

DOCUMENTATION OF
COASTAL PROTECTION WORKS
AT 1174 TO 1182 PITTWATER RD, NARRABEEN, NSW

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DRAWING LIST	
Sheet Number	Sheet Title
S01	GENERAL NOTES
S02	COASTAL PROTECTION WORKS PLAN
S03	LANDSCAPING PLAN
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S11	SECTION 2 (AT 1176)
S16	DEADMAN ANCHOR ALTERNATIVE
S20	ACCESS STAIRS

REFERENCE DOCUMENTS

1. SURVEY DRAWING PREPARED BY:
 DETAILED SURVEYS
 Ph. (02) 9913 9525
 REF No. 031/17
 DATED: 28 MAY 2017
2. GEOTECHNICAL REPORT BY
 JK GEOTECHNICS
 Ph. (02) 9888 5000
 REF No. 30005ZRprt
 DATED: 13 DEC 2016
3. PRE-2016 STORM PROFILES
 DERIVED FROM OEH PHOTOGRAMMETRIC DATA DATED
 5 APRIL 2016
4. POST-2016 STORM PROFILES
 DERIVED FROM UNSW WATER RESEARCH
 LABORATORY DATA
 DATED 10 JUNE 2016

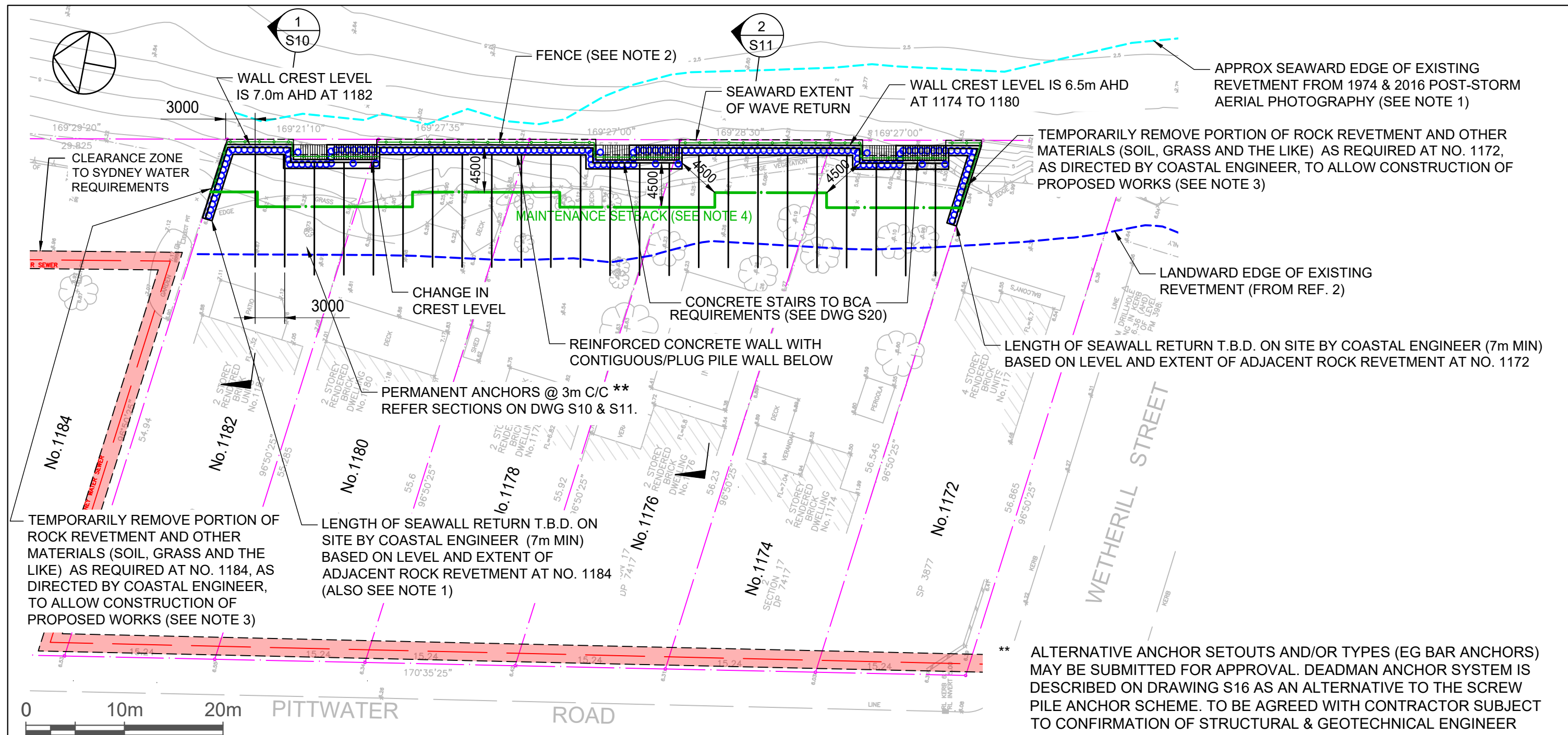
STRUCTURAL

- S1. ALL STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH AS 4100
- S2. ALL TIMBER STRUCTURES SHALL BE IN ACCORDANCE WITH AS 1720, AS 1684 AS REQUIRED
- S3. ALL PILING AND CONCRETE STRUCTURES SHALL BE IN ACCORDANCE WITH RELEVANT AUSTRALIAN STANDARDS

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BY	CHKD	DESCRIPTION	DATE	REV

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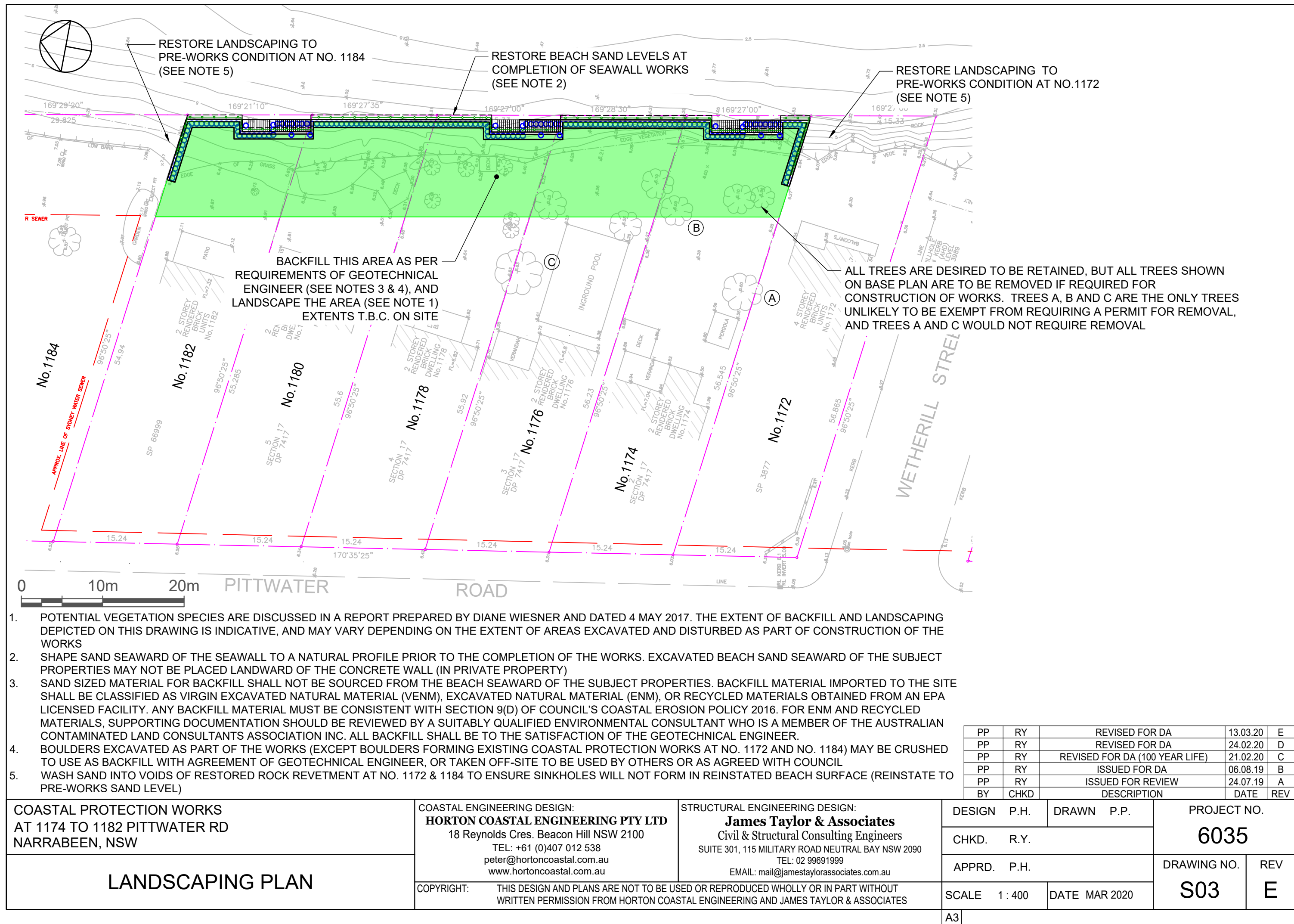


- ROCK REVETMENT WAS CONSTRUCTED AT No. 1184 AFTER 2016 STORM. EXTENT OF WORKS T.B.C. ON SITE.
- ALL FENCING AT THE TOP OF THE SEAWALL SHALL COMPLY WITH STATE ENVIRONMENTAL PLANNING POLICY (EXEMPT AND COMPLYING DEVELOPMENT CODES) 2008 AND BUILDING CODE OF AUSTRALIA (BCA)
- REINSTATE ROCK REVETMENT AND LAND AT NO. 1172 AND NO. 1184 TO PRE-WORKS CONDITION AS SOON AS POSSIBLE AFTER CONSTRUCTION OF SEAWALL AT NO. 1174 AND NO. 1182 RESPECTIVELY, AS DIRECTED BY COASTAL ENGINEER (ALSO SEE DWG S03)
- NO FUTURE STRUCTURES, EXCEPT READILY RELOCATABLE OR REMOVABLE STRUCTURES THAT DO NOT INTERRUPT VIEWS, ARE TO BE CONSTRUCTED SEAWARD OF THIS MAINTENANCE SETBACK LINE, TO ENABLE 4.5m OF CLEAR PASSAGE FOR CONSTRUCTION PLANT AS REQUIRED FOR FUTURE PROTECTION WORKS MAINTENANCE. THIS LINE IS THE RECOMMENDED MOST SEAWARD SETBACK FOR FUTURE DWELLINGS (SEE NOTE 5).
- FUTURE SETBACKS AND DEVELOPMENT TYPES ADOPTED ARE SUBJECT TO MERIT ASSESSMENT AGAINST OTHER PLANNING CONSIDERATIONS (INCLUDING VIEWS AND OVERSHADOWING) AND SPECIFIC ENGINEERING (COASTAL, STRUCTURAL AND GEOTECHNICAL) ADVICE (INCLUDING POTENTIAL IMPACTS ON THE PROTECTION WORKS)

** ALTERNATIVE ANCHOR SETOUTS AND/OR TYPES (EG BAR ANCHORS) MAY BE SUBMITTED FOR APPROVAL. DEADMAN ANCHOR SYSTEM IS DESCRIBED ON DRAWING S16 AS AN ALTERNATIVE TO THE SCREW PILE ANCHOR SCHEME. TO BE AGREED WITH CONTRACTOR SUBJECT TO CONFIRMATION OF STRUCTURAL & GEOTECHNICAL ENGINEER

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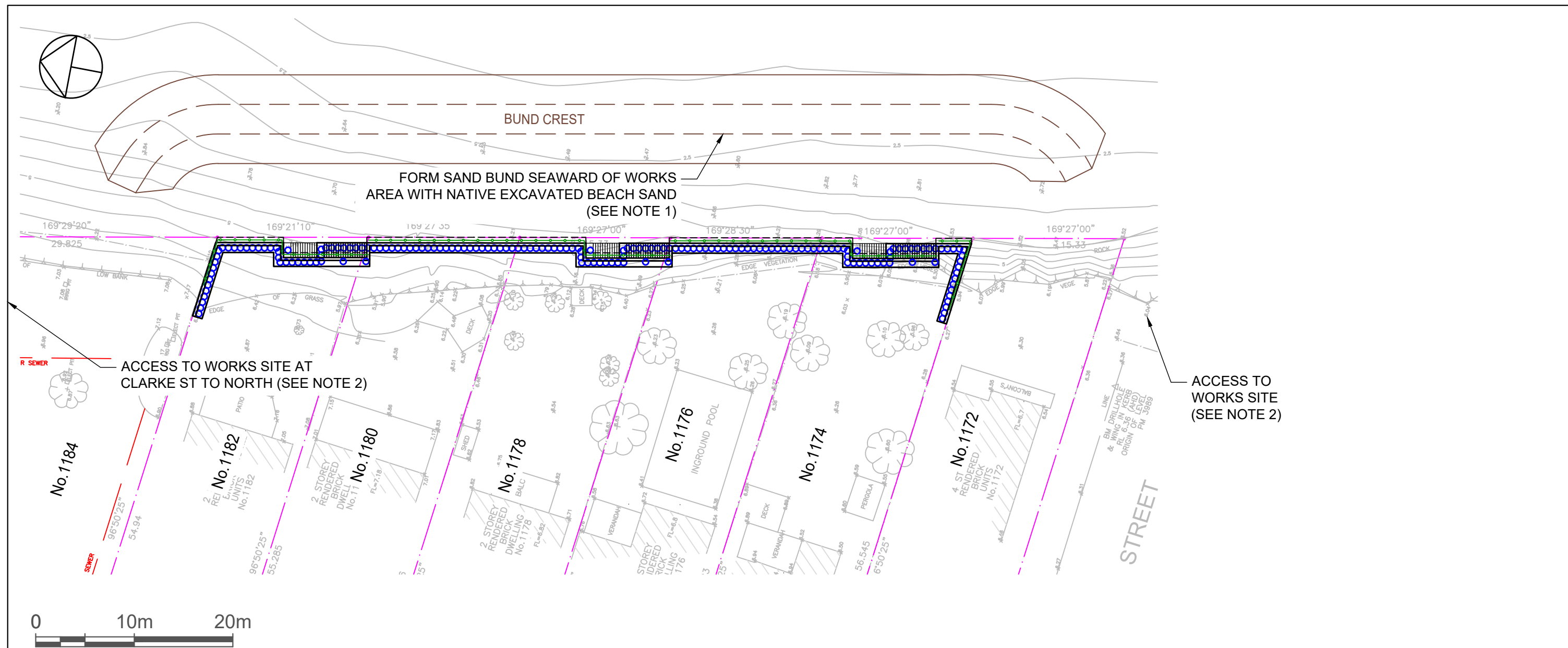


- POTENTIAL VEGETATION SPECIES ARE DISCUSSED IN A REPORT PREPARED BY DIANE WIESNER AND DATED 4 MAY 2017. THE EXTENT OF BACKFILL AND LANDSCAPING DEPICTED ON THIS DRAWING IS INDICATIVE, AND MAY VARY DEPENDING ON THE EXTENT OF AREAS EXCAVATED AND DISTURBED AS PART OF CONSTRUCTION OF THE WORKS
- SHAPE SAND SEAWARD OF THE SEAWALL TO A NATURAL PROFILE PRIOR TO THE COMPLETION OF THE WORKS. EXCAVATED BEACH SAND SEAWARD OF THE SUBJECT PROPERTIES MAY NOT BE PLACED LANDWARD OF THE CONCRETE WALL (IN PRIVATE PROPERTY)
- SAND SIZED MATERIAL FOR BACKFILL SHALL NOT BE SOURCED FROM THE BEACH SEAWARD OF THE SUBJECT PROPERTIES. BACKFILL MATERIAL IMPORTED TO THE SITE SHALL BE CLASSIFIED AS VIRGIN EXCAVATED NATURAL MATERIAL (VENM), EXCAVATED NATURAL MATERIAL (ENM), OR RECYCLED MATERIALS OBTAINED FROM AN EPA LICENSED FACILITY. ANY BACKFILL MATERIAL MUST BE CONSISTENT WITH SECTION 9(D) OF COUNCIL'S COASTAL EROSION POLICY 2016. FOR ENM AND RECYCLED MATERIALS, SUPPORTING DOCUMENTATION SHOULD BE REVIEWED BY A SUITABLY QUALIFIED ENVIRONMENTAL CONSULTANT WHO IS A MEMBER OF THE AUSTRALIAN CONTAMINATED LAND CONSULTANTS ASSOCIATION INC. ALL BACKFILL SHALL BE TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER.
- BOULDERS EXCAVATED AS PART OF THE WORKS (EXCEPT BOULDERS FORMING EXISTING COASTAL PROTECTION WORKS AT NO. 1172 AND NO. 1184) MAY BE CRUSHED TO USE AS BACKFILL WITH AGREEMENT OF GEOTECHNICAL ENGINEER, OR TAKEN OFF-SITE TO BE USED BY OTHERS OR AS AGREED WITH COUNCIL
- WASH SAND INTO VOIDS OF RESTORED ROCK REVETMENT AT NO. 1172 & 1184 TO ENSURE SINKHOLES WILL NOT FORM IN REINSTATED BEACH SURFACE (REINSTATE TO PRE-WORKS SAND LEVEL)

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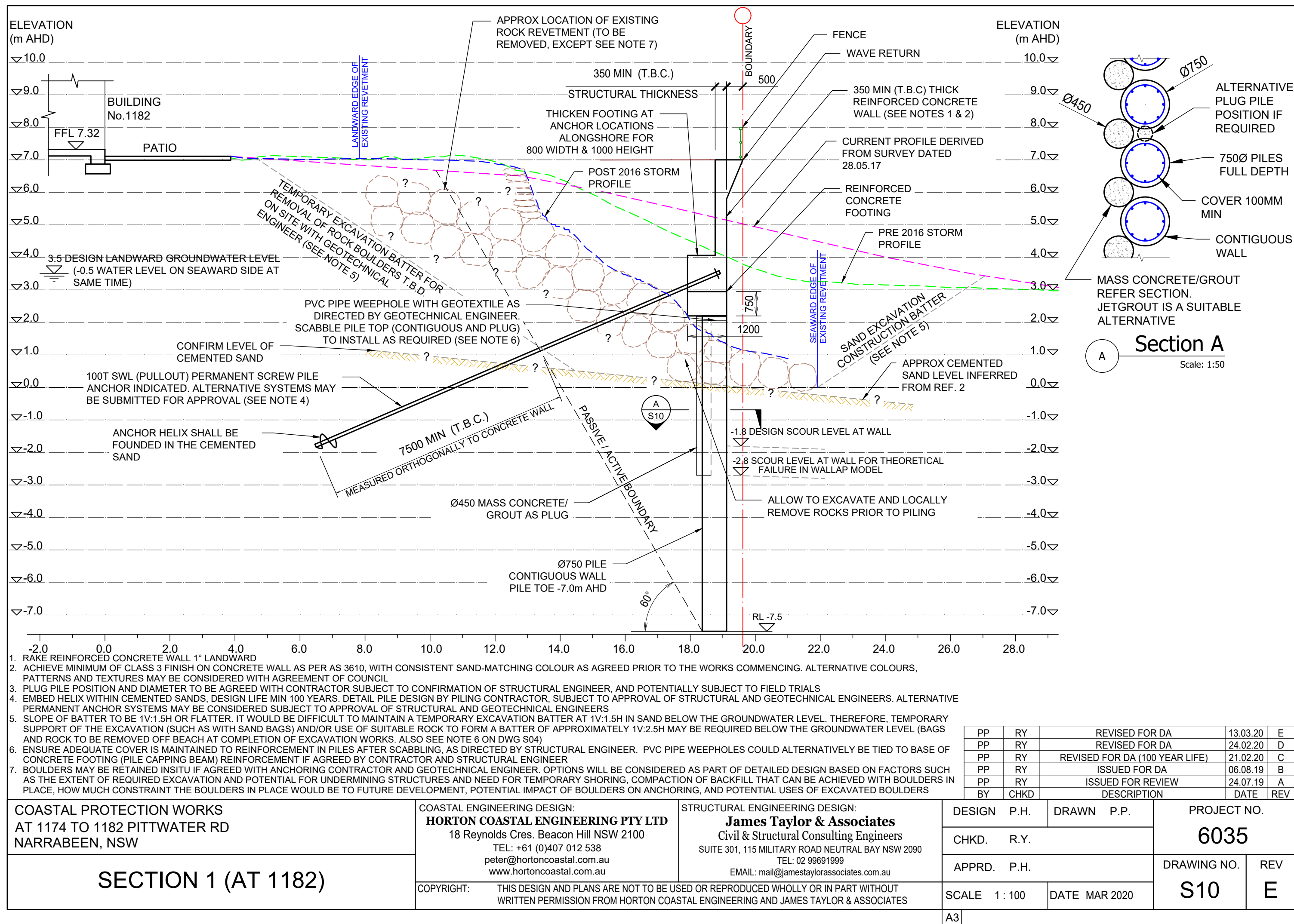
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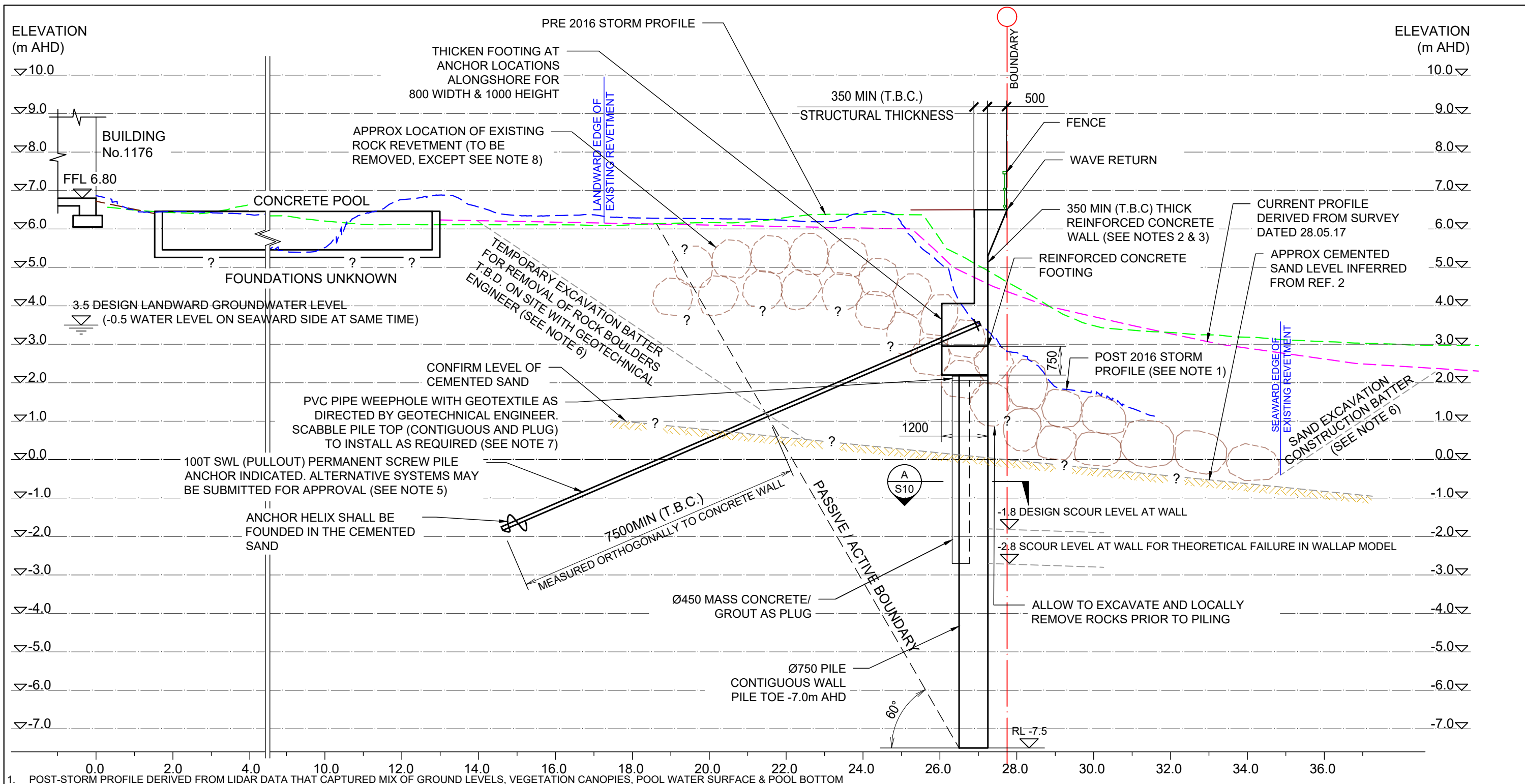


1. BUND MAY BE FORMED OVER A PORTION OR OVER THE ENTIRETY OF THE WORKS AREA DEPENDING ON CONSTRUCTION PROGRAM AND WAVE AND WATER LEVEL CONDITIONS, AS DIRECTED BY COASTAL ENGINEER OR CONTRACTOR (SUBJECT TO COUNCIL APPROVAL THROUGH "WORKING ON AND ACCESS TO RESERVES PERMIT"). BUND IS TO BE REMOVED, WITH SAND SHAPED TO A NATURAL PROFILE, PRIOR TO COMPLETION OF THE WORKS
2. ACCESS TO WORKS SITE WILL BE VIA WETHERILL STREET AND/OR CLARKE STREET, AS AGREED BETWEEN CONTRACTOR AND COUNCIL. IF WRITTEN AUTHORISATION IS OBTAINED FROM OWNERS OF NO. 1172 AND 1184, THEN SEAWARD PORTIONS OF THESE PROPERTIES MAY ALSO BE USED FOR ACCESS (WITH ALL ACCESSED AREAS RESTORED TO PRE-WORKS CONDITION BEFORE COMPLETION OF WORKS)
3. RUBBLE AND OTHER MATERIALS OR WASTE THAT WOULD BE UNSUITABLE ON A BEACH ARE TO BE SEPARATED AND STOCKPILED WHERE ENCOUNTERED DURING EXCAVATION (POTENTIALLY TO BE REUSED, SEE NOTE 8). EXCAVATED (LARGER FRACTION) ROCK BOULDERS MAY BE TEMPORARILY PLACED ON BEACH, ON LANDWARD SIDE OF BUND, AS DIRECTED BY COASTAL ENGINEER, TO PROVIDE SOME PROTECTION TO EXCAVATED WORKS AREA
4. ALL DELETERIOUS MATERIALS AND EQUIPMENT THAT COULD BE DAMAGED ARE TO BE REMOVED FROM WORK AREA IF BUND CANNOT BE MAINTAINED DUE TO ELEVATED WAVES AND WATER LEVELS. WORKS IN BEACH AREA MAY NEED TO TEMPORARILY CEASE UNDER THESE CONDITIONS
5. ALL MATERIAL STOCKPILES ARE TO BE LOCATED LANDWARD OF THE EXISTING EROSION ESCARPMENT. ANY STOCKPILE LOCATIONS ON COUNCIL LAND ARE TO BE AGREED BETWEEN COUNCIL AND CONTRACTOR
6. WHEN RESTORING BEACH SAND LEVELS AT THE COMPLETION OF THE SEAWALL WORKS, SCREENING IS TO BE UNDERTAKEN TO REMOVE RUBBLE, ROCK FRAGMENTS AND OTHER MATERIALS THAT WOULD BE UNSUITABLE ON A BEACH
7. ANY WASTE MATERIALS SHALL BE DISPOSED OF AT AN APPROPRIATE WASTE MANAGEMENT FACILITY OFF SITE
8. WASTE AND RUBBLE MATERIALS MAY BE BURIED LANDWARD OF THE WALL AS AGREED BY GEOTECHNICAL ENGINEER, SUBJECT TO A WASTE CLASSIFICATION UNDERTAKEN BY A SUITABLY QUALIFIED ENVIRONMENTAL CONSULTANT (WHO IS A MEMBER OF THE AUSTRALIAN CONTAMINATED LAND CONSULTANTS ASSOCIATION INC). ALSO SEE NOTE 3 ON DWG S03
9. WHERE DEWATERING IS UNDERTAKEN, WATER SHALL BE PUMPED INTO A SAND 'SUMP' AND NOT DISCHARGED DIRECTLY TO THE SEA

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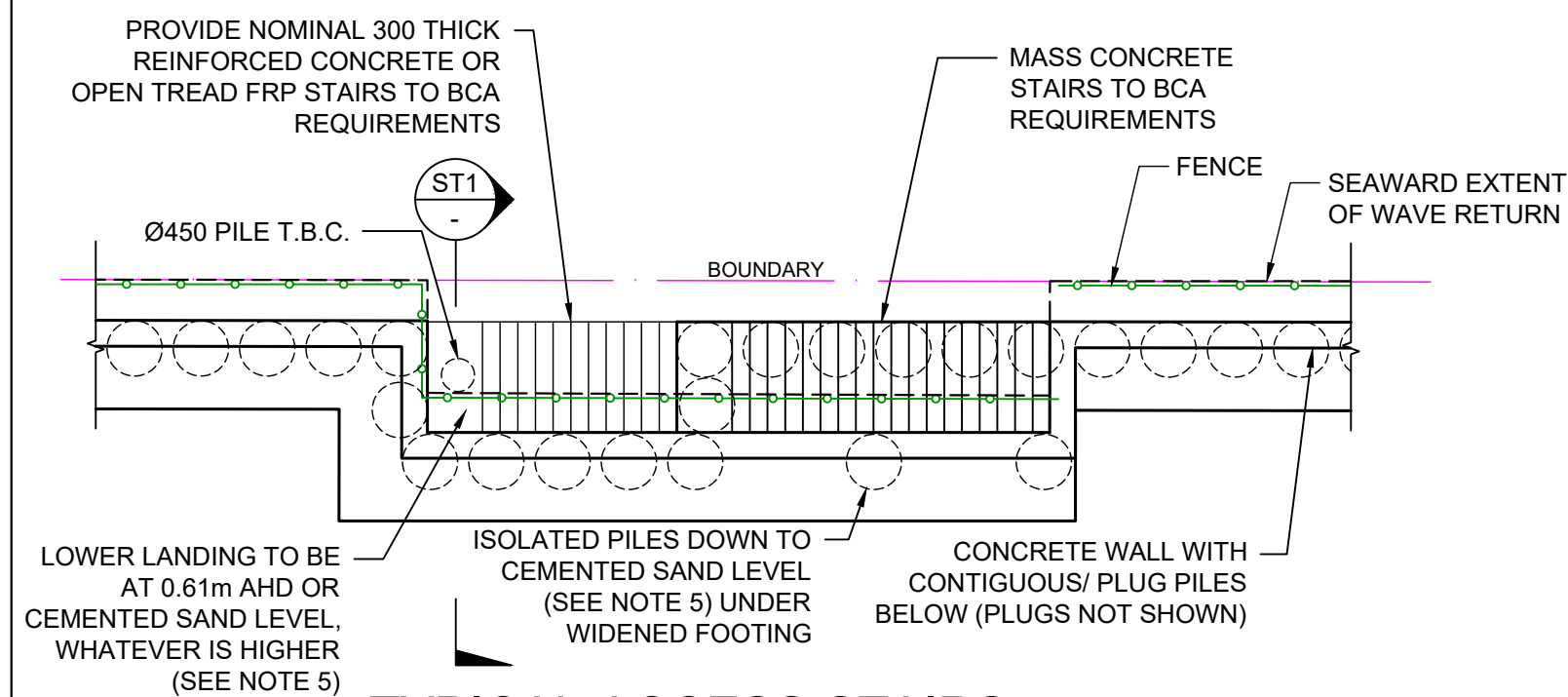
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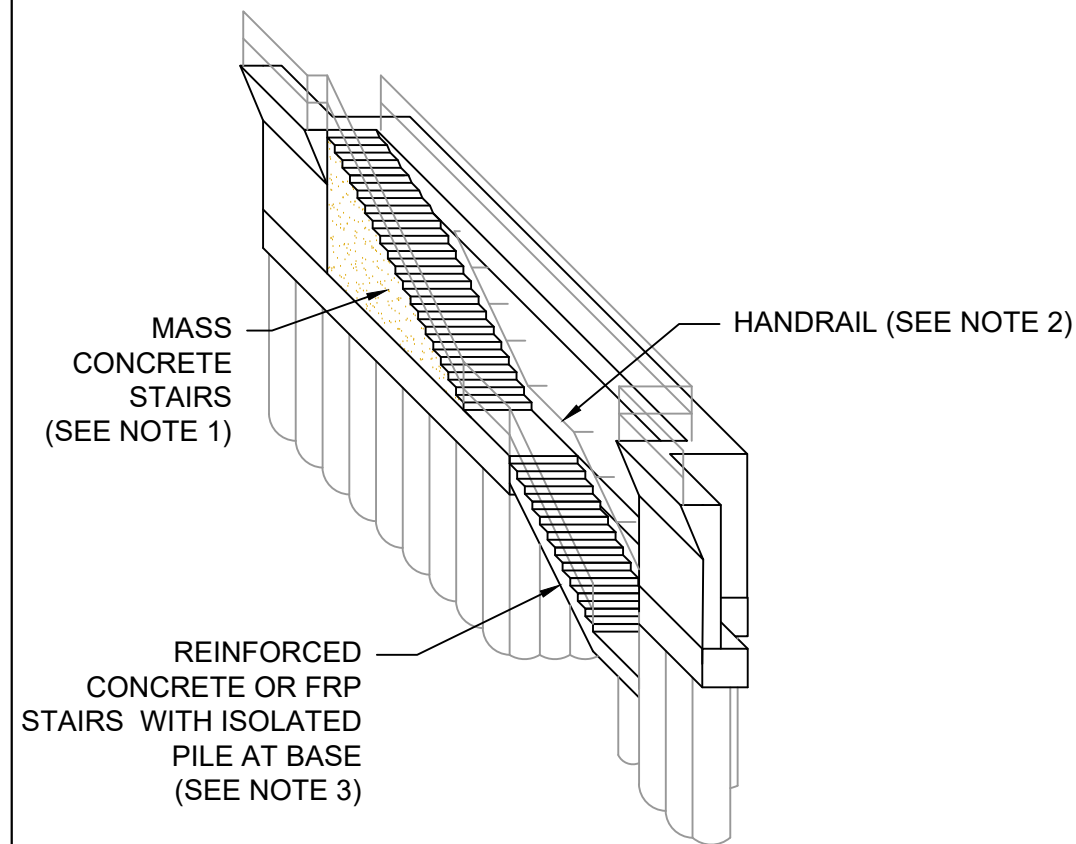
SECTION 2 (AT 1176)

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TYPICAL ACCESS STAIRS

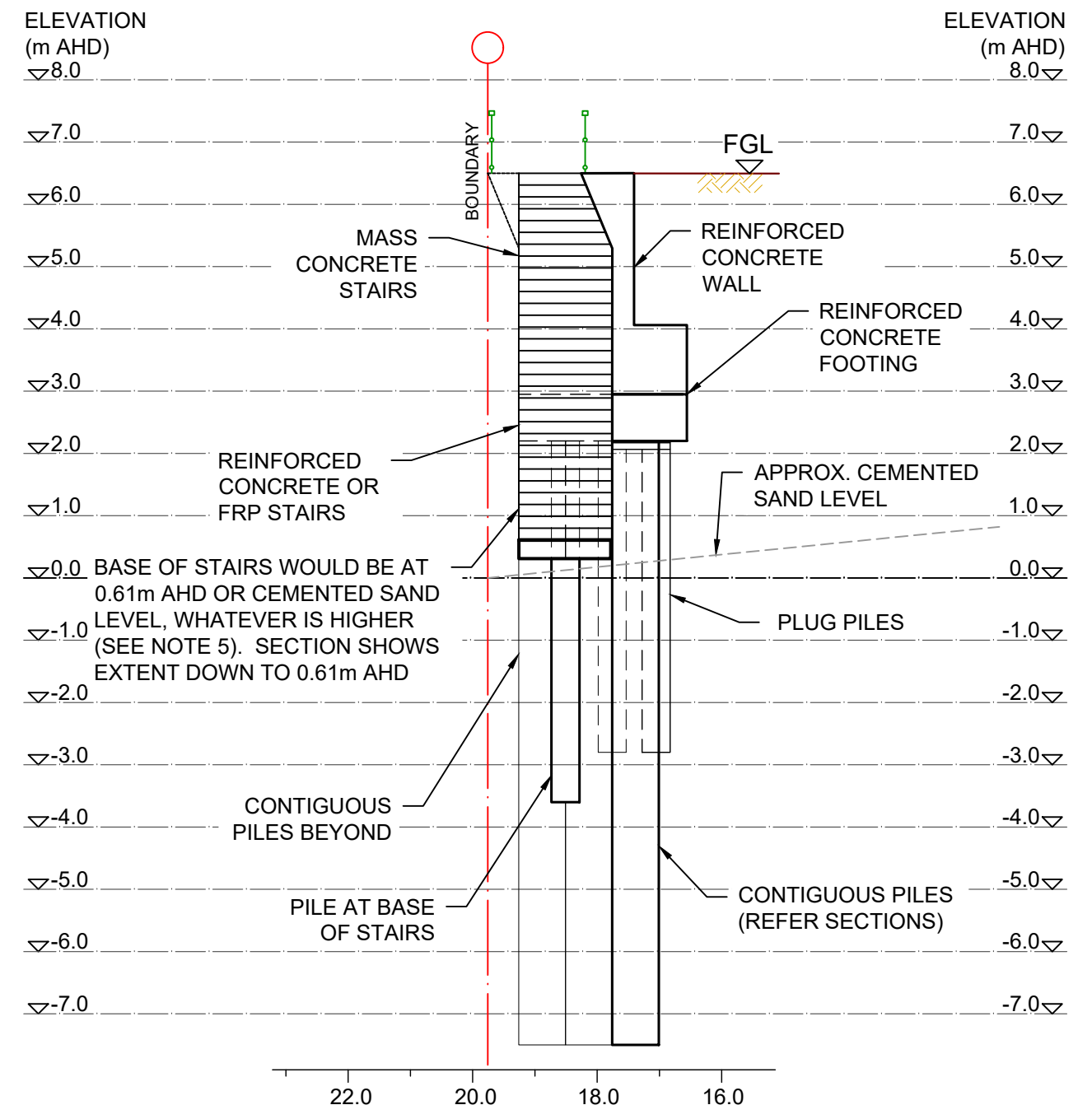
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TYPICAL 3D VIEW OF STAIRS

NTS (SEE NOTE 4)

1. BARRIERS ON SEAWARD SIDE OF MASS CONCRETE STAIRS SHALL COMPLY WITH BUILDING CODE OF AUSTRALIA (BCA)
2. HANDRAILS ON LANDWARD SIDE OF MASS CONCRETE STAIRS SHALL COMPLY WITH BCA
3. BARRIERS ON EACH SIDE OF REINFORCED CONCRETE OR FRP STAIRS SHALL COMPLY WITH BCA
4. FORM STAIRS TO BE COMPLIANT WITH BCA
5. CEMENTED SAND LEVEL TO BE CONFIRMED BY COASTAL ENGINEER



ST1
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