PATERSON GROUP

memorandum

re: **Anchor Detail – Fire Tanks**
Proposed Commercial Development
5923 Ottawa Street, Richmond (Ottawa), Ontario

to: Stratford Foxrun **– Jack Gulas** – jack@stratfordfoxrun.com

date: June 11, 2026

file: PH4924-MEMO.06

Further to your request and authorization, Paterson Group (Paterson) prepared the following memorandum to provide an anchoring detail for the fire tanks at the aforementioned site.

The following memorandum should be read in conjunction with the Site Servicing Plan-C102 by Egis dated January 28, 2026 attached to this report. The calculations were completed assuming that the attached 45,000 L Fire Tank by Boyd Bros Concrete will be used.

Anchoring Requirements

A detail regarding the required anchoring for **each** of the proposed fire tanks, consisting of four (4) concrete blocks each of minimum 0.61 m (W) x 0.61 m (H) x 1.22 m (L) (2 ft x 2 ft x 4 ft) with an anchoring ring/hook to attach strapping/cables, has been attached to this Memo (Paterson drawing PH4926-MEMO.06 – Figure 1). The cable should consist of minimum 13 mm (0.5”) diameter galvanized aircraft cable with turnbuckle rods or equivalent strapping. All material should be resistant to degradation due to water for an extended period to prevent failure during the tank lifespan. A lean concrete slab of minimum 0.13 m thick is to be poured below the base of anchor blocks. Compacted Granular ‘A’ shall be placed between the slab and tank base.

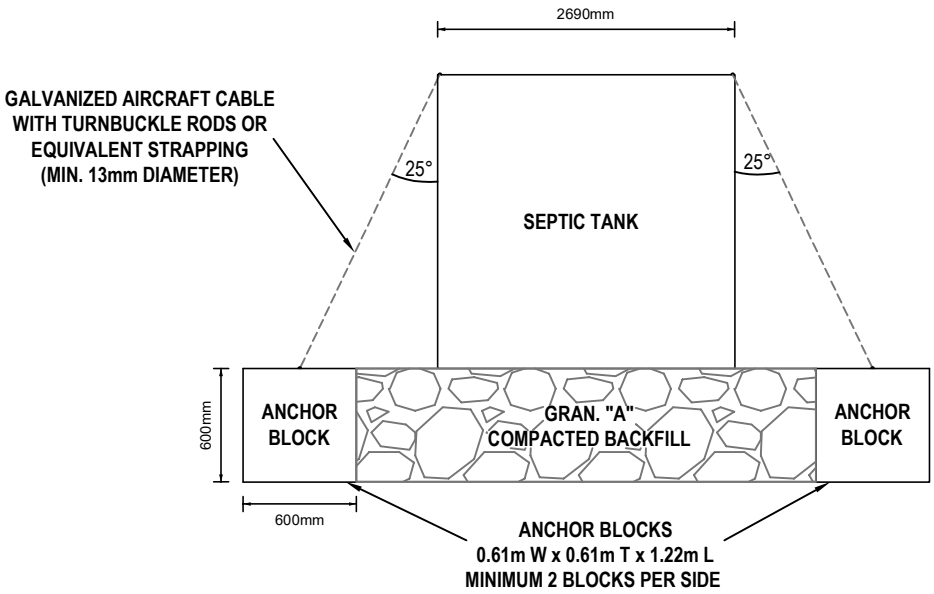
The calculations assumed 0.5 m of glacial till soil cover over the tanks and a high groundwater elevation of 1.46 m below ground surface based on the Paterson’s Groundwater Monitoring Program (PH4924-MEMO.01 dated August 5, 2025) and the proposed grade raises as per the Lot Grading & Drainage Plan completed by Egis (Drawing C101 dated January 28, 2026).

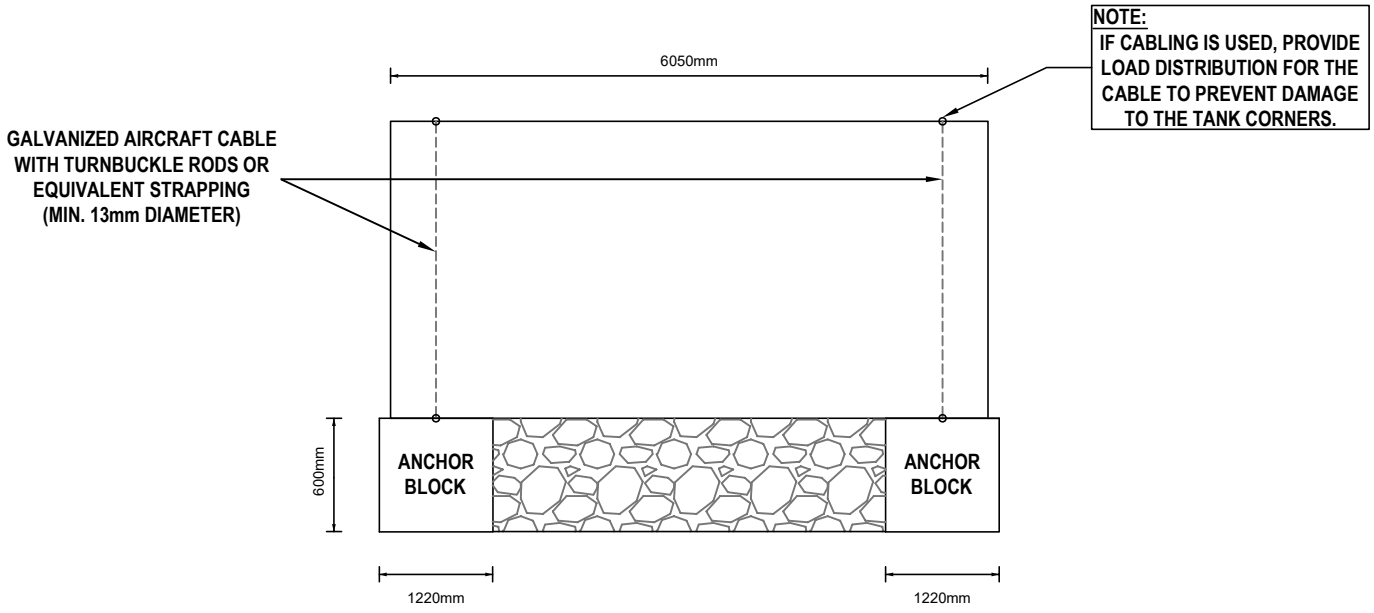
See attached drawing Figure 1 – Anchor Detail – Septic / Balancing Tank for specific placement of the anchor blocks. The review has only assessed the buoyancy impact on the proposed tanks due to an empty tank during seasonally high groundwater conditions.

We trust that the current submission meets your immediate requirements.

Best Regards,
Paterson Group Inc.

Michael S. Killam, P.Eng.
Attachment: Figure 1 – Anchor Detail – Septic / Balancing Tank





NOTE:

- STRAPPING TO BE PLACED SUCH AS TO NOT INTERFERE WITH THE TANK RISER ASSEMBLIES.
- HORIZONTAL PLACEMENT OF ANCHOR BLOCKS DEPENDENT UPON DIMENSIONS OF TANK (SEPTIC & BALANCING TANK).
- ANY STRAPPING OR CABLES USED SHOULD BE RESISTANT TO DEGRADATION DUE TO WATER FOR AN EXTENDED PERIOD OF TIME.

ASSUMPTIONS:

- GROUNDWATER AT A MAX. OF 93.63m
- SOIL COVER OF 500mm.

PATERSON GROUP
9 AURIGA DRIVE
OTTAWA, ON
K2E 7T9
TEL: (613) 226-7381

STRATFORD FOXRUN
BUOYANCY REVIEW
5923 OTTAWA STREET
OTTAWA (RICHMOND), ONTARIO

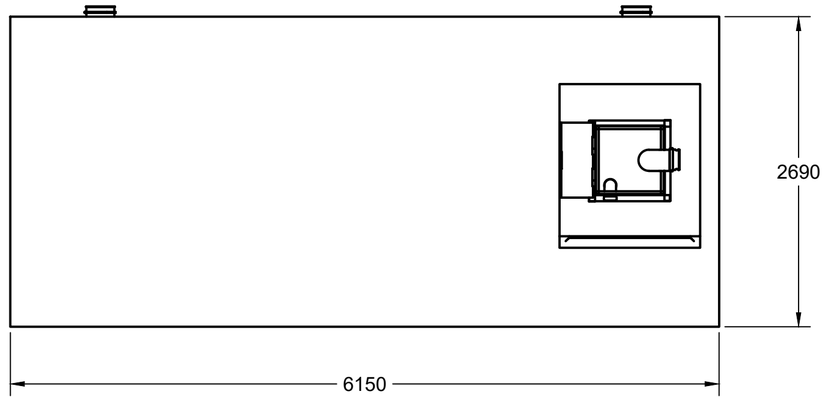
Title:

ANCHOR DETAIL - FIRE WATER STORAGE TANKS

Date:	Report No.:
06/2026	PH4924 - MEMO.06
Scale:	Drawing No.:
NTS	FIGURE 1
Drawn by: HV	Checked by: AS

p:\hydrogeological\ph49xx\ph4924 - stratford foxrun - jack gulas - 5923 ottawa street richmond\tank buoyancy calculations - august 14\june 1 2026\anchordetail - figure 4.dwg

8-1/2x11



TOTAL VOLUME: 45000L

CONCRETE: 35MPa WITH 5-8% AIR ENTRAINMENT
NON SULPHATE RESISTANT

REINFORCING: GRADE 400W CONFORMING TO CSA G30.18
15M @ 200mm ON CENTRE EACH WAY
ADDITIONAL 15M AROUND PERIMETER AT SEAM BETWEEN SECTIONS
15M x900mm ON DIAGONAL AT EACH CORNER OF LID OPENING

WEIGHT:

TOP SECTION	19000KGS
BOTTOM SECTION	19000KGS
TOTAL	38000KGS

MAXIMUM BURIAL DEPTH: 1200MM OF GROUND COVER IN AREA OF NON-VEHICULAR TRAFFIC

WATER TIGHTNESS: 2X ROWS CON-SEAL CS-102 MASTIC SEALANT BETWEEN SECTIONS. SEALANT APPLIED ONSITE BY BOYD BROS CONCRETE ACCORDING TO MANUFACTURER'S RECOMMENDED METHOD

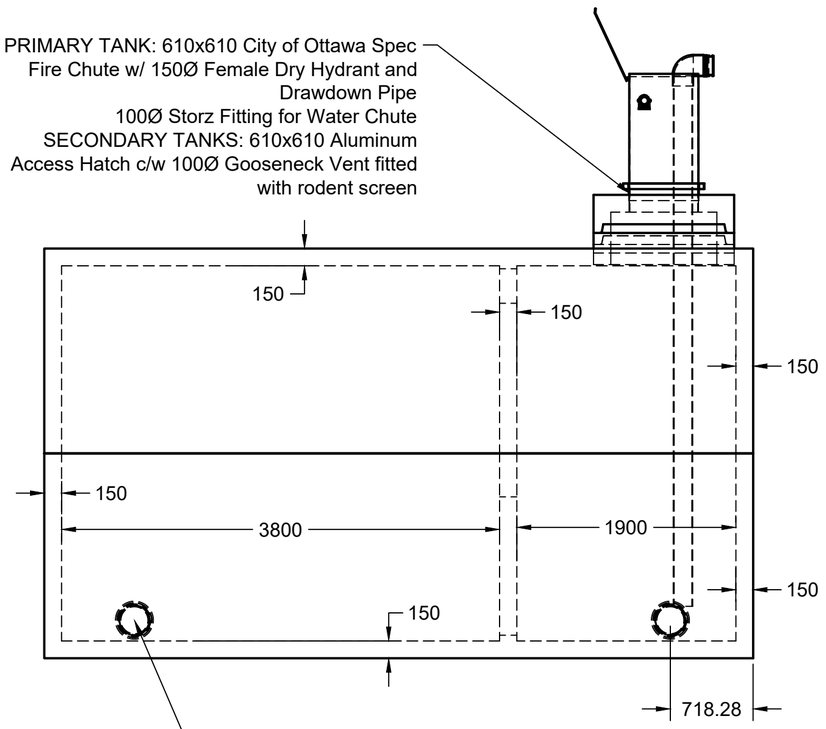
PIPE/WALL CONNECTIONS: 200mmØ Flexible Rubber Bootseal for PVC Supply Line

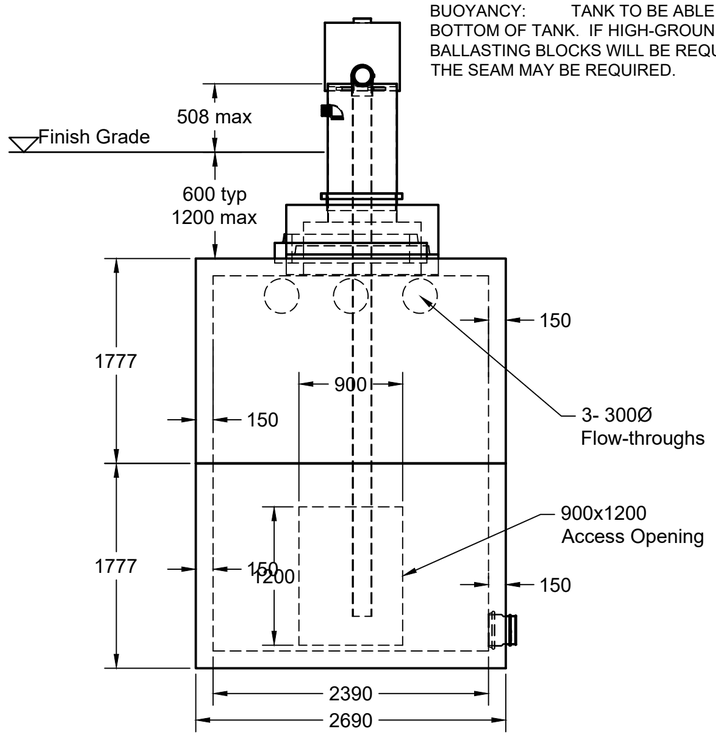
ACCESS OPENINGS:
PRIMARY TANK: 610X610 CITY OF OTTAWA SPEC FIRE CHUTE FOR FIRETRUCK CONNECTION
SECONDARY ACCESS (OPTIONAL) :1200x1300 CAST-IN RISER FLANGE WITH 610X610 DRIP PROOF ALUMINUM ACCESS HATCH
900X1200 OPENING IN DIVIDER WALL FOR ACCESS TO BOTH CHAMBERS FROM ONE ACCESS POINT

OPTIONAL STAINLESS STEEL BOLT-ON LADDER OPTIONAL

TANK DESIGN CONFORMS TO CSA STANDARD B66-15 WITH A NON-TRAFFIC LOAD ON TOP, AND WITH HEAVY TRUCK LOADING DIRECTLY ADJACENT TO TANK TO ACCOMODATE FIRE TRUCK TO BE WITHIN 1M OF WATER DRAW-DOWN CHUTE, AS PER FIRE DEPT.

BUOYANCY: TANK TO BE ABLE TO WITHSTAND GROUNDWATER UP 2.0M FROM BOTTOM OF TANK. IF HIGH-GROUNDWATER LEVEL IS IN EXCESS OF THIS, ADDITIONAL BALLASTING BLOCKS WILL BE REQUIRED. ADDITIONAL WATERPROOFING MEASURES AT THE SEAM MAY BE REQUIRED.





bb boyd bros concrete products
5450 Cuddy St Osgoode, ON K0A 2W0
tel: (613) 826.2318 fax: (613) 826.3679
toll free: 888.846.6664
website: www.boydbrosconcrete.ca
email: info@boydbrosconcrete.ca

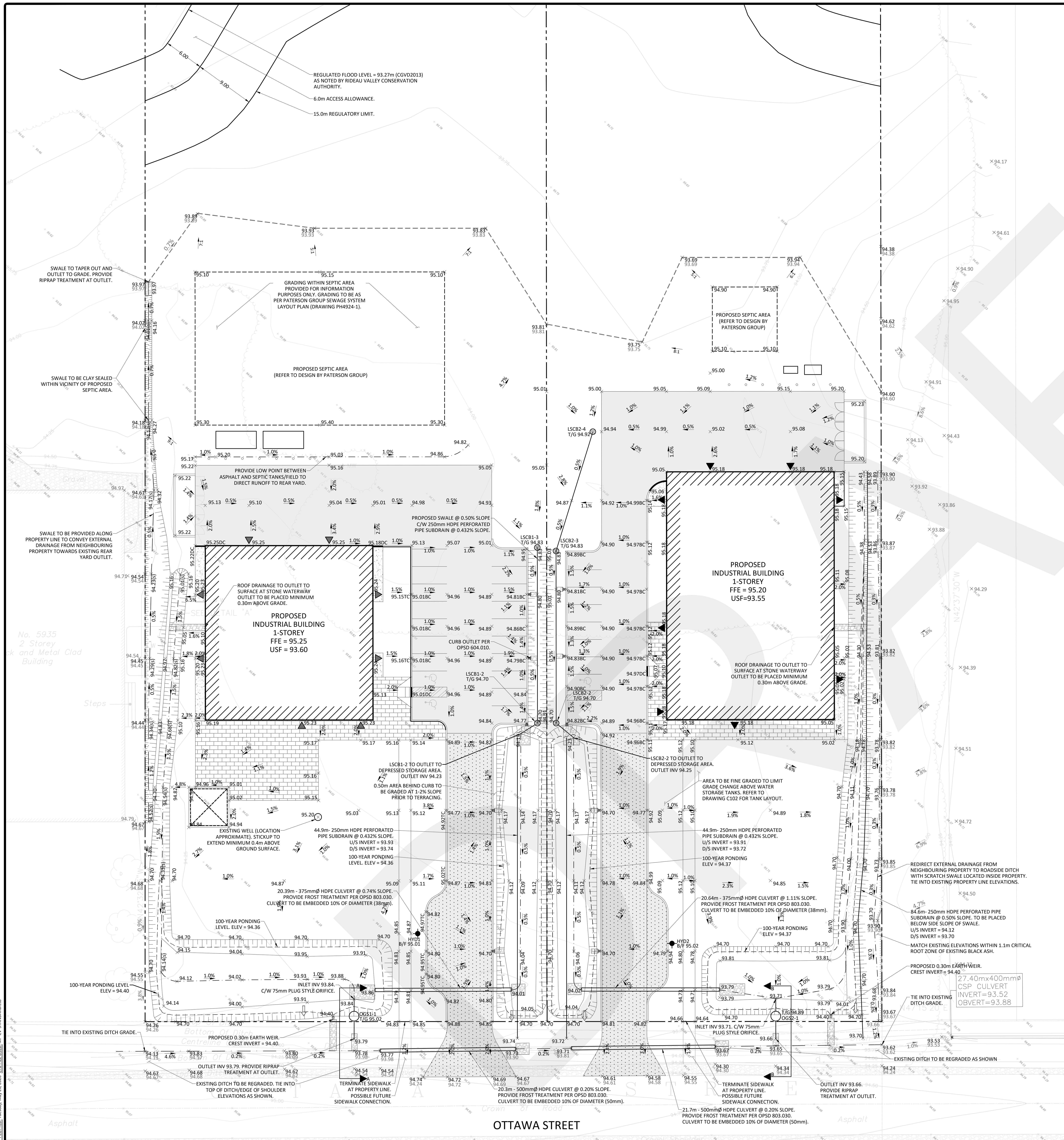
PROJECT
Boyd Bros Concrete

TITLE
45000 Fire Tank

DRAWN Rob Sanna 6/19/23 APPROVED

SIZE	DWG NAME	REV
C	45000 Fire Tank	3

SCALE	WEIGHT	SHEET
1:40	35000kgs	1/1



ROADWAY NOTES

1. RESTORE ANY TRENCHES AND DISTURBED SURFACES OF PUBLIC ROAD ALLOWANCES TO CONDITION EQUAL OR BETTER THAN ORIGINAL CONDITION AND TO THE SATISFACTION OF CITY AUTHORITIES.
2. CONCRETE CURB AND SIDEWALK SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STANDARD SC1.1 (BARRIER CURB), SC2 (MONOLITHIC SIDEWALK & CURB), AND SC4 (STANDARD SIDEWALK) AS NOTED. PROVISIONS SHALL BE MADE FOR CURB DEPRESSIONS AT SIDEWALKS, DRIVEWAYS AND RAMPS.
3. PAVEMENT REINSTATEMENT TO BE ACCORDANCE WITH CITY OF OTTAWA DETAIL R10 WITHIN THE CITY ROW.AS WELL AS WITHIN PRIVATE LAND

GENERAL NOTES

1. THE CONTRACTOR IS TO OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY BEFORE COMMENCING CONSTRUCTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR ALL LAYOUT.
3. THE CONTRACTOR IS TO DETERMINE THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. PROTECT AND ASSUME ALL RESPONSIBILITY FOR EXISTING UTILITIES WHETHER OR NOT SHOWN ON THESE DRAWINGS. IF THERE IS ANY DISCREPANCY THE CONTRACTOR IS TO NOTIFY THE ENGINEER PROMPTLY.
4. RESTORE ALL TRENCHES AND SURFACES OF PUBLIC ROAD ALLOWANCES TO CONDITION EQUAL OR BETTER THAN ORIGINAL CONDITION AND TO THE SATISFACTION OF THE CITY AUTHORITIES.
5. EXCAVATE AND DISPOSE OF ALL EXCESS EXCAVATED MATERIAL, SUCH AS ASPHALT, CURBING AND DEBRIS, OFF SITE AS DIRECTED BY THE ENGINEER AND THE CITY.
6. TOPSOIL TO BE STRIPPED AND STOCKPILED FOR REHABILITATION. CLEAN FILL TO BE PLACED IN FILL AREAS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
7. CONTRACTOR TO MINIMIZE THE ACTUAL LIMITS OF REMOVALS AND DISTURBED AREA WHEREVER POSSIBLE, AND SHALL MAKE THEIR OWN JUDGEMENT AND ACCOUNT FOR ALL MATERIAL AND LABOUR REQUIRED FOR ADEQUATELY REINSTATING THE AREA TO PRE-CONSTRUCTION CONDITIONS OR BETTER, AND BEAR THE COST OF THE SAME. NO ADDITIONAL PAYMENT WILL BE MADE FOR REINSTATEMENT WORK NOT SHOWN ON THE CONTRACT DRAWING AS A DIRECT RESULT FROM CONSTRUCTION.
8. ALL DISTURBED AREAS TO BE RESTORED TO ORIGINAL CONDITION OR BETTER UNLESS OTHERWISE SPECIFIED.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL AND SAFETY MEASURES DURING THE CONSTRUCTION PERIOD, INCLUDING THE

4. GRANULAR "A" SHALL BE PLACED TO A MINIMUM THICKNESS OF 300mm AROUND ALL STRUCTURES WITHIN PAVEMENT AREA.
5. ALL GRANULAR FOR ROADS SHALL BE COMPACTED TO A MINIMUM OF 100% SPMDD.
6. ASPHALT WEAR COURSE SHALL NOT BE PLACED UNTIL THE VIDEO INSPECTION OF SEWERS & NECESSARY REPAIRS HAVE BEEN CARRIED OUT TO THE SATISFACTION OF THE ENGINEER.
7. SUB- EXCAVATE SOFT AREAS AND FILL WITH GRANULAR 'B' COMPACTED IN MAXIMUM 300mm LIFTS.
8. PAVEMENT STRUCTURE: REFER TO DETAIL.

SUPPLY, INSTALLATION, AND REMOVAL OF ALL NECESSARY SIGNAGE, DELINEATORS, MARKERS AND BARRIERS.

10. DO NOT ALTER GRADING OF THE SITE WITHOUT PRIOR APPROVAL OF THE ENGINEER/CITY.
11. ALL ROADWAY, PARKING LOT, AND GRADING WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH CITY STANDARDS AND SPECIFICATIONS. THE CONTRACTOR IS TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE BUILDING.
12. CONTACT THE CITY FOR INSPECTION OF ROUGH GRADING OF PARKING LOTS, ROADWAYS AND LANDSCAPED AREAS PRIOR TO PLACEMENT OF ASPHALT AND TOPSOIL. ALL DEFICIENCIES NOTED SHALL BE RECTIFIED TO THE CITY'S SATISFACTION PRIOR TO PLACEMENT OF ANY ASPHALT, TOPSOIL, SEED & MULCH AND/OR SOD.
13. ALL DIMENSIONS AND INVERTS MUST BE VERIFIED PRIOR TO CONSTRUCTION, IF THERE IS ANY DISCREPANCY THE CONTRACTOR IS TO NOTIFY THE ENGINEER PROMPTLY.
14. ELECTRICAL, GAS, TELEPHONE AND TELEVISION SERVICE LOCATIONS ARE SUBJECT TO THE INDIVIDUAL AGENCY:
    - ELECTRICAL SERVICE - HYDRO ONE,
    - GAS SERVICE - ENBRIDGE,
    - TELEPHONE SERVICE - BELL CANADA,
    - TELEVISION SERVICE - ROGERS.
16. INSTALLATION TO BE IN ACCORDANCE WITH CURRENT CODES AND STANDARDS OF APPROVAL AGENCIES HYDRO ONE, BELL AND THE CITY.
17. CONTRACTOR TO ENSURE ALL APPLICABLE OPS SPECIFICATIONS ARE FOLLOWED DURING CONSTRUCTION
18. ALL PROPOSED CURB TO BE CONCRETE BARRIER CURB UNLESS OTHERWISE SPECIFIED.
19. THIS PLAN MUST BE READ IN CONJUNCTION WITH THE GEOTECHNICAL INVESTIGATION COMPLETED BY PATERSON GROUP, DATED JULY 9, 2025.

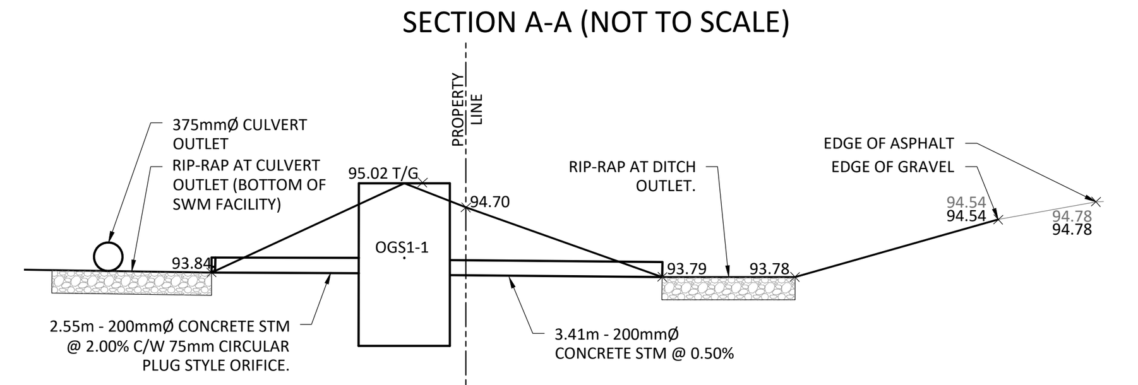
EROSION AND SEDIMENT CONTROL

1. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE, DURING CONSTRUCTION ACTIVITIES. THIS INCLUDES LIMITING THE AMOUNT OF EXPOSED SOIL, TEMPORARY SEDIMENT CONTROL (GEOSOCK INSERTS WITH AN OVERFLOW UNDER GRATE OR COVER) TO BE IMPLEMENTED DURING CONSTRUCTION ON ALL PROPOSED CATCHBASINS, REARYARD CATCHBASINS AND CATCHBASIN MANHOLES AND OTHER SEDIMENT TRAPS. NO RECYCLED GEOSOCK MATERIAL SHALL BE PERMITTED FOR USE ON SITE. 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. AT THE DISCRETION OF THE PROJECT MANAGER, CONSERVATION AUTHORITY, OR MUNICIPAL STAFF, ADDITIONAL SILT CONTROL DEVICES SHALL BE INSTALLED AT DESIGNATED LOCATIONS.
3. FOR SILT FENCE BARRIER, USE OPSD 219.110. GEOTEXTILE FOR SILT FENCE AS PER OPSS 1860, TABLE 3.
4. EXCEPT AS PROVIDED IN PARAGRAPHS 4.1., AND 4.2. BELOW, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS FEASIBLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY HAS TEMPORARILY OR PERMANENTLY CEASED.
   - 4.1. WHERE THE INITIATION OF STABILIZATION MEASURES BY THE 14TH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARILY OR PERMANENTLY CEASE IS PRECLUDED BY SNOW COVER, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS FEASIBLE.
   - 4.2. WHERE CONSTRUCTION ACTIVITY WILL RESUME ON A PORTION OF THE SITE WITHIN 21 DAYS FROM WHEN ACTIVITIES CEASED, (E.G. THE TOTAL TIME PERIOD THAT CONSTRUCTION ACTIVITY IS TEMPORARILY CEASED IS LESS THAN 21 DAYS) THEN STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF SITE BY THE 14TH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARILY CEASED.
5. ALTHOUGH NOT ANTICIPATED, WORK THROUGH WINTER MONTHS SHALL BE CLOSELY MONITORED FOR EROSION ALONG SLOPED AREAS. SHOULD EROSION BE NOTED, THE CONTRACTOR SHALL BE ALERTED AND SHALL TAKE ALL NECESSARY STEPS TO RECTIFY THE SITUATION. SHOULD THE CONTRACTOR'S EFFORTS FAIL AT REMEDIATING THE ERODED AREAS, THE CONTRACTOR SHALL CONTACT THE CITY AND/OR CONSERVATION AUTHORITY TO REVIEW THE SITE CONDITIONS AND DETERMINE THE APPROPRIATE COURSE OF ACTION. AS THE GROUND BEGINS TO THAW, THE CONTRACTOR SHALL PLACE SILT FENCING AT ALL REQUIRED LOCATIONS AS SOON AS GROUND CONDITIONS WARRANT.
6. SEDIMENT THAT IS ACCUMULATED BY THE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED IN A MANNER THAT AVOIDS ESCAPE OF THE SEDIMENT TO THE DOWNSTREAM SIDE OF THE CONTROL MEASURE AND AVOIDS DAMAGE TO THE CONTROL MEASURE. SEDIMENT SHALL BE REMOVED TO THE LEVEL OF THE GRADE EXISTING AT THE TIME THE CONTROL MEASURE WAS CONSTRUCTED AND BE ACCORDING TO THE FOLLOWING:
   - 6.1. FOR LIGHT-DUTY SEDIMENT BARRIERS, ACCUMULATED SEDIMENT SHALL BE REMOVED ONCE IT REACHES THE LESSER OF THE FOLLOWING:
     - 6.1.1. A DEPTH OF ONE-HALF THE EFFECTIVE HEIGHT OF THE CONTROL MEASURE.
     - 6.1.2. A DEPTH OF 300 MM IMMEDIATELY UPSTREAM OF THE CONTROL MEASURE.
   - 6.2. FOR ALL CONTROL MEASURES, ACCUMULATED SEDIMENT SHALL BE REMOVED AS NECESSARY TO PERFORM MAINTENANCE REPAIRS.
   - 6.3. ACCUMULATED SEDIMENT SHALL BE REMOVED PRIOR TO THE REMOVAL OF THE CONTROL MEASURE. ACCUMULATED SEDIMENT IS TO BE REMOVED AND DISPOSED OF AS PER OPSS 180.
7. CARE SHALL BE TAKEN AT THE REMOVAL STAGE TO ENSURE THAT ANY SILT THAT HAS ACCUMULATED IS PROPERLY HANDLED AND DISPOSED OF.
8. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MONITORED TO ENSURE THEY ARE IN EFFECTIVE WORKING ORDER. THE CONDITION OF THE CONTROL MEASURES SHALL BE MONITORED WEEKLY AS WELL AS PRIOR TO ANY FORECAST STORM EVENT AND FOLLOWING A STORM EVENT.
9. SHOULD DETERIORATION OF ANY EROSION & SEDIMENT CONTROL MEASURE BE OBSERVED, IT SHALL BE IMMEDIATELY REPAIRED OR REPLACED.
10. DUST CONTROL MEASURES SHOULD BE CONSIDERED PRIOR TO CLEARING AND GRADING. THE USE OF WATER, CALCIUM CHLORIDE FLAKES/SOLUTION OR MAGNESIUM CHLORIDE FLAKES/SOLUTION SHALL BE USED AS DUST SUPPRESSANTS AS PER OPSS 506. THIS IS TO LIMIT WIND EROSION OF SOILS WHICH MAY TRANSPORT SEDIMENTS OFFSITE, WHERE THEY MAY BE WASHED INTO THE RECEIVING WATER BY THE NEXT RAINSTORM.
11. ALL 'GREEN AREAS' TO BE TREATED WITH 150mm TOPSOIL AND SOD AS SOON AS FEASIBLE, AS PER OPSS 570.
12. ALL DISTURBED AREAS TO BE RESTORED TO ORIGINAL CONDITION OR BETTER UNLESS OTHERWISE SPECIFIED
13. ANY AREAS OF EXCESS FILL SHALL BE REMOVED OR LEVELED AS SOON AS POSSIBLE AND MUST BE LOCATED A SUFFICIENT DISTANCE FROM ANY DITCH OR WATERCOURSE TO ENSURE THAT NO SEDIMENT IS WASHED OUT INTO THE DITCH/WATERCOURSE.
14. STOCKPILED MATERIAL IS TO BE STORED AWAY FROM POTENTIAL RECEIVERS (E.G. LANDSCAPING CATCHBASINS, MANHOLES), AND BE SURROUNDED BY EROSION CONTROL MEASURES WHERE MATERIAL IS LEFT IN PLACE IN EXCESS OF 14 DAYS.
15. IF REQUIRED, DEWATERING/SETTLING BASINS SHALL BE CONSTRUCTED AS PER OPSD 219.240 AND LOCATED ON FLAT GRADE UPSTREAM OF OTHER EXISTING MITIGATION MEASURES. DITCHES SHALL NOT BE DIVERTED, OR BLOCKED, AND TEMPORARY DITCH CROSSINGS SHALL NOT BE CONSTRUCTED OR UTILIZED, UNLESS OTHERWISE SPECIFIED IN THE CONTRACT.
16. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL CONFORM TO OPSS 577
17. WHERE DEWATERING IS REQUIRED, THE DISCHARGED WATER SHALL BE CONTROLLED IN ACCORDANCE WITH OPSS 518.
18. ALL SETTLING/FILTRATION BASINS, IF REQUIRED, SHALL BE EQUIPPED WITH TERRAFIX 270R GEOTEXTILE (OR APPROVED EQUIVALENT) AND SHALL BE CLEANED AND REPLACED AS REQUIRED.

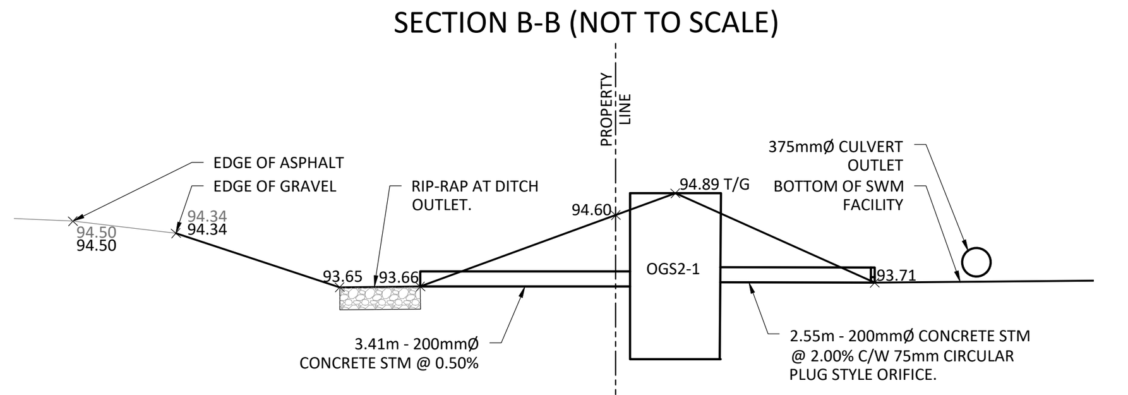
ELEVATION NOTES

1. THE ORIGINAL TOPOGRAPHY, GROUND ELEVATION AND SURVEY DATA SHOWN ARE SUPPLIED FOR INFORMATION PURPOSES ONLY, AND IMPLY NO GUARANTEE OF ACCURACY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL INFORMATION SHOWN.
2. REFER TO EGIS SURVEYING INC. DRAWING #CCO-25-0415 OTTAWA ST INTEGRATION DATA NOTE. BEARING ARE UTM GRID BEARINGS, DERIVED BY REAL TIME NETWORK GNSS OBSERVATIONS ON OBSERVED REFERENCE POINTS 'A' AND 'B' SHOWN ON DRAWING #CCO-25-0415 OTTAWA ST, AND ARE REFERRED TO THE NAD83 CSRS (2010) MTM ZONE 9 COORDINATE SYSTEM.
3. REFER TO EGIS SURVEYING INC. DRAWING #CCO-25-0415 OTTAWA ST VERTICAL DATUM NOTES. TOPOGRAPHIC SURVEY ELEVATIONS ARE GEODETIC (CGVD 2013) AND ARE DERIVED FROM GNSS OBSERVATIONS REFERENCED TO THE CGG 2013 GEOID MODEL. PLEASE NOTE, OBSERVED LOCAL DIFFERENCE BETWEEN THIS DATUM AND CGVD28:78 IS APPROXIMATELY -0.31M. CARE SHOULD BE TAKEN TO UNDERSTAND THE VERTICAL DATUM USED WHEN REVIEWING THIS AND OTHER RELATED GEOGRAPHIC INFORMATION.

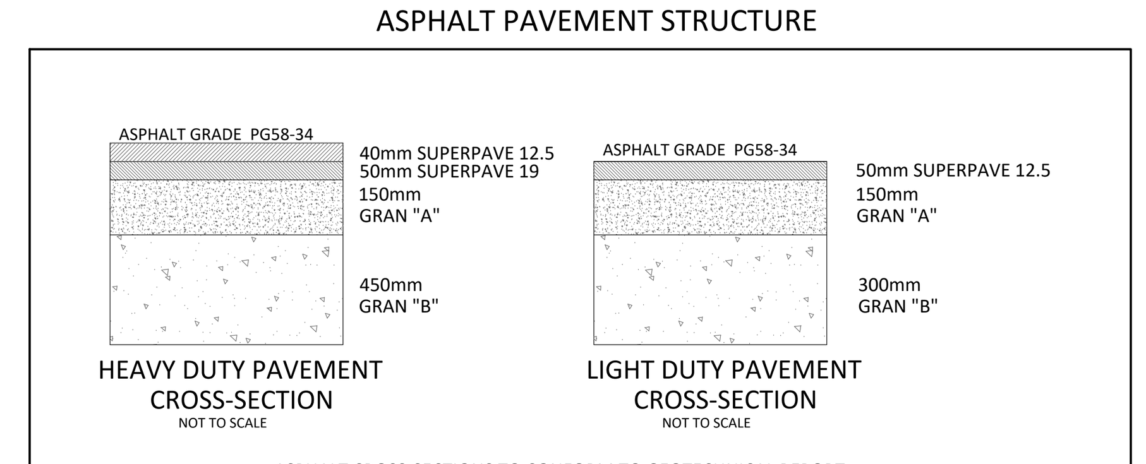
SECTION A-A (NOT TO SCALE)



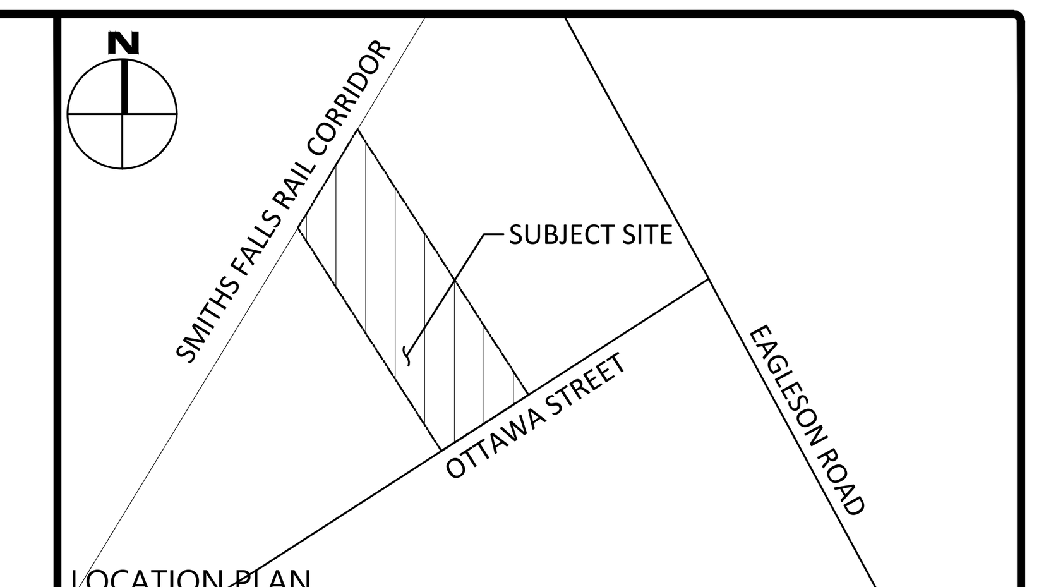
SECTION B-B (NOT TO SCALE)



ASPHALT PAVEMENT STRUCTURE



ASPHALT CROSS-SECTIONS TO CONFORM TO GEOTECHNICAL REPORT COMPLETED BY PATERSON GROUP, DATED JULY 9, 2025.



LOCATION PLAN

LEGEND

CONCRETE BARRIER CURB	LIMIT OF CONSTRUCTION
CONCRETE WALKWAY	DRAINAGE SWALE
PROPOSED ASPHALT	DRAINAGE DITCH
PROPOSED HEAVY DUTY ASPHALT	SLOPING AT 3:1 UNLESS SPECIFIED
LSCB# LANDSCAPING CATCHBASIN	95.50 SURFACE ELEVATION
CBMH# T/G CATCHBASIN MANHOLE	95.50 (S) SWALE ELEVATION
CB# T/G CATCHBASIN	T/W 95.50 B/W 94.25 TOP OF WALL ELEVATION BOTTOM OF WALL ELEVATION
MH#A T/G SANITARY SEWER MANHOLE	OVERLAND FLOW ROUTE
HYD B/F FIRE HYDRANT	SILT FENCE BARRIER
WATER VALVE	STRAW BALE CHECK DAM
WATER METER	MUD MAT
REMOTE WATER METER	CURB OUTLET PER OPSD 604.010
RETAINING WALL	PROPERTY BOUNDARY
OGS# OIL & GRIT SEPARATOR UNIT	

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

No.	Revisions	Date
6	REISSUED FOR SITE PLAN CONTROL	JAN. 28, 2026
5	REISSUED FOR SITE PLAN CONTROL	NOV. 21, 2025
4	REISSUED FOR SITE PLAN CONTROL	SEP. 16, 2025
3	REISSUED FOR SITE PLAN CONTROL	JUN. 06, 2025
2	ISSUED FOR SITE PLAN CONTROL	OCT. 17, 2024
1	ISSUED FOR COORDINATION	OCT. 11, 2024

Check and verify all dimensions before proceeding with the work — Do not scale drawings

SCALE 1 : 300
0 5 10 15 20 25 30 Metres

egis
750 Palladium Drive, Suite 310
Kanata, ON K2V 1C7
Tel: 613-836-2184
Fax: 613-836-3742
www.egis-group.com

Stamp:

Client:
99117756 CANADA INC.
411 LEGGET DRIVE, SUITE 710
OTTAWA, ON K2K 3C9

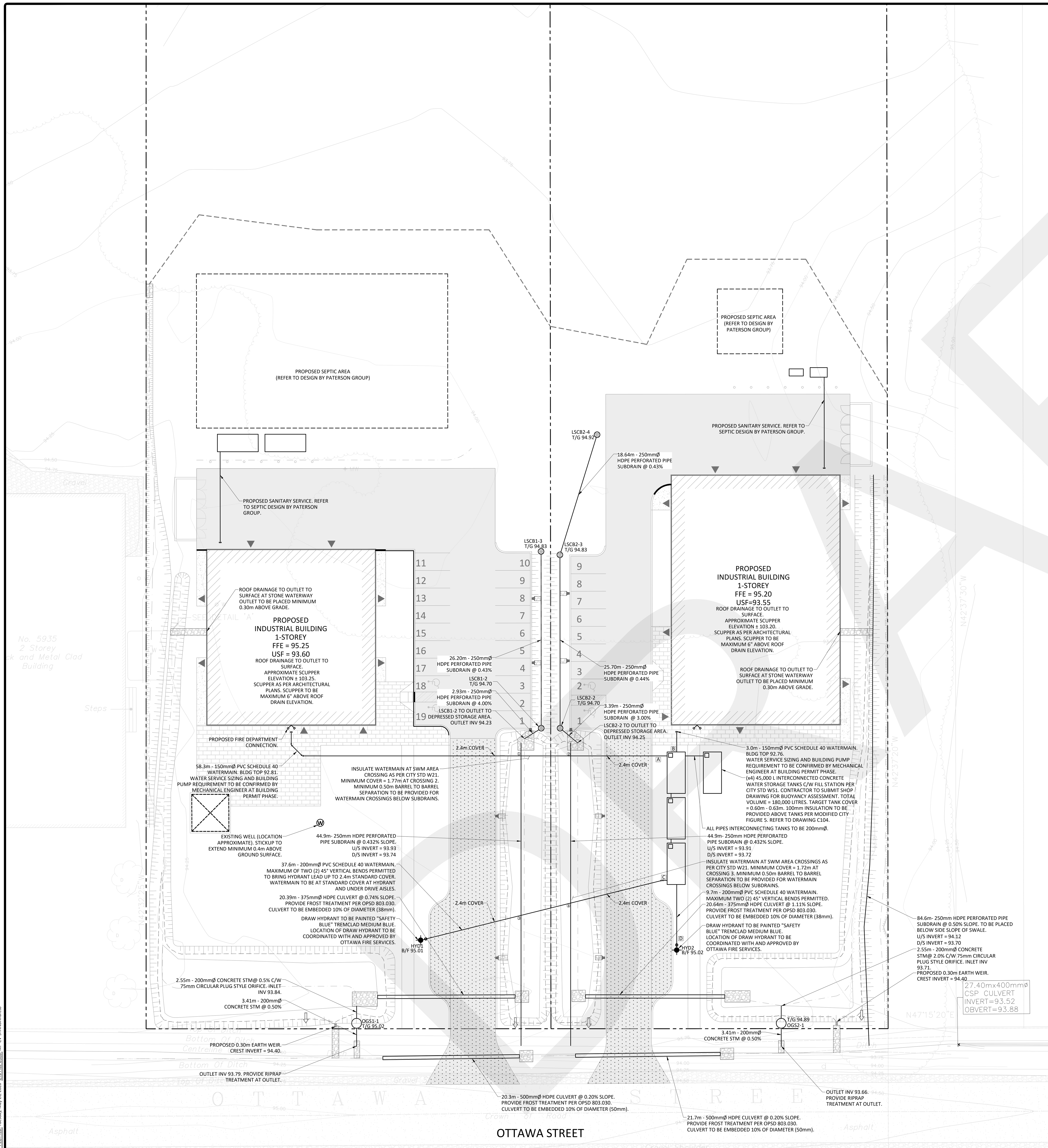
Project:
DISTILLERY & WAREHOUSE
5923 OTTAWA STREET

Drawing Title:
LOT GRADING & DRAINAGE PLAN

Scale: 1:300	Project Number: CCO-25-0415
Drawn By: FV	
Checked By: JB	Drawing Number: C101
Designed By: AG	

D07-12-25-0078

#19400



GENERAL NOTES

1. THE CONTRACTOR IS TO OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY BEFORE COMMENCING CONSTRUCTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR ALL LAYOUT.
3. THE CONTRACTOR IS TO DETERMINE THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. PROTECT AND ASSUME ALL RESPONSIBILITY FOR EXISTING UTILITIES WHETHER OR NOT SHOWN ON THESE DRAWINGS. IF THERE IS ANY DISCREPANCY THE CONTRACTOR IS TO NOTIFY THE ENGINEER PROMPTLY.
4. RESTORE ALL TRENCHES AND SURFACES OF PUBLIC ROAD ALLOWANCES TO CONDITION EQUAL OR BETTER THAN ORIGINAL CONDITION AND TO THE SATISFACTION OF THE CITY AUTHORITIES.
5. EXCAVATE AND DISPOSE OF ALL EXCESS EXCAVATED MATERIAL, SUCH AS ASPHALT, CURBING AND DEBRIS, OFF SITE AS DIRECTED BY THE ENGINEER AND THE CITY.
6. TOPSOIL TO BE STRIPPED AND STOCKPILED FOR REHABILITATION. CLEAN FILL TO BE PLACED IN FILL AREAS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
7. CONTRACTOR TO MINIMIZE THE ACTUAL LIMITS OF REMOVALS AND DISTURBED AREA WHEREVER POSSIBLE, AND SHALL MAKE THEIR OWN JUDGEMENT AND ACCOUNT FOR ALL MATERIAL AND LABOUR REQUIRED FOR ADEQUATELY REINSTATING THE AREA TO PRE-CONSTRUCTION CONDITIONS OR BETTER, AND BEAR THE COST OF THE SAME. NO ADDITIONAL PAYMENT WILL BE MADE FOR REINSTATEMENT WORK NOT SHOWN ON THE CONTRACT DRAWING AS A DIRECT RESULT FROM CONSTRUCTION.
8. ALL DISTURBED AREAS TO BE RESTORED TO ORIGINAL CONDITION OR BETTER UNLESS OTHERWISE SPECIFIED.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL AND SAFETY MEASURES DURING THE CONSTRUCTION PERIOD, INCLUDING THE SUPPLY, INSTALLATION, AND REMOVAL OF ALL NECESSARY SIGNAGE, DELINEATORS, MARKERS AND BARRIERS.
10. DO NOT ALTER GRADING OF THE SITE WITHOUT PRIOR APPROVAL OF THE ENGINEER/CITY.
11. ALL ROADWAY, PARKING LOT, AND GRADING WORKS TO BE UNDERTAKEN IN ACCORDANCE WITH CITY STANDARDS AND SPECIFICATIONS. THE CONTRACTOR IS TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE BUILDING.
12. CONTACT THE CITY FOR INSPECTION OF ROUGH GRADING OF PARKING LOTS, ROADWAYS AND LANDSCAPED AREAS PRIOR TO PLACEMENT OF ASPHALT AND TOPSOIL. ALL DEFICIENCIES NOTED SHALL BE RECTIFIED TO THE CITY'S SATISFACTION PRIOR TO PLACEMENT OF ANY ASPHALT, TOPSOIL, SEED & MULCH AND/OR SOD.
13. ALL DIMENSIONS AND INVERTS MUST BE VERIFIED PRIOR TO CONSTRUCTION, IF THERE IS ANY DISCREPANCY THE CONTRACTOR IS TO NOTIFY THE ENGINEER PROMPTLY.
14. ELECTRICAL, GAS, TELEPHONE AND TELEVISION SERVICE LOCATIONS ARE SUBJECT TO THE INDIVIDUAL AGENCY:
    - ELECTRICAL SERVICE - HYDRO ONE,
    - GAS SERVICE - ENBRIDGE,
    - TELEPHONE SERVICE - BELL CANADA,
    - TELEVISION SERVICE - ROGERS.
16. INSTALLATION TO BE IN ACCORDANCE WITH CURRENT CODES AND STANDARDS OF APPROVAL AGENCIES HYDRO ONE, BELL AND THE CITY.
17. CONTRACTOR TO ENSURE ALL APPLICABLE OPS SPECIFICATIONS ARE FOLLOWED DURING CONSTRUCTION
18. ALL PROPOSED CURB TO BE CONCRETE BARRIER CURB UNLESS OTHERWISE SPECIFIED.
19. THIS PLAN MUST BE READ IN CONJUNCTION WITH THE GEOTECHNICAL INVESTIGATION COMPLETED BY PATERSON GROUP, DATED JULY 9, 2025.

ELEVATION NOTES

1. THE ORIGINAL TOPOGRAPHY, GROUND ELEVATION AND SURVEY DATA SHOWN ARE SUPPLIED FOR INFORMATION PURPOSES ONLY, AND IMPLY NO GUARANTEE OF ACCURACY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL INFORMATION SHOWN.
2. REFER TO EGIS SURVEYING INC. DRAWING #CCO-25-0415 OTTAWA ST INTEGRATION DATA NOTE. BEARING ARE UTM GRID BEARINGS, DERIVED BY REAL TIME NETWORK GNSS OBSERVATIONS ON OBSERVED REFERENCE POINTS 'A' AND 'B' SHOWN ON DRAWING #CCO-25-0415 OTTAWA ST, AND ARE REFERRED TO THE NAD83 CSRS (2010) MTM ZONE 9 COORDINATE SYSTEM.
3. REFER TO EGIS SURVEYING INC. DRAWING #CCO-25-0415 OTTAWA ST VERTICAL DATUM NOTES. TOPOGRAPHIC SURVEY ELEVATIONS ARE GEODETIC (CGVD 2013) AND ARE DERIVED FROM GNSS OBSERVATIONS REFERENCED TO THE CGG 2013 GEOID MODEL. PLEASE NOTE, OBSERVED LOCAL DIFFERENCE BETWEEN THIS DATUM AND CGVD28:78 IS APPROXIMATELY -0.31M. CARE SHOULD BE TAKEN TO UNDERSTAND THE VERTICAL DATUM USED WHEN REVIEWING THIS AND OTHER RELATED GEOGRAPHIC INFORMATION.

SEWER NOTES:

1. CONSTRUCT ALL SEWERS, CATCH BASINS, MANHOLES AND APPURTENANCES IN ACCORDANCE WITH OPSD STANDARDS AND SPECIFICATIONS, AS WELL AS CITY.
2. SEWER TRENCHING AND BEDDING SHALL CONFORM TO OPSD 802.010 AND 802.013 UNLESS NOTED OTHERWISE.
   - 2.1. BEDDING SHALL BE A MINIMUM 150mm OF GRANULAR "A", COMPACTED TO MINIMUM 95% STANDARD PROCTOR DRY DENSITY. CLEAR STONE BEDDING SHALL NOT BE PERMITTED.
   - 2.2. SUB-BEDDING, IF REQUIRED SHALL CONSIST OF 450mm OF COMPACTED GRANULAR "B" TYPE 1.
   - 2.3. BACKFILL TO AT LEAST 300mm ABOVE TOP OF PIPE WITH GRANULAR "A" OR GRANULAR "B" TYPE 1.
   - 2.4. TO MINIMIZE DIFFERENTIAL FROST HEAVING, TRENCH BACKFILL (FROM PAVEMENT SUBGRADE TO 2.0 METRES BELOW FINISHED GRADE) SHALL MATCH EXISTING SOIL CONDITIONS.
3. SANITARY SEWERS AND CONNECTIONS 150mmØ AND SMALLER TO BE PVC SDR-28.
4. SEWERS AND CONNECTIONS 200mmØ AND LARGER TO BE PVC SDR-35. BEDDING TO BE TYPE "B" EXCEPT AT RISERS, UNLESS NOTED OTHERWISE.
5. SEWERS AND WATERMAINS LOCATED PARALLEL TO EACH OTHER SHOULD BE CONSTRUCTED IN SEPARATE TRENCHES. WHEN IT IS IMPOSSIBLE OR NOT PRACTICAL TO MAINTAIN VERTICAL AND/OR HORIZONTAL SEPARATION PER MECP STANDARDS, ALL SEWERS SHOULD BE CONSTRUCTED OF WATERMAIN QUALITY PIPE, PRESSURE TESTED IN PLACE AT A PRESSURE OF 350 kPa (50 psi) WITHOUT LEAKAGE USING THE TESTING METHODOLOGY IN ONTARIO PROVINCIAL STANDARD SPECIFICATION 701 (OPSS 701) OF THE OPS.
6. INSULATE ALL STORM AND SANITARY SEWERS/SERVICES THAT HAVE LESS THAN 2.0m OF COVER WITH THERMAL INSULATION AS PER CITY DETAIL S35, OPTION A.
7. SUPPLY AND INSTALL ALL PIPING AND APPURTENANCES AS SHOWN AND DETAILED TO WITHIN 1.0m OF BUILDING. ALL ENDS OF SERVICES TO BE PROPERLY CAPPED AND LOCATED WITH 2"x4"X8' LONG MARKER.
8. CONTRACTOR TO TELEVISE (CCTV) ALL PROPOSED SEWERS ON SITE, OUTLET CONNECTION TO THE MAIN AND PIPES 150mmØ OR GREATER PRIOR TO BASE COURSE ASPHALT. UPON COMPLETION OF CONTRACT, THE CONTRACTOR IS RESPONSIBLE TO FLUSH AND CLEAN ALL SEWERS & APPURTENANCES.
9. DYE TESTING IS TO BE COMPLETED ON SANITARY SERVICE TO CONFIRM PROPER CONNECTION TO SANITARY SEWER MAIN.

ROADWAY NOTES

1. RESTORE ANY TRENCHES AND DISTURBED SURFACES OF PUBLIC ROAD ALLOWANCES TO CONDITION EQUAL OR BETTER THAN ORIGINAL CONDITION AND TO THE SATISFACTION OF CITY AUTHORITIES.
2. CONCRETE CURB AND SIDEWALK SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STANDARD SC1.1 (BARRIER CURB), SC2 (MONOLITHIC SIDEWALK & CURB), AND SC4 (STANDARD SIDEWALK) AS NOTED. PROVISIONS SHALL BE MADE FOR CURB DEPRESSIONS AT SIDEWALKS, DRIVEWAYS AND RAMPS.
3. PAVEMENT REINSTATEMENT TO BE ACCORDANCE WITH CITY OF OTTAWA DETAIL R10 WITHIN THE CITY ROW.AS WELL AS WITHIN PRIVATE LAND.
4. GRANULAR "A" SHALL BE PLACED TO A MINIMUM THICKNESS OF 300mm AROUND ALL STRUCTURES WITHIN PAVEMENT AREA.
5. ALL GRANULAR FOR ROADS SHALL BE COMPACTED TO A MINIMUM OF 100% SPMDD.
6. ASPHALT WEAR COURSE SHALL NOT BE PLACED UNTIL THE VIDEO INSPECTION OF SEWERS & NECESSARY REPAIRS HAVE BEEN CARRIED OUT TO THE SATISFACTION OF THE ENGINEER.
7. SUB- EXCAVATE SOFT AREAS AND FILL WITH GRANULAR 'B' COMPACTED IN MAXIMUM 300mm LIFTS.
8. PAVEMENT STRUCTURE: REFER TO DETAIL ON DRAWING C101.

WATERMAIN NOTES

1. CONSTRUCT ALL WATERMAINS AND APPURTENANCES IN ACCORDANCE WITH CITY STANDARDS AND SPECIFICATIONS.
2. WATERMAINS AND/OR WATER SERVICES ARE TO HAVE A MINIMUM COVER OF 2.4m. INSULATE ALL WATERMAINS AND SERVICES THAT HAVE LESS THAN 2.4m COVER WITH THERMAL INSULATION AS PER CITY DETAIL W22.
3. IF THE WATERMAIN MUST BE DEFLECTED TO MEET ALIGNMENT, ENSURE THAT THE AMOUNT OF DEFLECTION USED IS EQUAL TO OR LESS THAN THAT WHICH IS RECOMMENDED BY THE MANUFACTURER AND CITY OF OTTAWA STANDARDS W25 AND W25.2.
4. THERMAL INSULATION OF WATERMAINS AT SWM AREA CROSSING AS PER CITY DETAIL W21.
5. CONCRETE THRUST BLOCKS TO CONFORM TO CITY STANDARD W25.3.
6. WATERMAIN TO BE SCHEDULE 40 PVC OR APPROVED EQUIVALENT WITH SOLVENT-WELDED JOINTS.
7. ALL PVC WATERMAIN SHALL BE INSTALLED WITH A 10 GAUGE STRANDED COPPER TWU OR RWU TRACER WIRE IN ACCORDANCE WITH CITY STANDARD W36.
8. FIRE HYDRANTS SHALL CONFORM TO CITY STANDARD W18 AND W19.
9. VALVE BOXES SHALL CONFORM TO CITY STANDARD W24.
10. VALVES TO BE INSTALLED WITH VALVE BOXES AS PER CITY STANDARD W24.
11. AS PER CITY GUIDELINE, THE MINIMUM VERTICAL CLEARANCE BETWEEN WATERMAIN/WATER SERVICE AND SEWER/UTILITY IS 0.25m FOR CROSSING OVER THE SEWER, AS PER CITY DETAIL W25.2 FOR CROSSING UNDER SEWER, THE MINIMUM VERTICAL CLEARANCE IS 0.5m AS PER CITY DETAIL W25. FOR CROSSING UNDER SEWER, ADEQUATE STRUCTURAL SUPPORT FOR THE SEWERS IS REQUIRED TO PREVENT EXCESSIVE DEFLECTION OF JOINTS AND SETTLING. THE LENGTH OF WATER PIPE SHALL BE CENTERED AT THE POINT OF CROSSING SO THAT THE JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER.
12. WATER STORAGE TANKS TO BE BOYD BROS 45,000 OR APPROVED EQUIVALENT.

STM STRUCTURE TABLE

NAME	RIM ELEV.	INVERT IN	INVERT OUT	DESCRIPTION
LSCB1-2	94.70	NW94.350	S94.347	PER CITY STANDARD S30
LSCB1-3	94.83		SE94.463	PER CITY STANDARD S31
LSCB2-2	94.70	NW94.350	E94.350	PER CITY STANDARD S30
LSCB2-3	94.83	NW94.470	SE94.463	PER CITY STANDARD S30
LSCB2-4	94.92		SE94.551	PER CITY STANDARD S31
OGS1-1	95.02	NW93.832	SE93.807	STORMCEPTOR EFO4 60% TSS REMOVAL
OGS2-1	94.89	NW93.698	SE93.673	STORMCEPTOR EFO4 60% TSS REMOVAL

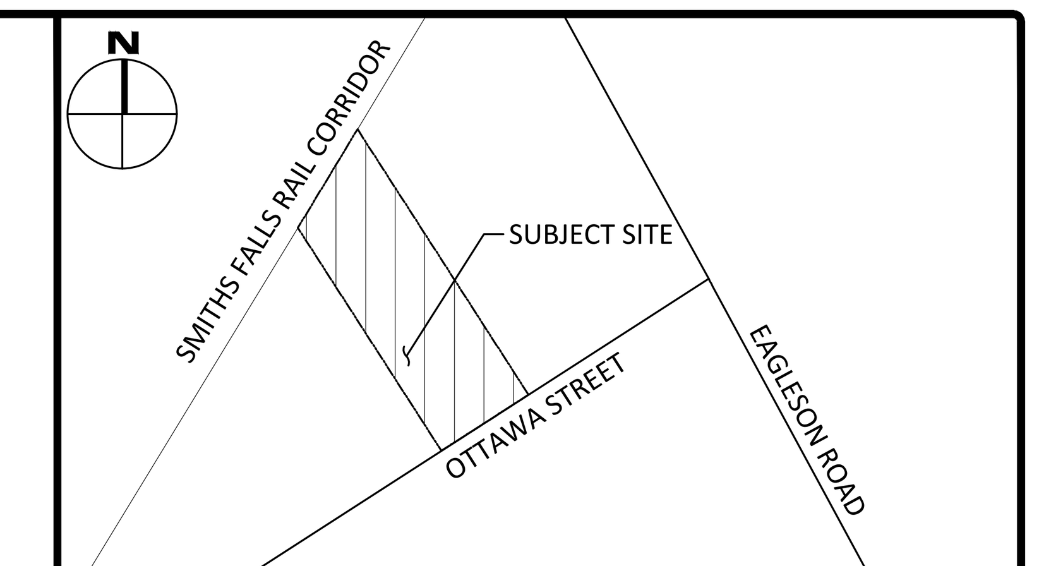
CROSSING CONFLICT TABLE

LOCATION	DESCRIPTION	SEPARATION
1	250mmØ HDPE SUBDRAIN INV 93.93 150mmØ WTR MAIN OBV 92.41	1.52
2	250mmØ HDPE SUBDRAIN INV 93.91 150mmØ WTR MAIN OBV 92.45	1.46
3	250mmØ HDPE SUBDRAIN INV 93.82 200mmØ WTR MAIN OBV 92.35	1.47
4	250mmØ HDPE SUBDRAIN INV 93.81 200mmØ WTR MAIN OBV 92.36	1.45

WATER COVER TABLE

LOCATION	STATION	FINISHED GRADE	TOP OF PIPE	COVER
A - STORAGE TANK	0+100.00	95.11	91.29	3.82
45° BEND	0+154.08	95.18	92.78	2.40
45° BEND	0+156.39	95.19	92.79	2.40
PHASE 1 BUILDING	0+158.32	95.21	92.81	2.40
B - STORAGE TANK	0+200.00	95.12	91.29	3.83
PHASE 2 BUILDING	0+203.03	95.15	92.75	2.40
C- STORAGE TANK	0+300.00	95.10	91.29	3.81
150mmØ VALVE	0+308.97	94.92	92.52	2.40
HYD2	0+309.72	94.92	92.52	2.40
D - STORAGE TANK	0+400.00	95.09	91.29	3.80
11.25° BEND	0+400.78	95.05	91.29	3.76
150mmØ VALVE	0+436.84	94.94	92.54	2.40
HYD1	0+437.94	94.91	92.51	2.40

WATERMAIN ELEVATION AT STORAGE TANK AS PER BOYD BROS 45,000L FIRE TANK SHOP DRAWING. PROVIDE VERTICAL BENDS AS REQUIRED TO MEET TARGET COVER AT BUILDINGS. MAXIMUM 2 VERTICAL BENDS PERMITTED ON DRY HYDRANT LEADS.



LOCATION PLAN

LEGEND

CONCRETE BARRIER CURB	LIMIT OF CONSTRUCTION
CONCRETE WALKWAY	DRAINAGE SWALE
PROPOSED ASPHALT	DRAINAGE DITCH
PROPOSED HEAVY DUTY ASPHALT	SLOPING AT 3:1 UNLESS SPECIFIED
LSCB# LANDSCAPING CATCHBASIN	95.50 SURFACE ELEVATION
CBMH# T/G CATCHBASIN MANHOLE	95.50 (S) SWALE ELEVATION
CB# T/G CATCHBASIN	T/W 95.50 B/W 94.25 TOP OF WALL ELEVATION BOTTOM OF WALL ELEVATION
MH#A T/G SANITARY SEWER MANHOLE	OVERLAND FLOW ROUTE
HYD B/F FIRE HYDRANT	SILT FENCE BARRIER
WATER VALVE	STRAW BALE CHECK DAM
WATER METER	MUD MAT
REMOTE WATER METER	CURB OUTLET PER OPSD 604.010
RETAINING WALL	PROPERTY BOUNDARY
OGS# OIL & GRIT SEPARATOR UNIT	

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

No.	Revisions	Date
6	REISSUED FOR SITE PLAN CONTROL	JAN. 28, 2026
5	REISSUED FOR SITE PLAN CONTROL	NOV. 21, 2025
4	REISSUED FOR SITE PLAN CONTROL	SEP. 16, 2025
3	REISSUED FOR SITE PLAN CONTROL	JUN. 06, 2025
2	ISSUED FOR SITE PLAN CONTROL	OCT. 17, 2024
1	ISSUED FOR COORDINATION	OCT. 11, 2024

Check and verify all dimensions before proceeding with the work — Do not scale drawings

SCALE 1 : 300 (0, 5, 10, 15, 20, 25, 30 Metres)

egis
750 Palladium Drive, Suite 310
Kanata, ON K2V 1C7
Tel: 613-836-2184
Fax: 613-836-3742
www.egis-group.com

Stamp:

Client: 99117756 CANADA INC.
411 LEGGET DRIVE, SUITE 710
OTTAWA, ON K2K 3C9

Project: DISTILLERY & WAREHOUSE
5923 OTTAWA STREET

Drawing Title: SITE SERVICING PLAN

Scale: 1:300	Project Number: CCO-25-0415
Drawn By: FV	
Checked By: JB	Drawing Number: C102
Designed By: AG	

D07-12-25-0078

#19400