NOTES:

1. THIS DRAWING SHALL BE USED IN ACCORDANCE WITH SECTION 5.0 OF THE MANUAL OF ENGINEERING STANDARDS AND SPECIFICATIONS, LATEST EDITION.
2. NOMINAL TRENCH WIDTH FOR SERVICE CONNECTION TO BE 600mm.
3. CONCRETE SERVICE BOX SHALL BE INSTALLED AS PART OF THE INITIAL SERVICE INSTALLATION AS PER SECTION 5.56.6
4. FOR 19mm and 25mm DIA. WATER CONNECTION, SERVICE BOXES SHALL BE CONCRETE WITH TOUCH READ CAST IRON LIDS.
5. FOR 38mm AND 50mm DIA. WATER CONNECTION, SERVICE BOXES SHALL BE CONCRETE WITH STEEL TOUCH READ TRAFFIC LIDS.
6. WHEN SERVICE BOX IS WITHIN A CONCRETE DRIVEWAY, CONCRETE ADJACENT TO THE SERVICE BOX MUST BE A MINIMUM OF 150mm THICK FOR A MINIMUM DISTANCE OF 150mm AROUND THE OUTSIDE EDGES OF THE SERVICE BOX.
7. TRACER WIRE SHALL BE 14 GAUGE AND BLUE IN COLOUR AS PER SECTION 5.30.1. TRACER WIRE SHALL BE INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATIONS AND BE ATTACHED TO THE THE CORPORATION STOP AND RUN ON TOP OF THE SERVICE PIPE TO THE CURB STOP WHERE IT SHALL BE COILED NEATLY WITHIN THE BOX WITH 600mm OF SURPLUS LENGTH. TRACER WIRE SHALL BE SECURED TO THE SERVICE PIPE AT 1.0m INCREMENTS USING ELECTRICAL TAPE. WIRE SHALL NOT BE WRAPPED AROUND THE SERVICE PIPE.
8. ONLY PRODUCTS LISTED IN THE CITY OF NANAIMO APPROVED PRODUCTS LIST WILL BE ACCEPTED FOR INSTALLATION.
9. ALL DIMENSIONS ARE MILLIMETERS UNLESS NOTED OTHERWISE.
NOTES:

1. NOMINAL TRENCH WIDTH FOR FLUSHOUT IS 600mm
   VALVE BOX NOT TO CONFLICT WITH CURB AND GUTTER
   CURB AND GUTTER NOT SHOWN

2. 150Ø x 200 PIPE TO BE PLACED AROUND PIPE
   AT DRAIN HOLE TO PREVENT EROSION.

3. ABOVE GROUND FLUSHOUT TO BE RESTRAINED
   AS PER THRUST BLOCK OR RESTRAINER METHOD
   AT THE DISCRETION OF THE ENGINEER.

4. WHEN RESTRAINER METHOD IS USED, RESTRAIN AS PER
   MANUFACTURER’S RECOMMENDATIONS.

5. ONLY PRODUCTS APPROVED BY CITY ENGINEER AND
   LISTED IN THE CITY OF NANAIMO APPROVED PRODUCTS
   LIST WILL BE ACCEPTED FOR INSTALLATION

6. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

THRU BLOCK METHOD

RESTRAINER METHOD
NOTES:

1. NOMINAL TRENCH WIDTH FOR FLUSHOUT IS 600mm.
   VALVE BOX NOT CONFLICT WITH CURB AND GUTTER.
   CURB AND GUTTER NOT SHOWN.

2. LETTERING ON MANHOLE COVER SHALL REFER TO
   "CITY OF NANAIMO WATERWORKS." LETTERING SHALL BE 25 FLATTENED FACE
   GOTHIC LETTERING WITH FACE OF LETTERS RAISED TO THE
   SAME ELEVATION AS THE TOP OF THE RIBS.

3. NOT TO BE USED IN AREAS WHERE WATER TABLE
   COULD BE ABOVE FIRE HOSE CONNECTION.

4. SURROUNDING GRADE TO DRAIN AWAY FROM COVER.

5. 150Ø x 200 PIPE TO BE PLACED AROUND PIPE
   AT DRAIN HOLE TO PREVENT EROSION.

6. FLUSHOUTS LOCATED ON GRAVEL ROADS OR SHOULDERS
   REQUIRE A 1.5m X 1.5m HOT MIX ASPHALT APRON,
   50mm THICK.

7. BELOW GRADE FLUSHOUT TO BE RESTRAINED AS PER
   THRUST BLOCK OR RESTRAINER METHOD AT THE
   DISCRETION OF THE ENGINEER.

8. WHEN RESTRAINER METHOD IS USED, RESTRAIN AS PER
   MANUFACTURER'S RECOMMENDATIONS.

9. ONLY PRODUCTS APPROVED BY CITY ENGINEER AND
   LISTED IN THE CITY OF NANAIMO APPROVED PRODUCTS
   LIST WILL BE ACCEPTED FOR INSTALLATION.

10. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE
    SHOWN.

THRU SP TIE RODS

RESTRAINER METHOD
NOTES:
1. CHAMBERS LOCATED ON GRAVEL ROADS OR SHOULDERS REQUIRE A 1.5m x 1.5m HOT MIX ASPHALT APRON, 50 THICK
2. PLACE FILTER CLOTH OVER DRAIN ROCK PRIOR TO BACKFILL.
3. ABOVE GROUND VENT PIPING TO BE PAINTED FOREST GREEN.
4. PRECAST CB BARREL SHALL BE AN ACCEPTABLE ALTERNATIVE TO MANHOLE BARREL AND POURED IN PLACE BASE.
5. ONLY PRODUCTS APPROVED BY THE CITY ENGINEER AND LISTED IN APPROVED PRODUCTS LIST WILL BE ACCEPTED FOR INSTALLATION
6. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE SHOWN.

AIR RELEASE VALVE ASSEMBLY AND CHAMBER FOR 15000 - 30000 MAIN

Engineering Standards & Specifications
November 2016 Edition
NOTES:
1. FOR HYDRANT OFFSETS REFER TO DESIGN DRAWINGS. AT NO TIME SHALL HYDRANTS BE CONSTRUCTED CLOSER THAN 1.0 METERS TO THE PROPERTY LINE.
2. HOSE AND PUMP NOZZLE MUST FACE CURB.
3. HYDRANT FLANGES SHALL BE SET 150 - 200mm ABOVE A POINT 2% UP FROM THE TOP OF THE CURB OR FROM THE TOP OF THE EDGE OF THE ASPHALT WHERE THERE IS NO CURB UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER.
4. VALVE BOXES LOCATED OUTSIDE PAVED AREAS REQUIRE A 1.5m X 1.5m HOTMIX ASPHALT APRON, 50mm THICK.
5. FOR VALVE NUT EXTENSION REQUIREMENTS REFER TO STD. DWG. NO. W-16.
6. ONLY PRODUCTS APPROVED BY THE CITY ENGINEER AND LISTED IN THE CITY OF NANAIMO APPROVED PRODUCTS LIST WILL BE ACCEPTED FOR CONSTRUCTION.
7. OUT OF SERVICE HYDRANTS SHALL BE BAGGED AS PER 5.52.2(h).
THE SANDBAG BULKHEADS REQUIRE CURVED WING WALLS TO FUNNEL THE FLOW.

1. **NOTES**

   **STANDARD SANDBAGS**
   Filled with 15 MPa Wet Pre-Mixed Concrete

   **TYPICAL DITCH SECTION**
   At Culvert Inlets and Outlets.

   **15M REBAR TIES**
   Bent over on top

   **DITCH GRADE**
   150mm

   **P"**
   **100mm CRUSHED GRAVEL**
   (20mm minus)

   **IMPORTED BACKFILL**

   **GRADE TO DRAIN**

   **FINISHED GRADE**

   **STANDARD SANDBAGS**
   Filled with 15 MPa Wet Pre-Mixed Concrete

   **SECTION A-A**

   **ELEVATION**

   **CULVERT 300mm Ø MIN.**
   **OR AS DIRECTED**

   **TYPICAL DITCH SECTION**
   **AT CULVERT INLETS AND OUTLETS.**

   **ELEVATION**

   **NOTES**

   1. IF THE HORIZONTAL DIRECTION OF FLOW AT CULVERT INLETS AND OUTLETS EXCEEDS 30°, THE SANDBAG BULKHEADS REQUIRE CURVED WING WALLS TO FUNNEL THE FLOW.

   2. ONLY PRODUCTS APPROVED BY THE CITY ENGINEER AND LISTED IN THE CITY OF NANAIMO APPROVED PRODUCTS LIST WILL BE ACCEPTED FOR INSTALLATION.
**MINIMUM THRUST AREAS FOR FITTINGS AT 1034 kPA PRESSURE AND FOR SOILS WITH MIN. BEARING OF 96kPA**

<table>
<thead>
<tr>
<th>TYPE OF FITTING</th>
<th>FITTING SIZE</th>
<th>OUTSIDE OF FITTING TO BEARING FACE</th>
<th>LENGTH</th>
<th>HEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>90° BEND</td>
<td></td>
<td>D 150 W 300 H 100</td>
<td>450</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>D 200 W 350 H 105</td>
<td>600</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>D 250 W 375 H 145</td>
<td>750</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>D 300 W 400 H 1650</td>
<td>900</td>
<td></td>
</tr>
<tr>
<td>45° BEND</td>
<td></td>
<td>D 150 W 300 H 450</td>
<td>450</td>
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<td></td>
<td>D 200 W 350 H 600</td>
<td>600</td>
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<td></td>
<td>D 250 W 375 H 750</td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>D 300 W 400 H 900</td>
<td>900</td>
<td></td>
</tr>
<tr>
<td>11 1/4° BEND</td>
<td></td>
<td>D 150 W 300 H 450</td>
<td>225</td>
<td></td>
</tr>
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<td>D 200 W 350 H 600</td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>D 250 W 375 H 835</td>
<td>450</td>
<td></td>
</tr>
<tr>
<td>22 1/2° BEND</td>
<td></td>
<td>D 300 W 400 H 900</td>
<td>450</td>
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</tr>
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<td></td>
<td>D 150 W 300 H 600</td>
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<td></td>
<td>D 250 W 375 H 1000</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>D 300 W 400 H 1200</td>
<td>450</td>
<td></td>
</tr>
</tbody>
</table>

**NOTES:**

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. DIMENSIONS APPLY TO THE LARGER DIAMETER END OF THE FITTING.
3. FOR CONCRETE SPECIFICATIONS SEE SECTION 11.
4. CONCRETE MINIMUM COMPRESSIVE STRENGTH SHALL BE 20MPa @ 28DAYS.
5. WHERE GROUND CANNOT BE EXCAVATED TO FREE STANDING UNDISTURBED SOIL, SMALL PLANK SHEET PILING SHALL BE DRIVEN TO PROVIDE UNDISTURBED THRUST AREA. PILING TO BE DRIVEN PRIOR TO EXCAVATING FOR THRUST BLOCK. PILING SHOULD BE USED ONLY BELOW THE PERMANENT WATER TABLE.

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**THRUST BLOCK DETAILS**

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**Scale:** NTS  
**Created:** MAY 2006  
**Rev Date:** NOV 2016  
**Dwg No:** W-8

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**Engineering Standards & Specifications**  
**November 2016 Edition**
1. FOR USE ONLY WHERE VALVE BOXES ARE LOCATED OUTSIDE THE PORTION OF A STREET.

2. THE VALVE MARKER SHALL BE LOCATED ON SITE BY THE ENGINEER, WITH THE FLATTENED END AND MARKED DISTANCE FACING THE VALVE BOX.

3. VALVE BOXES IN UNPAVED AREAS REQUIRE A 1.5m x 1.5m HOTMIX ASPHALT APRON, 50mm THICK.

4. FOR VALVE NUT EXTENSION REQUIREMENTS REFER TO STD. DWG. NO. W-16

5. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE SHOWN.
NOTES:
1. USE THIS DRAWING ONLY AS A GUIDE. DETAIL DESIGN SHALL CONSIDER EXISTING SITE AND SOIL CONDITIONS AND INCLUDE STEEL REINFORCEMENT.
2. CONCRETE AND REINFORCING STEEL SHALL CONFORM TO SECTION 11.
3. DESIGN VAULT TO WITHSTAND CS600 LOADING.
4. SIZE VAULT TO PROVIDE MINIMUM CLEARANCES AS PER SECTION 5.13.
5. CHAMBERS LOCATED ON GRAVEL ROADS OR SHOULDERS REQUIRE A 1.5m X 1.5m HOT MIX ASPHALT PERIMETER APRON, 50mm THICK.
6. ONLY PRODUCTS APPROVED BY THE CITY ENGINEER AND LISTED IN THE CITY OF NANAIMO APPROVED PRODUCTS LIST WILL BE ACCEPTED FOR INSTALLATION.
7. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE SHOWN.
8. MINIMUM 200mm CLEAR DISTANCE FROM FLANGE OR BOLTED CONNECTION TO THE INSIDE WALL.

MINIMUM INTERVAL DIMENSION FOR THE PRECAST VAULT METER CHAMBER

<table>
<thead>
<tr>
<th>DOMESTIC/FIRE METER</th>
<th>LENGTH</th>
<th>WIDTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-150Ø</td>
<td>2000</td>
<td>1200</td>
</tr>
<tr>
<td>150-250Ø</td>
<td>2600</td>
<td>1200</td>
</tr>
</tbody>
</table>
NOTES:
1. CHAMBERS LOCATED IN UNPAVED AREAS REQUIRE 1.5m x 1.5m GRAVEL OR PAVED SURFACE.
2. COVER 0mm IN PAVEMENT OR 25mm IN UNPAVED AREAS.
3. ONLY PRODUCTS APPROVED BY THE DIRECTOR OF ENGINEERING AND PUBLIC WORKS AND LISTED IN THE CITY OF NANAIMO APPROVED PRODUCTS LIST WILL BE ACCEPTED FOR INSTALLATION.
4. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.
5. MINIMUM 200mm CLEAR DISTANCE FROM FLANGE OR BOLTED CONNECTION TO THE INSIDE WALL.
6. WATERTIGHT MANHOLE FRAME AND COVER WHEN SPECIFICALLY APPROVED BY THE ENGINEER.
NOTES:

1. BRACKETS TO BE CONSTRUCTED OUT OF 3mm ALUMINUM PLATE
2. BRACKETS TO BE MOUNTED WITH TWO 6mm STAINLESS STEEL BOLTS WITH LEAD ANCHORS
3. IN PRECAST MANHOLE METER CHAMBERS THE BRACKET SHALL BE MOUNTED BETWEEN THE FIRST AND SECOND LADDER RUNG
4. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN
NOTE:
1. THRUST BLOCKING TO BE INSTALLED AS REQUIRED.
2. METER ASSEMBLY TO BE SUPPORTED BY STEEL PIPE SUPPORTS AS REQUIRED
3. FABRICATED STEEL PIPE AND FITTING TO BE SCHEDULE 40 SANDBLASTED, EPOXY LINED, AND COATED TO AWWA C-210 & ANSI/NSF-61 SPECIFICATION
4. ONLY PRODUCTS APPROVED BY THE CITY ENGINEER OR LISTED IN THE CITY OF NANAIMO APPROVED PRODUCTS LIST WILL BE ACCEPTED FOR INSTALLATION. ONLY UL LISTED/FM APPROVED PRODUCTS SHALL BE APPROVED FOR FIRELINE SERVICE.
5. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

MATERIAL LIST

1. WATER METER (FIRE)
2. FLANGE COUPLING ADAPTER FOR STEEL PIPE
3. GALVANIZED STEEL ADJUSTABLE PIPE SUPPORT
4. PIPE SEAL ASSEMBLY
5. THRUST-SEAL PLATE C/W BOLTS
6. REINFORCED CONCRETE THRUST BLOCK TO SPAN ENTIRE WIDTH
7. COUPLING
8. SUMP JET (OPTIONAL)
9. STRAINER DRAIN ASSEMBLY
10. GATE VALVE
11. VALVE BOX C/W LOCKING LID
12. TEE
13. 90° ELBOW
14. COUPLING
MATERIAL LIST

1. GATE VALVE
2. WATER METER
3. FLANGED COUPLING ADAPTOR
4. SILENT CHECK VALVE
5. LOCKING BALL VALVE
6. COUPLING
7. TEST PORT WITH VALVE (FOR 1000 METERS OR LARGER)
8. THRUST RINGS, c/w REINFORCED CONCRETE THRUST BLOCK TO SPAN ENTIRE WIDTH

NOTES:
1. METER ASSEMBLY TO BE SUPPORTED BY STEEL PIPE SUPPORTS AS REQUIRED.
2. THRUST BLOCKING TO BE INSTALLED AS REQUIRED.
4. ONLY PRODUCTS APPROVED BY THE CITY ENGINEER AND LISTED IN THE CITY OF NANAIMO APPROVED PRODUCT LIST WILL BE ACCEPTED FOR INSTALLATION.
5. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.
MATERIAL LIST

1. GATE VALVE
2. WATER METER - DOMESTIC
3. CURB STOP
4. METER BOX
5. COUPLING
6. VALVE BOX

NOTES:
1. METER BY-PASS MAY BE INSTALLED OUTSIDE THE METER BOX. VALVES OUTSIDE THE METER BOX SHALL BE AS PER SECTION 5.30.8
2. ONLY PRODUCTS APPROVED BY THE CITY ENGINEER AND LISTED IN THE CITY OF NANAIMO APPROVED PRODUCT LIST WILL BE ACCEPTED FOR INSTALLATION
NOTES:
1. METER ASSEMBLY TO BE SUPPORTED BY STEEL PIPE SUPPORTS AS REQUIRED
2. THRUST BLOCKING TO BE INSTALLED AS REQUIRED
3. ONLY PRODUCTS APPROVED BY THE CITY ENGINEER AND LISTED IN THE CITY OF NANAIMO APPROVED PRODUCT LIST WILL BE ACCEPTED FOR INSTALLATION. ONLY UL/FM LISTED PRODUCTS SHALL BE APPROVED FOR FIRE LINE SERVICE
NOTES:

1. VALVE RISER PIPE IN TRAVELED AREAS SHALL BE 150Ø DR-18 PVC AND IN UNTRAVELED AREAS SHALL BE 150Ø DR-35 PVC AT THE DISCRETION OF THE ENGINEER.

2. VALVE BOX SHALL BE MR TYPE AS PER STD. DWG. NO. W-16A. NELSON-TYPE VALVE BOX SHALL BE USED IN NON-PAVED AREAS AT THE DISCRETION OF THE ENGINEER.

3. ALL MR AND NELSON BOX LIDS SHALL BE PARSONS LONG NECK.

4. ONLY PRODUCTS APPROVED BY THE CITY ENGINEER AND LISTED IN THE CITY OF NANAIMO APPROVED PRODUCTS LIST WILL BE ACCEPTED FOR CONSTRUCTION.

5. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.

6. NO TIE-DOWNS REQUIRED IF VALVE FLANGED TO RESTRAINED TEE.
NOTES:

1. FINISH COATING TO BE BITUMINOUS DIP.

2. ONLY PRODUCTS APPROVED BY THE CITY ENGINEER AND LISTED IN THE CITY OF NANAIMO APPROVED PRODUCT LIST WILL BE ACCEPTED FOR CONSTRUCTION.

3. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.
NOTE:

1.) CONCRETE NO POST BARRIER PROTECTION REQUIRED FOR VENTS WITHIN 4.0m OF ROADWAY

2.) ONLY PRODUCTS APPROVED BY THE CITY ENGINEER AND LISTED IN THE CITY OF NANAIMO APPROVED PRODUCTS LIST WILL BE ACCEPTED FOR INSTALLATION.

3.) ALL DIMENSION IN MILLIMETERS UNLESS OTHERWISE SHOWN.
REFERRING TO "CITY OF NANAIMO WATER", LETTERING SHALL BE 25 FLATTENED FACE GOTHIC WITH FACE OF LETTERS RAISED TO THE SAME LEVELS AS THE TOP OF THE RIBS (IN STATUTORY RIGHTS-OF-WAY INCLUDE THE WORDING "DO NOT COVER" ON THE MANHOLE LID).

MANUFACTURER'S SYMBOL 90 MAXIMUM DIMENSION CIRCLE OR SQUARE

2-210 HOLES

160 x 65 GALVANIZED STEEL CARRIAGE BOLT AND NUT

TO SIT FLUSH WITH COVER WHEN NOT EXTENDED

5/8" GALVANIZED WASHER REQUIRED ON CARRIAGE BOLT WHEN NUT PENETRATES INTO CASTING.

BURR THREADS

FRAMES INSTALLED ON 600Ø BARRELS SHALL NOT HAVE RIB

NOTES:
1. THIS DRAWING SHALL BE USED IN ACCORDANCE WITH SECTION 5.0 OF THE MANUAL OF ENGINEERING STANDARDS AND SPECIFICATIONS, LATEST EDITION.
2. CASTINGS SHALL BE CERTIFIED TO MEET CS-600 LOADING.
3. ALL BEARING SURFACES BETWEEN FRAME, COVER AND RISER RINGS SHALL BE MACHINED FOR NON-ROCKING FIT IN ALL POSITIONS. ALLOW 1.5mm RAISED FACE IN CASTINGS FOR MACHINING.
4. ONLY PRODUCTS LISTED IN THE CITY OF NANAIMO APPROVED PRODUCTS LIST WILL BE ACCEPTED FOR INSTALLATION.
5. ALL DIMENSIONS ARE MILLIMETERS UNLESS NOTED OTHERWISE.
NOTES:
1. THIS DRAWING SHALL BE USED IN ACCORDANCE WITH SECTION 5.0 OF THE MANUAL OF ENGINEERING STANDARDS AND SPECIFICATIONS, LATEST EDITION.
2. CASTINGS SHALL BE CERTIFIED TO MEET CS-600 LOADING.
3. THIS MANHOLE FRAME AND COVER IS TO BE USED FOR ACCESS TO UNDERGROUND UTILITY CHAMBERS, INCLUDING PUMPS STATIONS AND PRVs, WHERE A LARGER ACCESS DIAMETER IS REQUIRED.
4. FOR COVER LETTERING AND BOLTING REQUIREMENTS REFER TO STD. DWG. W-19 OR W-21.
5. ONLY PRODUCTS LISTED IN THE CITY OF NANAIMO APPROVED PRODUCTS LIST WILL BE ACCEPTED FOR INSTALLATION.
6. ALL DIMENSIONS ARE MILLIMETERS UNLESS NOTED OTHERWISE.
APPLICATION: UNITS ARE FOR USE IN AREAS WHERE FLOODING OR HIGH TIDES ARE POSSIBLE. THIS UNIT SHALL HAVE A POSITIONING LUG IN COVER FOR EASY REPLACEMENT OF CAP SCREWS AND SHALL BE EQUIPPED WITH FOUR ONLY 190 HOLES IN FRAME FOR ANCHOR BOLTS AS SHOWN.

REFERRING TO "CITY OF NANAIMO WATER", LETTERING SHALL BE 25 FLATTENED FACE GOTHIC WITH FACE OF LETTERS RAISED TO THE SAME LEVELS AS THE TOP OF THE RIBS (IN STATUTORY RIGHTS-OF-WAY INCLUDE THE WORDING "DO NOT COVER" ON THE MANHOLE LID).

WEIGHT OF UNIT SHOWN IS
FRAME = 113.4 kg
COVER = 56.7 kg

FURNISHED WITH:
A) FOUR 13x57 PENTA HEAD STAINLESS STEEL CAP SCREWS TO DISCOURAGE VANDALISM.
B) A 6mm THICK NEOPRENE GASKET FULLY ENCOMPASSING BOLT HOLES.
C) METAL SURFACES BETWEEN FRAME AND COVER MACHINED TO ENSURE NON ROCKING FIT IN ALL POSITIONS, ALLOW 1.5 RAISED FACE IN CASTING FOR MACHINING
D) MANUFACTURE BOLT HOLES TO PERMIT INTERCHANGING OF COVERS BETWEEN FRAME UNITS.

NOTES:
1. THIS DRAWING SHALL BE USED IN ACCORDANCE WITH SECTION 5.0 OF THE MANUAL OF ENGINEERING STANDARDS AND SPECIFICATIONS, LATEST EDITION.
2. CASTINGS SHALL BE CERTIFIED TO MEET CS-600 LOADING.
3. FRAME SHALL BE SET IN MORTAR AND BOLTED TO THE MANHOLE SLAB WITH 190 STAINLESS STEEL BOLTS, WASHERS AND NUTS.
4. THIS DRAWING TO BE READ IN ACCORDANCE WITH DRAWING W-11A.
5. ONLY PRODUCTS LISTED IN THE CITY OF NANAIMO APPROVED PRODUCTS LIST WILL BE ACCEPTED FOR INSTALLATION.
6. ALL DIMENSIONS ARE MILLIMETERS UNLESS NOTED OTHERWISE.