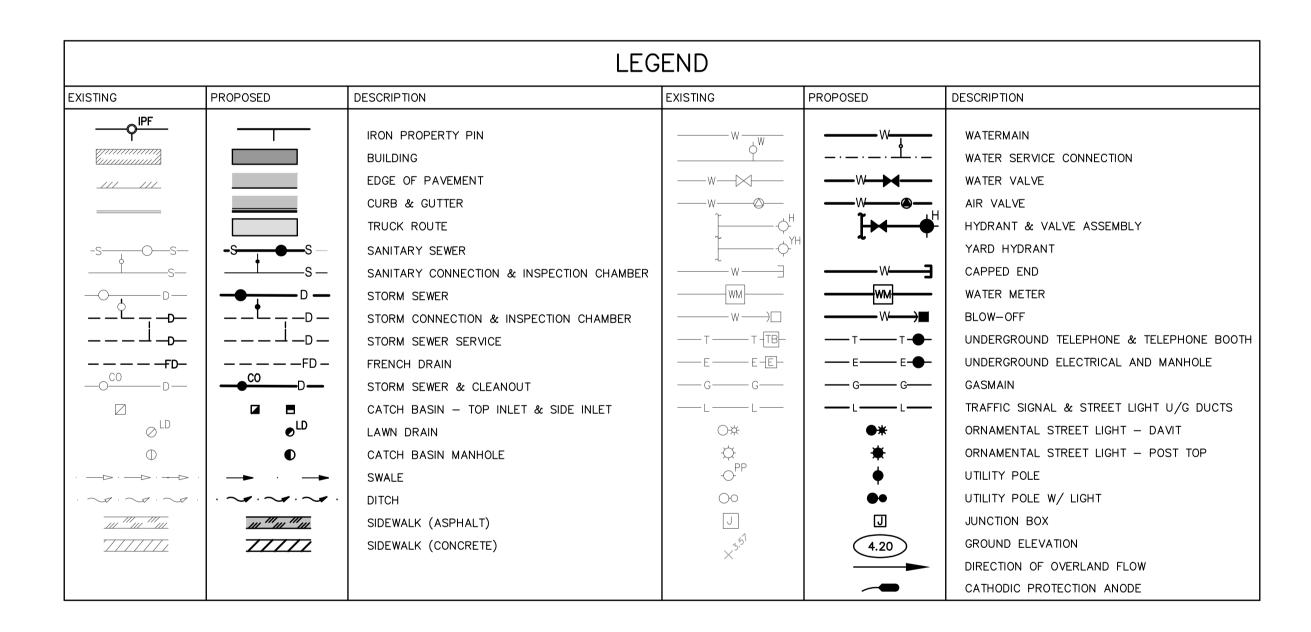
# CITY OF WHITE ROCK

15322 BUENA VISTA AVENUE, WHITE ROCK, BC V4B 1Y6

# 2019 WATER UTILITY CAPITAL WORKS WR19-039



	DRAWING INDEX							
	DWG TYPE	DWG #	SHEET #					
	WATERMAIN DETAILS	19-1006-WD1	1					
	WATERMAIN DETAILS	19-1006-WD2	2					
	BREARLEY WATERMAIN	19-1006-W2	3					
E	BREARLEY WATERMAIN TIE—IN DETAILS	19-1006-W2D	4					



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# GENERAL NOTES

## <u>GENERAL</u>

- CONSTRUCTION IS TO BE IN ACCORDANCE WITH THE APPLICABLE MUNICIPAL MASTER SPECIFICATIONS AND STANDARD DETAIL DRAWINGS, CITY OF WHITE ROCK STANDARD CONSTRUCTION DOCUMENTS, SUPPLEMENTARY SPECIFICATIONS & STANDARD DRAWINGS AND CITY DESIGN CRITERIA.
- 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY AND ALL CITY PERMITS FROM CITY OR OTHER UTILITY PROVIDERS FOR WORK TO BE PERFORMED.
- 3. WHERE UTILITY OR SERVICE CROSSINGS ARE REQUIRED ACROSS EXISTING PAVEMENT, ALL EXISTING PAVEMENT, BOULEVARDS, DRIVEWAYS, ETC., ARE TO BE REINSTATED TO ORIGINAL OR BETTER CONDITION IN ACCORDANCE WITH CITY SPECIFICATIONS.
- 4. THE CONTRACTOR WILL GIVE MINIMUM 7 DAYS WRITTEN NOTICE OF THE PROPOSED START OF CONSTRUCTION TO RESIDENTS DIRECTLY AFFECTED BY CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR WILL REQUIRE WRITTEN AUTHORIZATION FROM PROPERTY OWNER, WITH A COPY TO THE CITY, PRIOR TO ANY ENTRY ONTO PRIVATE PROPERTY AND A WRITTEN RELEASE, FROM THE PROPERTY OWNER, AT THE COMPLETION OF WORK. THE CONTRACTOR WILL OBTAIN ANY WORKING EASEMENTS IF HE DETERMINES THAT THEY ARE REQUIRED TO SUIT HIS CONSTRUCTION
- 5. OFFSETS AND LOCATIONS OF EXISTING UNDERGROUND UTILITIES HAVE BEEN COMPILED FROM GIS INFORMATION, AS-BUILTS, AND TOPOGRAPHICAL SURVEY AND MAY NOT BE COMPLETE OR ACCURATE.

PRIOR TO CONSTRUCTION. THE CONTRACTOR IS TO VERIFY THE LOCATION AND ELEVATION OF ALL PIPES OR OTHER UTILITY CROSSINGS AND SHALL NOTIFY THE ENGINEER OF RECORD OF ANY CONFLICTS. ANY CONFLICTS NOT REPORTED TO THE ENGINEER BEFORE START OF CONSTRUCTION SHALL BE RECTIFIED AT THE CONTRACTOR'S

- 6. THE CONTRACTOR IS TO EXPOSE CROSSINGS AND TIE-IN POINTS SUFFICIENTLY IN ADVANCE OF ORDERING MATERIALS AND CONSTRUCTION TO ALLOW ANY RE-DESIGN DUE TO CONFLICTS. THE CONTRACT VALUES WILL BE ADJUSTED TO REFLECT ADDITION OR DELETION OF WORK RESULTING FROM THE RE-DESIGN. COSTS RESULTING FROM LATE EXPOSING OF CONFLICT POINTS (EG. STANDBY TIME, RE-STOCKING OF MATERIAL, RELAYING OF PIPE, ETC.) IS NOT CONSIDERED AN ADDITIONAL COST TO THE CONTRACT.
- ORGANICS OR ORGANIC LADEN SOILS ENCOUNTERED AT PIPE INVERT ELEVATIONS SHALL BE STRIPPED. STRIPPING SHOULD EXTEND BEYOND THE PIPE LATERALLY ON BOTH SIDES TO A DISTANCE EQUIVALENT TO THE DEPTH OF OVER EXCAVATION.
- 8. ALL AS-CONSTRUCTED DIMENSIONS NOTED ON THESE RECORD DRAWINGS ARE TO PROPERTY CORNERS AS SHOWN ON WHITE ROCK'S GIS SYSTEM, PROVIDED BY THE CITY.

## **ROADWORKS**

- 1. EXISTING VALVE BOXES, MANHOLES, ETC., WITHIN THE ROAD ALLOWANCE SHALL BE ADJUSTED TO SUIT THE FINISHED GRADE.
- 2. CONTRACTOR TO REINSTATE / RELOCATE ALL SIGNS AND PAINT MARKINGS DISTURBED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER OR HIS REPRESENTATIVE ON SITE.
- 3. ALL PAINT MARKING AND SIGNAGE TO BE IN ACCORDANCE WITH THE LATEST EDITION OF THE TRANSPORTATION ASSOCIATION OF CANADA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR CANADA. ALL PAINT MARKING TO BE THERMOPLASTIC.
- 4. UTILITY TRENCHES TO BE AS PER DETAIL ON THIS SHEET AND THE DRAWINGS.
- 5. ROAD RESTORATION TO BE AS PER DETAIL ON THIS SHEET AND THE DRAWINGS.

## WATER WORKS NOTES

- 1. TIE-INS OF NEW WATERMAINS AND SERVICES TO LIVE MAINS, AFTER TESTING AND CHLORINATION, SHALL BE CARRIED OUT BY THE CONTRACTOR UNDER THE SUPERVISION OF THE CONSULTANT'S INSPECTOR AND THE OBSERVATION OF CITY'S INSPECTOR. ALL PIPES AND FITTINGS USED FOR FINAL CONNECTIONS MUST BE SWABBED AND CLEANED WITH
- 2. PRIOR TO INSTALLATION OF NEW SERVICES, THE CONTRACTOR SHALL EXPOSE EXISTING SERVICE CONNECTIONS TO CONFIRM THE SIZE AND LOCATION OF SERVICES.
- 3. ALL NEW WATERMAINS SHALL BE CAPPED 1.5m FROM TIE-IN POINTS TO EXISTING WATERMAINS TO HAVE TEST POINTS SET UP, UNLESS OTHERWISE NOTED ON DESIGN DRAWINGS. TIE-IN POINTS ARE TO BE CONFIRMED DURING PRE-DIG. THE PROPOSED WATERMAIN IS TO BE SET AT LINE AND GRADE TO MEET THE EXISTING WATERMAIN. TIE-IN POINTS TO INCLUDE TEST POINTS AS PER DETAIL ON THIS SHEET.
- 4. ALL DOMESTIC SERVICE CONNECTIONS WILL BE A MINIMUM OF 38mm DIAMETER UNLESS OTHERWISE SPECIFIED.
- 5. ALL FITTINGS SHALL BE D.I. TYTON JOINT UNLESS OTHERWISE NOTED. ALL BOLTS SHALL BE STAINLESS STEEL.
- 6. ALL FITTINGS AND VALVES SHALL BE RESTRAINED. ALL TEMPORARY FITTINGS FOR PRESSURE TESTING SHALL BE RESTRAINED.
- 7. TEST POINTS SHALL BE SIZED TO ALLOW FLUSHING VELOCITY OF 0.8 m/s.
- 8. WHEN THE WATERMAIN IS CLOSER THAN 0.5m VERTICALLY OR 3.0m HORIZONTALLY TO A SEWER (STORM OR SANITARY) BUT IS ABOVE THE SEWER, THE WATERMAIN SHALL BE LAID IN SUCH A MANNER THAT THE CROSSING IS MADE MIDWAY BETWEEN THE JOINTS ON A FULL LENGTH OF PIPE. IF THIS IS NOT ATTAINABLE. THE JOINTS SHALL BE WRAPPED WITH HEAT SHRINK PLASTIC OR PACKED WITH COMPOUND AND WRAPPED WITH DENSO TAPE.

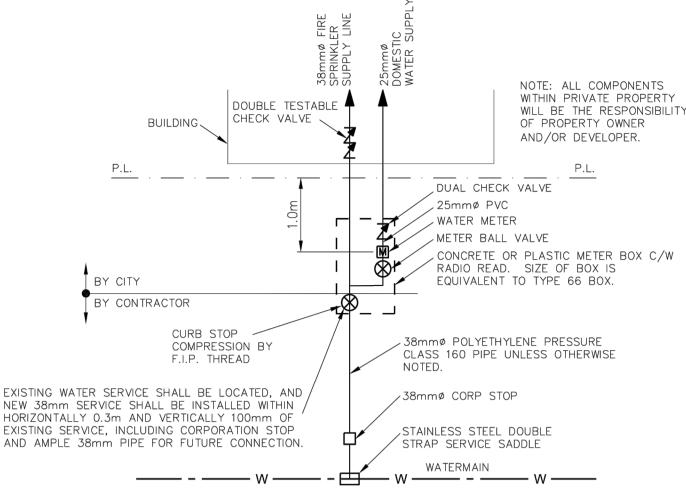
ACCEPTABLE STANDARDS ARE ANSI/AWWA C214 (FACTORY APPLIED), ANSI/AWWA C209 (FIELD APPLIED), AND ANSI/AWWA C217-90 (PETROLATUM TAPE). ALL MATERIALS USED SHALL HAVE ZERO HEALTH HAZARD.

WHEN THE WATERMAIN IS BENEATH THE SEWER, THERE SHALL BE A MINIMUM OF 300mm SEPARATION. THE WATERMAIN SHALL BE LAID IN SUCH A MANNER THAT THE CROSSING IS MADE MIDWAY BETWEEN THE JOINTS ON A FULL LENGTH OF PIPE. WATERMAIN JOINTS WITHIN 3.0m OF THE CROSSING ARE TO BE WRAPPED AS NOTED ABOVE.

- 9. THE CONTRACTOR TO ENSURE THE MAIN AND SERVICE CONNECTIONS ARE TESTED AND CHLORINATED PRIOR TO ANY TIE-IN WORKS (MAINS AND CONNECTIONS). CONTRACTOR TO HIRE QUALIFIED THIRD PARTY TO PERFORM TESTING. PRESSURE TESTING AND MICROBIOLOGY SAMPLING RESULTS SHALL BE SIGNED-OFF BY THE CONSULTANT WITNESSING THE TESTS AND SUBMITTED TO THE CITY PRIOR TO FINAL COMPLETION OF THE TIE-INS.
- 10. ALL NEW SERVICE CONNECTIONS SHALL BE POLYETHYLENE C/W 14 GAUGE COPPER COATED TRACER WIRE, SAMPLE TESTED. THE CONTRACTOR MUST CONTACT THE MANUFACTURER TO REVIEW INSTALLATION PROCEDURE.
- 11. ALL VALVE BOXES SHALL BE NELSON STYLE. ANY VALVE BOX OUTSIDE OF A TRAVELLED ROAD SHALL HAVE A 500mmø ASPHALT APRON PLACED AROUND IT.
- 12. ALL AIR RELEASE VENTS, STAND PIPES, ETC. SHALL BE FORD ENGINE BLUE.
- 13. ENSURE OPERATION OF HYDRANT ISOLATION VALVE SHALL NOT BE IMPEDED BY PROXIMITY OF HYDRANT.
- 14. RESTRAIN WATERMAIN AT JOINTS AS REQUIRED FOR SEISMIC ZONES. SEE TABLE FOR RESTRAINING LENGTHS FOR PIPES.

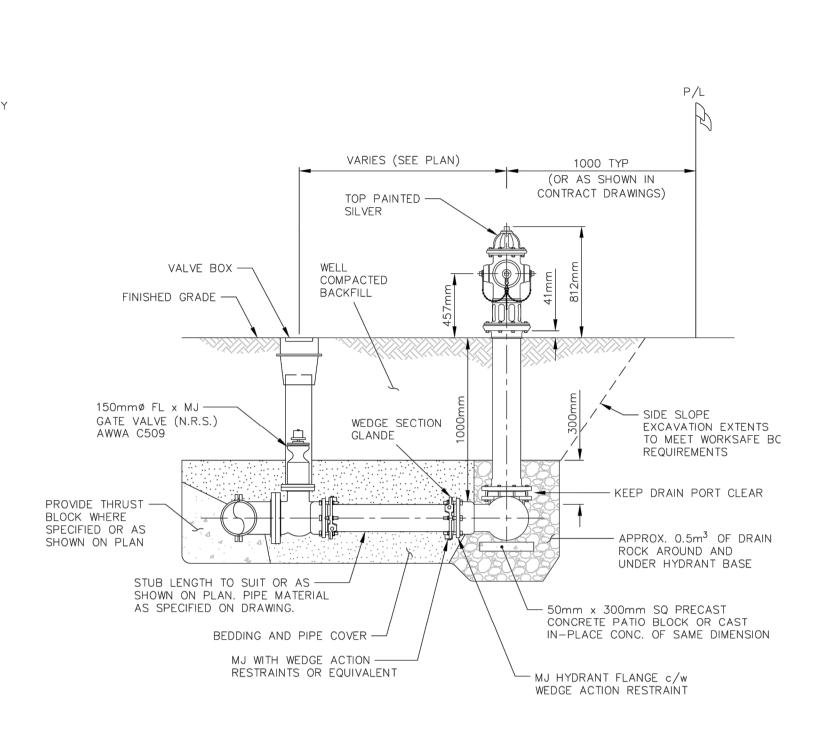
## CATHODIC PROTECTION NOTES

- 1. GENERAL: THE CATHODIC PROTECTION INSTALLATION SHALL BE IN ACCORDANCE WITH THIS DRAWING. ALL MATERIALS SHALL BE AS INDICATED OR APPROVED ALTERNATES INCLUDING ANODES. CABLES AND OTHER SPECIFIED MATERIALS.
- 2. THERMITE CONNECTIONS: ALL CABLE TO PIPE BONDS SHALL BE COMPLETED WITH APPROPRIATELY SIZED THERMITE WELD CHARGES AND MOLDS. BOND SURFACES TO BE PREPARED AS RECOMMENDED BY THE MANUFACTURER.
- 3. UNCOATED FITTING AND RESTRAINT SURFACES SHALL EITHER BE ENCASED WITH MINIMUM 8mm LOW DENSITY POLYETHYLENE FILM OR COATED WITH PETROLATUM TAPE /PASTE, ALL MATERIALS AND INSTALLATION REQUIREMENTS AS RECOMMENDED BY THE MANUFACTURER.
- 4. FIELD APPLIED COATINGS: ALL THERMITE WELD CONNECTIONS SHALL BE COATED WITH A COLD APPLICATION MASTIC. ROYSTON A51 OR APPROVED ALTERNATE.
- 5. A SINGLE 9LB. PACKAGED MAGNESIUM ANODE SHALL BE BONDED TO AS MANY AS 3 NEARBY FITTINGS. FINAL LOCATIONS FOR PLACEMENT OF ANODES AND BOND CABLES TO BE FIELD DETERMINED.
- 6. FITTINGS SHALL BE BONDED TOGETHER WITH 2 #8 CABLES.
- 7. NO ADDITIONAL CORROSION PROTECTION SHALL BE REQUIRED FOR JOINT RESTRAINTS. ALL JOINT RESTRAINTS AND FITTINGS SHALL BE WRAPPED WITH DENSO TAPE AS PER ANSI/AWWA C217-90



- 1. SERVICE LINES SHALL BE INSTALLED FROM WATER MAIN TO PROPERTY, AND FINAL CONNECTIONS AT PROPERTY SHALL BE MADE FOR DOMESTIC AND FIRE SPRINKLER LINES UNDER SUPERVISION
- 2. DEPTH OF DOMESTIC SERVICE LINE ARRIVING NEAR PROPERTY LINE SHALL BE 0.45m (MINIMUM FROST PROTECTION). DEPTH OF FIRE SPRINKLER LINE SHALL BE 0.60m MINIMUM AND 0.90m
- 3. FINAL GRADE ELEVATION REFERENCE MARK SHALL BE SUPPLIED FOR METRE PIT INSTALLATION.
- 4. CONSTRUCTION ZONE FOR METER BOX AND CONNECTIONS SHALL BE FREE OF OBSTRUCTIONS AND EASILY ACCESSIBLE TO CITY OF WHITE ROCK STAFF.
- 5. ALL CITY OF WHITE ROCK MAINS, METER BOXES AND OTHER FACILITIES SHALL BE ON CITY-OWNED ROAD RIGHT OF WAY.
- 6. ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH BC BUILDING CODE, MMCD SPECIFICATIONS, FEDERAL AND PROVINCIAL PLUMBING CODES, AND OTHER APPLICABLE ACTS, REGULATIONS, OR BYLAWS (CURRENT VERSIONS).
- 7. NEW SERVICES SHALL BE INSTALLED TO CURB STOP AND PLACED 2x4 VERTICALLY WITH END PAINTED BLUE
- 8. SERVICES TO BE INSTALLED PERPENDICULAR TO UTILITY MAINS.

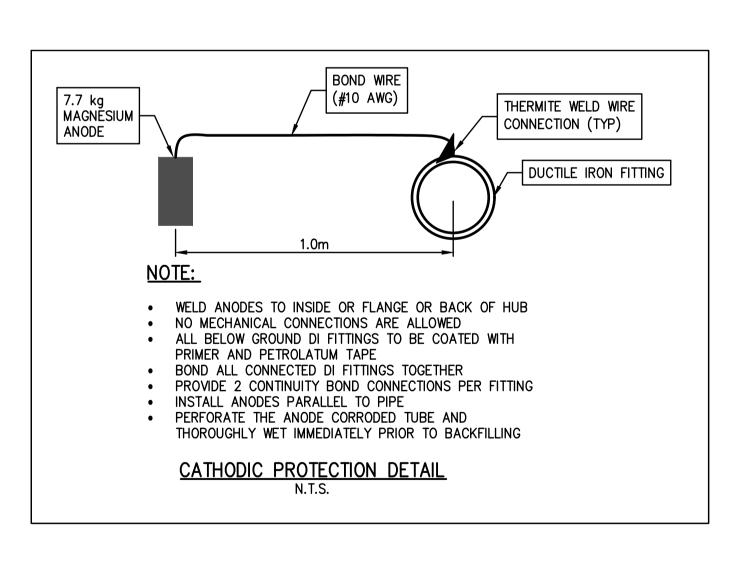
# 38mm RESIDENTIAL WATER SERVICE DETAIL

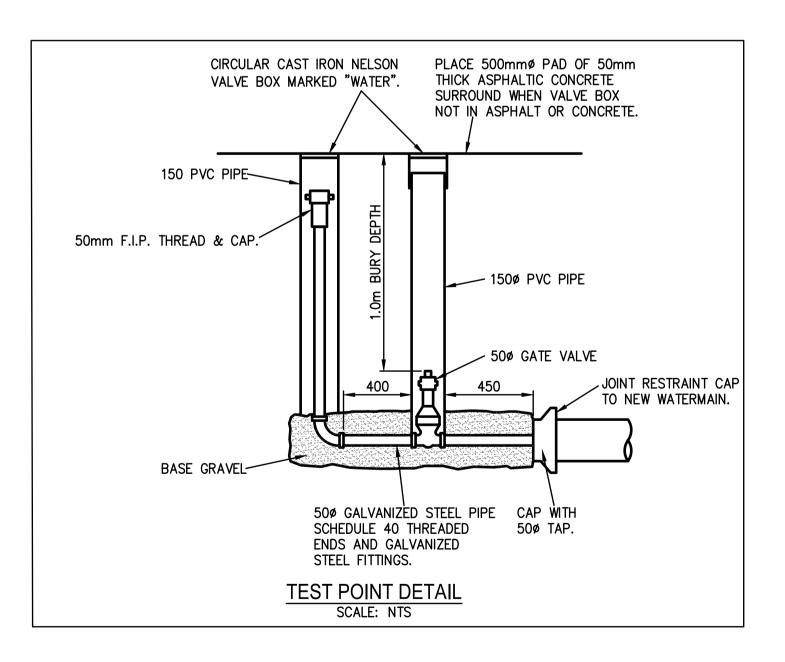


### NOTES:

- MUNICIPAL HYDRANTS PER AWWA C502, PAINTED RED WITH SILVER BONNET. HYDRANT SHALL BE INSTALLED VERTICALLY WITH MAXIMUM TOLERANCE OF 3°.
- 3. HYDRANTS SHALL BE MUELLER SUPER CENTURION A423.

FIRE HYDRANT DETAIL





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CLIENT CITY OF WHITE ROCK 15322 BUENA VISTA AVENUE, WHITE ROCK, BC V4B 1Y6

DRAWING DESCRIPTION

2020 WHITE ROCK WATER MAIN WATERMAIN DETAILS

SURVEYED BY #

DESIGNED BY RA

CHECKED BY RA

**SCALES** 

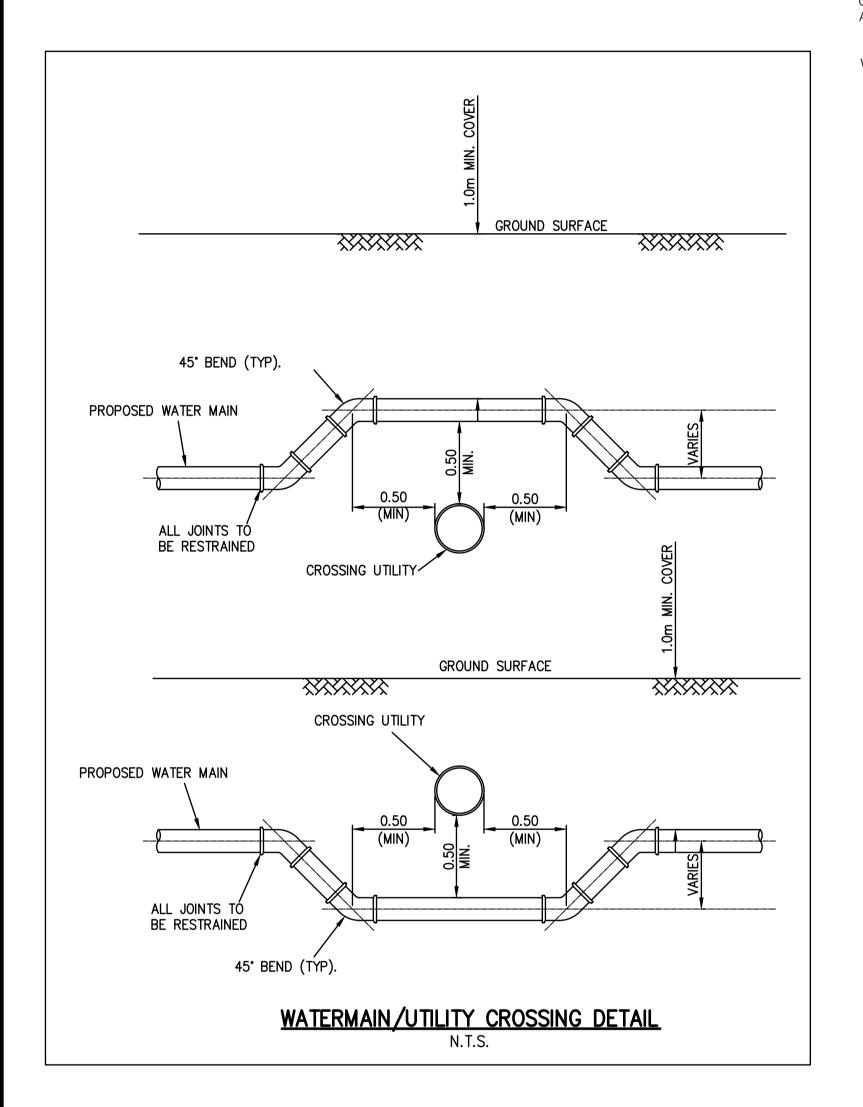
AS SHOWN

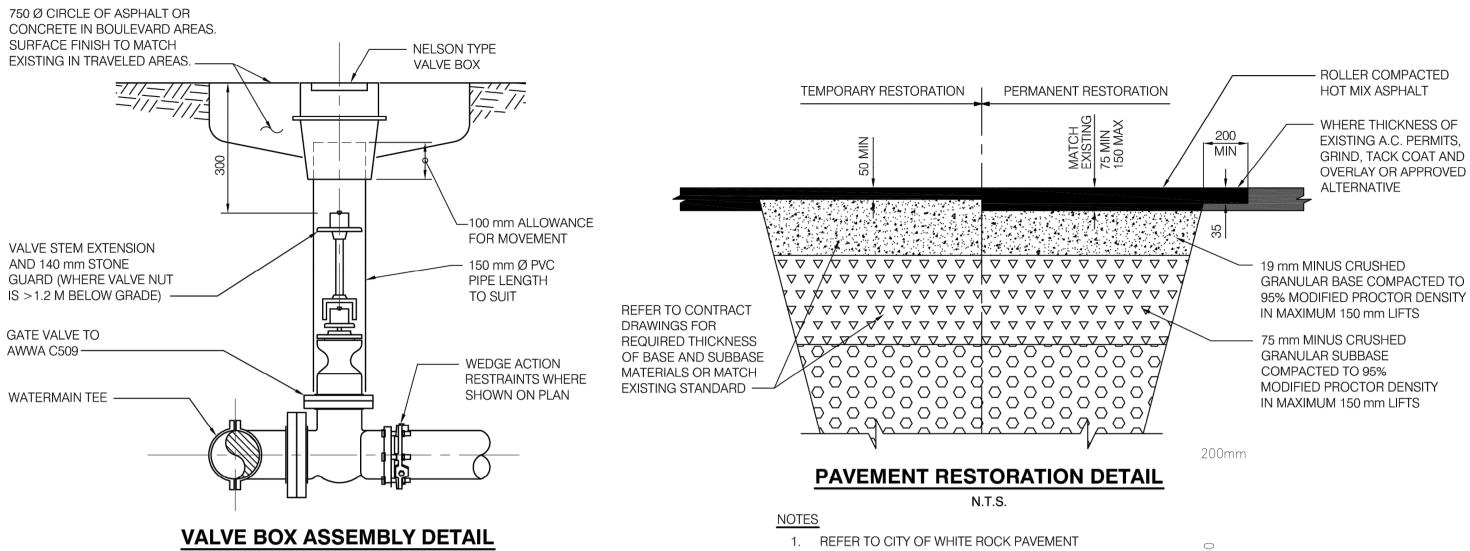
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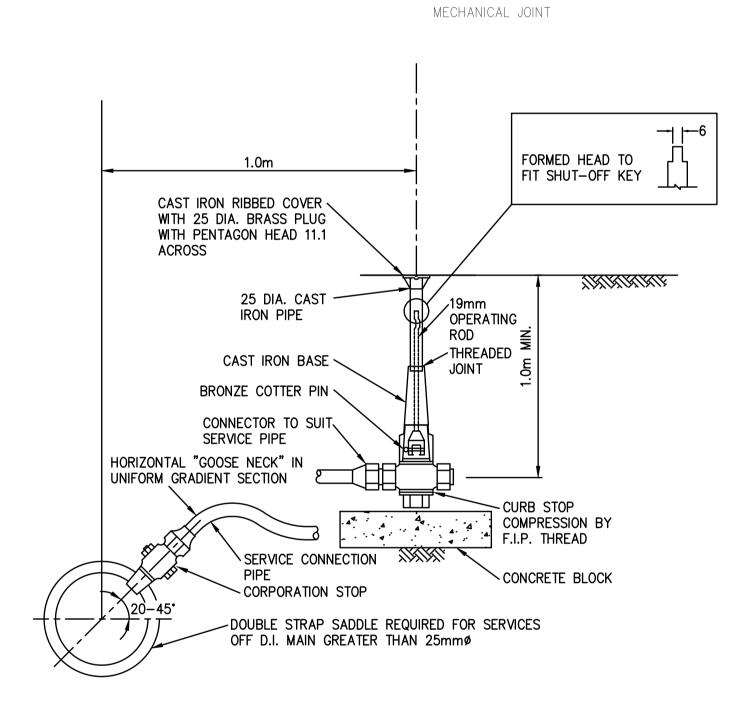
2020-03-12

DATE March 4, 2020 **DRAWING No.** 19-1006-WD1 SHEET 1 OF 4

DESTROY ALL PRINTS BEARING PREVIOUS No.



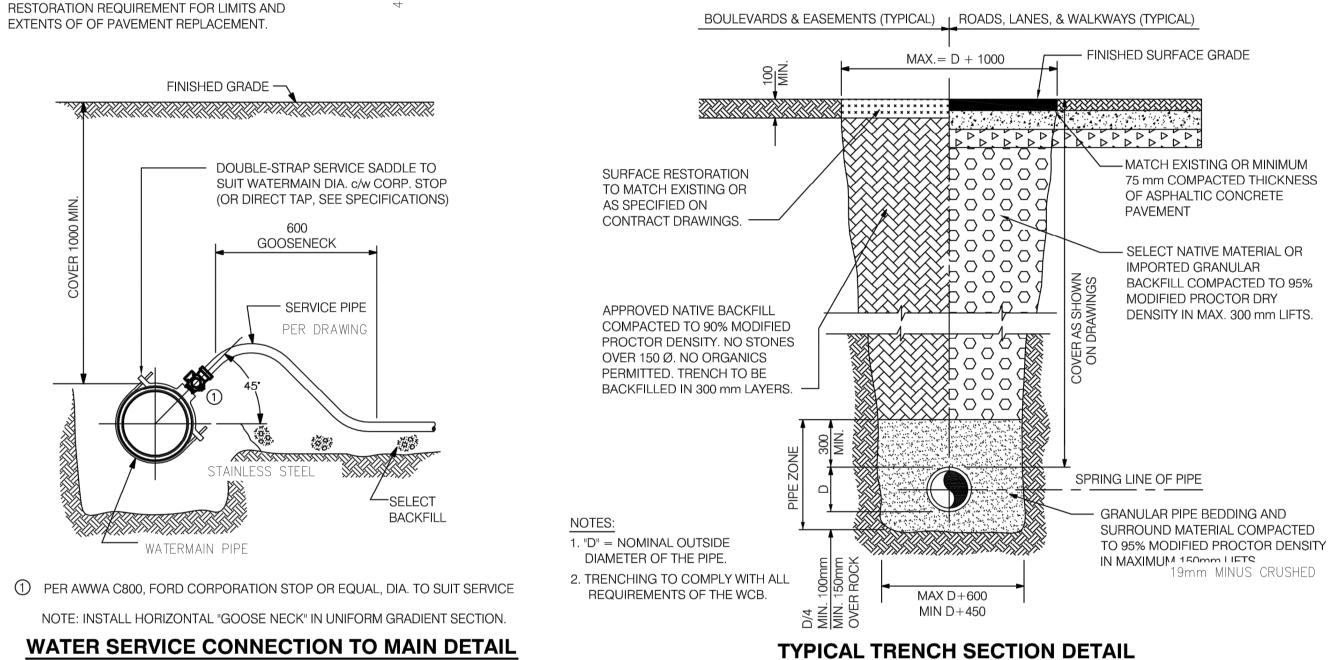




N.T.S.

- 1. THIS DETAIL FOR SERVICES 19 TO 50mm ONLY.
- 2. PVC SADDLES TO SECTION 33 11 01.
- 3. INSTALL SERVICE PIPE WITH "GOOSE NECK" IN HORIZONTAL POSITION

38mmØ NEW WATER SERVICE CONNECTION DETAIL (SOUTH SIDE OF COLDICUTT AVENUE) SCALE: NTS



RESTRAINING LENGTHS FOR PIPES PIPE Ø HORIZONTAL BENDS TEES REDUCERS VERTICAL BENDS (mm) x100 x150 x200 45° 22.5° 11.25° x100 x150 22.5° 11.25° 45° 100 1.6m 150 7.3m 7.1m 1.8m 11.9m 200 11.3m 250 ASSUMES NO JOINT #m/#m = UPPER/LOWER (ASSUMES A RESTRAINT ALONG DEPTH OF TWO METERS AT LOWER) LENGTH OF TEE ALL LENGTHS ASSUME A DEPTH OF ONE METER UNLESS NOTED OTHERWISE

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CLIENT DRAWING DESCRIPTION

**CITY OF WHITE ROCK** 15322 BUENA VISTA AVENUE, WHITE ROCK, BC V4B 1Y6 **2020 WHITE ROCK WATER MAIN** 

WATERMAIN DETAILS

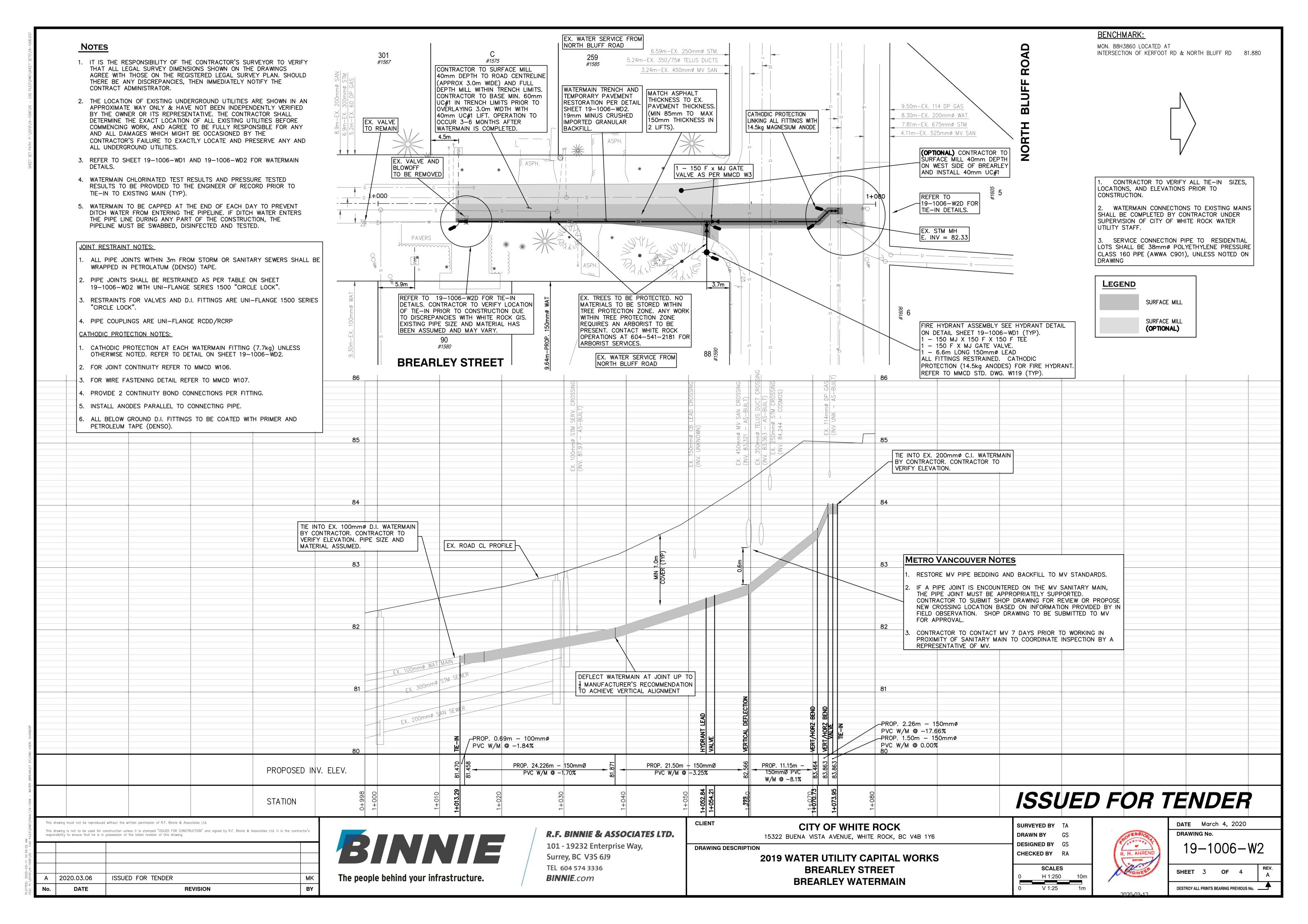
SURVEYED BY # DRAWN BY **DESIGNED BY** RA CHECKED BY RA **SCALES** AS SHOWN

DATE March 4, 2020 DRAWING No. 19-1006-WD2

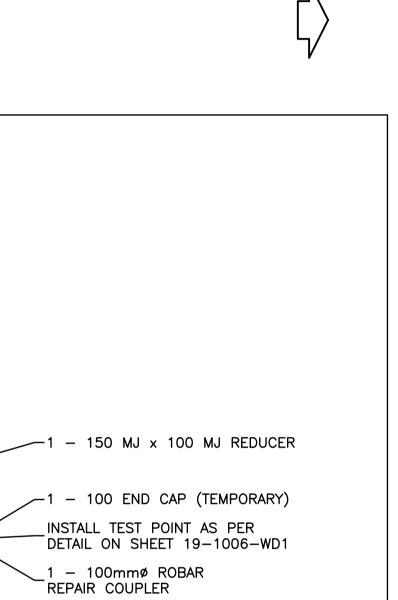
MATERIAL THICKNESS

PER GEOTECHNICAL RECOMMENDATIONS.

SHEET 2 OF 4 DESTROY ALL PRINTS BEARING PREVIOUS No.



- WATERMAIN TIE-INS SHALL BE DONE BY THE CONTRACTOR WITH CITY STAFF WITNESSING.
- 2. CONTRACTOR TO CONTACT CITY OF WHITE ROCK MIN. 5 WORKING DAYS PRIOR TO TIE-IN DATE.



TIE IN DETAIL
AT 1580 BREARLEY STREET
SCALE: 1:50

ALL FITTINGS SHALL BE RESTRAINED

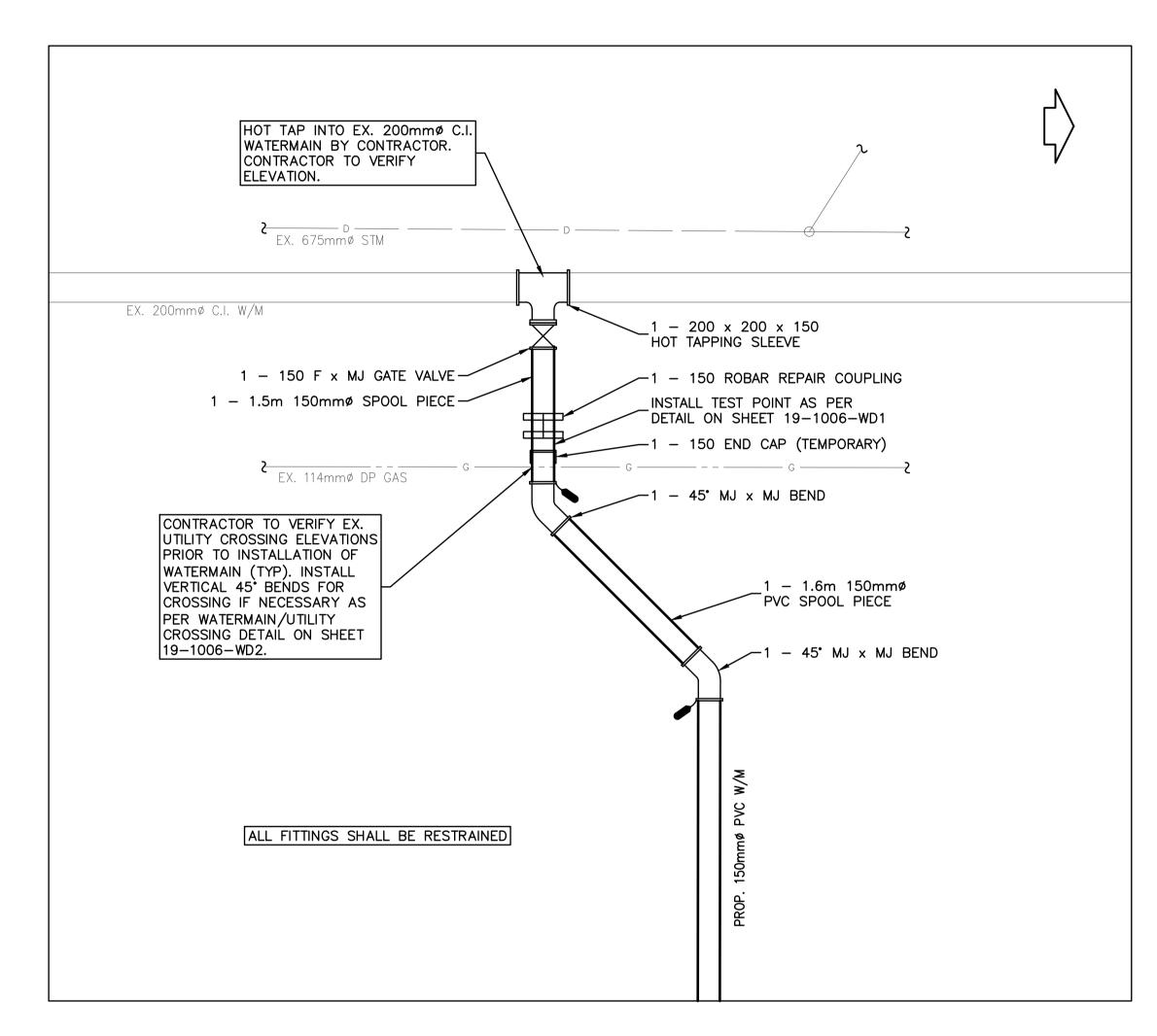
REMOVE EX. BLOW-OFF\_

1 - 0.7m 100mmø

SPOOL PIECE

EX. WATER SERVICE (APPROXIMATE LOCATION)

AND VALVE



TIE IN DETAIL

AT BREARLEY STREET & NORTH BLUFF ROAD

SCALE: 1:25

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CLIENT

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	15322	BUENA	VISTA	AVENUE,	WHITE	ROCK,	BC V4B	1Y6
PRAWING DESCRIPTION								
2019 WATER UTILITY CAPITAL WORKS								
BREARLEY STREET								
BREARLEY WATERMAIN TIE-IN DETAILS						AILS		

**CITY OF WHITE ROCK** 

SCALES				
CHECKED BY	RA			
DESIGNED BY	GS			
DRAWN BY	GS			
SURVEYED BY	TA			

AS SHOWN



	DATE March 4, 2020			
DRAWING No.				
ND ND	19-1006-W2	D		
	SHEET 4 OF 4	REV. Δ		

DESTROY ALL PRINTS BEARING PREVIOUS No.