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CITY OF KELOWNA

**MEMORANDUM**

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**Date:** May 1, 2009  
**File No.:** 3900-20  
**To:** City Manager  
**From:** Manager / Utility Services  
**Subject:** Subdivision, Development, and Servicing Bylaw 7900 amendment; and,  
Policy 266 - Subdivision, Development & Servicing - Approved Products List

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**RECOMMENDATION:**

THAT the Subdivision, Development, and Servicing Bylaw 7900 Schedule 5.2 (Standard Drawings) be amended by replacing existing Standard Drawings SS-S1a, SS-S6, SS-S11a, SS-S11b, SS-S11c, SS-W2, SS-W4, SS-W6, SS-W8a, SS-W8b, SS-W50, and SS-R26, with those attached to this report all dated April 15, 2008;

AND THAT the Subdivision, Development, and Servicing Bylaw 7900 Schedule 5.1 (Construction Specifications), City of Kelowna Supplemental to the Master Municipal Specifications Section S02725 be amended by Adding 2.1.15.3 "Support concrete to be non-shrink type, minimum 20Mpa @ 28 days, maximum 10mm diameter aggregate."

THAT Bylaw No. 10124, being Amendment No. 13 to Subdivision, Development & Servicing Bylaw No. 7900 be advanced for reading consideration.

THAT Council adopt the revised Policy 266 - Subdivision, Development & Servicing - Approved Products List attached to this report.

AND THAT Council Policy 266 - Subdivision, Development & Servicing - Approved Products List be updated to include the following:

**MANHOLES AND CATCHBASINS:**

**Adjustable Manhole Frame:**

TC Ironworks Inc. C44A adjustable MH frame and SR-Support Ring

**Catch Basin rollover frame and grate:**

Westview Sales Ltd. RB7 frame and grate



**BACKGROUND:**

## 1) Standard Drawings:

Standard Drawings were updated to reflect current products, materials, and practices that improve installations and maintenance. The Water Standard Drawings were edited and reviewed with the Kelowna Joint Water Committee to reach a common consensus. General changes are noted below for each Standard Drawing that was changed:

1. SS-S1a – Manholes – Changed concrete around MH Frame (vertical); Deleted lifting hole note and replaced with “lifting device as approved by Worksafe BC”; Deleted non-shrink grout for joints but leave gaskets or mastic.
2. SS-S6 – Cleanout Detail – Added concrete Grade Rings on Granular base
3. SS-S11a – Catch Basin’s – Replaced “Bricks” with “concrete riser ring”; Side inlet only for barrier curb; added note to use roll over grate for rollover curb i.e. Westview RB7 standard or equal.
4. SS-S11b – Catch Basin’s - Added note that side inlet casting is for barrier curb and added note to use rollover frame & grate for rollover curb.
5. SS-S11c– Catch Basin’s - Added note to modify openings for rollover frame and grate.
6. SS-W2 – Water Service connection- Required shut off stem to be stainless steel rods; and removed reference to “minimum.” for distance from property line.
7. SS-W4 – Fire Hydrant - Replaced tie rods with approved joint restrainers; All bolts to be stainless steel; Thrust block may be pre-cast; flange to be 50mm to 150mm above boulevard; filter fabric added.
8. SS-W6 – Air Valve Assembly - Added concrete bottom with drain; air vent off valve with PVC inside barrel for thermal break. Tee fitting used on main. Insulation outside or spray foam below frost line.
9. SS-W8a) – 50mm Blow Off – Added drain rock; concrete grade ring instead of bricks; added 65mm hydrant adaptor with cap; added requirement that assembly to be pressure tested for safety.
10. SS-W8b) – 100mm Blow Off- Added drain rock; changed riser from PVC to DI; restrain all joints; added requirement that assembly to be pressure tested for safety.
11. SS-W50 – Irrigation Service - Removed “c/w drain;” and added separate drain line and valve (self draining valves plug up); added irrigation valve box
12. SS-R26 – Hydrants and Poles near Ditches – Replaced “bagged head walls @ 15:1 slope” with concrete headwalls or approved alternate.

2) Construction Specifications:

In the Construction Specifications, a new mortar mix design is added that reduces potential for cracking and infiltration of water into manholes.

3) Approved Products List:

The Kelowna Joint Water Committee has reviewed and prepared an update to the Approved Products List (Water Division) for works constructed in the various water systems within the City. The updates are for new products or changes to existing ones. This list is used to provide consistency between the various water purveyors and to limit the number of product types that are maintained.

**INTERNAL CIRCULATION TO:**

Design & Construction  
Utility Services

**FINANCIAL/BUDGETARY CONSIDERATIONS:**

No increase in cost to the City.

**EXTERNAL AGENCY/PUBLIC COMMENTS:**

The Kelowna Joint Water Committee approved the changes to the list in accordance with the Policy. Initial draft amendments of Standard Drawings circulated to UDI but no comments received.

**COMMUNICATIONS CONSIDERATIONS:**

Changes will be made to the applicable documents and posted on the Web site.

Considerations that were not applicable to this report:

**LEGAL/STATUTORY AUTHORITY:**

**LEGAL/STATUTORY PROCEDURAL REQUIREMENTS:**

**EXISTING POLICY:**

**PERSONNEL IMPLICATIONS:**

**TECHNICAL REQUIREMENTS:**

**ALTERNATE RECOMMENDATION:**

Submitted by:



Don Degen, Manager / Utility Services



Approved for Inclusion:

A handwritten signature in black ink, appearing to be 'J. Vos', is written over a rectangular box.

J. Vos, General Manager, Community Services

Attachments: 1) Revised Policy 266 – Subdivision, Development & Servicing – Approved Products  
List  
2) Standard Drawings Dated April 15, 2008

cc: Bill Berry - Director / Design & Construction Services

cc: Steve Muenz - Manager / Development Engineering



# CITY OF KELOWNA

POLICY: 266  
PAGE: 1 of 6

## COUNCIL POLICY MANUAL

APPROVAL DATE: to be updated upon Council approval  
RESOLUTION #: to be updated upon Council approval  
REPLACING #: R59/99/01/25; R651/00/07/24; R650/02/07/29  
DATE OF LAST REVIEW: to be updated upon Council approval

SUBJECT: SUBDIVISION, DEVELOPMENT & SERVICING – APPROVED PRODUCTS LIST

This policy specifies the approved products to be used in the construction of Works and Services in the City of Kelowna. This list will be expanded and amended from time to time.

The list is to:

- (a) Standardize the products used between Water Improvement Districts and the City.
- (b) To limit the number of certain products that can be used within the City, to ensure that staff is trained to maintain those items, and to limit the inventory necessary for maintenance.
- (c) Make it easier for contractors and to minimize errors.

The City, subject to recommendation by the City Engineer, may approve products that satisfy the requirements of the respective Works & Utilities Divisions. For "Water" products, the Kelowna Joint Water Committee establishes the requirements. The respective Works & Utilities Managers will review Water, Wastewater, Drainage, Electrical, Parks, and Road and Transportation Products. Requests for product inclusion may be made to the respective Works & Utilities Manager.

### Table of Contents:

#### Waterworks

- 1. Pipe
- 2. Fittings & Appurtenances
- 3. Valves
- 4. Hydrants
- 5. Brass Service Fittings

#### Manholes and Catch Basins

- 1. Adjustable Manhole Frame
- 2. Catch Basin Rollover Frame and Grate

#### Misc. Metals

Landscape Products

### WATERWORKS DIVISION:

Note: Products must conform to CSA Standard, where applicable.

#### Legend:

- @ Subject to Engineers Design and Approval
- # Complete with Stainless Steel or high strength, low alloy steel bolts. All bolts to be denso paste and taped.

<u>Manufacturer</u>	<u>Make/Model</u>	<u>Size Range</u>	<u>Comments/Conditions</u>
<b>1. Pipe</b>			
<b><u>Water main</u></b>			
Iplex, Rehau, Royal	PVC C900	100 to 300mm	Only DR 18, class 150 or better as required for C900 & C905
	PVC C905	350 to 900mm	
Canada Pipe,	Ductile C151	250 to 750mm	Must be installed with Polyethylene encasement, and be cement mortar lined to AWWA C-104.
US Pipe	Ductile C151	750mm and up	



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### WATERWORKS DIVISION:

<u>Manufacturer</u>	<u>Make/Model</u>	<u>Size Range</u>	<u>Comments/Conditions</u>
<b><u>Service Pipe</u></b>			
Noranda, Wolverine	Type k Copper	min. 20mm (3/4") max. 50mm (2")	Must conform to CSA HC.7.6 & ASTM B88
All Suppliers	Polyethylene	min. 25mm (1") max. 50mm (2")	Only Series 160 or 200 conforming to CAN/CSA-B137.1-M All PE: ID must be equivalent to copper tube flow capacity

## 2. Fittings & Appurtenances

### Fittings

TC / ACS	Iron	100 – 600 mm	C-153 Fittings only
Norwood Foundry	Iron	100 – 600 mm	C-153 Fittings only
Sigma Corporation	Iron	100 – 600 mm	C-153 Fittings only
Ipex	PVC	100 – 200 mm	DR 18 Class 150, CSA B137.2 & B137.3, AWWA C907

### Restraining Joints

Ford Meter Box Co. / Uni-Flange	1300C, 1350C & 1390C	100 – 600 mm	# @
Smith Blair	Model 982	100 – 600 mm	# @
Sigma	PV – LOC Series	100 – 600 mm	# @
EBAA Iron	Series 1500 PVC	100 – 600 mm	# @
Canada Pipe	Thrust Loc Series	100 – 600 mm	# @
Sigma	Zip Flange	100 - 600 mm	# @



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### WATERWORKS DIVISION:

<u>Manufacturer</u>	<u>Make/Model</u>	<u>Size Range</u>	<u>Comments/Conditions</u>
<b><u>Service/Tapping Saddles</u></b>			
Robar	2606DB	100 – 600 mm	Up to 25mm boss
	2706DS	100 – 600 mm	With stainless steel straps
Canada Pipe	SC-2	100 – 400 mm	Up to 25mm boss With stainless steel straps
Ford	FS303	100 – 300 mm	Up to 25mm boss
	202 BS	100 – 900 mm	With stainless steel straps
Cambridge Brass	812	100 – 900 mm	Up to 25mm boss With stainless steel straps

### Couplings

**Note:** All couplings to be Fusion Bonded Epoxy Coated Ductile Iron.

Ford	FC1-ESH & FCA-ESH	100 – 600 mm	#
	FC2W Ultra Flex	100 – 300 mm	#
Robar	1506 & 1506R	100 – 600 mm	#
	1726 Multi-Fit	100 – 300 mm	#
Smith Blair	411, 413, 415, 441	100 – 600 mm	#
Canada Pipe	Style CDB	100 – 600 mm	#
Viking Johnson	Maxi-Fit & Maxi-Step	All sizes	#
T.P.S.	Hymax 2000	50 – 600 mm	#
Romac	XR 501 Extended Range	100 – 300 mm	#



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<u>Manufacturer</u>	<u>Make/Model</u>	<u>Size Range</u>	<u>Comments/Conditions</u>
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### 3. Valves

#### Gate Valves

Clow	Clow Resilient	50 – 600 mm	
Mueller	Super-Seal	50 – 300 mm	
Mueller	AWWA C-515 A2361	350 – 1050 mm	

#### Tapping Saddles

No fabricated Steele on PVC or AC	All sizes	# Unless approved by Utility or Improvement District
Ok on D.I. or C.I.		

#### Butterfly Valves

Centerline	Series 200	350 mm +	
Pratt	Groundhog	350 mm +	
Mueller	Linesal III	350 mm +	
Keystone	Type AR1 & AR2	350 mm +	

#### Air Valves

**Note:** Internal coating to be Factory, NSF approved Epoxy

Golden Anderson	945 E	25 – 100 mm	Internally Coated
Apco	143C, 145C, 147C 149C & 150C	25 – 150 mm	Internally Coated
Valmatic	201C, 202C, 203C & 204C	25 – 150 mm	Internally Coated
Crispin	All Models	25 – 150 mm	Internally Coated
Cla-Val	All Models	25 – 150 mm	Internally Coated

#### Service Boxes

Meuller	A-726	20 – 25 mm	c/w Stainless Steel Rods &
	A-728	37 – 50 mm	SS-RHD or MD-RHD Clevis Ends
Trojan	VSB1	20 – 25 mm	c/w Stainless Steel Rods &
	VSB2	37 – 50 mm	SS-RHD or MD-RHD Clevis Ends



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## WATERWORKS DIVISION:

<u>Manufacturer</u>	<u>Make/Model</u>	<u>Size Range</u>	<u>Comments/Conditions</u>
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### Main Valve Boxes

TC / ACS Norwood Foundry Dobney Foundry	D-5	Minimum 375mm Vertical Dimension	Nelson Type Nelson Type Nelson Type
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## 4. Hydrants

### Hydrants

Terminal City Clow Canada Valve	C-71-P Brigadier Century		TCH1A only c/w Storz Fitting c/w Storz Fitting c/w Storz Fitting
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## 5. Brass Service Fittings

### Corporation Stops

Mueller	B-25008	20 – 50 mm	Full port only
A.Y. McDonald	4701BQ	20 – 50 mm	Full port only
Ford	FB 1000	20 – 50 mm	Full port only
Cambridge Brass	Series 301	20 – 50 mm	Full port c/w new mueller gasket

### Curb Stops

**Note:** Stop & Drains NOT permitted.

Mueller	B-25209	20 – 50 mm	Full port only
A.Y. McDonald	6100XQ	20 – 50 mm	Full port only
Ford	B44 Series	20 – 50 mm	Only full port models 333, 444, 555, 666 & 777
Cambridge Brass	Series 202	20 – 50 mm	

### Service Line Couplers

Ford	C44 Series	20 – 50 mm	Models C44-1 to C44-88
Mueller	H-15403	20 – 50 mm	H15403, H15404 & H12940
Cambridge Brass	Series 118 & 119	20 – 50 mm	



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### MANHOLES AND CATCH BASINS:

- Adjustable Manhole Frame:
  - TC Ironworks Inc. C44A adjustable MH frame and SR-Support Ring
- Catch Basin Rollover Frame and Grate:
  - Westview Sales Ltd. RB7 frame and grate

### MISCELLANEOUS METALS DIVISION:

#### Landscape Products

Dobney Foundry      Tree Grates  
Surrey, BC            SP48 Model Grate  
(604) 596-7407      Colour: Black

Dobney Foundry      Tree Guards  
Surrey, BC            Type 'B'  
(604) 596-7407      Colour: Black

Dobney Foundry      Bollards  
Surrey, BC            Style 'B'  
(604) 596-7407      Colour: Black

Frances Andrews      Bench  
Surrey, BC            Model #G24-311M  
(800) 656-6579      Colour: RAL 5011

Frances Andrews      Garbage Receptacle  
Surrey, BC            Model # R-31-1  
(800) 656-6579      Colour: RAL 5011

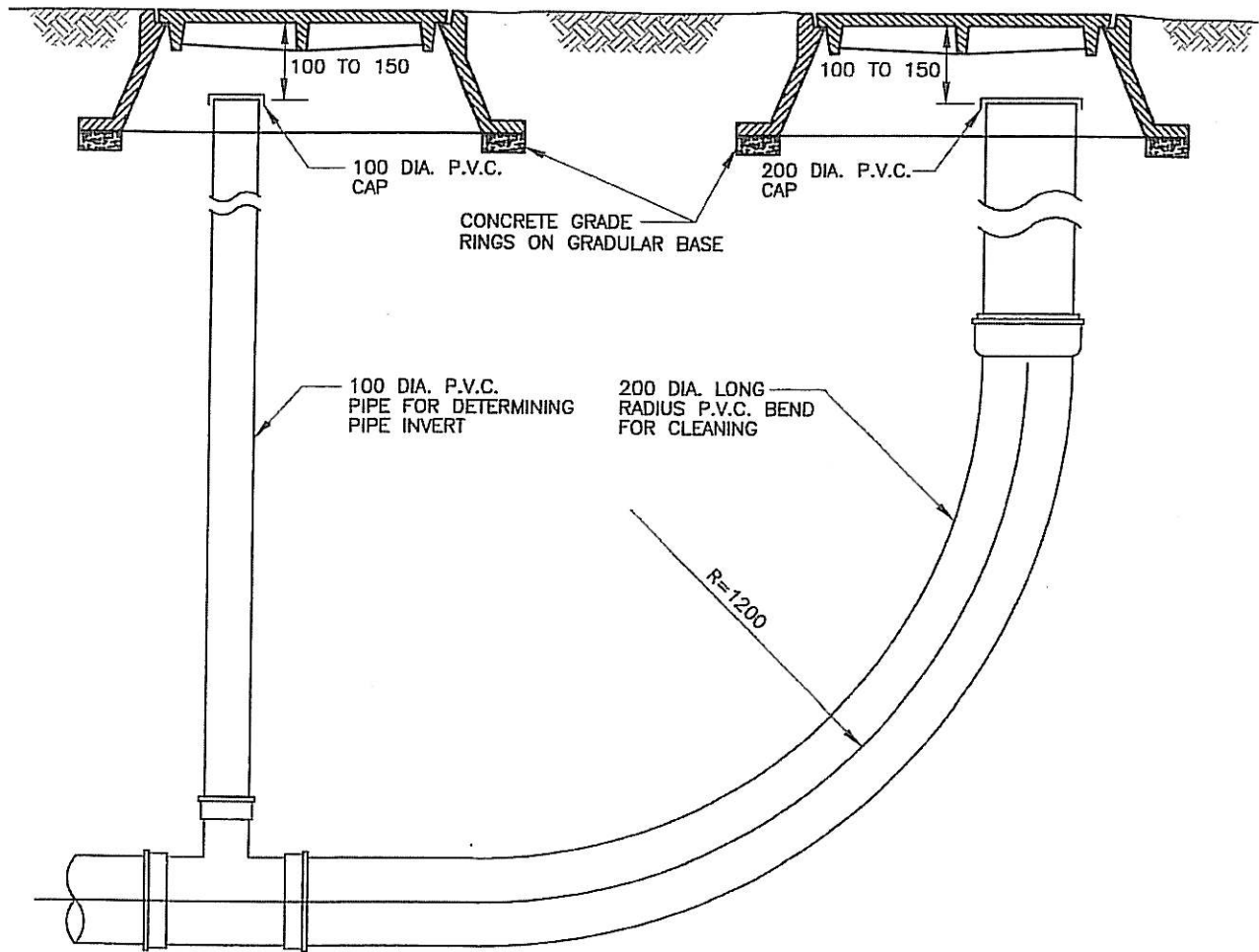
REASON FOR POLICY: To standardize products used for City infrastructure.

LEGISLATIVE AUTHORITY: *Local Government Act*, Sec. 938 "subdivision servicing requirements"; Subdivision, Development & Servicing Bylaw, Schedule 5, Sec. SO2666, 2.1.2; MMCD Volume III

PROCEDURE FOR IMPLEMENTATION: Policy and products referred to in contracts and engineering drawings.



STANDARD DETAIL DRAWINGS



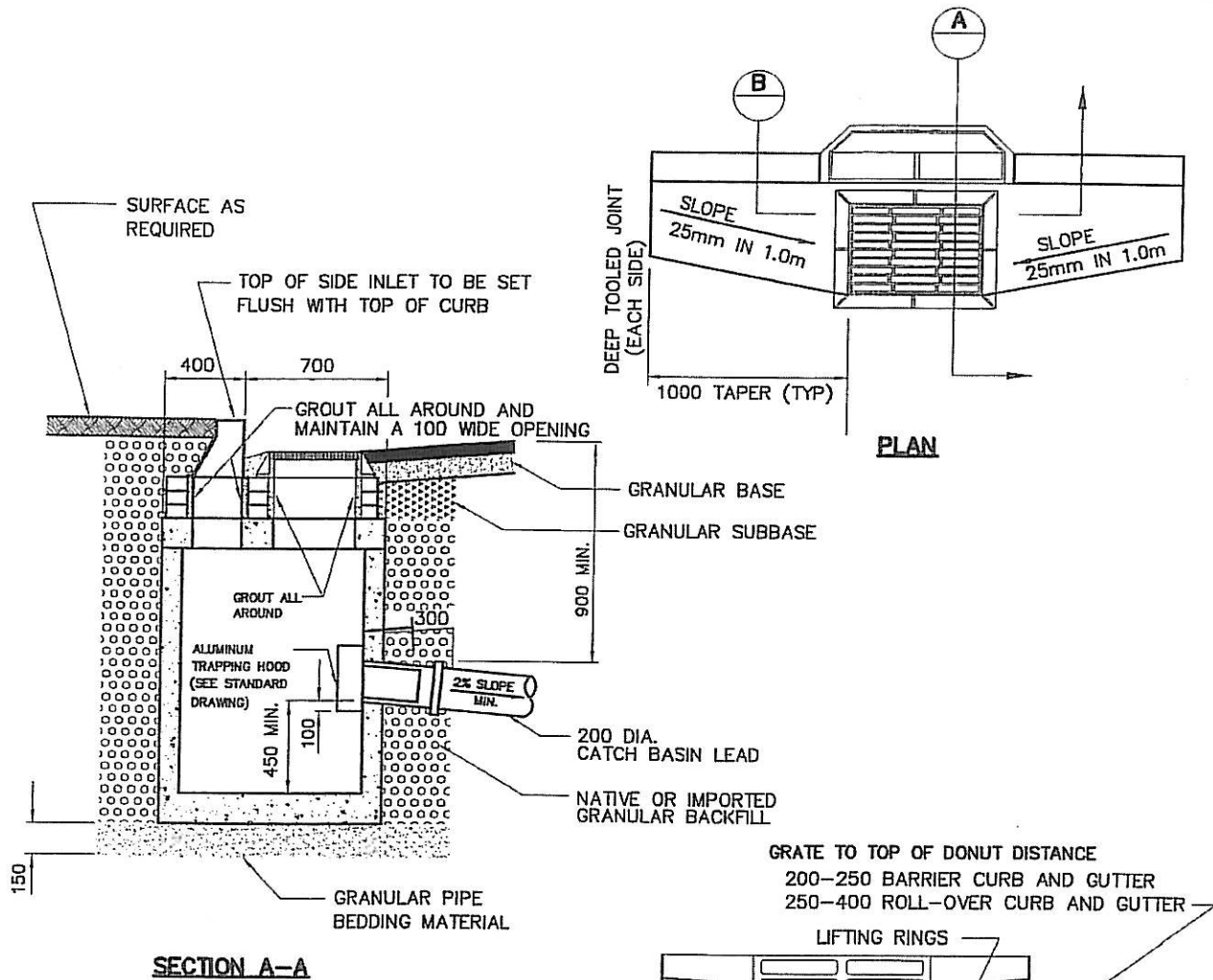
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CLEANOUT DETAIL (TEMPORARY)

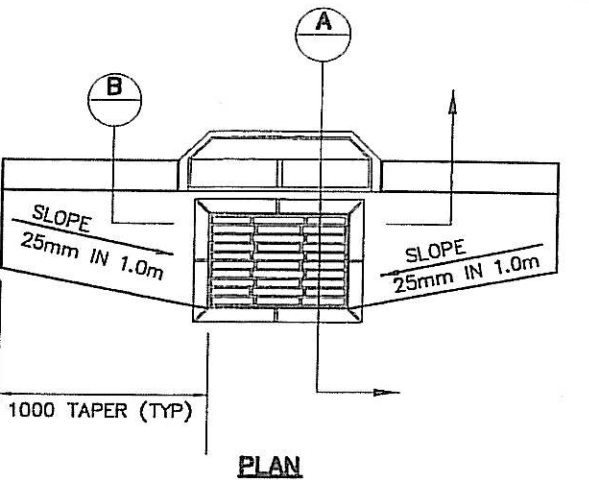
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SS-S6  
PROPOSED

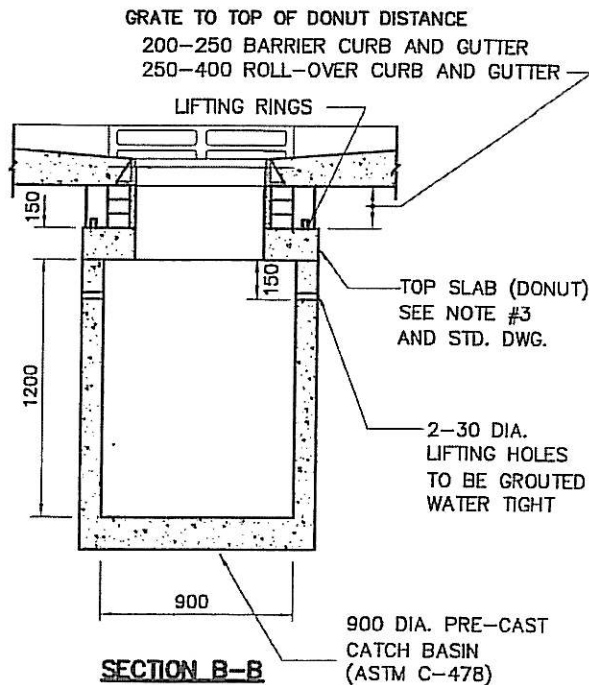
# STANDARD DETAIL DRAWINGS



**SECTION A-A**



**PLAN**



**SECTION B-B**

**NOTES:**

1. FOR DETAILS OF METAL CASTINGS; SEE STANDARD.
2. REFER TO CATCH BASIN TOP SLAB FOR DETAILS.
3. a) METAL CASTINGS ADJUSTED TO GRADE WITH CONCRETE GRADE RINGS. INSIDE SURFACES TO BE GROUTED SMOOTH.  
 b) FOR INSTALLATION OF CATCH BASIN IN ROLLOVER CURB CURB AND GUTTER, USE ROLLOVER FRAME AND GRATE. (WESTVIEW SALES LTD RB7 OR EQUAL)  
 c) FOR INSTALLATION OF CATCH BASIN WITHOUT CURB AND GUTTER, BLOCK CURB INLET OPENING IN TOP SLAB WITH SOLID NON-DECOMPOSABLE MATERIAL.
4. GRATE TO BE SET BELOW FIRST LIFT OF ASPHALT WHERE FINAL LIFT IS NOT BEING INSTALLED WITHIN ONE MONTH.

**CATCH BASIN (900mm DIA.)**

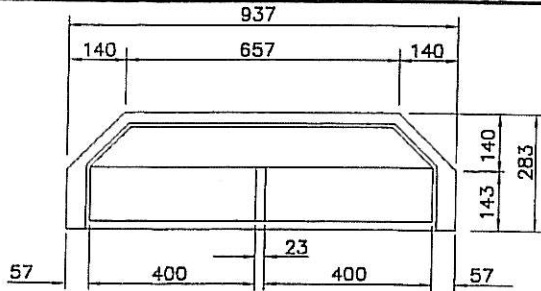
**SS-S11a**

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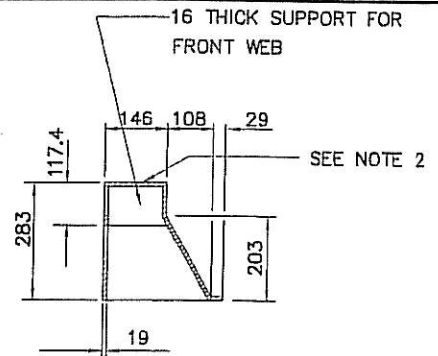
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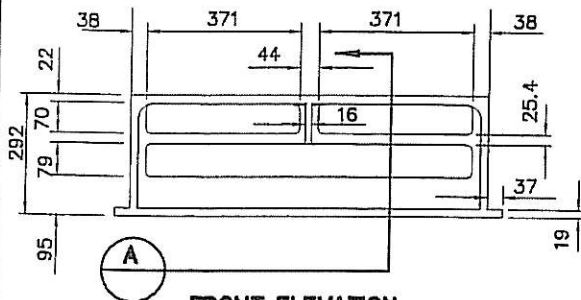
# STANDARD DETAIL DRAWINGS



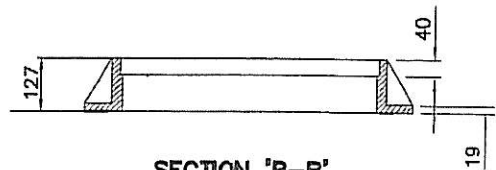
**BOTTOM VIEW**  
(BARRIER CURB ONLY)



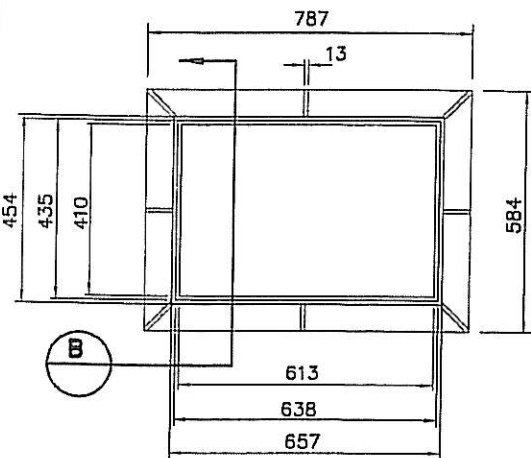
**SECTION 'A-A'**



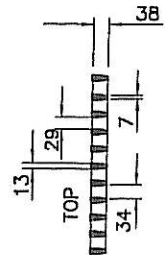
**FRONT ELEVATION**  
(BARRIER CURB ONLY)



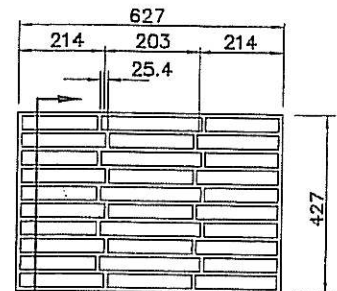
**SECTION 'B-B'**



**PLAN VIEW**  
(CATCH BASIN FRAME CASTING)



**SECTION C-C**



**PLAN VIEW**  
(CATCH BASIN GRATE)

**NOTE:**

1. CURB INLET CASTING GRATE AND FRAME CASTING TO BE DUCTILE IRON (DESIGNED FOR H-20 LOADING)
2. FISH DESIGN CAN BE ADDED TO TOP OF SIDE INLET BUT MUST BE APPROVED BY THE CITY ENGINEER PRIOR TO CONSTRUCTION.
3. FOR ROLL CURB USE ROLLOVER FRAME & GRATE (WESTVIEW SALES LTD RB7 OR EQUAL)

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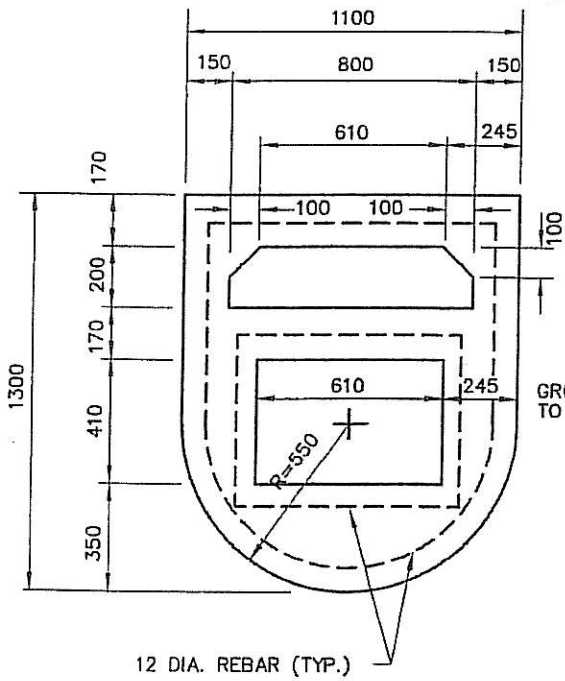
## CATCH BASIN CASTINGS COMBINED SIDE & GUTTER INLET

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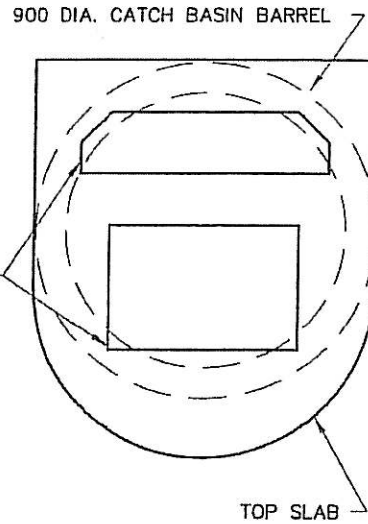
SS-S11b

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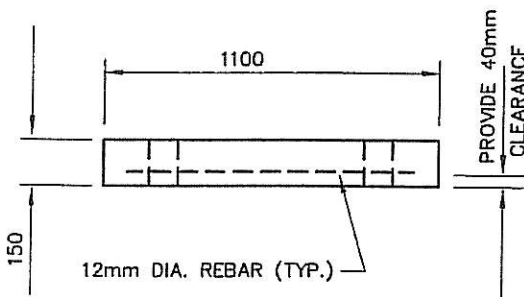
# STANDARD DETAIL DRAWINGS



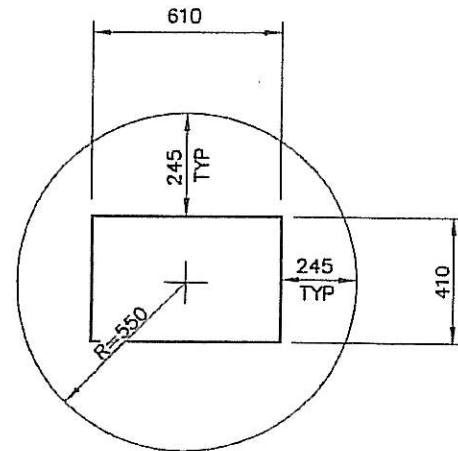
**PLAN TOP SLAB**



**POSITION OF TOP SLAB  
ON 900mm DIA. CATCH BASIN**



**FRONT ELEVATION**



**TOP SLAB  
(WITHOUT CURB INLET OPENING)**

**NOTES:**

1. ALL CONCRETE WORK TO BE A MINIMUM OF 30MPa STRENGTH AND DESIGNED FOR H-20 LOADING.
2. MODIFY OPENINGS FOR ROLLOVER FRAME AND GRATE.

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CATCH BASIN - TOP SLAB

SS-S11c

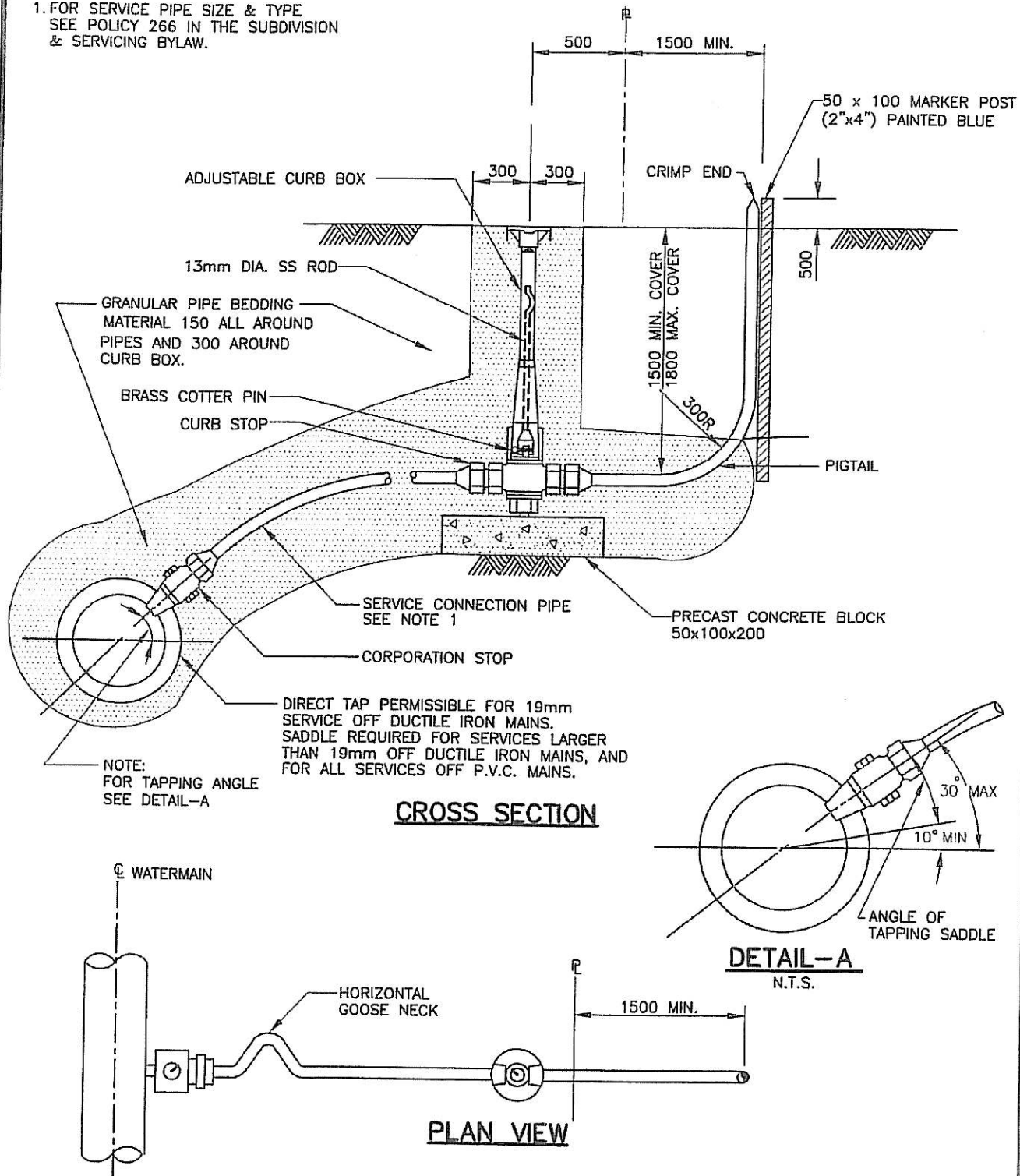
APRIL 15/08

PROPOSED

# STANDARD DETAIL DRAWINGS

## NOTES:

1. FOR SERVICE PIPE SIZE & TYPE  
SEE POLICY 266 IN THE SUBDIVISION  
& SERVICING BYLAW.



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WATER SERVICE CONNECTION

APRIL 15/08

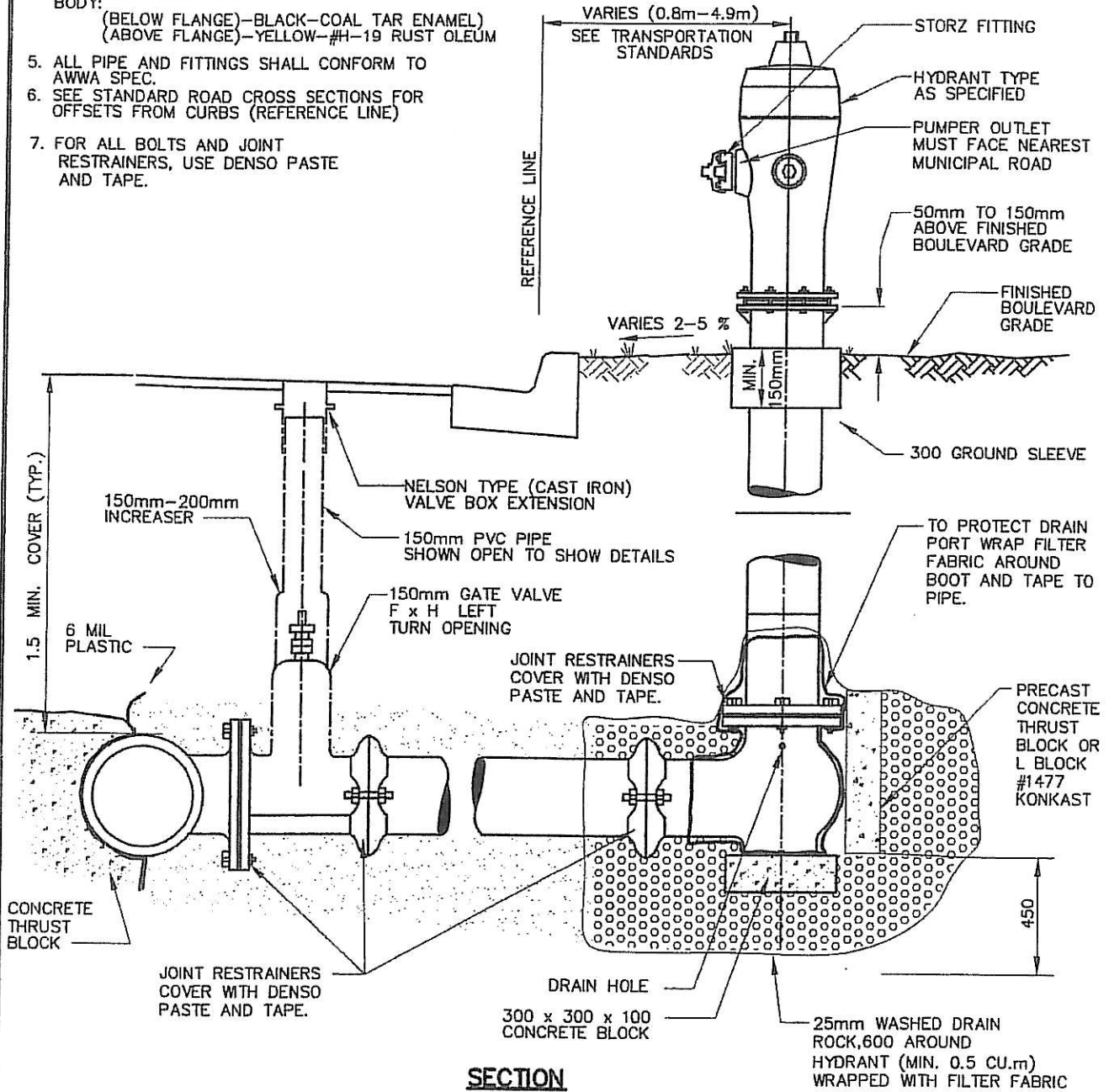
SS-W2  
PROPOSED



# STANDARD DETAIL DRAWINGS

**NOTES:**

1. HYDRANTS - IN ACCORDANCE WITH APPROVED PRODUCTS LIST.
2. HYDRANTS SHALL HAVE 2 - 63.5mm OUTLETS B.C. STANDARD  
1 - 100mm PUMPER OUTLET WITH STORZ FITTING
3. ALL HYDRANTS TO HAVE 300DIA. GROUND SLEEVE (SDR 35 PVC)
4. HYDRANT COLOR CODE  
BODY:  
(BELOW FLANGE)-BLACK-COAL TAR ENAMEL  
(ABOVE FLANGE)-YELLOW-#H-19 RUST OLEUM
5. ALL PIPE AND FITTINGS SHALL CONFORM TO AWWA SPEC.
6. SEE STANDARD ROAD CROSS SECTIONS FOR OFFSETS FROM CURBS (REFERENCE LINE)
7. FOR ALL BOLTS AND JOINT RESTRAINERS, USE DENSO PASTE AND TAPE.



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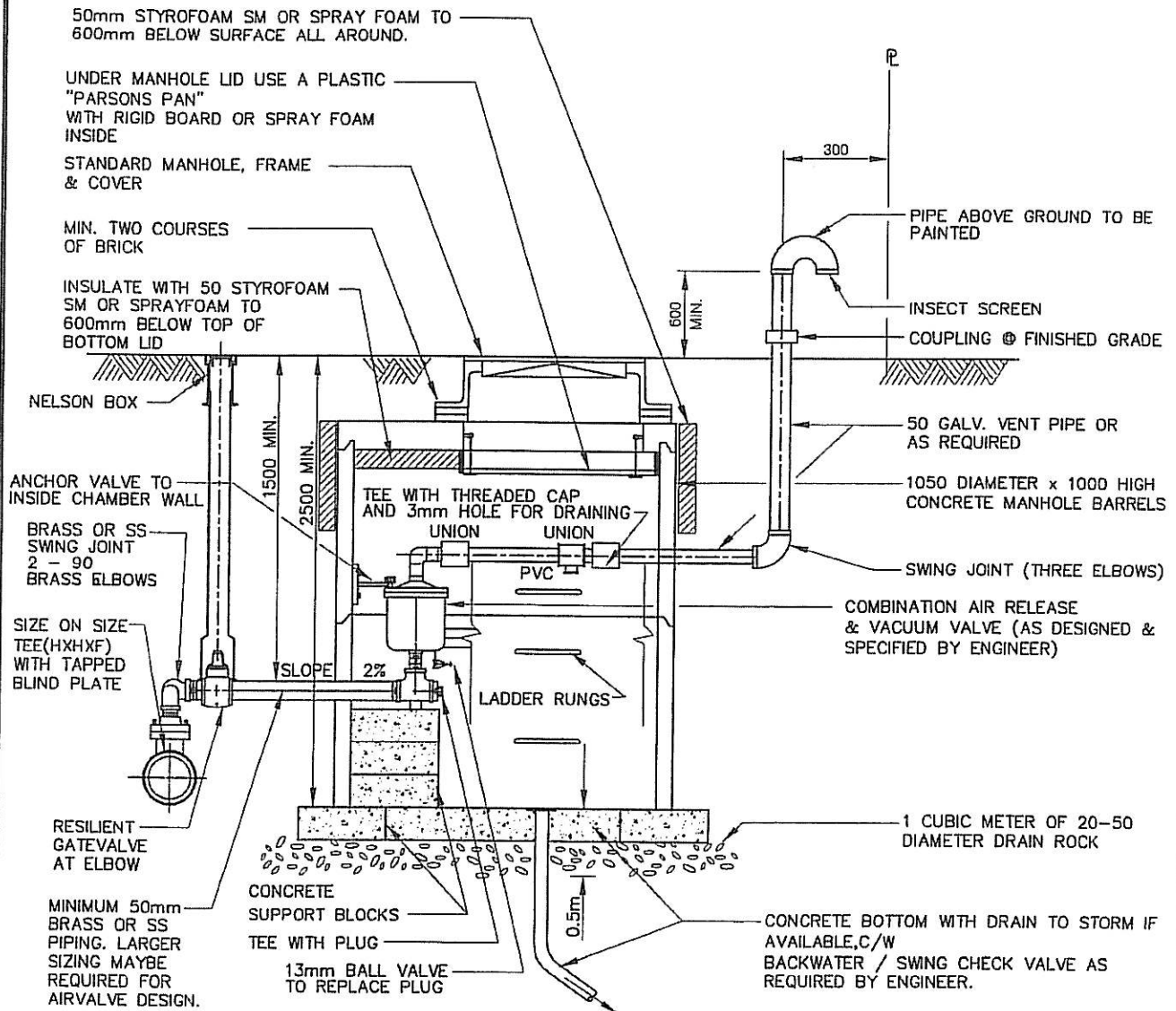
HYDRANT

SS-W4

APRIL 15/08

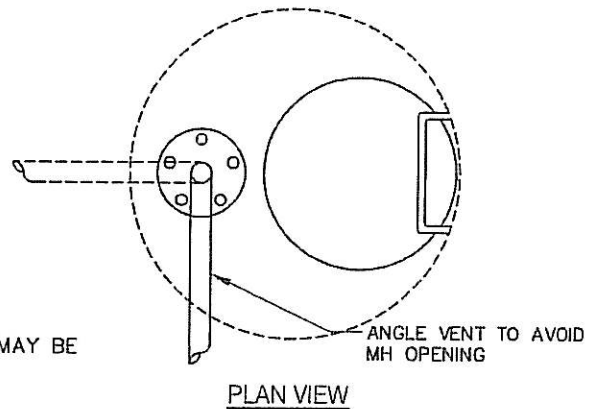
PROPOSED

# STANDARD DETAIL DRAWINGS



## NOTES:

1. AIR VALVE ASSEMBLY IS FOR 25 OR 50 AIR VALVES
2. LOCATE AIR VALVE AWAY FROM TRAFFIC (i.e. BOULEVARD)
3. LOCATE VENT PIPE AWAY FROM LADDER RUNGS.
4. ABOVE GROUND INSTALLATIONS (SHUCH AS "HOT BOXES") MAY BE REQUIRED BY THE UTILITY.

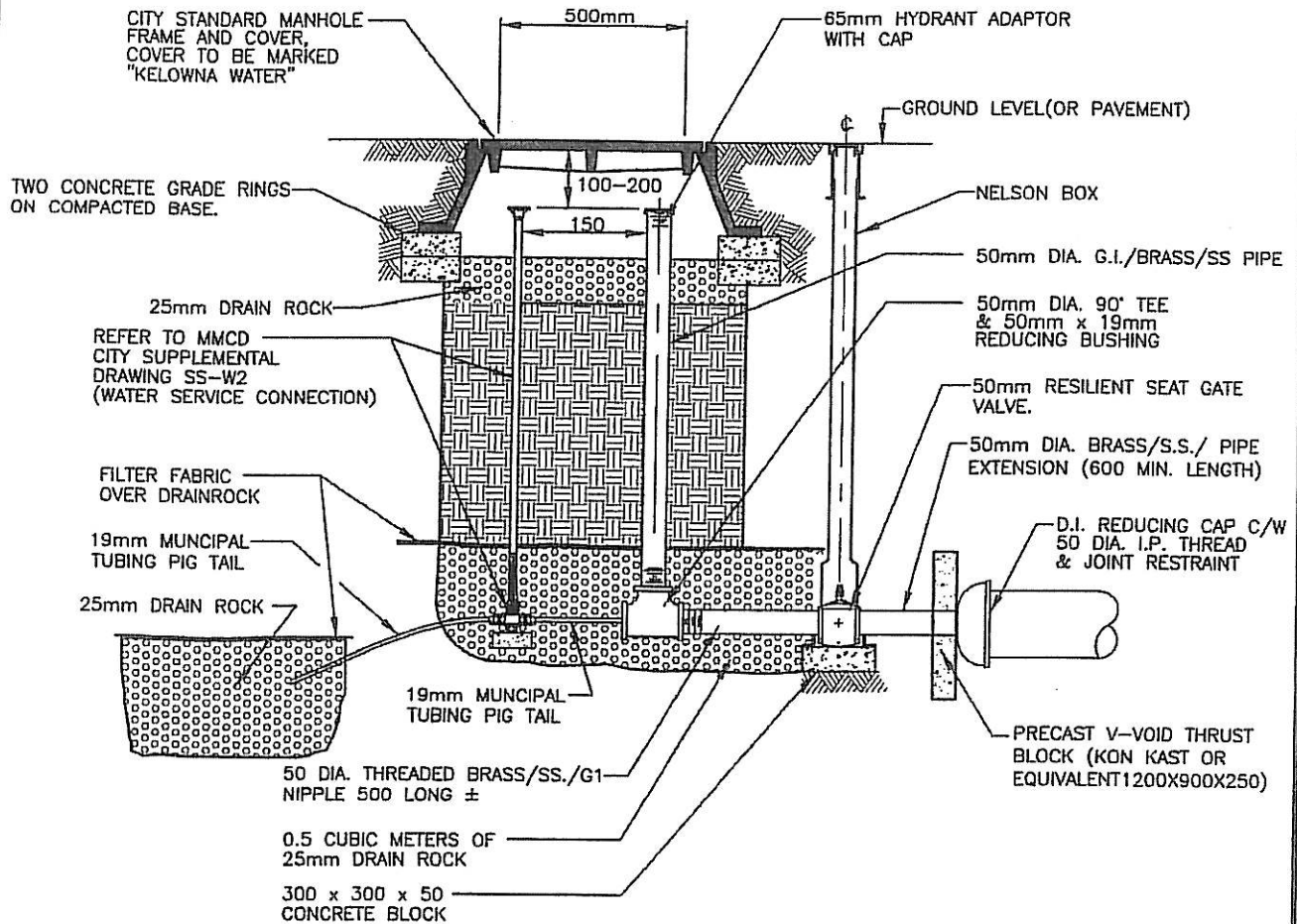


AIR VALVE ASSEMBLY

SS-W6  
PROPOSED

APRIL 15/08

# STANDARD DETAIL DRAWINGS



## NOTES:

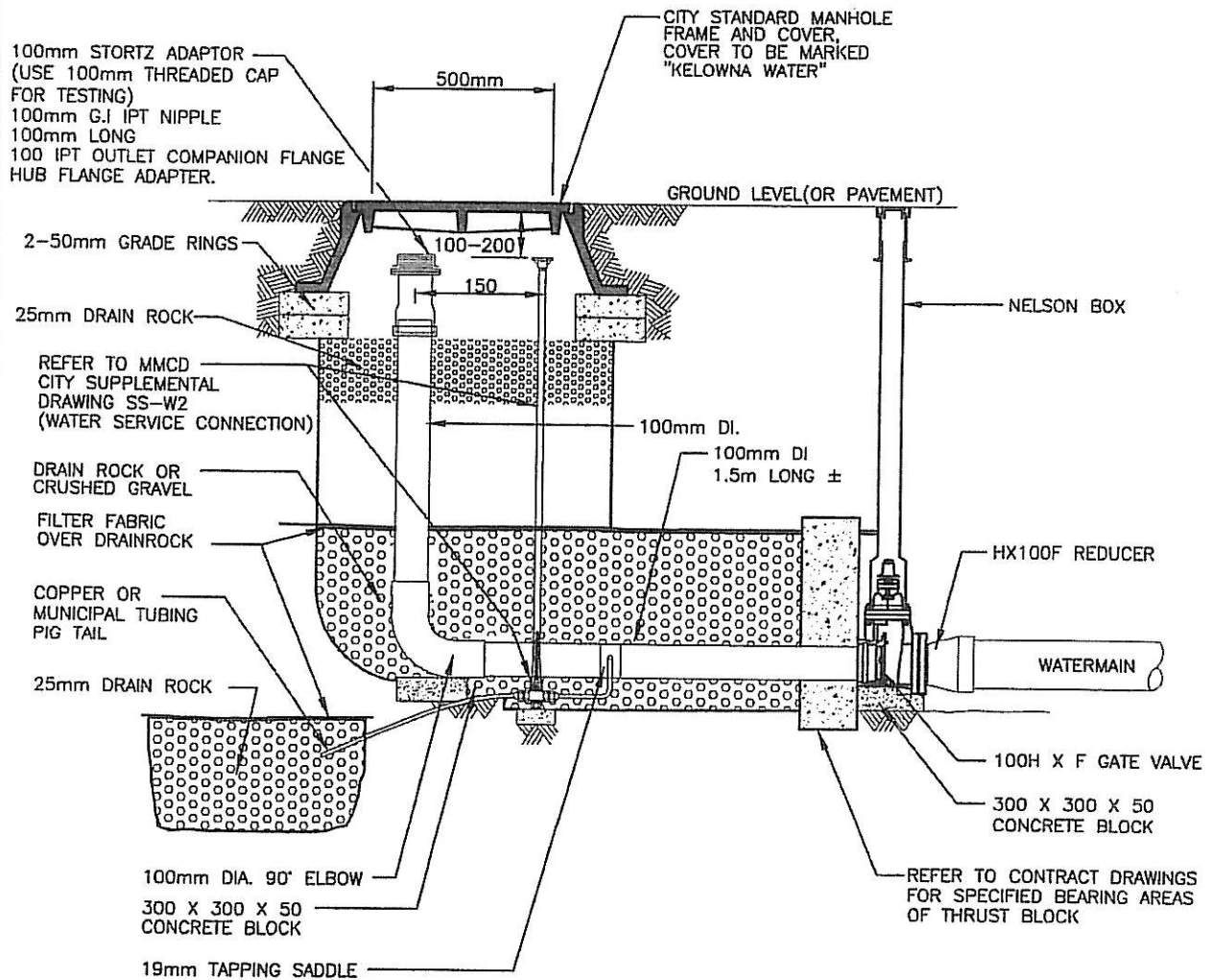
1. SIZE BLOW-OFF ASSEMBLY TO ACHIEVE SPECIFIED MAIN FLUSHING VELOCITY.
2. ENTIRE ASSEMBLY TO BE PRESSURE TESTED.
3. FOR ALL BOLTS AND JOINT RESTRAINERS USE DENSO PASTE AND TAPE.

**50mm BLOW-OFF**  
(FOR MAINS 100mm & SMALLER)

APRIL 15/08

**SS-W8a**  
PROPOSED

# STANDARD DETAIL DRAWINGS



## NOTES:

1. USE JOINT RESTRAINTS FOR ALL JOINTS.
2. ALL JOINT RESTRAINTERS TO BE APPROVED AS PER POLICY 266 IN THE CITY OF KELOWNA SUBDIVISION AND SERVICING BYLAW.
3. ALL JOINTS TO BE RESTRAINED AS PER MMCD 02666, 2.2.13 AND THE CITY OF KELOWNA SUBDIVISION AND SERVICING BYLAW SCHEDULE 4 WATER, SECTION 1.13, AND/OR AS SPECIFIED IN THE CONTRACT DOCUMENTS OR DRAWINGS.
4. ENTIRE ASSEMBLY TO BE PRESSURE TESTED.
5. FOR ALL BOLTS AND JOINT RESTRAINERS, USE DENSO PASTE AND TAPE.
6. PVC C900 PIPE MAYBE APPROVED BY UTILITIES OTHER THAN THE CITY

100mm BLOW-OFF  
( FOR MAINS 150mm & LARGER )

APRIL 15/08

SS-W8b  
PROPOSED