

**GENERAL NOTES:**

- COORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
- DETERMINE THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. PROTECT AND ASSUME RESPONSIBILITY FOR ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON THIS DRAWING.
- OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF OTTAWA BEFORE COMMENCING CONSTRUCTION.
- BEFORE COMMENCING CONSTRUCTION OBTAIN AND PROVIDE PROOF OF COMPREHENSIVE, ALL RISK AND OPERATIONAL LIABILITY INSURANCE FOR \$5,000,000.00. INSURANCE POLICY TO NAME OWNERS, ENGINEERS AND ARCHITECTS AS CO-INSURED.
- RESTORE ALL DISTURBED AREAS ON-SITE AND OFF-SITE, INCLUDING TRENCHES AND SURFACES ON PUBLIC ROAD ALLOWANCES TO EXISTING CONDITIONS OR BETTER TO THE SATISFACTION OF THE CITY OF OTTAWA AND ENGINEER.
- REMOVE FROM SITE ALL EXCESS EXCAVATED MATERIAL, ORGANIC MATERIAL AND DEBRIS UNLESS OTHERWISE INSTRUCTED BY ENGINEER. EXCAVATE AND REMOVE FROM SITE ANY CONTAMINATED MATERIAL. ALL CONTAMINATED MATERIAL SHALL BE DISPOSED OF AT A LICENSED LANDFILL FACILITY.
- ALL ELEVATIONS ARE GEODETIC.
- REFER TO ARCHITECT'S AND LANDSCAPE ARCHITECT'S DRAWINGS FOR BUS LOOP AND HARD SURFACE AREAS AND DIMENSIONS.
- REFER TO STORMWATER MANAGEMENT REPORT (R-XXXX-XXX) PREPARED BY NOVATECH ENGINEERING CONSULTANTS LTD.
- SAW CUT AND KEY GRIND ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE IN POINTS AS PER CITY OF OTTAWA STANDARDS (S1.10).
- REFER TO ARCHITECT'S DRAWING FOR LINE/PARKING PAINTING DETAILS.

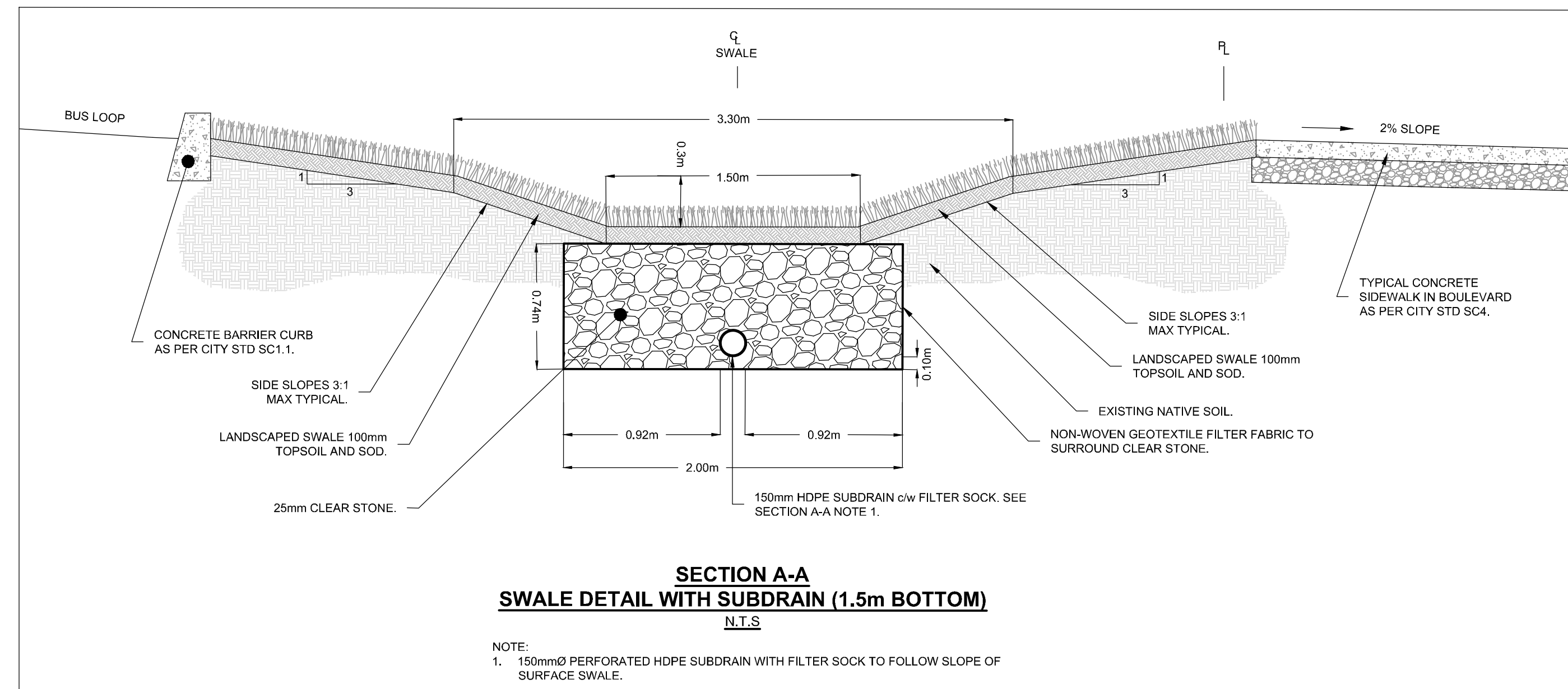
**PAVEMENT STRUCTURE:**

- LIGHT DUTY**  
 40mm H/LC OR H/L  
 50mm H/L  
 150mm GRAN "A"  
 300mm GRAN "B" TYPE II
- HEAVY DUTY**  
 50mm H/LC OR SP12.5 CAT D  
 60mm H/LC OR SP 19 CAT D  
 150mm GRAN "A"  
 450mm GRAN "B" TYPE II

PAVEMENT COMPOSITION AS PER GEOTECHNICAL REPORT

**GRADING NOTES:**

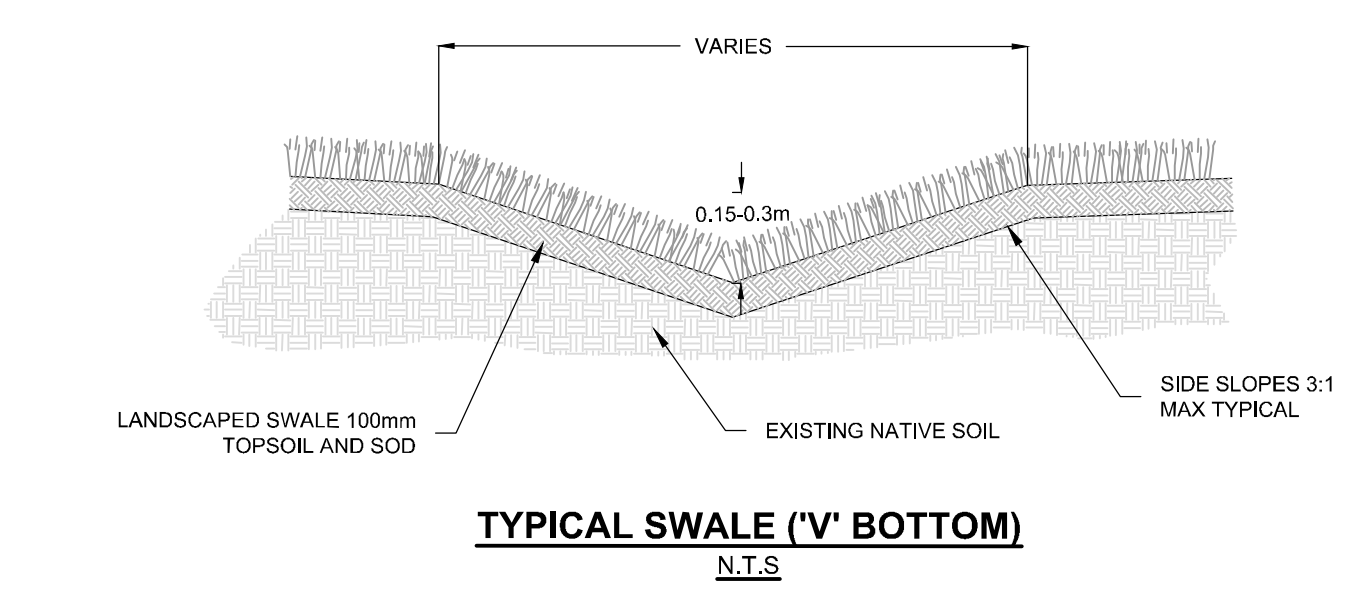
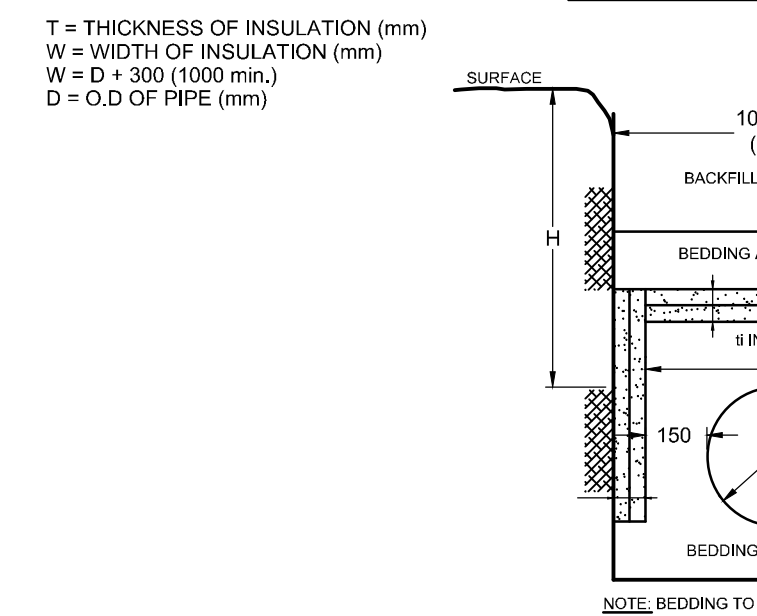
- ALL TOPSOIL, ORGANIC OR DELETERIOUS MATERIAL MUST BE ENTIRELY REMOVED FROM BENEATH THE PROPOSED PAVED AREAS AS DIRECTED BY THE SITE ENGINEER OR GEOTECHNICAL ENGINEER.
- EXPOSED SUBGRADES IN PROPOSED PAVED AREAS SHOULD BE PROOF ROLLED WITH A LARGE STEEL DRUM ROLLER AND INSPECTED BY THE GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF GRANULARS.
- ANY SOFT AREAS EVIDENT FROM THE PROOF ROLLING SHOULD BE SUB-EXCAVATED AND REPLACED WITH SUITABLE MATERIAL THAT IS FROST COMPATIBLE WITH THE EXISTING SOILS AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.
- THE GRANULAR BASE SHOULD BE COMPACTED TO AT LEAST 100% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY VALUE. ANY ADDITIONAL GRANULAR FILL USED BELOW THE PROPOSED PAVEMENT SHOULD BE COMPACTED TO AT LEAST 90% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY VALUE.
- MINIMUM OF 2% GRADE FOR ALL GRASS AREAS UNLESS OTHERWISE NOTED.
- MAXIMUM TERRACING GRADE TO BE 3:1 UNLESS OTHERWISE NOTED.
- ALL GRADES BY CURBS ARE EDGE OF PAVEMENT GRADES UNLESS OTHERWISE INDICATED.
- ALL CURBS SHALL BE BARRIER CURB (150mm) UNLESS OTHERWISE NOTED AND CONSTRUCTED AS PER CITY OF OTTAWA STANDARDS (SC1.1).
- REFER TO LANDSCAPE PLAN FOR PLANTING AND OTHER LANDSCAPE FEATURE DETAILS.
- CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GRADING PLAN INDICATING AS-BUILT ELEVATIONS OF ALL DESIGN GRADES SHOWN ON THIS PLAN.



**SEWER & WATERMAIN INSULATION NOTES:**

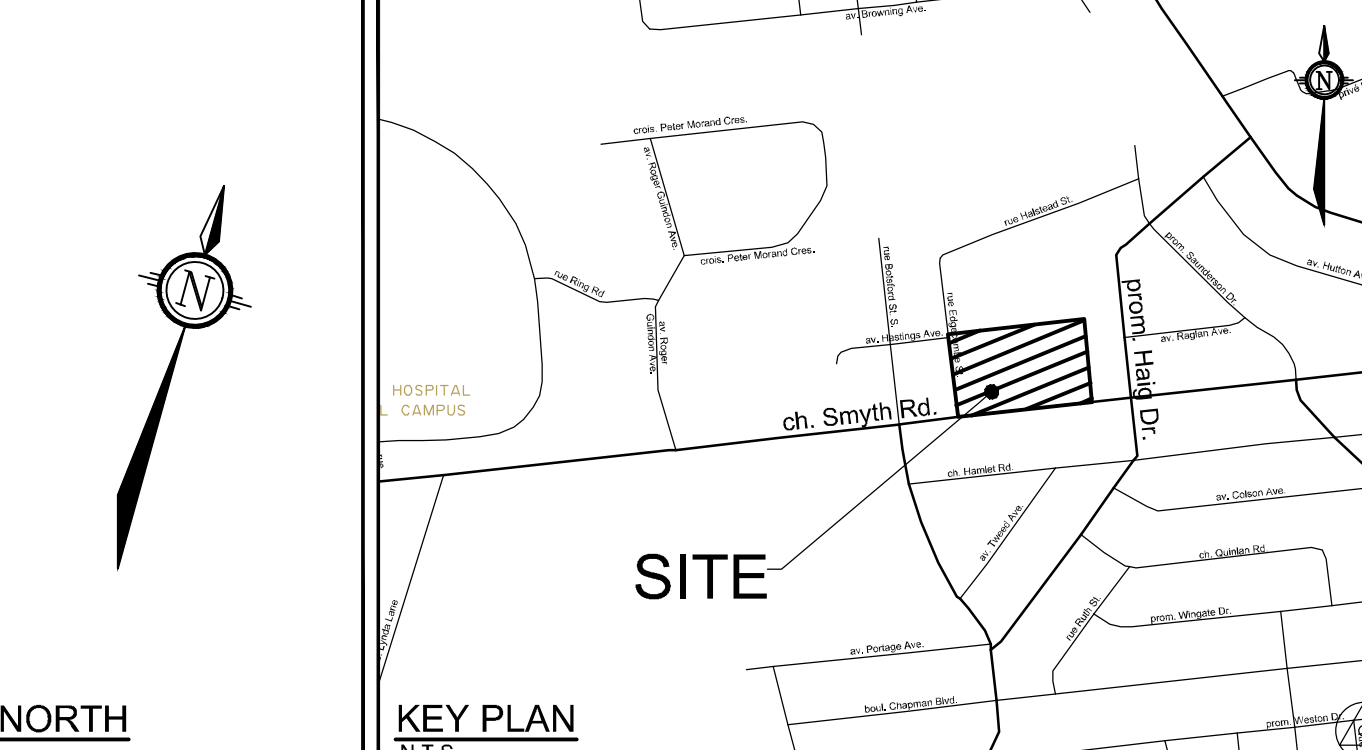
- INSULATE ALL SEWER PIPES THAT HAVE LESS THAN 1.5m COVER AND ALL WATERMAIN WITH LESS THAN 2.4m OF COVER WITH EXPANDED POLYSTYRENE INSULATION AS PER OPSD 1109.020.
- THE THICKNESS OF INSULATION SHALL BE THE EQUIVALENT OF 25mm FOR EVERY 300mm REDUCTION IN THE REQUIRED DEPTH OF COVER WITH 50mm MINIMUM (SEE TABLE).

COVER SEWER / WATER (mm)	INSULATION THICKNESS (mm)
1500-1200 / 2400-2100	50
1200-900 / 2100-1800	75
900-600 / 1800-1500	100



**PIPE CROSSING TABLE**

CROSSING NO.	STORM INVERT	SANITARY INVERT	TOP OF WATERMAIN	BOTTOM OF UTILITY TRENCH (ASSUMED)	CLEARANCE
1	73.88	72.57	-	-	0.81
2	73.89	-	73.12	-	0.57
3	73.70	-	-	74.24 GAS	0.23
4	73.71	-	-	74.44 SL	0.42
5	73.72	-	-	74.46 BELL	0.43



- LEGEND**
- EXISTING SANITARY MANHOLE
  - EXISTING STORM MANHOLE
  - EXISTING CATCHBASIN
  - EXISTING FENCE
  - EXISTING TREES / VEGETATION
  - EXISTING UTILITY POLE C/W C/W WIRES
  - EXISTING HOB AND VALVE
  - EXISTING CONCRETE CURB
  - EXISTING OVERHEAD WIRES
  - EXISTING STREET LIGHT DUCTS
  - EXISTING BELL DUCTS
  - EXISTING GAS PIPE
  - EXISTING WATERMAIN
  - EXISTING SANITARY MAIN
  - EXISTING STORM MAIN
  - PROPERTY LINE
  - PROPOSED ELEVATION
  - PROPOSED TOP OF CURB ELEVATION
  - PROPOSED SWALE ELEVATION
  - EXISTING ELEVATION
  - GRADE AND DIRECTION
  - PROPOSED BARRIER CURB (PER SC1.1)
  - PROPOSED DEPRESSED CURB (PER SC1.1)
  - EMERGENCY OVERLAND FLOW ROUTE
  - PROPOSED STORM PIPE
  - PROPOSED STORM PIPE WITH INSULATION
  - PROPOSED SWALE AND DIRECTION OF FLOW
  - MAXIMUM 3:1 SIDESLOPE (UNLESS OTHERWISE INDICATED)
  - PROPOSED HIGH POINT
  - TOP OF SLOPE
  - PROPOSED FENCE
  - REMOVALS
  - PROPOSED RIPRAP
  - PROPOSED 1200mm STORM MANHOLE

**SEWER NOTES:**

- SUPPLY AND CONSTRUCT ALL SEWERS AND APPURTENANCES IN ACCORDANCE WITH THE MOST CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS - ALL CURRENT VERSIONS AND AS AMENDED.
- SPECIFICATIONS:  

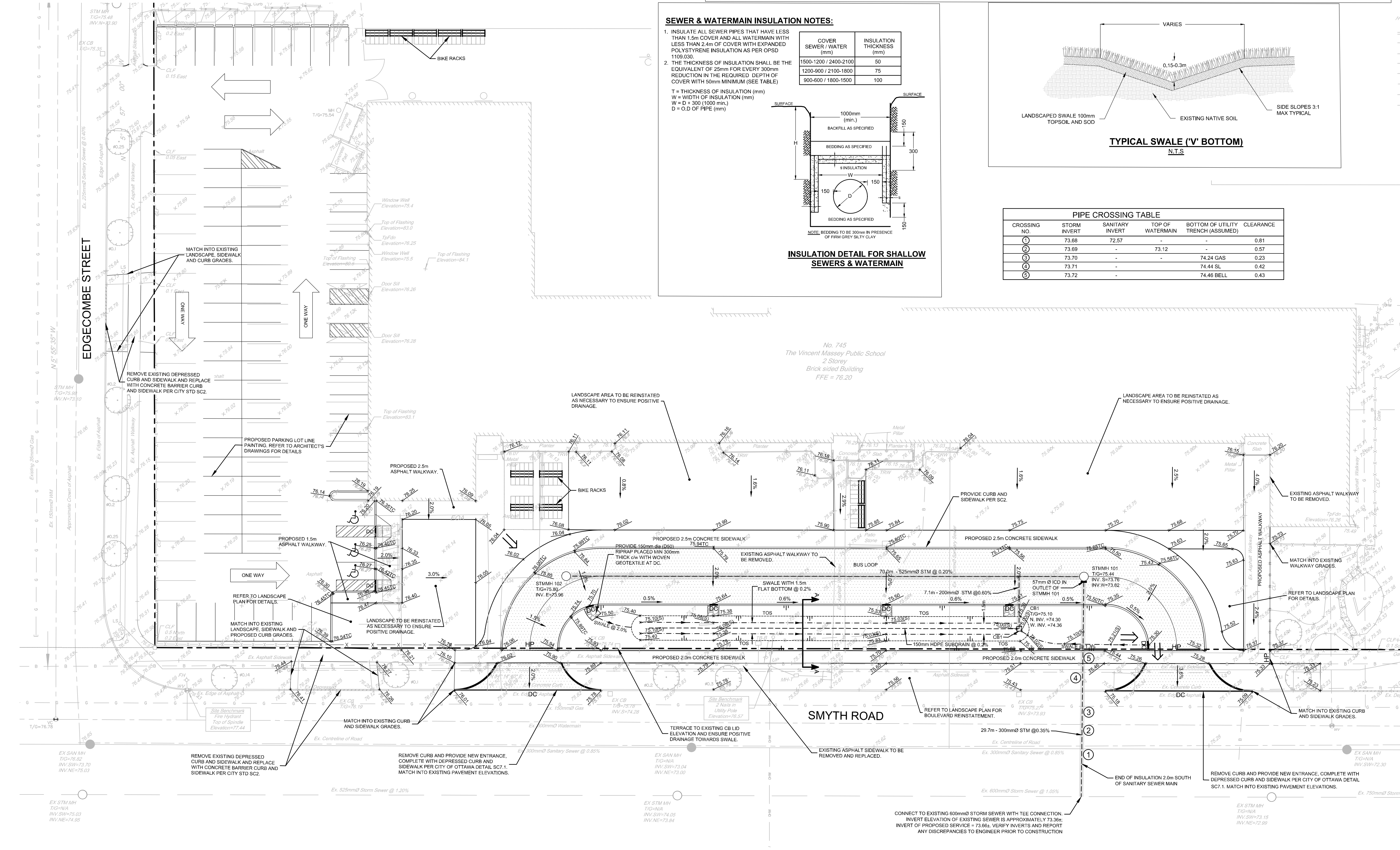
ITEM	SPEC. No.	REFERENCE
STORM MANHOLE (1200)	701.010/701.011	OPSD
STORM FRAME AND COVER	451.010 - TYPE B	OPSD
CATCHBASIN (600x600)	705.010	OPSD
CATCHBASIN FRAME AND COVER	450.020	OPSD
STORM SEWER (450mm Ø)	PVC DR 35	OPSD
STORM SEWER (450mm Ø +)	ULTRA-RIB / CONC CLASS 650	OPSD
SUBDRAIN	HDPE PERF-NON-PERF PIPE	OPSD
PERF. PIPE INSTALLATION SEWER TRENCH	S29 S6	CITY OF OTTAWA
- INSULATE ALL SEWER PIPES THAT HAVE LESS THAN 1.5m COVER WITH HI-40 RIGID INSULATION. REFER TO THE INSULATION DETAIL ON THIS DRAWING.
- FLEXIBLE CONNECTIONS ARE REQUIRED FOR CONNECTING PIPES TO MANHOLES FOR EXAMPLE KOR-SEAL, PFK, POSITIVE SEAL AND DURASEAL. THE CONCRETE GRADE FOR THE PIPE CAN BE ELIMINATED.
- ALL STORM MANHOLES AND CATCHBASIN MANHOLES TO HAVE 300mm SUMP UNLESS OTHERWISE INDICATED.
- ALL CATCHBASINS, MANHOLES AND/OR CATCHBASIN MANHOLES THAT ARE TO HAVE IC'S INSTALLED WITHIN THEM ARE TO HAVE 600mm SUMP UNLESS OTHERWISE SPECIFIED.
- CONTRACTOR TO TELEVISION (CCTV) ALL PROPOSED SEWERS, 250mm Ø OR GREATER TO ENSURE THAT THEY ARE CLEAN AND OPERATIONAL UPON COMPLETION OF CONTRACT. THE CONTRACTOR IS RESPONSIBLE TO FLUSH AND CLEAN ALL SEWERS & APPURTENANCES. OBTAIN APPROVAL FROM THE CITY'S SEWER OPERATIONS.
- THE OWNER SHALL REQUIRE THAT THE SITE SERVICING CONTRACTOR PERFORM FIELD TESTS FOR QUALITY CONTROL OF ALL SANITARY SEWERS. LEAKAGE TESTING SHALL BE COMPLETED IN ACCORDANCE WITH OPSD 410.17.16, 410.07.16.04 AND 401.07.24. DYE TESTING IS TO BE COMPLETED ON ALL SANITARY SERVICES TO CONFIRM PROPER CONNECTION TO THE SANITARY SEWER MAIN. THE FIELD TESTS SHALL BE PERFORMED IN THE PRESENCE OF A CERTIFIED PROFESSIONAL ENGINEER, WHO SHALL SUBMIT A CERTIFIED COPY OF THE TEST RESULTS.

**EROSION AND SEDIMENT CONTROL NOTES:**

- 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.
- THE OWNER AGREES TO PREPARE AND IMPLEMENT AN EROSION AND SEDIMENT CONTROL PLAN TO THE SATISFACTION OF THE CITY OF OTTAWA, APPROPRIATE TO THE SITE CONDITIONS, PRIOR TO UNDERTAKING ANY SITE ALTERATIONS (FILLING, GRADING, REMOVAL OF VEGETATION, ETC.) AND DURING ALL PHASES OF SITE PREPARATION AND CONSTRUCTION IN ACCORDANCE WITH THE CURRENT BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROL. SUCH AS BUT NOT LIMITED TO INSTALLING FILTER CLOTHS ACROSS MANHOLE/CATCHBASIN LIDS TO PREVENT SEDIMENTS FROM ENTERING STRUCTURES AND INSTALL AND MAINTAIN A LIGHT DUTY SILT FENCE BARRIER AS REQUIRED.
  - THE CONTRACTOR SHALL PLACE FILTER BAGS UNDER THE CATCHBASIN AND MANHOLE GRATES FOR THE DURATION OF CONSTRUCTION AND WILL REMAIN IN PLACE DURING ALL PHASES OF CONSTRUCTION.
  - SILT FENCING FOR ENTIRE PERIMETER OF SITE, SHALL BE UTILIZED TO CONTROL EROSION FROM THE SITE DURING CONSTRUCTION.
  - EROSION AND SEDIMENT CONTROL MEASURES MAY BE MODIFIED IN THE FIELD AT THE DISCRETION OF THE CITY OF OTTAWA SITE INSPECTOR OR CONSERVATION AUTHORITY.
  - THE CONTRACTOR IS RESPONSIBLE TO ENSURE ROADS ARE KEPT FREE OF MUD AND DEBRIS.

**NOTES:**

REFER TO REMOVAL PLAN 122204-REM FOR EXISTING REMOVALS



NOTE:  
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES 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 WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

**NOT FOR CONSTRUCTION**

SCALE		FOR REVIEW ONLY	
1:250	MA	CHECKED	MA
1:250	CJR	DRAWN	MA
1:250	CJR	CHECKED	CJR
1:250	JLS	APPROVED	JLS

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LOCATION		PROJECT No.	
CITY OF OTTAWA		122204	
745 SMYTH ROAD		REV # 2	
DRAWING NAME		DRAWING No.	
GRADING AND SERVICING PLAN		122204-GS	