

PRECAST REINFORCED CONCRETE BOX CULVERTS

VOHUP LEE's precast reinforced concrete box culverts are available in a wide variety of sizes, ranging from 600mm X 225mm (24" X 9") to 1,800mm X 1,800mm (72" X 72").

Our box culverts are made of a U-shaped invert (with or without *Dry Weather Flow* section) and a separate reinforced concrete lid slab or deck.

The benefits of using VOHUP LEE's precast reinforced concrete box culverts includes: -

- Minimising traffic delays at construction site, thus eliminating costly detours planning,
- Assurance of product quality because of the control measures at our manufacturing sites,
- Ease of installation,
- Early compressive strength,
- Simple metric measurements to suit various designs,
- Readily available.

VOHUP LEE's precast reinforced concrete box culverts are very versatile and can be used in various construction projects, including open drains, tunnels, sumps, ducts and many more.



Precast Reinforced Concrete Box Culverts

PRECAST REINFORCED CONCRETE U-SHAPED OPEN DRAINS

VOHUP LEE's precast reinforced concrete U-shaped open drains AKA U-drains are readily available in sizes ranging from 600mm X 300mm to 1,800mm X 1,800mm. We produce two types of precast reinforced concrete U-shaped open drain, with and without a *Dry Weather Flow* (DWF) section to suit the needs of the market.

The unit's shape and dimension is the same as the U-shaped invert section of the VOHUP LEE's precast reinforced concrete box culvert, only with the exception that it will be supplied **without** a concrete slab lid.

VOHUP LEE's economical precast reinforced concrete U-drain is designed solely for open drainage. The invert units are **not** designed to withstand any direct traffic loads, but for the sole purpose of withstanding soil pressure on both side of the drain. The detailed drawing of the loading conditions is shown in the handling and installation of the large precast reinforced concrete box culvert / U-shaped open drain section.

VOHUP LEE's precast reinforced concrete U-drains are designed in compliance with BS 8110, with a minimum reinforcement coverage of 25mm. These units have a 28 curing days characteristic strength of 30kN/m².

VOHUP LEE's precast reinforced concrete U-drains are supplied with plain butt joints that guarantees speed and ease of installation work. Cement mortar is recommended to fill the gaps in between the U-drain units.

VOHUP LEE's precast reinforced concrete U-drains are also supplied with lifting holes for easy handling and installation apart from their functions as weeping holes upon installation. A spreader bar is recommended for lifting of these U-drains to avoid cracking in the legs or any undesirable effect which may affect the appearance and usability of the product.



CONCRETE BOX CULVERTS

DESIGN

VOHUP LEE's precast reinforced concrete box culverts are manufactured in accordance to the requirements of MS 1293: Part 1: 1992, a specification for precast reinforced concrete box culverts not exceeding 1,800mm in width and 1,800mm in depth are catered for backfill depth of 2m inclusive of pavement, if any.

A proof load of 112.5kN and an ultimate load of 140kN are tested on our products by applying loads to every specified position on the reinforced concrete lid slab or deck of the culvert. Subsequently, water absorption of the concrete is tested by using test pieces cut or cored from culverts that have been subjected to and have complied with the proof load test. In order to maintain high standards of quality, these test pieces must not show an absorption rate exceeding 8%.

Therefore, you can save plenty of time, hassles and yet have the assurance of quality by choosing our products for your next design. Our technical teams will be able to provide any assistance and advice on the choice of your products upon demand.

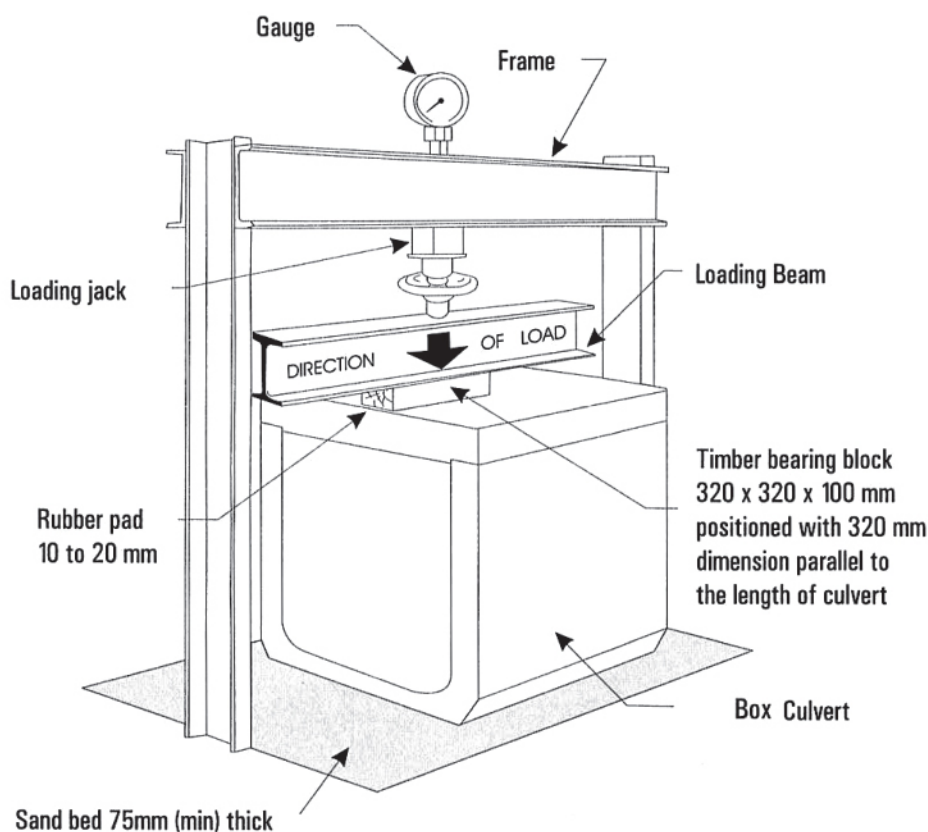


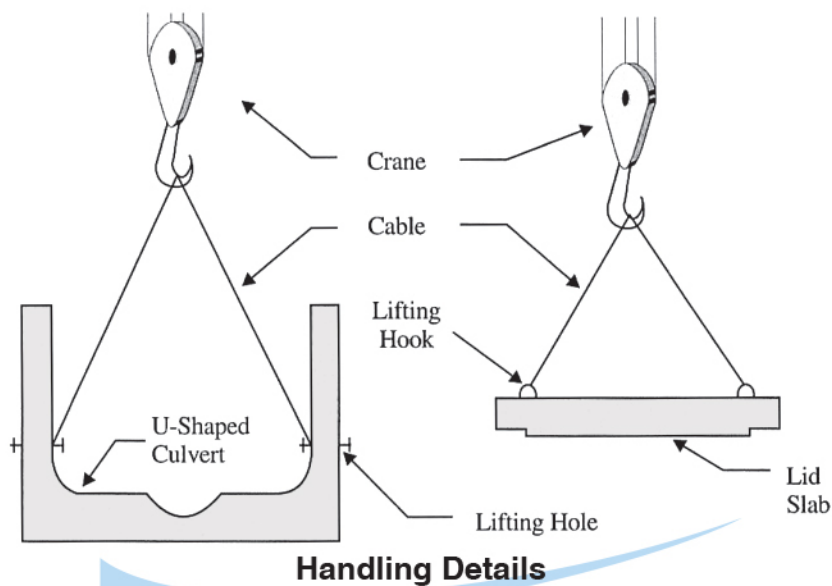
Figure 1: Load Testing Machine

HANDLING & INSTALLATION

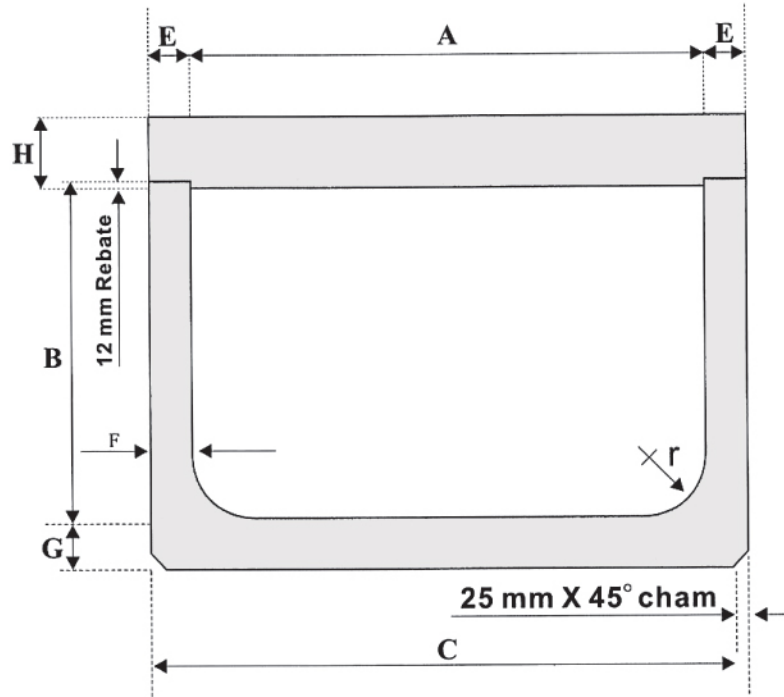
VOHUP LEE's precast reinforced concrete box culverts are fitted with lifting holes and lifting hooks in each U-shaped invert section and lid slab respectively for the ease of handling and installation.

Box culverts can be laid on sand bedding as it is not necessary to provide an in-situ concrete bedding. However, there may be a need for a deeper excavation and the need for a hard base below the layer of sand bedding or screed to reach the required level should the base not meet the required condition.

After the installation of U-shaped invert section, lifting holes should be fully covered with mortar and a layer of mortar to be spread on top of the U-shaped section to ensure uniformity between the U-shaped section and the lid slab.



PRECAST REINFORCED CONCRETE BOX CULVERTS & OPEN DRAINS (WITHOUT DWF)



Nominal Sizes mm X mm	A mm	B mm	C mm	E mm	F mm	G mm	r mm	H mm	Approx. Weight Per U-Shaped Drain (ton)	Approx. Weight Per Set (ton)
300 X 150	300	150	500	100	100	100	65	100	0.192	0.312
300 X 300	300	300	500	100	100	100	65	100	0.264	0.384
450 X 225	450	225	600	75	75	75	65	100	0.189	0.333
450 X 300	450	300	600	75	75	75	65	100	0.216	0.360
450 X 450	450	450	600	75	75	75	65	100	0.270	0.414
600 X 225	600	225	750	75	75	75	65	150	0.216	0.504
600 X 300	600	300	750	75	75	75	65	150	0.243	0.531
600 X 450	600	450	750	75	75	75	65	150	0.297	0.585
600 X 600	600	600	750	75	75	75	65	150	0.351	0.639

Standard Length: 1,000mm

Nominal Sizes mm X mm	A mm	B mm	C mm	E mm	F mm	G mm	r mm	H mm	Approx. Weight Per U-Shaped Drain (ton)	Approx. Weight Per Set (ton)
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750 X 300	750	300	950	100	100	100	75	150	0.372	0.714
750 X 450	750	450	950	100	100	100	75	150	0.444	0.786
750 X 600	750	600	950	100	100	100	75	150	0.516	0.858
750 X 750	750	750	950	100	100	100	75	150	0.588	0.930

900 X 300	900	300	1050	75	75	75	75	150	0.297	0.675
900 X 450	900	450	1050	75	75	75	75	150	0.351	0.729
900 X 600	900	600	1050	75	75	75	75	150	0.405	0.783
900 X 750	900	750	1050	75	75	75	75	150	0.459	0.837
900 X 900	900	900	1050	75	75	75	75	150	0.513	0.891

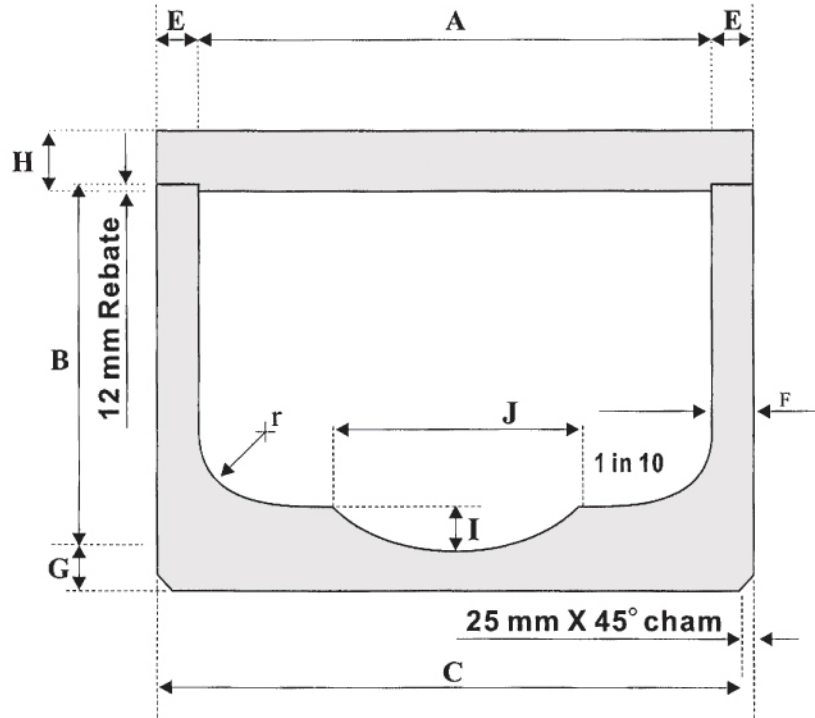
1200 X 300	1200	300	1400	100	100	100	90	150	0.480	0.984
1200 X 450	1200	450	1400	100	100	100	90	150	0.552	1.056
1200 X 600	1200	600	1400	100	100	100	90	150	0.624	1.128
1200 X 750	1200	750	1400	100	100	100	90	150	0.696	1.200
1200 X 900	1200	900	1400	100	100	100	90	150	0.768	1.272
1200 X 1200	1200	1200	1400	100	100	100	90	150	0.912	1.416

1500 X 600	1500	600	1750	125	125	125	110	150	0.885	1.515
1500 X 750	1500	750	1750	125	125	125	110	150	0.975	1.605
1500 X 900	1500	900	1750	125	125	125	110	150	1.065	1.695
1500 X 1050	1500	1050	1750	125	125	125	110	150	1.155	1.785
1500 X 1200	1500	1200	1750	125	125	125	110	150	1.245	1.875
1500 X 1350	1500	1350	1750	125	125	125	110	150	1.335	1.965
1500 X 1500	1500	1500	1750	125	125	125	110	150	1.425	2.055

1800 X 900	1800	900	2050	125	125	125	215	150	1.155	1.893
1800 X 1050	1800	1050	2050	125	125	125	215	150	1.245	1.983
1800 X 1200	1800	1200	2050	125	125	125	215	150	1.335	2.073
1800 X 1350	1800	1350	2050	125	125	125	215	150	1.425	2.163
1800 X 1500	1800	1500	2050	125	125	125	215	150	1.515	2.253
1800 X 1650	1800	1650	2050	125	125	125	215	150	1.605	2.343
1800 X 1800	1800	1800	2050	125	125	125	215	150	1.695	2.433

Standard Length: 1,000mm

PRECAST REINFORCED CONCRETE BOX CULVERTS & OPEN DRAINS INCORPORATED WITH DWF



Nominal Sizes mm X mm	A mm	B mm	C mm	E mm	F mm	G mm	r mm	H mm	J mm	I mm	Approx. Weight Per U-Shaped Drain (ton)	Approx. Weight Per Set (ton)
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600 X 225	600	225	750	75	75	75	65	150	450	100	0.243	0.531
600 X 300	600	300	750	75	75	75	65	150	450	100	0.270	0.558
600 X 450	600	450	750	75	75	75	65	150	450	100	0.324	0.612
600 X 600	600	600	750	75	75	75	65	150	450	100	0.378	0.666

750 X 300	750	300	950	100	100	100	75	150	450	100	0.408	0.750
750 X 450	750	450	950	100	100	100	75	150	450	100	0.480	0.822
750 X 600	750	600	950	100	100	100	75	150	450	100	0.552	0.894
750 X 750	750	750	950	100	100	100	75	150	450	100	0.624	0.966

Standard Length: 1,000mm

Nominal Sizes mm X mm	A mm	B mm	C mm	E mm	F mm	G mm	r mm	H mm	J mm	I mm	Approx. Weight Per U-Shaped Drain (ton)	Approx. Weight Per Set (ton)
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900 X 300	900	300	1050	75	75	75	75	150	450	100	0.324	0.702
900 X 450	900	450	1050	75	75	75	75	150	450	100	0.378	0.756
900 X 600	900	600	1050	75	75	75	75	150	450	100	0.432	0.810
900 X 750	900	750	1050	75	75	75	75	150	450	100	0.486	0.864
900 X 900	900	900	1050	75	75	75	75	150	450	100	0.540	0.918

1200 X 300	1200	300	1400	100	100	100	90	150	450	100	0.516	1.020
1200 X 450	1200	450	1400	100	100	100	90	150	450	100	0.588	1.092
1200 X 600	1200	600	1400	100	100	100	90	150	450	100	0.660	1.164
1200 X 750	1200	750	1400	100	100	100	90	150	450	100	0.732	1.236
1200 X 900	1200	900	1400	100	100	100	90	150	450	100	0.804	1.308
1200 X 1200	1200	1200	1400	100	100	100	90	150	450	100	0.948	1.452

1500 X 600	1500	600	1750	125	125	125	110	150	450	100	0.930	1.560
1500 X 750	1500	750	1750	125	125	125	110	150	450	100	1.020	1.650
1500 X 900	1500	900	1750	125	125	125	110	150	450	100	1.110	1.740
1500 X 1050	1500	1050	1750	125	125	125	110	150	450	100	1.200	1.830
1500 X 1200	1500	1200	1750	125	125	125	110	150	450	100	1.290	1.920
1500 X 1350	1500	1350	1750	125	125	125	110	150	450	100	1.380	2.010
1500 X 1500	1500	1500	1750	125	125	125	110	150	450	100	1.470	2.100

1800 X 900	1800	900	2050	125	125	125	215	150	450	100	1.2	1.938
1800 X 1050	1800	1050	2050	125	125	125	215	150	450	100	1.29	2.028
1800 X 1200	1800	1200	2050	125	125	125	215	150	450	100	1.38	2.118
1800 X 1350	1800	1350	2050	125	125	125	215	150	450	100	1.47	2.208
1800 X 1500	1800	1500	2050	125	125	125	215	150	450	100	1.56	2.298
1800 X 1650	1800	1650	2050	125	125	125	215	150	450	100	1.65	2.388
1800 X 1800	1800	1800	2050	125	125	125	215	150	450	100	1.74	2.478

Standard Length: 1,000mm

LARGE PRECAST REINFORCED CONCRETE BOX CULVERTS

VOHUP LEE's large precast reinforced concrete box culverts are readily available in sizes ranging from 2,100mm X 900mm to 3,600mm X 3,600mm. The large precast reinforced concrete box culverts are incorporated with or without a *Dry Weather Flow* (DWF) or monsoon drain between the two walls and are supplied with a separate piece of lid slab as cover.

VOHUP LEE's large precast reinforced concrete box culverts are designed in compliance with BS 8110 whereby the minimum reinforced coverage is 30mm. Our large precast reinforced concrete box culverts are designed to withstand the following loading conditions: -

Type of Load		Area of Load Application
Proof Load	Ultimate Load	
112.5kN	140kN	320mm X 320mm

Nominal Cover to Reinforcement	25mm
Grade of Concrete	Grade 40
Grade of Steel	Grade 500

The raw materials for our products consist of Ordinary Portland Cement procured from established manufacturing plants along with selected high-quality granite and quarry/river sand available from the region. Quality checks are done consistently on all raw materials to ensure reliability and quality finishing products.

All of the VOHUP LEE's large precast reinforced concrete box culverts are designed according to simple metric system. Nominal sizes quoted therefore, no longer represents the empirical dimensions, but the true metric measurements of our products.

At VOHUP LEE, we are more than willing to customise precast reinforced concrete box culverts according to the sizes or loading requirements and needs of our customers.

Customers are advised to refer to the drawings provided for proper handling and installation of our large precast reinforced box culverts.



LARGE PRECAST REINFORCED CONCRETE U-SHAPED OPEN DRAIN

VOHUP LEE's large precast reinforced concrete U-shaped open drains are available in various sizes ranging from 2,100mm X 900mm to 3,600mm X 3,600mm, and are incorporated with or without a *Dry Weather Flow (DWF)* section.

It is more economical to use the large precast reinforced concrete U-shaped open drains than large precast reinforced concrete box culvert inverts for the purpose of simple open drainage. Thus, the large precast reinforced concrete U-shaped open drains are not supplied with lid slabs, and they are designed to only withstand soil pressure. We do not recommend U-shaped open drains for applications that require any traffic loads.

VOHUP LEE's large precast reinforced concrete U-shaped open drains are supplied with plain butt joints that ensures speed and ease of installation work. Therefore, less supervision is required during the installation. The usage of cement mortar is recommended to fill the gap in between the U-drain units.

VOHUP LEE's large precast reinforced concrete U-shaped open drain designs are versatile and flexible. Therefore, VOHUP LEE's large precast reinforced concrete U-shaped open drains with alternative joints and sizes can also be supplied on demand upon receiving the detailed drawings from the customers. This line of products can be produced economically to suit the requirements of any applications.

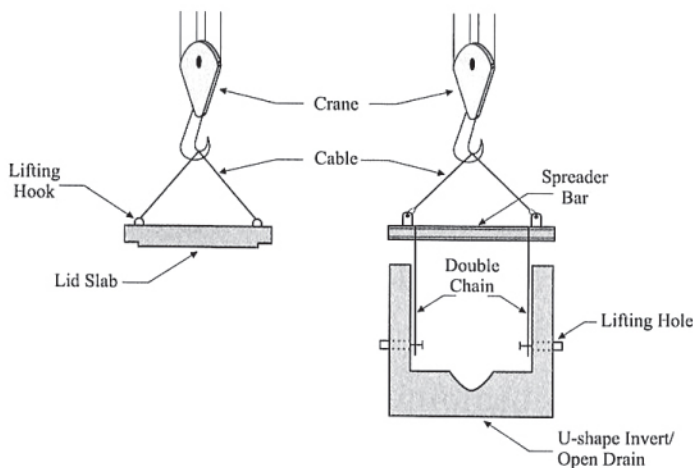
VOHUP LEE's large precast reinforced concrete U-shaped open drains are designed in compliance with BS 8110, with 28 curing days characteristic strength of 40kN/m² and a minimum reinforced coverage of 30mm.



HANDLING AND INSTALLATION OF THE LARGE PRECAST REINFORCED CONCRETE BOX CULVERT / U-SHAPED OPEN DRAIN

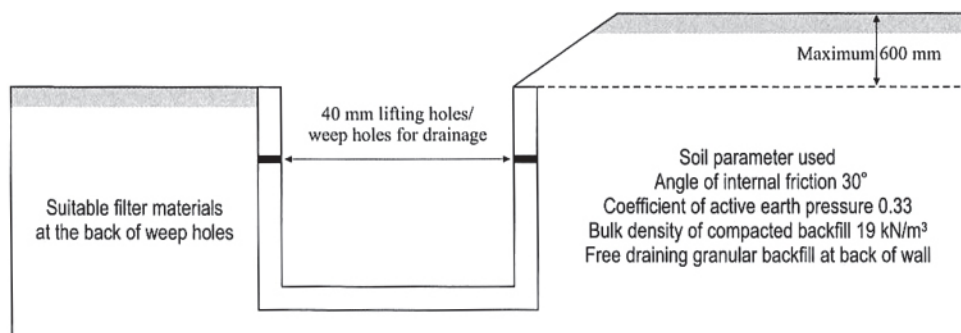
The drawings below illustrate the basic and safe handling procedure of the large precast reinforced concrete box culverts and U-shaped open drains. The safe handling procedure for the larger products varies from their smaller counterparts.

It is advisable to follow the illustrated method below to ensure safety of workers, equipment, and the condition of the products.



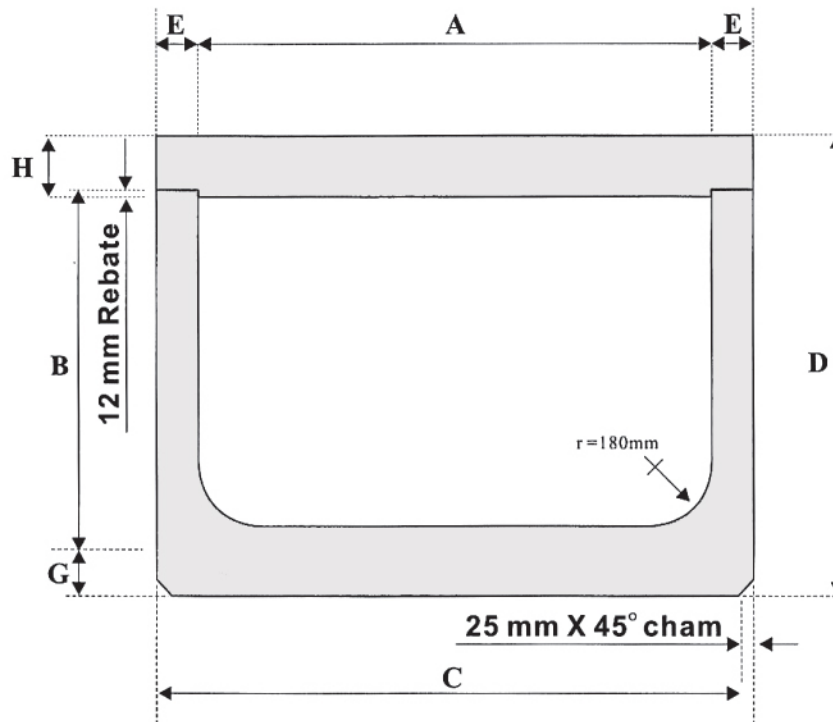
VOHUP LEE's large precast reinforced concrete may be laid on sand bedding. However, depending on the soil condition, users may be advised to excavate deeper and to provide a layer of screed prior to the placement of the products.

DESIGN CONSIDERATIONS AND LOADING CONDITIONS OF SMALL AND LARGE PRECAST REINFORCED CONCRETE U-SHAPED OPEN DRAIN



The lifting holes (also known as the weepholes) of 40mm provides drainage of any excess retained soil to minimize the build-up of hydrostatic pressure.

**LARGE PRECAST REINFORCED CONCRETE BOX CULVERTS AND OPEN DRAINS
(WITHOUT DWF)**



Nominal Sizes mm X mm	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	G (mm)	H (mm)	Approx. Weight Per Set (ton)	Approx. Weight Without Lid (ton)
2100 X 900	2100	900	2510	1320	205	205	215	3.47	2.15
2100 X 1050	2100	1050	2510	1470	205	205	215	3.62	2.30
2100 X 1200	2100	1200	2510	1620	205	205	215	3.77	2.45
2100 X 1350	2100	1350	2510	1770	205	205	215	3.92	2.60
2100 X 1500	2100	1500	2510	1920	205	205	215	4.07	2.75
2100 X 1650	2100	1650	2510	2070	205	205	215	4.22	2.90
2100 X 1800	2100	1800	2510	2220	205	205	215	4.37	3.05
2100 X 1950	2100	1950	2510	2370	205	205	215	4.52	3.20
2100 X 2100	2100	2100	2510	2520	205	205	215	4.67	3.35

2400 X 1050	2400	1050	2810	1470	205	205	215	3.91	2.45
2400 X 1200	2400	1200	2810	1620	205	205	215	4.06	2.60
2400 X 1350	2400	1350	2810	1770	205	205	215	4.21	2.75
2400 X 1500	2400	1500	2810	1920	205	205	215	4.36	2.90
2400 X 1650	2400	1650	2810	2070	205	205	215	4.51	3.05
2400 X 1800	2400	1800	2810	2220	205	205	215	4.66	3.20
2400 X 1950	2400	1950	2810	2370	205	205	215	4.81	3.35
2400 X 2100	2400	2100	2810	2520	205	205	215	4.96	3.50
2400 X 2250	2400	2250	2810	2670	205	205	215	5.11	3.65
2400 X 2400	2400	2400	2810	2820	205	205	215	5.26	3.80

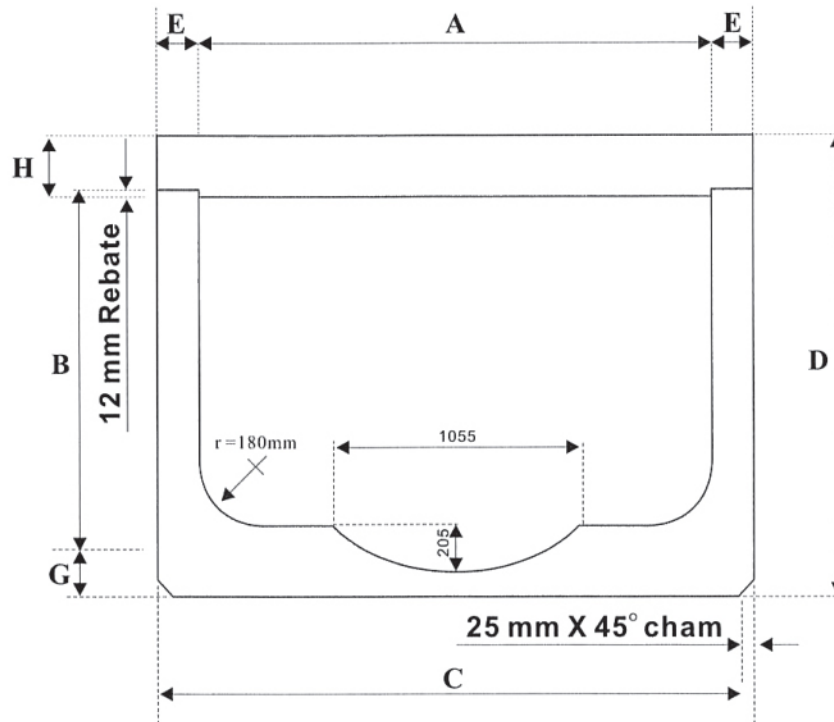
Nominal Sizes mm X mm	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	G (mm)	H (mm)	Approx. Weight Per Set (ton)	Approx. Weight Without Lid (ton)
2700 X 1200	2700	1200	3110	1620	205	205	215	4.38	2.75
2700 X 1350	2700	1350	3110	1770	205	205	215	4.53	2.90
2700 X 1500	2700	1500	3110	1920	205	205	215	4.68	3.05
2700 X 1650	2700	1650	3110	2070	205	205	215	4.83	3.20
2700 X 1800	2700	1800	3110	2220	205	205	215	4.98	3.35
2700 X 1950	2700	1950	3110	2370	205	205	215	5.13	3.50
2700 X 2100	2700	2100	3110	2520	205	205	215	5.28	3.65
2700 X 2250	2700	2250	3110	2670	205	205	215	5.43	3.80
2700 X 2400	2700	2400	3110	2820	205	205	215	5.58	3.95
2700 X 2550	2700	2550	3110	2970	205	205	215	5.73	4.10
2700 X 2700	2700	2700	3110	3120	205	205	215	5.88	4.25

3000 X 1350	3000	1350	3410	1770	205	205	215	4.83	3.05
3000 X 1500	3000	1500	3410	1920	205	205	215	4.98	3.20
3000 X 1650	3000	1650	3410	2070	205	205	215	5.13	3.35
3000 X 1800	3000	1800	3410	2220	205	205	215	5.28	3.50
3000 X 1950	3000	1950	3410	2370	205	205	215	5.43	3.65
3000 X 2100	3000	2100	3410	2520	205	205	215	5.58	3.80
3000 X 2250	3000	2250	3410	2670	205	205	215	5.73	3.95
3000 X 2400	3000	2400	3410	2820	205	205	215	5.88	4.10
3000 X 2550	3000	2550	3410	2970	205	205	215	6.03	4.25
3000 X 2700	3000	2700	3410	3120	205	205	215	6.18	4.40
3000 X 2850	3000	2850	3410	3270	205	205	215	6.33	4.55
3000 X 3000	3000	3000	3410	3420	205	205	215	6.48	4.70

3300 X 1500	3300	1500	3710	1920	205	205	215	5.30	3.35
3300 X 1650	3300	1650	3710	2070	205	205	215	5.45	3.50
3300 X 1800	3300	1800	3710	2220	205	205	215	5.60	3.65
3300 X 1950	3300	1950	3710	2370	205	205	215	5.75	3.80
3300 X 2100	3300	2100	3710	2520	205	205	215	5.90	3.95
3300 X 2250	3300	2250	3710	2670	205	205	215	6.05	4.10
3300 X 2400	3300	2400	3710	2820	205	205	215	6.20	4.25
3300 X 2550	3300	2550	3710	2970	205	205	215	6.35	4.40
3300 X 2700	3300	2700	3710	3120	205	205	215	6.50	4.55
3300 X 2850	3300	2850	3710	3270	205	205	215	6.65	4.70
3300 X 3000	3300	3000	3710	3420	205	205	215	6.80	4.85
3300 X 3150	3300	3250	3710	3570	205	205	215	6.95	5.00
3300 X 3300	3300	3300	3710	3720	205	205	215	7.10	5.15

3600 X 1650	3600	1650	4010	2070	205	205	215	5.74	3.65
3600 X 1800	3600	1800	4010	2220	205	205	215	5.89	3.80
3600 X 1950	3600	1950	4010	2370	205	205	215	6.04	3.95
3600 X 2100	3600	2100	4010	2520	205	205	215	6.19	4.10
3600 X 2250	3600	2250	4010	2670	205	205	215	6.34	4.25
3600 X 2400	3600	2400	4010	2820	205	205	215	6.49	4.40
3600 X 2550	3600	2550	4010	2970	205	205	215	6.64	4.55
3600 X 2700	3600	2700	4010	3120	205	205	215	6.79	4.70
3600 X 2850	3600	2850	4010	3270	205	205	215	6.94	4.85
3600 X 3000	3600	3000	4010	3420	205	205	215	7.09	5.00
3600 X 3150	3600	3250	4010	3570	205	205	215	7.24	5.15
3600 X 3300	3600	3300	4010	3720	205	205	215	7.39	5.30
3600 X 3450	3600	3450	4010	3870	205	205	215	7.54	5.45
3600 X 3600	3600	3600	4010	4020	205	205	215	7.69	5.60

**LARGE PRECAST REINFORCED CONCRETE BOX CULVERTS AND OPEN DRAINS
INCORPORATED WITH A DRY WEATHER FLOW (DWF) SECTION**



Nominal Sizes mm X mm	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	G (mm)	H (mm)	Approx. Weight Per Set (ton)	Approx. Weight Without Lid (ton)
2100 X 900	2100	900	2510	1320	205	205	215	4.25	2.94
2100 X 1050	2100	1050	2510	1470	205	205	215	4.40	3.09
2100 X 1200	2100	1200	2510	1620	205	205	215	4.55	3.24
2100 X 1350	2100	1350	2510	1770	205	205	215	4.70	3.39
2100 X 1500	2100	1500	2510	1920	205	205	215	4.85	3.54
2100 X 1650	2100	1650	2510	2070	205	205	215	5.00	3.69
2100 X 1800	2100	1800	2510	2220	205	205	215	5.15	3.84
2100 X 1950	2100	1950	2510	2370	205	205	215	5.30	3.99
2100 X 2100	2100	2100	2510	2520	205	205	215	5.45	4.14

2400 X 1050	2400	1050	2810	1470	205	205	215	4.85	3.39
2400 X 1200	2400	1200	2810	1620	205	205	215	5.00	3.54
2400 X 1350	2400	1350	2810	1770	205	205	215	5.15	3.69
2400 X 1500	2400	1500	2810	1920	205	205	215	5.30	3.84
2400 X 1650	2400	1650	2810	2070	205	205	215	5.45	3.99
2400 X 1800	2400	1800	2810	2220	205	205	215	5.60	4.14
2400 X 1950	2400	1950	2810	2370	205	205	215	5.75	4.29
2400 X 2100	2400	2100	2810	2520	205	205	215	5.90	4.44
2400 X 2250	2400	2250	2810	2670	205	205	215	6.05	4.59
2400 X 2400	2400	2400	2810	2820	205	205	215	6.20	4.74

Nominal Sizes mm X mm	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	G (mm)	H (mm)	Approx. Weight Per Set (ton)	Approx. Weight Without Lid (ton)
2700 X 1200	2700	1200	3110	1620	205	205	215	5.47	3.84
2700 X 1350	2700	1350	3110	1770	205	205	215	5.62	3.99
2700 X 1500	2700	1500	3110	1920	205	205	215	5.77	4.14
2700 X 1650	2700	1650	3110	2070	205	205	215	5.92	4.29
2700 X 1800	2700	1800	3110	2220	205	205	215	6.07	4.44
2700 X 1950	2700	1950	3110	2370	205	205	215	6.22	4.59
2700 X 2100	2700	2100	3110	2520	205	205	215	6.37	4.74
2700 X 2250	2700	2250	3110	2670	205	205	215	6.52	4.89
2700 X 2400	2700	2400	3110	2820	205	205	215	6.67	5.04
2700 X 2550	2700	2550	3110	2970	205	205	215	6.82	5.19
2700 X 2700	2700	2700	3110	3120	205	205	215	6.97	5.34

3000 X 1350	3000	1350	3410	1770	205	205	215	6.07	4.29
3000 X 1500	3000	1500	3410	1920	205	205	215	6.22	4.44
3000 X 1650	3000	1650	3410	2070	205	205	215	6.37	4.59
3000 X 1800	3000	1800	3410	2220	205	205	215	6.52	4.74
3000 X 1950	3000	1950	3410	2370	205	205	215	6.67	4.89
3000 X 2100	3000	2100	3410	2520	205	205	215	6.82	5.04
3000 X 2250	3000	2250	3410	2670	205	205	215	6.97	5.19
3000 X 2400	3000	2400	3410	2820	205	205	215	7.12	5.34
3000 X 2550	3000	2550	3410	2970	205	205	215	7.27	5.49
3000 X 2700	3000	2700	3410	3120	205	205	215	7.42	5.64
3000 X 2850	3000	2850	3410	3270	205	205	215	7.57	5.79
3000 X 3000	3000	3000	3410	3420	205	205	215	7.72	5.94

3300 X 1500	3300	1500	3710	1920	205	205	215	6.68	4.74
3300 X 1650	3300	1650	3710	2070	205	205	215	6.83	4.89
3300 X 1800	3300	1800	3710	2220	205	205	215	6.98	5.04
3300 X 1950	3300	1950	3710	2370	205	205	215	7.13	5.19
3300 X 2100	3300	2100	3710	2520	205	205	215	7.28	5.34
3300 X 2250	3300	2250	3710	2670	205	205	215	7.43	5.49
3300 X 2400	3300	2400	3710	2820	205	205	215	7.58	5.64
3300 X 2550	3300	2550	3710	2970	205	205	215	7.73	5.79
3300 X 2700	3300	2700	3710	3120	205	205	215	7.88	5.94
3300 X 2850	3300	2850	3710	3270	205	205	215	8.03	6.09
3300 X 3000	3300	3000	3710	3420	205	205	215	8.18	6.24
3300 X 3150	3300	3250	3710	3570	205	205	215	8.33	6.39
3300 X 3300	3300	3300	3710	3720	205	205	215	8.48	6.54

3600 X 1650	3600	1650	4010	2070	205	205	215	7.28	5.19
3600 X 1800	3600	1800	4010	2220	205	205	215	7.43	5.34
3600 X 1950	3600	1950	4010	2370	205	205	215	7.58	5.49
3600 X 2100	3600	2100	4010	2520	205	205	215	7.73	5.64
3600 X 2250	3600	2250	4010	2670	205	205	215	7.88	5.79
3600 X 2400	3600	2400	4010	2820	205	205	215	8.03	5.94
3600 X 2550	3600	2550	4010	2970	205	205	215	8.18	6.09
3600 X 2700	3600	2700	4010	3120	205	205	215	8.33	6.24
3600 X 2850	3600	2850	4010	3270	205	205	215	8.48	6.39
3600 X 3000	3600	3000	4010	3420	205	205	215	8.63	6.54
3600 X 3150	3600	3250	4010	3570	205	205	215	8.78	6.69
3600 X 3300	3600	3300	4010	3720	205	205	215	8.93	6.84
3600 X 3450	3600	3450	4010	3870	205	205	215	9.08	6.99
3600 X 3600	3600	3600	4010	4020	205	205	215	9.23	7.14