

BESS AREA
PERMEABLE SURFACE

Scale 1:10 @ A1

CROSS-SECTION THROUGH PERMEABLE SURFACE

STONED AREA
300mm MIN. GRANULAR MATERIAL
POROSITY TO BE AT LEAST 0.3
COMPACTED IN 150mm LAYERS
MAXIMUM. TO BE DETERMINED
FOLLOWING BESS UNIT FOUNDATION
DETAILS

IMPERMEABLE LINER
IMPERMEABLE GEOMEMBRANE TO BE MINIMUM 1mm THICK
HDPE, PP OR EPDM LINER WITHIN WELDED JOINTS TO FORM
WATERTIGHT LINER POLYPIPE PERMAVOID OR SIMILAR
APPROVED
NOTE LINER TO BE WITHHELD A MINIMUM OF 50mm FROM
PROPOSED ASPHALT CONCRETE LAYER TO PROTECT FROM
HEAT.
LINER IS TO EXTENT TO REAR OF KERB HAUNCHING.
SAND BLINDING OR GEOTEXTILE FLEECE IS RECOMMENDED TO
BE LAID ON THE FORMATION TO PROTECT THE LINER FROM
PUNCTURE.

THE BESS UNITS ARE TO BE PLACED ON
SCREW PILES, APPROXIMATELY 300mm
ABOVE THE FINISHED STONE LEVEL.
FINAL DETAILS TO BE CONFIRMED

FORMATION
FORMATION TO BE LAID OT FALLS TO
ALLOW WATER TO BE COLLECTED AT THE
LOW SPOT AND PIPED OUT OF THE
SUB-BASE TO THE DOWNSTREAM
DRAINAGE SYSTEM
FORMATION TO BE FREE FROM STONES
AND OTHER MATERIAL WHICH COULD
PUNCTURE THE LINER

CROSS-SECTION THROUGH PERMEABLE SURFACE UNDER DRAIN

SEPARATION MEMBRANE
NON-WOVEN GEOTEXTILE
TERRAM 1000 OR SIMILAR
APPROVED

PERFORATED PIPE
1500 PERFORATED DRAINAGE
PIPE
INSTALLED AS PER TYPICAL
FILTER/LAND DRAIN DETAIL

FORMATION
FORMATION TO BE LAID AT A FALL TO
ALLOW WATER TO BE COLLECTED AT THE
LOW SPOT AND PIPED OUT OF THE
SUB-BASE TO THE DOWNSTREAM
DRAINAGE SYSTEM
FORMATION TO BE FREE FROM STONES
AND OTHER MATERIAL WHICH COULD
PUNCTURE THE LINER

PIPE TRENCH BEDDING NOTES:

Bc = OUTSIDE DIAMETER OF PIPE BARREL.
Y = FOR UNIFORM SOILS: SLEEVE JOINTED PIPES, MIN.
50mm OR 1/6Bc, WHICHEVER IS THE GREATER.
SOCKETED PIPE, MIN. 100mm OR 1/6Bc, WHICHEVER IS
THE GREATER UNDER BARRELS AND NOT LESS THAN
50mm UNDER SOCKETS.

FOR ROCK OR MIXED SOILS CONTAINING ROCK BANDS,
BOULDERS, STONES OR OTHER IRREGULAR HARD
SPOTS: SLEEVE JOINTED PIPES, MIN. 150mm OR 1/4Bc,
WHICHEVER IS THE GREATER. SOCKETED PIPE, MIN.
200mm OR 1/4Bc, WHICHEVER IS THE GREATER UNDER
BARRELS AND NOT LESS THAN 150mm UNDER SOCKETS.

GRANULAR BEDDING MATERIAL

(ALL AGGREGATES TO TABLE 4 OF BS 882 :1983)

NOMINAL PIPE DIA.	SINGLE SIZED	GRADE
150mm	10mm OR 14mm	14mm - 5mm
200mm - 300mm	10mm, 14mm OR 20mm	14mm - 5mm OR 20mm - 5mm
375mm - 525mm	14mm OR 20mm	14mm - 5mm OR 20mm - 5mm
GREATER THAN 525	14mm, 12mm OR 40mm	14mm - 5mm, 20mm - 5mm OR 40mm - 5mm

SUB-BASE THICKNESS

SUB-BASE THICKNESS AS SHOWN ON THIS DRAWING IS
THE MINIMUM THICKNESS FOR STRUCTURAL DESIGN.

THE SUB-BASE THICKNESS SHOULD BE INCREASED TO
ACCOMMODATE THE REQUIRED DESIGN ATTENUATION
VOLUME REFER TO DRAINAGE PLAN LAYOUT DRAWING
AND DRAINAGE DESIGN CALCULATIONS

GENERAL NOTES

- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
- ALL COORDINATES ARE IN METRES RELATIVE TO ORDNANCE SURVEY NATIONAL GRID.

P05	REVIEW PRIOR TO PLANNING SUBMISSION	14/08/24	HR	SC	WD	JP
P04	FOR PLANNING	18/07/24	HR	SC	WD	JP
P03	FOR FINAL CLIENT COMMENT AND REVIEW	15/07/24	HR	SC	WD	JP
P02	AMENDMENTS FOLLOWING CLIENT COMMENTS	10/06/24	HR	SC	WD	JP
P01	FOR CLIENT REVIEW	28/05/24	HR	HR	SC	JP
Rev.	Description	Date	Author	Designer	Checker	Approver

Document Control

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Project Title
C&S ENERGY BESS

Drawing Title
STANDARD PERMEABLE SURFACE DETAILS

Parent Model
NOT FROM MODEL

Parent Model			
NOT FROM MODEL			
Security Classification		Scale	
N/A		DNS	
Author	Designer	Checker	Approver
H RAMJAN	H RAMJAN	S CATTERICK	J PANESAR
Suitability	Status		Revision
FOR PLANNING	A2		P05
Information Container			
MJF-JBA-XX-XX-DR-D-0005-Permeable Surface Details.dwg			
A1 Sheet Size			