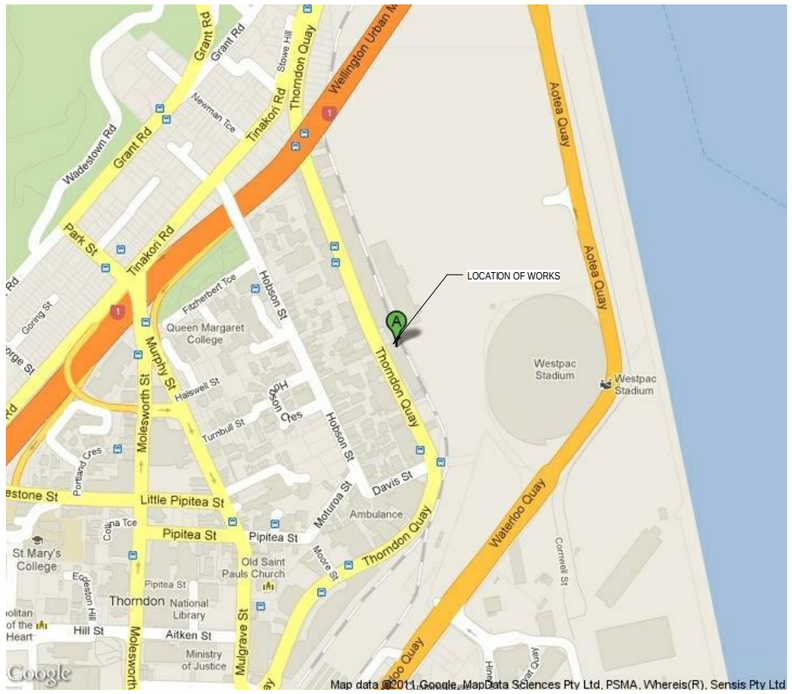
GUNSON PROPERTY GROUP LTD.
190 THORNDON QUAY
SEISMIC STRENGTHENING
51-30391

N



LOCATION PLAN

DRAWING INDEX			
PROJECT No.	SHEET	REV.	TITLE
0. GENERAL			
51-30391-	G001	1	COVER SHEET & DRAWING INDEX
2. STRUCTURAL			
51-30391-	S001	1	PLANS
51-30391-	S002	1	FRAME ELEVATIONS
51-30391-	S003	1	DETAILS SHEET 1
51-30391-	S004	1	GENERAL NOTES SHEET
51-30391-	S005	0	DETAILS SHEET 2

AS BUILT DOCUMENT **CONSTRUCTION**

No	Revision Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
1	REVISED AS SHOWN CLOUDED	CW	SL	NW	13.08.12
0	ISSUED FOR CONSTRUCTION	AJW			03.07.12

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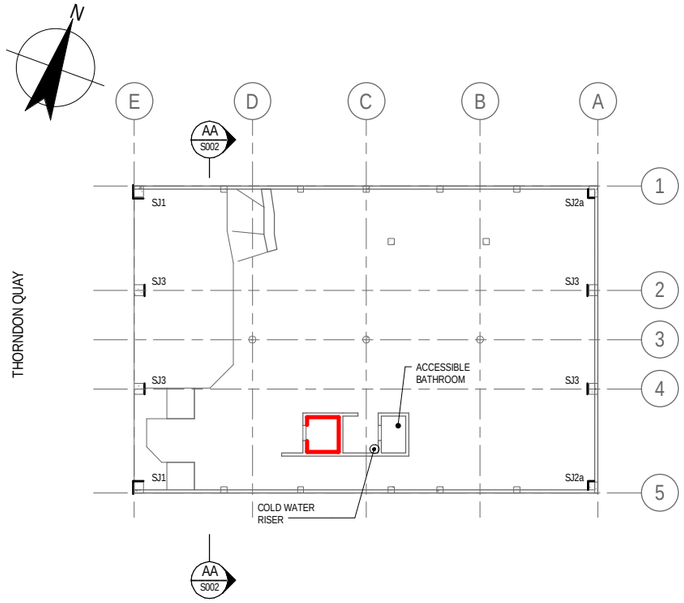
Drawn	A.WEST	Designer	M.DELMENDO
Drafting Check	*G.COPPARD	Design Check	*N.OAKES
Approved (Project Director)			
Date			
Scale	N/A	This Drawing must not be used for Construction unless signed as Approved	

Client **GUNSON PROPERTY GROUP LTD.**
Project **190 THORNDON QUAY**
Title **SEISMIC STRENGTHENING**
COVER SHEET & DRAWING INDEX

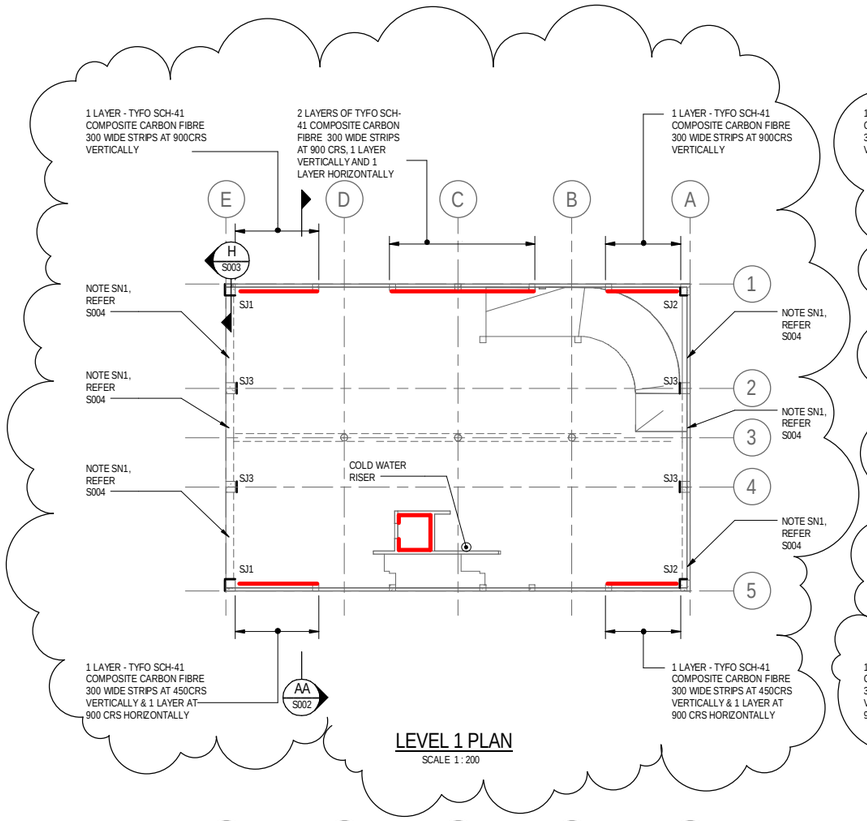
Original Size **A1** Drawing No: **51-30391-G001** Rev: **1**

Plot Date: 8/17/2012 11:33:05 AM Cad File No: C:\Users\dangus\My Documents\51-30391 190 THORNDON QUAY_dangus.rvt

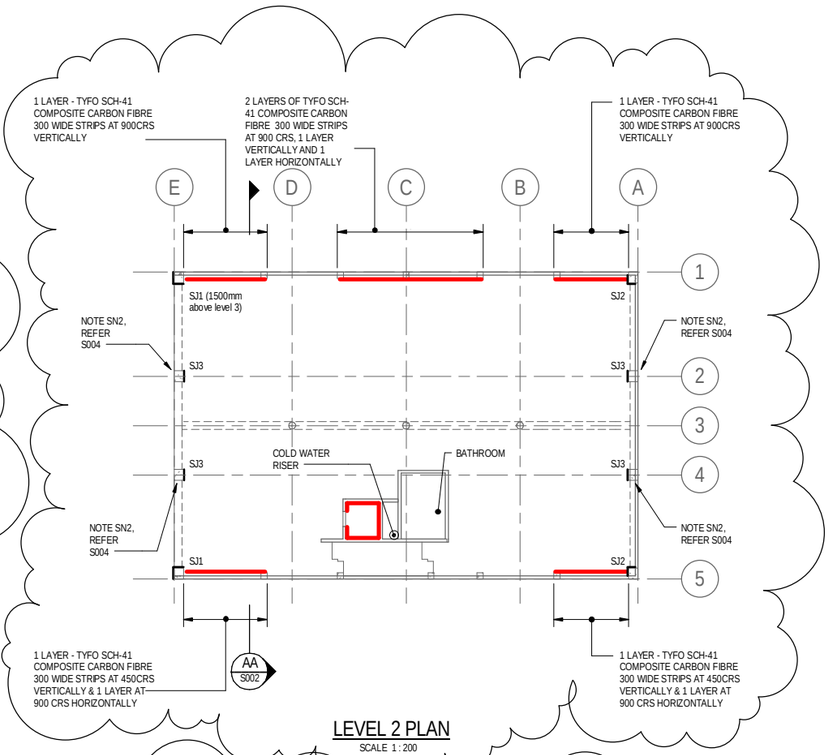
THORNDON QUAY



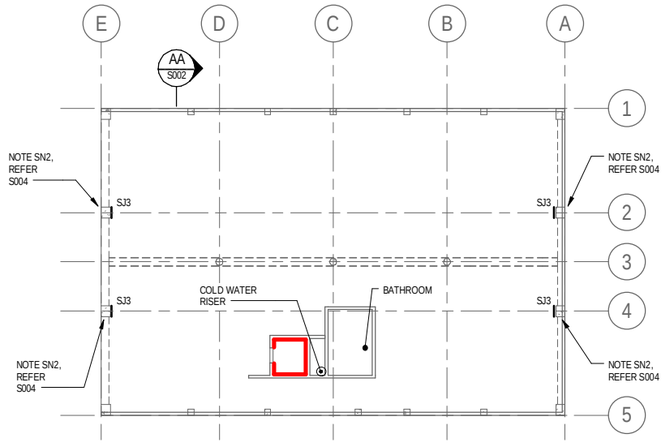
GROUND FLOOR PLAN
SCALE 1 : 200



LEVEL 1 PLAN
SCALE 1 : 200



LEVEL 2 PLAN
SCALE 1 : 200



LEVEL 3 PLAN
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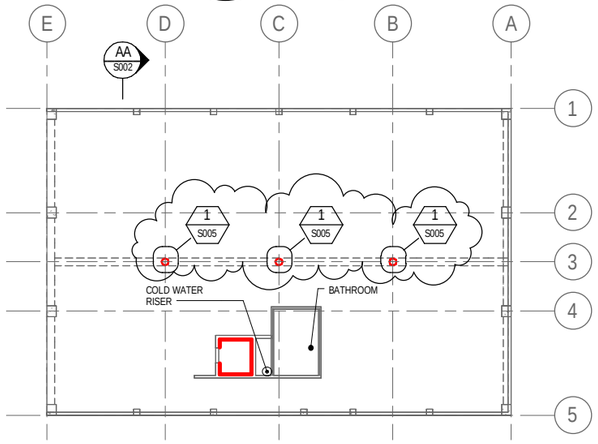
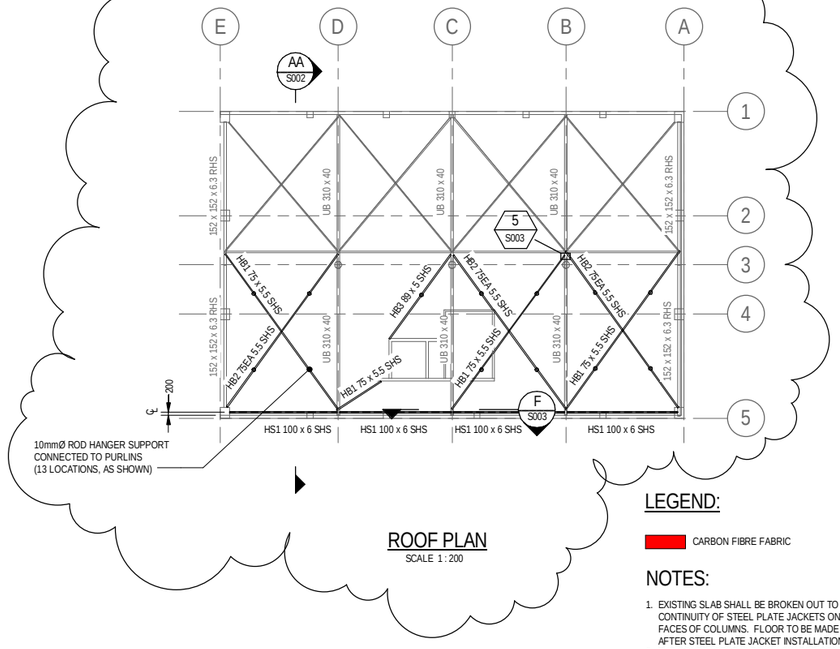


LEVEL 4 PLAN
SCALE 1 : 200



ROOF PLAN
SCALE 1 : 200

LEGEND:

CARBON FIBRE FABRIC

NOTES:

1. EXISTING SLAB SHALL BE BROKEN OUT TO ALLOW CONTINUITY OF STEEL PLATE JACKETS ON INTERNAL FACES OF COLUMNS. FLOOR TO BE MADE GOOD AFTER STEEL PLATE JACKET INSTALLATION.
2. THE CONTRACTOR IS TO ALLOW FOR CONTINUITY PLATES AND FIXINGS AT FLOOR LOCATION.

AS BUILT DOCUMENT

CONSTRUCTION

No	Revision	Drawn	Job Manager	Project Director	Date
1	REVISED AS SHOWN CLOUDED	CW	SL	NW	13.08.12
0	ISSUED FOR CONSTRUCTION	AJW			03.07.12

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0 2000 4000 6000 8000 10000mm
SCALE 1:200 AT ORIGINAL SIZE

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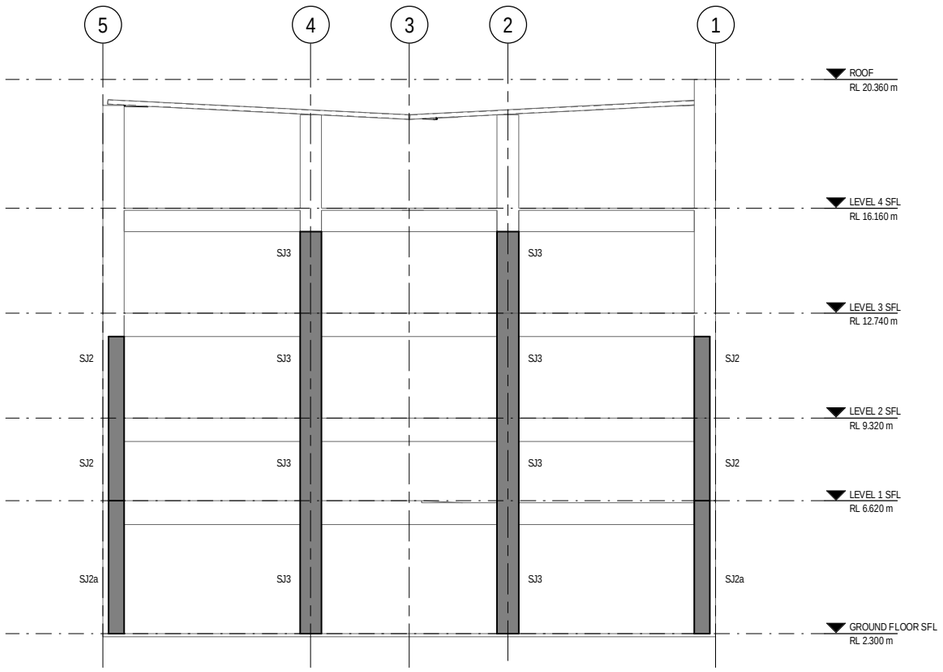
Drawn	A.WEST	Designer	M.DELMENDO
Drafting Check	*G.COPPARD	Design Check	*N.OAKES
Approved (Project Director)			
Date			
Scale	1 : 200	This Drawing must not be used for Construction unless signed as Approved	

Client **GUNSON PROPERTY GROUP LTD.**
Project **190 THORNDON QUAY**
Title **SEISMIC STRENGTHENING PLANS**

Original Size **A1** Drawing No: **51-30391-S001** Rev: **1**

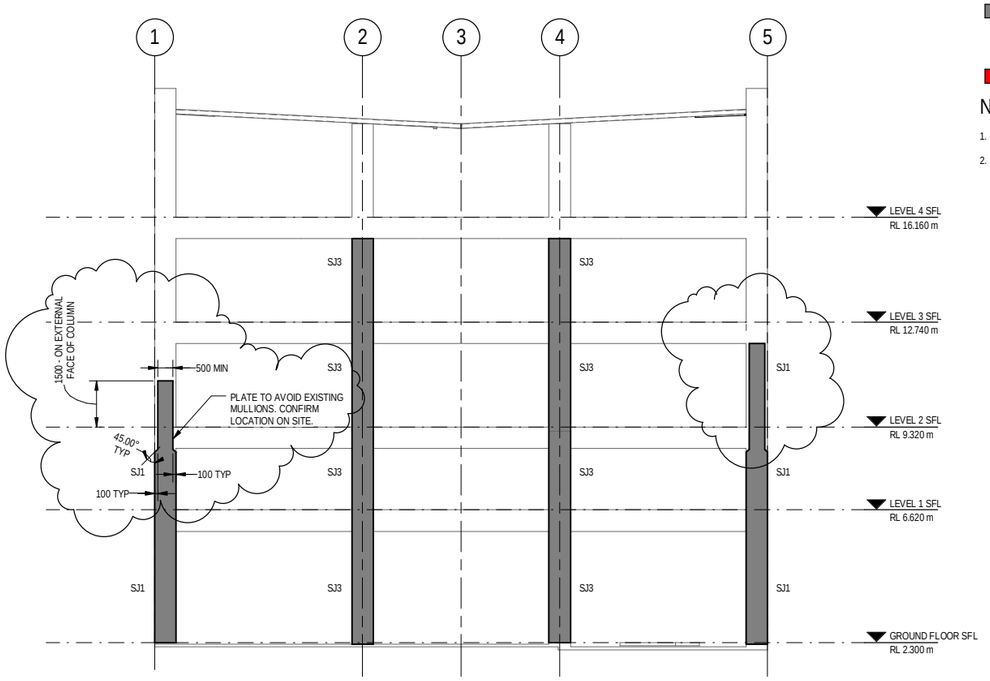
Plot Date: 8/17/2012 11:33:07 AM Cad File No: C:\Users\dangus\My Documents\51-30391 190 THORNDON QUAY_dangus.rvt



ELEVATION ON GRID A

SCALE 1 : 100

(REFER TO BULDING PLANS ON DRAWING 51-30391-S001 FOR STEEL PLATE JACKET LOCATIONS - INSIDE OR OUTSIDE FACES OF COLUMNS)



ELEVATION ON GRID E

SCALE 1 : 100

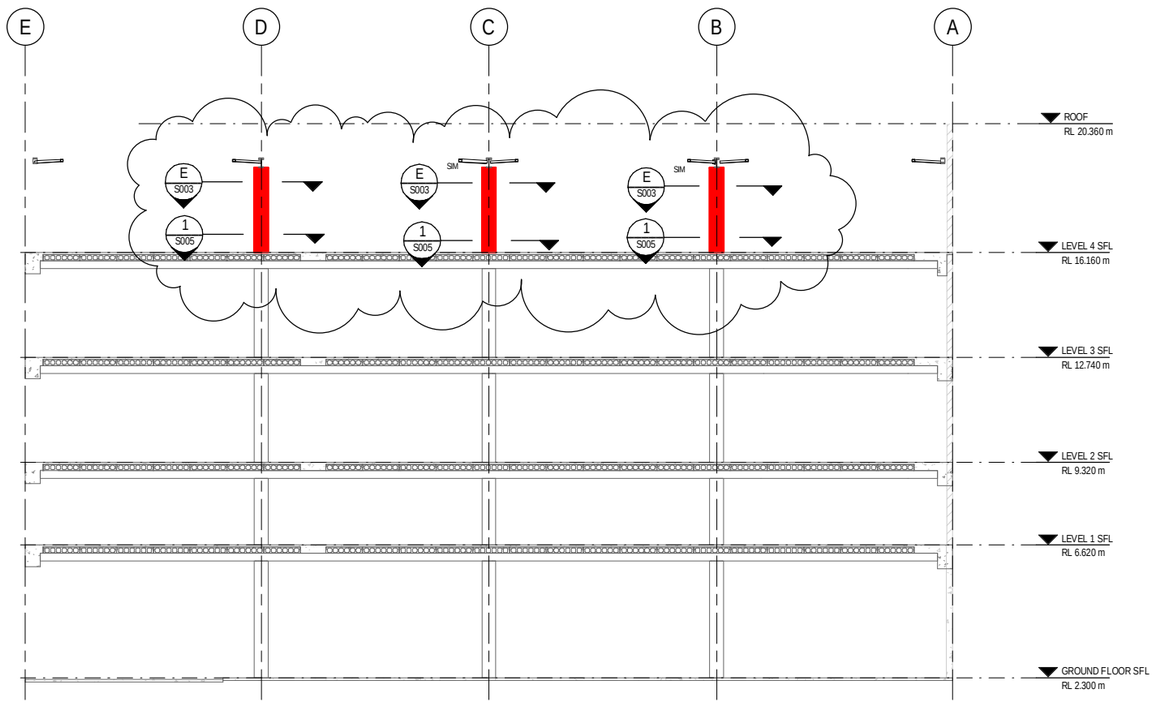
(REFER TO BULDING PLANS ON DRAWING 51-30391-S001 FOR STEEL PLATE JACKET LOCATIONS - INSIDE OR OUTSIDE FACES OF COLUMNS)

LEGEND:

- STEEL PLATE JACKET FIXED TO COLUMN FACE. REFER S001 & S003 FOR WHICH COLUMN FACES HAVE STEEL PLATE JACKETS AND JACKET DETAILS
- CARBON FIBRE FABRIC

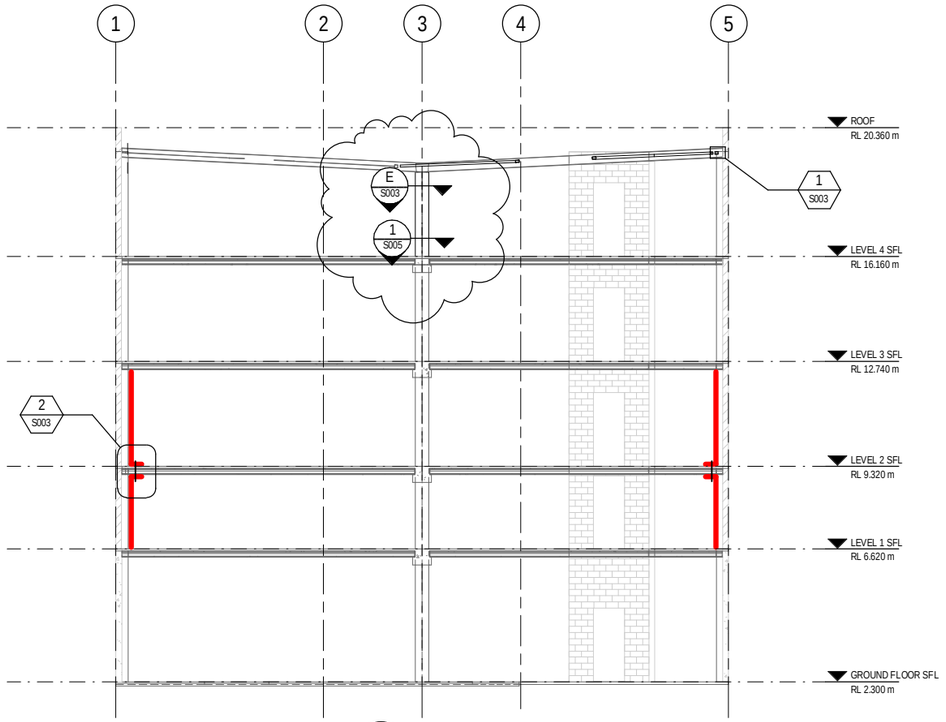
NOTES:

1. CARBON FIBRE FABRIC SHALL BE APPLIED AS PER MANUFACTURE'S RECOMMENDATIONS.
2. TYFO SIKADUR 30 EPOXY RESIN ADHESIVE TO BE INSTALLED STRICTLY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.



ELEVATION ON GRID 3

SCALE 1 : 100



AA SECTION

S001 SCALE 1 : 100

AS BUILT DOCUMENT

CONSTRUCTION

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
1	REVISED AS SHOWN CLOUDED		CW	SL	NW	13.08.12
0	ISSUED FOR CONSTRUCTION		AJW			03.07.12

0 1000 2000 3000 4000 5000 mm

SCALE 1:100 AT ORIGINAL SIZE

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DO NOT SCALE

GHD LIMITED

Drawn	A.WEST	Designer	M.DELMENDO
Drafting Check	*G.COPPARD	Design Check	*N.OAKES
Approved (Project Director)			
Date			
Scale	1 : 100	This Drawing must not be used for Construction unless signed as Approved	

Client **GUNSON PROPERTY GROUP LTD.**

Project **190 THORNDON QUAY**

Title **SEISMIC STRENGTHENING FRAME ELEVATIONS**

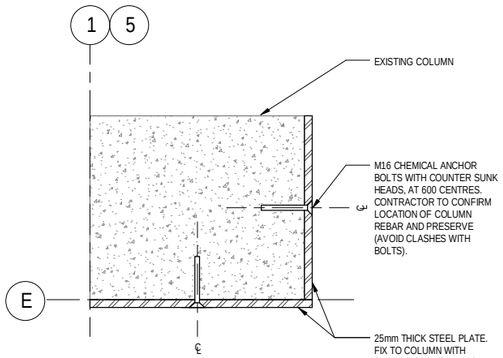
Original Size **A1**

Drawing No: **51-30391-S002**

Rev: **1**

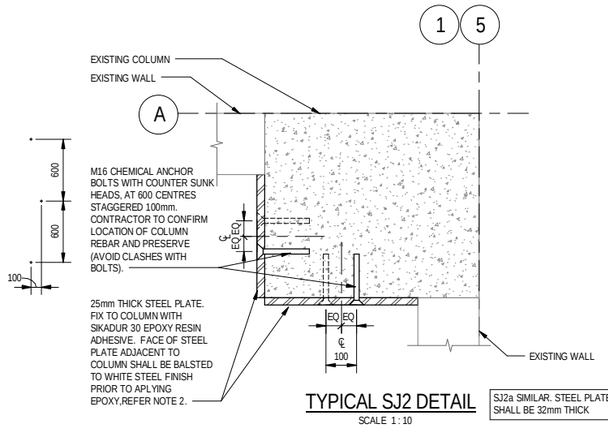
Plot Date: 8/17/2012 11:33:16 AM

Cad File No: C:\Users\dangus\My Documents\51-30391 190 THORNDON QUAY_dangus.rvt



TYPICAL SJ1 DETAIL

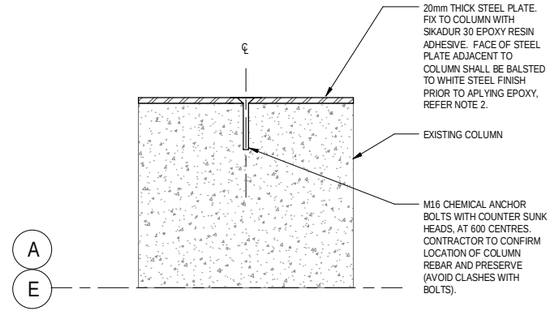
SCALE 1 : 10



TYPICAL SJ2 DETAIL

SCALE 1 : 10

SJ2a SIMILAR. STEEL PLATES SHALL BE 32mm THICK



TYPICAL SJ3 DETAIL

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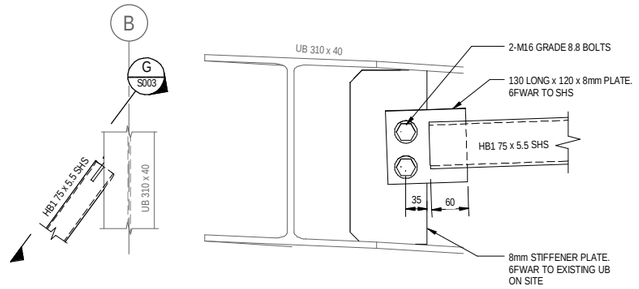
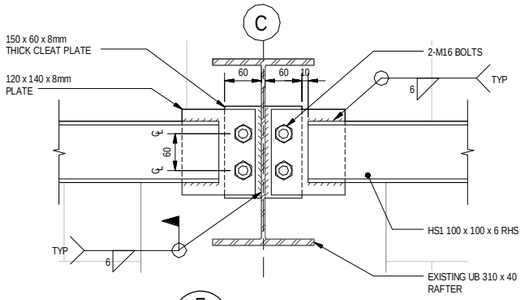


5 S001 DETAIL

SCALE 1 : 10

G S003 SECTION

SCALE 1 : 5



F S001 SECTION

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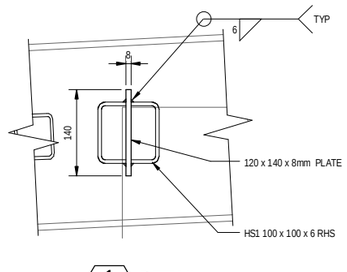
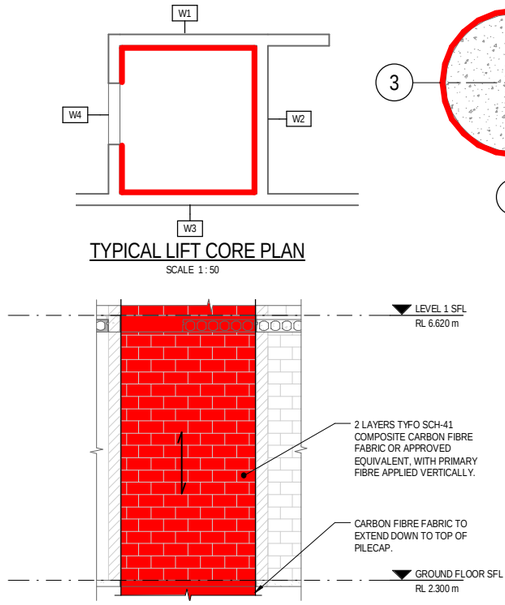


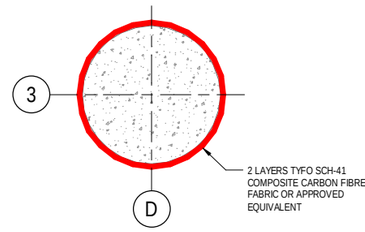
1 S002 DETAIL

SCALE 1 : 5



TYPICAL LIFT CORE PLAN

SCALE 1 : 50

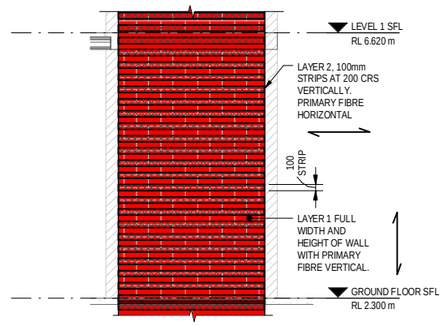


E S002 SECTION

SCALE 1 : 10

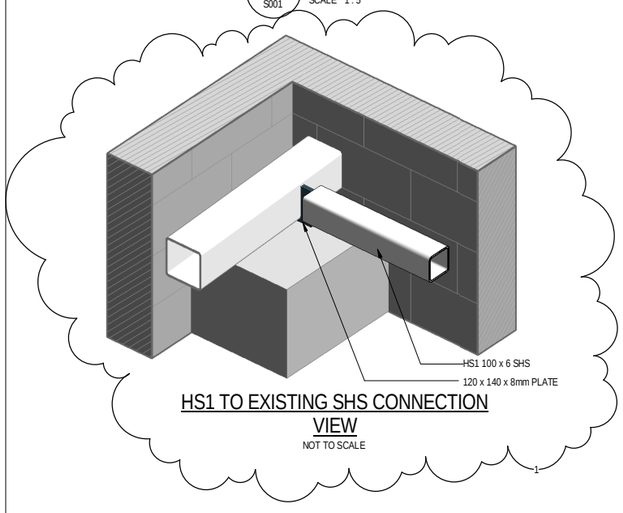
TYPICAL WALL ELEVATION W1 & W3 FROM GROUND TO ROOF, W2 & W4 LEVEL 3 TO ROOF

SCALE 1 : 50



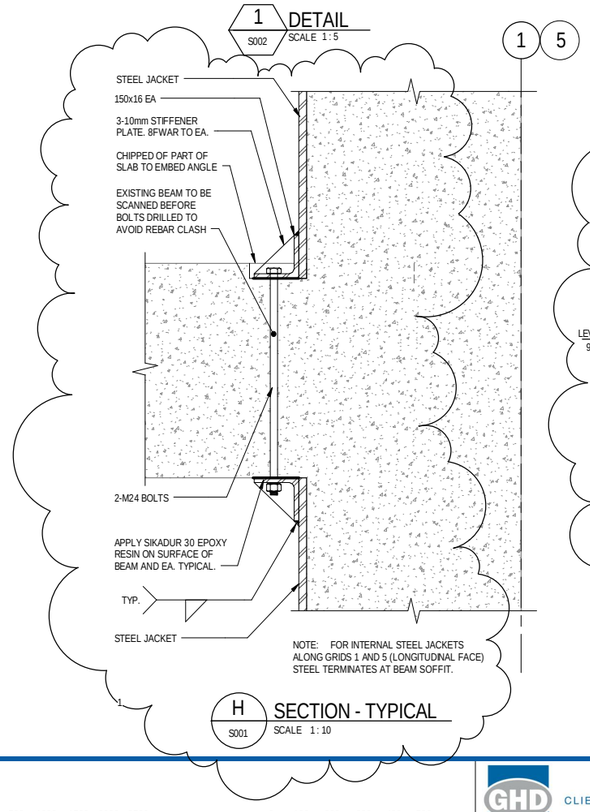
TYPICAL WALL ELEVATION - W2 & W4 GROUND TO UNDERSIDE OF LEVEL 3

SCALE 1 : 50



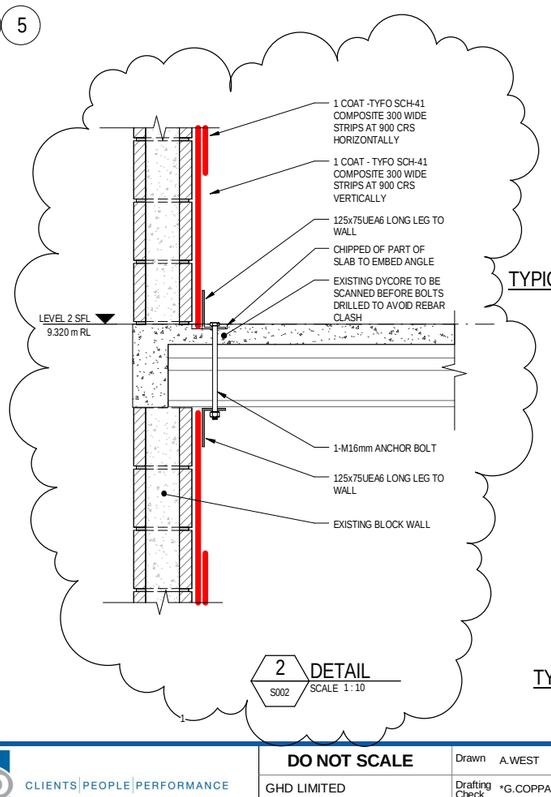
HS1 TO EXISTING SHS CONNECTION VIEW

NOT TO SCALE



H S001 SECTION - TYPICAL

SCALE 1 : 10



2 S002 DETAIL

SCALE 1 : 10

NOTES:

1. CARBON FIBRE FABRIC SHALL BE APPLIED AS PER MANUFACTURE'S RECOMMENDATIONS.
2. TYFO SIKADUR 30 EPOXY RESIN ADHESIVE TO BE INSTALLED STRICTLY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

AS BUILT DOCUMENT

CONSTRUCTION

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
1	REVISED AS SHOWN CLOUDED		CW	SL	NW	13.08.12
0	ISSUED FOR CONSTRUCTION		AJW			03.07.12

0 500 1000 1500 2000 2500mm
SCALE 1:50 AT ORIGINAL SIZE

0 100 200 300 400 500 mm
SCALE 1:10 AT ORIGINAL SIZE

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DO NOT SCALE

Drawn	A.WEST	Designer	M.DELMENDO
Drafting Check	*G.COPPARD	Design Check	*N.OAKES
Approved (Project Director)			
Date			
Scale	As indicated	This Drawing must not be used for Construction unless signed as Approved	

Client GUNSON PROPERTY GROUP LTD.
Project 190 THORNDON QUAY
Title SEISMIC STRENGTHENING DETAILS SHEET 1

Original Size A1 Drawing No: 51-30391-S003 Rev: 1

Plot Date: 8/17/2012 11:33:18 AM Cad File No: C:\Users\dangus\My Documents\51-30391 190 THORNDON QUAY_dangus.rvt

GENERAL

1. STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE SPECIFICATION, CIVIL AND ENGINEERING SERVICES DOCUMENTS.
2. CHECK STRUCTURAL DRAWINGS AGAINST ARCHITECTURAL, MECHANICAL, ELECTRICAL SERVICES AND OTHER DRAWINGS FOR REQUIREMENTS FOR PENETRATIONS, CONDUITS, DUCTS, PIPES ETC.
3. UNLESS OTHERWISE NOTED, ALL LEVELS ARE IN METERS, AND ALL DIMENSIONS ARE IN MILLIMETERS.
4. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING FROM DRAWINGS.
5. ALL DISCREPANCIES SHALL BE REFERRED TO THE DESIGN ENGINEER FOR RESOLUTION BEFORE PROCEEDING WITH THE WORK.
6. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, INSTALLATION AND MAINTENANCE OF ALL NECESSARY TEMPORARY WORKS TO ENSURE STRENGTH AND STABILITY OF THE STRUCTURE AND ADEQUATE SUPPORT TO THE EXISTING SERVICES THROUGHOUT THE COURSE OF THE WORKS.
7. TAKE PRECAUTIONS TO ESTABLISH LOCATION OF AND PROTECT EXISTING SERVICES AT SITE. SERVICES SHOWN ON DRAWINGS ARE IN APPROXIMATE LOCATIONS ONLY. SERVICES OTHER THAN THOSE SHOWN MAY EXIST ON SITE. HAND EXCAVATE WITHIN ONE METER OF SERVICES.
8. WHERE PROPRIETARY PRODUCTS ARE SPECIFIED IN THE DOCUMENTS THE CONTRACTOR MAY SUBMIT AN ALTERNATIVE PRODUCT FOR APPROVAL.
9. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CURRENT CODES OF PRACTICE EXCEPT WHERE VARIED BY THE SPECIFICATION AND/OR DRAWINGS.

AS/NZS 1170	STRUCTURAL DESIGN ACTIONS
NZS 3404	STEEL STRUCTURES STANDARD
NZS 4711	QUALIFICATION TESTS FOR MANUAL METAL ARC WELDERS
NZS 4781	CODE OF PRACTICE FOR SAFETY IN WELDING AND CUTTING
AS/NZS 3679	HOT-ROLLED STRUCTURAL STEEL BARS AND SECTIONS
AS1163	STRUCTURAL STEEL AND HOLLOW SECTIONS
AS/NZS 4600	COLD-FORMED STEEL STRUCTURES
AS/NZS 1554	STRUCTURAL STEEL WELDING PART 1: WELDING OF STEEL STRUCTURES
AS/NZS 1627	METAL FINISHING PREPARATION AND PRETREATMENT OF METAL SURFACES
AS/NZS 4680	HOT DIP GALVANISED (ZINC) COATINGS ON FABRICATED FERROUS ARTICLES
AS/NZS 2312	GUIDE TO THE PROTECTION OF IRON AND STEEL AGAINST EXTERIOR ATMOSPHERIC CORROSION
NZS 3101	CONCRETE STRUCTURES STANDARD
NZS 3104	SPECIFICATION FOR CONCRETE PRODUCTION - HIGH GRADE & SPECIAL GRADE
NZS 3109	CONCRETE CONSTRUCTION
NZS 3114	CONCRETE SURFACE FINISHES
NZS 3111	METHODS OF TEST FOR WATER AND AGGREGATE FOR CONCRETE
NZS 3112	METHODS OF TEST FOR CONCRETE
NZS 3121	SPECIFICATION FOR WATER AND AGGREGATE FOR CONCRETE

10. ABBREVIATIONS ON THE DRAWINGS ARE AS FOLLOWS:

ABR	ALTERNATE BAR REVERSED
AFFL	ABOVE FINISHED FLOOR LEVEL
ALT	ALTERNATE
B	BOTTOM
CJ	CONSTRUCTION JOINT
CP	CENTRALLY PLACED
CRS	CENTRES
DIA	DIAMETER
DP	DOWNPIPE
DRG	DRAWING
EF	EACH FACE
EJ	EXPANSION JOINT
EW	EACH WAY
FF	FAR FACE
FFL	FINISHED FLOOR LEVEL
FGL	FINISHED GROUND LEVEL
FL	FINISHED LEVEL
FW	FILLET WELD
FWAR	FILLET WELD ALL ROUND
GALV	GALVANISED
HDG	HOT DIP GALVANISED
LAR	LAP AT RANDOM
MAX	MAXIMUM
MCJ	MASONRY CONTROL JOINT
MEJ	MASONRY EXPANSION JOINT
MIN	MINIMUM
NF	NEAR FACE
NTS	NOT TO SCALE
PL	TOP OF PRECAST ELEMENT LEVEL
REF	REFER
REINF	REINFORCEMENT
RL	REDUCED LEVEL
SIM	SIMILAR
SJ	SAWN CONTROL JOINT
SOP	SET OUT POINT
STGD	STAGGERED
STRPS	STIRRUPS
STRS	STARTERS
T	TOP
T/S	TOPSIDE
THL	THICK
TOF	TOP OF FOOTING
TOS	TOP OF STEEL
TOW	TOP OF WALL
TYP	TYPICAL
U/S	UNDERSIDE
UNO	UNLESS NOTED OTHERWISE
VL	VARIOUS LENGTH
UOB	UNDERSIDE OF BASEPLATE

CONCRETE

1. MINIMUM CONCRETE STRENGTHS SHALL BE AS FOLLOWS, UNLESS NOTED OTHERWISE ON DRAWINGS:

ELEMENT	f'c (MPa)
COLUMNS, BEAMS, SLAB AND TOPPING.	35
SITE CONCRETE	10

2. SIZES OF CONCRETE ELEMENTS DO NOT INCLUDE THICKNESS OF APPLIED FINISHES.
3. ALL CONSTRUCTION JOINTS SHALL BE TYPE B. REFER TO NZS 3109:1997 SECTION 5.6 FOR DETAILS OF CONSTRUCTION JOINT TYPES. CONSTRUCTION JOINTS WHERE NOT SHOWN ON DRAWINGS SHALL BE LOCATED TO THE APPROVAL OF THE ENGINEER.
4. TOLERANCES AND FINISHES TO BE AS PER SPECIFICATION.
5. SCHEDULE OF SURFACE FINISHES:

ELEMENT	FINISH
CONCRETE EXPOSED IN FINISHED SURFACE (FORMED)	F4
CONCRETE EXPOSED IN FINISHED STRUCTURE (UNFORMED)	U4

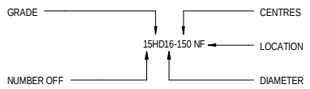
6. 20x20 CHAMFERS SHALL BE PROVIDED TO OUTER EDGES OF CONCRETE MEMBERS, UNO.
7. PROVIDE MINIMUM CLEAR COVER TO REINFORCEMENT AS SHOWN BELOW, EXCEPT WHERE SPECIFIED OTHERWISE.

LOCATION	COVER (mm)
COLUMNS AND BEAMS	40
WALLS	35
FLOOR SLABS	35
ELSEWHERE UNLESS NOTED OTHERWISE	50

8. EXPOSURE CLASSIFICATION FOR ALL ABOVE GROUND IS B1
9. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH NZS 3104:1991 AND NZS 3109:1997.
10. ALL CONCRETE SHALL BE 'SPECIAL' OR 'HIGH GRADE' AS DEFINED IN NZS 3109, CLAUSE 6.2, WITH SUFFICIENT CEMENT QUANTITY TO ENSURE SATISFACTORY FINISH AND DURABILITY, FROM AN APPROVED READY MIX PLANT SUITABLY GRADED IN ACCORDANCE WITH NZRMC (BASED ON NZS 3104:1991).
11. CALCIUM CHLORIDE SHALL NOT BE USED.
12. MAXIMUM AGGREGATE SIZE SHALL GENERALLY BE 19mm.
13. CONCRETE SHALL NOT BE PUMPED WITHOUT THE ENGINEER'S PRIOR APPROVAL. THE AGGREGATE USED, AND OVERALL MIX DESIGN (INCLUDING THE USE OF ANY ADDITIVES) SHALL MEET THE PROVISIONS OF SECTION 2 OF 'ALKALI AGGREGATE REACTION (C AND CA)'.
14. CURE CONCRETE IN ACCORDANCE WITH NZS 3109 FOR 7 DAYS.
15. DO NOT MAKE HOLES, PENETRATIONS, RECESSES, CHASES, NOR EMBED PIPES (OTHER THAN THOSE SHOWN ON STRUCTURAL DRAWINGS) WITHOUT APPROVAL OF ENGINEER. DO NOT PLACE CONDUITS, PIPES ETC WITHIN COVER CONCRETE. LOCATE CONDUITS, PIPES ETC ONLY IN MIDDLE THIRD OF SLAB OR BEAM DEPTH, AND SPACED AT 3 x DIAMETER CENTRES MINIMUM. DO NOT CUT REINFORCEMENT AT PENETRATIONS WITHOUT APPROVAL.
16. CONCRETE SHALL NOT BE PUMPED WITHOUT THE ENGINEERS PRIOR APPROVAL. THE AGGREGATE USED, AND OVERALL MIX DESIGN (INCLUDING THE USE OF ANY ADDITIVES) SHALL MEET THE PROVISIONS OF SECTION 2 OF 'ALKALKI AGGREGATE (C AND CA)'.
17. BASE SHALL BE KEPT CONTINUALLY WET BY PONDING FOR 7 DAYS THEN CURED FOR A FURTHER 7 DAYS BY PREVENTING DRYING.
18. AN APPROVED SHRINKAGE COMPENSATING AGENT SHALL BE USED AT ALL INFILL INSITU CONCRETE BETWEEN PRECAST WALL PANELS.

REINFORCEMENT

1. REINFORCING DESIGNATION AS FOLLOWS



SYMBOL	TYPE
R	PLAIN BARS GRADE 300E TO AS/NZS 4671 (300MPa)
HR	PLAIN BARS GRADE 500E TO AS/NZS 4671 (500MPa)
D	DEFORMED BARS GRADE 300E TO AS/NZS 4671 (300MPa)
HD	DEFORMED BARS GRADE 500E TO AS/NZS 4671 (500MPa)
M	MESH TO AS/NZS 4671 (485MPa)
RB	REIDBAR GRADE 500E RO AS/NZS 4671 & AS1302 (500MPa)

2. NO REINFORCEMENT SPLICES SHALL BE MADE OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS WITHOUT PRIOR APPROVAL OF THE ENGINEER.
3. REINFORCEMENT LAPS IN CONCRETE TO COMPLY WITH THE TABLE BELOW:
SPLICE LAP LENGTHS ARE FOR DEFORMED BARS (in mm.)

BAR SIZE	CONCRETE STRENGTH f'c (MPa)					
	20	25	30	35	40	50
D6	300	300	300	300	300	300
D10	340	300	300	300	300	300
D12	410	360	330	310	300	300
D16	540	480	440	410	380	340
D20	670	600	550	510	480	425
D24	810	720	660	610	570	530
D28	940	840	770	710	670	600
D32	1080	960	880	810	760	680
D40	1350	1200	1100	1020	950	850
HD6	300	300	300	300	300	300
HD10	560	500	465	430	395	360
HD12	675	605	550	510	475	425
HD16	900	800	730	670	632	565
HD20	1125	1000	915	850	790	710
HD25	1400	1250	1140	1060	990	885
HD28	1570	1410	1280	1180	1106	890
HD32	1970	1610	1460	1350	1265	1135
HD40	2240	2000	1825	1670	1580	1415

4. SPLICE LAP LENGTHS SHALL BE INCREASED BY 30% FOR TOP REINFORCEMENT WHERE MORE THAN 300mm OF CONCRETE IS CAST BELOW THE BAR. THE DEVELOPMENT OF PLAIN BARS SHALL RELY ON HOOKS.
5. STAGGER LAPS WHERE POSSIBLE. WHERE LAPS ARE NOT STAGGERED INCREASE LAP LENGTHS BY 30%.
6. MINIMUM LAP FOR FABRIC SHALL BE ON MESH BAR SPACING PLUS 25mm.
7. WELDING OF REINFORCEMENT IS NOT PERMITTED UNLESS SHOWN ON THE DRAWINGS OR APPROVED BY THE ENGINEER.
8. PROVIDE ONE CONTINUOUS BAR PARALLEL TO (WITHIN 75mm OF) CONCRETE EDGES, INCLUDING CONSTRUCTION JOINTS UNLESS NOTED OTHERWISE.
9. PROVIDE HD12 DIAGONAL TRIMMER BARS BY 1000mm LONG AT EACH LAYER OF REINFORCEMENT AT RE-ENTRANT CORNERS, OPENINGS, SERVICE PENETRATIONS ETC UNLESS NOTED OTHERWISE.
10. ALL REINFORCING BARS USED SHALL BE MICRO-ALLOYED BARS UNLESS NOTED OTHERWISE.
SECURE REINFORCEMENT IN POSITION AGAINST DISPLACEMENT AND MAINTAIN SPECIFIED CLEAR CONCRETE COVER TO REINFORCEMENT (INCLUDING FITMENTS) BY APPROVED CHAIRS, LIGATURES OR TIES. DO NOT PLACE REINFORCEMENT AFTER CONCRETING HAS COMMENCED.
PROVIDE ADEQUATE SUPPORT TO PREVENT DISPLACEMENT OF REINFORCING BY WORKMEN OR EQUIPMENT DURING FIXING AND SUBSEQUENT CONCRETE PLACEMENT WITHIN FOLLOWING TOLERANCES.
11. DEVIATION OF REINFORCEMENT FROM ITS SPECIFIED POSITION SHALL NOT EXCEED FOLLOWING (mm):

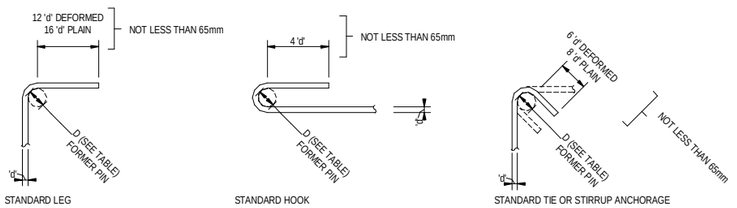
(a) FOR POSITIONS CONTROLLED BY COVER:
- IN BEAMS, SLABS, COLUMNS, AND WALLS -0, +10
- IN SLABS ON GROUND -10, +20
- IN FOOTINGS CAST IN GROUND -20, +40

WHERE NEGATIVE VALUE INDICATES A DECREASE IN SPECIFIED COVER, AND POSITIVE VALUE INDICATES AN INCREASE IN SPECIFIED COVER.

(b) FOR POSITIONS NOT CONTROLLED BY COVER:
- LOCATIONS ON TENDONS ON A PROFILE ±50
- POSITIONS OF ENDS OF REINFORCEMENT ±50

SPACING OF BARS IN WALLS AND SLABS AND OF FITMENTS IN BEAMS AND COLUMNS - 10% OF SPACING, OR ±15 MINIMUM.

. STANDARD HOOKS AND BENDS:



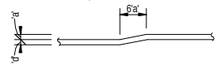
ALL DIMENSIONS ARE FROM OUTSIDE TO OUTSIDE OF BARS EXCEPT RADII WHICH ARE INSIDE TO INSIDE OF BAR. 'd' DENOTES NOMINAL BAR DIAMETER.

MINIMUM FORMER PIN DIAMETER D (mm)			
BAR SIZE	MAIN STEEL GRADE 300 & 500	STIRRUPS AND TIES GRADE 300 & 500	
		PLAIN ROUND	DEFORMED
6	30	12	24
10	50	20	40
12	60	24	48
16	80	32	64
20	100	40	80
24	144		
32	192		
40	240		

NOTE: FOR STIRRUPS AND TIES, WHERE THE MAIN BAR SIZE IS GREATER THAN THE MINIMUM FORMER PIN DIAMETER, THE MAIN BAR SIZE WILL GOVERN.

STANDARD BAR CRANK.

13. WHEN MAIN BARS ARE OFFSET, i.e. FOR CRANKED LAPS, THE SLOPE OF THE INCLINED PORTION OF THE BAR SHALL NOT EXCEED 1 IN 6, THUS:



CARBON FIBRE

1. INSTALL SPECIFIED CARBON FIBRE PRODUCTS IN ACCORDANCE WITH STRUCTURAL DRAWINGS AND MANUFACTURER'S RECOMMENDATIONS.
2. HANDLE IN ACCORDANCE WITH MANUFACTURER'S MATERIAL SAFETY DATA SHEET.
3. ALTERNATIVE PRODUCTS SHALL NOT BE USED UNLESS APPROVED BY THE ENGINEER.

STRUCTURAL STEEL

1. STEEL MEMBERS SHALL BE THE FOLLOWING GRADES UNLESS NOTED OTHERWISE.

MEMBER	GRADE
ANGLES	300

2. ALL PLATES AND CLEATS SHALL BE GRADE 350 UNLESS NOTED OTHERWISE.
3. ALL HOLDING DOWN BOLTS AND OTHER FIXING DEVICES SHALL HAVE A MINIMUM YIELD STRESS OF 250 MPa FOR GRADE 4.6 AND 650 MPa FOR GRADE 8.8. SUPPLY HOLDING DOWN BOLTS WITH TWO CLASS 5 HEXAGONAL HEAD NUTS AND TWO EXTRA LARGE FLAT WASHERS. HOT DIP GALVANISED HOLDING DOWN BOLTS, NUTS AND WASHERS TO AS1214. TIE HOLDING DOWN BOLT GROUPS RIGIDLY TOGETHER PRIOR TO INSTALLATION (eg. TACK WELD WITH 10mm DIAMETER REINFORCING BAR TO FORM A RIGID CAGE) TO ENSURE CORRECT BOLT LOCATIONS, AND SET OUT USING A 3mm MILD STEEL TEMPLATE SUPPLIED BY STEELWORK FABRICATOR. PROVIDE 4 HD12 TIES TO FIX HOLDING DOWN BOLT CAGE SECURELY TO SLAB/FOOTING REINFORCEMENT.
4. CORROSION PROTECTION:
REFER TO STRUCTURAL SPECIFICATIONS.
5. BOLTING:
UNLESS OTHERWISE SHOWN ON THE DRAWINGS BOLTS SHALL BE GRADE 8.8/S COMPLYING WITH NZS 3404. THREADS MAY BE INCLUDED IN SHEAR PLANES.
6. USE BOLT LENGTHS SO THAT PROJECTION BEYOND NUT IS AT LEAST TWO THREADS, AND NOT MORE THAN 10mm.
7. USE BOLTS WITH THREADS IN COMPLIANCE WITH AS1275. BOLTS OF STRENGTH GRADE 4.6 TO BE COMMERCIAL GRADE BOLTS TO AS1111 AND 1112. BOLTS OF STRENGTH GRADE 8.8 TO BE HIGH STRENGTH STRUCTURAL BOLTS, NUTS AND WASHERS TO AS/NZS1252. MECHANICAL PROPERTIES OF BOLTS, NUTS, SCREWS AND STUDS TO COMPLY WITH AS/NZS4291.2. WASHERS TO COMPLY WITH AS1237. TIGHTENING PROCEDURES TO COMPLY WITH NZS3404.
8. MILL CERTIFICATES SHALL BE PROVIDED TO THE ENGINEER FOR ALL STEELWORK USED IN THIS CONTRACT.
9. DRILL HOLES FULL SIZE OR REAM TO FULL SIZE AFTER SUB-DRILLING OR SUB-PUNCHING. SUB-DRILLED OR SUB-PUNCHED HOLES TO BE AT LEAST 3mm UNDERSIZE. FLAME CUTTING OF HOLES IS NOT PERMITTED.
10. BOLT HOLE SIZE TO BE:
- BOLT DIAMETER PLUS 2mm FOR STEEL TO STEEL CONNECTIONS.
- BOLT DIAMETER PLUS 4mm FOR STEEL TO CONCRETE CONNECTIONS.
- BOLT DIAMETER PLUS 6mm FOR HOLDING DOWN BOLTS

SLOTTED HOLE TO BE:
- LENGTH TO BE 2.5 x BOLT DIAMETER, WIDTH AS ABOVE.

11. WELDING:

WELDING SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF NZS 3404 AND NZS / AS 1554.1 UNLESS SPECIFICALLY SHOWN ON THE DRAWINGS. ALL WELDS SHALL BE CATEGORY SP (STRUCTURAL PURPOSE) E48XX/W50X 5mm FWAR IN ACCORDANCE WITH NZS / AS 1554.1 UNLESS NOTED OTHERWISE.

12. STEEL FABRICATOR SHALL PROVIDE THE ENGINEER WITH ONE COPY OF THEIR WELD PROCEDURE PRIOR TO COMMENCING WELDING.
13. PREPARE WORKSHOP DRAWINGS AND SUBMIT TWO COPIES OF EACH FOR ENGINEER REVIEW OF GENERAL COMPLIANCE WITH DESIGN.
14. SHOP DRAWINGS TO SHOW RELEVANT DETAILS OF EACH ASSEMBLY, COMPONENT AND CONNECTION, TOGETHER WITH INFORMATION RELATIVE TO FABRICATION, SURFACE TREATMENT, AND ERECTION, INCLUDING IDENTIFICATION, STEEL TYPE AND GRADE, DIMENSIONS OF ITEMS, LOCATION, TYPE AND SIZE OF WELDS OR BOLTS, WELD CATEGORIES AND BOLT CATEGORIES, SURFACE PREPARATION METHODS AND COATING SYSTEM, VENT / DRAIN HOLES FOR HOT DIP GALVANISING, PROPOSED JOINTS IN STEEL MEMBERS, ETC.
15. DO NOT COMMENCE FABRICATION UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED. ALLOW 10 WORKING DAYS FOR ENGINEERS REVIEW.
16. WORKMANSHIP AND MATERIALS TO COMPLY WITH NZS3404 AND AS/NZS1554.

SERVICES NOTES

SN 1. ALLOW TO REMOVE LOUVERS TO ENABLE REMEDIALS TO COLUMNS, AS REQUIRED.

SN 2. ALLOW TO REMOVE TRUNKING FROM SIDES OF COLUMNS. ISOLATE POWER AND PROTECT ALL CABLING WHILE STRUCTURAL REMEDIALS CARRIED OUT. PROTECT TRUNKING FROM DAMAGE. REINSTATE TRUNKING AND CABLES FOLLOWING REMEDIAL WORKS, AS REQUIRED.

AS BUILT DOCUMENT **CONSTRUCTION**

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
1	REVISED AS SHOWN CLOUDED		CW	SL	NW	13.08.12
0	ISSUED FOR CONSTRUCTION		AJW			03.07.12

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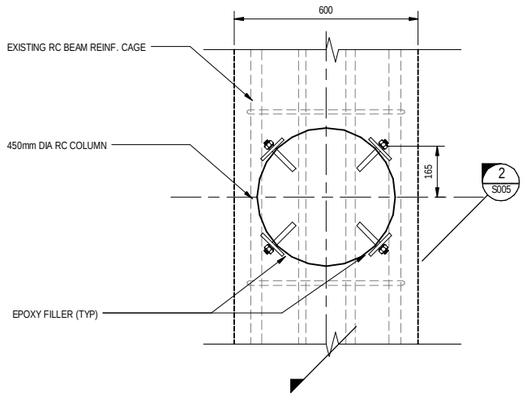
Drafting Check	*G.COPPARD	Design Check	*N.OAKES
Approved (Project Director)			
Date			
Scale	N/A	This Drawing must not be used for Construction unless signed as Approved	

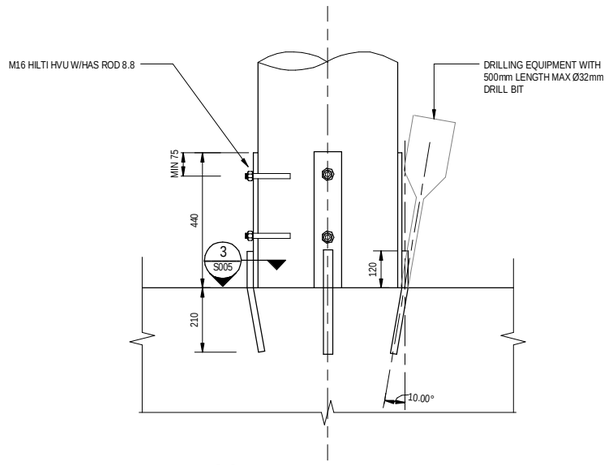
Client GUNSON PROPERTY GROUP LTD.
Project 190 THORNDON QUAY
Title SEISMIC STRENGTHENING GENERAL NOTES SHEET

Original Size A1 Drawing No: 51-30391-S004 Rev: 1

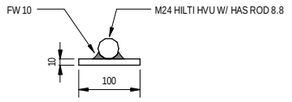
Plot Date: 8/17/2012 11:33:18 AM Cad File No: C:\Users\dangus\My Documents\51-30391 190 THORNDON QUAY_dangus.rvt



1 S002 PLAN
SCALE 1 : 10



2 S005 SECTION
SCALE 1 : 10



3 S005 DETAIL (PLAN)
SCALE 1 : 5

AS BUILT DOCUMENT **CONSTRUCTION**

No	Revision	Drawn	Job Manager	Project Director	Date
0	DETAILS ADDED	DA	SL	NW	8.16.12

Note: * indicates signatures on original issue of drawing or last revision of drawing

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DO NOT SCALE

GHD LIMITED

Drawn D.ANGUS | Designer P.CLARKE
Drafting Check | Design Check
Approved (Project Director)
Date
Scale As indicated
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Client **GUNSON PROPERTY GROUP LTD.**
Project **190 THORNDON QUAY**
Title **DETAILS SHEET 2**

Original Size **A1** Drawing No: **51-30391-S005** Rev: **0**

Plot Date: 8/17/2012 11:33:18 AM Cad File No: C:\Users\dangus\My Documents\51-30391 190 THORNDON QUAY_dangus.rvt

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