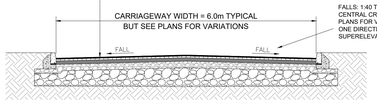
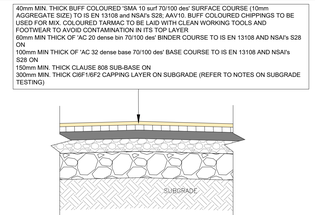
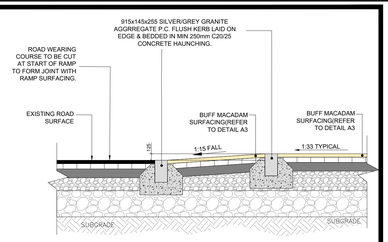


A1 SECTION
SCALE:- 1:50 @ A0
1:100 @ A2

TYPICAL CROSS SECTION THRO' ESTATE ROAD

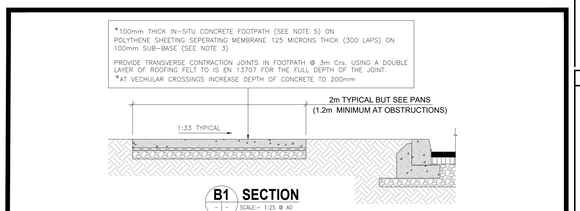


A2 BUILDUP FOR BUFF MACADAM (SHARED SURFACES/TURNINGHEADS)
SCALE @ A0 1:25



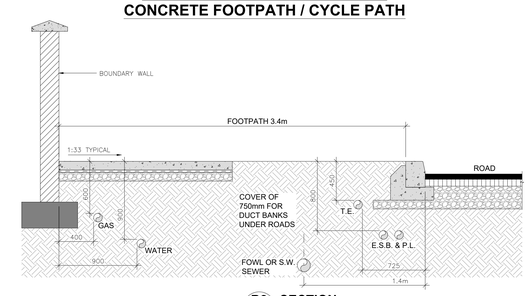
A3 TYPICAL BUILDUP AT SHARED SURFACES
SCALE @ A0: 1:25
SCALE @ A2: 1:50

DETAIL 'A' - FLEXIBLE ROADWAY / HARDSTANDING



B1 SECTION
SCALE:- 1:25 @ A0
1:50 @ A2

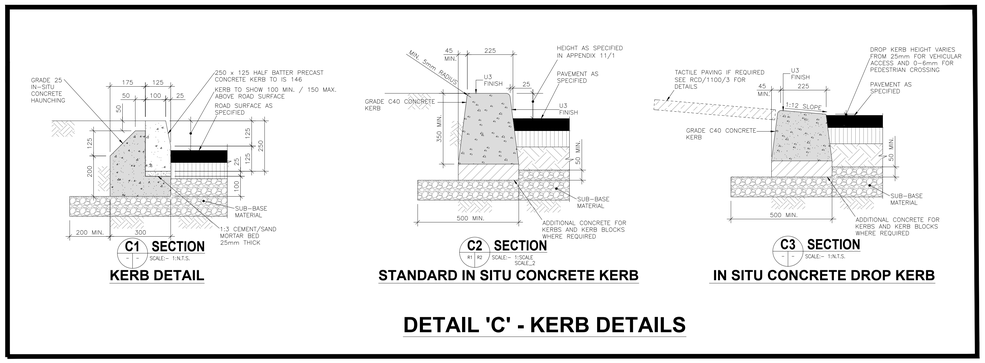
TYPICAL CROSS SECTION THRO'
CONCRETE FOOTPATH / CYCLE PATH



B2 SECTION
SCALE:- 1:25 @ A0
1:50 @ A2

TYPICAL SERVICES LAYOUT IN FOOTPATHS

DETAIL 'B' FOOTPATH DETAILS



C1 SECTION
SCALE:- 1:N.T.S.

KERB DETAIL

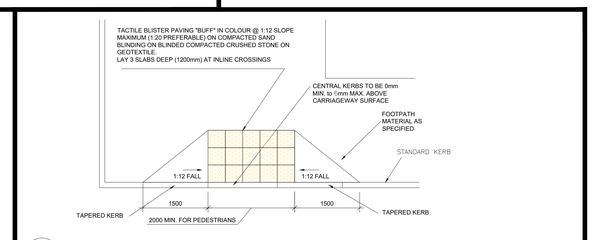
C2 SECTION
SCALE:- 1:SCALE 2

STANDARD IN SITU CONCRETE KERB

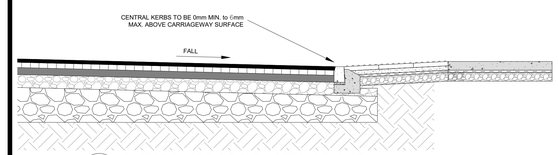
C3 SECTION
SCALE:- 1:N.T.S.

IN SITU CONCRETE DROP KERB

DETAIL 'C' - KERB DETAILS

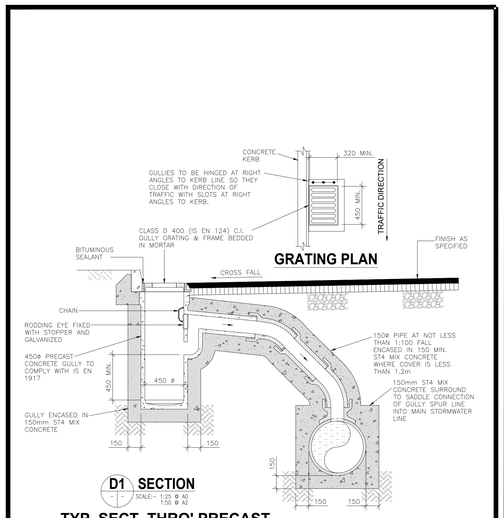


F1 TYPICAL TACTILE PAVING & DROP KERB DETAILS (INLINE UNCONTROLLED)
SCALE 1:50 @ A0 & 1:100 @ A2



F2 TYPICAL CROSS SECTION THRO' FOOTPATH WITH BLISTER PAVING
SCALE 1:25 @ A0 & 1:50 @ A2

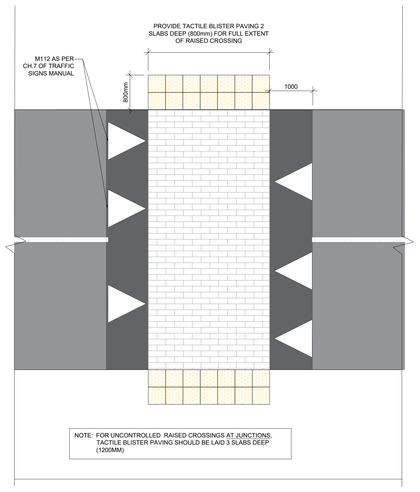
DETAIL 'F' - BLISTER PAVING



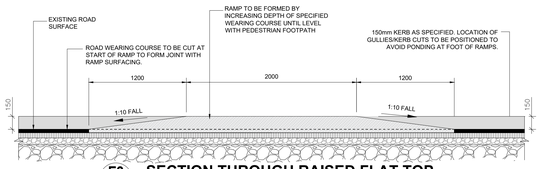
GRATING PLAN

D1 SECTION
SCALE:- 1:25 @ A0
1:50 @ A2

TYP. SECT. THRO' PRECAST ROAD GULLY

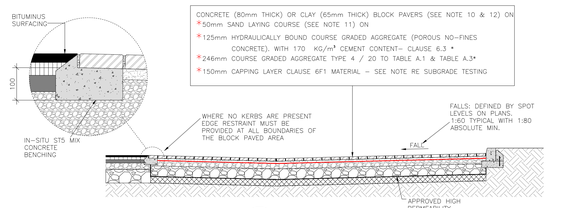


E3 TYPICAL TACTILE PAVING AT AN UNCONTROLLED CROSSING ON A KERB TO KERB FLAT TOP RAISED CROSSING (AWAY FROM JUNCTION)
SCALE 1:50 @ A0 & 1:100 @ A2



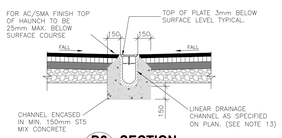
E2 SECTION THROUGH RAISED FLAT TOP PEDESTRIAN CROSSING
SCALE @ A0 1:25

DETAIL 'E' BLOCK PAVIOUR ROADWAY / HARDSTANDING



E1 SECTION
SCALE:- 1:50 @ A0
1:100 @ A2

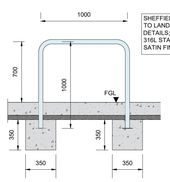
TYPICAL CROSS SECTION THRO' PERMEABLE BLOCK PAVING CAR PARK



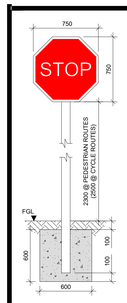
D2 SECTION
SCALE:- 1:10 @ A0
1:20 @ A2

TYPICAL SECTION THRO' LINEAR DRAINAGE CHANNEL IN FLEXIBLE ROADWAY / HARDSTANDING

DETAIL 'D' - ROADWAY / HARDSTANDING DRAINAGE DETAILS



G BIKE STAND DETAILS
SCALE @ A0 1:25
SCALE @ A2: 1:50



NOTES ON ROAD SIGNAGE:

1. ALL SIGNS TO BE SET BACK A MINIMUM OF 450MM FROM CARRIAGEWAY EDGE.
2. POST CAPS SHALL BE FITTED TO POSTS IN ADVANCE OF OR SIMULTANEOUS TO THE ERECTION OF THE POST.
3. POSTS SHALL NOT PROTRUDE ABOVE THE TOP OF THE SIGN FACE.
4. ALL SIGN FACES ARE TO BE INSTALLED WITH ANTI-ROTATION BRACKET FIXINGS.
5. ALL POSTS TO BE 76.1mm DIA. (3.2mm WALL THICKNESS) GRADE S235 STEEL, HOT DIP GALVANISED, AND SHALL COMPLY WITH I.S. EN 12899.
6. ALL SIGN FACE MATERIALS TO BE CLASS RA1 IN ACCORDANCE WITH TII SERIES 1200 SPECIFICATION FOR ROAD WORKS.
7. ALL SIGN POSTS SHALL BE GIVEN ADEQUATE TEMPORARY SUPPORT TO MAINTAIN LINE AND LEVEL DURING SETTING AND CURING OF CONCRETE. POSTS SHALL BE SUPPORTED FOR A MINIMUM OF 3 DAYS AFTER PLACING THE CONCRETE. BACKFILLING SHALL NOT TAKE PLACE UNTIL AT LEAST 48 HOURS AFTER PLACING.
8. ALL SIGN POSTS TO BE SET IN NEW 600 x 600 x 600mm CONCRETE FOUNDATIONS.
9. NEAR PEDESTRIAN ROUTES, MOUNTING HEIGHT FROM ADJACENT FINISHED FOOTPATH / GROUND LEVEL TO THE UNDERSIDE OF THE LOWEST SIGN FACE SHALL BE AT A MIN. HEIGHT OF 2.3m (INCREASED TO 2.5m AT CYCLE ROUTES).
10. CONTRACTOR SHALL ENSURE THAT POST LENGTHS ARE ADEQUATE TO ACHIEVE REQUIRED MOUNTING HEIGHTS.
11. WHERE EXISTING SIGNS ARE TO BE RELOCATED, NEW POSTS AND FOUNDATIONS SHALL BE PROVIDED.

H TYPICAL SIGNAGE DETAILS
SCALE @ A0 1:25
SCALE @ A2: 1:50

NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL ENGINEERS & ARCHITECT'S DRAWINGS.FIGURED DIMENSIONS ONLY (NOT SCALING) TO BE USED.WHERE A CONFLICT OF INFORMATION EXISTS OR IF IN ANY DOUBT - ASK.
2. CONSULTANTS TO BE INFORMED IMMEDIATELY OF ANY DISCREPANCIES BEFORE WORK PROCEEDS.

NOTES

1. ALTERNATIVE BASE COURSE MATERIAL:

   AS AN ALTERNATIVE TO ASPHALTIC CONCRETE BASE COURSE THE CONTRACTOR CAN USE AN STANDARD CONCRETE MIX "S12". "LEAN MIX" BASE COURSE 150mm THICK. STANDARD CONCRETE MIX "S12" SHALL CONFORM TO IS 206-1, BS 8500-1, BS 8500-2 & IS EN 13877-1. CURING OF LEAN-MIX ROAD BASE SHALL BE BY BITUMINOUS SPRAYING TO CLAUSE 920 NRA SPECIFICATION FOR ROAD WORKS.

2. USE OF BASE COURSE FOR CONSTRUCTION TRAFFIC:

   THE BASE COURSE MAY BE USED FOR CONSTRUCTION TRAFFIC PROVIDED IT IS INCREASED IN THICKNESS BY 50mm AND SURFACE DRESSED. SURFACE DRESSING SHOULD BE CARRIED OUT IN ACCORDANCE WITH CLAUSE 919 AND 922 OF THE NRA SPECIFICATION FOR ROADWORKS. THE BINDER SHOULD BE CUTBACK BITUMEN OR CATIONIC BITUMEN EMULSION, COMPLYING WITH THE SPECIFICATION. OTHER BINDERS MAY BE USED, SUBJECT TO APPROVAL.

   CUTBACK BITUMEN SHOULD BE OF THE APPROPRIATE GRADE SPECIFIED. CATIONIC BITUMEN EMULSION SHOULD HAVE A NOMINAL BITUMEN CONTENT OF 70%. THE BINDER SHOULD BE SPREAD AT THE APPROPRIATE RATE SPECIFIED. CHIPPINGS SHOULD BE OF A SINGLE SIZE (AS APPROVED BY THE LOCAL AUTHORITY). CUBICAL IN SHAPE AND SHOULD COMPLY WITH THE REQUIREMENTS OF TABLE 2.4 OF CLAUSE 919 OF THE NRA SPECIFICATION FOR ROAD WORKS.

3. DEPTH OF SUB-BASE & CAPPING LAYER:

   THE DEPTH OF THE SUB-BASE AND CAPPING LAYERS WILL VARY WITH THE SUBGRADE STRENGTH, AS INDICATED BY THE CBR TEST RESULTS.

   THE THICKNESS OF THE SUB-BASE LAYER SHOULD BE 150mm FOR ALL FORMS OF ROADWAY CONSTRUCTION.

   THE THICKNESS OF THE CAPPING LAYER WILL VARY WITH THE CBR VALUE, AS INDICATED IN TABLE 3.1 BELOW. IF THE CBR VALUE OF THE SUBGRADE EXCEEDS 15%, NO CAPPING LAYER IS REQUIRED. SEE FIGURE 4.1 IN PART 2A, HD25-26 OF NRA DESIGN MANUAL FOR ROADS AND BRIDGES.

TABLE 3.1 CAPPING LAYER - MINIMUM CONSTRUCTION THICKNESS	
LOWEST SUBGRADE CBR (%)	MINIMUM CAPPING LAYER THICKNESS (mm)
* LESS THAN 2	(SEE FOOTNOTE)
2->5	450->250
5->15	250->150
MORE THAN 15	NO CAPPING LAYER REQUIRED

   * FOR SUBGRADES WITH A CBR OF LESS THAN 2%, A GEOTEXTILE SEPARATOR (e.g. TERRAM 1000) SHOULD BE USED AND SPECIALIST ADVICE SOUGHT REGARDING MINIMUM THICKNESS.

   IF THE CONTRACTOR PROPOSES TO USE THE SUB-BASE FOR CONSTRUCTION TRAFFIC HE SHOULD SEEK APPROVAL FROM THE ENGINEER TO DO SO. SUCH APPROVAL WILL ONLY NORMALLY BE GIVEN ON CONDITION THAT THE SUB-BASE THICKNESS IS INCREASED TYPICALLY FOR CBR VALUES ≤ 4% THE SUB-BASE THICKNESS WILL HAVE TO BE INCREASED BY 150mm. FOR CBR VALUES > 4% AN INCREASE OF 80mm WILL BE SUFFICIENT.

   SUBGRADE STRENGTH SHOULD BE ESTABLISHED BY MEANS OF THE CALIFORNIA BEARING RATIO (CBR) TEST, IN ACCORDANCE WITH BS 1377-4:1990. SAMPLES SHOULD BE TAKEN AT THE RATE OF ONE PER 100m OF ROAD AND WHERE SIGNIFICANT VARIATIONS IN SOIL TYPE ARE ANTICIPATED. EXTRA SAMPLES MAY BE REQUIRED BY THE LOCAL AUTHORITY WHERE THE DIFFERENCE IN STRENGTH BETWEEN TWO ADJACENT SAMPLES INDICATES A SIGNIFICANT VARIATION IN SOIL TYPE. IN PREPARING THE TEST SPECIMEN, THE METHOD OF COMPACTION SHOULD BE THE STATIC COMPACTION METHOD 2, AS SPECIFIED IN PARAGRAPH 7.2.3.3 OF BS 1377-4:1990.

4. MATERIAL SPECIFICATION FOR SUB-BASE AND CAPPING LAYER:

   (a) SUB-BASE

   SUB-BASE MATERIAL SHOULD COMPRISE TYPE B GRANULAR MATERIAL, IN ACCORDANCE WITH CLAUSE 804 OF THE SPECIFICATIONS FOR ROADWORKS. THE MATERIAL SHOULD LIE WITHIN THE GRADING LIMITS SET OUT IN TABLE 4.1 BELOW.

TABLE 4.1 SUB-BASE MATERIAL - PERCENTAGE BY MASS PASSING			
ISO SIEVE SIZE (mm)	OVERALL GRADING RANGE	SUPP. DECLARED VALUE (GRADING RANGE)	TOLERANCE
63	100	NR	NR
31.5	80-99	NR	NR
16	55-85	63-77	+/-8
8	35-65	43-57	+/-8
4	22-50	30-42	+/-8
2	15-40	22-33	+/-7
1	10-35	15-30	+/-5
0.5	0-20	5-15	+/-5
0.063	0-7	NR	NR

   PARTICLE SIZE DISTRIBUTION SHOULD BE DETERMINED BY THE WASHING AND SIEVING METHOD OF IS EN 933-1. ALL MATERIAL USED SHOULD BE FROST RESISTANT.

   MATERIAL PASSING THE 0.425mm SIEVE, WHEN TESTED IN ACCORDANCE WITH BS 1377-2, SHOULD BE NON-PLASTIC.

   THE MATERIAL SHOULD HAVE A TEN PERCENT FINES VALUE OF 100kN, OR MORE, WHEN TESTED IN ACCORDANCE WITH IS EN 933-1.

   THE SUB-BASE SHOULD BE LAID AND COMPACTED TO THE REQUIREMENTS OF CLAUSE 802 OF THE NRA SPECIFICATION FOR ROADWORKS, WITHOUT DRIVING OUT, OR SEGREGATION.

   (b) CAPPING LAYER

   THE CAPPING LAYER SHALL BE CONSTRUCTED WITH CLASS 6F1 OR 6F2 MATERIAL AS PER SERIES 600 OF THE NRA SPECIFICATION FOR ROAD WORKS AND COMPRISING OF EITHER CRUSHED ROCK, NATURAL GRAVEL, CRUSHED GRAVEL OR CRUSHED CONCRETE. THE MATERIAL SHOULD HAVE A MAXIMUM SIZE OF 100mm AND THE MAXIMUM ALLOWABLE PASSING THE 63 MICRON SHOULD BE 10%. THE MATERIAL SHOULD BE WELL GRADED THROUGHOUT ALL SIZES.

   SELECTED DEMOLITION MATERIALS WHICH MEET THE ABOVE REQUIREMENTS MAY ALSO BE USED, SUBJECT TO APPROVAL.

5. CONCRETE FOR ROAD PAVEMENTS:

   PAVING QUALITY CONCRETE SHOULD BE PAV2 MIX (AIR ENTRAINED CONCRETE) MADE FROM NATURAL AGGREGATES, CEMENT, WATER AND AIR ENTRAINING AGENT COMPLYING WITH IS 206-1, BS 8500-1, BS 8500-2, EN 13877-2 AND THE REQUIREMENTS OF SERIES 1000 OF THE NRA SPECIFICATION FOR ROAD WORKS.

TABLE 5.1 CONSTITUENTS FOR PAVING QUALITY CONCRETE	
MINIMUM CEMENT CONTENT	340kg/m³
MAXIMUM FREE WATER/CEMENT RATIO	0.45
MAXIMUM AGGREGATE SIZE	20mm
MINIMUM STRENGTH CLASS	C32/40
AIR CONTENT	4.5 %
SLUMP CLASS	S3

6. REINFORCEMENT FOR CONCRETE SLABS SHOULD BE LONG MESH STEEL FABRIC, COMPLYING WITH BS 4483 AND SHOULD BE FREE FROM LOOSE MILL SCALE, RUST, DIRT, OIL, PAINT OR GREASE. THE MINIMUM WEIGHT OF REINFORCEMENT SHOULD BE 2.61kg/m². THE REINFORCEMENT SHOULD HAVE 50mm MINIMUM COVER FROM THE SURFACE AND SHOULD TERMINATE BETWEEN 250 AND 350mm FROM ANY TRANSVERSE JOINT BETWEEN 40 AND 80mm FROM A LONGITUDINAL JOINT. THE REINFORCEMENT SHOULD TERMINATE BETWEEN 40 AND 80mm FROM THE EDGE OF THE SLAB. REINFORCING MATS SHOULD OVERLAP SUCH THAT THE TRANSVERSE WIRE OF ONE MAT WOULD LIE WITHIN THE LAST COMPLETE MESH OF THE PREVIOUS MAT AND THE OVERLAP SHOULD BE AT LEAST 450mm. TRANSVERSE CONTRACTION JOINT SPACING FOR VARIOUS MESH SIZES SHOULD BE AS FOLLOWS:

LONG MESH REINFORCEMENT TO BS 4483	MAXIMUM SPACING (m) OF CONTRACTION JOINTS
C283	15m
C385	20m
C503	25m

7. SAWING OF JOINT GROOVES SHOULD BE UNDERTAKEN AS SOON AS POSSIBLE AFTER THE CONCRETE HAS HARDENED SUFFICIENTLY TO ENABLE A SHARP EDGED GROOVE TO BE PRODUCED, WITHOUT DISRUPTING THE CONCRETE AND BEFORE RANDOM CRACKS DEVELOP IN THE SLAB. THIS WOULD BE WITHIN 6 TO 24 HOURS AFTER THE CONCRETE IS POURED. THE GROOVES SHOULD BE BETWEEN ⅓ & ¼ THE DEPTH OF SLAB AND OF ANY CONVENIENT WIDTH NOT LESS THAN 3mm. THE GROOVE CAN BE WIDENED BY SAWING AT THIS STAGE, OR LATER, TO ACCOMMODATE THE JOINT SEALANT.

   EXPANSION JOINT FILLER SHOULD BE COMPRESSIBLE BOARD 25mm THICK, FOR THE FULL DEPTH OF THE CONCRETE. THE TOP OF THE FILLER BOARD SHOULD BE ROUTED OUT LATER, TO A DEPTH OF 25mm, IN ORDER TO RECEIVE THE JOINT SEALANT.

8. DOWEL BARS AND TIE BARS SHOULD BE BS500B STEEL, COMPLYING WITH IS EN 13877-3 AND SHOULD BE FREE FROM OIL, DIRT, LOOSE SCALE AND RUST. DOWEL BARS SHOULD BE STRAIGHT, FREE OF BURRS AND OTHER IRREGULARITIES, WITH THE SLIDING END SAWN. DOWEL BARS SHOULD BE DEBONDED OVER THEIR LENGTH WITH A TOUGH, DURABLE PLASTIC SHEATH OF AVERAGE THICKNESS NOT GREATER THAN 1.25mm. FOR EXPANSION JOINTS, THE EXPANSION SPACE AVAILABLE IN THE WATERPROOF CAP SHOULD BE 10mm GREATER THAN THE THICKNESS OF THE JOINT FILLER BOARD.

9. JOINT GROOVES SHOULD BE SEALED WITH A COLD APPLIED JOINT-SEALING COMPOUND COMPLYING WITH BS 5212 TYPE N. THE FINISHED SURFACE OF THE SEAL SHOULD BE 3mm BELOW THE SURFACE LEVEL OF THE CONCRETE.

NOTES Ctd.

14. GRATED LINEAR DRAINAGE CHANNEL SYSTEMS SHALL BE OF 100mm, 150mm OR 200mm NOMINAL INTERNAL WIDTH, AS SPECIFIED ON THE DRAWINGS, MANUFACTURED FROM HIGH STRENGTH POLYMER CONCRETE WITH CAST-IN GALVANISED STEEL EDGE RAILS. THE CHANNELS SHALL BE INSTALLED WITH MANUFACTURERS DUCTILE IRON OR STAINLESS STEEL GRATING APPROPRIATE TO THE SPECIFIED LOAD CLASS AND LOCKED SECURELY IN PLACE. THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS.
15. SLOTTED LINEAR DRAINAGE CHANNEL SYSTEMS SHALL BE CHOSEN ACCORDING TO THE LOAD CLASS REQUIRED AND MANUFACTURED FROM HIGH STRENGTH POLYMER CONCRETE INCORPORATING A 10mm WIDE CENTRALLY POSITIONED SLOT. THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS.
16. PRECAST KERBS SHALL BE LAID AND LEVELLED IN ACCORDANCE WITH BS 7533: PART 4. A RAISED LIP OF 25mm SHOULD BE USED FOR VEHICULAR ENTRANCES AND 0-6mm FOR PEDESTRIAN CROSSINGS.
17. IN SITU KERBS SHALL COMPLY WITH THE REQUIREMENTS OF BS 5931. KERBS SHALL BE PROTECTED FROM THE EFFECTS OF ADVERSE WEATHER UNTIL CURED. A RAISED LIP OF 25mm SHOULD BE USED FOR VEHICULAR ENTRANCES AND 0-6mm FOR PEDESTRIAN CROSSINGS.

NOTE:
BEFORE PAVERS / PAVEMENT WORKS ARE COMMENCED THE CONTRACTOR IS TO ESTABLISH IF THESE WORKS ARE TO BE TAKEN IN CHARGE BY THE LOCAL AUTHORITY. IF THIS IS THE CASE THE CONTRACTOR IS TO GET APPROVAL FROM THE LOCAL AUTHORITY FOR THE DETAILS SHOWN ON THIS DRAWING AND ESTABLISH INSPECTION AND TESTING REQUIREMENTS BEFORE COMENCING THE WORK.

NOTES Ctd.

10. CLAY AND CALCIUM SILICATE PAVERS SHOULD COMPLY WITH IS EN 1344: TYPE PB WITH CHAMFERS, 200 x 100 x 65mm FOR TRAFFICKED AREAS & 50mm THICK FOR PEDESTRIAN AREAS

    CONCRETE BLOCK PAVERS SHOULD COMPLY WITH BS EN 1338: TYPE R, 200 x 100 x 80mm THICK FOR TRAFFICKED AREAS & 50mm THICK FOR PEDESTRIAN AREAS.

    HORIZONTAL INTERLOCK SHOULD BE GIVEN TO THE PAVING EITHER BY THE USE OF SHAPED BLOCKS, OR BY LAYING RECTANGULAR BLOCKS IN HERRINGBONE FASHION, AT THE EDGE OF THE PAVEMENT, RESTRAINT SHOULD BE PROVIDED, IN ORDER TO PREVENT THE PAVERS AND THE LAYING COURSE FROM MIGRATING OUTWARDS AND LOSING INTERLOCK.

    CLAY, CALCIUM SILICATE & CONCRETE BLOCK PAVERS SHOULD BE LAID IN ACCORDANCE WITH BS 7533-3.

11. LAYING COURSE SAND SHALL BE "0/85 0/4 (M)" AS PER IS EN 12620. AS A GUIDE TO MOISTURE CONTENT, AFTER THE MATERIAL IS COMPRESSED THE MATERIAL SHOULD BIND TOGETHER WITHOUT SHOWING FREE MOISTURE ON ITS SURFACE. WHERE LAYING COURSE MATERIAL IS STORED ON SITE IT SHOULD BE COVERED TO REDUCE MOISTURE LOSS DUE TO EVAPORATION, OR SATURATION FROM RAINFALL.

    IF THE LAYING COURSE MATERIAL BECOMES SATURATED AFTER PLACEMENT THEN IT SHOULD BE REMOVED AND REPLACED WITH LAYING COURSE MATERIAL IN A CONDITION SUITABLE FOR THE BLOCK LAYING OPERATION. ALTERNATIVELY THE LAYING COURSE CAN BE LEFT IN PLACE UNTIL IT DRIES SUFFICIENTLY TO ALLOW BLOCK LAYING TO PROCEED.

12. JOINTS BETWEEN PAVERS TO BE LAID TIGHT (2mm to 5mm WIDE) AND FILLED WITH FINE SAND "0/85 0/1 (FP)" AS PER IS EN 12620.
13. LINEAR DRAINAGE CHANNEL SYSTEMS SHALL BE FULLY COMPLIANT WITH IS EN 1433:2002 AND CERTIFIED TO THE LOAD CASES SPECIFIED ON THE DRAWINGS AND AS DEFINED IN IS EN 1433:2002.

ISSUE	DATE	DESCRIPTION	DRN.	CHKD.
PL1	05.03.21	ISSUED FOR PLANNING	MT	MK

DRAWING STAGE: **PLANNING**

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ACEI
Association of Consulting Engineers

CLIENT: **CAIRNS HOMES PROPERTIES LTD.**

PROJECT TITLE: **COOKSTOWN RD. ENNISKERRY, CO. WICKLOW**

BM PROJECT No. **18.243**

MODEL REFERENCE: **18243-BMD-00-ZZ-DR-C-1210**

MODEL REV: **P1** SUITABILITY: **S0**

DRAWING TITLE: **ROAD & HARDSTANDING STANDARD DETAILS**

DRAWING No. **18243-BMD-00-ZZ-DR-C-1210** ISSUE: **PL1**