

WATERMAIN NOTES:

- SPECIFICATIONS:

ITEM	SPEC. No.	REFERENCE
WATERMAIN TRENCHING	W17	CITY OF OTTAWA
THERMAL INSULATION IN SHALLOW TRENCHES	W22, W23	CITY OF OTTAWA
WATERMAIN CROSSING BELOW SEWER	W25	CITY OF OTTAWA
WATERMAIN CROSSING ABOVE SEWER	W25.2	CITY OF OTTAWA
WATERMAIN PIPE	PVC DR 18(CLASS 150)	CITY OF OTTAWA
VALVE CHAMBER	W11	CITY OF OTTAWA
VALVE BOX	W24	CITY OF OTTAWA
TVS CONNECTION	W4	CITY OF OTTAWA
- SUPPLY AND CONSTRUCT ALL WATERMAINS AND APPURTENANCES IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARDS 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. NO WORK SHALL COMMENCE UNLESS A CITY WATER WORKS INSPECTOR IS ON SITE. REFER TO CITY OF OTTAWA SPECIFICATIONS F-4411, F-4412, F-4413, F-4414, F-4415, F-4417, F-4418, F-4419, F-4491, F-4492, F-4493, F-4494 AND ANY OTHER APPLICABLE SPECIFICATIONS.
- WATERMAIN SHALL BE MINIMUM 2.4m DEPTH BELOW GRADE UNLESS OTHERWISE INDICATED.
- WATERMAIN BEDDING DEPTH TO BE AS PER EXP GEOTECH REPORT DATED DECEMBER 2017.
- MINIMUM CLEARANCE BETWEEN CROSSING PIPES TO BE 0.25m WHEN WATER CROSSES ABOVE THE PIPE AS PER CITY OF OTTAWA SPECIFICATION W 25.2 AND 0.50m WHEN WATER CROSSES BELOW THE PIPE AS PER CITY OF OTTAWA SPECIFICATION W 25.
- INSULATE ALL WATERMAIN AT ALL CATCHBASINS AND LEADS AS PER W-23.
- FIRE HYDRANTS AS PER CITY OF OTTAWA DETAILS W-18 AND W-19.
- ALL WATERMAIN TO BE INSTALLED WITH THRUST BLOCKS AND RESTRAINING RINGS AS PER F-4492, W25.3, W25.4, W25.5 AND W25.6. NOTE LOCAL SOIL IS A CLAY WITH A BEARING CAPACITY BETWEEN 125 AND 175 kPa. THEREFORE, USE TABLES FOR BEARING CAPACITY OF 100-199 kPa.
- THRUST BLOCKS TO BE INSTALLED ON ALL CAPS, TEES, CROSSES, HORIZONTAL BENDS, TAPPING VALVES, OTHER FITTINGS THAT STOP FLOW OR CHANGE DIRECTION OF FLOW AND HYDRANTS.
- RESTRAINING RINGS TO BE INSTALLED ON ALL CAPS, TEES, CROSSES, HORIZONTAL AND VERTICAL BENDS, REDUCERS, SLEEVES, COUPLINGS, CURB-STUBS, AUXILIARY, ISOLATION/LINE/BRANCH VALVES, TAPPING VALVES, HYDRANTS, OTHER FITTINGS THAT STOP FLOW OR CHANGE DIRECTION AND PUSH ON JOINTS WITHIN RESTRAINED LENGTH AS PER CITY OF OTTAWA DETAIL W25.5 AND W25.6.
- WHERE WATERMAIN DEFLECTION IS REQUIRED, DEFLECT AT A MAXIMUM 1/2 THE MANUFACTURERS RECOMMENDATION, MAXIMUM 1.5" PER DEFLECTION.
- WATER SERVICE IS TO BE CONSTRUCTED TO WITHIN 1.0m OF FOUNDATION WALL AND CAPPED, UNLESS OTHERWISE INDICATED.
- IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARD W-18, NO DRIVEWAY SHALL BE LOCATED WITHIN 3.0m OF A FIRE HYDRANT. NO OBJECTS INCLUDING VEGETATION SHALL BE PLACED OR PLANTED WITHIN A 3.0m CORRIDOR BETWEEN A FIRE HYDRANT AND THE EDGE OF A ROADWAY OR A 1.5m RADIUS BESIDE OR BEHIND A FIRE HYDRANT.
- CATHODIC PROTECTION REQUIRED FOR PVC WATERMAIN SYSTEMS AS PER CITY OF OTTAWA W40, W42, AND F-4494. ALL WATERMAIN TO BE INSTALLED COMPLETE WITH TRACER WIRE AS PER CITY OF OTTAWA W-36 AND F-4493.
- WATERMAIN TESTING REQUIRED AS PER CITY OF OTTAWA SPECIFICATIONS F-4491 INCLUDING THE USE OF CHLORINATION NOZZLE AS PER CITY OF OTTAWA W46.

SEWER NOTES:

- ALL WORKS SHALL BE PERFORMED IN ACCORDANCE WITH CITY OF OTTAWA STANDARDS AND SPECIFICATIONS F-4070, F-4080, F-4100 AND ANY OTHER APPLICABLE SPECIFICATION.
- SPECIFICATIONS:

ITEM	SPEC. No.	REFERENCE
CATCHBASIN (600x600mm)	S1	CITY OF OTTAWA
STORM / SANITARY MANHOLE (1200mm)	701.010	OPSD
CB & CBMH FRAME & COVER	S19, 400.020	CITY OF OTTAWA, OPSD
STORM / SANITARY MH FRAME & COVER	S24, S24.1, S25	CITY OF OTTAWA
SEWER TRENCH - BEDDING (GRANULAR A)	S6.57	CITY OF OTTAWA
COVER (GRANULAR A OR SAND)	S6.57	CITY OF OTTAWA
STORM SEWER	PVC SDR 35/CONC	
SANITARY SEWER	PVC SDR 35 WITH RUBBER GASKETS	
CATCHBASIN LEAD	PVC SDR 35 MINIMUM 1%, 250mmØ	
- STORM SEWER TYPE AND CLASS AS PER OPSD 807.010.
- INSULATE ALL STORM AND SANITARY PIPES THAT HAVE LESS THAN 2.0m COVER AS PER CITY OF OTTAWA F-4102.
- SEWER BEDDING SHALL BE CLASS 'B' AS PER CITY OF OTTAWA STANDARDS S6 AND S7 UNLESS OTHERWISE NOTED.
- 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. PIPE BEDDING DEPTH AS PER EXP GEOTECH REPORT DATED DECEMBER 2017.
- FLEXIBLE CONNECTIONS ARE REQUIRED FOR ALL CONNECTIONS TO MANHOLES AND CONCRETE PIPES. CONTRACTOR TO USE KOR-N-SEAL OR EQUIVALENT.
- THE OWNER SHALL REQUIRE THAT THE SITE SERVICING CONTRACTOR PERFORM FIELD TESTS FOR QUALITY CONTROL OF ALL SANITARY SEWERS. SPECIFICALLY THE LEAKAGE TESTING SHALL BE COMPLETED IN ACCORDANCE WITH OPSD 410.07.16 AND 407.07.25. THE FIELD TESTS SHALL BE PERFORMED IN THE PRESENCE OF A CERTIFIED PROFESSIONAL ENGINEER WHO SHALL SUBMIT A CERTIFIED COPY OF THE TEST RESULTS.
- STORM MANHOLES WITH PIPES LESS THAN 900mm DIAMETER TO HAVE 300mm SUMP.
- ALL CATCHBASINS ARE TO HAVE 600mm SUMPS AND INCLUDE 3m OF SUBDRAIN EXTENDED IN TWO DIRECTIONS AND PARALLEL WITH THE CURB FACE.
- CONTRACTOR TO TELEWISE (CCTV) ALL PROPOSED SEWERS AS PER OPSD 409 AND CITY OF OTTAWA F-4090 AND DYE TEST SANITARY SEWERS.
- SEWER TRENCHES TO BE BACKFILLED WITH NATIVE SOIL TO MATCH THE EXISTING SOIL PROFILE, IN ORDER TO MINIMIZE THE DIFFERENTIAL FROST HEAVING OVER THE SERVICES.
- BEDDING AT THE ROCK/SOIL INTERFACE IS TO BE TRANSITIONED AT 5H:1V MINIMUM.
- ALL SEWER PIPES INSTALLED TO A GRADIENT OF 0.50% OR LOWER USING A LASER DEVICE AND SHALL BE CHECKED WITH A LEVEL INSTRUMENT PRIOR TO BACKFILLING.
- CONTRACTOR TO INSTALL CLAY SEALS IN SERVICE TRENCHES WHERE INDICATED. CLAY SEALS PER CITY OF OTTAWA STANDARD S8 AND MUST EXTEND A MINIMUM OF 1.5m.
- SERVICES ARE TO BE CONSTRUCTED TO 1.0m FROM FACE OF BUILDING AT A MINIMUM SLOPE OF 1.0%. ALL SERVICES TO INCLUDE BACKWATER VALVES AS PER CITY OF OTTAWA SPECIFICATIONS S14 AND S14.1.

17. CONTRACTOR TO TELEWISE (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.

18. STORMTECH SC-740 (OR APPROVED EQUIVALENT) TO BE INSTALLED AS PER MANUFACTURERS SPECIFICATIONS AND DESIGN. REFER TO STORMWATER MANAGEMENT REPORT FOR FURTHER DETAILS. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR REVIEW.

BLOCK 1 SERVICE TABLE		
STATION	SERVICE ELEVATION @ CAP	SERVICE DESCRIPTION
3+041.38	65.46m	EXISTING 100mmØ STM INVERT
3+041.39	65.48m	PROPOSED 100mmØ STM INVERT @ CAP
3+041.88	65.56m	EXISTING 50mmØ WM OBVERT
3+041.89	65.58m	PROPOSED 50mmØ WM OBVERT @ CAP
3+042.38	65.41m	EXISTING 150mmØ SAN INVERT
3+042.39	65.43m	PROPOSED 150mmØ SAN INVERT @ CAP

BLOCK 2 SERVICE TABLE		
STATION	SERVICE ELEVATION @ CAP	SERVICE DESCRIPTION
3+084.41	64.07m	PROPOSED 100mmØ STM INVERT @ CAP
3+084.91	64.17m	PROPOSED 50mmØ WM OBVERT @ CAP
3+085.41	64.02m	PROPOSED 150mmØ SAN INVERT @ CAP

BLOCK 3 SERVICE TABLE		
STATION	SERVICE ELEVATION @ CAP	SERVICE DESCRIPTION
3+141.73	62.09m	EXISTING 100mmØ STM INVERT
3+141.88	62.10m	PROPOSED 100mmØ STM INVERT @ CAP
3+142.23	62.23m	EXISTING 50mmØ WM OBVERT
3+142.39	62.24m	PROPOSED 50mmØ WM OBVERT @ CAP
3+142.74	62.02m	EXISTING 150mmØ SAN INVERT
3+142.89	62.03m	PROPOSED 150mmØ SAN INVERT @ CAP

CATCHBASIN TABLE			
CB No.	T/G ELEVATION	INVERT	ICD DIA.
CB2	65.82	64.42	94mmØ
CB3	66.65	65.25	83mmØ
CB4	65.44	64.04	108mmØ

STM MANHOLE TABLE		
MANHOLE ID	T/G ELEV	INVERT
404	65.60	E=63.96 NW=63.76 N=62.44 SW=63.28
406	66.96	SW=63.49 NW=63.43
408	67.19	NW=64.21 NW=63.90
414	67.46	SW=65.47 NW=65.41
EX. CAP	65.52	S=62.40
STORMTECH1 INLET	66.54	SE=63.38
STORMTECH1 OUTLET	66.03	NE=63.37

REAR YARD CATCHBASIN TABLE			
RYCB No.	T/G ELEVATION	INVERT	ICD DIA
CBMH1	67.74	S=66.06 NE=65.77	83mmØ
RYE1	67.40	N=65.99	-
RYE2	67.50	N=66.10	-
RYT1	67.50	NE=65.83 S=65.89	-
RYT2	67.55	NE=65.55 SW=65.55	CB-LANDSCAPE
TD1	65.82	SW=64.49	
TD2	65.30	W=64.10	

LEGEND

- DC

150mmØ

V&VB

11.25°/22.5°

101

100

CB-1

CBMH-1

RYE1

RYT1

25

PROPOSED WATERMAIN INSULATION (W23)

PROPOSED STORMTECH STORMWATER MANAGEMENT SYSTEM (REFER TO MANUFACTURERS DETAILS IN SWM REPORT)

PROPOSED TRENCH DRAIN

PROPOSED TACTILE WALKING SURFACE INDICATOR (TWSI)

PROPOSED INTERLOCK STONE

PROPOSED BIKE RACKS
- PROPOSED BARRIER CURB

PROPOSED DEPRESSED CURB

PROPOSED WATERMAIN AND DIAMETER

PROPOSED VALVE & VALVE BOX

PROPOSED STANDPOST

PROPOSED WATERMAIN BEND & THRUSTBLOCK

PROPOSED SANITARY/STORM/WATERMAIN CAP

PROPOSED WATERMAIN TEE

PROPOSED FIRE HYDRANT

PROPOSED SANITARY MANHOLE & SEWER WITH DIRECTION OF FLOW

PROPOSED STORM MANHOLE & SEWER WITH DIRECTION OF FLOW

PROPOSED CATCHBASIN

PROPOSED CATCH BASIN MANHOLE

PROPOSED REAR YARD ELBOW

PROPOSED REAR YARD TEE

SITE BENCHMARK (59.92m)

REFER TO KEY PLAN FOR LOCATION

PROPOSED WATERMAIN INSULATION (W23)

PROPOSED STORMTECH STORMWATER MANAGEMENT SYSTEM (REFER TO MANUFACTURERS DETAILS IN SWM REPORT)

PROPOSED TRENCH DRAIN

PROPOSED TACTILE WALKING SURFACE INDICATOR (TWSI)

PROPOSED INTERLOCK STONE

PROPOSED BIKE RACKS
- PROPOSED RETAINING WALL

PROPOSED RETAINING WALL C/W 1.2m HIGH CHAINLINK FENCE

PROPOSED RETAINING WALL C/W DECORATIVE RAILING

DECORATIVE RAILING

PIPE CROSSING (REFER TO TABLE)

EXISTING STORM BOX MANHOLE WITH ICD ORIFICE PLATE

EXISTING SANITARY MH & SEWER WITH DIRECTION OF FLOW

EXISTING STORM MH & SEWER WITH DIRECTION OF FLOW

EXISTING WATERMAIN

EXISTING HYDRANT

EXISTING VALVE & VALVE BOX

EXISTING CATCHBASIN MANHOLE

EXISTING CATCHBASIN

EXISTING TOWNHOUSE SERVICE LOCATION

EXISTING PADMOUNT HYDRO TRANSFORMER

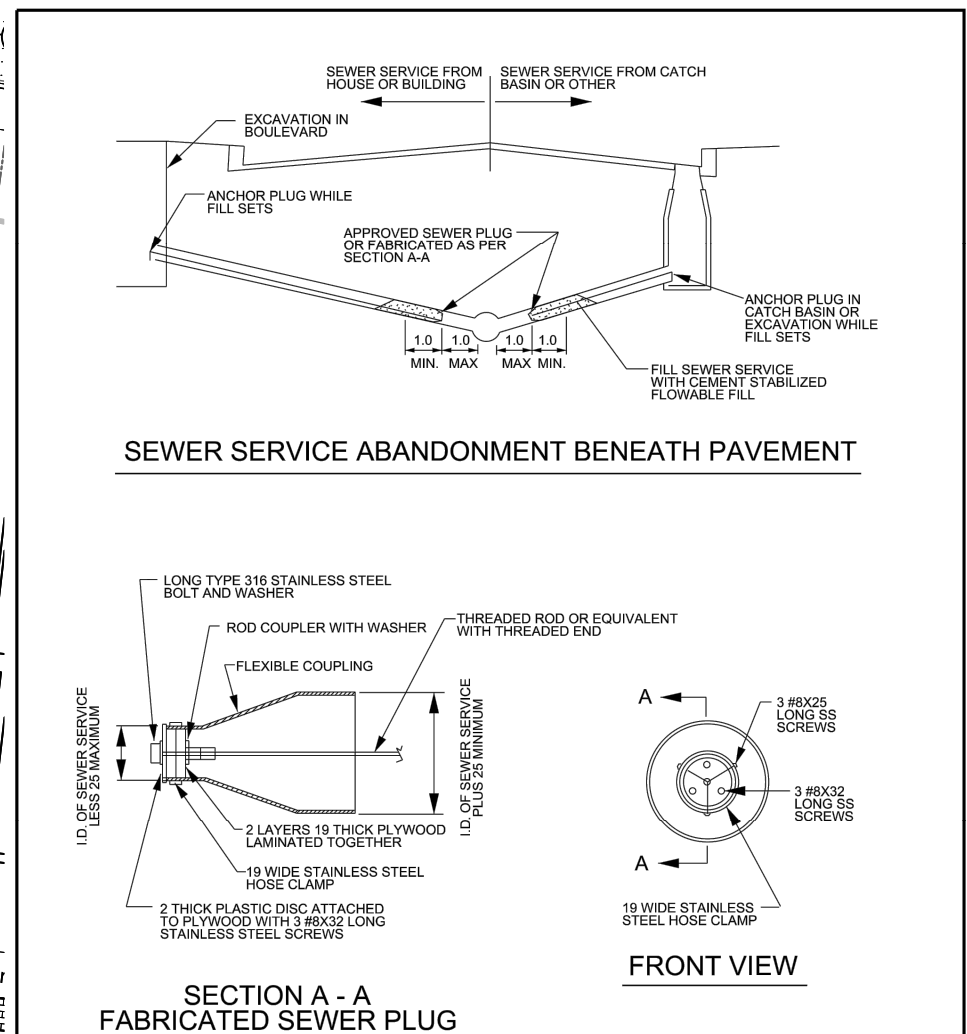
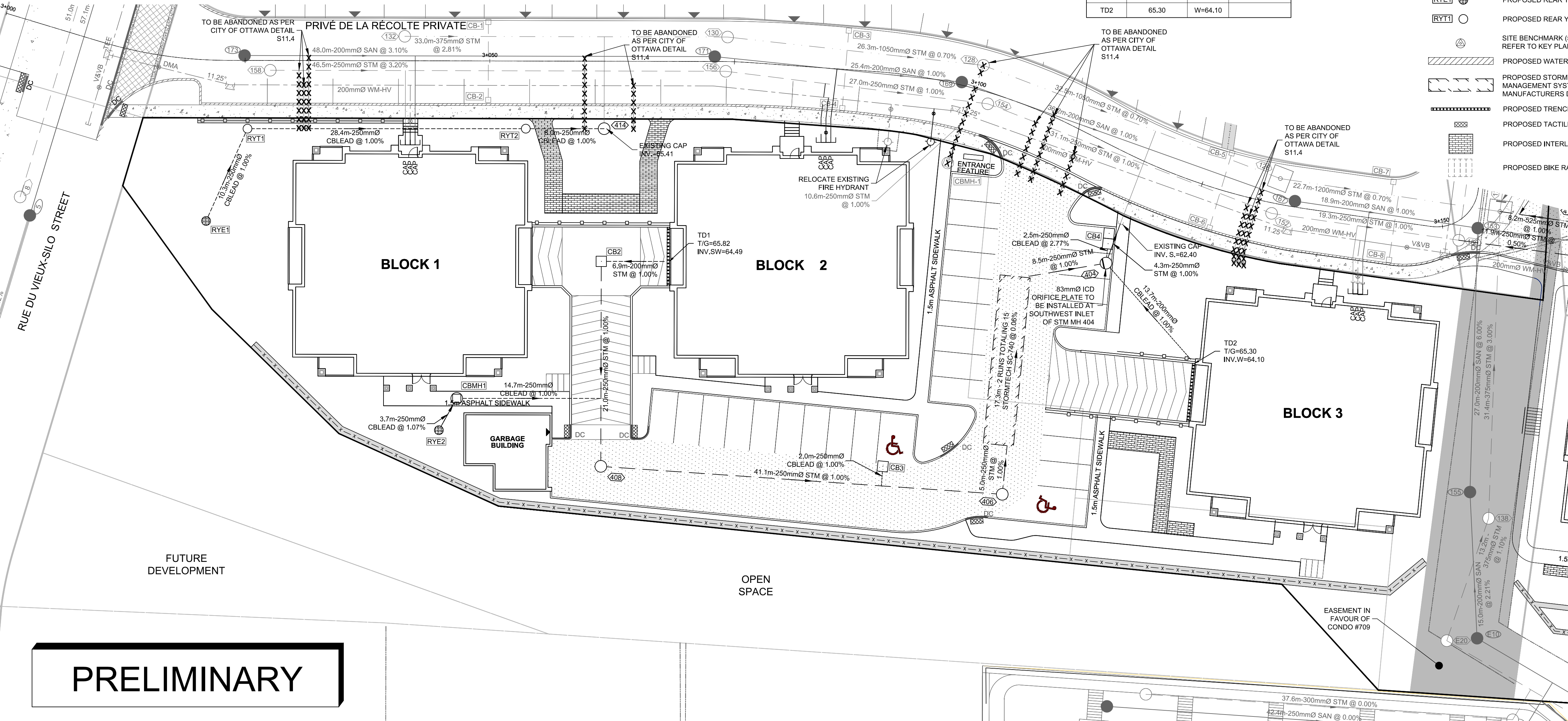
EXISTING CABLE TELEVISION PEDESTAL

EXISTING BELL GRADE LEVEL BOX

EXISTING STREET LIGHT

EXISTING TOWNHOUSE SERVICE LOCATION

EXISTING PAVER



PRELIMINARY

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.

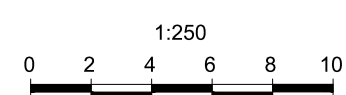
APPROVED ☐ REFUSED ☐
THIS ____ DAY OF _____, 20____

JEFF MCEWEN, P.ENG., MANAGER
DEVELOPMENT REVIEW, SUBURBAN SERVICES

No.	REVISION	DATE	BY
4.	ISSUED FOR SITE PLAN SUBMISSION	DEC 15/17	DDB
3.	ISSUED FOR SITE PLAN APPROVAL	AUG 26/16	DDB
2.	ISSUED FOR COORDINATION	JUL 4/16	DDB
1.	ISSUED FOR CLIENT REVIEW	JAN 29/16	DDB

SCALE

1:250



DESIGN

MWB
CHECKED
DDB
DRAWN
SAM
CHECKED
DDB
APPROVED
DDB

FOR REVIEW ONLY



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
HILLSIDE VISTA WALK-UP CONDOS

DRAWING NAME		PROJECT No.
GENERAL PLAN OF SERVICES		106011
REV	REV #4	
DRAWING No.		106011-GP-WT1