GENERAL NOTES

1. FOR DIMENSIONS AND DETAILS NOT SHOWN ON THE DRAWINGS, REFER TO THE ARCHITECT'S SITE PLAN. DETAILS WITH THE PREFIX 'OS' ARE CITY OF OSHAWA STANDARD DRAWINGS; THOSE PREFIXED BY 'S' ARE REGION OF DURHAM STANDARD DRAWINGS. ALL OTHER CONSTRUCTION DETAILS NOT REFERRED TO ON THE DRAWINGS, REFERENCE SHALL BE MADE TO THE LATEST DESIGN STANDARDS OF THE CITY OF OSHAWA, REGION OF DURHAM OR ONTARIO PROVINCIAL STANDARDS.
2. DIMENSIONS AND ELEVATIONS ARE IN METERS.
3. PIPE SIZES ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
4. ALL DIMENSIONS AND PIPE INVERTS MUST BE VERIFIED PRIOR TO CONSTRUCTION. IF THERE ARE ANY DISCREPANCIES, THE CONTRACTOR IS TO NOTIFY THE ARCHITECT AND CONSULTANT.
5. EXISTING UTILITIES SHOWN ON DRAWINGS ARE FOR REFERENCE PURPOSES ONLY. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING SERVICES AND PROTECTING ALL UTILITIES DURING CONSTRUCTION. GAS, HYDRO, TELEPHONE OR ANY OTHER UTILITIES THAT MAY EXIST ON SITE OR WITHIN THE STREET LINES, MUST BE LOCATED BY ITS OWN UTILITY AUTHORITY AND VERIFIED PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES CAUSED TO EXISTING UTILITIES DURING CONSTRUCTION.
6. ALL EXCAVATIONS SHALL BE IN ACCORDANCE WITH THE CURRENT "OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS".
7. TOPSOIL IN FILL AREAS TO BE STRIPPED AND CLEAN FILL TO BE PLACED AND COMPACTED TO 98% STANDARD PROCTOR DRY DENSITY.
8. NO ORGANIC MATERIAL SHALL BE USED AS BACKFILL.
9. ALL EXISTING PAVEMENT, CURBS, SIDEWALKS, DRIVEWAYS AND BOULEVARD AREAS DISTURBED BY CONSTRUCTION MUST BE REINSTATED TO THE SATISFACTION OF THE CITY OF OSHAWA AND/OR REGION OF DURHAM. AREAS TO BE RESTORED WITH A MINIMUM OF 250mm TOPSOIL UNLESS OTHERWISE NOTED.
10. CONTRACTOR SHALL DISPOSE OF EXCESS MATERIAL, PIPE, ETC. OFF SITE.
11. THE CONTRACTOR SHALL CONTACT THE CITY OF OSHAWA AND THE REGION OF DURHAM TO SCHEDULE A PRE-CONSTRUCTION MEETING A MINIMUM 2 WEEKS PRIOR TO COMMENCEMENT OF THE PROPOSED WORKS.
12. BOULEVARDS TO BE GRADED, TOPSOILED 250mm DEPTH AND SODDED BY CONTRACTOR TO THE CITY'S SATISFACTION.
13. A MINIMUM SETBACK OF 1.0M FROM STREET FURNITURE TO PROPOSED DRIVEWAYS AND SIDEWALKS SHALL BE MAINTAINED. ALL EXISTING STREET FURNITURE TO BE RELOCATED BY THE CONTRACTOR TO A SETBACK OF 1.0m. THE COST OF RELOCATION OF ANY UTILITY IS THE RESPONSIBILITY OF THE DEVELOPER/OWNER.
14. ALL BARRIER FREE ENTRANCES AND BARRIER FREE PATHS OF TRAVEL MUST COMPLY WITH O.B.C.3.8. AND WITH THE CITY OF OSHAWA ACCESSIBILITY STANDARDS.
15. ALL CONCRETE SIDEWALK RAMPS TO BE CONSTRUCTED TO CITY OF OSHAWA STD. OS-304.
16. THE CONTRACTOR SHALL SUPPLY ALL FIRE ROUTE AND HANDICAP SIGNS AS SET OUT IN THE CITY OF OSHAWA BY-LAWS AND DESIGN CRITERIA.
17. ALL EXTERIOR ILLUMINATION TO BE DIRECTED DOWNWARD AS WELL AS INWARD AND DESIGNED TO MAINTAIN ZERO CUTOFF LIGHT DISTRIBUTION AT THE PROPERTY LINE.
18. THE CONTRACTOR SHALL CARRY OUT TV CAMERA INSPECTIONS FOR ALL SEWERS INSTALLED UNDER THIS CONTRACT. THE CAMERA CAN EITHER BE PULLED OR SELF-PROPELLED THROUGH THE PIPES. THE EQUIPMENT IS TO HAVE FEATURES TO ENABLE CLOSE EXAMINATION OF FAULTS AND TO VIEW LATERAL CONNECTIONS. THE EQUIPMENT IS TO PROVIDE "MEASURED" LOCATION OF THE CAMERA RELATIVE TO MANHOLES IN ORDER TO LOCATES FAULTS, LATERALS, ETC. ALL DVD'S SHALL BE SUBMITTED DIRECTLY TO THE CONSULTANT ALONG WITH A WRITTEN REPORT OF ANY PROBLEM AREAS.
19. THE CONTRACTOR SHALL VERIFY BENCHMARK WITH THE CITY OF OSHAWA PRIOR TO CONSTRUCTION.

GRADING

1. SUITABILITY & COMPACTION OF FILL MATERIALS TO BE CONFIRMED BY A GEOTECHNICAL CONSULTANT PRIOR TO PLACEMENT OF ROAD BASE.
2. EXPOSED NATURAL SUBGRADE TO BE INSPECTED AND APPROVED BY THE GEOTECHNICAL CONSULTANT AND SUBSEQUENTLY PROOF-ROLLED FOR FILL PLACEMENT. ANY UNSUITABLE SOILS SHOULD BE REMOVED AND REPLACED WITH COMPACTED APPROVED FILL COMPATIBLE WITH THE SUBGRADE CONDITIONS.
3. ALL APPROVED FILL TO BE PLACED IN LAYERS NOT EXCEEDING 300MM BEFORE COMPACTION AND TO BE UNIFORMLY COMPACTED TO THE SATISFACTION OF THE GEOTECHNICAL CONSULTANT. THIS OPERATION TO BE SUPERVISED BY GEOTECHNICAL PERSONNEL.
4. THE FILL SHOULD NOT BE CONSTRUCTED DURING WINTER MONTHS WHEN PERSISTENT OR INTERMITTENT FREEZING TEMPERATURES OCCUR. IF THE FILL AREAS ARE LEFT FOR A PERIOD OF TIME, A SUITABLE SOIL COVER MUST BE PROVIDED TO PREVENT FROST ACTION AND DISTURBANCE.
5. THE SELECTED FILL MATERIAL SHOULD BE APPROVED BY THE GEOTECHNICAL CONSULTANT.

SANITARY SEWERS

1. ALL SANITARY SEWER MATERIALS AND CONSTRUCTION METHODS MUST CORRESPOND TO CURRENT REGION OF DURHAM STANDARDS AND SPECIFICATIONS.
2. ALL POLYVINYL CHLORIDE PIPE (PVC) UP TO AND INCLUDING 375mm DIAMETER SHALL CONFORM TO CSA SPECIFICATION B182.2 OR LATEST AMENDMENT UNLESS OTHERWISE NOTED. DIMENSION RATIO (DR) SHALL NOT EXCEED 35.
3. ALL 1200 DIA. PRECAST MAINTENANCE HOLES AS PER OPSD 701.010.
4. ALL SANITARY MANHOLES TO HAVE WATERTIGHT COVERS AS PER OPSD 401.030.
5. BEDDING FOR SANITARY SEWERS IN SEPARATE TRENCH SHALL BE CLASS 'P' AS PER S-200.010. UNLESS OTHERWISE DIRECTED BY GEOTECHNICAL CONSULTANT.
6. BEDDING FOR SANITARY SEWERS IN COMMON TRENCH SHALL BE AS PER S-100.040. UNLESS OTHERWISE DIRECTED BY GEOTECHNICAL CONSULTANT.
7. ALL SANITARY MANHOLES TO BE BENCHED TO THE OBVERT AS PER OPSD 701.021.

WATERMAINS

1. ALL WATERMAINS AND WATER SERVICE MATERIALS AND CONSTRUCTION METHODS MUST CORRESPOND TO CURRENT REGION OF DURHAM STANDARDS AND SPECIFICATIONS.
2. WATERMAINS UP TO AND INCLUDING 300mm SHALL BE POLYVINYL CHLORIDE CONFORMING TO CSA SPECIFICATION B137-3 AND AWWA C900 CLASS 150.
3. WATERMAINS MUST HAVE A MINIMUM VERTICAL CLEARANCE OF 0.50m OVER AND 0.50m UNDER SEWERS AND ALL OTHER UTILITIES WHEN CROSSING. WATERMAIN DEFLECTIONS SHALL BE AS PER S-200.070.
4. WATERMAINS AND WATER SERVICES ARE TO HAVE A MINIMUM COVER OF 1.8m MEASURED FROM TOP OF PIPE TO THE FINISHED CENTRE LINE ROAD GRADE.
5. GENTLE CURVATURE OF THE WATERMAIN (IE. WITHOUT FITTINGS) IS TO BE ACHIEVED ONLY BY DEFLECTING THE JOINTS. BENDING OF THE PIPE BARREL SHALL NOT BE PERMITTED ANYWHERE ON THIS PROJECT. CONTRACTOR TO ADHERE TO MANUFACTURER'S SPECIFICATIONS WHEN PERFORMING JOINT DEFLECTION.
6. ALL WATER VALVES, FITTINGS, SERVICE CONNECTIONS, TRACER WIRE, AND HYDRANTS ARE TO BE CATHODICALLY PROTECTED IN ACCORDANCE WITH REGION OF DURHAM STANDARDS. TRACER WIRE TO BE PROTECTED WITH ONE 5.4kg ZINC ANODE FOR EVERY 1000m OF TRACER WIRE. LOCATION OF TRACER WIRE ANODE TO BE DETERMINED IN THE FIELD.
7. HYDRANT TO BE INSTALLED AS PER STD. S-210.010 COMPLETE WITH GATE VALVE, ANCHOR TEE AND APPURTENANCES. HYDRANTS TO BE "STORZ" TYPE PUMPER HYDRANTS.
8. RESILIENT SEAT GATE VALVES CONFORMING TO AWWA C-509 SHALL BE USED ON ALL WATERMAINS 300mm DIAMETER AND LESS IN SIZE. VALVE AND VALVE BOX AS PER REGION OF DURHAM STD.S-220.010.
9. WATERMAIN TRENCH BEDDING AS PER REGION OF DURHAM STD. S-200.010 CLASS P, UNLESS OTHERWISE DIRECTED BY THE GEOTECHNICAL CONSULTANT.
10. WATERMAIN JOINT RESTRAINERS WITH GRANULAR THRUST BLOCKS SHALL BE AS PER REGION OF DURHAM STD. S-200.050 AND S-200.060. ALL WATERMAIN CONSTRUCTED IN FILL AREAS TO BE RESTRAINED.
11. ALL NEW WATERMAIN AND WATER SERVICES ARE TO BE PRESSURE TESTED, FLUSHED AND CHLORINATED AS A PART OF THIS PROJECT. THE CONTRACTOR IS TO INCLUDE BLOW OFFS, TEST POINT BYPASSES, TEMPORARY HYDRANTS AND ANY OTHER NECESSARY MATERIALS TO PERFORM THESE ACTIVITIES TO THE REGION'S SATISFACTION.
12. EXISTING FEATURES MUST BE ADJUSTED TO FINISHED GRADE

STORM SEWERS

1. ALL STORM SEWER MATERIALS AND CONSTRUCTION METHODS MUST CORRESPOND TO CURRENT CITY OF OSHAWA STANDARDS AND SPECIFICATIONS.
2. STORM MANHOLE FRAME & GRATE PER OPSD 401.010, TYPE A. CATCHBASIN MANHOLE GRATE PER OPSD 400.020 UNLESS OTHERWISE NOTED.
3. ALL STORM MANHOLES SHALL BE BENCHED PER OPSD 701.021. ALL CATCHBASIN MANHOLES DO NOT REQUIRE BENCHING AND A 300mm SUMP IS TO BE PROVIDED.
4. PVC SEWER PIPE UP TO AND INCLUDING 600mm DIAMETER SHALL CONFORM TO CSA SPECIFICATIONS B182.2 AND B182.3 AND OPSS 1841 OR LATEST AMENDMENT UNLESS OTHERWISE SPECIFIED.
5. RIBBED PVC SEWER PIPE MAY BE USED IN PLACE OF PVC SEWER PIPE UP TO AND INCLUDING 600mm DIAMETER AND SHALL CONFORM TO CSA SPECIFICATIONS B182.4 AND OPSS 1841 OR LATEST AMENDMENT UNLESS OTHERWISE SPECIFIED.
6. REINFORCED CONCRETE PIPE SHALL BE USED FOR PIPES LARGER THAN 600mm DIAMETER AND SHALL CONFORM TO CSA SPECIFICATIONS A257.2 - M1982 OR LATEST AMENDMENT UNLESS OTHERWISE NOTED. MINIMUM STRENGTH SHALL BE CLASS 65-D.
7. STORM SEWERS AND C.B. LEADS TO BE FITTED WITH APPROVED RUBBER GASKET JOINTS.
8. SINGLE CATCHBASINS TO BE PRECAST AS PER OPSD 705.010. FRAME AND GRATE AS PER OPSD 400.020 UNLESS OTHERWISE NOTED.
9. DOUBLE CATCHBASINS TO BE PRECAST AS PER OPSD 705.020. FRAME AND GRATE AS PER OPSD 400.020 UNLESS OTHERWISE NOTED.
10. CATCHBASIN CONNECTIONS: SINGLE - MIN. 250mm AT MIN. 0.35%; DOUBLE - MIN. 250mm AT MIN. 1.40% UNLESS OTHERWISE NOTED.
11. CATCHBASIN CONNECTION DETAIL AS PER OPSD 708.01 OR 708.03.
12. LATERALS AND LEADS AS PER OPSD 1006.01 OR 1006.02.
13. ALL PIPE TO PIPE CONNECTIONS TO BE CONSTRUCTED USING PREFABRICATED MANUFACTURERS TEES IF THE STORM SEWER IS 450mm AND SMALLER. CONNECTIONS TO STORM SEWERS 525mm AND LARGER MAY BE MADE USING FIELD INSTALLED TEES SUCH AS MORTARED IN BELLS OR STRAP ON SADDLES AND SHALL BE MADE WATERTIGHT.
14. ALL ROOF DRAIN MANHOLES TO HAVE WATERTIGHT COVERS AS PER OPSD 401.030.
15. BEDDING FOR RIBBED PVC AND PVC STORM SEWERS SHALL BE CLASS "P" IN COMMON TRENCH SHALL BE AS PER S-100.040 AND S-200.010. BEDDING FOR CONCRETE PIPE SHALL BE CLASS "B" IN COMMON TRENCH SHALL BE AS PER S-100.040 AND S-200.010. UNLESS OTHERWISE DIRECTED BY GEOTECHNICAL CONSULTANT.
16. STORM MAINTENANCE HOLES TO BE PRECAST CONCRETE AS PER OPSD 701.010 TO OPSD 701.015, UNLESS OTHERWISE NOTED.
17. IN ACCORDANCE WITH CITY OF OSHAWA STORM SEWER USE BY-LAW, THE ANNUAL INSPECTION AND MAINTENANCE RECORDS FOR THE OGS MUST BE MAINTAINED BY THE PROPERTY OWNER AND MADE AVAILABLE TO THE CITY UPON REQUEST.

PAVEMENT STRUCTURE

1. PAVEMENT DESIGN MUST BE VERIFIED BY A GEOTECHNICAL CONSULTANT PRIOR TO GRADING AND ROAD BASE CONSTRUCTION.
2. DURING PAVEMENT CONSTRUCTION, A GEOTECHNICAL CONSULTANT IS TO BE AVAILABLE ON SITE TO INSPECT THE WORK.
3. COMPACTION TESTS ARE TO BE CARRIED OUT TO THE SATISFACTION OF THE GEOTECHNICAL CONSULTANT.
4. PAVEMENT JOINT TREATMENT AS PER OS-530.
5. SHOULD CONSTRUCTION TAKE PLACE DURING THE WINTER OR WET MONTHS (I.E. OCT. 15 TO MAY 1), IT IS RECOMMENDED BY THE CITY OF OSHAWA THAT THE PAVEMENT STRUCTURES BE DESIGNED ACCORDING TO THE CITY OF OSHAWA'S TYPE E PAVEMENT DESIGN.
6. THE GRANULAR SUBBASE AND BASE MATERIALS SHOULD BE UNIFORMLY COMPACTED TO 100 PERCENT OF THEIR STANDARD PROCTOR MAXIMUM DRY DENSITIES. THE ASPHALT MATERIALS SHOULD BE COMPACTED TO BETWEEN 92 AND 96.5 PERCENT OF THEIR MARSHALL MAXIMUM RELATIVE DENSITIES, AS MEASURED IN THE FIELD USING A NUCLEAR DENSITY GAUGE.
7. EVEN THOUGH THE COMPACTION REQUIREMENTS HAVE BEEN MET, THE SUBGRADE STRENGTH MAY NOT BE ADEQUATE TO SUPPORT HEAVY CONSTRUCTION LOADING ESPECIALLY DURING WET WEATHER OR WHERE BACKFILL MATERIALS WET OF OPTIMUM HAVE BEEN PLACED. IN THIS REGARD, THE DESIGN GRANULAR B SUBBASE THICKNESS MAY NOT BE SUFFICIENT FOR A CONSTRUCTION HAUL ROAD AND ADDITIONAL GRANULAR B (IN THE ORDER OF 300 TO 450 MM) MAY BE REQUIRED. IN ANY EVENT, THE SUBGRADE SHOULD BE PROOFROLLED AND INSPECTED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING THE GRANULAR B SUBBASE AND ADDITIONAL GRANULAR PLACED, AS REQUIRED, CONSISTENT WITH THE PREVAILING WEATHER CONDITIONS AND ANTICIPATED USE BY CONSTRUCTION TRAFFIC.
8. TO PROVIDE ADEQUATE SUBSURFACE DRAINAGE, SHORT (APPROXIMATELY 3m LONG) PERFORATED STUBDRAINS SHOULD BE PROVIDED AT INTERNAL CATCHBASIN LOCATIONS ON ALL FOUR SIDES OF THE CATCHBASINS. STUB DRAINS SHOULD BE A MINIMUM OF 300mm BELOW THE BOTTOM OF THE GRANULAR SUBBASE AND CONNECTED TO THE CATCHBASINS. THE DRAINS SHOULD CONSIST OF 150mm DIAMETER GEOTEXTILE WRAPPED PERFORATED PIPE, SURROUNDED ON ALL SIDES BY AT LEAST 150mm OF 19mm CLEAR STONE.

CURB AND GUTTER, SUBDRAINS, AND SIDEWALK

1. CONCRETE BARRIER CURB AS PER OPSD 600.110 TO BE USED (FULL HEIGHT OR DEPRESSED CURB AS SPECIFIED ON GRADING PLANS). CONCRETE BARRIER CURB · (MODIFIED OPSD 600.110) TO BE USED IN CONJUNCTION WITH DETAIL FOR CONCRETE SIDEWALK RAMPS (OS-304).
2. SUBDRAINS TO BE CONSTRUCTED AS PER DETAIL OS-220 ON DT-2 DRAWING. SUBDRAINS TO BE LOCATED AT ALL ROAD CATCHBASINS.
3. SUBDRAINS TO BE 150mmø PERFORATED DUAL WALL POLYETHYLENE PIPE WITH SMOOTH INNER SURFACE AND HAVE A MINIMUM STIFFNESS OF 320kpA.
4. SUBDRAINS TO BE ENCASED IN GRANULAR 'A' MATERIAL AS PER DETAIL OS-220 AND WRAPPED IN FILTER FABRIC.
5. SIDEWALKS AS PER OS-301, OS-303 AND OS-304.

CALCIUM CARBONATE RECOMMENDATIONS

1. THE USE OF THE FOLLOWING AGGREGATE MATERIALS SHOULD BE AVOIDED FOR ALL FILL PLACEMENT INCLUDING BENEATH ROADWAYS, DRIVEWAYS, FLOOR SLABS, FOOTINGS AND SURROUNDING FOOTING DRAINS: CRUSHED AND/OR RECYCLED CONCRETE; SLAG, OR SIMILAR STEEL MILL BY-PRODUCTS; GRANULAR FILL MATERIALS CONTAINING CRUSHED AND/OR RECYCLED CONCRETE AND SLAG OR SIMILAR STEEL MILL BY-PRODUCTS; LIME, LIME KILN DUST (LKD) OR CEMENT KILN DUST (CKD); FLY ASH AND FLY ASH PRODUCTS; AND GYPSUM BASED FILL MATERIALS.

2. USING NON-FILTER WRAPPED PERFORATED WEEPING TILE PIPING IN FINE GRAINED COHESIVE SOIL ENVIRONMENTS (I.E. CLAYEY SILT TILL SOILS OR SIMILAR SOILS). GOLDER ASSOCIATES ADVISES THAT CONSIDERATION OF LOCALIZED SOIL CONDITIONS BE TAKEN INTO ACCOUNT WITH THE DECISION TO USE FILTER WRAPPED OR NON-FILTER WRAPPED WEEPING TILE PIPING.

EROSION AND SILTATION CONTROL PLAN GENERAL NOTES

1. SILTATION CONTROL FENCE TO BE INSTALLED PRIOR TO CONSTRUCTION.
2. LOCATION OF SILT FENCES IS APPROXIMATE. EXACT LOCATION IS TO BE DETERMINED ON-SITE BY THE CONTRACTOR IN CONSULTATION WITH THE ENGINEER AND THE OWNER.
3. ALL CONSTRUCTION VEHICLES TO ENTER AND LEAVE THE SITE AT APPROVED LOCATION ONLY.
4. ALL CONSTRUCTION VEHICLES TO BE REFUELED AT DESIGNATED AREAS ONLY.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL SILTATION CONTROL DEVICES AND STRUCTURES IN GOOD WORKING CONDITIONS AT ALL TIMES. CONTRACTOR AND CONSULTANT SHALL INSPECT SUCH DEVICES ON A WEEKLY BASIS, BEFORE AND AFTER EACH SIGNIFICANT RAINFALL EVENT OR SNOW MELT. ALL IDENTIFIED REPAIRS SHALL BE RECTIFIED WITHIN 24 HOURS.
6. SEDIMENT TO BE REMOVED FROM SEDIMENT PONDS WHEN THE SEDIMENT ACCUMULATION ZONE IS FULL. THE REQUIRED STORAGE OF 125m3/ha SHALL BE MAINTAINED AT ALL TIMES.
7. LOT DRAINAGE SHALL BE DIRECTED TOWARDS TEMPORARY SEDIMENT PONDS OR AS INDICATED ON THE DRAWINGS.
8. SEDIMENT TO BE REMOVED FROM BEHIND SILT FENCES WHEN IT IS ONE THIRD TO HALF WAY UP THE FILTER CLOTH.
9. IF UNDERGROUND SERVICES AND CONSTRUCTION OF ROADWAYS DOES NOT PROCEED FOLLOWING ROUGH GRADING, THE AREA SHOULD BE STABILIZED WITH HYDROSEED WITHIN 30 DAYS AND LEFT IN AN UNDISTURBED CONDITION.
10. TEMPORARY CATCHBASIN SILTATION CONTROL DEVICES SHALL BE INSTALLED IN ALL CATCHBASINS AS PER "TEMPORARY SILTATION CONTROL DEVICE (CATCHBASINS)" DETAIL.
11. ALL TEMPORARY SEDIMENT PONDS ARE TO BE CONSTRUCTED AT THE BEGINNING OF THE EARTHWORKS PROGRAM AND REMAIN IN PLACE UNTIL DIRECTED BY THE CONSULTANT.
12. RUNOFF CONTAINED IN TEMPORARY SEDIMENT PONDS IS TO BE PUMPED TO A SAFE OUTLET PRIOR TO STORM SEWER CONSTRUCTION. (REFER TO NOTE 3 IN CONSTRUCTION PROGRAM).
13. EXISTING VEGETATION SHALL NOT BE IMPACTED BY THE INSTALLATION OF EROSION/SEDIMENTATION CONTROL DEVICES.
14. AREAS TO BE HYDROSEEDED ARE TO BE DONE SO WITHIN 30 DAYS OF THE COMPLETION OF EARTHWORKS.
15. TEMPORARY STORM SEWER HALF BULKHEADS TO BE INSTALLED AT LOCATIONS SHOWN ON ER DRAWING. BULKHEADS TO BE INSPECTED ON A WEEKLY BASIS BEFORE AND AFTER EACH SIGNIFICANT RAINFALL EVENT OR SNOWFALL. ALL IDENTIFIED REPAIRS SHALL BE RECTIFIED WITHIN 24 HRS. SEDIMENT TO BE REMOVED FROM UPSTREAM SIDE OF BULKHEADS WHEN DEPTH OF SEDIMENT REACHES 75% OF BULKHEAD HEIGHT.

TEMPORARY SEDIMENT POND CONSTRUCTION AND MAINTENANCE

1. IF IT IS NECESSARY TO DRAIN ANY OF THE SEDIMENT PONDS THEY SHALL BE PUMPED TO A "WETLANDS" FILTER BAG OR EQUAL.
2. ALL TEMPORARY SEDIMENT PONDS ARE TO BE CONSTRUCTED PER DETAILS ON THIS DRAWING.
3. ALL TEMPORARY SEDIMENT PONDS ARE TO BE CONNECTED TO THE ADJACENT STORM SEWER OR AS SHOWN ON THE DRAWINGS.
4. ALL PUMPING OPERATIONS ARE TO BE PERFORMED UNDER THE DIRECTION OF THE CONSULTANT AND CITY ENGINEER.

DECOMMISSION OF TEMPORARY SEDIMENT PONDS

1. THE LOTS WHICH HAVE TEMPORARY SEDIMENT PONDS WILL NOT BE AVAILABLE FOR BUILDING PERMITS UNTIL SATISFACTORY ARRANGEMENTS ARE MADE TO REMOVE, REDUCE THE SIZE OF OR RELOCATE THE TEMPORARY SEDIMENT POND.
2. SEDIMENT PONDS TO BE DECOMMISSIONED WHEN AUTHORIZED BY CONTRACT ADMINISTRATOR AND CITY OF OSHAWA.
3. WHEN DIRECTED BY THE CONSULTANT, DRAIN THE SEDIMENT PONDS BY PUMPING TO A "WETLANDS" FILTER BAG OR EQUAL.
4. REMOVE THE TEMPORARY HICKENBOTTOM DRAINS, RIP RAP, FILTER FABRIC AND ANY CLEAR STONE AT THE BOTTOM OF THE TEMPORARY SEDIMENT POND AND DISPOSE OFF SITE.
5. EXCAVATE AND REMOVE ALL DEPOSITED MATERIAL AT THE BOTTOM OF THE PERMANENT STORMWATER MANAGEMENT POND . ALL EXCAVATED MATERIAL IS TO BE DEPOSITED OFF SITE.
6. EXCAVATE AND REMOVE ALL MATERIAL 0.75 METRES (MIN) BELOW BOTTOM OF ANY TEMPORARY SEDIMENT POND LOCATED ON A BUILDING LOT OR MORE AS DIRECTED BY THE GEOTECHNICAL CONSULTANT. ALL EXCAVATED MATERIAL IS TO BE DISPOSED OFF SITE OR AS DIRECTED BY THE CONSULTANT.
7. ONCE THE TEMPORARY SEDIMENT POND HAS BEEN REMOVED THE LOT(S) IS TO BE ENGINEERED FILLED TO BALANCE LINE. ALL FILLING IS TO BE COMPACTED TO 98% STANDARD PROCTOR DENSITY (OR TO A COMPACTION THAT IS APPROVED BY THE GEOTECHNICAL CONSULTANT).

CONSTRUCTION PROGRAM:

1. INSTALL MUD-MAT AT LOCATION SHOWN ON DWG. ER-1. MUD-MAT TO BE MAINTAINED IN GOOD WORKING CONDITION DURING CONSTRUCTION. INSTALL SEDIMENT CONTROL FENCE PER DETAIL ON THIS DRAWING AT LOCATIONS SHOWN ON ER DRAWINGS.
2. SEDIMENT CONTROL FENCE TO BE MAINTAINED IN GOOD WORKING CONDITION DURING CONSTRUCTION.
3. EXCAVATION OF TEMPORARY PONDS AS SHOWN ON ER DRAWINGS (PONDS TO BE REGULARLY MONITORED AND IF REQUIRED ARE TO BE PUMPED UNTIL THE MINOR SYSTEM IS IN PLACE. THE CITY ENGINEER IS TO BE CONTACTED PRIOR TO CLEANING OR PUMPING POND). THE TEMPORARY SEDIMENT CONTROL PONDS AND SWALES ARE TO BE KEPT IN OPERATION UNTIL FINE GRADING AND SODDING OF DISTURBED AREAS IS COMPLETED. AS THE DEVELOPMENT NEARS COMPLETION WITH SURFACE STABILIZATION CONSISTING OF PAVEMENT, DWELLING UNITS AND SODDED AREA, THE TEMPORARY TRAPS CAN BE REDUCED PROPORTIONALLY.
4. CONSTRUCT TEMPORARY SWALES PER "TYPICAL DRAINAGE DITCH SECTION" ON THE DETAILS PLAN, AT LOCATIONS EROSION AND SEDIMENT CONTROL DRAWING(S).
5. PERFORM ROUGH GRADING IN AREAS SHOWN, TO THE PREGRADE VALUES SET OUT IN THE EARTHWORKS CONTRACT, INCLUDING ENGINEERED FILL.
6. ONCE SEWERS HAVE BEEN INSTALLED, REMOVE TEMPORARY PONDS AND INSTALL TEMPORARY LOT DRAINS CONNECTED TO THE STORM SEWER SYSTEM.
7. WHEN CATCHBASINS HAVE BEEN INSTALLED, THE TEMPORARY SILTATION CONTROL DEVICES ARE TO BE PUT IN PLACE AS SHOWN ON THE DETAILS PLAN. THE CATCHBASIN SILTATION CONTROL DEVICES ARE TO REMAIN UNTIL FINE GRADING AND SODDING IS COMPLETED ON THE ABUTTING LOTS.
8. ONCE ROADS HAVE BEEN PAVED, REMOVE MUD-MAT AND DISPOSE OFFSITE.
9. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MAY BE REQUIRED AND SHALL BE DETERMINED BY THE ENGINEERING CONSULTANT AND/OR THE CITY OF OSHAWA.
10. DURING CONSTRUCTION, MUD TRACKING CONTROL (CONSISTING OF FLUSHING AND SWEEPING ROADS) IS TO BE PROVIDED FOR ALL ROADS, AS WARRANTED, IN ACCORDANCE WITH CITY OF OSHAWA MUD TRACKING AND DUST CONTROL POLICIES.

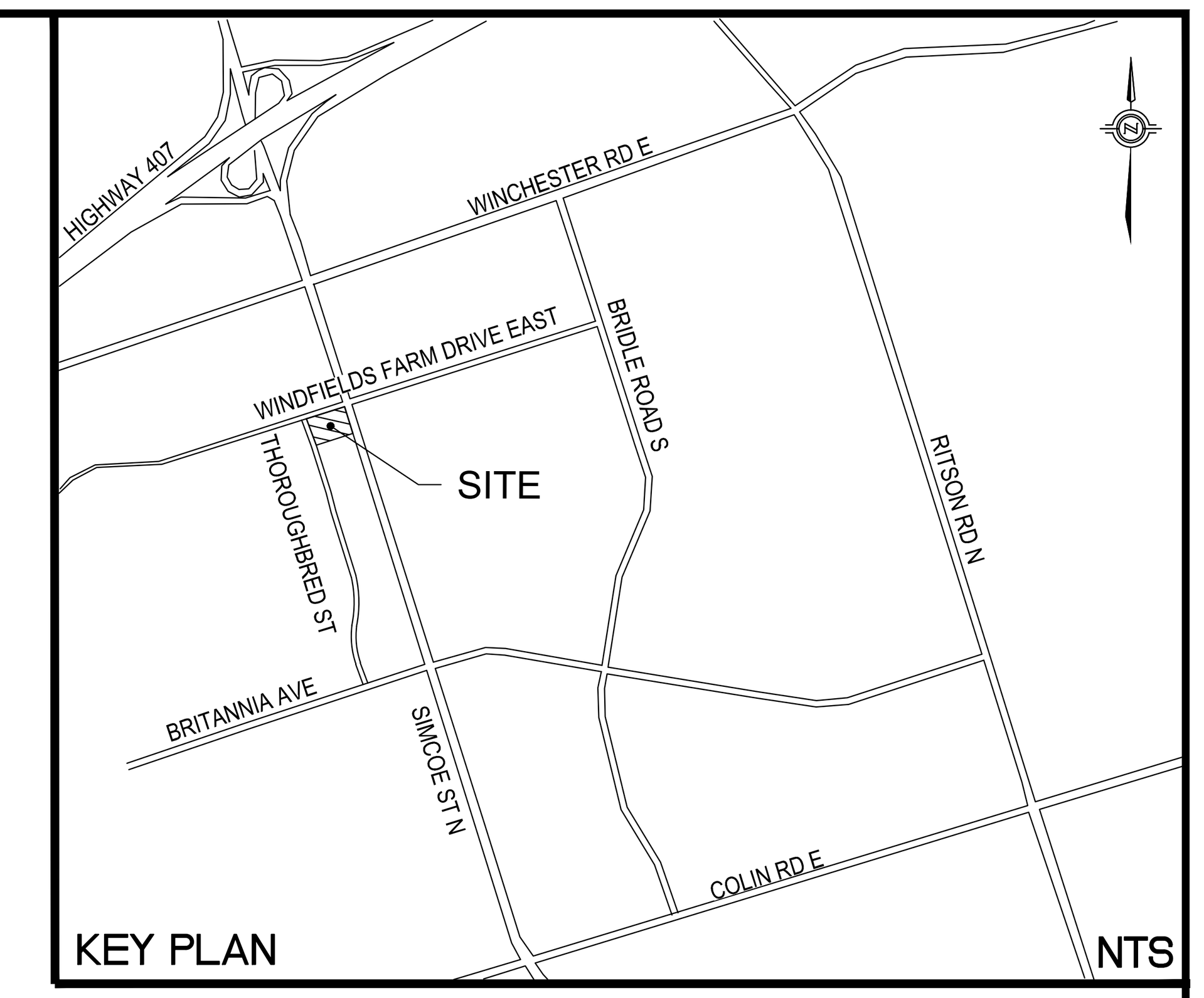
SPILL RESPONSE NOTES

1. CONTRACTOR MUST HAVE SPILL KITS AVAILABLE ON-SITE AT ALL TIMES THROUGH THE COURSE OF CONSTRUCTION.
2. CONTRACTOR TO NOTIFY THE CONSULTANT IMMEDIATELY WHEN A SPILL OCCURS TO ENSURE APPROPRIATE RESPONSE MEASURES ARE TAKEN.

PROPOSED DUST CONTROL MEASURES AND RESPONSE PLAN

DUST CONTROL WILL BE SUPPLIED BY THE GENERAL CONTRACTOR BY WAY OF THE FOLLOWING:

1. PRE-GRADING PLANNING
   a. TOPSOIL STRIPPING AND EARTHWORKS WILL COMMENCE UPON RECEIPT OF THE SITE ALTERATION BY-LAW PERMIT FROM THE CITY OF OSHAWA. THE SERVICING WILL COMMENCE AS SOON AS POSSIBLE AND BE CARRIED OUT IN CONJUNCTION WITH THE EARTHWORKS. THIS WILL REDUCE THE OVERALL AMOUNT OF TIME THAT AREAS ARE LEFT SUSCEPTIBLE TO WIND THAT CREATES BLOWING DUST. THE CONTRACTOR SHALL APPLY WATER TO HAUL ROADS AND STOCKPILE(S) BY WAY OF WATER TRUCK.
2. WATERING (POST-GRADING)
   a. WITHIN AREAS WHERE EARTHWORKS AND OR UNDERGROUND MUNICIPAL SERVICING IS ON-GOING, WATER IS TO BE UTILIZED AT SUFFICIENT QUANTITY TO PREVENT VISIBLE EMISSIONS FROM EXTENDING MORE THAN 30M FROM THE POINT OF ORIGIN.
3. REDUCE VEHICLE SPEED
   a. THE ON-SITE SPEED LIMIT FOR CONSTRUCTION VEHICLES WILL BE 25km/h MAXIMUM. THIS MAY NEED TO BE USED IN CONJUNCTION WITH WATERING TO PREVENT VISIBLE DUST EMISSIONS.
4. RESTRICT ACTIVITIES DURING HIGH WIND PERIODS
   a. THE HIGH VISIBILITY OF CERTAIN WORKS AND THE CLOSE PROXIMITY AND POPULATION IMPACT SHOULD BE TAKEN INTO CONSIDERATION WHEN SCHEDULING DUST-PRODUCING WORK.
5. ROAD CLEANING
   a. SPILLAGE, EROSION OR MATERIALS "TRACKED OUT" ON A ROAD TO BE CLEANED USING MECHANICAL STREET SWEEPERS OR FLUSHER TRUCK AT LEAST BY THE END OF THE WORK DAY. HOWEVER, IF THE SPILLAGE EXTENDS MORE THAN 15M ALONG A PAVED PUBLIC ROADWAY IT MUST BE CLEANED UP IMMEDIATELY.
   b. IMPORTING AND EXPORTING OF MATERIALS ON AND OFF-SITE WILL BE SHUT DOWN DURING AND FOLLOWING INCLEMENT WEATHER UNTIL THE ROAD SURFACES HAVE BEEN CLEANED. MONITORING AND RECORDING OF THE SITE CONDITIONS WILL BE UNDERTAKEN BY FIELD STAFF AND THE CONTRACTOR'S SITE SUPERINTENDENT.



KEY PLAN NTS

LIST OF DRAWINGS

PAVEMENT STRUCTURE DETAILS:

LIGHT DUTY ASPHALT (PARKING LOT)
40mm COMPACTED DEPTH OF HL-3 (SURFACE)
50mm COMPACTED DEPTH OF HL-8 BINDER (BASE)
150mm COMPACTED DEPTH OF GRANULAR A
300mm COMPACTED DEPTH OF GRANULAR B
540mm TOTAL COMPACTED DEPTH

HEAVY DUTY ASPHALT (FIRE ROUTE)
40mm COMPACTED DEPTH OF HL-3 (SURFACE)
75mm COMPACTED DEPTH OF HL-8 BINDER (BASE)
150mm COMPACTED DEPTH OF GRANULAR A
450mm COMPACTED DEPTH OF GRANULAR B
715mm TOTAL COMPACTED DEPTH

PAVEMENT STRUCTURE IN THOROUGHBRED STREET R.O.W.

40mm OF SURFACE ASPHALT (HL3)
80mm OF BASE ASPHALT (MDBC**)
150mm OF GRANULAR A
MIN. 480mm OF GRANULAR B
**HL8 ASPHALT BASE COURSE SHALL MEET MIN. SPECIFICATIONS FOR MEDIUM DENSITY BASE COURSE (AS PER OPSS-1150).

BENCH MARK:
CITY OF OSHAWA BENCHMARK No. 214 HAVING AN ELEVATION OF 182.701 METRES (GEODETIC). LOCATED ON THE SOUTHWEST CORNER OF SIMCOE STREET NORTH AND SIXTH CON. CUT CROSS AND PAINT ON NORTHERLY BOLT IN NORTHEAST SECTION OF LEG ON NORTHEAST CORNER CONCRETE BASE FOR HYDRO TOWER.

NOTES:
LOCATION OF BURIED UTILITIES ARE BASED UPON MARKINGS FOUND ON-SITE. ORIGIN AND AGE OF MARKINGS ARE UNKNOWN. CONTRACTOR TO VERIFY LOCATION OF ACTUAL UTILITIES PRIOR TO CONSTRUCTION.

REFERENCES

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1	2022-10-12	ISSUED FOR 1st SPA	M.I.

ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED

100 Scotia Court
Whitby, ON L1N 8Y6
www.wsp.com

LICENSED PROFESSIONAL ENGINEER
K. KYRIOPOULOS
100149682
June 16, 2023
PROVINCE OF ONTARIO

RIOCAN COMMERCIAL SITE C2
BLOCK 2, PART OF LOT 13, CONCESSION 5
CITY OF OSHAWA, ON

NOTES PLAN

DRAWN BY CADD	LOC.	CONST.	CITY	DESIGN BY M.D.	CHKD. BY K.K.	APPD. BY
DATE			REGION	DESIGN BY	CHKD. BY	APPD. BY

SCALE N.T.S.

221-07325 DWG. No. NT-1

Jul 13, 2023 - 1:23pm
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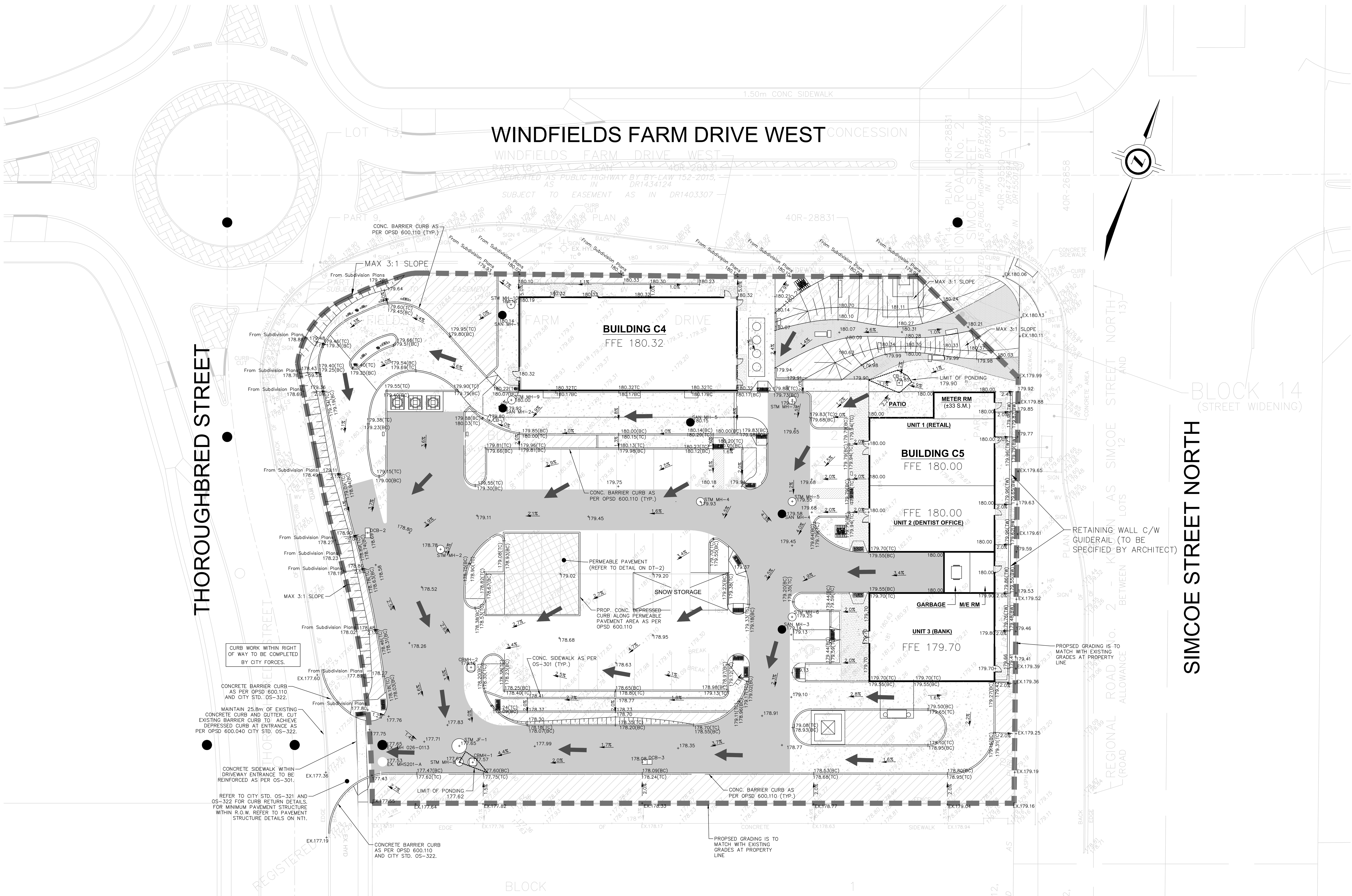
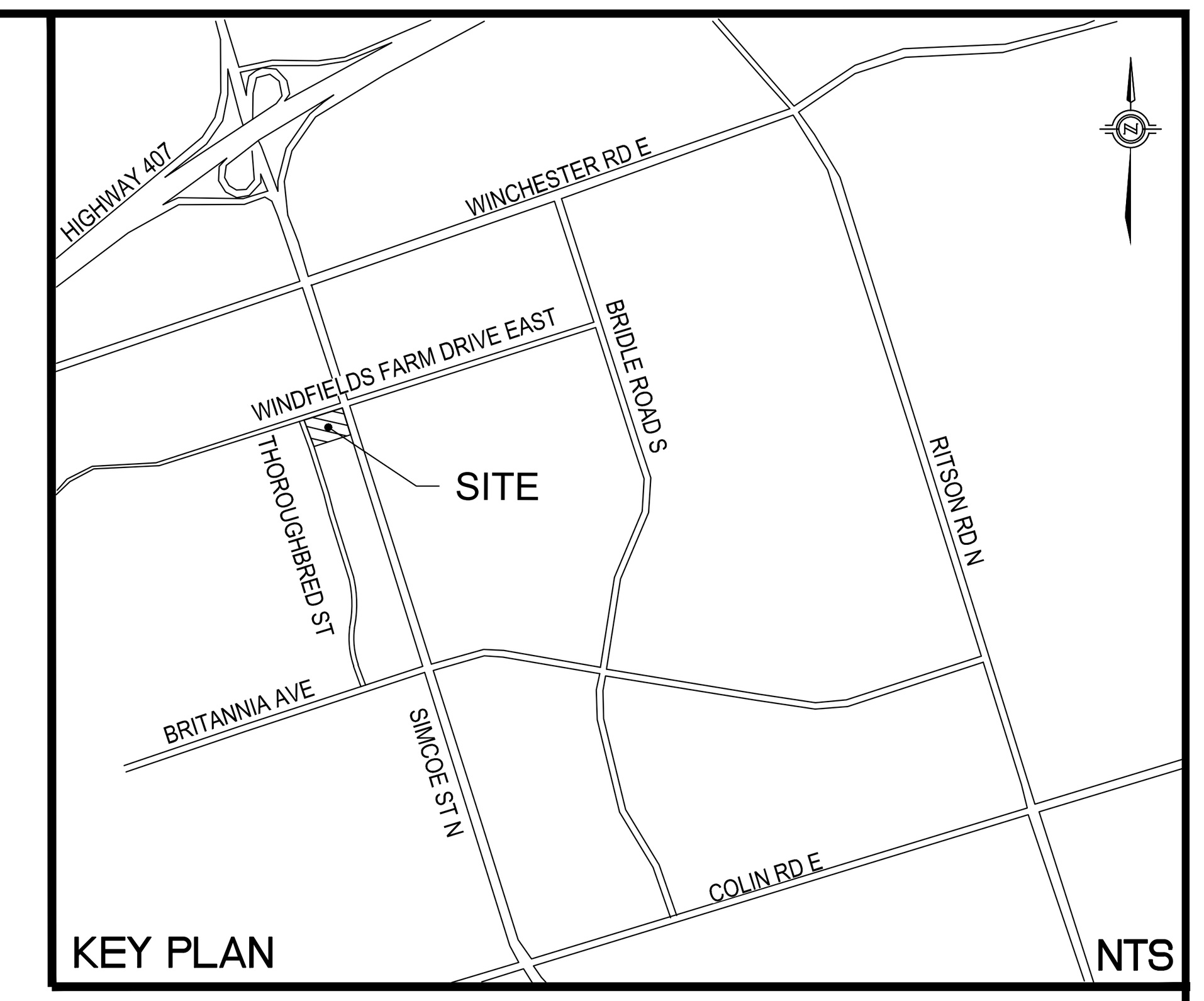


EARTHWORKS NOTES*:
TOPSOIL ON SITE TO BE REMOVED≈6445m³
REQUIRED FILL ON SITE≈1875m³
*VALUES ARE APPROXIMATE, BASED ON AVAILABLE TOPOGRAPHICAL SURVEY



LEGEND:

- PROPERTY LINE
- ×EX 175.31 — EXISTING GROUND ELEVATION
- ×176.16 — PROPOSED GRADE
- ×TC 177.58 — PROPOSED TOP OF CURB ELEVATION
- ×BC 177.55 — PROPOSED BOTTOM OF CURB ELEVATION
- ×SW 178.97 — PROPOSED SWALE ELEVATION
- ×HP/LP 178.46 — PROPOSED HIGH/LOW POINT ELEVATION
- 2.0% — DIRECTION OF OVERLAND FLOW
- HEAVY DUTY ASPHALT
- CIP CONCRETE
- LANDSCAPED AREA
- CONCRETE PAVERS
- FROST SLAB

THE CURRENT LANDSCAPING PLAN HAS BEEN REVIEWED WITH THE GRADING PLAN AND THERE DOES NOT APPEAR TO BE ANY ABOVE GROUND CONFLICTS WITH MUNICIPAL INFRASTRUCTURE

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BENCH MARK:

CITY OF OSHAWA BENCHMARK No. 214 HAVING AN ELEVATION OF 182.701 METRES (GEODETIC). LOCATED ON THE SOUTHWEST CORNER OF SIMCOE STREET NORTH AND SIXTH CON. CUT CROSS AND PAINT ON NORTHERLY BOLT IN NORTHEAST SECTION OF LEG ON NORTHEAST CORNER CONCRETE BASE FOR HYDRO TOWER.

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100 Scotia Court
Whitby, ON L1N 8Y6
www.wsp.com

RIOCAN COMMERCIAL SITE C2
BLOCK 2, PART OF LOT 13, CONCESSION 5
CITY OF OSHAWA, ON

SITE GRADING PLAN

LICENSED PROFESSIONAL ENGINEER K. KYRIOPOULOS 100149802 June 16, 2023 PROVINCE OF ONTARIO

DRAWN BY CADD	LOC.	CONST.	CITY	DESIGN BY M.D.	CHKD. BY K.K.	APPD. BY
DATE			REGION	DESIGN BY	CHKD. BY	APPD. BY

SCALE 1:300

221-07325 DWG. No. GR-1

Jul 13, 2023 – 1:25pm
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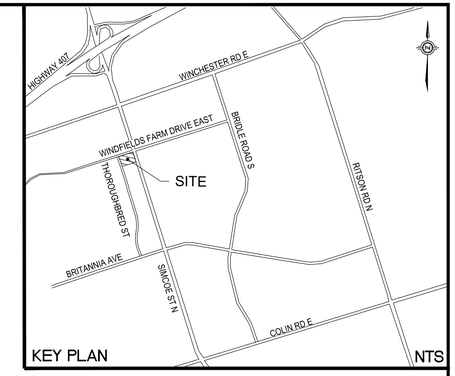
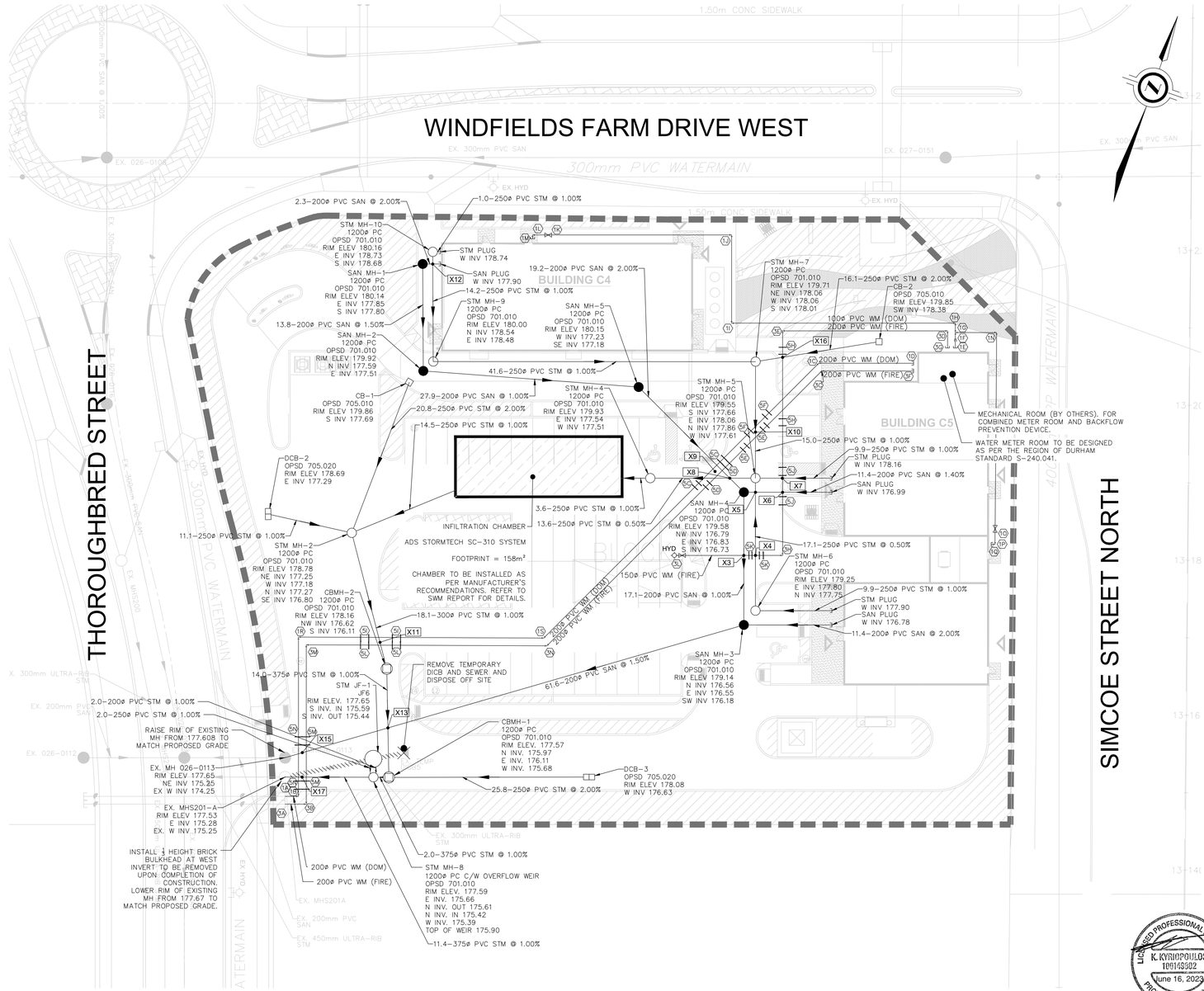
X NO.	PIPE	INVERT	PIPE	OBVERT	SEPARATION
X3	WM (FIRE)	177.56	SAN	176.85	0.71
X4	STM	177.76	WM (FIRE)	177.22	0.54
X5	STM	177.67	SAN	177.05	0.62
X6	SAN	176.90	WM (FIRE)	176.40	0.50
X7	STM	178.13	WM (FIRE)	176.33	1.80
X8	STM	177.58	SAN	177.04	0.54
X9	STM	177.58	WM (FIRE)	176.37	1.21
	STM	177.58	WM (DOM)	176.37	1.21
	SAN	176.87	WM (FIRE)	176.37	0.50
	SAN	176.89	WM (DOM)	176.37	0.52
X10	STM	177.94	WM (FIRE)	177.34	0.60
	STM	177.95	WM (DOM)	177.34	0.61
	STM	178.10	WM (DOM)	176.64	1.46
	STM	178.19	WM (FIRE)	176.64	1.55
X11	STM	176.64	WM (DOM)	176.05	0.59
	STM	176.65	WM (FIRE)	176.15	0.50
X12	STM	177.97	SAN	177.34	0.63
X13	STM	176.91	SAN	175.66	1.25
X15	SAN	175.28	WM (FIRE)	174.77	0.51
	SAN	175.29	WM (DOM)	174.77	0.52
X16	STM	178.13	WM (FIRE)	177.56	0.57
	STM	178.11	WM (DOM)	177.58	0.53
X17	STM	175.57	WM (FIRE)	174.77	0.80
	STM	175.69	WM (DOM)	174.77	0.92

MK	DOMESTIC AND FIRE WATER MAIN DEFLECTIONS AS PER S-200.070	TOP of PIPE
5C	DROP OF ø200 WM(DOM) UNDER ø200 SAN & ø250 STM	176.37
5D	DROP OF ø200 WM(FIRE) UNDER ø200 SAN & ø250 STM	176.37
5E	DROP OF ø200 WM(FIRE) UNDER ø250 STM	177.34
5F	DROP OF ø200 WM(DOM) UNDER ø250 STM	177.34
5G	DROP OF ø200 WM(DOM) UNDER ø200 WM(DOM), ø200 WM(FIRE), AND ø250 STORM	176.64
5H	DROP OF ø200 WM(FIRE) UNDER ø200 WM(DOM), ø200 WM(FIRE), ø250 STORM, AND ø200 WM(DOM)	176.64
5K	DROP OF ø200 WM(FIRE) UNDER ø250 STM	176.22
5J	DROP OF ø200 WM(FIRE) UNDER ø250 STM AND ø200 SAN	176.33
5I	DROP OF ø200 WM(DOM) UNDER ø300 STM	175.04
5L	DROP OF ø200 WM(FIRE) UNDER ø300 STM	175.14
5M	DROP OF ø200 WM(FIRE) UNDER ø375 STM & ø200 SAN	174.77
5N	DROP OF ø200 WM(DOM) UNDER ø375 STM & ø200 SAN	174.77

MK	DOMESTIC WATER MAIN DATA TABLE	TOP of PIPE
1A	REMOVE PLUG AND CONNECT TO EX. WATER SERVICE	175.68
1B	90° HORIZ. BEND	175.73
1C	45° HORIZ. BEND	178.06
1D	200mm PLUG	178.20
1E	200mm PLUG	178.20
1F	200mm X 100mm WM REDUCER	178.19
1G	100mm X 100mm DIA. TEE	178.19
1H	90° HORIZ. BEND	178.18
1I	90° HORIZ. BEND	178.19
1J	90° HORIZ. BEND	178.38
1K	100mm DIA. VALVE AND BOX	178.53
1L	90° HORIZ. BEND	178.52
1M	100mm PLUG	178.52
1N	90° HORIZ. BEND	178.21
1O	100mm DIA. VALVE AND BOX	178.18
1P	90° HORIZ. BEND	178.18
1Q	100mm PLUG	178.19
1R	90° HORIZ. BEND	176.46
1S	45° HORIZ. BEND	176.98

MK	FIREMAIN DATA TABLE	TOP of PIPE
3A	REMOVE PLUG AND CONNECT TO EX. WATER SERVICE	175.69
3B	45° HORIZ. BEND	175.93
3C	45° HORIZ. BEND	178.06
3D	90° HORIZ. BEND	178.18
3E	90° HORIZ. BEND	176.64
3F	200mm PLUG	178.20
3G	200mm PLUG	178.20
3H	90° HORIZ. BEND	177.89
3L	HYDRANT ASSEMBLY FLANGE ELEV. 179.40	177.50
3M	90° HORIZ. BEND	176.43
3N	45° HORIZ. BEND	176.94





LEGEND:

- PROPERTY LINE
- STORM MANHOLE
- SANITARY MANHOLE
- SINGLE CATCHBASIN
- DOUBLE CATCHBASIN
- SINGLE CATCHBASIN MANHOLE
- DOUBLE CATCHBASIN MANHOLE
- PIPE REMOVAL

WATERMAIN COMMISSIONING TO BE COMPLETED AS PER ALL APPLICABLE MINISTRY REGULATIONS AND SPECIFICATIONS AND TO BE PERFORMED AND CERTIFIED BY A LICENSED WATERMAIN OPERATOR.

NOTES:

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BENCH MARK:

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NOTES:

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100 Scotia Court
Whitby, ON L1N 8Y6
www.wsp.com

RIOCAN COMMERCIAL SITE C2
BLOCK 2, PART OF LOT 13, CONCESSION 5
CITY OF OSHAWA, ON

SITE SERVICING PLAN

DRAWN BY CADD	LOC.	CONST.	CITY	DESIGN BY M.D.	CHKD. BY K.K.	APPD. BY
DATE			REGION	DESIGN BY	CHKD. BY	APPD. BY

SCALE 1:300

221–07325 DWG. No. SS–1

LICENSED PROFESSIONAL ENGINEER
K. KYRIOPOULOS
100145902
June 16, 2023
PROVINCE OF ONTARIO

Jul 13, 2023 – 1:28pm
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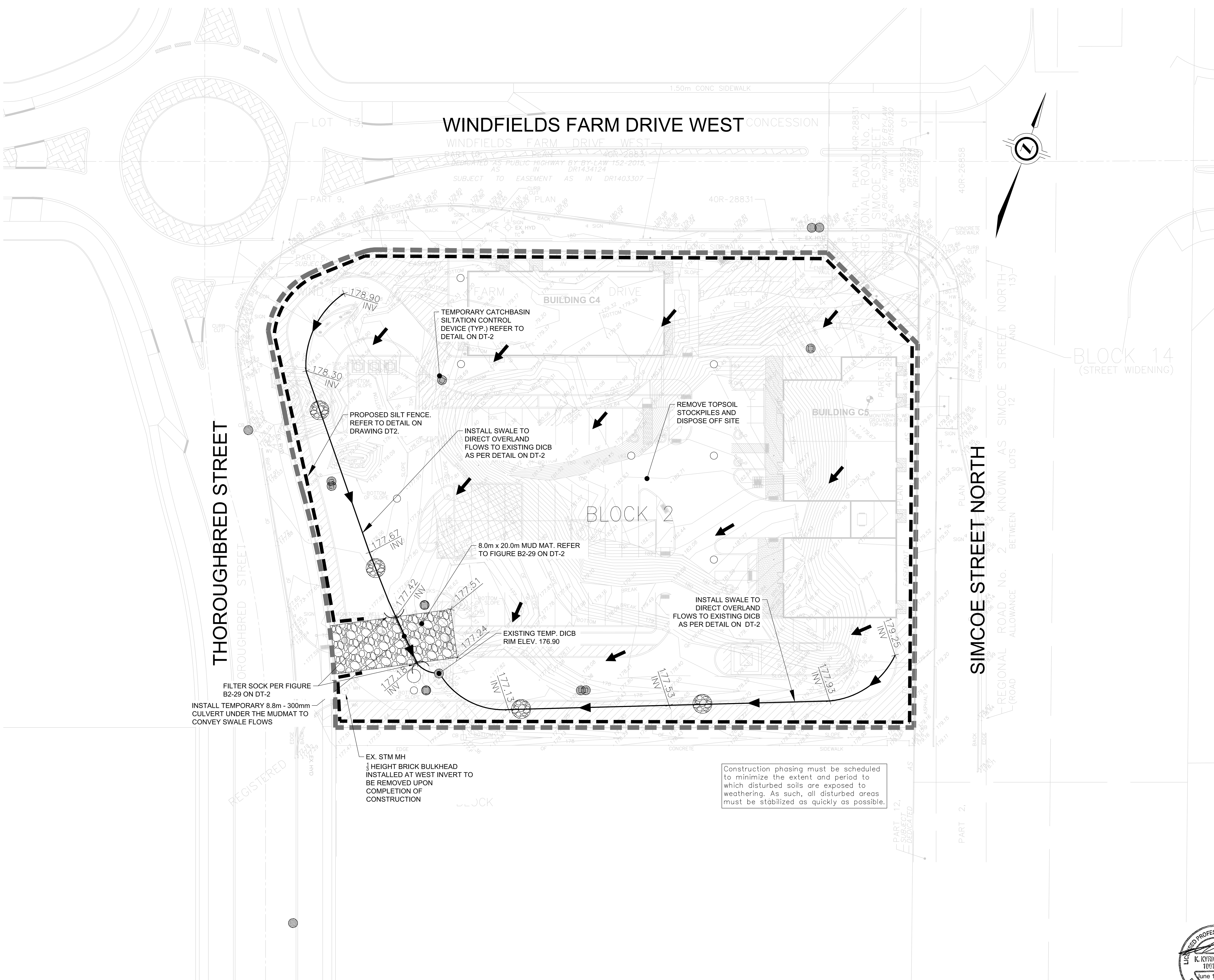
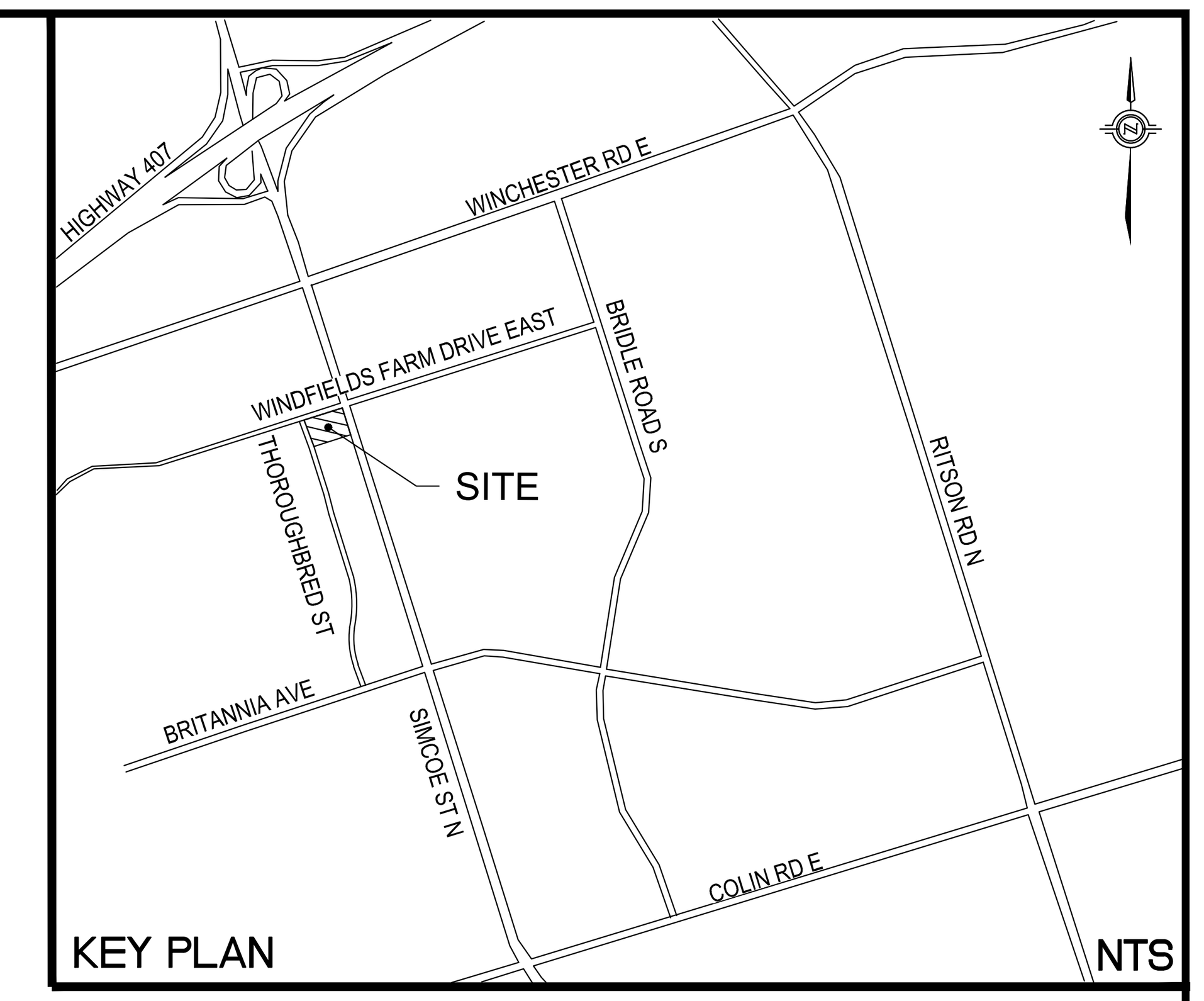


Construction phasing must be scheduled to minimize the extent and period to which disturbed soils are exposed to weathering. As such, all disturbed areas must be stabilized as quickly as possible.



LEGEND:

170.98 SW INV	TEMPORARY SWALE AND INVERT ELEVATION DURING CONSTRUCTION
▬ ▬ ▬	PROPOSED SEDIMENT CONTROL FENCE
➡	OVERLAND FLOW DIRECTION
●	PROPOSED ROCK CHECK DAM
▨	TEMPORARY CATCHBASIN SILTATION CONTROL DEVICE
▬ ▬ ▬	PROPERTY LINE

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100 Scotia Court
Whitby, ON L1N 8Y6
www.wsp.com

LICENSED PROFESSIONAL ENGINEER
K. KYRIOPOULOS
100149502
June 16, 2023
PROVINCE OF ONTARIO

RIOCAN COMMERCIAL SITE C2
BLOCK 2, PART OF LOT 13, CONCESSION 5
CITY OF OSHAWA, ON

EROSION AND SEDIMENTATION CONTROL PLAN

DRAWN BY CADD	LOC.	CONST.	CITY	DESIGN BY M.D.	CHKD. BY K.K.	APPD. BY
DATE			REGION	DESIGN BY	CHKD. BY	APPD. BY

SCALE 1: 300

221-07325 DWG. No. ER-1

Jul 13, 2023 – 1:31pm
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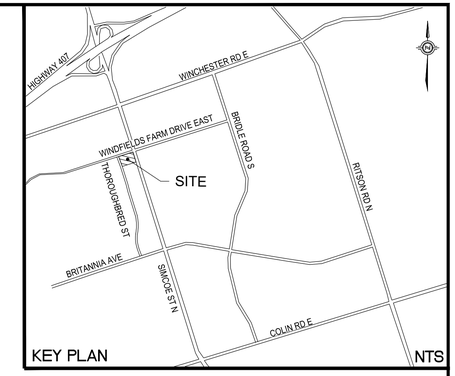

LEGEND

- PROPERTY LINE
- STORM DRAINAGE BOUNDARY
- 0.460 / 0.90 — AREA (HECTARES) / RUNOFF COEFFICIENT
- UNCONTROLLED DRAINAGE AREAS
- UNCONTROLLED STORM DRAINAGE BOUNDARY
- 0.460 / 0.90 — UNCONTROLLED DRAINAGE AREA (HECTARES) / RUNOFF COEFFICIENT

BENCH MARK:
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100 Scotia Court
Whitby, ON L1N 8Y6
www.wsp.com

RIOCAN COMMERCIAL SITE C2
BLOCK 2, PART OF LOT 13, CONCESSION 5
CITY OF OSHAWA, ON

STORM DRAINAGE PLAN (PHASE 1)

DRAWN BY CADD	LOC.	CONST.	CITY	DESIGN BY M.D.	CHKD. BY K.K.	APPD. BY
DATE			REGION	DESIGN BY	CHKD. BY	APPD. BY

SCALE 1:300

221-07325 DWG. No. STM-1

LICENSED PROFESSIONAL ENGINEER
K. KYRIOPOULOS
100163932
June 16, 2023
PROVINCE OF ONTARIO

Jul 13, 2023 - 1:32pm
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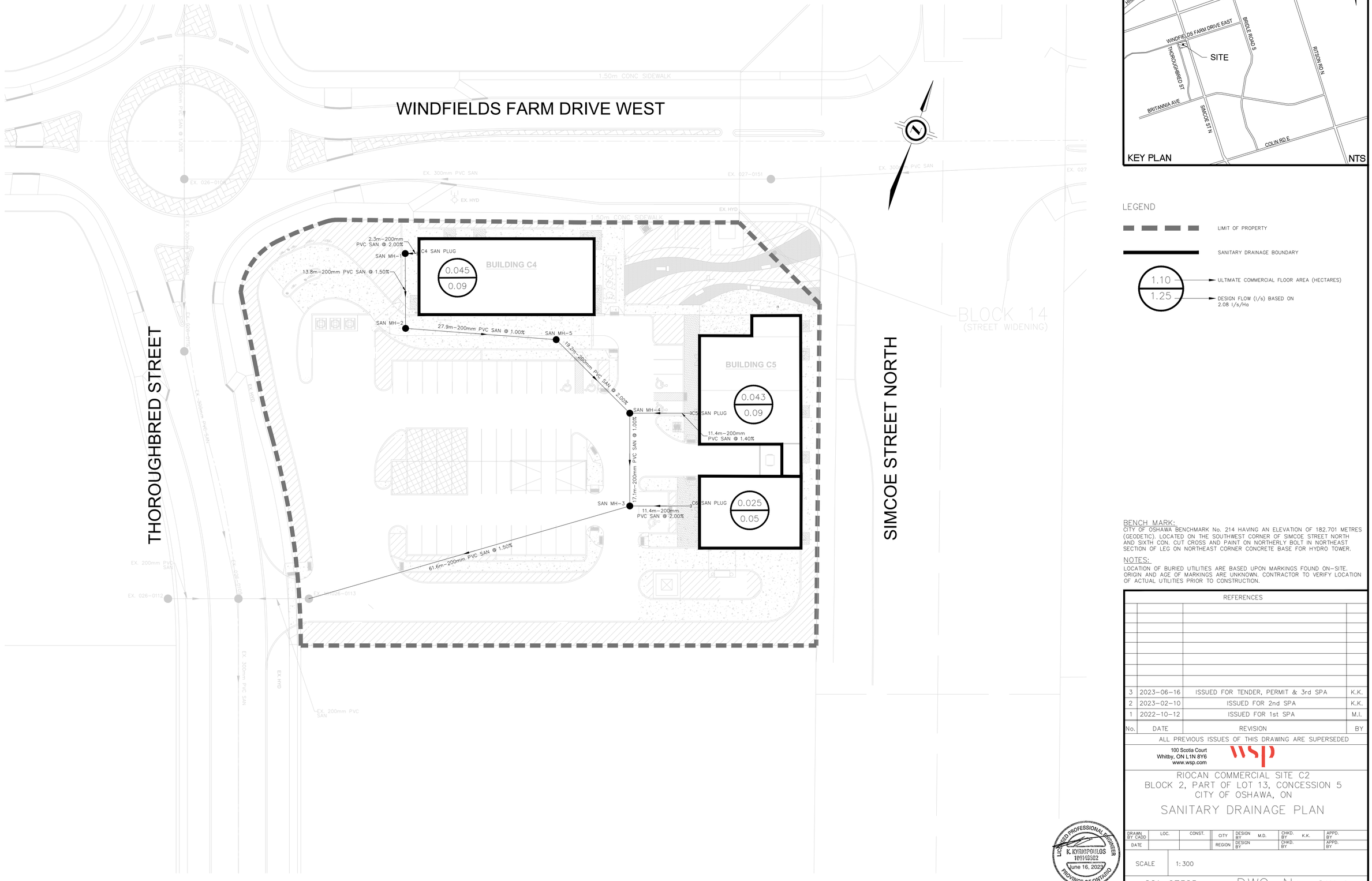

LEGEND

- LIMIT OF PROPERTY
- SANITARY DRAINAGE BOUNDARY
- 1.10 / 1.25 — ULTIMATE COMMERCIAL FLOOR AREA (HECTARES) / DESIGN FLOW (l/s) BASED ON 2.08 l/s/Ha

BENCH MARK:
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100 Scotia Court
Whitby, ON L1N 8Y6
www.wsp.com

LICENSED PROFESSIONAL ENGINEER
K. KYRIOPOULOS
100149322
June 16, 2023
PROVINCE OF ONTARIO

RIOCAN COMMERCIAL SITE C2
BLOCK 2, PART OF LOT 13, CONCESSION 5
CITY OF OSHAWA, ON

SANITARY DRAINAGE PLAN

DRAWN BY CADD	LOC.	CONST.	CITY	DESIGN BY M.D.	CHKD. BY K.K.	APPD. BY
DATE			REGION	DESIGN BY	CHKD. BY	APPD. BY

SCALE 1:300

221-07325 DWG. No. SAN-1

Jul 13, 2023 - 1:34pm
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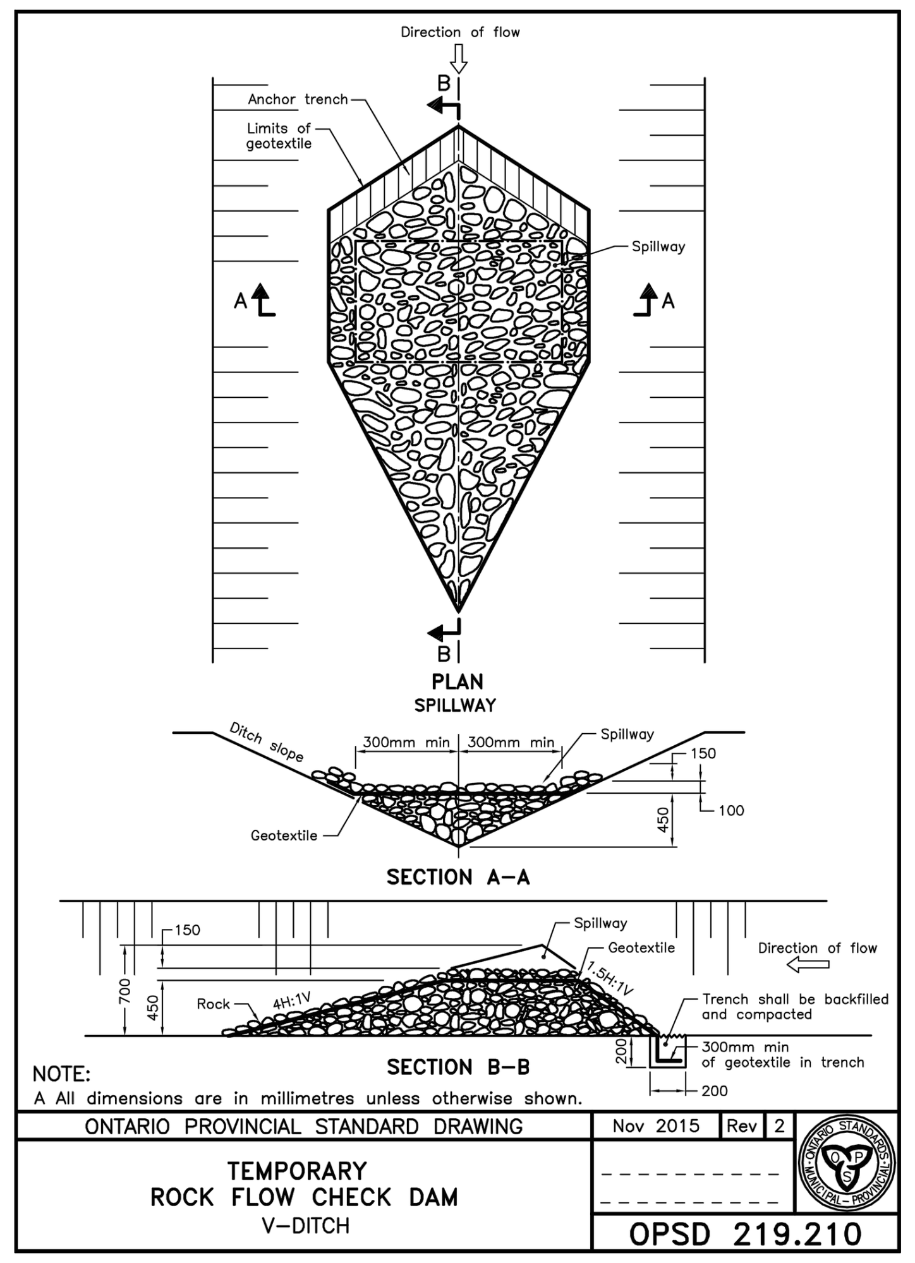
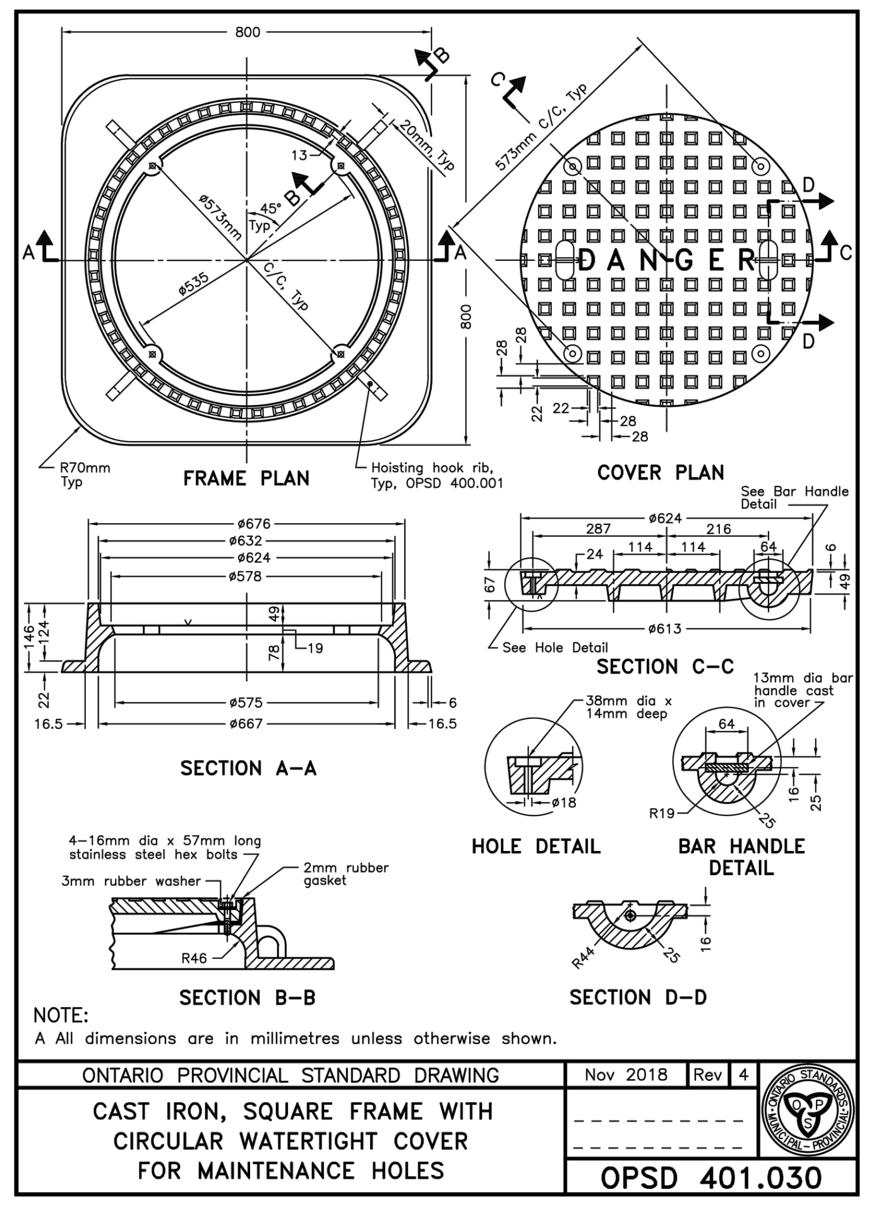
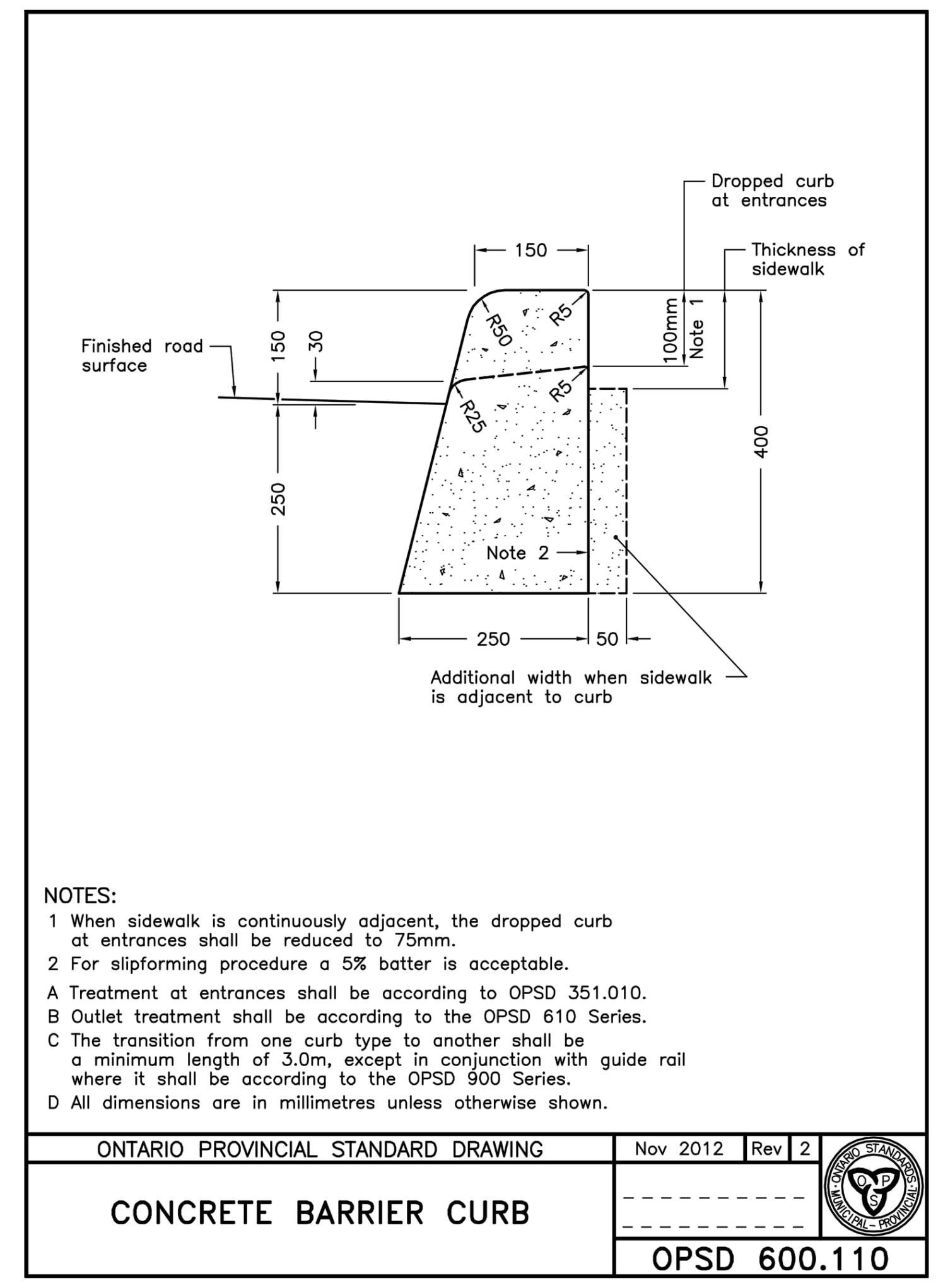
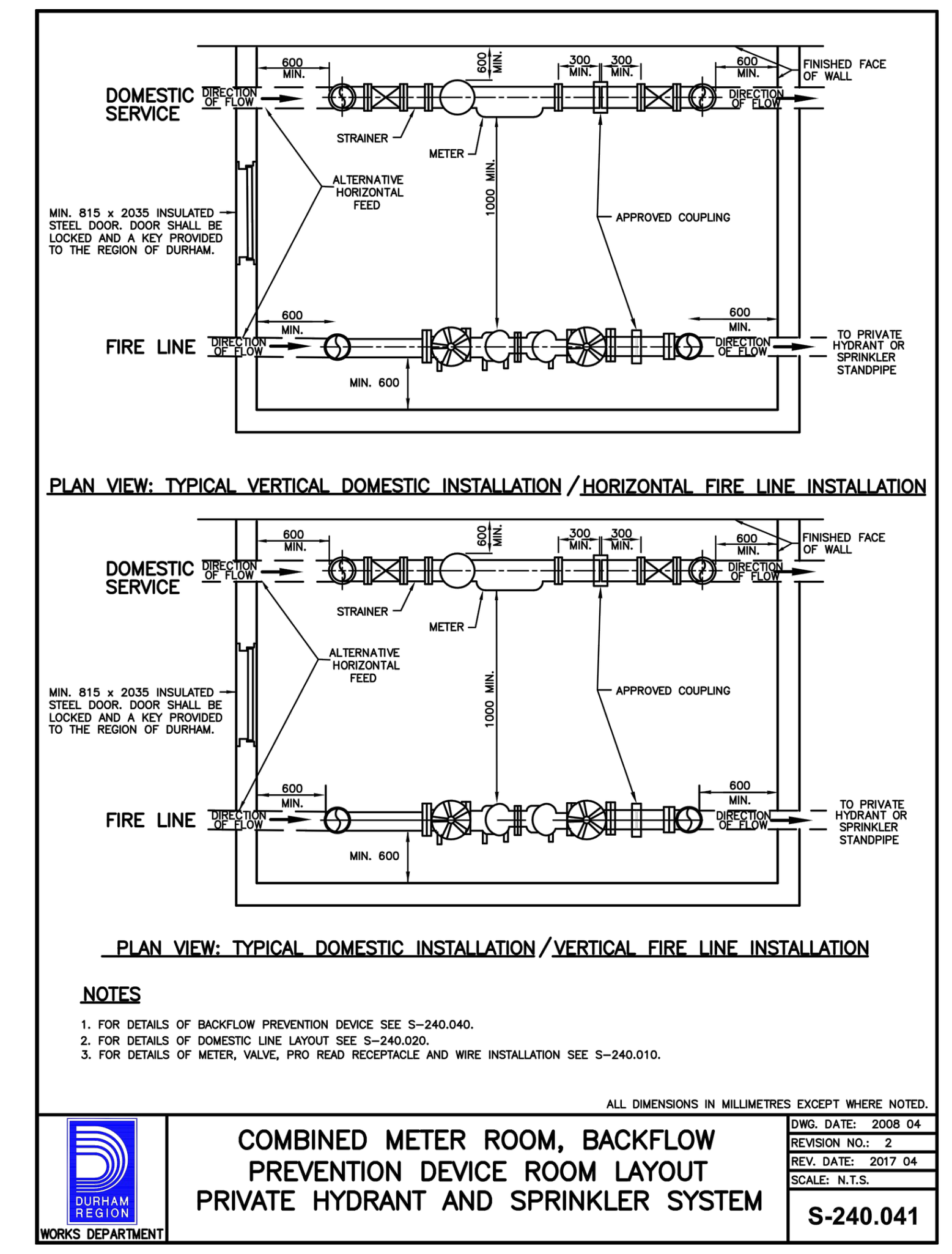
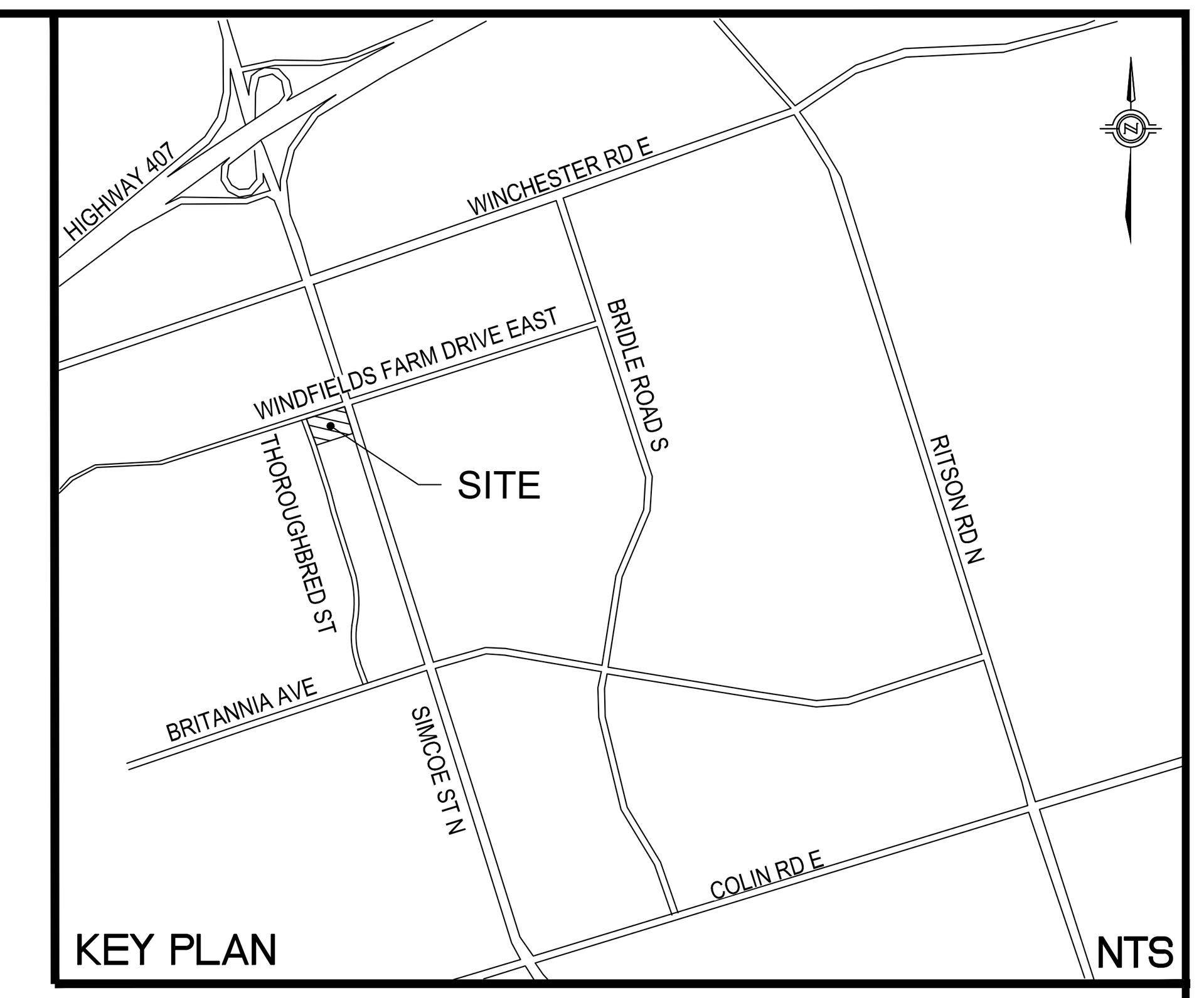
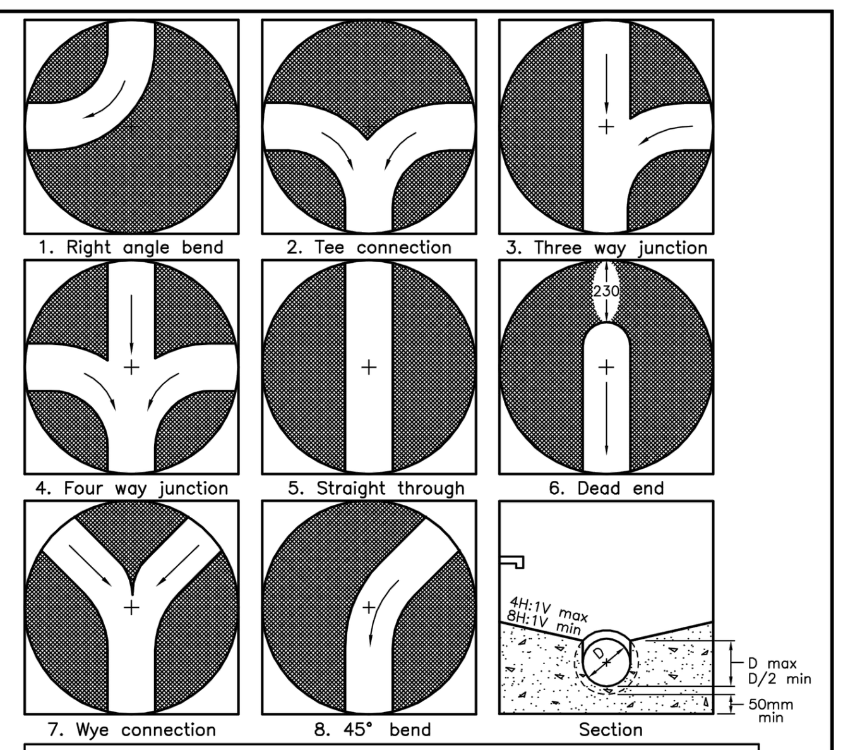








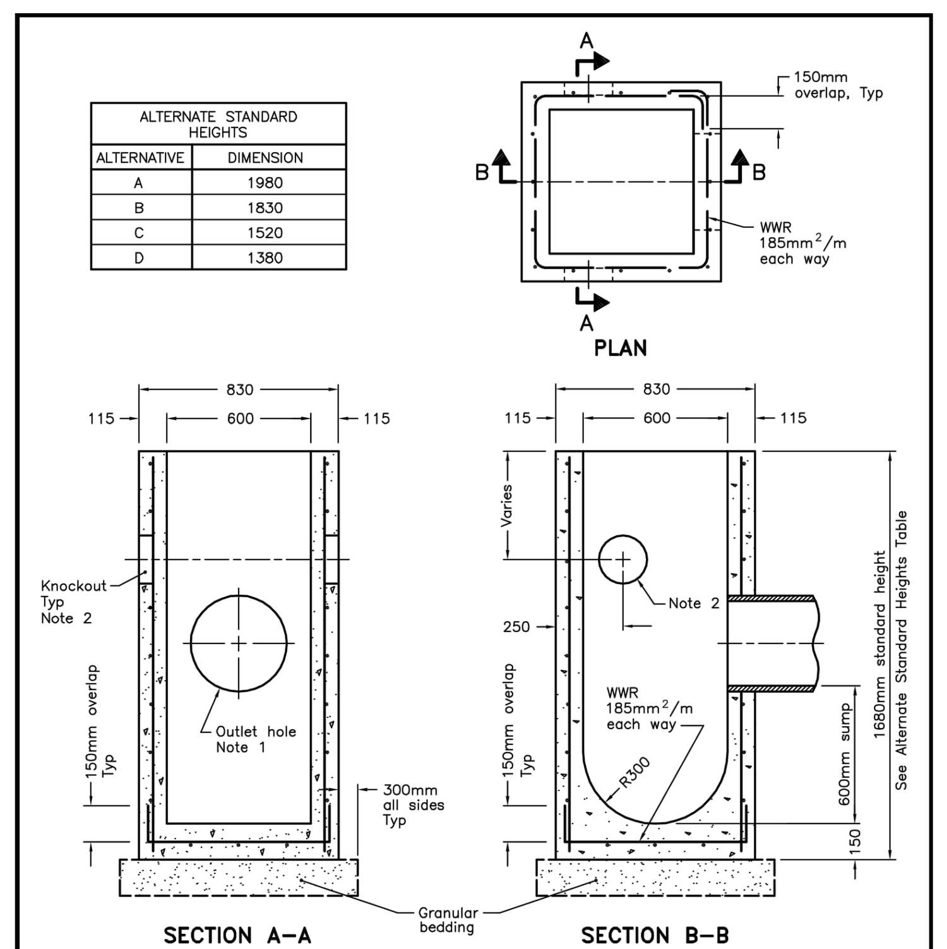




MAXIMUM SIZE HOLE IN THE WALL IN PRECAST RISER SECTIONS					
Maintenance Hole Diameter	No. 1–4	No. 5 and 6	No. 8	No.7 Inlet Hole	No.7 Outlet Hole
1200	700	860	780	700	860
1500	860	1220	960	860	1170
1800	1220	1485	1220	1220	1485
2400	1485	2020	1760	1485	2020
3000	1930	2450	2300	1930	2450
3600	2470	3085	2730	2470	3085

NOTES:
1 Slopes shall be maintained from the outlet hole opening for top of benching.
A Concrete for benching shall be 30MPa.
B When benching is hand–finshed, it shall be given wood float finish, channel shall be given steel trowel finish.
C Benching slope and height shall be as specified.
D When specified, maintenance holes that are 1200mm in diameter with a uniform channel for 200 or 250mm pipe may be prebenched at the manufacturer with standardized benching slope and channel orientation.
E All dimensions are nominal.
F All dimensions are in millimetres unless otherwise shown.

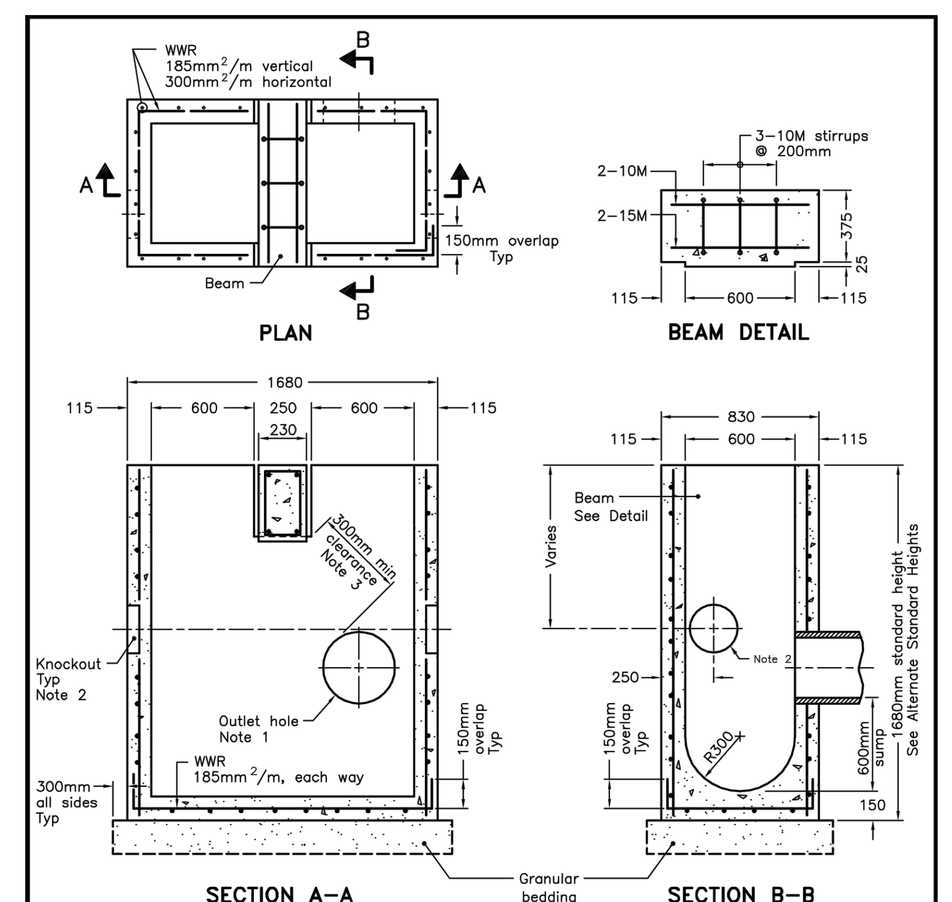
ONTARIO PROVINCIAL STANDARD DRAWING — Nov 2014 Rev 4
MAINTENANCE HOLE BENCHING AND PIPE OPENING ALTERNATIVES
OPSD 701.021



ALTERNATE STANDARD HEIGHTS	
ALTERNATIVE	DIMENSION
A	1980
B	1830
C	1520
D	1380

NOTES:
1 Outlet hole size 525mm diameter maximum, location as required.
2 200mm diameter knockout to accommodate subdrain. Knockout shall be 60mm deep.
A Centre reinforcing in base slab and walls ±20mm.
B Granular backfill shall be placed to a minimum thickness of 300mm all around the catch basin.
C Frame, grate, and adjustment units shall be installed according to OPSD 704.010.
D Pipe support shall be according to OPSD 708.020.
E All dimensions are nominal.
F All dimensions are in millimetres unless otherwise shown.

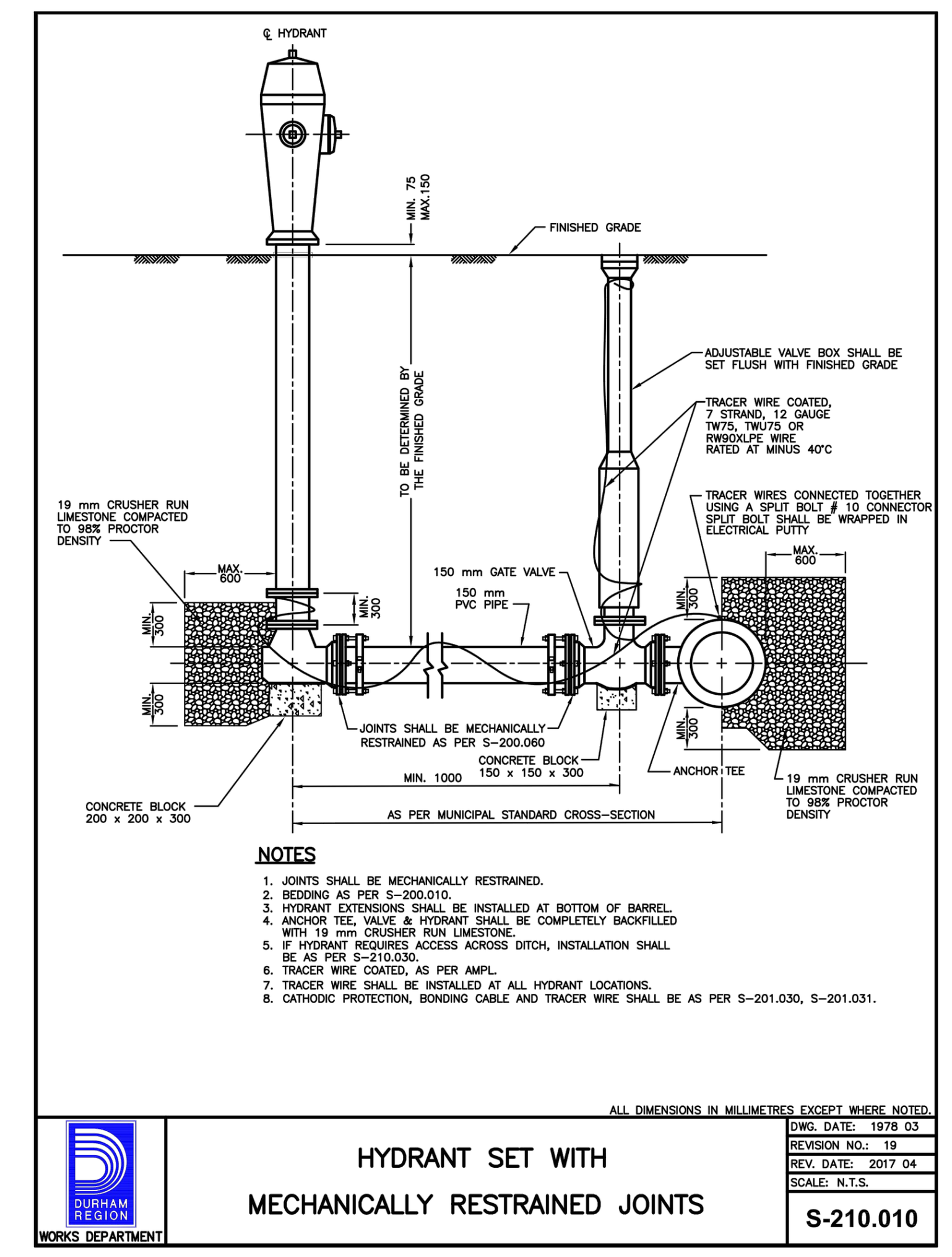
ONTARIO PROVINCIAL STANDARD DRAWING — Nov 2014 Rev 3
PRECAST CONCRETE CATCH BASIN
600x600mm
OPSD 705.010

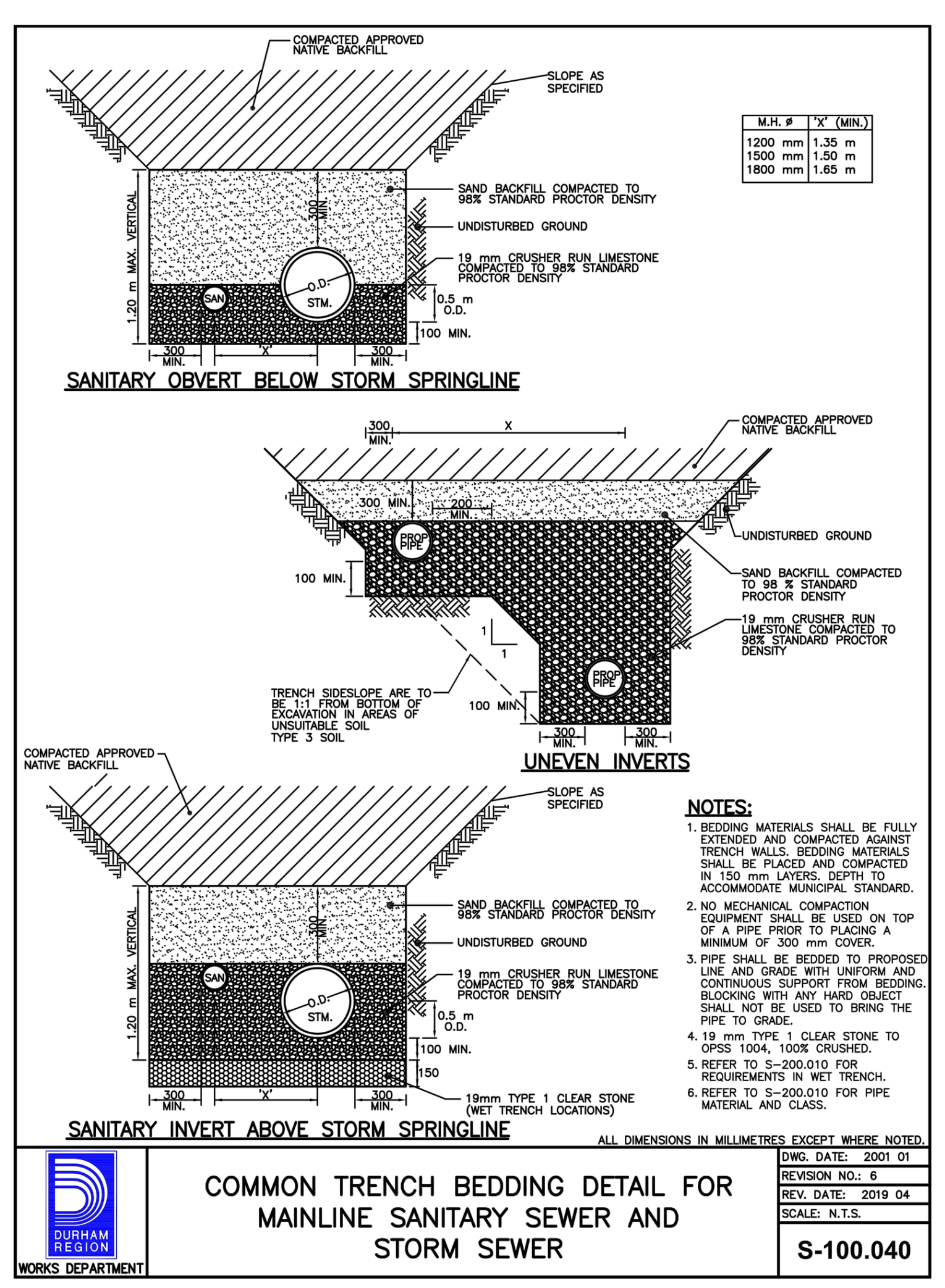


NOTES:
1 Outlet hole size 525mm diameter maximum, location as required.
2 200mm diameter knockout to accommodate subdrain. Knockout shall be 60mm deep.
3 Minimum clearance between beam recess and hole for pipe shall be 300mm or minimum clearance can be 150mm with addition of two 15M size rebar on 45 degree diagonal.
A Centre reinforcing in base slab and walls ±20mm.
B Granular backfill shall be placed to a minimum thickness of 300mm all around the catch basin.
C Frame, grate, and adjustment units shall be installed according to OPSD 704.010.
D Pipe support shall be according to OPSD 708.020.
E All dimensions are nominal.
F All dimensions are in millimetres unless otherwise shown.

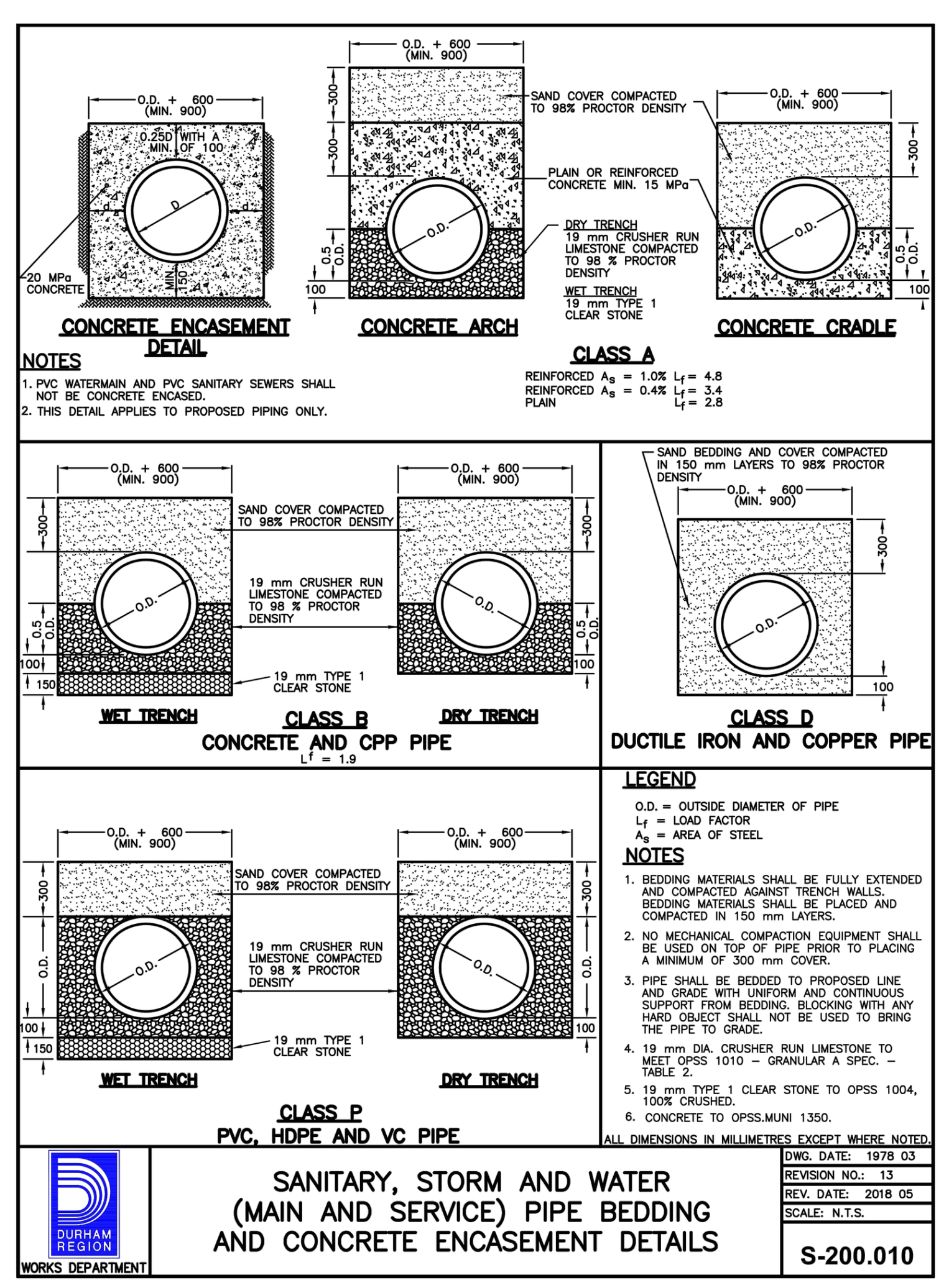
ALTERNATE STANDARD HEIGHTS	
ALTERNATIVE	DIMENSION
A	1980
B	1830
C	1680

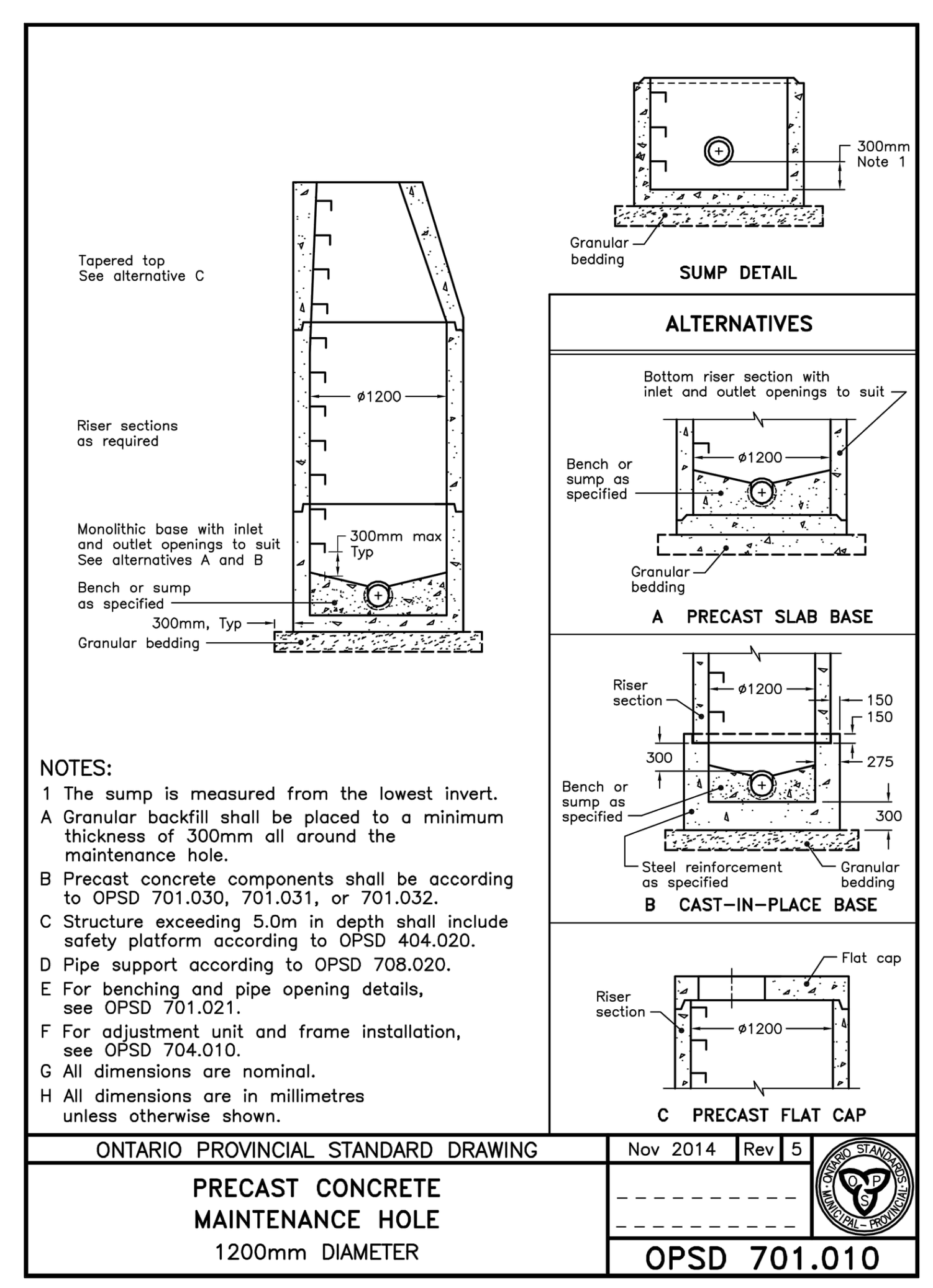
ONTARIO PROVINCIAL STANDARD DRAWING — Nov 2014 Rev 3
PRECAST CONCRETE TWIN INLET CATCH BASIN
600 x 1450mm
OPSD 705.020





M.H. ø	'X' (MIN.)
1200 mm	1.35 m
1500 mm	1.50 m
1800 mm	1.65 m





BENCH MARK:
CITY OF OSHAWA BENCHMARK No. 214 HAVING AN ELEVATION OF 182.701 METRES (GEODETIC). LOCATED ON THE SOUTHWEST CORNER OF SIMCOE STREET NORTH AND SIXTH CON. CUT CROSS AND PAINT ON NORTHERLY BOLT IN NORTHEAST SECTION OF LEG ON NORTHEAST CORNER CONCRETE BASE FOR HYDRO TOWER.

NOTES:
LOCATION OF BURIED UTILITIES ARE BASED UPON MARKINGS FOUND ON–SITE. ORIGIN AND AGE OF MARKINGS ARE UNKNOWN. CONTRACTOR TO VERIFY LOCATION OF ACTUAL UTILITIES PRIOR TO CONSTRUCTION.

REFERENCES

No.	DATE	REVISION	BY
3	2023–06–16	ISSUED FOR TENDER, PERMIT & 3rd SPA	K.K.
2	2023–02–10	ISSUED FOR 2nd SPA	K.K.
1	2022–10–12	ISSUED FOR 1st SPA	M.I.

ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED

100 Scotia Court
Whitby, ON L1N 8Y6
www.wsp.com

LICENSED PROFESSIONAL ENGINEER
K. KYRIOPOULOS
100149302
June 16, 2023
PROVINCE OF ONTARIO

RIOCAN COMMERCIAL SITE C2
BLOCK 2, PART OF LOT 13, CONCESSION 5
CITY OF OSHAWA, ON

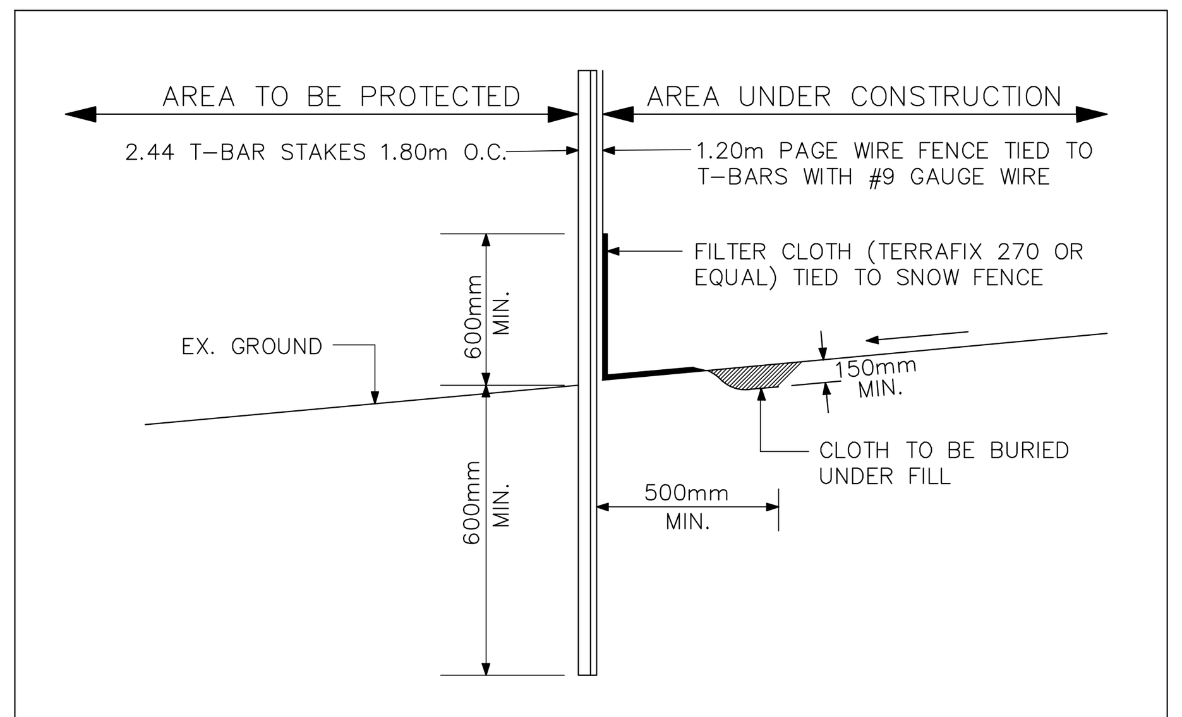
DETAILS

DRAWN BY CADD	LOC.	CONST.	CITY	DESIGN BY M.D.	CHKD. BY K.K.	APPD. BY
DATE			REGION	DESIGN BY	CHKD. BY	APPD. BY

SCALE N.T.S.

221–07325 DWG. No. DT–1

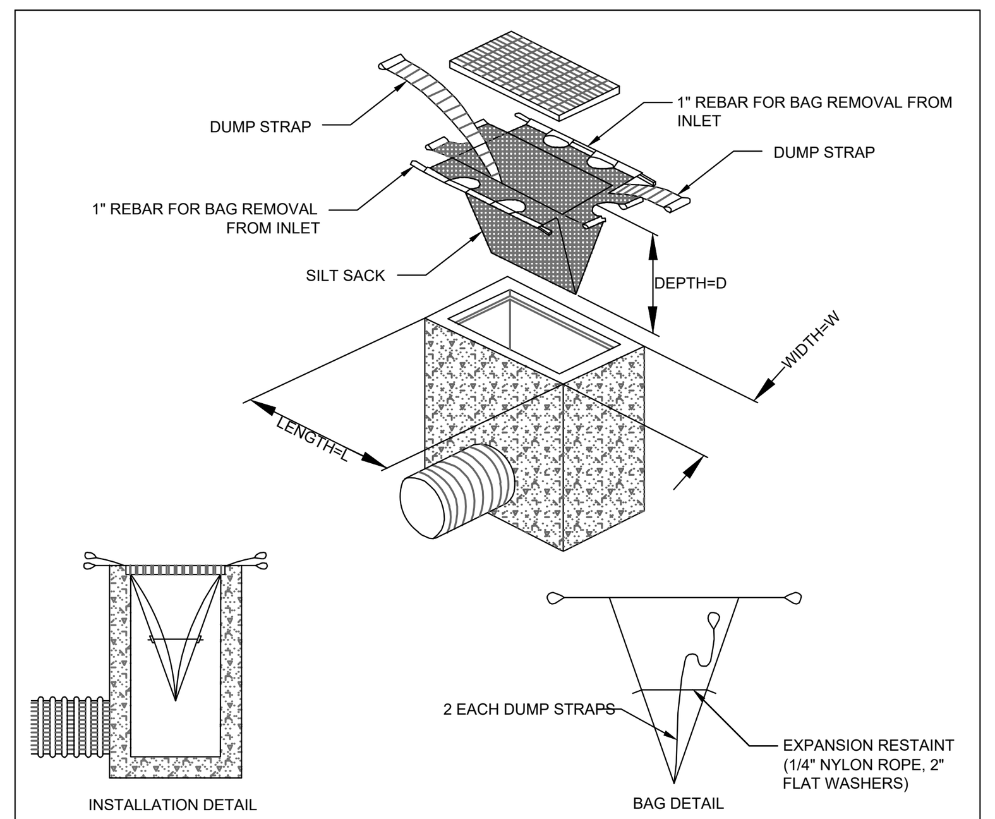
Jul 13, 2023 – 1:35pm
C:\Users\camd076046\ACCDocs\WSP Canada projects (AMER)\LDO\Files\221-07325 RioCan C2\ENG DWG\DT-1-2.dwg -tab:DT-1


AREA TO BE PROTECTED
AREA UNDER CONSTRUCTION
2.44 T-BAR STAKES 1.80m O.C.
1.20m PAGE WIRE FENCE TIED TO T-BARS WITH #9 GAUGE WIRE
FILTER CLOTH (TERRAFIX 270 OR EQUAL) TIED TO SNOW FENCE
EX. GROUND
600mm MIN.
150mm MIN.
CLOTH TO BE BURIED UNDER FILL
500mm MIN.
600mm MIN.

SEDIMENT CONTROL AND VEGETATION PRESERVATION FENCE

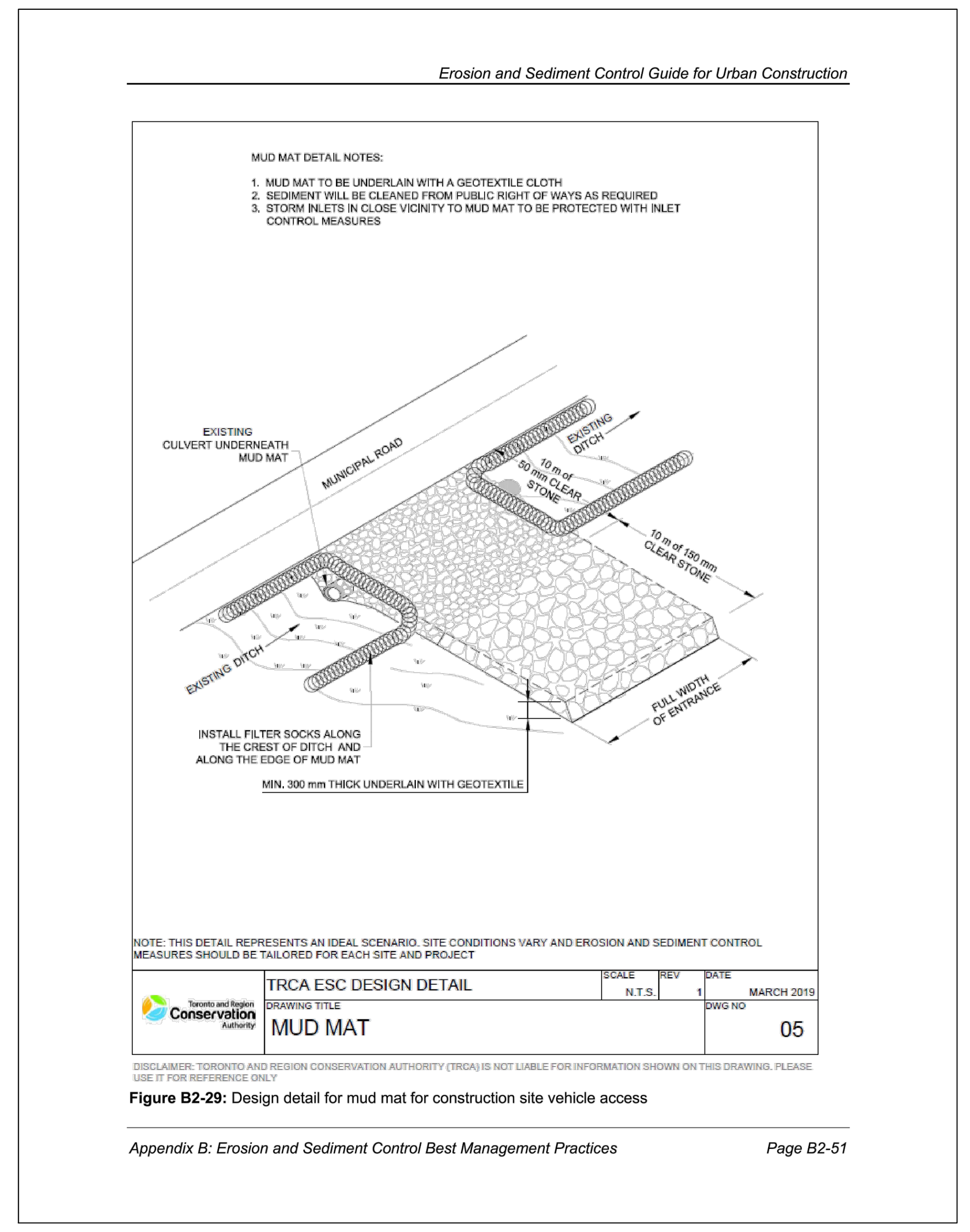
N.T.S.

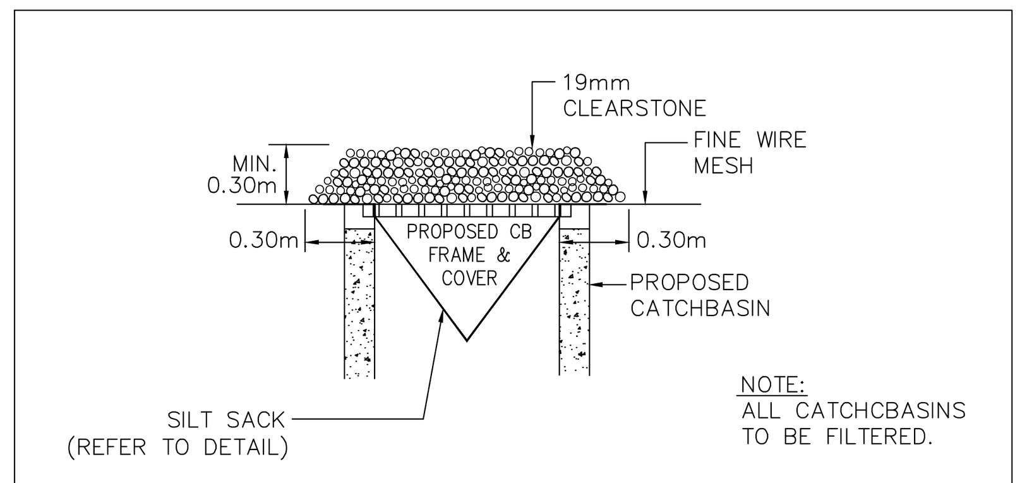
NOTE (REFERS TO OUTSIDE SILT FENCE ONLY): EVERY THIRD STAKE TO BE A 6.0" CEDAR POST BURIED 900mm (MIN.) BELOW EXISTING GROUND TO ENSURE SILT FENCE STABILITY.



SILT SACK DETAIL

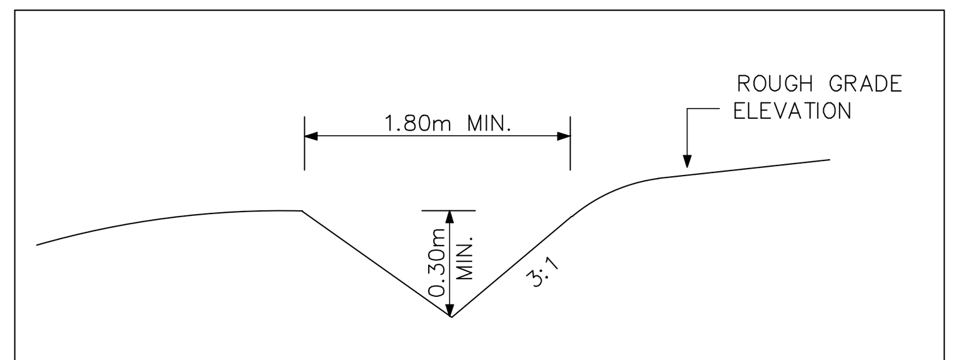
N.T.S.


Erosion and Sediment Control Guide for Urban Construction
MUD MAT DETAIL NOTES:
1. MUD MAT TO BE UNDERLAIN WITH A GEOTEXTILE CLOTH
2. SEDIMENT WILL BE CLEANED FROM PUBLIC RIGHT OF WAYS AS REQUIRED
3. STORM INLETS IN CLOSE VICINITY TO MUD MAT TO BE PROTECTED WITH INLET CONTROL MEASURES
EXISTING CULVERT UNDERNEATH MUD MAT
MUNICIPAL ROAD
INSTALL FILTER SOCKS ALONG THE CREST OF DITCH AND ALONG THE EDGE OF MUD MAT
MIN. 300 mm THICK UNDERLAIN WITH GEOTEXTILE
FULL WIDTH OF ENTRANCE
TRCA ESC DESIGN DETAIL
MUD MAT
05
MARCH 2019
Figure B2-29: Design detail for mud mat for construction site vehicle access
Appendix B: Erosion and Sediment Control Best Management Practices
Page B2-51



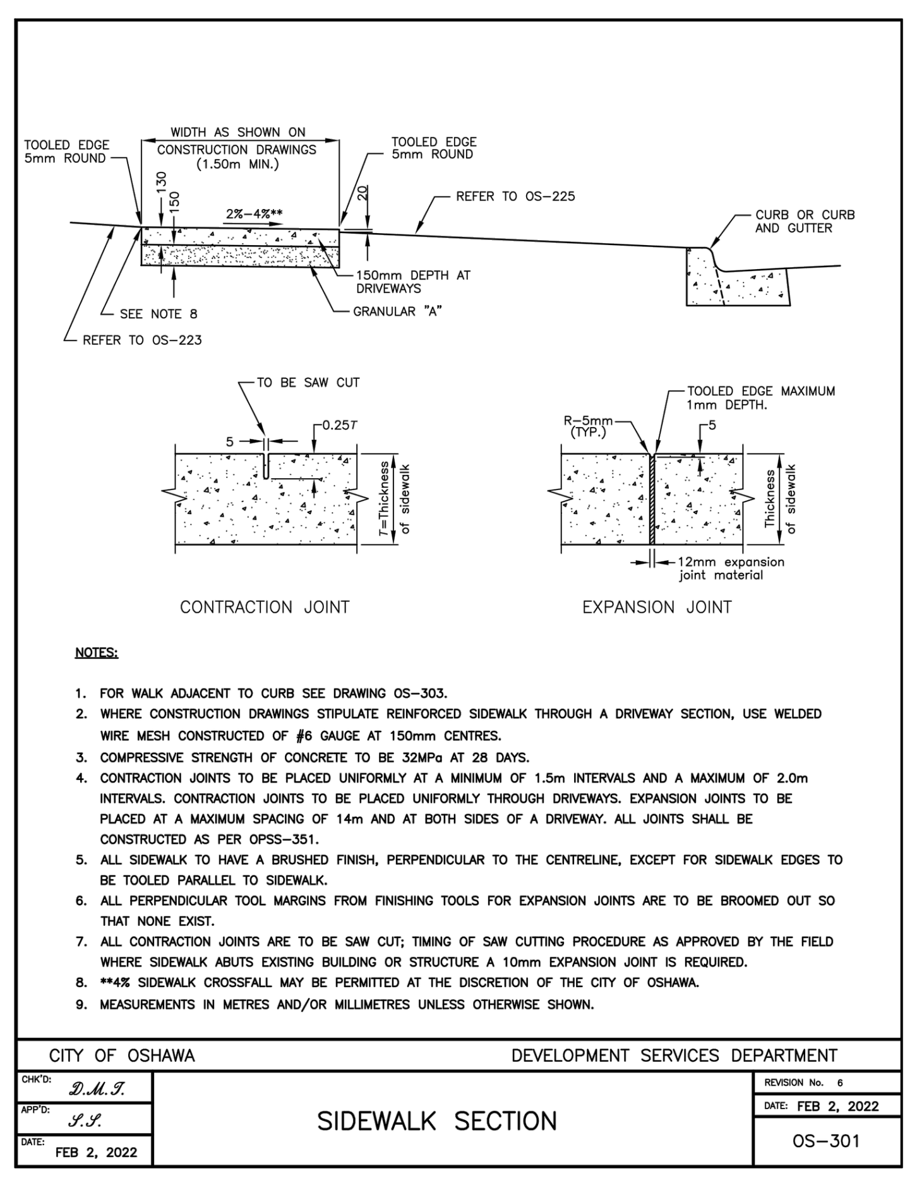
TEMPORARY SILTATION CONTROL DEVICE (CATCHBASINS)

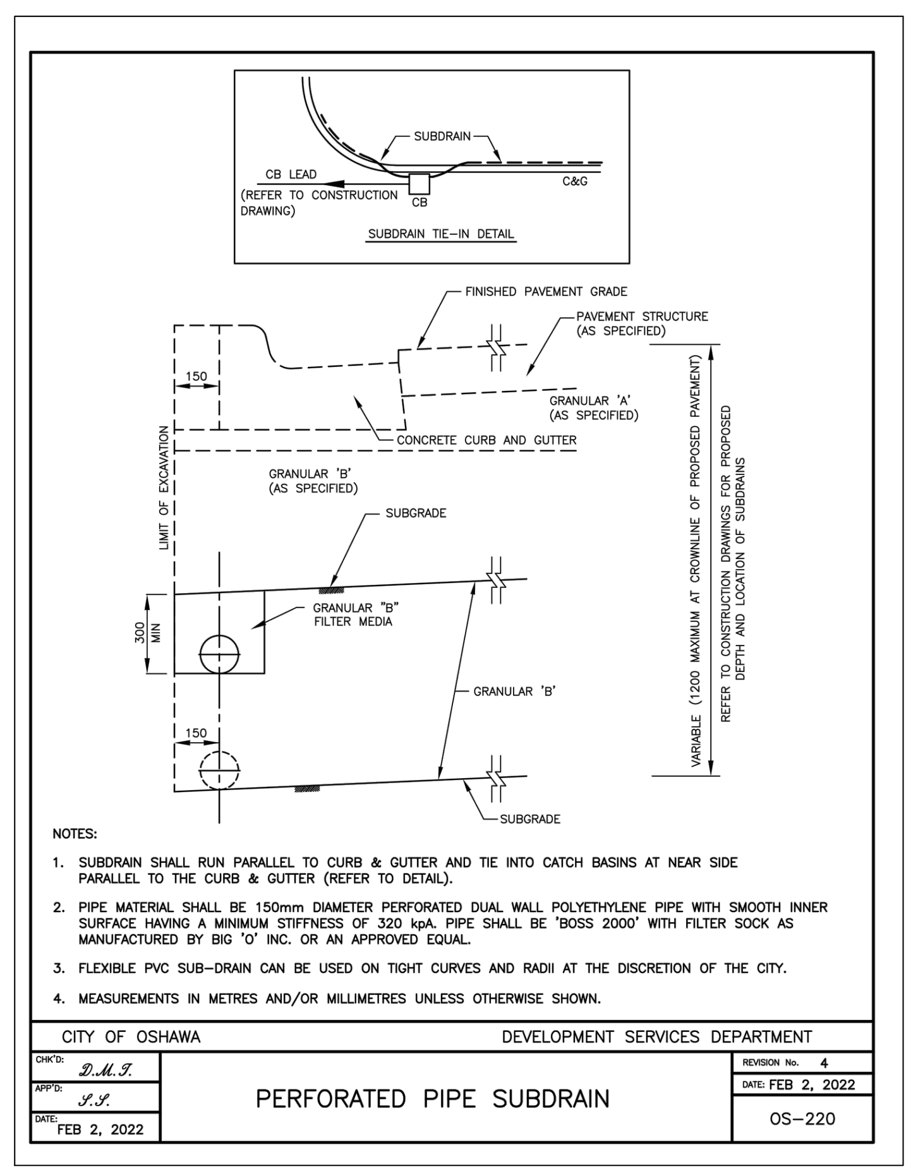
N.T.S.

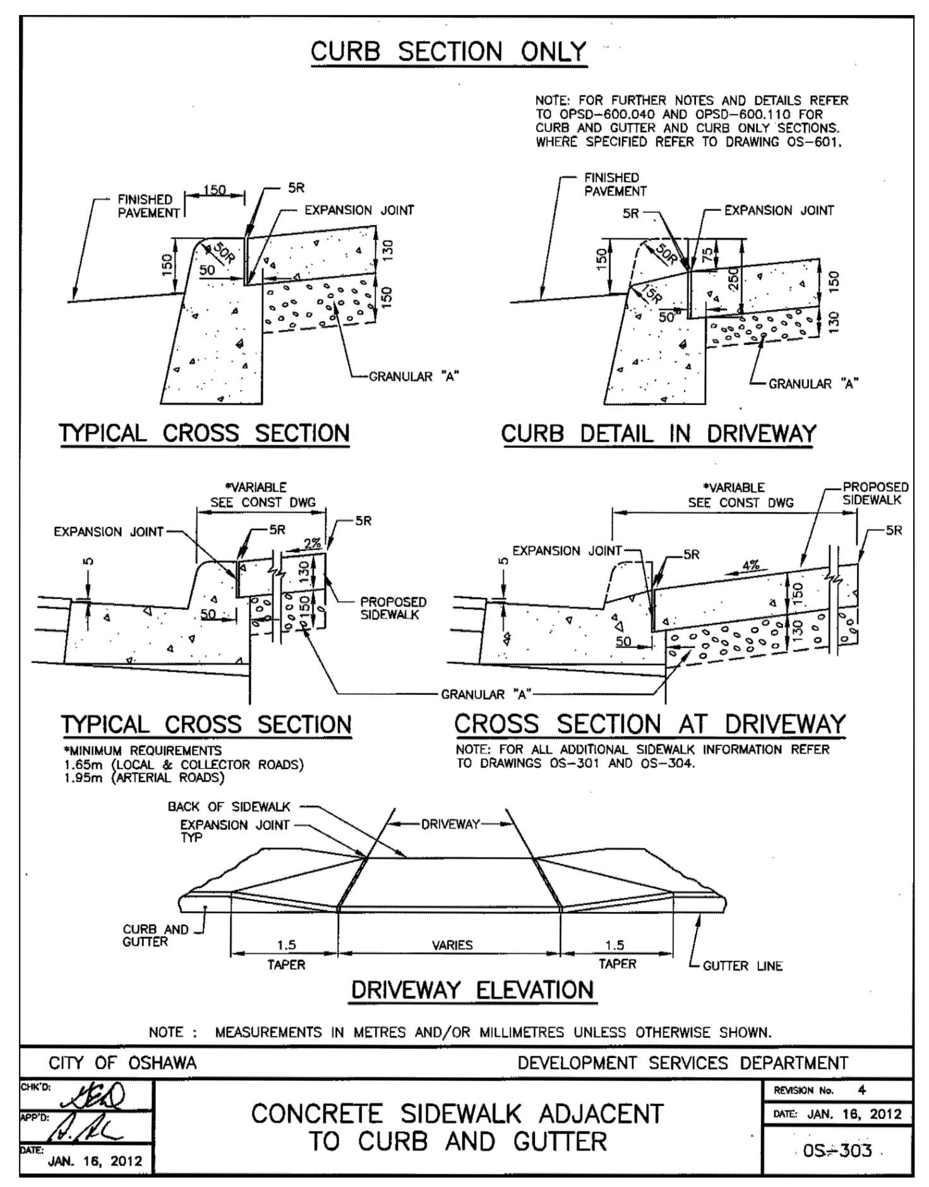


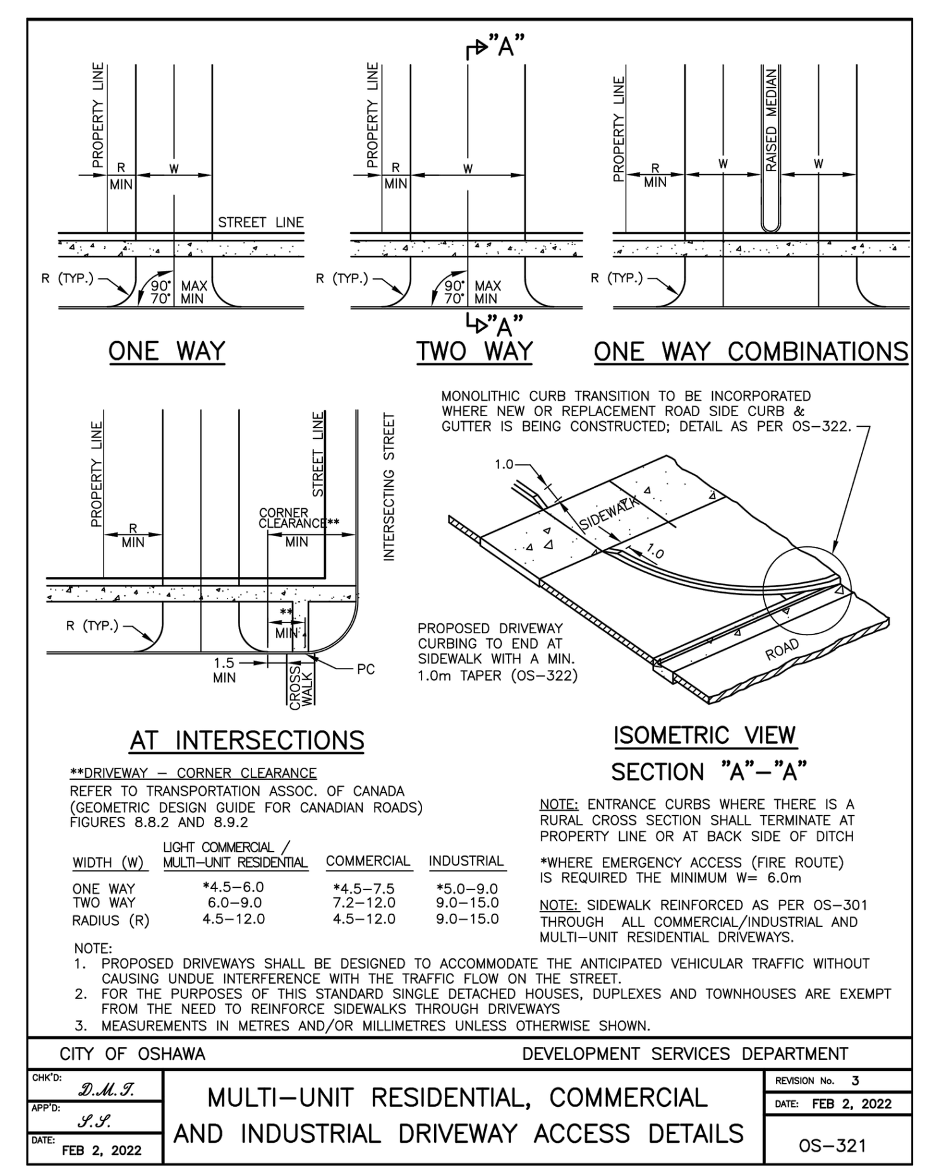
TYPICAL TEMPORARY SWALE SECTION

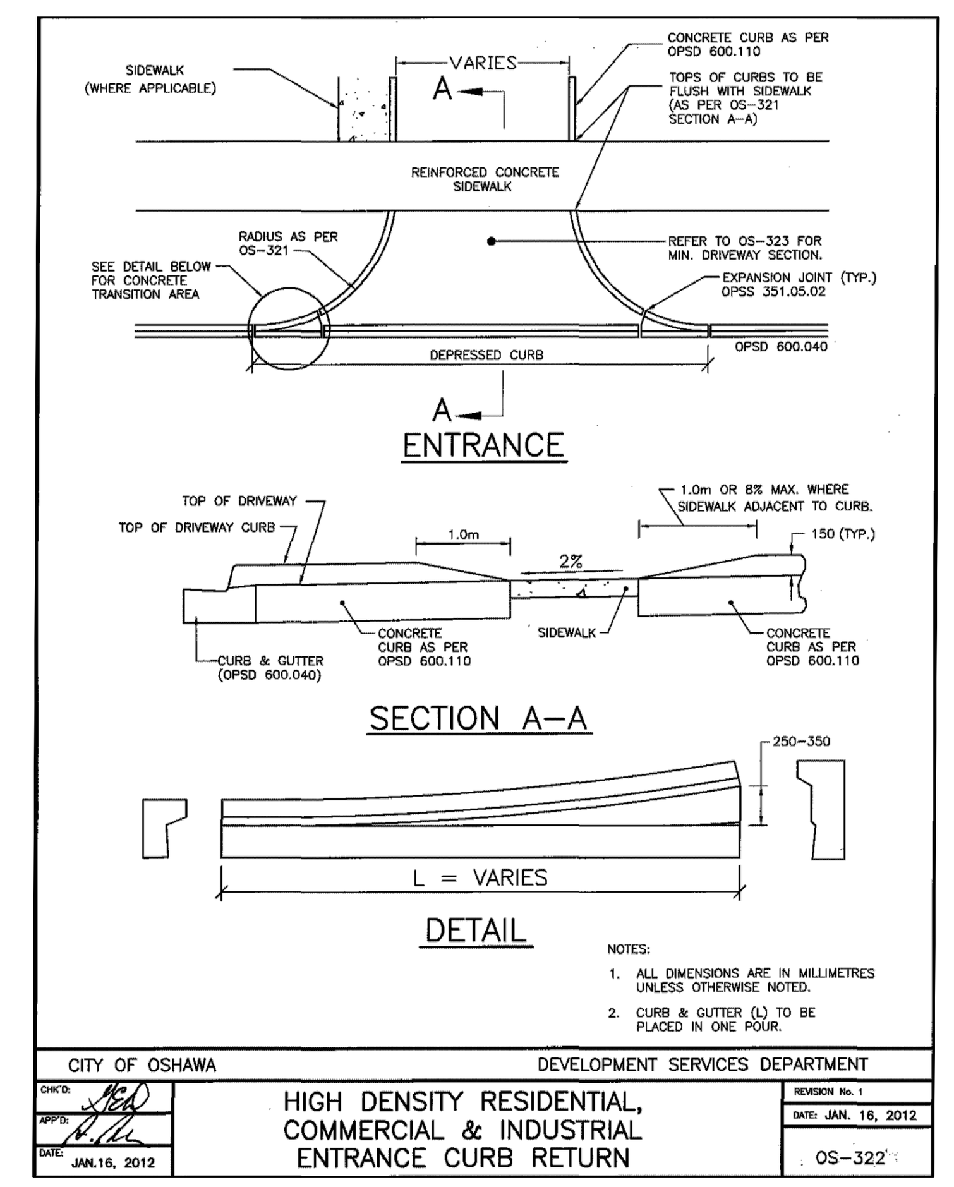
N.T.S.

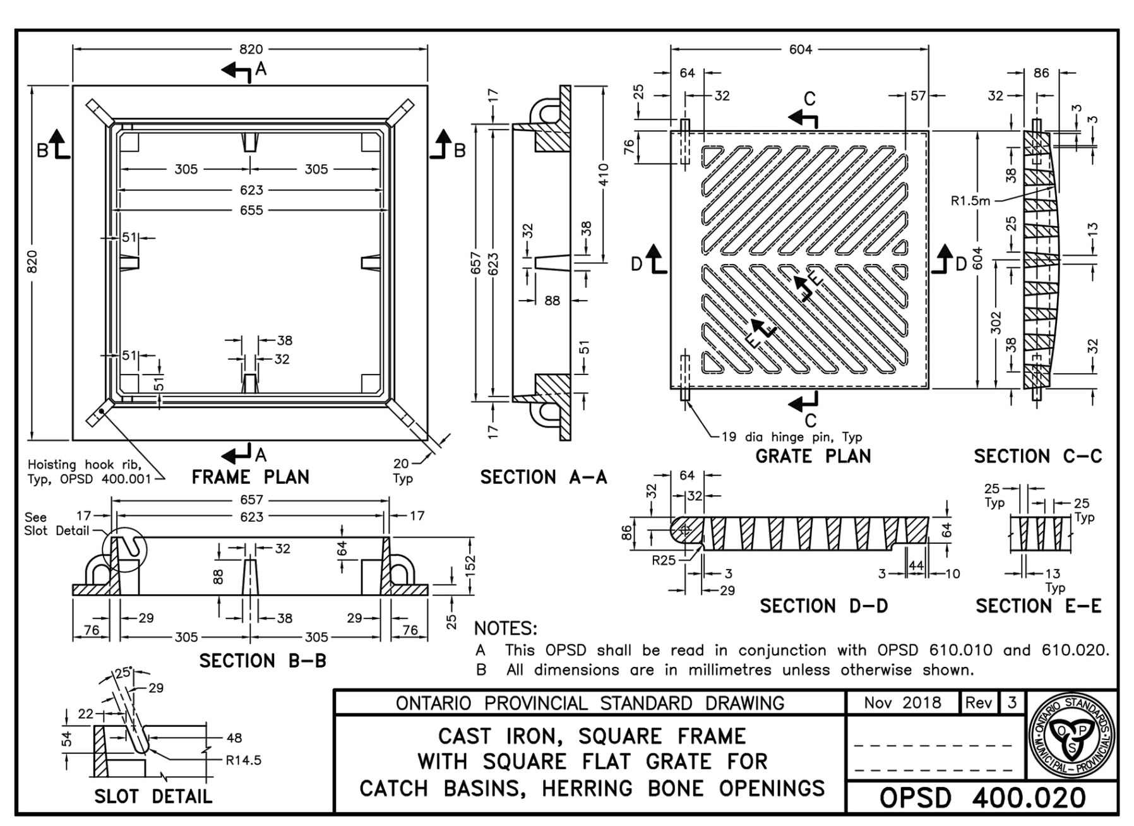


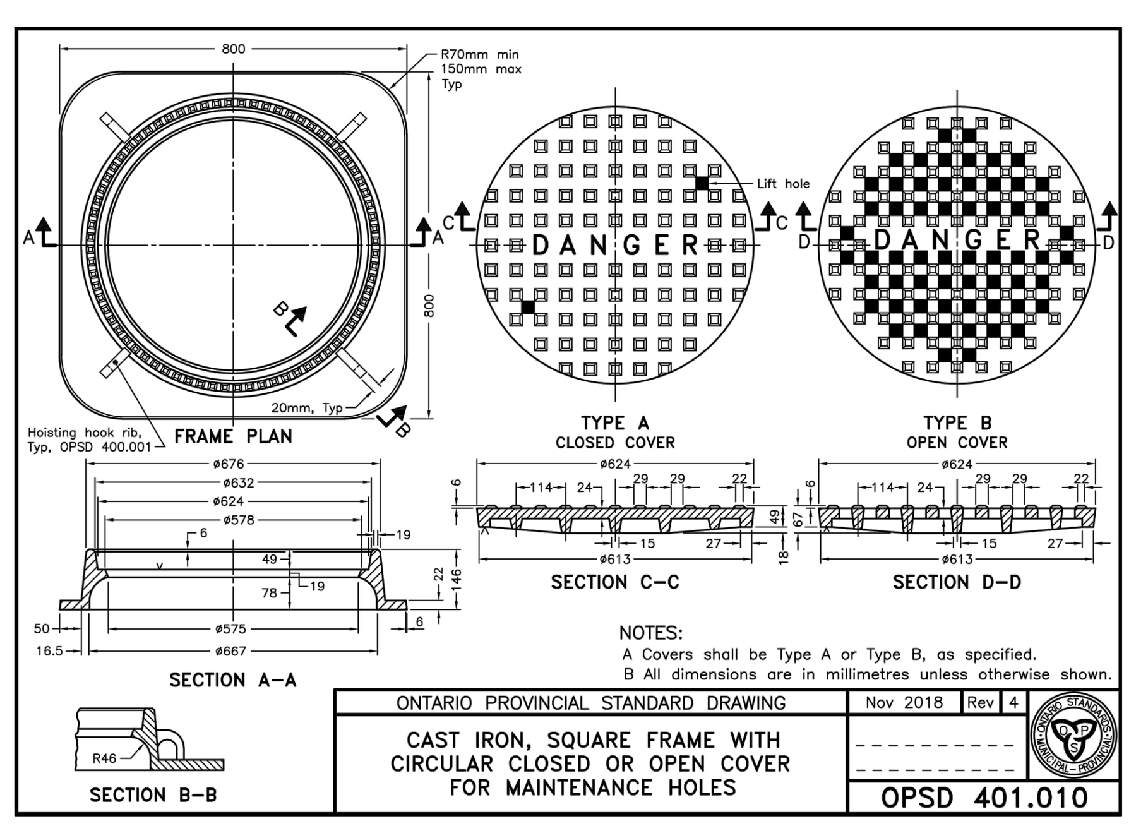


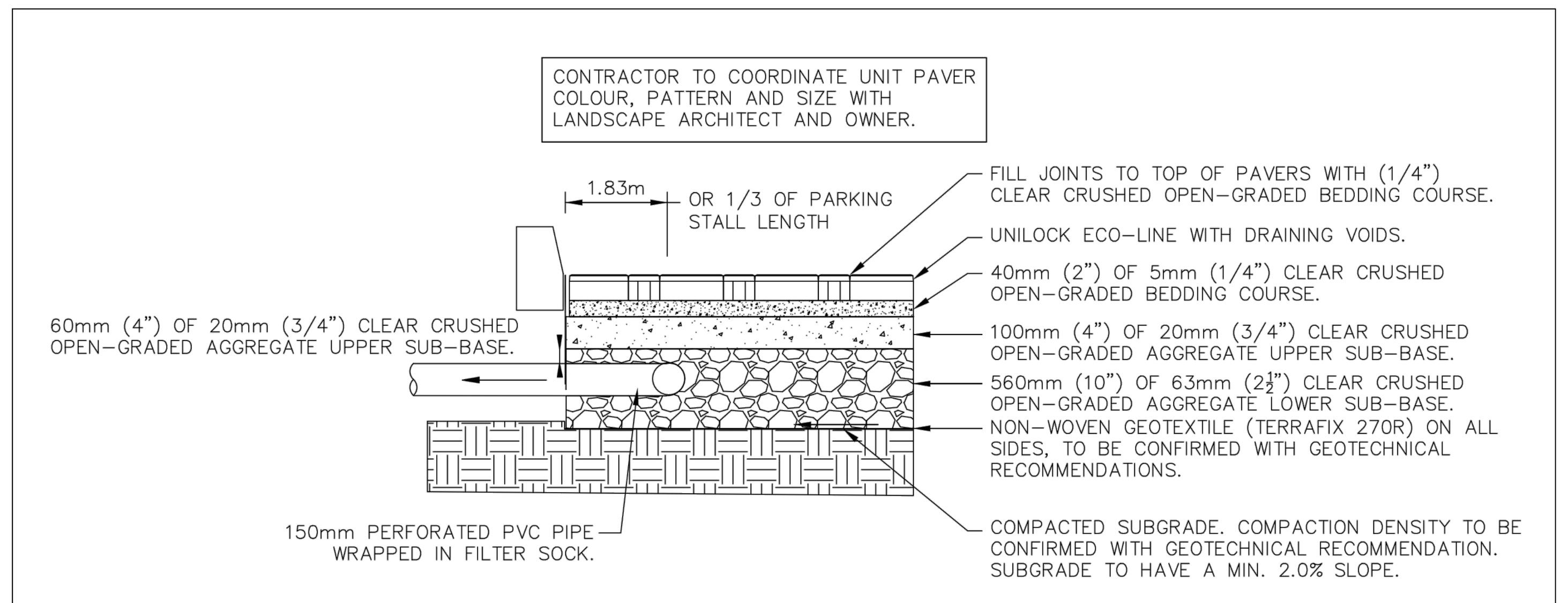

CURB SECTION ONLY
TYPICAL CROSS SECTION
CURB DETAIL IN DRIVEWAY
TYPICAL CROSS SECTION
CROSS SECTION AT DRIVEWAY
DRIVEWAY ELEVATION
NOTE : MEASUREMENTS IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN.
CITY OF OSHAWA
DEVELOPMENT SERVICES DEPARTMENT
CONCRETE SIDEWALK ADJACENT TO CURB AND GUTTER
JAN. 18, 2012
OS-303





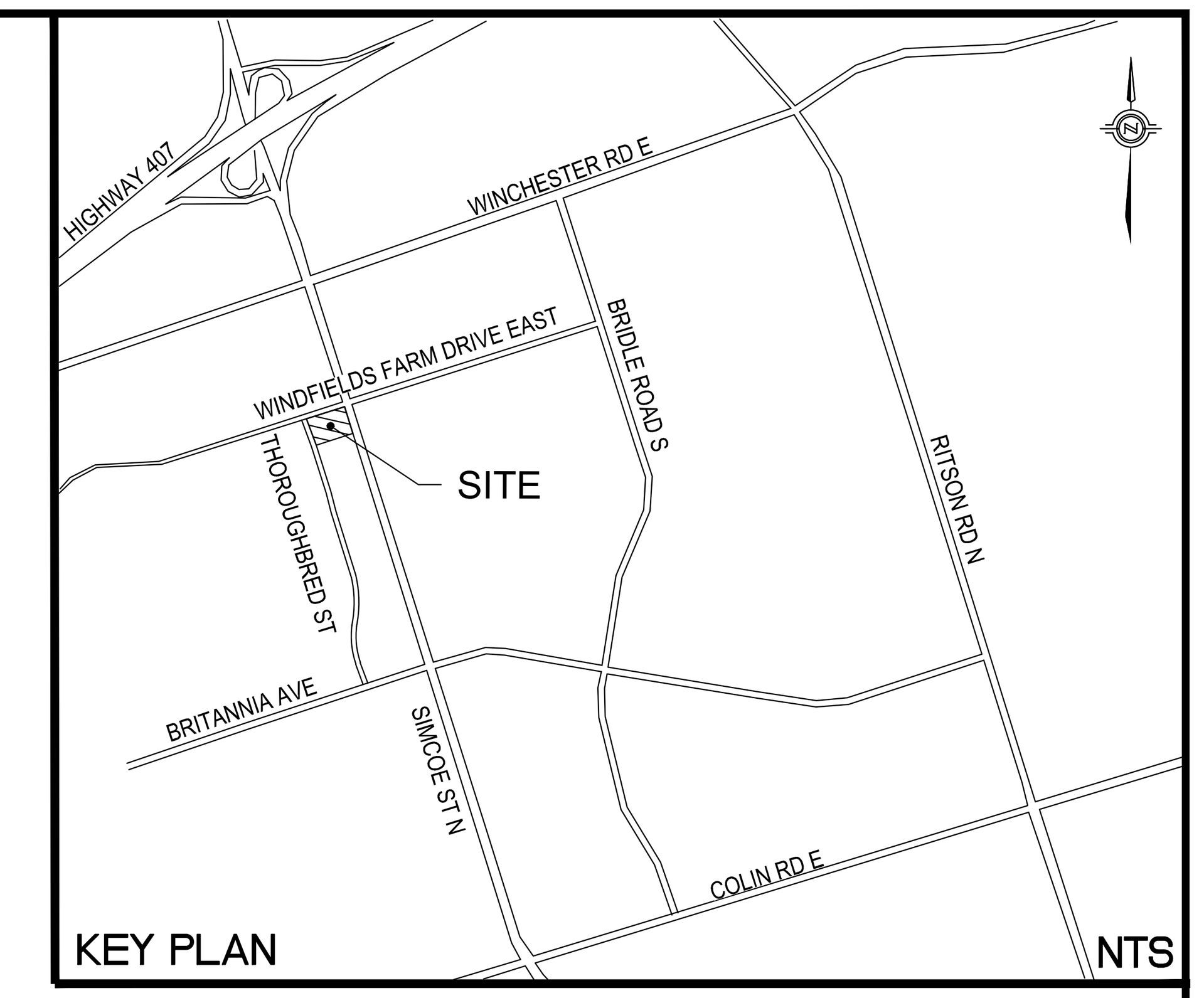

FRAME PLAN
SECTION A-A
GRATE PLAN
SECTION C-C
SECTION B-B
SECTION D-D
SECTION E-E
SLOT DETAIL
NOTES:
A This OPSD shall be read in conjunction with OPSD 610.010 and 610.020.
B All dimensions are in millimetres unless otherwise shown.
ONTARIO PROVINCIAL STANDARD DRAWING
Nov 2018
Rev 3
CAST IRON, SQUARE FRAME WITH SQUARE FLAT GRATE FOR CATCH BASINS, HERRING BONE OPENINGS
OPSD 400.020


DANGER
FRAME PLAN
TYPE A CLOSED COVER
TYPE B OPEN COVER
SECTION C-C
SECTION D-D
SECTION A-A
SECTION B-B
NOTES:
A Covers shall be type A or Type B, as specified.
B All dimensions are in millimetres unless otherwise shown.
ONTARIO PROVINCIAL STANDARD DRAWING
Nov 2018
Rev 4
CAST IRON, SQUARE FRAME WITH CIRCULAR CLOSED OR OPEN COVER FOR MAINTENANCE HOLES
OPSD 401.010


CONTRACTOR TO COORDINATE UNIT PAVER COLOUR, PATTERN AND SIZE WITH LANDSCAPE ARCHITECT AND OWNER.
1.83m OR 1/3 OF PARKING STALL LENGTH
FILL JOINTS TO TOP OF PAVERS WITH (1/4") CLEAR CRUSHED OPEN-GRADED BEDDING COURSE.
UNILOCK ECO-LINE WITH DRAINING VOIDS.
40mm (2") OF 5mm (1/4") CLEAR CRUSHED OPEN-GRADED BEDDING COURSE.
100mm (4") OF 20mm (3/4") CLEAR CRUSHED OPEN-GRADED AGGREGATE UPPER SUB-BASE.
560mm (10") OF 63mm (2½") CLEAR CRUSHED OPEN-GRADED AGGREGATE LOWER SUB-BASE.
NON-WOVEN GEOTEXTILE (TERRAFIX 270R) ON ALL SIDES, TO BE CONFIRMED WITH GEOTECHNICAL RECOMMENDATIONS.
60mm (4") OF 20mm (3/4") CLEAR CRUSHED OPEN-GRADED AGGREGATE UPPER SUB-BASE.
COMPACTED SUBGRADE. COMPACTION DENSITY TO BE CONFIRMED WITH GEOTECHNICAL RECOMMENDATION. SUBGRADE TO HAVE A MIN. 2.0% SLOPE.
150mm PERFORATED PVC PIPE WRAPPED IN FILTER SOCK.

PERMEABLE PAVEMENT DETAIL

N.T.S.



BENCH MARK:
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ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED

100 Scotia Court
Whitby, ON L1N 8Y6
www.wsp.com

wsp

RIOCAN COMMERCIAL SITE C2
BLOCK 2, PART OF LOT 13, CONCESSION 5
CITY OF OSHAWA, ON

DETAILS

LICENSED PROFESSIONAL ENGINEER K. KYRIOPOULOS 100149892 June 16, 2023 PROVINCE OF ONTARIO

DRAWN BY CADD	LOC.	CONST.	CITY	DESIGN BY	M.D.	CHKD. BY	K.K.	APPD. BY
DATE			REGION	DESIGN BY		CHKD. BY		APPD. BY

SCALE N.T.S.

221-07325 DWG. No. DT-2

Jul 13, 2023 – 1:35pm
C:\Users\camd076046\ACCDocs\WSP Canada projects (AMER)\LDO\Files\221-07325 RioCan C2\ENG DWG\DT-1-2.dwg -tab:DT-2