

32 OAK STREET INC.

# 32 OAK STREET, TOWN OF COLLINGWOOD

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- C2 GRADING AND SERVICING PLAN
- C3 EROSION AND SEDIMENT CONTROL PLAN
- C4 POST DEVELOPMENT DRAINAGE PLAN
- C5 STANDARD DETAILS



32 OAK STREET INC.  
32 OAK STREET  
COLLINGWOOD, ON  
L9Y 2X6

Project No. 2020-030

REISSUED FOR APPROVALS - 22/08/24

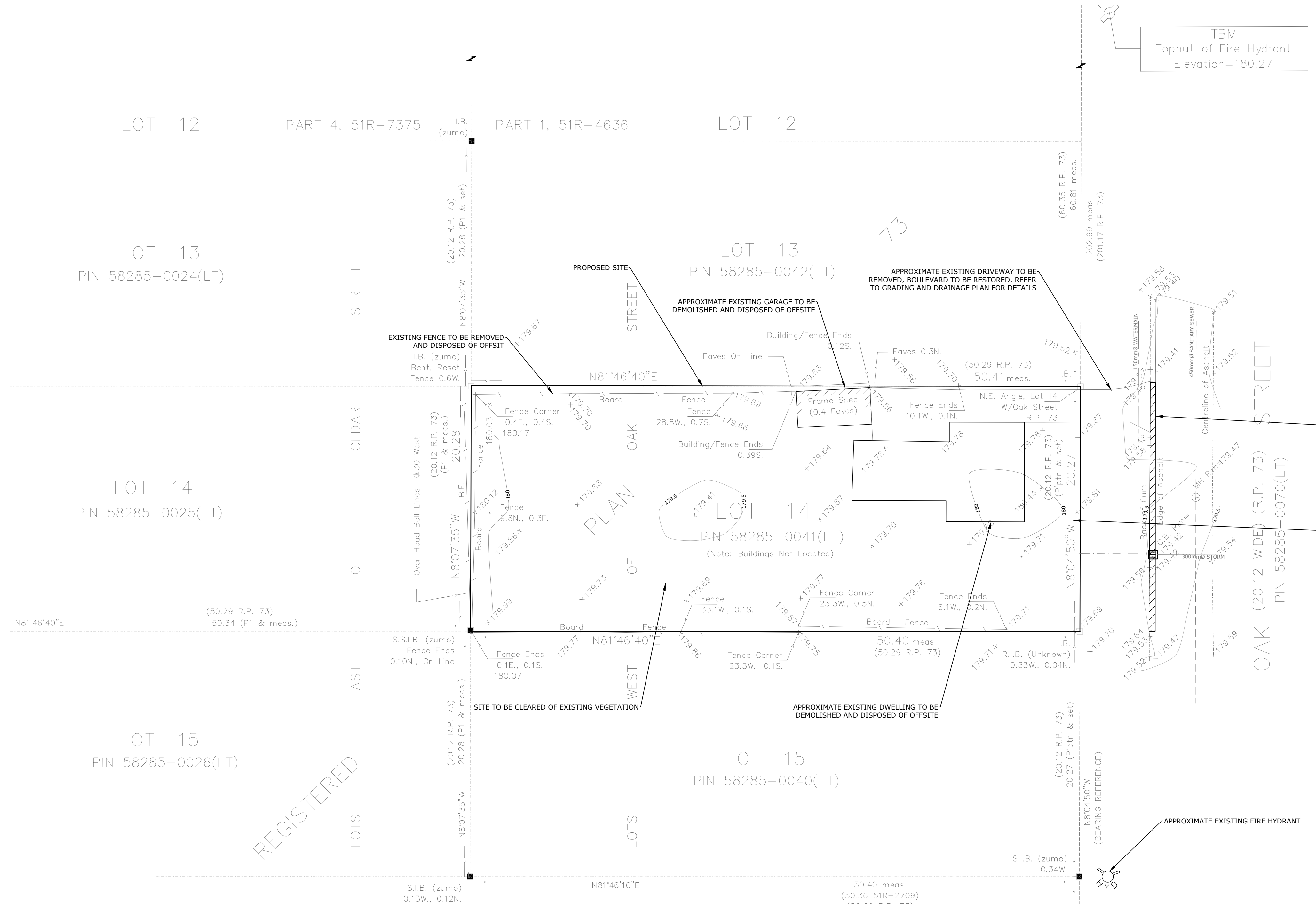
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**ENGINEERING**

2020-030 - 32 OAK STREET, COLLINGWOOD - 32 OAK STREET INC.  
REISSUED FOR APPROVALS - 22/08/24

CAPE ENGINEERING  
2020-030 - 32 OAK STREET, COLLINGWOOD - 32 OAK STREET INC.  
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- LEGEND**
- EXISTING SANITARY SERVICE
  - EXISTING WATER SERVICE
  - SANITARY SERVICE
  - WATER SERVICE
  - SWALE
  - BUILDING ENVELOPE
  - ROOF LEADER DISCHARGE LOCATION
  - S/P SUMP PUMP DISCHARGE LOCATION TO SPLASH PAD, c/w AIR GAP
  - TEST PIT LOCATION
  - 3:1 SLOPING (MAXIMUM)
  - PROPOSED GRADE
  - EXISTING GRADE
  - EXTERIOR BUILDING MOUNTED LIGHTS (TO REMAIN)
  - EXISTING BELL BOX
  - EXISTING CURB STOP
  - EXISTING SANITARY CLEANOUT
  - EXISTING TREE TO REMAIN
  - EXISTING TREE TO BE REMOVED
  - DENOTES SET
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  - DENOTES PLASTIC BAR
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  - DENOTES WITNESS
  - DENOTES MEASURE
  - DENOTES REGISTERED PLAN
  - DENOTES NORTH, SOUTH, EAST, WEST
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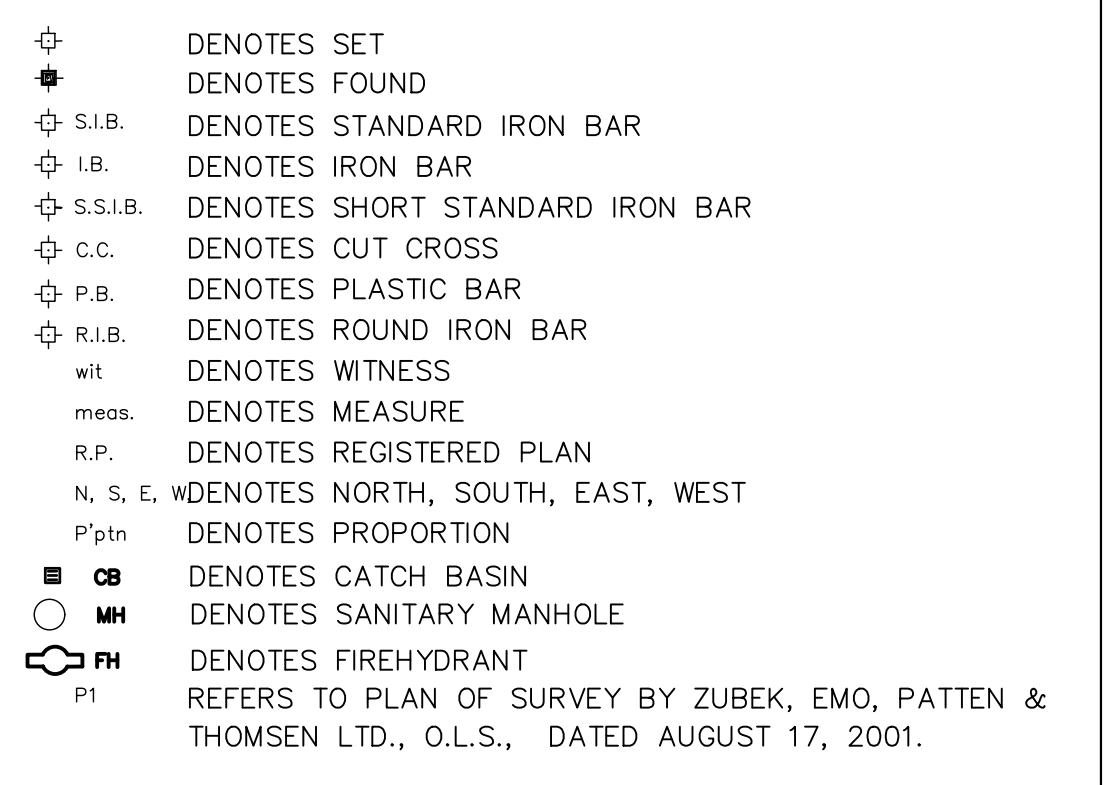
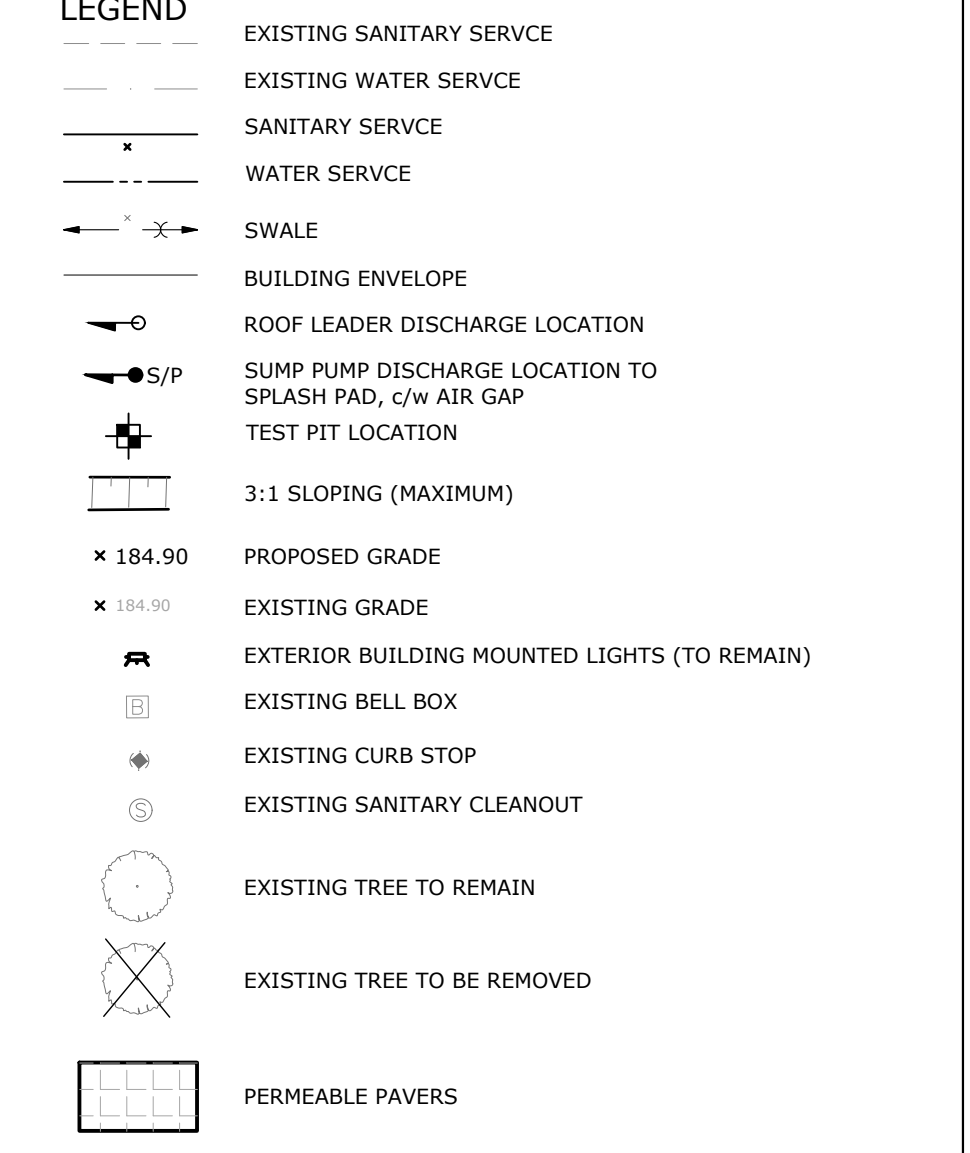
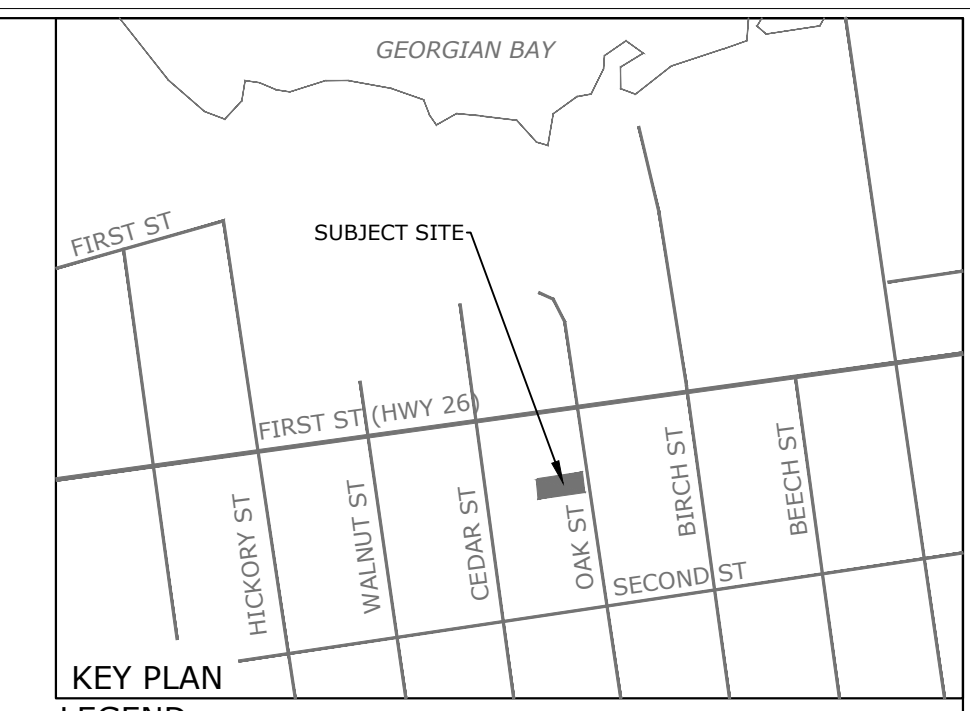
**LOT 14**  
**WEST OF OAK STREET**  
**REGISTERED PLAN 73**  
**TOWN OF COLLINGWOOD**  
**COUNTY OF SIMCOE**

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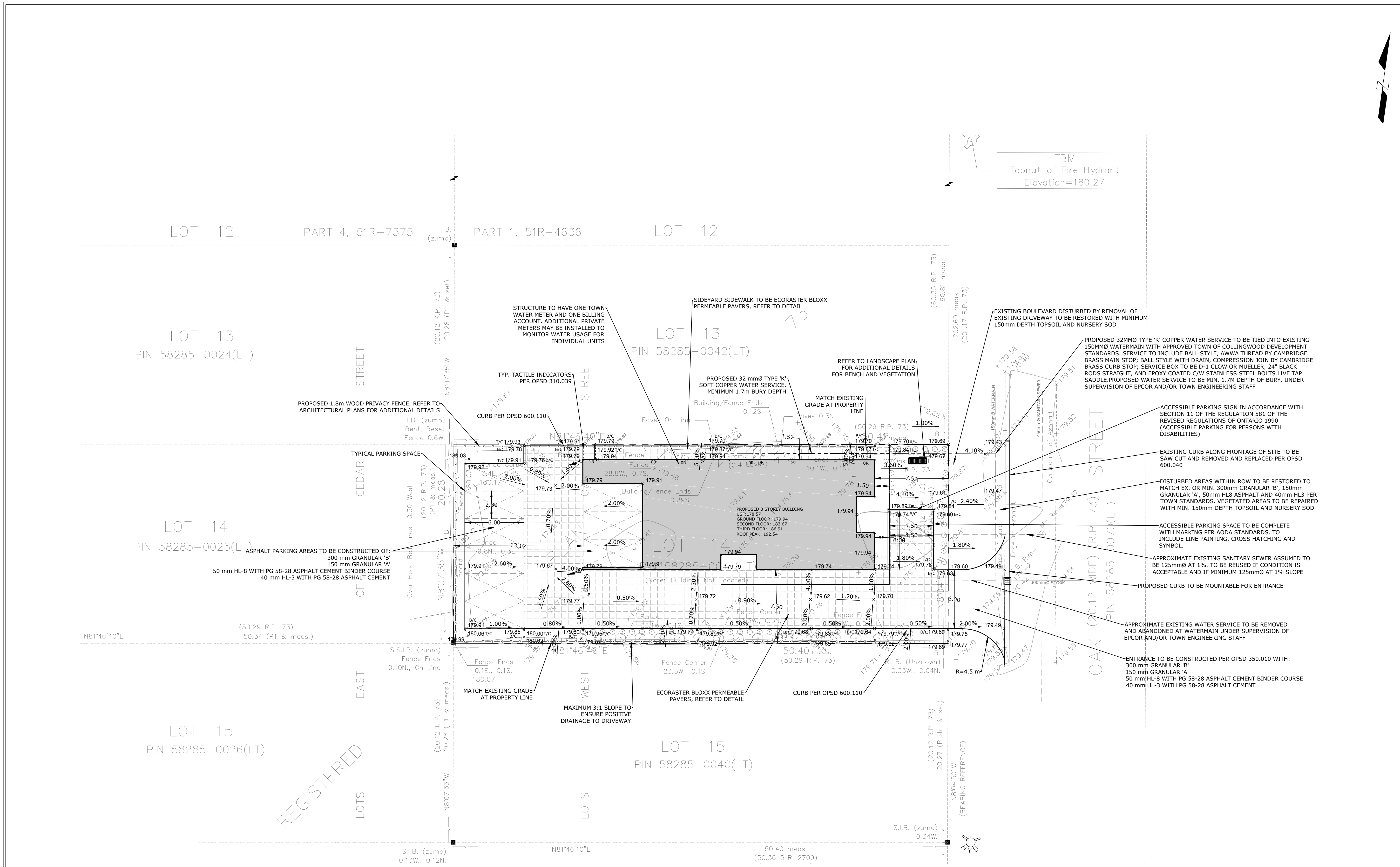
BENCH MARK	
ELEVATIONS HEREON ARE GEODETIC AND ARE REFERRED TO THE GEODETIC MONUMENT No. 72U313 HAVING AN ELEVATION OF 179.633 METRES (CGVD 28:78).	
<b>NOTE:</b>	
LEGAL AND TOPOGRAPHIC SURVEY INFORMATION PROVIDED BY THE OWNER, PREPARED BY ZUBEK, EMO, PATTEN & THOMSEN LTD. THIS PLAN DOES NOT ATTEMPT TO REPLICATE OR INTERPRET THE PLAN OF SURVEY PREPARED, AND DOES NOT CONSTITUTE A PLAN OF SURVEY	

Client  
**32 OAK STREET INC.**  
 32 OAK STREET  
 COLLINGWOOD, ON  
 L9Y 2X6

32 OAK STREET, TOWN OF COLLINGWOOD		EXISTING CONDITION PLAN	
Designed B. COLLINS	Checked C. CAPES	Date 20/10/29	Drawing No.
Project No. 2020-030	Rev No. 1	Scale 1:200	<b>C1</b>



- NOTES**
- THE OWNER/BUILDER/APPLICANT MUST OBTAIN A ROAD OCCUPANCY PERMIT FROM PUBLIC WORKS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION WORKS.
  - ALL DOWNSPOUTS, SUMP PUMP AND OTHER DRAINAGE DISCHARGE POINTS SHALL DISCHARGE ON TO A SPLASH PAD OR APPROVED EQUIVALENT.
  - A COPY OF THE "ACCEPTED FOR CONSTRUCTION" LOT GRADING AND DRAINAGE PLAN IS TO BE ON SITE FOR REFERENCE AT ALL TIMES DURING CONSTRUCTION.
  - SEDIMENT AND EROSION CONTROL MEASURES SHALL BE IMPLEMENTED TO PREVENT MIGRATION OF SILT AND SEDIMENT FROM THE SUBJECT LOT TO ANY ADJACENT LOT, INCLUDING MUNICIPAL RIGHT-OF-WAY. SPECIAL CARE SHALL BE TAKEN TO ENSURE THAT SILT AND SEDIMENT LADEN SURFACE WATER DOES NOT ENTER ANY WATERCOURSES OR ENVIRONMENTALLY SENSITIVE AREAS, EITHER OVERLAND OR THROUGH THE STORM DRAINAGE SYSTEM. THE OWNER/BUILDER/APPLICANT SHALL COMPLY WITH ALL DIRECTIVES ISSUED BY ANY OF THE ENVIRONMENTAL AGENCIES.
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  - ALL SWALES SHALL HAVE A MINIMUM DEPTH OF 150mm; 150mm DIAMETER SUBDRAINS SHALL BE PROVIDED UNDER ALL SWALES WITH GRADIENTS LESS THAN 1.0%. SUBDRAINS SHALL BE PERFORATED, CORRUGATED PIPE WITH GEOTEXTILE AND BE BEDDED IN A 300mmx300mm CLEAR STONE TRENCH WRAPPED WITH FILTER CLOTH.
  - EXISTING VEGETATION ON SITE TO BE REMOVED AND DISPOSED OF OFF SITE BEFORE LOT GRADING WORK AS SPECIFIED.
  - ALL DISTURBED AREAS ARE TO BE SODDED OVER A MINIMUM OF 150MM OF TOPSOIL OR APPROVED ALTERNATIVE GROUND COVER.
  - FOOTINGS WITHIN GROUNDWATER SHALL BE A FACTOR OF STANDARD WIDTH AS PER O.B.C. SECTION 9.15.3.4.



LOT 14  
WEST OF OAK STREET  
REGISTERED PLAN 73  
TOWN OF COLLINGWOOD  
COUNTY OF SIMCOE

Notes

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32 OAK STREET INC.  
32 OAK STREET  
COLLINGWOOD, ON  
L9Y 2X6

32 OAK STREET, TOWN OF COLLINGWOOD  
GRADING AND SERVICING PLAN

Designed  
B. COLLINS

Checked  
C. CAPES

Date  
20/10/29

Project No.  
2020-030

Rev No.  
1

Scale  
1:200

Drawing No.  
C2

355310 BLUE MOUNTAINS - EUPHRASIA TOWNSHIP  
CLARKSBURG, ON N0H 1J0  
WWW.CAPESENGINEERING.COM

32 OAK STREET, TOWN OF COLLINGWOOD  
GRADING AND SERVICING PLAN

Designed  
B. COLLINS

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C. CAPES

Date  
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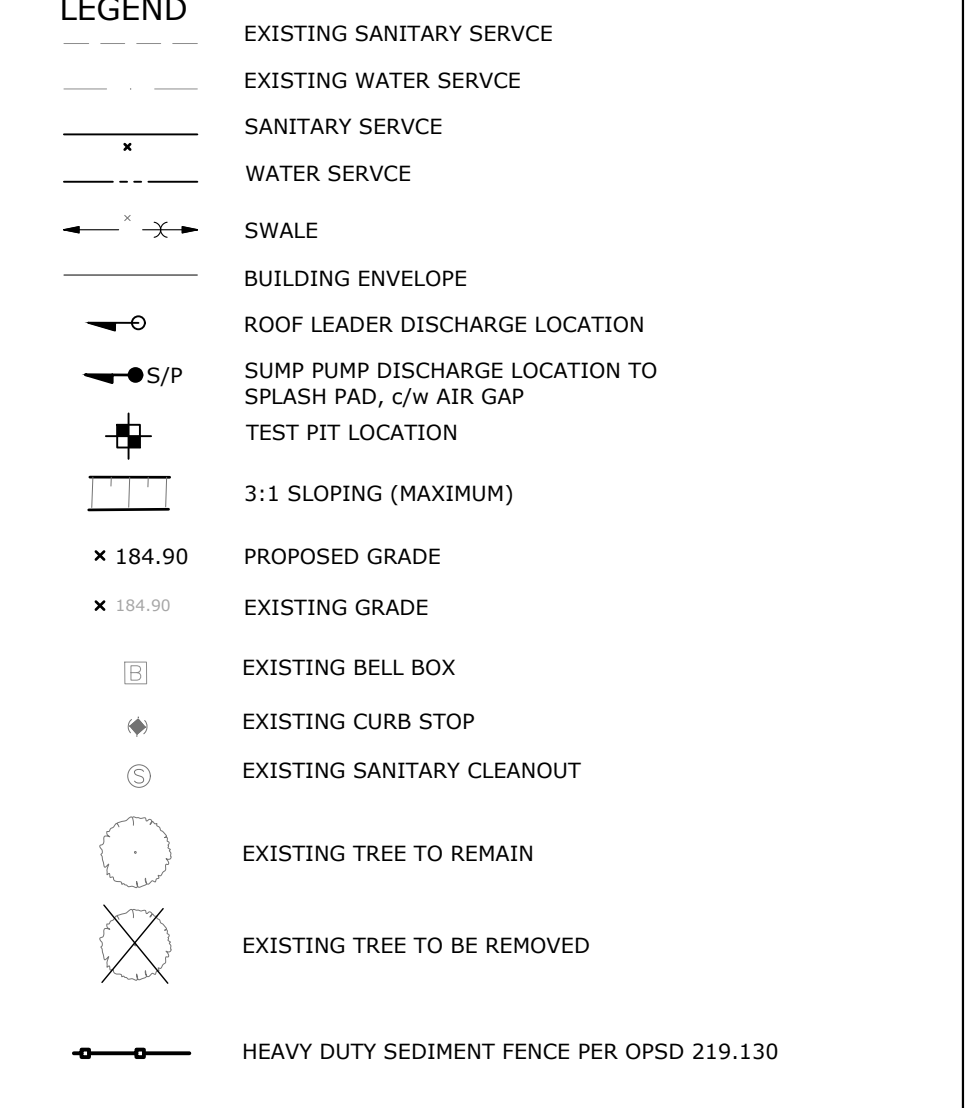
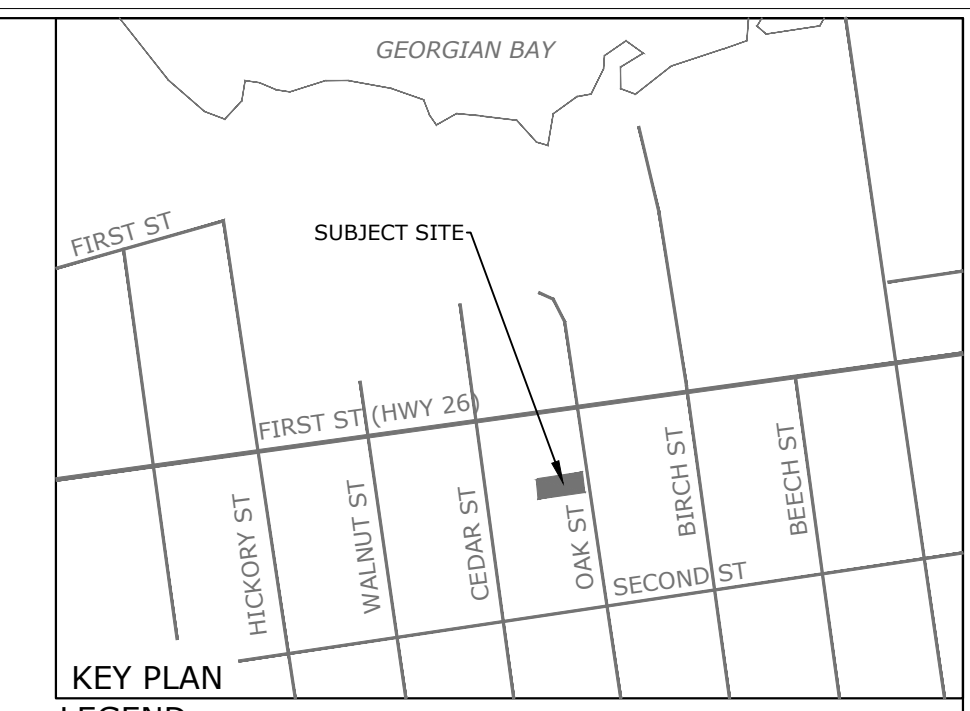
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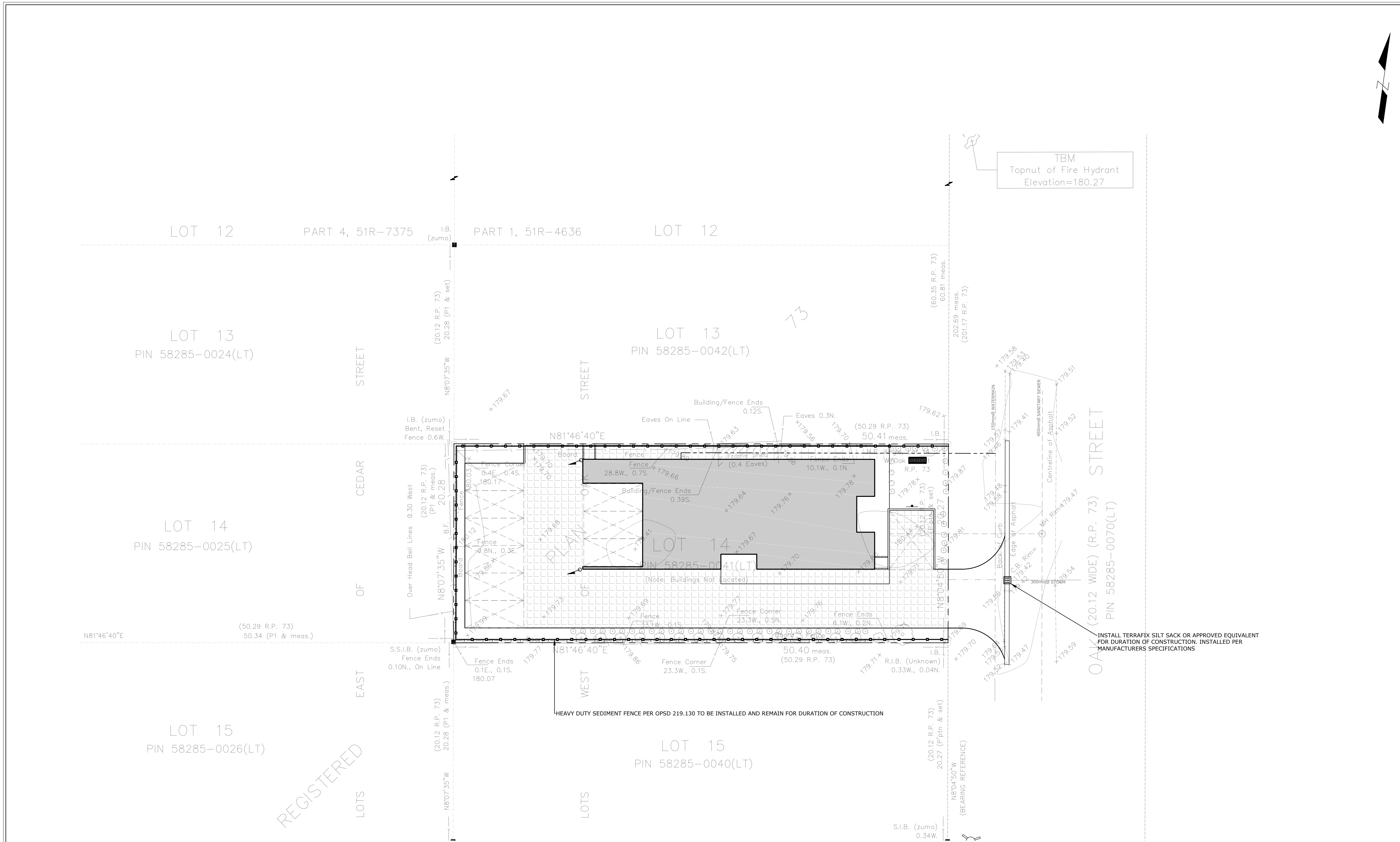
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C2

355310 BLUE MOUNTAINS - EUPHRASIA TOWNSHIP  
CLARKSBURG, ON N0H 1J0  
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LOT 14  
WEST OF OAK STREET  
REGISTERED PLAN 73  
TOWN OF COLLINGWOOD  
COUNTY OF SIMCOE

Notes

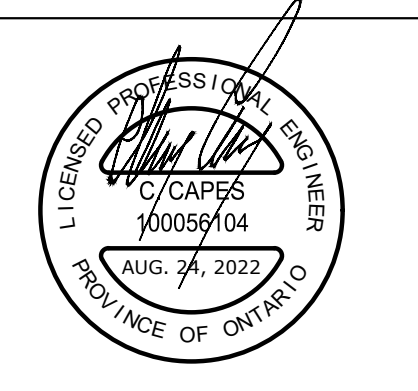
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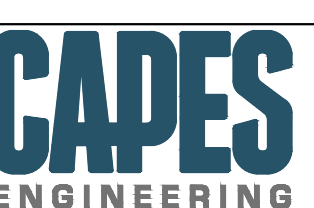
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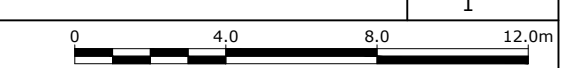


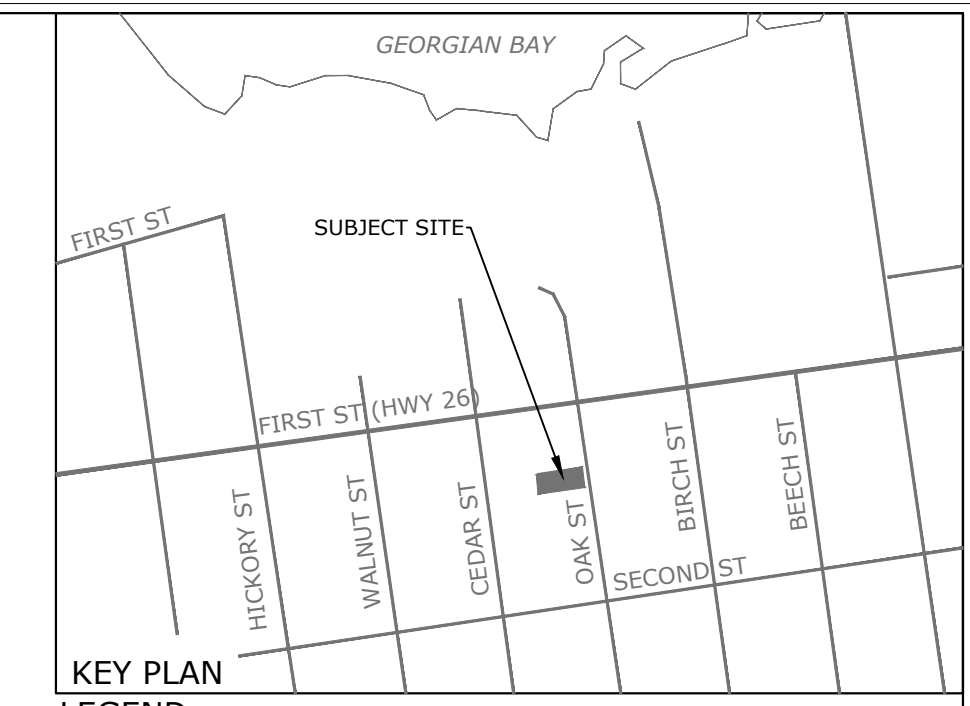
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COLLINGWOOD, ON  
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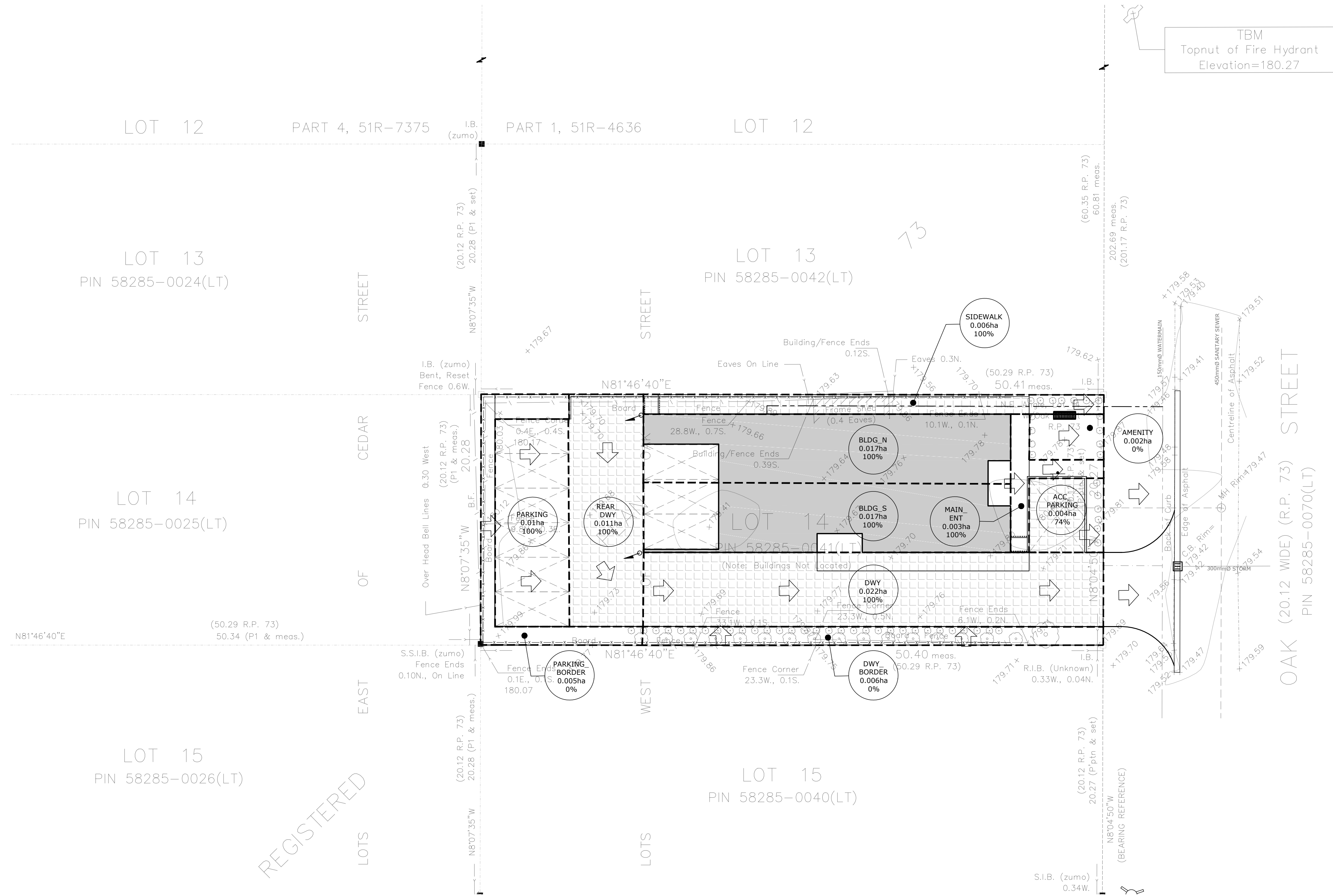
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CLARKSBURG, ON N0W 1J0  
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32 OAK STREET, TOWN OF COLLINGWOOD		EROSION AND SEDIMENT CONTROL PLAN	
Designed B. COLLINS	Checked C. CAPES	Date 20/10/29	Drawing No. C3
Project No. 2020-030	Rev No. 1	Scale 1:200	





- LEGEND**
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  - EXISTING WATER SERVICE
  - SANITARY SERVICE
  - WATER SERVICE
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  - EXISTING TREE TO BE REMOVED
  - OVERLAND FLOW DIRECTION
  - DWY. BORDER 0.006ha 0%
- ⊕ DENOTES SET  
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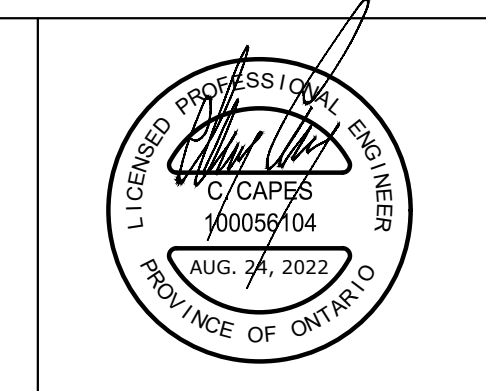
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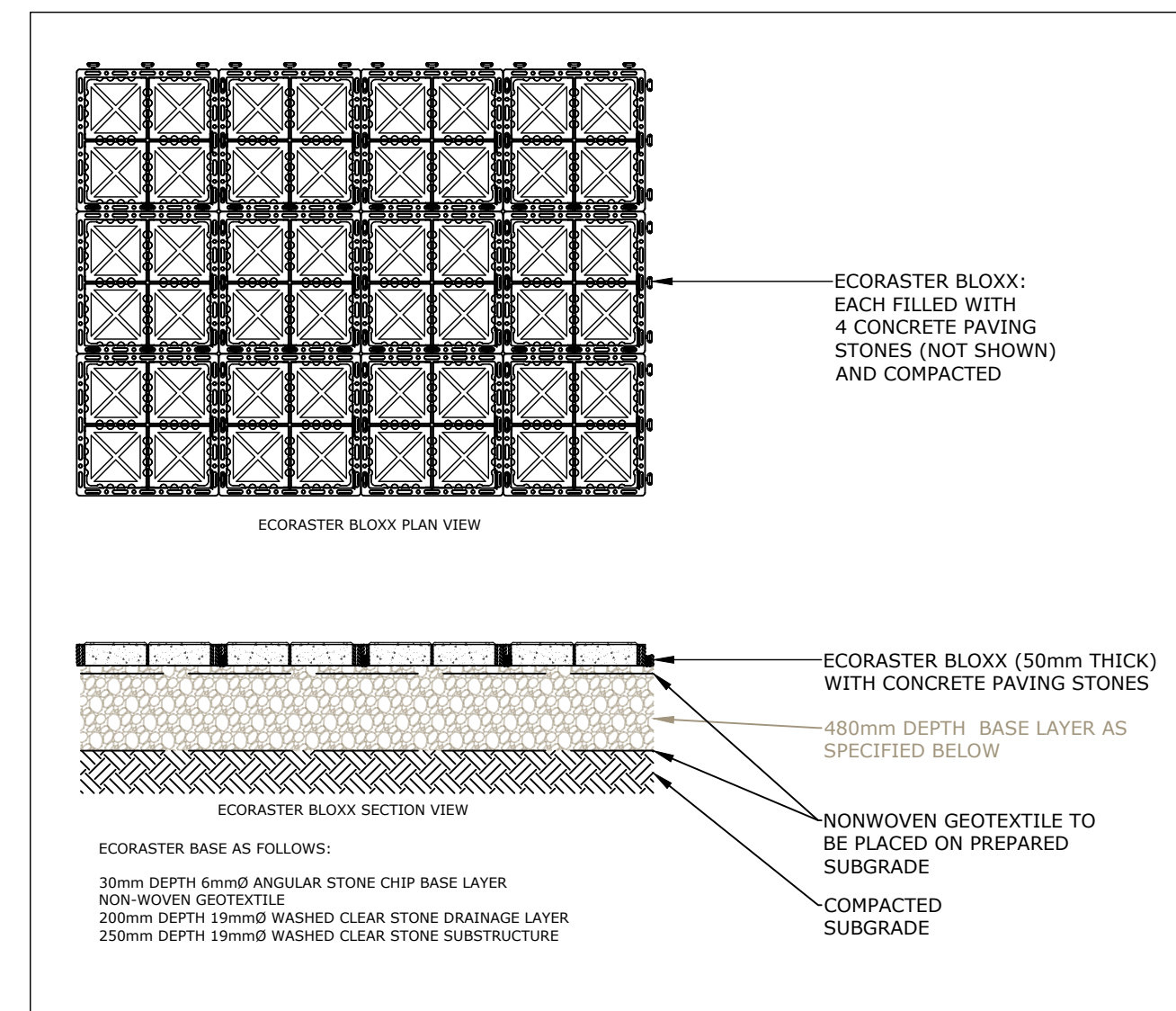
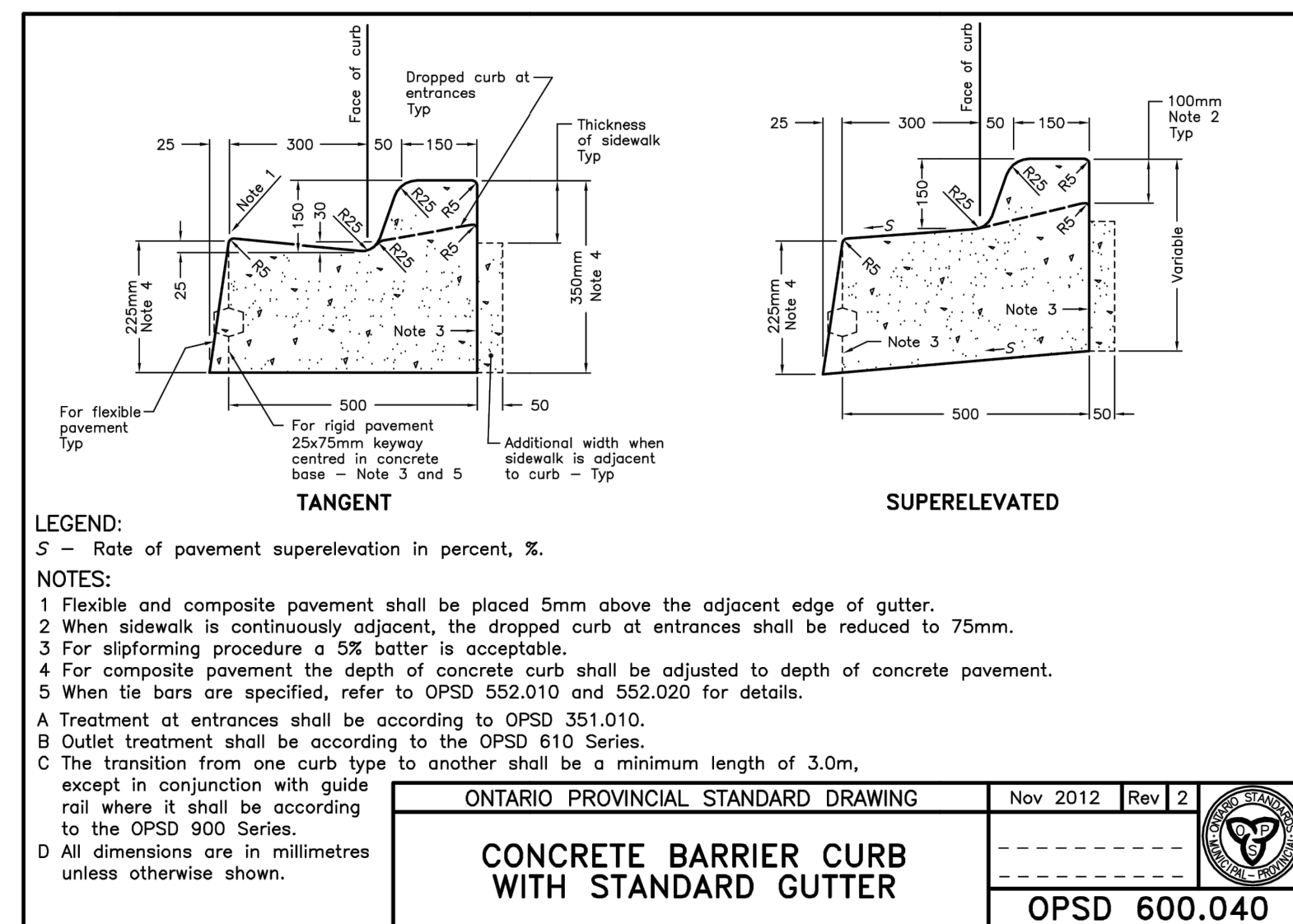
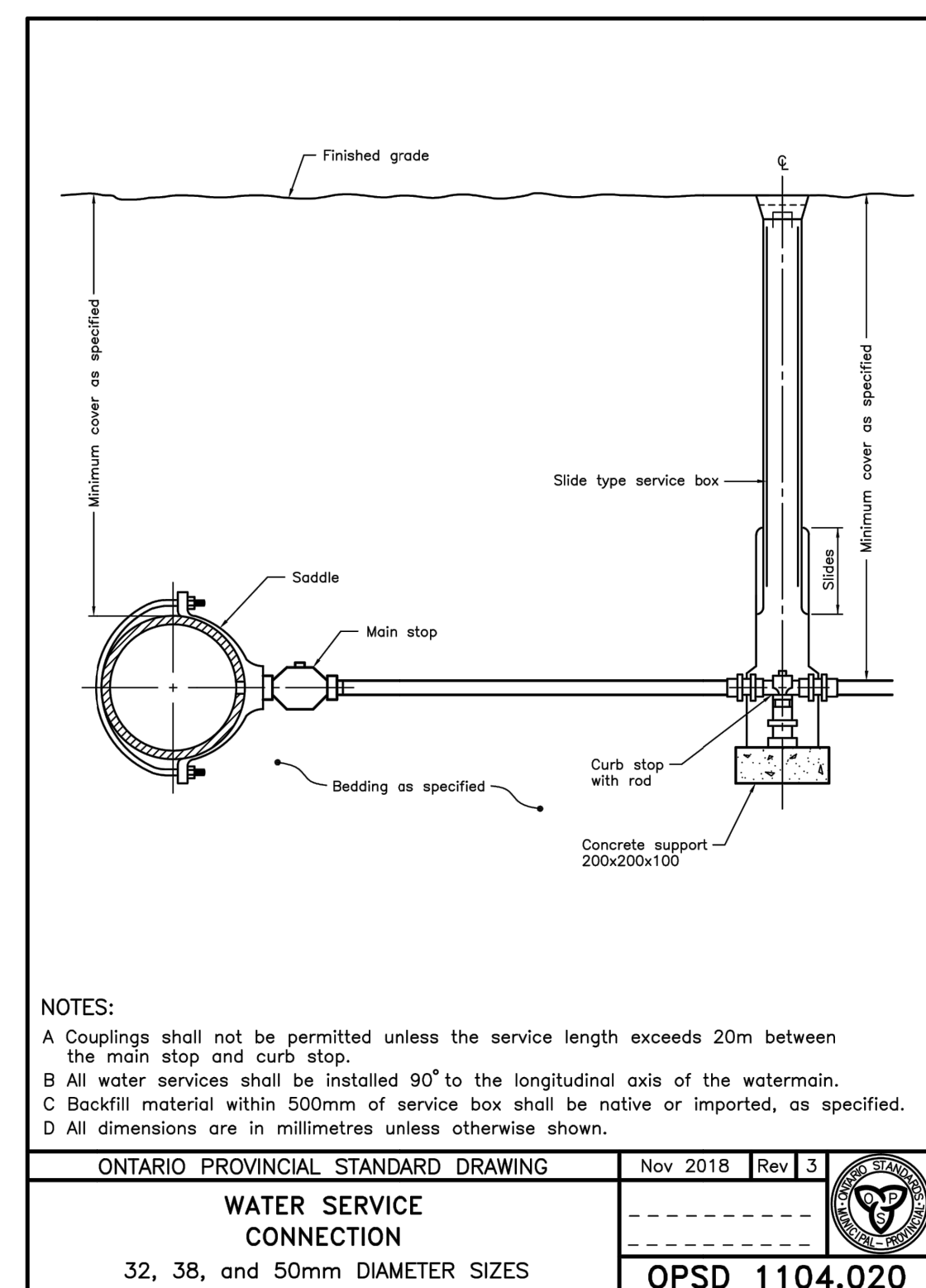
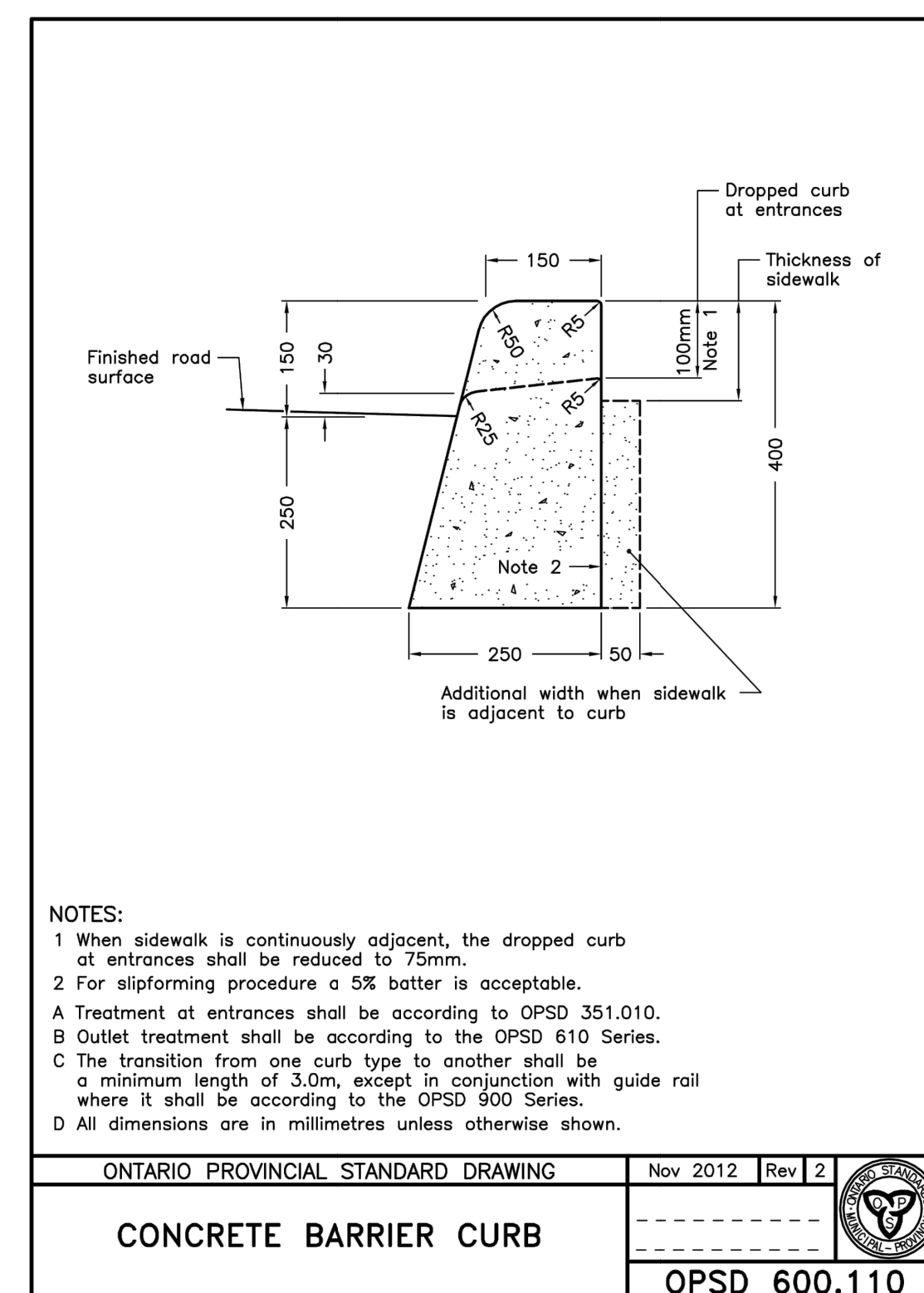
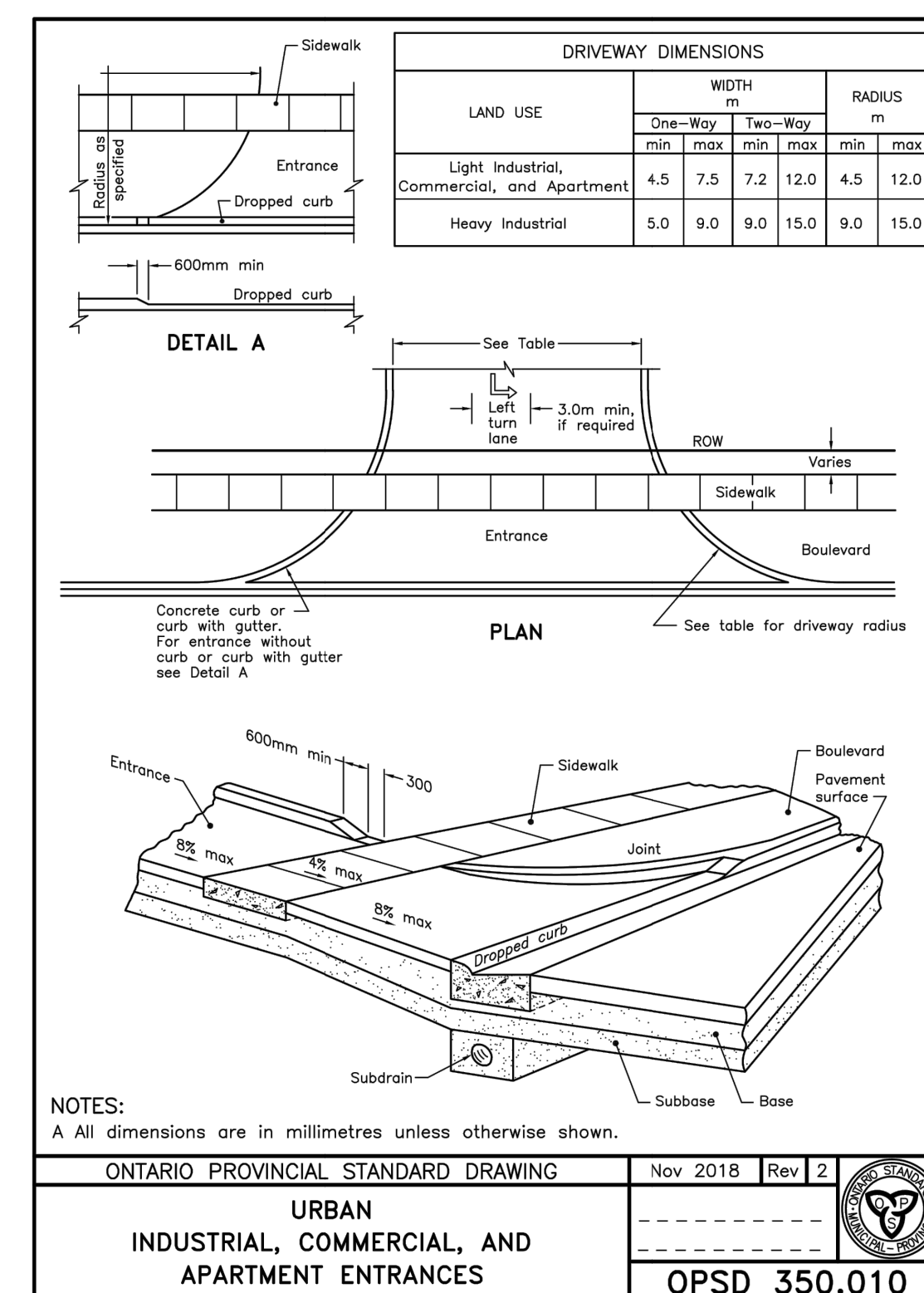
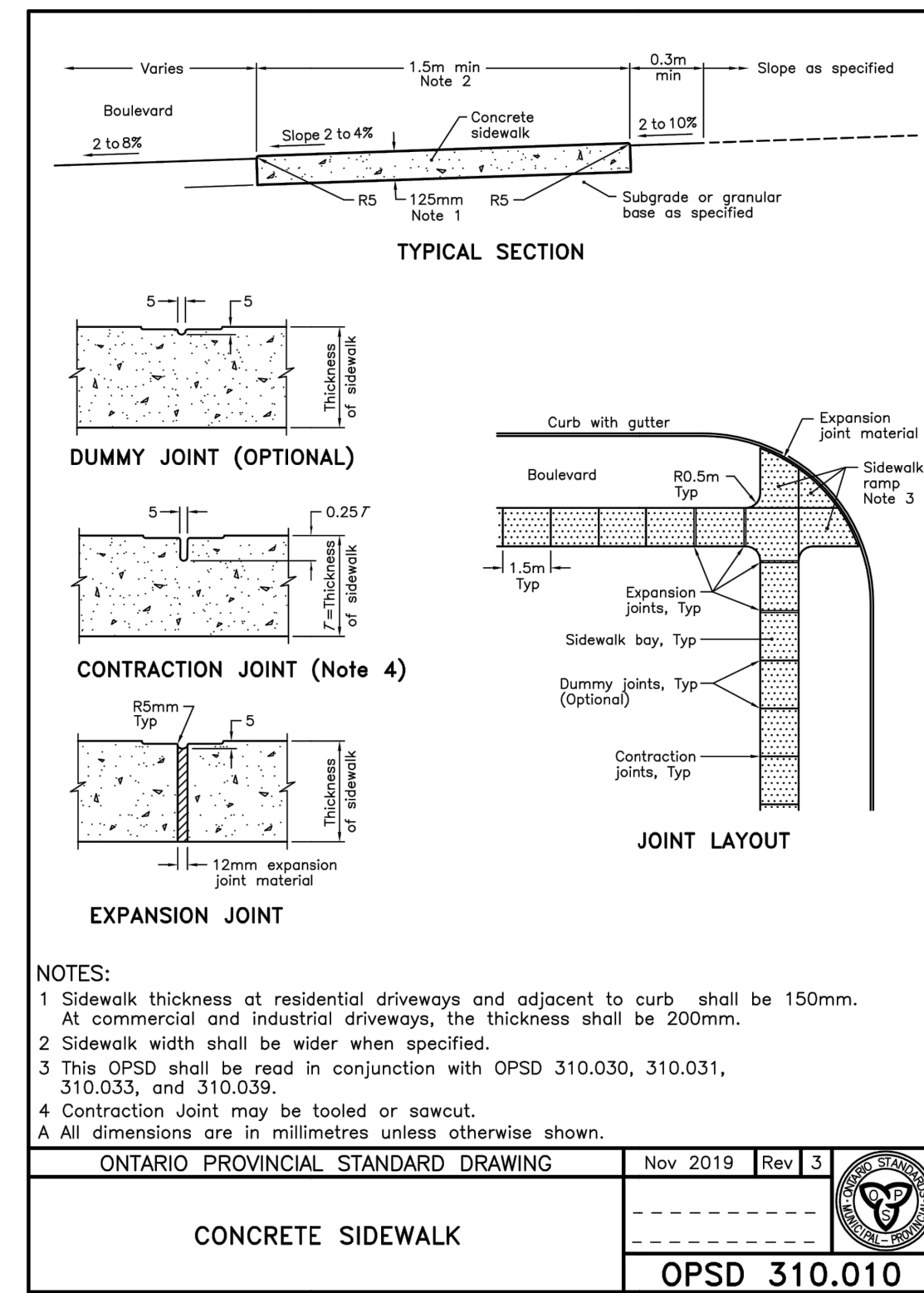
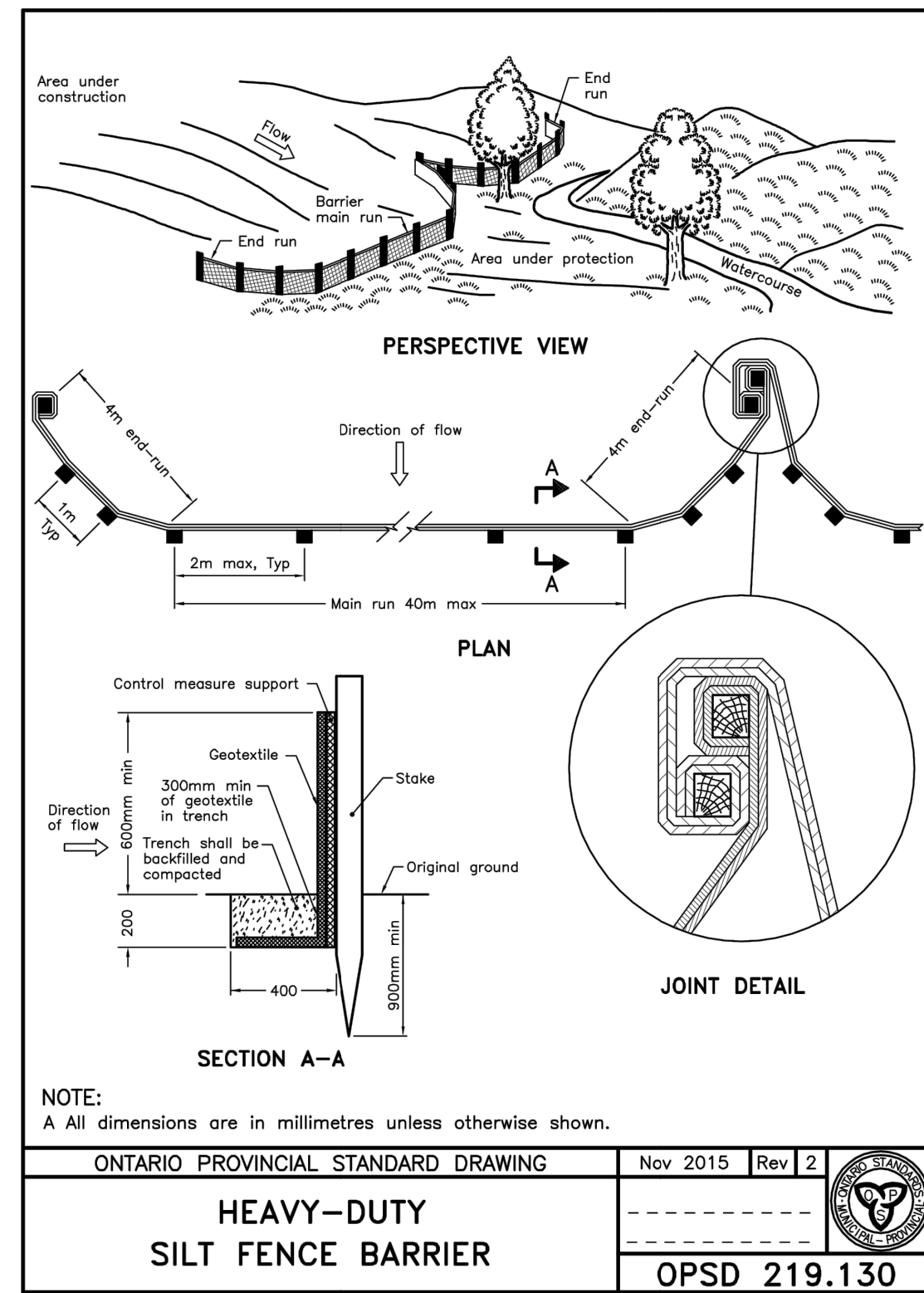


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**CAPES ENGINEERING**

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32 OAK STREET, TOWN OF COLLINGWOOD		POST DEVELOPMENT DRAINAGE PLAN	
Designed B. COLLINS	Checked C. CAPES	Date 20/10/29	Drawing No. C4
Project No. 2020-030	Rev No. 1	Scale 1:200	



**GEOTECHNICAL NOTES:**

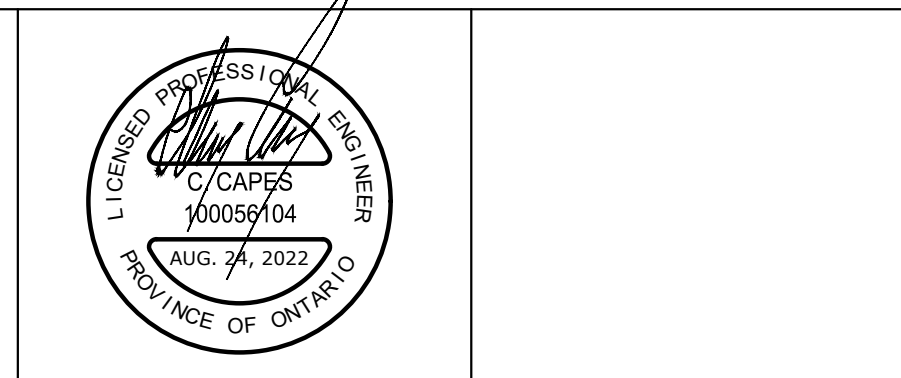
- The topsoil and weathered native soils encountered in the test pits are not suitable for conventional strip and spread footing foundations. Proposed strip and spread footing foundations must extend to and be founded on the native soil deposits with compact relative density or directly to the bedrock. Proposed strip and spread footing foundations may be designed as follows:
  - On soil (the sand or glacial till deposit) using a maximum geotechnical reaction at SLS of 75 kPa for a maximum of 25 mm of settlement. The factored geotechnical resistance at ULS is 115 kPa.
  - On bedrock using a maximum geotechnical reaction at SLS of 200 kPa (no appreciable settlement will occur). The factored geotechnical resistance at ULS is 300 kPa.
- It is recommended that footings either be set uniformly on soil or uniformly on bedrock. Where foundations straddle both soil and bedrock, the strain incompatibility (i.e. bedrock does not settle whereas soil has some settlement) can increase the risk for foundation wall cracking. The minimum strip footing widths to be used shall be dictated as per the Ontario Building Code, regardless of loading considerations. Footings stepped from one level to another must be at a slope not exceeding 7 vertical to 10 horizontal. Foundations exposed to ambient air temperature throughout the year must be provided with a minimum of 1.4 metres of earth cover for frost protection.
- Prior to pouring concrete for the footings, the footing subgrade must be cleaned of deleterious materials, softened, disturbed, or caved materials, and any standing water. During the excavation and construction of the footings CEE should be retained to inspect the founding base to ensure the subgrade has been properly prepared and that the integrity of the founding soil has been maintained. Soils tend to weather and deteriorate on exposure to the atmosphere or to surface water, therefore foundation bases that will remain open and exposed to the atmosphere for an extended period shall be protected by applying a skim coat of lean concrete. If construction is to proceed in freezing conditions, temporary frost protection for the footing bases and concrete must be provided. Construction traffic should be prohibited from travelling over the exposed subgrade.
- A lightly loaded unreinforced concrete slab can be constructed at this site provided the subgrade is stripped of all topsoil and does not contain any significantly weathered or soft soils, or soils that contain a high percentage of organics. The backfill to raise the sub-excavation back to underside of concrete slab should be placed in maximum 200 mm thick loose lifts and compacted to a minimum of 95% Standard Proctor Maximum Dry Density. To achieve adequate compaction, backfill material should be placed within ±2% of optimum moisture content. In addition, it is recommended that the soil used to bring the soil up to the base of the slab should consist of Select Subgrade Material if possible (cohesionless silty sand to gravelly sand type soil). It is necessary that the floor slabs be provided with a capillary moisture barrier and drainage layer. This is made by placing the slab on a minimum 200 mm layer of clear stone compacted by vibration to a dense state. The upper 50 mm of clear stone can be replaced with 19 mm crusher run limestone for a working surface. Perimeter and under-slab drainage at the foundation level is not required, provided that the underside of concrete slab is at least 200 mm above the prevailing grade of the site and the surrounding surfaces slope away from the building at a gradient of at least 2% to promote surface water run-off and to reduce groundwater infiltration adjacent to foundations. To minimize infiltration of surface water onto the foundation wall, the upper 150 mm of backfill could comprise compacted relatively impervious soil material.
- A review of the test pit data in the proposed driveway and parking areas indicates that the pavement subgrade will consist of a native sand with a generally compact relative density. The subgrade must be exposed by the removal of any vegetation, topsoil, existing pavements structures or disturbed soil. The pavement subgrade should be proof-rolled and inspected by the geotechnical engineer. Any loose, soft, wet or unstable areas must be sub-excavated and backfilled with clean, approved and compacted earth fill and compacted to a minimum of 95% SPMD.
- The industry pavement design methods are based on a design life of 15 to 20 years for typical weather conditions depending on actual traffic volumes. The following pavement thickness design is provided on the above noted considerations and subgrade basis for an asphaltic concrete pavement structure:
  - Surface Course Asphaltic Concrete: Minimum 40 mm thick HL-3 (OPSS 1150) with PG 58-28 Asphalt Cement (OPSS.MUNI 1101) Compacted per OPSS 310
  - Binder Course Asphaltic Concrete: Minimum 50 mm thick HL-8 (OPSS 1150) with PG 58-28 Asphalt Cement (OPSS.MUNI 1101) Compacted per OPSS 310
  - Base Course: Minimum 150 mm Granular A (OPSS.MUNI 1010) 100% Standard Proctor Maximum Dry Density (ASTM-D698)
  - Subbase Course: Minimum 300 mm Granular B (OPSS.MUNI 1010) Compacted to 100% Standard Proctor Maximum Dry Density (ASTM-D698)
- The granular materials must be compacted to a minimum of 100% SPMD. Asphalt materials should be rolled and compacted as per OPSS 310. The granular and asphalt pavement materials and their placement should conform to OPSS 310, 501, 1010 and 1150.
- If the pavement construction occurs in wet, winter or inclement weather, it may be necessary to provide additional subgrade support for heavy construction traffic by increasing the thickness of the granular subbase, base or both. Further, traffic areas for construction equipment may experience unstable subgrade conditions. These areas may be stabilized utilizing additional thickness of granular materials.
- It should be noted that in addition to adherence of the above pavement design recommendations, a close control on the pavement construction process will also be required in order to obtain the desired pavement life. Therefore, it is recommended that regular inspection and testing should be conducted during the pavement construction to confirm material quality, thickness, and to ensure adequate compaction.

No	Revision	Date
1	ISSUED FOR APPROVALS	20/11/13
2	REISSUED FOR APPROVALS	22/08/24

**BENCH MARK**

ELEVATIONS HEREON ARE GEODETIC AND ARE REFERRED TO THE GEODETIC MONUMENT No. 72U313 HAVING AN ELEVATION OF 179.633 METRES (CGVD 28:78).

NOTE:  
 LEGAL AND TOPOGRAPHIC SURVEY INFORMATION PROVIDED BY THE OWNER, PREPARED BY ZUBEK, EMO, PATTEN & THOMSEN LTD. THIS PLAN DOES NOT ATTEMPT TO REPLICATE OR INTERPRET THE PLAN OF SURVEY PREPARED, AND DOES NOT CONSTITUTE A PLAN OF SURVEY



Client  
**32 OAK STREET INC.**  
 32 OAK STREET  
 COLLINGWOOD, ON  
 L9Y 2X6

**CAPESE ENGINEERING**  
 355310 BLUE MOUNTAINS - EUPHRASIA TOWNLINE  
 CLARKSBURG, ON, NOV 1/18  
 WWW.CAPESEENGINEERING.COM

Designed	Checked	Date	Drawing No.
B. COLLINS	C. CAPES	20/10/29	
Project No.	Rev No.	Scale	
2020-030	1	NOT TO SCALE	<b>C5</b>