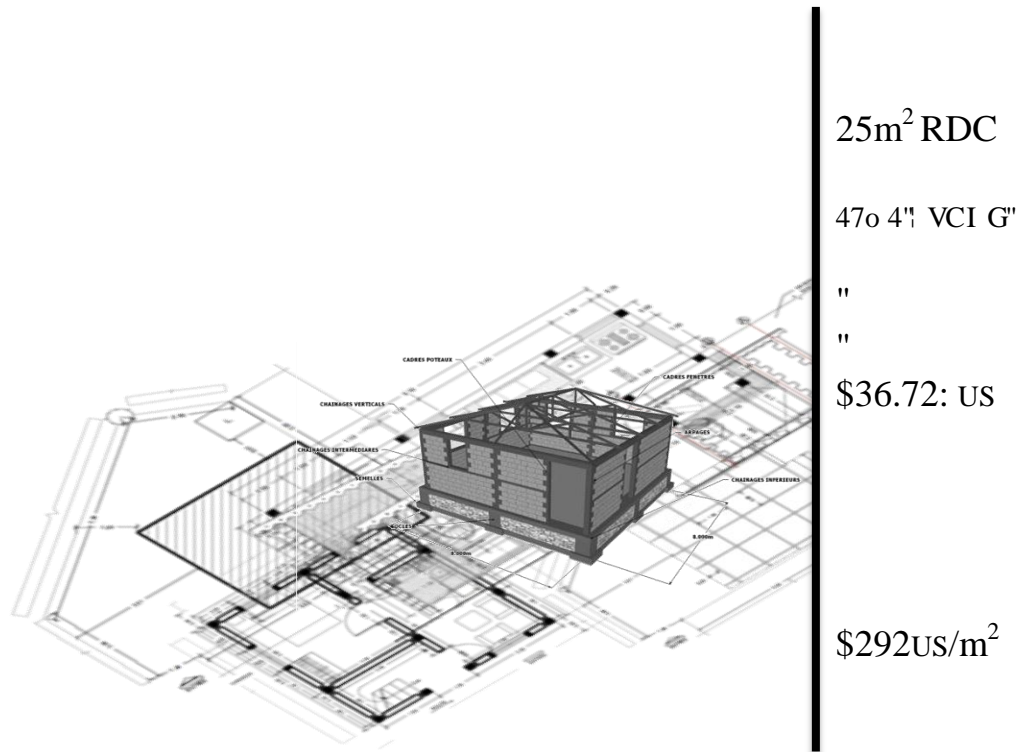


NOUVELLE CONSTRUCTION

MAISON IV



MAISON AVEC 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

Gravity Live Loads

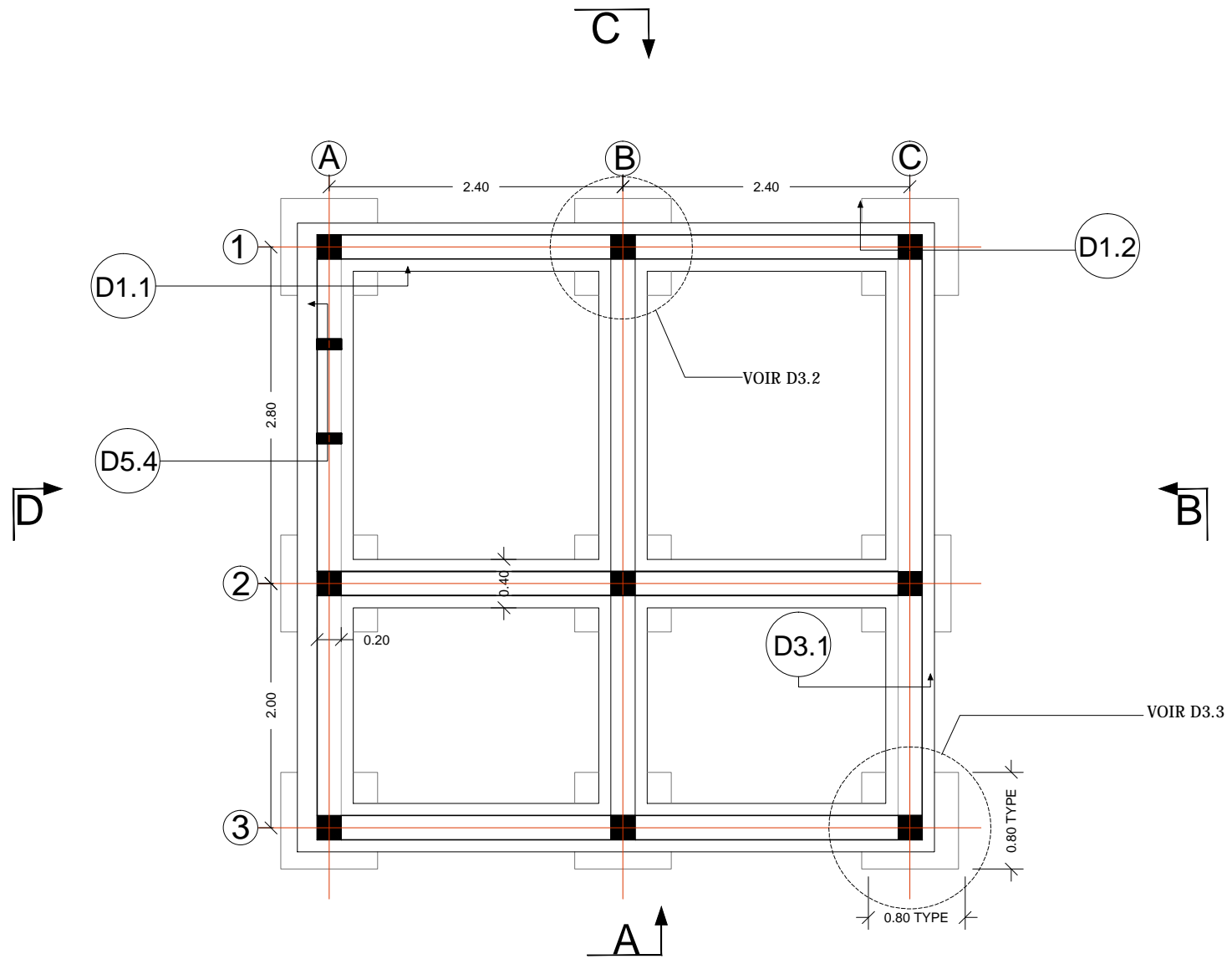
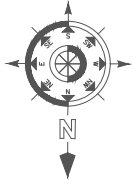
Concrete Slabs: 2.5kN/m²
Lightweight Roofs: 1.0kN/m²

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 _{M_s} = 1.590	

Wind Loads

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



PLAN D'IMPLANTATION ET DES FONDATIONS
Ech.:1/50

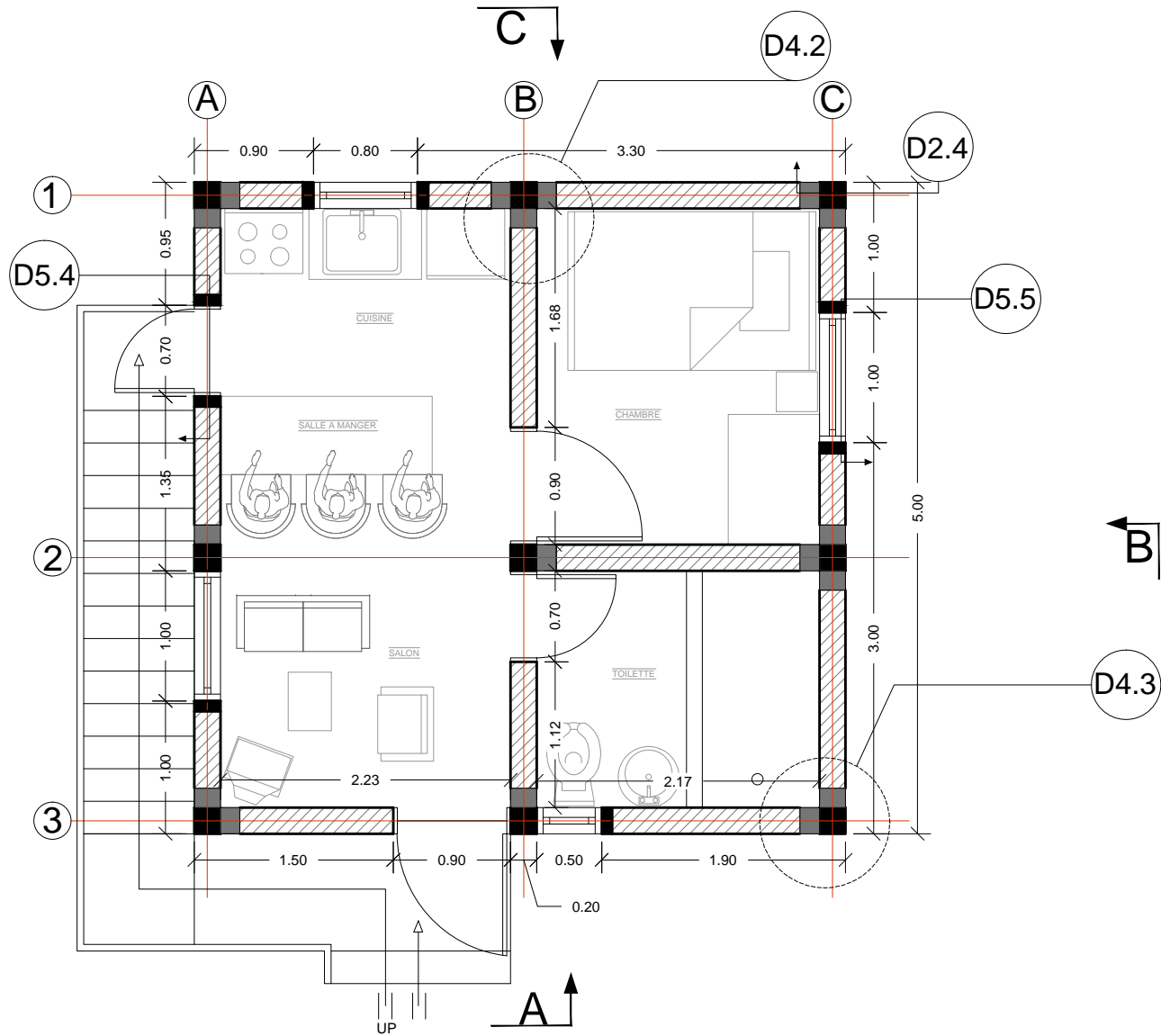
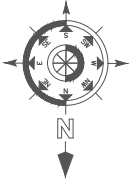
MAISON IV

PLAN D'IMPLANTATION ET DES FONDATIONS

NOTE:

DATE:16 FÉVRIER 2012

ECH.:1/50



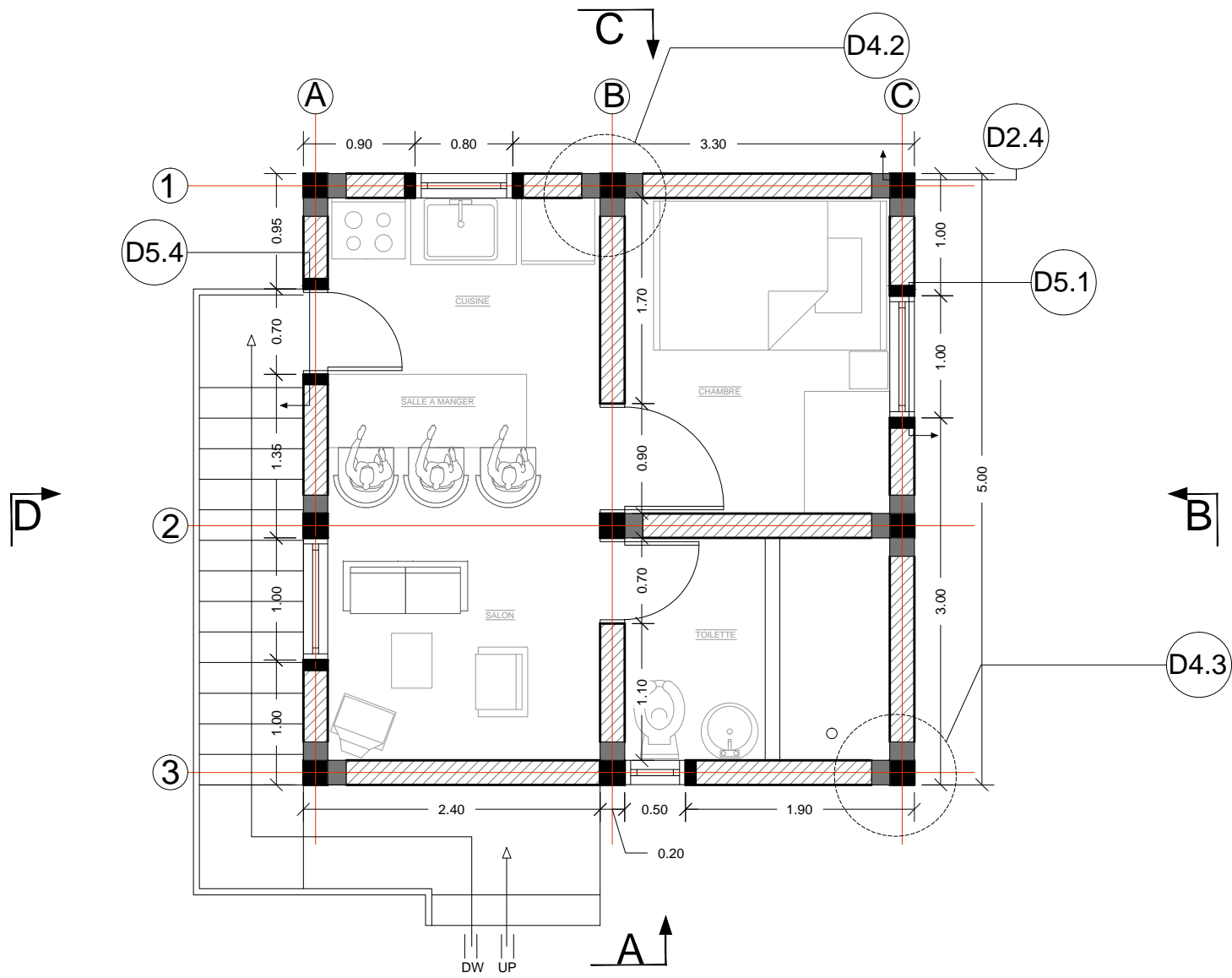
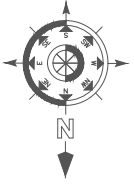
PLAN D'AMENAGEMENT ET DE DISTRIBUTION RDC
 ECH.:1/50

MAISON IV
 PLAN D'AMENAGEMENT ET DE DISTRIBUTION RDC

NOTE:

DATE:16 FÉVRIER 2012

ECH.:1/50



PLAN D'AMENAGEMENT ET DE DISTRIBUTION ETAGE
 ECH.:1/50

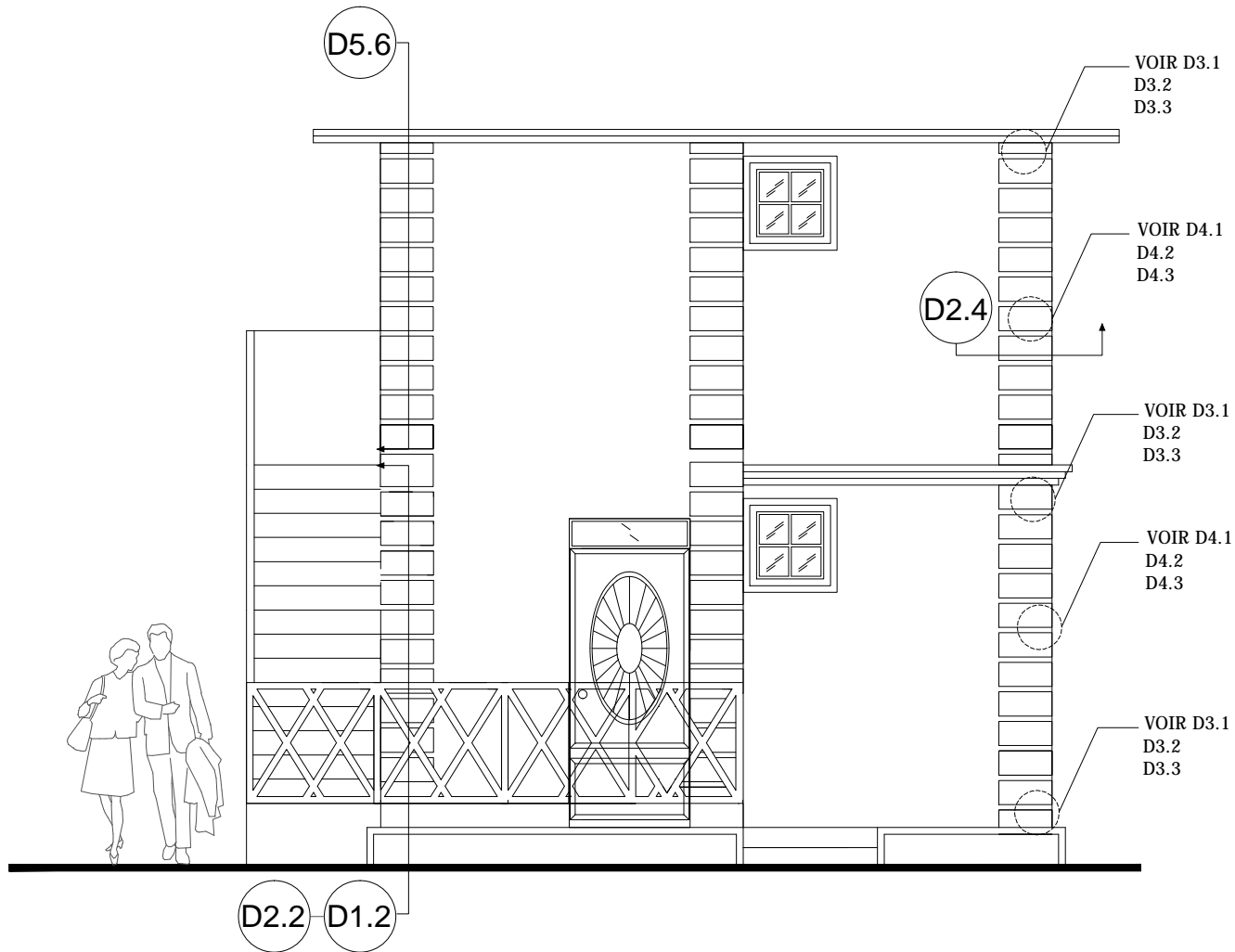
MAISON IV

PLAN D'AMENAGEMENT ET DE DISTRIBUTION ETAGE

NOTE:

DATE:16 FÉVRIER 2012

ECH.:1/50



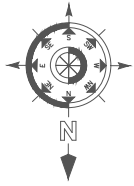
FAÇADE A
Ech.:1/50

MAISON IV
FACADE

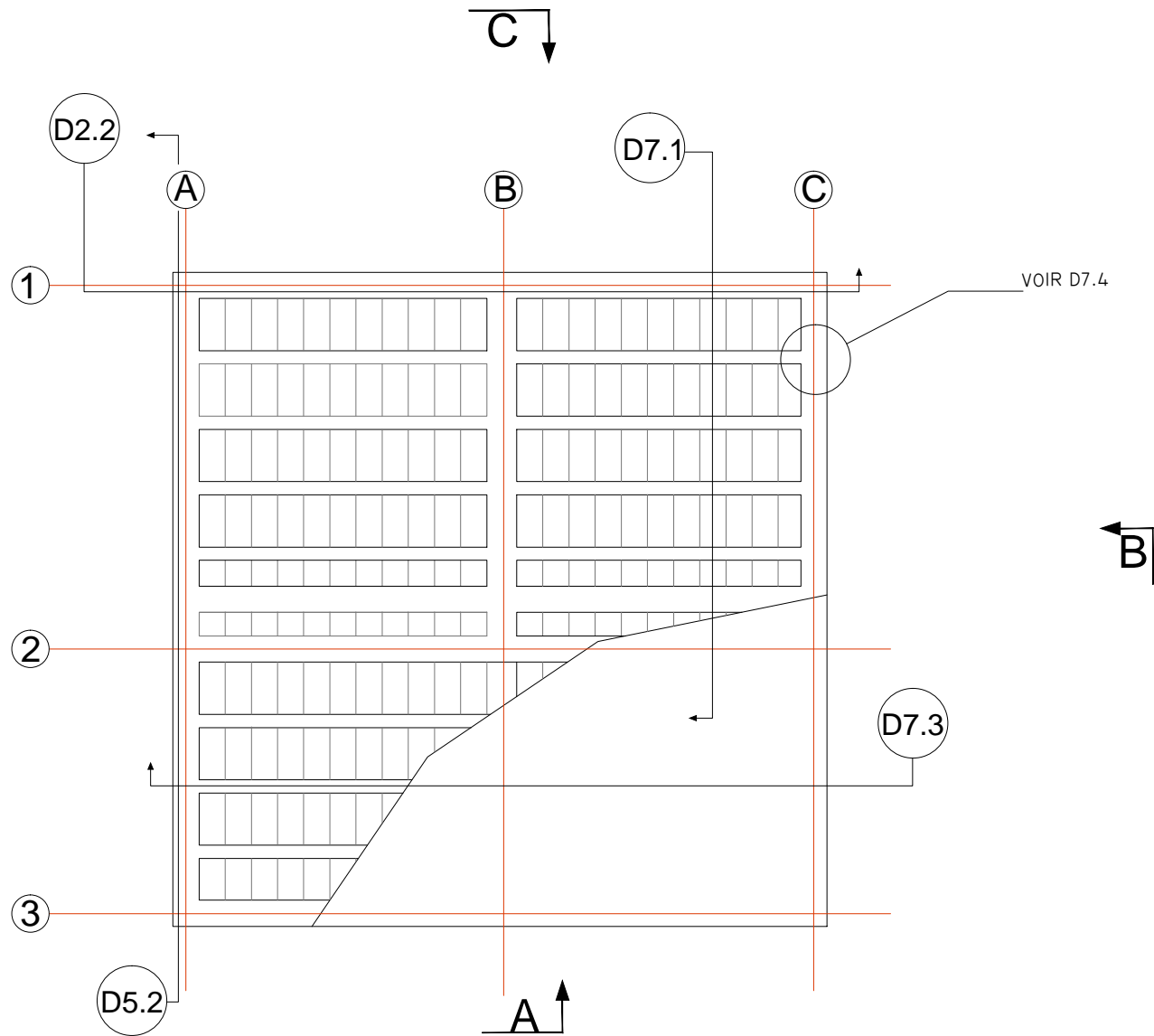
NOTE:

DATE:16 FÉVRIER 2012

ECH.:1/50



D



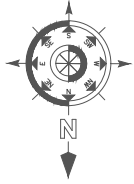
PLAN DE TOITURE DALLE
Ech.:1/50

MAISON IV
PLAN DE TOITURE DALLE

NOTE:

DATE:16 FÉVRIER 2012

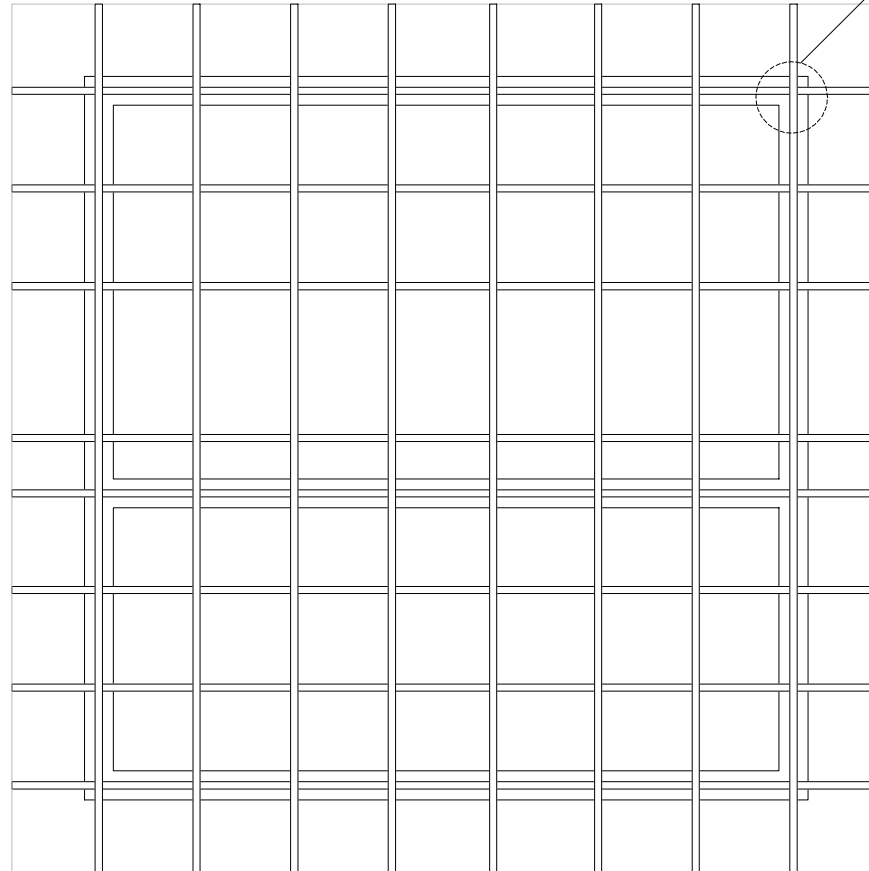
ECH.:1/50



C ↓

Distances maximums lattes
(1.00m)

VOIR: D8.6



Distances maximums Chevrans
(0.65m)

D →

B ←

A ↑

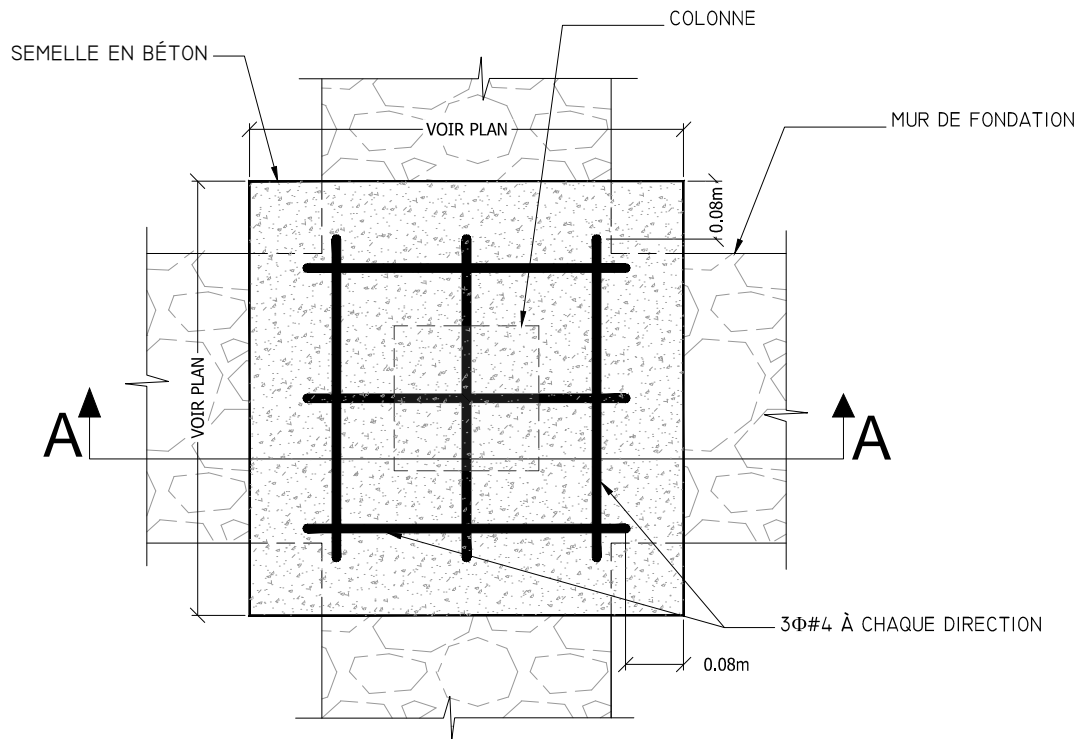
PLAN DE TOITURE TÔLE
Ech.:1/50

MAISON IV
PLAN DE TOITURE TÔLE

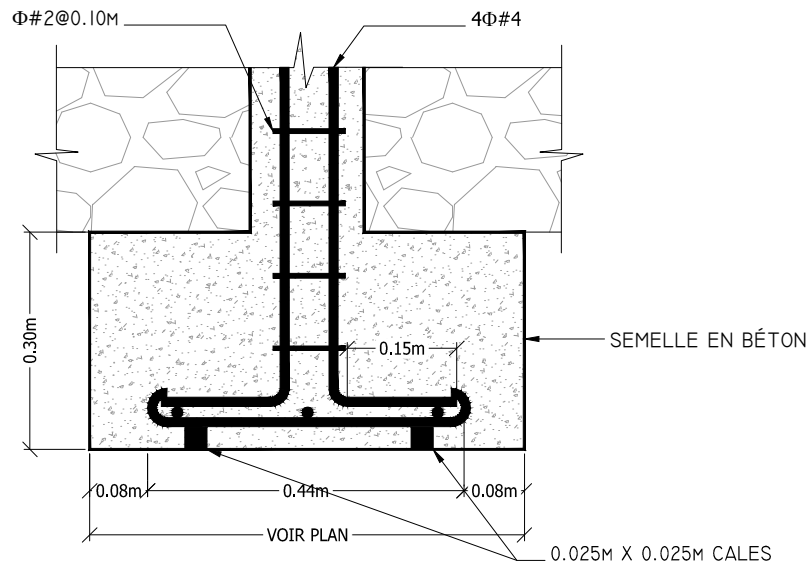
NOTE:

DATE:16 FÉVRIER 2012

ECH.:1/50



○ SEMELLE DE BÉTON PLAN
ÉCH.: 1/20



○ SEMELLE DE BÉTON COUPE A-A
ÉCH.: 1/20



DÉTAILS SEMELLE

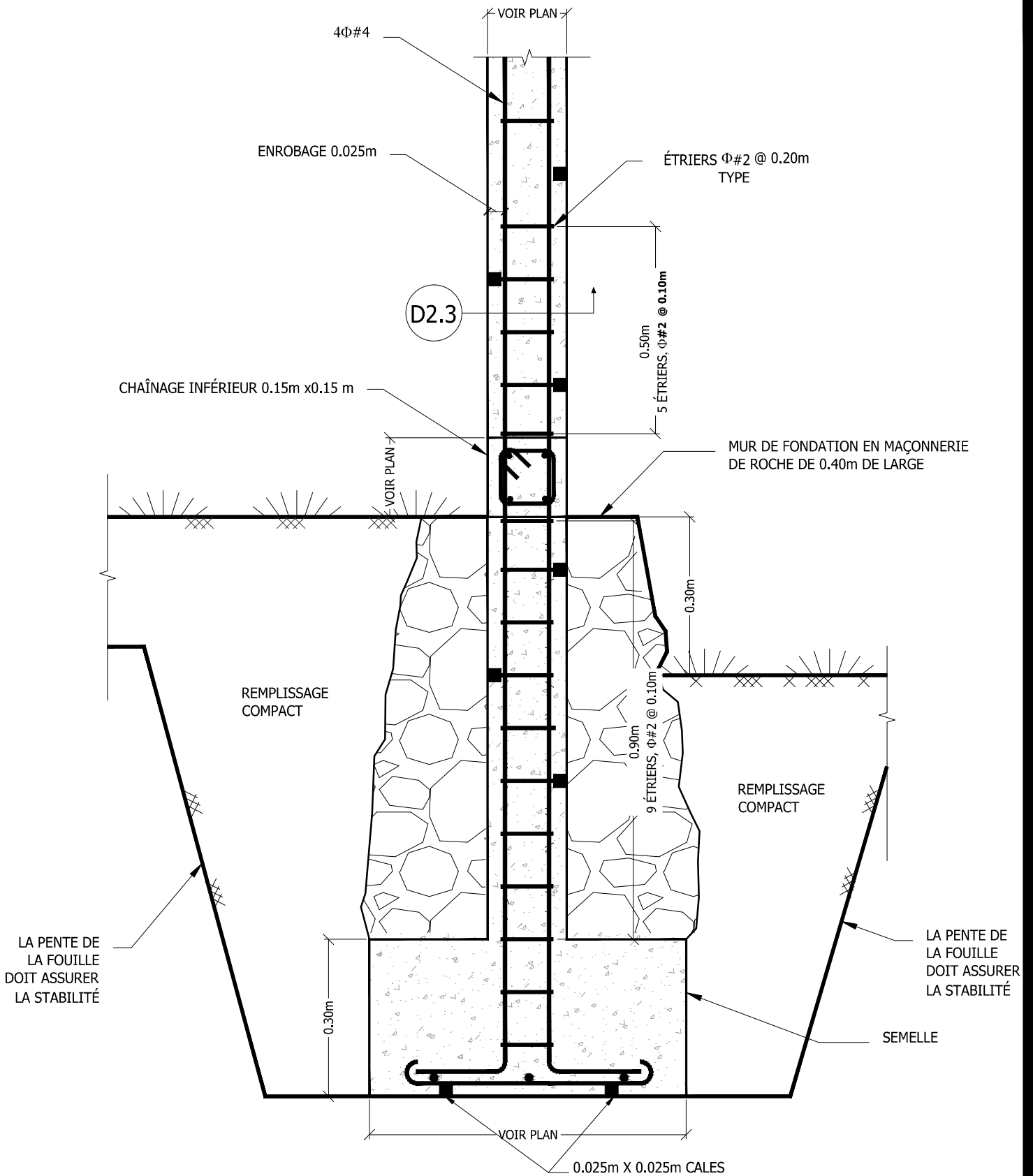
CROIX ROUGE AMÉRICAINE

PROJET: NOUVELLE CONSTRUCTION

ÉCH.: 1/20

DATE: 8 FÉVRIER 2012

D1.1



COUPE DES FONDATIONS À TRAVERS LA COLONNE

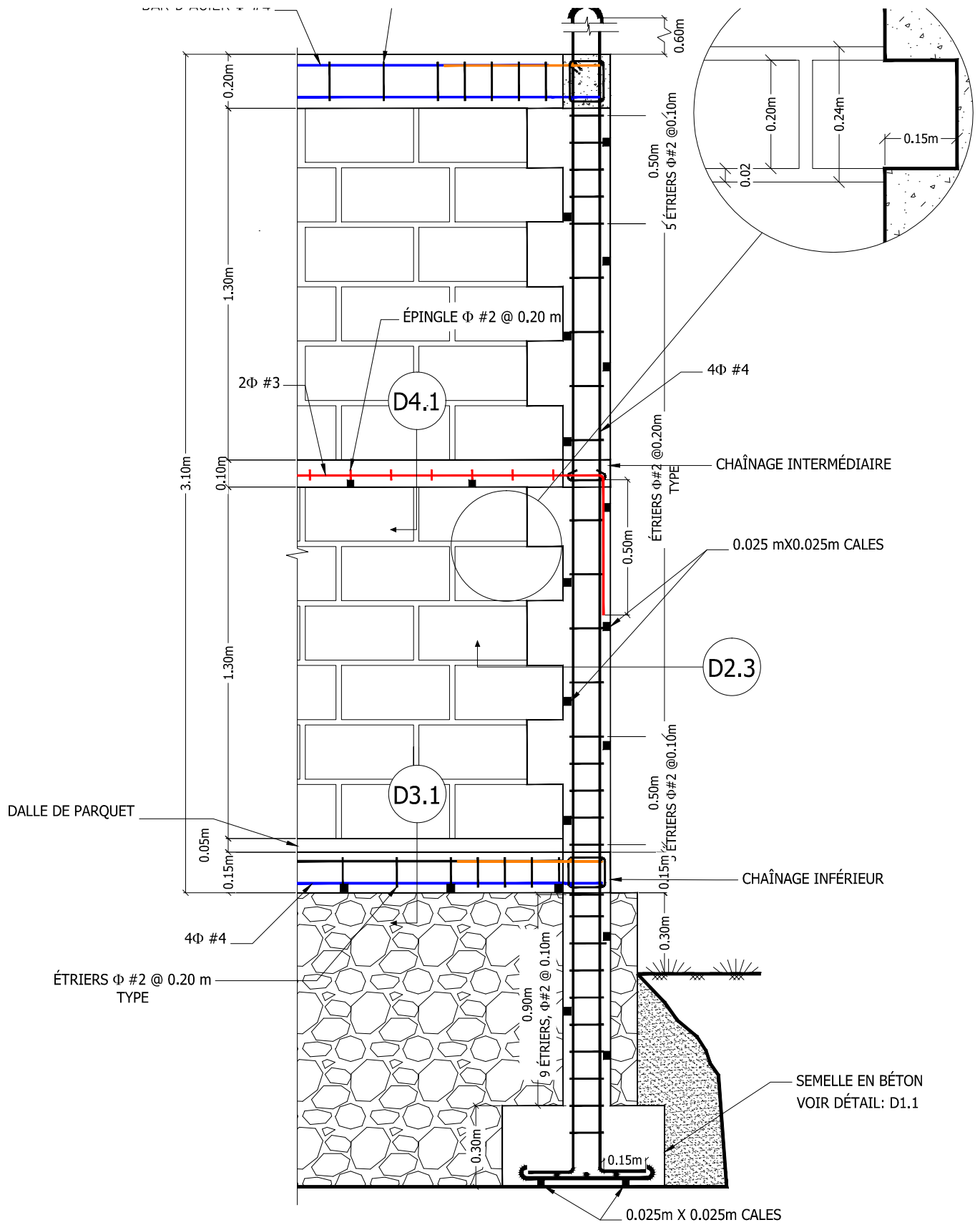
CROIX ROUGE AMÉRICAINE

PROJET: NOUVELLE CONSTRUCTION

ÉCH.: 1/10

DATE: 8 FÉVRIER 2012

D1.2



COUPE À TRAVERS COLONNE ET CHÂINAGES DALLE

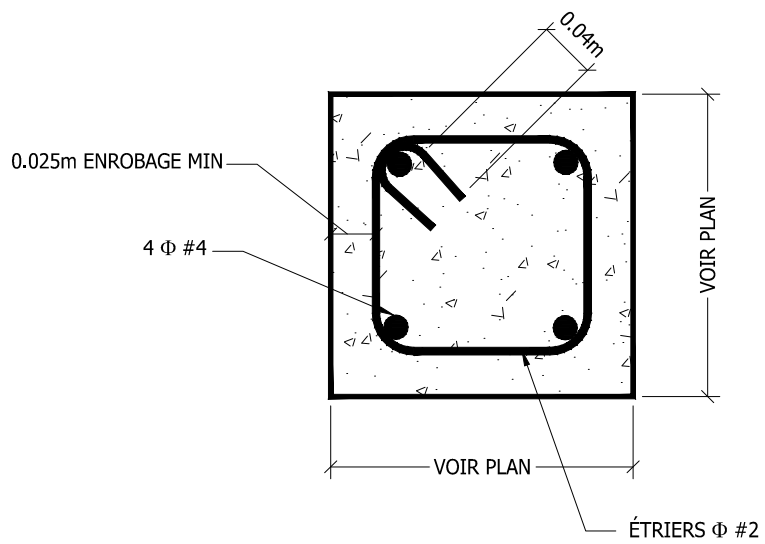
CROIX ROUGE AMÉRICAINE

PROJET: NOUVELLE CONSTRUCTION

ÉCH.: 1/20

DATE: 8 FÉVRIER 2012

D2.2



COUPE HORIZONTALE D'UNE COLONNE

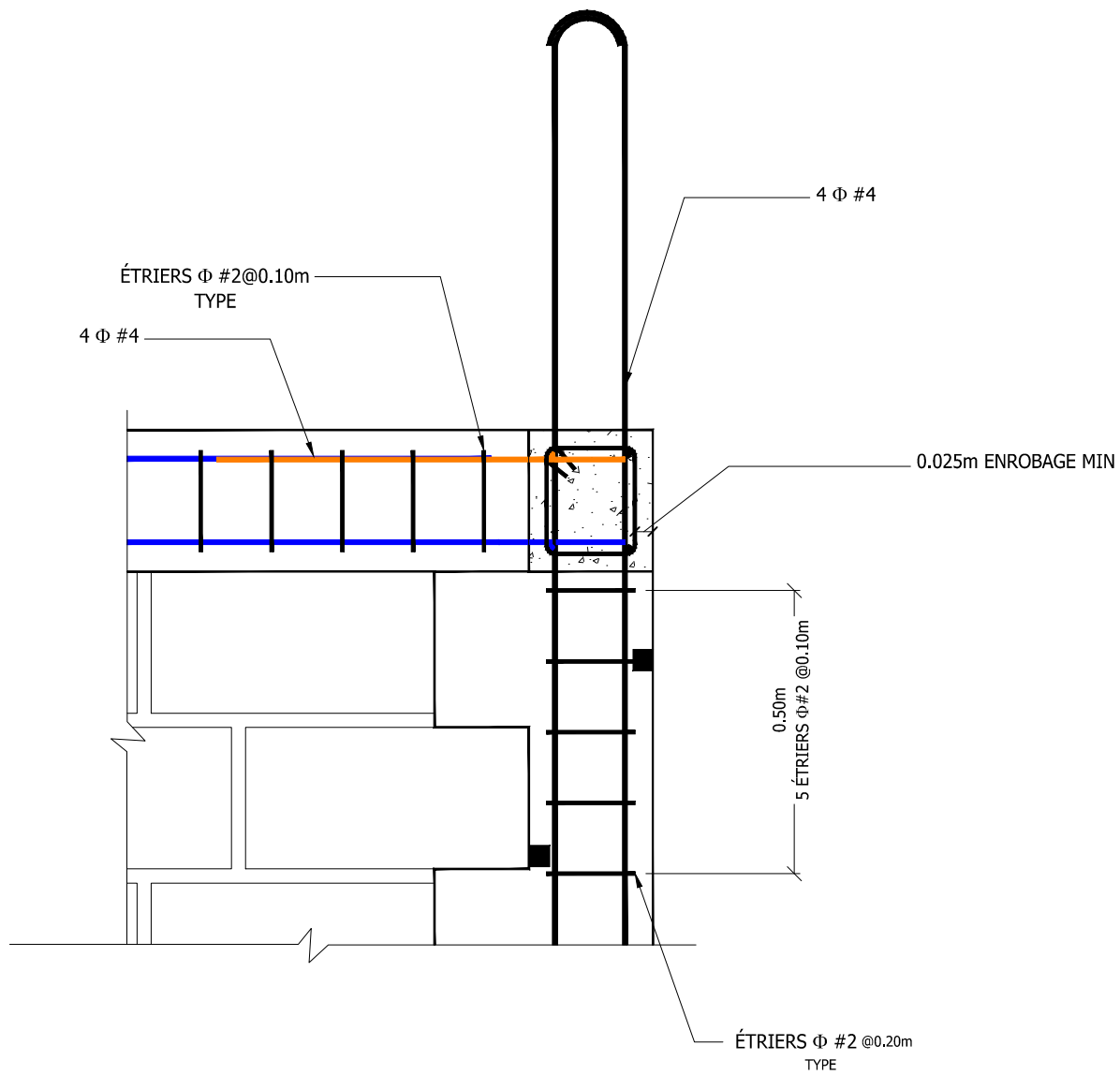
CROIX ROUGE AMÉRICAINE

PROJET: NOUVELLE CONSTRUCTION

ÉCH.: 1/5

DATE: 8 FÉVRIER 2012

D2.4



DÉTAIL ATTENTE DALLE



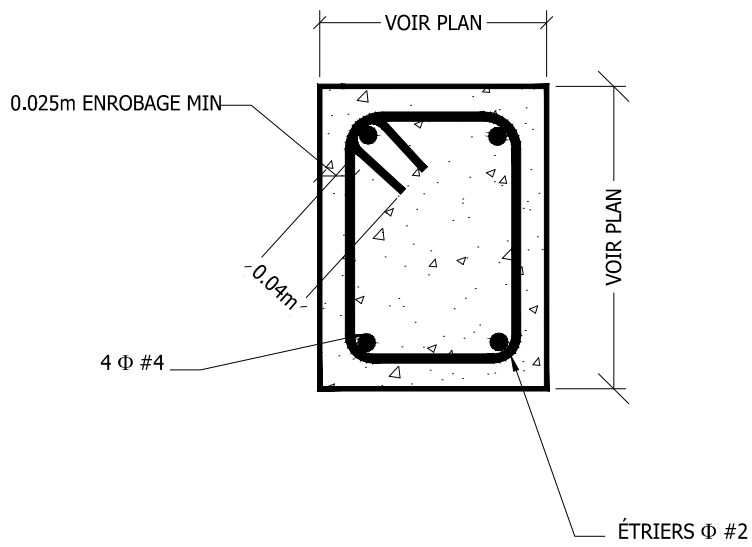
CROIX ROUGE AMÉRICAINE

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 CHÂINAGE INFÉRIEUR / SUPÉRIEUR A L'INTERSECTION DE 3 MURS

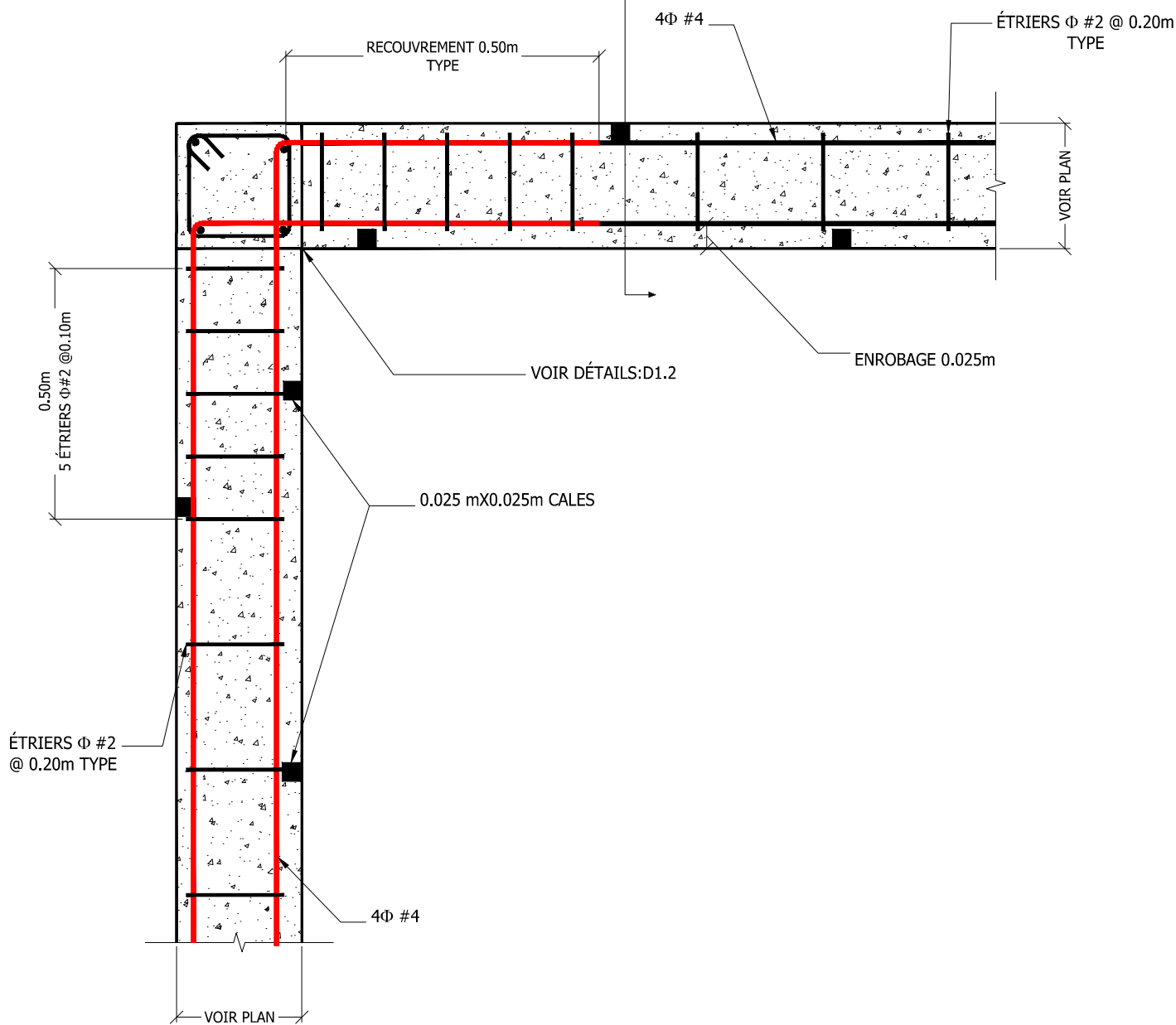
PROJET: NOUVELLE CONSTRUCTION
CROIX ROUGE AMÉRICAINÉ

ÉCH.: 1/10

DATE: 8 FÉVRIER 2012

D3.2

D3.1



COUPE HORIZONTALE DU CHAÎNAGE INFÉRIEUR AUX ANGLES

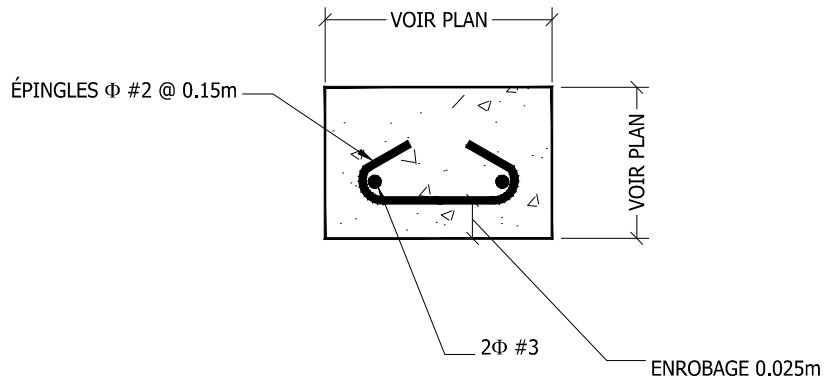
CROIX ROUGE AMÉRICAINAINE

PROJET: NOUVELLE CONSTRUCTION

ÉCH.: 1/10

DATE: 8 FÉVRIER 2012

D3.3



COUPE VERTICALE DU CHÂINAGE INTERMÉDIAIRE

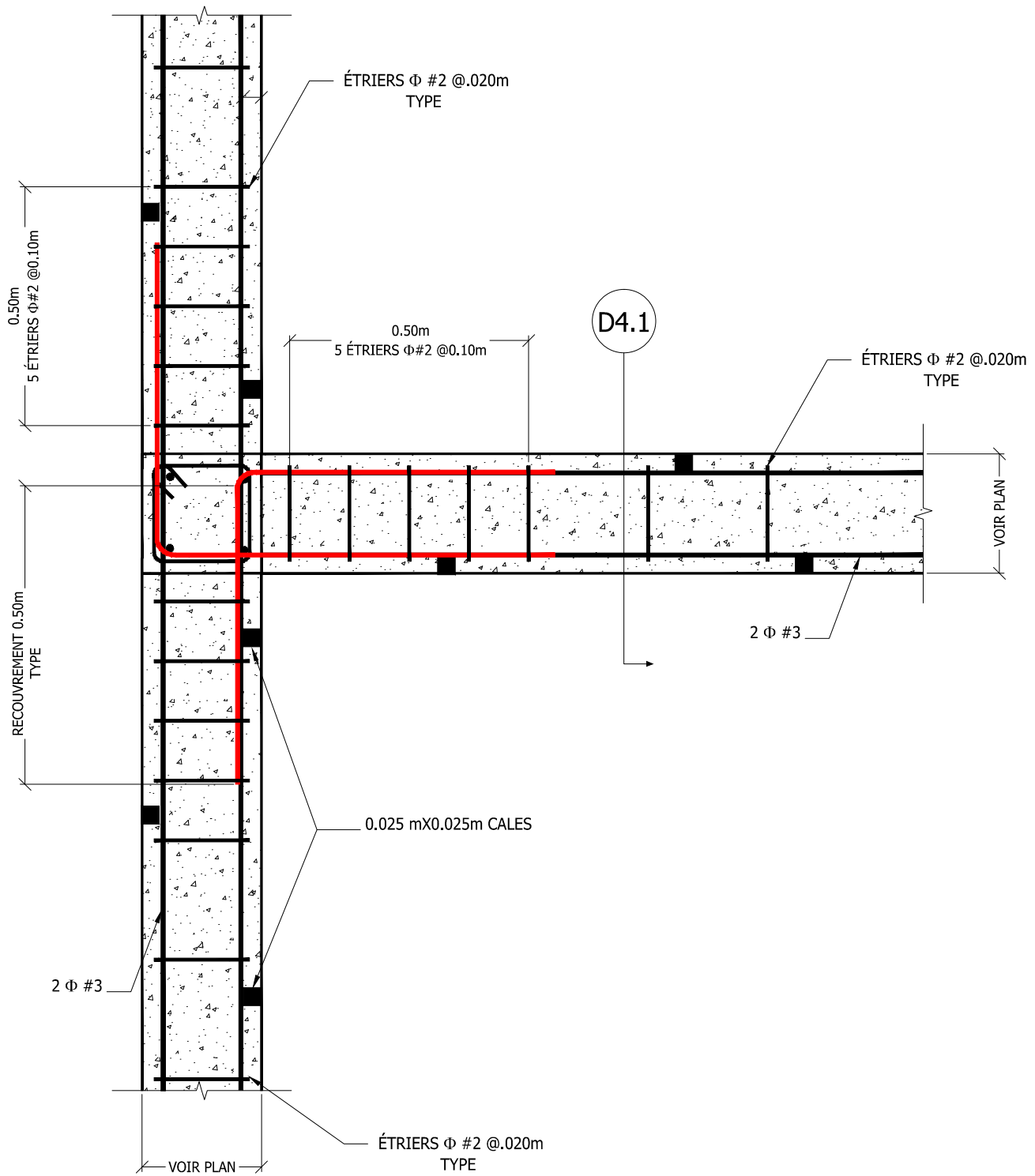
CROIX ROUGE AMÉRICAINE

PROJET: NOUVELLE CONSTRUCTION

ÉCH.: 1/5

DATE: 8 FÉVRIER 2012

D4.1



COUPE DU CHAÎNAGE INTERMÉDIAIRE A L'INTERSECTION DE 3 MURS

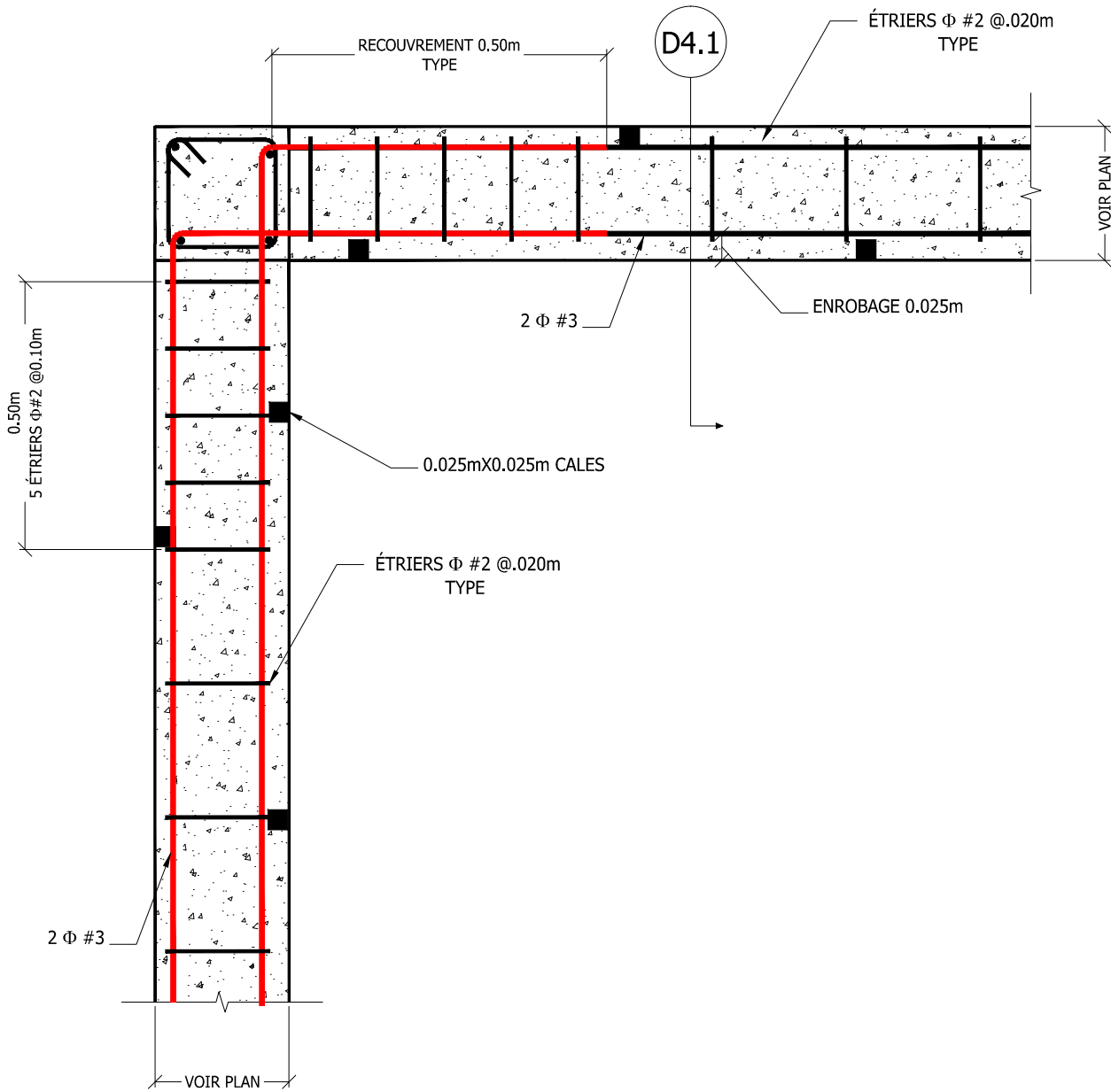
CROIX ROUGE AMÉRICAINNE

PROJET: NOUVELLE CONSTRUCTION

ÉCH.: 1/5

DATE: 8 FÉVRIER 2012

D4.2



COUPE DU CHAÎNAGE INTERMÉDIAIRE AUX ANGLES

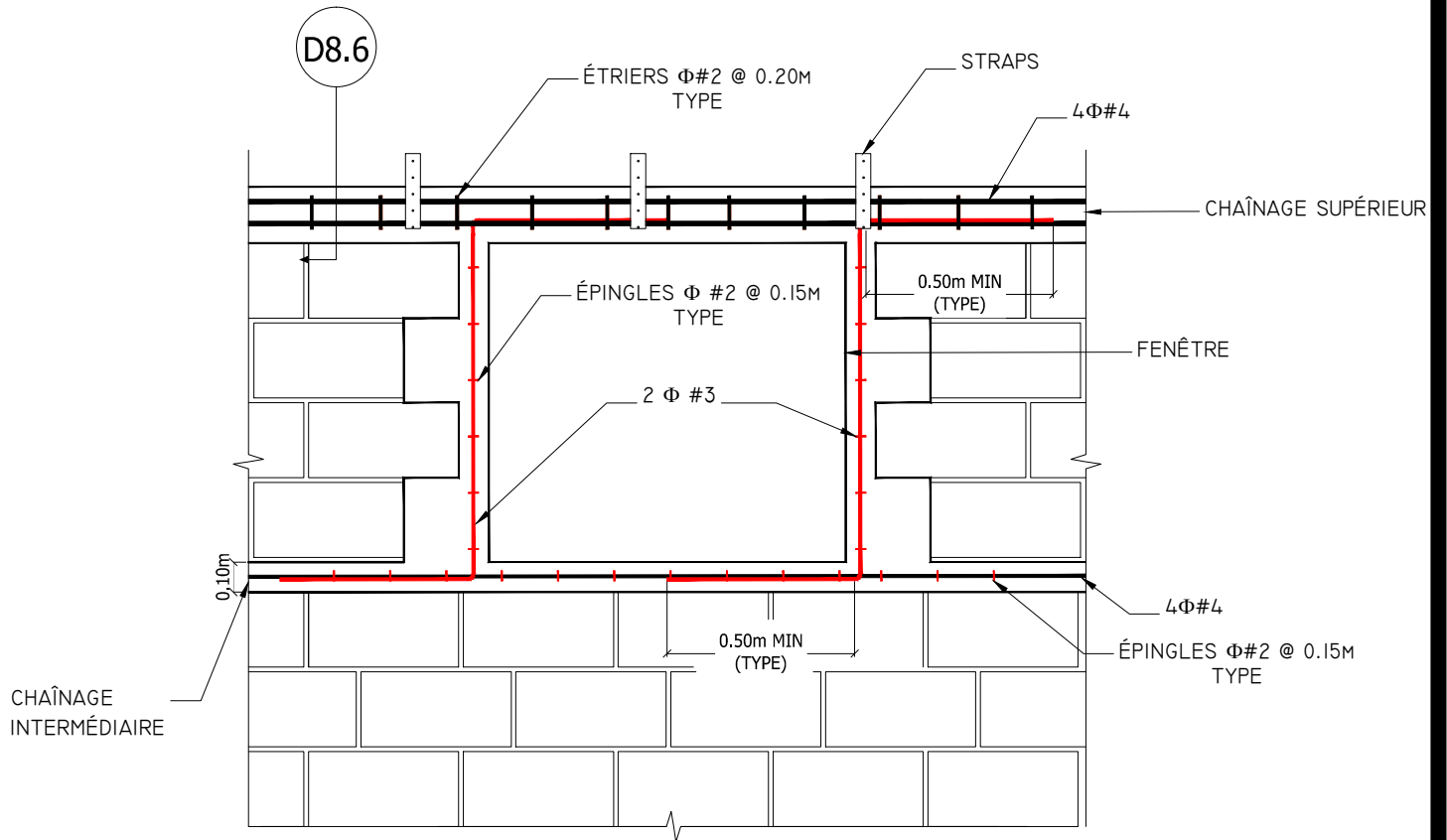
CROIX ROUGE AMÉRICAINNE

PROJET: NOUVELLE CONSTRUCTION

ÉCH.: 1/5

DATE: 8 FÉVRIER 2012

D4.3



ARMATURE AUX OUVERTURES DES FENÊTRES, TOITURE LÉGÈRE

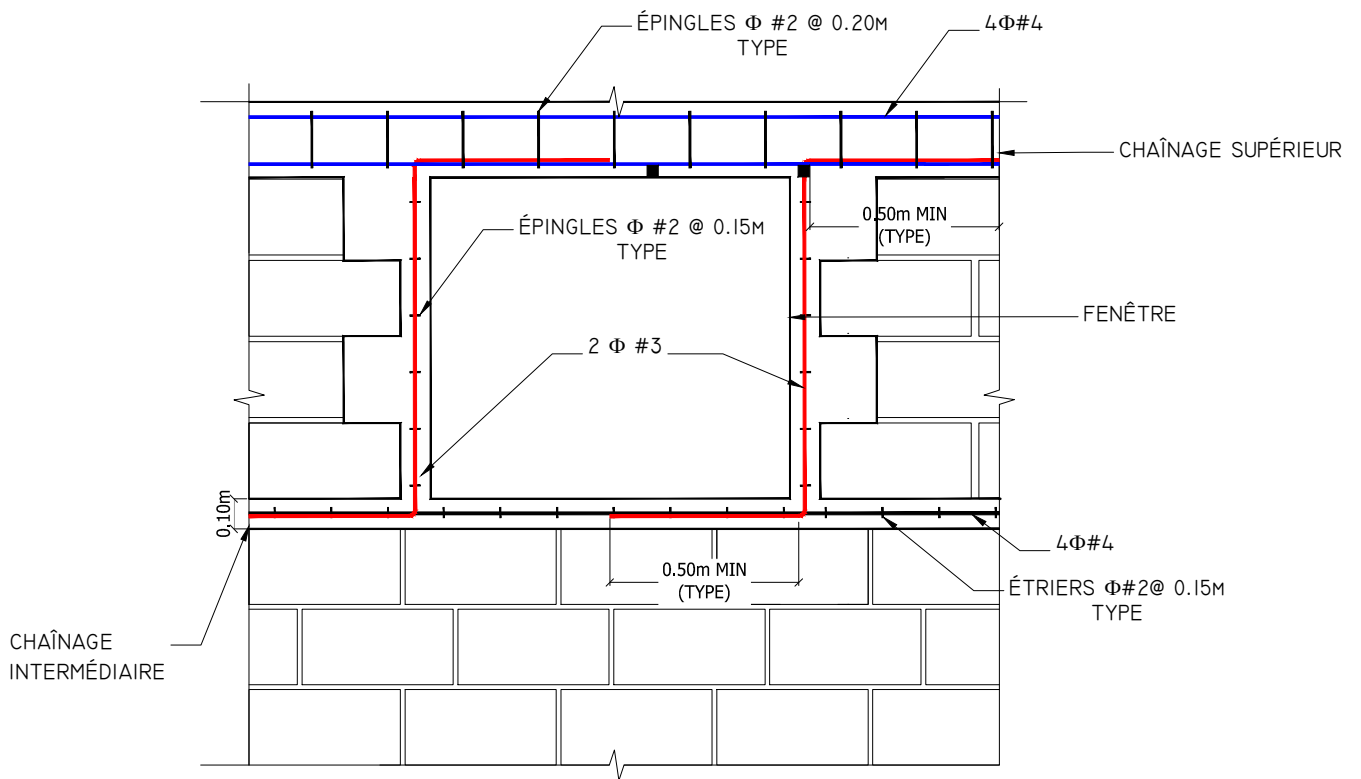
CROIX ROUGE AMÉRICAINNE

PROJET: NOUVELLE CONSTRUCTION

ÈCH.: 1/20

DATE: 8 FÉVRIER 2012

D5.1



ARMATURE AUX OUVERTURES DES FENÊTRES, DALLE

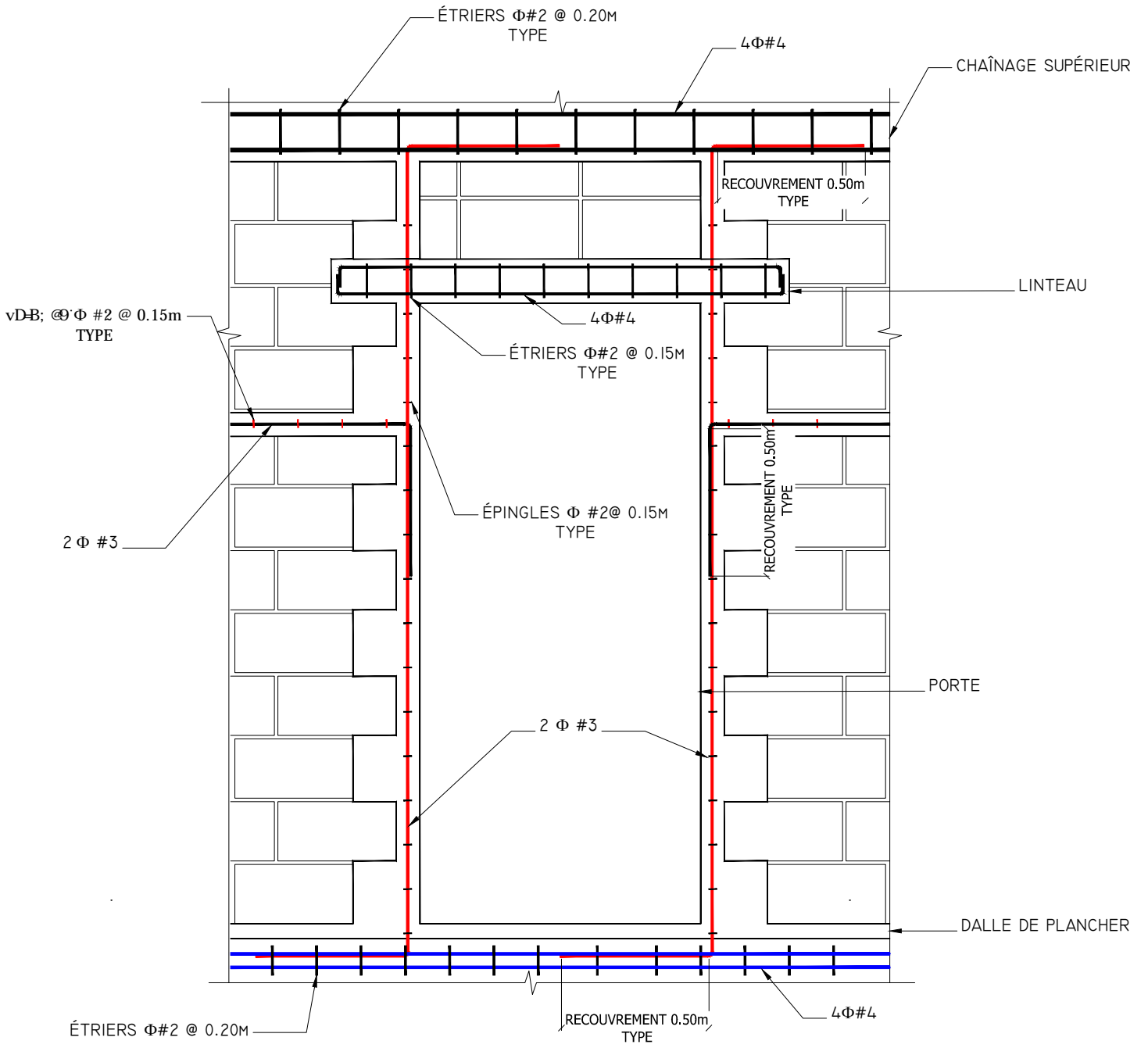
CROIX ROUGE AMÉRICAINE

PROJET: NOUVELLE CONSTRUCTION

ÈCH.: 1/5

DATE: 8 FÉVRIER 2012

D5.2



ARMATURE AUX OUVERTURES DES PORTES, DALLE



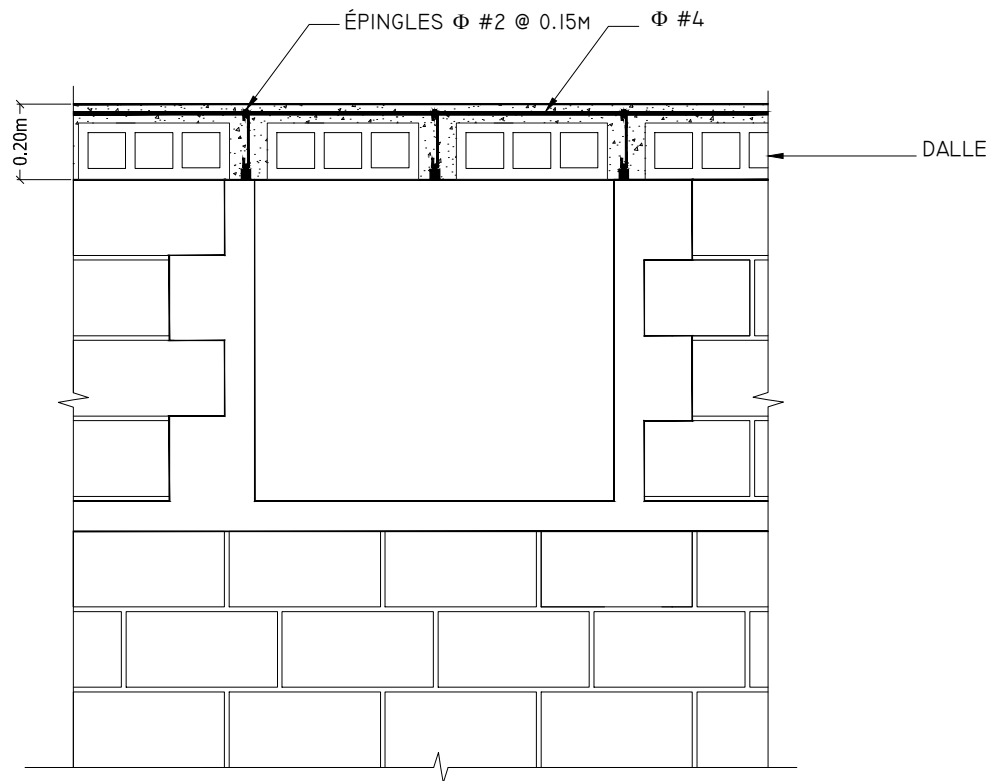
CROIX ROUGE AMÉRICAINE

PROJET: NOUVELLE CONSTRUCTION

ÉCH.: 1/5

DATE: 8 FÉVRIER 2012

D5.4



COUPE SUR DALLE AVEC VUE SUR FENÊTRE

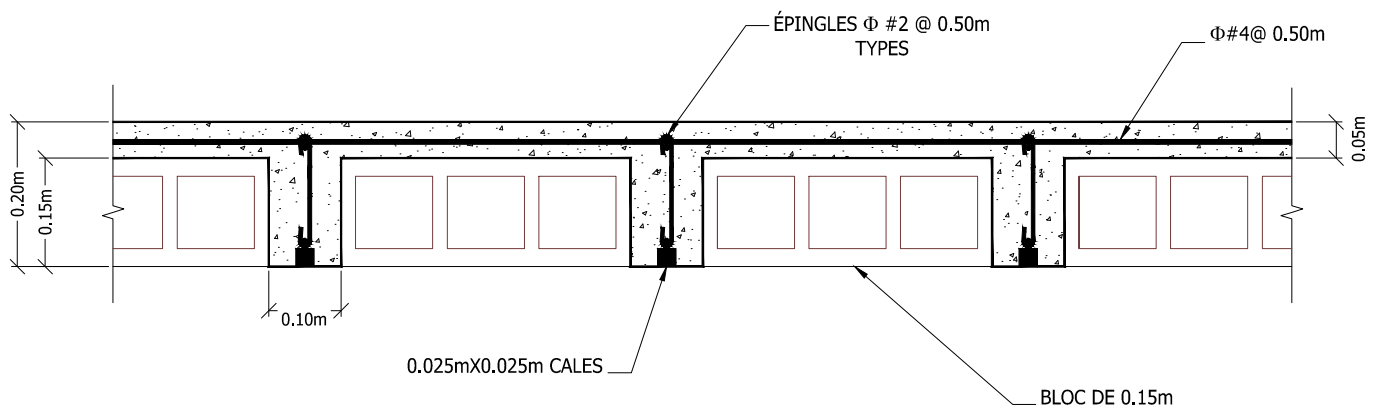
CROIX ROUGE AMÉRICAINE

PROJET: NOUVELLE CONSTRUCTION

ÈCH.: 1/5

DATE: 8 FÉVRIER 2012

D5.5



COUPE DE TOITURE EN BÉTON

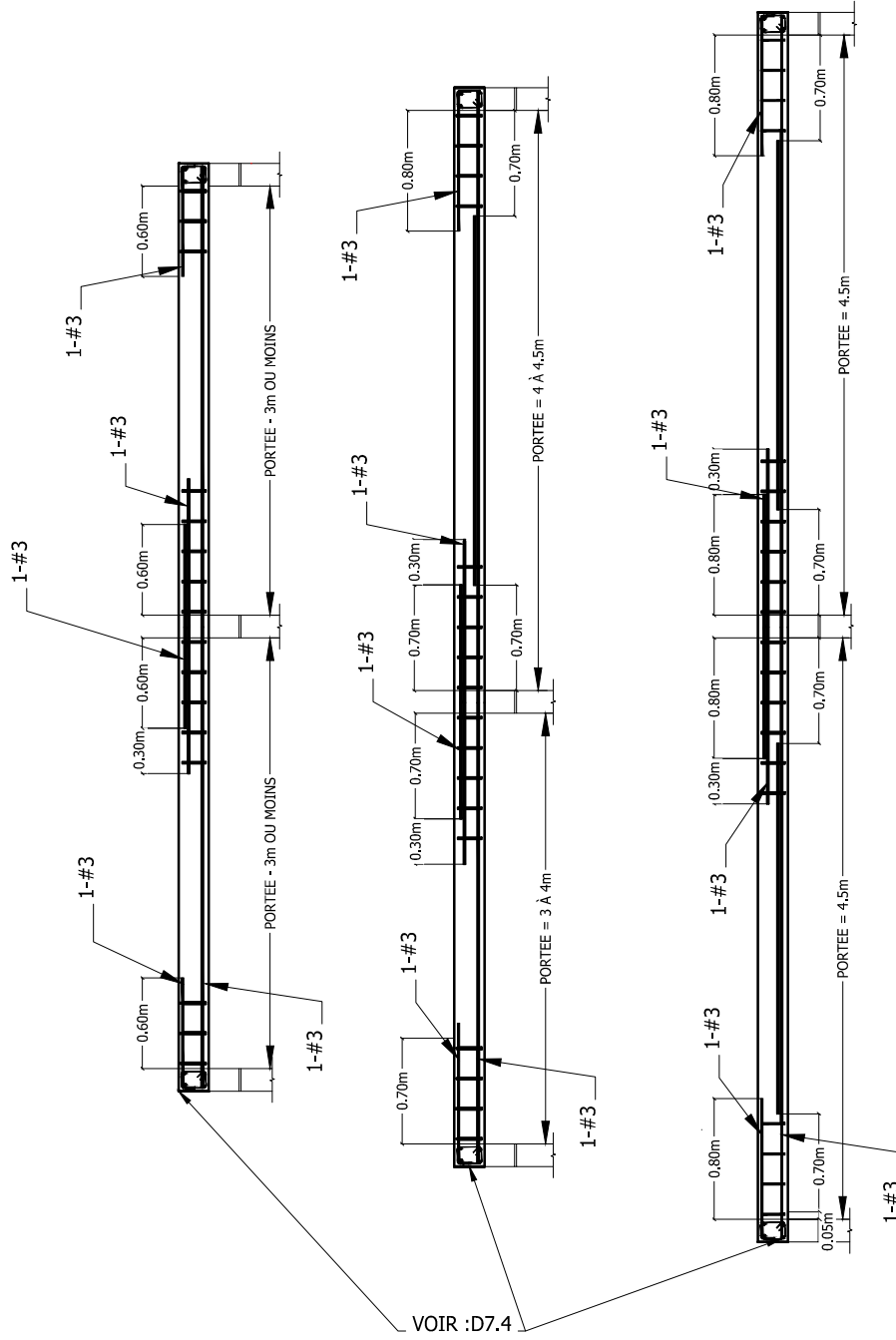
CROIX ROUGE AMÉRICAINE

PROJET: NOUVELLE CONSTRUCTION

ÉCH.: 1/10

DATE: 8 FÉVRIER 2012

D7.1



CROIX ROUGE AMERICAINE

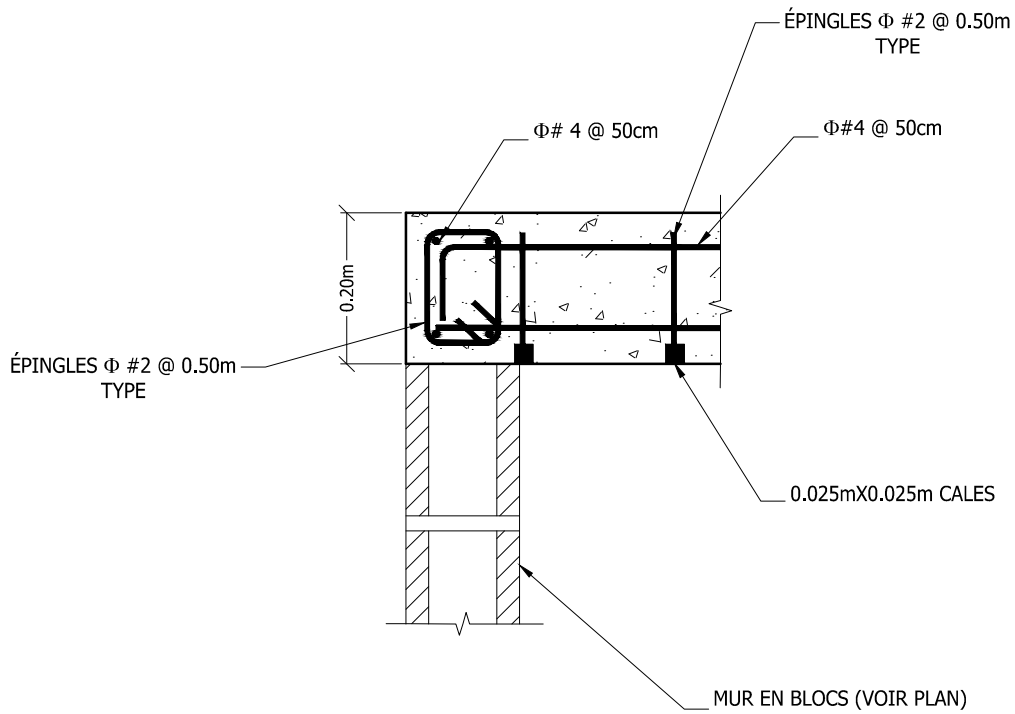
ARMATURE DE POUTRELLE DE PORTEE DOUBLE

PROJET: NOUVELLE CONSTRUCTION

ÈCH.: 1/5

DATE: 8 FÉVRIER 2012

D7.3



CONNEXION CHÂÎNAGE SUPÉRIEUR ET POUTRELLE

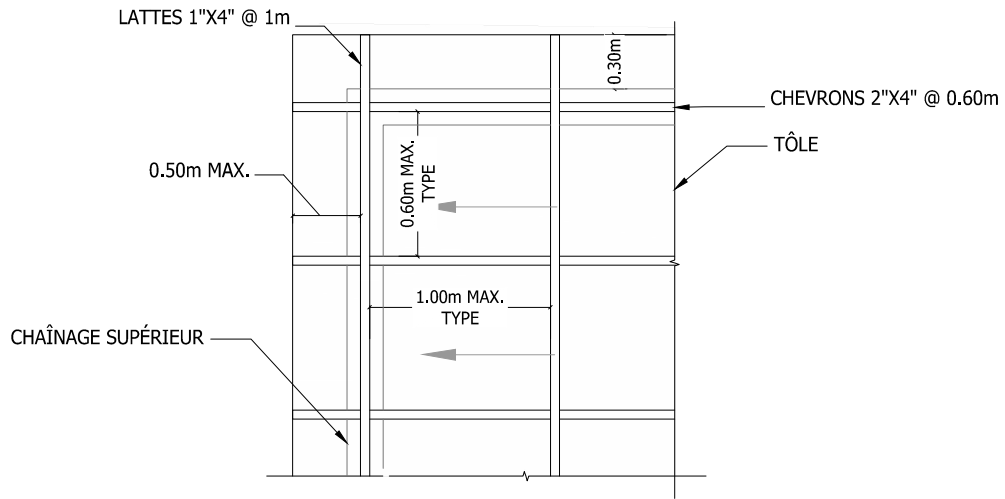
CROIX ROUGE AMÉRICAINE

PROJET: NOUVELLE CONSTRUCTION

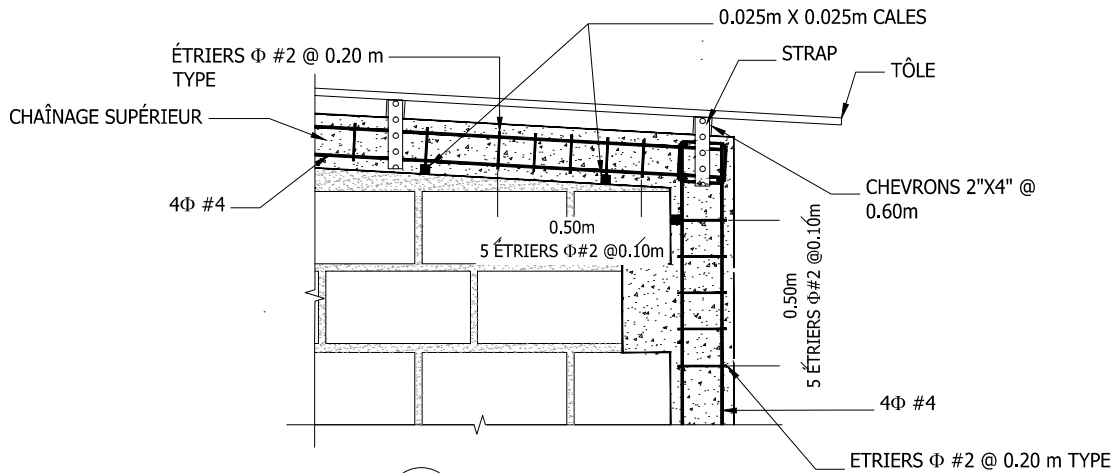
ÉCH.: 1/10

DATE: 8 FÉVRIER 2012

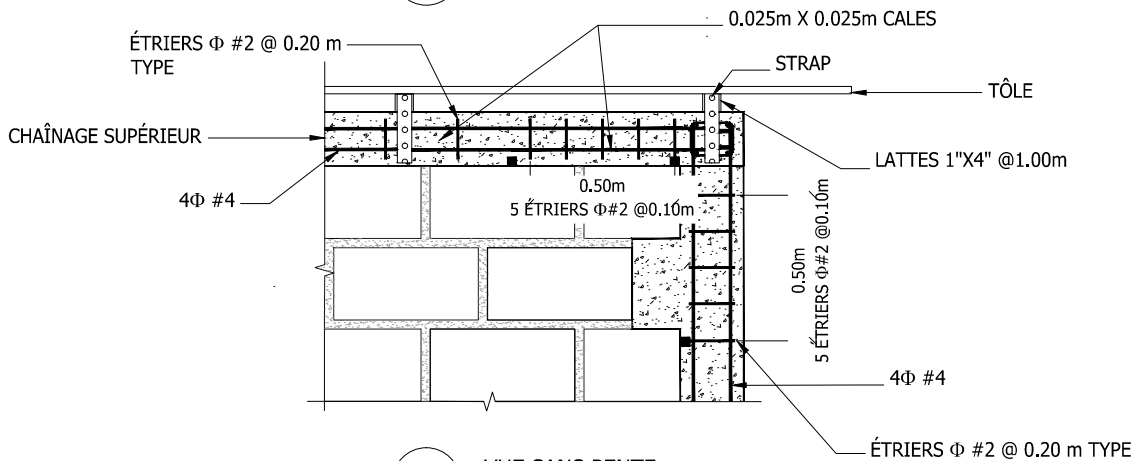
D7.4



PLAN
ÉCH.: 1/40



VUE AVEC PENTE
ÉCH.: 1/20



VUE SANS PENTE
ÉCH.: 1/20



DÉTAILS DE LA CHARPENTE DU TOIT SIMPLE BÂTIÈRE

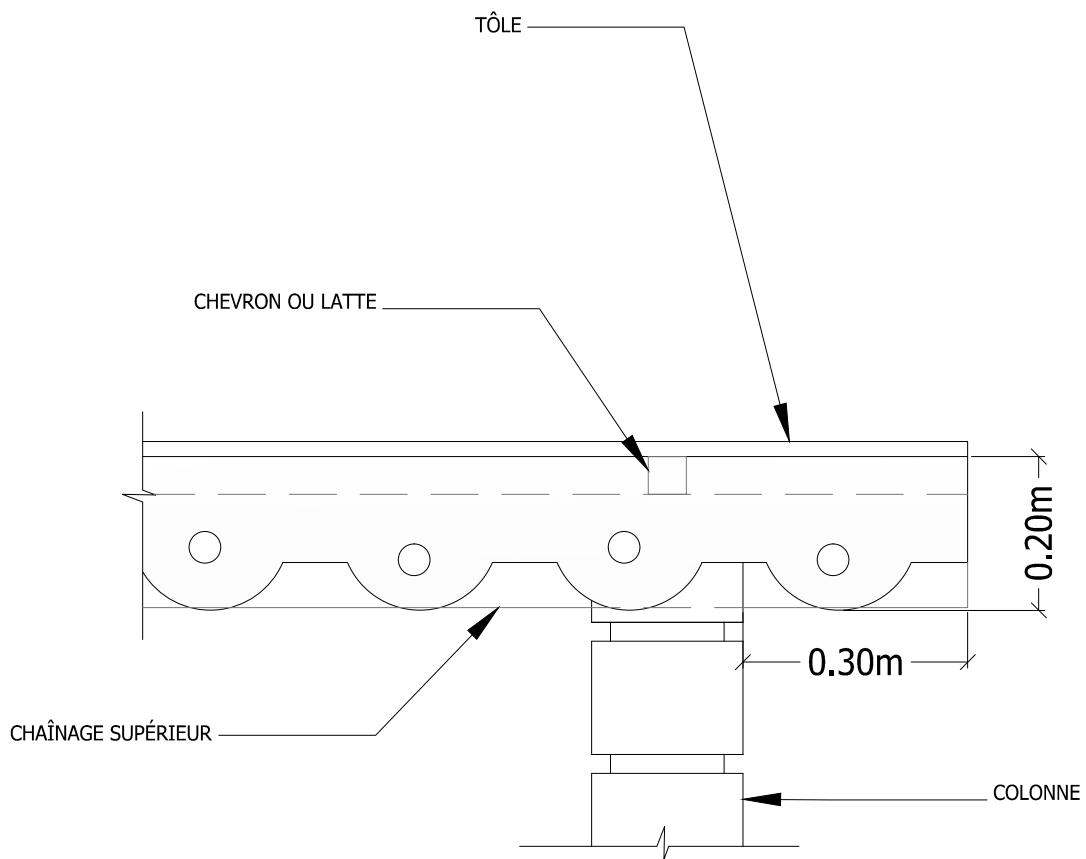
CROIX ROUGE AMÉRICAINE

PROJET: NOUVELLE CONSTRUCTION

ÉCH.: 1/INDIQUÉE

DATE: 8 FÉVRIER 2012

D8.1



DÉTAILS DENTELLE TOITURE

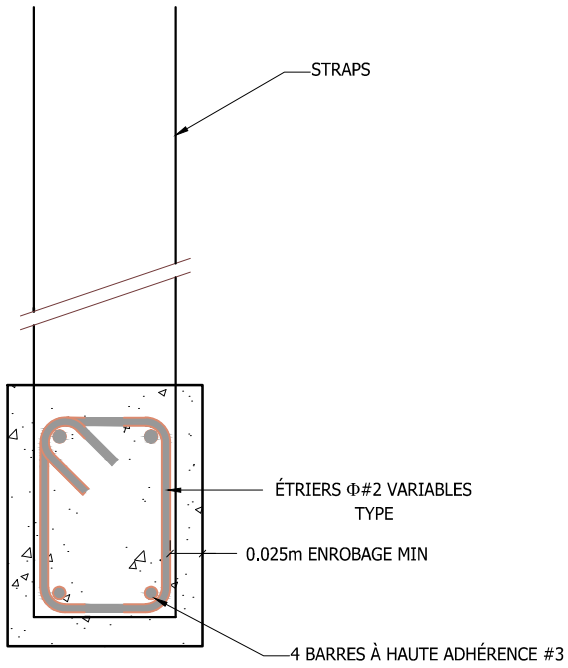
CROIX ROUGE AMÉRICAINE

PROJET: NOUVELLE CONSTRUCTION

ÈCH.: 1/20

DATE: 8 FÉVRIER 2012

D8.5



COUPE SUR D5.1
ÉCH.: 1/5



COUPE DE DÉTAIL DU CHAÎNAGE SUPÉRIEUR

CROIX ROUGE AMÉRICAINE

PROJET: NOUVELLE CONSTRUCTION

ÉCH.: 1/5

DATE: 8 FÉVRIER 2012

D8.6



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 IV rdc 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=	30	m
4	Mass concrete foundation walls	Longeur=		m
B: Chainage Inferieur				
1	20cm x 15cm Plinth beam (1:2:4)	Longeur=	30	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 =	64.7	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=	26.7	m
D: Ouvertures				
1	Doors	Nombre=	4	
	Height (up to the ring beam)	Longeur=	2.5	m
	Sum of door widths	Largeur=	3.5	m
2	Windows	Nombre=	4	
	Sum of window heights	Longeur=	7.8	m
	Sum of window widths	Largeur=	4.5	m
E: Chainage Superieur				
1	20cm x 15cm Ring beam (1:2:4)	Longeur=	30	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 =	154.3	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 =	154.3	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: 0

Date: 20-Feb-2012

Storey: 0

Engineer: LEGER Loubert

No	Item	Unit Price	Unit	INSTALLMENT 1: preparation & Foundation		INSTALLMENT 2: Walls up to the roof		INSTALLMENT 3: Roof & Finish		INSTSALLMENT 3 Holdback / Add'l Req		TOTAL	
				Total	Total Price	Total	Total Price	Total	Total Price	Total	Total Price	Total	Total Price
1	Cement	\$7.50	bag	34	\$255.00	29	\$217.50	33	\$247.50	\$0.00	\$0.00	96	\$720.00
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	6	\$126.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00	6	\$126.00
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	726	\$580.80	0	\$0.00	\$0.00	\$0.00	726	\$580.80
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	322	\$357.42	0	\$0.00	\$0.00	\$0.00	344	\$381.84
20	#3 Bars	\$0.77	m	126	\$97.02	66	\$50.82	300	\$231.00	\$0.00	\$0.00	492	\$378.84
21	#2 Bars	\$0.33	m	120	\$39.60	377	\$124.41	30	\$9.90	\$0.00	\$0.00	527	\$173.91
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	6	\$60.00	\$0.00	\$0.00	6	\$60.00
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				\$683		\$1,478		\$2,431	\$0			\$4,592
	Rental of formwork and shoring				\$0		\$0		\$0	\$0			\$0
	Cost of Labor				\$174		\$641		\$965	\$0			\$1,779
Subtotal					\$857		\$2,119		\$3,396	\$0			\$6,371
20% for unforeseen costs					\$171		\$424		\$679	\$0			\$1,274
Total					\$1,028		\$2,542		\$4,075	\$0	Grand Total=		\$7,645
Installment Request					\$1,028		\$2,542		\$4,075	\$0			\$7,645

Remak= Tout pri yo an dola ameriken



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 IV etage GPS: Telephone:	Date: 20-Feb-12 Ingenieur: LEGER Loubert Surface de la maison (m ²): 25.00
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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=		
3	Stone masonry foundation	Longeur=		m
4	Mass concrete foundation walls	Longeur=		m
B: Chainage Inferieur				
1	20cm x 15cm Plinth beam (1:2:4)	Longeur=		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 =	59.7	m2
2	20 cm blocks	surface des murs =		m2
B: Colonnes en Beton				
0	Number of columns	Nombre=	9	
1	15cm x 15cm Columns (1:2:4)	Longeur=	3	m
2	20cm x 20cm Columns (1:2:4)	Longeur=		m
3	25cm x 25cm Columns (1:2:4)	Longeur=		m
C: Chainage Intermediare				
1	15cm x 10cm Intermediate beam (1:2:4)	Longeur=	26.6	m
2	20cm x 10cm Intermediate beam (1:2:4)	Longeur=		m
D: Ouvertures				
1	Doors	Nombre=	3	
	Height (up to the ring beam)	Longeur=	2.5	m
	Sum of door widths	Largeur=	2.3	m
2	Windows	Nombre=	4	
	Sum of window heights	Longeur=	4.6	m
	Sum of window widths	Largeur=	3.8	m
E: Chainage Superieur				
1	20cm x 15cm Ring beam (1:2:4)	Longeur=	30	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 =		m2
B: Toiture Legere				
	Length perpendicular to slope	surface du plan =	5	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 =	25	m2

PHASE 4: Crepissage, Parquet, et Finition			No.	Unit
A: Crepissage				
1	10mm Plaster (1:5)	surface des murs =	119.5	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 =		m2
2	10cm Floor slab (1:3:6)	surface des murs =		m2
C: Peinture				
1	Paint	surface des murs =	119.5	m2
D: Portes/Fenetres				
1	Windows	Nombre=	4	
2	Iron window grilles	Nombre=	4	
3	Venilation blocks	Nombre=		
4	Doors	Nombre=	3	



Bill of Quantities -- New Confined Masonry Construction

Building Address: 0

Date: 20-Feb-2012

Storey: 0

Engineer: LEGER Loubert

No	Item	Unit Price	Unit	INSTALLMENT 1: preparation & Foundation		INSTALLMENT 2: Walls up to the roof		INSTALLMENT 3: Roof & Finish		INSTSALLMENT 3 Holdback / Add'l Req		TOTAL	
				Total	Total Price	Total	Total Price	Total	Total Price	Total	Total Price	Total	Total Price
1	Cement	\$7.50	bag	1	\$7.50	23	\$172.50	9	\$67.50	\$0.00	\$0.00	33	\$247.50
2	River Sand - washed	\$25.00	m3	1	\$25.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00	1	\$25.00
3	River Sand	\$19.00	m3	0	\$0.00	1	\$19.00	0	\$0.00	\$0.00	\$0.00	1	\$19.00
4	White Sand	\$20.00	m3	0	\$0.00	1	\$20.00	2	\$40.00	\$0.00	\$0.00	3	\$60.00
5	Crushed gravel	\$23.00	m3	1	\$23.00	2	\$46.00	0	\$0.00	\$0.00	\$0.00	3	\$69.00
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	1	\$21.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00	1	\$21.00
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	0	\$0.00	0	\$0.00	\$0.00	\$0.00	0	\$0.00
11	15cm Block	\$0.65	each	0	\$0.00	670	\$435.50	0	\$0.00	\$0.00	\$0.00	670	\$435.50
12	12cm Block	\$0.45	each	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00	0	\$0.00
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	0	\$0.00	258	\$286.38	0	\$0.00	\$0.00	\$0.00	258	\$286.38
20	#3 Bars	\$0.77	m	0	\$0.00	102	\$78.54	0	\$0.00	\$0.00	\$0.00	102	\$78.54
21	#2 Bars	\$0.33	m	0	\$0.00	281	\$92.73	0	\$0.00	\$0.00	\$0.00	281	\$92.73
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	62	\$52.70	\$0.00	\$0.00	62	\$52.70
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	9	\$14.85	\$0.00	\$0.00	9	\$14.85
37	Assorted Nails	\$1.20	lb	0	\$0.00	0	\$0.00	8	\$9.60	\$0.00	\$0.00	8	\$9.60
38	Roofing Nails	\$1.40	lb	0	\$0.00	0	\$0.00	3	\$4.20	\$0.00	\$0.00	3	\$4.20
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	10	\$300.00	\$0.00	\$0.00	10	\$300.00
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	3	\$264.00	\$0.00	\$0.00	3	\$264.00
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	4	\$40.00	\$0.00	\$0.00	4	\$40.00
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				\$77		\$1,151		\$2,042	\$0			\$3,269
	Rental of formwork and shoring				\$0		\$0		\$0	\$0			\$0
	Cost of Labor				\$4		\$469		\$825	\$0			\$1,299
Subtotal					\$81		\$1,620		\$2,867	\$0			\$4,567
20% for unforeseen costs					\$16		\$324		\$573	\$0			\$913
Total					\$97		\$1,944		\$3,440	\$0	Grand Total=		\$5,481
Installment Request					\$97		\$1,944		\$3,440	\$0			\$5,481


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	SOURCE
a Less than 10% = OK		< 10%				Yes/No				MTPTC 8
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				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?				
BC Engineer Signature: _____					Date: _____	Oui / No				
BC Team Leader Signature: _____					Date: _____	Comments:				
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				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			
Address: _____		Boss: _____							
Homeowner Phone No: _____									
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	BLINDING 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	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented
a	Mortar mix 1:3	Yes/No				Yes/No			GNA
b	Concrete blocks are 200mm wide ("Bloc 20")	Yes/No				Yes/No			
c	Mortar joints are 12.5mm	Yes/No				Yes/No			
d	Stagger vertical joints by 1/3 block	Yes/No				Yes/No			
e	Leave space for tie columns and tooth wall on each side by 1/3 block	Yes/No				Yes/No			
f	Wet concrete block prior to use	Yes/No				Yes/No			
i	Cure properly	Yes/No				Yes/No			
h	Backfill with compacted soil in 10 cm lifts	Yes/No				Yes/No			
7	TIE COLUMN ANCHORS	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented
a	Use four #4 bars at each tie column location with #2 stirrup cage	Yes/No				Yes/No			MTPTC 57
b	Bend bottom of #4 bars in four directions to create self supporting rebar cage	Yes/No				Yes/No			
c	Minimum 25 cm length foot	Yes/No				Yes/No			MTPTC 61
d	Use 3cm concrete spacers to achieve proper concrete cover below bars	Yes/No				Yes/No			
8	PIPING	Planned?	Date	Photo #	Recommendation Made	Done?	Date	Photo #	Recommendation Implemented
a	Do not put piping through reinforced concrete	Yes/No				Yes/No			MTPTC 63
b	Put piping through strip footing	Yes/No				Yes/No			MTPTC 63
Date: _____						Overall Assessment: Meets Minimum Standard?			
						Oui / No			
Date: _____						Comments:			
Date: _____									
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	Photo #	Recommendation Implemented
a 20 cm wide, 15cm high	Yes/ No				Yes/ No			
b Longitudinal Bars								
1 Four #3 (3/8") longitudinal bars	Yes/ No				Yes/ No			MTPTC 65
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	Photo #	Recommendation Implemented
a Longitudinal Bars					Yes/ No			
1 Minimum section 150mm by 150mm	Yes/ No				Yes/ No			Conflicts with MTPTC 60
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	Photo #	Recommendation Implemented
a BEAM STIRRUPS and COLUMN TIES								
1 Stirrup spacing maximum 20cm	Yes/ No				Yes/ No			MTPTC 60
2 Stirrups closely spaced (10cm) near all beam-column joints	Yes/ No				Yes/ No			MTPTC 60
3 Stirrup hooks rotated	Yes/ No				Yes/ No			MTPTC 60
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			MTPTC 66 says 60 cm
2 Apply one of overlap detailing options	Yes/ No				Yes/ No			MTPTC 67
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	Photo #	Recommendation Implemented
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	Photo #	Recommendation Implemented
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			MTPTC 64
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	<i>If any of the above exist, demolish concrete and repour</i>	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: _____
 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: