

MAIN STREET CROSS SECTION

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 LANDSCAPE AREAS AND DIMENSIONS.
- REFER TO SERVICES SHEET AND STORMWATER MANAGEMENT REPORT (R-2015-130 DATED JULY 2015) 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 UNPAVING PAINTING.
- CONTRACTOR TO PROVIDE THE CONSULTANT WITH A GENERAL PLAN OF SERVICES INDICATING ALL SERVING AS-BUILT INFORMATION SHOWN ON THIS PLAN. AS-BUILT INFORMATION MUST INCLUDE PIPE MATERIAL, SIZES, LENGTHS, SLOPES, INVERT AND TIE ELEVATIONS, STRUCTURE LOCATIONS, VALVE AND HYDRANT LOCATIONS, TWM ELEVATIONS AND ANY ALIGNMENT CHANGES, ETC.
- 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 WILL APPLY WHERE NO CITY STANDARDS ARE AVAILABLE.
- ALL PRIVATE APPROACHES MUST BE CONSTRUCTED AS PER CITY SPECIFICATION R-2015-130.

GEOTECHNICAL NOTES:

- FOR GEOTECHNICAL DATA REFER TO REPORT BY PATERSON GROUP INC. REPORT NO. PG142-1, "GEOTECHNICAL INVESTIGATION - PROPOSED MULTI-STORY BUILDING 115 ECHO DRIVE, OTTAWA, ONTARIO DATED JANUARY 15, 2014. REFER TO REPORT 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.

WATERMAIN NOTES:

- SPECIFICATIONS:
 - ITEM ACCESS, AIR & DRAIN VALVE CHAMBERS R1 & R2
 - ITEM T.V.S. CHAMBER
 - ITEM WATERMAIN TRENCHING
 - ITEM VALVE BOX ASSEMBLY
 - ITEM CONNECTION DETAIL FROM NEW TO EXISTING WM
 - ITEM WATERMAIN CROSSING OVER SEWER
 - ITEM THERMAL INSULATION IN SHALLOW TRENCHES
 - ITEM THERMAL INSULATED AT OPEN STRUCTURE
 - ITEM WATER METER INSULATION 75mm & LARGER
 - ITEM TYPICAL PRIVATE SESSION - 100mm CONNECTION
 - ITEM WMC DR 18
 - SPEC. No. W10, W11, W17, W24, W25, W22, W23, W32, W30
 - REFERENCE CITY OF OTTAWA, CITY OF OTTAWA, CITY OF OTTAWA, CITY OF OTTAWA, CITY OF OTTAWA, CITY OF OTTAWA, CITY OF OTTAWA, CITY OF OTTAWA, CITY OF OTTAWA
- SUPPLY AND CONSTRUCT ALL WATERMANS AND APPURTENANCES IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARDS AND SPECIFICATIONS. EXCAVATION, INSTALLATION, BACKFILL AND RESTORATION OF ALL WATERMANS BY THE CONTRACTOR. CONNECTIONS AND SHUTTERS AT THE MAIN AND CHORINATION OF THE WATER SYSTEM SHALL BE PERFORMED BY CITY FORCES.
 - WATERMAIN SHALL BE MINIMUM 24" DEPTH BELOW GRADE UNLESS OTHERWISE INDICATED. OTHERWISE THERMAL INSULATION IS REQUIRED AS PER STD. DWS W22.
 - PROVIDE MINIMUM 0.5m CLEARANCE BETWEEN OUTSIDE OF PIPES AT ALL CROSSINGS.
 - WATER SERVICE IS TO BE CONSTRUCTED TO WITHIN 1m OF FOUNDATION WALL AND CAPPED, UNLESS OTHERWISE INDICATED.
 - MAX HOURLY WATER DEMAND = 1.7m³.
 - ALL EXISTING WATER SERVICES TO BE BLANKED AT MAIN BY CITY FORCES. EXCAVATION AND REINSTATEMENT BY CONTRACTOR.

SEWER NOTES:

- SPECIFICATIONS:
 - ITEM SEWER SERVICE CONNECTION - RIGID PIPE
 - ITEM SEWER SERVICE ABANDONMENT
 - ITEM SEWER TRENCH - BEDDING (GRANULAR A)
 - ITEM COVER (GRANULAR A OR GRANULAR B TYPE 1)
 - ITEM SANITARY SEWER
 - ITEM STORM SEWER
 - SPEC. No. S11, S11.4, S11.4, S11.4, S11.4, S11.4
 - REFERENCE CITY OF OTTAWA, CITY OF OTTAWA, CITY OF OTTAWA, CITY OF OTTAWA, CITY OF OTTAWA, CITY OF OTTAWA
- INSULATE ALL PIPES (SANITARY) THAT HAVE LESS THAN 1.5m COVER WITH 50mmx120mm H-40 INSULATION. PROVIDE 150mm CLEARANCE BETWEEN PIPE AND INSULATION.
 - SERVICES ARE TO BE CONSTRUCTED TO 1.5m 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 KORN-SEAL, PSK, POSITIVE SEAL AND DURESEAL. THE CONCRETE CRADLE FOR THE PIPE CAN BE ELIMINATED.
 - THE OWNER SHALL REQUIRE THAT THE SITE SERVICES CONTRACTOR PERFORM FIELD TESTS FOR QUALITY CONTROL. OF ALL SANITARY SERVICES. LEAKAGE TESTING SHALL BE COMPLETED IN ACCORDANCE WITH OPS 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.
 - FULL PORT BACKWATER VALVES ARE REQUIRED ON THE SANITARY SERVICES. INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATIONS AND A BACKWATER VALVE IS REQUIRED ON THE STORM SERVICES FOUNDATION DRAINS FOR EACH BUILDING. INSTALLED AS PER STD. DWS S14.
 - REINSTATE ALL EXISTING PAVEMENT, CURB AND BOLLARDS AS PER CITY OF OTTAWA R10.
 - ALL EXISTING SANITARY AND STORM SERVICES TO BE CAPPED AT THE PROPERTY LINE TO THE SATISFACTION OF THE CITY OF OTTAWA'S SEWER OPERATIONS.

WATERMAIN TABLE FOR 150mm SERVICE - INTERIM

STATION	SURFACE ELEVATION	TOP OF WM ELEVATION	DESCRIPTION
0+00.0	67.25	64.85	CONNECTION TO EX. 400mm WM
0+00.7	67.30	64.90	CROSSING ABOVE FUTURE 450mm STM SEWER (CLEARANCE 0.7m)
0+00.9	67.30	65.00	CROSSING ABOVE EX. 375mm COMBINED SEWER (CLEARANCE 0.5m)
0+01.5	67.25	64.85	CROSSING ABOVE FUTURE 250mm SAN SEWER (CLEARANCE 1.0m)
0+01.7	67.40	65.00	VALVE BOX LOCATION
0+01.7	67.40	65.00	PROPERTY LINE
0+01.8	67.45	65.05	CONNECTION AT BUILDING

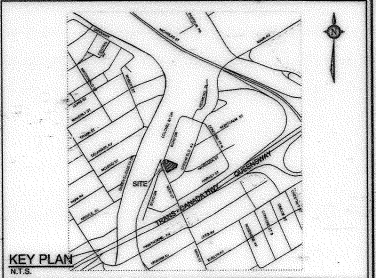
WATERMAIN TABLE FOR 150mm SERVICE - FUTURE

STATION	SURFACE ELEVATION	TOP OF WM ELEVATION	DESCRIPTION
0+00.8	67.25	64.85	CONNECTION TO EX. 400mm WM
0+00.7	67.30	64.90	CROSSING ABOVE FUTURE 450mm STM SEWER (CLEARANCE 0.7m)
0+00.9	67.30	65.00	CROSSING ABOVE EX. 375mm COMBINED SEWER (CLEARANCE 0.5m)
0+01.5	67.25	64.85	CROSSING ABOVE FUTURE 250mm SAN SEWER (CLEARANCE 1.0m)
0+01.7	67.40	65.00	VALVE BOX LOCATION
0+01.7	67.40	65.00	PROPERTY LINE
0+01.8	67.45	65.05	CONNECTION AT BUILDING

WATERMAIN TABLE FOR 150mm HYDRANT LEAD - INTERIM

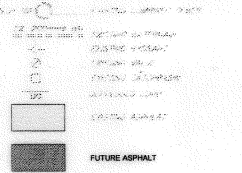
STATION	SURFACE ELEVATION	TOP OF WM ELEVATION	DESCRIPTION
1+00.8	67.25	64.85	CONNECTION TO EX. 150mm WM
1+00.8	67.30	64.90	CROSSING ABOVE FUTURE 450mm STM SEWER (CLEARANCE 0.7m)
1+00.9	67.30	65.00	CROSSING ABOVE EX. 375mm COMBINED SEWER (CLEARANCE 0.5m)
1+01.3	67.30	64.90	40" WATERMAIN BEND
1+01.4	67.35	64.95	CROSSING ABOVE FUTURE 250mm SAN SEWER (CLEARANCE 1.0m)
1+01.3	67.25	64.85	VALVE BOX LOCATION
1+01.6	67.25	64.85	HYDRANT LOCATION

EXACT DEPTH OF EXISTING WATERMAIN AND UTILITIES TO BE DETERMINED AT TIME OF EXCAVATION.
PROVIDE THERMAL INSULATION AS PER CITY OF OTTAWA DETAILS W22 AND/OR W23 WHERE COVER IS LESS THAN 2.4m.



LEGEND

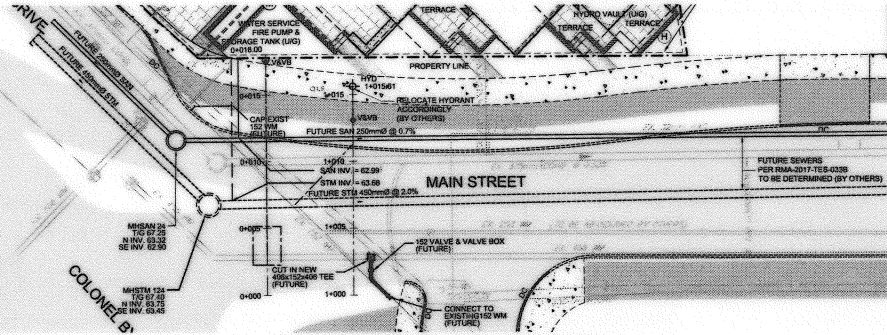
- 200mm WM - PROPOSED WATERMAIN AND DIAMETER
- VALVE - PROPOSED VALVE LOCATION
- VALVE BOX - VALVE & VALVE BOX
- VALVE CHAMBER - VALVE & VALVE CHAMBER
- HYD - PROPOSED HYDRANT CW VALVE & LEAD
- T/F-98.45 - PROPOSED TOP OF BOTTOM FLANGE
- BEND - PROPOSED BEND AND THURSTLOCK 11.25' 22.4' 47' 7.75' (SEE PLAN AND PROFILES)
- MHSA 101 - PROPOSED SANITARY MH & SEWER
- MHST 100 - PROPOSED STORM MH & SEWER
- CB-1 - PROPOSED ROAD CATCH BASIN
| CBM-1 | PROPOSED REARWARD CATCH BASIN MANHOLE AS PER CITY OF OTTAWA S19 |
| RD-1 | PROPOSED ROOF DRAIN |
| AD-1 | PROPOSED AREA DRAIN |
| H | HYDRO METER |
| G | GAS METER |
| M | WATER METER |
| R | REMOTE METER |
| Y | SIAMSE WATER CONNECTION |



PLAN VIEW 1:200

AREA AND ROOF DRAIN TABLE									
DRAIN ID	ZURN SPECIFICATION	NOTCHES	INVERT	POST-DEVELOPMENT CONTROLLED CONDITIONS					
				12 YEAR EVENT		1 YEAR EVENT		100 YEAR EVENT	
				FLOW (L/S)	DEPTH (in)	FLOW (L/S)	DEPTH (in)	FLOW (L/S)	DEPTH (in)
AD-1	Z401-HADJ-2014-VPR-Y	N/A	65.60	3.05	0.09	3.35	0.07	3.81	0.12
RD-1	ZCF121-WX-2-105-10-77	1	N/A	0.23	0.08	0.29	0.08	0.33	0.09
RD-2	ZCF121-WX-2-105-10-77	1	N/A	0.25	0.07	0.31	0.08	0.37	0.10
RD-3	ZCF121-WX-2-105-10-77	1	N/A	0.22	0.08	0.28	0.07	0.34	0.09
RD-4	ZCF121-WX-2-105-10-77	1	N/A	0.24	0.08	0.30	0.08	0.36	0.10
RD-5	ZCF121-WX-2-105-10-77	1	N/A	0.22	0.08	0.28	0.07	0.34	0.09
RD-6	ZCF121-WX-2-105-10-77	1	N/A	0.16	0.04	0.23	0.06	0.28	0.08
RD-7	ZCF121-WX-2-105-10-77	1	N/A	0.17	0.05	0.24	0.06	0.29	0.08
RD-8	ZCF121-WX-2-105-10-77	1	N/A	0.24	0.07	0.30	0.08	0.37	0.10
RD-9	ZCF121-WX-2-105-10-77	1	N/A	0.24	0.08	0.30	0.08	0.36	0.10
RD-10	ZCF121-WX-2-105-10-77	1	N/A	0.40	0.11	0.46	0.13	0.57	0.15
RD-11	ZCF121-WX-2-105-10-77	1	N/A	0.22	0.08	0.27	0.07	0.34	0.09
RD-12	ZCF121-WX-2-105-10-77	1	N/A	0.22	0.08	0.27	0.07	0.34	0.09
RD-13	ZCF121-WX-2-105-10-77	1	N/A	0.39	0.09	0.46	0.10	0.54	0.12
RD-14	ZCF121-WX-2-105-10-77	1	N/A	0.35	0.07	0.39	0.08	0.47	0.13
RD-15	ZCF121-WX-2-105-10-77	1	N/A	0.31	0.08	0.36	0.10	0.46	0.12
RD-16	ZCF121-WX-2-105-10-77	1	N/A	0.31	0.08	0.36	0.10	0.46	0.12
RD-17	ZCF121-WX-2-105-10-77	1	N/A	0.30	0.08	0.37	0.10	0.45	0.12

DETAIL 'A': CONCEPTUAL FUTURE SERVING 1:200



NOTE:
THE POSITION OF ALL PIPE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS TO 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.

No.	REVISION	DATE	BY	No.	REVISION	DATE	BY
1.	REVISED AND REISSUED FOR SITE PLAN CONTROL	AUG 23/18	BHS	8.	REVISED AND REISSUED FOR SITE PLAN CONTROL	JULY 16/18	BHS
2.	REVISED AND REISSUED FOR SITE PLAN CONTROL	APR 30/18	BHS	9.	ISSUED FOR PRICING	APR 30/18	BHS
3.	REVISED AND REISSUED FOR SITE PLAN CONTROL	MAR 09/18	BHS	10.	REVISED AND REISSUED FOR SITE PLAN CONTROL	NOV 01/17	BHS
4.	ISSUED FOR SITE PLAN CONTROL	NOV 01/17	BHS	11.	REVISED AND REISSUED FOR SITE PLAN CONTROL	AUG 08/15	BHS
5.	REVISED AND REISSUED FOR OPA AND REZONING	AUG 11/18	BHS	12.	ISSUED FOR OPA AND REZONING	AUG 08/15	BHS
6.	ISSUED FOR OPA AND REZONING	AUG 19/15	BHS	13.	ISSUED FOR COORDINATION	AUG 08/15	BHS
7.	ISSUED FOR COORDINATION	AUG 08/15	BHS				

SCALE
AS SHOWN

DESIGN
BCS
CHECKED
BHS
DRAWN
BCS
CHECKED
BHS
APPROVED
BHS

FOR REVIEW ONLY
NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 McLeod Court
Ottawa, Ontario, Canada K2M 1P5
Telephone (613) 254-8643
Facsimile (613) 254-5887
Website www.novatech-eng.com

LOCATION
CITY OF OTTAWA
115 ECHO DRIVE

DRAWING NAME
GENERAL PLAN OF SERVICES
PROJECT NO.
115105-00
REV
REV # 09
DRAWING NO.
115105-GP