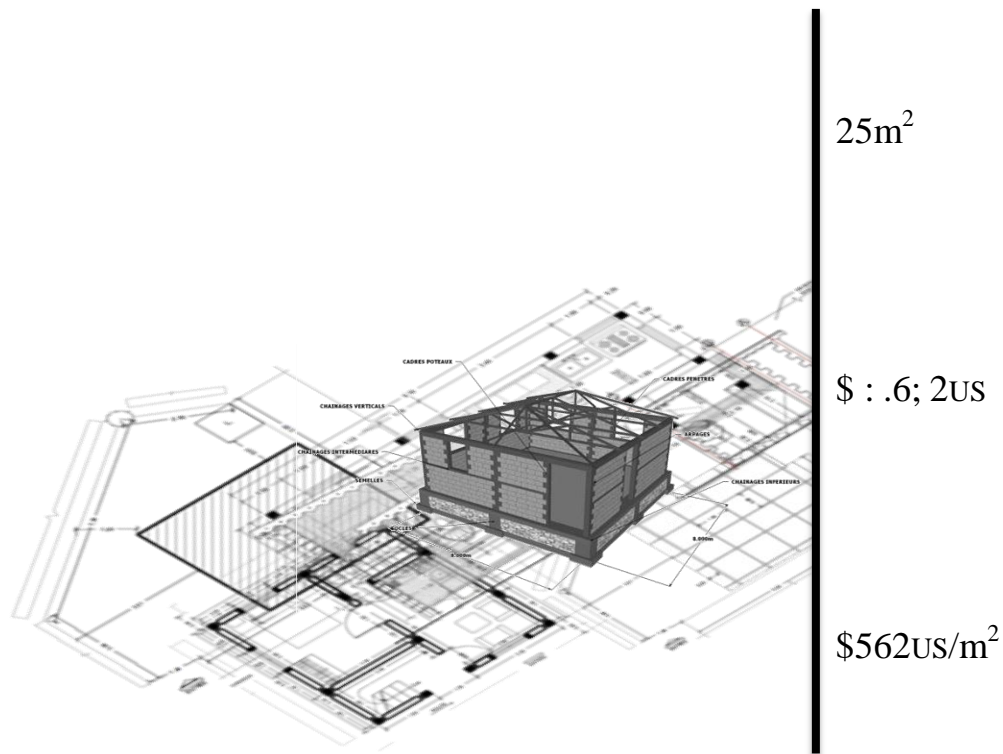


NOUVELLE CONSTRUCTION

MAISON I



MAISON EN DALLE DE BÉTON SANS
ÉTAGE EN MAÇONNERIE CHAINÉE





DESIGN BASIS FOR NEW CONSTRUCTIONS

Building Codes

Minimum Design Loads for Buildings and Other Structures, American Society of Civil Engineers, SEI/ASCE 7-05, 2005
Code International de Construction, International Building Code (IBC), International Code Council, 2009
Wind Speed Maps for the Caribbean for Application with the Wind Load Provisions of ASCE 7, Pan American Health Organization (PAHO), 2008
Documentation for Initial Seismic Hazard Maps for Haiti, United States Geological Survey (USGS), 2010

Material Design Codes

Building Code Requirements for Structural Concrete (ACI 318-08), American Concrete Institute
Building Code Requirements for Masonry Structures (ACI 530-08), American Concrete Institute, 2008
Wood Frame Construction Manual for One- and Two-Family Dwellings (WFCM-01), American Forest and Paper Association, 2001
Design Specification for Wood Construction with 2005 Supplement (NDS-05), American Forest and Paper Association National, 2005
Special Design Provisions for Wind and Seismic (ANSI/AF&PA SDPWS-08), American Forest and Paper Association, 2008
Steel Construction Manual, 13th Edition (AISC 13ed), American Institute of Steel Construction, 2005
Building Code Requirements for Masonry Structures (TMS 602-08), The Masonry Society, 2008

Loads

Dead Loads

Soil Bearing Capacity: 0.25kN/m²
Concrete Slabs: 4.00kN/m²
Masonry Walls: 2.50kN/m²

Wind Loads

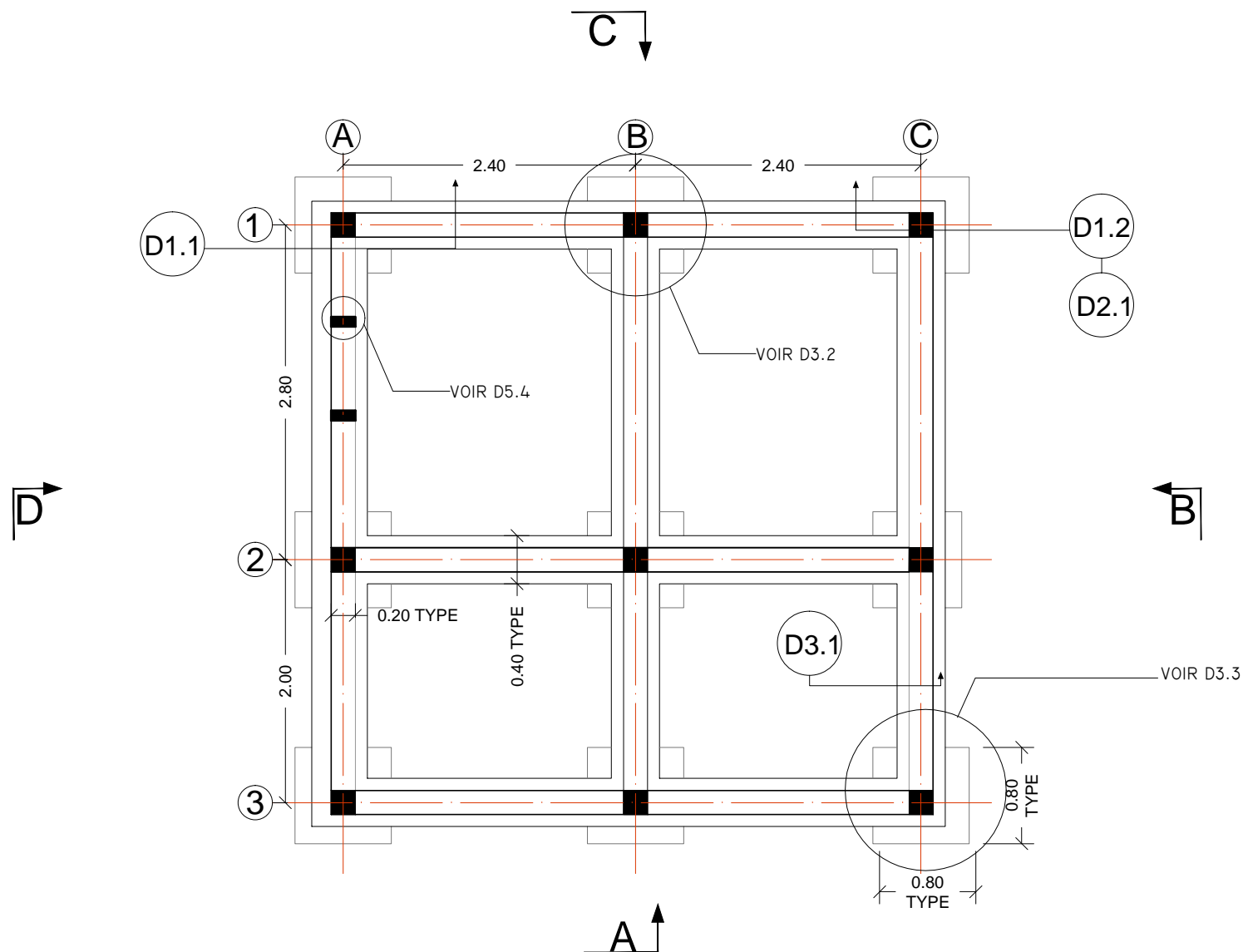
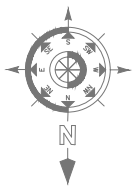
Analysis: Method 1 – Simplified Procedure
Base Wind Speed: 119mph (53.2m/s)
Importance Factor, I : 1.0
Exposure Category: C

Gravity Live Loads

Concrete Slabs: 2.5kN/m²
Lightweight Roofs: 1.0kN/m²

Seismic Loads

S _s = 1.590	S _{M1} = 0.930
S ₁ = 0.620	S _{D1} = 0.6200
F _a = 1.00	Seismic category= D
F _v = 1.5	Importance Factor, I : 1.0
S _{Ms} = 1.590	



MAISON I

PLAN D'IMPLANTATION ET DES FONDATIONS

NOTE:

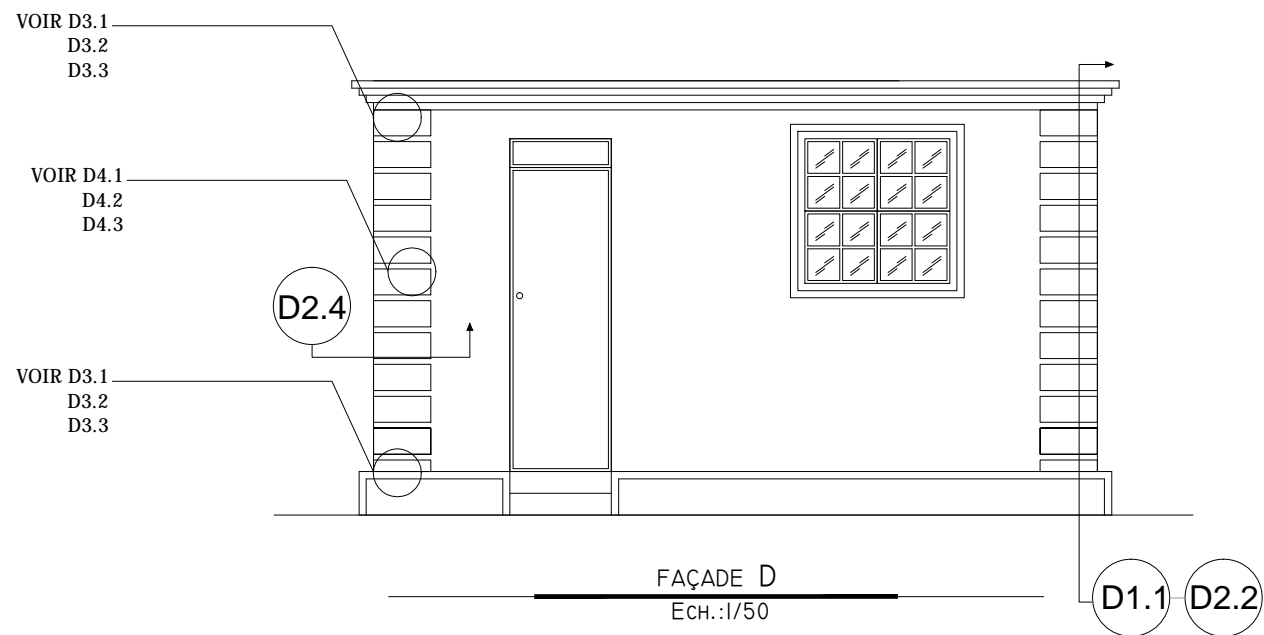
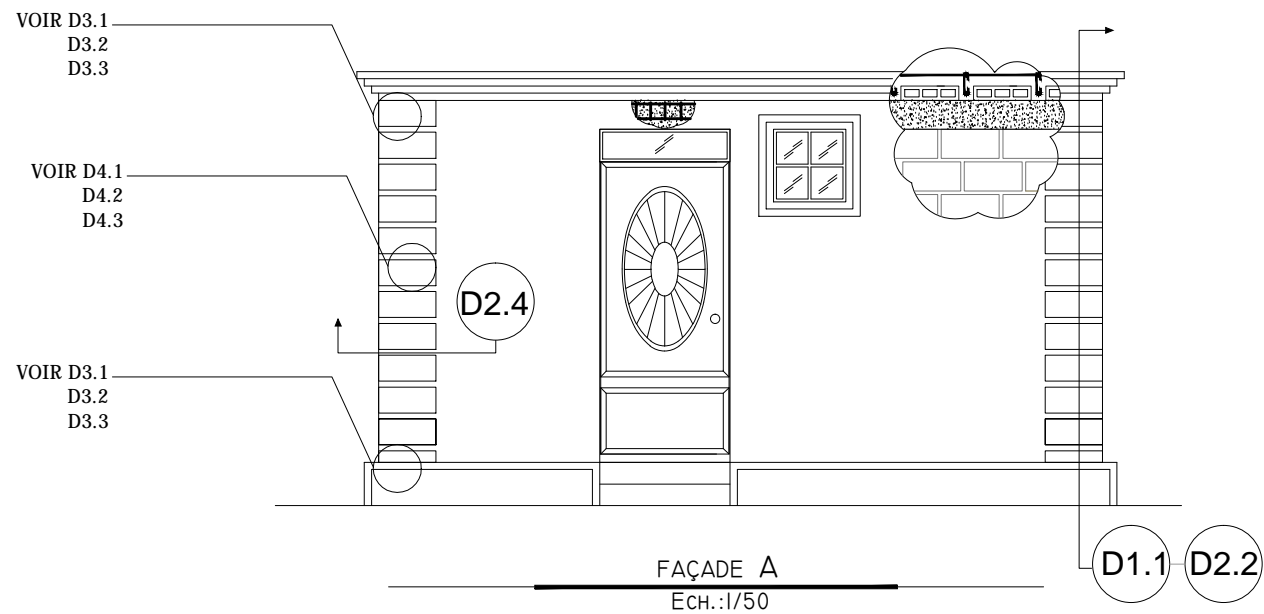
DATE:16 FÉVRIER 2012

ECH.:1/50



MAISON I

ECH.:1/50



MAISON I FAÇADES

NOTE:

DATE:16 FÉVRIER 2012

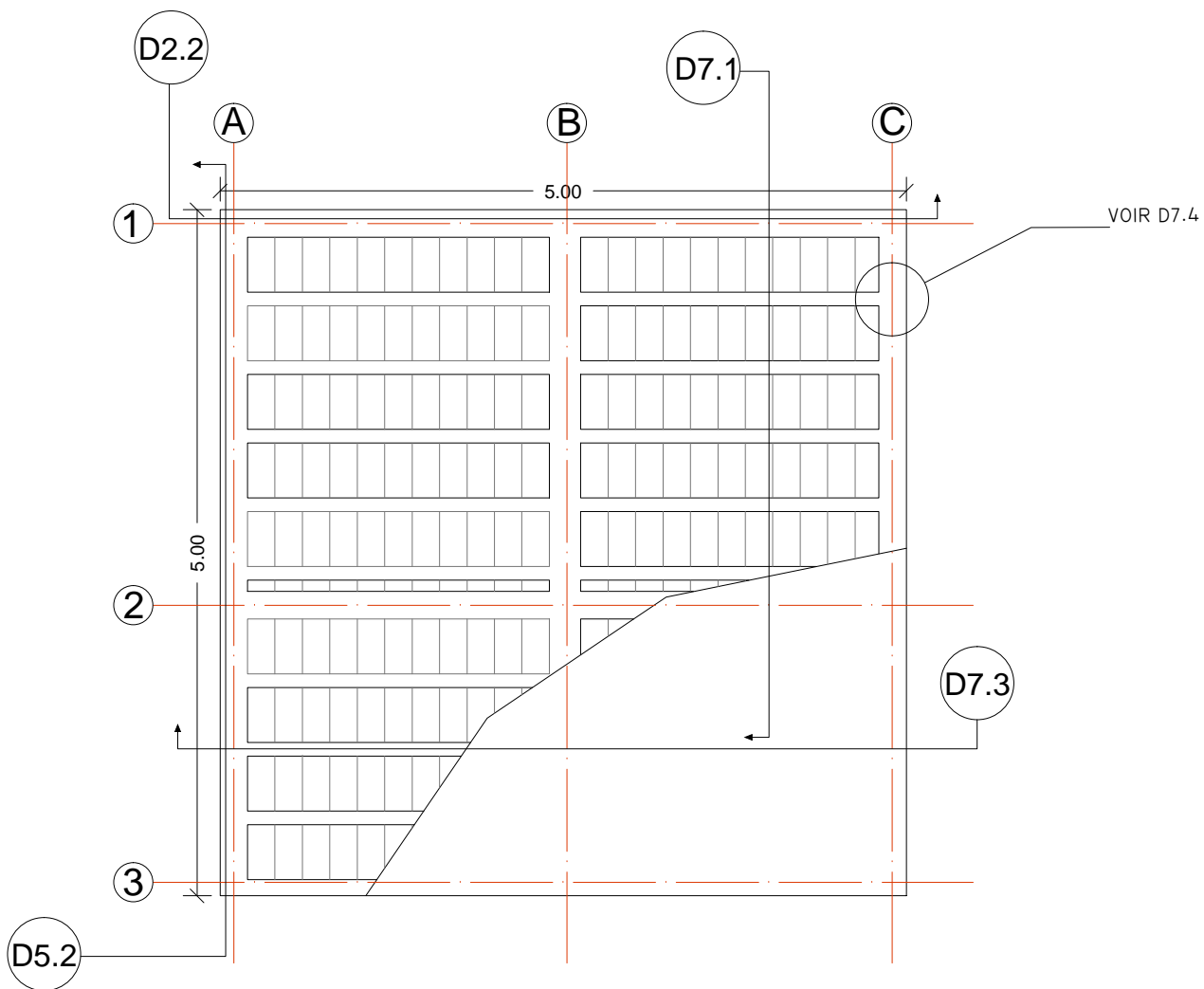
ECH.:1/50



D

C

B



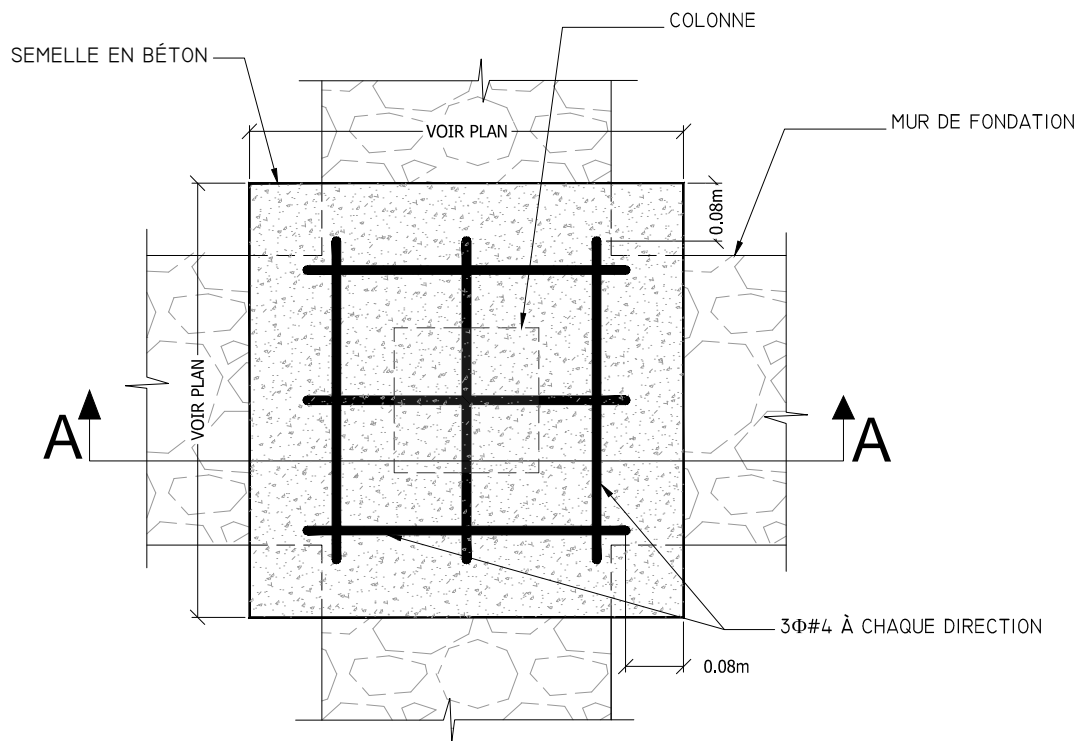
PLAN DE TOITURE
Ech.:1/50

MAISON I
PLAN DE TOITURE

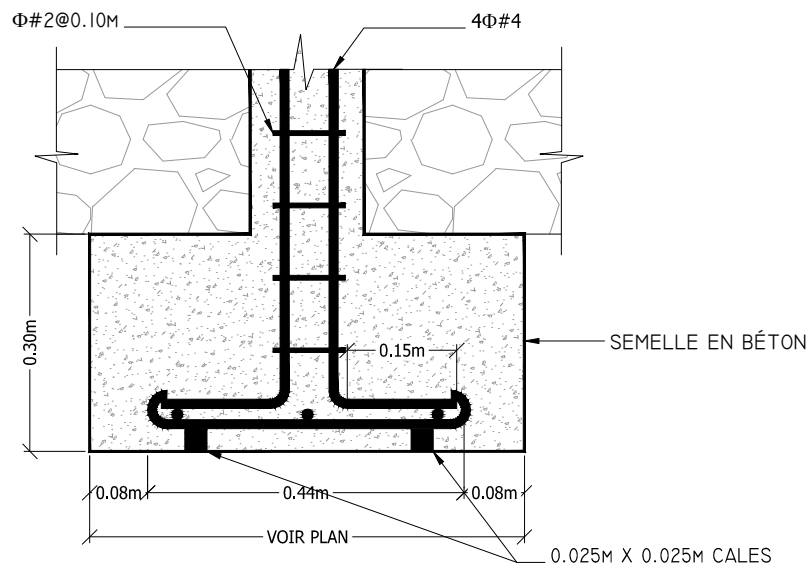
NOTE:

DATE:16 FÉVRIER 2012

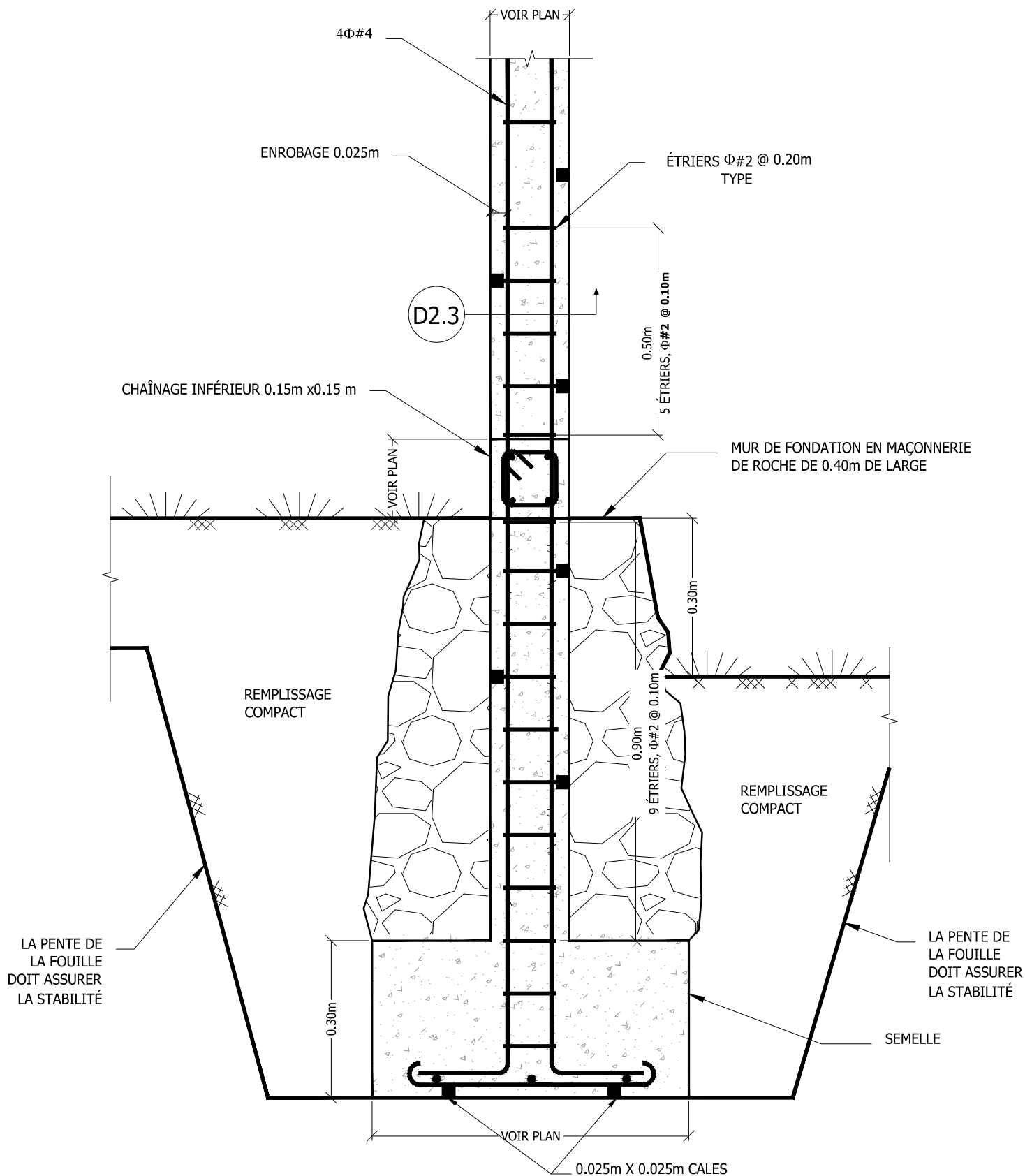
ECH.:1/50



SEMELLE DE BÉTON PLAN
ÉCH.: 1/20



SEMELLE DE BÉTON COUPE A-A
ÉCH.: 1/20



COUPE DES FONDATIONS À TRAVERS LA COLONNE

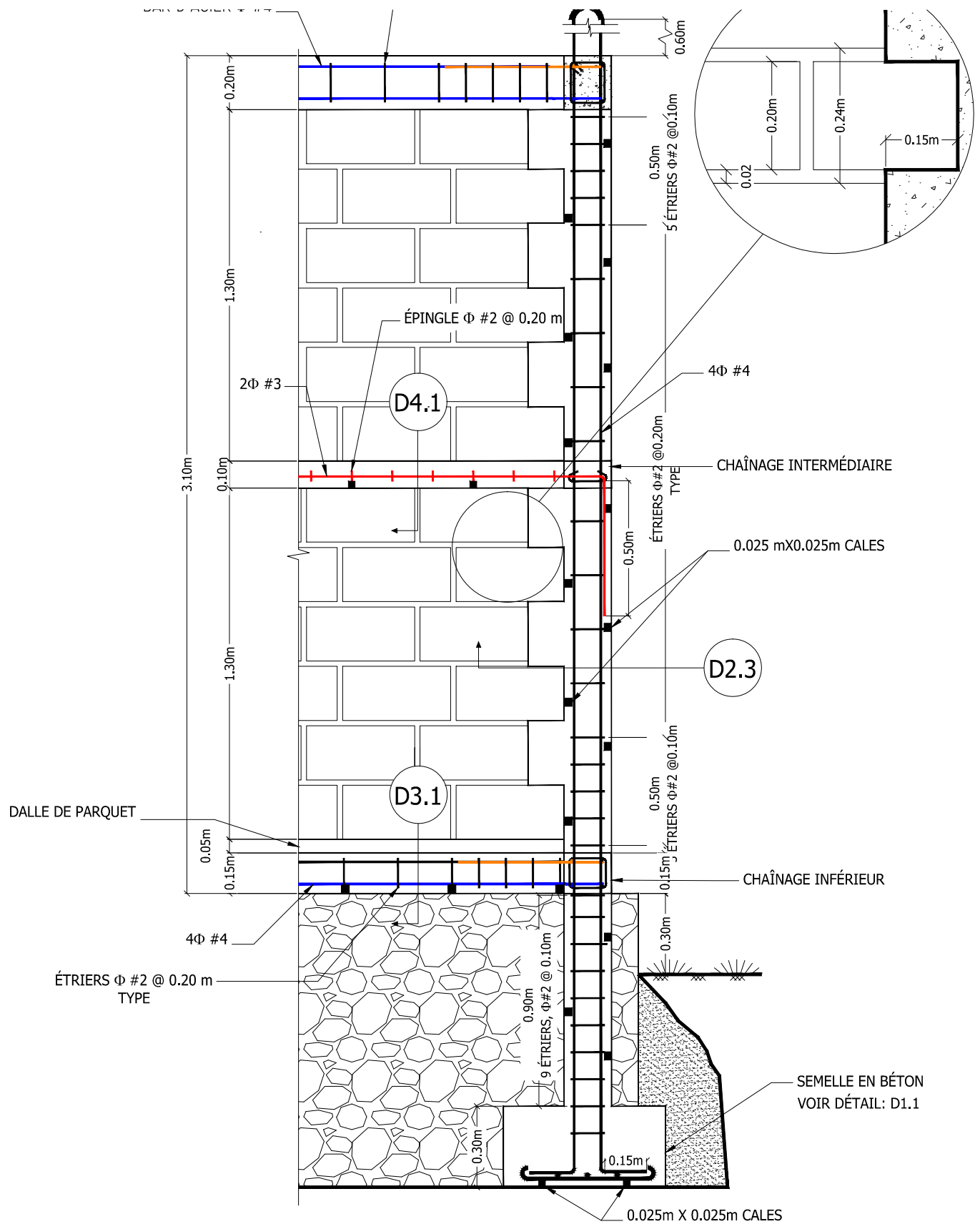
CROIX ROUGE AMÉRICAINE

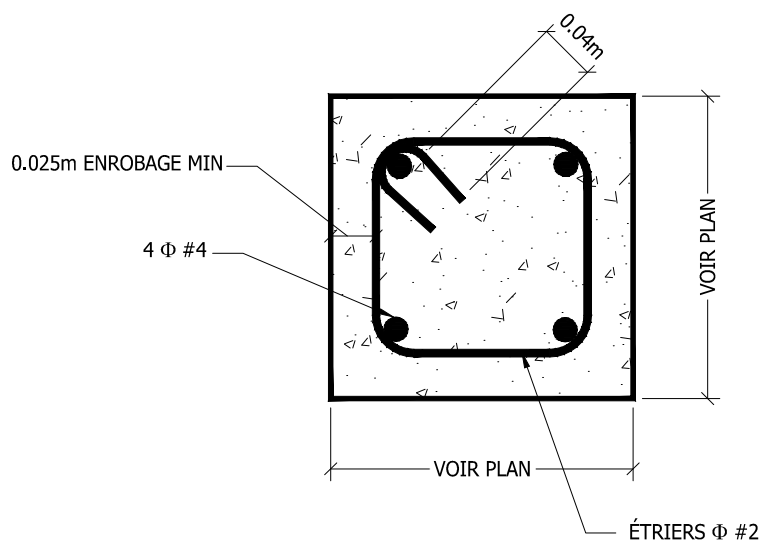
PROJET: NOUVELLE CONSTRUCTION

ÉCH.: 1/10

DATE: 8 FÉVRIER 2012

D1.2





COUPE HORIZONTALE D'UNE COLONNE

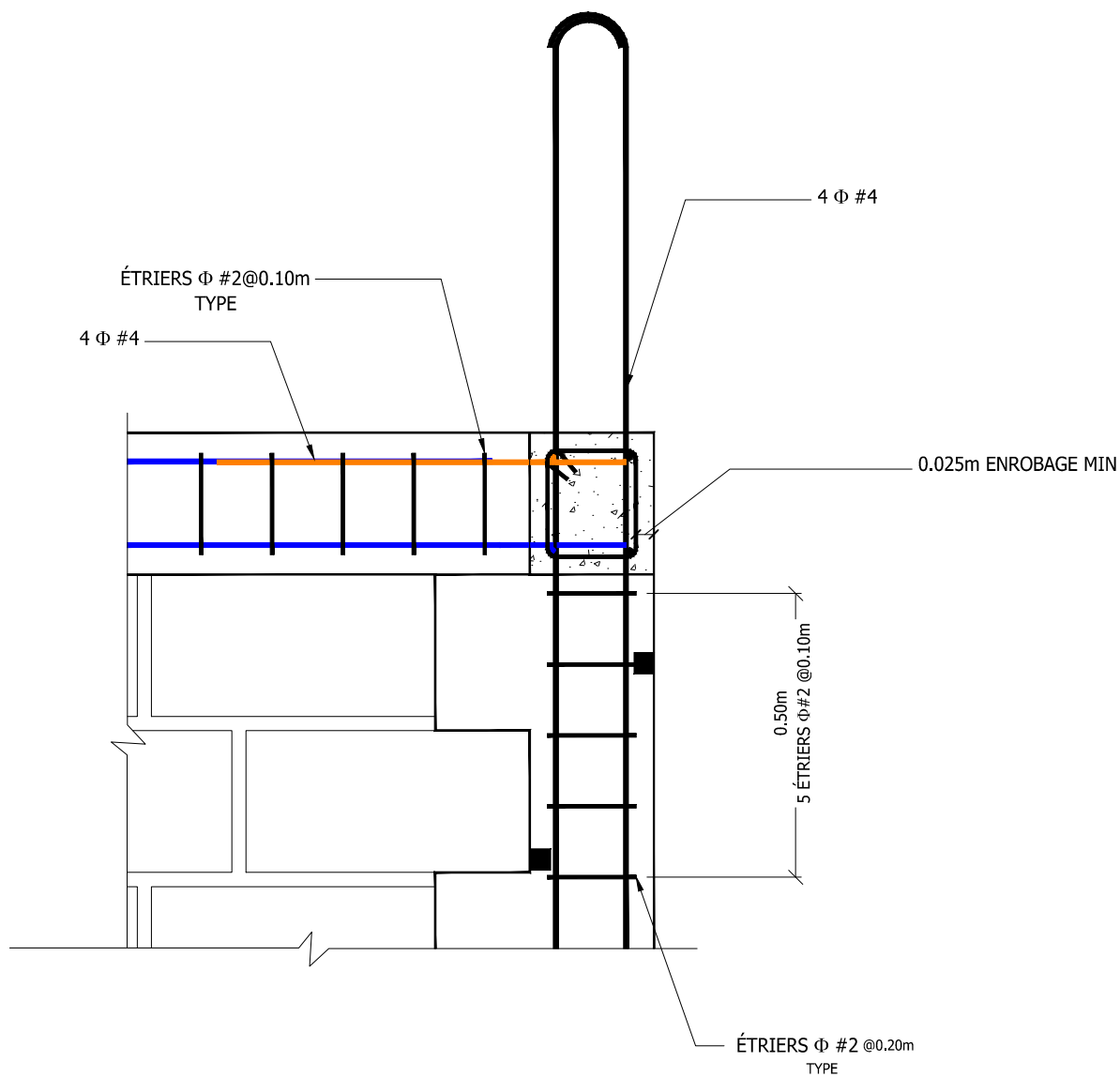
CROIX ROUGE AMÉRICAINE

PROJET: NOUVELLE CONSTRUCTION

ÉCH.: 1/5

DATE: 8 FÉVRIER 2012

D2.4



DÉTAIL ATTENTE DALLE

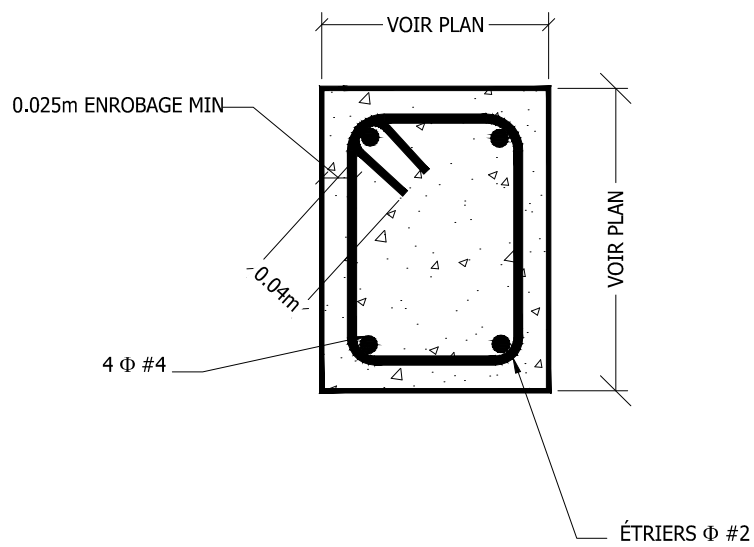
CROIX ROUGE AMÉRICAINE

PROJET: NOUVELLE CONSTRUCTION

ÉCH.: 1/10

DATE: 8 FÉVRIER 2012

D2.5



COUPE VERTICALE DU CHÂINAGE INFÉRIEUR / SUPÉRIEUR

CROIX ROUGE AMÉRICAINE

PROJET: NOUVELLE CONSTRUCTION

ÉCH.: 1/5

DATE: 8 FÉVRIER 2012

D3.1

ÉTRIERS Φ #2
@ 0.20m TYPE

ENROBAGE 0.025m

0.50m
5 ÉTRIERS Φ #2 @0.10m

D3.1

0.50m
5 ÉTRIERS Φ #2 @0.10m

ÉTRIERS Φ #2 @ 0.20m
TYPE

4 Φ #4

RECOUVREMENT 0.50m
TYPE

VOIR DÉTAILS:D1.2

0.025 mX0.025m CALES

VOIR PLAN

ÉTRIERS Φ #2
@ 0.20m TYPE

VOIR PLAN



COUPE HORIZONTALE DU CHÂTNAGE INFÉRIEUR / SUPÉRIEUR A L'INTERSECTION DE 3 MURS

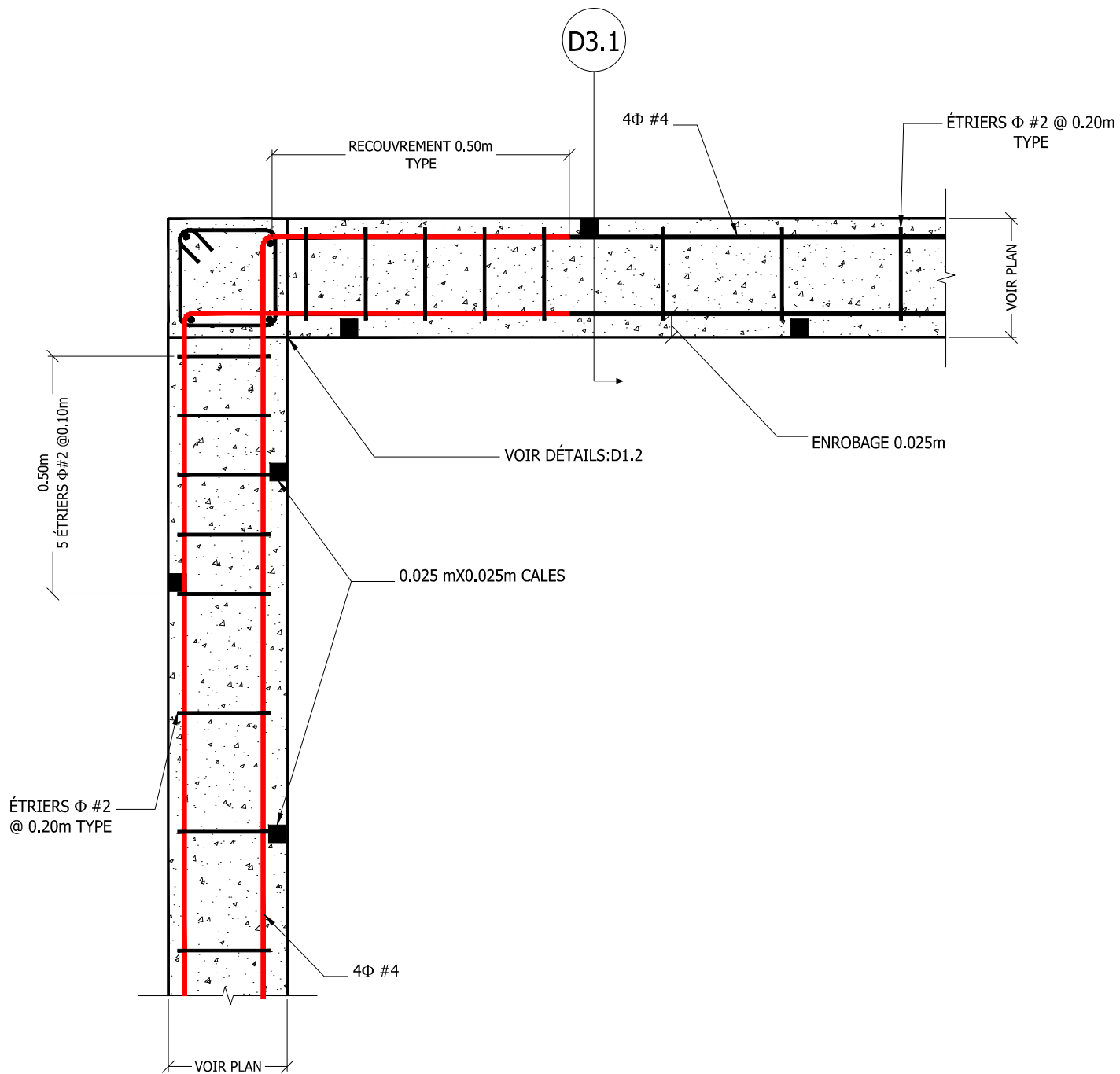
COIX ROUGE AMÉRICAIN

PROJET: NOUVELLE CONSTRUCTION

ÉCH.: 1/10

DATE: 8 FÉVRIER 2012

D3.2



COUPE HORIZONTALE DU CHÂINAGE INFÉRIEUR AUX ANGLES

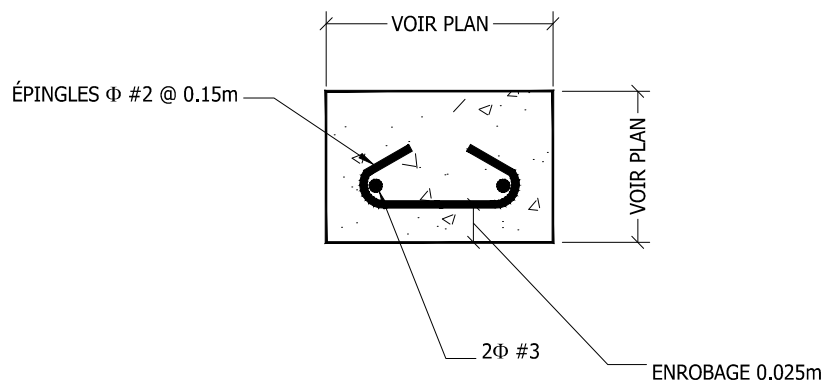
CROIX ROUGE AMÉRICAINE

PROJET: NOUVELLE CONSTRUCTION

ÉCH.: 1/10

DATE: 8 FÉVRIER 2012

D3.3



COUPE VERTICALE DU CHÂÎNAGE INTERMÉDIAIRE

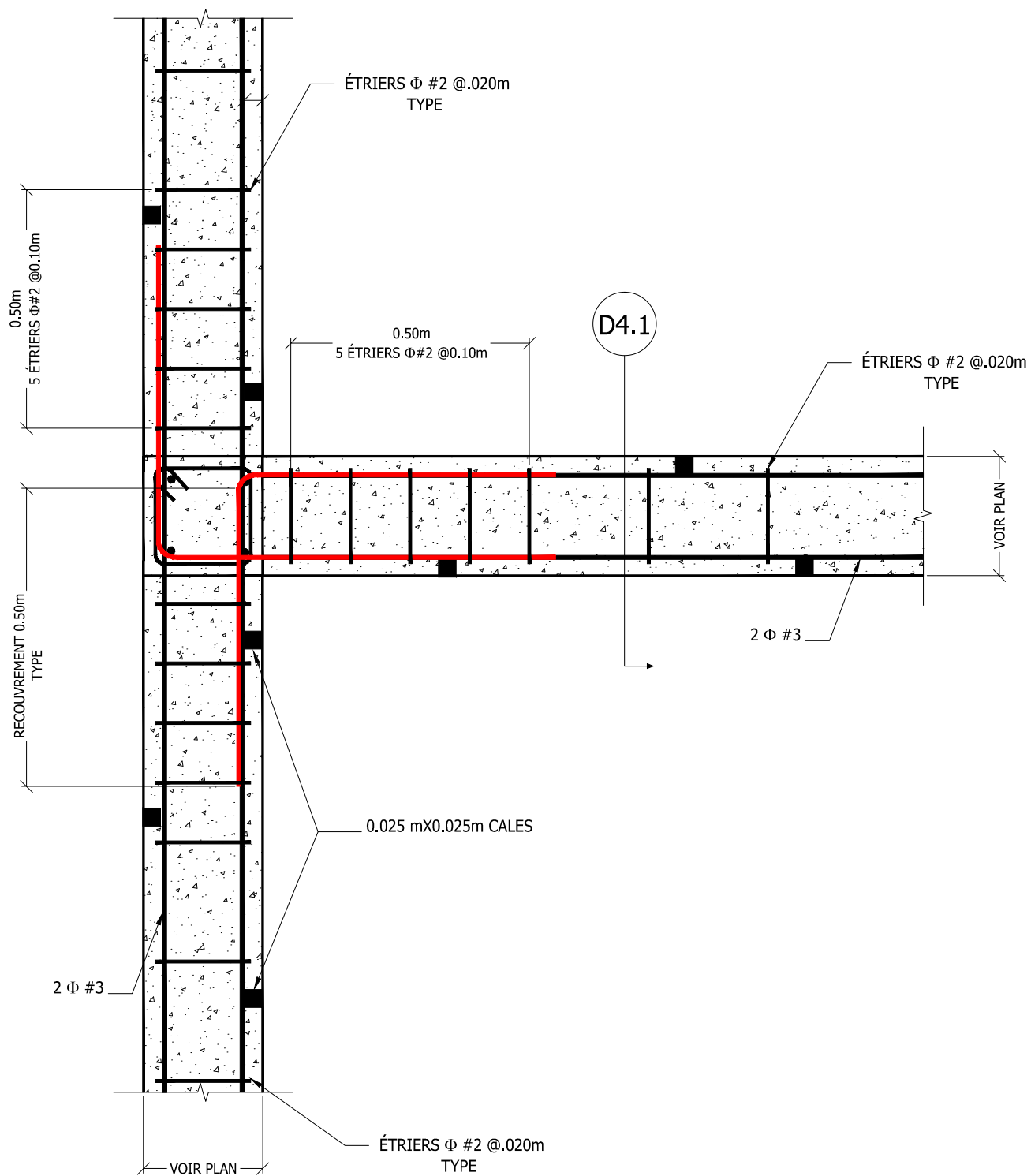
CROIX ROUGE AMÉRICAINE

PROJET: NOUVELLE CONSTRUCTION

ÉCH.: 1/5

DATE: 8 FÉVRIER 2012

D4.1



COUPE DU CHÂINAGE INTERMÉDIAIRE A L'INTERSECTION DE 3 MURS

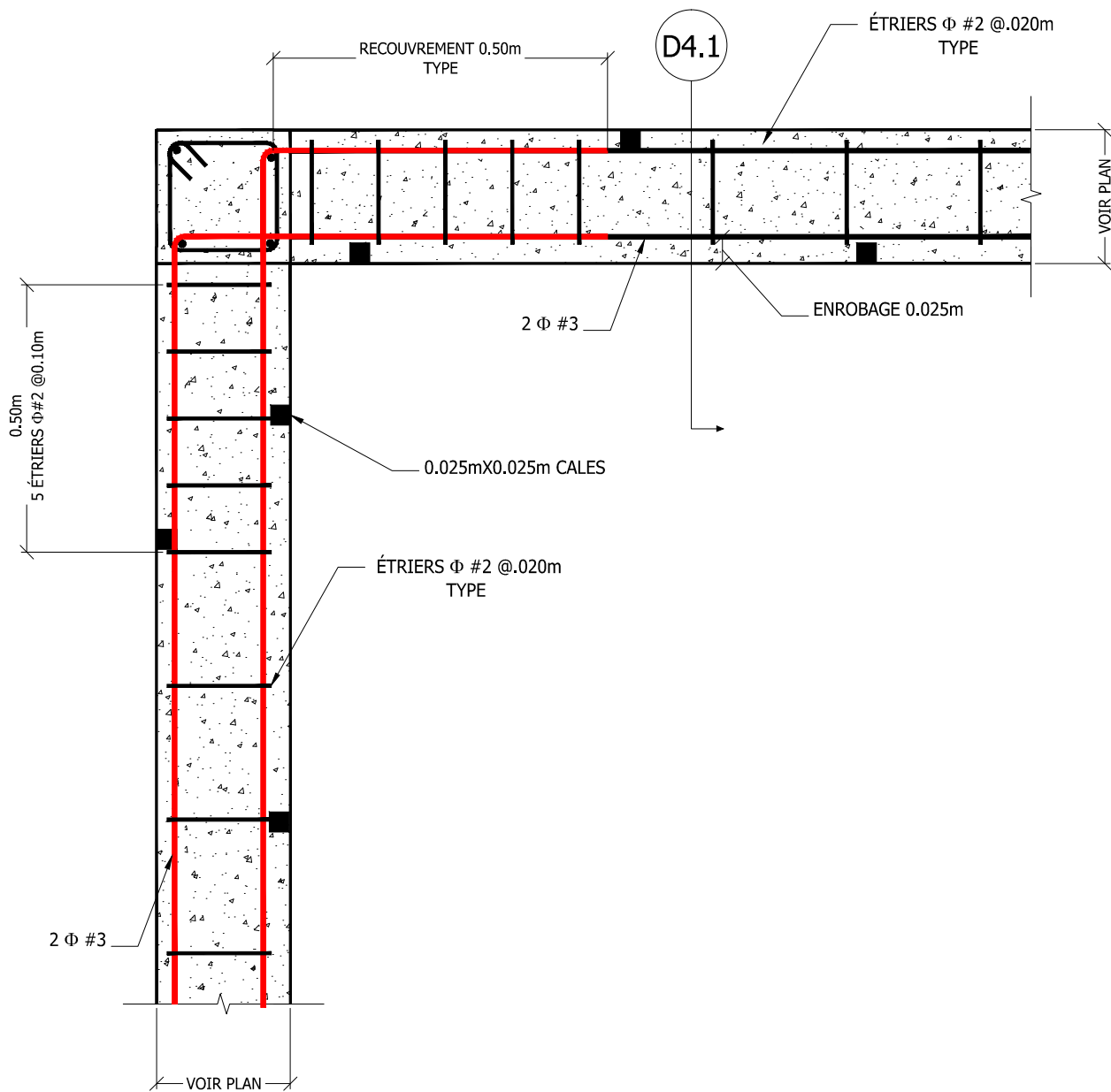
CROIX ROUGE AMÉRICAINE

PROJET: NOUVELLE CONSTRUCTION

ÉCH.: 1/5

DATE: 8 FÉVRIER 2012

D4.2



COUPE DU CHÂINAGE INTERMÉDIAIRE AUX ANGLES

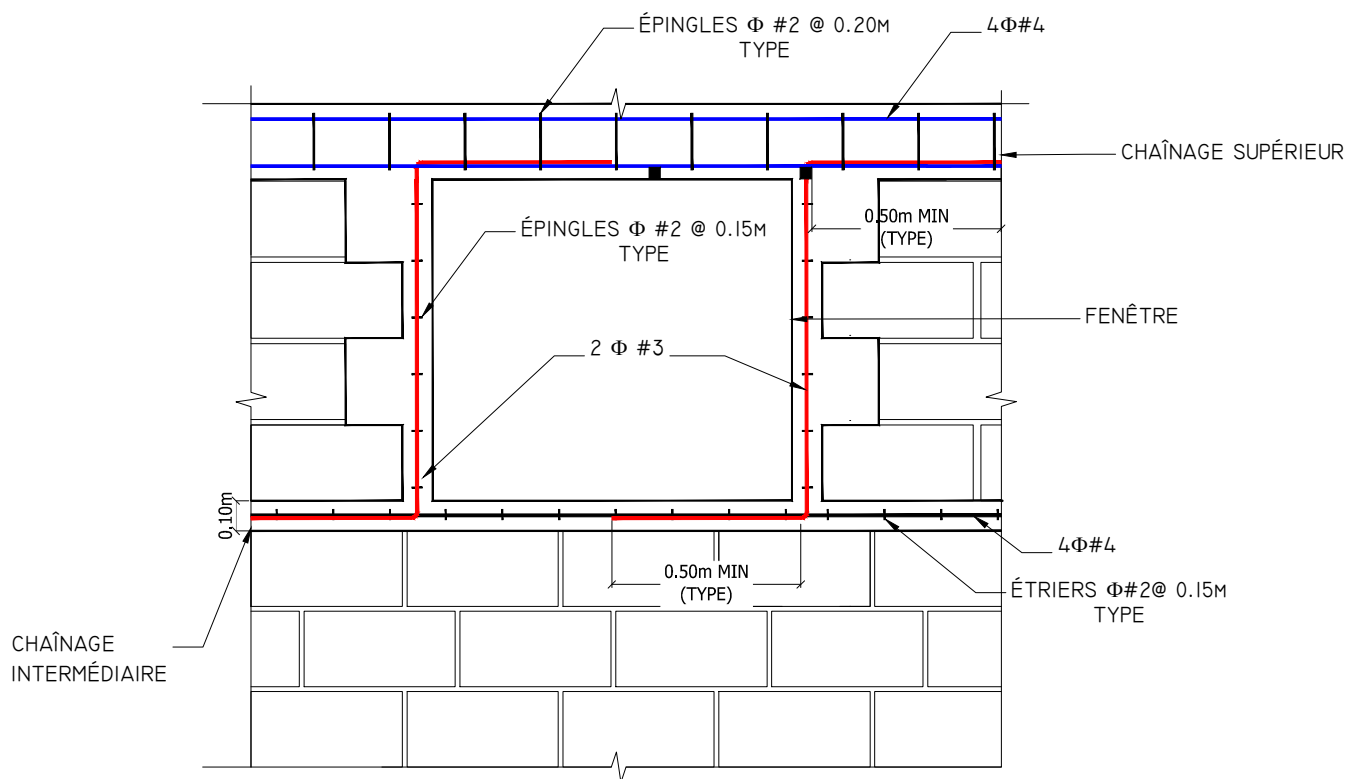
CROIX ROUGE AMÉRICAINE

PROJET: NOUVELLE CONSTRUCTION

ÉCH.: 1/5

DATE: 8 FÉVRIER 2012

D4.3



ARMATURE AUX OUVERTURES DES FENÊTRES, DALLE

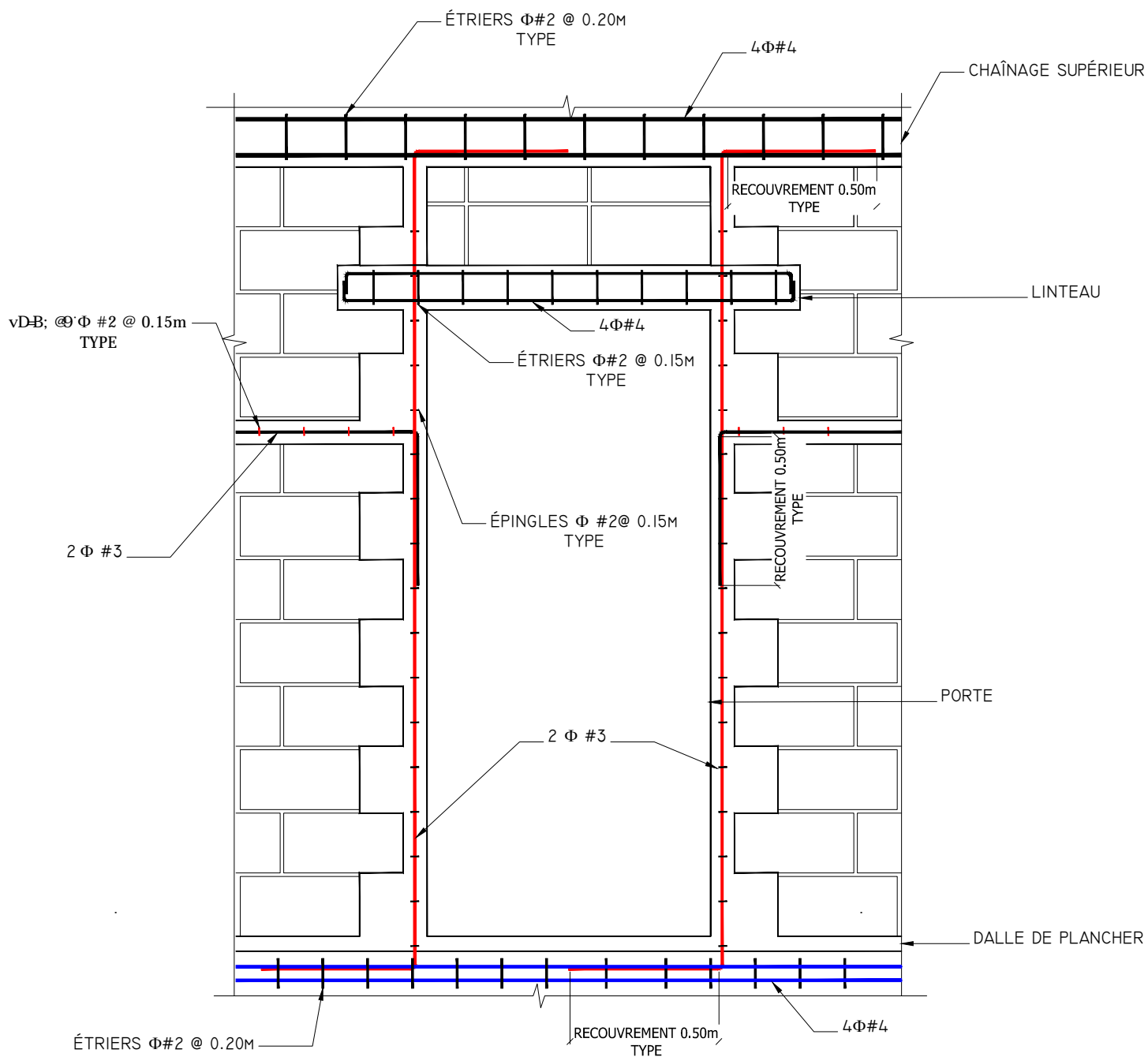
CROIX ROUGE AMÉRICAINE

PROJET: NOUVELLE CONSTRUCTION

ÉCH.: 1/5

DATE: 8 FÉVRIER 2012

D5.2



ARMATURE AUX OUVERTURES DES PORTES, DALLE

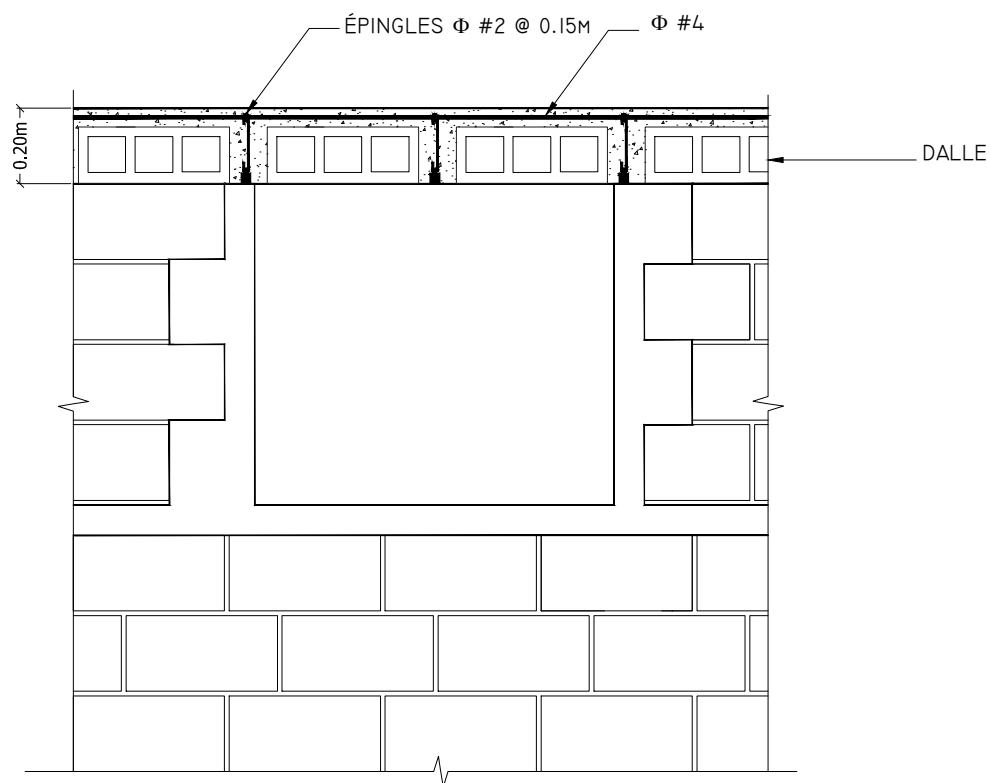
CROIX ROUGE AMÉRICAINE

PROJET: NOUVELLE CONSTRUCTION

ÈCH.: 1/5

DATE: 8 FÉVRIER 2012

D5.4



COUPE SUR DALLE AVEC VUE SUR FENÊTRE

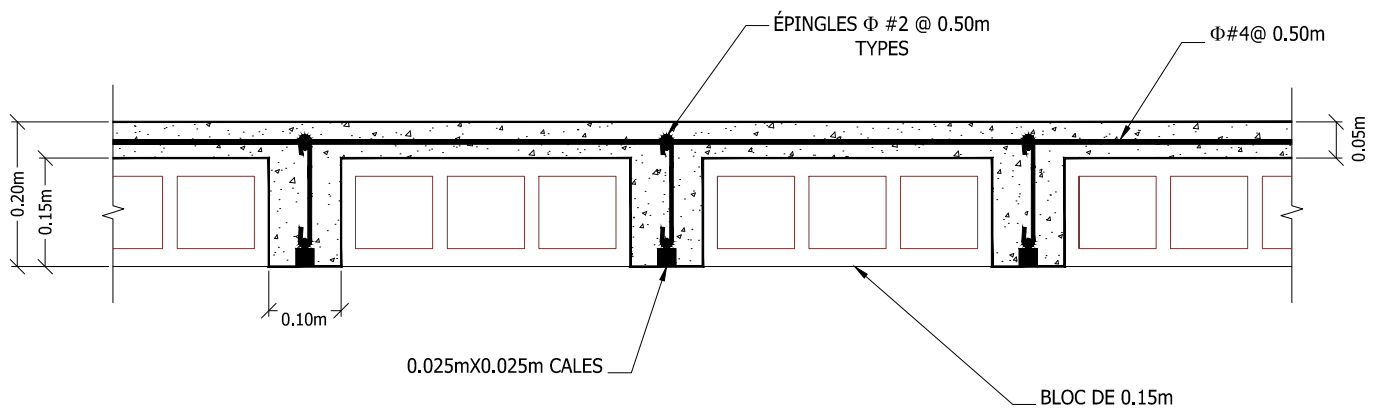
CROIX ROUGE AMÉRICAINE

PROJET: NOUVELLE CONSTRUCTION

ÈCH.: 1/5

DATE: 8 FÉVRIER 2012

D5.5



COUPE DE TOITURE EN BÉTON

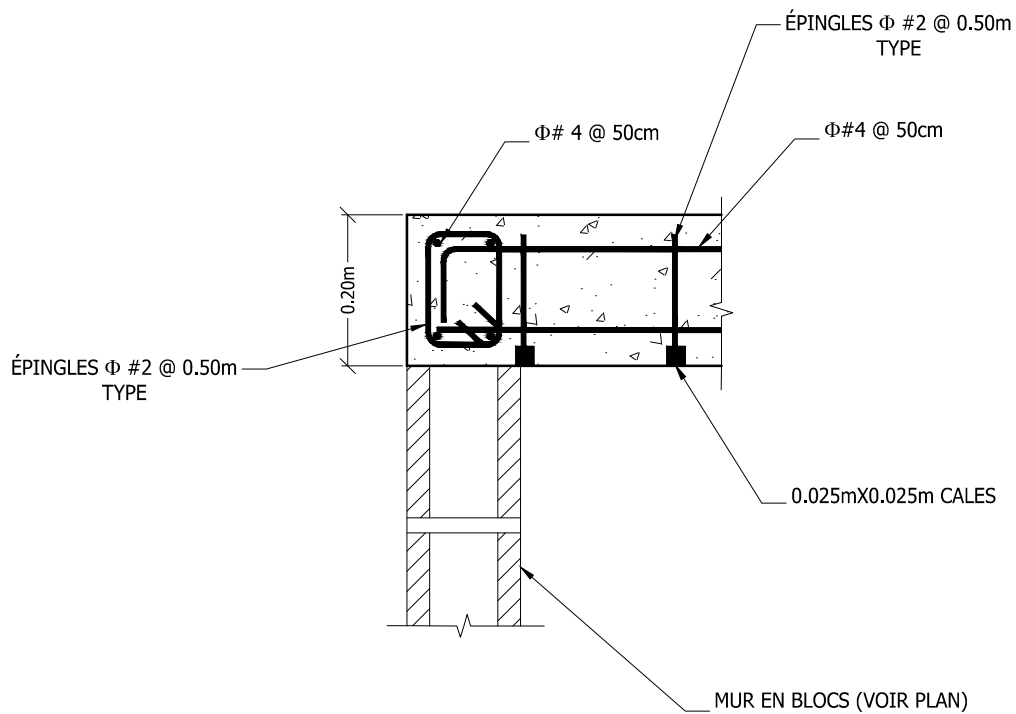
CROIX ROUGE AMÉRICAINE

PROJET: NOUVELLE CONSTRUCTION

ÉCH.: 1/10

DATE: 8 FÉVRIER 2012

D7.1



CONNEXION CHÂÎNAGE SUPÉRIEUR ET POUTRELLE

CROIX ROUGE AMÉRICAINE

PROJET: NOUVELLE CONSTRUCTION

ÉCH.: 1/10

DATE: 8 FÉVRIER 2012

D7.4



Devis Estimatif

Build Change Post-Earthquake Technical Assistance Program, Haiti

6-Feb-12

Note: All data should be entered on this page and will automatically be populated on other sheets.

Proprietaire: ARC Adresse: Maison I GPS: Telephone:	Date: 20-Feb-12 Ingenieur: LEGER Loubert Surface de la maison (m ²): 25.00
--	---

PHASE 0: Preparation du Site			No.	Unit
A: Demolition				
Item			QTY	UNIT
1	Lightweight roof removal	surface du plan =		m ²
2	Slab roof removal	surface du plan =		m ²
3	Demolition of walls and columns	surface des murs =		m ²
4	Floor slab removal	surface du plan =		m ²
5	Foundation removal	longuer des murs =		m
B: Deblaiement du site				
1	Demolition clearance	surface du plan =		m ²
2	Trash clearance	surface du site =		m ²
3	Removal of trees (keep if possible), shrubs, and grass	surface en herbe =		m ²

PHASE 1: Foundation			No.	Unit
A: Foundation				
1	Strip footing	Longeur=		m
2	Isolated column footing	Nombre=	9	
3	Stone masonry foundation	Longeur=	27.5	m
4	Mass concrete foundation walls	Longeur=		m
B: Chainage Inferieur				
1	20cm x 15cm Plinth beam (1:2:4)	Longeur=	27.5	m
2	25cm x 20cm Plinth beam (1:2:4)	Longeur=		m
3	30cm x 20cm Plinth beam (1:2:4)	Longeur=		m

PHASE 2: Murs, Colonnes, Chainages				No.	Unit
A: Walls					
1	15cm blocks	surface des murs =		m2	
2	20 cm blocks	surface des murs =	62.2	m2	
B: Colonnes en Beton					
0	Number of columns	Nombre=	9		
1	15cm x 15cm Columns (1:2:4)	Longeur=		m	
2	20cm x 20cm Columns (1:2:4)	Longeur=	4.5	m	
3	25cm x 25cm Columns (1:2:4)	Longeur=		m	
C: Chainage Intermediare					
1	15cm x 10cm Intermediate beam (1:2:4)	Longeur=		m	
2	20cm x 10cm Intermediate beam (1:2:4)	Longeur=	24.3	m	
D: Ouvertures					
1	Doors	Nombre=	4		
	Height (up to the ring beam)	Longeur=	2.5	m	
	Sum of door widths	Largeur=	3.2	m	
2	Windows	Nombre=	4		
	Sum of window heights	Longeur=	5.2	m	
	Sum of window widths	Largeur=	3.3	m	
E: Chainage Superieur					
1	20cm x 15cm Ring beam (1:2:4)	Longeur=	27.5	m	
2	25cm x 20cm Ring beam (1:2:4)	Longeur=		m	
3	30cm x 20cm Ring beam (1:2:4)	Longeur=		m	

PHASE 3: Toiture				No.	Unit
A: Toiture Lourde					
1	20cm Slab roof	surface du plan =	25	m2	
B: Toiture Legere					
	Length perpendicular to slope	surface du plan =	0.00001	m	
1	Lightweight roof with trusses and sleepers	surface du plan =		m2	
2	Lightweight roof with rafters and sleepers	surface du plan =		m2	
3	Lightweight roof with rafters	surface du plan =	0.00001	m2	

PHASE 4: Crepissage, Parquet, et Finition				No.	Unit
A: Crepissage					
1	10mm Plaster (1:5)	surface des murs =	149.4	m2	
2	15mm Plaster (1:5)	surface des murs =		m2	
3	20mm Plaster (1:5)	surface des murs =		m2	
B: Dalle de Plancher					
1	5cm Floor slab (1:3:6)	surface des murs =	25	m2	
2	10cm Floor slab (1:3:6)	surface des murs =		m2	
C: Peinture					
1	Paint	surface des murs =	149.4	m2	
D: Portes/Fenetres					
1	Windows	Nombre=	4		
2	Iron window grilles	Nombre=	4		
3	Venilation blocks	Nombre=			
4	Doors	Nombre=	4		



Bill of Quantities -- New Confined Masonry Construction

Building Address: CVM0047A										Date: 20-Feb-2012								
Storey: CVM0047A										Engineer: LEGER Loubert								
					INSTALLMENT 1: preparation & Foundation			INSTALLMENT 2: Walls up to the roof			INSTALLMENT 3: Roof & Finish			INSTSALLMENT 3 Holdback / Add'l Req			TOTAL	
No	Item	Unit Price	Unit		Total	Total Price		Total	Total Price		Total	Total Price		Total	Total Price		Total	Total Price
1	Cement	\$7.50	bag		32	\$240.00		28	\$210.00		33	\$247.50		\$0.00	\$0.00		93	\$697.50
2	River Sand - washed	\$25.00	m3		3	\$75.00		0	\$0.00		0	\$0.00		\$0.00	\$0.00		3	\$75.00
3	River Sand	\$19.00	m3		0	\$0.00		2	\$38.00		0	\$0.00		\$0.00	\$0.00		2	\$38.00
4	White Sand	\$20.00	m3		1	\$20.00		2	\$40.00		4	\$80.00		\$0.00	\$0.00		7	\$140.00
5	Crushed gravel	\$23.00	m3		2	\$46.00		3	\$69.00		3	\$69.00		\$0.00	\$0.00		8	\$184.00
6	Pea gravel	\$13.00	m3		0	\$0.00		0	\$0.00		0	\$0.00		\$0.00	\$0.00		0	\$0.00
7	River rock	\$21.00	m3		5	\$105.00		0	\$0.00		0	\$0.00		\$0.00	\$0.00		5	\$105.00
8	Limestone	\$20.00	m3		0	\$0.00		0	\$0.00		0	\$0.00		\$0.00	\$0.00		0	\$0.00
9	30cm Block	\$1.13	each		0	\$0.00		0	\$0.00		0	\$0.00		\$0.00	\$0.00		0	\$0.00
10	20cm Block	\$0.80	each		0	\$0.00		698	\$558.40		0	\$0.00		\$0.00	\$0.00		698	\$558.40
11	15cm Block	\$0.65	each		0	\$0.00		0	\$0.00		0	\$0.00		\$0.00	\$0.00		0	\$0.00
12	12cm Block	\$0.45	each		0	\$0.00		0	\$0.00		209	\$94.05		\$0.00	\$0.00		209	\$94.05
13	10cm Block	\$0.40	each		0	\$0.00		0	\$0.00		0	\$0.00		\$0.00	\$0.00		0	\$0.00
14	Cement brick (6x10x20)	\$32.00	each		0	\$0.00		0	\$0.00		0	\$0.00		\$0.00	\$0.00		0	\$0.00
15	Ventilation Blocks	\$0.80	each		0	\$0.00		0	\$0.00		36	\$28.80		\$0.00	\$0.00		36	\$28.80
16	#7 Bars	\$6.50	m		0	\$0.00		0	\$0.00		0	\$0.00		\$0.00	\$0.00		0	\$0.00
17	#6 Bars	\$5.25	m		0	\$0.00		0	\$0.00		0	\$0.00		\$0.00	\$0.00		0	\$0.00
18	#5 Bars	\$3.30	m		0	\$0.00		0	\$0.00		0	\$0.00		\$0.00	\$0.00		0	\$0.00
19	#4 Bars	\$1.11	m		22	\$24.42		304	\$337.44		0	\$0.00		\$0.00	\$0.00		326	\$361.86
20	#3 Bars	\$0.77	m		116	\$89.32		60	\$46.20		300	\$231.00		\$0.00	\$0.00		476	\$366.52
21	#2 Bars	\$0.33	m		110	\$36.30		356	\$117.48		30	\$9.90		\$0.00	\$0.00		496	\$163.68
22	Binding Wire	\$1.40	lb		0	\$0.00		0	\$0.00		0	\$0.00		\$0.00	\$0.00		0	\$0.00
23	1x4 Lumber	\$0.60	m		0	\$0.00		0	\$0.00		0	\$0.00		\$0.00	\$0.00		0	\$0.00
24	1x6 Lumber	\$0.70	m		0	\$0.00		0	\$0.00		0	\$0.00		\$0.00	\$0.00		0	\$0.00
25	1x8 S4S Lumber	\$0.90	m		0	\$0.00		0	\$0.00		0	\$0.00		\$0.00	\$0.00		0	\$0.00
26	1x8 RS Lumber	\$0.80	m		0	\$0.00		0	\$0.00		0	\$0.00		\$0.00	\$0.00		0	\$0.00
27	1x12 Lumber	\$1.55	m		0	\$0.00		0	\$0.00		0	\$0.00		\$0.00	\$0.00		0	\$0.00
28	2x2 Lumber	\$0.63	m		0	\$0.00		0	\$0.00		0	\$0.00		\$0.00	\$0.00		0	\$0.00
29	2x4 S4S Lumber	\$1.05	m		0	\$0.00		0	\$0.00		0	\$0.00		\$0.00	\$0.00		0	\$0.00
30	2x4 S4S Lumber	\$0.85	m		0	\$0.00		0	\$0.00		3	\$2.55		\$0.00	\$0.00		3	\$2.55
31	Plywood sheet (1/4")	\$13.00	each		0	\$0.00		0	\$0.00		0	\$0.00		\$0.00	\$0.00		0	\$0.00
32	Plywood sheet (1/2")	\$25.00	each		0	\$0.00		0	\$0.00		0	\$0.00		\$0.00	\$0.00		0	\$0.00
33	Plywood sheet (3/4")	\$36.00	each		0	\$0.00		0	\$0.00		0	\$0.00		\$0.00	\$0.00		0	\$0.00
34	Hardboard	\$0.00	each		0	\$0.00		0	\$0.00		0	\$0.00		\$0.00	\$0.00		0	\$0.00
35	Wood Preservative	\$20.00	gallon		0	\$0.00		0	\$0.00		0	\$0.00		\$0.00	\$0.00		0	\$0.00
36	Hurricane Straps	\$1.65	m		0	\$0.00		0	\$0.00		2	\$3.30		\$0.00	\$0.00		2	\$3.30
37	Assorted Nails	\$1.20	lb		0	\$0.00		0	\$0.00		1	\$1.20		\$0.00	\$0.00		1	\$1.20
38	Roofing Nails	\$1.40	lb		0	\$0.00		0	\$0.00		1	\$1.40		\$0.00	\$0.00		1	\$1.40
39	CGI 3'x6'	\$0.00	each		0	\$0.00		0	\$0.00		0	\$0.00		\$0.00	\$0.00		0	\$0.00
40	CGI 3'x8'	\$26.00	each		0	\$0.00		0	\$0.00		0	\$0.00		\$0.00	\$0.00		0	\$0.00

41	CGI 3'x10'	\$28.00	each		0	\$0.00		0	\$0.00		0	\$0.00	\$0.00	\$0.00		0	\$0.00
42	CGI 3'x12'	\$30.00	each		0	\$0.00		0	\$0.00		1	\$30.00	\$0.00	\$0.00		1	\$30.00
43	CGI squared 3'x12'	\$0.00	each		0	\$0.00		0	\$0.00		0	\$0.00	\$0.00	\$0.00		0	\$0.00
44	CGI wave, 28ga	\$5.00	m3		0	\$0.00		0	\$0.00		0	\$0.00	\$0.00	\$0.00		0	\$0.00
45	CGI squared, 28ga	\$0.00	m3		0	\$0.00		0	\$0.00		0	\$0.00	\$0.00	\$0.00		0	\$0.00
46	Ridge Cap	\$5.00	m		0	\$0.00		0	\$0.00		0	\$0.00	\$0.00	\$0.00		0	\$0.00
47	Door 36" x 80"	\$88.00	each		0	\$0.00		0	\$0.00		4	\$352.00	\$0.00	\$0.00		4	\$352.00
48	Door frame 1x6 S4S	\$16.00	each		0	\$0.00		0	\$0.00		0	\$0.00	\$0.00	\$0.00		0	\$0.00
49	Window	\$260.00	each		0	\$0.00		0	\$0.00		4	\$1,040.00	\$0.00	\$0.00		4	\$1,040.00
50	Window Grill	\$45.00	each		0	\$0.00		0	\$0.00		4	\$180.00	\$0.00	\$0.00		4	\$180.00
51	Paint	\$10.00	gallon		0	\$0.00		0	\$0.00		5	\$50.00	\$0.00	\$0.00		5	\$50.00
52	Rented Formwork (boards)	\$0.29	m		0	\$0.00		0	\$0.00		0	\$0.00	\$0.00	\$0.00		0	\$0.00
53	Rented Formwork (plywood)	\$1.68	m2		0	\$0.00		0	\$0.00		0	\$0.00	\$0.00	\$0.00		0	\$0.00
54	Metal Shoring	\$2.50	each		0	\$0.00		0	\$0.00		0	\$0.00	\$0.00	\$0.00		0	\$0.00
55	Labour	\$0.40	% mat's		0	\$0.00		0	\$0.00		0	\$0.00	\$0.00	\$0.00		0	\$0.00
	Cost of Materials					\$636			\$1,417			\$2,421	\$0				\$4,473
	Rental of formwork and shoring					\$0			\$0			\$0	\$0				\$0
	Cost of Labor					\$164			\$608			\$962	\$0				\$1,734
Subtotal						\$800			\$2,025			\$3,383	\$0				\$6,207
20% for unforeseen costs						\$160			\$405			\$677	\$0				\$1,241
Total						\$960			\$2,429			\$4,059	\$0	Grand Total=			\$7,449
Installment Request						\$960			\$2,429			\$4,059	\$0				\$7,449

Remak= Tout pri yo an dola ameriken

Devis Estimatif pour le bloc sanitaire				
Item	Prix unitaire	unite	Quantite	Prix total
	\$ US			\$ US
Evier	67.5		1	67.5
WC	162		1	162
Tuyau 2"	4.6		10	46
tuyau 4"	9.8		2	19.6
Convertisseur (2" en 4")	6		3	18
Coude 2"	2		8	16
Coude 4"	3		4	12
TOTAL				341.1
FINAL				\$ 341.1 US
Fosse septique				700
Grand total				1041.1


\$ US

N:b C'est un devis prix forfaitairement pour une maison a un seul niveau
pour les maisons a deux niveau on va multiplier par 2 le montant final.

Donc Rez de chausse + etage

\$ 1382.2

Homeowner: _____		ID No: _____	GPS: _____	House Type: _____		SITE and SOIL CONDITIONS		
BC Engineer: _____		Address: _____						
Homeowner Phone No: _____		Boss: _____		Boss Phone No: _____				
BUILD THE HOUSE ON A SAFE SITE								
1 DO NOT BUILD ON STEEP SLOPE	Slope?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented
a Less than 10% = OK	< 10%				Yes/No			SOURCE
b Between 10% and 35% - Consult engineer	10 < 35%				Yes/No			MTPTC 8
c More than 35% = Do not build	> 35%				Yes/No			MTPTC 8
2 SETBACKS from STEEP SLOPES	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented
a At least 10m behind house to slope	Yes/No				Yes/No			MTPTC 9
b At least 10m in front of house to slope	Yes/No				Yes/No			MTPTC 9
c No loose debris, falling soil or rock within 10m of house	Yes/No				Yes/No			MTPTC 9
d No existing building within 10m of house upslope of site	Yes/No				Yes/No			Build Change
3 IDENTIFY SEISMIC HAZARD	S₀₅	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented
a Site is located in an area of medium or high seismicity (Yellow or Orange Zone)	1.05g				Yes/No			Build Change
b Site is located in an area of very high seismicity (Red Zone)	1.67g				Yes/No			Build Change
4 SETBACKS from RIVER and DRAINAGE	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented
a At least 10 m from riverbed or drainage channel	Yes/No				Yes/No			MTPTC 13
b If flood zone, finished floor surface 80cm above ground	Yes/No				Yes/No			MTPTC Design Criteria
c If non flood zone, finished floor surface 30cm above ground	Yes/No				Yes/No			MTPTC Design Criteria
5 IDENTIFY SOIL TYPE & SCREEN FOR HAZARDOUS SOILS	Soil?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented
a Soil is Type A (Rock)	Yes/No				Yes/No			Build Change
b Soil is Type B (Compact Gravels and Compact Sands)	Yes/No				Yes/No			Build Change
c Soil is Type C (Non-consolidated Sand, Silt, Soft Clay) and...	Yes/No				Yes/No			Build Change
d If Type C Soil, there exists no risk of liquefaction (asses water table location)	Yes/No							Build Change
e Soil is not expansive clay (use linear shrinkage test)	Yes/No				Yes/No			Build Change
6 SCREENING FOR OBSTACLES ON SITE	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented
a There are no large obstacles that need to be removed (trees, existing walls etc)	Yes/No				Yes/No			Build Change
b The site is not covered in fill material	Yes/No				Yes/No			Build Change
c If no, the fill is less than 30cm deep	Yes/No				Yes/No			Build Change
7 SETBACKS FROM ROADS and BUILDINGS	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented
a Setback at least 2m from road or front boundary	Yes/No				Yes/No			Build Change
b Setback at least 1m from side boundary	Yes/No				Yes/No			Build Change
c Rainwater can flow into drainage	Yes/No				Yes/No			Build Change
d Building constructed at least 4m behind the fence	Yes/No				Yes/No			Build Change
e Septic tank more than 10m from active well	Yes/No				Yes/No			Build Change
f Minimum distance between two buildings = 1.5m	Yes/No				Yes/No			MTPTC 23
Homeowner Signature: _____				Date: _____	Overall Assessment: Meets Minimum Standard?			
					Oui / No			
BC Engineer Signature: _____				Date: _____	Comments:			
BC Team Leader Signature: _____				Date: _____				
BC Manager Signature: _____				Date: _____				

Homeowner: _____		ID No: _____		GPS: _____		House Type: _____		 CONFIGURATION CHECKLIST	
BC Engineer: _____		Address: _____							
Homeowner Phone No: _____		Boss: _____		Boss Phone No: _____					
CONFIGURATION RULES FOR SINGLE and TWO STORY HOMES									
1 PLAN	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented	
a For single storey buildings with lightweight roof, length to width ratio equal to 3 or less	Yes/No				Yes/No				GNA
b For other types of building, length to width ratio equal to 2.5 or less	Yes/No				Yes/No				GNA
c Height to width ratio equal to 1.7 or less	Yes/No				Yes/No				GNA
b Separate irregular shaped buildings(L,U,E)	Yes/No				Yes/No				MTPTC 22
2 ELEVATION	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented	
a Building has not more than 2 storeys	Yes/No				Yes/No				Build Change
b Maximum height of ground floor walls = 2.7m	Yes/No				Yes/No				GNA
c Maximum height of second floor walls = 2.5m	Yes/No				Yes/No				GNA
3 TYPE of FOUNDATION	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented	
a Do not use short columns (use continuous strip foundation)	Yes/No				Yes/No				Build Change
4 MINIMUM SHEAR WALL DENSITY	Complies?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented	
a Only include properly confined walls longer than 1m in shear wall density calculation	Yes/No				Yes/No				Build Change
b Shear wall density complies with Build Change guidelines	Yes/No				Yes/No				Build Change
5 SHEAR WALL LOCATION	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented	
a At least two lines of shear walls in X direction	Yes/No				Yes/No				MTPTC 41
b At least two lines of shear walls in Y direction	Yes/No				Yes/No				MTPTC 41
c Shear walls are symmetrically placed	Yes/No				Yes/No				MTPTC 41
d Shear walls are as far as possible from one another	Yes/No				Yes/No				MTPTC 41
e Shear walls are on exterior of building	Yes/No				Yes/No				MTPTC 41
f Spacing or perpendicular or cross walls does not exceed Build Change guidelines	Yes/No				Yes/No				Build Change
6 TIE COLUMN LOCATION	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented	
a Every corner (L)	Yes/No				Yes/No				MTPTC 41
b Every wall intersection (T)	Yes/No				Yes/No				MTPTC 41
c Every change in the direction of the wall	Yes/No				Yes/No				Build Change
d At both ends of every wall longer than 30cm	Yes/No				Yes/No				Build Change
7 BOND BEAM LOCATION	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented	
a At the foundation (plinth beam)	Yes/No				Yes/No				MTPTC 39
b At the roof level (ring beam)	Yes/No				Yes/No				MTPTC 39
c Intermediate ring beam at sill level	Yes/No				Yes/No				MTPTC 79
8 OPENING SIZE	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented	
a Maximum 1/2 length between to crosswalls	Yes/No				Yes/No				MTPTC 43
b Openings positioned directly under ring beam	Yes/No				Yes/No				Build Change
c Doors reinforced on both sides with 8cm column	Yes/No				Yes/No				MTPTC 81
d Windows reinforced on both sides with 8cm column	Yes/No				Yes/No				MTPTC 81
9 ACCESS and VENTILATION	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented	
a At least two entrances/exits	Yes/No				Yes/No				Build Change
b Entrances on different sides of building	Yes/No				Yes/No				Build Change
c Opening/ventilation greater than 5% of floor area	Yes/No				Yes/No				Build Change
d Opening position based on wind direction	Yes/No				Yes/No				Build Change
e Gable not facing the wind	Yes/No								Build Change
10 TWO STORY CONFIGURATION RULES	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented	
a Do not build buildings with open ground floor	Yes/No				Oui / No				MTPTC 15
b Do not build buildings with overhang	Yes/No				Oui / No				MTPTC 25
c Columns are continuous both floors	Yes/No				Oui / No				MTPTC 25
d Shear walls line up vertically	Yes/No				Oui / No				MTPTC 25, 42
e Openings line up vertically	Yes/No				Oui / No				MTPTC 25, 42
f Do not construct a second floor over a porch, or follow...	Yes/No				Oui / No				MTPTC 17
g Specific connection detailing	Yes/No				Oui / No				Build Change
Homeowner Signature: _____				Date: _____		Overall Assessment: Meets Minimum Standard?			
						Oui / No			
BC Engineer Signature: _____				Date: _____		Comments:			
BC Team Leader Signature: _____				Date: _____					
BC Manager Signature: _____				Date: _____					

Homeowner: _____
 BC Engineer: _____
 Homeowner Phone No: _____

ID No: _____ GPS: _____
 Address: _____
 Boss: _____

House Type: _____



MATERIALS QUALITY CHECKLIST

USE GOOD QUALITY MATERIALS!

1	WATER, SAND and AGGREGATES	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented	
a	Use clean water (not salty)	Yes/No								
b	Use clean river sand	Yes/No				Yes/No				
c	Use crushed/angular gravel for concrete	Yes/No				Yes/No				
d	Maximum gravel size 2cm for concrete	Yes/No				Yes/No				MTPTC 48
2	CEMENT	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented	
a	Use Type 1 for columns, beams and blocks	Yes/No				Yes/No				
b	Store off the ground and out of rain	Yes/No				Yes/No				
3	STEEL	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented	
a	Verify Grade 60 marking (minimum) on bars or...	Yes/No				Yes/No				MTPTC 60
b	Grade 40 for single story buildings with leightweight roofs	Yes/No				Yes/No				
c	Use ribbed bars	Yes/No				Yes/No				
d	Do not use rusty or recycled bars for longitudinal bars	Yes/No				Yes/No				
e	Use at least #3 bars for plinth beam and ring beam	Yes/No				Yes/No				
f	Use at least #4 bars for tie columns and door/window columns	Yes/No				Yes/No				
g	Use at least #2 bars for stirrups	Yes/No				Yes/No				
h	Cut column steel long enough for overlap $\geq \phi 50$	Yes/No				Yes/No				MTPTC 65
i	Store off the ground and out of rain	Yes/No				Yes/No				
4	CONCRETE BLOCKS	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented	
a	Compressive strength of blocks meets design requirements	Yes/No				Yes/No				Build Change
b	Block width equal to, or greater than 15cm	Yes/No				Yes/No				Build Change
c	Use block 15 for concrete slab	Yes/No				Yes/No				MTPTC 90
d	Blocks have been cured for at least seven days	Yes/No				Yes/No				Build Change
e	No cracks or chips or partial blocks unless intact 1/3 of 2/3	Yes/No				Yes/No				Build Change
f	Dimensions don't vary by more than 5mm	Yes/No				Yes/No				Build Change
g	Longitudinal block wall thickness minimum 3.0 cm	Yes/No				Yes/No				MTPTC 37
h	Transverse block wall thickness minimum 2.5 cm	Yes/No				Yes/No				MTPTC 37
	TIMBER and CGI SHEET	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented	
a	Use dimensional lumber	Yes/No				Yes/No				
b	Use Visually Graded Southern Pine #2 or equivalent	Yes/No				Yes/No				
c	Timber used free of knots and splits	Yes/No				Yes/No				
d	Do not use green lumber or lumber with high moisture content	Yes/No				Yes/No				
e	Do not use CCA pressure treated lumber (has green tint)	Yes/No				Yes/No				

Homeowner Signature: _____ Date: _____

BC Engineer Signature: _____ Date: _____


BC Team Leader Signature: _____ Date: _____


BC Manager Signature: _____ Date: _____

Overall Assessment: Meets Minimum Standard?


Oui / No

Comments:

		ID No: _____	GPS: _____	House Type: _____		FOUNDATION CHECKLIST			
Homeowner Phone No: _____		Address: _____							
		Boss: _____							
NG FOUNDATION									
1	SITE LINE OUT and BATTERBOARD	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented
a	Excavation consistent with plan	Yes/No				Yes/No			
b	Batterboard completed	Yes/No				Yes/No			MTPTC 54
c	Excavation lines at right angles	Yes/No				Yes/No			
2	FOUNDATION EXCAVATION DEPTH	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented
a	Depth of foundation excavation (minimum 80 cm)	Yes/No				Yes/No			MTPTC 56
b	Depth of excavation in natural ground (min 50 cm)	Yes/No				Yes/No			MTPTC 56 says min 50 cm in natural ground
3	FOUNDATION MINIMUM WIDTH	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented
	Check soil strength with 12mm rod. If penetration > 6cm, report to BC	Yes/No				Yes/No			
a	HARD (Rock, Gravel) = 40 cm	Yes/No				Yes/No			MTPTC 56
b	MEDIUM (Compacted sand, hard clay) = 50 cm	Yes/No				Yes/No			MTPTC 56
c	SOFT (Loose sand, soft clay) = 70 cm	Yes/No				Yes/No			MTPTC 56
4	FOUNDATION EXCAVATION	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented
a	Remove water from excavation	Yes/No				Yes/No			
b	Remove loose soil from excavation	Yes/No				Yes/No			MTPTC 59
c	Remove any organic debris or tree trunks	Yes/No				Yes/No			MTPTC 59
d	Bottom flat and level	Yes/No				Yes/No			MTPTC 59
e	Last 5cm of soil excavated immediately prior to pouring blinding	Yes/No				Yes/No			Build Change
5	BINDING BASE LAYER	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented
a	Use 5 cm blinding base layer	Yes/No				Yes/No			MTPTC 56, 59
b	Mix 1:4:5	Yes/No				Yes/No			MTPTC 48
c	Use coarse river sand	Yes/No				Yes/No			MTPTC 48
d	Use gravel max 3 cm	Yes/No				Yes/No			MTPTC 48
e	Blinding is well compacted	Yes/No				Yes/No			
6-1	OPTION 1: Large Aggregate Concrete Strip	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented
a	Mix 1:5:5 with 30% stone by volume	Yes/No				Yes/No			MTPTC 48 - cyclopean
b	Use coarse river sand	Yes/No				Yes/No			MTPTC 48 - cyclopean
c	Use gravel max 3 cm	Yes/No				Yes/No			MTPTC 48
d	Use stone max 25 cm	Yes/No				Yes/No			MTPTC 48
e	Wet stones and excavation before pouring concrete	Yes/No				Yes/No			MTPTC 64
f	Maximum depth of concrete poured in one go, less than 90 cm	Yes/No				Yes/No			MTPTC 64
g	Place stones progressively, more than 30 cm from columns	Yes/No				Yes/No			MTPTC 64
h	Scarify top for good contact	Yes/No				Yes/No			Build Change
i	Cure properly	Yes/No				Yes/No			
j	Wait 7 days for footing to harden before pouring plinth beam	Yes/No				Yes/No			
6-2	OPTION 2: Stone Masonry Strip Footing	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented
a	Use cut, angular stones	Yes/No				Yes/No			Build Change
b	Use mix 1:5 for mortar	Yes/No				Yes/No			
c	Fill all gaps between stones with mortar	Yes/No				Yes/No			
d	Use cross stones every 1 m	Yes/No				Yes/No			
e	Scarify top for good contact	Yes/No				Yes/No			
f	Cure properly	Yes/No				Yes/No			
g	Backfill with compacted soil in 10 cm lifts	Yes/No				Yes/No			
6-3	OPTION 3: BLOK 20 Strip Footing (2 story)	Planned?	Date						

Homeowner: _____		ID No: _____	GPS: _____	House Type: _____		REINFORCED CONCRETE	
BC Engineer: _____		Address: _____				CHECKLIST	
Homeowner Phone No: _____		Boss: _____		Boss Phone No: _____			
GOOD QUALITY REINFORCED CONCRETE TIE COLUMNS and BOND BEAMS							
1 PLINTH BEAM and RING BEAM		Planned?	Date	Photo #	Recommendation Made	Done?	Date
a 20 cm wide, 15cm high		Yes/ No				Yes/ No	
b Longitudinal Bars							
1 Four #3 (3/8") longitudinal bars		Yes/ No				Yes/ No	
2 Minimum Strength = Grade 60 or...		Yes/ No					
3 Grade 40 for single story buildings with lightweight roofs		Yes/ No					
5 Type of longitudinal bars RIBBED		Yes/ No				Yes/ No	
c Stirrups							
1 #2 closed stirrups		Yes/ No				Yes/ No	
2 Stirrup hooks bent at 135 degrees		Yes/ No				Yes/ No	
3 Hook length for stirrup minimum 4 cm		Yes/ No				Yes/ No	
4 Cover over steel minimum 2.5 cm		Yes/ No				Yes/ No	
2 TIE COLUMN		Planned?	Date	Photo #	Recommendation Made	Done?	Date
a Longitudinal Bars						Yes/ No	
1 Minimum section 150mm by 150mm		Yes/ No				Yes/ No	
2 Tie columns used at locations per configuration		Yes/ No				Yes/ No	
3 Four #4 longitudinal bars		Yes/ No				Yes/ No	
4 Type of longitudinal bars RIBBED		Yes/ No				Yes/ No	
b Column Ties							
1 #2 closed ties		Yes/ No				Yes/ No	
2 Stirrup hooks bent at 135 degrees		Yes/ No				Yes/ No	
3 Hook length for stirrup minimum 4 cm		Yes/ No				Yes/ No	
4 Cover over steel minimum 2.5 cm		Yes/ No				Yes/ No	
3 BAR ASSEMBLY		Planned?	Date	Photo #	Recommendation Made	Done?	Date
a BEAM STIRRUPS and COLUMN TIES							
1 Stirrup spacing maximum 20cm		Yes/ No				Yes/ No	
2 Stirrups closely spaced (10cm) near all beam-column joints		Yes/ No				Yes/ No	
3 Stirrup hooks rotated		Yes/ No				Yes/ No	
4 Stirrups tied to longitudinal bars with binding wire		Yes/ No				Yes/ No	
b JOINT DETAILING		Yes/ No					
1 Minimum lap length = 50Ø (50cm for #3 bars, 60cm for #4 bars)		Yes/ No				Yes/ No	
2 Apply one of overlap detailing options		Yes/ No				Yes/ No	
3 Use extra L or T bars only if bars not cut properly		Yes/ No				Yes/ No	
4 All bent bars at corners and T-junctions bent at 90 degrees		Yes/ No				Yes/ No	
5 Laps tied with binding wire		Yes/ No				Yes/ No	
4 FORMWORK and CONCRETE SPACER		Planned?	Date	Photo #	Recommendation Made	Done?	Date
a Formwork is good quality (not warped)		Yes/ No				Yes/ No	
b Use wood spacer to maintain distance between forms		Yes/ No				Yes/ No	
c Space between steel and formwork minimum 3 cm		Yes/ No				Yes/ No	
d Use concrete spacers every 3-4 stirrups or as req to maintain cover		Yes/ No				Yes/ No	
e Maximum size for concrete spacer is 3 cm x 3 cm x 3 cm		Yes/ No				Yes/ No	
f Use binding wire in concrete spacer		Yes/ No				Yes/ No	
g Check formwork for beams is level		Yes/ No				Yes/ No	
h Check formwork for columns is plumb		Yes/ No				Yes/ No	
5 CONCRETE MIXING		Planned?	Date	Photo #	Recommendation Made	Done?	Date
a Use Mix 1:2:4		Yes/ No				Yes/ No	
b Use crushed, angular gravel		Yes/ No				Yes/ No	
c Use gravel with size less than 2 cm		Yes/ No				Yes/ No	
d Use clean, washed river sand		Yes/ No				Yes/ No	
e Use clean water (not salty or muddy)		Yes/ No				Yes/ No	
f Use Type 1 Cement		Yes/ No				Yes/ No	
g Mix a clean, concrete or asphalt surface, not on dirt		Yes/ No				Yes/ No	
h Using a mechanical mixer is best		Yes/ No				Yes/ No	
i Batch out gravel, then sand, then cement		Yes/ No				Yes/ No	
j Turn over 3 times or until color is uniform		Yes/ No				Yes/ No	
k Do not use too much water! Add water slowly		Yes/ No				Yes/ No	
l Use slump test or hand test for water content		Yes/ No				Yes/ No	

6	CONCRETE POURING and CURING	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented
a	Wet formwork and steel before pouring concrete	Yes/ No				Yes/ No			
b	Use concrete within 90 minutes of mixing with water if from factory	Yes/ No				Yes/ No			
c	if manually use in less than 30 minutes	Yes/ No				Yes/ No			
d	Ensure toothed areas of columns completely filled with concrete	Yes/ No				Yes/ No			
e	Use rod to consolidate concrete around reinforcement	Yes/ No				Yes/ No			
f	Complete entire beam within one day	Yes/ No				Yes/ No			
g	If concrete pouring must stop, use a diagonal joint with stones	Yes/ No				Yes/ No			MTPTC 68
h	Have plastic on standby, cover if it rains	Yes/ No				Oui / No			
i	Scarify top for good contact	Yes/ No				Oui / No			MTPTC 68
j	Cure for minimum 3 days by sprinkling clean water,	Yes/ No				Oui / No			
k	cure 5 times perday : MORNING, At, 8 , 10	Yes/ No				Oui / No			
l	AFTERNOON: 12, 14, 16, pour water slowly	Yes/ No				Oui / No			
7	CONCRETE INSPECTION	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented
a	For slabs, remove formwork after 14 full days	Yes/ No				Oui / No			
b	If steel showing, demolish and rebuild	Yes/ No				Oui / No			
c	Remove the border of slab and/or beams after 48 hours	Yes/ No				Oui / No			
d	Any cracks larger than 3 mm	Yes/ No				Oui / No			
e	Many cracks in one location	Yes/ No				Oui / No			
f	Diagonal or vertical cracks anywhere in the beam	Yes/ No				Oui / No			
g	If any of the above exist, demolish concrete and repour	Yes/ No				Oui / No			
8	EMBEDDED STRAPS for RING BEAM - TRUSS CONNECTION	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented
a	Straps are placed according to the plan	Yes/ No				Oui / No			
b	Length of straps above ring beam adequate	Yes/ No				Oui / No			
c	Straps are hooked below bottom of stirrups	Yes/ No				Oui / No			
d	Straps are tied to ring beam reinforcement with binding wire	Yes/ No				Oui / No			
Homeowner Signature: _____						Date: _____		Overall Assessment: Meets Minimum Standard?	
						Oui / No			
BC Engineer Signature: _____						Date: _____		Comments:	
BC Team Leader Signature: _____						Date: _____			
BC Manager Signature: _____						Date: _____			

Homeowner: _____		ID No: _____	GPS: _____	House Type: _____		STRONG WALL		
BC Engineer: _____		Address: _____				CHECKLIST		
Homeowner Phone No: _____		Boss: _____		Boss Phone No: _____				
BUILD A STRONG MASONRY WALL								
1	MORTAR MIXING	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #
a	Use mortar 1:3 mix	Yes / No				Yes / No		
b	Use clean, fine river sand	Yes / No				Yes / No		
c	Use clean water (not salty or muddy)	Yes / No				Yes / No		
d	Use Type 1 Cement	Yes / No				Yes / No		
e	Mix a clean, concrete or asphalt surface, not on dirt	Yes / No				Yes / No		
f	Using a mechanical mixer is best	Yes / No				Yes / No		
g	Batch out gravel, then sand, then cement	Yes / No				Yes / No		
h	Turn over 3 times or until color is uniform	Yes / No				Yes / No		
i	Do not use too much water! Add water slowly	Yes / No				Yes / No		
2	WALL MASONRY	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #
a	Wet concrete blocks prior to use	Yes / No				Yes / No		
b	Use a line and deadman	Yes / No				Yes / No		
c	Prop up column steel so it remains plumb	Yes / No				Yes / No		
d	Use 1/3 bonding, chase the bond before starting	Yes / No				Yes / No		
e	Vibrate block	Yes / No				Yes / No		
f	Tooth wall at tie columns and openings by 1/3 block	Yes / No				Yes / No		
h	Maintain minimum 2.5 cm between block and column tie	Yes / No				Yes / No		
i	Maximum bed joint thickness 12.5mm	Yes / No				Yes / No		
k	Minimum head joint thickness 12.5mm	Yes / No				Yes / No		
j	Maximum variation in mortar joint size 4mm	Yes / No				Yes / No		
l	Prepare a reasonable amount of mortar to avoid wetting from time to time	Yes / No				Yes / No		
m	Pour the beam in one time	Yes / No				Yes / No		
n	Check the wall is plumb	Yes / No				Yes / No		
o	Maximum variation from plumb 2cm over 3m height	Yes / No				Yes / No		
p	Pour the column after completing min 1 m, max 1.2m height of wall	Yes / No				Yes / No		
q	Cure the wall 3 times per day for 3 days	Yes / No				Yes / No		
r	Check the top of the wall is level	Yes / No				Yes / No		
3	INTERMEDIATE RING BEAM	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #
a	Directly below window level, 8cm high, 15cm wide	Yes / No				Yes / No		
b	Use two #3 (3/8") bars	Yes / No				Yes / No		
c	Use #2 (1/4") stirrups spaced at 20 cm	Yes / No				Yes / No		
d	Apply one of overlap detailing options	Yes / No				Yes / No		
4	OPENING REINFORCEMENT	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #
a	Form 8x15cm column either side of openings	Yes / No				Yes / No		
b	Use 2 #4 (12mm) vertical bars	Yes / No				Yes / No		
c	Use #2 (1/4") stirrups at 15 cm spacing	Yes / No				Yes / No		
d	Tie reinforcement for doors into foundation beam	Yes / No				Yes / No		
e	Grout reinforcement for windows into blocks 50cm below sill beam	Yes / No				Yes / No		
f	Tie reinforcement into ring beam	Yes / No				Yes / No		
g	Use at least 40 cm overlap	Yes / No				Yes / No		
h	Fill space above door opening with lightweight material, or...	Yes / No				Yes / No		
i	Cast concrete lintel monolithic with ring beam	Yes / No				Yes / No		
j	Reinforce concrete lintel according to standard detail	Yes / No				Yes / No		
5	ELECTRICAL and PLUMBING	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #
a	Never break the wall to put electrical or plumbing	Yes / No				Yes / No		
b	Leave free space for utility piping	Yes / No				Yes / No		
6	POURING COLUMN CONCRETE	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #
a	Clean out the bottom before placing formwork	Yes / No				Yes / No		
b	Pour column in one day to the same height as wall	Yes / No				Yes / No		
c	Pour columns after minimum 1m wall built	Yes / No				Yes / No		
d	Distance between formwork and steel bars 25mm minimum	Yes / No				Yes / No		
e	Ensure toothed areas of columns completely filled with concrete	Yes / No				Yes / No		
7	FINISH THE WALL WITH PLASTER	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #
a	10mm plaster on both sides of walls	Yes / No				Yes / No		
b	Use clean, fine river sand	Yes / No				Yes / No		
c	Use clean water (not salty or muddy)	Yes / No				Yes / No		
Homeowner Signature: _____				Date: _____	Overall Assessment: Meets Minimum Standard?			
					Yes / No			
BC Engineer Signature: _____				Date: _____	Comments:			
BC Team Leader Signature: _____				Date: _____				
BC Manager Signature: _____				Date: _____				

Homeowner: _____
BC Engineer: _____

ID No: _____ GPS: _____
Address: _____

House Type: _____



STRONG WALL CHECKLIST

BUILD A STRONG ROOF

1	ROOF TRUSSES, BRACING and PURLINS	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented
a	Dimension of Tweezers 5 x 10 cm	Yes / No				Yes / No			
b	Dimension of Purlin 5 x 7 cm	Yes / No				Yes / No			
c	Dimension of Bracing 5 x 10 cm	Yes / No				Yes / No			
d	Assemble truss on the ground or on the walls	Yes / No				Yes / No			
e	Fix each joint with a bolt per drawing	Yes / No				Yes / No			
f	Use bolt diameter	Yes / No				Yes / No			
g	No. of bolts in truss	Yes / No				Yes / No			
h	Number of bolt at bint joint 8 bh	Yes / No				Yes / No			
i	Check nuts are finger tight	Yes / No				Yes / No			
j	Check nuts are flush with the surface of the timber	Yes / No				Yes / No			
k	Use 4 inch nails for structural connections	Yes / No				Yes / No			
l	Use 3 inch nails for purlin connections	Yes / No				Yes / No			
m	Remove and replace all shiners - exposed nails	Yes / No				Yes / No			
n	Residu all of the surface of timber (Class (II)	Yes / No				Yes / No			
o	Use ventilation in papan gable	Yes / No				Yes / No			
2	FASCIA BOARD AND CGI SHEET	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented
a	Put fascia board vertical	Yes / No				Yes / No			
b	Use 3" nails for fascia board	Yes / No				Yes / No			
c	Start CGI sheet from the bottom	Yes / No				Yes / No			
d	Nail at purlin	Yes / No				Yes / No			
e	Use special nails for CGI sheets	Yes / No				Yes / No			
f	Nail CGI at every 2 waves	Yes / No				Yes / No			
h	Overlap every side 15 cm	Yes / No				Yes / No			
i	Put GI ridge sheet at the top	Yes / No				Yes / No			
k	Check for leaks and repair with glue	Yes / No				Yes / No			

Homeowner Signature: _____

Date: _____

BC Engineer Signature: _____

Date: _____

BC Team Leader Signature: _____

Date: _____

BC Manager Signature: _____

Date: _____

Overall Assessment: Meets Minimum Standard?

Yes / No

Comments: