REV 2.0

WEMBLEY INNOVATION™

Wi SYSTEM™

USER MANUAL

Contents

The Wi System
is the ultimate solution
for blockwork construction.

Safe, strong, seamless.

The Wi System™ from Wembley Innovation is a revolutionary approach to masonry construction.

The Wi System removes the need for traditional concrete or steel windposts and lintels and allows bricklayers to construct reinforced concrete beams and columns within hollow column and trough block units that resist lateral loads acting on infill masonry panels.

Using simple internal reinforcement within uniquely designed hollow blocks the Wi System maximises masonry wall strength without thickening the wall or adversely impacting on its appearance. Combining the strength and versatility of Wi Beams and Wi Columns the Wi System is the ideal solution for the flexible placement of multiple and complex door and service openings in blockwork panels.

The Wi System provides the adaptability for contractors to make late changes to construction without affecting the build programme and creates seamless walls which do not require any follow-on fire boarding. It provides a faster, safer and highly cost effective masonry construction solution that increases lateral load capacity and typically reduces costs by 20% compared with traditional windpost construction.

The Wi System significantly improves the architectural and aesthetic appearance of masonry walls. It offers architects the possibility of creating uninterrupted blockwork panels with flexible detailing options whilst retaining the performance characteristics of traditional masonry such as fire integrity, acoustic performance and air permeability. Compliant with BS 5628 and Eurocode 6 and fully tested and approved by Lucideon the Wi System is a real revolution in blockwork construction.

Wembley Innovation and the Wi System

- Wembley Innovation invented, patented, developed and brought the Wi System to market
- We provide full consultancy services for the Wi System and masonry design
- We sell the complete range of Wi System products
- We provide free technical support, CPD sessions, training and advice

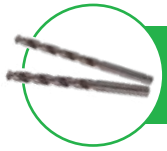
Wi System

The advantages

- Cost savings in excess of 20% compared to traditional windpost construction
- Delivery within 48 hours
- Reduce overall programme on site
- On-site changes can be made without delay
- Improves the aesthetic appearance of walls
- Improves acoustic, fire-proofing & air permeability performance
- Site safety improved through reduced manual handling
- Reduction in the number of windposts originally required
- Up to 23% carbon reduction – can be used toward BREEAM evaluation
- Wi Columns, Wi Beams and Wi Trough Lintels are 4-hour fire-rated

What will I need?

Construction of masonry walls using the Wi System does not require any specialist equipment. The tools and equipment you will need are as follows:



20mm drill bit to fix rebars to slab & 12mm drill bit for M12 expansion anchors to head cleat

SDS drill for concrete & magnetic drill for steel

Adjustable spanner

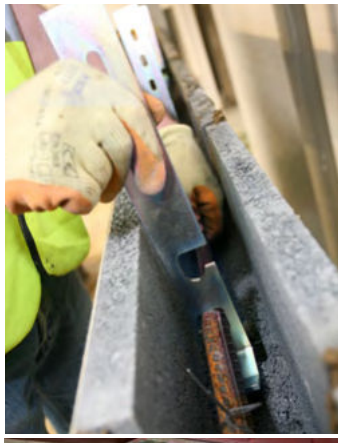
Laser level

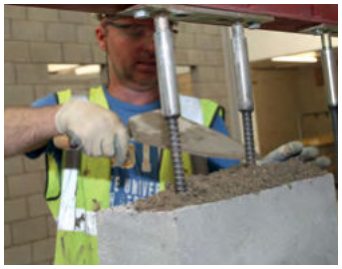
Resin & applicator gun

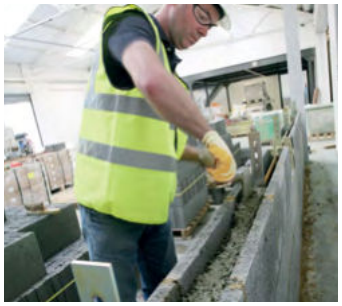
Grinder with metal & concrete cutting discs

Pincers & tie wire

Silo or concrete mixer







SAFETY FIRST

Wembley Innovation always recommend that you wear appropriate PPE when handling Wi System components and cementitious materials during construction. Please call us for free advice.

Help and advice
0208 903 4527

Wi COLUMN
STEP-BY-STEP INSTALLATION

Wi Details 1-5, 10, 11, 15, 16, 18, 19, 20, 21, 23, 24 and 25 *(Refer to Appendix A)*

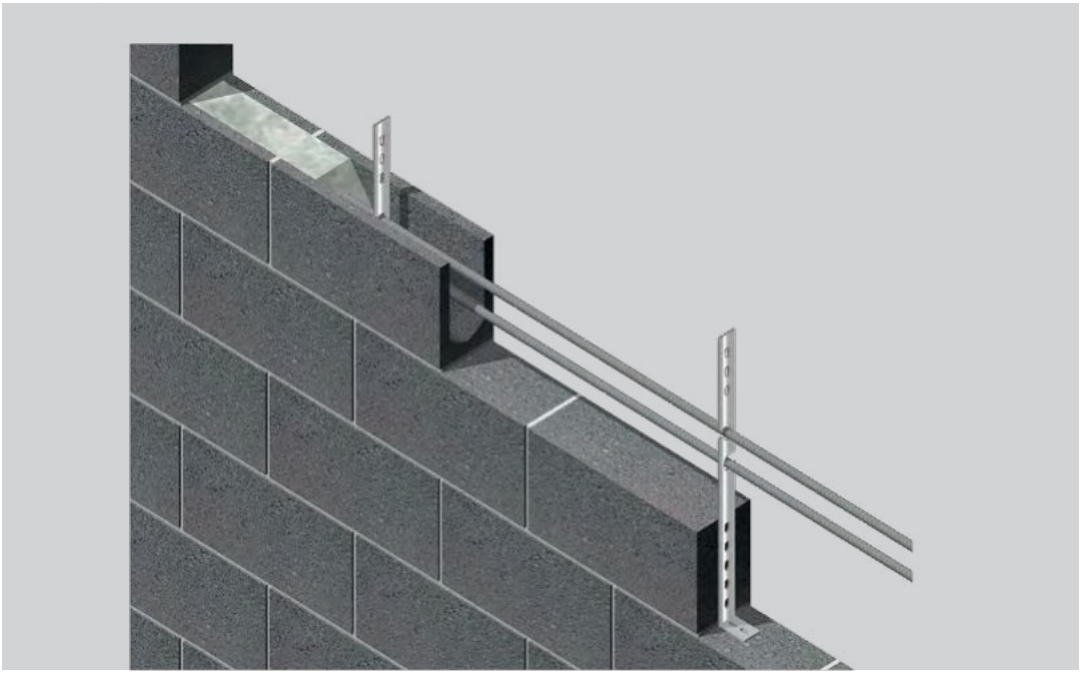
STEP	PROCEDURE
1	Set and bond out the line of the wall and mark the location of the Wi Columns on the ground as per the drawings; the Wi Column coursing will always follow the coursing of the main wall.
2	Drill two 20mm holes in the floor slab positioned 200mm apart and 75mm deep (unless otherwise specified). Centralise holes in the Wi Column as shown in Detail 2.
3	Using a laser level transfer the hole positions to the soffit, position the head bracket so the two spigots are over your marks and mark the bolt holes for the bracket.
4	Only two M12 bolts are required per head bracket, one each side, the additional two slots are alternatives should you encounter rebar when fixing to RC slabs.
5	Site measure the distance from the soffit at the top of the column to the slab at the base, add 40mm to this figure and this will be the length of the socket rebar required (75mm embedment less 35mm deflection at the head of the column); the bars come oversized so measure and cut the bar to suit, taking the excess off the end without the welded socket.
6	Blow and brush out the two holes at the base of the column and inject with resin until it starts to come out of the hole.
7	Push the column rebar into the hole with a twisting motion & bend the bar slightly to guide the welded sockets over the spigots of the head bracket.
8	Cut an 18mm slot to one end of the column block as shown in Figure 1.
9	Using the open slot in the Wi column blocks, slip a block through the rebar and fill with Wi Mortar, placing extra Wi Mortar on top to bed the next column block (the Wi Mortar contains a self-levelling agent but **ensure you trowel tamp as you go**), rake out the joints to create a 15mm recess which can be pointed in the standard mortar later to blend the joints in with the rest of the blockwork.
10	When placing the top Wi Column block it is necessary to allow the specified deflection joint between the top of the block and the soffit, this will allow enough room to place the block and allow for filling with the Wi Mortar (typical gap 30mm unless specified otherwise).
11	Standard masonry ties (refer to project specification) placed at 450mm c/c unless otherwise specified, debonding sleeves required to masonry ties spanning across movement joints.
12	A vertical movement joint with soft fill and mastic as per the specification is normally required to one side of the Wi Column (Appendix A, Detail 2), refer to drawings for location. The specified deflection is always required to the head of the column.
13	The Wi Column can be built independantly first or brought up with the rest of the blockwork; sequence has no effect on the permanent or temporary performance of the column. Refer to Standard Detail 1A for "day joint".

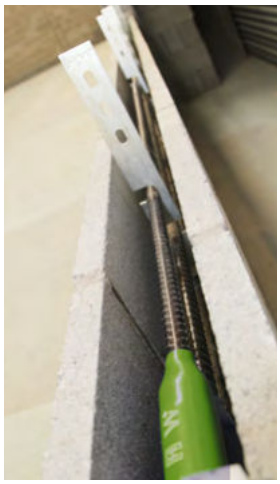
FIGURE 1
Slots cut to ends of blocks, alternating on each course

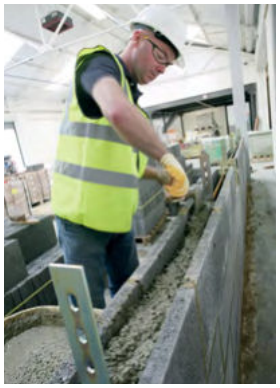
Wi BEAM
STEP-BY-STEP INSTALLATION

Wi Details 6-15, 17 and 22 *(Refer to Appendix A)*

STEP	PROCEDURE
1	Set out the line of the wall and commence laying blockwork up to one course below the designed location of the first Wi Beam (if Wi Beam at course 6, build blockwork up to and including course 4).
2	At this point the transfer rods are introduced typically at 900mm c/c but some designs may require 450mm c/c - refer to drawings.
3	Bed the long transfer rods in the preformed groove on the side of the Wi Slot Blocks with the rod projecting into the courses above and the foot resting on top of the course below (in this instance course 4), the groove will also act as a guide to ensure both the transfer rod and rebar of the Wi Beam are positioned correctly.
4	Fix end cleats to primary column measured 90mm from top of block course beneath U-block which identifies first hole position for cleat, use template to locate second hole. Check the positioning works with rebars before drilling. (Nuts should be pinch tightened only to allow vertical movement of the cleat.)
5	Now lay the U-block course bedded on standard mortar, sliding the special perforated U-blocks over the transfer rods when encountered.
6	Push the debonding sleeves over the sockets of the end cleats. Place the rebar into the end cleats and transfer rods. Where required ensure there is a minimum 500mm lap to the rebars and 3 no. wire ties per lap.
7	Place Corofil over the Wi Beam cleats (see Appendix A, Detail 8) and fill the trough with Wi Mortar to the top. **Ensure you trowel tamp as you go**. Note that jointing in this instance to the blockwork is with standard mortar.
8	Wall panel can now progress as traditional blockwork.
NOTE	Where a Wi Beam is used over a door or service opening, Wi U-blocks without perforations are required. Short transfer rods should be placed in the trough to receive the rebar in these locations.





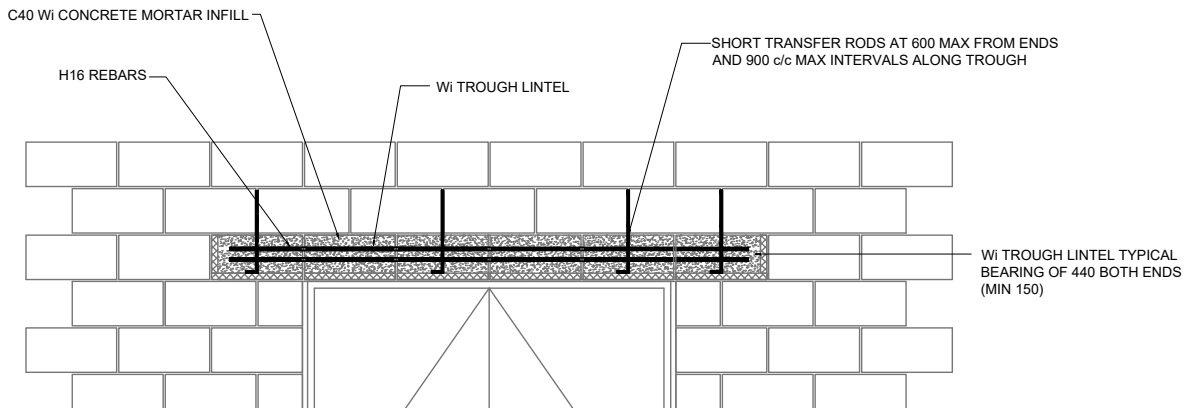


Wi TROUGH LINTEL
STEP-BY-STEP INSTALLATION

Wi Detail 14 *(Refer to Appendix A)*

STEP	PROCEDURE
1	Build the surrounding blockwork to the lintel bearing course.
2	Rest the Wi Temporary Support Angles on the blockwork reveals allowing 150mm minimum bearing at each end. (Tip: Place a bit of DPM/DPC at the end of the angles to make removal easier!). Refer to section on Temporary Works on page 14.
3	Lay the Wi Trough Lintel Blocks on top of the angles (coursing to match the surrounding blockwork) and point with standard mortar.
4	Place Wi Short Transfer Rods in the trough at 900mm centres and a minimum of 150mm past both reveals, insert H16 rebar into the transfer rod grooves.
5	Mix up a batch of Wi Mortar as per the guidance and fill the trough units to the top of the block. **Ensure you trowel tamp as you go.**
6	Check the short transfer rods will fall within the perp joints of the blockwork above.
7	After a curing period of 5 days remove the temporary angles and point in the missing bed mortar.
8	If the Wi Trough has an opening above, the projecting transfer rod(s) can be cut off once the Wi Mortar has cured (5 days).
9	For reduced height lintels (<215mm) please consult Wembley Innovation.

Wi TROUGH SECTIONAL ELEVATION



CONNECTING Wi BEAMS TO Wi COLUMNS

STEP-BY-STEP GUIDE

Wi Details 10, 11 and 15 *(Refer to Appendix A)*

STEP	PROCEDURE
1	Wi Columns & Wi Beams can be connected on site to form 'T', 'Cruciform' & 'Rugby Post' structures to suit different designs.
2	Refer to Details 10, 11 and 15 for block and rebar arrangements
3	When forming 'T' or 'Rugby Post' details, ensure the Wi Mortar is allowed to flow between the beam and column freely to create one structure.
4	When forming a cruciform connection (Appendix A, Detail 10) the central block will have to be cut from a Wi U-block as shown in Figure 2 to ensure a flow of Wi Mortar is maintained to all elements, this block will be fragile so take care in both handling and filling.

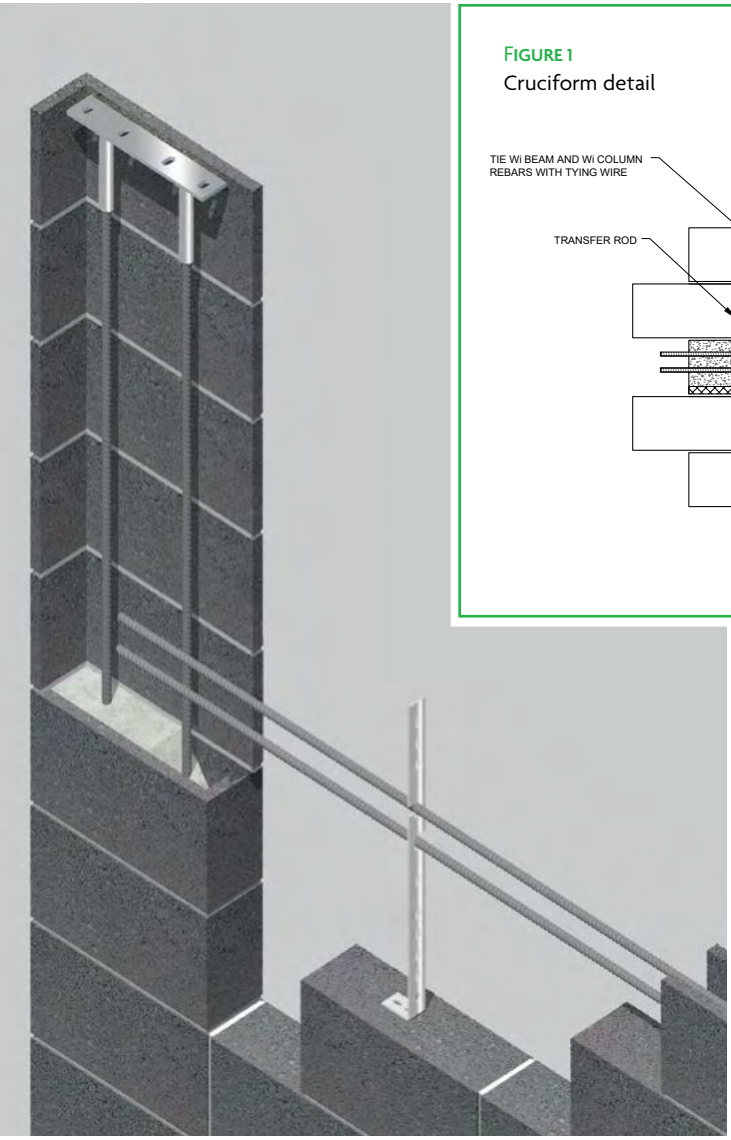


FIGURE 1

Cruciform detail

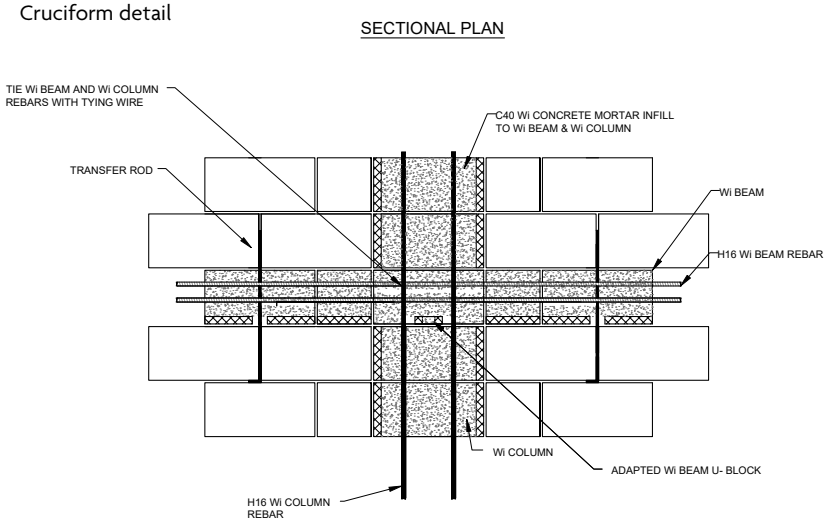
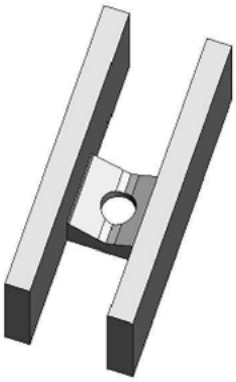


FIGURE 2

Adapted Wi Beam U-block (Isometric view)



Mixing guidance

When preparing Wi Mortar on site the following guidance should be followed to ensure the design strength of 40N/mm^2 is achieved.

Table 1 indicates the range of acceptable Wi Mortar slumps which can be used when forming Wi Columns, Wi Beams and Wi Trough Lintels.

On site, a "column mix" would be toward the drier end of this range (normally 25-75mm slump) and a "beam mix" would be the wetter end of the scale (normally 75-130mm).

For machine mixing on site, a good starting point is a 6:1 ratio of Wi Mortar to water (50mm slump mix) which can be added to achieve the desired slump and workability. The 3.1 Litres/25Kg would be seen as a maximum water content; our tests show that strengths of 45-55N/mm^2 are normally achieved with this mix.

To summarise, if a concrete slump test is conducted on the Wi Mortar then as long as the slump is between 25mm-130mm then the water to cement ratio would be acceptable and the Wi Mortar should achieve it's design strength.

NOTE
As a basic guide Wi Mortar should be mixed to the same consistency as standard bricklaying mortar.

SLUMP	WATER CONTENT LITRES/25KG	WATER ADDED %	W/C RATIO
25mm	2.2	8	0.32
40mm	2.4	8.8%	0.35
50mm	2.5	9%	0.36
75mm	2.6	9.5%	0.38
100mm	2.8	10%	0.41
130mm	3.1	11%	0.45

TABLE 1
ACCEPTABLE SLUMP RANGE FOR Wi MORTAR

Wi Mortar slump test

Wi Mortar at 100mm slump

Slump Test procedure and guidance

The purpose of a slump test is to measure the consistency of the Wi Mortar, which in turn confirms that the correct water content has been achieved to reach the designed strength.

The Wi Mortar is compacted into a mould in the shape of a cone and when the cone is withdrawn upwards, the distance the Wi Mortar has slumped indicates its consistency.

The Mould (Slump Cone)
So that it won't be readily attacked by cement paste the slump cone must be made of metal with a minimum thickness of 1.5mm. The interior of the mould should be smooth and free from projections and dents. The mould shall be in the form of a hollow cone having the following internal dimensions:

- Diameter of base: (200 ± 2) mm
- Diameter of top: (100 ± 2) mm
- Height: (300 ± 2) mm

STEP	PROCEDURE
1	Dampen the mould and base plate and place the mould on a level horizontal surface.
2	During filling hold the mould firmly against the surface by standing on the two foot holds (Fig 1).
3	Fill the mould in three layers, each approximately 1/3 of the height of the mould when compacted. Compact each layer with 25 strokes of the tamping rod and uniformly distribute the strokes over the cross-section of each layer. (Fig. 1-3)
4	With the second and top layer ensure the strokes just penetrate into the immediately underlying layer. After the top layer has been compacted, strike off the surface of the Wi Mortar in a sawing motion and remove spilled concrete from the surface around the mould. (Fig. 4)
5	Remove the mould from the concrete by raising it carefully in a vertical direction and perform the operation of raising the mould in 2-5 seconds in a steady upward motion, with no lateral or torsional movement (Fig. 5). Carry out the entire operation from the start of the filling to the removal of the mould without interruption and complete it within 150 seconds.


FIG. 1


FIG. 2


FIG. 3


FIG. 4


FIG. 5

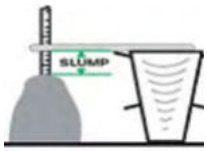


FIG. 6

TEST RESULTS

Immediately after removal of the mould, measure and record the slump 'h' by determining the difference between the height of the mould and that of the highest point of the slumped test specimen as shown in Figure 7.

The test is only valid if it yields a true slump, this being a slump in which the Wi Mortar remains substantially intact and symmetrical as shown in Figure 8(a).

If the specimen shears, as shown in Figure 8(b), another sample shall be taken and the procedure repeated. Report the true slump 'h', as shown in Figure 1, to the nearest 10 mm.

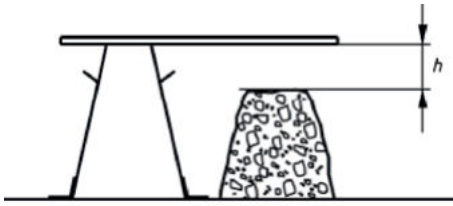


FIGURE 7
SLUMP MEASUREMENT


A. TRUE SLUMP B. SHEAR SLUMP

FIGURE 8
SLUMP MEASUREMENT

Cube making guide

STEP		PROCEDURE
MOULDS & SAMPLING	1	The moulds should be steel or cast iron, certified and comply with BS EN 12390-1. They are usually in two halves that bolt together and fasten by clamps to a metal base plate. If the internal angles are not 90 degrees, the test result will be wrong.
	2	Make sure there is no hardened mortar left inside or on the faces of the flanges where the two halves meet and coat the faces and flanges thinly with mould oil to prevent rust, make cube removal easier and prevent grout leakage during the filing.
	3	When a sample has been taken it must then be thoroughly re-mixed by hand on a non-absorbent mixing tray to ensure it will be uniform. From making a batch of Wi Mortar the sampling, remixing and cube making should be carried out without delay.
	4	If testing Wi Mortar from a silo, do not take the the sample from the beginning or end of a draw but around 1/3 – 2/3 way through to give a representative sample.
FILLING & COMPACTION	1	The re-mix sample is scooped into the mould and the concrete compacted. Proper compaction is absolutely essential to ensure that no air is trapped. Each 1% of entrapped air results in 5-6% loss of strength, so if the concrete cube consists of 4% air there will be at least a 20% reduction in strength.
	2	Moulds of 150mm should be filled in three layers & 100mm moulds in two equal layers, each compacted layer being about 50mm deep. Each layer is compacted using a standard tamping bar before the next layer is added. The number of tamps needed will depend on the consistancy of the Wi Mortar but at least 35 per layer.
	3	When the final layer has been compacted, trowel its surface level with the top of the mould using a scissoring action with steel floats. A reference on the cube will be needed so the laboratory report can be matched to the right cube.
INITIAL CURING	1	Correct curing of the cubes is vital if they are to give reliable results. Immediately after the moulds have been filled they must be stored away from vibration and disturbance.
	2	The ambient temperature and moisture level needs to be kept uniform which can be achieved by storing indoors, covering the surface of the Wi Mortar with damp sacking or similar material. Top this off with a waterproof membrane such as polythene to prevent drying out. Cubes that are for testing in less than seven days should be stored like this for about 24 hours with the temperature kept at between 18 and 22°C before stripping. Cubes for testing at seven days or more must be stored in damp conditions for 16-18 hours at a temperature between 15 and 25°C before stripping.
CUBE STRIPPING	1	The correct method for removing a test cube from its mould is first to slacken the nuts on the base plate and withdraw the locking lugs. Slacken the nuts on the side of the mould then tap the mould gently to free the cube. The concrete will still be weak so take care not to damage the cube during this process. Corners knocked off or slight cracks in the concrete will weaken the cube.
	2	After removing a cube, mark it clearly with a reference number in waterproof crayon. Do this even if there is already a reference scratched in the concrete.
CURING AFTER STRIPPING	1	The cubes need to be water cured and should be placed straight into a tank of water which must be kept between 18-22°C. A thermostatically controlled heating element is essential to maintain the temperature. Large tanks should have a circulation pump.

Cube making - Summary points to remember

MAKING CUBES

- Fill 150mm moulds in 3 equal layers or 2 equal layers for 100mm moulds
- Compact each layer fully (at least 35 tamps)
- Level off surface with care

INITIAL STORAGE

- Cover moulds to minismise evaporation
- Store between 18-22°C < 7days test for 24 hours
- Store between 15-25°C >7days test for 16-18 hours

STORAGE OF CUBES

- After stripping the mould mark with a reference code
- Place in water at 18-22°C

TRANSPORTATION

- Cubes must be kept damp
- Cubes must be protected from damage

ANY QUESTIONS

Please call us for free help and advice on any of the details covered in this guide.

Help and advice
0208 903 4527

TEMPORARY WORKS

This section covers the formation of Wi Trough Lintels and Wi Beams spanning openings. These standard temporary works examples can be replicated onsite with the use of metal 'L' angles which are available from Wembley Innovation and can be cut to suit standard door widths and openings.

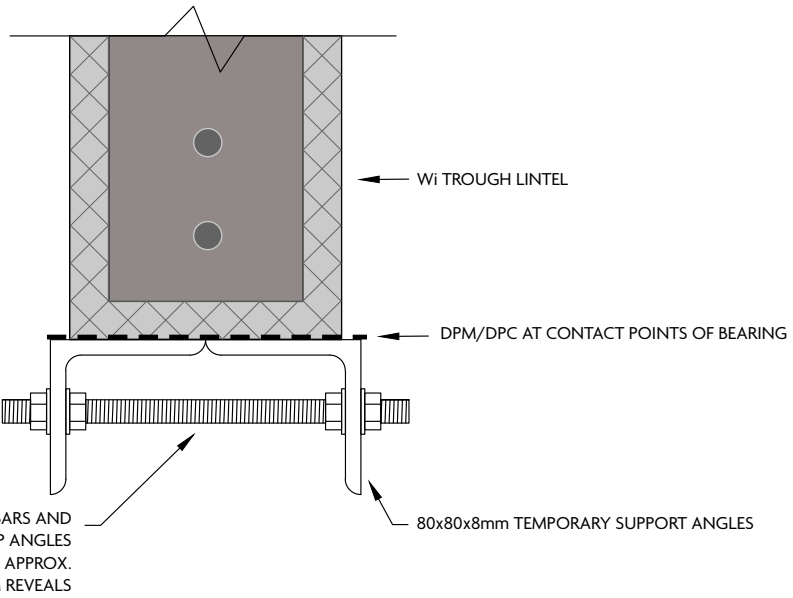
Please refer to Figures 2-5 on the next page.

STEP		PROCEDURE
FOR ALL OPENINGS	1	Build the wall to lintel bearing course.
	2	Lay 2 no. 80x80x8mm angles, both sides of the wall across the opening with 150mm (min) bearing to either end (Refer to Figure 1). Please refer to Wembley Innovation for further details.
	3	Place a small strip of DPM/DPC underneath the angles at the four contact points. This makes removal of the steel angle simpler after the mandatory five day curing period.
OPENINGS < 2500MM	4A	If the opening is less than 2,500mm wide then a maximum of 3 courses (675mm) can be built up on the angles first (if unpropped). The Wi Trough & blockwork should then be allowed to cure for a minimum of 24 hours, before the remaining blockwork can be built above.
OPENINGS > 2500MM	4B	If the opening is more than 2,500mm wide then the angles should be propped with maximum spacing of Acrow prop or scaffold tubing and screw jacks at 1.5m spacing and then the blockwork can be built above without restriction.
STRIKING	5	The angles can be removed after a minimum of 5 days curing of the Wi Trough Lintel.

TEMPORARY SUPPORT WITH 80X80X8mm ANGLES

FIGURE 1

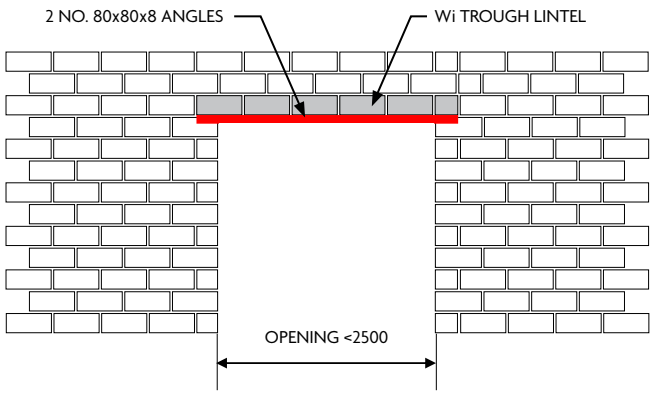
Section through support angles and Wi Trough Lintel



TEMPORARY SUPPORT WITH 80X80X8mm ANGLES

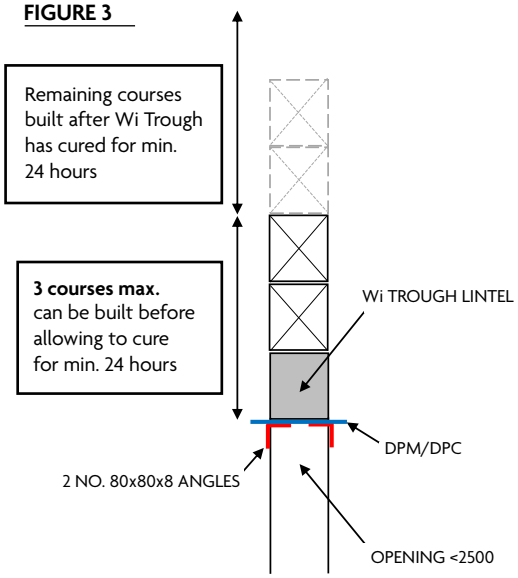
OPENINGS <2500mm

FIGURE 2



ELEVATION
(No propping needed)

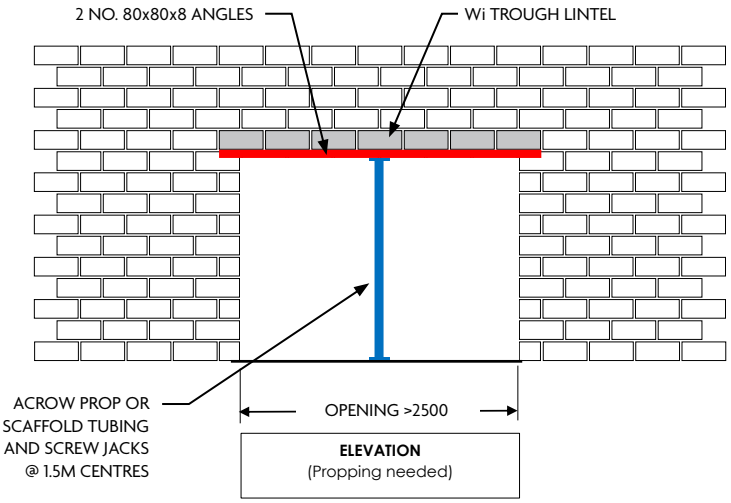
FIGURE 3



SECTION

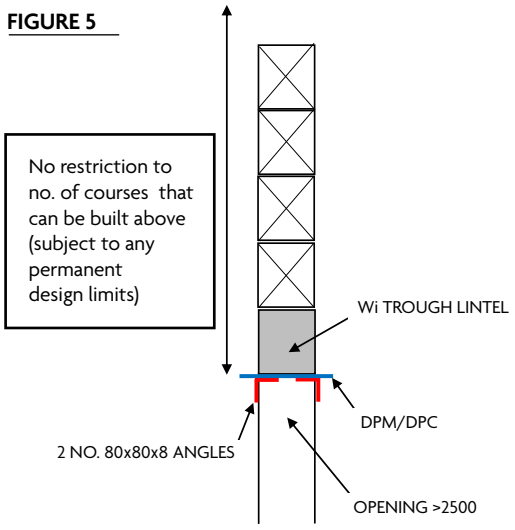
OPENINGS >2500mm

FIGURE 4



ELEVATION
(Propping needed)

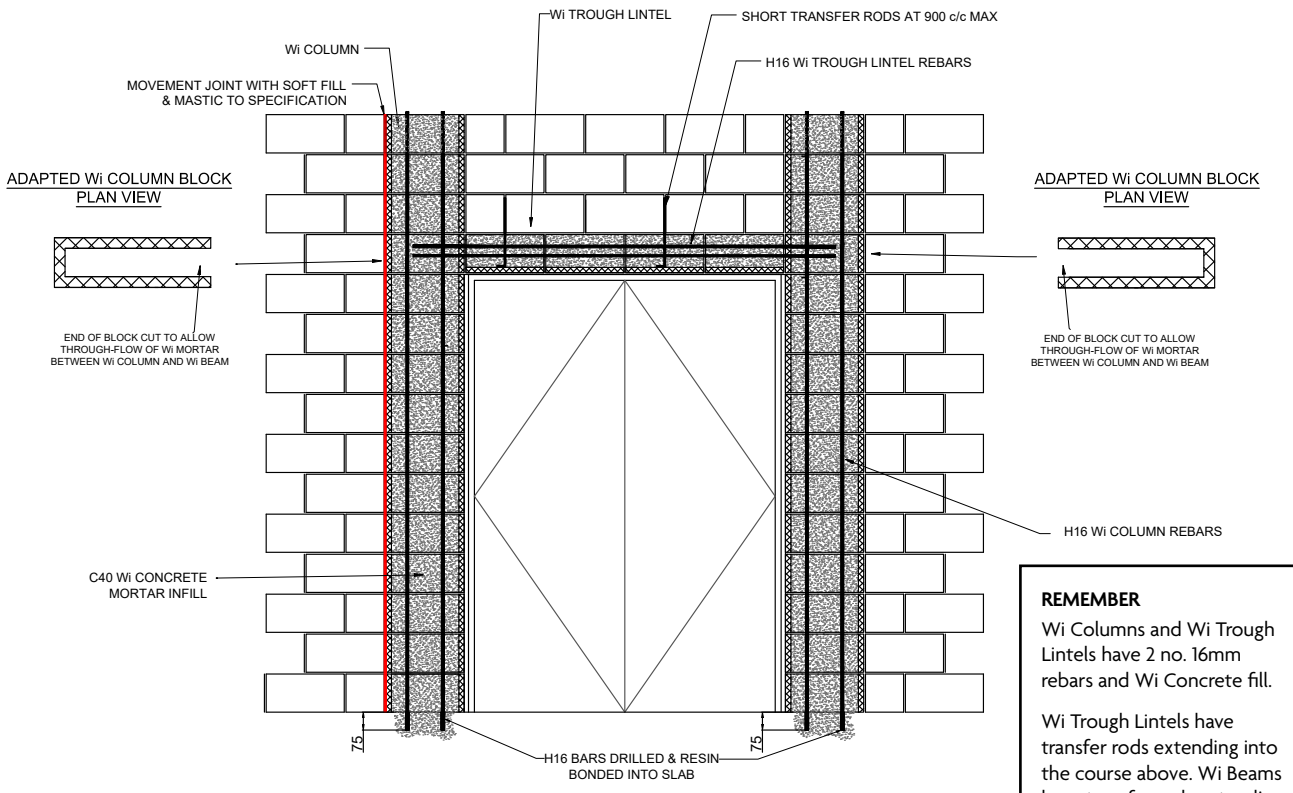
FIGURE 5



SECTION

Wi COLUMN & Wi BEAM
FIXINGS, CORING AND DRILLING GUIDANCE

Wi COLUMN & Wi BEAM CONSTRUCTION



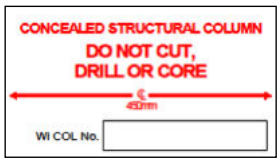
SECTIONAL ELEVATION

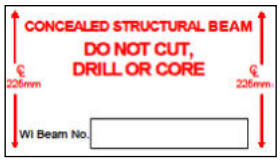
REMEMBER

Wi Columns and Wi Trough Lintels have 2 no. 16mm rebars and Wi Concrete fill.

Wi Trough Lintels have transfer rods extending into the course above. Wi Beams have transfer rods extending above and below.

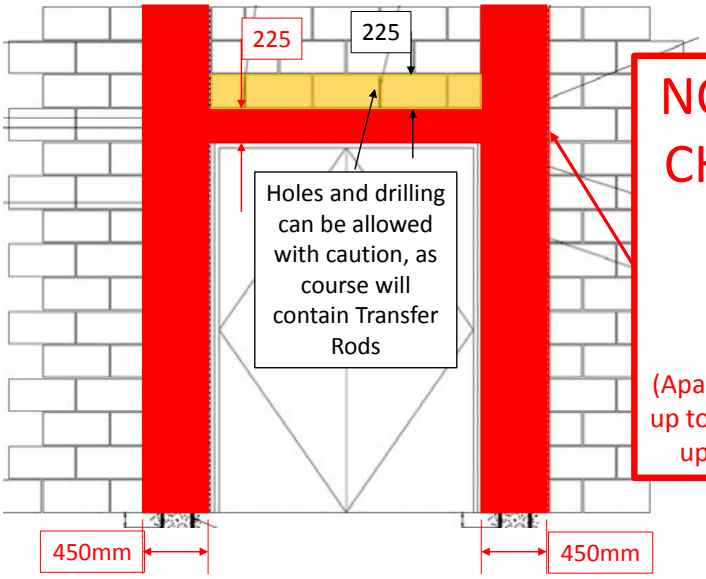
Wi COLUMN & Wi BEAM: GUIDANCE FOR HOLES & FIXINGS





Fix these warning stickers on Wi Columns and Wi Troughs/ Wi Beams.

(Stickers available from Wembley Innovation)

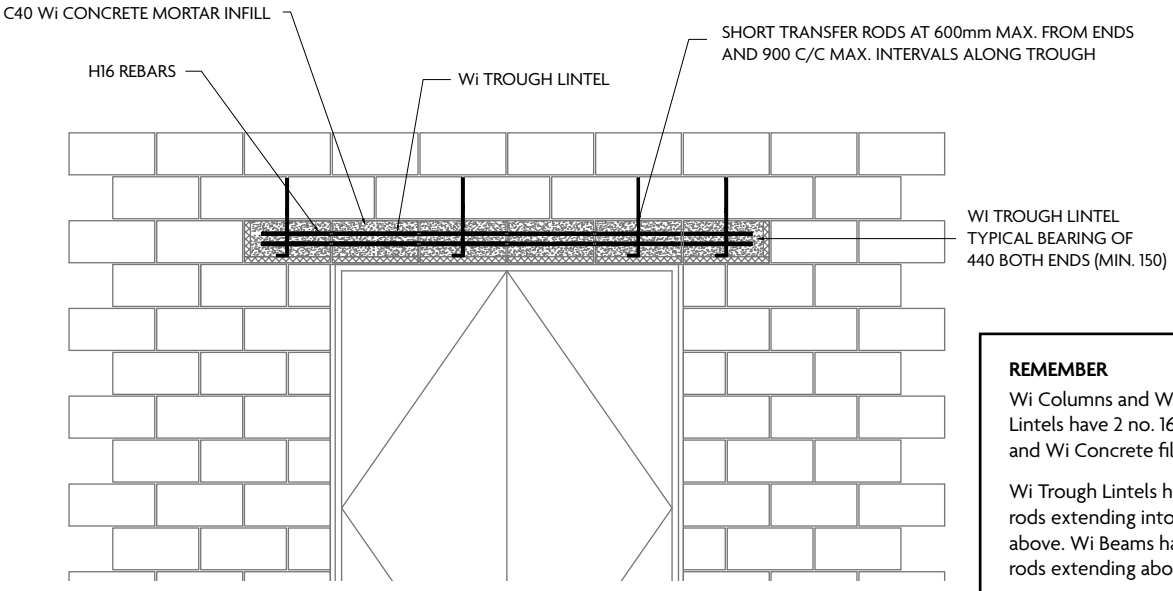


NO DRILLING CHASING OR CORING ZONES

(Apart from nominal fixings up to M12 or through-holes up to 12mm diameter)

Wi COLUMN & Wi BEAM
FIXINGS, CORING AND DRILLING GUIDANCE

Wi TROUGH CONSTRUCTION

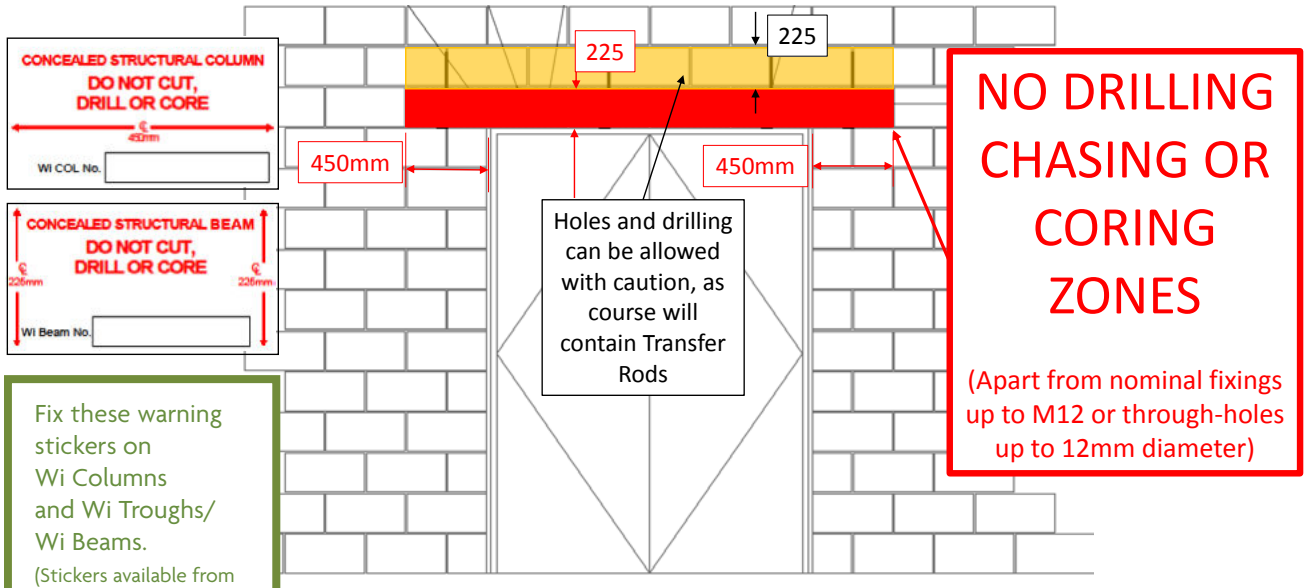


REMEMBER

Wi Columns and Wi Trough Lintels have 2 no. 16mm rebars and Wi Concrete fill.

Wi Trough Lintels have transfer rods extending into the course above. Wi Beams have transfer rods extending above and below.

Wi COLUMN & Wi BEAM: GUIDANCE FOR HOLES & FIXINGS

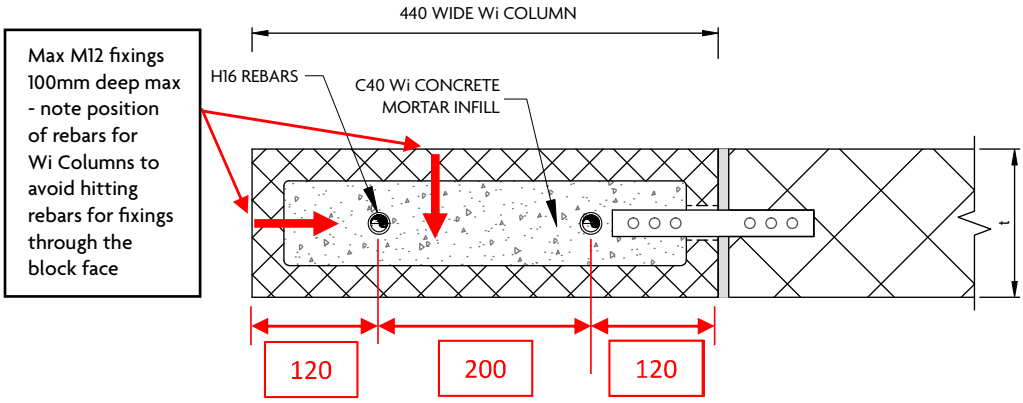


Fix these warning stickers on Wi Columns and Wi Troughs/ Wi Beams.

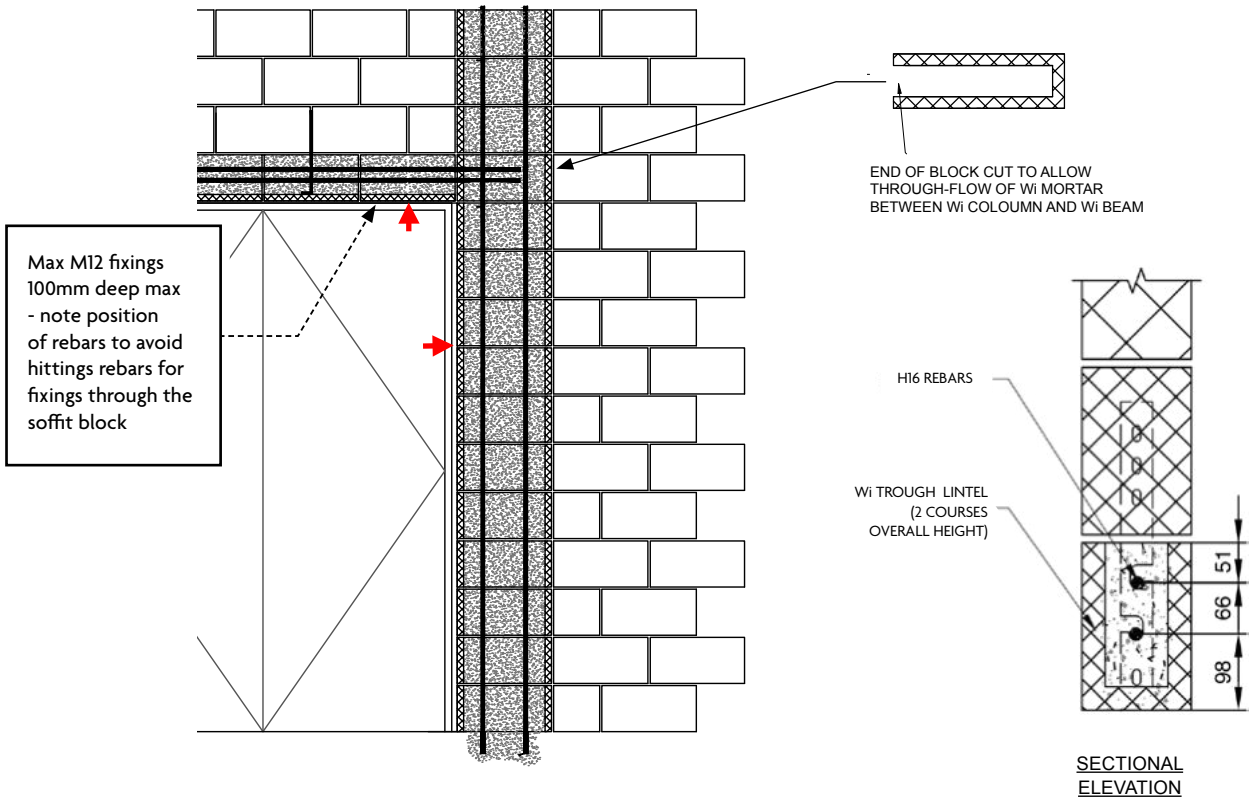
(Stickers available from Wembley Innovation)

Wi COLUMN & Wi BEAM
FIXINGS, CORING AND DRILLING GUIDANCE

SECTIONAL PLAN OF Wi COLUMN



Wi TROUGH ELEVATIONS

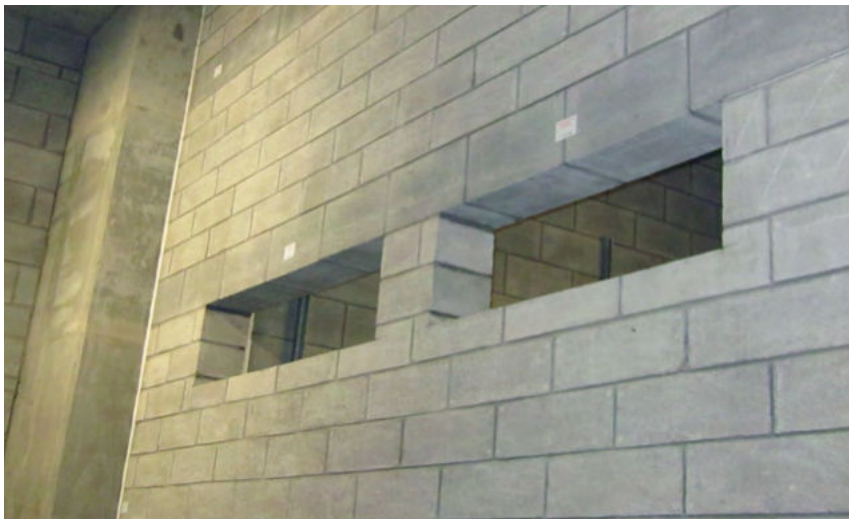


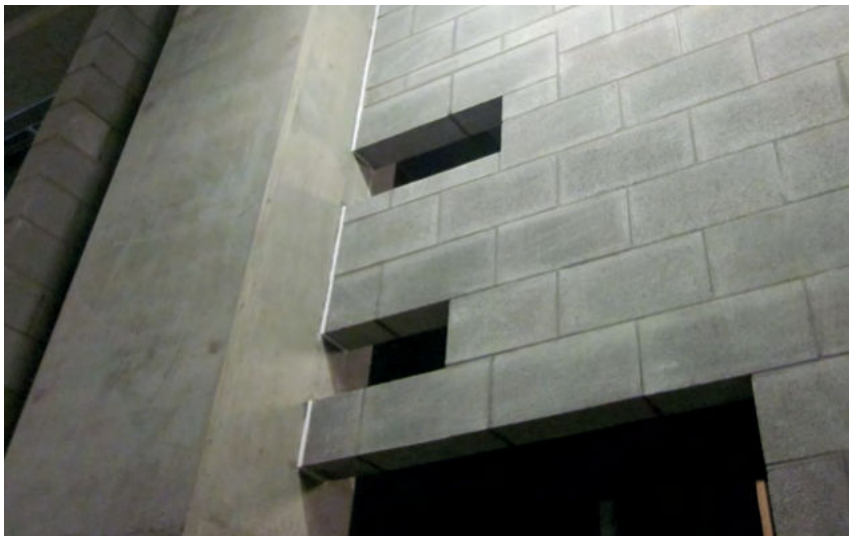
Suitable fixings:

- Plugs and screws
- Resin anchors - up to M12, 100mm long
- Expander bolts - up to M12, 100mm long
- **Fixings should be proof tested prior to installation where structural**

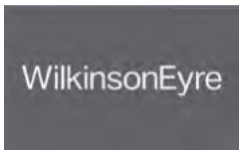
Refer to Wembley Innovation for recommended fixings from Hilti & fischer test reports

BUILDERSWORK HOLES EXAMPLES





All post-cut holes should be reviewed and confirmed by a structural engineer.




Our clients and partners

Who we work with

APPENDIX A

Standard Details

REV L

Wi SYSTEM DETAILS

The Wi System is a versatile method of replacing traditional windposts and lintels in masonry construction.

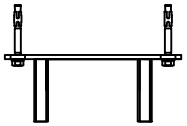
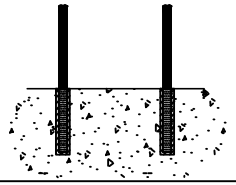
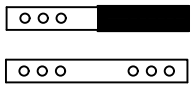
working in partnership with

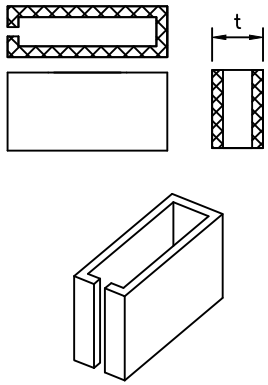
INDEX

No.	Revision/Issue	Date
J	General Revision	22/02/17
K	Detail 26 added	26/07/17
L	Details 01/10 revised	20/06/19

WEMBLEY INNOVATION™

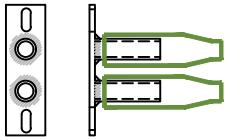
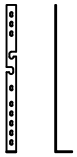
Wi COLUMN COMPONENTS

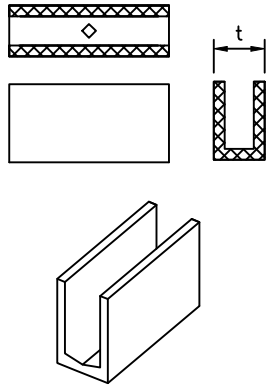
HEAD FIXING BRACKET	
BASE FIXING	
SOCKET ENDED 16mm REBAR (SINGLE CONTINUOUS LENGTH IN COLUMN)	
225mm MASONRY TIE WITH OR WITHOUT DE-BONDING SLEEVE	

C40 Wi CONCRETE MORTAR AVAILABLE IN SILOS, 1 TON BAGS AND 25kg BAGS FROM CPI (REFER TO USER MANUAL FOR MIXING GUIDANCE)	
Wi COLUMN BLOCK t= 100mm,140mm, 190mm, 215mm	

WEMBLEY INNOVATION™

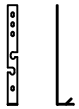
Wi BEAM COMPONENTS

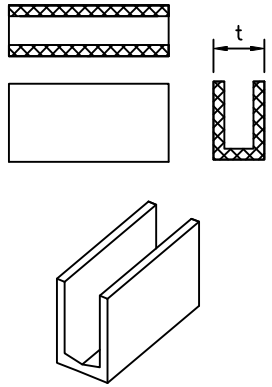
Wi BEAM CLEAT C/W DEBONDING SLEEVES	
TRANSFER ROD - LONG	
16mm Diameter REBAR (MINIMUM LAP LENGTH IN BEAMS IS 500mm)	

C40 Wi CONCRETE MORTAR AVAILABLE IN SILOS, 1 TON BAGS AND 25kg BAGS FROM CPI (REFER TO USER MANUAL FOR MIXING GUIDANCE)	
Wi BEAM U-BLOCK WITH KNOCK-OUT RECESS FOR TRANSFER ROD HOLE t=100mm, 140mm, 190mm, 215mm	

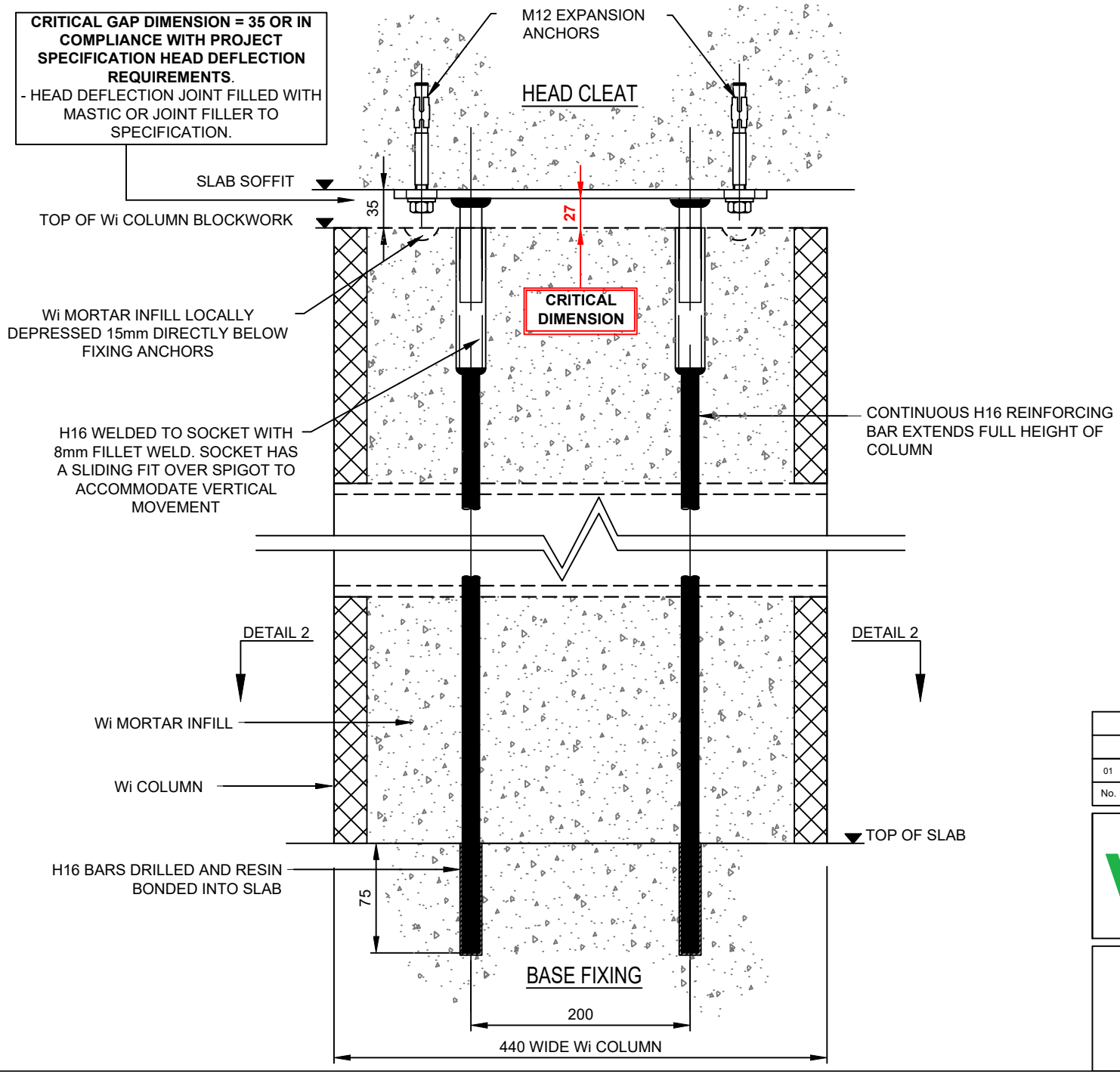
WEMBLEY INNOVATION™

Wi TROUGH LINTEL COMPONENTS

TRANSFER ROD - SHORT	
16mm Diameter REBAR	

C40 Wi CONCRETE MORTAR AVAILABLE IN SILOS, 1 TON BAGS AND 25kg BAGS FROM CPI (REFER TO USER MANUAL FOR MIXING GUIDANCE)	
Wi TROUGH BLOCK t=100mm, 140mm, 190mm, 215mm	

WEMBLEY INNOVATION™



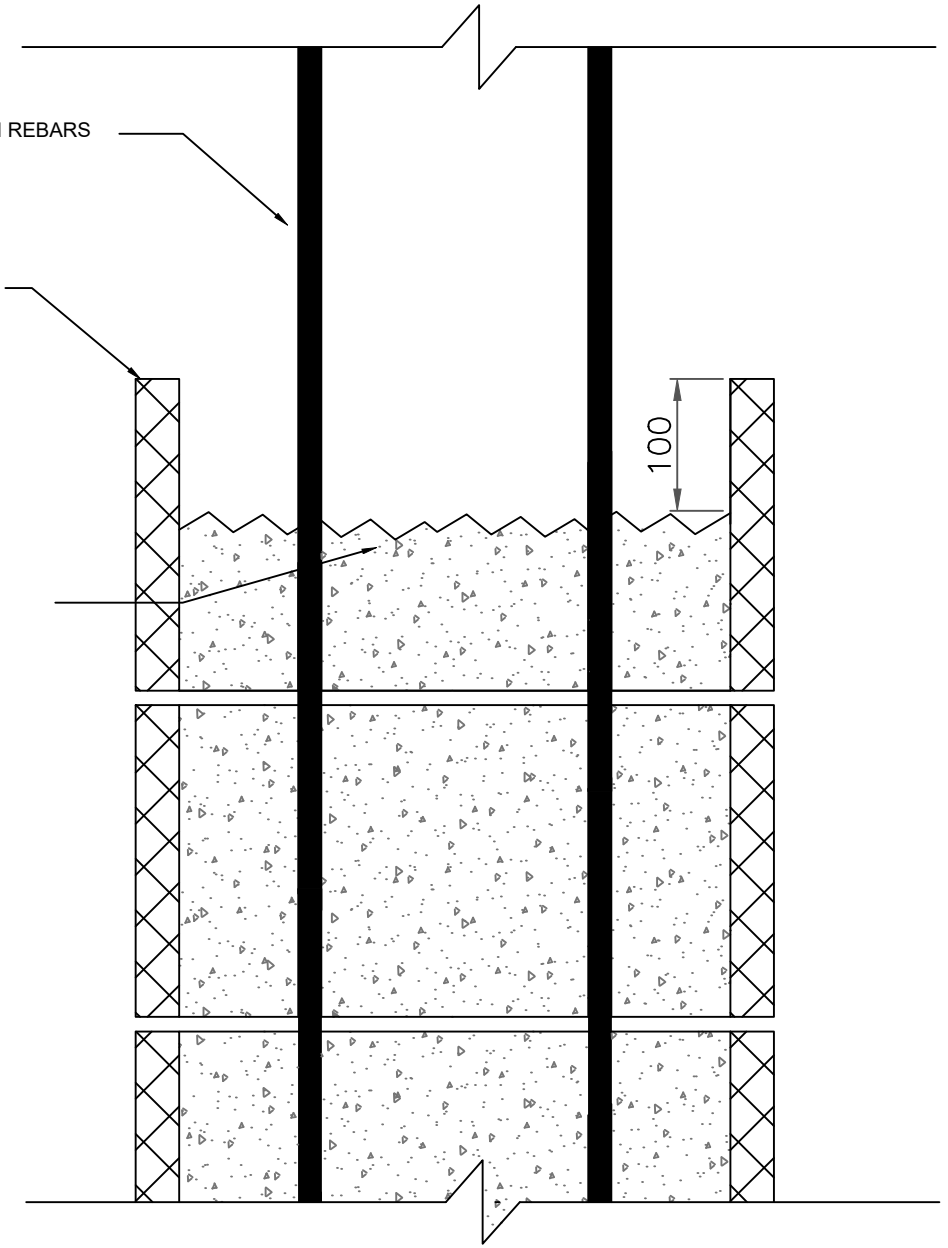
01	General Revision	22/02/17
No.	Revision/Issue	Date

WEMBLEY INNOVATION™

PRINCIPAL Wi SYSTEM DETAILS

DETAIL 1

Wi COLUMN HEAD AND BASE FIXING DETAILS



1. Wi MORTAR LEFT AT MID-DEPTH OF LAST Wi COLUMN BLOCK (100mm FROM THE TOP OF THE BLOCK).
2. TOP SURFACE TO BE KEYED OR TROWEL ROUGHENED.
3. IF NOT KEYED WHEN MORTAR IS FRESH, SURFACE-DRILL TO CREATE A KEY.
4. WHEN CONTINUING NEXT LIFT, THE KEYED SURFACE SHOULD BE DAMPENED WITH CLEAN WATER.

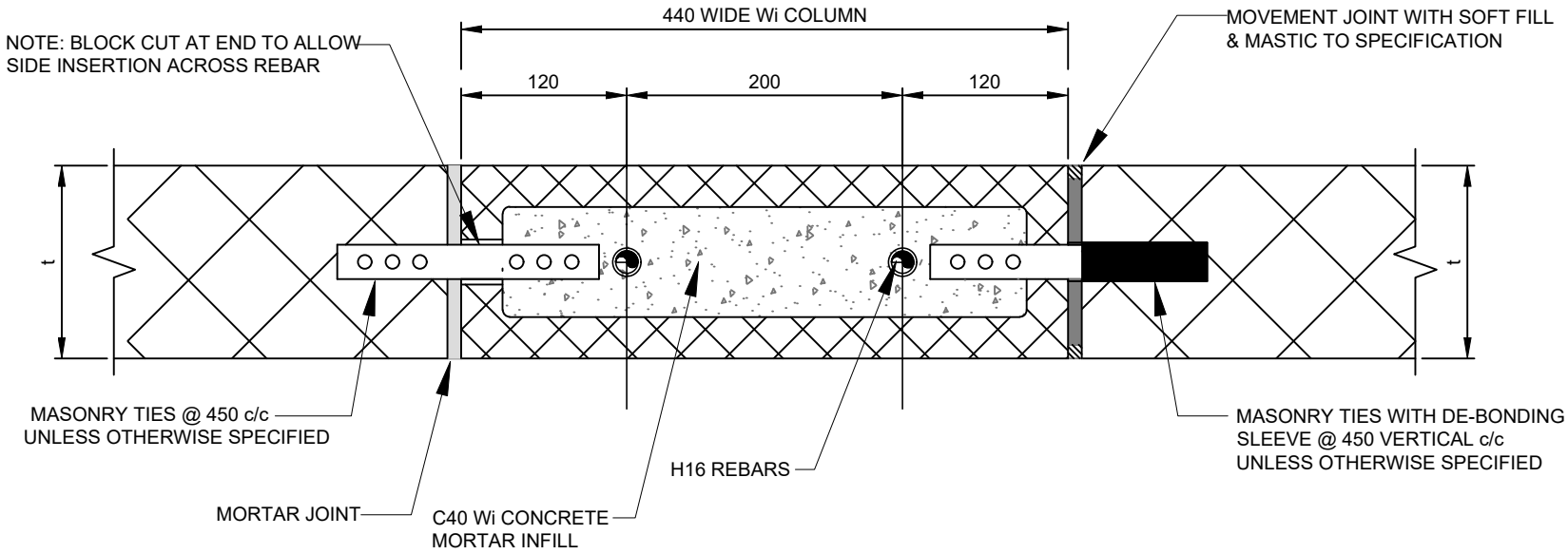
01	FIRST ISSUE	21/06/19
No.	Revision/Issue	Date

WEMBLEY INNOVATION™

PRINCIPAL Wi SYSTEM DETAILS

DETAIL 1A

Wi COLUMN DAY JOINT



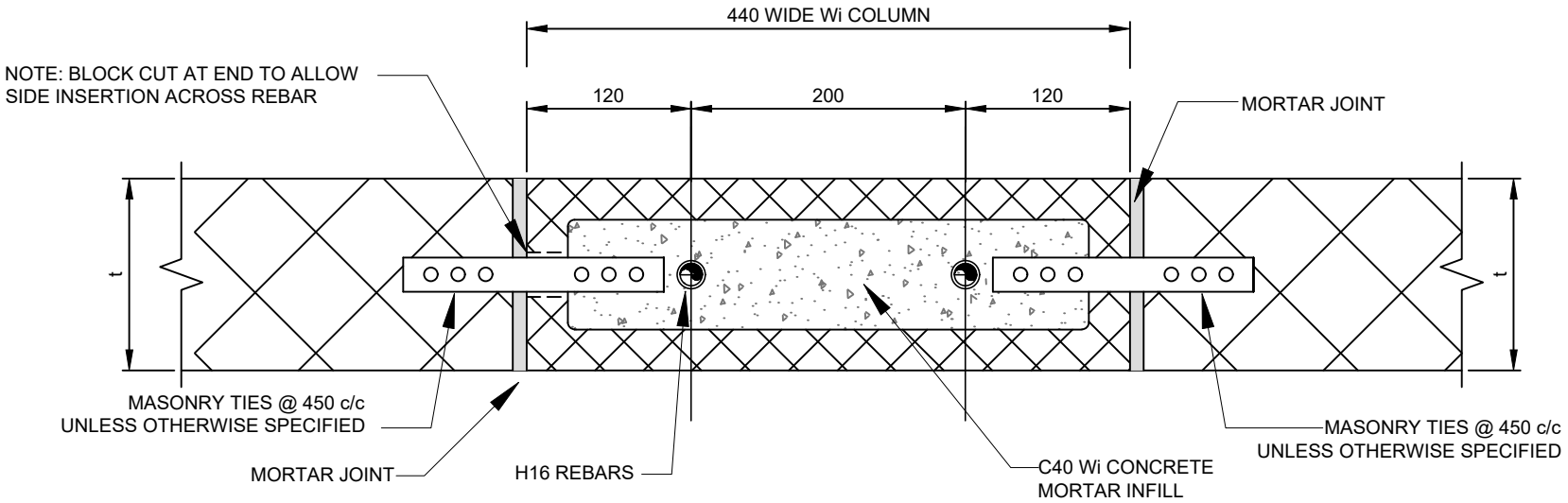
SECTIONAL PLAN

No.	Revision/Issue	Date
01	General Revision	22/02/17

WEMBLEY INNOVATION™

PRINCIPAL Wi SYSTEM DETAILS

DETAIL 2
Wi COLUMN WITH BONDED & SLEEVED TIES



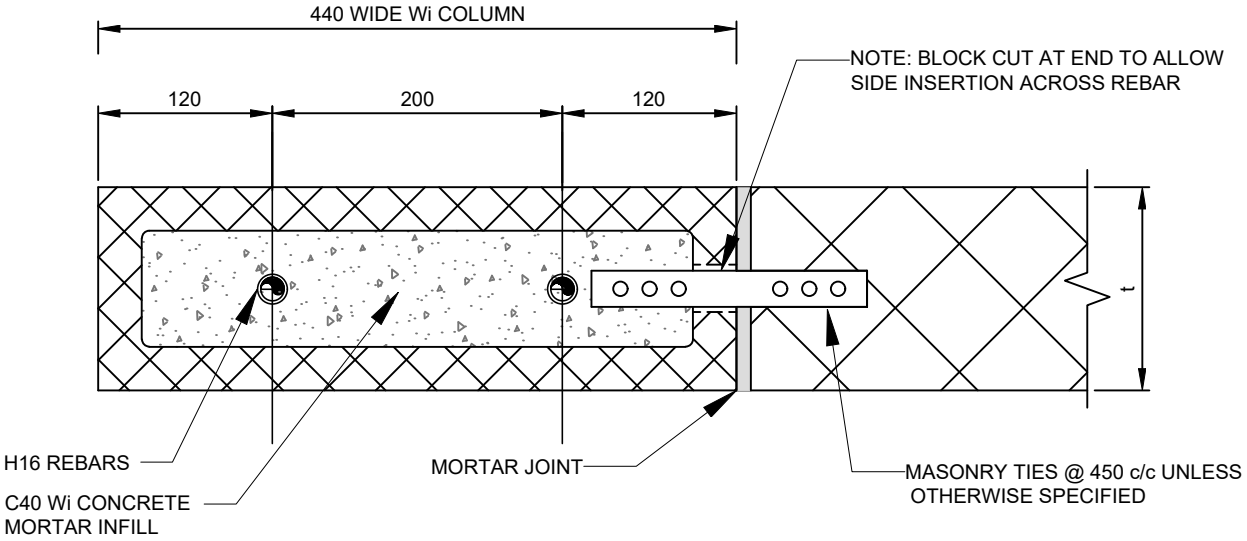
SECTIONAL PLAN

No.	Revision/Issue	Date
02	Detail renumbered	21/06/19
01	General Revision	22/02/17

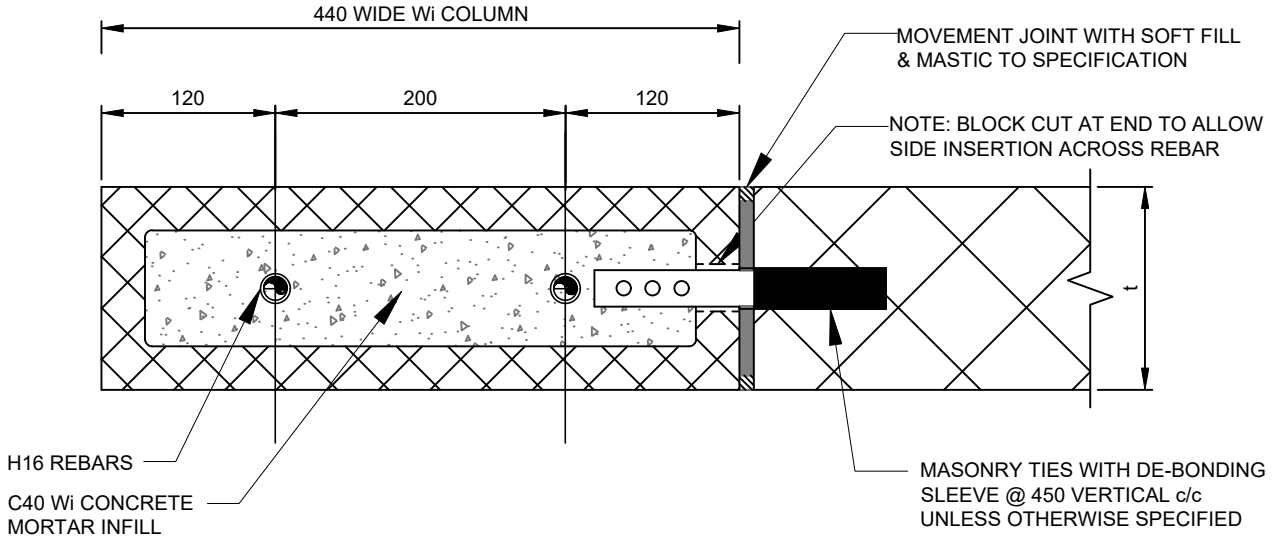
WEMBLEY INNOVATION™

PRINCIPAL Wi SYSTEM DETAILS

DETAIL 3
Wi COLUMN WITH BONDED TIE JOINTS



DETAIL 4A - WALL JUNCTION WITH BONDED TIE - SECTIONAL PLAN



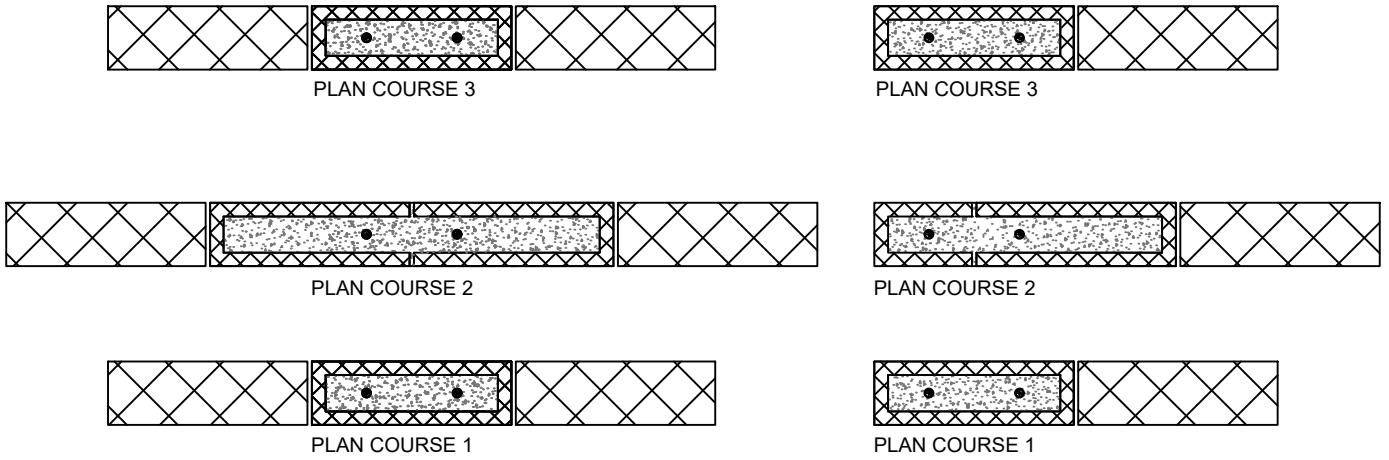
DETAIL 4B - WALL JUNCTION WITH DEBONDED TIE - SECTIONAL PLAN

No.	Revision/Issue	Date
02	Details number revised	20/06/19
02	Detail 3A added	10/11/17
01	General Revision	22/02/17

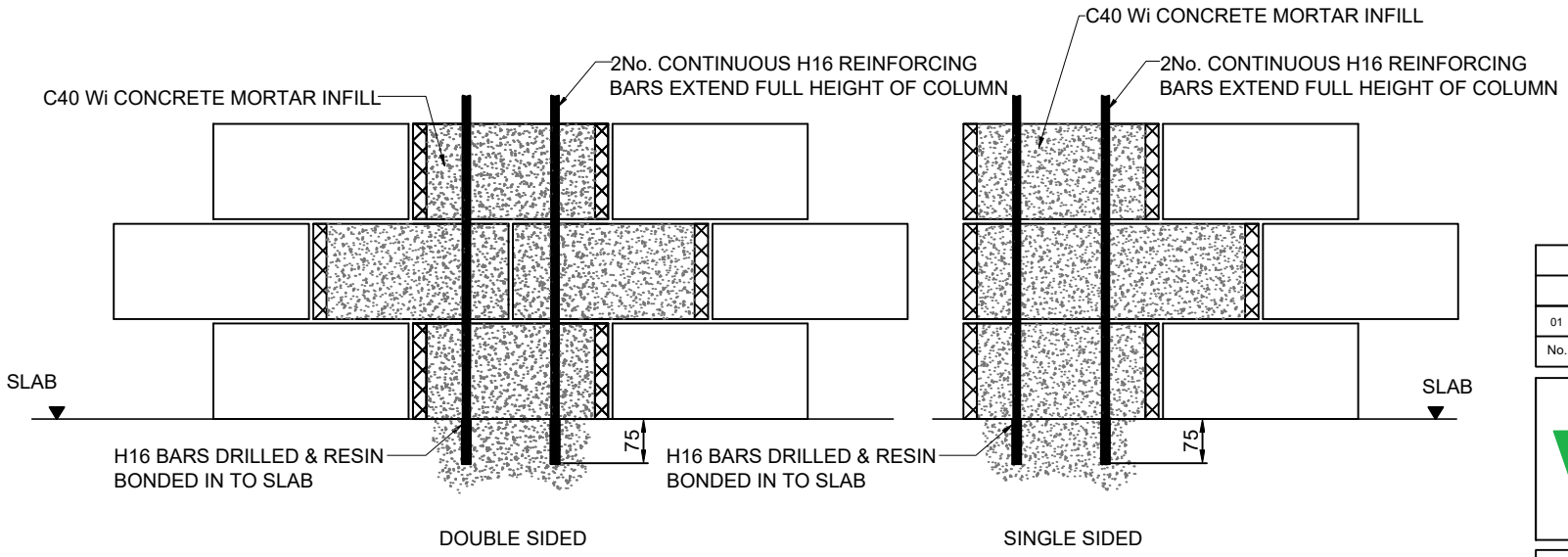
WEMBLEY INNOVATION™

PRINCIPAL Wi SYSTEM DETAILS

DETAIL 4
Wi COLUMN AT END OF WALL



SECTIONAL PLANS



SECTIONAL ELEVATIONS

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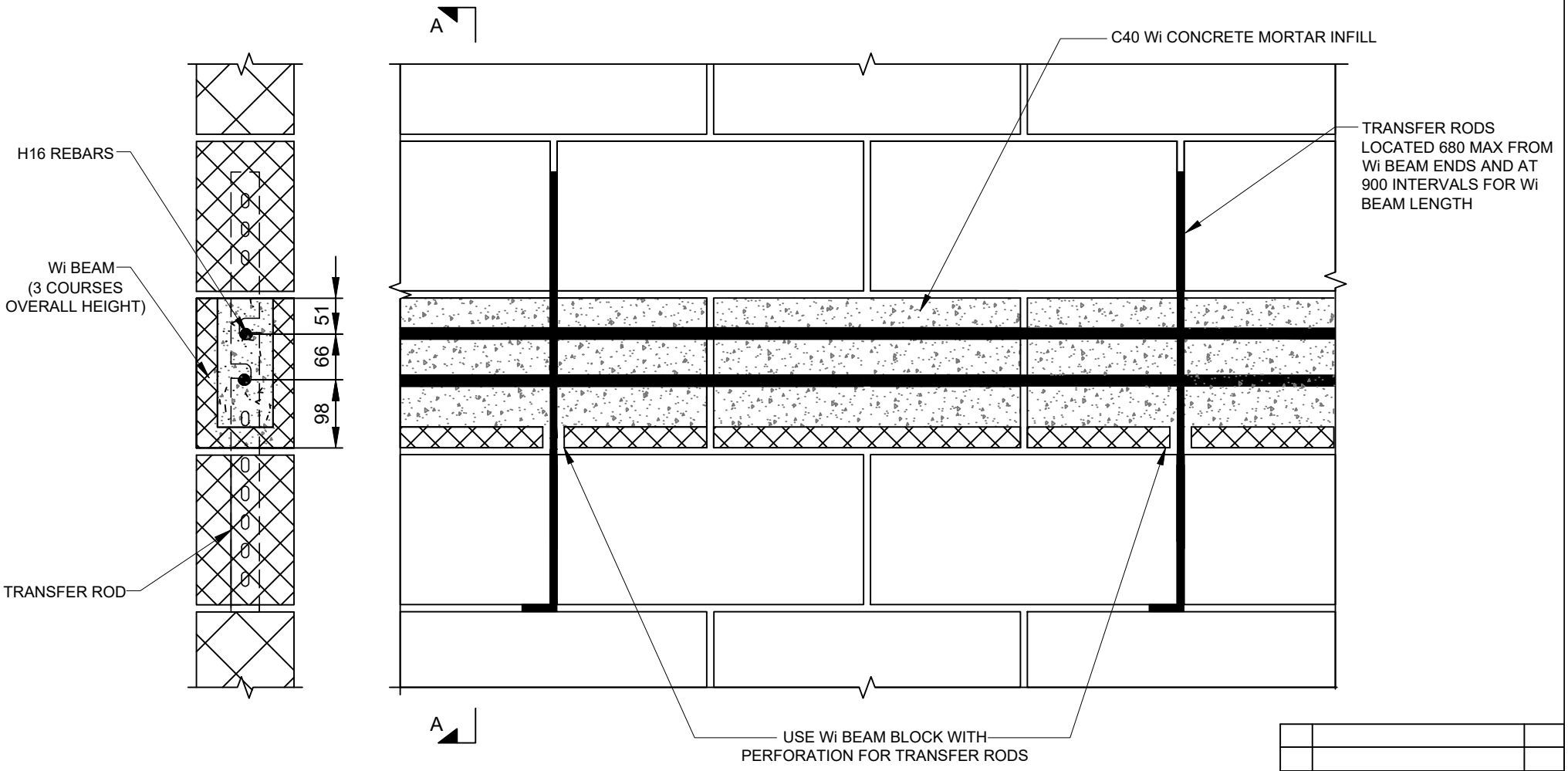
WEMBLEY INNOVATION™

PRINCIPAL Wi SYSTEM DETAILS

DETAIL 5

BLOCK BONDED Wi COLUMNS



SECTION A-A

SECTIONAL ELEVATION

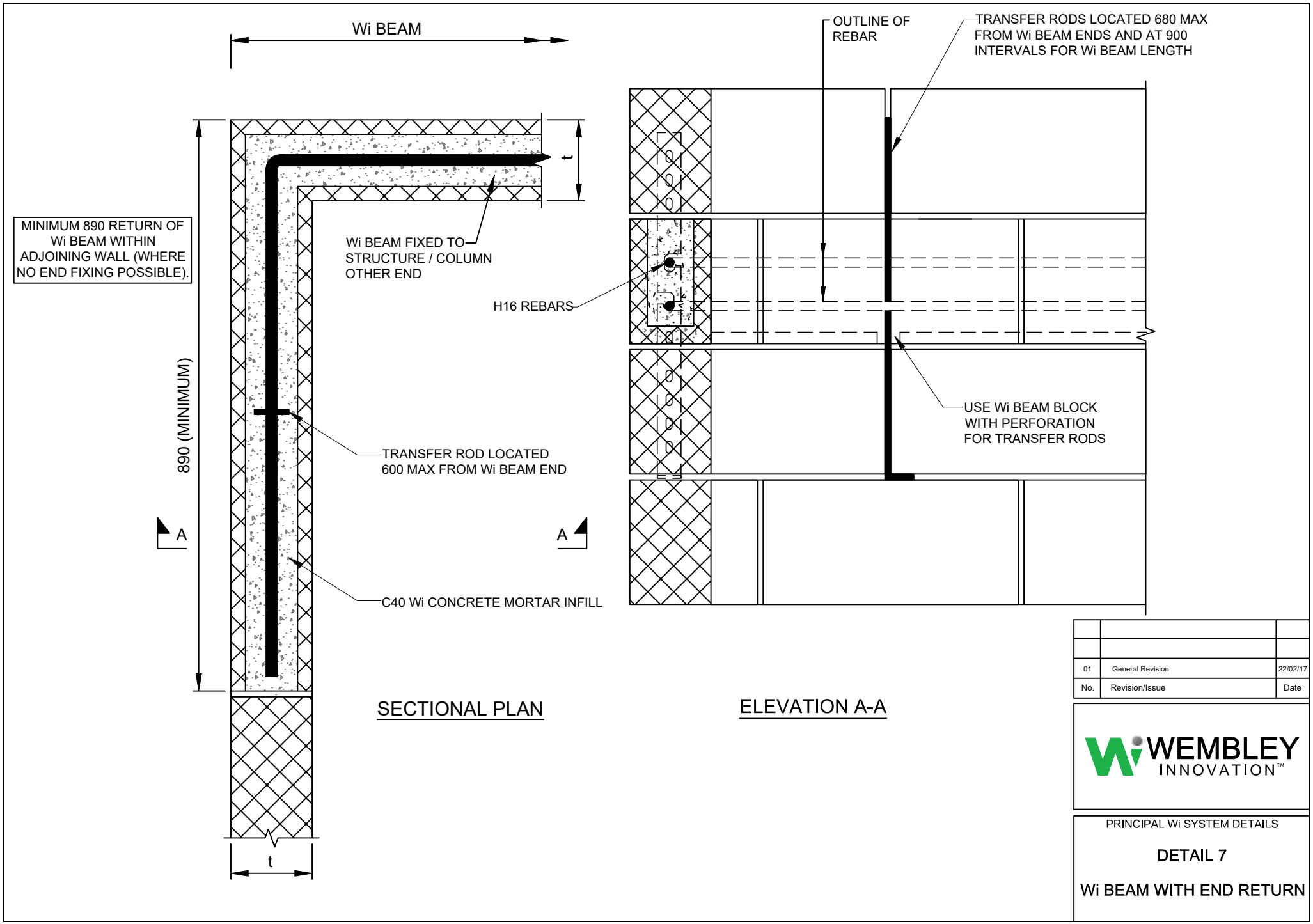
No.	Revision/Issue	Date
01	General Revision	22/02/17

WEMBLEY INNOVATION™

PRINCIPAL Wi SYSTEM DETAILS

DETAIL 6

Wi BEAM DETAIL



No.	Revision/Issue	Date
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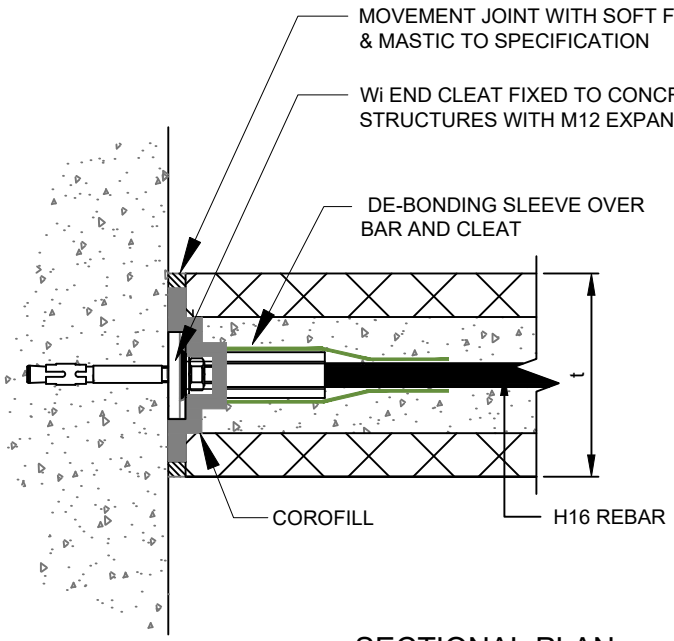
WEMBLEY INNOVATION™

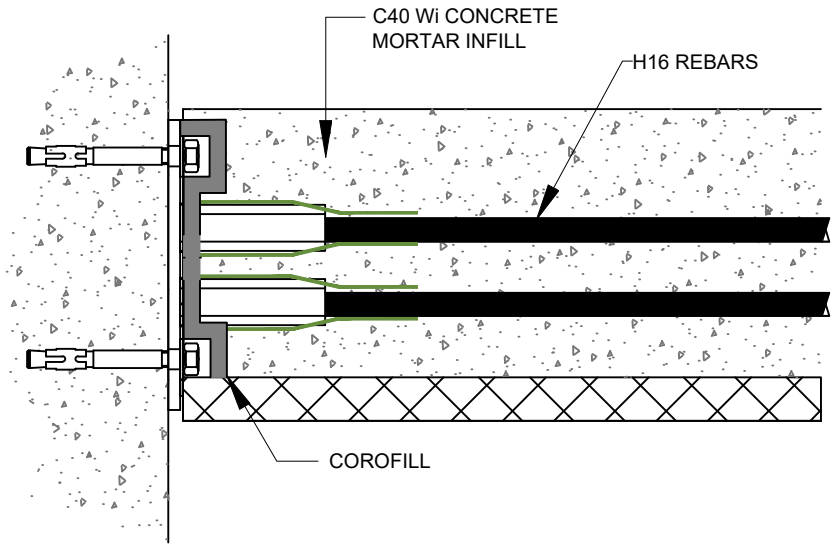
PRINCIPAL Wi SYSTEM DETAILS

DETAIL 7

Wi BEAM WITH END RETURN



SECTIONAL PLAN



SECTIONAL ELEVATION

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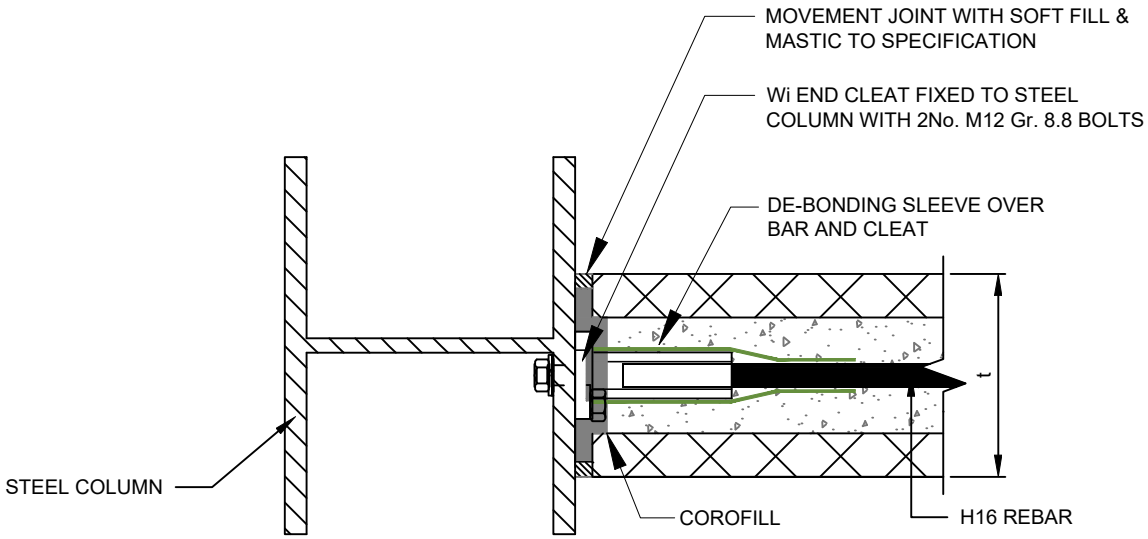
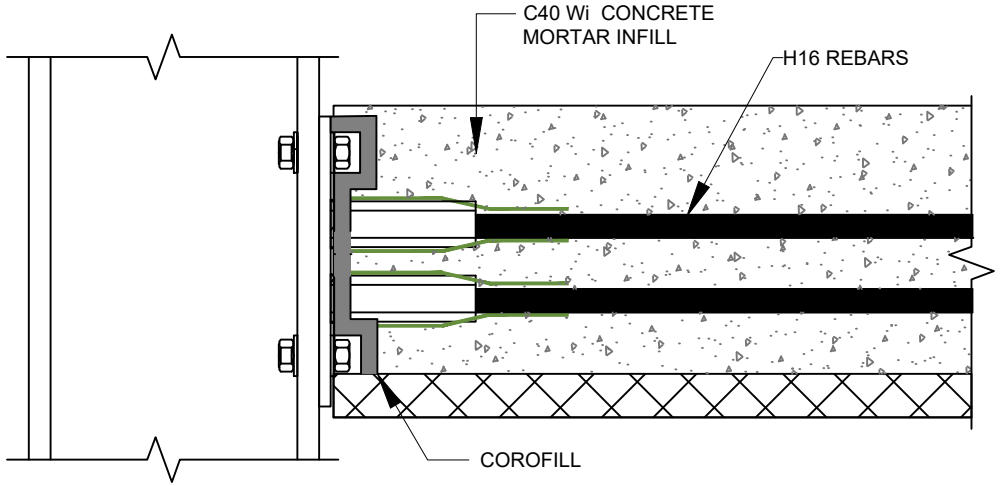
PRINCIPAL Wi SYSTEM DETAILS

DETAIL 8

Wi BEAM FIXED TO CONCRETE STRUCTURE



SECTIONAL PLAN



SECTIONAL ELEVATION

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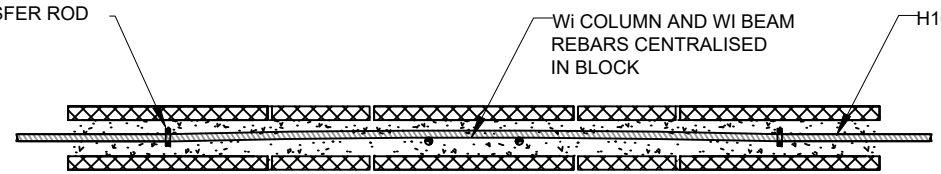
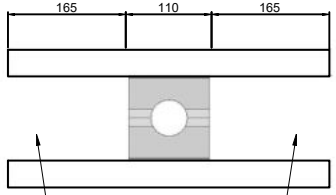
PRINCIPAL Wi SYSTEM DETAILS

DETAIL 9

Wi BEAM FIXED TO STEEL COLUMN

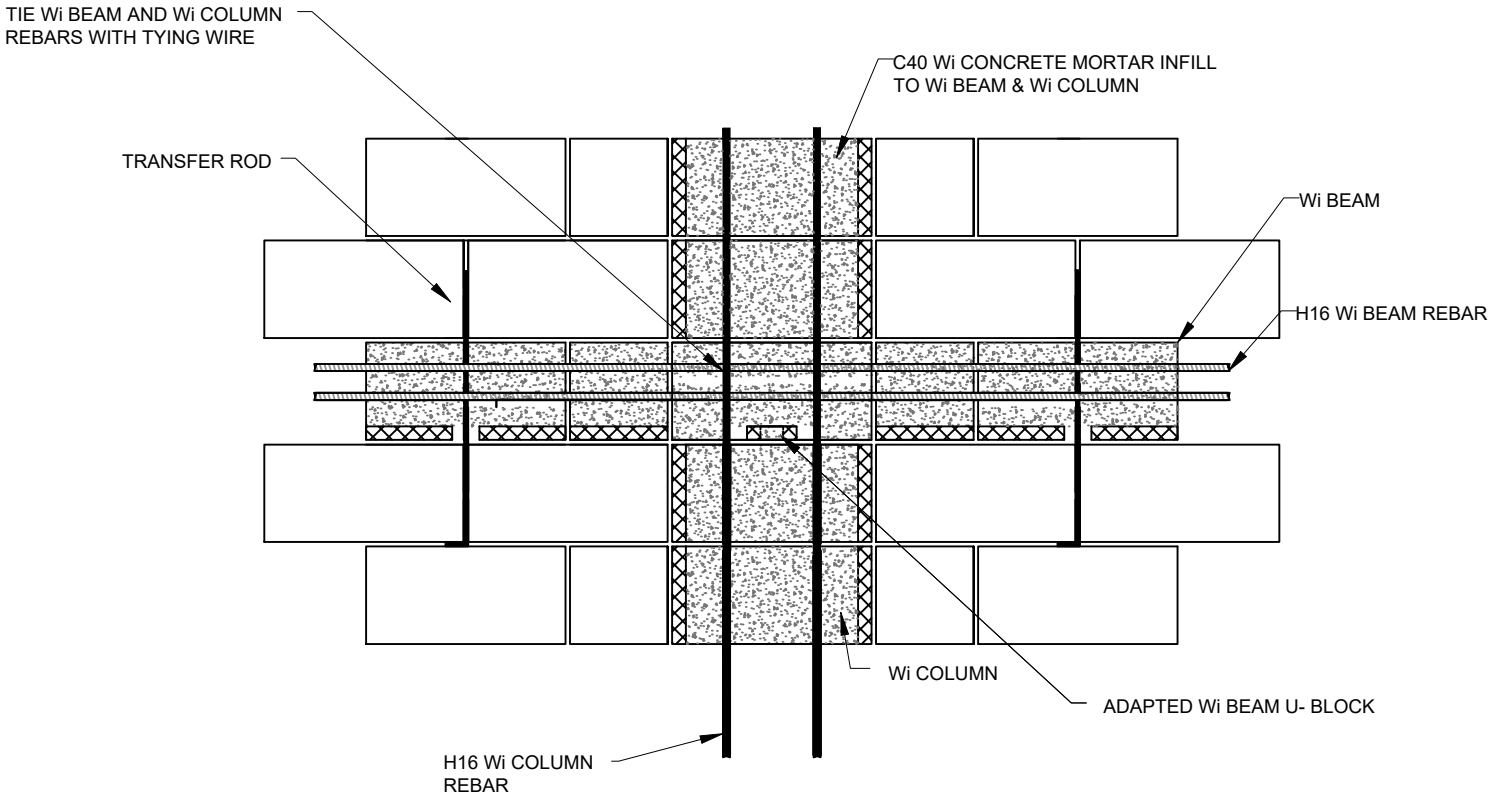


SECTIONAL PLAN

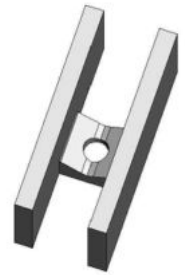


ENDS TO BASE OF U-BLOCK CUT
AND CENTRAL RECESS
KNOCKED-OUT TO ALLOW
THROUGH-FLOW OF Wi MORTAR
BETWEEN Wi COLUMN AND Wi BEAM

ADAPTED Wi BEAM U-BLOCK
PLAN VIEW



SECTIONAL ELEVATION



ADAPTED Wi BEAM U-BLOCK
ISOMETRIC VIEW

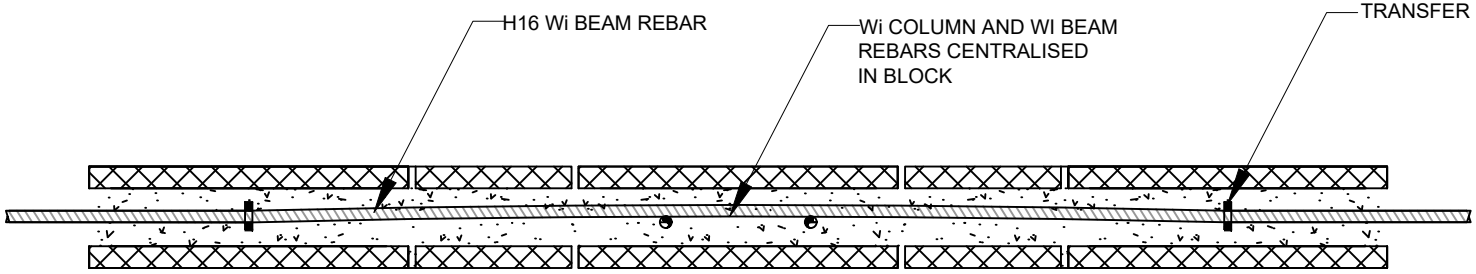
02	General Revision	20/06/19
01	General Revision	22/02/17
No.	Revision/Issue	Date

WEMBLEY INNOVATION™

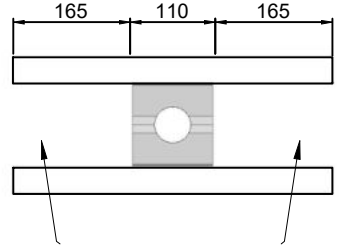
PRINCIPAL Wi SYSTEM DETAILS

DETAIL 10

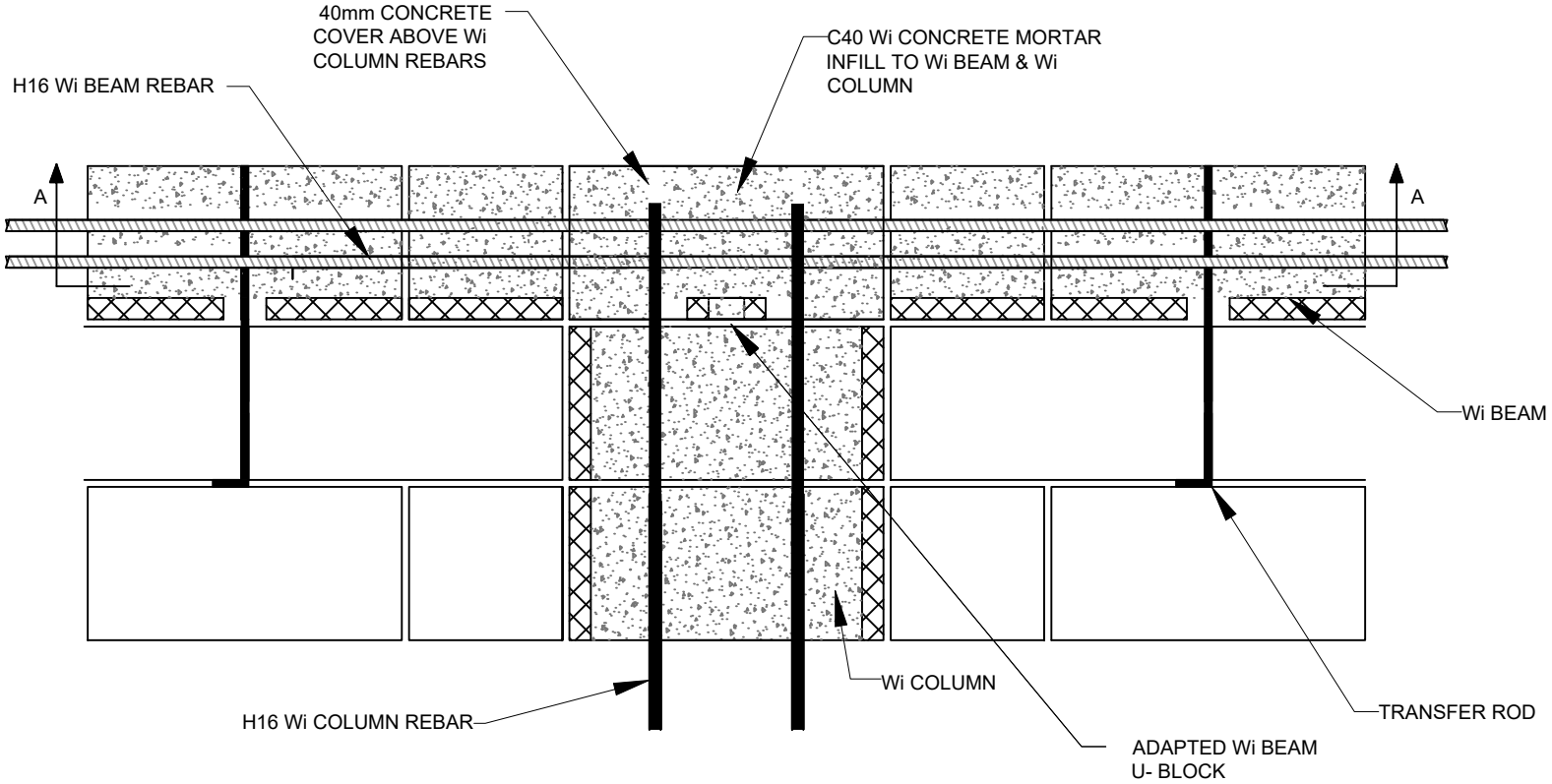
Wi COLUMN - Wi BEAM
DOUBLE CONNECTION



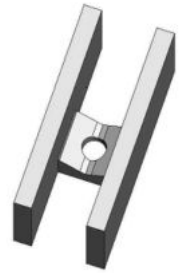
SECTION A-A



ADAPTED Wi BEAM U-BLOCK
PLAN VIEW



SECTIONAL ELEVATION



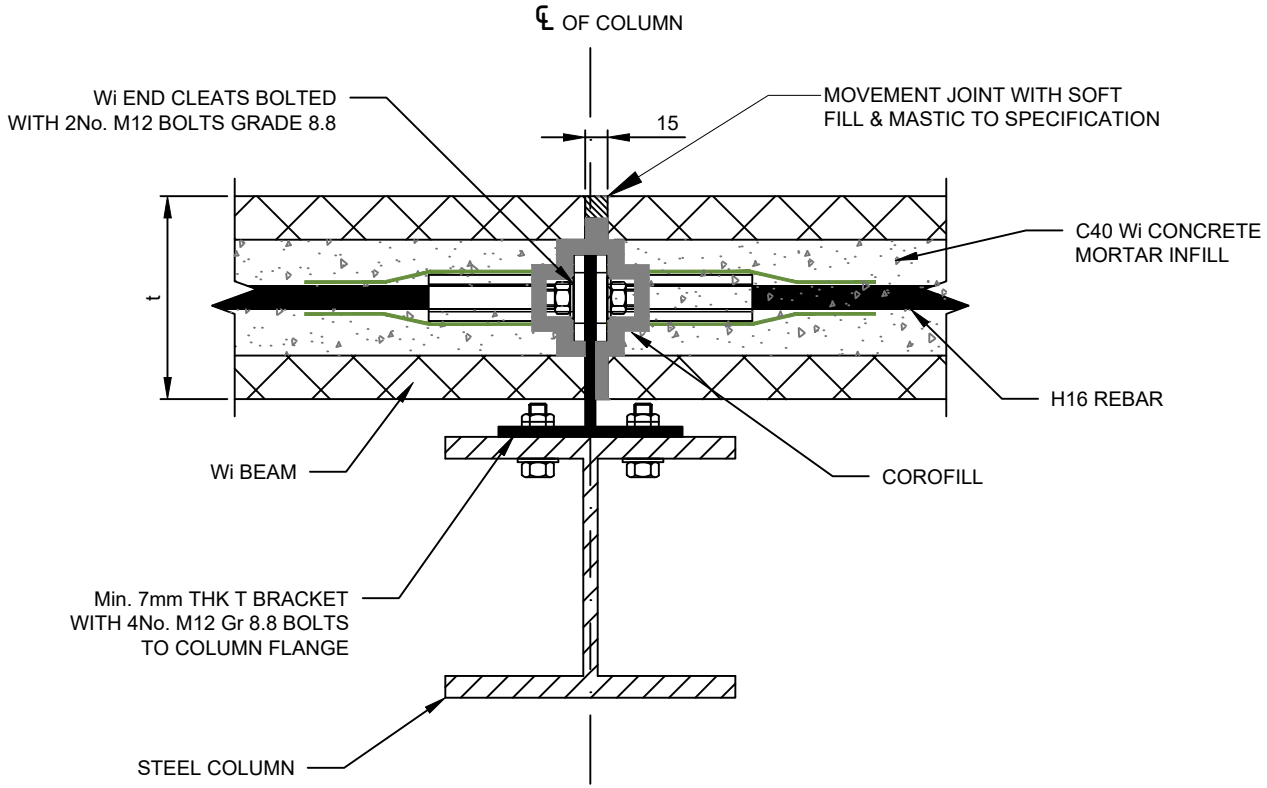
ADAPTED Wi BEAM U-BLOCK
ISOMETRIC VIEW

01	General Revision	22/02/17
No.	Revision/Issue	Date

WEMBLEY INNOVATION™

PRINCIPAL Wi SYSTEM DETAILS

DETAIL 11
Wi COLUMN TERMINATION AT Wi BEAM COURSE



SECTIONAL PLAN

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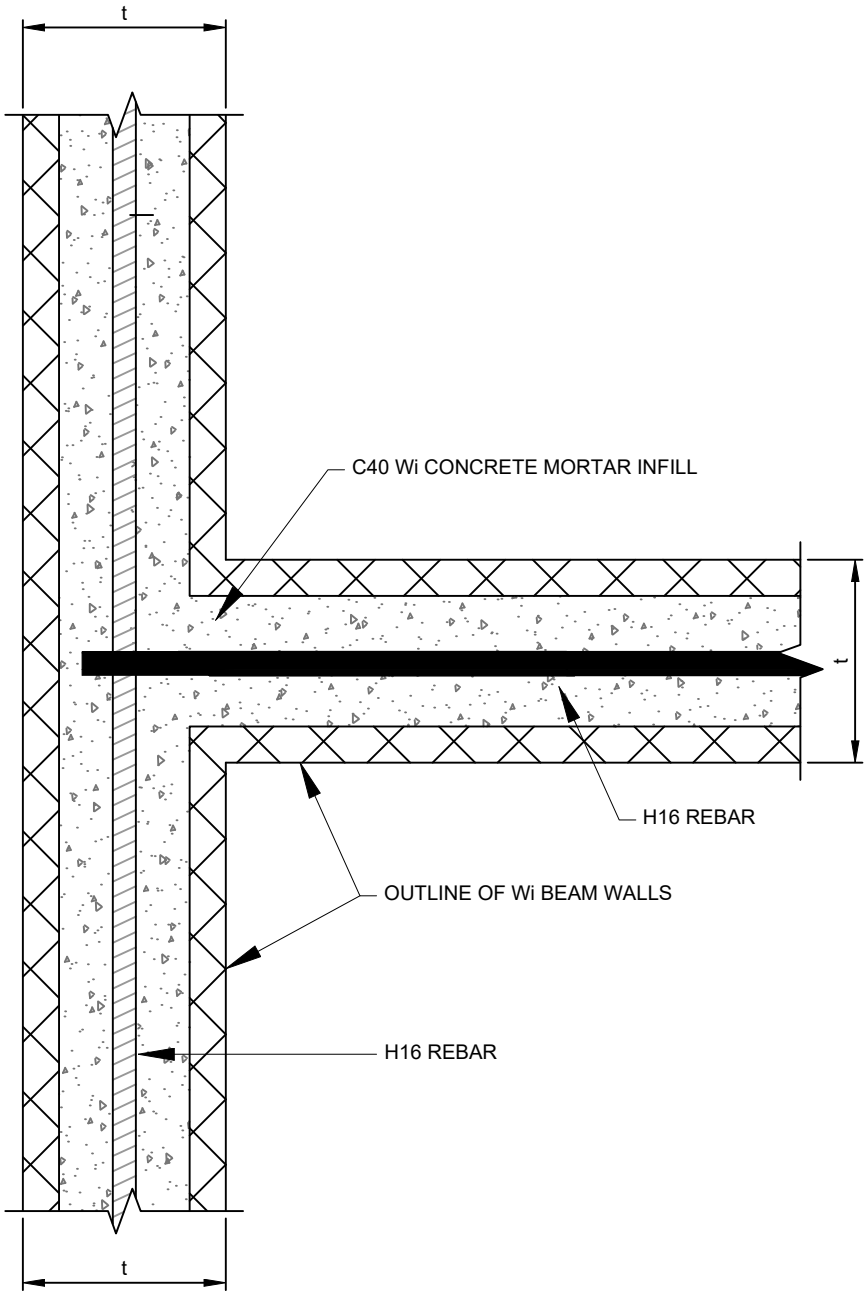
WEMBLEY INNOVATION™

PRINCIPAL Wi SYSTEM DETAILS

DETAIL 12
CONNECTION OF Wi BEAMS TO OFFSET STRUCTURAL STEEL COLUMN



SECTIONAL PLAN

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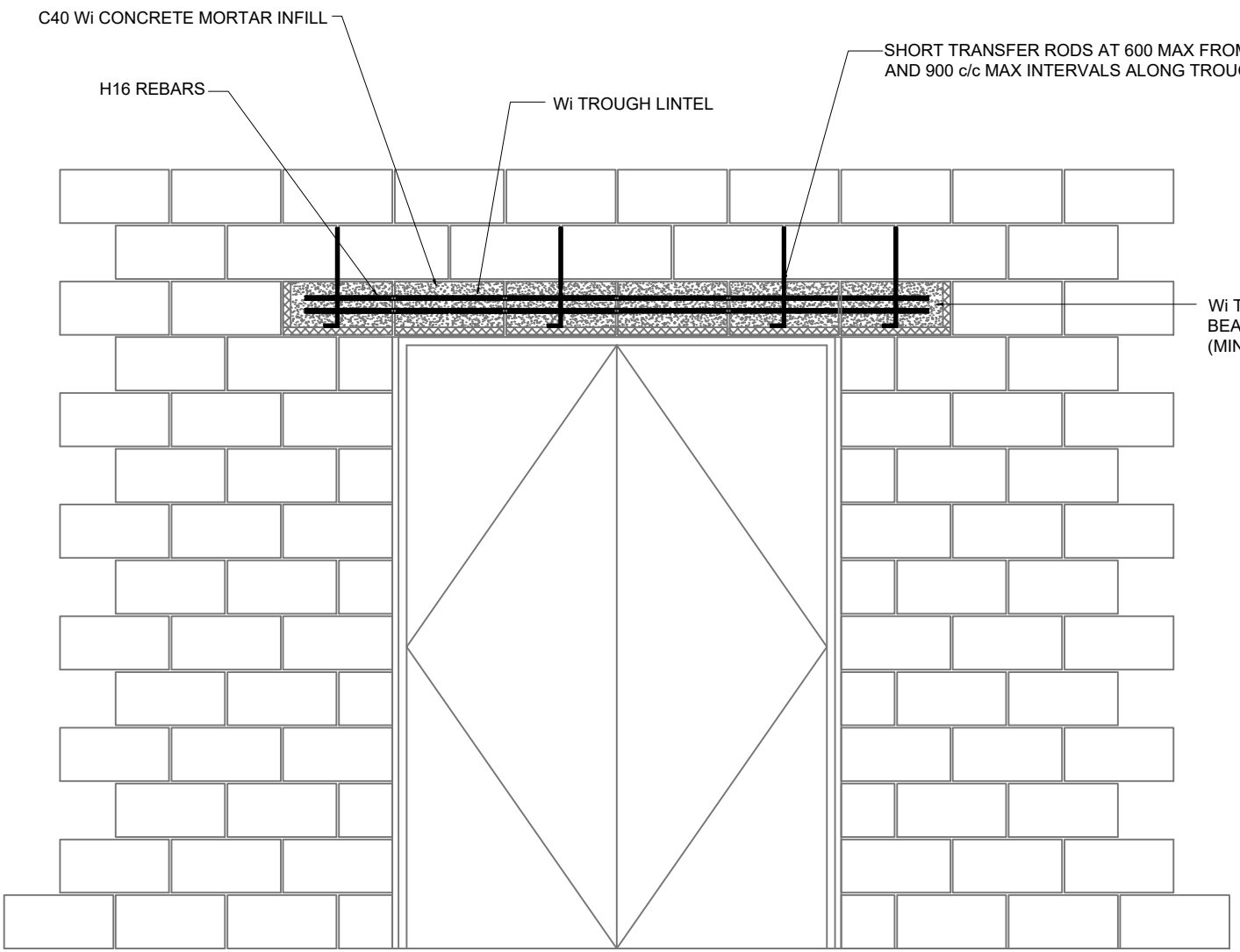
WEMBLEY INNOVATION™

PRINCIPAL Wi SYSTEM DETAILS

DETAIL 13

Wi BEAM
T - CONNECTION



SECTIONAL ELEVATION

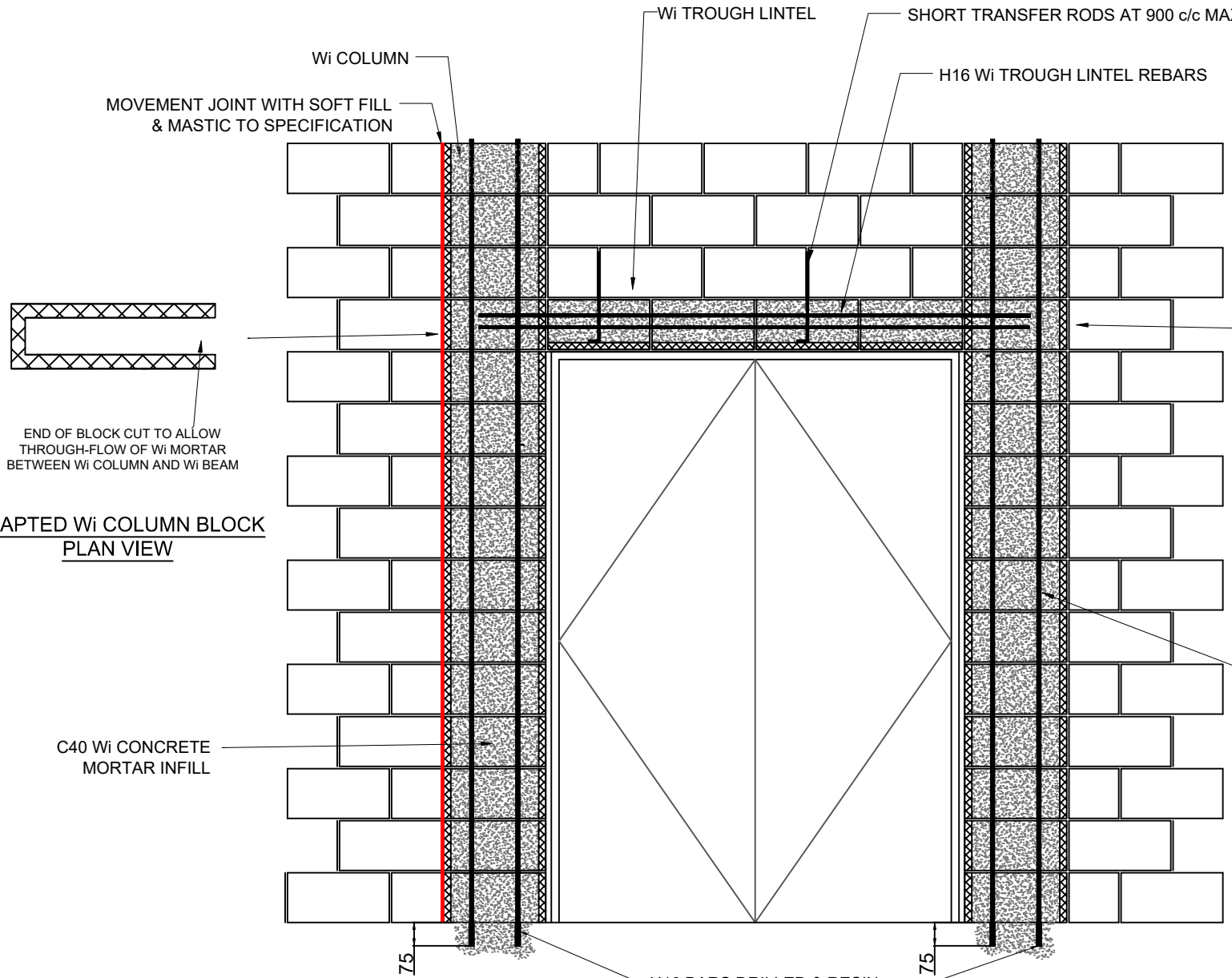
01	General Revision	22/02/17
No.	Revision/Issue	Date

WEMBLEY INNOVATION™

PRINCIPAL Wi DETAILS

DETAIL 14

Wi TROUGH LINTEL TO DOOR OPENING



SECTIONAL ELEVATION

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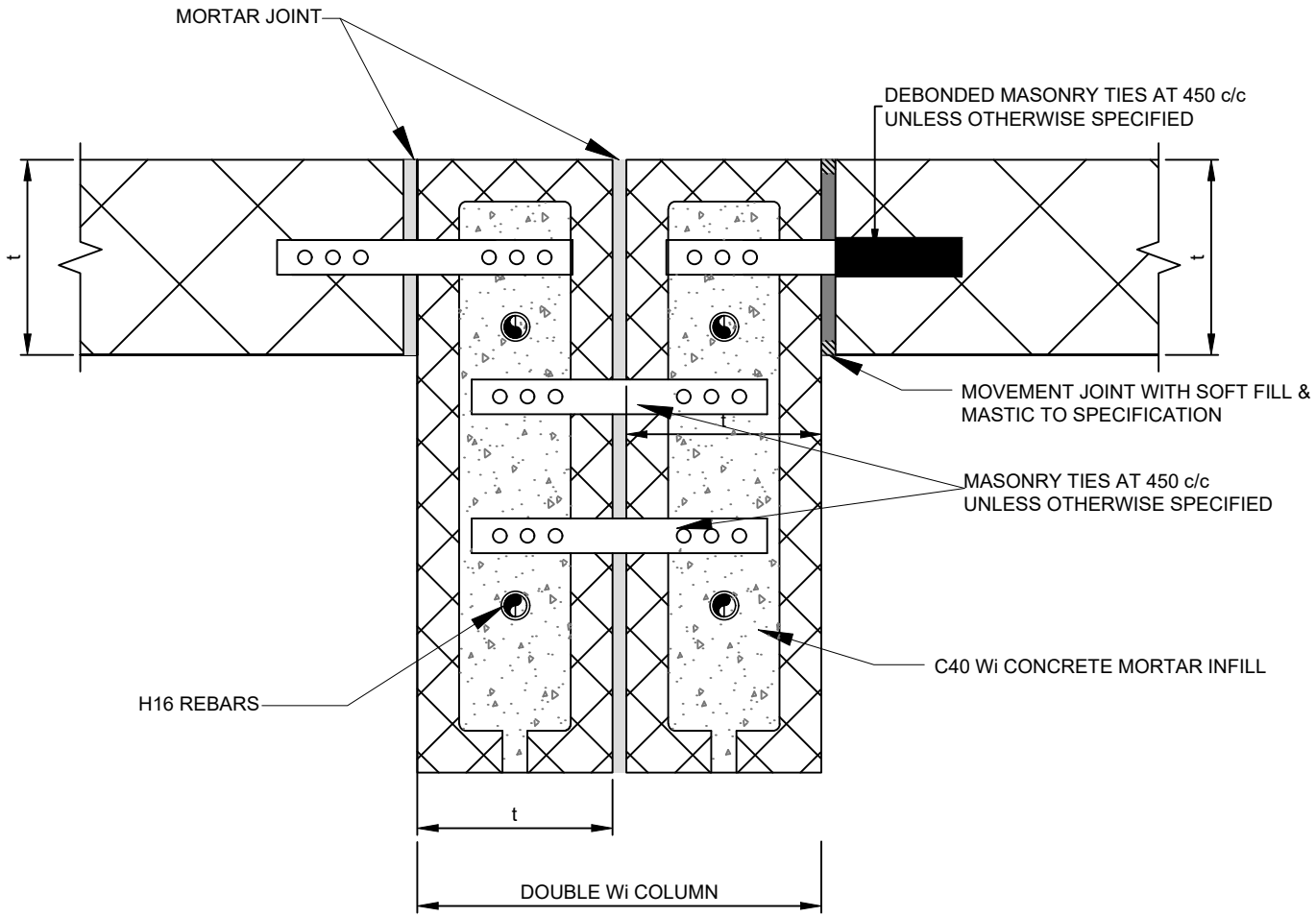
WEMBLEY INNOVATION™

PRINCIPAL Wi DETAILS

DETAIL 15

TYPICAL Wi COLUMN TO Wi TROUGH LINTEL CONNECTION



SECTIONAL PLAN

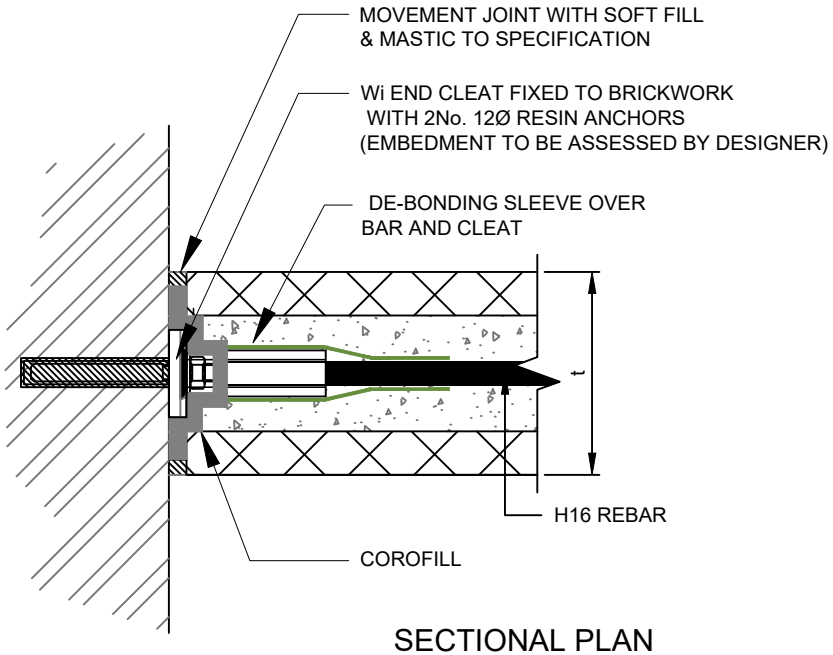
No.	Revision/Issue	Date
01	General Revision	22/02/17

WEMBLEY INNOVATION™

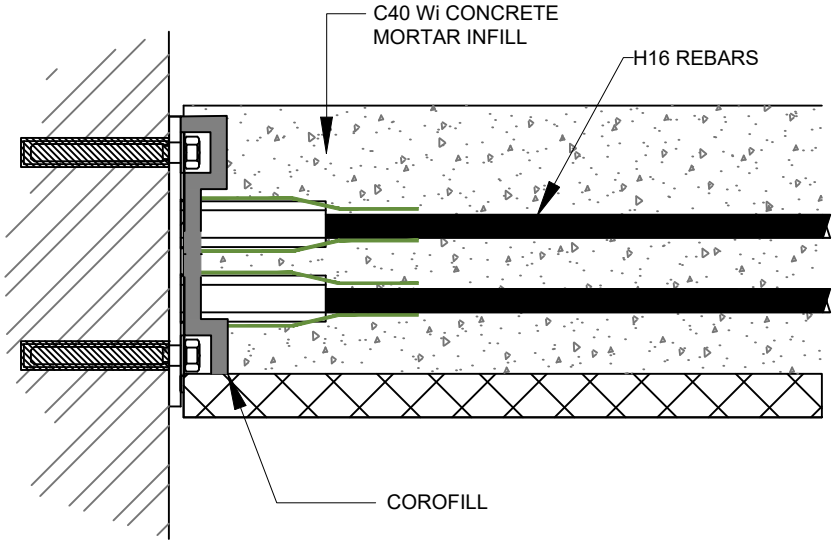
PRINCIPAL Wi SYSTEM DETAILS

DETAIL 16

ROTATED DOUBLE
Wi COLUMN



SECTIONAL PLAN



SECTIONAL ELEVATION

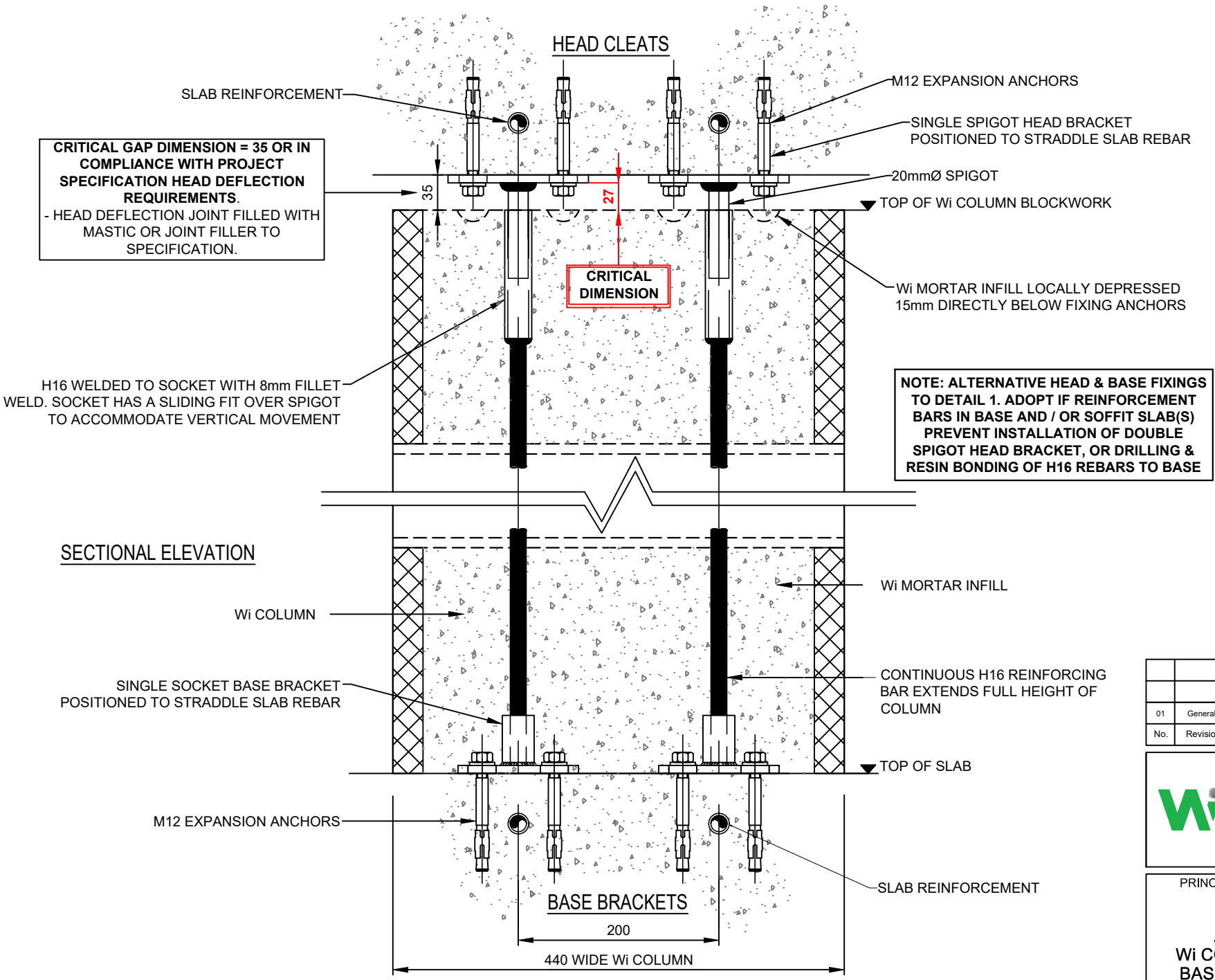
01	General Revision	22/02/17
No.	Revision/Issue	Date

WEMBLEY INNOVATION™

PRINCIPAL Wi SYSTEM DETAILS

DETAIL 17

Wi BEAM FIXED TO BRICKWORK WALL

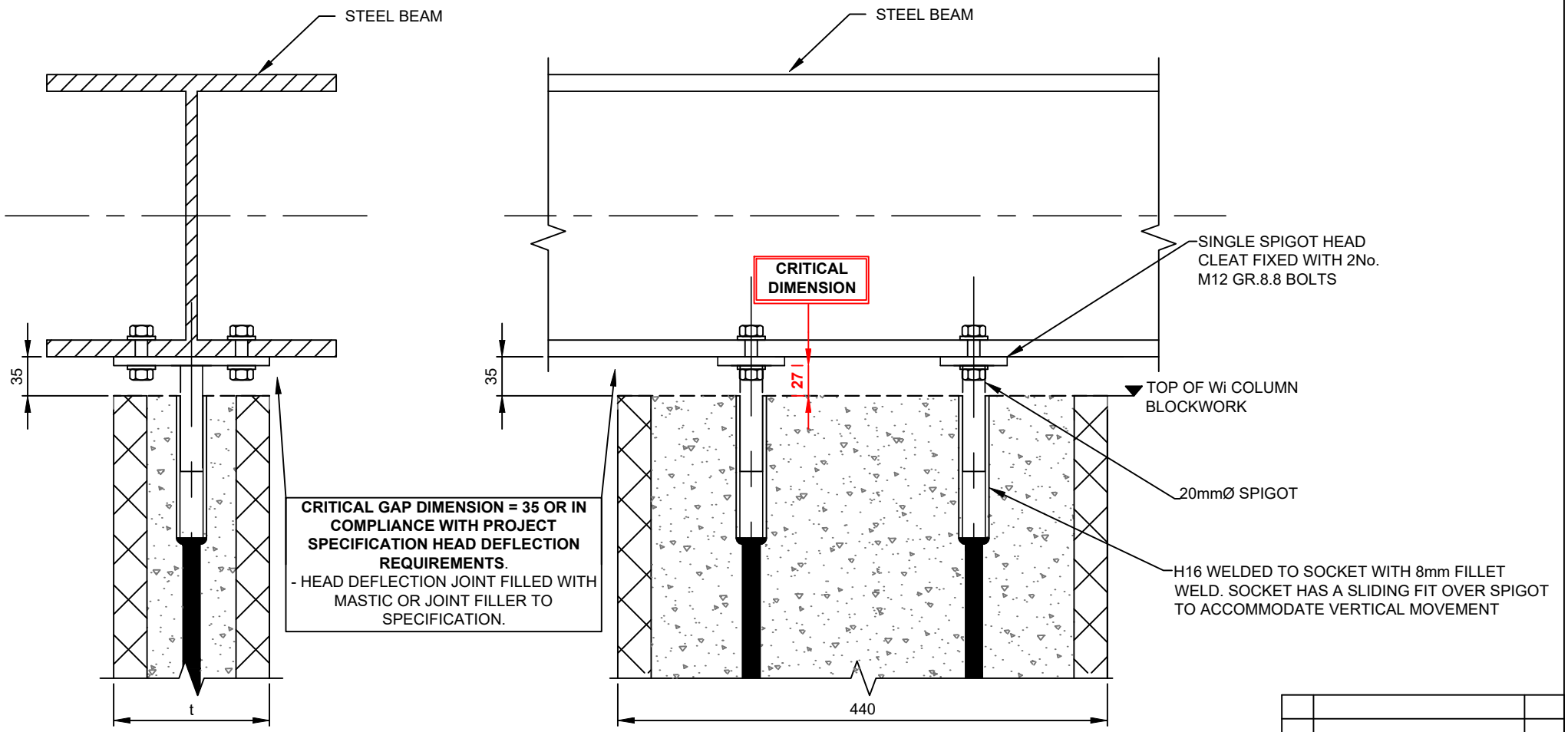


01	General Revision	10/11/17
No.	Revision/Issue	Date

WEMBLEY INNOVATION™

PRINCIPAL Wi SYSTEM DETAILS

DETAIL 18
ALTERNATIVE
Wi COLUMN HEAD AND BASE FIXING DETAILS



SECTION

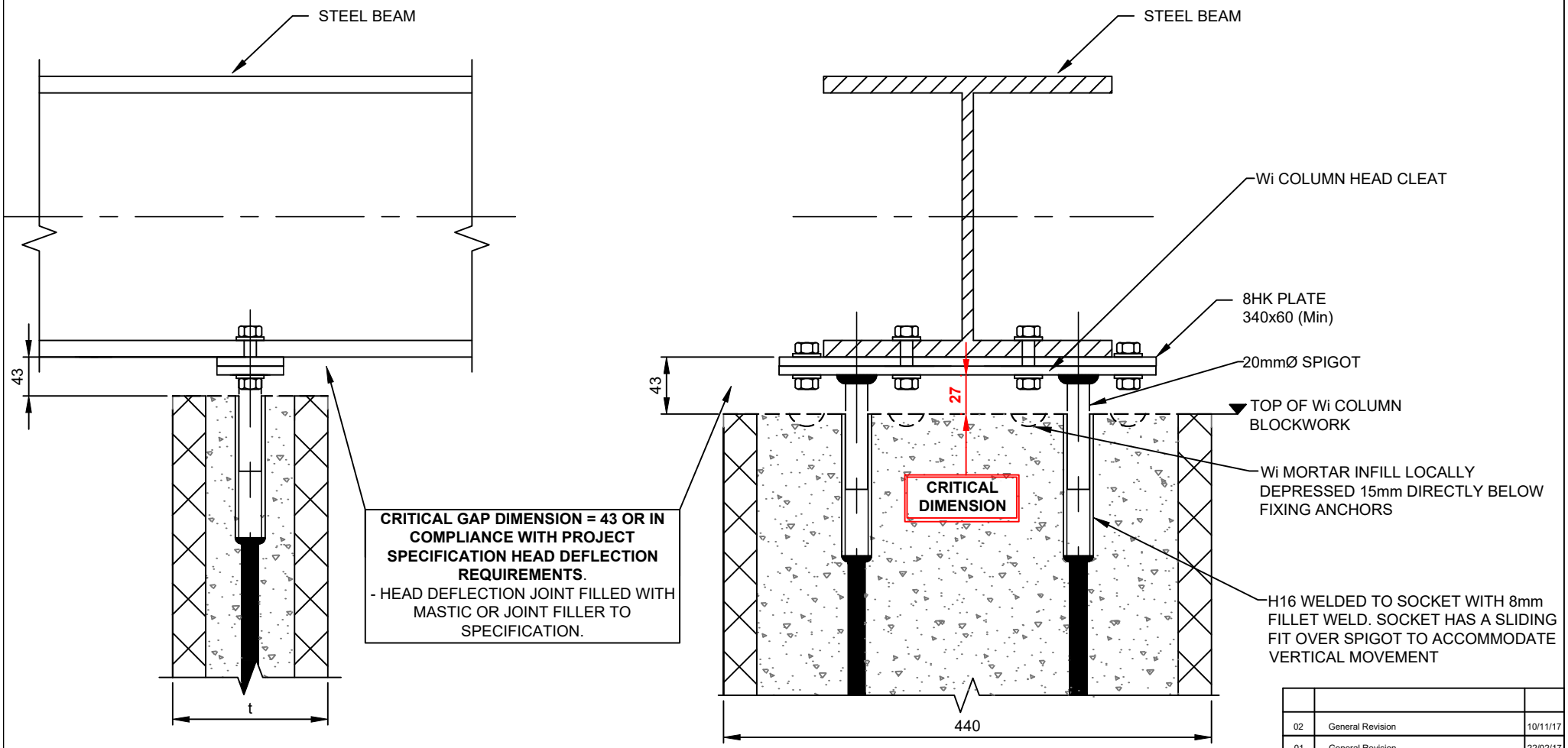
ELEVATION

01	General Revision	22/02/17
No.	Revision/Issue	Date

WEMBLEY INNOVATION™

PRINCIPAL Wi SYSTEM DETAILS

DETAIL 19
Wi COLUMN HEAD FIXING DETAILS TO STEEL BEAM PARALLEL TO WALL



SECTION

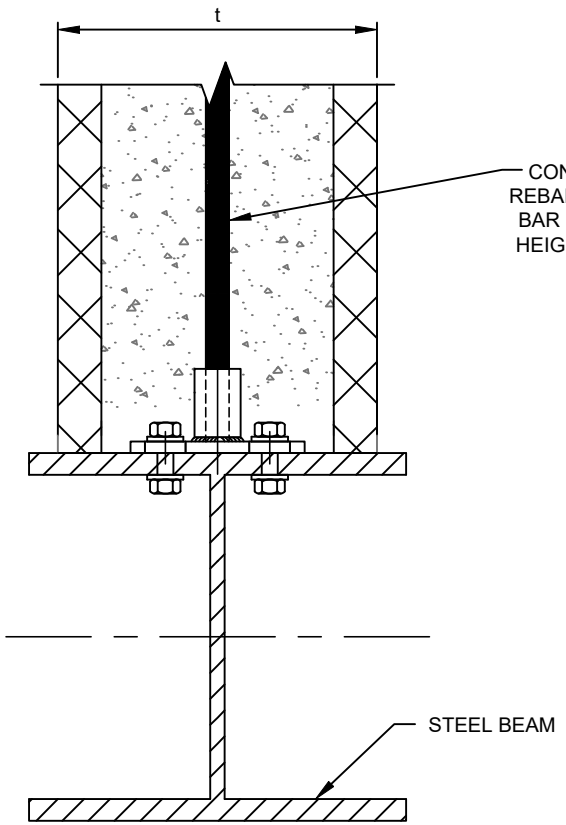
ELEVATION

No.	Revision/Issue	Date
02	General Revision	10/11/17
01	General Revision	22/02/17

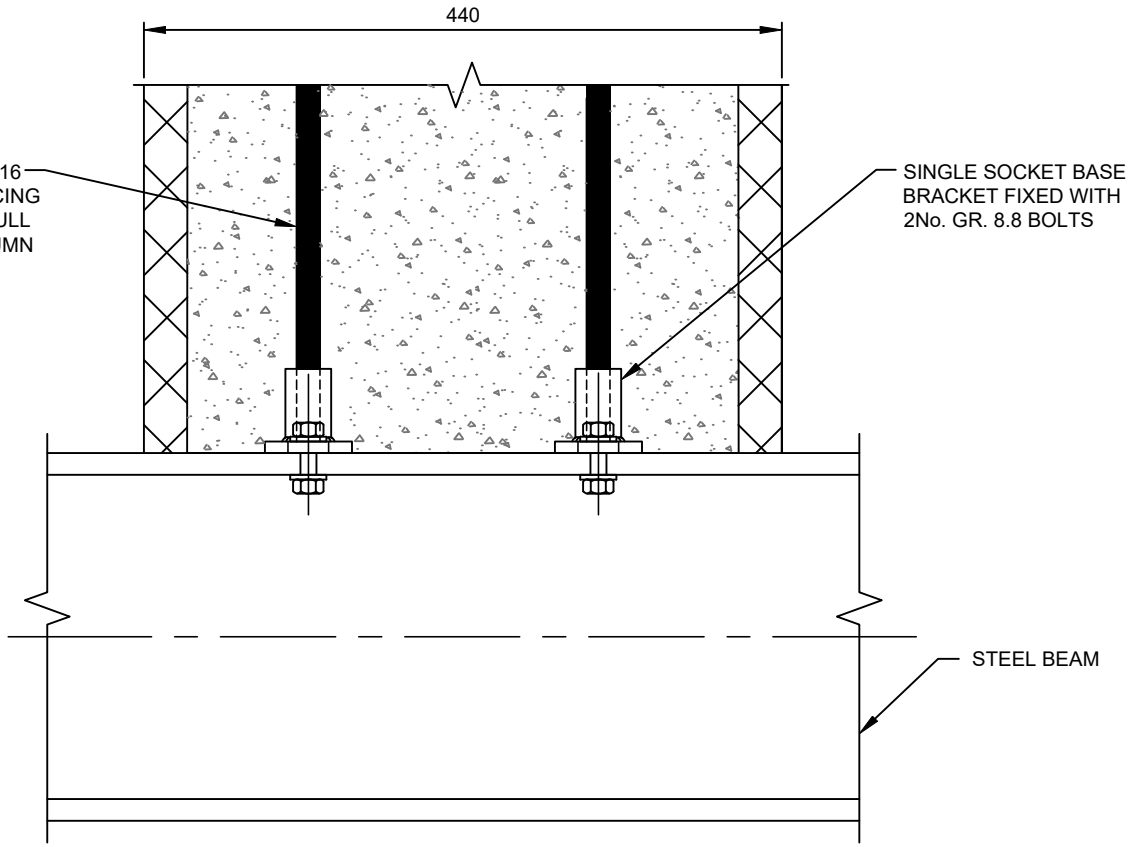
WEMBLEY INNOVATION™

PRINCIPAL Wi SYSTEM DETAILS

DETAIL 20
Wi COLUMN HEAD FIXING DETAILS TO STEEL BEAM PERPENDICULAR TO WALL



SECTION



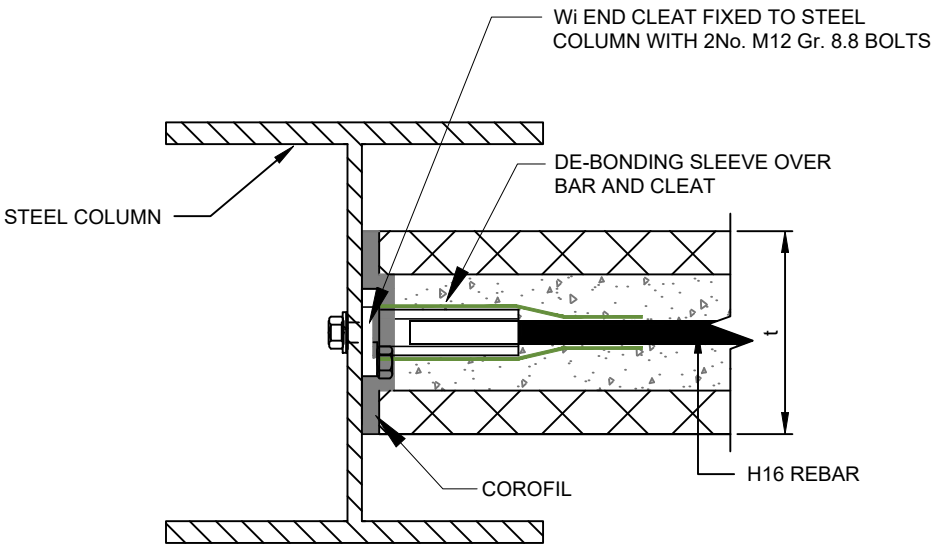
ELEVATION

01	General Revision	22/02/17
No.	Revision/Issue	Date

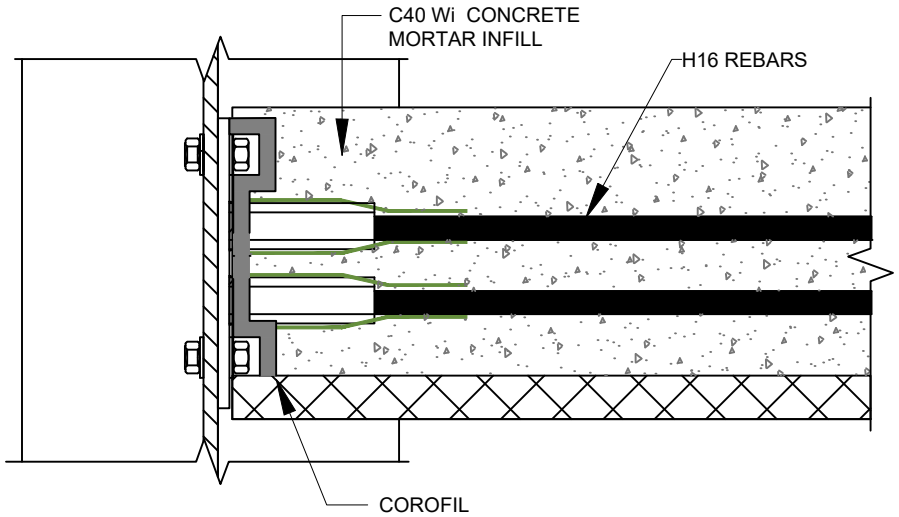
WEMBLEY INNOVATION™

PRINCIPAL Wi SYSTEM DETAILS

DETAIL 21
Wi COLUMN BASE FIXING DETAILS TO STEEL BEAM



SECTIONAL PLAN



SECTIONAL ELEVATION

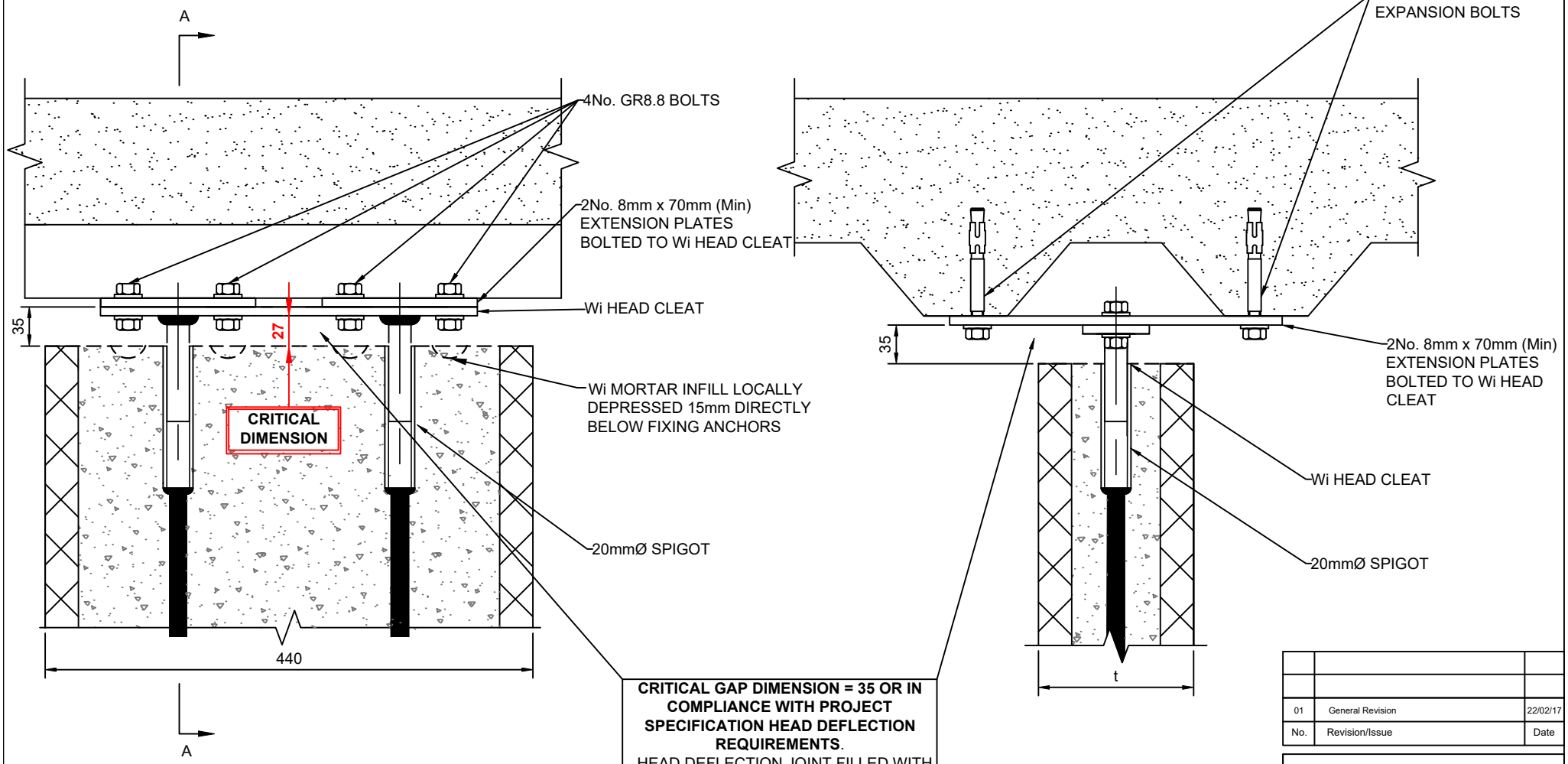
01	General Revision	22/02/17
No.	Revision/Issue	Date

WEMBLEY INNOVATION™

PRINCIPAL Wi SYSTEM DETAILS

DETAIL 22

Wi BEAM FIXED TO STEEL COLUMN WEB



CRITICAL GAP DIMENSION = 35 OR IN COMPLIANCE WITH PROJECT SPECIFICATION HEAD DEFLECTION REQUIREMENTS.
- HEAD DEFLECTION JOINT FILLED WITH MASTIC OR JOINT FILLER TO SPECIFICATION.

ELEVATION

SECTION A-A

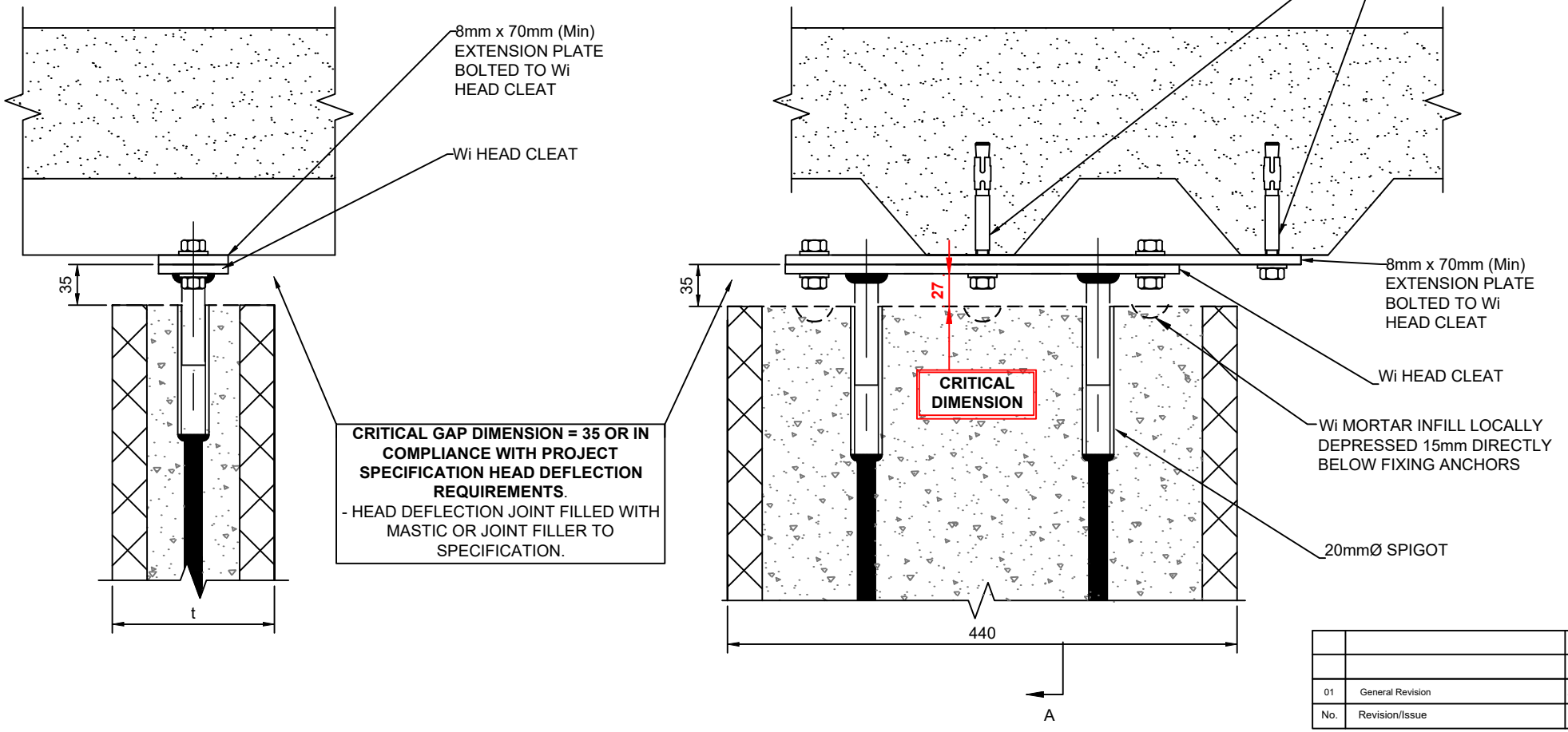
No.	Revision/Issue	Date
01	General Revision	22/02/17

WEMBLEY INNOVATION™

PRINCIPAL Wi SYSTEM DETAILS

DETAIL 23

Wi HEAD CLEAT CONNECTION TO PROFILED DECKING - PARALLEL TO TROUGH



SECTION A-A

ELEVATION

01	General Revision	22/02/17
No.	Revision/Issue	Date

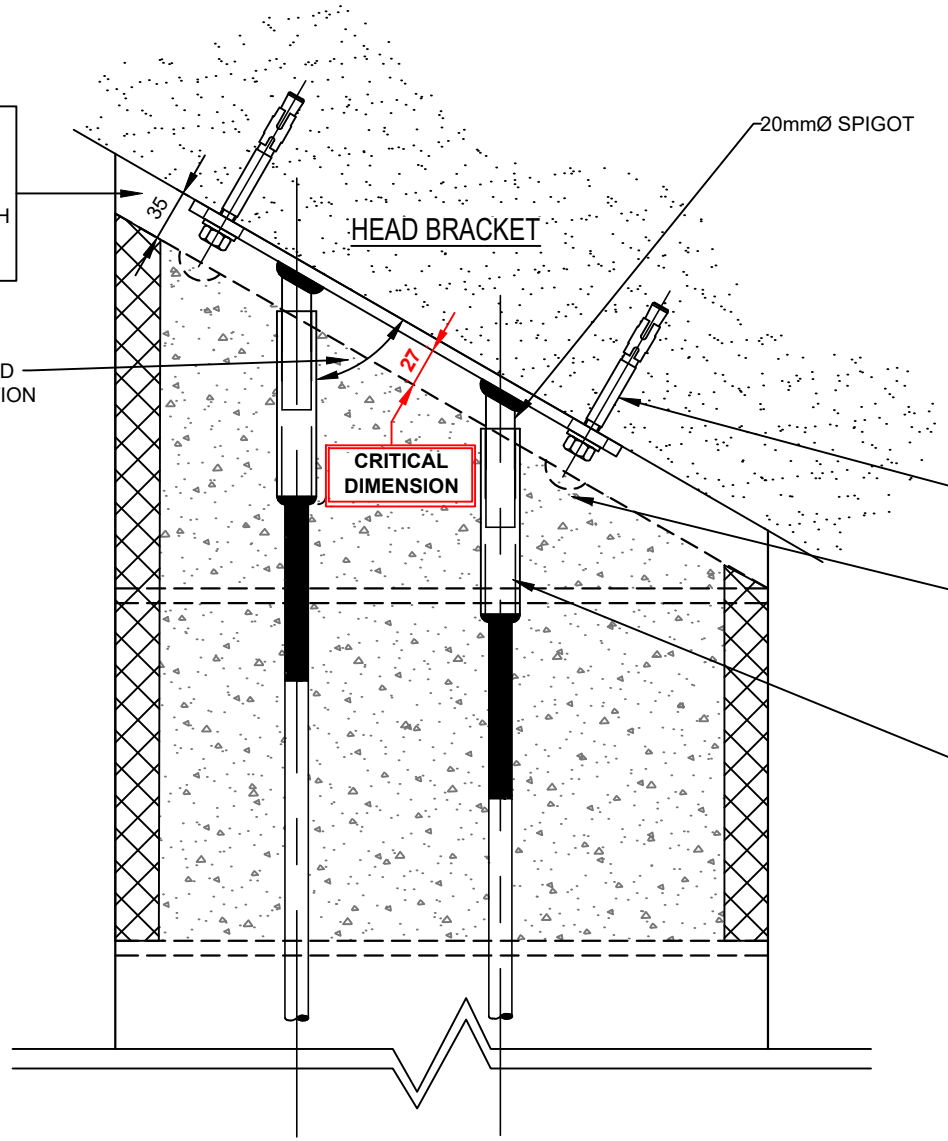
WEMBLEY INNOVATION™

PRINCIPAL Wi SYSTEM DETAILS

DETAIL 24

Wi HEAD CLEAT CONNECTION TO PROFILED DECKING - ACROSS TROUGH

CRITICAL GAP DIMENSION = 35 OR IN COMPLIANCE WITH PROJECT SPECIFICATION HEAD DEFLECTION REQUIREMENTS.
- HEAD DEFLECTION JOINT FILLED WITH MASTIC OR JOINT FILLER TO SPECIFICATION.



SECTIONAL ELEVATION

01	General Revision	22/02/17
No.	Revision/Issue	Date

WEMBLEY INNOVATION™

PRINCIPAL Wi SYSTEM DETAILS

DETAIL 25

WiC ANGLED HEAD CLEAT FIXING DETAILS

WEMBLEY INNOVATION™

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