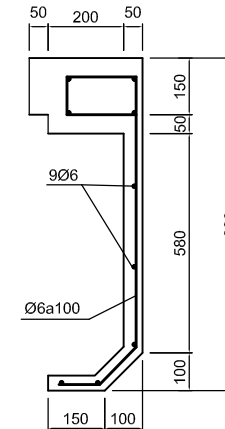
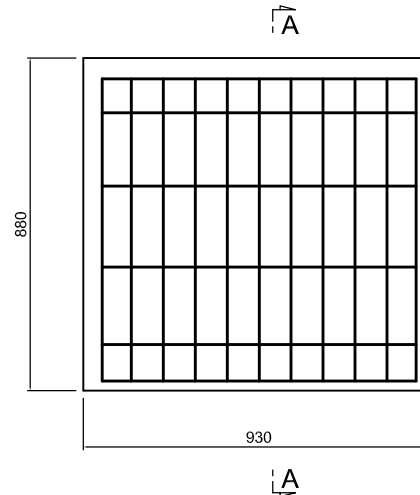


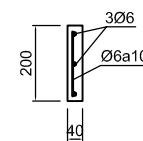
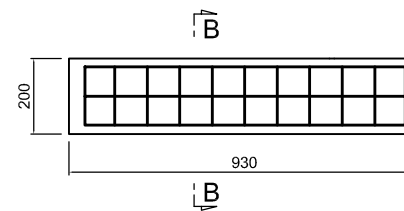
GUTTER
SCALE : 1/10

A-A
SCALE : 1/10



BLADE
SCALE : 1/10

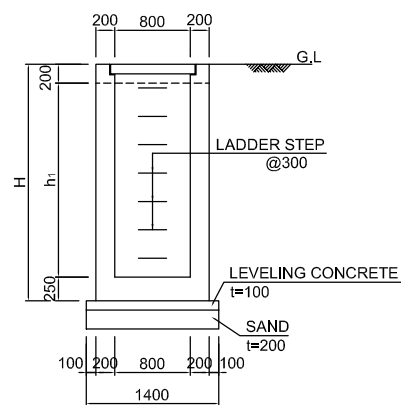
B-B
SCALE : 1/10



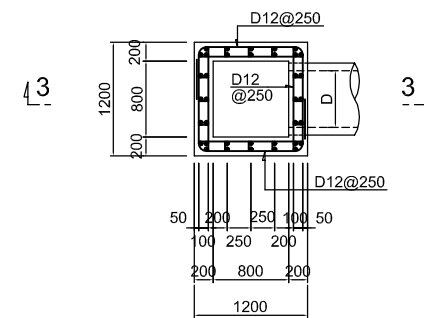
VOLUME TABLE

	GUTTER	BLADE
CONC. M200 (m³)	0.079	0.007
STEEL ROD Ø6 (Kg)	5.128	0.946

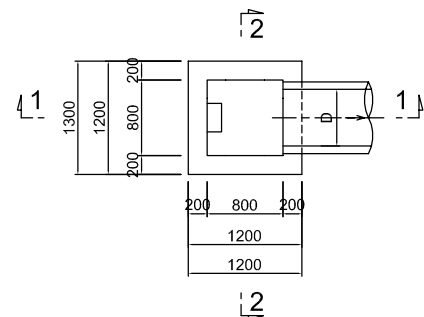
2-2
SCALE : 1/40



PLAN
SCALE : 1/40



PLAN
SCALE : 1/40

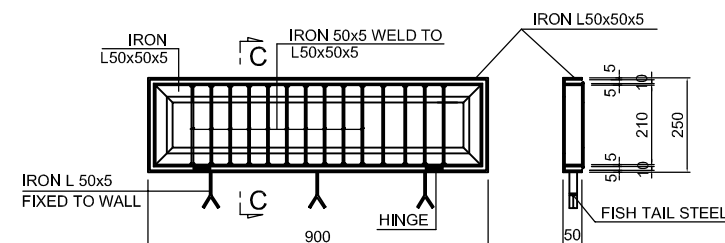


INLET TYPE

	A	B
I1	250	200
I2	400	0

STEEL GRID
SCALE : 1/10

C-C
SCALE : 1/10



QUANTITY

- IRON V. 150x50x5	= 7.34 kg
- IRON 50x5	= 5.77 kg
WEIGHT: 23.11kg	

NO.	DATE	DESCRIPTIONS	BY	APRO.

REVISIONS

PROJECT MANAGEMENT UNIT FOR
HO CHI MINH CITY
WATER ENVIRONMENT IMPROVEMENT

THE DETAILED DESIGN ON HO CHI MINH CITY
WATER ENVIRONMENT IMPROVEMENT PROJECT
IN THE SOCIALIST REPUBLIC OF VIET NAM

PACKAGE B

PUMP DRAINAGE IMPROVEMENT
THANH DA AREA

TYPICAL PLAN, SECTION AND
BAR ARRANGEMENT OF INLET PIT

SCALE : AS SHOWN

JICA JAPAN INTERNATIONAL COOPERATION
AGENCY (JICA)

PACIFIC CONSULTANTS INTERNATIONAL

DESIGNED
TOKUMASU TOSHIAKI

CHECKED
KONDO MASAMI

DATE : JUNE 2001 DWG. No. PB-PDI-BMC1-249

List of Manhole

Route	Manhole No.	Type of Manhole	Type of Manhole Cover	Main Sewer						Connection Pipe						GL (m)	Dimension (mm)					
				IN			OUT			Invert I ₃ (m)	D ₃ (mm)	Degree ∅ ₃	Invert I ₄ (m)	D ₄ (mm)	Degree ∅ ₄		H	h ₁	h ₂	h ₃	h ₄	h ₅
				Invert I ₁ (m)	D ₁ (mm)	Degree ∅ ₁	Invert I ₂ (m)	D ₂ (mm)	Degree ∅ ₂													
BM1 W1-1	M1	2-B	A				-0.360	900	180	-0.350	400	90				1.470	2,400	2,100	300	1,550	270	450
	M2	2-C-1	A	-0.373	900	0	-0.373	900	180	-0.350	400	90				1.330	2,200	1,900	300	1,350	197	450
	M3	2-C-1	A	-0.386	900	0	-0.386	900	180	-0.350	400	135				1.340	2,300	2,000	300	1,450	274	450
	M4	2-C-1	A	-0.406	900	0	-0.406	900	180	-0.400	400	90				1.340	2,300	2,000	300	1,450	254	450
	M5	2-C-1	A	-0.423	900	0	-0.423	900	180	-0.400	400	90				1.360	2,300	2,000	300	1,450	217	450
	M6	2-C-1	A	-0.440	900	0	-0.440	900	180	-0.440	400	90				1.370	2,400	2,100	300	1,550	290	450
	M7	2-C-1	A	-0.455	900	0	-0.455	900	180	-0.450	400	90				1.390	2,400	2,100	300	1,550	255	450
	M8	2-D-2	A	-0.470	900	0	-0.470	900	180	-0.450	400	90	-0.470	900	270	1.430	2,400	2,100	300	1,550	200	450
	M9	2-C-1	A	-0.485	900	0	-0.485	900	180	-0.450	400	90				1.444	2,500	2,200	300	1,650	271	450
	M10	2-C-1	A	-0.500	900	0	-0.500	900	180	-0.450	400	90				1.426	2,500	2,200	300	1,650	274	450
	M11	2-C-1	A	-0.515	900	0	-0.515	900	180	-0.250	400	90				1.444	2,500	2,200	300	1,650	241	450
	M12	2-C-1	A	-0.530	900	0	-0.530	900	180	-0.220	400	90				1.480	2,600	2,300	300	1,750	290	450
BM1 W1-2	M13	3-B	A	-0.544	900	0	-0.844	1200	90							1.530	3,000	2,600	400	2,000	276	500
	M14	3-D-1	A	-0.860	1200	0	-0.860	1200	180	-0.050	400	90	0.200	400	315	1.560	3,000	2,600	400	2,000	230	500
	M15	3-C-1	A	-0.877	1200	0	-0.877	1200	180	-0.100	400	90				1.526	3,000	2,600	400	2,000	247	500
	M16	3-C-1	A	-0.892	1200	0	-0.892	1200	180	-0.150	400	90				1.480	3,000	2,600	400	2,000	278	500
	M17	3-C-1	A	-0.907	1200	0	-0.907	1200	180	-0.400	600	90				1.430	3,000	2,600	400	2,000	313	500
	M18	3-C-1	A	-0.925	1200	0	-0.925	1200	180	-0.150	400	90				1.450	3,000	2,600	400	2,000	275	500
	M19	3-C-1	A	-0.943	1200	0	-0.943	1200	180	-0.400	600	90				1.435	3,000	2,600	400	2,000	272	500
	M20	3-C-1	A	-0.960	1200	0	-0.960	1200	180	-0.200	400	90				1.420	3,000	2,600	400	2,000	270	500
	M21	3-C-1	A	-0.978	1200	0	-0.978	1200	180	-0.200	400	90				1.400	3,000	2,600	400	2,000	272	500
	M22	3-C-1	A	-0.994	1200	0	-0.994	1200	180	-0.200	400	90				1.430	3,000	2,600	400	2,000	226	500
	M23	3-C-1	A	-1.012	1200	0	-1.012	1200	180	-0.150	400	90				1.470	3,100	2,600	500	2,000	268	500
	M24	3-C-1	A	-1.032	1200	0	-1.032	1200	180	-0.300	600	90				1.500	3,200	2,600	600	2,000	318	500
	M25	3-C-1	A	-1.044	1200	0	-1.044	1200	180	-0.050	400	90				1.545	3,200	2,600	600	2,000	261	500
	M26	3-C-1	A	-1.060	1200	0	-1.060	1200	180	-0.200	600	90				1.610	3,300	2,600	700	2,000	280	500
	M27	3-C-1	A	-1.080	1200	0	-1.080	1200	180	0.050	400	90				1.680	3,400	2,600	800	2,000	290	500
BM1 W1-4	M28	4-D-3	A	-1.095	1200	0	-1.695	1800	180	-0.100	600	90	-1.095	1200	270	1.700	4,000	3,100	900	2,500	255	500
	M29	4-C-1	A	-1.712	1800	0	-1.712	1800	180	-0.100	600	90				1.710	4,100	3,100	1000	2,500	328	500
	M30	4-C-1	A	-1.729	1800	0	-1.729	1800	180	0.050	400	90				1.670	4,000	3,100	900	2,500	251	500
	M31	4-C-1	A	-1.744	1800	0	-1.744	1800	180	0.050	400	90				1.680	4,100	3,100	1000	2,500	326	500
	M32	4-C-1	A	-1.760	1800	0	-1.760	1800	180	0.050	400	90				1.690	4,100	3,100	1000	2,500	300	500
	M33	4-C-1	A	-1.775	1800	0	-1.775	1800	180	0.050	400	90				1.700	4,100	3,100	1000	2,500	275	500
	M34	4-C-1	A	-1.785	1800	0	-1.785	1800	180	0.050	400	90				1.700	4,100	3,100	1000	2,500	265	500
	M35	4-C-1	A	-1.800	1800	0	-1.800	1800	180	0.050	400	90				1.700	4,200	3,100	1100	2,500	350	500
	M36	4-C-1	A	-1.815	1800	0	-1.815	1800	180	0.050	400	90				1.700	4,200	3,100	1100	2,500	335	500
	M37	4-C-1	A	-1.830	1800	0	-1.830	1800	180	0.050	400	90				1.700	4,200	3,100	1100	2,500	320	500
	M38	4-C-1	A	-1.848	1800	0	-1.848	1800	180	0.050	400	90				1.720	4,200	3,100	1100	2,500	282	500
	M39	4-C-1	A	-1.865	1800	0	-1.865	1800	180	0.100	400	90				1.770	4,300	3,100	1200	2,500	315	500
	M40	4-C-1	A	-1.883	1800	0	-1.883	1800	180	0.150	400	90				1.840	4,400	3,100	1300	2,500	327	500
	M41	4-C-1	A	-1.900	1800	0	-1.900	1800	180	0.100	600	90				1.930	4,500	3,100	1400	2,500	320	500
	M42	4-C-1	A	-1.900	1800	0	-1.923	1800	270	0.250	400	90				1.910	4,500	3,100	1400	2,500	317	500
E 3-1	M0	1-A	A	-0.163	600	0	-0.163	600	200							0.900	1,600	-	1300	0	237	300
	I1	1-A	A	-0.200	600	20	-0.200	600	270							1.040	1,800	-	1500	0	260	300
	M1	2-B	A	-0.227	600	90	-0.527	900	180							1.040	2,100	1,800	300	1,250	233	450
	M2	2-C-1	A	-0.558	900	0	-0.558	900	180	-0.558	400	90				1.140	2,200	1,900	300	1,350	202	450
	M3	2-C-1	A	-0.589	900	0	-0.589	900	180	-0.589	400	90				1.180	2,300	2,000	300	1,450	231	450
	M4	2-C-1	A	-0.620	900	0	-0.620	900	180	-0.620	400	90				1.220	2,400	2,100	300	1,550	260	450
	M5	2-C-1	A	-0.643	900	0	-0.643	900	180	-0.643	400	90				1.260	2,400	2,100	300	1,550	197	450
BM1 E 3-2	M6	3-C-3	A	-0.671	900	0	-1.271	1500	180				-0.671	900	270	1.260	3,200	2,600	600	2,000	319	500
	M7	3-C-1	A	-1.303	1500	0	-1.303	1500	180	-0.650	400	90				1.250	3,200	2,600	600	2,000	297	500
	M8	3-C-1	A	-1.330	1500	0	-1.330	1500	180	-0.650	400	90				1.240	3,200	2,600	600	2,000	280	500
	M9	3-C-1	A	-1.360	1500	0	-1.360	1500	180	-0.700	400	90				1.220	3,200	2,600	600	2,000	270	500
	M10	3-C-1	A	-1.390	1500	0	-1.390	1500	180	-0.750	400	90				1.170	3,200	2,600	600	2,000	290	500
	M11	3-C-1	A	-1.420	1500	0	-1.420	1500	180	-0.800	400	90				1.130	3,200	2,600	600	2,000	300	500
	M12	3-C-1	A	-1.455	1500	0	-1.455	1500	180	-0.800	400	90				1.140	3,200	2,600	600	2,000	255	500
	M13	3-C-1	A	-1.485	1500	0	-1.485	1500	180	-0.800	400	90				1.160	3,300	2,600	700	2,000	305	500
	M14	3-C-1	A	-1.515	1500	0	-1.515	1500	180	-0.900	600	90				1.190	3,300	2,600	700	2,000	245	500
BM1 E1-1	M1	2-B	A				-0.380	1000	180	0.000	400	90				1.330	2,300	2,000	300	1,450	290	500
	M2	2-C-1	A	-0.401	1000	0	-0.401	1000	180	0.000	400	90				1.330	2,300	2,000	300	1,450	247	500
	M3	2-C-1	A	-0.423	1000	0	-0.423	1000	210	0.000	400	90				1.330	2,300	2,000	300	1,450	247	500
	M4	2-D-1	A	-0.458	1000	0	-0.458	1000	150	-0.050	400	90	-0.458	400	270	1.330	2,300	2,000	300	1,450	212	500
	M5	2-D-1	A	-0.491	1000	0	-0.491	1000	180	-0.050	400	90	-0.491	400	270	1.330	2,400	2,100	300	1,550	279	500
	M6	2-D-1	A	-0.519	1000	0	-0.519	1000	180	-0.050	400	90	-0.500	400	270	1.310	2,400	2,100	300	1,550	271	500
	M7	2-D-1	A	-0.548	1000	0	-0.548	1000	180	-0.050	400	90	-0.500	400	270	1.300	2,400	2,100	300	1,550		

List of Manhole

Route	Manhole No.	Type of Manhole	Type of Manhole Cover	Main Sewer						Connection Pipe						GL (m)	Dimension (mm)					
				Invert	IN Dia	Degree	Invert	OUT Dia	Degree	Invert	Dia	Degree	Invert	Dia	Degree		H	h ₁	h ₂	h ₃	h ₄	h ₅
				I ₁ (m)	D ₁ (mm)	∅ ₁	I ₂ (m)	D ₂ (mm)	∅ ₂	I ₃ (m)	D ₃ (mm)	∅ ₃	I ₄ (m)	D ₄ (mm)	∅ ₄							
	M12	2-D-1	A	-0.696	1000	0	-0.696	1000	180	0.100	400	90	-0.350	400	270	1.480	2,700	2,400	300	1,850	224	500
	M13	2-D-1	A	-0.723	1000	0	-0.723	1000	180	0.150	400	90	-0.250	400	270	1.520	2,800	2,500	300	1,950	257	500
BM1 E1-2	M14	3-B	A	-0.748	1000	0	-0.948	1200	270							1.520	3,100	2,600	500	2,000	282	500
	M15	3-D-1	A	-0.977	1200	0	-0.977	1200	180	0.100	400	90	-0.550	400	270	1.460	3,100	2,600	500	2,000	313	500
	M16	3-D-1	A	-1.004	1200	0	-1.004	1200	180	0.050	400	90	-0.600	400	270	1.390	3,000	2,600	400	2,000	256	500
	M17	3-D-1	A	-1.034	1200	0	-1.034	1200	180	-0.050	400	90	-0.700	600	270	1.290	2,900	2,600	300	2,000	226	500
	M18	3-D-1	A	-1.064	1200	0	-1.064	1200	180	-0.100	400	90	-0.550	400	270	1.270	3,000	2,600	400	2,000	316	500
	M19	3-D-1	A	-1.094	1200	0	-1.094	1200	180	-0.100	400	90	-0.750	600	270	1.270	3,000	2,600	400	2,000	286	500
	M20	3-D-1	A	-1.123	1200	0	-1.123	1200	180	-0.100	400	90	-0.550	400	270	1.255	3,000	2,600	400	2,000	272	500
	M21	3-D-1	A	-1.160	1200	0	-1.160	1200	180	-0.100	400	90	-0.550	400	270	1.250	3,000	2,600	400	2,000	240	500
	M22	3-D-1	A	-1.184	1200	0	-1.184	1200	180	-0.100	400	90	-0.750	600	270	1.250	3,100	2,600	500	2,000	316	500
	M23	3-D-1	A	-1.217	1200	0	-1.217	1200	180	-0.150	400	90	-0.600	400	270	1.210	3,000	2,600	400	2,000	223	500
	M24	3-D-1	A	-1.252	1200	0	-1.252	1200	180	-0.200	400	90	-0.650	400	270	1.180	3,100	2,600	500	2,000	318	500
BM1 E1-3	M25	3-D-2	A	-1.288	1200	0	-1.588	1500	180	-1.200	1200	120	-1.200	1200	300	1.222	3,400	2,600	800	2,000	240	500
	M26	3-D-1	A	-1.619	1500	0	-1.619	1500	180	-0.050	400	90	-0.600	400	270	1.300	3,500	2,600	900	2,000	231	500
	M27	3-D-1	A	-1.646	1500	0	-1.646	1500	180	-0.000	400	90	-0.550	400	270	1.360	3,600	2,600	1000	2,000	244	500
	M28	3-D-1	A	-1.675	1500	0	-1.675	1500	180	0.100	400	90	-0.450	400	270	1.440	3,700	2,600	1100	2,000	235	500
	M29	3-D-1	A	-1.705	1500	0	-1.705	1500	180	0.100	600	90	-0.650	600	270	1.450	3,800	2,600	1200	2,000	295	500
	M30	3-D-1	A	-1.739	1500	0	-1.739	1500	180	0.100	400	90	-0.450	400	270	1.430	3,800	2,600	1200	2,000	281	500
	M31	3-D-1	A	-1.773	1500	0	-1.773	1500	180	0.150	400	90	-0.500	400	270	1.400	3,800	2,600	1200	2,000	277	500
	M32	3-D-1	A	-1.807	1500	0	-1.807	1500	180	0.200	400	90	-0.300	400	270	1.580	4,000	2,600	1400	2,000	263	500
	M33	3-D-1	A	-1.842	1500	0	-1.842	1500	200	0.400	400	90	-0.100	400	270	1.820	4,300	2,600	1700	2,000	288	500
	M34	3-C-2	A	-1.862	1500	0	-1.862	1500	180				-1.300	1000	250	1.920	4,400	2,600	1800	2,000	268	500
BM1 W2-1	M1	2-C-1	A				-0.708	1000	180	-0.250	400	90	-0.570	400	270	1.430	2,700	2,400	300	1,850	262	500
	M2	2-D-1	A	-0.744	1000	0	-0.744	1000	180	-0.500	400	90	-0.744	600	270	1.160	2,400	2,100	300	1,550	196	500
	M3	2-D-1	A	-0.792	1000	0	-0.792	1000	180	-0.400	400	90	-0.760	600	270	1.240	2,600	2,300	300	1,750	268	500
	M4	2-D-1	A	-0.840	1000	0	-0.840	1000	180	-0.400	400	90	-0.750	600	270	1.250	2,600	2,300	300	1,750	210	500
	M5	2-C-1	A	-0.876	1000	0	-0.876	1000	180				-0.750	600	270	1.230	2,600	2,300	300	1,750	194	500
	M6	2-C-1	A	-0.920	1000	0	-0.920	1000	180				-0.800	400	270	1.190	2,700	2,400	300	1,850	290	500
	M7	2-D-1	A	-0.958	1000	0	-0.958	1000	180	-0.500	400	90	-0.850	400	270	1.170	2,700	2,400	300	1,850	272	500
	M8	2-D-1	A	-0.990	1000	0	-0.990	1000	180	-0.500	400	90	-0.850	400	270	1.170	2,700	2,400	300	1,850	240	500
	M9	2-D-1	A	-1.030	1000	0	-1.030	1000	180	-0.400	400	90	-0.800	400	270	1.210	2,800	2,500	300	1,950	260	500
	M10	2-D-1	A	-1.062	1000	0	-1.062	1000	180	-0.400	400	90	-0.800	400	270	1.216	2,800	2,500	300	1,950	222	500
	M11	2-D-1	A	-1.098	1000	0	-1.098	1000	180	-0.400	400	90	-0.750	400	270	1.240	2,900	2,550	350	2,000	262	500
	M12	2-D-1	A	-1.140	1000	0	-1.140	1000	180	-0.500	400	90	-0.850	400	270	1.140	2,800	2,500	300	1,950	220	500
	M13	2-D-2	A	-1.183	1000	0	-1.183	1000	180	-1.183	1000	90	-0.900	400	270	1.110	2,800	2,500	300	1,950	207	500
BM1 W2-2	M14	3-D-1	A	-1.221	1000	0	-1.421	1200	180	-0.500	400	90	-0.850	400	270	1.130	3,200	2,600	600	2,000	299	500
	M15	3-D-1	A	-1.457	1200	0	-1.457	1200	180	-0.500	400	90	-0.850	400	270	1.140	3,200	2,600	600	2,000	253	500
	M16	3-D-1	A	-1.493	1200	0	-1.493	1200	180	-0.500	400	90	-0.850	400	270	1.140	3,300	2,600	700	2,000	317	500
	M17	3-D-1	A	-1.536	1200	0	-1.536	1200	180	-0.500	400	90	-0.850	400	270	1.160	3,300	2,600	700	2,000	254	500
	M18	3-D-1	A	-1.580	1200	0	-1.580	1200	180	-0.500	400	90	-0.850	400	270	1.180	3,400	2,600	800	2,000	290	500
	M19	3-D-1	A	-1.616	1200	0	-1.616	1200	180	-0.400	400	90	-0.800	400	270	1.210	3,400	2,600	800	2,000	224	500
	M20	3-D-1	A	-1.652	1200	0	-1.652	1200	180	-0.400	400	90	-0.700	400	270	1.260	3,500	2,600	900	2,000	238	500
	M21	3-D-1	A	-1.695	1200	0	-1.695	1200	180	-0.300	400	90	-0.650	400	270	1.340	3,700	2,600	1100	2,000	315	500
	M22	3-D-1	A	-1.738	1200	0	-1.738	1200	180	-0.200	400	90	-0.600	400	270	1.400	3,800	2,600	1200	2,000	312	500
	M23	3-D-1	A	-1.781	1200	0	-1.781	1200	180	-0.150	400	90	-0.550	400	270	1.450	3,900	2,600	1300	2,000	319	500
	M24	3-D-1	A	-1.823	1200	0	-1.823	1200	180	-0.150	400	90	-0.500	400	270	1.460	3,900	2,600	1300	2,000	267	500
	M25	3-D-1	A	-1.864	1200	0	-1.864	1200	180	-0.050	400	90	-0.500	400	270	1.522	4,000	2,600	1400	2,000	264	500
	M26	3-C-3	A	-1.900	1200	0	-1.900	1200	225	-1.900	1200	90				1.570	4,100	2,600	1500	2,000	280	500
	M27	1-A	C				-0.200	400	180							1.230	2,000	-	1700	0	270	200
	M28	1-A	C	-0.250	400	0	-0.250	400	180							1.190	2,000	-	1700	0	260	200
	M29	1-A	C	-0.300	400	0	-0.300	400	180							1.170	2,000	-	1700	0	230	200
BM1 E-2	M1	3-B	A				-0.715	1200	180				-0.660	400	270	1.240	2,600	2,300	300	1,700	295	500
	M2	3-C-1	A	-0.750	1200	0	-0.750	1200	180				-0.700	400	270	1.150	2,500	2,200	300	1,600	250	500
	M3	3-C-1	A	-0.780	1200	0	-0.780	1200	180				-0.750	400	270	1.080	2,500	2,200	300	1,600	290	500
	M4	3-D-1	A	-0.810	1200	0	-0.810	1200	180	-0.710	600	90	-0.750	400	270	1.090	2,500	2,200	300	1,600	250	500
	M5	3-C-1	A	-0.850	1200	0	-0.850	1200	180				-0.750	400	270	1.100	2,600	2,300	300	1,700	300	500
	M6	3-C-1	A	-0.880	1200	0	-0.880	1200	180				-0.750	400	270	1.090	2,600	2,300	300	1,700	280	500
	M7	3-C-1	A	-0.910	1200	0	-0.910	1200	180				-0.750	400	270	1.090	2,600	2,300	300	1,700	250	500
	M8	3-C-1	A	-0.950	1200	0	-0.950	1200	180				-0.700	400	270	1.120	2,700	2,400	300	1,800	280	500
	M9	3-D-1	A	-0.980	1200	0	-0.980	1200	180	-0.700	600	90	-0.700	400	270	1.135	2,700	2,400	300	1,800	235	500
	M10	3-C-1	A	-1.010	1200	0	-1.010	1200	180				-0.70									