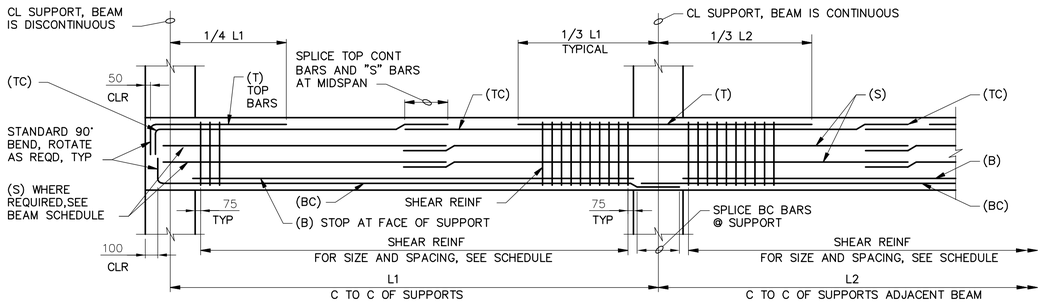
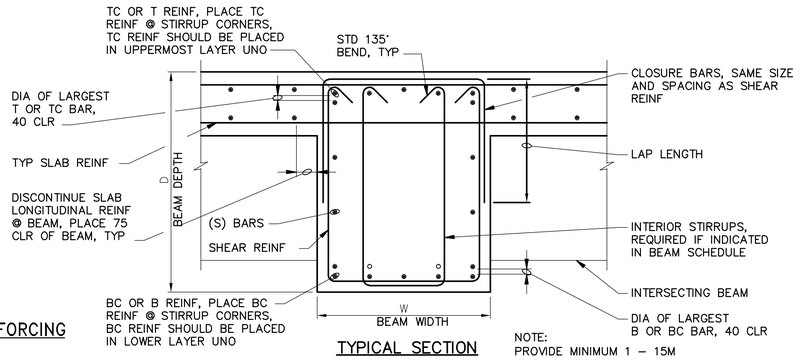
SHEET: COW-A1 (05/2005)



BEAM REINFORCING
N.T.S.

BEAM NO. (SEE PLANS)	SIZE		TOP REINF AT LEFT SUPPORT		BOTTOM REINF		* TOP REINF AT RIGHT SUPPORT		S BARS	SHEAR REINF (MM)		REMARKS
	W	D	T	TC	B	BC	T	TC		NO. SIZE	SPACING FROM LEFT SUPPORT	
MB1	400	600		4-15M		4-20M	–	4-15M	2-10M	10M	200	
MB2	400	600		4-25M		4-25M	–	4-25M	2-10M	10M	200	
MB3	400	600		3-25M		4-25M	2-25M	3-25M	2-10M	10M	150	
MB4	400	600		4-25M		4-25M	3-25M	4-25M	2-10M	12M	150	
MB5	400	600		4-20M		4-20M	2-20M	4-20M	2-10M	10M	200	
MB6	400	600	2-20M	4-20M		–	–	4-20M	2-10M	10M	200	
MB7	400	600	–	5-25M		5-25M	2-25M	5-25M	2-10M	10M	200	
MB8	400	600	2-25M	5-25M		5-25M	3-25M	5-25M	2-10M	10M	200	
MB9	400	600	3-25M	5-25M		5-25M	1-25M	5-25M	2-10M	10M	200	
MB10	400	600	1-25M	5-25M		5-25M		5-25M	2-10M	10M	200	
FB1	400	600	–	5-30M	–	4-25M	–	5-30M	2-10M	15M	200	
FB2	500	750	1-30M	4-30M	–	4-30M	2-30M	4-30M	2-15M	10M	150	
FB3	500	750	–	4-30M	–	4-30M	–	4-30M	2-15M	10M	200	
FB4	500	750	–	4-30M	–	4-30M	2-30M	4-30M	2-15M	10M	200	
FB5	600	900	6-30M	6-30M	–	6-30M	2-30M	6-30M	4-15M	15M	200	4 LEG STIRRUPS
FB6	600	900	2-30M	6-30M	–	6-30M	2-30M	6-30M	4-15M	15M	200	4 LEG STIRRUPS
FB7	600	900	2-30M	6-30M	–	6-30M	2-30M	6-30M	4-15M	15M	200	4 LEG STIRRUPS
FB8	600	900	–	6-30M	–	6-30M	2-30M	6-30M	4-15M	15M	200	4 LEG STIRRUPS
FB9	500	750	–	4-30M	–	5-30M	2-30M	4-30M	2-15M	10M	150	
FB10	500	750	2-30M	4-30M	–	5-30M	3-30M	4-30M	2-15M	10M	150	
FB11	500	750	3-30M	4-30M	–	5-30M	–	4-30M	2-15M	10M	200	
FB12	500	750	–	4-30M	–	5-30M	3-30M	4-30M	2-15M	10M	200	
FB13	500	750	3-30M	4-30M	1-25M	5-30M	–	4-30M	2-15M	10M	150	
FB14	500	750	–	4-30M	–	4-30M	2-30M	4-30M	2-15M	10M	200	
FB15	500	750	2-30M	4-30M	1-25M	4-30M	2-30M	4-30M	2-15M	10M	150	
FB16	500	750	–	4-25M	–	4-25M	–	4-25M	2-15M	10M	200	
FB17	500	750	–	4-25M	–	4-25M	1-25M	4-25M	2-15M	10M	200	
RBI	600	900	–	4-25M	–	4-25M	–	4-25M	4-15M	10M	200	W/ UPSTAND
RB2	600	900	–	5-25M	–	4-25M	–	5-25M	4-15M	10M	200	W/ UPSTAND
RB3	300	750	–	4-25M	–	4-25M	–	4-25M	2-15M	10M	200	
RB4	600	900	–	5-30M	–	4-30M	4-30M	5-30M	4-15M	10M	200	
RB5	600	900	4-30M	5-30M	2-30M	4-30M	5-30M	5-30M	4-15M	15M	250	
RB6	600	900	5-30M	5-30M	–	4-30M	–	5-30M	4-15M	10M	150	
RB7	600	900	–	6-30M	–	5-30M	5-30M	6-30M	4-15M	15M	200	
RB8	600	900	6-30M	6-30M	3-30M	5-30M	5-30M	6-30M	4-15M	15M	200	
RB9	600	900	5-30M	6-30M	–	5-30M	–	6-30M	4-15M	15M	200	
RB10	600	900	–	5-25M	–	4-25M	3-25M	5-25M	4-15M	10M	200	W/ UPSTAND
RB11	600	900	3-25M	5-25M	2-25M	4-25M	5-25M	5-25M	4-15M	10M	200	W/ UPSTAND
RB12	600	900	5-25M	5-25M	–	4-25M	–	5-25M	4-15M	10M	200	W/ UPSTAND
RB13	400	600	–	4-25M	–	4-25M	–	4-25M	2-10M	10M	200	W/ UPSTAND ALONG GL B17
LB1	300	400	–	3-20M	–	3-20M	–	3-20M	–	10M	200	

BEAM SCHEDULE

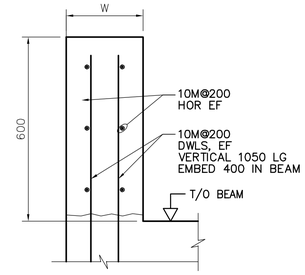


TYPICAL SECTION

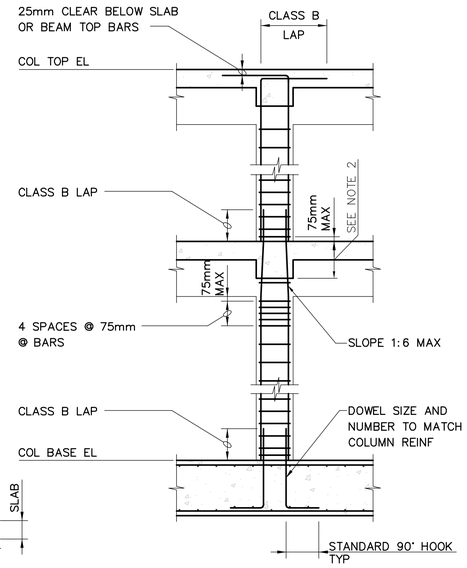
NOTE:
PROVIDE MINIMUM 1 – 15M CONTINUOUS AT EACH CORNER OF STIRRUPS.

NOTES:

1. PLACE TOP (T & TC) AND BOTTOM (B & BC) BARS IN MULTIPLE ROWS ONLY WHERE INDICATED IN SCHEDULE.
2. WHEN INDICATED IN BEAM SCHEDULE, SUBSTITUTE CLOSED TIES ( ) FOR STIRRUPS AND CLOSURE BARS SHOWN ( ).

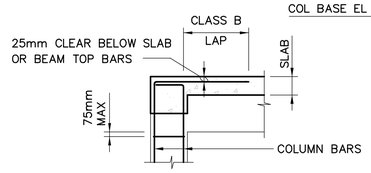


TYPICAL UPSTAND REINFORCING



NOTE:

1. FOR DIMENSIONS AND REINFORCEMENT SEE COLUMN SCHEDULE.
2. CONTINUE TIES AT SPACING NOTED THROUGH BEAM CONNECTION ZONE WHERE CONCRETE BEAMS DO NOT FRAME INTO COLUMN ON ALL FOUR SIDES



NON–CONTINUOUS END

COLUMN REINFORCING
N.T.S.

2 – DETAIL
N.T.S.

COLUMN TYPE		SIZE	VERTICAL REINF.	TIES	REMARKS	COLUMN TYPE		SIZE	VERTICAL REINF.	TIES	REMARKS
500 × 500	C1	500x500	8–25M	2–10M @ 200		400 × 400	C5	400x400	8–15M	2–10M @ 200	
700 × 700	C2	700x700	8–30M	2–15M @ 200	FROM EL. 236.170 TO EL. 245.000	200 × 300	C6	200x300	4–20M	2–10M @ 150	FROM EL. 236.170 TO EL.239.770
500 × 500	C2	500x500	8–25M	2–10M @ 200	FROM EL. 245.000 TO EL.249.100	300 × 300	C7	300x300	4–20M	2–10M @ 200	FROM EL. 236.170 TO EL.239.770
700 × 700	C3	700x700	8–30M	2–15M @ 200		500 × 600	C8	500x600	6–25M	2–10M @ 200	FROM EL. 236.170 TO EL.239.770
400 × 400	C4	400x400	8–30M	2–10M @ 200							

COLUMN SCHEDULE

NOTES:

1. * TOP REINFORCING MAY BE CALLED–OUT TWICE IN SCHEDULE. (I.E. "TOP REINFORCING AT RIGHT SUPPORT" OF BEAM THAT IS CONTINUOUS OVER THE RIGHT SUPPORT IS CALLED–OUT AS "TOP REINFORCING AT LEFT SUPPORT" OF ADJACENT BEAM.)
2. LEFT SUPPORT IS DESIGNATED AS THE SUPPORT CLOSEST TO THE LEFT SIDE OR BOTTOM OF SHEET ON WHICH FRAMING PLAN IS DRAWN, UNLESS NOTED OTHERWISE ON PLAN.
3. FOR CONCRETE BEAM END DETAIL , SEE 3 / WB–S0451 TYP. UNO

APEGM
Certificate of Authorization
CH2M HILL Canada Ltd.
No. 1441 Expiry: April 30, 2006

B.M.
ELEV.

NO.	REVISIONS	DATE	BY
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CH2MHILL
Fredericksen Cooper ARCHITECTS
EarthTech A Tyco International Ltd. Company

DESIGNED BY	KA	CHECKED BY	AP
DRAWN BY	IV	APPROVED BY	DJT
SCALE:	NTS	RELEASED FOR CONSTRUCTION BY:	R. SOROKOWSKI
DATE	2005/08/10	DATE	2006/02/08

ENGINEER'S SEAL
ORIGINAL SIGNED BY
D. KRUGER
2006/02/06

CONSULTANT DRAWING NO.
WC–S0515

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

WATER TREATMENT PLANT
CHEMICAL FEED SYSTEMS
FOUNDATIONS AND CONCRETE STRUCTURES

STRUCTURAL
CHEMICAL AREA
COLUMN AND BEAM SCHEDULES

CITY FILE NUMBER
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CITY DRAWING NUMBER
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