PROPOSED WAREHOUSE DEVELOPMENT
BRINGELLY ROAD, LEPPINGTON NSW
CIVIL ENGINEERING WORKS

LOCALITY SKETCH

SCALE: N.T.S.

DRAWING SCHEDULE	
21U79_DA_C000	COVER SHEET, DRAWING SCHEDULE AND LOCALITY SKETCH
21U79_DA_C010	NOTES
21U79_DA_C100	GENERAL ARRANGEMENT PLAN
21U79_DA_C120	SITE SECTIONS, SHEET 1 OF 2
21U79_DA_C121	SITE SECTIONS, SHEET 2 OF 2
21U79_DA_C200	STORMWATER MISCELLANEOUS DETAILS AND PIT LID SCHEDULE
21U79_DA_C201	STORMWATER MISCELLANEOUS DETAILS
21U79_DA_C210	OSD PLAN AND SECTION
21U79_DA_C211	OSD DETAILS
21U79_DA_C250	POST-DEVELOPMENT STORMWATER CATCHMENT PLAN
21U79_DA_C251	PRE-DEVELOPMENT STORMWATER CATCHMENT PLAN
21U79_DA_C300	RETAINING WALL PLAN
21U79_DA_C310	RETAINING WALL TYPICAL DETAILS
21U79_DA_SE01	SEDIMENT AND EROSION CONTROL PLAN
21U79_DA_SE02	SEDIMENT AND EROSION CONTROL TYPICAL SECTIONS AND DETAILS
21U79_DA_BE01	BULK EARTHWORKS CUT AND FILL PLAN - BULK LEVEL
21U79_DA_BE02	BULK EARTHWORKS CUT AND FILL PLAN - BULK DEPTH

ISSUED FOR APPROVAL

SURVEY INFORMATION
SURVEYED BY LANDPARTNERS
DATUM: AHD
ORIGIN OF LEVELS: SSM 192186 RL 79.008

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
02	ISSUED FOR SSDA	SC	NW	21.07.2022					
01	ISSUED FOR SSDA	SC	NW	20.04.2022					

Client
ESR

Architect
SBA ARCHITECTS

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Project
PROPOSED WAREHOUSE DEVELOPMENT
BRINGELLY ROAD, LEPPINGTON NSW

Title
COVER SHEET, DRAWING SCHEDULE AND LOCALITY SKETCH

Drawn	Designed	Date
S.Chen	N.Wetzlar	Feb 2022
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	N.T.S.

Drawing number: 21U79_DA_C000

Revision: 02

GENERAL NOTES:

1. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH LIVERPOOL CITY COUNCIL'S SPECIFICATION. CONTRACTOR TO OBTAIN AND RETAIN A COPY ON SITE DURING THE COURSE OF THE WORKS.
2. ALL NEW WORKS ARE TO MAKE A SMOOTH JUNCTION WITH EXISTING CONDITIONS AND MARRY IN A 'WORKMANLIKE' MANNER.
3. THE CONTRACTOR IS TO VERIFY THE LOCATION OF ALL SERVICES WITH EACH RELEVANT AUTHORITY. ANY DAMAGE TO SERVICES SHALL BE RECTIFIED BY THE CONTRACTOR OR THE RELEVANT AUTHORITY AT THE CONTRACTOR'S EXPENSE. SERVICES SHOWN ON THESE PLANS ARE ONLY THOSE EVIDENT AT THE TIME OF SURVEY OR AS DETERMINED FROM SERVICE DIAGRAMS. H & H CONSULTING ENGINEERS PTY. LTD CANNOT GUARANTEE THE INFORMATION SHOWN NOR ACCEPT ANY RESPONSIBILITY FOR INACCURACIES OR INCOMPLETE DATA.
4. SERVICES & ACCESSES TO THE EXISTING PROPERTIES ARE TO BE MAINTAINED IN WORKING ORDER AT ALL TIMES DURING CONSTRUCTION.
5. ADJUST EXISTING SERVICE COVERS TO SUIT NEW FINISHED LEVELS TO RELEVANT AUTHORITY REQUIREMENTS WHERE NECESSARY.
6. REINSTATE AND STABILISE ALL DISTURBED LANDSCAPED AREAS.
7. MINIMUM GRADE OF SUBSOIL SHALL BE 0.5% (1:200) FALL TO OUTLETS.
8. ALL TEMPORARY SEDIMENT AND EROSION CONTROL DEVICES ARE TO BE CONSTRUCTED, PLACED AND MAINTAINED IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS, EROSION AND SEDIMENTATION CONTROL PLAN AND LIVERPOOL CITY COUNCIL'S REQUIREMENTS WHERE APPLICABLE.
9. CONTRACTOR TO CHECK AND CONFIRM SITE DRAINAGE CONNECTIONS ACROSS THE VERGE PRIOR TO COMMENCEMENT OF SITE DRAINAGE WORKS.
10. PROPERTIES AFFECTED BY THE WORKS ARE TO BE NOTIFIED IN ADVANCE WHERE DISRUPTION TO EXISTING ACCESS IS LIKELY.

SURVEY NOTES

1. THE EXISTING SITE CONDITIONS SHOWN ON THE FOLLOWING DRAWINGS HAVE BEEN INVESTIGATED BY THE SURVEYOR SPECIFIED IN THE TITLE BLOCK.
2. THE INFORMATION IS SHOWN TO PROVIDE A BASIS FOR DESIGN. HENRY AND HYMAS PTY. LTD. DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE SURVEY BASE OR ITS SUITABILITY AS A BASIS FOR CONSTRUCTION DRAWINGS.
3. SHOULD DISCREPANCIES BE ENCOUNTERED DURING CONSTRUCTION BETWEEN THE SURVEY DATA AND ACTUAL FIELD DATA, CONTACT HENRY AND HYMAS PTY. LTD. THE FOLLOWING NOTES HAVE BEEN TAKEN DIRECTLY FROM ORIGINAL SURVEY DOCUMENTS.

ORIGIN OF LEVELS	SSM 192186 (RL 79.008)
DATUM	A.H.D.

SITEWORKS NOTES

1. DATUM : A.H.D.
2. ORIGIN OF LEVELS : REFER TO BENCH OR STATE SURVEY MARKS WHERE SHOWN ON PLAN.
3. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO THE COMMENCEMENT OF WORK.
4. ALL WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS & THE DIRECTIONS OF THE SUPERINTENDENT.
5. EXISTING SERVICES UNLESS SHOWN ON THE SURVEY PLAN HAVE BEEN PLOTTED FROM SERVICES SEARCH PLANS AND AS SUCH THEIR ACCURACY CANNOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT. CLEARANCES SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY.
6. WHERE NEW WORKS ABUT EXISTING THE CONTRACTOR SHALL ENSURE THAT A SMOOTH EVEN PROFILE, FREE FROM ABRUPT CHANGES IS ACHIEVED.
7. THE CONTRACTOR SHALL ARRANGE ALL SURVEY SETOUT TO BE CARRIED OUT BY A REGISTERED SURVEYOR.
8. CARE IS TO BE TAKEN WHEN EXCAVATING NEAR EXISTING SERVICES. NO MECHANICAL EXCAVATION IS TO BE UNDERTAKEN OVER TELSTRA OR ELECTRICAL SERVICES. HAND EXCAVATE IN THESE AREAS.
9. CONTRACTOR TO OBTAIN AUTHORITY APPROVALS WHERE APPLICABLE.
10. MAKE SMOOTH TRANSITION TO EXISTING SURFACES AND MAKE GOOD.
11. THESE PLANS SHALL BE READ IN CONJUNCTION WITH APPROVED LANDSCAPE, ARCHITECTURAL, STRUCTURAL, HYDRAULIC AND MECHANICAL DRAWINGS AND SPECIFICATIONS
12. OR WRITTEN INSTRUCTIONS THAT MAY BE ISSUED RELATING
13. TO DEVELOPMENT AT THE SITE.
14. TRENCHES THROUGH EXISTING ROAD AND CONCRETE PAVEMENTS SHALL BE SAWCUT TO FULL DEPTH OF CONCRETE AND A MINIMUM OF 50mm IN BITUMINOUS PAVING.
15. ALL BRANCH GAS AND WATER SERVICES UNDER DRIVEWAYS AND BRICK PAVING SHALL BE LOCATED IN Ø80 uPVC SEWER GRADE CONDUITS EXTENDING A MINIMUM OF 500mm BEYOND EDGE OF PAVING.
16. GRADES TO PAVEMENTS TO BE AS IMPLIED BY RL'S ON PLAN . GRADE EVENLY BETWEEN NOMINATED RL'S. AREAS EXHIBITING PONDING GREATER THAN 5mm DEPTH WILL NOT BE ACCEPTED UNLESS IN A DESIGNATED SAG POINT.
17. ALL COVERS AND GRATES ETC TO EXISTING SERVICE UTILITIES ARE TO BE ADJUSTED TO SUIT NEW FINISHED SURFACE LEVELS WHERE APPLICABLE.

BULK EARTHWORKS/ SUBGRADE PREPARATION - SITEWORKS.

1. REFER TO GEOTECHNICAL INVESTIGATION REPORT OR INFORMATION RELATING TO EXISTING GROUND CONDITIONS, SITE TREATMENT AND SUPERVISION. REFERENCE GEOTECH REPORT BY DOUGLAS PARTNERS REFERENCE NUMBER 213088.00 DATED APRIL 2022 AND ALL RELEVANT PRECEDING REPORTS.
2. THE LOCATIONS OF UNDERGROUND SERVICES SHOWN ON THESE DRAWINGS HAVE BEEN PLOTTED FROM SURVEY AND AUTHORITY INFORMATION. THE SERVICE INFORMATION HAS BEEN PREPARED ONLY TO SHOW THE APPROXIMATE POSITIONS OF ANY KNOWN SERVICES AND MAY NOT BE AS CONSTRUCTED OR ACCURATE.
3. HENRY AND HYMAS PTY LTD CAN NOT GUARANTEE THAT THE SERVICES INFORMATION SHOWN ON THESE DRAWINGS, ACCURATELY INDICATES THE PRESENCE OR ABSENCE OF SERVICES OR THEIR LOCATION AND WILL ACCEPT NO LIABILITY FOR INACCURACIES IN THE SERVICES INFORMATION SHOWN ARISING FROM ANY CAUSE WHATSOEVER.
   CONTRACTORS ARE TO CONTACT THE RELEVANT SERVICE AUTHORITY PRIOR TO COMMENCEMENT OF EXCAVATION.
   FOR COMMENCEMENT OF WORKS ON SITE, SEARCH RESULTS ARE TO BE KEPT ON SITE AT ALL TIMES.
4. ALL SERVICES ARE TO BE LOCATED AND CUT OFF PRIOR TO THE COMMENCEMENT OF EXCAVATION AND FILLING OPERATIONS.
5. ALL TOP SOIL, ORGANIC MATTER AND FILL MATERIAL SHALL BE REMOVED FROM ALL AREAS UNDER BUILDING AND CARPARK LOCATIONS TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER. AREAS TO BE FULLY STRIPPED OF EXISTING FILL AND DARK BROWN BLACK UPPER ORGANIC ALLUVIUM, OR OBVIOUS UNSUITABLE MATERIAL.
6. EXCAVATE TO ACHIEVE SUBGRADE LEVELS WHERE NECESSARY.
7. THE EXPOSED SUBGRADE AFTER STRIPPING AND/ OR EXCAVATION IS TO BE PROOF ROLLED IN ACCORDANCE WITH GEOTECH ENGINEERS REQUIREMENTS UNDER THE SUPERVISION OF AN EXPERIENCED GEOTECHNICAL ENGINEER OR AN EXPERIENCED CIVIL ENGINEER. ANY AREAS ON THE SUBGRADE EXHIBITING EXCESSIVE DEFLECTION / MOVEMENT UNDER ROLLER TO BE EXCAVATED TO A MIN. DEPTH OF 0.5m AND REPLACED WITH APPROVED GRANULAR MATERIAL COMPACTED IN 250mm LOOSE LAYERS OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
8. ENGINEERED FILL FOR REPLACEMENT OF SOFT OR HEAVING AREAS OR FOR BULK FILLING TO COMPRISE ESSENTIALLY OF GRANULAR MATERIALS (EG. EXCAVATED SHALE), WITH A PARTICLE SIZE NOT GREATER THAN 75mm DIAMETER. ENGINEERED FILL TO BE PLACED IN LAYERS NOT EXCEEDING 250mm LOOSE THICKNESS AND COMPACTED TO 100% OF STANDARD MAXIMUM DRY DENSITY (SMDD) WITHIN ± 2% OF OPTIMUM MOISTURE CONTENT (OMC).
9. IMPORTED FILLING (IF REQUIRED) IS TO BE TO THE APPROVAL OF THE GEOTECHNICAL ENGINEER. THE CONTRACTOR IS TO NOMINATE THE SOURCE AND PROVIDE A SAMPLE FOR APPROVAL PRIOR TO IMPORTATION AND PLACEMENT ON SITE.
10. ALL FILL MATERIAL SHALL BE FROM A SOURCE APPROVED BY THE SUPERINTENDENT AND SHALL COMPLY WITH THE FOLLOWING.
    FREE FORM ORGANIC AND PERISHABLE MATTER
    MAXIMUM PARTICLE SIZE = 75mm
    MAXIMUM PLASTICITY INDEX = 15%
    MIN CBR 5%

    ALL IMPORTED FILL MATERIAL SHALL BE IN ACCORDANCE WITH SPECIFICATIONS FROM GEOTECH REPORT BY DOUGLAS PARTNERS REFERENCE NUMBER 213088.00 DATED APRIL 2022 AND ALL RELEVANT PRECEDING REPORTS.
11. ALL EARTHWORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH GEOTECH REPORT BY DOUGLAS PARTNERS REFERENCE NUMBER 213088.00 DATED APRIL 2022 AND ALL RELEVANT PRECEDING REPORTS.
12. IN-SITU DENSITY TESTING AND SUPERVISION MUST BE CARRIED OUT IN ACCORDANCE WITH THE RECOMMENDATIONS CONTAINTED WITHIN GEOTECH REPORT BY DOUGLAS PARTNERS REFERENCE NUMBER 213088.00 DATED APRIL 2022 AND ALL RELEVANT PRECEDING REPORTS.

COMPACTION REQUIREMENTS

1. PREPARATION FOR PAVEMENT: CLEAR SITE, STRIP TOP-SOIL, CUT AND FILL AND PREPARATIONS OF SUB-GRADE SHALL BE AS DESCRIBED IN "SUBGRADE PREPARATION - SITEWORKS".
2. SUB-GRADE SHALL BE COMPACTED TO 98% STANDARD MAXIMUM DRY DENSITY RATIO AT OPTIMUM MOISTURE CONTENT ± 2% IN ACCORDANCE WITH AS 1289 5.1.1., TOP 300MM TO 100% SDD.
3. FOR A SAND SUBGRADE, COMPACTION SHALL BE TO MIN.90% DENSITY INDEX AS PER AS1289 E6.1
4. LOWER BASE COURSE SHALL BE CONSTRUCTED FROM CRUSHED ROCK COMPACTED TO 98% MODIFIED MAXIMUM DRY DENSITY RATIO AT OPTIMUM MOISTURE CONTENT ± 2% IN ACCORDANCE WITH AS 1289 5.1.1. OF THICKNESS NOTED ON DRAWINGS.
5. BASE COURSE SHALL BE CONSTRUCTED FROM FINE CRUSHED ROCK COMPACTED TO 98% MODIFIED MAXIMUM DRY DENSITY RATIO AT OPTIMUM MOISTURE CONTENT ± 2% IN ACCORDANCE WITH AS 1289 5.1.1 OF THICKNESS NOTED ON DRAWINGS.
6. WEARING SURFACE SHALL BE ASPHALTIC CONCRETE TO STANDARD SPECIFICATION
7. TESTING OF THE SUBGRADE AND PAVEMENT LAYERS SHALL BE CARRIED OUT BY APPROVED N.A.T.A. REGISTERED LABORATORY

KERBING NOTES:

INCLUDES ALL KERBS, GUTTERS, DISH DRAINS, CROSSING AND EDGES.

1. ALL KERBS, GUTTERS, DISH DRAINS AND CROSSING TO BE CONSTRUCTED ON MINIMUM 75mm GRANULAR BASE COURSE COMPACTED TO MINIMUM 98% MODIFIED MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1.
2. EXPANSION JOINTS (EJ) TO BE FORMED FROM 10mm COMPRESSIBLE CORK FILTER BOARD FOR THE FULL DEPTH OF THE SECTION AND CUT TO PROFILE. EXPANSION JOINTS TO BE LOCATED AT DRAINAGE PITS, ON TANGENT POINTS OF CURVES AND ELSEWHERE AT 12m CENTRES EXCEPT FOR INTEGRAL KERBS WHERE THE EXPANSION JOINTS ARE TO MATCH THE JOINT LOCATION IN KERBS.
3. WEAKENED PLANE JOINTS TO BE MIN 3mm WIDE AND LOCATED AT 3m CENTRES EXCEPT FOR INTEGRAL KERBS WHERE WEAKENED PLANE JOINTS ARE TO MATCH THE JOINT LOCATIONS IN SLABS.
4. PROVIDE BROOMED FINISH TO ALL RAMPED AND VEHICULAR CROSSINGS, ALL OTHER KERBING OR DISH DRAINS TO BE STEEL FLOAT FINISHED.
5. IN THE REPLACEMENT OF KERBS:
   EXISTING ROAD PAVEMENT IS TO BE SAWCUT 900mm FROM LIP OF GUTTER. UPON COMPLETION OF NEW KERBS, NEW BASECOURSE AND SURFACE IS TO BE LAID 900mm WIDE TO MATCH EXISTING MATERIALS AND THICKNESS. EXISTING ALLOTMENT DRAINAGE PIPE'S ARE TO BE BUILT INTO NEW KERB WITH A 100mm DIA HOLE. EXISTING KERBS ARE TO BE COMPLETELY REMOVED WHERE NEW KERBS ARE SHOWN.

ISSUED FOR APPROVAL

SURVEY INFORMATION
SURVEYED BY LANDPARTNERS
DATUM: AHD
ORIGIN OF LEVELS: SSM 192186 RL 79.008

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
02	ISSUED FOR SSDA	SC	NW	21.07.2022					
01	ISSUED FOR SSDA	SC	NW	20.04.2022					

Client: ESR
Architect: SBA ARCHITECTS

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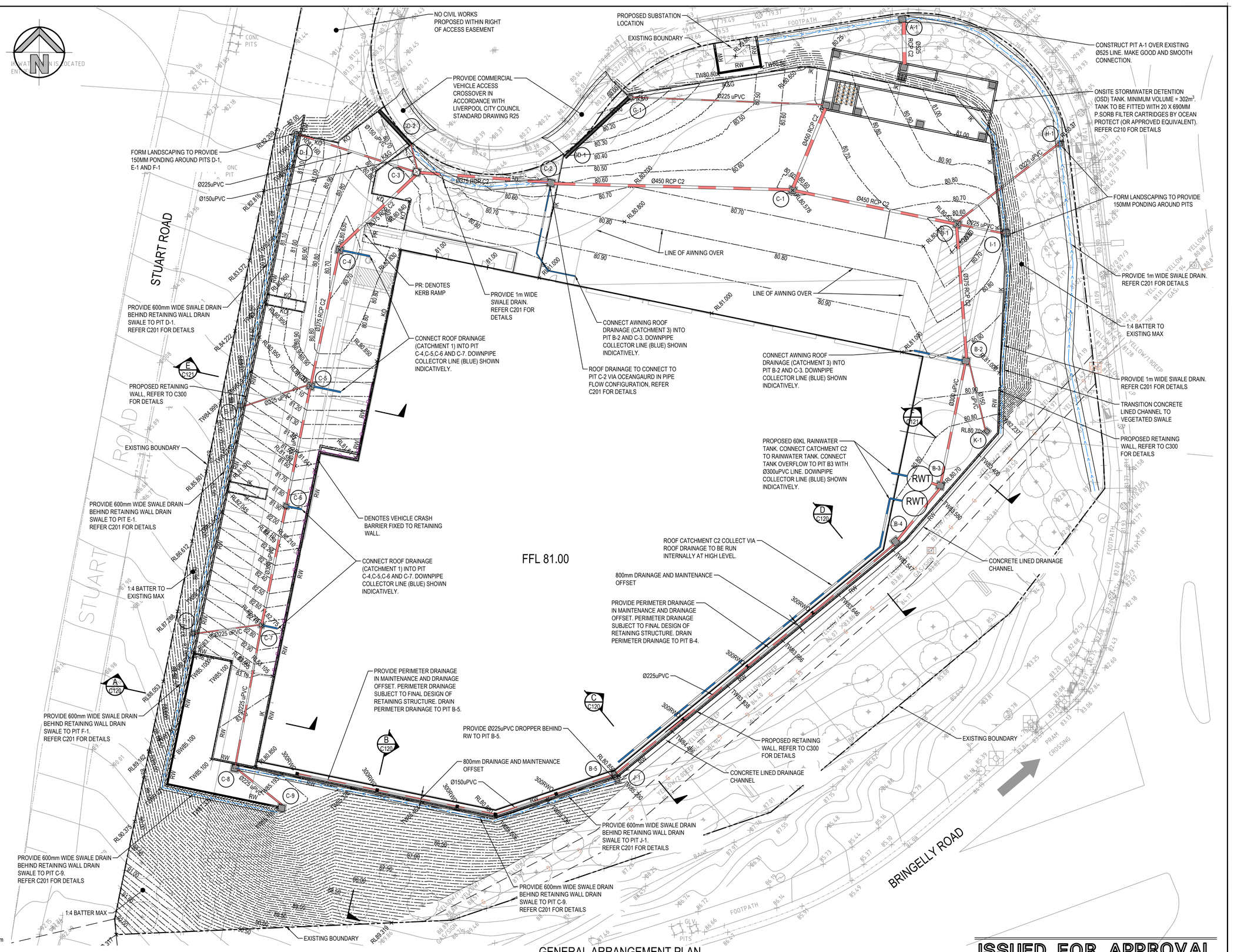
Project: PROPOSED WAREHOUSE DEVELOPMENT BRINGELLY ROAD, LEPPINGTON NSW
Title: NOTES

Drawn	Designed	Date
S.Chen	N.Wetzlar	Feb 2022
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	N.T.S.

Drawing number: 21U79_DA_C010
Revision: 02

LEGEND

- EXISTING BOUNDARY
- R — PROPOSED RIDGE LINE
- V — PROPOSED VALLEY LINE
- SS — PROPOSED SUBSOIL LINE
- PROPOSED JUNCTION PITS
- PROPOSED SURFACE INLET PITS
- 300RWO — PROPOSED SURFACE OUTLET
- A-1 — LINE LETTER / PIT NUMBER — PROPOSED PIT TAG
- 40.125 / Ø425RCP / 20.450m / 1.5% / 39.818 — STORMWATER UPSTREAM INVERT RL / STORMWATER PIPE DIAMETER & CLASS / STORMWATER PIPE LENGTH / STORMWATER PIPE GRADE / STORMWATER DOWNSTREAM INVERT RL.
- PROPOSED GRATED DRAIN
- PROPOSED STORMWATER PIPE
- PROPOSED DOWNPIPE COLLECTOR LINE
- 82.70 — EXISTING CONTOURS
- 83.40 — PROPOSED CONTOURS
- 83.40 — PROPOSED SPOT LEVEL
- K&G — PROPOSED KERB & GUTTER
- KO — PROPOSED KERB ONLY
- IK — PROPOSED INTEGRAL KERB
- DEK — PROPOSED DROP EDGE KERB
- G — EXISTING GAS LINE
- RW — PROPOSED RETAINING WALL
- PROPOSED SWALE



GENERAL ARRANGEMENT PLAN

SCALE: 1:250

ISSUED FOR APPROVAL

SURVEY INFORMATION
SURVEYED BY LANDPARTNERS
DATUM: AHD
ORIGIN OF LEVELS: SSM 192186 RL 79.008

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
05	ISSUED FOR SSDA	SC	NW	29.07.2022
04	ISSUED FOR SSDA	SC	NW	21.07.2022
03	ISSUED FOR SSDA	SC	NW	26.05.2022
02	ISSUED FOR SSDA	SC	NW	02.05.2022
01	ISSUED FOR SSDA	SC	NW	20.04.2022

Client: ESR

Architect: SBA ARCHITECTS

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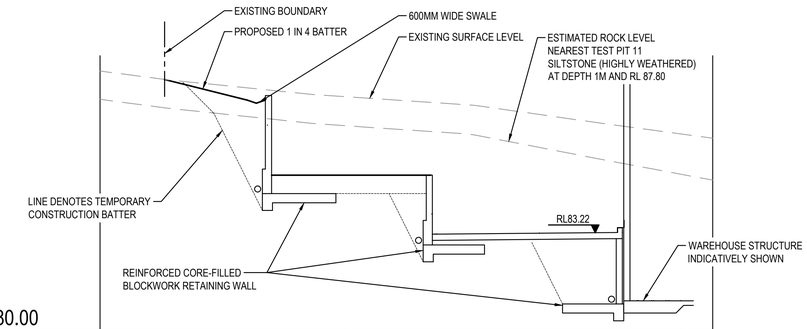
Project: PROPOSED WAREHOUSE DEVELOPMENT BRINGELLY ROAD, LEPPINGTON NSW

Title: GENERAL ARRANGEMENT PLAN

Drawn	Designed	Date
S.Chen	N.Wetzlar	Feb 2022
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	1:250

Drawing number: 21U79_DA_C100

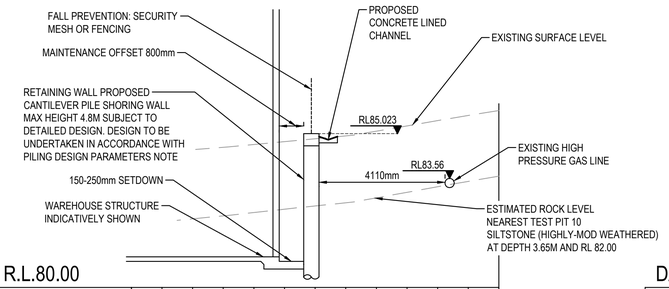
Revision: 05



DATUM R.L.80.00

DESIGN LEVELS				88.00	87.75	87.48	85.10	85.10	85.10	85.10	85.10	83.17	83.18	83.19	83.20	83.21	83.22	83.23	81.00	81.00	81.00
BULK LEVELS				87.90	87.65	87.38	85.00	85.00	85.00	85.00	85.00	83.07	83.08	83.09	83.10	83.11	83.12	83.13	80.77	80.77	80.77
EXISTING LEVELS	88.50	88.37	88.24	88.13	88.03	87.93	87.83	87.73	87.66	87.60	87.53	87.46	87.39	87.27	87.13	86.99	86.85	86.71	86.58	86.44	86.31
CHAINAGE	0.000	1.000	2.000	3.000	4.000	5.000	6.000	7.000	8.000	9.000	10.000	11.000	12.000	13.000	14.000	15.000	16.000	17.000	18.000	19.000	20.000

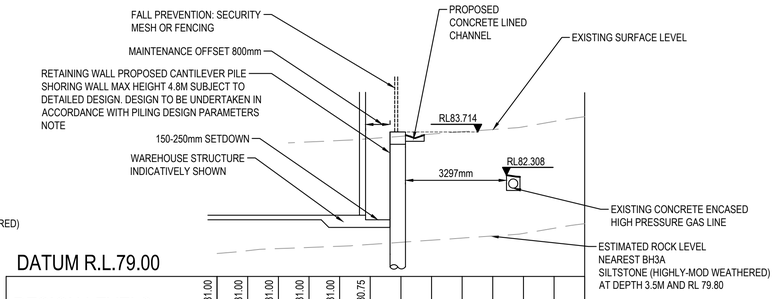
SECTION A C100
SCALE: 1:100



DATUM R.L.80.00

DESIGN LEVELS	81.00	81.00	81.00	81.00	81.00	80.75								
BULK LEVELS	80.77	80.77	80.77	80.77	80.77	80.50								
EXISTING LEVELS	84.34	84.42	84.50	84.58	84.67	84.76	84.85	84.95	85.10	85.27	85.45	85.61	85.78	
CHAINAGE	0.000	1.000	2.000	3.000	4.000	5.000	6.000	7.000	8.000	9.000	10.000	11.000	12.000	

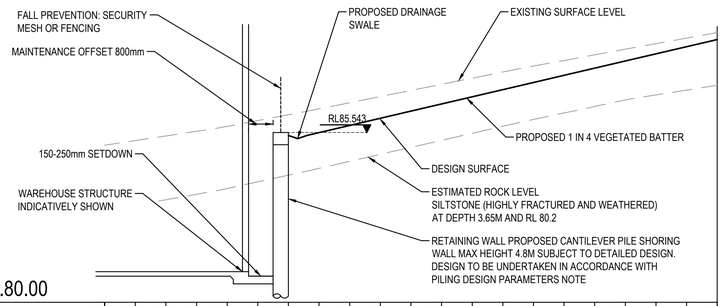
SECTION C C100
SCALE: 1:100



DATUM R.L.79.00

DESIGN LEVELS	81.00	81.00	81.00	81.00	81.00	80.75								
BULK LEVELS	80.77	80.77	80.77	80.77	80.77	80.50								
EXISTING LEVELS	83.28	83.30	83.35	83.39	83.44	83.50	83.57	83.65	83.72	83.80	83.89	84.06	84.22	
CHAINAGE	0.000	1.000	2.000	3.000	4.000	5.000	6.000	7.000	8.000	9.000	10.000	11.000	12.000	

SECTION D C100
SCALE: 1:100



DATUM R.L.80.00

DESIGN LEVELS	81.00	81.00	81.00	81.00	81.00	80.75	85.27	85.54	85.77	86.00	86.24	86.47	86.71	86.94	87.17	87.41	87.64	87.87	88.11	88.34	88.57
BULK LEVELS	80.77	80.77	80.77	80.77	80.77	80.50	85.17	85.44	85.67	85.90	86.14	86.37	86.61	86.84	87.07	87.31	87.54	87.78	88.01	88.24	88.48
EXISTING LEVELS	85.13	85.28	85.43	85.58	85.74	85.93	86.12	86.31	86.51	86.71	86.91	87.11	87.31	87.52	87.71	87.89	88.08	88.26	88.44	88.62	88.80
CHAINAGE	0.000	1.000	2.000	3.000	4.000	5.000	6.000	7.000	8.000	9.000	10.000	11.000	12.000	13.000	14.000	15.000	16.000	17.000	18.000	19.000	20.000

SECTION B C100
SCALE: 1:100

NOTE: PILING DESIGN PARAMETERS

- THE MOVEMENTS OF RETAINING WALL STRUCTURES SHALL NOT RESULT IN ANY DAMAGE TO JEMENA ASSETS.
- PILING IS TO BE UNDERTAKEN TO LIMIT VIBRATION IN ACCORDANCE WITH REQUIREMENTS DETAILED BY JEMENA AS WELL AS REQUIREMENTS DETAILED IN GEOTECHNICAL INVESTIGATION BY DOUGLAS PARTNERS REF. 213088.00 DATED APRIL 2022.
- DETAILED DESIGN TO BE UNDERTAKEN IN ACCORDANCE WITH GEOTECHNICAL PARAMETERS DETAILED IN GEOTECHNICAL INVESTIGATION BY DOUGLAS PARTNERS REF. 213088.00 DATED APRIL 2022.
- DETAILED DESIGN TO BE UNDERTAKEN TO LIMIT THE TOTAL SERVICEABILITY HORIZONTAL MOVEMENT OF THE WALL IN ANY ONE DIRECTION IS TO BE LIMITED TO 0.5% OF THE EXCAVATED HEIGHT, OR 20MM, OR THE STRUCTURAL SERVICEABILITY REQUIREMENTS OF THE RETAINING WALL, WHICHEVER IS THE LESSER. TOTAL SERVICEABILITY HORIZONTAL MOVEMENT TO BE CONFIRMED BY JEMENA PRIOR TO FINAL DESIGN.
- DETAILED DESIGN TO BE UNDERTAKEN IN ACCORDANCE WITH DESIGN LOADING FROM AS 1170 STRUCTURAL DESIGN ACTIONS AND AS 2159 PILING - DESIGN AND INSTALLATION.
- IN THE CASE OF A DESIGN AND CONSTRUCT (D&C) SHORING SYSTEM, THE BUILDING CONTRACTOR SHALL SUBMIT THE PROPOSED DETAILS AND DESIGN CALCULATIONS FOR THE ENGINEER'S REVIEW PRIOR TO COMMENCING WORK ONSITE.
- DESIGN OF THE PILES TO BE DESIGNED IN CONSIDERATION OF THE INSTALLATION RESTRICTIONS. INSTALLATION OF SHORING PILES SHALL BE IN ACCORDANCE WITH AS2159 WITH A MAXIMUM POSITIONAL TOLERANCE OF 20 MM AND A MAXIMUM VERTICAL STRAIGHTNESS WITHIN 1% UNO.
- GEOTECHNICAL INSTRUMENTATION AND MONITORING IS REQUIRED ADJACENT TO THE EXISTING GAS MAIN. INSTRUMENTATION AND MONITORING PLAN TO JEMENA RECOMMENDATIONS (TBC).

0 2 4 6 8 10m
2 1
SCALE 1:100

ISSUED FOR APPROVAL

SURVEY INFORMATION
SURVEYED BY LANDPARTNERS
DATUM: AHD
ORIGIN OF LEVELS: SSM 192186 RL 79.008

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
03	ISSUED FOR SSDA	SC	NW	21.07.2022
02	ISSUED FOR SSDA	SC	NW	02.05.2022
01	ISSUED FOR SSDA	SC	NW	20.04.2022

Client: ESR
Architect: SBA ARCHITECTS

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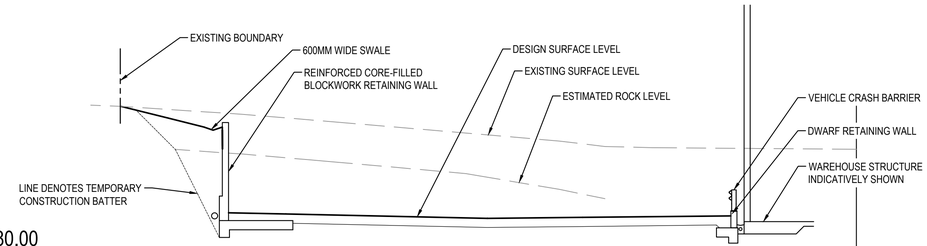
Project: PROPOSED WAREHOUSE DEVELOPMENT BRINGELLY ROAD, LEPPINGTON NSW
Title: SITE SECTIONS SHEET 1 OF 2

Drawn	Designed	Date
S.Chen	N.Wetzlar	Feb 2022
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	AS NOTED

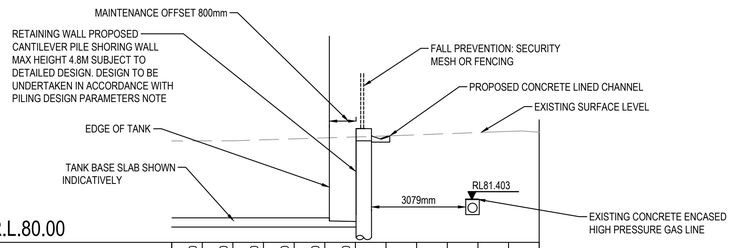
Drawing number: 21U79_DA_C120
Revision: 03



DATUM R.L.80.00

DESIGN LEVELS		84.76	84.51	84.26	83.99	81.28	81.26	81.24	81.21	81.19	81.17	81.15	81.13	81.11	81.12	81.13	81.14	81.15	81.16	81.17	81.18	81.19	81.00	81.00	81.00	81.00
BULK LEVELS		84.66	84.41	84.16	83.89	80.98	80.96	80.94	80.91	80.89	80.87	80.85	80.83	80.81	80.82	80.83	80.84	80.85	80.86	80.87	80.88	80.89	80.77	80.77	80.77	80.77
EXISTING LEVELS	84.80	84.76	84.70	84.63	84.57	84.50	84.42	84.34	84.25	84.17	84.08	84.00	83.91	83.83	83.74	83.66	83.55	83.45	83.42	83.41	83.40	83.39	83.39	83.38	83.37	83.36
CHAINAGE	0.000	1.000	2.000	3.000	4.000	5.000	6.000	7.000	8.000	9.000	10.000	11.000	12.000	13.000	14.000	15.000	16.000	17.000	18.000	19.000	20.000	21.000	22.000	23.000	24.000	25.000

SECTION E C100
SCALE: 1:100



DATUM R.L.80.00

DESIGN LEVELS		80.80	80.80	80.80	80.80	80.80	80.70						
BULK LEVELS		80.60	80.60	80.60	80.60	80.60	80.45						
EXISTING LEVELS	83.31	83.31	83.31	83.34	83.38	83.41	83.44	83.47	83.51	83.54	83.58	83.62	83.59
CHAINAGE	0.000	1.000	2.000	3.000	4.000	5.000	6.000	7.000	8.000	9.000	10.000	11.000	12.000

SECTION F C100
SCALE: 1:100

NOTE: PILING DESIGN PARAMETERS

- THE MOVEMENTS OF RETAINING WALL STRUCTURES SHALL NOT RESULT IN ANY DAMAGE TO JEMENA ASSETS.
- PILING IS TO BE UNDERTAKEN TO LIMIT VIBRATION IN ACCORDANCE WITH REQUIREMENTS DETAILED BY JEMENA AS WELL AS REQUIREMENTS DETAILED IN GEOTECHNICAL INVESTIGATION BY DOUGLAS PARTNERS REF. 213088.00 DATED APRIL 2022.
- DETAILED DESIGN TO BE UNDERTAKEN IN ACCORDANCE WITH GEOTECHNICAL PARAMETERS DETAILED IN GEOTECHNICAL INVESTIGATION BY DOUGLAS PARTNERS REF. 213088.00 DATED APRIL 2022.
- DETAILED DESIGN TO BE UNDERTAKEN TO LIMIT THE TOTAL SERVICEABILITY HORIZONTAL MOVEMENT OF THE WALL IN ANY ONE DIRECTION IS TO BE LIMITED TO 0.5% OF THE EXCAVATED HEIGHT, OR 20MM, OR THE STRUCTURAL SERVICEABILITY REQUIREMENTS OF THE RETAINING WALL, WHICHEVER IS THE LESSER. TOTAL SERVICEABILITY HORIZONTAL MOVEMENT TO BE CONFIRMED BY JEMENA PRIOR TO FINAL DESIGN.
- DETAILED DESIGN TO BE UNDERTAKEN IN ACCORDANCE WITH DESIGN LOADING FROM AS 1170 STRUCTURAL DESIGN ACTIONS AND AS 2159 PILING - DESIGN AND INSTALLATION.
- IN THE CASE OF A DESIGN AND CONSTRUCT (D&C) SHORING SYSTEM, THE BUILDING CONTRACTOR SHALL SUBMIT THE PROPOSED DETAILS AND DESIGN CALCULATIONS FOR THE ENGINEER'S REVIEW PRIOR TO COMMENCING WORK ONSITE.
- DESIGN OF THE PILES TO BE DESIGNED IN CONSIDERATION OF THE INSTALLATION RESTRICTIONS. INSTALLATION OF SHORING PILES SHALL BE IN ACCORDANCE WITH AS2159 WITH A MAXIMUM POSITIONAL TOLERANCE OF 20 MM AND A MAXIMUM VERTICAL STRAIGHTNESS WITHIN 1% UNO.
- GEOTECHNICAL INSTRUMENTATION AND MONITORING IS REQUIRED ADJACENT TO THE EXISTING GAS MAIN. INSTRUMENTATION AND MONITORING PLAN TO JEMENA RECOMMENDATIONS (TBC).

0 2 4 6 8 10m
2 1
SCALE 1:100

ISSUED FOR APPROVAL

SURVEY INFORMATION
SURVEYED BY LANDPARTNERS
DATUM: AHD
ORIGIN OF LEVELS: SSM 192186 RL 79.008

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
01	ISSUED FOR SSDA	SC	NW	21.07.2022					

Client
ESR

Architect
SBA ARCHITECTS

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Project
PROPOSED WAREHOUSE DEVELOPMENT
BRINGELLY ROAD, LEPPINGTON NSW

Title
SITE SECTIONS
SHEET 2 OF 2

Drawn	Designed	Date
S.Chen	N.Wetzlar	Feb 2022
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	AS NOTED

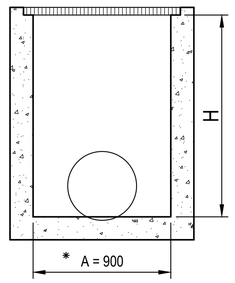
Drawing number: 21U79_DA_C121
Revision: 02

TYPICAL PIT CHAMBER SIZES

IT IS THE CONTRACTORS RESPONSIBILITY TO SELECT PIT CHAMBER SIZE WITH REGARDS TO PIPE SIZE, DEPTH TO INVERT AND SKEW ANGLE. REFER SKETCHES BELOW.

1. SELECT PIT CHAMBER USING THE STEPS BELOW:
2. SELECT PIT CHAMBER SIZE DEPENDING ON THE PIPE DIAMETERS.
3. CHECK PIT CHAMBER SIZE TO SATISFY DEPTH TO INVERT REQUIREMENTS.
   CHECK PIT CHAMBER DIMENSIONS TO SATISFY THE SKEW ANGLE IN THE TABLE.

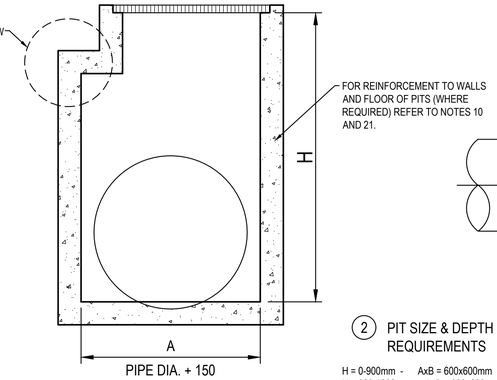
FOR B = 600mm - MAX. SIDE ENTRY PIPE AT 45° SKEW = 225mm
FOR B = 900mm - MAX. SIDE ENTRY PIPE AT 45° SKEW = 375mm
FOR B = 1200mm - MAX. SIDE ENTRY PIPE AT 45° SKEW = 600mm
FOR B = 1500mm - MAX. SIDE ENTRY PIPE AT 45° SKEW = 825mm
FOR B = 1900mm - MAX. SIDE ENTRY PIPE AT 45° SKEW = 1050mm



SECTION
NTS

*A = 600 FOR PIPES UP TO 375 DIA.

1 PIT CHAMBER DIMENSIONS FOR PIPES UP TO 600 DIA.

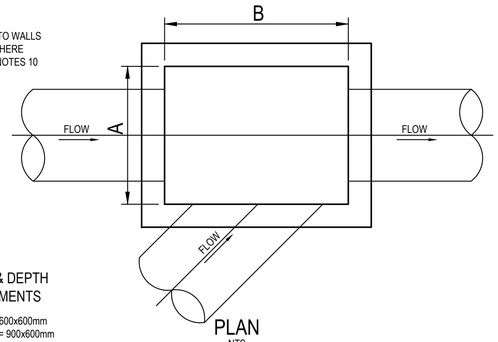


SECTION
NTS

1 PIT CHAMBER FOR PIPES GREATER THAN 600 DIA.

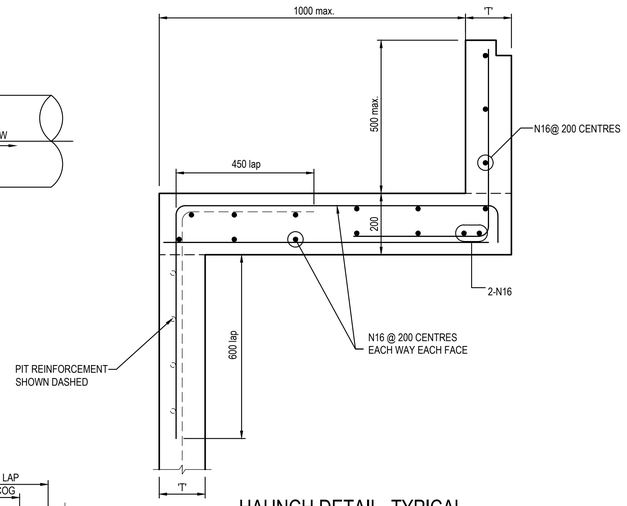
2 PIT SIZE & DEPTH REQUIREMENTS

H = 0-900mm - AxB = 600x600mm
H = 900-1200mm - AxB = 900x600mm
H = >1200mm - AxB = 900x900mm

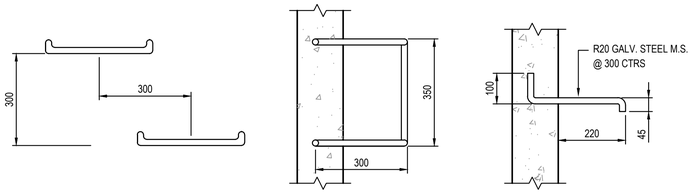


PLAN
NTS

3 PIT CHAMBER FOR SIDE ENTRY ON SKEW

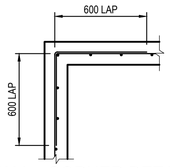


HAUNCH DETAIL -TYPICAL
SCALE 1:10

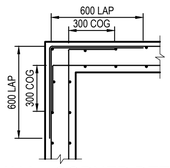


ELEVATION PLAN SECTION

TYPICAL STEP IRON DETAIL
SCALE 1:10



150 WALL - CORNER DETAIL
SCALE 1:20



200 WALL - CORNER DETAIL
SCALE 1:20

PIT LID SCHEDULE

PIT/STRUCTURE NUMBER	DESCRIPTION
C-2 B-2 C-1 C-4 C-5 B-3 B-4 B-1	PROPOSED SURFACE INLET PIT WITH HINGED 900x900 HEAVY DUTY GRATED LID CLASS 'D' IN ACCORDANCE WITH LOCAL COUNCIL'S REQUIREMENTS.
C-6 C-7 G-1 K-1	PROPOSED SURFACE INLET PIT WITH HINGED 600x600 HEAVY DUTY GRATED LID CLASS 'D' IN ACCORDANCE WITH LOCAL COUNCIL'S REQUIREMENTS.
A-1 C-9 I-1 C-8	PROPOSED SURFACE INLET PIT WITH HINGED 900x900 LIGHT DUTY SURCHARGE STYLE GRATED LID CLASS 'B' IN ACCORDANCE WITH LOCAL COUNCIL'S REQUIREMENTS.
J-1 D-1 E-1 F-1 H-1 6-5-1	PROPOSED SURFACE INLET PIT WITH HINGED 600x600 LIGHT DUTY GRATED LID CLASS 'B' IN ACCORDANCE WITH LOCAL COUNCIL'S REQUIREMENTS.
6D-1 6D-2	PROPOSED 300mm WIDE GRATED DRAIN HEAVY DUTY CLASS 'D' IN ACCORDANCE WITH LOCAL COUNCIL'S REQUIREMENTS.
C-3	PROPOSED JUNCTION PIT WITH 900x900 MEDIUM DUTY SEALED LID CLASS 'C' IN ACCORDANCE WITH LOCAL COUNCIL'S REQUIREMENTS.
300 RWO	300mm DIA CAST-IN RAIN WATER OUTLET TO FUTURE SPECIFICATIONS
C-2 B-2 C-1 C-4 C-5 B-3 B-4 B-1 F-1 C-6 C-7 G-1 A-1 C-9 I-1 C-8 J-1 D-1 E-1 H-1	PITS TO BE INSTALLED WITH OCEANGUARD 200 MICRON BASKET, REFER C201 FOR DETAILS AND SIZING

DRAINAGE NOTES:

1. ALL STORMWATER WORK TO COMPLY WITH AS 3500 PART 3.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE MINIMUM COVER OF 600mm ON ALL PIPES.

3. PROTECTION OF PIPES DUE TO LOADS EXCEEDING W7 WHEEL LOAD SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

4. BEDDING TYPE SHALL BE TYPE H2 FOR RCP. WHERE NECESSARY THE OVERLAY ZONE SHALL BE REDUCED TO ACCOMMODATE PAVEMENT REQUIREMENTS. REFER TO THIS DRAWING FOR DETAILS.

5. MINIMUM COVER OVER EXISTING PIPES FOR PROTECTION DURING CONSTRUCTION SHALL BE 800mm.

6. NO CONSTRUCTION LOADS SHALL BE APPLIED TO PLASTIC PIPES.

7. FINISHED SURFACE LEVELS SHOWN ON LAYOUT PLAN DRGS TAKE PRECEDENCE OVER DESIGN DRAINAGE SURFACE LEVELS.

8. ALL PIPES UP TO AND INCLUDING 300 DIA. SHALL BE SOLVENT OR RUBBER RING JOINTED PVC CLASS SH PIPE TO AS1260. ALL OTHER PIPES TO BE RCP USING CLASS 2 RUBBER RING JOINTED PIPE. HARDIES FRC PIPE MAY BE USED IN LIEU OF RCP IF DESIRED IN GROUND. ALL AERIAL PIPES TO BE PVC CLASS SH.

9. ALL PITS IN NON TRAFFICABLE AREAS TO BE PREFABRICATED POLYESTER CONCRETE "POLYCRETE" WITH "LIGHT DUTY" CLASS B GALV. MILD STEEL GRATING AND FRAME.
ALL PITS IN TRAFFICABLE AREAS (CLASS "D" LOADING MAX) TO HAVE 150mm THICK CONCRETE WALLS AND BASE CAST IN-SITU fc=32 MPa, REINFORCED WITH N12-200 BOTH LOADING WAYS CENTRALLY PLACE .U.N.O. ON SEPARATE DESIGN DRAWINGS IN THIS SET. GALV.MILD STEEL GRATING AND FRAME TO SUIT DESIGN LOADING. PRECAST PITS, RECTANGULAR OR CIRCULAR IN SHAPE, MAY BE USED IN LIEU AND SHALL COMPLY WITH RELEVANT AUSTRALIAN STANDARDS.

10. ALL PITS, GRATINGS AND FRAMES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATION AND TO BE IN ACCORDANCE WITH AS3500.3 AND AS3996.
11. PIT CHAMBER DIMENSIONS ARE TO BE SELECTED TO SATISFY THE FOLLOWING:
- PIPE SIZE
- DEPTH TO INVERT
- SKEW ANGLE
  REFER TYPICAL PIT CHAMBER DETAILS BELOW
IF PIT LID SIZE IS SMALLER THAN THE PIT CHAMBER SIZE THEN THE PIT LID IS TO BE CONSTRUCTED ON THE CORNER OF THE PIT CHAMBER WITH THE STEP IRONS DIRECTLY BELOW. ALTERNATIVELY THE PIT LID TO BE USED, IS TO BE THE SAME SIZE AS THE PIT CHAMBER.

12. FOR PIPE SIZES GREATER THAN Ø300mm, PIT FLOOR IS TO BE BENCHED TO FACILITATE FLOW.

13. GALVANISED STEP IRONS SHALL BE PROVIDED AT 300 CTS FOR PITS HAVING A DEPTH EXCEEDING 1200mm. SUBSOIL DRAINAGE PIPE SHALL BE PROVIDED IN PIPE TRENCHES ADJACENT TO INLET PIPES. (MINIMUM LENGTH 3m).

14. ALL SUBSOIL PIPES SHALL BE 100mm SLOTTED PVC IN A FILTER SOCK, UNO, WITH 3m INSTALLED UPSTREAM OF ALL PITS.

15. ALL PIPEWORK SHALL HAVE MINIMUM DIAMETER 100.

16. MINIMUM GRADE FOR ROOFWATER DRAINAGE LINES SHALL BE 1%.

17. ALL PIPE JUNCTIONS AND TAPER UP TO AND INCLUDING 300 DIA. SHALL BE VIA PURPOSE MADE FITTINGS.

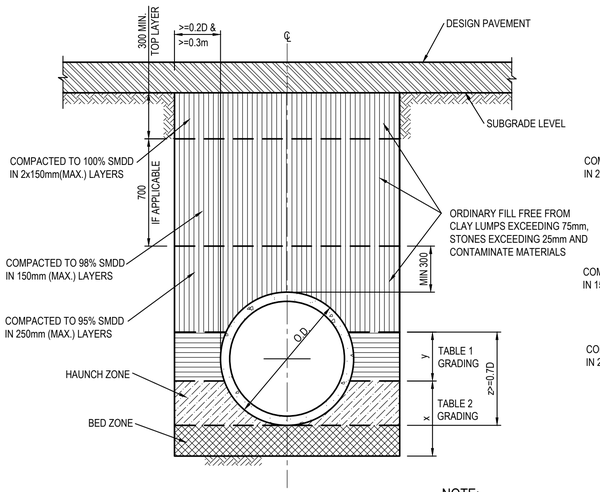
18. ALL ROOF DRAINAGE TO BE INSTALLED IN ACCORDANCE WITH AS3500, PART 3. TESTING TO BE UNDERTAKEN AND REPORTS PROVIDED TO THE SUPERINTENDENT.

19. LOCATION OF THE DIRECT DOWN PIPE CONNECTIONS MAY VARY ON SITE TO SUIT SITE CONDITIONS, WHERE CONNECTION SHOWN ON LONG SECTIONS CHAINAGES ARE INDICATIVE ONLY.

20. PITS IN EXCESS OF 1.5 m DEEP TO HAVE WALL AND FLOOR THICKNESS INCREASED TO 200mm. REINFORCED WITH N12@200 CTS CENTRALLY PLACED BOTH WAYS THROUGHOUT U.N.O.ON SEPARATE DESIGN DRAWINGS IN THIS SET. IF DEPTH EXCEEDS 5m CONTACT ENGINEER.

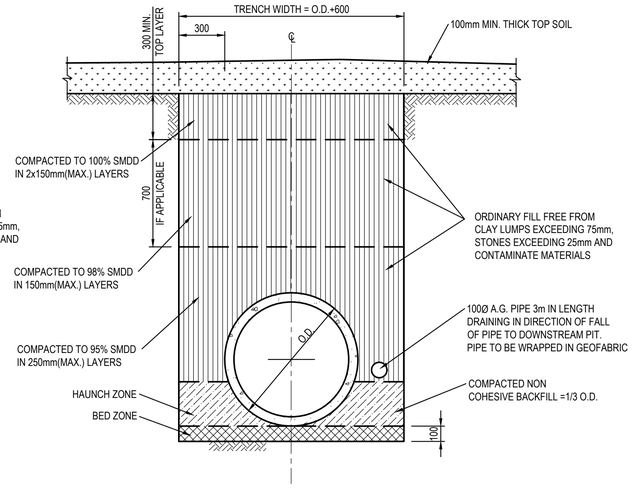
21. SUBSOIL DRAINAGE LINES FOR LANDSCAPE AREA NOT SHOWN ON THESE DRAWINGS. REFER TO LANDSCAPING PLANS FOR DETAILS.

22. ALL STORMWATER PITS TO HAVE Ø100 uPVC SLOTTED SUBSOIL PIPES CONNECTED TO THEM. THESE SUBSOILS TO EXTEND 3m UPSTREAM OF THE PIT AT A MINIMUM GRADE.



PIPE TRENCH INSTALLATION BENEATH PAVEMENT
(HS SUPPORT TO BE USED UNDER ROADWAY)
SCALE 1:20

NOTE:
TYPE HS2 TO BE USED AS A TYPICAL SUPPORT FOR TRENCHES UNDER ROADWAY UNLESS SPECIFIED SEPERATELY



PIPE TRENCH INSTALLATION IN LANDSCAPE AREAS
(H1 & H2 SUPPORT)
SCALE 1:20

TABLE 1	
SIEVE SIZE (MM)	WEIGHT PASISNG (%)
75.0	100
9.5	100 TO 50
2.36	100 TO 30
0.60	50 TO 15
0.075	25 TO 0

TABLE 2	
SIEVE SIZE (MM)	WEIGHT PASISNG (%)
19.0	100
2.36	100 TO 50
0.60	90 TO 20
0.30	60 TO 10
0.15	25 TO 0
0.075	10 TO 0

TABLE 3				
SUPPORT TYPE	BED ZONE X	HAUNCH ZONE Y	BED AND HAUNCH ZONES COMPACTION	MAX BEDDING FACTOR
HS1	100 IF D<=1500, OR 150 IF D>=1500	0.1D	50	2.0
HS2		0.3D	60	2.5
HS3		0.3D	70	4.0

0 400 800 1200 1600 2000mm
400 200
SCALE 1:20

0 200 400 600 800 1000mm
200 100
SCALE 1:10

ISSUED FOR APPROVAL

SURVEY INFORMATION
SURVEYED BY LANDPARTNERS
DATUM: AHD
ORIGIN OF LEVELS: SSM 192186 RL 79.008

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
02	ISSUED FOR SSDA	SC	NW	21.07.2022					
01	ISSUED FOR SSDA	SC	NW	20.04.2022					

Client
ESR
Architect
SBA ARCHITECTS

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Project
PROPOSED WAREHOUSE DEVELOPMENT
BRINGELLY ROAD, LEPPINGTON NSW

Title
STORMWATER MISCELLANEOUS DETAILS AND PIT LID SCHEDULE

Drawn	Designed	Date
S.Chen	N.Wetzlar	Feb 2022
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	AS NOTED

Drawing number: 21U79_DA_C200
Revision: 02

SUBSOIL DRAINAGE NOTES

1. GENERALY PROVIDE SUBSOIL DRAINS TO INTERCEPT GROUNDWATER SEEPAGE AND PREVENT WATER BUILD-UP BEHIND WALLS AND UNDER FLOORS AND PAVEMENTS. CONNECT SUBSOIL TO SURFACE DRAINS OR TO THE STORMWATER DRAINAGE SYSTEM AS APPLICABLE.

2. PIPE DEPTH:
PROVIDE THE FOLLOWING MINIMUM CLEAR DEPTH, MEASURED TO THE CROWN OF THE PIPE, WHERE THE PIPE PASSES BELOW THE FOLLOWING ELEMENTS:

- 100mm BELOW FORMATION LEVEL OF THE PAVEMENT, KERB OR CHANNEL.
- 100mm BELOW THE AVERAGE GRADIENT OF THE BOTTOM OF FOOTINGS.

3. JOINTING:
AT JUNCTIONS OF SUBSOIL PIPES PROVIDE TEES, COUPLINGS OR ADAPTORS TO AS2439.1.

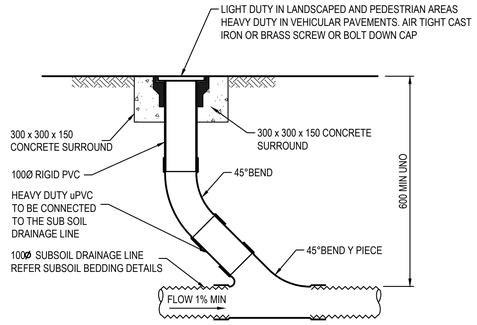
4. TRENCH WIDTH MINIMUM 300mm.

5. PIPE UNDERLAY
GENERAL: GRADE THE TRENCH FLOOR EVENLY TO THE GRADIENT OF THE PIPELINE. IF THE TRENCH FLOOR IS ROCK, CORRECT ANY IRREGULARITIES WITH COMPACTED BEDDING MATERIAL. BED PIPING ON A CONTINUOUS UNDERLAY OF BEDDING MATERIAL, AT LEAST 75mm THICK AFTER COMPACTION. LAY THE PIPE WITH ONE LINE OF PERFORATIONS AT THE BOTTOM.

CHASES: IF NECESSARY TO PREVENT PROJECTIONS SUCH AS SOCKETS AND FLANGES FROM BEARING ON THE TRENCH BOTTOM OR UNDERLAY.

6. PIPE SURROUNDS:
GENERAL: PLACE THE MATERIAL IN THE PIPE SURROUND IN LAYERS SMALLER THAN OR EQUAL TO 200mm LOOSE THICKNESS, AND COMPACT WITHOUT DAMAGING OR DISPLACING PIPING.
DEPTH OF OVERLAY: TO THE UNDERSIDE OF THE BASE OF OVERLYING STRUCTURES SUCH AS PAVEMENTS, SLABS AND CHANNELS TO WITHIN 150mm OF THE FINISHED SURFACE OF UNPAVED OR LANDSCAPED AREAS.

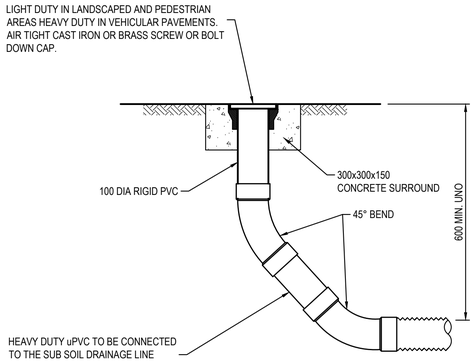
7. FILTER SOCKS:
PROVIDE POLYESTER PERMEABLE SOCKS CAPABLE OF RETAINING PARTICLES OF 0.25mm SIZES. SECURELY FIT OR JOIN THE SOCK AT EACH JOINT.



INTERMEDIATE RISER (IR)

SCALE 1:10

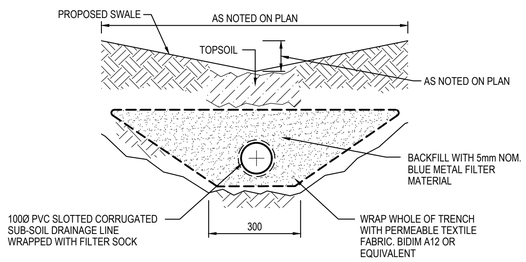
NOTE: SLOTTED RIGID PVC PIPE AND FITTINGS MAY BE USED



FLUSHING POINT (FP)

SCALE 1:10

NOTE: SLOTTED RIGID PVC PIPE AND FITTINGS MAY BE USED



SUBSOIL DRAIN DETAIL IN SWALES

SCALE 1:10

PLAN ID	MAXIMUM PIT PLAN DIMENSIONS
S	450mm x 450mm
M	600mm x 600mm
L	900mm x 900mm
XL	1200mm x 1200mm

DEPTH ID	BAG DEPTH	OVERALL DEPTH
1	170	270
2	300	450
3	600	700

		DEPTH ID		
		1	2	3
PLAN ID	S	■		
	M	■	■	
	L	■	■	■
	XL	■	■	■

GENERAL NOTES

1. THE MINIMUM CLEARANCE DEPENDS ON THE CONFIGURATION (SEE NOTE 2) AND THE LOCAL COUNCIL REQUIREMENTS.

2. CLEARANCE FOR ANY PIT WITHOUT AN INLET PIPE (ONLY USED FOR SURFACE FLOW) CAN BE AS LOW AS 50mm. FOR OTHER PITS, THE RECOMMENDED CLEARANCE SHOULD BE GREATER OR EQUAL TO THE PIPE OBVERT SO AS NOT TO INHIBIT HYDRAULIC CAPACITY.

3. OCEAN PROTECT PROVIDES TWO FILTRATION BAG TYPES:- 200 MICRON BAGS FOR HIGHER WATER QUALITY FILTERING AND A COARSE BAG FOR TARGETING GROSS POLLUTANTS.

4. DRAWINGS NOT TO SCALE.

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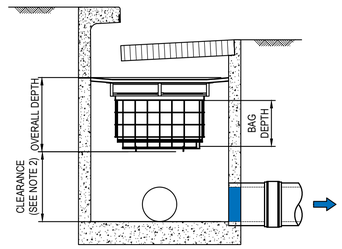
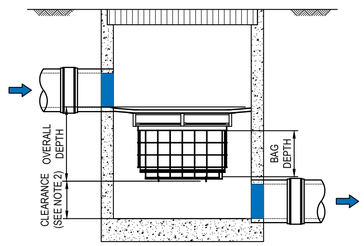
OCEAN PROTECT
OCEANGUARD
TYPCIAL ARRANGEMENTS
SPECIFICATION DRAWING



SURFACE FLOW CONFIGURATION

SCALE: 1:20



PIPE FLOW CONFIGURATION

SCALE: 1:20

0 200 400 600 800 1000mm
200 100
SCALE 1:10

ISSUED FOR APPROVAL

SURVEY INFORMATION
SURVEYED BY LANDPARTNERS
DATUM: AHD
ORIGIN OF LEVELS: SSM 192186 RL 79.008

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
02	ISSUED FOR SSDA	SC	NW	21.07.2022					
01	ISSUED FOR SSDA	SC	NW	20.04.2022					

Client
ESR

Architect
SBA ARCHITECTS

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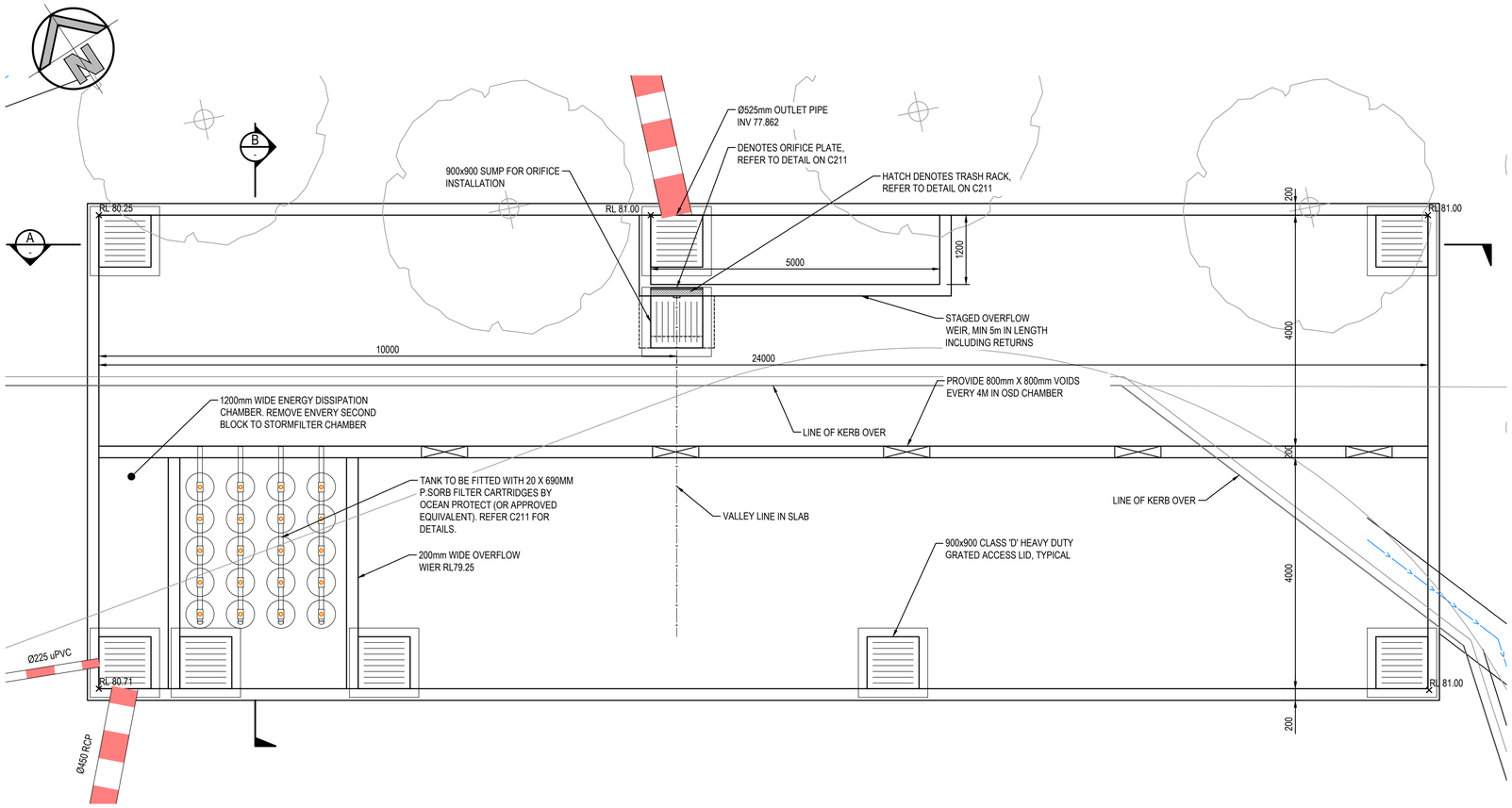
Project
PROPOSED WAREHOUSE DEVELOPMENT
BRINGELLY ROAD, LEPPINGTON NSW

Title
STORMWATER MISCELLANEOUS DETAILS

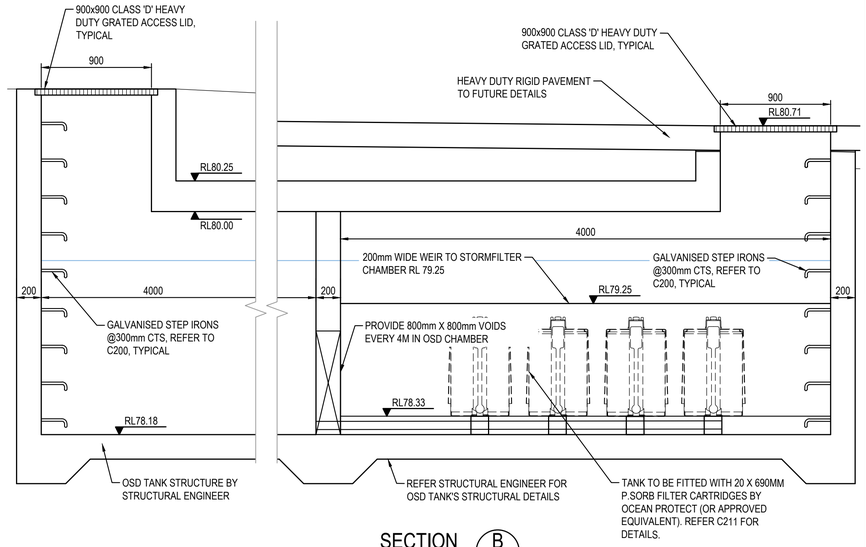
Drawn	Designed	Date
S.Chen	N.Wetzlar	Feb 2022
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	AS NOTED

Drawing number: 21U79_DA_C201
Revision: 02



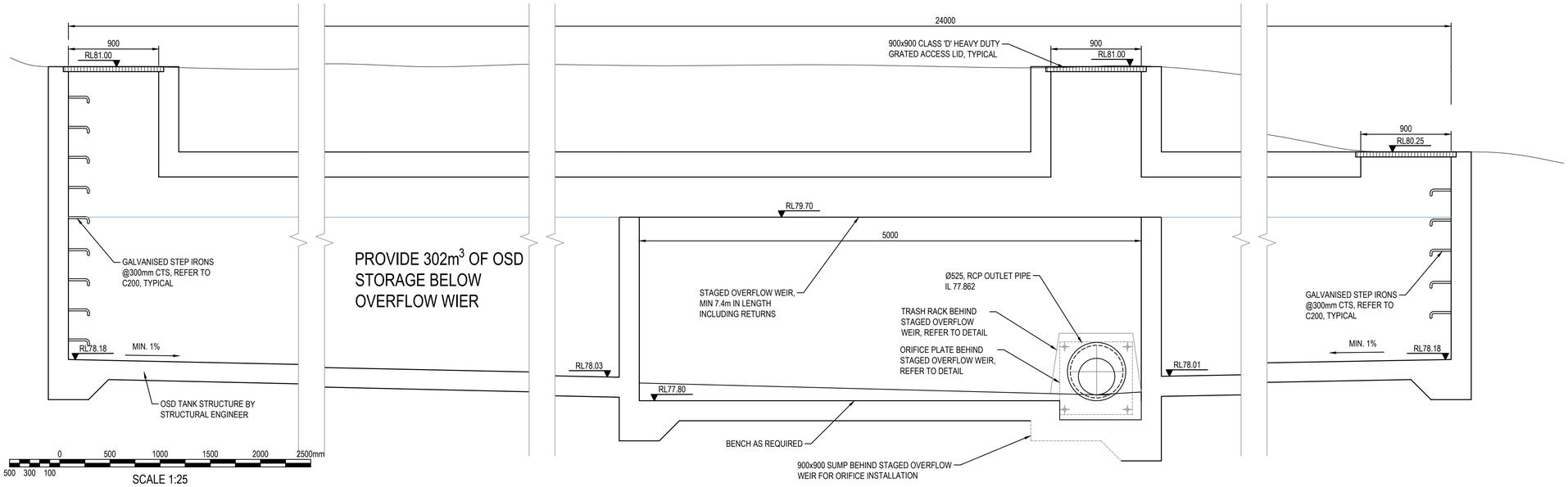
OSD PLAN

SCALE: 1:50



SECTION B

SCALE: 1:25



SECTION A

SCALE: 1:25

0 500 1000 1500 2000 2500mm
500 300 100
SCALE 1:25

0 1000 2000 3000 4000 5000mm
1000 600 200
SCALE 1:50

ISSUED FOR APPROVAL

SURVEY INFORMATION
SURVEYED BY LANDPARTNERS
DATUM: AHD
ORIGIN OF LEVELS: SSM 192186 RL 79.008

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
03	ISSUED FOR SSDA	SC	NW	21.07.2022
02	ISSUED FOR SSDA	SC	NW	26.05.2022
01	ISSUED FOR SSDA	SC	NW	20.04.2022

Client: ESR

Architect: SBA ARCHITECTS

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Project: PROPOSED WAREHOUSE DEVELOPMENT BRINGELLY ROAD, LEPPINGTON NSW

Title: OSD PLAN AND SECTIONS

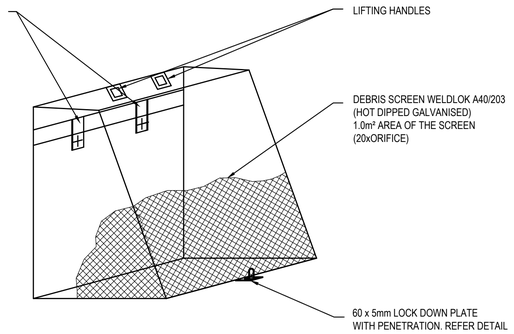
Drawn	Designed	Date
S.Chen	N.Wetzlar	Feb 2022
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	AS NOTED

Drawing number: 21U79_DA_C210

Revision: 03

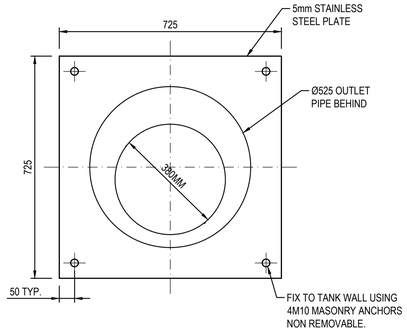
100 x 16 MOUNTING BAR WITH BRACKETS, SCREEN TO BE ATTACHED (GENERALLY ON A SLIDING MECHANISM) TO THE WALL, BUT SHOULD BE REMOVABLE (WITHOUT THE USE OF TOOLS) TO PERMIT CLEANSING AND EASY INSPECTION OF THE OUTLET CONTROL. ALL STEEL TO BE HOT DIPPED GALVANISED.

SCREEN TYPE WELDLOK A40/203 IS RECOMENDED FOR ORIFICES LARGER THAN 150mm AND SCREEN AREA 20 x THE ORIFICE AREA FOR THAT TYPE OF SCREEN



DEBRIS SCREEN DETAIL

NOT TO SCALE
ALL STEEL TO BE HOT DIPPED GALVANISED



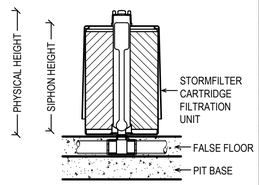
ORIFICE PLATE DETAIL

SCALE 1:10

STORMFILTER DESIGN TABLE

- STORMFILTER TREATMENT CAPACITY VARIES BY NUMBER OF FILTER CARTRIDGES INSTALLED.
- THE STANDARD CONFIGURATION IS SHOWN. ACTUAL CONFIGURATION OF THE SPECIFIED STRUCTURE(S) PER CERTIFYING ENGINEER WILL BE SHOWN ON SUBMITTAL DRAWING(S).
- FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF-CLEANING. RADIAL MEDIA DEPTH SHALL BE 178mm.

CARTRIDGE NAME / SIPHON HEIGHT (mm)	690
CARTRIDGE PHYSICAL HEIGHT (mm)	840
TYPICAL WEIR HEIGHT [H] (mm)	920
CARTRIDGE FLOW RATE FOR ZPG MEDIA (L/s)	0
CARTRIDGE FLOW RATE FOR PSORB MEDIA (L/s)	0.9



STORMFILTER
CARTRIDGE DETAIL

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	[ ]
NUMBER OF CARTRIDGES REQ'D	20
SIPHON HEIGHT (310 / 460 / 690)	[690]
MEDIA TYPE (ZPG / PSORB)	[PSORB]
WATER QUALITY FLOW RATE (L/S)	[18]
HYDRAULIC CAPACITY (L/S)	-

PIPE DATA:	I.L.	MATERIAL	DIAMETER
INLET PIPE #1	[ ]	[ ]	[ ]
INLET PIPE #2	[ ]	[ ]	[ ]
INLET PIPE #3	[ ]	[ ]	[ ]
OUTLET PIPE	[ ]	[ ]	[ ]

PRECAST MANHOLE WEIGHT	12,000kg
PRECAST LID WEIGHT	4,500kg

GENERAL NOTES

1. PRECAST STRUCTURE SUPPLIED WITH CORE HOLES TO SUIT OUTER DIAMETER OF NOMINATED PIPE SIZE / MATERIAL.
2. PRECAST STRUCTURE SHALL MEET W80 WHEEL LOAD RATING ASSUMING A MAXIMUM EARTH COVER OF 2.0m AND A GROUND WATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. CERTIFYING ENGINEER TO CONFIRM ACTUAL GROUNDWATER ELEVATION. PRECAST STRUCTURE SHALL BE IN ACCORDANCE WITH AS3600.
3. IF THE PEAK FLOW RATE, AS DETERMINED BY THE SITE CERTIFYING ENGINEER, EXCEEDS THE PEAK HYDRAULIC CAPACITY OF THE SYSTEM, AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.
4. ALL WATER QUALITY TREATMENT DEVICES REQUIRE PERIODIC MAINTENANCE. REFER TO OPERATION AND MAINTENANCE MANUAL FOR GUIDELINES AND ACCESS REQUIREMENTS.
5. SITE SPECIFIC PRODUCTION DRAWING WILL BE PROVIDED ON PLACEMENT OF ORDER.
6. DRAWING NOT TO SCALE.

INSTALLATION NOTES

1. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY CERTIFYING ENGINEER.
2. CONTRACTOR TO PROVIDE ALL EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMFILTER STRUCTURE (LIFTING DETAIL PROVIDED SEPARATELY).
3. CONTRACTOR TO APPLY SEALANT TO ALL JOINTS AND TO PROVIDE, INSTALL AND GROUT INLET AND OUTLET PIPES.

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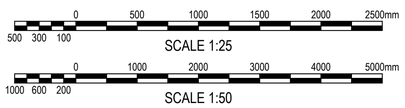
OCEAN PROTECT
20 CARTRIDGE STORMFILTER SYSTEM
CUSTOM OSD TANK DESIGN
SPECIFICATION DRAWING



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SURVEY INFORMATION
SURVEYED BY LANDPARTNERS
DATUM: AHD
ORIGIN OF LEVELS: SSM 192186 RL 79.008

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
02	ISSUED FOR SSDA	SC	NW	21.07.2022					
01	ISSUED FOR SSDA	SC	NW	20.04.2022					

Client: ESR
Architect: SBA ARCHITECTS

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Project: PROPOSED WAREHOUSE DEVELOPMENT
BRINGELLY ROAD, LEPPINGTON NSW

Title: OSD DETAILS

Drawn	Designed	Date
S.Chen	N.Wetzlar	Feb 2022
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	AS NOTED

Drawing number: 21U79_DA_C211
Revision: 2

LEGEND

PERVIOUS AREA (INTERNAL)
AREA = 12892m²

PERVIOUS AREA (EXTERNAL)
AREA = 1716m²

0 8 16 24 32 40m
8 6 4 2
SCALE 1:400

PRE-DEVELOPMENT STORMWATER CATCHMENT PLAN

SCALE: 1:400

ISSUED FOR APPROVAL

SURVEY INFORMATION
SURVEYED BY LANDPARTNERS
DATUM: AHD
ORIGIN OF LEVELS: SSM 192186 RL 79.008

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
02	ISSUED FOR SSDA	SC	NW	21.07.2022
01	ISSUED FOR SSDA	SC	NW	20.04.2022

Client: ESR
Architect: SBA ARCHITECTS

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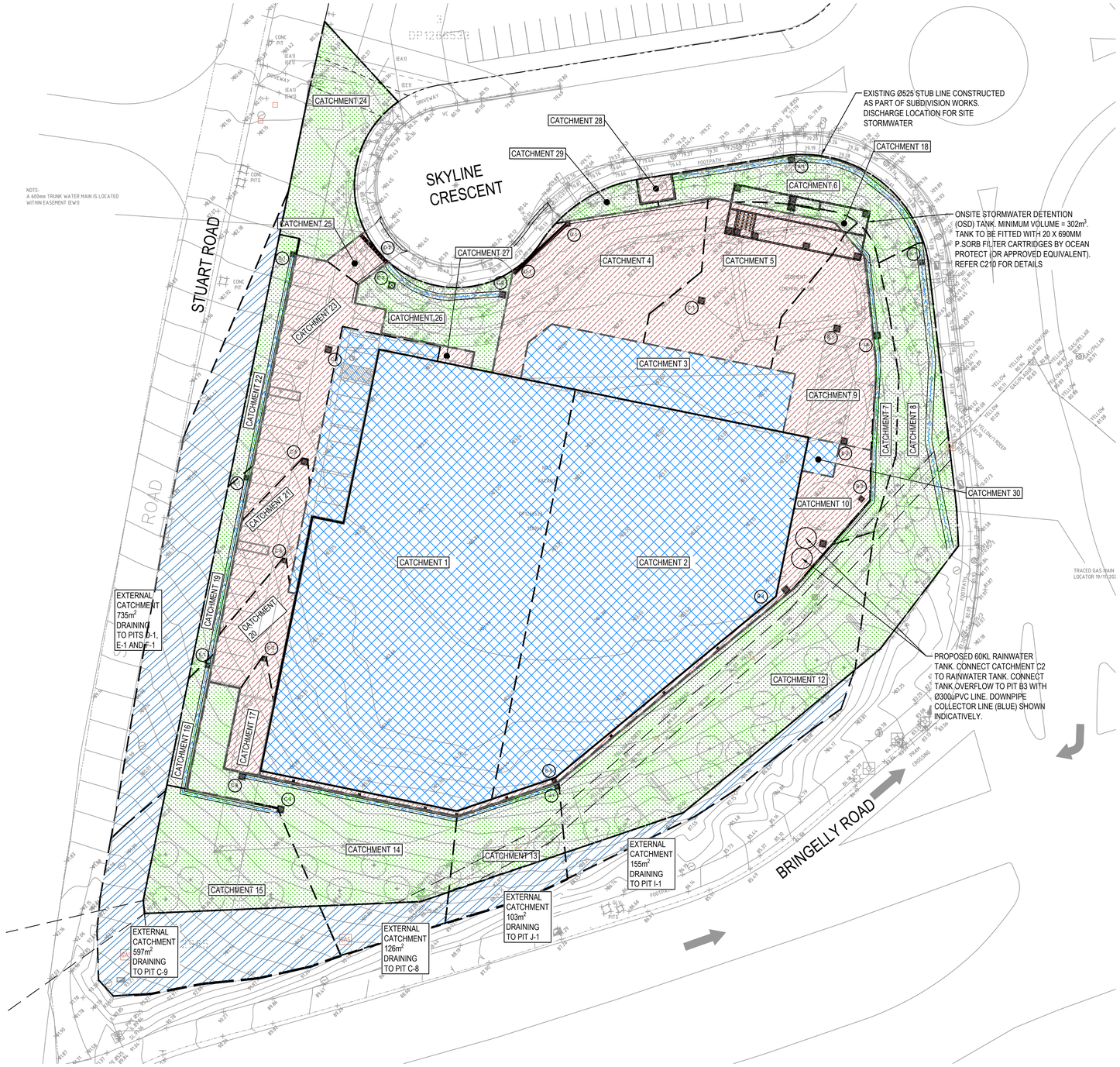
Project: PROPOSED WAREHOUSE DEVELOPMENT BRINGELLY ROAD, LEPPINGTON NSW
Title: PRE - DEVELOPMENT STORMWATER CATCHMENT PLAN

Drawn	Designed	Date
S.Chen	N.Wetzlar	Feb 2022
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	1:400

Drawing number: 21U79_DA_C250
Revision: 02



LEGEND

LANDSCAPE AREA
100% PERVIOUS
AREA =4576m²

HARDSTAND AREA
100% IMPERVIOUS
AREA =2801m²

ROOF AREA
100% IMPERVIOUS
AREA =5515m²

PERVIOUS AREA (EXTERNAL)
AREA = 1716m²

POST DEVELOPMENT CATCHMENT

CATCHMENT #	TYPE	TO PIT	AREA [m²]
C1	ROOF	C-4,C-5,C-6,C-7	2978
C2	ROOF	RAINWATER TANK	2061
C3	ROOF	B-2	456
C4	HARDSTAND	GD-1, G-1	599
C5	HARDSTAND	C-1	538
C6	LANDSCAPE (OSD BYPASS)	A-1	328
C7	LANDSCAPE	I-1	182
C8	LANDSCAPE	H-1	623
C9	HARDSTAND	B-1	436
C10	HARDSTAND	B-5,B-3,B-4, K-1	274
C12	LANDSCAPE	I-1	1056
C13	LANDSCAPE	J-1	225
C14	LANDSCAPE	C-8	617
C15	LANDSCAPE	C-10	461
C16	LANDSCAPE	F-1	73
C17	HARDSTAND	C-7	101
C18	LANDSCAPE	C-1	30
C19	LANDSCAPE	E-1	114
C20	HARDSTAND	C-6	172
C21	HARDSTAND	C-5	182
C22	LANDSCAPE	D-1	143
C23	HARDSTAND	C-4	411
C24	LANDSCAPE	BYPASS	405
C25	HARDSTAND	GD-2	45
C26	LANDSCAPE	C-2	258
C27	HARDSTAND	C-2	18
C28	HARDSTAND	BYPASS	23
C29	LANDSCAPE	BYPASS	55
C30	ROOF	B-2	30

0 8 16 24 32 40m
8 6 4 2
SCALE 1:400

POST-DEVELOPMENT STORMWATER CATCHMENT PLAN

SCALE: 1:400

ISSUED FOR APPROVAL

SURVEY INFORMATION
SURVEYED BY LANDPARTNERS
DATUM: AHD
ORIGIN OF LEVELS: SSM 192186 RL 79.008

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
03	ISSUED FOR SSDA	SC	NW	29.07.2022
02	ISSUED FOR SSDA	SC	NW	21.07.2022
01	ISSUED FOR SSDA	SC	NW	20.04.2022

Client: ESR
Architect: SBA ARCHITECTS

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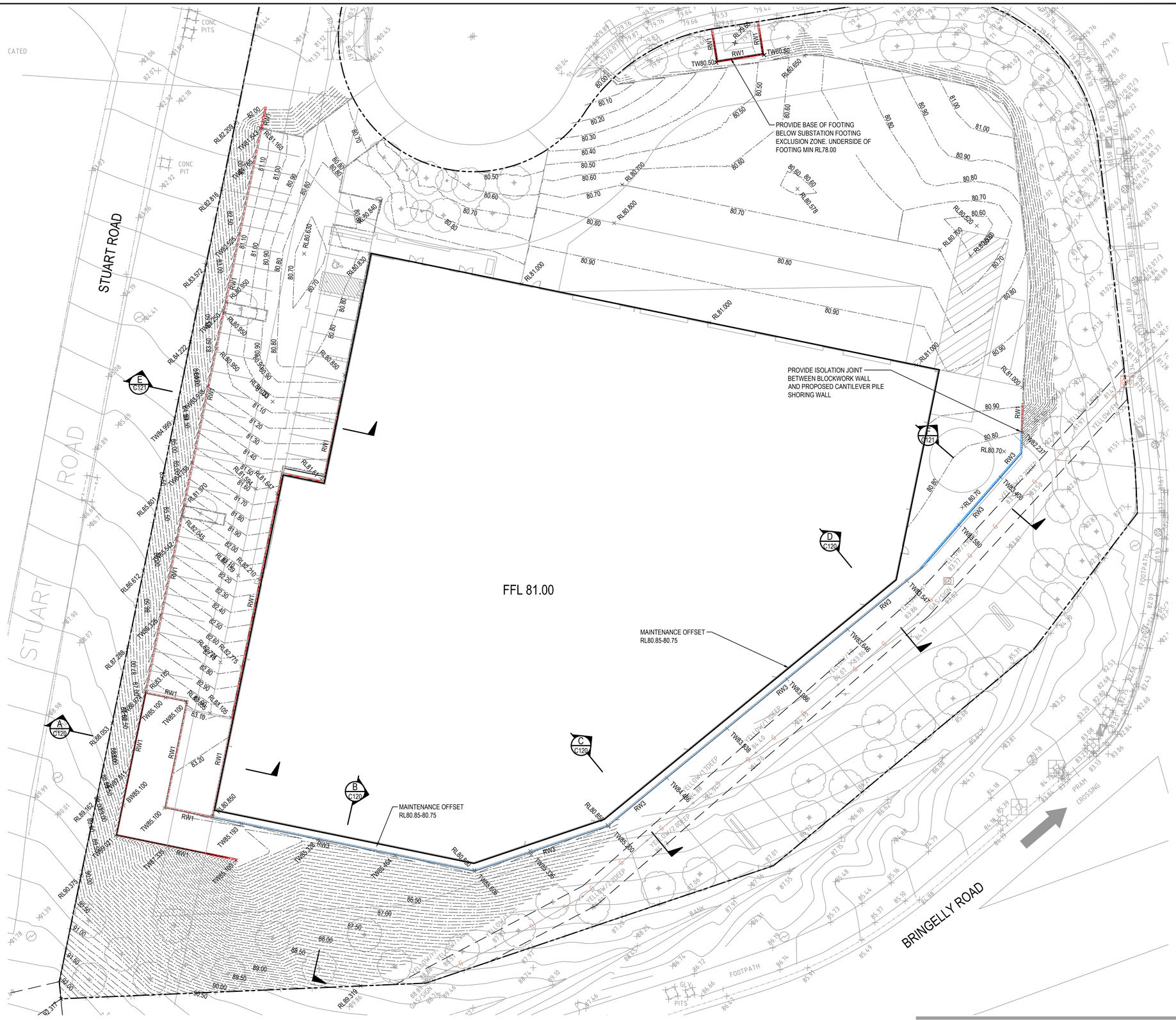
Project: PROPOSED WAREHOUSE DEVELOPMENT BRINGELLY ROAD, LEPPINGTON NSW
Title: POST - DEVELOPMENT STORMWATER CATCHMENT PLAN

Drawn	Designed	Date
S.Chen	N.Wetzlar	Feb 2022
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	1:400

Drawing number: 21U79_DA_C251
Revision: 03

LEGEND

	EXISTING BOUNDARY
82.70	EXISTING CONTOURS
83.40	PROPOSED CONTOURS
RW1	PROPOSED REINFORCED BLOCKWORK CANTILEVER RETAINING WALL, REFER DETAIL ON C310
RW3	PROPOSED PILE SHORING WALL OR REINFORCED CONCRETE CANTILEVER WALL. DETAILS TO BE PROVIDED DURING DETAILED DESIGN. REFER TO C310 FOR DESIGN PARAMETERS FOR SHORING WALL.



0 5 10 15 20 25m
5 4 3 2 1
SCALE 1:250

RETAINING WALL PLAN

SCALE: 1:250

ISSUED FOR APPROVAL

SURVEY INFORMATION
SURVEYED BY LANDPARTNERS
DATUM: AHD
ORIGIN OF LEVELS: SSM 192186 RL 79.008

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
04	ISSUED FOR SSDA	SC	NW	29.07.2022
03	ISSUED FOR SSDA	SC	NW	21.07.2022
02	ISSUED FOR SSDA	SC	NW	02.05.2022
01	ISSUED FOR SSDA	SC	NW	20.04.2022

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE

Client
ESR

Architect
SBA ARCHITECTS

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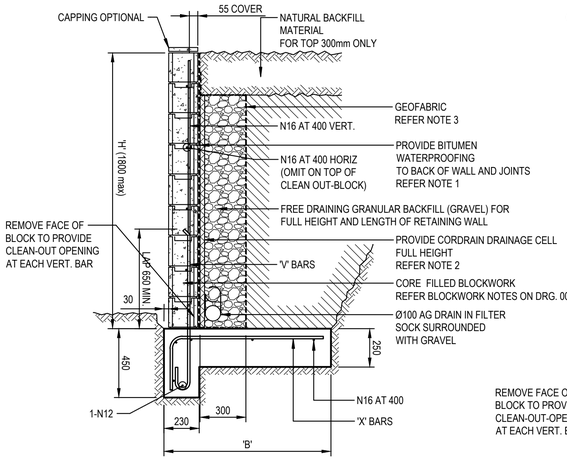
Project
PROPOSED WAREHOUSE DEVELOPMENT
BRINGELLY ROAD, LEPPINGTON NSW

Title
RETAINING WALL PLAN

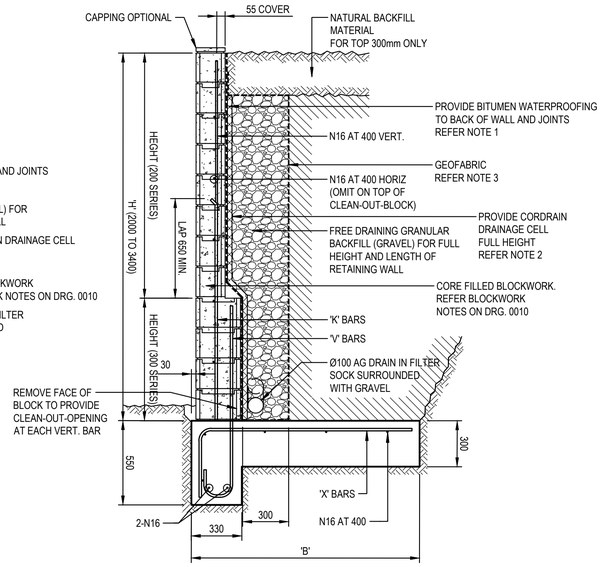
Drawn	Designed	Date
S.Chen	N.Wetzlar	Feb 2022
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	1:250

Drawing number: 21U79_DA_C300
Revision: 04



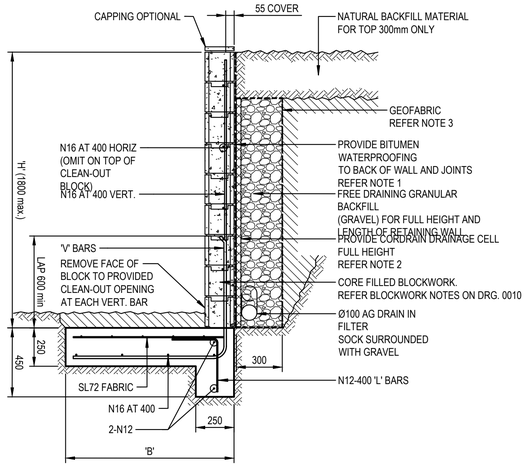
150 AND 200 SERIES BLOCK WALL

5.0 kPa SURCHARGE



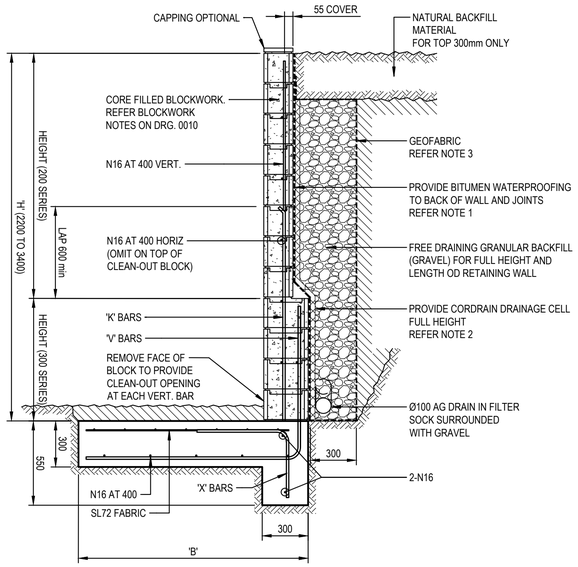
200 AND 300 SERIES BLOCK WALL

5.0 kPa SURCHARGE



150 OR 200 SERIES BLOCK WALL

5.0 kPa SURCHARGE



200 OR 300 SERIES BLOCK WALL

5.0 kPa SURCHARGE

RETAINING WALL SECHEDULE

TOTAL HEIGHT 'H' (mm)	HEIGHT OF BLOCK TYPE			'B' (mm)	'V' & 'X' BARS	'K' BARS
	150 SERIES	200 SERIES	300 SERIES			
800	800	-	-	800	N12 AT 400	-
1000	1000	-	-	900	N12 AT 400	-
1200	1200	-	-	1000	N12 AT 400	-
1400	-	1400	-	1100	N16 AT 400	-
1600	-	1600	-	1200	N16 AT 400	-
1800	-	1800	-	1400	N16 AT 400	-
2000	-	1400	600	1600	N16 AT 200	N16 AT 200
2200	-	1400	800	1800	N16 AT 200	N16 AT 200
2400	-	1600	800	2000	N16 AT 200	N16 AT 200
2600	-	1600	1000	2100	N16 AT 200	N16 AT 200
2800	-	1800	1000	2200	N16 AT 200	N16 AT 200
3000	-	2000	1000	2400	N16 AT 200	N16 AT 200
3200	-	2000	1200	2600	N20 AT 200	N16 AT 200
3400	-	2000	1400	2800	N20 AT 200	N16 AT 200

NOTES:

1. ENSURE REAR FACE OF RETAINING WALL IS FULLY WATERPROOFED. USE EMER-PROOF ECOFLEX OR APPROVED EQUIVALENT IN ACCORDANCE WITH MANUFACTURERS SPECIFICATION. EG: 2 COATS min. APPLIED IN OPPOSITE DIRECTIONS AND ALLOWED TO CURE FOR 7 DAYS. (TO BE CONIRMED BY THE ARCHITECT)
2. INSTALL FULL HEIGHT DRAINAGE CELL TO REAR OF WALL, USE NYLEX CORDRAIN/18 OR APPROVED EQUIVALENT, AT 1500 CENTRES.
3. PROVIDE GEOFABRIC MATERIAL AS SEPARATION BETWEEN GRANULAR BACKFILL (GRAVEL) AND NATURAL BACKFILL MATERIAL. USE BIDIM A24 OR APPROVED EQUIVALENT.
4. MINIMUM ALLOWABLE BEARING PRESSURE AT BASE = 100 kPa

RETAINING WALL SCHEDULE

TOTAL HEIGHT 'H' (mm)	HEIGHT OF BLOCK TYPE			'B' (mm)	'V' & 'X' BARS	'K' BARS
	150 SERIES	200 SERIES	300 SERIES			
800	800	-	-	800	N12 AT 400	-
1000	1000	-	-	900	N12 AT 400	-
1200	1200	-	-	1000	N12 AT 400	-
1400	-	1400	-	1100	N16 AT 400	-
1600	-	1600	-	1400	N16 AT 400	-
1800	-	1800	-	1600	N16 AT 400	-
2000	-	1400	600	1800	N16 AT 200	N16 AT 200
2200	-	1400	800	2000	N16 AT 200	N16 AT 200
2400	-	1600	800	2200	N16 AT 200	N16 AT 200
2600	-	1600	1000	2400	N16 AT 200	N16 AT 200
2800	-	1800	1000	2600	N16 AT 200	N16 AT 200
3000	-	2000	1000	3000	N16 AT 200	N16 AT 200
3200	-	2000	1200	3300	N20 AT 200	N16 AT 200
3400	-	2000	1400	3600	N20 AT 200	N16 AT 200

NOTES:

1. ENSURE REAR FACE OF RETAINING WALL IS FULLY WATERPROOFED. USE EMER-PROOF ECOFLEX OE APPROVE EQUIVALENT IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS. EG: 2 COATS min. APPLIED IN OPPOSITE DIRECTIONS AND ALLOWED TO CURE FOR 7 DAYS.
2. INSTALL FULL HEIGHT DRAINAGE CELL TO REAR OF WALL, USE NYLEX CORDRAIN/18 OR APPROVED EQUIVALENTS.
3. PROVIDE GEOFABRIC MATERIAL AS SEPARATION BETWEEN GRANULAR BACKFILL (GRAVEL) AND NATURAL BACKFILL MATERIAL. USE BIDIM A24 OR APPROVED EQUIVALENT.

NOTES:

1. UNLESS OTHERWISE NOTED ON PLAN JOINTS SHALL BE LOCATED AT 8000 CENTRES max. AND 4000 FROM CORNERS.
2. PROVIDE SILICON SEALANT BOTH FACES IN ALL JOINTS, USE PARCHEM EMER-SEAL CR OR AN APPROVED EQUIVALENT.

MASONRY CONSTRUCTION:

B1 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS3700 AND AS NOTED ON THE DRAWINGS.

B2 BRICK AND BLOCK COMPRESSIVE STRENGTH (f'uc) SHALL BE 15 MPa MINIMUM UNO. STRENGTH GRADE SHALL BE CLEARLY INDICATED ON THE DELIVERY DOCKETS.

B3 JOINT MORTAR SHALL BE OF CLASS M3 WITH 1:1:6 (CEMENT: LIME: SAND) PROPORTIONS BY VOLUME AND COMPLY WITH AS3700. MORTAR JOINTS SHALL BE 10 mm THICK AND HAVE A MAXIMUM TOOLED DEPTH OF 3 mm UNO.

B4 NON-LOAD BEARING WALLS SHALL BE SEPARATED FROM THE LOAD-BEARING ELEMENTS BY 15 mm THICK 'CANEITE' OR EXPANDED POLYSTYRENE UNO AT BOTH HORIZONTAL AND VERTICAL FACES.

NON-LOAD BEARING WALLS SHALL BE TIED TO THE SOFFITS OF BEAMS OR SLABS OVER BY USING 'MET 4-1' TIES (OR APPROVED EQUIVALENT), AT 800 mm MAX. CENTRES, UNO ON THE DRAWINGS, TO MANUFACTURER'S SPECIFICATIONS

B5 WHERE CONCRETE SLABS BEAR ON UNREINFORCED MASONRY, INCLUDING CLAY BRICKS, RENDER THE BEARING SURFACE OF THE MASONRY WALL WITH 1:3 (CEMENT : SAND) MORTAR TO ACHIEVE A LEVEL SURFACE AND PLACE A PRE-GREASED METAL SLIP JOINT PROTECTED BY 0.2 mm POLYETHYLENE SHEET TAPED TO THE FORMWORK BEFORE PLACING CONCRETE. SPECIAL DETAILS SUCH AS WATER-PROOFING MAY APPLY FOR ROOF SLABS OR SIMILARLY EXPOSED ELEMENTS.

B6 CONTROL JOINTS

CONTROL JOINTS SHALL BE PROVIDED IN MASONRY WALLS AS PER THE TABLE BELOW UNLESS CLOSER SPACINGS ARE SPECIFIED ELSEWHERE IN THE DOCUMENTATION.

MASONRY TYPE	LOCATION	JOINT SIZE (mm)	SPACING (m)
CONCRETE MASONRY	- EXTERNAL	10	7.0
	- EXTERNAL (WITH OPENINGS > 900mm IN HEIGHT)	10	5.0
	- INTERNAL (FACE FINISHED)	10	6.0
	- INTERNAL (RENDERED)	10	5.0
LIGHT-WEIGHT MASONRY	- INTERNAL / EXTERNAL	10	6.0
CLAY MASONRY	- INTERNAL / EXTERNAL	15	6.0 *
	- PARAPET WALLS	15	4.0

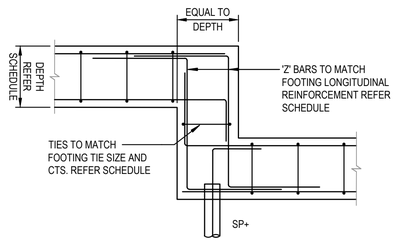
* - FOR REACTIVE ' CLASS M' SITES ONLY. REFER TABLE 4.3 OF AS3700.2011 FOR ARTICULATION JOINTS IN CLAY MASONRY.

2. CONTROL JOINTS SHALL BE PLACED AT HALF THE SPECIFIED SPACING FROM A CORNER. PROVIDE JOINTS TO MATCH JOINTS IN THE SUPPORTING STRUCTURE.
3. CONTROL JOINTS MUST BE KEPT FREE OF MORTAR AND SEALED WITH A POLYETHYLENE FOAM BACKING ROD SQUEEZED INTO THE GAP AND A GUNNED-IN MASTIC SEALANT. IF THE WALL IS TO BE FIRE-RATED, A FIRE-RATED SEALING SYSTEM WILL BE REQUIRED INSTEAD.

B7 BLOCKWORK

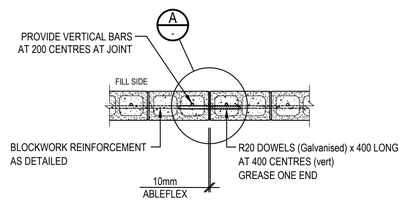
1. IN CORE-FILLED BLOCKWORK, EXCESS MORTAR PROTRUDING INTO THE CORES SHALL BE REMOVED BY RODDING AFTER EACH COURSE IS LAID. EVERY CORE FILLED WITH GROUT SHALL HAVE A CLEANOUT BLOCK IN THE BOTTOM COURSE.
2. REINFORCEMENT SHALL BE PLACED AND SECURELY TIED IN POSITION AS SHOWN ON THE DRAWINGS. STARTER BARS SHALL BE HELD IN PLACE BY TYING TO HORIZONTAL BARS AT CLEANOUT BLOCKS. PROVIDE COVER TO REINFORCEMENT AS SHOWN IN THE DETAILS.
3. CORE FILLING GROUT SHALL BE AS NOTED IN CONCRETE NOTES IN LIFTS NO MORE THAN 1200mm IN HEIGHT.

Element	Slump	Max. Agg. Size	Cement Type	Exposure Classifn.	Min. Conc. Grade (f'c) MPa U.N.O	Conc. Cover (U.N.O.)
Core Filling Grout	230±30	10	GP	-	20	-

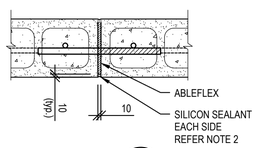


TYPICAL FOOTING STEP DETAIL

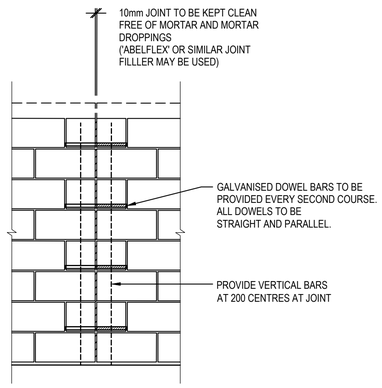
SCALE 1:20



PLAN



DETAIL A -



ELEVATION

TYPICAL BLOCKWORK VERTICAL EXPANSION JOINT

PILING DESIGN PARAMETERS

- THE MOVEMENTS OF RETAINING WALL STRUCTURES SHALL NOT RESULT IN ANY DAMAGE TO JEMENA ASSETS.
- PILING IS TO BE UNDERTAKEN TO LIMIT VIBRATION IN ACCORDANCE WITH REQUIREMENTS DETAILED BY JEMENA AS WELL AS REQUIREMENTS DETAILED IN GEOTECHNICAL INVESTIGATION BY DOUGLAS PARTNERS REF. 213088.00 DATED APRIL 2022.
- DETAILED DESIGN TO BE UNDERTAKEN IN ACCORDANCE WITH GEOTECHNICAL PARAMETERS DETAILED IN GEOTECHNICAL INVESTIGATION BY DOUGLAS PARTNERS REF. 213088.00 DATED APRIL 2022.
- DETAILED DESIGN TO BE UNDERTAKEN TO LIMIT THE TOTAL SERVICEABILITY HORIZONTAL MOVEMENT OF THE WALL IN ANY ONE DIRECTION IS TO BE LIMITED TO 0.5% OF THE EXCAVATED HEIGHT, OR 20MM, OR THE STRUCTURAL SERVICEABILITY REQUIREMENTS OF THE RETAINING WALL, WHICHEVER IS THE LESSER. TOTAL SERVICEABILITY HORIZONTAL MOVEMENT TO BE CONFIRMED BY JEMENA PRIOR TO FINAL DESIGN.
- DETAILED DESIGN TO BE UNDERTAKEN IN ACCORDANCE WITH DESIGN LOADING FROM AS 1170 STRUCTURAL DESIGN ACTIONS AND AS 2159 PILING - DESIGN AND INSTALLATION.
- IN THE CASE OF A DESIGN AND CONSTRUCT (D&C) SHORING SYSTEM, THE BUILDING CONTRACTOR SHALL SUBMIT THE PROPOSED DETAILS AND DESIGN CALCULATIONS FOR THE ENGINEER'S REVIEW PRIOR TO COMMENCING WORK ONSITE.
- DESIGN OF THE PILES TO BE DESIGNED IN CONSIDERATION OF THE INSTALLATION RESTRICTIONS. INSTALLATION OF SHORING PILES SHALL BE IN ACCORDANCE WITH AS2159 WITH A MAXIMUM POSITIONAL TOLERANCE OF 20 MM AND A MAXIMUM VERTICAL STRAIGHTNESS WITHIN 1% UNO.
- GEOTECHNICAL INSTRUMENTATION AND MONITORING IS REQUIRED ADJACENT TO THE EXISTING GAS MAIN. INSTRUMENTATION AND MONITORING PLAN TO JEMENA RECOMMENDATIONS (TBC).

ISSUED FOR APPROVAL

SURVEY INFORMATION
SURVEYED BY LANDPARTNERS
DATUM: AHD
ORIGIN OF LEVELS: SSM 192186 RL 79.008

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
03	ISSUED FOR SSDA	SC	NW	21.07.2022
02	ISSUED FOR SSDA	SC	NW	02.05.2022
01	ISSUED FOR SSDA	SC	NW	20.04.2022

Client: ESR

Architect: SBA ARCHITECTS

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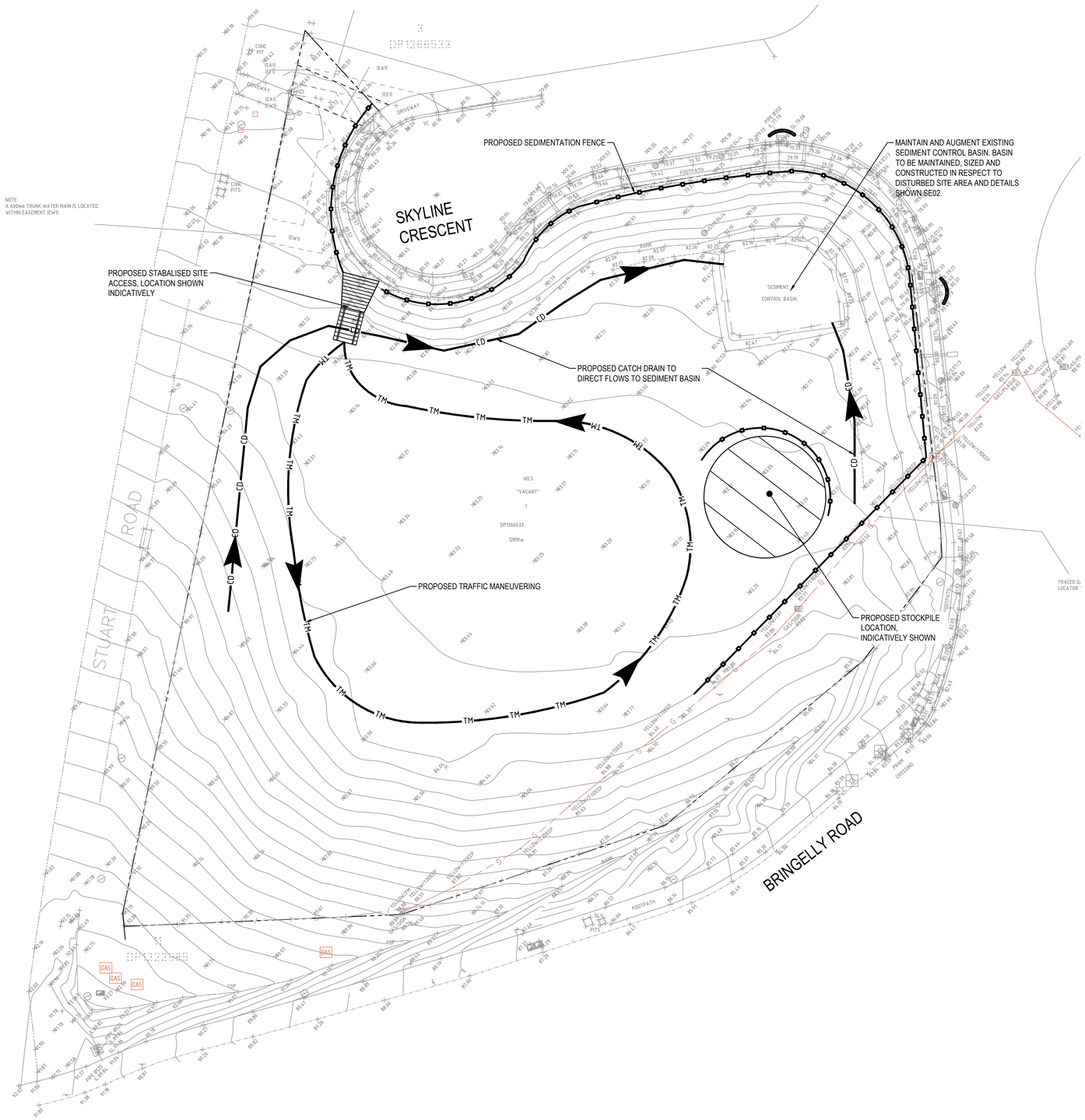
Project: PROPOSED WAREHOUSE DEVELOPMENT BRINGELLY ROAD, LEPPINGTON NSW

Title: RETAINING WALL TYPICAL DETAILS

Drawn	Designed	Date
S.Chen	N.Wetzlar	Feb 2022
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	N.T.S.

Drawing number: 21U79_DA_C310

Revision: 03



LEGEND

- EXISTING BOUNDARY
- CATCH DIVERSION DRAIN
- TRAFFIC MANOEUVRING
- PROPOSED SEDIMENTATION FENCE
- PROPOSED VEHICLE SHAKER GRID
- PROPOSED STABILISED SITE ACCESS
- PROPOSED STOCKPILE LOCATION
- PROPOSED MESH & GRAVEL INLET FILTER

SEDIMENT & EROSION CONTROL NOTES

- ALL SEDIMENT CONTROL DEVICES ARE TO BE CONSTRUCTED, PLACED AND MAINTAINED IN ACCORDANCE WITH LIVERPOOL CITY COUNCIL'S SPECIFICATIONS AND LANDCOM'S "SOIL AND CONSTRUCTION" MANUAL.
- ALL PERIMETER & SILTATION CONTROL MEASURES ARE TO BE PLACED PRIOR TO, OR AS THE FIRST STEP IN EARTH WORKS AND/OR CLEARING.
- THE SEDIMENT & EROSION CONTROL PLAN MAY REQUIRE FUTURE ADJUSTMENT TO REFLECT CONSTRUCTION STAGING. IT IS ALSO THE CONTRACTORS RESPONSIBILTY TO PREPARE THEIR OWN SEDIMENT AND EROSION CONTROL PLAN WHICH SUITS THE DESIGNED CONSTRUCTION STAGING.
- FILTRATION BUFFER ZONES ARE TO BE FENCED OFF AND ACCESS PROHIBITED TO ALL PLANT AND MACHINERY.
- ALL TEMPORARY EARTH BERMS, DIVERSIONS & SILT DAM EMBANKMENTS ARE TO BE MACHINE COMPACTED, SEEDED & MULCHED FOR TEMPORARY VEGETATION COVER AS SOON AS THEY HAVE BEEN FORMED.
- ALL SEDIMENT TRAPPING STRUCTURES AND DEVICES ARE TO BE INSPECTED AFTER STORMS FOR STRUCTURAL DAMAGE OR CLOGGING. TRAPPED MATERIAL IS TO BE REMOVED TO A SAFE LOCATION.
- ALL TOPSOIL IS TO BE STOCKPILED ON SITE FOR REUSE (AWAY FROM TREES AND DRAINAGE LINES). MEASURES SHALL BE APPLIED TO PREVENT EROSION OF THE STOCKPILES.
- ALL EARTHWORK AREAS SHALL BE ROLLED EACH EVENING TO SEAL THE EARTHWORKS.
- ALL FILLS ARE TO BE LEFT WITH A LIP AT THE TOP OF THE SLOPE AT THE END. ALL CUT AND FILL SLOPES ARE TO BE SEEDED AND STRAW MULCHED WITHIN 14 DAYS OF COMPLETION OF FORMATION U.N.O. BY LANDSCAPE ARCHITECTS.
- UPON COMPLETION OF ALL EARTHWORKS OR AS DIRECTED BY COUNCIL SOIL CONSERVATION TREATMENTS SHALL BE APPLIED SO AS TO RENDER AREAS THAT HAVE BEEN DISTURBED, EROSION PROOF WITHIN 14 DAYS.
- EROSION AND SILT PROTECTION MEASURES ARE TO BE MAINTAINED AT ALL TIMES.
- THESE DRAWINGS SHOW THE INITIAL STAGES OF THE SITE CONSTRUCTION AND EROSION CONTROLS. AS CONSTRUCTION CONTINUES IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL PITS ARE PROGRESSIVELY FITTED WITH MESH AND GRAVEL INLET FILTERS AS REQUIRED
- ALL EXISTING COUNCIL PITS WITHIN 50m OF THE SITE BOUNDARIES ARE TO BE FITTED WITH MESH AND GRAVEL INLET FILTERS

0 8 16 24 32 40m
8 6 4 2
SCALE 1:400

SEDIMENT AND EROSION CONTROL PLAN

SCALE: 1:400

ISSUED FOR APPROVAL

SURVEY INFORMATION
SURVEYED BY LANDPARTNERS
DATUM: AHD
ORIGIN OF LEVELS: SSM 192186 RL 79.008

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
02	ISSUED FOR SSDA	SC	NW	21.07.2022
01	ISSUED FOR SSDA	SC	NW	20.04.2022

Client: ESR
Architect: SBA ARCHITECTS

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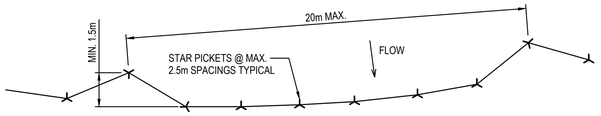
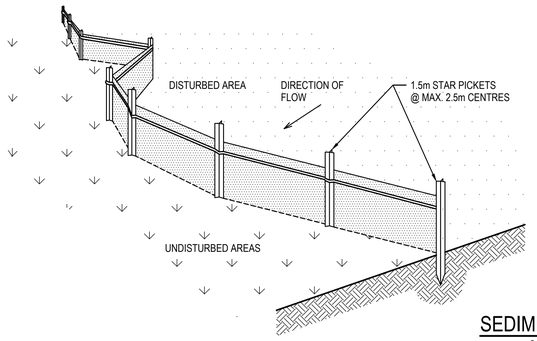
Project: PROPOSED WAREHOUSE DEVELOPMENT BRINGELLY ROAD, LEPPINGTON NSW
Title: SEDIMENT AND EROSION CONTROL PLAN

Drawn	Designed	Date
S.Chen	N.Wetzlar	Feb 2022
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	1:400

Drawing number: 21U79_DA_SE01
Revision: 02

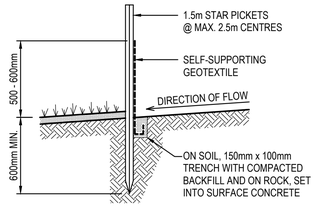


PLAN



SEDIMENT FENCE

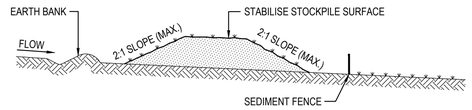
SCALE N.T.S.



SECTION DETAIL

SEDIMENT FENCE CONSTRUCTION NOTES:

1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT.
2. CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. 3. DRIVE 1.5m LONG STAR PICKETS INTO GROUND @ 2.5m INTERVALS (MAX.) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. 4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
5. 5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP. 6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

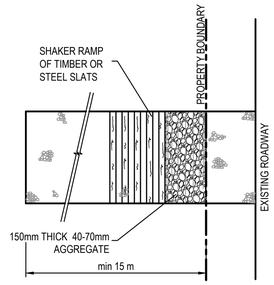


STOCKPILE CONSTRUCTION NOTES:

1. PLACE STOCKPILES MORE THAN 2 (PREFERABLY 5) METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METRES IN HEIGHT.
4. WHERE THEY ARE TO BE PLACED FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED E.S.C.P. OR S.W.M.P. TO REDUCE THE C-FACTOR TO LESS THAN 0.10.
5. CONSTRUCT EARTH BANKS ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES 1 TO 2 METRES DOWNSLOPE.

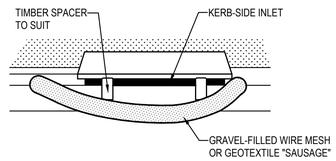
STOCKPILES

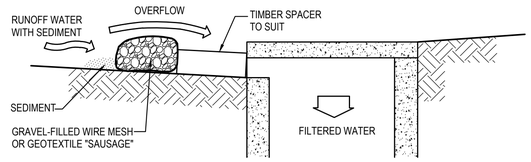
SCALE N.T.S.



PLAN
STABILISED SITE ACCESS WITH SHAKER RAMP

N.T.S.



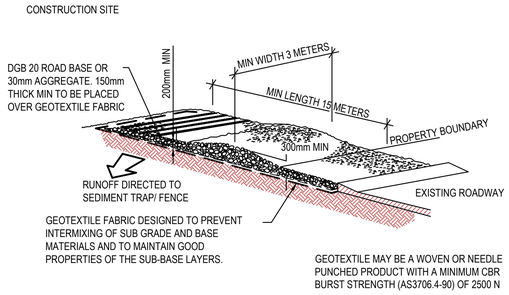


MESH & GRAVEL INLET FILTER CONSTRUCTION NOTES:

1. FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT AND FILL IT WITH 25mm TO 50mm GRAVEL.
2. FORM AN ELLIPTICAL CROSS-SECTION ABOUT 150mm HIGH x 400mm WIDE.
3. PLACE THE FILTER AT THE OPENING LEAVING AT LEAST A 100mm SPACE BETWEEN IT AND THE KERB INLET. MAINTAIN THE OPENING WITH SPACER BLOCKS.
4. FORM A SEAL WITH THE KERB TO PREVENT SEDIMENT BYPASSING THE FILTER.
5. SANDBAGS FILLED WITH GRAVEL CAN SUBSTITUTE FOR THE MESH OR GEOTEXTILE PROVIDING THEY ARE PLACED SO THAT THEY CAN FIRMLY ABUT EACH OTHER AND SEDIMENT / LADEN WATERS CANNOT PASS BETWEEN.

MESH & GRAVEL INLET FILTER

SCALE N.T.S.

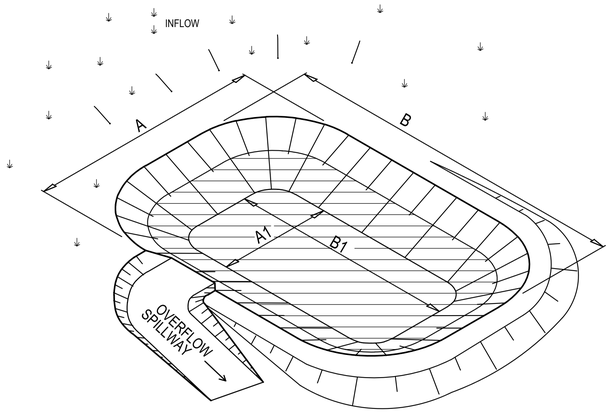


STABILISED SITE ACCESS WITH SHAKER RAMP

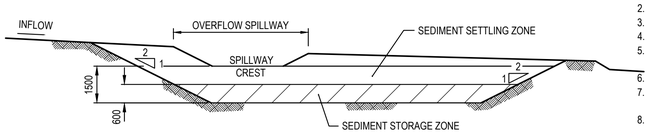
N.T.S.

NOTES:

1. THIS DEVICE IS TO BE LOCATED AT ALL EXITS FROM CONSTRUCTION SITE.
2. THIS DEVICE IS TO BE REGULARLY CLEANED OF DEPOSITED MATERIAL SO AS TO MAINTAIN A 50mm DEEP SPACE BETWEEN PLANKS.
3. ANY UNSEALED ROAD BETWEEN THIS DEVICE AND NEAREST ROADWAY IS TO BE TOPPED WITH 100mm THICK 40-70mm SIZE AGGREGATE.
4. ALTERNATIVELY, THREE(3) PRECAST CONCRETE CATTLE GRIDS (AS MANUFACTURED BY "HUMES CONCRETE MAY BE USED. 1, 2 & 3 ABOVE ALSO APPLY.



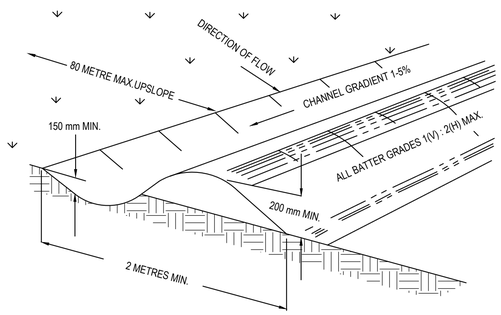
PERSPECTIVE VIEW



TYPICAL SECTION

TYPE 'D' & 'F' SEDIMENTATION BASIN

N.T.S.



NOTE: ONLY TO BE USED AS TEMPORARY BANK WHERE MAC.UPSLOPE LENGTH IS 80 METERS.

CATCH DRAIN CONSTRUCTION NOTES:

1. CONSTRUCT ALONG GRADIENT AS SPECIFIED.
2. MAXIMUM SPACING BETWEEN BANKS SHALL BE 80 METRES.
3. DRAINS TO BE OF PARABOLIC OR TRAPEZOIDAL CROSS SECTION NOT V-SHAPED.
4. EARTH BANKS TO BE ADEQUATELY COMPACTED IN ORDER TO PREVENT FAILURE.
5. CONSTRUCTION IS OF A TEMPRORARY NATURE AND SHALL BE COMPACTED AT THE END A DAYS WORK OR IMMEDIATELY PRIOR RAIN.
6. ALL OUTLETS FROM DISTURBED LANDS ARE TO FEED INTO SEDIMENT BASIN OR SIMILAR.
7. DISCHARGE RUNOFF COLLECTED FROM UNDISTURBED LANDS ONTO EITHER A STABILISED OR AN UNDISTURBED DISPOSAL AISTE WITHIN THE SAME SUBCATCHMENT AREA FROM WHICH THE WATER ORIGINATED.
8. COMPACT WITH A SUITABLE IMPLEMENT IN SITUATIONS WHERE THEY ARE REQUIRED TO FUNCTION FOR MORE THAN FIVE DAYS.
9. EARTH BANKS TO BE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT WILL IMPEDE NORMAL FLOW.

CATCH DRAINS

SCALE N.T.S.

SEDIMENT BASIN SIZING

1. THE SEDIMENT BASIN SHALL BE CONSTRUCTED ON A RATE PER HECTARE BASIS AND HAS BEEN IN ACCORDANCE WITH THE REQUIREMENTS OF THE LANDCOM MANUAL "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION", FOR SEDIMENTATION **TYPE D** SOILS. THE DISTURBED AREA WITHIN THIS CATCHMENT AT ANY ONE TIME SHOULD BE LIMITED TO AN AREA FOR WHICH EACH SEDIMENT BASIN CAN HANDLE. EACH BASIN SHALL BE SIZED IN ACCORDANCE WITH THE TABLE BELOW.

SEDIMENT BASIN SIZING TYPE D SOILS	
VOLUMETRIC RUNOFF COEFFICIENT, CV	0.51 (APPENDIX F - TABLE F2)
75TH PERCENTILE 5 DAY TOTAL RAINFALL DEPTH, R	32.2mm
CATCHMENT AREA, A	1 Ha (UNIT AREA)
SETTLING ZONE VOLUME (PER HECTARE) 10 CV A R	164.22 m^3
DISTURBED CATCHMENT AREA	1 Ha (UNIT AREA)
R K LS P C	264 m^3
SEDIMENT ZONE VOLUME (0.17 A (R K LS P C)/1.3	34.5 m^3 < 50% SETTLING VOL
TOTAL SEDIMENT BASIN VOLUME REQUIRED :	246.33 m^3/Ha

* (LANDCOM MANAGING URBAN STORMWATER MANUAL REFERENCE)

2. THE FOLLOWING DESIGN PARAMETERS HAVE BEEN ASSESSED FOR THE SITE:

CONSTRAINT	VALUE	(SOURCE)*
RAINFALL EROSIVITY (R-FACTOR)	2500	APPENDIX B - MAP 10
LENGTH/SLOPE GRADIENT FACTOR, LS	2.14	APPENDIX A - TABLE A1
SOIL ERODIBILITY (K-FACTOR)	0.038	(TABLE C19 - LUDDENHAM CL GROUP)
EROSION CONTROL PRACTICE FACTOR (P-FACTOR)	1.3 (COMPACTED)	APPENDIX A - TABLE A2
COVER FACTOR (C-FACTOR)	1.0 (DURING EARTHWORKS)	APPENDIX A - FIGURE A5
CALCULATED SOIL LOSS, A (RUSLE EQUATION)	264.22 t/Ha/YR	A = R K LS P C
SOIL HYDROLOGIC GROUP	GROUP C	APPENDIX C TABLE 19
SEDIMENT TYPE	TYPE D	APPENDIX C TABLE 19
75TH PERCENTILE 5-DAY RAINFALL EVENT	32.2mm (LIVERPOOL)	TABLE 6.3A

* (LANDCOM MANAGING URBAN STORMWATER MANUAL REFERENCE)

BASIN MANAGEMENT

1. THE CAPTURED STORMWATER IN THE SETTLING ZONE SHOULD BE DRAINED TO MEET THE MINIMUM STORAGE CAPACITY REQUIRED WITHIN A FIVE (5) DAY PERIOD FOLLOWING RAINFALL, PROVIDED THE ACCEPTABLE WATER QUALITY (NFR) AND TURBIDITY HAVE BEEN ACHIEVED.
2. CHEMICAL FLOCCULENT SUCH AS GYPSUM MAY BE DOSED TO AID SETTLING WITHIN 24 HOURS OF CONCLUSION OF EACH STORM. THE APPLIED DOSING RATES SHOULD ACHIEVE THE TARGET QUALITY WITHIN 36 TO 72 HOURS OF THE STORM EVENT.
3. INSPECT THE SEDIMENT BASINS AFTER EACH RAINFALL EVENT AND/OR WEEKLY. ENSURE THAT ALL SEDIMENT IS REMOVED ONCE THE SEDIMENT STORAGE ZONE IS FULL (REFER TO PEGS INSTALLED IN BASINS IN ACCORDANCE WITH THE SWMP). ENSURE THAT OUTLET AND EMERGENCY SPILLWAY WORKS ARE MAINTAINED IN A FULLY OPERATIONAL CONDITION AT ALL TIMES.

SOWING SEASON	SEED MIX
AUTUMN/WINTER	OATS@40KG/Ha + JAPANESE MILLET@10kg/Ha
SPRING/SUMMER	OATS@20kg/Ha + JAPANESE MILLET@20kg/Ha

4. THE LONG TERM GROUND COVER FACTORS FOR THE CONSTRUCTION WORKS IS NOT TO EXCEED THE FOLLOWING LIMITS:

LAND	MAXIMUM C-FACTOR	REMARKS
WATERWAYS AND OTHER AREAS OF CONCENTRATED FLOWS, POST CONSTRUCTION	0.05	APPLIES AFTER TEN WORKING DAYS OF COMPLETION OF FORMATION AND BEFORE CONCENTRATED FLOWS ARE APPLIED. FOOT AND VEHICULAR TRAFFIC IS PROHIBITED IN THIS AREA AND 70% GROUND COVER IS REQUIRED.
STOCKPILES, POST CONSTRUCTION	0.10	APPLIES AFTER TEN WORKING DAYS FROM COMPLETION OF FORMATION. 60% GROUND COVER IS REQUIRED.
ALL LANDS, INCLUDING WATERWAYS AND STOCKPILES, DURING CONSTRUCTION.	0.15	APPLIES AFTER 20 DAYS OF INACTIVITY, EVEN THOUGH WORKS MAY BE INCOMPLETE. 50% GROUND COVER IS REQUIRED.

ISSUED FOR APPROVAL

SURVEY INFORMATION
SURVEYED BY LANDPARTNERS
DATUM: AHD
ORIGIN OF LEVELS: SSM 192186 RL 79.008

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE	REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
02	ISSUED FOR SSDA	SC	NW	21.07.2022					
01	ISSUED FOR SSDA	SC	NW	20.04.2022					

Client: ESR
Architect: SBA ARCHITECTS

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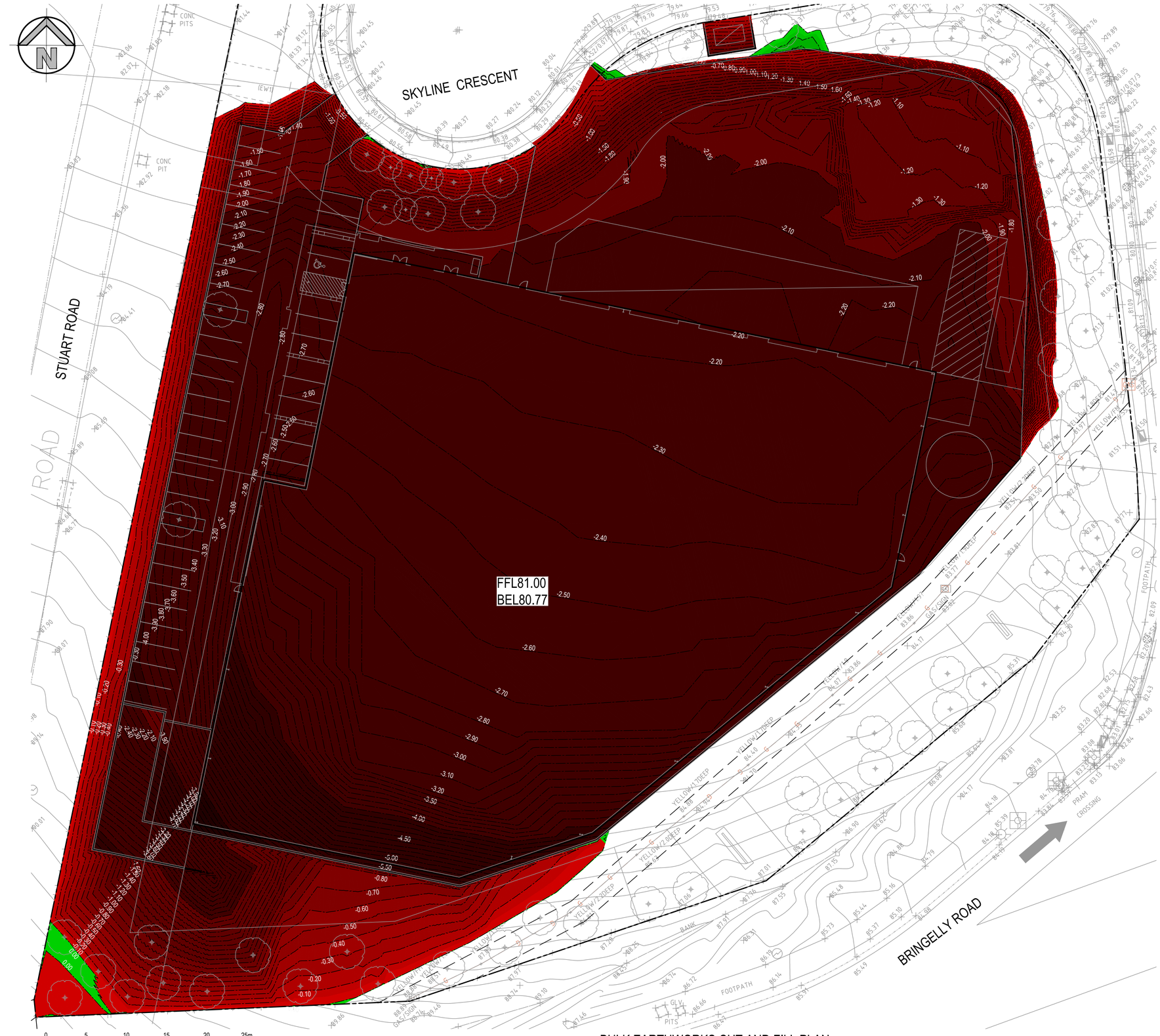
Project: PROPOSED WAREHOUSE DEVELOPMENT BRINGELLY ROAD, LEPPINGTON NSW

Title: SEDIMENT AND EROSION CONTROL TYPICAL DETAILS AND SECTIONS

Drawn	Designed	Date
S.Chen	N.Wetzlar	Feb 2022
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	1:250

Drawing number: 21U79_DA_SE02
Revision: 02



BULK EARTHWORKS CUT AND FILL PLAN

SCALE: 1:250

LEGEND

DEPTH OF CUT & FILL RANGE				
LOWER VALUE		UPPER VALUE		COLOUR
-8.00	to	-6.00	m	
-6.00	to	-4.00	m	
-4.00	to	-2.00	m	
-2.00	to	-1.00	m	
-1.00	to	-0.80	m	
-0.80	to	-0.60	m	
-0.60	to	-0.40	m	
-0.40	to	-0.20	m	
-0.20	to	-0.10	m	
-0.10	to	-0.05	m	
-0.05	to	0.00	m	
0.00	to	0.05	m	
0.05	to	0.10	m	
0.10	to	0.20	m	
0.20	to	0.40	m	
0.40	to	0.60	m	
0.60	to	0.80	m	
0.80	to	1.00	m	
1.00	to	2.00	m	
2.00	to	4.00	m	

LEGEND

-0.50 DEPTH CONTOURS BE

BULK EARTHWORKS QUANTITIES		
TOTAL AREA (10,310m²)		
CUT	22886	m³
FILL	2	m³
EXCESS OF CUT OVER FILL	22884	m³
EXCAVATION FOR RETAINING WALLS NOT INCLUDED IN CALCULATION		
EXCAVATION FOR SERVICE TRENCHES NOT INCLUDED IN CALCULATION		
VOLUME HAS BEEN CALCULATED AFTER STRIPPING THE SITE OF TOPSOIL - ASSUMED TOPSOIL DEPTH 100mm. STRIPPED MATERIAL NOT INCLUDED IN ABOVE QUANTITIES		

ISSUED FOR APPROVAL

SURVEY INFORMATION
SURVEYED BY LANDPARTNERS
DATUM: AHD
ORIGIN OF LEVELS: SSM 192186 RL 79.008

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
03	ISSUED FOR SSDA	SC	NW	29.07.2022
02	ISSUED FOR SSDA	SC	NW	21.07.2022
01	ISSUED FOR SSDA	SC	NW	20.04.2022

Client: ESR

Architect: SBA ARCHITECTS

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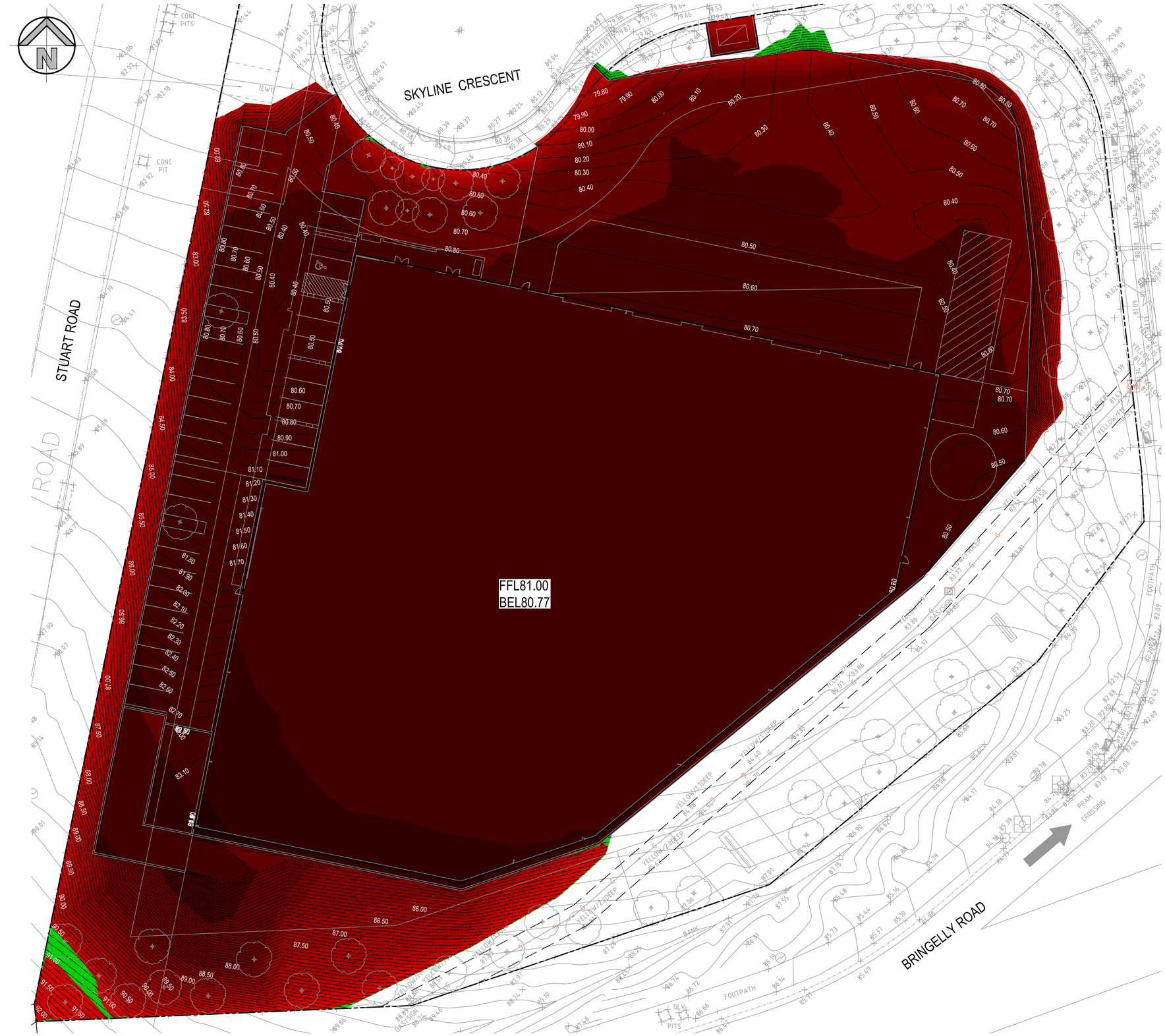
Project: PROPOSED WAREHOUSE DEVELOPMENT BRINGELLY ROAD, LEPPINGTON NSW

Title: BULK EARTHWORKS CUT AND FILL PLAN BULK DEPTH

Drawn	Designed	Date
S.Chen	N.Wetzlar	Feb 2022
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	1:250

Drawing number: 21U79_DA_BE02

Revision: 03



BULK EARTHWORKS CUT AND FILL PLAN

SCALE: 1:250

LEGEND

DEPTH OF CUT & FILL RANGE				
LOWER VALUE		UPPER VALUE		COLOUR
-8.00	to	-6.00	m	
-6.00	to	-4.00	m	
-4.00	to	-2.00	m	
-2.00	to	-1.00	m	
-1.00	to	-0.80	m	
-0.80	to	-0.60	m	
-0.60	to	-0.40	m	
-0.40	to	-0.20	m	
-0.20	to	-0.10	m	
-0.10	to	-0.05	m	
-0.05	to	0.00	m	
0.00	to	0.05	m	
0.05	to	0.10	m	
0.10	to	0.20	m	
0.20	to	0.40	m	
0.40	to	0.60	m	
0.60	to	0.80	m	
0.80	to	1.00	m	
1.00	to	2.00	m	
2.00	to	4.00	m	

LEGEND

81.00 CONTOURS BE

BULK EARTHWORKS QUANTITIES		
TOTAL AREA (10,310m²)		
CUT	22886	m³
FILL	2	m³
EXCESS OF CUT OVER FILL	22884	m³
EXCAVATION FOR RETAINING WALLS NOT INCLUDED IN CALCULATION		
EXCAVATION FOR SERVICE TRENCHES NOT INCLUDED IN CALCULATION		
VOLUME HAS BEEN CALCULATED AFTER STRIPPING THE SITE OF TOPSOIL - ASSUMED TOPSOIL DEPTH 100mm. STRIPPED MATERIAL NOT INCLUDED IN ABOVE QUANTITIES		

ISSUED FOR APPROVAL

SURVEY INFORMATION
SURVEYED BY LANDPARTNERS
DATUM: AHD
ORIGIN OF LEVELS: SSM 192186 RL 79.008

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
03	ISSUED FOR SSDA	SC	NW	29.07.2022
02	ISSUED FOR SSDA	SC	NW	21.07.2022
01	ISSUED FOR SSDA	SC	NW	20.04.2022

Client: ESR

Architect: SBA ARCHITECTS

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henry&hymas

Project: PROPOSED WAREHOUSE DEVELOPMENT BRINGELLY ROAD, LEPPINGTON NSW

Title: BULK EARTHWORKS CUT AND FILL PLAN BULK LEVEL

Drawn	Designed	Date
S.Chen	N.Wetzlar	Feb 2022
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	1:250

Drawing number: 21U79_DA_BE01

Revision: 03