NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

2. PERMANENT REINSTATEMENT TO BE MEASURED SEPERATELY.

3. GRADE ST4 CONCRETE AS BACKFILL TO TRENCHES TO BE SEMI-DRY MIX COMPACTED. BY MEANS OF A VIBRATING PLATE COMPACTOR/TRENCH RAMMER IN LAYERS NOT GREATER THAN 200mm.

4. SELECTED BACKFILL TO BE COMPACTED BY MEANS OF A VIBRATING PLATE COMPACTOR/TRENCH RAMMER IN LAYERS NOT GREATER THAN 200mm.

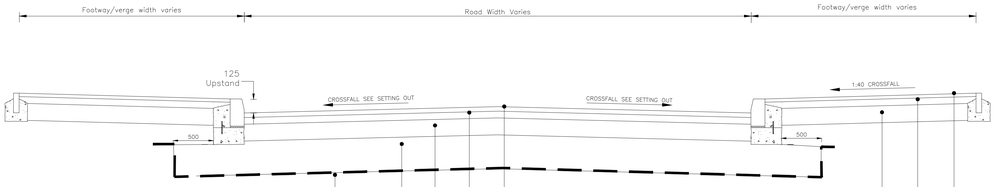
5. THE EDGE OF ALL TRENCHES TO BE SAW CUT, MINIMUM DEPTH OF 40mm.

6. ALL DUCTS TO BE 100mmØ, AND ARE TO BE COMPLETE WITH 6mmØ POLYPROPELENE DRAWROPE SECURED AT BOTH ENDS.

7. THE DUCTING SHALL BE H.D.P.E (5mm WALL THICKNESS) AND SHALL BE CLEARLY MARKED(STREET LIGHTING/TRAFFIC SIGNALS) AS APPROPRIATE; OR FLEXIBLE WITH A RIBBED M.D.P.E.OUTER PROFILE AND A SMOOTH L.D.P.E. INNER BORE.

8. THE DUCTING SHALL CONFORM TO A DENSITY OF 0.9/cm3 DIN53479 WITH A BREAKINGPOINT OF 23-30N/mm2 DIN53455. THE DUCTING SHALL BE COMPATIBLE WITH THE APPROVED ACCESS CHAMBERS PRE-TREPANED KNOCKOUT. WHERE THE DUCTS NEED TO BE JOINED A MANUFACTURER APPROVED CONNECTOR MUST BE USED AND APPROVED BY THE OVERSEEING ORGANISATION.

TYPICAL CARRIAGEWAY CONSTRUCTION DETAIL



FULL DEPTH CARRIAGEWAY CONSTRUCTION-(NO LIMESTONE AGGREGATE TO BE USED IN SURFACE COURSES OR ANY SURFACES TO BE TEMPORARILY TRAFFICKED). ALL MATERIALS TO BE LAID AND TRANSPORTED IN ACCORDANCE WITH THE SHW, BITUMINOUS SPRAY TO BE APPLIED IN ACCORDANCE WITH CLAUSE 920 OF THE SHW.

SURFACE: 50MM THICK HRA 35/14 SURF 40/60 DES 20MM PRECOATED CHIPPINGS PSV MIN 60 TO BS EN 13108. MIN PSV OF 68 TO BE APPLIED ON APPROACHES TO ROUNDABOUT AND TRAFFIC SIGNAL STOP LINES.

BINDER: 60MM THICK AC 20 DENSE BIN 40/60 REC TO BS EN 13108.

BASE: 150MM THICK AC32 BASE 40/60 REC TO BS EN 13108.

SUB BASE: MIN 150MM THICK SUB-BASE (SUBJECT TO ON-SITE CBR RESULTS-PLEASE REFER TO TABLE ON D004) IN TYPE 1 GRANULAR MATERIAL, LAID AND COMPACTED TO THE SPECIFICATION FOR HIGHWAY WORKS CLAUSES 701, 803, & 803.

CAPPING: REQUIRED CAPPING DEPTH SUBJECT TO ON-SITE CBR TEST RESULTS. FOR ALL CAPPING DETAILS PLEASE REFER TO THE TABLE PROVIDED ON THE STANDARD DETAILS PLAN AND THE DMRB FOR FURTHER GUIDANCE. CBR TO BE ESTABLISHED ON SITE PRIOR TO STARTING WORKS. CONTRACTOR TO REFER RESULTS TO A REPRESENTATIVE OF THE LOCAL AUTHORITY AND THE DESIGN MANUAL FOR ROADS AND BRIDGES VOLUME 7, SECTION 2, PART 3 CHAPTER 3 FOR FURTHER GUIDANCE ON SUB-BASE CAPPINGRELATIONSHIP. APPROPRIATE TERRAM GEOTEXTILE MEMBRANE TO BE LAID BENEATH CAPPING LAYER TO MANUFACTURER'S PROPRIETARY REQUIREMENTS.

SURFACE COURSE:– 20MM THICK AC6 DENSE SURF 160/220 REC, SUPPLIED AND LAID IN ACCORDANCE WITH THE SHW AND EN13108

BINDER COURSE:–40MM THICK AC 20 DENSE BIN 160/220 REC,SUPPLIED AND LAID IN ACCORDANCE WITH THE SHW AND EN13108.

SUB BASE:– 100MM THICK TYPE 1 GRANULAR SUB BASE 150MM AT VEHICLE CROSSINGS. SUPPLIED AND LAID IN ACCORDANCE WITH THE SHW.

ESTIMATED CBR (%)	Foundation Option 1 Sub base only	Foundation Option 2 Sub base and capping	
	Sub Base Depth (mm)	Capping Depth (mm)	Sub Base Depth (mm)
2.5	450	250	350
3	410	240	320
4	360	230	270
5	320	210	240
6	300	200	220
7	280	200	210
8	260	190	200
9	250	180	190
10	240	170	180
11	230	170	170
12	220	160	160
13	210	160	160
14	210	150	150
>15	200	150	150

Table 3: Road Foundation Design Thicknesses

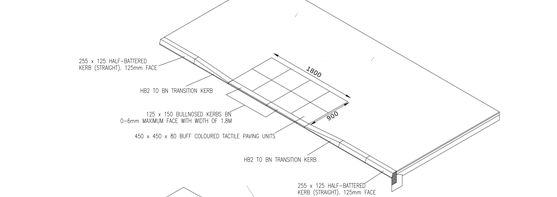
CAPPING AND SUB-BASE THICKNESS DESIGN

SITE TESTS

CBR TESTS SHALL BE UNDERTAKEN ON SITE BY THE CONTRACTOR TO DETERMINE THE CBR VALUE AT FORMATION LEVEL AND SUB BASE CAPPING DEPTHS CONFIRMED WITH LA ENGINEER AND FIG. 3.1 OF THE DEPARTMENT OF TRANSPORT DESIGN CAPPING DEPTHS SHALL BE LAID IN ACCORDANCE WITH MANUAL HD 26/06.

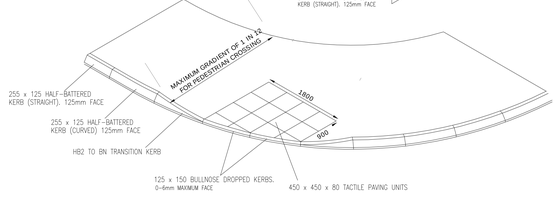
STRAIGHT DROPPED KERB DETAIL

(NOTE : THE ABOVE DETAIL SHOULD BE USED AS A GUIDE FOR GENERAL LAYOUT PURPOSES)



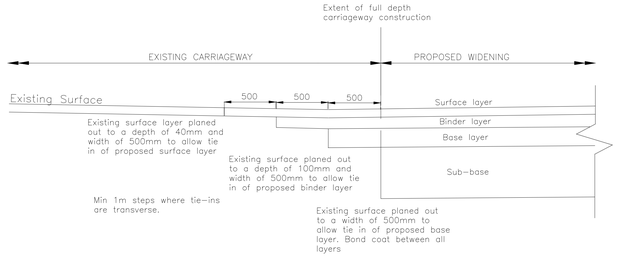
RADIAL DROPPED KERB DETAIL

(NOTE : THE ABOVE DETAIL SHOULD BE USED AS A GUIDE FOR GENERAL LAYOUT PURPOSES)

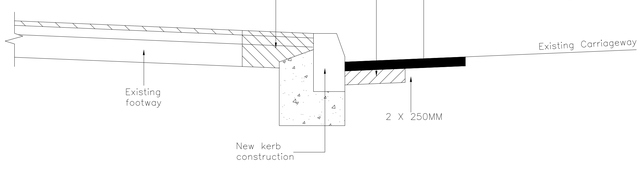




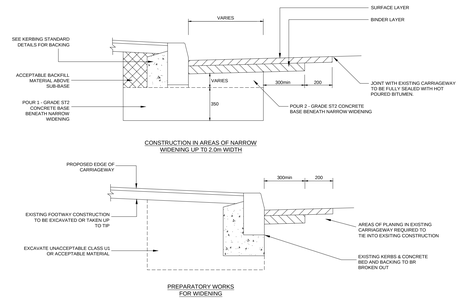
TYPICAL PRECAST CONCRETE GULLY DETAIL



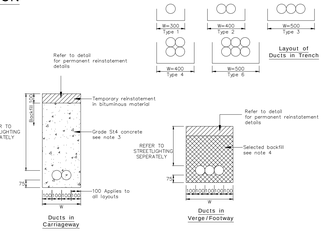
TIE IN CONSTRUCTION



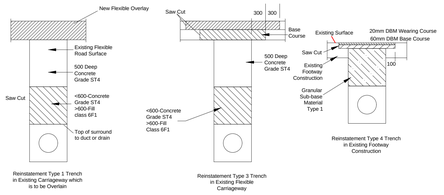
KERB RENEWAL / CARRIAGEWAY REINSTATEMENT



CARRIAGEWAY NARROW WIDENING

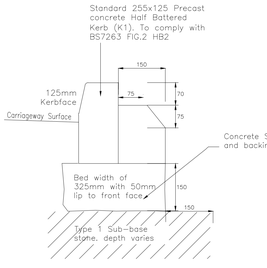


DUCT CROSSING DETAILS-FOR ALL DUCT DETAILS RELATING TO STREETLIGHTING REFER TO LIGHTING DESIGNS SEPARATELY



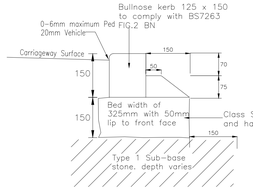
TRENCH REINSTATEMENT

TYPE OF KERB AND THEIR DESIGNATIONS			
TYPE OF KERB	DESIGNATION	FIG Nr.	SIZE
Kerbs:			
Bullnosed	BN	K.1a	125 x 150
45° Splayed	SP	K.1b	125 x 255
Half Battered	HB 1	K.1c	150 x 305
Half Battered	HB 2	K.1d	125 x 255
Half Battered	HB 3	K.1e	125 x 150
Left Hand	TL	K.2a	Transition HB to SP
Right Hand	TR	K.2a	Transition HB to SP
Left Hand	DL1	K.2b	Dropper Type 1 : HB to BN
Right Hand	DR1	K.2b	Dropper Type 1 : HB to BN
Left Hand	DL2	K.2c	Dropper Type 2 : 45° to BN
Right Hand	DR2	K.2c	Dropper Type 2 : 45° to BN
Channels:			
Channel Square	CS1	K.1f	255 x 125
Channel Square	CS2	K.1g	150 x 125
Channel Dished	CD	K.1h	255 x 125
Edgings:			
Round Top Edging	ER	K.3a	50 x 150, 200 or 250
Flat Top Edging	EF	K.3b	50 x 150, 200 or 250
Bullnosed Edging	EBN	K.3c	50 x 150, 200 or 250
Quadrants:			
Quadrant	QBN	K.3d	305 or 455 x 150 or 255
Quadrant	QHB	K.3d	305 or 455 x 150 or 255
Quadrant	QSP	K.3d	305 or 455 x 150 or 255
Angles:			
Internal Angle	IA	K.3e	125 x 255, HB1 or SP
External Angle	XA	K.3f	125 x 255, HB1 or SP

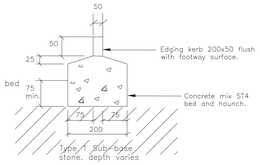


HALF BATTERED KERB

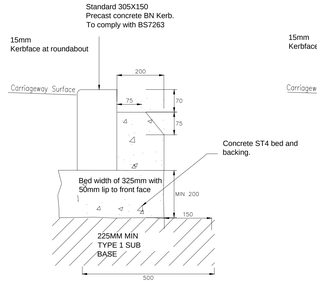
KERB BASE, KERB AND KERB BACKING LAID BEFORE CONCRETE SETS



BULLNOSED KERB

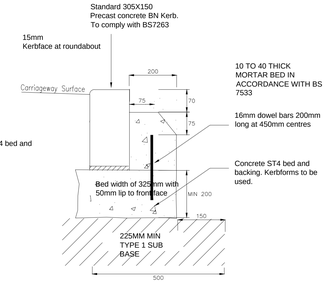


EDGING KERB



OVERRUN KERB CONSTRUCTION TYPE A

KERB BASE, KERB AND KERB BACKING LAID BEFORE CONCRETE SETS



OVERRUN KERB CONSTRUCTION TYPE B

KERB BASE SET PRIOR TO LAYING KERB AND KERB BACKING

NOTES

1. ALL ADOPTABLE SEWERS AND ASSOCIATED WORKS ARE TO COMPLY FULLY WITH "SEWERS FOR ADOPTION" 7TH EDITION. ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE ON-SITE DRAWINGS PRIOR TO UNDERTAKING ANY WORKS AND ANY DISCREPANCIES WITH BOUNDARIES, FENCELINES, EARTHWORKS OR OTHERWISE REPORTED IMMEDIATELY TO THE ENGINEER PRIOR TO WORKS COMMENCING.

2. ALL HIGHWAY AND DRAINAGE WORKS TO BE TO ADOPTABLE STANDARDS AND SHALL COMPLY FULLY WITH THE LOCAL AUTHORITY SPECIFICATION, APPROVED STANDARD DETAILS AND THE RELEVANT SECTIONS OF THE DESIGN MANUAL FOR ROADS AND BRIDGES, SPECIFICATION FOR HIGHWAY WORKS AND BRITISH STANDARDS. CONTRACTOR TO ENSURE POSITIVE DRAINAGE TO ALL GULLIES PRIOR TO UNDERTAKING ANY PAVEMENT WORKS.

3. ANY PRIVATE WORKS ARE TO COMPLY FULLY WITH THE LATEST EDITIONS OF THE BUILDING REGULATIONS

4. ALL EXISTING STATIONS, INVERT LEVELS AND DRAINAGE NETWORK TO BE CHECKED BY THE CONTRACTOR AT THE START OF WORKS AND ANY DISCREPANCIES NOTIFIED TO THE ENGINEER. ALL LEVELS ARE BASED ON ORDNANCE DATUM. CONTRACTOR TO IMMEDIATELY NOTIFY ENGINEER OF DISCREPANCIES BETWEEN THIS AND OTHER DRAWINGS TO BE REPORTED TO THE ENGINEER PRIOR TO CONSTRUCTION.

5. ALL MATERIALS TO BEAR THE RELEVANT B.S.KITEMARK AND COMPLY FULLY WITH THE SPECIFICATIONS. ALL MATERIALS TO BE AGREED WITH THE OVERSEEING LOCAL AUTHORITY REPRESENTATIVE PRIOR TO ORDERING. ALL CONCRETE TO BE DESIGN MIX ST4 UNLESS NOTED OTHERWISE. (NO LIMESTONE AGGREGATE TO BE USED IF INVESTIGATION REPORT PROVES THAT SULPHATE ATTACK FROM SOILS AND GROUNDWATER WILL NOT OCCUR.)

6. ALL STATUTORY CONSENTS, OPENING NOTICES ETC. AS REQUIRED UNDER HIGHWAYS ACTS AND WATER INDUSTRIES ACTS, ARE TO BE OBTAINED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF THE WORKS (UNLESS OTHERWISE STATED). ALL WORKS ARE TO BE INSPECTED BY L.A., NHBC OR STATUTORY AUTHORITY AS APPLICABLE.

7. CONTRACTOR TO MAKE ADVANCE ALLOWANCE FOR THE MANAGEMENT AND COORDINATION OF STATUTORY UNDERTAKERS DIVERSIONS WITHIN THEIR PROGRAMME OF WORKS. PRESENCE OF STATUTORY UNDERTAKERS EQUIPMENT IN THE HIGHWAY SHOULD BE VERIFIED BY THE CONTRACTOR ON SITE PRIOR TO STARTING ANY WORKS. THE LOCATION OF STATUTORY PLANT SHOWN ON ANY PLANS IS INDICATIVE ONLY AND SHOULD NOT BE RELIED UPON FOR THE LOCATION OF ANY PREWORK OR CABLING. THE CONTRACTOR SHOULD CONFIRM THE EXACT LOCATION OF ALL SERVICES WITH THE RELEVANT AUTHORITIES. CONTRACTOR TO MAKE ADVANCE ALLOWANCE FOR THE PRESENCE OF ALL STATUTORY APPROPRIATE PROTECTION / DIVERSION MEASURES (INCORPORATING SPLIT DUCT AND 150MM CONCRETE SURROUND OR SIMILAR STATUTORY APPROVED METHOD) IS TO BE PUT IN PLACE BY THE CONTRACTOR UNLESS STATED OTHERWISE) WHERE STATE EQUIPMENT ARE FOUND TO BE WITHIN THE AREA OF HIGHWAY WORKS.

8. PRIOR TO ORDERING THE CONTRACTOR IS TO AGREE ALL SIGN POSTS/LIGHTING COLUMN MATERIALS AND FINISHES WITH THE LOCAL AUTHORITY. ALL SIGNS TO COMPLY WITH BS EN 12899:2007 AND ITS NATIONAL ANNEX TYPE OF POSTS, FINISHES AND LIGHTING UNITS(COLUMNS) TO BE AGREED WITH LA STREETLIGHTING ENGINEER PRIOR TO ORDERING. CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE PROVISION OF ALL REQUIRED STREETLIGHTING AND TRAFFIC SIGNS WITH THE LOCAL AUTHORITY PRIOR TO THE WORKS COMMENCING. CONTRACTOR TO MAKE ALLOWANCE FOR ANY LEAD-INS WITHIN THEIR PROGRAMME.

9. ALL ROADMARKINGS TO BE LAID IN ACCORDANCE WITH THE REQUIREMENTS OF THE TRAFFIC SIGNS MANUAL, CHAPTER 5, TRAFFIC SIGNS REGULATIONS AND GENERAL DIRECTIONS, ROADMARKING MATERIALS, LAYING AND REMOVAL. ALL ROADMARKINGS TO BE APPLIED USING MATERIALS AS DETAILED IN BS 3262 PART 1. ACCESS COVERS WITHIN THE VICINITY OF THE WORKS TO HAVE HIGH FRICTION COVERS AND AGREED WITH LA ENGINEER, PSV OF ALL LINING AND COVERS TO SUIT ADJACENT SURFACING.

10. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL ADVANCE NOTICES ARE IN PLACE AND TRAFFIC MANAGEMENT IS IN PLACE PRIOR TO WORKS COMMENCING. THE CONTRACTOR IS TO MAKE ALLOWANCE FOR THE ADVANCE PROVISION OF ALL ELECTRICAL WORKS AND EQUIPMENT FOR SIGNALS AND STREETLIGHTING WITHIN THEIR PROGRAMME OF WORKS.

C.D.M. REGULATIONS 2015

IN LINE WITH THE ABOVE REGULATIONS WE ARE OBLIGED TO INFORM THE CLIENT OF THE RISKS THAT MAY BE ENCOUNTERED IN THE CONSTRUCTION OF THESE WORKS. WHEREVER POSSIBLE RISKS HAVE BEEN ELIMINATED OR REDUCED THROUGH THE DESIGN PROCESS. HOWEVER, IT IS NOT POSSIBLE TO ELIMINATE OR REDUCE ALL THE RISKS FROM THE DESIGN. WE WOULD ALSO RESPECTFULLY REMIND THE CLIENT OF HIS OBLIGATIONS TO TAKE ALL REASONABLE STEPS IN ENSURING THAT ONLY COMPETENT CONTRACTORS WHO HAVE A VALID SAFETY POLICY ARE EMPLOYED. THEY SHOULD ALSO PROVIDE SATISFACTORY RESPONSES AT TENDER STAGE AS TO THE MANNER IN WHICH THEY WILL DEAL WITH THE ELEMENTS OF RISK INVOLVED IN THIS TYPE OF WORK AND IN PARTICULAR THOSE HIGHLIGHTED BY CHDIT BELOW.

1. TRENCH EXCAVATIONS IN EXCESS OF 1.2M DEEP.
2. GUARDING TO EDGES OF EXCAVATIONS TO PREVENT PEOPLE, MATERIALS AND VEHICLES FALLING INTO EXCAVATION.
3. UNDERMINING OF EXCAVATIONS OUTSIDE WORKING HOURS TO PREVENT UNAUTHORISED ACCESS.
4. UNDERMINING TO ADJACENT ROADS OR STRUCTURES.
5. CONFINED SPACE OPERATIONS.
6. DEALING WITH EXISTING SERVICES.
7. TRAFFIC MANAGEMENT ON EXISTING HIGHWAYS AND PROTECTION OF SITE PERSONNEL AND MEMBERS OF THE PUBLIC.
8. PROCEDURE TO BE FOLLOWED IN EVENT OF ACCIDENT OR EMERGENCY.
9. METHOD OF WORKING WHERE CONTAMINATED GROUND IS PRESENT ON SITE.
10. CONFIRMATION WILL BE REQUIRED THAT ALL OPERATIVES ARE ADEQUATELY TRAINED. COPIES OF RELEVANT TRAINING CERTIFICATES TO BE SUPPLIED.

IT IS THE RESPONSIBILITY OF ALL PERSONS GIVING OPERATIVES INTENDING TO CONSTRUCT THE DESIGNS SHOWN ON THIS DRAWING SHOULD ENSURE THAT THEY

i) HAVE BEEN REGULARLY AND THOROUGHLY BRIEFED BY THE PRINCIPAL CONTRACTOR ON ALL HEALTH AND SAFETY MATTERS AND HAVE HAD SIGHT OF:

ii) THE FULL DESIGNERS AND CONTRACTORS RISK ASSESSMENTS AND RISK REGISTERS.
iii) THE DEVELOPED CONSTRUCTION HEALTH AND SAFETY PLAN
iii) THE CONTRACTORS CONSTRUCTION METHOD STATEMENTS.

THE ABOVE LIST IS BY NO MEANS EXHAUSTIVE BUT IT DOES HIGHLIGHT OPERATIONS THAT PRESENT A RISK TO CONTRACTORS AND THE GENERAL PUBLIC.

REV	DETAILS	DRAWN	CHECKED	DATE
-	-	-	-	-

CLIENT:
CASTLE GREEN

PROJECT:
MAIN ROAD, WREXHAM

DRAWING TITLE:
S278 STANDARD DETAILS PART ONE

SCALES:
NTS @ A0

DRAWN:	CHECKED:	DATE:
JC	MC	MAR 21

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Manchester
M3 4LY
Email: info@crofts.co.uk
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www.eddisons.com/services/transport-planning

DRAWING NUMBER: 3311-D004

REVISION: A

Eddisons | Incorporating Croft

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