

**NOTES: GENERAL**

- DRAWINGS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL AND LANDSCAPE DRAWINGS
- ALL SERVICES, MATERIALS, CONSTRUCTION METHODS AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND REGULATIONS OF THE CITY OF OTTAWA STANDARD SPECIFICATIONS AND DRAWINGS, ONTARIO PROVINCIAL SPECIFICATION STANDARD SPECIFICATION (OPSS) AND ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD), UNLESS OTHERWISE SPECIFIED, TO THE SATISFACTION OF THE CITY AND THE CONSULTANT
- THE POSITION OF EXISTING POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND ABOVEGROUND UTILITIES, STRUCTURES AND APPURTENANCES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWING, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SATISFY HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM DURING THE COURSE OF CONSTRUCTION. ANY RELOCATION OF EXISTING UTILITIES REQUIRED BY THE DEVELOPMENT OF SUBJECT LANDS IS TO BE UNDERTAKEN AT CONTRACTOR'S EXPENSE.
- THE CONTRACTOR MUST NOTIFY ALL EXISTING UTILITY COMPANY OFFICIALS FIVE (5) BUSINESS DAYS PRIOR TO START OF CONSTRUCTION AND HAVE ALL EXISTING UTILITIES AND SERVICES LOCATED IN THE FIELD OR EXPOSED PRIOR TO THE START OF CONSTRUCTION, INCLUDING BUT NOT LIMITED TO HYDRO, BELL, CABLE TV, AND CONSUMERS GAS LINES.
- ALL TRENCHING AND EXCAVATIONS TO BE IN ACCORDANCE WITH THE LATEST REVISIONS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS AND AS PER THE RECOMMENDATIONS INCLUDED IN THE GEOTECHNICAL REPORT.
- REFER TO ARCHITECTS PLANS FOR BUILDING DIMENSIONS, LAYOUT AND REMOVALS. REFER TO LANDSCAPE PLAN FOR LANDSCAPED DETAILS AND OTHER RELEVANT INFORMATION. ALL INFORMATION SHALL BE CONFIRMED PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- TOPOGRAPHIC SURVEY COMPLETED AND PROVIDED BY FARLEY, SMITH & DENIS SURVEYING LTD DATED ON AUGUST 19, 2021. CONTRACTOR TO VERIFY IN THE FIELD PRIOR TO CONSTRUCTION OF ANY WORK AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- ALL ELEVATIONS ARE GEODETIC AND UTILIZE METRIC UNITS. VERIFY THAT JOB BENCHMARKS HAVE NOT BEEN ALTERED OR DISTURBED.
- ALL GROUND SURFACES SHALL BE EVENLY GRADED WITHOUT PONDING AREAS AND WITHOUT LOW POINTS EXCEPT WHERE APPROVED SWALE OR CATCH BASIN OUTLETS ARE PROVIDED.
- ALL EDGES OF DISTURBED PAVEMENT SHALL BE SAW CUT TO FORM A NEAT AND STRAIGHT LINE PRIOR TO LAYING NEW PAVEMENT. PAVEMENT REINSTATEMENT SHALL BE WITH STEP JOINTS OF 500mm WIDTH MINIMUM.
- ALL DISTURBED AREAS OUTSIDE PROPOSED GRADING LIMITS TO BE RESTORED TO ORIGINAL ELEVATIONS AND CONDITIONS UNLESS OTHERWISE SPECIFIED. ALL RESTORATION SHALL BE COMPLETED WITH THE GEOTECHNICAL REQUIREMENTS FOR BACKFILL AND COMPACTION.
- ABUTTING PROPERTY GRADES TO BE MATCHED UNLESS OTHERWISE SHOWN.
- CONTRACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS FROM THE MUNICIPAL AUTHORITIES PRIOR TO COMMENCING CONSTRUCTION.
- MINIMIZE DISTURBANCE TO EXISTING VEGETATION DURING THE EXECUTION OF ALL WORKS.
- REMOVE FROM SITE ALL EXCESS EXCAVATED MATERIAL UNLESS OTHERWISE DIRECTED FROM THE ENGINEER. EXCAVATE AND REMOVE ALL ORGANIC MATERIAL AND DEBRIS LOCATED WITHIN THE PROPOSED BUILDING, PARKING AND ROADWAY LOCATIONS.
- AT PROPOSED UTILITY CONNECTION POINTS AND CROSSINGS (I.E. STORM SEWER, SANITARY SEWER, WATER, ETC.) THE CONTRACTOR SHALL DETERMINE THE PRECISE LOCATION AND DEPTH OF EXISTING UTILITIES AND REPORT ANY DISCREPANCIES OR CONFLICTS TO THE ENGINEER BEFORE COMMENCING WORK.
- CONTRACTOR TO OBTAIN POST-CONSTRUCTION TOPOGRAPHIC SURVEY, COMPLETED BY OLS OR FENG CONFIRMING COMPLIANCE WITH DESIGN GRADING AND SERVING. SURVEY IS TO INCLUDE LOCATION AND INVERTS FOR BURIED UTILITIES.
- ABIDE BY RECOMMENDATIONS OF GEOTECHNICAL REPORT. REPORT ANY VARIATIONS IN OBSERVED CONDITIONS FROM THOSE INCLUDED IN REPORT.
- REPORT REFERENCES
  - STORMWATER MANAGEMENT REPORT, PREPARED BY WSP CANADA INC, PROJ. NO. 211-1217-00, NOVEMBER 30, 2021
  - GEOTECHNICAL INVESTIGATION REPORT, PREPARED BY PINCHIN LTD, PINCHIN FILE 296551.001, NOVEMBER 30, 2021

**NOTES: EROSION AND SEDIMENT CONTROL**

\*\* CONTRACTOR IS RESPONSIBLE FOR ALL INSTALLATION, MONITORING, REPAIR AND REMOVAL OF ALL EROSION AND SEDIMENT CONTROL FEATURES, AND MEETING ASSOCIATED LEED REQUIREMENT \*\*

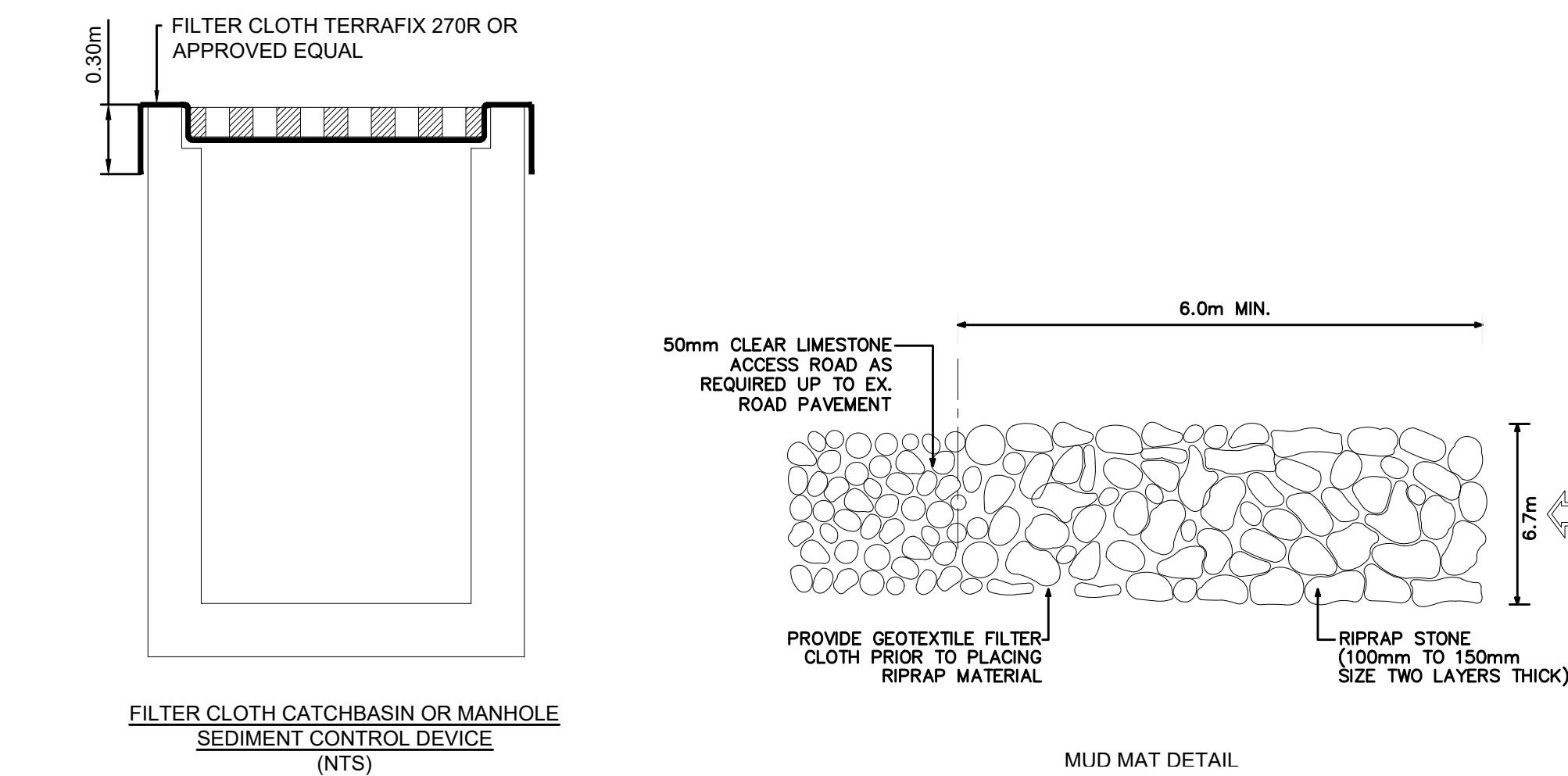
- PRIOR TO START OF CONSTRUCTION:
  - INSTALL SILT FENCE IN LOCATION SHOWN ON DWG C08 AND C09.
  - INSTALL FILTER FABRIC OR SILT SACK FILTERS IN ALL THE CATCHBASINS AND MANHOLES TO REMAIN DURING CONSTRUCTION WITHIN THE SITE (SEE TYPICAL DETAIL).
  - INSPECT MEASURES IMMEDIATELY AFTER INSTALLATION.
- DURING CONSTRUCTION:
  - MINIMIZE THE EXTENT OF DISTURBED AREAS AND THE DURATION OF EXPOSURE AND IMPACTS TO EXISTING GRADING.
  - PERIMETER VEGETATION TO REMAIN IN PLACE UNTIL PERMANENT STORM WATER MANAGEMENT IS IN PLACE. OTHERWISE, IMMEDIATELY INSTALL SILT FENCE WHEN THE EXISTING SITE IS DISTURBED AT THE PERIMETER.
  - PROTECT DISTURBED AREAS FROM OVERLAND FLOW BY PROVIDING TEMPORARY SWALES TO THE SATISFACTION OF THE FIELD ENGINEER. TIE-IN TEMPORARY SWALE TO EXISTING CB'S AS REQUIRED.
  - PROVIDE TEMPORARY COVER SUCH AS SEEDING OR MULCHING IF DISTURBED AREA WILL NOT BE REHABILITATED WITHIN 30 DAYS.
  - INSPECT SILT FENCES, FILTER FABRIC FILTERS AND CATCH BASIN SUMPS WEEKLY AND WITHIN 24 HOURS AFTER A STORM EVENT. CLEAN AND REPAIR WHEN NECESSARY.
  - DRAWING TO BE REVIEWED AND REVISED AS REQUIRED DURING CONSTRUCTION.
  - EROSION CONTROL FENCING TO BE ALSO INSTALLED AROUND THE BASE OF ALL STOCKPILES.
  - DO NOT LOCATE TOPSOIL PILES AND EXCAVATION MATERIAL CLOSER THAN 2.5m FROM ANY PAVED SURFACE, OR ONE WHICH IS TO BE PAVED BEFORE THE PILE IS REMOVED. ALL TOPSOIL PILES ARE TO BE SEEDED IF THEY ARE TO REMAIN ON SITE LONG ENOUGH FOR SEEDS TO GROW (LONGER THAN 30 DAYS).
  - CONTROL WIND-BLOWN DUST OFF SITE BY SEEDING TOPSOIL PILES AND OTHER AREAS TEMPORARILY (PROVIDE WATERING AS REQUIRED AND TO THE SATISFACTION OF THE ENGINEER).
  - NO ALTERNATE METHODS OF EROSION PROTECTION SHALL BE PERMITTED UNLESS APPROVED BY THE FIELD ENGINEER.
  - CITY ROADWAY AND SIDEWALK TO BE CLEANED OF ALL SEDIMENT FROM VEHICULAR TRACKING AS REQUIRED.
  - DURING WET CONDITIONS, TIRES OF ALL VEHICLES/EQUIPMENT LEAVING THE SITE ARE TO BE SCRAPPED.
  - ANY MULTIMATERIAL TRACKED ONTO THE ROAD SHALL BE REMOVED IMMEDIATELY BY HAND OR RUBBER TIRE LOADER.
  - TAKE ALL NECESSARY STEPS TO PREVENT BUILDING MATERIAL, CONSTRUCTION DEBRIS OR WASTE BEING SPILLED OR TRACKED ONTO ADJUTING PROPERTIES OR PUBLIC STREETS DURING CONSTRUCTION AND PROCEED IMMEDIATELY TO CLEAN UP ANY AREAS SO AFFECTED.
  - ALL EROSION CONTROL STRUCTURE TO REMAIN IN PLACE UNTIL ALL DISTURBED GROUND SURFACES HAVE BEEN STABILIZED EITHER BY PAVING OR RESTORATION OF VEGETATIVE GROUND COVER.
  - THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE, DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.

**NOTES: WATERMAIN**

- ALL WATERMAIN AND WATERMAIN APPURTENANCES, MATERIALS, CONSTRUCTION AND TESTING METHODS SHALL CONFORM TO THE CURRENT CITY OF OTTAWA AND MINISTRY OF ENVIRONMENT STANDARDS AND SPECIFICATIONS.
  - ALL WATERMAIN 300mm DIAMETER AND SMALLER TO BE POLY VINYL CHLORIDE (PVC) CLASS 150 DR 18 MEETING AWWA SPECIFICATION C900.
  - ALL WATERMAIN TO BE INSTALLED AT MINIMUM COVER OF 2.4m BELOW FINISHED GRADE. WHERE WATERMANS CROSS OVER OTHER UTILITIES, A MINIMUM 0.50m CLEARANCE SHALL BE MAINTAINED. WHERE WATERMANS CROSS UNDER OTHER UTILITIES, A MINIMUM 0.50m CLEARANCE SHALL BE MAINTAINED. WHERE THE MINIMUM SEPARATION CANNOT BE ACHIEVED, THE WATERMAIN SHALL BE INSTALLED AS PER CITY OF OTTAWA STANDARD W25 AND W25.2. WHERE 2.4m MINIMUM DEPTH CANNOT BE ACHIEVED, THERMAL INSULATION SHALL BE PROVIDED AS PER CITY OF OTTAWA STANDARD W22. WHERE A WATERMAIN IS IN CLOSE PROXIMITY TO AN OPEN STRUCTURE, THERMAL INSULATION SHALL BE PROVIDED AS PER CITY OF OTTAWA STANDARD W23.
  - CONCRETE THRUST BLOCKS AND MECHANICAL RESTRAINTS ARE TO BE INSTALLED AT ALL TEES, BENDS, HYDRANTS, REDUCERS, ENDS OF MAINS AND CONNECTIONS 100mm AND LARGER, IN ACCORDANCE WITH CITY OF OTTAWA STANDARDS W25.3 & W25.4.
  - CATHODIC PROTECTION REQUIRED FOR ALL IRON FITTINGS AS PER CITY OF OTTAWA STANDARD W40 & W42.
  - ALL VALVES AND VALVE BOXES AND CHAMBERS, HYDRANTS, AND HYDRANT VALVES AND ASSEMBLES SHALL BE INSTALLED AS PER CITY OF OTTAWA STANDARD
  - FIRE HYDRANT LOCATION AND INSTALLATION AS PER CITY OF OTTAWA STANDARD W18 & W19. CONTRACTOR TO PROVIDE FLOW TEST AND PAINTING OF NEW HYDRANT IN ACCORDANCE WITH CITY STANDARDS.
  - IF WATER MAIN MUST BE DEFLECTED TO MEET ALIGNMENT, ENSURE THAT THE AMOUNT OF DEFLECTION USED IS LESS THAN HALF THAT RECOMMENDED BY THE MANUFACTURER.
- NOTES: SANITARY SEWER AND MANHOLES**
- ALL SANITARY SEWER, SANITARY SEWER APPURTENANCES AND CONSTRUCTION METHODS SHALL CONFORM TO THE CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS. PROVIDE CCTV INSPECTION REPORTS FOR ALL NEW SANITARY PIPING. PROVIDE DYE TESTING FOR NEW SERVICES.
  - SANITARY SEWER PIPE SIZE 150mm DIAMETER AND GREATER TO BE PVC SDR-35 (UNLESS SPECIFIED OTHERWISE) WITH RUBBER GASKET TYPE JOINTS IN CONFORMANCE WITH CSA B-182.2,3,4.
  - SEWER BEDDING AS PER CITY OF OTTAWA DETAIL S6.
  - MAINTENANCE HOLE BENCHING AND PIPE OPENING ALTERNATIVES AS PER THE OPSD 701.021
  - ANY SANITARY SEWER WITH LESS THAN 2.5m COVER REQUIRES THERMAL INSULATION AS PER CITY OF OTTAWA STANDARD W22, OR APPROVED BY THE ENGINEER.
  - COVERS FOR SANITARY MAINTENANCE HOLES SAMH08 AND SAMH10 LOCATED IN PROPOSED PONDING AREAS ARE TO BE WATERTIGHT.

**NOTES: PARKING LOT AND WORK IN PUBLIC RIGHTS OF WAY**

- CONTRACTOR TO REINSTATE ROAD CUTS AS PER CITY OF OTTAWA DETAIL R10. ROAD CUTS EXTENDING INTO THE ROADWAY SHALL BE REINSTATED ACROSS THE ENTIRETY OF THE LAST IMPACTED LANE.
- CONTRACTOR TO PREPARE SUBGRADE, INCLUDING PROOFROLLING, TO THE SATISFACTION OF THE GEOTECHNICAL CONSULTANT PRIOR TO THE COMMENCEMENT OF PLACEMENT OF GRANULAR B MATERIAL.
- FILL TO BE PLACED AND COMPACTED PER THE GEOTECHNICAL REPORT REQUIREMENTS.
- CONTRACTOR TO SUPPLY, PLACE AND COMPACT GRANULAR B MATERIAL IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL CONSULTANT. CONTRACTOR TO PROVIDE CONSULTANT WITH SAMPLES OF GRANULAR B MATERIAL FOR TESTING AND CERTIFICATION FROM THE GEOTECHNICAL CONSULTANT THAT THE MATERIAL MEETS THE GRADATION REQUIREMENTS SPECIFIED IN THE GEOTECHNICAL REPORT.
- GRANULAR A MATERIAL TO BE PLACED ONLY UPON APPROVAL BY THE GEOTECHNICAL CONSULTANT OF GRANULAR B PLACEMENT.
- CONTRACTOR TO SUPPLY, PLACE AND COMPACT GRANULAR A MATERIAL IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL CONSULTANT. CONTRACTOR TO PROVIDE CONSULTANT WITH SAMPLES OF GRANULAR A MATERIAL FOR TESTING AND CERTIFICATION FROM THE GEOTECHNICAL CONSULTANT THAT THE MATERIAL MEETS THE GRADATION REQUIREMENTS SPECIFIED IN THE GEOTECHNICAL REPORT.
- ASPHALT MATERIAL TO BE PLACED ONLY UPON APPROVAL BY THE GEOTECHNICAL CONSULTANT OF GRANULAR A PLACEMENT.
- CONTRACTOR TO SUPPLY, PLACE AND COMPACT ASPHALT MATERIAL IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL CONSULTANT. CONTRACTOR TO PROVIDE CONSULTANT WITH SAMPLES OF ASPHALT MATERIAL FOR TESTING AND CERTIFICATION FROM THE GEOTECHNICAL CONSULTANT THAT THE MATERIAL MEETS THE REQUIREMENTS SPECIFIED IN THE GEOTECHNICAL REPORT.
- CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING LINE AND GRADE IN ACCORDANCE WITH THE PLANS, AND FOR PROVIDING THE CONSULTANT WITH VERIFICATION PRIOR TO PLACEMENT.
- ALL EXCESS MATERIAL TO BE HAULED OFFSITE AND DISPOSED OF AT AN APPROVED DUMP SITE. SHOULD THE CONTRACTOR DISCOVER ANY HAZARDOUS MATERIAL, CONTRACTOR IS TO NOTIFY CONSULTANT. CONSULTANT TO DETERMINE APPROPRIATE DISPOSAL METHOD/LOCATION.
- PAVEMENT STRUCTURE (MATERIAL TYPES AND THICKNESS) FOR HEAVY DUTY AND LIGHT DUTY AREAS TO BE AS SPECIFIED IN THE GEOTECHNICAL REPORT AND SHOWN ON THE PLANS.



**NOTES: STORM SEWERS AND STRUCTURES**

- ALL STORM SEWER MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO THE CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS. PROVIDE CCTV INSPECTION REPORTS FOR ALL NEW STORM SEWERS, SERVICES AND CB LEADS.
- STORM SEWERS 450mm DIAMETER AND SMALLER SHALL BE PVC SDR-35, WITH RUBBER GASKET PER CSA A-257.3.
- SEWER BEDDING AS PER CITY OF OTTAWA DETAIL S6.
- ALL STORM MANHOLES 1200mm IN DIAMETER TO BE AS PER OPSD 701.01. FRAME AND COVER TO BE AS PER CITY OF OTTAWA STANDARD S25 AND S24.1.
- ANY NEW OR EXISTING STORM SEWER WITH LESS THAN 2.0m COVER REQUIRES THERMAL INSULATION AS PER CITY OF OTTAWA STANDARD W22, OR APPROVED BY THE ENGINEER. ADD INSULATION ABOVE EXISTING STORM SEWER BETWEEN EXISTING CBM101 AND CB1.
- CB IN LANDSCAPE AREAS SHALL BE AS PER CITY OF OTTAWA STANDARD S31.
- ALL CATCHBASIN LEADS TO BE MINIMUM 200mm DIAMETER AT MINIMUM 1.0% SLOPE UNLESS OTHERWISE SPECIFIED.
- STORM CATCHBASINS AS PER OPSD 705.010 AND FRAME/COVER AS PER CITY STANDARD DRAWINGS S19. STORM CBM'S AS INDICATED IN TABLE WITH SUMP AND FRAME/COVER AS PER OPSD 401.010 TYPE B. SANITARY MHS AS PER OPSD 701.010 TYPE A BASE WITH BENCHING, AND FRAME/COVER AS PER OPSD 401.010 TYPE A. ADJUSTMENT SECTIONS SHALL BE AS PER OPSD 704.010.
- INSTALLATION OF FLOW CONTROL ICDS TO BE VERIFIED BY QUALITY VERIFICATION ENGINEER RETAINED BY CONTRACTOR.

**NOTES: SERVICES LATERALS**

- NO SERVICE LATERALS ARE TO BE DIRECTLY CONNECTED TO A MANHOLE.
- BACKWATER VALVES FOR SERVICES ARE TO BE PROVIDED AS PER CITY OF OTTAWA STANDARD S14, S14.1 AND S14.2.
- SERVICE LATERALS THAT HAVE INSUFFICIENT COVER ARE TO BE THERMAL INSULATED AS PER CITY OF OTTAWA STANDARD W22.
- SERVICE LATERALS IN PROXIMITY TO OPEN STRUCTURES ARE TO BE INSULATED AS PER CITY OF OTTAWA STANDARD W23.
- SIZE FOR THE SERVICE LATERALS
  - STM: 100mmØ
  - SAN: 125mmØ
  - WAT: 19mmØ
- REFER TO DRAWING C01 FOR TYPICAL SERVICE LATERAL LOCATION FOR TOWNHOUSE.

**PAVEMENT STRUCTURE - ACCESS ROADWAYS**

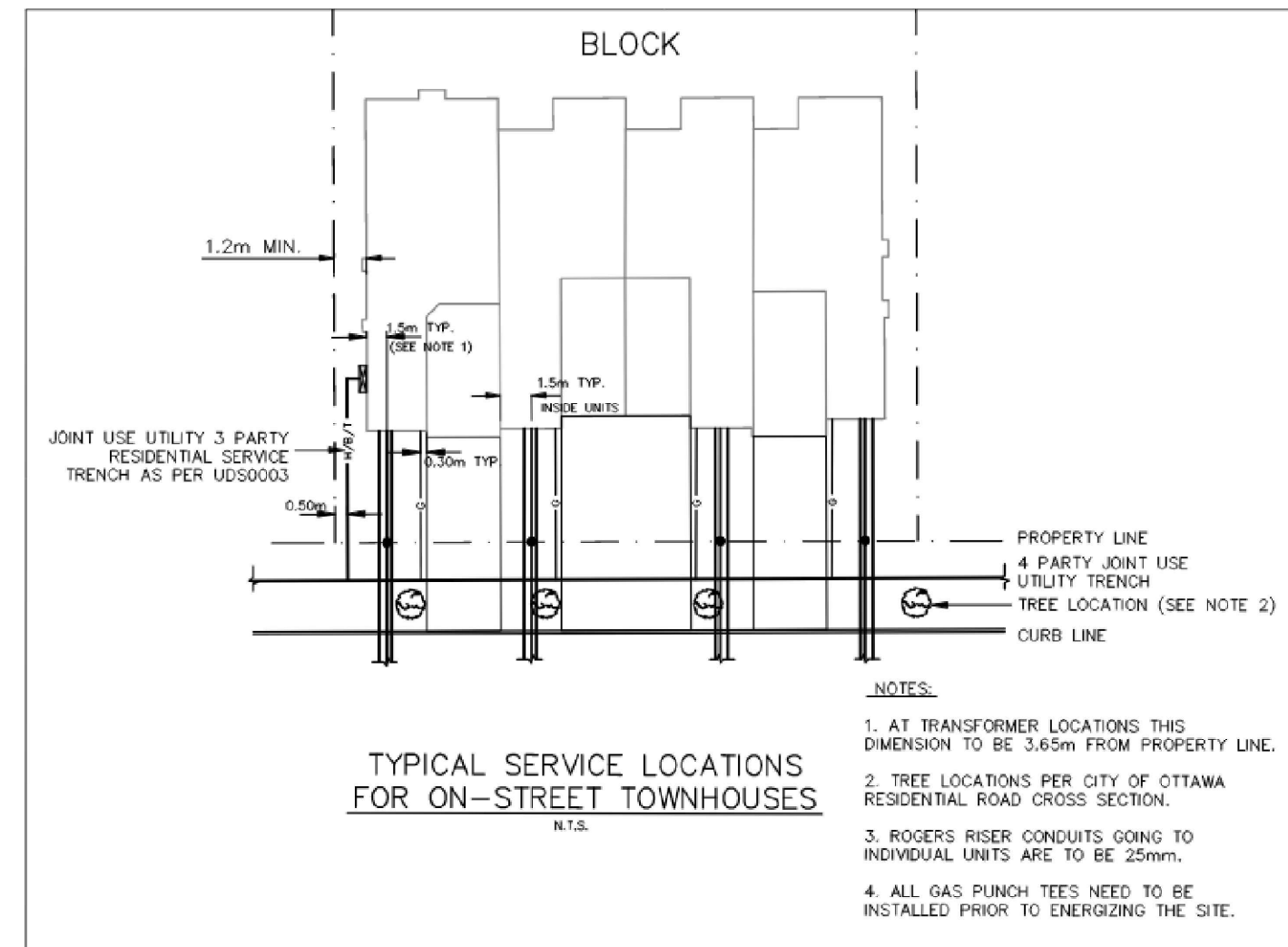
COURSE	MATERIAL	THICKNESS
SURFACE	HL-3 (OPSS 1150)	40mm
BINDER	HL-8 (OPSS 1150)	80mm
BASECOURSE	OPSS GRANULAR 'A'	150 mm
SUBBASE	OPSS GRANULAR 'B' TYPE I	450 mm

**PAVEMENT STRUCTURE - PARKING AREAS**

COURSE	MATERIAL	THICKNESS
SURFACE	HL-3 (OPSS 1150)	40 mm
BINDER	HL-8 (OPSS 1150)	50 mm
BASECOURSE	OPSS GRANULAR 'A'	150 mm
SUBBASE	OPSS GRANULAR 'B' TYPE II	300 mm

\*NOTE: REFER TO THE GEOTECHNICAL INVESTIGATION REPORT, PREPARED BY PINCHIN LTD, FILE: 296551.001, NOVEMBER 30, 2021

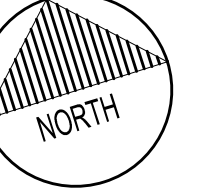
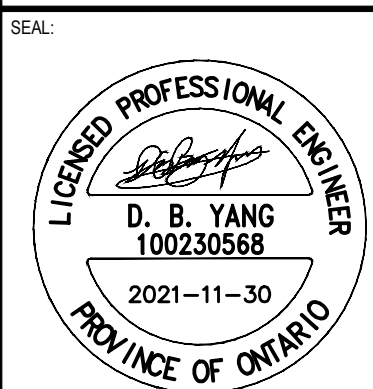
**LEGEND:**



2011 QUEENSWOOD DR  
OTTAWA, ONTARIO  
CANADA K2B 9K2  
T: 613-829-8300  
F: 613-829-8299  
WWW.WSP.COM

**KPMB ARCHITECTS**

351 KING STREET EAST, SUITE 1200  
TORONTO, ONTARIO  
CANADA M5A 9L6  
T: 416-977-5104



**CLIENT:**  
UNITED PROPERTY RESOURCE CORPORATION  
QUEENSWOOD UNITED CHURCH

**CLIENT REF. #:**  
PROJECT:

**QUEENSWOOD UNITED CHURCH**



**DISCLAIMER:**  
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THIS DRAWING IS NOT TO BE SCALED.

ISSUED FOR - REVISION	DATE	DESCRIPTION
1	2021-11-30	ISSUED FOR SPA AND ZBLA

PROJECT NO:	DATE:
211-12127-00	NOVEMBER 2021

ORIGINAL SCALE: 1:300  
DESIGNED BY: EB/DY  
DRAWN BY: JT/EB  
CHECKED BY: DY

DISCIPLINE: CIVIL

TITLE: NOTES AND DETAILS

SHEET NUMBER:	ISSUE:	REV #:
C01	ISSUED FOR REVIEW	0

DATE OF: 2021-11-30

#XXXXX

CATCHBASIN/CATCHBASIN MANHOLE AND ICD DATA TABLE													
STRUCTURE ID	AREA ID	STRUCTURE	COVER	TOP OF GRATE	INVERT			DIAMETER (mm)	TYPE	HEAD (m)	FLOW (l/s)	ICD TYPE	
					INLET	INLET	OUTLET						
RYCB01	S-016, S-010	OPSD 705.010	S19.1	87.25			84.210	250	PVC SDR-35	2.94	35.60	150-VHV-2	
CB02	S-006	OPSD 705.010	S19.1	87.29			84.150	200	PVC SDR-35				
CB03	S-007	OPSD 705.010	S19.1	87.35			84.260	200	PVC SDR-35				
RYCB04	S-011, S-015	OPSD 705.010	S19.1	87.05			84.170	250	PVC SDR-35	3.04	61.30	200-VHV-2	
CB05	S-008	OPSD 705.010	S19.1	87.39			84.220	200	PVC SDR-35				
CB06	S-012	OPSD 705.010	S19.1	87.52			84.450	200	PVC SDR-35	2.40	5.30	75-VHV-1	
CB07	S-009	OPSD 705.010	S19.1	87.47			84.210	200	PVC SDR-35				
CB09	S-013	OPSD 705.010	S19.1	87.40			84.500	200	PVC SDR-35				
CB10	S-003	OPSD 705.010	S19.1	87.35			84.100	200	PVC SDR-35				
CB11	S-002	OPSD 705.010	S19.1	87.26			84.090	200	PVC SDR-35				
CB12	S-001	OPSD 705.010	S19.1	87.26			83.900	200	PVC SDR-35				
RYCB013	S-014	OPSD 705.010	S19.1	87.09			84.360	200	PVC SDR-35				
CBMH30	S-004	OPSD 701.010	S28.1	87.48			83.820	83.760	200	PVC SDR-35			
CBMH31	S-001	OPSD 701.010	S28.1	87.59			83.730	83.670	200	PVC SDR-35	1.49	3.50	75-VHV-1
CBMH32	S-014	OPSD 701.010	S28.1	87.54			84.040	84.020	200	PVC SDR-35			
CBMH33	S-003	OPSD 701.010	S28.1	87.61			83.980	83.960	200	PVC SDR-35	1.66	3.70	75-VHV-1
CBMH34	S-005	OPSD 701.010	S28.1	87.58			84.180	84.150	200	PVC SDR-35			
CBMH35	S-004	OPSD 701.010	S28.1	87.58			84.210	84.150	200	PVC SDR-35	1.68	3.70	75-VHV-1
CBMH36	S-004	OPSD 701.010	S28.1	87.67			84.120	84.060	250	PVC SDR-35			
CBMH37	S-004	OPSD 701.010	S28.1	87.29			84.330	84.300	200	PVC SDR-35			
CBMH38	S-009	OPSD 701.010	S28.1	87.71			84.160	84.130	200	PVC SDR-35	2.26	5.30	75-VHV-1
CBMH39	S-008	OPSD 701.010	S28.1	87.60			84.120	84.100	200	PVC SDR-35			
CBMH40	S-007	OPSD 701.010	S28.1	87.57			84.160	84.100	200	PVC SDR-35			
CBMH41	S-007	OPSD 701.010	S28.1	87.52			84.010	83.950	200	PVC SDR-35	1.63	3.70	75-VHV-1
CBMH42	S-006	OPSD 701.010	S28.1	87.45			84.060	84.000	200	PVC SDR-35	1.56	3.60	75-VHV-1
CBMH43	S-006	OPSD 701.010	S28.1	87.68			83.980	83.920	200	PVC SDR-35			

STORM STRUCTURE TABLE							
STRUCTURE ID	TOP OF GRATE	INVERT			DESCRIPTION	COVER	
		INLET	INLET	OUTLET			
STMH101	87.36		83.300	82.870	1200mm DIA. OPSD 701.010	S24.1	
STMH102	87.61	83.560	83.550	83.530	1200mm DIA. OPSD 701.010	S24.1	
STMH103	87.49		83.810	83.740	1200mm DIA. OPSD 701.010	S24.1	
STMH104	87.62	83.900	83.890	83.840	1200mm DIA. OPSD 701.010	S24.1	
STMH105	87.78		84.140	84.120	1200mm DIA. OPSD 701.010	S24.1	
STMH106	87.61		84.230	84.200	1200mm DIA. OPSD 701.010	S24.1	
STMH107	87.4		84.400	84.350	1200mm DIA. OPSD 701.010	S24.1	
STMH108	87.74		84.020	83.900	1200mm DIA. OPSD 701.010	S24.1	
STMH109	87.48		84.140	84.100	1200mm DIA. OPSD 701.010	S24.1	
CBMH30	87.48		83.820	83.760	1200mm DIA. OPSD 701.010	S28.1	
CBMH31	87.59		83.730	83.670	1200mm DIA. OPSD 701.010	S28.1	
CBMH32	87.54		84.040	84.020	1200mm DIA. OPSD 701.010	S28.1	
CBMH33	87.61		83.980	83.960	1200mm DIA. OPSD 701.010	S28.1	
CBMH34	87.58		84.180	84.150	1200mm DIA. OPSD 701.010	S28.1	
CBMH35	87.58		84.210	84.150	1200mm DIA. OPSD 701.010	S28.1	
CBMH36	87.67		84.120	84.060	1200mm DIA. OPSD 701.010	S28.1	
CBMH37	87.29		84.330	84.300	1200mm DIA. OPSD 701.010	S28.1	
CBMH38	87.71		84.160	84.130	1200mm DIA. OPSD 701.010	S28.1	
CBMH39	87.60		84.120	84.100	1200mm DIA. OPSD 701.010	S28.1	
CBMH40	87.57		84.160	84.100	1200mm DIA. OPSD 701.010	S28.1	
CBMH41	87.52		84.010	83.950	1200mm DIA. OPSD 701.010	S28.1	
CBMH42	87.45	84.060	84.020	84.000	1200mm DIA. OPSD 701.010	S28.1	
CBMH43	87.68		83.980	83.920	1200mm DIA. OPSD 701.010	S28.1	
RYCB01	87.25		84.210	600X600mm	OPSD 705.010	S19.1	
RYCB02	87.29		84.150	600X600mm	OPSD 705.010	S19.1	
CB03	87.35		84.260	600X600mm	OPSD 705.010	S19.1	
CB04	87.05		84.170	600X600mm	OPSD 705.010	S19.1	
CB05	87.39		84.220	600X600mm	OPSD 705.010	S19.1	
CB06	87.52		84.450	600X600mm	OPSD 705.010	S19.1	
CB07	87.47		84.210	600X600mm	OPSD 705.010	S19.1	
CB09	87.40		84.500	600X600mm	OPSD 705.010	S19.1	
CB10	87.35		84.100	600X600mm	OPSD 705.010	S19.1	
CB11	87.26		84.090	600X600mm	OPSD 705.010	S19.1	
CB12	87.26		83.900	600X600mm	OPSD 705.010	S19.1	
RYCB013	87.09		84.360	600X600mm	OPSD 705.010	S19.1	

SAN STRUCTURE TABLE						
STRUCTURE ID	TOP OF GRATE	INVERT			DESCRIPTION	COVER
		INLET	INLET	OUTLET		
SAMH02	87.41		83.960	83.940	1200mm DIA. OPSD-701.010	S24
SAMH03	87.57		84.050	84.020	1200mm DIA. OPSD-701.010	S24
SAMH04	87.43		84.260	84.240	1200mm DIA. OPSD-701.010	S24
SAMH05	87.57		84.320	84.290	1200mm DIA. OPSD-701.010	S24
SAMH06	87.74		84.520	84.490	1200mm DIA. OPSD-701.010	S24
SAMH07	87.56		84.590	84.560	1200mm DIA. OPSD-701.010	S24
SAMH08	87.57		84.750	1200mm DIA.	OPSD-701.010	S24
SAMH09	87.71		84.450	84.420	1200mm DIA. OPSD-701.010	S24
SAMH10	87.52		84.530	1200mm DIA.	OPSD-701.010	S24

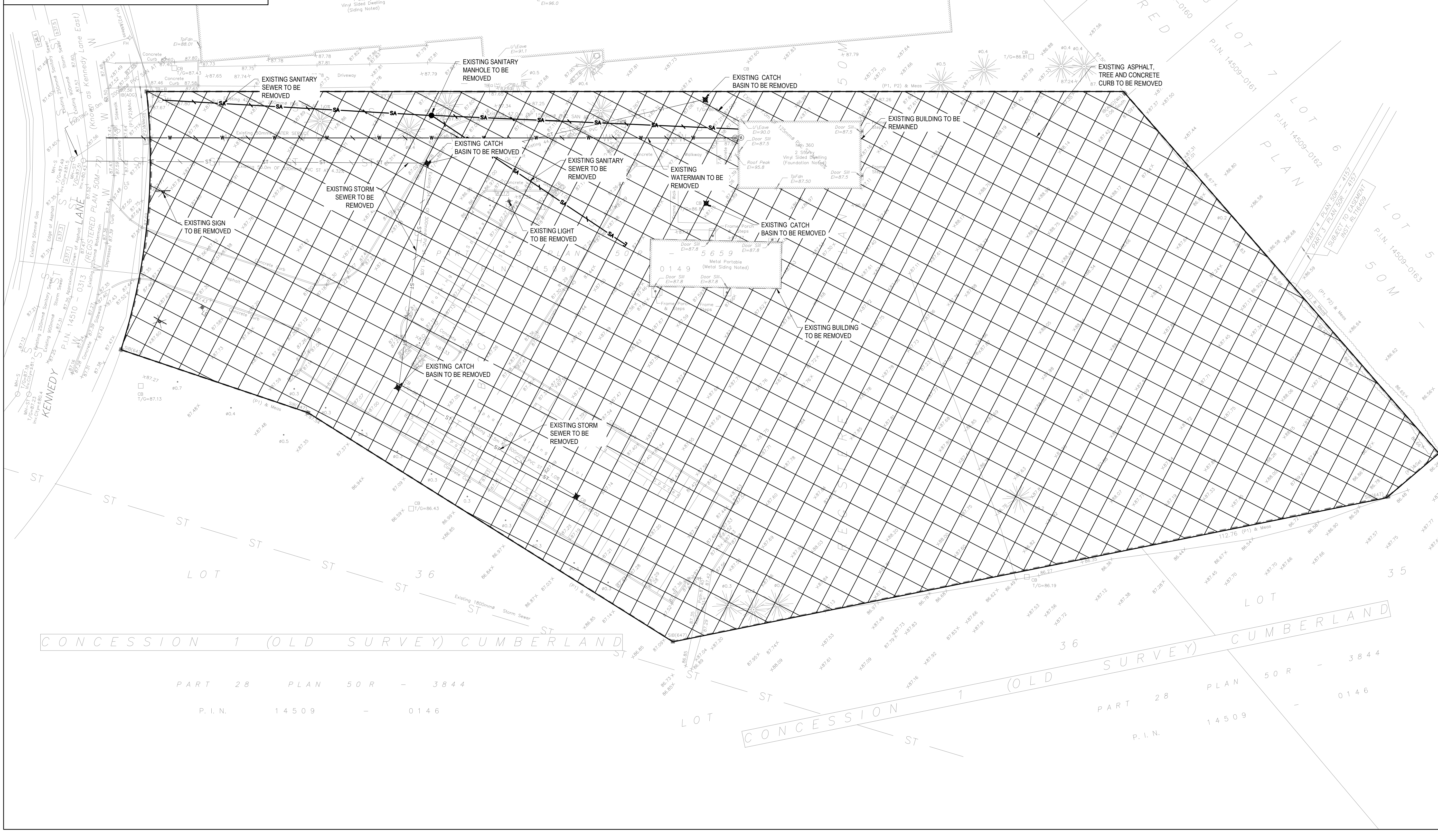
PIPE CROSSING TABLE - PARCEL 1									
NO.	PIPE	Obvert		Clearance	Invert		TYPE	HEAD (m)	FLOW (l/s)
		Obvert	Invert		Obvert	Invert			
1	150mmØ PVC FM	85.340	85.140	0.794	84.346	84.096	200mmØ PVC STM		
2	150mmØ PVC FM	85.300	85.100	0.370	84.730	84.530	200mmØ PVC SAN		
3*	200mmØ PVC SAN	84.045	83.845	0.274	83.571	83.196	375mmØ PVC STM		
4	200mmØ PVC WM	85.000	84.800	0.320	84.480	84.280	200mmØ PVC STM		
5	200mmØ PVC WM	85.060	84.860	0.863	83.997	83.747	250mmØ PVC STM		
6*	250mmØ PVC STM	83.967	83.717	0.167	84.334	84.134	200mmØ PVC SAN		
7	200mmØ PVC W/M	84.960	84.760	0.680	84.080	83.880	200mmØ PVC STM		
8	200mmØ PVC W/M	85.030	84.830	0.909	83.921	83.721	200mmØ PVC STM		
9*	200mmØ PVC STM	83.891	83.691	0.117	84.208	84.008	200mmØ PVC SAN		
10	200mmØ PVC STM	84.811	84.611	0.495	84.116	83.916	200mmØ PVC SAN		
11	200mmØ PVC W/M	85.130	84.930	0.856	84.074	83.874	200mmØ PVC SAN		
12	200mmØ PVC W/M	84.920	84.720	0.846	83.874	83.674	200mmØ PVC STM		
13	200mmØ PVC W/M	84.910	84.710	0.829	83.881	83.681	200mmØ PVC STM		
14	200mmØ PVC W/M	85.190	84.990	1.076	83.914	83.714	200mmØ PVC SAN		
15	200mmØ PVC W/M	85.140	84.940	1.021	83.919	83.719	200mmØ PVC SAN		
16	EXISTING 203mmØ W/M	85.090	84.887	2.540	82.347	81.972	375mmØ PVC STM		
17	200mmØ PVC STM	83.652	83.452	0.163	84.015	83.815	200mmØ PVC SAN		
18	200mmØ PVC W/M	85.150	84.950	1.252	83.698	83.498	200mmØ PVC STM		
19	200mmØ PVC W/M	85.090	84.890	1.297	83.593	83.218	375mmØ PVC STM		
20	200mmØ PVC W/M	84.950	84.750	0.626	84.124	83.924	200mmØ PVC STM		
21	200mmØ PVC W/M	85.230	85.030	1.150	83.880	83.680	200mmØ PVC STM		
22*	200mmØ PVC STM	83.845	83.645	0.105	84.150	83.950	200mmØ PVC SAN		
23	200mmØ PVC W/M	84.990	84.790	0.548	84.242	84.042	200mmØ PVC STM		
24	200mmØ PVC W/M	85.020	84.820	0.915	83.905	83.705	200mmØ PVC STM		
25*	200mmØ PVC STM	83.875	83.675	0.160	84.235	84.035	200mmØ PVC SAN		
26	200mmØ PVC STM	84.171	83.971	0.929	85.100	84.900	200mmØ PVC W/M		
27	200mmØ PVC STM	83.691	83.491	1.449	85.140	84.940	200mmØ PVC W/M		

\*Note: Provide Concrete Encased for crossing clearance less than 0.3m

WATERMAIN SCHEDULE					
STATION	DESCRIPTION	FINISHED GRADE	TOP OF WATERMAIN	AS-BUILT WATERMAIN	COVER
200mm W/M Looping					
0+000	Connect to Ex. 203mm W/M WITH 200x200 TEE			85.090	2.40
0+006.85	200mm VB	87.54	85.140		2.40
0+013.69	Crossing 200mmØ PVC SAN	87.59	85.190		2.40
0+016.33	22.5" Bend	87.53	85.130		2.40
0+024.35	Crossing 200mmØ PVC STM	87.32	84.920		2.40
0+036.94	Crossing 200mmØ PVC STM	87.55	85.150		2.40
0+039.60	150x200 TEE	87.61	85.210		2.40
0+040.21	22.5" Bend	87.62	85.220		2.40
0+084.08	Crossing 200mmØ PVC STM	87.43	85.030		2.40
0+088.39	Crossing 200mmØ PVC STM	87.36	84.960		2.40
0+095.42	150x200 TEE	87.49	85.090		2.40
0+122.45	Crossing 250mmØ PVC STM	87.46	85.060		2.40
0+127.18	Crossing 200mmØ PVC STM	87.40	85.000		2.40
0+149.07	22.5" Bend	87.74	85.340		2.40
0+162.34	45" Bend	87.65	85.250		2.40
0+169.58	22.5" Bend	87.53	85.130		2.40
0+176.22	150x200 TEE	87.60	85.200		2.40
0+180.53	22.5" Bend	87.50	85.100		2.40
0+185.85	150x200 TEE	87.61	85.210		2.40
0+196.06	11.25" Bend	87.74	85.340		2.40
0+219.18	Crossing 200mmØ PVC STM	87.50	85.100		2.40
0+241.24	150x200 TEE	87.63	85.230		2.40
0+242.85	22.5" Bend	87.60	85.200		2.40
0+251.93	22.5" Bend	87.44	85.040		2.40
0+253.19	Crossing 200mmØ PVC STM	87.42	85.020		2.40
0+255.32	Crossing 200mmØ PVC STM	87.39	84.990		2.40
0+278.69	Crossing 200mmØ PVC STM	87.63	85.230		2.40
0+292.21	Crossing 200mmØ PVC STM	87.35	84.950		2.40
0+304.40	Crossing 200mmØ PVC STM	87.49	85.090		2.40
0+307.23	Crossing 200mmØ PVC SAN	87.53	85.130		2.40
0+314.93	Crossing 200mmØ PVC STM	87.54	85.140		2.40
0+327.50	Crossing 200mmØ PVC STM	87.31	84.910		2.40
0+334.37	22.5" Bend	87.49	85		

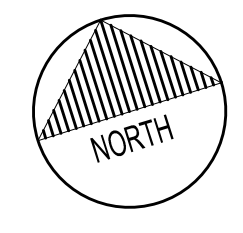
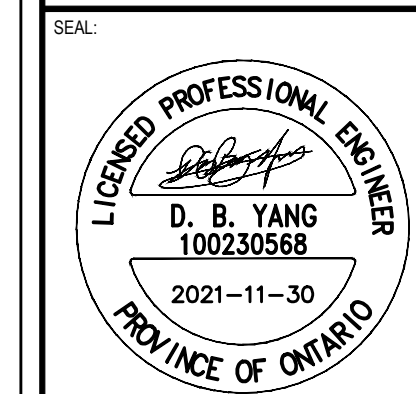
**LEGEND:**

- EXISTING WATERMAIN REMOVAL
- EXISTING SANITARY SEWER REMOVAL
- EXISTING STORM SEWER REMOVAL
- EXISTING CATCH BASIN REMOVAL
- EXISTING SANITARY MANHOLE REMOVAL
- EXISTING LIGHT POLE REMOVAL
- EXISTING ROAD SIGN REMOVAL
- EXISTING ASPHALT REMOVAL
- EXISTING BUILDING REMOVAL



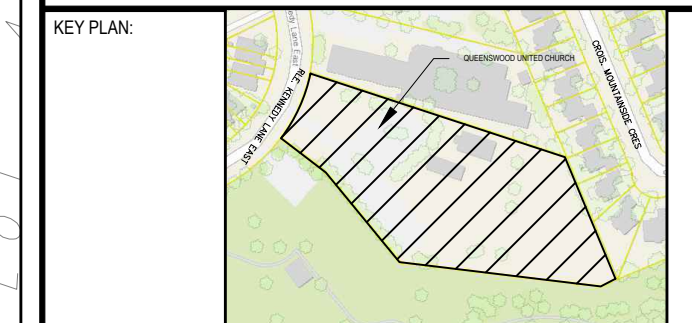
2011 QUEENVIEW DR  
OTTAWA, ONTARIO  
CANADA K2B 9K2  
T: 613-829-2800  
F: 613-829-8299  
WWW.WSP.COM

ARCHITECT:  
**KPMB ARCHITECTS**  
351 KING STREET EAST, SUITE 1200  
TORONTO, ONTARIO  
CANADA M5A 9L6  
T: 416-977-5104



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DESIGNED BY: EB/DY	
DRAWN BY: JT/EB	
CHECKED BY: DY	

DISCIPLINE: CIVIL	
TITLE: <b>REMOVAL PLAN</b>	
SHEET NUMBER: C03	
SHEET #: 3 OF 8	
ISSUE: ISSUED FOR REVIEW	REV #: 0
DATE OF: 2021-11-30	

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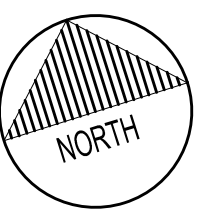


2011 QUEENSWOOD DR  
OTTAWA, ONTARIO  
CANADA K2B 9K2  
T: 613-828-8280  
F: 613-828-8299  
WWW.WSP.COM

ARCHITECT:

**KPMB ARCHITECTS**  
351 KING STREET EAST, SUITE 1200  
TORONTO, ONTARIO  
CANADA M5A 9L5  
T: 416-977-5104

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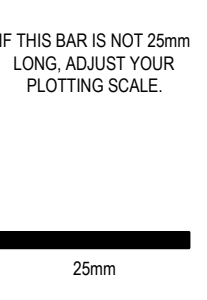
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GRADING PLAN

C04

4 OF 8

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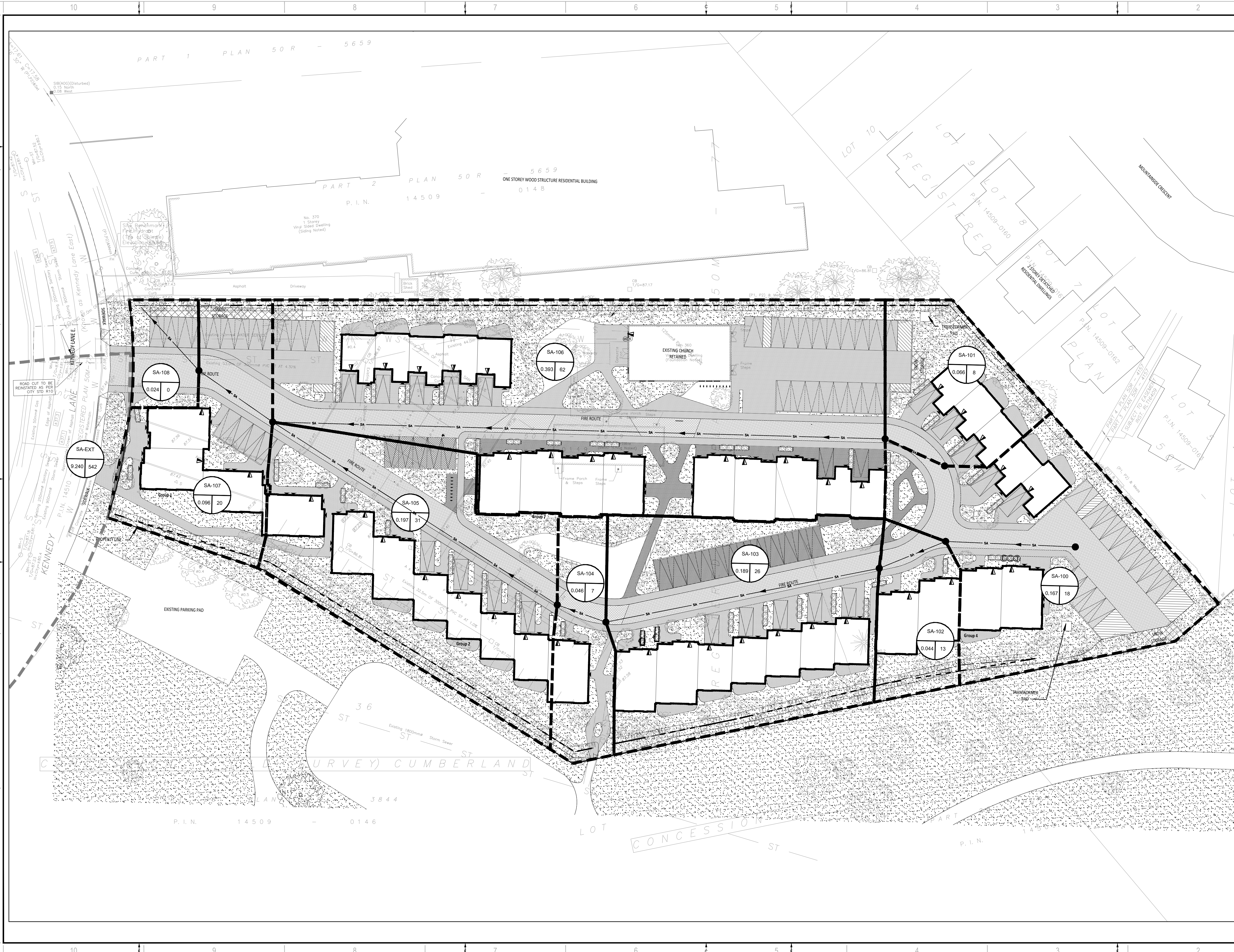


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2011 QUEENVIEW DR  
OTTAWA, ONTARIO  
CANADA K2B 9K2  
T: 613-829-8300  
F: 613-829-8299  
WWW.WSP.COM

ARCHITECT:  
**KPMB ARCHITECTS**  
351 KING STREET EAST, SUITE 1200  
TORONTO, ONTARIO  
CANADA M5A 9L5  
T: 416-977-5104

SEAL:

LICENSED PROFESSIONAL ENGINEER  
**D. B. YANG**  
100230568  
2021-11-30  
PROVINCE OF ONTARIO

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**SANITARY DRAINAGE AREA PLAN**

SHEET NUMBER: C07  
SHEET #: 7 OF 8  
ISSUE: ISSUED FOR REVIEW  
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