



- LEGEND**
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|--|---|--|--------------------------|
| | SANITARY MANHOLE, SEWER & DIRECTION OF FLOW | | ROAD CATCHBASIN |
| | STORM MANHOLE, SEWER & DIRECTION OF FLOW | | ROAD CATCHBASIN WITH ICD |
| | WATERMAIN AND DIAMETER | | SINGLE SERVICE LOCATION |
| | VALVE & VALVE BOX | | DOUBLE SERVICE LOCATION |
| | BEND AND THRUST BLOCK | | |
| | HYDRANT CW VALVE & LEAD | | |
| | CAP | | |
| | REDUCER | | |

- GENERAL NOTES:**
- DIMENSIONS AND LAYOUT INFORMATION SHALL BE CONFIRMED PRIOR TO COMMENCEMENT OF CONSTRUCTION.
 - THE ORIGINAL TOPOGRAPHY AND GROUND ELEVATIONS, SURVEYING AND SURVEY INFORMATION SHOWN ON THIS PLAN ARE SUPPLIED FOR INFORMATION PURPOSES ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ACCURACY OF ALL INFORMATION OBTAINED FROM THIS PLAN.
 - CO-ORDINATE AND SCHEDULE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
 - BEFORE COMMENCING CONSTRUCTION, PROVIDE PROOF OF COMPREHENSIVE ALL RISK AND OPERATIONAL LIABILITY INSURANCE INCLUDING BLASTING, INSURANCE POLICY TO NAME THE OWNER, ENGINEER AND THE CITY AS CO-INSURED.
 - CONNECT TO EXISTING SYSTEMS AS DETAILED, INCLUDING ALL RESTORATION WORK NECESSARY TO REINSTATE SURFACES TO EXISTING CONDITIONS OR BETTER.
 - 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 THESE DRAWINGS.
 - OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS BEFORE COMMENCING CONSTRUCTION.
 - RESTORE ALL TRENCHES AND SURFACE FEATURES TO EXISTING CONDITIONS OR BETTER AND TO THE SATISFACTION OF MUNICIPAL AUTHORITIES.
 - REMOVE FROM SITE ALL EXCESS EXCAVATED MATERIAL UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER. EXCAVATE AND REMOVE FROM SITE ALL ORGANIC MATERIAL AND DEBRIS UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER.
 - ALL ELEVATIONS ARE GEODETIC AND UTILIZE METRIC UNITS.
 - REFER TO GEOTECHNICAL INVESTIGATION PROJECT: 84153.74 (AUGUST 2, 2017), PREPARED BY HOULE CHEVRIER ENGINEERING FOR SUBSURFACE CONDITIONS AND CONSTRUCTION RECOMMENDATIONS.
 - PERFORATED PIPE SUB-DRAINS TO BE PROVIDED AT SUBGRADE LEVEL EXTENDING FROM THE ROADSIDE CATCHBASIN FOR A DISTANCE OF 3.0m, PARALLEL TO THE CURB IN TWO DIRECTIONS.

- SEWER NOTES:**
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|-----------------------------------|--------------------|---------------------------------------|
| 1. SPECIFICATIONS: | SPEC. No. | REFERENCE |
| ITEM | ITEM | ITEM |
| CATCH-BASIN (600x600mm) | 705.010 | OPSD |
| STORM / SANITARY MANHOLE (1200mm) | 701.010 | OPSD |
| ROADSIDE CB, FRAME & COVER | S2 & S19 | CITY OF OTTAWA |
| STORM / SANITARY MH FRAME & COVER | S24.1 / S24 & S25 | CITY OF OTTAWA |
| STORM SEWER | PVC DR 35 OR CONC. | (GLASS SPECIFIED ON PROFILE DRAWINGS) |
| SANITARY SEWER | PVC DR 35 | |
| CATCHBASIN LEAD | PVC DR 35 | |
- INSULATE ALL PIPES (SAN/STM) THAT HAVE LESS THAN 1.5m COVER WITH 50mmX1200mm HI-40 INSULATION. PROVIDE 150mm CLEARANCE BETWEEN PIPE AND INSULATION.
 - SERVICES ARE TO BE CONSTRUCTED TO PROPERTY LINE AT MINIMUM SLOPE OF 1.0% (2.0% IS PREFERRED).
 - 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.
 - SEWER SERVICE CONNECTIONS PER CITY OF OTTAWA DETAILS S11 AND S11.1.
 - THE SITE SERVICING CONTRACTOR SHALL PERFORM FIELD TESTS FOR QUALITY CONTROL OF ALL SANITARY SEWERS. LEAKAGE TESTING SHALL BE COMPLETED IN ACCORDANCE WITH OPS8 410.07.16 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 THE ENGINEER.
 - STORM MANHOLES AND CBMHS SHALL HAVE 300mm SUMPS UNLESS OTHERWISE INDICATED.
 - CONTRACTOR TO TELETYPE (CCTV) ALL PROPOSED SEWERS, 200mm OR GREATER PRIOR TO BASE COURSE ASPHALT. UPON COMPLETION OF CONTRACT, THE CONTRACTOR IS RESPONSIBLE TO FLUSH AND CLEAN ALL SEWERS & APPURTENANCES.

- WATERMAIN NOTES:**
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|---|-------------|----------------|
| 1. GENERAL: | DETAIL No. | REFERENCE |
| ITEM | ITEM | ITEM |
| WATERMAIN TRENCHING | W17 | CITY OF OTTAWA |
| THERMAL INSULATION IN SHALLOW TRENCHES | W22 | CITY OF OTTAWA |
| WATERMAIN CROSSING BELOW SEWER / OVER SEWER | W25 / W25.2 | CITY OF OTTAWA |
- THE WATERMAIN SHALL BE PVC DR 18 IN ACCORDANCE WITH MATERIAL SPECIFICATION MW-18.1, UNLESS OTHERWISE INDICATED.
 - SUPPLY AND CONSTRUCT ALL WATERMANS AND APPURTENANCES IN ACCORDANCE WITH THE CITY OF OTTAWA STANDARDS AND SPECIFICATIONS. EXCAVATION, 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.
 - PROVIDE MINIMUM 0.25m CLEARANCE BETWEEN OUTSIDE OF PIPES AT ALL CROSSINGS.
 - WATER LATERAL AND SERVICE POST IS TO BE CONSTRUCTED 5.0m FROM FACE OF BUILDING.

STM MANHOLE TABLE				
MANHOLE ID	SIZE (mm)	T/G ELEV (m)	INVERT (m)	PIPE DIAMETER (mm)
1	15000	104.49	NE=101.72 S=101.87 NW=101.84	NE=600 S=450 NW=375
3	12000	104.96	SE=102.11 SW=102.19	SE=375 SW=300
5	12000	105.11	NE=102.49	NE=300
7	12000	104.55	N=101.88 SW=102.04 SE=101.96	N=450 SW=300 SE=375
9	12000	104.88	NE=102.29	NE=300
11	12000	104.58	NW=102.09 SW=102.17	NW=375 SW=300
13	12000	104.78	NE=102.43	NE=300
15	12000	104.70	NE=102.07 SE=102.14 NW=102.14	NE=375 SE=375 NW=375
17	12000	104.72	SE=102.19 SW=102.27	SE=375 SW=300
19	12000	104.92	NE=102.56	NE=300
21	12000	105.04	NW=102.36 E=102.42 SW=102.42	NW=375 E=375 SW=300
23	12000	105.18	NE=102.71	NE=300
25	12000	105.28	W=102.45 SE=102.51	W=375 SE=300
27	12000	105.39	SW=102.74 NW=102.68	SW=300 NW=300
29	12000	105.47	NE=103.09	NE=300

SAN MANHOLE TABLE				
MANHOLE ID	SIZE (mm)	T/G ELEV (m)	INVERT (m)	PIPE DIAMETER (mm)
2	12000	104.49	NE=100.43 S=100.73 NW=100.73	NE=200 S=200 NW=200
4	12000	104.97	SE=101.28 SW=101.54	SE=200 SW=200
6	12000	105.16	NE=101.86	NE=200
8	12000	104.60	N=100.88 SW=101.16 SE=100.94	N=200 SW=200 SE=200
10	12000	105.00	NE=101.73	NE=200
12	12000	104.63	NW=101.58 SW=101.64	NW=200 SW=200
14	12000	104.90	NE=101.92	NE=200
16	12000	104.72	NE=100.85 SE=101.40 NW=101.40	NE=200 SE=200 NW=200
18	12000	104.76	SE=101.68 SW=101.70	SE=200 SW=200
20	12000	105.13	NE=102.01	NE=200
22	12000	105.00	NW=101.77 E=101.83 SW=101.83	NW=200 E=200 SW=200
24	12000	105.27	NE=102.15	NE=200
26	12000	105.24	W=101.90 SE=101.96	W=200 SE=200
28	12000	105.40	SW=102.21 NW=102.15	SW=200 NW=200
30	12000	105.59	NE=102.59	NE=200

CATCHBASIN TABLE				
CB No.	T/G ELEVATION	INVERT	ICD DIA.	
50	104.75	103.35	127mm	
51	104.40	103.00	152mm	
52	104.44	103.04	127mm	
53	104.49	103.09	127mm	
54	104.64	103.24	152mm	
55	104.64	103.24	152mm	
56	104.63	103.43	127mm	
57	105.20	103.80	127mm	

SEWER CROSSING TABLE			
LOCATION	ELEVATIONS	CLEARANCE	
C1	STM INV=101.72 SAN OBV=100.66	0.76m	
C2	STM INV=101.97 SAN OBV=101.39	0.58m	
C3	STM INV=102.07 SAN OBV=101.63	0.44m	
C4	STM INV=102.35 SAN OBV=102.04	0.31m	

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.

SCALE		
1:400		
1. SITE PLAN SUBMISSION	MAR 22/19	MAB
No.	REVISION	DATE BY

DESIGN: LRW
CHECKED: MAB
DRAWN: DTD
CHECKED: MAB
APPROVED: JGR

FOR REVIEW ONLY
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CITY OF OTTAWA
FERNBANK CROSSING - BLOCK 135

GENERAL PLAN OF SERVICES

PROJECT No.: 117089
REV: REV #1
DRAWING No.: 117089-GP