

SECTION 3 – GENERAL REQUIREMENTS CONTENTS

STANDARD SPECIFICATIONS

SECTION NO.

Temporary Construction Facilities	3.01 [↓]
Operating Manuals	3.02 [↓]
Explosives	3.03 [↓]
Site Maintenance and Cleanup	3.04 [↓]
Timing of Installation	3.05 [↓]
Work Within Road Rights-of-Way	3.06 [↓]

EXISTING STRUCTURES AND UTILITY WORKS

Location of Structures	3.20 [↓]
Protection, Adjustment and Salvage of Structures	3.21 [↓]
Emergency Situations	3.22 [↓]
Access Maintained	3.23 [↓]
Curtailment of Utility Service	3.24 [↓]
Support of Structures	3.25 [↓]
Drainage Facilities Systems (REVISE? TBD 2025)	3.26 [↓]
Tree Protection	3.27 [↓]

CONTROL OF PUBLIC TRAFFIC

Control of Public Traffic – General	3.60 [↓]
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GEOTECHNICAL ASSESSMENT AND REPORTING (REVISED JULY 2022)

Geotechnical Assessment and Reporting	3.70 [↓]
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STANDARD DRAWINGS

DWG. NO.

Tree Protection Fencing	TP-1 [↓]
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SECTION 3 – GENERAL REQUIREMENTS STANDARD SPECIFICATIONS

3.01 TEMPORARY CONSTRUCTION FACILITIES

.1 Access Road:

- (a) Temporary roads ~~shall~~ **are to** be constructed as required for access to the working areas. Access to temporary roads from public **roadways** require prior written **approval** from the ~~City of Nanaimo~~. *(REVISE? TBD 2025)*
- (b) Adequate drainage ~~facilities~~ **system** in the form of ditches, culverts, or other conduits ~~shall~~ **are to** be ~~installed, as found necessary, to maintain installed to drain~~ these **access** roads. ~~In~~ **During** the construction of access roads, existing drainage ~~facilities, works, whether~~ natural or ~~otherwise, shall constructed, must~~ not pose **a hazard to** properties outside the ~~working work~~ **area** ~~and such facilities shall, unless otherwise provided elsewhere in the specifications, or harm the watercourse environment. Expect that restoration to original condition will be required upon completion of works. Unless specified otherwise, these facilities should be restored to their original condition as much as possible upon far as is practical to do so on possible upon~~ completion of the work. *(REVISE? TBD 2025)*
- (c) Site access requires erosion and sediment control measures as per existing bylaws, such as *Storm Sewer Regulation and Fee Bylaw and Development Approval Information Bylaw*. *(REVISE? TBD 2025)*

.2 Sanitary Facilities:

- (a) Clean, sanitary latrine accommodations ~~shall~~ **are to** be provided by the **Contractor**, and ~~shall be~~ located and maintained such that they are not offensive to any **property owner** or member of the public. ~~Workers will use The use of these facilities by persons engaged in the work shall be strictly enforced.~~ *(REVISE? TBD 2025)*
- (b) These facilities ~~shall~~ **are to** be removed by the **Contractor** at the conclusion of the ~~work~~ **Works** or when instructed to do so by the ~~Owner~~ **City Engineer**. *(REVISE? TBD 2025)*

3.02 OPERATING MANUALS

- .1 For installations which include mechanical and electrical equipment or machinery having wearing parts and requiring periodical repair and adjustment, all special tools, wrenches and accessories required for removing work parts, making adjustments and carrying out maintenance ~~shall~~ **must** be supplied. ~~All These include all~~ gauges, indicators and lubricating devices necessary for the proper operation of the equipment shall be furnished. *(REVISE? TBD 2025)*
- .2 With each piece of equipment, 4 sets of operating manuals and as constructed shop drawings shall be supplied. The manuals ~~should~~ give the manufacturer's recommended maintenance schedules with the grades of lubricants required and instructions as to how the equipment may be take apart for periodic inspection and replacement. *(REVISE? TBD 2025)*

SECTION 3 – GENERAL REQUIREMENTS

STANDARD SPECIFICATIONS

3.03 EXPLOSIVES

- .1 The General method of storage, handling, use and character of all explosives ~~shall be subject-must~~ comply to the Accident Prevention Regulations covering explosives, pursuant to the *Occupational Health and Safety Regulation Part 21: Blasting Operations and Explosives Act and Regulation* of British Columbia and must conform to local police requirements. (REVISE? TBD 2025)
- .2 Explosives ~~shall-must~~ be kept only in registered premises, which have been licensed under the *Explosives Act* (Canada). (REVISE? TBD 2025)

3.04 SITE MAINTENANCE AND CLEANUP

- .1 The working areas ~~shall-are to~~ be maintained in an orderly manner and ~~shall~~ not be encumbered with equipment, materials or debris. (REVISE? TBD 2025)
- .2 Cleanup ~~shall-be-is~~ a continuing process from the start of the work to final acceptance of the project. The Contractor ~~shall-will~~, at all times, and without further order, keep property, on which work is in progress free from accumulations of waste materials or rubbish caused by employees or by the work. Accumulations of waste materials which might constitute a fire hazard ~~will-not-be-permitted-is~~ prohibited. Spillage from the Contractor's hauling vehicles on travelled public roadway or private roads shall be promptly cleaned up. On completion of construction, the Contractor shall remove all temporary structures, rubbish and waste materials resulting for ~~his-their~~ operations. (REVISE? TBD 2025)

3.05 TIMING OF INSTALLATION

- .1 The Contractor ~~shall-will~~ schedule the work in a manner such that disruption of normal traffic and inconvenience to residents in the working area is kept to a minimum. Testing of pipe and cleanup of the site shall be completed no later than 30 days following commencement of construction on any street block. (REVISE? TBD 2025)
- .2 Departure from scheduling, as specified above, will be permitted only with the written consent of the ~~Owner-City~~ to a request made by the Contractor. (REVISE? TBD 2025)

3.06 WORK WITHIN ROAD RIGHTS-OF-WAY

- .1 All work within road rights-of-way ~~shall-be-in-strict-conformance-must~~ conform with, but ~~shall~~ not be limited to, the following requirements: (REVISE? TBD 2025)
 - (a) Surface runoff is to be prevented from seeping into trenches.
 - (b) Excavation across entrances, whether private or commercial, shall be backfilled and thoroughly compacted, within two hours unless otherwise approved in writing by the tenant or property owner.
 - (c) Open cut excavation shall not be left open overnight or on weekends unless there are ~~workmen-workers~~ on duty and there is authorization by letter from the ~~City-of-Nanaimo~~. (REVISE? TBD 2025)

SECTION 3 – GENERAL REQUIREMENTS STANDARD SPECIFICATIONS

- (d) Adequate signs, barriers, flares, etc., to ensure the safety of the public, [workers](#) and traffic are to be provided at all times. Lights and flares are to be in good working order at all times and are to be checked daily. Lights that are not operational shall be removed from the worksite. *(REVISE? TBD 2025)*
- (e) Existing drainage courses and culverts are to be preserved and maintained as required.
- (f) If the ~~City of Nanaimo~~, at any time, deems it necessary, ~~a workman~~ [a representative from City forces](#) ~~representative City workforce from the Operations Division, City of Nanaimo~~, will be stationed at the work site to ensure that no damage is done to existing services. *(REVISE? TBD 2025)*

SECTION 3 – GENERAL REQUIREMENTS

EXISTING STRUCTURES AND UTILITY WORKS

3.20 LOCATION OF STRUCTURES

- .1 Prior to commencing any excavation the Contractor ~~shall be~~ is responsible for exposing existing surface and underground structures that may affect the work or may be damaged during construction. (REVISE? TBD 2025)
- .2 Drawings or descriptions, verbal or otherwise, of existing structures or their location that are given to the Contractor are intended only as an aid to the location of these structures. Measurements and location of the existing underground structures shown on the drawings are no guaranteed to be accurate, and must be verified by the Contractor prior to proceeding with construction.

3.21 PROTECTION, ADJUSTMENT AND SALVAGE OF STRUCTURES

- .1 Unless ~~authorization from removal is approved by the City Engineer is received for their removal~~, underground and surface structures encountered during construction ~~shall be~~ must be protected from damage. ~~In the event of damage resulting from the construction operation, they shall be repaired or replaced at the Contractor's sole expense to a condition which is at least the equivalent of that which existed prior to construction.~~ If damage occurs as a result of construction activities, the Contractor is responsible for repairing or replacing the affected structures at their own expense to a condition at least equivalent to that which existed prior to construction. (REVISE? TBD 2025)

3.22 EMERGENCY SITUATIONS

- .1 In emergency situations resulting from the construction operation, where life or property ~~are~~ is endangered, the Contractor ~~shall~~ must immediately take whatever action is required to ~~elimination~~ eliminate the danger and ~~shall~~ also notify the appropriate authorities of the situation. (REVISE? TBD 2025)
- .2 In the specific case of a water or sewer break, the contractor ~~shall~~ must immediately notify the Public Works Department at 250-758-5222. (REVISE? TBD 2025)
- .3 During periods when the Contractor's personnel are not on the job (after hours and weekends) at least one of the three Contractor's representatives in Nanaimo shall be available by phone contact. The names, addresses and phone numbers of the three Contractor's representatives shall be filed with the City Engineer prior to commencement of construction and this list shall be updated by the Contractor as is necessary. (REVISE? TBD 2025)

SECTION 3 – GENERAL REQUIREMENTS

EXISTING STRUCTURES AND UTILITY WORKS

3.23 ACCESS MAINTAINED

- .1 Existing hydrants, valve or manhole covers, valve boxes, curb stop boxes, fire or police call boxes, and all other utility controls, warning systems, and appurtenances thereof ~~shall not be obstructed or made inaccessible at any time by the construction work~~ must remain clear of obstructions and accessible at all times during construction. The Contractor is required to provide ~~Bridges~~bridges, walks, or other temporary facilities, ~~shall be provided~~ as may be necessary, to ensure ~~that~~ these controls or warning systems ~~are free for use~~ remain fully accessible and usable in their normal manner at all times during construction. (REVISE? TBD 2025)

3.24 CURTAILMENT OF UTILITY SERVICE

- .1 Where existing utilities such as water, sanitary sewer, storm sewer, electricity, telephone, and gas are serving the public, work shall be planned and executed such that there is no curtailment of service provided by these utilities without prior receipt of approval of the ~~authorities responsible~~ authority having jurisdiction for provision and maintenance of these utilities. The Contractor shall obtain the above approvals from the ~~recognized authorities controlling these utilities.~~ authority having jurisdiction. If approval for such disruption of utility service is not granted, the Contractor may be able to establish temporary facilities to provide continuous utility service during the course of construction. Such temporary facilities ~~shall~~ must only be implemented after receiving the approval of the utility authority and all costs relating to the establishment of temporary services ~~shall~~ are to be borne by the Contractor. (REVISE? TBD 2025)
- .2 ~~If the Contractor, after~~ After receiving approval of the ~~responsible authorities~~ authority having jurisdiction, if the Contractor is to temporarily close off an existing utility, ~~he~~ unless otherwise authorized by the Engineer, they must notify individual users of the utility at least forty-eight (48) hours prior to the time of shut-off, unless otherwise approved by the City Engineer. The notification ~~shall be~~ is in the form of a hand delivered letter with the contractors contact information. (REVISE? TBD 2025)

3.25 SUPPORT OF STRUCTURES

- .1 Existing structures other than pipes ~~shall~~ must be protected against damage from settlement by means of support or compaction of backfill as required. Support shall remain in place following backfill of excavations. (REVISE? TBD 2025)
- .2 Backfill which is placed under or adjacent to existing structures which have been undermined during excavation shall be compacted in a manner which will prevent damage of the structure from settlement. Such backfill shall be of approved granular material suitable for compaction.
- .3 For support of existing piping, other than asbestos cement or cast iron piping, refer to Standard Drawing No. T-11 [] in Section 4.0 – Excavation, Trenching and Backfill.

SECTION 3 – GENERAL REQUIREMENTS EXISTING STRUCTURES AND UTILITY WORKS

- .4 Where excavations for works cross underneath existing asbestos cement or cast iron piping the existing pipe shall be replaced by the **Contractor** with PVC pipe **approved** by the **City Engineer** or supported with a concrete grade beam refer to Standard Drawing No. T-11 [\[1\]](#), Section 4.0 – Excavation, Trenching and Backfill as determined by the **City Engineer**. *(REVISE? TBD 2025)*

SECTION 3 – GENERAL REQUIREMENTS

EXISTING STRUCTURES AND UTILITY WORKS

3.26 DRAINAGE ~~FACILITIES~~ SYSTEMS (REVISE? TBD 2025)

- .1 Existing culverts, enclosed drains, flumes and ditches, and other drainage ~~structures~~ ~~works~~ affected by the work but left in place, ~~shall~~ ~~will~~ be kept clear of excavated material at all times during construction. When it is necessary to temporarily remove an existing drainage ~~works~~ ~~structure~~, the Contractor ~~shall provide~~ ~~will install~~ suitable temporary ditches or other ~~approved~~ means of handling the drainage during construction. Refer to Temporary Construction Facilities – Section 3.01 [→]. (REVISE? TBD 2025)
- .2 Culverts and drain pipes ~~shall be replace on line and grade~~ ~~will be replaced as per design~~ at the time of trench backfilling, in accordance with ~~this manual~~. ~~City of Nanaimo Standards and Specifications~~. (REVISE? TBD 2025)
- .3 ~~No Discharging~~ chlorinated water ~~shall be discharged~~ ~~is prohibited~~ into the storm drainage ~~facilities~~ ~~system~~ without prior ~~approval~~ from the City Engineer. (REVISE? TBD 2025)
- .4 Prior to, and during construction, the Contractor ~~shall take full responsibility~~ ~~is responsible~~ for erosion and sediment control measures as per existing bylaws, such as ~~Storm Sewer Regulation and Fee Bylaw and Development Approval Information Bylaw~~. ~~controlling erosion and sediment transfer by utilizing the guidelines contained in the handbook entitled, “Land Development Guidelines for the Protection of Aquatic Habitat”, by the Department of Fisheries and Oceans and Ministry of Environment, to prevent discharge of sediment into City stormwater management systems and environmentally sensitive areas. It is incumbent for the contractor to acquire and be familiar with these guidelines.~~ (REVISE? TBD 2025)

3.27 TREE PROTECTION

- .1 Tree protection fencing is to be installed around all areas where trees are to be retained, as per the Tree Protection Area Plan. Refer to Standard Drawing No. TP-1 [↑]. (REVISE? TBD 2025)
- .2 Excavation is not to occur within the Tree Protection Area without direction and supervision from a qualified project arborist. After excavation outside of the Tree Protection Area has occurred, all exposed roots over ~~2.5 cm~~ ~~25 mm~~ in ~~dia~~ ~~diameter~~ must be cleanly cut. (REVISE? TBD 2025)
- .3 The operation of equipment, placing of fill, debris or any other construction related materials within the Tree Protection Area is prohibited.

SECTION 3 – GENERAL REQUIREMENTS

CONTROL OF PUBLIC TRAFFIC

3.60 CONTROL OF PUBLIC TRAFFIC – GENERAL

- .1 The following general principles shall be maintained when performing **works**, construction or maintenance work, upon ~~Municipal Rights~~ Right-of-Way and thereby affecting use of Municipal facilities. *(REVISE? TBD 2025)*
 - (a) All control of public traffic will be carried out in accordance with the **BC 2020 Traffic Control-Management Manual for Work on Roadways**, current edition and as amended. *(REVISE? TBD 2025)*
 - (b) All control of public traffic will be carried out in accordance with WorkSafeBC regulations.
 - (c) Make adequate provision to accommodate normal traffic along streets and highways immediately adjacent to or crossing the Works so as to cause minimum ~~of~~ inconvenience to the general public whilst maintaining the required level of safety. *(REVISE? TBD 2025)*
 - (d) Emergency vehicles utilizing warning devices (sirens, horns, lights) ~~shall~~ **must** be given immediate access through the site at all times. *(REVISE? TBD 2025)*
 - (e) Regional District of Nanaimo Transit and other forms of public transit ~~shall be~~ **are** given priority over regular vehicles, such that they are not unnecessarily delayed. Co-ordination with transit authorities is the responsibility of the **Contractor**. *(REVISE? TBD 2025)*
 - (f) Regardless of the condition/width of existing facilities, accommodation is to be made for all forms of travel, including, but not limited to, pedestrians, cyclists, wheelchairs and mobility scooters, and users who are visually impaired.
 - (g) Provide and maintain reasonable ~~road~~ **roadway** access and egress to properties fronting along, or in the vicinity of, the work. *(REVISE? TBD 2025)*
 - (h) The length of the worksite ~~shall be directly~~ **is** proportional to the ~~amount of work that~~ **Works** a **contractor** ~~reasonably~~ expects to complete in any one shift. *(REVISE? TBD 2025)*
 - (i) Unless otherwise accepted by the **City**, all regular forms of traffic ~~shall~~ **must** be reinstated to as near normal as possible when ~~work is~~ **Works are** not in progress. *(REVISE? TBD 2025)*
- .2 Contractors shall prepare Traffic Management Plan(s) encompassing all activities on the Municipal rights-of-way.
 - (a) Traffic Management Plans ~~shall~~ **must** be submitted to the **City** for review. *(REVISE? TBD 2025)*
 - (b) Traffic Management Plans will be reviewed within ten (10) working days and either accepted or returned with a request for re-submission.
 - (c) Re-submissions will be reviewed within ten (10) working days from the date of resubmission.

SECTION 3 – GENERAL REQUIREMENTS

CONTROL OF PUBLIC TRAFFIC

- (d) No works shall occur before the Traffic Management Plan has been accepted by the **City**.
 - (i) Acceptance of the Traffic Management Plan, by the **City**, does not imply any responsibility or liability for the completeness or correctness of the Traffic ~~Control~~ **Management** Plan. *(REVISE? TBD 2025)*
 - (e) The **City**, as part of the Traffic Management Plan, may require traffic disruptions to be limited to specific hours.
- .3 The minimum level of Traffic Management Plan required for any works within the Municipal right-of-way (local ~~roads~~ **roadways**, lanes ~~ways~~, ~~path ways~~, **pathways**, parks and other Municipal facilities) ~~shall~~ include, but not **be** limited to, the following: *(REVISE? TBD 2025)*
- (a) Description of the works and all impacted rights-of-way. *(REVISE? TBD 2025)*
 - (b) Name of the **Contractor**; Traffic Control Personnel/Subcontractor; **Contractor's** Traffic Manager.
 - (c) Provide 24 hour emergency ~~contract~~ **contact** information. *(REVISE? TBD 2025)*
 - (d) Note the location(s) of worksite identification signs. These signs shall have the name and phone number of the **contractor** and identify the project. *(REVISE? TBD 2025)*
 - (e) Note the location of safety equipment, muster station(s) and any other site facilities.
 - (f) Note locations of equipment/materials laydown/storage areas are for both working and non-working hours.
 - (g) Identify the figures used from the **BC 2020 Traffic ~~Control~~ **Management** Manual for Work on Roadways**. *(REVISE? TBD 2025)*
 - (h) Identify the expected truck movements to/from and through the site.
 - (i) Identify how the following ~~road~~ **street** users will be accommodated: *(REVISE? TBD 2025)*
 - (i) Pedestrians
 - (ii) Visually Impaired
 - (iii) Persons with Mobility Issues
 - (iv) Cyclists
 - (v) Transit
 - (vi) Heavy Trucks
 - (vii) Vehicles
- .4 For all ~~major roads~~ **arterial streets** and any local ~~roads~~ **streets** which have special requirements identified by the **City** (~~adjacent school zones, Municipal facilities~~), the following items are required in addition to the above: *(REVISE? TBD 2025)*

SECTION 3 – GENERAL REQUIREMENTS

CONTROL OF PUBLIC TRAFFIC

- (a) Be prepared by a [Qualified Registered Professional—Engineer](#), and in accordance with the [BC 2020 Traffic Control—Management Manual for work—Work on Roadways](#), current edition and as amended. *(REVISE? TBD 2025)*
 - (b) Be prepared using editable computer program, relatively to scale, and submitted in digital PDF 11x17 format.
 - (c) Include an accurate ~~road~~-street configuration with ~~road~~-street names, north arrow marker, speed limit and proposed extents of the relevant work item. *(REVISE? TBD 2025)*
 - (d) Indicate placement marker and distance of signs; sign images and sign number; delineators, cones, barricades, etc; position of dedicated TCP's; and any traffic control equipment including Flashing Arrow Boards (FAB) and High Level Warning Devices (HLWD); symbols should match those within Chapter ~~34~~ and ~~45~~ of the [BC 2020 Traffic Control Management Manual for Work on Roadways](#). *(REVISE? TBD 2025)*
 - (e) Identify lanes to be obstructed, along with taper lengths and widths of lanes.
 - (f) Identify impacts to driveways, bus stops, parking, pedestrian and cyclist traffic. Include measures to facilitate and maintain access.
 - (g) Identify any road closures or detours.
- .5 It is expected that the site superintendent designate, in charge of traffic control, will have the plan and/or copies of the relevant traffic control figures onsite available for review, at all times, ~~that work is for~~ [Works](#) occurring within the right-of-way. It is understood that traffic control operations may require adjustment to site specific conditions; however, significant changes should be submitted to the [City](#) for acceptance. *(REVISE? TBD 2025)*
- .6 The [City](#) reserves the right to issue a Shut Down Notice for works within the [City](#) right-of-way at any time. Work within the right-of-way is not resume until a revised Traffic Management Plan has been submitted and accepted. Conditions for a [City](#)-based Shut Down Notice are if: *(REVISE? TBD 2025)*
- (a) The [Contractor's](#) traffic set-up on site, differs significantly from the accepted Traffic Management Plan.
 - (b) A copy of the accepted ~~Transportation Master~~-Traffic Management Plan and/or figures cannot be supplied. *(REVISE? TBD 2025)*
 - (c) Emergency services or Regional District of Nanaimo Transit ~~needed~~ cannot be accommodated.
- .7 Road Closures and Detours:
- (a) Road closures and detours require [approval](#) of the [City Engineer](#) and may not be granted.
 - (b) A road closure must accommodate emergency traffic at all times unless otherwise [approved](#) by the [City Engineer](#).

SECTION 3 – GENERAL REQUIREMENTS

CONTROL OF PUBLIC TRAFFIC

- (c) At a minimum, local traffic must ~~be~~ reinstated at the end of every shift for Road Closures. *(REVISE? TBD 2025)*
- (d) Where practical, detours ~~shall~~ ~~will~~ avoid diverting traffic from a major or collector ~~road-street~~ to a local ~~road-street~~. *(REVISE? TBD 2025)*
- (e) Where detours are to be installed, directional signage ~~shall~~ ~~must~~ be installed for length of the detour in both directions. *(REVISE? TBD 2025)*
- (f) Where detours or ~~road~~ ~~roadway~~ closures are permitted, the Contractor will notify emergency services (fire, police and ambulance), as well as the Regional District of Nanaimo Transit, if the closure is on a bus route. *(REVISE? TBD 2025)*
- (g) Where detours are to be in place for longer than five days, the Contractor is to submit a pre-construction photo survey prior to ~~implement~~ ~~implementing~~ the detour. At the end of construction, the contractor is to complete a final inspection of the detour route and rectify any damage at the ~~contractors~~ ~~contractor's~~ cost, in the opinion of the City Inspector, that was not evident prior to the detour implementation. *(REVISE? TBD 2025)*
- (h) Where ~~road~~ ~~roadway~~ closures/detours affect private residences ~~or~~ ~~and~~ ~~businesses~~, the contractor shall provide written notice five (5) days in advance ~~notice~~ to all ~~properties~~ ~~property owners and business owners~~ affected by the closure ~~and all properties for the length of any or~~ detours. A draft of the written notice needs to be accepted by the City prior to distribution. ~~Letters are not to be issued prior to approval of the closure/detour.~~ *(REVISE? TBD 2025)*

SECTION 3 – GENERAL REQUIREMENTS

GEOTECHNICAL ASSESSMENT AND REPORTING ~~(REVISED JULY 2022)~~

3.70 GEOTECHNICAL ASSESSMENT AND REPORTING

- .1 The design process for new ~~roads~~ **roadway** and underground utilities shall be supported by geotechnical engineering assessment and input. The scope of geotechnical assessment and engineering input ~~shall be~~ **is** commensurate with the nature of the project, the complexity of ground conditions, and project specific performance requirements identified by the **City Engineer and Professional of Record** ~~or lead professional~~. The assessment and reporting ~~shall confirm~~ **will comply** to the most recent version of the **City's Guidelines for Geotechnical Reports**. In the absence of project specific design criteria provided by the **City**, the geotechnical assessment shall consider a functional design life under normal loading conditions of 100 years for new or upgraded underground utilities or road base, and 20 years for pavement design. *(REVISE? TBD 2025)*
- .2 Standard reporting expectations for projects involving new ~~roads~~ **roadway** and underground utilities include an assessment of geohazards; the characterization of soil and groundwater conditions pertinent to the project; subgrade conditions relative to the **City's** standard pavement sections and pipe bedding requirements, and trench backfill including the re-use potential of native backfill. Where appropriate, reporting ~~shall include~~ **includes** construction recommendations related to site preparation, excavation, temporary trench stability, requirements for shoring, dewatering, and erosion and siltation control. *(REVISE? TBD 2025)*
- .3 Seismic considerations and performance ~~shall~~ **must** be consistent with the latest version of the **City's Seismic Design Guidelines for Water, Sewer Utilities, and Roads**. *(REVISE? TBD 2025)*
- .4 The **City** expects geotechnical engineering, analysis, design and field reviews to conform with standard industry practice, including pertinent Professional Practice Guidelines and Advisories issued by the Engineers and Geoscientists of BC. *(REVISE? TBD 2025)*