1. GENERAL

1.1 USE BAR SCALE TO CONFIRM ACTUAL PLOT SCALE.
1.2 EXISTING AND NEW ELEVATIONS AND INVERTS SHOWN ARE GEODETIC AND ARE IN METERS.
1.3 EXISTING ELEVATIONS AND LOCATIONS, INVERTS AND SIZES OF EXISTING SERVICES ARE NOT NECESSARILY SHOWN ON PLAN AND THOSE SHOWN ARE DERIVED FROM AVAILABLE INFORMATION AND MUST BE CONFIRMED ON SITE BEFORE COMMENCING CONSTRUCTION. REPORT ANY DIFFERENCES TO ENGINEER.
1.4 REFER TO ARCHITECTURAL / LANDSCAPE SITE PLANS FOR EXACT LOCATIONS OF BUILDINGS, PAVED AREAS SIDEWALKS ETC.
1.5 REFERENCE THE LATEST REVISION AND ALL ADDENDUMS OF THE GEOTECHNICAL INVESTIGATION BY DST CONSULTING ENGINEERS INC. FILE No. 0605383.
1.6 DRAWINGS ARE TO BE READ IN CONJUNCTION WITH SPECIFICATIONS.
1.7 DRAWINGS ARE TO BE READ IN CONJUNCTION WITH STORM WATER MANAGEMENT REPORT No. 06017 PREPARED BY D. B. GRAY ENGINEERING INC. DATED JANUARY 3, 2013.
1.8 OWNER'S MAILING ADDRESS:
ALI ASGARI
c/o GALAXY CAMERA
525 BANK STREET
OTTAWA, ON
K2P 1Z5
1.9 REINSTATE ADJACENT PROPERTIES TO PRE-CONSTRUCTION CONDITIONS.
1.10 REINSTATE CITY PROPERTIES TO CITY STANDARDS AND TO CITY OF OTTAWA'S SATISFACTION.
1.11 ALL CITY PROPERTY, DAMAGED AS A RESULT OF THIS WORK, SHALL BE REINSTATED TO THE CITY'S SATISFACTION.
1.12 ALL RELEVANT WORK SHALL BE DONE IN ACCORDANCE WITH CURRENT CITY STANDARDS AND SPECIFICATIONS.
1.13 ONTARIO PROVINCIAL STANDARDS & SPECIFICATIONS WILL APPLY WHERE NO CITY STANDARDS ARE AVAILABLE.

2. EROSION AND SEDIMENT CONTROL

2.1 THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATER COURSE DURING CONSTRUCTION ACTIVITIES. THIS INCLUDES LIMITING THE AMOUNT OF EXPOSED SOIL, USING FILTER CLOTH UNDER THE GRATES OF CATCH BASINS AND MANHOLES AND INSTALLING SILT FENCES AND OTHER EFFECTIVE SEDIMENT TRAPS. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.
2.2 PRIOR TO COMMENCEMENT OF CONSTRUCTION AT ALL MUNICIPAL CATCH BASINS ADJACENT TO THE SITE AND AT ANY MANHOLES OR CATCH BASINS THAT WILL RECEIVE DISCHARGE FROM DE-WATERING OPERATIONS AND ALL NEW CATCH BASINS AS THEY ARE INSTALLED: PLACE GEOTEXTILE FABRIC BETWEEN THE GRATE AND FRAME. INSPECT AT THE END OF EACH DAY AND AFTER EACH RAINFALL. REMOVE AND DISPOSE OLD GEOTEXTILE FABRIC AND SEDIMENT WHEN SEDIMENT DEPOSITS ARE GREATER THAN 10mm DEEP AND REPLACE WITH NEW GEOTEXTILE FABRIC. IMMEDIATELY REPAIR OR REPLACE ANY DAMAGED FABRIC. DO NOT REMOVE FABRIC UNTIL CONSTRUCTION IS COMPLETE.
2.3 CAP (WITH WATERTIGHT BULKHEAD) EXISTING STORM AND SANITARY SEWERS CONNECTIONS IMMEDIATELY AFTER EXPOSING.

3. GRADING & DRAINAGE

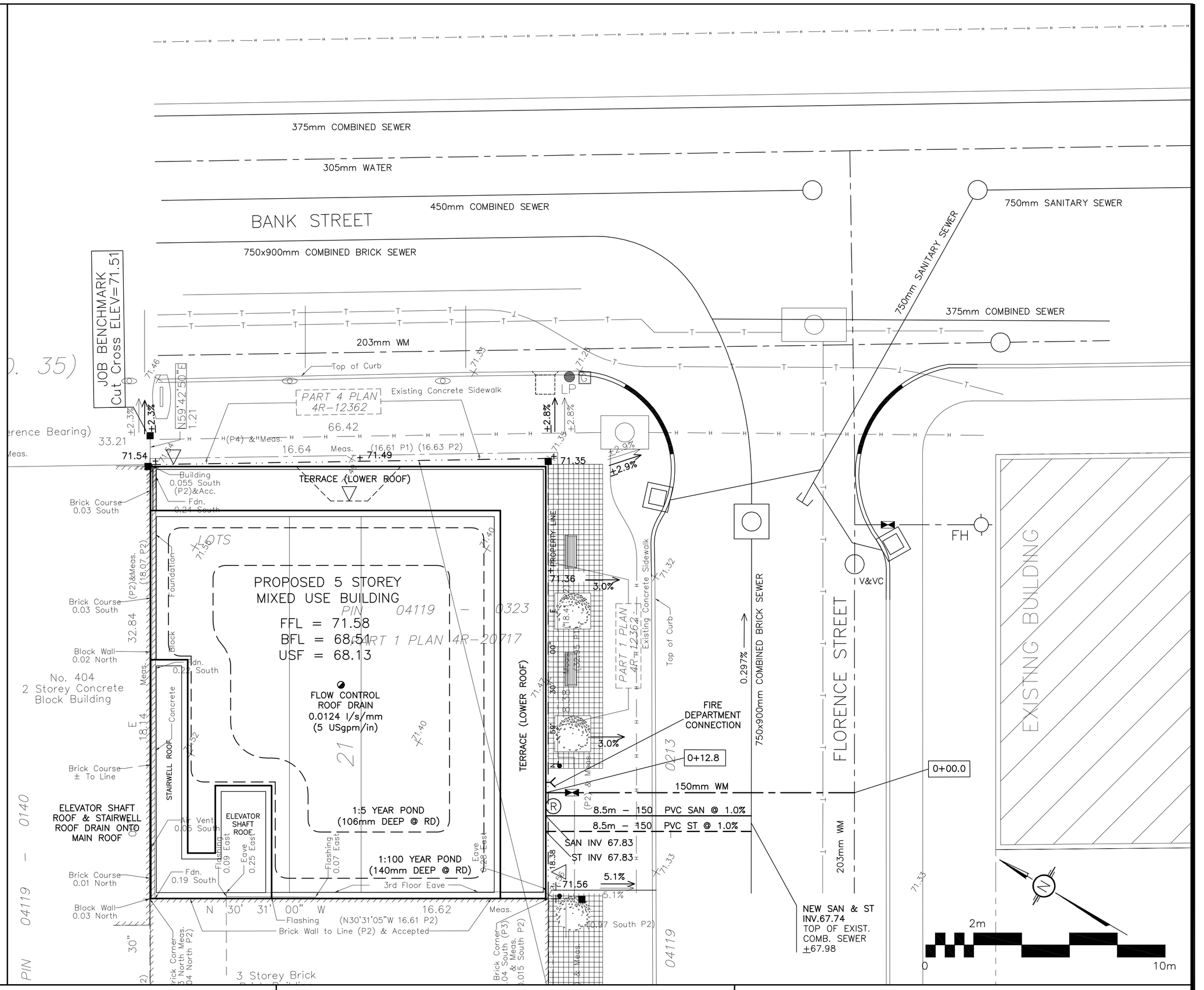
3.1 NEW GRADES TO MATCH EXISTING AT PROPERTY LINE. NO EXCESS DRAINAGE WILL BE DIRECTED TOWARDS THE ADJACENT PROPERTIES DURING AND AFTER CONSTRUCTION. THERE WILL BE NO ALTERATION TO EXISTING GRADE AND DRAINAGE PATTERNS ON PROPERTY LINE.
3.2 ALL AREAS SHALL BE GRADED TO ENSURE ADEQUATE DRAINAGE AWAY FROM BUILDINGS TO CATCH BASINS, SWALES, DITCHES AND OTHER APPROVED DISPOSAL AREAS. GRADES TO BE GRADUAL BETWEEN FINISHED SPOT ELEVATIONS SHOWN ON DRAWINGS TO PREVENT PONDING.

4. SITE SERVICES

4.1 IT IS BELIEVED THAT ALL PREVIOUS SEWER AND WATER SERVICES HAVE BEEN REMOVED OR CAPPED. ANY SEWERS ENCOUNTERED SHALL BE CAPPED AT THE PROPERTY LINE AND ANY WATER SERVICES ENCOUNTERED SHALL BE BLANKED AT THE MAIN.
4.2 WATER METER SHALL BE INSTALLED AS PER CITY OF OTTAWA DWG. No. W.31. ALL WATER SERVICE MATERIALS AND CONSTRUCTION METHODS TO CITY OF OTTAWA STANDARDS AND SPECIFICATIONS.
4.3 PROVIDE A MINIMUM 2.4 m COVER OVER WATER SERVICE CONNECTION. WHERE THE MINIMUM COVER IS NOT POSSIBLE INSULATE AS PER CITY OF OTTAWA DWG. No. W.22. WHERE LESS THAN 2.4 m CLEARANCE FROM AN OPEN STRUCTURE (EG. MANHOLES & CATCH BASINS) PLACE INSULATION AROUND WATER SERVICE CONNECTIONS AS PER CITY OF OTTAWA DWG. No. W.23.
4.4 PROVIDE A MINIMUM 300mm VERTICAL SEPARATION BETWEEN SEWERS AND WATER SERVICE CONNECTIONS.
4.5 PROVIDE THRUST BLOCKS AS PER CITY OF OTTAWA STANDARD W-25.3 AT ALL VALVES, TEES, CAPS, BENDS, REDUCERS AND HYDRANTS.
4.6 CONNECTION TO WATERMAIN BY CITY OF OTTAWA, CONTRACTOR SHALL PROVIDE EXCAVATION, BACKFILL AND REINSTATEMENT.
4.7 WATERMAIN MATERIALS SHALL BE PVC PRESSURE CLASS 150 DR18.
4.8 THE SANITARY BUILDING DRAIN SHALL BE INSTALLED WITH A FULL-PORT BACKWATER VALVE (TO CITY OF OTTAWA STANDARDS).
4.9 THE STORM BUILDING DRAIN SHALL BE INSTALLED WITH A BACKWATER VALVE (TO CITY OF OTTAWA STANDARDS).
4.10 CONNECT PROPOSED SEWER SERVICE CONNECTIONS TO EXISTING MUNICIPAL COMBINED SEWER USING A BELL END INSERT METHOD AS PER CITY OF OTTAWA DWG, N).: S11.2
4.11 SEWER MATERIAL SHALL BE PVC SDR-35 (SDR-28 FOR DIAMETERS 150mm OR LESS) AND SHALL CONFORM TO CSA B182.2 AND SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS. PROVIDE A MINIMUM 0.3m HORIZONTAL SEPARATION BETWEEN SEWER CONNECTIONS AND WATER SERVICE CONNECTION. PROVIDE A MINIMUM 1.0m HORIZONTAL SEPARATION BETWEEN SEWERS AND WATERMAIN. SEWERS WITHIN 2.44 m HORIZONTAL DISTANCE OF THE WATERMAIN OR WATER SERVICE PIPE SHALL BE PVC SDR-35 WITH JOINTS CAPABLE OF BEING PRESSURE TESTED TO A MINIMUM 345 kPa (50psi) AND SHALL CONFORM TO CSA B137.3. (IPEX Ring-Tite or EQUAL) AND THE SEWAGE SYSTEM SHALL BE CONSTRUCTED OF PIPING WHICH IS PRESSURE TESTED IN ACCORDANCE WITH OBC 7.3.7 (TESTING OF POTABLE WATER SYSTEMS) AT 345 kPa (50psi).
4.12 THE ROOF DRAIN ON THE MAIN ROOF SHALL BE INSTALLED AT THE LOW POINT OF THE ROOF WHICH SHALL BE 150mm LOWER THAN THE PERIMETER OF THE ROOF. SCUPPERS SHALL BE INSTALLED SO THAT THE MAXIMUM DEPTH OF WATER ON THE ROOF CANNOT EXCEED 150mm.
4.13 THE ROOF DRAIN ON THE MAIN ROOF SHALL BE FLOW CONTROL TYPE INSTALLED WITH A WEIR WITH ONE PARABOLIC SLOT. EACH SLOT SHALL RELEASE 0.0124 l/s/mm (5 USgpm/inch). ALL ROOF DRAINS SHALL DRAIN TO THE CISTERN. RAINWATER LEADERS INSIDE BUILDING SHALL BE VENTED FROM THE BASE THROUGH ROOF TO THE EXTERIOR.

5. CONSTRUCTION:

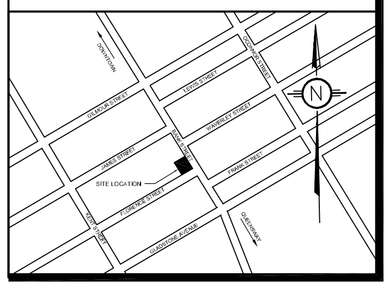
5.1 PRIOR TO COMMENCING WORK:
A. OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS FROM THE AUTHORITIES.
B. SIZE, DEPTH AND LOCATION OF EXISTING UTILITIES AND STRUCTURES AS INDICATED ARE FOR GUIDANCE ONLY. EXISTING UTILITIES AND STRUCTURES ARE NOT NECESSARILY SHOWN ON PLANS. COMPLETENESS AND ACCURACY ARE NOT GUARANTEED. NOTIFY ALL APPLICABLE OWNERS, UTILITY COMPANIES AND AUTHORITIES HAVING JURISDICTION OF PROPOSED WORK AND LOCATE AND CLEARLY IDENTIFY ALL EXISTING SERVICES, UTILITIES AND STRUCTURES ON AND ADJACENT TO SITE. CONFIRM LOCATIONS OF BURIED SERVICES AND UTILITIES BY CAREFUL TEST EXCAVATIONS AND REPORT ANY DIFFERENCES TO THE ENGINEER.
C. COORDINATE AND SCHEDULE WORK WITH THE AUTHORITIES AND OTHER TRADES.
5.2 MAINTAIN AND PROTECT FROM DAMAGE, SERVICES, UTILITIES AND STRUCTURES ENCOUNTERED. PROTECT EXISTING BUILDINGS, TREES AND OTHER PLANTS, LAWNS, FENCING, SERVICE POLES, WIRES, PAVEMENT, SURVEY BENCH MARKS AND MONUMENTS AND OTHER SURFACE FEATURES FROM DAMAGE WHILE WORK IS IN PROGRESS. DO NOT DISTURB SOIL WITHIN BRANCH SPREAD OF TREES OR SHRUBS THAT ARE TO REMAIN.
5.3 PROVIDE TRAFFIC CONTROL AND SAFETY MEASURES INCLUDING ANY NECESSARY PERSONEL AND THE SUPPLY, INSTALLATION AND REMOVAL OF ALL NECESSARY SIGNAGE AND BARRIERS.
5.4 REMOVE OBSTRUCTIONS, ICE AND SNOW, FROM SURFACES TO BE EXCAVATED.
5.5 CUT PAVEMENT AND / OR SIDEWALK NEATLY ALONG LIMITS OF PROPOSED EXCAVATION IN ORDER THAT SURFACE MAY BREAK EVENLY AND CLEANLY.
5.6 STOCKPILE GRANULAR AND FILL MATERIALS IN MANNER TO PREVENT SEGREGATION AND PROTECT FROM CONTAMINATION.
5.7 EXCAVATION, TRENCHING & BACKFILL:
A. SHORE AND BRACE EXCAVATIONS, PROTECT SLOPES AND BANKS AND PERFORM ALL WORK IN ACCORDANCE WITH OCCUPATIONAL HEALTH AND SAFETY ACT AND OTHER AUTHORITIES HAVING JURISDICTION.
B. KEEP EXCAVATIONS FREE OF WATER WHILE WORK IS IN PROGRESS. PROTECT OPEN EXCAVATIONS AGAINST FLOODING AND DAMAGE DUE TO SURFACE RUN-OFF.
C. EXCAVATION MUST NOT INTERFERE WITH BEARING CAPACITY OF ADJACENT FOUNDATIONS.
D. DO NOT OBSTRUCT FLOW OF SURFACE DRAINAGE OR NATURAL WATERCOURSES.
E. EXCAVATE TO LINES, GRADES, ELEVATIONS AND DIMENSIONS AS INDICATED. DISPOSE OF SURPLUS AND UNSUITABLE EXCAVATED MATERIAL OFF SITE.
F. EARTH BOTTOMS OF EXCAVATIONS TO BE UNDISTURBED SOIL, LEVEL, FREE FROM LOOSE, SOFT OR ORGANIC MATTER.
G. ALL STRUCTURES WITHIN PAVED AREAS SHALL HAVE 4:1 FROST TAPERS FROM FROST LINE TO SUB-GRADE.
H. CORRECT OVER-EXCAVATION WITH GRANULAR A COMPACTED TO NOT LESS THAN 95 % OF CORRECTED MAXIMUM DRY DENSITY.
I. SUB-GRADE AND AREAS TO BE BACKFILLED TO BE FREE FROM DEBRIS, SNOW, ICE, WATER AND FROZEN GROUND.
J. DO NOT USE BACKFILL MATERIAL WHICH IS FROZEN OR CONTAINS ICE, SNOW OR DEBRIS.
K. BEDDING AND SURROUND MATERIAL FOR SEWERS SHALL BE OPSS A. BEDDING AND SURROUND MATERIAL FOR WATERMAIN AND WATER SERVICE CONNECTIONS SHALL BE OPSS A OR OPSS M.
L. DO NOT USE BEDDING, SURROUND OR BACKFILL MATERIAL WHICH IS FROZEN OR CONTAINS ICE, SNOW OR DEBRIS.
M. PIPE BEDDING SHALL BE 150mm THICK. SHAPE BED TRUE TO GRADE AND TO PROVIDE CONTINUOUS, UNIFORM BEARING SURFACE FOR PIPE.
N. PLACE SURROUND MATERIAL AROUND PIPES TO FULL WIDTH OF TRENCH AND TO 300mm ABOVE PIPES.
O. PLACE BEDDING AND SURROUND AND BACKFILL MATERIAL IN UNIFORM LAYERS NOT EXCEEDING 150mm COMPACTED THICKNESS. PLACE FILL AND BACKFILL MATERIAL IN UNIFORM LAYERS NOT EXCEEDING 300mm COMPACTED THICKNESS.
P. COMPACT EACH LAYER TO 95% OF CORRECTED DRY DENSITY BEFORE PLACING SUCCEEDING LAYER.
Q. DO NOT BACKFILL AROUND OR OVER CAST-IN-PLACE CONCRETE WITHIN 24 HOURS AFTER PLACING OF CONCRETE.
5.8 PIPES:
A. HANDLE PIPE USING METHODS APPROVED BY MANUFACTURER.
B. LAY, CUT AND JOIN PIPES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
C. USE ONLY FITTINGS AS RECOMMENDED BY PIPE MANUFACTURER.
D. LAY PIPES ON PREPARED BED, TRUE TO LINE AND GRADE AND ENSURE BARREL OF EACH PIPE IS IN CONTACT WITH SHAPED BED THROUGHOUT ITS FULL LENGTH, FREE OF SAGS OR HIGH POINTS.
E. DO NOT EXCEED MAXIMUM JOINT DEFLECTION RECOMMENDED BY PIPE MANUFACTURER.
F. AT RIGID STRUCTURES, INSTALL PIPE JOINTS NOT MORE THAN 1.2m FROM SIDE OF STRUCTURE.
G. WHENEVER WORK IS SUSPENDED, INSTALL REMOVABLE WATERTIGHT BULKHEAD AT OPEN END OF LAST PIPE LAID TO PREVENT ENTRY OF FOREIGN MATERIALS.
H. WHEN STOPPAGE OF WORK OCCURS, BLOCK PIPES TO PREVENT CREEP DURING DOWN TIME. MAKE WATERTIGHT CONNECTIONS TO MANHOLES.
I. USE NON-SHRINK GROUT WHEN SUITABLE GASKETS ARE NOT AVAILABLE.
J. JOINTS SHALL BE STRUCTURALLY SOUND AND WATERTIGHT.
K. MAINTAIN EXISTING SEWAGE FLOWS DURING CONSTRUCTION.
REPAIR OR REPLACE PIPE, PIPE JOINT OR BEDDING FOUND DEFECTIVE.
L. PERFORM FIELD TESTS FOR QUALITY CONTROL OF ALL SANITARY SEWERS. SPECIFICALLY, THE LEAKAGE TESTING SHALL BE COMPLETED IN ACCORDANCE WITH OPSS 410.07.01.16 AND 407.07.26 AND IN ACCORDANCE WITH THE PLUMBING CODE.
M. REPAIR AND RETEST SEWER LINE AS REQUIRED.
N. REPAIR VISIBLE LEAKS REGARDLESS OF TEST RESULTS.
O. CONDUCT TWO CCTV INSPECTIONS OF SEWERS. FIRST INSPECTION AFTER COMPLETION OF CONSTRUCTION, SECOND INSPECTION IMMEDIATELY PRIOR TO END OF ONE YEAR TO WARRANTY PERIOD. A PAN AND TILT CAMERA SHALL BE USED. REPAIR SEWER LINE AS REQUIRED. SUBMIT REPORTS AND DVDs TO ENGINEER.
5.10 MAINTAIN RECORD DRAWINGS AND RECORD ACCURATELY DEVIATIONS FROM THE ORIGINAL CONTRACT DOCUMENTS CAUSED BY SITE CONDITIONS AND CHANGES MADE BY CHANGE ORDER OR ADDITIONAL INSTRUCTION. UPDATE DAILY AND MAKE AVAILABLE ON-SITE FOR REVIEW THROUGHOUT THE CONSTRUCTION PERIOD AND SUBMIT DRAWINGS TO ENGINEER AT THE END OF CONSTRUCTION. MARK CHANGES IN RED INK. RECORD DRAWINGS SHALL INCLUDE BUT NOT NECESSARILY LIMITED TO CHANGES OF DIMENSION AND DETAIL; CHANGES TO GRADE ELEVATIONS; AND HORIZONTAL AND VERTICAL LOCATIONS OF UNDERGROUND UTILITIES AND APPURTENANCES REFERENCED TO A PERMANENT SURFACE STRUCTURE.
5.11 REINSTATE PAVEMENTS AND SIDEWALKS DISTURBED BY EXCAVATION TO THICKNESS, STRUCTURE AND ELEVATION WHICH EXISTED BEFORE EXCAVATION.
5.12 CLEAN AND REINSTATE AREAS AFFECTED BY THE WORK.



DRAWING LEGEND

- WM — WATER SERVICE / WATERMAIN
- SAN — SANITARY SEWER
- ST — STORM SEWER
- CURB STOP
- VALVE & VALVE BOX
- FIRE HYDRANT
- (M) WATER METER
- (R) REMOTE WATER METER READOUT
- UP UTILITY POLE
- X 68.75 EXISTING GRADE ELEVATION
- + 93.79 PROPOSED GRADE ELEVATION
- 0.5% SLOPE OF GRADE
- 0.5% EXISTING SLOPE OF GRADE
- PROPERTY LINE
- FFL FIRST FLOOR ELEVATION
- BFL BASEMENT FLOOR ELEVATION
- USF UNDERSIDE OF FOOTING ELEVATION

KEY PLAN



No.	Date	Revision
8	JAN 3-13	SWM CISTERN ADDED RE-ISSUED FOR APPROVAL
7	JUN 29-12	REVISED AS PER CITY COMMENTS RE-ISSUED FOR APPROVAL
6	DEC 13-11	ISSUED FOR APPROVAL
5	OCT 13-11	ISSUED FOR CLIENT REVIEW
4	AUG 17-06	REVISED AS PER CITY COMMENTS ISSUED FOR APPROVAL
3	JUL 17-06	ISSUED FOR BUILDING PERMIT
2	JUN 14-06	REVISED AS PER CITY COMMENTS ISSUED FOR APPROVAL
1	APR 6-06	ISSUED FOR APPROVAL

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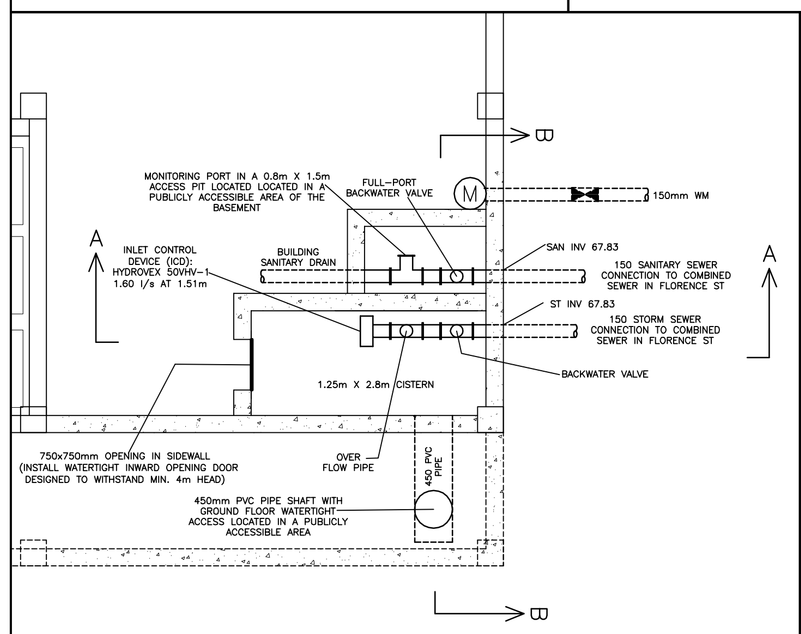
Project
GALAXY HOUSING
406-408 BANK STREET
OTTAWA, ONTARIO.

Drawing Title
SITE SERVICING PLAN & GRADING PLAN

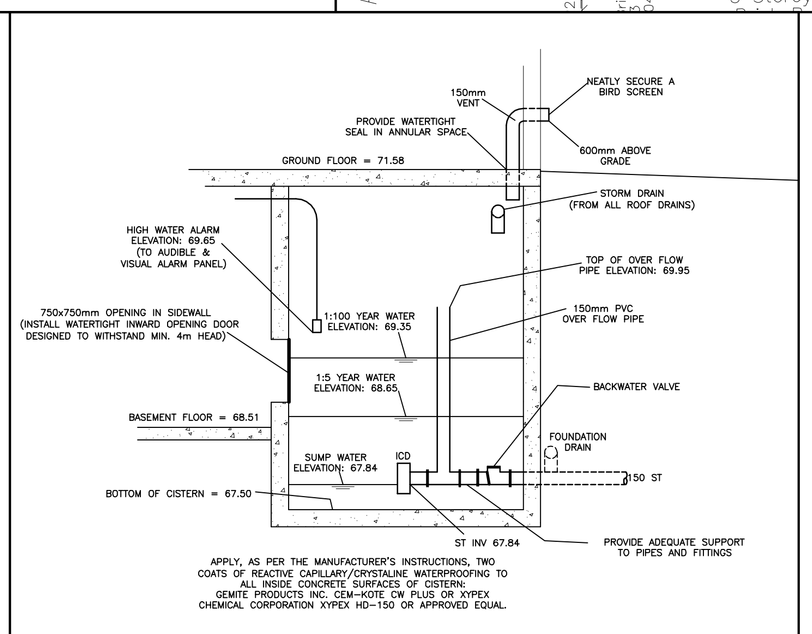
Engineer's Seal
LICENSED PROFESSIONAL ENGINEER
D.B. GRAY
17016502
JAN 3-12
PROVINCE OF ONTARIO
NOT VALID UNLESS SIGNED & DATED

Drawn D.B.G
Hor. Scale 1:100
Vert. Scale
Date APR 3-06
Job 06017

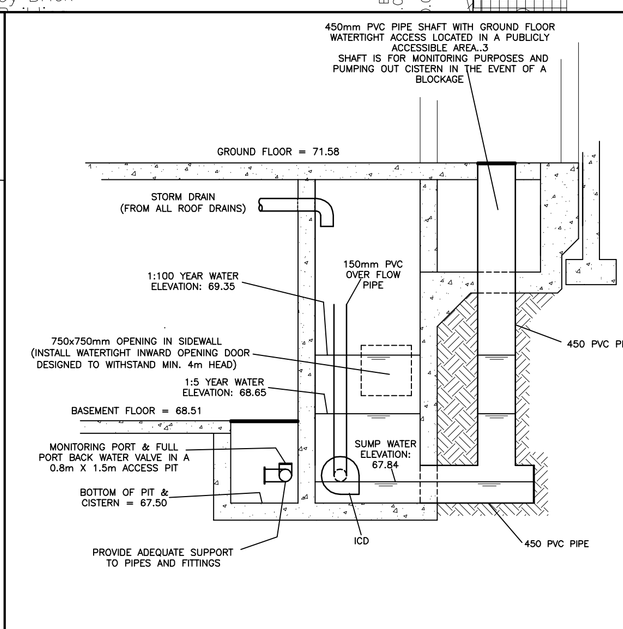
Drawing No.
SG-1
of 1



STORMWATER MANAGEMENT CISTERN & ACCESS SHAFT & SANITARY DRAIN ACCESS PIT
N.T.S.



STORMWATER MANAGEMENT CISTERN SECTION 'A-A' N.T.S.



STORMWATER MANAGEMENT CISTERN, ACCESS PIT & SHAFT SECTION 'B-B' N.T.S.

WATER SERVICE PROFILE TABLE

WATERMAIN MATERIAL:
150mm PVC PRESSURE CLASS 150 DR18

STATION	DESCRIPTION	GRADE ELEV.	TOP OF PIPE	DEPTH OF COVER	COMMENTS
0+00.0	TVS CONNECTION TO 200mm MUNICPIAL WATERMAIN	APPROX. 71.23	APPROX. 68.70	APPROX. 2.53	-
0+04.4	-	71.31	68.74	2.57	CROSSING 750x900mm COMBINED SEWER (TOP 67.98) 610mm VERTICAL SEPARATION (MIN. 500mm REQUIRED)
0+07.9	-	71.18	68.78	2.40	GRADE AT EXISTING GUTTER
0+11.8	150mm VALVE & VALVE BOX TO CITY OF OTTAWA STANDARDS	71.41	69.01	2.40	-
0+12.8	-	71.42	69.02	2.40	ENTRY INTO BUILDING