

WATERMAIN TABLE				WATERMAIN TABLE			
STATION	DESCRIPTION	GROUND ELEVATION	TOP OF WATERMAIN	STATION	DESCRIPTION	GROUND ELEVATION	TOP OF WATERMAIN
0+000	CONNECTION TO EXISTING	88.41	88.01	4+000	TEE c/w THRUSTBLOCK	88.70	86.30
0+10		88.25	88.85	4+10	VALVE & VLAVE BOX	88.70	86.30
0+20		88.26	88.86				
0+21		88.26	88.86	4+20		88.70	86.30
0+30		88.36	88.96	4+30		88.80	86.40
0+40	VALVE & VLAVE BOX	88.16	85.76	4+40		88.80	86.40
0+50		88.16	85.76	4+50		88.80	86.40
0+60		88.28	88.88	4+60		88.80	86.40
0+70		88.39	88.99	4+70		88.80	86.40
0+80		88.49	89.09	4+80		88.80	86.40
0+90		88.55	89.15	4+90		88.80	86.40
0+97.6	TEE c/w THRUSTBLOCK	88.43	86.03	4+100		88.80	86.40
0+100		88.35	85.95	4+110		88.80	86.40
0+110		88.27	85.87	4+120		88.80	86.40
0+120		88.40	86.00	4+130		88.80	86.40
0+130		88.30	85.90	4+134.9	45° BEND c/w THRUSTBLOCK	88.70	86.30
0+140		88.45	86.05	4+140		88.70	86.30
0+147	VALVE & VLAVE BOX	88.70	86.30	4+150		88.70	86.30
0+150	FIRE LINE METER CHAMBER R4 CITY STD 32.1	88.77	86.37	4+156.6	45° BEND c/w THRUSTBLOCK	88.70	86.30
0+160		88.58	86.18	4+160		88.70	86.30
0+167.5	TEE c/w THRUSTBLOCK	88.50	86.10	4+170		88.70	86.30
0+170	TEE c/w THRUSTBLOCK	88.50	86.10	4+180		88.70	86.30
0+180		88.80	86.40	4+184.8	45° BEND c/w THRUSTBLOCK	88.70	86.30
0+190	VALVE & VLAVE BOX	88.93	86.53	4+190		88.70	86.30
0+200		88.05	86.65	4+198.8	VALVE & VLAVE BOX	88.70	86.30
0+201.2	CAP 1.0m FROM BUILDING FACE	88.04	86.64	4+200	FIRE HYDRANT	88.40	86.00

SANITARY SEWER STRUCTURE TABLE			
STRUCTURE NUMBER	STRUCTURE TYPE	FRAME & COVER	
SAN 301	1200mmØ, OPSD 701.010	S25, S24	
SAN 303	1200mmØ, OPSD 701.010	S25, S24	
SAN 304	1200mmØ, OPSD 701.010	S25, S24	
SAN 305	1200mmØ, OPSD 701.010	S25, S24	
SAN 306	1200mmØ, OPSD 701.010	S25, S24	

1+00	TEE c/w THRUSTBLOCK	88.50	86.10
1+10	VALVE & VLAVE BOX	87.75	85.35
1+20		88.78	86.38
1+30		88.70	86.30
1+34.8	45° BEND c/w THRUSTBLOCK	88.90	86.50
1+37.5	45° BEND c/w THRUSTBLOCK	88.95	86.55
1+40	TEE c/w VALVE AND FIRE HYDRANT	88.95	86.55
1+50		88.90	86.50
1+60		88.80	86.20
1+70		88.75	86.35
1+72.1	VALVE & VLAVE BOX	88.80	86.40
1+75.2	FIRE HYDRANT	88.65	86.45
2+00	TEE c/w THRUSTBLOCK		
2+10		88.49	86.09
2+20		88.45	86.05
2+30		88.57	86.17
2+31.6	VALVE & VLAVE BOX	88.60	86.20
2+35.8	TEE c/w THRUSTBLOCK	88.60	86.20
2+37.4	45° BEND c/w THRUSTBLOCK	88.55	86.15
2+40		88.65	86.25
2+48.6	45° BEND c/w THRUSTBLOCK	88.85	86.45
2+50	FIRE LINE METER CHAMBER R4 CITY STD 32.1	88.90	86.50
2+59	45° BEND c/w THRUSTBLOCK	88.85	86.45
2+60		88.90	86.50
2+70		88.78	86.38
2+71.2		88.80	86.40
2+80		88.70	86.30
2+90		88.70	86.30
2+100		87.60	85.20
2+117.3	TEE c/w THRUSTBLOCK	88.50	86.10

STORM SEWER NOTES:

- ALL STORM SEWER MATERIALS AND INSTALLATION SHALL CONFORM TO THE LATEST REVISIONS OF THE STANDARDS AND SPECIFICATIONS OF THE CITY OF OTTAWA, ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND SPECIFICATIONS (OPSS).
- CATCHBASIN MAINTENANCE HOLE COVER AS PER CITY STANDARD S28.1 AND CIRCULAR FRAME AS PER CITY STANDARD S25.
- ALL STORM SEWER TO BE PVC SDR 35 OR REINFORCED CONCRETE IN ACCORDANCE WITH CSA STANDARDS A257.2 AND A257.3 (JOINTS). PVC STORM SEWERS ARE TO BE SDR 35 APPROVED PER C.S.A. 5182.2 OR LATEST AMENDMENT, UNLESS OTHERWISE SPECIFIED.
- THE CONTRACTOR SHALL CONSTRUCT FLEXIBLE STORM SEWERS IN ACCORDANCE WITH OPSD 802.010 AND 802.013. RIGID STORM PIPE SHALL BE CONSTRUCTED IN ACCORDANCE WITH OPSD 802.030. DURING CONSTRUCTION THE CONTRACTOR SHALL PROTECT THE PIPES FROM HEAVY CONSTRUCTION EQUIPMENT. BEDDING AND BACKFILL SHALL BE COMPACTED TO A MINIMUM OF 95% SPMD.
- SEWER BEDDING AS PER CITY STANDARD S6 & S7.
- WITHIN THE FROST ZONE, THE BACKFILL IN THE SERVICE TRENCHES SHOULD MATCH THE SOIL ON SIDES TO MINIMIZE DIFFERENTIAL FROST HEAVING IN THE SUBGRADE.
- THE CONTRACTOR SHALL CONDUCT CCTV INSPECTION OF ALL NEWLY INSTALLED STORM SEWERS AND EXISTING SEWERS CONNECTED TO THE TEST SHALL BE PERFORMED IMMEDIATELY AFTER SEWERS INSTALLED.
- ALL CATCH BASIN LEADS TO BE 250mm DIAMETER WITH A SLOPE OF 1.5% UNLESS NOTED OTHERWISE.

WATERMAIN NOTES:

- ALL WATERMAIN MATERIALS AND INSTALLATION SHALL CONFORM TO THE LATEST REVISIONS OF THE STANDARDS AND SPECIFICATIONS OF THE CITY OF OTTAWA, ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND SPECIFICATIONS (OPSS).
- NO WORK SHALL COMMENCE UNLESS A CITY WATER WORKS INSPECTOR IS ON SITE. WATERMAIN CONNECTIONS BY CITY OF OTTAWA FORCES WITH ALL EXCAVATION BACKFILL AND ROAD REINSTATEMENT BY CONTRACTOR.
- WATERMAINS TRENCH AND BEDDING SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STANDARD W17, UNLESS OTHERWISE SPECIFIED.
- ALL WATERMAINS TO BE INSTALLED AT MINIMUM COVER OF 2.4m. THERMAL INSULATION SHALL BE INSTALLED WHERE MINIMUM COVER CANNOT BE ACHIEVED AS PER CITY STANDARDS W-21, W-22 AND W-23.
- IF WATERMAIN MUST BE DEFLECTED TO MEET ALIGNMENT, ENSURE THAT THE AMOUNT OF DEFLECTION USED IS LESS THAN HALF THAT RECOMMENDED BY THE MANUFACTURER.
- DISINFECTION AND TESTING OF WATERMAIN TO BE IN ACCORDANCE WITH CITY OF OTTAWA STANDARDS.
- STORM MANHOLES ADJACENT TO WATERMAIN TO BE INSULATED AS PER CITY OF OTTAWA STANDARD DETAIL DRAWING W23.

STORM SEWER STRUCTURE TABLE

STRUCTURE NUMBER	STRUCTURE TYPE	FRAME & COVER
CB101	600 x 600, OPSD 705.010	OPSD 400.020
CB102	600 x 600, OPSD 705.010	OPSD 400.020
CB103	600 x 600, OPSD 705.010	OPSD 400.020
CB104	600 x 600, OPSD 705.010	OPSD 400.020
CB105	600 x 600, OPSD 705.010	OPSD 400.020
CB106	600 x 600, OPSD 705.010	OPSD 400.020
CB107	600 x 600, OPSD 705.010	OPSD 400.020
CB108	600 x 600, OPSD 705.010	OPSD 400.020
CB109	600 x 600, OPSD 705.010	OPSD 400.020
CB110	600 x 600, OPSD 705.010	OPSD 400.020
CB111	600 x 600, OPSD 705.010	OPSD 400.020
CB112	600 x 600, OPSD 705.010	OPSD 400.020
CB113	600 x 600, OPSD 705.010	OPSD 400.020
CB114	600 x 600, OPSD 705.010	OPSD 400.020
CB115	600 x 600, OPSD 705.010	OPSD 400.020
CB116	600 x 600, OPSD 705.010	OPSD 400.020
CB117	600 x 600, OPSD 705.010	OPSD 400.020
CB118	600 x 600, OPSD 705.010	OPSD 400.020
CB119	600 x 600, OPSD 705.010	OPSD 400.020
CB120	600 x 600, OPSD 705.010	OPSD 400.020
CB121	600 x 600, OPSD 705.010	OPSD 400.020
CB122	600 x 600, OPSD 705.010	OPSD 400.020
CB125	600 x 600, OPSD 705.010	OPSD 400.020
CB126	600 x 600, OPSD 705.010	OPSD 400.020
CB127	600 x 600, OPSD 705.010	OPSD 400.020
CB128	600 x 600, OPSD 705.010	OPSD 400.020
CB129	600 x 600, OPSD 705.010	OPSD 400.020
CB130	600 x 600, OPSD 705.010	OPSD 400.020

STORM SEWER STRUCTURE TABLE

STRUCTURE NUMBER	STRUCTURE SIZE
CBMH201	1200mmØ, OPSD 701.010
CBMH202	1800mmØ, OPSD 701.012
CBMH203	1200mmØ, OPSD 701.010
CBMH204	1200mmØ, OPSD 701.010
CBMH205	1800mmØ, OPSD 701.012
CBMH206	1200mmØ, OPSD 701.010
CBMH207	1200mmØ, OPSD 701.010
CBMH208	1800mmØ, OPSD 701.012
CBMH209	1200mmØ, OPSD 701.010
CBMH210	1200mmØ, OPSD 701.010
CBMH211	1800mmØ, OPSD 701.012
CBMH212	1200mmØ, OPSD 701.010
CBMH213	2400mmØ, OPSD 701.013
CBMH214	1200mmØ, OPSD 701.010
CBMH215	1500mmØ, OPSD 701.011
CBMH216	1200mmØ, OPSD 701.010
CBMH217	1200mmØ, OPSD 701.010
CBMH218	1200mmØ, OPSD 701.010
CBMH219	1200mmØ, OPSD 701.010
CBMH220	1500mmØ, OPSD 701.011
CBMH221	2400mmx1800 Box MH
CBMH222	2400mmØ, OPSD 701.013
CBMH223	2400mmØ, OPSD 701.013
CBMH224	1500mmØ, OPSD 701.014
CBMH225	1200mmØ, OPSD 701.010
CBMH226	1200mmØ, OPSD 701.010
CBMH227	1800mmØ, OPSD 701.012
CBMH228	1200mmØ, OPSD 701.010
CBMH229	1800mmØ, OPSD 701.011
CBMH230	1800mmØ, OPSD 701.012
CBMH231	1500mmØ, OPSD 701.011

INLET CONTROL DEVICE TABLE

ICD Location	Controlled Rate (L/sec)	Orifice Centre Elev. (m)	Max Elev. (m)	Max Head (m)	ICD Type / Model
CBMH221	184	85.39	88.7	3.31	220mm diameter Plug Type Orifice
CBMH227	354	86.08	88	1.92	350mm diameter Plug Type Orifice
CBMH 224	42.5	85.3	88.3	3	100 mm diameter Plug Type Orifice

WATERMAIN / SEWER CROSSING TABLE

LOCATION	STORM SEWER			SANITARY SEWER			WATERMAIN			CLEARANCES (mm)
	Invert Elev	Dia. (mm)	Obvert Elev	Invert Elev	Dia. (mm)	Obvert Elev	Invert Elev	Dia. (mm)	Obvert Elev	
1	85.27	250	85.52				85.77	200	85.97	250mm (STM Below)*
2	85.05	300	85.35				85.85	200	86.05	500mm (STM Below)*
3	85.02	300	85.32	84.59	200	84.79	85.71	200	85.91	230mm (SAN Below)
4				86.41	150	86.56	85.71	200	85.91	500mm (WM Below)
5	85.37	750	86.12	84.97	200	85.17				200mm (STM Below)
6	85.38	750	86.13				86.38	200	86.68	250mm (STM Below)*
7				85.08	200	85.28	86.18	200	86.38	900mm (SAN Below)
8	84.9	1050	85.95				86.25	200	86.45	300mm (STM Below)*
9	84.91	1050	85.96	86.62	200	86.82				600mm (STM Below)
10				86.65	200	86.85	86	200	86.2	450mm (WM Below)*
11	86.37	600	86.97				85.67	200	85.87	300mm (STM Below)*
12	86.34	600	86.94							350 mm
13	84.94	1050	85.99							910mm (SAN Below)
14	84.98	1050	86.03	85.2	200	85.4	86.3	200	86.5	270mm (STM Below)
15	86.4	250	86.65				85.9	200	86.1	300mm (WM Below)
16	85.67	525	86.2				86.5	200	86.7	280mm (STM Below)*
17	85.97	525	86.5				86.75	200	86.95	250mm (STM Below)*
18	86.38	250	86.63				85.85	200	86.05	330mm (STM Below)*
20	85.22	250	85.47	84.43	200	84.63				590mm (SAN Below)

*Note: Thermal Insulation shall be installed where minimum cover cannot be achieved as per City Standards W-21, W-22 and W-23

SANITARY SEWER NOTES:

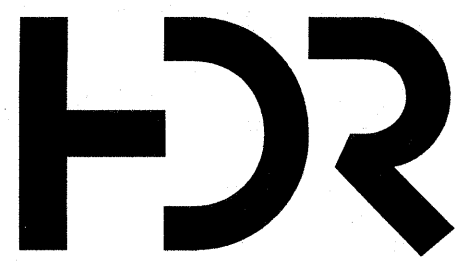
- ALL SANITARY SEWER MATERIALS AND INSTALLATION SHALL CONFORM TO THE LATEST REVISIONS OF THE STANDARDS AND SPECIFICATIONS OF THE CITY OF OTTAWA, ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND SPECIFICATIONS (OPSS).
- ALL SANITARY SEWERS SHALL BE PVC SDR 35, IPEX "RING-TITE" (OR EQUIVALENT), AS PER CSA STANDARD 5182.2 OR LATEST AMENDMENT, UNLESS OTHERWISE NOTED.
- SANITARY SEWER TRENCH AND BEDDING SHALL BE AS PER CITY OF OTTAWA STD S6 AND S7.
- THE CONTRACTOR SHALL CONDUCT INFILTRATION/EXFILTRATION (AS PER CURRENT OPSS) TESTING ON ALL NEWLY INSTALLED SANITARY SEWERS. THE TEST SHALL BE PERFORMED IMMEDIATELY AFTER SEWER INSTALLATION AND VIEWED BY THE CONSULTANT.
- THE CONTRACTOR SHALL CONDUCT CCTV INSPECTION OF ALL NEWLY INSTALLED SANITARY SEWERS AND EXISTING SEWERS CONNECTED TO THE TEST SHALL BE PERFORMED IMMEDIATELY AFTER SEWERS INSTALLED.
- THE CONTRACTOR SHALL CONSTRUCT FLEXIBLE SANITARY SEWERS IN ACCORDANCE WITH OPSD 802.010 AND 802.013. DURING CONSTRUCTION, THE CONTRACTOR SHALL PROTECT THE PIPES FROM HEAVY CONSTRUCTION EQUIPMENT. BEDDING AND BACKFILL SHALL BE COMPACTED TO A MINIMUM OF 95% SPMD.
- ALL SANITARY DRAINING DRAINS TO BE EQUIPPED WITH SANITARY BACKWATER VALVES INSTALLED PER CITY OF OTTAWA STANDARD DRAWING S14.1.
- WITHIN THE FROST ZONE, THE BACKFILL IN THE SERVICE TRENCHES SHOULD MATCH THE SOIL ON SIDES TO MINIMIZE DIFFERENTIAL FROST HEAVING IN THE SUBGRADE.

LEGEND

---	PROPERTY LINES
200mm WATERMAIN	PROPOSED WATER MAIN
300mm SAN	PROPOSED SANITARY SEWER
450mm STM	PROPOSED STORM SEWER
---	PROPOSED FENCE
---	PROPOSED SILT FENCE
---	PROPOSED RETAINING WALL
---	EXISTING SWALE
■	PROPOSED CATCHBASIN
○	PROPOSED CATCHBASIN MANHOLE
V&VB	PROPOSED VALVE & VALVE BOX
TH	PROPOSED THRUST BLOCK
---	PROPOSED FIRE HYDRANT
---	CONCRETE
---	PROPOSED LIGHT DUTY ASPHALT
*	ALL OTHER PROPOSED ASPHALT AREAS TO BE HEAVY DUTY ASPHALT
88.70	EXISTING GRADE
88.70	PROPOSED GRADE
M	PROPOSED SIAMESE CONNECTION
M	PROPOSED WATER METER
RM	PROPOSED REMOTE WATER METER

GENERAL NOTES:

- ALL WORKS AND MATERIALS SHALL CONFORM TO THE LATEST REVISIONS OF THE STANDARDS AND SPECIFICATIONS OF THE CITY OF OTTAWA, ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND SPECIFICATIONS (OPSS), WHERE APPLICABLE.
- THE LOCATION OF UTILITIES IS APPROXIMATE ONLY, AND THE EXACT LOCATION SHOULD BE DETERMINED BY CONSULTING THE MUNICIPAL AUTHORITIES AND UTILITY COMPANIES CONCERNED. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE THE LOCATION AND STATUS OF UTILITIES AND SHALL BE RESPONSIBLE FOR ADEQUATE PROTECTION OF PLANT AND EQUIPMENT FROM DAMAGE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OR REPLACEMENT OF ANY SERVICES OR UTILITIES DISTURBED DURING CONSTRUCTION, TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION.
- THE CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF EXISTING SERVICES PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL CONFIRM LOCATIONS AND ELEVATIONS OF EXISTING SERVICES AND STRUCTURES TO BE CONNECTED TO AND EXISTING SERVICES THAT MAY BE DAMAGED OR CAUSE CONFLICTS PRIOR TO CONSTRUCTION OF ANY NEW SEWER, WATER AND/OR STORM WATER WORKS. ALL DIMENSIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES, INTERPRETATIONS, CHANGES AND ADDITIONS TO THESE DRAWINGS MUST BE BROUGHT TO THE ATTENTION OF THE ENGINEER, WHEN NOTED AND BEFORE PROCEEDING WITH CONSTRUCTION WORKS. DO NOT CONTINUE CONSTRUCTION IN AREAS WHERE DISCREPANCIES APPEAR UNTIL SUCH DISCREPANCIES HAVE BEEN RESOLVED.
- ALL ELEVATIONS ARE GEODETIC AND UTILIZE METRIC UNITS. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SPECIFIED. ALL DRAWINGS SHALL BE SCALED BY THE CONTRACTOR. ANY MISSING OR QUESTIONABLE DIMENSIONS ARE TO BE CONFIRMED WITH THE ENGINEER IN WRITING.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED AND BEAR COST OF THE SAME.
- ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE "OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS", THE GENERAL CONTRACTOR SHALL BE DEEMED TO BE THE CONSTRUCTOR AS DEFINED IN THE ACT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATION, BACKFILL, AND REINSTATEMENT OF ALL AREAS DISTURBED DURING CONSTRUCTION TO THE SATISFACTION OF THE CONSULTANT, THE CITY OF OTTAWA AND THE AUTHORITY HAVING JURISDICTION.
- ANY AREAS BEYOND THE LIMIT OF THE SITE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL COMPLY WITH THE CITY OF OTTAWA REQUIREMENTS FOR TRAFFIC CONTROL WHEN WORKING ON CITY STREETS. ALL CONSTRUCTION SIGNAGE MUST CONFORM TO THE M.T.O. MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (LATEST AMENDMENT).
- EXCESS EXCAVATED MATERIAL SHALL BE REMOVED FROM THE SITE.
- THE SITE LAYOUT IS THE RESPONSIBILITY OF THE CONTRACTOR. AS-BUILT SITE SERVICING & GRADING DRAWINGS SHALL BE MAINTAINED ON SITE BY THE CONTRACTOR.
- ALL EDGES OF DISTURBED PAVEMENT SHALL BE SAW CUT TO FORM A NEAT AND STRAIGHT LINE PRIOR TO PLACING NEW PAVEMENT.
- CIVIL DRAWINGS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, STRUCTURAL, LANDSCAPE AND LEGAL DRAWINGS.



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