

M E M O R A N D U M

DATE: MARCH 9, 2018

TO: RICHARD BUCHANAN

FROM: JUSTIN GAUTHIER

RE: 10 DES OBLATS AVENUE – GREYSTONE VILLAGE 2A / 2B MIXED
USE BUILDING: SITE SERVICING AND STORMWATER
MANAGEMENT MEMORANDUM

CC: JOHN RIDDELL

ATTACHED: 114025-GP(2A/2B): GENERAL PLAN OF SERVICES
114025-GR(2A/2B): GRADING, EROSION AND SEDIMENT CONTROL PLAN
116143-STM(2A/2B): STORMWATER MANAGEMENT PLAN
(114025-2)

This memo is supplementary to the “*Greystone Village - 175 Main Street: Site Servicing, Stormwater Management, Noise, Erosion and Sediment Control Brief (Phase 2 and 3), R-2017-089*”, dated May 26, 2017 to provide specifics related to the Greystone Village 2A / 2B Mixed Use Building which is part of the overall Greystone Village subdivision development.

The proposed development is located at 10 des Oblats Avenue in Old Ottawa East, east of Main Street, south of des Oblats Avenue, west of Deschâtelets Avenue and north of the Grande Allée within the City of Ottawa. The existing property is currently partially occupied by the sales center and also partially vacant. The proposed re-development of this portion of the site will consist of both a 6-storey and a 9-storey mixed use building that will contain 122 units and 122 units respectively. A total of approximately 186 underground and surface parking spaces will be provided on 1 level of underground parking and a small surface parking lot.

The subject site is approximately 0.6591 ha in area. The development will have a two-way vehicular access to the site located on des Oblats Avenue, as well as a ramp access to the underground parking garage.

This site servicing and stormwater management memorandum will outline how the site will be serviced with sanitary, storm and watermain; and will demonstrate that adequate municipal capacity is available within the proposed infrastructure to service the development.

Sanitary

The proposed 6-storey building at the corner of Main Street/des Oblats Avenue will be serviced by an existing 150mm dia. sanitary service that connects to the existing 375mm dia. sanitary sewer on Main Street.

The proposed 9-storey building at the corner of des Oblats Avenue/Deschâtelets Avenue will be serviced by a 150mm dia. sanitary service that connects to the existing 250mm dia. sanitary sewer on Deschâtelets Avenue.

The ultimate outlet is the existing 1350mm Rideau River Interceptor trunk sewer that runs parallel to the Rideau River on the eastern portion of the overall site, as well as the existing 375mm Main Street sewer.

The development will consist of 244 suites, therefore:

2A (to Main Street)

$$Q_{SAN} = 125 \text{ units} \times 2.1 \text{ persons/unit} \times 350 \text{ L/cap/day} = 91,875 \text{ L/day}$$

$$\text{Average Sanitary Flow} = 91,875 \text{ L/day} = 1.06 \text{ L/sec}$$

$$\text{Peak Sanitary Flow} = 4.24 \text{ L/sec (with PF} = 4.0 \Rightarrow \text{max for residential)}$$

$$\text{Extraneous flow} = 0.28 \text{ L/sec/ha} \times 0.32 \text{ ha} = 0.0896 \text{ L/sec}$$

Therefore,

$$\text{Total Site Average Sanitary Flow to Main St} = 1.96 \text{ L/sec}$$

$$\text{Total Site Peak Sanitary Flow to Main St} = 5.14 \text{ L/sec (with PF)}$$

2B

$$Q_{SAN} = 119 \text{ units} \times 2.1 \text{ persons/unit} \times 350 \text{ L/cap/day} = 87,465 \text{ L/day}$$

$$\text{Average Sanitary Flow} = 87,465 \text{ L/day} = 1.01 \text{ L/sec}$$

$$\text{Peak Sanitary Flow} = 4.04 \text{ L/sec (with PF} = 4.0 \Rightarrow \text{max for residential)}$$

$$\text{Extraneous flow} = 0.28 \text{ L/sec/ha} \times 0.3391 \text{ ha} = 0.0949 \text{ L/sec}$$

Therefore,

$$\text{Total Site Average Sanitary Flow to Deschâtelets Ave} = 1.19 \text{ L/sec}$$

$$\text{Total Site Peak Sanitary Flow to Deschâtelets Ave} = 4.13 \text{ L/sec (with PF)}$$

The proposed development population estimates and sanitary flows accounted for in the *"Greystone Village - 175 Main Street: Site Servicing, Stormwater Management, Noise, Erosion and Sediment Control Brief (Phase 2 and 3)"* are based on the City of Ottawa Sewer Design Guidelines.

Stormwater

The site has an overall slope towards both the Rideau River to the East and to Main Street to the west. Storm runoff from the majority of the site is conveyed overland towards the Rideau River, with a portion conveyed towards Main Street.

The proposed 6-storey building at the corner of Main Street/des Oblats Avenue will be serviced by an existing 250mm dia. storm service that connects to the existing 1350mm dia. storm sewer on Main Street.

The proposed 9-storey building at the corner of des Oblats Avenue/Deschâtelets Avenue will be serviced by a 200mm dia. storm service that connects to the existing 525mm dia. storm sewer on Deschâtelets Avenue.

The ultimate outlet is the Rideau River on the eastern portion of the overall site, as well as the Main Street sewer on the western portion.

As discussed in the “*Greystone Village - 175 Main Street: Site Servicing, Stormwater Management, Noise, Erosion and Sediment Control Brief (Phase 2 and 3)*”, water quality control will be provided within the subdivision’s storm sewer system with Vortech type structures and water quantity control is not required, other than for the roof, since the sewers are ultimately discharging directly to the Rideau River, provided the outlets are designed with suitable erosion protection measures. **The roof is to be controlled to 80L/s/ha. Furthermore, 0.32ha will drain to Main Street with a flow of 55.09L/s (max).**

The site will be graded such that flows in excess of the 100-year storm event will be conveyed overland to Main Street, des Oblats Avenue, Deschâtelets Avenue, as well as the Grande Allée.

Erosion and sediment control measures will be implemented during all phases of construction and inspected regularly.

Watermain

The proposed 6-storey building at the corner of Main Street/des Oblats Avenue will be serviced by an existing 200mm dia. water service that connects to the existing 400mm dia. watermain on Main Street.

The proposed 9-storey building at the corner of des Oblats Avenue/Deschâtelets Avenue will be serviced by a 200mm dia. water service that connects to the existing 250mm dia. watermain on des Oblats Avenue.

It should be noted that both services will need to be interconnected for redundancy.

The existing 250mm dia. watermain on des Oblats Avenue is looped from the existing 200mm dia. watermain on Clegg Street to the new 400mm dia. watermain on Main Street.

Estimated domestic water demands for the development are roughly the same as the proposed development sanitary flows listed above. Therefore:

Average Day Demand = 2.07 L/s

Maximum Day Demand = 2.07 L/s * 2.5 = 5.175 L/s

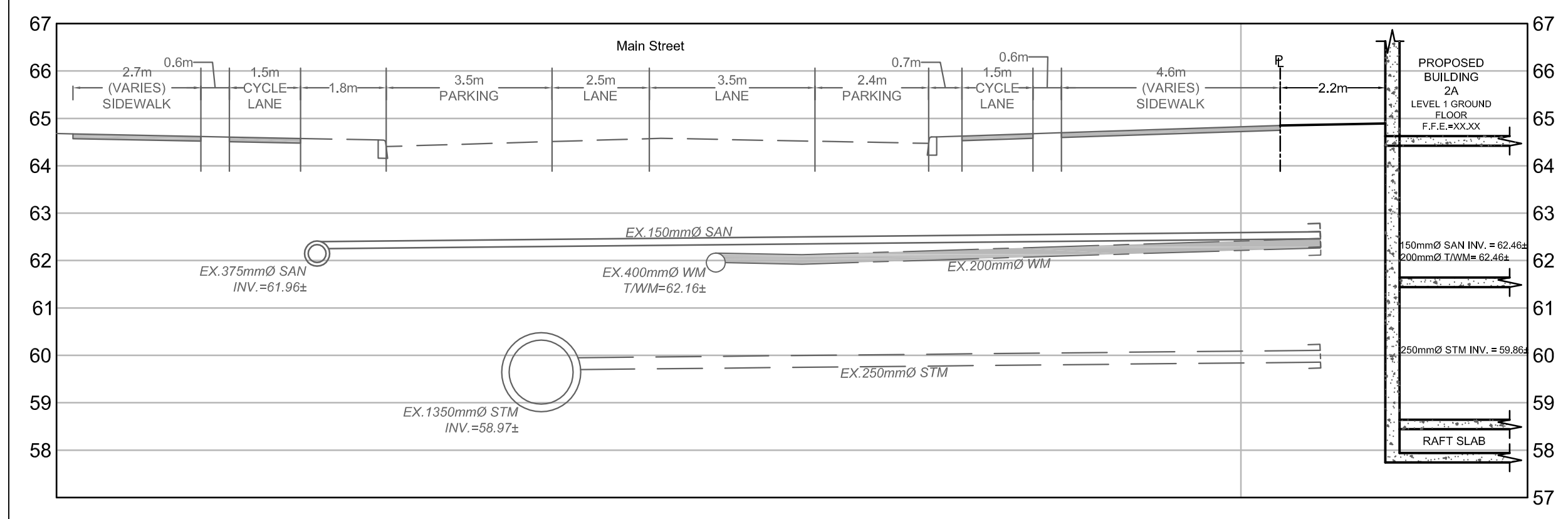
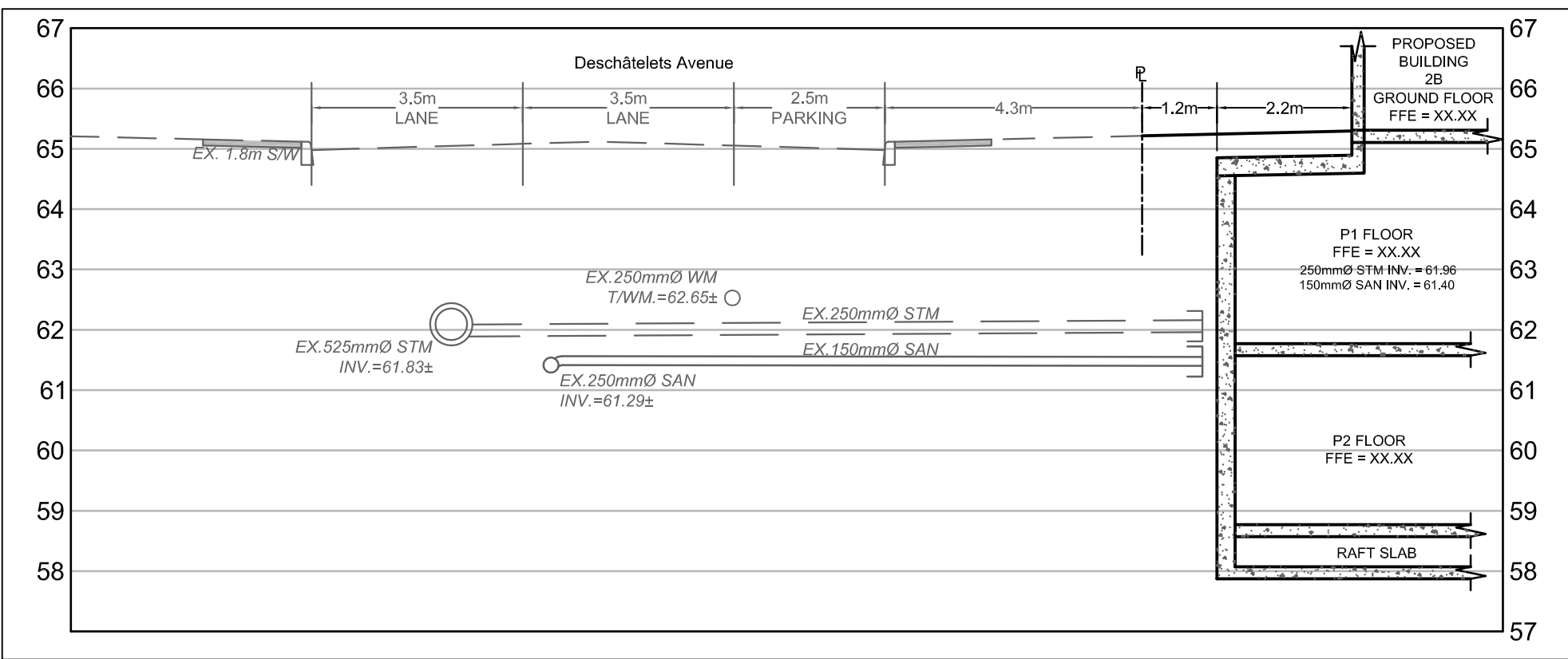
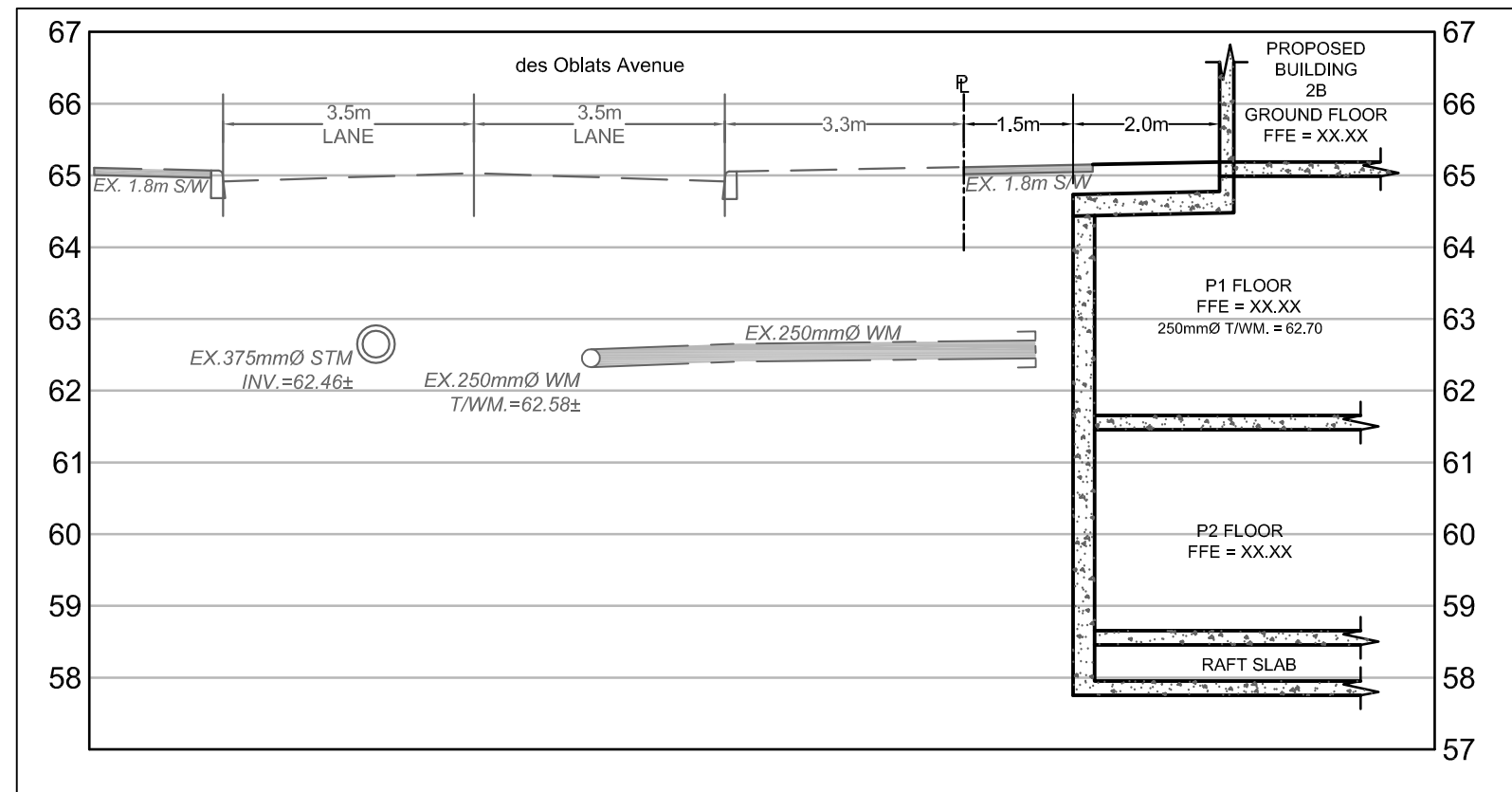
Maximum Hourly Demand = 5.175 * 2.2 = 11.385 L/s

The hydraulic analysis performed for the overall site as per the "*Greystone Village - 175 Main Street: Site Servicing, Stormwater Management, Noise, Erosion and Sediment Control Brief (Phase 2 and 3)*" demonstrates that the system will work for domestic water as well as fire demand.

We submit the following and request your review and approval in order that we can receive site plan approval.

Thanks.





SERVICING PROFILE - MAIN STREET

PROPOSED BUILDING 2A - ROOF DRAIN TABLE						
AREA ID	ZURN SPECIFICATION	NOTCHES	POST DEVELOPMENT ZURN ROOF DRAIN CONTROL PARAMETERS			
			1.5 - YEAR EVENT		1:100 - YEAR EVENT	
			HEAD(m)	Q(l/s)	HEAD(m)	Q(l/s)
RD 1 - RD 21 AS REQUIRED FOR 80L/S/ha	-	-	-	-	-	-
TOTAL			-	-	-	-

ROOF AREAS RD 1 TO RD 21 WILL HAVE CONTROLLED ROOF DRAINS AND WILL DIRECT CONTROLLED RUNOFF TO THE OUTLET VIA THE BUILDING'S INTERNAL PIPES.

PROPOSED BUILDING 2B - ROOF DRAIN TABLE						
AREA ID	ZURN SPECIFICATION	NOTCHES	POST DEVELOPMENT ZURN ROOF DRAIN CONTROL PARAMETERS			
			1.5 - YEAR EVENT		1:100 - YEAR EVENT	
			HEAD(m)	Q(l/s)	HEAD(m)	Q(l/s)
RD 22 TO RD 32 AS REQUIRED FOR 80L/S/ha	-	-	-	-	-	-
TOTAL			-	-	-	-

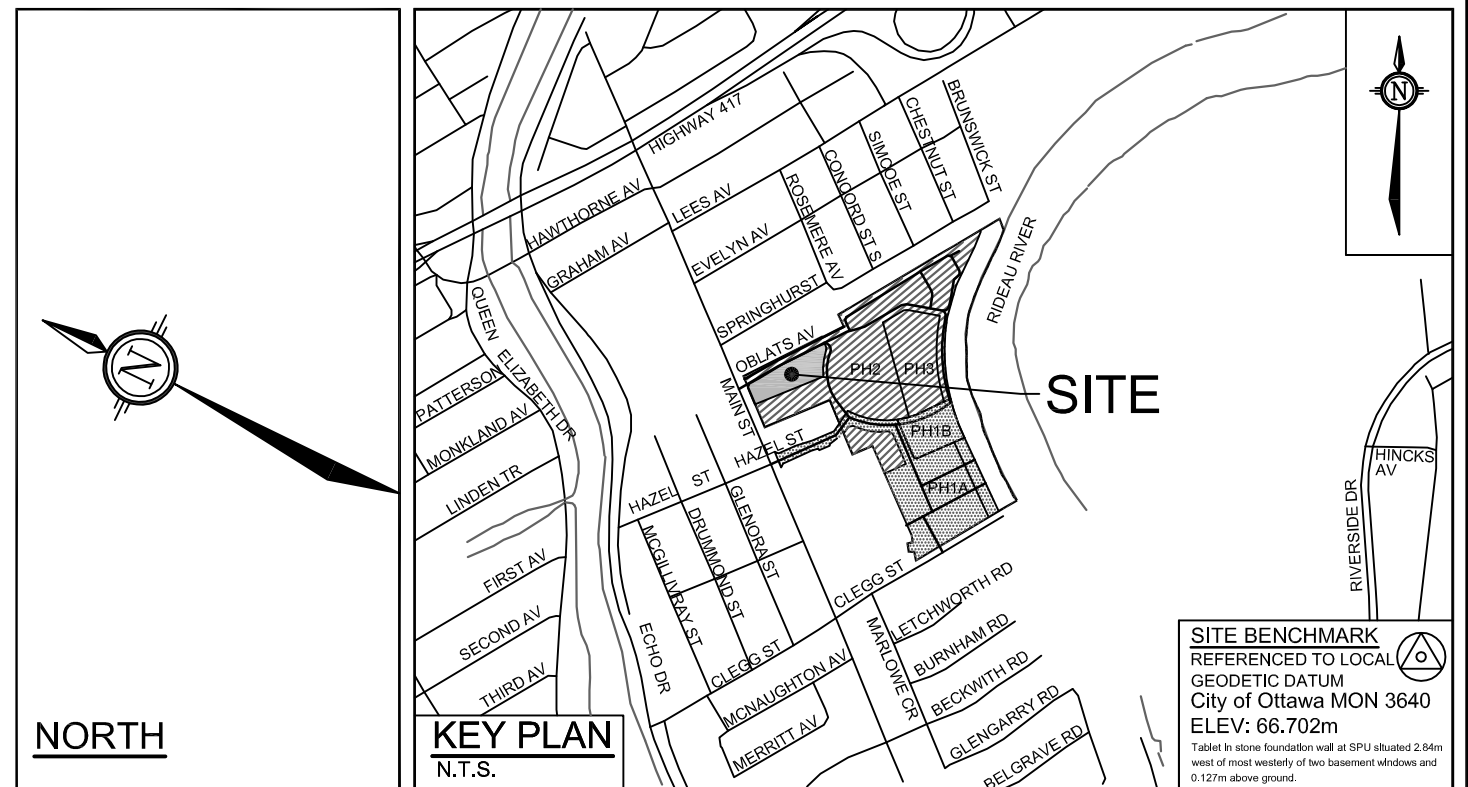
ROOF AREAS RD 22 TO RD 32 WILL HAVE CONTROLLED ROOF DRAINS AND WILL DIRECT CONTROLLED RUNOFF TO THE OUTLET VIA THE BUILDING'S INTERNAL PIPES.

WATERMAIN TABLE - DES OBLATS AVE				
STATION	SURFACE ELEVATION	TOP OF WM ELEVATION	DESCRIPTION	
0+000	64.99	62.58	CONNECT TO EXISTING 250mm WATERMAIN	
0+05.2	65.14	62.74	WATER VALVE AT PROPERTY LINE	
0+08.2	65.16	62.76	CAP	

* EXACT DEPTH OF EXISTING WATERMAIN TO BE DETERMINED AT TIME OF EXCAVATION. CONTRACTOR TO CONFIRM TOP OF WATERMAIN. PROVIDE THERMAL INSULATION AS PER CITY OF OTTAWA DETAIL W23 WHERE COVER IS LESS THAN 2.4m

WATERMAIN TABLE - MAIN STREET				
STATION	SURFACE ELEVATION	TOP OF WM ELEVATION	DESCRIPTION	
0+000	64.56	62.16	CONNECT TO EXISTING 400mm WATERMAIN	
0+05.0	64.02	62.22	WATER VALVE AT PROPERTY LINE	
0+11.7	64.85	62.45	CAP	
0+12.7	64.87	62.47	CAP	

* EXACT DEPTH OF EXISTING WATERMAIN TO BE DETERMINED AT TIME OF EXCAVATION. CONTRACTOR TO CONFIRM TOP OF WATERMAIN. PROVIDE THERMAL INSULATION AS PER CITY OF OTTAWA DETAIL W23 WHERE COVER IS LESS THAN 2.4m



LEGEND

- SITE BOUNDARY
- PROPOSED STORM SEWER AND DIRECTION OF FLOW
- PROPOSED SANITARY SEWER AND DIRECTION OF FLOW
- PROPOSED WATERMAIN
- PROPOSED VALVE AND VALVE BOX
- PROPOSED HYDRO METER LOCATION
- PROPOSED REMOTE METER LOCATION
- PROPOSED RETAINING WALL
- PROPOSED BUILDING ENTRANCE
- PROPOSED CATCH BASIN
- PROPOSED AREA DRAIN
- PROPOSED SIAMSE CONNECTION
- PROPOSED TREES / SHRUBS
- EXISTING TREES
- EXISTING STORM MANHOLE AND SEWER
- EXISTING SANITARY MANHOLE AND SEWER
- EXISTING WATERMAIN
- EXISTING UNDERGROUND BELL
- EXISTING UNDERGROUND HYDRO
- EXISTING UNDERGROUND GAS
- EXISTING ABANDONED UNDERGROUND GAS
- EXISTING VALVE AND VALE BOX
- EXISTING FIRE HYDRANT
- EXISTING CATCH BASIN
- EXISTING TOP OF GRATE
- EXISTING UTILITY POLE C/W GUY WIRES
- EXISTING STREETLIGHT

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 ELEVATIONS ARE GEODETIC.
- REFER TO ARCHITECT'S AND LANDSCAPE ARCHITECT'S DRAWINGS FOR BUILDING AND HARDSURFACE AREAS AND DIMENSIONS.
- REFER TO SERVICING DESIGN BRIEF PREPARED BY NOVATECH ENGINEERING CONSULTANTS LTD.
- 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.
- CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GRADING PLAN INDICATING THE AS-BUILT ELEVATION OF EVERY DESIGN GRADE SHOWN ON THIS PLAN.
- REFER TO GEOTECHNICAL REPORT (NO. 1668819, DATED JUNE 2017) PREPARED BY GOLDER ASSOCIATES 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.
- ALL MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARDS AND SPECIFICATIONS AND ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS. ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS WILL APPLY WHERE NO CITY STANDARDS ARE AVAILABLE.
- ALL PRIVATE APPROACHES MUST BE CONSTRUCTED AS PER CITY SPECIFICATION SC13.

SEWER NOTES:

- SPECIFICATIONS:

ITEM	SPEC. No.	REFERENCE
SEWER SERVICE CONNECTION - RIGID PIPE	S11	CITY OF OTTAWA
SEWER SERVICE ABANDONMENT	S11.4	CITY OF OTTAWA
SEWER TRENCH - BEDDING (GRANULAR A)	S6, S7, W17	CITY OF OTTAWA / OPSD
COVERS (GRANULAR A OR GRANULAR B TYPE I, WITH MAXIMUM PARTICLE SIZE=25mm)	S6, S7, W17	CITY OF OTTAWA / OPSD
- INSULATE ALL PIPES (SAN/STM) THAT HAVE LESS THAN 1.5m COVER WITH 50mmX1200mm HL-40 INSULATION. 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-9 SEAL, PSX: POSITIVE SEAL AND DURASEAL). 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 OPS 410.07.16, 410.07.16.M 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.
- FULL PORT BACKWATER VALVES ARE REQUIRED ON THE SANITARY SERVICES, INSTALLED AS PER THE MANUFACTURERS RECOMMENDATIONS AND A BACKWATER VALVE IS REQUIRED ON THE STORM SERVICES / FOUNDATION DRAINS FOR EACH BUILDING, INSTALLED AS PER STD. DWG S14.
- CONTRACTOR TO TELEVISION (CCTV) ALL PROPOSED SEWERS/LATERALS.
- REINSTATE ALL EXISTING PAVEMENT, CURB AND BOULEVARDS AS PER CITY OF OTTAWA R10.
- ALL EXISTING SANITARY AND STORM SERVICES ARE TO BE CAPPED AT THE PROPERTY LINE TO THE SATISFACTION OF THE CITY OF OTTAWA'S SEWER OPERATION.
- MONITORING TEST PORTS FOR SANITARY SERVICES TO BE INSTALLED IN PARKING GARAGE.

WATERMAIN NOTES:

- SPECIFICATIONS:

ITEM	SPEC. No.	REFERENCE
WATERMAIN TRENCHING	W17	CITY OF OTTAWA
THERMAL INSULATION IN SHALLOW TRENCHES	W22	CITY OF OTTAWA
VALVE BOX ASSEMBLY	W24	CITY OF OTTAWA
CONNECTION DETAIL FROM EXISTING TO NEW WM	W25.1	CITY OF OTTAWA
WATERMAIN CROSSING BELOW SEWER	W25	CITY OF OTTAWA
WATERMAIN CROSSING OVER SEWER	W25.2	CITY OF OTTAWA
WATERMAIN (150mm)	PVC DR 18	CITY OF OTTAWA
TYPE 'K' COPPER	W23	CITY OF OTTAWA
THERMAL INSULATED AT OPEN STRUCTURE	W23	CITY OF OTTAWA
WATER SERVICE INSTALLATION AT SEWER CROSSING	W28	CITY OF OTTAWA
- SUPPLY AND CONSTRUCT ALL WATERMANS AND APPURTENANCES IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARD AND SPECIFICATIONS. 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. OTHERWISE THERMAL INSULATION IS REQUIRED AS PER STD. DWG W22.
- PROVIDE MINIMUM 0.50m CLEARANCE BETWEEN OUTSIDE OF PIPES AT ALL CROSSINGS WHEN WATERMAIN IS BELOW AND MINIMUM 0.25m CLEARANCE WHEN WATERMAIN IS ABOVE.
- WATER SERVICE IS TO BE CONSTRUCTED TO WITHIN 1m OF FOUNDATION WALL AND CAPPED, UNLESS OTHERWISE INDICATED.
- WATER DEMAND = A.D.D. + T.B.D. L/Sec. M.D.D. + T.B.D. L/Sec. M.H.D. + T.B.D. L/Sec
- ALL EXISTING WATER SERVICES TO BE BLANKED AT MAIN BY CITY FORCES. EXCAVATION AND REINSTATEMENT BY CONTRACTOR.
- WATERMANS TO BE INTERCONNECTED FOR REDUNDANCY.

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.

PRELIMINARY
NOT FOR
CONSTRUCTION

SCALE			
1:300			
No.	REVISION	DATE	BY
1.	ISSUED WITH SITE PLAN APPLICATION	MARCH 9/16	JAG

DESIGN

JAG

CHECKED

MSP

DRAWN

MTM

CHECKED

JAG

APPROVED

JGR

FOR REVIEW ONLY



LOCATION
CITY OF OTTAWA
Greystone Village Condo 2A-2B

DRAWING NAME

GENERAL PLAN OF SERVICES

PROJECT No.

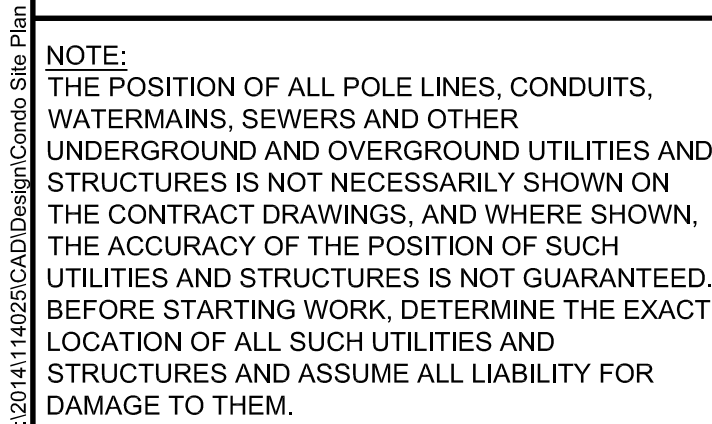
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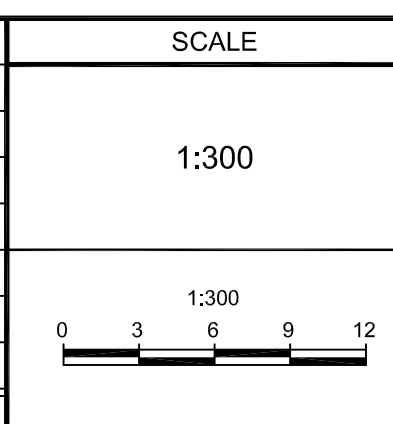
REV #1

DRAWING No.

114025-GP(2A/2B)



No.	REVISION			DATE	BY
1.	ISSUED WITH SITE PLAN APPLICATION			MAR 9'18	JAG

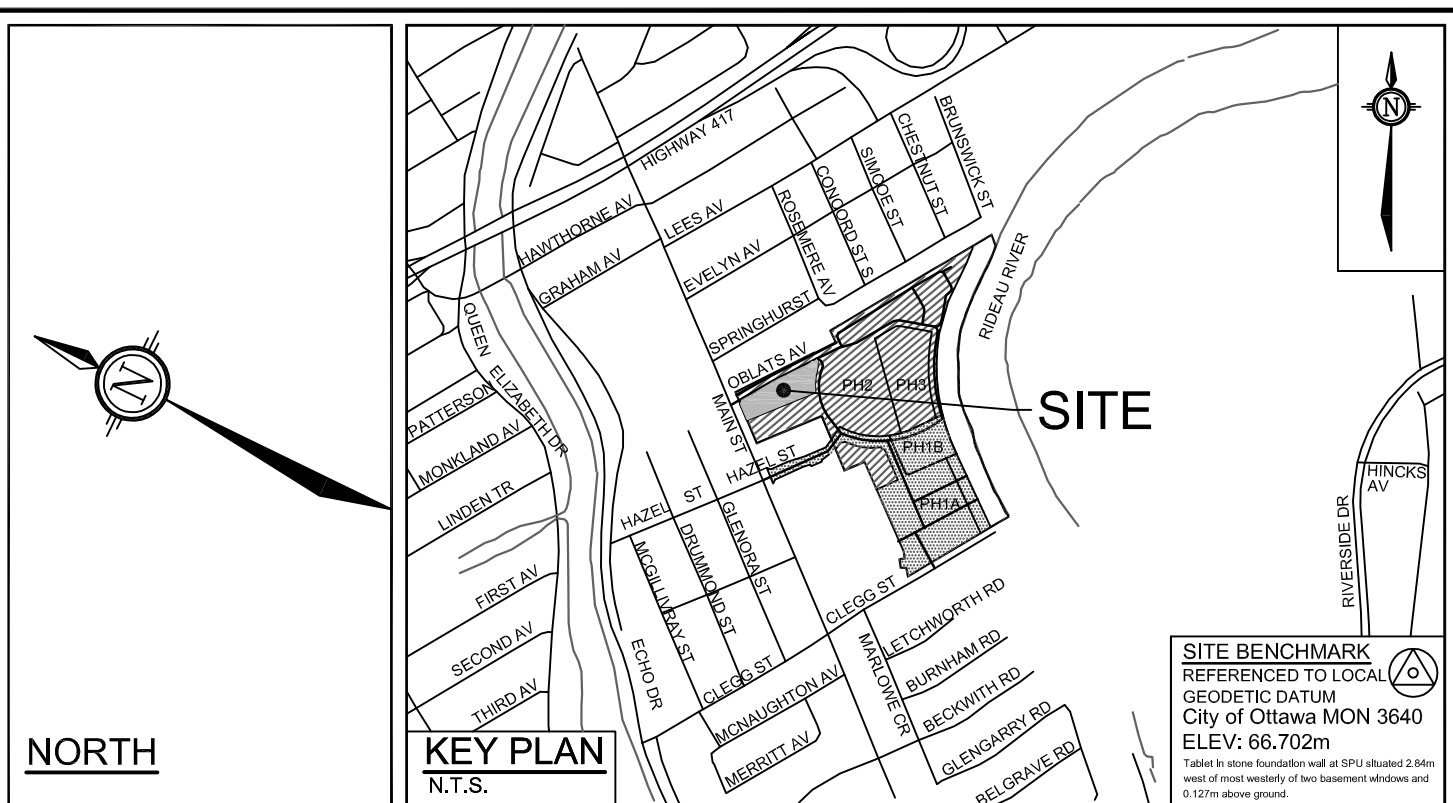










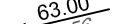

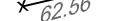



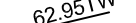


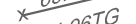
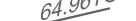

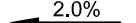

DESIGN	JAG
CHECKED	MSF
DRAWN	MTM
CHECKED	JAG
APPROVED	IGR

REGISTERED PROFESSIONAL ENGINEER
J.G. RIDDELL
PROVINCE OF ONTARIO

NOVATECH
Engineers, Planners & Landscape Architects
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Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

PROJECT No.	114025-00
REV	REV # 1
DRAWING No.	114025-GR(2A/2B



- # LEGEND
- | | | | |
|---|---------------------------------|---|------------------------------------|
|  | SITE BOUNDARY |  | EXISTING VALVE AND VALE BOX |
|  | PROPOSED ELEVATION |  | EXISTING FIRE HYDRANT |
|  | EXISTING ELEVATION |  | EXISTING CATCHBASIN |
|  | PROPOSED TOP OF WALL ELEVATION |  | EXISTING TOP OF GRATE |
|  | EXISTING TOP OF CURB ELEVATION |  | EXISTING UTILITY POLE CW GUY WIRES |
|  | EXISTING TOP OF GRATE ELEVATION |  | EXISTING LIGHT STANDARD |
|  | PROPOSED GRADE AND DIRECTION |  | EXISTING HYDRANT |
|  | PROPOSED TERRACING (MAX 3:1) | | |
|  | PROPOSED SILT FENCE | | |
|  | PROPOSED AREA DRAIN | | |
|  | PROPOSED SHAMESE CONNECTION | | |
|  | PROPOSED BUILDING ENTRANCE | | |
|  | PROPOSED RETAINING WALL | | |
|  | PROPOSED BARRIER CURB | | |
|  | PROPOSED DEPRESSED CURB | | |

- 1) COORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
- 2) 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.
- 3) OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF OTTAWA BEFORE COMMENCING CONSTRUCTION.
- 4) BEFORE COMMENCING CONSTRUCTION OBTAIN AND PROVIDE PROOF OF COMPREHENSIVE, ALL RISK AND OPERATIONAL LIABILITY INSURANCE FOR \$5,000,000/30, INSURANCE POLICY TO NAME OWNERS, ENGINEERS AND ARCHITECTS AS CO-INSURED.
- 5) 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.
- 6) REMOVE FROM SITE ALL EXCESS EXCAVATED MATERIAL, ORGANIC MATERIAL AND DEBRIS UNLESS OTHERWISE IN WRITTEN AGREEMENT. EXCAVATE AND REMOVE FROM SITE ANY CONTAMINATED MATERIAL. ALL CONTAMINATED MATERIAL SHALL BE DISPOSED OF AT A LICENSED LANDFILL FACILITY.
- 7) ALL ELEVATIONS ARE GEODETIC.
- 8) REFER TO ARCHITECTS AND LANDSCAPE ARCHITECTS'S DRAWINGS FOR BUILDING AND HARDSCAPE AREAS AND DIMENSIONS.
- 9) REFER TO SERVISING DESIGN BRIEF PREPARED BY NOVATECH ENGINEERING CONSULTANTS LTD.
- 10) SAW CUT AND KEY GRIND ASPHALT AT ALL ROAD CUTS AND ASPHALT TIE IN POINTS AS PER CITY OF OTTAWA STANDARDS (RTD).
- 11) PROVIDE LINE/PARKING PAINTING.
- 12) CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GRADING PLAN INDICATING THE AS-BUILT ELEVATION OF EVERY DESIGN GRADE SHOWN ON THIS PLAN.
- 13) REFER TO GEOTECHNICAL REPORT (NO 1688819, JUNE 2017) PREPARED BY GOLDER ASSOCIATES 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.
- 14) ALL MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARDS AND SPECIFICATIONS AND ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS, ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS WILL APPLY WHERE NO CITY STANDARDS ARE AVAILABLE.
- 15) ALL PRIVATE APPROACHES MUST BE CONSTRUCTED AS PER CITY SPECIFICATION S.C13.

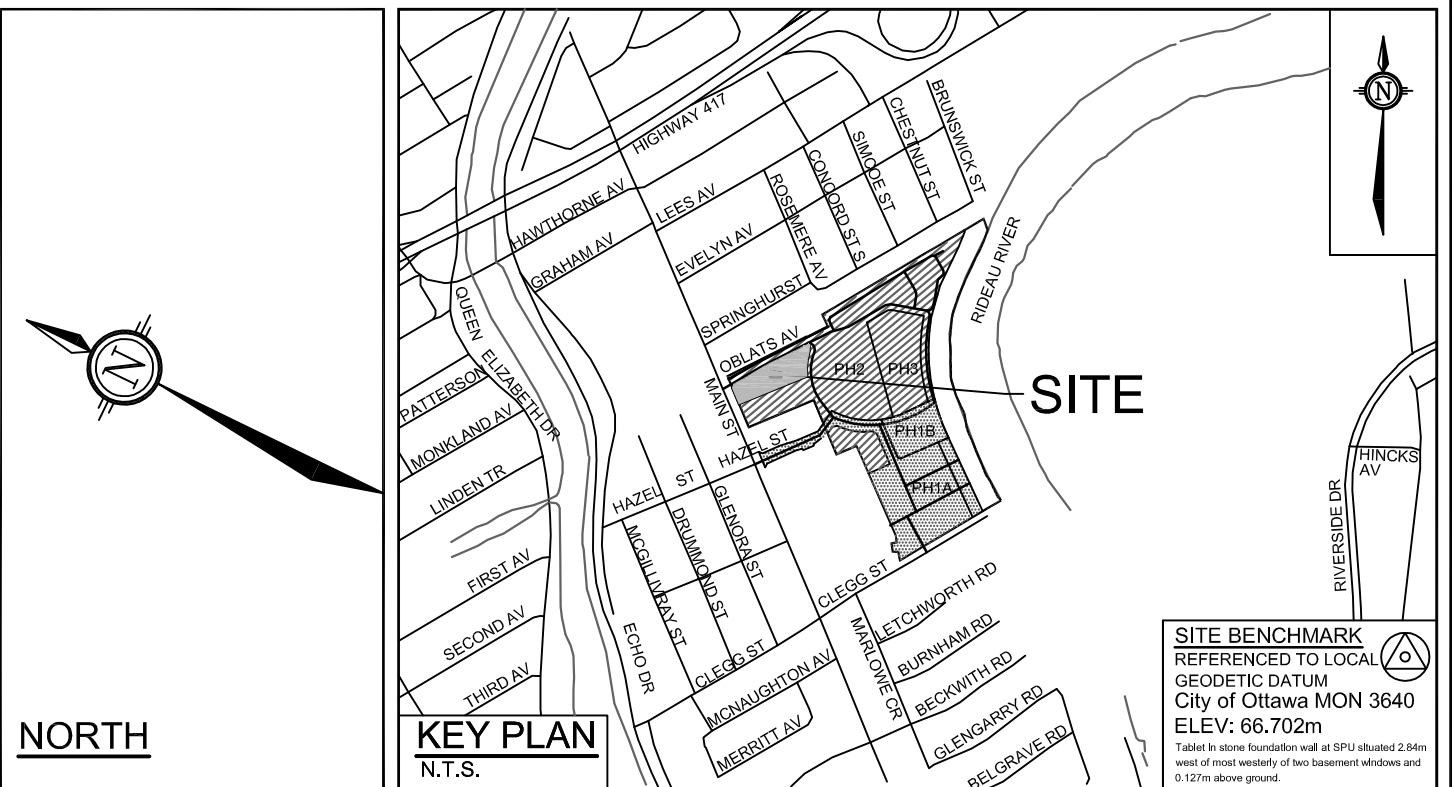
- 1) ALL TOPSOIL, ORGANIC OR DELETERIOUS MATERIAL MUST BE ENTIRELY REMOVED FROM BENEATH THE PROPOSED PAVED AREAS.
- 2) EXPOSED SUBGRADES IN PROPOSED PAVED AREAS SHOULD BE PROOF ROLLED WITH A LARGE STEEL DRUM ROLLER AND INSPECTED BY THE GEOTECHNICAL CONSULTANT.
- 3) ANY SOFT AREAS EVIDENT FROM THE PROOF ROLLING SHOULD BE SUBEXCAVATED AND REPLACED WITH SUITABLE MATERIAL THAT IS FROST COMPATIBLE WITH THE EXISTING SOILS.
- 4) THE GRANULAR BASE SHOULD BE COMPACTED TO AT LEAST 100% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY VALUE. ANY ADDITIONAL GRANULAR FILL USED BELOW THE PROPOSED PAVEMENT SHOULD BE COMPACTED TO AT LEAST 90% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY VALUE.
- 5) GRADE AND/OR FILL BEHIND PROPOSED CURB AND BETWEEN BUILDINGS AND CURBS, WHERE REQUIRED TO PROVIDE POSITIVE DRAINAGE.
- 6) MINIMUM OF 2% GRADE FOR ALL GRASS AREAS UNLESS OTHERWISE NOTED.
- 7) ALL GRADES BY CURBS ARE EDGE OF PAVEMENT GRADES UNLESS OTHERWISE INDICATED.
- 8) ALL CURBS SHALL BE BARRIER CURB (150mm) UNLESS OTHERWISE NOTED AND CONSTRUCTED AS PER CITY OF OTTAWA STANDARDS (SC1.1).
- 9) REFER TO LANDSCAPE PLAN FOR PLANTING AND OTHER LANDSCAPE FEATURE DETAILS.

- 40mm Superpave 12.5mm PG 58-34
- 50mm Superpave 19.0mm PG 58-34
- 150mm GRANULAR 'A' BASE
- 375mm GRANULAR 'B' TYPE II SUBBASE
- OPSS SELECT SUBGRADE MATERIAL (SSM)

- 40mm Superpave 12.5mm PG58-34, TRAF. CA.
- 50mm Superpave 19mm PG58-34, TRAF. CAT.
- 300mm GRANULAR 'A' BASE

[INSULATION TO BE PER TRAF. LOAD (i.e. H

- 1) ALL EROSION AND SEDIMENT CONTROLS ARE TO BE INSTALLED TO THE SATISFACTION OF THE ENGINEER AND THE CITY OF OTTAWA. THEY ARE TO BE APPROPRIATE TO THE SITE CONDITIONS, PRIOR TO UNDERTAKING ANY SITE ALTERATIONS. LIGNING OR REMOVAL OF VEGETATION, OR ANY OTHER PHASES OF SITE PREPARATION AND CONSTRUCTION, THESE PRACTICES ARE TO BE IMPLEMENTED IN ACCORDANCE WITH THE CURRENT BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROL AND SHOULD INCLUDE AS A MINIMUM THOSE MEASURES LISTED ON THE ATTACHED SHEET.
- 2) TO PREVENT SURFACE EROSION FROM ENTERING THE DITCH OR STORM SYSTEM DURING CONSTRUCTION, FILTER CLOTH WILL BE PLACED UNDER GRATES OF CATCHBASINS AND STRUCTURES. A LIGHT DUTY SILT FENCE BARRIER WILL ALSO BE INSTALLED ALONG THE PROPERTY LINES. THESE CONTROL MEASURES WILL REMAIN IN PLACE UNTIL VEGETATION HAS BEEN ESTABLISHED AND CONSTRUCTION IS COMPLETE.
- 3) THE SEDIMENT CONTROL MEASURES SHALL ONLY BE REMOVED WHEN, IN THE OPINION OF THE ENGINEER, THE MEASURES ARE NO LONGER REQUIRED. NO CONTROL MEASURES MAY BE PERMANENTLY REMOVED WITHOUT PRIOR AUTHORIZATION FROM THE ENGINEER.
- 4) THE CONTRACTOR SHALL IMMEDIATELY REPORT TO THE ENGINEER ANY ACCIDENTAL DISCHARGES OF SEDIMENT MATERIAL INTO ANY DITCH OR STORM SEWER SYSTEM. APPROPRIATE RESPONSE MEASURES, INCLUDING ANY REPAIRS TO EXISTING OR NEW STRUCTURES OR THE IMPLEMENTATION OF ADDITIONAL CONTROL MEASURES, SHALL BE CARRIED OUT BY THE CONTRACTOR WITHOUT DELAY.
- 5) THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.
- 6) ROADWAYS ARE TO BE SWEEP AS REQUIRED OR AS DIRECTED BY THE ENGINEER AND/OR MUNICIPALITY.
- 7) THE CONTRACTOR SHALL ENSURE PROPER CUSTODY CONTROL OF SITE IS PROVIDED WITH THE APPLICATION OF WATER (AND IF REQUIRED, CALCIUM CHLORIDE) DURING DRY PERIODS.



- LEGEND**
- SITE BOUNDARY
 - PROPOSED STORM SEWER AND DIRECTION OF FLOW
 - PROPOSED VALVE AND VALVE BOX
 - PROPOSED REMOTE METER LOCATION
 - PROPOSED REMOTE METER LOCATION
 - PROPOSED RETAINING WALL
 - PROPOSED BUILDING ENTRANCE
 - PROPOSED CATCHBASIN
 - PROPOSED AREA DRAIN
 - PROPOSED SIAMSE CONNECTION
 - STORM DRAINAGE AREA
 - MAIN STREET TRIBUTARY AREA
 - DRAINAGE AREA (HECTARES)
 - DRAINAGE AREA I.D.
 - RUNOFF COEFFICIENT
 - DIRECTION OF MAJOR OVERLAND FLOW ROUTE
 - PROPOSED TREES / SHRUBS
 - EXISTING TREES
 - EXISTING STORM MANHOLE AND SEWER
 - EXISTING SANITARY MANHOLE
 - EXISTING VALVE AND VALE BOX
 - EXISTING FIRE HYDRANT
 - EXISTING CATCHBASIN
 - EXISTING TOP OF GRATE
 - EXISTING UTILITY POLE C/W GUY WIRES
 - EXISTING LIGHT STANDARD

PROPOSED BUILDING 2A - ROOF DRAIN TABLE						
AREA ID	ZURN SPECIFICATION	NOTCHES	POST DEVELOPMENT ZURN ROOF DRAIN CONTROL PARAMETERS			
			1:5 - YEAR EVENT		1:100 - YEAR EVENT	
			HEAD(m)	Q(l/s)	HEAD(m)	Q(l/s)
RD 1 - RD 21	AS REQUIRED FOR 80L/s / ha	-	-	-	-	-
TOTAL			-	-	-	-

ROOF AREAS RD 1 TO RD 21 WILL HAVE CONTROLLED ROOF DRAINS AND WILL DIRECT CONTROLLED RUNOFF TO THE OUTLET VIA THE BUILDINGS INTERNAL PIPES.

PROPOSED BUILDING 2B - ROOF DRAIN TABLE						
AREA ID	ZURN SPECIFICATION	NOTCHES	POST DEVELOPMENT ZURN ROOF DRAIN CONTROL PARAMETERS			
			1:5 - YEAR EVENT		1:100 - YEAR EVENT	
			HEAD(m)	Q(l/s)	HEAD(m)	Q(l/s)
RD 22 TO RD 32	AS REQUIRED FOR 80L/s / ha	-	-	-	-	-
TOTAL			-	-	-	-

ROOF AREAS RD 22 TO RD 32 WILL HAVE CONTROLLED ROOF DRAINS AND WILL DIRECT CONTROLLED RUNOFF TO THE OUTLET VIA THE BUILDINGS INTERNAL PIPES.

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.

PRELIMINARY
NOT FOR
CONSTRUCTION

DESIGN	JAG	FOR REVIEW ONLY				LOCATION CITY OF OTTAWA Greystone Village Condo 2A-2B	DRAWING NAME STORMWATER MANAGEMENT PLAN	PROJECT NO. 114025-00	REV REV #1	DRAWING NO. 114025-STM(2A/2B)
CHECKED	MSP									
DRAWN	MTM									
CHECKED	JAG									
APPROVED	JGR	SCALE 1:300 0 3 6 9 12								
1. ISSUED WITH SITE PLAN APPLICATION	MARCH 9/18	JAG								
No.	REVISION	DATE	BY							