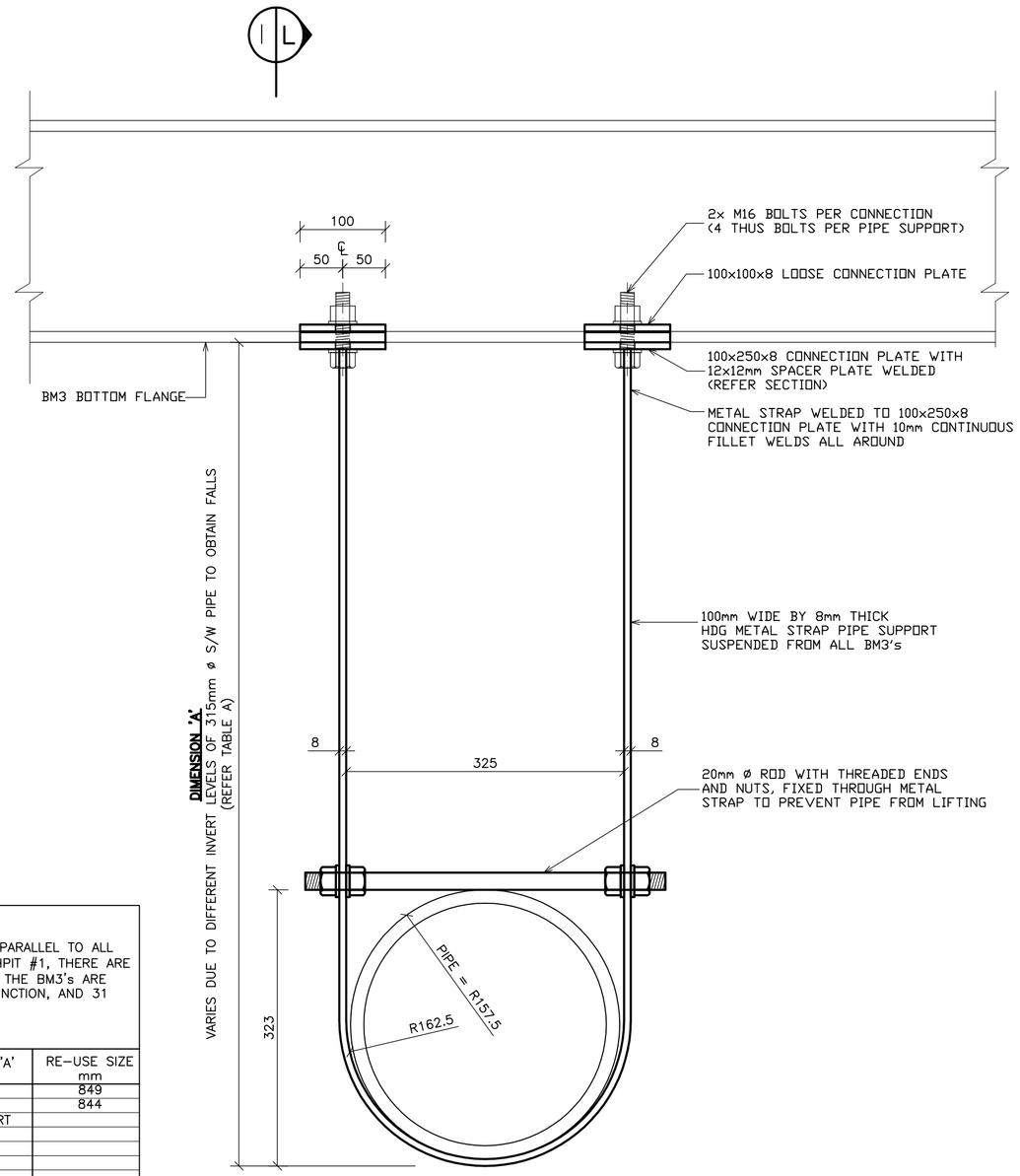
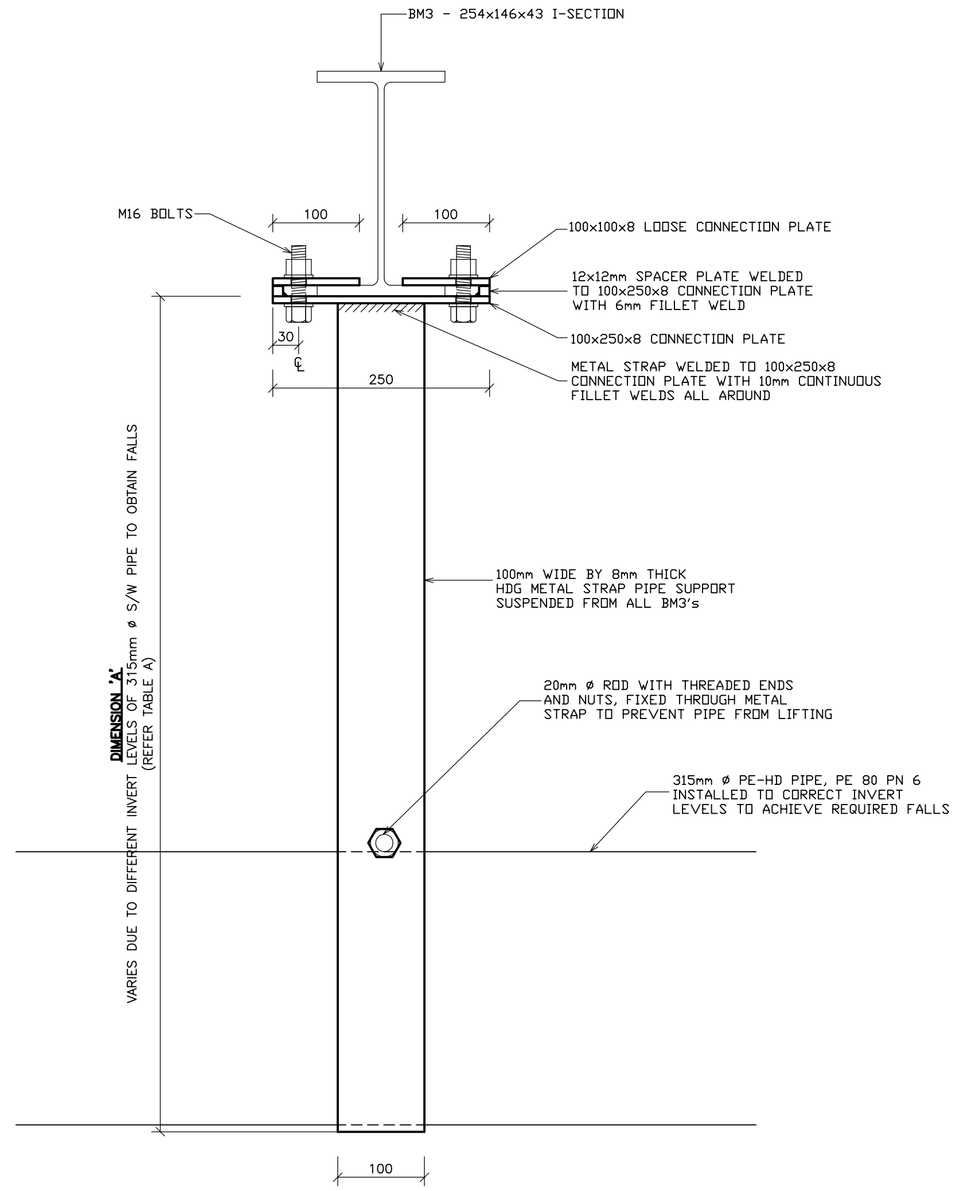
IF IN DOUBT ASK ! – UKUBA UYATHANDABUZE BUZA !

Contract	Drawing	Rev
1233	14	02



S/W PIPE SUPPORT FIXING AND CLAMP DETAIL AT ALL BM3'S
SCALE 1:5



SECTION
SCALE 1:5

TABLE A – EASTBOUND PIPE SUPPORTS

THE STORMWATER PIPE RUNNING FROM THE T–JUNCTION TOWARDS THE SEPARATOR, IS PARALLEL TO ALL PROPOSED BM3's. FROM THE T–JUNCTION IN THE EASTERN DIRECTION TOWARDS CATCHPIT #1, THERE ARE 31 NUMBER OF BM3's FROM WHICH THE PIPE SUPPORT STRAPS CAN BE SUSPENDED. THE BM3's ARE THEREFORE NUMBERED FROM 1 TO 31, WITH 1 BEING THE BM3 CLOSEST TO THE T–JUNCTION, AND 31 BEING THE BM3 FURTHEST AWAY FROM THE T–JUNCTION.

BM3 NUMBER	DIMENSION 'A' mm	RE–USE SIZE mm
1	934	
2	929	
3	924	
4	919	
5	914	
6	909	
7	904	
8	899	
9	894	
10	NO SUPPORT	
11	889	
12	884	
13	879	
14	874	
15	869	
16	864	
17	861	859
18	856	854

BM3 NUMBER	DIMENSION 'A' mm	RE–USE SIZE mm
19	851	849
20	847	844
21	NO SUPPORT	
22	841	
23	836	
24	831	
25	827	
26	821	
27	816	
28	811	
29	806	
30	801	
31	796	

TABLE A – WESTBOUND PIPE SUPPORTS

THE STORMWATER PIPE RUNNING FROM THE T–JUNCTION TOWARDS THE SEPARATOR, IS PARALLEL TO ALL PROPOSED BM3's. FROM THE T–JUNCTION IN THE WESTERN DIRECTION TOWARDS CATCHPIT #17, THERE ARE 36 NUMBER OF BM3's FROM WHICH THE PIPE SUPPORT STRAPS CAN BE SUSPENDED. THE BM3's ARE THEREFORE NUMBERED FROM 1 TO 36, WITH 1 BEING THE BM3 CLOSEST TO THE T–JUNCTION, AND 36 BEING THE BM3 FURTHEST AWAY FROM THE T–JUNCTION.

BM3 NUMBER	DIMENSION 'A' mm	RE–USE SIZE mm
1	931	
2	926	
3	921	
4	916	
5	911	
6	906	
7	NO SUPPORT	
8	901	
9	896	
10	891	
11	886	
12	881	
13	876	
14	871	
15	866	
16	861	
17	856	
18	851	

BM3 NUMBER	DIMENSION 'A' mm	RE–USE SIZE mm
19	846	
20	841	
21	836	
22	831	
23	NO SUPPORT	
24	826	
25	821	
26	816	
27	811	
28	806	
29	801	
30	796	
31	791	
32	786	
33	781	781 From original Eastbound supports
34	776	776 From original Eastbound supports
35	771	Adjusted 791 From original Eastbound supports
36	766	Adjusted 786 From original Eastbound supports

ADDITIONAL NOTES

1. ALL 'ADDITIONAL NOTES' INDICATED ON DRAWING NO. 1233–03 PERTAIN AND ARE APPLICABLE TO THIS DRAWING.
2. ALL BOLTS, NUTS AND WASHERS TO BE HOT DIP GALVANISED. CLASS 8.8 BOLTS AND CLASS 8 NUTS TO BE USED. ALL BOLTS TO BE M20 EXCEPT WHERE NOTED OTHERWISE.
3. EACH BOLTED CONNECTION TO RECEIVE ONE PAIR OF WASHERS. ALL WASHERS TO BE 40mmx40mmX6mm WITH 22mm ø OPENING AND TO BE HOT DIP GALVANISED.
4. NIB AND CAST IRON HALF ROUND COLUMN PROTRUDING FROM EXISTING R.C. WALL TO BE HIGH PRESSURE WATER JET BLASTED AND PAINTED TO SPECIFICATION
5. CONTRACTOR MAY OPT FOR 10mm CONTINUOUS FILLET WELDS AS OPPOSED TO BOLTED CONNECTIONS IN CERTAIN INSTANCES. ALL WELDING TO BE SHOP WELDED AND INCLUDED IN HOT DIP GALVANISING
6. ALL STEEL TO BE HOT DIP GALVANISED. ALL HOT DIP GALVANISING TO BE STRICTLY UNPASSIVATED.
7. CONTRACTOR TO MANUFACTURE AND SUPPLY BRACKETS TO CLAMP TO STANCHIONS FOR DIVERS CUTTING TORCH TO SUPPORT AGAINST DURING CUTTING OF EXISTING STANCHIONS S1 AND S2. BRACKET TO BE APPROVED BY ENGINEER PRIOR TO MANUFACTURING.

NOTES ON RIB & BLOCK SLAB SYSTEM

1. ALL CAST IN LATTICES TO RIBS TO BE HOT DIP GALVANISED (BUT UNPASSIVATED).
2. ALL PRECAST RIBS TO BE TREATED ON BOTTOM AND SIDES WITH CEMENTITIOUS WATERPROOFING SYSTEM, TO ENGINEERS WRITTEN APPROVAL.
3. ALL ADDITIONAL SLAB AND BEAM REINFORCING TO BE HOT DIP GALVANISED INCLUDING MESH SHEETS. MESH SHEETS TO LAP 200mm MINIMUM.
4. EXPANSION JOINTS BETWEEN PROPOSED SLAB PANELS OR BETWEEN PROPOSED AND EXISTING CONCRETE SURFACES TO BE FORMED WITH FORMWORK AND WITH 20mm THICK CLOSED CELL EXPANDED POLYETHYLENE PREFORMED JOINT FILLER OF APPROPRIATE WIDTH TO SUIT THE REQUIRED HEIGHT, AND SHOULD INCLUDE A HINGED BLOCKING PIECE FOR TEARING OUT LATER. ALL EXPANSION JOINTS TO BE SEALED WITH POLYSULPHIDE SEALANT.
5. CONCRETE GENERALLY TO BE SMOOTH OFF SHUTTER FINISH.
6. TOP OF CONCRETE DECK TO BE FINISHED WITH A BROOMSWEPT FINISH. DIRECTION OF SWEEP TO BE STRICTLY TOWARDS LINE OF STORMWATER PIPE ONLY.
7. CONCRETE TO BE CURED WITH NON WAX BASED CURING COMPOUND FOR 7 DAYS MINIMUM BEFORE TRAFFICABLE.

NOTES ON STORMWATER SYSTEM

1. STORMWATER PIPE TO BE 315mm NOMINAL ø WITH SOME 180mm ø PIPE COMPONENTS AND TO BE INSTALLED TO INVERT LEVELS INDICATED TO ACHIEVE FALLS OF APPROX. 1:300. PIPES TO BE TYPE PE–HD (BLACK) PIPE TO SABS ISO 4427, PE 80 PN6 AND SDR 21 (S 8.3). PIPE IS TO BE SUPPLIED WITH COUPLINGS, JUNCTIONS FOR CATCHPITS WELDED AND T JUNCTION TOWARDS SEPARATOR.
2. CATCHPIT 1 TO CATCHPIT 17 TO BE 190mm ø HINGED GULLY GRATINGS AND FRAMES, PRODUCT NO. 2870 EACH WEIGHING 2,3kg. GULLY GRATINGS AND FRAMES TO BE PRODUCED FROM HIGH QUALITY DUCTILE CAST IRON BY A REPUTABLE FOUNDRY TO SABS STANDARDS.
3. ACCESS MANHOLE #1 TO #3 TO BE INSTALLED ABOVE 3 CHAMBERS OF THE STORMWATER SEPARATOR. COVER AND FRAME TO BE LOCKABLE SECUREX TYPE 4 REPLACEMENT COMPLETE WITH A FRAME INSIDE ø OF 559mm. COVERS AND FRAMES TO BE FROM DUCTILE CAST IRON AND BY A REPUTABLE FOUNDRY TO SABS STANDARDS.
4. ACCESS MANHOLE #4 ONWARDS ARE TO PROVIDE ACCESS TO UNDERNEATH THE DECK FOR FUTURE MAINTENANCE. COVER AND FRAME TO BE LOCKABLE SECUREX TYPE 4 REPLACEMENT COMPLETE WITH A FRAME INSIDE ø OF 559mm. COVERS AND FRAMES TO BE FROM DUCTILE CAST IRON AND BY A REPUTABLE FOUNDRY TO SABS STANDARDS.
5. PRECAST BLOCKS CLASHING WITH CATCHPITS AND MANHOLES, TO BE REMOVED TO SUIT AT ALL CATCHPIT AND ACCESS MANHOLE POSITIONS PRIOR TO CASTING. INDEPENDANT FORMWORK AND SHUTTERING TO BE PROVIDED TO CONSTRUCT CATCHPIT AND MANHOLE OPENINGS. PLEASE NOTE THAT THESE BLOCKS ARE INDICATED ON THE DRAWINGS AND HAVE NOT BEEN REMOVED.
6. CATCHPITS ARE INDICATED AT 6m INTERVALS, EXCEPT FOR CATCHPIT 4 AND 5 BEING 7m APART. CATCHPIT 9 AND THE T–JUNCTION TOWARDS THE SEPARATOR HAVE BEEN SET OUT FROM GRIDLINE K.
7. INVERT LEVELS (I.L.) INDICATED AT EACH CATCHPIT ARE THE PIPE INVERT LEVELS.

AS BUILT DRAWING

GENERAL NOTES

1.0 REINFORCED CONCRETE WORKS
All aspects of structural concrete work (plain and reinforced for civil engineering and building construction shall be in accordance with the requirements of SABS 1200G and SABS 0155 (Accuracy in Building). Any discrepancies are to be referred to the engineer.

1.1 CONCRETE MIXES: All concrete mixing shall conform to SABS 1200G. Specialised concrete applications will be referred to the engineer. All aggregates used are to be approved by the engineer. The water is to be clean as for human consumption.

1.2 CONCRETING: Concreting shall conform to SABS 1200G. All dirt and trash shall be removed from the formwork before concreting. Concrete shall be thoroughly consolidated by means of tamping of vibration. T ans L beams shall be cast simultaneously with the slabs, unless otherwise agreed with the engineer.

1.3 MAINTAINING REINFORCEMENT IN POSITION: The General Contractor shall ensure that the correct concrete cover is maintained during the casting of concrete. In order to do this he shall provide suitable concrete or plastic cover blocks. All reinforcing is to be inspected and approved by the engineer prior to casting of concrete. The engineer shall be given 24 Hrs notice prior to any inspection. Unless otherwise specified the clear cover to the reinforcement shall be as follows:

Slabs . . . . . 70mm (external construction)
Beams . . . . . 70mm All faces
Columns . . . . . 70mm All faces
Bases . . . . . .70mm All faces

1.4 FORMWORK: The General Contractor shall be responsible for the adequacy of all formwork which shall conform to SABS 1200G.

1.5 CONSTRUCTION JOINTS: These are to be constructed to SABS 1200G or as directed by the engineer.

1.6 CURE: All new concrete shall be thoroughly cured by means of a resin–based curing compound or as approved by the engineer.

1.7 HOLES, DUCTS, PIPES ETC.: No holes, chases, pipes or conduits shall be chased or laid through the reinforced concrete without written approval from the engineer.

1.8 FOUNDATIONS: All excavations for foundations are to be inspected and approved by the engineer before concrete is placed. Where suitable founding material is NOT encountered at the depth indicated on the foundation drawings, the excavations shall proceed to a depth where suitable material is encountered and the excavations filled to the required level with mass concrete of strength as specified below.

The bottoms of ALL foundations shall, after approval by the engineer, be sealed with a minimum of 75mm of "blinding". Foundations are based on an allowable soil stress of . . . . . KN/m2. The engineer reserves the right to revise this value on final inspection of excavations. The contractor is to take extreme care so as not to disturb existing services.

1.9 DIMENSIONS: All dimensions are to be checked on site and to the architect's drawings. Beam sizes are given breadth x height. Scaling of the drawing is not permissable.

1.10 CONTROLLED CONCRETE STRENGTHS: All concrete used in the construction shown on the relevant drawings shall be of the following grade:

Mass Concrete . 20 MPa . . . . . .
Foundations . . . 30 MPa . . . . . .
Columns . . . . . 30 MPa . . . . . .
Beams & Slabs . . . . . .
Walls . . . . . .
Stairs . . . . . .

1.11 CONCRETE CUBE TEST: Cube test are to be taken from each cast, or to SABS 1200G as approved by the engineer. Results are to be submitted for the engineer's approval.

2.0 STRUCTURAL STEEL WORKS

2.1 Works are to be executed in accordance with SABS 1200H or SABS 1200 HA, as applicable.
2.2 All dimensions to be checked on site.
2.3 All welds are to be 10mm fillet continuous unless otherwise noted.
2.4 All holes are to be 2mm greater than bolt diameter. Slotted holes are to be approved by the engineer in writing.
2.5 The Contractor is to ensure stability of the structure at all times during erection.
2.6 All shop details and drawings are to be approved by the engineer prior to manufacture.
2.7 A paint specification shall be obtained from the engineer in writing. If the specification below is deviated from.
2.8 Structural steel elements are to be approved by the engineer after manufacture and but prior to erection.

2.9 PAINT SPECIFICATION FOR USE ON STRUCTURAL STEELWORK:

Primer:	65-75 uM	Surface tolerant epoxy primer:	STONCOR (Chemrite Coatings) Carboline 193 Primer
			or DULUX/SIGMA Sigmacover primer
			or INTERNATIONAL (Plascon) Intergard 269
Topcoat:	65-75 uM	Two component recoatable Polyurethane finish (Gloss):	STONCOR (Chemrite Coatings) Carboline 134
			or DULUX/SIGMA Sigmadur gloss
			or INTERNATIONAL (Plascon) Interthane 990

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Rev.	Date	Description	By
01	09/07/2008	Table A – Eastbound pipe supports and Westbound pipe supports, changed. Note 2 and 6 on Stormwater System changed	K.V.
02	09/03/2009	AS BUILT DRAWING	K.V.

DESIGN LOADING
The superstructure beams & slabs have been designed to support the following loads in addition to their own weight plus brick and / or lightweight walling as shown on the Architect's drawing:–
FINISHES – KN/m2
PARTITIONS – KN/m2
LIVE LOADS – KN/m2

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CK 88/13685/23

Project title
NPA - PORT ELIZABETH HARBOUR REHABILITATION OF DOM PEDRO QUAY

Drawing title
STORMWATER PIPE SUPPORT DETAILS

Designed by	I.L.H. & K.V.	Scale	1:5
Drawn by	K.V. ACAD		
Checked by	Pr Eng R40375	Date	26 OCTOBER 2007
Sheet size A1	DRAWING NO.	Contract 1233	Drawing 14 Rev 02