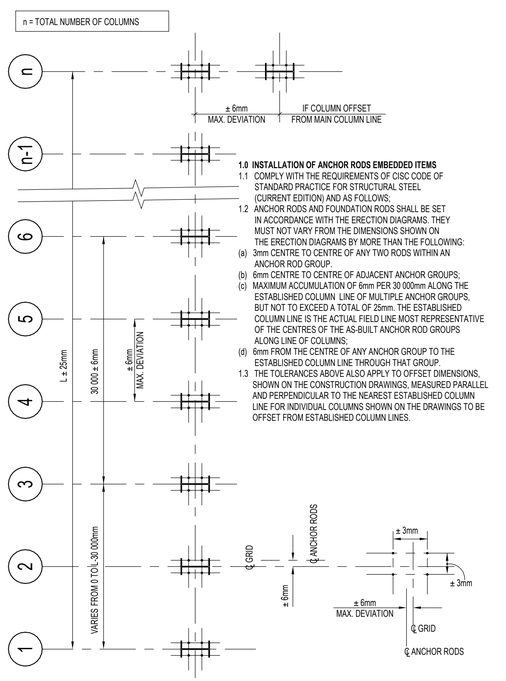
TOLERANCES ON ANCHOR ROD PLACEMENT — SAB01



1.0 INSTALLATION OF ANCHOR RODS EMBEDDED ITEMS

1.1 COMPLY WITH THE REQUIREMENTS OF CISC CODE OF STANDARD PRACTICE FOR STRUCTURAL STEEL (CURRENT EDITION) AND AS FOLLOWS.

1.2 ANCHOR RODS AND FOUNDATION RODS SHALL BE SET IN ACCORDANCE WITH THE ERECTION DIAGRAMS. THEY MUST NOT VARY FROM THE DIMENSIONS SHOWN ON THE ERECTION DIAGRAMS BY MORE THAN THE FOLLOWING:

(a) 3mm CENTRE TO CENTRE OF ANY TWO RODS WITHIN AN ANCHOR ROD GROUP

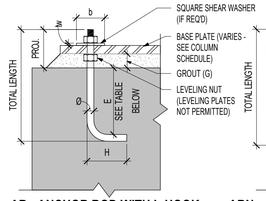
(b) 6mm CENTRE TO CENTRE OF ADJACENT ANCHOR GROUPS;

(c) MAXIMUM ACCUMULATION OF 6mm PER 30 000mm ALONG THE ESTABLISHED COLUMN LINE OF MULTIPLE ANCHOR GROUPS, BUT NOT TO EXCEED A TOTAL OF 25mm. THE ESTABLISHED COLUMN LINE IS THE ACTUAL FIELD LINE MOST REPRESENTATIVE OF THE CENTRES OF THE AS-BUILT ANCHOR ROD GROUPS ALONG LINE OF COLUMNS;

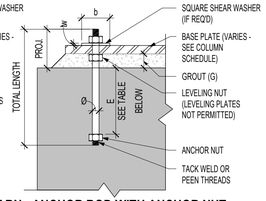
(d) 6mm FROM THE CENTRE OF ANY ANCHOR GROUP TO THE ESTABLISHED COLUMN LINE THROUGH THAT GROUP.

1.3 THE TOLERANCES ABOVE ALSO APPLY TO OFFSET DIMENSIONS, SHOWN ON THE CONSTRUCTION DRAWINGS, MEASURED PARALLEL AND PERPENDICULAR TO THE NEAREST ESTABLISHED COLUMN LINE FOR INDIVIDUAL COLUMNS SHOWN ON THE DRAWINGS TO BE OFFSET FROM ESTABLISHED COLUMN LINES.

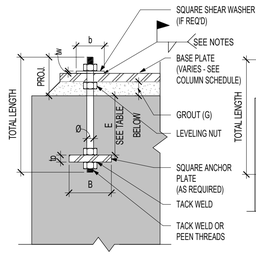
ANCHOR ROD DETAILS — SAB02



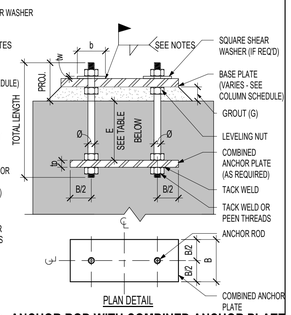
AR - ANCHOR ROD WITH L-HOOK



ARN - ANCHOR ROD WITH ANCHOR NUT



ARP - ANCHOR ROD WITH ANCHOR PLATE



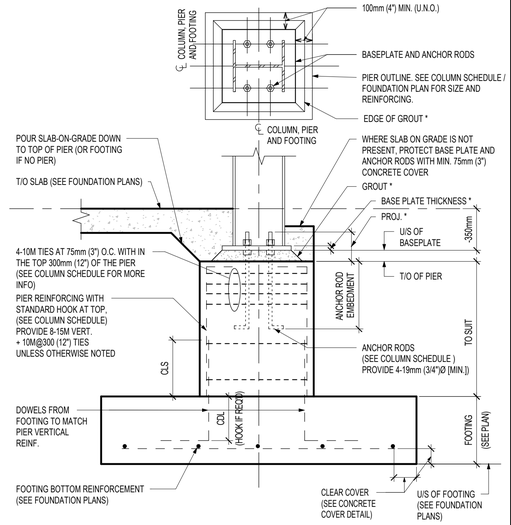
ARCP - ANCHOR ROD WITH COMBINED ANCHOR PLATE

ANCHOR		ANCHOR ROD						GROUT THICKNESS (G)	ANCHOR PLATE		PROJ. (MIN)	SHEAR WASHER	
MARK	TYPE	DIA (Ø)	EMBED (E)	HOOK (H)	GRADE (KSI)	Hf (kN)			WIDTH (B)	THICK (tp)		WIDTH (b)	THICK (tw)
AR1	AR	3/4"	300	75	36	N/A		50	N/A	N/A	180	N/A	N/A
AR2	ARP	1"	600	N/A	36	N/A		50	70	20	180	50	9.5

NOTES:
1. DESIGN CONNECTION OF SHEAR WASHER TO BASE PLATE FOR Hf NOTED IN TABLE IN EACH PLAN DIRECTION. IF NO FORCE NOTED, CONNECT FOR FULL SHEAR CAPACITY OF ANCHOR ROD.

STEEL GRAVITY COLUMN BASE DETAIL — SC02

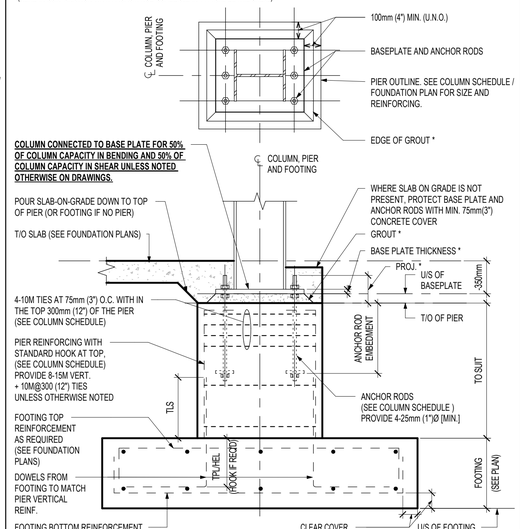
(READ IN CONJUNCTION WITH ANCHOR ROD SCHEDULE IN TYPICAL DETAIL SAB02)



NOTES:
1. FOOTINGS SHALL BE PLACED ON UNDISTURBED SOIL WITH A MINIMUM BEARING CAPACITY AS NOTED ON THE DRAWINGS.
2. GROUT UNDER BASE PLATES SHALL BE AN APPROVED PROPRIETARY BRAND PRE-MIXED, NON-METALLIC, NON-SHRINK GROUT UNLESS OTHERWISE APPROVED.
3. LEVELING PLATES ARE NOT PERMITTED.
4. REFER TO COLUMN SCHEDULE/FOUNDATION PLAN FOR BASE PLATES, ANCHOR ROD, PIER, FOOTING DIMENSIONS AND REINFORCEMENT.
5. REFER TO A04, SAB02 FOR ANCHOR ROD GRADE
6. REFER ALSO TO GENERAL NOTES, STEEL NOTES AND CAST-IN-PLACE CONCRETE NOTES.
7. REFER TO SPLICE AND DEVELOPMENT TABLES IN C02A, C02B, C03A AND C03B.
8. REFER TO SAB02 FOR ALL ITEMS MARKED WITH *

STEEL MOMENT COLUMN BASE DETAIL (NOTED AS M IN COLUMN SCHEDULE) — SC04

(READ IN CONJUNCTION WITH ANCHOR ROD SCHEDULE IN TYPICAL DETAIL SAB02)



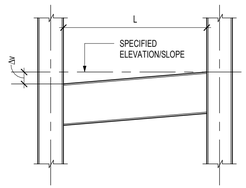
NOTES:
1. FOUNDATION DESIGN MOMENT Mf NOTED IN COLUMN SCHEDULE.
2. GROUT UNDER BASE PLATES SHALL BE AN APPROVED PROPRIETARY BRAND PRE-MIXED, NON-METALLIC, NON-SHRINK GROUT UNLESS OTHERWISE APPROVED.
3. LEVELING PLATES ARE NOT PERMITTED.
4. REFER TO COLUMN SCHEDULE/FOUNDATION PLAN FOR BASE PLATES, ANCHOR ROD, PIER, FOOTING DIMENSIONS AND REINFORCEMENT.
5. REFER TO E04, SAB02 FOR ANCHOR ROD GRADE.
6. REFER ALSO TO GENERAL NOTES, STEEL NOTES AND CAST-IN-PLACE CONCRETE NOTES.
7. REFER TO SPLICE AND DEVELOPMENT TABLES IN C02A, C02B, C03A AND C03B.
8. THIS DETAIL APPLIES FOR CONVENTIONAL CONSTRUCTION ONLY (Rd=1.5).
9. REFER TO SAB02 FOR ALL ITEMS MARKED WITH *.

ERECTION TOLERANCES FOR STEEL BEAMS — SB02A

(READ IN CONJUNCTION WITH SB02B)

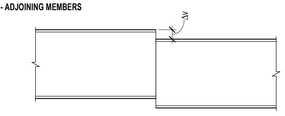
1. VERTICAL DEVIATION FROM SPECIFIED ELEVATION/SLOPE.

FLOOR BEAMS:	Δv = ± 10mm (3/8") OR = L/500
MEMBERS WITH ADJUSTABLE CONNECTIONS:	Δv =± 6mm (1/4") OR = L/1000



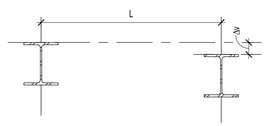
2. VERTICAL DEVIATION FROM SPECIFIED ELEVATION - ADJOINING MEMBERS

FLOOR BEAMS:	Δv = ±6mm (1/4")
MEMBERS WITH ADJUSTABLE CONNECTIONS:	Δv = ±2mm (3/32")



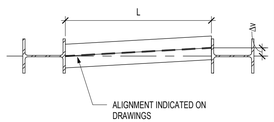
3. VERTICAL DEVIATION FROM ADJACENT BEAMS

FLOOR BEAMS:	Δv = L/1000



4. HORIZONTAL DEVIATION FROM INDICATED POSITION

FLOOR BEAMS:	ΔH = ±12mm (1/2") OR L/500
SPANDREL BEAMS:	ΔH = ±6mm (1/4") OR L/1000



NOTES

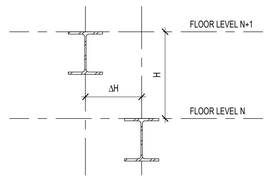
1. TOLERANCES PROVIDED IN THE DETAIL ABOVE SHALL NOT SUPERSEDE THE VALUES INDICATED IN CSA S16 AND REFERENCED DOCUMENTS.

ERECTION TOLERANCES FOR STEEL BEAMS — SB02B

(READ IN CONJUNCTION WITH SBB02A)

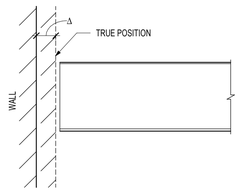
5. HORIZONTAL DEVIATION FROM ADJACENT BEAMS

FOR H < 3000mm (10'-0"):	ΔH = ±5mm (3/16")
FOR H > 3000mm (10'-0"):	ΔH = H/600



6. HORIZONTAL DEVIATION FROM SUPPORT POINT AT VERTICAL WALL

Δ = ±25mm (1")



NOTES

1. TOLERANCES PROVIDED IN THE DETAIL ABOVE SHALL NOT SUPERSEDE THE VALUES INDICATED IN CSA S16 AND REFERENCED DOCUMENTS.
2. FOR ERECTION TOLERANCES OF SPECIAL MEMBERS SUCH AS CRANE GIRDERS, CRANE RAILS AND MONORAIL BEAMS, SEE THE APPROPRIATE CODE RECOMMENDATIONS.
3. DEVIATIONS SHOWN FOR W-SHAPES ALSO APPLY TO BUILT-UP SECTIONS, HOLLOW STRUCTURAL SECTIONS, CHANNEL AND ANGLE SHAPES.
4. ERECTION TOLERANCES ARE TO BE MEASURED IN CALM WEATHER. RECORD AMBIENT TEMPERATURE AT TIME TOLERANCES ARE VERIFIED.

NON-LOAD BEARING BLOCK WALL LINTELS — M01A

STRUCTURAL STEEL LINTELS

WALL OPENING CLEAR SPAN	MASONRY BLOCK THICKNESS				
	90 (4")	140 (6")	190 (8")	240 (10")	290 (12")
300mm TO 500mm (12" TO 22")	75mm X 8mm PL (3"x5/16" PL)	125mm X 8mm PL (5"x5/16" PL)	175mm X 8mm PL (7"x5/16" PL)	225mm X 8mm PL (9"x5/16" PL)	275mm X 8mm PL (11"x5/16" PL)
550mm TO 1200mm (22" TO 4'-0")	1-L89x89x6.4 OR 2-L44x44x4.8	1-L127x89x6.4 (LLH) OR 2-L64x44x6.4	2-L89x89x6.4	L102x89x6.4 (LLH) + L127x89x6.4 (LLH)	3-L89x89x6.4
1200mm TO 1830mm (4'-0" TO 6'-0")	1-L127x89x7.9 (LLV) OR 2-L51x38x6.4(LLV)	1-L127x127x7.9 OR 2-L89x64x6.4 (LLV)	2-L89x89x6.4	L102x89x6.4 (LLH) + L127x89x6.4 (LLH)	3-L89x89x6.4
1830mm TO 2440mm (6'-0" TO 8'-0")	1-L127x89x7.9 (LLV)	1-L127x127x7.9 OR 2-L89x64x7.9 (LLV)	2-L127x89x6.4 (LLV)	L102x102x7.9 + L127x102x7.9 (LLH)	3-L127x89x6.4 (LLV)
2440mm TO 3080mm (8'-0" TO 10'-0")	1-L127x89x9.5 (LLV)	1-L127x127x7.9	2-L127x89x7.9 (LLV)	L152x102x7.9 (LLV)+ L127x127x7.9	3-L127x89x7.9 (LLV)
3080mm TO 3660mm (10'-0" TO 12'-0")	N/A	N/A	W200x27 + 175x6.4 PL. BOTTOM	W200x27 + 225x6.4 PL. BOTTOM	N/A

STRUCTURAL STEEL LINTEL NOTES:
1. WHEN PROVIDING MULTIPLE ANGLES SEE DIAGRAMS FOR ORIENTATION. BOLT DOUBLE ANGLES BACK TO BACK USING 16mmØ BOLTS OR PROVIDE 6mmX50mm (1/4"x2") LONG WELDS @450mm (18") O/C STARTING AT 100mm (4") MAX FROM THE EACH END OF THE LINTEL.
2. SAWCUT WEBS OF BLOCK IN COURSE OF BLOCK OVER OPENING AS NECESSARY TO INSTALL ANGLES.
3. ALTERNATIVES PROVIDED FOR CASES WHERE EXPOSED FACE OF SINGLE ANGLE IS NOT ACCEPTABLE.

MASONRY BEAM LINTELS

WALL OPENING CLEAR SPAN	MASONRY BLOCK THICKNESS				
		140 (6")	190 (8")	240 (10")	290 (12")
0mm TO 1200mm (0" TO 4'-0")		390 (16") DEEP 1-10M B	390 (16") DEEP 1-10M B	190 (8") DEEP 1-10M B	190 (8") DEEP 1-10M B
1200mm TO 1830mm (4'-0" TO 6'-0")		390 (16") DEEP 1-10M B	390 (16") DEEP 1-10M B	390 (16") DEEP 1-10M B	390 (16") DEEP 1-15M B
1830mm TO 2440mm (6'-0" TO 8'-0")		390 (16") DEEP 1-10M B	390 (16") DEEP 1-15M B	390 (16") DEEP 1-15M B	390 (16") DEEP 1-15M B
2440mm TO 3080mm (8'-0" TO 10'-0")		390 (16") DEEP 1-10M B	390 (16") DEEP 1-15M B	390 (16") DEEP 1-15M B	390 (16") DEEP 3-10M B

MASONRY BEAM LINTEL NOTES:
1. BEAM MUST BE FILLED WITH MASONRY GROUT (MORTAR IS NOT ACCEPTABLE). REFER TO M03 FOR DETAILS.
2. TEMPORARILY SHORE LINTEL UNTIL GROUT HAS REACHED FULL DESIGN STRENGTH.

APPROVAL STAMP

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ISSUE OR REVISION

NO.	ISSUED FOR	DATE
2	ISSUED FOR TENDER	DEC/01/23

PROJECT:
CITY OF VAUGHAN
FIRE STATION 7-12
9511 WESTON ROAD, VAUGHAN

CLIENT
VAUGHAN

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO COMMENCEMENT OF THE WORK. ANY DISCREPANCIES ARE TO BE REPORTED TO THE CONSULTANT.

Salas O'Brien
2235 Sheppard Ave. E. Suite No. 1100
Toronto, ON M2J 5B5
Stephenson Engineering, a company of Salas O'Brien

PROFESSIONAL SEAL

DWG TITLE
TYPICAL NOTES

ORIENTATION

DATE: DEC. 2023

SCALE	DRAWN BY	CHECKED BY
1 : 1		MM

DWG STATUS : TENDER ISSUE

PROJECT No. 20210932

DRAWING No.	REVISION
S4-03	2

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