

**APPROVED**  
By Kersten Nitsche at 11:47 am, Nov 27, 2024

*Kersten Nitsche*

**KERSTEN NITSCHKE, MCIP RPP  
MANAGER (A), DEVELOPMENT REVIEW WEST  
PLANNING, DEVELOPMENT AND BUILDING SERVICES  
DEPARTMENT, CITY OF OTTAWA**

- 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 OPSDS, OPSD & 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 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 ELEVATIONS ARE GEODETIC.
  - REFER TO GEOTECHNICAL REPORT (NO. 02211293.000, DATED MAY 10, 2023), PREPARED BY ENGLOBE CORP. FOR SUBSURFACE CONDITIONS, CONSTRUCTION RECOMMENDATIONS, AND GEOTECHNICAL INSPECTION REQUIREMENTS. THE GEOTECHNICAL INSPECTION REPORT IS TO BE REVIEWED ON-SITE CONDITIONS AFTER PRIOR TO PLACEMENT OF THE GRANULAR MATERIAL.
  - REFER TO ARCHITECTS AND LANDSCAPE ARCHITECTS DRAWINGS FOR BUILDING AND HARD SURFACE AREAS AND DIMENSIONS.
  - REFER TO THE DEVELOPMENT SERVICING STUDY & STORMWATER MANAGEMENT REPORT (R-2023-014) PREPARED BY NOVATECH.
  - SAW CUT AND KEY GRIND ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE IN POINTS AS PER CITY OF OTTAWA STANDARDS (R10).
  - PROVIDE LINE / PARKING PAINTING AS REQUIRED PER THE ARCHITECTURAL SITE PLAN.

- WATERMAIN NOTES:**
- SUPPLY AND CONSTRUCT ALL WATERMAINS AND APPURTENANCES IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARDS AND SPECIFICATIONS - ALL CURRENT VERSIONS AND 'AS AMENDED'. 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 THE CONTRACTOR IN THE PRESENCE OF OTTAWA FORCES.
  - 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 AT OPEN STRUCTURES W23 CITY OF OTTAWA  
VALVE BOX ASSEMBLY W24 CITY OF OTTAWA  
WATERMAIN CROSSING BELOW SEWER W25 CITY OF OTTAWA  
WATERMAIN CROSSING OVER SEWER W25.2 CITY OF OTTAWA  
WATERMAIN PVC DR 18
  - 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.
  - BENCH MARK IS TO BE CONSTRUCTED TO WITHIN 1.0m OF FOUNDATION WALL AND CAPPED.

- BENCHMARK NOTES:**
- ELEVATIONS SHOWN ON THIS PLAN ARE RELATED TO GEODETIC DATUM (CGVD28-78) AND ARE DERIVED FROM PUBLISHED CONTROL MONUMENT 0011983975 HAVING A PUBLISHED ELEVATION OF 90.612 METRES.
  - IT IS THE RESPONSIBILITY OF THE USER OF THIS INFORMATION TO VERIFY THAT THE SITE BENCHMARK HAS NOT BEEN ALTERED OR DISTURBED AND THAT ITS RELATIVE ELEVATION AND DESCRIPTION AGREES WITH THE INFORMATION SHOWN ON THIS DRAWING.
  - BENCHMARK WAS PROVIDED ON PLAN OF SURVEY SHOWING TOPOGRAPHIC DETAIL OF PART OF BLOCK 2, REGISTERED PLAN 4M-1012, CITY OF OTTAWA, SURVEYED BY J.D. BARNES LIMITED.

**PROPOSED 150mmØ WATERMAIN TABLE**

| STATION | SURFACE ELEVATION | TWM ELEVATION | COMMENTS                                 |
|---------|-------------------|---------------|--|
| 0+000   | 95.05             | 91.70*        | CONNECTION TO EXISTING 300mmØ WM         |
| 0+001.5 | 95.03             | 92.33         | 22.5' VERTICAL BEND                      |
| 0+002.7 | 95.34             | 92.33         | VALVE BOX AT PROPERTY LINE               |
| 0+011.1 | 95.06             | 92.23         | CROSS BELOW 600mmØ STM (±0.5m CLEARANCE) |
| 0+017.0 | 95.12             | 92.29         | HYDRANT TEE                              |
| 0+022.1 | 95.12             | 92.34         | 45' HORIZONTAL BEND                      |
| 0+024.1 | 95.10             | 92.35         | 45' HORIZONTAL BEND                      |
| 0+030.5 | 95.04             | 92.35         | BUILDING SERVICE TEE                     |
| 0+031.5 | 95.03             | 92.35         | VALVE BOX                                |
| 0+032.5 | 95.02             | 92.35         | BUILDING SERVICE TEE                     |
| 0+035.9 | 95.00             | 92.35         | CROSS ABOVE 200mmØ SAN (±0.7m CLEARANCE) |
| 0+046.4 | 95.02             | 92.35         | CROSS BELOW 600mmØ STM (±0.5m CLEARANCE) |
| 0+067.0 | 94.86             | 92.16         | VALVE BOX AT PROPERTY LINE               |
| 0+076.5 | 94.50             | 92.10         | CROSS EX. 450mmØ STM                     |
| 0+079.4 | 94.55             | 92.15         | CROSS EX. 250mmØ SAN                     |
| 0+084.4 | 94.60             | 92.20*        | CONNECTION TO EXISTING 300mmØ WM         |

**PROPOSED 150mmØ WATERMAIN TABLE**

| STATION | SURFACE ELEVATION | TWM ELEVATION | COMMENTS                         |
|---------|-------------------|---------------|----------------------------------|
| 1+000   | 95.04             | 92.35         | CONNECTION TO PROPOSED 150mmØ WM |
| 1+008.2 | 95.05             | 92.65         | VALVE BOX                        |
| 1+020.6 | 95.45             | 93.05         | CAP AT 1.0m FROM BUILDING FACE   |

**PROPOSED 150mmØ WATERMAIN TABLE**

| STATION | SURFACE ELEVATION | TWM ELEVATION | COMMENTS                         |
|---------|-------------------|---------------|----------------------------------|
| 2+000   | 95.02             | 92.35         | CONNECTION TO PROPOSED 150mmØ WM |
| 2+008.2 | 95.05             | 92.65         | VALVE BOX                        |
| 2+020.6 | 95.45             | 93.05         | CAP AT 1.0m FROM BUILDING FACE   |

**CRITICAL SEWER PIPE CROSSING TABLE**

| CROSSING* | LOWER PIPE           | HIGHER PIPE          | CLEARANCE | SURFACE ELEVATION |
|-----------|----------------------|----------------------|-----------|-------------------|
| 1         | 150mmØ TWM-92.23     | 600mmØ STM INV-92.84 | ± 0.5m    | 95.06 m           |
| 2         | 150mmØ TWM-92.35     | 600mmØ STM INV-92.95 | ± 0.5m    | 94.91 m           |
| 3         | 200mmØ SAN OBV-91.50 | 150mmØ WM INV-92.20  | ± 0.7m    | 95.00 m           |
| 4         | 200mmØ SAN OBV-91.43 | 600mmØ STM INV-92.86 | ± 1.33m   | 94.87 m           |

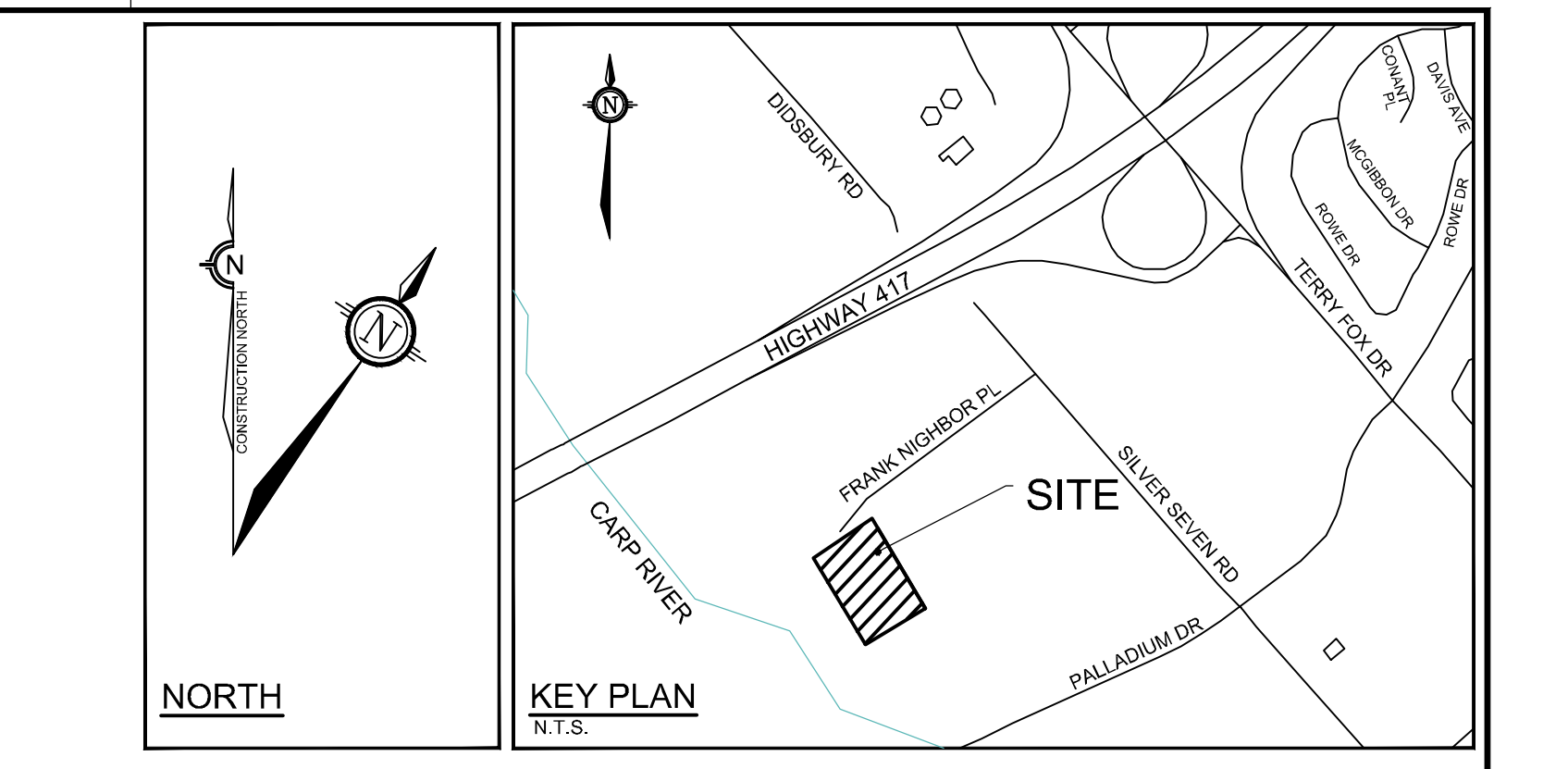
**ICD TABLE - CBMH116 (AREAS A-1a TO A-1h, R-1 & R-2)**

| DESIGN EVENT | TYPE OF ICD              | DIAMETER OF OUTLET PIPE (mm) | DESIGN FLOW (L/s) | DESIGN HEAD (m) | PONDING ELEV. (m) | VOLUME** (m³) |
|--------------|--------------------------|------------------------------|-------------------|-----------------|-------------------|---------------|
| 1.2 YR       | 109mm DIA. ORIFICE PLATE | 300                          | 31.6              | 1.57            | 94.79             | 78            |
| 1.5 YR       |                          |                              | 31.3              | 1.54            | 94.97             | 132           |
| 1.100 YR     |                          |                              | 25.2              | 1.09            | 95.10             | 337           |

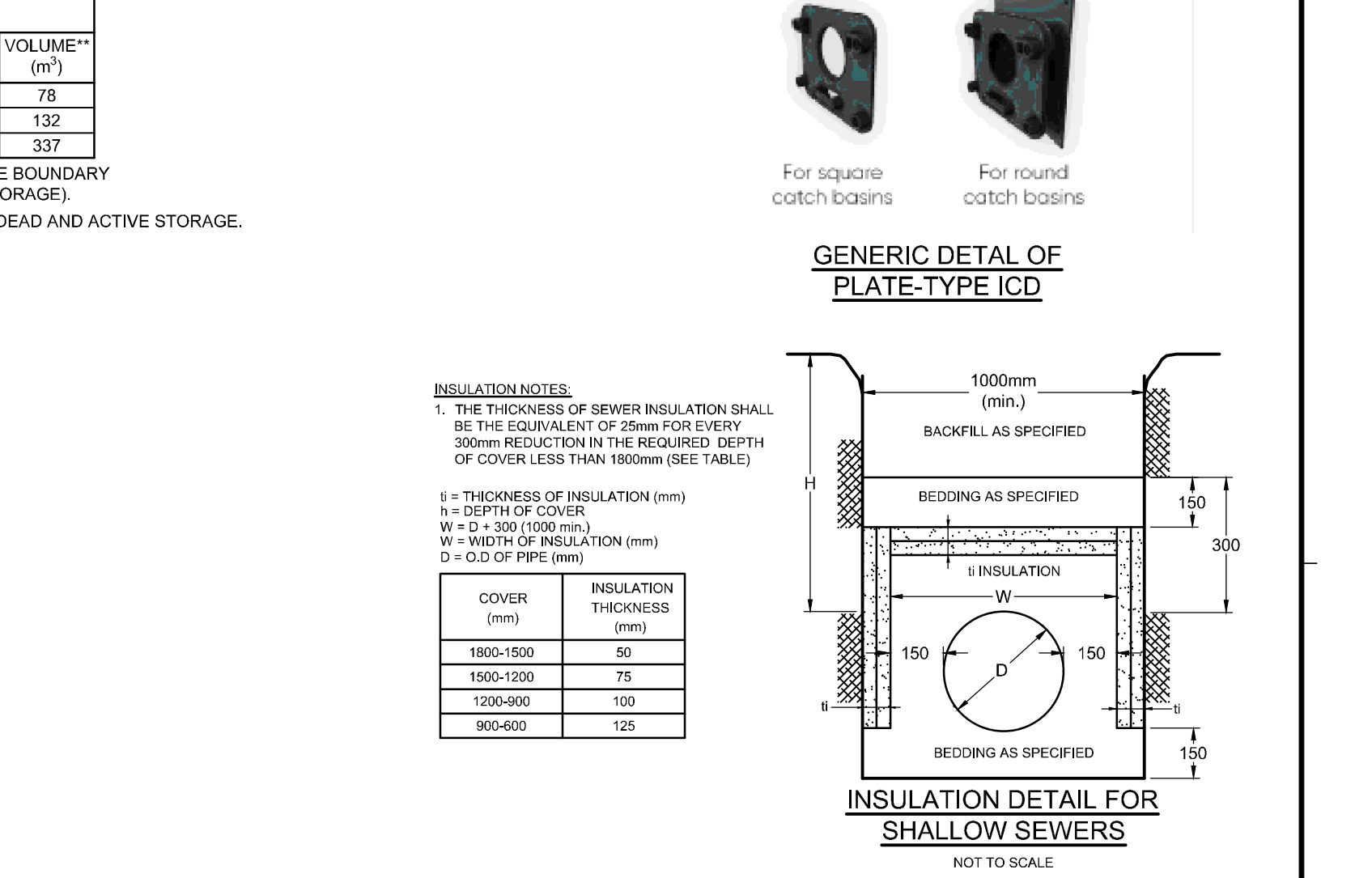
**SITE FLOWS & STORMWATER MANAGEMENT TABLE**

| DESIGN EVENT | PRE-DEVELOPMENT CONDITIONS |                              | POST-DEVELOPMENT CONDITIONS       |                                    | CHANGE FROM PRE TO POST (L/s or %) |
|--------------|----------------------------|------------------------------|-----------------------------------|------------------------------------|------------------------------------|
|              | UNCONTROLLED FLOW (L/s)    | ALLOWABLE RELEASE RATE (L/s) | A-1a to A-1h, DIRECT RUNOFF (L/s) | A-1a to A-1h, R-1 & R-2 FLOW (L/s) |                                    |
| 1.2 YR       | 34.7                       | 40.7                         | 5.3                               | 31.6                               | 36.9 2.2 or -13%                   |
| 1.5 YR       | 47.1                       |                              | 7.2                               | 31.3                               | 38.5 -8.6 or -18%                  |
| 1.100 YR     | 100.9                      |                              | 14.4                              | 25.2                               | 39.6 -61.3 or -61%                 |

- 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  
CATCHBASIN (600x600mm) 705.010 OPSD  
STORM / SANITARY MANHOLE (1200mmØ) 701.010 OPSD  
CB, FRAME & COVER 400.020 OPSD  
SANITARY MH FRAME & COVER 401.010 - TYPE "A" OPSD  
STORM / CBMH MANHOLE FRAME AND COVER 401.010 - TYPE "B" OPSD  
WATERTIGHT MH FRAME AND COVER 401.030 OPSD  
SEWER TRENCH S6 CITY OF OTTAWA  
STORM SEWER CONC. 65-D (450mmØ or greater), PVC DR 35 (SMALLER THAN 450mmØ)  
SANITARY SEWER PVC DR 35  
CATCHBASIN LEAD
  - ALL STORM AND SANITARY SERVICE LATERALS SHALL BE EQUIPPED WITH BACKFLOW PREVENTION DEVICES AS PER THE CITY OF OTTAWA STANDARD DETAILS S14 AND S14.1 OR S14.2.
  - INSULATE ALL PIPES (SAN/STM) THAT HAVE LESS THAN 18m COVER WITH HI-40 INSULATION PER INSULATION DETAIL FOR SHALLOW SEWERS. PROVIDE 150mm CLEARANCE BETWEEN PIPE AND INSULATION.
  - 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.
  - FLEXIBLE CONNECTIONS ARE REQUIRED FOR CONNECTING PIPES TO MANHOLES (FOR EXAMPLE KOR-N-SEAL). THE CONCRETE CRADLE FOR THE PIPE CAN BE ELIMINATED.
  - 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 OPSD 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.
  - ALL STORM MANHOLES AND CATCHBASIN MANHOLES ARE TO HAVE 300mm SUMPS UNLESS OTHERWISE INDICATED. ALL CATCHBASINS ARE TO HAVE 600mm SUMPS.
  - ALL CATCHBASINS, MANHOLES AND/OR CATCHBASIN MANHOLES THAT ARE TO HAVE ICD'S INSTALLED WITHIN THEM ARE TO HAVE 600mm SUMPS.
  - IF REQUIRED, ALL WEEPING TILE SYSTEMS ARE TO BE PUMPED TO THE SURFACE AS INDICATED ON THE GENERAL PLAN OF SERVICES DRAWING. REFER TO MECHANICAL PLANS FOR DETAILS.
  - CONTRACTOR 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.
  - 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.



- LEGEND**
- PROPERTY LINE
  - PROPOSED BUILDING ENTRANCE
  - SAN MH 101 (WT LID) PROPOSED SANITARY MH (c/w WATERTIGHT LID) & SEWER
  - PROPOSED SITE LIGHTING (REFER TO ELEC)
  - PROPOSED TRANSFORMER
  - CBMH 104 PROPOSED CATCHBASIN MANHOLE & SEWER
  - PROPOSED SIGN
  - CB 01 PROPOSED CATCHBASIN c/w LEAD
  - PROPOSED STORM MANHOLE & SEWER
  - EXISTING CONCRETE CURB
  - EXISTING SANITARY MANHOLE AND SEWER
  - EXISTING CATCHBASIN MANHOLE
  - EXISTING STORM MANHOLE AND SEWER
  - EXISTING CATCHBASIN C/W CATCHBASIN LEAD
  - EXISTING UTILITY POLE C/W GUY WIRES
  - EXISTING WATERMAIN
  - EXISTING HYDRANT C/W VALVE & LEAD
  - EXISTING LIGHT STANDARD
  - EXISTING FENCE
  - DEPRESSED BARRIER CURB (15cm CURB HEIGHT)
  - DEPRESSED BARRIER CURB (60mm/5cm CURB HEIGHT)
  - PROPOSED WATERMAIN AND DIAMETER
  - PROPOSED VALVE AND VALVEBOX
  - PROPOSED BEND AND THRUSTBLOCK 11.25', 22.5', 45' or TEE
  - PROPOSED WATER METER AND REMOTE METER
  - PROPOSED CAP
  - PROPOSED INLET CONTROL DEVICE
  - THERMAL INSULATION FOR SHALLOW SEWERS
  - PROPOSED TW51
  - PROPOSED PRIVACY FENCE
  - PROPOSED ROOF DRAIN



**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.

**OWNER INFORMATION**  
401 REAL ESTATE TRUST INC.  
2225 EAGLE STREET N.  
CAMBRIDGE, ONTARIO, N3H 4R7  
TED LANCASTER  
PHONE: (705) 816-6355  
ted.lancaster@401auto.ca

| No. | REVISION                              | DATE       | BY  |
|-----|---------------------------------------|------------|-----|
| 4   | REVISED PER CITY COMMENTS             | MAR 27/24  | FST |
| 3   | REVISED PER CITY COMMENTS             | FEB 12/24  | FST |
| 2   | REVISED PER CITY COMMENTS             | SEPT 29/23 | FST |
| 1   | ISSUED FOR SITE PLAN CONTROL APPROVAL | MAY 11/23  | FST |

| DESIGN   | FOR REVIEW ONLY |
|----------|-----------------|
| DESIGN   | ZA              |
| CHECKED  | FST             |
| DRAWN    | ZA              |
| CHECKED  | CV              |
| APPROVED | FST             |

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Website www.novatech-eng.com

LOCATION  
CITY OF OTTAWA  
40 FRANK NIGHBOR PLACE

DRAWING NAME  
**GENERAL PLAN OF SERVICES**

PROJECT No. 123002  
REV #4  
DRAWING No. 123002-GP  
Plan #19002

M:\2023\123002-GP\Drawings\123002-GP.dwg, GP\_Mar\_28\_2024 - 2:10pm, cns

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