

FLEXIBLE CARRIAGEWAY CONSTRUCTION

IMPROVEMENTS WHERE SURFACE MODULUS IS < 30MPa

- THE UNSUITABLE MATERIAL CAN BE REMOVED AND REPLACED WITH A MORE SUITABLE MATERIAL (I.E. CAPPING MATERIAL). IF THE DEPTH IS SMALL IT CAN BE REPLACED IN ITS ENTIRETY ALTHOUGH IT MAY ONLY BE NECESSARY TO REPLACE THE TOP LAYER. TYPICALLY 0.5m TO 1.0m OF MATERIAL REMOVED. THE DESIGN SURFACE MODULUS SHOULD BE ASSUMED TO BE 30MPa TO ALLOW FOR THE EFFECTS OF ANY SOFTER MATERIAL UNDERNEATH.
- IF THE SOIL IS COHESIVE A LIME (OR SIMILAR) TREATMENT MAY BE APPROPRIATE. THE NEW DESIGN SURFACE MODULUS SHOULD BE ASSUMED TO BE 30MPa. THE UPPER LIMIT ON DESIGN SURFACE MODULUS FOR AREAS OF IMPROVEMENT OF THE SUBGRADE SHALL BE 50 MPa. WHERE THE DESIGN SUBGRADE SURFACE MODULUS IS LOWER THAN 30 MPa, IMPROVEMENT OF THE SUBGRADE SHALL BE UNDERTAKEN.
- MECHANICAL STABILISATION USING GEO-GRIDS TO ACHIEVE A CLASS TWO FOUNDATION MAY BE USED WHEN A MANUFACTURERS DESIGN IS ACCEPTED AND APPROVED.
- IF THE SOIL IS REASONABLY PERMEABLE THEN A DEEPER THAN NORMAL DRAINAGE SYSTEM MAY BE CONSIDERED TO DRAIN THE SOIL AND INCREASE THE CBR. HOWEVER, THIS WILL TAKE A CERTAIN PERIOD TO WORK EFFECTIVELY AS THE SOIL NEED TO DRAIN BEFORE CONSTRUCTION WORKS BEGIN ON THE PAVEMENT.

SURFACE COURSE	40mm TARMAC ULTLAYER S 10 SURF PMB TO CL 942. PSV VALUE IN COMPLIANCE WITH CD 236. BOND COAT TO BE APPLIED TO ALL BOUND PAVEMENT LAYERS IN ACCORDANCE WITH BS 594987
BINDER COURSE	70mm THICK AC20 DENSE BIN 40/60
BASE (ROADBASE)	190mm THICK AC32 DENSE BASE 40/60
SUB-BASE / CAPPING	REFER TO TABLE 1 FOR FOUNDATION THICKNESS OPTIONS
GEOTEXTILE LAYER	TERRAM 1000 OR SIMILAR APPROVED TO BE INSTALLED BENEATH SUB-BASE OF CARRIAGEWAY DURING CONSTRUCTION PHASE IF WORKING PRACTICES, LENGTH OF TIME THE FORMATION IS EXPOSED AND WEATHER CONDITIONS REQUIRE IT

PAVEMENT CONSTRUCTION TYPE 1 (DMRB DESIGN)
1:20

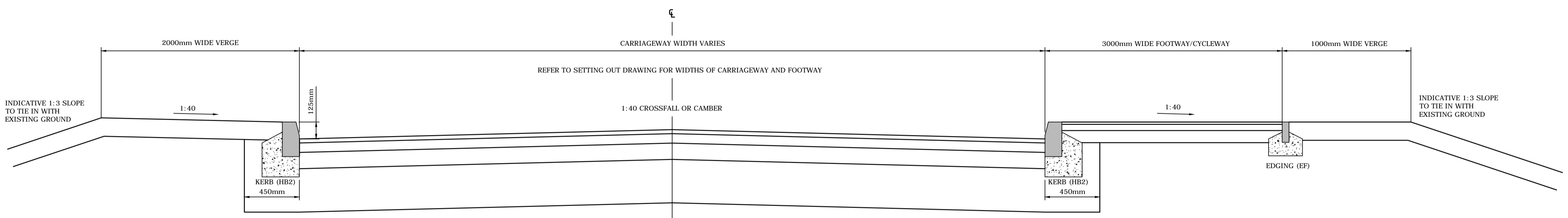
FILL MATERIAL BELOW ADOPTABLE HIGHWAYS

ALL FILL MATERIAL BELOW ADOPTABLE HIGHWAYS TO BE CLASS 1A, 1B, 1C, 2A, 6F1 OR 6F2 IN ACCORDANCE WITH THE SPECIFICATION FOR HIGHWAY WORKS. ALL MATERIAL TO BE PLACED AND COMPACTED IN ACCORDANCE WITH THE SPECIFICATION FOR HIGHWAY WORKS AND PROJECT SPECIFIC EARTHWORKS SPECIFICATION, REF: 775823-MLM-ZZ-XX-RP-1-002-S2-C03. THE CONTRACTOR SHALL ARRANGE FOR INDEPENDENT TESTING OF THE LEVELS OF COMPACTION (TO BE CARRIED OUT IN ACCORDANCE WITH THE SPECIFICATION FOR HIGHWAY WORKS). TEST RESULTS SHOWING CONFORMITY SHALL BE SUPPLIED TO THE APPROVING HIGHWAY AUTHORITY. THE CONTRACTOR SHALL OBTAIN THE APPROVAL OF THE APPROVING HIGHWAY AUTHORITY FOR THE FILL MATERIAL, LAYER THICKNESS AND METHOD OF COMPACTION.

SUBGRADE SURFACE MODULUS (MPa)	SUB-BASE ONLY		SUB-BASE AND CAPPING	
	FOUNDATION CLASS 2 SUB-BASE MCHW1 803 THICKNESS (mm)	FOUNDATION CLASS 2 SUB-BASE MCHW1 803 THICKNESS (mm)	SUB-BASE MCHW1 803 THICKNESS (mm)	CAPPING MCHW1 SERIES 600 THICKNESS (mm)
30	420	250	430	
40	330	220	340	
50	270	200	250	
60	250	240	170	

TABLE 1 - SUB-BASE AND CAPPING, AND SUB-BASE ONLY THICKNESSES FOR SUBGRADE SURFACE MODULUS VALUES < 30MPa. REFER TO ENGINEER FOR VALUES < 30MPa.

HIGHLIGHTED SUBGRADE SURFACE MODULUS TAKEN AS DESIGN CONSTRUCTION DEPTH OF HIGHWAY FOUNDATION BASED UPON SITE TESTING. CONTRACTOR TO CONFIRM SUITABILITY OF SUBGRADE SURFACE MODULUS PRIOR TO CONSTRUCTION, AND IMPROVE IF REQUIRED.



FLEXIBLE CARRIAGEWAY CONSTRUCTION FOR LOCAL DISTRIBUTOR ROAD

SURFACE COURSE	40mm TARMAC ULTLAYER S 10 SURF PMB TO CL 942. PSV VALUE IN COMPLIANCE WITH CD 236. BOND COAT TO BE APPLIED TO ALL BOUND PAVEMENT LAYERS IN ACCORDANCE WITH BS 594987
BINDER COURSE	70mm HRA OR 70mm HRA
BASE (ROADBASE)	150mm HRA 170mm DBM
SUB-BASE	SEE TABLE 2 SEE TABLE 2

PAVEMENT CONSTRUCTION TYPE 2
TO BE CONSTRUCTED IN ACCORDANCE WITH SUFFOLK COUNTY COUNCIL SPECIFICATION FOR ESTATE ROADS
1:20

FOOTWAY CONSTRUCTION

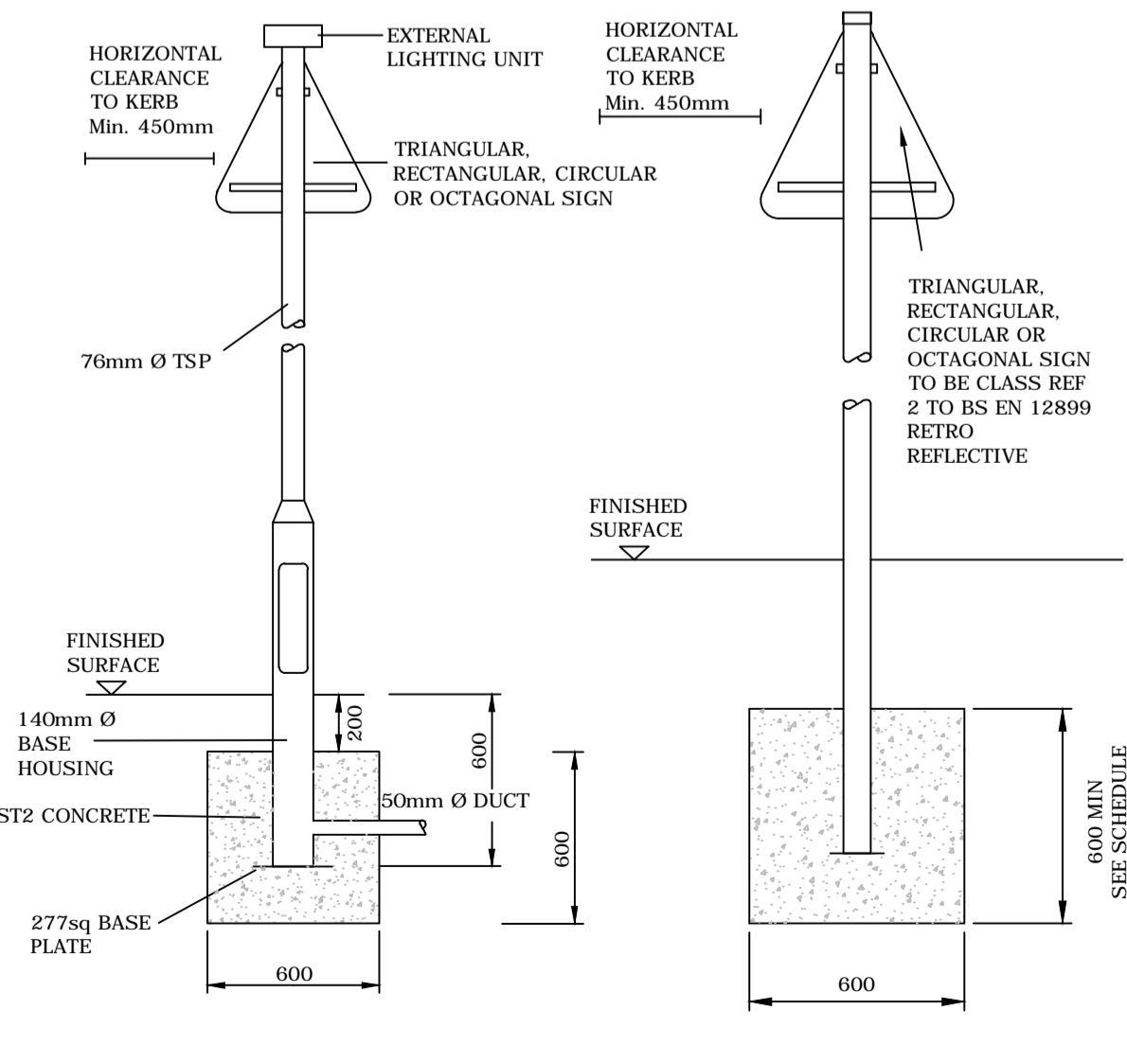
SURFACE COURSE	20mm THICK AC6 DENSE SURF 100/150 ASPHALT CONCRETE TO BS EN 13108
BINDER COURSE	50mm THICK AC20 DENSE BIN 100/150 ASPHALT CONCRETE TO BS EN 13108
SUB-BASE	100mm THICK TYPE 1 GRANULAR MATERIAL TO H.A. SPECIFICATION FOR HIGHWAY WORKS CLAUSE 803.

TABLE 2:
DEPTH OF SUB-BASE FOR CBR VALUES - PAVEMENT CONSTRUCTION TYPE 2 AS PER TABLE 9.2 OF THE SUFFOLK COUNTY COUNCIL SPECIFICATION FOR ESTATE ROADS, MAY 2007

CBR	SUB-BASE THICKNESS
> 5%	225mm
4%	300mm
3%	380mm
2%	500mm

- NOTES**
- IF SUB-GRADE IS FROST SUSCEPTIBLE ROAD CONSTRUCTION MUST BE AT LEAST 450mm THICK. ANY VARIATION IN GROUND CONDITIONS TO BE REFERRED TO THE SITE ENGINEER.
 - PAVEMENT CONSTRUCTION TYPE 2 SUB-BASE THICKNESS TO BE USED ON SOUTHERN ARM OF CENTRAL ROUNDABOUT. FOR FULL EXTENT REFER TO DRG. 619132-MLM-ZZ-XX-DR-C-0073

WHERE CBR < 2% ADDITIONAL MEASURES MAY BE REQUIRED.



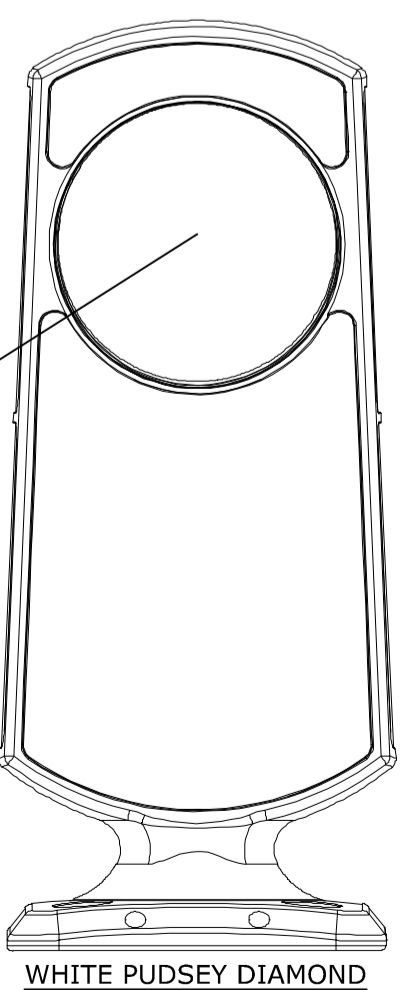
TRAFFIC SIGN (ILLUMINATED)
1:20

TRAFFIC SIGN DETAIL
1:20

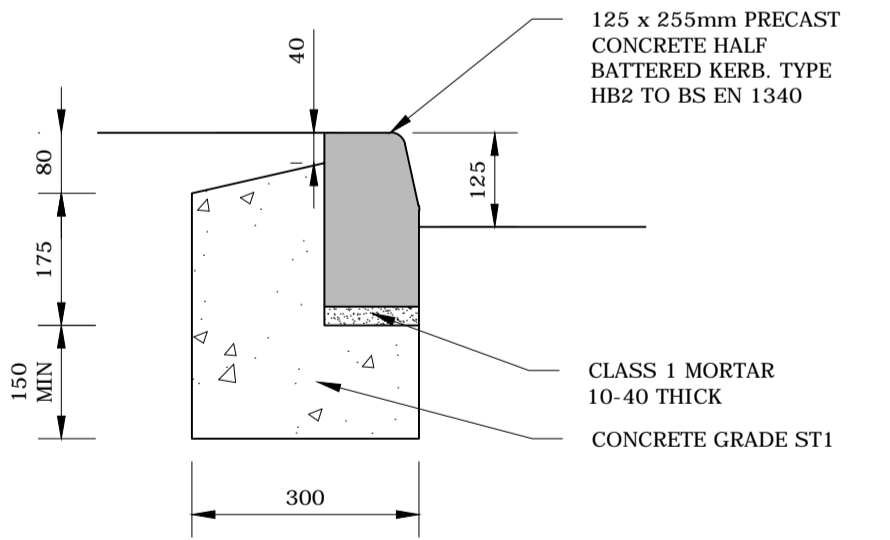
NOTE:
LIT SIGNS TO BE 3w LED BY SIMMONSIGNS OR OTHER APPROVED. SECONDARY ISOLATOR TO BE LS1, 2, 3, 4 RANGE BY CHARLES ENDIRECT

DIAGRAM NUMBERS REFER TO THE TRAFFIC SIGNS REGULATIONS AND GENERAL DIRECTIONS 2016 AND ANY AMENDMENT THERETO.

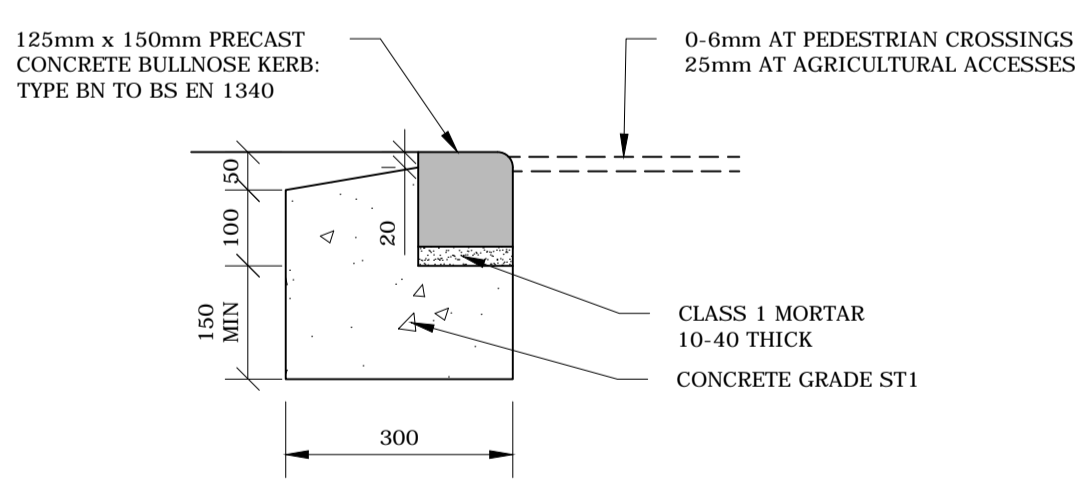
- NOTES**
- BOLLARD TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND TO THE SATISFACTION OF SCC AND THE HIGHWAYS INSPECTOR



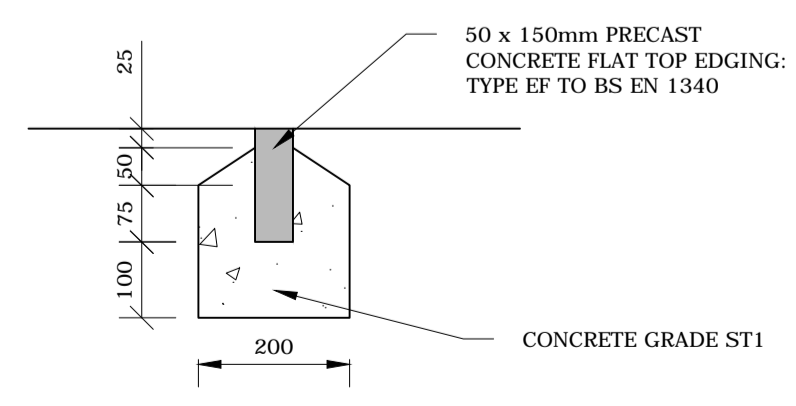
RETRO-REFLECTIVE BOLLARD DETAIL
NTS



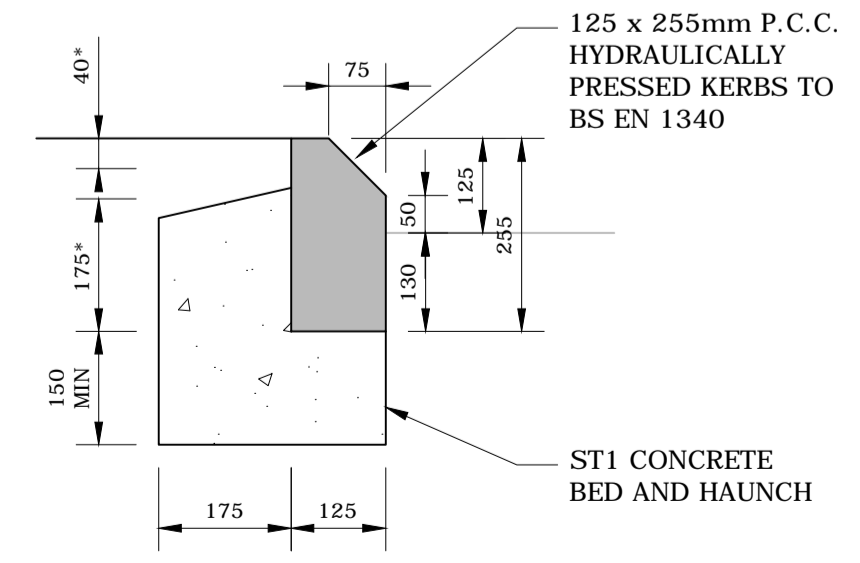
HB2 KERB DETAIL
1:10



BN KERB DETAIL
1:10



EDGING TYPE EF DETAIL
1:10



SP2 KERB DETAIL
1:10

- NOTES**
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ENGINEERS, ARCHITECTS AND SPECIALISTS DRAWINGS AND THE SPECIFICATION.
 - DO NOT SCALE FROM THIS DRAWING MANUALLY OR ELECTRONICALLY. WRITTEN PERMISSION MUST BE OBTAINED FROM MLM PRIOR TO SCALING ELECTRONICALLY OR USING THIS ELECTRONIC FILE.
 - WHERE CBR < 2.5% IT IS CONSIDERED UNSUITABLE SUPPORT FOR A PAVEMENT FOUNDATION AND MUST BE PERMANENTLY IMPROVED. SEE IMPROVEMENTS BOX BELOW.
 - RESTRICTED FOUNDATION DESIGN IS INTENDED FOR USE WHERE IT IS INAPPROPRIATE TO CARRY OUT THE RANGE OF COMPLIANCE TESTING REQUIRED FOR PERFORMANCE RELATED SPECIFICATION FOR FOUNDATIONS (PRSF).
 - CAPPING MATERIAL MAY COMPRISE 6F1, 6F2, 6F3, 6F4, 6F5 & 6S - ALL TO SPECIFICATION SERIES 600 OF THE MCHW.
 - REFER TO DRG. 619132-MLM-ZZ-XX-DR-C-0120 FOR EXTENT OF PSV VALUES USED
 - FORMATION AND FOUNDATION TESTING TO COMPLY WITH MCHW CL. 882, 884 & 885.
 - DYNAMIC PROBE SUPER HEAVY COMPACTION TEST TO BE CARRIED OUT IN ACCORDANCE WITH BS EN ISO 22476-2 SPECIFICATIONS.

CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS 2015

DESIGNERS HAZARD INFORMATION FOR CONSTRUCTION

- IF YOU DO NOT FULLY UNDERSTAND THE RISKS INVOLVED DURING THE CONSTRUCTION OF THE ITEMS INDICATED ON THIS DRAWING ASK YOUR MANAGER, HEALTH & SAFETY ADVISOR OR A MEMBER OF THE DESIGN TEAM BEFORE PROCEEDING.
 - WORKS ADJACENT TO LIVE PUBLIC HIGHWAY.
 - DEEP EXCAVATIONS.
 - WORKING NEAR OPEN WATER.
 - EXISTING SERVICES.
 - DEEP DRAINAGE.
- THE ABOVE NOTES REFER SPECIFICALLY TO THE INFORMATION SHOWN ON THIS DRAWING.
REFER TO THE HEALTH AND SAFETY PLAN FOR FURTHER INFORMATION.

REV	DATE	REVISION	MADE	CHK	APP
C04	13.12.2022	FILL MATERIAL BOX NOTE UPDATED	TM	SJC	SJC
C03	15.11.2022	SP2 KERB UPSTAND AMENDED	TM	JRC	JRC
C02	09.11.2022	HIGHWAY GEOTEXTILE ADDED & MINOR AMENDMENT TO TABLE 1	TM	JRC	JRC
C01	05.09.2022	ISSUED FOR CONSTRUCTION	TM	JRC	JRC

CONSTRUCTION

SUITABILITY DESCRIPTION

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Part of Sweco

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Website: www.mlmgroupp.com

PERSIMMON

PROJECT
NORTHWEST HAVERHILL RELIEF ROAD

DRAWING TITLE
HIGHWAY CONSTRUCTION DETAILS

DRAWN/DESIGN	LB	MLM REF	STATUS	REVISION		
SCALE	1:500 @A1	619132	-	C04		
PROJECT	ORIGINATOR	VOLUME/ LEVELS & SYSTEM	LOCATIONS	TYPE	ROLE	NUMBER
619132-MLM-ZZ-XX-DR-C-0075						