CATCH BASIN & MANHOLE SCHEDULE

(SUBMIT SHOP DRAWINGS OF ALL CATCH BASINS & MANHOLES TO ENGINEER FOR APPROVAL)

REF	TOP	SIZE	TYPE	INVERT AT INLET	INVERT AT OUTLET	NOTES
STORM SEWER						
CB–1	122.16	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	121.36	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19
CB/MH–2	122.34	1200mm	PRECAST CONCRETE CATCH–BASIN/MANHOLE	–	121.35	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S28.1 OR OPSD 401.010
CB/MH–3	122.23	1200mm	PRECAST CONCRETE CATCH–BASIN/MANHOLE	121.19(W)	121.19(E)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S28.1 OR OPSD 401.010
CB–4	122.19	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	121.20	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19
CB–5	122.16	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	121.34	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19
CB–6	121.98	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	121.20	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19
CB–7	121.87	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	121.12	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19
CB/MH–8	122.16	1200mm	PRECAST CONCRETE CATCH–BASIN/MANHOLE	121.13(W) 121.13(N)	121.13(SE)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S28.1 OR OPSD 401.010
CB–9	121.98	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	121.07	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19
CB–10	121.98	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	120.95	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19
CB–10A	121.75	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	121.00	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19
CB/MH–11	121.98	1200mm	PRECAST CONCRETE CATCH–BASIN/MANHOLE	120.95(SW) 120.95(NN)	120.95(NE)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S28.1 OR OPSD 401.010
CB–12	121.98	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	121.01	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19
CB–12A	121.98	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	121.09	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19
CB–13	122.18	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	121.02	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19
CB/MH–14	121.98	1200mm	PRECAST CONCRETE CATCH–BASIN/MANHOLE	120.82(SW)	120.82(SE)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S28.1 OR OPSD 401.010
CB/MH–15	122.00	1200mm	PRECAST CONCRETE CATCH–BASIN/MANHOLE	120.70(NW)	120.70(S)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S28.1 OR OPSD 401.010
CB–16	121.98	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	121.12	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19
CB/MH–17	121.98	1200mm	PRECAST CONCRETE CATCH–BASIN/MANHOLE	121.00(SW)	121.00(SE)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S28.1 OR OPSD 401.010
CB–18	121.98	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	121.05	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19
CB/MH–19	121.98	1200mm	PRECAST CONCRETE CATCH–BASIN/MANHOLE	120.93(SW) 120.93(NW)	120.93(SE)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S28.1 OR OPSD 401.010
CB–20	121.98	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	120.98	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19
CB/MH–21	121.98	1200mm	PRECAST CONCRETE CATCH–BASIN/MANHOLE	120.86(SW) 120.86(NW)	120.86(SE)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S28.1 OR OPSD 401.010
CB–22	121.98	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	120.92	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19
CB/MH–23	121.98	1200mm	PRECAST CONCRETE CATCH–BASIN/MANHOLE	120.79(SW) 120.79(NW)	120.79(NE)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S28.1 OR OPSD 401.010
CB/MH–24	121.98	1200mm	PRECAST CONCRETE CATCH–BASIN/MANHOLE	120.73(SW)	120.73(NE)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S28.1 OR OPSD 401.010
CB/MH–25	121.98	1200mm	PRECAST CONCRETE CATCH–BASIN/MANHOLE	120.66(SW)	120.66(E)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S25 & S28.1 OR OPSD 401.010
MH–26	122.00	CDS PMSU2015–5–C	PRECAST CONCRETE MANHOLE	120.98(SW)	120.98(NE)	TO OPSD 701.010 & CITY OF OTTAWA STANDARDS EXCEPT WITH A DEEP SUMP AS REQUIRED BY CDS
CB–27	121.58	600mm x 600mm	PRECAST CONCRETE CATCH–BASIN	–	119.33	TO OPSD 705.010 & CITY OF OTTAWA STANDARDS – FRAME & COVER TO CITY OF OTTAWA DRAWING No. S19

1. GENERAL

1.1 USE BAR SCALE TO CONFIRM ACTUAL PLOT SCALE. ALL PIPE DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
1.2 UNLESS OTHERWISE STATED "ENGINEER" REFERS TO D. B. GRAY ENGINEERING INC.
1.3 EXISTING ELEVATIONS AND LOCATIONS, INVERTS AND SIZES OF EXISTING SERVICES & UTILITIES ARE NOT NECESSARILY SHOWN ON PLAN AND THOSE SHOWN ARE DERIVED FROM AVAILABLE INFORMATION AND MUST BE CONFIRMED ON SITE BEFORE COMMENCING CONSTRUCTION. REPORT ANY DIFFERENCES TO ENGINEER. UNDERGROUND LOCATES (INCLUDING ONTARIO ONE CALL: 1–800–400–2255) SHALL BE CONDUCTED PRIOR TO THE COMMENCEMENT OF ANY EXCAVATION.
1.4 SITE BOUNDARIES AND EXISTING GRADES AND OTHER FEATURES DERIVED FROM TOPOGRAPHIC SURVEY PREPARED BY CALLON DIETZ INCORPORATED FILE No.: 22–1868. EXISTING AND NEW GRADE ELEVATIONS AND INVERT ELEVATIONS ON THE THE SURVEY PLAN AND THESE DRAWINGS ARE IN METRES AND ARE GEODETIC (CGVD–1928:1978) AND ARE DERIVED FROM THE CANNET VRS NETWORK STATION OTTAWA HAVING AN ELEVATION OF 95.230. IT IS THE RESPONSIBILITY OF THE USER OF THE SURVEY PLAN AND THESE DRAWINGS TO VERIFY THAT THE JOB BENCHMARK HAS NOT BEEN ALTERED OR DISTURBED AND THAT ITS RELATIVE ELEVATION AND DESCRIPTION AGREE WITH THE INFORMATION SHOWN ON SURVEY PLAN AND THESE DRAWINGS.
1.5 REFER TO ARCHITECTURAL AND LANDSCAPE SITE PLANS FOR EXACT LOCATIONS OF BUILDINGS, PAVED AREAS, SIDEWALKS, PLANTERS ETC. LAYOUT SHALL BE COMPLETED BY THE CONTRACTOR AND SHALL BE REVIEWED BY THE OWNER'S REPRESENTATIVE OR ENGINEER PRIOR TO CONSTRUCTION. AT ALL TIMES THE CONTRACTOR IS RESPONSIBLE FOR THE ACCURACY OF THE LAYOUT INCLUDING LINES AND GRADES.
1.6 REFERENCE THE LATEST REVISION AND ALL ADDENDUMS OF THE GEOTECHNICAL INVESTIGATION BY KOLLARD ASSOCIATES PROJECT # 230403, DATED JUNE 14, 2022. SITE PREPARATION SHALL CONFORM TO THE GEOTECHNICAL INVESTIGATION TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER INCLUDING: BUILDING SUB–GRADE PREPARATION; PAVEMENT SUB–GRADE PREPARATION AND CONSTRUCTION OF THE PAVEMENT STRUCTURE; EXCAVATION AND BACKFILLING; SERVICE TRENCH EXCAVATION AND PIPE BEDDING AND BACKFILL; AND THE COMPACTION OF MATERIALS.
1.7 DRAWINGS ARE TO BE READ IN CONJUNCTION WITH SERVICING STUDY & STORM WATER MANAGEMENT REPORT No. 22111 PREPARED BY D. B. GRAY ENGINEERING INC.
1.8 REINSTATE ADJACENT PROPERTIES TO PRE–CONSTRUCTION CONDITIONS.
1.9 REINSTATE CITY PROPERTIES TO CITY STANDARDS AND TO CITY OF OTTAWA'S SATISFACTION.
1.10 ALL RELEVANT WORK SHALL BE DONE IN ACCORDANCE WITH CURRENT CITY STANDARDS AND SPECIFICATIONS.
1.11 ONTARIO PROVINCIAL STANDARDS & SPECIFICATIONS WILL APPLY WHERE NO CITY STANDARDS ARE AVAILABLE.
1.12 ALL PROPOSED RETAINING WALLS SHALL BE SETBACK A MINIMUM 0.15m FROM PROPERTY LINE INCLUDING THE WALL FOUNDATION AND FOOTINGS. ALL PROPOSED RETAINING WALLS GREATER THAN 1.0m IN HEIGHT SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN ONTARIO. ALL RETAINING WALLS OVER 0.6 m REQUIRE A GUARD RAIL (SEE ARCHITECTURAL).

2. EROSION AND SEDIMENT CONTROL PLAN

2.1 THE EROSION AND SEDIMENT CONTROL PLAN IS A "LIVING DOCUMENT" AND SHALL BE REVISED IN THE EVENT THE SPECIFIED CONTROL MEASURES ARE NOT SUFFICIENT. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES TO PROVIDE PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATER COURSE DURING CONSTRUCTION ACTIVITIES. THIS INCLUDES LIMITING THE AMOUNT OF EXPOSED SOIL, USING SEDIMENT CAPTURE FILTER SOCK INSERTS IN CATCH BASINS AND MANHOLES AND INSTALLING SILT FENCES AND OTHER EFFECTIVE SEDIMENT TRAPS. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY. SPECIFICALLY THE CONTRACTOR SHALL INSTALL THE FOLLOWING CONTROL MEASURES AND INSPECT (AFTER EACH RAINFALL), MAINTAIN AND REMOVE THE CONTROL MEASURES.
2.2 AT ANY MANHOLES OR CATCH BASINS THAT WILL RECEIVE DISCHARGE FROM DE–WATERING OPERATIONS AND ALL NEW CATCH BASINS AS THEY ARE INSTALLED: INSTALL SEDIMENT CAPTURE FILTER SOCK INSERTS (TERRAFIX GEOSYNTHETICS INC SILTSACK OR APPROVED EQUAL). INSPECT AT THE END OF EACH DAY AND AFTER EACH RAINFALL. REMOVE SEDIMENT AS RECOMMENDED BY THE MANUFACTURER. IMMEDIATELY REPAIR OR REPLACE ANY DAMAGED FILTER SOCK INSERTS. DO NOT REMOVE UNTIL CONSTRUCTION IS COMPLETE.
2.3 INSTALL A SILT FENCE BARRIER AROUND STOCKPILED SEDIMENT OR SOIL. PRIOR TO COMMENCEMENT OF CONSTRUCTION INSTALL A SILT FENCE BARRIER AS SHOWN ON PLANS. INSPECT ALL SILT FENCES AT THE END OF EACH DAY AND AFTER EACH RAINFALL. REMOVE SEDIMENT DEPOSITS WHEN THE LEVEL OF DEPOSITS REACHES ONE THIRD THE HEIGHT OF THE FENCE. IMMEDIATELY REPAIR OR REPLACE ANY DAMAGED SECTIONS OF FENCE. DO NOT REMOVE ANY SILT FENCES IN ANY PHASE UNTIL CONSTRUCTION IS COMPLETE.
2.4 PRIOR TO COMMENCEMENT OF CONSTRUCTION INSTALL STRAW BALE FLOW CHECK DAMS AS INDICATED ON DRAWINGS. INSPECT ALL STRAW BALE FLOW CHECK DAMS AT THE END OF EACH DAY AND AFTER EVERY RAINFALL. REMOVE SEDIMENT DEPOSITS WHEN THE LEVEL OF DEPOSITS REACHES ONE THIRD THE HEIGHT OF THE DAM. IMMEDIATELY REPAIR OR REPLACE ANY DAMAGED BALES. STRAW BALES SHALL BE EMBEDDED INTO SOIL A MINIMUM 150MM AND SHALL BE SECURELY ANCHORED BY TWO STAKES. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARDS THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER. DO NOT REMOVE ANY STRAW BALES UNTIL CONSTRUCTION IS COMPLETE.
2.5 CONTROL AND LIMIT VEHICLE ACCESS TO AND AROUND THE CONSTRUCTION SITE TO MINIMIZE THE DISTURBANCE OF SOIL AND VEGETATION. PRIOR TO COMMENCEMENT OF CONSTRUCTION INSTALL AT ALL POINTS OF EGRESS TO PUBLIC ROADS GEOTEXTILE FABRIC MUD MATS (TERRAFIX GEOSYNTHETICS INC, OR APPROVED EQUAL OR OTHER APPROVED METHOD. MUD MATS SHALL BE THE FULL WIDTH OF THE EGRESS POINT AND AT LEAST 18m IN LENGTH. MUD MATS SHALL BE WASHED AS REQUIRED TO PREVENT MATERIAL FROM BEING TRACKED ONTO THE PUBLIC ROAD. DO NOT REMOVE MUD MATS UNTIL CONSTRUCTION IS COMPLETE. IN ADDITION, IF REQUIRED TO PREVENT MATERIAL FROM BEING TRACKED ONTO THE PUBLIC ROAD, WASH VEHICLE TIRES AT THE EGRESS POINT.
2.6 ANY MATERIAL DEPOSITED ON A PUBLIC ROAD SHALL BE REMOVED BY SWEEPING AND SHOVELING OR VACUUMING AND DISPOSING SEDIMENT IN A CONTROLLED AREA. DO NOT SWEEP OR HOSE MATERIAL INTO ANY STORMWATER CONVEYANCE SYSTEM.
2.7 CONSTRUCTION IS CONSIDERED COMPLETE WHEN THE FOLLOWING CONDITIONS HAVE BEEN MET:
a. ALL STRUCTURES HAVE BEEN BUILT.
b. ALL HARD SURFACES HAVE BEEN CONSTRUCTED.
c. ALL PROPOSED GRASSED AREAS ARE EITHER SODDED OR HAVE A FULL COVERAGE OF WELL ESTABLISHED TURF AND HAVE HAD A MINIMUM OF ONE FULL GROWING SEASON (MAY 15TH TO SEPTEMBER 15TH).
d. THERE ARE NO AREAS OF EXPOSED EARTH.
e. ALL STOCKPILED MATERIALS HAVE BEEN REMOVED.
2.8 REMOVE EROSION AND SEDIMENT CONTROL MEASURES WHEN CONSTRUCTION IS COMPLETE.

3. GRADING & DRAINAGE

3.1 NEW GRADES TO MATCH EXISTING AT PROPERTY LINE. NO EXCESS DRAINAGE WILL BE DIRECTED TOWARDS THE ADJACENT PROPERTIES DURING AND AFTER CONSTRUCTION. THERE WILL BE NO ALTERATION TO EXISTING GRADE AND DRAINAGE PATTERNS ON PROPERTY LINE.
3.2 ALL AREAS SHALL BE GRADED TO ENSURE ADEQUATE DRAINAGE AWAY FROM BUILDINGS TO CATCH BASINS, SWALES, DITCHES AND OTHER APPROVED DISPOSAL AREAS. GRADING SHALL BE GRADUAL BETWEEN FINISHED SPOT ELEVATIONS SHOWN ON DRAWINGS TO PREVENT PONDING (OTHER THAN PONDING REQUIRED FOR STORMWATER MANAGEMENT).
3.3 WHETHER RESULT OF POOR WORKMANSHIP OR DAMAGE: DEFECTIVE GRADING SHALL BE CORRECTED. PROMPTLY MAKE GOOD OTHER CONTRACTOR'S WORK DAMAGED BY SUCH CORRECTIONS.
3.4 CULVERTS SHALL BE HDPE OR ROUND CORRUGATED STEEL PIPE CSP) TO CITY OF OTTAWA STANDARDS AND SPECIFICATIONS. HDPE CULVERTS SHALL BE TO OPSS 1840 AND CSA B182.8 OR 182.6. MINIMUM 320 kPa STIFFNESS AT 5% DEFLECTION. JOINTS SHALL BE SOIL–TIGHT OR BETTER (BOSS 2000 OR APPROVED EQUAL). CSP CULVERTS SHALL BE 500mm ROUND CORRUGATED STEEL 2.0 mm THICK ALUMINIZED TYPE 2 TO CITY OF OTTAWA STANDARDS AND SPECIFICATIONS AND TO OPSS 1801 AND OPSD 805.010 AND CSA G401. ALL CULVERTS WITHIN PAVED AREAS SHALL HAVE 5:1 FROST TAPERS FROM THE INVERT OF THE CULVERT TO THE PAVEMENT SUB–GRADE.
3.5 RIP RAP: PLACE RIP–RAP 300mm THICK AS INDICATED ON PLANS AS PER OPSS 511 AND OPSD 810.010 AND/OR 810.020. USE QUARRIED STONE 200MM TO 300MM IN DIAMETER. AREA TO BE RIP RAPPED SHALL BE EXCAVATED AND FINE GRADED TO A UNIFORM AND EVEN SURFACE TO PROVIDE ADEQUATE FOUNDATION. FILL AND THOROUGHLY COMPACT DEPRESSIONS. WHERE RIP RAP IS TO BE PLACED ON SLOPES, EXCAVATE TRENCH AT TOE OF SLOPE. PLACE GEOTEXTILE FABRIC ON PREPARED SURFACE. GEOTEXTILE FABRIC SHALL EXTEND A MINIMUM 300mm BEYOND THE EXTENT OF THE RIP RAP IN ALL DIRECTIONS. PLACE RIP RAP ON FABRIC CAREFULLY, TO AVOID PUNCTURING FABRIC. PLACE RIP RAP IN A SET AND STABLE MANNER. ROCK SHALL BE PLACED, STARTING AT THE LOWER END OF THE SLOPE. THE LARGEST ROCKS OBTAINABLE SHALL BE USED AND PLACED IN THE BOTTOM COURSES AND FOR USE AS HEADERS THROUGH SUBSEQUENT COURSES. THEY SHALL BE LAID CLOSELY AND SUCH THAT THEY WILL PROVIDE A REASONABLE SEMBLANCE OF COURSES. FILL VOIDS WITH ROCK SPALLS OR COBBLES. FINNISH SURFACE EVEN, FREE OF LARGE OPENINGS AND NEAT IN APPEARANCE.
3.6 GEOTEXTILE FABRIC: TO OPSS 1860. WOVEN SYNTHETIC FIBRE FABRIC SHALL BE USED IN SILT FENCE BARRIER (GEOSYNTHETIC HD105 OR APPROVED EQUAL). NON–WOVEN SYNTHETIC FIBRE FABRIC 1.75mm THICK, 200g/sq.m. SHALL BE USED FOR MATERIAL SEPARATION. SUBDRAIN / DRY WELL / INFILTRATION TRENCH APPLICATIONS: GEOSYNTHETIC TERRAFIX 360R OR APPROVED EQUAL. RIP RAP APPLICATIONS: GEOSYNTHETIC TERRAFIX 420R OR APPROVED EQUAL. PRIOR TO INSTALLATION SUBMIT SHOP DRAWING TO ENGINEER FOR APPROVAL. GEOTEXTILE FABRIC SHALL BE FREE OF TEARS AND RESISTANT TO DETERIORATION BY ULTRA VIOLET AND HEAT EXPOSURE. PLACE GEOTEXTILE MATERIAL BY UNROLLING ONTO GRADED SURFACE. SMOOTH AND FREE OF TENSION STRESS, FOLDS, WRINKLES AND CREASES. PLACE GEOTEXTILE MATERIAL ON SLOPING SURFACES IN ONE CONTINUOUS LENGTH FROM TOE OF SLOPE TO UPPER EXTENT OF GEOTEXTILE. OVERLAP EACH SUCCESSIVE STRIP OF GEOTEXTILE 600mm OVER PREVIOUSLY LAID STRIP IN DIRECTION OF FLOW. ALTERNATIVELY THE FABRIC MAY BE LAPPED A MINIMUM OF 300mm AND PINNED TOGETHER. PROTECT INSTALLED GEOTEXTILE MATERIAL FROM DISPLACEMENT, DAMAGE OR DETERIORATION BEFORE, DURING AND AFTER PLACEMENT OF MATERIAL. LAYERS AFTER INSTALLATION, COVER WITH OVERLYING LAYER WITHIN 4 HOURS OF PLACEMENT. DURING DELIVERY AND STORAGE, PROTECT GEOTEXTILES FROM DIRECT SUNLIGHT, ULTRAVIOLET RAYS, EXCESSIVE HEAT, MUD, DIRT, DUST, DEBRIS AND RODENTS. VEHICULAR TRAFFIC NOT PERMITTED DIRECTLY ON GEOTEXTILE. AVOID PUNCTURING GEOTEXTILE. REPLACE DAMAGED OR DETERORATED GEOTEXTILE.

4. SITE SERVICES

4.1 ALL WATERMAIN MATERIALS AND CONSTRUCTION METHODS TO CITY OF OTTAWA STANDARDS AND ONTARIO PROVINCIAL STANDARDS SPECIFICATIONS (OPSS & OPSD). WATERMAIN CONNECTING FIRE TANKS (WATER FILL STATION / WATER SUPPLY FOR FIREFIGHTING) AND FIRE HYDRANTS SHALL BE PVC DR18 TO AWWA C–900 & CSA B137.3 (IPEX BLUE BRUTE OR APPROVED EQUAL). PROVIDE THRUST BLOCKS AS PER CITY OF OTTAWA DWG. NO. W25.3 & W25.4 AT ALL VALVES, TEES, CAPS, BENDS, REDUCERS AND HYDRANTS OR OTHER FITTINGS WHERE CHANGES OCCUR IN PIPE DIAMETER OR DIRECTION. RESTRAINING AS PER AS PER CITY OF OTTAWA DWG. NO W25.5 & W25.6. ALL CONNECTIONS, RESTRAINT RODS AND VALVE BOLTS TO BE STAINLESS STEEL. CATHODIC PROTECTION & ANODE INSTALLATION AS PER CITY OF OTTAWA DWG. NO W40, W42, W44 & W47.
4.2 PROVIDE A MINIMUM 2.4 m COVER OVER WELL WATER LINE AND WATERMAIN. WHERE THE MINIMUM COVER IS NOT POSSIBLE INSULATE AS PER DETAIL.
4.3 FIRE HYDRANTS SHALL BE TO CITY OF OTTAWA STANDARDS AND SHALL BE OF THE TYPE THAT CONNECTS TO A MUNICIPAL WATERMAIN. (FIRE HYDRANTS SHALL NOT BE DRY HYDRANTS FOR DRAFTING FROM STORAGE RESERVOIRS). LOCATE FIRE HYDRANTS AS PER CITY OF OTTAWA DWG. NO. W18. INSTALL FIRE HYDRANT AS PER CITY OF OTTAWA DWG. NO. W19. LOCATE FIRE HYDRANT 1.5 m TO 2.5 m FROM FACE OF CURB OR EDGE OF PAVEMENT. THE HYDRANT SHALL BE INSTALL WITH THE BREAKABLE FLANGE 50mm TO 150mm ABOVE FINISHED GRADE. THERE SHALL BE NO VEGETATION OR OTHER OBSTRUCTIONS IN FRONT OF HYDRANT AND WITHIN 1.5m OF FIRE HYDRANT. THE REMOTE HYDRANT LOCATED ADJACEN TO THE WATER FILL STATIONS SHALL BE PAINTED BLUE TO MATCH THE CHUTES. OTHER FIRE HYDRANTS SHALL BE RED WITH WHITE BONNETS AND CAPS TO CITY STANDARDS.
4.4 SEWER MATERIAL SHALL BE PVC OR REINFORCED CONCRETE. PVC SEWERS SHALL BE SDR–35 (SDR–28 FOR DIAMETERS 150mm OR LESS) AND SHALL CONFORM TO CSA B182.2 AND SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS.
4.5 SANITARY FORCEMAIN SHALL BE PVC SDR 26 (IPEX CYLCETOUGH OR APPROVED EQUAL). PROVIDE THRUST BLOCKS AS PER CITY OF OTTAWA DWG. No. W25.3 & W25.4 AT ALL VALVES, TEES, CAPS, BENDS, REDUCERS AND HYDRANTS OR OTHER FITTINGS WHERE CHANGES OCCUR IN PIPE DIAMETER OR DIRECTION. RESTRAINING AS PER AS PER CITY OF OTTAWA DWG. No W25.5 & W25.6.
4.6 SANITARY FORCEMAIN SHALL HAVE A MINIMUM 2.4 m OF COVER OR SHALL BE INSULATED AS PER THE DETAILS. WHERE LESS THAN 2.4 m CLEARANCE FROM AN OPEN STRUCTURE (EG. MANHOLES, CATCH BASINS & WINDOW WELLS) PLACE INSULATION AROUND AND WATER SERVICE CONNECTIONS AS PER CITY OF OTTAWA DWG. NO. W23 INSTALLED FORCEMAIN WITH A MINIMUM 0.5% SLOPE TOWARDS THE PUMP CHAMBER WITH NO SAGS.
4.7 SEWAGE PUMP STATION:
DUPLEX SYSTEM COMPLETE WITH:
– TWO SUBMERSIBLE NON–CLOG SEWAGE PUMP PUMPS: EACH 30 USgpm AT 30 FT (1.9 L/s AT 9.1 m) HEAD;
– MECHANICAL FLOAT ASSEMBLY AND FLOATATION WEIGHTS WITH HIGH WATER ALARM, PUMP–ON AND PUMP–OFF FLOATS SHALL HAVE A MINIMUM VERTICAL SEPARATION OF 300mm;
– TWO STAINLESS STEEL LIFTING CHAINS;
– QUICK DISCONNECTS FOR PUMPS;
– ONE DUPLEX CONTROLLER;
– 2 SHUT OFF VALVES, 2 CHECK VALVES AND A VENT (THE VENT SHALL HAVE CARBON FILTERS);
– ALL REQUIRED WIRING;
– CHAMBER: MINIMUM 475 L WORKING CAPACITY (475 L VOLUME BETWEEN PUMP–ON AND PUMP–OFF FLOAT) COMPLETE WITH GUIDE RAILS; ANCHOR TANK TO PREVENT UPLIFT FROM HYDROSTATIC PRESSURES (USING A METHOD APPROVED BY TANK MANUFACTURER);
– THE JUNCTION BOX, MAIN DISCONNECT, CONTROL PANEL, ALARM PANEL, SHALL BE INSTALLED IN A WEATHERPROOF ENCLOSURE; WHICH SHALL SHALL BE LOCKABLE AND VANDAL RESISTANT;

SUBMIT SHOP DRAWINGS WHICH SHALL INCLUDE: EXACT DIMENSIONS; A SECTIONAL DRAWING OF THE CHAMBER BASIN SHOWING ALL CONNECTION AND FLOAT ELEVATIONS, VALVES, FLOATS, FLOAT SUPPORT AND JUNCTION BOXES; ALL ACCESSORIES; PUMP PERFORMANCE CURVES; BASIN ANTI–FLOTATION ANCHOR; AND ELECTRICAL SCHEMATICS.
SUBMIT OPERATION AND MAINTENANCE MANUAL INCLUDING PARTS LIST.
CONTRACTOR SHALL COORDINATE ALL ASPECTS OF SEWAGE PUMP STATION TO PROVIDE A COMPLETE SYSTEM.
SYSTEM SHALL BE TESTED AND CERTIFIED BY CERTIFIED PERSONNEL.
4.8 MANHOLES & CATCH BASINS:
A. PRECAST MANHOLE UNITS: TO OPSS 1351 AND OPSD 701.010 WITH BASE SLAB OR MONOLITHIC BASE. TOP SECTIONS ECCENTRIC CONE OR FLAT LAB TOP TYPE WITH OPENING OFFSET FOR VERTICAL LADDER INSTALLATION.
B. MANHOLE STEPS: TO OPSD 405.01
C. ADJUSTING RINGS: TO ASTM C 478M.
D. ALUMINUM SURFACES IN CONTACT WITH OR CAST INTO CONCRETE SHALL HAVE POLYETHYLENE ANCHOR INSULATING SLEEVES.
E. PREFAST CATCH BASIN SECTIONS: TO OPSS 1351.
F. JOINTS: SHALL BE MADE WATERTIGHT USING BUTYL BASED, FLEXIBLE WATERSTOP/JOINT SEALANT MATERIAL.
H. STORM SEWERS: MANHOLES SHALL HAVE A 300mm SUMP AND CATCH BASINS AND DITCH INLETS SHALL HAVE A 600mm SUMP.
I. FRAMES, GRATES AND COVERS TO CITY OF OTTAWA DRAWINGS OR OPSD (AS PER CATCH BASIN & MANHOLE SCHEDULE). GRATES AND COVERS TO BEAR EVENLY ON FRAMES.
J. GRANULAR BEDDING AND BACKFILL: OPSS GRANULAR A. RE–CYLCLED GRANULAR MATERIALS ARE NOT PERMITTED.
4.9 THE INLET CONTROL DEVICE (ICD) LOCATED IN THE INLET OF OF THE 450 mm CULVERT AT THE OUTLET OF THE STORMWATER DETENTION AREA SHALL BE PLUG STYLE WITH A ROUND ORIFICE (WITH THE ORIFICE LOCATED AT THE BOTTOM OF THE PLUG) MANUFACTURED BY PEDKO PLASTICS (OR APPROVED EQUAL) AND SIZED BY THE MANUFACTURER FOR A DISCHARGE RATE AS INDICATED ON PLAN. PRIOR TO INSTALLATION SUBMIT SHOP DRAWING TO ENGINEER FOR APPROVAL.
4.10 WATER FILL STATION / WATER SUPPLY FOR FIRE FIGHTING STORAGE TANKS, CHUTE WITH FIRE FITTINGS AND DRAW PIPES AS PER LOCAL FIRE DEPARTMENT STANDARDS. SUPPLY AND INSTALL A LOW WATER LEVEL FLOAT ALARM (AUDIBLE AND VISUAL) THAT IS ACTIVATED WHEN THE WATER LEVEL DROPS MORE THAN 300 mm BELOW THE TOP OF THE TANK. CONNECT 45,000 LITRE (10,000 GAL) CONCRETE TANKS WITH 250 mm DIAMETER PVC DR25 PIPE (IPEX BLUE BRUTE OR APPROVED EQUAL). CORE DRILL OPENINGS IN TANKS AND MAKE JOINTS WATERTIGHT BETWEEN TANK AND PIPE. AS INDICATED ON PLANS: TANKS SHALL EITHER HAVE A CHUTE AND A DRAW PIPE OR SHALL HAVE AN ACCESS OPENING WITH A 150 mm GALVANIZED STEEL "CANDY CANE" VENT C/W WITH RODENT SCREEN. ANCHOR TANKS TO PREVENT UPLIFT FROM HYDROSTATIC PRESSURES USING A METHOD APPROVED BY TANK MANUFACTURER. HANDLE AND INSTALL FIRE STORAGE TANKS USING METHODS APPROVED BY THE TANK MANUFACTURER AND AS FOLLOWS (IN THE EVENT OF A CONFLICT, THE METHOD APPROVED BY THE MANUFACTURER SHALL BE USED):
A. PLACE TANK CLIMB AND TRUE TO ALIGNMENT AND GRADE.
B. SET TANK ON MINIMUM 300 mm OF OPSS GRANULAR A COMPACTED TO 100% CORRECTED MAXIMUM DRY DENSITY OR AS DIRECTED BY MANUFACTURER. RE–CYLCLED GRANULAR MATERIALS ARE NOT PERMITTED.
C. PLACE GRANULAR BACKFILL MATERIALS IN A UNIFORM LAYERS TO COMPACTED THICKNESS OF 150 MM, COMPACT TO 95% CORRECTED MAXIMUM DRY DENSITY.
D. PLACE LAYERS SIMULTANEOUSLY ON BOTH SIDES OF INSTALLED WORK TO EQUALIZE LOADING.
D. MAKE ALL JOINTS WATERTIGHT.
E. PERFORM FIELD LEAKAGE TESTS ON ALL TANKS AND CONNECTING PIPES AND WATERMAIN COMPLETED IN ACCORDANCE WITH OPSS 407 (MAINTENANCE HOLES & VALVE CHAMBERS) & OPSS 410 (SEWERS). REPAIR AND RETEST AS REQUIRED. REPAIR VISIBLE LEAKS REGARDLESS OF TEST RESULTS.

5. CONSTRUCTION:

5.1 PRIOR TO COMMENCING WORK:
A. OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS FROM THE AUTHORITIES.
B. SIZE, DEPTH AND LOCATION OF EXISTING SERVICES, UTILITIES AND STRUCTUR