

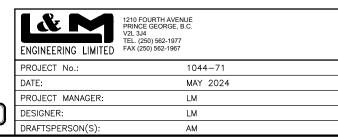
DISTRICT OF MACKENZIE

CENTENNIAL DR & NATION AVE P.R.S. #1 & #2 REPLACEMENT

DRAWING INDEX

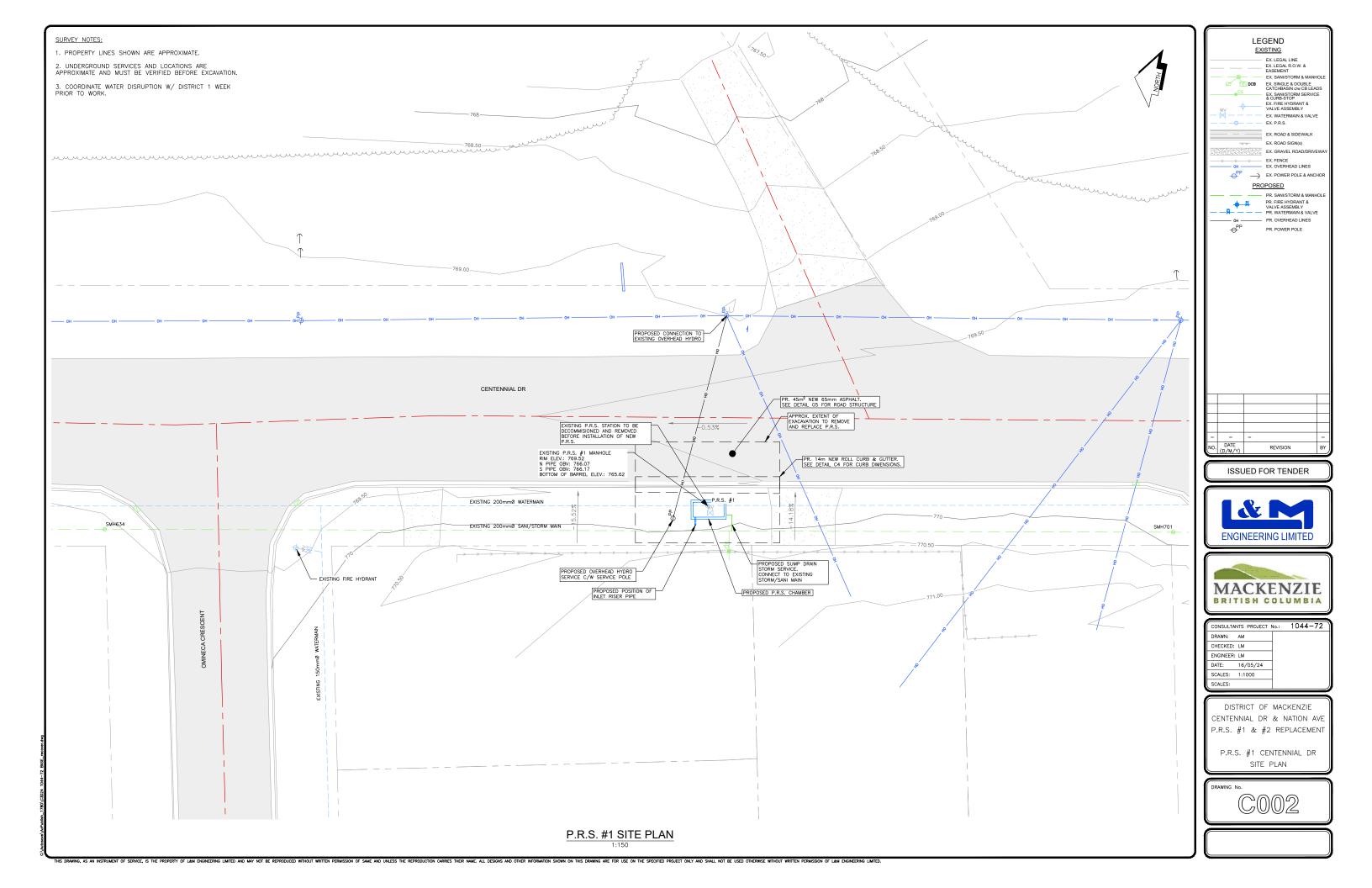
Dwg No.	Rev.	Description
C001	0	OVERALL SITE PLAN
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C003	0	P.R.S. #2 NATION AVE SITE PLAN
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C005	0	SECTIONS & DETAILS

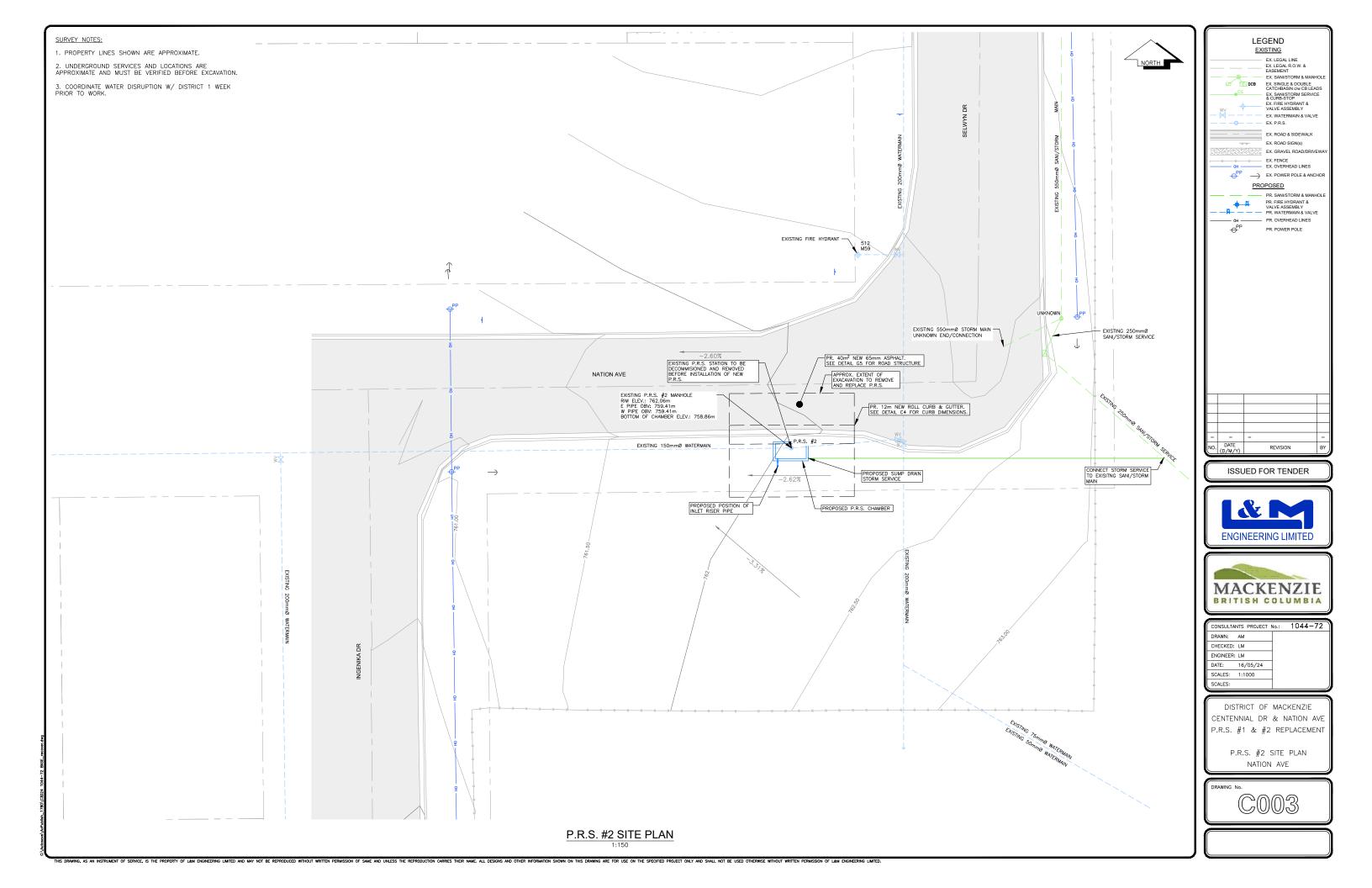




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GENERAL CONSTRUCTION NOTES

- ALL WORKS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE 2019 MASTER MUNICIPAL CONSTRUCTION DOCUMENTS (MMCD)
- THE LOCATION OF EXISTING UTILITIES, AS SHOWN ON THE DESIGN DRAWINGS, ARE APPROXIMATE ONLY AND MAY NOT BE FULLY ACCURATE OR COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR A BC ONE CALL AND TO LOCATE ALL EXISTING UNDERGROUND UTILITIES PRIOR TO ANY SITE WORKS. THE CONTRACTOR SHALL EXPOSE ALL THEIN LOCATIONS AND POTENTIAL POINTS OF CONFICT AND CONFIRM DESIGN ELEVATIONS PRIOR TO COMMENCING CONSTRUCTION. IN THE EVENT OF A CONFLICT, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY FOR DIRECTION. THE CONTRACTOR SHALL ASSUME ALL COSTS AND EXPENSES THAT MAY ARISE FROM DAMAGES AND REPAIR TO SUCH UTILITIES.
- FOR ANY MATERIAL SUBSTITUTION OR CHANGE TO THE DESIGN, THE CONTRACTOR MUST OBTAIN WRITTEN APPROVAL FROM THE ENGINEER PRIOR TO COMMENCING CONSTRUCTION. FAILURE TO GET WRITTEN APPROVAL FROM THE ENGINEER OF RECORD MAY RESULT IN A BREACH OF CONTRACT AND THE CONTRACTOR MAY HE HELD LIABLE FOR DAMAGES THAT MAY OCCUR.
- SITE WORK DEMOLITION AND REMOVALS ALL REMOVALS ARE TO BE DISPOSED OF IN AN APPROVED OFF SITE LOCATION. THE CONTRACTOR IS TO PROTECT EXISTING STRUCTURES AND SPECIAL CARE IS TO BE TAKEN TO NOT DAMAGE EXISTING ITEMS OUTSIDE OF THE LIMIT OF REMOVALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES THAT MAY OCCUR.
- ASPHALT AND CONCRETE REMOVALS ALL ASPHALT AND CONCRETE THAT ARE TO BE REMOVED ARE TO BE SAWCUT ALONG THE LIMIT OF REMOVALS AND DISPOSED OF IN AN APPROVED OFF SITE LOCATION. SPECIAL CARE IS TO BE TAKEN TO NOT DAMAGE THE PAVEMENT OUTSIDE OF THE LIMIT OF REMOVALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES THAT MAY OCCUR.
- UNDERGROUND POWER AND COMMUNICATION CABLE DUCTS UTILITY LOCATION AND INSTALLATION SHALL BE AS PER ELECTRICAL ENGINEERING DESIGN DRAWINGS, UTILITY COMPANY SPECIFICATIONS, AND MANUFACTURES INSTRUCTIONS.
- ALL WORK SHALL BE IN ACCORDANCE WITH CURRENT WORK SAFE B.C. REGULATIONS.

MASTER MUNICIPAL CONSTRUCTION DOCUMENTS 2019

DIVISION 1 - GENERAL REQUIREMENTS

- PROJECT RECORD DOCUMENTS SHALL CONFORM TO SECTION 01 33 01 OF THE MMCD
- REFERENCE SPECIFICATIONS SHALL CONFORM TO SECTION 01 42 00 OF THE MMCD.
- TRAFFIC CONTROL, VEHICLE ACCESS AND PARKING SHALL CONFORM TO SECTION 01 55 00 OF THE MMCD.
- ENVIRONMENTAL PROTECTION SHALL CONFORM TO SECTION 01 57 01 OF THE MMCD
- a. THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN ACCESS ROADS TO PREVENT ACCUMULATION OF MUD, DIRT, SAND, GRAVEL OR DEBRIS ON CITY ROADS, CITY LANDS OR PROVINCIAL HIGHWAYS.
- PROJECT IDENTIFICATION SHALL CONFORM TO SECTION 01 58 01 OF THE MMCD.

DIVISION 3 - CONCRETE

- 1. CONCRETE REINFORCEMENT SHALL CONFORM TO SECTION 03 20 01 OF THE MMCD.
- CONCRETE WALKS, CURBS AND GUTTERS (MMCD DRAWING C1-C9) SHALL CONFORM TO SECTION 03 30 20 OF THE MMCD.
- a. THE CONTRACTOR SHALL SUBMIT THE CONCRETE MIX DESIGN AND TRIAL MIX TEST RESULTS TO THE ENGINEER FOR REVIEW AT LEAST TWO WEEKS PRIOR TO COMMENCING WORK.
- CONCRETE CAST-IN-PLACE SHALL CONFORM TO SECTION 03 30 53 OF THE MMCD.
- PRECAST CONCRETE SHALL CONFORM TO SECTION 03 40 01 OF THE MMCD.

DIVISION 31 - EARTHWORKS

- 1. AGGREGATE AND GRANULAR MATERIALS SHALL CONFORM TO SECTION 31 05 17 OF THE MMCD.
- a. SECTION 31 05 17 2.3 PIT RUN GRAVEL REFER TO THE TABLE FOR MATERIAL GRADATION
- b. SECTION 31 05 17 2.8 SELECT GRANULAR SUBBASE (SGSB) REFER TO THE TABLE FOR MATERIAL GRADATION.
- c. SECTION 31 05 17 2.9 CRUSHED GRANULAR SUB-BASE REFER TO THE TABLE FOR MATERIAL GRADATION d. $\underline{\text{SECTION 31 05 17 2.10 - GRANULAR BASE (WGB, IGB)}}$ REFER TO THE TABLE FOR MATERIAL GRADATION.
- EXCAVATING TRENCHING AND BACKELLING (MMCD DRAWING G4) SHALL CONFORM TO SECTION 31 23 01 OF THE MMCD TRENCH BACKFILL FOR ALL UTILITY MAINS OR SERVICES SHALL CONSIST OF TYPE "3" FILL (APPROVED NATIVE MATERIAL), COMPACTED IN 200mm (LOOSE) THICK LIFTS TO 98% STANDARD PROCTOR MAXIMUM DRY DENSITY. THE TOP 300mm OF SURGRADE IN ALL LITLITY TRENCHES SHALL BE COMPACTED IN 200mm (LOOSE) LIFTS TO 100% STANDARD PROCTOR MAXIMUM DRY DENSITY. CONTRARY TO SECTION 31 23 01

 3.4.1 - PIPE INSTALLATION THE PIPE BEDDING AND SURROUND MATERIAL WILL CONFORM TO THE PIPE MANUFACTURERS RECOMMENDATIONS

DIVISION 32 - ROAD AND SITE IMPROVEMENTS

- GRANULAR SUBBASE SHALL CONFORM TO SECTION 32 11 16.1 OF THE MMCD.
- a. THE LAYER OF GRANULAR SUBBASE MATERIAL SHALL BE PLACED IN LIFTS NOT EXCEEDING 200mm MEASURED IN LOOSE THICKNESS AND COMPACTED TO 100% STANDARD PROCTOR MAXIMUM DRY DENSITY.
- 2. GRANULAR BASE SHALL CONFORM TO SECTION 32 11 23 OF THE MMCD.
- 3. THE LAYER OF GRANULAR BASE COURSE MATERIAL SHALL BE COMPACTED TO 100% STANDARD PROCTOR MAXIMUM DRY DENSITY
- 4. ASPHALT PRIME SHALL CONFORM TO SECTION 32 12 13.2 OF THE MMCD.
- 5. HOT-MIX ASPHALT CONCRETE PAVING SHALL CONFORM TO SECTION 32 12 16 OF THE MMCD.
- a. THE ASPHALT SURFACE SHALL CONSIST OF A MINIMUM THICKNESS OF 65mm OF MIX 'C' INSTALLED IN ONE LIFT. UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL SUBMIT THE ASPHALT CONCRETE MIX DESIGN AND TRIAL MIX TEST RESULTS TO THE ENGINEER FOR REVIEW AT LEAST TWO WEEKS PRIOR TO COMMENCING WORK.
- 13. TOPSOIL AND FINISHED GRADING SHALL CONFORM TO SECTION 32 91 21 OF THE MMCD.
- 14. SEEDING SHALL CONFORM TO SECTION 32 92 20 OF THE MMCD.
- g. REFER TO THE MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE 2020 STANDARD SPECIFICATION FOR HIGHWAY CONSTRUCTION SECTION 257 - RE-VEGETATION SEEDING WITH A NORTHERN COSTAL SEED MIX.

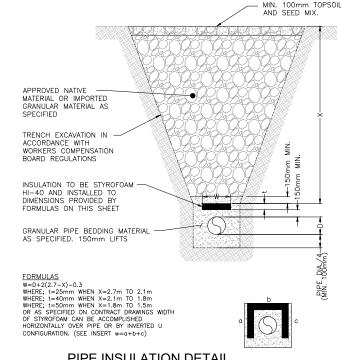
DIVISION 33 - UTILITIES

- 1. CCTV INSPECTION OF PIPELINES SHALL CONFORM TO SECTION 33 01 30.1 OF THE MMCD.
- a. PERFORM CLOSED CIRCUIT TELEVISION INSPECTIONS (CCTV) OF INSTALLED STORM SEWERS BY CCTV CAMERA AND RECORDING DEVICES IN ACCORDANCE WITH WRC STANDARDS.
- b. PERFORM CLOSED CIRCUIT TELEVISION INSPECTIONS (CCTV) OF INSTALLED SANITARY SEWERS BY CCTV CAMERA AND RECORDING DEVICES IN ACCORDANCE WITH WRC STANDARDS.
- 2. WATERWORKS SHALL CONFORM TO SECTION 33 11 01 OF THE MMCD.
- a. WATER MAIN SHALL BE POLY VINYL CHLORIDE PRESSURE PIPE (PVC) TO AWWA C900, PRESSURE CLASS 235 (DR 18) TO THE DIMENSIONS SHOWN IN THE DESIGN DRAWINGS. THE WATER MAIN SHALL HAVE 3.0m MINIMUM COVER UNLESS NOTED OTHERWISE.
- b. THRUST BLOCKS (MMCD DRAWING W1) SHALL BE CONSTRUCTED AS PER SECTION 33 11 01 OF THE MMCD.
- c. GATE VALVES (MMCD DRAWING W3) SHALL BE CONSTRUCTED AS PER SECTION 33 11 01 OF THE MMCD.

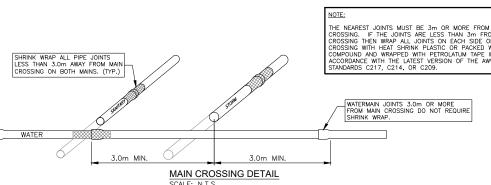
- d. MECHANICAL RESTRAINTS ALL FITTINGS ARE TO BE INSTALLED WITH DUCTILE IRON JOINT RESTRAINTS (COATED TO AWWA C219 / 210 / 213 / 550) COMPLETE WITH STUD BOLTS / RODS (ASTM A354, GR BC, SACRIFICIAL COATING WITH ZINC TO ASTM B633 OR CADMIUM TO ASTM B766 MIN 190 OR GREATER (I) AND NUTS (ASTM A563 SACRIFICIAL COATING WITH ZINC TO ASTM B633 OR CADMIUM TO ASTM B766). STUD BOLTS AND NUTS ARE TO BE INSTALLED FINGER-TIGHT. RESTRAINT SHALL BE SUITABLE FOR HOST PIPE, FORD BOX UNIFLANGE 1300/C OR EQUAL. PIPE JOINTS TO BE EBAA IRON MEGALUG MECHANICAL JOINT OR APPROVED EQUIVALENT. ALL PIPE JOINTS WITHIN 12m OF ANY VERTICAL PIPE BEND ARE TO BE MECHANICALLY RESTRAINED.
- e. FITTINGS SHALL BE CAST IRON FITTINGS DUCTILE IRON, CEMENT LINED TO AWWA C104 WITH TYTON OR ANSI/ASME B16.1 CLASS 125/150 FLAT FACE FLANGES, MEETING AWWA (C110, C111, C115, C150, C153), CL350. STAR PIPE OR EQUAL.
- f. TESTING PROCEDURE SHALL CONFORM TO SECTION 33 11 01 OF THE MMCD AND THE LATEST VERSION OF THE ANSI/AWWA STANDARD FOR DISINFECTING WATER MAINS, PRIOR TO CONNECTING THE NEW WATER MAIN TO THE EXISTING WATER MAIN SYSTEM, THE WATER MAIN MUST BE PRESSURE TESTED, CHLORINATED, FLUSHED, AND BACTERIOLOGICAL TESTS CONDUCTED. IF THE CONTRACTOR WISHES TO UTILIZE CITY WATER TO PRESSURE TEST, CHLORINATE, AND FLUSH, THE CONTRACTOR MUST INSTALL A TEMPORARY DOUBLE BACK-FLOW PREVENTOR IN ACCORDANCE WITH THE ANSI/AWWA C510 STANDARDS.
- PRESSURE TESTING OF THE WATER MAIN SHALL BE CONDUCTED IN ACCORDANCE WITH SECTION 33 11 01 OF THE MMCD. HYDROSTATIC AND LEAKAGE TESTING SHALL CONFORM TO ANSI/AWWA C900-07 STANDARDS, APPLY A LEAKAGE TEST PRESSURE OF 1.5 TIMES DESIGN WORKING PRESSURE OR 1035 KPa (150 psi), WHICHEVER IS HIGHER FOR MINIMUM OF 2 HOURS. ALL TESTING SHALL BE WITNESSED BY THE ENGINEER.
- FILUSHING OF THE WATER MAIN SHALL BE IN ACCORDANCE WITH ANSI/AWWA STANDARD C651-14. FLUSHING SHALL BE CONDUCTED PRIOR TO BOTH THE PRESSURE TESTING AND PRIOR TO THE BACTERIOLOGICAL TESTING. FLUSHING VELOCITIES SHALL BE CONFIRMED WITH THE ENGINEER. THE CONTRACTOR IS TO OBTAIN APPROVAL FROM THE MUNICIPALITY PRIOR TO DISCHARGING AND CHI ORINATED WATER INTO THE SANITARY SYSTEM
- CHLORINATION OF THE WATER MAIN SHALL BE CONDUCTED IN ACCORDANCE WITH SECTION 33 11 01 OF THE MMCD AND IN ACCORDANCE WITH ANSI/AWWA STANDARD C651-14. AN INITIAL CHIORINE RESIDUAL OF 50ppm IS REQUIRED THROUGHOUT THE ENTIRE WATER MAIN SYSTEM. AFTER 24 HOURS, A CHLORINE RESIDUAL OF 10ppm MUST BE PRESENT IN THE TEST SECTION. USE A TEST POINT INSTALLATION (MMCD DRAWINGS W5) IF REQUIRED.
- THE CONTRACTOR IS RESPONSIBLE PERFORMING BACTERIOLOGICAL TESTS ON THE WATER MAIN IN ACCORDANCE WITH ANSI/AWWA STANDARD C651-14. BACTERIOLOGICAL TESTS SHALL BE TAKEN DAILY FOR A MINIMUM OF TWO DAYS. THE BACTERIOLOGICAL TESTS SHALL BE PERFORMED BY AN ACCREDITED LABORATORY APPROVED BY THE NORTHERN HEALTH AUTHORITY. ALL TESTING SHALL BE WITNESSED BY THE ENGINEER.

DIVISION 34 - TRANSPORTATION

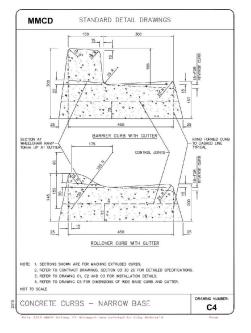
- 1. TRAFFIC SIGNALS SHALL CONFORM TO SECTION 34 41 13 OF THE MMCD.
- TRAFFIC SIGNS TO CONFORM TO THE MINISTRY OF TRANSPORTATION MANUAL OF STANDARD TRAFFIC SIGNS AND PAVEMENT MARKINGS. ALL SIGNS SHALL BE DIAMOND GRADE.

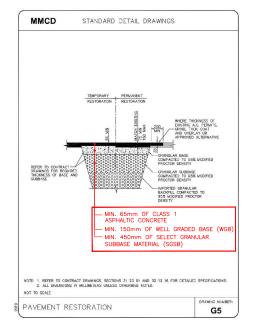


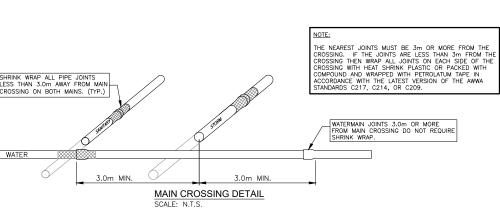
PIPE INSULATION DETAIL



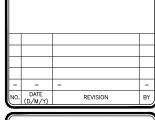
STANDARD DETAIL DRAWINGS - IMPORTED GRANULAR BACKFILL COMPACTED TO 95% MODIFIED UTILITY TRENCH G4







LEGEND



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DRAWN:	АМ	
CHECKE	: LM	
ENGINEE	R: LM	
DATE:	16/05/24	
SCALES:		
SCALES:		

DISTRICT OF MACKENZIE CENTENNIAL DR & NATION AVE P.R.S. #1 & #2 REPLACEMENT

CONSTRUCTION NOTES

