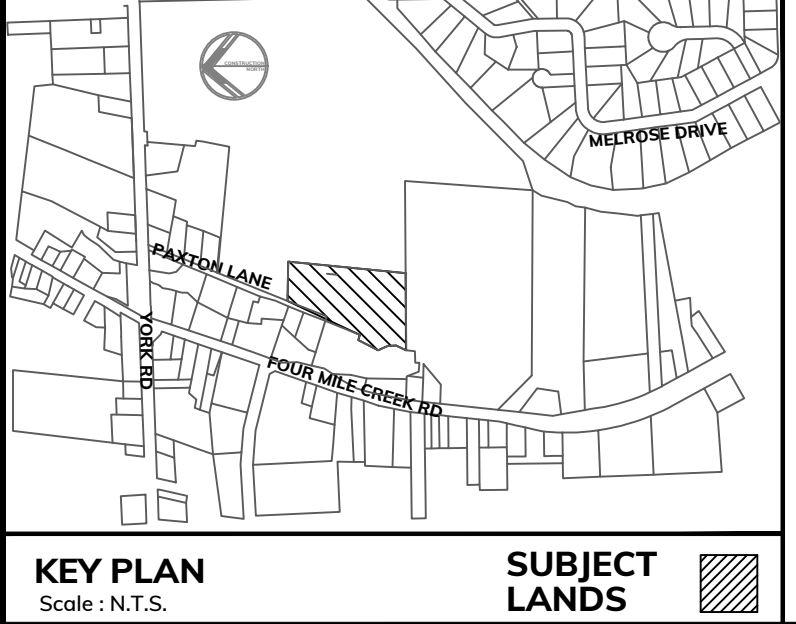


MH No.	SAN INVERTS
EX SAN MH 1A	RIM = 122.58 S INV = 118.62 E INV = 118.70 N INV = 118.57
EX SAN MH 2A	RIM = 123.11 S INV = 119.45 E INV = 119.05 N INV = 119.38
PROP SAN MH 1A	RIM = 122.71 S INV = 119.11 E INV = 119.05 N INV = 119.05
PROP SAN MH 2A	RIM = 122.87 E INV = 119.20 W INV = 119.17
PROP SAN MH 3A	RIM = 123.55 S INV = 119.51 E INV = 119.45
PROP SAN MH 4A	RIM = 123.25 S INV = 119.64
PROP SAN MH 5A	RIM = 124.30 S INV = 119.96 W INV = 119.93
PROP SAN MH 6A	RIM = 124.93 N INV = 120.39
PROP SAN MH 7A	RIM = 124.81 N INV = 120.57
PROP SAN MH 8A	RIM = 124.25 S INV = 120.24 E INV = 120.34 N INV = 120.18
PROP SAN MH 9A	RIM = 124.06 N INV = 120.32
PROP SAN MH 10A	RIM = 124.02 S INV = 120.10 N INV = 120.07
PROP SAN MH 11A	RIM = 123.13 S INV = 119.53 N INV = 119.50

MH / CB No.	STN INVERTS
PROP STN CB 1	RIM = 124.68 N INV = 123.07 E INV = 123.44 S INV = 123.18
PROP STN CB 2	RIM = 124.68 E INV = 124.68 S INV = 123.18
PROP STN CB 3	RIM = 124.98 E INV = 123.26 S INV = 123.10
PROP STN CB 4	RIM = 123.10 E INV = 122.42 S INV = 122.42
PROP STN CB 5	RIM = 124.25 E INV = 123.43 S INV = 123.25
PROP STN CB 6	RIM = 123.92 E INV = 123.14 S INV = 123.14
PROP STN CB 7	RIM = 123.64 E INV = 123.24 S INV = 123.19
PROP STN CB 8	RIM = 123.93 E INV = 123.10 S INV = 123.10
PROP STN CB 9	RIM = 124.85 E INV = 123.23 S INV = 123.14
PROP STN CB 10	RIM = 124.85 E INV = 123.23 S INV = 123.14
PROP STN CB 11	RIM = 124.85 E INV = 123.23 S INV = 123.14

MH / CB No.	STN INVERTS
PROP STN CB 12	RIM = 124.68 N INV = 123.07 E INV = 123.44 S INV = 123.18
PROP STN CB 13	RIM = 124.68 E INV = 124.68 S INV = 123.18
PROP STN CB 14	RIM = 124.98 E INV = 123.26 S INV = 123.10
PROP STN CB 15	RIM = 123.10 E INV = 122.42 S INV = 122.42
PROP STN CB 16	RIM = 124.25 E INV = 123.43 S INV = 123.25
PROP STN CB 17	RIM = 123.92 E INV = 123.14 S INV = 123.14
PROP STN CB 18	RIM = 123.64 E INV = 123.24 S INV = 123.19
PROP STN CB 19	RIM = 123.93 E INV = 123.10 S INV = 123.10
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PROP STN CB 21	RIM = 124.85 E INV = 123.23 S INV = 123.14
PROP STN CB 22	RIM = 124.85 E INV = 123.23 S INV = 123.14

MH / CB No.	STN INVERTS
PROP STN CB 23	RIM = 124.68 N INV = 123.07 E INV = 123.44 S INV = 123.18
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PROP STN CB 25	RIM = 124.98 E INV = 123.26 S INV = 123.10
PROP STN CB 26	RIM = 123.10 E INV = 122.42 S INV = 122.42
PROP STN CB 27	RIM = 124.25 E INV = 123.43 S INV = 123.25
PROP STN CB 28	RIM = 123.92 E INV = 123.14 S INV = 123.14
PROP STN CB 29	RIM = 123.64 E INV = 123.24 S INV = 123.19
PROP STN CB 30	RIM = 123.93 E INV = 123.10 S INV = 123.10
PROP STN CB 31	RIM = 124.85 E INV = 123.23 S INV = 123.14
PROP STN CB 32	RIM = 124.85 E INV = 123.23 S INV = 123.14
PROP STN CB 33	RIM = 124.85 E INV = 123.23 S INV = 123.14



**ELEVATION NOTE:**  
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**METRIC NOTE:**  
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EXISTING TOPOGRAPHICAL INFORMATION SUPPLIED BY J.D. BARNES LIMITED DATED MARCH 6, 2020.

BOUNDARY DATA DERIVED FROM INFORMATION SUPPLIED BY J.D. BARNES LIMITED.

SCALE(S):

NO.	REVISIONS	DATE	BY
12	ISSUED FOR SPA (AS PER CITY COMMENTS)	1/16/2026	ZZ
11	ADDED EXISTING SERVICES TO EXISTING HOUSE	9/25/2025	AM
10	ISSUED FOR SPA (AS PER CITY COMMENTS)	6/27/2022	GV
9	ISSUED FOR SPA (AS PER CITY COMMENTS)	6/20/2022	GV
8	ISSUED FOR REVIEW AND COORDINATION	6/15/2022	GV
7	ISSUED FOR REVIEW AND COORDINATION	6/13/2022	GV
6	ISSUED FOR SPA	4/20/2022	GV
5	ISSUED FOR SPA (AS PER CITY COMMENTS)	3/29/2022	GV
4	FIRST SUBMISSION	3/9/2021	MW
3	FIRST SUBMISSION (CANCELLED)	5/27/2020	MW
NO.	REVISIONS	DATE	BY

**CONTRACTOR TO PROVIDE AS-BUILT DRAWINGS UPON COMPLETION OF ALL WORKS TO THE ODAN/DETECH GROUP**

**CONTRACTOR TO VERIFY ALL INVERTS, SIZE, MATERIAL AND LOCATION OF ALL SERVICES PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES TO THE ODAN/DETECH GROUP**

**UNIT 33 HAS A SEPTIC TANK**

**ODAN-DETECH CONSULTING ENGINEERS**

The Odan/Detech Group Inc. P: (905) 632-3811 F: (905) 632-3363  
5230 SOUTH SERVICE ROAD, BURLINGTON, ONTARIO, L7L 5K2

PROJECT No: 10238

DRAWING TITLE: **SITE SERVICING PLAN**

PROJECT: SETTLEMENT AT ST. DAVID'S PHASE 1  
PAXTON LANE  
NIAGARA-ON-THE-LAKE, ONTARIO

CLIENT: 2233497 ONTARIO LIMITED

DESIGNED BY: M.H.H. CHECKED BY: M.H.H. PROJECT No: 10238 DRAWING No: 1 OF 7

DRAWN BY: Z.Z. APPROVED BY: P.H. DATE STARTED: NOV. 2019

ENGINEER

**PROFESSIONAL ENGINEER**  
JAN. 16/76  
P.J. HECHIMOVIC  
186128980  
PROVINCE OF ONTARIO

OWNER'S NAME

OWNER'S SIGNATURE

Town of Niagara-on-the-Lake

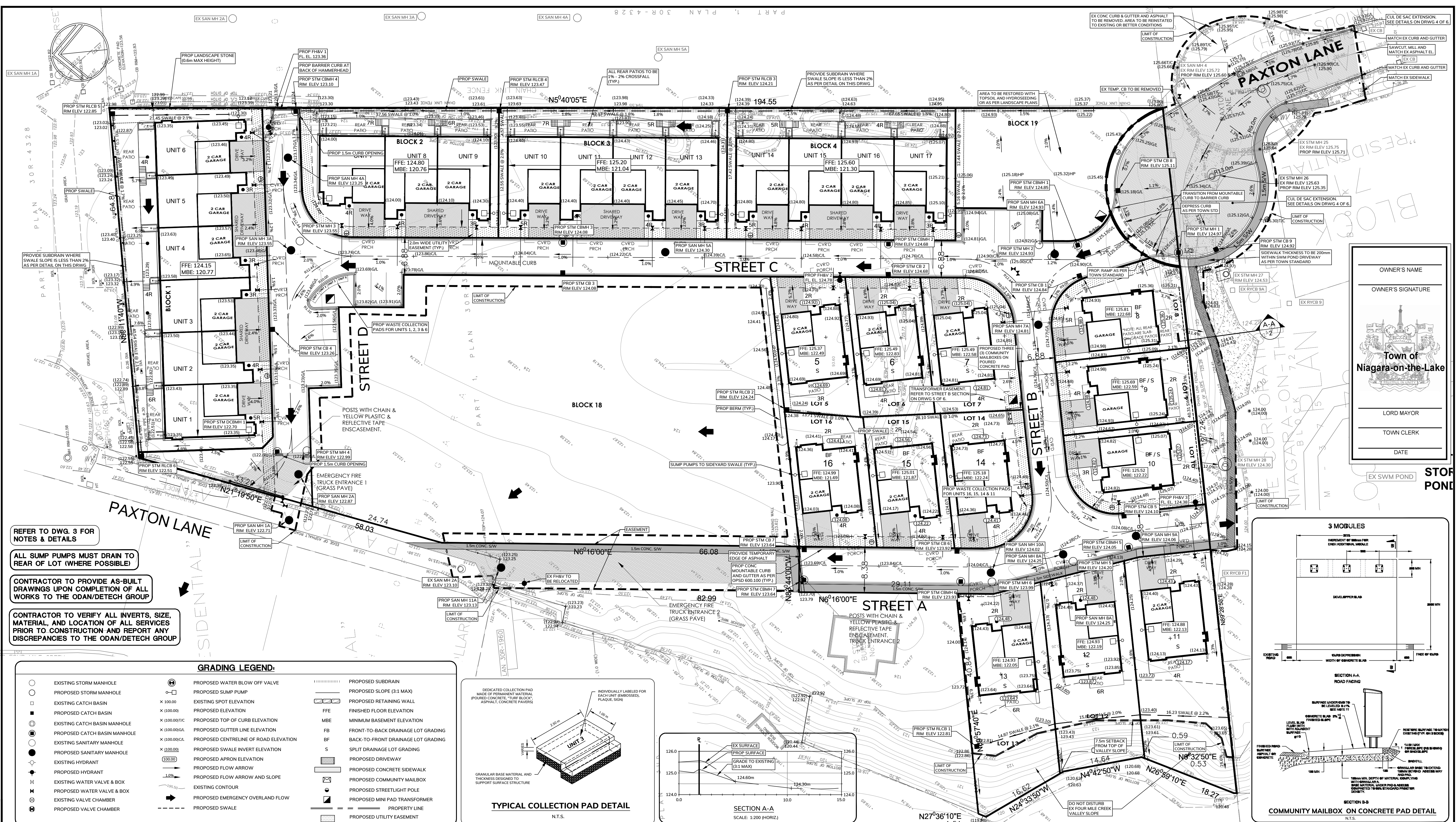
LORD MAYOR

TOWN CLERK

DATE

**SERVICING LEGEND:**

- EXISTING STORM MANHOLE
- PROPOSED STORM MANHOLE
- EXISTING CATCH BASIN MANHOLE
- PROPOSED CATCH BASIN MANHOLE
- PROPOSED STORMCEPTOR
- EXISTING CATCH BASIN
- PROPOSED CATCH BASIN
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- EXISTING SANITARY MANHOLE
- PROPOSED SANITARY MANHOLE
- PROPOSED SANITARY SEWER
- EXISTING SANITARY SEWER
- EXISTING HYDRANT
- PROPOSED HYDRANT
- EXISTING WATER VALVE & BOX
- PROPOSED WATER VALVE & BOX
- EXISTING VALVE CHAMBER
- PROPOSED VALVE CHAMBER
- PROPOSED WATER BLOW OFF VALVE
- EXISTING WATER MAIN
- PROPOSED WATER MAIN
- PROPOSED SUMP PUMP
- PROPOSED CAP FOR SANITARY, STORM AND/OR WATER AS NOTED
- PROPOSED SUBDRAIN
- PROPOSED SLOPE (3:1 MAX)
- PROPOSED RETAINING WALL
- PROPOSED DRIVEWAY
- PROPOSED CONCRETE SIDEWALK
- PROPOSED COMMUNITY MAILBOX
- PROPOSED STREETLIGHT POLE
- PROPOSED MINI PAD TRANSFORMER
- PROPERTY LINE
- PROPOSED UTILITY EASEMENT



**REFER TO DWG. 3 FOR NOTES & DETAILS**

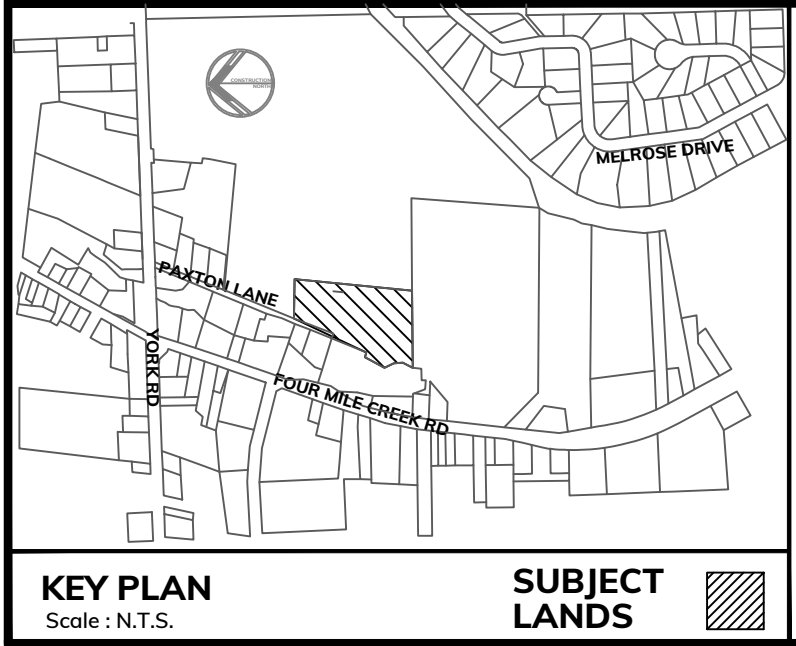
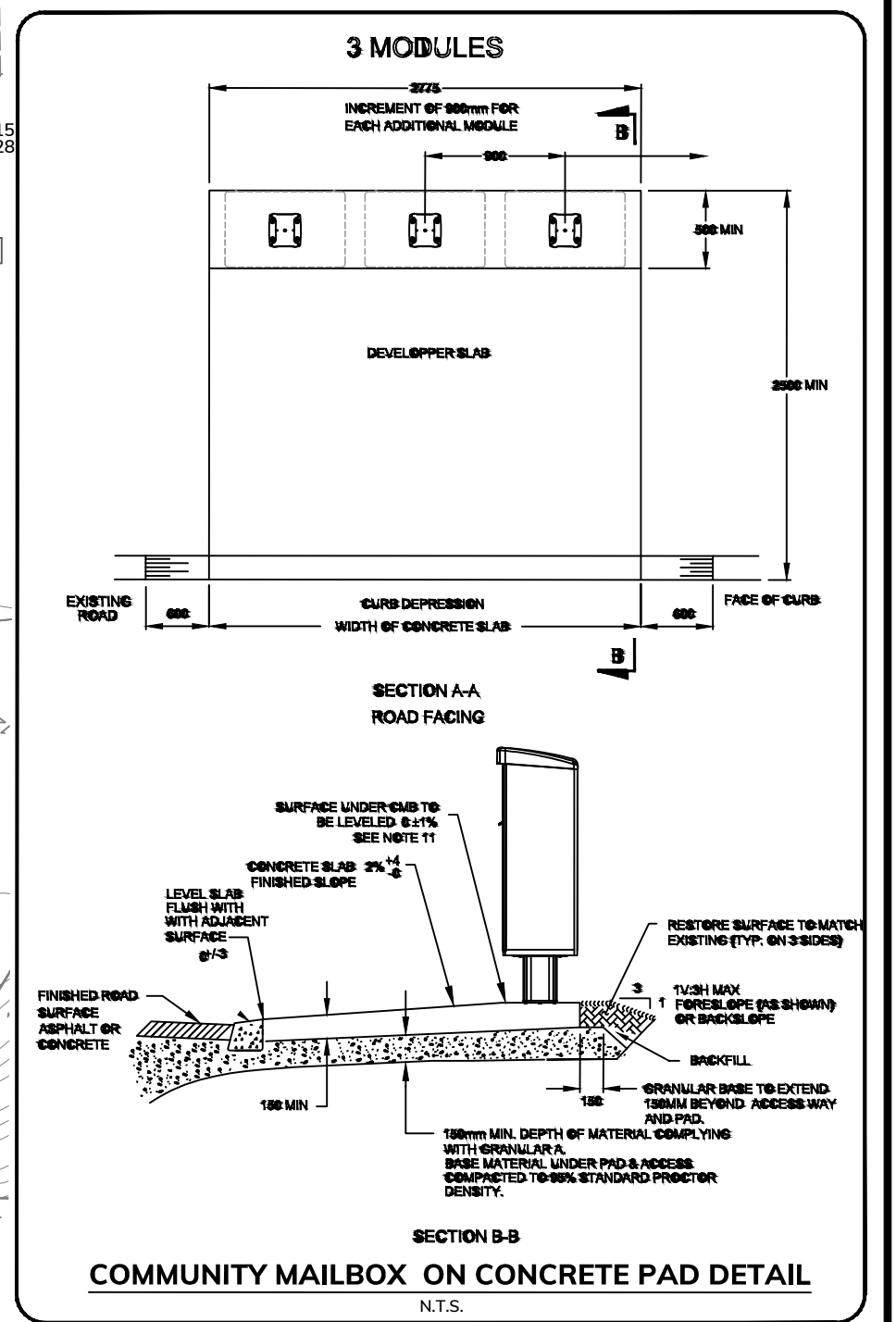
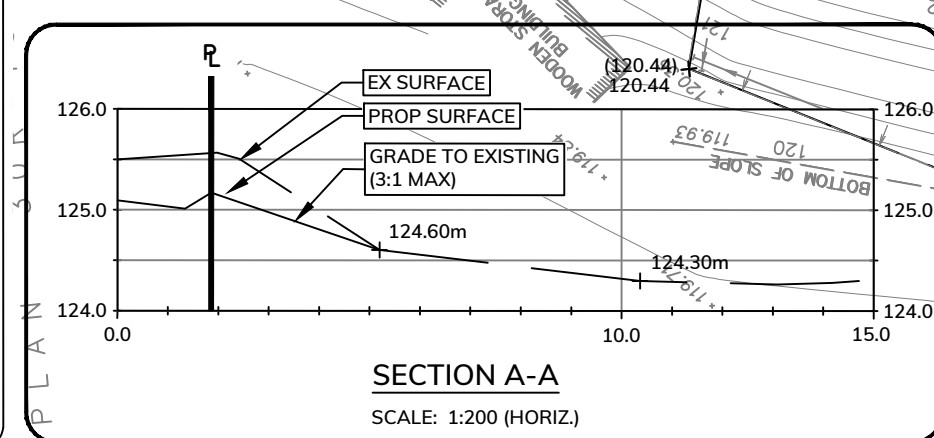
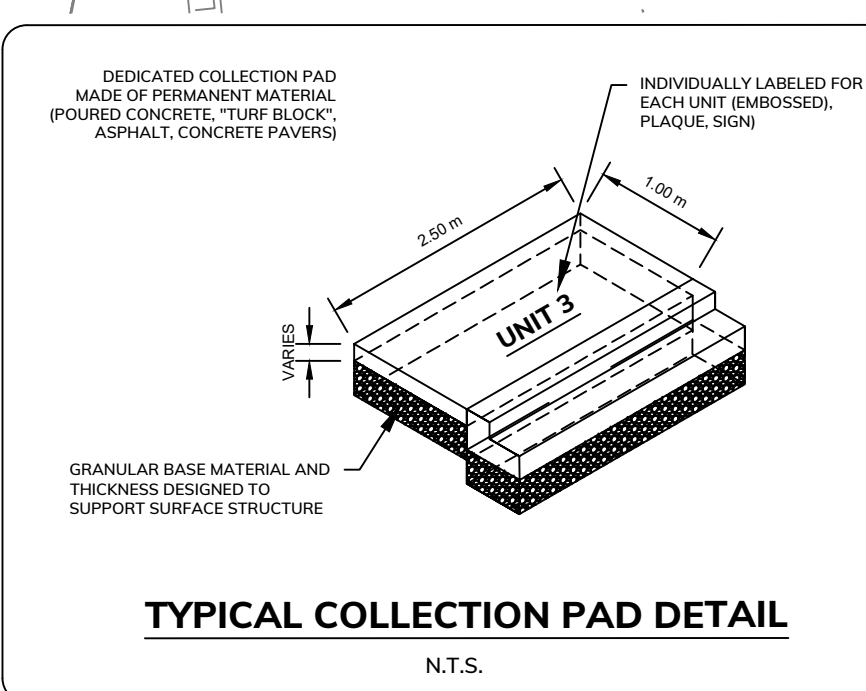
**ALL SUMP PUMPS MUST DRAIN TO REAR OF LOT (WHERE POSSIBLE)**

**CONTRACTOR TO PROVIDE AS-BUILT DRAWINGS UPON COMPLETION OF ALL WORKS TO THE ODAN/DETECH GROUP**

**CONTRACTOR TO VERIFY ALL INVERTS, SIZE, MATERIAL, AND LOCATION OF ALL SERVICES PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES TO THE ODAN/DETECH GROUP**

**GRADING LEGEND:**

○	EXISTING STORM MANHOLE	⊙	PROPOSED WATER BLOW OFF VALVE	▨	PROPOSED SUBDRAIN
○	PROPOSED STORM MANHOLE	⊙	PROPOSED SUMP PUMP	▨	PROPOSED SLOPE (3:1 MAX)
□	EXISTING CATCH BASIN	×	EXISTING SPOT ELEVATION	▨	PROPOSED RETAINING WALL
▣	PROPOSED CATCH BASIN	×	(100.00)	FFE	FINISHED FLOOR ELEVATION
⊙	EXISTING CATCH BASIN MANHOLE	×	(100.00)TC	MBE	MINIMUM BASEMENT ELEVATION
⊙	PROPOSED CATCH BASIN MANHOLE	×	(100.00)GL	FB	FRONT-TO-BACK DRAINAGE LOT GRADING
⊙	EXISTING SANITARY MANHOLE	×	(100.00)CL	BF	BACK-TO-FRONT DRAINAGE LOT GRADING
⊙	PROPOSED SANITARY MANHOLE	×	(100.00)	S	SPLIT DRAINAGE LOT GRADING
⊙	EXISTING SANITARY MANHOLE	⊙	(100.00)	PROPOSED DRIVEWAY	
⊙	PROPOSED SANITARY MANHOLE	⊙	(100.00)	PROPOSED CONCRETE SIDEWALK	
⊙	EXISTING HYDRANT	→	PROPOSED SWALE INVERT ELEVATION	⊙	PROPOSED COMMUNITY MAILBOX
⊙	PROPOSED HYDRANT	→	PROPOSED APRON ELEVATION	⊙	PROPOSED STREETLIGHT POLE
⊙	EXISTING WATER VALVE & BOX	→	PROPOSED FLOW ARROW	⊙	PROPOSED MINI PAD TRANSFORMER
⊙	PROPOSED WATER VALVE & BOX	→	PROPOSED FLOW ARROW AND SLOPE	⊙	PROPERTY LINE
⊙	EXISTING VALVE CHAMBER	→	EXISTING CONTOUR	⊙	PROPOSED UTILITY EASEMENT
⊙	PROPOSED VALVE CHAMBER	→	PROPOSED EMERGENCY OVERLAND FLOW		
		→	PROPOSED SWALE		



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EXISTING TOPOGRAPHICAL INFORMATION SUPPLIED BY J.D. BARNES LIMITED DATED MARCH 6, 2020.

BOUNDARY DATA DERIVED FROM INFORMATION SUPPLIED BY J.D. BARNES LIMITED.

**SCALE(S):**

1:300

NO.	REVISIONS	DATE	BY
12	ISSUED FOR SPA (AS PER CITY COMMENTS)	1/16/2026	ZZ
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7	ISSUED FOR REVIEW AND COORDINATION	6/13/2022	GV
6	ISSUED FOR SPA	4/20/2022	GV
5	ISSUED FOR SPA (AS PER CITY COMMENTS)	3/29/2022	GV
4	FIRST SUBMISSION	3/9/2021	MW
3	FIRST SUBMISSION (CANCELLED)	5/22/2020	MW
NO.			

**ODAN-DETECH**  
CONSULTING ENGINEERS

The Odan/Detech Group Inc. P: (905) 632-3811 F: (905) 632-3363  
5230 SOUTH SERVICE ROAD, BURLINGTON, ONTARIO, L7L 5K2

PROJECT No: 10238

DRAWING TITLE: **SITE GRADING PLAN**

PROJECT: SETTLEMENT AT ST. DAVID'S PHASE 1  
PAXTON LANE  
NIAGARA-ON-THE-LAKE, ONTARIO

CLIENT: 2233497 ONTARIO LIMITED

DESIGNED BY: M.H.H. CHECKED BY: M.H.H. PROJECT No: 10238 DRAWING No: 2 of 7

DRAWN BY: Z.Z. APPROVED BY: P.H. DATE STARTED: NOV. 2019

ENGINEER: **P.J. HECIMOVIC**  
180128980  
PROVINCE OF ONTARIO

OWNER'S NAME \_\_\_\_\_

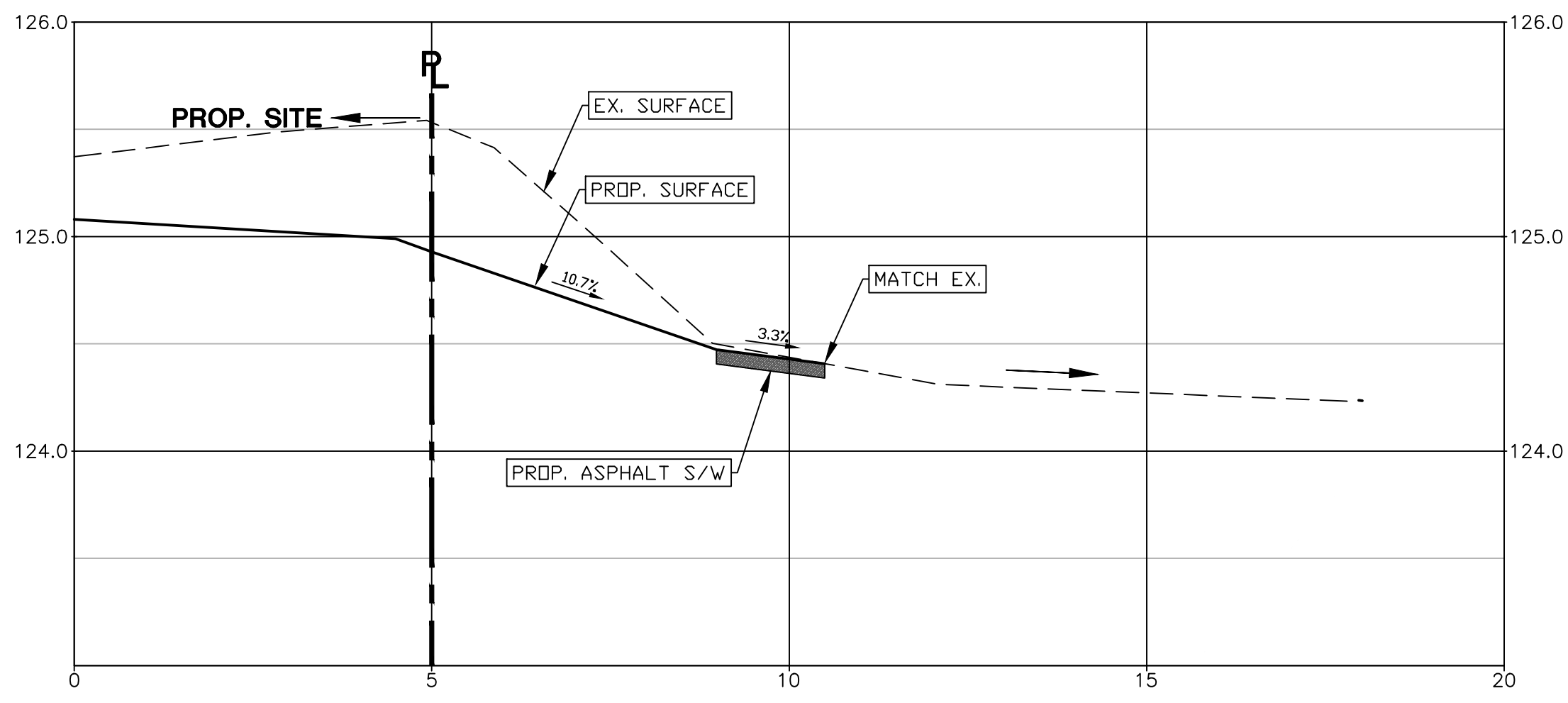
OWNER'S SIGNATURE \_\_\_\_\_

**Town of Niagara-on-the-Lake**

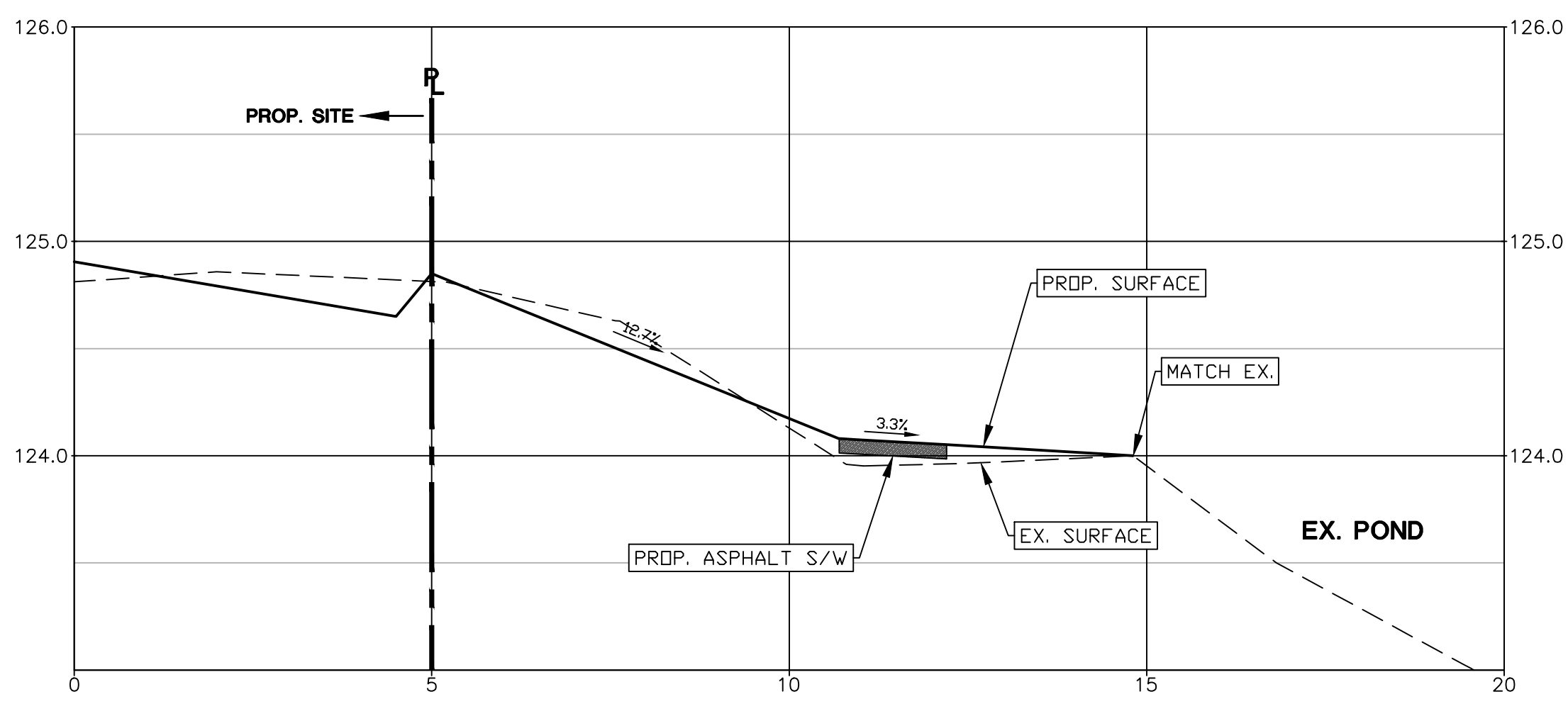
LORD MAYOR \_\_\_\_\_

TOWN CLERK \_\_\_\_\_

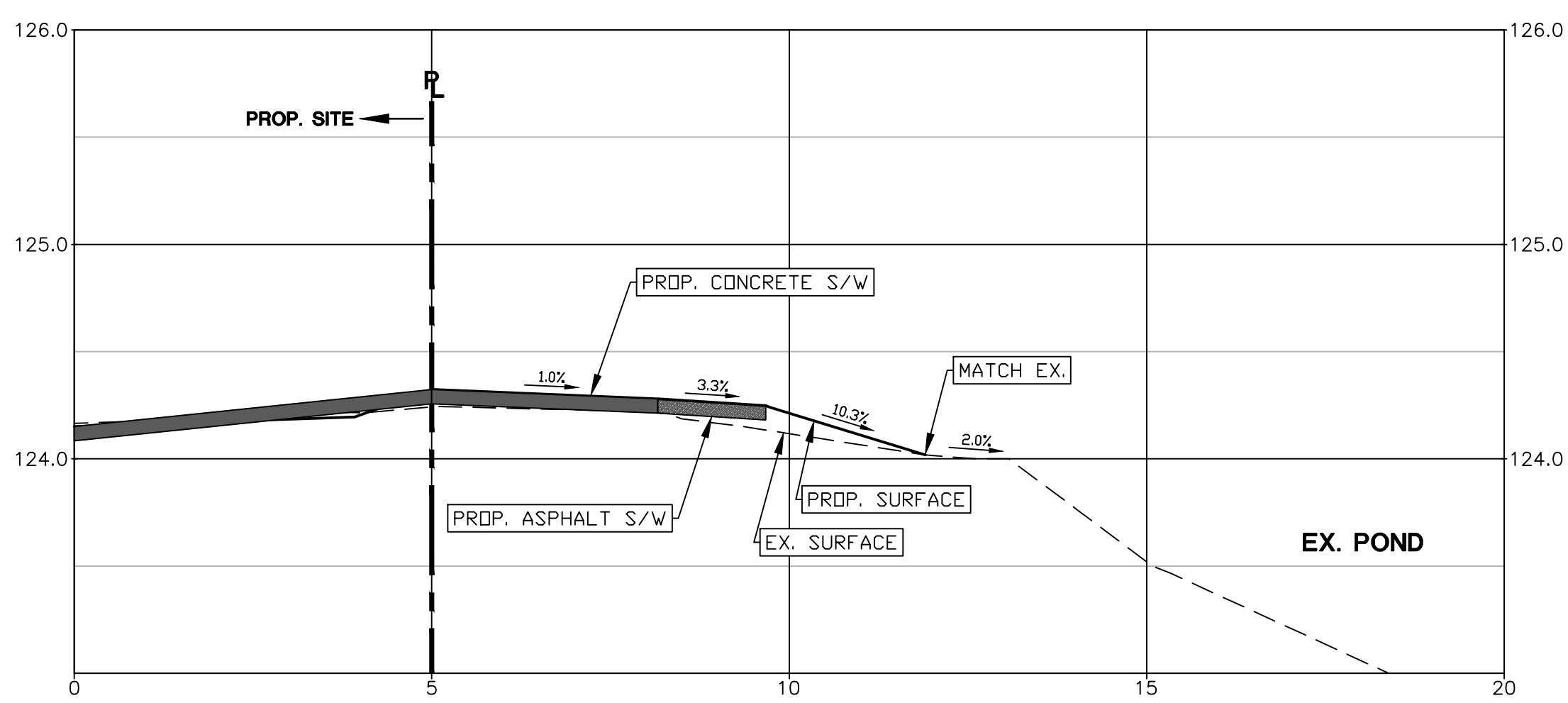
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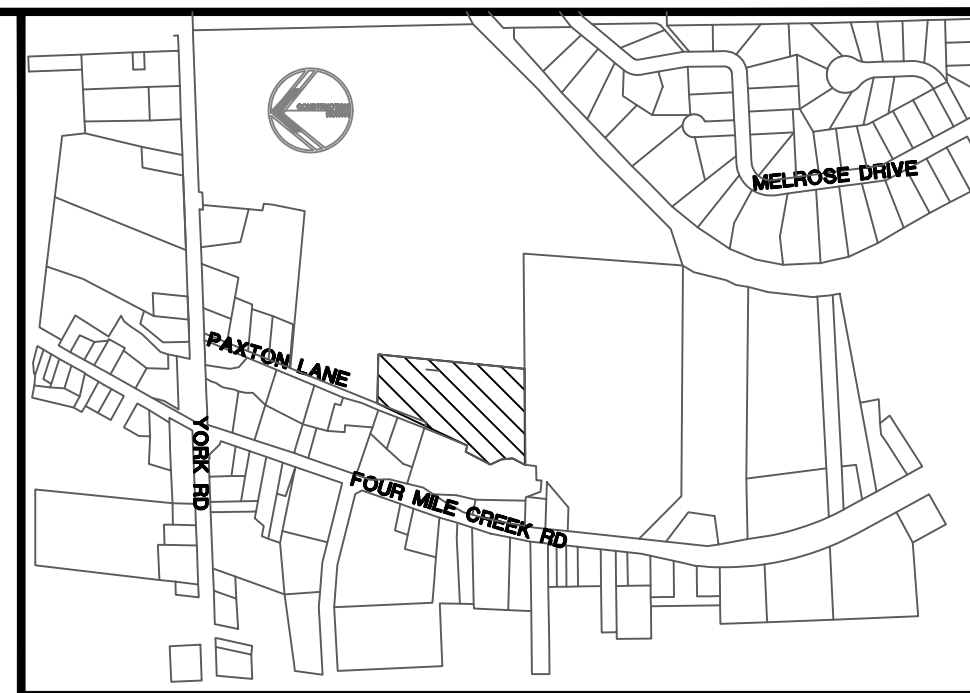
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V 1:25



**SECTION B-B**  
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V 1:25



**SECTION C-C**  
scale H=1:75  
V 1:25



**KEY PLAN**  
Scale: N.T.S. **SUBJECT LANDS**

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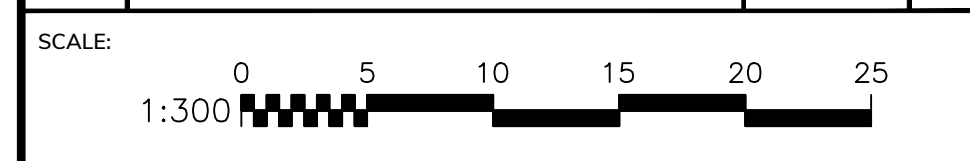
EXISTING TOPOGRAPHICAL INFORMATION SUPPLIED BY J.D. BARNES LIMITED DATED MARCH 6, 2020. BOUNDARY DATA DERIVED FROM INFORMATION SUPPLIED BY J.D. BARNES LIMITED.

**ELEVATION NOTE:**  
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NO.	REVISIONS	DATE	BY
12.	ISSUED FOR SPA (AS PER CITY COMMENTS)	1/16/2026	ZZ
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10.	ISSUED FOR SPA (AS PER CITY COMMENTS)	6/27/2022	GV
9.	ISSUED FOR SPA (AS PER CITY COMMENTS)	6/20/2022	GV
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7.	ISSUED FOR REVIEW AND COORDINATION	6/13/2022	GV
6.	ISSUED FOR SPA	4/20/2022	GV
5.	ISSUED FOR SPA (AS PER CITY COMMENTS)	3/29/2022	GV
4.	FIRST SUBMISSION	3/8/2021	MW
3.	FIRST SUBMISSION (CANCELLED)	5/22/2020	MW
2.	ISSUED FOR REVIEW AND COORDINATION	3/19/2020	MW
1.	ISSUED FOR REVIEW AND COORDINATION	11/27/2019	MW



DRAWING: **PROPOSED SIDEWALK EXTENSION GRADING PLAN AND SECTION VIEWS**

CLIENT: **2233497 ONTARIO LIMITED**

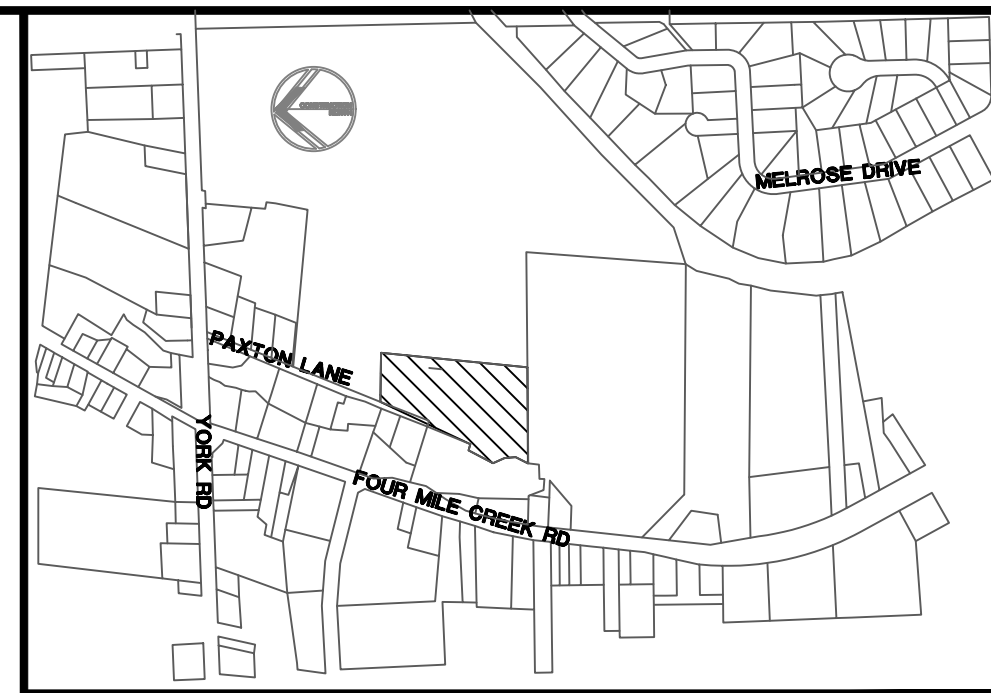
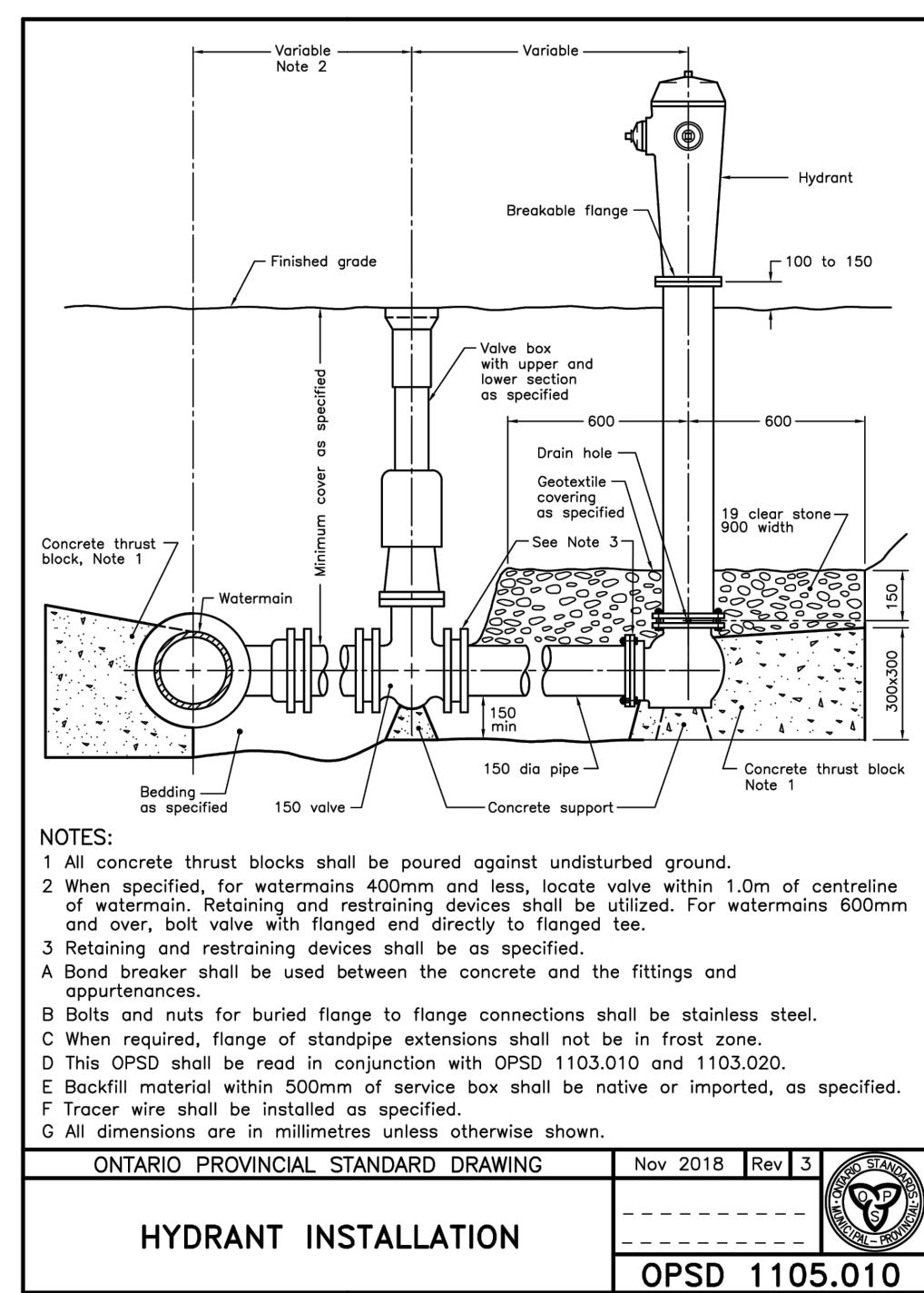
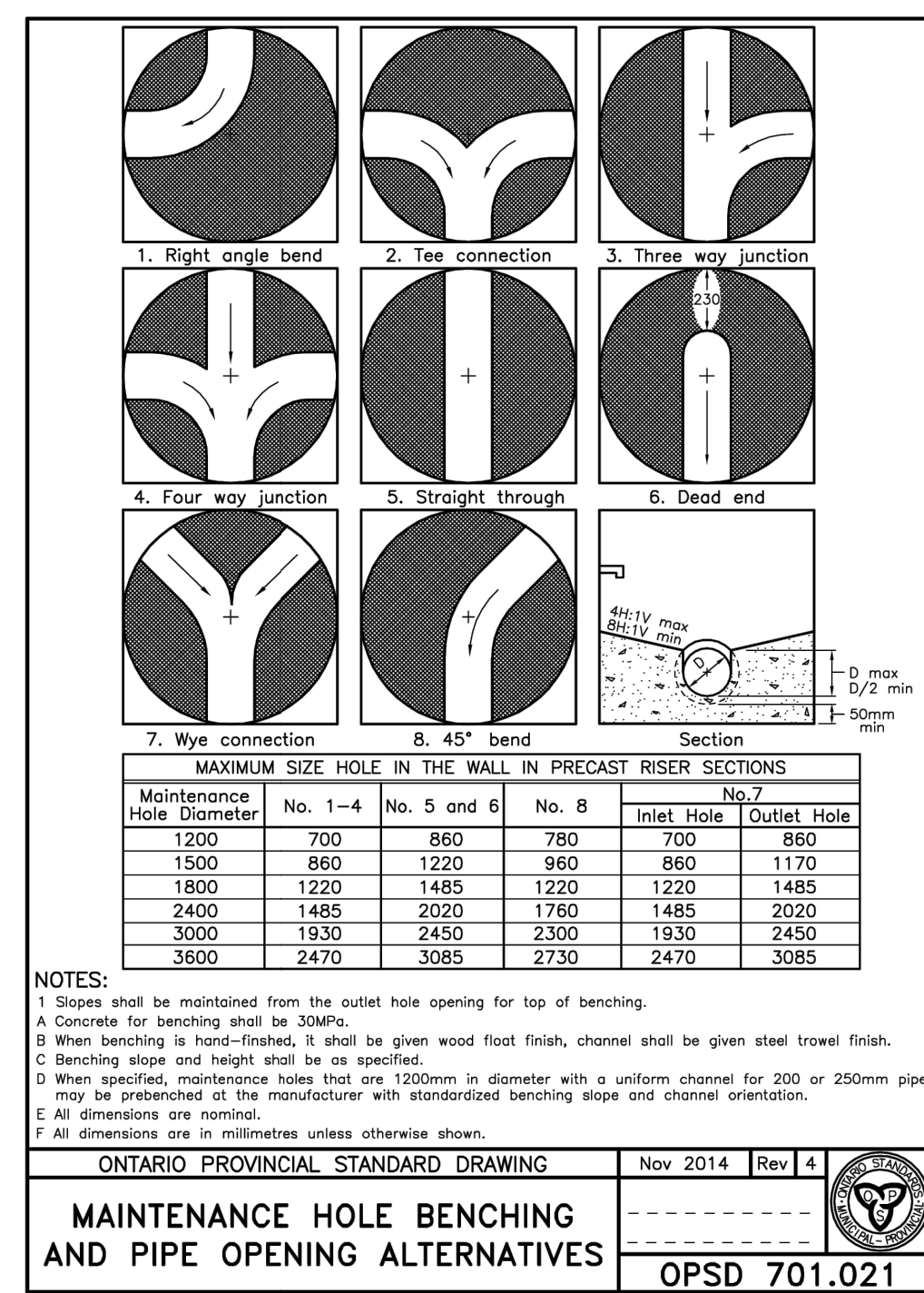
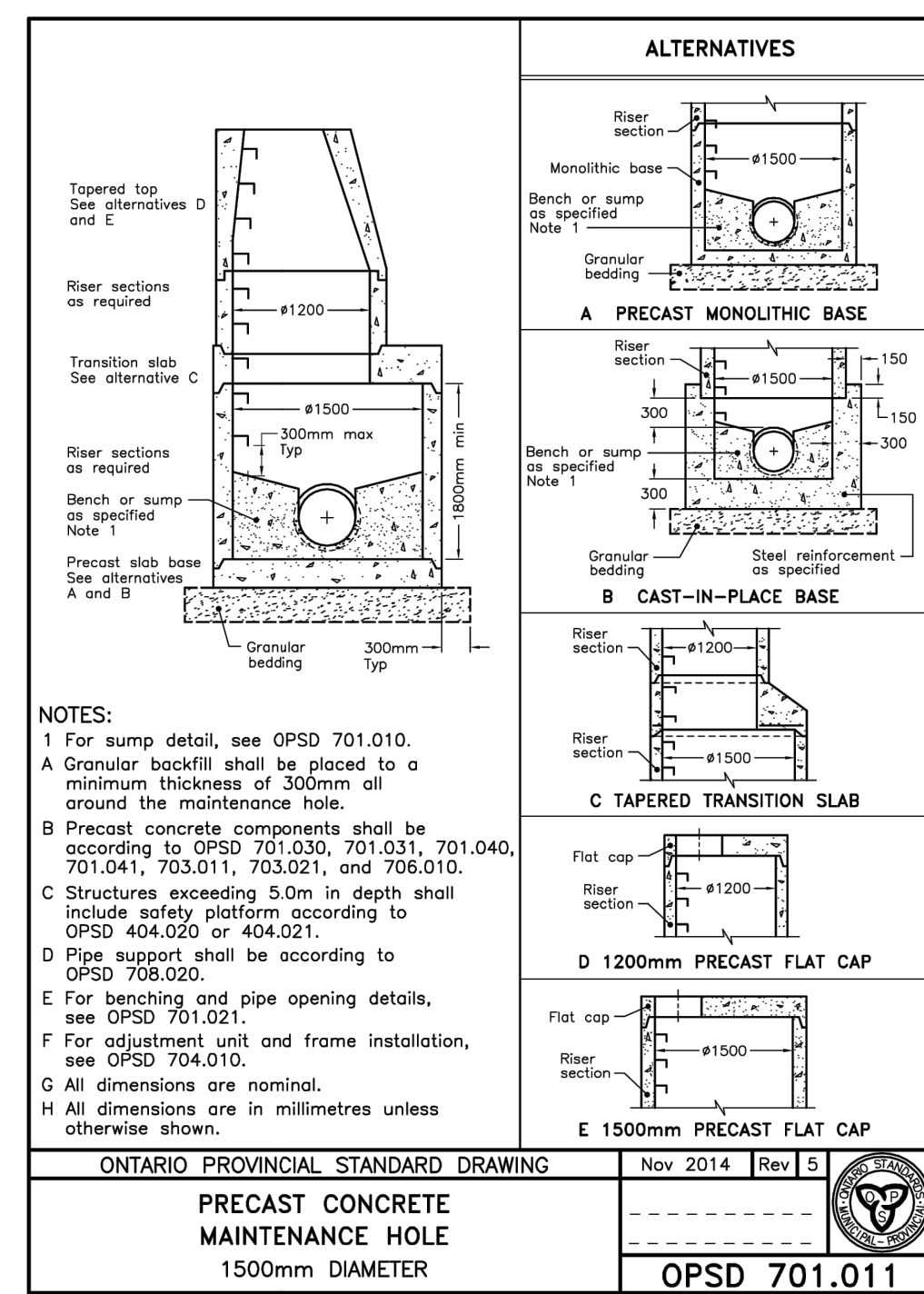
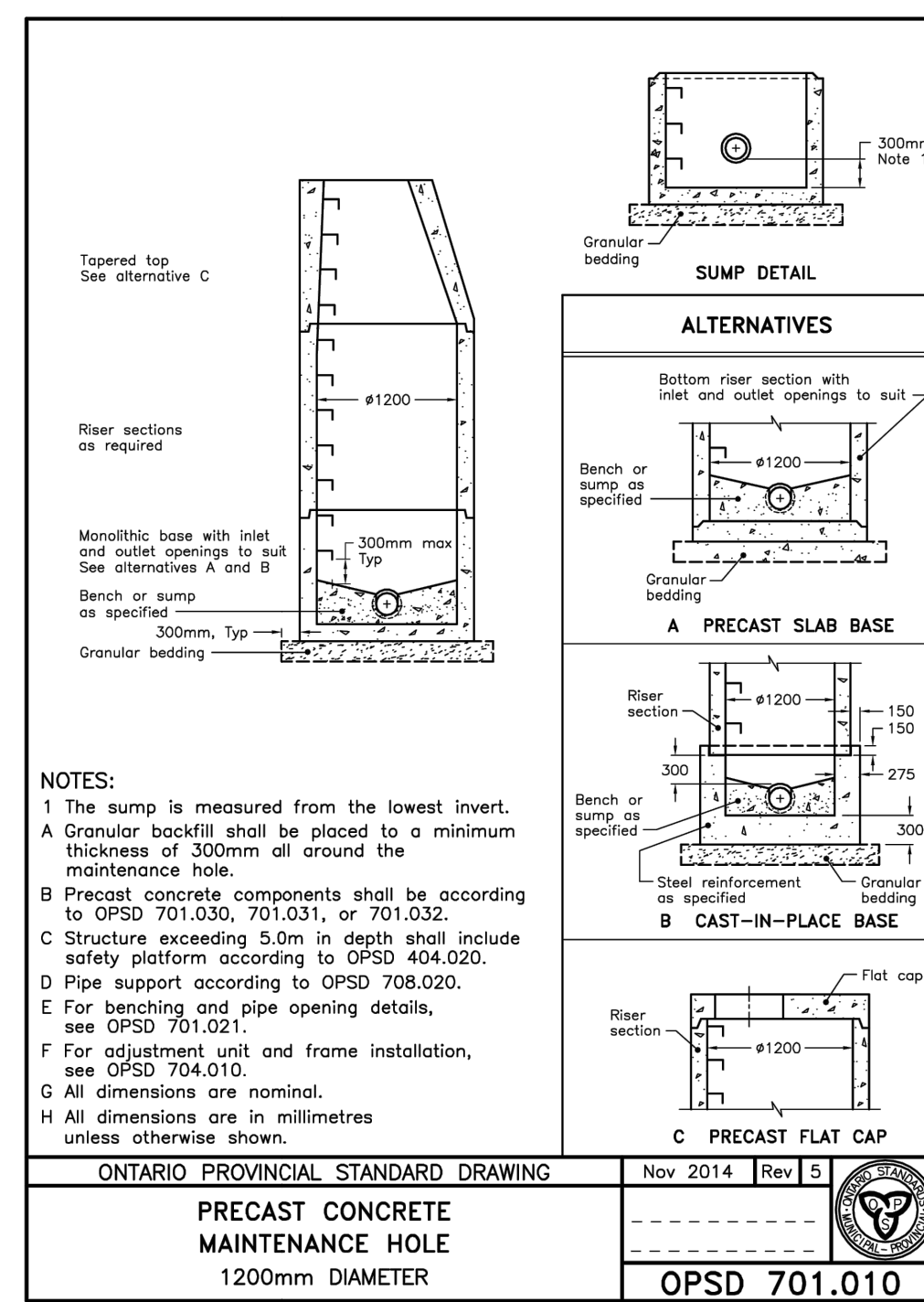
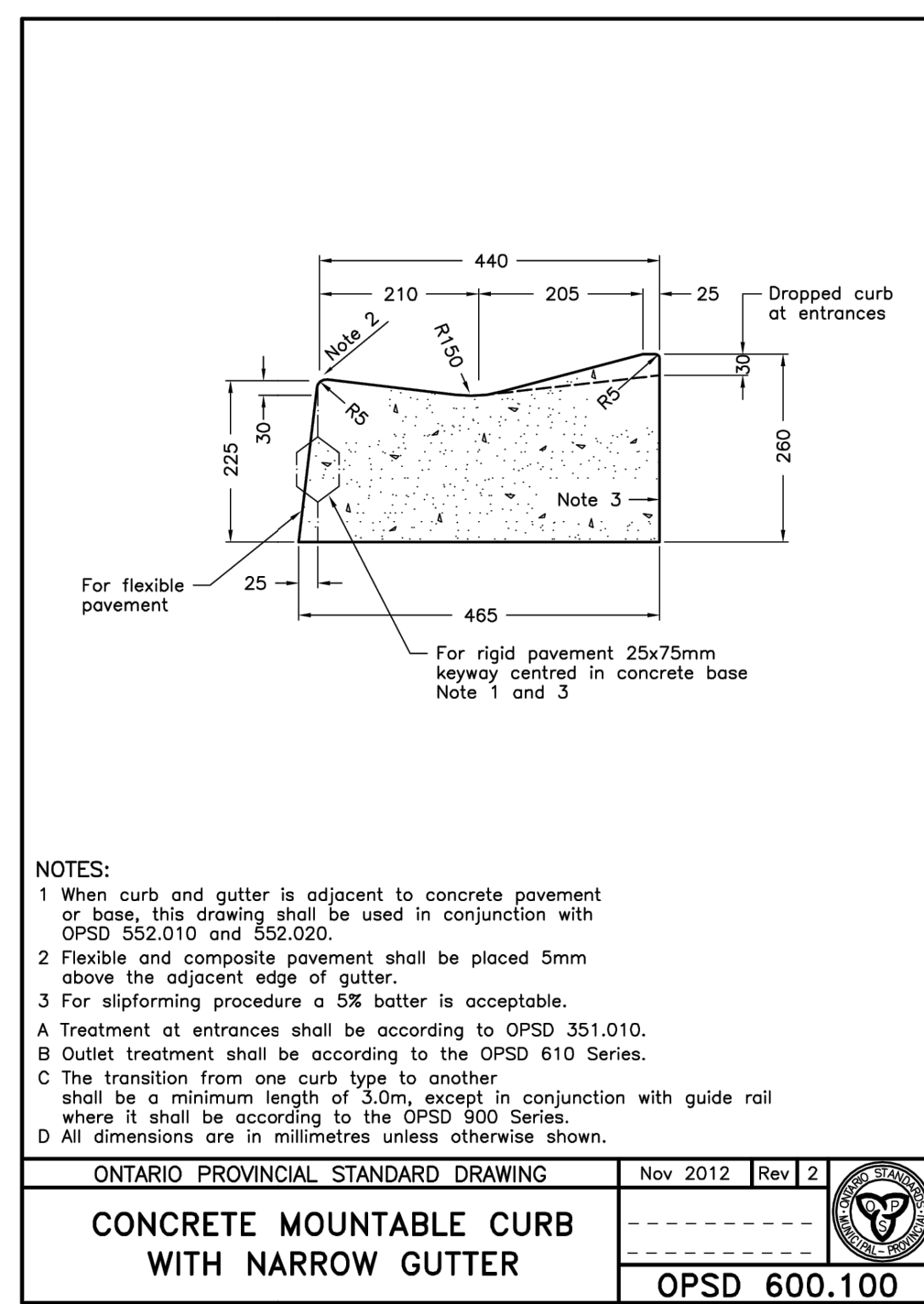
PROJECT: **SETTLEMENT AT ST. DAVID'S PHASE 1 PAXTON LANE NIAGARA-ON-THE-LAKE, ONTARIO**

OWNER'S NAME  
OWNER'S SIGNATURE

SCALE:	PROJ. NO.:	DATE:	DESIGN BY:
	10238	NOV. 2019	M.H.H.
			DRAWN BY: Z.Z.
			CHECKED BY: M.H.H.
			APPROVED BY: P.H.
			DRWG. NO.: 3 OF 7

Town of Niagara-on-the-Lake

LORD MAYOR  
TOWN CLERK  
DATE



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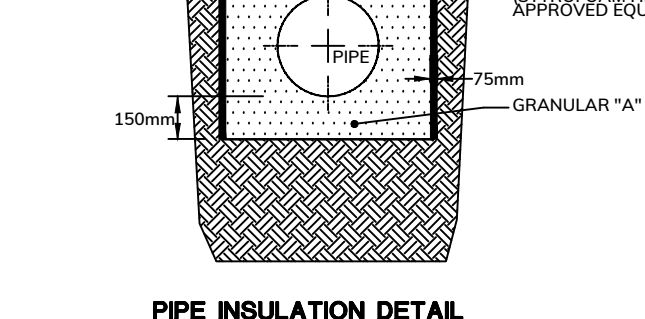
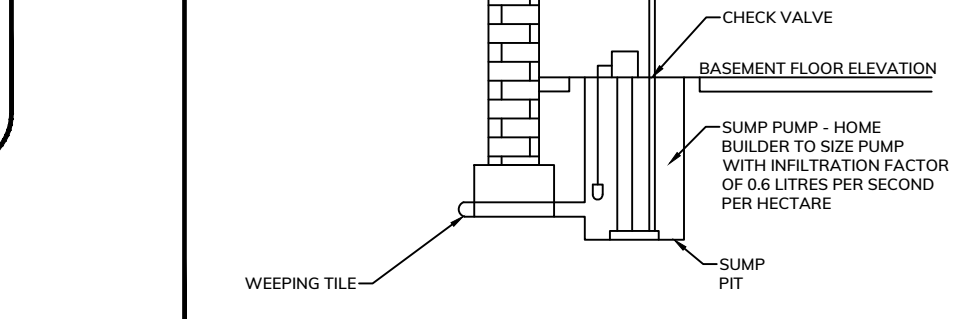
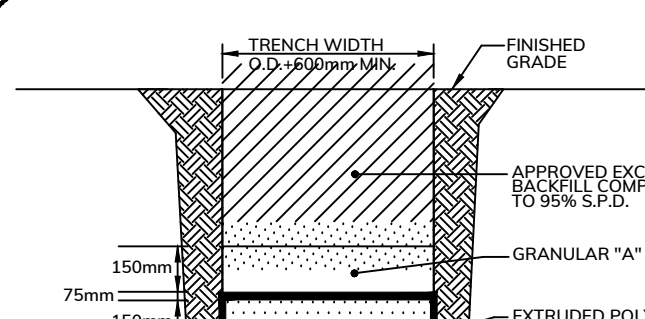
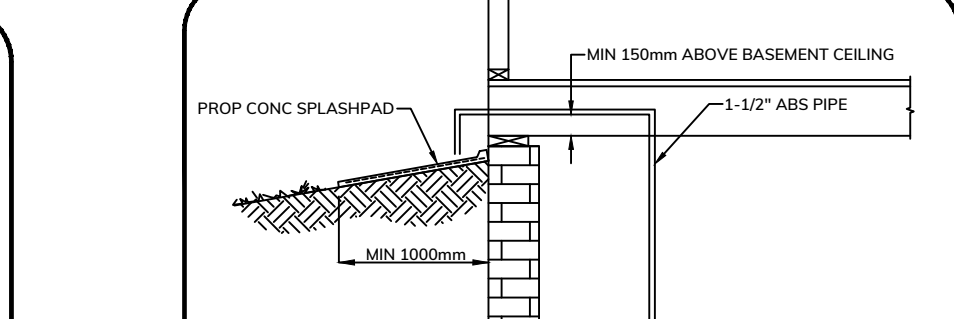
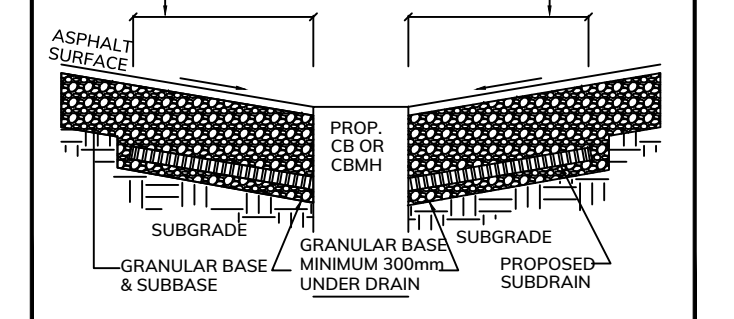
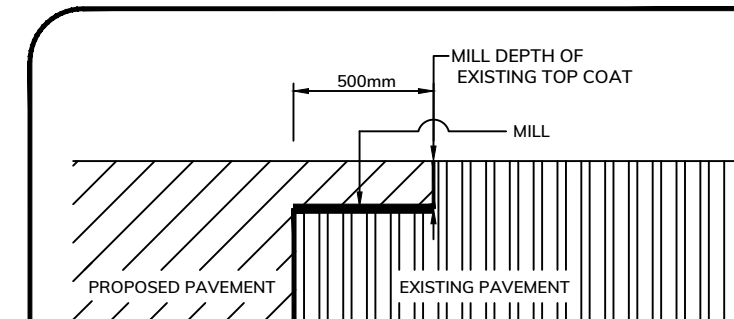
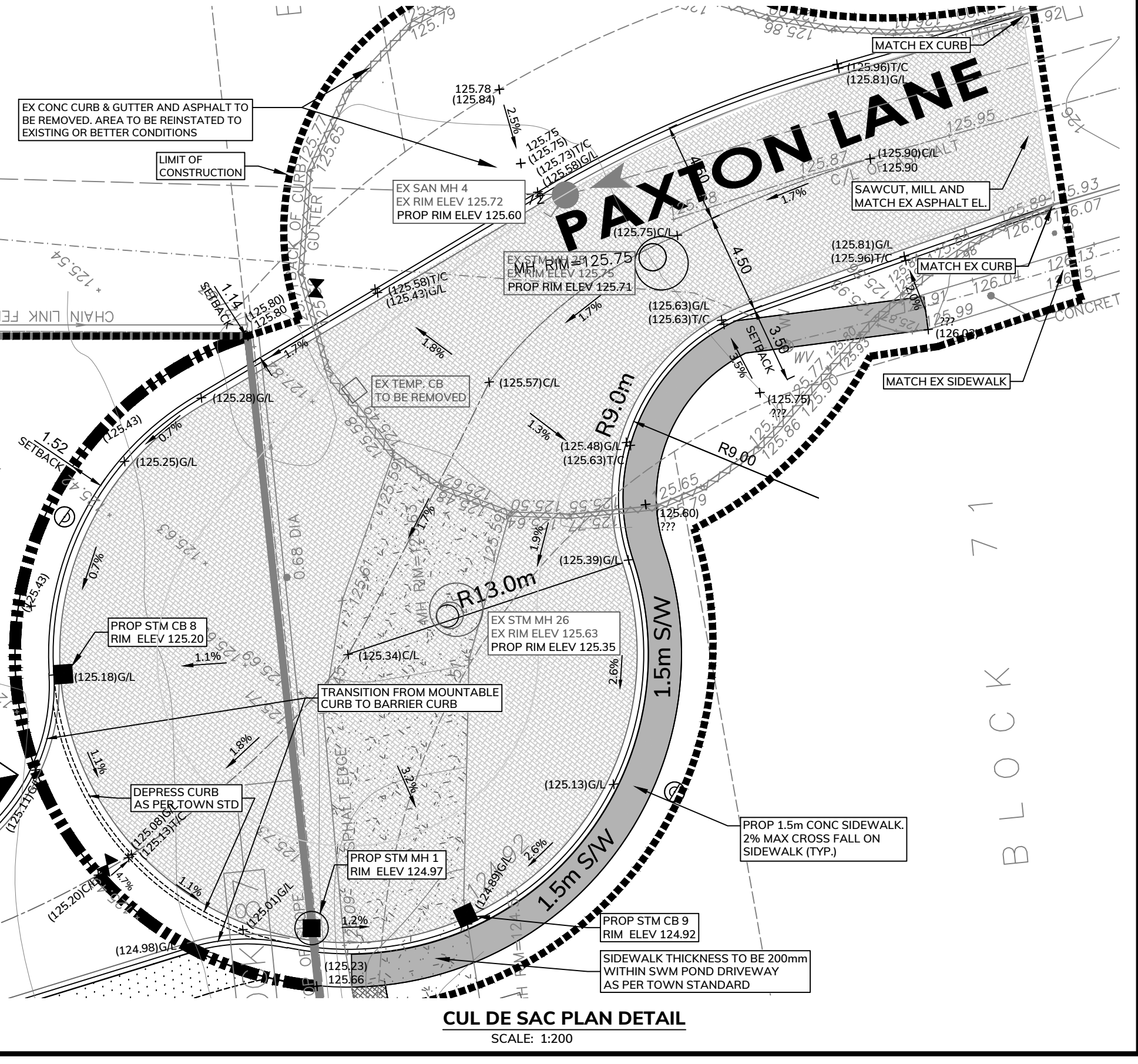
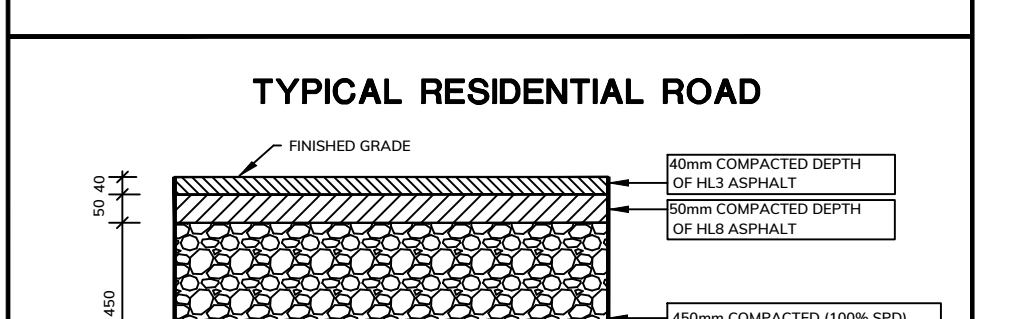
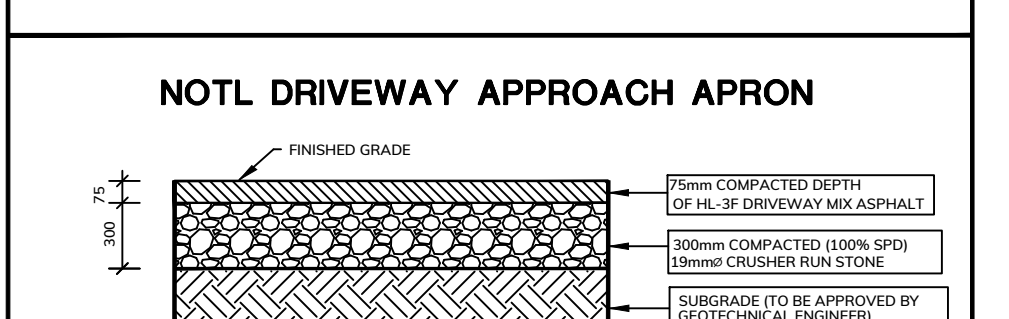
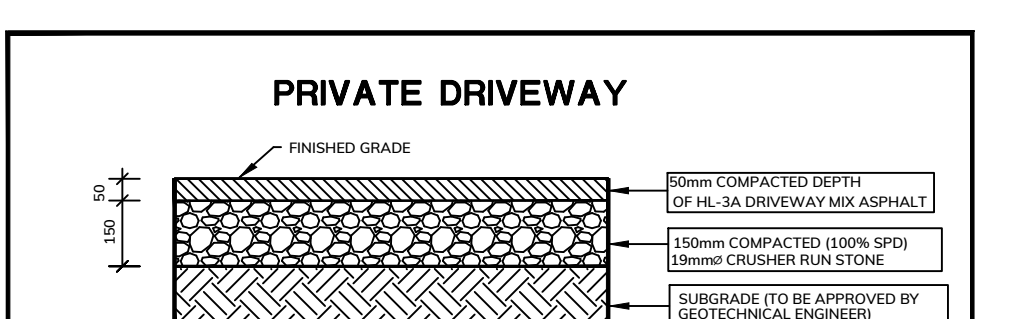
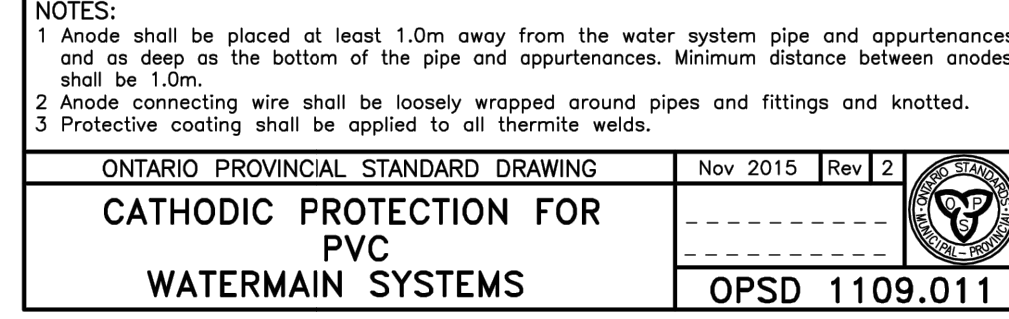
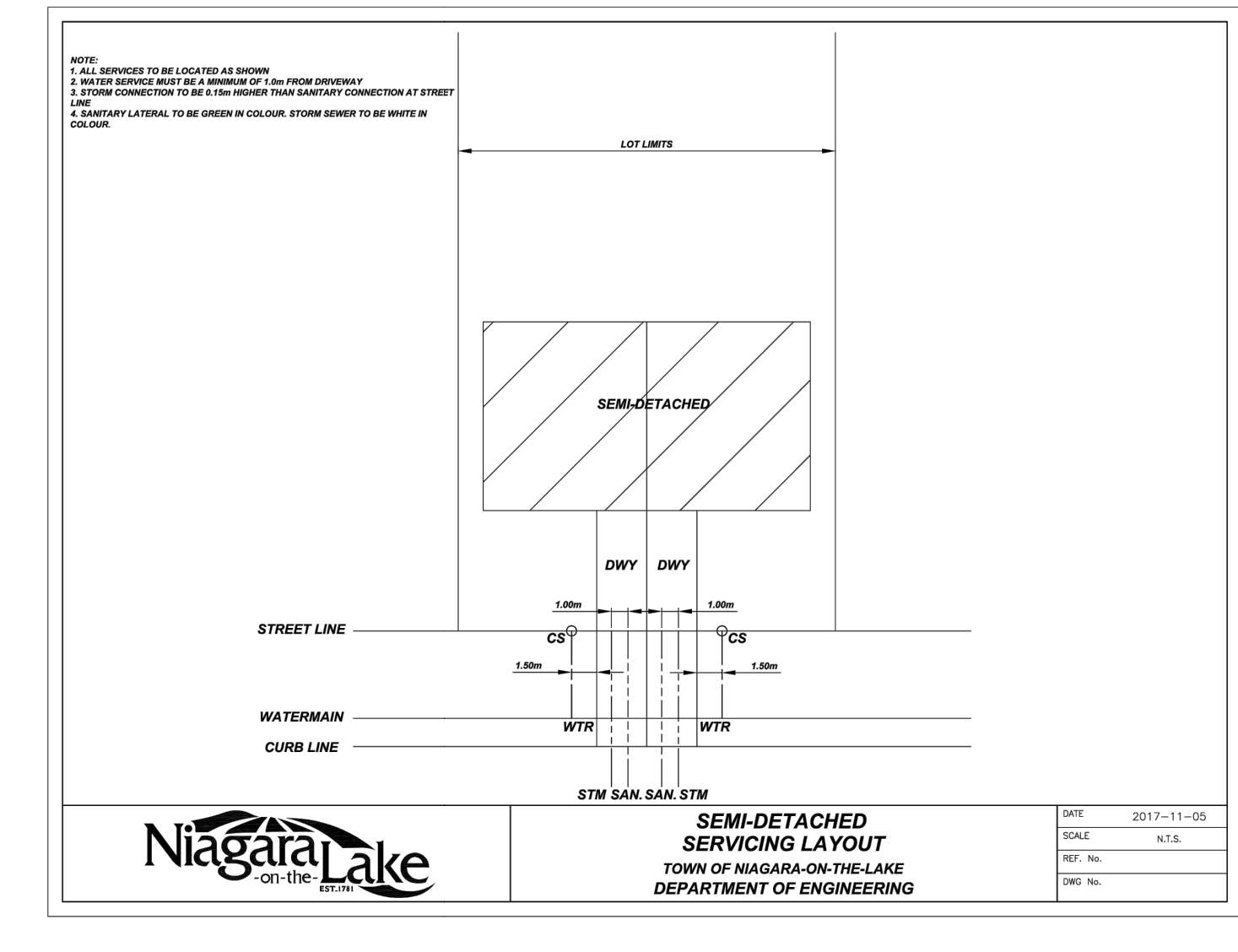
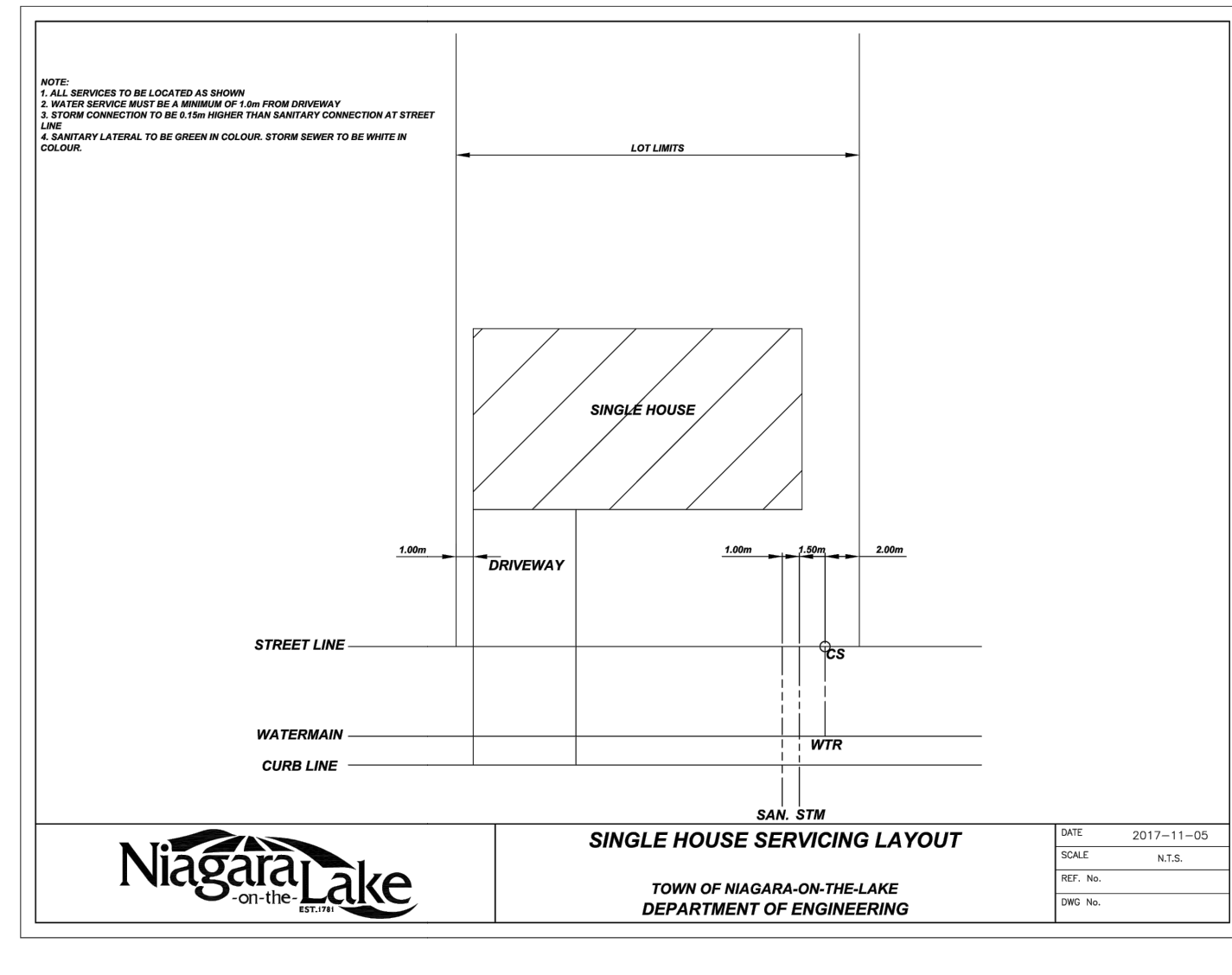
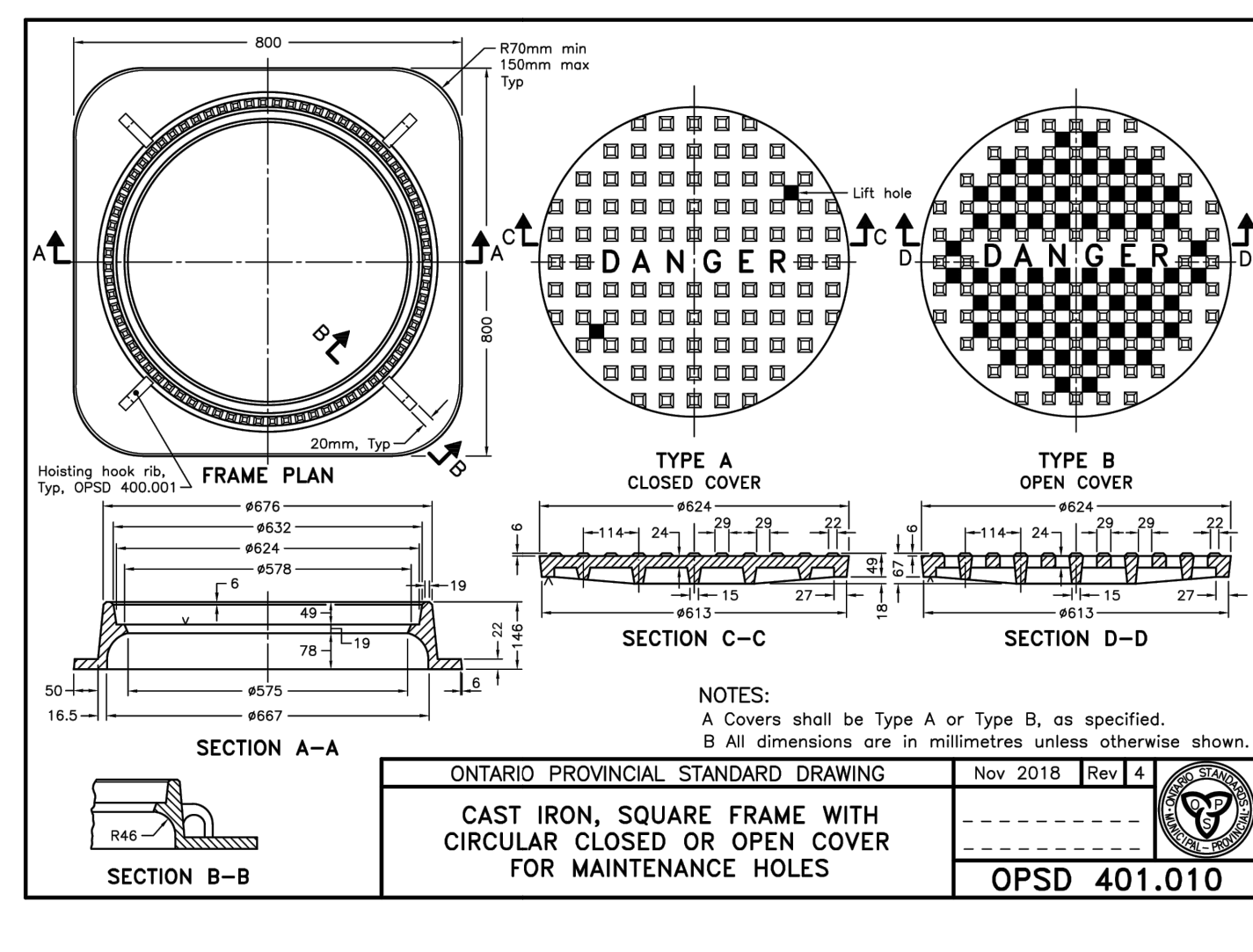
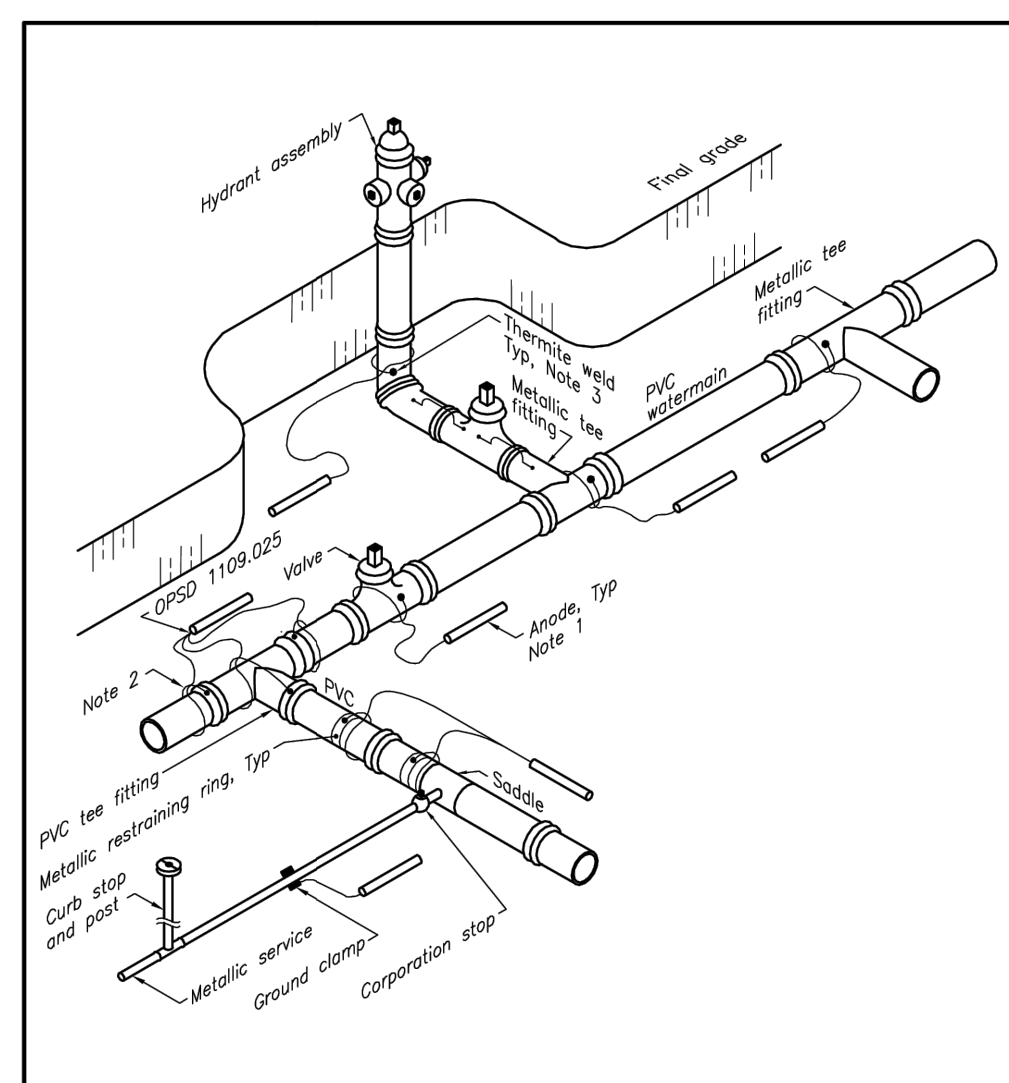
THE CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS ON THE JOB AND REPORT ANY DISCREPANCY TO THE ARCHITECTS/ENGINEERS BEFORE PROCEEDING WITH THE WORKS.

ALL DRAWINGS AND SPECIFICATIONS ARE INSTRUMENTS OF SERVICE AND THE PROPERTY OF THE ENGINEER WHICH MUST BE RETURNED AT THE COMPLETION OF WORK.

THIS DRAWING IS NOT TO BE SCALED. CONTRACTOR TO USE DIGITAL FILES FOR LAYOUT PROVIDED BY ENGINEER. THIS PLAN MUST NOT BE USED TO SITE THE EXPOSED BUILDINGS.

THE APPROVAL OF THIS PLAN DOES NOT EXEMPT THE OWNER'S CONTRACTOR FROM OBTAINING, BUT NOT LIMITED TO THE FOLLOWING PERMITS: ROAD CUT, SEWER PERMITS, RELOCATION OF SERVICES, ENCROACHMENT AGREEMENTS, APPROACH APPROVAL PERMITS, ETC.,

EXISTING TOPOGRAPHICAL INFORMATION SUPPLIED BY J.D. BARNES LIMITED DATED MARCH 6, 2020. BOUNDARY DATA DERIVED FROM INFORMATION SUPPLIED BY J.D. BARNES LIMITED.



**ELEVATION NOTE:**  
 ELEVATIONS ARE OF GEODETIC ORIGIN (CGVD-1928-78), AND ARE DERIVED FROM GNSS OBSERVATIONS AND NATURAL RESOURCES CANADA'S GEOD MODEL 1172.0.

**BEARING NOTE:**  
 BEARINGS ARE UTM GRID, DERIVED FROM OBSERVED REFERENCE POINTS A AND B, BY REAL TIME NETWORK (RTN) OBSERVATIONS, UTM ZONE 17, NAD83 (ORIGINAL).

**METRIC NOTE:**  
 DISTANCES AND ELEVATIONS ON THIS PLAN ARE TYPICALLY SHOWN IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

NO.	REVISIONS	DATE	BY
12.	ISSUED FOR SPA (AS PER CITY COMMENTS)	1/16/2026	ZZ
11.	ADDED EXISTING SERVICES TO EXISTING HOUSE	9/25/2025	AM
10.	ISSUED FOR SPA (AS PER CITY COMMENTS)	6/27/2022	GV
9.	ISSUED FOR SPA (AS PER CITY COMMENTS)	6/20/2022	GV
8.	ISSUED FOR REVIEW AND COORDINATION	6/15/2022	GV
7.	ISSUED FOR REVIEW AND COORDINATION	6/13/2022	GV
6.	ISSUED FOR SPA	4/20/2022	GV
5.	ISSUED FOR SPA (AS PER CITY COMMENTS)	3/29/2022	GV
4.	FIRST SUBMISSION	3/8/2021	MW
3.	FIRST SUBMISSION (CANCELLED)	5/22/2020	MW
2.	ISSUED FOR REVIEW AND COORDINATION	3/19/2020	MW
1.	ISSUED FOR REVIEW AND COORDINATION	11/27/2019	MW

SCALE:  
 DRAWING:  
 CLIENT:

2233497 ONTARIO LIMITED

SETTLEMENT AT ST. DAVID'S  
 PHASE 1  
 PAXTON LANE  
 NIAGARA-ON-THE-LAKE, ONTARIO

**ODAN-DETECH CONSULTING ENGINEERS**  
 The Odan/Detech Group Inc. P: (905) 632-3811 F: (905) 632-3363  
 6230 SOUTH SERVICE ROAD, BURLINGTON, ONTARIO, L7L 5K2

SCALE: N.T.S. PROJ. NO: 10238 DATE: NOV. 2019 DESIGN BY: M.H.H.  
 DRAWN BY: M.W.  
 CHECKED BY: M.H.H.  
 APPROVED BY: P.H.  
 DRWG. NO.: 4 OF 7

FILE NUMBER: ENGINEER



**GENERAL NOTES**

- 1. DRAWINGS ARE NOT TO BE SCALED.
2. DO NOT SITE BUILDINGS WITH THIS DRAWING.
3. ALL DIMENSIONS TO BE CHECKED AND VERIFIED ON THE SITE PRIOR TO ANY CONSTRUCTION.
4. UNLESS OTHERWISE NOTED ON THE DRAWINGS, THE STANDARD TOWN, REGION/COUNTY, MTO AND OPSD AND OPSD ARE TO CONSTITUTE PART OF THIS CONTRACT AND SITE PLAN DRAWINGS.
5. REFER TO TOWN STANDARDS AND SPECIFICATIONS FOR LIST OF APPROVED MANUFACTURERS AND MATERIALS.
6. EXISTING STRUCTURES ARE NOT TO BE DISTURBED, NOR ENCRoACHMENT ON ADJACENT PROPERTIES UNLESS INSTRUCTED BY THE ENGINEER.
7. THE APPROVAL OF THIS PLAN DOES NOT EXEMPT THE OWNER'S CONTRACTOR FROM OBTAINING AND PAYING FOR, BUT NOT LIMITED TO, THE FOLLOWING PERMITS: ROAD CUTS, SEWER PERMITS, RELOCATION OF SERVICES, ENCRoACHMENT AGREEMENTS, APPROACH APPROVAL PERMITS, ETC. ALL RESTORATION AS PER TOWN STANDARDS.
8. 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 TOWN IS TO BE NOTIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
9. THIS PLAN IS TO BE READ IN CONJUNCTION WITH THE SITE PLAN, LANDSCAPE PLAN, SITE ELECTRICAL PLANS, AND ANY OTHER PLANS OR DRAWINGS WHICH DEPICT WORKS THAT ARE PROPOSED FOR THIS SITE.
10. 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 TOWN AND THE MTO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR ONTARIO.
11. THE CONTRACTOR SHALL ENDEAVOR TO PREVENT MUD TRACKING ONTO EXISTING RIGHT-OF-WAYS AND SHALL PROVIDE FOR CLEANUP AT HIS OWN EXPENSE AS DIRECTED BY THE TOWN. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE TO CONTROL DUST ON THE PROJECT AND HE SHALL PROVIDE AT HIS OWN EXPENSE AS DIRECTED BY THE TOWN.
12. 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.
13. THE CONTRACTOR SHALL RECTIFY ALL DISTURBED AREAS TO ORIGINAL CONDITION OR BETTER AND TO THE SATISFACTION OF THE TOWN.
14. BLASTING WILL NOT BE ALLOWED UNLESS AUTHORIZED BY THE TOWN.
15. ANY UTILITY RELOCATIONS DUE TO THIS DEVELOPMENT TO BE UNDERTAKEN AT THE EXPENSE OF THE OWNER/DEVELOPER.
16. ALL DRAWINGS AND SPECIFICATIONS ARE INSTRUMENTS OF SERVICE AND THE PROPERTY OF THE ENGINEER WHICH MUST BE RETURNED AT THE COMPLETION OF WORK.
17. DRIVEWAYS SHALL BE SETBACK A MINIMUM CLEARANCE OF 1.0m FROM ALL ABOVEGROUND SERVICES OR OTHER OBSTRUCTIONS.
18. 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.
19. CONSTRUCTION ACCESS SHALL BE CONSTRUCTED WITH A MIN. OF 450mm THICK CRUSHED STONE BASE FROM MUNICIPAL CURB OR EDGE OF PAVEMENT TO THE PROPERTY LINE TO THE SATISFACTION OF THE TOWN. LOCATION SHALL BE AS PER THE TOWN, REFER TO MUD MAT DETAIL ON DRAWING 6 OF 6.
20. MINIMUM CLEARANCE OF 1.0m FROM ALL ABOVE GROUND SERVICES AND UTILITIES.
21. OUTSIDE LIGHTING TO BE DIRECTED DOWNWARD AS WELL AS INWARD AND DESIGNED TO MAINTAIN ZERO CUTOFF LIGHT DISTRIBUTION AT THE PROPERTY LINE.
22. ALL WORKS WITHIN TOWN RIGHT-OF-WAY TO BE PERFORMED BY TOWN FORCES OR AN APPROVED CONTRACTOR AS PER TOWN ACCEPTANCE, UNLESS OTHERWISE DIRECTED BY THIS ENGINEER.
23. ALL EXISTING SERVICES ARE TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION INCLUDING SEWER INVERTS, MATERIAL TYPE, AND SIZE. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER.
24. ALL RELOCATION, RECONSTRUCTION AND RESTORATION TO BE PERFORMED TO THE SATISFACTION OF THE DIRECTOR OF ENGINEERING.

**SERVICING NOTES**

**STORM SEWERS**

- 1. STORM SEWERS LARGER THAN 375mm Ø ARE TO BE CONCRETE, RUBBER GASKET, CONFORMING TO CSA A257.2, CLASS 650, OR LATEST AMENDMENT. STORM SEWERS 375mm Ø AND SMALLER ARE TO BE PVC SDR 95, CSA-B182.2, ASTM D-2779 & ASTM D-3034 OR LATEST REVISIONS, RUBBER GASKET, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
2. ROOF TOP STORM SDR 150mm Ø AND SMALLER TO BE PVC SDR 28.
3. ALL 300mm CONCRETE PIPE AND LARGER TO BE STEEL REINFORCED CONCRETE PIPE CLASS 3 (EXTRA STRENGTH) AS PER ASTM C76 - 20 AND CSA 257.2, WHERE REQUIRED.
4. ALL CATCH BASIN LEADS TO BE A MINIMUM OF 250mm PVC SDR 35 IN ACCORDANCE WITH CSA-B182.2, ASTM D-2779, ASTM D-3034 OR LATEST REVISIONS, RUBBER GASKET, UNLESS OTHERWISE NOTED. ALL CATCH BASIN LEADS TO BE AT MINIMUM 0.5% SLOPE.
5. BEDDING AND COVER FOR PVC SEWERS (FLEXIBLE PIPE) AS PER OPSD 802.010, GRANULAR "A" COMPACTED TO 100% SPD.
6. BEDDING AND COVER FOR CONCRETE SEWERS (RIGID PIPE) AS PER OPSD 802.030, CLASS B, GRANULAR "A", COMPACTED TO 100% SPD, UNLESS OTHERWISE SPECIFIED.
7. ALL STORM SERVICES TO BUILDINGS SHALL BE AT A MINIMUM SLOPE OF 1.0%, WHITE IN COLOUR AND 100mm Ø.
8. THE CONTRACTOR IS TO CAP ALL STORM SERVICES 1.5 METRES AWAY FROM THE PROPOSED BUILDING LINES UNLESS OTHERWISE NOTED.
9. CULVERT THICKNESS SHALL BE 1.0mm MINIMUM WITH MINIMUM LENGTH OF 6 METERS AND LENGTHS GREATER THAN 40 METERS WILL REQUIRE CATCH BASIN ACCESS POINTS.
10. STORM MANHOLES SHALL BE AS PER OPSD-701.010 (1200mmØ) AND OPSD-701.011 (1500mmØ), AS SPECIFIED. BENCHING TO SPRINGLINE OF PIPE AS PER OPSD-701.021. FRAME & COVER AS PER OPSD-401.011 TYPE A.
11. ALL CATCH BASIN MANHOLES AS PER OPSD 701.010. FRAME AND GRATE AS PER OPSD 400.02.
12. ALL MANHOLE AND CATCH BASIN ADJUSTMENTS SHALL BE AS PER OPSD-704.010. MAXIMUM OF THREE (3) UNITS AND 300mm HIGH, WHERE EXCEED CAST-IN-PLACE OR PRE-CAST RISER SECTIONS SHALL BE PROVIDED.
13. DROP STRUCTURES REQUIRED WHERE DIFFERENCE IN ELEVATION BETWEEN MANHOLE INLET AND OUTLET EXCEEDS 0.5m. ALL MANHOLE DROP STRUCTURES SHALL BE EXTERNAL TYPE AS PER OPSD-1003.01 (TEE) AND 1003.02 (WYE) AS SPECIFIED.
14. ALL SAFETY GRATES AS PER OPSD 404.020 FOR MANHOLES > 4.0m DEPTH.
15. EXISTING STORM MANHOLE(S) TO BE RE-BENCHED AS REQUIRED, AS PER OPSD-701.021.
16. ALL CATCH BASINS SHALL BE INSTALLED IN ACCORDANCE WITH OPSD 705.010. INCLUDE GOSS TRAP IF REQUIRED BY TOWN. ALL CATCH BASIN FRAMES AND COVERS AS PER OPSD 400.02. CATCH BASIN FRAMES IN GRASSSED AREAS ARE TO BE BEEHIVE FRAMES. ALL CATCH BASINS ON PRIVATE PROPERTY ARE TO BE SURPLUSS.
17. ALL DOUBLE CATCH BASINS SHALL BE INSTALLED IN ACCORDANCE WITH OPSD-705.020. INCLUDE GOSS TRAP IF REQUIRED BY TOWN. ALL CATCH BASIN FRAMES AND COVERS AS PER OPSD 400.02.
18. ALL DITCH INLET CATCH BASINS SHALL BE AS PER OPSD-705.030, WITH RIP-RAP TREATMENT AS PER OPSD-810.02, TYPE "B" WITH GEOTEXTILE (MIRAFI P-140N).
19. ALL CATCH BASIN CONNECTIONS SHALL BE AS PER OPSD-708.01 (RIGID PIPE) AND OPSD-708.03 (FLEXIBLE PIPE).
20. ALL CATCH BASINS CONSTRUCTED IN FILL AREAS TO BE SUPPORTED IN 14MPa. CONCRETE.
21. AT ALL CATCH BASIN & CATCH BASIN MANHOLE SAG POINTS INCLUDE FOUR (4) 4.0m LONG, 100mmØ PVC SUBDRAINS WITH FILTER CLOTH, CAP ONE END AND CONNECT THE OTHER TO THE CATCH BASIN OR CATCH BASIN MANHOLE.
22. ALL SEWER SERVICE CONNECTIONS FOR RIGID PIPE SHALL BE AS PER OPSD-1006.01.
23. ALL SEWER SERVICE CONNECTIONS FOR FLEXIBLE PIPE SHALL BE AS PER OPSD-1006.02.
24. ALL CONCRETE OUTLETS AS PER OPSD 605.04 WITH ASPHALT SPILLWAY AND RIP-RAP.
25. ALL RIP-RAP TREATMENT FOR SEWER AND CULVERT OUTLETS SHALL BE AS PER OPSD-810.01, TYPE "B" WITH GEOTEXTILE (MIRAFI P-140N).
26. ALL PAVEMENT REINSTATEMENT AND ROAD CUT REPAIRS TO BE IN ACCORDANCE WITH TOWN STANDARDS.
27. ALL TESTING OF STORM SERVICES TO BE IN ACCORDANCE WITH ONTARIO PROVINCIAL STANDARD SPECIFICATIONS.
28. CONTRACTOR SHALL PROVIDE COLOUR VIDEO OF STORM SEWER UPON COMPLETION TO THE ENGINEER.
29. ALL STORM MANHOLES AND CATCH BASINS ARE TO BE INSPECTED DURING REGULAR BASIS (AT LEAST ONCE A YEAR) AND CLEANED FREE OF DEBRIS AS FOUND NECESSARY.

**WATER**

- 1. WATERMAIN PIPE TO BE PVC-SDR 18 CL 150 CONFORMING TO CSA B137.3, INCLUDING No. 8 TRACER WIRE BETWEEN HYDRANTS OR OTHER CONDUCTING APPURTENANCES. PIPE SHALL HAVE A MINIMUM COVER OF 1.7m. ALL WATER MAIN 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 (HYPROTECT OR EQUAL).
2. ALL DOMESTIC WATER SERVICES SHALL BE 19mm TYPE "K" SOFT COPPER AND INSTALLED AS PER OPSD-1104.01 (19mmØ25mm) AND OPSD-1104.02 (32mm, 38mm AND 50mm). SIZE AS PER PLAN AND TOWN STANDARD.
3. BEDDING AND COVER AS PER OPSD 802.010, TYPE 1 & 2, GRANULAR "A" COMPACTED TO 100% SPD.
4. ALL WATER MAIN FITTINGS AND APPURTENANCES TO BE SELECTED FROM TOWN APPROVED MATERIAL LIST FOR WATER.
5. WATER MAINS SHALL HAVE A MINIMUM VERTICAL SEPARATION OF 0.50m BELOW AND 0.50m ABOVE AND A HORIZONTAL SEPARATION OF 1.20m BETWEEN ANY SEWER OR MANHOLE.
6. EXISTING WATER MAIN SHALL BE DEFLECTED BELOW PROPOSED GRADES TO MEET 1.7m COVER AS PER TOWN STANDARDS AND SPECIFICATIONS. REPLACE WATER MAIN IF NECESSARY.
7. CONTRACTOR TO CONFIRM THE SIZE AND MATERIAL TYPE OF EXISTING WATER SERVICE AND WATER MAIN PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER.
8. EXISTING WATER MAIN OVERTS TO BE CONFIRMED ON SITE AT THE TIME OF CONSTRUCTION.
9. WATER MAIN AND SERVICES SHALL BE CAPPED 2.0m FROM BUILDING, UNLESS OTHERWISE NOTED.
10. ALL TAPPING SLEEVES TO BE STAINLESS STEEL, SIMILAR TO MUELLER TYPE, COMPLETE WITH VALVE.
11. ALL VALVE AND BOX ASSEMBLIES SHALL BE INSTALLED AS PER OPSD-1101.02.
12. ALL HYDRANTS SHALL BE INSTALLED AS PER OPSD 1105.01, WITH CATHODIC PROTECTION AS PER TOWN STANDARDS. ALL HYDRANTS SHALL CONFORM TO AWWA SPECIFICATIONS C502-64. THE DIRECTION SHALL BE COUNTER CLOCKWISE AND THEY SHALL HAVE 2 63.5mm NOZZLES AND 1100mm STORTZ CONNECTION.
13. ALL THRUST BLOCKINGS SHALL BE AS PER OPSD-1103.01 (HORIZONTAL) AND OPSD-1103.02 (VERTICAL).
14. FROST COLLARS ARE TO BE PROVIDED ON CURB STOPS AND VALVE BOXES WHEN LOCATED WITHIN THE LIMITS OF THE DRIVEWAY.
15. ALL WATER CHAMBERS SHALL BE AS PER OPSD-1101.010.
16. ALL WATER MAIN BLOW-OFF ASSEMBLIES SHALL BE AS PER OPSD-1104.03, 25mmØ.
17. ALL PAVEMENT REINSTATEMENT SHALL BE AS PER OPSD-509.010, FOR UTILITY CUTS, BACKFILL AS PER TOWN STD.
18. FLUSHING, SWABBING, AND TESTING OF WATER MAIN AS PER ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS.

**SANITARY**

- 1. ALL SANITARY SERVICES 200mmØ AND GREATER ARE TO BE PVC-SDR 35 GREEN IN COLOUR IN ACCORDANCE WITH CSA-B182.2, ASTM D-2779 AND ASTM D-3034 OR LATEST REVISIONS, RUBBER GASKET.
2. ALL SANITARY SERVICES 150mmØ AND LESS ARE TO BE PVC-SDR 26 GREEN IN COLOUR IN ACCORDANCE WITH CSA-B182.2, ASTM D-2779 AND ASTM D-3034 OR LATEST REVISIONS, RUBBER GASKET.
3. BEDDING AND COVER FOR PVC SANITARY SERVICES AS PER OPSD 802.010, GRANULAR "A" COMPACTED TO 100% SPD.
4. THE CONTRACTOR IS TO CAP ALL SANITARY SERVICES 2.0 METRES AWAY FROM THE PROPOSED BUILDING LINES UNLESS OTHERWISE NOTED.
5. ALL SANITARY SERVICES TO SINGLE FAMILY, SEMI-DETACHED AND TOWNHOUSES SHALL BE 135mmØ, GREEN IN COLOUR AND AT A MINIMUM SLOPE OF 1.0%.
6. SANITARY MANHOLES SHALL BE AS PER OPSD-701.010 (1200mmØ), BENCHING TO SPRINGLINE OF PIPE AS PER OPSD-701.021. FRAME & COVER AS PER OPSD-401.011 (TYPE A CLOSED COVER)
7. ALL SAFETY GRATES AS PER OPSD 404.020 FOR MANHOLES > 4.0m DEPTH.
8. DROP STRUCTURES REQUIRED WHERE DIFFERENCE IN ELEVATION BETWEEN MANHOLE INLET AND OUTLET EXCEEDS 0.5m. ALL MANHOLE DROP STRUCTURES SHALL BE EXTERNAL TYPE AS PER OPSD-1003.01 (TEE) AND 1003.02 (WYE) AS SPECIFIED.
9. ALL MANHOLE ADJUSTMENTS SHALL BE AS PER OPSD-704.010. MAXIMUM OF THREE (3) UNITS AND 300mm HIGH, WHERE EXCEED CAST-IN-PLACE OR PRE-CAST RISER SECTIONS SHALL BE PROVIDED.
10. PROVIDE WATER TIGHT COVERS FOR SANITARY MANHOLES LOCATED IN PONDING AREAS.
11. ALL SEWER SERVICE CONNECTIONS FOR FLEXIBLE PIPE SHALL BE AS PER OPSD-1006.02.
12. ALL PAVEMENT REINSTATEMENT SHALL BE AS PER OPSD-509.010, FOR UTILITY CUTS, BACKFILL AS PER TOWN STD.
13. ALL TESTING OF SANITARY SERVICES TO BE IN ACCORDANCE WITH ONTARIO PROVINCIAL STANDARD SPECIFICATIONS.
14. CONTRACTOR SHALL PROVIDE COLOUR VIDEO OF SANITARY SEWER UPON COMPLETION TO THE ENGINEER.
15. CONTRACTOR SHALL PROVIDE INSULATION FOR SANITARY SEWERS WITH LESS THAN 1.7m OF COVER.

**LOT GRADING NOTES**

**GENERAL DRAINAGE AND GRADING NOTES**

- 1. ALL SURFACE DRAINAGE, INCLUDING DOWNSPOUT DISCHARGE, SHALL BE DIRECTED AWAY FROM THE BUILDINGS, INCLUDING ADJACENT EXISTING OR FUTURE BUILDINGS.
2. UNLESS OTHERWISE STIPULATED, THE LOT SHALL HAVE A MINIMUM SLOPE OF 2% AND A MAXIMUM SLOPE OF 6%. AVERAGE SLOPES BETWEEN 6% AND 10% CAN BE ACHIEVED BY COMBINING A 6% MAXIMUM SLOPE WITH A 3 TO 1 SLOPE AT THE REAR OF THE LOT/BLOCK.
3. SHOULD THE AVERAGE SLOPE EXCEED 10%, THE TOWN'S PUBLIC WORKS DEPARTMENT MAY REQUIRE A RETAINING STRUCTURE TO REDUCE THE GRADE DIFFERENTIAL TO AN ACCEPTABLE AMOUNT. NOTWITHSTANDING THE ABOVE, ELEVATION CHANGES EXCEEDING ONE METRE IN HEIGHT SHALL REQUIRE A RETAINING STRUCTURE.
4. THE MAXIMUM SLOPE BETWEEN THE DWELLING UNIT AND THE SIDE PROPERTY LINE SHALL BE 3 TO 1. OTHERWISE, APPROPRIATE STEPS OR RETAINING STRUCTURES SHALL BE REQUIRED.
5. DIFFERENCE BETWEEN TOP OF FOUNDATION ELEVATION AND THE APRON ELEVATION SHOULD BE BETWEEN 0.24m AND 0.30m.
6. TERRACES BETWEEN LOTS SHALL BE LOCATED ON THE LOWER LOT WITH THE TOP OF THE TERRACE SLOPE AT THE LOT LINE.
7. DRAINAGE FLOWS SHALL BE CONFINED TO DEFINED SWALES WHICH SHALL BE LOCATED AS FAR FROM THE DWELLING UNITS AS POSSIBLE.
8. SWALES SHALL HAVE A MINIMUM GRADE OF 1% AND A MAXIMUM GRADE OF 6%.
9. THE SWALE DEPTH SHALL NOT EXCEED 500mm.
10. THE SIDE SLOPE OF SWALES SHALL NOT BE STEEPER THAN 3 TO 1.
11. THE ALIGNMENT OF SWALES SHALL NOT CHANGE MORE THAN 45 DEGREES UNLESS OTHERWISE APPROVED.
12. REAR YARD SWALES SHALL BE LOCATED:
a) CENTRED ON THE REAR LOT LINE IF ADJOINING LOTS ARE WITHIN THE SAME SUBDIVISION;
b) ENTIRELY ON THE SUBJECT LOT IF THE ADJOINING LAND IS OUTSIDE THE SUBDIVISION.
13. THE MAXIMUM LENGTH OF A REAR YARD SWALE FROM THE HIGH POINT TO THE OUTLET (REAR YARD CATCHBASIN OR OTHER SUITABLE OUTLET) SHALL BE 60 METRES UNLESS OTHERWISE APPROVED. THIS MAXIMUM LENGTH OF SWALE MAY BE VARIED AT THE DISCRETION OF THE TOWN DEPENDING ON THE LOT SIZE, TOPOGRAPHY, AND DRAINAGE AREA.
14. THE MAXIMUM FLOW ALLOWED IN A SIDE YARD SWALE SHALL BE THAT FROM TWO BACKYARDS, IF BACKYARDS ARE OF AN UNUSUALLY LARGE SIZE, THE TOWN MAY REQUIRE THAT DRAINAGE BE DIRECTED BY REAR YARD SWALES.
15. GENERALLY SPEAKING, ALL SEMI-DETACHED AND MINIMUM SIZED LOTS SHALL HAVE REAR LOT DRAINAGE SCHEMES. SIDE YARD SWALES SHALL ONLY BE PERMITTED WITH APPROVAL OF THE TOWN, IF THE CONSTRUCTION OF SUCH SWALES CAN BE ACCOMMODATED.
16. THE MINIMUM GRADE ON DRIVEWAYS SHALL BE 2%. THE DESIRABLE MAXIMUM GRADE ON DRIVEWAYS SHALL BE 8% WITH AN ABSOLUTE MAXIMUM GRADE OF 10%.
17. DEPRESSED DRIVEWAYS SLOPING TOWARD THE DWELLING UNITS ARE NOT ALLOWED.
18. SIDE AND BACK ENTRANCES AND STAIRWELLS SHALL NOT BE LOCATED ADJACENT TO MAIN SWALES OR DOWNSPOUTS.
19. WINDOW WELLS SHOULD PREFERABLY BE AVOIDED BUT, WHERE THEY ARE REQUIRED, SPECIAL CARE SHALL BE TAKEN TO ENSURE THAT SURFACE WATER FROM OVERLAND FLOW AND OTHER SOURCES SUCH AS DOWNSPOUTS SHALL NOT ENTER THESE WELLS. THE EDGE OF THE WINDOW-WELL SHALL BE HIGHER THAN THE ADJACENT GROUND.
20. THE BRICK-LINE MUST BE AT LEAST 150mm ABOVE THE FINISHED GRADE.
21. DOWNSPOUTS MUST DISCHARGE VIA SPLASH PADS (CONCRETE OR OTHER SUITABLE MATERIAL) TO GRASS SURFACES. THESE SPLASH PADS SHALL EXTEND A DISTANCE AT LEAST 1 METRE AWAY FROM THE BUILDING.
22. DOWNSPOUTS MUST DIRECT THE FLOW AWAY FROM THE BUILDING, NOT ONTO WALKS OR DRIVEWAYS AND NOT ONTO ADJACENT PROPERTY.
23. ALL LOT GRADING MUST CONFORM TO "SPLIT" DRAINAGE DESIGN UNLESS OTHERWISE APPROVED BY THE TOWN.

**CURBING/SIDEWALKS/ASPHALT**

- 1. ALL PROPOSED EXTERNAL CURBING, INCLUDING CURB AND GUTTER ON TRAVELED ROADWAY, TO BE CONCRETE MOUNTABLE CURB AND GUTTER AS PER OPSD 600.100, EXCEPT OTHERWISE NOTED.
2. ALL REQUIRED CURB CUTTING AT ENTRANCE AND CURB DEPRESSIONS AT SIDEWALK CROSSINGS SHALL BE INSTALLED TO THE SATISFACTION OF THE TOWN AND IN ACCORDANCE WITH TOWN STANDARDS & SPECIFICATIONS.
3. CURB CUTS WITHIN THE PUBLIC R.O.W. TO BE PERFORMED TO THE SATISFACTION OF THE TOWN.
4. ALL PROPOSED ROAD CUTS TO BE PERFORMED AND RESTORED TO THE SATISFACTION OF THE TOWN, AND IN ACCORDANCE WITH TOWN STANDARDS & SPECIFICATIONS.
5. CONCRETE SIDEWALK WITHIN PUBLIC R.O.W. AS PER OPSD-310.010 AND OPSD-310.020 (ADJACENT TO CURB). ALL SIDEWALKS SHALL BE 300mm WITH 7% AIR. ALL CONCRETE SIDEWALKS TO BE MINIMUM 150mm THICK AT RESIDENTIAL DRIVEWAYS AND 200mm THICK THROUGH COMMERCIAL/INDUSTRIAL ENTRANCES HAVE 150mm GRANULAR 'A' BASE, COMPACTED TO 100% SPD.
6. ALL CONCRETE CURB FROM EXISTING ROAD CURB TO STREET LINE SHALL BE AS PER TOWN STD. ALL CONCRETE CURB HEIGHTS SHALL BE 150mm UNLESS OTHERWISE NOTED. DRIVEWAY CURB TO BE DISCONTINUOUS AT SIDEWALK AND TAPERED BACK 450mm MINIMUM WHERE SIDEWALK CONTINUES THROUGH THE ENTRANCE AS PER OPSD-350.01.
7. APPROPRIATE CONSTRUCTION DETAILS SHOULD BE PROVIDED FOR RETAINING WALLS HIGHER THAN 1.0m. DETAILS SHALL BE DESIGNED AND SEALED BY A PROFESSIONAL ENGINEER UPON APPROVAL. HANDRAIL IS REQUIRED WHEN HEIGHT EXCEEDS 0.60m AND SHALL BE AS PER OPSD-980.101.
8. ALL RESIDENTIAL ROADS WITHIN THE SITE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:
40mm COMPACTED DEPTH OF HL3 ASPHALT - TOP COURSE
50mm COMPACTED DEPTH OF HL8 ASPHALT - BINDER COURSE
450mm COMPACTED (100% SPD) GRANULAR "A" TYPE 1
9. ALL PRIVATE DRIVEWAYS WITHIN THE SITE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:
50mm COMPACTED DEPTH OF HL-3A DRIVEWAY MIX ASPHALT
150mm COMPACTED (100% SPD) 19mmØ CRUSHER RUN STONE
10. ALL DRIVEWAYS WITHIN THE SITE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:
75mm COMPACTED DEPTH OF HL-3F DRIVEWAY MIX ASPHALT
300mm COMPACTED (100% SPD) 19mmØ CRUSHER RUN STONE
11. ALL CONCRETE TOE WALLS SHALL BE AS PER OPSD-3120.100 TYPE I TOE WALL, 30MPa, 7% AIR.
12. ALL DEAD END BARRICADES SHALL BE AS PER OPSD-912.532.
13. ALL TEMPORARY STEEL BEAM GUIDE RAILS SHALL BE AS PER OPSD-912.532.
14. ALL SECTIONAL PRE-CAST CONCRETE CURBING AS PER OPSD-603.02.

**UTILITY / SERVICE ISOLATION**

- 1. ALL SERVICES AND/OR UTILITIES LOCATED ON CONCRETE SIDEWALKS OR CURBS TO BE ISOLATED FROM THE SIDEWALK OR CURB AS PER OPSD-310.040.

**UTILITY SUPPORTS AND TRENCHES**

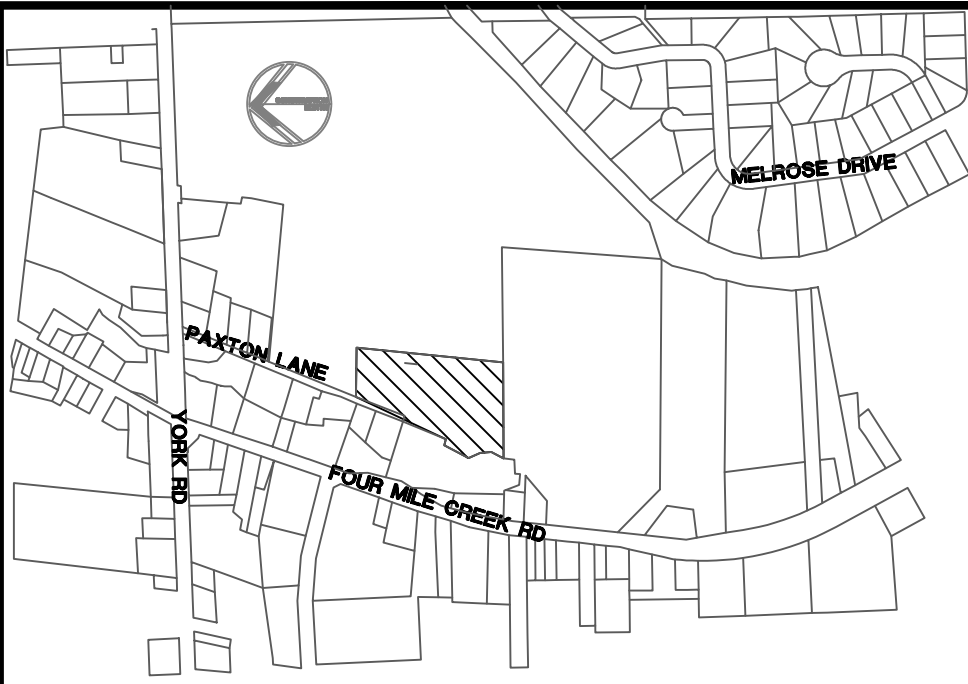
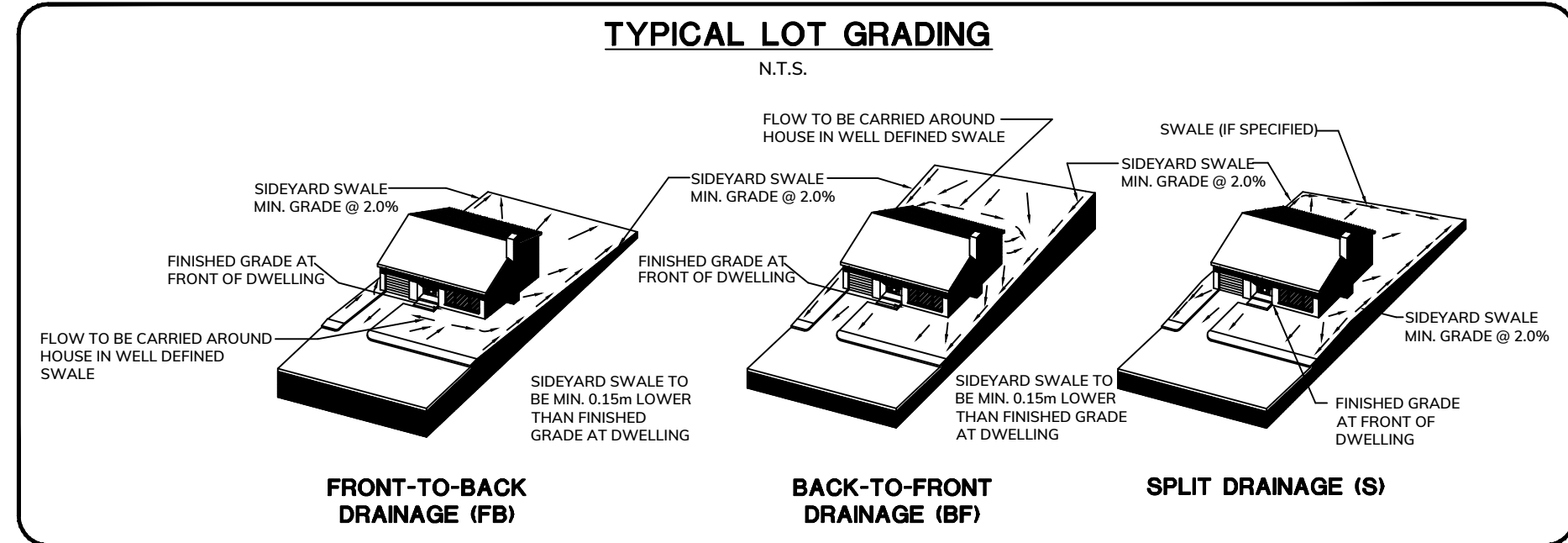
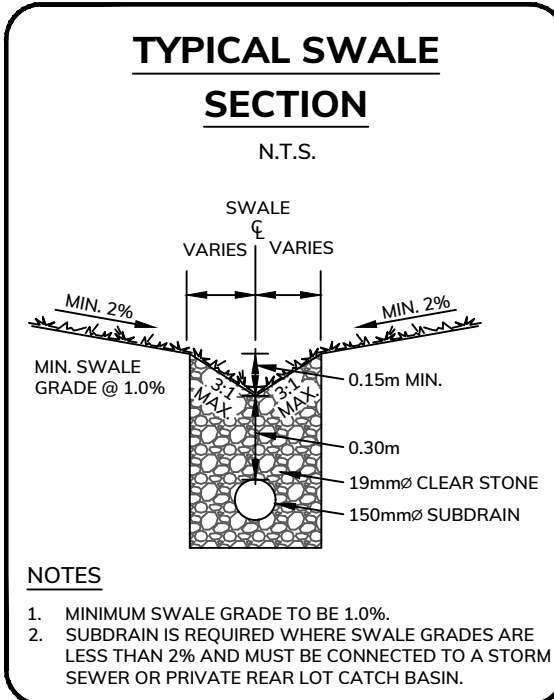
- 1. ALL SERVICES, UTILITIES AND CATCH BASIN LEADS SHALL BE SUPPORTED AS PER OPSD-1007.01 AND OPSD-1007.02.
2. ALL UTILITIES SHALL BE LOCATED, SUPPORTED AND PROTECTED TO THE SATISFACTION OF THE UTILITY COMPANY DURING THE CONSTRUCTION PERIOD.

**RESTORATION OF DRIVEWAYS & ROADS**

- 1. ANY CUTS INTO DRIVEWAYS, ROADS, ETC. (ANY PAVED AREA/CONCRETE OR ASPHALT), SHOULD BE RESTORED TO TOWN STANDARDS OR IN LIEU OF TOWN STANDARDS REFER TO RESTORATION DETAIL.

**GRADING**

- 1. THE GRADING PLAN IS TO BE READ WITH THE SITE SERVICES DRAWING AND THE SITE PLAN. FOR BUILDING DETAILS REFER TO THE LATEST REVISION OF THE SITE PLAN AS PER THE ARCHITECT.
2. CONTRACTOR TO RESTORE ALL DISTURBED AREAS (I.E. PUBLIC R.O.W., ADJACENT LANDS) WHICH HAVE BEEN DISTURBED DURING CONSTRUCTION TO PREVIOUS OR BETTER CONDITION.
3. ALL DRIVEWAY AND GRADING MATERIAL AND CONSTRUCTION METHODS MUST CONFORM TO CURRENT TOWN STANDARDS AND SPECIFICATIONS.
4. ALL FILL WITHIN THE SITE TO BE COMPACTED TO A MIN. OF 100% STD. PROCTOR DENSITY. THE SUITABILITY OF ALL FILL MATERIALS ARE TO BE CONFIRMED BY A RECOGNIZED SOILS CONSULTANT TO THE DIRECTOR OF ENGINEERING PRIOR TO INSTALLATION OF ANY ROAD BASE MATERIALS.
5. LANDSCAPE SHALL NOT ENCRoACH ON BOULEVARD NOR SHALL BOULEVARD GRADES BE ALTERED.
6. SILT FENCES TO BE INSTALLED AND MAINTAINED TO PREVENT SILT FLOWING ONTO ADJACENT LANDS. SILTATION CONTROL METHODS SUCH AS ENVIROFENCE OR APPROVED EQUAL SHALL BE ERCTED PRIOR TO ANY GRADING OR CONSTRUCTION AND SHALL BE MAINTAINED IN GOOD REPAIR THROUGHOUT THE CONSTRUCTION AND GRADING PHASES. THE LOCATION AND ERECTION OF THE SILTATION CONTROL METHODS TO BE APPROVED BY THE TOWN, REFER TO SILT CONTROL DETAIL.
7. ANY CHANGES IN GRADES OR CATCH BASINS REQUIRE THE APPROVAL OF THE ODANDETECH GROUP INC.
8. ALL SODDING OF SIDE SLOPES (DITCHES) SHALL BE AS PER OPSD-218.01.
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.
10. ALL CONNECTIONS WITH PAVED PORTIONS OF EXISTING ROADS TO BE BACKFILLED WITH GRANULAR 'A' MATERIAL OR LATEST TOWN SPECIFICATIONS AND COMPACTED TO 100% SPD.
11. CONSTRUCTION ACCESS SHALL BE CONSTRUCTED WITH A MIN. OF 450mm THICK CRUSHED STONE BASE FROM MUNICIPAL CURB OR EDGE OF PAVEMENT TO THE PROPERTY LINE TO THE SATISFACTION OF THE TOWN, REFER TO MUD MAT DETAIL ON SHEET 6 OF 6.
12. PAVEMENT GRADE (MIN. 0.5%, MAX. 8%).
13. DRAINAGE SWALES GRADES ARE TO BE A MIN SLOPE OF 1% AND MAX. 6%. SLOPE LESS THAN 2% ARE TO HAVE SUBDRAINS INSTALLED.
14. SLOPES IN LANDSCAPE AREAS AND ON BERMS SHALL NOT EXCEED 3 HORIZONTAL TO 1 VERTICAL.
15. THE PARKING AREAS AND DRIVEWAY HAVE BEEN DESIGNED ACCORDING TO A FROST SUSCEPTIBILITY FACTOR OF 5. THIS FACTOR IS TO BE VERIFIED BY A SOILS CONSULTANT.
16. 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.



**NOTE:**

THE POSITION OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND UNDERGROUND AND ABOVE GROUND UTILITIES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED, BEFORE STARTING THE WORK THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

THE CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS ON THE JOB AND REPORT ANY DISCREPANCY TO THE ARCHITECTS/ENGINEERS BEFORE PROCEEDING WITH THE WORKS.

ALL DRAWINGS AND SPECIFICATIONS ARE INSTRUMENTS OF SERVICE AND THE PROPERTY OF THE ENGINEER WHICH MUST BE RETURNED AT THE COMPLETION OF WORK.

THIS DRAWING IS NOT TO BE SCALED. CONTRACTOR TO USE DIGITAL FILES FOR LAYOUT PROVIDED BY ENGINEER. THIS PLAN MUST NOT BE USED TO SITE THE EXPOSED BUILDINGS.

THE APPROVAL OF THIS PLAN DOES NOT EXEMPT THE OWNER'S CONTRACTOR FROM OBTAINING, BUT NOT LIMITED TO THE FOLLOWING PERMITS: ROAD CUT, SEWER PERMITS, RELOCATION OF SERVICES, ENCRoACHMENT AGREEMENTS, APPROACH APPROVAL PERMITS, ETC...

EXISTING TOPOGRAPHICAL INFORMATION SUPPLIED BY J.D. BARNES LIMITED DATED MARCH 6, 2020. BOUNDARY DATA DERIVED FROM INFORMATION SUPPLIED BY J.D. BARNES LIMITED.

**ELEVATION NOTE:**

ELEVATIONS ARE OF GEODETIC ORIGIN (CGVD - 1928-78), AND ARE DERIVED FROM GNSS OBSERVATIONS AND NATURAL RESOURCES CANADA'S GEOD MODEL HT2.0.

**BEARING NOTE:**

BEARINGS ARE UTM GRID, DERIVED FROM OBSERVED REFERENCE POINTS A AND B, BY REAL TIME NETWORK (RTN) OBSERVATIONS, UTM ZONE 17, NAD83 (ORIGINAL).

**METRIC NOTE:**

DISTANCES AND ELEVATIONS ON THIS PLAN ARE TYPICALLY SHOWN IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

NO.	ISSUED FOR SPA (AS PER CITY COMMENTS)	DATE	BY
12.	ISSUED FOR SPA (AS PER CITY COMMENTS)	1/16/2026	ZZ
11.	ADDED EXISTING SERVICES TO EXISTING HOUSE	9/25/2025	AM
10.	ISSUED FOR SPA (AS PER CITY COMMENTS)	6/27/2022	GV
9.	ISSUED FOR SPA (AS PER CITY COMMENTS)	6/20/2022	GV
8.	ISSUED FOR REVIEW AND COORDINATION	6/15/2022	GV
7.	ISSUED FOR REVIEW AND COORDINATION	6/13/2022	GV
6.	ISSUED FOR SPA	4/20/2022	GV
5.	ISSUED FOR SPA (AS PER CITY COMMENTS)	3/29/2022	GV
4.	FIRST SUBMISSION	3/8/2021	MW
3.	FIRST SUBMISSION (CANCELLED)	5/22/2020	MW
2.	ISSUED FOR REVIEW AND COORDINATION	3/19/2020	MW
1.	ISSUED FOR REVIEW AND COORDINATION	11/27/2019	MW

NO.	REVISIONS	DATE	BY
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SCALE:

DRAWING :

**NOTES & DETAILS**

CLIENT :

2233497 ONTARIO LIMITED

PROJECT :

SETTLEMENT AT ST. DAVID'S PHASE 1 PAXTON LANE NIAGARA-ON-THE-LAKE, ONTARIO



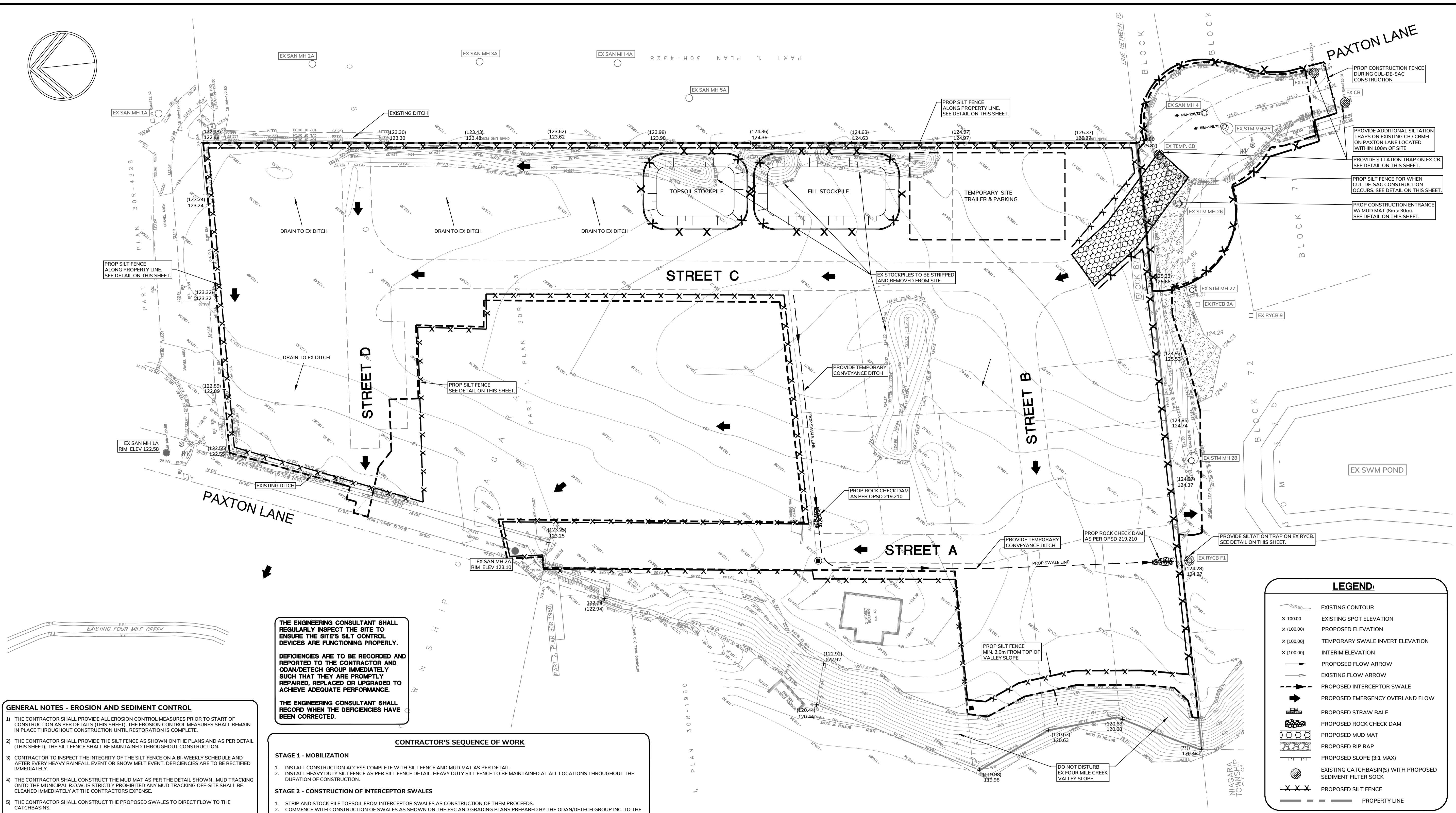
The Odan/Detech Group Inc. P. (905) 632-3811 F. (905) 632-3363 6230 SOUTH SERVICE ROAD, BURLINGTON, ONTARIO, L7L 9K2

SCALE :	PROJ. NO.:	DATE:	DESIGN BY:
	10238	NOV. 2019	M.H.H.
			DRAWN BY: Z.Z.
			CHECKED BY: M.H.H.
			APPROVED BY: P.H.
			DRWG. NO.: 6 OF 7

FILE NUMBER ENGINEER

OWNER'S NAME  
OWNER'S SIGNATURE  
LORD MAYOR  
TOWN CLERK  
DATE





**GENERAL NOTES - EROSION AND SEDIMENT CONTROL**

1. THE CONTRACTOR SHALL PROVIDE ALL EROSION CONTROL MEASURES PRIOR TO START OF CONSTRUCTION AS PER DETAILS (THIS SHEET). THE EROSION CONTROL MEASURES SHALL REMAIN IN PLACE THROUGHOUT CONSTRUCTION UNTIL RESTORATION IS COMPLETE.
2. THE CONTRACTOR SHALL PROVIDE THE SILT FENCE AS SHOWN ON THE PLANS AND AS PER DETAIL (THIS SHEET). THE SILT FENCE SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
3. CONTRACTOR TO INSPECT THE INTEGRITY OF THE SILT FENCE ON A BI-WEEKLY SCHEDULE AND AFTER EVERY HEAVY RAINFALL EVENT OR SNOW MELT EVENT. DEFICIENCIES ARE TO BE RECTIFIED IMMEDIATELY.
4. THE CONTRACTOR SHALL CONSTRUCT THE MUD MAT AS PER THE DETAIL SHOWN. MUD TRACKING ONTO THE MUNICIPAL R.O.W. IS STRICTLY PROHIBITED. ANY MUD TRACKING OFF-SITE SHALL BE CLEANED IMMEDIATELY AT THE CONTRACTORS EXPENSE.
5. THE CONTRACTOR SHALL CONSTRUCT THE PROPOSED SWALES TO DIRECT FLOW TO THE CATCHBASINS.
6. THE CONTRACTOR SHALL STRIP AND STOCKPILE ALL TOPSOIL WHERE SWALE GRADING IS REQUIRED.
7. ALL CATCH BASINS, MAINTENANCE HOLES AND PIPE ENDS ARE TO BE PROTECTED FROM SEDIMENT INTRUSION WITH GEOTEXTILE (TERRARIX 270R).
8. THE CONTRACTOR SHALL PROVIDE DUST CONTROL THROUGHOUT THE GRADING PROCESS.
9. AT ALL TIMES THE SITE OPERATIONS SHALL SEQUENCE THE WORKS TO MINIMIZE THE DURATION THAT ANY PORTION OF THE SITE REMAINS IN AN UNVEGETATED STATE.
10. THE CONTRACTOR SHALL PROTECT ALL EXPOSED SURFACES AND CONTROL ALL RUNOFF DURING CONSTRUCTION.
11. THE CONTRACTOR SHALL HYDRO SEED ALL DISTURBED AREAS, AND MAINTAIN UNTIL VEGETATION IS ESTABLISHED.
12. THE CONTRACTOR SHALL PREVENT WIND BLOWN DUST.
13. THE CONTRACTOR SHALL KEEP ALL SUMP'S CLEAN DURING CONSTRUCTION.
14. IF STOCKPILES ARE TO BE LEFT FOR MORE THAN 30 DAYS THEY MUST BE STABILIZED BY HYDROSEEDING AS PER OPSD 572. CONTRACTOR TO CONFER WITH ODAN/DETECH IF STABILIZATION IS REQUIRED UPON COMPLETION OF STOCKPILING.
15. REMOVAL OF ANY EROSION AND SEDIMENT CONTROL MEASURES WILL REQUIRE THE APPROVAL OF ODAN/DETECH. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED AND DECOMMISSIONED UPON COMPLETION OF CONSTRUCTION.
16. ALL OF THE ABOVE NOTES AND ANY SEDIMENT & EROSION CONTROL MEASURES ARE AT THE MINIMUM TO BE IN ACCORDANCE WITH THE MINISTRY OF NATURAL RESOURCES GUIDELINES ON EROSION AND SEDIMENT CONTROL FOR URBAN CONSTRUCTION SITES.

**DUST CONTROL:**

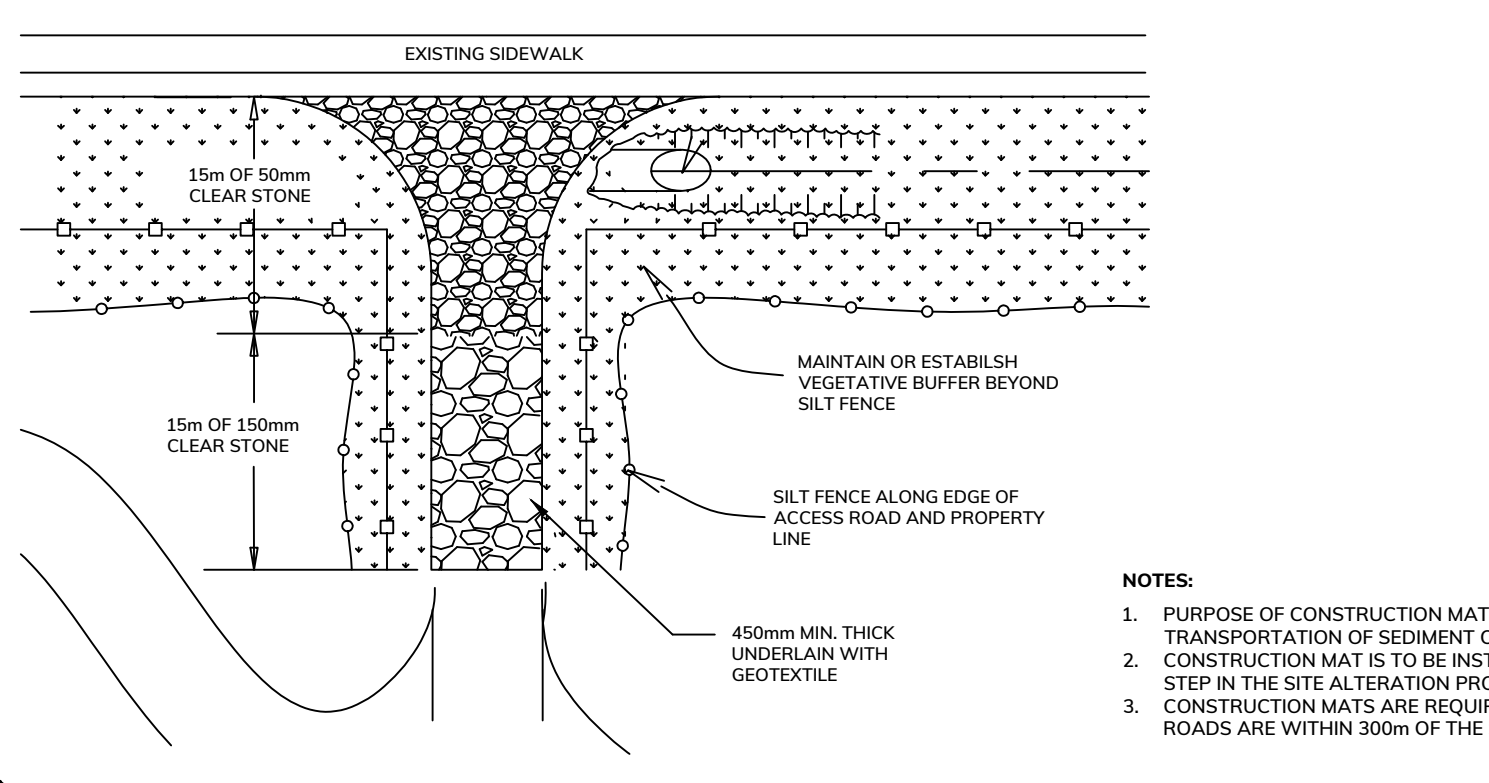
1. CONTRACTOR TO MINIMIZE DUST ON-SITE WITH USE OF WATER, OR APPROVED ALTERNATE.
2. CONTRACTOR TO CLEAN ROADWAY DAILY.
3. CONTRACTOR TO WASH ROAD WEEKLY.
4. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONTROLLING DUST NUISANCE RESULTING FROM HIS OPERATIONS, BOTH ON THE SITE AND WITHIN THE ADJACENT RIGHT-OF-WAYS DURING CONSTRUCTION.
5. WATER SHALL BE APPLIED TO AREAS ON OR ADJACENT TO THE SITE, AS REQUIRED, FOR THE PREVENTION OF DUST NUISANCE TO THE PUBLIC.
6. SHOULD DUST BE PRESENT UPON COMPLETION OF CONSTRUCTION THE AREAS SHALL BE REVIEWED WITH THE OWNER AND ENGINEER TO DETERMINE IF TEMPORARY MEASURES WILL BE REQUIRED.

THE ENGINEERING CONSULTANT SHALL REGULARLY INSPECT THE SITE TO ENSURE THE SITE'S SILT CONTROL DEVICES ARE FUNCTIONING PROPERLY. DEFICIENCIES ARE TO BE RECORDED AND REPORTED TO THE CONTRACTOR AND ODAN/DETECH GROUP IMMEDIATELY SUCH THAT THEY ARE PROMPTLY REPAIRED, REPLACED OR UPGRADED TO ACHIEVE ADEQUATE PERFORMANCE. THE ENGINEERING CONSULTANT SHALL RECORD WHEN THE DEFICIENCIES HAVE BEEN CORRECTED.

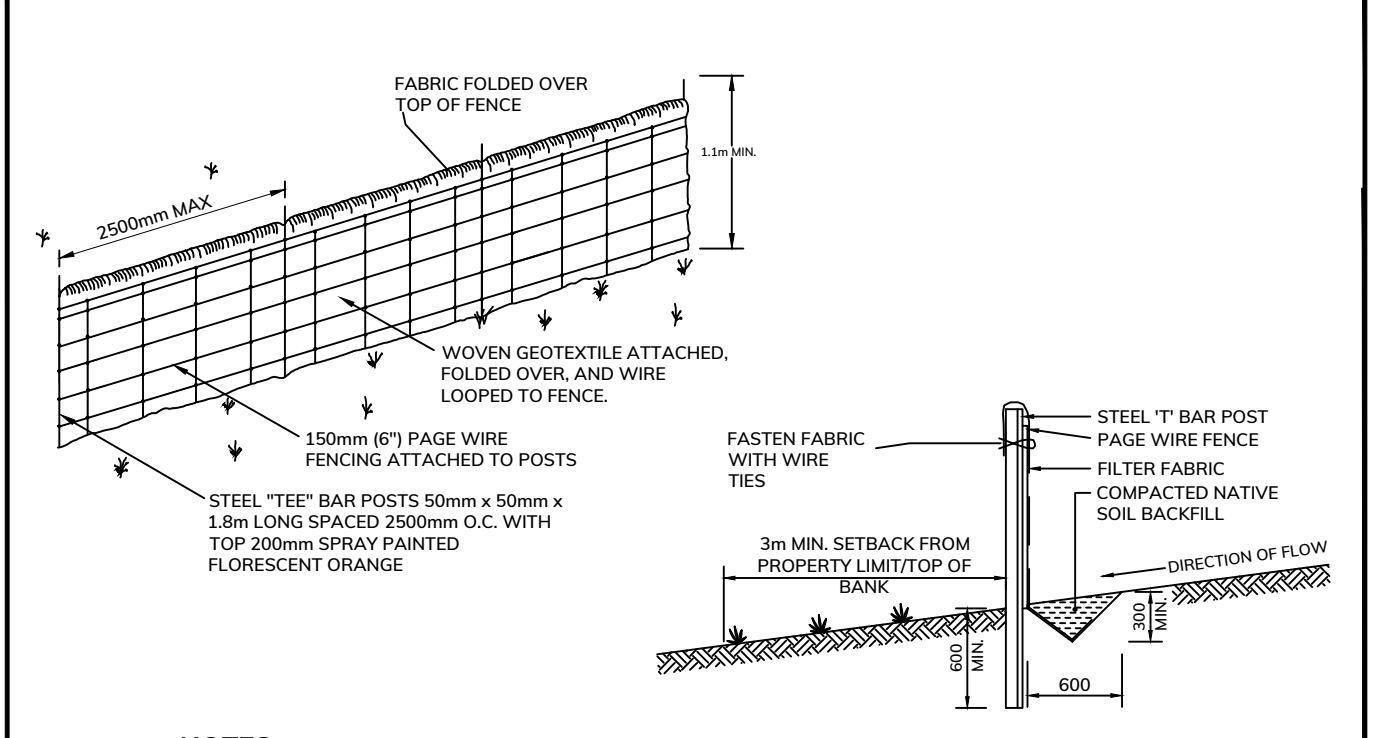
**CONTRACTOR'S SEQUENCE OF WORK**

- STAGE 1 - MOBILIZATION**
1. INSTALL CONSTRUCTION ACCESS COMPLETE WITH SILT FENCE AND MUD MAT AS PER DETAIL.
  2. INSTALL HEAVY DUTY SILT FENCE AS PER SILT FENCE DETAIL. HEAVY DUTY SILT FENCE TO BE MAINTAINED AT ALL LOCATIONS THROUGHOUT THE DURATION OF CONSTRUCTION.
- STAGE 2 - CONSTRUCTION OF INTERCEPTOR SWALES**
1. STRIP AND STOCK PILE TOPSOIL FROM INTERCEPTOR SWALES AS CONSTRUCTION OF THEM PROCEEDS.
  2. COMMENCE WITH CONSTRUCTION OF SWALES AS SHOWN ON THE ESC AND GRADING PLANS PREPARED BY THE ODAN/DETECH GROUP INC. TO THE SATISFACTION OF THE TOWN OF NIAGARA-ON-THE-LAKE AND THE ODAN/DETECH GROUP INC.
  3. ROCK CHECK DAMS TO BE PLACED APPROXIMATELY EVERY 30m.
  4. STOCKPILE EXCAVATED MATERIAL IN DESIGNATED AREAS AND/OR AS DIRECTED BY THE OWNER.
- STAGE 3 - STRIP TOPSOIL/GRADING OPERATIONS**
1. COMMENCE WITH TOPSOIL STRIPPING. REMOVE TOPSOIL TO DESIGNATED STOCKPILE LOCATION.
  2. COMMENCE WITH CUT, FILL AND GRADING OPERATIONS.
  3. TO REDUCE INCREASED RUNOFF AND SEDIMENT THE CONTRACTOR MUST MAKE AN EFFORT TO MINIMIZE DISTURBANCE TO THE EXISTING VEGETATED AREAS AND AVOIDING THE EXISTING WETLANDS COMPLETELY. IF HAUL ROUTES ARE REQUIRED BY THE CONTRACTOR PLANS ARE TO BE SUBMITTED TO THE TOWN OF NIAGARA-ON-THE-LAKE PRIOR TO BEGINNING IMPORT/EXPORT OF FILL.

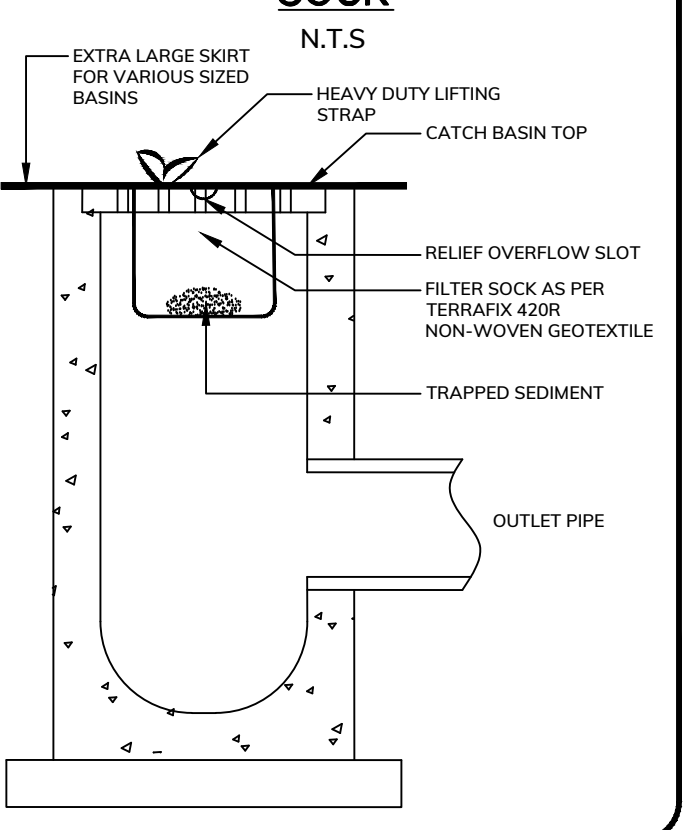
**TYPICAL DETAIL OF MUD MAT**  
N.T.S.



**TYPICAL DETAIL OF SILT/SEDIMENT FENCE**



**SEDIMENT CONTROL AT CATCH BASIN WITH FILTER SOCK**  
N.T.S.



**LEGEND:**

- 195.50 — EXISTING CONTOUR
- x 100.00 EXISTING SPOT ELEVATION
- x 100.00 PROPOSED ELEVATION
- x 100.00 TEMPORARY SWALE INVERT ELEVATION
- x 100.00 INTERIM ELEVATION
- PROPOSED FLOW ARROW
- EXISTING FLOW ARROW
- PROPOSED INTERCEPTOR SWALE
- PROPOSED EMERGENCY OVERLAND FLOW
- PROPOSED STRAW BALE
- PROPOSED ROCK CHECK DAM
- PROPOSED MUD MAT
- PROPOSED RIP RAP
- PROPOSED SLOPE (3:1 MAX)
- EXISTING CATCHBASIN(S) WITH PROPOSED SEDIMENT FILTER SOCK
- PROPOSED SILT FENCE
- PROPERTY LINE



**KEY PLAN**  
Scale: N.T.S.

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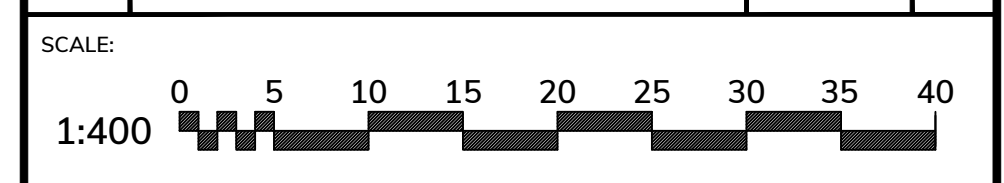
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1.	ISSUED FOR REVIEW AND COORDINATION	11/27/2019	MW



**EROSION & SEDIMENT CONTROL PLAN AND DETAILS**

CLIENT: 2233497 ONTARIO LIMITED

PROJECT: SETTLEMENT AT ST. DAVID'S PHASE 1 PAXTON LANE NIAGARA-ON-THE-LAKE, ONTARIO

OWNER'S NAME  
OWNER'S SIGNATURE

The Odan/Detech Group Inc. P: (905) 632-3811 F: (905) 632-3363  
6230 SOUTH SERVICE ROAD, BURLINGTON, ONTARIO, L7L 5K2

SCALE:	PROJ. NO.:	DATE:	DESIGN BY:
1:400	10238	NOV. 2019	M.H.H.
10238-STDAVIDS_7 ESC			DRAWN BY: M.Z.W.
			CHECKED BY: M.H.H.
			APPROVED BY: P.H.
			DRWG. NO.: 7 OF 7

FILE NUMBER ENGINEER