







Wilklichener/422-2022/422144 - 465 Garafraxa Street West Fergus/Design Phase\Drawings/422144 - Design.dwg LAYOUT:Servicing









RETAINING WALL PROFILE 2 OF 2







GENERAL NOTES

1. DRAWINGS ARE NOT TO BE SCALED.

- ALL DIMENSIONS TO BE CHECKED AND VERIFIED ON THE SITE PRIOR TO ANY CONSTRUCTION. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER BEFORE PROCEEDING.
- 3. UNLESS OTHERWISE NOTED ON THE DRAWINGS THE STANDARD TOWNSHIP, REGION (OR COUNTY), MTO AND OPSD DRAWINGS AND OPSS ARE TO CONSTITUTE PART OF THIS CONTRACT AND DRAWINGS.
- 4. REFER TO O.B.C. 2012 STANDARDS AND SPECIFICATIONS AND TOWNSHIP SPECIFICATIONS AND STANDARD DRAWINGS FOR LIST OF APPROVED MANUFACTURERS AND MATERIALS.
- 5. EXISTING STRUCTURES ARE NOT TO BE DISTURBED, NOR ENCROACH ON ADJACENT PROPERTIES UNLESS INSTRUCTED BY THE ENGINEER.
- 6. THE APPROVAL OF THIS PLAN DOES NOT EXEMPT THE OWNERS CONTRACTOR FROM OBTAINING, BUT NOT LIMITED TO THE FOLLOWING PERMITS, ROAD CUTS, SEWER PERMITS, RELOCATION OF SERVICES, ENCROACHMENT AGREEMENTS, APPROACH APPROVAL PERMITS, ETC.
- 7. PRIOR TO CONSTRUCTION, THE ENGINEER IS TO BE NOTIFIED BY THE OWNER AND THE CONTRACTOR AS TO THE EXTENT OF THE CONSTRUCTION LIMITS THEY PROPOSE. THE TOWNSHIP, BUILDING AND PLUMBING OFFICIALS ARE TO BE NOTIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
- 8. THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE SERVICING PLANS, LANDSCAPE PLAN, SITE ELECTRICAL PLANS, AND ANY OTHER PLANS OR DRAWINGS WHICH DEPICT WORKS THAT ARE PROPOSED FOR THIS SITE.
- 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL AND SAFETY MEASURES DURING THE CONSTRUCTION PERIOD, INCLUDING THE SUPPLY, INSTALLATION AND REMOVAL OF ALL NECESSARY SIGNAGE DELINEATORS MARKERS AND BARRIERS ALL SIGNS ETC. SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS FOR THE TOWNSHIP AND THE MTO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR ONTARIO.
- 10. THE CONTRACTOR SHALL ENDEAVOUR TO PREVENT MUD TRACKING ONTO EXISTING RIGHT-OF-WAYS AND SHALL PROVIDE FOR CLEANUP AT HIS OWN EXPENSE AS DIRECTED BY THE TOWNSHIP. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE TO CONTROL DUST ON THE PROJECT AND HE SHALL PROVIDE CONTROLLING MEASURES AS DIRECTED BY THE TOWNSHIP.
- 11. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING UTILITIES PRIOR TO AND DURING CONSTRUCTION. LOCATION OF EXISTING UTILITIES TO BE VERIFIED IN THE FIELD. 12. ALL SERVICES AND/OR UTILITIES LOCATED ON CONCRETE SIDEWALKS OR CURBS TO BE ISOLATED
- 13. ALL UTILITIES SHALL BE LOCATED, SUPPORTED AND PROTECTED TO THE SATISFACTION OF THE UTILITY COMPANY DURING THE CONSTRUCTION PERIOD.
- 14. THE CONTRACTOR SHALL RECTIFY ALL DISTURBED AREAS TO ORIGINAL CONDITION OR BETTER AND TO THE SATISFACTION OF THE TOWNSHIP. 15. THE CONTRACTOR IS TO OBTAIN, AND PAY FOR ANY NECESSARY PERMITS FOR ANY MUNICIPAL ROAD
- CUTS FOR THE INSTALLATION OF SANITARY, STORM, AND WATER SERVICE CONNECTIONS. ROAD CUTS TO BE RESTORED AS PER TOWNSHIP SATISFACTION.
- 16. BLASTING WILL NOT BE ALLOWED UNLESS AUTHORIZED BY THE TOWNSHIP. 17. ANY UTILITY RELOCATIONS DUE TO THIS DEVELOPMENT TO BE UNDERTAKEN AT THE EXPENSE OF THE OWNER/DEVELOPER.
- 18. ALL DRAWINGS AND SPECIFICATIONS ARE INSTRUMENTS OF SERVICE AND THE PROPERTY OF THE ENGINEER WHICH MUST BE RETURNED AT THE COMPLETION OF WORK.
- 19. DRIVEWAYS SHALL BE SETBACK A MINIMUM CLEARANCE OF 1.0m FROM ALL ABOVEGROUND SERVICES OR OTHER OBSTRUCTIONS. 20. ALL CONSTRUCTION WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE
- OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS. 21. ANY CONFLICTS WITH EXISTING SERVICES SHALL BE RECTIFIED AT THE OWNER'S EXPENSE.

GENERAL TESTING AND INSPECTION NOTES

1 TESTING OF ALL SERVICES BY GENERAL CONTRACTOR

FROM THE SIDEWALK OR CURB AS PER OPSD 310.040.

- 2. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CONTACTING GM BLUEPLAN ENGINEERING LIMITED FOR THE COMPLETION OF ALL REQUIRED SITE INSPECTIONS.
- 3. ALL STORM SEWERS ARE TO BE MANDREL TESTED PRIOR TO FINAL ACCEPTANCE BY THE ENGINEER. ALL MANDREL TESTING AS PER OPSS 410.
- 4. ALL STORM REQUIRE FIELD INSPECTION BY THE SITE SERVICING ENGINEERING DURING INSTALLATION INSPECTION SERVICES REQUIRE A MINIMUM OF 4 HOURS NOTICE.

SERVICING NOTES - SANITARY

- 1) ALL SANITARY SEWERS ARE TO BE PVC-DR 35 IN ACCORDANCE WITH CSA-B182.2 ASTM D-2779 AND ASTM D-3034 OR LATEST REVISIONS, RUBBER GASKET. SERVICES TO BE PVC-DR 28.
- 2) EXISTING SEWER INVERTS, MATERIAL TYPE, AND SIZE TO BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- 3) PRECAST MANHOLES TO BE MANUFACTURED TO REQUIREMENTS OF CSA A257.4 AND A.S.T.M. DESIGNATION C478M. 1200Ø MANHOLES AS PER OPSD 701.010, 1500Ø MANHOLES AS PER OPSD 701.011 MANHOLE FRAMES AND COVERS AS PER OPSD 401.010 TYPE 'A'
- 4) ALL MAINTENANCE HOLES SHALL BE BENCHED UP TO 1/2 HEIGHT REGARDLESS OF PIPE SIZE. ALL BENCHING SHALL SLOPE UP AND AWAY FROM THE PIPE AT 8% SLOPE. SANITARY SEWER MAINTENANCE HOLES SHALL NOT BE PRE-BENCHED BY THE MANUFACTURER EXCEPT IN NEW DEVELOPMENT. BENCHING MAINTENANCE HOLES MUST BE COMPLETED DURING CONSTRUCTION ON SITE.
- 5) BEDDING FOR PVC SANITARY SEWERS AS PER OPSD 802.010, GRANULAR 'A', COMPACTED TO 100% SPMDD.
- 6) ALL TESTING OF SANITARY SERVICES TO BE IN ACCORDANCE WITH O.B.C. 2012 AND TOWNSHIP SPECIFICATIONS.

SERVICING NOTES - WATER

- WATER SERVICE PIPE TO BE PVC-DR 18 CL 150 CONFORMING TO CSA B137.3, INCLUDING 12 GAUGE 7 STRAND TRACER WIRE BETWEEN HYDRANTS OR OTHER CONDUCTING APPURTENANCES. PIPE SHALL HAVE A MINIMUM COVER OF 2.0m. ALL WATERMAIN JOINTS TO BE APPROVED PUSH-ON. MECHANICAL OR FLANGE TYPE JOINTS AS REQUIRED FOR 1000 kPa RATED PRESSURE. CORROSION PROTECTION FOR ALL FITTINGS, VALVES AND HYDRANTS.
- 2) WATERMAINS SHALL HAVE A MINIMUM VERTICAL SEPARATION OF 0.5m AND HORIZONTAL SEPARATION OF 2.4m BETWEEN ANY SEWER OR MANHOLE.
- 3) CONTRACTOR TO CONFIRM THE SIZE, LOCATION AND MATERIAL TYPE OF EXISTING WATER SERVICE AND WATERMAIN PRIOR TO COMMENCING ANY WORK.
- 4) EXISTING WATERMAIN OBVERTS TO BE CONFIRMED ON SITE AT THE TIME OF CONSTRUCTION. 5) FLUSHING, SWABBING, AND TESTING OF WATERMAIN AS PER ONTARIO PROVINCIAL
- STANDARD SPECIFICATIONS. 6) ALL WATERMAIN MATERIALS, INSTALLATION METHODS AND TESTING SHALL

CONFORM TO OBC-2012 AND TOWNSHIP SPECIFICATIONS.

7) ALL METALLIC WATER FITTINGS ARE TO HAVE ANODES, TRACE WIRE AND WRAPPED IN A THREE PART PETROLEUM TAPE SYSTEM IN ACCORDANCE WITH THE REGION OF WATERLOO DGSSMS.

SERVICING NOTES - STORM

- TO BE CONCRETE IN ACCORDANCE WITH CSA A257.2, CLASS 65D OR LATEST REVISIONS. UNLESS OTHERWISE NOTED.
- TO 98% SPD
- COMPACTED TO 98% SPMDD.
- TO COMMENCEMENT OF CONSTRUCTION. 5. ALL CATCHBASINS SHALL BE INSTALLED IN ACCORDANCE WITH OPSD 705.010 OR OPSD
- 6. ALL EXISTING SEWERS ARE TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION.
- OTHERWISE

GRADING

- 1. THE GRADING PLAN IS TO BE READ WITH THE SITE SERVICES DRAWINGS.
- DISTURBED DURING CONSTRUCTION.
- CURRENT TOWNSHIP STANDARDS AND SPECIFICATIONS.
- ALL FILL WITHIN THE SITE PARKING AREA TO BE COMPACTED TO A MIN. OF 95% SPD. THE BASE MATERIALS.
- ALTERED.
- 6. SILT FENCE(S) TO BE INSTALLED AND MAINTAINED TO PREVENT SILT FLOWING ONTO GRADING PHASES.
- SEWERS REQUIRE THE APPROVAL OF GM BLUEPLAN ENGINEERING LIMITED.

- 10. ALL COMPACTION TO BE CERTIFIED BY A GEOTECHNICAL CONSULTANT.
- OTHERWISE. 12. PAVEMENT GRADE SHALL BE MIN. 0.5%, MAX. 8%.
- 13. DRAINAGE SWALE GRADE SHALL BE MIN. 2%, MAX. 6%.
- VERTICAL, UNLESS NOTED OTHERWISE.

250Ø STM. @ 2.0%

INV. = 414.33

5.6m 150Ø PERFORATED PIPE @ 0.0% BIG 'O'-BOSS 1000 c/w FACTORY WRAPPED FILTER



STONE INFILTRATION GALLERY 1 - SECTION DETAIL N.T.S.

BOTTOM OF STONE ELEV. = 412.55

-12.0m LONG x 7.0m WIDE x 1.0m DEEP CLEAR

STONE INFILTRATION GALLERY C/W TERRAFIX

FILTER FABRIC 270R OR EQUIVALENT, WRAPPED

TOP OF STONE ELEV. = 413.55

AROUND ALL

1. ALL STORM SEWERS 375mmØ AND SMALLER TO BE PVC SDR 35 IN ACCORDANCE WITH CSA-B182.2 ASTM D-2779 AND ASTM D-3034 OR LATEST REVISIONS. 450mmØ AND LARGER

2. BEDDING FOR PVC STORM SEWERS AS PER OPSD 802.010, GRANULAR 'A', COMPACTED

3. BEDDING FOR CONCRETE PIPE AS PER OPSD-802.030, CLASS B, GRANULAR 'A',

4. EXISTING SEWER INVERTS, MATERIAL TYPE, AND SIZE TO BE CONFIRMED ON SITE PRIOR

705.020. ALL CATCHBASIN FRAMES AND COVERS IN THE ROADWAY AS PER OPSD 400.110. ALL CATCHBASIN FRAMES AND COVERS IN WALKWAY AREAS AS PER OPSD 400.100.

7. ALL CATCHBASIN LEADS TO BE MINIMUM 250mmØ PVC SDR 35 IN ACCORDANCE WITH CSA-B182.2, ASTM D-2779 AND ASTM D-3034, OR NON-REINFORCED CONCRETE PIPE, OR BOSS 2000 HDPE IN ACCORDANCE WITH CSA-B182.8, ASTM D-3350, UNLESS NOTED

8. ALL MAINTENANCE HOLES AND CATCHBASIN MAINTENANCE HOLES SHALL BE BENCHED UP TO 3/4 HEIGHT REGARDLESS OF PIPE SIZE. ALL BENCHING SHALL SLOPE UP AND AWAY FROM THE PIPE AT 8% SLOPE. STORM SEWER MAINTENANCE HOLES SHALL NOT BE PRE-BENCHED BY THE MANUFACTURER EXCEPT IN NEW DEVELOPMENT. BENCHING MAINTENANCE HOLES MUST BE COMPLETED DURING CONSTRUCTION ON SITE.

2. CONTRACTOR TO RESTORE AREAS ON PUBLIC R.O.W. OR ADJACENT LANDS THAT HAVE BEEN

3. ALL DRIVEWAY AND GRADING MATERIAL AND CONSTRUCTION METHODS MUST CONFORM TO 4. ALL FILL WITHIN THE SITE TO BE COMPACTED TO A MIN. OF 98% Std. PROCTOR DRY DENSITY.

SUITABILITY OF ALL FILL MATERIALS ARE TO BE CONFIRMED BY A RECOGNIZED SOILS CONSULTANT TO THE DIRECTOR OF PUBLIC WORKS PRIOR TO INSTALLATION OF ANY ROAD

5. LANDSCAPING SHALL NOT ENCROACH ON BOULEVARD NOR SHALL BOULEVARD GRADES BE

ADJACENT LANDS. SILTATION CONTROL SHALL BE ERECTED PRIOR TO ANY GRADING OR CONSTRUCTION AND SHALL BE IN GOOD REPAIR THROUGHOUT THE CONSTRUCTION AND

7. ANY CHANGES IN GRADES, CATCH BASINS, SERVICES LATERALS, STORM AND SANITARY

8. THE CONTRACTOR SHALL RECTIFY ALL DISTURBED AREAS TO ORIGINAL CONDITION OR BETTER AND TO THE SATISFACTION OF GM BLUEPLAN ENGINEERING LIMITED.

9. ALL LANDSCAPING TO BE INSTALLED AS SOON AS POSSIBLE OR PRIOR TO THE END OF THE FIRST GROWING SEASON. LANDSCAPING TO BE MAINTAINED UNTIL IT IS ESTABLISHED.

11. ALL CURBS ARE TO BE 150mm ABOVE THE PROPOSED GUTTER LINE (G/L) UNLESS NOTED

14. SLOPES IN LANDSCAPE AREAS AND ON BERMS SHALL NOT EXCEED 3 HORIZONTAL TO 1



TYPICAL SWALE SUBDRAIN DETAIL N.T.S.



P.F.G.

DECEMBER 202

250Ø STM. @ 2.0%~

-150Ø STM. @ 1.0%

-INV. = 414.77

-INV. = 414.33

-INV. = 412.90

