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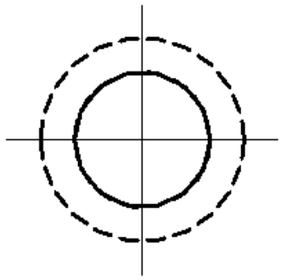
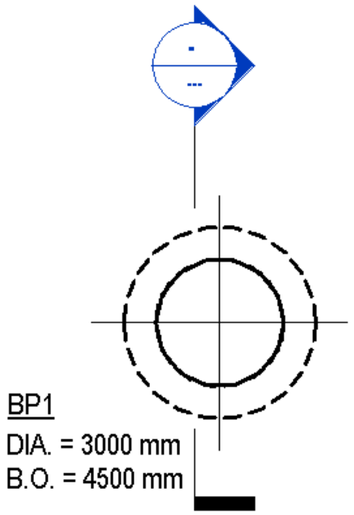
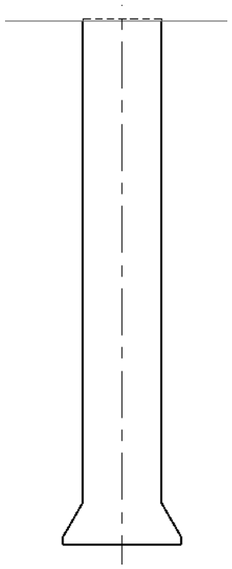
BIM OBJECT	BORED PILE



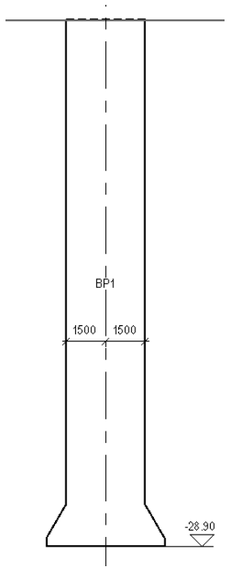
PLAN VIEW OF OBJECT



PLAN VIEW OF OBJECT
(WITH ANNOTATION)

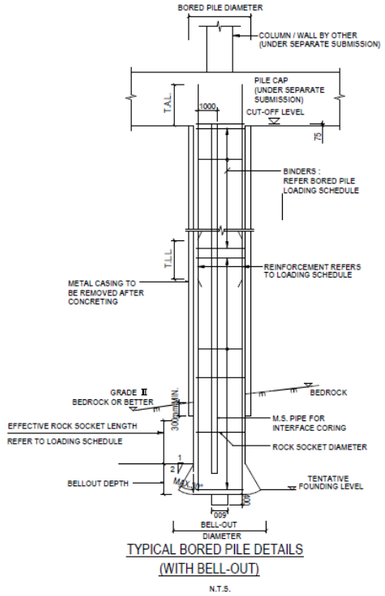


SECTION VIEW OF OBJECT



SECTION VIEW OF OBJECT
(WITH ANNOTATION)

3D VIEW (FOR REFERENCE ONLY)



TYPICAL BORED PILE DETAILS
(WITH BELL-OUT)
N.T.S.

DETAILS (2D DRAFTING)

■ Geometrical information ■ Non-geometrical information ■ Schedule formula

BORED PILE LOADING SCHEDULE (1 OF 2)

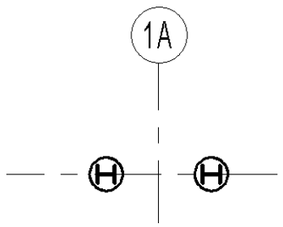
BORED PILE MARK	BORED PILE CAP THICKNESS (FOR REFERENCE ONLY)	BORED PILE DIAMETER	BORED PILE EFFECTIVE SHAFT DIAMETER	ROCK SOCKET DIAMETER	PILE BASE DIAMETER	(X) BELLOUT DEPTH	(AA) CUT-OFF LEVEL	(W) TENTATIVE ROCKHEAD LEVEL	(Z) TENTATIVE FOUNDING LEVEL	(AB)=(AA)-(Z) TENTATIVE PILE LENGTH	(Y) EFFECTIVE ROCK SOCKET LENGTH	(a) SELF-WEIGHT OF BORED PILE (SUBMERGED) (SWP)	(b) Dmin (total)	(c)=(a)+(b) Dmin + SWP	(d) SDL(total)	(b)+(d) TOTAL DEAD LOAD (DL) = Dmin + SDL	(e) LIVE LOAD (LL) (total)	(f)=(b)+(d)+(e) DL + SDL + LL	(h) Wmax (total)	(i) TOTAL UPLIFT FORCE DUE TO GROUND WATER (U)	(j) ADDITIONAL LOAD DUE TO STEPPING EFFECT	
																					WITHOUT WIND	WITH WIND
	(m)	(m)	(m)	(m)	(m)	(m)	(mPD)	(mPD)	(mPD)	(m)	(m)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)
BP1	2.5	3.0	2.80	2.80	4.5	1.50	-8.775	-45.5	-50.90	42.125	3.6	3820	43000	46820	14700	57700	13700	71400	18500	-20400	80	99

BORED PILE LOADING SCHEDULE (2 OF 2)

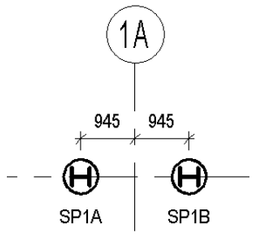
BORED PILE MARK	(f) MAX. PILE LOAD: DL + SDL + LL	(f)+(h) MAX. PILE LOAD: DL + SDL + LL + Wmax	(f)+(a)+(j) MAX. PILE LOAD: DL + SDL + LL + Stepping Load	(f)+(h)+(a)+(k) MAX. PILE LOAD: DL + SDL + LL + Wmax + Stepping Load	(i)=(b)+(i) MIN. PILE LOAD: Dmin + SWP -U	(m)=(b)-(h)+(i) MIN. PILE LOAD: Dmin + SWP - Wmax - U	(n)=(b)-1.5*(h)+1.5*(i) MIN. PILE LOAD: Dmin + SWP - 1.5Wmax - 1.5U	VERTICAL BARS: LAYER 1	VERTICAL BARS: LAYER 2	LINKS	(o) PILE BARING CAPACITY (COMPRESSION): WITHOUT WIND	(p)=(o)*1.25 PILE BARING CAPACITY (COMPRESSION): WITH WIND	(q) ROCK FRICTION (COMPRESSION): WITHOUT WIND	(r)=(q)*1.25 ROCK FRICTION (COMPRESSION): WITH WIND	(r1) ROCK FRICTION (TENSION)	(p1) ROCK/SOIL MASS (SUBMERGED)	(a1)=Min of(((r1),(p1)/3))+(a) UPLIFT RESISTANCE: ALLOWABLE	(u1)=Min of(((r1)*2,(p1))+(a) UPLIFT RESISTANCE: ULTIMATE	(u)=(o)+(q) BORED PILE BEARING CAPACITY (COMPRESSION): WITHOUT WIND	(v)=(u)*1.25 BORED PILE BEARING CAPACITY (COMPRESSION): WITH WIND	(b)+0.9*(u1)-1.5*(h)+1.5*(i)>0 STABILITY CHECK: Dmin + 0.9*Ru -1.5Wmax - 1.5U	(b)+(a1)-(h)+(i)>0 STABILITY CHECK: Dmin + Ra - Wmax - U	REFERENCE BORED HOLE
	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	LAYER 1	LAYER 2		(m)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)		
BP1	64000	78700	66700	81400	24700	10000	-5100	44 T50	40 T50	T16 / 200 (1 rings)	55230	69038	12150	15188	8020	15477	7859	18177	67380	84225	8559	15159	BH8

SCHEDULE

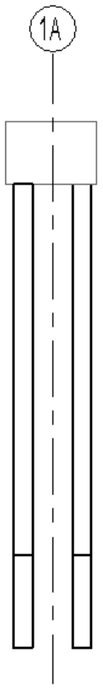
BIM OBJECT	SOCKET H-PILE



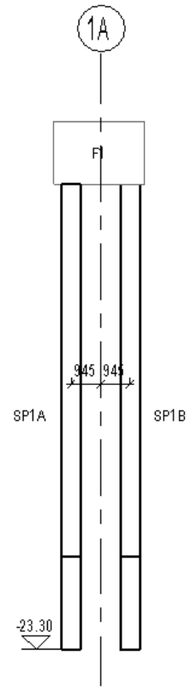
PLAN VIEW OF OBJECT



PLAN VIEW OF OBJECT (WITH ANNOTATION)

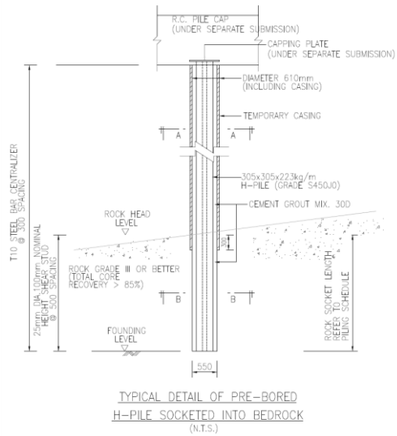


SECTION VIEW OF OBJECT



SECTION VIEW OF OBJECT (WITH ANNOTATION)

3D VIEW(FOR REFERENCE ONLY)



TYPICAL DETAIL OF PRE-BORED H-PILE SOCKETED INTO BEDROCK
(N.T.S.)

DETAILS (2D DRAFTING)

■ Geometrical information ■ Non-geometrical information ■ Schedule formula

SOCKET H-PILE LOADING SCHEDULE (1 OF 2)

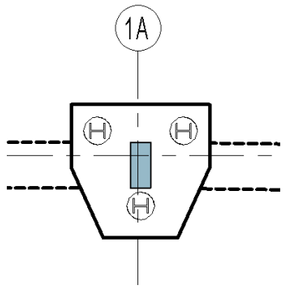
PILE MARK	PILE CAP THICKNESS (FOR REFERENCE ONLY)	(A) PIPE EFFECTIVE SHAFT DIAMETER	(A) ROCK SOCKET DIAMETER	PILE CAP BASE LEVEL	(AA) CUT-OFF LEVEL	(w) TANTATIVE ROCKHEAD LEVEL	(Z) TANTATIVE FOUNDING LEVEL	(AB) TENTATIVE PILE LENGTH	TENTATIVE PILE LENGTH ABOVE RH	(Y) EFFECTIVE ROCK SOCKET LENGTH	(P1) ROCK MASS (SUBMEGED)	(P2) SOIL MASS SURROUNDING PILE (SUBMERGED)	(P3) = (P1) + (P2) ROCK/SOIL MASS (SUBMERGED W/O PILE SELF-WEIGHT	(a) SELF-WEIGHT (SUBMERGED) (SWP)	(P4) = (P3) + (a) ROCK / SOIL MASS (SUBMERGED) W/ PILE SELF WEIGHT	(b) Min DEAD LOAD PER PILE (Dmin)	(d) SDL PER PILE	(b) + (d) TOTAL DEAD LOAD (DL) = Dmin + SDL	(e) LIVE LOAD (LL)	(f) = (b) + (d) + (e) DL + SDL + LL	(h) Wmax PER PILE	(i) UPLIFT FORCE PER PILE (AT THE BOTTOM OF CAP) (U)	(j) ADDITIONAL LOAD DUE TO STEPPING EFFECT	(k) = (j) * 1.25
																								WITHOUT WIND	WITH WIND
	(m)	(m)	(mPD)	(mPD)	(mPD)	(m)	(m)	(m)	(m)	(m)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)
SP1A	2.0	0.61	0.61	-8.35	-8.275	-46.3	-53.3	45.025	38.025	7	200	5112	5312	230	5542	2197	1233	3430	1067	4497	333	-2500	441	551
SP1B	2.0	0.61	0.61	-8.35	-8.275	-46.3	-53.3	45.025	38.025	7	200	5112	5312	230	5542	2197	1233	3430	1067	4497	333	-2500	441	551

SOCKET H-PILE LOADING SCHEDULE (2 OF 2)

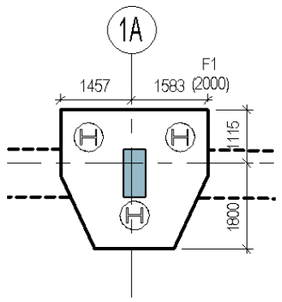
PILE MARK	(f) MAX. PILE LOAD DL + SDL + LL	(f)+(h) MAX. PILE LOAD DL + SDL + LL + Wmax	(f)+(a)+(j) MAX. PILE LOAD DL + SDL + LL + SWP + Stepping Load	(f)+(h)+(a)+(k) MAX. PILE LOAD DL + SDL + LL + Wmax + SWP + Stepping Load	(l)=(b)+(a)+(i) MIN. PILE LOAD Dmin + SWP -U	(m)=(b)-(h)+(i) MIN. PILE LOAD Dmin + SWP - Wmax - U	(n)=(b)-1.5*(h)+1.5*(i) MIN. PILE LOAD Dmin + SWP - 1.5Wmax - 1.5U	(o) PILE BARING CAPACITY (COMPRESSION) WITHOUT WIND	(p)=(o)*1.25 PILE BARING CAPACITY (COMPRESSION) WITH WIND	(r1) ROCK FRICTION (TENSION)	(p1) = (P3) ROCK/SOIL MASS (SUBMERGED)	(a1)=Min of(((r1),(p1)/3))+(a) UPLIFT RESISTANCE ALLOWABLE	(u1)=Min of(((r1)*2,(p1))+(a) UPLIFT RESISTANCE ULTIMATE	(b)+0.9*(u1)-1.5*(h) +1.5*(i)>0 STABILITY CHECK Dmin + 0.9*Ru -1.5Wmax - 1.5U	(b)+(a1)-(h)+(i)>0 STABILITY CHECK Dmin + Ra - Wmax - U	REFERENCE BORED HOLE
	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(m)	(kN)	(kN)	(kN)	Ra (kN)	Ru (kN)	(kN)	(kN)	
SP1A	4497	4830	5168	5611	-73	-407	-1823	6106	9159	3053	5312	2001	5542	2934	1364	BH1
SP1B	4497	4830	5168	5611	-73	-407	-1823	6106	9159	3053	5312	2001	5542	2934	1364	BH1

SCHEDULE

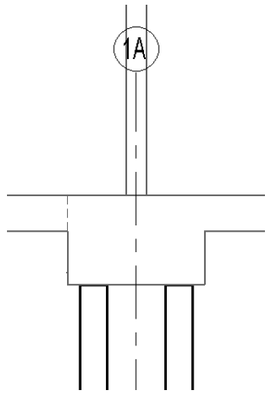
BIM OBJECT	PILE CAP



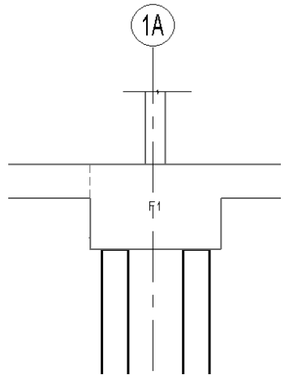
PLAN VIEW OF OBJECT



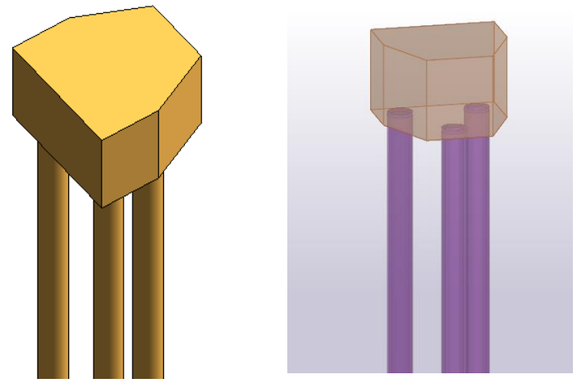
PLAN VIEW OF OBJECT
(WITH ANNOTATION)



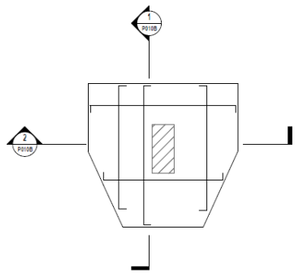
SECTION VIEW OF OBJECT



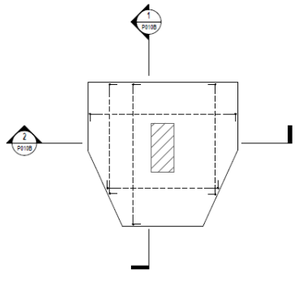
SECTION VIEW OF OBJECT
(WITH ANNOTATION)



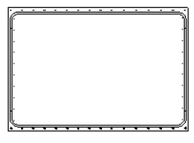
3D VIEW(FOR REFERENCE ONLY)



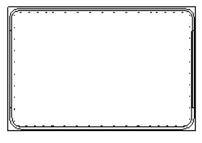
PILE CAP F1 (2000mm THK.) TOP BAR
1 : 50



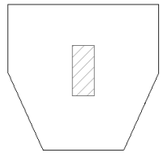
PILE CAP F1 (2000mm THK.) BOTTOM BAR
1 : 50



1 SECTION 1
1 : 50

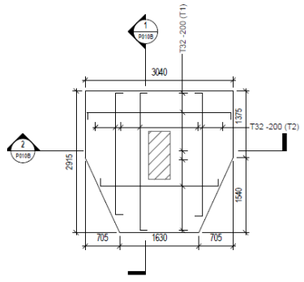


2 SECTION 2
1 : 50

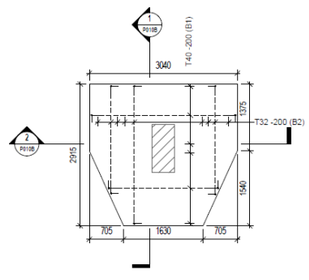


PILE CAP F1 (2000mm THK.)
(F2, F3, F4, F7 & F8 SIMILAR)
(SHEAR REINFORCEMENT)
1 : 50

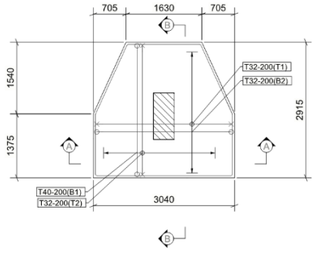
RC DETAIL OF OBJECT



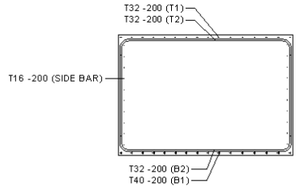
PILE CAP F1 (2000mm THK.) TOP BAR
1 : 50



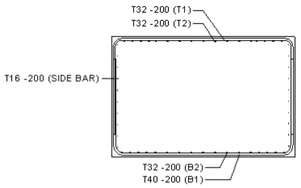
PILE CAP F1 (2000mm THK.) BOTTOM BAR
1 : 50



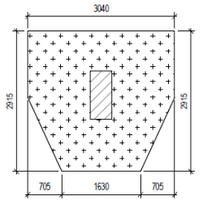
PILE CAP F1 (2000MM THK.)
(F2,F3,F4,F7&F8 SIMILAR)
1:50



1 SECTION 1
1 : 50

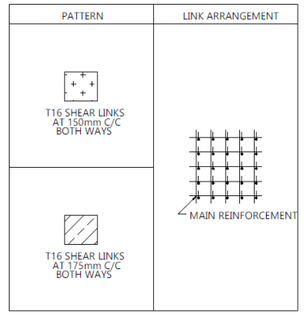


2 SECTION 2
1 : 50



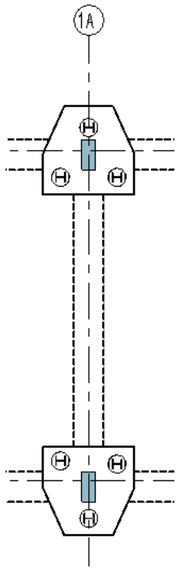
PILE CAP F1 (2000mm THK.)
(F2, F3, F4, F7 & F8 SIMILAR)
(SHEAR REINFORCEMENT)
1 : 50

LEGEND FOR SHEAR LINK DIAGRAM:

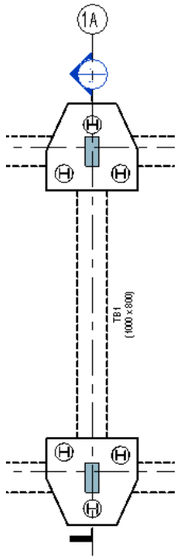


RC DETAIL OF OBJECT WITH ANNOTATION

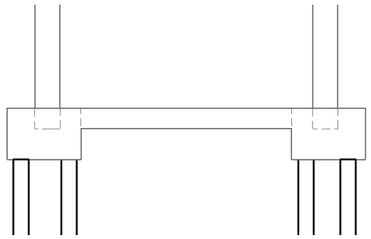
BIM OBJECT	TIE BEAM



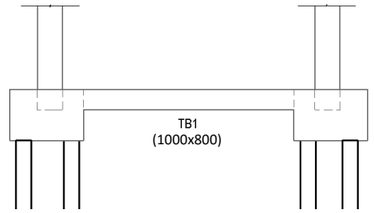
PLAN VIEW OF OBJECT



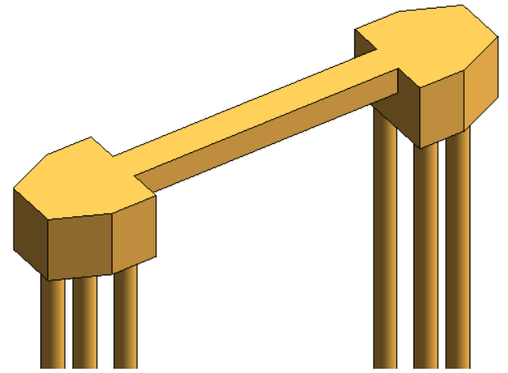
PLAN VIEW OF OBJECT
(WITH ANNOTATION)



SECTION VIEW OF OBJECT



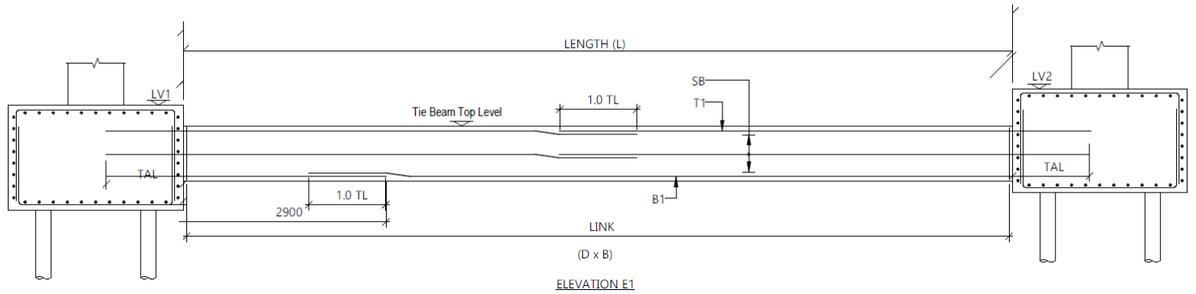
SECTION VIEW OF OBJECT
(WITH ANNOTATION)



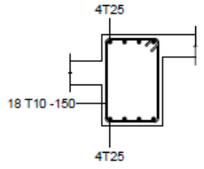
3D VIEW(FOR REFERENCE ONLY)

■ Geometrical information ■ Non-geometrical information ■ Schedule formula

TIE BEAM R.C. DETAILS SCHEDULE															
TIE BEAM MARK	BEAM SIZE (D x B)	LENGTH (m)	TIE BEAM TOP LEVEL (mPD)	PILE CAP (P1)	TOP LEVEL (Lv1) (mPD)	PILE CAP (P2)	TOP LEVEL (Lv2) (mPD)	STEEL BAR					LINK	SECTION REFERENCE	ELEVATION REFERENCE
								T1	T2	B1	B2	SB			
TB1	1000 x 800	10.935	-6.35	F1	-6.35	F2	-6.35	10T40	6T40	10T40	6T40	5T12 E.F.	T12-150 T.S.	SECTION S1	ELEVATION E1
TB2	1000 x 800	7.385	-6.35	F1	-6.35	F3	-6.35	10T40	6T40	10T40	6T40	5T12 E.F.	T12-150 T.S.	SECTION S1	ELEVATION E1



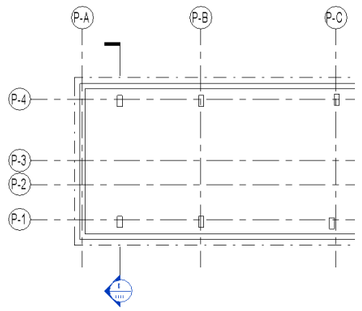
ELEVATION E1



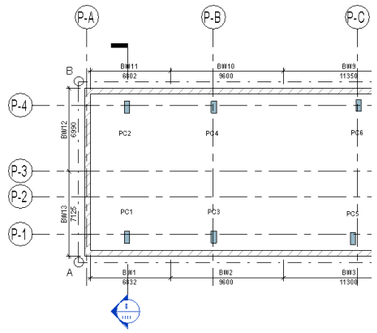
SECTION

SCHEDULE

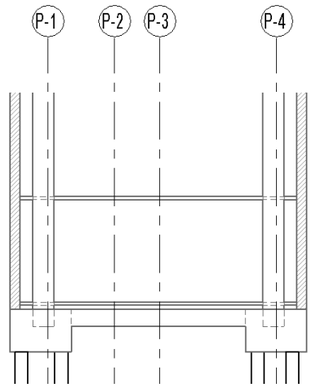
BIM OBJECT	SCREEN WALL	



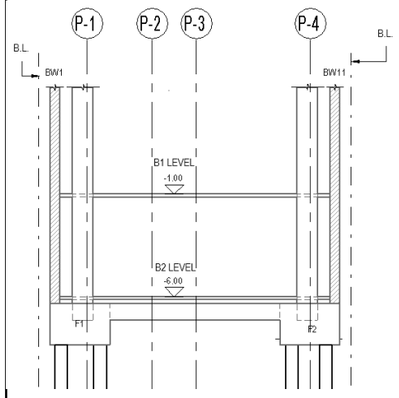
PLAN VIEW OF OBJECT



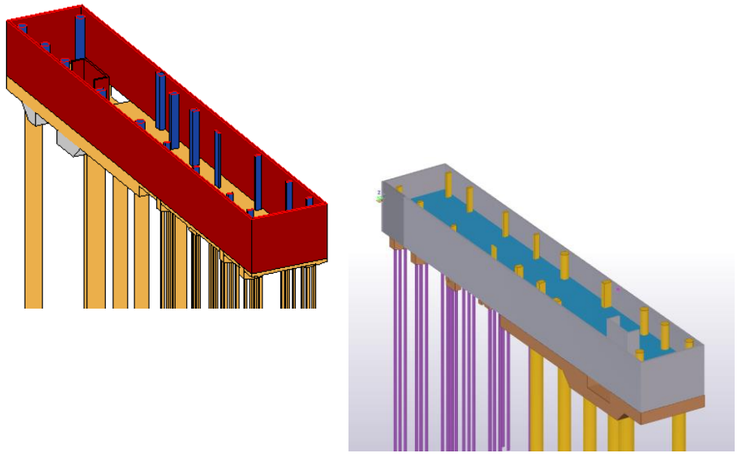
PLAN VIEW OF OBJECT
(WITH ANNOTATION)



SECTION VIEW OF OBJECT



SECTIONVIEW OF OBJECT
(WITH ANNOTATION)



3D VIEW(FOR REFERENCE ONLY)

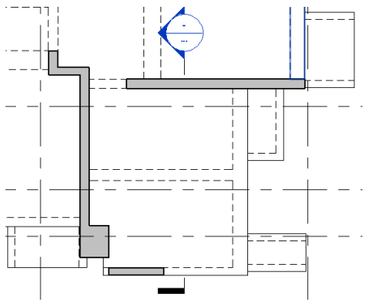
■ Geometrical information ■ Non-geometrical information ■ Schedule formula

WALL LOADING SCHEDULE ABOVE PILE CAP (1 OF 2)

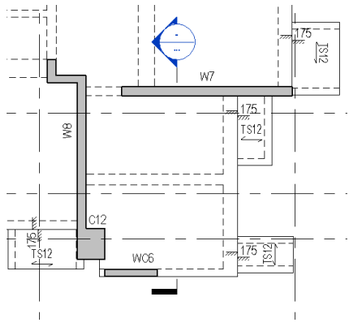
WALL MARK	ANGLE	MIN DEAD LOAD (Dmin)						SDL						DEAD LOAD (DL) = Dmin + SDL						LIVE LOAD (LL)						DL + LL					
		P (kN)	Mx (kNm)	My (kNm)	Vx (kN)	Vy (kN)	Mz (kNm)	P (kN)	Mx (kNm)	My (kNm)	Vx (kN)	Vy (kN)	Mz (kNm)	P (kN)	Mx (kNm)	My (kNm)	Vx (kN)	Vy (kN)	Mz (kNm)	P (kN)	Mx (kNm)	My (kNm)	Vx (kN)	Vy (kN)	Mz (kNm)	P (kN)	Mx (kNm)	My (kNm)	Vx (kN)	Vy (kN)	Mz (kNm)
BW1	0	2300	0	-900	0	0	0	700	0	-500	0	0	0	3000	0	-1400	0	0	0	400	0	-200	0	0	0	3400	0	-1600	0	0	0
BW2	0	3200	0	-600	0	0	0	1100	0	-300	0	0	0	4300	0	-900	0	0	0	700	0	-100	0	0	0	5000	0	-1000	0	0	0
BW3	0	3200	0	-600	0	0	0	900	0	-300	0	0	0	4100	0	-900	0	0	0	600	0	-100	0	0	0	4700	0	-1000	0	0	0
BW4	0	2600	0	-300	0	0	0	400	0	-100	0	0	0	3000	0	-400	0	0	0	400	0	-100	0	0	0	3400	0	-500	0	0	0
BW5	0	11300	0	-2500	0	0	0	2200	0	2600	0	0	0	13500	0	100	0	0	0	4000	0	-3300	0	0	0	17500	0	-3200	0	0	0
BW6	90	4000	0	-2200	0	0	0	1000	0	-800	0	0	0	5000	0	-3000	0	0	0	1100	0	-600	0	0	0	6100	0	-3600	0	0	0
BW7	0	19600	0	-11400	0	0	0	5800	0	1800	0	0	0	25400	0	-9600	0	0	0	6000	0	-14700	0	0	0	31400	0	-24300	0	0	0
BW8	0	3400	0	500	0	0	0	800	0	300	0	0	0	4200	0	800	0	0	0	600	0	100	0	0	0	4800	0	900	0	0	0
BW9	0	2000	0	-200	0	0	0	200	0	-100	0	0	0	2200	0	-300	0	0	0	200	0	-200	0	0	0	2400	0	-500	0	0	0

SCHEDULE

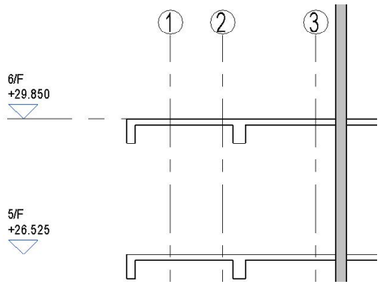
BIM OBJECT	SLAB	



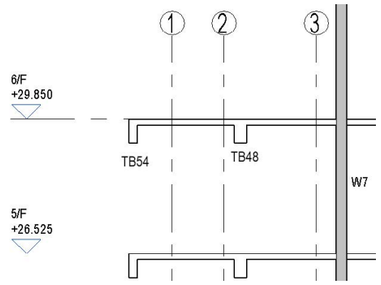
PLAN VIEW OF OBJECT



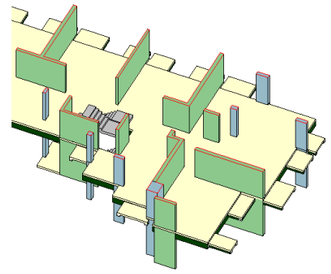
PLAN VIEW OF OBJECT
(WITH ANNOTATION)

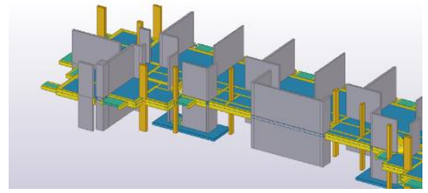


SECTION VIEW OF OBJECT

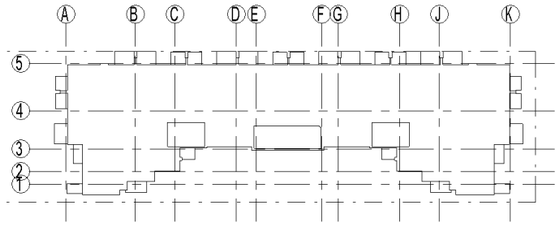


SECTIONVIEW OF OBJECT
(WITH ANNOTATION)



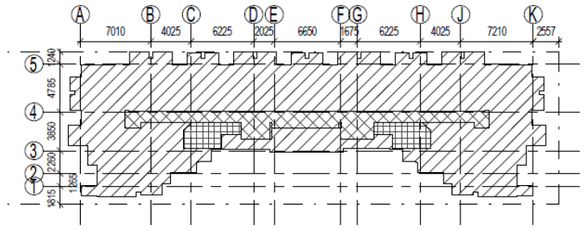


3D VIEW(FOR REFERENCE ONLY)



TYP FLOOR LOADING KEY PLAN
1 : 300

LOADING KEY PLAN OF OBJECT

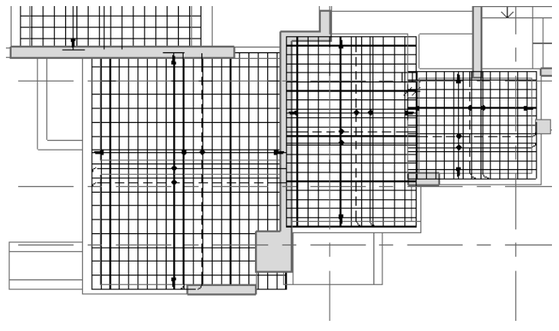


TYP FLOOR LOADING KEY PLAN
1 : 300

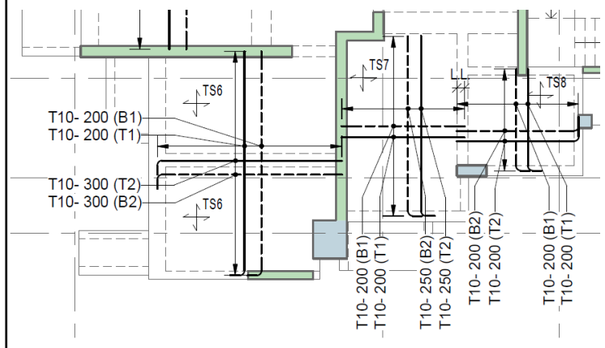
LOADING KEY PLAN

USAGE	LEGEND	L.L. (kPa)	FIN. (kPa)	F.R.R. (MIN)
STAIRCASE		3.0	1.25	60/60/60
LOBBY		3.0	1.25	60/60/60
DOMESTIC		2.0	0.50	60/60/60
PLANT ROOM		7.5	1.25	60/60/60
FLAT ROOF		5.0	5.60	60/60/60

LOADING KEY PLAN WITH ANNOTATION

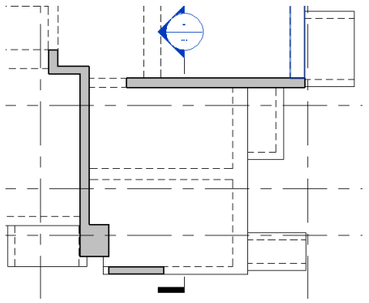


PLAN VIEW OF OBJECT WITH REBAR

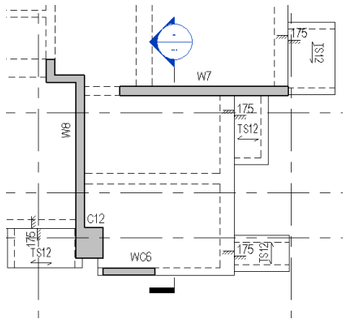


PLAN VIEW OF OBJECT WITH REBAR
(WITH ANNOTATION)

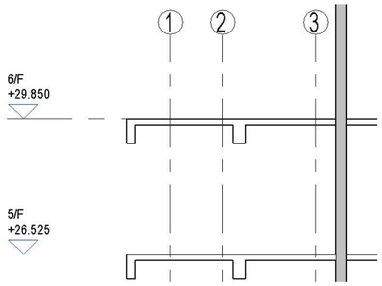
BIM OBJECT	STRUCTURAL WALL



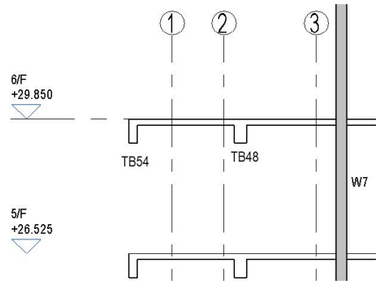
PLAN VIEW OF OBJECT



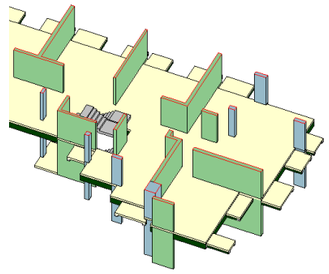
PLAN VIEW OF OBJECT
(WITH ANNOTATION)

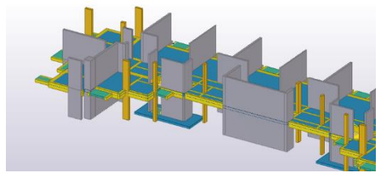


SECTION VIEW OF OBJECT

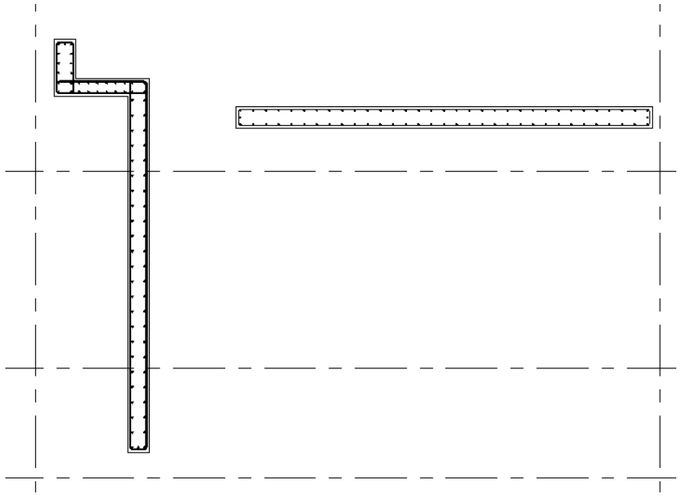


SECTIONVIEW OF OBJECT
(WITH ANNOTATION)



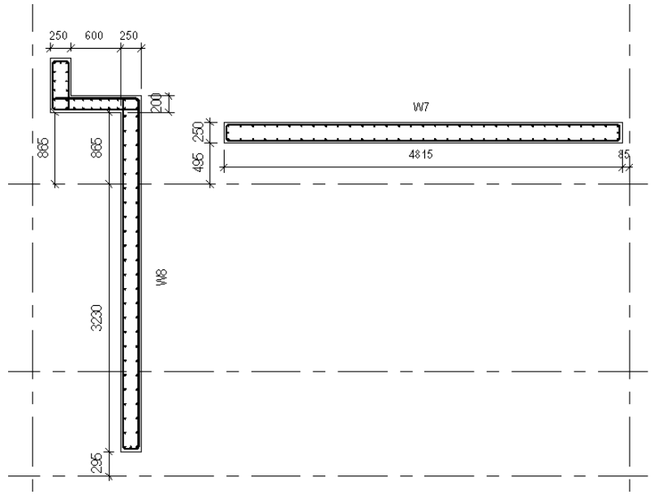


3D VIEW(FOR REFERENCE ONLY)



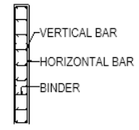
PLAN VIEW OF OBJECT WITH REBAR

■ Geometrical information ■ Non-geometrical information



LEGEND:

GRID LINE

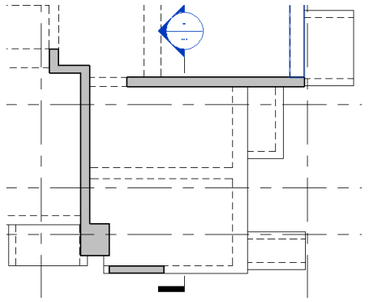


TYPICAL DETAIL OF WALL
(N.T.S.)

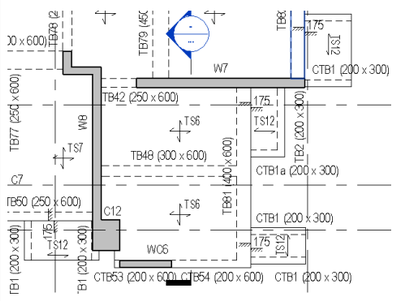
R.C. WALL SCHEDULE								
FLOOR	WALL MARK	CONCRETE GRADE	THICKNESS (mm)	VERTICAL BARS	HORIZONTAL BARS	BINDER		STEEL RATIO (%)
						HORIZONTAL	VERTICAL	
3/F	W7	C60	250	T25-150	T12-125	T12-200	150	1.3
3/F	W8	C60	250	T32-175	T12-125	T12-200	150	1.8

PLAN VIEW OF OBJECT WITH REBAR
(WITH ANNOTATION)

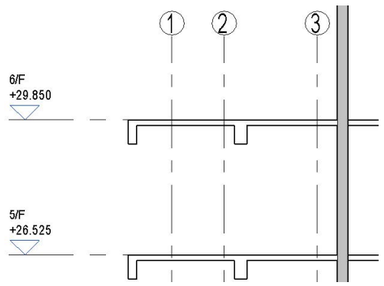
BIM OBJECT	BEAM	



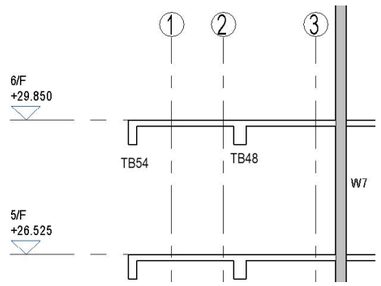
PLAN VIEW OF OBJECT



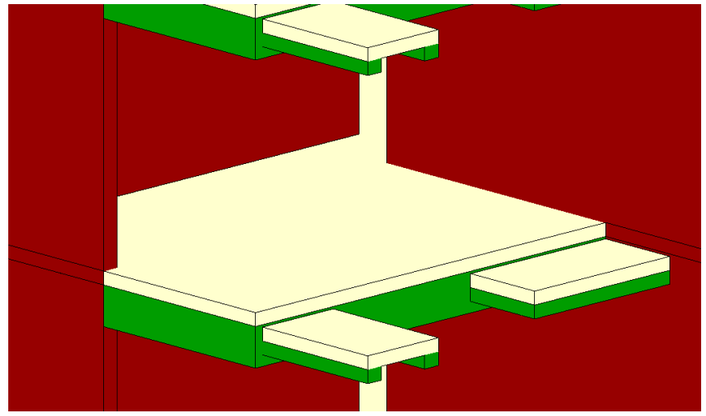
PLAN VIEW OF OBJECT WITH ANNOTATION



SECTION VIEW OF OBJECT



SECTIONVIEW OF OBJECT ANNOTATION

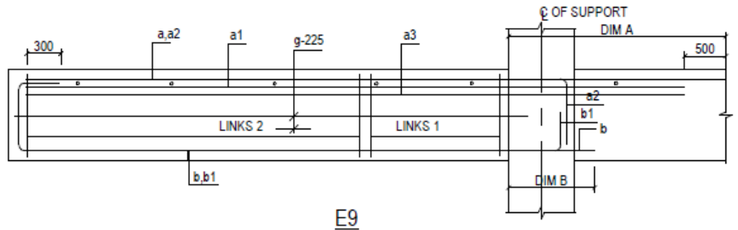


3D VIEW(FOR REFERENCE ONLY)

■ Geometrical information ■ Non-geometrical information

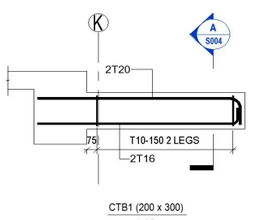
R.C. BEAM SCHEDULE

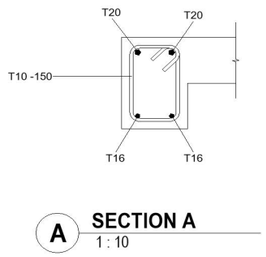
BEAM MARK	BEAM SIZE (BXD)	ELEV. REFER	REINFORCEMENT										REINFORCEMENT			DIMENSION			
			a	a1	a2	b	b1	c	d	e	f	g	LINKS 1	LINKS 2	LINKS 3	A	B	C	D
TB1	200 x 300	E9	2T20	-	-	-	2T16	-	-	-	-	-	<————	T10-150(2 LEGS)	————>	2550	-	-	-
TB1a	200 x 300	E9	2T20	-	-	-	2T16	-	-	-	-	-	<————	T10-150(2 LEGS)	————>	2550	-	-	-



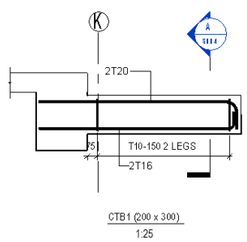
E9

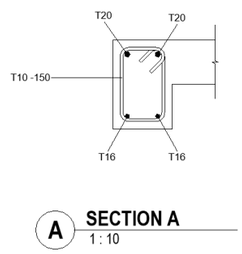
RC DETAIL (SCHEDULE FORMAT)

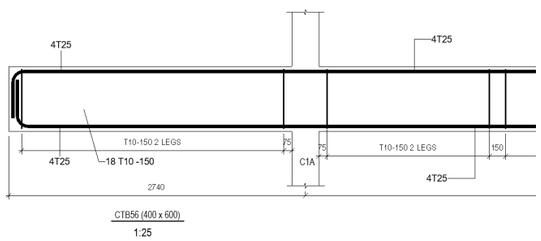




SECTION VIEW OF OBJECT WITH REBAR

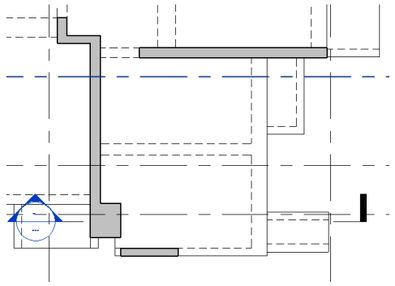




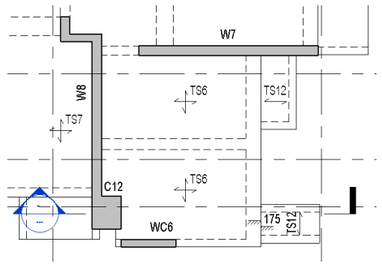


SECTION VIEW OF OBJECT WITH REBAR (WITH ANNOTATION)

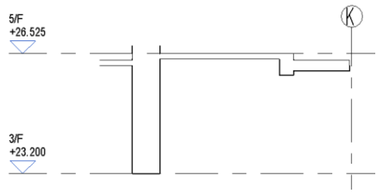
BIM OBJECT	STRUCTURAL COLUMN			



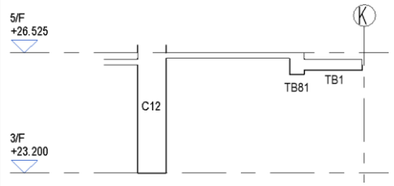
PLAN VIEW OF OBJECT



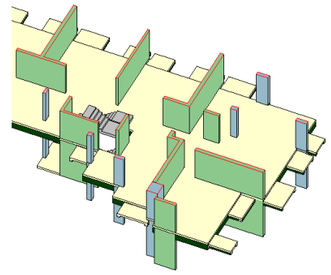
PLAN VIEW OF OBJECT
(WITH ANNOTATION)



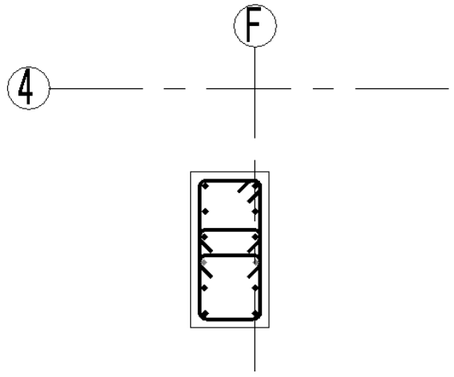
SECTION VIEW OF OBJECT



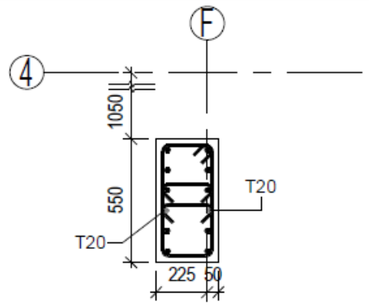
SECTIONVIEW OF OBJECT
(WITH ANNOTATION)



3D VIEW(FOR REFERENCE ONLY)



PLAN VIEW OF OBJECT WITH REBAR

29/F TO 5/F	
COLUMN MARK	C10
COLUMN SIZE	275x550
VERT. BARS	10T25+2T20 (3.70%)
BINDERS IN TYPICAL REGION	T10-175
BINDERS IN CRITICAL REGION	T10-125
CRITICAL REGION H (mm)	1000

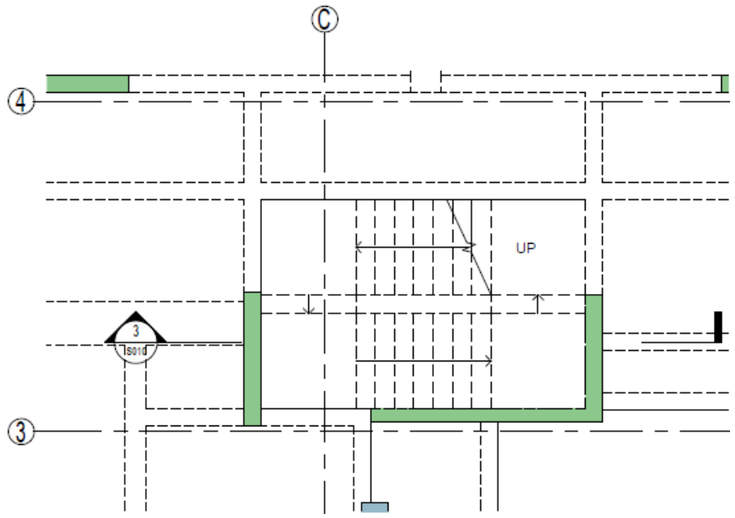
PLAN VIEW OF OBJECT WITH REBAR
(WITH ANNOTATION)

■ Geometrical information ■ Non-geometrical information

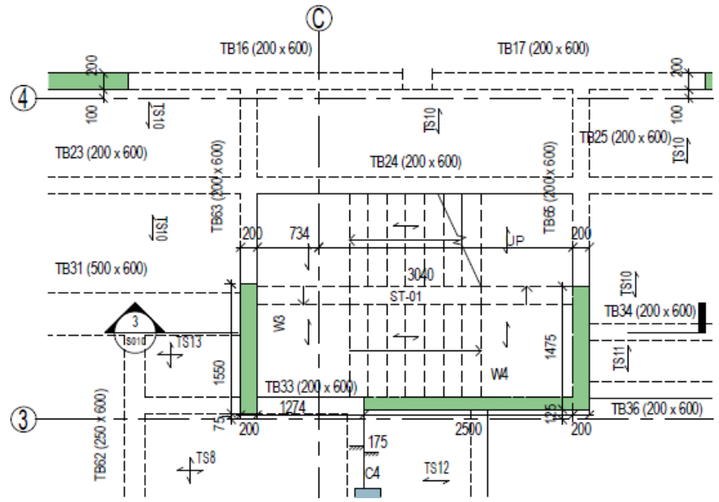
COLUMN SCHEDULE	
COLUMN MARK	SIZE (mm)
C1A	250 x 875
C1B	235 x 825
C1C	275 x 450
C2A	250 x 775
C2B	235 x 825
C2C	275 x 450

SCHEDULE

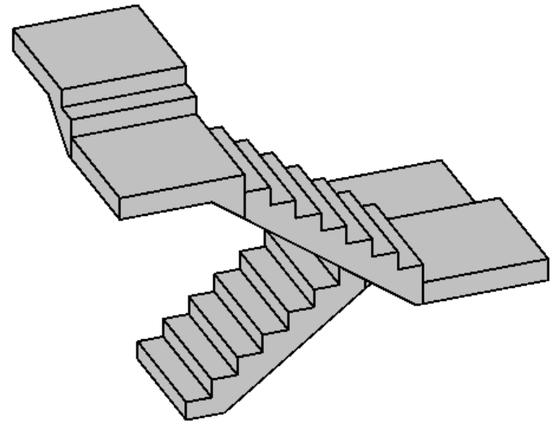
BIM OBJECT	STAIRCASE	



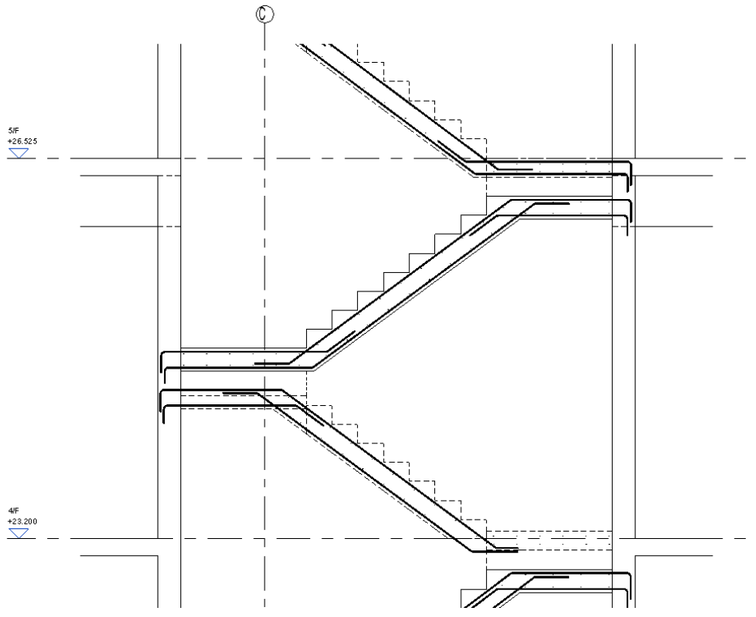
PLAN VIEW OF OBJECT



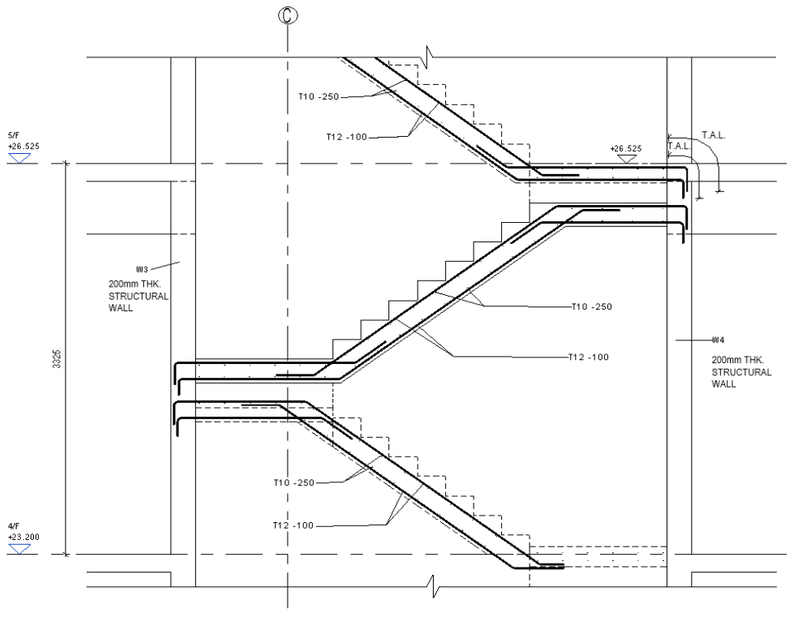
PLAN VIEW OF OBJECT WITH ANNOTATION



3D VIEW(FOR REFERENCE ONLY)

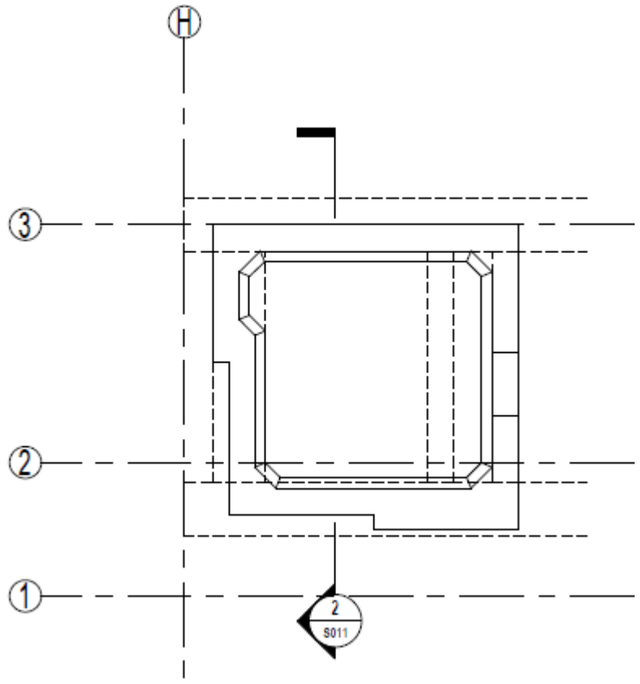


SECTION VIEW OF OBJECT WITH REBAR

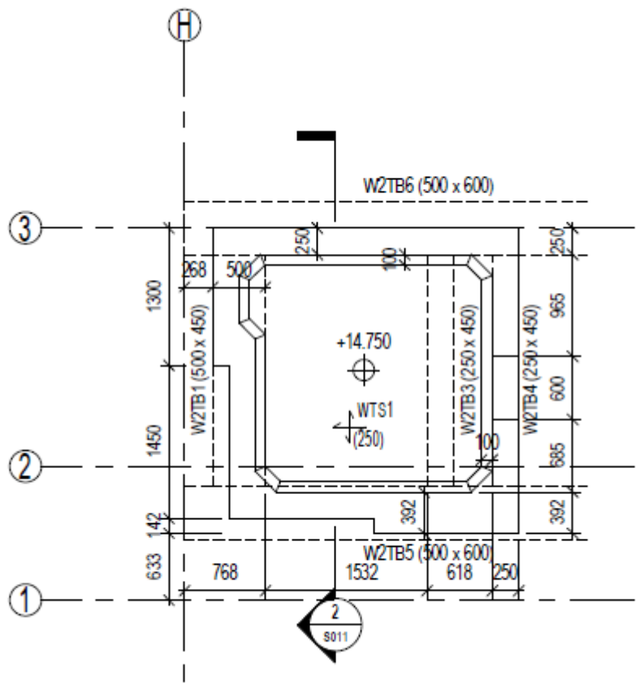


SECTION VIEW OF OBJECT WITH REBAR
(WITH ANNOTATION)

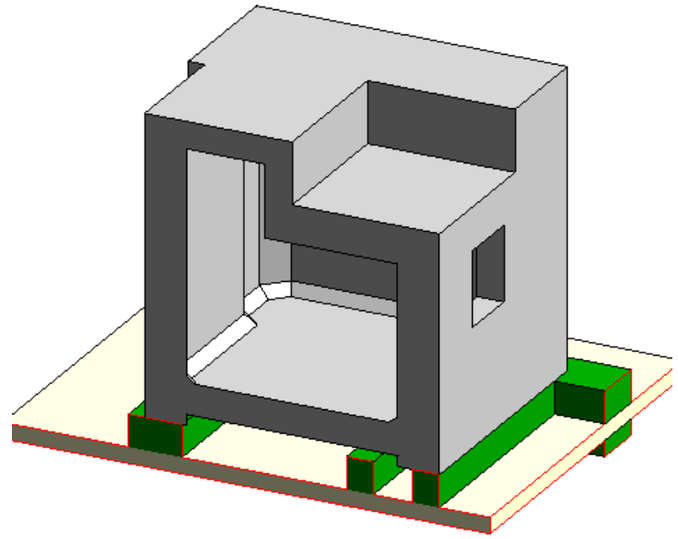
BIM OBJECT	WATER TANK	



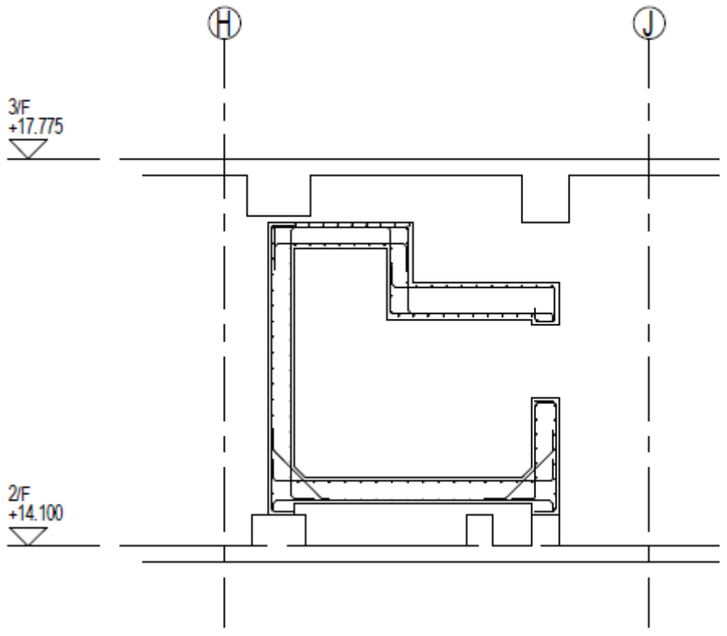
PLAN VIEW OF OBJECT



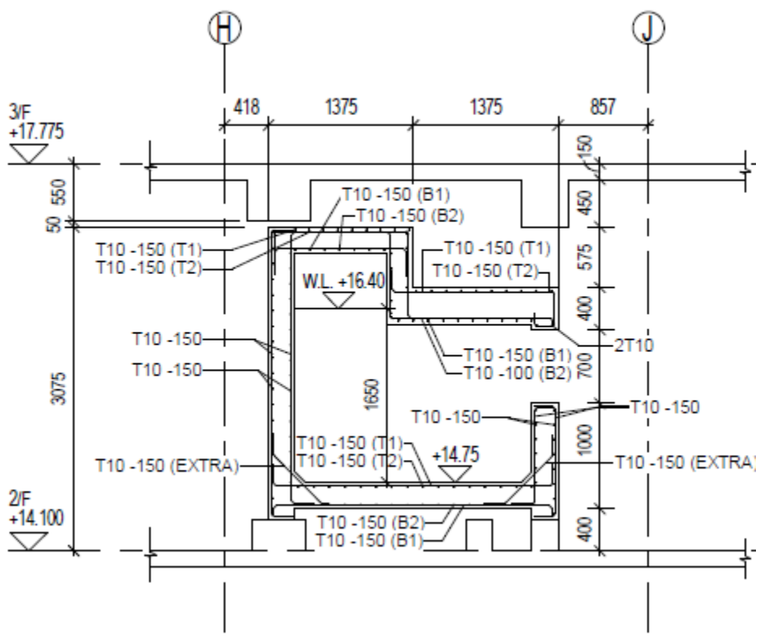
PLAN VIEW OF OBJECT WITH ANNOTATION



3D VIEW(FOR REFERENCE ONLY)

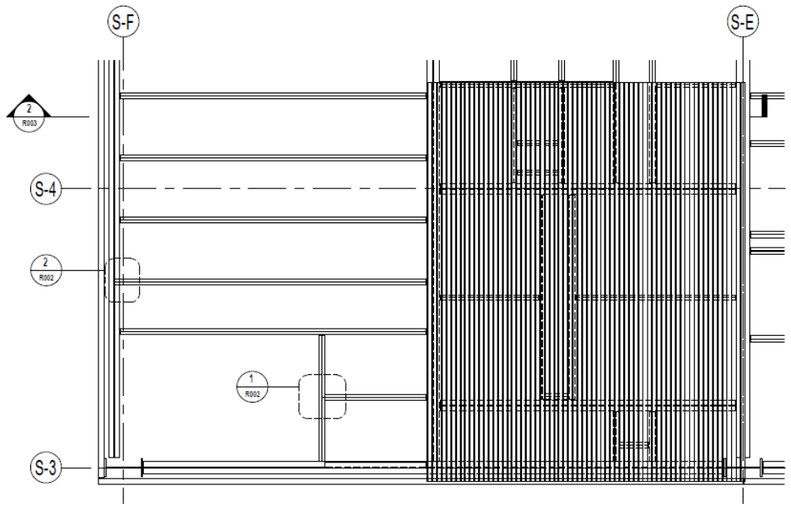


PLAN VIEW OF OBJECT WITH REBAR

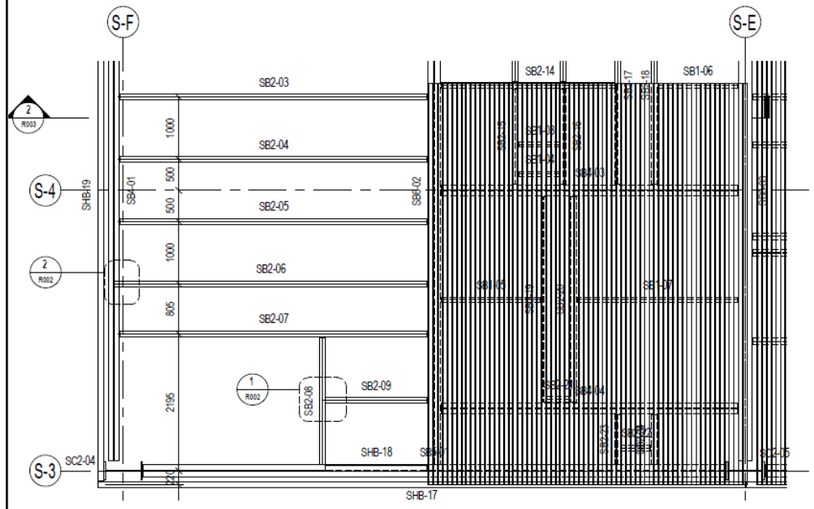


SECTION VIEW OF OBJECT WITH REBAR (WITH ANNOTATION)

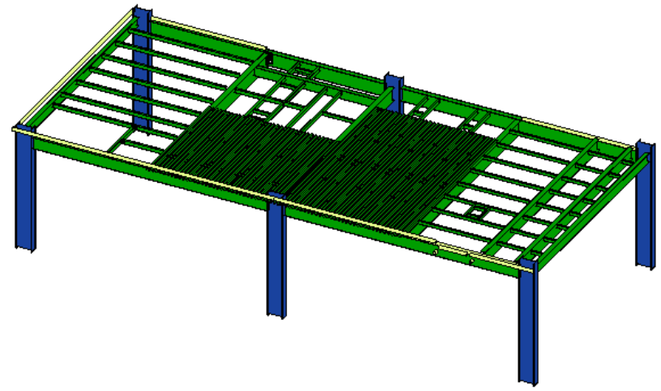
BIM OBJECT	STEEL STRUCTURE	



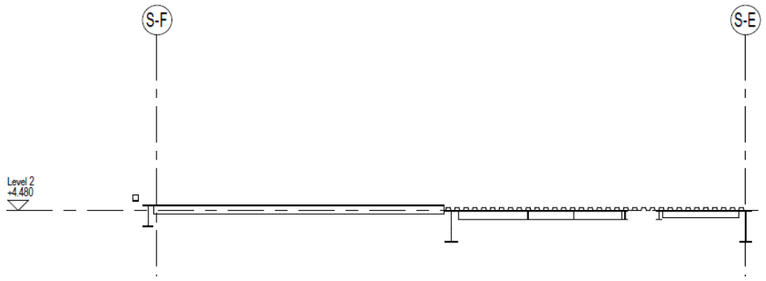
PLAN VIEW OF OBJECT



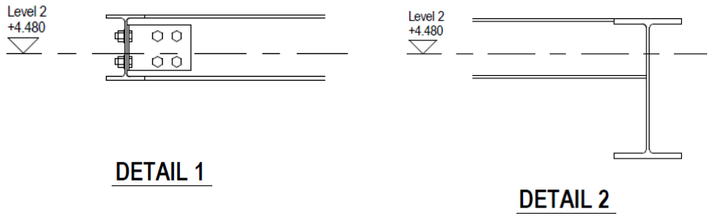
PLAN VIEW OF OBJECT WITH ANNOTATION



3D VIEW(FOR REFERENCE ONLY)



SECTION VIEW OF OBJECT

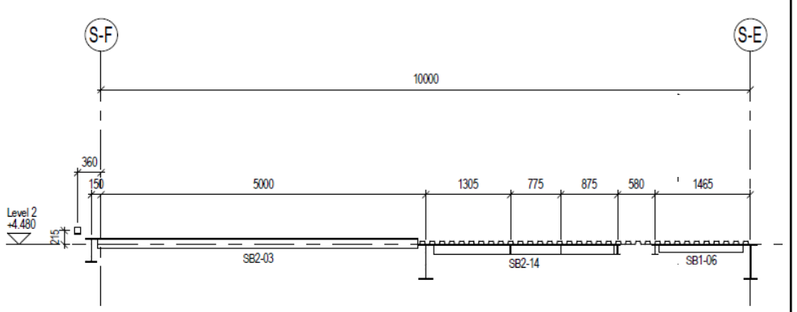


CONNECTION DETAIL OF OBJECT

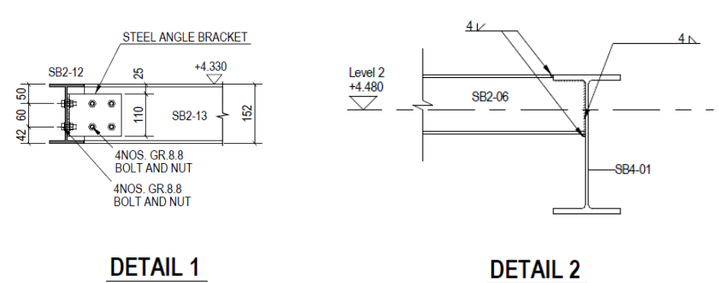
■ Geometrical information ■ Non-geometrical information

STEEL BEAM SCHEDULE		
TYPE MARK	SIZE	STEEL GRADE
SB6	UB533x210x101	S355
SB5	UB457x191x74	S355
SB4	UB356x171x57	S355
SB3	UB203x102x23	S355
SB2	UB152x89x16	S355
SB1	UB127x76x13	S355
SHB	SHS100x100x4	S355
SCH1	CH305x89x42	S355
SCH2	CH203x76x24	S355

STEEL COLUMN SCHEDULE		
TYPE MARK	SIZE	STEEL GRADE
SC1	UC152x152x30	S355
SC2	UB610x305x179	S355
SHC1	SHS100x100x4	S355

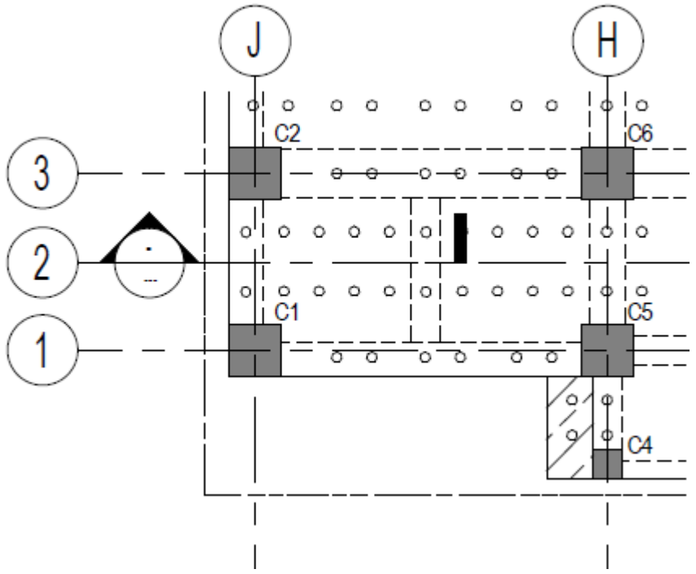


SECTION VIEW OF OBJECT (WITH ANNOTAION)

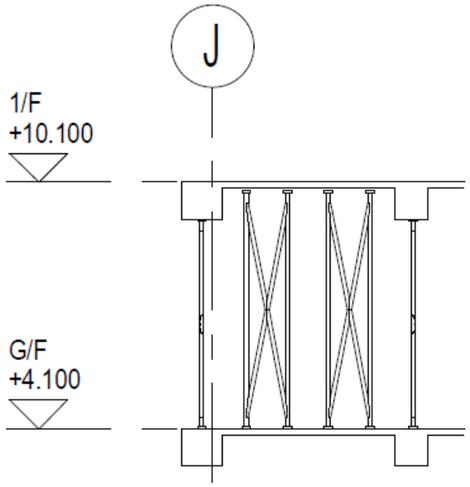


CONNECTION DETAIL OF OBJECT (WITH ANNOTATION)

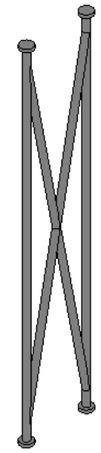
BIM OBJECT	PROPPING	



PLAN VIEW OF OBJECT

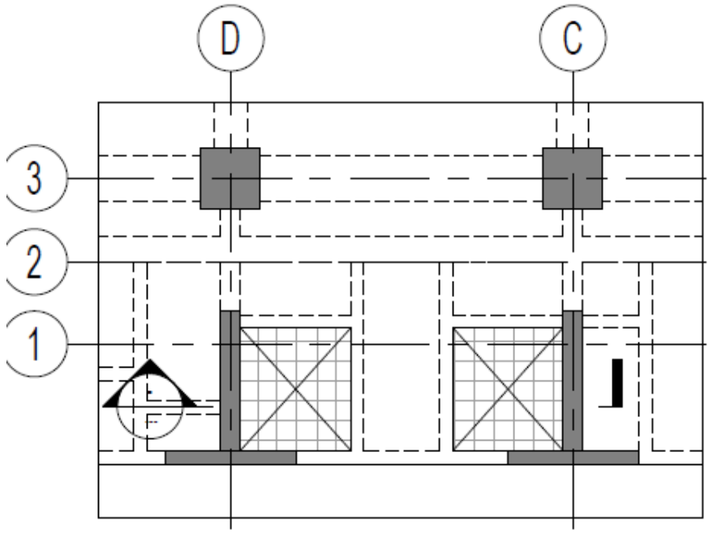


SECTION VIEW OF OBJECT

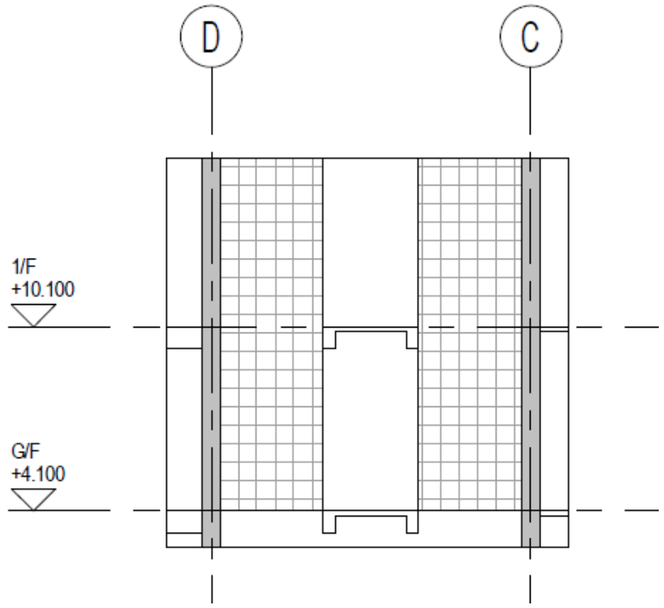


3D VIEW(FOR REFERENCE ONLY)

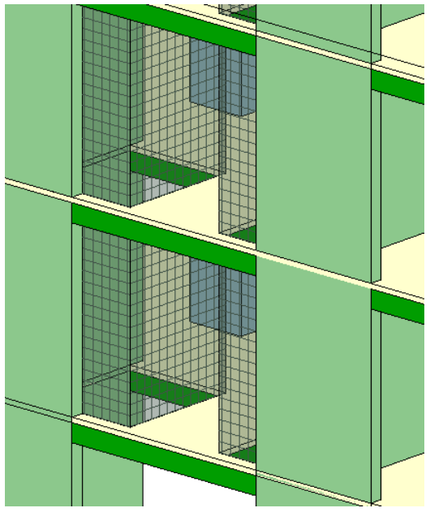
BIM OBJECT	DEBRIS CHUTE	



PLAN VIEW OF OBJECT

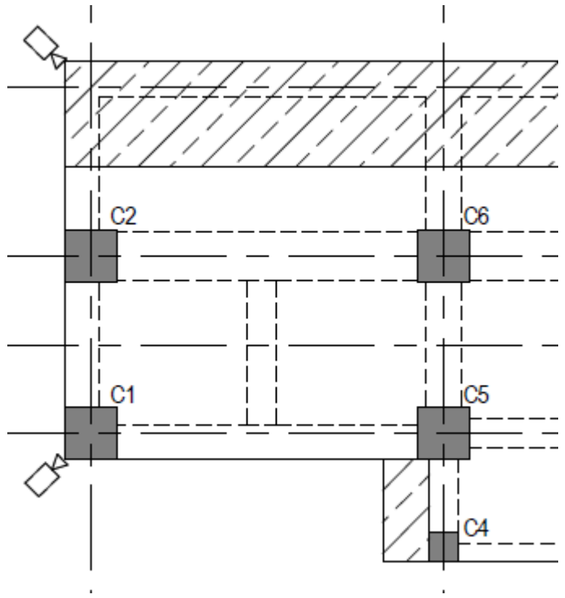


SECTION VIEW OF OBJECT

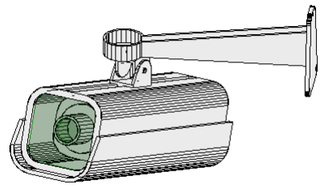


3D VIEW(FOR REFERENCE ONLY)

BIM OBJECT	VIDEO CAMERA	

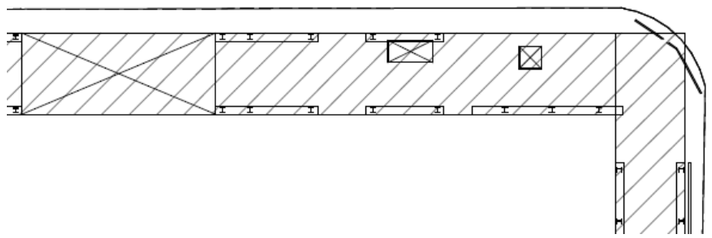


PLAN VIEW OF OBJECT

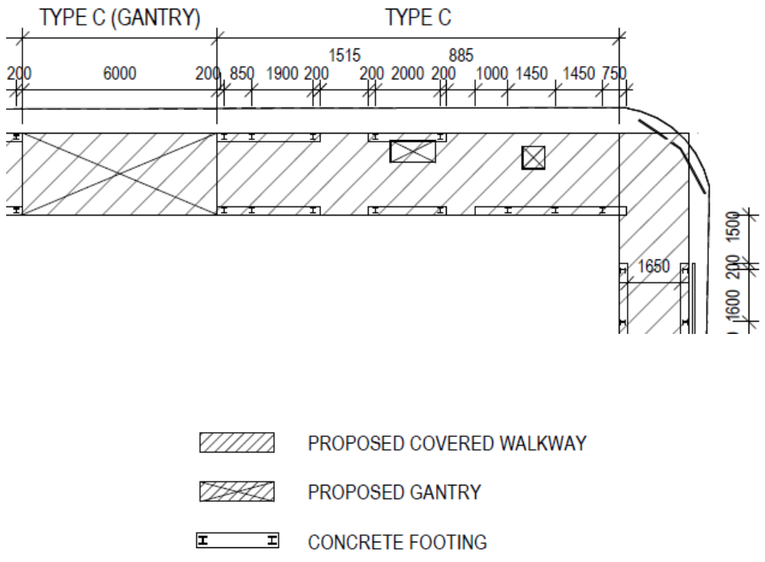


3D VIEW(FOR REFERENCE ONLY)

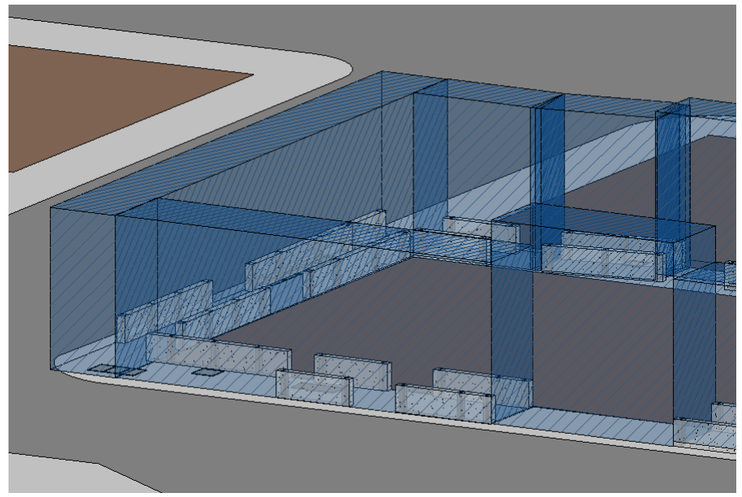
BIM OBJECT	HOARDING, GANTRY AND CONCRETE FOOTING	



PLAN VIEW OF OBJECT

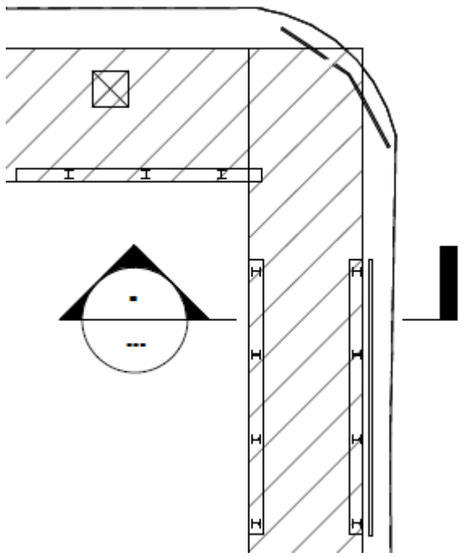


PLAN VIEW OF OBJECT (WITH ANNOTATION)



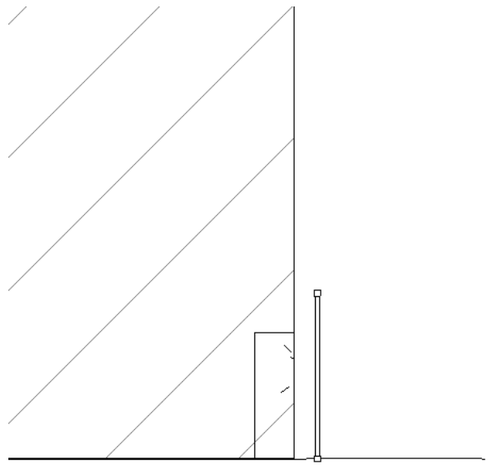
3D VIEW(FOR REFERENCE ONLY)

BIM OBJECT	RAILING	

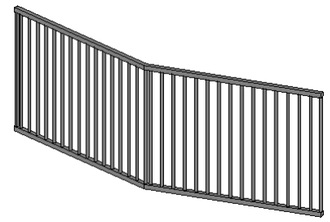


PEDESTRIAN RAILING

PLAN VIEW OF OBJECT

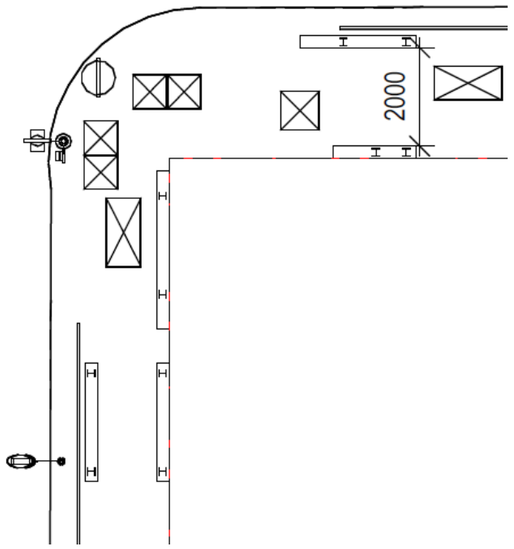


SECTION VIEW OF OBJECT

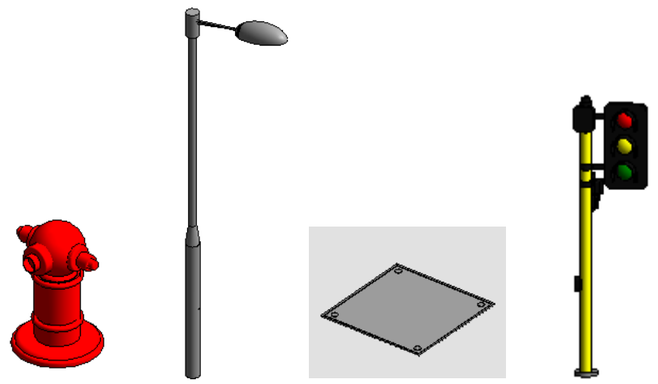


3D VIEW(FOR REFERENCE ONLY)

BIM OBJECT	STREET FURNITURES	

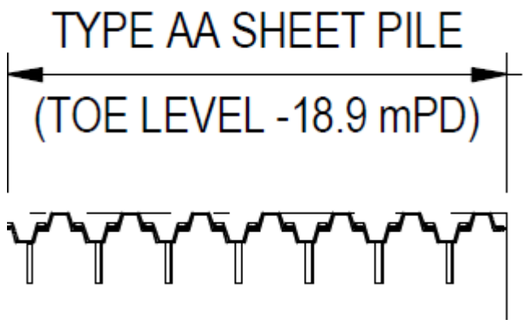


PLAN VIEW OF OBJECT

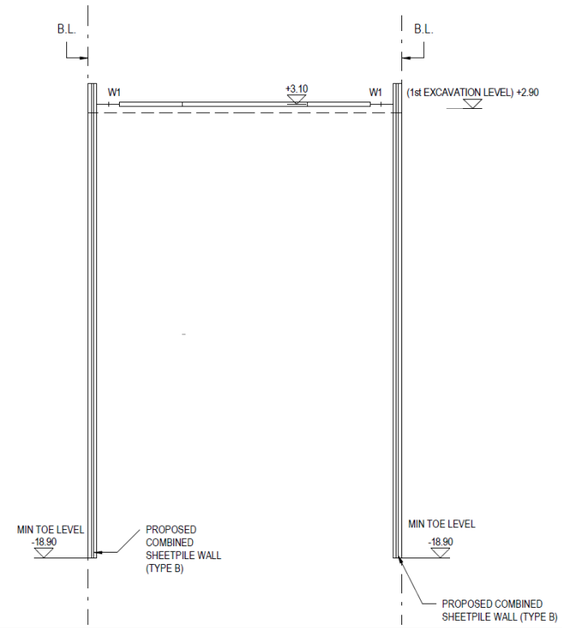


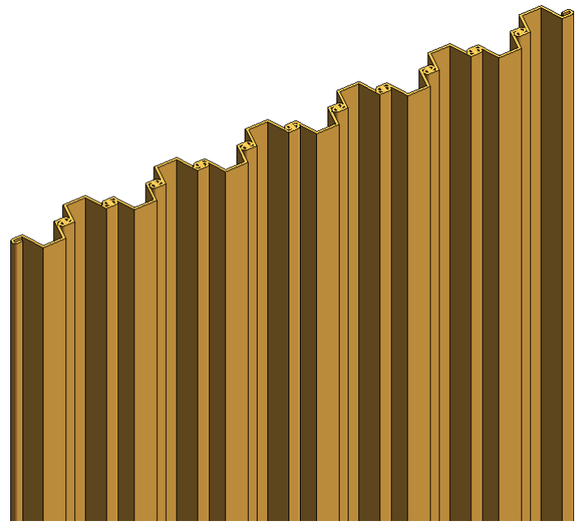
3D VIEW(FOR REFERENCE ONLY)

BIM OBJECT	SHEET PILE

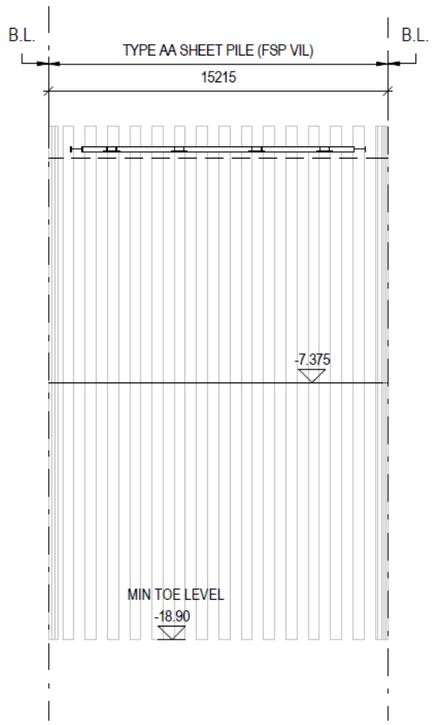


PLAN VIEW OF OBJECT (WITH ANNOTATION)





3D VIEW(FOR REFERENCE ONLY)



ELEVATION VIEW OF OBJECT (WITH ANNOTATION)

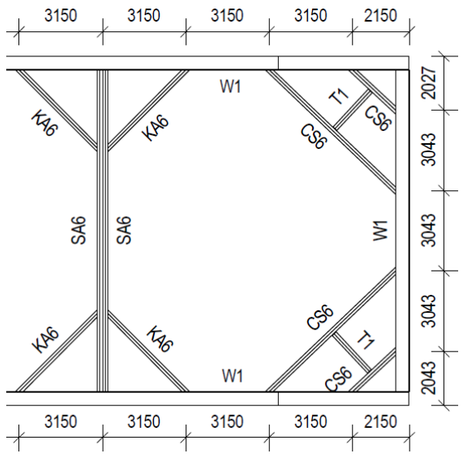
■ Geometrical information ■ Non-geometrical information ■ Schedule formula

SHEET PILE SCHEDULE						
SHEET PILE TYPE	MEMBER SIZE	TOE LEVEL (mPD)	MAX RETAINING HEIGHT (m)	FINAL EXCAVATION LEVEL (mPD)	MIN EMBEDMENT LENGTH (m)	GRADE
A	FSP-VIL (BOX TYPE)	-23.0	12.675	-10.325	14.225	S275
B	FSP-VIL	-18.9	12.175	-8.075	10.825	S275

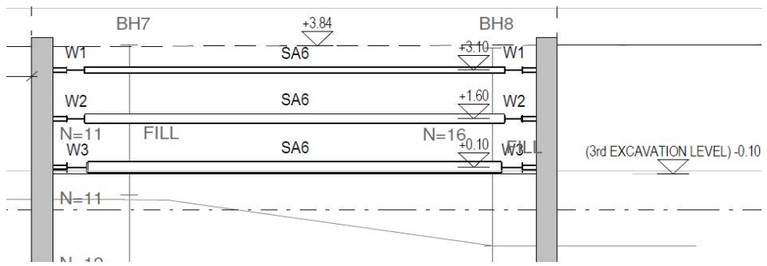
SHEET PILE SECTION PROPERTIES											
MEMBER SIZE	DIMENSIONS (mm)			SECTION AREA (PER PILE) (cm^2)	MOMENT OF INERTIA (PER PILE) (cm^4)	WEIGHT (PER PILE) (kg/m)	SECTION MODULUS (PER PILE) (cm^3)	SECTION AREA (PER 1m PILE) (cm^2)	MOMENT OF INERTIA (PER 1m PILE) (cm^4)	WEIGHT (PER 1m PILE) (kg/m)	SECTION MODULUS (PER 1m PILE) (cm^3)
	w	h	t								
FSP IV	400	170	15.5	153	11400	120	680	306	86000	240	3820
FSP VIL	500	225	27.6	153	11400	120	680	306	86000	240	3820

SCHEDULE

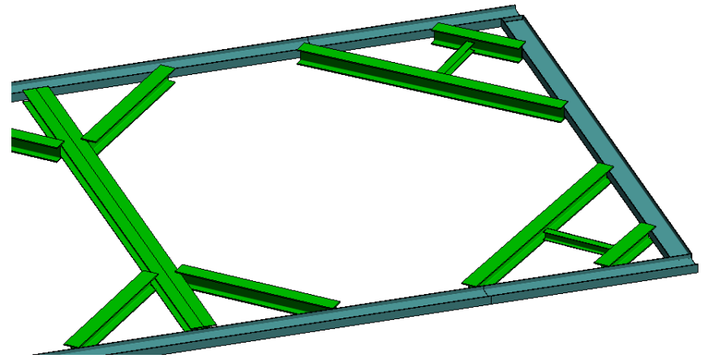
BIM OBJECT	STRUT, WALING, TIE	



PLAN VIEW OF OBJECT (WITH ANNOTATION)



SECTION VIEW OF OBJECT (WITH ANNOTATION)



3D VIEW(FOR REFERENCE ONLY)

■ Geometrical information ■ Non-geometrical information ■ Schedule formula

SCHEDULE OF VERTICAL TIE			
ITEM	MEMBER MARK	GRADE	MEMBER SIZE
VERTICAL TIE	D4	S355	UBP356x368x174

SCHEDULE OF HORIZONTAL TIE			
ITEM	MEMBER MARK	GRADE	MEMBER SIZE
TIE	T1	S355	UC203x203x46

SCHEDULE OF MAIN STRUT						
PILE TYPE	LAYER	WALING MEMBER SIZE	PRELOAD (kN/m)	PRELOAD PER STRUT (kN)	HORIZONTAL LOAD (kN/m)	DESIGN LOAD FOR STRUT (kN)
A	1	305X305X97 kg/m UC	20	95	86	569
A	2	305X305X97 kg/m UC	50	237	130	860

SECTION PROPERTIES OF WAILING									
ITEM	GRADE	SECTION AREA (cm²)	MOMENT OF INERTIA (cm4)	WEIGHT (kg/m)	SECTION MODULUS (cm³)	DEPTH D (mm)	WIDTH B (mm)	WEB THICKNESS t (mm)	FLANGE THICKNESS T (mm)
533X210X92 kg/m UB	S355	117	55200	92	2070	533.1	209.3	10.1	15.6
610X305X179 kg/m UB	S355	228	153000	179	4930	620.2	307.1	14.1	23.6

SECTION PROPERTIES OF STRUTS									
ITEM	GRADE	SECTION AREA (cm²)	MOMENT OF INERTIA (cm4)	WEIGHT (kg/m)	SECTION MODULUS (cm³)	DEPTH D (mm)	WIDTH B (mm)	WEB THICKNESS t (mm)	FLANGE THICKNESS T (mm)
305X305X97 kg/m UC	S355	123	22200	97	1450	307.9	305.3	9.9	15.4
356X368X177 kg/m UC	S355	226	57100	177	3100	368.2	372.6	14.4	23.8

SCHEDULE OF WAILING					
PILE TYPE	LAYER	WALING MEMBER SIZE	COMPRESSION (kN) =1.4*Fh* (1.414*3.15)	SHEAR (kN) =1.4*Fh* (0.6*3.15)	MOMENT (kNm) =1.4*Fh* (3.15^2/9)
A	1	533X210X92 kg/m UB	531	228	100
A	2	533X210X92 kg/m UB	803	344	151

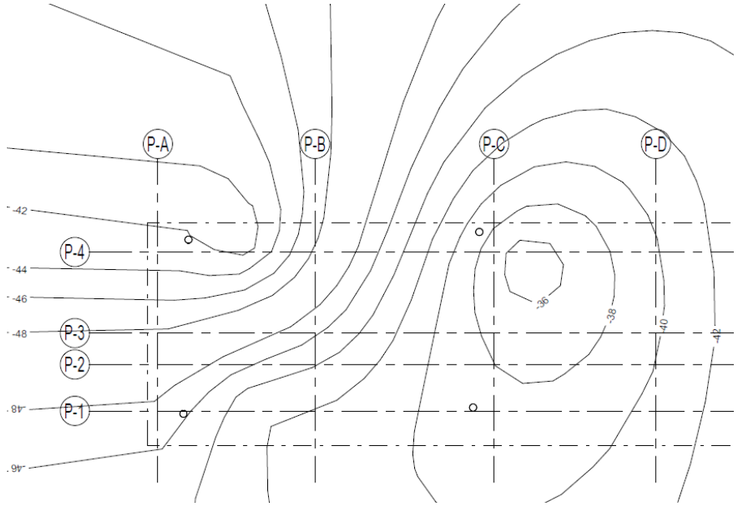
SCHEDULE OF SECONDARY STRUT AND CORNER STRUT			
PILE TYPE	LAYER	WALING MEMBER SIZE	STRUT LEVEL (mPD)
A	1	356X368X202 kg/m UC	+3.1
A	2	356X368X202 kg/m UC	+1.6

SECTION PROPERTIES OF SHORT STRUT / SPACER									
ITEM	GRADE	SECTION AREA (cm²)	MOMENT OF INERTIA (cm4)	WEIGHT (kg/m)	SECTION MODULUS (cm³)	DEPTH D (mm)	WIDTH B (mm)	WEB THICKNESS t (mm)	FLANGE THICKNESS T (mm)
152x89x24 kg/m CH	S355	30.4	1168	23.87	153	152.4	88.9	7.1	11.6

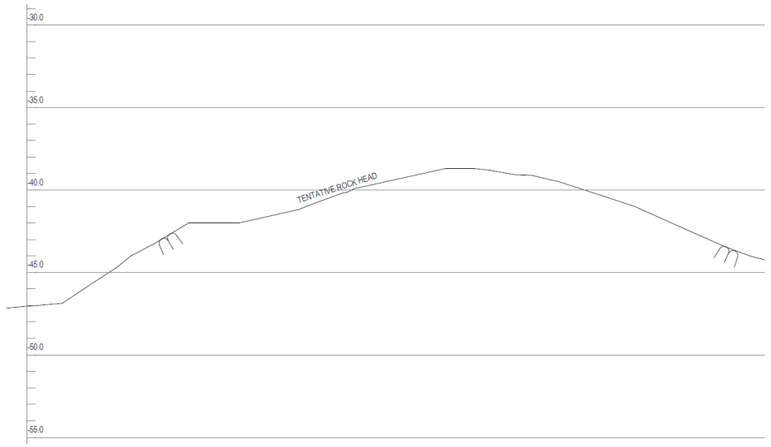
SECTION PROPERTIES OF HORIZONTAL TIE									
ITEM	GRADE	SECTION AREA (cm²)	MOMENT OF INERTIA (cm4)	WEIGHT (kg/m)	SECTION MODULUS (cm³)	DEPTH D (mm)	WIDTH B (mm)	WEB THICKNESS t (mm)	FLANGE THICKNESS T (mm)
203X203X46 kg/m UC	S355	58.7	4570	46	450	203.2	203.6	7.2	11.0

SECTION PROPERTIES OF VERTICAL TIE									
ITEM	GRADE	SECTION AREA (cm²)	MOMENT OF INERTIA	WEIGHT (kg/m)	SECTION MODULUS (cm³)	DEPTH D (mm)	WIDTH B (mm)	WEB THICKNESS t (mm)	FLANGE THICKNESS T (mm)
356X368X174 kg/m UBP	S355	221	51000	173.9	2820	361.4	378.5	20.3	20.4

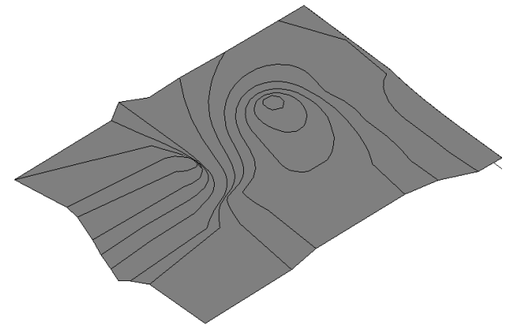
BIM OBJECT	ROCK PROFILE	



PLAN VIEW OF OBJECT (WITH ANNOTATION)

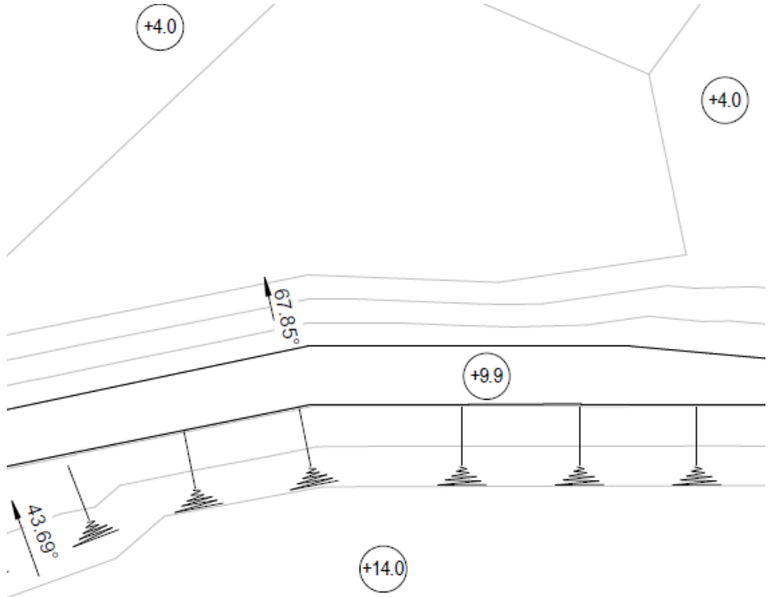


SECTION VIEW OF OBJECT (WITH ANNOTATION)

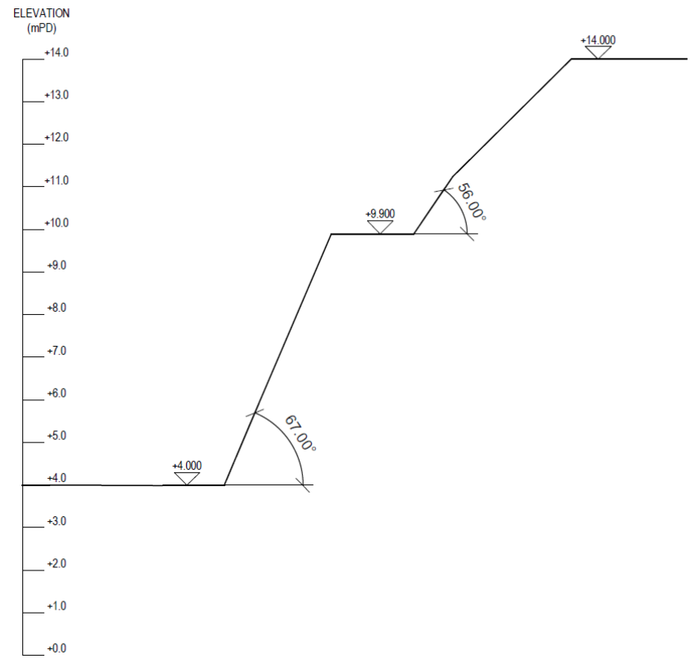


3D VIEW(FOR REFERENCE ONLY)

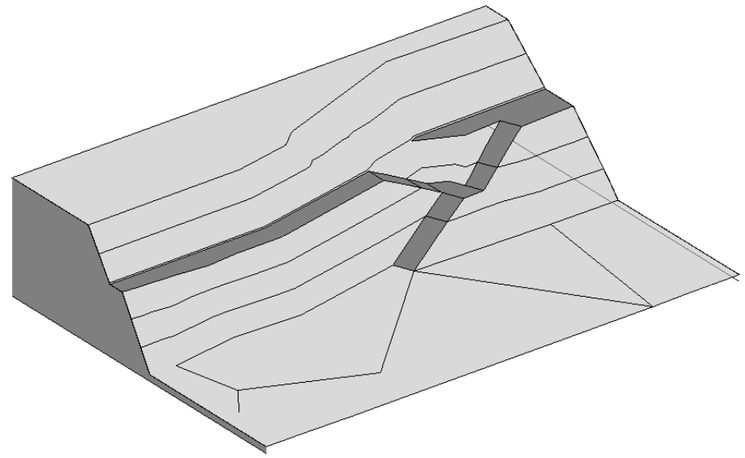
BIM OBJECT	SOIL PROFILE	



PLAN VIEW OF OBJECT (WITH ANNOTATION)

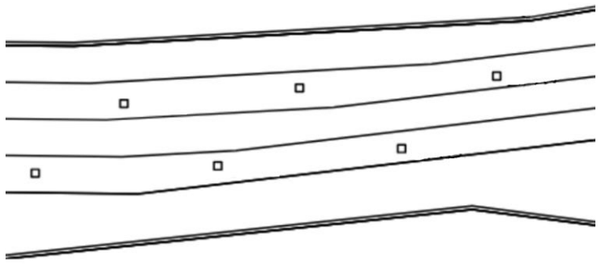


SECTION VIEW OF OBJECT (WITH ANNOTATION)

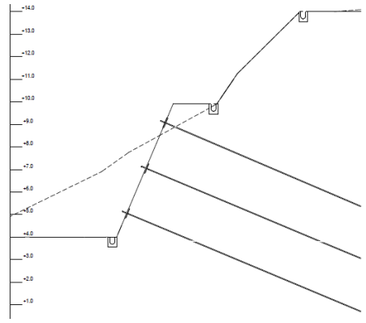


3D VIEW(FOR REFERENCE ONLY)

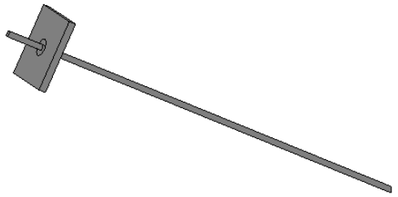
BIM OBJECT	SOIL NAIL	



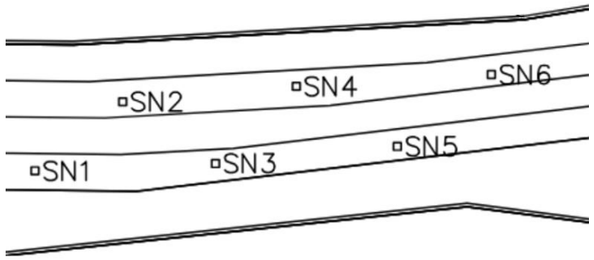
PLAN VIEW OF OBJECT



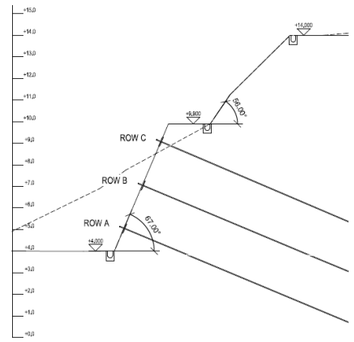
SECTION VIEW OF OBJECT



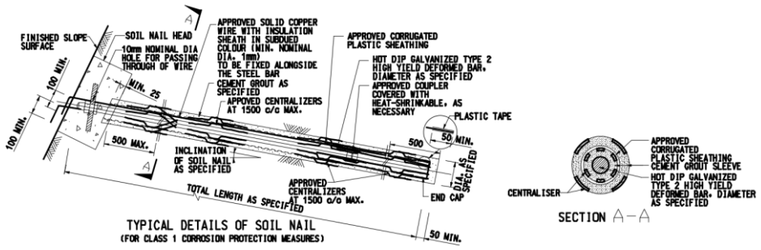
3D VIEW(FOR REFERENCE ONLY)



PLAN VIEW OF OBJECT (WITH ANNOTATION)



SECTION VIEW OF OBJECT (WITH ANNOTATION)



DETAILS (2D DRAFTING)

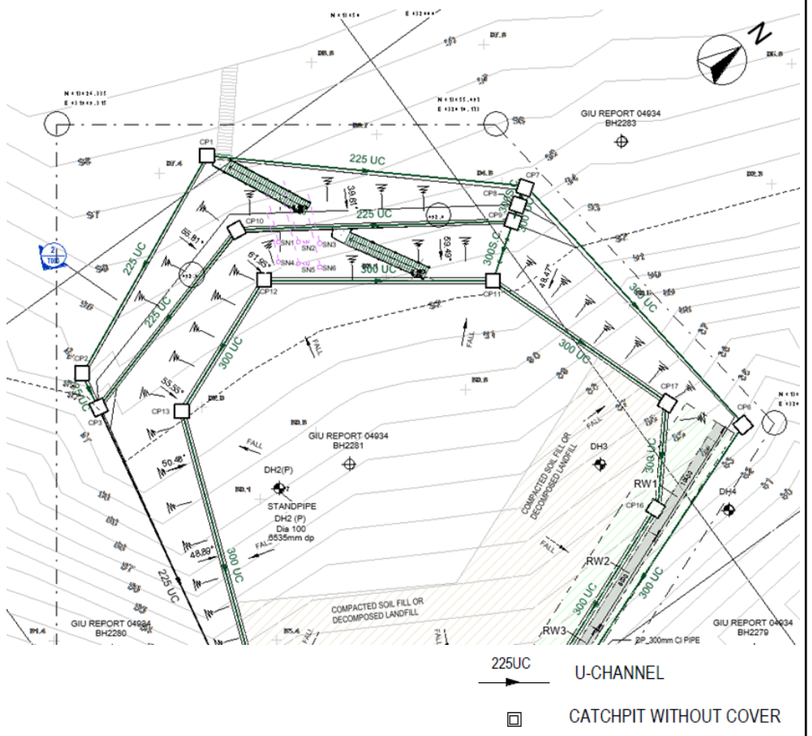
PLAN VIEW OF OBJECT (WITH ANNOTATION) | SECTION VIEW OF OBJECT (WITH ANNOTATION) | DETAILS (2D DRAFTING)

■ Geometrical information ■ Non-geometrical information

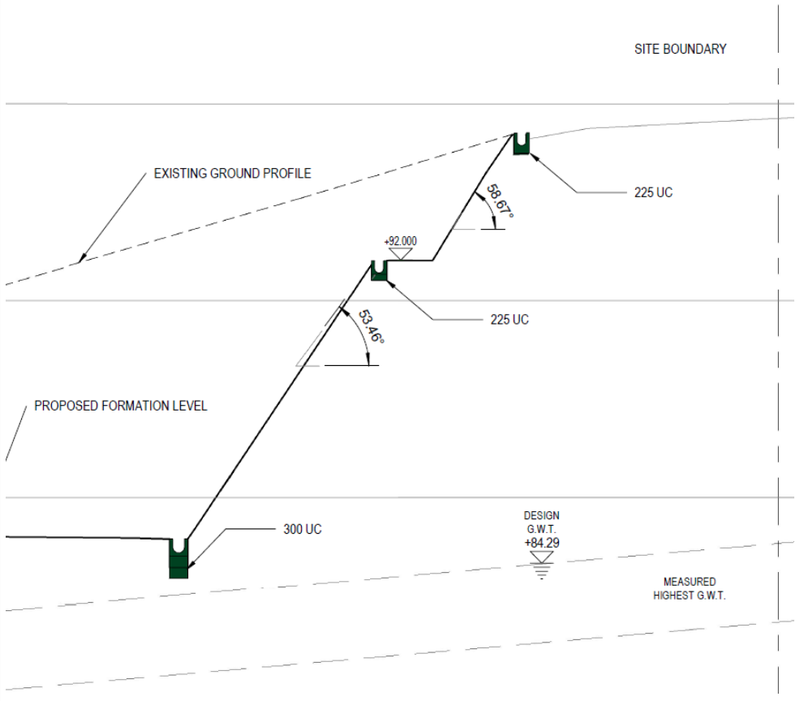
Soil Nail Schedule								
Soil Nail Type	Soil Nail Head Type	Mark	Soil Nail Diameter	Soil Nail Inclination	Soil Nail Total Length	Hole Diameter	Designed Anchorage Length	Bearing Angle
			(mm)	(degree)	(mm)	(mm)	(mm)	(degree)
Soil Nail with Typical Nail Head	Nail Head 800 x 800	SN 1	50	20	4000	100	1500	155

SCHEDULE

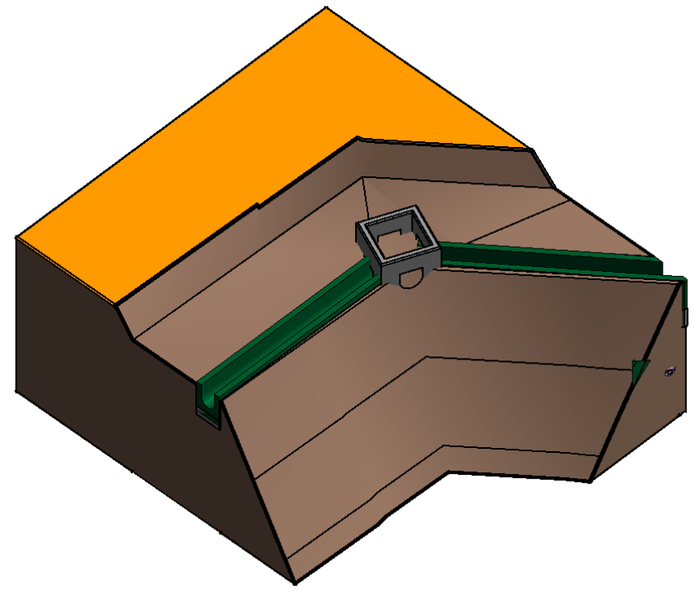
BIM OBJECT	SLOPE DRAINAGE, U-CHANNEL, CATCHPIT WITHOUT COVER	



PLAN VIEW OF OBJECT (WITH ANNOTATION)

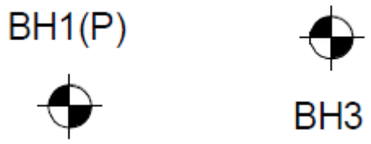


SECTION 2 VIEW OF OBJECT (WITH ANNOTATION)

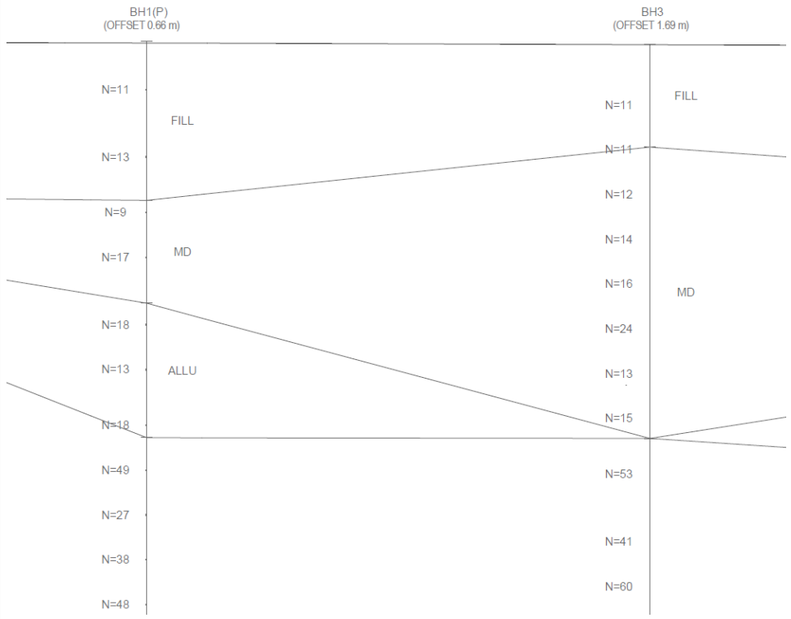


3D VIEW(FOR REFERENCE ONLY)

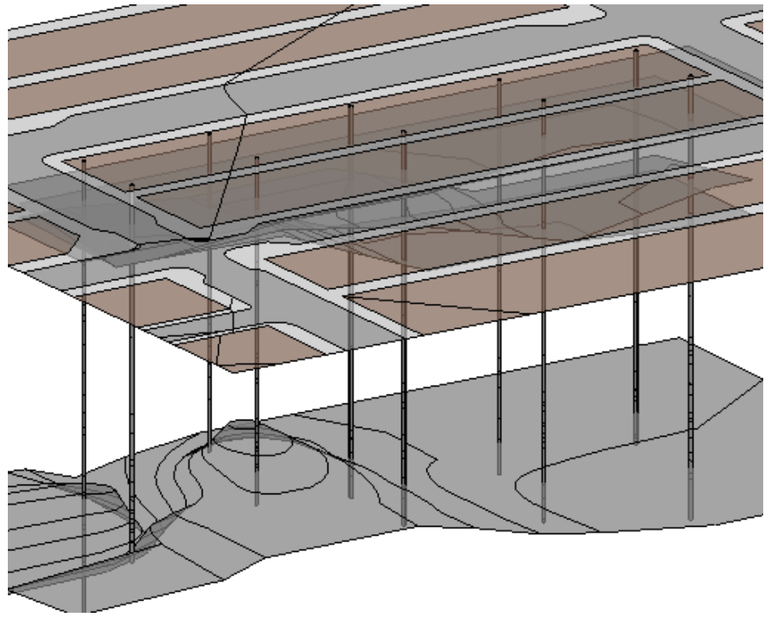
BIM OBJECT	ROCK CORE SAMPLE	



PLAN VIEW OF OBJECT (WITH ANNONTAION)

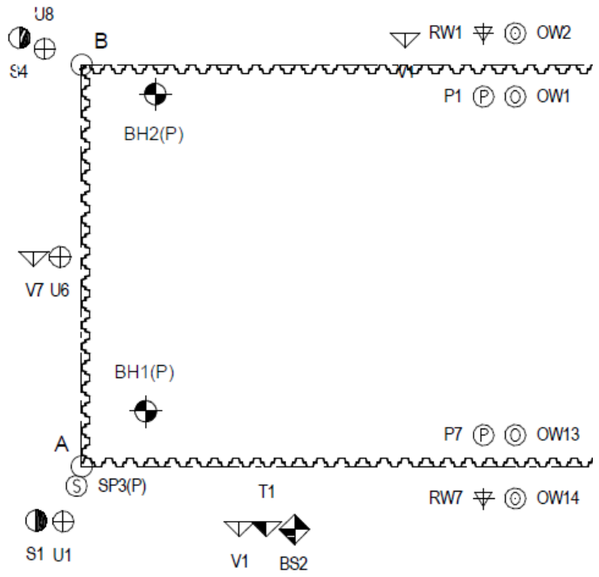


SECTION VIEW OF OBJECT (WITH ANNONTAION)



3D VIEW(FOR REFERENCE ONLY)

BIM OBJECT	MONITORING INSTRUMENTS



PLAN VIEW OF OBJECT (WITH ANNONTAION)

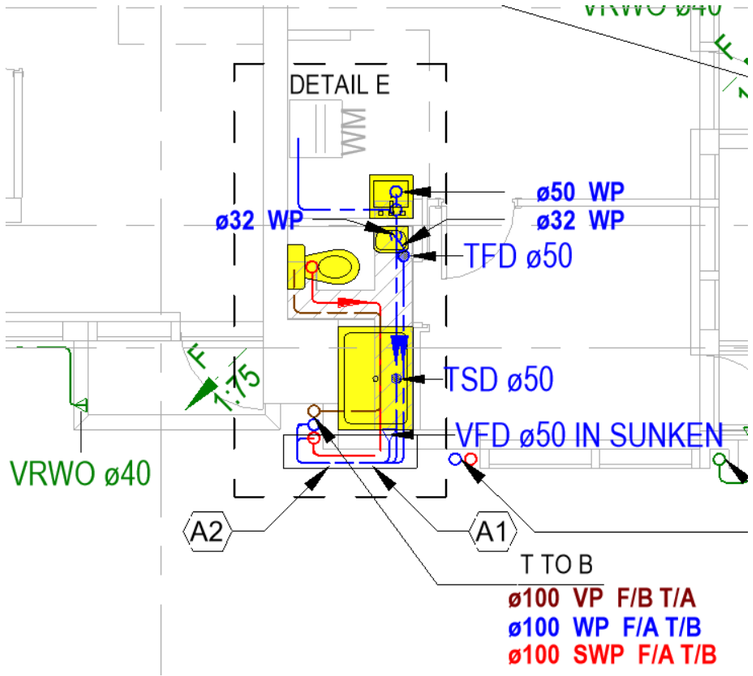
■ Geometrical information ■ Non-geometrical information

INSTRUMENT SCHEDULE		
SYMBOL	**TYPE**	**NUMBER**
BS1	BUILDING SETTLEMENT MARKER (BS1-BS12)	12
T1	BUILDING TILTING CHECK POINT WITH VERTICAL DISPLACEMENT (T1-T11)	11
S1	GROUND SETTLEMENT CHECK POINT (S1-S10)	10
OW1	OBSERVATION WELL (OW1-OW14)	14
P1	PUMP WELL (P1 TO P7)	7
RW1	RECHARGE WELL (RW1-RW7)	7
SP1(P)	STANDPIPE (WITH PIEZOMETER) (SP1(P) TO SP5(P))	5
U1	UTILITY SETTLEMENT MONITORING POINT ON GROUND (U1-U12)	12
V1	VIBRATION CHECK POINT (V1-V11)	11

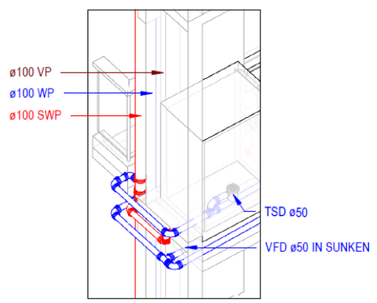
SCHEDULE

3D VIEW(FOR REFERENCE ONLY)

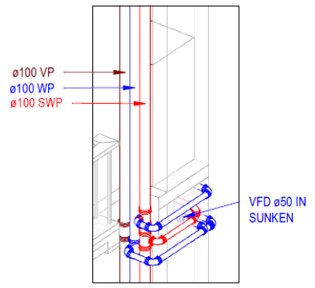
DRAWING TITLE	DRAINAGE PIPE	



PLAN



A1 3D View-Right (for reference only)
(Not to scale)



A2 3D View-Left (for reference only)
(Not to scale)

3D VIEW(FOR REFERENCE ONLY)

DIRECTION OF FLOW

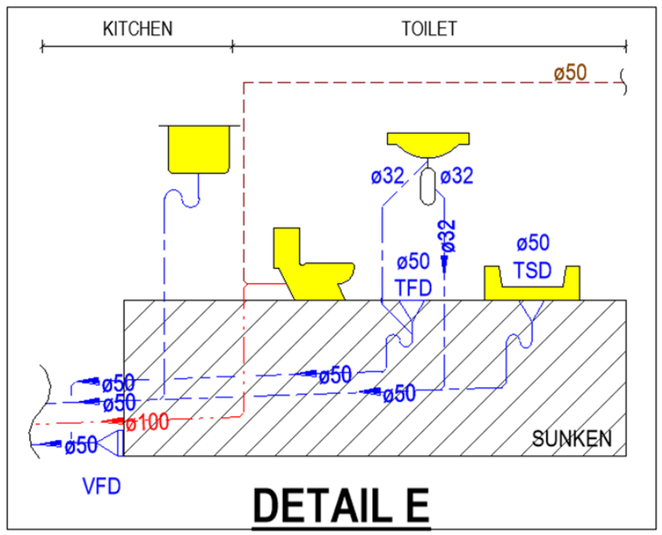
WASTE PIPE

SOIL & WASTE PIPE / SOIL PIPE

RAIN WATER PIPE

VENTILATING PIPE/
ANTI-SYPHONAGE PIPE

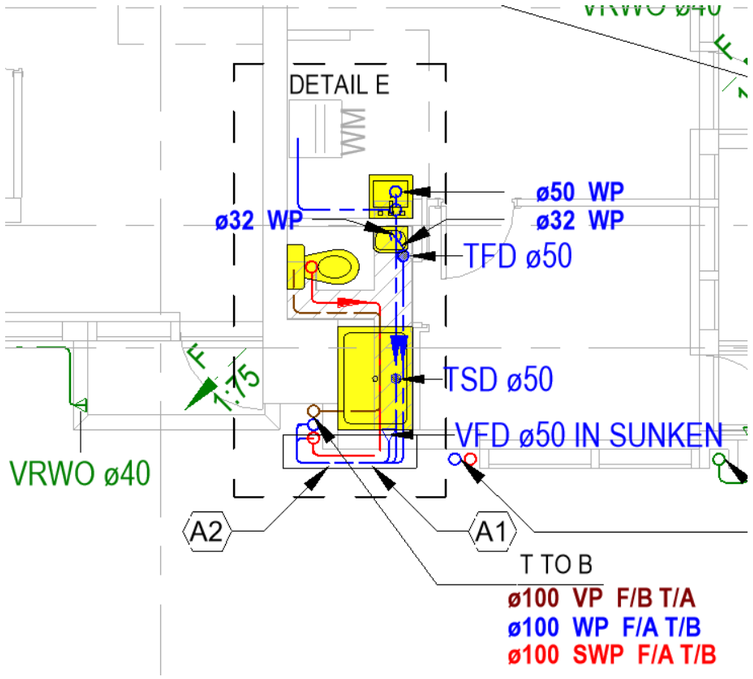
A/C CONDENSATION DRAIN PIPE



DETAIL E
1 : 100

SCHEMATIC DIAGRAM

DRAWING TITLE	DRAIN	



PLAN

FD/TFD/TSD

VRWO/VFD

3D VIEW(FOR REFERENCE ONLY)

VRWO — VERTICAL RAIN WATER OUTLET

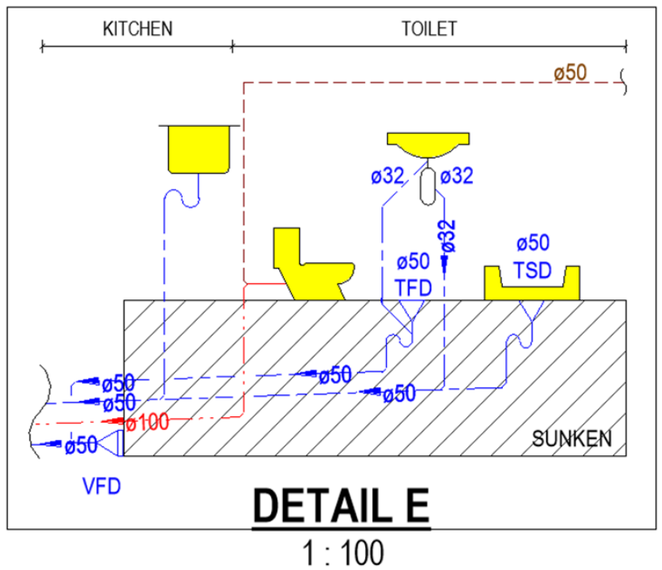
RWO — RAIN WATER OUTLET

TFD — TOP ACCESS FLOOR DRAIN

TSD — TOP ACCESS SHOWER DRAIN

FD — FLOOR DRAIN

VFD — VERTICAL FLOOR DRAIN

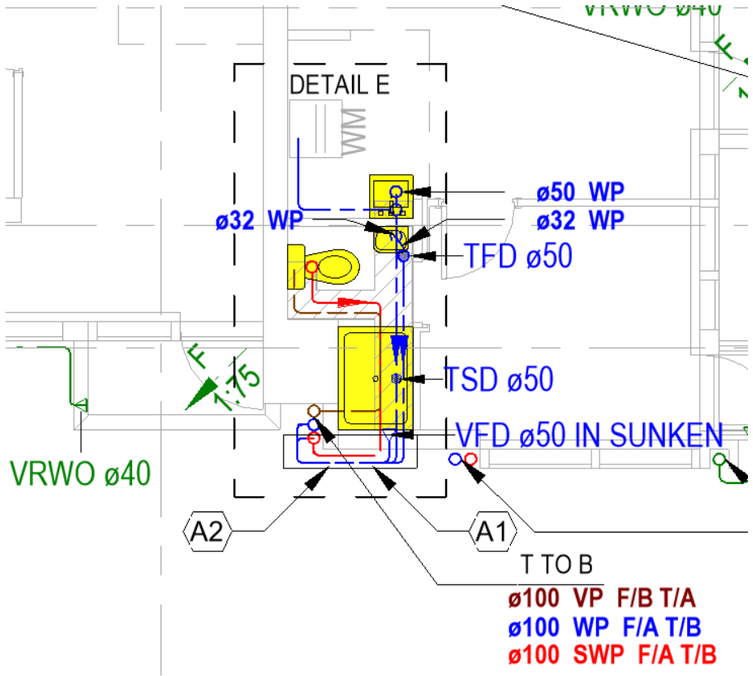


DETAIL E

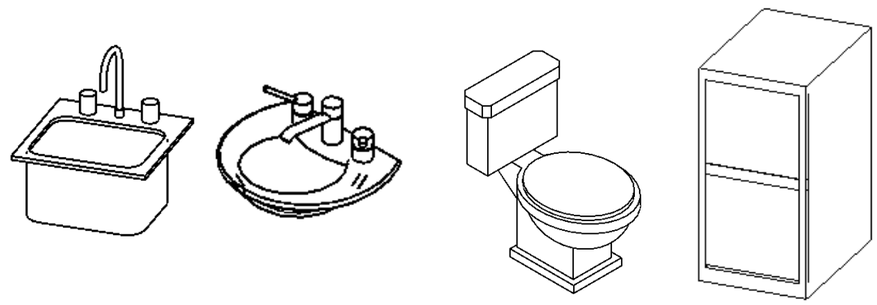
1 : 100

SCHEMATIC DIAGRAM

DRAWING TITLE	SANITARY FITMENT	

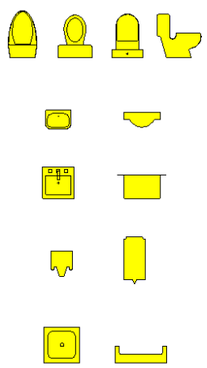


PLAN



Sink | Wash Basin | Water Closet | Shower

3D VIEW(FOR REFERENCE ONLY)



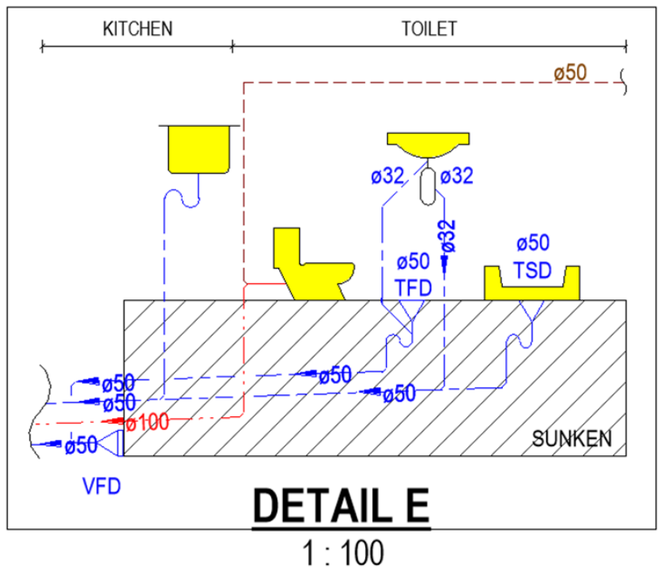
WATER CLOSET

WASH BASIN

SINK

URINAL

SHOWER



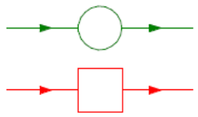
DETAIL E

1 : 100

SCHEMATIC DIAGRAM

DRAWING TITLE	MANHOLE

LEGEND:



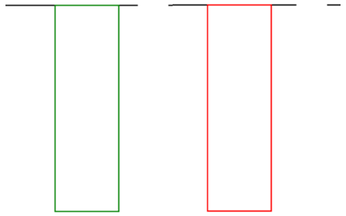
STORMWATER MANHOLE

SOIL & WASTE MANHOLE

SMH-01
C.L.: -6.15
I.L.: -7.90

WMH-01
C.L.: -6.10
I.L.: -7.85

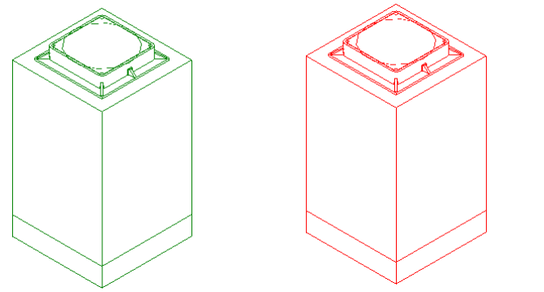
PLAN



SMH-01
C.L.: -6.15
I.L.: -7.90

WMH-01
C.L.: -6.10
I.L.: -7.85

SCHEMATIC DIAGRAM



STORM WATER MANHOLE

SOIL & WASTEMANHOLE

3D VIEW(FOR REFERENCE ONLY)

■ Geometrical information ■ Non-geometrical information

STORM WATER MANHOLE SCHEDULE					
MANHOLE NO.	DRAIN DIAMETER (mm)	C.L.	I.L.	DEPTH (mm)	TYPE
SMH-01	150	-6.15	-7.9	1750	D1

Grand total: 1

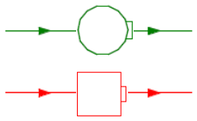
FOUL WATER MANHOLE SCHEDULE					
MANHOLE NO.	DRAIN DIAMETER (mm)	C.L.	I.L.	DEPTH (mm)	TYPE
WMH-01	150	-6.1	-7.85	1750	D1

Grand total: 1

SCHEDULE

DRAWING TITLE	TERMINAL MANHOLE

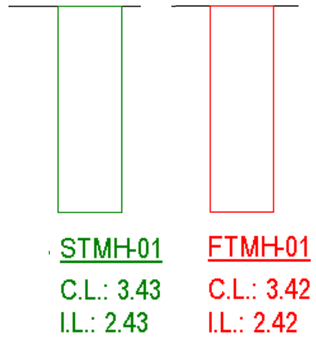
LEGEND:



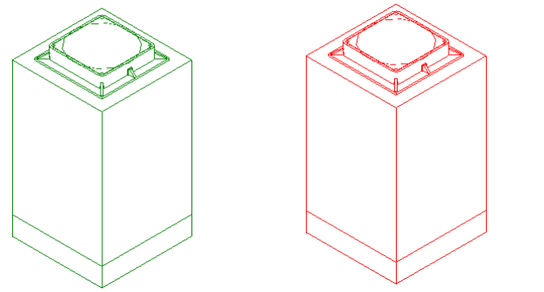
STORMWATER MANHOLE

SOIL & WASTE MANHOLE

PLAN



SCHEMATIC DIAGRAM



STORM WATER MANHOLE SOIL & WASTEMANHOLE

3D VIEW(FOR REFERENCE ONLY)

■ Geometrical information ■ Non-geometrical information

FOUL WATER TERMINAL MANHOLE SCHEDULE						
MANHOLE NO.	DRAIN DIAMETER (mm)	C.L.	I.L.	D.T.I.L.	DEPTH (mm)	TYPE
FTMH-01	225	+3.42	+2.42	+2.27	1150	T1_1

Grand total: 1

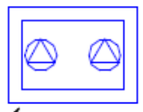
STORM WATER TERMINAL MANHOLE SCHEDULE						
MANHOLE NO.	DRAIN DIAMETER (mm)	C.L.	I.L.	D.T.I.L.	DEPTH (mm)	TYPE
STMH-01	225	+3.43	+2.43	+2.28	1150	T1_1

Grand total: 1

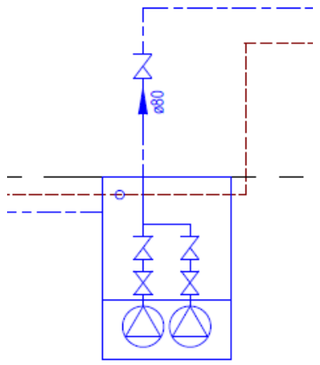
SCHEDULE

DRAWING TITLE	SUMP PIT

SWPP-01
FLOW: 6.0 L/s
HEAD: 20.0 m
EFFECTIVE VOLUME:
2000(L) x 1500(W) x 600(D)
UNDERGROUND SUMP
PIT W/ 2 NOS.
SUBMERSIBLE PUMP
C.L.: -5.85
I.L.: -6.50

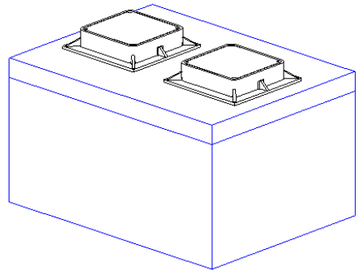


PLAN



UNDERGROUND SUMP PIT
SWPP-01
FLOW: 6.0 L/s
HEAD: 20.0 m
EFFECTIVE VOLUME:
2000(L) x 1500(W) x 600(D)

SCHEMATIC DIAGRAM



3D VIEW(FOR REFERENCE ONLY)

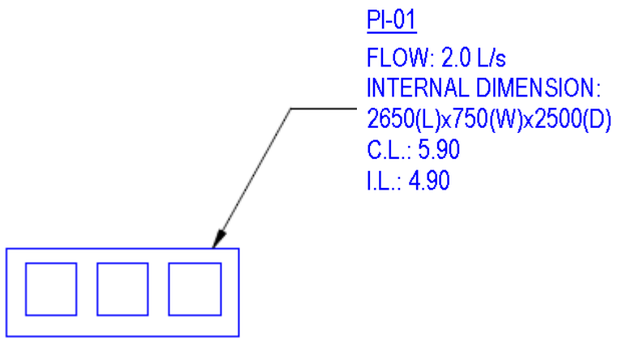
■ Geometrical information ■ Non-geometrical information

SUMP PIT SCHEDULE							
						PUMP DUTY (EACH)	
SUMP PIT NO.	SUMP PIT SIZE (LxWxD)	C.L.	I.L.	B.L.	PUMP NO.	FLOW (l/s)	HEAD (m)
SWPP-01	2000(L) x 1500(W) x 600(D)	-5.85	-6.5	-7.5	SSP01-01,02	6.0	20

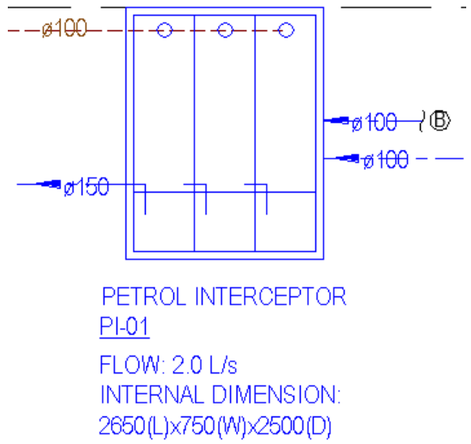
Grand total: 1

SCHEDULE

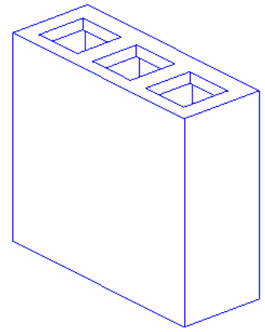
DRAWING TITLE	PETROL INTERCEPTOR



PLAN



SCHEMATIC DIAGRAM



3D VIEW(FOR REFERENCE ONLY)

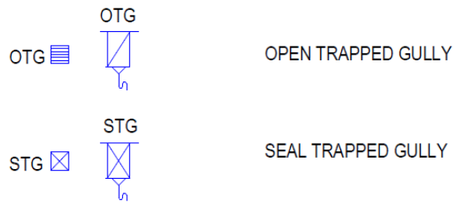
■ Geometrical information ■ Non-geometrical information

PETROL INTERCEPTOR SCHEDULE				
PETROL INTERCEPTOR NO.	C.L.	I.L.	B.L.	DEPTH (mm)
PI-01	+5.9	+4.9	+3.4	2500

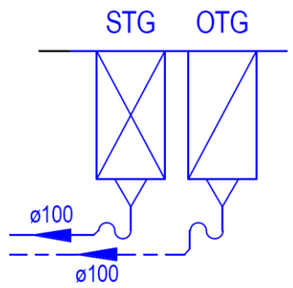
Grand total: 1

SCHEDULE

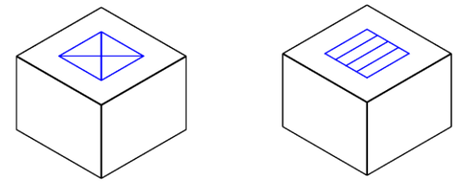
DRAWING TITLE	OPEN TRAPPED GULLY / SEAL TRAPPED GULLY	



PLAN

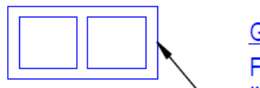


SCHEMATIC DIAGRAM



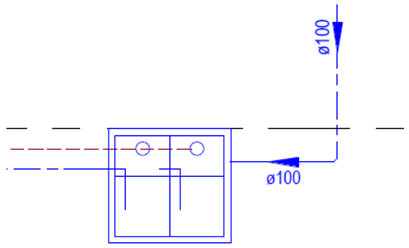
3D VIEW(FOR REFERENCE ONLY)

DRAWING TITLE	GREASE TRAP



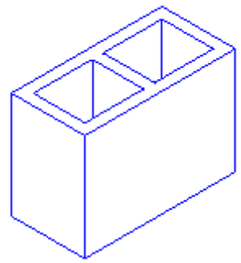
GT-02
FLOW: 1.0 L/s
INTERNAL DIMENSION:
1650(L) x 900(W) x 1000(D)
UNDERGROUND GREASE TRAP

PLAN



GREASE TRAP
GT-02
FLOW: 1.0 L/s
INTERNAL DIMENSION:
1650(L) x 900(W) x 1000(D)

SCHEMATIC DIAGRAM



3D VIEW(FOR REFERENCE ONLY)

■ Geometrical information ■ Non-geometrical information

GREASE TRAP SCHEDULE			
GREASE TRAP NO.	C.L.	B.L.	DEPTH (mm)
GT-02	-5.9	-6.9	1000

Grand total: 1

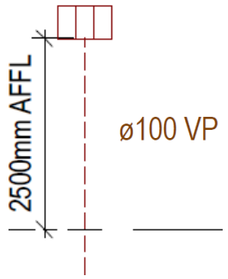
SCHEDULE

DRAWING TITLE	FRESH AIR INLET	

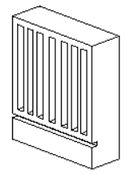
F.A.I. FRESH AIR INLET

ø100 VP TERMINATE AT H/L W/ FAI GRATING AT 2500mm AFFL

PLAN



SCHEMATIC DIAGRAM

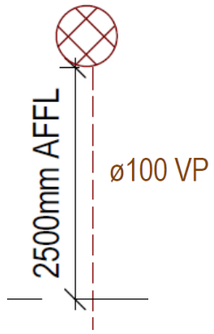


3D VIEW(FOR REFERENCE ONLY)

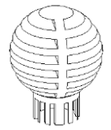
DRAWING TITLE	WIRE BALLON

WIRE MESH BALLOON (VENT COWL)

PLAN

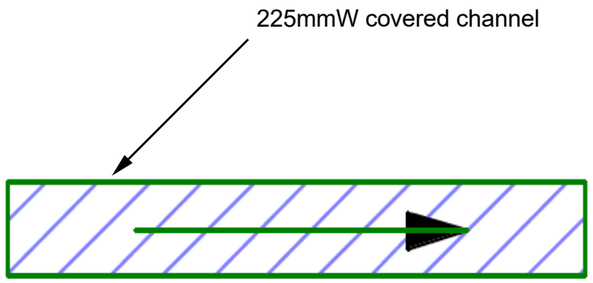


SCHEMATIC DIAGRAM

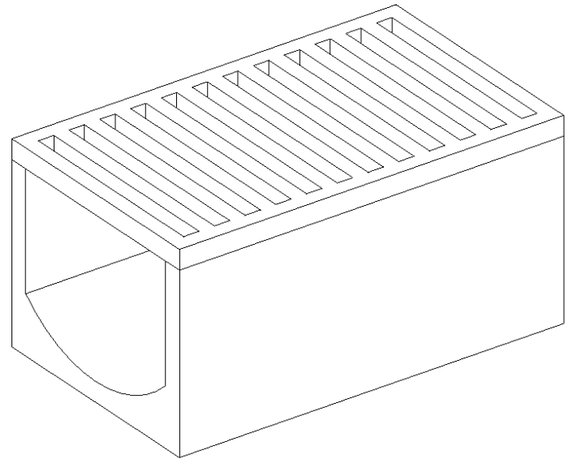


3D VIEW(FOR REFERENCE ONLY)

DRAWING TITLE	SURFACE CHANNEL	



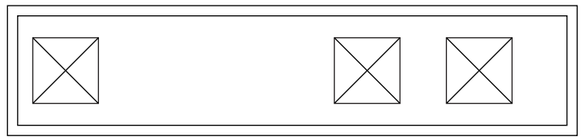
PLAN



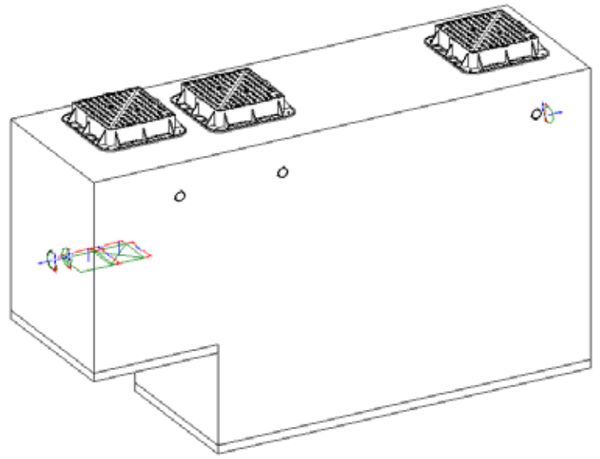
3D VIEW(FOR REFERENCE ONLY)

DRAWING TITLE	SEPTIC TANKS	

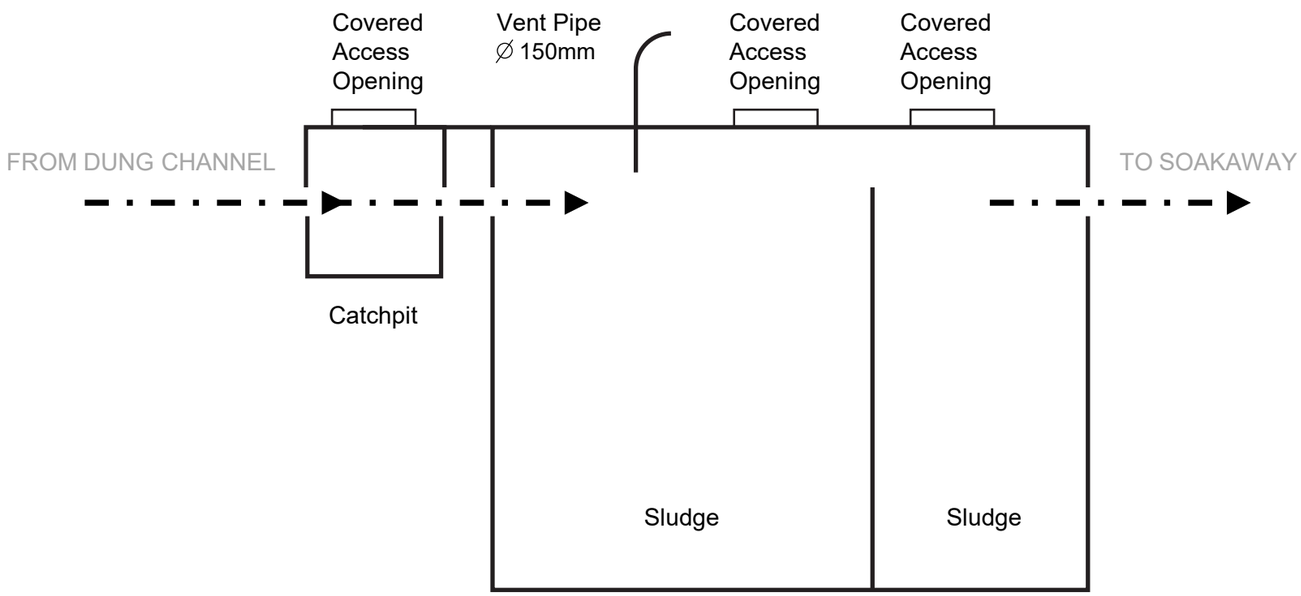
SEPTIC TANKS



PLAN



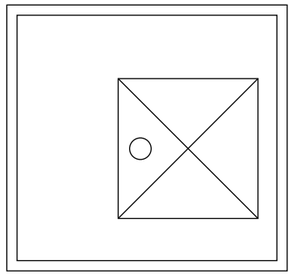
3D VIEW(FOR REFERENCE ONLY)



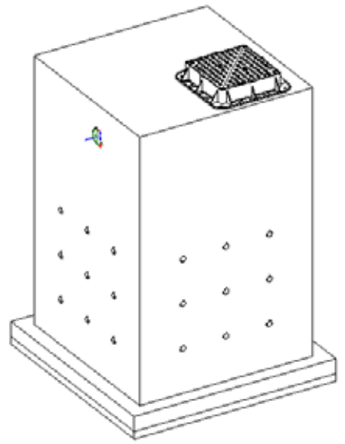
DIAGRAM

DRAWING TITLE	SOAKAWAY PIT	

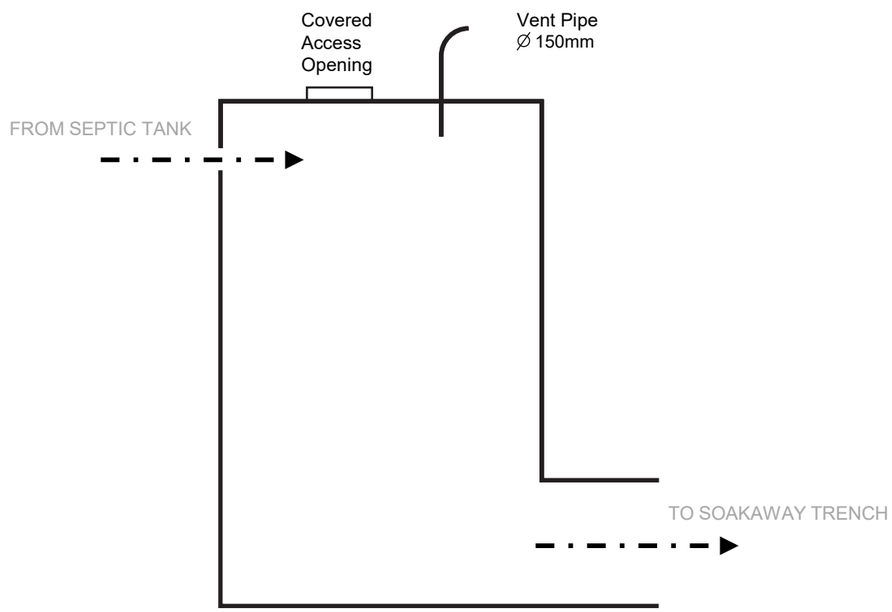
SOAKAWAY PIT



PLAN



3D VIEW(FOR REFERENCE ONLY)



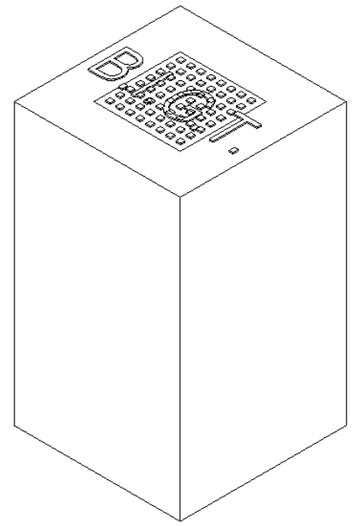
DIAGRAM

DRAWING TITLE	BACK INLET GULLY TRAP	

BACK INLET GULLY TRAP

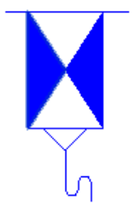
BIGT

PLAN



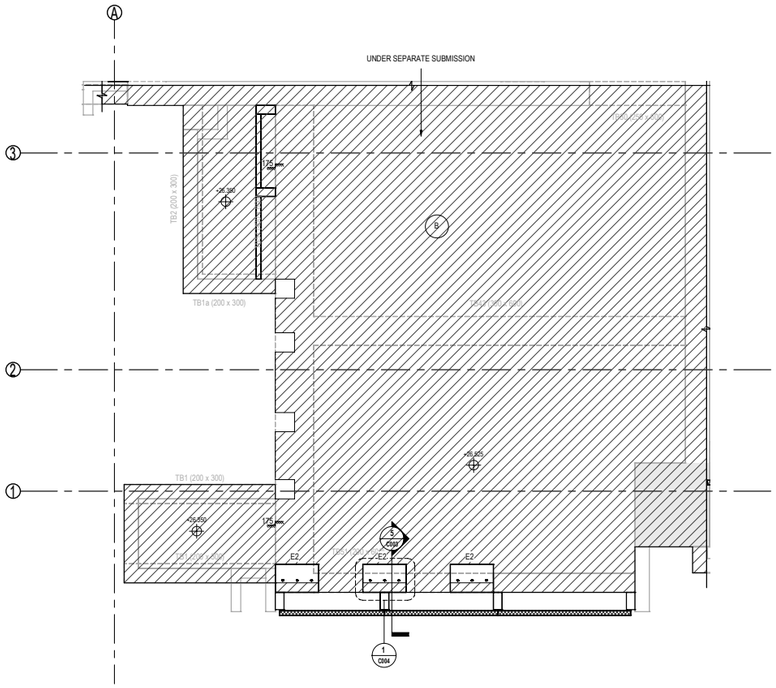
3D VIEW(FOR REFERENCE ONLY)

BIGT



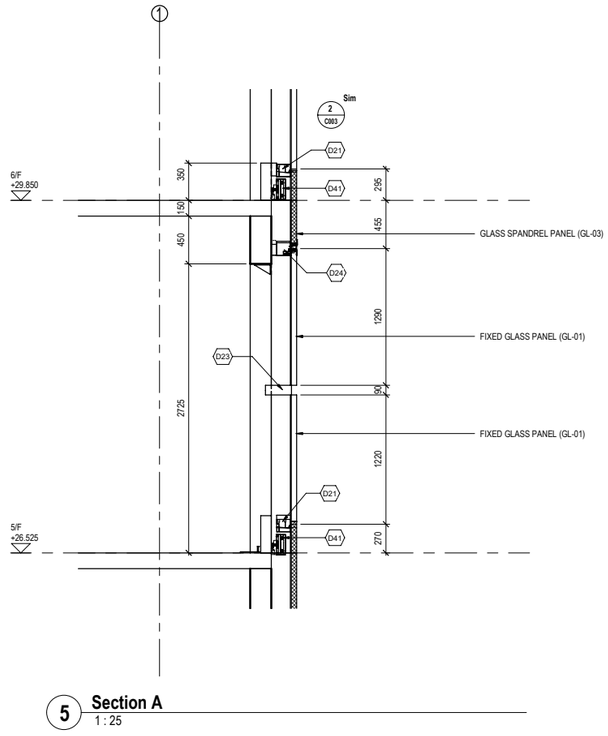
SCHEMATIC DIAGRAM

DRAWING TITLE	CURTAIN WALL



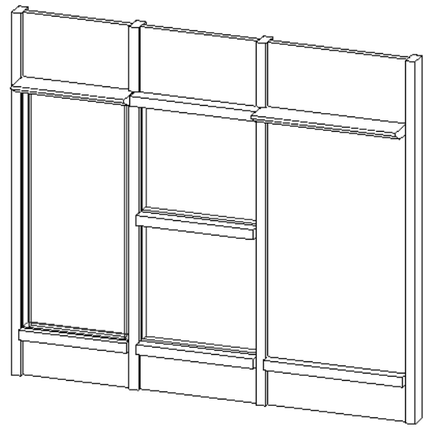
1 5/F CAST-IN LAYOUT PART PLAN (FLAT B)
1 : 25

PLAN

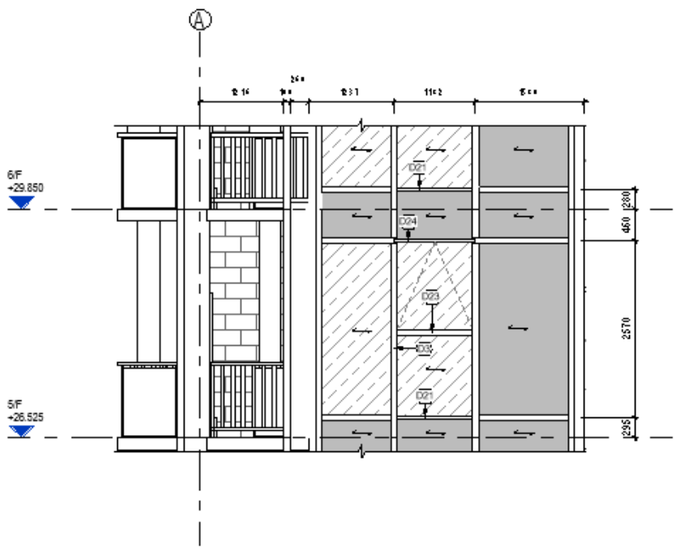


5 Section A
1 : 25

SECTION A



3D VIEW(FOR REFERENCE ONLY)

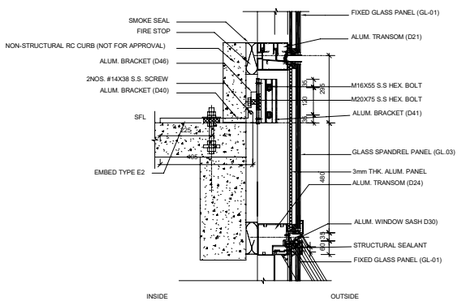


TP10+12A+TP10mm SILVER GREY GLASS PANEL
GLASS W/LOW-E COATING ON SURFACE (GL-01)

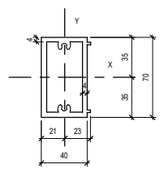
GLASS SPANDREL PANEL

OPENABLE WINDOW

ELEVATION

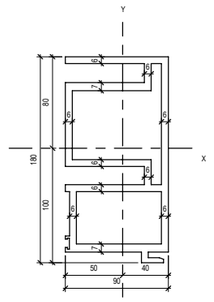


2 TYPICAL TRANSOM FIXING DETAIL
1 : 10



D1 ALUM. TRANSOM	SECTION PROPERTY
ALLOY	6063-T6
Area (mm^2) :	922.5
Moments of inertia - X (mm^4) :	592951
Moments of inertia - Y (mm^4) :	211886
Radii of gyration - X (mm) :	25
Radii of gyration - Y (mm) :	15
elastic Modulus - Zx (mm^3) :	Iy - max = 16941
elastic Modulus - Zy (mm^3) :	Jᐟ x- max = 9326

3 TRANSOM DETAIL (D1)
1 : 2

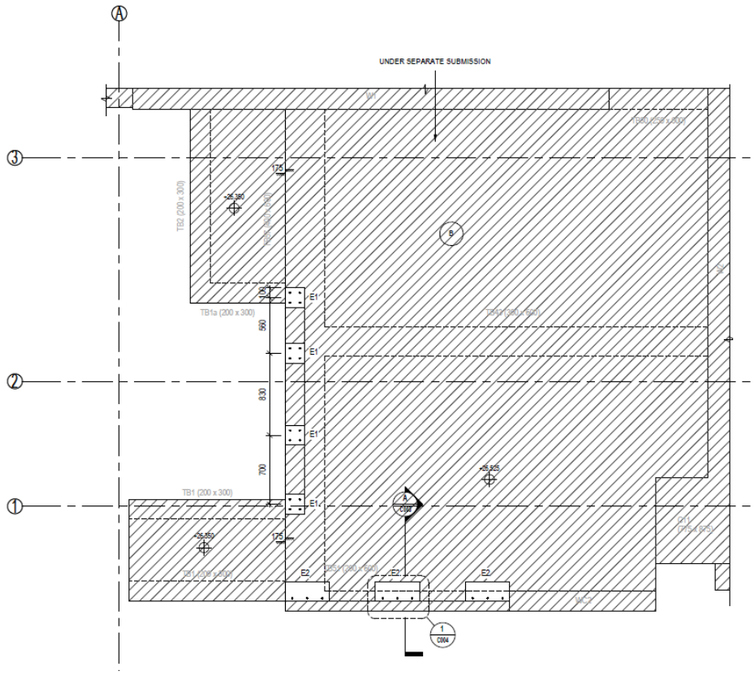


D3 ALUM. MULLION	SECTION PROPERTY
ALLOY	6063-T6
Area (mm^2) :	2311.8
Moments of inertia - X (mm^4) :	4509546
Moments of inertia - Y (mm^4) :	629163
Radii of gyration - X (mm) :	44
Radii of gyration - Y (mm) :	16
elastic Modulus - Zx (mm^3) :	Iy - max = 63137
elastic Modulus - Zy (mm^3) :	Jᐟ x- max = 25172

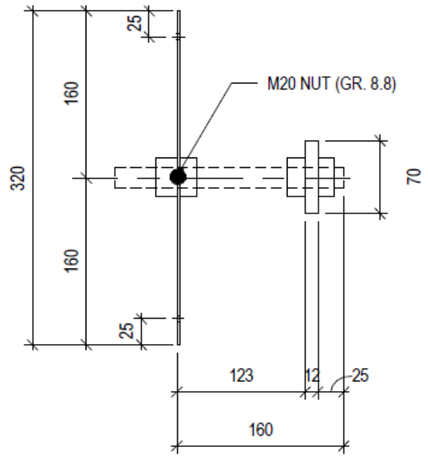
4 MULLION DETAIL (D3)
1 : 2

DETAIL (2D DRAFTING)

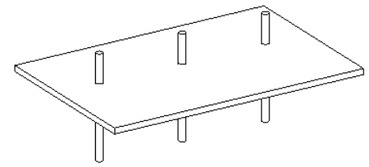
DRAWING TITLE	EMBED	



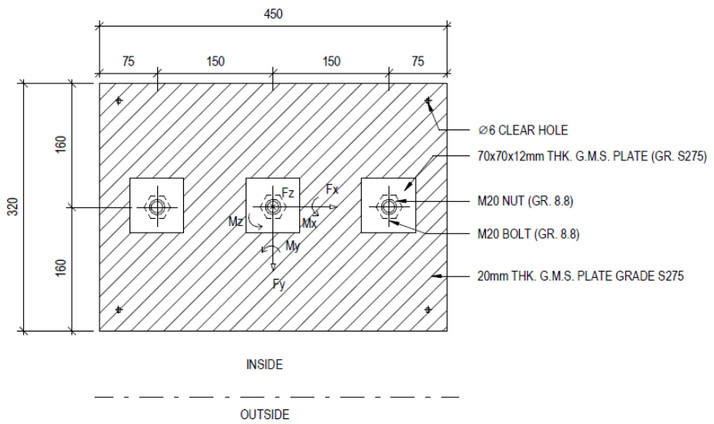
PLAN



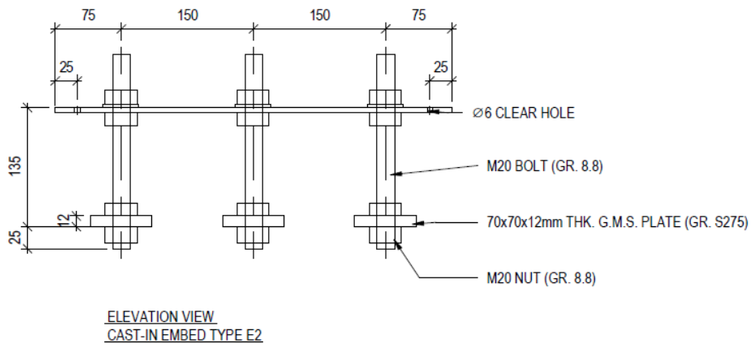
SIDE VIEW (2D DRAFTING)



3D VIEW(FOR REFERENCE ONLY)



PLAN VIEW (2D DRAFTING)



ELEVATION VIEW
CAST-IN EMBED TYPE E2

ELEVATION VIEW (2D DRAFTING)

UNFACTORED FORCES FOR CAST-IN EMBED TYPE E2		
	D.L.	W.L.
Fx (kN)	0	0
Fy (kN)	0	39.5
Fz (kN)	-14	0
Mx (kNm)	0.9	2
My (kNm)	0	0
Mz (kNm)	0	0

*(W.L.) WIND LOAD ARE REVERSIBLE

LODING SCHEDULE (2D DRAFTING)