

VISAKHAPATNAM URBAN DEVELOPMENT AUTHORITY

Udyog Bhavan Complex, Siripuram Junction, VISAKHAPATNAM - 530 003

Ph : 0891 - 2754133-34, Fax : 0891 - 2754189, Website : www.vuda.gov.in



VUDA

Sl. No. **08822**

PROCEEDINGS OF THE VICE CHAIRMAN, VUDA, VISAKHAPATNAM

PRESENT: SRI P.BASANTH KUMAR, IAS

Rc.No.8979/2017/L7, dated.12-07-2018

SUB:- VUDA – PLG – VSP – Approval of layout in Sy.Nos.232/1 & 2 of Dakamarri (V), Bheemunipatnam (M), Visakhapatnam District – Applied by Smt D.K.Kumari and others, Resapuvanipalem, Visakhapatnam District to an extent of Ac.5.40 Cts. vide **L.P.No.76/2018** – Orders – Issued.

READ:-1) Online Layout Application Dated 18-10-2017 of Smt D.K.Kumari, Visakhapatnam.

- 2) This office letter even No., Dt.22-11-2017 addressed to the applicant.
- 3) This office letter even No., Dt.02-03-2018 addressed to the applicant.
- 4) Letter dated 07-04-2018 of Smt D.K.Kumari.
- 5) Letter dated 17-05-2018 of Smt D.K.Kumari.
- 6) Orders of the Vice-Chairman, VUDA, Dt.28-05-2018.
- 7) This office letter even No., Dt.30-05-2018.
- 8) Letter dated 07-06-2018 of Smt D.K.Kumari.
- 9) Orders of the Vice-Chairman, VUDA, Dt.19-06-2018.
- 10) This office letter even No., Dt.21-06-2018
- 11) Letter dated 30-06-2018 of Smt D.K.Kumari.

ORDER:

In the reference 1st cited, Smt D.K.Kumari and Others, Visakhapatnam has applied the proposals for approval of layout to an extent of Ac.5.40 Cts. in Sy.Nos.232/1P & 2P of Dakamarri (V), Bheemunipatnam (M), Visakhapatnam District.

The plans so received have been examined in detail and the applicant has furnished land conversion from Agricultural land into Non Agricultural purpose orders issued by the competent Authority, and RDO, Visakhapatnam vide Proceedings RDOVSP-Land0Nala-(App1)/13/2018-SA(SA-2)--RDO(VSKP)VSKPDVSN dt.28.04.2018.

The applicant has paid total amount of Rs.11,86,972/- towards Processing fee, Development charges and Paper Notification charges (1) Rs.20,000/- vide VUDA Receipt No.1532/2017-18 dt.18.10.2017, (2) Rs.6,00,000/- vide VUDA Receipt No.998/2018-19 Dt.12.06.2018 and (3) Rs.5,66,972/- vide VUDA Receipt No.1219/2018-19, Dt.02-07-2018.

Accordingly, the applicant has submitted the layout plan duly demarcating the layout pattern on ground by cutting trenches along the roads and requested for release of approved layout plan.

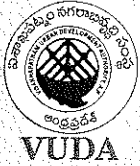
21880 - The applicant has executed the deed of mortgage for the Plot Nos.33, 34, 35, 36 & 38, 39, 40, 41 (total plots 8 Nos.) to an extent of Ac.0.48 Cts. or 2,323.20 Sq.yds. i.e. 15% plotted area of Dakamarri (V), Bheemunipatnam (M), Visakhapatnam District and got the same registered by Registration Department. The applicant has also been directed to execute Indemnity bond on Rs.100/- non-Judicial Stamp Papers.

In the reference 11th cited, the applicant has furnished Mortgage Deed duly mortgaging the plots in the Sub-Registrar Office, Bheemunipatnam, Visakhapatnam District vide Document No.2530/2018, Dt:25-06-2018 and also furnished the Indemnity Bond to develop the layout.

The applicant has also submitted the Photographs of Mortgaged Plots which are fenced with barbed wire and also erected display Boards showing the details of plots Mortgaged to VUDA at the layout site and requested to release approved L.P.

The matter has been examined in detail with reference to the provisions of APMR & UDA Act No.5 of 2016 and also in accordance with the Statutory Master Plan/ Zonal Development plans along with the existing G.O.s and Rules and Regulations which are in force. The layout is hereby approved in **L.P.No.76/2018** and communicated subject to the following conditions:

1. The layout owner is permitted to sell the Plot Nos.1 to 22, 24 to 32, 37 & 42 to 61.
2. This permission of developing the land shall not be used as proof of the title of the land.
3. The applicant shall solely be responsible for the development of the layout and in no way VUDA will take up development works.
4. The deed of mortgage executed by the applicant in favour of VUDA is purely a measure to ensure compliance of the conditions of development of infrastructure by the applicant/developer and VUDA is no way accountable to the plot purchaser in the event of default by the applicant/developer.
5. In case the applicant/developer fails to develop the layout area with the infrastructure facilities as specified by VUDA the area so mortgaged in favour of VUDA shall be forfeited and also VUDA to liable to take criminal action against such applicant/developer as per provisions of A.P.M.R. & U.D.A. Act No.5 of 2016.
6. The layout development work as per the specifications enclosed.
7. The layout applicant is directed to complete the above developmental works within a period of **three years** and submit a requisition letter for releasing of mortgage plots/area, which is in the favour of Vice-Chairman, VUDA duly enclosing letter in regard to roads, open spaces taken over by the Panchayat Secretary, Tallavalasa Gram Panchayat, Bheemunipatnam Mandal, Visakhapatnam District.



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Not Valid
Without
Hologram

Sl. No. **08823**

8. The applicant shall not be permitted to sell the Plot No.33 to 36 and 38 to 41 (total 08 No.of plots) and the Panchayat Secretary, Dakamarri Gram Panchayat, Bheemunipatnam Mandal, Visakhapatnam District shall ensure that, no development like buildings authorized or unauthorizedly should come up in the mortgaged site.
9. The applicant is permitted to sell the plots, other than mortgaged plots as mentioned in item No.1 above.
10. The Local Authority, shall not approve and release any building permission or allow any unauthorized developments in the area under Mortgage to VUDA in particular, and in other plots of the layout in general until and unless the applicant has completed the developmental works and then got released the mortgaged land from VUDA.
11. The layout applicant shall display a board at a prominent place with size 10' X 10' in the above site showing the layout pattern with permit **L.P.No.76/2018 dated 19-06-2018** Sy.Nos & Village, Extent of layout, No. of plots, Percentage of open space, intended for common amenities and with full details of the layout specifications and conditions to facilitate the public in the matter.
12. The Panchayat Secretary, Dakamarri Gram Panchayat, Bheemunipatnam Mandal, Visakhapatnam District should ensure that the open spaces shall be developed by the applicant along with other developments with ornamental compound wall as per the sanctioned layout plan.
13. The Panchayat Secretary, Dakamarri Gram Panchayat, Bheemunipatnam Mandal, Visakhapatnam District shall ensure that the area covered by roads and open spaces of the layout shall be taken over from the applicant, by way of registered Gift Deed, before release of Mortgage to the applicant, after collecting the necessary charges before release of Mortgage to the applicant as per their rules in force.
14. The local Authority shall also ensure that the all the open spaces shown in the layout must be developed by the applicant with greenery along with play equipments for children and benches before it is taken over by the Panchayat Secretary, Tallavalasa Gram Panchayat, Bheemunipatnam Mandal, Visakhapatnam District.
15. The land / layout development shall be commenced within one year from the date of sanction.
16. The duration of completion of land / Layout Development from the date of sanction is valid for a period of 3 years subject to the condition that development shall be commenced within a period of one year.
17. The areas reserved for **Utilities Plot No.23** shall be handed over to the local authority free of cost through a registered gift deed. This area shall be utilized only for community facilities such as Electrical substation, Government school,

18. Government Dispensary, Ward office, Public Utility Office, Public Library, Water Reservoir, Rain Water harvesting structure, Police Station / Outpost, Public parking, Fire Station, Bus Station, Septic Tank, Solid waste Collection point etc. by the local authority.
19. The area reserved for **Amenities** shall be used only for the purposes earmarked in the Final layout plan (FLP) by the competent Authority for educational, commercial facilities etc. the Owner / Developer may also sell or lease this area but only for the purposes earmarked in the Final Layout Plan (FLP).
20. The applicant has to develop the layout as per the guidelines / conditions stipulated in G.O.Ms.No.275, MA&UD Department, Dt.18-07-2017.

Two sets of Plans duly endorsed and authenticated are enclosed herewith. The Panchayat Secretary, Dakamarri Gram Panchayat, Bheemunipatnam Mandal, Visakhapatnam District is requested to release one set of plans to the applicant and direct the applicant to abide by the conditions and develop the layout strictly adhere to the plan. Any deviation in this matter will be viewed seriously and action will be taken as per the provisions of the Act.

Encl: As above.

Yours faithfully,
Sd/- CHIEF URBAN PLANNER
For VICE CHAIRMAN

//t.c.f.b.o//

P. Ramesh
ADMN.OFFICER(L) 12/7/18

12/7/18
LR

To
The Panchayat Secretary,
Dakamarri Gram Panchayat,
Bheemunipatnam Mandal,
Visakhapatnam District.

Copy to: Smt D.K.Kumari, Door No.51-17-6/1, Kranthinagar, Resapuvanipalem, Visakhapatnam. PIN-530016

Copy to: The Sub-Registrar, Bheemunipatnam, Visakhapatnam District.

Copy submitted to the Vice Chairman's Peshi.

Copy to: I.T. Cell Incharge for uploading in VUDA website.

ANNEXURE - I

INFRASTRUCTURE TO BE PROVIDED AND SPECIFICATION IN THE LAYOUT AREA:

I. The following services should be provided by the layout owner.

A. Municipal Corporation/Municipal Area/Non-Municipal Areas (Gram Panchayats):

1. Bitumen surface roads with Water Bound Macadam road (WBM).
2. Pucca Masonry drain/RCC drain including load drain and drainage system in arrangement with Municipal Corporation/Municipality/Gram Panchayat/near by outlet.
3. Protected Water supply arrangement with Municipal Corporation/Municipality/ Non-Municipality or borewells with internal water supply system by the layout owner.
4. Street electrification arrangement with Municipal Corporation/Municipality or by the layout owner.
5. Rain harvesting structures in open space/parks.
6. The open spaces shall be enclosed with a minimum of 2'-0" height basement wall and over that 2'-0" height grills or Brick masonry.
7. Avenue plantation.

II. Specifications :

Shall conform to the detailed guidelines detailed in Annexure-II.

ANNEXURE - II

Guidelines for taking up Development works Engineering Designs & Construction:

GENERAL REQUIREMENT:

1. General :

This section of Engineering guidelines for layout development have been compiled on outline VUDA's general procedure and practices in respect of the Engineering works for the development of land and providing infrastructure facilities within the jurisdiction of VUDA.

The following guidelines have been prepared in order to facilitate the efficient, processing of Engineering drawings, submissions and construction approvals for release of Final Layout Plan. Applicant should be aware that each requirement to be treated on its merits and that approval is dependent on the overall impact of the development of the area and not solely in compliance with minimum Engineering standards.

It is the responsibility of the applicant to ensure that all works are carried out in a sound efficient workmen like manner and in accordance with sound engineering practice and principle and are completed in accordance with the approved Engineering Drawing and specifications.

Before the applicant commencing the Civil Engineering works, Engineering drawings are to be submitted and approved by VUDA. After obtaining the approval and any consent required in writing from statutory authority and adjoining property owner if applicable the applicant may construct the roads, drains and all other improvement works.

1. EARTH Work:

2.1 Removal of Trees.

The applicant is advised that no trees are to be removed without VUDA permission.

Removal of trees is limited to those directly affected by road and/ or drainage construction or as specified herein. Trees which are considered to be dangerous or may damage any part of the road, proposed road or public place, drainage structure or any public utility installation, or may affect visibility, shall be removed or trimmed.

Trees and / or shrubs to be retained are to be adequately protected at all times and particular care shall be taken to avoid damage in the roots, trunks and branches.

1.2 Clearing and Grubbing:

For the full area of the site specified or shown on the drawing the prescribed materials, being fences, concrete and / or brick foundations and / or floors, structures of all descriptions, trees, shrubs, scrub, stumps, logs, boulders and roots, except those fences, structures, trees, shrubs and / or items shall be cleared and / or wholly grubbed and shall be disposed of in accordance with the provisions of section 3.3.

1.3 Disposal of material:

All material cleared and / or grubbed in accordance with these guidelines shall become the property of the applicant and shall be removed from site and disposed of in an / appropriate manner.

The burning of materials is prohibited.

1.4 Stripping of Topsoil

The topsoil is to be stripped from the construction area to a depth specified on the approved Engineering drawings, or as directed by VUDA stockpiled and replaced or as directed by VUDA stockpiled and replaced upon the earth works at the completion of the construction and / or spread over those areas of the site indicated on the approved Engineering drawings appropriate erosion and sediment control measures are to be implemented for stockpile sites and those areas where topsoil has been replaced.

1.5 Unsuitable Material / Improper Works :

Following the stripping of topsoil and before any excavation, filling or other works commenced any underlying material which is unsuitable for the placing of filling or as a sub-grade material shall be removed and disposed of, as directed, to an approved site.

If at any time during the progress of the work VUDA Engineering (Quality control cell of VUDA) is of the opinion that any material of work whether fixed or not, is of inferior or improper nature, he may direct, in writing, the removal or amendment of the same by the applicant, notwithstanding that he may previously have expressed satisfaction in regard thereto and the removal or amendment of the said material or work shall be done.

1.6 Embankments

Embankments shall be constructed from approved sound material placed in horizontal layers not greater than 150mm in thickness loose measurement and shall be compacted to give a density ratio of at least 95% standard as per the MDST / IRC specification where the cross slope of the natural surface is steeper than one (1) vertical, in four (4) horizontal, the base of the entire embankment shall be stopped and roughened to prevent slipping, and benched to hold the top of the embankment, before an existing to give a bond with new material.

1.7 Catch Drains / Table Drains :

On the top side of cuttings catch drains shall be provided with a cross-sectional area not less than 0.2 Square meters. Side slopes not steeper than adjacent road gutter and a minimum depth of 300mm over a width of at least 300mm. The minimum gradient of catch drains shall be 1:100. The catch drain shall be located a minimum 2.5 mtrs from the edge of the cutting.

Where the grade of the catch drain exceeds 6% scour protection shall be provided. The type of scour protection provided shall be sufficient to completely restrict scour.

Proper outlet drains shall be provided leading to culverts and in earth cuttings pitching of the outlet drain is to be provided to prevent scour.

The applicant may construct an embankment not less than 500mm high, 300mm wide on top with 2:1 slopes in lieu of cutting catch drains.

Table drains, when necessary shall be aligned and graded parallel to the shoulders of the roadway and diverted at intervals not exceeding 150 metres into culverts, side drains for water sources.

Where grade of the table drain exceeds 6% scour protection in the form of concrete lined drain to kerb and gutter shall be provided.

2. Section Road works:

3.1 General:

The road pavement is to be designed in accordance with MDST/IRC specifications.

The road pavement shall be constructed on the sub-grade or sub-base in uniform layers to provide the specified pavement thickness. No individual layers shall be more than 200mm or less than 100mm compacted thickness. Each layer of the pavement shall be finished by slurry in to give smooth surface conforming to the design.

3.2 Sub-base course:

In all cases except in cut in rock or hard gravel strata the sub-base shall be formed with Quarry Rubbish of minimum 230mm thick including consolidation with 8 to 10 tonnes road roller including sectioning to camber and gradient trimming side slopes etc. The sub-base material shall have the properties / specifications as per MDST.

3.3 Base course:

Base course is proposed in two layers each 100mm thick (loose) compacted to 75mm thick each. The base course material shall satisfy the requirements of MDST/IRC.

- a) 1st Layer provide WBM using 65mm size HB OTG metal (IRC) spread 100mm thick loose compacted to 75mm thick using 25% of gravel to blindage including sectioning to camber and gradient and consolidation with 8 to 10 tones capacity Power Roller.
- b) 2nd Layer providing WBM road by spreading 63 to 45mm HBG GR-II Metal (I.R.C./ MDST) to compacted thickness of 75mm using 25% of gravel for blindage including sectioning to camber and gradient and consolidate with 8 to 10 tonnes power roller and wetting the consolidation for a period of fortnight etc.,.

3.4 Wearing Course :

a) B.T. Carpet :

Providing B.T. carpet 20mm thick using 0.18 cum of 13X20mm size stone chippings (passing 22.4mm sieve and retained on 11.2mm sieve) and 0.09 cum of 11.2mm size stone chippings (passing 13.20mm sieve and retained on 5.6mm sieve) using total quantity of 14.60 Kgs of 80/100 Grade Bitumen

per 10 Sq.m including sectioning to camber and consolidation of 8 to 10 tonnes power roller.

b) B.T. Seal Coat:

Providing B.T. simultaneous Seal coat using 0.06cum of course fine aggregate 6.70mm size passing I.S. 9.50mm sieve and retained on I.S. 2.36mm sieve per 10 Sq.mts and using total quantity of 680 Kgs of 80/100 grade Bitumen per 10 Sq.mts including consolidation with 8 to 10 tonnes Power Roller.

3.5 Kerb and Gutter :

Kerb and gutter is to be provided as per type design enclosed in VCC (1:2:4) mix using 20mm size H.B.G. metal for 100 feet, 80 feet and 60 feet wide roads.

Roads design:

1. 24', 30' & 33' wide roads / paths:

Carriage way 4.00 mts wide with provision for side drains and germs on both sides.

2. 40' wide road:

Carriage way : 7.50 Mts.

Greener / Path way : On either side.

Drainage : Masonry drains with provision of suitable connecting pipe.

3. 60' wide road:

Carriage way : 10 Mts.

Kerb and Gutter : 640mm

Greener / Pathway : On either side.

Drainage : Masonry drains with provision of suitable connecting pipe.

4. 80' /100 wide roads

Carriage way : 4 lane carriage way with two bays of 7.5 Mts each and Central divider of 2.4 mts.

Kerb and Gutter : 640mm

Greenery / Path way : On either side.

Drainage : Masonry drains with provision of suitable connecting pipe.

5. Longitudinal Section:

A longitudinal Section of the center line of the roads shall be supplied at scales of

1:500 Horizontal

1:100 Vertical

The longitudinal section of the centerline of roads shall show supplied chainage reduced level of existing surface and of design level of road design grades, length of vertical curves and where appropriate stopping sight distance.

Longitudinal levels should be taken at maximum 20metre intervals and at all intermediate changes of grade kerb return profiles shall be detailed Longitudinal sections and cross-sections shall be taken along existing intersecting road for sufficient distance (approx. 50 metres) to enable kerb returns, dish-crossing and any necessary drainage to be designed.

6. Cross Sections:

Cross-sections shall be supplied at intervals not exceeding 30 metres for straights and 15 metres at curves at scales of 1:100 natural, cross sections shall show chainage, reduced levels of existing surface and the design level of pavement, kerb and gutter and leaf path.

Cross sections shall show how the new construction ties in with any existing road pavement.

7. Kerb and Gutter:

100', 80' and 60' wide roads to be provided with an approved sealed pavement with kerb and gutter to adequately and safely provided both vehicular and pedestrian access to each allotment, pram ramps are to be provided in all kerb returns.

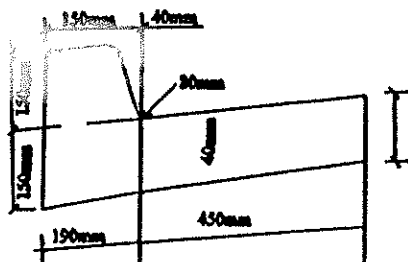
8. Avenue Plantation :

Types of species to be raised for Avenue Plantations.

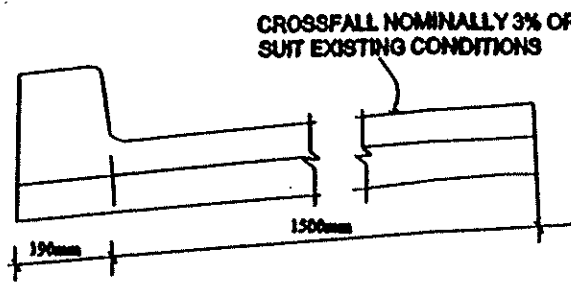
Sl. No	Category of Road	Spacement	Species to be raised
1	30m and above	3x8m on either side	a) S.S. Amam b) P. Foosugina c) Kanuga d) Colonix
2	Above 15m but less than 30m	3x8m	a) Sisso b) Kanuga c) Sapta adia d) Mallggivhia
3	Below 15m	3x8m in a staggered fusion	a) Kanuga b) Neem c) Spatadia d) Miclling tonix

Care should be taken to avoid planting of plants under electric transmissions lines.

For planting the avenue, 60x60cm cube pits should be dug. Red earth and farmyard manure shall be supplemented if the soil is poor.

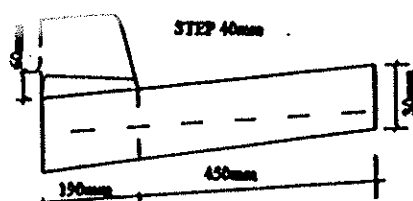


NOMINAL INTEGRAL K&G

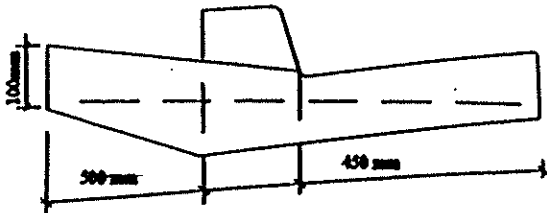


BUS STOP TYPE K&G

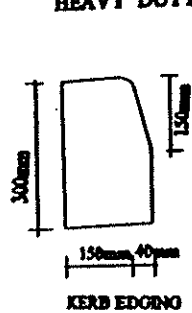
CROSSFALL NOMINALLY 3% OR AS SUIT EXISTING CONDITIONS



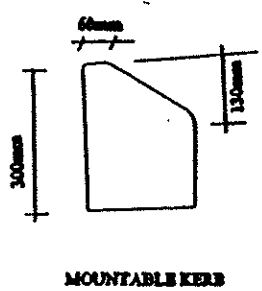
KERB VEHICLE ENTRANCE 3M LONG (NORMAL) WITH TWO 100mm WINGS HEAVY DUTY



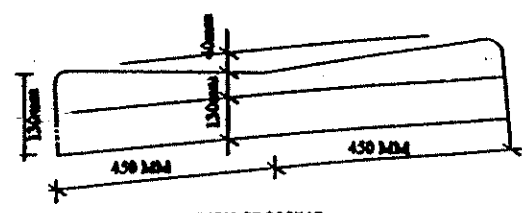
LOW LEVEL FOOTPATH VEHICLE ENTRANCE HEAVY DUTY



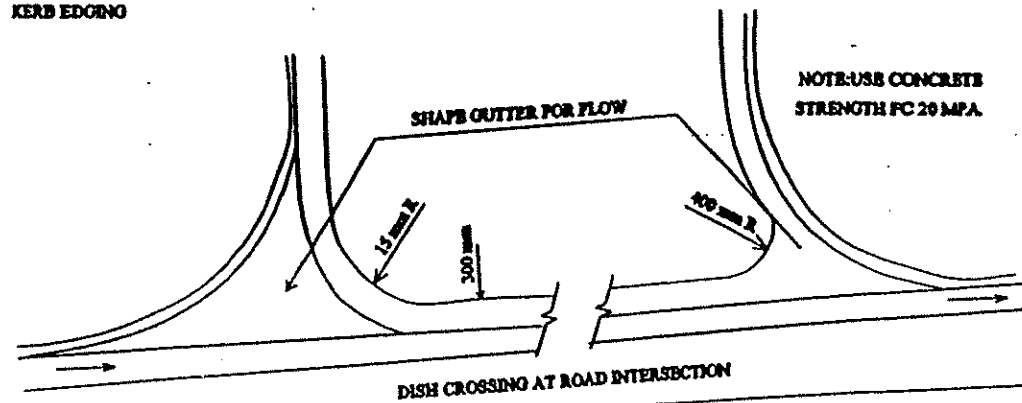
KERB EDGING



MOUNTABLE KERB



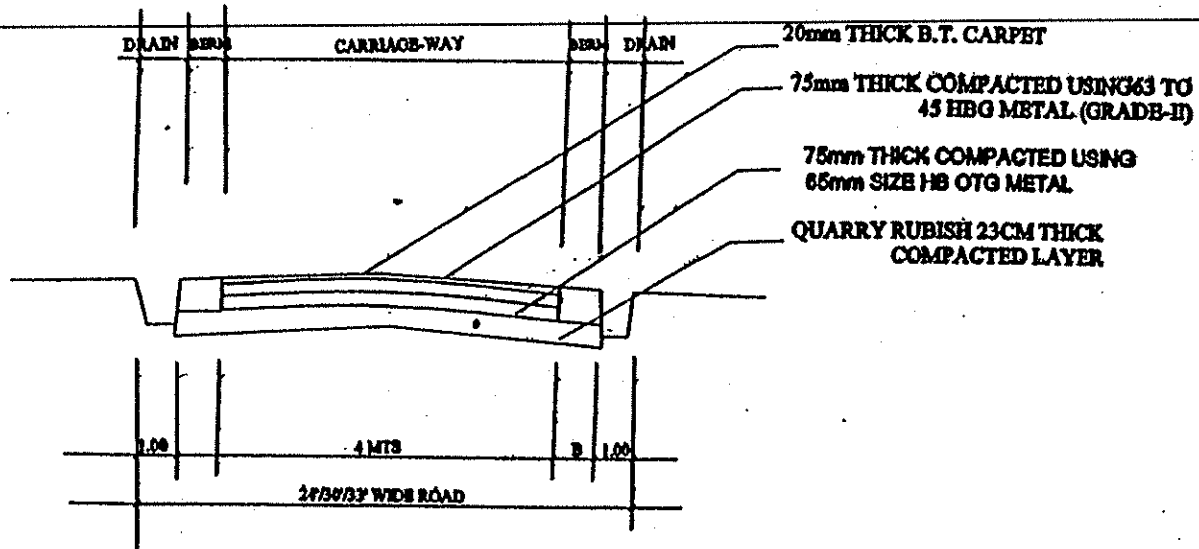
DISH CROSSING



DISH CROSSING AT ROAD INTERSECTION

NOTE: USE CONCRETE STRENGTH FC 20 MPA.

		KERB RADIUS	CORNER SPLAY
X-ROADS	90°	6 M	6M
T- JUNCTIONS	90°	6 M	4M
ANGLE LOSS THAN 75°		9 M	7.5 M
ANGLE GREATER THAN 90	AS FOR	90°	AS FOR 90°

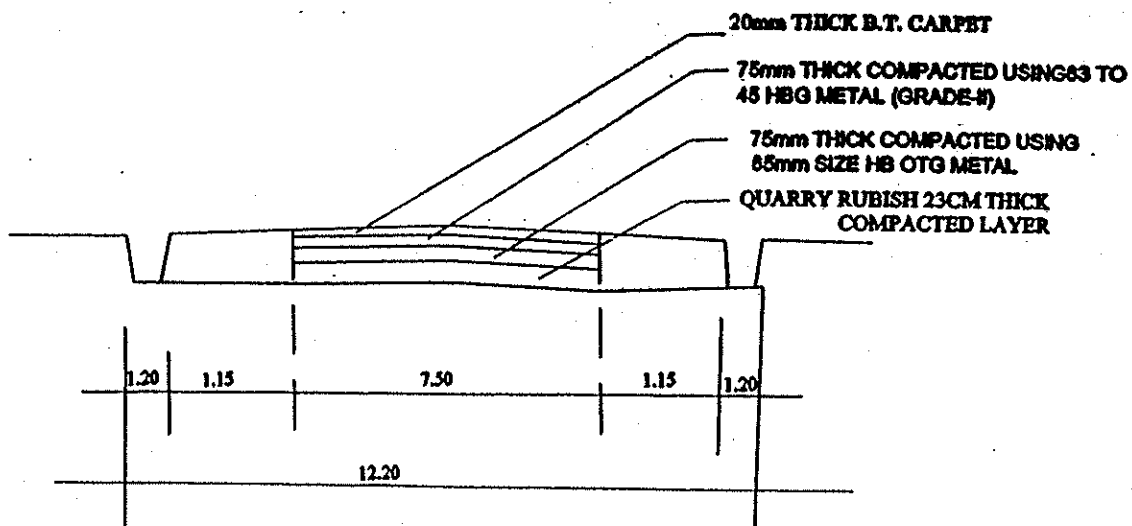


CROSS SECTION OF 24'-0", 30'-0" & 33'-0" WIDE ROAD/PATH

NOT TO SCALE

ALL DIMENSIONS ARE IN METRES

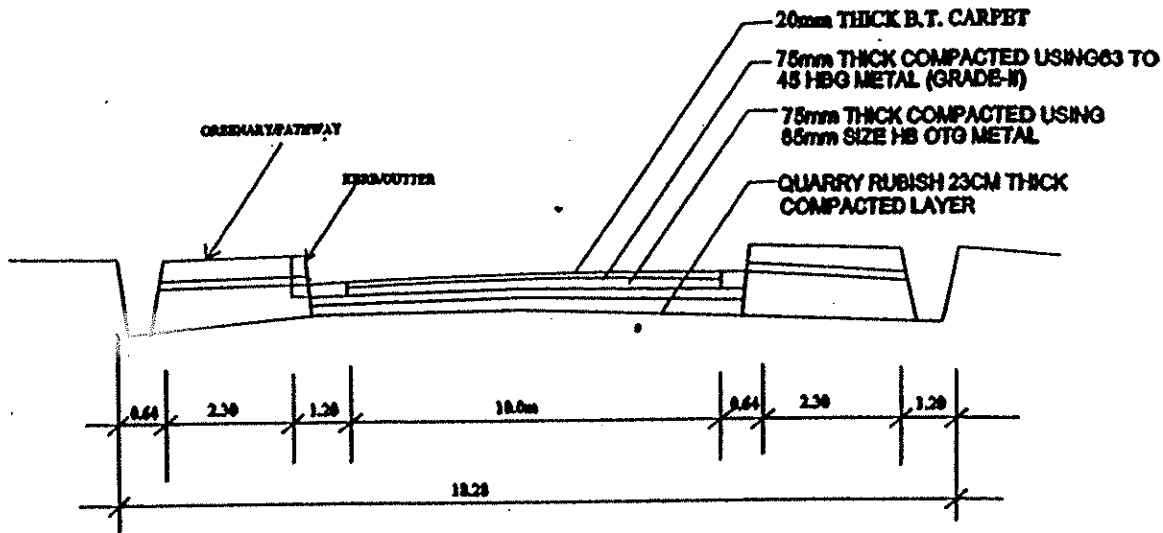
ROAD WIDTH	CARRIAGE-WAY	BARM
24'-0"	4.0 MTS	0.66
30'-0"	4.0 MTS	1.57
33'-0"	4.0 MTS	2.00



CROSS SECTION OF 40'-0" ROAD/PATH

ALL DIMENSIONS ARE IN METRES

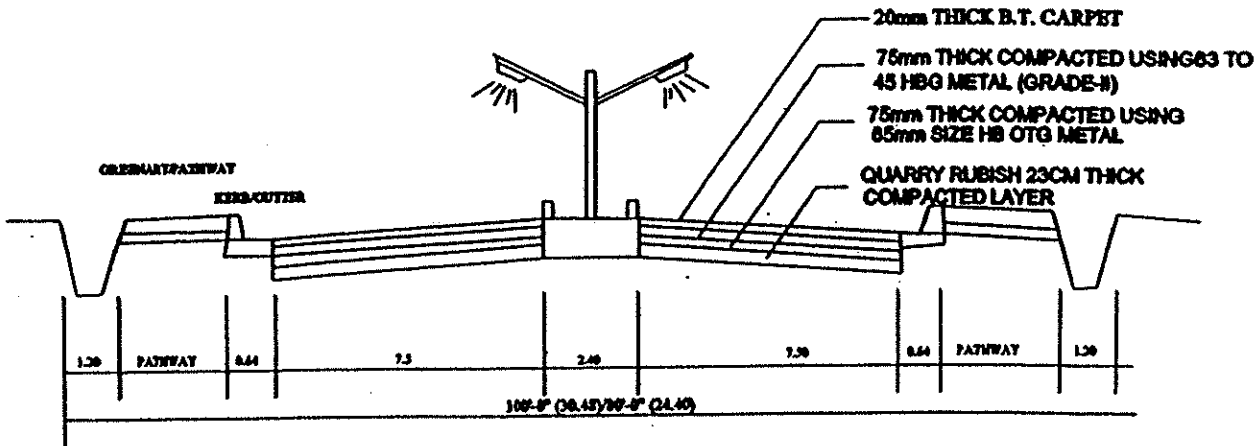
NOT TO SCALE



CROSS SECTION OF 60'-0" ROAD/PATH

ALL DIMENSIONS ARE IN METRES

NOT TO SCALE

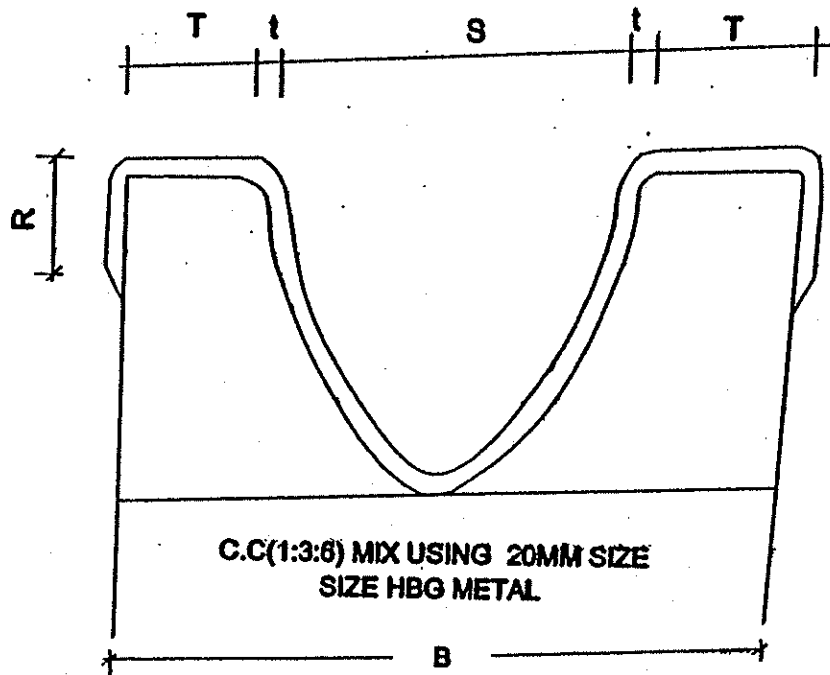


CROSS SECTION OF 100'-0" (30.48) x 80'-0" (24.40)

ROAD WIDTH	CARRIAGE-WAY	PATHWAY
100'-0"	7.50	4.70
80'-0"	7.50	1.66

ALL DIMENSIONS ARE IN METRES

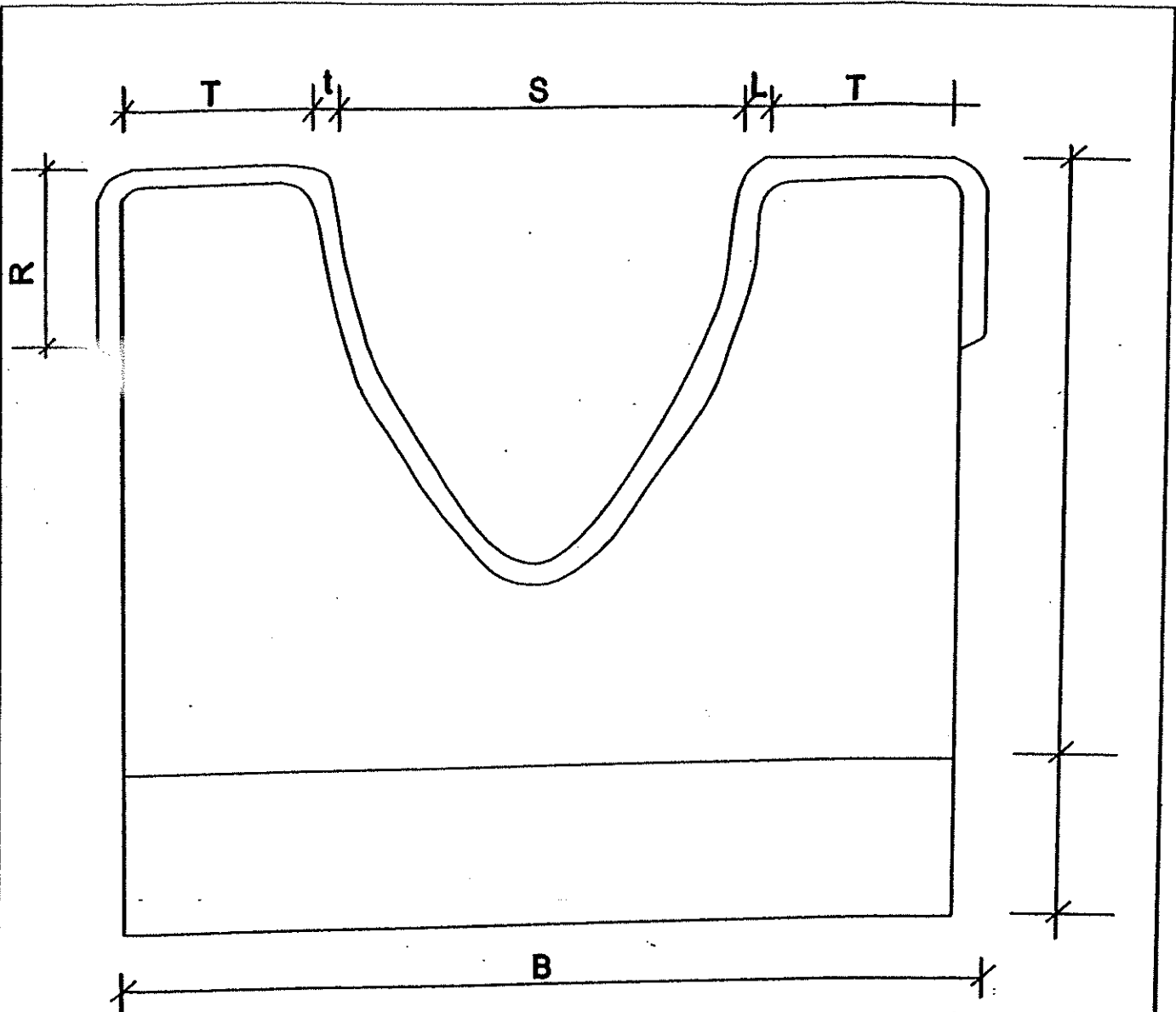
NOT TO SCALE



**NOT TO SCALE
ALL DIMENSIONS ARE IN MM**

C C DRIAN

ROAD WIDTH	SIZE OF DRAIN	S	T	t	d	H1	H2	B
40'-0"	12"	300	150	12	80	300	150	624



R.R. DRAIN

ROAD WIDTH	SIZE OF DRAIN	S	T	t	d	H1	H2	H3	B
40'-0"	12"	300	300	20	80	300	80	150	940
60'-0"	15"	380	300	20	80	380	80	150	1020
50'-0"	18"	450	300	20	80	450	80	150	1090
100'-0"	24"	600	300	20	80	600	80	150	1200

Providing CC/RR drains in private layouts for approval of layouts

(Revised specifications)

Sl. No.	Size of drain	Type of drain	Specifications	Remarks
1	12"	CC	<p>Bed concrete CC (1:3:6) mix using 20mm size HBG Metal 150mm thick</p> <p>Side walls: CC(1:3:6) mix using 20mm size HBG Metal, 150mm thick for side walls. Road side walls are to be raised if necessary to maintain camber and required crossfall.</p> <p>Plastering Plastering in CM (1:3) 12mm thick for inside wetted perimeter area, top and for outside border 80mm width. The drain is to be constructed as per type design No.II enclosed.</p>	<p>12" size CC drain is to be provided for the cumulative flow of sullage/ storm water for the maximum length 700mm including branch drains where the discharge is commutative. CC drains are to be provided for the steeper gradients and where the embankment is minimum. Extra widths if necessary are to be provided for side walls.</p>
2	12"	RR	<p>Bed concrete CC (1:5:10) mix using 40mm thick size HBG Metal 150mm thick.</p> <p>Side wall and bottom. RR Masonry in CM (1:6) mix using hard variety of rough stone with 300mm thick side walls and 80mm thick for bottom layer. Road side walls are to be raised if necessary to maintain camber and required crossfall.</p> <p>Plastering : Plastering in CM (1:5) 20mm thick for inside wetted perimeter area, top and for outside border 80mm width. The drain is to be constructed as per type design No.III enclosed.</p>	<p>12" size RR drain is to be provided for the cumulative flow of sullage storm water for the maximum length 700mm including branch drains where the discharge is commutative. RR Masonry drains are to be constructed for at higher embankments and at ditches, broken lands, hilly terrain to maintain gradient and to act as retaining wall. Necessary inverts are to be provided wherever necessary. Extra widths if necessary are to be provided for side walls.</p>
	15"	RR	<p>Bed concrete CC (1:5:10) mix using 40mm size HBG Metal 150mm thick, Side wall and bottom layer. RR Masonry in CM (1:6) mix using hard variety of rough stone with 300mm thick for side walls and 80mm thick for bottom layer. Road side walls are to be raised if necessary to maintain camber and required cross fall.</p> <p>Plastering : Plastering in CM (1:5) 20mm thick for inside wetted perimeter area, top and for outside border 80mm width. The drain is to be constructed as per type design No.IV enclosed.</p>	<p>15" size RR drain is to be provided for the cumulative flow of sullage/ storm water for the length beyond 700mts and up to 1150mts (cumulative length of 1150 mts) including branch drains where the discharge is commutative. Necessary inverts are to be provided wherever necessary to act as retaining wall and to maintain gradient. Extra widths if necessary are to be provided for side walls.</p>
	18"	RR	<p>Bed concrete: CC (1:5:10) mix using 40mm size HBG</p>	<p>18" size RR drain is to be provided for the cumulative</p>

			<p>Metal 150mm thick. Side wall and bottom layer. RR Masonry in CM (1:6) mix using hard variety of rough stone with 300mm thick side walls and 80mm thick for bottom layer. Road side walls are to be raised if necessary to maintain camber and required cross fall. Plastering : Plastering in CM (1:5) 20mm thick for inside wetted perimeter area, top and for outside 80mm width. The drain is to be constructed as per type design No.V enclosed.</p>	<p>flow of sullage/ storm water for the length beyond 1170mm and up to 1600m (cumulative length of 1600m) including branch drains where the discharge is commutative. Necessary Inverts are to be provided wherever necessary to act as retaining wall and to maintain gradient. Extra widths if necessary are to be provided for side walls.</p>
	24"	RR	<p>Bed concrete CC (1:5:10) mix using 40mm size HBG Metal 150mm thick, side wall and bottom layer. RR Masonry in CM (1:6) mix using hard variety of rough stone with 300mm thick for side walls and 80mm thick for bottom layer. Road side walls are to be raised if necessary to maintain camber and required cross fall. Plastering : Plastering in CM (1:5) 20mm thick for inside wetted perimeter area, top and for outside border 80mm width. The drain is to be constructed as per type design No.VI enclosed.</p>	<p>24" size RR drain is to be provided for the cumulative flow of sullage /storm water for the length beyond 1600m and up to 2800m (cumulative length of 2800 m) including branch drains where the discharge is commutative. Necessary inverts are to be provided wherever necessary to act as retaining wall and to maintain gradient. Extra widths if necessary are to be provided for side walls.</p>

1. The above drain sizes and lengths are given based on to maintain bed slopes to arrive the minimum cleansing velocity of one metre per second.
2. The layout owner has to construct the drains in consultation with the VUDA Engineering Staff.
3. Catch drains and leading drains of higher size i.e, more than 24" size are to be provided as directed where there is possibility of getting discharge from upstream catchments and further in continuation follow higher sizes than the incoming drain.
4. The minimum size of culvert with vent of size 1'-6"x2'-0" for slab culverts.
5. The culvert vent sizes are 0'-6" more than the upstream side drain with minimum heights of 2'-0" with suitable sizes of walls and slab.

Note: The size of the drain varies according to discharge and there are no norms for adopting the size straight way according to the width of the road. However, the following minimum sizes of drain to be followed for different types of roads are suggested subject to increasing width of drain according to increase in quantity of discharge.

ABSTRACT

- a) For 40' wide road : 12" size C.C/R.R.
- b) For 60' wide road : 15" size C.C/R.R.
- c) For 80' wide road : 18" size C.C/R.R.
- d) For 100' road and above roads : 24" Size R.R. Masonry

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For VICE CHAIRMAN
Urban Development Authority
Visakhapatnam


10/2/18
A.D.M.


10/2/18