DOMM HOLDINGS LTD.

SERVICING OPTIONS STUDY

PROPOSED SUBDIVISION – AYTON

MUNICIPALITY OF WEST GREY

COUNTY OF GREY

OCTOBER 2024

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1. INTRODUCTION

Cobide Engineering Inc. was retained by Domm Holdings Ltd. to prepare a Servicing Options Study that includes a D-5-4 Assessment to support a Draft Plan of Subdivision application. The application will be to subdivide the property into a residential subdivision development.

A copy of the proposed Draft Plan has been included in **Appendix A** as Drawing 05069-DP1.

1.1 LOCATION

The proposed development, herein referred to as the Site, is located on Lots 3, 4, 5, and 6 South of Victoria Street and Lots 4, 5, and 6 North of Albert Street, in the hamlet of Ayton, within the former geographic Township of Normanby, Municipality of West Grey, County of Grey. A Regional Location Map is included as **Figure 1**.

The site is located between the existing road allowances of Victoria Street and Albert Street, west of Caroline Street and east of the South Saugeen River. The site will have access from the proposed extension of Victoria Street and Albert Street.

1.2 DEVELOPMENT PROPOSAL

The overall property area is 5.42 hectares (13.39 acres) in size. It is planned to develop the property into 12 single detached residential lots.

Lots 1 through 11 will have frontage onto Victoria Street and Lot 12 will have frontage onto Albert Street. The extension of Victoria Street will be constructed as per municipal standards.

The Draft Plan showing the lot configuration has been included in **Appendix A** and noted as Drawing 05069-DP1.

The proposed development is within the *"Secondary Settlement Boundary"* for West Grey and is currently zoned *"Future Development (FD)", "Unserviced Residential"* and *"Natural Environment (NE)".* A zoning by-law amendment will be required with the lands being re-zoned to *"Unserviced Residential Zone (R1 A)"* to allow the proposed development.

The Grey County Official Plan designates the proposed development as *"Secondary Settlement Area"* with *"Hazard Lands"*. Therefore, no official plan amendment will be required.

1.3 OTHER REPORTS

In support of the proposed Draft Plan of Subdivision, the following reports have been prepared:

- **Stormwater Management Report**, Domm Subdivision - Ayton, Municipality of West Grey, Cobide Engineering Inc., October 2024;
- **Environmental Impact Study**, Domm Subdivision - Ayton, Aboud and Associates Inc., October 2024;
- **MECP D-5-5 Groundwater Supply Investigations**, Part Lot 15, Con. 10, Formerly Normanby Twp (Ayton), Municipality of West Grey, County of Grey, GAMAN Consultants Inc., June 2024;
- **Stage 1 – 2 Archaeological Assessment** of 1035 Victoria Road, In Part of Lot 14, Concession 10, Township of Normanby, Now Town of Ayton, Grey County, Ontario, Lincoln Environmental Consulting (LEC), October 2024;

- **Planning Justification Report**, Domm Subdivision - Ayton, Municipality of West Grey, Patterson Planning Consultants Inc., October 2024.
- **Geotechnical Investigation**, Proposed Residential Development, Victoria Street, Ayton, Ontario, CMT Engineering Inc., May 2024.
- **Grey County Planning and Development**, Pre-Submission Consultation Letter, March 16, 2023.

MAP SOURCE - MTO ROAD MAP

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Client/Project
PROPOSED RESIDENTIAL SUBDIVISION
VICTORIA STREET AND ALBERT STREET (AYTON)
MUNICIPALITY OF WEST GREY
COUNTY OF GREY
SERVICING OPTIONS STUDY

Figure No.
1

Title
REGIONAL LOCATION MAP

ORIGINAL SHEET – 8 x 11
H:\Domm Construction\05069 – Domm Subdivision – Ayton\Drawings\Working Drawings\2024-06-11 SOS Regional Location 05069.dwg Jun 11, 2024 – 1:19pm

Figure 1 - Regional Location Map

2. EXISTING CONDITIONS

2.1 LAND USE

2.1.1 ON-SITE

The present use of the subject property is agricultural (cropped) with some wooded areas around the perimeter along with valley lands to the south which border the Saugeen River.

The overall property is approximately 5.42 ha (13.39 acres).

More detailed information relating to the present on-site environmental conditions can be found in the Environmental Impact Study that was prepared by Aboud and Associates Inc.

2.1.2 SURROUNDING

The surrounding land use is a mix of low density residential, agricultural, and woodland forest and the Saugeen River.

South

Immediately to the south of the site is the South Saugeen River and associated wooded valleylands. The wooded valleylands are zoned *"Natural Environment (NE)"* within the Municipality of West-Grey's Zoning Bylaw. A small portion of the site is bounded to the south by existing low density residential dwellings that are serviced by individual wells and septic systems that are zoned *"Unserviced Residential Zone (R1A)"*.

West

Existing wooded valleylands and the South Saugeen River form the west boundary of the subject property. The lands to the west of the site are zoned "*Natural Environment (NE)"*

North

The Victoria Street right of way forms the north boundary of the subject property. The lands on the north side of Victoria Street consist of mixed cropped land with small patches of woodland forest. The lands immediately north of the site are zoned *"Future Development (FD)"*.

East

Directly east of site are existing low density residential dwellings which are zone additional woodland forests and agricultural properties zoned *"Unserviced Residential Zone (R1A)"*.

2.2 GEOLOGY, TOPOGRAPHY AND SOIL CONDITIONS

The site is located within the southwest boundary of the physiographic region referred to as the "Dundalk Till Plain" as described by Chapman and Putnam. The surficial geology within the watershed is comprised of till. In general, the soils on site are developed from limestone till and comprise of medium textured materials such as sandy silt to silty sand till with good drainage.

The site steeply slopes from east to west towards the Saugeen River and its associated valleylands. The range of measured elevations for the property is between 344.75m to 305.50m. Six (6) boreholes were completed at various locations within the site boundary by CMT Engineering Inc. Soil samples were logged at various depths within the boreholes. The boreholes revealed the existing soil conditions on the site consist of sandy silt, some gravel and clay; sandy gravel, some silt, trace clay; sandy, gravelly silt,

trace clay; Sand and gravel, some silt, trace clay and gravel and sand, some silt, trace clay. No indication of groundwater was located within the boreholes. Percolation rates (t-times) were also completed for this site as the use of individual septic systems is being proposed. A detailed look at the serviceability of the proposed subdivision by individual septic systems will be reviewed in Section 4 of this report along with the supporting MECP D-5-4 calculations.

Additional information regarding the subsurface soil conditions, percolation rates, etc. can be found within the **Geotechnical Investigation** that was prepared by CMT Engineering Inc.

2.3 NATURAL ENVIRONMENT

A detailed inventory of the natural environment/heritage of the site was undertaken by Aboud and Associates Inc. For additional details on the natural environment of the site, refer to the report entitled, **Environmental Impact Study** completed by Aboud and Associates Inc.

2.4 SURFACE WATER

The predominant surface water feature in the vicinity of the subject property is the South Saugeen River that bounds the property on the south and west side. Surface water flows overland from the northeast corner of the site southwest towards the South Saugeen River.

For additional information regarding surface water, refer to the **Preliminary Stormwater Management Report** that was prepared by Cobide Engineering Inc.

2.5 GROUNDWATER AND HYDROGEOLOGY

A detailed hydrogeologic investigation was completed by GAMAN Consultants Inc. to determine the potential hydrogeologic impacts of the proposed development on the existing wells within the vicinity of the proposed development.

Within the report, GAMAN investigated 49 existing wells in the area using well records and additionally canvased over twenty (20) residences that rely on wells for domestic water use. From well records, it was confirmed that water well contractors consistently extended the drilled wells into the bedrock aquifer within the study area. From the data provided, the construction of drilled wells will yield enough water from the proposed dwellings at this site. Two (2) test wells were also installed within the site boundary which demonstrated evidence to service the average and peak water demands for a four-bedroom dwelling with five occupants. Therefore, the investigation concluded that the proposed use of individual wells within the development will not have an adverse impact to the neighbouring wells nor the existing bedrock aquifer.

For more details on the hydrogeological findings of the study, refer to the report entitled **MECP D-5-5 Groundwater Supply Investigations** that was prepared by GAMAN Consultants Inc.

2.6 ARCHAEOLOGY

A Stage 1 and 2 Archaeological Assessment of the property was completed by Lincoln Environmental Consulting under an archaeological consulting license issued to Ms. Kara Adams by the MHSTCI (Ministry of Heritage, Sport, Tourism, and Culture Industries).

Stage 1 background research revealed that portions of the study area were determined as having archaeological potential for Pre-contact and/or Post-contact archaeological resources due to its proximity to historic transportation routes and areas known to be well populated during the nineteenth century. Background research also indicated that the property has potential for archaeological resources of Indigenous origins based on the proximity to the navigable waterway South Saugeen River and potable water sources.

Stage 2 test pit screening and analysis did not reveal any archaeological resources. As such, Lincoln Environmental Consulting recommends no further archaeological assessment of the study area.

For more information and detail, refer to the archaeological report entitled **Stage 1-2 Archaeological Assessment** completed by Lincoln Environmental Consulting.

3. WATER SUPPLY EVALUATION

3.1 ALTERNATIVES CONSIDERED

The following three (3) alternatives were considered to provide domestic water supply for the proposed development:

Alternative 1: Individual Private Wells

Alternative 2: Extension of the nearest municipal water supply

Alternative 3: Construction of an on-site communal water supply system

The above alternatives were evaluated and compared based on the overall cost to construct, annual operational and maintenance costs and the suitability of existing underground water supply. Each alternative is outlined below:

3.1.1 ALTERNATIVE 1: INDIVIDUAL PRIVATE WELLS

All the existing properties within the area obtain their water supply from individual private wells due to their rural geographical location. Therefore, the use of individual private wells has been considered for this development.

The estimated capital cost to drill a well would be approximately $15,000-20,000 per lot based on the following assumptions:

- Requirement to provide basic treatment;
- Cost of well drilling and development;
- Extension of water line to the dwelling;
- Submersible well pump and electrical control

The annual operational and maintenance costs to each lot owner would include but is not limited to hydro consumption, chemicals for treatment if desired and periodic water testing analysis. The operational and maintenance costs for individual well systems is primarily related to the hydro consumption with the addition of chemical treatment disinfection and minor testing costs. These costs are estimated to range from $500 to $1,000 per lot per year.

3.1.2 ALTERNATIVE 2: EXTENSION OF THE NEAREST MUNICIPAL WATER SUPPLY

The closest municipal water supply is located in the former village of Neustadt, within the Municipality of West Grey. While this water distribution system is within the same municipality, it is approximately 9.5 km from the proposed development.

A preliminary capital cost of extending the municipal water supply line from Neustadt to the proposed subdivision indicates that the cost would be upwards of $3 million and would make the proposed development economically impractical to develop.

The construction of a municipal watermain from the former village of Neustadt is not considered feasible due to the overall distance, cost of construction and the existing land topography along the proposed watermain route. Therefore, no further review of this option will be undertaken.

3.1.3 ALTERNATIVE 3: ON-SITE COMMUNAL WATER SUPPLY SYSTEM

The construction of a communal water supply was also considered. A communal water supply can be described as a shared facility for the supply, treatment, and distribution of potable water. For multiple private ownership developments (i.e., subdivision), these systems are usually required to be owned, operated, and managed by the Municipality.

As the development is proposed as primary residences, there are many rigorous Ministry guidelines that must be followed with respect to treatment, testing, and analysis of treated water; all which would be the responsibility of the Municipality. Generally, communal water supply systems also have a large capital expense for the initial construction which is borne by the developer.

A communal water supply is not considered a desirable choice for this development due to the eventual requirement of the Municipality to own, operate, and manage the overall system. Typically, municipalities are not eager to assume these types of systems due to the rigorous guidelines that must be followed and the additional liability they can inflict as well as the management, operation, and maintenance of the system. Therefore, no further review of this option will be undertaken.

3.2 PREFERED WATER SUPPLY ALTERNATIVE

As part of the required D-5-5 Water Supply Evaluation for the proposed development that was completed by GAMAN Consultants Inc., several well records were reviewed and a survey of current residents using wells was undertaken. Several boreholes were completed, and two (2) test wells were installed within the property boundary. From this, it has been determined from the observed and predicted effects of providing water by individual wells to this proposed subdivision shows acceptable effects on groundwater levels with little to no risk of adverse effects to neighbouring wells.

Each lot within the proposed subdivision will be serviced by individual wells which will be installed and constructed in accordance with Ontario Regulation 903. The recommendations of the D-5-5 Water Supply Evaluation will be used when determining the well depths and locations within each lot boundary.

MECP Guideline B-1-1, Water Management – Policies, Guidelines, Provincial Water Quality Objectives of the Ministry of Environment and Energy will be used as a basis to provide protection and enhancement of drinking water quality and describes the Provincial Water Quality Objectives (PWQOs) and the Ontario Drinking Water Objectives (ODWOs).

The well placement will follow the Ontario Building Code (OBC) and the Ontario Water Supply Wells: Requirements and Best Practices Guide. The wells will be installed by a licensed well contractor and will have adequate protection from potential effluent contamination from the on-site sewage systems.

The D-5-5 Water Supply Evaluation has taken the following into consideration:

- Future residents must be provided with water for domestic consumption that is of acceptable quality and of adequate quantity;
- Appropriate well construction techniques must be followed in order to minimize the possibility of well water quality degradation;
- There must be minimal adverse effects on well water in the development from sources of contamination on the site or on adjoining lands;
- The development must not result in water quantity interference conflicts between users in the development and users on the adjoining lands;

Groundwater quality was tested as part of the **MECP D-5-5 Groundwater Supply Investigations** on the two (2) wells installed within the site boundary and they were found to be consistent with the groundwater quality of the off-site domestic wells. High concentrations of sulphates, hardness, and other metals were found to be above the aesthetic and operational guidelines, however, these can all be treated to reduce to acceptable levels which is standard practice for individual water wells. Raw water quality will be tested in each individual well in order to ascertain the level of treatment required for consumption.

Existing wells within 500m of the proposed development have been taken into consideration as to ensure that neither the proposed development nor the existing wells will adversely impact one another. For further information, please refer to the report entitled **MECP D-5-5 Groundwater Supply Investigations** that was prepared by GAMAN Consultants Inc.

4. SANITARY SEWAGE SERVICING EVALUATION

4.1 ALTERNATIVES CONSIDERED

The following four (4) sewage servicing options were considered to provide sewage treatment and disposal for the proposed development:

Alternative 1: Extension of the nearest Municipal gravity sanitary sewer

Alternative 2: On-site gravity sanitary sewer with sewage pump station and forcemain

Alternative 3: On-site gravity sanitary sewer with communal treatment and disposal system

Alternative 4: Individual On-site sewage treatment and disposal systems

4.1.1 ALTERNATIVE 1: EXTENSION OF THE NEAREST MUNICIPAL GRAVITY SANITARY SEWER

As outlined in the water supply evaluation, the former village of Neustadt is approximately 9.5 km from the proposed development. There are many design factors that would make the construction of a gravity sanitary sewer to the proposed development challenging such as grade changes, water crossings, existing utilities, road crossings, etc. It would also need to be determined that the existing municipal system has the capacity to accept the additional sewage flows from the development.

The preliminary capital cost of extending the municipal sanitary sewer from Neustadt to the proposed development indicates that the cost would be in excess of $3.2 million and would make the proposed development economically impractical to develop.

The construction of a gravity sewer from the former village of Neustadt is not practical or feasible due to the topography alone. Therefore, no further review of this option will be undertaken.

4.1.2 ALTERNATIVE 2: ON-SITE GRAVITY SANITARY SEWER WITH SEWAGE PUMP STATION AND FORCEMAIN

This alternative is similar to Alternative 1 in that a new gravity sanitary sewer collection system would be constructed within the subdivision boundary. A pumping station would be constructed at the subdivision boundary to pump the raw sewage from the proposed development through a new forcemain that would be extended to connect to the existing municipal sanitary sewer system in the former village of Neustadt.

Similarly, to Alternative 1, there are many design challenges that would make this option difficult such as the overall distance, water crossings, existing utilities, road crossings, etc. It is also assumed that several pumping stations would be required along the route of the forcemain in order to provide proper movement of the raw sewage.

A preliminary capital cost of this alternative would be in excess of $4.5 million due to the pumping station(s) and the overall length and route of the forcemain. The entire system (i.e., the gravity sewer within the development, the pumping station(s) and forcemain) would all be the responsibility of the Municipality once final assumption has been fulfilled.

The construction of an on-site gravity sanitary sewer with a sewage pumping station and forcemain to the former village of Neustadt is not considered a desirable or feasible due to the overall cost and operational and maintenance responsibilities. Therefore, no further review of this option will be undertaken.

4.1.3 ALTERNATIVE 3: ON-SITE GRAVITY SANITARY SEWER WITH COMMUNAL TREATMENT AND DISPOSAL SYSTEM

A communal sewage system can be described as a shared facility for the on-site collection, treatment, and disposal of sewage. The construction of this type of system would still require the installation of a gravity sanitary sewage collection system that would provide each residential lot with a sanitary sewer connection leading to a centralized sewage treatment facility. The treatment facility would consist of a treatment component and a surface water disposal component into the South Saugeen River. The treatment component of the system would be located on the south side of the development which would assist in the system meeting the MECP's Reasonable Use Criteria (i.e., Effluent Nitrate Concentration > 2.5 mg/L)

A variety of design alternatives exist with respect to communal systems. The chosen system would have to have denitrification and phosphorus removal capabilities and UV disinfection prior to discharging into the South Saugeen River.

In addition, the MECP will likely require a Groundwater and Surface Water Monitoring Program to be set-up to ensure the system is functioning properly.

A financial assurance arrangement is typically required to be entered into between the developer and local municipality to guarantee that the system will be operated and maintained in accordance with the Environmental Compliance Approval (ECA) until the Municipality assumes ownership of the system. Financial assurance is a financial security to guarantee that the developer is able to cover the cost of operating and maintaining the system in compliance with the ECA.

The rate in which homes will be built will also vary based on the current market demand which can pose issues causing varying fluctuations in flow, quality, and quantity in terms of the overall treatment required.

As there are several design and layout factors that must be considered for this alternative, a preliminary capital cost was not explored at this time. Generally, municipalities do not prefer this option as the system will become the overall responsibility of the Municipality once the subdivision is assumed. Therefore, no further review of this option will be explored.

4.1.4 ALTERNATIVE 4: INDIVIDUAL ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS

This alternative would involve constructing individual on-site sewage treatment and disposal systems on each lot within the proposed subdivision. Each homeowner would ultimately be responsible for their own sewage treatment and disposal system including the cost of construction and installation as well as all the operation and maintenance costs.

This option offers low capital and operational costs. The following summarizes the *average* installed costs for a conventional and tertiary treatment sewage system:

- Conventional Class 4 Sewage System ~ $25,000
- Tertiary Sewage Treatment System ~ $40,000

Individual sewage systems require little maintenance on an annual basis. These systems are generally required to be pumped every three to five years with an average cost of pumping around $500.

For this option to be feasible though, the MECP's D-5-4 Procedure would first need to be completed to confirm if the proposed 12 lots are capable of being serviced by individual on-site systems. The D-5-4 procedure will confirm if the required nitrate concentration can be met and if a tertiary system would be required versus a conventional system. Further review of this option will be undertaken since this alternative aligns with the existing properties in the surrounding area, it requires individual ownership (not Municipally owned or operated), has the lowest installation, operational and maintenance costs. The Nitrate Dilution (D-5-4) calculations have been completed in the section below.

4.2 NITRATE DILUTION (D-5-4) CALCULATIONS FOR ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS

In order to support the use of individual on-site sewage systems in the proposed subdivision, a nitrate assessment using the MECP's D-5-4 Procedure has been completed.

The nitrate dilution calculations will demonstrate and illustrate that the groundwater resources in the local area will not be adversely impacted by the proposed development using individual on-site sewage systems.

The following summarizes the dilution calculations using the MECPs' D-5-4 procedure:

Contaminant Source: (On-site Sewage Systems)	Sewage effluent
Background Water Quality:	2.21 mg/L (Average of samples taken, nitrate-nitrogen)
Effluent Volume	1,000 l/day x 12 lots = 12,000 l/day
Available Infiltration Water ($q_{infiltrate}$)	$q_{infiltrate} = A \times W_S \times I_f$

Where A = Net pervious area within the flow path of the contaminant plume in square metres. It is assumed that 5% of gross area is impervious.

Area 1 = Gross area x (1 – imperv. %) m^2

= 54,227 m^2 x (1 – 0.05)

= 51,516 m^2 (5.15 ha)

W_S = Average daily precipitation surplus, in metres per day.

W_S = P – ET

Where W_S = Average annual precipitation surplus, (m/yr)

P = annual precipitation (m/yr) derived from the Environment Canada precipitation normals for the closest climatic station to the site (Hanover) (1.087 m/yr)

ET = mean annual actual evapotranspiration (m/yr) derived from the Environment Canada evapotranspiration normals (0.500 m/yr)

W_S = P – ET
= 1.087 – 0.500
= 0.590 m/yr
= 1.61 x 10^{-3} m/day

I_f = Infiltration factor

The MECP has compiled a set of factors to quantify the percentage of the water surplus that infiltrates into the subsurface. These factors are defined as infiltration factor, **I_f,** and are shown in the following table:

Infiltration Factor Parameters

Physical Description of Site	**Value of I_f**
Topography:	
• Flat land, average slope <0.6 m per km	0.30
• Rolling land, average slope of 2.8 m to 3.8 m per km	0.20
• Hilly land, average slope of 28 m to 47 m per km	0.10
Soil:	
• Tight impervious clay	0.10
• Medium combination of clay and loam	0.20
• Open sandy loam	0.40
Cover:	
• Cultivated lands	0.10
• Woodland	0.20

I_f = Topography Factor + Soil Factor + Cover Factor
= 0.15 + 0.30 + 0.15
= 0.60

Therefore: $q_{infiltrate}$ = (51,516 m^2 x 1.61 x 10^{-3} m/day x 0.60)
= 49.71 m^3/day
= 49,709 L/day

The nitrate concentration at the downgradient boundary of the proposed development can be calculated as follows:

$$\text{Nitrate Concentration (as N)} = \frac{q_{infiltrate} \times c_{background} + q_{effluent} \times c_{effluent}}{q_{infiltrate} + q_{effluent}}$$

Where: $q_{infiltrate}$ = 49,709 l/day

$c_{background}$ = 2.21 mg/l

$q_{effluent}$ = sewage effluent flow based on a daily effluent production rate of 1,000 l/day/dwelling
= 12 lots x 1,000 l/day/dwelling

= 12,000 l/day

$C_{effluent}$ = 40 mg/l (as N)

Therefore:

Nitrate Concentration = $\frac{(49{,}709\ L/day \times 2.21\ mg/l) + (40mg/l \times 12{,}000\ l/day)}{(12{,}000\ l/day + 49{,}709\ l/day)}$

= **9.56 mg/l** (as N) < 10 mg/l, therefore tertiary treatment is not required

Since the downstream nitrate (as N) concentration is less than 10 mg/L, servicing the proposed 12 lot subdivision with conventional Class 4 sewage systems will meet the requirements of the MECP's D-5-4 Procedure therefore, tertiary sewage systems will not be needed.

4.3 PREFERRED SANITARY SEWAGE SERVICING ALTERNATIVE

Based on a review of the above four (4) alternatives, the preferred sewage servicing option is to install individual on-site sewage treatment and disposal systems on each lot within the proposed development. This option has the lowest construction and maintenance costs and requires considerably less maintenance than the other alternatives. It also releases both the Municipality and the Developer of additional risk, liability, and overall short and long-term costs for both construction, operation, and maintenance. The recommendation of on-site sewage treatment and disposal systems also follows the status quo of all the properties within Ayton. The existing in-situ soils in the development boundary also have T-times within acceptable rates to construct conventional Class 4 sewage systems.

5. STORM SEWER AND STORMWATER MANAGEMENT EVALUATION

This section will pertain to the collection and outfall of the stormwater into the South Saugeen River. A **Preliminary Stormwater Management Report** prepared by Cobide Engineering Inc. has been prepared under separate cover.

All stormwater from the extension of Victoria Street will be conveyed through a network of roadside ditches with outlet into the South Saugeen River. The runoff from the developed lots will be directed overland through a combination of naturalized stormwater management practices and network of swales with discharge into the South Saugeen River which borders the southwest boundary of the site.

The **Preliminary Stormwater Management Report** outlines the details of the pre and post development conditions, flows, modelling, quantity and quality control.

6. GRADING, EROSION & SEDIMENT CONTROL

Erosion and sediment controls shall meet the requirements of the most recent version of the MECP's Stormwater Management Planning and Design Manual at the time of construction.

6.1 CONSTRUCTION STAGE

Prior to the start of construction, appropriate sediment control facilities are to be in place. The following details regarding erosion and sediment control are to be implemented:

- Placement of heavy-duty siltation fencing is required along the southwest property boundary to intercept sediment that could potentially be transported by sheet flow across the site towards the South Saugeen River. Light Duty Siltation fence will also be installed at any development grading limits where runoff may discharge from the site.
- It is proposed that any stormwater controls be constructed first to control site runoff from entering directly into the South Saugeen River.
- Placement of temporary straw check dams within swales and any other locations where a concentrated flow of runoff may occur. All proposed drainage swales are to be seeded during construction;
- Mud mats will be placed at construction accesses to keep public roadways free from debris during the construction period.
- Re-vegetate all disturbed areas after underground and surface works have been constructed.

Prior to removal of sediment control facilities, ensure that sediment that may have accumulated has been removed.

Once the area has been stabilized, the silt fencing can be removed.

6.2 LOT DEVELOPMENT

During individual construction of homes within the subdivision, silt barriers are to be constructed, as appropriate, to prevent the eroding of materials into the roadside drainage system. The sedimentation control can be in the form of siltation fences placed in the direction of flow from the construction site and shallow excavated sediment traps (moats) should be constructed around any stockpiled materials.

The responsibility for the individual lot sediment control lies with the landowner/builder constructing the dwelling.

The proposed development grading design will generally follow the existing grade. The proposed grading design will match all existing grades at the property lines and will not alter or affect the drainage patterns of the neighbouring properties. The proposed site grading will drain the stormwater through the roadside ditches and grassed towards the South Saugeen River. The majority of the existing slopes found on site are greater than 6%. It is proposed that once developed, the lots will generally conform to the existing grades within the site. Some minor re-grading will be required for the proposed dwellings, driveways, septic beds, etc.

7. ROADS

The proposed extension of Victoria Street will be designed to meet the Municipality of West Grey's Engineering Standards for a rural road. Adequate turn-around for snowplows, emergency vehicles, etc., at the end of the extension for both Victoria and Albert Street will be considered during the design process.

The following parameters are proposed:

- 20m Rural Road Allowance with roadside ditches to convey water to the South Saugeen River;
- 3.25m asphalt lanes with 2% cross fall;
- 1.50m gravel shoulder with 6% cross fall;
- Road design
    - 40 mm HL3 asphalt surface
    - 50 mm HL4 asphalt base
    - 150 mm Granular A base
    - 400 mm Granular B base
- Boulevard
    - 75 mm topsoil and seed

8. UTILITIES

8.1 STREETLIGHTS

The configuration of the streetlights will be designed in accordance with municipal standards. Streetlights will be mounted on the overhead hydro poles. Lamp fixtures and arms shall be as per the municipal standards.

8.2 ELECTRICITY

Hydro One will be responsible for completing the design of the electrical distribution system. Each lot will be individually serviced. Overhead distribution lines will be utilized within the road right-of-way for this development with the potential for underground servicing to each lot depending on the individual homeowner's preference.

8.3 TELEPHONE/INTERNET

Bell Canada, EH!Tel, and Eastlink will be given the opportunity to provide telephone and internet services to the development. They will complete their own design and provide drawings showing their proposed service locations.

9. CONCLUSIONS

The above report presented the various servicing options in support of the Draft Plan Approval Application. Based on the findings of this report, the following conclusions are made:

1. Domestic water supply can be provided by on-site individual wells as supported by the D-5-5 Water Supply Evaluation by GAMAN Consultants Inc.
2. On-site sewage disposal and treatment systems can be utilized within this development as demonstrated by the D-5-4 Nitrate calculations.
3. Stormwater can be conveyed towards the South Saugeen River from the road allowance by the use of roadside ditches. Stormwater from the lots can be conveyed overland to the South Saugeen River by use of a naturalized stormwater management approach. Further details of the proposed stormwater management is outlined in the Stormwater Management Report completed by Cobide Engineering Inc.
4. The extension of Victoria Street will be constructed to meet the Municipality of West Grey standards of a rural road.
5. The proposed development can be serviced with hydro, telephone, and internet.

Based on the above conclusions of this report, it is recommended that the above Servicing Options Study for the subdivision be submitted to the SVCA, Municipality of West Grey and Grey County as part of the Draft Plan Approval Application.

If you have any questions regarding the above, please contact the undersigned at 519-506-5959.

Sincerely,

Cobide Engineering Inc.

Amy Hoffarth, P.Eng.
Project Engineer
Ext. 104

Stephen Cobean, P.Eng.
Director
Ext. 102

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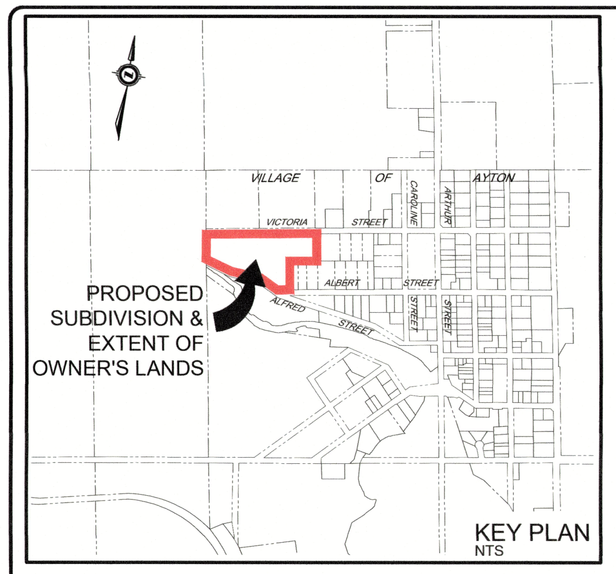
Appendix A

DRAWINGS

05059-DP1 – DRAFT PLAN OF SUBDIVISION

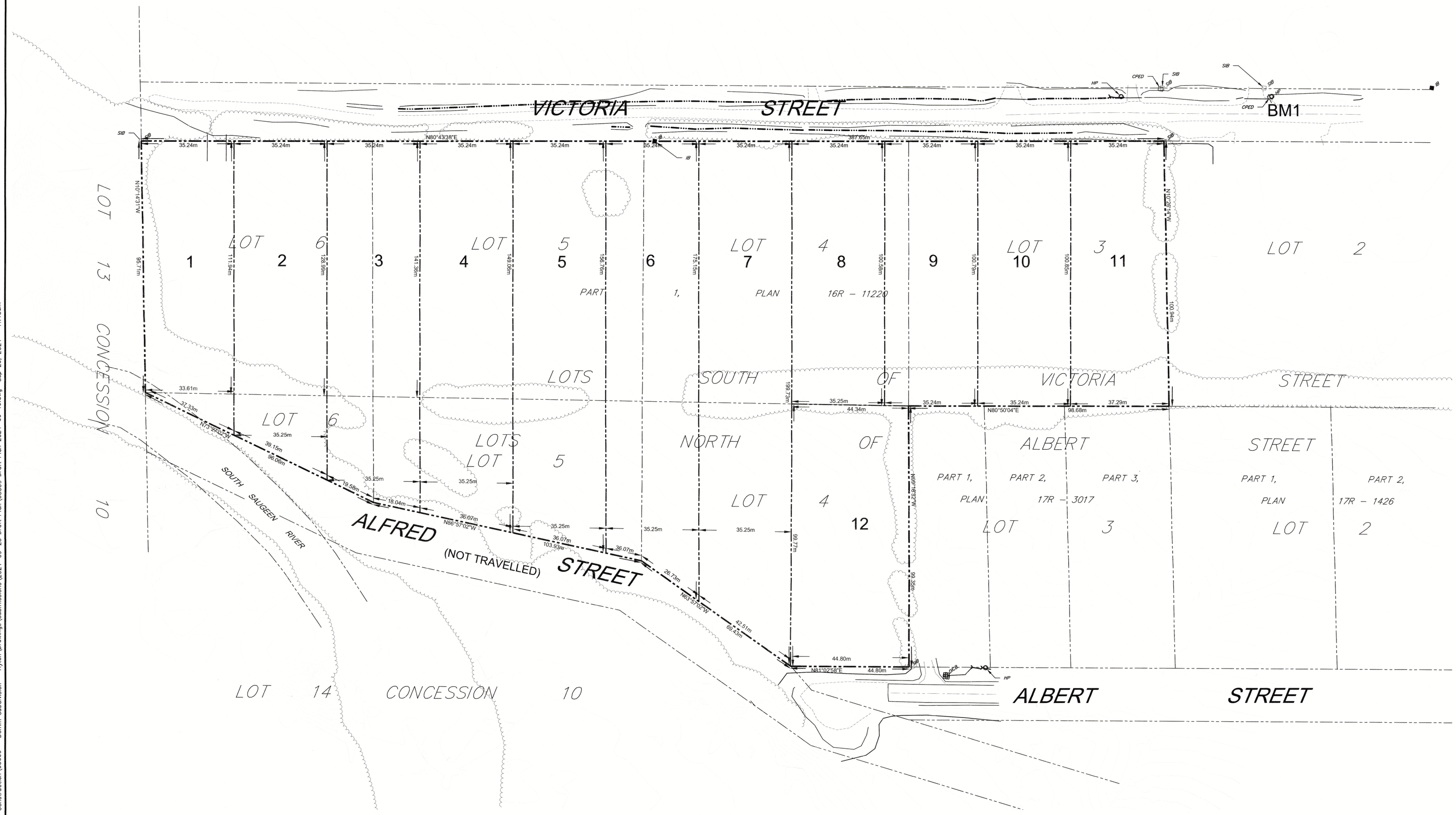
05059-SP2 – TEST WELL AND BOREHOLE LOCATION PLAN



LEGEND

- PROPERTY BOUNDARY
- PROPOSED STREET/PROPERTY LINES
- EDGE OF EXISTING PAVEMENT
- EDGE OF EXISTING GRAVEL
- BM — BENCHMARK
- 348.00 — EXISTING CONTOUR LINE
- EXISTING HYDRO GUY WIRE
- HP — EXISTING HYDRO POLE
- CATV — EXISTING CABLE TV PEDESTAL
- BPED — EXISTING TELEPHONE PEDESTAL
- SIB — STANDARD IRON BAR
- IB — IRON BAR
- EXISTING DECIDUOUS TREE
- EXISTING CONIFEROUS TREE
- EXISTING TREE LINE

Lot Information												
Lot Number	1	2	3	4	5	6	7	8	9	10	11	12
Frontage (m)	35.24	35.24	35.24	35.24	35.24	35.24	35.24	35.24	35.24	35.24	35.24	44.8
Area (sq.m)	3566.7	4245.2	4805.0	5117.5	5388.8	5776.6	6584.3	3533.6	3550.0	3552.9	3658.8	4447.8



DRAFT PLAN OF SUBDIVISION

LOTS 3, 4, 5 & 6 SOUTH OF VICTORIA STREET
AND LOTS 4, 5 & 6 NORTH OF ALBERT STREET
REGISTERED PLAN No. 153
(VILLAGE OF AYTON)
GEOGRAPHIC TOWNSHIP OF NORMANBY
MUNICIPALITY OF WEST GREY
COUNTY OF GREY

RELEVANT SITE INFORMATION

DETACHED RESIDENTIAL LOTS (LOTS 1-12)	5.423 ha.
TOTAL PROPOSED SUBDIVISION	5.423 ha.

ADDITIONAL INFORMATION REQUIRED UNDER SECTION 51 OF THE PLANNING ACT

a. AS SHOWN
b. AS SHOWN
c. AS SHOWN
d. SINGLE FAMILY RESIDENTIAL,
e. AS SHOWN
f. AS SHOWN
g. AS SHOWN
h. PRIVATE WELLS
i.SANDY SILT & GRAVEL
j. AS SHOWN
k. HYDRO, TELEPHONE
l. AS SHOWN

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:
THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED AND THEIR RELATIONSHIP TO THE ADJACENT LANDS ARE CORRECTLY SHOWN.

Sept. 26, 2024
DATE

D. A. CULBERT
ONTARIO LAND SURVEYOR
D. CULBERT LTD.

OWNER'S CERTIFICATE

I, THE REGISTERED OWNER OF THESE LANDS, HEREBY AUTHORIZE COBIDE ENGINEERING INC. TO SUBMIT THIS DRAFT PLAN FOR APPROVAL.

SEPT 30/24
DATE

JAKE DOMM
VICE PRESIDENT
DOMM HOLDINGS LTD.

Notes

1. PROPERTY BOUNDARY DERIVED FROM INFROMATION SHOWN ON PLAN 16R-11220.
2. TOPOGRAPHICAL INFORMATION DERIVED FROM SURVEY PERFORMED BY COBIDE ENGINEERING INC. ON DECEMBER 08, 2023 & JANUARY 03, 2024.

Benchmark Information

BM1 — NAIL IN HYDRO POLE ON VICTORIA STREET AS SHOWN
ELEVATION 348.18m

SCALE 1:750 (24 x 36)
10 0 10 20 50 METRES
50 0 25 50 100 FEET

No.	DATE	DESCRIPTION	BY	APPD
2	SEPT 25/24	REVISED PRELIMINARY SUBMISSION	TLB	SJC
1	FEB 14/24	REVISED PRELIMINARY SUBMISSION	TLB	SJC
0	OCT 23/23	PRELIMINARY SUBMISSION	TLB	SJC

REVISION / ISSUE

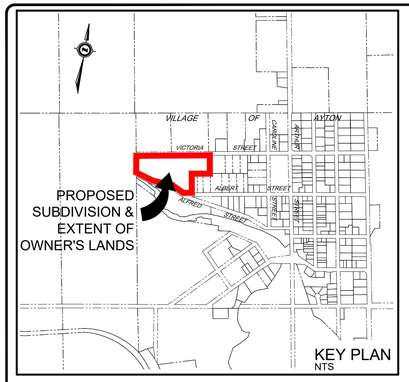
COBIDE ENGINEERING INC
517 - 10th STREET, Hanover, Ontario N4N 1R4
Telephone: (519) 506-5959
www.cobideeng.com

Client: DOMM CONSTRUCTION

Design:	TLB	Scale:	1:750
Drawn:	JAF	Approved:	
Checked:	SJC		
Date:	OCT 2023		Design Engineer

DRAWING No. 05069-DP1

H:\Domm Construction\05069 - Domm Subdivision - Ayton\Drawings\Submissions\2024-09-25 Draft Plan\05069 Draft Plan 2024-09-19.dwg Sep 26, 2024 - 11:18am



BOREHOLE & TEST WELL INFORMATION		
BOREHOLE / TEST WELL	TOP OF CASING ELEVATION	GROUND ELEVATION
TW 24-1	337.21m	336.65m
TW 24-2	318.35m	317.86m
BH-01		340.52m
BH-02		329.08m
BH-03		324.76m
BH-04		315.53m
BH-05		311.76m
BH-06		316.06m

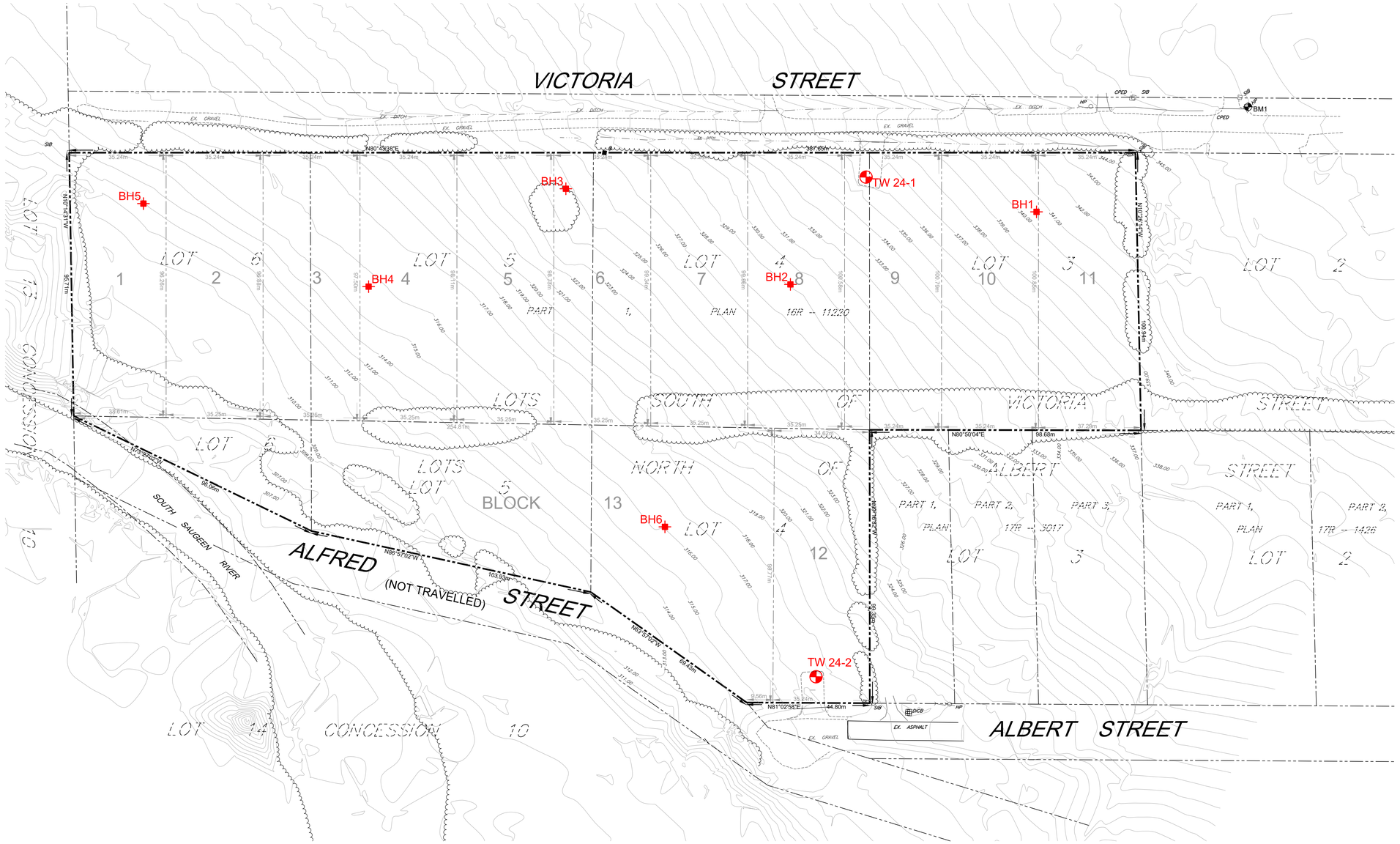
LEGEND

- PROPERTY BOUNDARY
- PROPOSED STREET/PROPERTY LINES
- EDGE OF EXISTING PAVEMENT
- EDGE OF EXISTING GRAVEL
- EXISTING TREE LINE
- EXISTING CONTOUR LINE
- BENCHMARK
- EXISTING HYDRO GUY WIRE
- EXISTING HYDRO POLE
- EXISTING CABLE TV PEDESTAL
- EXISTING TELEPHONE PEDESTAL
- STANDARD IRON BAR
- IRON BAR
- TEST WELL
- BOREHOLE

CAUTION:
THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES, AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

Notes

1. TOPOGRAPHICAL INFORMATION DERIVED FROM FIELD SURVEY BY COBIDE ENGINEERING INC. COMPLETED ON JANUARY 3, 2024 AND DRONE SURVEY.
2. PROPERTY BOUNDARY DERIVED FROM INFORMATION SHOWN ON PLAN 16R-11220.



SCALE 1:750 (24 x 36)

10 0 10 20 50 METRES
50 0 25 50 100 FEET

Benchmark Information

BM1
NAIL IN HYDRO POLE ON NORTH SIDE OF VICTORIA STREET AS SHOWN.
ELEVATION 348.18m

No.	DATE	DESCRIPTION	BY	APPD
0	APR 30/24	PRELIMINARY SUBMISSION	TLB	SJC

REVISION / ISSUE

Seal not valid unless signed and dated

COBIDE ENGINEERING INC
517 - 10th STREET, Hanover, Ontario N4N 1R4
Telephone: (519) 506-5959
www.cobideeng.com

Title: PROPOSED SUBDIVISION (VILLAGE OF AYTON) GEOGRAPHIC TOWNSHIP OF NORMANBY MUNICIPALITY OF WEST GREY TEST WELL & BOREHOLE LOCATION PLAN

Client: DOMM CONSTRUCTION

Design:	TLB	Scale:	1:750
Drawn:	JAF	Approved:	
Checked:	SJC		
Date:	APR 2024		Design Engineer

DRAWING No. 05069-SP2

H:\Domm Construction\05069 - Domm Subdivision - Ayton\Drawings\Submissions\2024-04-30 Site Plan Boreholes and Wells\05069 Site Plan- Wells and Boreholes April 30-24.dwg Apr 30, 2024 - 2:49pm