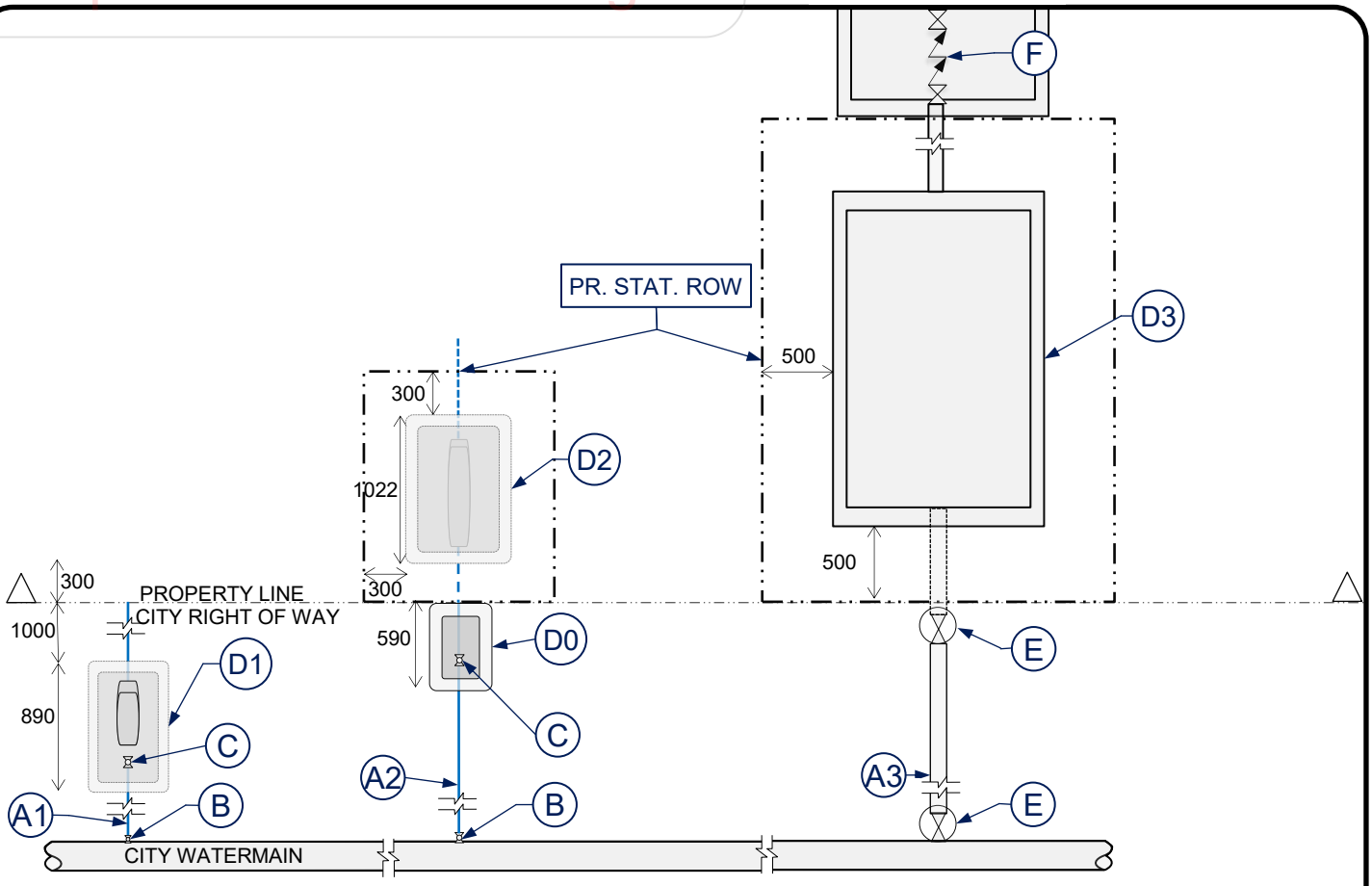


Item	Description	Clauses and Standard Drawings
A1	25 mm diameter PE or PEXa. Stainless Steel (SS) insert for PE service at ends	Section 5.06, Section 5.30, Section 5.56, Drawing W-1
A2	50 mm diameter PE or PEXa. Stainless Steel (SS) insert for PE service at ends	Section 5.06, Section 5.30, Section 5.56, Drawing W-1
A3	Service line greater than 50 mm diameter	
B	Corporation Stop with Saddle – sized to service line	Section 5.30 .2, Drawing W-1
C	Curb Stop, sized to service line, in meter box	Section 5.30 .3 Section 5.56. 6, Drawing W-1
D0	Concrete service box for curb stop	Section 5.56. 6, Section 5.57 .1, Drawing W-1B
D1	Meter box with meter setter for (19 mm and 25 mm). Meter supplied by City.	Section 5.56. 6, Section 5.57 .1, Drawing W-1A
D2	Meter box with meter setter with built-in bypass (38 mm and 50 mm). Designed by Professional of Record. Installation occur after subdivision and is applicant's responsibility.	Section 5.56. 6, Drawing W-1B
D3	Meter chamber with meter. Designed by Professional of Record and installation by applicant.	Drawing W-11; Drawing W-13
E	Gate valve in riser pipe	Drawing W-16, Drawing W-16A and Drawing W-9
F	Double check valve assembly (applicant's responsibility). Bypass requires detector meter. Meter and backflow prevention assembly can be installed in mechanical room, only if approved by City Engineer.	Section 5.72, Drawing W-15

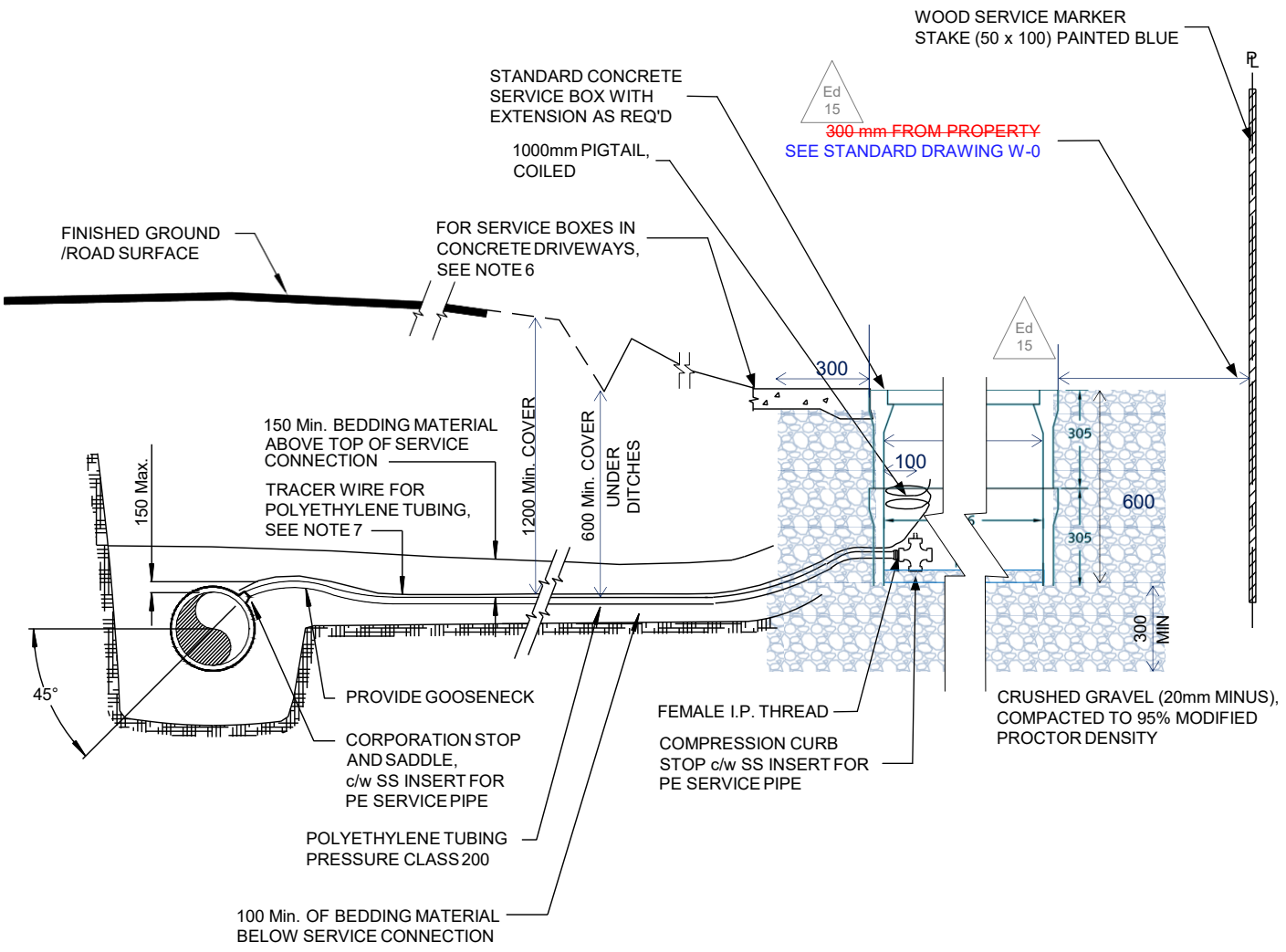
NOTES:

1. THIS DRAWING SHALL BE USED IN ACCORDANCE WITH SECTION 5.0.
2. ONLY PRODUCTS LISTED IN THE CITY OF NANAIMO APPROVED PRODUCTS LIST WILL BE ACCEPTED FOR INSTALLATION.
3. ALL DIMENSIONS ARE MILLIMETERS UNLESS NOTED OTHERWISE.

CITY OF NANAIMO
THE HARBOUR CITY

WATER SERVICE CONNECTION
INSTALLATION SCHEMATICS

Scale: N.T.S.
Created: 2025-04-30
Rev Date: 2025-10-30
Dwg No: W-0



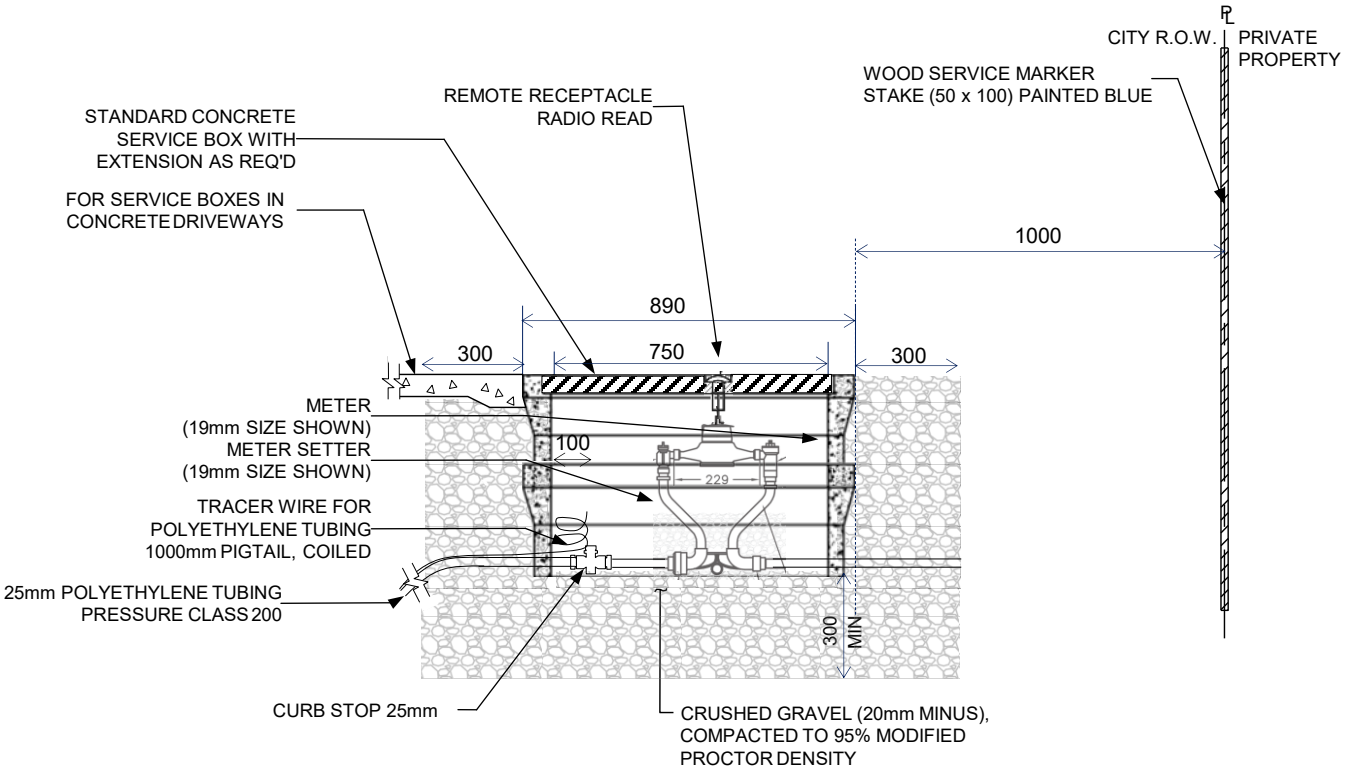
NOTES:

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 RADIO ~~TOUCH~~ READ CAST IRON LIDS. Ed 15
5. FOR ~~38mm AND~~ 50mm DIA. WATER CONNECTION, SERVICE BOXES SHALL BE CONCRETE WITH CAST IRON ~~STEEL TOUCH READ~~ TRAFFIC LIDS, AND BOXES WITH METER SETTERS AND METERS SHALL HAVE RADIO READ LIDS. REFER TO STANDARD DRAWING W-1B.
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 1000mm OF SURPLUS LENGTH. TRACER WIRE SHALL BE SECURED TO THE SERVICE PIPE AT 1.0m INCREMENTS USING ELECTRICAL TAPE OR NYLON TIES. WIRE SHALL NOT BE WRAPPED AROUND THE SERVICE PIPE. Ed 15
8. ONLY PRODUCTS LISTED IN THE CITY OF NANAIMO APPROVED PRODUCTS LIST WILL BE ACCEPTED FOR INSTALLATION. Ed 15
9. ALL DIMENSIONS ARE MILLIMETERS UNLESS NOTED OTHERWISE.
10. CONCRETE AS PER SECTION 11.0.

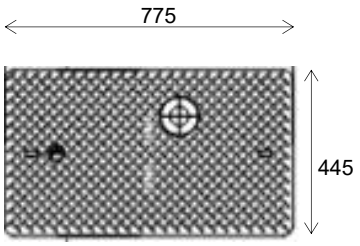
CITY OF NANAIMO
THE HARBOUR CITY

WATER SERVICE CONNECTION
(25Ø and 50Ø ~~19Ø TO 50Ø~~)

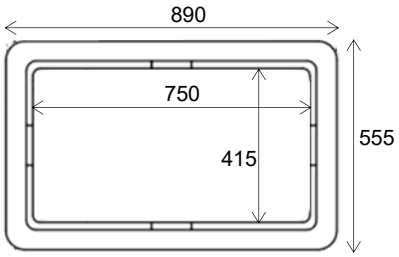
Scale: NTS
Created: MAR 2016
Rev Date: ~~MAY 2020~~
Dwg No: W-1
Ed 15



ELEVATION



CAST IRON COVER WITH REMOTE RECEPTACLE



PLAN

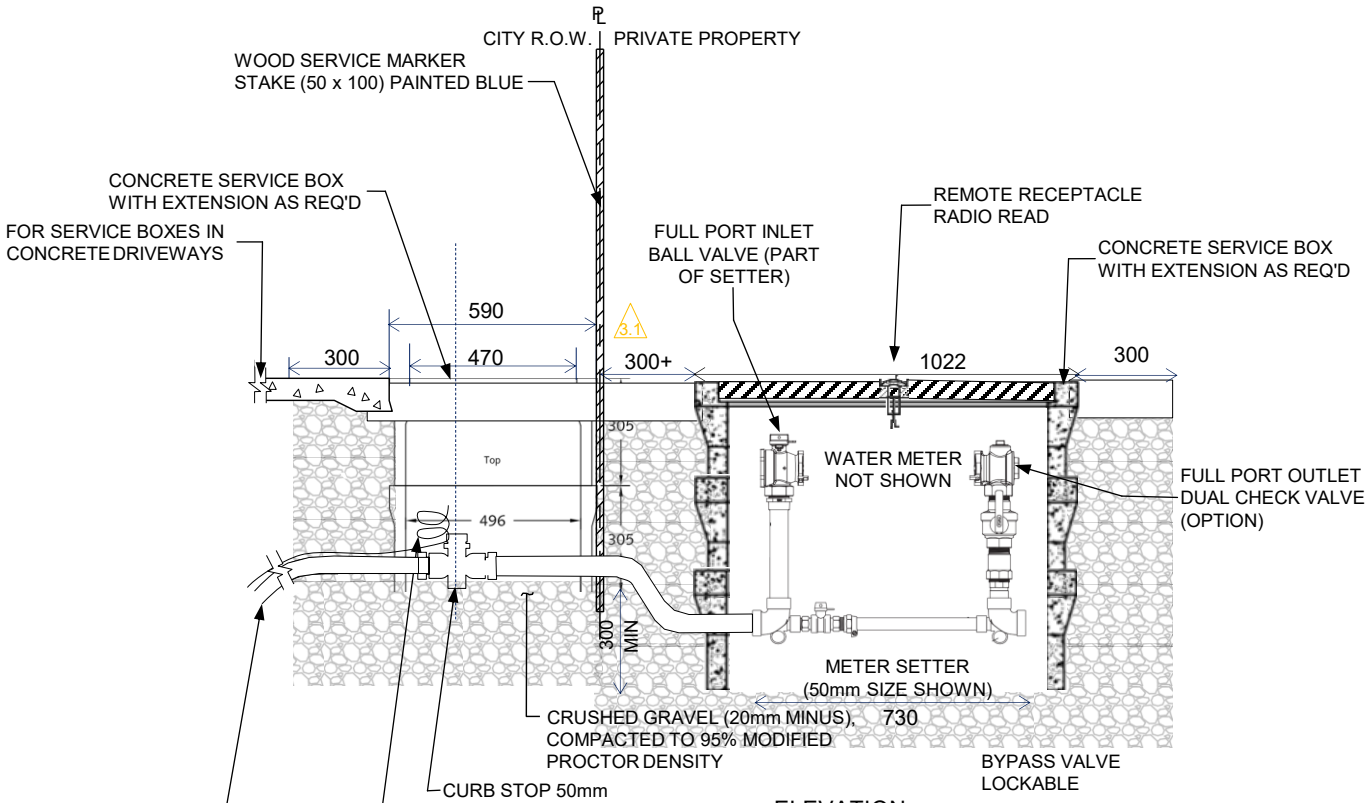
NOTES:

1. THIS DRAWING SHALL BE USED IN ACCORDANCE WITH SECTION 5.0 OF THE MANUAL OF ENGINEERING STANDARDS AND SPECIFICATIONS, LATEST EDITION.
2. CONCRETE AS PER SECTION 11.0.
3. ONLY PRODUCTS LISTED IN THE CITY OF NANAIMO APPROVED PRODUCTS LIST WILL BE ACCEPTED FOR INSTALLATION.
4. ALL DIMENSIONS ARE MILLIMETERS UNLESS NOTED OTHERWISE.
5. CONCRETE SERVICE BOX SHALL BE INSTALLED AS PART OF THE INITIAL SERVICE INSTALLATION AS PER SECTION 5.56.6
6. 25mm DIAMETER WATER CONNECTION, SERVICE BOXES SHALL BE CONCRETE WITH RADIO READ CAST IRON LIDS.
7. 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.
8. 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 CORPORATION STOP AND RUN ON TOP OF THE SERVICE PIPE TO THE CURB STOP WHERE IT SHALL BE COILED NEATLY WITHIN THE BOX WITH 1000mm OF SURPLUS LENGTH. TRACER WIRE SHALL BE SECURED TO THE SERVICE PIPE AT 1.0m INCREMENTS USING ELECTRICAL TAPE OR NYLON TIES. WIRE SHALL NOT BE WRAPPED AROUND THE SERVICE PIPE.

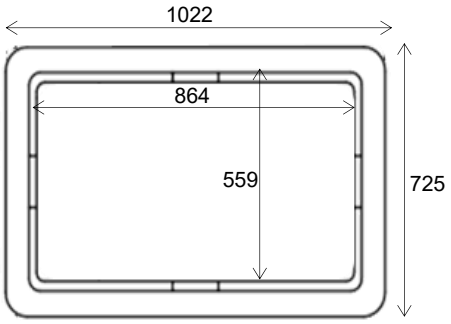
CITY OF NANAIMO
THE HARBOUR CITY

WATER METER SETTER AND METER
(19Ø AND 25Ø)

Scale:	N.T.S.
Created:	2025-04-30
Rev Date:	2025-10-30
Dwg No:	W-1A



ELEVATION



PLAN

NOTES:

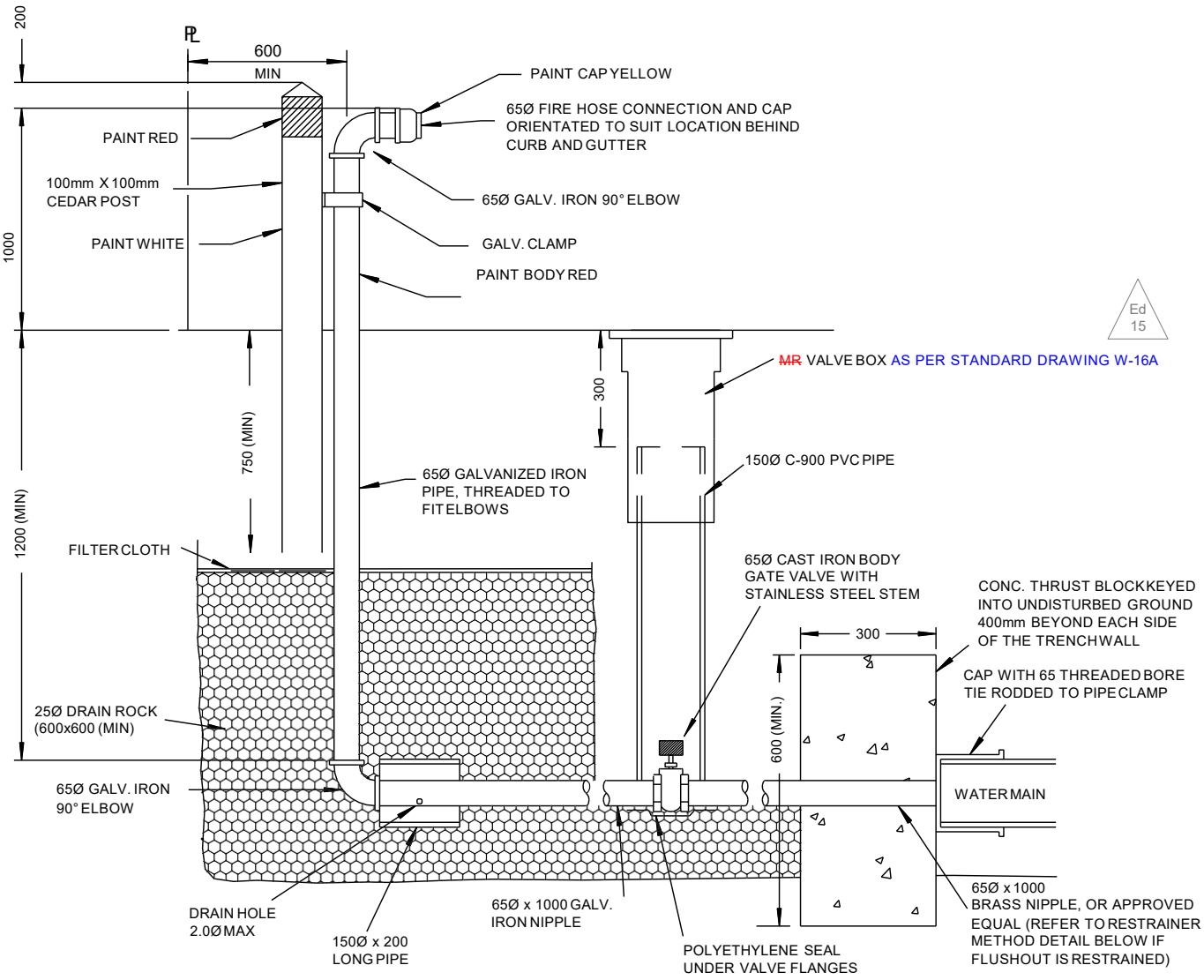
1. THIS DRAWING SHALL BE USED IN ACCORDANCE WITH SECTION 5.0 OF THE MANUAL OF ENGINEERING STANDARDS AND SPECIFICATIONS, LATEST EDITION.
2. CONCRETE AS PER SECTION 11.0.
3. ONLY PRODUCTS LISTED IN THE CITY OF NANAIMO APPROVED PRODUCTS LIST WILL BE ACCEPTED FOR INSTALLATION.
4. ALL DIMENSIONS ARE MILLIMETERS UNLESS NOTED OTHERWISE.
5. CONCRETE SERVICE BOX SHALL BE INSTALLED AS PART OF THE INITIAL SERVICE INSTALLATION AS PER SECTION 5.56.6.
6. 50mm DIA. WATER CONNECTION, SERVICE BOXES SHALL BE CONCRETE WITH CAST IRON TRAFFIC LIDS, AND BOXES WITH METER SETTERS AND METERS SHALL HAVE RADIO READ LIDS.
7. 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.
8. 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 CORPORATION STOP AND RUN ON TOP OF THE SERVICE PIPE TO THE CURB STOP WHERE IT SHALL BE COILED NEATLY WITHIN THE BOX WITH 1000mm OF SURPLUS LENGTH. TRACER WIRE SHALL BE SECURED TO THE SERVICE PIPE AT 1.0m INCREMENTS USING ELECTRICAL TAPE OR NYLON TIES. WIRE SHALL NOT BE WRAPPED AROUND THE SERVICE PIPE.

CITY OF NANAIMO
THE HARBOUR CITY

WATER METER SETTER AND METER
(35Ø AND 50Ø)

Scale: N.T.S.
Created: 2025-04-30
Rev Date: 2025-10-30
Dwg No: W-1B

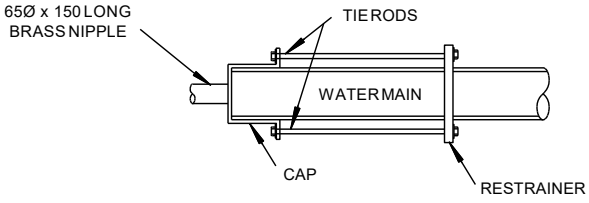
Ed 15



THRUST BLOCK METHOD

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.



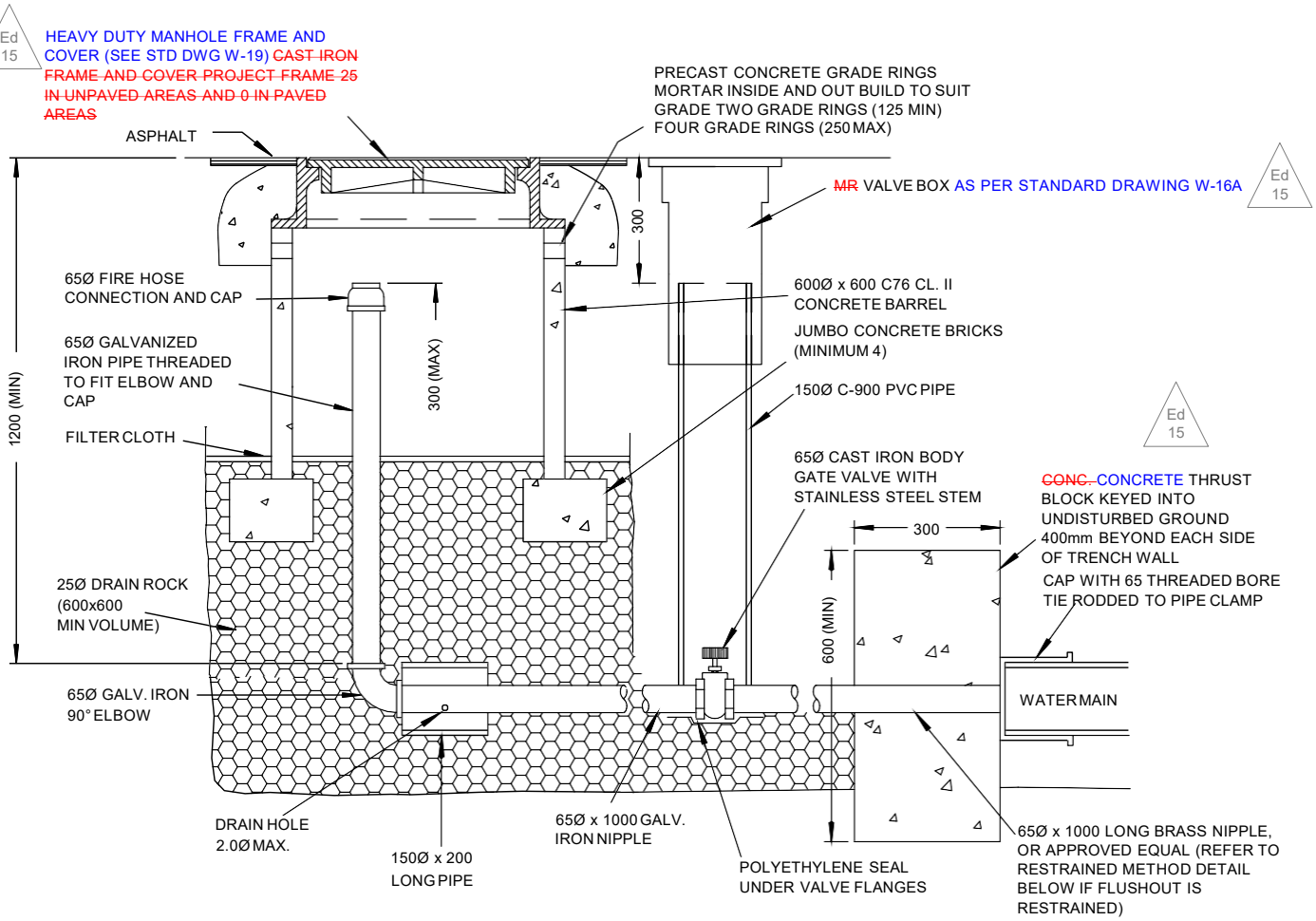
RESTRAINER METHOD

CITY OF NANAIMO
THE HARBOUR CITY

ABOVE GROUND FLUSHOUT C/W THRUST BLOCK AND OPTIONAL RETRAINED METHOD

Scale: NTS
Created: MAY 2013
Rev Date: ~~NOV 2016~~
Dwg No: W-2A

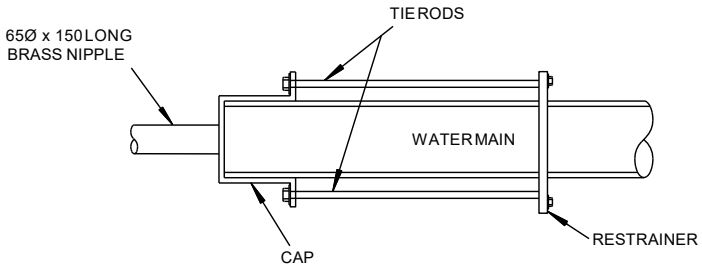
Ed 15



THRUST BLOCK 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~~ AS DESIGNED BY PROFESSIONAL OF RECORD. CONCRETE AS PER SECTION 11.0.
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 OR APPROVED BY CITY ENGINEER.
10. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

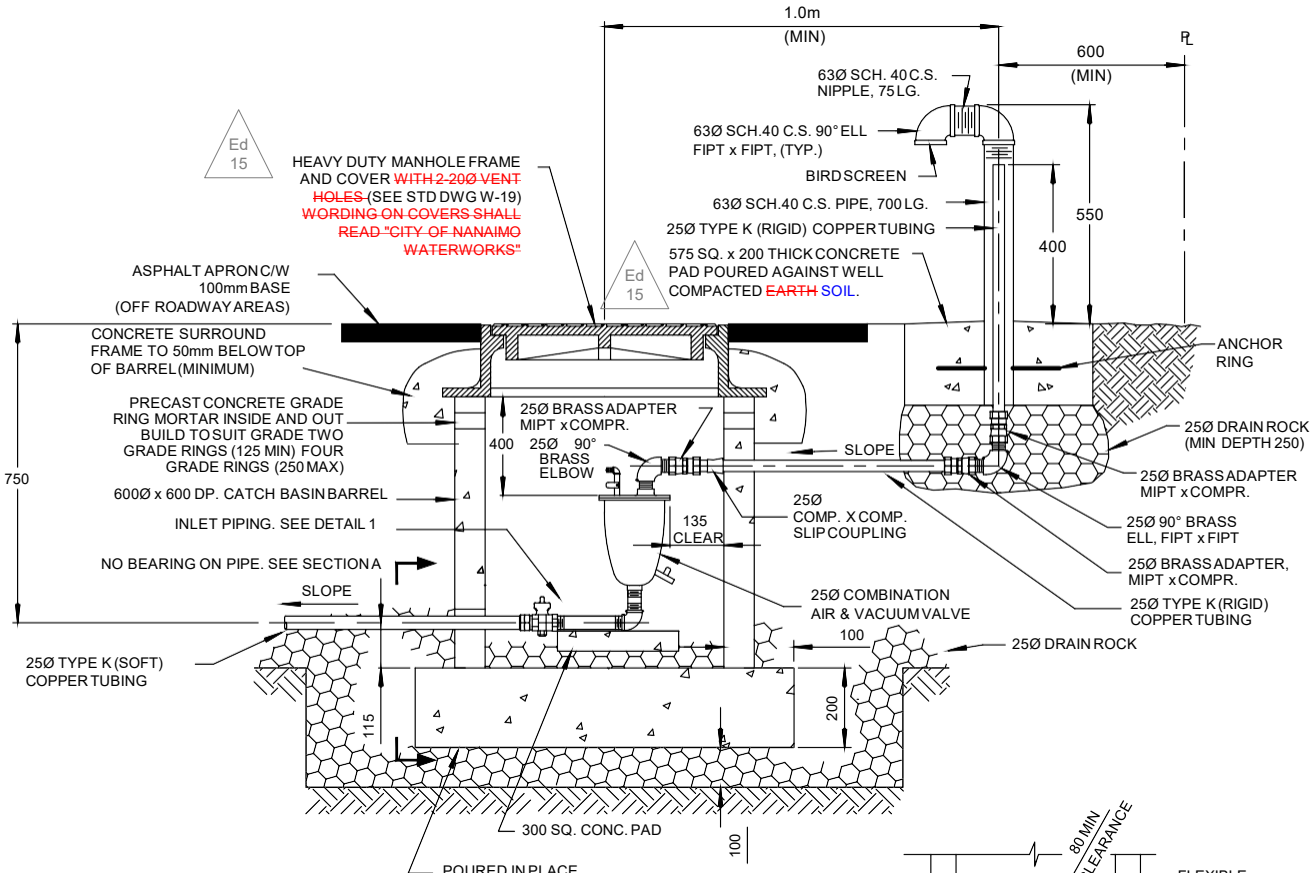


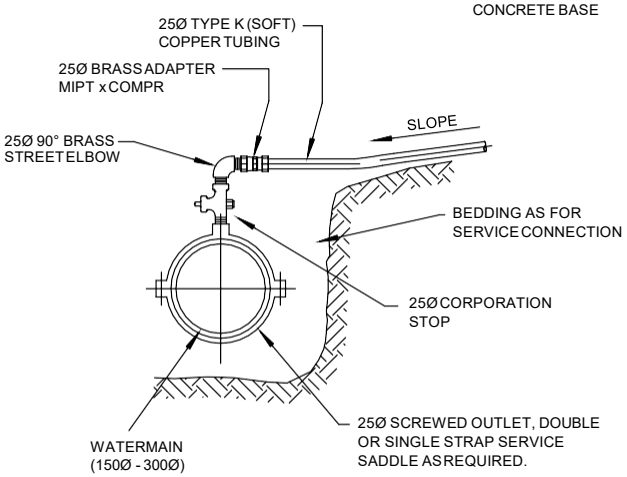
RESTRAINER METHOD

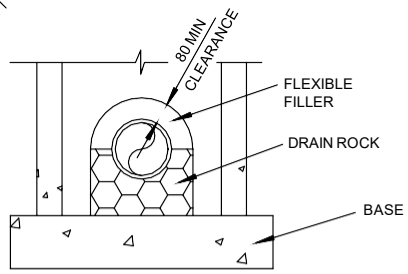
CITY OF NANAIMO
THE HARBOUR CITY

BELOW GROUND FLUSHOUT C/W THRUST BLOCK AND OPTIONAL RESTRAINED METHOD

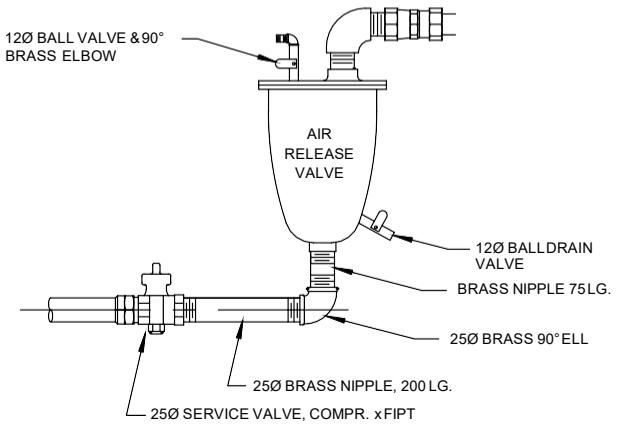
Scale: NTS
Created: NOV 2009
Rev Date: ~~NOV 2016~~
Dwg No: W-2B







SECTION A



DETAIL 1

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~~ CATCH BASIN BARREL SHALL BE AN ACCEPTABLE ALTERNATIVE TO MANHOLE BARREL AND POURED IN PLACE BASE.
5. ONLY PRODUCTS ~~APPROVED BY CITY ENGINEER AND~~ LISTED IN THE CITY OF NANAIMO APPROVED PRODUCTS LIST WILL BE ACCEPTED FOR INSTALLATION OR APPROVED BY CITY ENGINEER.
6. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE SHOWN.
7. CONCRETE AS PER SECTION 11.0.

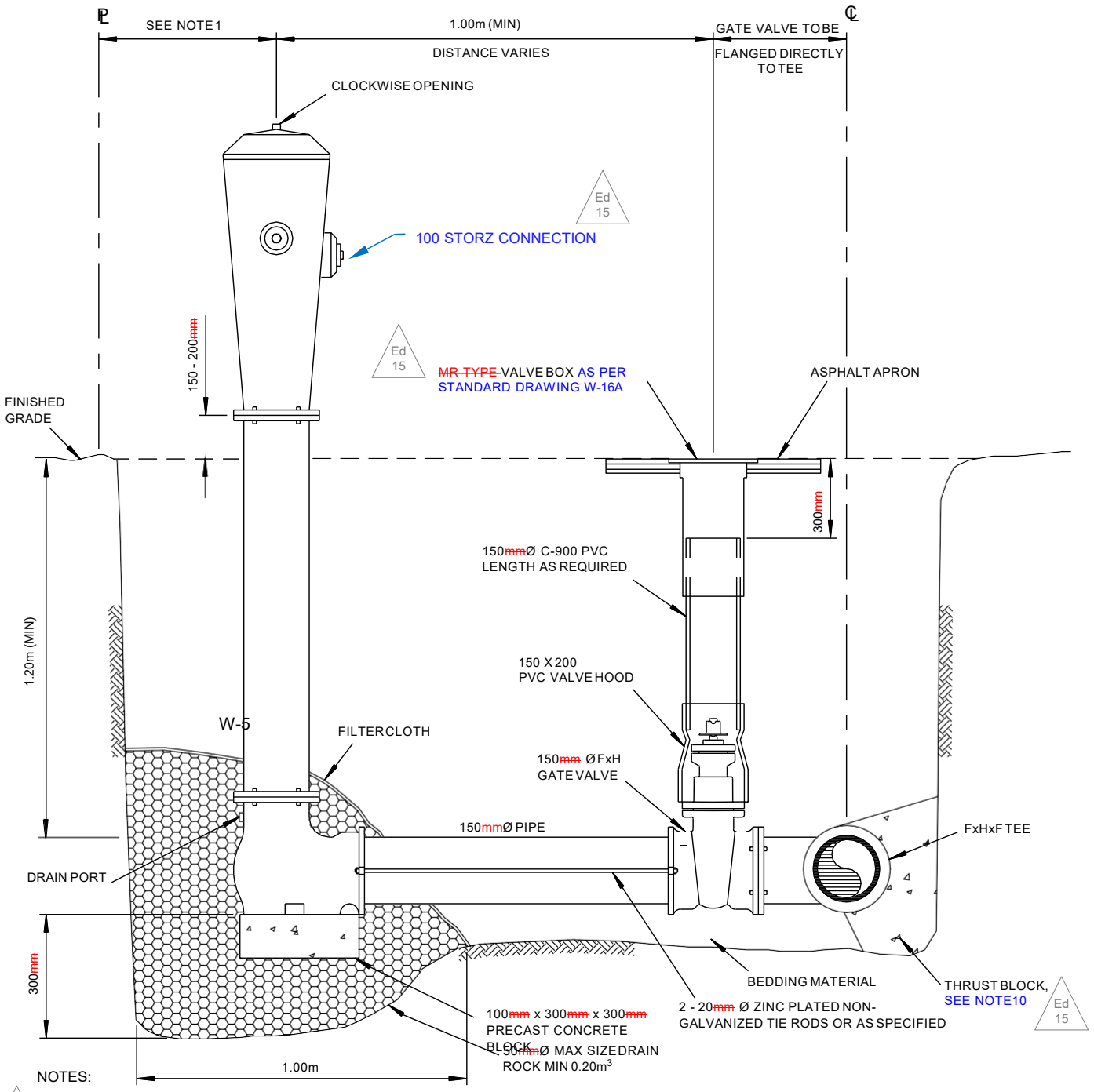
Ed 15 (4)

CITY OF NANAIMO
THE HARBOUR CITY

AIR RELEASE VALVE ASSEMBLY AND
CHAMBER FOR 150Ø - 300Ø MAIN

Scale: NTS
Created: MAY 2013
Rev Date: ~~NOV 2016~~
Dwg No: W-4

Ed 15



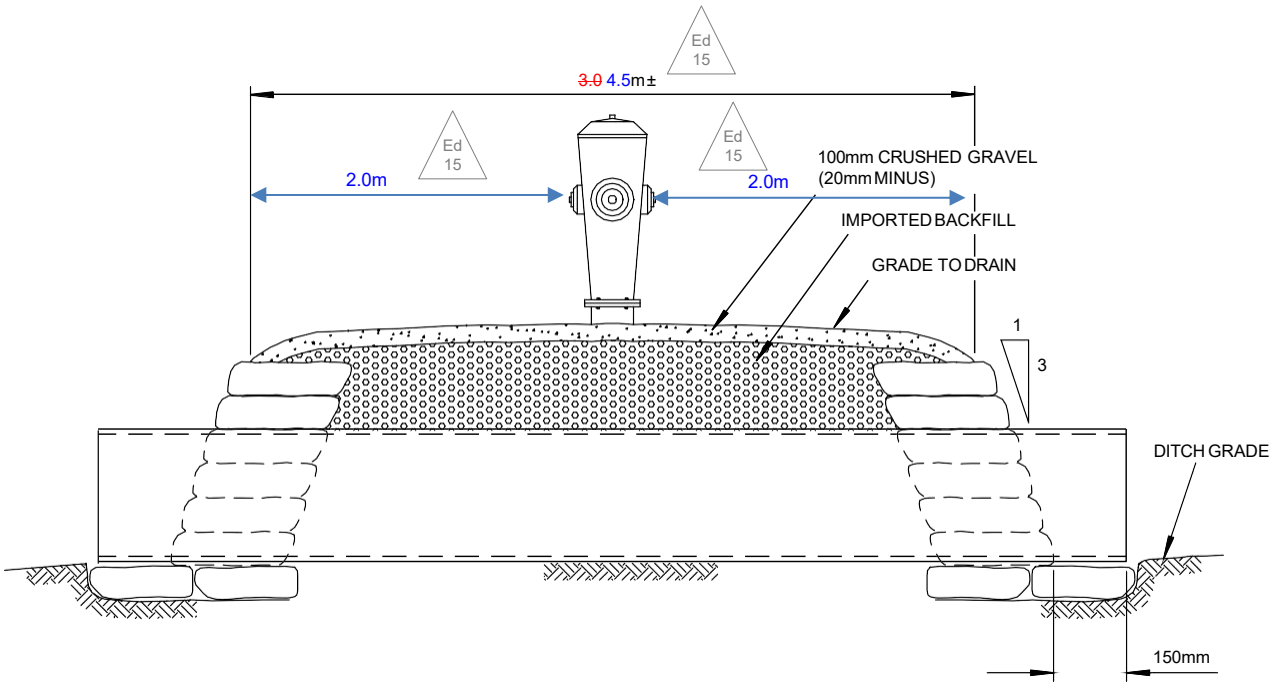
NOTES:

1. FOR HYDRANT LOCATIONS ~~OFFSETS~~ REFER TO DESIGN DRAWINGS. THE PROFESSIONAL OF RECORD MUST CONSIDER THE MINIMUM OFFSETS IN SECTION 5.07.6.~~AT NO TIME SHALL HYDRANTS BE CONSTRUCTED CLOSER THAN 1.0 METERS TO THE PROPERTY LINE~~
2. HOSE AND PUMPER NOZZLE MUST FACE ~~CURB~~ FIRE TRUCK ACCESS.
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, AS PER STANDARD DRAWING W-9 ~~REQUIRE A 1.5m X 1.5m HOTMIX ASPHALT APRON, 50mm THICK.~~
5. FOR VALVE NUT EXTENSION REQUIREMENTS REFER TO ~~STD. DWG. NO.~~ STANDARD DRAWING W-16.
6. ONLY PRODUCTS ~~APPROVED BY CITY ENGINEER AND~~ LISTED IN THE CITY OF NANAIMO APPROVED PRODUCTS LIST WILL BE ACCEPTED FOR ~~CONSTRUCTION~~INSTALLATION OR APPROVED BY CITY ENGINEER.
7. OUT OF SERVICE HYDRANTS SHALL BE BAGGED AS PER SECTION 5.52.2(h).
8. ALL DIMENSIONS ARE MILLIMETERS UNLESS NOTED OTHERWISE.
9. CONCRETE AS PER SECTION 11.0.
10. FOR THRUST BLOCK ON WATERMAIN, REFER TO DESIGN CRITERIA IN SECTION 5.09 AND STANDARD DRAWING W-8.

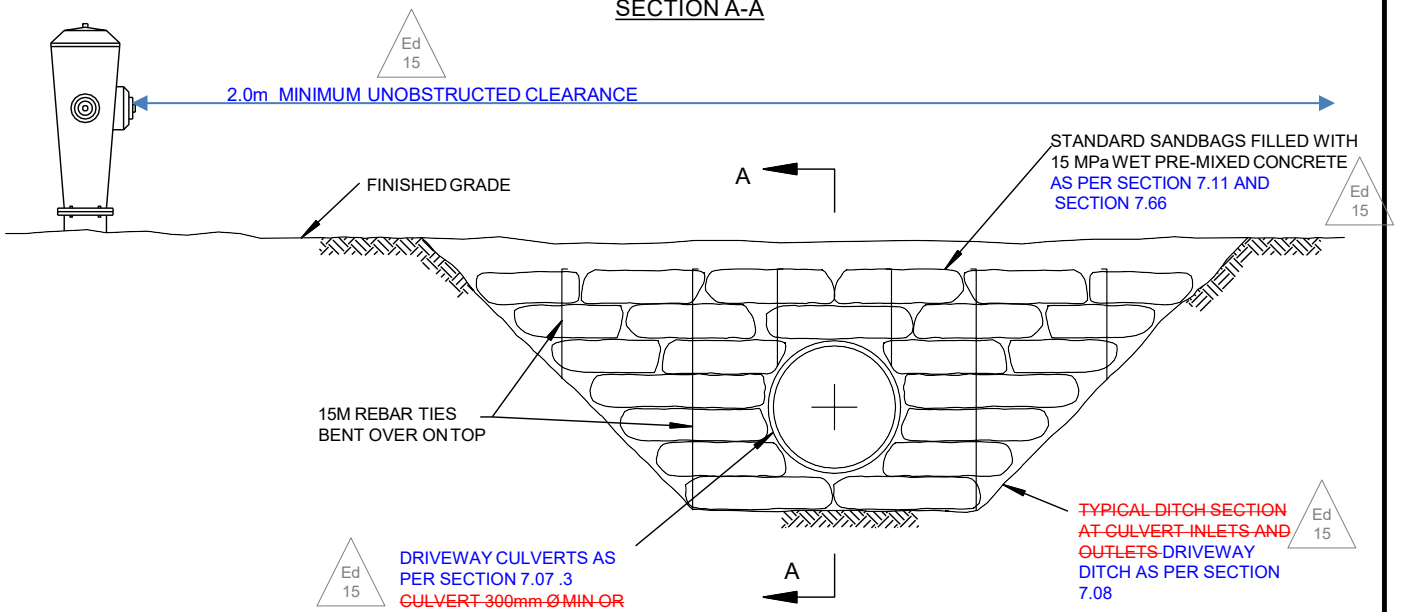
CITY OF NANAIMO
THE HARBOUR CITY

HYDRANT CONNECTION

Scale: NTS
Created: NOV 2009
Rev Date: ~~NOV 2016~~ Ed 15
Dwg No: W-5



SECTION A-A



ELEVATION

NOTES:

1. IF THE HORIZONTAL DIRECTION OF FLOW AT CULVERT INLETS AND OUTLETS EXCEEDS 30°, THE THE SANDBAG BULKHEADS REQUIRE CURVED WING WALLS TO FUNNEL THE FLOW.
2. ONLY PRODUCTS ~~APPROVED BY CITY ENGINEER AND~~ LISTED IN THE CITY OF NANAIMO APPROVED PRODUCTS LIST WILL BE ACCEPTED FOR INSTALLATION OR APPROVED BY CITY ENGINEER.

Ed 15

CITY OF NANAIMO
THE HARBOUR CITY

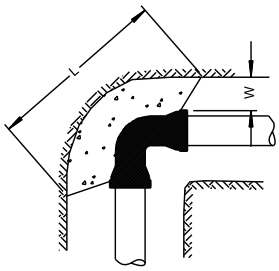
HYDRANT ACCESS - DITCH
CROSSING DETAIL

Scale: NTS
Created: MAY 1999
Rev Date: ~~NOV 2016~~
Dwg No: W-7

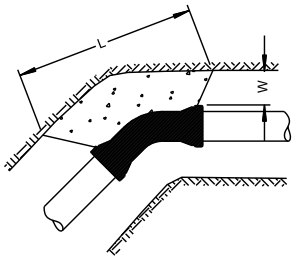
Ed 15

3.6.2020

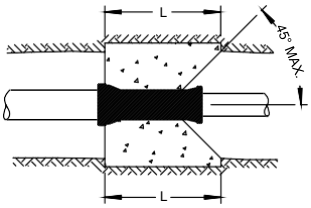
G:\INFRASTRUCTURE PLANNING\STANDARDS & PRODUCTS\MOE SSI EDITION NO 13 MAY 2020\2019-09-15 REDLINE INCORPORATION - WORKING\2020 DRAWING SECTIONS\FINAL DRAFT\SECTION 5 DWG\SW-7



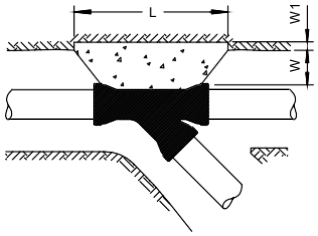
HORIZONTAL 90° BEND



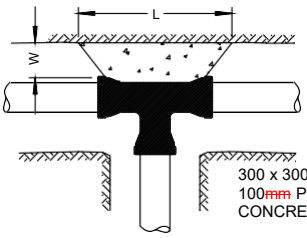
HORIZONTAL 45° BEND



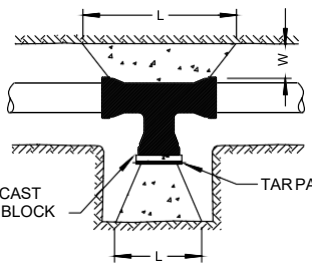
REDUCER



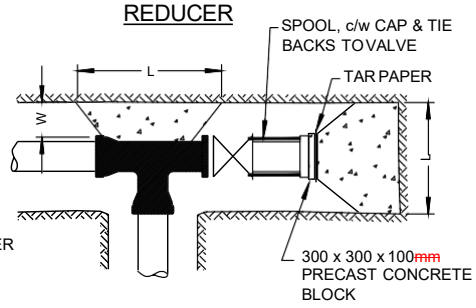
WYE



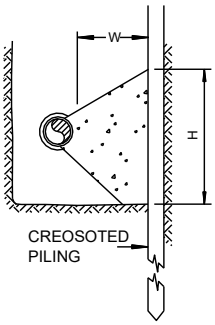
TEE

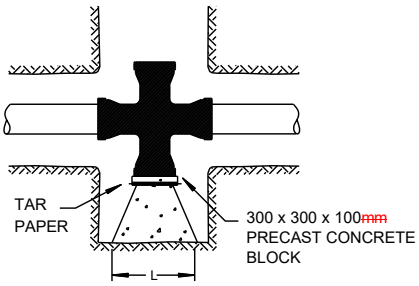


TEE WITH PLUG



TEE WITH VALVE





CROSS WITH PLUG

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONS APPLY TO THE LARGER DIAMETER END OF THE FITTING.
3. CONCRETE AS PER SECTION 11.0. ~~FOR CONCRETE SPECIFICATIONS SEE SECTION 11.~~ Ed 15
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. Ed 15
6. REFER TO DESIGN CRITERIA IN SECTION 5.09.

MINIMUM THRUST AREAS FOR FITTINGS AT 1034 kPA PRESSURE AND FOR SOILS WITH MIN. BEARING OF 96kPA
(NOT TO BE USED FOR SOFT CLAY, MUCK, PEAT, etc.)

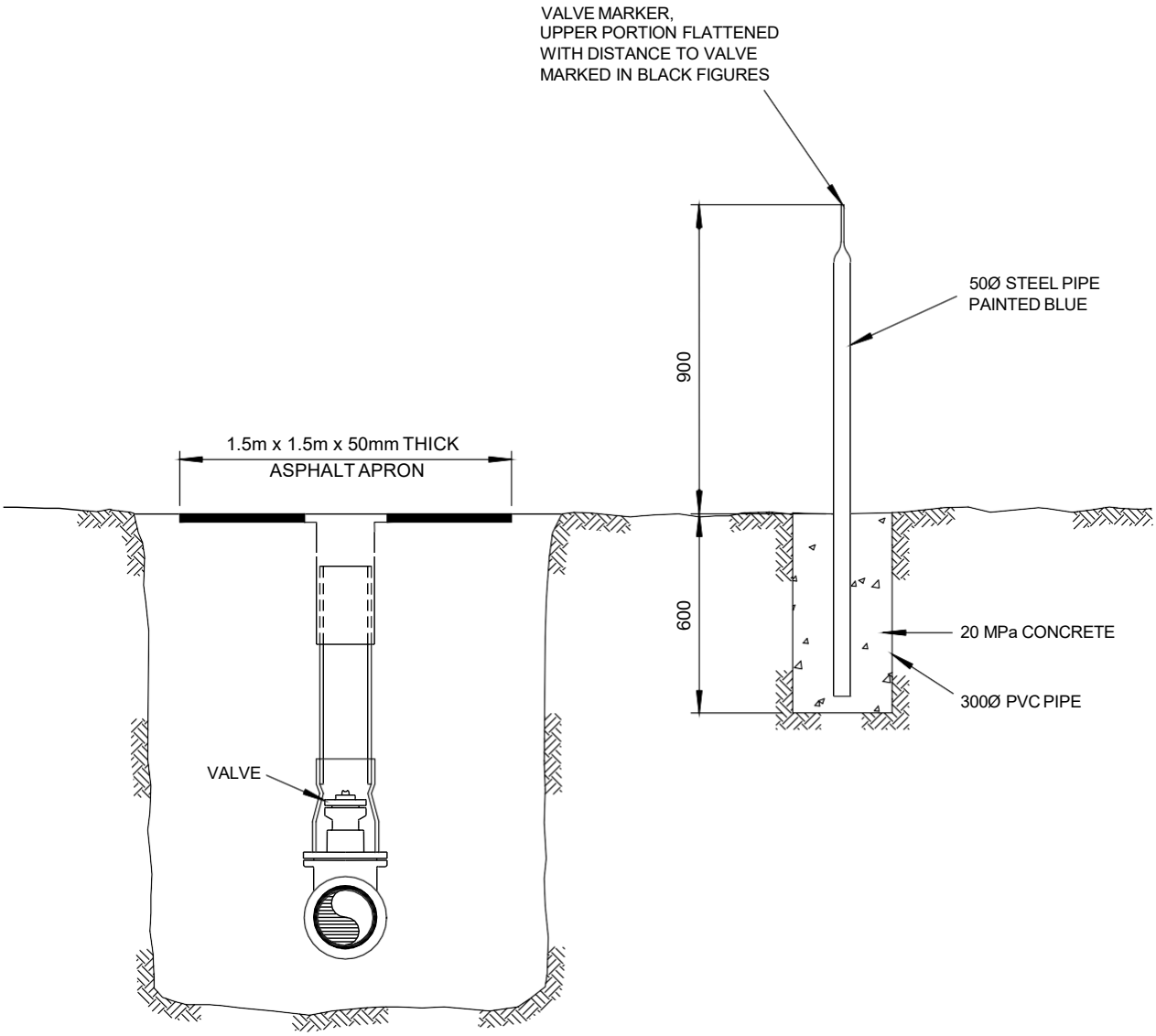
TYPE OF FITTING	FITTING SIZE	OUTSIDE OF FITTING TO BEARING FACE	LENGTH	HEIGHT	TYPE OF FITTING	FITTING SIZE	OUTSIDE OF FITTING TO BEARING FACE	RECESS IN TRENCH	LENGTH	HEIGHT
	D	W	L	H		D	W	W	L	H
90° BEND	150	300	900	450	CROSS	150	300		600	450
	200	350	1050	600		200	350		750	600
	250	375	1450	750		250	375		1000	750
	300	400	1650	900		300	400		1200	900
45° BEND	150	300	450	450	45° WYE	150	300	300	450	450
	200	350	600	600		200	350	400	600	600
	250	375	750	750		250	375	500	750	750
	300	400	900	900		300	400	600	900	900
11 1/4° BEND 22 1/2° BEND	150	300	450	225	*REDUCER	150	300	150	450	450
	200	350	600	300		200	350	200	600	600
	250	375	835	450		250	375	250	750	750
	300	400	900	450		300	400	300	900	900
TEE	150	300	600	450	CAPS AND PLUGS (IF NOT BOLTED)	150	300		450	450
	200	350	750	600		200	350		600	600
	250	375	1000	750		250	375		750	750
	300	400	1200	900		300	400		900	900

CITY OF NANAIMO
THE HARBOUR CITY

THRUST BLOCK DETAILS

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

Ed 15



NOTES:

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~~ PROFESSIONAL OF RECORD, 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 STANDARD DRAWING ~~STD. DWG.~~ NO. W-16.
5. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE SHOWN.
6. CONCRETE AS PER SECTION 11.0.

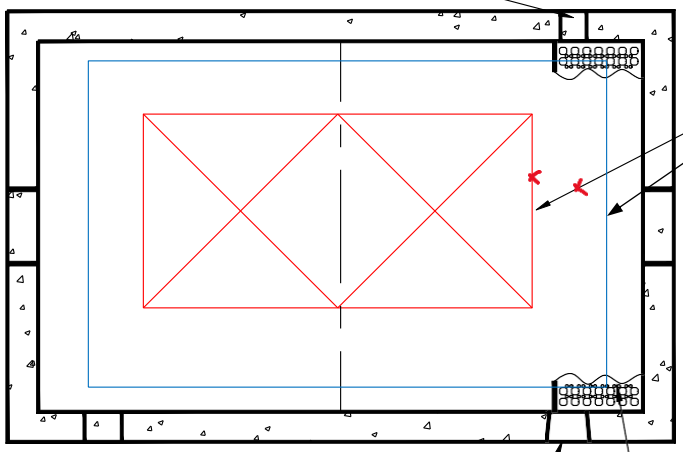
Ed 15

Ed 15

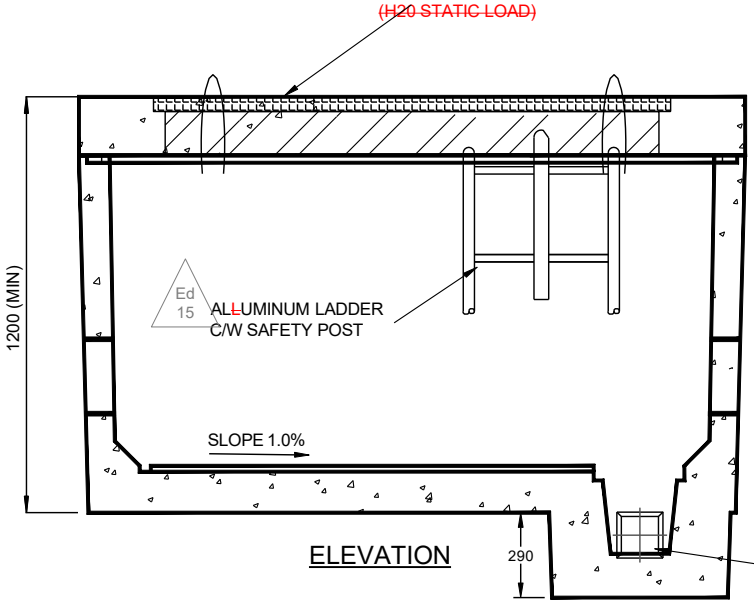
CITY OF NANAIMO
THE HARBOUR CITY

VALVE BOXES IN UNPAVED AREAS

Scale: NTS
Created: NOV 2009
Rev Date: ~~NOV 2016~~
Dwg No: W-9



PLAN



ELEVATION

NOTES:

1. THE DESIGN IS DONE BY A PROFESSIONAL OF RECORD WHO CAN USE THIS STANDARD 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.~~ AS PER SECTION 11.0.
3. DESIGN VAULT TO WITHSTAND CS600 STATIC 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, AS PER SECTION 5.58.
6. ONLY PRODUCTS ~~APPROVED BY CITY ENGINEER AND~~ LISTED IN THE CITY OF NANAIMO APPROVED PRODUCTS LIST WILL BE ACCEPTED FOR INSTALLATION OR APPROVED BY CITY ENGINEER.
7. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE SHOWN.
8. MINIMUM 200mm CLEAR DISTANCE FROM FLANGE OR BOLTED CONNECTION TO THE INSIDE WALL.
9. A DOUBLE CHECK VALVE ASSEMBLY (DCVA) BACKFLOW PREVENTION ASSEMBLY SHALL BE A SPECIAL CASE. THE PRECAST VAULT SHALL BE A MINIMUM OF 2000mm L X 1200mm W. DEPENDENT UPON THE DCVA MANUFACTURED CLEARANCE AND ORIENTATION A LARGER VAULT MAY BE REQUIRED.
10. SUBJECT TO APPROVAL BY THE CITY ENGINEER A METER AND BACKFLOW PREVENTION ASSEMBLY MAY BE INSTALLED IN A MECHANICAL ROOM.
11. ALUMINUM ACCESS LADDER MUST MEET THE WORKSAFEBC REQUIREMENTS FOR FIXED LADDERS

MINIMUM ~~INTERVAL~~ INTERNAL DIMENSION FOR THE PRECAST VAULT METER CHAMBER

DOMESTIC~~/~~ OR FIRE METER*	LENGTH	WIDTH
100-150Ø	2000	1200
150-250Ø	2600	1200
DCVA	SEE NOTE 9	

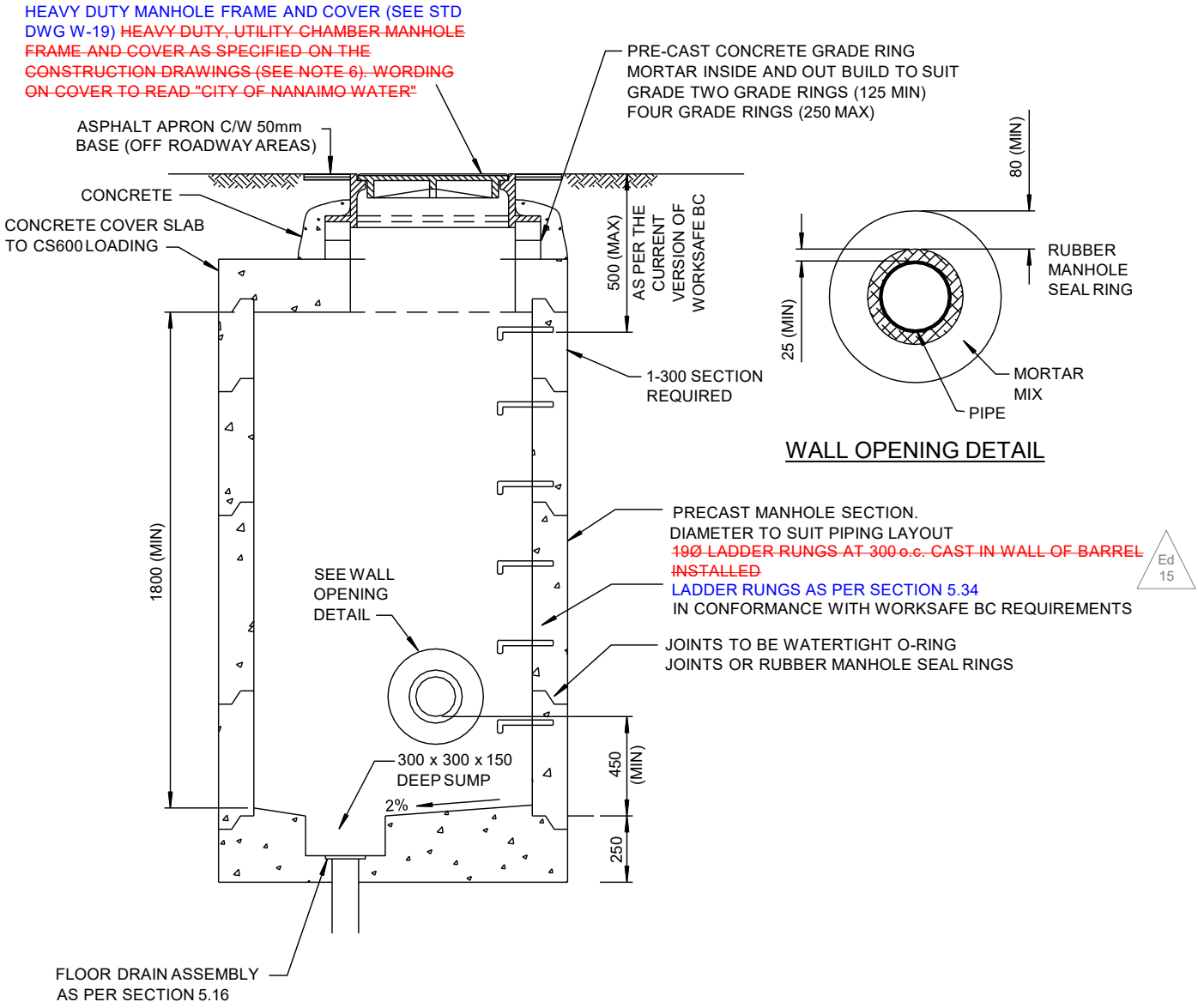
*FIRE RATED METERS TYPICALLY REQUIRE LARGER CHAMBERS.

CITY OF NANAIMO
THE HARBOUR CITY

METER ~~/~~ OR DCVA BACKFLOW PREVENTION ASSEMBLY PRECAST VAULT

Scale: NTS
Created: MAY 2012
Rev Date: ~~MAY 2020~~
Dwg No: W-11

Ed 15



Ed 15

NOTES:

1. CHAMBERS LOCATED IN UNPAVED AREAS REQUIRE 1.5m X 1.5m GRAVEL OR PAVED SURFACE AROUND COVER. PROJECT COVER 0mm IN PAVEMENT OR 25mm IN UNPAVED AREAS.
2. CHAMBER MANHOLES LOCATED IN UNPAVED AREAS REQUIRE A 1.5m X 1.5m, 50mm THICK HOT MIX ASPHALT APRON.
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 OR APPROVED BY CITY ENGINEER.
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~~ PROFESSIONAL OF RECORD.
7. CONCRETE AS PER SECTION 11.0.

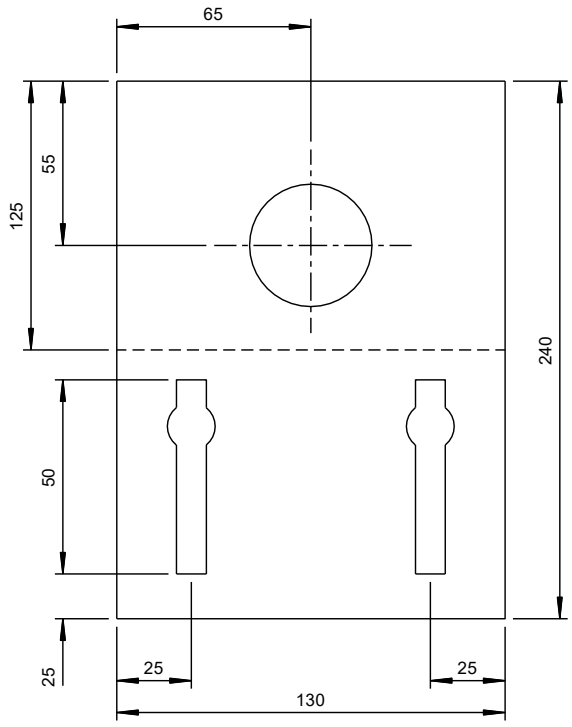
Ed 15

CITY OF NANAIMO
THE HARBOUR CITY

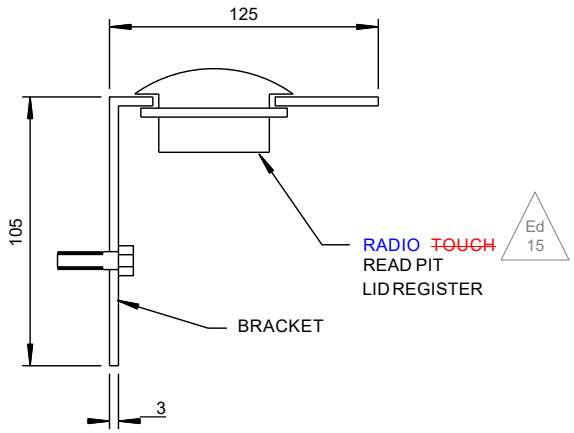
METER CHAMBER
PRECAST CIRCULAR
MANHOLE

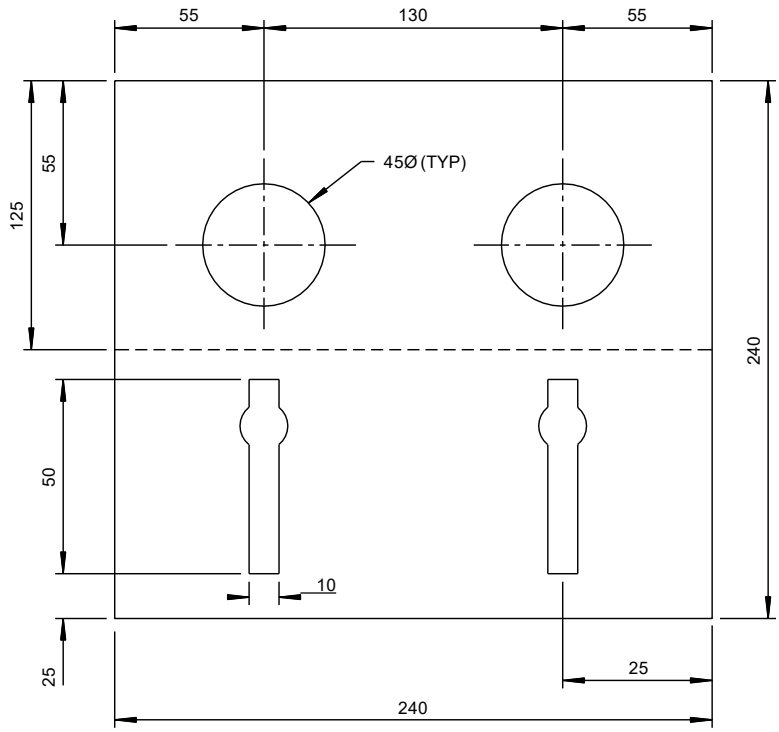
Scale: NTS
Created: MAY 2013
Rev Date: ~~NOV 2016~~
Dwg No: W-11A

Ed 15



SINGLE METER BRACKET





DOUBLE METER BRACKET

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

Ed 15

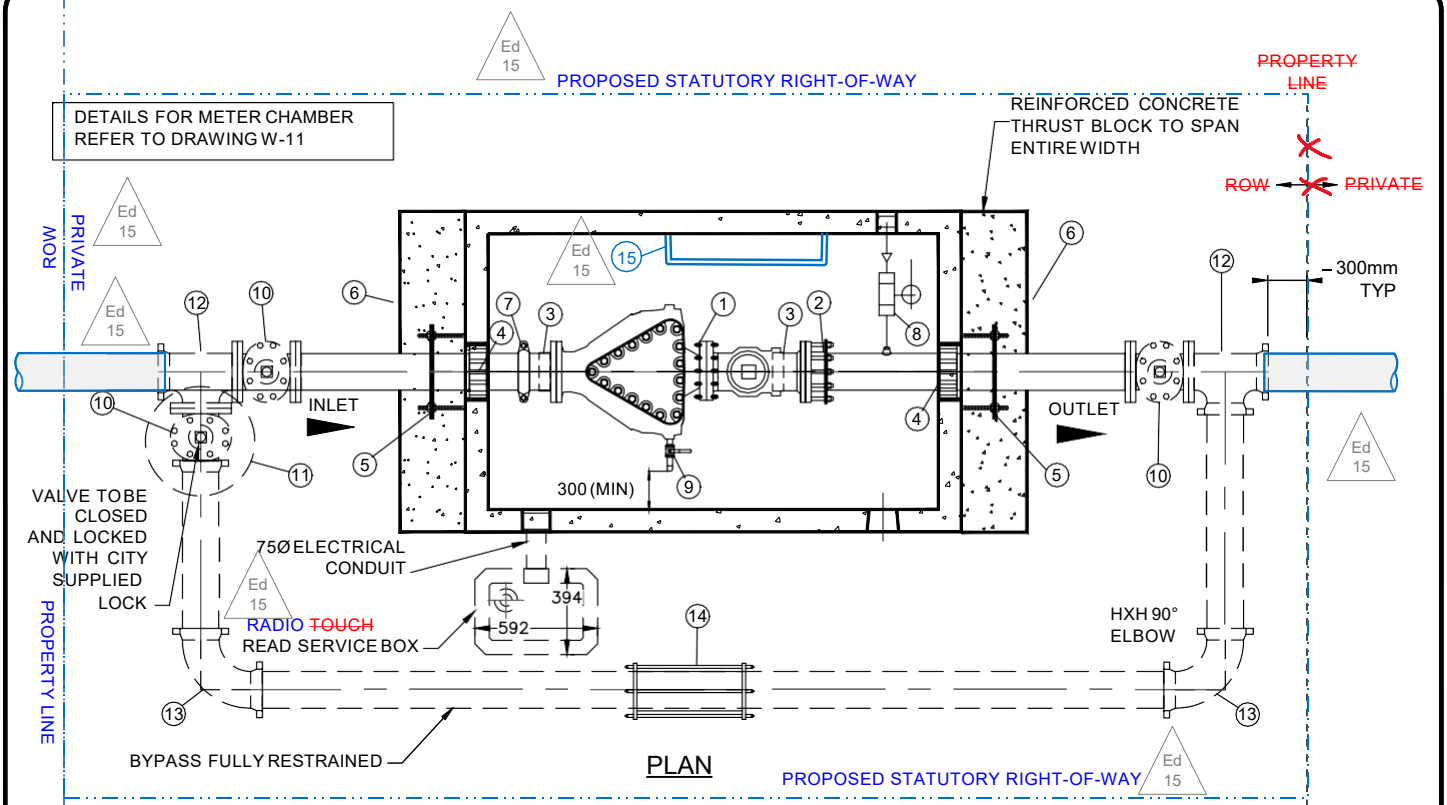
CITY OF NANAIMO
THE HARBOUR CITY

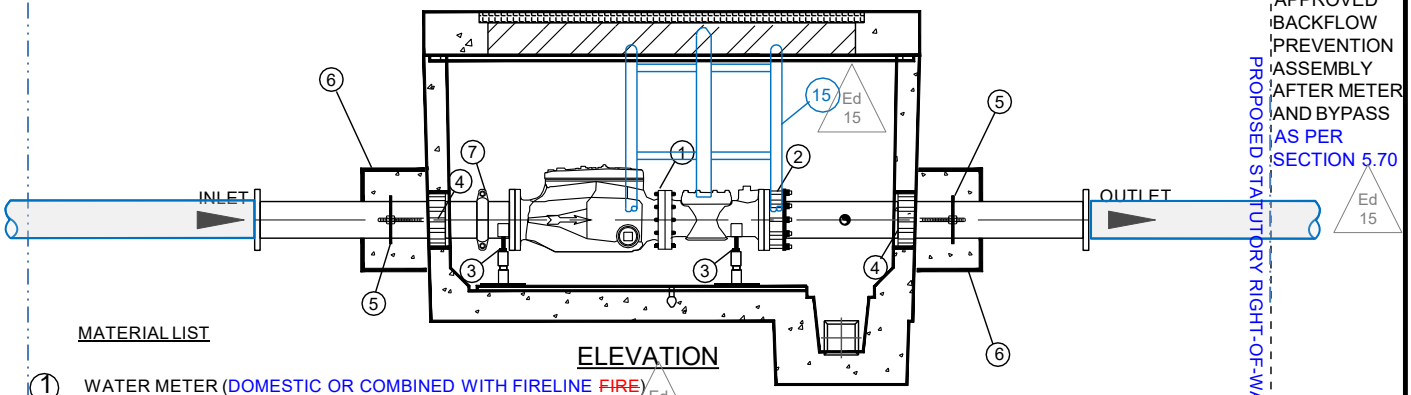
Ed 15 WATER METER
RADIO ~~TOUCH~~
READ BRACKET

Scale: NTS
Created: MAY 2013
Rev Date: ~~NOV 2016~~
Dwg No: W-12

Ed 15

3.6.2020





MATERIAL LIST

1. WATER METER (DOMESTIC OR COMBINED WITH FIRELINE ~~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
15. LADDER

NOTES:

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 CITY ENGINEER AND~~ LISTED IN THE CITY OF NANAIMO APPROVED PRODUCTS LIST WILL BE ACCEPTED FOR INSTALLATION OR APPROVED BY CITY ENGINEER. ONLY UL LISTED/FM APPROVED PRODUCTS SHALL BE APPROVED FOR FIRELINE SERVICE.
5. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.
6. PROVIDE APPROVED BACKFLOW PREVENTION ASSEMBLY AFTER THE METER AND BYPASS ACCORDING TO CITY OF NANAIMO CROSS CONNECTION CONTROL BYLAW AND AS PER SECTION 5.70.
7. CONCRETE AS PER SECTION 11.0.

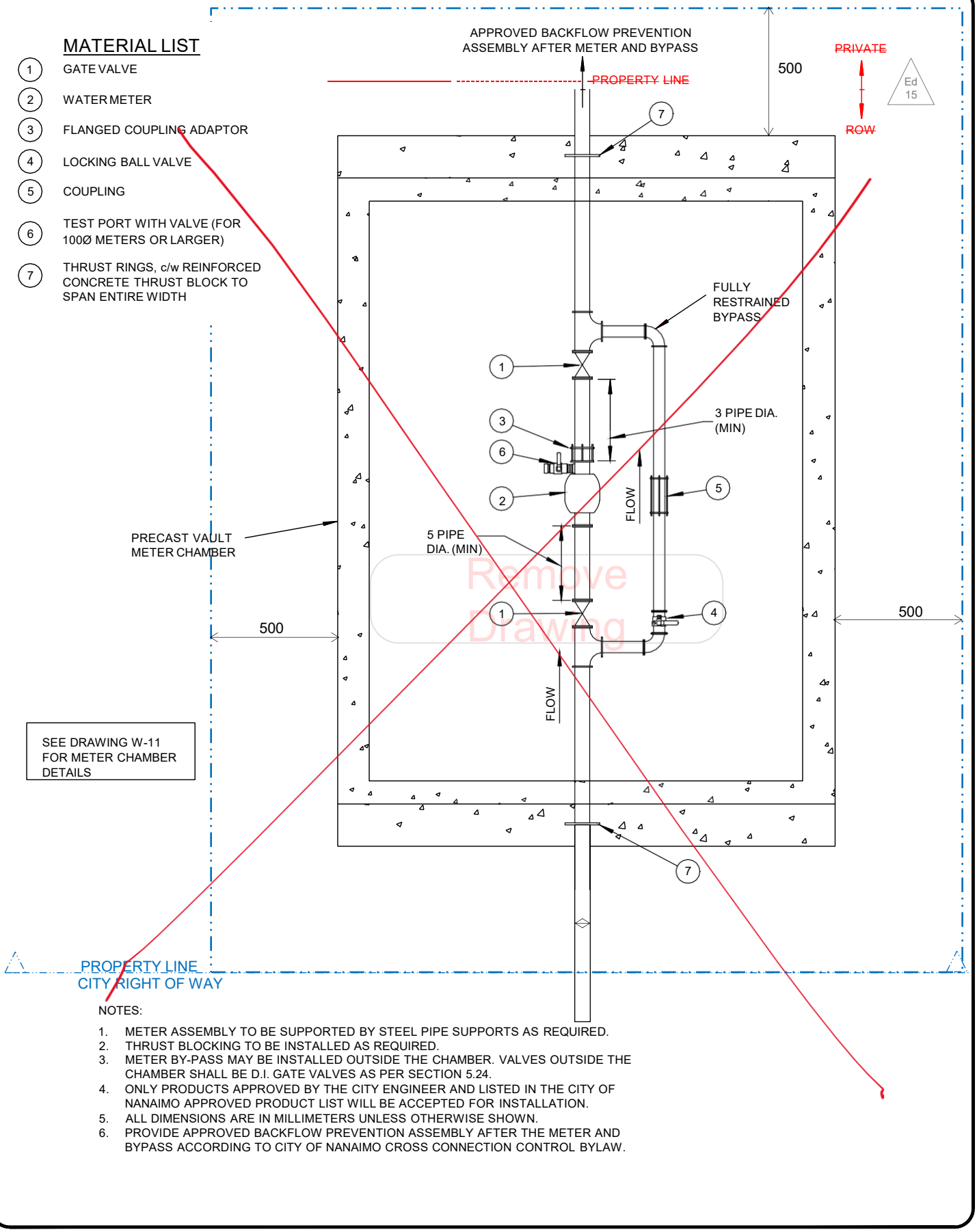
CITY OF NANAIMO
THE HARBOUR CITY

FIRE/-OR DOMESTIC WATER METER
PIPING LAYOUT (~~100~~ 75Ø - 250Ø)

Scale: NTS
Created: MAY 2013
Rev Date: ~~MAY~~ 2020
Dwg No: W-13

MATERIAL LIST

1. GATE VALVE
2. WATER METER
3. FLANGED COUPLING ADAPTOR
4. LOCKING BALL VALVE
5. COUPLING
6. TEST PORT WITH VALVE (FOR 100Ø METERS OR LARGER)
7. THRUST RINGS, c/w REINFORCED CONCRETE THRUST BLOCK TO SPAN ENTIRE WIDTH



SEE DRAWING W-11 FOR METER CHAMBER DETAILS

NOTES:

1. METER ASSEMBLY TO BE SUPPORTED BY STEEL PIPE SUPPORTS AS REQUIRED.
2. THRUST BLOCKING TO BE INSTALLED AS REQUIRED.
3. METER BY-PASS MAY BE INSTALLED OUTSIDE THE CHAMBER. VALVES OUTSIDE THE CHAMBER SHALL BE D.I. GATE VALVES AS PER SECTION 5.24.
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.
6. PROVIDE APPROVED BACKFLOW PREVENTION ASSEMBLY AFTER THE METER AND BYPASS ACCORDING TO CITY OF NANAIMO CROSS CONNECTION CONTROL BYLAW.

G:\INFRASTRUCTURE PLANNING\STANDARDS & PRODUCTS\MOESS\EDITION NO\13 MAY 2020\2019-09-15 REDLINE INCORPORATION - WORKING\2020 DRAWING SECTIONS\FINAL DRAFT\SECTION 5 DWGS\W-14

CITY OF NANAIMO
THE HARBOUR CITY

DOMESTIC WATER METER
PIPING LAYOUT (75Ø - 250Ø)

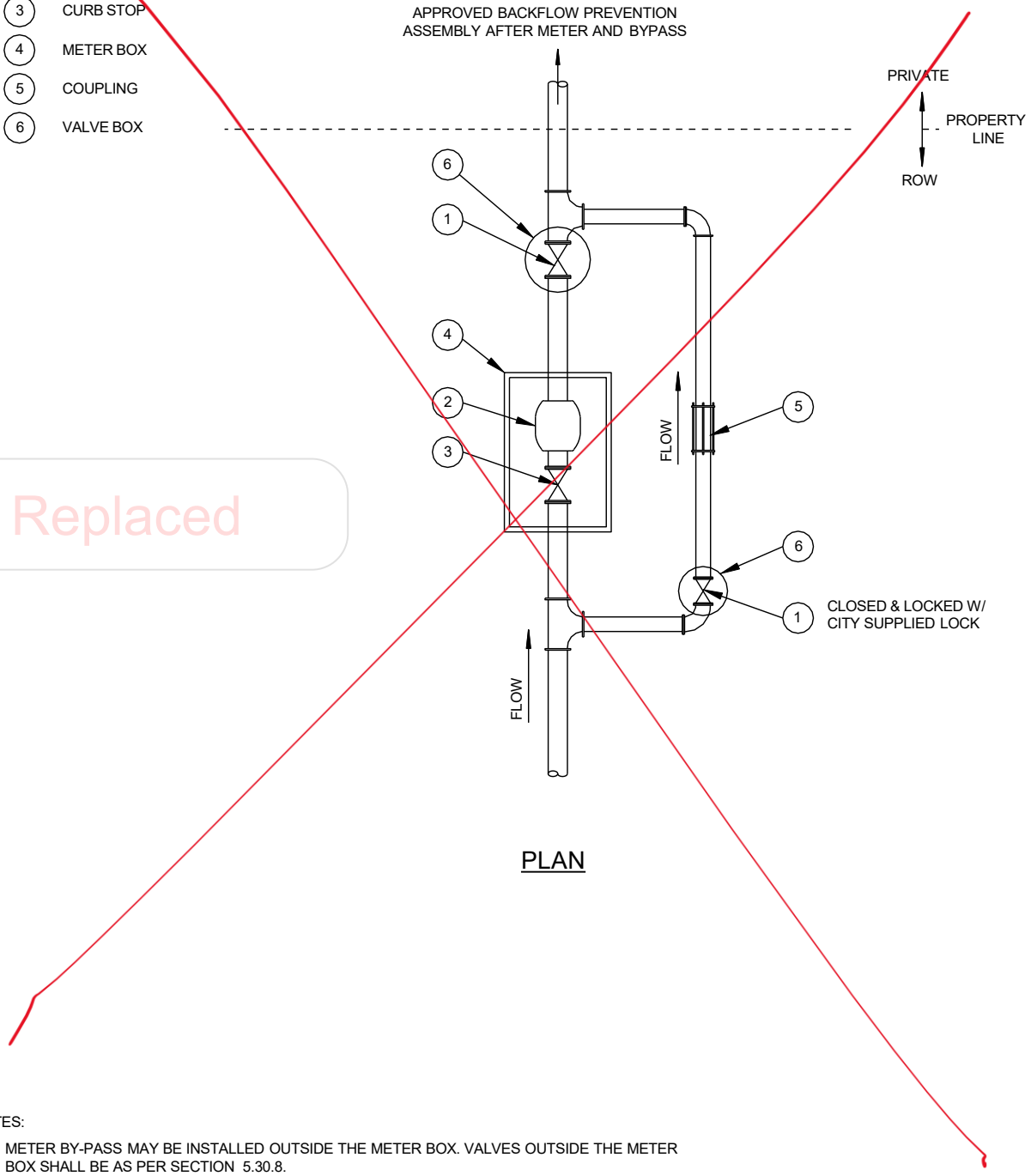
Scale: NTS
Created: MAY 2012
Rev Date: ~~MAY 2020~~
Dwg No: W-14

Ed 15

3.6.2020

MATERIAL LIST

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



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PLAN

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.
3. PROVIDE APPROVED BACKFLOW PREVENTION ASSEMBLY AFTER THE METER AND BYPASS ACCORDING TO CITY OF NANAIMO CROSS CONNECTION CONTROL BYLAW.
4. CONCRETE AS PER SECTION 11.0.

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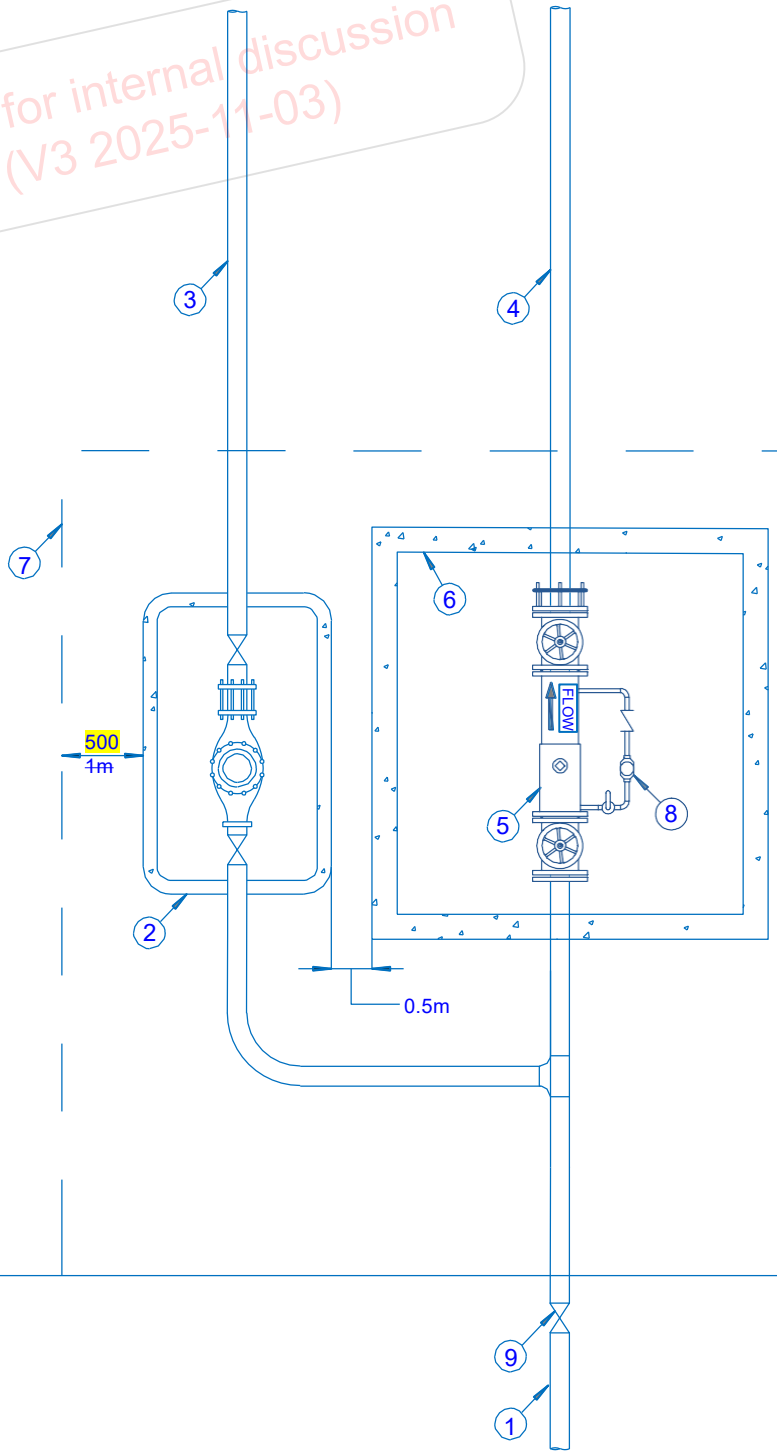
3.6.2020

CITY OF NANAIMO
THE HARBOUR CITY

DOMESTIC WATER METER
PIPING LAYOUT (38Ø & 50Ø)

Scale: NTS
Created: MAY 2013
Rev Date: ~~MAY 2020~~
Dwg No: W-14A



NOTES:

1. WATER SERVICE.
2. WATER METER AS PER CITY OF NANAIMO STANDARD DETAIL W-14A.
3. DOMESTIC WATER SERVICE.
4. FIRE WATER SERVICE.
5. DCDA.
6. DCDA CHAMBER.
7. STATUTORY RIGHT-OF-WAY.
8. RADIO READ WATER METER.
9. CURB STOP.

DRAFT

I:\E&PW\BRUCE W\0\WATER METER\WATER METER MOESS

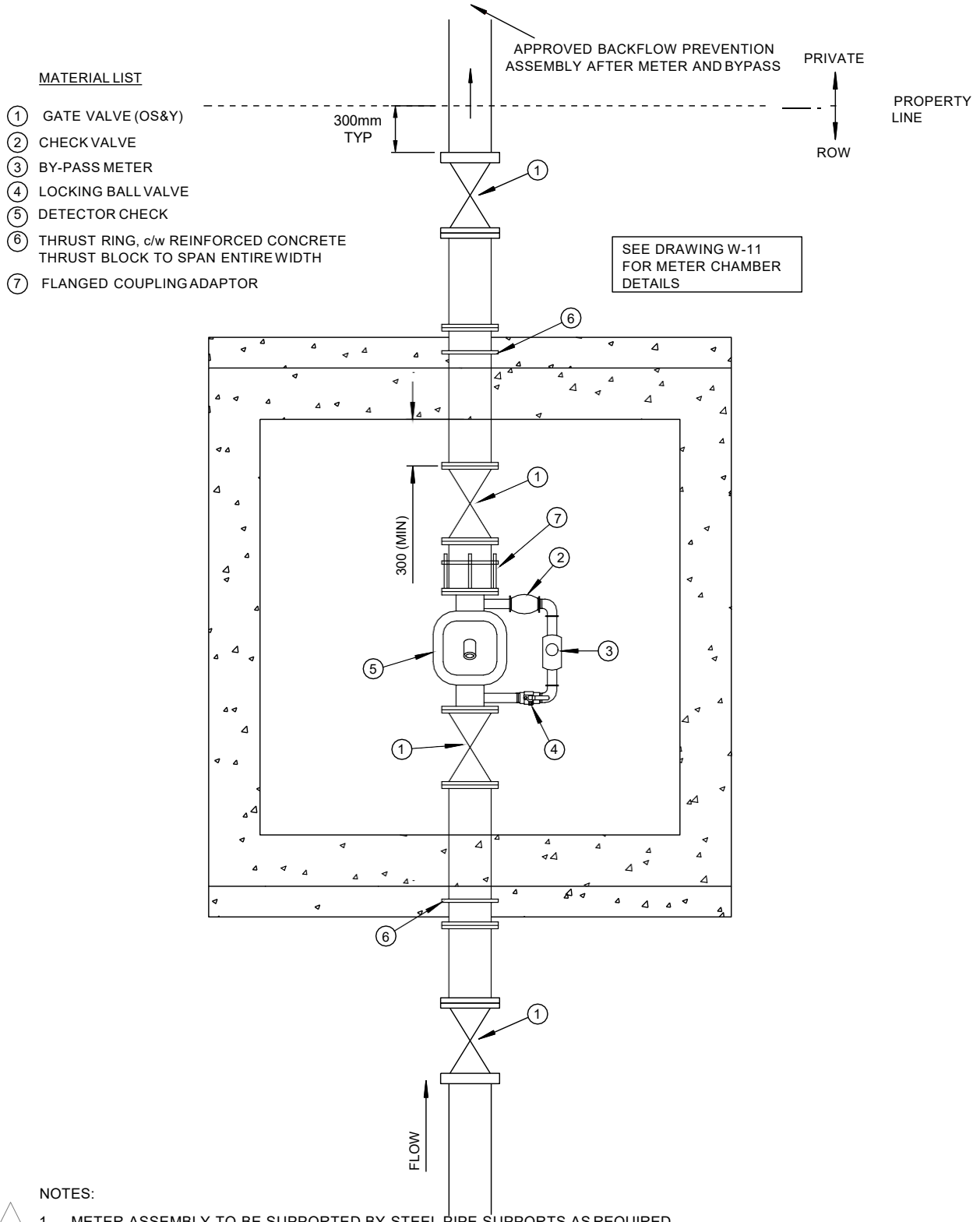
7.29.2025

CITY OF NANAIMO
THE HARBOUR CITY

Ed 15

25 mm TO 50 mm WATER SERVICE WITH FIRE LINE

Scale:	NTS
Created:	JULY 2025
Rev Date:	JULY 2025
Dwg No:	W-14A



MATERIAL LIST

1. GATE VALVE (OS&Y)
2. CHECK VALVE
3. BY-PASS METER
4. LOCKING BALL VALVE
5. DETECTOR CHECK
6. THRUST RING, c/w REINFORCED CONCRETE THRUST BLOCK TO SPAN ENTIRE WIDTH
7. FLANGED COUPLING ADAPTOR

NOTES:

1. METER ASSEMBLY TO BE SUPPORTED BY STEEL PIPE SUPPORTS AS REQUIRED.
2. THRUST BLOCKING TO BE INSTALLED AS REQUIRED. REFER TO DESIGN CRITERIA IN SECTION 5.09 AND STANDARD DRAWING W-8.
3. ONLY PRODUCTS ~~APPROVED BY CITY ENGINEER AND~~ LISTED IN THE CITY OF NANAIMO APPROVED PRODUCTS LIST WILL BE ACCEPTED FOR INSTALLATION OR APPROVED BY CITY ENGINEER. ONLY UL/FM LISTED PRODUCTS SHALL BE APPROVED FOR FIRE LINE SERVICE.
4. PROVIDE APPROVED BACKFLOW PREVENTION ASSEMBLY AFTER THE METER AND BYPASS ACCORDING TO CITY OF NANAIMO CROSS CONNECTION CONTROL BYLAW.
5. SUBJECT TO APPROVAL BY THE CITY ENGINEER A METER AND BACKFLOW PREVENTION ASSEMBLY MAY BE INSTALLED IN A MECHANICAL ROOM.

Ed 15

Ed 15

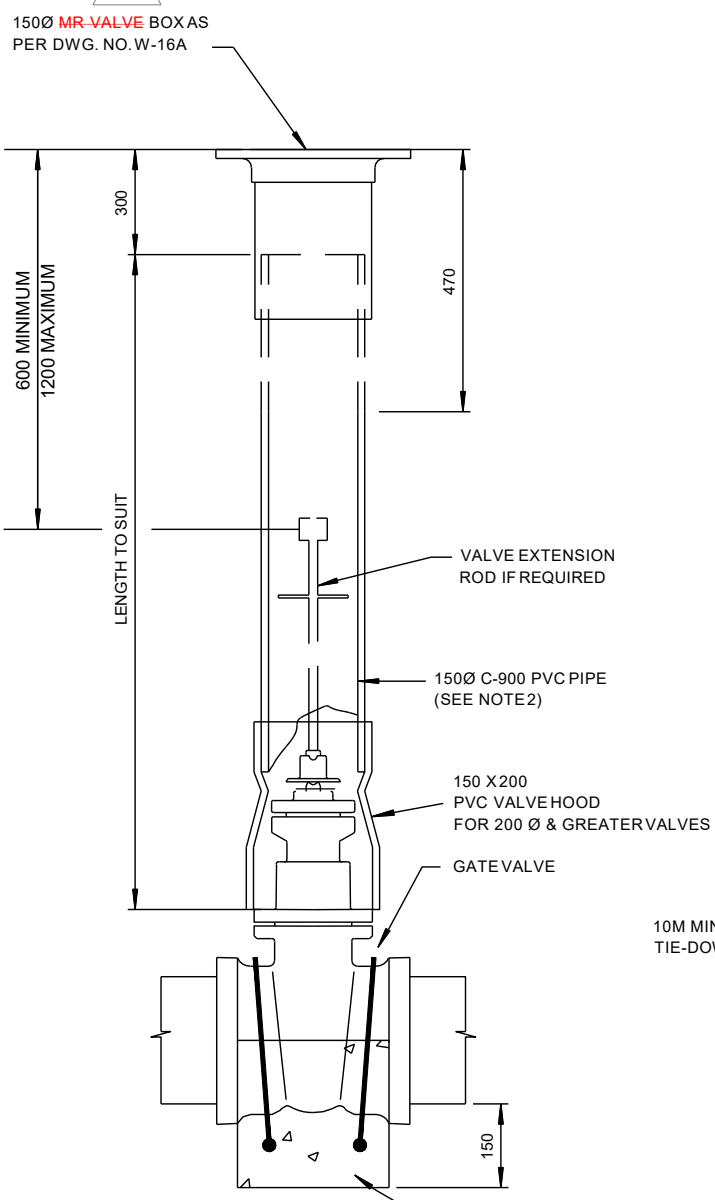
CITY OF NANAIMO
THE HARBOUR CITY

DETECTOR CHECK FIRE LINE SERVICE
PIPING LAYOUT (100Ø - 250Ø)

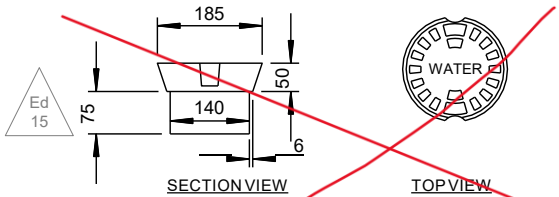
Scale: NTS
Created: MAY 2013
Rev Date: MAY 2020
Dwg No: W-15

Ed 15

3.6.2020

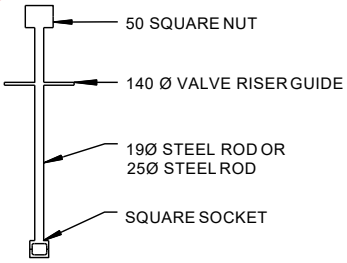


ASSEMBLY WITH CONCRETE FOOTING



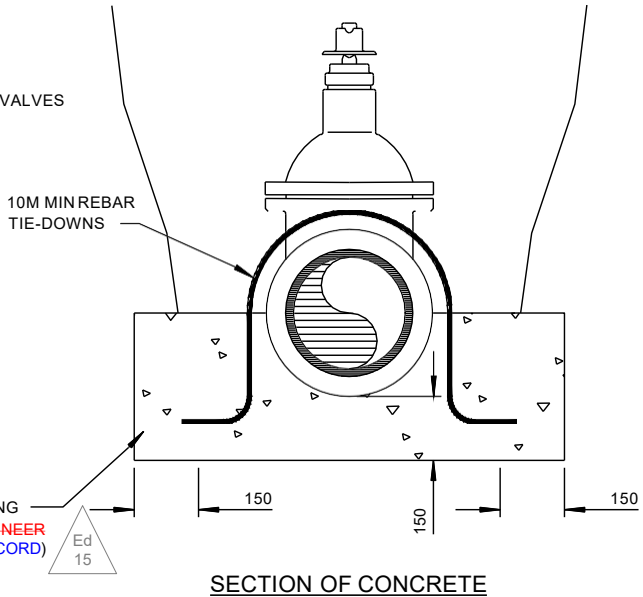
PARSONS LONG NECK LID

(NELSON + MR TYPE)



VALVE EXTENSION ROD

EXTENSION RODS REQUIRED WHEN BURY DEPTH EXCEEDS ~~1.2m~~ 1200 FROM TOP OF VALVE TO GROUND LEVEL. TOP OF EXTENSION ROD NUT SHALL BE 600~~mm~~ MINIMUM AND 1200~~mm~~ MAXIMUM TO GROUND LEVEL.



SECTION OF CONCRETE FOOTING

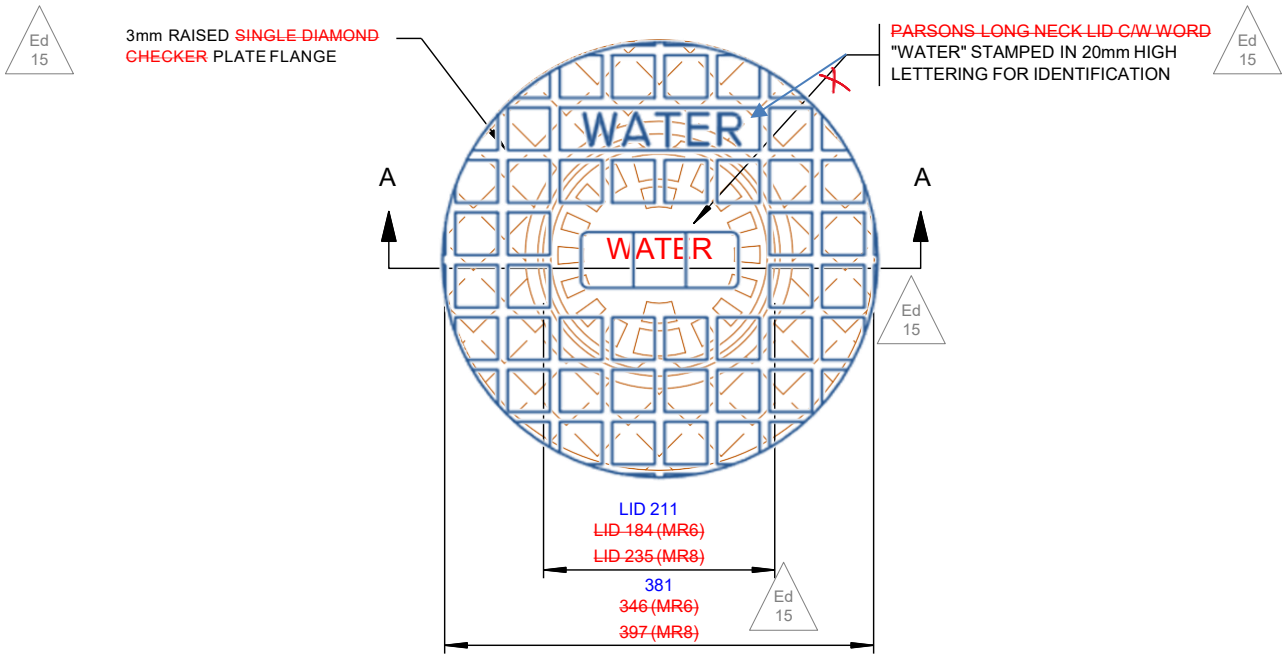
NOTES:

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.~~ STANDARD DRAWING 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.~~
3. 4. ~~4.~~ ONLY PRODUCTS ~~APPROVED BY CITY ENGINEER AND~~ LISTED IN THE CITY OF NANAIMO APPROVED PRODUCTS LIST WILL BE ACCEPTED FOR ~~CONSTRUCTION~~ INSTALLATION OR APPROVED BY CITY ENGINEER.
4. ~~5.~~ ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
5. ~~6.~~ NO TIE-DOWNS REQUIRED IF VALVE FLANGED TO RESTRAINED TEE.
6. CONCRETE AS PER SECTION 11.0.

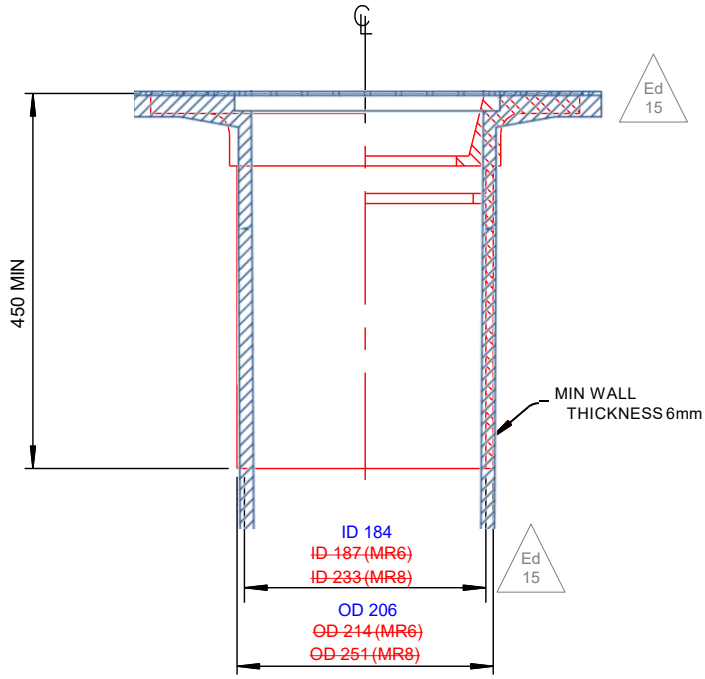
CITY OF NANAIMO
THE HARBOUR CITY

GATE VALVE & VALVE NUT EXTENSIONS

Scale: NTS
Created: MAY 2013
Rev Date: ~~NOV 2016~~
Dwg No: W-16



PLAN



SECTION A - A

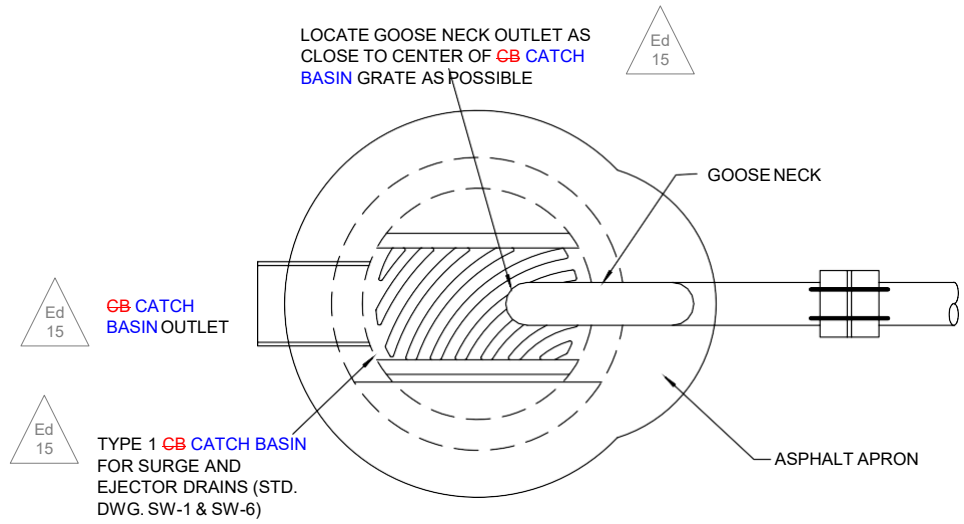
NOTES:

1. FINISH COATING TO BE BITUMINOUS DIP.
2. ONLY PRODUCTS ~~APPROVED BY CITY ENGINEER AND~~ LISTED IN THE CITY OF NANAIMO APPROVED PRODUCTS LIST WILL BE ACCEPTED FOR ~~CONSTRUCTION~~ INSTALLATION OR APPROVED BY CITY ENGINEER.
3. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.

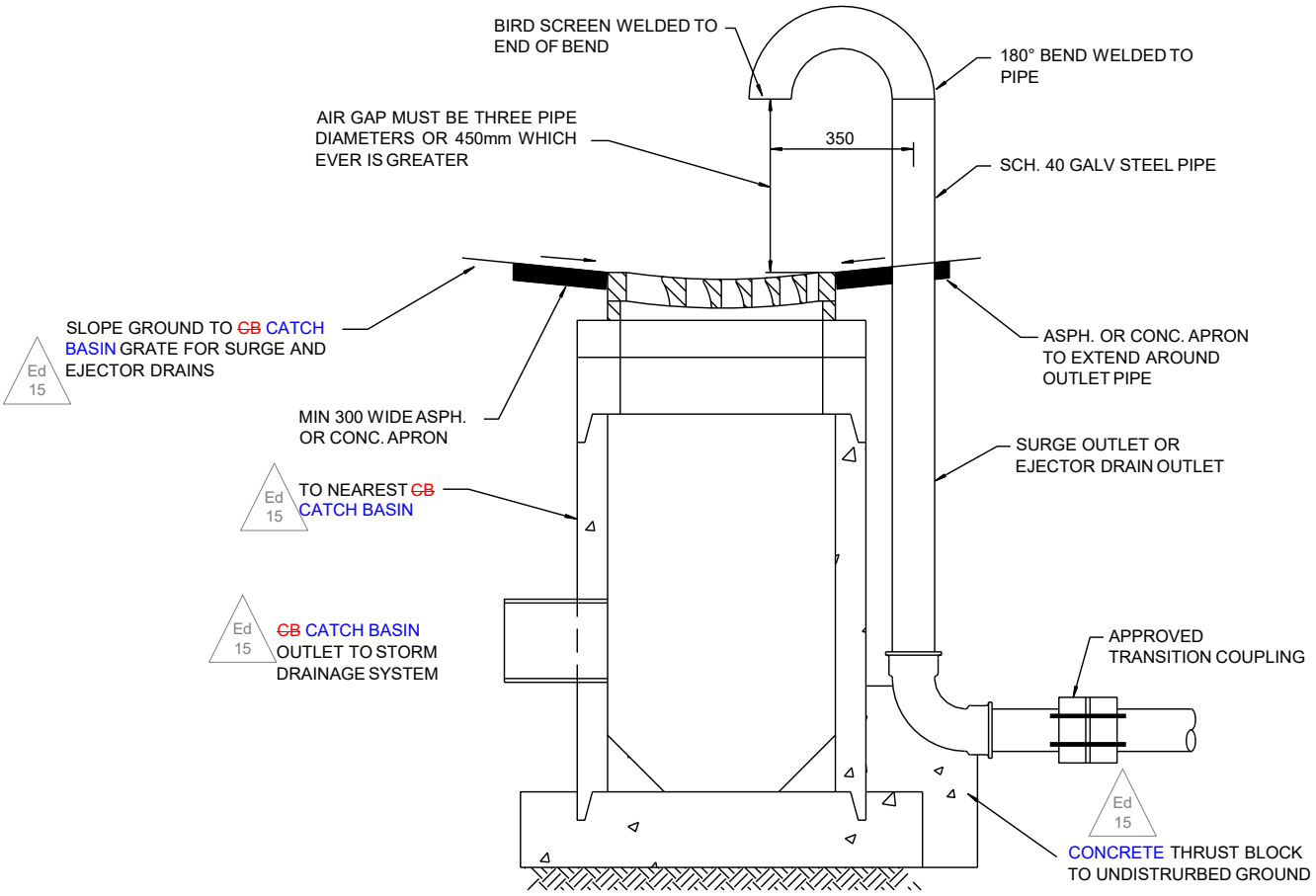
CITY OF NANAIMO
THE HARBOUR CITY

~~MR TYPE~~ WATER VALVE BOX

Scale: NTS
Created: NOV 2009
Rev Date: ~~NOV 2016~~
Dwg No: W-16A



PLAN VIEW



SIDE VIEW

NOTES:

Ed 15 1. CONCRETE NO POST BARRIER PROTECTION REQUIRED FOR VENTS WITHIN 4.0m OF ROADWAY.

Ed 15 2. ONLY PRODUCTS ~~APPROVED BY CITY ENGINEER AND~~ LISTED IN THE CITY OF NANAIMO APPROVED PRODUCTS LIST WILL BE ACCEPTED FOR INSTALLATION OR APPROVED BY CITY ENGINEER.

Ed 15 3. ALL DIMENSION IN MILLIMETERS UNLESS OTHERWISE SHOWN.

4. CONCRETE AS PER SECTION 11.0.

CITY OF NANAIMO
THE HARBOUR CITY

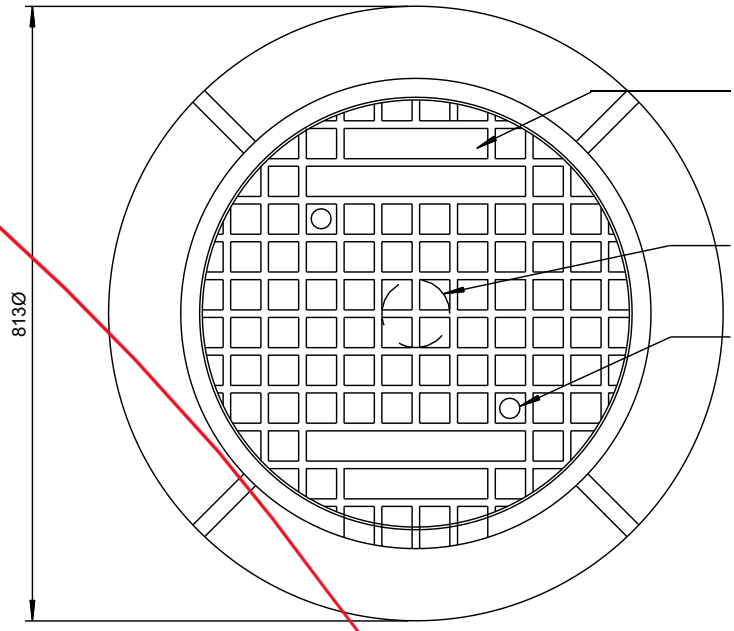
GOOSE NECK FOR PRESSURE REDUCING STATION DRAIN

Scale: NTS
Created: MAY 2012
Rev Date: ~~MAY 2020~~
Dwg No: W-18

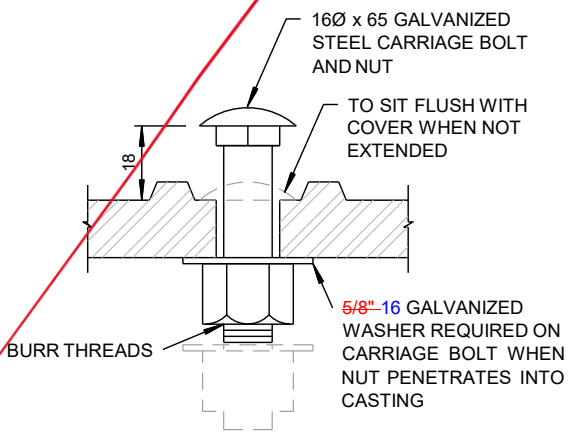
Ed 15

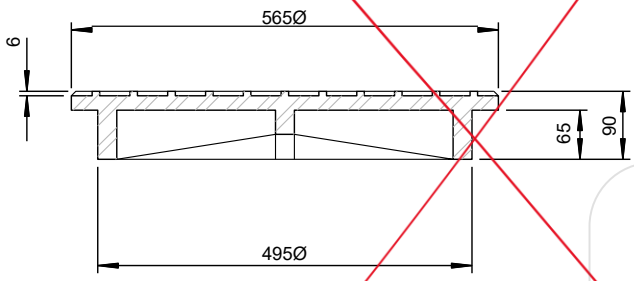
Ed 15

3.6.2020

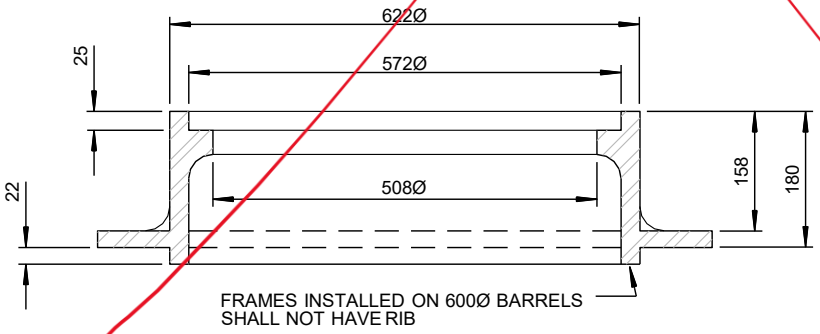


PLAN





COVER



FRAME

REPLACED WITH ORCA PATTERN

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.

G:\INFRASTRUCTURE PLANNING\STANDARDS & PRODUCTS\MOESS\EDITION NO\13 MAY 2020\2019-09-15 REDLINE INCORPORATION - WORKING\2020 DRAWING SECTIONS\FINAL DRAFT\SECTION 5 DWGS\W-19

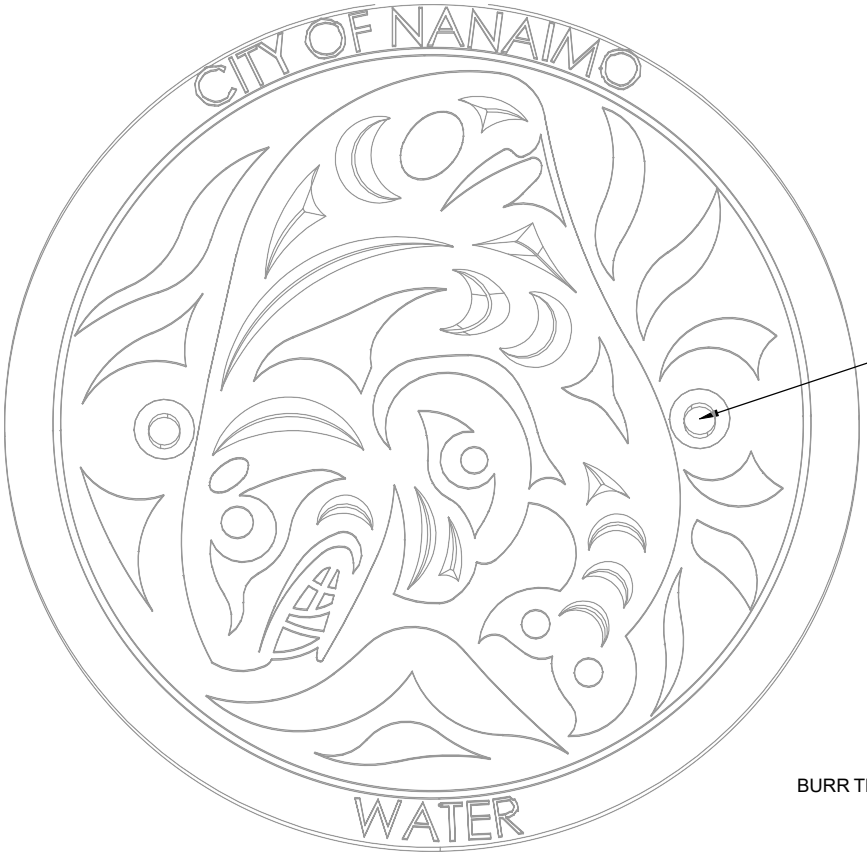
3.6.2020

CITY OF NANAIMO
THE HARBOUR CITY

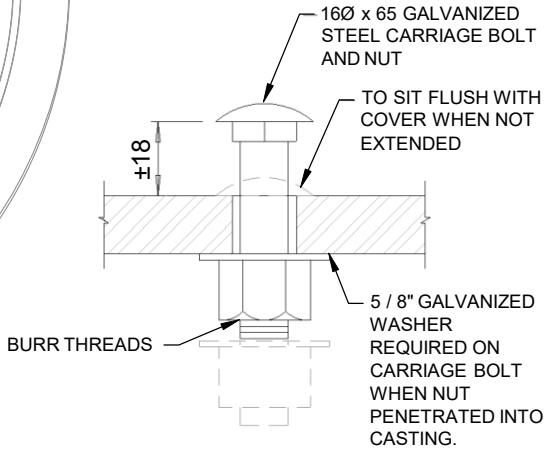
MANHOLE COVER AND FRAME

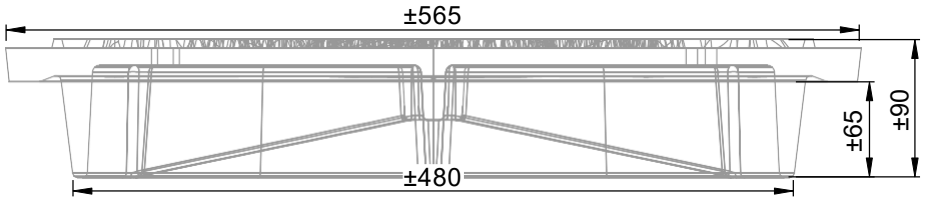
Scale: NTS
Created: MAR 2016
Rev Date: NOV 2016
Dwg No: W-19

REPLACEMENT



PLAN





COVER

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.
6. 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.

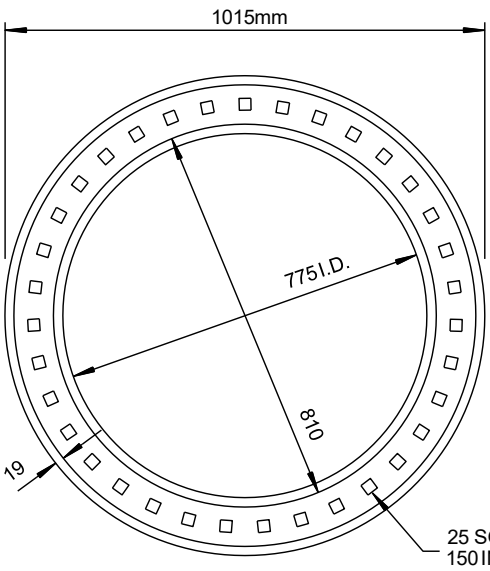
CITY OF NANAIMO
THE HARBOUR CITY

WATER ~~MAINTENANCE~~ MANHOLE - UTILITY COVER SNUNEYMUXW ORCA PATTERN
2023 - 2033

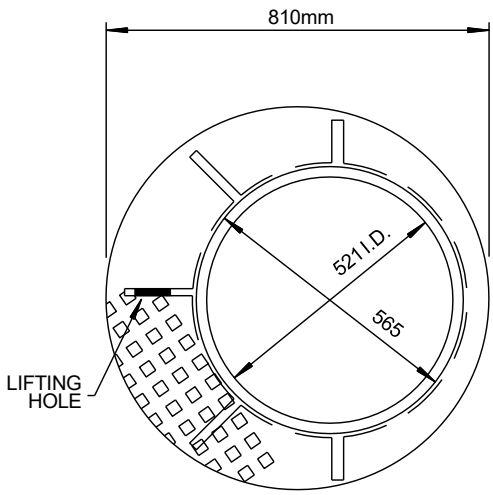
Scale:	NTS
Created:	JULY 2023
Rev Date:	
Dwg No:	W-19

T:\PLANNING\1386\03 DESIGNS\01 UTILITYCOVERS_AYLELUM_2023\MOESS\20230720_COP1386_WATER- UTILITY COVER -SNUNEYMUXW ORCA PATTERN

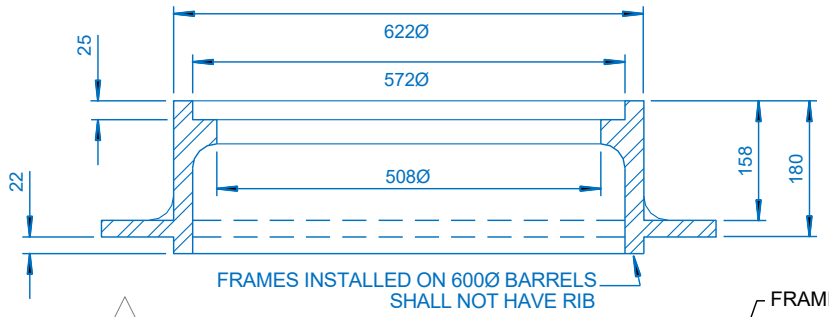
7.20.2023



PLAN OF FRAME

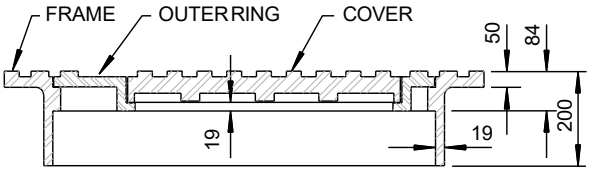


PLAN OF OUTER RING



Ed 15

FRAME



SECTION OF FRAME, RING AND COVER

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.

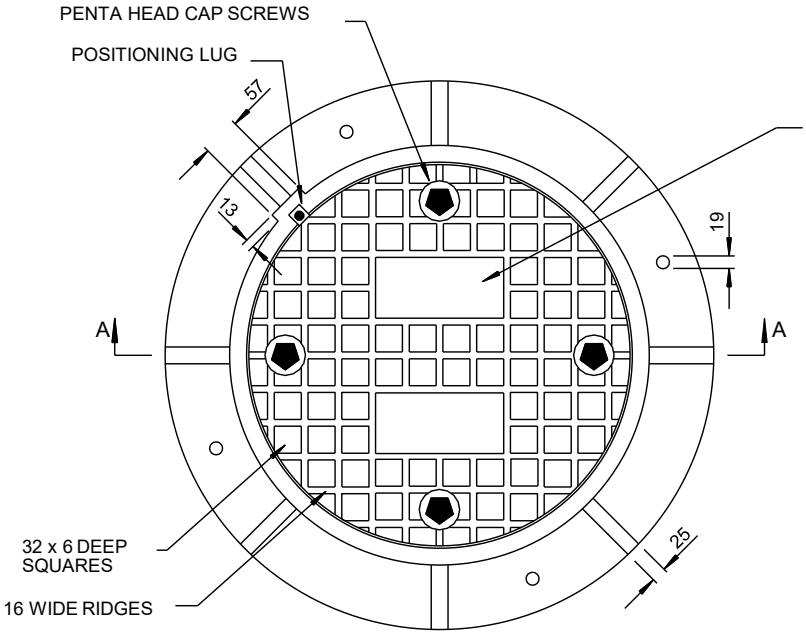
CITY OF NANAIMO
THE HARBOUR CITY

UTILITY CHAMBER MANHOLE
FRAME, RING AND COVER

Scale: NTS
Created: MAR 2016
Rev Date: ~~NOV 2016~~
Dwg No: W-20

Ed 15

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 19Ø HOLES IN FRAME FOR ANCHOR BOLTS AS SHOWN.



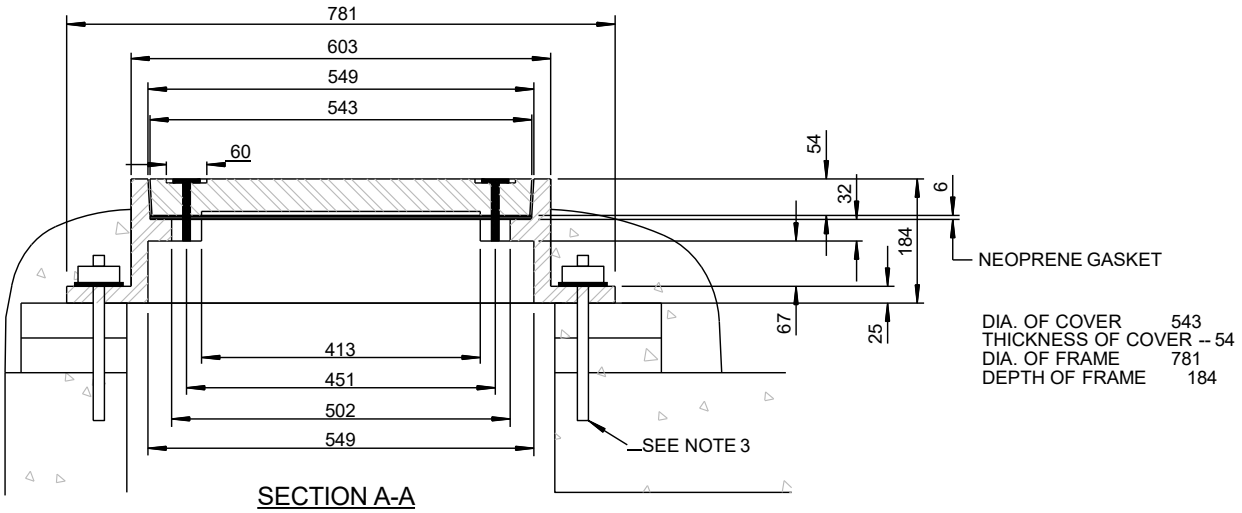
PLAN

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.



SECTION A-A

DIA. OF COVER 543
THICKNESS OF COVER -- 54
DIA. OF FRAME 781
DEPTH OF FRAME 184

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 19Ø 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.

3.6.2020

CITY OF NANAIMO
THE HARBOUR CITY

WATERTIGHT MANHOLE
FRAME AND COVER

Scale: NTS
Created: MAR 2016
Rev Date: NOV 2016
Dwg No: W-21