

LEGEND



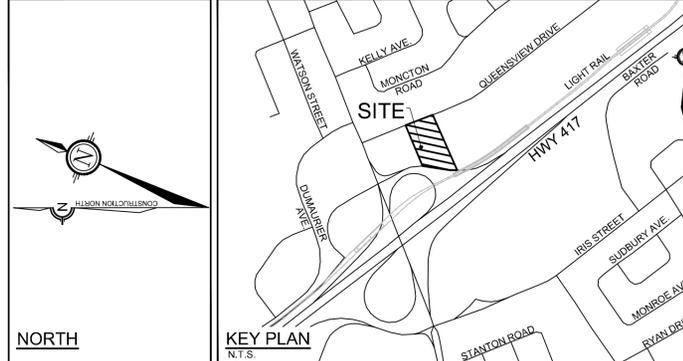
GENERAL NOTES:

- 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.
- COMPLETE ALL WORKS IN ACCORDANCE WITH THE MOST CURRENT CITY OF OTTAWA STANDARDS AND SPECIFICATIONS USING THE CURRENT GUIDELINES, BYLAWS AND STANDARDS INCLUDING MATERIALS OF CONSTRUCTION, DISINFECTION AND ALL RELEVANT REFERENCES TO OPSS, OPSS & AWWA GUIDELINES - ALL CURRENT VERSIONS AND 'AS AMENDED'.
- 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 MUNICIPAL AUTHORITIES.
- REMOVE FROM SITE ALL EXCESS EXCAVATED MATERIAL, ORGANIC MATERIAL AND DEBRIS UNLESS OTHERWISE INSTRUCTED BY ENGINEER. EXCAVATE AND REMOVE FROM SITE ANY CONTAMINATED MATERIAL. ALL CONTAMINATED MATERIAL SHALL BE DISPOSED OF AT A LICENSED LANDFILL FACILITY.
- ALL ELEVATIONS ARE GEODETIC.
- REFER TO GEOTECHNICAL INVESTIGATION REPORT (R# 160: PG4353-2, DATED MAY 19, 2021) PREPARED BY PATERSON GROUP INC. 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 SURFACED AREAS AND DIMENSIONS.
- REFER TO THE 'DEVELOPMENT SERVICES STUDY AND STORMWATER MANAGEMENT REPORT' (R-2021-066) PREPARED BY NOVATECH.
- SAW CUT AND KEYGRIND ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE-IN POINTS AS PER CITY OF OTTAWA STANDARDS (R10).

SEWER NOTES:

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

| ITEM | SPEC. No. | REFERENCE |
|------------------------------------|---|----------------|
| STORM/SANITARY MANHOLE (12000) | 701.010 | OPSD |
| STORM/CATCHBASIN MANHOLE (15000) | 701.011 | OPSD |
| 401.010 - TYPE 'B' | 401.010 | OPSD |
| SANITARY MANHOLE FRAME AND COVER | 401.010 - TYPE 'A' | OPSD |
| WATERTIGHT MANHOLE FRAME AND COVER | 401.030 | OPSD |
| CATCHBASIN MH FRAME & COVER | 401.010 Type 'B' | OPSD |
| CATCHBASIN (600x600) | 705.010 | OPSD |
| CATCHBASIN FRAME & COVER | S19 | CITY OF OTTAWA |
| SEWER TRENCH | S6 | CITY OF OTTAWA |
| STORM SEWER | PVC DR 35 (450mmØ PIPE AND SMALLER) | CITY OF OTTAWA |
| SANITARY SEWER | HDPE BOSS 2000 (600mmØ PIPE AND LARGER) | CITY OF OTTAWA |
| | PVC DR 35 | |
- THE SANITARY SERVICE LATERAL SHALL BE EQUIPPED WITH BACKFLOW PREVENTERS WITHIN THE BUILDING FOOTPRINT AS PER CITY OF OTTAWA STANDARD DETAILS S14.1 OR S14.2. REFER TO MECHANICAL PLANS FOR DETAILS.
- THE STORM SERVICE LATERAL SHALL BE EQUIPPED WITH A BACKFLOW PREVENTER WITHIN THE BUILDING FOOTPRINT AS PER CITY OF OTTAWA STANDARD DETAILS S14. REFER TO MECHANICAL PLANS FOR DETAILS.
- SERVICES ARE TO BE CONSTRUCTED TO 1.0m FROM FACE OF BUILDING AT A MINIMUM SLOPE OF 1.0%.
- PIPE BEDDING, COVER AND BACKFILL ARE TO BE COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. THE USE OF CLEAR CRUSHED STONE AS A BEDDING LAYER SHALL NOT BE PERMITTED.
- INSULATE ALL PIPES (SAN / STM) THAT HAVE LESS THAN 1.5m COVER WITH H-40 INSULATION PER INSULATION DETAIL FOR SHALLOW SEWERS. PROVIDE 150mm CLEARANCE BETWEEN PIPE AND INSULATION.
- CONCRETE MANHOLES ARE TO BE 1200mmØ STRUCTURES UNLESS OTHERWISE NOTED ON THE DRAWING. 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.
- TYPICAL STORM MANHOLES AND CATCHBASIN MANHOLES ARE TO HAVE 300mm SUMPS UNLESS OTHERWISE INDICATED.
- THE CONTRACTOR IS TO TELEVIEW (CCTV) ALL PROPOSED SEWERS, 200mmØ OR GREATER PRIOR TO BASE COURSE ASPHALT. UPON COMPLETION OF CONTRACT, THE CONTRACTOR IS RESPONSIBLE TO FLUSH AND CLEAN ALL SEWERS & APPURTENANCES. PROVIDE A COPY OF ALL CCTV INSPECTION REPORTS TO THE ENGINEER FOR REVIEW.
- 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 TIG 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 OPSS 410.07.16, 410.07.16.04 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.



WATERMAIN NOTES:

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

| ITEM | SPEC. No. | REFERENCE |
|--|------------------------------|----------------|
| WATERMAIN TRENCHING | W17 | CITY OF OTTAWA |
| HYDRANT INSTALLATION | W19 | CITY OF OTTAWA |
| THERMAL INSULATION IN SHALLOW TRENCHES | W22 | CITY OF OTTAWA |
| THERMAL INSULATION BY OPEN STRUCTURES | W23 | CITY OF OTTAWA |
| VALVE BOX ASSEMBLY | W24 | CITY OF OTTAWA |
| WATERMAIN CROSSING BELOW SEWERS | W25 | CITY OF OTTAWA |
| CATHODIC PROTECTION FOR PVC WATERMANS | W40 | CITY OF OTTAWA |
| WATERMAIN MATERIAL | PVC DR 18 (100mm AND LARGER) | |
- EXCAVATION, INSTALLATION, BACKFILL AND RESTORATION OF ALL WATERMANS 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.
- PROVIDE MINIMUM 0.5m CLEARANCE BETWEEN OUTSIDE OF PIPES AT ALL CROSSINGS, UNLESS OTHERWISE INDICATED.
- WATER SERVICE IS TO BE CONSTRUCTED TO WITHIN 1.0m OF FOUNDATION WALL AND CAPPED, UNLESS OTHERWISE INDICATED.

PROPOSED 200mmØ / 150mmØ WATER SERVICE TABLE

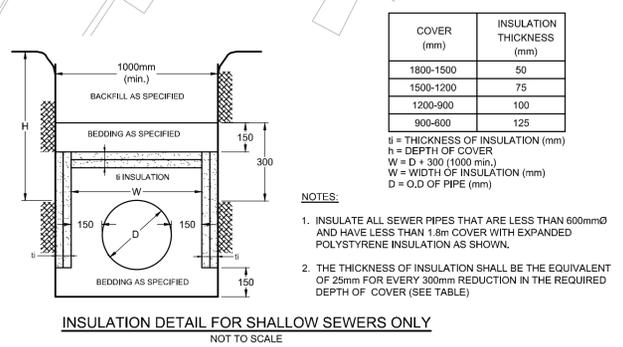
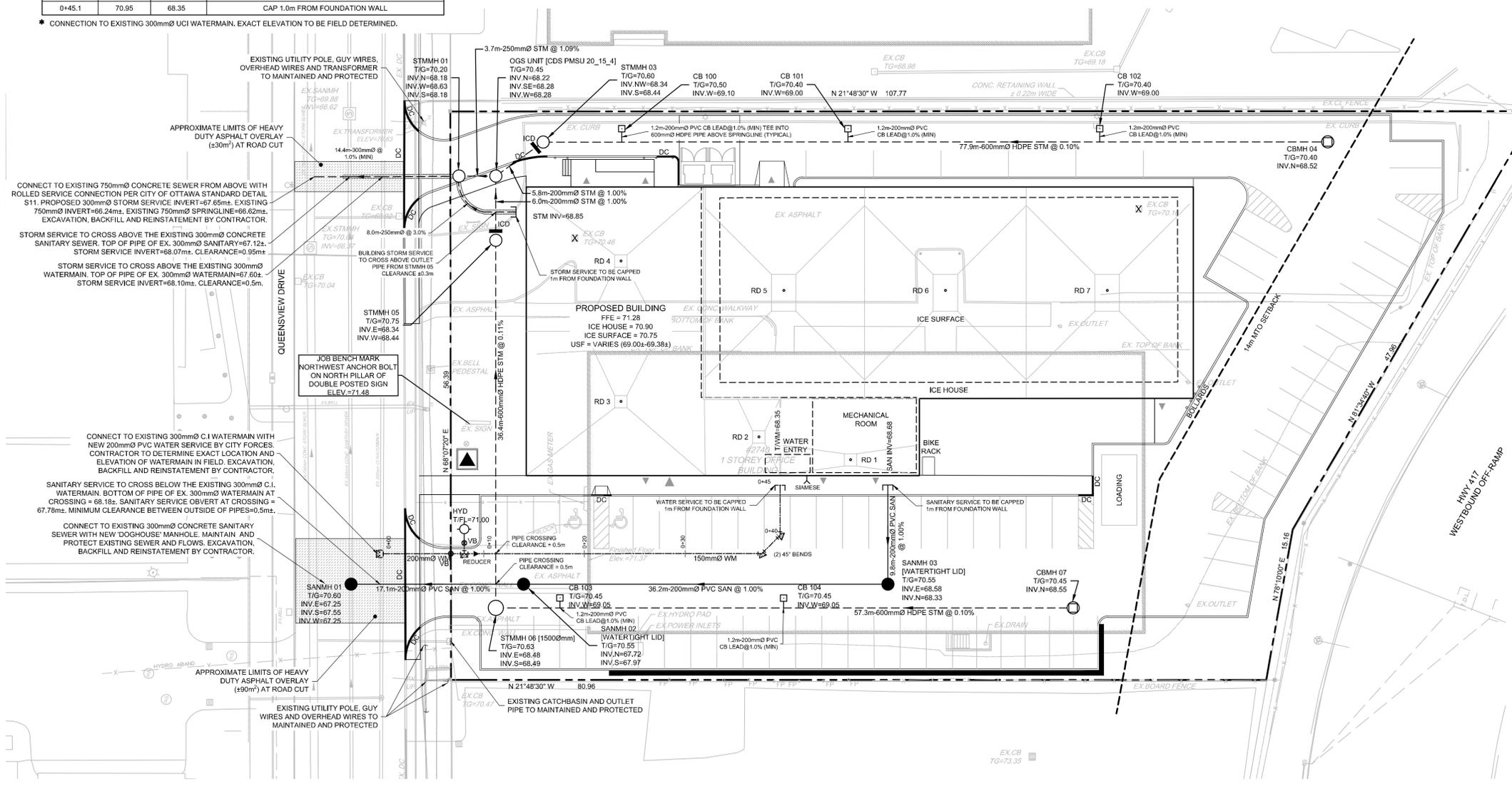
| STATION | SURFACE ELEVATION | T/WM ELEVATION | COMMENTS |
|---------|-------------------|----------------|--|
| 0+00 | 70.52± | 68.18± | 200mmØ WM CONNECTION TO EX. 300mmØ C.I. WM |
| 0+06.7 | 70.60 | 68.00 | PROPERTY LINE / 200mmØ V&VB |
| 0+08.0 | 70.59 | 68.00 | HYDRANT LEAD |
| 0+09.0 | 70.58 | 68.00 | 200x150mmØ REDUCER |
| 0+11.2 | 70.56 | 67.95 | CROSS BELOW 600mmØ STORM (CLEARANCE = 0.5m±) |
| 0+20 | 70.68 | 68.08 | --- |
| 0+30 | 70.80 | 68.20 | --- |
| 0+37.6 | 70.65 | 68.25 | 45° HORIZONTAL BEND |
| 0+40.2 | 70.73 | 68.30 | 45° HORIZONTAL BEND |
| 0+45.1 | 70.95 | 68.35 | CAP 1.0m FROM FOUNDATION WALL |

* CONNECTION TO EXISTING 300mmØ UCI WATERMAIN. EXACT ELEVATION TO BE FIELD DETERMINED.

PROPOSED ROOF DRAIN TABLE: AREA R-1 (ROOF DRAINS 1 to 7)

| AREA ID | ROOF DRAIN No. (WATTS MODEL) | ROOF DRAIN OPENING SETTING | 1.5 YEAR RELEASE RATE | APPROX. 5-YR PONDING DEPTH | 1:100 YEAR RELEASE RATE | APPROX. 100-YR PONDING DEPTH | | | | | | | | | | | | | |
|---------|------------------------------|----------------------------|-----------------------|----------------------------|---|------------------------------|---------------------|--------|----------|-------|----------|-------|-----|---------------------|--------|----------|-------|----------|-------|
| R-1 | RD 1 (RD-100-A-ADJ) | CLOSED | 0.32 L/s | 9 cm | 0.32 L/s | 13 cm | | | | | | | | | | | | | |
| R-1 | RD 2 (RD-100-A-ADJ) | CLOSED | 0.32 L/s | 8 cm | 0.32 L/s | 12 cm | | | | | | | | | | | | | |
| R-1 | RD 3 (RD-100-A-ADJ) | CLOSED | 0.32 L/s | 11 cm | 0.32 L/s | 15 cm | | | | | | | | | | | | | |
| R-1 | RD 4 (RD-100-A-ADJ) | CLOSED | 0.32 L/s | 11 cm | 0.32 L/s | 15 cm | | | | | | | | | | | | | |
| R-1 | RD 5 (RD-100-A-ADJ) | CLOSED | 0.32 L/s | 11 cm | 0.32 L/s </tr <tr> <td>R-1</td> <td>RD 6 (RD-100-A-ADJ)</td> <td>CLOSED</td> <td>0.32 L/s</td> <td>11 cm</td> <td>0.32 L/s</td> <td>15 cm</td> </tr> <tr> <td>R-1</td> <td>RD 7 (RD-100-A-ADJ)</td> <td>CLOSED</td> <td>0.32 L/s</td> <td>10 cm</td> <td>0.32 L/s</td> <td>14 cm</td> </tr> | R-1 | RD 6 (RD-100-A-ADJ) | CLOSED | 0.32 L/s | 11 cm | 0.32 L/s | 15 cm | R-1 | RD 7 (RD-100-A-ADJ) | CLOSED | 0.32 L/s | 10 cm | 0.32 L/s | 14 cm |
| R-1 | RD 6 (RD-100-A-ADJ) | CLOSED | 0.32 L/s | 11 cm | 0.32 L/s | 15 cm | | | | | | | | | | | | | |
| R-1 | RD 7 (RD-100-A-ADJ) | CLOSED | 0.32 L/s | 10 cm | 0.32 L/s | 14 cm | | | | | | | | | | | | | |

* REFER TO THE 'DEVELOPMENT SERVICING STUDY AND STORMWATER MANAGEMENT REPORT' (R-2021-066) PREPARED BY NOVATECH FOR DRAINAGE AREA IDENTIFIERS AND STORMWATER MANAGEMENT DETAILS.
 ** ALL CONTROLLED FLOW ROOF DRAINS FOR THE PROPOSED BUILDINGS TO BE WATTS 'ADJUSTABLE ACCUTROL' ROOF DRAINS.



INLET CONTROL DEVICE DATA TABLE - AREA A-1

| DESIGN EVENT | ICD TYPE (PLUG TYPE) | OUTLET STRUCTURE | DIAMETER OF OUTLET PIPE (mm) | PEAK DESIGN FLOW (L/s) | DESIGN HEAD (m) | WATER ELEVATION (m) | VOLUME (m³) | AVAILABLE STORAGE |
|--------------|----------------------|-------------------|------------------------------|------------------------|-----------------|---------------------|-------------|-------------------|
| 1:2 YR | IPX TEMPEST | 1200mmØ STM MH 03 | 200mmØ PVC | 2.8 | 0.46 | 68.90 | 17.4 | 69.9 m³ |
| 1:5 YR | VORTEX LMF 65 | | | 3.3 | 0.71 | 69.15 | 23.8 | |
| 1:100 YR | | | | 5.5 | 2.07 | 70.51 | 37.0 | |

INLET CONTROL DEVICE DATA TABLE - AREA A-2

| DESIGN EVENT | ICD TYPE (PLUG TYPE) | OUTLET STRUCTURE | DIAMETER OF OUTLET PIPE (mm) | PEAK DESIGN FLOW (L/s) | DESIGN HEAD (m) | WATER ELEVATION (m) | VOLUME (m³) | AVAILABLE STORAGE |
|--------------|----------------------|-------------------|------------------------------|------------------------|-----------------|---------------------|-------------|-------------------|
| 1:2 YR | IPX TEMPEST | 1200mmØ STM MH 05 | 200mmØ PVC | 5.1 | 0.56 | 69.00 | 26.0 | 66.1 m³ |
| 1:5 YR | VORTEX LMF 85 | | | 6.8 | 1.04 | 69.48 | 31.0 | |
| 1:100 YR | | | | 9.5 | 2.13 | 70.57 | 52.6 | |

PROPOSED SITE FLOWS & STORMWATER MANAGEMENT TABLE

| DESIGN EVENT | PRE-DEVELOPMENT CONDITIONS | | POST-DEVELOPMENT CONDITIONS | | | | | REDUCTION IN FLOW IN FLOW (L/s or %)** | |
|--------------|----------------------------|---------------------------|-----------------------------|----------------|----------------|----------------|--------------------|--|------------------|
| | SITE FLOWS (L/s) | TARGET CONTROL RATE (L/s) | A-0 FLOW (L/s) | A-1 FLOW (L/s) | A-2 FLOW (L/s) | R-1 FLOW (L/s) | CONTROL FLOW (L/s) | | TOTAL FLOW (L/s) |
| 1:2 YR | 81.6 | 17.4 | 2.9 | 2.8* | 5.1* | | 10.1* | 13.0 | 68.6 or 84% |
| 1:5 YR | 110.8 | (33.5 L/s/ha) | 4.0 | 3.3* | 6.8* | 2.2* | 12.3* | 16.3 | 94.5 or 85% |
| 1:100 YR | 212.6 | | 8.1 | 5.5* | 9.5* | | 17.2* | 25.3 | 187.3 or 88% |

* TOTAL CONTROLLED FLOW IS LESS THAN THE TARGET CONTROL RATE (EXCLUDING A-0 DUE TO DIFFERENT TIMES TO PEAK)
 ** REDUCED FLOW COMPARED TO PRE-DEVELOPMENT UNCONTROLLED CONDITIONS

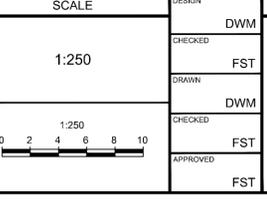
NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.



OWNER INFORMATION
 GRANITE CURLING CLUB OF WEST OTTAWA
 2026 SCOTT STREET, OTTAWA, ON K1Z 6T1
 TELEPHONE: 613-732-1843
 manager@OttawaGranite.com

DESIGN BUILDER INFORMATION
 MORLEY HOPPNER INC.
 1818 BRADLEY SIDE ROAD, OTTAWA, ON K0A 1L0
 CONTACT: KEN HOPPNER, CEO
 TELEPHONE: 613-831-5490
 khoppner@morleyhoppner.com

| No. | REVISION | DATE | BY |
|-----|-------------------------------|-----------|-----|
| 1 | ISSUED FOR SITE PLAN APPROVAL | JUL 26/21 | FST |



FOR REVIEW ONLY

| | |
|----------|-----|
| DESIGN | DWM |
| CHECKED | FST |
| DRAWN | DWM |
| CHECKED | FST |
| APPROVED | FST |

NOVATECH
 Engineers, Planners & Landscape Architects
 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
 CITY OF OTTAWA
 2740 QUEENSVIEW DRIVE

DRAWING NAME
 GENERAL PLAN OF SERVICES

PROJECT No. 121127-00
 REV 121127-GP

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