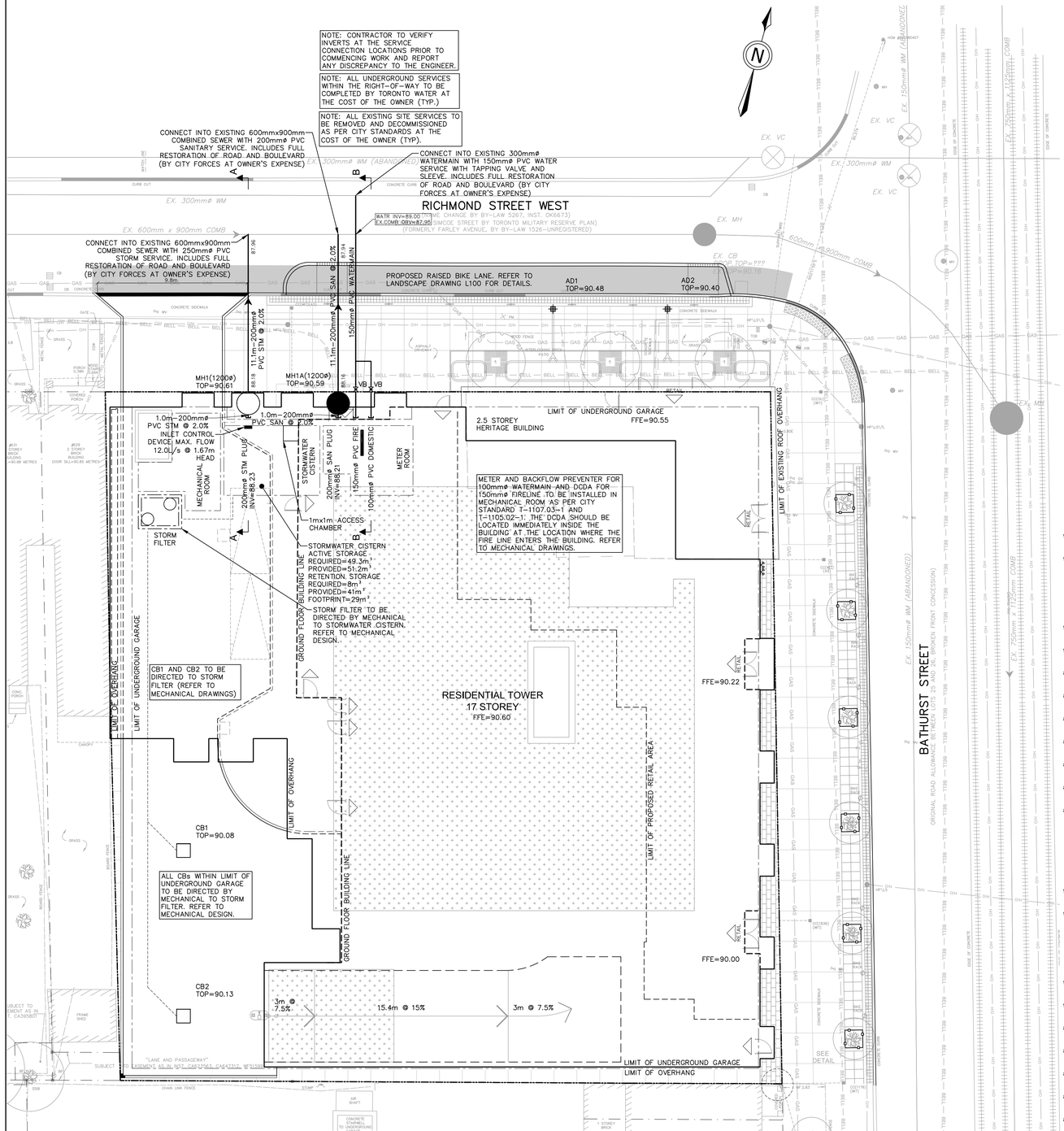


WATERMAINS:

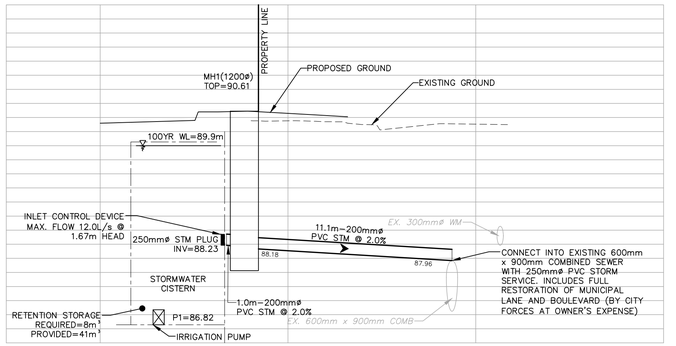
1. PVC WATERMAINS SHALL BE MINIMUM DR 18 CLASS 235 (AWWA) C900-07 OR MOLECULARLY ORIENTED POLYVINYL CHLORIDE (PVCO) PIPES RANGING IN SIZE FROM 100mm TO 300mm IN DIAMETER PRESSURE CLASS 235AWWA C909-09. PVC RANGING IN SIZE FROM 350mm THROUGH 600mm IN DIAMETER, SHALL BE PRESSURE RATING 235, DR 18 ACCORDING TO AWWA C905-10.
2. EMBEDMENT MATERIAL FOR FLEXIBLE PIPE SHALL BE ACCORDING TO OPSD 802.010 AND USING GRANULAR A ACCORDING TO TS 1010 AND COMPACTED TO MINIMUM 98% OF MAXIMUM DRY DENSITY.
3. MINIMUM COVER ON WATERMAINS SHALL BE 1.8m.
4. ALL HYDRANTS SHALL BE CONSTRUCTED ACCORDING TO T-1105.01.
5. HYDRANT LEADS SHALL BE MINIMUM DR 18 CLASS 235 (AWWA) C900-07.
6. ALL SERVICE CONNECTIONS SHALL BE CONSTRUCTED ACCORDING TO T-1104.01, T-1104.02-1, T-1104.02-3 T-1105.02-1 AND T-1105.02-2.
7. SINGLE WATER SERVICE CONNECTIONS SHALL BE A MINIMUM OF 19mm DIA. TYPE "K" SOFT COPPER ACCORDING TO T-1104.01. WHEN SERVICE LENGTH EXCEEDS 30m, THE DIAMETER SHALL BE 25mm DIA.
8. ALL CURB AND VALVE BOXES TO BE LOCATED AT STREET LINE.
9. MECHANICAL THRUST RESTRAINTS SHALL BE INSTALLED AT ALL FITTINGS, BENDS,TEES, CROSSES, REDUCERS AND VALVES FOR ALL WATERMAIN MECHANICAL RESTRAINTS AT JOINTS SHALL BE INSTALLED AT EVERY PIPE JOINT 6.1m OF EITHER SIDE OF THE VALVE FOR WATERMAINS 100mm DIAMETER OR LARGER.
10. ALL TEES, PLUGS, HORIZONTAL, VERTICAL BENDS, REDUCERS AND HYDRANTS TO HAVE CONCRETE THRUST BLOCKS ACCORDING TO T-1103.01 AND T-1103.020.
11. WATERMAINS MUST FOLLOW THE ONTARIO MINISTRY OF THE ENVIRONMENT PROCEDURE F-6-1 THAT GOVERN THE SEPARATION OF SEWERS AND WATERMAINS. A MINIMUM VERTICAL CLEARANCE OF 0.30m WHEN CROSSING OVER AND 0.5m WHEN CROSSING UNDER SEWERS AND ALL OTHER UTILITIES IS REQUIRED. MUST ALSO MAINTAIN 2.5m HORIZONTAL SEPARATION WITH SEWERS.
12. ALL VALVES LESS THAN 400mm WILL BE IN A VALVE AND BOX ACCORDING TOT-1101.02-2. ALL VALVES 400mm AND LARGER SHALL BE IN A CHAMBER.
13. SACRIFICIAL ANODES SHALL BE INSTALLED ON ALL METALLIC PIPES AND APPURTENANCES, WATER SERVICES AND FITTINGS ACCORDING TO T-1106.04, T-1106.05, T-1106.06 AND TS 7.22.
14. TRACER WIRE INSTALLATION SHALL BE ACCORDING TO TS 7.40.
15. HYDROSTATIC PRESSURE TEST AND LEAKAGE TESTING OF THE WATERMAIN SHALL BE ACCORDING TO TS 441.
16. THE NEW WATERMAIN SHALL BE ISOLATED ACCORDING TO T-1104.03-3 OR T-1104.03-4 UNTIL BACTERIOLOGICAL TESTS ARE SATISFACTORILY COMPLETED.
17. PROVISIONS FOR FLUSHING THE WATER MAIN PRIOR TO TESTING AND SO FORTH MUST BE PROVIDED WITH AT LEAST A 50mm OUTLET ON 100mm AND LARGER LINES ACCORDING TO T-1104.03-1, COPPER WATER SERVICES SHALL HAVE FLUSHING POINTS AT THE END, THE SAME SIZE AS THE LINE. ON FIRE LINES, FLUSHING OUTLET TO BE 50mm DIAMETER MINIMUM OR A HYDRANT.
18. DISINFECTION OF THE WATERMAIN SHALL BE ACCORDING TO TS 7.30 AND SHALL INCLUDE ALL NEW WATER SERVICES 100mm DIA AND LARGER
19. TORONTO WATER REQUIRES THAT THE NEW DISTRIBUTION SYSTEM REMAIN ISOLATED UNTIL SATISFACTORY BACTERIOLOGICAL SAMPLE RESULTS ARE RECEIVED. ECS CONTRACT ADMINISTRATOR SHALL NOTIFY TORONTO WATER WHEN SAMPLE RESULTS HAVE PASSED IN ORDER TO PROCEED WITH REMOVAL OF THE BLOW-OFF AND BACK FILLING OF THE ACCESS PIT.
20. AFTER SATISFACTORY DISINFECTION OF THE NEW WATERMAIN IS ACHIEVED, PERMANENT CONNECTIONS TO THE EXISTING WATERMAIN(S) WITH A FILLER PIECE SHALL BE MADE ACCORDING TO TS 7.70.
21. CITY IN-SERVICE WATER VALVES, CURB STOPS, FIRE HYDRANTS CAN ONLY BE OPERATED BY TORONTO WATER STAFF.
22. ALL NEW WATERMAINS SHALL BE INSULATED WHERE THE COVER IS LESS THAN 1.65 M ACCORDING TO T-708.01-4.
23. THE CONTRACTOR SHALL CONNECT OR RECONNECT ALL STRAY CURRENT DRAINAGE CABLES CONNECTED TO THE TTC ELECTRIFIED RAIL SYSTEM ENCOUNTERED DURING WATERMAIN CONSTRUCTION.

SANITARY AND STORM SEWERS:

1. MAIN LINE PVC PIPE SHALL BE DR 35.
2. SANITARY SERVICE CONNECTIONS SHALL BE SINGLE, 150mm DIAMETER MINIMUM, PVC DR 28 INSTALLED AT 2 PERCENT AND THE COLOUR SHALL BE GREEN, FOR SINGLE RESIDENTIAL DWELLINGS.
3. EMBEDMENT MATERIAL FOR FLEXIBLE PIPE SHALL BE ACCORDING TO OPSD 802.010 AND USING GRANULAR A ACCORDING TO TS 1010 AND COMPACTED TO MINIMUM 98% OF MAXIMUM DRY DENSITY.
4. BEDDING FOR RIGID PIPE SHALL BE CLASS B BEDDING MATERIAL ACCORDING TO OPSD 802.031 AND USING GRANULAR A NATIVE OR GRANULAR A RCM BEDDING MATERIAL ACCORDING TO TS 1010 AND COMPACTED TO MINIMUM 98% OF MAXIMUM DRY DENSITY.
5. ULTRA-RIB PIPE IS NOT PERMITTED WITHIN THE MUNICIPAL RIGHT-OF-WAY.
6. MAINTENANCE HOLES SHALL BE ACCORDING TO T-701.010 (1200mm), T-701.011 (1500mm), T-701.012-1 (1800mm) OR T-701.013 (2400 mm). FRAME AND COVER SHALL BE ACCORDING TO OPSD 401.010 TYPE A CLOSED (SANITARY AND STORM).
7. MAINTENANCE HOLE CHAMBER OPENINGS MUST BE LOCATED ON THE UPSTREAM SIDE OF THE MAINTENANCE HOLE.
8. BENCHING DETAILS SHALL BE ACCORDING TO T-701.021 OR AS SHOWN ON THE DRAWINGS.
9. DROP STRUCTURES SHALL BE ACCORDING TO T-1003.01 (EXTERNAL) AND T-1003.01-2 (INTERNAL).
10. SANITARY MAINTENANCE HOLES SHALL HAVE WATERTIGHT FRAMES AND COVERS IN PONDING AREAS ACCORDING TO OPSD 401.030.
11. REINFORCED CONCRETE PIPE SHALL BE MINIMUM 65-D, HEIGHT OF FILL TO BE VERIFIED USING OPSD TABLES 807.010 AND 807.030.
12. NON-REINFORCED CONCRETE PIPE 150mm TO 250mm SHALL BE CLASS 3. HEIGHT OF FILL TO BE VERIFIED USING OPSD TABLE 807.040.
13. SINGLE CATCHBASINS SHALL BE ACCORDING TO T-705.010 COMPLETE WITH GOSS TRAP, WHERE SPECIFIED. FRAME AND COVER SHALL BE ACCORDING TO OPSD 400.070.
14. DOUBLE CATCHBASINS SHALL BE ACCORDING TO T-705.020 COMPLETE WITH GOSS TRAP, WHERE SPECIFIED.
15. CATCHBASIN LEADS TO BE 250mm PVC DR 35 FOR SINGLE CATCHBASINS AND 300mm PVC DR 35 FOR DOUBLE CATCHBASINS.
16. CONNECTION DETAIL FOR SEWER PIPE AT CATCHBASINS AND MAINTENANCE HOLES SHALL BE ACCORDING TO T-708.020.

GENERAL NOTES:

1. CONTRACTOR TO PROVIDE ASBUILTS, WATERMAIN TEST RESULTS, AND CCTV VIDEOS FOR STORM AND SANITARY SEWERS TO THE SITE ENGINEER FOR CERTIFICATION PURPOSES. ASBUILTS TO INCLUDE TOP ELEVATIONS FOR ALL STRUCTURES, PIPE INVERTS, AND ELEVATIONS ALONG THE CURB LINE.



CROSS SECTION A-A

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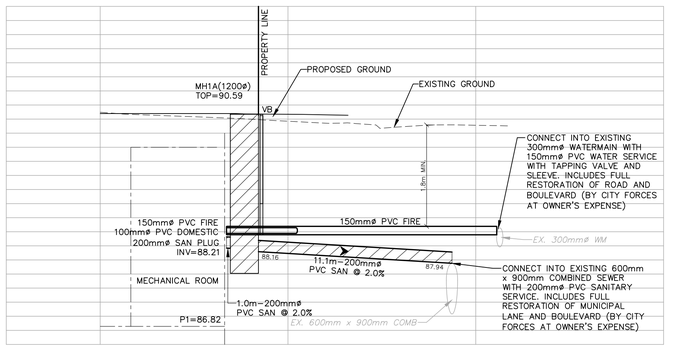
VER. 1:50



CROSS SECTION B-B

SCALE: HOR. 1:150
VER. 1:50

TORONTO
ENGINEERING and CONSTRUCTION SERVICES DIVISION

ACCEPTED TO BE IN ACCORDANCE WITH THE CITY OF TORONTO STANDARDS. THIS ACCEPTANCE IS NOT TO BE CONSTRUED AS VERIFICATION OF ENGINEERING CONTENT.

Manager, Development Engineering DATE:

LEGEND

- PROPOSED STORM SEWER
- PROPOSED SANITARY SEWER
- EXISTING COMBINED SEWER
- PROPOSED STORM CATCHBASIN
- PROPOSED VALVE & BOX
- PROPOSED WATERMAIN
- PROPERTY LINE
- LIMIT OF OVERHANG
- LIMIT OF LEVEL 1
- LIMIT OF UNDERGROUND GARAGE
- PROPOSED CURB UNDER BUILDING
- PROPOSED RESIDENTIAL AND COMMERCIAL DIVISION

HUSSON
ENGINEERING + MANAGEMENT
P 905.709.5826
300 CACHET WOODS COURT, SUITE 304
MARKHAM, ON L6C 0Z8
HUSSON.CA

No.:	Revision:	Date:
		Revisions:

LICENSED PROFESSIONAL ENGINEER
G.K. RAPP
100010605
2020-04-26
PROVINCE OF ONTARIO

No.:	Issued For:	Date:
2.	Issued For SPA	April 26, 2022
1.	Issued For ZBA	June 4, 2021

ELEVATION

ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE RELATED TO CITY OF TORONTO BENCH MARK No. CT556 HAVING AN ELEVATION OF 91.165 METRES.

Client:
Originate Developments

152-164 Bathurst Street &
623-627 Richmond Street, Toronto
Proposed Residential Development

Drawing Title:
SERVICING PLAN

Scale: 1 : 150
Drawn by: WS
Checked by: GKR
Project No.: 211176
Date: April 26, 2022
Drawing No.:
SW2