

VICTORIA ANNEX

GEORGIAN COMMUNITIES

TOWN OF COLLINGWOOD

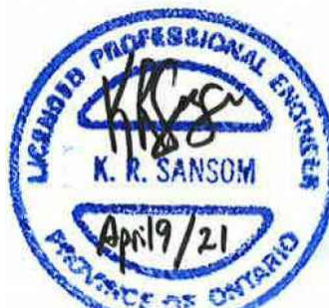


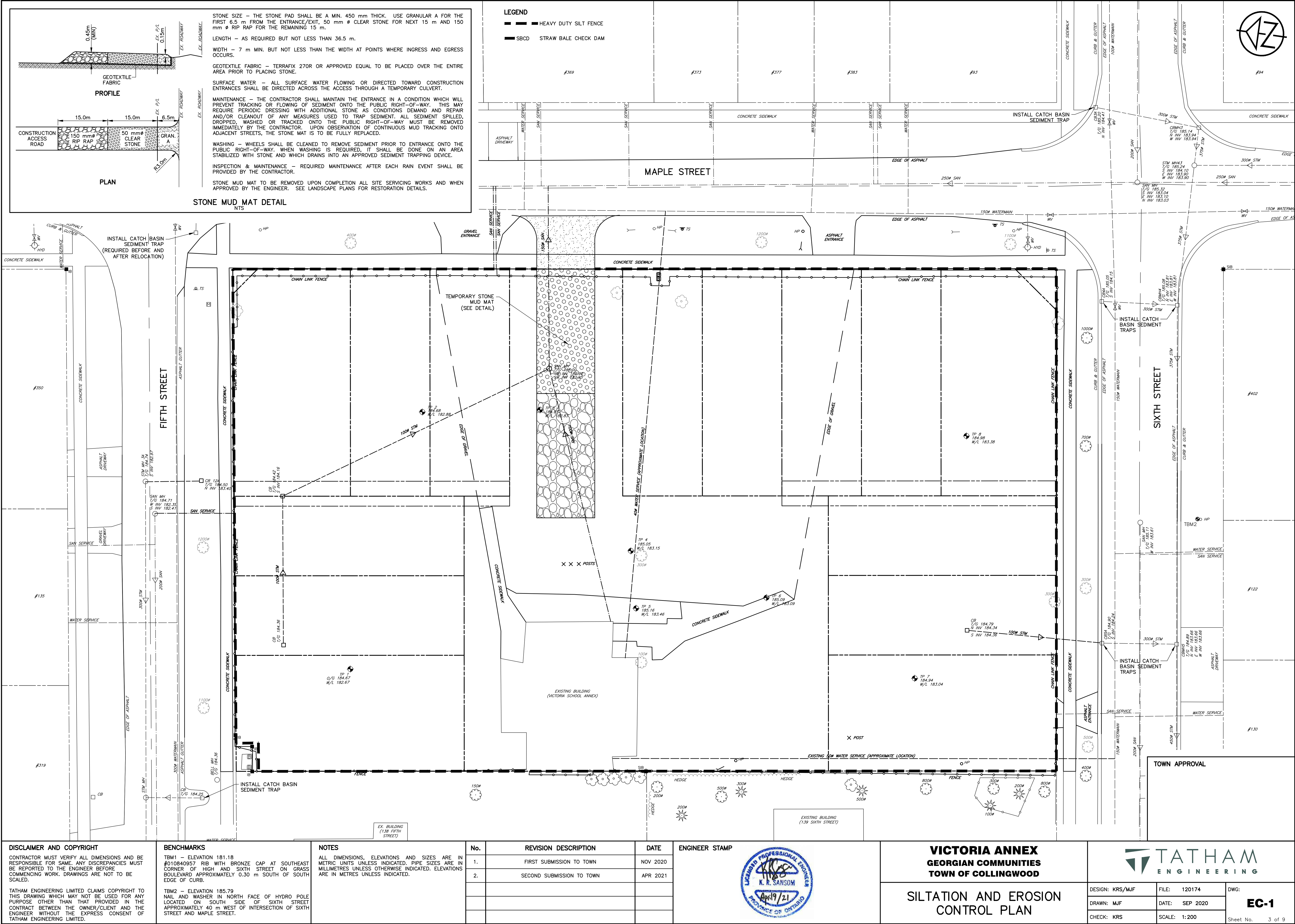
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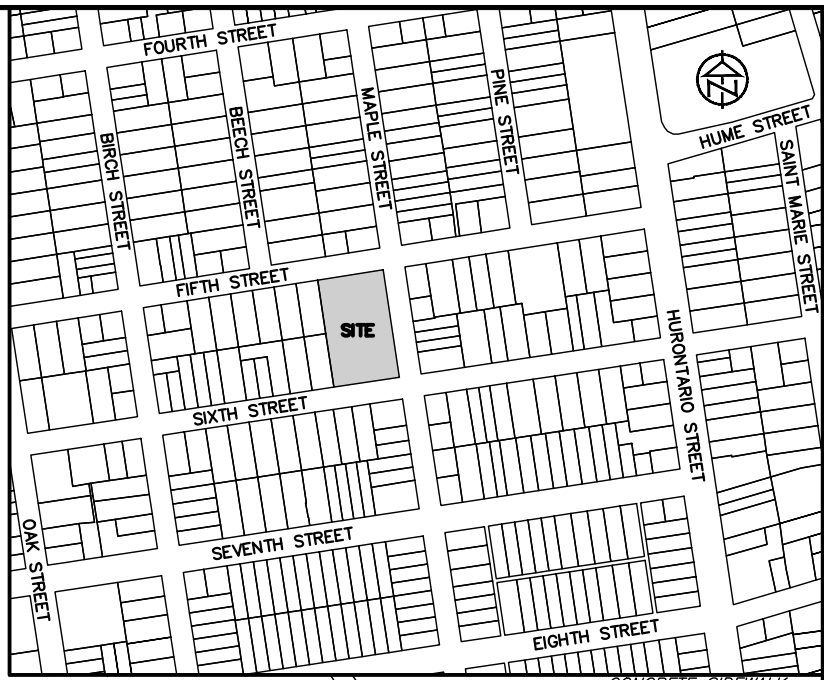
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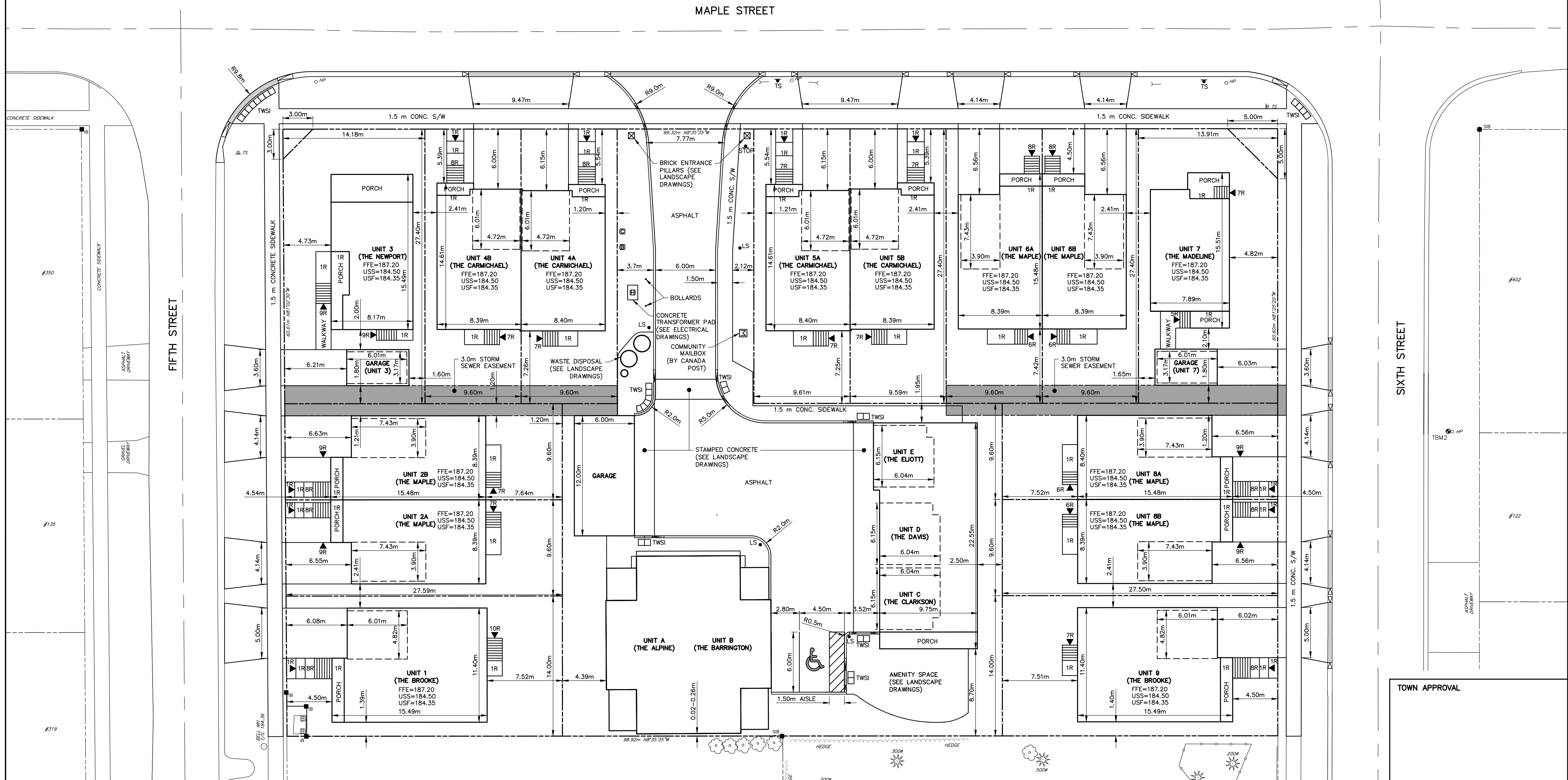
PROPERTY LINE	=====
EXISTING CENTERLINE	-----
PROPOSED CENTERLINE	-----
EXISTING EDGE OF ASPHALT	=====
EXISTING CURB	=====
PROPOSED EDGE OF ASPHALT	=====
PROPOSED CURB	=====
EXISTING DITCH/DIRECTION OF FLOW	----->
PROPOSED DITCH/DIRECTION OF FLOW	----->
EXISTING SANITARY SEWER/SIZE/DIRECTION OF FLOW	-----200# SAN----->
PROPOSED SANITARY SEWER/SIZE/DIRECTION OF FLOW	-----200# SAN----->
EXISTING SANITARY SERVICE	-----
PROPOSED SANITARY SERVICE	-----
EXISTING WATERMAIN/SIZE	-----150# W/M-----
PROPOSED WATERMAIN/SIZE	-----150# W/M-----
EXISTING WATER SERVICE	-----
PROPOSED WATER SERVICE	-----
EXISTING STORM SEWER/SIZE/DIRECTION OF FLOW	-----375# STM----->
PROPOSED STORM SEWER/SIZE/DIRECTION OF FLOW	-----375# STM----->
EXISTING CULVERT	=====
PROPOSED CULVERT	=====
PROPOSED SWALE LOCATION	----->
EXISTING GAS MAIN	-----GAS-----
EXISTING GAS SERVICE	-----GAS-----
EXISTING FENCELINE	-----
PROPOSED FENCELINE	-----
EXISTING BUSHLINE	-----
EXISTING CONTOUR	-----179.00-----
EXISTING SPOT ELEVATION	X 179.00
PROPOSED SPOT ELEVATION	X 179.00
EXISTING GRADING DIRECTION	----->
PROPOSED GRADING DIRECTION	----->
EXISTING TEMPORARY BENCHMARK	● TBM
EXISTING STANDARD IRON BAR	■ SIB
EXISTING BOREHOLE	● BH9
EXISTING GAS VALVE	⋈ GAS
EXISTING HYDRO TRANSFORMER	⊠
EXISTING CABLE PEDESTAL	⊞
EXISTING BELL PEDESTAL	⊞
EXISTING BELL MAINTENANCE HOLE	○ BELL MH
EXISTING HYDRO POLE	○ HP
EXISTING HYDRO GUY WIRE	—
EXISTING TRAFFIC SIGN	⊥ TS
PROPOSED TRAFFIC SIGN (MISCELLANEOUS)	⊥ TS
EXISTING DECIDUOUS TREE	⊙
EXISTING CONIFEROUS TREE	⊙
EXISTING BUSH	⊙
EXISTING SANITARY MAINTENANCE HOLE	○ SAN MH20
PROPOSED SANITARY MAINTENANCE HOLE	● SAN MH17
EXISTING HYDRANT	◇ HYD
PROPOSED HYDRANT	◆ HYD
EXISTING WATER VALVE	⋈ WV
PROPOSED WATER VALVE	⋈ WV
PROPOSED CURB STOP VALVE	⋈ CSV
EXISTING WATERMAIN PLUG	⊞
PROPOSED WATERMAIN PLUG	⊞
PROPOSED WATERMAIN REDUCER	⊞
EXISTING STORM MAINTENANCE HOLE	○ STM MH20
PROPOSED STORM MAINTENANCE HOLE	● STM MH9
EXISTING CATCH BASIN	□ CBM118
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PROPOSED CATCH BASIN MAINTENANCE HOLE	○ CBMH12
PROPOSED DOUBLE CATCH BASIN MAINTENANCE HOLE	⊞ DCBMH4
PROPOSED DOUBLE CATCH BASIN	■ DCB12
PROPOSED DITCH INLET CATCH BASIN	■ DICB2
PROPOSED TACTILE WALKING SURFACE INDICATOR	⊞
PROPOSED CURB DEPRESSION	⊞

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			<div>2.</div>	<div>SECOND SUBMISSION TO TOWN</div>	<div>APR 2021</div>			
<div>DRAWING INDEX AND LEGEND</div>								
<div>DESIGN: KRS/MJF</div>		<div>FILE: 120174</div>		<div>DWG:</div>		<div>IN-1</div> <div>Sheet No. 2 of 9</div>		
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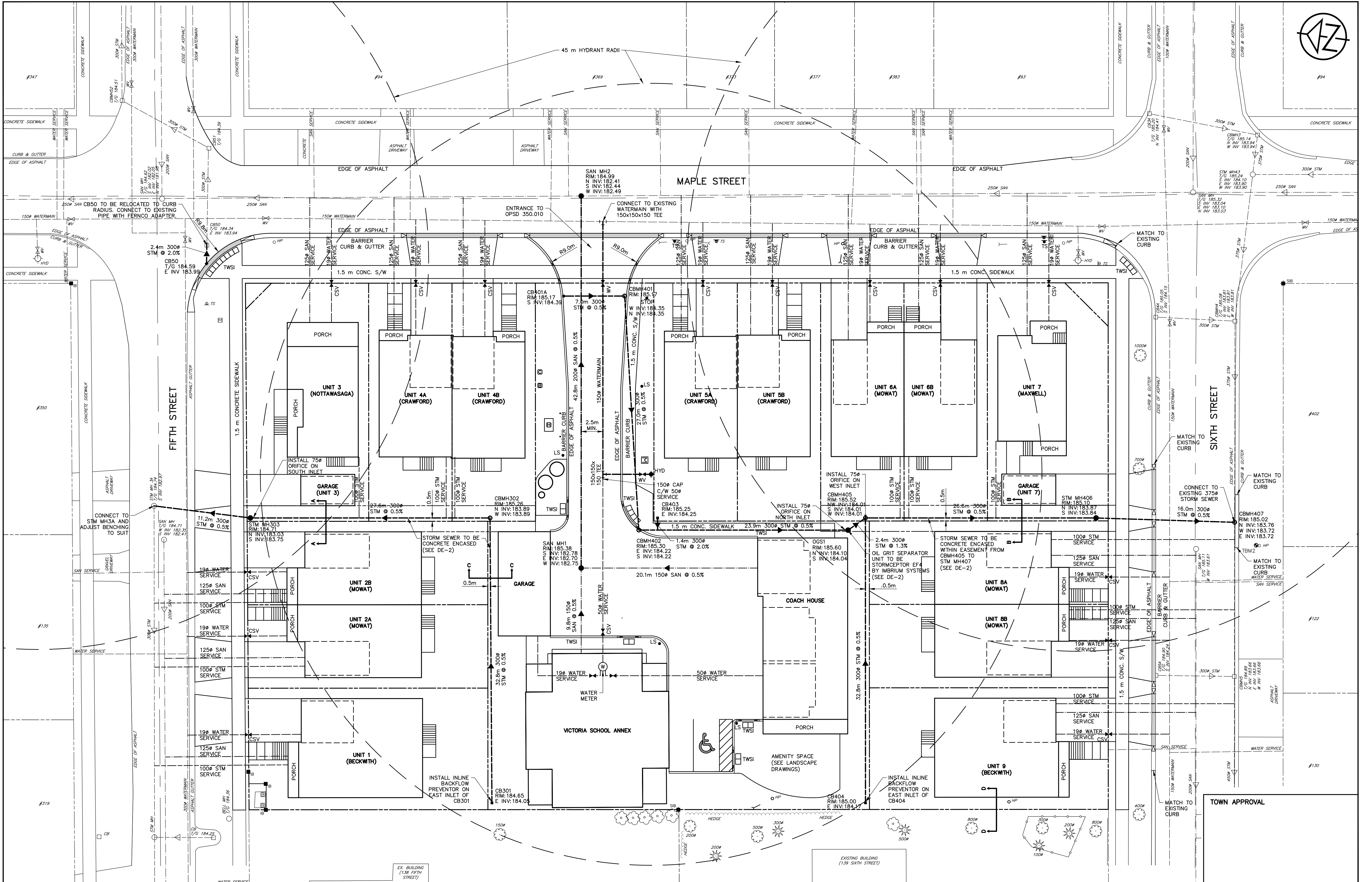




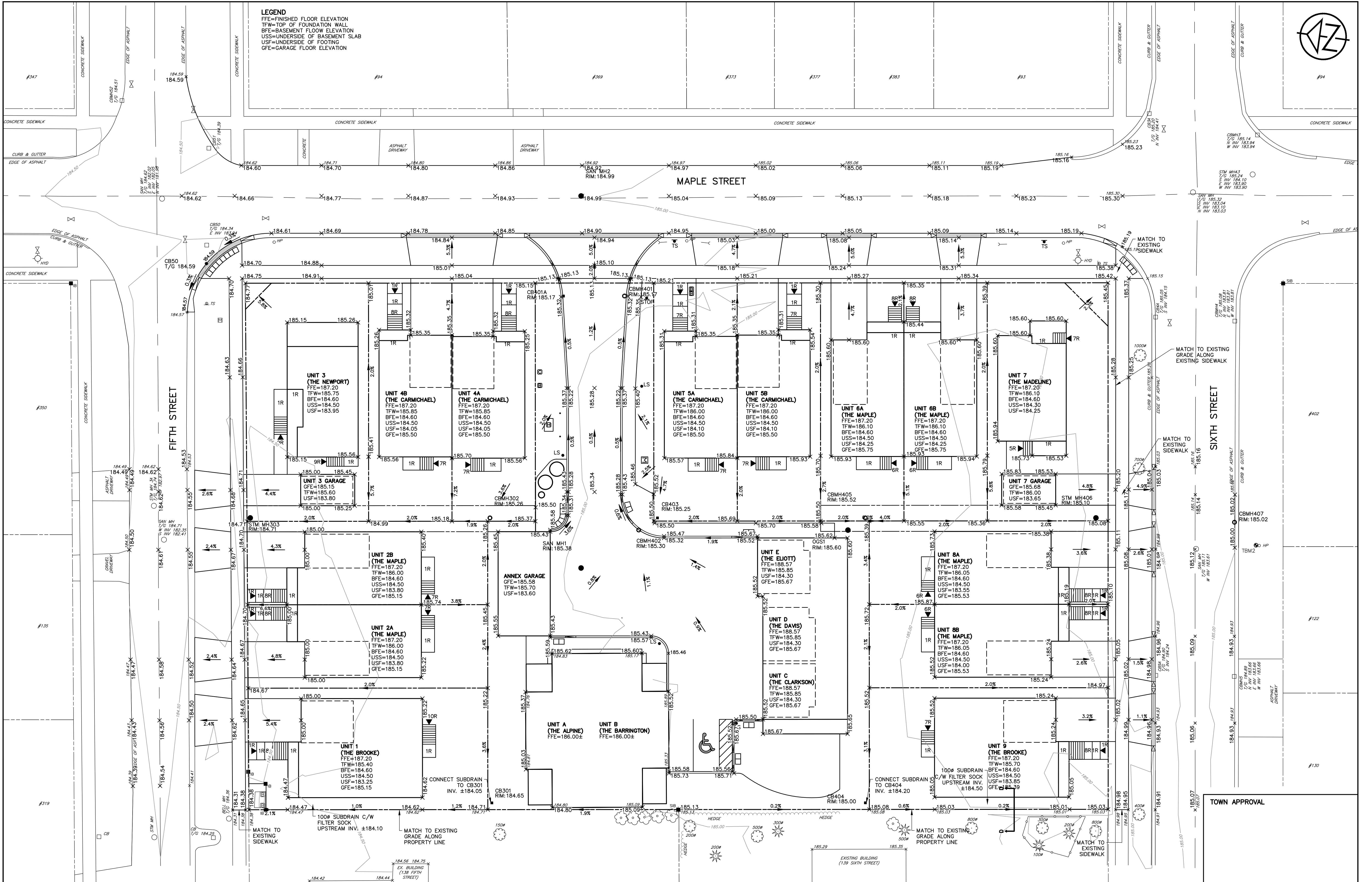
KEY PLAN





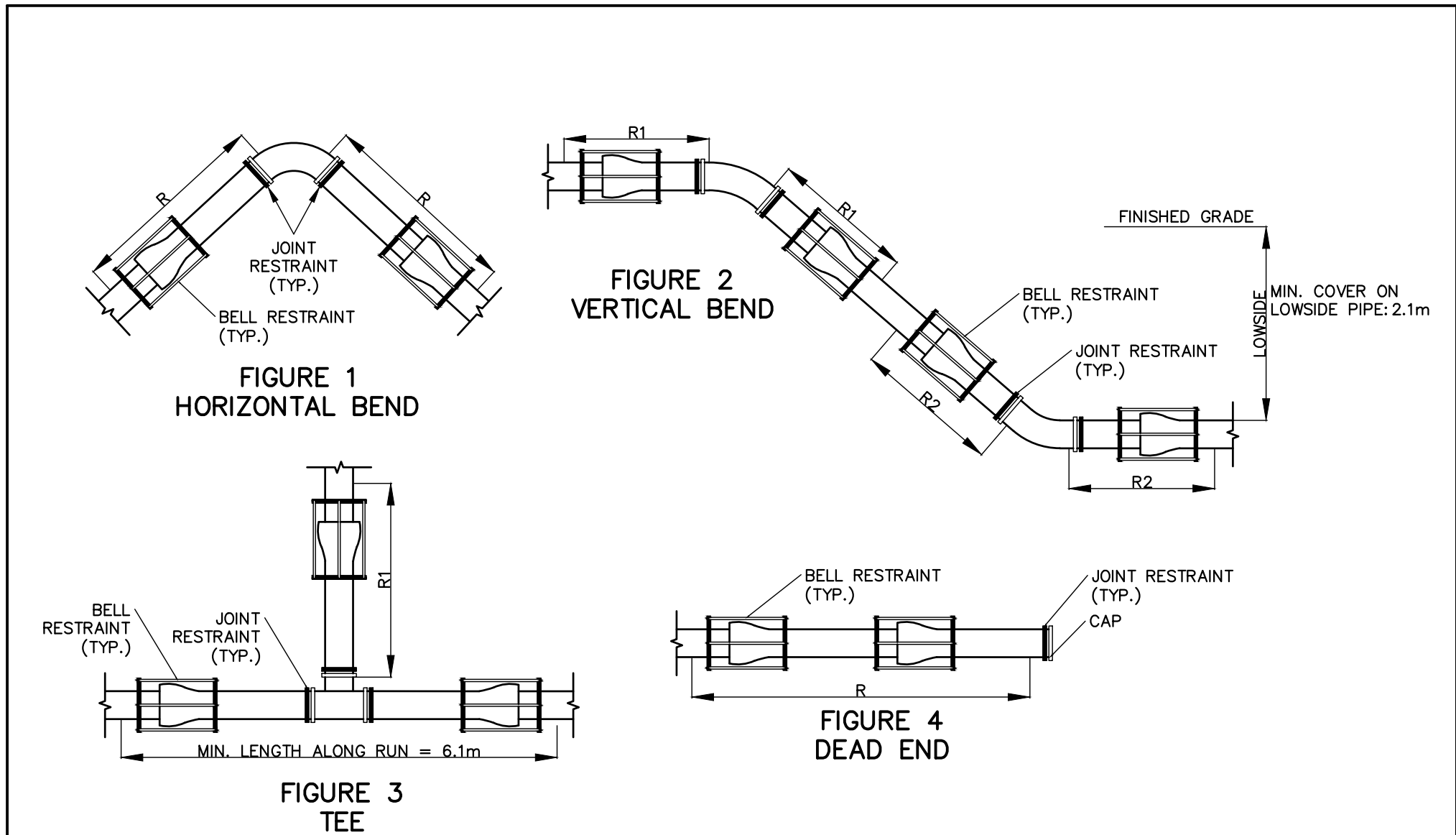
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CHARACTERISTICS USED TO CALCULATE RESTRAINT LENGTH:

PIPE MATERIAL: DUCTILE IRON
SOIL TYPE: ML (INORGANIC SILTS, VERY FINE SANDS, SILTY OR CLAYEY FINE SANDS, ROCK FLAK)
SAFETY FACTOR: 1.5 TO 1
TRENCH TYPE: 5 (PIPE BEDDED IN COMPACT GRANULAR MATERIAL)
DEPTH OF BURY: 1.52m (5 ft)
TEST PRESSURE: 1035 kPa (150 p.s.i.)
PROGRAM: ROMAC INDUSTRIES INC. - THRUST RESTRAINT CALCULATOR

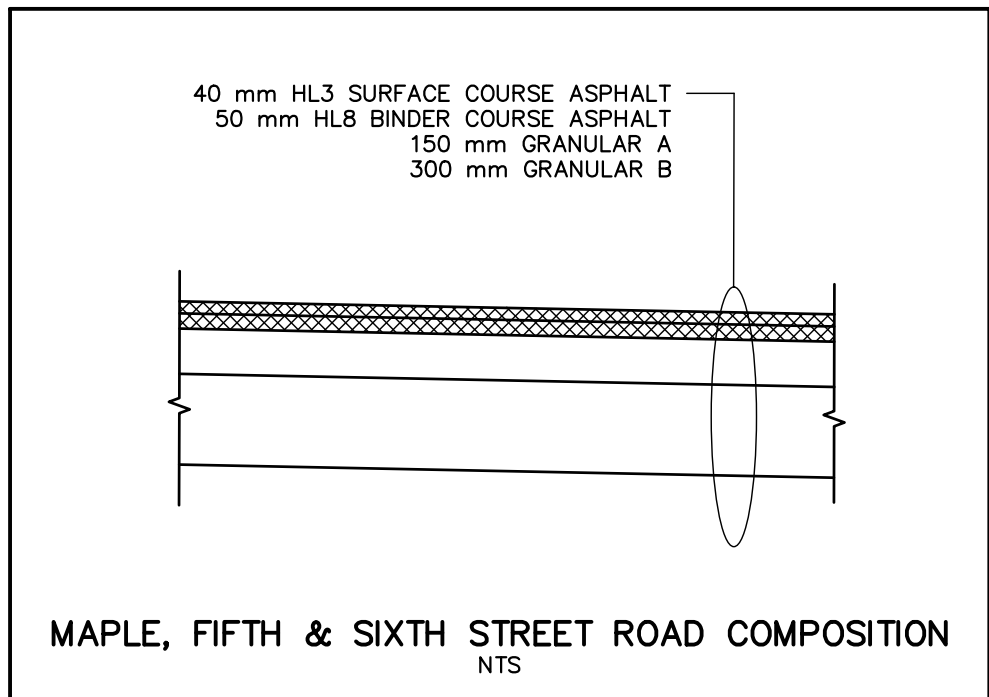
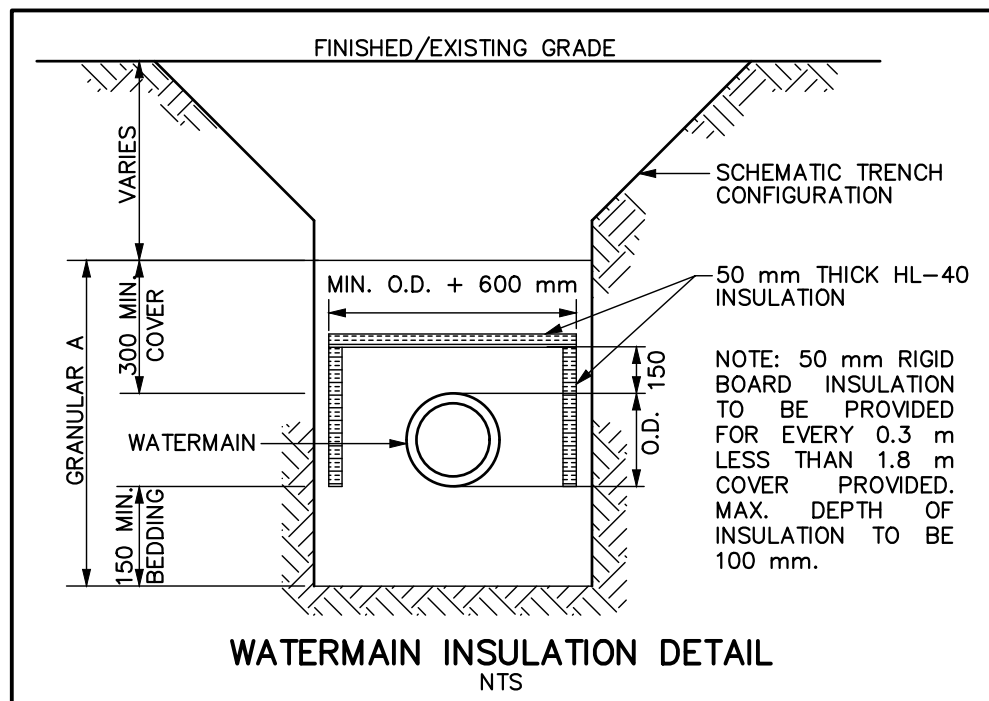
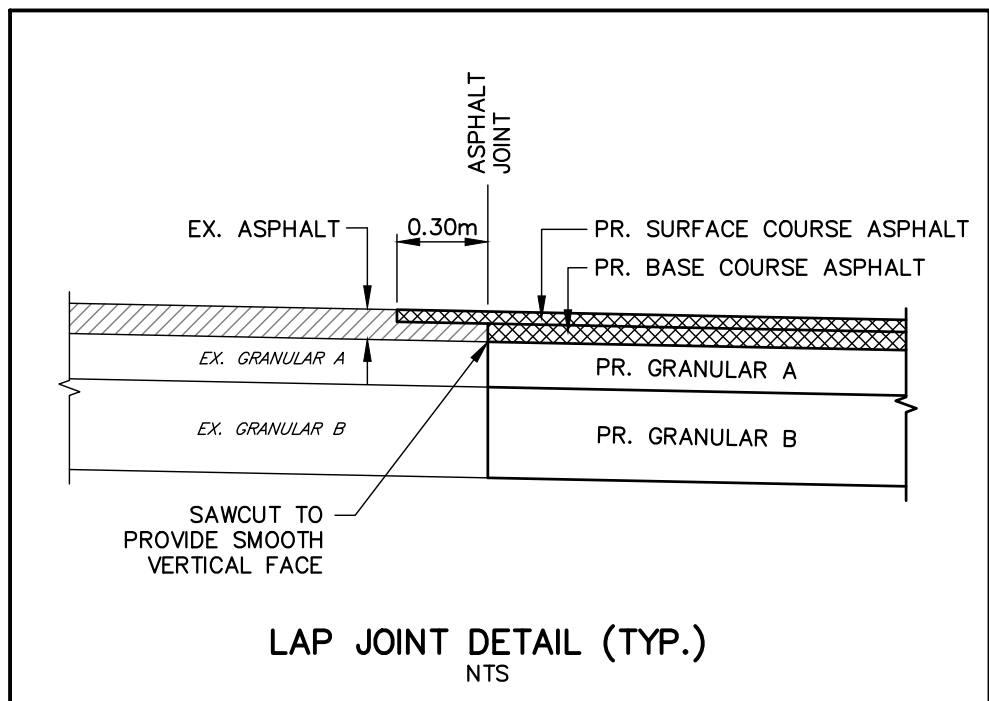
TABLE 2: PIPE RESTRAINT SCHEDULE FOR DI TEES (ALL JOINTS AND BELLS LOCATED WITHIN THE CALCULATED RESTRAINT LENGTH SHALL BE RESTRAINED WITH APPROVED BELL AND JOINT RESTRAINTS)

TEES		
NOMINAL PIPE DIA.	BRANCH PIPE DIA.	RESTRAINT 1 LENGTH (m)
150	150	0

- NOTES:
- CONTRACTOR TO REPORT IN WRITING TO THE ENGINEER ANY CHANGES TO SOIL OR SITE CHARACTERISTIC THAT MAY ALTER THE PIPE RESTRAINT CALCULATION.
 - THE CONTRACTOR IS RESPONSIBLE TO CONFIRM THRUST RESTRAINT REQUIREMENTS WITH THE PIPE AND RESTRAINT MANUFACTURERS.
 - VALVES TO BE RESTRAINED ON BOTH SIDES AS IF THEY ARE DEAD ENDS.

TABLE 1: PIPE RESTRAINT SCHEDULE FOR DI PIPE (ALL JOINTS AND BELLS LOCATED WITHIN THE CALCULATED RESTRAINT LENGTH SHALL BE RESTRAINED WITH APPROVED BELL AND JOINT RESTRAINTS)

PIPE DIA.	BEND ANGLE	HORIZONTAL BEND	VERTICAL BEND		DEAD END (NO BEND ANGLE)
		RESTRAINT LENGTH (m)	RESTRAINT 1 LENGTH (m)	RESTRAINT 2 LENGTH (m)	RESTRAINT LENGTH (m)
150ø	90°	3.8	—	—	10.6
	45°	1.6	4.4	1.3	
	22.5°	0.8	2.1	0.6	
	11.25°	0.4	1.1	0.3	



GENERAL

- ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH TOWN OF COLLINGWOOD STANDARDS AND OPS STANDARDS. WHERE CONFLICT OCCURS, TOWN STANDARDS TO GOVERN.
- THE OWNER'S ENGINEER SHALL PROVIDE TEMPORARY BENCHMARK ELEVATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DETAILED LAYOUT OF THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF, AND FOR THE COST OF REPLACING, LAYOUT STAKES, BENCHMARKS, AND SURVEY BARS, IF REMOVED DURING CONSTRUCTION.
- LEGAL SURVEY BOUNDARIES SHOWN ON DRAWING BASED ON LEGAL SURVEY COMPLETED BY J.D. BARNES LIMITED.
- ALL PROPERTY BARS TO BE PRESERVED AND WORK IS TO BE COMPLETED WITHOUT DISRUPTION TO PROPERTY BARS. IF DISRUPTION IS REQUIRED TO COMPLETE THE WORK, PROPERTY BAR SHALL BE REPLACED BY QLS AT CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THE SUPPLY OF TEMPORARY WATER AND POWER.
- DEWATERING TO BE CARRIED OUT IN ACCORDANCE WITH OPSS:MUNI 517, OPSS:MUNI 518, OWRA AND O.REG 64/16. MAINTAIN ALL TRENCHES IN A DRY AND STABLE CONDITION. A PERMIT TO TAKE WATER (PTTW) HAS NOT BEEN OBTAINED FOR THIS PROJECT.
- ALL ENGINE DRIVEN PUMPS TO BE ADEQUATELY SILENCED, SUITABLE FOR OPERATION IN A RESIDENTIAL DISTRICT.
- GENERAL INSTALLATION AND TESTING OF SEWERS, WATERMAIN AND APPURTENANCES TO BE IN ACCORDANCE WITH OPSS 407, OPSS 408, OPSS:MUNI 409, OPSS:MUNI 410, OPSS:MUNI 421 AND OPSS:MUNI 441 AND ALL SPECIFICATIONS REFERENCED WITHIN THESE SECTIONS.
- CLEAR, GRUB AND DISPOSE OF ALL SCRUB, BUSHES AND TREES IN ACCORDANCE WITH OPSS:MUNI 180 AND OPSS:MUNI 201 AS REQUIRED TO INSTALL WORKS. LIMITS TO BE APPROVED BY THE ENGINEER PRIOR TO PROCEEDING.
- STRIP AND DISPOSE OF ALL TOPSOIL WITHIN ROADWAY CONSTRUCTION IN ACCORDANCE WITH OPSS:MUNI 510.
- REMOVE AND DISPOSE OF ALL ORGANIC MATERIAL WITHIN THE EXISTING RIGHT-OF-WAY AND/OR AS REQUIRED TO COMPLETE THE WORK.
- EXCESS OR UNSUITABLE MATERIALS TO BE DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH OPSS:MUNI 180 AT AN APPROVED LOCATION AS PART OF THE WORK.
- FOR THE DURATION OF THE CONTRACT, MATERIAL THAT BECOMES CONTAMINATED DUE TO CONTRACTOR'S ACTIVITY SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR AT NO EXTRA COST TO THE CONTRACT.
- ALL MAINTENANCE HOLES ARE 1200 mm DIAMETER, UNLESS OTHERWISE SPECIFIED.
- ROCK EXCAVATION TO BE IN ACCORDANCE WITH OPSS:MUNI 403. EXCAVATION AND GRADING TO BE IN ACCORDANCE WITH OPSS:MUNI 206 AND OPSS:MUNI 510.
- ALL STRUCTURES TO BE INSTALLED WITH FROST STRAPS IN ACCORDANCE WITH OPSD 701.100.
- STEPS IN ALL STRUCTURES TO OPSD 405.010.
- PIPE SUPPORT AT ALL STRUCTURES IN ACCORDANCE WITH OPSD 708.020.
- ALL MAINTENANCE HOLE AND CATCH BASIN FRAME AND GRATES AND WATER VALVE BOXES TO BE SET TO BINDER COURSE ASPHALT ELEVATION IN ACCORDANCE WITH OPSD 704.010. FRAME AND GRATES TO BE RAISED TO FINISHED GRADE PRIOR TO THE PLACEMENT OF SURFACE COURSE ASPHALT USING CONCRETE ADJUSTMENT UNITS IN ACCORDANCE WITH OPSD 704.010. WATER VALVE BOXES TO BE RAISED TO FINISHED GRADE PRIOR TO PLACEMENT OF SURFACE COURSE ASPHALT.
- TRENCH BACKFILL TO BE SELECT NATIVE MATERIAL OR IMPORTED SELECT SUBGRADE MATERIAL IN ACCORDANCE WITH OPSS:MUNI 1010. BACKFILL TO BE PLACED IN MAXIMUM 200 mm THICK LIFTS (OR AS OTHERWISE DIRECTED BY THE GEOTECHNICAL ENGINEER) AND COMPACTED TO A DRY DENSITY OF AT LEAST 95% OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD).
- ALL PIPE HANDLING AND INSTALLATION TO BE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION GUIDELINES.
- PIPE DEFLECTIONS SHALL NOT EXCEED MANUFACTURER'S SPECIFICATIONS.
- PIPE EMBEDMENT TO BE COMPACTED TO A DRY DENSITY OF AT LEAST 95% OF THE MATERIAL'S SPMDD. BACKFILL AND EMBEDMENT IN ACCORDANCE WITH OPSD 802.010 (FLEXIBLE PIPE), GRANULAR A EMBEDMENT OR OPSD 802.031 (RIGID PIPE) CLASS "B", GRANULAR A BEDDING, GRANULAR B COVER (MAX. AGGREGATE SIZE 25 mm). MINIMUM BEDDING DEPTH 150 mm, MINIMUM COVER DEPTH 300 mm ON ALL PIPES. WHERE EXCESSIVELY WET OR POOR SUBGRADE IS ENCOUNTERED AT THE INVERT LEVEL, IT MAY BE NECESSARY TO INCREASE THE BEDDING THICKNESS. WATER SERVICES TO BE INSTALLED WITH MINIMUM 300 mm SAND EMBEDMENT.
- COMPACTING TO BE IN ACCORDANCE WITH OPSS:MUNI 501 (METHOD A).
- THE CONTRACTOR SHALL SUPPLY ALL NECESSARY WATER AND/OR CALCIUM CHLORIDE AS REQUIRED FOR COMPACTION AND/OR DUST CONTROL.
- THE CONTRACTOR IS TO SUBMIT SAMPLES AND A GRADATION ANALYSIS OF THE PROPOSED GRANULAR MATERIALS FOR APPROVAL BY THE ENGINEER PRIOR TO COMMENCING WORK.
- REINSTATEMENT OF ALL DISTURBED BOULEVARDS TO INCLUDE REGRADING, PLACEMENT OF MIN. 150 mm SCREENED TOPSOIL AND KENTUCKY BLUEGRASS SOD IN ACCORDANCE WITH OPSS:MUNI 802 AND OPSS:MUNI 803. SOD TO BE STAKED WHERE NECESSARY TO AVOID MOVEMENT.
- LOCATION OF EXISTING INFRASTRUCTURE BASED ON A TOPOGRAPHICAL SURVEY COMPLETED BY TATHAM ENGINEERING LIMITED. LOCATIONS OF EXISTING UTILITIES ARE NOT GUARANTEED. THE CONTRACTOR SHALL OBTAIN LOCATES FROM ALL RELEVANT UTILITY COMPANIES, 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY WORK AND IF NECESSARY LOCATE UTILITIES BY HAND DIGGING. CONTRACTOR SHALL ASSUME THERE ARE FULL UTILITY SERVICES TO EACH EXISTING DWELLING/BUILDING (GAS, BELL, ROGERS, HYDRO, SANITARY, WATER) NOT NECESSARILY SHOWN ON THE DRAWINGS. CONTRACTOR SHALL WORK AROUND ALL EXISTING SERVICES AS NECESSARY TO COMPLETE THE WORK.
- THE CONTRACTOR IS RESPONSIBLE FOR THE PRESERVATION OF ALL EXISTING INFRASTRUCTURE/FACILITIES AS WELL AS NOTIFYING ALL UTILITY COMPANIES PRIOR TO COMMENCING WORK AND CO-ORDINATE CONSTRUCTION ACCORDINGLY. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR LOCATING, SUPPORTING AND PROTECTING ALL UNDERGROUND AND OVERHEAD UTILITIES AND STRUCTURES EXISTING AT THE TIME OF CONSTRUCTION IN THE AREA OF THE CONTRACTOR'S WORK, WHETHER SHOWN ON THE DRAWINGS OR NOT, AND FOR ALL REPAIRS AND CONSEQUENCES RESULTING FROM DAMAGE TO SAME.
- ALL ON-SITE MATERIAL SHALL BE PROPERLY STORED, SECURED, MONITORED AND COVERED AS REQUIRED. SPECIFICALLY, ALL PVC PIPE SHALL BE COVERED WHILE STORED ON-SITE.
- DURING CONSTRUCTION, TRAFFIC MARKERS & SIGNS ARE TO BE INSTALLED IN ACCORDANCE WITH THE ONTARIO TRAFFIC MANUAL BOOK 7. THE CONTRACTOR WILL BE RESPONSIBLE FOR SUBMITTING A TRAFFIC CONTROL PLAN FOR APPROVAL BY THE ENGINEER PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.
- ALL CONSTRUCTION MATERIALS SHALL BE REMOVED FROM THE SITE PRIOR TO RESTORATION OF DISTURBED AREAS.
- TRENCHES SHALL BE EXCAVATED IN STRICT ACCORDANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT.

ROADS

- SUBGRADE AND BOULEVARD MATERIAL TO BE COMPACTED TO A DRY DENSITY OF AT LEAST 100% OF THE MATERIAL'S SPMDD. SUBGRADE TO BE PROOF ROLLED AND CERTIFIED PRIOR TO PLACING GRANULAR B.
- GRANULAR A AND B TO BE COMPACTED TO A DRY DENSITY OF AT LEAST 100% OF THE MATERIAL'S RESPECTIVE SPMDD.
- ALL GRANULAR AND ASPHALT MATERIAL TO BE PLACED IN ACCORDANCE WITH OPSS:MUNI 310 AND OPSS:MUNI 314.
- ASPHALT TO BE COMPACTED TO A MINIMUM OF 92% OF THE MATERIAL'S MAXIMUM RELATIVE DENSITY.
- MAPLE STREET, FIFTH STREET AND SIXTH STREET ROADWAY TO BE CONSTRUCTED WITH MIN. 300 mm GRANULAR B, 150 mm GRANULAR A, 50 mm HL8 BINDER COURSE ASPHALT, 40 mm HL3 SURFACE COURSE ASPHALT.
- JOINTS WITH EXISTING ASPHALT TO BE SAW CUT STRAIGHT PRIOR TO PLACING NEW ASPHALT AND TACK COAT SHALL BE APPLIED TO EXISTING ASPHALT WHERE EXISTING ASPHALT IS GREATER THAN 75 mm DEPTH. A 300 mm WIDE BY 40 mm DEEP LAP JOINT SHALL BE GROUND INTO EXISTING ASPHALT, OTHERWISE A BUTT JOINT SHALL BE USED.
- EXISTING STOP SIGNS AND STREET SIGNS TO BE PRESERVED. IF SIGNS MUST BE TEMPORARILY REMOVED OR RELOCATED TO FACILITATE THE WORK, THEY ARE TO BE REMOVED, SALVAGED AND REINSTALLED TO TOWN STANDARDS.
- ALL STOP SIGNS AND STREET SIGNS TO BE INSTALLED IN ACCORDANCE WITH TOWN STANDARDS.
- CONDOMINIUM ENTRANCE OFF MAPLE STREET TO BE INSTALLED IN ACCORDANCE WITH OPSD 350.010.
- CONCRETE BARRIER CURB AND GUTTER IN ACCORDANCE WITH OPSD 600.040 AND OPSS:MUNI 353. CONCRETE BARRIER CURB IN ACCORDANCE WITH OPSD 600.110 AND OPSS:MUNI 353. DRIVEWAY WIDTHS AS SHOWN ON THE DRAWINGS. CURB DEPRESSIONS AT DRIVEWAYS TO BE INSTALLED AS PER OPSD 351.010. LAYOUT OF CURB DEPRESSIONS TO BE REVIEWED BY ENGINEER AND TOWN.
- CONCRETE SIDEWALK IN ACCORDANCE WITH OPSD 310.010 AND OPSS:MUNI 351. SUBBASE TO CONSIST OF 150 mm DEPTH GRANULAR A COMPACTED TO 100% OF THE MATERIAL'S SPMDD.
- TACTILE WALKING SURFACE INDICATORS IN ACCORDANCE WITH OPSD 310.033 AND OPSD 310.039.
- 100 mm DIAMETER PIPE SUBDRAINS SHALL BE PROVIDED BEHIND/BELOW GUTTER ON BOTH SIDES OF ROADS IN ACCORDANCE WITH OPSS:MUNI 405 AND TOWN STANDARD 210 (TYPE A).
- SUBDRAINS TO BE PERFORATED, COMPLETE WITH FILTER SOCK, OTHER THAN THE 2.0 m SECTION IMMEDIATELY UPSTREAM OF ALL STRUCTURES WHICH SHALL BE NON-PERFORATED. CONNECTION TO STRUCTURES IN ACCORDANCE WITH OPSD 809.010.
- ASPHALT DRIVEWAYS TO BE CONSTRUCTED WITH MIN. 150 mm GRANULAR A AND 50 mm HL3F SURFACE COURSE ASPHALT.
- ADJUSTMENT UNITS AND JOINTS SHALL BE SEALED AND/OR PARGED ON THE OUTSIDE IN COMPLIANCE WITH MANUFACTURER'S SPECIFICATION AND GUIDELINES.
- MORTAR IS TO BE USED FOR LEVELING OF PRECAST UNITS ONLY. THE THICKNESS OF MORTAR SHALL BE 10 mm TO FILL ALL VOIDS CREATED BY IRREGULARITIES IN THE PRECAST UNITS TO ENSURE AN EVEN SURFACE ONLY.

PAVEMENT MARKINGS

- PAVEMENT MARKINGS REQUIRE 2 APPLICATIONS OF PAINT FOR NEW ASPHALT. THE SECOND APPLICATION SHALL NOT BE APPLIED UNTIL THE FIRST IS TACK-FREE.
- PAVEMENT MARKINGS SHALL ONLY BE APPLIED WHEN TEMPERATURE IS ABOVE 10 DEGREES CELSIUS, THE PAVEMENT IS PERFECTLY DRY AND UPON THE AUTHORIZATION OF THE ENGINEER.
- WORK TO BE IN ACCORDANCE WITH OPSS 1712, OPSS 1713 AND OPSS 1714 AND THE ONTARIO TRAFFIC MANUAL BOOK 11, MINISTRY OF TRANSPORTATION ONTARIO.

STORM SEWER

- MAINTENANCE HOLES AND CATCH BASIN MAINTENANCE HOLES IN ACCORDANCE WITH OPSD 701.010.
- MAINTENANCE HOLES TO BE BENCHED IN ACCORDANCE WITH OPSD 701.021.
- MAINTENANCE HOLE AND CATCH BASIN MAINTENANCE HOLE STEPS IN ACCORDANCE WITH OPSD 405.010.
- CATCH BASINS IN ACCORDANCE WITH OPSD 705.010 WITH 600 mm SUMP.
- CATCH BASIN MAINTENANCE HOLES TO INCLUDE 300 mm SUMP.
- CATCH BASIN AND CATCH BASIN MAINTENANCE HOLE FRAMES AND GRATES IN ACCORDANCE WITH OPSD 400.020. FRAME AND GRATES IN ROADWAYS TO BE INSTALLED IN THE CURB LINE IN ACCORDANCE WITH OPSD 610.010.

- CATCH BASIN LEADS - 250ø TO OPSD 708.030.
- SERVICE CONNECTIONS IN ACCORDANCE WITH OPSD 1006.010, 100 mm DIAMETER AS SHOWN ON DRAWINGS. RADIUS BENDS TO BE USED ON ALL SEWER CONNECTIONS WHERE THE ANGLE OF CONNECTION BETWEEN THE SERVICE AND SEWER EXCEEDS 90°. SERVICE CONNECTIONS TO EXISTING STORM MAINS TO BE WITH INSERTA TEE. SERVICE CONNECTIONS TO BE TERMINATED AT THE LOCATION SHOWN ON THE DRAWINGS WITH A CAP SUITABLY BRACED TO WITHSTAND TEST PRESSURES AND AN 89 mm x 38 mm MARKER PLACED FROM THE INVERT OF THE CONNECTION TO 600 mm ABOVE FINISHED GRADE PAINTED WHITE. MINIMUM GRADE OF SERVICE TO BE 2%. MAXIMUM GRADE OF SERVICE TO BE 15%.
- OIL GRIT SEPARATOR TO BE INSTALLED AS PER MANUFACTURER'S INSTRUCTIONS.

SANITARY SEWER

- MAINTENANCE HOLES IN ACCORDANCE WITH OPSD 701.010.
- MAINTENANCE HOLES TO BE BENCHED IN ACCORDANCE WITH OPSD 701.021 ALL CONNECTIONS TO MAINTENANCE HOLES TO INCLUDE KOR-N-SEAL RUBBER BOOT PIPE CONNECTION.
- MAINTENANCE HOLE STEPS IN ACCORDANCE WITH OPSD 405.010.
- MAINTENANCE HOLE FRAME AND COVER IN ACCORDANCE WITH OPSD 401.010 TYPE A CLOSED COVER.
- SERVICE CONNECTIONS IN ACCORDANCE WITH OPSD 1006.010, 125 mm DIAMETER OR 150 mm DIAMETER AS SHOWN ON DRAWINGS. RADIUS BENDS TO BE USED ON ALL SEWER CONNECTIONS WHERE THE ANGLE OF CONNECTION BETWEEN THE SERVICE AND SEWER EXCEEDS 90°. SERVICE CONNECTIONS TO EXISTING SANITARY MAINS TO BE WITH INSERTA TEE. SERVICE CONNECTIONS TO BE TERMINATED AT THE LOCATION SHOWN ON THE DRAWINGS WITH A CAP SUITABLY BRACED TO WITHSTAND TEST PRESSURES AND AN 89 mm x 38 mm MARKER PLACED FROM THE INVERT OF THE CONNECTION TO 600 mm ABOVE FINISHED GRADE PAINTED GREEN. MINIMUM GRADE OF SERVICE TO BE 2%. MAXIMUM GRADE OF SERVICE TO BE 15%.

WATERMAIN

- ALL WORK REQUIRED ON WATERMAIN TO BE COORDINATED WITH THE TOWN.
- THRUST PROTECTION TO BE PROVIDED BY THE USE OF RESTRAINING GLANDS WHERE THRUST PRESSURES OCCUR. WATER VALVES SHALL BE RESTRAINED ON BOTH SIDES TO THE SAME STANDARD AS A DEAD END. AS A MINIMUM, PIPE RESTRAINTS SHALL BE PER DETAIL ON DRAWING DE-1, AND IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. WHERE CONFLICT EXISTS, THE MANUFACTURER'S SPECIFICATIONS GOVERN. WHERE RESTRAINING GLANDS CANNOT BE USED (OR AS OTHERWISE SPECIFIED), THRUST BLOCKS SHALL BE USED IN ACCORDANCE WITH OPSD 1103.010 AND OPSD 1103.020.
- 19 mm DIAMETER RESIDENTIAL SERVICE CONNECTIONS TO OPSD 1104.010 DIRECT TAP. TOWN TO LIVE TAP SERVICES AND INSTALL SERVICE TO PROPERTY LINE C/W CURB STOP AND VALVE AT PROPERTY LINE TO AWWA/ANSI SPECIFICATIONS.
- FIRE HYDRANTS TO OPSD 1105.010. HYDRANTS ARE TO BE MIN. 1.85 m LONG. EXTENSIONS IF REQUIRED ARE TO BE INSTALLED BELOW THE 1.85 m SECTION. DRAIN PLUGS TO INSTALLED WHERE HIGH WATER TABLE IS ENCOUNTERED.
- MINIMUM COVER ON WATERMAIN AND SERVICES TO BE 1.8 m. INSULATION TO BE INSTALLED OVER WATERMAIN AND SERVICES WITH LESS THAN 1.8 m COVER AS PER DETAILS AND AS DIRECTED BY THE ENGINEER. WHERE CONFLICT EXISTS, WATER SERVICES SHALL BE INSTALLED BELOW SEWERS WITH MINIMUM 0.5 m SEPARATION.
- TRACER WIRE TO BE INSTALLED ON WATERMAINS AND WATER SERVICES.
- CATHODIC PROTECTION TO INCLUDE SACRIFICIAL ZINC CAPS ON ALL FITTING BOLTS.
- SEPARATION BETWEEN WATERMAINS AND SEWERS TO BE A MINIMUM OF 2.5 m HORIZONTAL. WHERE THIS HORIZONTAL SEPARATION CANNOT BE OBTAINED THE SEPARATION SHALL BE A MINIMUM VERTICAL SEPARATION OF 0.5 m.
- FOLLOWING TESTING, THE CONTRACTOR SHALL CONTACT THE TOWN, WHO WILL THEN OPERATE EACH WATER SERVICE TO VERIFY FLOW AND PRESSURE AT THE CURB STOP TO THE SATISFACTION OF THE ENGINEER AND THE TOWN.
- GENERAL INSTALLATION AND TESTING OF WATERMAIN AND APPURTENANCES TO BE IN ACCORDANCE WITH OPSS:MUNI 441 AND TOWN SPECIFICATIONS.
 - BACKFLOW PREVENTOR FOR TESTING OPERATIONS SHALL BE PROVIDED BY CONTRACTOR. BACKFLOW PREVENTOR TO BE REDUCED PRESSURE ZONE BACKFLOW DEVICE IN ACCORDANCE WITH MOST RECENT MECP STANDARDS.
 - ALL WATERMAINS ARE TO BE SWABBED AND FLUSHED BY THE CONTRACTOR. ENGINEER AND THE TOWN TO BE PRESENT DURING TESTING.
 - ALL WATERMAINS ARE TO BE PRESSURE TESTED BY THE CONTRACTOR, WITH A COPY OF THE PRESSURE TEST REPORT SENT TO THE TOWN. ENGINEER AND THE TOWN TO BE PRESENT DURING TESTING.
 - THE TOWN WILL DISINFECT THE WATERMAIN.
 - WATERMAINS SHALL NOT TO BE CONNECTED TO THE EXISTING WATERMAIN UNTIL BACTERIOLOGICAL TESTING HAS BEEN SUCCESSFULLY COMPLETED. THE TOWN WILL COLLECT THE SAMPLES AND ADVISE THE CONTRACTOR OF THE RESULTS.
 - THE TOWN AND ENGINEER TO RECEIVE A MINIMUM 48 HOURS NOTICE PRIOR TO TESTING OF THE WATERMAINS.

MATERIALS

- ALL MATERIAL TO COMPLY WITH CSA, OPSS AND TOWN STANDARDS.
- SANITARY SEWER - PVC SDR 35 (GREEN).
- SANITARY SERVICE CONNECTIONS - PVC SDR 28 (GREEN).
- STORM SEWER - PVC SDR 35, CONCRETE CLASS - MINIMUM 65-0 OR AS OTHERWISE REQUIRED TO MEET OPS SPECIFICATIONS FOR ACTUAL COVER AND BEDDING CONDITIONS (REFER TO OPSD 807.010 AND OPSD 807.030), OR SMOOTH WALL HDPE (BOSS 2000 WITH BELL AND SPIGOT AND MIN. PIPE STIFFNESS = 320kPa OR EQUAL).
- STORM SERVICE CONNECTIONS - PVC SDR 28 (WHITE).
- CATCH BASIN LEAD BACKFLOW PREVENTOR - REDVALVE TIDEXFLEX CHECKMATE INLINE CHECK VALVE OR APPROVED EQUAL.
- SUBDRAIN (FACTORY PERFORATED) - BIG 'O' WITH GEOTEXTILE FILTER SOCK OR APPROVED EQUAL.
- AGGREGATES IN ACCORDANCE WITH OPSS:MUNI 1010.
- TACTILE WALKING SURFACE INDICATORS - CAST IRON.
- FILTER FABRIC - TERRAFIX 270R OR APPROVED EQUAL.
- WATERMAIN - CLASS 52, OR PRESSURE CLASS 350 CEMENT LINED DUCTILE IRON PIPE, AS APPROVED BY THE TOWN. CONDUCTIVITY CONNECTORS TO BE USED ON ALL JOINTS.
- WATERMAIN SERVICES - 19 mm DIAMETER (RESIDENTIAL) TYPE "K" SOFT COPPER TUBING.
- MAIN STOPS - 201-A3H3 ¾" TO 2", (NO LEAD-LIFETIME GUARANTEED AGAINST LEAD LEACHATE FROM THE CASTING) BALL STYLE C/W S/S STEM, AWWA THREAD BY COMPRESSION JOINT BY CAMBRIDGE BRASS.
- CURB STOPS - 203-H3H3, ¾" TO 2", (NO LEAD-LIFETIME GUARANTEED AGAINST LEAD LEACHATE FROM THE CASTING) BALL STYLE WITH DRAIN C/W S/S STEM, AWWA COMPRESSION BY COMPRESSION JOINT BY CAMBRIDGE BRASS.
- SERVICE BOXES - NUMBER 7 OR NUMBER 8 D-I BY MUELLER OR CLOW 24" STAINLESS STEEL RODS STRAIGHT, CAP PAINTED BLUE.
- HYDRANTS - CENTURY MAINBORN 1, OPEN LEFT (O/L), 2 CSA HOSE PORTS, 33B PUMPER PORT, BREAKAWAY TYPE, 6" MJ BASE, SELF-DRAINING, YELLOW BASE WITH SILVER BONNET AND PORTS. FLEXSTAKE HYDRANT MARKER MODEL FHV804, REFLECTIVE HYDRANT DECAL ON EACH SIDE AT TOP OF MARKER, YELLOW, 48" LENGTH WITH ANTI TAMPER DEVICE, BLUE. MARKER TO BE PLACED ON RIGHT PORT AS VIEWED FROM THE STREET.
- VALVES - RESILIENT SEATED, RSOV, MECHANICAL JOINT, OPEN LEFT CLOW OR MUELLER.
- VALVE BOXES - 5-SL-48 SLIDING OR APPROVED EQUAL, CAP PAINTED BLUE.
- MECHANICAL JOINT DUCTILE FITTINGS - AWWA/ANSI C153/A21.53.
- RESTRAINER GLANDS - ROMAC GRIP RINGS AND ROMAC 600 SERIES FOR BELL RESTRAINTS ON WATERMAIN UP TO AND INCLUDING 300ø.
- TRACER WIRE - 12 AWG TWH SOLID PLASTIC COVERED, TW4 75°C 600V OR APPROVED EQUIVALENT.
- SACRIFICIAL CAPS - ZINC NUTS AND CAPS, BREN TECHNOLOGIES SAP CAP OR APPROVED EQUIVALENT.
- OIL GRIT SEPARATOR - STORMCEPTOR EF4 BY IMBRIUM SYSTEMS.

SILTATION AND EROSION CONTROL

- ALL SILTATION & EROSION CONTROL PROTECTION DEVICES ARE TO BE INSTALLED PRIOR TO COMMENCEMENT OF CONSTRUCTION. CONTRACTOR SHALL MAINTAIN CONTROL DEVICES THROUGHOUT CONSTRUCTION AND REMOVE THE CONTROL DEVICES ONCE GROUND COVER IS ESTABLISHED IN ALL DISTURBED AREAS. THE LOCATION OF ALL SILTATION AND EROSION CONTROL WORKS TO BE REVIEWED ON SITE AND MAY BE REVISED AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR MAY CONSIDER ALTERNATIVE SEDIMENT AND EROSION CONTROL MEASURES. SUCH MEASURES MUST BE PRESENTED IN WRITING TO THE ENGINEER FOR APPROVAL OF THE TOWN AND THE ENGINEER.
- THE CONTRACTOR SHALL HAVE MATERIALS AVAILABLE ON-SITE TO REPAIR SEDIMENT AND EROSION CONTROL MEASURES IN THE EVENT OF UNFORESEEN CONDITIONS: HIGH WATER, EXTREME RAINFALL EVENTS, ETC.
- ALL EROSION AND SEDIMENT CONTROL MEASURES MUST BE INSPECTED, CLEANED AND MAINTAINED BY THE CONTRACTOR AFTER EACH STORM EVENT. ALL WORKS WILL BE REVIEWED BY THE ENGINEER BI-WEEKLY AND AFTER EACH MAJOR STORM EVENT.
- ALL CONSTRUCTION VEHICLES TO ACCESS SITE USING THE DESIGNATED CONSTRUCTION ACCESS.
- PROVIDE SAFETY FENCE OR APPROVED EQUAL ACROSS ALL CONSTRUCTION ENTRANCES DURING PERIODS OF INACTIVITY.
- HEAVY DUTY SILT FENCE TO BE IN ACCORDANCE WITH OPSD 219.130.
- STRAW BALE FLOW CHECK DAM TO BE IN ACCORDANCE WITH 219.180.
- CATCH BASIN SEDIMENT TRAP - RECTANGULAR CBST BY LAYFIELD OR APPROVED EQUAL.

TOWN APPROVAL

DISCLAIMER AND COPYRIGHT

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BENCHMARKS

BM1 - ELEVATION 181.18
#010840957 RIB WITH BRONZE CAP AT SOUTHEAST CORNER OF HIGH AND SIXTH STREET ON GRASS BOULEVARD APPROXIMATELY 0.30 m SOUTH OF SOUTH EDGE OF CURB.

BM2 - ELEVATION 185.79
NAIL AND WASHER IN NORTH FACE OF HYDRO POLE LOCATED ON SOUTH SIDE OF SIXTH STREET APPROXIMATELY 40 m WEST OF INTERSECTION OF SIXTH STREET AND MAPLE STREET.

NOTES

ALL DIMENSIONS, ELEVATIONS AND SIZES ARE IN METRIC UNITS UNLESS INDICATED. PIPE SIZES ARE IN MILLIMETRES UNLESS OTHERWISE INDICATED. ELEVATIONS ARE IN METRES UNLESS INDICATED.

No.	REVISION DESCRIPTION	DATE	ENGINEER STAMP
1.	FIRST SUBMISSION TO TOWN	NOV 2020	
2.	SECOND SUBMISSION TO TOWN	APR 2021	

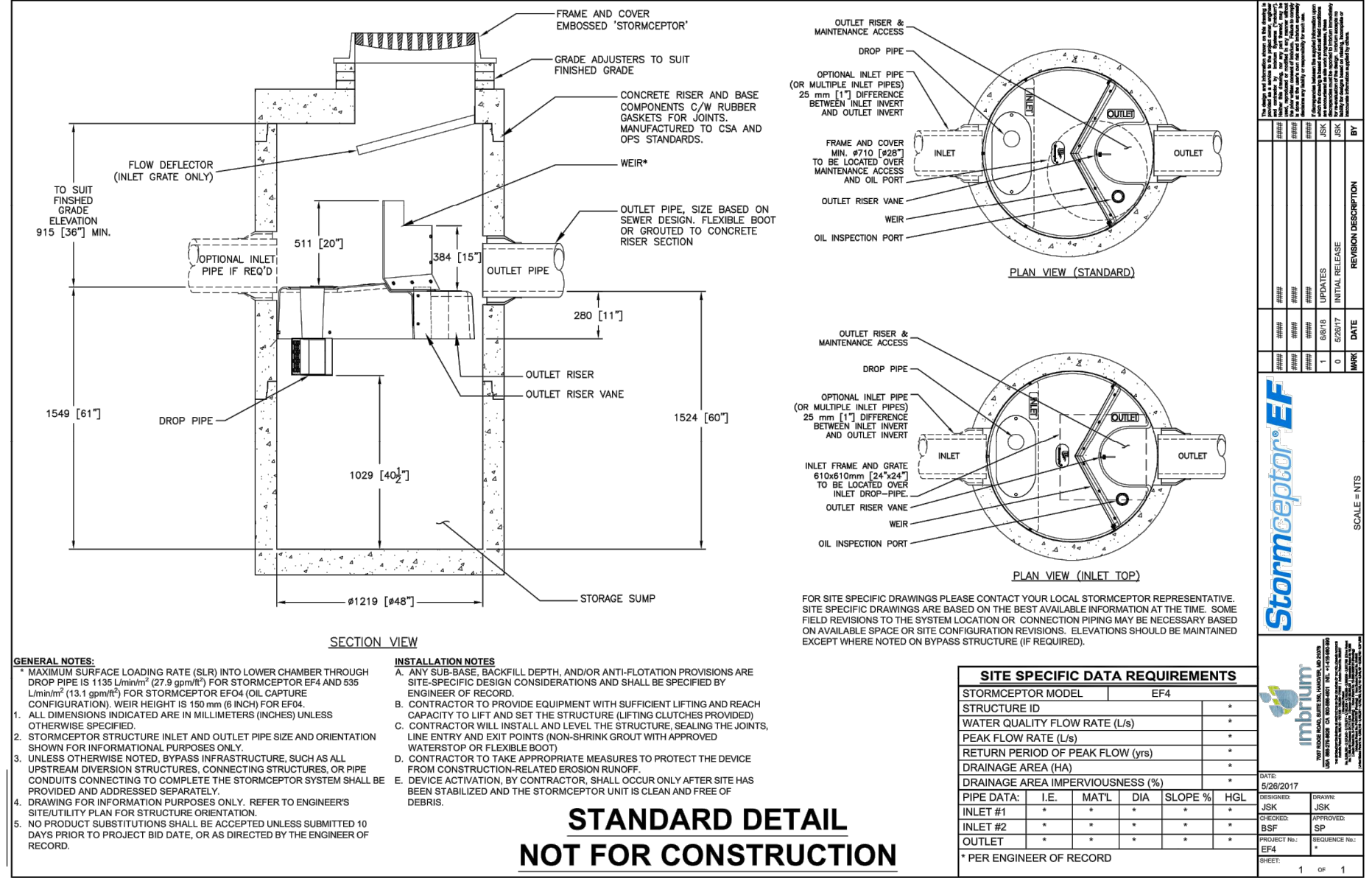
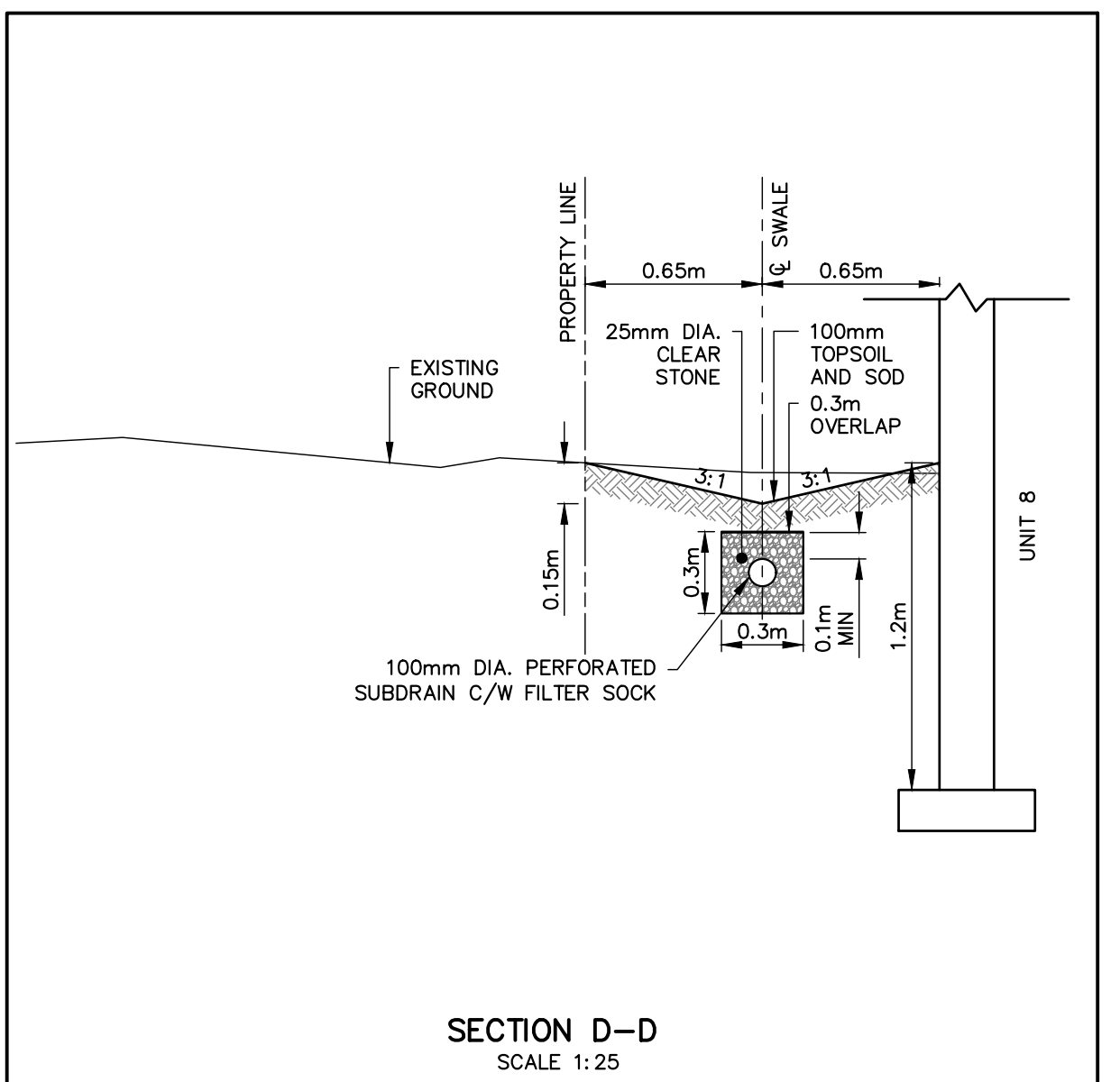
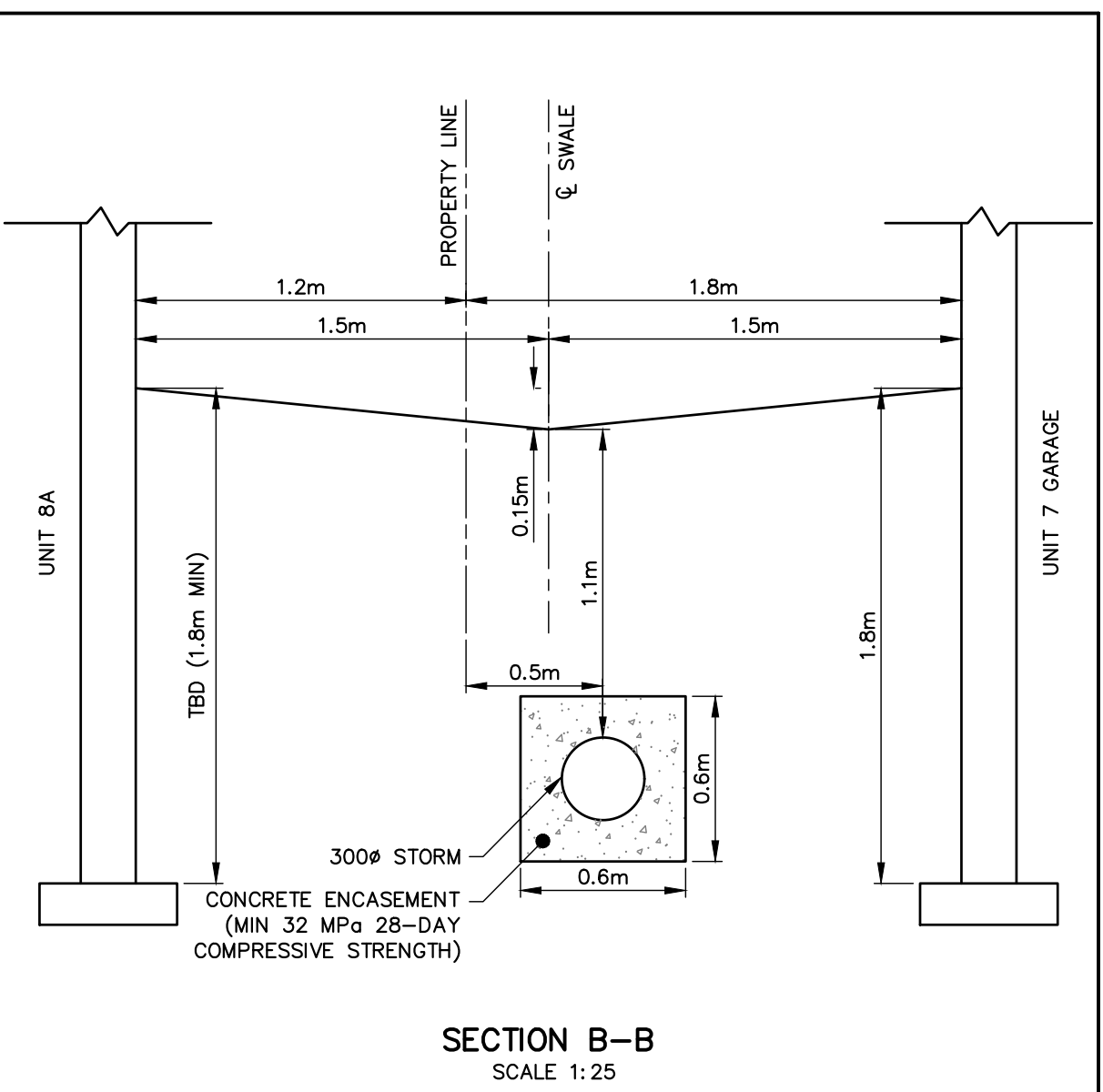
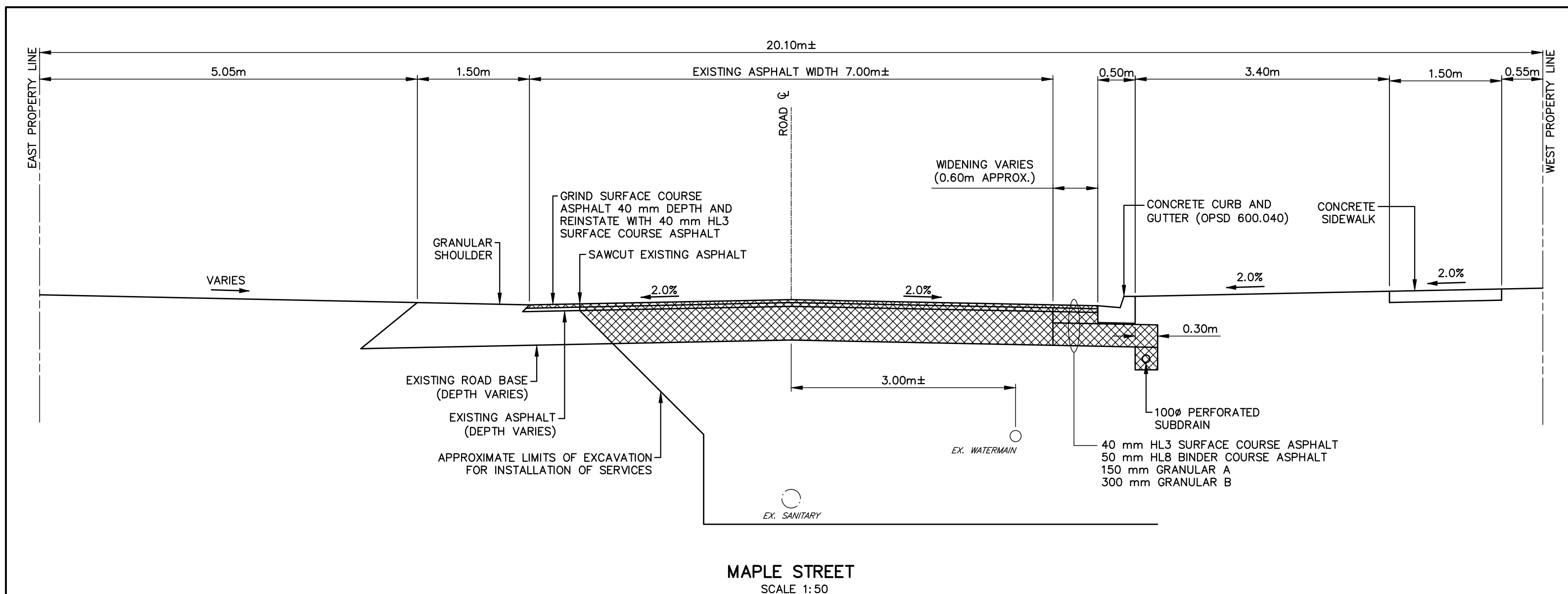
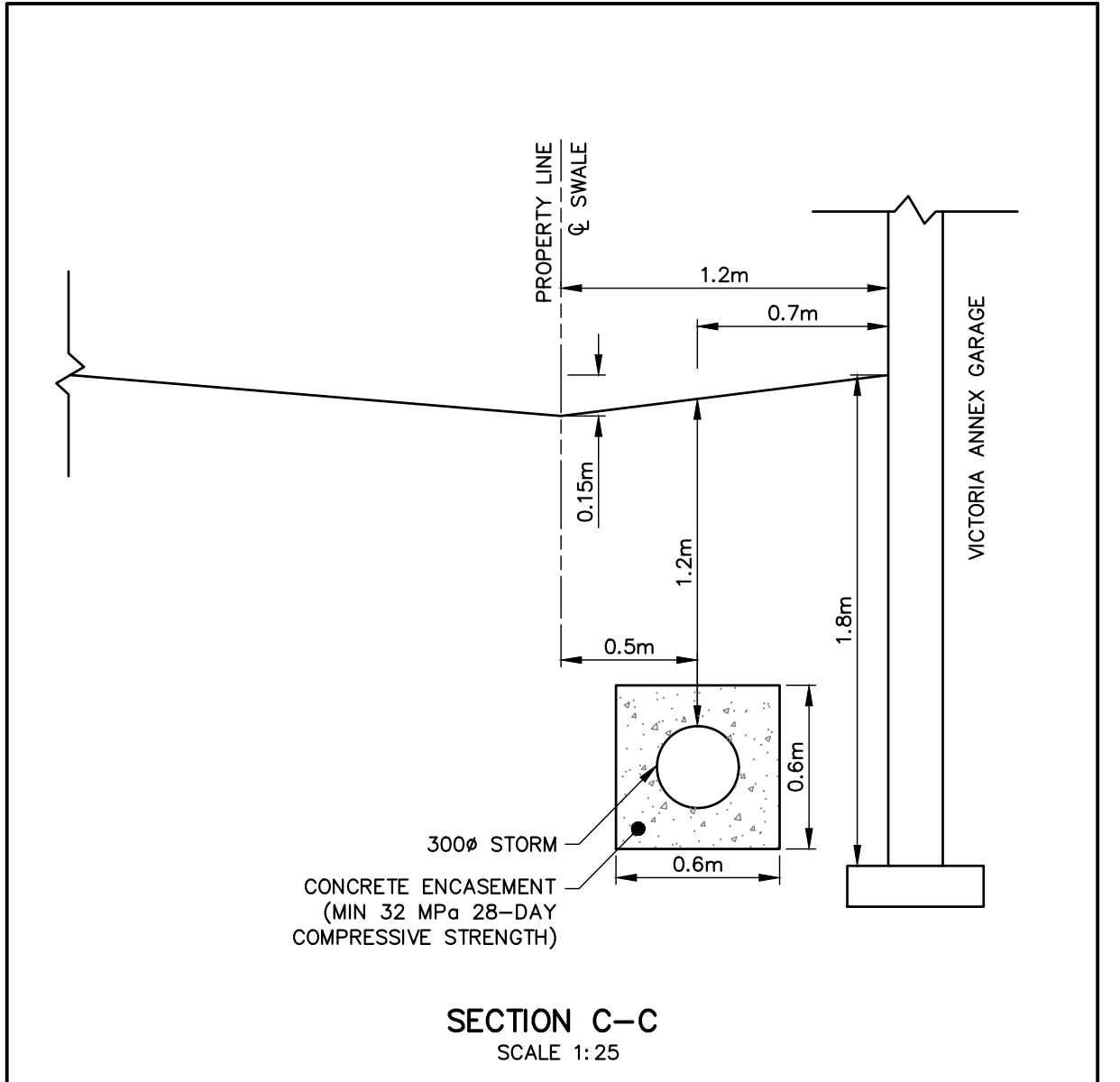
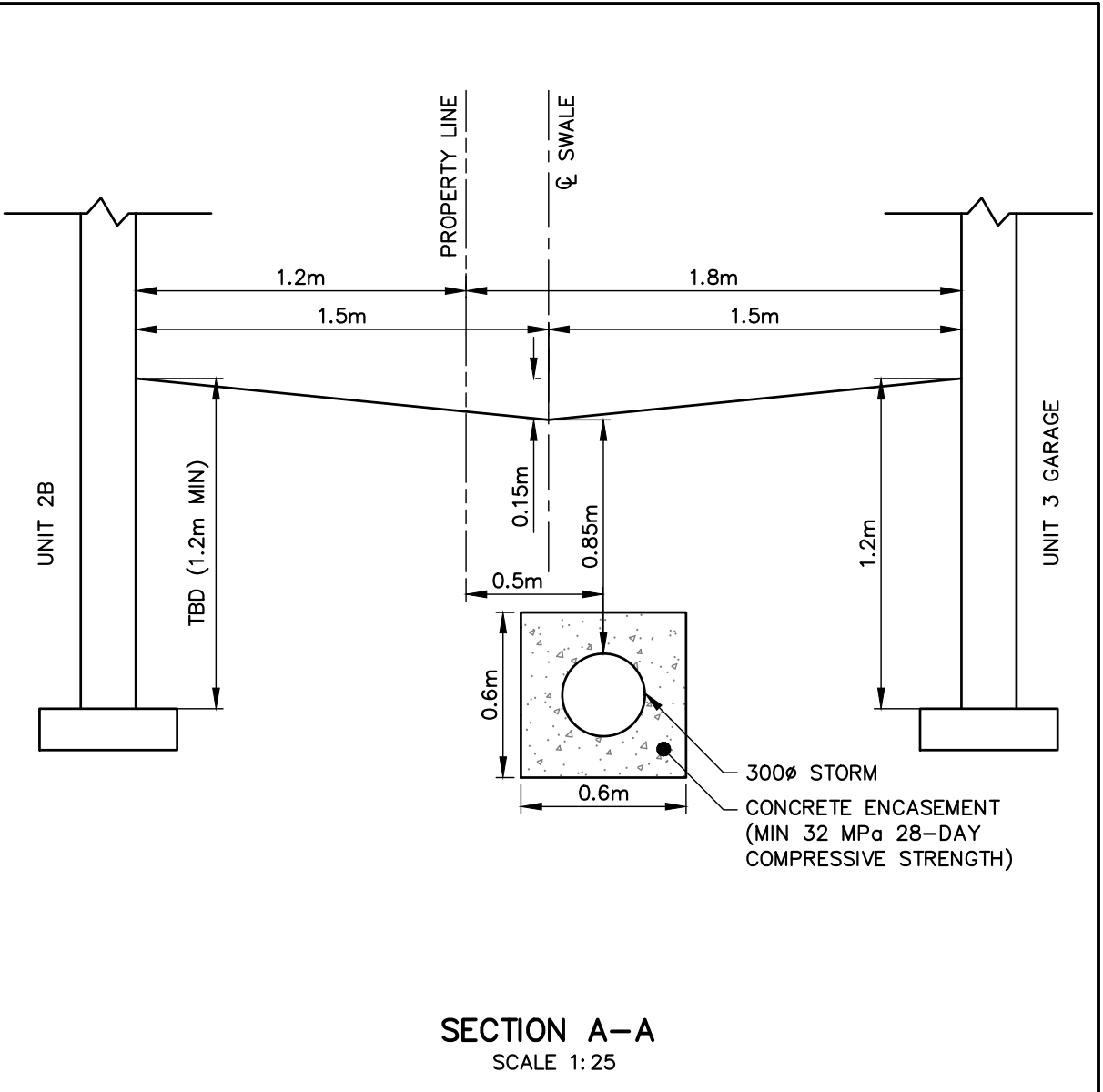
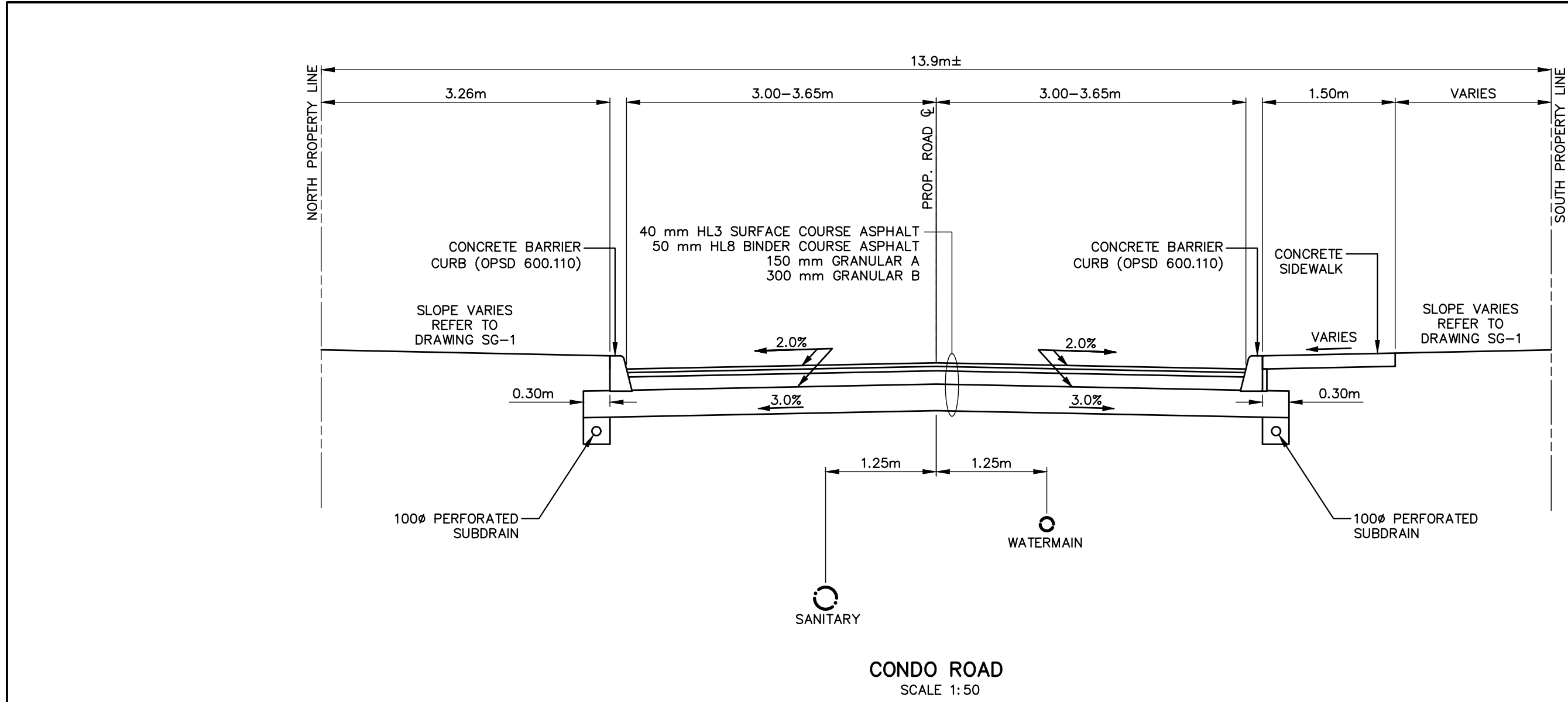
VICTORIA ANNEX
GEORGIAN COMMUNITIES
TOWN OF COLLINGWOOD

TATHAM
ENGINEERING

DETAILS AND NOTES

DESIGN: KRS/MJF	FILE: 120174	DWG:
DRAWN: MJF	DATE: SEP 2020	DE-1
CHECK: KRS	SCALE: AS SHOWN	

Sheet No. 8 of 9



TOWN APPROVAL

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No.	REVISION DESCRIPTION	DATE
1.	FIRST SUBMISSION TO TOWN	NOV 2020
2.	SECOND SUBMISSION TO TOWN	APR 2021

ENGINEER STAMP
K. R. SANSOM
PROFESSIONAL ENGINEER
ON 19/21
PROVINCE OF ONTARIO

VICTORIA ANNEX
GEORGIAN COMMUNITIES
TOWN OF COLLINGWOOD

TYPICAL ROAD
CROSS SECTIONS

TATHAM
ENGINEERING
DESIGN: KRS/MJF
DRAWN: MJF
CHECK: KRS
FILE: 120174
DATE: SEP 2020
SCALE: AS SHOWN
DWG: **DE-2**
Sheet No. 9 of 9