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GENERAL THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE, DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.

THE CONTRACTOR ACKNOWLEDGES THAT SURFACE EROSION AND SEDIMENT RUNOFF RESULTING FROM THEIR CONSTRUCTION OPERATIONS HAS POTENTIAL TO CAUSE A DETRIMENTAL IMPACT TO ANY DOWNSTREAM WATERCOURSE OR SEWER, AND THAT ALL CONSTRUCTION OPERATIONS THAT MAY IMPACT UPON WATER QUALITY SHALL BE CARRIED OUT IN A MANNER THAT STRICTLY MEETS THE REQUIREMENTS OF ALL APPLICABLE LEGISLATION AND REGULATIONS.

AS SUCH, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CARRYING OUT THEIR OPERATIONS, AND SUPPLYING AND INSTALLING ANY APPROPRIATE CONTROL MEASURES, SO AS TO PREVENT SEDIMENT LADEN RUNOFF FROM ENTERING ANY SEWER OR WATERCOURSE WITHIN OR DOWNSTREAM OF THE WORKING AREA.

THE CONTRACTOR ACKNOWLEDGES THAT NO ONE MEASURE IS LIKELY TO BE MORE EFFECTIVE FOR EROSION PROTECTION AND SEDIMENT CONTROL THAN THE COMBINATION OF MEASURES THEREFORE TO BE USED. WHERE NECESSARY, THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL MEASURES ARRANGED IN SUCH A MANNER AS TO MITIGATE SEDIMENT RELEASES FROM THE CONSTRUCTION OPERATIONS, AND ACHIEVE SPECIFIC MAXIMUM PERMITTED CRITERIA WHERE APPLICABLE. SUGGESTED ON-SITE MEASURES MAY INCLUDE, BUT SHALL NOT BE LIMITED TO, THE FOLLOWING METHODS: SEDIMENT POND, FILTER BAGS, PUMP FILTERS, SETTLING TANKS, SILT FENCES, STRAW BALES, FILTER CLOTHS, CATCH BASIN FILTERS, CHECK DAMS AND/OR BERMS, OR OTHER RECOGNIZED TECHNOLOGIES AND METHODS AVAILABLE AT THE TIME OF CONSTRUCTION. SPECIFIC MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF OPSS 577 WHERE APPROPRIATE, OR IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

WHERE, IN THE OPINION OF THE CONTRACT ADMINISTRATOR OR REGULATORY AGENCY, THE INSTALLED CONTROL MEASURES FAIL TO PERFORM ADEQUATELY, THE CONTRACTOR SHALL SUPPLY AND INSTALL ADDITIONAL OR ALTERNATIVE MEASURES AS DIRECTED BY THE CONTRACT ADMINISTRATOR OR REGULATORY AGENCY. AS SUCH, THE CONTRACTOR SHALL HAVE ADDITIONAL CONTROL MATERIALS ON SITE AT ALL TIMES WHICH ARE EASILY ACCESSIBLE AND MAY BE IMPLEMENTED BY HIM AT A MOMENT'S NOTICE.

PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL SUBMIT TO THE CONTRACT ADMINISTRATOR SIX COPIES OF A DETAILED EROSION AND SEDIMENT CONTROL PLAN (ESCP). THE ESCP WILL CONSIST OF A WRITTEN DESCRIPTION AND DETAILED DRAWINGS INDICATING THE ON-SITE ACTIVITIES AND MEASURES TO BE USED TO CONTROL EROSION AND SEDIMENT MOVEMENT FOR EACH STEP OF THE WORK.

CONTRACTOR'S RESPONSIBILITIES
THE CONTRACTOR SHALL ENSURE THAT ALL WORKERS, INCLUDING SUB-CONTRACTORS, IN THE WORKING AREA ARE AWARE OF THE IMPORTANCE OF THE EROSION AND SEDIMENT CONTROL MEASURES AND INFORMED OF THE CONSEQUENCES OF THE FAILURE TO COMPLY WITH THE REQUIREMENTS OF ALL REGULATORY AGENCIES.

THE CONTRACTOR SHALL PERIODICALLY, AND WHEN REQUESTED BY THE CONTRACT ADMINISTRATOR, CLEAN OUT ACCUMULATED SEDIMENT DEPOSITS AS REQUIRED AT THE SEDIMENT CONTROL DEVICES, INCLUDING THOSE DEPOSITS THAT MAY ORIGINATE FROM OUTSIDE THE CONSTRUCTION AREA. ACCUMULATED SEDIMENT SHALL BE REMOVED IN SUCH A MANNER THAT PREVENTS THE DEPOSITION OF THIS MATERIAL INTO ANY SEWER OR WATERCOURSE AND AVOIDS DAMAGE TO THE CONTROL MEASURE. THE SEDIMENT SHALL BE REMOVED FROM THE SITE AT THE CONTRACTOR'S EXPENSE AND MANAGED IN COMPLIANCE WITH THE REQUIREMENTS FOR EXCESS EARTH MATERIAL, AS SPECIFIED ELSEWHERE IN THE CONTRACT.

THE CONTRACTOR SHALL IMMEDIATELY REPORT TO THE CONTRACT ADMINISTRATOR ANY ACCIDENTAL DISCHARGES OF SEDIMENT MATERIAL INTO EITHER THE WATERCOURSE OR THE STORM SEWER SYSTEM. FAILURE TO REPORT WILL BE CONSTITUTE A BREACH OF THIS SPECIFICATION AND THE CONTRACTOR MAY ALSO BE SUBJECT TO THE PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY. APPROPRIATE RESPONSE MEASURES, INCLUDING ANY REPAIRS TO EXISTING CONTROL MEASURES OR THE IMPLEMENTATION OF ADDITIONAL CONTROL MEASURES, SHALL BE CARRIED OUT BY THE CONTRACTOR WITHOUT DELAY.

THE SEDIMENT CONTROL MEASURES SHALL ONLY BE REMOVED WHEN, IN THE OPINION OF THE CONTRACT ADMINISTRATOR, THE MEASURE OR MEASURES, IS NO LONGER REQUIRED. NO CONTROL MEASURE MAY BE PERMANENTLY REMOVED WITHOUT PRIOR AUTHORIZATION FROM THE CONTRACT ADMINISTRATOR. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED IN A MANNER THAT AVOIDS THE ENTRY OF ANY EQUIPMENT, OTHER THAN HAND-HELD EQUIPMENT, INTO ANY WATERCOURSE, AND PREVENTS THE RELEASE OF ANY SEDIMENT OR OTHER MATERIAL INTO ANY WATERCOURSE WITHIN OR DOWNSTREAM OF THE WORKING AREA. ALL ACCUMULATED SEDIMENT SHALL BE REMOVED FROM THE WORKING AREA AT THE CONTRACTOR'S EXPENSE AND MANAGED IN COMPLIANCE WITH THE REQUIREMENTS FOR EXCESS EARTH MATERIAL.

WHERE, IN THE OPINION OF EITHER THE CONTRACT ADMINISTRATOR OR A REGULATORY AGENCY, ANY OF THE TERMS SPECIFIED HEREIN HAVE NOT BEEN COMPLIED WITH OR PERFORMED IN A SUITABLE MANNER, OR AT ALL, THE CONTRACT ADMINISTRATOR OR REGULATORY AGENCY HAS THE RIGHT TO IMMEDIATELY WITHDRAW ITS PERMISSION TO CONTINUE THE WORK BUT MAY RENEW ITS PERMISSION UPON BEING SATISFIED THAT THE DEFAULTS OR DEFICIENCIES IN THE PERFORMANCE OF THIS SPECIFICATION BY THE CONTRACTOR HAVE BEEN REMEDIATED.

1. PRIOR TO THE COMMENCEMENT OF THE SITE GRADING WORKS, ALL SILTATION CONTROL DEVICES SHALL BE INSTALLED AND OPERATIONAL.
2. ALL GRANULAR AND PAVEMENT FOR ROADS/PARKING AREAS SHALL BE CONSTRUCTED IN ACCORDANCE WITH GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.
3. TOP SURFACES SHALL BE STRIPPED WITHIN THE ROAD AND PARKING AREAS ALLOWANCE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
4. CURB SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF OTTAWA STD. SC.1.1. PROVISION SHALL BE MADE FOR CURB DEPRESSIONS AS INDICATED ON ARCHITECTURAL SITE PLAN. CONCRETE SIDEWALK SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STD. SC.1.1.1. AND SIDEWALKS SHOWING ON THIS DRAWING SHALL BE CONSIDERED TO BE PROVIDED IN THE STREETSWORKS PORTION OF THE CONTRACT.
5. DRIVEWAYS SHALL BE CONSTRUCTED AND UTILITY CUTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF OTTAWA STD. R10 AND OPS50 010, AND OPS5 310.
6. GRANULAR "A" SHALL BE PLACED TO A MINIMUM THICKNESS OF 300mm around ALL STRUCTURES WITHIN THE PAVEMENT AREAS.
7. SUB-EXCAVATE SOFT AREAS AND FILL WITH GRANULAR "B" COMPACTED IN MAXIMUM 300mm LIFTS.
8. ALL JOINTS SHALL BE JOINTED AS PROPOSED AND SHALL BE JOINTED TO THE CITY OF OTTAWA MUNICIPALITY PRIOR TO BACKFILLING.
9. CONTRACTOR TO OBTAIN ROAD OCCUPANCY PERMIT 48 HOURS PRIOR TO COMMENCING ANY WORK WITHIN THE MUNICIPAL ROAD ALLOWANCE, IF REQUIRED BY THE MUNICIPALITY.
10. ALL PAVEMENT MARKING FEATURES AND SITE SIGNAGE SHALL BE PLACED PER ARCHITECTURAL SITE PLAN, LANE PAINTING AND SIGNAGE SHALL BE DONE IN ACCORDANCE WITH A MINIMUM OF TWO COATS OF ORGANIC SOLVENT PAINT.
11. REFER TO ARCHITECTURAL SITE PLAN FOR DIMENSIONS AND SITE DETAILS.
12. ALL JOINTS SHALL BE JOINTED TO THE CITY OF OTTAWA MUNICIPALITY PRIOR TO BACKFILLING ASPHALT. ALL JOINTS MUST BE SEALED.
13. SIDEWALKS TO BE 150mm x 6 REVELED AT 21.0 x 6mm WITH NO BEVEL REQUIRED BELOW THE FINISHED FLOOR SLAB SURFACE. SIDEWALKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF OTTAWA STD. SC.1.1.1. AND OPS5 310.1.1.1. AND OPS5 310.1.1.2. AND OPS5 310.1.1.3. AND OPS5 310.1.1.4. AND OPS5 310.1.1.5. AND OPS5 310.1.1.6. AND OPS5 310.1.1.7. AND OPS5 310.1.1.8. AND OPS5 310.1.1.9. AND OPS5 310.1.1.10. AND OPS5 310.1.1.11. AND OPS5 310.1.1.12. AND OPS5 310.1.1.13. AND OPS5 310.1.1.14. AND OPS5 310.1.1.15. AND OPS5 310.1.1.16. AND OPS5 310.1.1.17. AND OPS5 310.1.1.18. AND OPS5 310.1.1.19. AND OPS5 310.1.1.20. AND OPS5 310.1.1.21. AND OPS5 310.1.1.22. AND OPS5 310.1.1.23. AND OPS5 310.1.1.24. AND OPS5 310.1.1.25. AND OPS5 310.1.1.26. AND OPS5 310.1.1.27. AND OPS5 310.1.1.28. AND OPS5 310.1.1.29. AND OPS5 310.1.1.30. AND OPS5 310.1.1.31. AND OPS5 310.1.1.32. AND OPS5 310.1.1.33. AND OPS5 310.1.1.34. AND OPS5 310.1.1.35. AND OPS5 310.1.1.36. AND OPS5 310.1.1.37. AND OPS5 310.1.1.38. AND OPS5 310.1.1.39. AND OPS5 310.1.1.40. AND OPS5 310.1.1.41. AND OPS5 310.1.1.42. AND OPS5 310.1.1.43. AND OPS5 310.1.1.44. AND OPS5 310.1.1.45. AND OPS5 310.1.1.46. AND OPS5 310.1.1.47. AND OPS5 310.1.1.48. AND OPS5 310.1.1.49. AND OPS5 310.1.1.50. AND OPS5 310.1.1.51. AND OPS5 310.1.1.52. AND OPS5 310.1.1.53. AND OPS5 310.1.1.54. AND OPS5 310.1.1.55. AND OPS5 310.1.1.56. AND OPS5 310.1.1.57. AND OPS5 310.1.1.58. AND OPS5 310.1.1.59. AND OPS5 310.1.1.60. AND OPS5 310.1.1.61. AND OPS5 310.1.1.62. AND OPS5 310.1.1.63. AND OPS5 310.1.1.64. AND OPS5 310.1.1.65. AND OPS5 310.1.1.66. AND OPS5 310.1.1.67. AND OPS5 310.1.1.68. AND OPS5 310.1.1.69. AND OPS5 310.1.1.70. AND OPS5 310.1.1.71. AND OPS5 310.1.1.72. AND OPS5 310.1.1.73. AND OPS5 310.1.1.74. AND OPS5 310.1.1.75. AND OPS5 310.1.1.76. AND OPS5 310.1.1.77. AND OPS5 310.1.1.78. AND OPS5 310.1.1.79. AND OPS5 310.1.1.80. AND OPS5 310.1.1.81. AND OPS5 310.1.1.82. AND OPS5 310.1.1.83. AND OPS5 310.1.1.84. AND OPS5 310.1.1.85. AND OPS5 310.1.1.86. AND OPS5 310.1.1.87. AND OPS5 310.1.1.88. AND OPS5 310.1.1.89. AND OPS5 310.1.1.90. AND OPS5 310.1.1.91. AND OPS5 310.1.1.92. AND OPS5 310.1.1.93. AND OPS5 310.1.1.94. AND OPS5 310.1.1.95. AND OPS5 310.1.1.96. AND OPS5 310.1.1.97. AND OPS5 310.1.1.98. AND OPS5 310.1.1.99. AND OPS5 310.1.1.100. AND OPS5 310.1.1.101. AND OPS5 310.1.1.102. AND OPS5 310.1.1.103. AND OPS5 310.1.1.104. AND OPS5 310.1.1.105. AND OPS5 310.1.1.106. AND OPS5 310.1.1.107. AND OPS5 310.1.1.108. AND OPS5 310.1.1.109. AND OPS5 310.1.1.110. AND OPS5 310.1.1.111. AND OPS5 310.1.1.112. AND OPS5 310.1.1.113. AND OPS5 310.1.1.114. AND OPS5 310.1.1.115. AND OPS5 310.1.1.116. AND OPS5 310.1.1.117. AND OPS5 310.1.1.118. AND OPS5 310.1.1.119. AND OPS5 310.1.1.120. AND OPS5 310.1.1.121. AND OPS5 310.1.1.122. AND OPS5 310.1.1.123. AND OPS5 310.1.1.124. AND OPS5 310.1.1.125. AND OPS5 310.1.1.126. AND OPS5 310.1.1.127. AND OPS5 310.1.1.128. AND OPS5 310.1.1.129. AND OPS5 310.1.1.130. AND OPS5 310.1.1.131. AND OPS5 310.1.1.132. AND OPS5 310.1.1.133. AND OPS5 310.1.1.134. AND OPS5 310.1.1.135. AND OPS5 310.1.1.136. AND OPS5 310.1.1.137. AND OPS5 310.1.1.138. AND OPS5 310.1.1.139. AND OPS5 310.1.1.140. AND OPS5 310.1.1.141. AND OPS5 310.1.1.142. AND OPS5 310.1.1.143. AND OPS5 310.1.1.144. AND OPS5 310.1.1.145. AND OPS5 310.1.1.146. AND OPS5 310.1.1.147. AND OPS5 310.1.1.148. AND OPS5 310.1.1.149. AND OPS5 310.1.1.150. AND OPS5 310.1.1.151. AND OPS5 310.1.1.152. AND OPS5 310.1.1.153. AND OPS5 310.1.1.154. AND OPS5 310.1.1.155. AND OPS5 310.1.1.156. AND OPS5 310.1.1.157. AND OPS5 310.1.1.158. AND OPS5 310.1.1.159. AND OPS5 310.1.1.160. AND OPS5 310.1.1.161. AND OPS5 310.1.1.162. AND OPS5 310.1.1.163. AND OPS5 310.1.1.164. AND OPS5 310.1.1.165. AND OPS5 310.1.1.166. AND OPS5 310.1.1.167. AND OPS5 310.1.1.168. AND OPS5 310.1.1.169. AND OPS5 310.1.1.170. AND OPS5 310.1.1.171. AND OPS5 310.1.1.172. AND OPS5 310.1.1.173. AND OPS5 310.1.1.174. AND OPS5 310.1.1.175. AND OPS5 310.1.1.176. AND OPS5 310.1.1.177. AND OPS5 310.1.1.178. AND OPS5 310.1.1.179. AND OPS5 310.1.1.180. AND OPS5 310.1.1.181. AND OPS5 310.1.1.182. AND OPS5 310.1.1.183. AND OPS5 310.1.1.184. AND OPS5 310.1.1.185. AND OPS5 310.1.1.186. AND OPS5 310.1.1.187. AND OPS5 310.1.1.188. AND OPS5 310.1.1.189. AND OPS5 310.1.1.190. AND OPS5 310.1.1.191. AND OPS5 310.1.1.192. AND OPS5 310.1.1.193. AND OPS5 310.1.1.194. AND OPS5 310.1.1.195. AND OPS5 310.1.1.196. AND OPS5 310.1.1.197. AND OPS5 310.1.1.198. AND OPS5 310.1.1.199. AND OPS5 310.1.1.200. AND OPS5 310.1.1.201. AND OPS5 310.1.1.202. AND OPS5 310.1.1.203. AND OPS5 310.1.1.204. AND OPS5 310.1.1.205. AND OPS5 310.1.1.206. AND OPS5 310.1.1.207. AND OPS5 310.1.1.208. AND OPS5 310.1.1.209. AND OPS5 310.1.1.210. AND OPS5 310.1.1.211. AND OPS5 310.1.1.212. AND OPS5 310.1.1.213. AND OPS5 310.1.1.214. AND OPS5 310.1.1.215. AND OPS5 310.1.1.216. AND OPS5 310.1.1.217. AND OPS5 310.1.1.218. AND OPS5 310.1.1.219. AND OPS5 310.1.1.220. AND

1. ALL CONSTRUCTION EQUIPMENT SHALL BE RE-FUELED, MAINTAINED, AND STORED NO LESS THAN 30 METRES FROM ANY EXISTING OR PROPOSED WELLS, WATER BODIES, AND WATERWAYS, AND SHALL BE PROTECTED BY A FENCED AND SPECIFIED AREA.
2. THE CONTRACTOR MUST IMPLEMENT ALL NECESSARY MEASURES IN ORDER TO PREVENT LEAKS, DISCHARGES OR SPILLS OF POLLUTANTS, DELETERIOUS MATERIALS, OR OTHER SUCH MATERIALS OR SUBSTANCES WHICH WOULD OR COULD CAUSE AN ADVERSE EFFECT ON THE ENVIRONMENT.
3. IN THE EVENT OF A LEAK, DISCHARGE OR SPILL OF A POLLUTANT, DELETERIOUS MATERIAL OR OTHER SUCH MATERIAL OR SUBSTANCE, THE CONTRACTOR SHALL IMMEDIATELY REPORT THE INCIDENT TO THE APPROPRIATE FEDERAL, PROVINCIAL AND LOCAL GOVERNMENT MINISTRIES, DEPARTMENTS AND AGENCIES, AND SHALL TAKE ALL NECESSARY MEASURES TO PREVENT FURTHER RELEASE OF SUCH MATERIALS OR SUBSTANCES BY-LAWS, PERMITS, APPROVALS, ETC.
4. THE CONTRACTOR SHALL PROTECT THE MATERIALS, SUBSTANCE, AND TO TAKE SUCH MEASURES TO MITIGATE AGAINST ADVERSE IMPACTS TO THE NATURAL ENVIRONMENT.
5. RESTORATION OF THE AREA TO THE ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE AUTHORITIES HAVING JURISDICTION.

1. THE GRANULAR MATERIAL WILL REQUIRE PERIODIC REPLACEMENT AS IT BECOMES CONTAMINATED BY VEHICLE TRAFFIC.
2. SEDIMENT SHALL BE CLEANED FROM PUBLIC ROADS AT THE END OF EACH DAY.
3. SEDIMENT SHALL BE REMOVED FROM PUBLIC ROADS BY SHOVELING OR SWEEPING AND DISPOSED OF PROPERLY IN A CONTROLLED SEDIMENT DISPOSAL AREA.

Diagram illustrating the components and assembly of the SiltSack® system:

- INSERT 1" REBAR FOR BAG REMOVAL FROM INLET (REBAR NOT INCLUDED)**: Shows a 1-inch rebar being inserted into the top of the bag.
- OPTIONAL OVERFLOW**: Points to the top edge of the bag where overflow can occur.
- SILTSACK®**: The main collection bag, shown in its collapsed state and then expanded into a rectangular structure.
- DUMP LOOPS® (REBAR NOT INCLUDED)**: The loops at the bottom of the bag used for securing it.
- Dimensions**: The expanded bag structure is labeled with **DEPTH = D**, **WIDTH = W**, and **LENGTH = L**.
- Assembly**: A perspective view shows the SiltSack® placed inside a rectangular container, with a dump loop secured to the bottom corner.

ALL WATERMAIN INSTALLATION SHALL CONFORM TO THE LATEST REVISIONS OF THE CITY OF OTTAWA AND THE ONTARIO PROVINCIAL WATERMAIN DRAINAGE CODE. THE FOLLOWING ARE THE MINIMUM REQUIREMENTS FOR THE CITY OF OTTAWA WATERMAIN INSTALLATION:

ALL PVC WATERMANS SHALL BE AWWA C-900 CLASS 150, SDR 18 OR APPROVED EQUIVALENT.

ALL WATERMANS SHALL BE AT LEAST 12" IN DIAMETER.

ALL WATERMANS SHALL BE LAPPED WITH A MINIMUM OF 10'.

WATERMAIN TRENCH BACKFILL BEDDING SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STANDARD W17, UNLESS SPECIFIED OTHERWISE.

BEDDING AND COVER MATERIAL SHALL BE SPECIFIED BY THE PROJECT GEOTECHNICAL ENGINEER.

ALL WATERMANS SHALL BE INSTALLED WITH A MINIMUM OF 12" COVER. ALL WATERMANS SHALL BE TRACER MARKED IN ACCORDANCE WITH CITY OF OTTAWA STD. W36.

CATHODIC PROTECTION SHALL BE INSTALLED ON ALL METALLIC FITTINGS PER CITY OF OTTAWA STD. W40 AND W42.

VALVE BOXES SHALL BE INSTALLED PER CITY OF OTTAWA STD. W24.

ALL WATERMANS SHALL BE INSTALLED WITH RESTRAINED JOINTS PER CITY OF OTTAWA STD. W25.5 AND W26.

THRUST BLOCKING OF WATERMANS TO BE INSTALLED PER CITY OF OTTAWA STD. W25.3 AND W26.4.

THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY CAPS, PLUGS, BLOW-OFFS, AND NOZZLES REQUIRED FOR TESTING AND DISINFECTION OF THE WATERMAIN.

WATERMAIN CROSSING OVER AND BELOW SEWERS SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STD. W25.2 AND W25.5.

WATER SERVICES ARE TO BE INSULATED PER CITY STD. W23 WHERE SEPARATION BETWEEN SERVICES AND MAINTENANCE HOLES ARE REQUIRED.

THE MINIMUM VERTICAL CLEARANCE BETWEEN WATERMAIN AND SEWER / UTILITY IS 0.50m PER GOOD PRACTICE GUIDELINES. FOR CROSSING UNDER WATERMANS, THE MINIMUM VERTICAL CLEARANCE SHALL BE 1.00m PER GOOD PRACTICE GUIDELINES. ALL EXPOSED DEFLECTORS SHALL BE SETTING. THE LENGTH OF WATER PIPE SHALL BE CENTRED AT THE POINT OF CROSSING TO ENSURE THE JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER.

ALL WATERMANS SHALL BE INSULATED PER CITY OF OTTAWA STD. W24. THERMAL INSULATION IS REQUIRED AS PER STD. DMC W22.

GENERAL PLANT MATERIAL TO UTILITY CLEARANCE AS PER STD. DMC R20.

HYDRANT FLANGE ELEVATIONS SHALL BE 1.00m ABOVE FINISHED GRADE AT HYDRANT; FIRE HYDRANT LOCATION AS PER STD. DMC W18.

ALL WATERMANS SHALL BE INSTALLED WITH THE MINIMUM COVER SPECIFIED IN THE CITY OF OTTAWA STD. W25. OTHERWISE NOTED AND MUST BE RESTRAINED A MINIMUM OF 12cm BACK FROM ST.

ALL WATERMANS SHALL BE HYDROSTATICALLY TESTED IN ACCORDANCE WITH THE CITY OF OTTAWA AND ONTARIO GUIDELINES UNLESS OTHERWISE DIRECTED. PROVISIONS FOR FLUSHING WATER LINE PRIOR TO TESTING, ETC. MUST BE PROVIDED.

ALL WATERMANS SHALL BE BACTERIOLOGICALLY TESTED IN ACCORDANCE WITH THE CITY OF OTTAWA AND ONTARIO GUIDELINES. ALL WATERMANS SHALL BE DISINFECTED IN ACCORDANCE WITH THE CITY OF OTTAWA AND ONTARIO GUIDELINES. ALL DISINFECTION MUST BE CONTROLLED AND TREATED SO AS NOT TO ADVERSELY EFFECT THE ENVIRONMENT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF OTTAWA.

ALL WATERMAIN STOPS SHALL BE TERMINATED WITH A PLUG AND 50mm Blow Off UNLESS OTHERWISE NOTED.

LIGHT DUTY

50mm SUPERPAVE 12.5mm

150mm GRANULAR 'A'

300mm GRANULAR 'B' TYPE II

SUBGRADE

FIRE ROUTE / HEAVY DUTY

40mm SUPERPAVE 12.5mm

50mm SUPERPAVE 19.0mm

150mm GRANULAR 'A'

400mm GRANULAR 'B' TYPE II

SUBGRADE

*PER GEOTECHNICAL INVESTIGATION (PG4678-1) PREPARED BY PATERSON GROUP INC

Diagram illustrating the components and dimensions of a storm maintenance structure:

- INLET CONTROL DEVICE** (with sub-note: PLASTIC CAP TO BE INSTALLED IN DOWNSTREAM END OF STORM MAINTENANCE STRUCTURE)
- CIRCULAR OPENING AS SPECIFIED** (with sub-note: TO BE SITUATED AT INVERT OF OUTLET SEWER)
- DIAMETER TO SUIT OUTLET SEWER** (indicated by a dimension line across the structure)

NOT TO SCALE

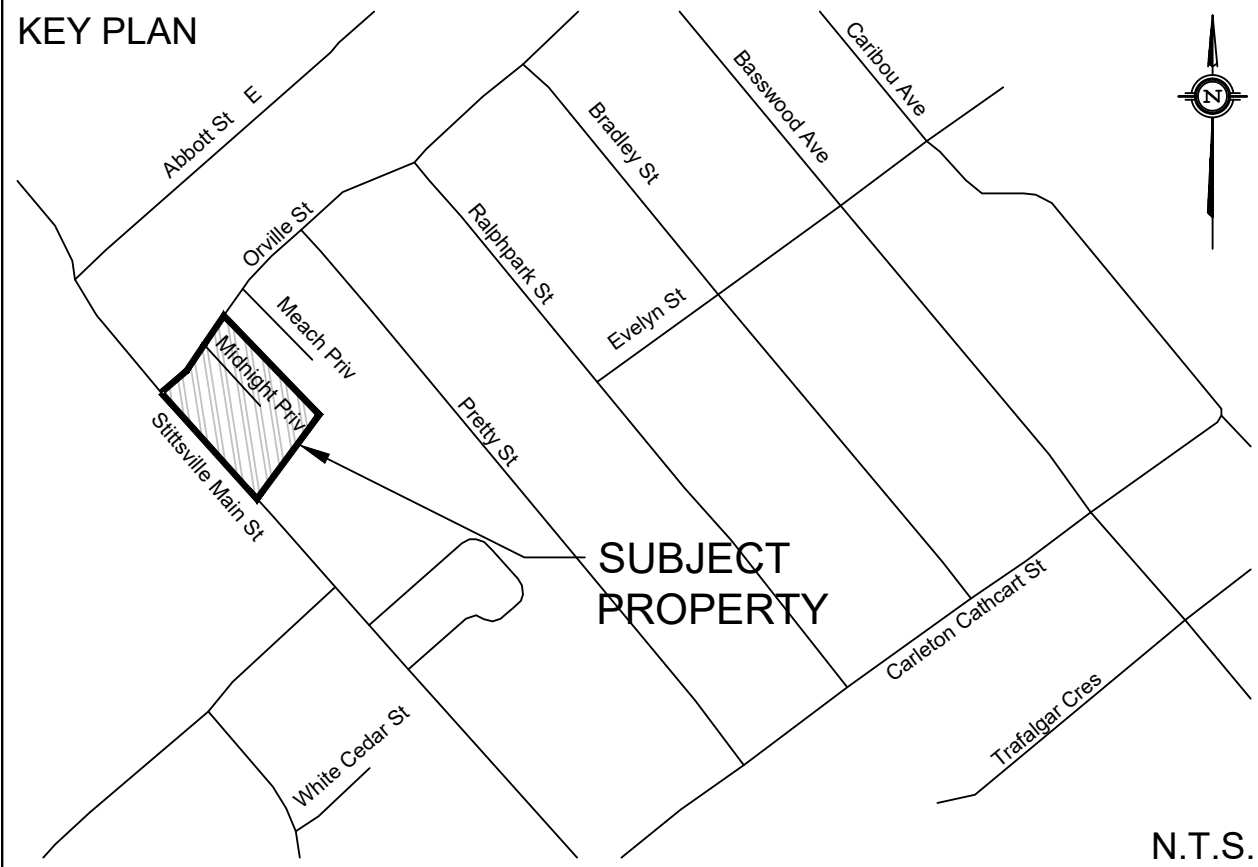
GENERAL

1. LASER ALIGNMENT CONTROL TO BE UTILIZED ON ALL SEWER INSTALLATIONS.
2. CLAY SEALS TO BE INSTALLED PER CITY STANDARD DRAWING S-8. THE SEALS SHOULD BE AT LEAST 15" LONG (ON THE TRENCH) AND SHOULD EXTEND FROM TRENCH WALL TO TRENCH WALL. THE SEALS SHOULD EXTEND FROM THE FIRST LINE AND SECOND LINE OF THE TRENCH TO THE BARRELED END OF THE CONCRETE PIPE. THE SEALS SHOULD BE COMPACTED TO A MINIMUM OF 95% PROCTOR DIRECTION BROWN SILTY CLAY PLACED IN MAXIMUM 225mm LAYS AND COMPACTED TO A MINIMUM OF 95% PROCTOR. THE CLAY SHALL BE PLACED IN PLAYS TO A MINIMUM OF 100mm.
3. SERVICES TO BUILDINGS TO BE TERMINATED 1.0m FROM THE OUTSIDE FACE OF BUILDING UNLESS OTHERWISE NOTED.
4. ALL MANHOLE STRUCTURES AND/OR BATHING EXCAVATIONS TO BE BACKFILLED WITH GRANULAR MATERIAL COMPACTED TO 95% PROCTOR PROVISION DENSITY TO A MINIMUM OF 100mm.
5. "MODULOC" OR APPROVED PRE-CAST MANHOLE STRUCTURES AND CATCH BASIN ASSEMBLIES TO BE USED IN LIEU OF BROWNS.
6. SAFETY PLATFORMS SHALL BE PER OPSD 404.02.
7. PROSP STRUCTURES SHALL BE IN ACCORDANCE WITH OPSD 1003.01 AND 1003.02, IF APPLICABLE.
8. THE CONTRACTOR IS TO PROVIDE CITY CAMERA INSPECTIONS OF ALL SEWERS, INCLUDING PICTORIAL, ONE (1) CD COPY AND TWO (2) VIDEO RECORDINGS IN A FORMAT ACCEPTABLE TO THE ENGINEER. ALL SEWERS ARE TO BE FLUSHED PRIOR TO CAMERA INSPECTIONS. THE INSPECTIONS ARE TO BE COMPLETED BY THE END OF THE DAY OF THE INSPECTION. THE PRESENCE OF THE CONSULTANT, FOR SANITARY SEWERS IN ACCORDANCE WITH OPSD 410 AND OPSD 407, CONTRACTOR SHALL PERFORM VIDEO INSPECTION OF ALL SEWERS. A COPY OF THE VIDEO AND INSPECTION REPORT SHALL BE SUBMITTED TO THE CONSULTANT FOR REVIEW AND APPROVAL PRIOR TO PLACEMENT OF WORK NEAR CURB ASPHALT.

SANITARY

1. ALL SANITARY SEWER INSTALLATION SHALL CONFORM TO THE LATEST REVISIONS OF THE CITY OF OTTAWA AND THE ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND SPECIFICATIONS (OPS).
2. ALL SANITARY GRAVITY SEWER SHALL BE 12" DIA. S-8, PIPE "RINO-TITE" (OR APPROVED EQUIVALENT) PER CSA STANDARD B162.2 OR LATEST AMENDMENT, UNLESS SPECIFIED OTHERWISE.
3. EXISTING MAINTENANCE STRUCTURES TO BE RE-BEHOED WHERE A NEW CONNECTION IS MADE.
4. EXISTING 12" DIA. SECONDARY SANITARY SEWERS TO BE 12" DIA. OTTAWA S-8 AND S-7, CLASS "B" BEDDING, UNLESS OTHERWISE SPECIFIED OTHERWISE.
5. ALL SANITARY MAINTENANCE STRUCTURE FRAME AND COVERS SHALL BE PER CITY OF OTTAWA S-24 AND S-25.
6. SANITARY MAINTENANCE STRUCTURES SHALL BE BENCHED PER OPSD 701.021.
7. 100mm thick HIGH-DENSITY GRADE "A" POLYSTYRENE INSULATION TO BE INSTALLED IN ACCORDANCE WITH CITY STD W022 WHERE

17. ALL REINFORCED CONCRETE STORM SEWER PIPE SHALL BE IN ACCORDANCE WITH C.S.A. A257.2, OR LATEST AMENDMENT, UNLESS OTHERWISE SPECIFIED. ALL JOINTS SHALL BE PROTECTED WITH AN APPROVED JOINT SEALANT. JOINTS SHALL BE PROTECTED WITH STD. RUBBER GASKETS AS PER C.S.A. A257.3, OR LATEST AMENDMENT.
18. ALL P.V.C. STORM SEWERS SHALL BE IN ACCORDANCE WITH C.S.A. A257.2, OR LATEST AMENDMENT, UNLESS OTHERWISE SPECIFIED. BEDDING AND COVER MATERIAL SHALL BE AS SPECIFIED BY PROJECT GEOTECHNICAL ENGINEER.
19. ALL P.V.C. STORM SEWERS AND 30" OR 36" APPROVED PER C.S.A. B182.2 OR LATEST AMENDMENT, UNLESS OTHERWISE SPECIFIED, SHALL HAVE RIGID SLEEVES.
20. CATCH BASIN LEADS SHALL BE 200MM DIA. AT 1% SLOPE (MIN) UNLESS OTHERWISE SPECIFIED.
21. ALL CATCH BASIN LEADS SHALL HAVE RIGID SLEEVES.
22. ALL CATCH BASIN LEAD INVERTS TO BE 1.5m BELOW FINISHED GRADE UNLESS OTHERWISE SPECIFIED.
23. THE STORM SEWER CLASSES HAVE BEEN DESIGNED BASED ON BEDDING CONDITIONS SPECIFIED ABOVE. THE SPECIFIED TRENCH WIDTHS ARE BASED ON THE ASSUMPTION THAT THE TRENCHES WILL BE EXCAVATED FOR EXTRA TEMPORARY AND/OR PERMANENT REPAIRS MADE NECESSARY BY THE WEATHERING TRENCH.
24. ALL STORM SEWER CLASSES SHALL BE INSTALLED WITH ORTHOGONALLY PLACED SUBDRAINS IN ACCORDANCE WITH DETAIL PERFORATED SUBDRAIN FOR FLOOR AND PARKING LOT CATCH BASIN. SHALL BE INSTALLED PER CITY STD. R1 UNLESS OTHERWISE SPECIFIED. CATCH BASIN SHALL BE INSTALLED PER CITY STD. S29, S30, AND S31, WHERE APPLICABLE.
25. CATCH BASIN SHALL BE FOR SEWER AND CULVERT OUTFALLS PER OPSD B10.010.
26. ALL STORM SEWERS / CULVERTS TO BE INSTALLED WITH TRENCH TREATMENT PER OPSD B03.031 WHERE APPLICABLE.
27. CATCH BASIN MANHOLES WITH DIAMETERS LESS THAN 900mm IN DIAMETER SHALL BE CONSTRUCTED WITH A 300mm SUMP AS PER SDO.



1 Total Cover Over Chambers: 451 mm

2 Height Of Chamber: 915 mm

3 Embedment Stone Under Chambers: 0 mm

4 Volume of Embedment Stone Required: 18 Cu. m

5 Volume of Fill Material Required: 8 Cu. m

Total Storage Provided: 18 Cu. m

Type Of Chambers: S-29

Of Chambers Required: 13

Of End Caps Required: 6

Required Bed Size: 27 Sq. m

Volume of Excavation: 37 Cu. m

* Area of Filter Fabric: 50 Sq. m

of Chambers Long: 5

of rows: 2

Actual Trench Length: 6.93 m

Actual Trench Width: 3.80 m

* Filter Fabric quantity for Fabric on Top and Sides of System Only, does not include overlap

m³ TRITON S-29 STORAGE SYSTEM OR AN APPROVED EQUIVALENT
LAYOUT N.T.S.

TOPOGRAPHIC INFORMATION PROVIDED BY ANNIS, O'SULLIVAN, VOLLEBEK LTD.
 PROJ. NO.
 DATED OCTOBER 23, 2018

SITE PLAN PROVIDED BY PROJECT1 STUDIO
PROJ. NO.1811
RECEIVED AUGUST 28, 2019

GEOTECHNICAL RECOMMENDATIONS PROVIDED BY
PROJ. NO. PG4678-1
DATED NOVEMBER 3, 2018

SERVICING AND STORMWATER MANAGEMENT RECOMMENDATIONS PROVIDED BY DSEL
 PROJ. NO. 18-1033

PROJ: NO.18=1035
DATED: AUGUST 2019

BENCH MARK

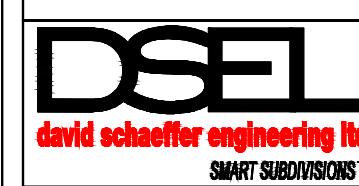
LOCATED TOP OF SPINDLE, NORTHWEST OF THE SUBJECT SITE
ELEV=123.22

6	C.M.K.	19.09.04	ISSUED FOR MUNICIPAL REVIEW
5	C.M.K.	19.08.20	ISSUED FOR MUNICIPAL REVIEW
4	C.M.K.	19.08.20	ISSUED FOR MUNICIPAL REVIEW
3	C.M.K.	19.07.25	ISSUED FOR MUNICIPAL REVIEW
2	C.M.K.	19.06.21	ISSUED FOR MUNICIPAL REVIEW
1	C.M.K.	19.01.17	ISSUED FOR MUNICIPAL REVIEW
No.	BY	YY.MM.DD	DESCRIPTION

PROFESSIONAL

[illegible]

STITTSVILLE MAIN STREET LIMITED



DRAWN BY:	C.M.K.	CHECKED BY:	R.D.F.	DRAWING NO.	SHEET NO.
DESIGNED BY:	A.J.G.	CHECKED BY:	A.D.F.	DS-1	5 of 5
SCALE:	NTS	DATE:	JANUARY 2019		

