

INTEGRITY EDGE

Quality Assurance Programme

PLUMBER:

SITE ADDRESS:

OHS

- New contractors to complete TAC before commencement of work (www.integritynewhomes.com.au/tradecontractorlogin username: subcontractor; password: integrity)
 - Provide project manager with SWMS (where required) and general induction numbers.
 - Ensure that you carry an Australian Standard Compliant, First Aid Kit in your vehicle at all times when on an Integrity site – this kit should be construction site & employee number appropriate.
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IMPORTANT PLUMBING AND DRAINAGE NOTES/DETAILS

There are nine (9) pages of attached plumbing and drainage notes, plans and summaries which form part of the Integrity Edge Plumber requirements and are referred to by page number and title (stated in Job Address title box) where relevant within the text below. These requirements must be complied with where applicable for any job.

UNDERSLAB PLUMBING & DRAINAGE

- Check measure all survey points.
- All service trenches to be outside the zone of influence referred to on slab engineering. If not possible advise Project Manager.

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- Please go to the relevant Council and amend Council records to your name, on any job you have commenced.
 - Provide floor waste to all wet areas including powder rooms with vanities and tiled laundries, but excluding separate wc's without basins/vanities.
 - If trenching is required (by others) after the drainage work is complete, expose the pipes. Your drainage could be damaged if not visible.
 - Ensure stormwater cut into curb or pit.
 - Position overflow gullies under external taps.
 - Comply with "Plumbing and Drainage Summary" information page 2/9 of attached plans and details for soil type/drainage grade guide (for sites, A, S, M, H1, H2, E, P and P2).
 - Comply with "General Plumbing and Drainage Detail" information page 9/9 of attached plans details.
 - Where Polyvoid slabs are specified comply with "Plumbing and Drainage Details Polyvoid Slabs" information page 7/9 of attached plans and details.
 - For Highly Reactive (H) Sites provide overflow gullies under all external taps.
 - For Moderately (M), Highly (H) & Extremely (E) reactive sites:
 1. The base of trenches shall be sloped away from the building.
 2. Trenches shall be backfilled with clay in the top 300mm within 1.5m of the building. The clay used for backfilling shall be compacted.
 3. Where pipes pass under the footing system, the trench shall be backfilled full depth with clay. Alternatively, a plastic membrane across the cross-section of the trench, taped to the pipe and keyed into the sides and base of the trench may be used.
 4. Comply with "Plumbing and Drainage Notes RE: AS2870-2011" information page 1/9 of attached plans and details.

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5. Comply with "Plumbing and Drainage Details Strip Footing/Pads, Slab on Ground, Waffle for M and M-D" information page 5/9 of attached plans and details.

For Highly (H) & Extremely (E) reactive sites:

1. All horizontal penetrations of the edge beam or footings by stormwater or sanitary drain pipe shall be lagged using closed-cell polyethylene lagging.
2. The lagging shall be 20mm thick on class H1 sites and 40mm thick on class H2 and class E sites. (Vertical penetrations do not require lagging.) Sleeves allowing equivalent movements may be used as an alternative to the lagging.
3. All drains/pipes emerging from under the building shall incorporate flexible joints within 1m of the edge of the building to accommodate a total range of differential movement in any direction equal to 40-60mm (H1), 60-75mm (H2) & 75mm+ (E).
4. Comply with "Plumbing and Drainage Details Strip Footing/Pads for P, Land Slip or Creep" information page 3/9 of attached plans and details.
5. Comply with "Plumbing and Drainage Details Strip Footing/Pads for H1-D, H2-E, H2-D, E-D" information page 4/9 of attached plans and details.
6. Comply with "Plumbing and Drainage Details Slab on Ground or Waffle for H1 & H1-D, H2-E, H2-D, E-D, P-D" information page 6/9 of attached plans and details.

ROUGH-IN

- Flanges for wastes on timber floors to be routed flush with surface.
- Laundry tub 410mm to the centre if adjacent to sliding glass door (100mm gap at side).
- All washing machine connections to be under laundry tub.
- All bath tubs that are not pressed steel to be supported under by plumber.

-
- Fit cover plates over cut outs in kitchen and vanities shelves.
 - Rehau piping system (or equivalent) to be used for all water and gas installations.
 - Check orders for applicable HWS if gas instantaneous recess boxes need to be installed prior to external cladding, if heat pump ensure inlet outlet pipes are in correct location for model of HWS.
 - Install roof flashing of penetrations before sheeting.
 - Rough-in blanking spindles used must accept waterproof flange to be fitted by waterproofer.
 - Down pipes to be installed as per the roof drainage design (including location and qty).
 - Comply with "Down Pipe/Stormwater Details in Reactive Sites for H1, H1-D, H2-E, H2-D, E-D, P-D" information page 8/9 of attached plans and details.
 - Please clean out job and sweep where necessary before leaving or back charges will follow from the next trade or the Project Manager.

FIT-OFF

- Run all taps for 5-10 minutes to confirm drainage is operative with no blockages.
- Confirm tempering valves are suitable for HWS (if applicable).
- Ensure copper or brass olives (not nylon) & copper pipe used on flow and return to solar panels. (if applicable)
- Chrome tube to be used on inlet to cisterns (no flexible connections).
- Replace all shelving under vanities and kitchens that have been removed to connect drainage.
- Ensure all access holes are cut for dishwasher connections and washing machine connections as required.

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- It is the plumber's responsibility to commission the hot water system and the rainwater pump system to ensure correct operation prior to leaving site. This may mean another visit to site to check appliances operating correctly.

 - Record the serial number of the HWS here _____.
 - Water filter to be installed horizontally above melamine shelf in kitchen in accordance with suppliers details.

 - Provide copies of all paperwork relating to council inspections and the dates of inspection plus stormwater and sewer diagram at the end of the job.

 - Cut off yard drainage points to a maximum height which will allow landscaping to fall 50mm per 1 meter away from the building and water to enter the drain (drain point not to be left higher than this).**

 - Provide certificate confirming the hot water tempering valve has been installed in accordance with the Australian standard.

 - Ensure when you leave, the house is secure. If not, you will be liable for theft and any damage that may be caused.

 - Complete and sign Integrity Edge and submit with invoice at end of job.

Signature: _____

Date: _____

Print Name: _____

Invoice No: _____

Plumbing requirements . . . Clause 5.6.4

Buildings on highly or extremely reactive sites shall be provided with a system of plumbing detailed in accordance with the following:

- (a) Penetrations of the edge beams of a raft and perimeter strip footings shall be avoided where practicable, but where necessary shall be detailed to allow for movement. Closed-cell polyethylene lagging shall be used around all stormwater and sanitary plumbing drain pipe penetrations through footings. The lagging shall be a minimum of 20 mm thick on Class H1 sites and 40 mm thick on Class H2 and Class E sites.

Vertical penetrations do not require lagging.

NOTE: Sleeves allowing equivalent movements may be used as an alternative to the lagging.

- (b) Drains attached to or emerging from underneath the building shall incorporate flexible joints immediately outside the footing and commencing within 1 m of the building perimeter to accommodate a total range of differential movement in any direction equal to the estimated characteristic surface movement of the site (y_s). In the absence of specific design guidance, the fittings or other devices that are provided to allow for the movement shall be set at the mid-position of their range of possible movement at the time of installation, so as to allow for movement equal to $0.5y_s$ in any direction from the initial setting. This requirement applies to all stormwater and sanitary plumbing drains and discharge pipes.

- (d) Drainage under a slab shall be avoided where practicable.

NOTES:

- 1 Pipes may be encased in concrete or in recesses in the slab when provided with flexible joints at the exterior of the slab.
- 2 Methods used should comply with the AS/NZS 3500 series.

Section 6.6

Additional Requirements for Moderately, Highly and Extremely Reactive Sites

For stiffened rafts, waffle rafts, or strip footings on moderately, highly and extremely reactive sites, the following requirements apply to the building services and footing system in addition to the requirements of Clauses 6.4 and 6.5:

- (a) Where the design of the footing system relies on particular detailing of masonry construction to minimize any damage caused by foundation movement, that detailing shall be included on the drawings.
- (b) Penetrations of the edge beam and footing by drain pipes shall be sleeved using closed-cell polyethylene lagging or similar.

- (c) During construction, water run-off shall be collected and channelled away from the building.
- (d) Excavations near the edge of the footing system shall be backfilled in such a way as to prevent access of water to the foundation as described in Clause 5.6.3(b).

NOTES:

- 1 For example, excavations should be backfilled above or adjacent to the footing with moist clay compacted by hand-rodding or tamping.
- 2 Porous material such as sand, gravel or building rubble should not be used.

- (e) Water shall not be allowed to pond in the trenches.

Appendix B

B2.3 Classes M, H1, H2 and E sites

Sites classified as M, H1, H2, or E should be maintained at essentially stable moisture conditions and extremes of wetting and drying prevented. This will require attention to the following:

- (a) Drainage of the site.
The site should be graded or drained so that water cannot pond against or near the building. The ground immediately adjacent to the building should be graded to a uniform fall of 50 mm minimum away from the building over the first metre. The subfloor space for buildings with suspended floors should be graded or drained to prevent ponding where this may affect the performance of the footing system. The site drainage recommendations should be maintained for the economic life of the building.
- (d) Repair of leaks
Leaks in plumbing, including stormwater and sewerage drainage, should be repaired promptly.



	Job Address: PLUMBING & DRAINAGE NOTES RE: AS 2870-2011			Client: INH	SIGNATURE
	Drawn: INH	Job Number: INH IE 1234	Page: 1 / 12	Issue: n/a	
	Date: 10/03/2012	Site Classification: N/A	Environment Exposure Classification: N/A		ENGINEERS AUSTRALIA Professional Engineers MEMBER

TABLE : SP 26911

SOIL TYPE WITH DRAINAGE AND STORM WATER GRADE SUMMARY

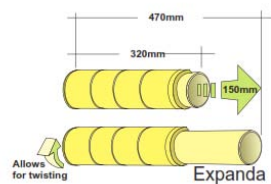
NOTE: Must be read in conjunction with Storm Plastics "Under Slab Guidelines"

AS2870-2011 CLASSIFICATION	ONSITE SOIL CONDITIONS	DIFFERENTIAL MOVEMENT	SEWER DRAINAGE GRADE MAXIMUM	STORM WATER GRADE MAXIMUM	SWIVEL* WITH (50mm expansion)	SWIVEL/COMBO* (100mm Expansion)	EXPANDER* JOINTS (150mm expansion This unit absorbs developing pipe twist)	DRAWING NUMBER	FOUNDATION TYPE
A	Most Sand & Rock sites	0 - 10mm	1:60	1:100	Not necessary	Not necessary	Not necessary	N/a	All Types
S	Slightly reactive Soils	10 - 20mm			As per AS2870 Single unit			Page 5	
M	Moderately reactive Soils	20 - 40mm							
H1	Highly Reactive Soils	40 - 60mm	1:40	1:60/1:40	As per AS 3500.5 using 2 Swivel units outside and an Expanda on every riser	As necessary	Within 1 Mtr of House internal footprint and every 6mtrs	Page 6	WAFFLE
H2	Very Highly Reactive Soils	60 - 75mm			Not applicable to suspended sub floors	Every Riser ...unless suspended	All Junctions & Bends As per above Differential Movement ...unless suspended	Page 4	Strip Footings
E	Extremely Reactive Soils	75mm +							
P	Soils affected by Abnormal Moisture Conditions and Trees	20mm+	As Per above Differential Movement	As Per above Differential Movement				Page 7	Polyvoid Strip Pad

NOTE: Engineer or Local Authority details take precedence over this table

RATIO	FALL IN 10 Mtrs	ANGLE	GRADE %
1:300	33mm	.19°	.33
1:200	50mm	.28°	.5
1:100	100mm	.57°	1.0
1:80	125mm	.71°	1.25
1:60	167mm	.95°	1.6
1:50	200mm	1.14°	2.0
1:40	250mm	1.43°	2.5

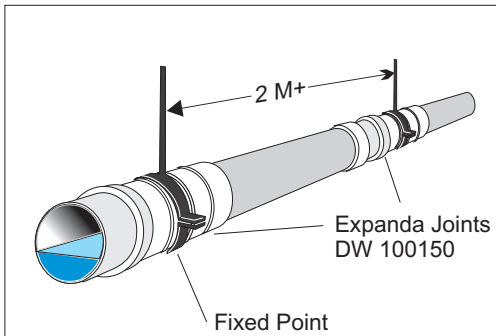
This Unit absorbs any developing Pipe Twist or Torque caused by Soil movement



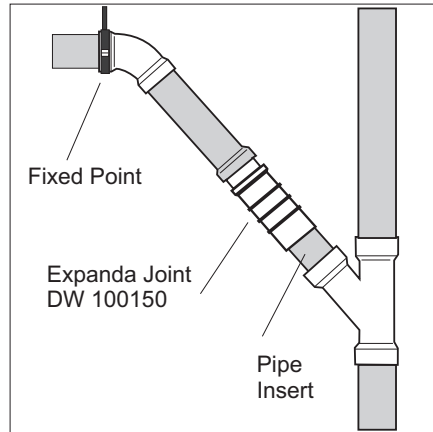
* Unless otherwise specified, these expansion Joints must be set at 50% of total Expansion ability as per AS2870-2011(Clause 5.6.4(b))

	Job Address: PLUMBING & DRAINAGE SUMMARY			Client: INH	SIGNATURE ENGINEERS AUSTRALIA Professional Engineers MEMBER JOHN D'AMICI MIEAust CPEng NPER (316291) RPEQ (12014)
	Drawn: INH	Job Number: INH IE 1234	Page: 2 / 12	Issue: n/a	
	Date: 10/03/2012	Site Classification: N/A	Environment Exposure Classification: N/A	Wind rating: N/A	

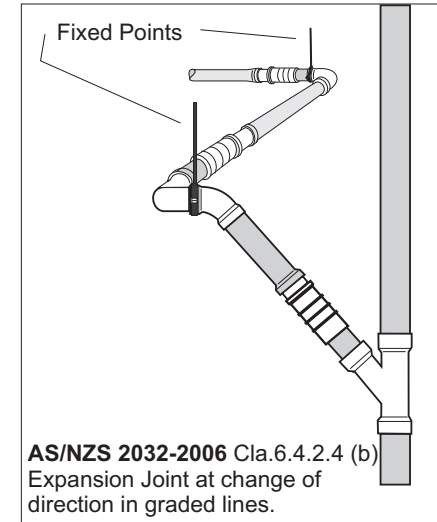
AS2870-2011 is the most radical change to interpreting soils & house engineering we have seen since 1986 and several trades will need to know what is in it and how to apply it.



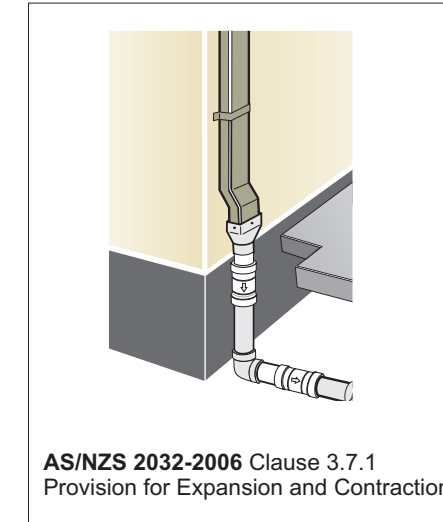
AS/NZS 2032-2006 Clause 6.4.2.2 (a)
Expansion joints provided where distance between fixed points exceed 2 metres (cold pipelines)



AS/NZS 2032-2006 Clause 6.4.2.4 (a)
Expansion Joint at connection to stack



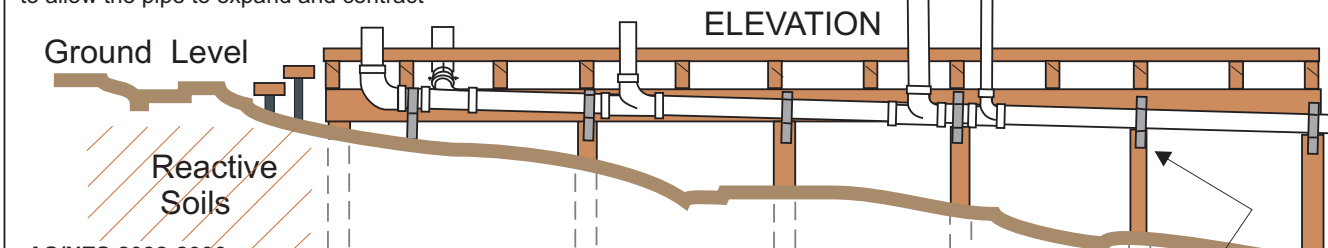
AS/NZS 2032-2006 Cla.6.4.2.4 (b)
Expansion Joint at change of direction in graded lines.



AS/NZS 2032-2006 Clause 3.7.1
Provision for Expansion and Contraction

AS/NZS 2032-2006 Clause 3.7.1 Provision for Expansion and contraction.

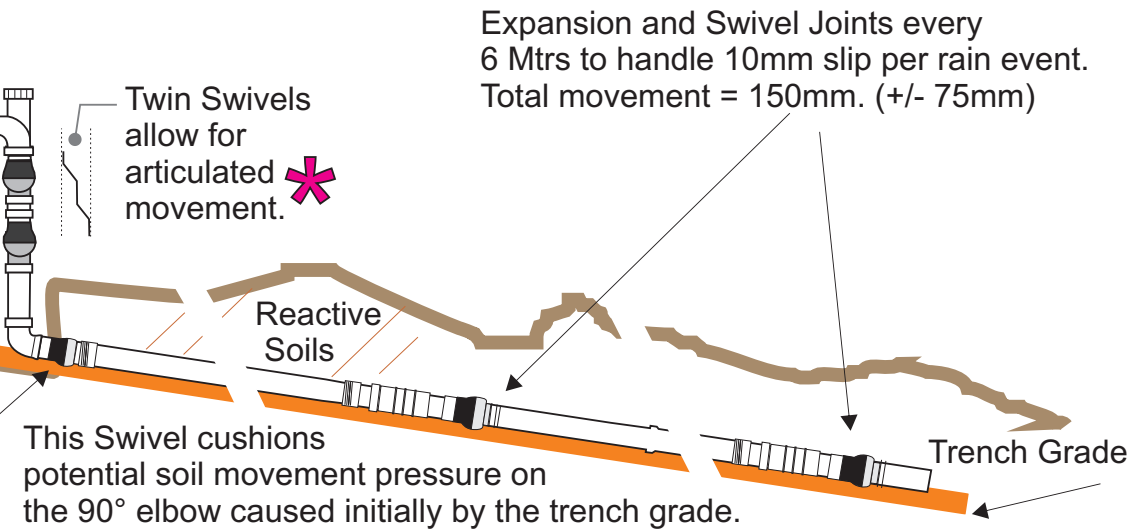
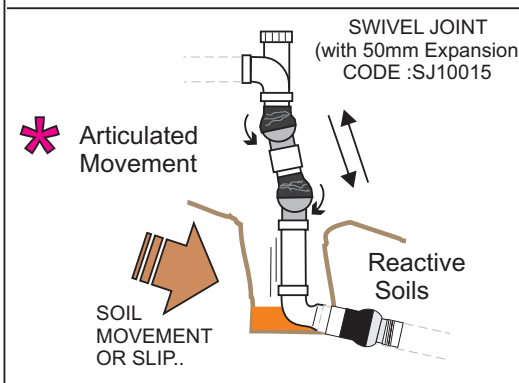
Downpipes do not normally need special provision for expansion and contraction. However, when a downpipe is connected to a Stormwater pipe, or otherwise restrained at the discharge end, provisions shall be made to allow the pipe to expand and contract



AS/NZS 2032-2006.
Clause 2.3 : Hangers and Clips: Hangers and Clips shall be corrosion resistant for the intended environment. **Sliding Joints,** pipe hangers and clips shall be constructed so that, when fully tightened, longitudinal movement of the pipe is possible without damage to the pipe or fitting. **Anchor clips** for fixed points shall be constructed so that, when fully tightened, the fitting or pipe is securely and evenly clamped to prevent movement. Care shall be taken to ensure that pipes and fittings are not distorted by over tightening.

Clause 3.7.2 Vibration
Vibration of the pipe (e.g. at connections to water pumps) shall be avoided and where necessary, flexible couplings shall be installed to minimize transmission of vibration to the pipe work.

Clause 4.2.2 (g) Solvent Cement Jointing
Allow the joints to cure for 24hrs. Do not fill the pipeline with water until at least 1 h after making the last joint. Do not pressurize for at least 24 h after making the last joint.



Please refer to Storm Plastics Table No. SP- 1 for additional details on flow gradients and installation

Drawing No.SP 105A		NOT DRAWN TO SCALE	
SOIL CLASSIFICATION		Class - P : Land Slip or Creep	
AS 2870-2011	Residential Installation Guide ONLY for use of		
AS/NZS 2870-2011	Mechanical Expansions Joints in Reactive Soils.		
COMPANY		STORM PLASTICS (SA) Pty Ltd	
GRADE		1:50 (200mm Fall in 10 Mtrs)	
PIPE MATERIAL		Poly Vinyl Chloride - PVC	March 2012

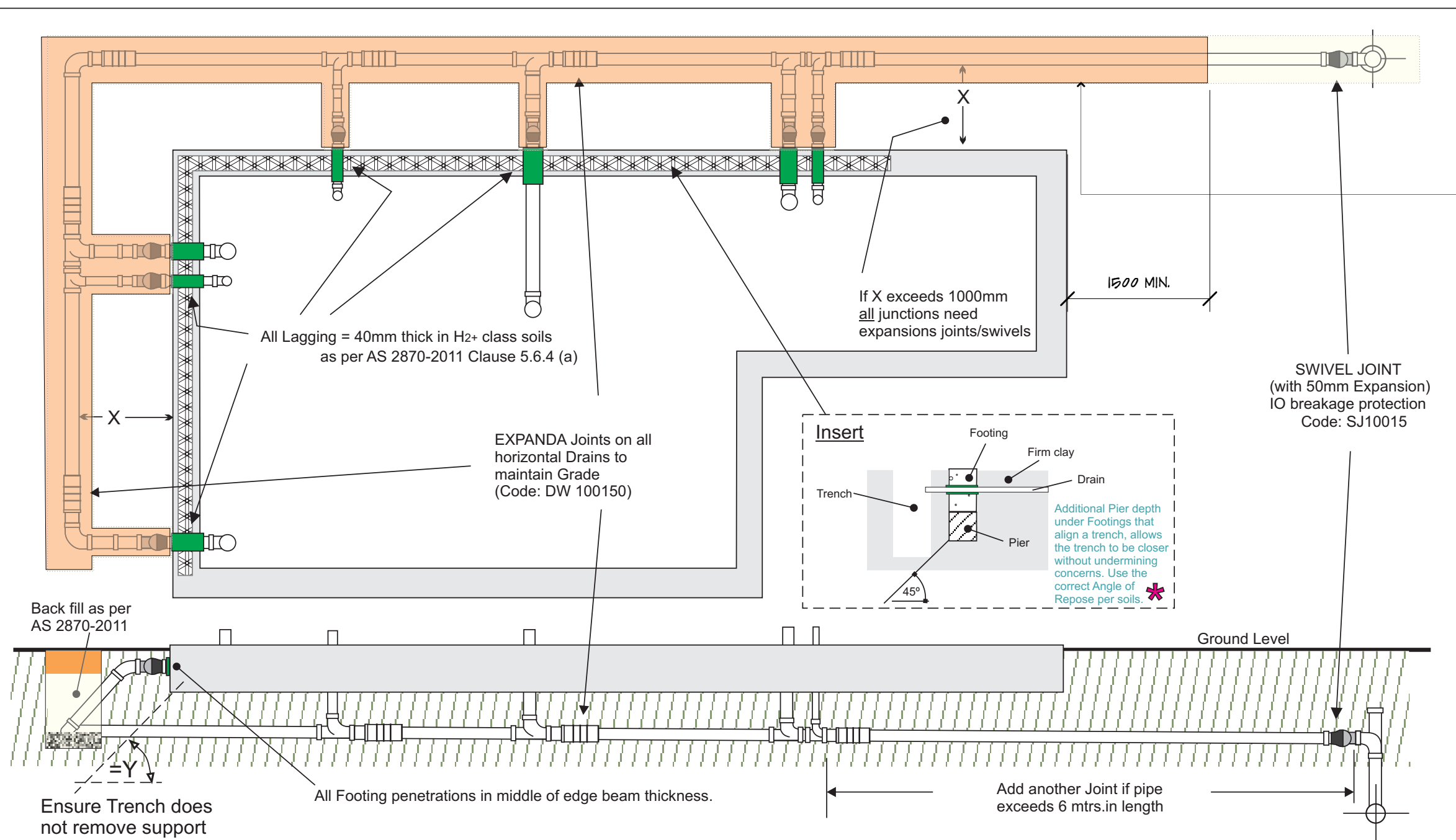
QUALITY APPROVED TO AS/NZS ISO 9001:2008
REGN. Number 1274
Manufactured under a quality system certified as complying with ISO 9001 by an accredited certification body

Job Address: PLUMBING & DRAINAGE DETAILS STRIP FOOTING/PADS FOR P, LAND SLIP OR CREEP			Client: INH
Drawn: INH	Job Number: INH IE 1234	Page: 3 / 12	Issue: n/a
Date: 10/03/2012	Site Classification: N/A	Environment Exposure Classification: N/A	
	Wind rating: N/A		

SIGNATURE

ENGINEERS AUSTRALIA
Professional Engineers MEMBER

JOHN D'AMICI
MIEAust CPEng NPER (316291)
RPEQ (12014)



TRENCHES SHALL BE BACKFILLED WITH CLAY IN THE TOP 300mm WITHIN 1.5m OF THE BUILDING. THE CLAY USED FOR BACKFILLING SHALL BE COMPACTED. WHERE PIPES PASS UNDER THE FOOTING SYSTEM THE TRENCH SHALL BE BACKFILLED FULL DEPTH WITH CLAY OR CONCRETE TO ACT AS A BARRIER TO THE INGRESS OF WATER BENEATH THE FOOTING SYSTEM. ALTERNATIVELY USE A SIMILAR ARRANGEMENT TO DETAIL "A" (SHOWN ON SHEET 7) OR PROVIDE A PLASTIC MEMBRANE ACROSS THE CROSS-SECTION OF THE TRENCH TAPED TO THE PIPE AND KEYED INTO THE SIDES AND BASE OF THE TRENCH MAY BE USED

* Y = 45 deg for Firm CLAYS
Y = 30 deg for SAND

For further clarification and other soil types see Clause/Figure 4.15.2 AS/NZS 3500.5 Draft.



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Please refer to Storm Plastics Table No. SP -1 for additional details on flow gradients and installation

Drawing No.SP 101A	LAGGED PIPEWORK ON 45 Deg SYSTEM	NOT DRAWN TO SCALE
SOIL CLASSIFICATION	Class H2 /E -Strip Footings with stumps or pads 75 + mm Differential Movement	
AS 2870-2011	Residential Installation <u>Guide ONLY</u> for use of Mechanical Expansions Joints in Reactive Soils.	
COMPANY	STORM PLASTICS (SA) Pty Ltd	
GRADE	1:50 (200mm Fall in 10 Mtrs)	
PIPE MATERIAL	Poly Vinyl Chloride - PVC	July 2011



Job Address: PLUMBING & DRAINAGE DETAILS STRIP FOOTING/PADS FOR H1-D, H2, E, H2-D, E-D

Drawn: INH **Job Number:** INH IE 1234 **Page:** 4 / 12

Date: 10/03/2012 **Site Classification:** N/A **Environment Exposure Classification:** N/A

Wind rating: N/A

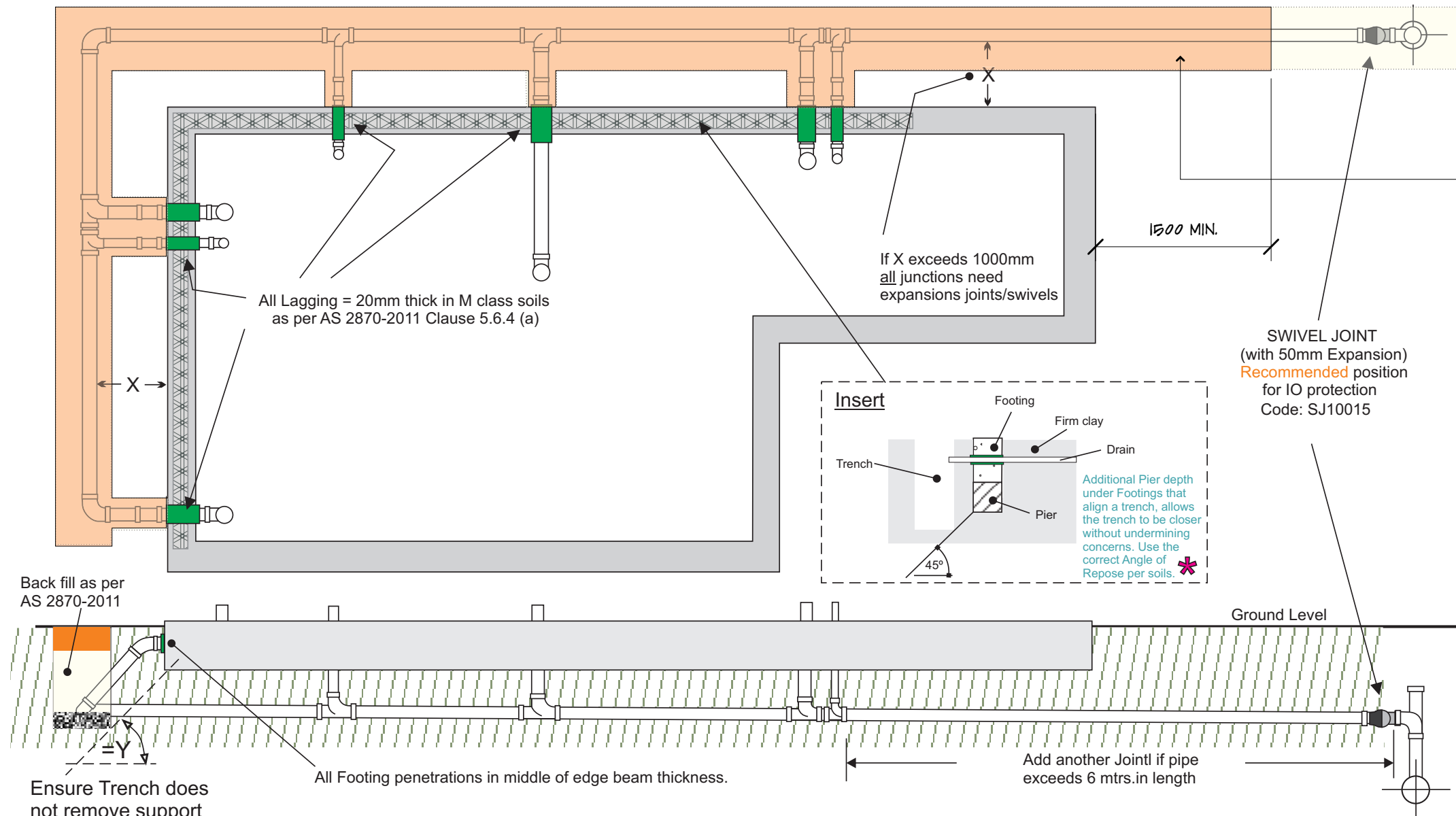
Client: INH

Issue: n/a

SIGNATURE

ENGINEERS AUSTRALIA Professional Engineers MEMBER
JOHN D'AMICI
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TRENCHES SHALL BE BACKFILLED WITH CLAY IN THE TOP 300mm WITHIN 1.5m OF THE BUILDING. THE CLAY USED FOR BACKFILLING SHALL BE COMPCATED. WHERE PIPES PASS UNDER THE FOOTING SYSTEM THE TRENCH SHALL BE BACKFILLED FULL DEPTH WITH CLAY OR CONCRETE TO ACT AS A BARRIER TO THE INGRESS OF WATER BENEATH THE FOOTING SYSTEM. ALTERNATIVELY USE A SIMILAR ARRANGEMENT TO DETAIL "A" (SHOWN ON SHEET 7) OR PROVIDE A PLASTIC MEMBRANE ACROSS THE CROSS-SECTION OF THE TRENCH TAPED TO THE PIPE AND KEYED INTO THE SIDES AND BASE OF THE TRENCH MAY BE USED

* Y = 45 deg for CLAYS
Y = 30 deg for SAND

For further clarification and other soil types see Clause/Figure 4.15.2 AS/NZS 3500.5 Draft



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Please refer to Storm Plastics Table No. SP-1 for additional details on flow gradients and installation

Drawing No. SP 101	LAGGED PIPEWORK ON 45 Deg SYSTEM	NOT DRAWN TO SCALE
SOIL CLASSIFICATION	Class M -Strip Footings with stumps or pads 20 - 40 mm Differential Movement	
AS 2870-2011	Residential Installation Guide ONLY for use of Mechanical Expansions Joints in Reactive Soils.	
COMPANY	STORM PLASTICS (SA) Pty Ltd	
GRADE	1:50 (200mm Fall in 10 Mtrs)	
PIPE MATERIAL	Poly Vinyl Chloride - PVC	July 2011



Job Address: PLUMBING & DRAINAGE DETAILS STRIP FOOTING/PADS, SLAB ON GROUND, WAFFLE FOR M & M-D

Client: INH

SIGNATURE

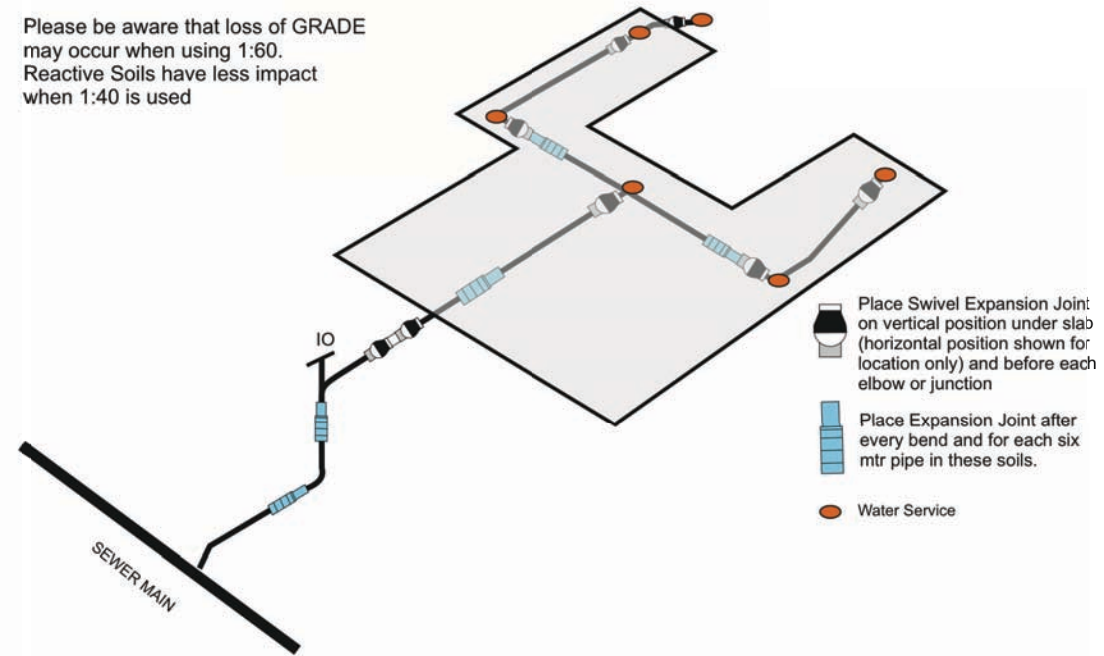
Drawn: INH Job Number: INH IE 1234 Page: 5 / 12
Date: 10/03/2012 Site Classification: N/A Environment Exposure Classification: N/A
Wind rating: N/A

Issue: n/a

ENGINEERS AUSTRALIA Professional Engineers MEMBER
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MASTER LEGEND	
⊗	Swivel / Expansion Joint
×	Expansion Joint
✱	Expansion Joint Bend
○	Inspection Opening
⊠	Overflow Relief Gully
IOS	Inspection Opening to Surface
V	Vent
B	Basin
BTH	Bath
SHR	Shower
FWG	Floor Waste Gully
CS	Cleaner's Sink
WC	Water Closet
TR	Trough
S	Sink

Please be aware that loss of GRADE may occur when using 1:60. Reactive Soils have less impact when 1:40 is used



UNDER SLAB/ZERO LOT ALIGNMENT DRAINAGE

SLAB ON GROUND OR WAFFLE
H1, H1-D, H2-E, H2-D, E-D, P-D SOILS
SOIL MOVEMENT FROM 65-150mm

PERIMETER DRAINAGE

SLAB ON GROUND OR WAFFLE
H1, H1-D, H2-E, H2-D, E-D, P-D SOILS
SOIL MOVEMENT FROM 65-150mm



Job Address: PLUMBING & DRAINAGE DETAILS SLAB ON GROUND OR WAFFLE FOR H1 & H1-D, H2-E, H2-D, E-D, P-D

Client: INH

SIGNATURE

Drawn: INH

Job Number: INH IE 1234

Page: 6 / 12

Issue: n/a

Date: 10/03/2012

Site Classification: N/A

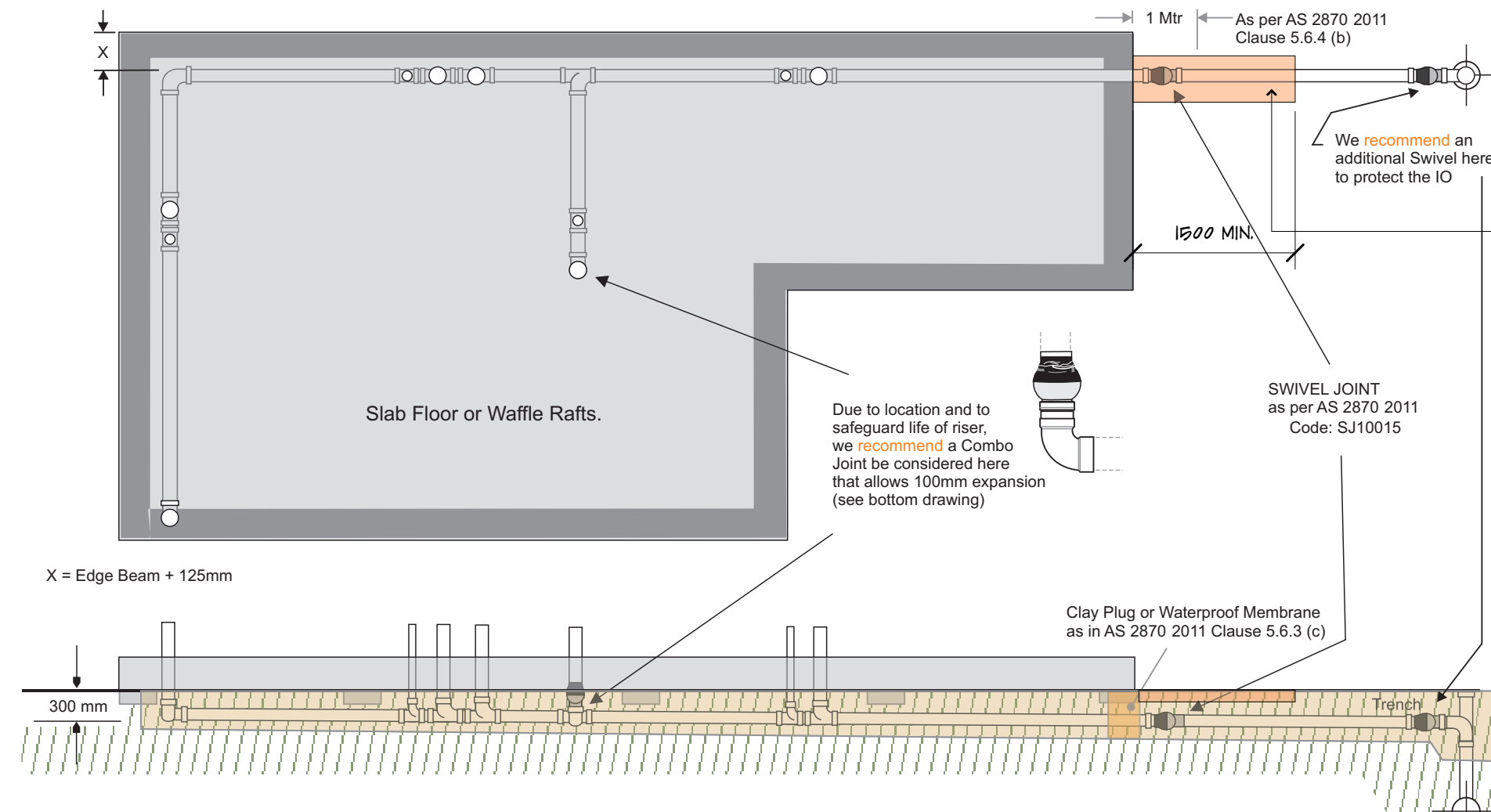
Environment Exposure Classification: N/A

Wind rating: N/A

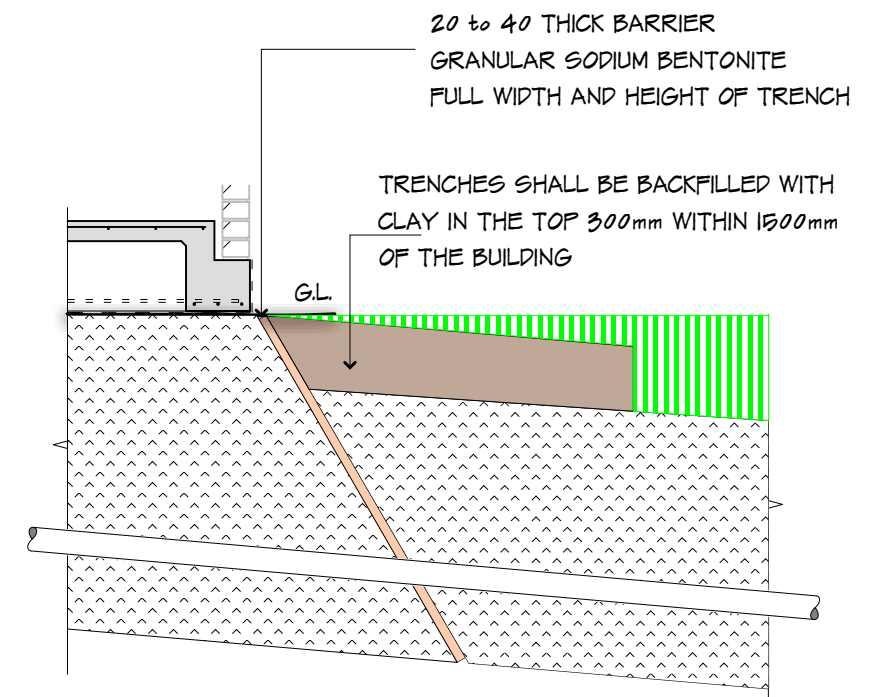


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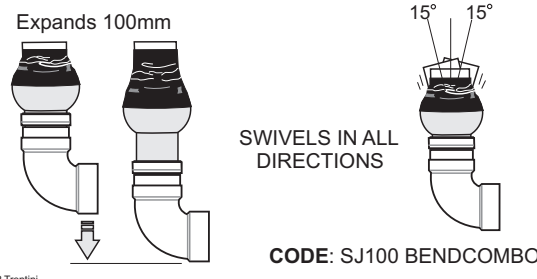
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DETAIL A
NOT TO SCALE



COMBO JOINT



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Please refer to Storm Plastics Table No. SP 1 for additional details on flow gradients and installation

Drawing No. SP 100	UNDER SLAB DRAINAGE	NOT DRAWN TO SCALE
SOIL CLASSIFICATION	Class M - Slab or Waffle Rafts 20 - 40mm Differential Movement	
AS 2870-2011	Residential Installation Guide ONLY for use of Mechanical Expansions Joints in Reactive Soils.	
COMPANY	STORM PLASTICS (SA) Pty Ltd	
DRAIN GRADE	1:50 (200mm Fall in 10 Mtrs)	
PIPE MATERIAL	Poly Vinyl Chloride - PVC	July 2011



Job Address: PLUMBING & DRAINAGE DETAILS SLAB ON GROUND & WAFFLE FOR M & M-D

Drawn: INH **Job Number:** INH IE 1234 **Page:** 7 / 12
Date: 10/03/2012 **Site Classification:** N/A **Environment Exposure Classification:** N/A
Wind rating: N/A

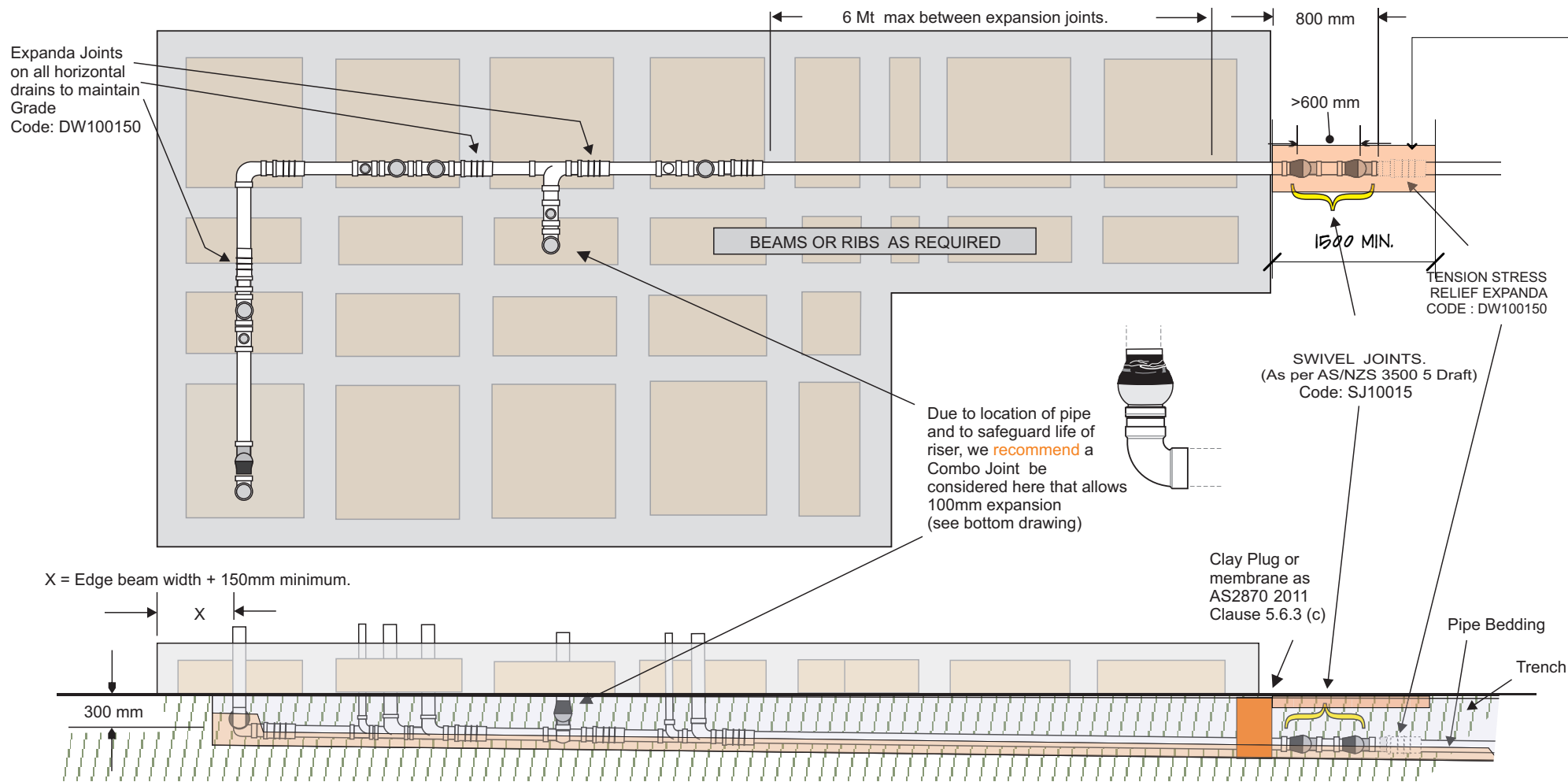
Client: INH

Issue: n/a

SIGNATURE

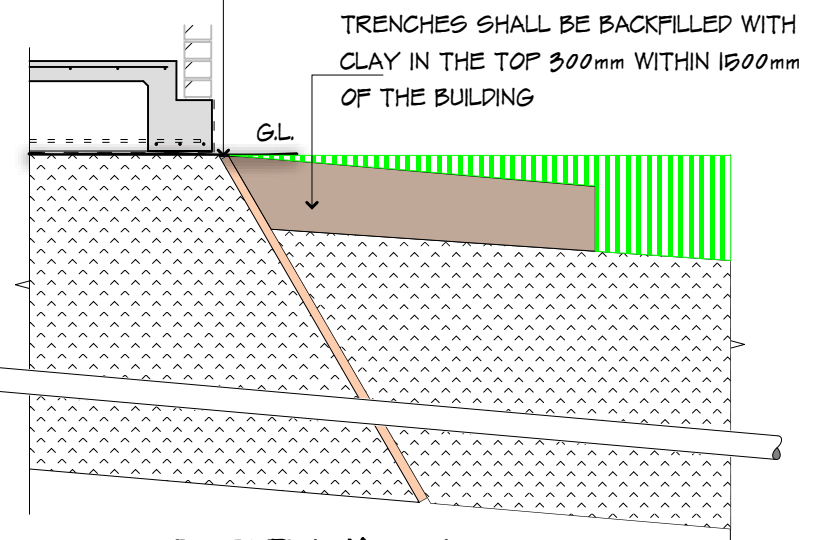
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TRENCHES SHALL BE BACKFILLED WITH CLAY IN THE TOP 300mm WITHIN 1.5m OF THE BUILDING. THE CLAY USED FOR BACKFILLING SHALL BE COMPCATED. WHERE PIPES PASS UNDER THE FOOTING SYSTEM THE TRENCH SHALL BE BACKFILLED FULL DEPTH WITH CLAY OR CONCRETE TO ACT AS A BARRIER TO THE INGRESS OF WATER BENEATH THE FOOTING SYSTEM. ALTERNATIVELY REF TO DETAIL A OR PROVIDE A PLASTIC MEMBRANE ACROSS THE CROSS-SECTION OF THE TRENCH TAPED TO THE PIPE AND KEYED INTO THE SIDES AND BASE OF THE TRENCH MAY BE USED

20 to 40 THICK BARRIER GRANULAR SODIUM BENTONITE FULL WIDTH AND HEIGHT OF TRENCH



DETAIL A
NOT TO SCALE



COMBO JOINT

SWIVELS IN ALL DIRECTIONS..

ALLOWS FOR PIPE MIS-ALIGNMENT AND SOIL EXPANSION OR CONTRACTION.

Expands 100mm

CODE: SJ100 BENDCOMBO

SCI QUAL INTERNATIONAL

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REGN. Number 1274

Manufactured under a quality system certified as complying with ISO 9001 by an accredited certification body

JAS-ANZ

Please refer to Storm Plastics Table No. SP 1 for additional details on flow gradients and installation

Drawing No. SP 102	UNDER SLAB DRAINAGE	NOT DRAWN TO SCALE
SOIL CLASSIFICATION	Class H₁/H₂ - Waffle Pad / Slab	
	40-75 mm Differential Movement	
AS 2870-2011	Residential Installation Guide ONLY for use of Mechanical Expansions Joints in Reactive Soils.	
COMPANY	STORM PLASTICS (SA) Pty Ltd	
DRAIN GRADE	1:50 (200mm Fall in 10 Mtrs)	
PIPE MATERIAL	Poly Vinyl Chloride - PVC	July 2011



Job Address:	PLUMBING & DRAINAGE DETAILS SLAB ON GROUND, WAFFLE FOR H1& H2		
Drawn: INH	Job Number: INH IE 1234	Page: 8 / 12	Client: INH
Date: 10/03/2012	Site Classification: N/A	Environment Exposure Classification: N/A	
	Wind rating: N/A		

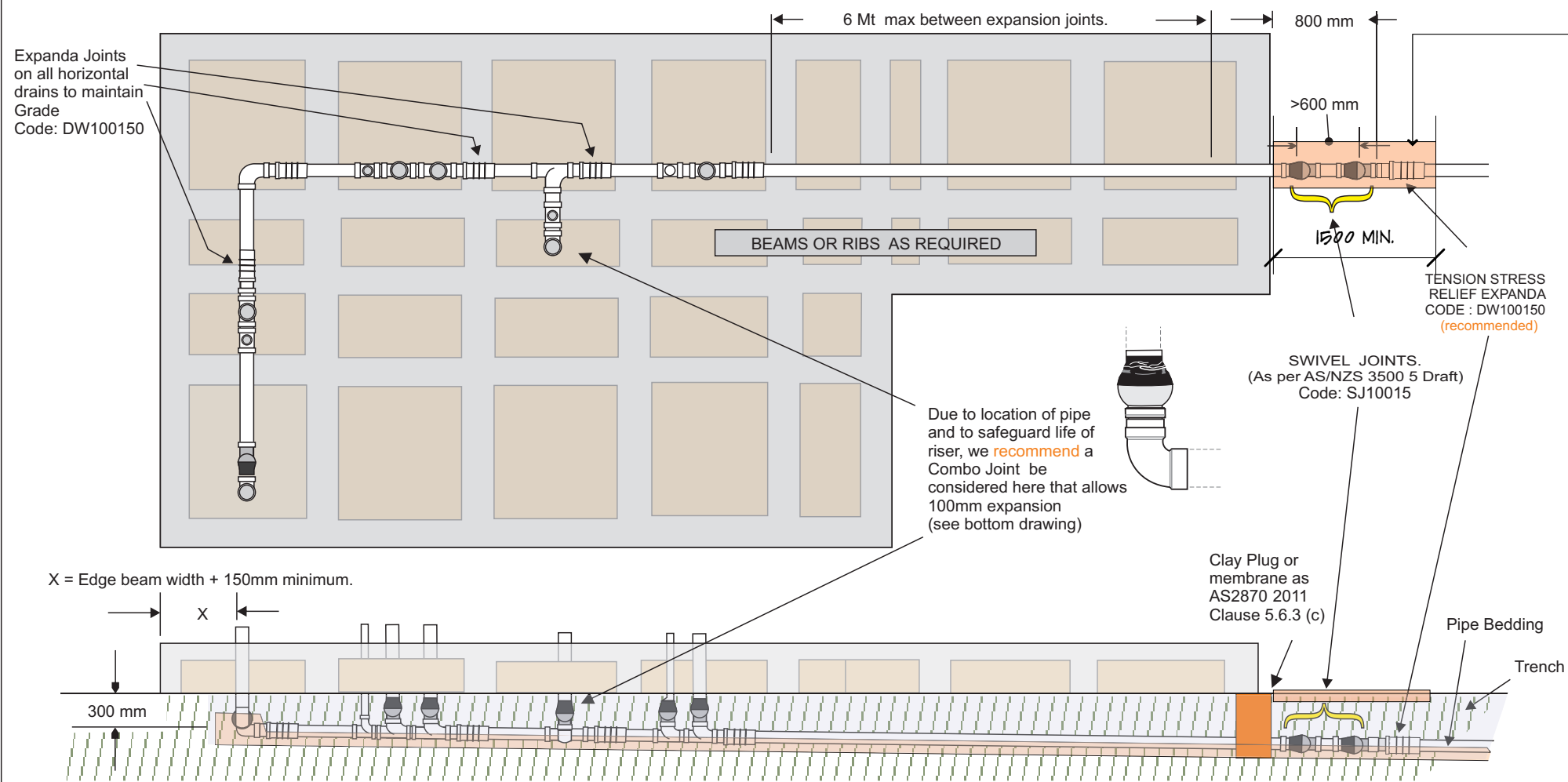
Client:	INH
Issue:	n/a

SIGNATURE

ENGINEERS AUSTRALIA
Professional Engineers
MEMBER

JOHN D'AMICI
MIEAust CPEng NPER (316291)
RPEQ (12014)

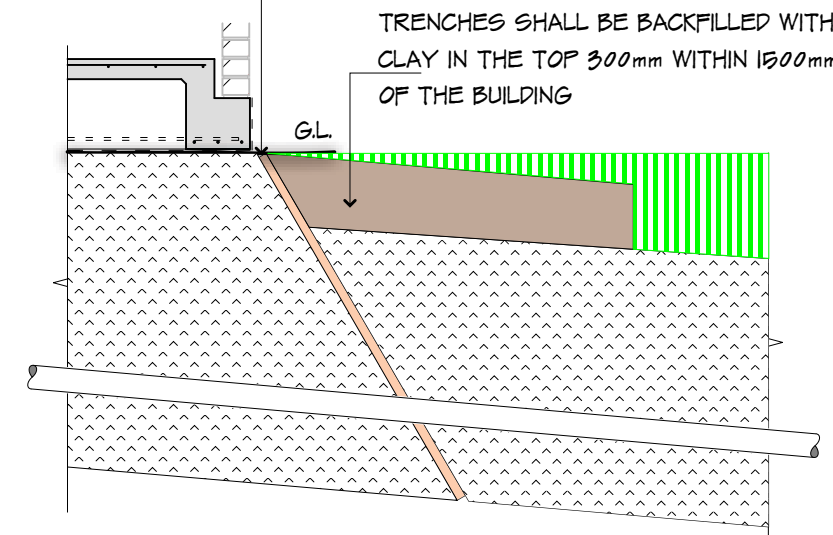
AS2870-2011 is the most radical change to interpreting soils and house engineering we have seen since 1986 and several trades will need to know what is in it and how to apply it.



TRENCHES SHALL BE BACKFILLED WITH CLAY IN THE TOP 300mm WITHIN 1.5m OF THE BUILDING. THE CLAY USED FOR BACKFILLING SHALL BE COMPCATED. WHERE PIPES PASS UNDER THE FOOTING SYSTEM THE TRENCH SHALL BE BACKFILLED FULL DEPTH WITH CLAY OR CONCRETE TO ACT AS A BARRIER TO THE INGRESS OF WATER BENEATH THE FOOTING SYSTEM. ALTERNATIVELY REF TO DETAIL A OR PROVIDE A PLASTIC MEMBRANE ACROSS THE CROSS-SECTION OF THE TRENCH TAPED TO THE PIPE AND KEYED INTO THE SIDES AND BASE OF THE TRENCH MAY BE USED

20 to 40 THICK BARRIER GRANULAR SODIUM BENTONITE FULL WIDTH AND HEIGHT OF TRENCH

TRENCHES SHALL BE BACKFILLED WITH CLAY IN THE TOP 300mm WITHIN 1500mm OF THE BUILDING

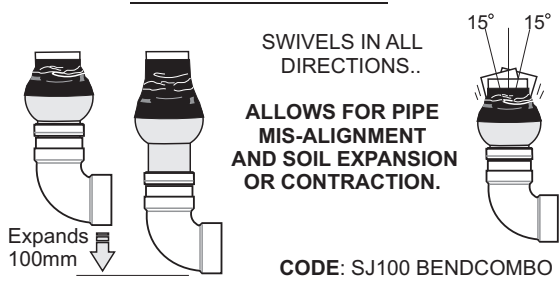


DETAIL A

NOT TO SCALE



COMBO JOINT



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Please refer to Storm Plastics Table No. SP 1 for additional details on flow gradients and installation
Drawing No. SP 102A UNDER SLAB DRAINAGE NOT DRAWN TO SCALE

SOIL CLASSIFICATION	Class E- Waffle Pad / Slab 75 + mm Differential Movement	
AS 2870-2011	Residential Installation Guide ONLY for use of Mechanical Expansions Joints in Reactive Soils.	
COMPANY	STORM PLASTICS (SA) Pty Ltd	
DRAIN GRADE	1:50 (200 mm Fall in 10 Mtrs)	
PIPE MATERIAL	Poly Vinyl Chloride - PVC	July 2011



Job Address: PLUMBING & DRAINAGE DETAILS SLAB ON GROUND & WAFFLE FOR H1-D, H2, E, H2-D, E-D

Drawn: INH Job Number: INH IE 1234 Page: 9 / 12
Date: 10/03/2012 Site Classification: N/A Environment Exposure Classification: N/A
Wind rating: N/A

Client: INH

Issue: n/a

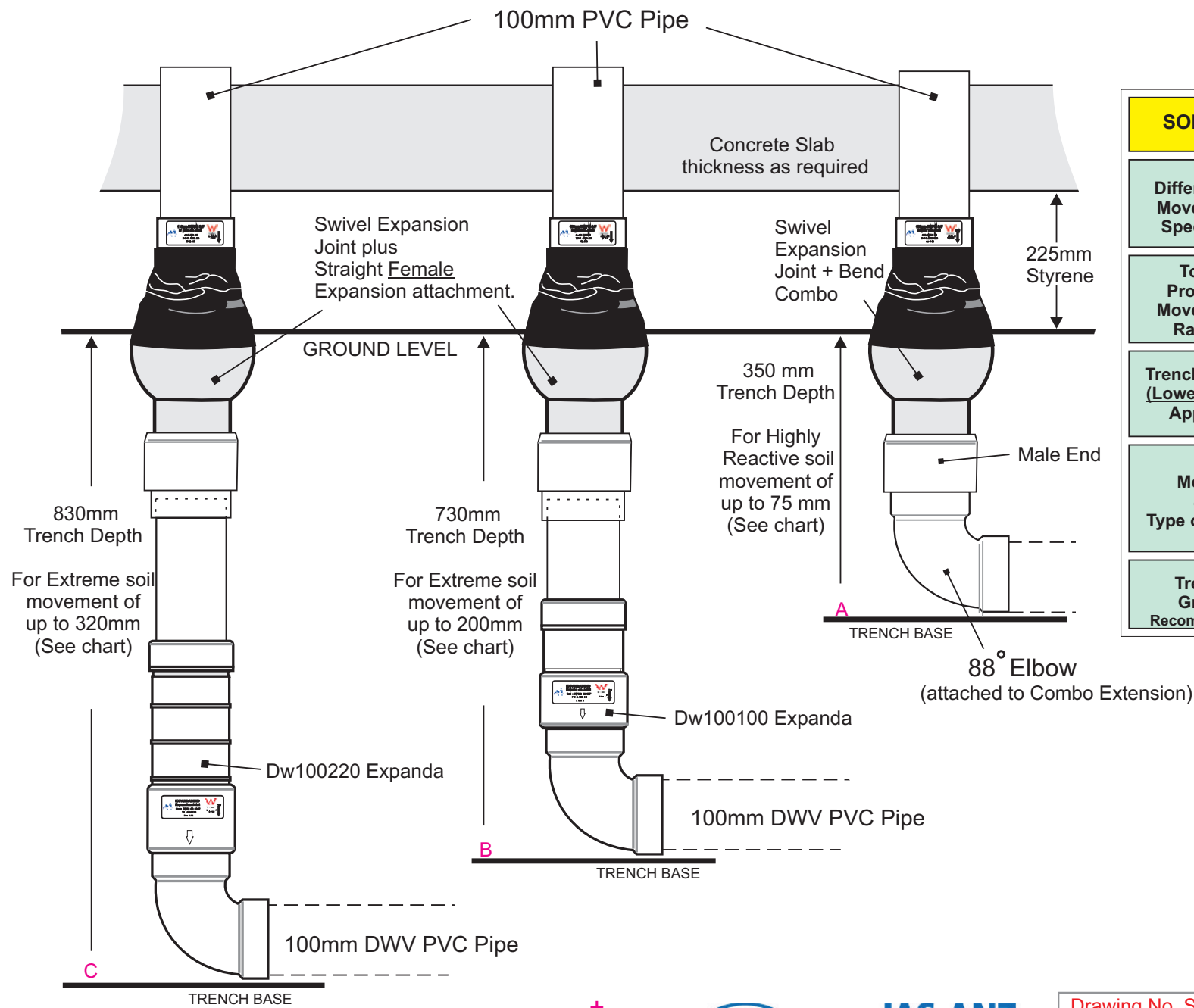
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ENGINEERS AUSTRALIA Professional Engineers MEMBER
JOHN D'AMICI MIEAust CPEng NPER (316291) RPEQ (12014)

POLYVOID SLAB SYSTEM

To Suit Soil Class - M, H1, H1-D, H2, H2-D, (to 100mm) E, E-D (to 200mm), P (to 320mm)

INSTALLATION GUIDE CHART IN DIFFERENT ys SOILS



SOIL ys	M/M-D	H1/H1-D	H2/H2-D	E/E-D	P
Differential Movement Specified	20-40	40-60	60-75	From 75+ Specification needed	From 75+ Specification needed
Total Product Movement Range	0-100	0-100	0-100	0-200	0-320
Trench depth (Lowest end) Approx	A 350	A 350	A 350	B 730	C 830
Model & Type of Joint	† Swivel Expansion Joint Bend Combo	† Swivel Expansion Joint Bend Combo	† Swivel Expansion Joint Bend Combo	Swivel Straight Expanda with 100mm DW100100MM.	Swivel Straight Expanda with 220mm DW100220MM.
Trench Grade Recommended	1:60	1:50	1:50/1:40	1:40	

(All dimensions include 50 + 40mm internal overlaps)

This group represents over 85% of common differential soil movement found in Australia.

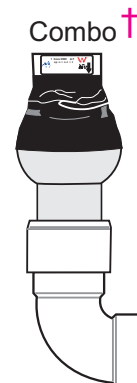
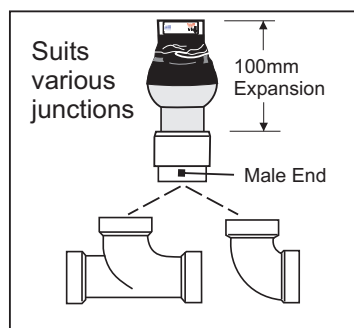
This group represents approx 15% of extreme soil differential movement found in Australia.

NB. The above is based on the 225mm thick system. If using the 300mm POLYVOID system, reduce the Trench Depth by 100mm.

For POLYVOID Systems ONLY.

Please ensure that all fittings are installed 'Expanded' in dry conditions, as drawn.

Compress and install the fittings to 50% of the pertinent ys in wet conditions.



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Drawing No. SP 111	NOT DRAWN TO SCALE	
PRODUCT NAME	Expanda & Swivel Expansion products used in... POLYVOID SLAB SYSTEM	
PLEASE NOTE	The above information & dimensions are given as a GUIDE only and are subject to change dependant on site requirements.	
COMPANY	STORM PLASTICS (SA) Pty Ltd	
DRAWING DATE	9th August, 2012	
MATERIAL	Poly Vinyl Chloride - PVC	
DIMENSIONS	All dimensions shown are nominal in mm and subject to change without notice.	



Job Address:

PLUMBING & DRAINAGE DETAILS POLYVOID SLABS

Client:

INH

SIGNATURE

Drawn: INH

Job Number: INH IE 1234

Page: 10/ 12

Issue:

n/a

Date: 10/03/2012

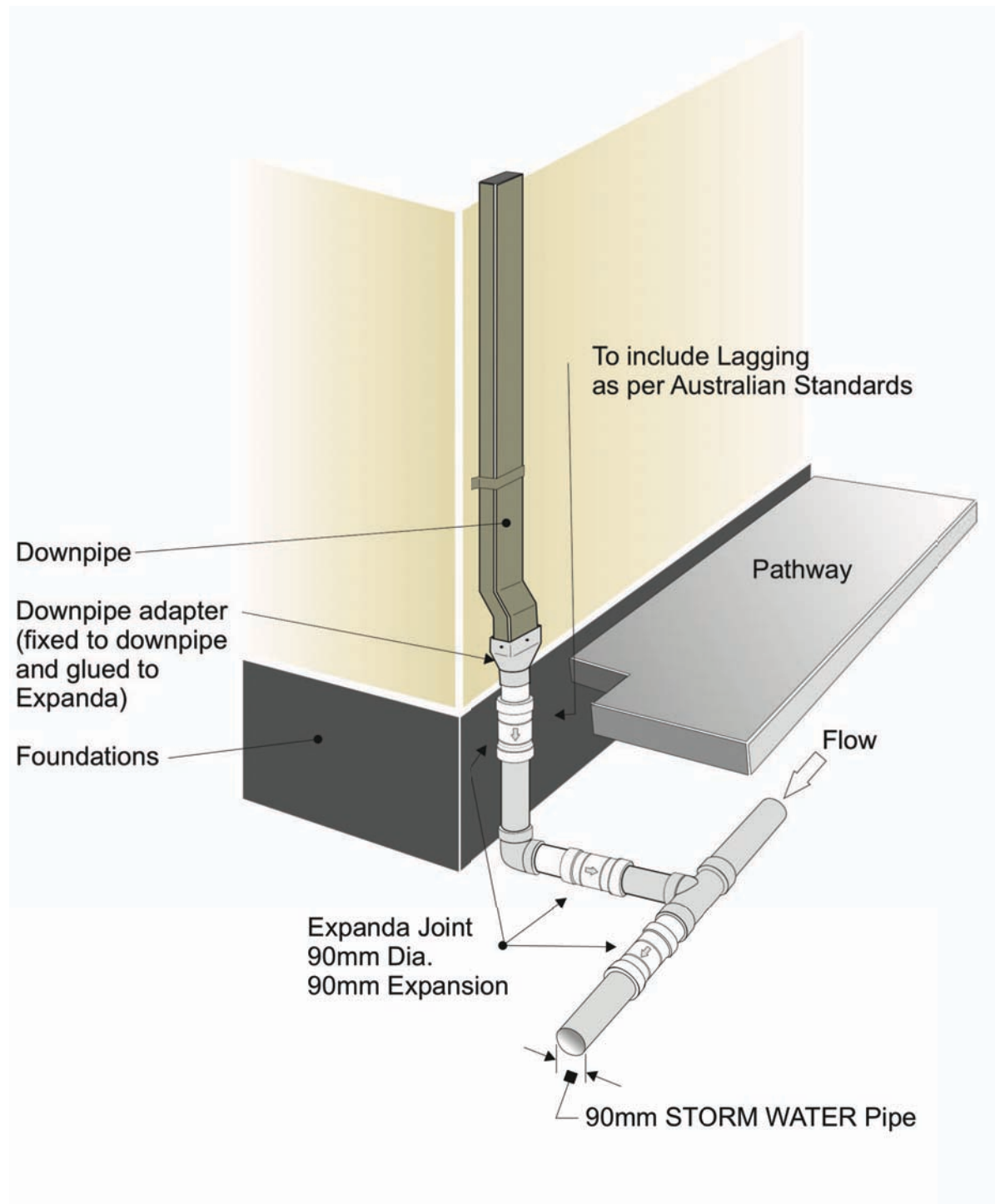
Site Classification: N/A

Environment Exposure Classification: N/A

Wind rating: N/A



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Job Address: DOWN PIPE/STORMWATER DETAILS IN REACTIVE SITES H1, H1-D, H2-E, H2-D, E-D, P-D		
Drawn: INH	Job Number: INH IE 1234	Page: 11 / 12
Date: 10/03/2012	Site Classification: N/A	Environment Exposure Classification: N/A
	Wind rating: N/A	

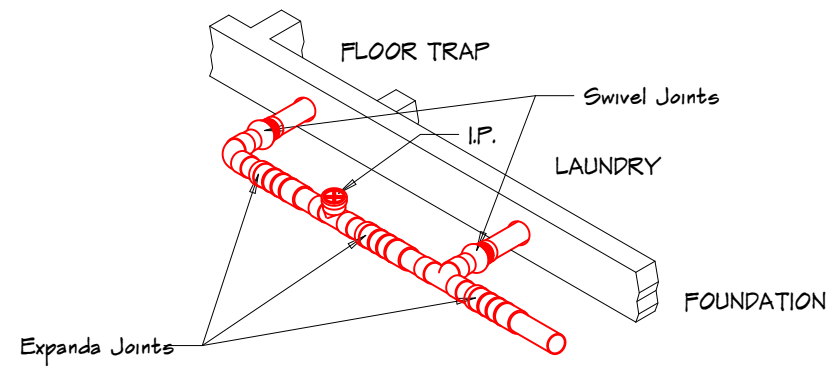
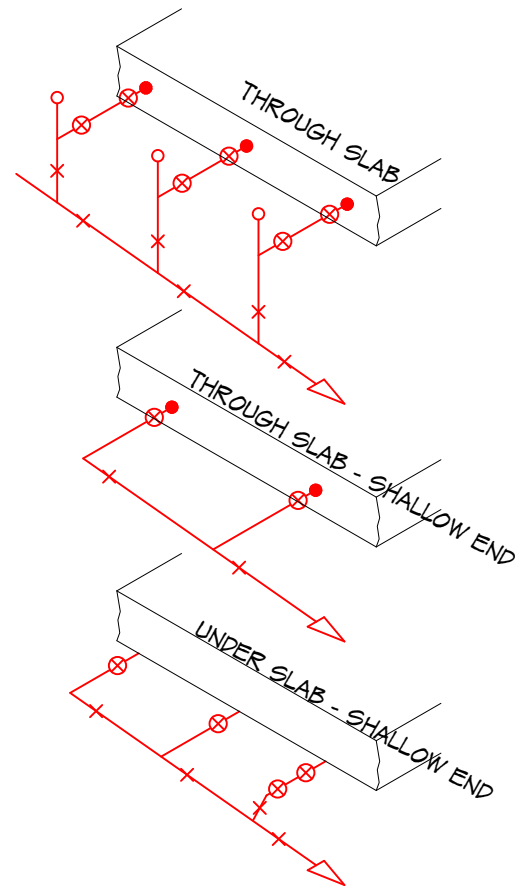
Client: INH

Issue: n/a

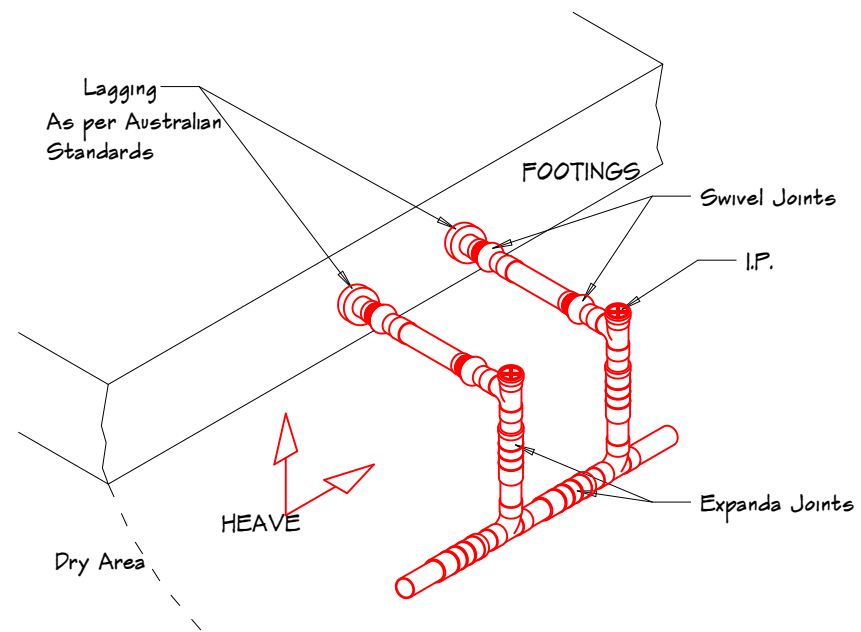
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MASTER LEGEND	
⊗	Swivel / Expansion Joint
×	Expansion Joint
⊗	Expansion Joint Bend
○	Inspection Opening
⊠	Overflow Relief Gully
IOS	Inspection Opening to Surface
V	Vent
B	Basin
BTH	Bath
SHR	Shower
FWG	Floor Waste Gully
CS	Cleaner's Sink
WC	Water Closet
TR	Trough
S	Sink



Job Address:

GENERAL PLUMBING & DRAINAGE DETAIL

Client:

INH

SIGNATURE

Drawn: INH

Job Number: INH IE 1234

Page: 12 / 12

Issue:

n/a

Date: 10/03/2012

Site Classification: N/A

Environment Exposure Classification: N/A

Wind rating: N/A



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