PROPOSED RESIDENCE
LOT. 128 NO. 20 CORIDALE BOULEVARD, LARA

DWG No.	DESCRIPTION
S00	COVER SHEET
S01	GENERAL NOTES
S02	GROUND FLOOR SLAB PLAN
S03	WAFFLE SLAB SCHEDULE & NOTES
S04	FOOTING DETAILS - SHEET 1
S05	FOOTING DETAILS - SHEET 2
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S09	ARTICULATION JOINT PLAN
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S11	DRAINAGE LAYOUT PLAN
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REV.	REMARK/COMMENT	DATE:	APPR.
01	CONSTRUCTION ISSUE	20.10.21	

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PROJECT
PROPOSED RESIDENCE
LOT. 128 NO. 20 CORIDALE BOULEVARD
LARA

CLIENT
HERMITAGE HOMES PTY LTD

CONSTRUCTION ISSUE

DRAWING
COVER SHEET

169446	ENGINEER:P.R	DRAWN:X.M.	REV
	SHEET NO. S00	NO. OF SHEETS 15	01

TEMPLATE: SH-TEMPLATE-RESI&MD[B]

GENERAL NOTES

GENERAL

G1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANT'S DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCY SHALL BE REFERRED TO THE ENGINEER OR ARCHITECT BEFORE PROCEEDING WITH THE WORK.
G2. ALL DIMENSIONS ARE TO BE OBTAINED FROM THE ARCHITECT'S DRAWINGS OR FROM SITE. ENGINEER'S DRAWINGS MUST NOT BE SCALED.
G3. DURING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STRUCTURE IN A STABLE CONDITION AND ENSURING NO PART SHALL BE OVERSTRESSED UNDER CONSTRUCTION ACTIVITIES.
G4. MATERIAL AND WORKMANSHIP ARE TO BE IN ACCORDANCE WITH THE RELEVANT SAA CODES, BCA/NCC REQUIREMENTS UNLESS OTHERWISE NOTED IN THE PROJECT SPECIFICATION.
G5. THE APPROVAL OF A SUBSTITUTION BY THE ENGINEER IS NOT AN AUTHORIZATION FOR AN EXTRA. ANY EXTRA INVOLVED MUST BE TAKEN UP WITH THE ARCHITECT BEFORE WORK COMMENCES.
G6. THE STRUCTURAL WORK SHOWN ON THESE DRAWINGS HAS BEEN DESIGNED FOR THE FOLLOWING LIVE LOADS:-

AREA	LIVE LOAD
FLOOR	1.5 kPa
ROOF	0.25 KPa 'OR' (1.8/A + 0.12) WHICHEVER IS GREATER
BALCONY (IF APPLICABLE)	2.0 kPa
GARAGE (IF APPLICABLE)	2.5 kPa

G7. FOUNDATION MATERIAL TO BE APPROVED BEFORE POURING CONCRETE FOR A SAFE BEARING CAPACITY OF: 50kPa.....WAFFLE SLAB
100kPa.....STRIP FOOTING
G8. ALL DETAILS SHOWN IN INTRAX'S DRAWING SETS ARE FOR STRUCTURAL PURPOSES ONLY. THE ARCHITECT AND BUILDER MUST ENSURE ALL CONSTRUCTION REQUIREMENTS SET BY THE BCA/NCC ARE MET. THIS OFFICE SHOULD BE CONTACTED IF ANY CLARIFICATION IS REQUIRED.

STRUCTURAL STEELWORK

S1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 1250 AND/OR AS4100.
S2. WELDING SHALL BE PERFORMED BY AN EXPERIENCED OPERATOR IN ACCORDANCE WITH AS 1554.
S3. HIGH STRENGTH BOLTING SHALL BE IN ACCORDANCE WITH AS 1511.
S4. TWO COPIES OF THE SHOP DETAIL DRAWINGS ARE TO BE SUBMITTED TO THE ENGINEERS AND APPROVAL OF SAME OBTAINED BEFORE COMMENCING FABRICATION. APPROVAL WILL NOT COVER DIMENSIONS OR LAYOUT.
S5. THE CONTRACTOR SHALL PROVIDE AND LEAVE IN PLACE UNTIL PERMANENT BRACING ELEMENTS ARE CONSTRUCTED SUCH TEMPORARY BRACING AS IS NECESSARY TO STABILIZE THE STRUCTURE DURING ERECTION.
S6. CAMBER TO STRUCTURAL STEEL ROOF BEAMS, TRUSSES, PORTALS, ETC.,TO BE 2mm FOR EVERY 1M OR SPAN UNLESS OTHERWISE NOTED.
S7. ALL CLEAT AND DRILLING FOR FIXING OF TIMBER MEMBERS, ETC., TO BE PROVIDED BY FABRICATOR.
S8. EXCEPT WHERE OTHERWISE SHOWN CONNECTIONS SHALL HAVE 6mm CONTINUOUS FILLET WELDS, 2-M16 8.8/S BOLTS IN 1.5mm CLEARANCE HOLES AND 10mm THICK CLEAT PLATE.
S9. CONCRETE ENCASED STEELWORK SHALL BE WRAPPED WITH SLAB FABRIC, UNLESS OTHERWISE SHOWN.
S10. STEELWORK SHALL BE THOROUGHLY WIRE BRUSHED AND GIVEN ONE SHOP COAT OF APPROVED PRIMER EXCEPT THAT NONE SHALL BE APPLIED AT CONTACT SURFACES WHERE H.S. BOLTS USED.
S11. ALL STEEL BEAMS AND LINTELS ARE TO HAVE 100mm MIN. END BEARING UP TO 1.0m & 150mm MIN. END BEARING OVER 1.0m, UNLESS OTHERWISE NOTED.
S12. STEEL FRAMING MUST BE PROTECTED FROM CORROSION WHERE REQUIRED IN ACCORDANCE WITH CURRENT BCA 3.4.2.2

CONCRETE

C1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600.
C2. CONCRETE COVER TO ALL REINFORCEMENT (FINISHES NOT INCLUDED).

ELEMENT	FORMED AND SHELTERED	FORMED AND EXPOSED	NO FORM WORK
SLABS AND WALLS	20mm	30mm	65mm
BEAMS	25mm	40mm	65mm
COLUMNS	40mm	50mm	75mm
FOOTINGS		65mm	75mm

C3. CONCRETE SIZES SHOWN DO NOT INCLUDE FINISH AND MUST NOT BE REDUCED OR HOLED IN ANY WAY WITHOUT THE ENGINEER APPROVAL.
C4. DEPTHS OF BEAMS ARE GIVEN FIRST AND INCLUDE SLAB THICKNESS.
C5. CONSTRUCTION JOINTS WHERE NOT SHOWN SHALL BE PROPERLY FORMED AND LOCATED TO THE APPROVAL OF THE ENGINEER.
C6. REINFORCEMENT IS SHOWN DIAGRAMMATICALLY AND NOT NECESSARILY IN TRUE PROJECTION.
C7. SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN POSITIONS SHOWN. WELDING OF REINFORCEMENT WILL NOT BE PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS.
C8. REINFORCEMENT SYMBOLS:-
L LOW DUCTILITY BARS TO AS 4671 : 2001
N NORMAL DUCTILITY BARS TO AS 4671 : 2001
E SEISMIC (EARTHQUAKE) DUCTILITY BAR TO AS 4671 : 2001
THE NUMBER FOLLOWING THE BAR SYMBOL IS THE NOMINAL BAR DIAMETER IN MILLIMETRES.
C9. CAMBER TO BEAMS AND SLABS SHALL BE 2mm FOR EVERY 1M OF SPAN UNLESS OTHERWISE NOTED.
C10. ALL CONCRETE SHALL BE GRADE 20MPa - 100mm SLUMP (U.N.O.)
C11. ALL REINFORCEMENT SHALL BE SUPPORTED IN ITS CORRECT POSITION SO AS NOT TO BE DISPLACED DURING CONCRETING ON APPROVED BAR CHAIRS AT 1.0m MAX CRS BOTH WAYS. WHERE REQUIRED PROVIDE SUPPORT BARS N16 AT 1.0M MAX CRS.
C12. CONCRETE TO BE KEPT FREE OF SUPPORTING BRICKWORK BY TWO LAYERS OF A SUITABLE MEMBRANE (MALTHOID, ETC.), OR AS DIRECTED BY THE ENGINEER. VERTICAL FACES OF CONCRETE TO BE KEPT FREE BY 10mm THICKNESS OF BITUMINOUS CANITE.
C13. WHERE WALLS ARE NON-LOAD BEARING AT EITHER HORIZONTAL OR VERTICAL FACES THEY SHALL BE SEPARATED FROM CONCRETE OR BRICKWORK BY 10mm THICK CANITE.
C14. ALL REINFORCEMENT FOR ANY ONE POUR SHALL BE COMPLETELY PLACED AND TIED PRIOR TO INSPECTION BY THE ENGINEER OR ARCHITECT. NO CONCRETE SHALL BE POURED UNTIL REINFORCEMENT HAS BEEN INSPECTED AND APPROVED.
C15. WHERE SLABS AND BEAMS ARE TO SUPPORT BRICKWORK OVER, FORMWORK AND PROPS MUST BE REMOVED BEFORE COMMENCEMENT OF BRICKWORK.
C16. TRENCH MESH IN BEAMS TO BE LAID CONTINUOUSLY WITH EACH LAYER BEING LAPPED FOR ITS FULL WIDTH AT INTERSECTIONS AND FOR A MINIMUM OF 500mm AT SPLICES. THE TRENCH MESH SHALL BE OVERLAPPED BY THE WIDTH OF THE FABRIC AT T & L JUNCTIONS.
C17. AS A GENERAL POLICY, INTRAX DO NOT RECOMMEND THE USE OF POLISHED CONCRETE. THE OWNER SHOULD BE MADE AWARE BY THE BUILDING DESIGNER AND BUILDER THAT CONCRETE IS A NATURAL MATERIAL AND THE POSSIBILITY OF SURFACE CRACK FORMATION MAY OCCUR AND CANNOT BE GUARANTEED EITHER IN THE SHORT OR LONG TERM, WE HIGHLY RECOMMEND CURING THE SLAB USING AN APPROVED CURING SPRAYED MEMBRANE.
C18. WHEN NEW FOOTING IS ABUTTED TO THE ADJACENT STRUCTURES OF NEIGHBOURING BUILDING AT BOUNDARY, A MINIMUM OF 10mm THICK "ABLEFLEX" (OR APPROVED EQUIVALENT) MUST BE PLACED BETWEEN STRUCTURES (UNLESS OTHERWISE NOTED ON ENGINEERING DRAWINGS TYPICAL)

BRICKWORK

B1. THE UNCONFINED COMPRESSIVE STRENGTH OF A BRICK UNIT TO BE MIN. OF 15MPa AND COMPRESSIVE STRENGTH OF MASONRY TO BE A MIN. OF 5.4 MPa
B2. THE MORTAR MIX FOR BRICKWORK SHALL BE 1:1:6
B3. FOR NON-LOAD BEARING WALLS SEE NOTE C13.
B4. ARTICULATION (OR EXPANSION) JOINT SPACING MUST BE IN ACCORDANCE WITH AS4773.1 - 2015, AS4773.2 - 2015 & TECHNICAL NOTE 61 (AUG 2008) FOR ARTICULATED WALLING UNLESS NOTED OTHERWISE.
B5. ALL WALL TIES MUST BE GALVANISED.

STRUCTURAL TIMBER

T1. ALL TIMBER FRAMING IS TO BE IN ACCORDANCE WITH AS 1684-2010 RESIDENTIAL TIMBER FRAMED CONSTRUCTION.
T2. ALL TIMBER STRESS GRADES NOMINATED SHALL BE IN ACCORDANCE WITH THE RELEVANT CODES AND MEANS THE STRUCTURAL QUALITY OF A TIMBER SECTION (REFER TO AS 1720).
T3. TIMBER SHALL BE STORED AND HANDLED SO AS NOT TO BE DETRIMENTAL TO THEIR PERFORMANCE OR DAMAGE THEM. REFER APPENDIX H AS 1684-2:2010
T4. ALL TIMBER SHALL BE DRY, IE: LESS THAN 15% MOISTURE CONTENT AT THE TIME OF CONSTRUCTION AND SHALL BE PROTECTED AND/OR TREATED AS NOTED.
T5. ALL TIMBER BEAMS AND LINTELS ARE TO BEAR ON DOUBLE STUDS (ONE JAMB AND ONE BEARING STUD), UNLESS OTHERWISE NOTED.
T6. BEAMS/STUDS HAVING MORE THAN 1 MEMBER TO BE NAIL LAMINATED TOGETHER IN ACCORDANCE WITH AS 1684-2010.
T7. ALL EXPOSED TIMBER TREATMENT MUST BE IN ACCORDANCE WITH EXPOSURE CLASSIFICATION AS1684.2 TABLE B1, MINIMUM H3 TREATED OR DURABLE SPECIES TO BE ADOPTED TYPICAL U.N.O.

FRAMING

F1. PROVIDE SOLID BLOCKING (45 WIDE x D-25 DEEP) SECURELY NAILED TO JOISTS/RAFTERS (D=DEPTH OF JOIST/RAFTER) AT 1800 MAX. CRS.
F2. ALL EXTERNAL OR EXPOSED STEELWORK TO BE HOT DIP GALVANISED.
F3. WATERPROOFING TO ARCHITECTS DETAILS.
F4. ALL TIMBER FRAMING & BRACING NOT SHOWN SHALL COMPLY WITH AS1684-2010 RESIDENTIAL TIMBER FRAMED CONSTRUCTION.
F5. ALL BRICKWORK LINTELS TO ARCHITECTS DETAILS. ALL BRICKWORK LINTELS TO COMPLY WITH F.3.3.3.5 OF CURRENT BCA VOLUME 2.
F6. ALL BEAMS/GIRDER & HIP TRUSSES TO BE SUPPORTED ON DOUBLE STUDS EACH END U.N.O.
F7. ALL LINTELS TO BE SUPPORTED ON SINGLE STUD AND JAMB STUD U.N.O.
F8. ALL TRUSSES & WALL FRAMES TO MANUFACTURER'S DESIGN & DETAILS.
F9. TRUSS DIRECTION ASSUMED AS SHOWN (IF APPLICABLE). CONTACT THIS OFFICE IF DIFFERENT TRUSS LAYOUT IS USED SO LINTELS ETC CAN BE REDESIGNED (IF REQUIRED).
F10. ALL TIMBER LINTELS TO BE DESIGNED BY THE TRUSS MANUFACTURER. TYPICAL U.N.O
F11. BUILDER TO SUPPLY MANUFACTURERS TRUSS LAYOUT TO THIS OFFICE FOR APPROVAL PRIOR TO CONSTRUCTION. TRUSS DESIGN MUST BE IN ACCORDANCE WITH AS1720 AND AS1684. TRUSS FABRICATOR/BUILDER IS RESPONSIBLE FOR PROVIDING ADEQUATE ROOF/WALL BRACING TO ENSURE STABILITY OF THE STRUCTURE IN ACCORDANCE TO AS1684.
F12. ALL INTERNAL WALLS TO BE NON-LOAD BEARING (TYPICAL) UNLESS HATCHED OTHERWISE ON PLANS.

INSPECTIONS

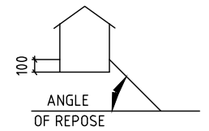
ALL STRUCTURAL WORK MUST BE INSPECTED AND APPROVED IN WRITING PRIOR TO ANY WORK PROCEEDING. 48 HOUR MIN. NOTICE IS REQUIRED FOR ALL INSPECTIONS.

SITE DRAINAGE

D1. AT THE TIME OF THE PREPARATION OF THIS DOCUMENT, IF THE DRAINAGE DESIGN WAS NOT PREPARED OR CERTIFIED BY THIS OFFICE THEN THE DRAINAGE SYSTEM MAY NEED TO BE DOCUMENTED BY A SUITABLY QUALIFIED PERSON TO COMPLY WITH AS2870-2011. THE DRAINAGE DESIGNER SHOULD ENSURE THAT THE ELEMENTS OF THE DRAINAGE SYSTEM DESIGN ARE CONSIDERED WITH RESPECT TO THE PROPOSED FOOTING SYSTEM.WE RECOMMEND THAT INTRAX CONSULTING ENGINEERS OR AN EQUIVALENT CERTIFIED PRACTITIONER, REVIEW ALL THE DOCUMENTATION TO ENSURE COMPLIANCE.
D2. SITES SHOULD BE DRAINED SO THAT WATER CANNOT POND AGAINST OR NEAR THE HOUSE. THE GROUND IMMEDIATELY ADJACENT TO THE HOUSE SHOULD BE GRADED TO FALL 50mm OVER THE FIRST METRE.WHERE THIS IS IMPRACTICABLE (IE: ON SEVERAL SLOPING SITES) USE A.G. DRAINS ADJACENT TO FOOTINGS WHERE THE GROUND FALLS TOWARDS THE BUILDING.

FOOTING: ANGLE OF REPOSE

A1. FOOTING MUST NOT UNDERMINE EXISTING FOOTING OR BE UNDERMINED BY PROPOSED EXCAVATION.
A2. ENSURE ADEQUATE ANGLE OF REPOSE AT ALL TIMES (REFER DETAILS BELOW).
A3. NOTIFY THIS OFFICE IF FOOTING UNDERMINE OCCURS.
A4. PIPE DEPTH & LOCATION MUST BE CONFIRMED PRIOR TO CONSTRUCTION.



ANGLE OF REPOSE
30° MAX IN SAND/SILT
45° MAX IN CLAY
60° MAX IN ROCK

OCCUPATIONAL, HEALTH AND SAFETY

01. FOR ALL WORKS CONDUCTED ON THIS PROJECT, THE BUILDER SHALL HAVE ALL APPROPRIATE AND SUFFICIENT SAFETY MEASURES AND PROCEDURES IN PLACE.
02. DEEP TRENCHES MAY EXIST ON THIS SITE. BUILDER TO ENSURE NECESSARY SAFETY MEASURES ARE TAKEN TO PREVENT FALL AND TRIPPING HAZARDS ARE ELIMINATED.
03. FOR LARGE SPAN BEAMS (≥ 6000mm), BUILDER TO ENSURE SEAT PLATES/ANGLES TO STEEL COLUMNS FOR MAJOR BEAMS AND LINTELS ARE INSTALLED FOR SAFER CONNECTION, BOLTING AND SITE WELDING.
04. ADEQUATE PROPPING MAY BE REQUIRED FOR ANY RETAINING/LOAD BEARING WALLS ON BOUNDARIES. TEMPORARY SHORING MAY BE REQUIRED.
05. PROVISIONS SHALL BE MADE FOR APPROPRIATE DISTANCE FOR ROOF BATTENS/RAFTERS TO PROVIDE A SAFE WORKING PLATFORM DURING ROOF INSTALLATION AND WORKING AT HEIGHTS.
06. BUILDER MAY NEED TO BE AWARE OF APPROPRIATE MEASURES TO DEAL WITH HAZARDOUS MATERIALS SUCH AS ASBESTOS WHICH STILL CAN BE FOUND IN SERVICE PITS.
07. IF A CRANE IS REQUIRED, THE BUILDER IS TO PROVIDE ADEQUATE SAFETY MEASURES FOR CRANE USAGE AROUND POWER LINES.
08. IF ANY DIGGING IS REQUIRED OUTSIDE OF SITE BOUNDARIES, INFORMATION REGARDING EXISTING COUNCIL ASSETS NEED TO BE SOUGHT FROM "DIAL BEFORE YOU DIG".
09. THE SAFETY CONCERNS AND HAZARDS IDENTIFIED ABOVE REPRESENT COMMONLY OCCURRING RISKS. THE LIST DOES NOT COVER THE FULL RANGE OF RISK AVOIDANCE MEASURES REQUIRED.

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LARA

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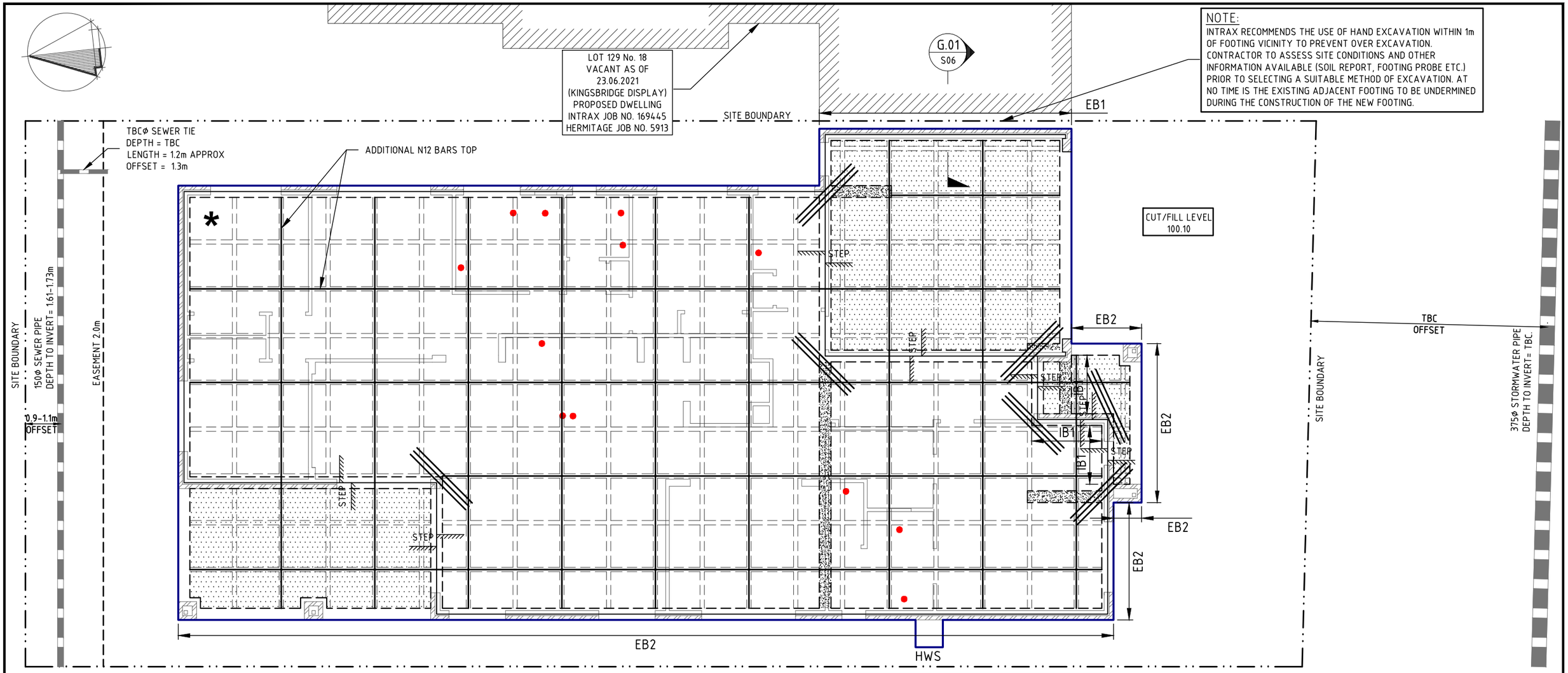
CONSTRUCTION ISSUE

DRAWING
GENERAL NOTES

169446	ENGINEER:P.R	DRAWN:X.M.	REV
	SHEET NO. S01	NO. OF SHEETS 15	01

TEMPLATE: SH-TEMPLATE-RESI&MD[B]



GROUND FLOOR SLAB PLAN

SCALE = 1:100

LEGEND

- BRICKWORK OVER
- TIMBER STUD WALLS OVER
- DENOTES INTERNAL RIB TO MATCH EXTERNAL RIB PROPERTIES U.N.O. (SEE WAFFLE SLAB SCHEDULE)
- DENOTES 3-N12 CRACK CONTROL BARS 2000mm LONG TIED TO UNDERSIDE OF SLAB MESH.
- DENOTES WAFFLE BOX SETDOWN
- * DENOTES STARTING POINT FOR WAFFLE BOX
- ● SLAB PENETRATION (REFER TO ARCH DRAWINGS)
- HWS LOCALLY WIDEN WITH SL92 TOP & BOTTOM. STEP TO ARCH'S DETAILS (IF REQUIRED)

EB1 300mm WIDE x 600mm MIN. OVERALL DEEP EDGE BEAM OR TO MATCH WITH ADJACENT FOOTING DEPTH WITH 3-L11TM TOP & 2×3-L11TM OR 3-N16 BARS BOTTOM.

EB2 300mm WIDE × 885mm OVERALL DEEP EDGE BEAM WITH 3-L11TM TOP & 2×3-L11TM OR 3-N16 BARS BOTTOM DUE TO DRAINAGE AOR & TREE.

FOOTING UNDERMINE NOTES:

- AT NO TIME IS THE EXISTING ADJACENT FOOTING TO BE UNDERMINED DURING THE CONSTRUCTION OF THE NEW FOOTING;
- BUILDER TO ENSURE AND CONFIRM ON SITE PRIOR TO COMMENCEMENT OF THE NEW FOOTING CONSTRUCTION;
- HAND EXCAVATION IS RECOMMENDED NEAR EXISTING FOOTINGS;
- THIS OFFICE IS TO BE CONTACTED IF THE DESIGN OF THE NEW FOOTING IS UNDERMINING THE EXISTING ADJACENT FOOTING.

NOTE:
FOOTING TO BE LOCALLY WIDENED AT ALL BRICK PIER LOCATIONS TYPICAL U.N.O.

NOTE:
BUILDER TO ENSURE NEWLY BUILT AND/OR EXISTING STRUCTURES ARE NOT UNDERMINED WHEN EXCAVATING ON SITE. IF NOT ACHIEVABLE STOP WORKS AND CONTACT THIS OFFICE FOR ADVICE.

NOTE:
BUILDER TO ENSURE THE SAFETY OF STORMWATER PIPES/COUNCIL ASSETS WHEN EXCAVATING ON SITE

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CONSTRUCTION ISSUE

DRAWING
GROUND FLOOR SLAB PLAN

169446	ENGINEER:P.R	DRAWN:X.M.	REV
	SHEET NO. S02	NO. OF SHEETS 15	01

TEMPLATE: SH-TEMPLATE-RESI&MD[B]

NOTES:
PURSUANT NCC CLAUSE 3.1.1, UNRETAINED PERMANENT EMBANKMENTS FOR A MAXIMUM HEIGHT OF 600mm RELATING TO EARTHWORKS TO FORM THE DWELLING BENCH SHALL BE IN ACCORDANCE WITH THE UNDERLYING SITE CLASSIFICATION AS REFERRED TO IN THE RELEVANT SOIL REPORT AND NCC TABLE 3.1.1.1

UN-RETAINED EMBANKMENT SLOPE RATIOS

SOIL CLASS	SITE CUT	COMPACTED FILL
STABLE ROCK (CLASS A)	8:1	2:3
SAND [& SILT] (CLASS A)	1:2	1:2
FIRM CLAY (CLASS M-E)	1:1	1:2
SOFT CLAY (CLASS M-E)	2:3	NOT SUITABLE

NOTE: REFER TO NCC TABLE 3.1.1.1 FOR FURTHER DETAILS

WAFFLE SLAB SCHEDULE

SLAB DETAILS

OVERALL SLAB DEPTH	385 mm	U.N.O.
VOID FORM HEIGHT	300 mm	U.N.O.
SLAB THICKNESS	85 mm	U.N.O.
INTERNAL RIB WIDTH	110 mm	U.N.O.
EXTERNAL RIB WIDTH	300 mm	U.N.O.
STEM WIDTH	150 mm	U.N.O.

- PROVIDE MEMBRANE IN ACCORDANCE WITH BCA (LAPPED 200 MIN. AND TAPED AT JOINTS) ON MAXIMUM 50mm COMPACTED QUARRY PRODUCT IF REQUIRED;
- MEMBRANE MAY HAVE MINOR PENETRATIONS IN ACCORDANCE WITH AS2870;
- CONCRETE STRENGTH = 20 MPa AT 28 DAYS. SLUMP = 100mm

SLAB REINFORCEMENT

TOP		
SLAB FABRIC	SL92	U.N.O.
INTERNAL RIB	1-N12 BAR	REFER PLAN
EXTERNAL RIB	3-L11TM	U.N.O.
BOTTOM		
INTERNAL RIB	1-N16 BAR	U.N.O.
EXTERNAL RIB	2×3-L11TM OR 3-N16 BARS	U.N.O.

REFER TO RECOMMENDATIONS & SITE INVESTIGATIONS:

COMPANY:	INTRAX CONSULTING ENGINEERS PTY LTD
REF. No.:	169446
DATED:	28.06.2021
CLASS:	P/H2 (AS2870-2011)

REFER TO ARCHITECTURAL WORKING DRAWINGS:

COMPANY:	HERMITAGE HOMES
REF. No.:	5914 - ISSUE WD
DATED:	22.09.2021

REFER TO CIVIL/DRAINAGE DESIGN DRAWINGS:

COMPANY:	INTRAX CONSULTING ENGINEERS PTY LTD
REF. No.:	169446
DATED:	20.10.2021

NOTES:
1. THIS DESIGN SHOULD BE READ IN CONJUNCTION WITH THE DOCUMENTATION AND DRAWINGS REFERENCED ABOVE;
2. SITE BOUNDARY RETAINING WALLS TO BE DESIGNED BY OTHERS AS REQUIRED U.N.O.
3. (a) USE APPROPRIATE FLEXIBLE BEDDING MORTAR FOR BRITTLE FLOOR COVERING WHERE BRITTLE AREA IS GREATER THAN 16m² (eg. CERAMIC TILES);
   (b) ALTERNATIVELY IF FLEXIBLE ADHESIVE TO BE USED FOR LAYING OF TILES, MINIMUM 90 DAYS WAITING PERIOD IS REQUIRED AFTER SLAB HAS BEEN POURED;
4. TWO LAYERS OF POLYETHYLENE MEMBRANE ARE REQUIRED FOR STRIP FOOTINGS AND BEAMS BELOW FINISHED GROUND LEVEL GREATER THAN 700mm DEEP TYPICAL U.N.O.
5. IF THE NEW FOOTING CONSTRUCTED TO ADJACENT EXISTING FOOTING IS LESS OR EQUAL TO 1000mm, THIS OFFICE SHOULD BE CONTACTED FOR FURTHER ADVICE
6. PERCHED GROUND WATER MAY OCCUR DURING HIGH PERIODS OF RAINFALL WHICH CAN LEAD TO CONSTRUCTION DIFFICULTIES. IF THIS SITUATION IS ENCOUNTERED ONSITE THIS OFFICE IS TO BE CONTACTED TO PROVIDE CONFIRMATION OF FOOTING DESIGN AND ALTERNATIVE CONSTRUCTION METHODS THAT MAY BE REQUIRED

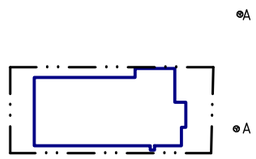
FRAMING AND BRACING BY OTHERS NOTE:
FRAMING AND BRACING TO BE DESIGNED AND NOMINATED BY FRAMING/TRUSS MANUFACTURER

WAFFLE CONSTRUCTION NOTES

1. ALL LOOSE SURFACE FILL, ROOTS AND ORGANIC MATERIAL ARE TO BE REMOVED FROM THE BUILDING PLATFORM & ROLL SITE SURFACE UNTIL A FIRM STABLE SURFACE IS ACHIEVED.
2. PERFORM THE SITE CUT TO REQUIRED BENCH LEVEL.
3. ANY ADDED FILL FORMING PART OF THE CUT/FILL OPERATION SHALL BE COMPACTED IN 150mm MAXIMUM LAYERS. THE LAYERS ARE TO BE ROLLED WITH AN EXCAVATOR IN ORTHOGONAL DIRECTIONS REPEATEDLY AND EXTEND 1000mm PAST THE WAFFLE EDGE.
4. WHERE FILL IS ADDED TO FORM THE BENCH LEVEL, A LAYER OF WELL GRADED QUARRY MATERIAL (CLASS 3) IS TO BE PLACED OVER THE BUILDING "FILL" AREA (EXTENDING 1000mm OUTSIDE THE BUILDING EDGE LINE).
5. PLUMBER IS TO LAY DRAINAGE PIPES BELOW THE GROUND SURFACE. ALL RISERS ARE TO BE FIRMLY STAKED.
6. PREPARE FORMWORK IN ACCORDANCE WITH THE FOOTING PLAN AND DETAILS. WAFFLE PODS ARE TO BE PLACED IN ACCORDANCE WITH THE START LOCATION SHOWN ON THE SLAB LAYOUT PLAN. WAFFLE PODS ARE TO BE CUT AND TAPED AROUND PLUMBING PIPES.
7. PLACE ALL SLAB REINFORCEMENT AS INDICATED BY THE SLAB LAYOUT PLAN AND POUR CONCRETE.
8. ALL EXTERNAL & INTERNAL RIBS WIDER THAN 300mm SHALL BE REINFORCED WITH AN ADDITIONAL N12 BAR TOP & N16 BAR BOTTOM FOR EVERY 110MM IN ADDITIONAL WIDTH (TYPICAL).

NOTE:
MEMBRANE IN ACCORDANCE WITH BCA OVER COMPACTED QUARRY PRODUCT AS REQUIRED TYPICAL UNO

NOTE:
- THE SITE NEEDS TO BE ROLLED TO DETERMINE SOFT OR OTHERWISE UNSUITABLE ZONES AND SUCH ZONES RECTIFIED AS NECESSARY UNTIL A FIRM STABLE SURFACE IS ACHIEVED.
- THE OVERALL DEPTH OF COMPACTED FILL PLACED IN ADDITION TO EXISTING SITE FILL MATERIAL IS NOT TO EXCEED 300mm UNDER THE SLAB



TREE EFFECT SITE KEY PLAN
SCALE = NTS

NOTES:
A - DENOTES EXISTING IMMATURE DECIDUOUS TREE WITH ASSUMED MATURE TREE HEIGHT 17m.

TREE EFFECT NOTE:
- THIS SLAB DESIGN HAS TAKEN TREE EFFECT (IDENTIFIED AT THE TIME OF SOIL INVESTIGATION) INTO CONSIDERATION;
- BUILDER TO REMOVE ALL TREES AND TREE ROOTS/MATERIAL OVER THE PROPOSED BUILDING AREA;
- ANY SOFT OR LOOSE MATERIAL THAT DOES NOT RESPOND TO COMPACTION SHOULD BE EXCAVATED TO ACHIEVE A FIRM BASE, BACKFILL HOLES WITH NON POROUS MATERIAL, COMPACTED IN 150mm MAXIMUM LAYERS.
- THE TREE HEIGHTS AND/OR SPECIES ARE BASED ON THE BEST INFORMATION AVAILABLE TO INTRAX AT THE TIME OF DESIGN. SHOULD INFORMATION TO THE CONTRARY TO THE DESIGN ASSUMPTION BECOME AVAILABLE, THIS OFFICE SHALL BE CONTACTED FOR REVIEW.

REV.	REMARK/COMMENT	DATE:	APPR.
01	CONSTRUCTION ISSUE	20.10.21	

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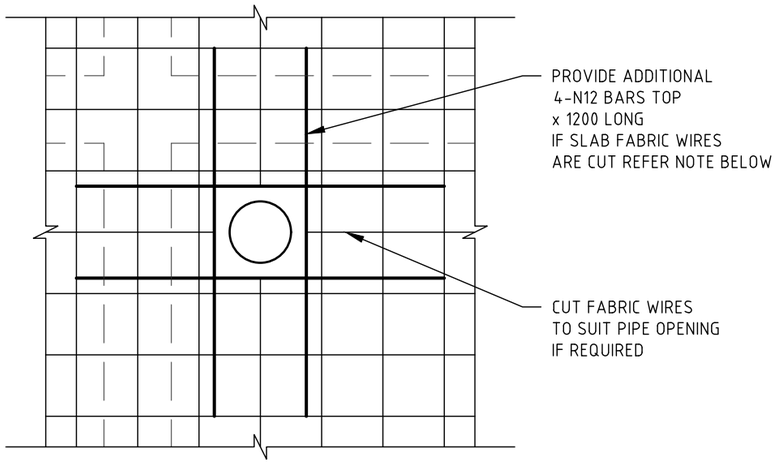
CONSTRUCTION ISSUE

DRAWING
WAFFLE SLAB SCHEDULE & NOTES

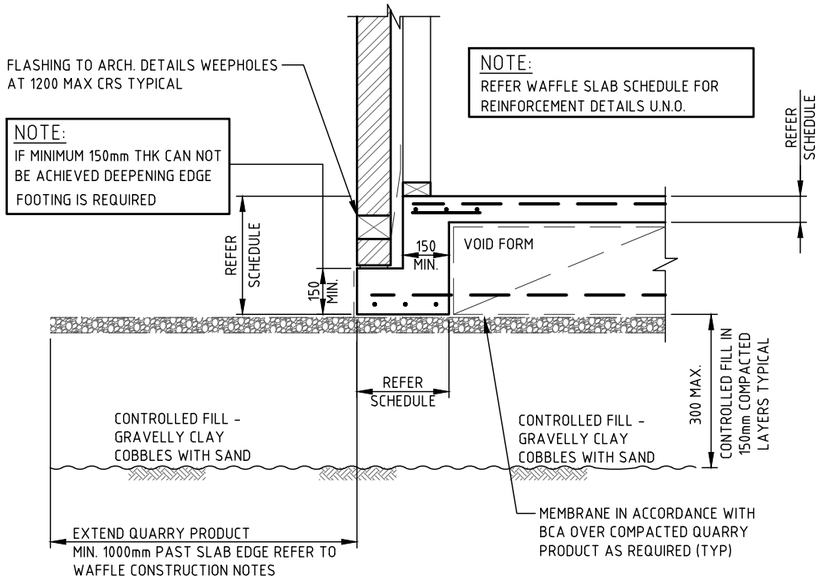
169446	ENGINEER:P.R	DRAWN:X.M.	REV 01
	SHEET NO. S03	NO. OF SHEETS 15	

TEMPLATE: SH-TEMPLATE-RESI&MD[B]

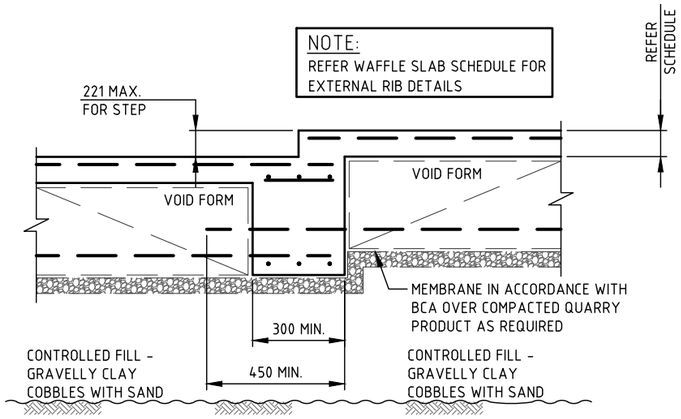


NOTE:
ADDITIONAL BARS MUST BE PLACED AROUND PIPE OPENING IF SLAB FABRIC WIRES ARE CUT, DAMAGED OR BENT (TYPICAL)

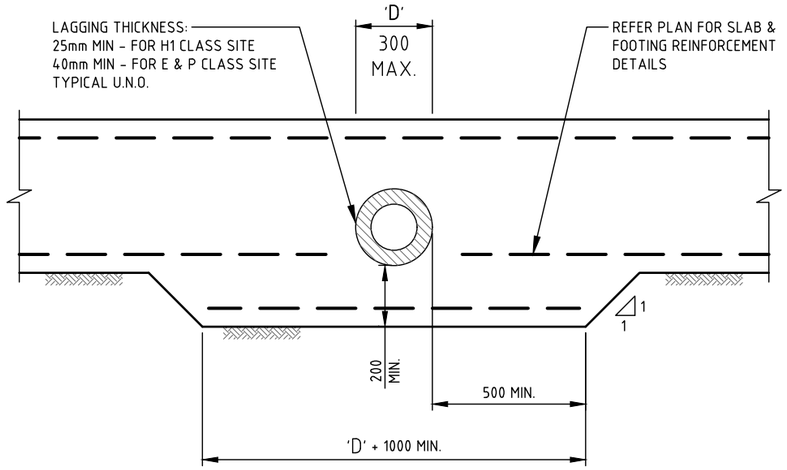
TYPICAL SLAB PENETRATION DETAIL
N.T.S.



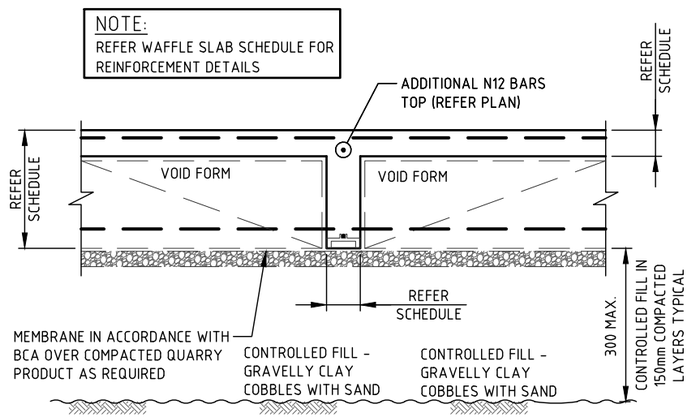
TYPICAL EXTERNAL RIB DETAIL
SCALE = 1:20



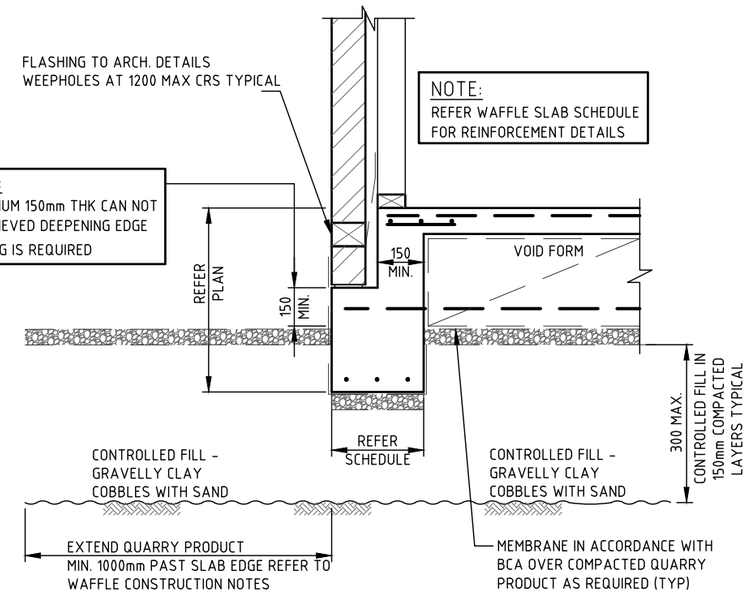
TYPICAL STEPDOWN DETAIL AT GARAGE/PORCH/OUTDOOR LIVING
SCALE = 1:20



TYPICAL PENETRATION THROUGH FOOTING DETAIL
SCALE = 1:20



TYPICAL INTERNAL RIB DETAIL
SCALE = 1:20



TYPICAL DEEPENED EXTERNAL RIB DETAIL
SCALE = 1:20

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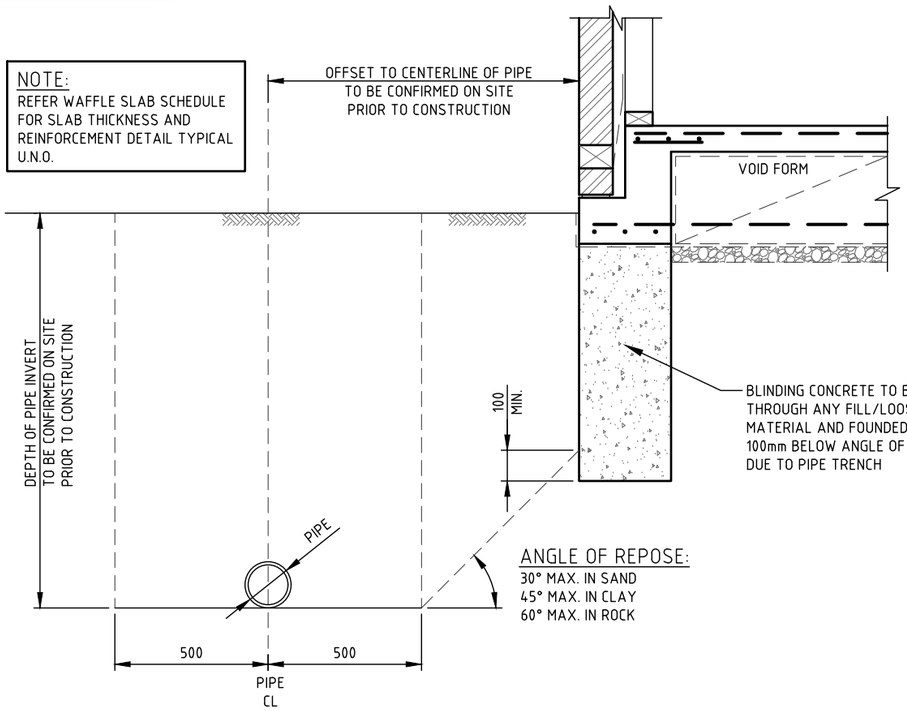
CONSTRUCTION ISSUE

DRAWING
FOOTING DETAILS - SHEET 1

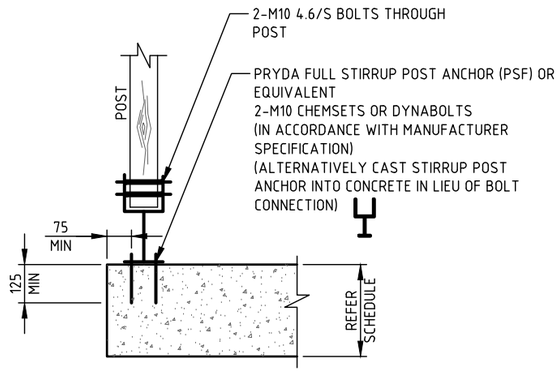
169446	ENGINEER:P.R	DRAWN:X.M.	REV 01
	SHEET NO. S04	NO. OF SHEETS 15	

TEMPLATE: SH-TEMPLATE-RESI&MD[B]



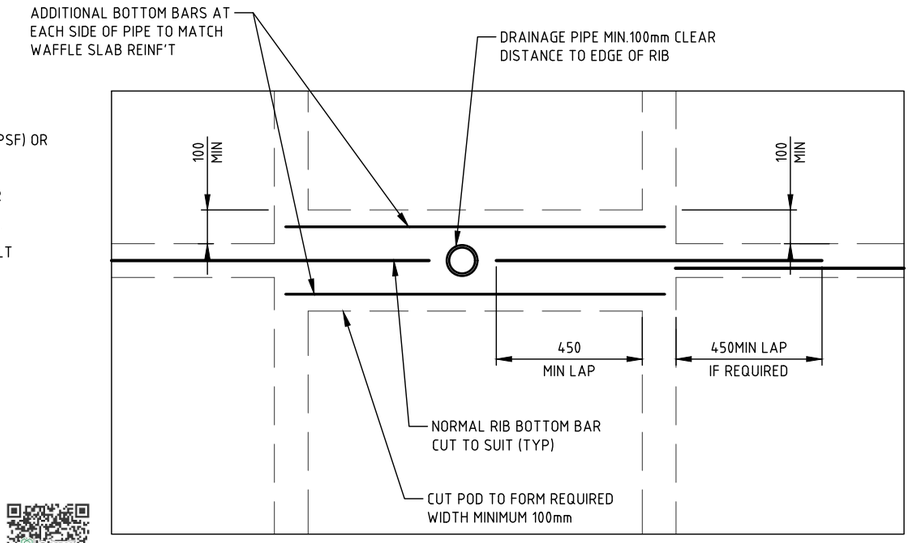
TYPICAL ANGLE OF REPOSE DETAIL (IF REQUIRED)

SCALE = 1:20



TYPICAL TIMBER FULL STIRRUP POST ON CONCRETE SLAB/FOOTING DETAIL

SCALE = 1:20

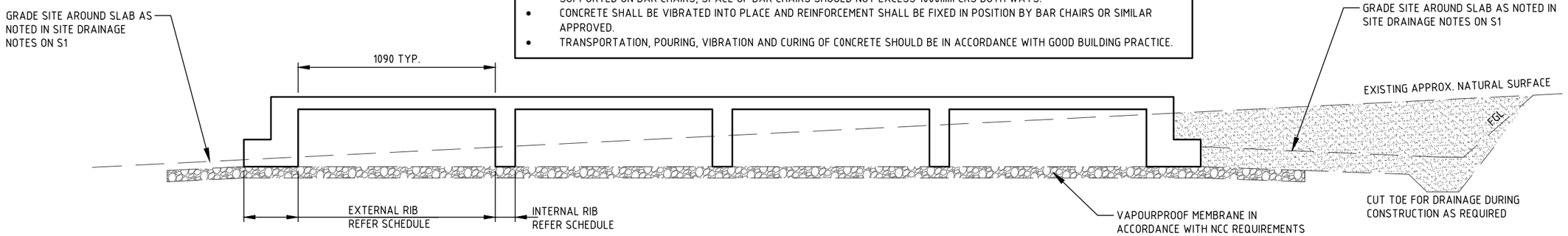


TYPICAL PIPE THROUGH WAFFLE RIB PLAN VIEW

SCALE = 1:20

NOTES:

- 0.2mm THICK POLYETHYLENE MEMBRANE TO BE APPROVED, TAPED AROUND PIPES AND LAPPED A MINIMUM OF 200mm.
- MINOR PENETRATION IS ACCEPTABLE AS PER AS2870 C5.3.3.
- 30mm COVER FOR BEAM REINFORCEMENT, AT SPLICES (500mm LAP FOR N12 BARS, 700mm LAP FOR N16 BARS) AND FULL BEAM WIDTH AT INTERSECTIONS.
- SLAB REINFORCEMENT COVER TO HAVE 20mm MINIMUM, LAP LENGTH TO BE MINIMUM 225mm OR 2 CROSS WIRES AND SHOULD BE SUPPORTED ON BAR CHAIRS, SPACE OF BAR CHAIRS SHOULD NOT EXCESS 1000mm CRS BOTH WAYS.
- CONCRETE SHALL BE VIBRATED INTO PLACE AND REINFORCEMENT SHALL BE FIXED IN POSITION BY BAR CHAIRS OR SIMILAR APPROVED.
- TRANSPORTATION, POURING, VIBRATION AND CURING OF CONCRETE SHOULD BE IN ACCORDANCE WITH GOOD BUILDING PRACTICE.



TYPICAL SECTION THROUGH WAFFLE SLAB

N.T.S.

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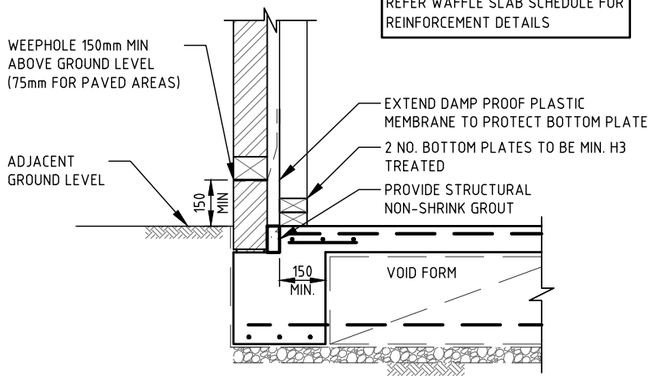
DRAWING
FOOTING DETAILS - SHEET 2

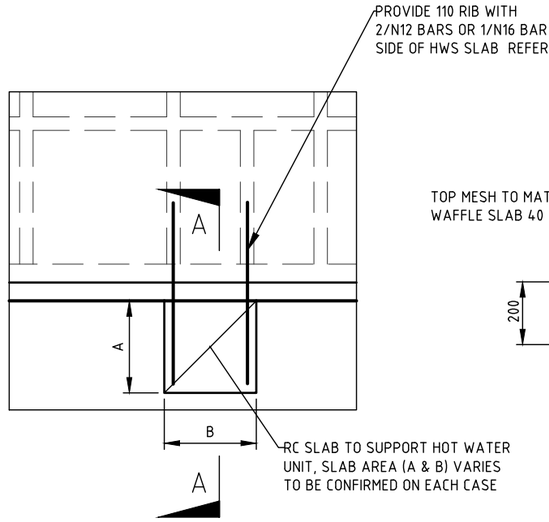
169446	ENGINEER:P.R	DRAWN:X.M.	REV
	SHEET NO. S05	NO. OF SHEETS 15	01

TEMPLATE: SH-TEMPLATE-RESI&MD[B]



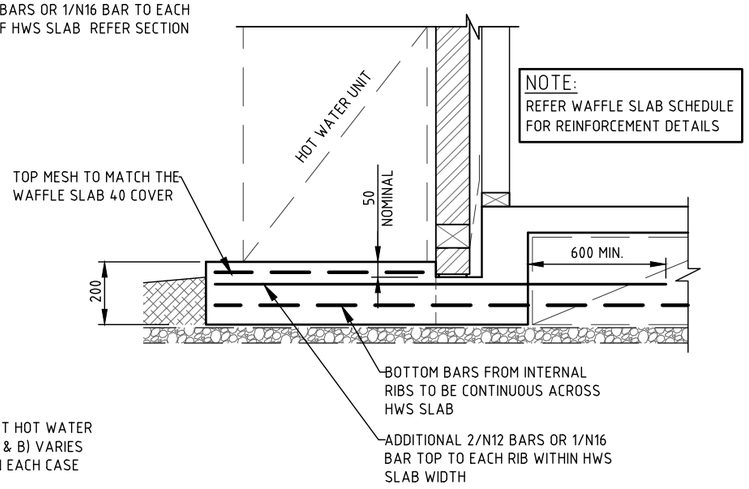
WEEPHOLE ON EXTERNAL RIB DETAIL FOR NON HABITABLE AREAS (IF REQUIRED)

SCALE = 1:20



KEY PLAN AT (HWS)

N.T.S.

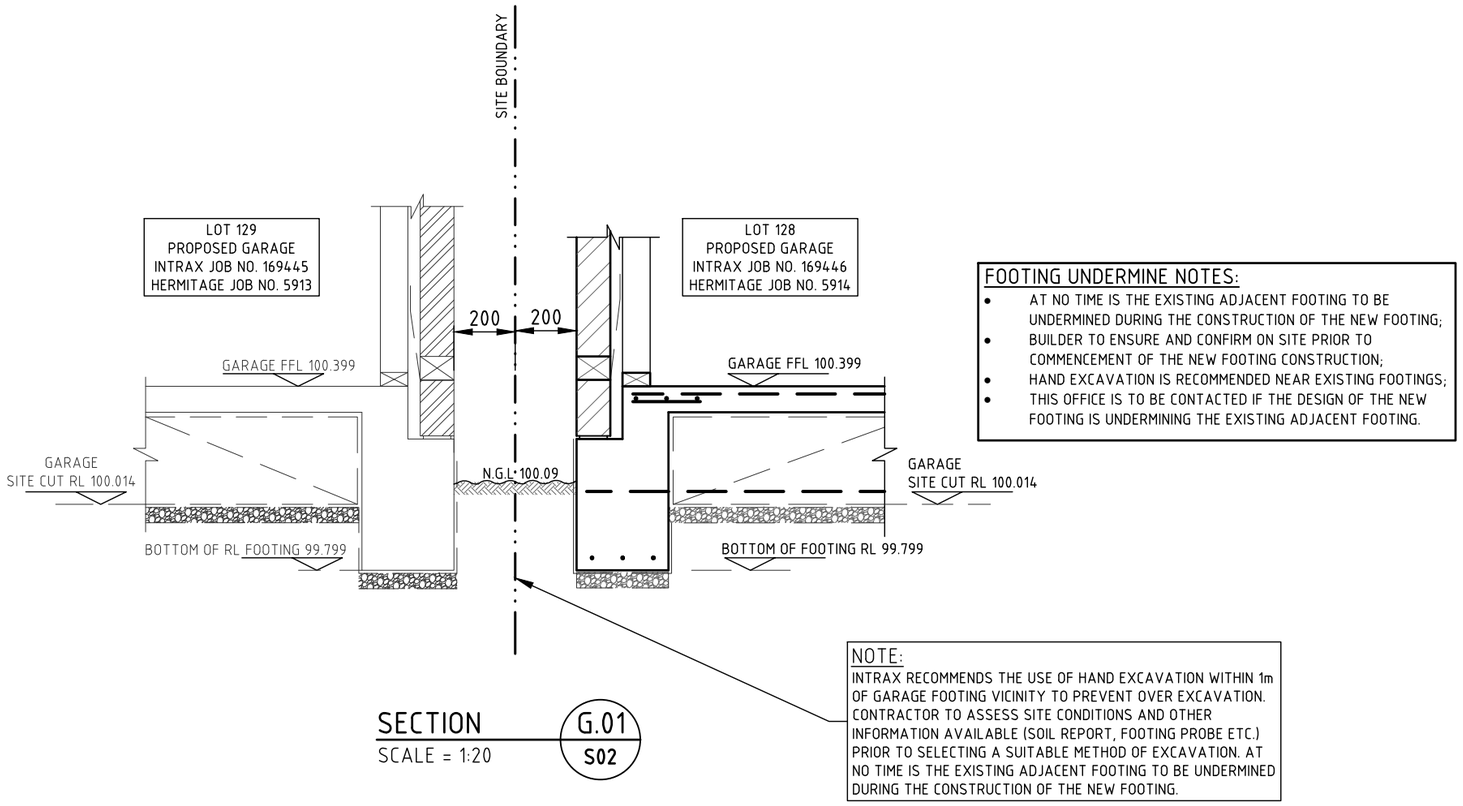


SECTION A-A

SCALE = 1:20

TYPICAL HWS PAD DETAIL

SCALE = 1:20



FOOTING UNDERMINE NOTES:

- AT NO TIME IS THE EXISTING ADJACENT FOOTING TO BE UNDERMINED DURING THE CONSTRUCTION OF THE NEW FOOTING;
- BUILDER TO ENSURE AND CONFIRM ON SITE PRIOR TO COMMENCEMENT OF THE NEW FOOTING CONSTRUCTION;
- HAND EXCAVATION IS RECOMMENDED NEAR EXISTING FOOTINGS;
- THIS OFFICE IS TO BE CONTACTED IF THE DESIGN OF THE NEW FOOTING IS UNDERMINING THE EXISTING ADJACENT FOOTING.

NOTE:
INTRAX RECOMMENDS THE USE OF HAND EXCAVATION WITHIN 1m OF GARAGE FOOTING VICINITY TO PREVENT OVER EXCAVATION. CONTRACTOR TO ASSESS SITE CONDITIONS AND OTHER INFORMATION AVAILABLE (SOIL REPORT, FOOTING PROBE ETC.) PRIOR TO SELECTING A SUITABLE METHOD OF EXCAVATION. AT NO TIME IS THE EXISTING ADJACENT FOOTING TO BE UNDERMINED DURING THE CONSTRUCTION OF THE NEW FOOTING.

SECTION G.01 / S02

SCALE = 1:20

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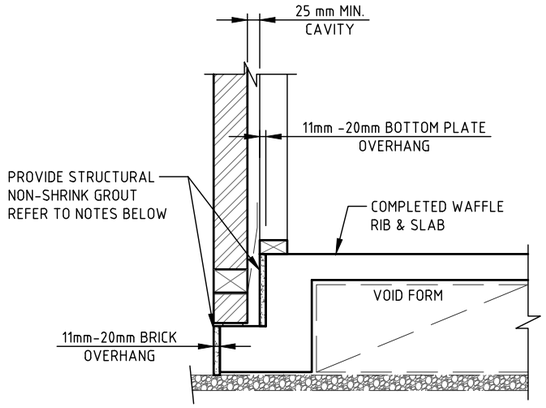
CONSTRUCTION ISSUE

DRAWING
FOOTING DETAILS - SHEET 3

169446	ENGINEER:P.R	DRAWN:X.M.	REV
	SHEET NO. S06	NO. OF SHEETS 15	01

TEMPLATE: SH-TEMPLATE-RESI&MD[B]



PROVISIONAL ALTERNATIVE EDGE RIB DETAIL FOR BRICK & FRAME OVERHANG (11mm TO 20mm)

N.T.S.

NOTES:

1. THE EDGES OF THE EXISTING CONCRETE SLAB ARE TO BE SCABBLED OR ACID WASHED AND THEN RINSED TO PROVIDE A COARSE SURFACE TO ACCEPT THE NON-SHRINK GROUT.
2. APPLY A BONDCRETE OR BONDIT PRODUCT TO THE EDGES OF THE CONCRETE SLAB TO RECEIVE THE NON-SHRINK GROUT, IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
3. WHILE THE SLURRY MIX IS STILL WET, PROVIDE HIGH-STRENGTH NON-SHRINK GROUT TO BENEATH OF THE OVERHANG. (SUCH AS LANKO 702 DURABED OR SIMILAR APPROVED) INSTALLED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS. BENEATH THE OVERHANG THE THICKNESS OF THE GROUT MUST BE CONSISTENT WITH THE OVERHANG & GROUT MUST BE AT LEAST 150mm DEEP.
4. THE ABOVE DETAIL IS ONLY APPLICABLE FOR BRICK VENEER, (UP TO TWO STORIES RESIDENTIAL BUILDING) WITH NOMINAL FIXINGS TO THE SLAB, MAXIMUM OVERHANG LENGTH NOT TO EXCEEDING 20mm.
5. BOTTOM WALL PLATE TO BE FIXED TO CONCRETE SLAB IN ACCORDANCE WITH TIMBER FRAMING MANUAL.
6. IF ONE OF THE FOLLOWING CONDITION ARE MET TO THE OVERHANG, BUILDER SHOULD SUBMIT DETAILS TO INTRAX CONSULTING ENGINEERS, PRIOR COMMENCE ANY CONSTRUCTION WORKS.
   - BRACED WALL WITH SPECIFIED FIXING, OTHER THAN NOMINAL FIXING;
   - UNDER CONCENTRATED LOADS (DOUBLE/TRIPLE STUDS OR STEEL COLUMNS);
   - VOIDS ON SURFACE OF EXTERNAL RIBS (DUE TO POOR COMPACTION/VIBRATION);
   - LENGTH OF OVERHANG EXCEEDS 2000mm
   - TIMBER FRAMING WALL IS LESS THAN 90mm WIDE
   - TIMBER FRAMING WALL IS GREATER THAN 2700mm HIGH
   - WIND CLASSIFICATION OF N3 OR ABOVE

NOTE:
DYNABOLTS ARE NOT PERMITTED

PROVISIONAL ALTERNATIVE EDGE RIB DETAIL FOR BRICK & FRAME OVERHANG (MAX O/H 30mm)

N.T.S.

NOTES:
BOTTOM WALL PLATE TO BE FIXED TO CONCRETE SLAB IN ACCORDANCE WITH TIMBER FRAMING MANUAL

NOTES:
REFER TO ENGINEERING DRAWINGS FOR EXISTING FOOTING SPECIFICATIONS. EXTERNAL RIB TO ACHIEVE MIN DIMENSIONS SPECIFIED . IF NOT, THIS OFFICE IS TO BE CONTACTED

NOTES:
BRICK VENEER CAVITY WIDTH/WALL TIES TO BE AS PER BCA REQUIREMENTS

NOTES:
IF ONE OF THE FOLLOWING CONDITION ARE MET TO THE OVERHANG, BUILDER SHOULD SUBMIT DETAILS TO INTRAX CONSULTING ENGINEERS, PRIOR COMMENCE ANY CONSTRUCTION WORKS

- BRACED WALL WITH SPECIFIED FIXING, OTHER THAN NOMINAL FIXING
- UNDER CONCENTRATED LOADS (DOUBLE/TRIPLES STUDS OR STEEL COLUMN)
- VOIDS ON SURFACE OF EXTERNAL RIBS (DUE TO POOR COMPACT/VIBRATION)
- LENGTH OF OVERHANG EXCEEDS 2000mm
- TIMBER FRAMING WALL IS LESS THAN 90mm WIDE
- TIMBER FRAMING WALL IS GREATER THAN 2700mm HIGH
- WIND CLASSIFICATION OF N3 OR ABOVE

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DRAWING
FOOTING DETAILS - SHEET 4

169446	ENGINEER:P.R	DRAWN:X.M.	REV
	SHEET NO. S07	NO. OF SHEETS 15	01

TEMPLATE: SH-TEMPLATE-RESI&MD[B]

ANGLE LINTEL SCHEDULE (L)

BRICK LINTEL SPAN (mm)	BRICK HEIGHT	
	800mm MAX.	3200mm MAX.
0 – 900	100 x 100 x 6 EA	100 x 100 x 8 EA
901 – 1600	100 x 100 x 6 EA	100 x 100 x 10 EA
1601 –2100	100 x 100 x 6 EA	150 x 100 x 10 UA
2101 – 2600	150 x 100 x 10 UA	150 x 100 x 10 UA + 50 x 10 EXT. PL
2601 – 3100	150 x 100 x 10 UA	150 x 100 x 12 UA + 75 x 12 EXT. PL
3101 – 3600	150 x 100 x 12 UA	N/A

NOTES:
1. ANGLE LINTEL TO EACH MASONRY SKIN TYPICAL
2. SET ANGLES WITH LONG LEG VERTICAL TYPICAL U.N.O.
3. HOT DIP GALVANISED TO ALL EXPOSED ANGLE LINTELS TYPICAL

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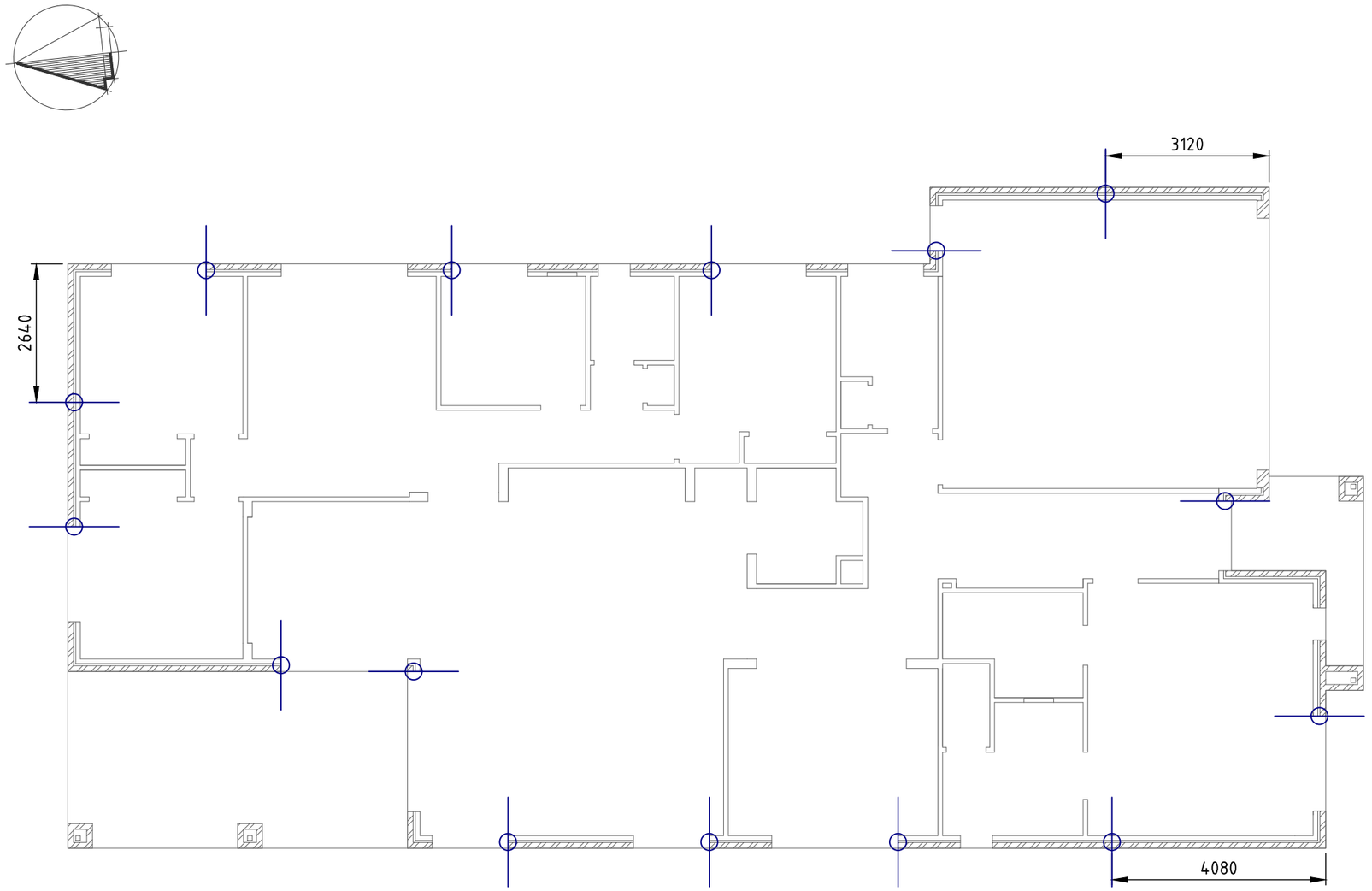
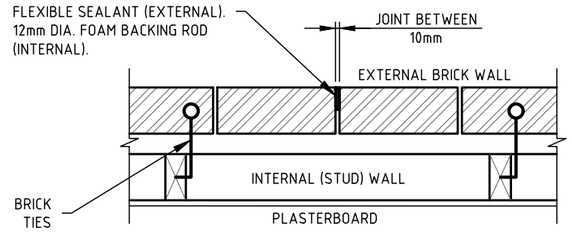
DRAWING
FRAMING DETAILS - SHEET 1

169446	ENGINEER:P.R	DRAWN:X.M.	REV
	SHEET NO. S08	NO. OF SHEETS 15	01





BRICK VENEER WALL ARTICULATION JOINT DETAILS

N.T.S.

ARTICULATION JOINT PLAN

SCALE= 1:100

LEGEND

ARTICULATION JOINT

NOTE:
ARTICULATION JOINT ON BOUNDARY WALL TO BE FIRE RATED AS PER BCA REQUIREMENTS.

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DRAWING
ARTICULATION JOINT PLAN

169446	ENGINEER:P.R	DRAWN:X.M.	REV
	SHEET NO. S09	NO. OF SHEETS 15	01

GENERAL DRAINAGE NOTES

1. THE CONTRACTOR SHALL ADEQUATELY DRAIN THE SITE DURING ALL STAGES OF CONSTRUCTION.
2. CONTRACTOR SHALL VERIFY ALL LEVELS DIMENSIONS AND SERVICES PRIOR TO COMMENCEMENT OF WORK.
3. ALL APPROPRIATE PERMITS SHALL BE OBTAINED AND FEES PAID FOR BY THE CONTRACTOR.
4. ANY PAVEMENT OR FEATURES DAMAGED DURING THE COURSE OF THIS CONTRACT SHALL BE REINSTATED TO THEIR FORMER CONDITION.
5. THE CONTRACTOR SHALL ARRANGE A SITE INSPECTION WITH THE CIVIL ENGINEERING SUPERVISING OFFICER PRIOR TO THE COMMENCEMENT OF WORK TO RECORD ANY DAMAGE TO EXISTING FEATURES.
6. ALL EXISTING PIT COVERS, DOWNPIPE CONNECTIONS AND SIMILAR FEATURES IN CONSTRUCTION AREAS ARE TO BE ADJUSTED TO SUIT AS PART OF THIS CONTRACT.
7. ALL CONCRETE PAVEMENT SHALL BE FINISHED WITH A NON SKID FLOAT, (NO BROOMED FINISH).
8. BEFORE COMMENCEMENT OF WORK A TEMPORARY BENCH MARK IS TO BE ESTABLISHED BY THE CONTRACTOR IN A POSITION ON SITE SAFE FROM DISTURBANCE.
9. ALL FILLING SHALL BE UNIFORMITY PLACED IN LAYERS NOT EXCEEDING 200mm LOOSE MEASUREMENT. EACH LAYER SHALL BE WITHIN 85% TO 115% OF OPTIMUM MOISTURE CONTENT AND BE PROPERLY COMPACTED, AS SPECIFIED, BASED ON THE STANDARD COMPACTION TEST AS OUTLINED IN AS 1289-1977.
10. CRUSHED ROCK PAVEMENT COMPACTIONS SHALL BE TO 100% STANDARD MAXIMUM DRY DENSITY FOR BASE COARSE, AND 98% FOR SUB BASE COARSE.
11. ANY SHORTFALL IN INDIGENOUS TOPSOIL REQUIRED TO BRING THE GARDEN AND GRASSED AREAS TO THE DESIGN LEVELS SHALL BE MADE UP WITH APPROVED IMPORTED TOPSOIL. NO ADDITIONAL PAYMENT WILL BE MADE FOR IMPORTED TOPSOIL.
12. EXCAVATED MATERIAL SHALL BE STOCKPILED ON SITE AS DIRECTED BY THE SUPERINTENDENT. EXCESS TO BE REMOVED FROM SITE AT CONTRACTORS EXPENSE.
13. TOPSOIL TO BE STRIPPED TO A DEPTH OF 150mm UNDER FILL AREAS AND ALL OTHER AREAS. THIS TOPSOIL SHALL BE STOCKPILED ON SITE AS DIRECTED BY SUPERINTENDENT . EXCESS SOIL TO BE STOCKPILED ON SITE AS DIRECTED BY THE SUPERINTENDENT, OR REMOVED FROM THE SITE AT THE CONTRACTORS EXPENSE, IF SO DIRECTED.
14. ALL STORMWATER DRAINS SHALL BE BEDDED ON A MINIMUM OF 80mm COMPACTED THICKNESS 20 N.S. CLASS 3 FINE CRUSHED ROCK, IN SOIL BASED TRENCHES . INCREASE TO 200mm THICKNESS IN ROCK BASED TRENCHES.
15. 100mm DIAMETER STORMWATER DRAINS SHALL BE LAID AT A MINIMUM GRADE OF 1:100, UNLESS OTHERWISE SHOWN.
16. 150mm DIAMETER STORMWATER DRAINS SHALL BE LAID AT A MINIMUM GRADE OF 1:100, UNLESS OTHERWISE SHOWN.
17. TRENCH EXCAVATIONS; WHERE ONE OR BOTH SIDES OF ANY TRENCH EXCEED 1.5 M IN DEPTH, THE CONTRACTOR SHALL ENSURE THAT THE PROVISIONS OF MINES ACT 1958 AND THE MINES (TRENCHES) REGULATIONS 1979 ARE COMPLIED WITH.
18. TRENCHES TRAVERSING EXISTING OR PROPOSED PAVEMENTS INCLUDING ASPHALT AND CONCRETE SHALL BE BACKFILLED WITH "FIRST CLASS MATERIAL" AND COMPACTED, PAVEMENT SHALL BE REINSTATED TO THE SATISFACTION OF THE SUPERINTENDENT.
19. ALL SURPLUS EXCAVATED MATERIAL SHALL BE REMOVED FROM SITE.
20. FOOTPATHS, DRIVEWAYS, ROADWAYS, KERBS , R.O.W.'S OR EXISTING FEATURES DISTURBED, BROKEN OR AFFECTED BY THE WORKS ARE TO BE REINSTATED TO THE COMPLETE SATISFACTION OF THE CITY ENGINEER OR HIS REPRESENTATIVE.
21. ALL CONCRETE TO BE SAW CUT AND BROKEN OUT TO THE NEAREST JOINT.
22. ALL NATURE STRIPS AND LAWN AREAS OUTSIDE PRIVATE PROPERTY TO BE REINSTATED WITH TOP SOIL AND SEEDED.
23. CONTRACTOR TO CONTACT LOCAL COUNCIL ENGINEERING DEPARTMENT AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION OF OUTFALL DRAINAGE TO ARRANGE FOR COUNCIL SUPERVISION AND INSPECTION IF REQUIRED BY COUNCIL.
24. THE CONTRACTOR IS TO VERIFY ALL LOCATIONS AND DEPTH OF SERVICES WITH THE RELEVANT AUTHORITIES FOR THE CONSTRUCTION OF DRAINS AND SERVICES OUTSIDE THE PROPERTY BOUNDARY PRIOR TO THE COMMENCEMENT OF WORK, AND SHALL BE FULLY RESPONSIBLE FOR RECTIFICATION OF ANY DAMAGED SERVICE.
25. ALL EXCESS TOPSOIL SHALL BE REMOVED OFF SITE AT THE CONTRACTOR'S EXPENSE.
26. ALL ADDITIONAL FILL MATERIAL REQUIRED DUE TO OVER EXCAVATION OR A SHORTFALL OF SUITABLE EXCAVATED MATERIAL SHALL BE IMPORTED AT THE CONTRACTORS EXPENSE.
27. AT THE TIME OF THE PREPARATION OF THE DRAINAGE DESIGN, IF THE LANDSCAPING DESIGN WAS NOT SUPPLIED TO THIS OFFICE, THEN THE DRAINAGE SYSTEM MAY BE SUBJECT TO CHANGE. THIS OFFICE OR A QUALIFIED PRACTITIONER SHALL REVIEW THE DRAINAGE DESIGN WHEN LANDSCAPING DESIGN IS FINALISED.

DRAINAGE NOTES:

1. ALL SURFACE DRAINAGE WORKS SHALL BE INSTALLED IN ACCORDANCE WITH CLAUSE 5.6.3 DRAINAGE REQUIREMENTS OF AS 2870-2011, WHEREIN FOR BUILDINGS ON MODERATELY, HIGHLY AND REACTIVE SITES:
   - SURFACE DRAINAGE SHALL BE CONTROLLED THROUGHOUT CONSTRUCTION AND BE COMPLETED BY THE FINISH OF CONSTRUCTION.
   - THE BASE OF TRENCHES SHALL SLOPE AWAY FROM THE BUILDING.
   - WHERE PIPES PASS UNDER THE FOOTING SYSTEMS, CLAY PLUGS ARE ADOPTED TO PREVENT THE INGRESS OF WATER.
2. FOR BUILDINGS ON HIGHLY AND REACTIVE SITES, DRAINER SHALL PROVIDE DRAINAGE ARTICULATION TO ALL STORMWATER, SANITARY PLUMBING DRAINS AND DISCHARGE PIPES IN ACCORDANCE WITH CLAUSE 5.6.4 PLUMBING REQUIREMENTS, WHEREIN FLEXIBLE JOINTS IMMEDIATELY OUTSIDE BUILDING AND COMMENCING WITHIN 1m OF THE BUILDING PERIMETER ARE REQUIRED TO ACCOMMODATE THE REQUIRED DIFFERENTIAL MOVEMENT BASE ON THE SOIL CLASSIFICATION, REFER TABLE 'MIN. REQUIREMENTS FOR EXPANSION AND ALLOWABLE IN FITTINGS.
3. SURFACE WATER MUST BE DIVERTED AWAY FROM THE DWELLING AND GRADED AWAY FROM ALL FOUNDATIONS TO GIVE A SLOPE OF NOT LESS THAN 50mm OVER THE FIRST 1000mm FROM THE DWELLING.
4. SUBSURFACE DRAINS TO REMOVE GROUND OR TABLE WATER SHALL BE DETAILED BY THE DESIGN ENGINEER. FURTHERMORE, DAMP-PROOF MEMBRANE IN ACCORDANCE WITH 5.3.3 SHALL BE INSTALLED FOR GROUNDWATER OR AGGRESSIVE SOILS.
5. DRAINAGE DESIGN IS IN ACCORDANCE WITH AS3500.

MATERIALS

1. PROPOSED 100Ø & 150Ø STORMWATER DRAINS SHALL BE FORMED OF UNPLASTICISED POLYVINYL CHLORIDE PIPES AND FITTINGS CLASS SH (SEWER CLASS) MANUFACTURED TO CONFORM TO AS.1260.
2. PROPOSED 225 DIAMETER AND LARGER STORMWATER DRAINS SHALL BE FORMED OF FIBRE REINFORCED CONCRETE CLASS 2, RUBBER RING JOINTED PIPE MANUFACTURED TO CONFORM TO AS 4058. (CLASS 3 WHERE INDICATED). USE UPVC TO AS1260. (CLASS SH) WHERE SHOWN ON THE DRAWINGS.

SERVICE

1. PRIOR TO THE COMMENCEMENT OF WORK THE CONTRACTOR SHALL LOCATE EXISTING SERVICES TO BE RETAINED WHERE PROPOSED SERVICES CROSS THEM, AND ASCERTAIN FOR HIMSELF THAT NO CLASHES OF SERVICES WILL OCCUR.
2. WHERE PROPOSED SERVICES TRAVERSE EXISTING ASPHALT AND CONCRETE PAVEMENTS THE PAVEMENT IS TO BE SAW CUT TO FULL DEPTH OF PAVEMENT PRIOR TO EXCAVATION.
3. TRENCHES TRAVERSING EXISTING OR PROPOSED PAVEMENTS INCLUDING ASPHALT AND CONCRETE SHALL BE BACKFILLED WITH CLASS 2 FINE CRUSHED ROCK AND COMPACTED ALL TO THE SATISFACTION OF THE SUPERINTENDENT.
4. THE CONTRACTOR SHALL CO-ORDINATE THE LAYING OF ALL SERVICES TO AVOID CLASHES.
5. LAY ALL SERVICES TO NOMINATED LEVELS WHERE GIVEN, OTHER SERVICES SHALL BE LAID TO COMPLY WITH MINIMUM COVER REQUIREMENTS.
6. DIFFERENT PARALLEL SERVICES THAT ARE IN CLOSE PROXIMITY TO EACH OTHER MAY BE LAID IN A COMMON TRENCH, SUBJECT TO THE APPROVAL OF THE RELEVANT AUTHORITY AND THE SUPERINTENDENT.

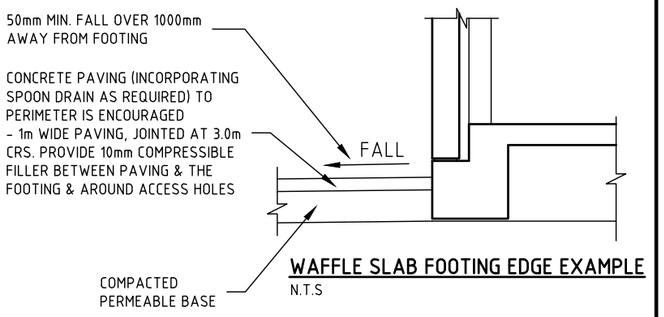
SITE DRAINAGE REQUIREMENTS - CONSTRUCTION STAGE:

THE GEOTECHNICAL REPORT HAS RECOMMENDED THE USE OF A CERTAIN FOOTING THAT IS APPROPRIATE FOR THIS SITE. WHILE MAKING THIS RECOMMENDATION IT HAS BEEN ASSUMED THAT CERTAIN SITE DRAINAGE REQUIREMENTS AS PER AS2870-2011 & BCA HAS BEEN MET.
DURING THE CONSTRUCTION OF THE FOOTING THE FOLLOWING SITE DRAINAGE REQUIREMENTS ARE LISTED AS BEING PART OF THE FINAL FOOTING DESIGN BY INTRAX CONSULTING ENGINEERS.

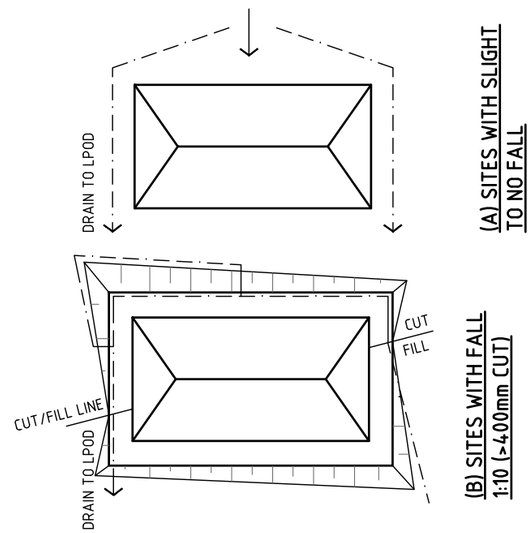
1. MUST PREVENT WATER PONDING AGAINST OR NEAR THE FOOTING
2. THE GROUND IN THE IMMEDIATE VICINITY OF THE PERIMETER FOOTING SHALL BE GRADED TO A FALL OF 50mm MIN. AWAY FROM THE FOOTING OVER A DISTANCE OF 1000mm (1:20) AND SHAPED TO PREVENT PONDING OF WATER (THIS INCLUDES THE GROUND UPHILL FROM THE FOOTING ON A CUT/FILL SITE) - WHERE FILLING IS PLACED ADJACENT TO THE BUILDING, THE FILLING SHALL BE COMPACTED AND GRADED TO ENSURE DRAINAGE OR WATER AWAY FROM THE BUILDING
3. ALL COLLECTED STORMWATER MUST BE DISCHARGED TO A LPOD
4. SURFACE DRAINAGE OF THE SITE SHALL BE CONTROLLED FROM THE START OF THE SITE PREPARATION AND CONSTRUCTION; SURFACE DRAINAGE INCLUDES SURFACE WATER RUN-OFF AND BUILDING WATER (ROOF/FLOOR/CONCRETE) RUN-OFF:
   -ALL WATER RUN-OFF SHALL BE CONTROLLED AT ALL TIMES
   - USE TEMPORARY DOWNPIPES TO COLLECT WATER FROM THE ROOFED BUILDING FRAME;
   - WHEN SILT PITS ARE USED TO GATHER SURFACE WATER FROM AREAS ADJACENT TO THE FOOTINGS, THESE SILT PITS ARE TO BE AT LEAST 1000mm AWAY FROM THE FOOTING AND CONNECTED TO THE STORMWATER SYSTEM WITH SOLID PIPE;
   - STORMWATER DRAINS SHALL BE AT LEAST 90mm AND HAVE A MINIMUM FALL OF 1:100 AND 100mm COVER UNDER THE SOIL AND/OR PAVED AREAS;
   - INSPECTION OPENINGS SHOULD BE PROVIDED AT EACH PIPE CONNECTION POINT AND AT A NOMINAL SPACING OF 25m
   - AVOID UNDERMINING THE FOOTING WITH ANY TRENCHES OR PIPE OR PITS UNLESS THE FOOTING HAS BEEN DESIGNED TO ALLOW FOR SUCH SITUATION.
5. SUB-SURFACE DRAINAGE IS REQUIRED TO REMOVE ANY UNWANTED GROUND WATER BY MEANS 90mm SLOTTED PIPE IN A 300mm WIDE TRENCH (MIN. FALL OF 1:100), BASE OF THE TRENCH IS FILLED WITH 10mm CRUSHED ROCK OR SIMILAR COVERING THE SLOTTED PIPE.
   - AG DRAINS MUST BE INSTALLED AT THE BASE OF ALL SITE CUTS THAT EXCEED 400mm IN HEIGHT, ALONG THE HIGH SIDE OF A SLOPING SITE AND POSSIBLY ALONG THE LOW SIDE OF A SLOPING SITE ALONG THE BOUNDARY. TO BE CONNECTED TO STORMWATER SYSTEM VIA A SILT PIT.
   - AG DRAINS TO BE LAID APPROX. 200mm INTO UNDISTURBED CLAY OR COMPACTED CLAY.
6. AC CONDENSERS, HW OVERFLOW, WATER TANKS AND ADJOINING PROPERTIES ARE ALL POTENTIAL SOURCES OF UNWANTED WATER. THIS WATER MUST BE CONTROLLED AND DIRECTED TO THE LPOD. POSSIBLE WATER IMPACTING THE SITE FROM AN ADJOINING PROPERTY, ESPECIALLY IF THERE IS A FOOTING ON OR NEAR A BOUNDARY MUST BE ADDRESSED. LOCALISED FOOTING STRENGTHENING IS TO BE CONSIDERED DURING CONSTRUCTION ILO DRAINAGE THAT MAY JEOPARDISE THE FOOTINGS.
7. GRATED DRAINS MAY BE UTILISED IN A PAVED AREA (E.G. DRIVERWAY/GARAGE INTERFACE) WHERE THE PAVING NECESSARILY SLOPES TOWARDS THE HOUSE OR GARAGE. SPOON DRAINS MAY ALSO BE USED IN CONJUNCTION WITH A PAVED SURFACE.
8. THE GROUND BENEATH A TIMBER DECK MUST BE GRADED SO THAT THE AREA BENEATH THE DECK IS ABOVE THE ADJACENT FINISHED GROUND LEVEL TO PREVENT PONDING.
9. ALL TRENCHES MUST BE DUG AT A SIMILAR GRADE AS THE PIPES THE TRENCHES HOUSE.
   - ALL TRENCHES MUST GENERALLY SLOPE AWAY FROM THE FOOTINGS
   - TRENCHES MUST BE 'CLAY PLUGGED' OR CONCRETED WHEN PASSING PERPENDICULARLY UNDER ANY PART OF THE FOOTING AND ON ANY SLOTTED PIPE SIDE OF A CONNECTION PIT
   - ALL TRENCHES WITHIN 1500mm OF ANY FOOTING MUST BE EFFECTIVELY SEALED FROM SURFACE WATER, WITH AT LEAST THE TOP 300mm OF THE TRENCH FILLED WITH LOCAL CLAY COMPACTED TO AN IMPERMEABLE TOP LAYER. APPROVED MOISTURE BARRIER USE WITH TRENCHES IS AN OPTION.
   - CONCRETE PAVING IS ADVISED OVER ANY TRENCHES WITHIN 1000mm OF ANY FOOTING.
10. FLEXIBLE PLUMBING JOINTS ARE REQUIRED FOR H1/H2/E/P SITES TO ALLOW FOR EXPECTED VERTICAL GROUND MOVEMENTS (REFER GEOTECHNICAL REPORT). THE JOINTS MUST BE SET AT THE MIDWAY POINT WHEN INSTALLED & MUST ALSO INCORPORATE SWIVEL JOINTS IN THE SYSTEM
    - DRAINS EMERGING FROM UNDER THE FOOTING REQUIRE THE FLEXIBLE JOINT TO BE WITHIN 1000mm OF THE OUTSIDE OF THE PERIMETER FOOTING
    - INSTALLATION, LOCATION AND NUMBER OF JOINTS TO COMPLY WITH MANUFACTURER'S SPECS
11. PLUMBING PENETRATING THE FOOTING MUST BE AVOIDED WHERE PRACTICABLE. IF UNAVOIDABLE THEN THE PIPE MUST PASS THROUGH THE MIDDLE THIRD OF THE FOOTING DEPTH AND LAGGING TO THE PIPE PROVIDED

MAINTENANCE:

1. THE MAINTENANCE OF THE SITE AROUND A NEW HOME IS AN IMPORTANT FACTOR IN THE LONG-TERM PERFORMANCE OF THE FOOTING SYSTEM
2. THE PRIMARY OBJECTIVE OF THIS MAINTENANCE IS TO MINIMIZE THE VARIATION IN SOIL MOISTURE LEVELS AROUND THE FOOTING THAT COULD LEAD THE EXCESSIVE SOIL MOVEMENT AND POSSIBLE DISTRESS OF THE SUPERSTRUCTURE AND/OR FOOTING. WHEN THE SLAB FORMS PART OF THE TERMITE BARRIER SYSTEM FOR THE HOUSE, THEN IT IS ALSO NECESSARY TO MAINTAIN THE EFFECTIVENESS OF THAT BARRIER WITH APPROPRIATE MAINTENANCE ACTIVITIES.
3. WHEN A CONCRETE SLAB-ON-GROUND IS USED AS PART OF THE TERMITE BARRIER SYSTEM AS OUTLINES IN AS3660.0, THEN IT CANNOT BE TOO HIGHLY STRESSED THAT REGULAR INSPECTION AND MAINTENANCE OF THE SLAB SURROUNDING BY A COMPETENT PROFESSIONAL IS REQUIRED TO ENSURE THAT ANY TERMITE INFESTATION IS DETECTED AND TREATED PROMPTLY.
4. ONGOING MAINTENANCE AND INSPECTION ON A REGULAR BASIS IS A REQUIREMENT OF AS3660.1 AND OWNER SHOULD BE CLEARLY ADVISED IF THEIR RESPONSIBILITIES TO ENSURE THAT THEIR INVESTMENT IS PROPERLY PROTECTED.
5. LEAKING TAPS, DOWNPIPES, SEWERS, GUTTERS AND DRAINAGE CAN ALSO AFFECT THE MOISTURE CONTENT OF THE SOIL AND THESE MUST BE INSPECTED REGULARLY TO ENSURE AGAINST DAMAGE TO THE FOOTINGS. SIMILARLY, GUTTERS, DOWNPIPE AND COLLECTION POINTS CAN GET BLOCKED WITH LEAVES AND OTHER DEBRIS, PREVENTING THE EFFECTIVE DRAINAGE OF STORMWATER AWAY FROM THE HOUSE. AGAIN, REGULAR INSPECTIONS AND MAINTENANCE SHOULD BE CARRIED OUT TO PREVENT BLOCKAGES.
6. IT IS IMPORTANT FOR BUILDER TO MAKE THE HOMEOWNER AWARE OF THE MAINTENANCE ISSUES ASSOCIATED WITH ENSURING THE LONG-TERM PERFORMANCE OF THE FOOTING SYSTEM.



WAFFLE SLAB FOOTING EDGE EXAMPLE
N.T.S



SCHEMATIC SITE PLAN FOR SUB-SURFACE DRAINAGE
N.T.S

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DRAINAGE NOTES

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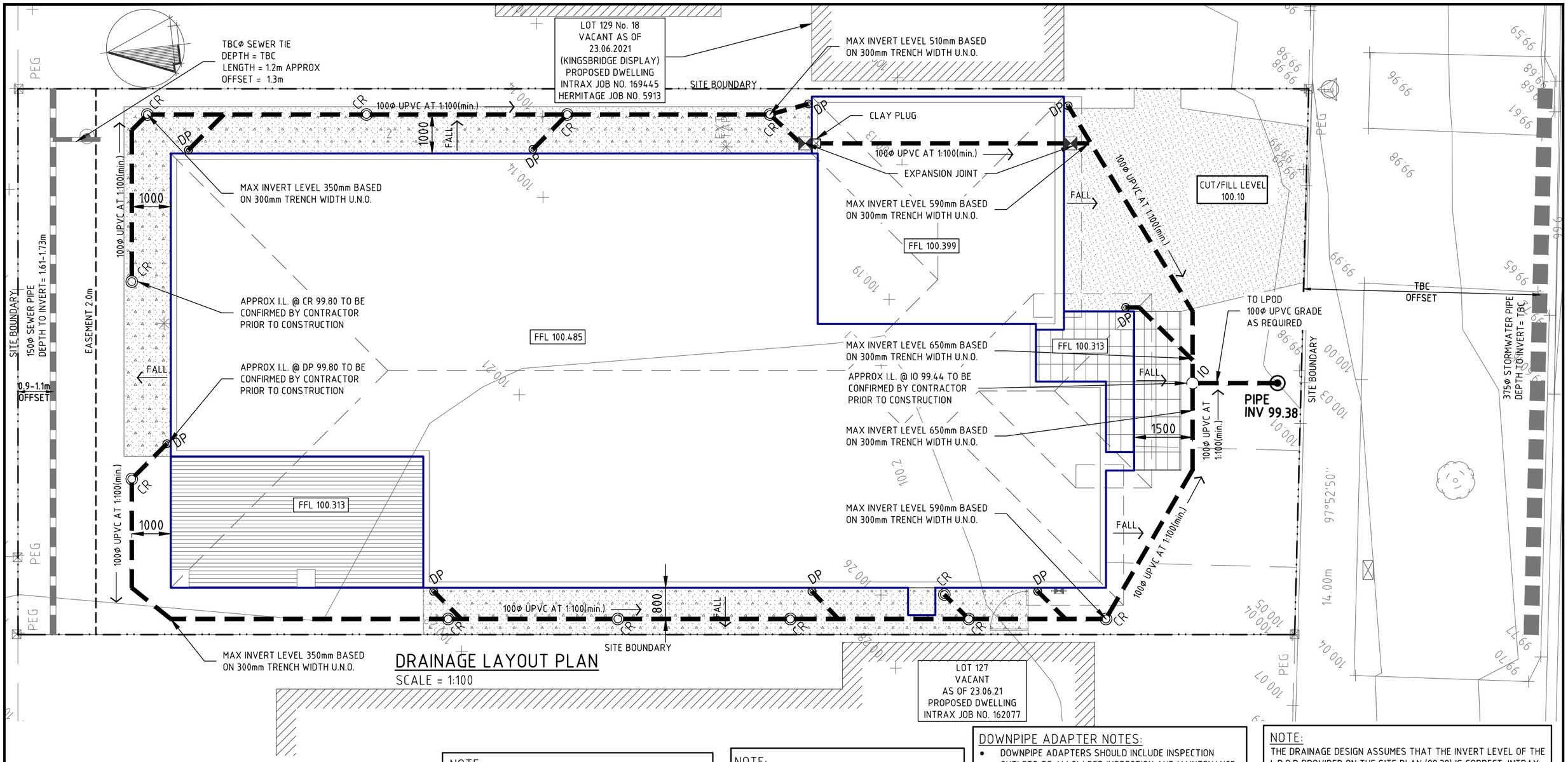
	SHEET NO. S10	NO. OF SHEETS 15	01

TEMPLATE: SH-TEMPLATE-RESI&MD[B]



DRAINAGE LAYOUT PLAN

SCALE = 1:100

NOTE:
CONTRACTOR TO ENSURE MINIMUM OF 200mm COVER TO PIPE IS MAINTAINED THROUGHOUT THE DRAINAGE SYSTEM.

NOTE:
BUILDER TO ENSURE THE SAFETY OF STORMWATER PIPES/COUNCIL ASSETS WHEN EXCAVATING ON SITE

DOWNPIPE ADAPTER NOTES:
- DOWNPIPE ADAPTERS SHOULD INCLUDE INSPECTION OUTLETS TO ALLOW FOR INSPECTION AND MAINTENANCE;
- THIS OFFICE RECOMMENDS THE USE OF CASTEC DOWNPIPE ADAPTER WITH I.O. OR EQUIVALENT

NOTE:
THE DRAINAGE DESIGN ASSUMES THAT THE INVERT LEVEL OF THE L.P.O.D PROVIDED ON THE SITE PLAN (99.38) IS CORRECT. INTRAX NEEDS TO BE CONTACTED FOR FURTHER ADVICE IF THE INVERT LEVEL OF THE L.P.O.D PROVIDED IS FOUND TO BE INCORRECT.

LEGEND

- EXISTING LEVEL (00.00)
- EXISTING SURFACE CONTOURS
- FINISHED FLOOR LEVEL (FFL xxx.xx)
- INVERT LEVEL (IL xx.xxx)
- RETAINING WALL
- PROPERTY BOUNDARY (SITE BOUNDARY)
- GRATED TRENCH (STORMWATER)
- PROPOSED STORMWATER DRAIN SEALED SYSTEM
- PROPOSED STORMWATER DRAIN
- EXISTING STORMWATER/SEWER MAIN
- AGI-PIPE (Ag)
- NATURAL SPOON DRAIN (SWALE DRAIN)
- EXISTING TREES
- CLAY PLUG
- EXPANSION/FLEXI JOINT
- 100ø DOWNPIPES (DP)
- INSPECTION SHAFT (IO)
- GRATED SILT PIT
- DRAINAGE PIPE FLOW DIRECTION
- DIRECTION OF SURFACE RUNOFF MINIMUM 1:20 FALL AWAY FROM THE BUILDING TYPICAL U.N.O. (FALL)
- CAPPED RISER (NON-VISUAL) (CR)

MINIMUM REQUIREMENT FOR EXPANSION/FLEXI JOINTS (IF REQUIRED)

SITE CLASS	DESIGN Ys MOVEMENT (mm)	MIN. EXPANSION JOINT CAPACITY REQUIREMENT	ALLOWABLE ROTATION
E	Ys >75	150mm	15°

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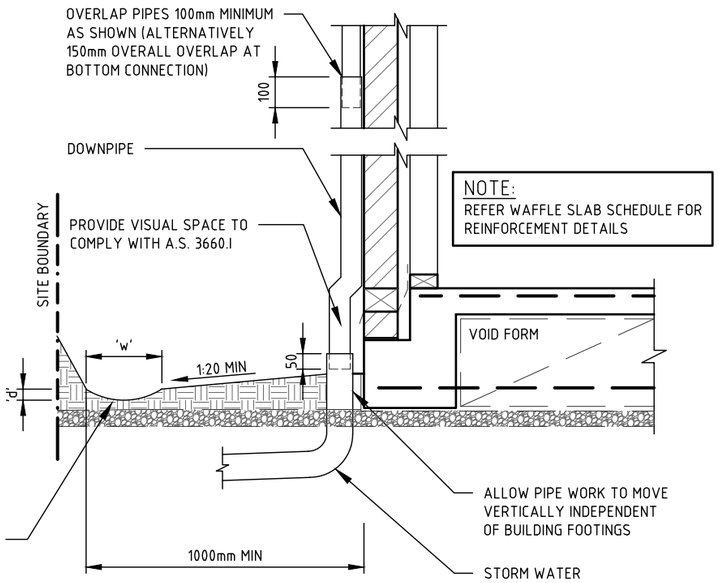
TEMPLATE: SH-TEMPLATE-RESI&MD[B]

NATURAL SWALE DRAIN GUIDELINE

CUT DEPTH	SWALE DEPTH 'd'	SWALE WIDTH 'w'
< 400mm	100mm	300mm
400mm-800mm	150mm	400mm
> 800mm	200mm	400mm



TYPICAL DOWNPIPE & SWALE DRAIN DETAIL (IF REQUIRED)

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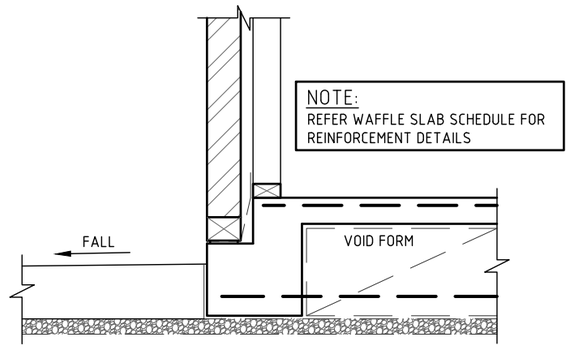

TYPICAL BENCHING DETAIL

N.T.S.

1. PREVENT "OVERPOUR" OF CONCRETE BY LINING ANY COLLAPSED SIDES OF TRENCHES WITH FIBRE CEMENT SHEETING, FORMPLY, BOARDS OR COMPACTED SOIL BACKFILLING BEHIND VAPOUR BARRIER (OR DAMP-PROOF MEMBRANE) DURING POUR.
2. FALL "CUT" BENCHING AWAY FROM THE FOOTING.
3. TERMINATE VAPOUR BARRIER (OR DAMP-PROOF MEMBRANE) UNDER DPM OR "CUT" BENCHING.
4. PLACE DPM BETWEEN PAVING AND FOOTING.
5. MINIMUM EDGE EXPOSURE (E) OF 70mm MAY BE REQUIRED FOR TERMITE PROTECTION TO COMPLY WITH AS3660.1 AND IS REQUIRED ON "E" CLASS SITES TO COMPLY WITH THE SOUTH AUSTRALIA HOUSING CODE (THE GREATER THE EXPOSURE HOWEVER, THE GREATER THE OPPORTUNITY TO DRY OUT FROM THE OUTSIDE FACE).
6. THE DPM (VISCOUS DAMP PROOF MEMBRANE AS USED BY BRICKLAYERS) SHOULD SIT ON THE 'CUT' BENCH LEVEL FOR A MINIMUM OF 75mm. IT SHOULD THEN EXTEND UP THE FACE OF THE FOOTING TO END AT THE TOP OF THE PAVEMENT.

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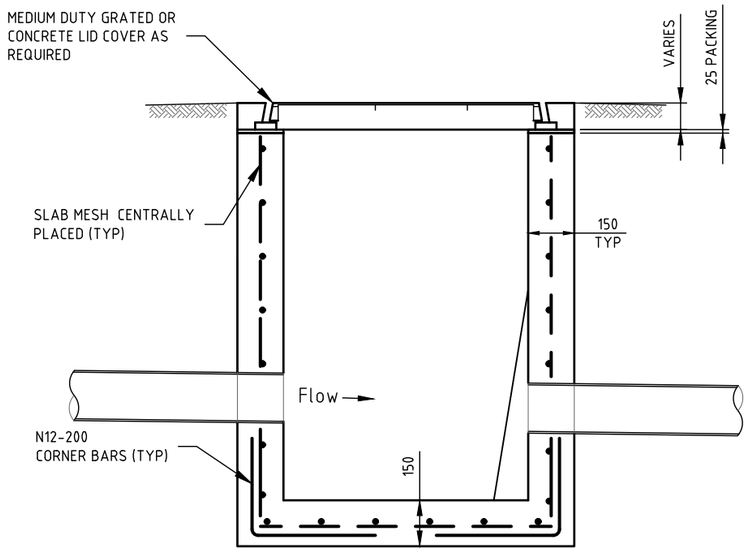
	SHEET NO. S12	NO. OF SHEETS 15	01

TEMPLATE: SH-TEMPLATE-RESI&MD[B]



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PIT WITH SILT TRAP DETAIL FOR TRAFFICABLE AREA(IF REQUIRED)

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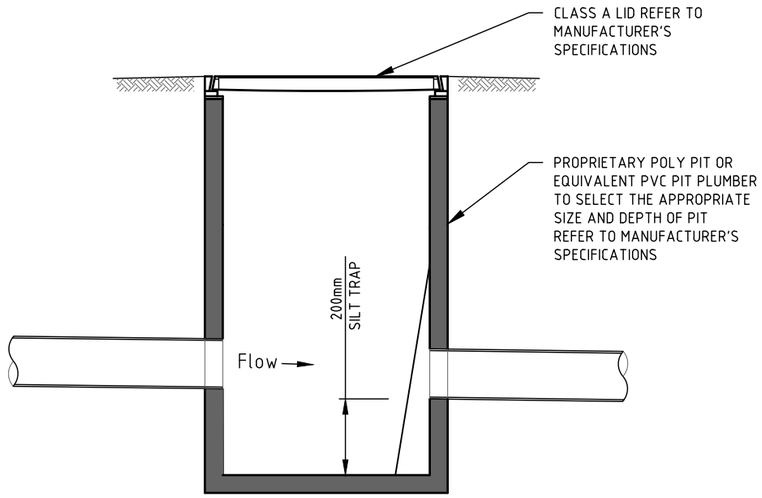

PIT WITH SILT TRAP DETAIL FOR NON-TRAFFICABLE AREA(IF REQUIRED)

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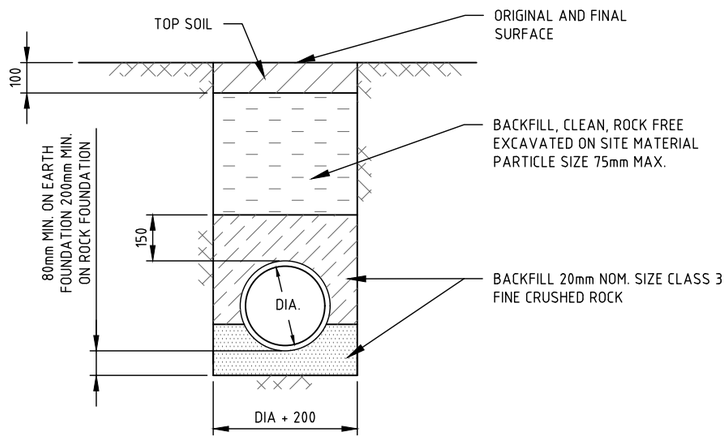
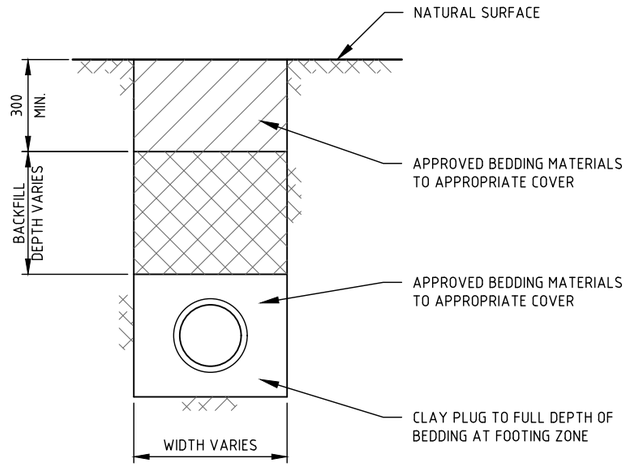


TRENCH CONDITIONS FOR DRAINAGE PIPE INSTALLATION (NOT UNDER PAVEMENTS)

SCALE = 1:20



TYPICAL CLAY PLUG DETAIL

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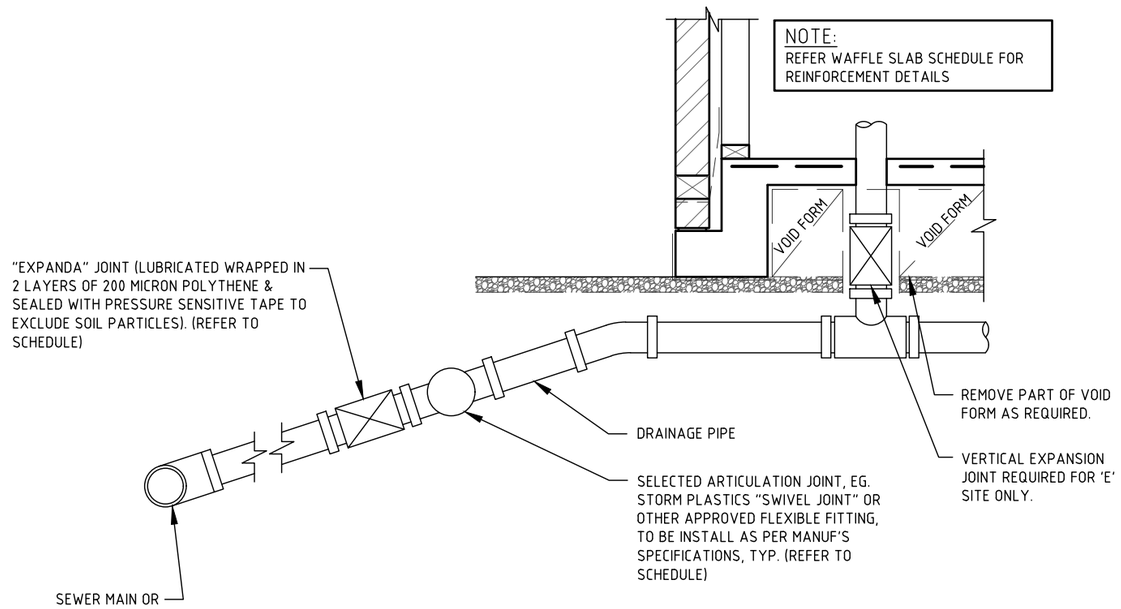
	SHEET NO. S13	NO. OF SHEETS 15	

TEMPLATE: SH-TEMPLATE-RESI&MD[B]

MINIMUM REQUIREMENTS FOR SEWER ARTICULATION			
SITE CLASS	DESIGN Ys MOVEMENT (mm)	SEWER EXIT POINTS & ORG	
		SWIVEL	EXPANDER
E	Ys >75	2	1

NOTE:
EXPANDER REQUIRED ON ALL RISERS FOR (CLASS E, Ys >75mm OR EQUIVALENT SITES



TYPICAL UNDER WAFFLE SLAB PIPE DETAIL
SCALE = 1:20

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