

ABBREVIATIONS

- CB ----- CATCH BASIN
- ELEV. ----- ELEVATION
- FH ----- FIRE HYDRANT
- INV. ----- INVERT
- MAX. ----- MAXIMUM
- MIN. ----- MINIMUM
- MH ----- MANHOLE
- N.T.S. ----- NOT TO SCALE
- O/C ----- ON CENTER
- O/S ----- OUTSIDE
- PVC ----- POLYVINYL CHLORIDE
- R.D. ----- ROOF DRAIN
- R/W ----- REINFORCED WITH
- SAN ----- SANITARY
- SANMH ---- SANITARY MANHOLE
- STM ----- STORMWATER
- S.O.G. ----- SLAB ON GRADE
- SPEC. ----- SPECIFICATIONS
- SYM. ----- SYMMETRICAL
- T&B ----- TOP AND BOTTOM
- THK. ----- THICK
- THRU ----- THROUGH
- T/G ----- TOP OF GRADE
- T/S ----- TOP OF SLAB
- T/W ----- TOP OF WALL
- TYP. ----- TYPICAL
- U.N.O. ----- UNLESS NOTED OTHERWISE
- WM ----- WATER MAIN



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M. Heidari

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SITE GRADING & SERVICING

130 Beech Street, Strathroy, Ontario

DRAWING LIST

SHEET NO.	SHEET NAME
F-0	COVER
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DRAWINGS

- THE USE OF THESE DRAWINGS IS LIMITED TO THAT IDENTIFIED IN THE REVISIONS COLUMN. DO NOT CONSTRUCT FROM THESE DRAWINGS UNLESS MARKED "ISSUED FOR CONSTRUCTION" IN THE REVISIONS COLUMN, BY READ JONES CHRISTOFFERSEN LTD. THE DRAWINGS SHALL NOT BE USED FOR PRICING, COSTING, OR TENDER UNLESS SO INDICATED NOT BE USED FOR PRICING, COSTING, OR TENDER UNLESS SO INDICATED IN THE REVISION COLUMN. PRICING OR COSTING DRAWINGS ARE NOT COMPLETE AND ANY PRICES BASED ON PRICING OR COSTING DRAWINGS MUST INCLUDE ALLOWANCES.
- THIS SET OF DRAWINGS SHOWS THE COMPLETED PROJECT. THE DRAWINGS DO NOT SHOW COMPONENTS THAT MAY BE NECESSARY FOR CONSTRUCTION SAFETY. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR SAFETY IN AND ABOUT THE JOB SITE DURING CONSTRUCTION, AND THE DESIGN AND ERECTION OF ALL TEMPORARY STRUCTURES, FORMWORK, FALSE WORK, SHORING, ETC. REQUIRED TO COMPLETE THE WORK.
- THE INFORMATION ON THESE DRAWINGS SHALL NOT BE USED FOR ANY OTHER PROJECT OR WORKS. THE INFORMATION ON THESE DRAWINGS APPLIES SOLELY TO THIS PROJECT.

Project Number:

296

Client:

Brody Luis

Address:

130 Beech Street,
Strathroy, Ontario

Revision:

No. 1

Sheet Name:

COVER

Designed by:

M. Heidari, PhD, P.Eng.

Sheet Number:

F.0

Scale

GENERAL

1. ALL DIMENSIONS ARE IN METRES, EXCEPT PIPE DIAMETERS, WHICH ARE IN MILLIMETRES, UNLESS SPECIFIED OTHERWISE.
2. ALL DIMENSIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION, AND ANY DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER.
3. LOCATIONS OF ALL EXISTING UTILITIES ARE APPROXIMATE ONLY AND MUST BE CONFORMED IN THE FIELD. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AND VERIFY ALL DIMENSIONS AND ELEVATIONS RELATIVE TO THE EXISTING STRUCTURE(S).
4. UNLESS OTHERWISE NOTED, MATERIAL AND DESIGN SPECIFICATIONS CITED HEREIN SHALL BE THOSE CONFORMING WITH THE VERSION OF THE APPLICABLE SPECIFICATION OR CODE MOST RECENTLY ADOPTED BY THE PERMITTING AUTHORITY.
5. ALL FEATURES OF CONSTRUCTION NOT FULLY SHOWN SHALL BE OF THE SAME TYPE AND CHARACTER AS SHOWN FOR SIMILAR CONDITIONS, SUBJECT TO REVIEW BY THE ENGINEER.
6. EXISTING SITE DETAIL AND ELEVATION SHOWN HERE ARE BASED ON A SURVEY COMPLETED BY EKS LAND SURVEYOR INC., DATED MARCH 8, 2013.
7. ELEVATIONS ARE OF GEODETIC ORIGIN.
8. THE ENGINEER'S CERTIFICATION SUBMISSION FOR ALL WORK COMPLETED IN THE PROPERTY SHALL BE IN CONFORMANCE WITH THE TOWN/CITY'S CERTIFICATION REQUIREMENTS.
9. PRIOR TO COMMENCING ANY WORK WITHIN THE MUNICIPAL RIGHT-OF-WAY, THE CONTRACTOR OR DEVELOPER WILL OBTAIN ALL NECESSARY ROAD OCCUPANCY PERMITS AND SERVICE CONNECTION PERMITS FROM THE CITY.
10. ALL WORK WITHIN THE MUNICIPAL RIGHT-OF-WAY SHALL BE CONSTRUCTED IN ACCORDANCE WITH ONTARIO PROVINCIAL STANDARD DRAWINGS AND SPECIFICATIONS AND THE TOWN/CITY SUPPLEMENTAL SPECIFICATIONS AND STANDARD DRAWINGS.
11. REGULATORY SIGNS AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE ONTARIO TRAFFIC MANUAL.
12. THE STANDARD DRAWINGS INCLUDED WITH THESE PLANS ARE PROVIDED FOR CONVENIENCE ONLY AND ARE NOT TO BE CONSTRUED TO BE A COMPLETE SET FOR THE PURPOSE OF THE CONTRACT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL RELEVANT STANDARD DRAWINGS AND SPECIFICATIONS AS REQUIRED FOR THIS CONTRACT.
13. THE PRIME CONTRACTOR AND SUB-CONTACTORS ARE RESPONSIBLE FOR THE CONSTRUCTION PROCESS AND SAFETY OF THE WORKERS. THIS INCLUDES, BUT NOT LIMITED TO, THE CONSTRUCTION SEQUENCES TEMPORARY HAND DRILLS, EXCAVATION ACCESS AND BARRIERS. IT ALSO INCLUDES LIFTING OF MATERIALS AND CONSTRUCTION EQUIPMENT INTO AND OUT OF THE EXCAVATION, TEMPORARY SHORING OF EXCAVATIONS AND STABILITY OF ALL TEMPORARY EXCAVATIONS AND CUT SLOPES.
14. FALL PREVENTION MEASURES (GUARD RAILS OR EQUIVALENT, DESIGNED TO SAFETY REQUIRED SAFETY CODES) SHALL BE PLACED AROUND ENTIRE SHORING PERIMETER TO ALLOW ACCESS TO TOP OF SHORING FOR INSPECTION AND/OR MONITORING.
15. THE OWNER'S CONTRACTOR IS TO CONTACT THE CONSULTING ENGINEER FOR FINAL ONSITE REVIEW. THE CONTRACTOR IS TO PROVIDE AT LEAST 48 HOURS NOTICE PRIOR TO REQUIRED ONSITE REVIEW.
16. THE OWNER'S CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES UNDER THE OCCUPATIONAL HEALTH AND SAFETY ACT AS REQUIRED BY THE MINISTRY OF LABOUR TO EXECUTE THE WORK.

SANITARY AND STORM SEWERS

1. ALL STORM AND/OR SANITARY SEWER INSTALLATION SHALL BE IN ACCORDANCE WITH THE CURRENT TOWN/CITY'S DESIGN CRITERIA AND THE CURRENT EDITION OF THE ONTARIO BUILDING CODE.
2. ALL PVC PIPE LARGER THAN 350MM THROUGH 400MM IN DIAMETER, SHALL BE PRESSURE RATING 235, OR 18 AND MANUFACTURED IN ACCORDANCE TO AWWA C905-97 STANDARD AND CSA B137.3-05 AND SHALL HAVE CAST IRON OUTSIDE DIAMETER DIMENSIONS.
3. BEDDING FOR FLEXIBLE PIPE SHALL BE AS PER OPSD 802.010, 802.013 OR 802.014. MINIMUM COVER ON WATERMAIN WILL BE 2.6 METERS.
4. PROVISIONS FOR FLUSHING THE WALER LINE PRIOR TO TESTING AND SO FORTH MUST BE PROVIDED WITH AT LEAST A 50MM OUTLET ON 100MM AND LARGER LINES AS PER T- 1104.03-1. COPPER LINES ARE TO HAVE FLUSHING POINTS AT THE END, THE SAME SIZE AS THE LINE. ON FIRE LINES, FLUSHING OUTLET TO BE 100MM DIAMETER MINIMUM OR A HYDRANT.
5. ALL SITE SERVICES SHALL BE INSTALLED TO 1 M OUTSIDE FOUNDATION WALL.
6. ALL ORGANIC, UNSTABLE OR UNSUITABLE MATERIALS BENEATH THE ROAD ALLOWANCE, SERVICES, UTILITIES, OR FOUNDATIONS MUST BE REMOVED AND THESE AREAS BACKFILLED WITH AN APPROVED FILL MATERIAL, ALL TO THE SATISFACTION OF A GEOTECHNICAL ENGINEER AND SHOULD BE PLACED IN LIFTS NOT EXCEEDING 300MM (LOOSE) THAT ARE COMPACTED TO 95% SPMDD (100% FOR PAVED SURFACES). THE FILL MATERIAL SHOULD COMPRISE OF CLEAN, COMPACTIBLE FILL WITHIN 3% OF THE OPTIMUM MOISTURE CONTENT.
7. REMOVE ALL TRENCH WATER WHEN PIPE LAYING IS IN PROGRESS. ALL REQUIREMENTS FOR DEWATERING PERMITS (INCLUDING THE MINISTRY OF ENVIRONMENT, CONSERVATION AND PARKS (M.E.C.P)'S PERMIT TO TAKE WATER, IF REQUIRED) SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR .
8. CONNECTIONS FROM FOUNDATIONS, WEEPING TILE, SUMP PUMP, AND ROOF DRAINS ARE NOT PERMITTED TO ENTER THE SANITARY SEWER SYSTEM.
9. ALL PROPOSED STORM SEWER PIPE SHALL BE: PVC SMOOTH WALL (CSA B182.2) (1000 TO 6000) OR RIBBED (CSA B182.4) (2000 TO 6000) OR HOPE (CSA B182.6, 320 KPA ON-SITE PER OBC AND CSA B182.8 IN R .O.W.) (2000 TO 6000) OR NON-REINFORCED CONCRETE (CAN/CSA 257.1) (1000 TO 600E) OR REINFORCED CONCRETE (CAN/CSA 257.2) AND SANITARY SEWER PIPE TO BE PVC SMOOTH WALL (CSA B182.2) (1000 TO 6000) OR RIBBED (CSA B182.4) (2000 TO 6000) OR NON-REINFORCED CONCRETE (CAN/CSA 257.1) (1000 TO 600E) OR REINFORCED CONCRETE (CAN/CSA 257.2). PVC PIPE SHALL BE LAID WITH TYPE I BEDDING UNDER 4.5M OF COVER AND TYPE II BEDDING OVER 4.5M OF COVER. CONCRETE PIPE SHALL BE LAID WITH CLASS B (B1 OR B2) BEDDING. ALL SEWER BACKFILL MUST BE COMPACTED TO 95% STANDARD MAXIMUM DRY DENSITY (MINIMUM) (100% FOR PAVED AREAS).
10. CLASS B1 BEDDING (CRUSHED STONE) TO EXTEND FROM THE INLET ANO OUTLET PIPES OF ANY MAINTENANCE HOLE FOR A DISTANCE OF 5.0M.
11. THE MINIMUM DEPTH OF A STORM SEWER SHALL BE 1.22M FROM THE FINISHED GROUND ELEVATION TO THE CROWN OF THE PIPE AS PER OPSD 3090.101 FOUNDATION, FROST PROTECTION DEPTHS FOR SOUTHERN ONTARIO. WHERE MINIMUM DEPTHS CANNOT BE ACHIEVED AND THEREFORE FROST PROTECTION IS WARRANTED, INSULATION IS REQUIRED AS PER THE OPSD 1109.030'.

12. ALL STORM AND SANITARY SEWERS/SERVICES AND CATCHBASIN LEADS SHALL HAVE APPROVED RUBBER GASKET JOINTS + BE INSTALLED USING A LASER LEVEL.
13. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR ALL PRECAST CONCRETE STRUCTURES
14. ALL CATCHBASINS TO HAVE 0.6M SUMP AS PER OPSO 705.010 AND CATCHBASIN MAINTENANCE HOLES 12000 & LARGER TO HAVE 0.3M SUMP AS PER OPSO 701.010.
15. 3.0M LENGTHS OF 15DMM DIAMETER PERFORATED FILTER WRAPPED PVC PIPE ARE TO BE INSTALLED AS SUBDRAINS CONNECTED TO TWO SIDES OF EACH CATCHBASIN AND CATCHBASIN MAINTENANCE HOLE WITHIN PAVED AREAS. THE SUBDRAINS ARE TO BE LOCATED JUST BELOW SUBGRADE ELEVATION.
16. ALL STRUCTURES TO BE DESIGNED TO RESIST BUOYANCY IF REQUIRED. ENSURE MINIMUM OF 1 ADJUSTMENT UNIT FOR ALL STRUCTURES. MAXIMUM TOTAL ADJUSTMENT UNIT'S HEIGHT OF 300MM.
17. WHEN CROSSING ABOVE A SANITARY/STORM SEWER THE CONTRACTOR IS TO ENSURE A MINIMUM 0.5M VERTICAL SEPARATION FROM THE UNDERSIDE OF THE WATER SERVICE TO THE TOP OF THE SEWER AS OUTLINED IN THE CURRENT EDITION OF THE M.E.C.P "DESIGN GUIDELINES FOR DRINKING-WATER SYSTEMS" AND INSULATE WATER SERVICE AS PER CLAUSE 7.3.5.7. 'FREEZE PROTECTION' OF THE CURRENT EDITION OF THE ONTARIO BUILDING CODE, WHERE REQUIRED.
18. ALL EXISTING UNDERGROUND UTILITY (TELEPHONE, HYDRO, GAS, CABLE, SEWER, WATERMAINS, ETC.) THAT WILL BE CROSSED UNDER DURING THE INSTALLATION OF SERVICES FOR THIS DEVELOPMENT SHALL BE SUPPORTED, AS MAY BE REQUIRED BY THE OWNERS OF THE UTILITY BEING CROSSED UNDER.
19. OWNER'S CONTRACTOR TO LOCATE/FIELD VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
20. OWNER'S CONTRACTOR TO COORDINATE WITH UTILITIES PROVIDER FOR BRACING, DECOMMISSIONING AND/OR RELOCATION OF EXISTING GAS, HYDRO, TELEPHONE, CABLE. ETC. SERVICES, IF REQUIRED.
21. MAIN LINE PVC PIPE AS PER DR 35 CSA B182.2-06 CERTIFIED ASTM; 03034-04A, F679-03. SERVICE CONNECTION PVC PIPE TO BE AS PER DR 28 CSA B182.2-06 CERTIFIED ASTU. 03034-04A .
22. BEDDING FOR FLEXIBLE PIPE SHALL BE AS PER OPSO 802.010. 802.013 OR 802.014.

WATERMAINS

1. CONSTRUCTION OF WATERMAINS AND PRIVATE SERVICES SHALL BE IN ACCORDANCE WITH CITY STANDARDS & SPECIFICATIONS MANUAL (LATEST EDITION) AND MINISTRY OF ENVIRONMENT (MOE) GUIDELINES (LATEST EDITION).
2. WATERMAIN AND WATERMAIN APPURTENANCES SHALL CONFORM TO THE MUNICIPALITY MATERIAL/MANUFACTURER SPECIFICATIONS.
3. ALL SERVICE CONNECTIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH T-1104.01, T-1104.02-1, T-1104.02-2, T- 1105.02-1 AND T-1105.02-2.
4. ALL POLYVINYL CHLORIDE (PVC) PIPES, RANGING IN SIZE FROM 100MM THROUGH 300MM IN DIAMETER, SHALL BE CLASS 150, DR 18 AND MANUFACTURED IN ACCORDANCE AWWA C900-07 AND TO CSA 8137.3-05 AND SHALL HAVE CAST IRON OUTSIDE DIAMETER DIMENSIONS.
5. WATER SERVICES ARE TO BE INSTALLED PERPENDICULAR TO THE EXISTING CITY WATERMAIN AND STRAIGHT INTO THE BUILDING.
6. PVC PIPE IN SIZES 100MM THROUGH 300MM SHALL BE CLASS 150 DR18 CONFORMING TO AWWA C900.
7. PVC WATERMAIN/SERVICE MATERIAL, CATHODIC PROTECTION, TRACER WIRE ETC. MUST BE AS PER FORM 400.
8. FOR WATERMAIN DEFLECTION (PVC PIPE):
i) MAXIMUM ALLOWABLE DEFLECTION OF 1.5 DEGREES PER JOINT FOR UP TO 250MM DIAMETER. (THE MAXIMUM ALLOWABLE PIPE DEFLECTION TO BE 1/2 THE MANUFACTURER'S RECOMMENDATIONS).
ii) EACH JOINT SHALL BE DEFLECTED AN EQUAL AMOUNT.
9. ALL SYSTEM COMPONENTS ARE TO BE EITHER TO CITY'S STANDARDS OR ONTARIO PROVINCIAL STANDARD DRAWING (OPSD), WHERE A CITY STANDARD EXISTS IT SHALL BE USED IN THE PLACE OF THE OPSD STANDARD.
10. CURB STOPS ARE TO BE INSTALLED ON ALL WATER SERVICES.
11. GRANULAR BEDDING AS PER WM-200.01 TO BE GRANULAR 'D' AS PER FORM 600.
12. WATER SERVICES TO BE INSTALLED WITH A MINIMUM COVER OF 1.6M.
13. ALL VALVE BOXES TO BE SET TO PROPOSED GRADE.
14. GATE VALVES AND VALVE BOXES FOR 100MM TO 300MM AS PER WM-202.
15. FOR 100MM TO 300MM WATERMAINS, STANDARD CONCRETE BLOCKS AS PER WM-204.01.
16. FOR 100MM TO 300MM WATERMAINS, VERTICAL BEND CONCRETE BLOCKS AS PER WM-204.10 AND WM-204-11.

EROSION CONTROL

1. ALL FIELD FENCING TO BE INSTALLED PRIOR TO COMMENCEMENT OF ANY AREA GRADING, EXCAVATING, OR DEMOLITION TO PROTECT ADJACENT AREAS FROM MIGRATION OF SEDIMENT IN OVERLAND FLOW
2. EROSION CONTROL FENCING TO BE PLACED AROUND THE BASE OF ALL STOCKPILES ALL IS STRIKE PILES MUST BE KEPT A MINIMUM DISTANCE OF 2.5 METER FROM ALL OLD PROPERTY LINES AND 15 METERS AWAY FROM ALL WATER COURSES.
3. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE PROTECTION OF THE AREAS DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE DURING CONSTRUCTION ACTIVITIES. THIS INCLUDES LIMITING THE AMOUNT OF EXPOSED SOIL, USING TEMPORARY SEDIMENT CONTROL MEASURES DURING CONSTRUCTION ON ALL PROPOSED ROAD CATCHBASINS, REAR YARD CATCHBASINS AND CATCHBASIN MANHOLES (SUCH AS FILTER FABRIC INSERTS WITH AN OVERFLOW UNDER GRATES OR COVERS) AND OTHER NECESSARY SEDIMENT TRAPS. NO RECYCLED FILTER FABRIC MATERIAL SHALL BE PERMITTED FOR USE ON SITE.



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Designed by:	M. Heidari, PhD, P.Eng.
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Scale	

4. AT THE DISCRETION OF THE PROJECT MANAGER OR MUNICIPAL STAFF, ADDITIONAL SILT CONTROL DEVICES SHALL BE INSTALLED AT DESIGNATED LOCATIONS.
5. EROSION PROTECTION TO BE PROVIDED AROUND ALL THE STORM AND SANITARY MANHOLES AND OR CATCH BASINS AS PER THE ATTACHED FOUND IN THE DRAWING SET.
6. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AS SITE DEVELOPMENT PROGRESSES CONTRACTORS TO PROVIDE ALL ADDITIONAL EROSION CONTROL STRUCTURES.
7. EROSION CONTROL STRUCTURES TO BE MONITORED REGULARLY BY ENGINEER AND DAMAGED REPAIRED IMMEDIATELY SEDIMENTS TO BE REMOVED WHEN ACCUMULATIONS REACH A MAXIMUM A MAXIMUM OF ONE THIRD (1/3) THE HEIGHT OF THE SILT FENCE.
8. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MONITORED TO ENSURE THEY ARE IN EFFECTIVE WORKING ORDER. THE CONDITION OF THE CONTROL MEASURES SHALL BE MONITORED PRIOR TO ANY FORECAST STORM EVENT AND FOLLOWING A STORM EVENT.
9. ALL EROSION CONTROL STRUCTURES TO REMAIN IN PLACE UNTIL ALL DISTURBED GROUND SERVICES HAVE BEEN RESTABILIZED EITHER BY PAVING OR RESTRICTION OF VEGETATIVE GROUND COVER.
10. NO ALTERNATE METHODS OF EROSION CONTROL PROTECTION SHALL BE PERMITTED UNLESS APPROVED BY ENGINEER.
11. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING SEDIMENTS FROM THE MUNICIPAL ROADWAY AND SIDEWALKS AT THE END OF EACH WORK DAY.
12. ALL CATCHBASINS SHALL BE PROTECTED WITH EITHER SILK SACKS OR WRAPPED IN GEOTEXTILE CLOTH.
13. THE ENGINEER TO MONITOR THE SITE DEVELOPMENT TO ENSURE ALL EROSION CONTROLS ARE INSTALLED AND MAINTAINED TO CITY REQUIREMENTS. CONTRACTOR TO COMPLY WITH THE ENGINEER'S INSTRUCTION TO INSTALL MODIFY OR MAINTAIN EROSION CONTROL WORKS.
14. ALL DISTURBED AREAS WILL BE STABILIZED AS QUICKLY AS POSSIBLE TO MINIMIZE THE OPPORTUNITY FOR EROSION PER OPSS 572.
15. SLOPES GREATER THAN 5:1 WILL BE A STABILIZED USING SUITABLE METHODS (E.G. EROSION CONTROL MATS TACKIFIER AND SEED, ETC.) AS SOON AS PRACTICAL.
16. SILTATION CONTROL BARRIERS SHALL BE PLACED AS DETAILED.
17. ALL SILTATION CONTROL MEASURES SHALL BE CLEANED AND MAINTAINED AFTER EACH RAINFALL AS DIRECTED AND TO THE SATISFACTION OF THE CITY'S ENGINEER.
18. ADDITIONAL SEALED CONTROL LOCATIONS MAY BE REQUIRED AS DETERMINED BY THE CITY'S ENGINEER.
19. KEEP ALL SUMPS CLEAN DURING CONSTRUCTION.
20. MINIMIZE AREA DISTURBED DURING CONSTRUCTION.
21. ALL COLLECTED SEDIMENT TO BE DISPOSED OF AT AN APPROVED LOCATION.
22. ALL SETTLING/FILTRATION BASINS SHALL BE EQUIPPED WITH TERRAFIX 270R GEOTEXTILE (OR APPROVED EQUIVALENT) AND SHALL BE CLEANED AND REPLACED AS REQUIRED.
23. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL CONFORM TO OPSS 577. WHERE DEWATERING IS REQUIRED, THE DISCHARGED WATER SHALL BE CONTROLLED IN ACCORDANCE WITH OPSS 518.

SITE GRADING AND ROAD

1. NO ALTERATIONS TO EXISTING BOUNDARY ELEVATIONS OR ADJACENT LANDS SHALL BE UNDERTAKEN UNLESS WRITTEN AGREEMENT WITH THE ADJACENT PROPERTY OWNER IS OBTAINED AND SUBMITTED IN A FORMAT ACCEPTABLE TO THE CITY.
2. ANY DAMAGE TO PROPERTY ADJACENT TO THE CONSTRUCTION SITE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE STORM DRAINAGE SHALL BE SELF CONTAINED WITHIN THE SUBJECT PROPERTY UNTIL IT CAN BE DISCHARGED, REUSED, INFILTRATED AND/OR EVAPOTRANSPIRED IN A MANNER ACCEPTABLE TO THE CITY.
4. THE MINIMUM GRADIENT ON ANY DRIVEWAY SHALL BE 2.0%. THE MAXIMUM DRIVEWAY GRADIENT IS 8.0%.
5. RETAINING WALLS SHALL BE CONSTRUCTED ENTIRELY ON THE UPPER PROPERTY SO THAT TIE BACKS (IF REQUIRED) DO NOT CROSS PROPERTY BOUNDARIES.
6. MAXIMUM PONDING DEPTH 0.3M.
7. ALL AREAS DISTURBED DURING CONSTRUCTION WITHIN THE CITY'S RIGHT-OF-WAY SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION. GRASSED AREAS SHALL BE PROVIDED WITH 100MM OF TOPSOIL AND SHALL BE SODDED AS PER T.S. 5.00 & T.S. 5.10.
8. PROPOSED SPOT ELEVATIONS SHOWN ARE ON ASPHALT, LANDSCAPE OR CONCRETE AREAS. UNLESS OTHERWISE NOTED TOP OF CURB ELEVATIONS ARE 0.15M ABOVE ASPHALT ELEVATIONS EXCEPT AT CURB DEPRESSIONS AND WHEEL CHAIR RAMPS.
9. WHERE NEW ASPHALT MATCHES EXISTING ASPHALT, GRIND EXISTING ASPHALT A MINIMUM OF 300MM WIDE AND 40MM DEEP FOR KEYING. APPLY HOT RUBBER SEALING COMPOUND IN ACCORDANCE WITH OPSS 1212. ALL SURFACES TO BE TACK COATED WITH SS-1.
10. MINIMUM PAVEMENT REQUIREMENTS FOR DRIVEWAY ENTRANCES ARE AS PER GEOTECHNICAL RECOMMENDATION.
11. THE APPROVED FILL SHOULD BE PLACE IN LAYERS NOT EXCEEDING 300MM BEFORE COMPACTION AND SHALL BE UNIFORMLY COMPACTED TO AT LEAST 100% OF THE MATERIAL'S SPMD. THIS OPERATION SHALL BE FULLY SUPERVISED BY GEOTECHNICAL PERSONNEL.
12. THE FILL SHOULD NOT BE CONSTRUCTED DURING WINTER MONTHS WHEN PERSISTENT OR INTERMITTENT FREEZING TEMPERATURES OCCUR. IF THE FILL AREAS ARE LEFT FOR A PERIOD OF TIME, A SUITABLE SOIL COVER MUST BE PROVIDED TO PREVENT FROST ACTION AND DISTURBANCE.
13. SUITABILITY AND COMPACTION OF ALL FILL MATERIALS SHALL BE CONFIRMED BY THE GEOTECHNICAL CONSULTANT.

14. TOPSOIL AND OTHER SOILS WITH EXCESSIVE ORGANICS AND/OR WEAK SOILS SHOULD BE REMOVED AND DISPOSED OFF SITE.
15. THE EXPOSED NATURAL SUBGRADE SHALL BE INSPECTED AND APPROVED BY THE GEOTECHNICAL CONSULTANT.
16. UNLESS INDICATED OTHERWISE, ALL WORK WITHIN THE CITY RIGHT-OF-WAY SHALL BE CONSTRUCTED IN ACCORDANCE WITH DESIGN STANDARDS AND SPECIFICATION AND THE UNDERTAKING.
17. ANY DISCREPANCIES BETWEEN SITE CONDITIONS AND THE DRAWINGS MUST BE REPORTED TO THE CONSULTING ENGINEER/CITY PRIOR TO COMMENCEMENT OF CONSTRUCTION AND APPROPRIATE ACTION TAKEN TO THE SATISFACTION OF THE CITY/TOWN.
18. ALL SURVEY POINTS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE LAYOUT SHALL BE REPORTED TO THE CONSULTANT AND THE CONSULTANT SHALL NOTIFY THE CITY OF THE NECESSARY CHANGES.
19. NO PORTION OF THE WORK SHALL BE CARRIED OUT WITHOUT FIRST HAVING OBTAINED APPROVED CONSTRUCTION DRAWINGS, APPROVED PROJECT SCHEDULE(S), APPROVED TRAFFIC STAGING PLANS AND PERMITS FOR SUCH PORTION OF THE INFRASTRUCTURE WORK IN ACCORDANCE WITH THE PROVISIONS HEREOF AND GIVING 10 WORKING DAYS PRIOR WRITTEN NOTICE TO THE EXECUTIVE DIRECTOR OF TECHNICAL SERVICES THAT SUCH WORK IS TO BE CARRIED OUT WITH SUCH NOTICE TO SPECIFY THE ANTICIPATED DATE OF COMMENCEMENT OF THE WORK. A PRE-CONSTRUCTION COORDINATION MEETING WITH CITY STAFF IS TO BE HELD A MINIMUM OF 5 WORKING DAYS PRIOR TO THE COMMENCEMENT OF ANY OF THE WORK.
20. THE CONTRACTOR SHALL REFER TO THE ONTARIO TRAFFIC MANUAL BOOK 7, TEMPORARY CONDITIONS FOR TEMPORARY CONSTRUCTION SIGNAGE.
21. CONTRACTOR SHALL VERIFY AND MATCH EXISTING PAVEMENT STRUCTURE IN DEPTH AND MATERIAL. ANY DISCREPANCIES SHALL BE REPORTED TO THE CONSULTANT PRIOR TO COMMENCEMENT OF CONSTRUCTION AND APPROPRIATE ACTION TAKEN TO THE SATISFACTION OF THE CITY'S ENGINEER.



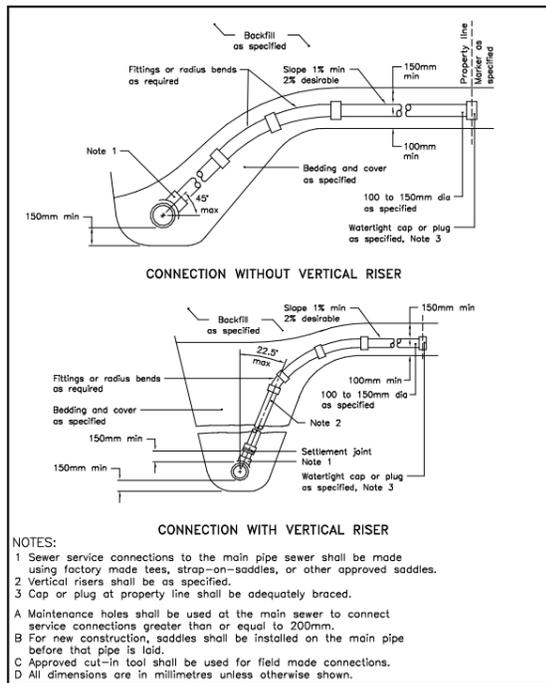
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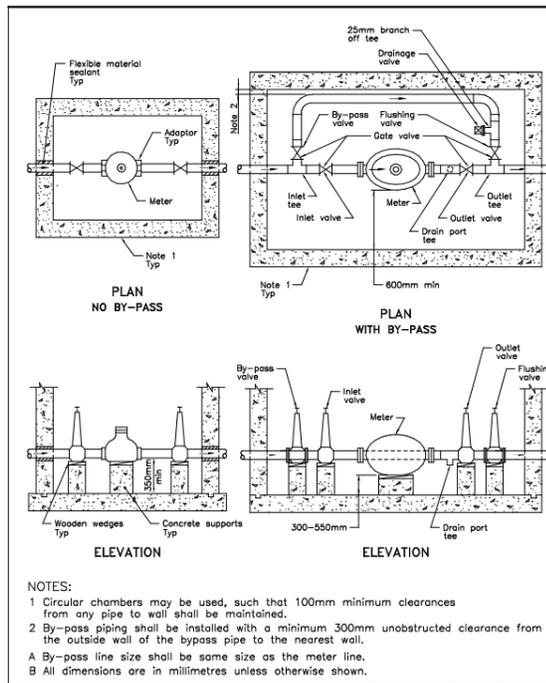


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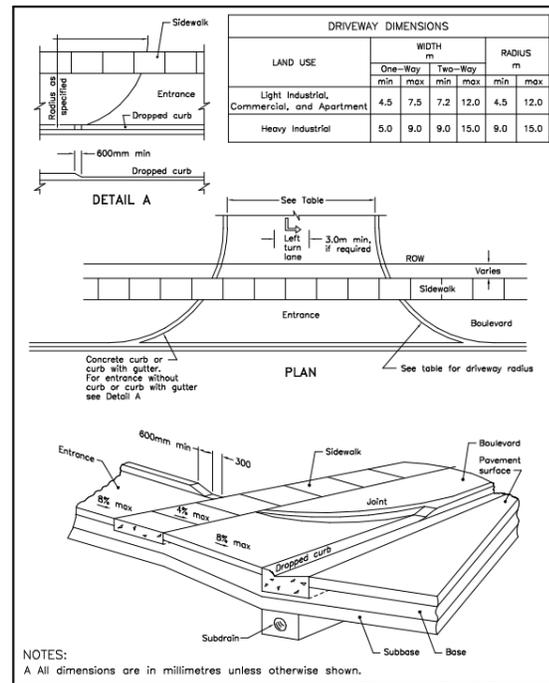
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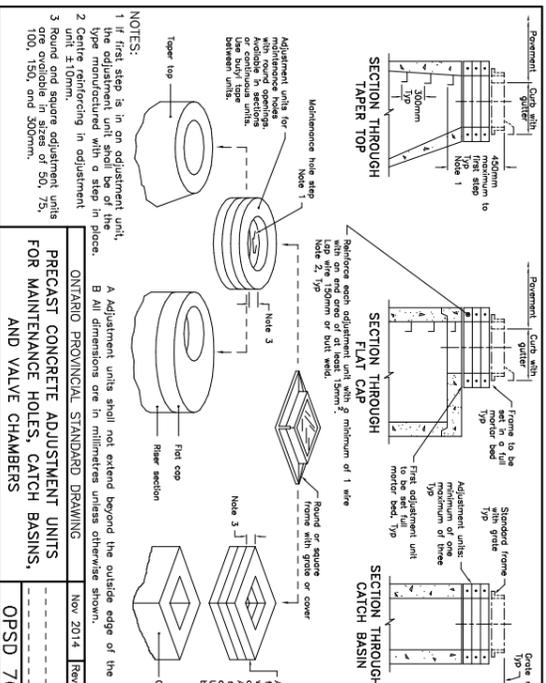
ONTARIO PROVINCIAL STANDARD DRAWING Nov 2016 Rev 3
SEWER SERVICE CONNECTIONS FOR MAIN PIPE SEWER
OPSD 1006.010



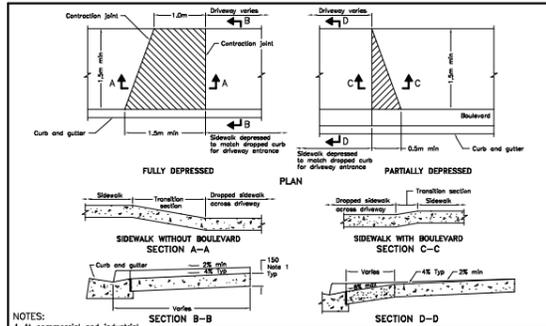
ONTARIO PROVINCIAL STANDARD DRAWING Nov 2019 Rev 3
PIPING LAYOUT FOR WATER METERS 50mm AND SMALLER IN CHAMBERS
OPSD 1107.010



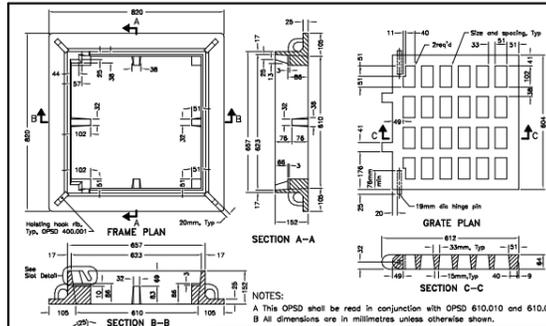
ONTARIO PROVINCIAL STANDARD DRAWING Nov 2018 Rev 2
URBAN INDUSTRIAL, COMMERCIAL, AND APARTMENT ENTRANCES
OPSD 350.010



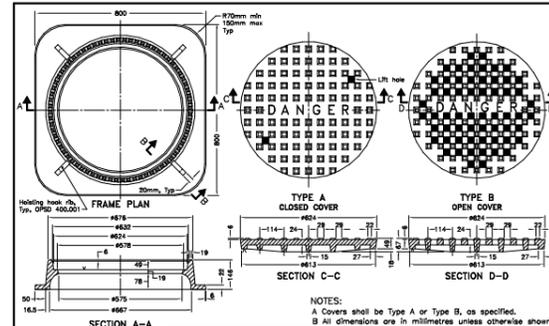
ONTARIO PROVINCIAL STANDARD DRAWING Nov 2014 Rev 3
PRECAST CONCRETE ADJUSTMENT UNITS FOR MAINTENANCE HOLES, CATCH BASINS, AND VALVE CHAMBERS
OPSD 704.010



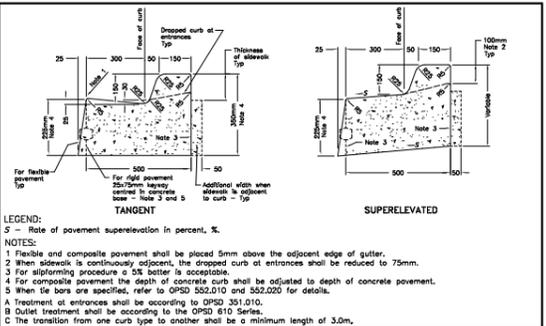
ONTARIO PROVINCIAL STANDARD DRAWING Nov 2019 Rev 3
CONCRETE SIDEWALK DRIVEWAY ENTRANCE DETAILS
OPSD 310.050



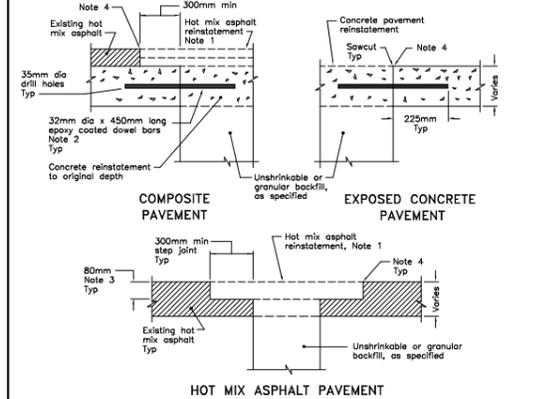
ONTARIO PROVINCIAL STANDARD DRAWING Nov 2018 Rev 2
CAST IRON, SQUARE FRAME WITH CIRCULAR CLOSED OR OPEN COVER FOR MAINTENANCE HOLES
OPSD 401.010



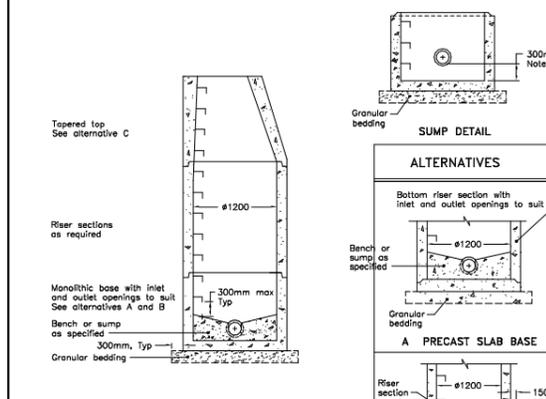
ONTARIO PROVINCIAL STANDARD DRAWING Nov 2018 Rev 4
CAST IRON, SQUARE FRAME WITH CIRCULAR CLOSED OR OPEN COVER FOR MAINTENANCE HOLES
OPSD 401.010



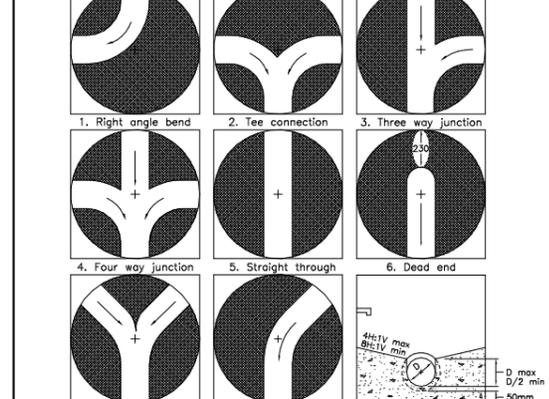
ONTARIO PROVINCIAL STANDARD DRAWING Nov 2012 Rev 2
CONCRETE BARRIER CURB WITH STANDARD GUTTER
OPSD 600.040



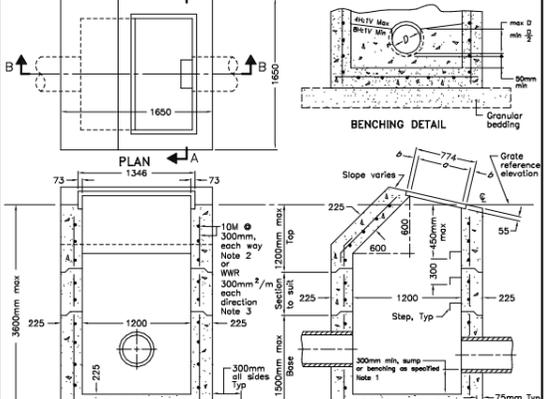
ONTARIO PROVINCIAL STANDARD DRAWING Nov 2020 Rev 3
PAVEMENT REINSTATEMENT FOR UTILITY CUTS
OPSD 509.010



ONTARIO PROVINCIAL STANDARD DRAWING Nov 2014 Rev 5
PRECAST CONCRETE MAINTENANCE HOLE 1200mm DIAMETER
OPSD 701.010



ONTARIO PROVINCIAL STANDARD DRAWING Nov 2014 Rev 4
MAINTENANCE HOLE BENCHING AND PIPE OPENING ALTERNATIVES
OPSD 701.021



ONTARIO PROVINCIAL STANDARD DRAWING Nov 2014 Rev 3
PRECAST CONCRETE DITCH INLET MAINTENANCE HOLE - TYPE A 1200 x 1200mm
OPSD 702.040

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M.M. Heidari Sarvestani

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Project Number: 296

Client: Brody Luis

Address: 130 Beech Street, Strathroy, Ontario

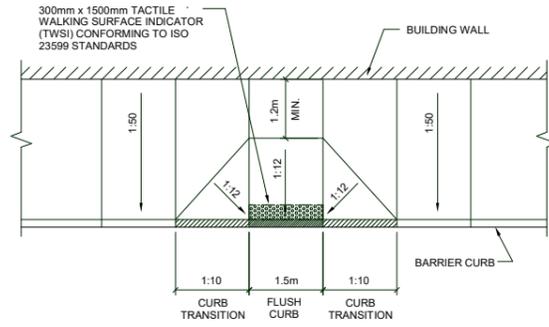
Revision: No. 1

Sheet Name: OPSD

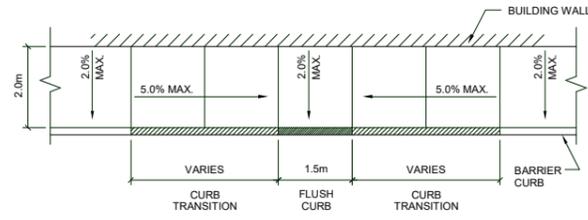
Designed by: M. Heidari, PhD, P.Eng.

Sheet Number: F.2-1

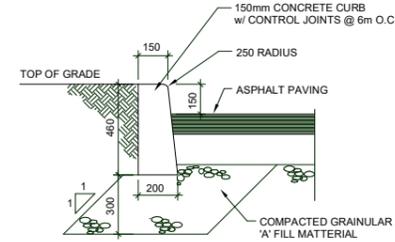
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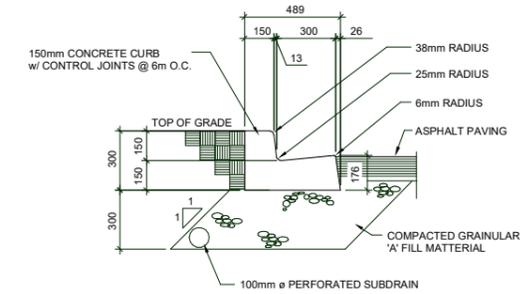
F.6-1.1 : TYPICAL DETAIL FOR ACCESSIBILITY RAMP



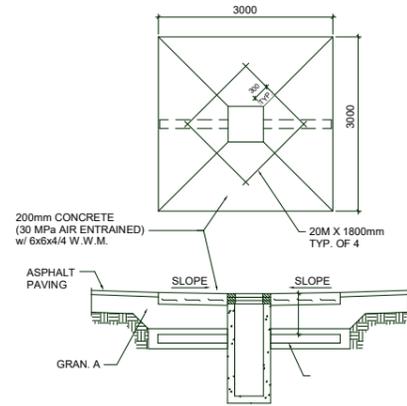
F.6-1.2 : TYPICAL DETAIL FOR RAMP



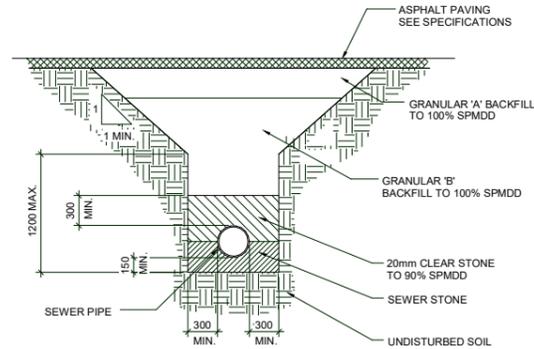
F.6-1.3 : TYPICAL DETAIL BARRIER CURB



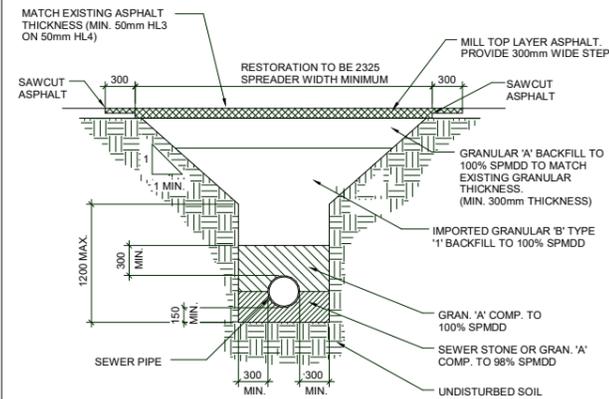
F.6-1.4 : TYPICAL DETAIL FOR CURB-GUTTER



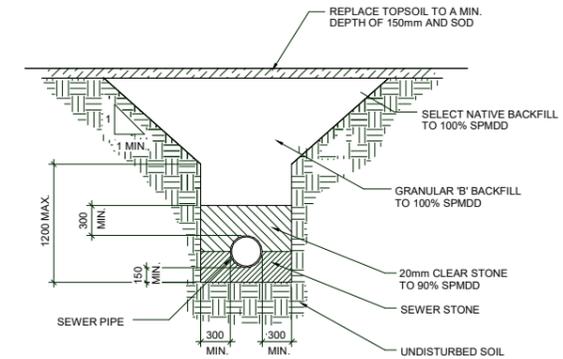
F.6-1.5 : TYPICAL DETAIL FOR CATCHBASIN



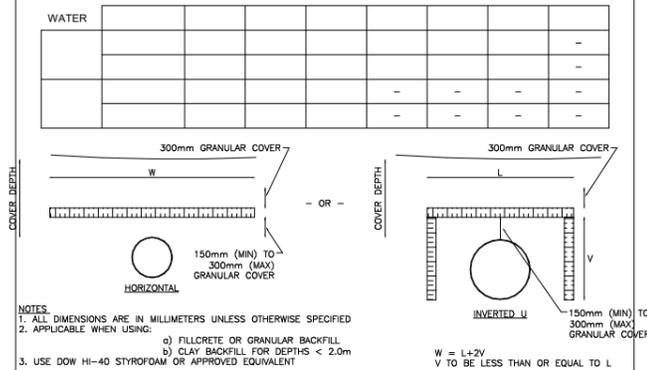
F.6-1.6 : TYPICAL DETAIL FOR UTILITY TRENCH - ASPHALT



F.6-1.7 : TYPICAL DETAIL FOR UTILITY TRENCH - EXISTING ASPHALT



F.6-1.8 : TYPICAL DETAIL FOR UTILITY TRENCH - LANDSCAPED



W = L+2V
V TO BE LESS THAN OR EQUAL TO L



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M. Heidari

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Project Number: 296

Client: Brody Luis

Address: 130 Beech Street, Strathroy, Ontario

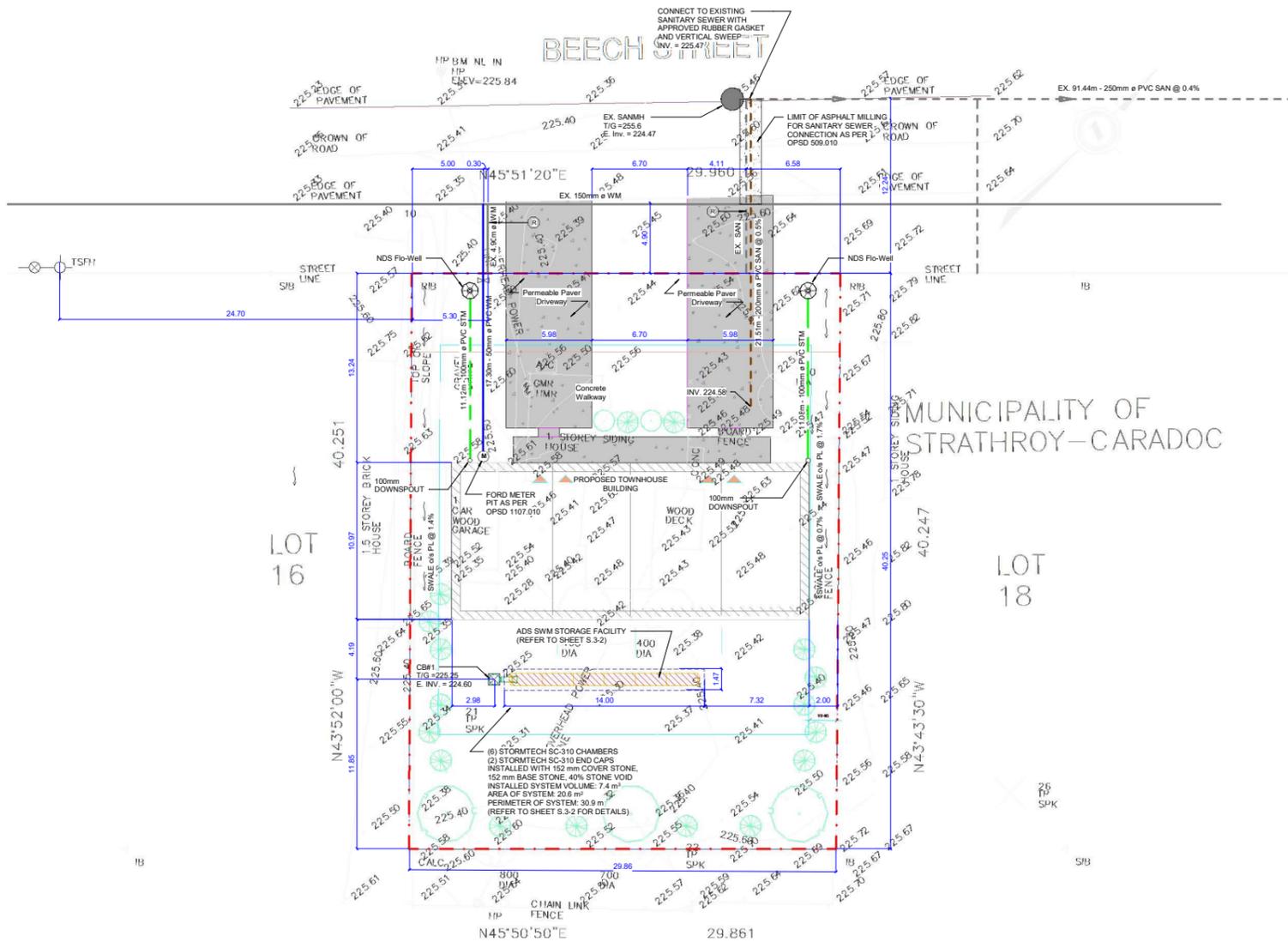
Revision: No. 1

Sheet Name: TYPICAL DETAILS

Designed by: M. Heidari, PhD, P.Eng.

Sheet Number: F.2-2

Scale 1 : 20



SERVICING PLAN

1:150

NOTE

- ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH ONTARIO PROVINCIAL STANDARD DRAWINGS AND SPECIFICATIONS.
- NO CONNECTION TO EXISTING MUNICIPAL SERVICES SHALL TAKE PLACE UNTIL NEW SECTIONS HAVE BEEN TESTED AND CERTIFIED BY THE ENGINEER AND APPROVED BY THE TOWN/CITY STAFF.
- THE SIZE AND INVERT ELEVATION IF THE RECEIVING SANITARY SEWER ON FIFTH AVENUE AND THE LOCATION AND SIZE OF THE EXISTING WATER SERVICE TO THE PROPERTY SHALL BE VERIFIED PRIOR TO PROCEEDING WITH THE CONSTRUCTION. ANY DISCREPANCY FOUND FROM WHAT IS SHOWN ON THE PLANS SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER FOR POSSIBLE REDESIGN.
- LOCATION OF ALL EXISTING DETAIL SHOWN ON THE PLANS IS APPROXIMATE AND SHALL BE CONFIRMED IN THE FIELD BY THE CONTRACTOR.
- ALL DOWNSPOUTS, SUMP PUMP AND OTHER DRAINAGE DISCHARGE POINTS SHALL DISCHARGE ON TO A SPLASH PAD OR APPROVED EQUIVALENT.
- THE OWNER/BUILDER/APPLICANT IS RESPONSIBLE FOR OBTAINING UTILITY AND SERVICING LOCATES PRIOR TO ANY WORKS.
- THIS LOT GRADING/DRAINAGE PLAN HAS BEEN DESIGNED/COMPLETED SUCH THAT MUNICIPAL, COUNTY AND PROVINCIAL LANDS ADJACENT TO OR IN THE VICINITY OF THIS LOT ARE NOT AFFECTED.
- A COPY OF THE "ACCEPTED FOR MUNICIPAL PURPOSES" LOT GRADING/DRAINAGE PLAN IS TO BE ON SITE FOR REFERENCE AT ALL TIMES DURING CONSTRUCTION.
- THE STRUCTURE ELEVATIONS HAVE BEEN SET SUCH THAT THERE IS NO RISK OF HYDROSTATIC PRESSURE AFFECTING THE STRUCTURE"

Manhole Schedule

ID Number	Diameter (mm)	T/G Elev. (masl)	N. Inv. Elev. (masl)	E. Inv. Elev. (masl)	W. Inv. Elev. (masl)	S. Inv. Elev. (masl)
CB#1	750	225.25	----	224.60	----	----

LEGEND	
	BOUNDARY LINE
	CONCRETE SIDEWALK
	MUD MAT
	ASPHALT MILLING
	DRY SWALE
	RETAINING WALL
	OVER LAND FLOW
	SLOPE
	2%
	DIRECTION OF SURFACE DRAINAGE
	PROPOSED SWALE
	EXISTING HYDRANT AND VALVE
	PROPOSED FIRE HYDRANT
	EXISTING WATERMAIN
	EXISTING SANITARY SEWER
	EXISTING STORMWATER SEWER
	PROPOSED WATERMAIN
	PROPOSED SANITARY SEWER
	PROPOSED STORMWATER SEWER
	CATCH BASIN
	CATCH BASIN MANHOLE
	EXISTING SANITARY MANHOLE
	EXISTING STORM MANHOLE
	FORD METER PIT
	STORMCEPTOR
	FLO-WELL
	SHUT OFF VALVES
	DOWN SPOT
	SPOT ELEVATION
	MATCH TO EXISTING ELEVATION
	PROPOSED ELEVATION
	TO BE REMOVED
Catchment Area $\frac{1}{100}$ Runoff Coefficient Area in m ²	



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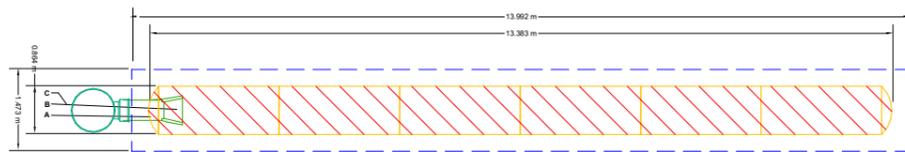


Handwritten signature of M.M. Heidari Sarvestani

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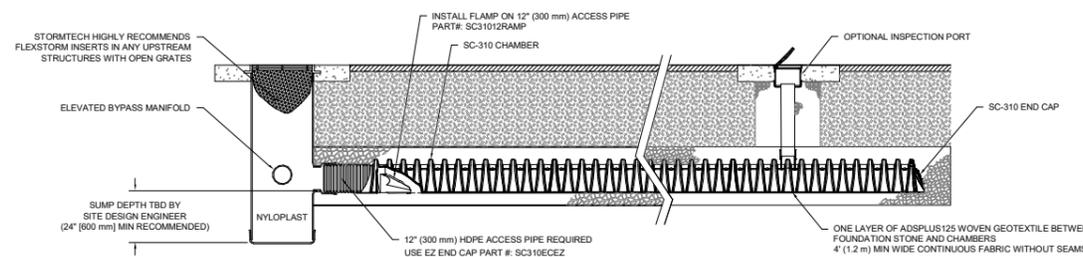
Project Number:	296
Client:	Brody Luis
Address:	130 Beech Street, Strathroy, Ontario
Revision:	No. 1
Sheet Name:	SERVICING PLAN
Designed by:	M. Heidari, PhD, P.Eng.
Sheet Number:	F.3-1
Scale	As indicated

PROPOSED LAYOUT	CONCEPTUAL ELEVATIONS	PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT	MAX FLOW
6	STORMTECH SC-310 CHAMBERS	MINIMUM ALLOWABLE GRADE (TOP OF PAVEMENT OR UNPAVED)	2.987			
7	STORMTECH SC-310 END CAPS	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC)	1.188			
152	STONE ABOVE (MIN)	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC)	1.038	PREFABRICATED EZ END CAP	A	300 mm BOTTOM PREFABRICATED EZ END CAP PART# SC310ECEZ / TYP OF ALL 300 mm
153	STONE BELOW (MIN)	MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT)	1.038	SLUMP	B	BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS
40	STONE VOID	MINIMUM ALLOWABLE GRADE (FLEXIBLE PAVEMENT)	0.718	FLAMP	C	INSTALL FLAMP ON 300 mm ACCESS PIPE / PART# SC3102RAMP
7.4	INSTALLED SYSTEM VOLUME (V) (PERMETER STONE INCLUDED)	TOP OF FINISH	0.718	NYLOPLAST (INLET W/ ISO PLUS ROW)		750 mm DIAMETER (610 mm SLUMP MIN)
	(COVER STONE INCLUDED)	TOP OF SC-310 CHAMBER	0.718			
	(BASE STONE INCLUDED)	300 mm ISOLATOR ROW PLUS INVERT	0.118			
20.6	SYSTEM AREA (M ²)	FOUNDATION STONE	0.000			
20.7	SYSTEM PERIMETER (m)	BOTTOM OF STONE	0.000			



NOTES

- MANHOLE SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #632 FOR MANHOLE SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANHOLE COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITH SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.
- *NOT FOR CONSTRUCTION: THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.



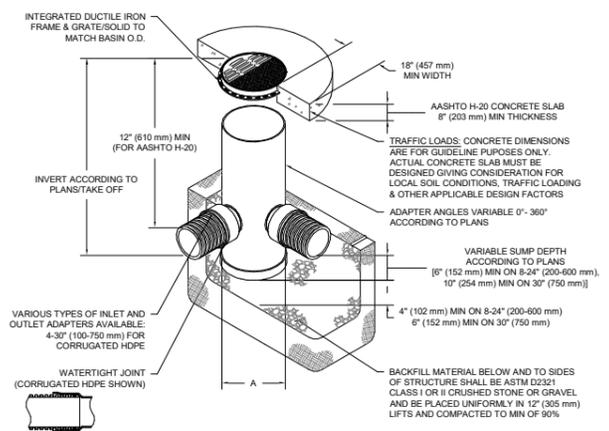
SC-310 ISOLATOR ROW PLUS DETAIL
NTS

INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT**
- A. INSPECTION PORTS (IF PRESENT)
 - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
 - A.2. REMOVE AND CLEAN FLEXFORM FILTER IF INSTALLED
 - A.3. USING A FLASHLIGHT AND STADI ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
 - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
 - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
 - B. ALL ISOLATOR PLUS ROWS
 - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
 - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
 - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
 - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
 - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS**
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
 - B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
 - C. VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.**
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.**

- NOTES**
- INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
 - CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

NYLOPLAST DRAIN BASIN
NTS



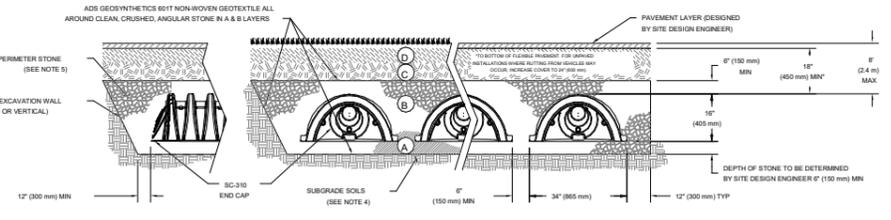
- NOTES**
- 8-30" (200-750 mm) GRATES/SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
 - 12-30" (300-750 mm) FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS
 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 P/C
 - FOR COMPLETE DESIGN AND PRODUCT INFORMATION: WWW.NYLOPLAST-US.COM
 - TO ORDER CALL: 800-821-6710

A	PART #	GRATE/SOLID COVER OPTIONS
8"	2806AG	PEDESTRIAN LIGHT DUTY / STANDARD LIGHT DUTY / SOLID LIGHT DUTY
10"	2819AG	PEDESTRIAN LIGHT DUTY / STANDARD LIGHT DUTY / SOLID LIGHT DUTY
12"	2812AG	PEDESTRIAN AASHTO H-10 / STANDARD AASHTO H-20 / SOLID AASHTO H-20
15"	2815AG	PEDESTRIAN AASHTO H-10 / STANDARD AASHTO H-20 / SOLID AASHTO H-20
18"	2818AG	PEDESTRIAN AASHTO H-10 / STANDARD AASHTO H-20 / SOLID AASHTO H-20
24"	2824AG	PEDESTRIAN AASHTO H-10 / STANDARD AASHTO H-20 / SOLID AASHTO H-20
30"	2830AG	PEDESTRIAN AASHTO H-20 / STANDARD AASHTO H-20 / SOLID AASHTO H-20

ACCEPTABLE FILL MATERIALS: STORMTECH SC-310 CHAMBER SYSTEMS

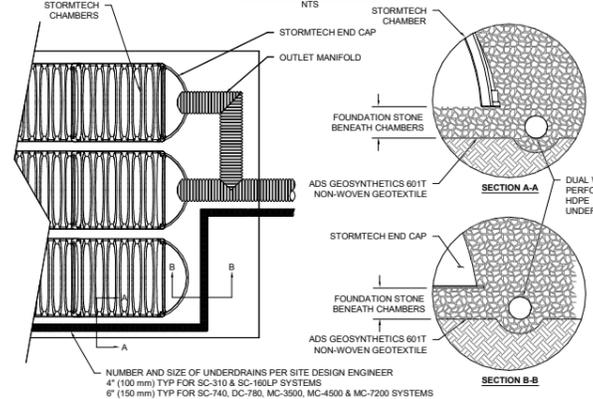
MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT	
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	NA	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.	
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE (E' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL-AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. OR MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M40' A.1, A.2.4, A.3 OR AASHTO M43' 3, 307, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO MIN. 90% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (5,443 kg) DYNAMIC FORCE NOT TO EXCEED 25,000 lbs (9,072 kg).
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE (A' LAYER) TO THE 'C' LAYER ABOVE.	AASHTO M43' 3, 307, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.	
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	AASHTO M43' 3, 307, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE 2.3	

- PLEASE NOTE:**
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
 - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'K' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FILL COVERAGES WITH A VIBRATORY COMPACTOR.
 - WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
 - ONCE LAYER 'C' IS PLACED, ANY SOIL MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



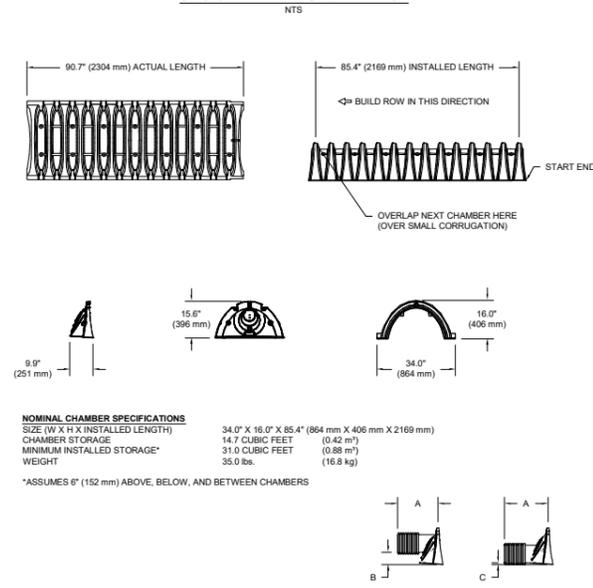
- NOTES:**
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2022 (POLYETHYLENE) OR ASTM F2418 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
 - SC-310 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2417 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
 - THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
 - PERMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:**
- TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 400 LBS/FT³. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND I) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

UNDERDRAIN DETAIL
NTS



NUMBER AND SIZE OF UNDERDRAINS PER SITE DESIGN ENGINEER
4" (100 mm) TYP FOR SC-310 & SC-160/P-SYSTEMS
6" (150 mm) TYP FOR SC-740, DC-780, MC-3500, MC-4500 & MC-7200 SYSTEMS

SC-310 TECHNICAL SPECIFICATION
NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	34.0" X 16.0" X 85.4" (864 mm X 406 mm X 2169 mm)
CHAMBER STORAGE	14.7 CUBIC FEET (0.42 m ³)
MINIMUM INSTALLED STORAGE*	31.0 CUBIC FEET (0.88 m ³)
WEIGHT	35.0 lbs. (16.8 kg)

*ASSUMES 6" (152 mm) ABOVE, BELOW, AND BETWEEN CHAMBERS

PRE-FAB STUB AT BOTTOM OF END CAP WITH FLAMP END WITH "BR"
PRE-FAB STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "R"
PRE-FAB STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
PRE-CORED END CAPS END WITH "PC"

PART #	STUB	A	B	C
SC310EP06T / SC310EP06TPC	6" (150 mm)	9.6" (244 mm)	5.8" (147 mm)	---
SC310EP08R / SC310EP08RPC	---	---	---	0.5" (13 mm)
SC310EP08T / SC310EP08TPC	---	---	---	---
SC310EP08B / SC310EP08BPC	8" (200 mm)	11.9" (302 mm)	3.5" (89 mm)	0.6" (15 mm)
SC310EP10T / SC310EP10TPC	10" (250 mm)	12.7" (323 mm)	1.4" (36 mm)	---
SC310EP10B / SC310EP10BPC	---	---	---	0.7" (18 mm)
SC310ECEZ	12" (300 mm)	13.5" (343 mm)	---	0.9" (23 mm)

ALL STUBS, EXCEPT FOR THE SC310ECEZ ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

* FOR THE SC310ECEZ THE 12" (300 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 0.25" (6 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL.



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Handwritten signature of M.M. Hedari Sarvestani.

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Project Number:
296

Client:
Brody Luis

Address:
130 Beech Street,
Strathroy, Ontario

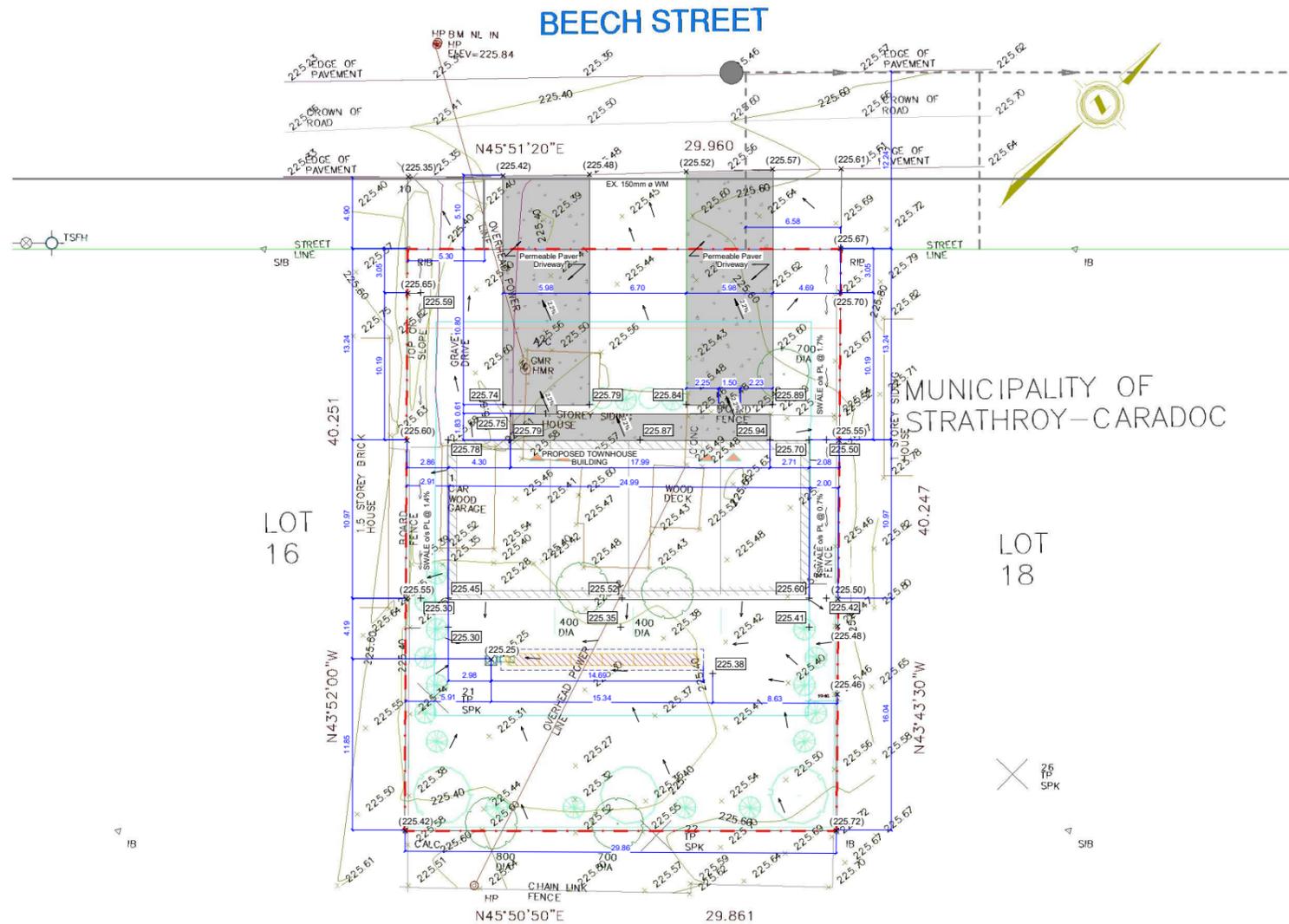
Revision:
No. 1

Sheet Name:
ADS SWM STORAGE

Designed by:
M. Heidari, PhD, P.Eng.

Sheet Number:
F.3-2

Scale:
As indicated



GRADING PLAN

1 : 150

NOTE

1. EXISTING DRAINAGE OF ABUTTING LANDS IS NOT TO BE DISTURBED.
2. LOCALIZED SURFACE DRAINAGE FROM ABUTTING PROPERTIES TO BE DEVELOPED IN FUTURE MAY BE DISCHARGED ONTO THE PROPOSED LOTS IN THIS SUBDIVISION.
3. BASEMENT OPENINGS TO BE MINIMUM 300MM ABOVE THE CENTERLINE OF ROAD UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
4. GROUND ELEVATIONS AT HOUSES ABUTTING OVERLAND FLOW ROUTES ARE TO BE 225MM ABOVE OVERLAND FLOW ROUTE ELEVATIONS.
5. RETAINING WALLS, 1.0M HIGH OR GREATER, ARE TO BE DESIGNED BY AND CONSTRUCTED TO THE SPECIFICATIONS OF A REGISTERED PROFESSIONAL ENGINEER IN ACCORDANCE WITH THE ONTARIO BUILDING CODE.
6. BOULEVARD AREAS AND CONCRETE SIDEWALKS DISTURBED DURING INSTALLATION OF SERVICES SHALL BE RESTORED TO MATCH EXISTING CONDITION OR SURFACE WORKS NOTES ON SHEET C1, WHICHEVER IS GREATER, ALL AT NO COST TO THE CITY.
7. ALL CLEARANCES TO ELECTRICAL CONDUCTORS AS SET OUT IN THE CURRENT OBC DIV. B-3.1.19.1 ELECTRICAL CONDUCTOR CLEARANCES TO BUILDINGS SHALL BE MAINTAINED.
8. THE OWNER'S CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL MEASURES IN COMPLIANCE WITH THE ONTARIO TRAFFIC MANUAL BOOK 7 FOR ALL WORKS WITHIN THE CITY RIGHT-OF-WAY. THE OWNER'S CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLANS TO THE CITY/ENGINEER FOR REVIEW PRIOR TO PROCEEDING WITH CONSTRUCTION.

LEGEND	
	BOUNDARY LINE
	CONCRETE SIDEWALK
	MUD MAT
	ASPHALT MILLING
	DRY SWALE
	RETAINING WALL
	OVER LAND FLOW
	SLOPE
	DIRECTION OF SURFACE DRAINAGE
	PROPOSED SWALE
	EXISTING HYDRANT AND VALVE
	PROPOSED FIRE HYDRANT
	EXISTING WATERMAIN
	EXISTING SANITARY SEWER
	EXISTING STORMWATER SEWER
	PROPOSED WATERMAIN
	PROPOSED SANITARY SEWER
	PROPOSED STORMWATER SEWER
	CATCH BASIN
	CATCH BASIN MANHOLE
	EXISTING SANITARY MANHOLE
	EXISTING STORM MANHOLE
	FORD METER PIT
	STORMCEPTOR
	FLO-WELL
	SHUT OFF VALVES
	DOWN SPOT
	SPOT ELEVATION
	MATCH TO EXISTING ELEVATION
	PROPOSED ELEVATION
	TO BE REMOVED
Catchment Area $\frac{1}{100}$ Runoff Coefficient Area in m ²	



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M. Heidari

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