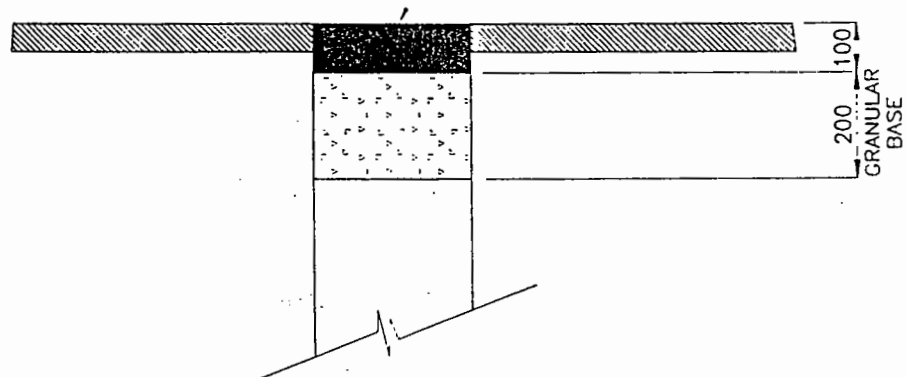


MINIMUM SEPARATION (S) = $\frac{\phi \text{ STORM MANHOLE} + \phi \text{ SANITARY MANHOLE} + 300\text{mm}}{2}$ (OR 1.2 METRES)

COMMON TRENCH INSTALLATION

— COLD PATCH WITHIN 24 HOURS OF CUTTING



TEMPORARY PAVEMENT PATCHING (ROAD CUT PATCH)

NOTE: 1. FOR PERMANENT PAVEMENT RESTORATION REFER TO MMCD STANDARD DRAWING G5 (PERMANENT RESTORATION).

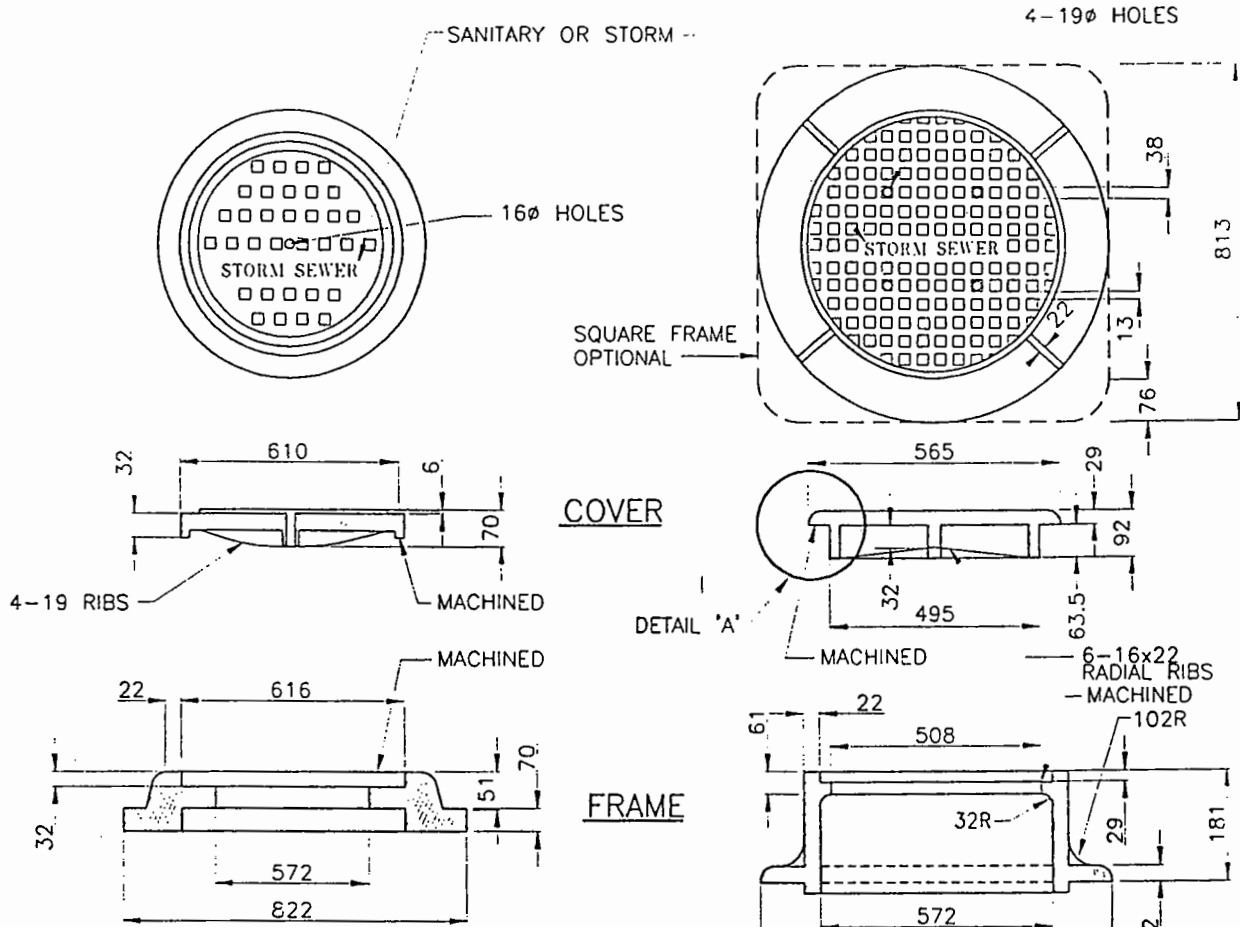
No.	REVISION	APPROVED
SCALE	N.T.S.	
DATE	JUNE, 1999	



DISTRICT OF HOPE

TITLE
TEMPORARY PAVEMENT PATCHING AND COMMON TRENCH INSTALLATION

SDS-1

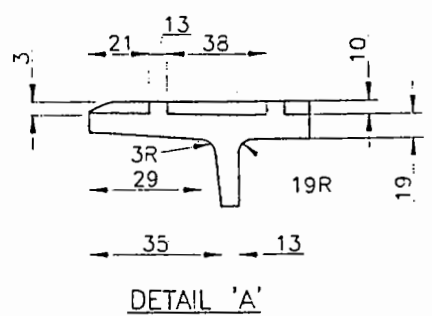


FRAME & COVER #1
(LIGHTWEIGHT)

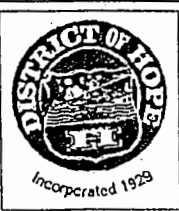
FRAME & COVER #2
(H2O LOADING)

NOTES

1. APPROXIMATE WEIGHTS:
 - COVER No.1 61 kg
 - FRAME No.1 47-52 kg
 - COVER No.2 63 kg
 - FRAME No.2 102-138 kg
 - GRATE FOR ABOVE (NOT SHOWN) 50-59 kg
 FOR DETAILS OF COVER AND FRAME No.1 SEE DOBNEY B-26D AND B-26F OR APPROVED EQUAL.
 FOR DETAILS OF COVER, FRAME AND GRATE No.2 SEE DOBNEY C-18 OR APPROVED EQUAL.
2. LIMITS OF TOLERANCE ± 2mm.
3. COVER SHALL BE MARKED SANITARY OR STORM AS REQUIRED AND MACHINED FOR A NON ROCKING FIT IN ALL POSITIONS.
4. CASTINGS SHALL BE FINISHED BY COATING WITH HOT ASPHALT AND BLACK PAINT EMULSION.
5. LETTERING TO BE 25mm FLATTENED FACE GOTHIC LETTERING WITH FACE OF LETTERS RAISED TO THE SAME LEVEL AS THE TOP OF THE RIBS.

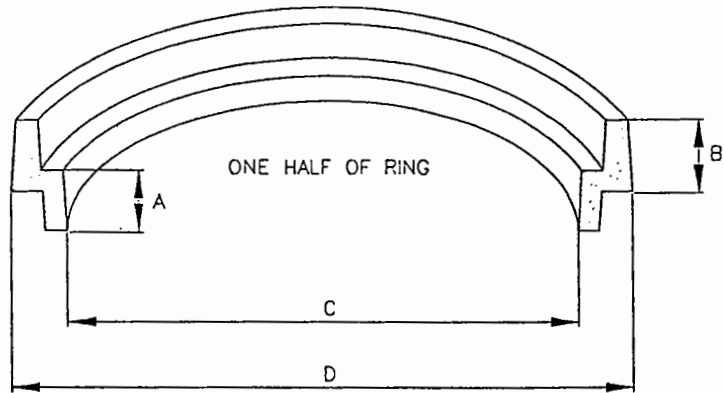


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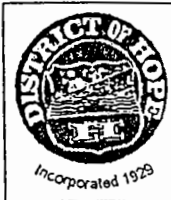
TITLE	MANHOLE FRAME AND COVER
	SDS-2



MANHOLE EXTENSION RING

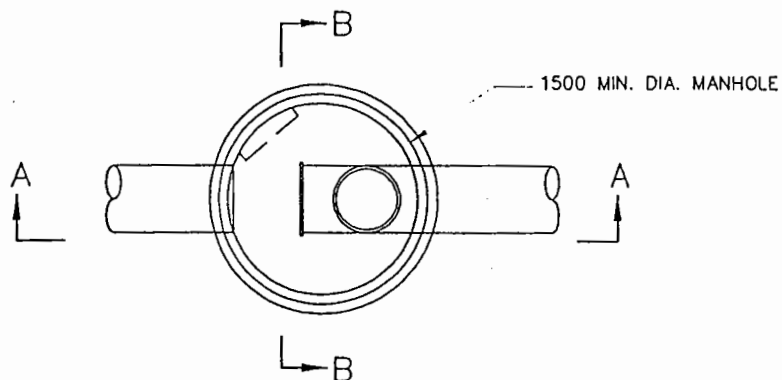
MANHOLE EXTENSION RING DETAILS			
DIMENSIONS			
A	B	C	D
38	38	508	616
51	38	508	616
63	38	508	616
76	38	508	616
101	38	508	616
127	38	508	616

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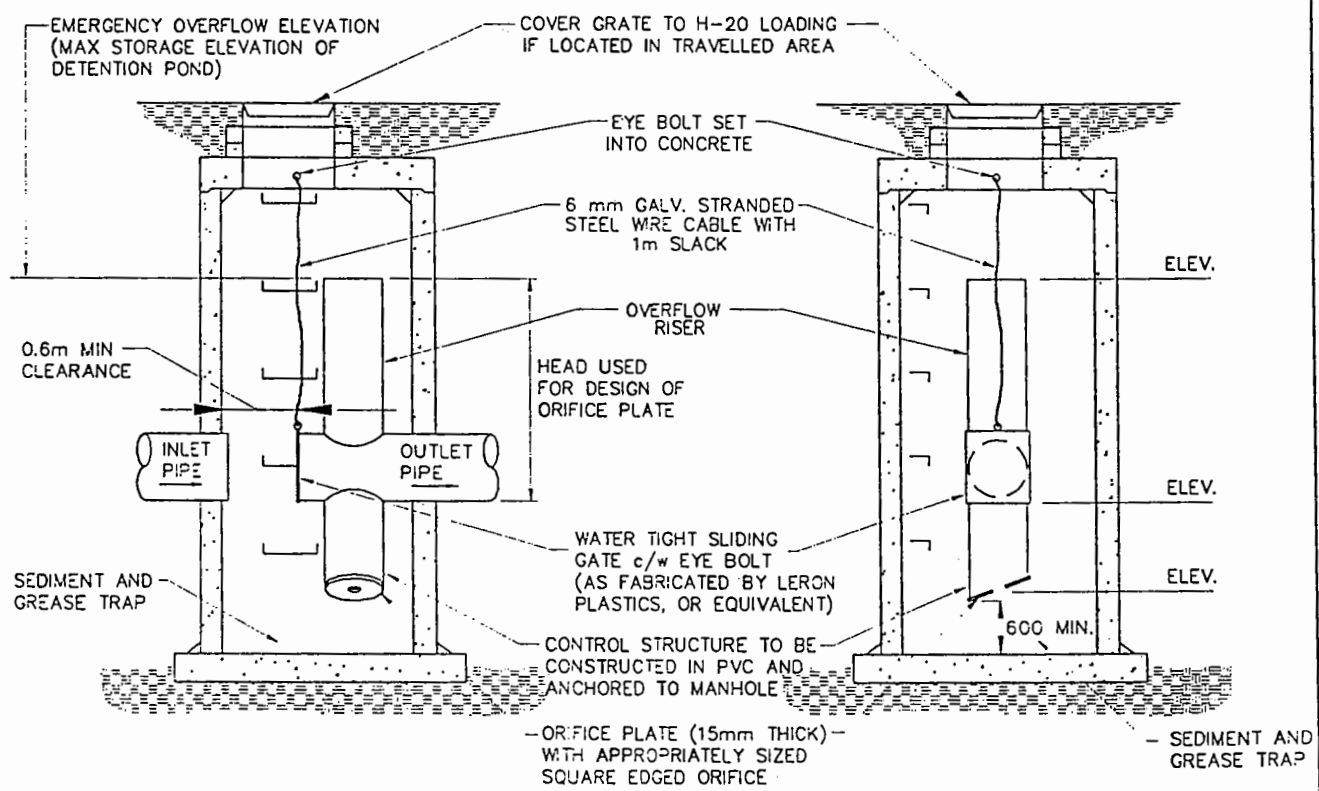


DISTRICT
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TITLE	RISER RING
	SDS-3



PLAN



STANDARD MANHOLE SECTION A-A

STANDARD MANHOLE SECTION B-B

NOTES:

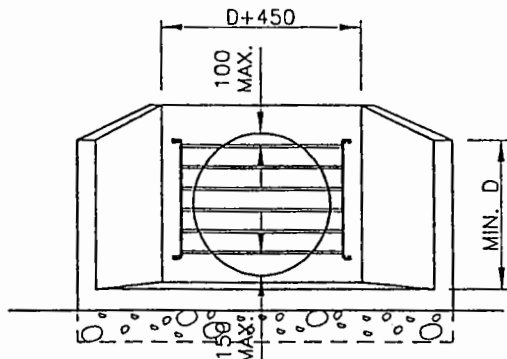
1. CONSTRUCT MANHOLE AS PER DWG MMCD S-1.
2. MINIMUM MANHOLE SIZE TO BE 1200mm DIAMETER.

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SCALE	N.T.S.	
DATE	JUNE, 1999	

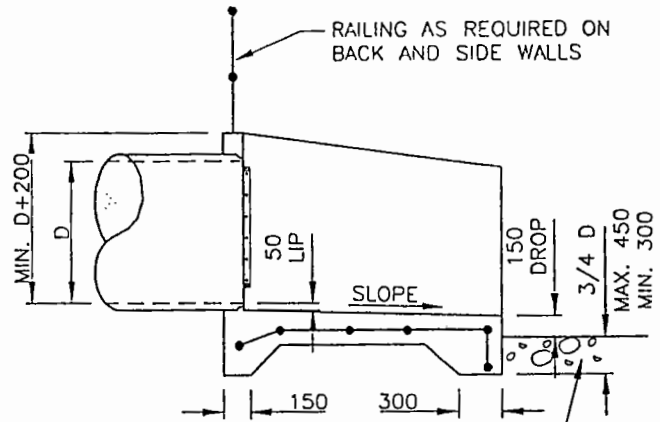


DISTRICT OF HOPE

TITLE	FLOW CONTROL MANHOLE
	SDS-4

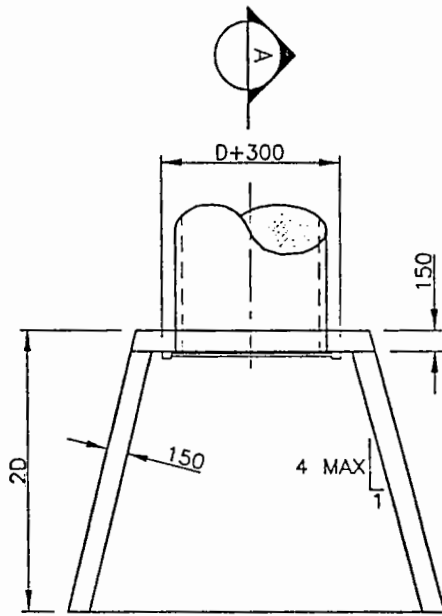


ELEVATION

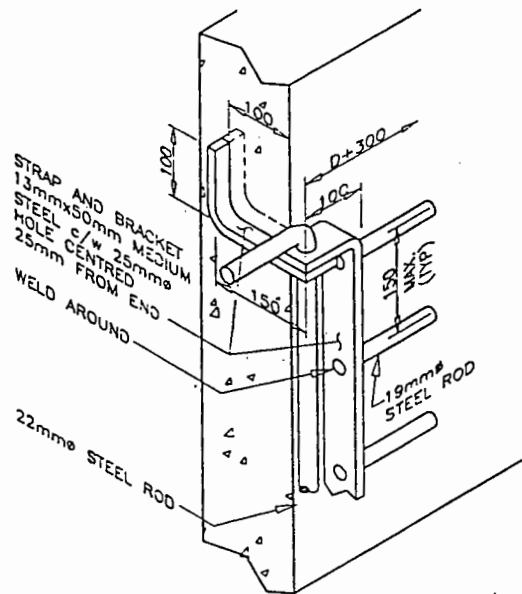


SECTION A

RIPRAP. SEE NOTE BELOW



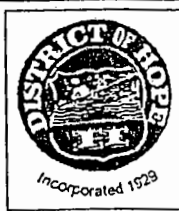
PLAN



NOTES:

1. RIPRAP SUITABLY SIZED OR GABIONS c/w FILTER BED SHALL BE PLACED ON BOTTOM AND SIDES TO DESIGN WATER LEVEL AND DOWNSTREAM DISTANCE OF 1.5 TIMES THE DESIGN WATER VELOCITY (1.0m MIN.).
2. PIPE SIZES LARGER THAN 1050mm ϕ , WATER VELOCITIES GREATER THAN 2.14m/SEC. OR WALLS HIGHER THAN 2.0m SHALL REQUIRE A SPECIAL DESIGN FOR THE STRUCTURE.
3. REBAR 10M AT 200mm BOTH WAYS AND CENTRED PLUS ONE 10M AROUND PIPE.
4. REBAR TO HAVE MINIMUM 50mm COVER.
5. CONCRETE TO BE 30MPa AT 28 DAYS.
6. CHAMFER ALL EXPOSED CORNERS 25mm.
7. RAILINGS REQUIRED ON WALLS 1.2m AND HIGHER.
8. GRILLAGE NOT REQUIRED ON PIPES LESS THAN 400mm ϕ .
9. ALL STEEL COMPONENTS TO BE GALVANIZED.
10. CONSTRUCT STRUCTURE ON 100mm MIN OF 20mm CRUSHED BASE GRAVEL TO 95% M.P.D.

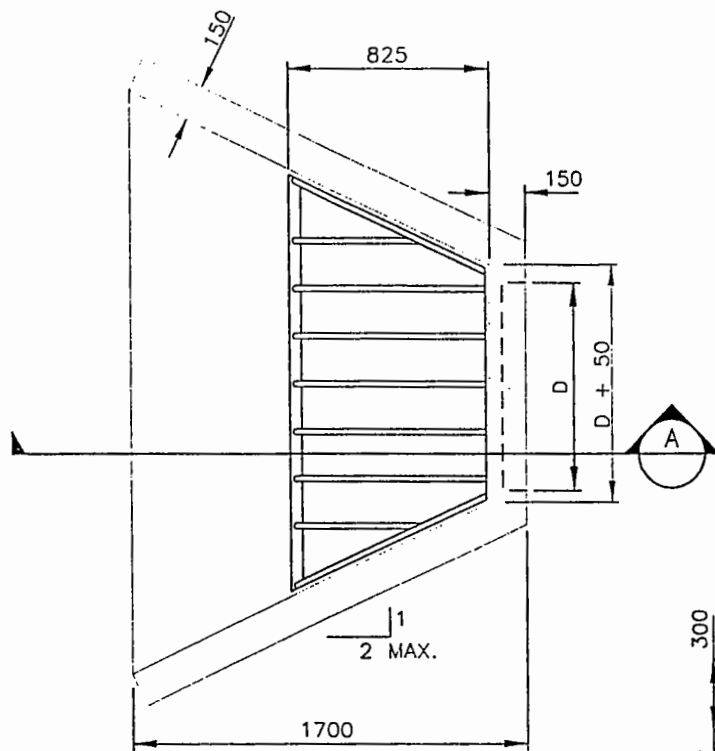
NO.	REV. NO.	APPROVED
SCALE:	N.T.S.	
DATE:	JUNE, 1999	



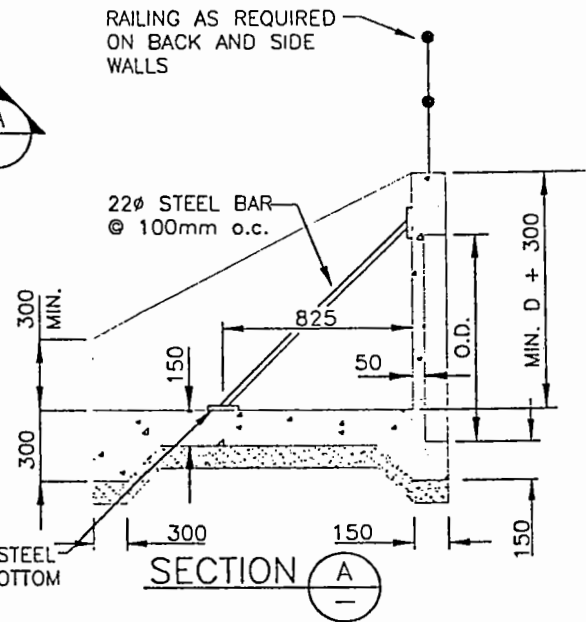
DISTRICT OF HOPE

OUTLET STRUCTURE

SDS-8



PLAN VIEW

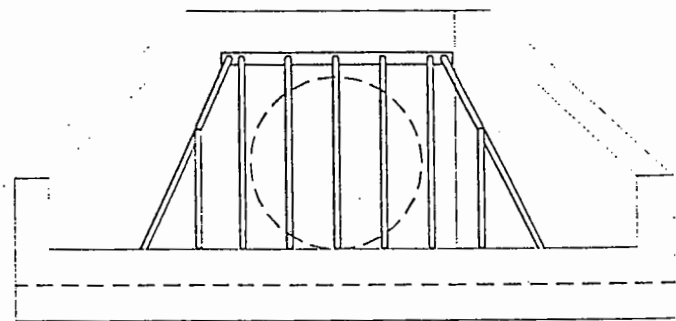


12mmx64mm MEDIUM STEEL
FLAT BARS TOP AND BOTTOM

SECTION A

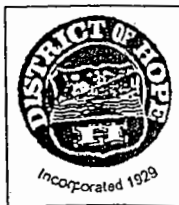
NOTES:

1. GRILLAGE NOT REQUIRED ON PIPES LESS THAN 300mm ϕ .
2. ALL STEEL COMPONENTS TO BE HOT DIPPED GALVANIZED AFTER FABRICATION.
3. CONCRETE: TO BE 30MPa @ 28 DAYS
4. REINFORCING:
 - i) 50mm MIN. COVER
 - ii) 10M @ 200mm o.c. EACH WAY.
5. 25mm CHAMFER ON ALL EXPOSED EDGES.
6. SEE DWG S-11 FOR GRATE CONNECTION DETAILS.
7. RAILINGS REQUIRED FOR WALLS 1.2m AND HIGHER.
8. CONSTRUCT STRUCTURE ON 100mm MIN. OF 20mm CRUSHED BASE GRAVEL TO 95% M.P.D



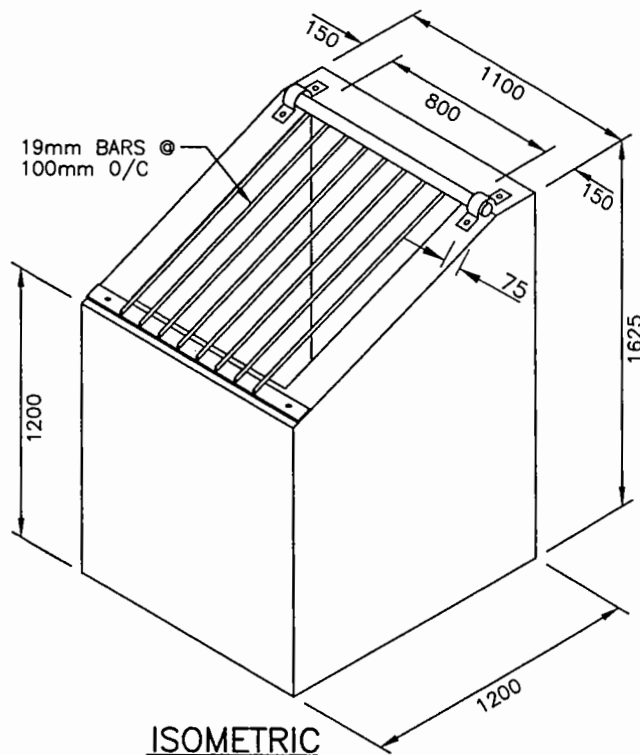
FRONT ELEVATION

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DATE	JUNE, 1999	



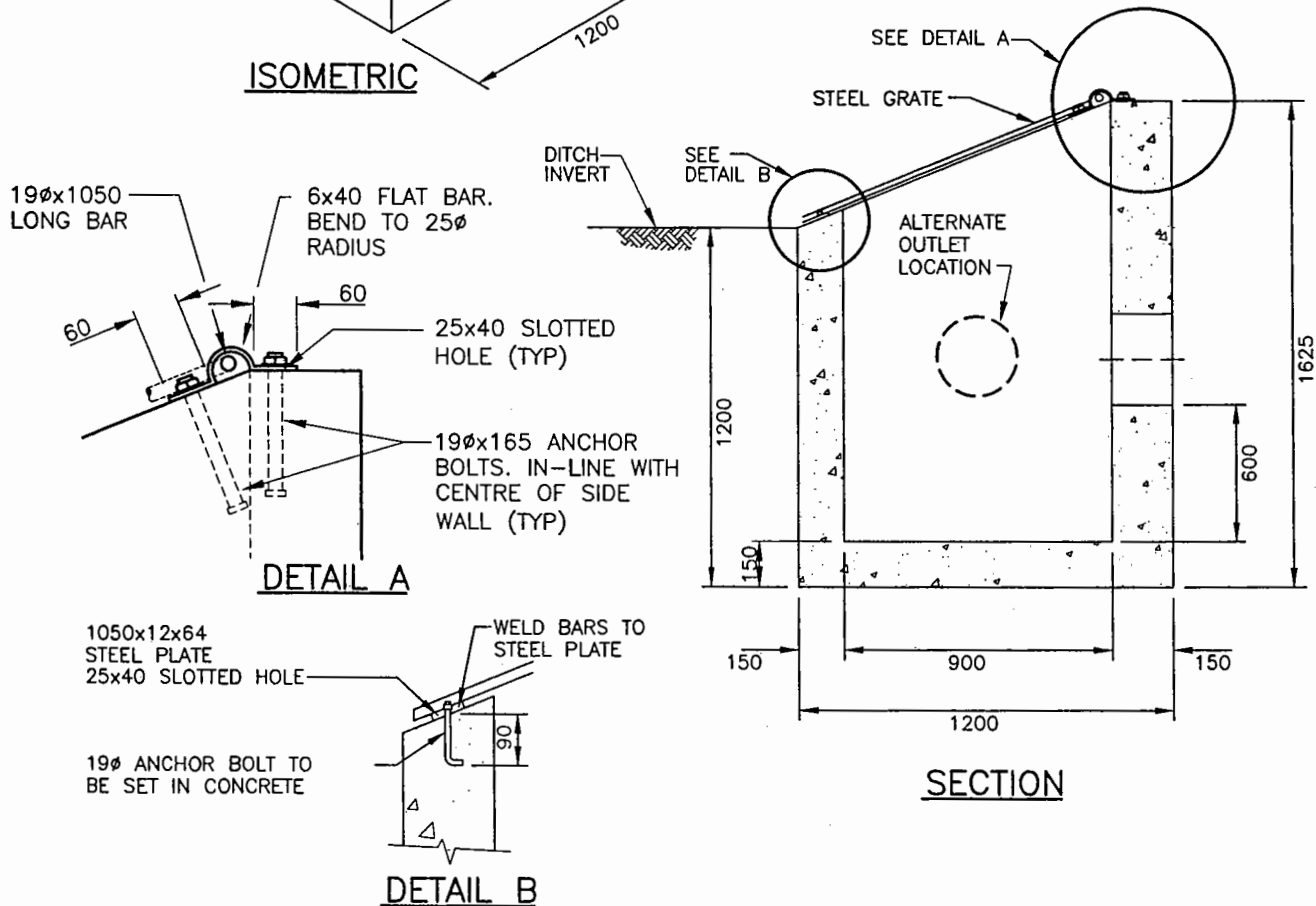
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TITLE
INLET STRUCTURE c/w GRILLAGE (FOR 1050mm ϕ OR LESS)
SDS-9

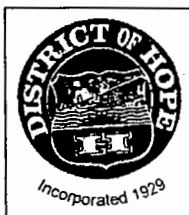


NOTES:

1. GRILLAGE NOT REQUIRED ON PIPES LESS THAN 300mm ϕ .
2. ALL STEEL COMPONENTS TO BE HOT DIPPED GALVANIZED AFTER FABRICATION.
3. CONCRETE: MIN. 30MPa @ 28 DAYS
4. REINFORCING:
 - i) 50mm MIN. COVER
 - ii) 10M @ 200mm o.c.EACH WAY.
5. 20mm CHAMFER ON ALL EXPOSED EDGES.
6. SEE DWG S-11 FOR CONNECTION DETAILS.
7. ALL METAL TO BE HOT DIPPED GALVANIZED.
8. ALL DIMENSIONS ARE IN MILLIMETRES.

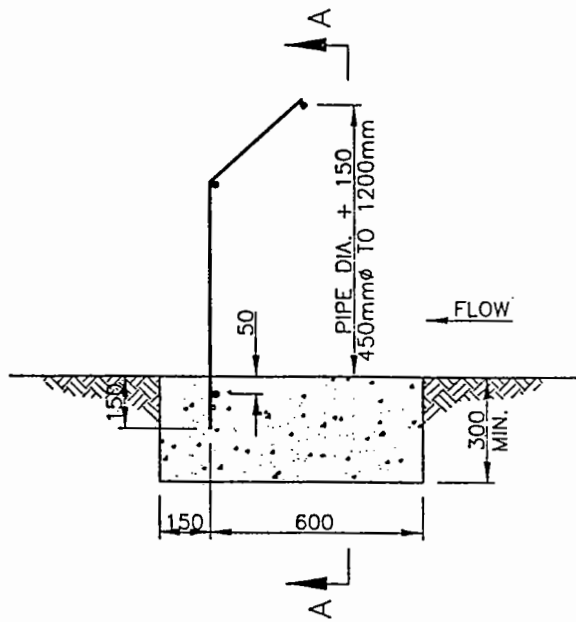


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DATE:	JUNE, 1999	

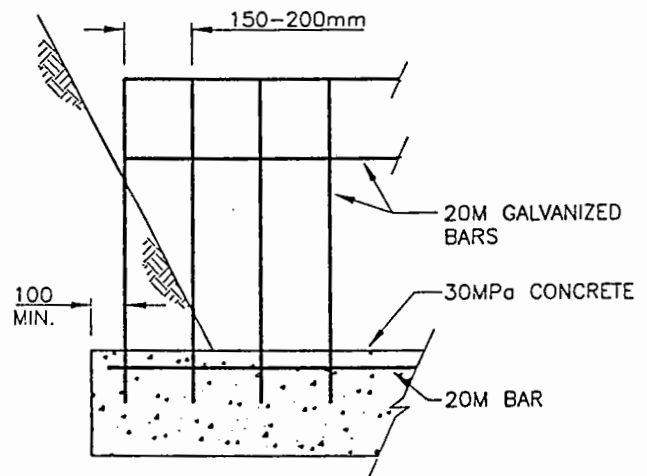


DISTRICT OF HOPE

TITLE
CAST IN PLACE INLET STRUCTURE (MAX. 300 ϕ PIPE)
SDS-11



SIDE VIEW



SECTION A-A

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SCALE	N.T.S.	
DATE	JUNE, 1999	

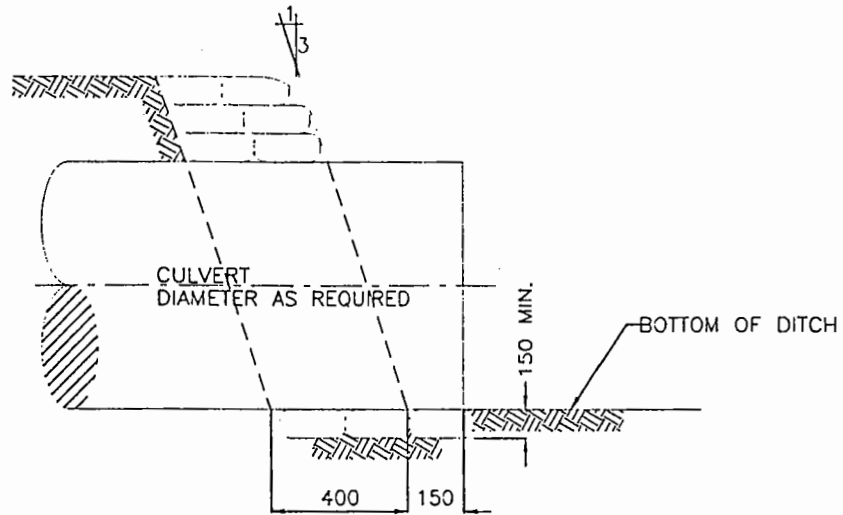


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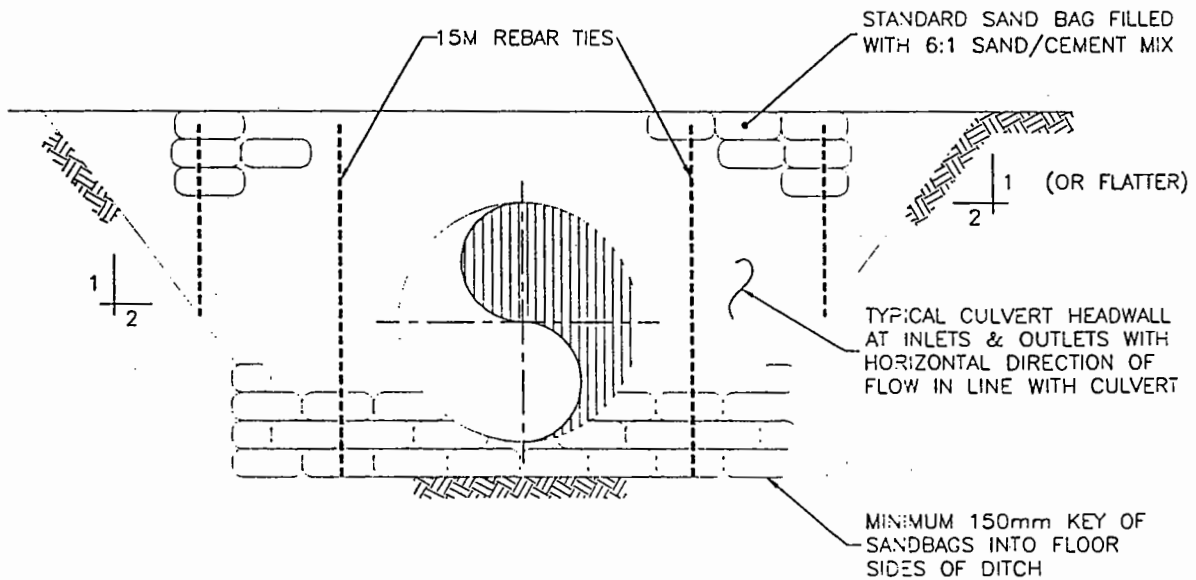
TITLE

TRASH RACK

SDS-14



SECTION

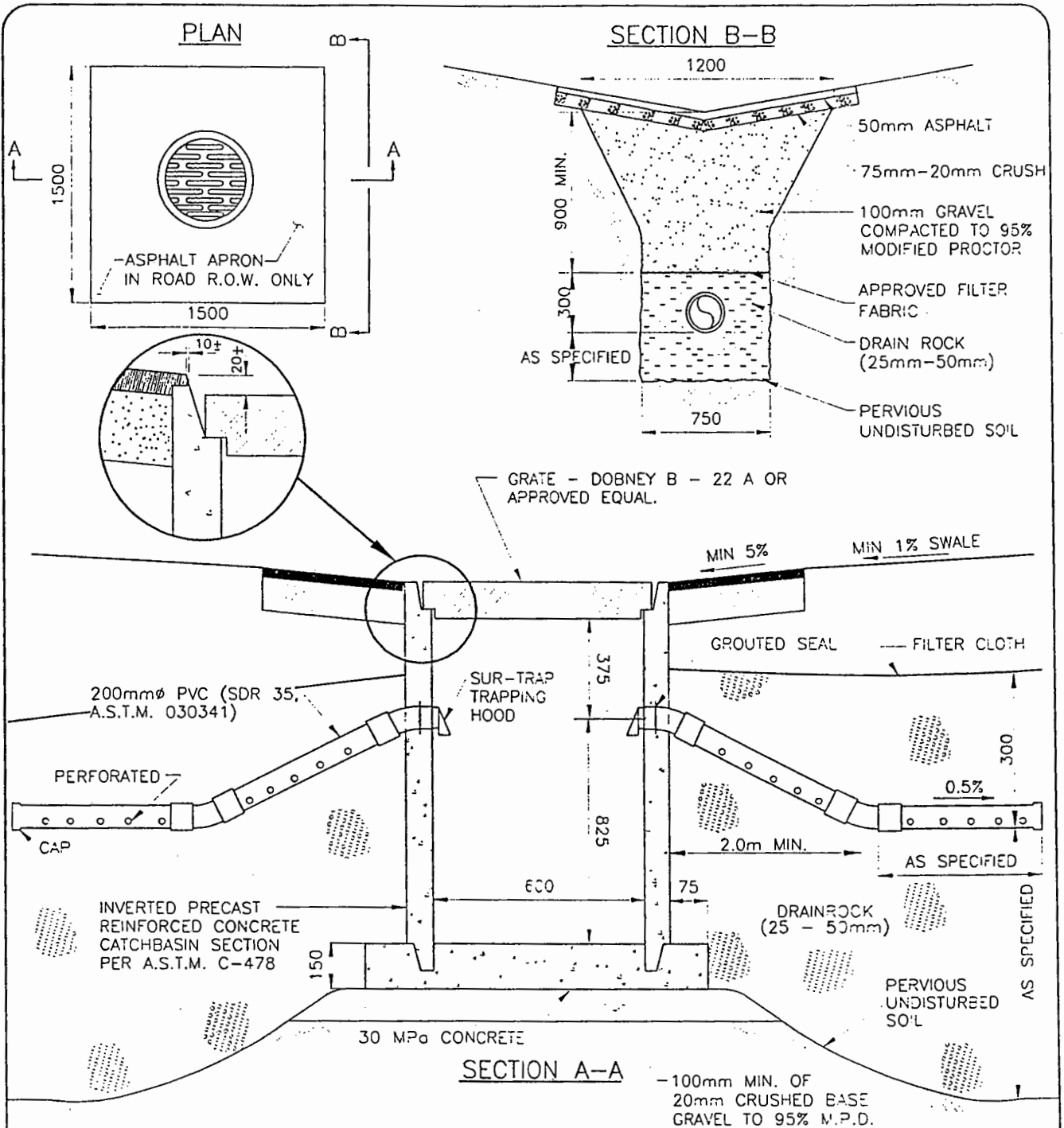


No.	DESIGN	APPROVED
SCALE	N.T.S.	
DATE	JUNE, 1999	




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TITLE
SANDBAG TYPE CULVERT HEADWALL
SDS-15

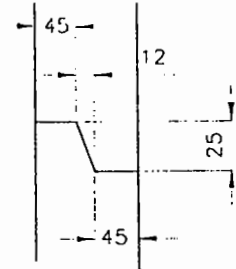
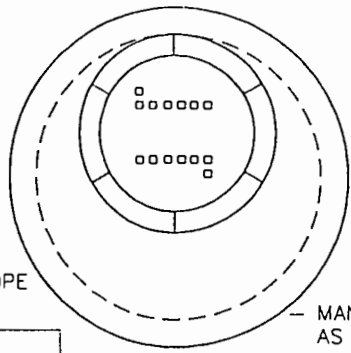


- NOTES:
1. DISCHARGE PIPES TO BE ALIGNED PARALLEL TO THE ROAD CENTRELINE.
 2. TRENCH DEPTH SHALL BE AS REQUIRED TO REACH A PERVIOUS UNDISTURBED SOIL.
 3. DEPTH OF DRAINROCK TO BE SPECIFIED BY THE ENGINEER.
 4. USE ROCK PIT ONLY WITH A SURFACE DRAINAGE OUTLET ROUTE.

FOR USE ONLY WITH DISTRICT'S APPROVAL

No.	REVISED	APPROVED		TITLE
				ROCK PIT
SCALE	N.T.S.			SDS-16
DATE	JUNE, 1999			

DISTRICT OF HOPE



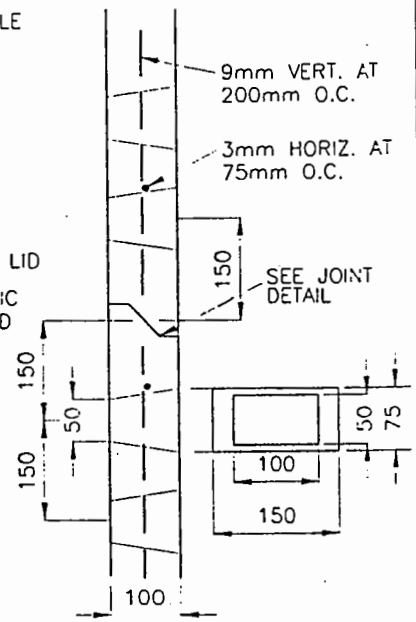
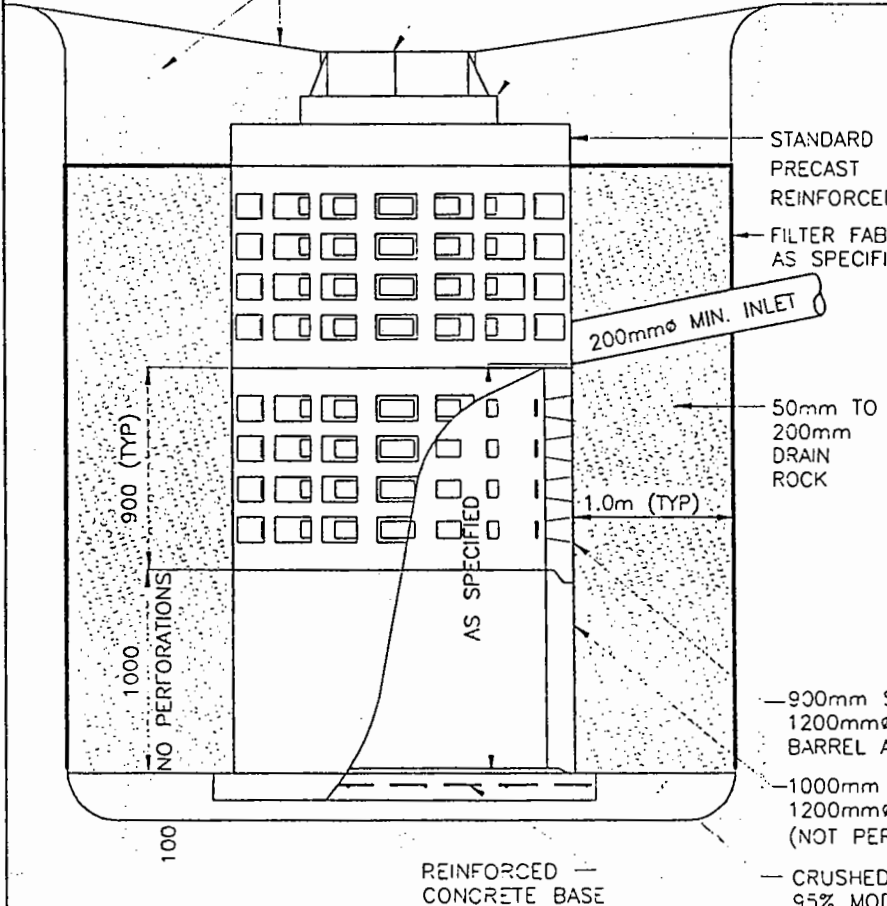
REGRADE AND SLOPE GROUND SUITABLE FOR MOWING

MANHOLE FRAME AND COVER AS PER STD. DWG. S-2.

JOINT DETAIL

NATIVE FILL COMPACTED TO 95% MODIFIED PROCTOR

PRECAST CONCRETE MANHOLE RISER, MAX. 3, MIN. 1



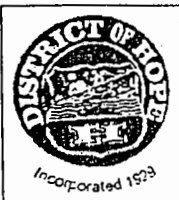
PERFORATION DETAIL

900mm SECTION OF PRECAST 1200mm Ø I.D. PERFORATED BARREL AS PER STD. DETAIL
 1000mm SECTION OF PRECAST 1200mm Ø I.D. BARREL (NOT PERFORATED)
 CRUSHED GRANULAR BEDDING TO 95% MODIFIED PROCTOR DENSITY

- NOTE:
1. CONSTRUCT MANHOLE AS PER DWG. MMCD S-1.
 2. ROCK PIT DEPTH TO BE DETERMINED IN THE FIELD AND TO PROJECT 1.0m MIN. INTO NATIVE PERMEABLE MATERIAL.
 3. WHERE DRYWELL FORMS PART OF STORM SEWER SYSTEM, MANHOLE RUNGS SHALL BE INSTALLED IN ACCORDANCE WITH DWG. MMCD S-1.

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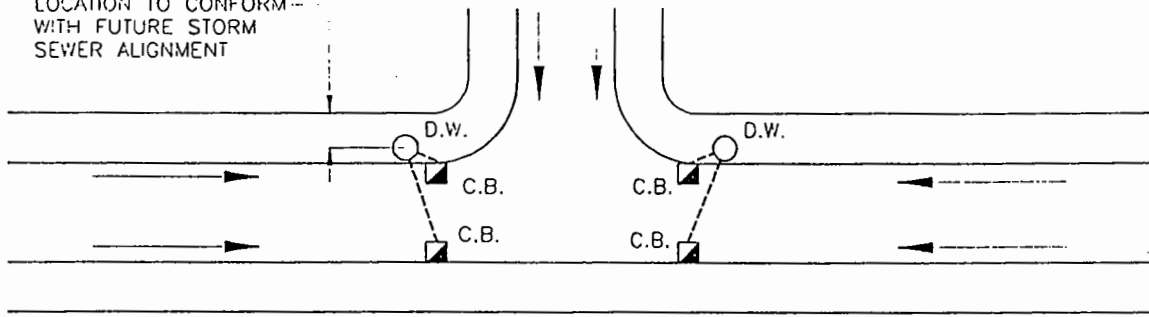
NO.	REVISION	APPROVED
SCALE	N.T.S.	
DATE	JUNE, 1999	



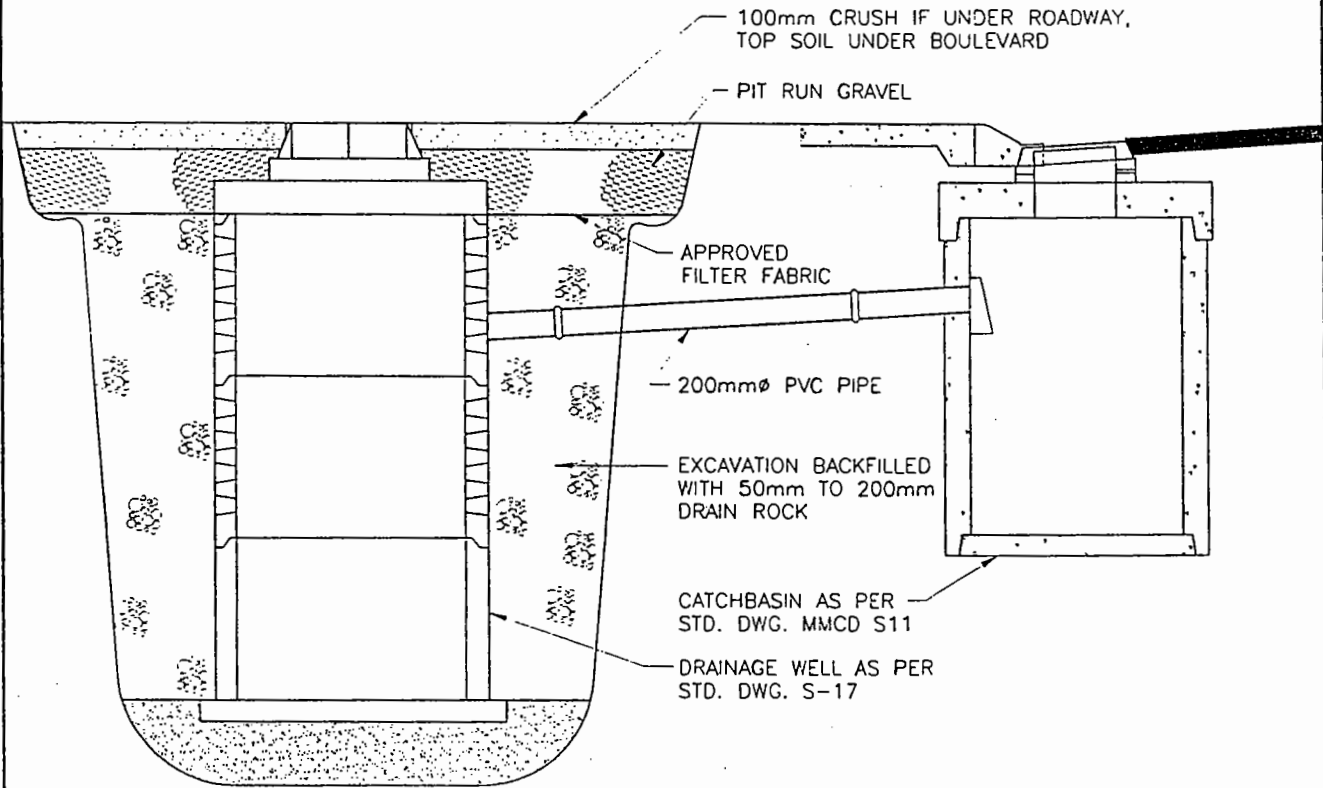
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FILE	DRAINAGE DRYWELL
	SDS-17

LOCATION TO CONFORM WITH FUTURE STORM SEWER ALIGNMENT



TYPICAL INSTALLATION

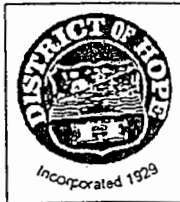


NOTES:

1. THE NUMBER AND SPACING OF DRAINAGE DRYWELLS WILL BE CALCULATED IN ACCORDANCE WITH DRAINAGE DESIGN CRITERIA AND WILL DEPEND UPON THE AREA DRAINED AND EXISTING GROUND CONDITIONS.
2. FILTER FABRIC TO BE PLACED OVER TOP OF BARREL PRIOR TO PLACING COVERSLAB. ACCESS TO DRYWELL NOT TO BE CUT THROUGH FILTER FABRIC UNTIL FINAL INSPECTION.
3. THE DRYWELL SHALL BE INSTALLED ON THE UP-HILL SIDE OF THE RIGHT-OF-WAY.

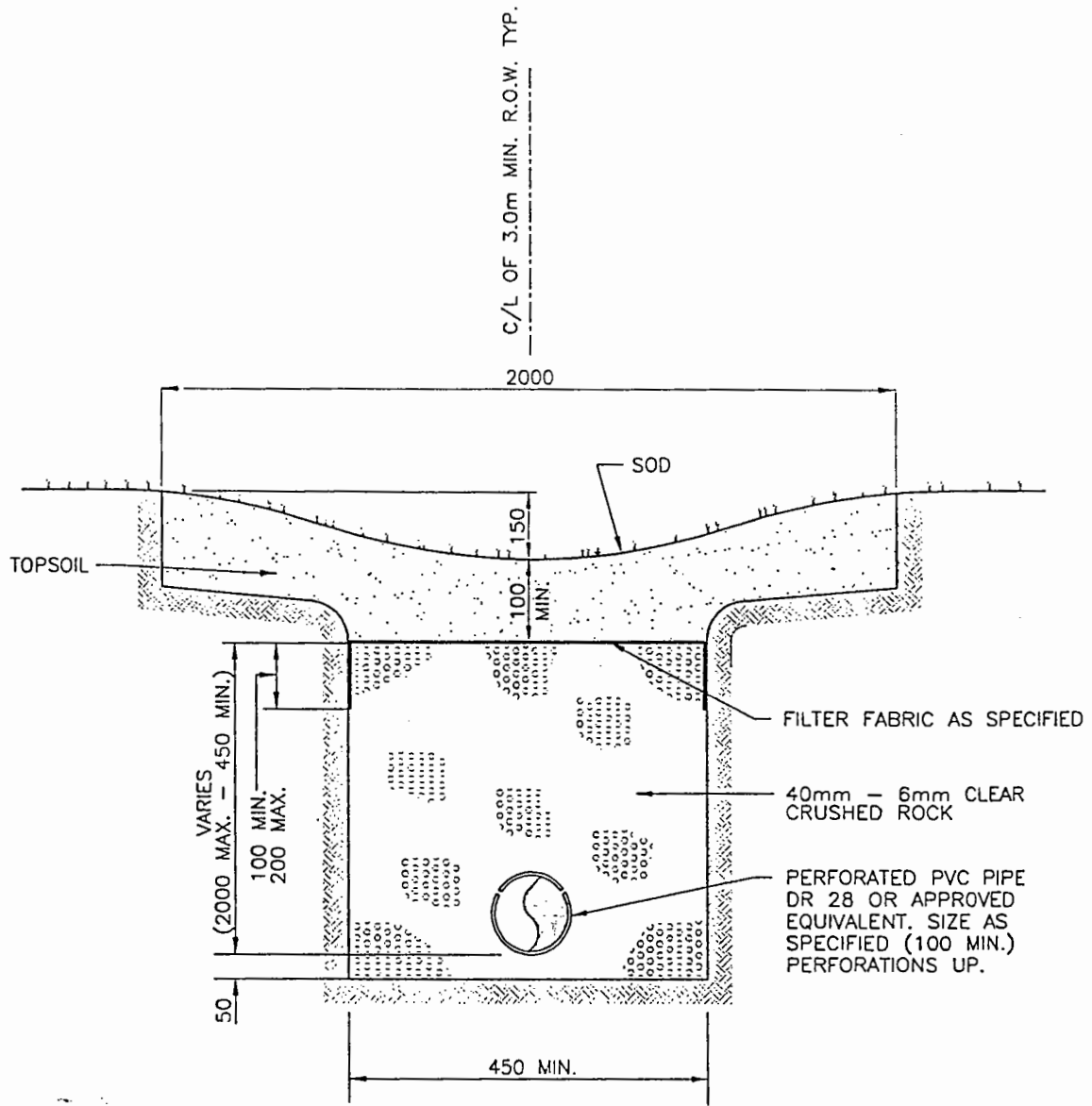
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DATE	JUNE, 1999	



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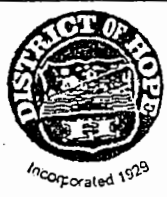
TITLE
INSTALLATION OF DRAINAGE DRYWELL
SDS-18



NOTES:

1. SWALE TO BE CENTRED IN 3.0m R.O.W.
2. SOD TO PLACED ON MINIMUM 100mm TOPSOIL.
3. PROVIDE CLEANOUT AS PER MMCD S6 AT 50m MAX. SPACING.

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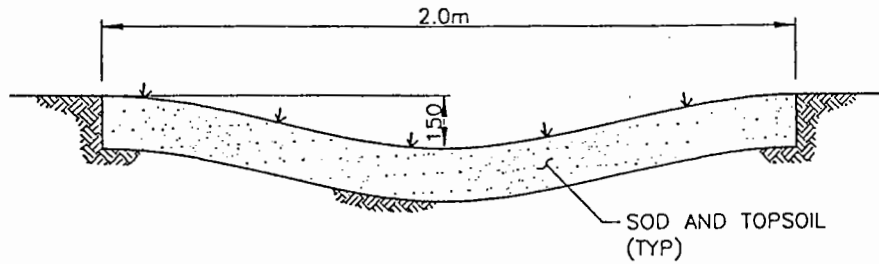


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TITLE

SWALE AND
FRENCH DRAIN

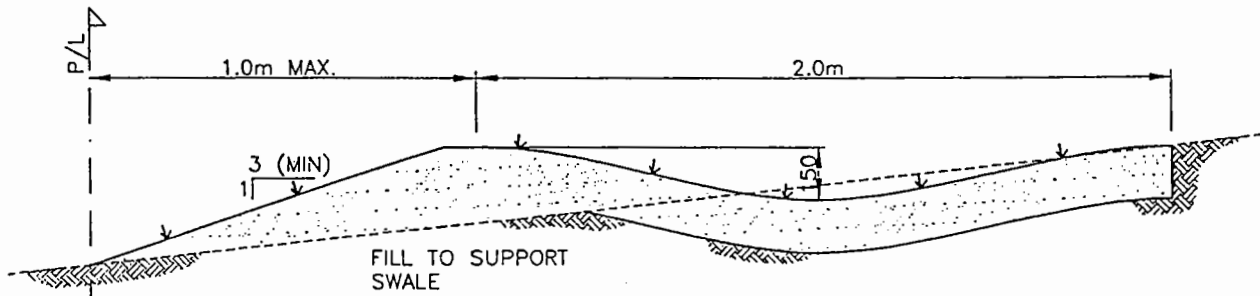
SDS-19



TYPE 'A'

NOTE:

1. SWALE TYPICALLY CENTRED ON 3.0m R.O.W.
2. SOD TO BE PLACED ON 100mm TOPSOIL.



TYPE 'B'

NOTE:

1. EASEMENT WIDTH AS REQUIRED TO SUPPORT PROPOSED SWALE.

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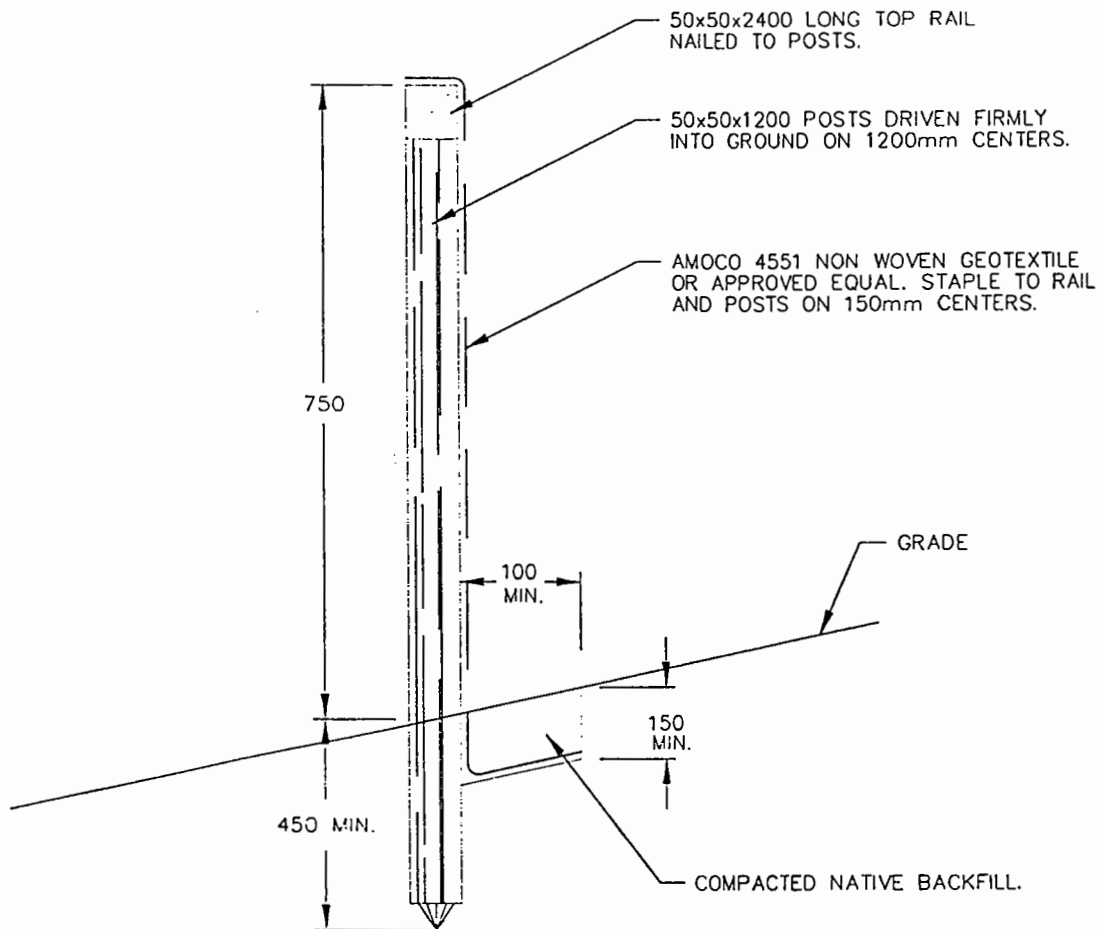


DISTRICT
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TITLE

SWALE

SDS-20



INSTALLATION PROCEDURE

1. LAY OUT A SUITABLE FENCE LINE AND SET POSTS ALONG IT. ON SLOPES, ALIGN THE FENCE ALONG THE CONTOUR AS CLOSELY AS POSSIBLE. IN SMALL SWALES, CURVE THE FENCE LINE UPSTREAM AT THE SIDES TO DIRECT THE FLOW TOWARD THE MIDDLE OF THE FENCE. THE ENDS SHOULD BE HIGHER THAN THE CENTER.

EXCAVATE A TRENCH APPROXIMATELY 150mm DEEP AND 150mm WIDE ALONG THE LINE OF THE POSTS ON THE UPHILL SIDE OF THE BARRIER.

2. FASTEN THE FILTER FABRIC TO THE UPHILL SIDE OF THE FENCE POSTS USING STAPLES OR TIE WIRES. EXTEND FABRIC AT LEAST 150mm INTO THE TRENCH, AND LEAVE A MAXIMUM OF 450mm HEIGHT ABOVE THE GROUND. CUT THE FABRIC FROM A CONTINUOUS ROLL TO AVOID THE USE OF JOINTS. WHERE JOINTS ARE NECESSARY, SPLICE THE FABRIC AT A POST WITH A MINIMUM 150mm OVERLAP, AND SECURELY FASTEN BOTH SECTIONS TO THE POST.

3. BACKFILL THE TRENCH OVER THE TOE OF THE FABRIC, AND COMPACT THE SOIL TO MEET THE ORIGINAL GRADE.

MATERIALS:

FILTER FABRIC

-AMOCO 4551 OR APPROVED EQUAL

FENCE POSTS

-WOOD POSTS-MIN. 50x50x1200 LONG
-STEEL POSTS-MIN. 1.97 kg/m x 1200 LONG

NOTE:

-INSPECT AFTER EVERY RAINFALL
-REMOVE SEDIMENT BEFORE DEPTH REACHES 1/4 HEIGHT OF FENCE
-REPAIR AS REQUIRED

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SCALE	N.T.S.	
DATE	JUNE, 1999	



DISTRICT OF HOPE

TITLE
SILT FENCE DETAIL

SDS-22

