

GENERAL NOTES:

- COORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
- DETERMINE THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. PROTECT AND ASSUME RESPONSIBILITY FOR ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON THIS DRAWING.
- OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF OTTAWA BEFORE COMMENCING CONSTRUCTION.
- BEFORE COMMENCING CONSTRUCTION OBTAIN AND PROVIDE PROOF OF COMPREHENSIVE, ALL RISK AND OPERATIONAL LIABILITY INSURANCE FOR \$5,000,000.00. INSURANCE POLICY TO NAME OWNERS, ENGINEERS AND ARCHITECTS AS CO-INSURED.
- RESTORE ALL DISTURBED AREAS ON-SITE AND OFF-SITE, INCLUDING TRENCHES AND SURFACES ON PUBLIC ROAD ALLOWANCES TO EXISTING CONDITIONS OR BETTER TO THE SATISFACTION OF THE CITY OF OTTAWA AND ENGINEER.
- REMOVE FROM SITE ALL EXCESS EXCAVATED MATERIAL, ORGANIC MATERIAL AND DEBRIS UNLESS OTHERWISE INSTRUCTED BY ENGINEER. EXCAVATE AND REMOVE FROM SITE ANY CONTAMINATED MATERIAL. ALL CONTAMINATED MATERIAL SHALL BE DISPOSED OF AT A LICENSED LANDFILL FACILITY.
- ALL DIMENSIONS AND INVERTS MUST BE VERIFIED PRIOR TO CONSTRUCTION. IF THERE IS ANY DISCREPANCY THE CONTRACTOR IS TO NOTIFY THE ENGINEER PROMPTLY.
- ALL ELEVATIONS ARE GEODETIC AND ARE REFERRED TO THE CGVD28 GEODETIC DATUM. BEARINGS ARE DERIVED FROM MTM ZONE 9 (NAD-83, ORIGINAL). PRIOR TO CONSTRUCTION, THE CONTRACTOR IS TO RETAIN A SURVEYOR TO PROVIDE A LOCAL SITE BENCHMARK.
- REFER TO GEOTECHNICAL INVESTIGATION REPORT PROPOSED RESIDENTIAL DEVELOPMENT, COPPERWOOD FLATS BLOCK 127, 1075 MARCH ROAD, OTTAWA ONTARIO, PG6613-1, REVISION 4 (DATED AUGUST 1, 2025), PREPARED BY PATERSON GROUP FOR SUBSURFACE CONDITIONS, CONSTRUCTION RECOMMENDATIONS AND GEOTECHNICAL INSPECTION REQUIREMENTS. THE GEOTECHNICAL CONSULTANT IS TO REVIEW ON-SITE CONDITIONS AFTER EXCAVATION PRIOR TO PLACEMENT OF THE GRANULAR MATERIAL.
- REFER TO ARCHITECT'S AND LANDSCAPE ARCHITECT'S DRAWINGS FOR BUILDING AND HARD SURFACE AREAS AND DIMENSIONS.
- REFER TO THE STORMWATER MANAGEMENT REPORT No. R-2025-009, DATED **August 19th**, 2025 PREPARED BY NOVATECH.
- SAV CUT AND KEYGRIND ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE IN POINTS AS PER CITY OF OTTAWA STANDARDS (R10 AND R25).
- PROVIDE LINE/PARKING PAINTING.
- CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GENERAL PLAN OF SERVICES INDICATING ALL SERVICING AS-BUILT INFORMATION SHOWN ON THIS PLAN. AS-BUILT INFORMATION MUST INCLUDE: PIPE MATERIAL, SIZES, LENGTHS, SLOPES, INVERT AND T/G ELEVATIONS, STRUCTURE LOCATIONS, VALVE AND HYDRANT LOCATIONS, TWM ELEVATIONS AND ANY ALIGNMENT CHANGES, ETC.
- CONTRACTOR IS RESPONSIBLE FOR ALL LAYOUT FOR CONSTRUCTION PURPOSES.

SEWER NOTES:

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

ITEM	SPEC. No.	REFERENCE
SANITARY/STORMCATCH-BASIN MANHOLE (12000)	701.010	OPSD
STORM MANHOLE (15000)	701.011	OPSD
CATCHBASIN (600x600)	705.010	OPSD
CATCHBASIN FRAME AND COVER	400.020	OPSD
STORMS/SANITARY MH FRAME	S25	CITY OF OTTAWA
SANITARY COVER	S24	CITY OF OTTAWA
STORM COVER (CLOSED)	S24.1	CITY OF OTTAWA
STORM COVER (OPEN)	S28.1	CITY OF OTTAWA
SEWER TRENCH	S6 & S7	CITY OF OTTAWA
STORM SEWER < 450mmØ	PVC DR 35/UNLESS SPECIFIED OTHERWISE	CITY OF OTTAWA
STORM SEWER ≥ 450mmØ	CONC 65D (UNLESS SPECIFIED OTHERWISE)	CITY OF OTTAWA
SANITARY SEWER (LESS THAN 2.5M CLEAR TO WTM)	PVC DR 26	CITY OF OTTAWA
SANITARY SEWER (MORE THAN 2.5M CLEAR TO WTM)	PVC DR 35	CITY OF OTTAWA
CATCHBASIN LEAD	PVC DR 35	CITY OF OTTAWA
CATCHBASIN COVER	S19	CITY OF OTTAWA
WATERTIGHT FRAME & COVER (SANMH105 & SANMH110)	401.030	OPSD
- INSULATE ALL PIPES (SAN/STM) THAT HAVE LESS THAN 2.0m COVER WITH 50mmX1200mm HI-40 INSULATION. PROVIDE 150mm CLEARANCE BETWEEN PIPE AND INSULATION (REFER TO DETAIL).
- SERVICES ARE TO BE CONSTRUCTED TO 1.0m FROM FACE OF BUILDING AT A MINIMUM SLOPE OF 1.0% (2.0% PREFERRED)
- ALL STORM AND SANITARY LATERALS SHALL BE EQUIPPED WITH BACKFLOW PREVENTION DEVICES AS PER THE CITY OF OTTAWA STANDARD DETAILS S14 AND S14.1 OR S14.2.
- THE PIPE BEDDING FOR THE SEWER AND WATER PIPES SHOULD CONSIST OF AT LEAST 150 MM OF OPSS GRANULAR. THE BEDDING SHOULD EXTEND TO THE SPRING LINE OF THE PIPE. COVER MATERIAL FROM THE SPRING LINE TO AT LEAST 300mm ABOVE OBVERT OF THE PIPE, SHOULD CONSIST OF OPSS GRANULAR A OR GRANULAR B TYPE II WITH MAXIMUM SIZE OF 25mm. THE BEDDING LAYER SHOULD BE INCREASED TO A MINIMUM THICKNESS OF 300mm WHERE SUBGRADE CONSISTS OF GREY SILT ROCK. THE BEDDING AND COVER MATERIAL SHOULD BE PLACED IN MAXIMUM 225mm THICK LIFTS COMPACTED TO 95% OF THE MATERIALS STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD).
- THE BACKFILL MATERIAL WITHIN THE FROST ZONE (ABOUT 1.8m BELOW FINISHED GRADE) SHOULD MATCH THE SOILS EXPOSED AT THE TRENCH WALLS TO REDUCE POTENTIAL DIFFERENTIAL FROST HEAVING. THE BACKFILL SHOULD BE PLACED IN MAXIMUM 300mm THICK LOOSE LIFTS AND COMPACTED TO A MINIMUM OF 95% OF THE MATERIALS SPMDD.
- FLEXIBLE CONNECTIONS ARE REQUIRED FOR CONNECTING PIPES TO MANHOLES (FOR EXAMPLE KOR-N-SEAL, PSX: POSITIVE SEAL AND DURASEAL). THE CONCRETE CRADLE FOR THE PIPE CAN BE ELIMINATED.
- ALL STORM MANHOLES WITH PIPE SIZES LESS THAN 900mm ARE TO HAVE 300mm SUMPS UNLESS OTHERWISE INDICATED.
- CONTRACTOR TO TELEVISION (CCTV) ALL PROPOSED SEWERS 200mm OR GREATER IN DIAMETER PRIOR TO BASE COURSE ASPHALT TO ENSURE THAT THEY ARE CLEAN AND OPERATIONAL UPON COMPLETION OF CONTRACT. THE CONTRACTOR IS RESPONSIBLE TO FLUSH AND CLEAN ALL SEWERS & APPURTENANCES AND RE CCTV PRIOR TO ACCEPTANCE. OBTAIN APPROVAL FROM THE CITY'S SEWER OPERATIONS. PROVIDE THE CCTV INSPECTION AND REPORT TO THE ENGINEER FOR REVIEW AND APPROVAL.
- CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GENERAL PLAN OF SERVICES INDICATING ALL APPLICABLE SERVICING AS-BUILT INFORMATION SHOWN ON THIS PLAN. AS-BUILT INFORMATION MUST INCLUDE: PIPE MATERIAL, SIZES, LENGTHS, SLOPES, INVERT AND T/G ELEVATIONS, STRUCTURE LOCATIONS AND ANY ALIGNMENT CHANGES, ETC.
- THE OWNER SHALL REQUIRE THAT THE SITE SERVICING CONTRACTOR PERFORM FIELD TESTS FOR QUALITY CONTROL OF ALL SANITARY SEWERS. LEAKAGE TESTING SHALL BE COMPLETED IN ACCORDANCE WITH OPS5 410.07.16, 410.07.18.04 AND 407.07.24. DYE TESTING IS TO BE COMPLETED ON ALL SANITARY SERVICES TO CONFIRM PROPER CONNECTION TO THE SANITARY SEWER MAIN. THE FIELD TESTS SHALL BE PERFORMED IN THE PRESENCE OF A CERTIFIED PROFESSIONAL ENGINEER WHO SHALL SUBMIT A CERTIFIED COPY OF THE TEST RESULTS.
- ALL CATCHBASINS AND CATCHBASIN MANHOLES TO BE PROVIDED WITH MINIMUM 3 METER LONG PERFORATED SUBDRAINS EXTENDING IN TWO DIRECTIONS 300mm BELOW THE SUBGRADE LEVEL. SUBDRAIN IS TO BE PROVIDED AT THE TRANSITIONS BETWEEN DIFFERENT PAVEMENT COMPOSITIONS. THE SUBGRADE SURFACE SHOULD BE SHAPED TO PROMOTE WATER FLOW TO THE DRAINAGE LINES.
- ALL WORKS SHALL BE PERFORMED AS APPLICABLE IN ACCORDANCE WITH CITY OF OTTAWA STANDARD SPECIFICATIONS, AND IN PARTICULAR O.P.S.S. 407 AND 410.

PAVEMENT STRUCTURE:

- ACCESS LANES AND HEAVY-TRUCK PARKING AREAS
40mm WEAR COURSE - HL-3 OR SUPERPAVE 12.5 ASPHALTIC CONCRETE
50mm BINDER COURSE - HL-8 OR SUPERPAVE 19.0 ASPHALTIC CONCRETE
150mm BASE - OPSS GRANULAR A CRUSHED STONE
400mm SUBBASE - OPSS GRANULAR B TYPE II

- CAR ONLY PARKING AREAS
50mm WEAR COURSE - HL-3 OR SUPERPAVE 12.5 ASPHALTIC CONCRETE
150mm BASE - OPSS GRAN "A" CRUSHED STONE
300mm SUBBASE - OPSS GRAN "B" TYPE II

NOTE:

- MINIMUM PERFORMANCE GRADING (PG) 58-34 ASPHALT CEMENT.
- SUBGRADE - EITHER FILL, IN SITU SOIL OR BEDROCK OR OPSS GRANULAR TYPE I OR II MATERIAL PLACED OVER IN SITU SOIL, BEDROCK OR FILL.

REFER TO GEOTECHNICAL REPORT FOR SUBSURFACE CONDITIONS AND CONSTRUCTION RECOMMENDATIONS

WATERMAIN NOTES:

- SUPPLY AND CONSTRUCT ALL WATERMAIN AND APPURTENANCES IN ACCORDANCE WITH THE MOST CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS.
- SPECIFICATIONS:

ITEM	SPEC. No.	REFERENCE
WATERMAIN TRENCHING	W17	CITY OF OTTAWA
THERMAL INSULATION IN SHALLOW TRENCHES	W22	CITY OF OTTAWA
THERMAL INSULATION BY OPEN STRUCTURES	W23	CITY OF OTTAWA
WATERMAIN CROSSING BELOW SEWER	W25	CITY OF OTTAWA
WATERMAIN CROSSING ABOVE SEWER	W25.2	CITY OF OTTAWA
HYDRANT	WSD-24	CITY OF OTTAWA
VALVE AND VALVE BOX	WSD-19	CITY OF OTTAWA
WATERMAIN	PVC DR 18	CITY OF OTTAWA
- SUPPLY AND CONSTRUCT ALL WATERMAINS AND APPURTENANCES IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARD AND SPECIFICATIONS. EXCAVATION, INSTALLATION, BACKFILL AND RESTORATION OF ALL WATERMAINS BY THE CONTRACTOR. CONNECTIONS AND SHUT-OFFS AT THE MAIN AND CHLORINATION OF THE WATER SYSTEM SHALL BE PERFORMED BY CITY OFFICIALS.
- WATERMAIN SHALL BE MINIMUM 2.4m DEPTH BELOW GRADE UNLESS OTHERWISE INDICATED. ANY WATERMAIN WITH LESS THAN 2.4m COVER TO BE INSULATED PER THE SEWER AND WATERMAIN NOTES AND DETAIL.
- PROVIDE MINIMUM CLEARANCE, BETWEEN OUTSIDE OF PIPES, AT ALL CROSSINGS AS PER CITY DETAILS W25 AND W25.2. WATERMAIN MUST HAVE A MINIMUM VERTICAL CLEARANCE OF 0.25m OVER AND 0.50m UNDER SEWERS AND ALL OTHER UTILITIES WHEN CROSSING.
- WATER SERVICE IS TO BE CONSTRUCTED TO WITHIN 1.0m OF FOUNDATION WALL AND CAPPED, UNLESS OTHERWISE INDICATED.
- CATHODIC PROTECTION REQUIRED FOR ALL IRON FITTINGS CITY OF OTTAWA STANDARD DETAILS WSD-39, 40, 41, 42, 43 AND 44.
- IF WATERMAIN MUST BE DEFLECTED TO MEET ALIGNMENT, ENSURE THAT THE AMOUNT OF DEFLECTION USED IS LESS THAN HALF THAT RECOMMENDED BY THE MANUFACTURER.

GRADING NOTES:

- ALL TOPSOIL, ORGANIC OR DELETERIOUS MATERIAL MUST BE ENTIRELY REMOVED FROM BENEATH THE PROPOSED BUILDING AND PAVED AREAS.
- EXPOSED SUB-GRADES IN PROPOSED PAVED AREAS SHOULD BE PROOF ROLLED WITH A LARGE STEEL DRUM ROLLER AND INSPECTED BY THE GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF GRANULARS.
- NON-SPECIFIED EXISTING FILL ALONG WITH SITE-EXCAVATED SOIL COULD BE PLACED AS GENERAL LANDSCAPING FILL WHERE SETTLEMENT OF THE GROUND SURFACE IS OF MINOR CONCERN. THESE MATERIALS SHOULD BE SPREAD IN LIFTS WITH A MAXIMUM THICKNESS OF 300 mm AND COMPACTED BY THE TRACKS OF THE SPREADING EQUIPMENT TO MINIMIZE VOIDS. IF THIS MATERIAL IS TO BE USED TO BUILD UP THE SUBGRADE LEVEL FOR AREAS TO BE PAVED, IT SHOULD BE COMPACTED IN THIN LIFTS TO AT LEAST 95% OF THE MATERIAL'S SPMDD.
- THE PAVEMENT GRANULAR BASE AND SUBBASE SHOULD BE PLACED IN MAXIMUM 300 mm THICK LIFTS AND COMPACTED TO A MINIMUM OF 100% OF THE MATERIAL'S SPMDD USING SUITABLE COMPACTION EQUIPMENT. IF BEDROCK IS ENCOUNTERED AT THE SUBGRADE LEVEL, THE TOTAL THICKNESS OF THE PAVEMENT GRANULAR MATERIALS (BASE AND SUBBASE) COULD BE REDUCED TO 300 mm FOR THE NOTED PAVEMENT STRUCTURES. THE UPPER 300 mm OF THE BEDROCK SURFACE SHOULD BE REVIEWED AND APPROVED BY PATERSON PRIOR TO PLACING THE BASE AND SUBBASE MATERIALS. CARE SHOULD BE EXERCISED TO ENSURE THAT THE BEDROCK SUBGRADE DOES NOT HAVE DEPRESSIONS THAT WILL TRAP THE WATER.
- BACKFILL MATERIAL BELOW SIDEWALKS AND WALKWAY SUBGRADE AREAS THROUGHOUT THE SUBJECT SITE, INCLUDING ALONG THE BUILDINGS, SHOULD BE PROVIDED WITH A MINIMUM 300 MM THICK LAYER OF OPSS GRANULAR A OR OPSS GRANULAR B TYPE II CRUSHED STONE. THIS MATERIAL SHOULD BE PLACED IN MAXIMUM 300 MM THICK LOOSE LIFTS AND COMPACTED TO A MINIMUM OF 98% OF THE MATERIALS SPMDD.
- IF SOFT SPOTS DEVELOP IN THE SUBGRADE DURING COMPACTION OR DUE TO CONSTRUCTION TRAFFIC, THE AFFECTED AREAS SHOULD BE EXCAVATED AND REPLACED WITH OPSS GRANULAR B TYPE I OR II MATERIAL. THE PAVEMENT GRANULAR BASE AND SUBBASE SHOULD BE PLACED IN MAXIMUM 300 MM THICK LIFTS AND COMPACTED TO A MINIMUM OF 100% OF THE MATERIAL'S SPMDD USING SUITABLE VIBRATORY EQUIPMENT.
- ALL CURBS SHALL BE BARRIER CURB (150mm) UNLESS OTHERWISE NOTED. REFER TO CITY OF OTTAWA DETAIL SC1.1.
- GRADE AND/OR FILL BEHIND PROPOSED CURB AND BETWEEN BUILDINGS AND CURBS, WHERE REQUIRED TO PROVIDE POSITIVE DRAINAGE.
- MINIMUM OF 2% GRADE FOR ALL GRASS AREAS UNLESS OTHERWISE NOTED
- ALL GRADES BY CURBS ARE EDGE OF PAVEMENT GRADES UNLESS OTHERWISE INDICATED.
- REFER TO LANDSCAPE PLAN FOR PLANTING AND OTHER LANDSCAPE FEATURE DETAILS.
- CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GRADING PLAN INDICATING THE AS-BUILT ELEVATION OF EVERY DESIGN GRADE SHOWN ON THIS PLAN.
- ASENSITIVE MARINE CLAY TO BE REMOVED AND REPLACED WITH ENGINEERING FILL AS DIRECTED GEOTECHNICAL CONSULTANT.

EROSION AND SEDIMENT CONTROL NOTES:

THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE, DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.

- THE OWNER AGREES TO PREPARE AND IMPLEMENT AN EROSION AND SEDIMENT CONTROL PLAN TO THE SATISFACTION OF THE CITY OF OTTAWA, APPROPRIATE TO THE SITE CONDITIONS, PRIOR TO UNDERTAKING ANY SITE ALTERATIONS (FILLING, GRADING, REMOVAL OF VEGETATION, ETC.) AND DURING ALL PHASES OF SITE PREPARATION AND CONSTRUCTION IN ACCORDANCE WITH THE CURRENT BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROL, SUCH AS BUT NOT LIMITED TO INSTALLING FILTER CLOTHS ACROSS MANHOLE/CATCHBASIN LIDS TO PREVENT SEDIMENTS FROM ENTERING STRUCTURES AND INSTALL AND MAINTAIN A LIGHT DUTY SILT FENCE BARRIER AS REQUIRED.
- THE CONTRACTOR SHALL PLACE FILTER BAGS UNDER THE CATCHBASIN AND MANHOLE GRATES FOR THE DURATION OF CONSTRUCTION AND WILL REMAIN IN PLACE DURING ALL PHASES OF CONSTRUCTION.
- SILT FENCING FOR ENTIRE PERIMETER OF SITE, SHALL BE UTILIZED TO CONTROL EROSION FROM THE SITE DURING CONSTRUCTION.
- THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.
- PROVIDE MUD MATS AT ALL CONSTRUCTION ACCESS POINTS TO MINIMIZE SEDIMENT TRANSPORT OFFSITE.
- EROSION AND SEDIMENT CONTROL MEASURES MAY BE MODIFIED IN THE FIELD AT THE DISCRETION OF THE CITY OF OTTAWA SITE INSPECTOR OR CONSERVATION AUTHORITY.

TYPICAL SERVICING NOTES:

- NO HORIZONTAL BENDS IN RIGHT-OF-WAY UNLESS OTHERWISE APPROVED BY THE CITY. MAXIMUM OF TWO 22.5° HORIZONTAL BENDS FOR SANITARY AND STORM SERVICES.
- 1.0 % MINIMUM SANITARY AND STORM SERVICE GRADIENT WITH 2% PREFERRED.
- SEE S7 FOR PIPE FOUNDATION, EMBEDMENT AND FINAL BACKFILL REQUIREMENTS.
- MULTIPLE TAPS WITH SADDLES IN PVC WATERMAIN SHALL BE STAGGERED AND MINIMUM 600mm APART.
- ELEVATION OF SERVICES VARIABLE DEPENDING ON GRADIENT AND/OR DEPTH OF COVER.
- ALL DIMENSIONS ARE IN MILLIMETERS.
- CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GRADING PLAN INDICATING AS-BUILT ELEVATIONS OF ALL DESIGN GRADES SHOWN ON THIS PLAN.
- GRADE AND/OR FILL BEHIND PROPOSED CURB AND BETWEEN BUILDINGS AND CURBS, WHERE REQUIRED TO PROVIDE POSITIVE DRAINAGE.
- REFER TO ELECTRICAL DESIGN FOR UTILITY LOCATIONS.

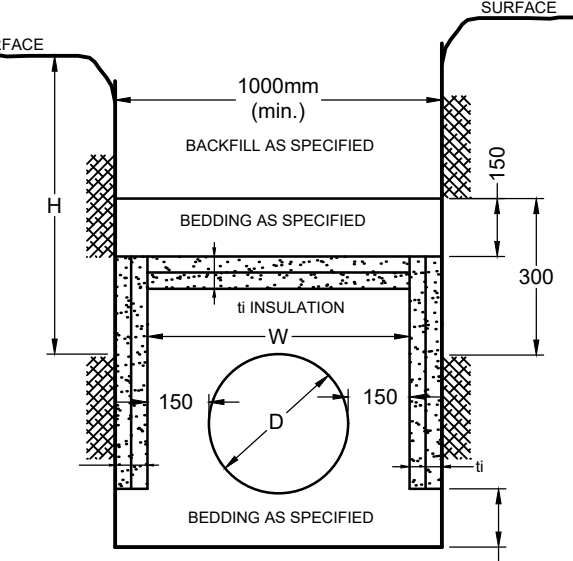
PROPOSED 150mmØ WATERMAIN (1+000.0)				
STATION	SURFACE ELEVATION	TWM ELEVATION	COMMENTS	
1+000.0	86.91	84.58	300mmX150mm TEE	
1+009.1	87.05	84.65	150mmØ VALVE AND VALVE BOX	
1+011.7	87.00	85.52	CROSS ABOVE 750mmØ STM AS PER CITY OF OTTAWA STANDARD W25.2 (±0.25 CLEARANCE)	
1+017.0	86.74	84.34	45° HORIZONTAL BEND	
1+021.4	86.60	84.72	CROSS ABOVE 200mmØ SAN AS PER CITY OF OTTAWA STANDARD W25.2 (±0.25 CLEARANCE)	
1+023.6	86.64	84.24	45° HORIZONTAL BEND	
1+041.6	86.42	84.02	45° HORIZONTAL BEND	
1+048.3	86.52	84.05	CROSS BELOW 135mmØ SAN (±0.50CLEARANCE)	
1+052.4	86.41	84.01	45° HORIZONTAL BEND	
1+072.1	86.14	83.74	45° HORIZONTAL BEND	
1+076.4	86.00	83.55	CROSS BELOW135mmØ SAN (±0.50 CLEARANCE)	
1+077.9	85.95	83.55	45° HORIZONTAL BEND	
1+105.9	86.26	84.23	CROSS ABOVE 200mmØ SAN AS PER CITY OF OTTAWA STANDARD W25.2 (±0.25CLEARANCE)	
1+140.3	87.05	84.65	150mmØ VALVE AND VALVE BOX	
1+145.2	87.15	84.75	150mmX150mm TEE	
1+182.8	87.09	84.69	45° HORIZONTAL BEND	
1+187.1	87.37	84.97	150mmX150mm TEE (HYD)	
1+188.5	87.29	84.89	45° HORIZONTAL BEND	
1+194.3	87.37	84.63	CROSS BELOW 200mmØ SAN AS PER CITY OF OTTAWA STANDARD W25 (±0.25 CLEARANCE)	
1+205.5	87.96	84.96	CROSS ABOVE 135mmØ SAN (±0.25 CLEARANCE)	
1+222.4	88.02	85.62	45° HORIZONTAL BEND	
1+224.9	88.07	86.27	CROSS ABOVE 135mmØ SAN AS PER CITY OF OTTAWA STANDARD W25.2 (±0.25CLEARANCE)	
1+230.0	88.00	85.60	45° HORIZONTAL BEND	
1+248.4	87.86	85.46	45° HORIZONTAL BEND	
1+253.0	87.91	85.51	45° HORIZONTAL BEND	
1+257.8	87.85	85.45	CROSS ABOVE 200mmØ SAN (±0.13 CLEARANCE)	
1+263.0	87.68	85.27	CROSS ABOVE 450mmØ STM (±1.26 CLEARANCE)	
1+264.3	87.66	85.26	150mmØ VALVE AND VALVE BOX	
1+265.4	87.65	85.25	150mmX150mm TEE	

SEWER & WATERMAIN INSULATION NOTES:

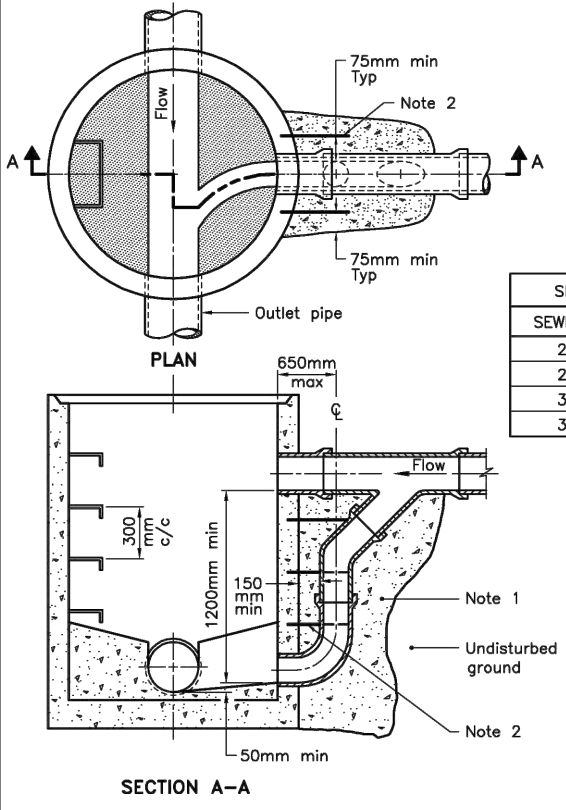
- INSULATE ALL SEWER PIPES THAT HAVE LESS THAN 2.0m COVER AND ALL WATERMAIN WITH LESS THAN 2.4m OF COVER WITH EXPANDED POLYSTYRENE INSULATION AS PER OPSD 1109.030.
- THE THICKNESS OF INSULATION SHALL BE THE EQUIVALENT OF 25mm FOR EVERY 300mm REDUCTION IN THE REQUIRED DEPTH OF COVER WITH 50mm MINIMUM (SEE TABLE)

COVER SEWER / WATER (mm)	INSULATION THICKNESS (mm)
2000-1700 / 2400-2100	50
1700-1400 / 2100-1800	75
1400-1100 / 1800-1500	100

T = THICKNESS OF INSULATION (mm)
W = WIDTH OF INSULATION (mm)
W = D + 300 (1000 min.)
D = O.D OF PIPE (mm)



INSULATION DETAIL FOR SHALLOW SEWERS & WATERMAIN N.T.S



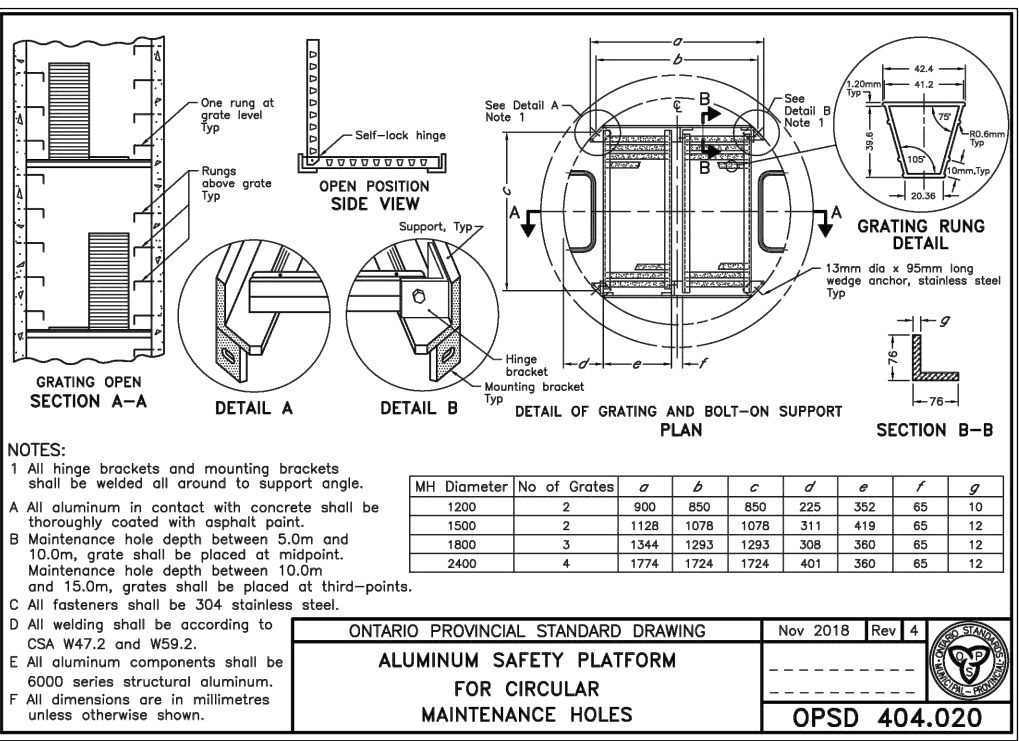
- NOTES:
- Concrete shall be placed to undisturbed ground and the outside face of the maintenance hole, but there shall be a minimum of 150mm of 15Mpa concrete around the drop pipe.
 - Concrete shall be secured to the maintenance hole with 450mm long, 13mm diameter threaded rods and drilled expansion anchors down either side of the drop pipe at 300mm centres.
 - All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING
CAST-IN-PLACE
MAINTENANCE HOLE DROP STRUCTURE WYE
Nov 2016 Rev 3
OPSD 1003.020

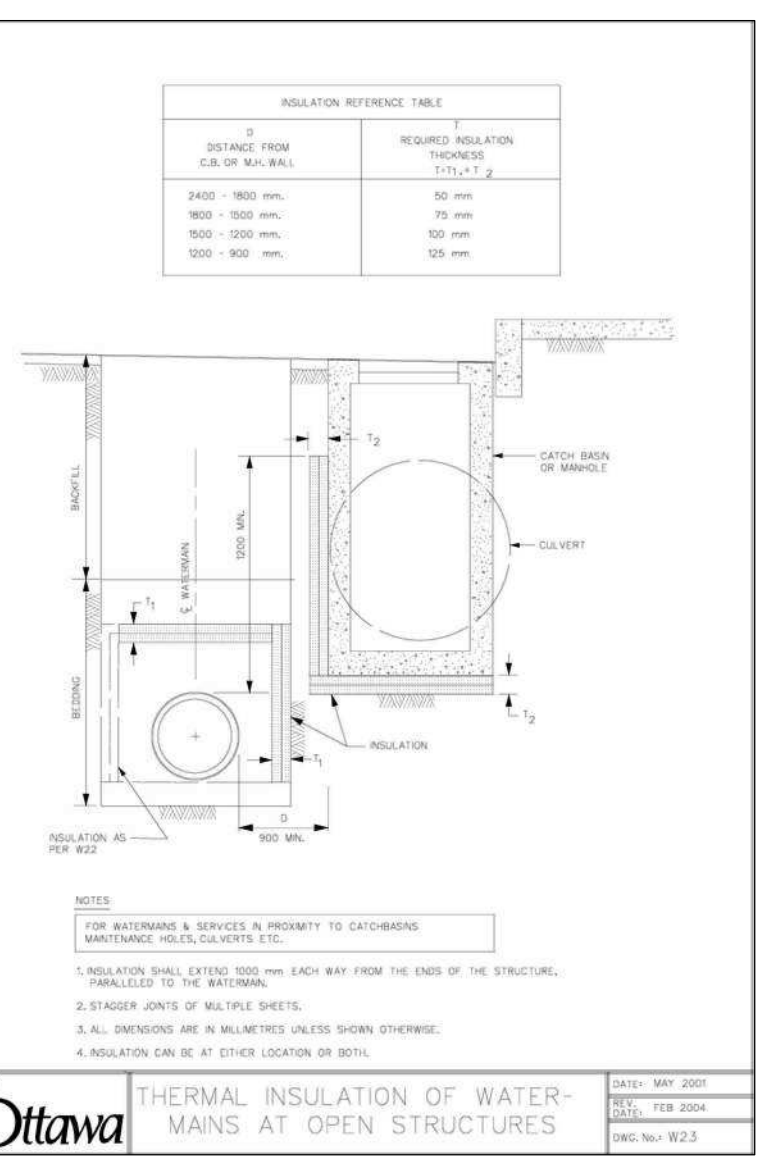
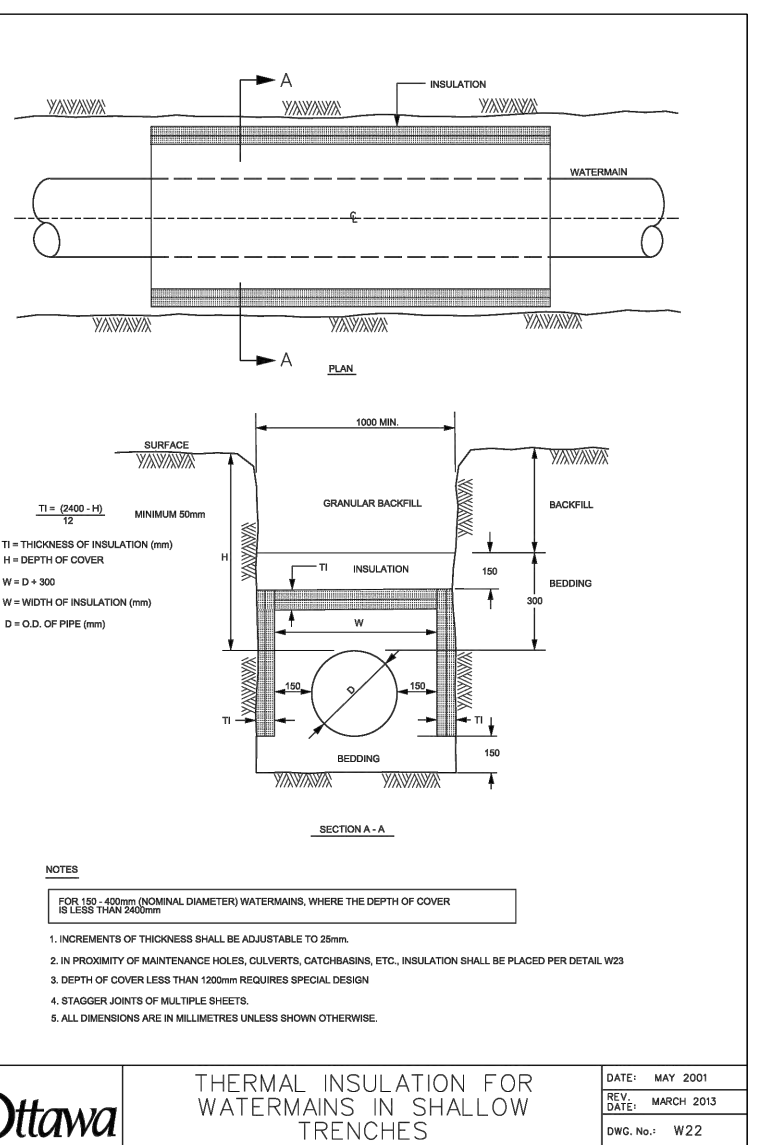
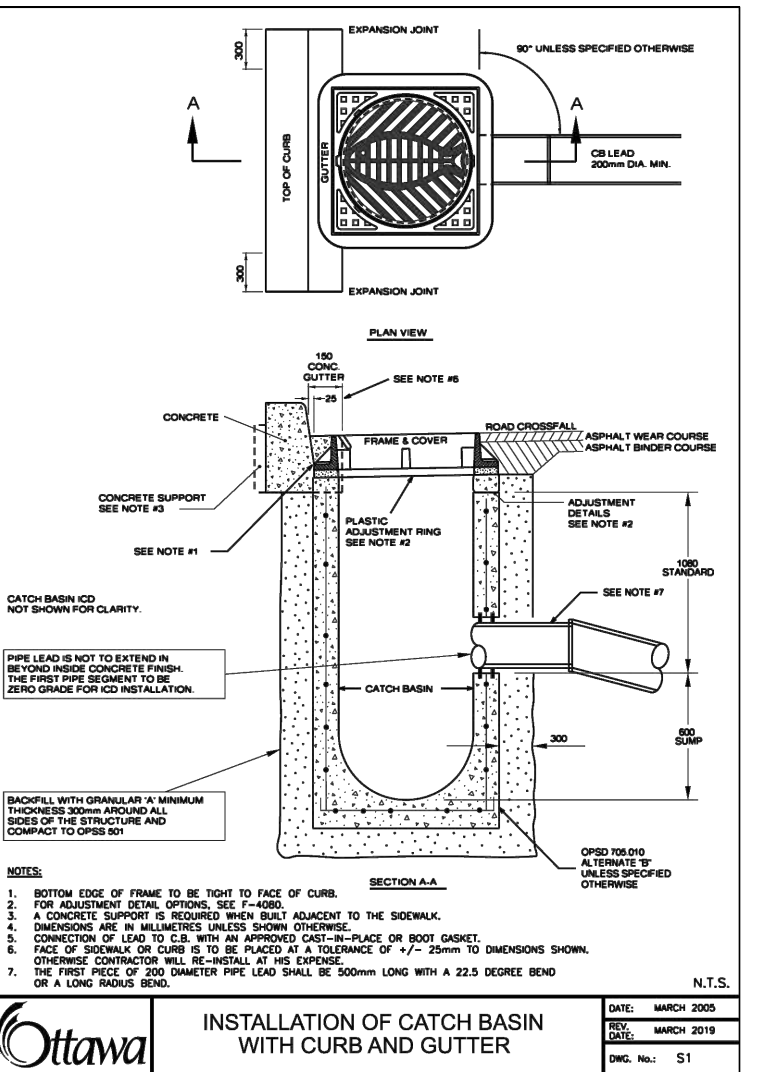
PROPOSED 150mmØ WATERMAIN (2+000.0)				
STATION	SURFACE ELEVATION	TWM ELEVATION	COMMENTS	
2+000.0	87.60	85.20	300mmX150mm TEE	
2+009.8	87.72	85.32	DMA PER CITY OF OTTAWA DETAIL W3.3	
2+011.4	87.69	85.29	CROSS ABOVE 250mmØ STM (±1.25 CLEARANCE)	
2+013.2	87.65	85.25	150mmX150mm TEE	
2+014.7	87.60	85.20	CROSS ABOVE 135mmØ SAN (±1.74CLEARANCE)	
2+015.2	87.59	85.19	CROSS ABOVE100mmØ STM (±0.94) CLEARANCE)	
2+024.0	87.37	84.97	CROSS BELOW 200mmØ STM (±1.16CLEARANCE)	
2+033.0	87.53	85.13	CROSS ABOVE 135mmØ SAN (±1.51CLEARANCE)	
2+037.5	87.38	84.98	150mmØ VALVE AND VALVE BOX	
2+045.9	87.26	84.86	CROSS ABOVE 250mmØ STM (±0.83 CLEARANCE)	
2+047.4	87.23	84.83	CROSS ABOVE 200mmØ SAN (±1.24CLEARANCE)	
2+049.4	87.21	85.21	CROSS ABOVE 750mmØ STM AS PER CITY OF OTTAWA STANDARD W25.2 (±0.25 CLEARANCE)	
2+054.2	87.16	84.76	150mmX150mm TEE	

PIPE CROSSING TABLE				
CROSSING	LOWER PIPE	HIGHER PIPE	CLEARANCE	
①	375mmØ SAN OBV = 81.48	450mmØ STM INV = 83.14*	±1.67m	
②	450mmØ STM OBV = 83.79*	300mmØ WTM INV = 84.90	±1.11m	
③	200mmØ SAN OBV = 81.56	300mmØ WTM INV = 84.80	±3.24m	
④	250mmØ STM OBV = 83.89	150mmØ WTM INV = 85.14	±1.25m	
⑤	450mmØ STM OBV = 83.86*	150mmØ WTM INV = 85.12	±1.26m	
⑥	200mmØ SAN OBV = 83.17	150mmØ WTM INV = 85.30	±2.13m	
⑦	150mmØ WTM OBV = 84.97	200mmØ STM INV = 86.13	±1.16m	
⑧	200mmØ SAN OBV = 83.33	450mmØ STM INV = 83.50*	±0.17m	
⑨	250mmØ STM OBV = 83.88	150mmØ WTM INV = 84.71	±0.83m	
⑩	250mmØ STM OBV = 84.09	200mmØ SAN INV = 84.69	±0.60m	
⑪	150mmØ WTM OBV = 84.63	200mmØ SAN OBV = 85.13	±0.50m	
⑫	200mmØ SAN OBV = 83.69	250mmØ STM INV = 83.89	±0.20m	
⑬	200mmØ SAN OBV = 83.46	150mmØ WTM INV = 84.68	±1.22m	
⑭	200mmØ SAN OBV = 83.83	150mmØ WTM INV = 84.08	±0.25m	
⑮	200mmØ SAN OBV = 84.32	150mmØ WTM INV = 84.57	±0.25m	
⑯	750mmØ STM OBV = 85.12*	150mmØ WTM INV = 85.37	±0.25m	
⑰	750mmØ STM OBV = 84.81*	150mmØ WTM INV = 85.06	±0.25m	
⑱	200mmØ SAN OBV = 83.69	750mmØ WTM INV = 84.13	±0.44m	
⑲	200mmØ SAN OBV = 83.56	300mmØ wtm INV = 84.41	±0.85m	

* INV/OBV INDICATED FOR CONCRETE PIPES ARE OUTER DIAMETER

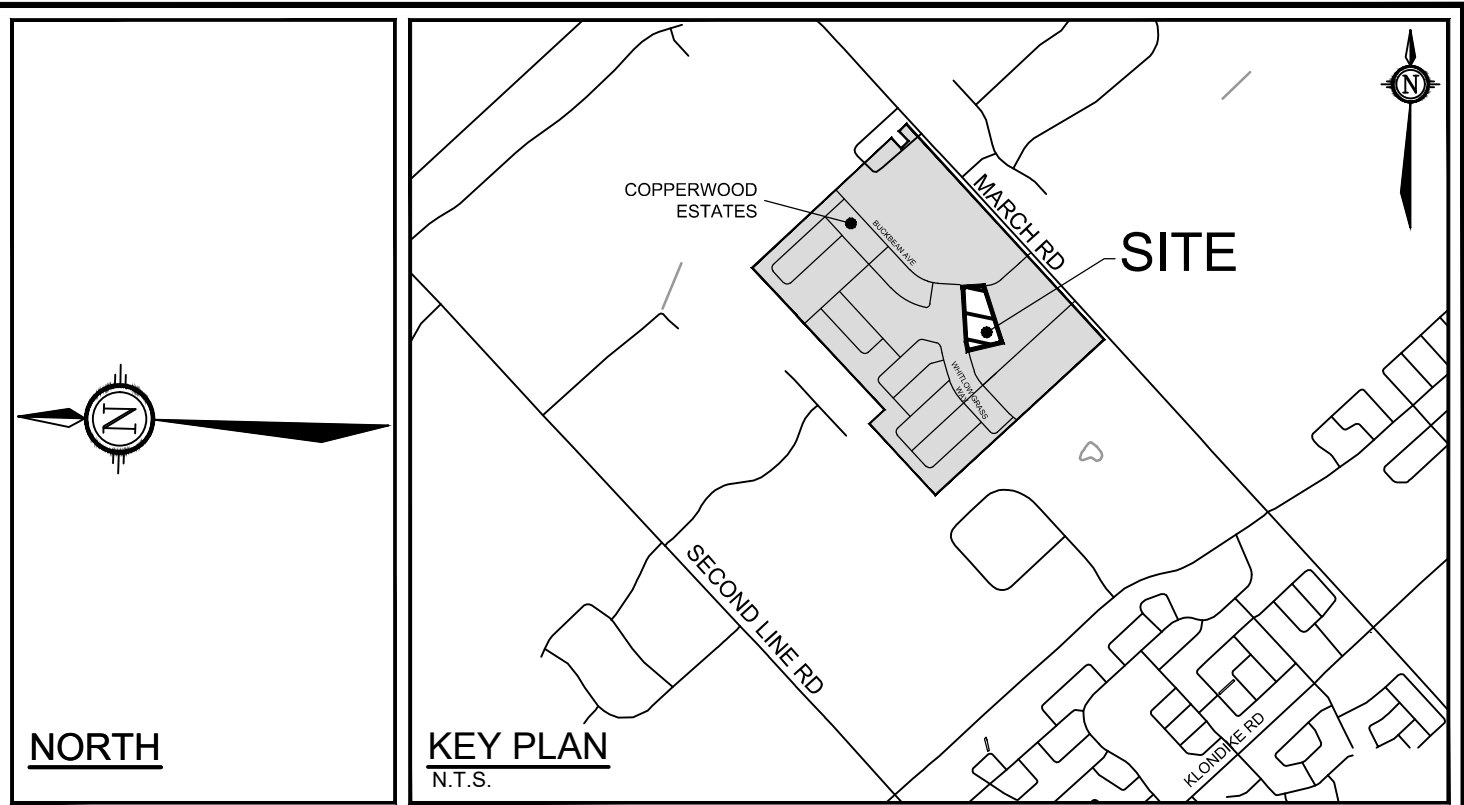
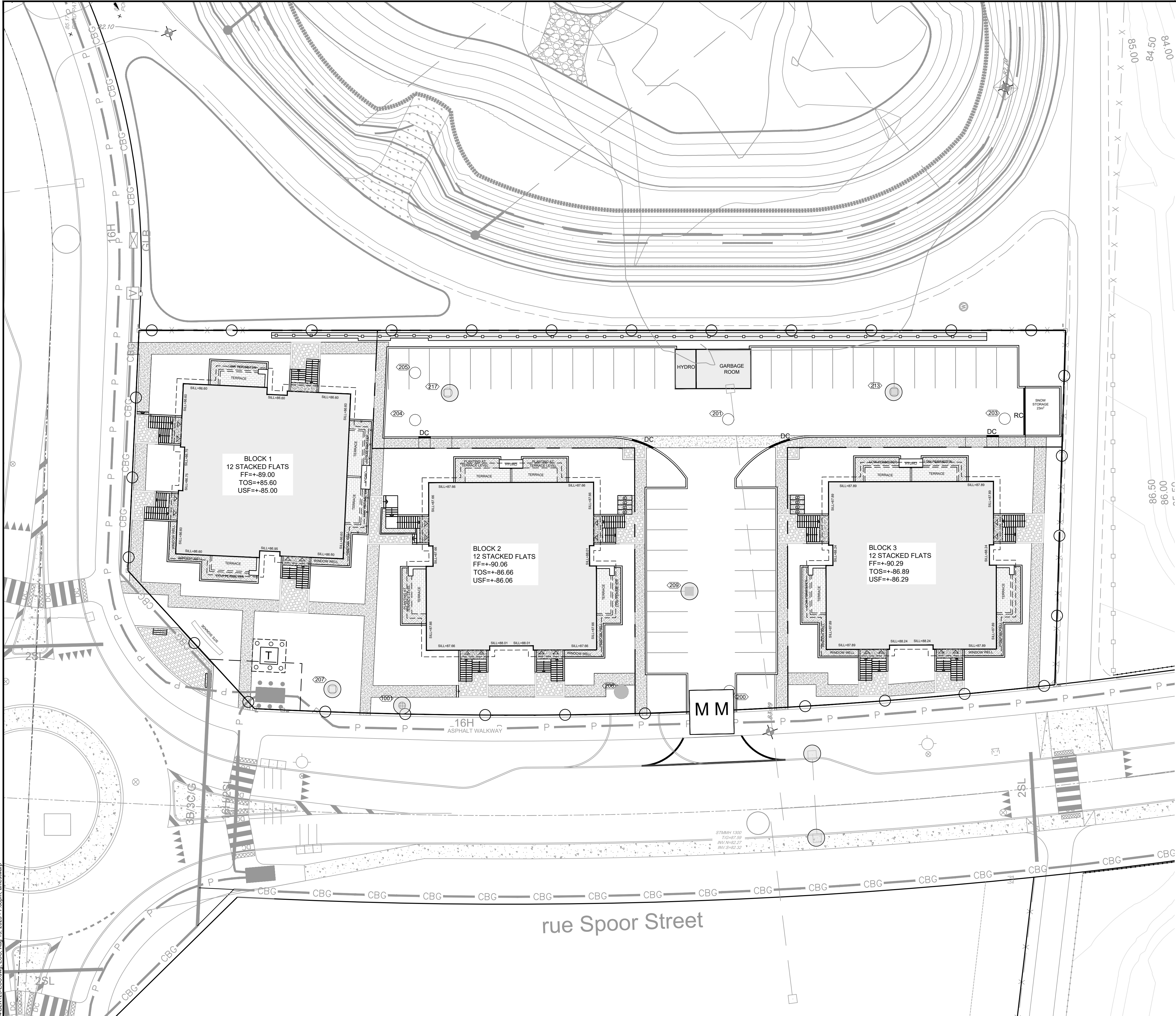


ONTARIO PROVINCIAL STANDARD DRAWING
ALUMINUM SAFETY PLATFORM
FOR CIRCULAR
MAINTENANCE HOLES
Nov 2018 Rev 1
OPSD 404.020

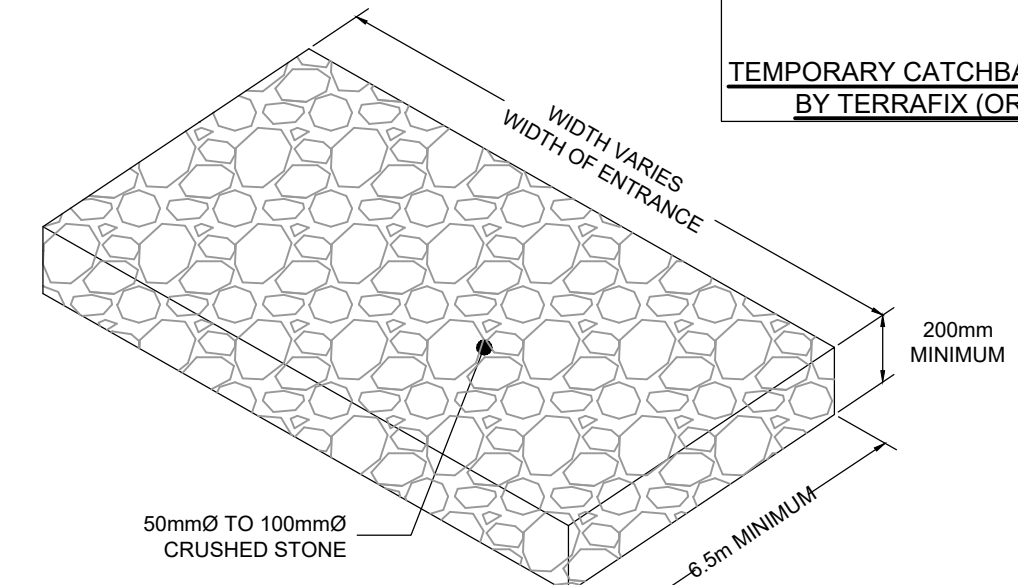
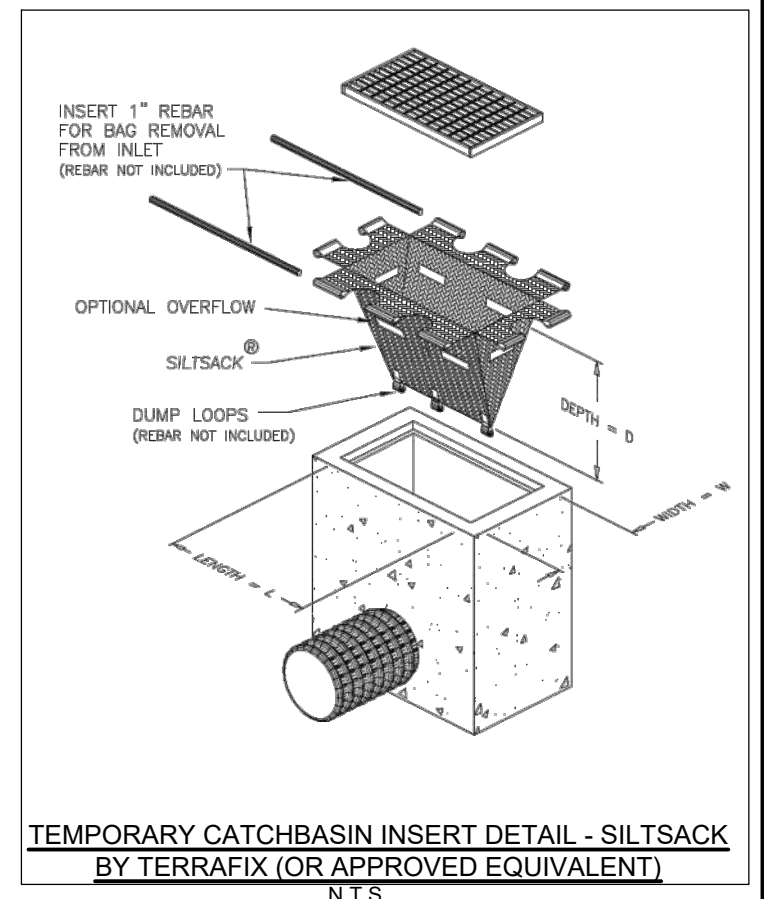


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NOTE: THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.	NOT FOR CONSTRUCTION
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- LEGEND**
- SITE PROPERTY LINE
 - MISC LEGAL LINE (EASEMENT, PROPERTY LINES) REFER TO LEGAL PLAN FOR DETAILS
 - PROPOSED NOISE WALL
 - PROPOSED CONCRETE SIDEWALK
 - PROPOSED RETAINING WALL
 - CW RAILING
 - PROPOSED CURB
 - PROPOSED DERESSED CURB
 - SWALE c/w SUBDRAIN AND DIRECTION OF FLOW
 - PROPOSED TRANSFORMER WITH BOLLARDS
 - PROPOSED MUD MAT
 - LIGHT DUTY SILT FENCE (OPSD 219.110)
 - PROPOSED FILTER BAGS AT CATCHBASINS, CATCHBASIN MANHOLES
 - PROPOSED STORM MANHOLE
 - PROPOSED STORM MANHOLE C/W ICD
 - PROPOSED CATCHBASIN MANHOLE
 - PROPOSED CATCHBASIN MANHOLE C/W ICD
 - PROPOSED CATCHBASIN
 - PROPOSED CATCHBASIN C/W ICD
 - PROPOSED LANDSCAPE DRAIN
 - EXISTING STORM MANHOLE
 - EXISTING CATCHBASIN
 - EXISTING LIGHT STANDARD
 - FENCE BY OTHERS
 - EXISTING DITCH CENTRELINE
 - EXISTING HYDRO INFRASTRUCTURE

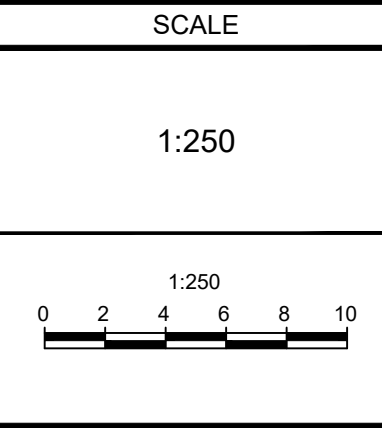


- EROSION AND SEDIMENT CONTROL NOTES:**
- THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE, DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.
- THE OWNER AGREES TO PREPARE AND IMPLEMENT AN EROSION AND SEDIMENT CONTROL PLAN TO THE SATISFACTION OF THE CITY OF OTTAWA, APPROPRIATE TO THE SITE CONDITIONS, PRIOR TO UNDERTAKING ANY SITE ALTERATIONS (FILLING, GRADING, REMOVAL OF VEGETATION, ETC.) AND DURING ALL PHASES OF SITE PREPARATION AND CONSTRUCTION IN ACCORDANCE WITH THE CURRENT BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROL, SUCH AS BUT NOT LIMITED TO INSTALLING FILTER CLOTHS ACROSS MANHOLE/CATCHBASIN LIDS TO PREVENT SEDIMENTS FROM ENTERING STRUCTURES AND INSTALL AND MAINTAIN A LIGHT DUTY SILT FENCE BARRIER AS REQUIRED.
 - THE CONTRACTOR SHALL PLACE FILTER BAGS UNDER THE CATCHBASIN AND MANHOLE GRATES FOR THE DURATION OF CONSTRUCTION AND WILL REMAIN IN PLACE DURING ALL PHASES OF CONSTRUCTION.
 - SILT FENCING FOR ENTIRE PERIMETER OF SITE, SHALL BE UTILIZED TO CONTROL EROSION FROM THE SITE DURING CONSTRUCTION.
 - THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.
 - PROVIDE MUD MATS AT ALL CONSTRUCTION ACCESS POINTS TO MINIMIZE SEDIMENT TRANSPORT OFFSITE.
 - EROSION AND SEDIMENT CONTROL MEASURES MAY BE MODIFIED IN THE FIELD AT THE DISCRETION OF THE CITY OF OTTAWA SITE INSPECTOR OR CONSERVATION AUTHORITY.
- REFER TO 122144-ND FOR ADDITIONAL NOTES & DETAILS

NOTE:
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NOT FOR CONSTRUCTION

No.	REVISION	DATE	BY
5.	REVISED PER RETAINING WALL ALTERATIONS	OCT 07/25	GJM
4.	ADDITION OF GEOTECHNICAL RECOMMENDATIONS	AUG 19/25	GJM
3.	REVISED PER CITY COMMENTS	AUG 12/25	GJM
2.	REVISED PER COMPLETENESS REVIEW COMMENTS	MAY 09/25	GJM
1.	ISSUED FOR SITE PLAN APPLICATION	MARCH 21/25	GJM



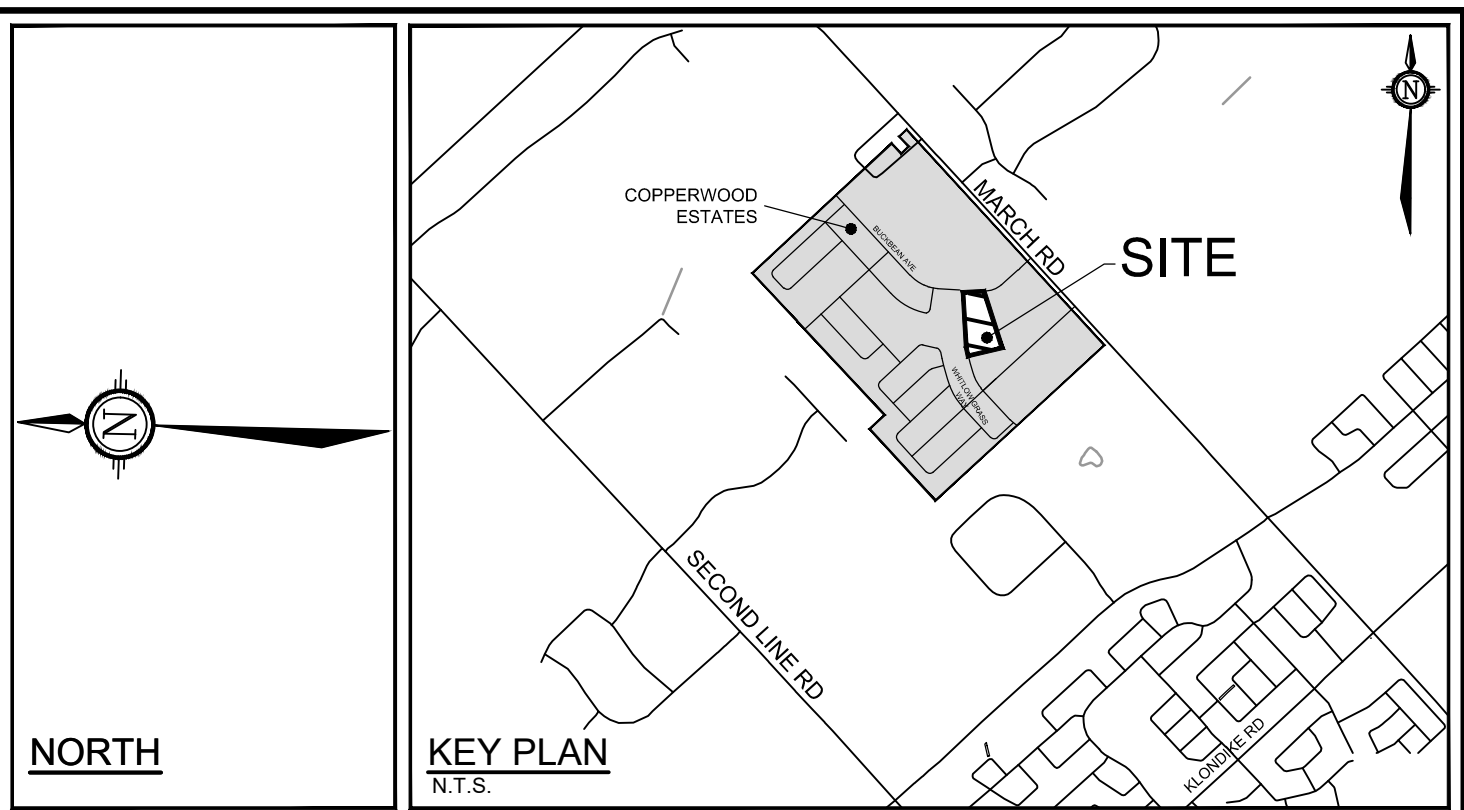
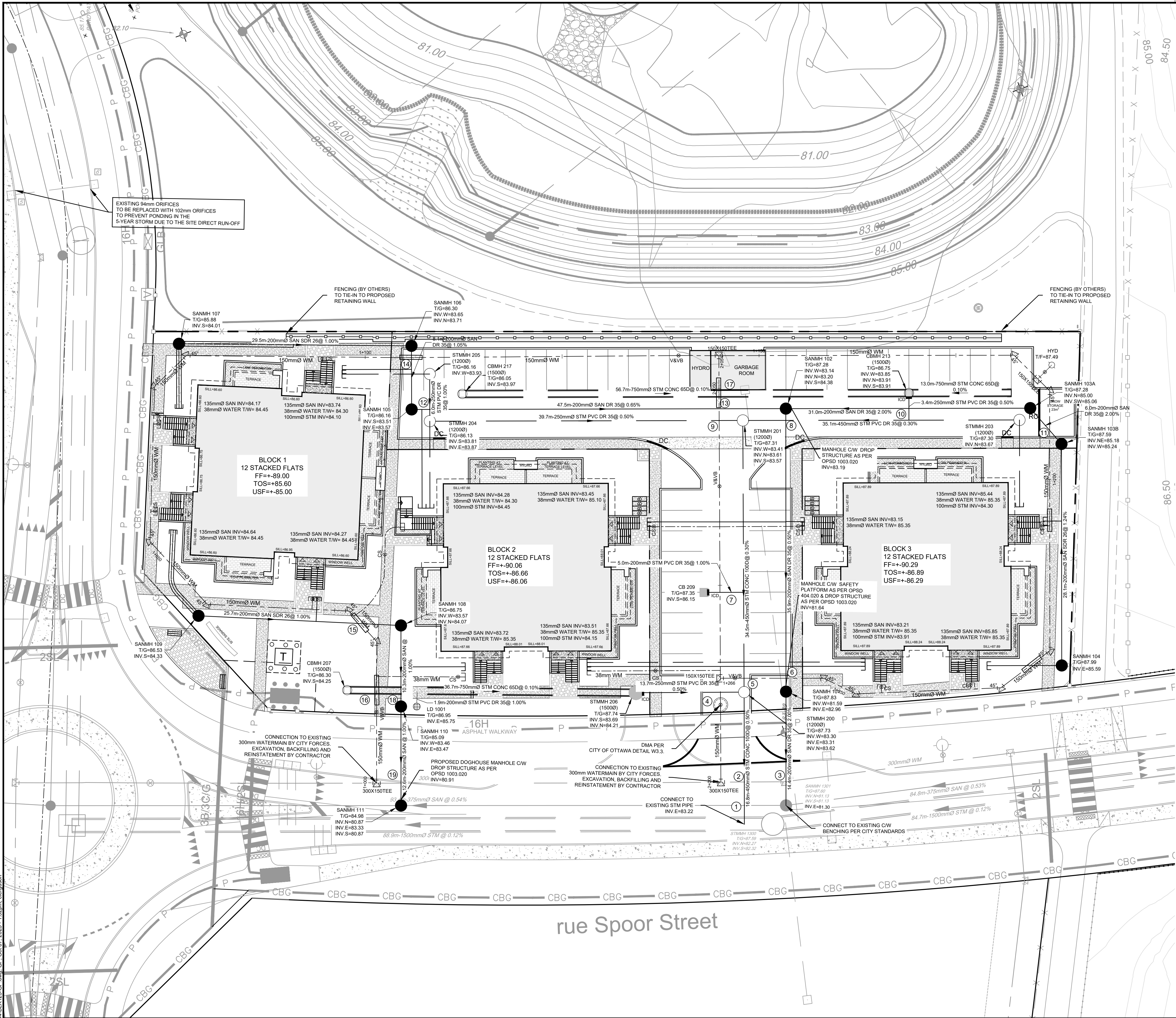
DESIGN	ARM/AM
CHECKED	ARM
DRAWN	ARM/CJF/AM
CHECKED	ARM
APPROVED	GJM

FOR REVIEW ONLY

NOVATECH
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Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

LOCATION	1101 SPOOR STREET, CITY OF OTTAWA COPPERWOOD FLATS - BLOCK 125
DRAWING NAME	EROSION AND SEDIMENT CONTROL PLAN
PROJECT No.	122144
REV	REV#5
DRAWING No.	122144-ESC

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LEGEND

--- SITE PROPERTY LINE	--- EXISTING DITCH CENTRELINE
--- MISC LEGAL LINE (EASEMENT, PROPERTY LINES) REFER TO LEGAL PLAN FOR DETAILS	--- V&VB EXISTING WATERMAIN C/W VALVE BOX
--- PROPOSED SIDEWALK	--- HYD EXISTING HYDRANT C/W VALVE & LEAD
--- PROPOSED CURB	--- SAN MH EXISTING SANITARY MANHOLE & SEWER
--- PROPOSED DEPRESSED CURB	--- STM MH EXISTING STORM MANHOLE & SEWER
--- PROPOSED RETAINING WALL	--- CB EXISTING CATCHBASIN
--- SWALE c/w SUBDRAIN AND DIRECTION OF FLOW	--- FENCE BY OTHERS
--- PROPOSED SANITARY SERVICE c/w MANHOLE	--- EXISTING DITCH CENTRELINE
--- PROPOSED STORM SEWER AND MANHOLE	--- EXISTING MONITORING WELL
--- PROPOSED STORM MANHOLE C/W ICD	--- CBG EXISTING JOINT UTILITY
--- PROPOSED STORMWATER MANAGEMENT PIPE	--- EXISTING HYDRO
--- PROPOSED CATCHBASIN MANHOLE	--- ZSL PROPOSED CATCHBASIN MANHOLE C/W ICD
--- PROPOSED CATCHBASIN	--- EXISTING LIGHT STANDARD
--- PROPOSED CATCHBASIN C/W ICD	--- LS EXISTING HYDRO INFRASTRUCTURE
--- PROPOSED LANDSCAPE DRAIN	
--- PROPOSED WATER MAIN	
--- PROPOSED HYDRANT c/w LEAD & VALVE	
--- PROPOSED BEND AND THRUSTBLOCK 11.25°, 22.5°, 45° or TEE	
--- PROPOSED CURB STOP	
--- PROPOSED VALVE AND VALVE BOX	
--- PROPOSED TOP OF BOTTOM FLANGE	
--- PROPOSED PIPE CROSSING REFER TO 122144-ND FOR DETAILS	
--- PROPOSED SEWER AND PIPE INSULATION PER S35	
--- PROPOSED TRANSFORMER WITH BOLLARDS	

ICD TABLE				
STRUCTURE	T/G ELEVATION	INVERT	ICD DIA	100-YR RELEASE
CBMH 213	86.75	INV W=83.85 INV N=83.91 INV S=83.91	94mm	29.73 L/s
STMH 206	87.74	INV S=83.69 INV N=84.21	LMF 75	8.20 L/s
CB 209	87.35	INV S=86.15	102mm	25.20 L/s

- NOTES**
- PIPES TO BE INSULATED WHERE MINIMUM COVER IS NOT MET.
 - LEAN CONCRETE INFILLED TRENCHES ARE RECOMMENDED TO EXTEND THE FOOTING LOADS BELOW THE ADJACENT PIPES WHERE SERVICES ARE WITHIN THE FOUNDATION LOADING ZONES.
 - REFER TO MEMORANDUM TITLED : GRADING AND SITE SERVICING REVIEW PREPARED BY PATERSON GROUP DATED AUGUST 15TH, 2025 (PG6613-MEMO.02, REV 1)

REFER TO 122144-ND FOR ADDITIONAL NOTES & DETAILS

NOTE:
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2.	REVISED PER COMPLETENESS REVIEW COMMENTS	MAY 09/25	GJM
1.	ISSUED FOR SITE PLAN APPLICATION	MARCH 21/25	GJM

SCALE

1:250

0 2 4 6 8 10

DESIGN

ARM/AM

CHECKED

ARM

DRAWN

ARM/CJF/AM

CHECKED

ARM

APPROVED

GJM

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PROFESSIONAL ENGINEER

A.R. MESTWARP
100201604
OCT 07/2025
PROVINCE OF ONTARIO

PROFESSIONAL DESIGNER

G.J. MACDONALD
OCT 07/2025
PROVINCE OF ONTARIO

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Website www.novatech-eng.com

LOCATION
1101 SPOOR STREET, CITY OF OTTAWA
COPPERWOOD FLATS - BLOCK 125

DRAWING NAME
GENERAL PLAN OF SERVICES

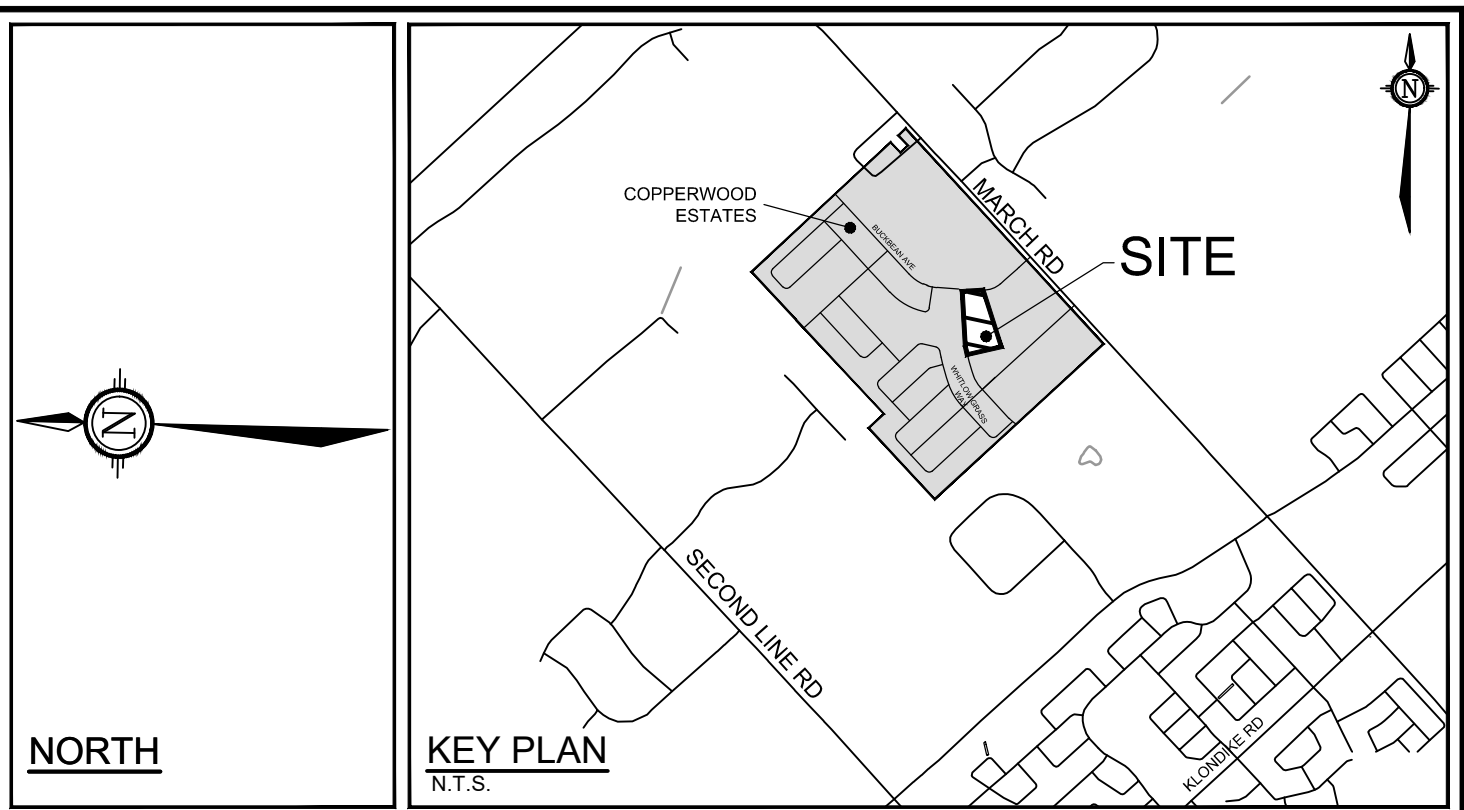
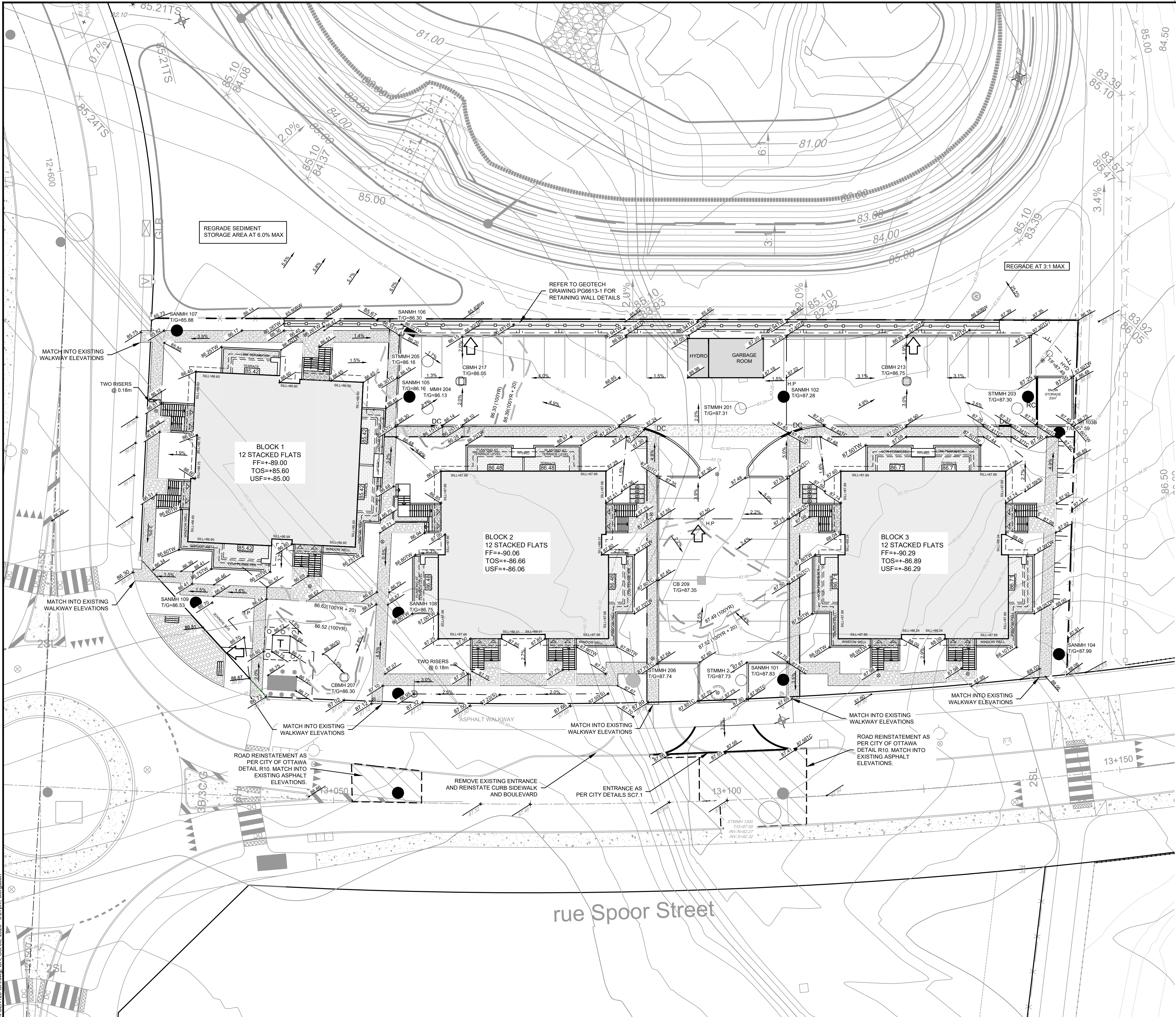
PROJECT No.
122144

REV
REV#5

DRAWING No.
122144-GP

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D07-125-0038



LEGEND	
PROPERTY LINE	FF= FINISHED FLOOR ELEVATION
MISC LEGAL LINE (EASEMENT, PROPERTY LINES)	TF= TOP OF FOUNDATION ELEVATION
REFER TO LEGAL PLAN FOR DETAILS	USF= UNDERSIDE OF FOOTING ELEVATION
PROPOSED ELEVATION	
PROPOSED SWALE ELEVATION	
PROPOSED TOP OF CURB ELEVATION	
PROPOSED TOP OF WALL ELEVATION	
PROPOSED BOTTOM OF WALL ELEVATION	
PROPOSED DWELLING ELEVATION	
SLOPE AND DIRECTION	
EXISTING ELEVATION	
DIRECTION OF MAJOR OVERLAND FLOW	
PROPOSED SAN MANHOLE	
PROPOSED STORM MANHOLE	
PROPOSED CATCHBASIN MANHOLE	
PROPOSED CATCHBASIN MANHOLE C/W ICD	
PROPOSED CATCHBASIN	
PROPOSED CATCHBASIN C/W ICD	
PROPOSED RETAINING WALL C/W RAILING	
PROPOSED LANDSCAPE DRAIN	
PROPOSED FIRE HYDRANT	
PROPOSED VALVE AND VALVE BOX	
PROPOSED SIDEWALK	
PROPOSED CURB	
PROPOSED DEPRESSED CURB	
SWALE AND DIRECTION OF FLOW	
TERRACING 3:1 SLOPE MAX (UNLESS OTHERWISE INDICATED)	
ROAD REINSTATEMENT	
PROPOSED TRANSFORMER WITH BOLLARDS	

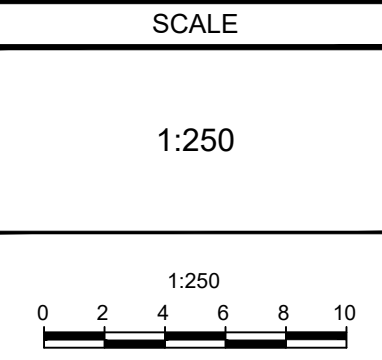
NOTES

- SENSITIVE MARINE CLAY TO BE REMOVED AND REPLACED WITH ENGINEERING FILL AS DIRECTED BY THE GEOTECHNICAL CONSULTANT.
- FOOTINGS ARE TO BE PROTECTED AGAINST FROST ACTION WHERE 1.5m OF COVER IS NOT PROVIDED.
- REFER TO MEMORANDUM TITLED 'GRADING AND SITE SERVICING REVIEW' PREPARED BY PATERSON GROUP DATED AUGUST 15TH, 2025 (PG6613-MEMO.02, REV 1)

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DESIGN	ARM/AM
CHECKED	ARM
DRAWN	ARM/CJF/AM
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APPROVED	GJM

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DRAWING NAME	GRADING PLAN
PROJECT No.	122144
REV	REV#5
DRAWING No.	122144-GR