, Fartown Huddersfield, HD1 6LG</p>			Title	<h2>CONTRACTION JOINT DETAIL</h2>	
		Section	Date			
		Drawing No.	HD/SD/10/05B			



DIMENSIONS OF DOWEL BAR

SLAB THICKNESS (mm)	DIAMETER (mm)	LENGTH (mm)
LESS THAN 150	NIL	NIL
150 >190	20	550
190 >240	25	650
240 AND OVER	32	750

GENERAL REQUIREMENTS

1. STEEL DOWEL BARS COMPLYING WITH BS EN 13877-3 AT 300mm CTS. SYMMETRICALLY PLACED ABOUT JOINT CENTERS.
2. THE DETAIL APPLIES FOR AN UN-REINFORCED SLAB WITH THE REINFORCEMENT OMITTED.
3. PREFORMED COMPRESSION SEALS SHALL NOT BE USED IN EXPANSION JOINTS
4. IN REINFORCED SLABS OF THICKNESS 165mm OR LESS DOWEL BARS ARE TO BE 85mm DEEP.



STANDARD DETAILS

Scale
NOT TO SCALE

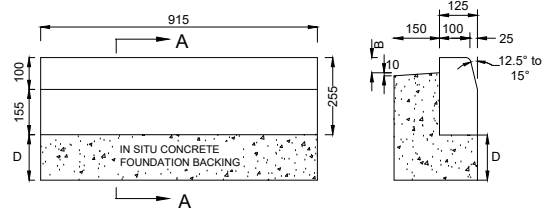
Drawn AKKV	Checked
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Commercial Regulatory and Operational Service
Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title
EXPANSION JOINT DETAIL

Section HD	Date JAN 22
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Drawing No. HD/SD/10/06B

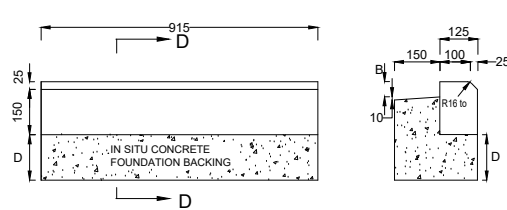


FRONT ELEVATION

SECTION A-A

KERB TYPE 1

K1/ DEPTH OF BED(mm)

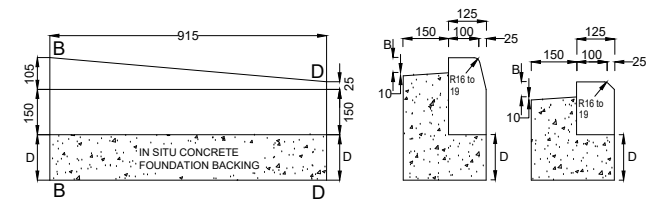


FRONT ELEVATION

SECTION D-D

KERB TYPE 4

K4/ DEPTH OF BED(mm)

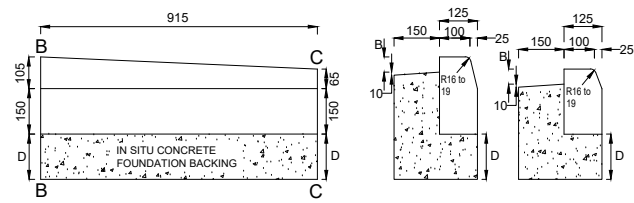


FRONT ELEVATION

SECTION B-B SECTION D-D

KERB TYPE 7

K7/ DEPTH OF BED(mm)

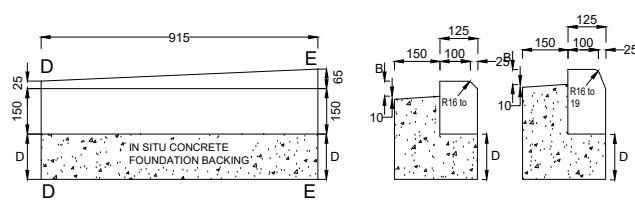


FRONT ELEVATION

SECTION B-B SECTION C-C

KERB TYPE 2

K2/ DEPTH OF BED(mm)

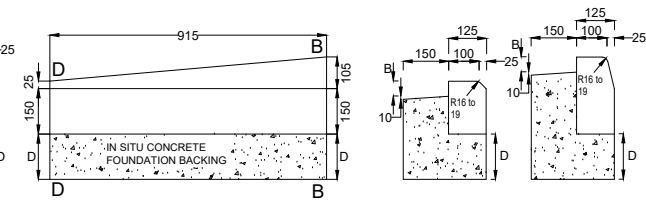


FRONT ELEVATION

SECTION D-D SECTION E-E

KERB TYPE 5

K5/ DEPTH OF BED(mm)

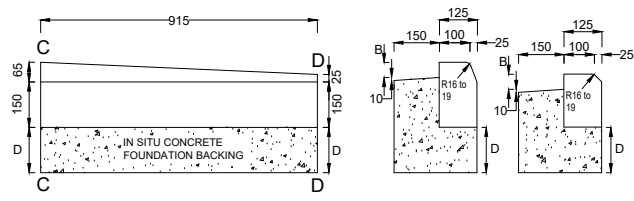


FRONT ELEVATION

SECTION D-D SECTION B-B

KERB TYPE 8

K8/ DEPTH OF BED(mm)

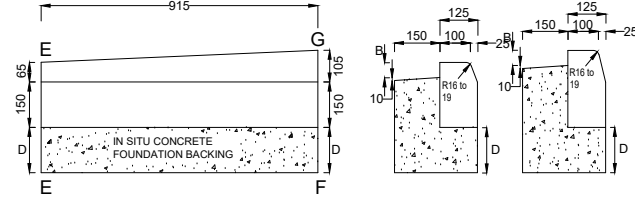


FRONT ELEVATION

SECTION C-C SECTION D-D

KERB TYPE 3

K3/ DEPTH OF BED(mm)



FRONT ELEVATION

SECTION E-E SECTION F-F

KERB TYPE 6

K6/ DEPTH OF BED(mm)

NOTE

1. ALL DIMENSIONS ARE IN MILLIMETRES
2. THE DEPTH 'D' OF FOUNDATIONS, BEDS, CHANNELS ETC. SHALL UNLESS OTHERWISE SHOWN, BE MEASURED AT THE EDGE OF THE CARRIAGEWAY OR HARD SHOULDER DEFINED ON THE DRAWINGS AND SHALL INCLUDE THE MORTAR BED WHERE APPROPRIATE.
3. ALTHOUGH THE UNDERSIDE OF FOUNDATIONS ARE SHOWN HORIZONTAL ON THE STANDARD DETAIL DRAWINGS. ALLOWANCE MUST BE MADE FOR CROSS-FALLS OF FORMATIONS AND PAVEMENT COURSES AND VERGES.
4. WHERE A CONCRETE KERB OR CHANNEL ABUTS ROLLED ASPHALT SURFACING COURSE, IT SHALL BE PAINTED WITH TACK COAT OF 70/100 PEN. BITUMEN.
5. FOR KERBING AND CHANNELLING INCLUDING THE SUFFIX 'V', GRADE C25/30 CONCRETE IS TO BE USED IN THE FOUNDATION AND BACKING.
6. FOR KERB ADJACENT TO FLAGGED OR BLOCK PAVED AREAS, DIMENSION 'B' SHALL BE 15mm GREATER THAN DEPTH OF PRECAST ELEMENT OR UNIT BUT NOT LESS THAN 50mm. IN ALL OTHER SITUATIONS 'B' = 50.
7. INSITU CONCRETE SHALL BE CLASS C8/10 OR ST2.
8. THE MINIMUM LENGTH OF PRECAST CONCRETE KERBS, CHANNELS AND EDGINGS USED SHALL BE 300mm.



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV/AA

Checked

DB

Commercial Regulatory and Operational Service

Title

KERBS 01

Section

HD

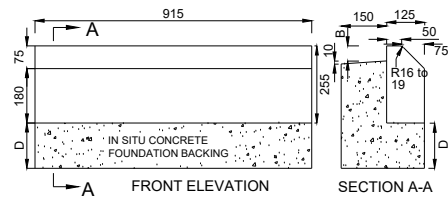
Date

JAN 22

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

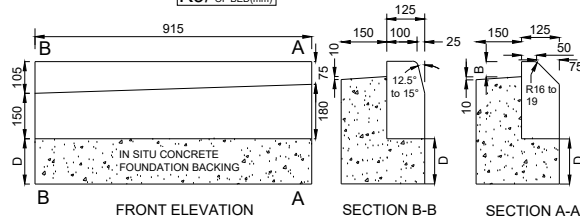
Drawing No.

HD/SD/11/01B



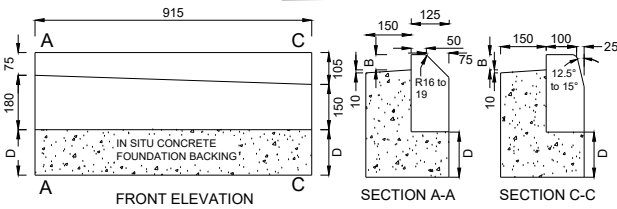
KERB TYPE 9

K9/DEPTH OF BED(mm)



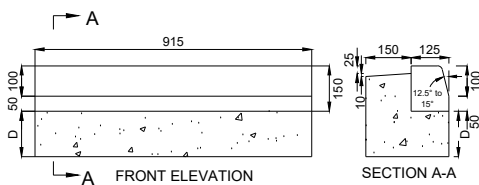
KERB TYPE 10

K10/DEPTH OF BED(mm)



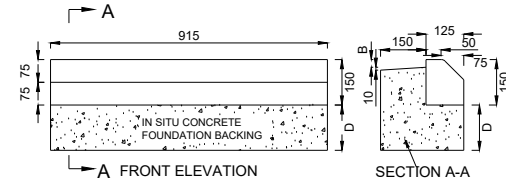
KERB TYPE 11

K11/DEPTH OF BED(mm)



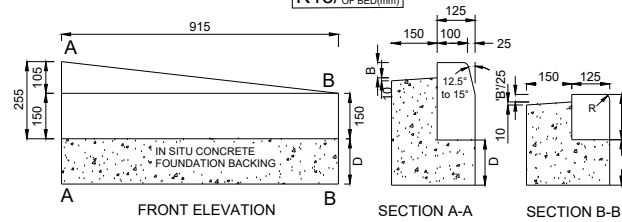
KERB TYPE 12

K12/DEPTH OF BED(mm)



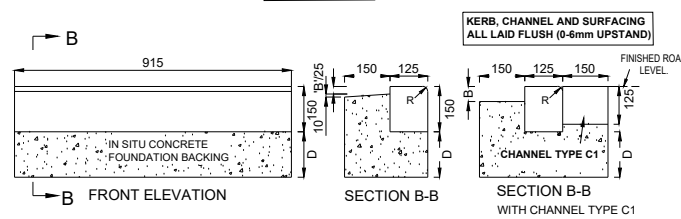
KERB TYPE 13

K13/DEPTH OF BED(mm)



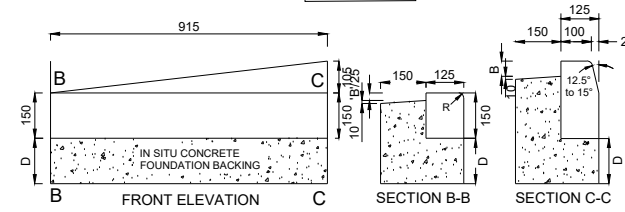
KERB TYPE 14

K14/DEPTH OF BED(mm)



KERB TYPE 15

K15/DEPTH OF BED(mm)



KERB TYPE 16

K16/DEPTH OF BED(mm)

NOTE

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. THE DEPTH "D" OF FOUNDATIONS, BEDS, CHANNELS ETC. SHALL UNLESS OTHERWISE SHOWN, BE MEASURED AT THE EDGE OF THE CARRIAGEWAY OR HARD SHOULDER DEFINED ON THE DRAWINGS, AND SHALL INCLUDE THE MORTAR BED WHERE APPROPRIATE.
3. ALTHOUGH THE UNDERSIDE OF FOUNDATIONS ARE SHOWN HORIZONTAL ON THE STANDARD DETAIL DRAWINGS, ALLOWANCE MUST BE MADE FOR CROSS-FALLS OF FORMATIONS AND PAVEMENT COURSES AND VERGES.
4. WHERE A CONCRETE KERB OR CHANNEL ABUTS ROLLED ASPHALT SURFACE COURSE, IT SHALL BE PAINTED WITH A TACK COAT.
5. SEE DRG. No. HD/SD/11/06 FOR DETAILS OF DROP CROSSINGS.
6. KERBS AND CHANNELS, INCLUDING THE SUFFIX "V", GRADE C25/30 CONCRETE IS TO BE USED IN THE FOUNDATION AND BACKING.
7. INSITU CONCRETE SHALL BE CLASS C8/10 OR ST2.
8. FOR KERB ADJACENT TO FLAGGED OR BLOCK PAVED AREAS, DIMENSION 'B' SHALL BE 15mm GREATER THAN DEPTH OF PRECAST ELEMENT OR UNIT. IN ALL OTHER SITUATIONS DEPTH AS SHOWN
9. PRECAST CONCRETE KERBS, CHANNELS, AND EDGINGS SHALL NOT BE CUT TO A LENGTH < 300mm.



STANDARD DETAILS

Commercial Regulatory and Operational Service
Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Project

Title

KERBS 02

Scale

NOT TO SCALE

Drawn

AKKV/AA

Checked

DB

Section

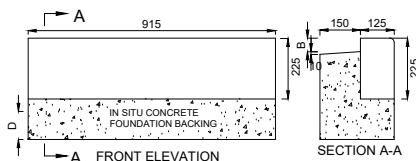
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Date

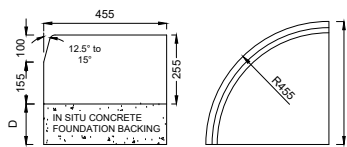
AUG 22

Drawing No.

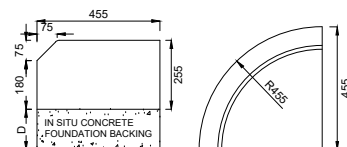
HD/SD/11/02B



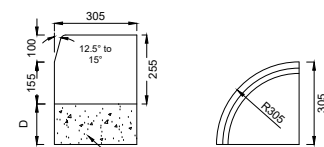
KERB TYPE 17
K17/DEPTH OF BED(mm)



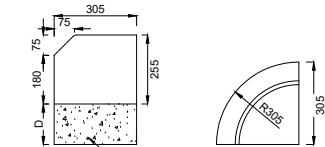
KERB TYPE 21 - QUADRANT
K21/DEPTH OF BED(mm)



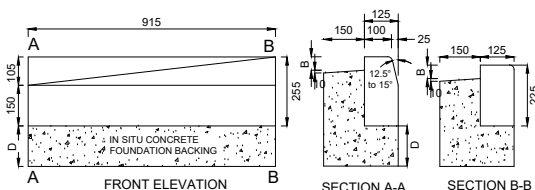
KERB TYPE 22 - QUADRANT
K22/DEPTH OF BED(mm)



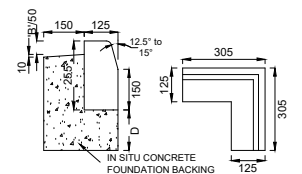
KERB TYPE 23 - QUADRANT
K23/DEPTH OF BED(mm)



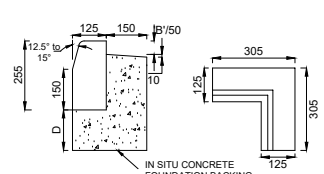
KERB TYPE 24 - QUADRANT
K24/DEPTH OF BED(mm)



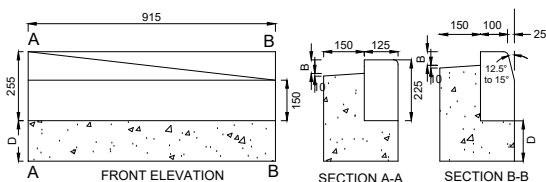
KERB TYPE 18
K18/DEPTH OF BED(mm)



KERB TYPE 25 - EXTERNAL RETURN
K25/DEPTH OF BED(mm)



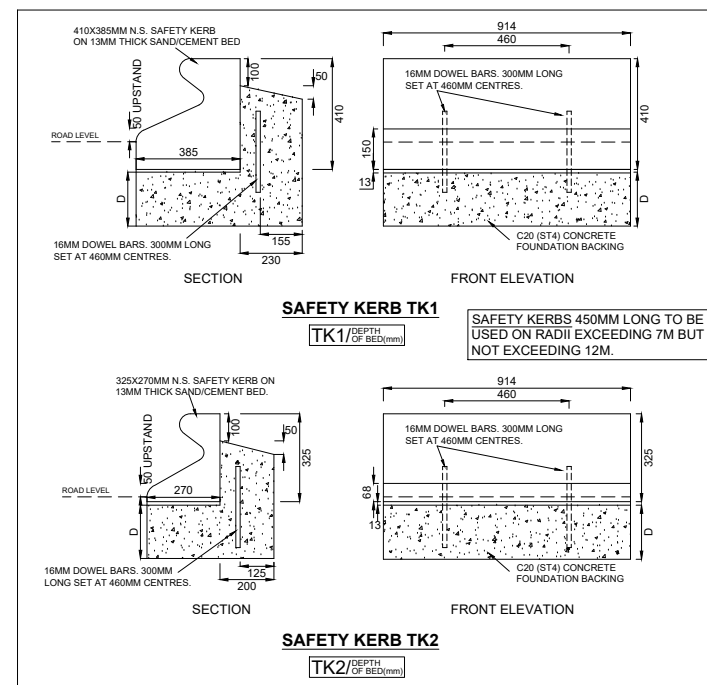
KERB TYPE 26 - INTERNAL RETURN
K26/DEPTH OF BED(mm)



KERB TYPE 19
K19/DEPTH OF BED(mm)

NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. THE DEPTH "D" OF FOUNDATIONS, BEDS, CHANNELS ETC. SHALL UNLESS OTHERWISE SHOWN, BE MEASURED AT THE EDGE OF THE CARRIAGEWAY OR HARD SHOULDER DEFINED ON THE DRAWINGS AND SHALL INCLUDE THE MORTAR BED WHERE APPROPRIATE.
3. ALTHOUGH THE UNDERSIDE OF FOUNDATIONS ARE SHOWN HORIZONTAL ON THE STANDARD PRACTICE DRAWINGS, ALLOWANCE MUST BE MADE FOR CROSS-FALLS OF FORMATIONS AND PAVEMENT COURSES AND VERGES.
4. WHERE A CONCRETE KERB OR CHANNEL ABUTS ROLLED ASPHALT WEARING COURSE, IT SHALL BE PAINTED WITH A TACK COAT OF 70/100 PEN. PAVING GRADE BITUMEN.
5. INSITU CONCRETE SHALL BE CLASS C8/10 OR ST2.
6. KERBING AND CHANNELLING INCLUDING THE SUFFIX "V", GRADE C25/30 CONCRETE IS TO BE USED IN THE FOUNDATION AND BACKING.
7. FOR KERB ADJACENT TO FLAGGED OR BLOCK PAVED AREAS, DIMENSION 'B' SHALL BE 15mm GREATER THAN DEPTH OF PRECAST ELEMENT OR UNIT BUT NOT LESS THAN 50mm. IN ALL OTHER SITUATIONS 'B' = 50.
8. SAFETY KERB - 450mm LONG TO BE USED ON RADIUS EXCEEDING 7m BUT NOT EXCEEDING 12m.



STANDARD DETAILS

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Huddersfield, HD1 6LG

Project

Title

KERBS 03

Scale

NOT TO SCALE

Drawn

AKKV/AA

Checked

DB

Section

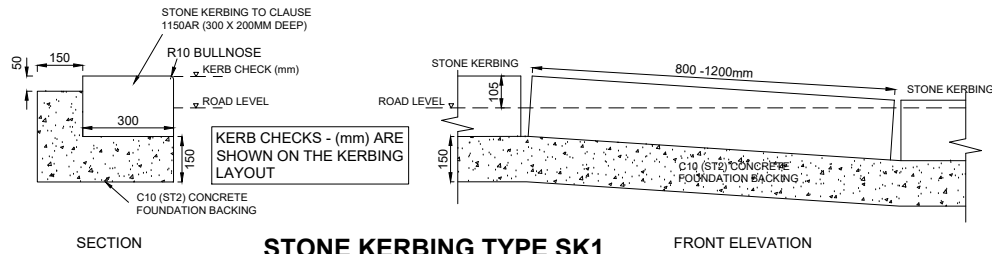
HD

Date

JAN 22

Drawing No.

HD/SD/11/03B



SECTION

STONE KERBING TYPE SK1

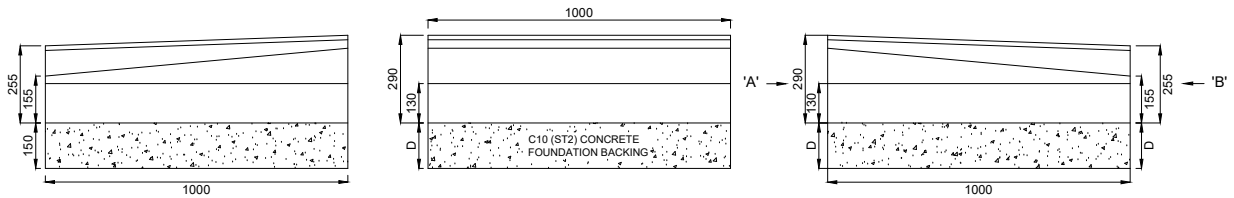
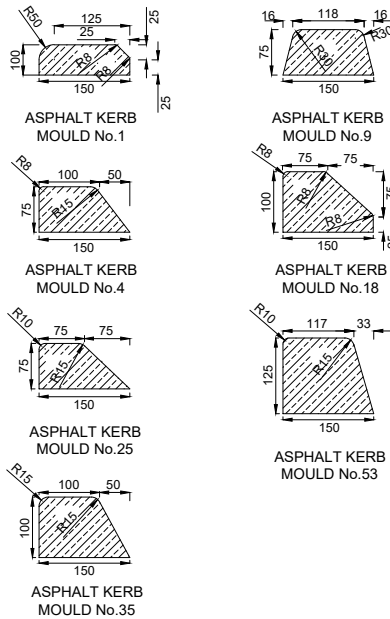
FRONT ELEVATION

LENGTH OF KERBS
800 - 1200mm on straight runs and
tapers. 500 - 600mm for radii.

NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. THE DEPTH "D" OF FOUNDATIONS, BEDS, CHANNELS ETC. SHALL UNLESS OTHERWISE SHOWN, BE MEASURED AT THE EDGE OF THE CARRIAGEWAY OR HARD SHOULDER DEFINED ON THE DRAWINGS AND SHALL INCLUDE THE MORTAR BED WHERE APPROPRIATE. MIN 150mm
3. ALTHOUGH THE UNDERSIDE OF FOUNDATIONS ARE SHOWN HORIZONTAL ON THE STANDARD DETAIL DRAWINGS, ALLOWANCE MUST BE MADE FOR CROSS-FALLS OF FORMATIONS AND PAVEMENT COURSES AND VERGES.
4. WHERE A CONCRETE KERB OR CHANNEL ABUTS ROLLED ASPHALT WEARING COURSE, IT SHALL BE PAINTED WITH A TACK COAT OF 70/100 PEN. PAVING GRADE BITUMEN.
5. INSITU CONCRETE TO BE CLASS C8/10 OR ST2.
6. KERBING AND CHANNELLING INCLUDING THE SUFFIX "V", GRADE C25/30 CONCRETE IS TO BE USED IN THE FOUNDATION AND BACKING.
7. FOR KERB ADJACENT TO FLAGGED OR BLOCK PAVED AREAS, DIMENSION 'B' SHALL BE 15mm GREATER THAN DEPTH OF PRECAST ELEMENT OR UNIT BUT NOT LESS THAN 50mm. IN ALL OTHER SITUATIONS 'B' = 50.
8. INSTALLATION ACCESS KERB TO BE MANUFACTURES INSTRUCTIONS.

ASPHALT KERBS



ACCESS KERB TYPE KB1

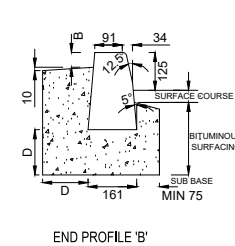
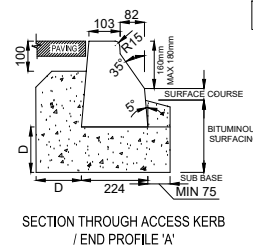
ACCESS KERB TYPE KB2

ACCESS KERB TYPE KB3

KB1/ DEPTH OF BED(mm)

KB2/ DEPTH OF BED(mm)

KB3/ DEPTH OF BED(mm)



NOTE:
125mm HALF BATTER FACE KERBS PROVIDE AS AN ACCESS KERB AT SITES WHERE ALTERNATIVES OPTIONS ARE NOT CONSIDERED TO BE AVAILABLE.
THE 125mm FACE KERB IS RECOMMENDED ON THE BASIS OF BEING THE MINIMUM HEIGHT REQUIRED IN ORDER TO ENSURE AN ABSOLUTE MAXIMUM 1 IN 12 GRADIENT FOR THE DEPLOYMENT OF BUS PLATFORMS RAMPS.

ACCESS KERBS



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV/AA

Checked

DB

Commercial Regulatory and Operational Service

Highway Design
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Title

KERBS 04

Section

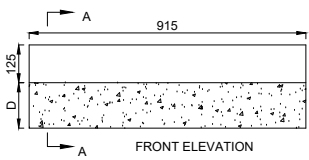
HD

Date

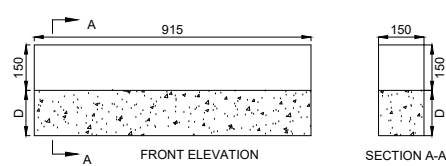
JAN 22

Drawing No.

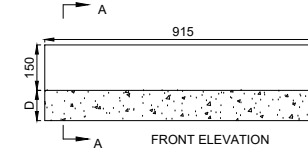
HD/SD/11/04B



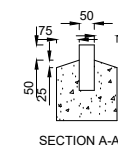
CHANNEL TYPE 1
C1/ DEPTH OF BED(mm)



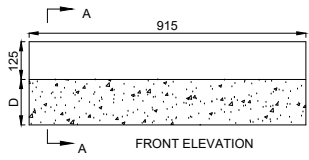
CHANNEL TYPE 5
C5/ DEPTH OF BED(mm)



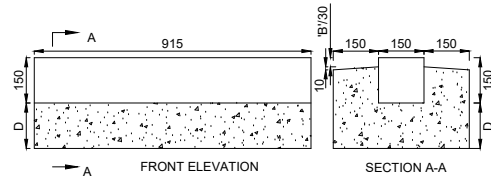
EDGING TYPE 1
E1/ DEPTH OF BED(mm)



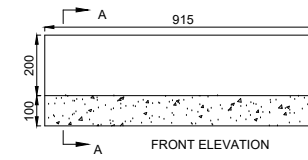
EDGING TYPE 2
E2/ DEPTH OF BED(mm)



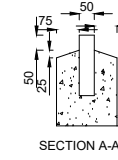
CHANNEL TYPE 2
C2/ DEPTH OF BED(mm)



CHANNEL TYPE 6
C6/ DEPTH OF BED(mm)



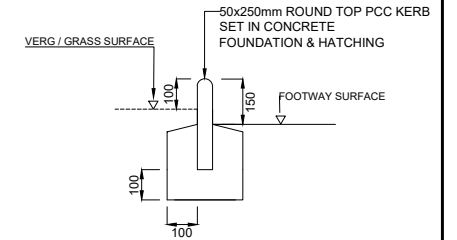
EDGING TYPE 3
E3



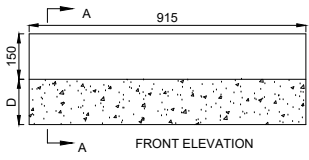
EDGING TYPE 4
E4

NOTE

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. INSITU CONCRETE TO BE CLASS C8/10 OR ST2.
3. WHERE THE SUFFIX "V" IS INCLUDED, GRADE C25/30 CONCRETE IS TO BE USED IN THE FOUNDATION AND BACKING.
4. TREATMENT OF TIMBER TO BE IN ACCORDANCE WITH CLAUSE 311 OF THE SPECIFICATION
5. TIMBER EDGINGS SHALL BE FIXED TO STAKES WITH 75mm GALVANISED STEEL NAILS, TWO PER STAKE.



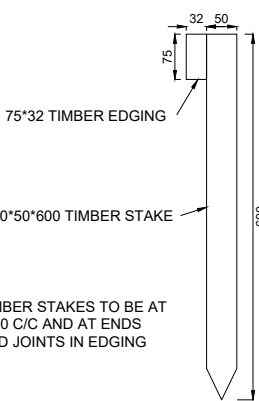
EDGING TYPE 5
E5



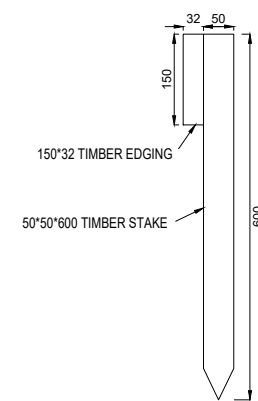
CHANNEL TYPE 3
C3/ DEPTH OF BED(mm)

NOTE

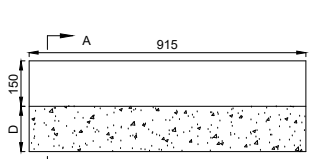
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. THE DEPTH 'D' OF FOUNDATIONS, BEDS, CHANNELS ETC. SHALL UNLESS OTHERWISE SHOWN, BE MEASURED AT THE EDGE OF THE CARRIAGEWAY OR HARD SHOULDER DEFINED ON THE DRAWINGS AND SHALL INCLUDE THE MORTAR BED WHERE APPROPRIATE.
3. ALTHOUGH THE UNDERSIDE OF FOUNDATIONS ARE SHOWN HORIZONTAL ON THE STANDARD DETAIL DRAWINGS, ALLOWANCE MUST BE MADE FOR CROSS-FALLS OF FORMATIONS AND PAVEMENT COURSES AND VERGES.
4. WHERE A CONCRETE CHANNEL ABUTS ROLLED ASPHALT WEARING COURSE, IT SHALL BE PAINTED WITH A TACK COAT OF 70/100 PEN. PAVING GRADE BITUMEN.
5. STANDARD 125 x 150 BULLNOSED KERBS SHALL NOT BE PERMITTED AS CHANNELS.
6. FOR CHANNELLING INCLUDING THE SUFFIX "V", GRADE C25/30 CONCRETE IS TO BE USED IN THE FOUNDATION AND BACKING.
7. INSITU CONCRETE TO BE CLASS C8/10 OR ST2.
8. FOR CHANNELS ADJACENT TO FLAGGED OR BLOCK PAVED AREAS, DIMENSION 'B' SHALL BE 15mm GREATER THAN DEPTH OF PRECAST ELEMENT OR UNIT. IN ALL OTHER SITUATIONS DEPTH AS SHOWN



TIMBER STAKES TO BE AT 1000 C/C AND AT ENDS AND JOINTS IN EDGING



TIMBER STAKES TO BE AT 1000 C/C AND AT ENDS AND JOINTS IN EDGING



CHANNEL TYPE 4
C4/ DEPTH OF BED(mm)



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Project

STANDARD DETAILS

Title

CHANNEL AND EDGING

Scale

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Drawn

AKKV

Checked

DB

Section

HD

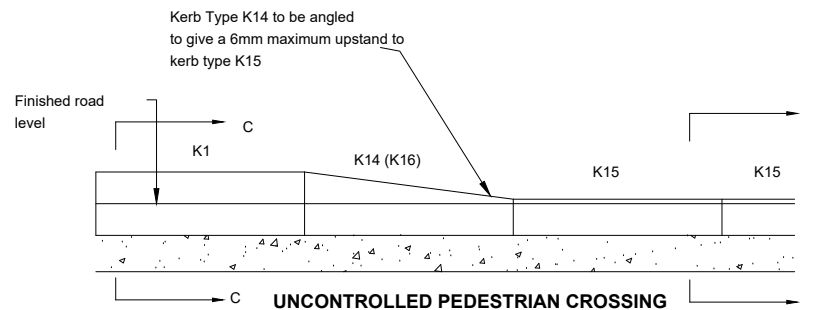
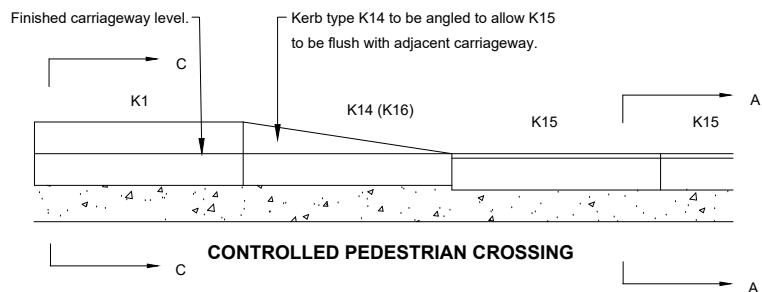
Date

APRIL 22

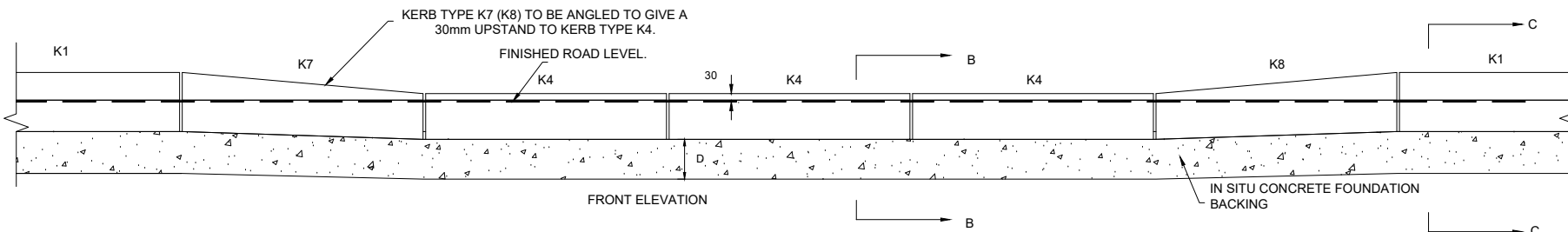
Drawing No.

HD/SD/11/05B

PEDESTRIAN DROPPED CROSSING (1 DROPPER + N CENTRES = PC/N)

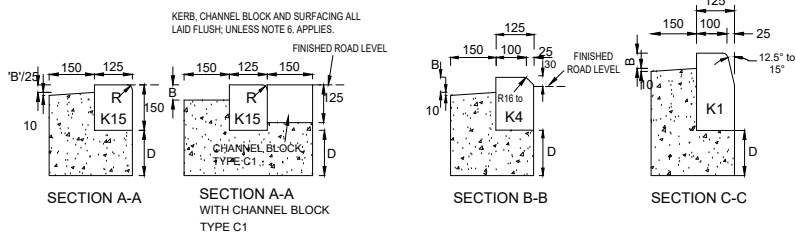


VEHICULAR DROPPED CROSSING (1 DROPPER + N CENTRES = VC/N)



NOTE

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. WHERE THE SUFFIX "V" IS INCLUDED GRADE C25/30 CONCRETE SHALL BE USED IN FOUNDATIONS AND BACKING. ALL OTHER INSITU CONCRETE SHALL BE CLASS C8/10 OR ST2
3. CENTRE KERBS TO BE HALF KERB LENGTH WHEN LAID TO RADII LESS THAN 15 METRES.
4. NUMBER OF CENTRE KERBS WILL VARY.
5. K15 KERBS TO BE SET FLUSH TO CHANNEL BLOCKS EXCEPT WHERE BACKFALL TO FOOTWAY IS UNAVOIDABLE IF SO SET K15 KERBS 6mm ABOVE CHANNEL BLOCKS FOR DRAINAGE PURPOSES
6. CHANNEL BLOCKS SHALL NOT BE PROVIDED IF CARRIAGEWAY SURFACING IS NOT INCLUDED IN THE WORKS.



STANDARD DETAILS

Scale
NOT TO SCALE

Drawn
AKKV/AA

Checked
DB

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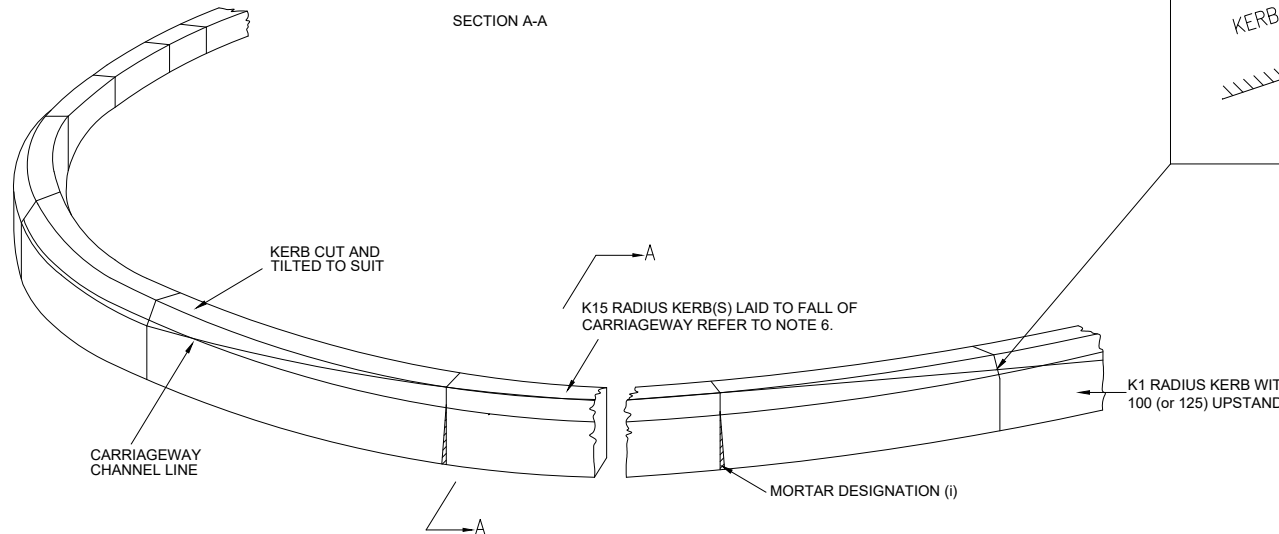
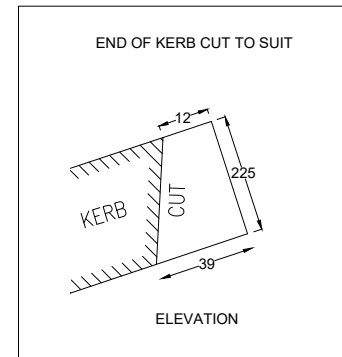
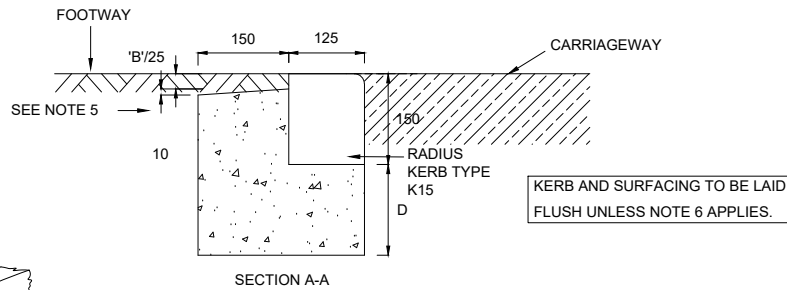
Project
KERB TYPE PC & VC

Title

Section
HD

Date
AUG 22

Drawing No. HD/SD/11/06B



DROPPED KERB CROSSING TO RADIUS INCLUDING 'N' No. CENTRE KERBS.

RC / N

NOTE

1. APPROPRIATE K15 RADIUS KERBS TO BE USED THROUGHOUT CROSSING.
2. BEDDING AND BACKING TO BE AS SHOWN IN SECTION A-A THROUGHOUT CROSSING.
3. ALL DIMENSIONS ARE IN MILLIMETRES.
4. WHERE SUFFIX "V" IS INCLUDED GRADE C25/30 CONCRETE IS TO BE USED IN FOUNDATIONS AND BACKING. ALL OTHER INSITU CONCRETE TO BE CLASS C8/10 OR ST2
5. THIS DIMENSION TO BE INCREASED WHERE IT CONFLICTS WITH FOOTWAY SURFACING.
6. K15 KERBS TO BE SET FLUSH TO CHANNEL BLOCKS EXCEPT WHERE BACKFALL TO FOOTWAY IS UNAVOIDABLE IF SO SET K15 KERBS 6mm ABOVE CHANNEL BLOCKS FOR DRAINAGE PURPOSES

CHANNEL BLOCKS SHALL NOT BE PROVIDED IF CARRIAGEWAY SURFACING IS NOT INCLUDED IN THE WORKS.



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV/AA

Checked

DB

Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

**DROPPED CROSSING
RADIUS CROSSING - TYPE RC**

Section

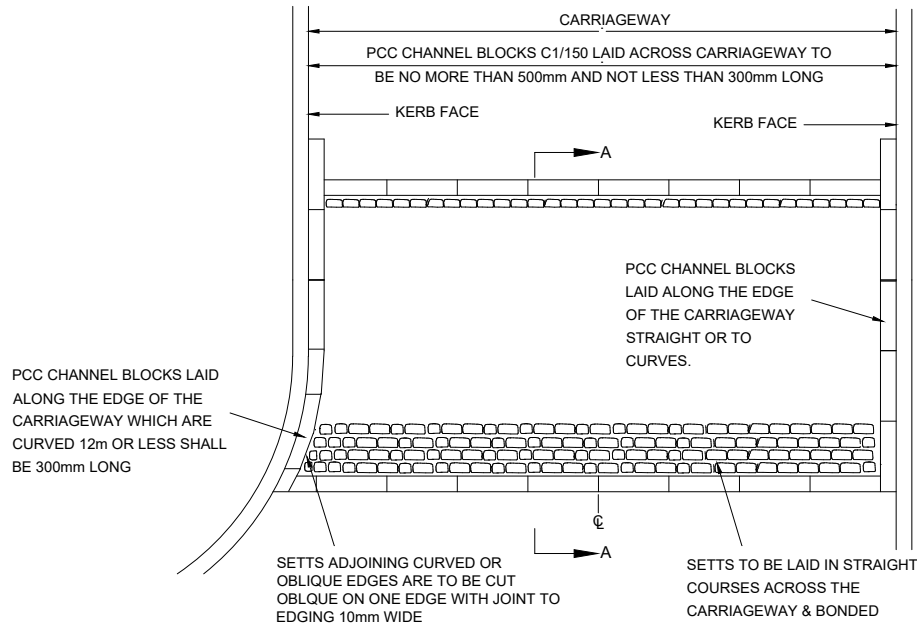
HD

Date

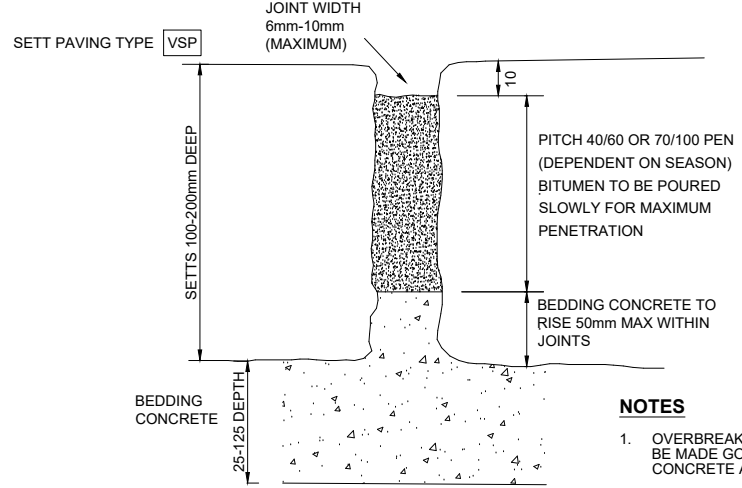
APRIL 21

Drawing No.

HD/SD/11/07B



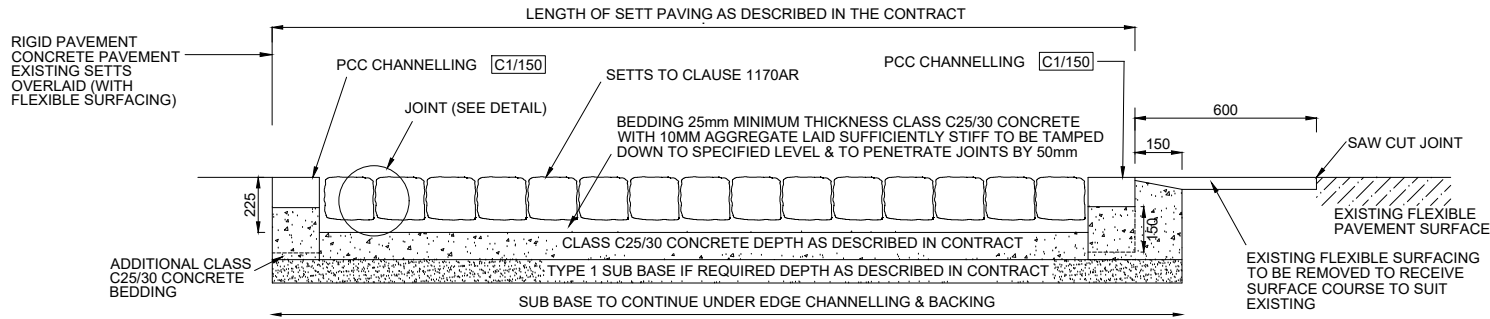
PLAN



JOINTING DETAIL

NOTES

1. OVERBREAK OF EXISTING CARRIAGEWAY TO BE MADE GOOD WITH CLASS C25/30 CONCRETE AT CONTRACTOR'S EXPENSE
2. SETTED AREAS NOT TO BE TRAFFICKED WITHIN 7 DAYS
3. CHANNEL BLOCKS MAY BE OMITTED ON THE HIGH SIDE OF SUPER ELEVATED CARRIAGEWAYS

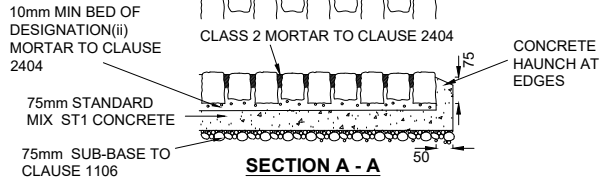
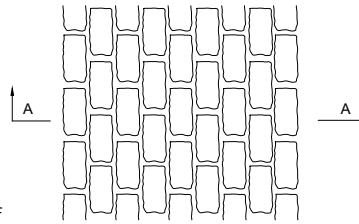


SECTION A - A

ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE SHOWN.

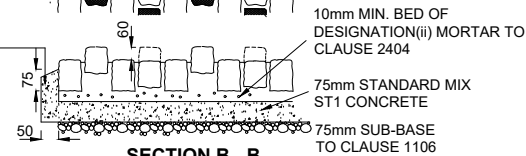
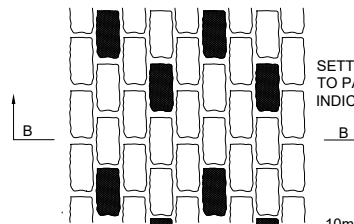
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	<p>Commercial Regulatory and Operational Service</p> <p>Highway Design Flint Street, Fartown Huddersfield, HD1 6LG</p>			Title	<h2>VEHICULAR SETT PAVING</h2>		Drawn	AKKV/AA
		Section	HD	Date			APRIL 21	
		Drawing No.	HD/SD/11/08B					

SETTS TYPE 1 SP1
STRETCHER COURSING



SECTION A - A

SETTS TYPE 3 SP3
PEDESTRIAN DETERRENT

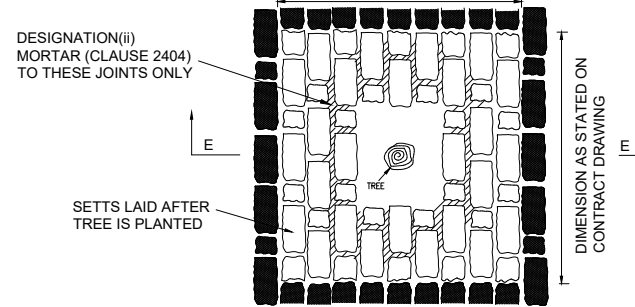


SECTION B - B

DRY LAID SETTS AROUND A TREE

IDENTIFIED ON CONTRACT DRAWINGS BY SUFFIX 'DL' VIZ 'SP1DL' 'SP2DL' ETC.

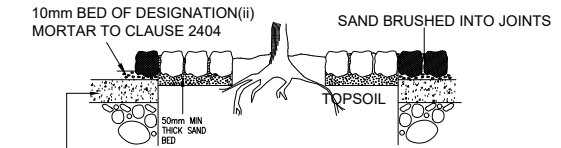
DIMENSION AS STATED ON CONTRACT DRAWING



DESIGNATION(ii) MORTAR (CLAUSE 2404) TO THESE JOINTS ONLY

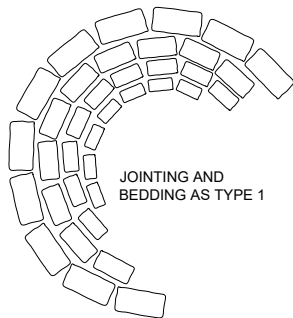
SETTS LAID AFTER TREE IS PLANTED

DIMENSION AS STATED ON CONTRACT DRAWING



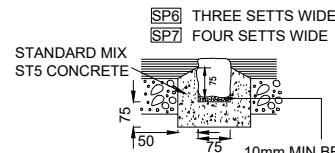
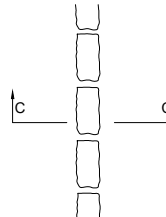
SECTION E - E

SETTS TYPE 2 SP2
CIRCULAR LAID



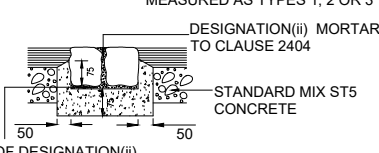
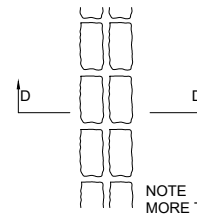
JOINTING AND BEDDING AS TYPE 1

SETTS TYPE 4 SP4
SINGLE ROW

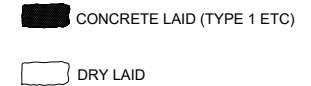


SECTION C - C

SETTS TYPE 5 SP5
DOUBLE ROW



SECTION D - D



NOTE

- JOINT WIDTH 6mm-10mm (MAXIMUM)
- MORTAR JOINT TO BE RECESSED.
- FOR CONTRACTS NOT UNDER THE D.O.T. SPECIFICATION FOR HIGHWAY WORKS, REFERENCES SHALL BE READ AS FOLLOWS:-

ST1 = C7.5
ST5 = C25
DESIGNATION(ii) Mortar



Commercial Regulatory and Operational Service
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Project

STANDARD DETAILS

Scale

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Checked

DB

Title

SETT PAVED AREAS

Section

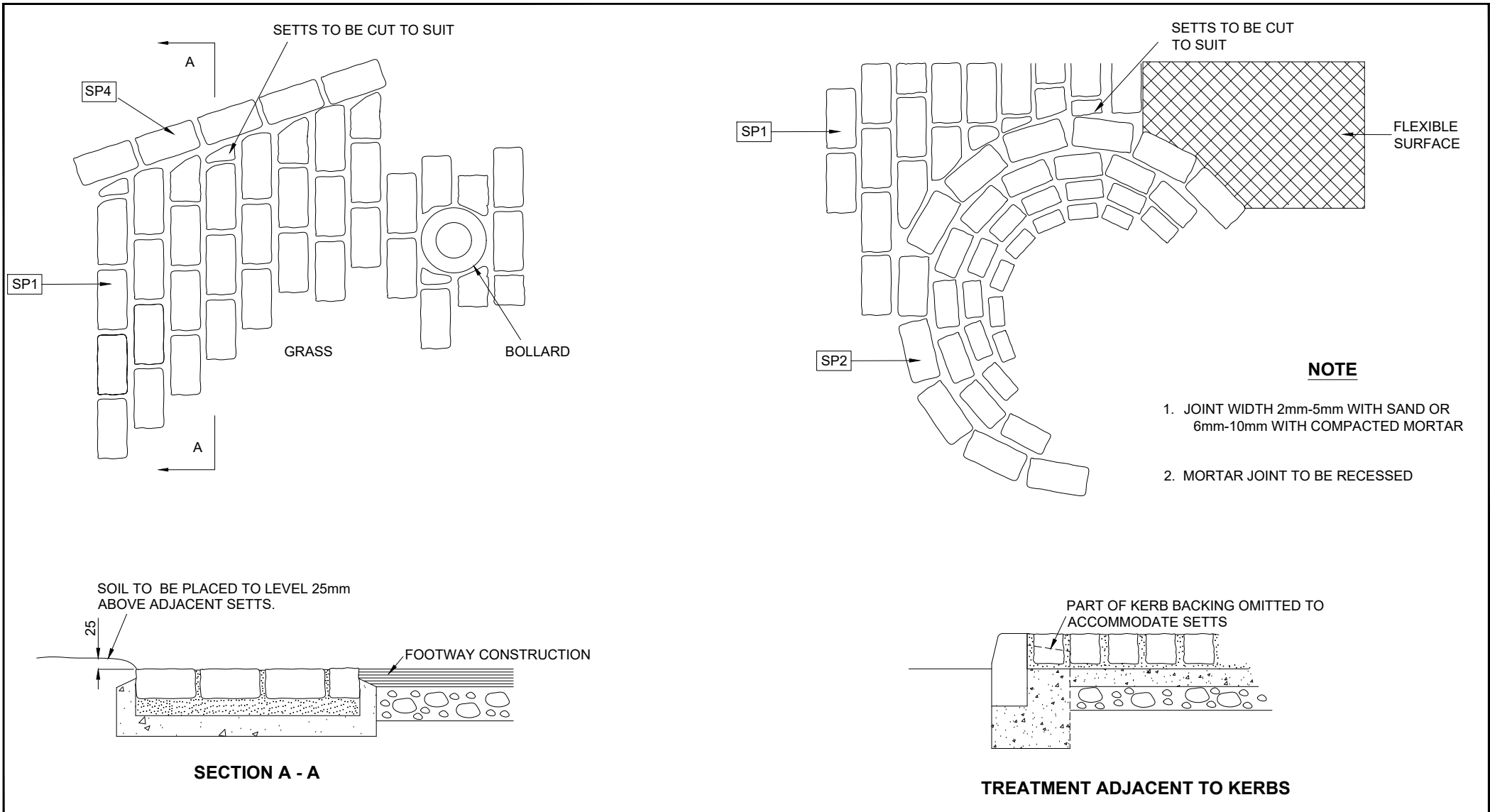
HD


Date

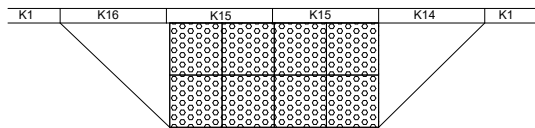
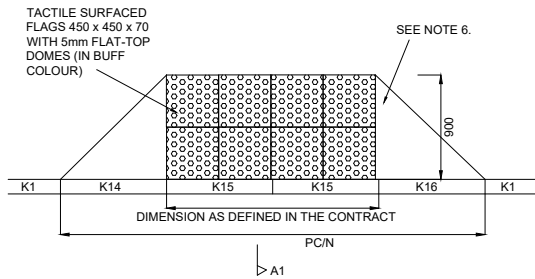
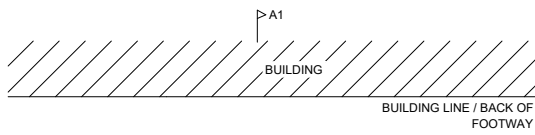
APRIL 21

Drawing No.

HD/SD/11/09B

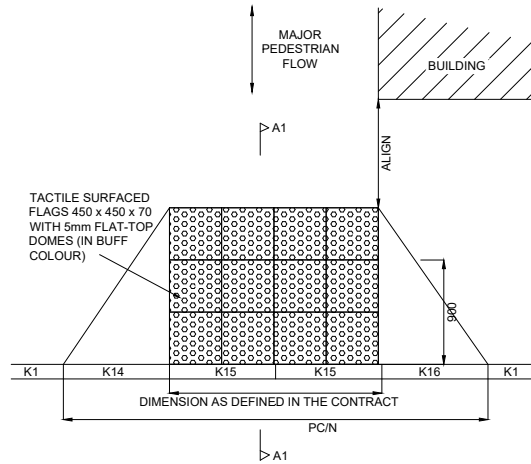


	Project	<h1>STANDARD DETAILS</h1>		Scale	
				NOT TO SCALE	
Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG	Title	<h2>SETT PAVED AREAS (TYPICAL APPLICATIONS)</h2>		Drawn	Checked
				AKKV/AA	DB
				Section	Date
		HD	APRIL 21		
		Drawing No. HD/SD/11/10B			



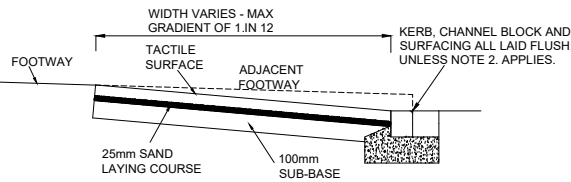
DETAIL A

DETAIL OF TACTILE PAVING WHERE CROSSING IS SITED AT RIGHT ANGLES TO THE FOOTWAY ON A STRAIGHT ROAD



DETAIL B

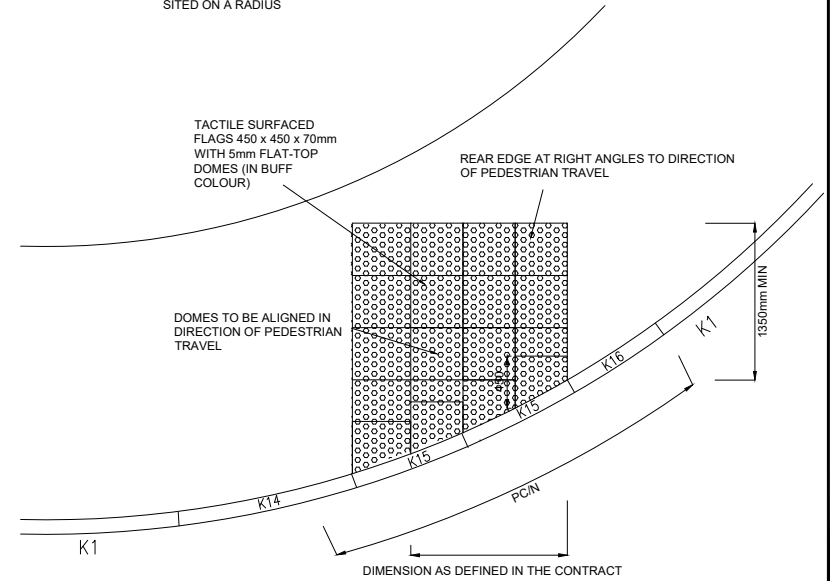
DETAIL OF TACTILE PAVING WHERE CROSSING IS SITED AT RIGHT ANGLES TO THE FOOTWAY AT GAP IN BUILDING LINE



SECTION A1 - A1

DETAIL C

TYPICAL DETAIL OF TACTILE PAVING WHERE CROSSING IS SITED ON A RADIUS



NOTES

- EDGE FLAGS (CUT) SHALL BE NOT LESS THAN 1/2 FLAG IN WIDTH. K15 KERBS TO BE SET FLUSH TO CHANNEL BLOCKS EXCEPT WHERE BACKFALL TO RAMP IS UNAVOIDABLE - IF SO SET K15 KERBS 8mm ABOVE CHANNEL BLOCKS FOR DRAINAGE PURPOSES. CHANNEL BLOCKS SHALL NOT BE PROVIDED IF POINTING RADIUS KERBS ARE PROVIDED IN PLACE OF KERBS OVER POSITIVE GRADIENTS TO PROVIDE A RAMP CROSSING THE JUNCTION, MINIMISING THE RISK OF VEHICLES OVER-RUNNING THE FOOTWAY.
- WHERE PC/N REFERENCE USED 'N' REFERS TO NUMBER OF KERBS TYPE K15. (MIN TO BE N=1.5)
- TACTILE AREA SHALL BE PAVED IN BUFF TACTILE BLOCKS TO SAME LAYOUT AND AREA IF SO SPECIFIED IN THE CONTRACT
- WHERE ADJACENT FLAGS ARE BUFF, TACTILE FLAGS TO BE IN CONTRASTING COLOUR OTHER THAN RED.
- IN CERTAIN SITUATIONS A SINGLE ROW OF TACTILE FLAGS MAY BE REQUIRED. REFER TO SCHEME GENERAL ARRANGEMENT DRAWING.
- WHERE THE BACK EDGE IS NOT PARALLEL TO THE KERB (ie THE CROSSING ITSELF IS NOT AT RIGHT ANGLES TO THE KERB) THE TACTILE SURFACE NOT BE LESS THAN 800mm IN DEPTH AT ANY POINT.



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV/AA

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DB

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Highway Design
Flint Street, Fartown
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Title

TEXTURED FOOTWAY SURFACES AT UNCONTROLLED PEDESTRIAN CROSSINGS

Section

HD

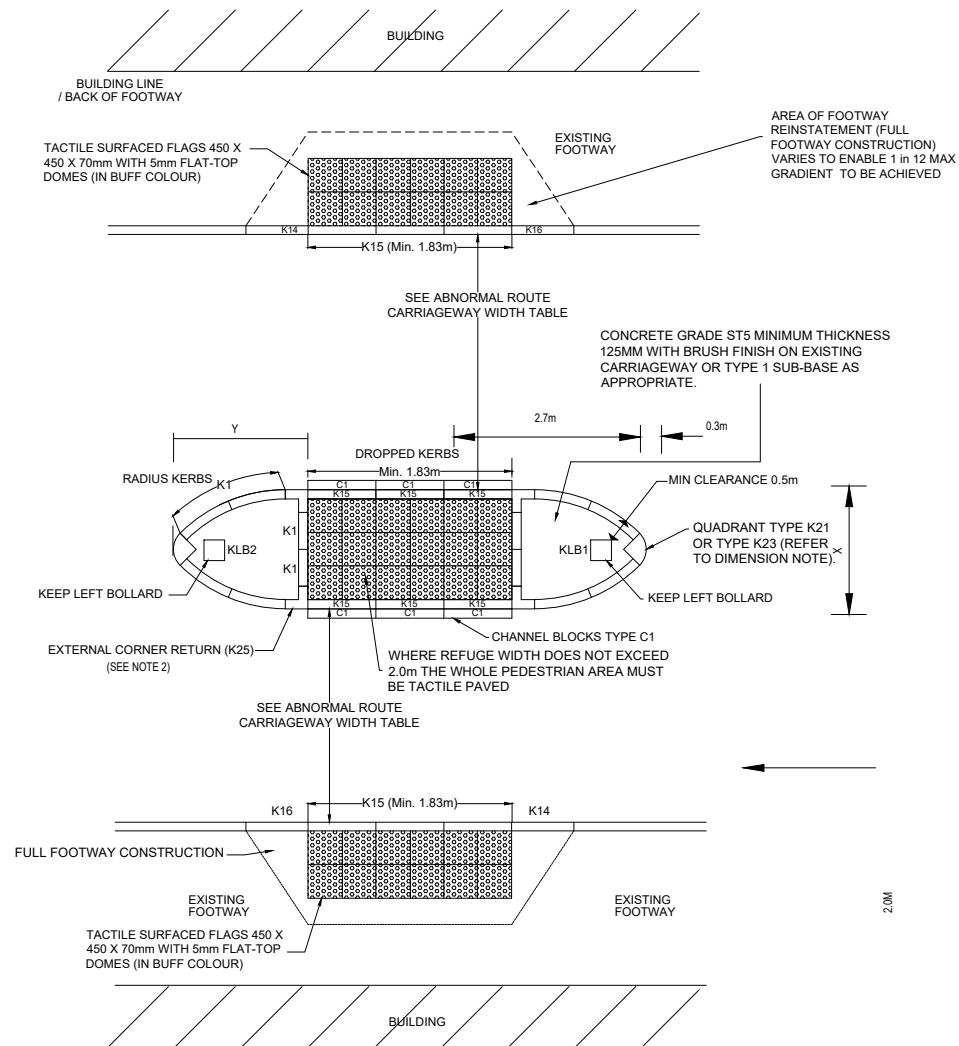
Date

APRIL 21

Drawing No.

HD/SD/11/11B

TYPICAL PEDESTRIAN REFUGE DETAIL



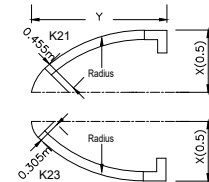
MINIMUM LANE CARRIAGEWAY WIDTH

TYPE OF ROAD	Desirable minimum carriageway lane width on both sides with 0.5m set back of street furniture (m)
RESIDENTIAL ROUTE	2.75 to 3.1m
MINOR ROUTE	2.75 to 3.1m
MAJOR/TRUNK ROUTE	4.1 to 4.3m
NATIONAL ABNORMAL ROUTE	=>4.3m

NOTE:

- A TRAFFIC LANE OF MINIMUM WIDTH 4.0m IS REQUIRED TO PERMIT SAFE OVERTAKING THE CYCLIST AT CENTRAL ISLAND. IF THE APPROACH TO THE NARROWED SECTION IS NOT STRAIGHT OR SIGNIFICANT NUMBERS OF HOVS OR BUSES ARE EXPECTED, THIS MINIMUM SHOULD BE INCREASED.

ON A WIDE ROAD ROUTE IF A WIDTH OF =>4.3M CANNOT BE ACHIEVED FLEXI BOLLARDS WITH A KNUCKLE JOINT TO THE BASE MUST BE USED



'X' PEDESTRIAN ISLAND WIDTH TO BE SPECIFIED IN THE CONTRACT

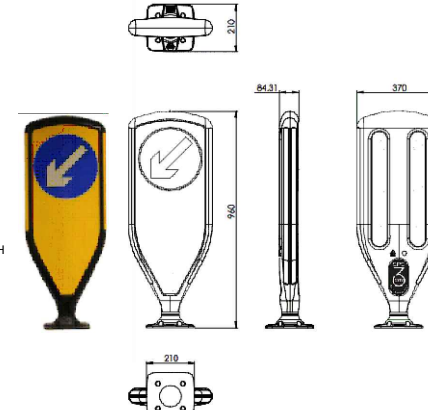
DIMENSIONS

THE DIMENSIONS OF THE ISLAND SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE.

ISLAND TYPE	TAPER DIMENSIONS AND KERBS		
	Quadrant	X	Kerbs
1/1	K23	1.84m	2 1/2 x 2.4 radius
1/2	K21	2.05m	2 1/2 x 2.4 radius
1/3	K23	2.19m	3 x 3.0 radius
1/4	K21	2.40m	3 x 3.0 radius
1/5	K23	3.07m	4 x 4.5 radius
1/6	K21	3.28m	4 x 4.5 radius
1/7	K23	3.95m	5 1/2 x 6.0 radius
1/8	K21	4.16m	5 1/2 x 6.0 radius
2/1	K23	1.50m	2 x 1.8 radius
2/2	K21	1.70m	2 x 1.8 radius
3/1	K23	1.02m	1 1/2 x 1m radius
3/2	K21	1.23m	1 1/2 x 1m radius

NOTES
ALL RADIUS KERBS ARE HB2
125MM X 255MM
125MM X 150MM (DROPPED KERBS)

Keep Left Bollard



BOLLARD TYPE WITH KEEP LEFT ASPECT (DIA-610) TO BE DE-ILLUMINATED SELF-RIGHTING BOLLARDS (e.g. 'SPS 3SIXTY (SIGNPOST) OR FLEXABOLL (PUIDSEY DIAMOND)) BOLLARD MUST BE ILLUMINATED BY USE OF RETROREFLECTING MATERIAL

NOTES

- THE FINISHED UPSTAND OF KERBS TO THE OUTSIDE OF THE PEDESTRIAN REFUGE ISLANDS SHALL BE 100MM OR 125MM, EXCEPT THE KERBS TYPE K15, WHICH SHALL BE FLUSH WITH CARRIAGEWAY SURFACE. CHANNEL BLOCKS SHALL NOT BE PROVIDED IF CARRIAGEWAY SURFACING IS NOT INCLUDED IN THE WORKS.
- WHERE THE USE OF EXTERNAL RETURN KERBS TYPE K25 IS NOT APPROPRIATE DUE TO THE LONGFALL AND CROSSFALL OF THE CARRIAGEWAY, K1 KERBS SHALL BE USED, MITRED TO SUIT.
- BOLLARDS SHALL BE AS SPECIFIED IN APPENDIX 12/1 AND SHALL CONFORM TO CLAUSE 12/10.
- FIXING OF BOLLARDS SHALL BE AS SHOWN ABOVE.
- CENTRE REFUGE BEACON SHOULD ONLY BE CONSIDERED AFTER CONSULTATION WITH THE CASUALTY REDUCTION UNIT AND STREET LIGHTING UNIT. IF REQUIRED IT SHALL BE AS SPECIFIED IN APPENDIX 12/4 AND SHALL CONFORM TO CLAUSE 12/4.
- THE PEDESTRIAN REFUGE ISLANDS MUST BE A MINIMUM OF 1500mm IN WIDTH TO BE ABLE TO CATER FOR WHEELCHAIR USERS, BUT PREFERABLY 2000mm IN WIDTH.



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

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Title

PEDESTRIAN ISLAND/REFUGE DETAIL

Section

HD

Date

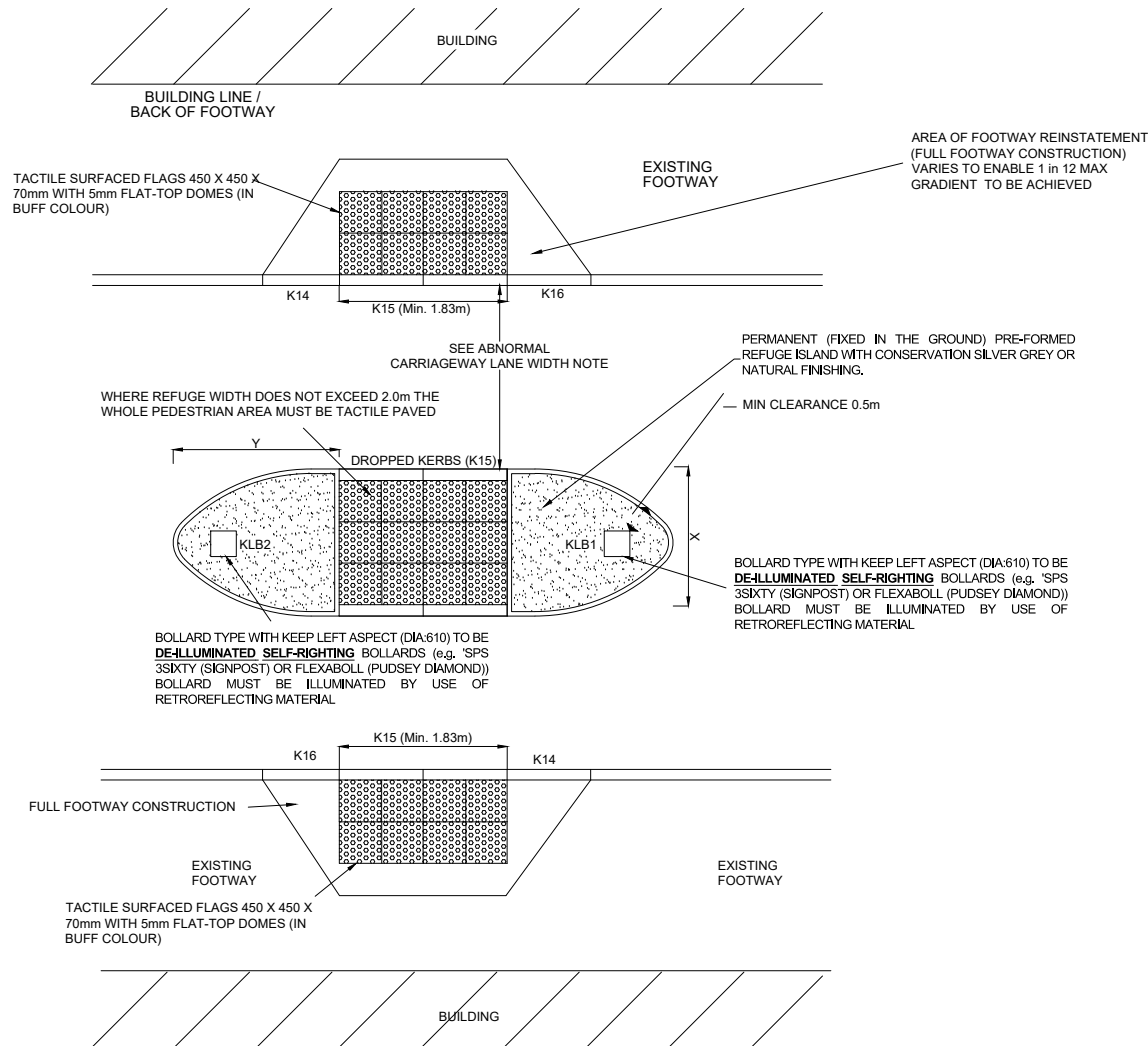
AUG 22

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HD/SD/11/12C

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Flint Street, Fartown
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PRE-FORMED REFUGE ISLAND



DIMENSIONS

THE DIMENSIONS OF THE ISLAND SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE, OTHERWISE THE 'X' PEDESTRIAN ISLAND WIDTH TO BE SPECIFIED IN THE CONTRACT (MINIMUM 1.0m WIDE)

ISLAND TYPE	DIMENSIONS	
	Y (LENGTH)	X (WIDTH)
PRG 1	1200 mm	1200 mm
PRG 2	1500 mm	1500 mm
PRG 3	1800 mm	1800 mm

NOTES

- BOLLARDS SHALL BE AS SPECIFIED IN APPENDIX 12/1 AND SHALL CONFORM TO CLAUSE 1210.
- CENTRE REFUGE BEACON SHOULD ONLY BE CONSIDERED AFTER CONSULTATION WITH THE CASUALTY REDUCTION UNIT AND STREET LIGHTING UNIT. IF REQUIRED IT SHALL BE AS SPECIFIED IN APPENDIX 12/4 AND SHALL CONFORM TO CLAUSE 1214.
- PRE-FORMED REFUGE ISLAND WITH BASE FIXING ARRANGEMENT FOR BEACON POLE SHALL BE SUPPLIED IF BEACON ARE REQUIRED.
- ON A WIDE LOAD ROUTE IF A WIDTH OF $\geq 4.3m$ CANNOT BE ACHIEVED FLEXI BOLLARDS WITH A KNUCKLE JOINT TO THE BASE MUST BE USED

ABNORMAL LANE CARRIAGEWAY WIDTH

- DESIRABLE MINIMUM CARRIAGEWAY WIDTH OF 4.3m IS REQUIRED KERB TO KERB ON BOTH SIDES WITH 0.5m SET BACK OF STREET FURNITURE.
- A TRAFFIC LANE OF MINIMUM WIDTH 4.1m IS REQUIRED TO PERMIT SAFE OVERTAKING THE CYCLIST AT CENTRAL ISLAND. IF THE APPROACH TO THE NARROWED SECTION IS NOT STRAIGHT OR SIGNIFICANT NUMBERS OF HGVS OR BUSES ARE EXPECTED, THIS MINIMUM SHOULD BE INCREASED



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 Highway Design
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Project

STANDARD DETAILS

Title

PRE-FORMED REFUGE ISLAND

Scale

NOT TO SCALE

Drawn

AKKV

Checked

Section

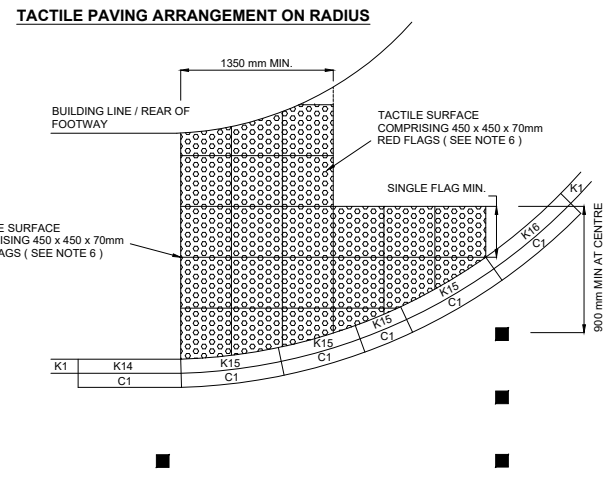
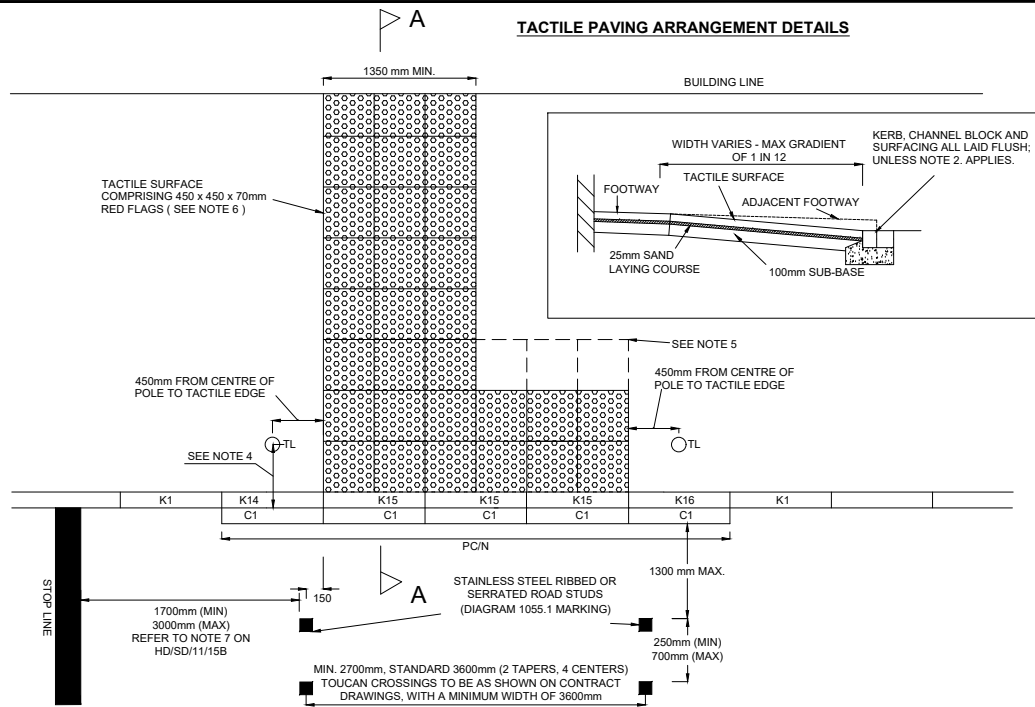
HD

Date

AUG 22

Drawing No.

HD/SD/11/13B



NOTE

- EDGE FLAGS (CUT) SHALL BE NOT LESS THAN 1/2 FLAG IN WIDTH
- K15 KERBS TO BE SET FLUSH TO CHANNEL BLOCKS EXCEPT WHERE BACKFALL TO RAMP IS UNAVOIDABLE IF SO SET K15 KERBS 6mm ABOVE CHANNEL BLOCKS FOR DRAINAGE PURPOSES. HOWEVER, IT IS IMPORTANT TO AVOID HAVING FLUSH CROSSING POINTS ON THE RADIUS KERB BECAUSE A RAISED RADIUS KERB GIVES POSITIVE GUIDANCE FOR DRIVERS TURNING THROUGH THE JUNCTION, MINIMISING THE RISK OF VEHICLES OVER-RUNNING THE FOOTWAY
CHANNEL BLOCKS SHALL NOT BE PROVIDED IF CARRIAGEWAY SURFACING IS NOT INCLUDED IN THE WORKS.
- WHERE PC/N REFERENCE USED, 'N' REFERS TO NUMBER OF KERBS TYPE K15
OFF SET FROM FRONT OF KERB TO CENTRE OF POLE (REFER - DRAWING LUT SD 89)
- TRAFFIC SIGNAL POLES ARE TO BE SET BACK FROM THE KERB FACE TO THE CENTRE OF THE POLE

STRAIGHT POLE	0.75 m
CRANKED POLE	0.75 m
SHORT POLE	0.75 m

AND 450mm FROM THE BOTTOM OF THE TAPERED KERB TO THE DROPPED CROSSING. BASE OF TRAFFIC SIGNAL POLES TO BE SET 700mm BELOW FOOTWAY LEVEL.

TRAFFIC SIGNAL POSTS ARE TO BE LOCATED PRECISELY AND SHALL BE AGREED WITH THE UTC ENGINEER ON SITE. ANY DISCREPANCIES NOTED ON SITE ARE TO BE REPORTED TO UTC ENGINEER IMMEDIATELY.

- SEE ALSO SCHEME GENERAL ARRANGEMENT DRAWING - IN CERTAIN LOCATIONS THREE ROWS OF FLAGS ARE REQUIRED TO REAR OF K15 KERBS (DEPENDANT ON LOCATION)
- TACTILES TO GO BACK MAX. 5m FROM KERB OR ACROSS THE FOOTWAY EXTENDING TO BACK OF FOOTWAY IF THE FOOTWAY WIDTH IN LESS THEN 5m.

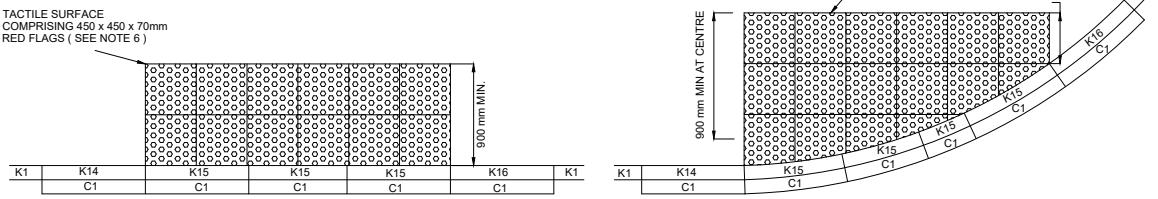
FLAGS TO FORM AN "L" SHAPE IN FOOTWAY AT THE CONTROLLED CROSSINGS.

A TACTILE AREA (MIN. LENGTH 0.9m) LAID BEHIND THE KERBLINE TO SHOWS THE LIMITS OF THE CROSSING INSIDE THE TAPER KERBS THE STRIP SHOULD ALWAYS BE LOCATED ON THE PEDESTRIAN RIGHT HAND SIDE WHEN FACING CARRIAGEWAY.

THE FLAGS SHALL BE LAID SUCH THAT THE "BLISTERS" ARE IN LINE WITH THE DIRECTION OF PEDESTRIAN TRAVEL ACROSS THE CARRIAGEWAY I.E. PARALLEL TO THE STUDS.

- ON ISLANDS GREATER THAN 2.0m WIDE, THE TACTILE TO BE LAID TO A MIN. WIDTH OF 0.9m (OMITTING THE TACTILE STRIP), WITH THE REMAINING AREA OF THE ISLAND PAVED NORMALLY.

TACTILE PAVING ARRANGEMENT ON ISLANDS



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

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LH

Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
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Title

PEDESTRIAN CROSSING POINT (SIGNAL CONTROLLED) TACTILE LAYOUT

Section

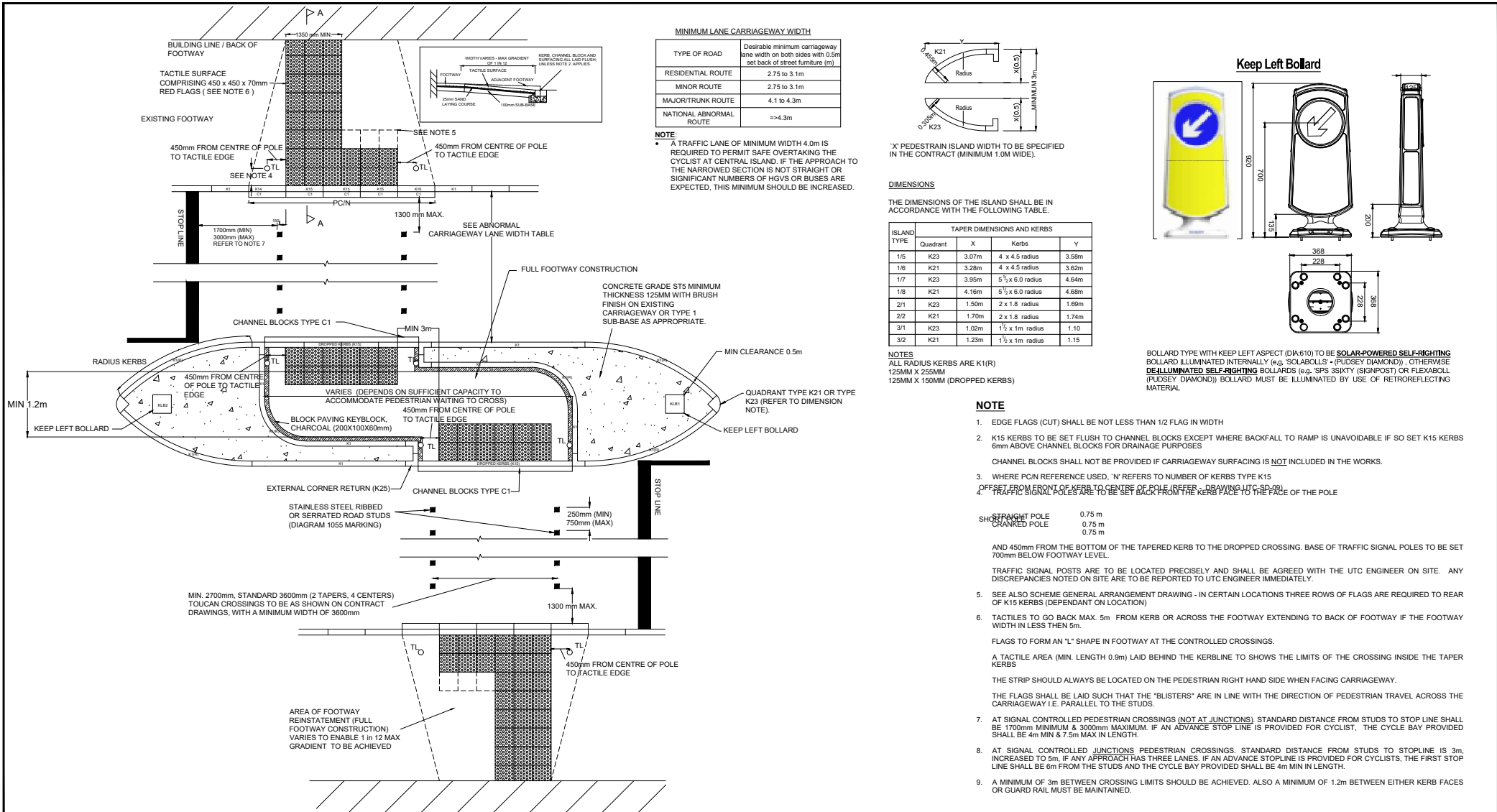
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Date

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Drawing No.

HD/SD/11/14B



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Project

STANDARD DETAILS

Title

STAGGERED PEDESTRIAN REFUGE DETAIL

Scale

NOT TO SCALE

Drawn

AKKV

Checked

LH

Section

HD

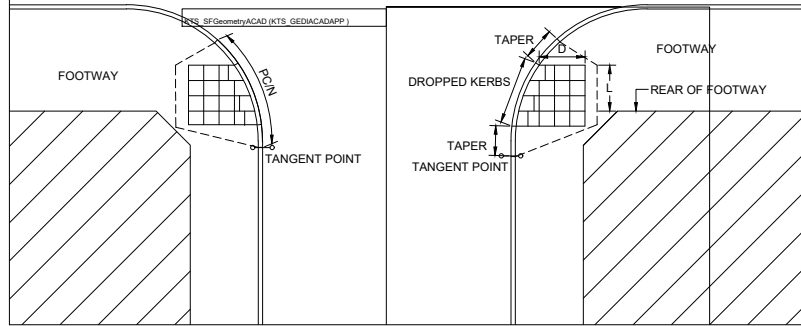
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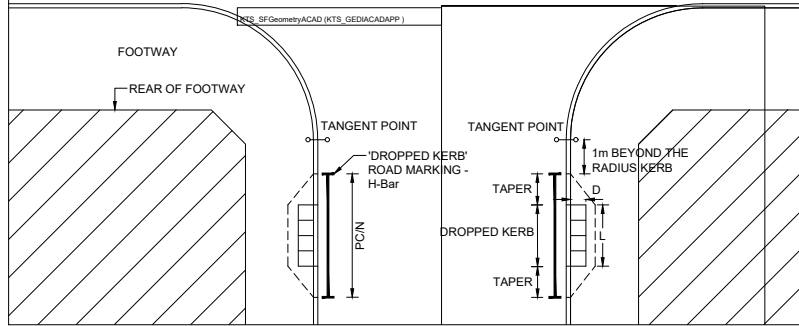
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HD/SD/11/15B

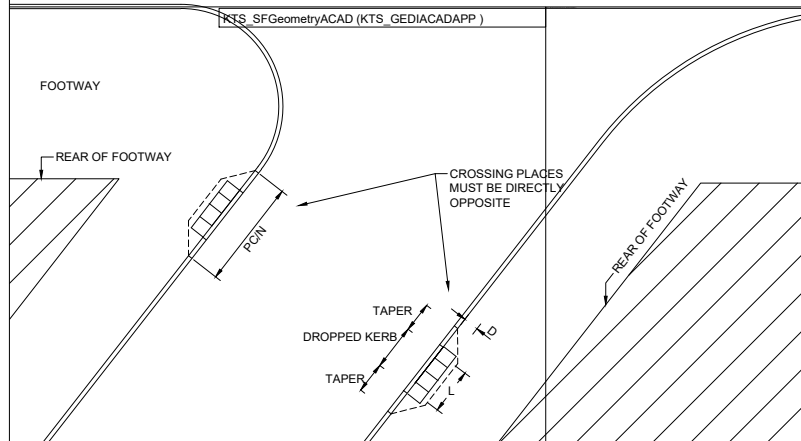
OPTION 1 - CROSSING LOCATED IN-LINE OF TRAVEL AT JUNCTION



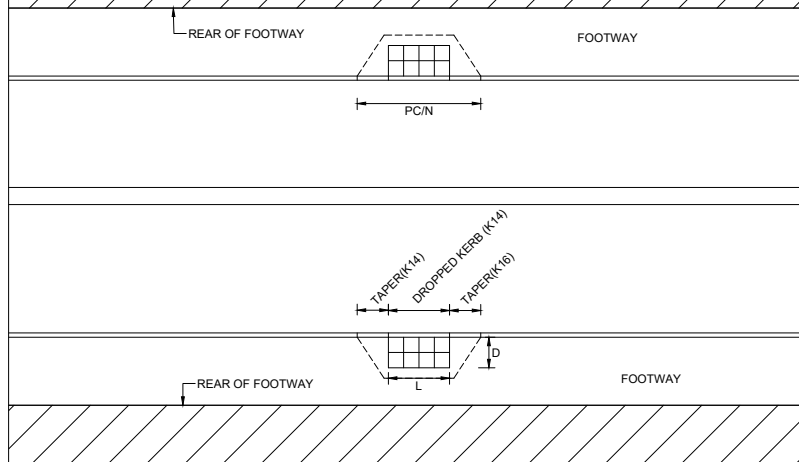
OPTION 2 - CROSSING LOCATED OFF SET FROM JUNCTION



OPTION 3 - CROSSING LOCATED OFF SET AT ACUTE ANGLED JUNCTIONS



OPTION 4 - CROSSING AWAY FROM A JUNCTION



1) CHOICE OF LOCATION

Agree option with the Engineer.

Options 1 or 2 for crossings at junctions, Option 2 being the preferred option. Obstructions to travel, sight lines and construction restraints to be assessed. Option 3 for acute angled junctions. Option 4 for crossings away from junctions.

2) SETTING OUT INFORMATION

a) Agree Centre line of travel and mark on footway. A-A

b) Mark lines parallel with and offset by L/2 from centre line.

3) EXTENT OF BLISTER PAVING

a) Depth D (to be measured on shortest side)

Option 1- 1.35m (3 flags) deep

Option 2 & 3

Option 4- 0.90m (2 flags) deep

b) Length L option 1

Minimum length 3 flags (kerbs may cut to suit)

c) Length L option 2 & 3

Minimum length of dropped kerbs 2 No (1.8m)

d) Length L option 4

Minimum length of dropped kerbs 2 No (1.8m Min.)

4) CONSTRUCTION DETAILS

See HD/SD/11/11 & 12



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Project

STANDARD DETAILS

Title

GUIDANCE ON THE USE OF TACTILE PAVING AT UNCONTROLLED CROSSINGS

Scale

NOT TO SCALE

Drawn

AKKV/AA

Checked

DB

Section

HD

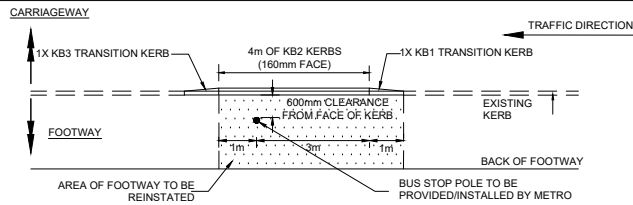
Date

APRIL 21

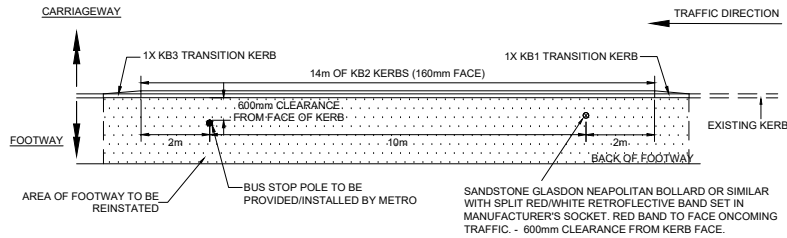
Drawing No.

HD/SD/11/16B

STANDARD DETAILS OF BUS STOP WITHOUT BUS SHELTER

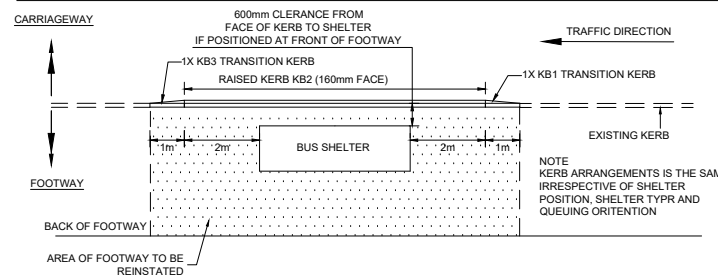


NOT ON A GUIDED BUS SERVICE ROUTE.

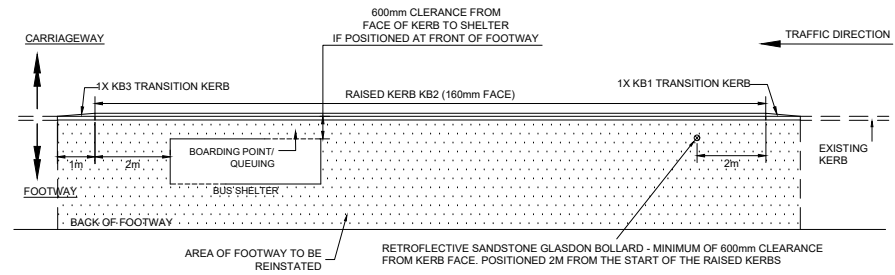


LOCATED ON A GUIDED BUS SERVICE ROUTE.

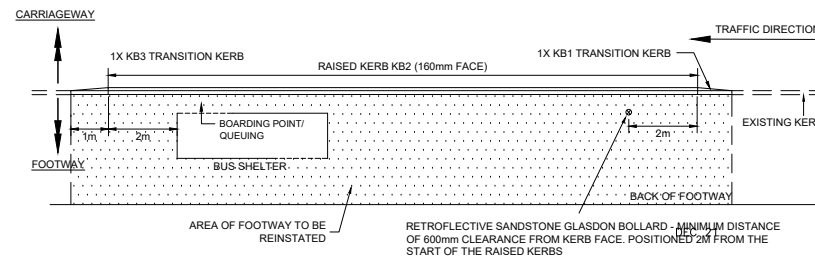
STANDARD DETAILS OF BUS STOP WITH BUS SHELTER



NOT ON A GUIDED BUS SERVICE ROUTE.



LAYOUT A - LOCATED ON A GUIDED BUS SERVICE ROUTE



LAYOUT B - LOCATED ON A GUIDED BUS SERVICE ROUTE

TO BE READ IN CONJUNCTION WITH WYCA-BUS STOP INFRASTRUCTURE STANDARDS GUIDANCE 2020.

NOTES:

1. DETAILS OF BUS SHELTER WILL BE DETERMINED BY METRO AFTER SITE VISIT.
BUS SHELTER - MINIMUM DISTANCE OF 1.2m FOR PASSING PEDESTRIANS / WHEEL CHAIRS FROM SHELTER TO EITHER BACK OF FOOTWAY OR KERB. BUS SHELTER MINIMUM DISTANCE TO KERB FACE OF 0.6m.
SHELTER LAYOUT- A IS PREFERRED AS WAITING PASSENGERS FACE ONCOMING BUS. PASSENGERS ENTER FROM REAR AND EXIT AT THE FRONT
SHELTER LAYOUT- B.
PASSENGERS PASSENGERS ENTER FROM REAR AND EXIT THE FRONT.
2. WHERE THE EXISTING KERB IS LESS THAN 125mm HIGH 2 TRANSITION KERBS SHALL BE USED. THIS CAN BE ACHIEVED USING NEW KERBS OR BY RELAYING THE EXISTING ADJACENT KERB TO SUIT.
3. WHERE TWO OR MORE BUS STOPS ARE LOCATED AT THE SAME SITE, THE RAISED KERBS SHOULD RUN CONTINUOUSLY BETWEEN EACH STOP
4. WHERE THE PROPOSED BUS STOP IS LOCATED WITHIN A GRASS VERGE, A SURFACED HARDSTANDING WILL BE REQUIRED FOR THE TOTAL LENGTH OF THE RAISED KERBS
5. STREET FURNITURE SHOULD BE SITED AT THE FOLLOWING DISTANCES FROM THE FACE OF THE PROPOSED KERB.
 - a. 450mm. MIN IF 1.2M HIGH OR LESS.
 - b. 600mm. MIN (650mm FOR SHELTER SITES) IF >1.2 MIN HEIGHT, WITH LIGHTING COLUMNS PREFERABLY SITED AT THE REAR OF THE FOOTWAY.
6. BUILD OUTS WHERE RAISED KERBS FOR BUS STOPS ARE TO BE PROVIDED AS PART OF NEW BUILD-OUTS INTO THE CARRIAGEWAY
7. A MINIMUM OF 4M OF CHARCON ACCESS KERBS PLUS TRANSITION SHALL BE PROVIDED AT BUS STOPS WITHOUT A SHELTER. WHERE A SHELTER EXISTS (OR IS PROPOSED BY METRO) THE LENGTH OF RAISED CHARCON ACCESS KERBS SHALL BE MINIMUM OF SHELTER LENGTH AS SHOWN IN WYCA- BUS STOP INFRASTRUCTURE STANDARDS GUIDANCE 2020, PLUS TRANSITION.



Project

STANDARD DETAILS

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Title

**STANDARD LAYOUT FOR RAISED KERBS
GUIDED AND NON GUIDED BUS STOPS**

Section

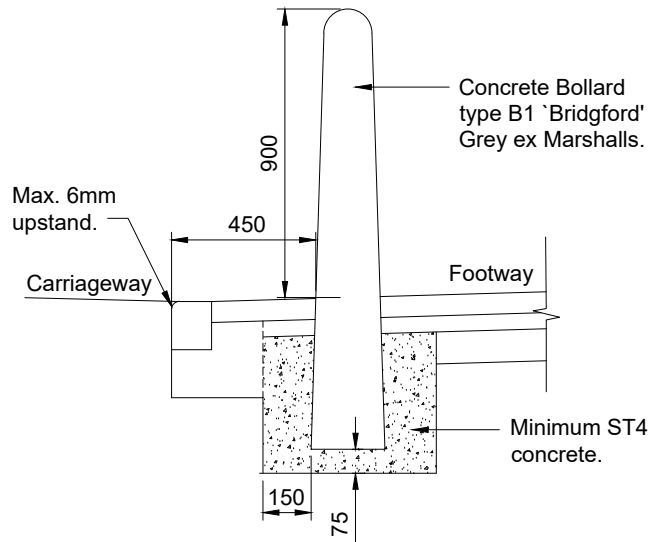
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Date

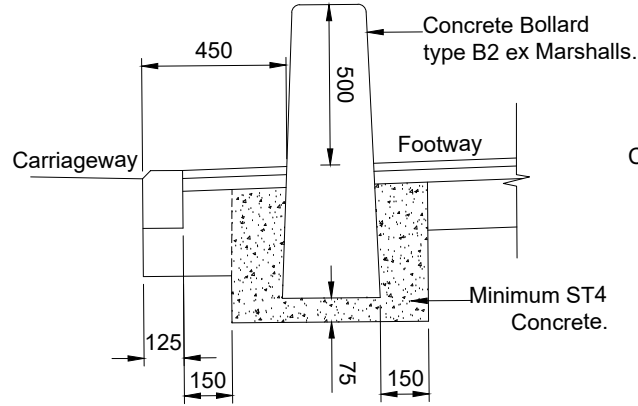
DEC 21

Drawing No.

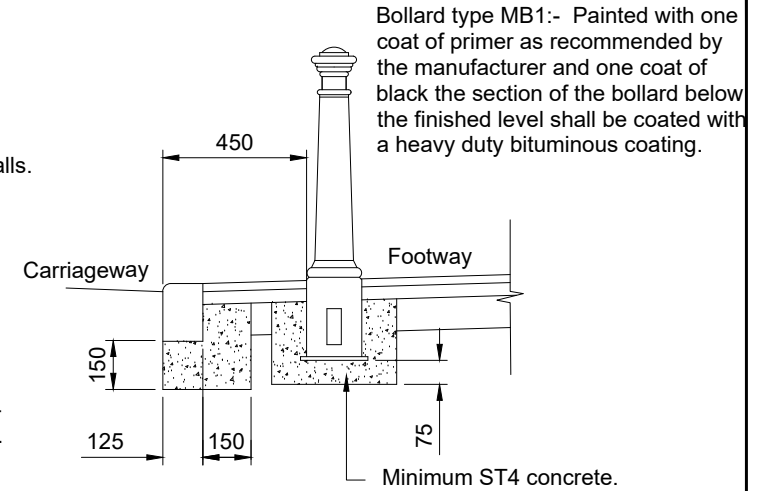
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BOLLARD TYPE B1

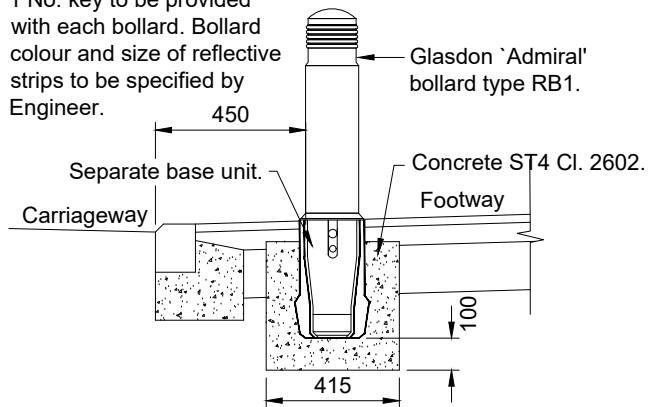


BOLLARD TYPE B2



BOLLARD TYPE MB1

1 No. key to be provided with each bollard. Bollard colour and size of reflective strips to be specified by Engineer.



BOLLARD TYPE RB1

NOTE

All dimensions are in millimetres.



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Highway Design
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Project

STANDARD DETAILS

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Section

HD

Date

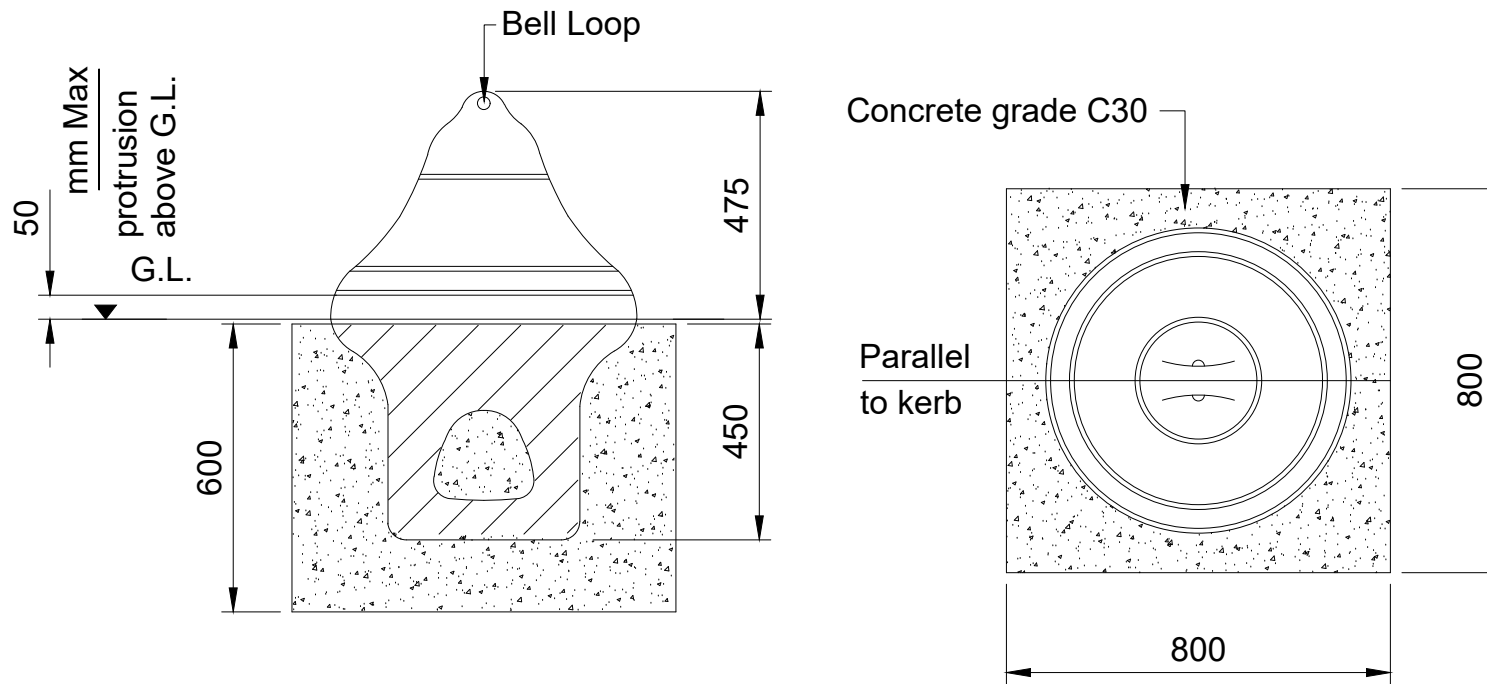
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Drawing No.

HD/SD/12/01B


Title

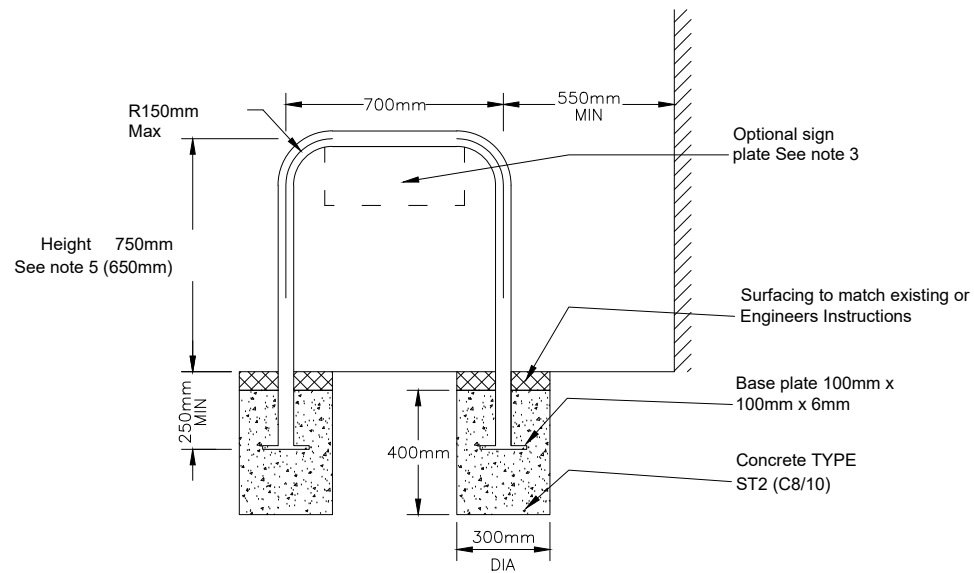
BOLLARDS



BELL BOLLARD

ONLY TO BE USED IN AREAS OF SIGNIFICANT HGV OVER RUN DDA CONSIDERATIONS
MUST BE ADDRESSED IN THE SAFETY AUDIT.

 <p>Kirklees COUNCIL</p>	Project	<h1>STANDARD DETAILS</h1>		Scale	
				NOT TO SCALE	
<p>Commercial Regulatory and Operational Service</p> <p>Highway Design Flint Street, Fartown Huddersfield, HD1 6LG</p>	Title	<h2>BOLLARD - BELL BOLLARDS</h2>		Drawn	Checked
				AKKV/AA	AP
				Section	Date
				HD	JAN 22
				Drawing No.	HD/SD/12/02B

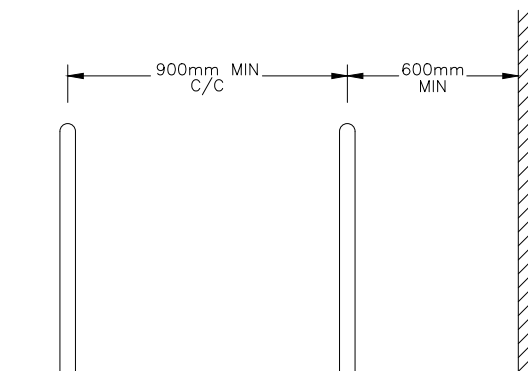


Type 1 & Type 2, 1/S & 2/S

NOTES

1. TYPES 1 AND 2 SHALL BE 50mm DIAMETER (± 5 mm) MILD STEEL SEAMLESS NYLON COATED TUBING COLOURED BLACK. OTHER COLOURS MAY BE SPECIFIED FOR PARTICULAR LOCATIONS
2. TYPES 1/S and 2/S SHALL BE 50mm DIAMETER (± 5 mm) STAINLESS STEEL SEAMLESS TUBING POLISHED AFTER BENDING USING A 240 GRIT TO OBTAIN A DULL SATIN FINISH. TUBING WEIGHT SHALL BE AT LEAST 2.5kg PER METRE AND WITH A WALL THICKNESS OF AT LEAST 2mm
3. TYPES 2 AND 2/S SHALL INCORPORATE A SIGNBACKING PLATE WELDED TO THE TOP TUBE
4. THE CONCRETE FOUNDATIONS MAY BE MODIFIED AND RAPID SETTING CONCRETE MAY BE USED SUBJECT TO THE APPROVAL OF THE ENGINEER
5. THE HEIGHT SHALL BE 650mm WHEN INTENDED FOR USES BY PRIMARY SCHOOL AGED CHILDREN
6. FOR OFF-STREET LOCATIONS SURFACE MOUNTED TOAST RACK ARRANGEMENTS WITH A MINIMUM TUBE DIAMETER OF 35mm MAY BE SPECIFIED

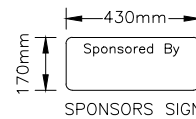
SIGN OPTIONS
(DIMENSIONS AS PER TSRGD 968, 968.1)



TSRGD Diag. 968
CLASS 2 REFLECTIVE



TSRGD Diag. 968.1
CLASS 2 REFLECTIVE



SPONSORS SIGN



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

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Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

SHEFFIELD PARKING STAND
TYPE 1, 2, 1/S AND 2/S

Section

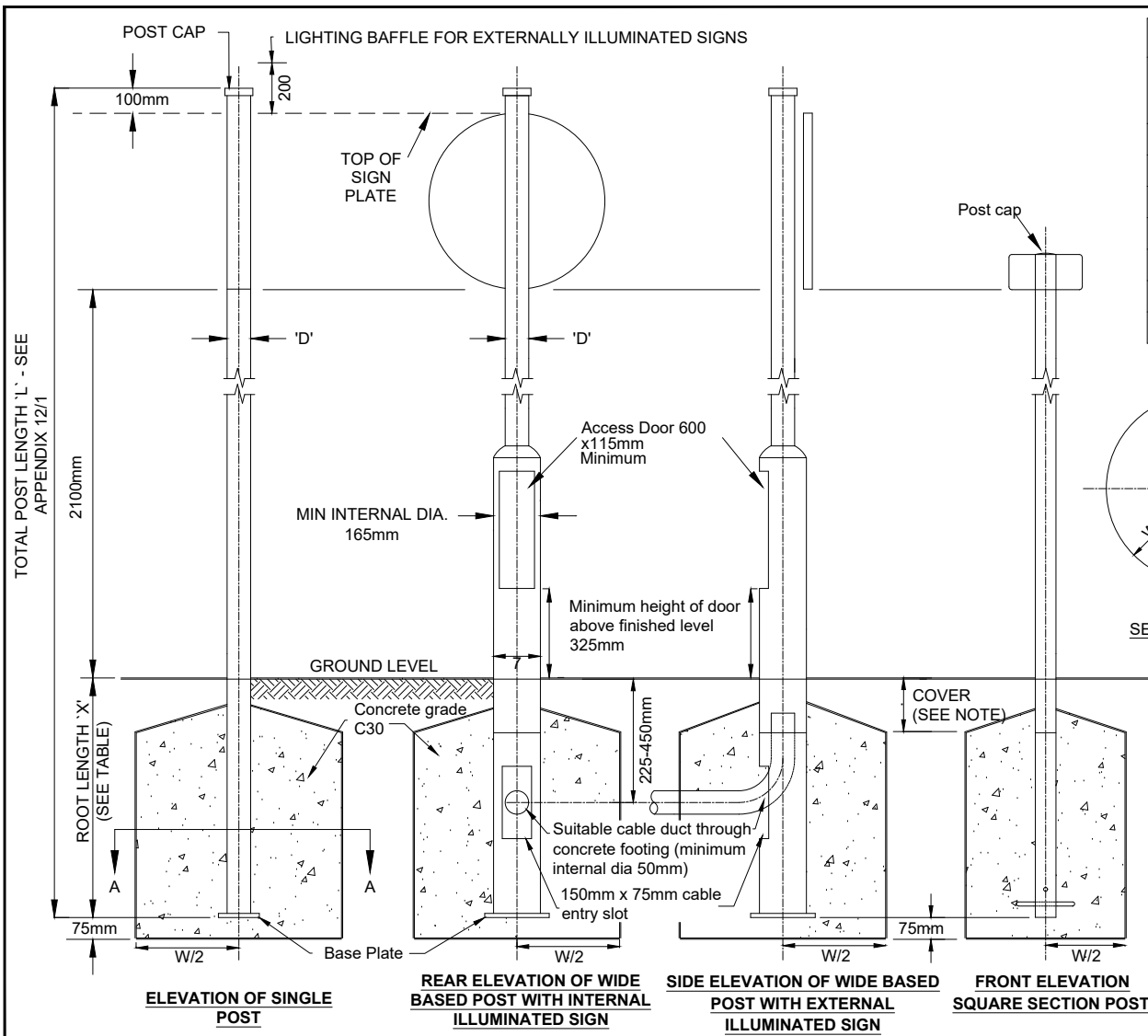
HD

Date

JAN 22

Drawing No.

HD/SD/12/03B



FOR POSTS WITH OR WITHOUT WIDE BASE (FOR STANDARD TRAFFIC SIGN ONLY (NOT FOR ADVANCE DIRECTION SIGNS / INFORMATION SIGNS PLATE))

POST DIAMETER 'D' mm	POST DEPTH BELOW GROUND 'X' mm		MIN. CONCRETE SURROUND DIA. 'W' mm
	LEVEL GROUND	ON 1 IN 2 SLOPES	
76	750	1000	750
89	750	1000	750
100	1200	1500	750
115	1500	1800	750
140	1750	2050	750
170	1750	2050	750
SQUARE SECTION 50x50	600	850	400

NOTES:

1. TOP OF POST TO BE LEVEL WITH TOP OF SIGN PLATE BUT POSTS MAY EXTEND A MAXIMUM OF 75MM ABOVE THE TOP OF THE SIGN PLATE TO ALLOW AN OVER-HEAD LIGHTING UNIT TO BE ATTACHED.
2. THE CONCRETE FOUNDATION MAY BE MODIFIED SUBJECT TO THE APPROVAL OF THE ENGINEER TO SUIT DIFFICULT LOCATIONS INVOLVING PIPE OR SERVICE RUNS. HEAD LIGHTING UNIT TO BE ATTACHED.
3. CONES FORMED FROM SHEET STEEL AND WELDED TO BOTH SECTIONS ARE NOT ACCEPTABLE. POSTS REQUIRING AN ELECTRICAL SUPPLY WITH A STEM DIAMETER OF 165MM OR GREATER SHALL BE PURPOSE MADE, WITH SERVICE APERTURE, DOOR AND BASEBOARD, ALL AS FOR WIDE-BASE POSTS.
4. INCREASE POST LENGTH BY 250MM BELOW ACCESS DOOR LEVEL IN SLOPING GROUND.
5. COVER
 - VERGE - 150MM
 - EXISTING FOOTWAY - 100MM
 REINSTATEMENT TO SUIT EXISTING MATERIALS. SEE RELEVANT APPENDIX SECTION 11
6. ERECTION TO COMPLY WITH CHAPTERS 1 AND 13 OF THE TRAFFIC SIGNS MANUAL.
7. MOUNTING HEIGHT- A MINIMUM CLEARANCE OF 2100mm SHOULD BE MAINTAINED OVER FOOTWAYS, 2300mm OVER CYCLE TRACKS OR SHARED-USE FACILITIES AND 2700mm OVER EQUESTRIAN ROUTES.

Kirklees COUNCIL

Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

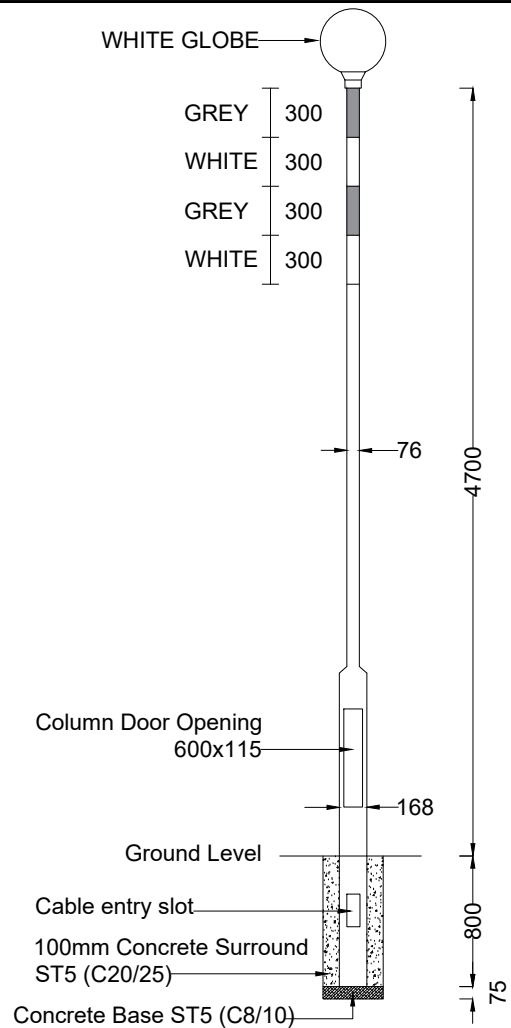
Project

STANDARD DETAILS

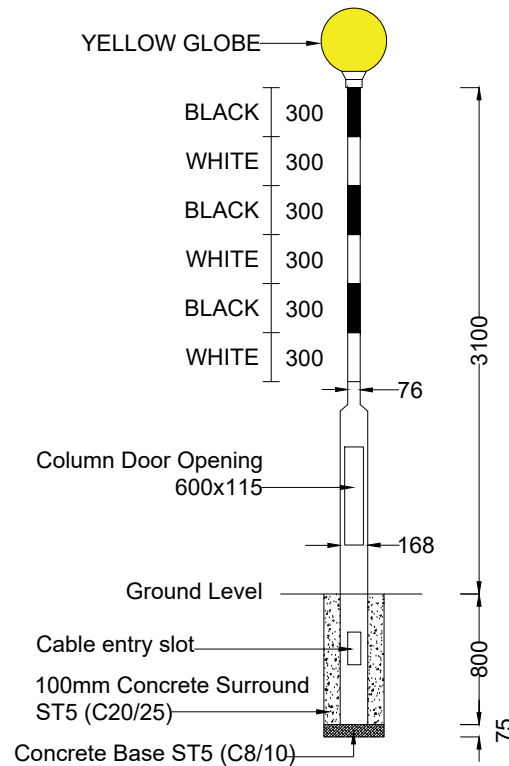
Title

SIGN POST DETAIL

Scale		NOT TO SCALE	
Drawn	AKKV/AA	Checked	AP
Section	HD	Date	AUG 22
Drawing No.	HD/SD/12/04B		



MARKER BEACON
CMB1



BELISHA BEACON
CBB1

NOTES:-

1. All dimensions in millimeters unless otherwise stated.
2. Columns to be galvanised to BS EN ISO 1461 and painted as per Appendix 19 (Marker beacon finish colour BS4800 00-A-09 Mid Grey, Belisha beacon finish colour BS4800 00E53 Black).
3. White bands on CBB1 to have Class 1 retroreflectivity.
4. Columns are *not* to be internally illuminated.
5. Belisha beacon / marker beacon globe to have 12x1W LED lamps.
6. Proposed equipment to comply with the requirements of BS 873



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Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV

Checked

Title

MARKER BEACON & BELISHA BEACON

Section

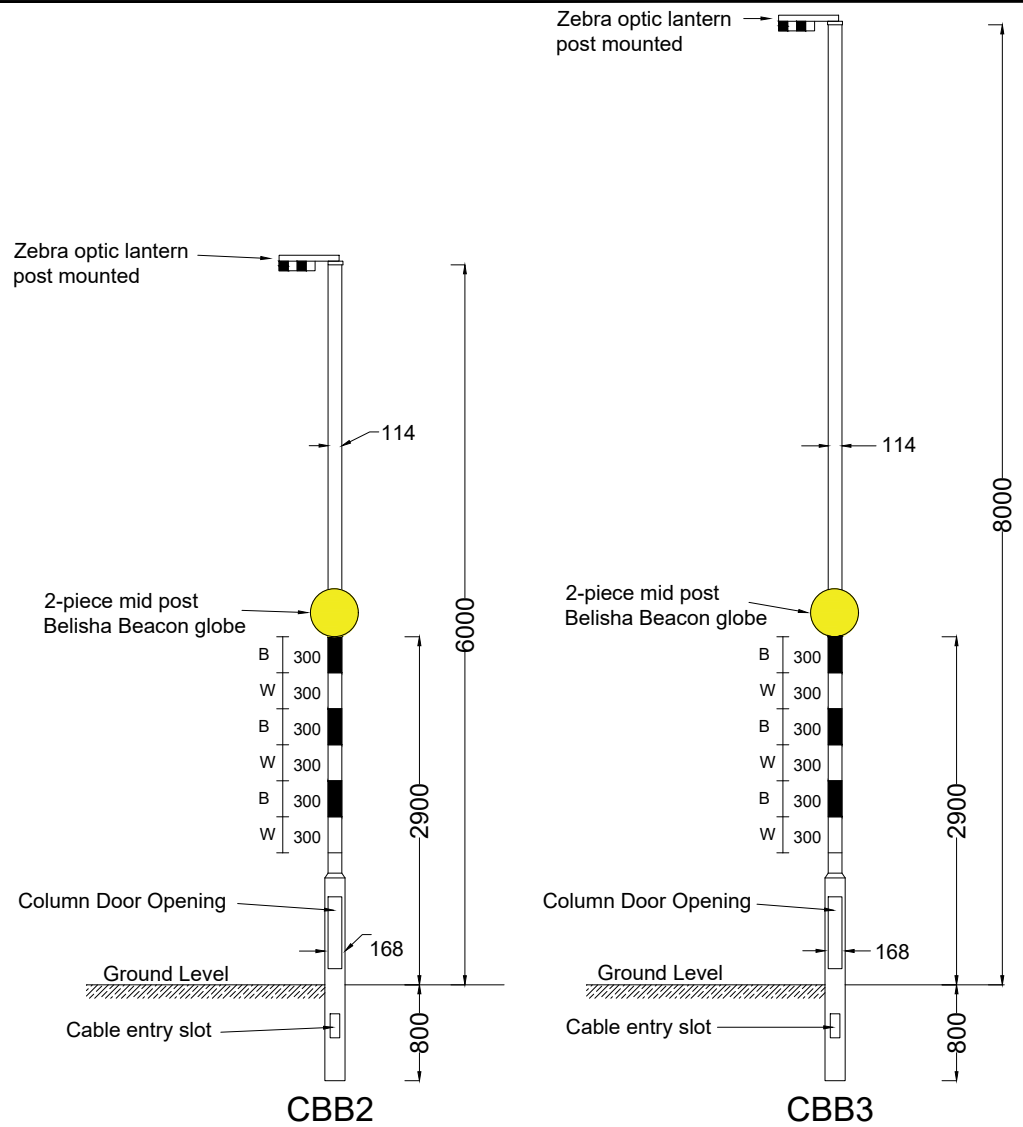
HD

Date

APRIL 21

Drawing No.

HD/SD/12/05B



- NOTES:-
1. All dimensions in millimeters unless otherwise stated.
 2. Foundation detail as per column manufacturers installation guidelines.
 3. Zebra lantern to be LED type 6 at 6000mm, and LED type 8 at 8000mm unless otherwise instructed by the Engineer.
 4. White bands to have Class 1 retroreflectivity.
 5. Column is *not* to be internally illuminated.
 6. Belisha beacon globe to have 12x1W LED lamps.



STANDARD DETAILS

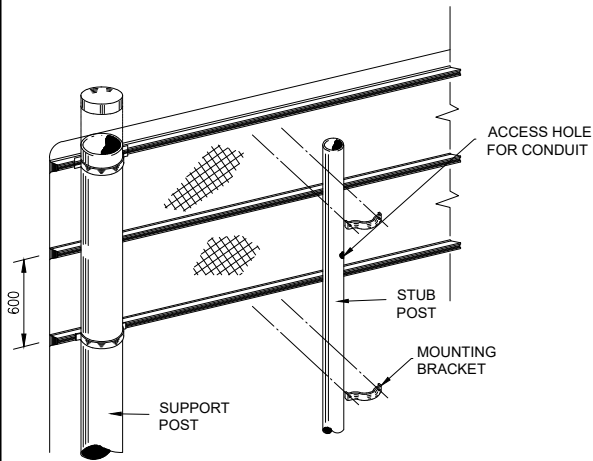
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Drawn	Checked		
AKKV			
Section	Date		
HD	APRIL 21		
Drawing No.	HD/SD/12/06B		

Commercial Regulatory and Operational Service
 Highway Design
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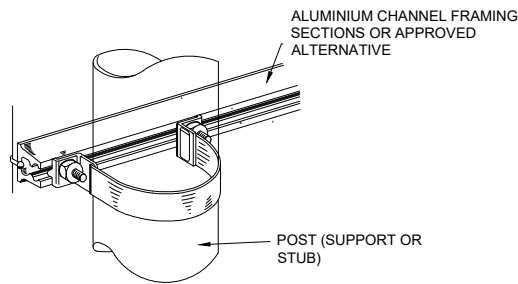
Project

Title

COMBINED BELISHA/ZEBRA LANTERN COLUMN



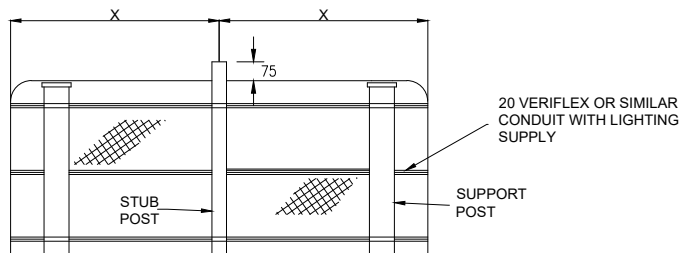
SIGN MOUNTING DETAIL



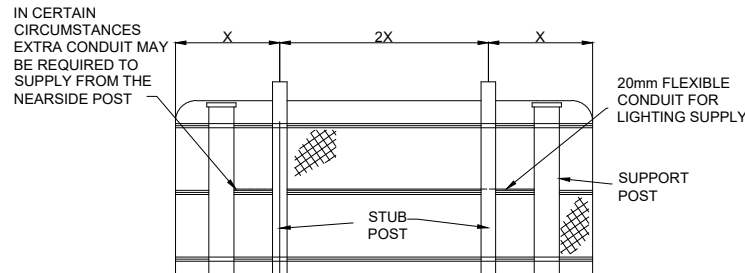
MOUNTING BRACKET DETAIL

NOTES

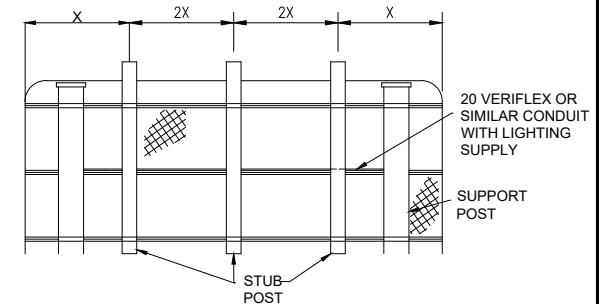
1. ACCESS HOLES TO BE PROVIDED AT THE TOP OF STUB POSTS FOR CABLE FEED TO LANTERN VIA BRACKET CLAMP ASSEMBLY.
2. WHERE CLAMP BRACKET ASSEMBLY IS USED ON STUB POSTS THEN BLANKING CAPS ARE TO BE FITTED.
3. FLEXIBLE CONDUIT TO BE TIED TO TO HORIZONTAL FRAMING SECTIONS WITH TIE WRAPS THROUGH PRE-DRILLED 3mm HOLES AT 300 CENTRES.



LAYOUT ARRANGEMENT WITH ONE STUB POST



LAYOUT ARRANGEMENT WITH TWO STUB POSTS



LAYOUT ARRANGEMENT WITH THREE STUB POSTS



STANDARD DETAILS

Scale
NOT TO SCALE

Drawn
AKKV

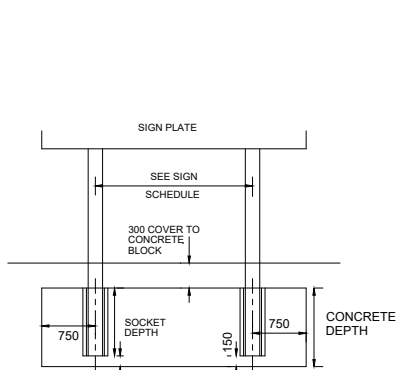
Checked

Commercial Regulatory and Operational Service
Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

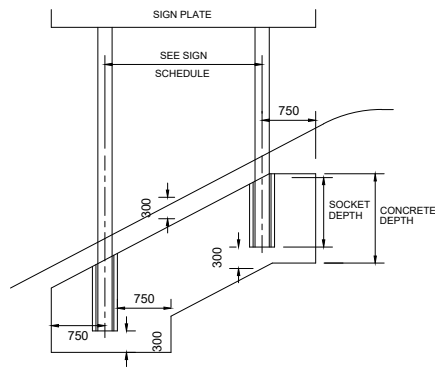
Title
TRAFFIC SIGNS: ILLUMINATION (STUB POST)

Section
HD
Date
APRIL 21

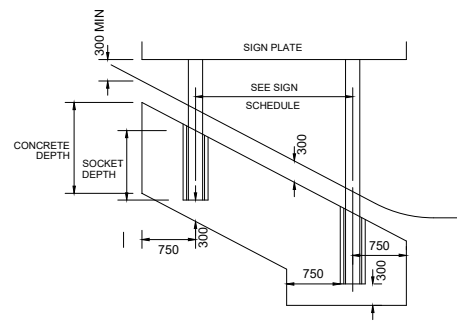
Drawing No. HD/SD/12/07B



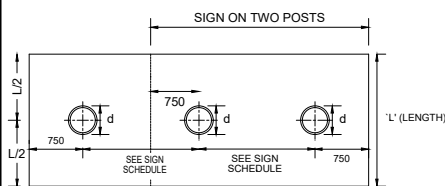
SIGN ON LEVEL SITE



SIGN ON EMBANKMENT



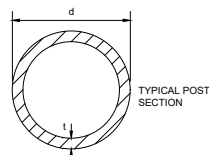
SIGN IN CUTTING



FOUNDATION PLAN (3 POSTS)



PLAN OF POST SOCKET



STANDARD STEEL SECTION
SIZE AND SHAPE TO BS EN 10210-2 STEEL TO COMPLY WITH BS EN 10210-1 GRADE S275J0H.

TABLE FOR SIZE OF POSTS & FOUNDATIONS
(FOR STANDARD TRAFFIC SIGN ONLY (NOT FOR ADVANCE DIRECTION SIGNS / INFORMATION SIGNS PLATE))

POST SECTION	THICKNESS 't' (mm)	LENGTH 'L' (mm)	CONCRETE FOUNDATION		POST SOCKET		POST DEPTH BELOW GROUND (mm)
			CONCRETE DEPTH LEVEL SITE (mm)	CONCRETE DEPTH SIDE SLOPES (mm)	DIAMETER 'D' (mm)	STANDARD DEPTH (mm)	
114.3	4.5	1350	900	1050	275	750	1050
139.7	5.4	1650	1050	1200	300	900	1200
168.3	5.4	1950	1075	1225	325	925	1225
193.7	4.9	2150	1100	1250	350	950	1250
219.1	5.4	2350	1125	1275	375	975	1275
244.5	5.9	2550	1150	1300	400	1000	1300
273.0	5.9	2750	1175	1325	425	1025	1325

GENERAL REQUIREMENTS

1. ALL POSTS TO HAVE APPROVED POST CAPS, TOP OF POST TO BE LEVEL WITH TOP OF SIGN PLATE.

EXCAVATION FOR SUPPORTS

2. WHERE SOLID ROCK IS ENCOUNTERED THE MASS CONCRETE FOUNDATIONS MAY BE DISPENSED WITH SUBJECT TO THE APPROVAL OF THE ENGINEER, IN WHICH CASE HOLES OF THE SAME DIMENSIONS SHALL BE DRILLED DIRECTLY INTO THE ROCK.

3. CARE SHOULD BE TAKEN DURING EXCAVATION TO AVOID DAMAGE OR MOVEMENT TO ADJACENT PIPE RUNS OR OTHER SERVICES, SPLIT DUCTS WILL BE USED FOR PROTECTING SERVICES IN FOUNDATIONS.

SUPPORT FOUNDATIONS

4. CONCRETE SHALL BE STANDARDISED PRESCRIBED CONCRETE ST2 AS SPECIFIED IN CLAUSE 2602.

5. THE SLAB UP TO THE SOCKET BASE MAY BE CAST FIRST, THE REMAINDER UP TO THE FULL SOCKET DEPTH MUST BE CAST IN ONE OPERATION.

ERECTION OF POSTS

6. SOCKET TO BE CLEANED OUT BEFORE ERECTION OF POST.

7. BACKFILL SOCKET ANNULUS WITH SHARP SAND TO B.S.882, GRADING M.

8. POST TO BE ERECTED VERTICALLY AND GROUPS TO BE IN A STRAIGHT LINE WITH TOPS LEVEL.

9. POSTS SHALL BE SUITABLY BRACED FOR 3 DAYS AFTER BASES HAVE BEEN CAST TO PREVENT MOVEMENT.

10. SURFACE ABOVE SIGN FOUNDATION TO BE TOP SOILED OR SURFACED TO CONFORM TO THE STANDARD OF THE SURROUNDING MATERIALS.

DUCTS WHEREVER REQUIRED

11. 50mm DUCTS SHALL BE PROVIDED WITHIN FOUNDATION FOR ELECTRICAL SERVICE TO SIGN.

12. WHERE FOUNDATION OCCUPIES MORE THAN HALF WIDTH OF FOOTWAY 2 x 150mm DUCTS SHALL BE INSTALLED CENTRALLY BETWEEN POSTS OR SOCKETS.

FOR CONTRACTS NOT UNDER THE D.o.T. SPECIFICATION FOR HIGHWAY WORKS CONCRETE C10 SHALL BE USED.



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV

Checked

Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

TRAFFIC SIGNS: CIRCULAR MS POSTS

Section

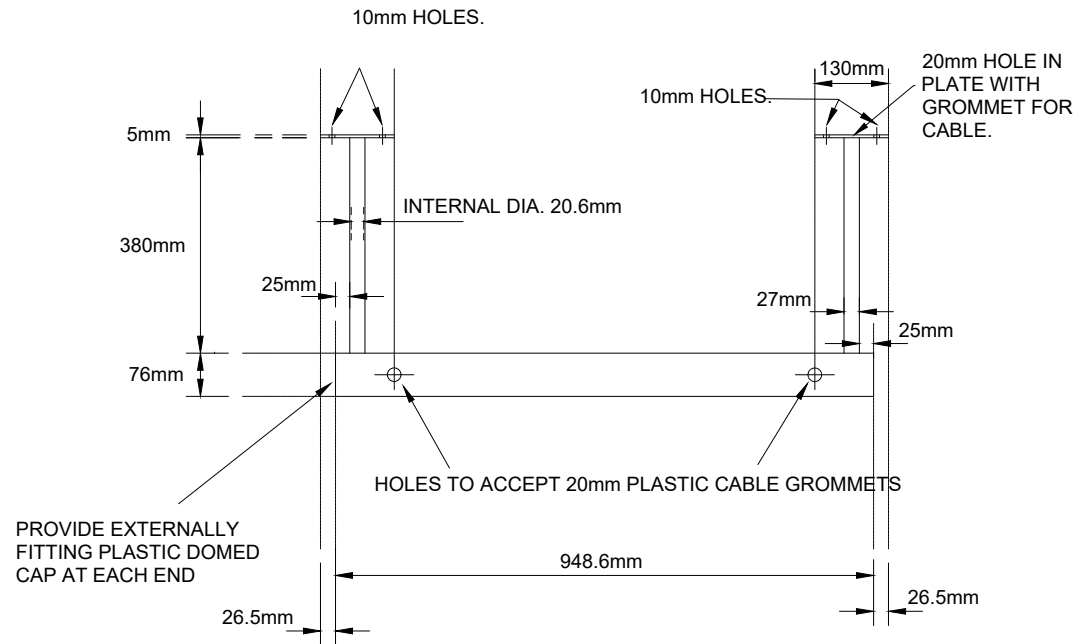
HD

Date

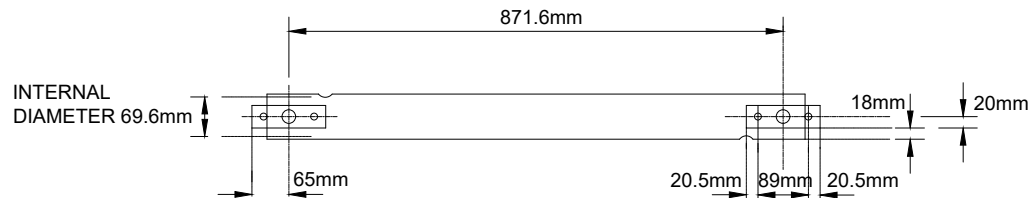
APRIL 21

Drawing No.

HD/SD/12/08B



SIDE ELEVATION



END ELEVATION

NOTES

1. ALL MACHINING AND DEBURRING TO BE COMPLETED BEFORE PROTECTIVE FINISH IS APPLIED
2. PROTECTIVE FINISH - AS APPENDIX 19
3. THIS BRACKET IS TO BE MOUNTED IN ACCORDANCE WITH STANDARD FIXING METHOD FOR SIGNAL POLE ATTACHMENTS
4. FIXING BOLTS, NUTS AND SPACERS PROVIDED BY EMPLOYER.



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 Highway Design
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Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV

Checked

Title

SIGN ATTACHMENT BRACKET FOR TRAFFIC SIGNAL POLES

Section

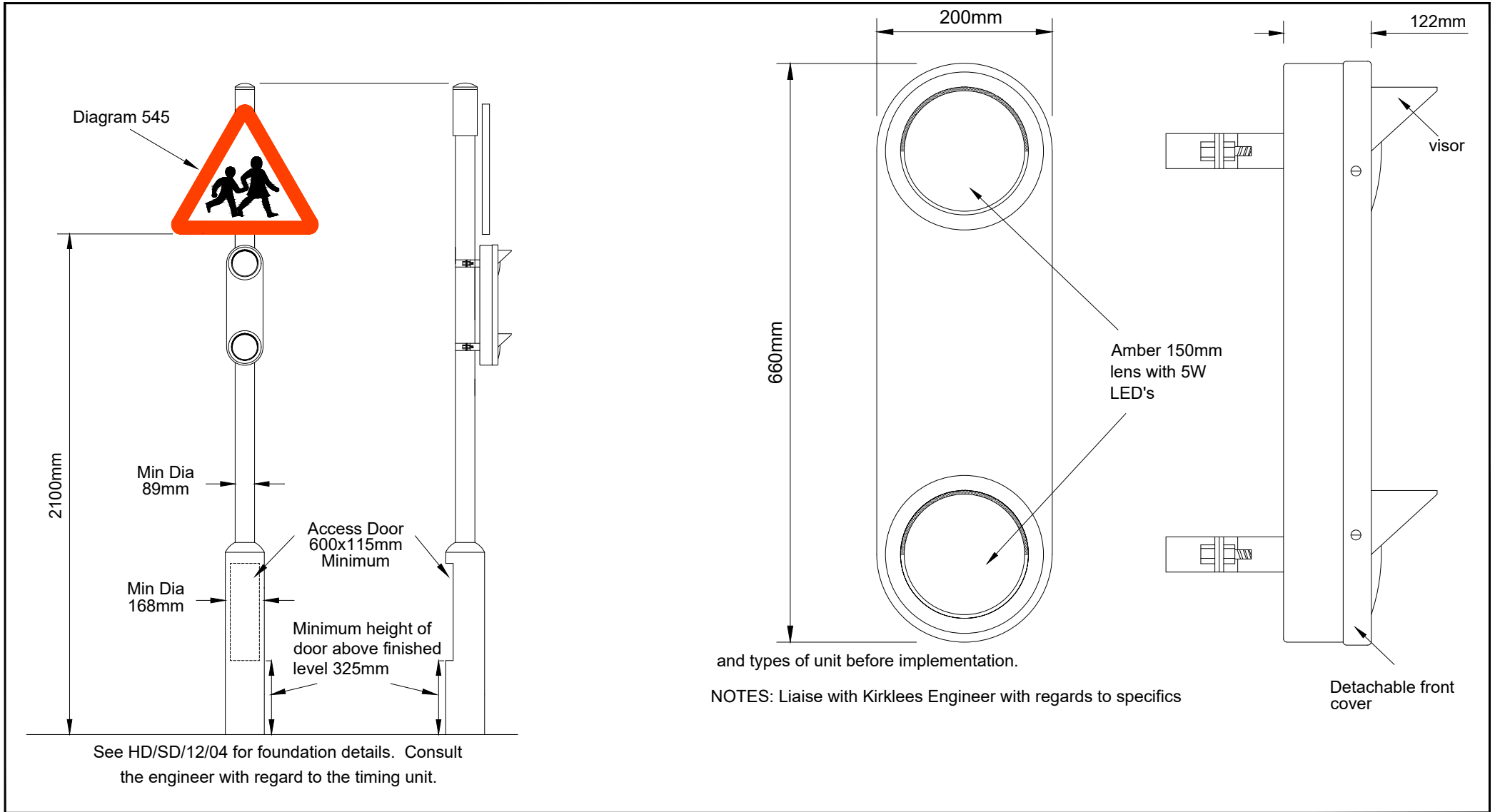
HD

Date


APRIL 19

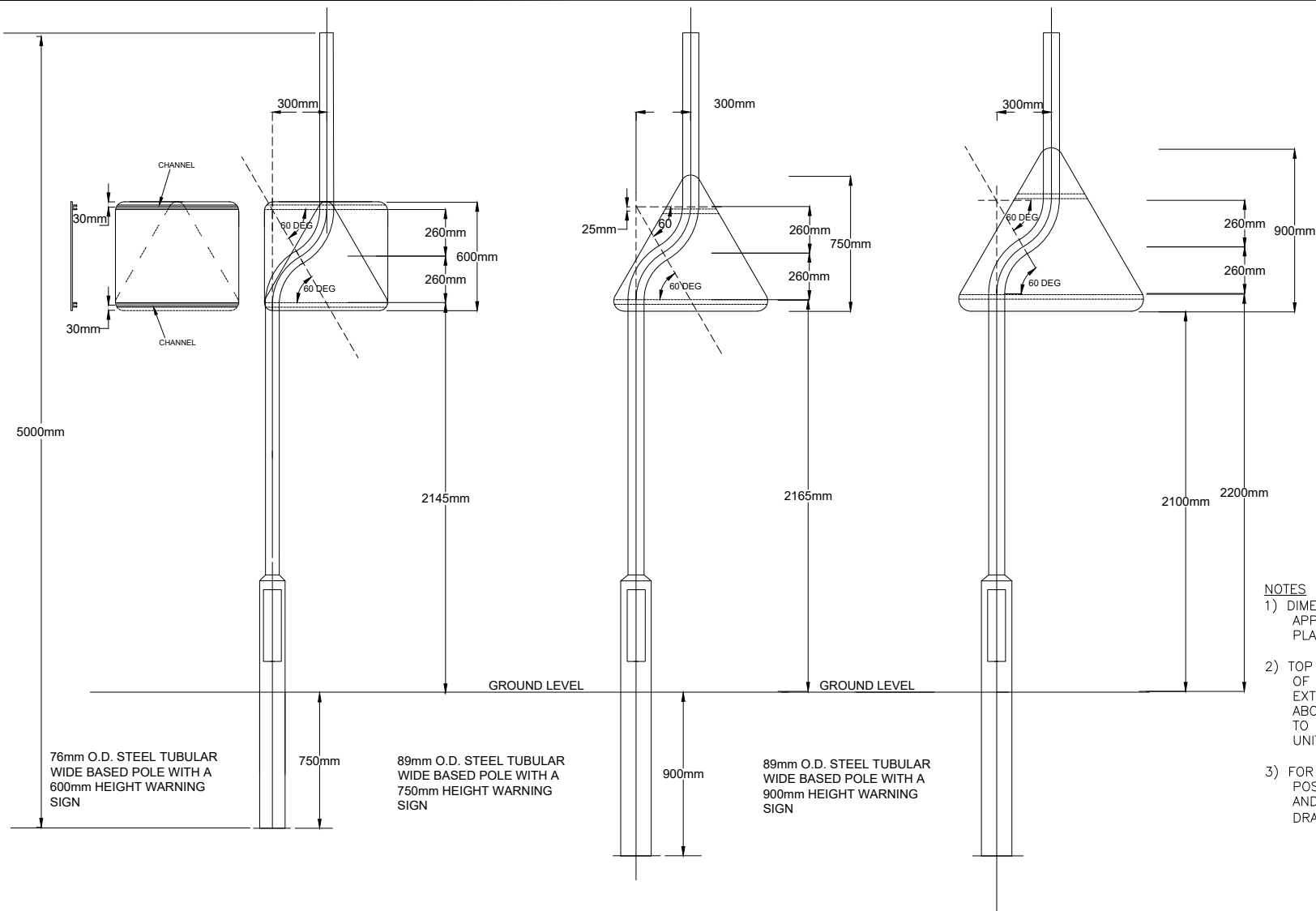
Drawing No.

HD/SD/12/09B



See HD/SD/12/04 for foundation details. Consult the engineer with regard to the timing unit.

	Project	<h1>STANDARD DETAILS</h1>		Scale	
				NOT TO SCALE	
Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG	Title	<h2>SCHOOL CROSSING PATROL WARNING LIGHT</h2>		Drawn	Checked
				AKKV	
				Section	Date
		HD	APRIL 19		
		Drawing No. HD/SD/12/10B			



- NOTES**
- 1) DIMENSIONS FOR OFFSET POLES APPLY TO BOTH WIDE BASED AND PLAIN POLES.
 - 2) TOP OF POST TO BE LEVEL WITH TOP OF SIGN PLATE BUT POSTS MAY EXTEND A MAXIMUM OF 75mm ABOVE THE TOP OF THE SIGN PLATE TO ALLOW AN OVERHEAD LIGHTING UNIT TO BE ATTACHED.
 - 3) FOR DETAILED REQUIREMENTS OF POST FOUNDATIONS, WIDE BASES AND ACCESS DOORS, REFER TO DRAWING No. H/SD/12/11A



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 Highway Design
 Flint Street, Fartown
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Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV

Checked

Title

OFFSET SIGN POLES DETAILS

Section

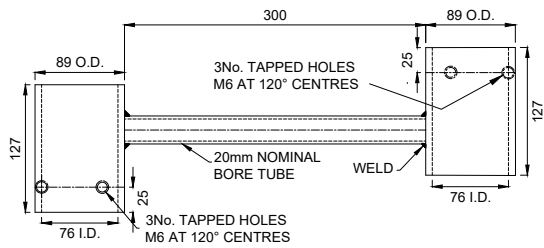
HD

Date

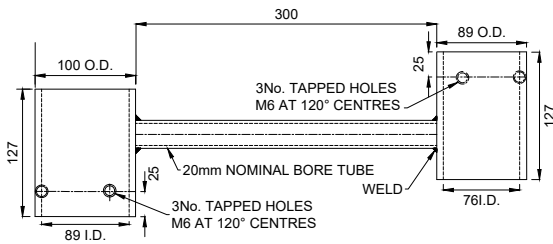
APRIL 19

Drawing No.

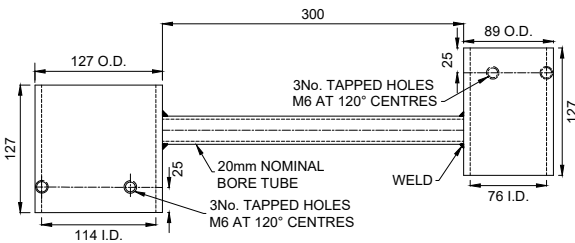
HD/SD/12/11B



TYPE 'A'

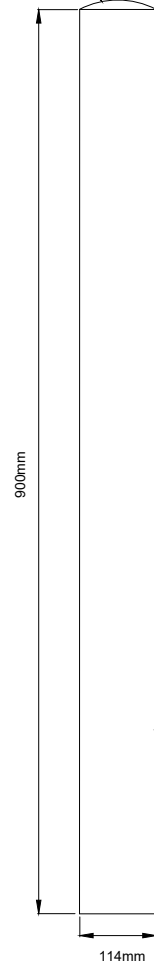


TYPE 'B'



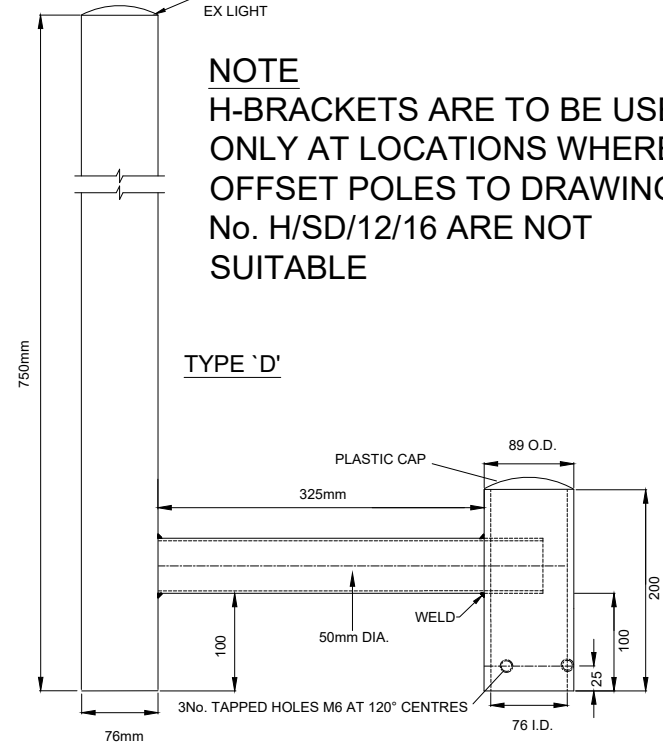
TYPE 'C'

PLASTIC CAP OR EX LIGHT



NOTE
H-BRACKETS ARE TO BE USED ONLY AT LOCATIONS WHERE OFFSET POLES TO DRAWING No. H/SD/12/16 ARE NOT SUITABLE

TYPE 'D'



TYPE 'E'



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Highway Design
Flint Street, Fartown
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Project

STANDARD DETAILS

Title

H-BRACKETS

Scale

NOT TO SCALE

Drawn

AKKV

Checked

Section

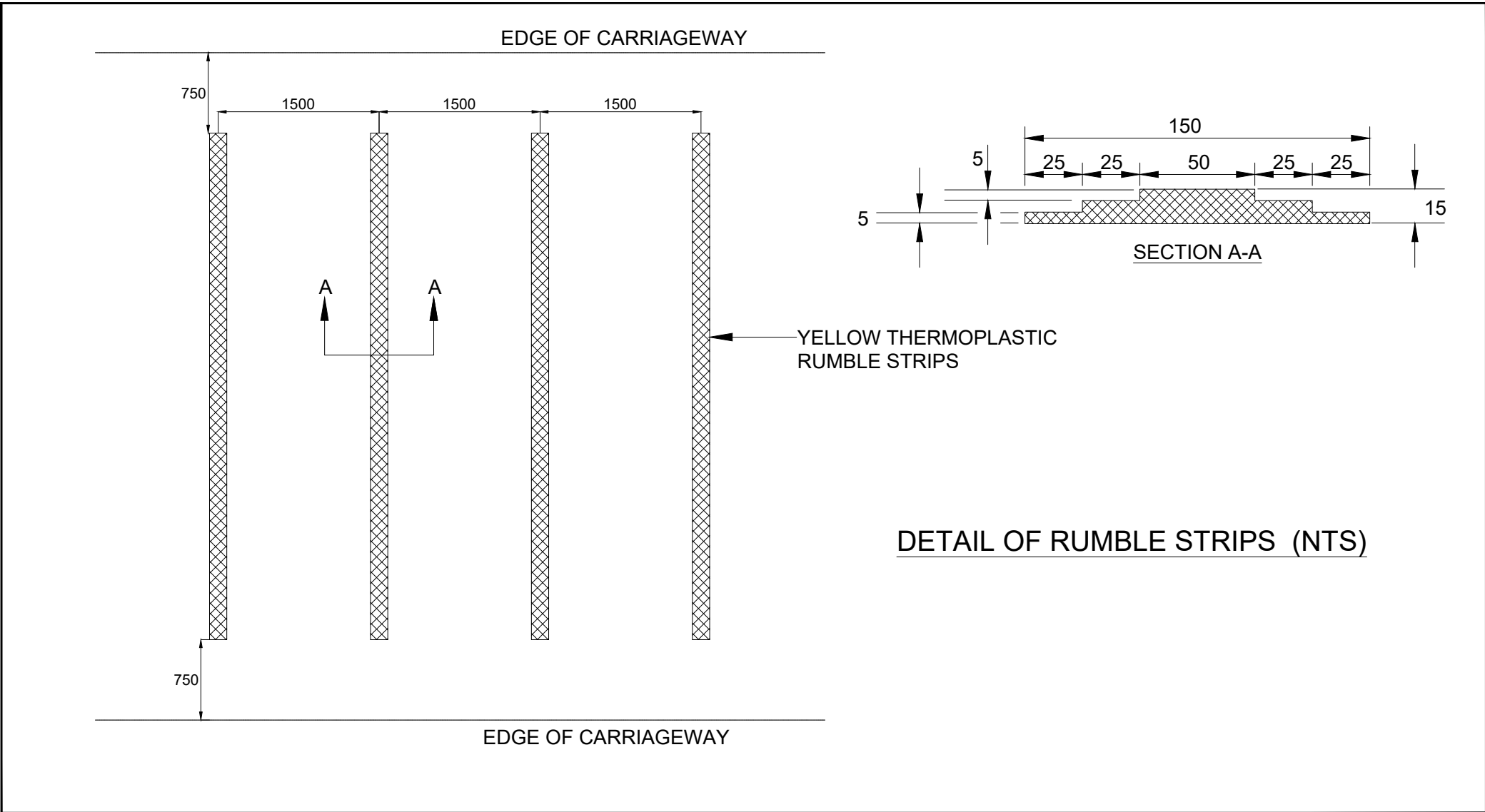
HD


Date

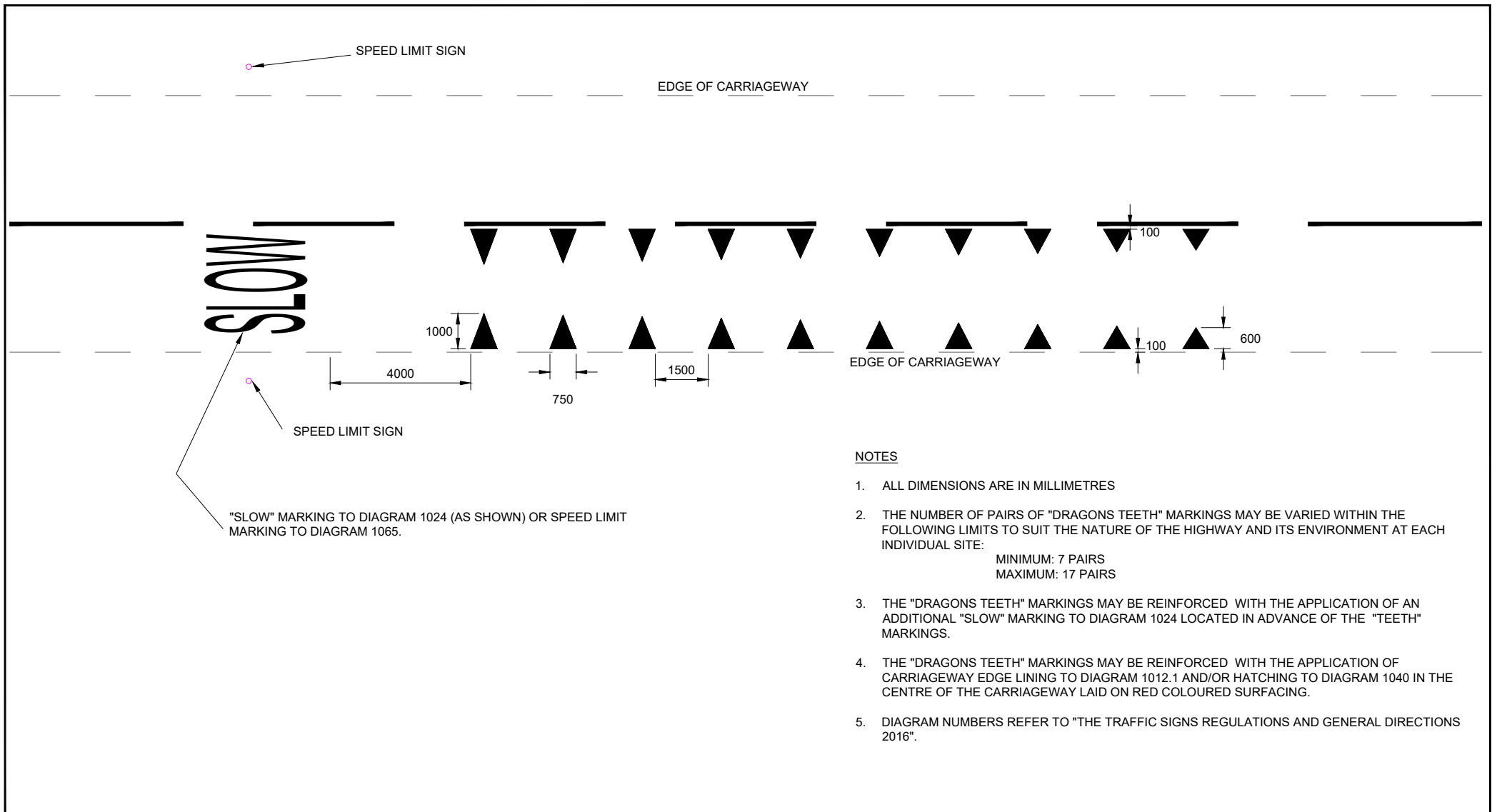
APRIL 19


Drawing No.

HD/SD/12/12B



	Project	<h1>STANDARD DETAILS</h1>		Scale	NOT TO SCALE	
	Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG			Title	<h2>ROAD MARKINGS - RUMBLE STRIPS</h2>	
		Section	Date			
		Drawing No.				



	Project	<h1>STANDARD DETAILS</h1>		Scale	
				NOT TO SCALE	
Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG	Title	<h2>ROAD MARKINGS - GATEWAY DETAIL (DRAGONS TEETH)</h2>		Drawn	Checked
				AKKV	PW
				Section	Date
		HD	APRIL 22		
		Drawing No. HD/SD/12/14B			

**Essential Roadworks
on behalf of
Kirklees Council
(Contractor's
name here)
Emergency Telephone
(Contractor's no. here)**

**Sorry for any
inconvenience**


Sign Reference HD/SD/12/19A
Letter colour White
Background Red
Border White
x-height 37.5

Sign Face
Width 890mm
Height 790mm
Area 0.68sq.m

Note:

1. Details shown shall be varied as appropriate. Each line of legend may have a different size of lettering which shall be smaller than the emergency telephone number.
2. The bottom panel may be omitted.

**Nature of roadworks, giving names of employer and contractor,
emergency telephone number, and apology for inconvenience**
(Sign for pedestrian)

 Kirklees COUNCIL	Project	STANDARD DETAILS		Scale	
				NOT TO SCALE	
Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG	Title	ROADWORK INFORMATION SIGN (Sign for Pedestrian)		Drawn	Checked
				AKKV	
				Section	Date
		HD	APRIL 21		
		Drawing No.	HD/SD/12/15B		

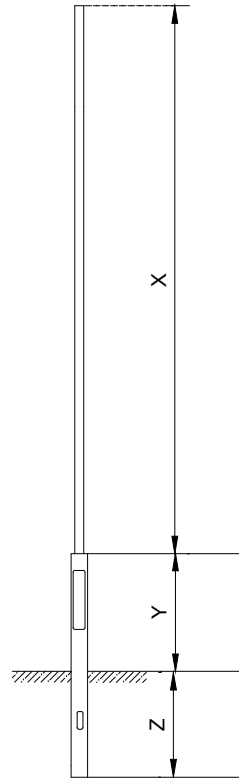
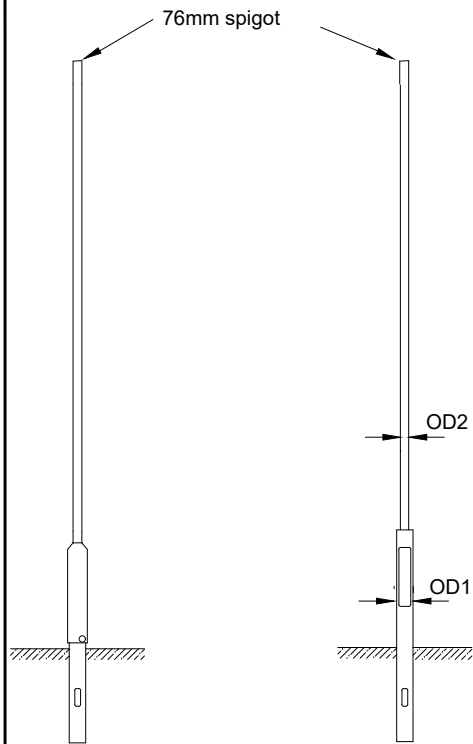


Note:

1. The 'Streetscene and Housing 01484 414700' details may be substituted for ' Highways Customer Care 0800 731 8765'.
2. The type of work 'Highway Improvement Works' may be varied to non-scheme specific type of work as follows
 - Car Park Improvements
 - Road Surfacing
 - Road Safety Improvements
 - Junction Improvements
 - Bridge Repairs
 - Bus Journey Improvements
 - Pavement Improvements
 - Drainage Improvements
 - Wall Repairs
 - Improving Your Surroundings
 - Work to help Reduce Congestion
 - This road will be closed (ROAD CLOSURE)
3. The date and duration of the work may be varied
4. "until" and a date may be substitute for "for 3 weeks"

Letter colour : BLACK
 Background : YELLOW
 Border: BLACK
 x-height : 50 MIN

	Project	STANDARD DETAILS		Scale	NOT TO SCALE	
	Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG	Title	ADVANCED SCHEME INFORMATION SIGN		Drawn	Checked
Section					Date	
Drawing No. HD/SD/12/16B						



Column height (m)	SHAFT X	BASE Y	PLANTING DEPTH Z	OD1	OD2	MIN DOOR OPENING	BRACKET			COMMENTS
							TYPE	LENGTH	ANGLE	
5	4000	1000	800	168	76	500 X 100	N/A	N/A	N/A	
5	4100	900	800	168	76	N/A	N/A	N/A	N/A	BASE HINGED COLUMN
6	5000	1000	1000	168	76	500 X 100	N/A	N/A	N/A	
6	5100	900	1000	168	76	N/A	N/A	N/A	N/A	BASE HINGED COLUMN

Columns galvanised to BS 729 and painted to comply with Appendix 19/3



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV/AA

Checked

PF

Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

LIGHTING COLUMNS 5 & 6m

Section

HD

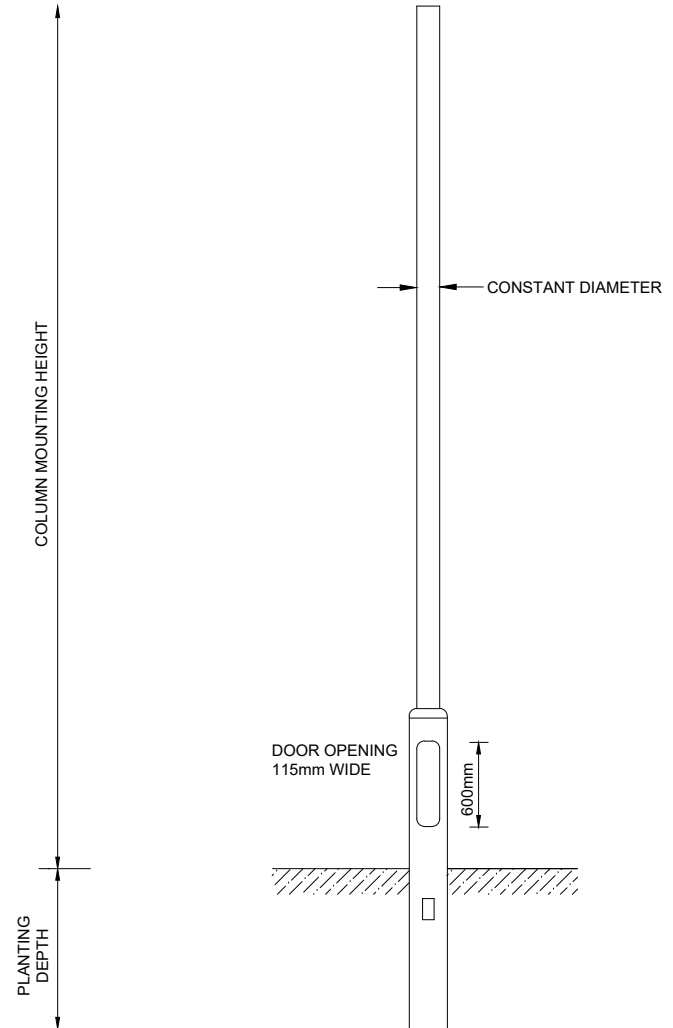
Date

APRIL 21

Drawing No.

HD/SD/13/01B

Col Ht	Shaft X	Base Y	Planting Depth Z	OD1 Shaft	OD2 Base	Min Door Opening
8	6800	1200	1200	89	168	600 x 115
10	8800	1200	1500	114	168	600 x 115
12	10800	1200	1700	140	194	600 x 115
15	13800	1200	2000	168	194	600 x 115



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV/AA

Checked

PF

Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
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Title

LIGHTING COLUMN 8, 10 & 12m

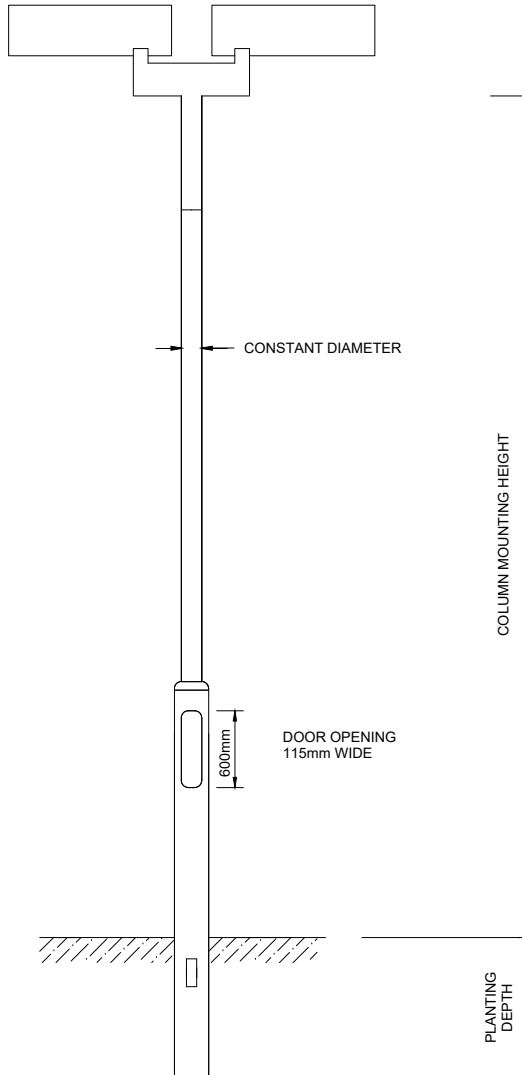
Section

HD

Date

APRIL 21

Drawing No. HD/SD/13/02B



INDICATIVE DRAWING



Commercial Regulatory and Operational Service
 Highway Design
 Flint Street, Fartown
 Huddersfield, HD1 6LG

Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV/AA

Checked

PF

Title

10 & 12m TWIN ARM LIGHTING COLUMNS

Section

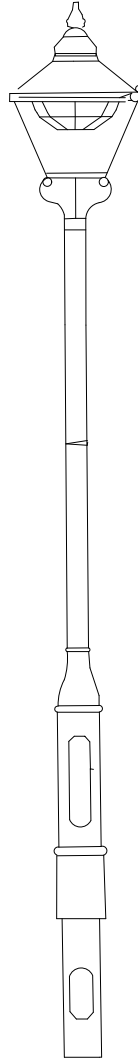
HD

Date

APRIL 21

Drawing No.

HD/SD/13/03B



NOTES

1. VICTORIAN STYLE LANTERN WITH POLYCARBONATE ONE PIECE GLAZING SEALED TO IP66.
2. OPTICAL COMPARTMENT WITH HIGH PERFORMANCE REFLECTOR AND REFRACTOR SUITABLE FOR LED FITTING.
3. GALVANISED STEEL COLUMN WITH CAST IRON DECORATOR (OPTIONAL)
3. PAINTED OR POWDER COATED 'BLACK' FINISH (CONSERVATION AREA)



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Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV/AA

Checked

YA

Title

LIGHTING COLUMN

Section

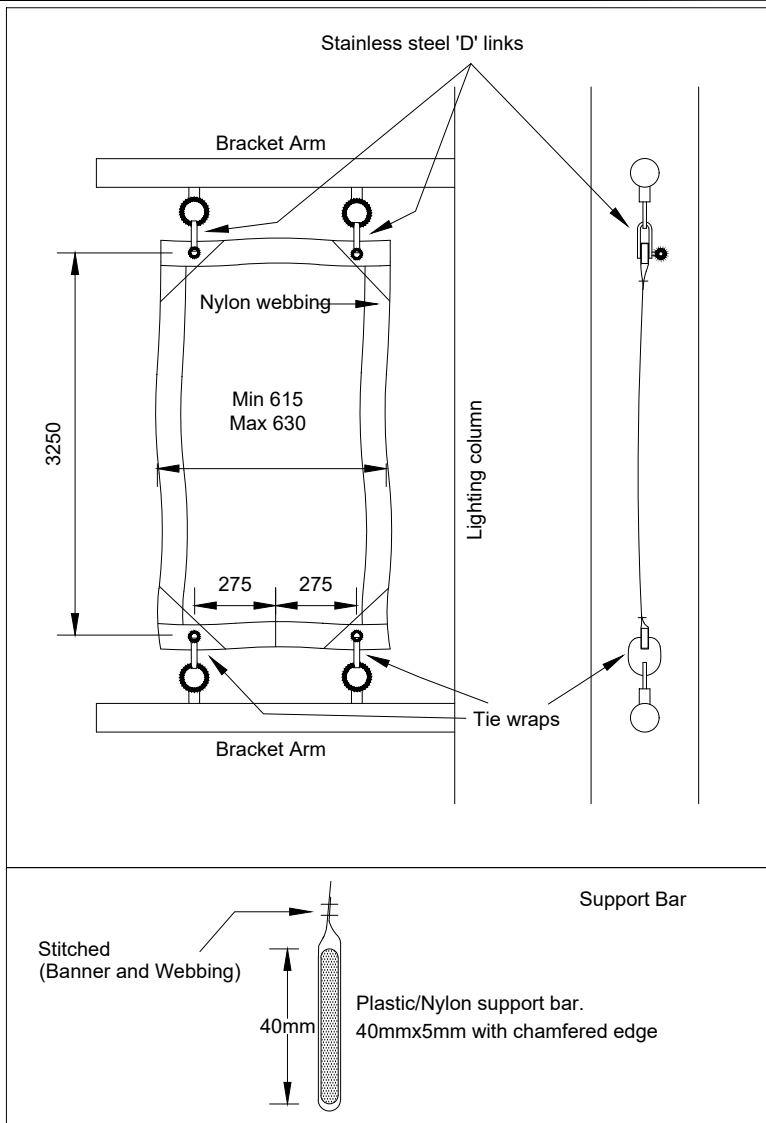
HD

Date

APRIL 22

Drawing No.

HD/SD/13/04B



NOTES:

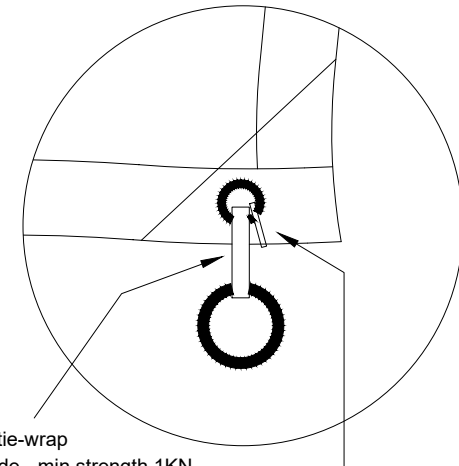
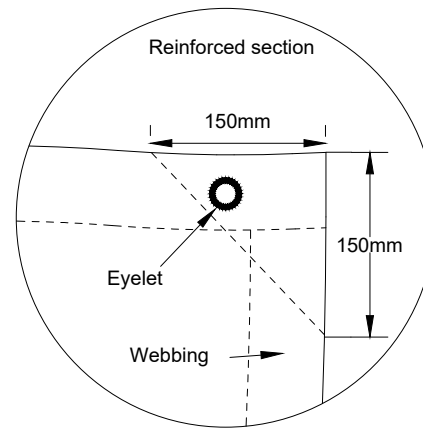
Material: Woven polyester - Design force 4.5KN at the banner centroid.

Finishing: Hemmed all round with reinforced sleeves top and bottom to accommodate nylon support bar. Corners to be reinforced as shown. Four eyelet's per sleeve capable of withstanding 1.5KN per eyelet. Webbing sewn to outside on bothsides.

Fittings: 4.5mm thick nylon support bar 600x40mm with de-burred edges and two 200mm dia drilled holes, with chamfered edges.

'D' links: Body and pin dia shall be 10mm having a jaw of 19mm and inside length of 35mm. (SWL 50KN)

Top stainless steel fixings are supplied by the Council and installed by their maintenance contractor. Any deviation from this system must receive prior approval.



Heavyduty tie-wrap
12.7mm Wide - min strength 1KN

Additional standard plastic tie-wrap
(Strength - 220N)



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Project

STANDARD DETAILS

Title

**SPECIFICATION FOR BANNERS
FESTIVE LIGHTING**

Scale

NOT TO SCALE

Drawn

AKKV/AA

Checked

PF

Section

HD

Date

APRIL 21

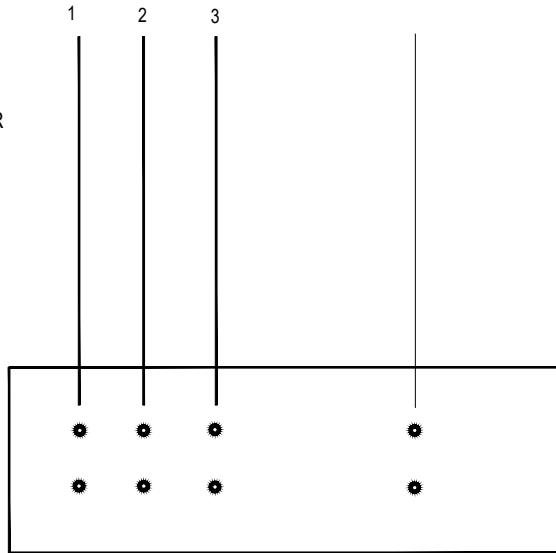
Drawing No.

HD/SD/13/05B

EARTHING CONDUCTOR TO LANTERN
(PART OF T&E CABLE)

6mm EARTHING CONDUCTOR
TO :

- 1 CUT OUT
- 2 COLUMN SHAFT
- 3 COLUMN DOOR



EARTH MARSHALLING BLOCK

ALL BARE CONDUCTORS TO BE COVERED WITH GREEN/YELLOW PVC SLEEVING

NOTES:

ALL CABLES TO BE P.V.C./P.V.C. TO B.S.6004 & COLOUR CODED AS FOLLOWS:
(PHASE) P=RED
(NEUTRAL) N=BLACK OR BLUE
(LOAD) L=YELLOW
(CONTROL WIRES) W=WHITE LENGTH VARIES WITH MOUNTING HEIGHT
(EARTH) E=GREEN/YELLOW

ALL EXPOSED/EXTRANEIOUS CONDUCTIVE PARTS TO BE CONNECTED TO THE MAIN
EARTH TERMINAL USING AN EQUIPOTENTIAL BONDING CONDUCTOR OF 6mm.

CIRCUIT CONDUCTORS TO BE 1.5mm FOR MOUNTING HEIGHTS UP TO 6.0m.
CIRCUIT CONDUCTORS TO BE 2.5mm FOR MOUNTING HEIGHTS OF 8.0m TO 12.0m.

WIRING AS SPECIFIED IN SECTION 14 MEASURED UNDER SECTION 13



Commercial Regulatory and Operational Service
Highway Design
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Project

STANDARD DETAILS

Title

WIRING AND EARTH DETAILS

Scale

NOT TO SCALE

Drawn

AKKV/AA

Checked

PF

Section

HD

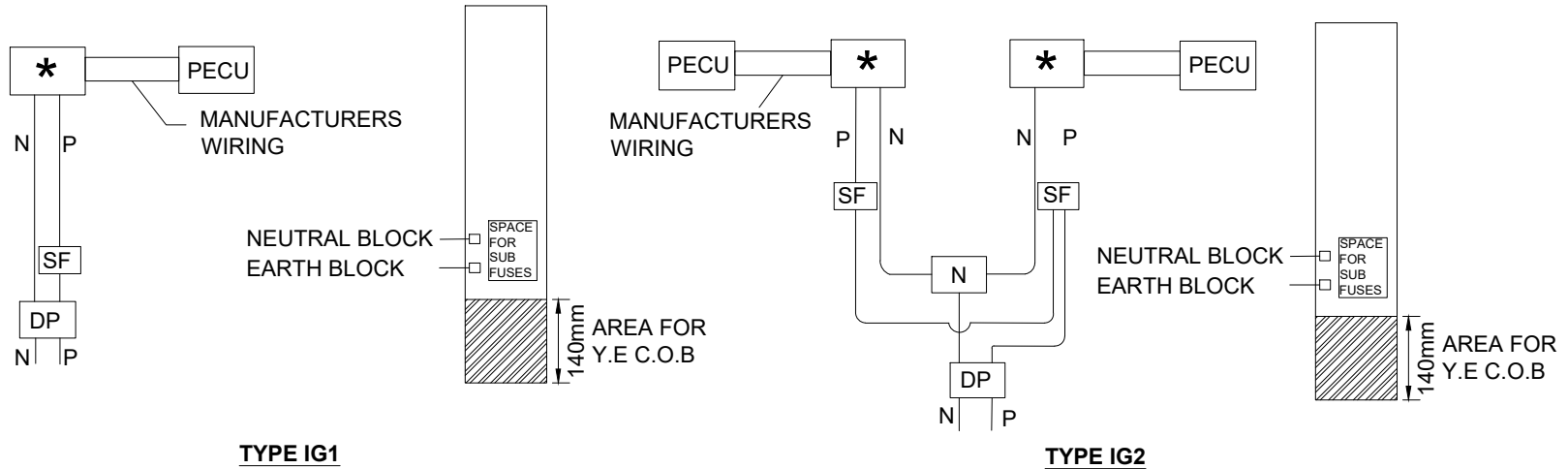
Date

APRIL 21

Drawing No.

HD/SD/13/06B

**WIRING DIAGRAM TYPES FOR INTEGRAL GEAR DETAIL
WITH ONE PART P.E.C.U.**




* LANTERN OR SIGN

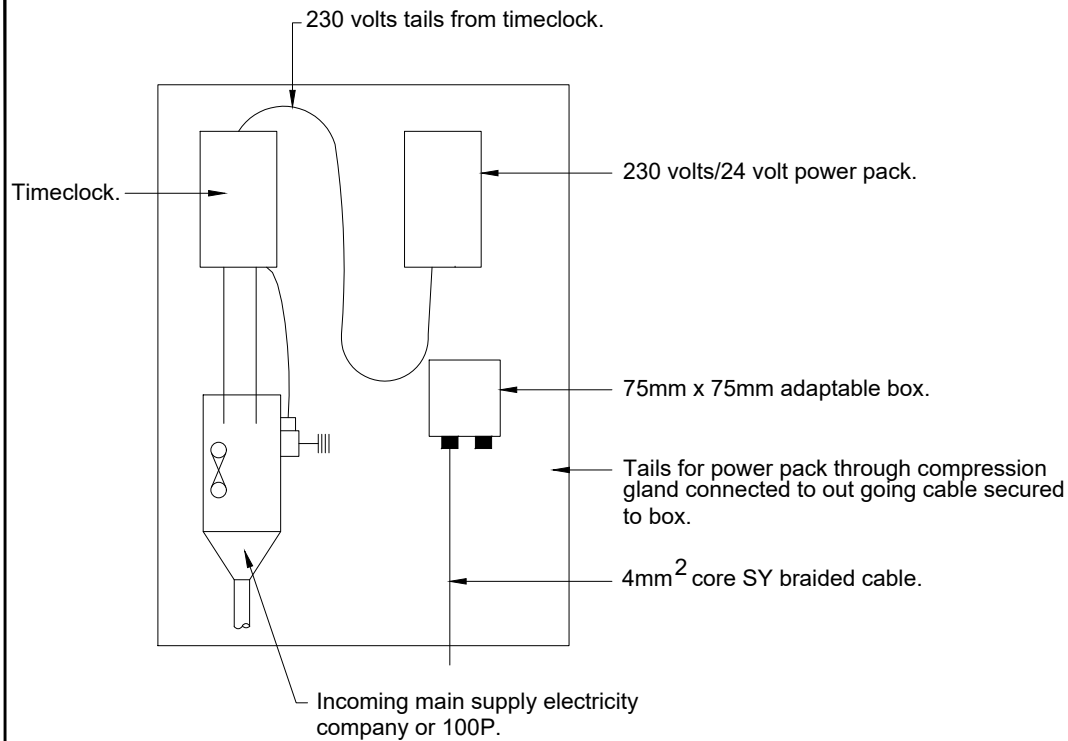
NOTES:

SUB FUSES (SF) TO FACILITATE FERRULE TYPE FUSE (BS88)

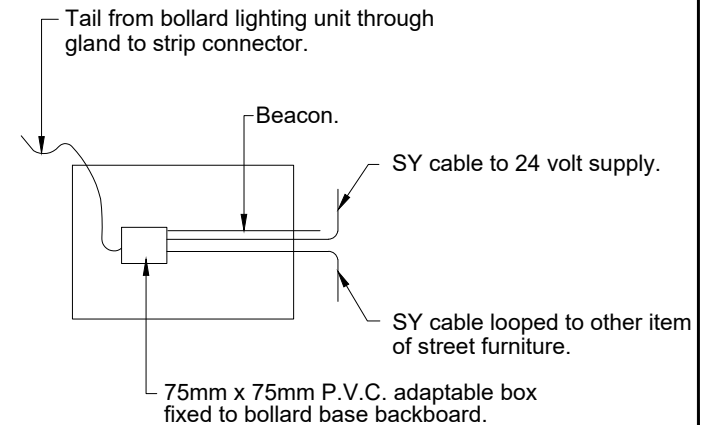
THE C.O.B. FUSE TO BE RATED TO ACCOMMODATE THE LOADS & PROVIDE DISCRIMINATION.

DOUBLE POLE ISOLATOR (DP)

	Project	STANDARD DETAILS		Scale	NOT TO SCALE		
	Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG	Title	ROAD LIGHTING COLUMN WIRING INTEGRAL GEAR		Drawn	AKKV/AA	Checked
Section					HD	Date	APRIL 21
Drawing No.					HD/SD/13/07B		



FEEDER PILLAR/COLUMN ARRANGEMENT



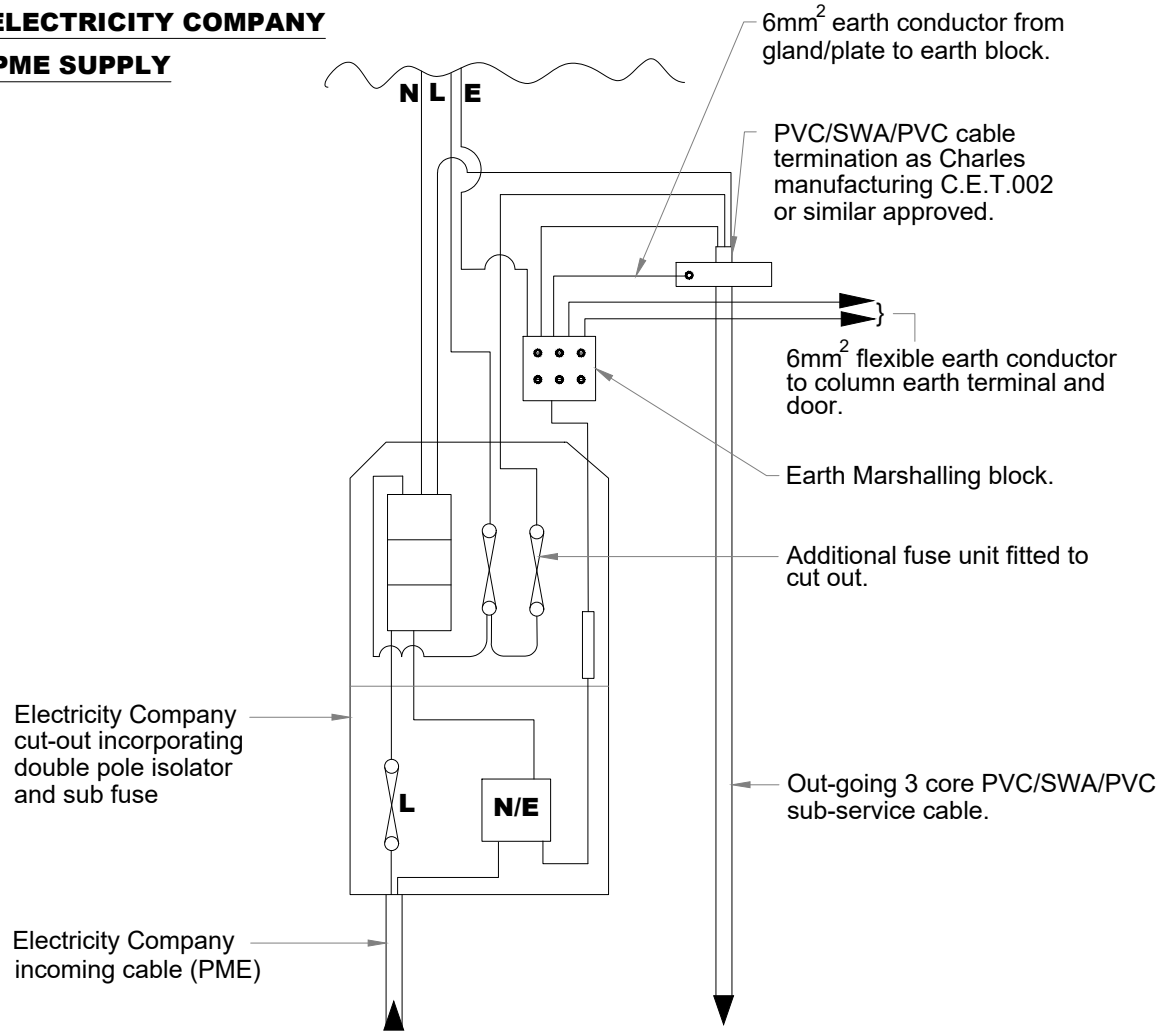
NOTE

If beacon as to be fitted 2 connections (Beacon and 2nd Bollard) should be connected.

ARRANGEMENT IN BOLLARD BASE

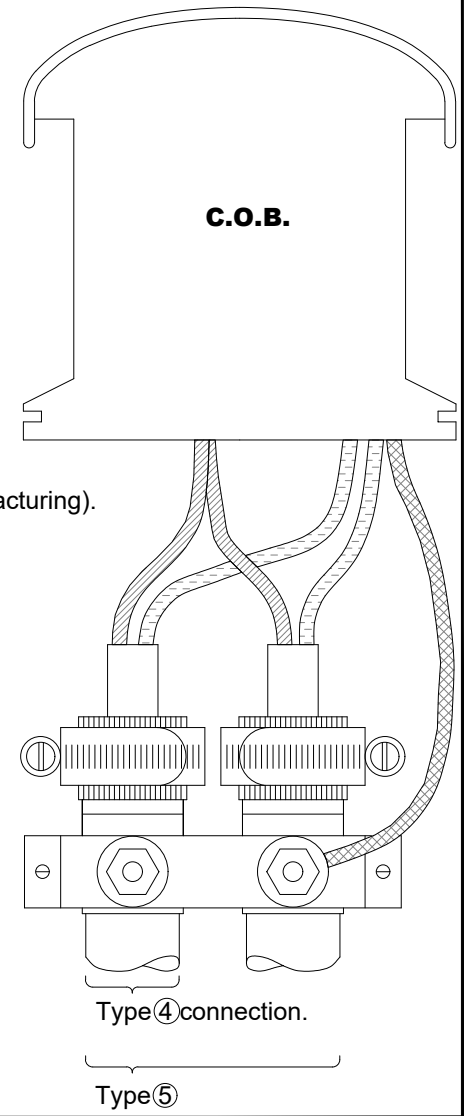
 <p>Kirklees COUNCIL</p>	Project	<h1>STANDARD DETAILS</h1>		Scale	NOT TO SCALE	
	<p>Commercial Regulatory and Operational Service</p> <p>Highway Design Flint Street, Fartown Huddersfield, HD1 6LG</p>			Title	Drawn	Checked
<h2>ELECTRICAL ARRANGEMENT FOR LOW VOLTAGE INSTALLATIONS</h2>		Section	HD	Date	APRIL 21	
		Drawing No.	HD/SD/13/08B			

ELECTRICITY COMPANY
PME SUPPLY



KIRKLEES SUPPLY

P.V.C./S.W.A./P.V.C. Cable termination type C.E.T. 002 and saddle or similar approved (by Charles Manufacturing).



TERMINATION DETAIL OF LOOP SUPPLY CABLE IN SIGN POST.

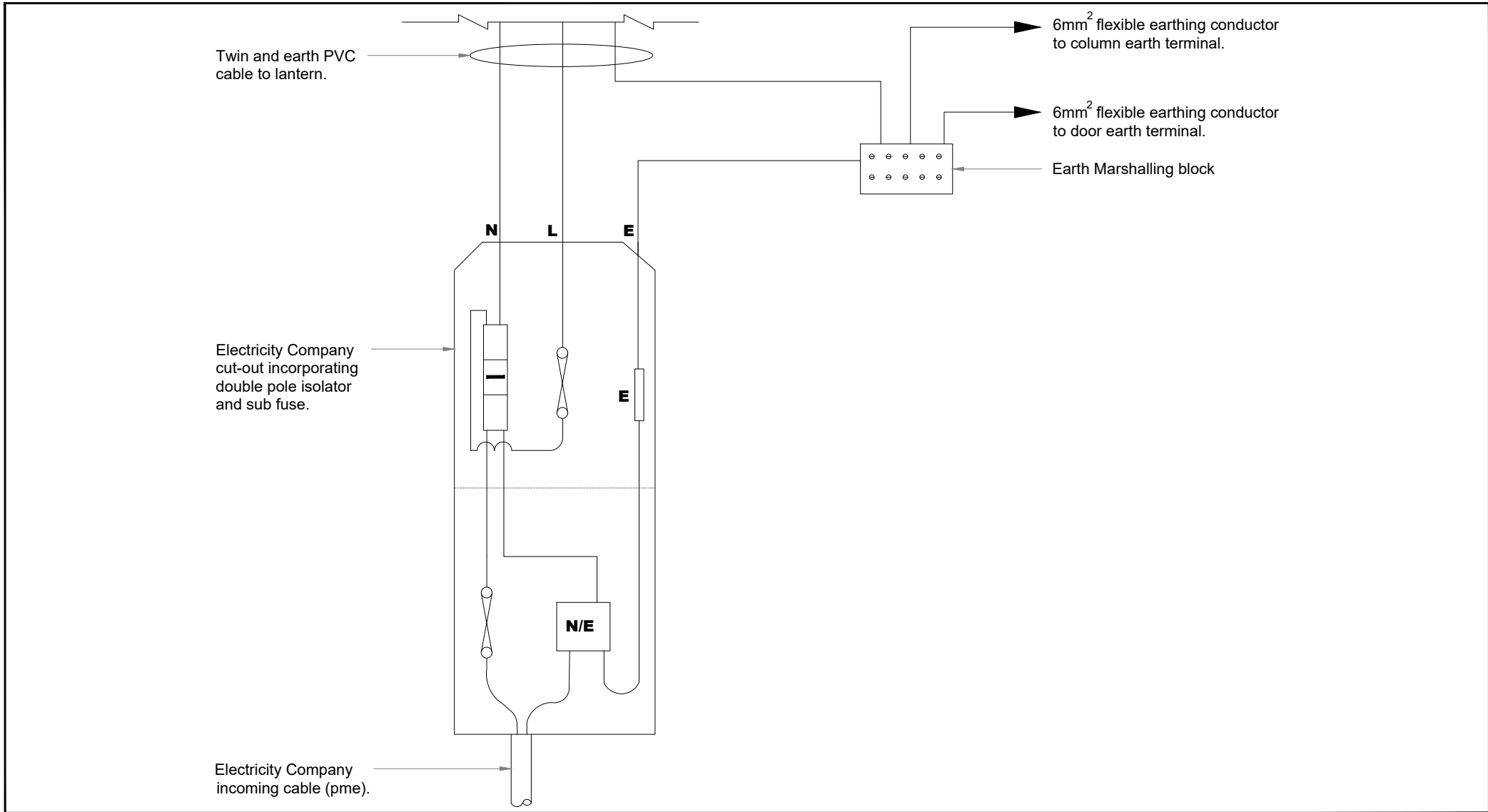



Commercial Regulatory and Operational Service
Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

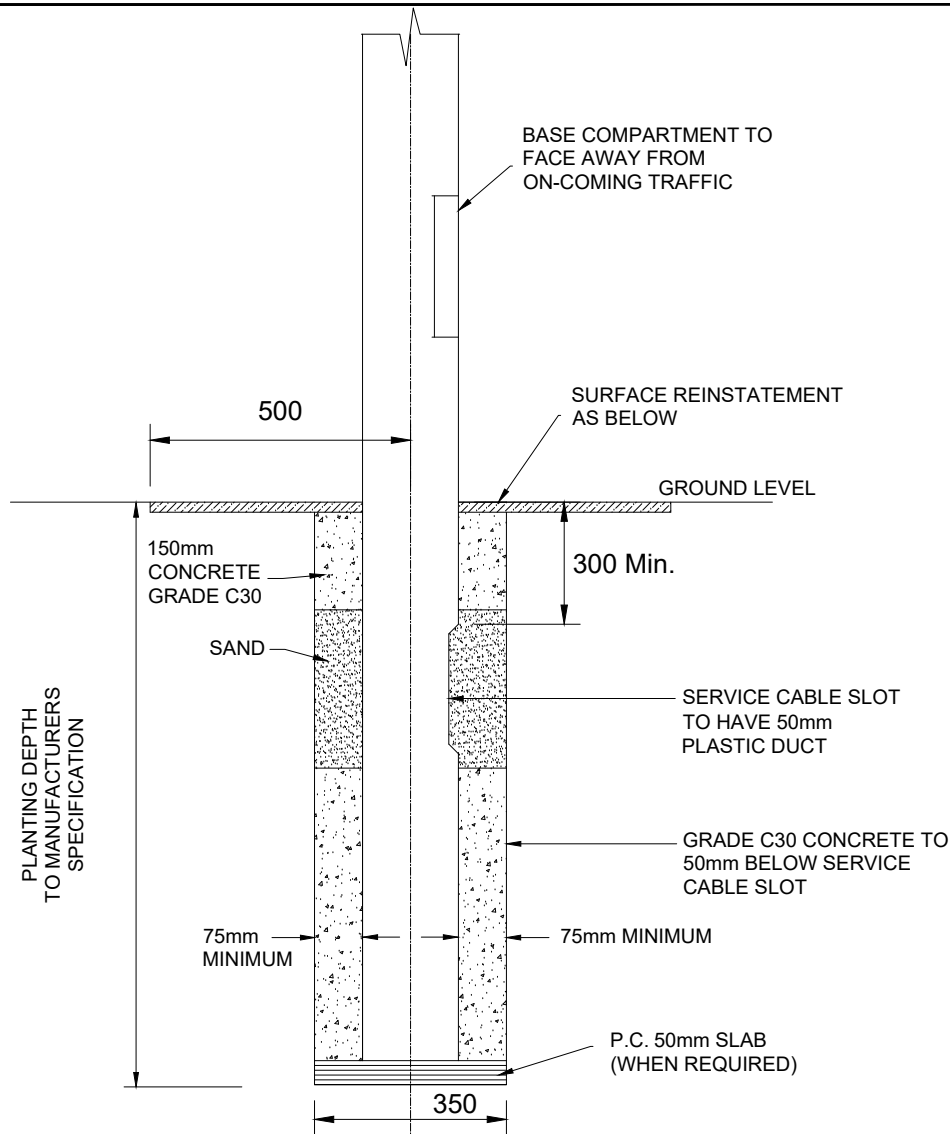
Project
STANDARD DETAILS

Title
TYPICAL BASE COMPARTMENT ELECTRICAL ARRANGEMENT INCLUDING CONNECTION DETAILS OF LOOP SUPPLY

Scale NOT TO SCALE	
Drawn AKKV/AA	Checked PF
Section HD	Date APRIL 21
Drawing No. HD/SD/13/09B	



	Project	STANDARD DETAILS		Scale	NOT TO SCALE		
	Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG	Title	BASE WIRING TO LIGHTING COLUMN OR SIGN POST WITH ELECTRICITY COMPANY PME SUPPLY		Drawn	Checked	
AKKV/AA					PF		
Section					Date		
		HD		APRIL 21			
		Drawing No.		HD/SD/13/10B			




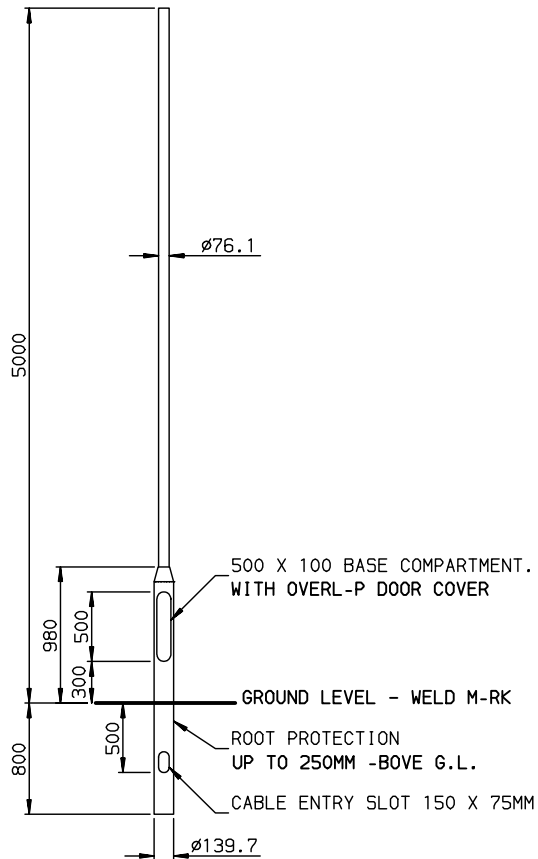
NOTES

1. UNLOADING, STACKING & SLINGING SHALL BE TO MANUFACTURERS INSTRUCTIONS.
2. COLUMNS SHALL BE PLUMBED AND ALIGNED BEFORE COMPLETION OF BACKFILLING.
3. THE DEPTH OF COLUMN IN THE GROUND SHALL BE AS SPECIFIED BY MANUFACTURER.
4. ALL DIMENSIONS IN MILLIMETERS

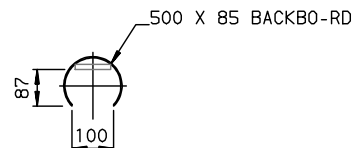
REINSTATEMENTS

- GRASSED AREAS
- 150mm IN-SITU CONCRETE GRADE RC30
- PAVED AREAS
- REINSTATEMENT TO HD/SD/07/03 (CLAUSES 1104,1105,1151 REFER)

	Project	STANDARD DETAILS		Scale	NOT TO SCALE		
	Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG	Title	STREET LIGHTING COLUMN FOUNDATION		Drawn	Checked	
AKKV/AA					PF		
Section					Date		
				HD		APRIL 21	
				Drawing No.		HD/SD/13/11B	



M-AXIMUM LO-DING INCLUDING BR-CKET FOR POST TOP -RR-NGEMENTS ONLY		
WIND LO-DING REGION	TERR-IN C-TEGORY	WEIGHT / WIND-GE -RE-
RWF 350 EXTR- LIGHT	II	40KG / 0.49M ²
	III	60KG / 0.56M ²
RWF 396 LIGHT	II	40KG / 0.41M ²
	III	60KG / 0.48M ²
RWF 429 MEDIUM	II	40KG / 0.37M ²
	III	60KG / 0.43M ²
RWF 466 HE-VY	II	40KG / 0.32M ²
	III	60KG / 0.38M ²
RWF 576 EXTR- HE-VY	II	40KG / 0.24M ²
	III	60KG / 0.28M ²



BASE COMPARTMENT.
SCALE 1:10

NOTES:

ALL DIMENSIONS IN MILLIMETRES
ALL PLATE TO BS EN 10025
ALL CFCHS TO BS EN 10219
PRODUCT CONSTRUCTION TO BS EN 40.
-LL WELDING TO BS EN 1011
PROCEDURES TO BS EN ISO 15614-1
WELDERS QU-LIFIED TO BS EN287-1
FINISH: H.D.G. TO BS EN ISO 1461.

TECHNIC-L INFORMATION:

DESIGN TO BS EN 40, PD6547:2004+A1: 2009
LOAD CL-SS B
DEFLECTION CL-SS 3
NO SIGN ATTACHMENTS

P-RT No: FR2505T01



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV

Checked

Commercial Regulatory and Operational
Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

5m Forest Column

Section

HD

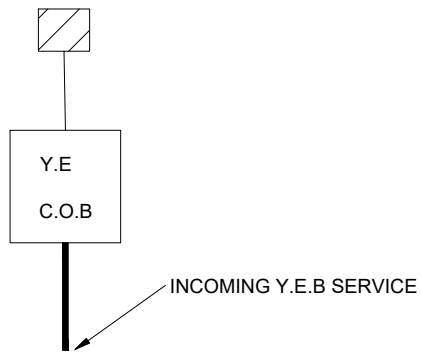
Date

Jun 10

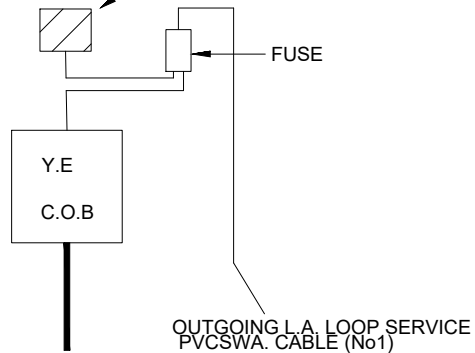
Drawing No.

HD/SD/13/12A

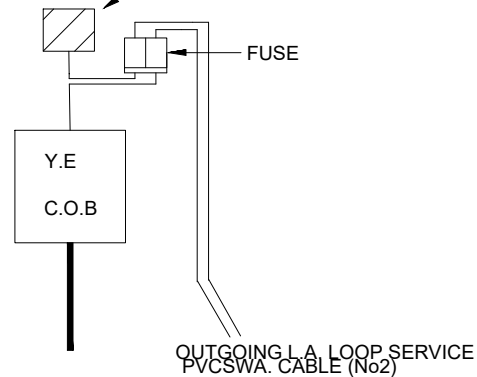
TYPE 1 SEE WIRING DIAGRAM



TYPE 2 SEE WIRING DIAGRAM



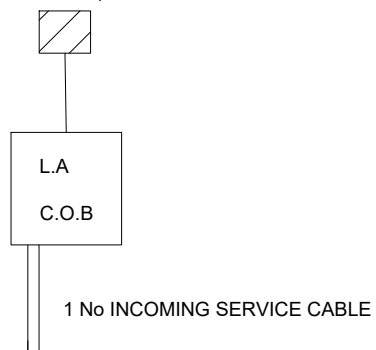
TYPE 3 SEE WIRING DIAGRAM



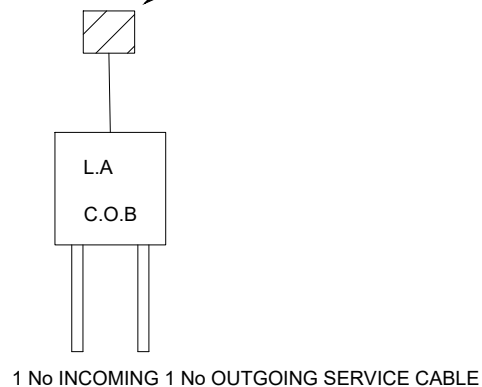
NOTE:
FOR ALL CONNECTIONS THE
C.O.B SHALL BE RATED AT (25A
MAX) WHERE SUBFUSES
ARE REQUIRED THEY SHOULD BE
RATED AS APPENDIX 14.

TERMINATIONS
SPECIFIED/MEASURED UNDER
SECTION 14

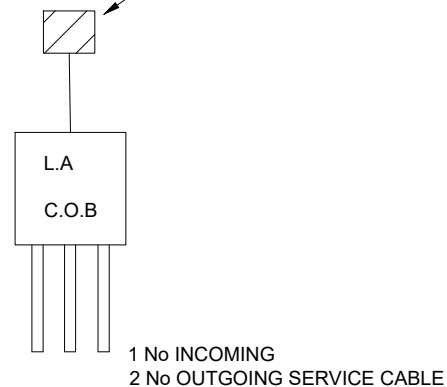
TYPE 4 SEE WIRING DIAGRAM



TYPE 5 SEE WIRING DIAGRAM



TYPE 6 SEE WIRING DIAGRAM



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV

Checked

Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

UNDERGROUND SERVICE CABLE TERMINATION TYPES

Section

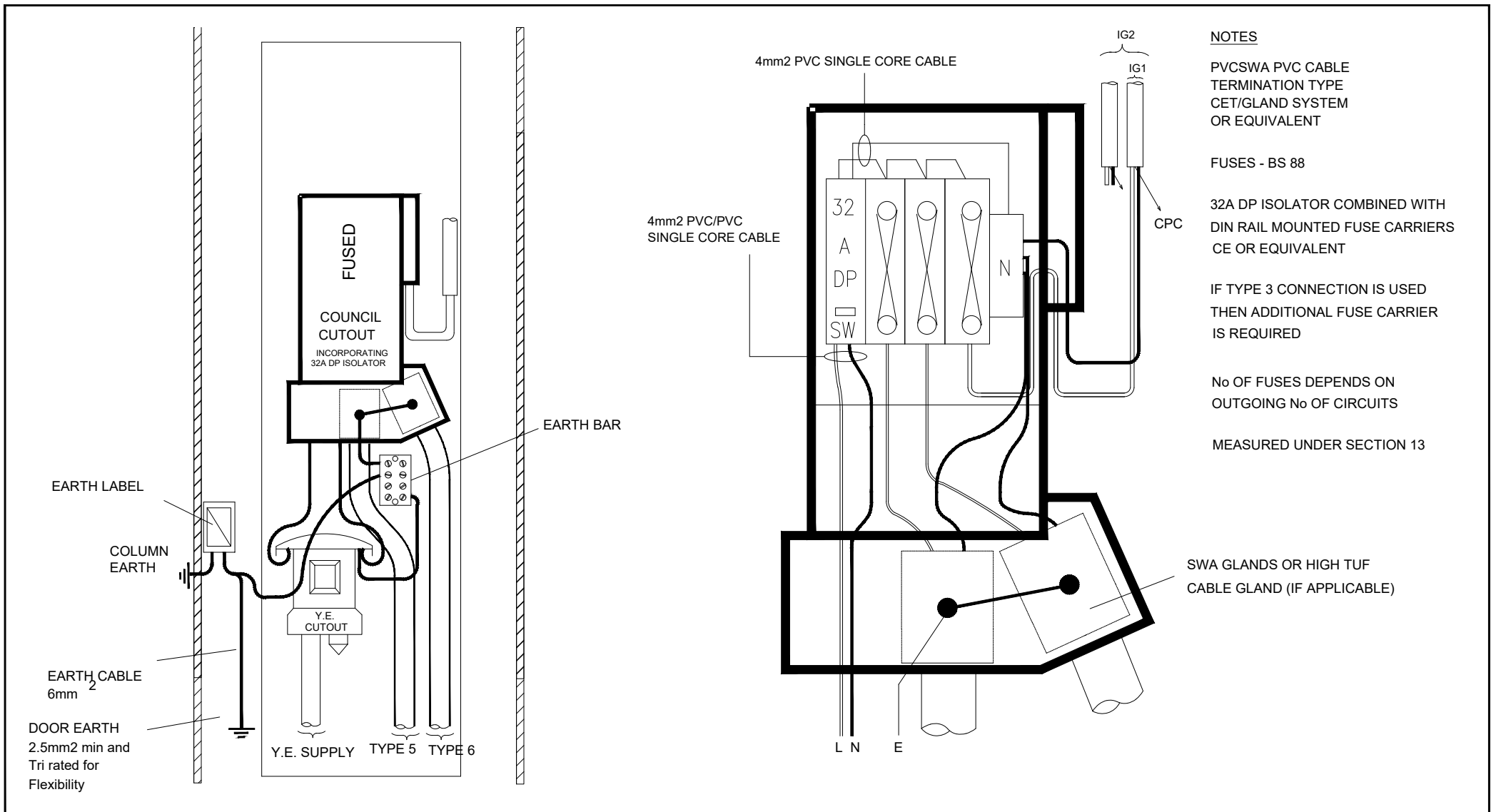
HD

Date

APRIL 21

Drawing No.

HD/SD/14/01B



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV

Checked

Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

**CABLE TERMINATION (Y.E.SUPPLY)
WITH OUTGOING U/G COUNCIL CABLES**

Section

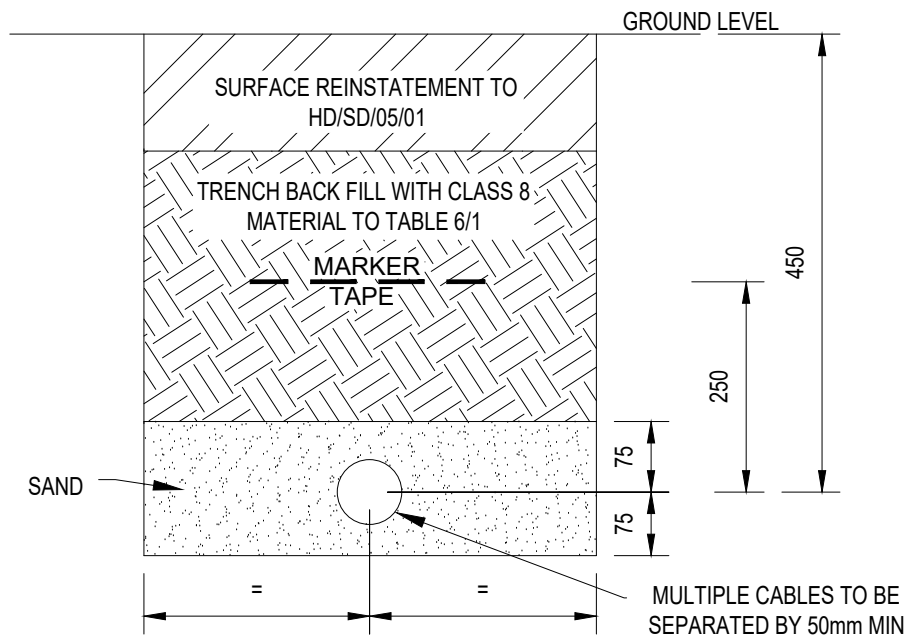
HD

Date

APRIL 21


Drawing No.

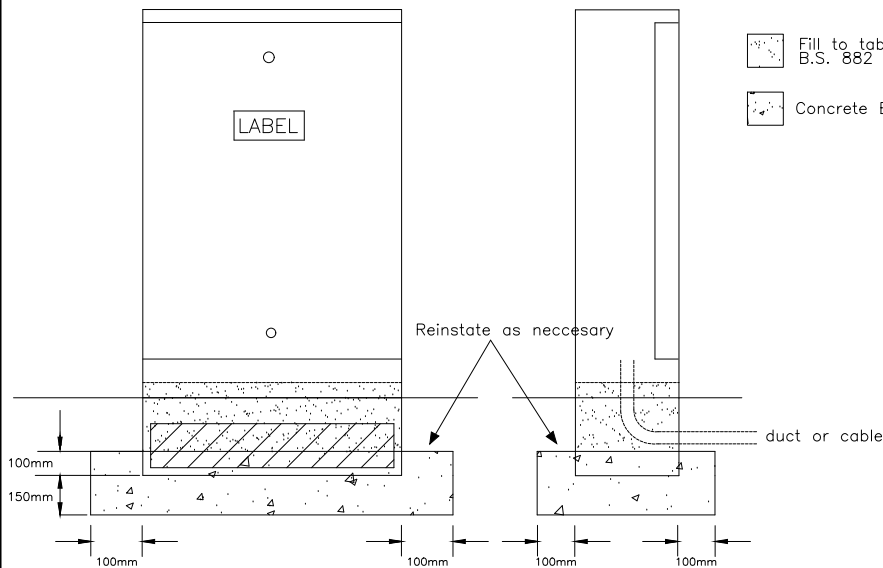
HD/SD/14/02B



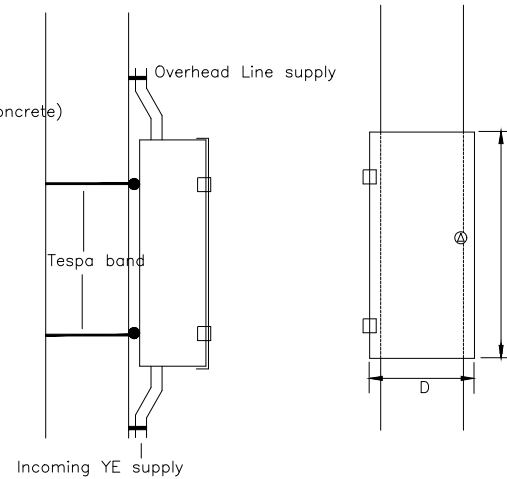
NOTES

1. TRENCH TO BE EXCAVATED IN ACCORDANCE WITH CLAUSE 602
2. TRENCH BACKFILL TO BE CARRIED OUT IN ACCORDANCE WITH CLAUSE 1421
3. POSITION OF CABLE TO BE RECORDED BEFORE BACKFILLING OF TRENCH
4. 2.5mm MARKER TAPE TO BE 150mm WIDE P.V.C WITH LEGEND "ELECTRICITY CABLES DUCT". THE TILE SHOULD BE LAMINATED WITH SUITABLE IDENTIFICATION COMPLYING WITH ENATS STANDARD 12-23 AND MEER IMPACT REQUIREMENT OF BS 2484
5. REINSTATEMENT SHALL BE TO CLAUSE 618 SURFACE TREATMENT TYPE 1
6. THE TRENCH MAY BE EXCAVATED BY HAND OR MACHINE DEPENDING ON LOCAL CONDITIONS - TO BE DETERMINED BY CONTRACTOR

	Project	STANDARD DETAILS		Scale	NOT TO SCALE		
	Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG	Title	TRENCH FOR CABLES / DUCTS LAID DIRECT IN GROUND		Drawn	Checked	
AKKV							
Section					Date		
		HD		APRIL 21			
		Drawing No.		HD/SD/14/03B			



TYPE 1 & 2



TYPE 3

FEEDER TYPE	1	2	3
Approx height	700	950	450
Width internal	150	350	150
Depth internal	100	150	150
Root	300	300	NA
Backboard approx	300x480	330x700	280x420

NOTES:

- TYPES 1 & 2
BODY: 3mm MILD STEEL FABRICATED WITH RADIUS CORNERS
DOOR: 3mm MILD STEEL FABRICATED WITH EARTH TERMINAL AND TRIHEAD SCREW LOCKS.
- TYPE 3
BODY: 3mm MILD STEEL FABRICATED WITH RADIUS CORNERS
DOOR: 3mm MILD STEEL FABRICATED WITH 2NO HINGES WITH TRIHEAD SCREW LOCK.
- TYPE 1, 2 & 3
FINISHED GALVANIZED STEEL TO B.S. 729
PAINTED TO COMPLY WITH APPENDIX 19
- HARD STANDING SHALL BE CONSTRUCTED IN FRONT OF CABINETS AND PILLARS FOR EASE OF MAINTENANCE.
- "MOWING STRIPS" 150mm SHALL BE REQUIRED AROUND ALL SIGNAL POLES, PILLARS, CABINETS AND CHAMBERS INSTALLED IN AREAS OF VEGETATION TO REDUCE RISKS FROM EQUIPMENT BECOMING OVERGROWN BY VEGETATION OR RISKS ASSOCIATED WITH MAINTENANCE OF THE VEGETATION.



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AA

Checked

LH

Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

**FEEDER PILLARS
TYPE 1,2 & 3**

Section

HD

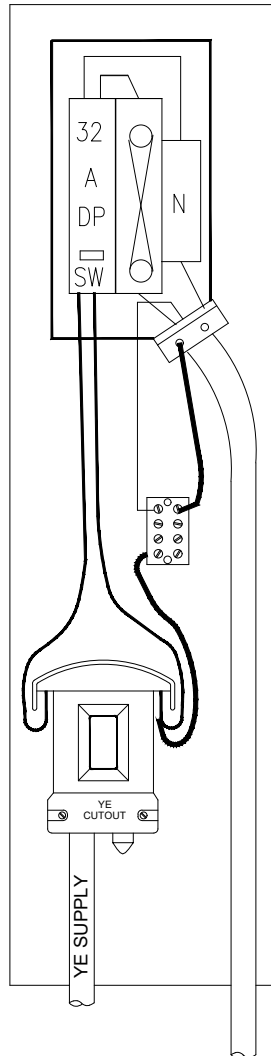
Date

MAY 22

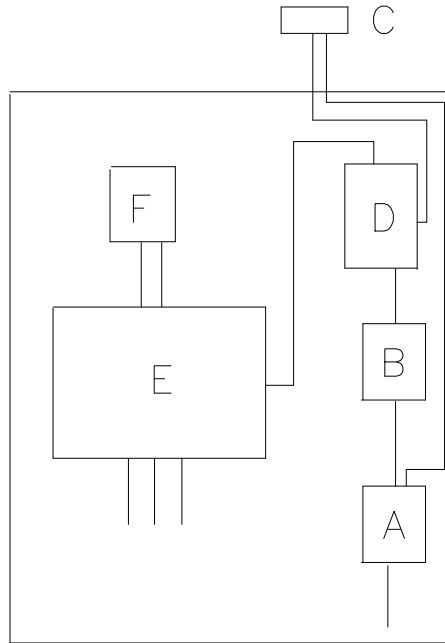
Drawing No.

HD/SD/14/04B

TYPE 1



TYPE 2



- A. AREA FOR Y.E. CUT OUT
- B. DP FUSE
- C. 2 PART P.E.C.U
- D. 100A CONTACTOR (SP & N)
- E. 4 way DIST BOARD (Metalclad Din rail mounted)
- F. SOCKET OUTLET (1 gang single outlet, metalclad)

FEEDER TYPE	1	2
Approx height	700	950
Width internal	150	350
Depth internal	100	150
Root	300	300
Backboard approx	130x480	330x700
Equipment schedule	See Sketch 1,2,3,4,5,6	



Commercial Regulatory and Operational Service
 Highway Design
 Flint Street, Fartown
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Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV

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Title

**FEEDER PILLAR EQUIPMENT LAYOUT
 TYPE 1 & 2**

Section

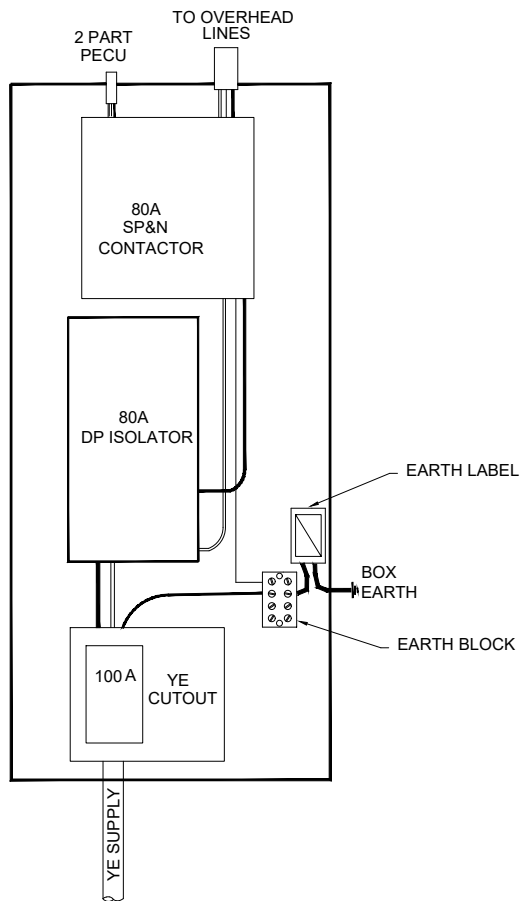
HD

Date

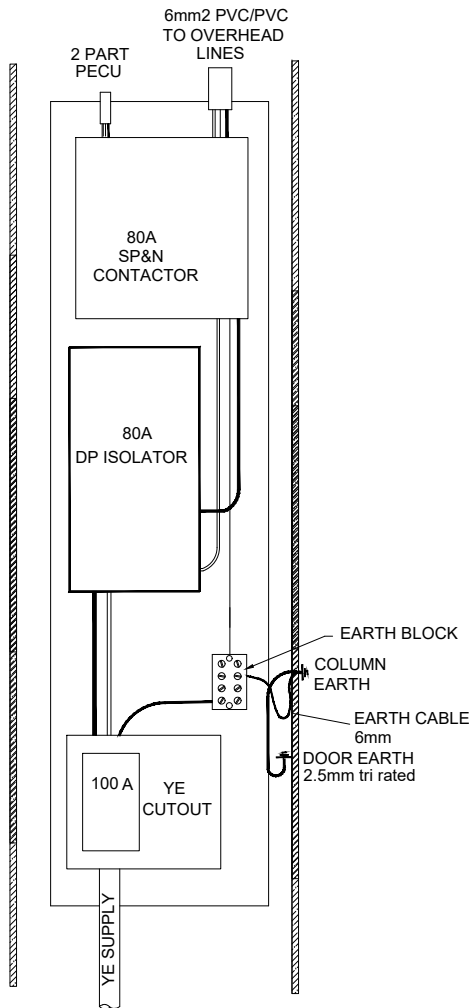
APRIL 21

Drawing No.

HD/SD/14/05B



TYPE 3



TYPE 4 : Mounted inside Overhead Line Transmission Pole.

FEEDER TYPE	3	4
Approx height	450	NA
Width internal	150	NA
Depth internal	150	NA
Root	NA	NA
Backboard approx	280x420	150x600
Equipment schedule	See Sketch	See Sketch

WIRING NOTES

100A YE CUT OUT TO BE FUSED 80A

6mm² (BS 6004) P,N,E INSULATED & SHEATHED CONDUCTORS TO OVERHEAD LINES

2.5mm² (BS 6004) 3 CORE & ECC TO PECU

16mm² (BS 6004) SINGLE CORE INSULATED & SHEATHED CONDUCTORS, BETWEEN CONTACTOR AND YE CUT OUT



STANDARD DETAILS

Scale
NOT TO SCALE

Drawn
AKKV

Checked

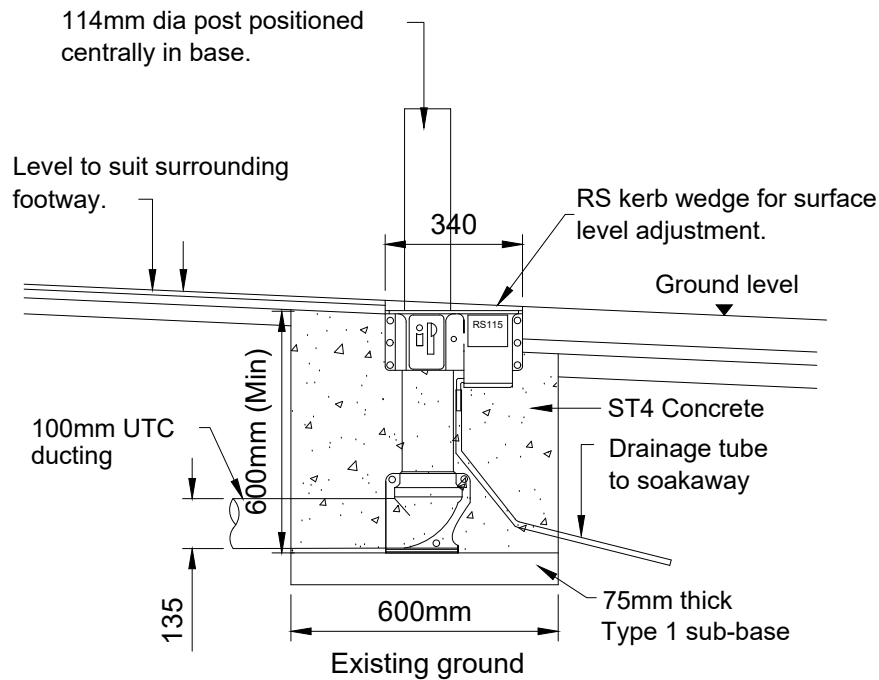
Commercial Regulatory and Operational Service
Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title
**FEEDER PILLAR EQUIPMENT LAYOUT
TYPES 3 & 4**

Section
HD

Date
APRIL 21

Drawing No. HD/SD/14/06B



TRAFFIC SIGNAL POLE RETENTION SOCKET WITH DUCKFOOT BEND TYPE RS115 DF (600mm DEEP) AS MANUFACTURED BY:- N.A.L. SYSTEMS LTD OR SIMILAR APPROVED PRODUCT. THE CONTRACTOR SHALL INSTALL THE PRODUCT IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS.

WEIR LANE
 WORCESTER
 WR2 4AY.
 TEL:- 01905 427 100
 FAX:- 01905 427 030

RECOMMENDED INSTALLATION INSTRUCTIONS

1. EXCAVATE HOLE:- EXCAVATION TO SUIT LOCATION AND DEPTH OF SOCKET.
2. COMPACT A 75mm LAYER OF TYPE 1 SUB-BASE IN THE BASE OF THE EXCAVATION
3. PLACE THE RS115 IN THE REQUIRED LOCATION, ENSURING THAT THERE IS AT LEAST 200MM CLEARANCE TO THE SURROUND AND THE DRAINAGE DUCT IS NOT PINCHED OR OBSTRUCTED.
4. ENSURE THE TWO STAINLESS STEEL BOLTS DO NOT OBSTRUCT THE TRAFFIC SIGNAL POLE FROM ENTERING THE SOCKET.
5. CONNECT THE TRAFFIC SIGNAL DUCTING (IF USED) TO THE SOCKET.
6. LUBRICATE THE STAINLESS STEEL SLEEVE PRIOR TO PLACING THE STUB POLE INTO SOCKET AND FASTEN THE TWO STAINLESS STEEL BOLTS AGAINST THE STUB POLE. USING THE STUB POLE ENSURE THE POST IS IN A VERTICAL POSITION
7. CAST CONCRETE WITH THE LID LOCKED IN POSITION AND COMPACT USING A VIBRATING POKER. FILL THE CONCRETE TO A LEVEL TO ALLOW FOR THE SURROUNDING SURFACING. THE CONCRETE SHOULD BE AT LEAST ST4/C30 MIX OR STRONGER.
8. CHECK THE POST IS VERTICAL AND FINISH.
9. THE CONTRACTOR SHALL INSTALL THE SOCKETS AND THE POLES. THE POLES WILL BE SUPPLIED BY THE TRAFFIC SIGNALS CONTRACTOR.
10. "MOWING STRIPS" 150MM SHALL BE REQUIRED AROUND SIGNAL POLES, PILLARS, CABINETS AND CHAMBERS INSTALLED IN AREAS OF VEGETATION TO REDUCE RISKS FROM EQUIPMENT BECOMING OVERGROWN BY VEGETATION OR RISKS ASSOCIATED WITH MAINTENANCE OF THE VEGETATION..



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AA

Checked

LH

Commercial Regulatory and Operational Service

Highway Design
 Flint Street, Fartown
 Huddersfield, HD1 6LG

Title

TRAFFIC SIGNAL POLE RETENTION SOCKET

Section

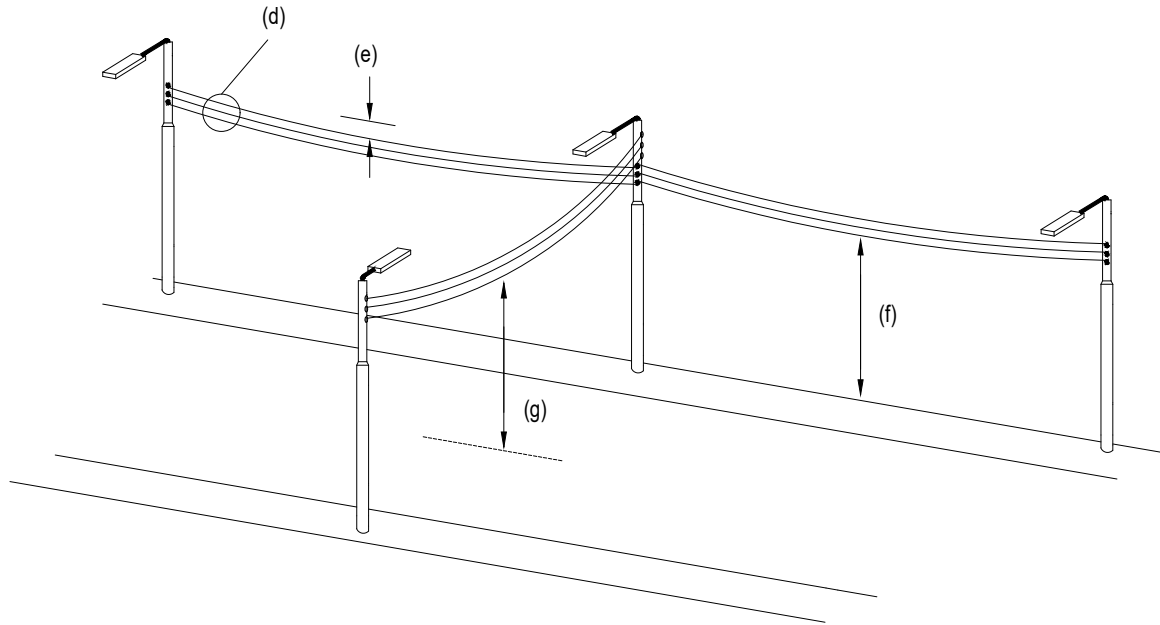
HD

Date

MAY 22

Drawing No.

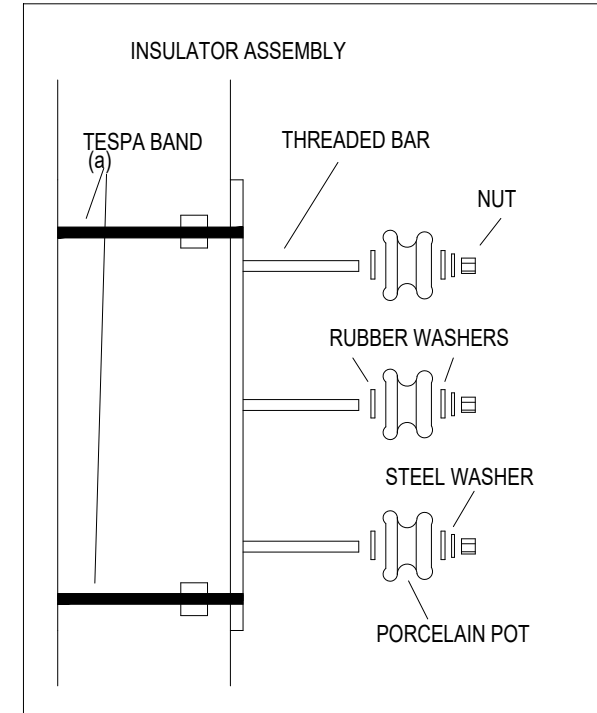
HD/SD/14/07B




DETAIL OF NETWORK LAYOUT AND CLEARANCES

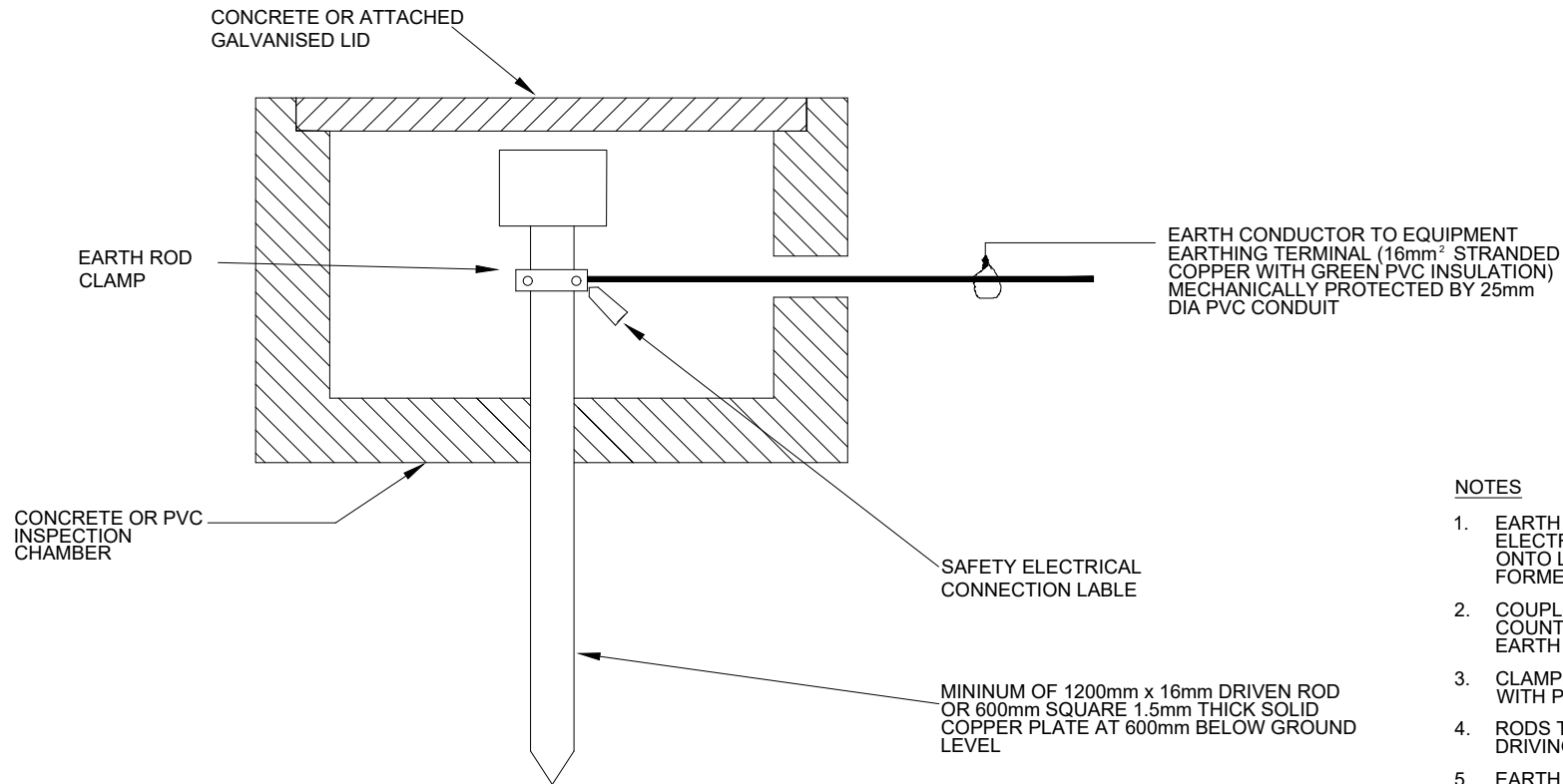
NOTES

- O/H lines to be measured in section 14 as a single line. (ie 30m 3 wire span equals 90m)
- (a) 3 insulator assembly on bracket strapped to col
- (b) bridging conductors - connection via line tap and insulate overall
- (c) lantern feed - connection via line tap and insulate overall / 2.5mm² PVC insulated T+E (BS 6004)
- (d) spans to be parallel - 6mm² hard drawn copper conductor / PVC insulated (BS 7884)
- (e) max droop not to exceed 300mm (at 10 °c ± 5 °c)
- (f) min clearance to footway 5m
- (g) min clearance to carriageway 6m
- (h) 6mm² pvc supply point cable between column base and o/h line to terminate with line tap




OVERHEAD LINE LAYOUT

	Project	STANDARD DETAILS		Scale	NOT TO SCALE		
	Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG	Title	OVERHEAD LINE LAYOUT		Drawn	Checked	
AKKV							
Section					Date		
		HD		APRIL 21			
		Drawing No.		HD/SD/14/08B			

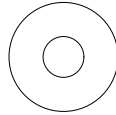


NOTES

1. EARTH RODS SHALL BE SOLID COPPER OR ELECTRLYTIC COPPER MOLECULARLY BONDED ONTO LOW CARBON STEEL CORE. THREADS SHALL BE FORMED BY ROLLING.
2. COUPLINGS SHALL BE SILICONE ALUMINIUM BRONZE COUNTER BORED TO COMPLETELY ENCLOSE THE EARTH ROD THREADS.
3. CLAMPS SHALL BE SILICONE ALUMINIUM BRONZE WITH PHOSPHOR BRONZE SCREWS.
4. RODS TO BE DRIVEN HOME USING PURPOSE MADE DRIVING HEAD.
5. EARTH CONDUCTORS SHALL BE SNAKED IN THE BASE COMPARTMENT OF THE EQUIPMENT BEING EARTHED TO PROVIDE 0.5m OF SLACK FOR FUTURE MAINTENANCE.
6. CLAMPS SHALL BE PROTECTED VIA PETROLATOM BASED TAPE.

 <p>Kirklees COUNCIL</p>	Project	<h1>STANDARD DETAILS</h1>		Scale		
				NOT TO SCALE		
<p>Commercial Regulatory and Operational Service</p> <p>Highway Design Flint Street, Fartown Huddersfield, HD1 6LG</p>	Title	<h2>EARTH ELECTRODE</h2>		Drawn	Checked	
					AKKV	
				Section	Date	
		HD	APRIL 21			
		Drawing No. HD/SD/14/09B				

KIRKLEES
COUNCIL



00001

Request to Northern Powergrid for connection of Public Lighting installation.

I certify that the installation has been completed and tested in accordance with the current edition of the IEE Regulations for Electrical Installations (in so far as practicable) and the requirements of the Electricity Supply Regulations have been met.



DANGER

The equipment installed may be **LIVE** and could be **DANGEROUS** if interfered with.

INITIAL INSPECTION & TEST

Name (please print)	Company	Date	Signed

PERIODIC INSPECTION & TEST

Name (please print)	Company	Date	Signed

NO INSPECTION OR TEST OF THE ELECTRICAL INSTALLATION
WILL BE CARRIED OUT BY NORTHERN POWERGRID

NOTE:

- (1) Label to be installed using cable tie to lantern
circuit drip loop
- (2) Label to be supplied by engineer



**Commercial Regulatory and Operational
Service**
Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV

Checked

Title

INSPECTION LABEL

Section

HD

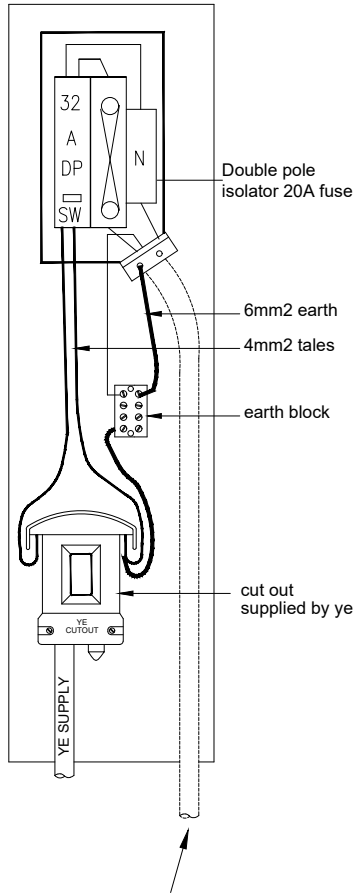
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APRIL 21

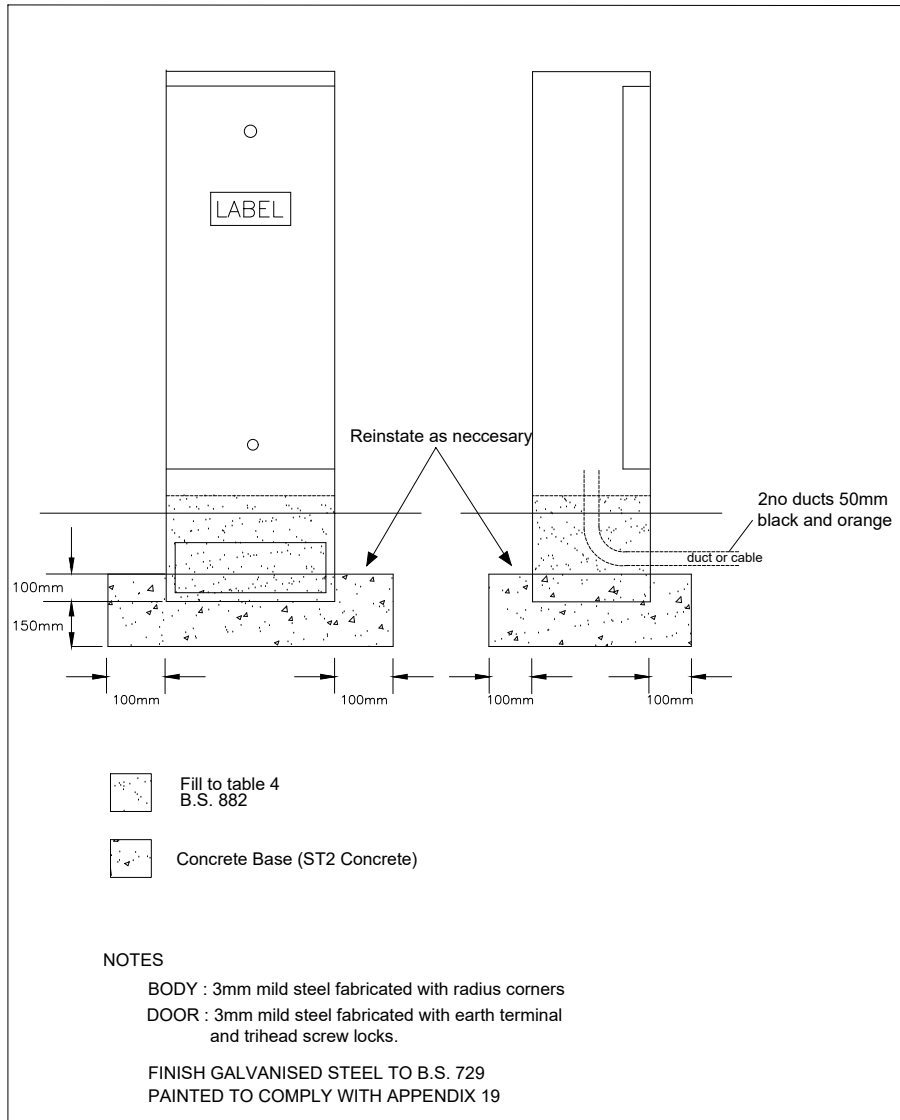
Drawing No.

HD/SD/14/10B

TYPE 1



3 metres of 2.5mm² HITUF installed in orange duct and coiled in TSC base Ensure cable has been taped up on the end. ie. electrically insulated



NOTES

BODY : 3mm mild steel fabricated with radius corners
DOOR : 3mm mild steel fabricated with earth terminal and trihead screw locks.

FINISH GALVANISED STEEL TO B.S. 729
PAINTED TO COMPLY WITH APPENDIX 59

FEEDER TYPE 1

Approx height	900
Width internal	350
Depth internal	150
Root	300
Backboard approx	334x785
Equipment schedule	See Sketch

NOTES:

- 1) BLACK YE DUCT TO BE DIRECTED INTO FOOTPATH FOR YE CONNECTION
- 2) ORANGE STREET LIGHTING DUCT TO BE DIRECTED TO TSC BASE ADJACENT TO THE FEEDER PILLAR
- 3) HARD STANDING SHALL BE CONSTRUCTED IN FRONT OF CABINETS AND PILLARS FOR EASE OF MAINTENANCE.
- 4) "MOWING STRIPS" 150mm SHALL BE REQUIRED AROUND SIGNAL POLES, PILLARS, CABINETS AND CHAMBERS INSTALLED IN ASSOCIATED WITH MAINTENANCE OF THE VEGETATION.



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AA

Checked

LH

Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

**FEEDER PILLAR EQUIPMENT LAYOUT
UNMETERED TYPE (TRAFFIC SIGNALS)**

Section

HD

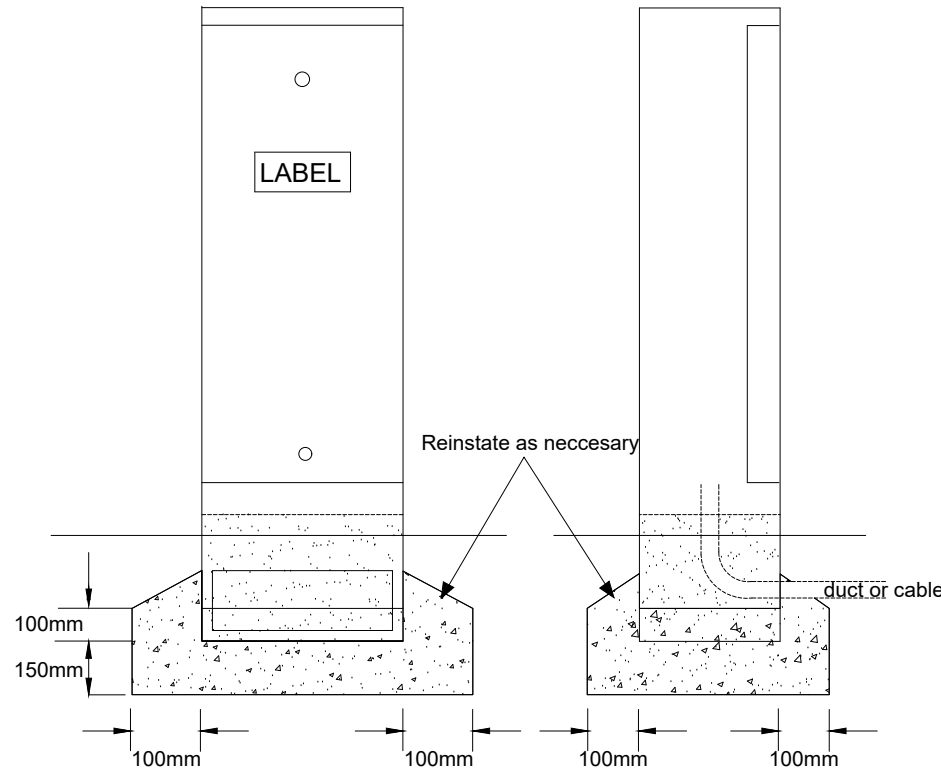
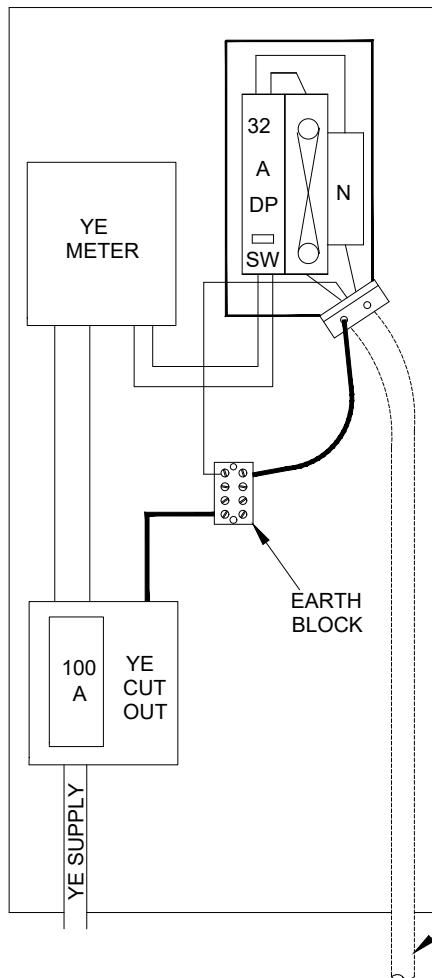
Date

MAY 22

Drawing No.

HD/SD/14/11B

TYPE 1



Fill to table 4
B.S. 882

Concrete Base (ST2 Concrete)

2no ducts 50mm black and orange

NOTES
 BODY : 3mm mild steel fabricated with radius corners
 DOOR : 3mm mild steel fabricated with earth terminal and trihead screw locks.

FINISH GALVANISED STEEL TO B.S. 729 PAINTED TO COMPLY WITH APPENDIX 19

FEEDER TYPE 1

Approx height	900
Width internal	350
Depth internal	150
Root	300
Backboard approx	334x785
Equipment schedule	See Sketch

NOTES:

- 1) BLACK YE DUCT TO BE DIRECTED INTO FOOTPATH FOR YE CONNECTION
- 2) ORANGE STREET LIGHTING DUCT TO BE DIRECTED TO TSC BASE ADJACENT TO THE FEEDER PILLAR
- 3) HARD STANDING SHALL BE CONSTRUCTED IN FRONT OF CABINETS AND PILLARS FOR EASE OF MAINTENANCE.
- 4) "MOWING STRIPS" 150mm SHALL BE REQUIRED AROUND SIGNAL POLES, PILLARS, CABINETS AND CHAMBERS INSTALLED IN AREAS OF VEGETATION TO REDUCE RISKS FROM EQUIPEMENT BECOMING OVERGROWN BY VEGETATION OR RISKS ASSOCIATED WITH MAINTENANCE OF THE VEGETATION.



STANDARD DETAILS

Scale
NOT TO SCALE

Drawn AA Checked LH

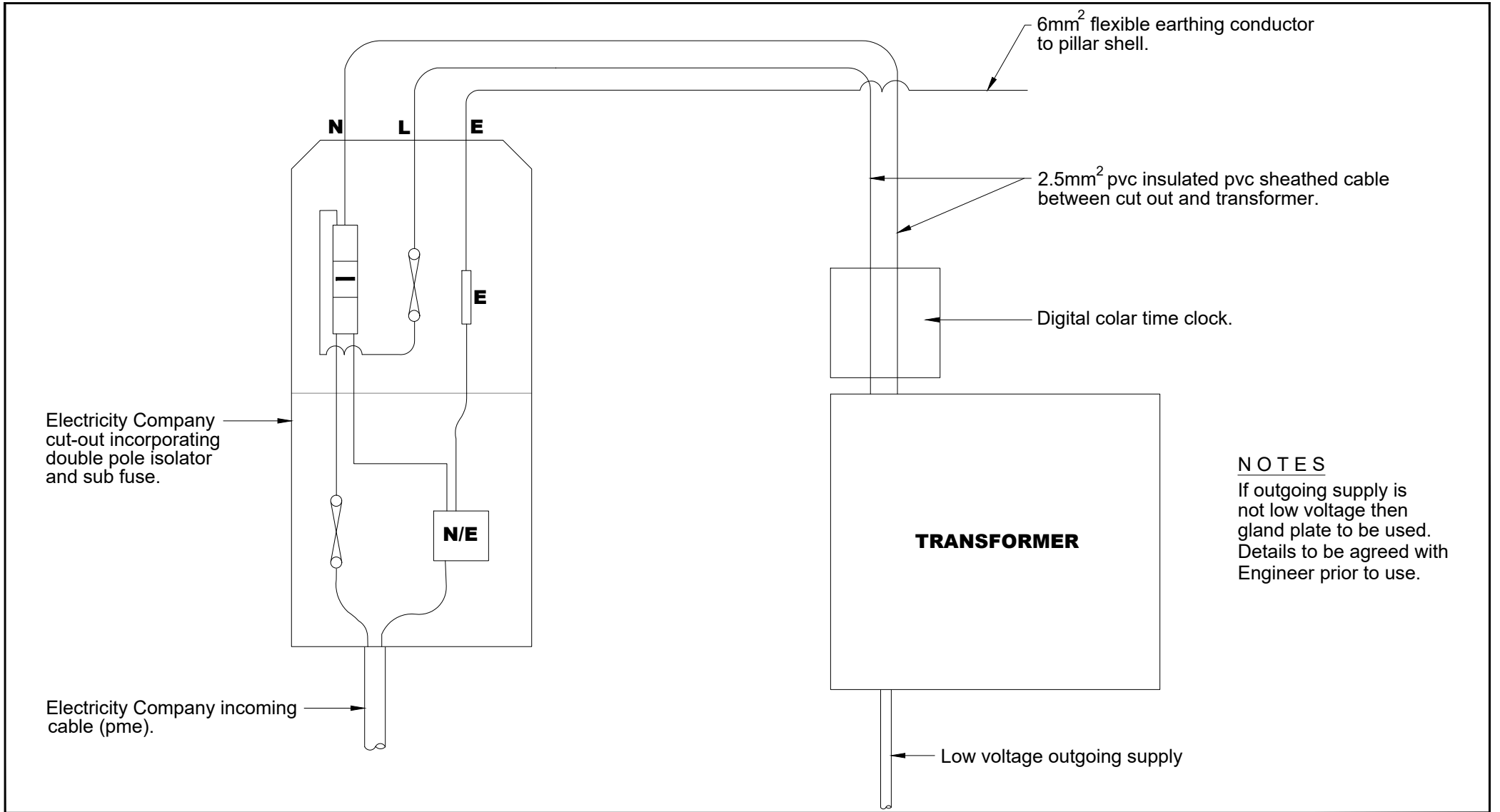
Commercial Regulatory and Operational Service
 Highway Design
 Flint Street, Fartown
 Huddersfield, HD1 6LG


Project
STANDARD DETAILS

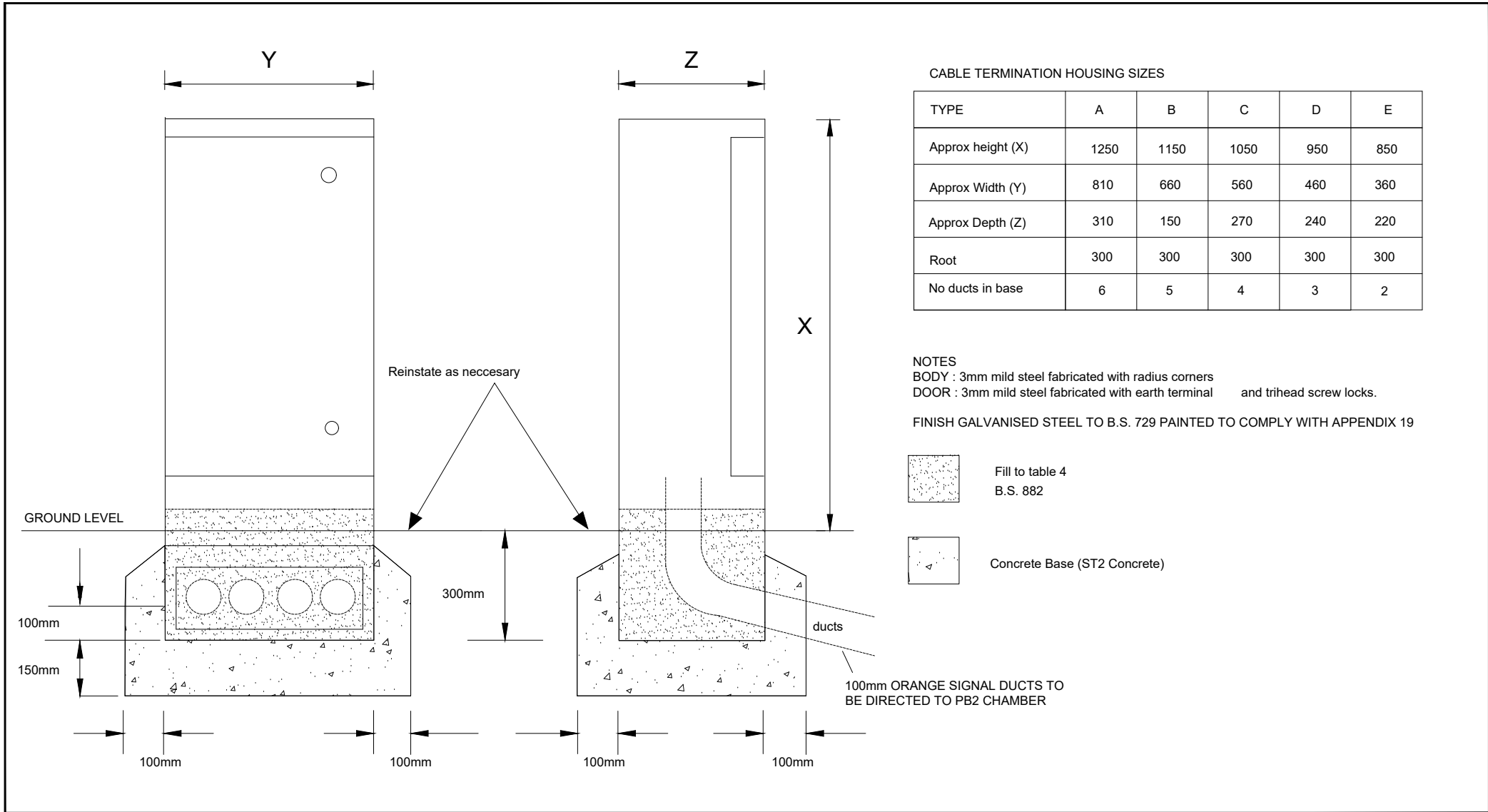
Title
**FEEDER PILLAR LAYOUT
 TYPE WITH METER (TRAFFIC SIGNALS)**

Section HD Date MAY 22

Drawing No. HD/SD/14/12B





	Project	STANDARD DETAILS		Scale	NOT TO SCALE		
	Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG	Title	TYPICAL FEEDER PILLAR ARRANGEMENT INCLUDING CONNECTION DETAILS FOR OUT GOING LOW VOLTAGE SUPPLY		Drawn	Checked	
AKKV							
Section					Date		
		HD		APRIL 21			
		Drawing No.		HD/SD/14/13B			




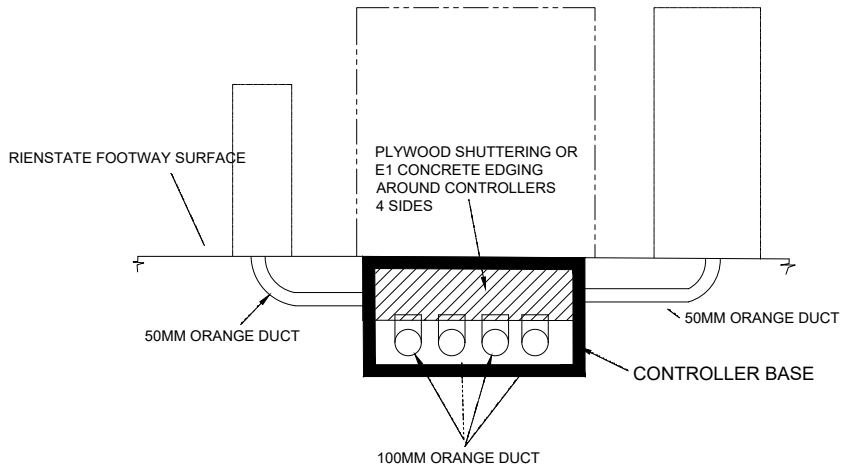
CABLE TERMINATION HOUSING SIZES

TYPE	A	B	C	D	E
Approx height (X)	1250	1150	1050	950	850
Approx Width (Y)	810	660	560	460	360
Approx Depth (Z)	310	150	270	240	220
Root	300	300	300	300	300
No ducts in base	6	5	4	3	2

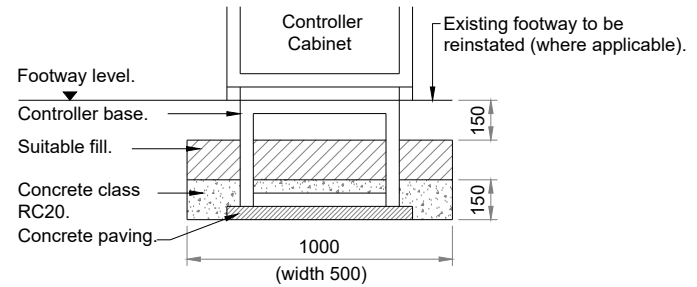
NOTES
 BODY : 3mm mild steel fabricated with radius corners
 DOOR : 3mm mild steel fabricated with earth terminal and trihead screw locks.
 FINISH GALVANISED STEEL TO B.S. 729 PAINTED TO COMPLY WITH APPENDIX 19

-  Fill to table 4
B.S. 882
-  Concrete Base (ST2 Concrete)

	Project	<h1>STANDARD DETAILS</h1>		Scale	NOT TO SCALE		
	Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG			Title	<h2>CABLE TERMINATION HOUSING LAYOUT</h2>		Drawn
		Checked					
		Date	APRIL 21				
		Section	HD		Drawing No.	HD/SD/14/14B	

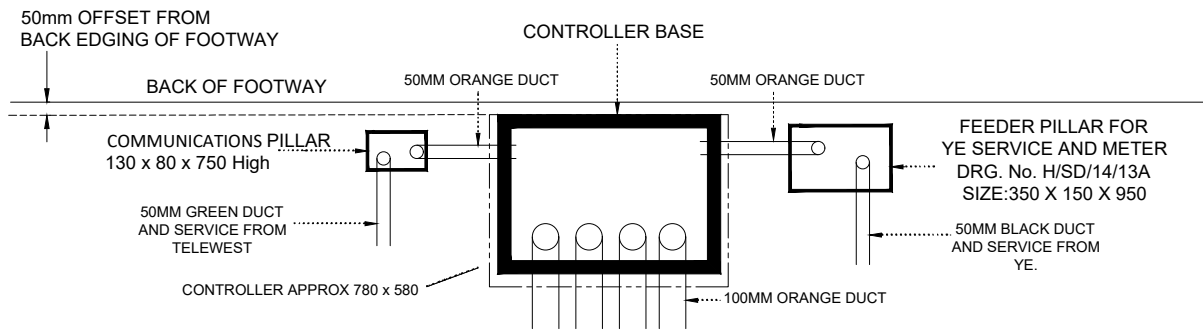


FRONT SECTION



NOTE:- Ensure a minimum clearance of 100mm from any vertical obstruction (eg. walls) adjacent to the controller.

SECTION FOUNDATION FOR CONTROLLER



PLAN SECTION



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV

Checked

Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

CONTROLLER BASE INSTALLATION DETAIL

Section

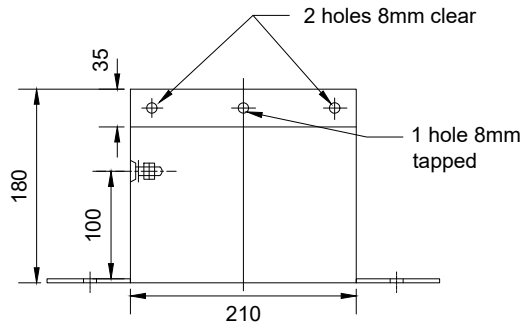
HD

Date

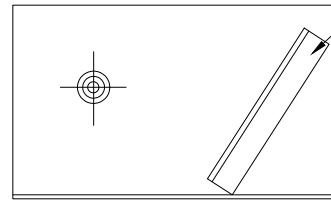
APRIL 21

Drawing No.

HD/SD/14/16B



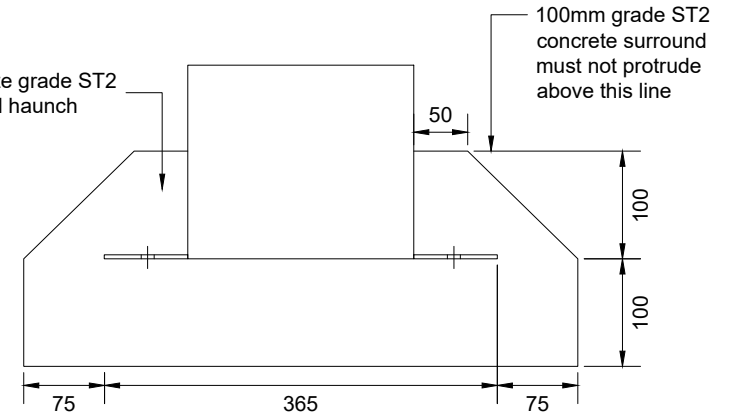
END ELEVATION



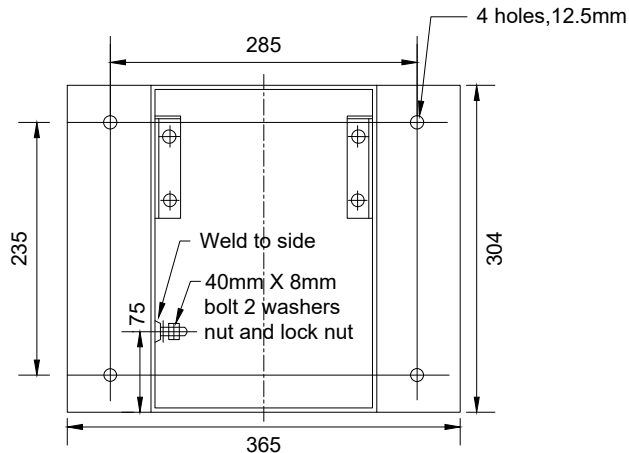
SIDE ELEVATION

25mm X 25mm X 3mm
M.S. angle to accept 8mm
exterior grade board to be
fixed with 5mm brass bolts

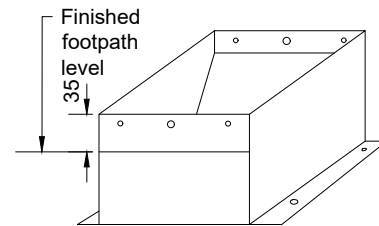
Concrete grade ST2
bed and haunch



**DETAIL OF BED AND HAUNCH TO
BOLLARD BASE**



PLAN OF BASE



SIZE AND TYPES PF PAVEMENT BOXES

NOTES

1. Base and top section to be 3mm mild steel plate.
2. Mild steel to be shot blasted and hot dip galvanised to B.S.729 min. thickness 120µm.
3. Bollard base to be fixed with universal base illuminated based unit.



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Project

STANDARD DETAILS

Scale

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Checked

Title

TYPES OF PAVEMENT BOXES

Section

HD

Date

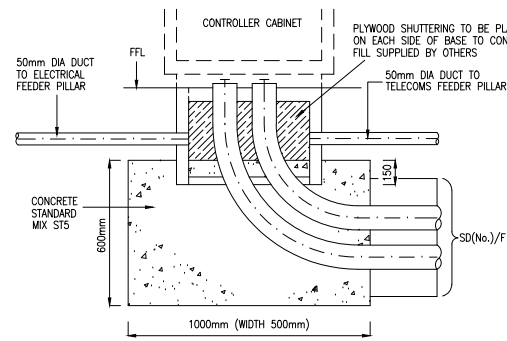
APRIL 21

Drawing No.

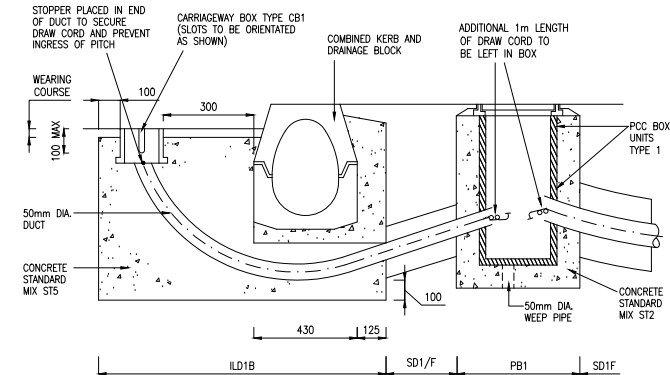
HD/SD/14/17B

NOTES

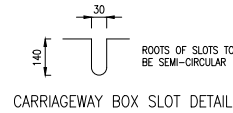
- ALL DIMENSIONS IN MILLIMETRES.
- PAVEMENT INSPECTION BOX TYPE PB1 IS SHOWN USING PRECAST CONCRETE UNITS (DETAILED ON DWG. No. H/SD/05/54). ALTERNATIVELY CHAMBERS MAY BE FORMED IN HIGH DENSITY POLYETHYLENE UNITS 450 x 450mm IN PLAN SIZE WITH 150mm CONCRETE SURROUND STANDARD MIX ST1.
- COMPOSITE COVERS WITH FRAMES FOR PB1 AND PB2 BOXES TO BE AS SUPPLIED BY BURDENS INTEGRATED DUCTING SYSTEMS, LEEDS. TEL: 0113 229 9282 OR EC EQUIVALENT.
- CARRIAGEWAY BOX TYPE ILD1 FROM NAL OR EQUIVALENT WITH SLOTS FORMED IN TWO OPPOSITE FACES. SLOTS TO BE ALIGNED PARALLEL TO ADJACENT KERBS. ROOT OF SLOT TO BE SEMICIRCULAR - BOXES WITH NONE SEMICIRCULAR SLOT ROOTS WILL NOT BE ACCEPTED
- COMPOSITE COVERS MUST BE MANUFACTURED FROM SHEET MOLDING COMPOUND (SMC) COMPOSITE COVERS MUST BE LOAD TESTED TO EN124 WITH D400 (40 TONNE) ON CARRIAGEWAY AND C250 (25 TONNE) LOADING ON PAVED AREAS.
- CONCRETE FOR BASES AND SURROUNDS SHALL BE AS THE RELEVANT STANDARD MIX DETAILED IN BS 8500 - TO BE READ IN CONJUNCTION WITH BS EN 206.
- PAVEMENT BOXES IN CARRIAGEWAY SHALL HAVE CONCRETE GRADE C30 BED AND SURROUND, 150mm THICK.
- FOR CONTRACTS NOT UNDER THE HIGHWAYS AGENCY SPECIFICATION FOR HIGHWAY WORKS CONCRETE REFERENCES SHALL BE READ AS:-
ST1 = C6/8
ST2 = C8/10
ST5 = C20/25
- DUCTS FOR TRAFFIC SIGNAL CABLES SHALL BE ORANGE UPVC AND PRINTED WITH THE LEGEND "TRAFFIC SIGNALS".
- DUCT ALIGNMENTS SHOULD BE SMOOTH WITH ALL CHANGES IN ALIGNMENT MADE WITH BENDS - MITRED JOINTS ARE NOT PERMITTED
- HARD STANDING SHALL BE CONSTRUCTED IN FRONT OF CABINETS AND PILLARS FOR EASE OF MAINTENANCE
- "MOWING STRIPS" 150mm SHALL BE REQUIRED AROUND SIGNAL POLES, PILLARS, CABINETS AND CHAMBERS INSTALLED IN AREAS OF VEGETATION TO REDUCE RISKS FROM EQUIPMENT BECOMING OVERGROWN BY VEGETATION OR RISKS ASSOCIATED WITH MAINTENANCE OF THE VEGETATION.



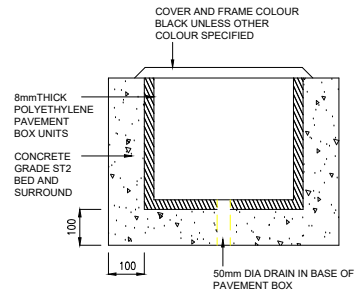
SECTION THROUGH TRAFFIC SIGNAL CONTROLLER INSTALLATION



DETAIL OF INDUCTION LOOP DUCT INSTALLATION ILD1B



CARRIAGEWAY BOX SLOT DETAIL



TYPICAL CONSTRUCTION OF PAVEMENT BOX

SERVICE DUCT REFERENCE

INTERNAL DUCT / S.D. / NO. OF BACKFILL DUCTS / TYPE

PAVEMENT BOX TYPE

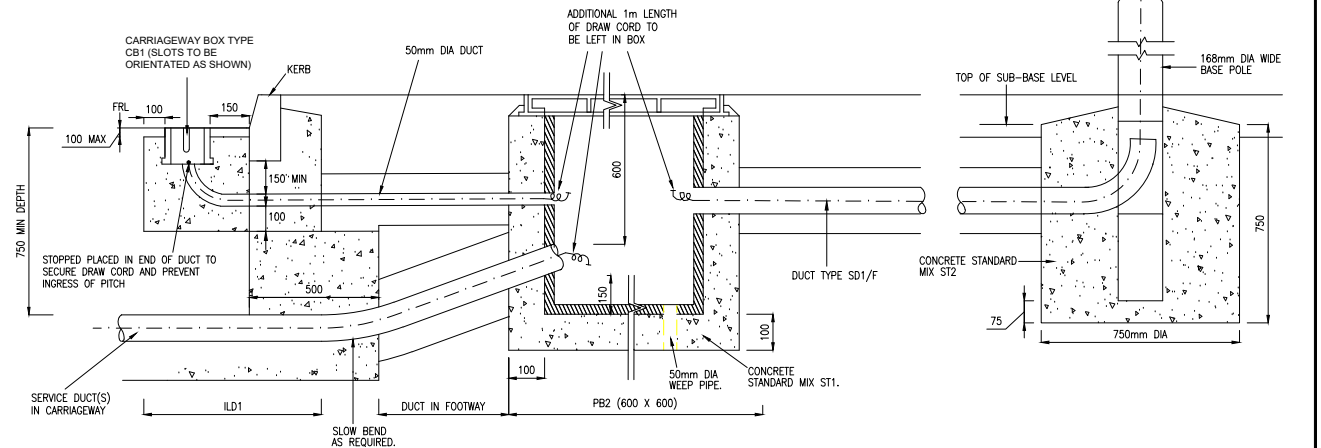
REF	NOMINAL SIZE (mm)
PB1	300 x 450
PB2	600 x 600
PB3	450 x 450
PB4	450 x 600
PB5	450 x 900
PB6	300 x 300

PAVEMENT BOX SUFFIXES

SUFFIX	APPROX DEPTH TO TOP OF BASE	PERMITTED BOX TYPES
A	450	PB1-6
B	600	PB1-5
C	750	PB2-5
D	1000	PB2 AND 5
E	1250	PB2 AND 5

PAVEMENT BOX REFERENCING NOTES

- BOXES THAT ARE REQUIRED TO BE SHAPED TO ADJUST TRAFFIC SIGNAL POLES WILL BE SUFFIXED WITH A LETTER 'P' AFTER THE BOX TYPE.
- ONLY BOXES TYPE PB1 OR PB6 CAN HAVE SUFFIX 'P'.
- PAVEMENT BOXES REFERENCED AS PB(NO.)(SUFFIX LETTER) E.G.:- PB3C.



DETAIL OF INDUCTION LOOP DUCT 1 (ILD1), PAVEMENT BOX AND WIDE BASE TRAFFIC SIGNAL POLE



STANDARD DETAILS

Project

Scale

NOT TO SCALE

Title

PAVEMENT INSPECTION BOXES TYPES PB1 & PB2 AND INDUCTION LOOP DUCT INSTALLATIONS TYPES ILD1 & ILD1B

Drawn

AA

Checked

LH

Section

HD

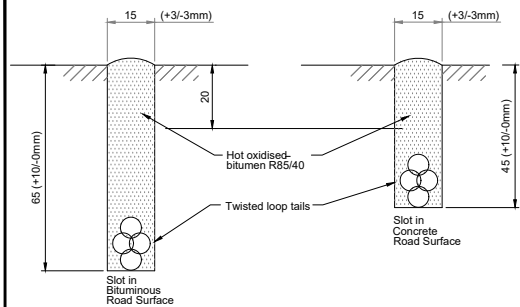
Date

MAY 22

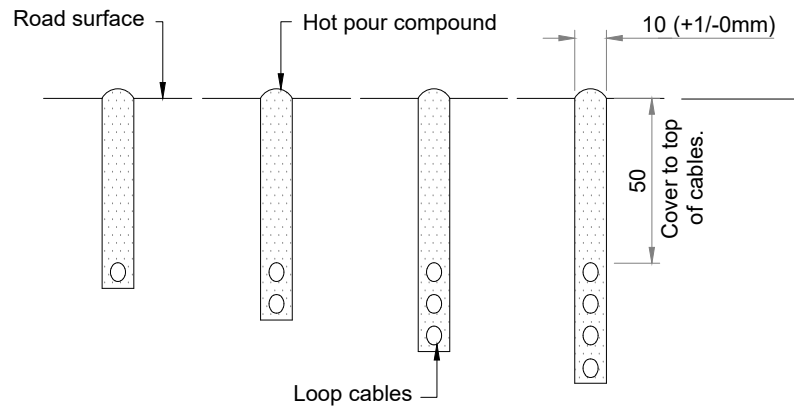
Drawing No.

HD/SD/14/18B

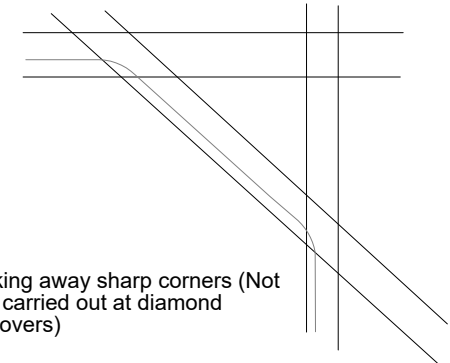
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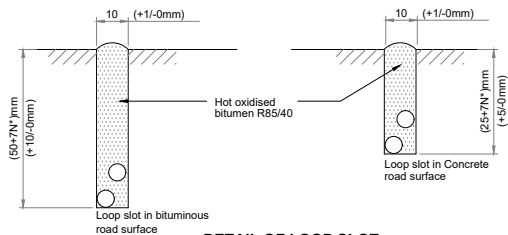
DETAIL OF LOOP TAIL SLOT



SLOT DETAIL



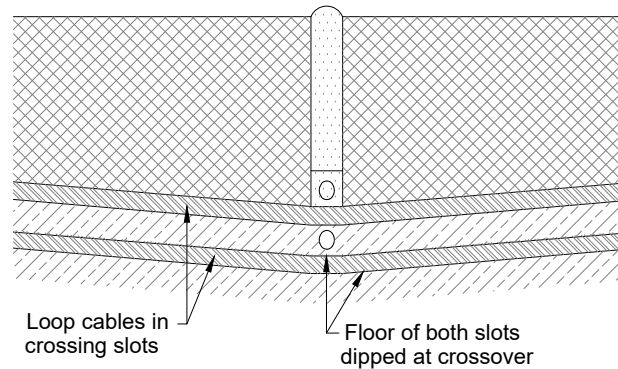
Breaking away sharp corners (Not to be carried out at diamond crossovers)



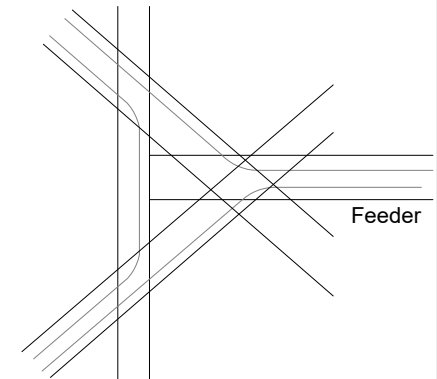
DETAIL OF LOOP SLOT

NOTE

1. N* is the number of cables in the slot
2. Slots must be dried and debris removed before backfilling.



MAINTAINING 50mm COVER AT CROSSOVERS



Feeder



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Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Project

STANDARD DETAILS

Title

SLOT

Scale

NOT TO SCALE

Drawn

AKKV

Checked

Section

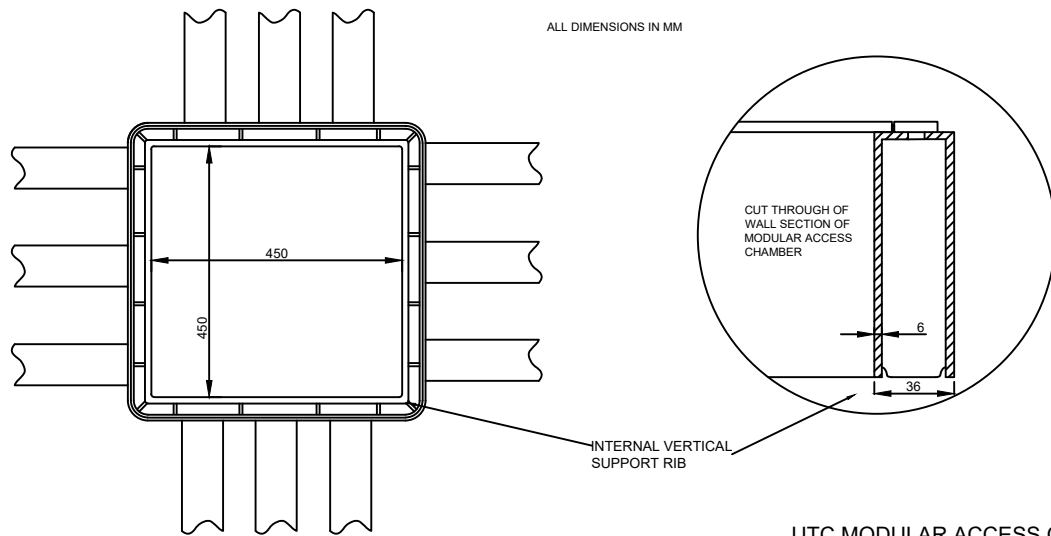
HD

Date

APRIL 21

Drawing No.

HD/SD/14/19B



PLAN SHOWING DUCTS ENTERING MODULAR ACCESS CHAMBER

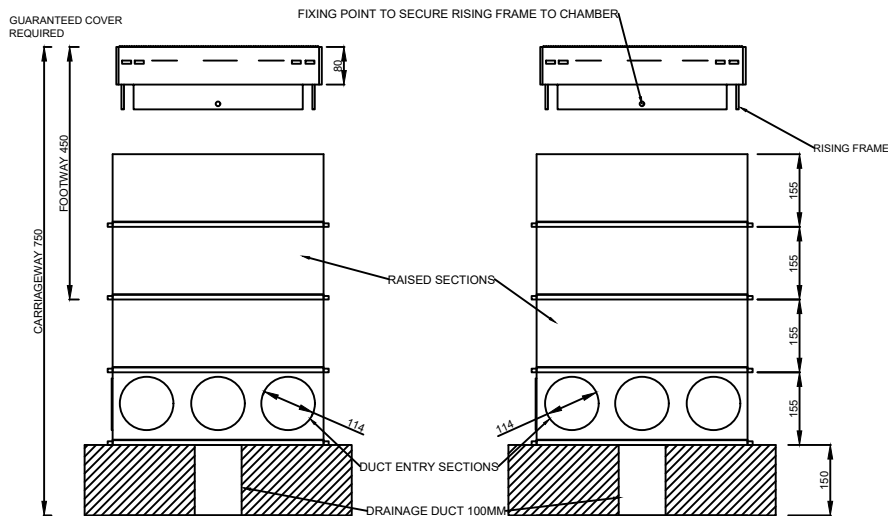
UTC MODULAR ACCESS CHAMBER EXAMPLE SHOWN 450 X 450

SPECIFICATION FOR COMPOSITE COVERS AND FRAMES

1. COMPOSITE COVERS MUST BE MANUFACTURED FROM SHEET MOLDING COMPOUND (SMC) COMPOSITE COVERS MUST BE LOAD TESTED TO EN124 WITH C250 (25 TONNE) LOADING.
2. COMPOSITE COVERS MUST HAVE A MINIMUM SKID RESISTANCE VALUE (SRV) OF 80.
3. FRAMES MUST HAVE A MINIMUM UP STAND OF 80MM TO ENABLE PAVEMENT MATERIALS TO BE INSTALLED DIRECTLY AGAINST THE FRAME. FRAMES MUST NOT HAVE AN EXTERNAL FLANGE.
4. FRAMES MUST HAVE A FIXING MECHANISM WHICH ENABLES THEM TO BE MECHANICALLY SECURED TO THE ACCESS CHAMBER.
5. COMPOSITE COVERS AND FRAMES TO BE SUPPLIED TO THE ABOVE SPECIFICATION BY NAL LTD OR EQUALLY APPROVED MANUFACTURER.

SPECIFICATION FOR TWIN WALL ACCESS CHAMBERS

1. ACCESS CHAMBERS MUST BE TESTED TO WITHSTAND A MINIMUM VERTICAL LOAD OF 40 TONES WITHOUT THE USE OF CONCRETE FOR SURROUND SUPPORT.
2. EXTERNAL WALLS SHALL HAVE AN EXTERNAL RIB OF WIDTH NO GREATER THAN 15MM, POSITIONED AT THE BOTTOM OF EACH SECTION TO ALLOW FULL SECTION DEPTH COMPACTION.
3. EXTERNAL WALLS SHALL BE FREE FROM MOULDING VOIDS THAT WILL NEGATIVELY IMPACT THE EFFECTIVENESS OF COMPACTION WHICH SHOULD BE IN ACCORDANCE WITH THE NEW ROADS AND STREET WORKS ACT (1991).
4. ACCESS CHAMBERS MUST NOT BE JOINTED IN THE CORNER OR REQUIRE MECHANICAL FIXING TO ACHIEVE STRENGTH.
5. ACCESS CHAMBER SECTIONS MUST HAVE THE ABILITY TO BE ADJUSTED IN HEIGHT DURING INSTALLATION.
6. ACCESS CHAMBER SECTIONS MUST BE CAPABLE OF BEING CUT LATERALLY TO ALLOW FOR TRANSITIONAL GRADIENT INSTALLATIONS.
7. ACCESS SECTIONS SHOULD HAVE PRE-DRILLED DUCT ENTRIES AND BE SUPPLIED WITH REMOVEABLE CAPS.
8. ACCESS CHAMBERS MUST HAVE THE ABILITY TO ALLOW INTERNAL CABLE MANAGEMENT FURNITURE TO BE RETROFITTED WITHOUT THE NEED FOR ANY EXCAVATION.
9. TWIN WALL ACCESS CHAMBERS TO BE SUPPLIED TO THE ABOVE SPECIFICATION BY NAL LTD OR EQUALLY APPROVED MANUFACTURER.



NOTES:

1. DO NOT SCALE FROM THIS DRAWING. ALL DIMENSIONS MUST BE CHECKED/VERIFIED ON SITE. IF IN DOUBT ASK.
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH REFERENCE TO ALL RELEVANT DRAWINGS.
3. ANY DISCREPANCIES NOTED ON SITE ARE TO BE REPORTED TO THE UTC ENGINEER IMMEDIATELY.
4. ALL DIMENSIONS IN MM



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AA

Checked

LH

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Highway Design
Flint Street, Fartown
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Title

MODULAR ACCESS CHAMBER

Section

HD

Date

MAY 22

Drawing No.

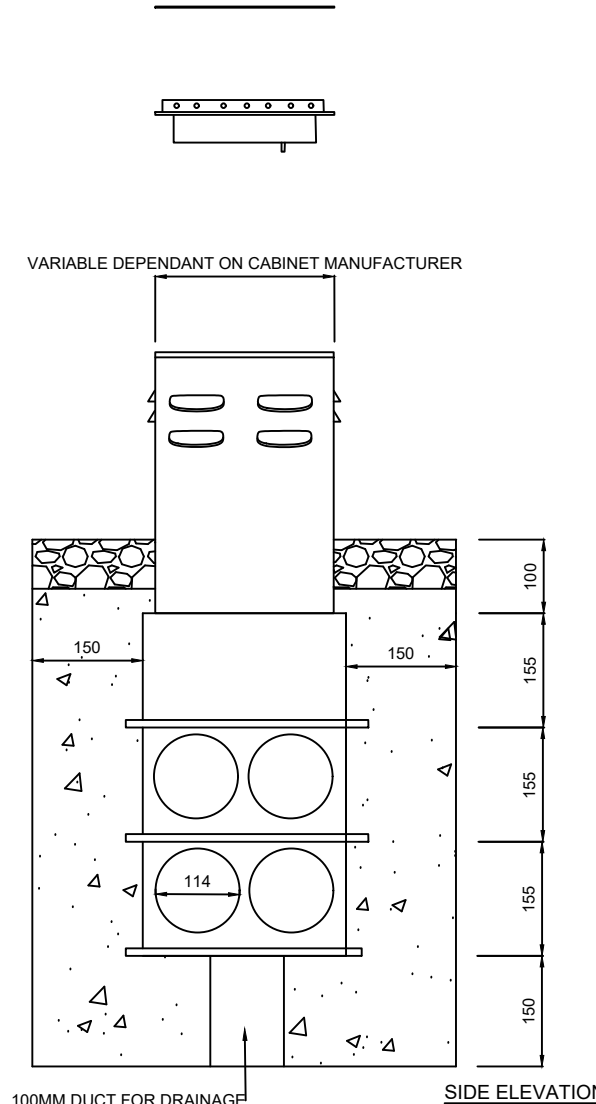
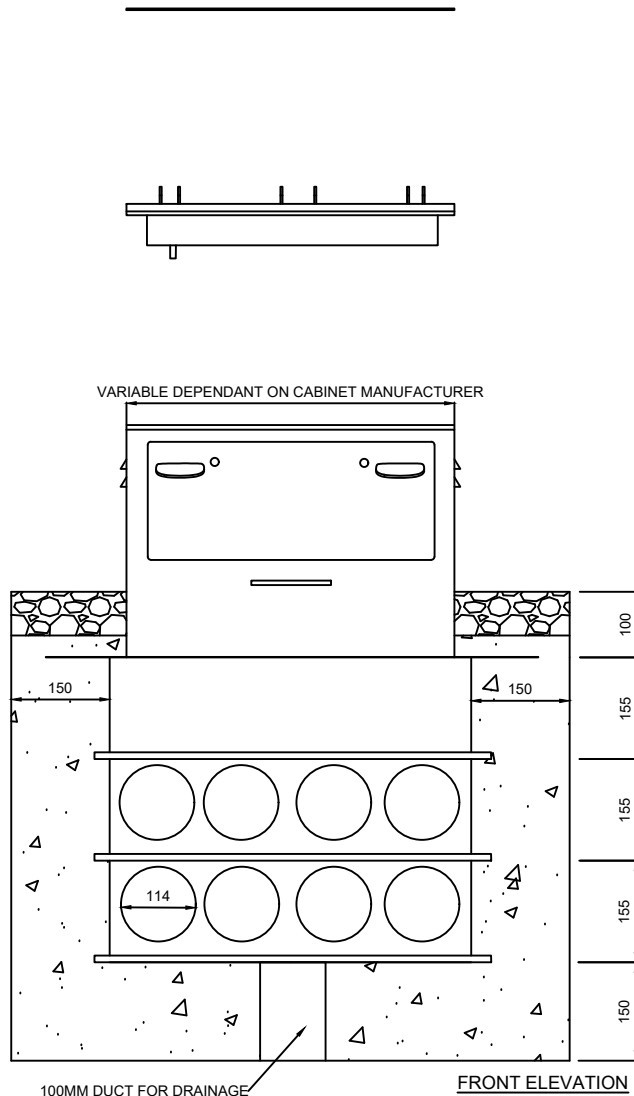
HD/SD/14/20B

SPECIFICATION FOR COMPOSITE COVERS AND FRAMES

1. CONTROLLER CABINET BASE MUST ENABLE THE INSTALLATION OF ANY TRAFFIC SIGNAL CONTROLLER CABINET WITHOUT THE REQUIREMENT FOR BASE SEAL.
2. CONTROLLER CABINET BASES MUST HAVE A MINIMUM OF 56NR SEALING GROMMETS WITH THE ABILITY TO SEAL CABLES WITH AN OUTSIDE DIAMETER OF 5MM TO 26MM DIAMETER.
3. CONTROLLER CABINET PLINTH SHOULD BE MANUFACTURED FROM 2MM UTILITY GRADE 1.4003 STAINLESS STEEL POLYESTER POWDER COATED TO MATCH CONTROLLER CABINETS.
4. PLINTH TO BE MANUFACTURED WITH A MINIMUM 12 LOUVRE AIR VENTS WITH PERFORATED STEEL MESH FIXED INTERNALLY. ALL COMPONENTS MUST BE LINKED WITH 6MM EARTH CABLES.
5. BOTH PLINTH AND CABLE GLAND TRAY TO BE MANUFACTURED WITH PRE-DRILLED FIXING POINTS FOR CABINET, CASTELLATION BARDS AND EARTH POINTS TO SUIT ALL UK TRAFFIC SIGNAL CONTROLLER CABINETS.
6. ACCESS CHAMBER BENEATH PLINTH MUST BE OF TWIN WALL CONSTRUCTION WHICH HAS BEEN VERTICALLY TESTED TO EN124 D400 (40 TONNES).
7. ACCESS CHAMBERS MUST BE MANUFACTURED FROM THERMOPLASTIC MATERIAL WHICH IS BOTH RECYCLED AND RECYCLABLE AT THE END OF ITS PRODUCT LIFE.
8. ACCESS CHAMBER EXTERNAL WALLS SHALL HAVE AN EXTERNAL RIB OF WIDTH NO GREATER THAN 15MM POSITIONED AT THE BOTTOM OF EACH SECTION, TO ALLOW FULL SECTION DEPTH COMPACTION.
9. ACCESS CHAMBER EXTERNAL WALLS SHALL BE FREE FROM MouldING VOIDS THAT WILL NEGATIVELY IMPACT THE EFFECTIVENESS OF COMPACTION WHICH SHOULD BE IN ACCORDANCE WITH THE NEW ROADS AND STREET WORKS ACT (1991).
10. ACCESS CHAMBERS MUST HAVE A MIN OF 24NR 100MM DUCT ENTRY POINTS. THESE MUST BE SUPPLIED WITH REMOVABLE CAPS.
11. ACCESS CHAMBERS MUST NOT BE JOINED IN THE CORNER OR REQUIRES MECHANICAL FIXING THE ACHIEVE STRENGTH.
12. ACCESS CHAMBERS MUST HAVE THE ABILITY TO BE REDUCED TO 200MM OR EXTENDED IN DEPTH ON SITE EASILY TO OVERCOME SHALLOW STRUCTURES AND/OR EXISTING SERVICES.
13. ACCESS CHAMBER SECTIONS MUST BE CAPABLE OF BEING CUT LATERALLY TO ALLOW FOR TRANSITIONAL GRADIENT INSTALLATIONS.
14. CONTROLLER CABINET BASES ARE TO BE SUPPLIED TO THE ABOVE SPECIFICATION BY NAL LTD OR ANY EQUALLY APPROVED MANUFACTURER.

NOTES:

1. DO NOT SCALE FROM THIS DRAWING. ALL DIMENSIONS MUST BE CHECKED/VERIFIED ON SITE. IF IN DOUBT ASK.
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH REFERENCE TO ALL RELEVANT DRAWINGS.
3. ANY DISCREPANCIES NOTED ON SITE ARE TO BE REPORTED TO THE UTC ENGINEER IMMEDIATELY.
4. ALL DIMENSIONS IN MM



STANDARD DETAILS

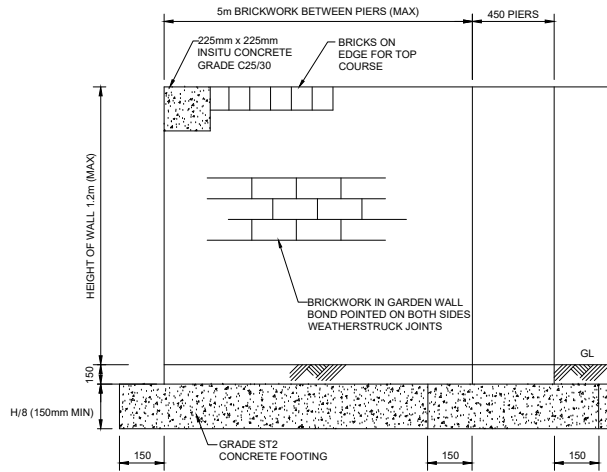
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Project
ADAPTIVE TRAFFIC SIGNAL CONTROLLER BASE

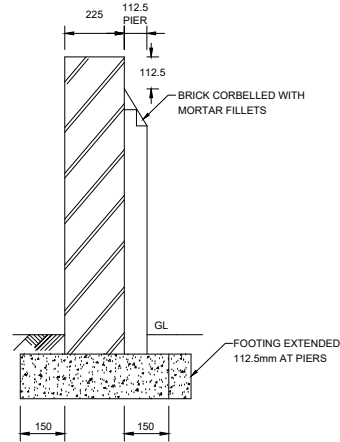
Title

Scale		NOT TO SCALE	
Drawn	AA	Checked	LH
Section	HD	Date	MAY 22
Drawing No.	HD/SD/14/21B		

ONE BRICK WALL (225mm)



ELEVATION

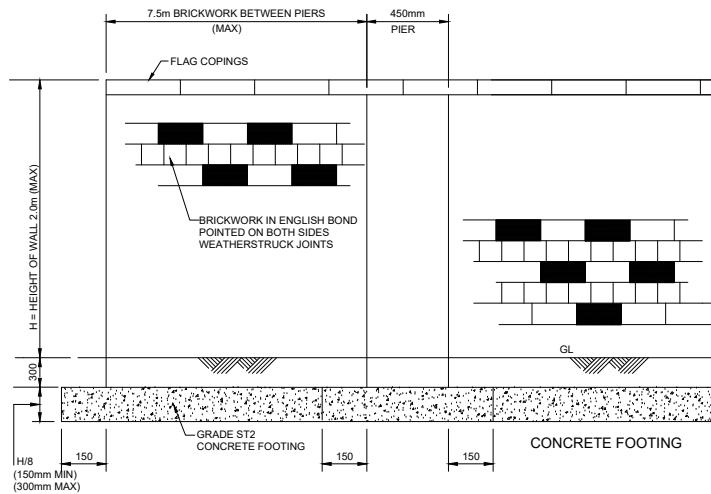


X-SECTION

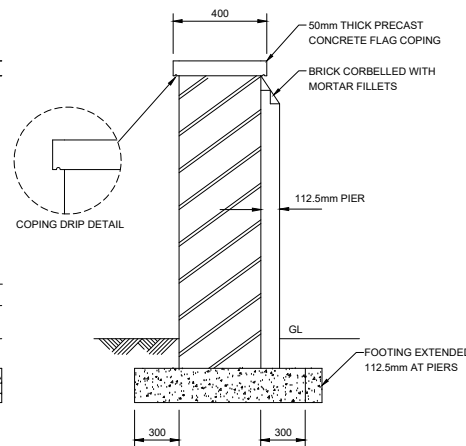
NOTES

1. ALL DIMENSIONS IN MILLIMETRES UNLESS STATED OTHERWISE.
2. ALL BRICKWORK TO CONFORM WITH THE RELEVANT SPECIFICATION.
3. ALL BRICKWORK TO BE IN CLASS 'B' ENGINEERING BRICKS UNLESS OTHERWISE DESCRIBED IN THE CONTRACT.
4. MORTAR FOR BRICKWORK TO BE IN ACCORDANCE WITH 2404 DESIGNATION (iii)
5. BRICKWORK TO BE FAIR FACE ON SIDE WITHOUT PILLARS AND POINTED ON ALL FACES.
6. PIERS TO BE FULLY BONDED.
7. PIERS TO BE ON NON - TRAFFIC FACE UNLESS OTHERWISE STATED.
8. POINTING NEED TO BE SPECIFIED BY ENGINEER.

ONE AND A HALF BRICK WALL (337mm)



ELEVATION



X-SECTION



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV/RS

Checked

FK

Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

NON RETAINING BRICK BOUNDARY WALLS

Section

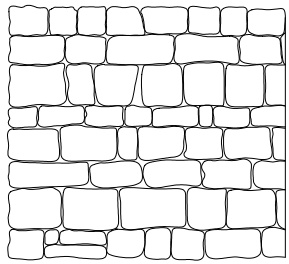
HD

Date

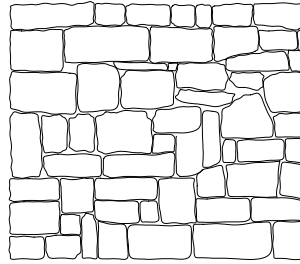
March 21

Drawing No.

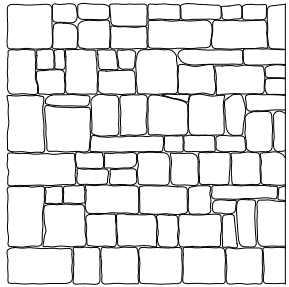
HD/SD/24/01B



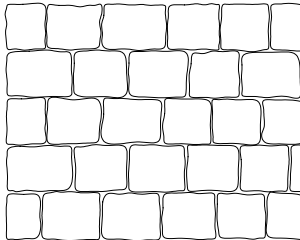
RANDOM RUBBLE COURSED
(THICKNESS) RRCW/(HEIGHT)



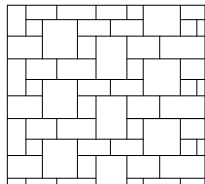
RANDOM RUBBLE UNCOURSED
(THICKNESS) RRUW/(HEIGHT)



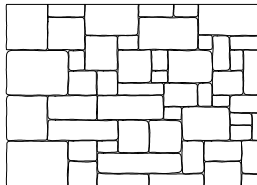
RANDOM RUBBLE BROUGHT TO COURSES
(THICKNESS) RRBCW/(HEIGHT)



SQUARED RANDOM RUBBLE
(THICKNESS) SRRCW/(HEIGHT)

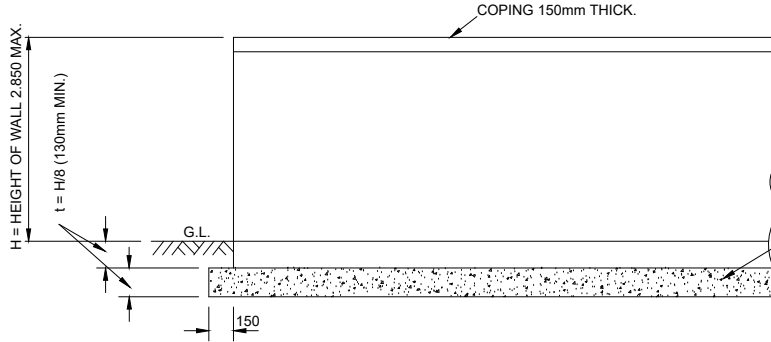


SQUARED RANDOM RUBBLE SNECKED
(THICKNESS) SRRSW/(HEIGHT)

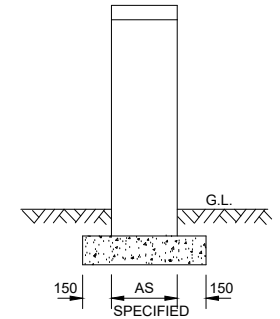


SQUARED RANDOM RUBBLE UNCOURSED
(THICKNESS) SRRUW/(HEIGHT)

TYPES OF RUBBLE WALLING



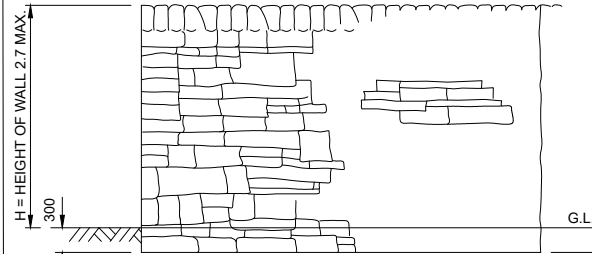
TYPICAL ELEVATION



TYPICAL SECTION

DRY RUBBLE WALLING

(THICKNESS) DRW/(HEIGHT)



NOTES

1. ALL DIMENSIONS IN MILLIMETRES UNLESS STATED OTHERWISE
2. ALL STONEMWORK TO CONFORM WITH THE SPECIFICATION.
3. MORTAR FOR STONEMWORK TO BE IN ACCORDANCE WITH CLAUSE 2404 DESIGNATION (iii).
4. COPINGS TO BE ROUNDED STONE TO MATCH WALL OR AS DESCRIBED IN THE CONTRACT.
5. JOINTS TO BE RECESSED BY 25mm TO GIVE A DRY STONE APPEARANCE.

COPING STONES TO BE BEDDED JOINTED AND POINTED IN CEMENTATION MORTAR.

400 MIN.

WALL FACES BATTERED BACK AT 1 IN 16.



STANDARD DETAILS

Scale
NOT TO SCALE

Drawn
AKKV

Checked
FK

Commercial Regulatory and Operational Service
Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Project

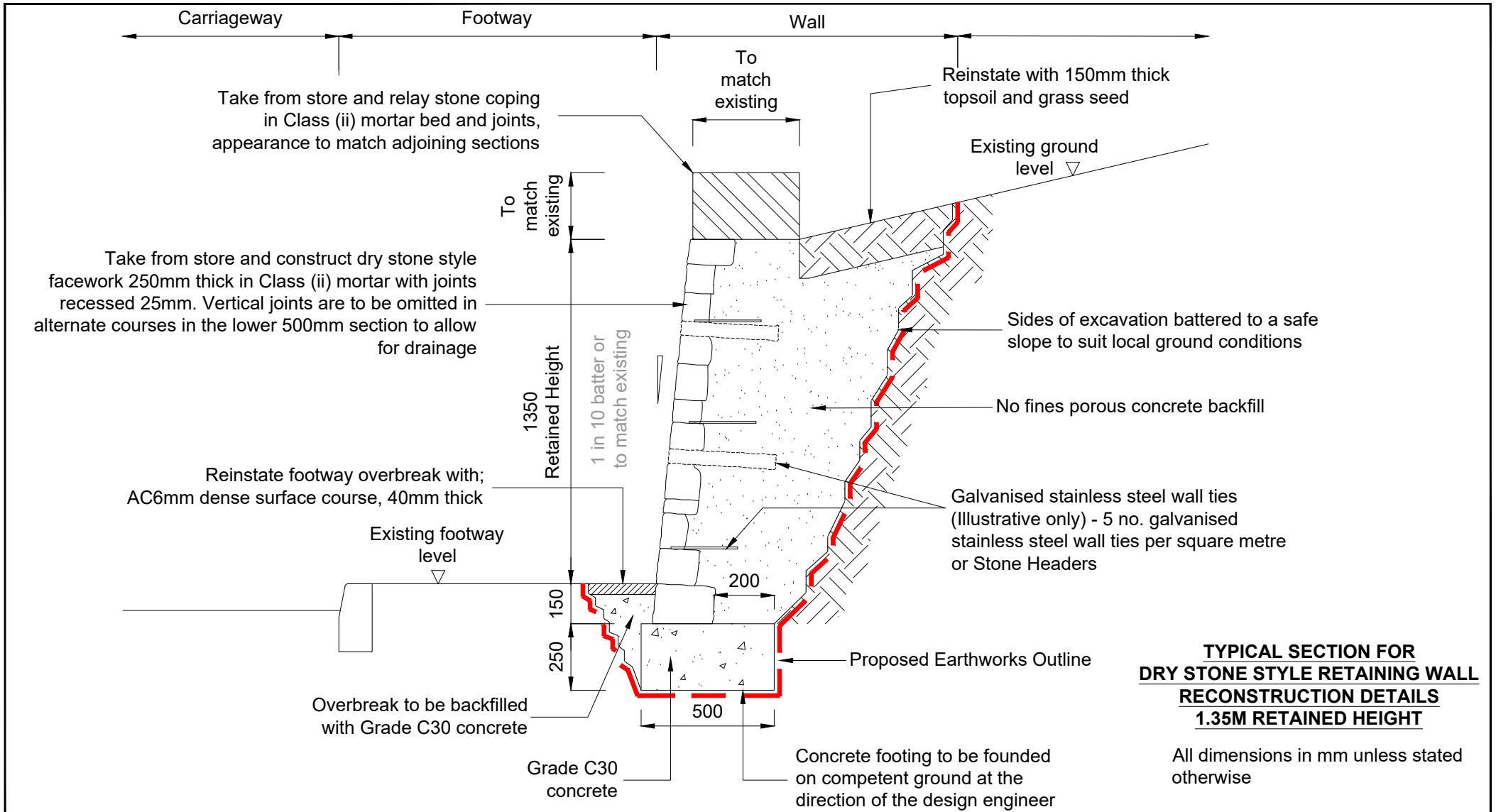
Title

NON-RETAINING BOUNDARY STONE WALLS

Section
HD


Date
March 21

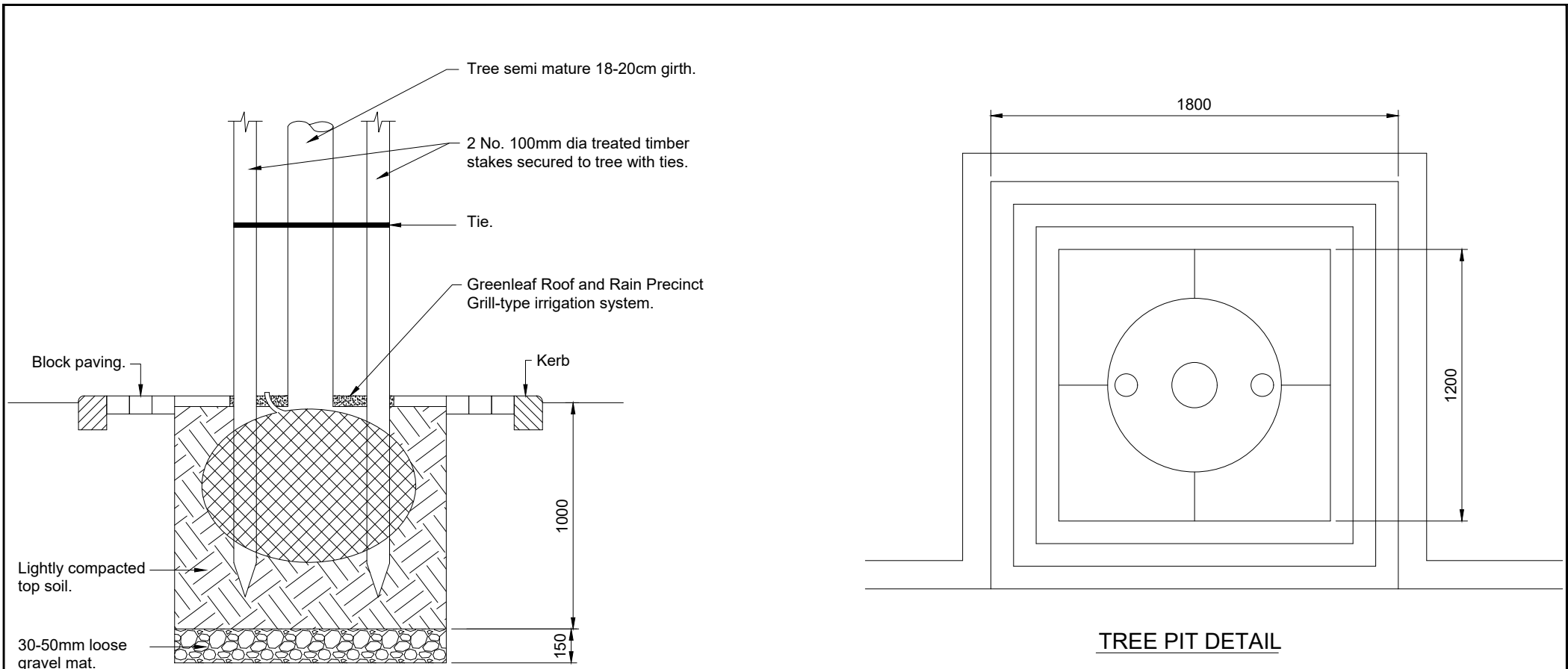
Drawing No. HD/SD/24/02B



**TYPICAL SECTION FOR
DRY STONE STYLE RETAINING WALL
RECONSTRUCTION DETAILS
1.35M RETAINED HEIGHT**

All dimensions in mm unless stated otherwise

	Project	STANDARD DETAILS		Scale	NOT TO SCALE	
	Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG	Title	DRY STONE STYLE RETAINING WALL RECONSTRUCTION (1.35m RETAINED HEIGHT)		Drawn	Checked
AKKV/RS					FK	
Section					Date	
				HD	March 22	
				Drawing No.	HD/SD/24/03B	




TREE PIT DETAIL

NOTE

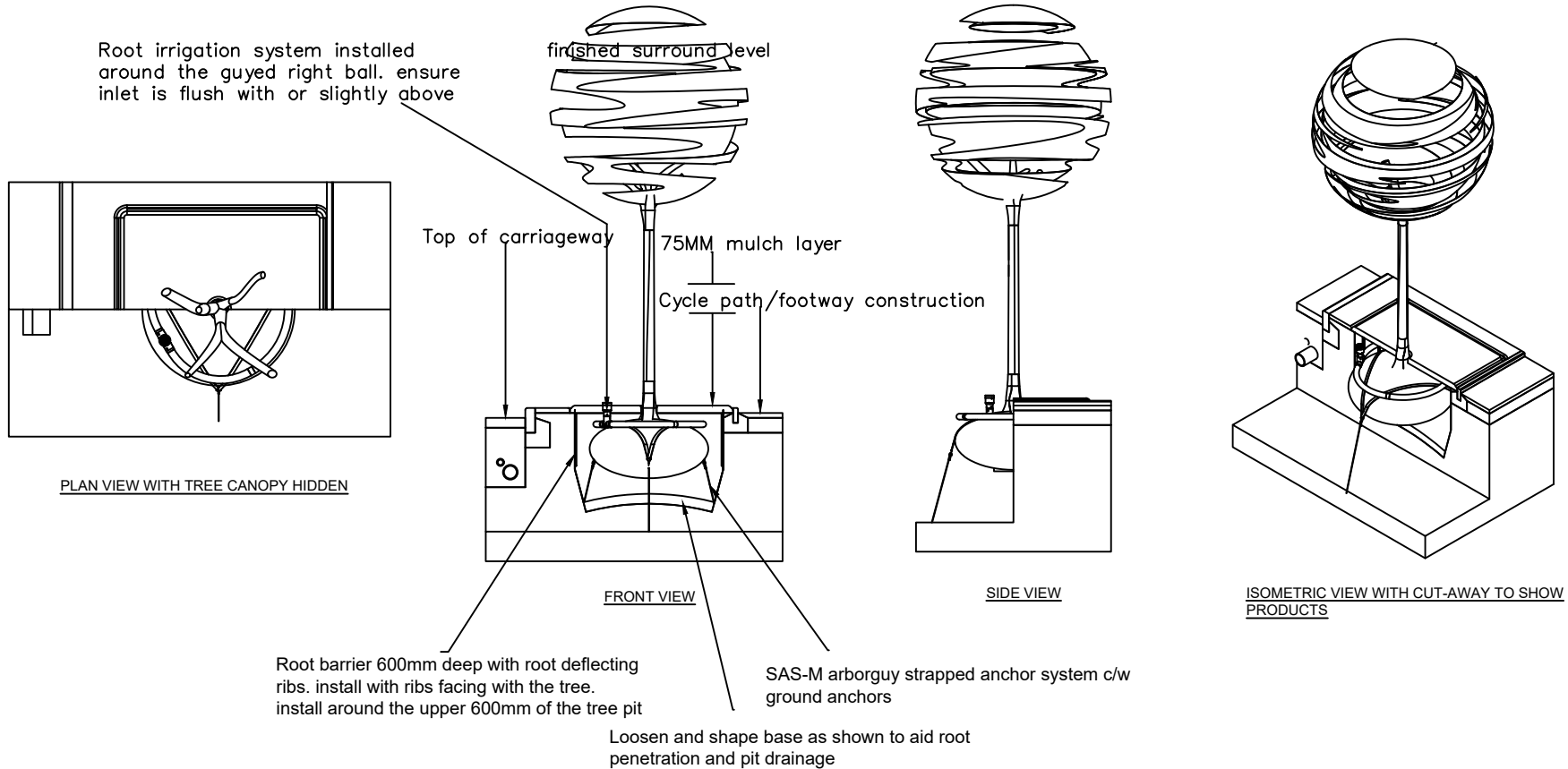
SECTION 38 - Kirklees Council will charge a commuted sum for the future maintenance liability of trees on new development sites.

Working drawing (tbc with landscape)


	Project	<h1>STANDARD DETAILS</h1>		Scale	
				NOT TO SCALE	
Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG	Title	<h2>STANDARD TREE WITH DOUBLE STAKE AND GRILLE</h2>		Drawn	Checked
				Section	Date
				Drawing No. HD/SD/30/01B	

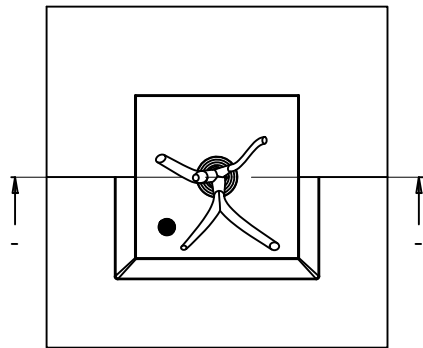
NOTES

1. HIGHWAY VERGE PLANTING DETAIL INCORPORATING ROOT PROTECTION FOR ADJACENT HARD PAVED AREAS. INCLUDES ROOT URBAN LARGE DIAMETER IRRIGATION SYSTEM AND UNDERGROUND GUYING.

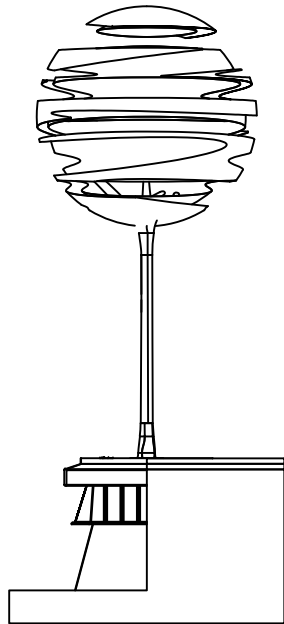


Working drawing (tbc with landscape)

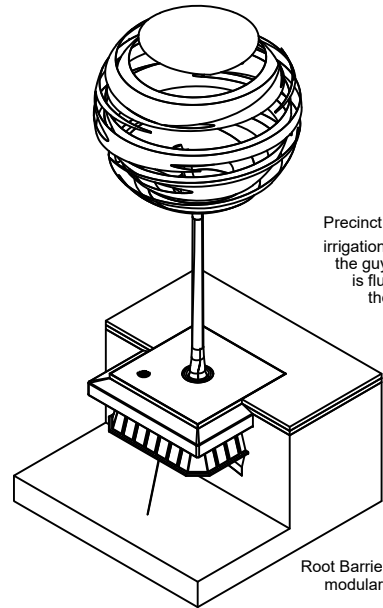
 <p>Kirklees COUNCIL</p>	Project	<h1>STANDARD DETAILS</h1>		Scale		
				NOT TO SCALE		
<p>Commercial Regulatory and Operational Service</p> <p>Highway Design Flint Street, Fartown Huddersfield, HD1 6LG</p>	Title	<h2>STANDARD TREE WITH UNDERGROUND GUYING SYSTEM</h2>		Drawn	Checked	
					AKKV	
				Section	Date	
		HD	APRIL 21			
		Drawing No.	HD/SD/30/02B			



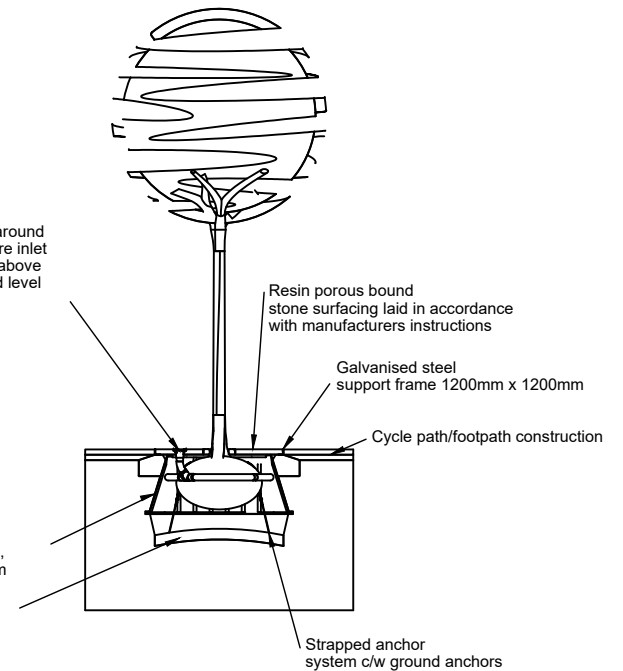
PLAN VIEW WITH TREE CANOPY HIDDEN



SIDE VIEW



ISOMETRIC VIEW WITH CUT-AWAY TO SHOW PRODUCTS



SECTION A-A

NOTES

1. TREE PIT FOR CONTINUOUS PAVED SURROUND, INCORPORATING SURROUND ROOT MANAGEMENT, IRRIGATION, GUYING AND RESIN BONDED STONE SURFACE DETAIL.

Precinct root irrigation system installed around the guyed root ball. Ensure inlet is flush with or slightly above the finished surround level

Root Barrier/Director, medium, modular root barrier system

Loosen and shape base as shown to aid root penetration and pit drainage


Resin porous bound stone surfacing laid in accordance with manufacturers instructions

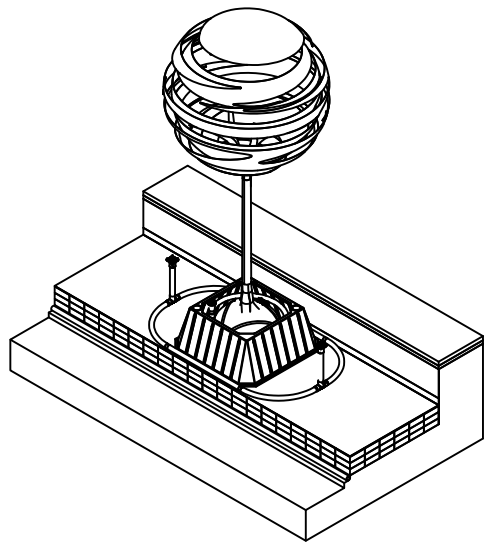
Galvanised steel support frame 1200mm x 1200mm

Cycle path/footpath construction

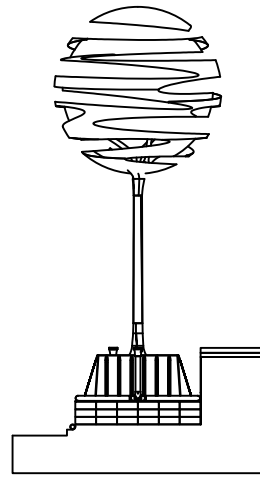
Strapped anchor system c/w ground anchors

Working drawing (tbc with landscape)

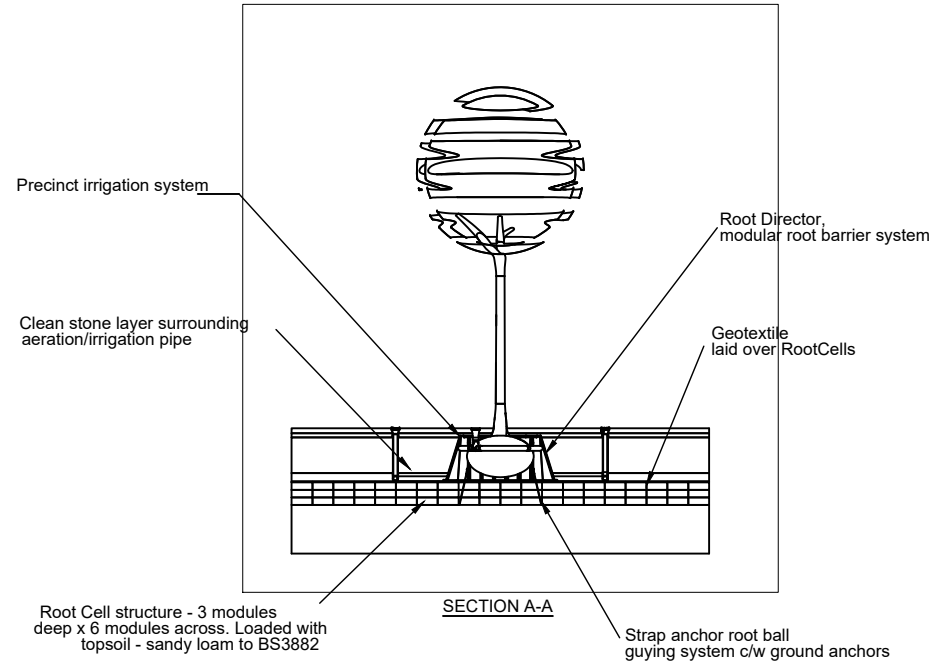
	Project	<h1>STANDARD DETAILS</h1>		Scale	
				NOT TO SCALE	
Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG	Title	<h2>STANDARD TREE WITH ROOT BARRIER AND GUYING SYSTEM</h2>		Drawn	Checked
				AKKV	
				Section	Date
		HD	APRIL 21		
		Drawing No.	HD/SD/30/03B		



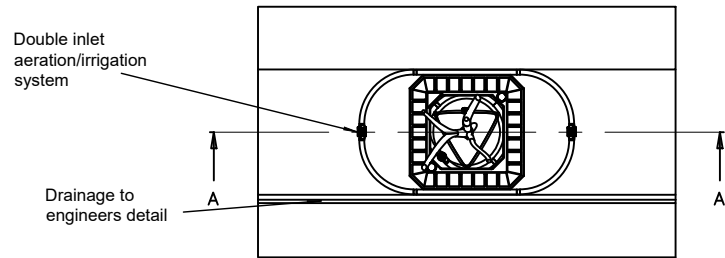
ISOMETRIC VIEW WITH CUT-AWAY TO SHOW PRODUCTS



SIDE VIEW



SECTION A-A




PLAN VIEW WITH TREE CANOPY HIDDEN

NOTES

1. CONTINUOUS CORRIDOR TREE PIT SYSTEM INCORPORATING TRIPLE STACK ROOTCELL LOAD BEARING SOIL MODULE STRUCTURE, SURROUND ROOT MANAGEMENT, IRRIGATION, AERATION AND GUYING

Working drawing (tbc with landscape)

 <p>Kirklees COUNCIL</p>	Project	<h1>STANDARD DETAILS</h1>		Scale		NOT TO SCALE	
	<p>Commercial Regulatory and Operational Service</p> <p>Highway Design Flint Street, Fartown Huddersfield, HD1 6LG</p>			Title	Drawn	Checked	
<h2>STANDARD TREE WITH ROOT BARRIER, GUYING SYSTEM AND CELLULAR ROOT PROTECTION MODULE SYSTEM</h2>		Section	Date				
		Drawing No.	HD/SD/30/04B				

Product descriptions

GLRCM RootCells, 312 No. 250mm x 250mm x 90mm

RER300 ribbed root deflecting barrier - 5m

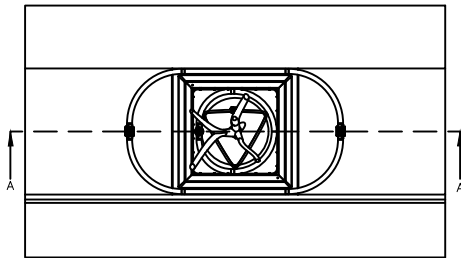
RERJT ReRoot joint tape - 1 roll

SAS-L root ball guying system

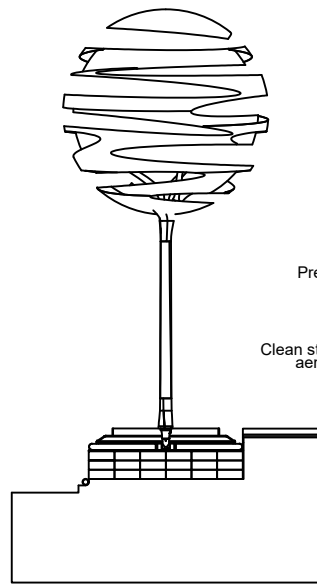
RRPREC1 irrigation system

RRARB-Di3 Arborvent double inlet aeration/irrigation system with cast inlets

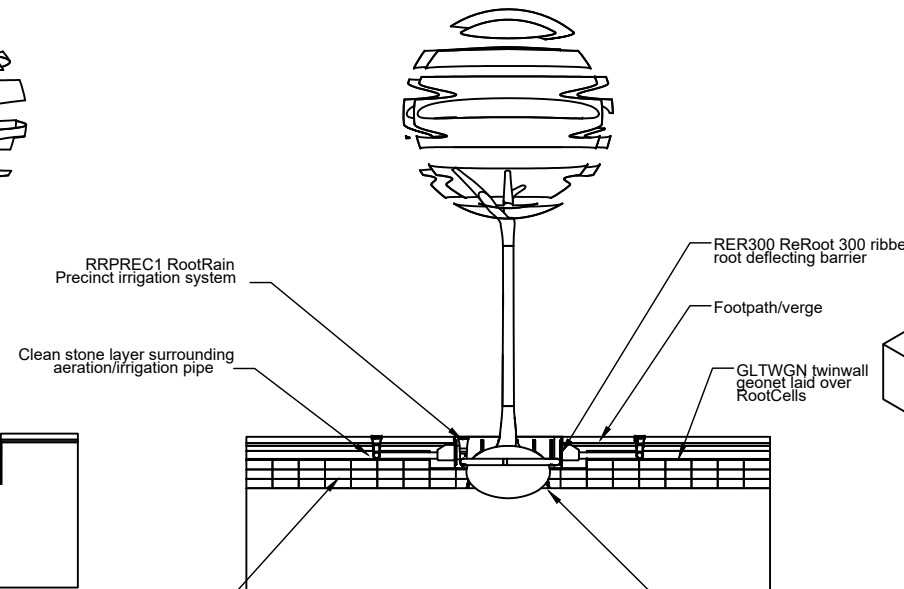
GLTWGN twinwall geonet 6.5 Sq. m



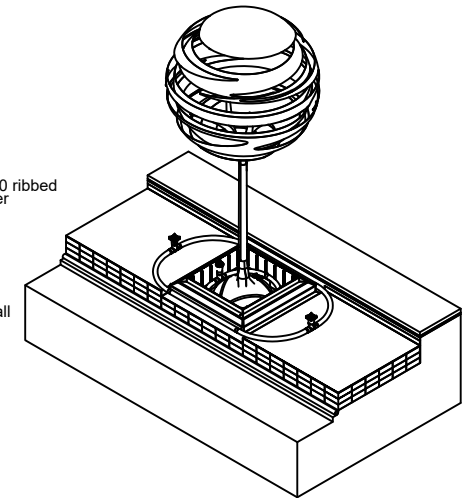
PLAN VIEW WITH TREE CANOPY HIDDEN



SIDE VIEW



SECTION A-A



ISOMETRIC VIEW WITH CUT-AWAY TO SHOW PRODUCTS

GLRCM RootCell structure - 3 modules deep x 6 modules across. Loaded with topsoil - sandy loam to BS3882

RER300 ReRoot 300 ribbed root deflecting barrier

Footpath/verge

GLTWGN twinwall geonet laid over RootCells

SAS-L Arborguy strap anchor root ball guying system c/w ground anchors

Working drawing (tbc with landscape)



Project

STANDARD DETAILS

Scale

NOT TO SCALE

Drawn

AKKV

Checked

Commercial Regulatory and Operational Service

Highway Design
Flint Street, Fartown
Huddersfield, HD1 6LG

Title

STANDARD TREE WITH SHALLOW CELLULAR ROOT PROTECTION SYSTEM

Section

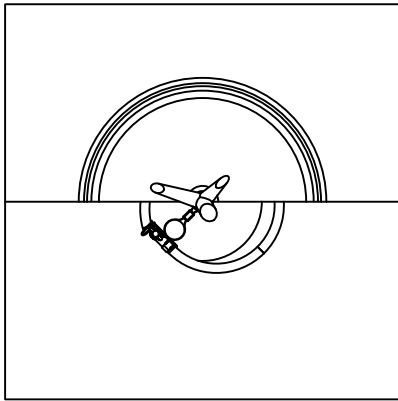
HD

Date

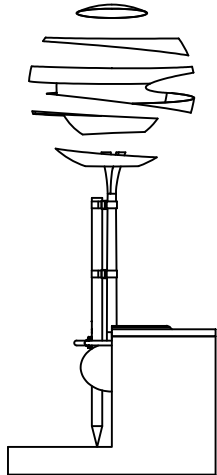
APRIL 21

Drawing No.

HD/SD/30/05B

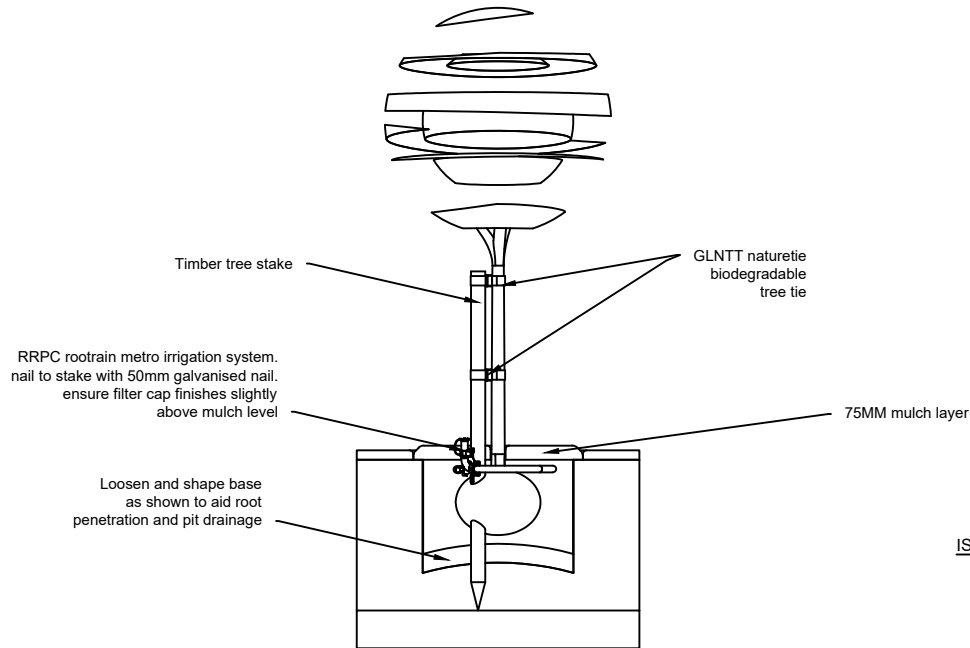


PLAN VIEW WITH TREE CANOPY HIDDEN

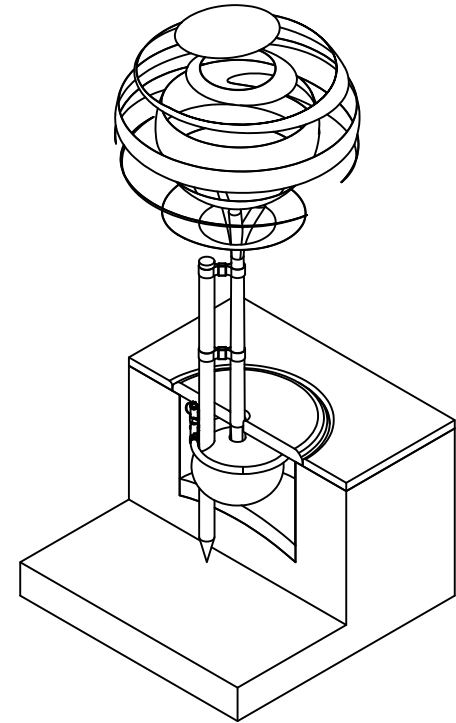


SIDE VIEW

NOTES
 TREE PIT DESIGN SUITED TO LIGHT
 STANDARD AND STANDARD TREES
 IN SOFT LANDSCAPED AREAS




FRONT VIEW



ISOMETRIC VIEW WITH CUT-AWAY TO SHOW PRODUCTS

Working drawing (tbc with landscape)

	Project	<h1>STANDARD DETAILS</h1>		Scale	
				NOT TO SCALE	
Commercial Regulatory and Operational Service Highway Design Flint Street, Fartown Huddersfield, HD1 6LG	Title	<h2>STANDARD TREE WITH SINGLE STAKE AND TIES AND IRRIGATION SYSTEM</h2>		Drawn	Checked
				Section	Date
				Drawing No.	
				AKKV	JULY 21
				HD	HD/SD/30/06B