

Environmental Impact Study and Tree Conservation Report for 3555 Borrisokane Road, Ottawa

2024-10-07

Final Report
(Revised Figure 3 and Appendices)

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List of Acronyms and Abbreviations

- CRZ – Critical Root Zone
- EIS – Environmental Impact Study
- ELC – Ecological Land Classification
- ESA – Endangered Species Act
- FWCA – Fish and Wildlife Conservation Act
- HDFA – Headwater Drainage Features Assessment
- HDF – Headwater Drainage Feature
- KAL – Kilgour & Associates Ltd.
- MBCA – Migratory Birds Convention Act
- MECP – Ministry of the Environment, Conservation and Parks
- MNRF – Ministry of Natural Resources and Forestry
- NHRM – Natural Heritage Reference Manual
- PPS – Provincial Policy Statement
- PSW – Provincially Significant Wetland
- RVCA – Rideau Valley Conservation Authority
- SARA - Species at Risk Act
- SAR – Species at Risk
- SWH – Significant Wildlife Habitat
- TCR - Tree Conservation Report
- UNF – Urban Natural Feature
- WMP - Cambrian Woods Woodland Management Plan



1.0 INTRODUCTION

This report is an Environmental Impact Study (EIS) prepared by Kilgour & Associates Ltd. (KAL, Appendix A) on behalf of The Ottawa Korean Community Church in support of a proposed church facility and associated amenity areas located at 3555 Borrisokane Road, Ottawa, ON, K2J 0T2 (hereafter referred to as “the Site”). In the City of Ottawa, an EIS is required when development or site alteration is proposed within 120 m of a Natural Environment area as mapped on Schedule “C11” of the City of Ottawa Official Plan (2021). The purposes of an EIS are to:

- Identify natural heritage features on or adjacent to the Site;
- Assess potential impacts of the proposed development to existing features; and,
- Recommend mitigation measures to minimize or eliminate identified impacts.

This report also reviews trees on and adjacent to Site and, as such, serves as the Tree Conservation Report (TCR) for the project. Per the findings below, however, trees do not occur within the footprint of proposed development. The TCR portion of this report is thus generally limited to the provision of mitigation measures to protect trees on adjacent properties (see Section 7.2).

2.0 ENVIRONMENTAL POLICY CONTEXT

Natural heritage policies and legislation relevant to this EIS are outlined below.

2.1 The Provincial Policy Statement, 2020

The Provincial Policy Statement (PPS) was issued under Section 3 of the Planning Act (Government of Ontario, 1990a). The current PPS came into effect May 1, 2020 (Government of Ontario, 2020). Natural features are afforded protections under Section 2.1 of the PPS. Protections may include maintenance, restoration, and improved function of diversity, connectivity, ecological function, and biodiversity of natural heritage systems. These protections restrict development and site alteration in significant natural areas (e.g., woodlands, wetlands, wildlife habitat) unless it can be demonstrated that there will be no negative effects on the features and ecological functions of those natural areas. Technical guidance for implementing the natural heritage policies of the PPS is found within the second edition of the Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005 (NHRM: Ministry of Natural Resources (MNR), 2010). This manual recommends the approach and technical criteria for protecting natural heritage features and areas in Ontario.

2.2 City of Ottawa Official Plan

The City of Ottawa Official Plan (2021) provides direction for future growth in the City and is a policy framework to guide physical development to 2031. The Official Plan was developed in accordance with the PPS (and relevant provincial legislation). The City of Ottawa reviews development applications within its boundaries, which must be in accordance with the Official Plan. The Site is located within Ottawa’s



urban area and is designated 'Neighbourhood' in Schedule B6 of the Official Plan. Section 5.6.4.1 of the Official Plan requires that development or site alteration proposed in or adjacent to natural heritage features must be supported by an EIS prepared in accordance with the City's guidelines. The Site is located directly adjacent to the publicly owned Cambrian Woods, designated as an 'Urban Natural Feature' (UNF) in Schedule C12 of the Official Plan, Urban Greenspace. Section 7.3 of the Official Plan states that "development and site alteration within 30 m of the boundary of an Urban Natural Feature must demonstrate no negative impacts on the natural features within the area or their ecosystem services".

2.3 Conservation Authorities Act, 1990

Conservation Authorities were created to address erosion, flooding, and drought concerns regionally by managing at the watershed level. Conservation Authorities were given the ability to regulate under Section 28 of the Conservation Authorities Act (Government of Ontario, 1990). The Act provides mechanisms to regulate works and site alterations that have potential to affect erosion, flooding, land conservation, and alterations to waterbodies within their jurisdiction. It is the obligation of all Conservation Authorities to implement Ontario Regulations 42/06 and 146/06 to 182/06 Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses under Section 28 of the Conservation Authorities Act for relevant works.

2.4 Ontario Regulation 174/06

Section 2(1)(b) states no person shall undertake development or permit another person to undertake development in or on areas within the jurisdiction of the Authority, that include river or stream valleys, the limits of which are determined in accordance with the following:

- Where the river or stream valley is apparent and has stable slopes, the valley extends from the stable top of bank, plus 15 meters, to a similar point on the opposite site; and,

Where the river or stream valley is apparent and has unstable slopes, the valley extends from the predicted long term stable slope projected from the existing stable slope or, If the toe of the slope is unstable, from the predicted location of the toe of the slope as a result of stream erosion over a projected 100-year period, plus 15 meters, to a similar point on the opposite side.

2.5 Species at Risk Act, 2002

The federal *Species at Risk Act* (Government of Canada, 2002) is administered by Environment and Climate Change Canada (ECCC) and provides direction to protect and ensure the survival of wildlife species in Canada. The purpose of the SARA is to prevent populations of wildlife from becoming Extirpated, Endangered, or Threatened, provide recovery Endangered or Threatened species, and to manage other species to prevent them from becoming Endangered or Threatened.

All species listed on Schedule 1 of SARA are afforded protection on federal lands. Aquatic species and species of migratory birds protected by the *Migratory Birds Convention Act* (MBCA; 1994) and listed as Endangered, Threatened, or Extirpated under Schedule 1 of SARA are protected wherever they occur in Canada, regardless of land ownership.



2.6 Endangered Species Act, 2007

The provincial *Endangered Species Act* (ESA; Government of Ontario, 2007) is administered by the Ministry of Environment, Conservation, and Parks (MECP) and provides protection for species at risk (SAR) and their habitat. The ESA states that it is illegal to harm the habitat of species listed as Extirpated, Endangered, and Threatened. It is also illegal to kill, harm, harass, possess, transport, buy or sell Extirpated, Endangered, and Threatened species, whether it is living or dead. Species listed as Endangered, Threatened, or Extirpated and their habitats (e.g., areas essential for breeding, rearing, feeding, hibernation, and migration) are automatically afforded legal protection under the ESA.

2.7 Migratory Birds Convention Act, 1994

Nesting migratory birds are protected under the MBCA (Government of Canada, 1994). No work is permitted that would result in the destruction of active nests (nests with eggs or young birds) or the wounding or killing of bird species protected under the MBCA and/or associated regulations (e.g., SARA). The “incidental take” of migratory birds and the disturbance, destruction, or taking of the nest of a migratory bird is prohibited. “Incidental take” is the killing or harming of migratory birds due to actions that are not primarily focused on taking migratory birds (e.g., economic development) and no permits exist for the incidental take of migratory birds or their nest/eggs as a result of activities that are not focused on taking migratory birds. These prohibitions apply throughout the year. The Government of Canada has compiled nesting calendars that apply across Canada that can be used to greatly reduce the risk of harming/destroying active nests by ensuring works that may impact nests are performing outside of the nesting period.

Effective July 30, 2022, a list of 18 species of migratory birds identified on Schedule 1 of the MBCA are provided year-round nest protection until they can be deemed abandoned. The Schedule includes this list for birds that re-use their own nest from one year to the next. If the nest of a Schedule 1 species has not been occupied by a migratory bird for the entirety of the waiting time indicated in the MBCA, it is considered to be abandoned, and to no longer have high conservation value for migratory birds.

2.8 Fish and Wildlife Conservation Act, 1997

The provincial *Fish and Wildlife Conservation Act* (FWCA; Government of Ontario, 1997) governs the hunting and trapping of a variety of wildlife including mammals, birds, reptiles, amphibians, and fish in Ontario, thereby facilitating the protection of wildlife and their habitat. The FWCA outlines the prohibition of hunting or trapping specially protected species and the requirement for provincially issued licenses for the hunting or trapping of “furbearing” or “game” animals. Examples of specifically protected animals include, for example, Southern Flying Squirrel (*Glaucomys volans*), Northern Harrier (*Circus cyaneus*), American Kestrel (*Falco sparverius*), Blue Jay (*Cyanocitta cristata*), Midland Painted Turtle (*Chrysemus picta marginata*), Northern Watersnake (*Nerodia sipedon*) and Gray Treefrog (*Hyla versicolor*). In particular, raptors that are not protected under the MBCA (including Peregrine Falcon) are protected under the FWCA.



3.0 PROPERTY IDENTIFICATION AND CONTEXT

The Site is located at 3555 Borrisokane Road, in the City of Ottawa, and is legally described as Concession 3, Pt. Lot 11 (Roll # 06141207701595500000). The irregularly shaped Site is located southeast of the intersection of Borrisokane Road and Flagstaff Drive and is approximately 2.24 ha in size. The current zoning is Light Industrial Zone (IL(304)).

Prior to 2008, the Site was used for active agricultural production of cover crops. In 2008, the site was stripped of topsoil, regraded, and surcharged in preparation for residential development. The Site was then slowly acquiring sparse, early successional vegetation until 2019. By 2021, the Site was subject to further clearing, grading and stockpiling activities as part of the ongoing residential development work on adjacent parcels. The Site is currently in an idle state with limited vegetation present.

An unnamed surface water feature (a former agricultural drain) historically traversed from south to north on the properties to east of the Site. As part of the ongoing development work in area, that feature was realigned westward in 2021. Now named Tipperary Creek, the realigned watercourse and its associated corridor currently abut the eastern property line of the Site. A silt fence was installed along the top of slope areas on the Site and adjacent property to follow the watercourse path.

The forested area adjacent to the southern property boundary is the northern block of the Cambrian Woods UNF. The Site is bordered to the north and west by Flagstaff Drive and Borrisokane Road respectively.

4.0 METHODOLOGY

4.1 Desktop and Background Data Review

4.1.1 Background Review

Background information was obtained from online databases and geographic information system mapping applications to review relevant information. Aerial imagery was used to identify existing features and confirm information found in the background review.

The Site was previously owned by Mattamy Homes and has been subject to ongoing ground works since 2008 as part of broader land development efforts for the adjacent Half Moon Bay West community (including the creation of Tipperary Creek). The review, current site conditions, and the recent history of changes to those conditions is based on recent EIS work by KAL (2022) to support those efforts.

4.1.2 Agency Consultation

A preliminary SAR screening for species listed under the federal SARA and provincial ESA following the *Draft Client's Guide to Preliminary Screening for Species at Risk* (MECP, 2019), was previously completed by KAL (2022) for the broader development area. The results of the screening process inform the initial list of species to be considered in the assessment of the potential for development to impact(s) to SAR or



SAR habitat. Prior to 2023, MECP provided a service to review the initial species list produced following the SAR Screening process or provide updates to the species list, however the MECP no longer provides this review process. Regardless, if the EIS process were to assess a likelihood for potential impacts to a given SAR under the proposed development, an MECP review of the specific risks and proposed mitigation strategies would be required and would be initiated through the submission of an Information Gathering Form (IGF). Per Section 5.5 below, no additional consultation with the MECP was deemed necessary.

4.2 Field Surveys

This EIS is based primarily on field reviews completed under other studies (submitted to and approved by the City) supporting development on lands adjacent to the Site (which that included the Site area). As such, only one site visit was completed to confirm the existing ecological conditions on the Site as otherwise previously assessed. This study is detailed in Table 1 below.

Table 1 Field Survey Summary

Date	Purpose	Conditions	Personnel
May 12, 2023	<ul style="list-style-type: none"> Identify general site conditions Potential constraints Record dominant plant species 	<ul style="list-style-type: none"> 18°C Partly cloudy Wind 29 km/h NW 	Kurtis Westbury

4.2.1 Vegetation

A desktop review of current aerial imagery (City of Ottawa, 2023) and of previous field studies completed by KAL informed the initial vegetation, topography and land cover conditions on the Site. During the site visit on May 12, 2023, the dominant plant species and current vegetative condition on the Site were recorded. Representative photos of the Site were taken and are included within the Vegetation Cover section in this report.

5.0 EXISTING CONDITIONS

5.1 Landforms, Soils, and Geology

The Site (Figure 1) is located within the Ottawa Valley Clay Plains physiographic region (Chapman & Putnam, 1984). The surficial geology of the region was composed of clay and silt underlying erosion terraces, though the site was subjected to topsoil stripping in 2008. Soils on the Site are mapped as part of the Carsonby soil series in Report No. 58 of the Ontario Institute of Pedology, *The Soils of The Regional Municipality of Ottawa-Carleton* (Schut & Wilson, 1987). Carsonby soils are a noncalcareous, poorly drained Orthic Humic Gleysol and are part of the Osgoode association. Soils within the Osgoode association occur on level marine plains and are composed of moderately coarse to medium textured marine or fluvial material. The majority of the area surrounding the Site is also mapped as part of the Carsonby soil series, while the forested area Cambrian Woods UNF south of Cambrian Road are mapped as organic soils.



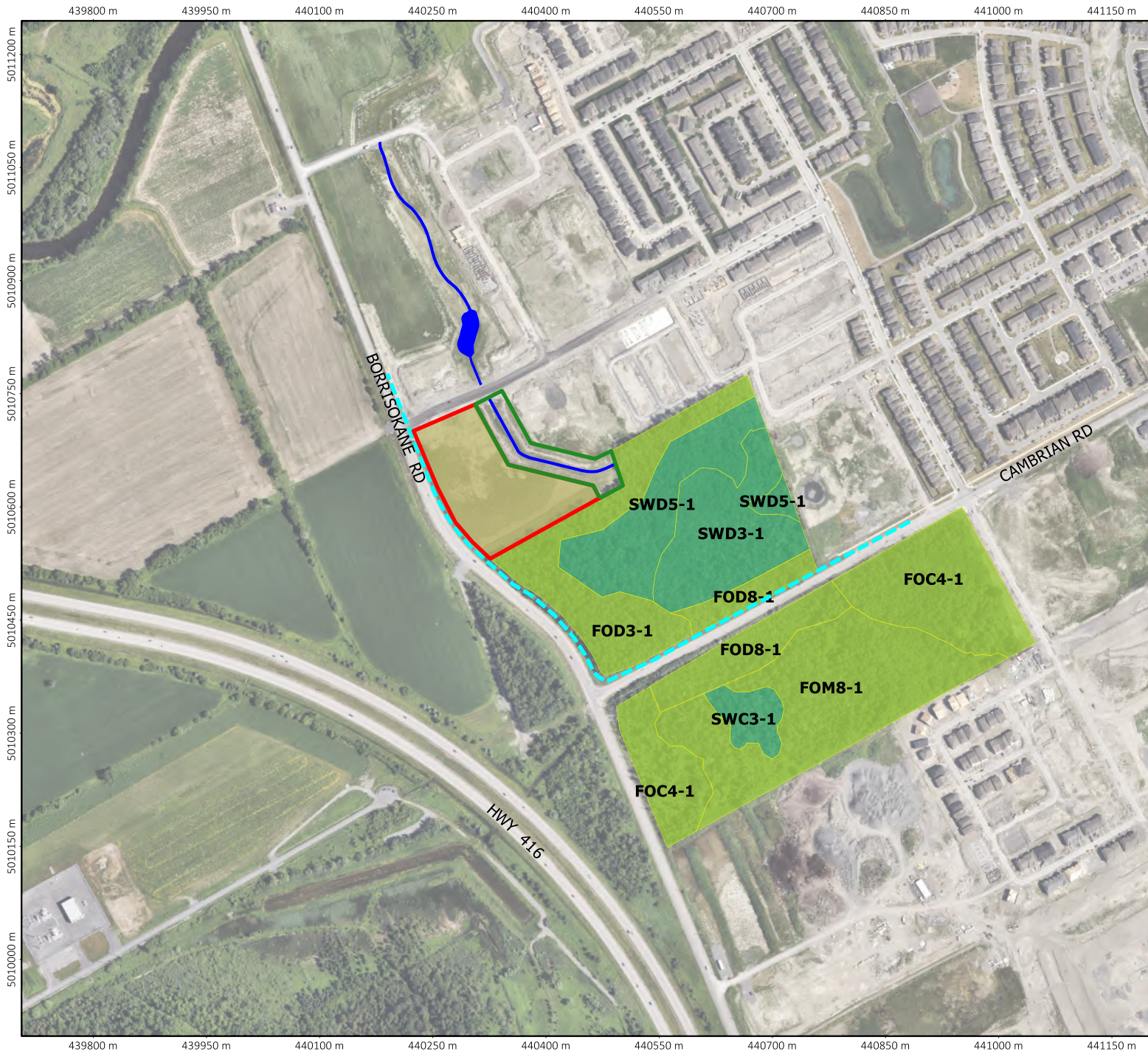


Figure 1 Existing Conditions

LEGEND

- Site Boundary

- ELC**
- Forest (FOD)
- Swamp (SWD)

- Site Water Features**
- Realigned Watercourse
- - - Roadside Ditch
- Realigned Watercourse Buffer Area



0 150 m

Project: PAI 1461
 Map File: PAI 1461 Existing Conditions.map
 Universal Transverse Mercator - Zone 18 (N)
 Printed on: 2024-05-15



The Site, after being subject to multiple regrading works since 2008, is currently mostly flat, with a low-lying depression located along the southern property boundary and within the riparian corridor directly associated with the newly realigned/constructed Tipperary Creek adjacent to the northeast side of the Site. These new and shifting depressions are remnants of recent site works and may temporarily accumulate standing water during the spring freshet and/or rain events. However, having been recently constructed of non-hydric soils (i.e. all organic material and top soil was stripped as the area was fully regraded) and lacking wetland plant cover, they do not constitute wetlands.

A fill pile is currently located along the western Site boundary.

5.2 Surface Water, Groundwater and Fish Habitat

5.2.1 Wetland Features

No Provincially Significant Wetlands (PSW) or unevaluated wetlands are present on the Site. The Cambrian Woods UNF located adjacent to the southern boundary of the Site is mapped as an unevaluated wetland (MNRF, 2023). Based on a previous KAL study (dated February 10, 2022) of the adjacent lands to the east of the Site, approximately half of Cambrian Woods UNF consists of swamp wetland (Figure 1).

5.2.2 Surface Water & Groundwater

Two surface water features appear to be mapped on the Site under existing records (City of Ottawa, 2023; MNRF, 2023), though both were removed prior the start of the current project. These include a former farm drain that previously conveyed water from the central north side of the Cambrian Woods UNF northward adjacent to the current Parallax Private Drive, and a historic drain traversing the Site to the southwest from the historic farm drain and terminating at Borrisokane Road. The former farm drain feature was realigned westward along the eastern boundary of the Site as “Tipperary Creek” - a naturalized watercourse (Figure 1). The realignment work was a joint project between Mattamy Homes and Glenview Homes. The channel and riparian corridor were realigned under permit RV5-1421 from the Rideau Valley Conservation Authority (RVCA) with the understanding that the habitat provided by the previous feature was limited in nature.

The second mapped historic drain traversing the Site to the southwest from the historic farm drain (Tipperary Creek) and terminating at Borrisokane Road was fully removed sometime prior to 2021. A Headwater Drainage Feature Assessment (HDFA) completed for Glenview Homes and Mattamy Homes Properties on Cedarview Road (KAL, 2016) included an assessment of surface water features on the Site. The second mapped historic drain feature was found to be dry during all site visits and field surveys, extremely overgrown, and not representative of a headwater drainage feature (HDF). It lacked suitable amphibian, turtle, and fish habitat and did not offer hydrological function. This HDFA (KAL, 2016) was reviewed and approved by the City, acknowledging the previous condition of the historic drain. As part of Site re-grading activities in ~2021, this historic drain feature was permanently removed and no longer exists on the Site.

As previously discussed in Section 5.1 above, the Site, after being subject to multiple regrading works since 2008 and most recently in 2021-2022, is currently mostly flat, with a low-lying area located along the southern property boundary. This new and shifting low area may temporarily accumulate areas of



standing water during the spring freshet and/or rain events. It was only recently established in 2021, and only exists as a result of fill storage at the southern Site boundary. The low-lying area does not constitute wetlands, a watercourse, or a surface water feature. The feature dries before summer despite the presence of swamp wetland in the adjacent Cambrian Woods and is therefore not considered a groundwater feature or to constitute habitat for amphibians, turtles, or fish. Groundwater movement through the Cambrian Woods wetland is from south to north (i.e. the Site itself is not a source for the wetland); the realigned Tipperary Creek was designed as the primary outlet for the wetland (i.e. the Site itself is not a receiver for the wetland; Kilgour, 2022). The hydrology of the Site and surrounding lands is thus not related to the temporary depression in the field and/or the eventual regrading that portion of the Site.

Tipperary Creek was intended to provide improved functionality as a natural corridor from the Cambrian Woods UNF to the Jock River located north of the Site. Tipperary Creek was designed to allow and encourage frog transit between Cambrian Woods and the Jock River, but to prevent fish from obtaining access to the swamp Cambrian Woods UNF. A silt fence was installed at the top of slopes of the watercourse channel to protect water quality and provide an adequate buffer area and setback from the watercourse during construction (Figure 2). A culvert is located at the intersection of Tipperary Creek and Flagstaff Drive, allowing flow to the northern adjacent property and Jock River. Tipperary Creek will not require alteration to accommodate proposed development on the Site.



Figure 2 Sediment fencing separating Tipperary Creek (the realigned watercourse) and the Site

The setback requirements for Tipperary Creek were identified and confirmed within the KAL (2022) EIS supporting Phase 3 of Mattamy's Half Moon Bay West residential development on the opposite side of the watercourse, in accordance with the stipulations of *Jock River Reach One Subwatershed Study* (Stantec, 2007). Setbacks for this reach are not defined by distances from the channel per se, but rather provide that the channel be located (and approximately centered within) a 30 m wide corridor with an additional 5 m on either side, which may be used for potential pathways. Directly south of Flagstaff Road the property lines on either side of the creek fully accommodate the 40 m corridor requirement. At the eastward creek bend ~90 m south of Flagstaff Road, the gap between the associated property lines narrows such that they correspond with 30 m base corridor width. An additional 5 m of setback thus extends onto the Site adjacent to the realigned channel (and similarly on the Half Moon Bay West



community side). The 5 m strip directly adjacent to the narrowest part of the corridor, as a potential pathway site, is not required specifically to be naturalized per se. The *Jock River Reach One Subwatershed Study* (Stantec, 2007) requires that the 5 m on either side of the 30 m corridor be reserved for pathways, and is not permitted to be built upon other than pathway construction. Plantings of native trees and shrubs may be implemented with the 5 m outer buffer to soften and partially renaturalized the interface between the proposed development and Tipperary Creek. An extensive planting program there (i.e. with significant tree cover), however, would preclude the potential for future pathway construction and would thus not comply with the directives of the Subwatershed Study.

5.3 Vegetation Cover and Site Trees

The Site is an open, highly disturbed property with vegetation limited to sparse grasses. Three mature trees are present on the northwest corner of the Site along the property boundary: one American Elm and two Willow species. All three trees were observed to have good trunk and canopy health. As (per Section 6.0 below) no development work is anticipated under the current development proposal within at least 85 m of these trees, they will not be subject to further assessment or review within this report.

Deciduous and coniferous saplings have been planted along the top of slope areas between the silt fence and Tipperary Creek near the eastern boundary of the Site (Figure 2) as part of the ongoing naturalization of the creek corridor. None of the plantings, however, are sufficiently close to the property boundary that their current critical root zones (CRZ) would extend beyond that boundary.

5.4 Incidental Wildlife Observations

Incidental wildlife observations made during the site visit on April 12, 2023 are listed in Table 2 below.

Species Name	Resident/Visitor	Evidence
American Goldfinch (<i>Spinus tristis</i>)	Transient (Visitor)	Flyover
Song Sparrow (<i>Melospiza melodia</i>)	Transient (Visitor)	Flyover
Blue Jay (<i>Cyanocitta cristata</i>)	Transient (Visitor)	Flyover
American Robin (<i>Turdus migratorius</i>)	Transient (Visitor)	Flyover

5.5 Species at Risk

The Site was previously owned by Mattamy Homes and has been subject to ongoing ground works since 2008 as part of broader land development efforts for the adjacent Half Moon Bay West community (including the creation of Tipperary Creek). The heavily disturbed area was recently concluded to have negligible potential to support SAR (Kilgour & Associates Ltd. (KAL), 2022). Given the ongoing disturbance associated with work on the Tipperary Creek corridor, the situation is unchanged and the Site is still to have negligible potential to support SAR.

5.6 Urban Natural Features/Significant Woodland

While forest cover is not currently present directly on the Site, the Cambrian Woods UNF is a mature mixed forest community located directly adjacent to the Site's southern boundary. It represents one of



the largest blocks of contiguous remnant forest within the highly disturbed Jock River-Barrhaven sub-catchment. As a wooded area >0.8 ha and >60 years old, the Cambrian Woods UNF located adjacent to the Site is also considered to be a significant woodland under the Significant Woodland Policy for the City of Ottawa (2022).

The area was identified within the Jock River Reach 1 Subwatershed Plan (Stantec, 2007), though not targeted specifically for conservation efforts (KAL, 2022). The Cambrian Woods Woodland Management Plan (WMP; Kilgour 2013) established how the City owned UNF forest may be maintained and managed while permitting the development of the adjacent owned lands. The WMP placed some constraints on the development of the surrounding lands, including imposing a requirement to maintain a wildlife corridor and hydrological connection between the swamp and the Jock River. This corridor was enhanced as part of the watercourse realignment. Previous field studies conducted by KAL (2019, 2021) documented the existing ecological conditions using standard Ecological Land Classification (ELC) methods for Ontario (Lee et al., 1998). The UNF was documented as consisting of Red Maple Mineral Deciduous Swamp (SWD3-1) and Black Ash Organic Deciduous Swamp (SWD5-1) located centrally and to the eastern edge, with Dry-Fresh Poplar Deciduous Forest (FOD3-1) along the western and northern edges, and Fresh-Moist Poplar Deciduous Forest (FOD8-1) along the southern edge. No forest types associated with a high or extreme wildland fire hazard are located within 100 m of the Site.

5.7 Significant Wildlife Habitat

The Significant Wildlife Habitat (SWH) Criteria Schedule for Ecoregion 6E (MNRF, 2015) identifies four main types of significant wildlife habitat: seasonal concentrations areas, rare vegetation communities, specialized habitat for wildlife and habitats of Species of Conservation Concern.

5.7.1 Seasonal Concentration Areas

The background information reviewed for the Site did not identify any seasonal concentration areas for animals. No obvious signs or evidence of use as a seasonal concentration area were observed and none are likely to occur on the Site.

5.7.2 Rare Vegetation Communities or Specialized Habitat for Wildlife

Rare Vegetation Communities

Rare vegetation communities typically include those that have developed on cliff and talus slopes, sand barrens, shallow soils over limestone bedrock (alvar), old growth forests, savannahs, and tallgrass prairies. No rare vegetation communities are present on the Site.

Specialized Wildlife Habitat

No specialized wildlife habitat was identified on the Site. It is possible that the Site could provide nesting habitat for waterfowl due to the presence of the realigned watercourse and proximity to the wetland area (<120m) in the adjacent Cambrian Woods UNF. However, due to the limited size of the watercourse, disturbed nature, and limited vegetation on the Site, waterfowl nesting area is unlikely to be present.



Our review of air photos indicates that the Cambrian Woods UNF wetland feature extends onto adjoining lands and upland areas on surrounding properties to the south of the Site, and the Jock River containing larger areas of open water is located north of the Site. These areas are more likely to provide suitable waterfowl nesting habitat.

5.7.3 Habitats of Species of Conservation Concern

Habitats of Species of Conservation Concern include marsh bird breeding habitat, open country bird habitat, shrub/early successional bird breeding habitat, terrestrial crayfish and special concern and rare wildlife species. Our background review did not identify the presence of any of the Habitats of Species of Conservation Concern and no Species of Conservation Concern were observed on the Site.

5.8 Other Natural Heritage Features

No other significant natural heritage features are located within 120 m of the Site.

6.0 DESCRIPTION OF THE PROJECT

The proposed development includes a single storey, 30,000 square foot church facility and approximately 131 parking spaces. Two new access points to the site are proposed, one from Borrisokane Road and one from Flagstaff Drive. A sidewalk has already been established along Flagstaff Drive. The facility will include chapels, offices, boardrooms, classrooms, and a gymnasium space. The development plans are shown in Figure 3.

In consideration of the Ottawa Bird- Safe Design Guidelines, Walker/Vitro Architectural Glass “AviProtek E” bird friendly vertical etched glass will be utilized for the large windows along the southern church facade, the main lobby area and adjacent Ainos room. Windows are a double glazed Solarban 60(2) Solargray + Clear Glass Insulating Glass Unit. This is a tinted glass specification with Visible Light Transmittance (VLT) of 35% and an exterior reflectance of 6%. Windows have also been divided into smaller panes using a contrasting clear anodized aluminum framing system to avoid a large monolithic glass facade.





Figure 3 Site Development Plan

LEGEND

 Site Boundary

N



0 30 m

Project: PAI 1461
 Map File: PAI 1461 Existing Conditions.map
 Universal Transverse Mercator- Zone 18 (N)
 Printed on: 2024-10-17



7.0 IMPACT ASSESSMENT AND MITIGATION

7.1 Surface Water and Aquatic Habitat

Tipperary Creek is separated from the proposed development on the Site in accordance with setback requirements generally provided for by the *Jock River Reach One Subwatershed Study* (Stantec, 2007) and confirmed specifically within the KAL (2022) EIS supporting Phase 3 of Mattamy's Half Moon Bay West residential development. Directly south of Flagstaff Road the property lines on either side of the creek fully accommodate the 40 m corridor requirement. Further south, where the parcel lines associated with the creek corridor narrow provide the 30 m "base width" for the feature, the development plan includes only open space (i.e. no structures) within the additional 5 m reserved for potential pathway usage. With the required setbacks to the creek respected, no negative impacts to the water course are anticipated as a result of the proposed development.

The Cambrian Woods UNF includes wetland areas of Maple Mineral Deciduous Swamp (SWD3-1) and Black Ash Organic Deciduous Swamp (SWD5-1) communities. These communities, however, are generally located more than 30 m south from the northern forested edge. The water from those wetland areas outlets to Tipperary Creek, which was designed to maintain the pre-existing outflow levels and thus the hydrology of the wetland (KAL, 2022). The location of the church development is downstream of the Cambrian Woods wetlands areas, on the opposite side of Tipperary Creek and fully outside of the creek corridor. The development as proposed and located is therefore not anticipated to impact the hydrology of the wetland portions of the Cambrian Woods directly, or to limit the ability of the creek to function as intended in managing/maintaining water levels therein. Regardless, under the RVCA permit for the realignment of Tipperary Creek, the feature is already subject to a five-year monitoring plan (set to commence in 2025), which will include monitoring water levels associate with the upstream creek inlet to ensure the maintenance of the hydrology of the wetland. That program is/will be jointly managed by Mattamy and Glenview. Any observed changes to the hydrology of the wetland area to be addressed through adjustments made to the Tipperary Creek realignment as agreed to in consultation between Mattamy and Glenview, the City and the RVCA. The current project proponent is not party to those processes; no additional/duplicate monitoring program is required or recommended for the Site and/or adjacent surface water features.

The following mitigation measures are recommended to be applied during site preparation and construction to minimize impacts to the surface water features on and adjacent to the Site:

- Do not alter lands or change the existing grade within the realigned watercourse channel or its associated 30 m corridor;
- Do not alter or remove any planted trees or silt fencing located within the realigned watercourse corridor; and
- Ensure the parking areas are appropriately graded and/or serviced to prevent surface runoff from accessing Tipperary Creek.

Snow storage areas are located away from Tipperary Creek, in the central and south-central portions of the Site. The site grading for the snow storage has been planned such that melt runoff will be fully directed



away from both Tipperary Creek and from the Cambrian Woods UNF (Appendix B). Melt runoff will then be managed by the SWM systems within the parking area.

7.2 Vegetation and Significant Woodlands

Three mature trees are present on the Site along the northwest property boundary; one American Elm and two Willow species. These species are located outside of the proposed development envelope. No negative impact is anticipated should these trees require removal.

The Cambrian Woods UNF is considered to be a significant woodland based on the City's Urban criteria. Forest along the southern Site boundary is primarily characterized as Dry-Fresh Poplar Deciduous Forest (FOD3-1). Due to the nature of the surrounding land uses (medium-density residential, educational and agricultural), the highly disturbed nature of the Site and surrounding lands, limited vegetation, little to no suitable habitat for species at risk or significant wildlife habitat present, and development setback from the southern property boundary it is not anticipated that the proposed development of the will negatively impact the Cambrian Woods UNF. Construction fencing (tree protection fencing) will be installed near the southern property boundary, and replaced with sheep and goat fencing in the same location. The tree protection fencing and sheep and goat fencing placement has been designed to minimize fencepost placement within the CRZ of the UNF to the highest extent possible (Appendix C). The tree protection fencing and sheep and goat fencing is depicted by the same line, and labelled accordingly in the landscape plan (Appendix C). UNF trees and their CRZs were captured by Annis O'Sullivan Vollebakk Ontario Land Surveyors (AOV). There are six minor intrusions into the CRZ of smaller trees and one intrusion into the CRZ of a medium sized tree. No cedar post excavation will be undertaken within the CRZ of UNF trees. For the seven CRZ intrusions, a T-iron line post will be driven into place, in a location with the least resistance and impact to the CRZ. All Site development and grading will occur outside of the CRZ of UNF trees (Appendix B). The proposed limit of grading shown in Appendix B adequately remains outside of UNF CRZs.

It is our professional opinion that the development setback, site grading, physical fence barrier (tree protection fencing, sheep and goat fencing) and land use along the southern property boundary are sufficient in the protection of the UNF. Mitigation measures recommended to be employed during construction are detailed below. The implementation of these mitigation measures will ensure the effectivity of the development setback from the UNF. Site (re)grading and vegetation clearing works to the property line have already been completed accordingly by the previous landowner. No portion of the UNF will has been or will be altered or removed.

The following mitigation measures are recommended to be applied during site preparation and construction to minimize potential impacts to the Cambrian Woods UNF:

- Erect tree protective construction fencing along the southern property line to prevent unnecessary damage to the roots and soils of the UNF during construction works. The fence must be highly visible (orange construction fence) and remain in place until all construction work is completed. Fencing at this location will be situated beyond the critical root zone (CRZ, i.e. 10 x the trunk diameter at breast height) of the trees of the UNF. CRZ fencing must include informational signage every 5 m that identifies the function of the fencing for CRZ protection, that it is to be maintained until construction and grading is completed;



- No excavation for the placing of cedar fenceposts should occur within the CRZ of any tree. T-iron posts should be driven into a location with minimal resistance and impact to the CRZ;
- Do not place any material or equipment within the CRZ of the tree;
- Do not attach any signs, notices or posters to any tree;
- Do not raise or lower the existing grade within the CRZ without approval;
- Tunnel or bore when digging within the CRZ of a tree;
- Do not damage the root system, trunk or branches of any tree; and
- Ensure that exhaust fumes from equipment are not directed towards the tree canopy in the UNF.

7.3 Species at Risk and Wildlife Mitigation

The potential for the Site to be used as SAR habitat is negligible; therefore, no impacts to SAR or SAR habitats are anticipated from the proposed development. No woodland or forest cover is present on the Site and no negative impacts are anticipated to forest habitat.

In the unlikely event of wildlife species presence during earth alteration works and construction, any wildlife observed in the vicinity of the work areas or that may otherwise be in danger should be relocated to the Cambrian Woods UNF or the realigned watercourse area off the Site. Animals should be moved only far enough to ensure their safety and any handling of SAR species during construction for safe relocated purposes should be done by individuals who are properly trained to do so. No monitoring is required or recommended for SAR or wildlife beyond standard best practices for wildlife management during construction per below.

In consideration of potential transient wildlife species within the development area, the following mitigation measures are recommended to be implemented during construction of the project on site:

- Do not harm, feed, or unnecessarily harass wildlife;
- Food wastes and other garbage – effective mitigation measures include waste control (prevent littering); keeping all trash secured in wildlife-proof containers, and prompt removal from the site (especially in warm weather);
- Drive slowly and avoid hitting wildlife where possible;
- Shelter – effective mitigation measures include covering or containing piles of soil, fill, brush, rocks and other loose materials; capping ends of pipes where necessary to keep wildlife out; ensuring that trailers, bins, boxes, and vacant buildings are secured at the end of each work day to prevent access by wildlife;
- Checking the work site (including previously cleared areas) for wildlife, prior to beginning work each day;



- Inspecting protective fencing or other installed measures daily and after each rain event to ensure their integrity and continued function; and,
- Monitoring construction activities to ensure compliance with the project-specific protocol (where applicable) or any other requirements.

Windows within the Site area required to be compliant with the City of Ottawa (2020) *Bird Safe Design Guidelines*. Window specifications are detailed in Section 6.0. Elevation drawings are included in Appendix D.



7.4 Summary of Impacts and Mitigation

Activity	Natural Heritage Feature/Function	Potential Effect	Proposed Mitigation	Residual Effect
Site Preparation	Surface water and aquatic habitat	None anticipated. No impact to the hydrology of the wetland portions of the Cambrian Woods directly, or the function of Tipperary Creek is anticipated.	See Section 7.1	None
	Vegetation	No loss of trees or vegetation on the Site.	See Section 7.2	None
	Significant woodlands	None anticipated.	See Section 7.2	None
	SAR and other wildlife	None anticipated. The potential for the Site to be used as SAR habitat is negligible.	See Section 7.3	None
Construction of Proposed Development	Surface water and aquatic habitat	None anticipated if mitigation measures are appropriately followed.	See Section 7.1	None, if mitigation measures are appropriately followed
	Vegetation	None anticipated.	See Section 7.2	None
	Significant woodlands	None anticipated if mitigation measures are appropriately followed.	See Section 7.2	None, if mitigation measures are appropriately followed
	SAR and other wildlife	None anticipated.	See Section 7.3	None
Post-construction Operation	Surface water and aquatic habitat	None anticipated. The proposed development is not expected to impact Tipperary Creek or the wetlands contained in the Cambrian Woods post-construction.	See Section 7.1	None, if mitigation measures are appropriately followed
	Vegetation	None anticipated.	See Section 7.2	None
	Significant woodlands	None anticipated.	See Section 7.2	None
	SAR and other wildlife	None anticipated.	See Section 7.3	None

8.0 CONCLUSION

This report provides a set of mitigation measures for employment in the design and construction of the proposed development. The assessment of the potential for impacts to the natural heritage system is based on the implementation of these mitigation measures. It is our professional opinion that the proposed development is not anticipated to have negative impacts on existing natural features or ecological functions on and adjacent to the Site if the recommended mitigation measures provided in this report are implemented.

9.0 CLOSURE

This report was prepared for exclusive use by The Ottawa Korean Community Church and may be distributed only by The Ottawa Korean Community Church. Questions relating to the data and interpretation can be addressed to the undersigned.

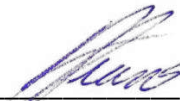


Respectfully submitted,

KILGOUR & ASSOCIATES LTD.



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Appendix A Qualifications of Report Authors



Anthony Francis, PhD

Dr. Francis is a Senior Ecologist with 24 years' consulting experience to both government agencies and private industry. He has worked on a diversity of projects relating to species at risk, invasive species, terrestrial and aquatic habitat, environmental effects monitoring and mitigation, and fate/effects of contaminants. Within each of these subject areas, Dr. Francis has completed projects addressing specific site concerns and broader policy initiatives. He has extensive experience in preparing Environmental Impact Statements, Integrated Environmental Reviews and Tree Conservation Reports in support of land development and property severances. He has carried out literature reviews for government agencies, performed complex geospatial analyses of plant and animal distributions, and completed numerous field programs in support of environmental impact statements and assessments.

Maren Nielsen, BES, EMA

Maren is a Biologist with a background in terrestrial ecology. She has over eight years of comprehensive field, laboratory and environmental and agricultural consulting experience through a combination of graduate and undergraduate studies and work experience. Maren completed a Bachelor of Environmental Studies with Honours at York University and a Graduate Certificate in Environmental Management and Assessment from Niagara College Canada. Maren assists clients to navigate the land development and site rehabilitation processes as well as obtaining permits and approvals from regulatory agencies. She has led numerous studies including Environmental Assessments (EA), Environmental Impact Studies (EIS), Opportunities & Constraints Analysis, Agricultural Impact Assessments (AIA), LEAR Studies and Minimum Distance Separation (MDS) I & II studies. Maren has carried out field programs for the collection of soils, water, sediment, fish and benthos as well as vegetation surveys, wildlife surveys, wind turbine avian and bat mortality monitoring, and land use surveys. Since joining Kilgour & Associates Ltd. in 2023, Maren has worked on a variety of land development projects and completed numerous Environmental Impact Studies (EIS), Headwater Drainage Feature Assessments (HDFA), Existing Conditions Reports, Opportunities and Constraints Analysis, and Species at Risk (SAR) monitoring. Maren is a certified wetland evaluator under the Ontario Wetland Evaluation System (OWES).

Nick Moore, BSc

Nick is a Field Ecologist with a background in Aquatic Biology. He graduated from Sir Sandford Fleming in 2018 with two Technical Diplomas for Environmental Technician and Environmental Technologist, as well as completing his Bachelor of Science with Honors in Biology and Environmental and Resource Studies at Trent University. He has worked with Kilgour & Associates Ltd. for two years. With us, he has been involved in dozens of land-development projects where he has written several Environmental Impact Studies and has used his academic training to characterize the flora and fauna of natural environments. Nick is a certified wetland evaluator under Ontario's Wetland Evaluation System (OWES) process.



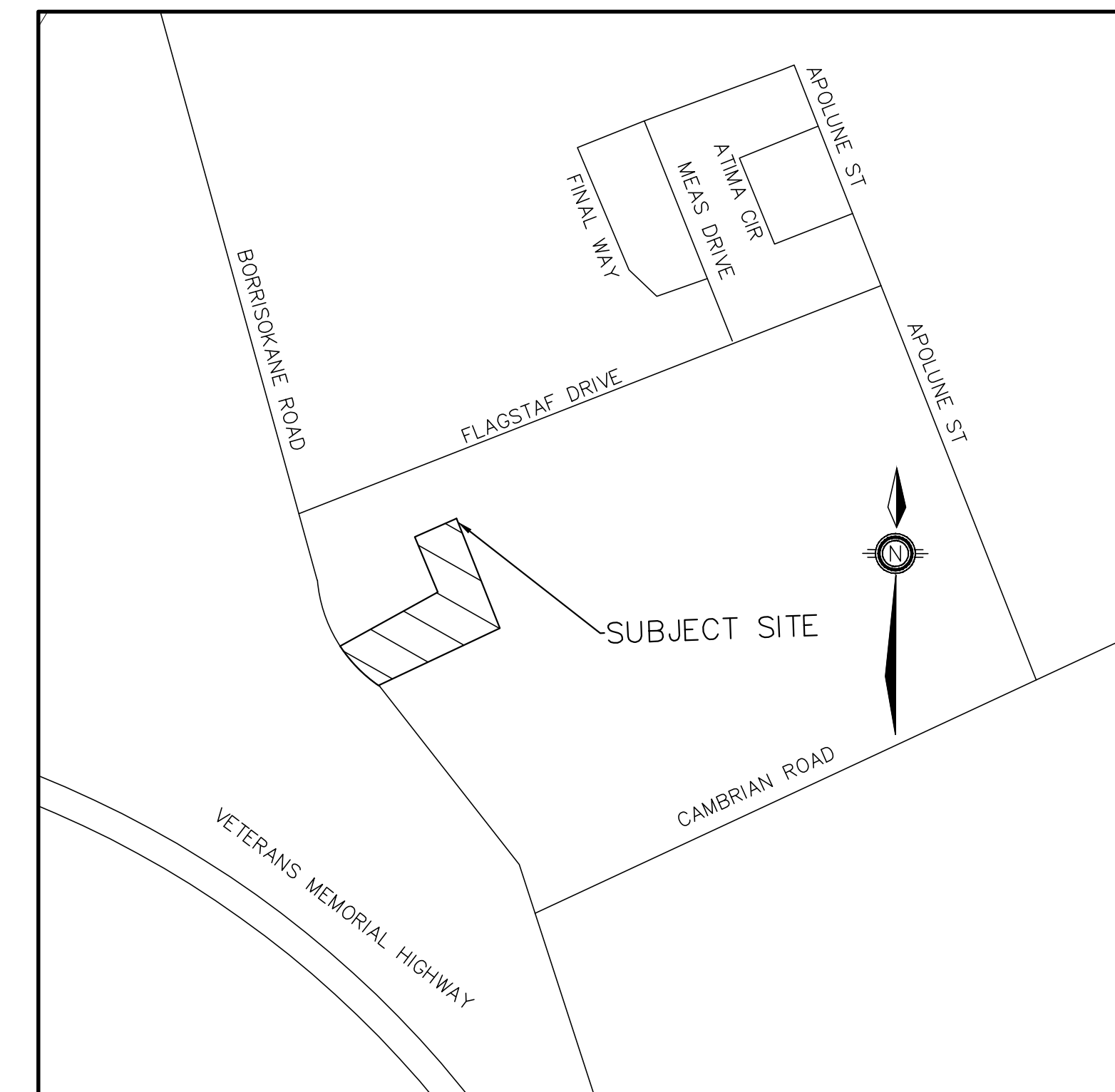
Appendix B Grading and Snow Storage



**KOREAN COMMUNITY CHURCH
3555 BORRISOKANE ROAD,
CITY OF OTTAWA**

DRAWING LIST

- ND-1 NOTES AND DETAILS (1 OF 3)
- ND-2 NOTES AND DETAILS (2 OF 3)
- ND-3 NOTES AND DETAILS (3 OF 3)
- SG-1 SITE GRADING PLAN
- SS-1 SITE SERVICING PLAN
- STM-1 PRE-DEVELOPMENT STORM CATCHMENT PLAN
- STM-2 POST-DEVELOPMENT STORM CATCHMENT PLAN
- EP-1 EROSION PROTECTION PLAN



CITY OF OTTAWA
110 LAURIER AVE W.
OTTAWA, ONTARIO
K1P 1J1

OTTAWA KOREAN COMMUNITY CHURCH
384 ARLINGTON AVE.
OTTAWA ONTARIO,
K1R 6Z5



PEARSON
ENGINEERING
PEARSONENG.COM PH. 705.719.4785

1. DRAWINGS

- A. THE NOTES ON THIS SHEET APPLY TO ALL WORKS UNDER THIS CONTRACT UNLESS OTHERWISE NOTED ON THE SPECIFIC DETAIL DWGS.
- B. THE STANDARD DRAWINGS OF THE CITY OF OTTAWA, ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS (OPSS) AND THE ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) CONSTITUTE PART OF THE PLANS OF THIS CONTRACT.
- C. THE STANDARD DRAWINGS INCLUDED WITH THESE PLANS ARE PROVIDED FOR CONVENIENCE ONLY AND ARE NOT TO BE CONSTRUED TO BE A COMPLETE SET FOR THE PURPOSE OF THE CONTRACT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL RELEVANT STANDARD DRAWINGS AND SPECIFICATIONS AS REQUIRED FOR THIS CONTRACT.

2. MEASUREMENTS

- A. ALL DIMENSIONS ARE IN METRES, EXCEPT PIPE DIAMETERS, WHICH ARE IN MILLIMETRES, UNLESS SPECIFIED OTHERWISE.
- B. ALL DIMENSIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION, AND ANY DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER.

3. GENERAL

- A. EXISTING SERVICES AND UTILITIES SHOWN ON THESE CONTRACT DRAWINGS ARE BASED ON THE BEST INFORMATION AVAILABLE AND THEIR LOCATIONS ARE NOT GUARANTEED. THE CONTRACTOR SHALL INTERPRET THIS INFORMATION AS HE WISHES WITH THE UNDERSTANDING THAT THE OWNER DISCLAIMS ALL RESPONSIBILITY FOR ITS ACCURACY AND/OR SUFFICIENCY. THE CONTRACTOR IS REQUIRED TO NOTIFY THE VARIOUS UTILITY COMPANIES 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY WORK.
- B. NATIVE MATERIAL, SUITABLE FOR BACKFILL, SHALL BE COMPACTED TO 95% STANDARD PROCTOR MAXIMUM DRY DENSITY.
- C. GRANULAR MATERIAL, USED FOR BACKFILL, SHALL BE PLACED IN LAYERS 150mm IN DEPTH MAXIMUM AND COMPACTED TO 100% STANDARD PROCTOR MAXIMUM DRY DENSITY.
- D. ALL DISTURBED AREAS ARE TO BE REINSTATED TO THEIR ORIGINAL CONDITION OR BETTER, AS DETERMINED BY THE ENGINEER. ALL GRASS AND VEGETATION COVERED AREAS SHALL BE RESTORED BY PLACING 200mm OF APPROVED TOPSOIL AND NURSERY SOO UNLESS NOTED OTHERWISE.

4. SANITARY & STORM SEWERS

- A. SANITARY SEWERS SHALL BE CONSTRUCTED WITH BEDDING AS PER OPSD-802.010, (GRAN. 'A' EMBEDMENT MATERIAL) FOR FLEXIBLE PIPES AND OPSD-802.030 OR 802.031 CLASS B (GRAN. 'A' BEDDING MATERIAL) FOR RIGID PIPES UNLESS OTHERWISE APPROVED BY THE CITY OF OTTAWA.
- B. PRECAST MANHOLES SHALL BE 1200mm DIAMETER UNLESS OTHERWISE SPECIFIED, AND SHALL BE IN ACCORDANCE WITH OPSD-701.010, FRAME AND COVER SHALL BE IN ACCORDANCE WITH OPSD-401.010.
- C. SINGLE CATCHBASINS TO BE 600mm SQUARE PRECAST CONCRETE TO OPSD-705.010, FRAME AND GRATE TO OPSD-400.020.
- D. PLACE ALL CATCHBASIN LATERALS AT 2% GRADE UNLESS OTHERWISE NOTED. PIPE SIZE MINIMUM 250mm DIAMETER SINGLE, 300mm DIAMETER DOUBLE.
- E. FOR ALL PVC PIPES CONNECTING INTO CONCRETE MH'S AND CB'S USE PVC MH ADAPTER COATED WITH SAND.
- F. ALL CONNECTIONS TO THE STORM MAIN SHALL BE MADE WITH A STOM MANHOLE OR APPROVED FACTORY TEE CONNECTION AS PER OPSD-701.10 OR 708.03.
- G. MANHOLE BENCHING SHALL CONFORM WITH OPSD-701.021.
- H. MAINTENANCE HOLE TOPS (FRAMES) AND CATCH BASIN (FRAMES) ARE TO BE SET TO BASE COURSE ASPHALT GRADE AND THEN ADJUSTED TO FINAL GRADE WHEN THE TOP LIFT OF ASPHALT IS PLACED. ALL ADJUSTMENT WILL BE IN ACCORDANCE WITH OPSD-704.010.
- I. ALL PIPE HANDLING INSTALLATIONS MUST BE IN STRICT COMPLIANCE WITH MANUFACTURERS INSTALLATION GUIDES AND THE O.C.P.A. OR UNIBELL GUIDELINES.
- J. ALL SEWERS WITH LESS THAN 1.2m OF COVER MUST BE INSULATED.
- K. PVC STORM PIPE MATERIAL TO BE PVC SDR 35, CERTIFIED TO C.S.A. STANDARDS 182.2 AND 182.4 LATEST AMENDMENT.
- L. CONCRETE STORM SEWER PIPE TO BE EQUAL TO CSA SPECIFICATION A257.1 (LATEST AMENDMENT)
- M. SANITARY MAINTENANCE HOLE SHALL HAVE WATERTIGHT GRAME AND COVER IN FONDING AREAS AS PER OPSD 401.030
- N. SERVICE CONNECTIONS AND UTILITY CUTS TO BE BACKFILLED WITH UNSHRINKABLE FILL.
- O. SEWER PIPES TO BE BACKFILLED UP TO 300mm ABOVE TOP, WITH A GRANULAR MATERIAL TO AIDE COMPACTION IN TIGHT SPACES WITHOUT DAMAGING PIPES.

5. WATERMAIN

- A. WATERMAIN SHALL BE CONSTRUCTED TO THE LATEST CITY OF OTTAWA STANDARDS, AND OR THE ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND SPECIFICATIONS (OPSS)
- B. ALL WATER SERVICES LESS THAN OR EQUAL TO 50mm DIA SHALL BE TYPE "K" COPPER.
- C. WATERMAIN TRENCH AND BEDDING SHALL BE IN ACCORDANCE WITH CITY OF OTTAWA STANDARD W17, UNLESS SPECIFIED OTHERWISE
- D. VALVE BOXES SHALL BE INSTALLED PER CITY OF OTTAWA STD W24.
- E. THRUST BLOCKS FOR WATERMAINS TO BE INSTALLED PER CITY OF OTTAWA STD. W25.3 AND W25.4.
- F. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL TEMPORARY CAPS, PLUGS, BLOW-OFFS, AND NOZZLES REQUIRED FOR TESTING AND DISINFECTION OF THE WATERMAIN.
- G. WATERMAIN CROSSING OVER AND BELOW SEWERS SHALL BE IN ACCORDANCE WITH THE CITY OF OTTAWA STD. W25.2 AND W25.
- H. WATER SERVICES ARE TO BE INSULATED PER CITY STD. W23 WHERE SEPARATION BETWEEN SERVICES AND MAINTENANCE HOLES ARE LESS THAN 2.4M.
- I. THE MINIMUM VERTICAL CLEARANCE BETWEEN WATERMAIN AND SEWER/UTILITY IS 0.5m AS PER MOE GUIDELINES.
- J. ALL WATERMAINS SHALL HAVE A MINIMUM COVER OR 2.4M, OTHERWISE THERMAL INSULATION IS REQUIRED AS PER STD DWG W22.
- K. FIRE HYDRANT INSTALLATION AS PER STD DWG W19. ALL BOTTOM OF HYDRANT FLANGE ELEVATIONS TO BE INSTALLED 0.10M ABOVE PROPOSED FINISHED GRADE AT HYDRANT; FIRE HYDRANT LOCATION AS PER STD DWG W18.
- L. ALL WATERMAIN STUBS SHALL BE TERMINATED WITH A PLUG AND 50MM BLOW OFF UNLESS OTHERWISE NOTED.
- M. ALL WATERMAINS SHALL BE HYDROSTATICALLY TESTED IN ACCORDANCE WITH THE CITY OF OTTAWA AND ONTARIO GUIDELINES UNLESS OTHERWISE DIRECTED. PROVISIONS FOR FLUSHING WATER LINE PRIOR TO TESTING, ETC. MUST BE PROVIDED.

PAVEMENT STRUCTURE

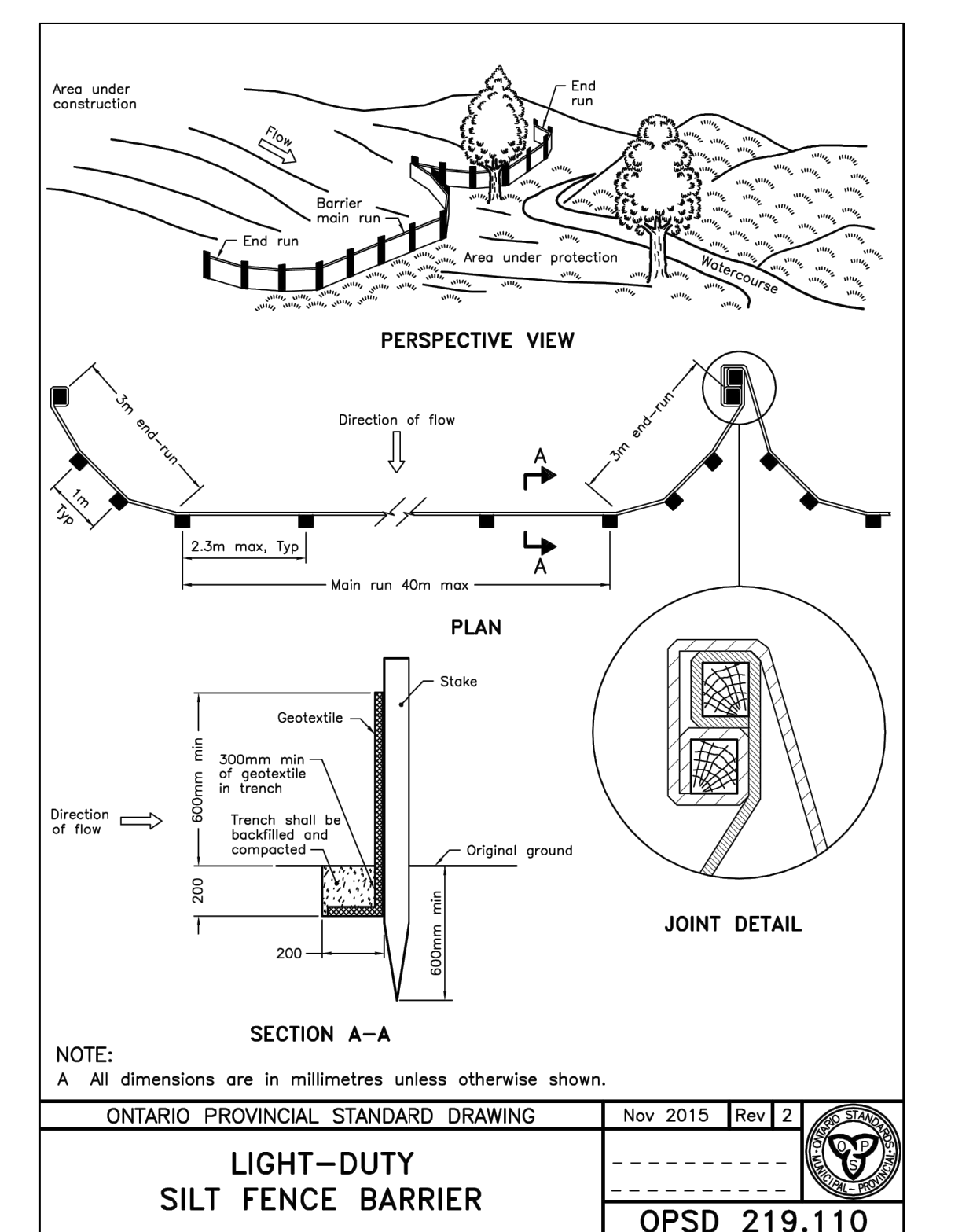
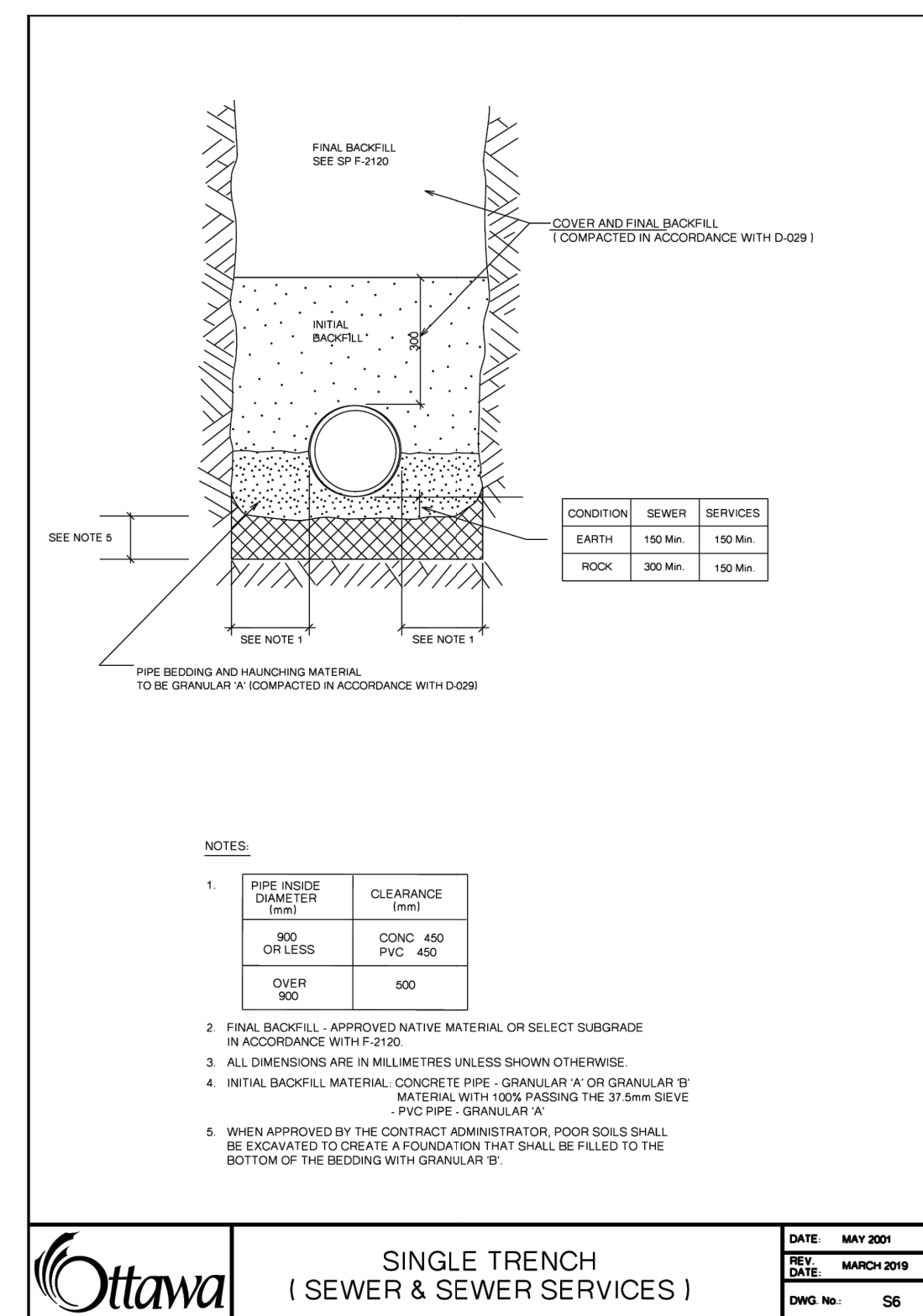
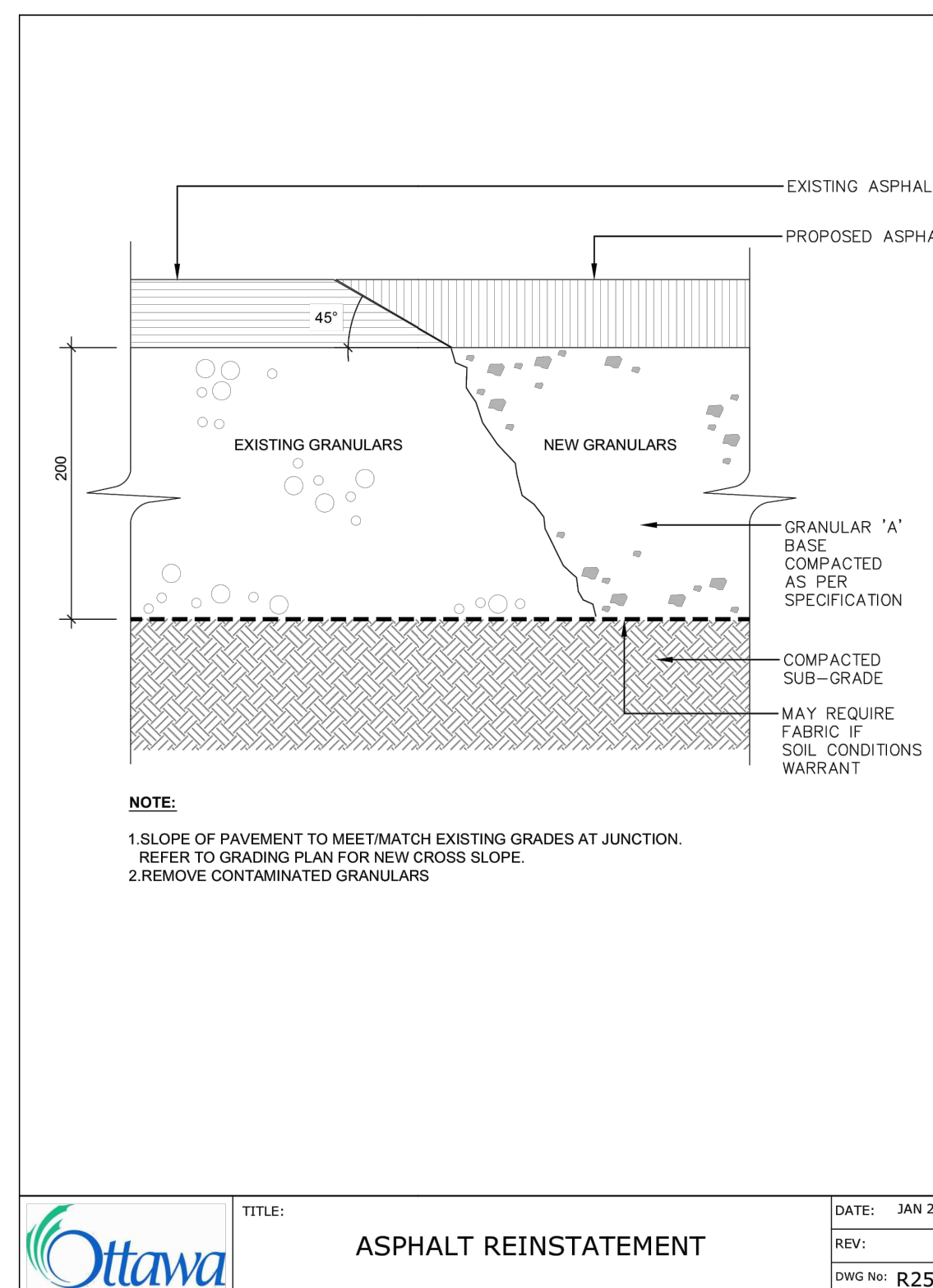
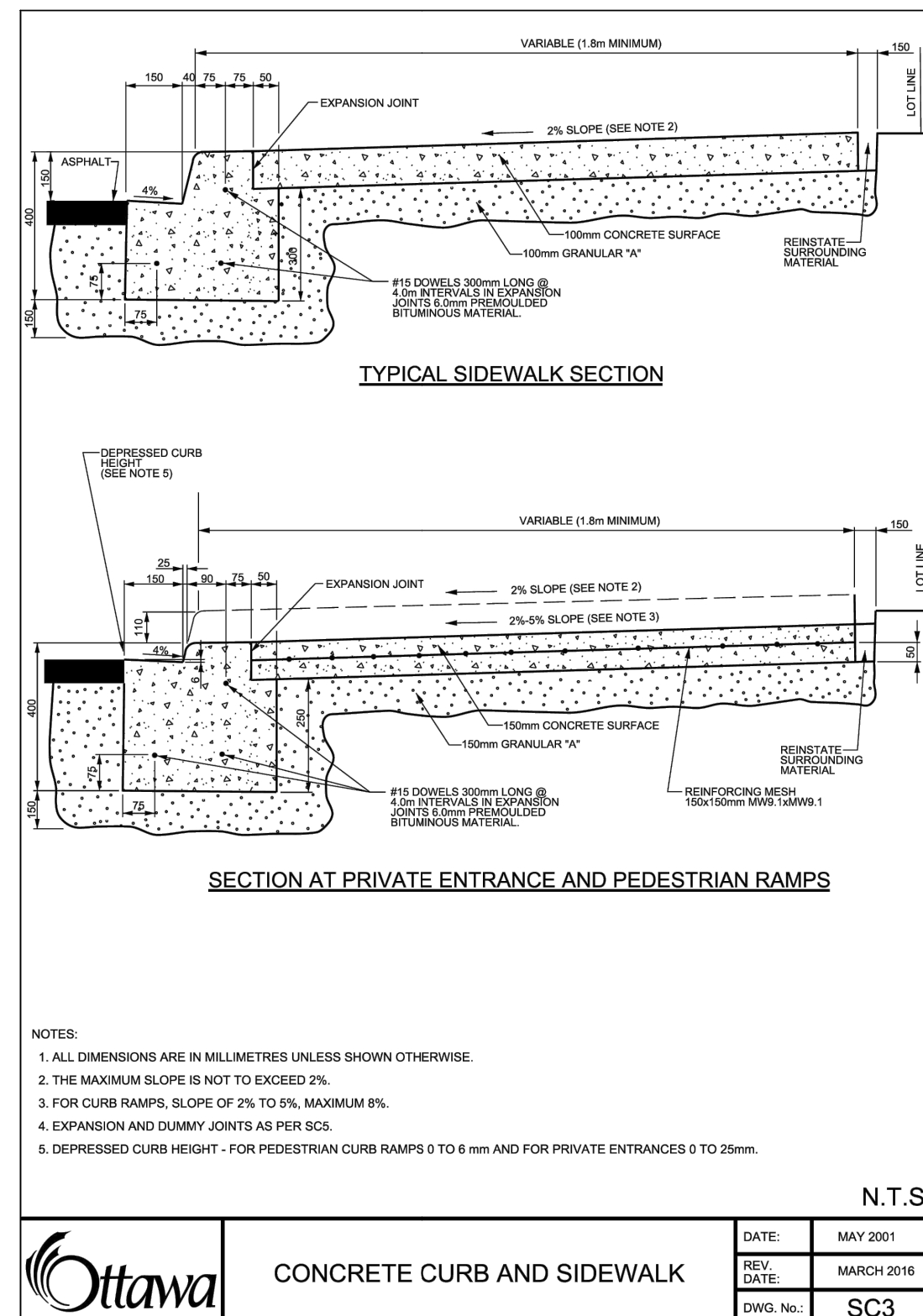
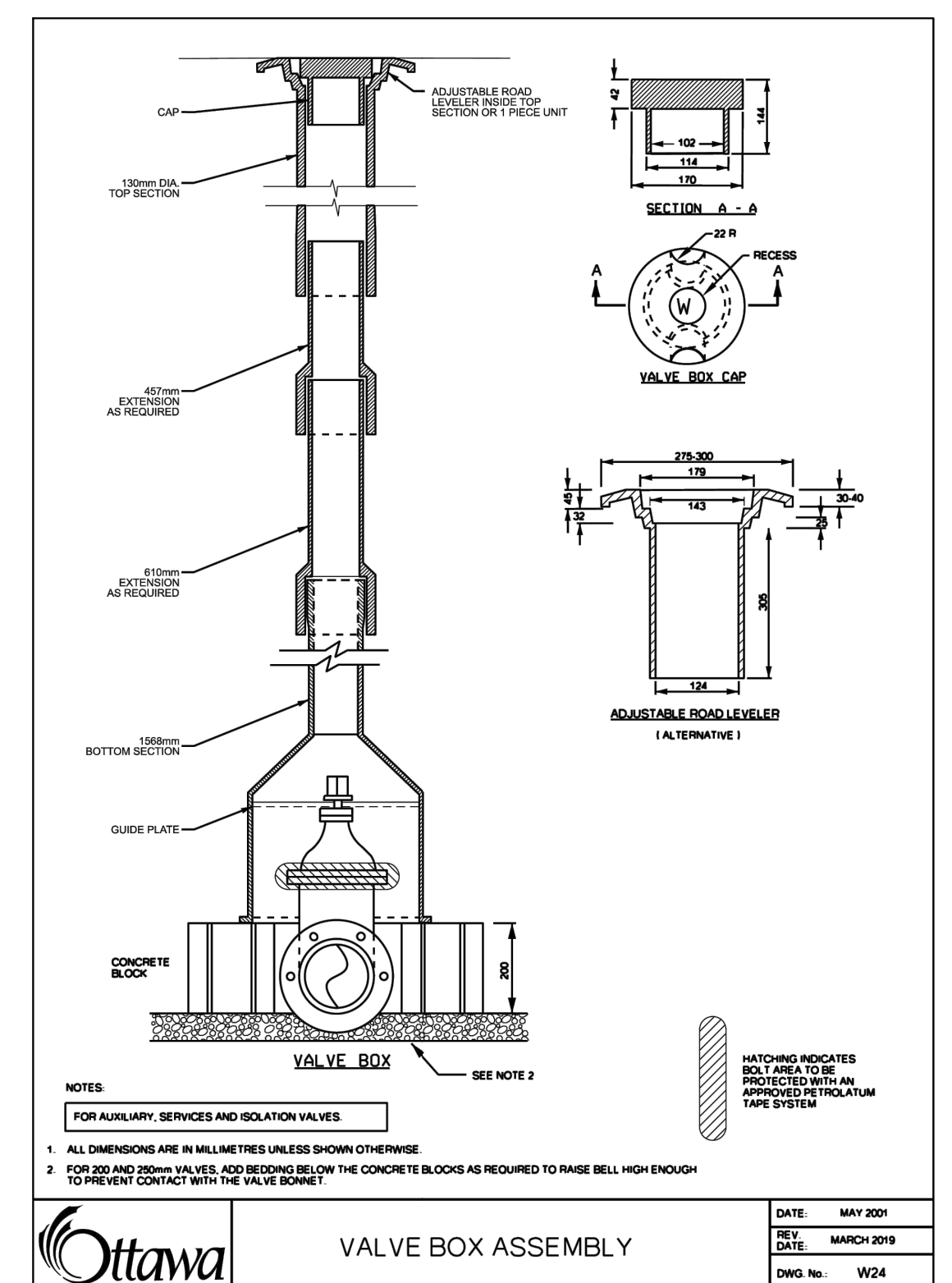
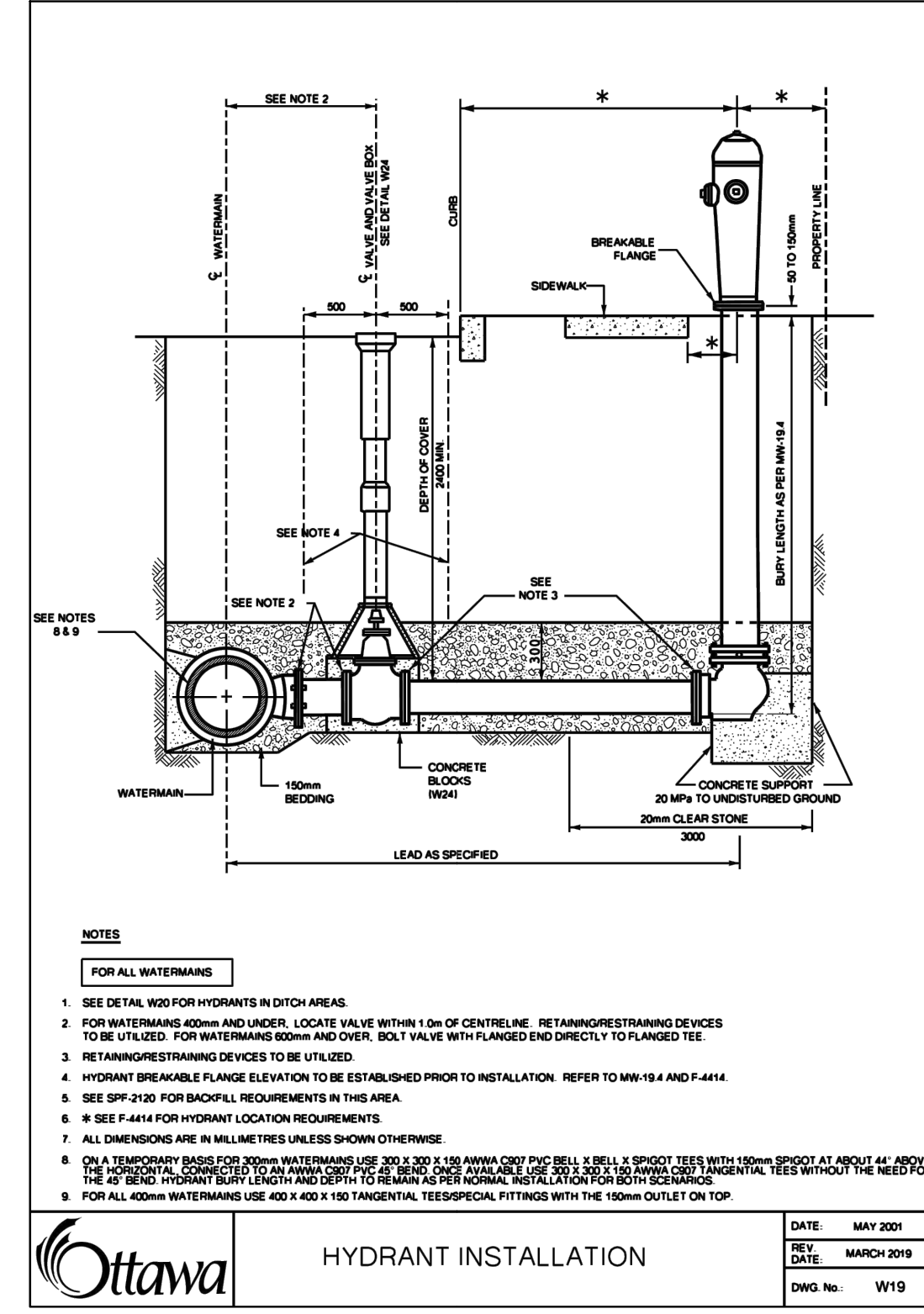
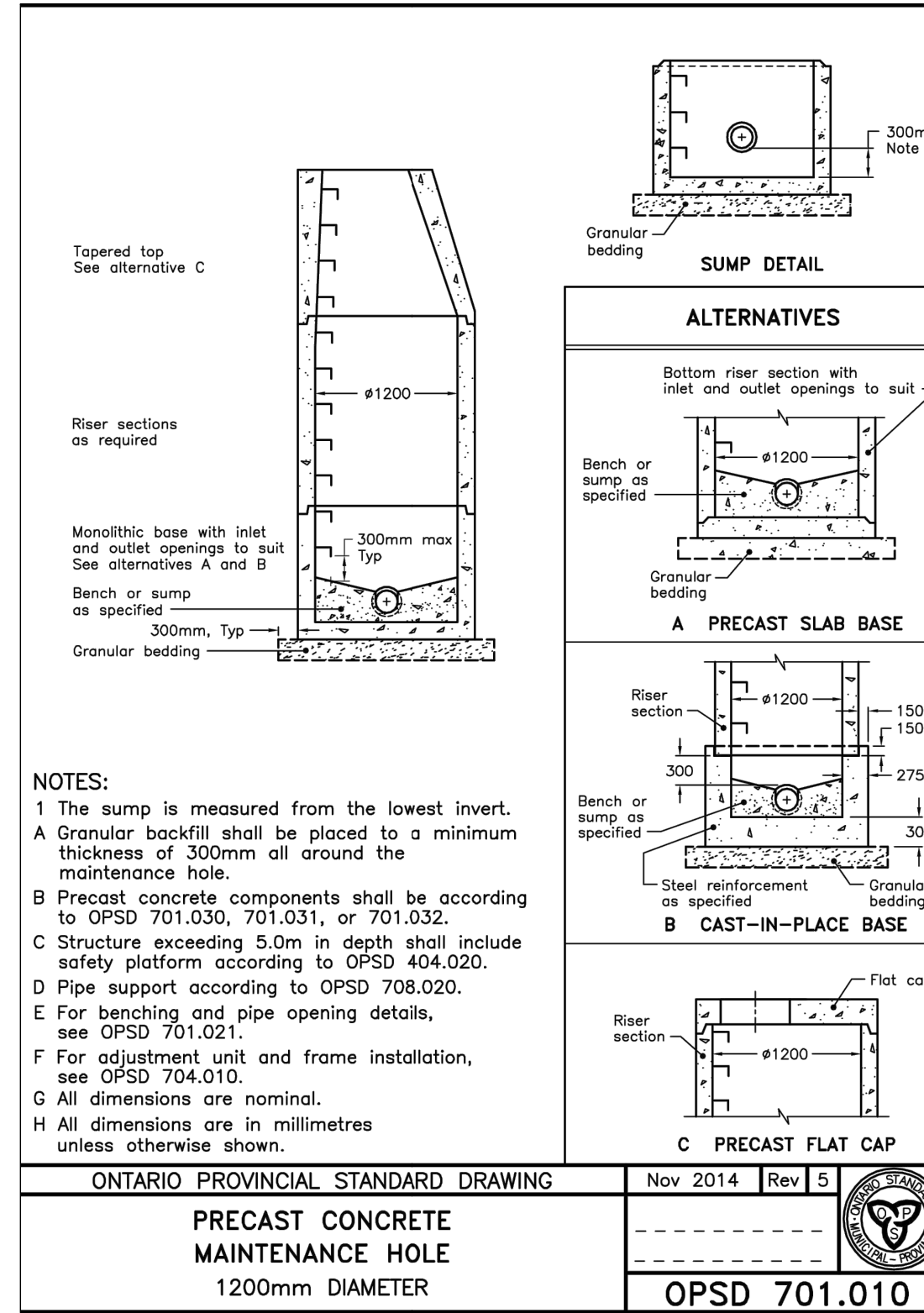
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CAR PARKING AREAS

50mm SURFACE COURSE - HL3 ASPHALT
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300mm GRANULAR "B" SUBBASE TYPE 2

FIRE ROUTE

40mm SURFACE COURSE - HL3 ASPHALT
50mm BASE COURSE - HL8 ASPHALT
150mm GRANULAR BASE - OPSS GRAN A CRUSHED STONE
400mm GRANULAR "B" SUBBASE TYPE 2



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03.	AS PER UPDATED SITE PLAN	07/04/24	JM
02.	AS PER 2nd SUBMISSION COMMENTS	02/12/24	JM
01.	AS PER 1st SUBMISSION COMMENTS	11/02/23	JM

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MARCH 2016		MARCH 2016	
SC3		R25	

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MARCH 2016		MARCH 2016	
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SC3		R25	

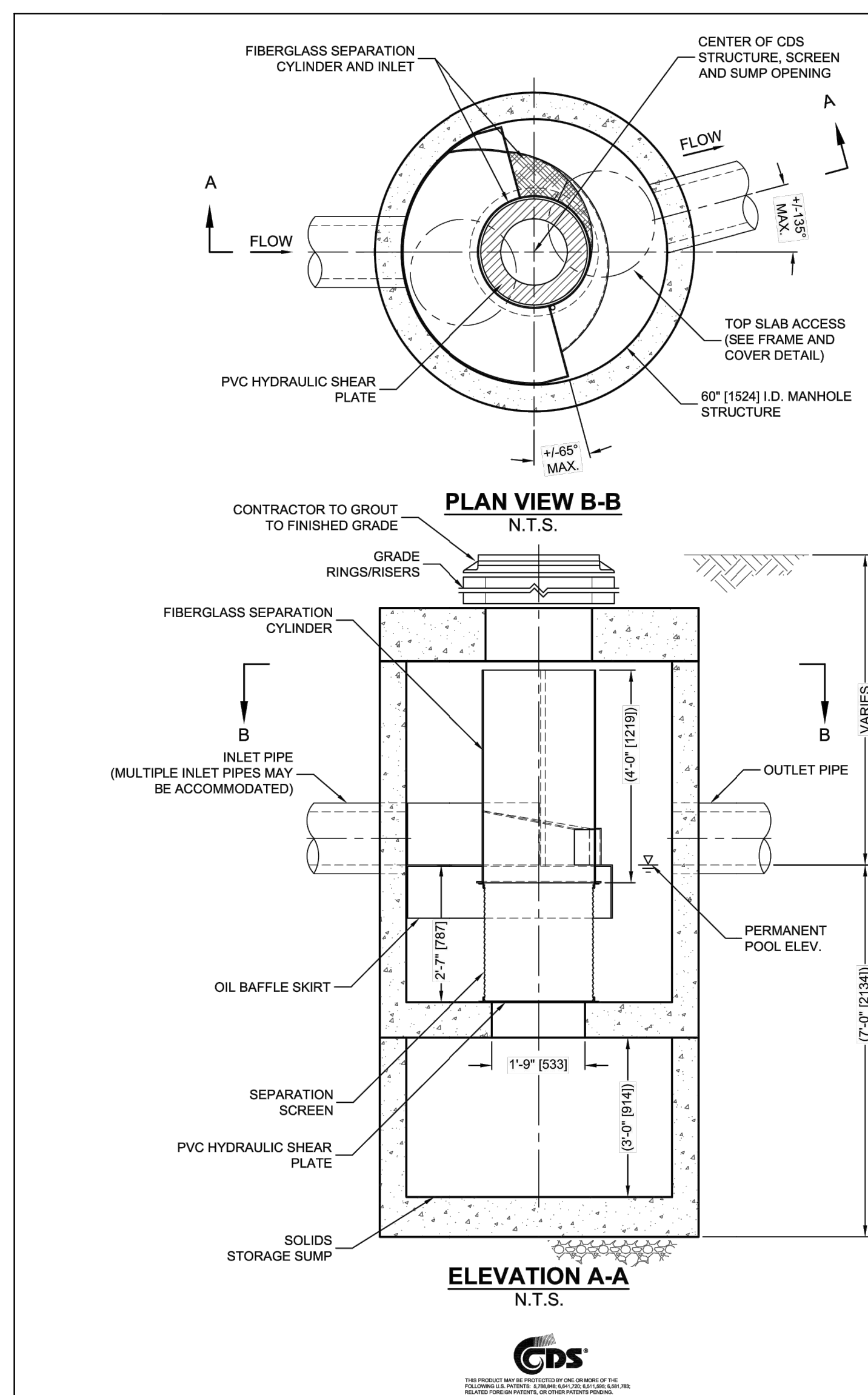
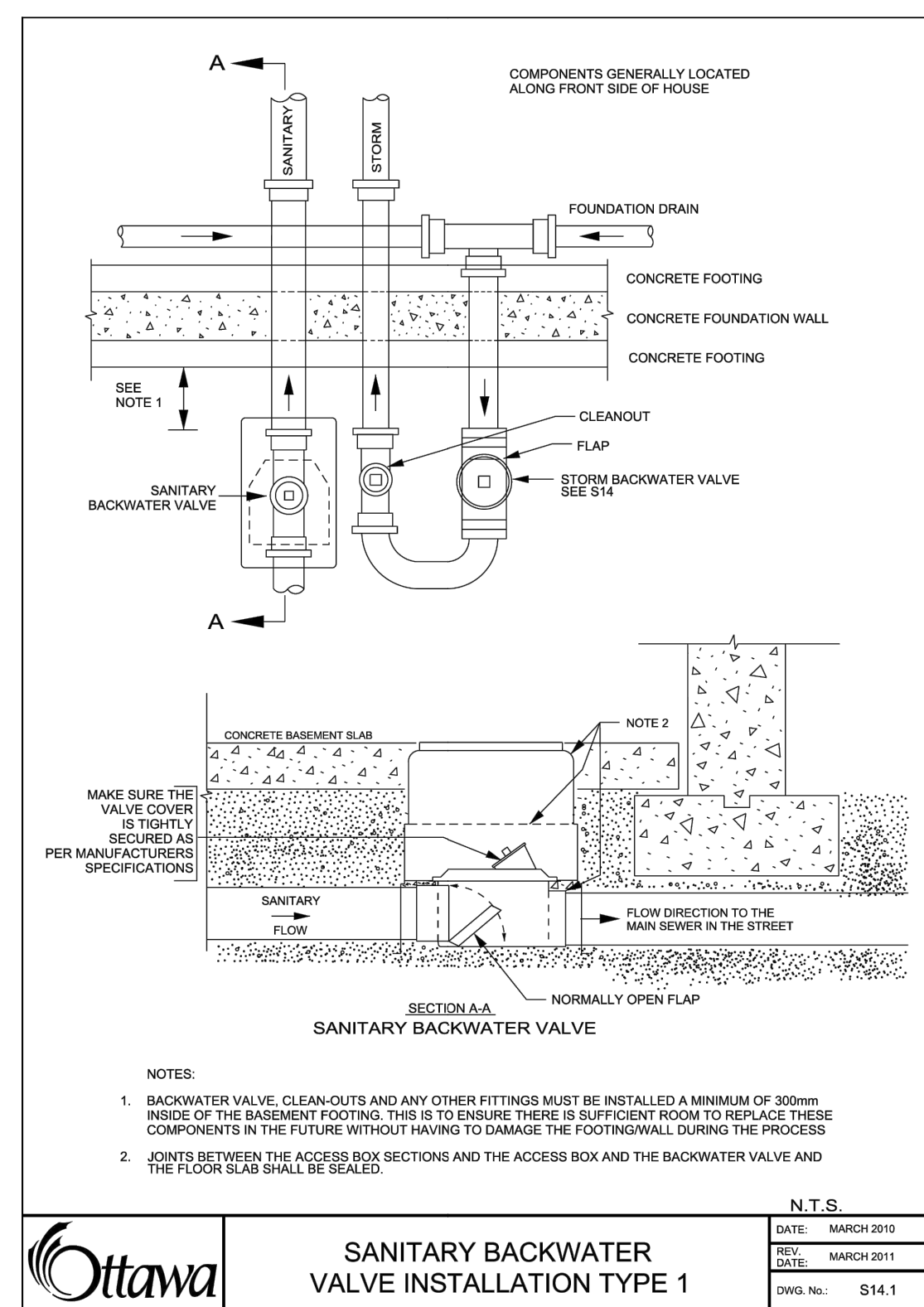
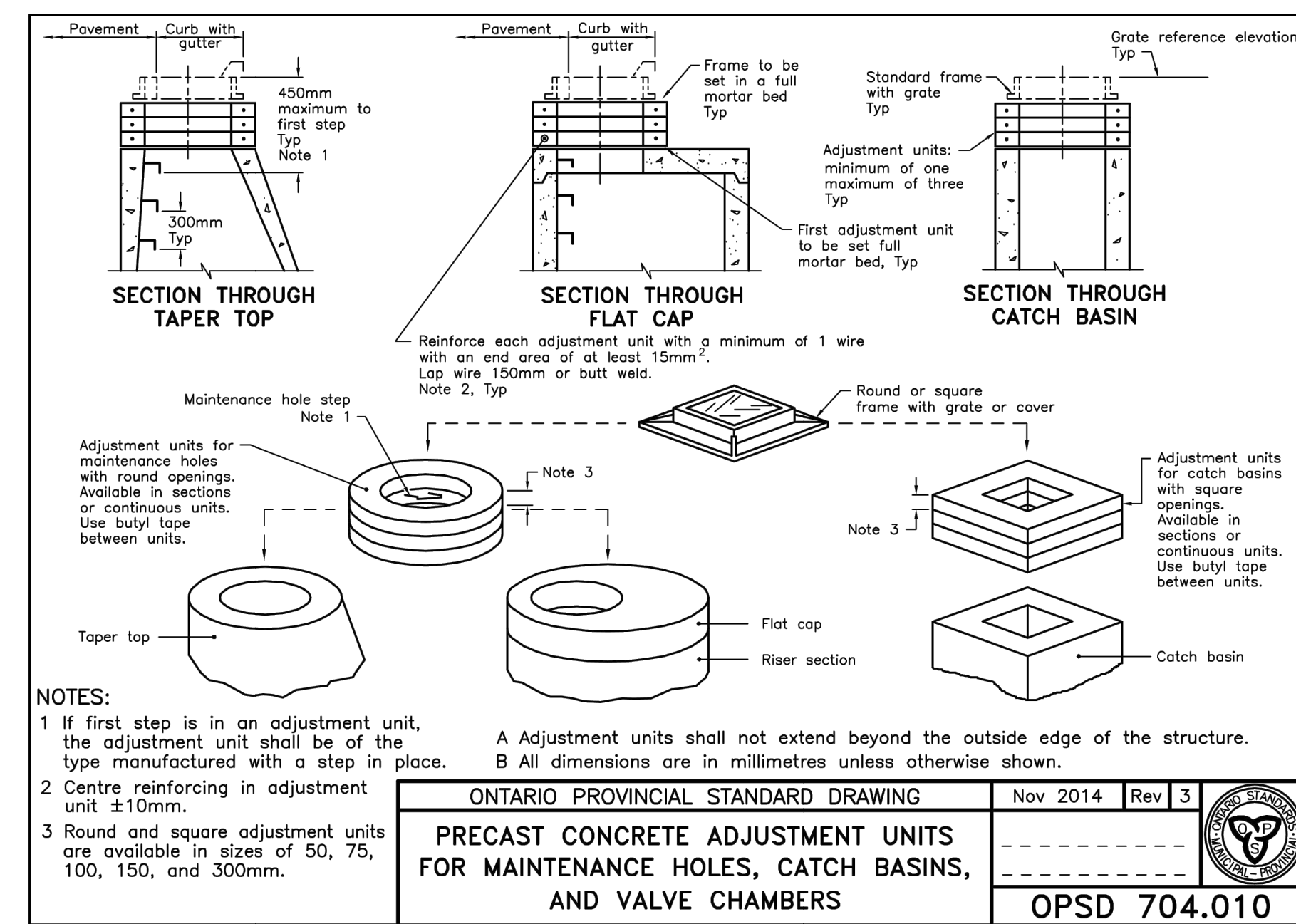
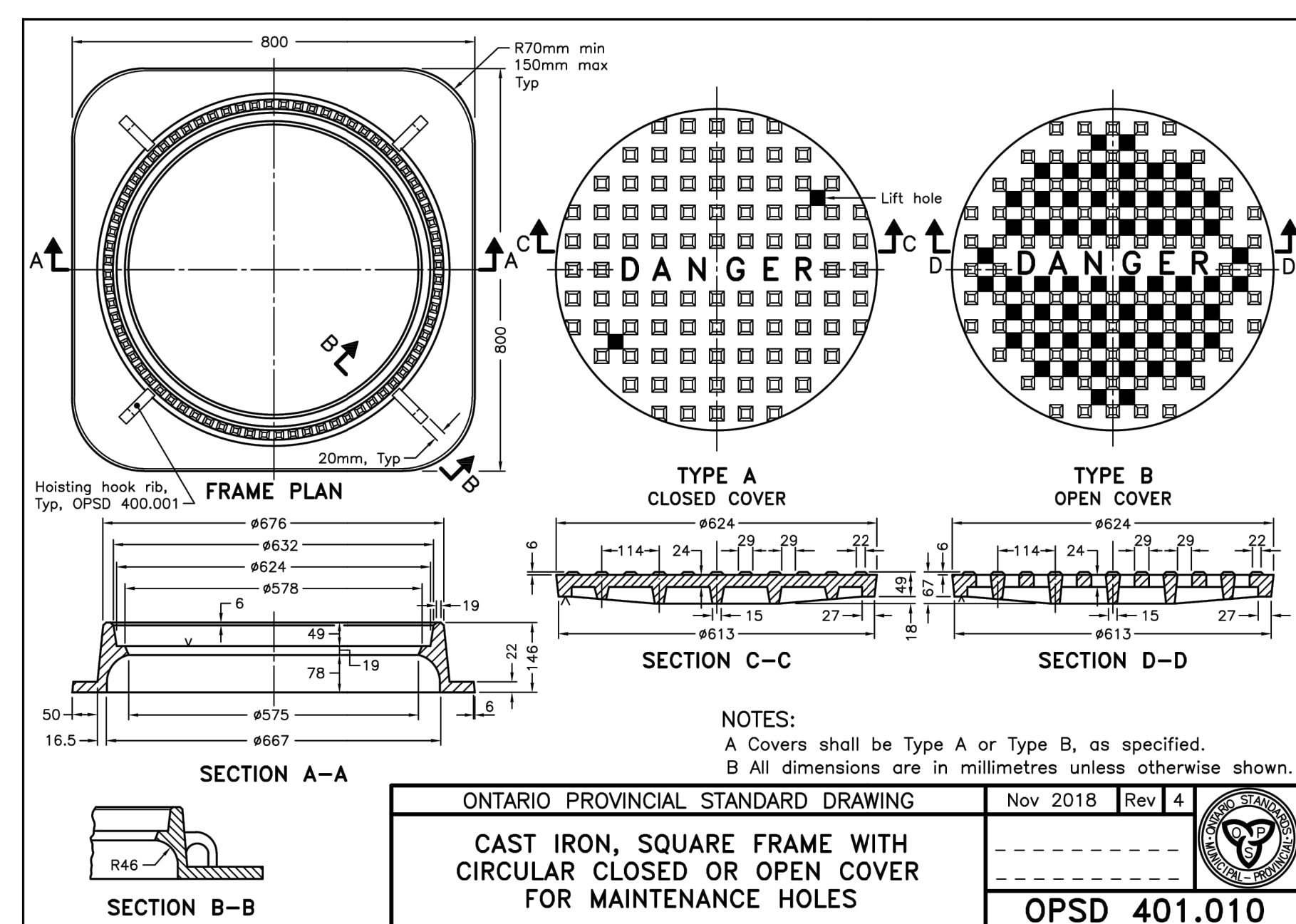
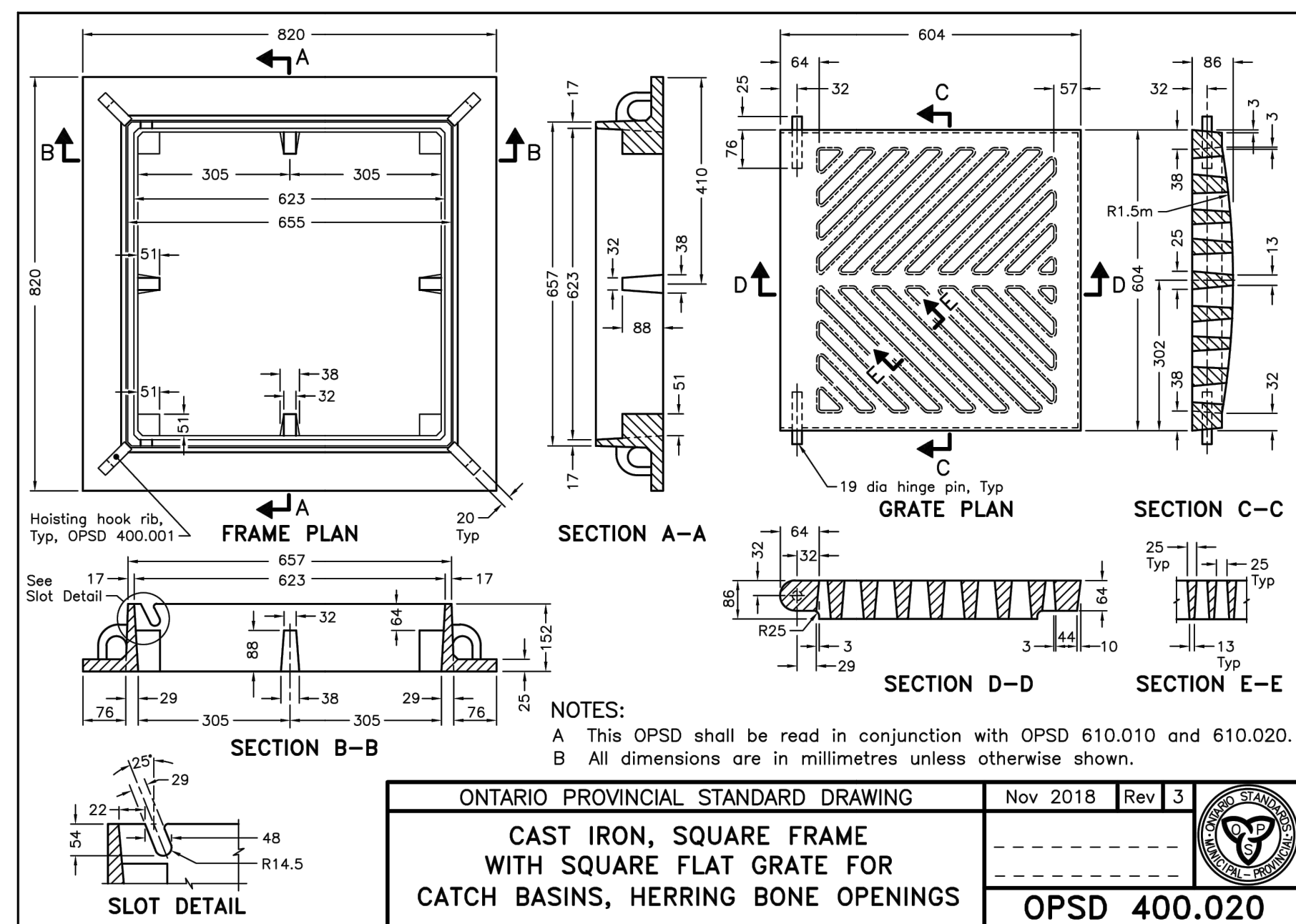
DATE	REV.	DATE	REV.
MAY 2001		MAY 2001	
MARCH 2016		MARCH 2016	
SC3		R25	

KOREAN COMMUNITY CHURCH
3555 BORRISOKANE ROAD
CITY OF OTTAWA

NOTES AND DETAILS
(1 OF 3)

PEARSON ENGINEERING
PEARSONENG.COM PH. 705.719.4785

DESIGNED BY	NW/MWD	HORIZ SCALE	N/A	PROJECT #	22099
DRAWN BY	JM	VERT SCALE	N/A	DRAWING #	ND-1
CHECKED BY	MWD	DATE	JUNE 2023	REVISION #	5



CDS PMSU2020-5-C DESIGN NOTES

THE STANDARD CDS PMSU2020-5-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION	
GRATED INLET ONLY (NO INLET PIPE)	
GRATED INLET WITH INLET PIPE OR PIPES	
CURB INLET ONLY (NO INLET PIPE)	
CURB INLET WITH INLET PIPE OR PIPES	
CUSTOMIZABLE SUMP DEPTH AVAILABLE	
ANTI-FLOTATION DESIGN AVAILABLE UPON REQUEST	

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	WATER QUALITY FLOW RATE (CFS OR L/s)	PEAK FLOW RATE (CFS OR L/s)	RETURN PERIOD OF PEAK FLOW (YRS)	SCREEN APERTURE (2400 OR 4700)
	*	*	*	*

PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	*	*	*
INLET PIPE 2	*	*	*
OUTLET PIPE	*	*	*

ANTI-FLOTATION BALLAST	WIDTH	HEIGHT
*	*	*

NOTES/SPECIAL REQUIREMENTS:
 * PER ENGINEER OF RECORD

GENERAL NOTES
 1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
 2. DIMENSIONS MARKED WITH () ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
 3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE: www.contechES.com
 4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
 5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 308) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
 6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES
 A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
 B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
 C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
 D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
 E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

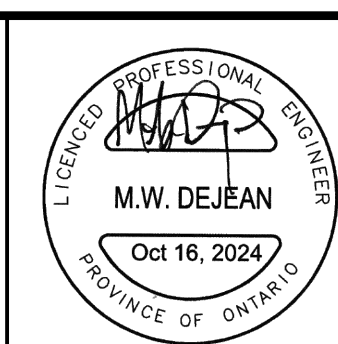
CONTECH
 ENGINEERED SOLUTIONS LLC
www.contechES.com
 9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
 800-338-1122 513-645-7000 513-645-7993 FAX

CDS PMSU2020-5-C
 INLINE CDS
 STANDARD DETAIL

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NO.	REVISION NOTE	DATE	BY
05.	UPDATED SNOW STORAGE	10/16/24	JM
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01.	AS PER 1st SUBMISSION COMMENTS	11/02/23	JM

BENCHMARK
 SPIKE IN UTILITY POLE LOCATED ON THE SE CORNER OF THE BORRISOKANE RD. AND PROMENADE FLAGSTAFF DR. INTERSECTION.
 ELEV: 92.96

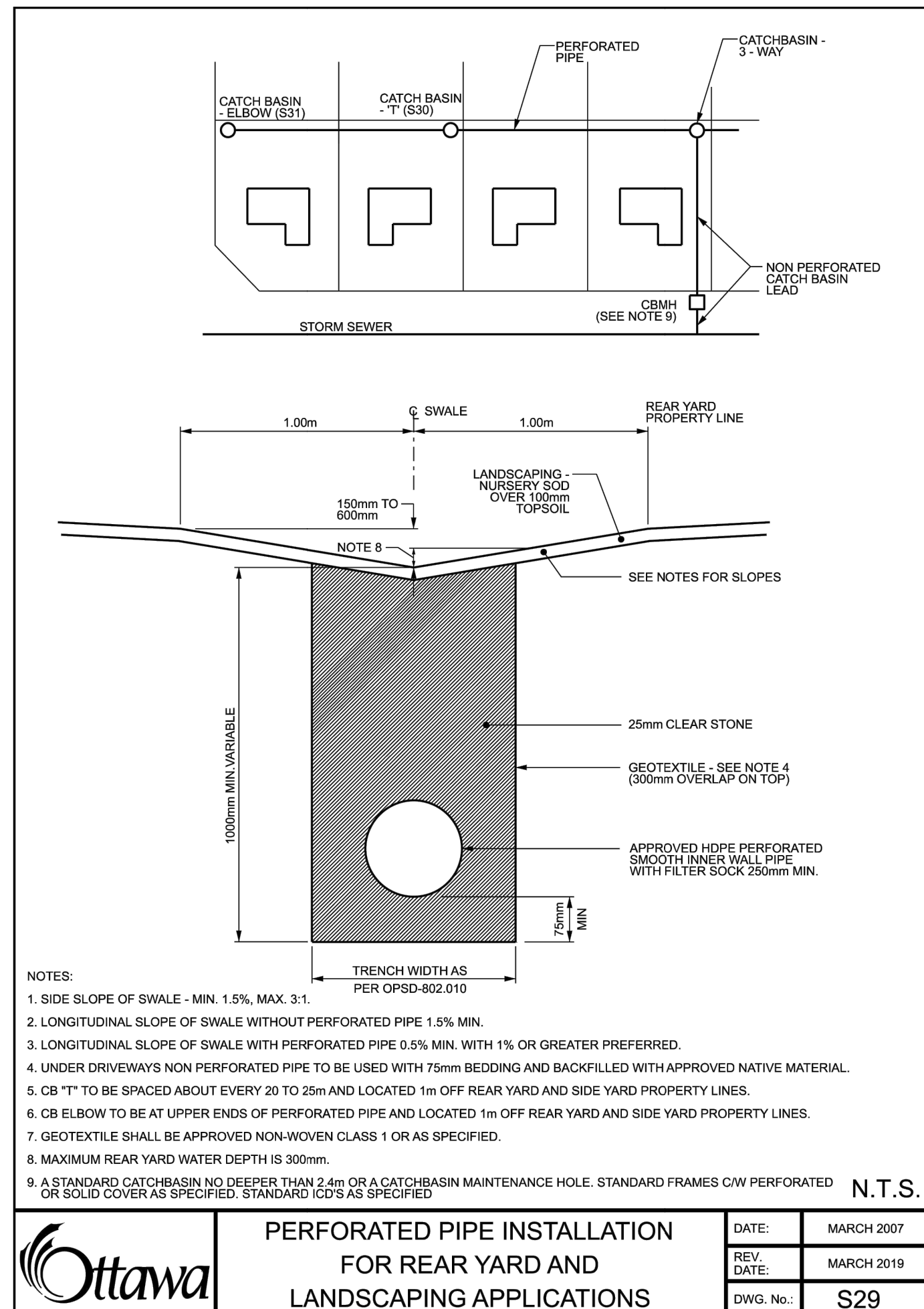


KOREAN COMMUNITY CHURCH
 3555 BORRISOKANE ROAD
 CITY OF OTTAWA

NOTES AND DETAILS
 (2 OF 3)

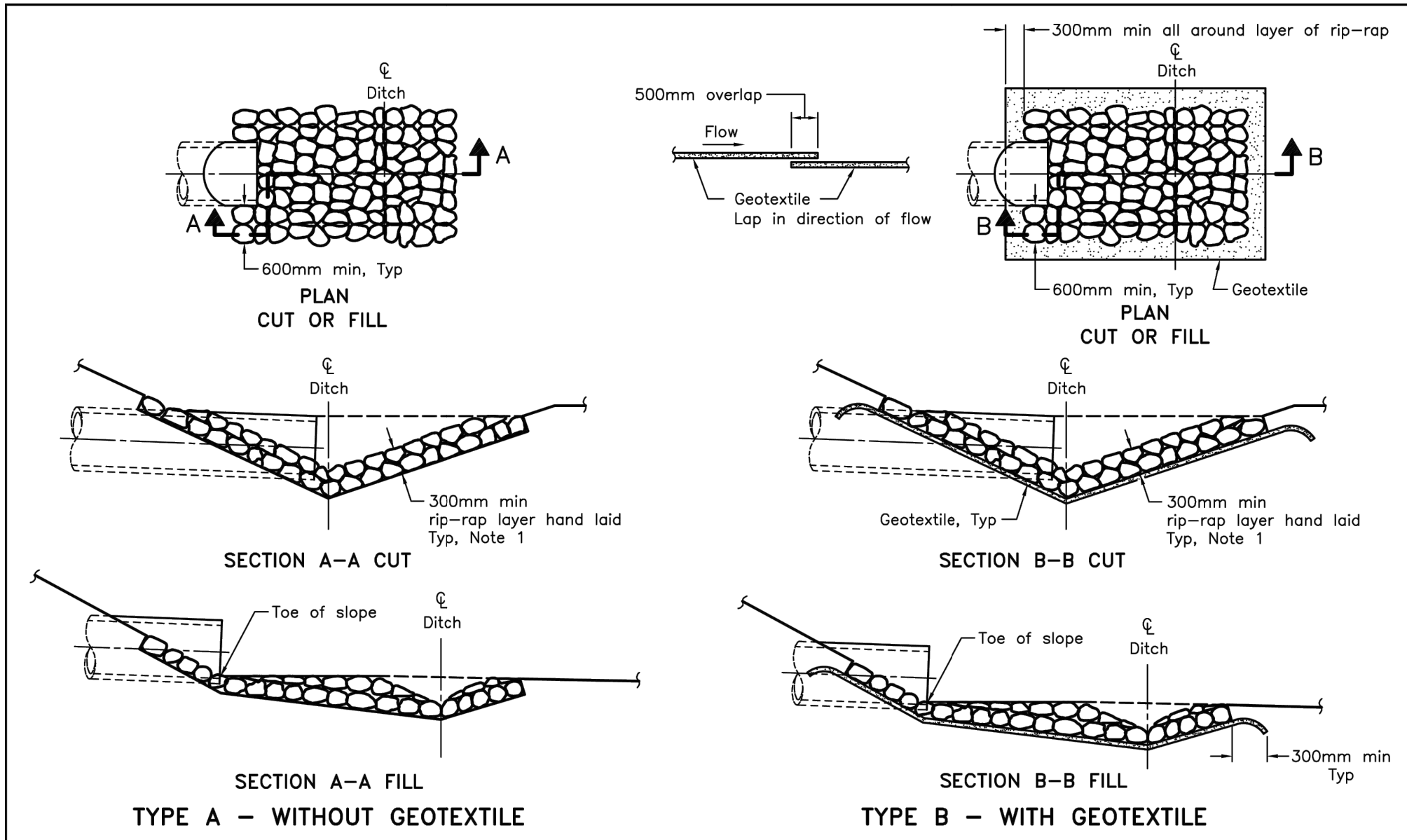


DESIGNED BY	NW/MWD	HORIZ SCALE	N/A	PROJECT #	22099
DRAWN BY	JM	VERT SCALE	N/A	DRAWING #	ND-2
CHECKED BY	MWD	DATE	JUNE 2023	REVISION #	5



- NOTES:
- SIDE SLOPE OF SWALE - MIN. 1.5%, MAX. 3:1.
 - LONGITUDINAL SLOPE OF SWALE WITHOUT PERFORATED PIPE 1.5% MIN.
 - LONGITUDINAL SLOPE OF SWALE WITH PERFORATED PIPE 0.5% MIN. WITH 1% OR GREATER PREFERRED.
 - UNDER DRIVEWAYS NON PERFORATED PIPE TO BE USED WITH 75mm BEDDING AND BACKFILLED WITH APPROVED NATIVE MATERIAL.
 - CB "T" TO BE SPACED ABOUT EVERY 20 TO 25m AND LOCATED 1m OFF REAR YARD AND SIDE YARD PROPERTY LINES.
 - CB ELBOW TO BE AT UPPER ENDS OF PERFORATED PIPE AND LOCATED 1m OFF REAR YARD AND SIDE YARD PROPERTY LINES.
 - GEOTEXTILE SHALL BE APPROVED NON-WOVEN CLASS 1 OR AS SPECIFIED.
 - MAXIMUM REAR YARD WATER DEPTH IS 300mm.
 - A STANDARD CATCHBASIN NO DEEPER THAN 2.4m OR A CATCHBASIN MAINTENANCE HOLE. STANDARD FRAMES CW PERFORATED OR SOLID COVER AS SPECIFIED. STANDARD KIDS AS SPECIFIED.

Ottawa	PERFORATED PIPE INSTALLATION FOR REAR YARD AND LANDSCAPING APPLICATIONS		DATE:	MARCH 2007
			REV. DATE:	MARCH 2019
			DWG. No.:	S29

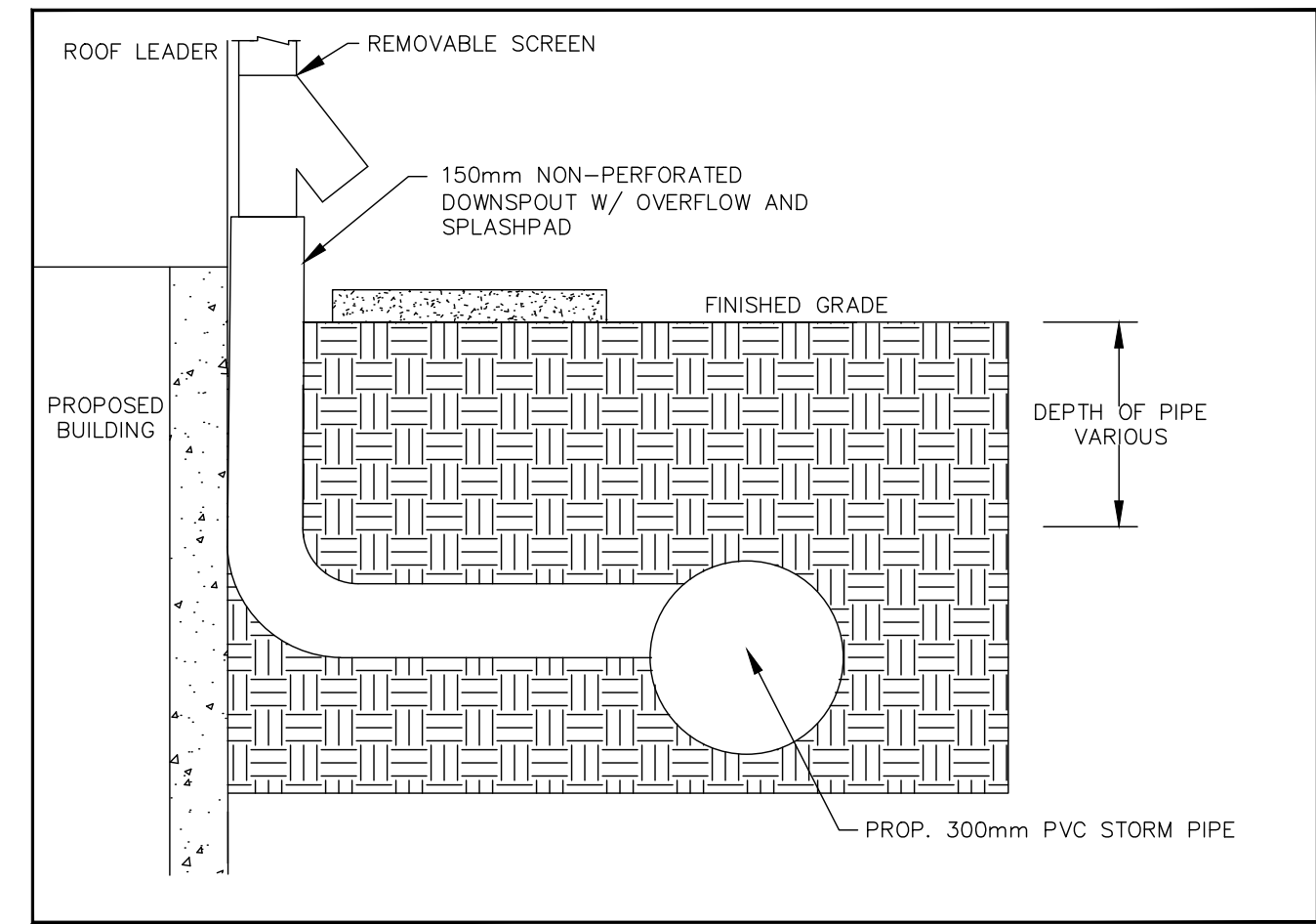


NOTES:

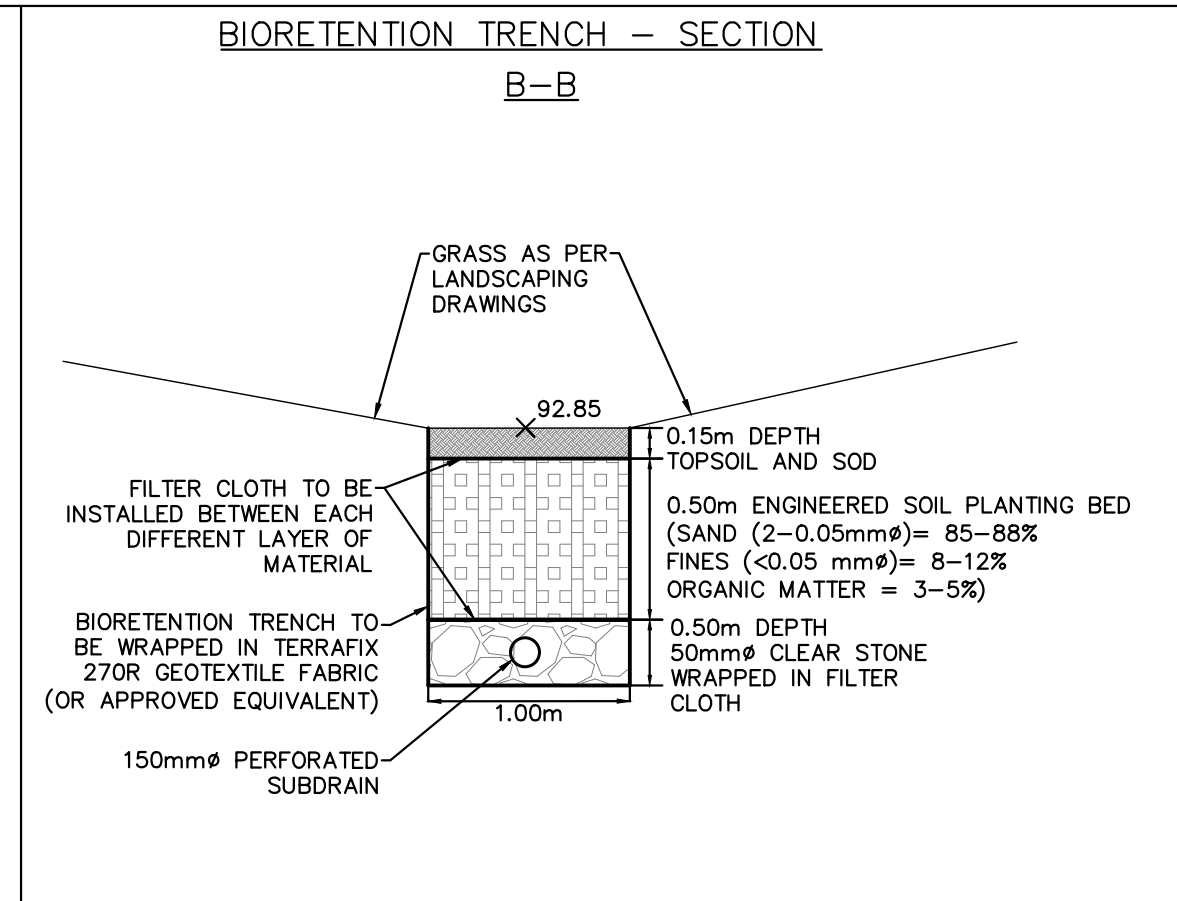
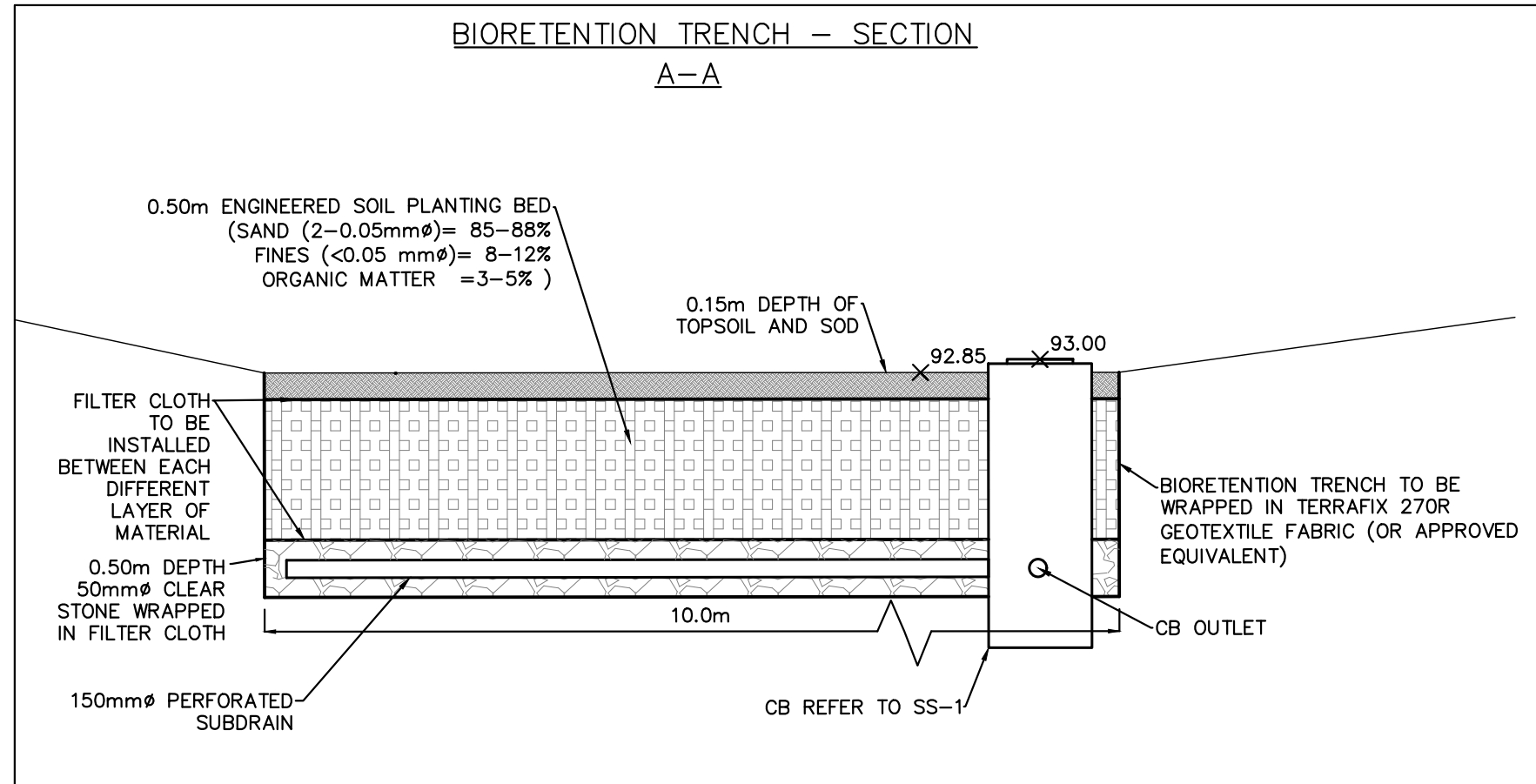
1 The thickness of the rip-rap layer shall be at least 1.5 times the rip-rap mean diameter.

A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING		Nov 2018	Rev 3
GENERAL RIP-RAP LAYOUT FOR SEWER AND CULVERT OUTLETS			
OPSD 810.010			



ROOF LEADER DETAIL
N.T.S



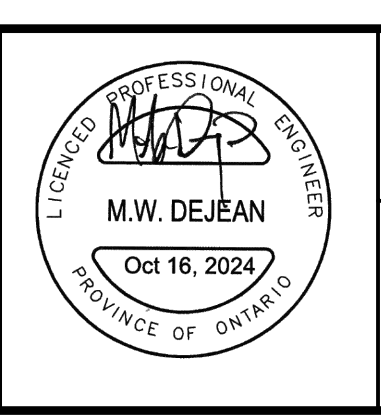
BIO-RETENTION TRENCH SECTIONS
N.T.S

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05.	UPDATED SNOW STORAGE	10/16/24	JM	BENCHMARK SPIKE IN UTILITY POLE LOCATED ON THE SE CORNER OF THE BORRISOKANE RD. AND PROMENADE FLAGSTAFF DR. INTERSECTION. ELEV. 92.96
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01.	AS PER 1st SUBMISSION COMMENTS	11/02/23	JM	
NO.	REVISION NOTE	DATE	BY	

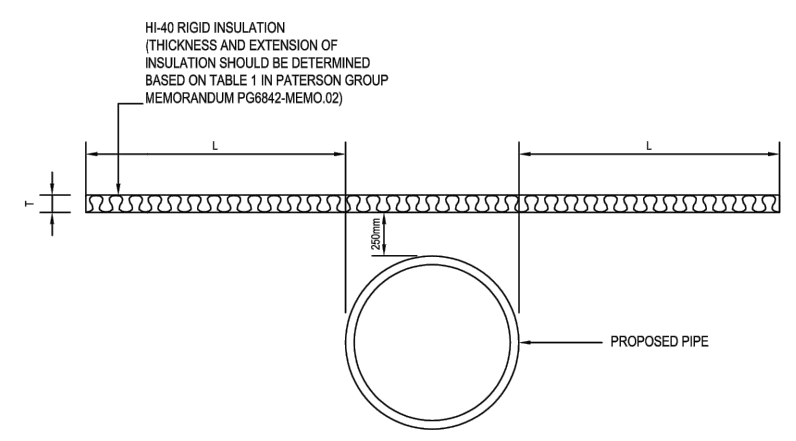
KOREAN COMMUNITY CHURCH
3555 BORRISOKANE ROAD
CITY OF OTTAWA

NOTES AND DETAILS
(3 OF 3)



DESIGNED BY	NW/MWD	HORIZ SCALE	N/A	PROJECT #	22099
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CHECKED BY	MWD	DATE	JUNE 2023	REVISION #	5

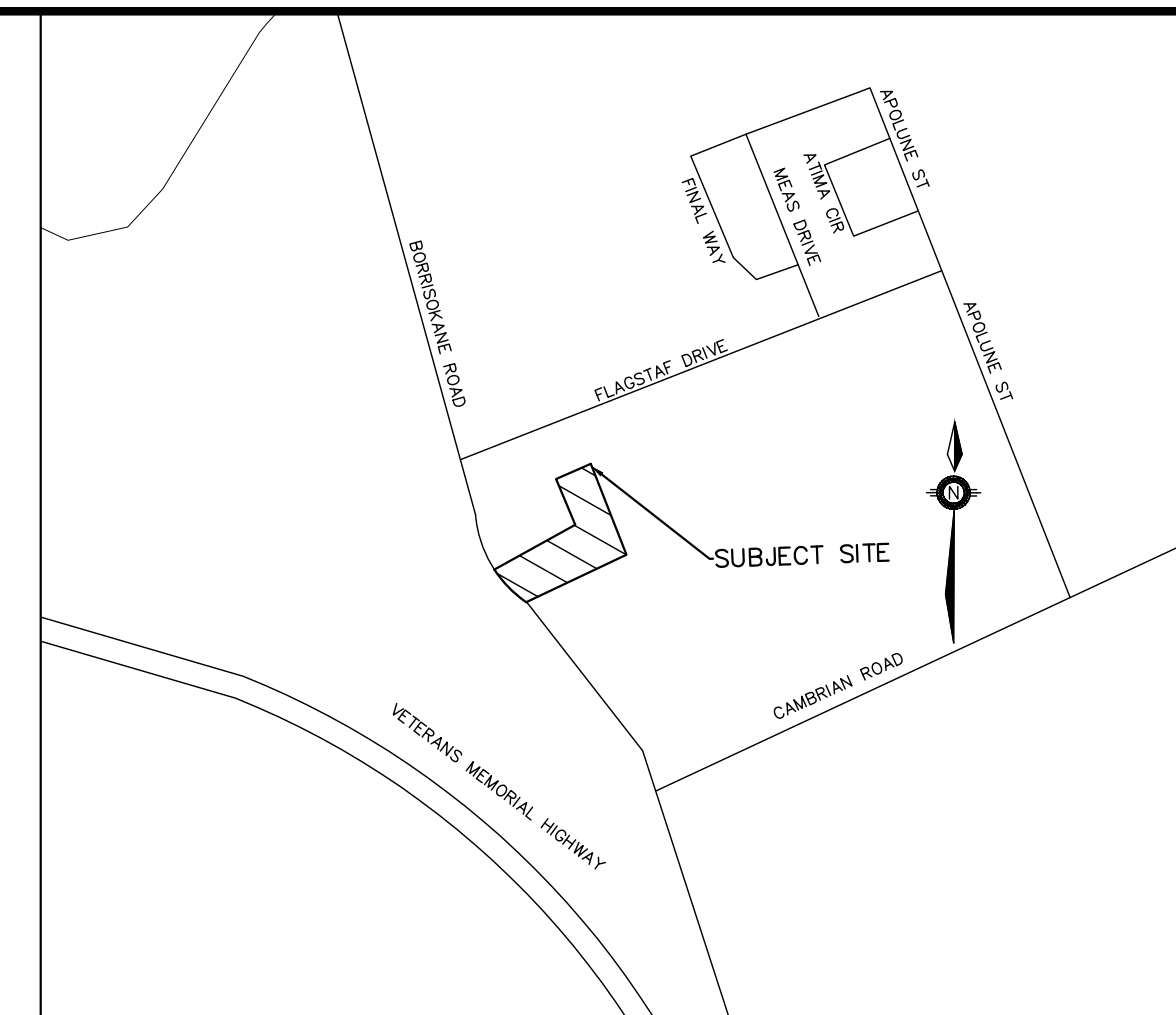
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PATERSON GROUP
SOLUTION ORIENTED ENGINEERING

TYPICAL FROST INSULATION DETAIL

Scale: N.T.S.	Date: 02/20/24
Drawn by: JMC	Report No.: P080-MEMO-02
Checked by: YZ	Drawing No.: FIG.2
Approved by: JJA	Revision No.:



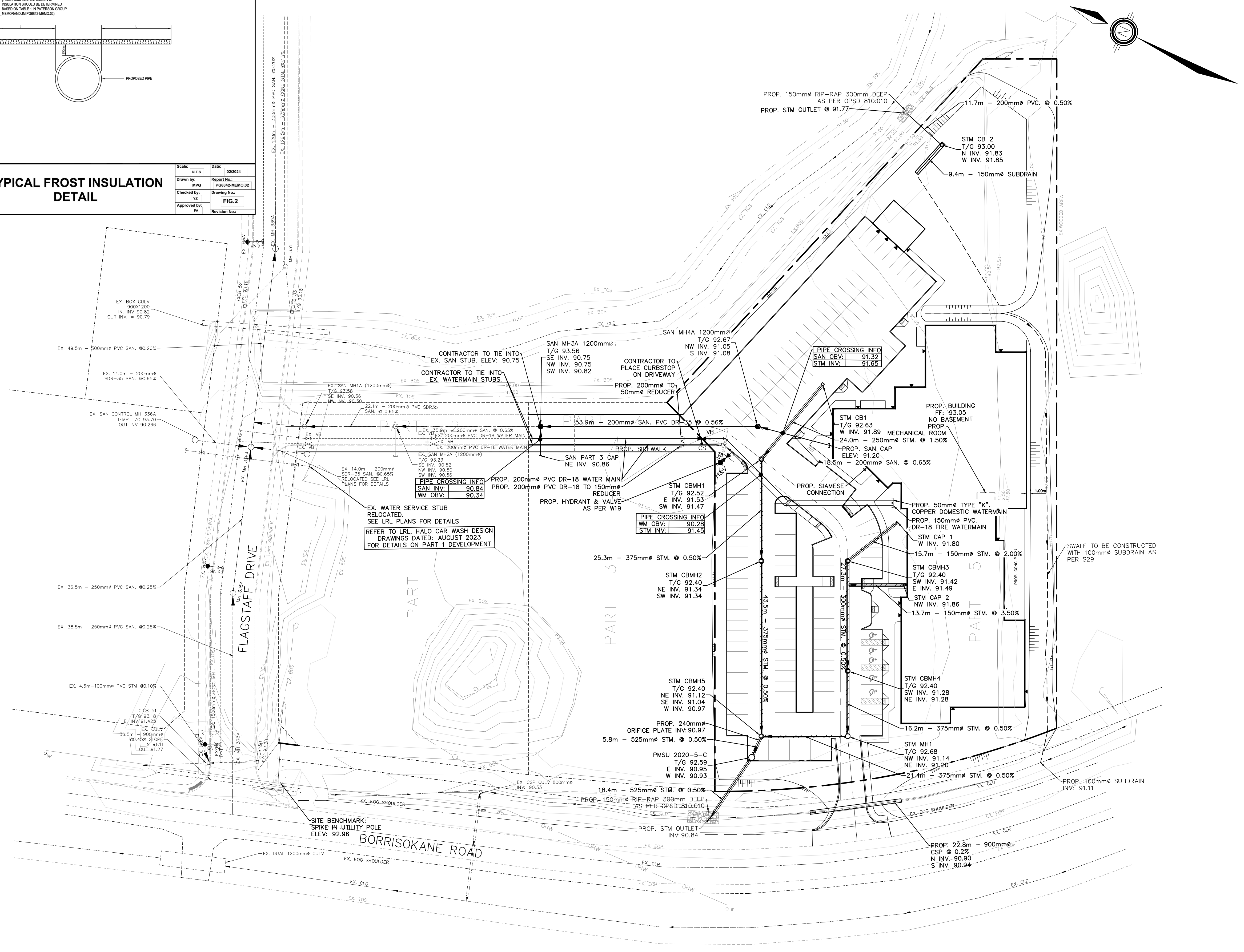
KEYMAP NTS

LEGEND

- CB CATCH BASIN
- DCB DOUBLE CATCH BASIN
- CBMH CATCH BASIN
- MH STORM MANHOLE
- MH SANITARY MANHOLE
- SERVICE CAP
- H&V FIRE HYDRANT
- VB WATER VALVE
- CS CURB STOP W/ SERVICE
- × 254.63 PROPOSED ELEVATION
- 254.09 EXISTING ELEVATION
- 1.5% PROPOSED DIRECTION AND GRADE
- BACK OF CURB
- EDGE OF PAVEMENT
- CURB CUT LOCATION
-) (HIGH POINT
- PROPOSED PIPE INSULATION AS PER SS-1 DETAIL
- ▲ OVERHEAD DOOR
- ▲ ENTRY LOCATION

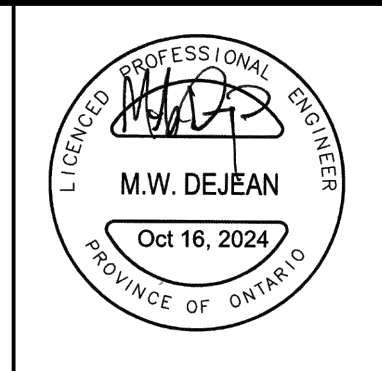
- SITE SERVICING NOTES:**
- OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM CITY OF OTTAWA BEFORE COMMENCING WORK.
 - REFER TO CITY OF OTTAWA STANDARD R10 FOR ASPHALT TIE INS.
 - BACKWATER VALVES TO BE INSTALLED AS PER CITY OF OTTAWA STANDARD S14, AND S14.1 OR S14.2
 - EXISTING SERVICES TO BE BLANKED AT MAIN.
 - THERMAL INSULATION TO BE PROVIDED FOR WATER SERVICES LESS THAN 2.4m FROM OPEN STRUCTURES AS PER CITY OF OTTAWA STANDARD W23.
 - WATER SERVICE TO HAVE MORE THAN 2.4m OF COVER OR BE INSULATED AS PER CITY OF OTTAWA STANDARD DRAWING W22.
 - SUNKEN ENTRANCE DRAIN CANNOT CONNECT DIRECTLY TO WEEPING TILE ANY WATER IN SUNKEN ENTRANCE TO DRAIN DOWN INTO PERMEABLE FILL WHERE IT WILL BE PICKED UP BY WEEPING TILE SYSTEM.

C:\Users\jmc@paterson.com\AppData\Local\Temp\AutoCAD\202409_16\202409_16_10_56.dwg - Plotter: Oct 17, 2024 @ 10:56am by jmc@paterson.com - PATERSON ENGINEERING LTD.



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BENCHMARK
SPIKE IN UTILITY POLE LOCATED ON THE SE CORNER OF THE BORRISOKANE RD. AND PROMENADE FLAGSTAFF DR. INTERSECTION.
ELEV: 92.96



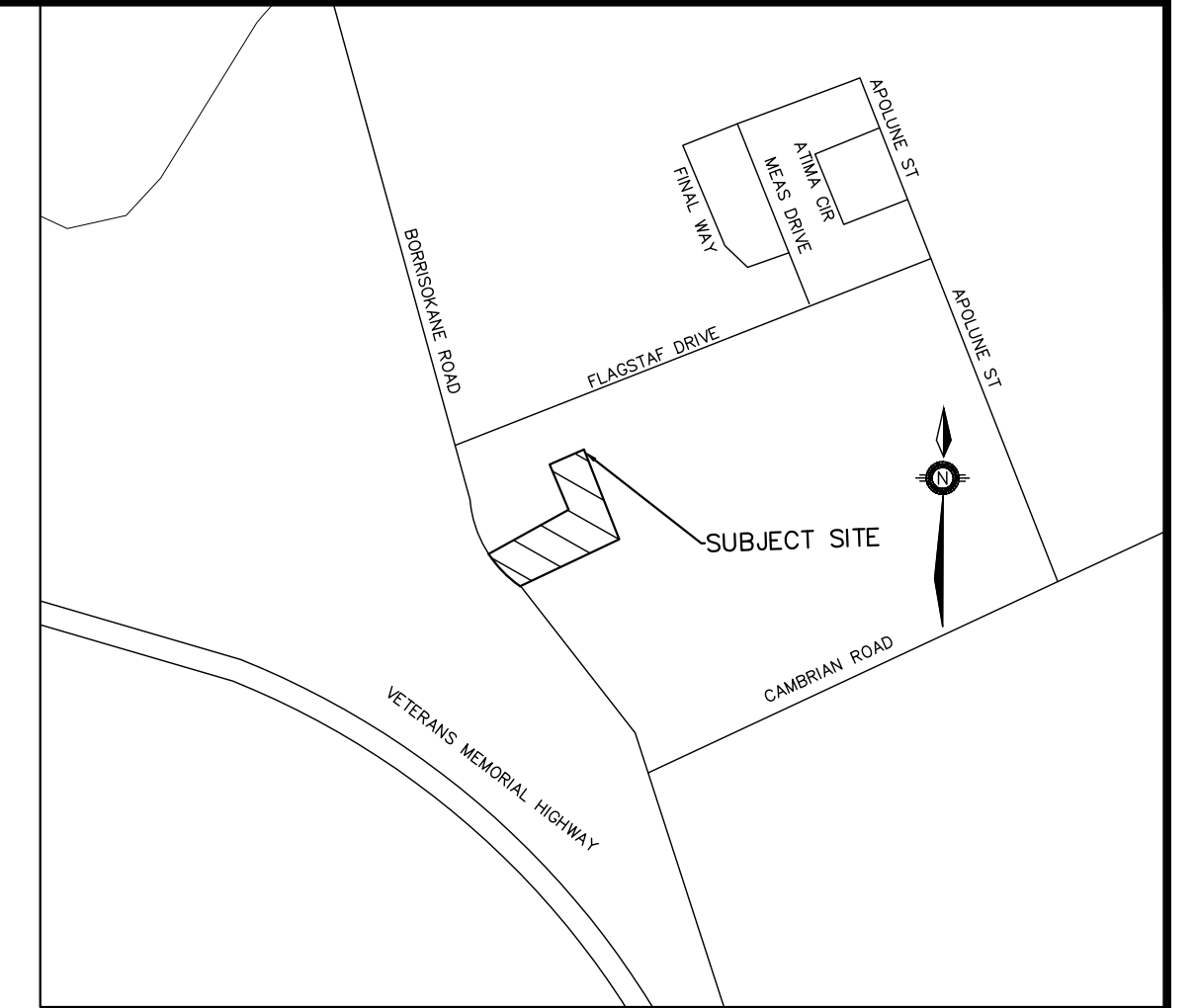
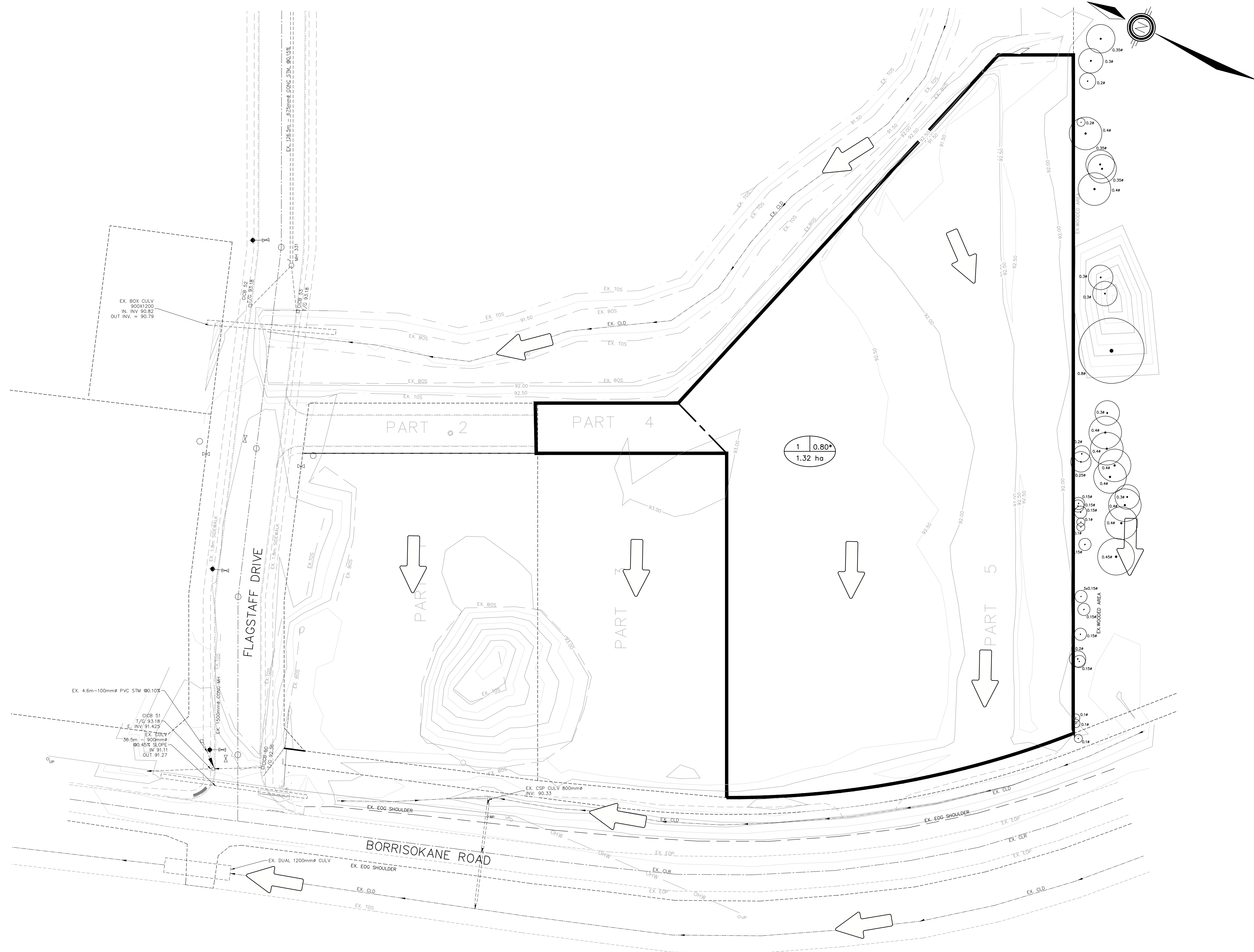
KOREAN COMMUNITY CHURCH
3555 BORRISOKANE ROAD
CITY OF OTTAWA

SITE SERVICING PLAN

PEARSON ENGINEERING
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DESIGNED BY	NW/MWD	HORIZ SCALE	1:500	PROJECT #	22099
DRAWN BY	JM	VERT SCALE	N/A	DRAWING #	SS-1
CHECKED BY	MWD	DATE	JUNE 2023	REVISION #	5

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KEYMAP NTS

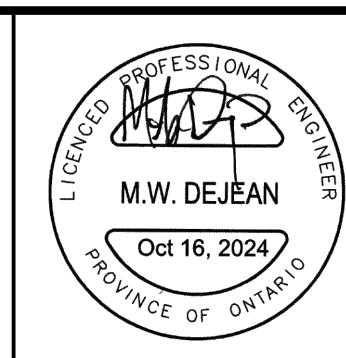
LEGEND

- OVERLAND FLOW DIRECTION
- CATCHMENT AREA (1, 0.75, 1.00 ha) RUNOFF COEFFICIENT (0.75, 1.00) AREA IN HECTARES
- CATCHMENT BOUNDARY

*ALLOWABLE RUNOFF TAKEN FROM DSEL DESIGN BRIEF FOR THE HALF MOON BAY WEST SUBDIVISION PH. 3 DATED NOVEMBER 18, 2021

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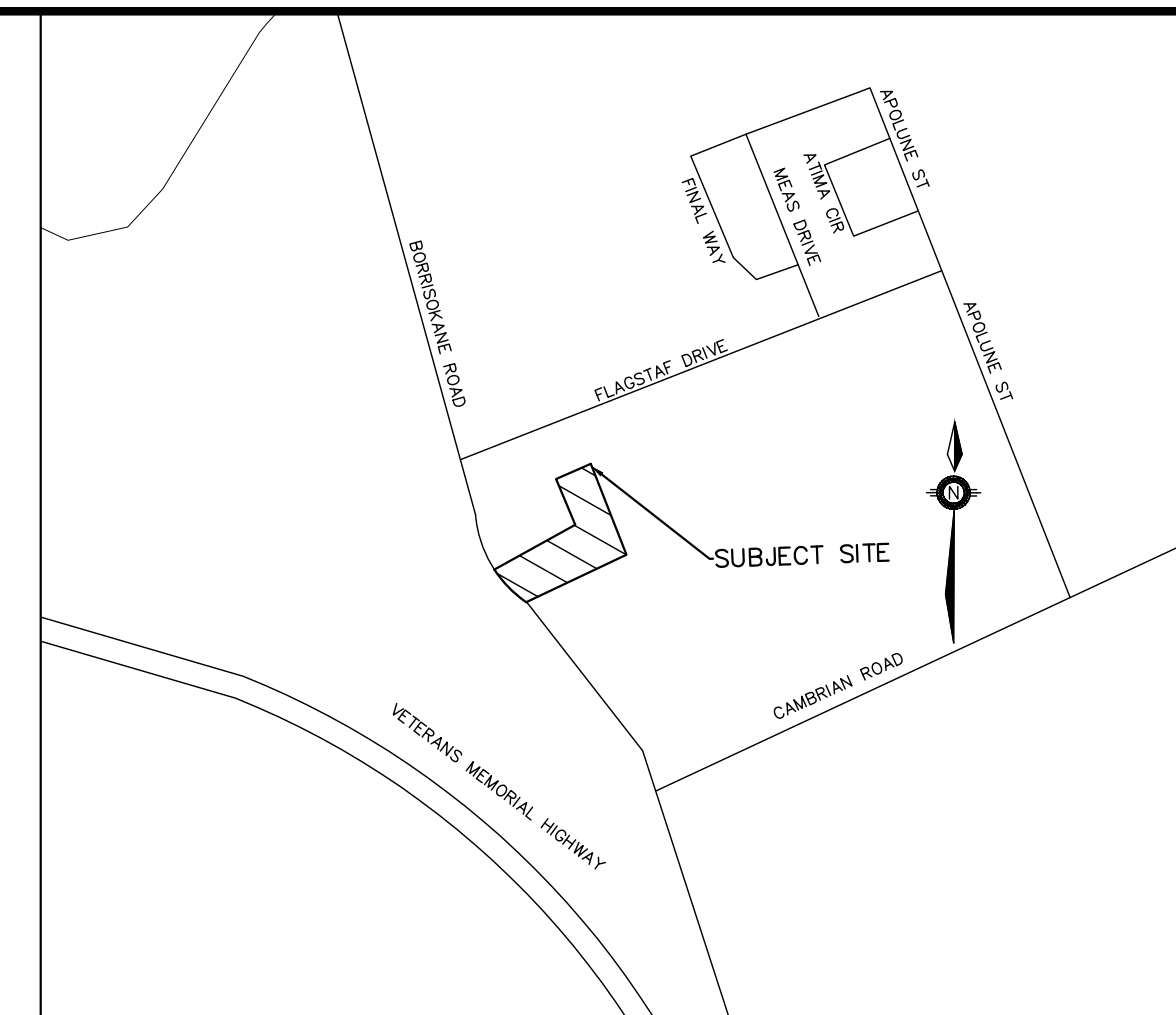
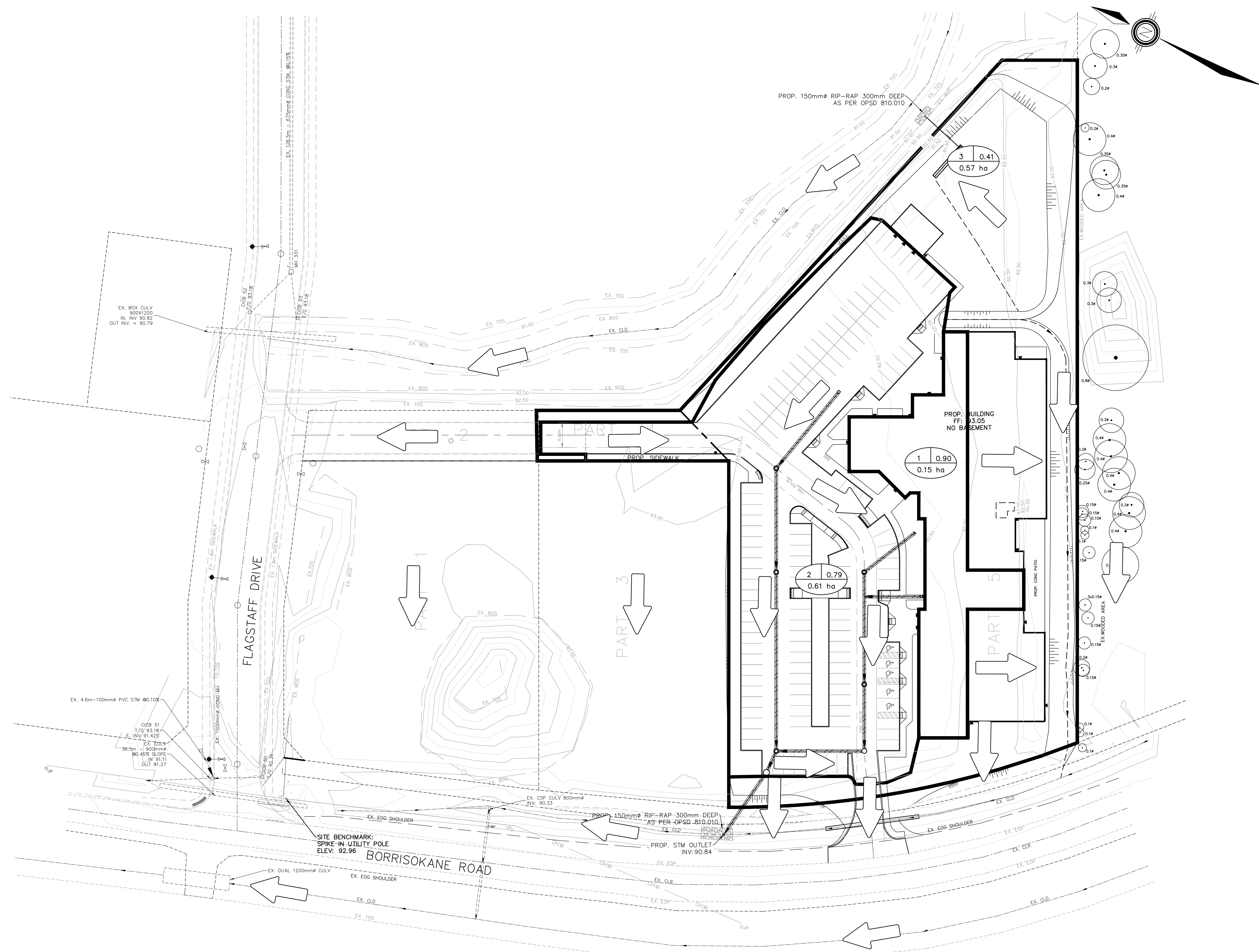
KOREAN COMMUNITY CHURCH
3555 BORRISOKANE ROAD
CITY OF OTTAWA

PRE-DEVELOPMENT STORM
CATCHMENT PLAN



DESIGNED BY	NW/MWD	HORIZ SCALE	1:500	PROJECT #	22099
DRAWN BY	JM	VERT SCALE	N/A	DRAWING #	STM-1
CHECKED BY	MWD	DATE	JUNE 2023	REVISION #	5

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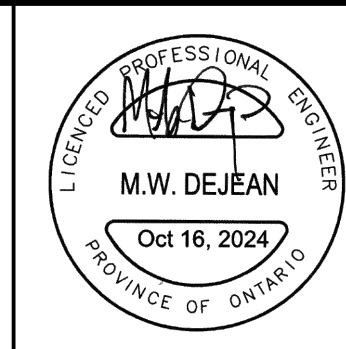
KEYMAP NTS

LEGEND

- OVERLAND FLOW DIRECTION
- CATCHMENT AREA $\frac{1}{1.00 \text{ ha}}$ RUNOFF COEFFICIENT $\frac{0.79}{1.00}$
- AREA IN HECTARES
- CATCHMENT BOUNDARY

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BENCHMARK
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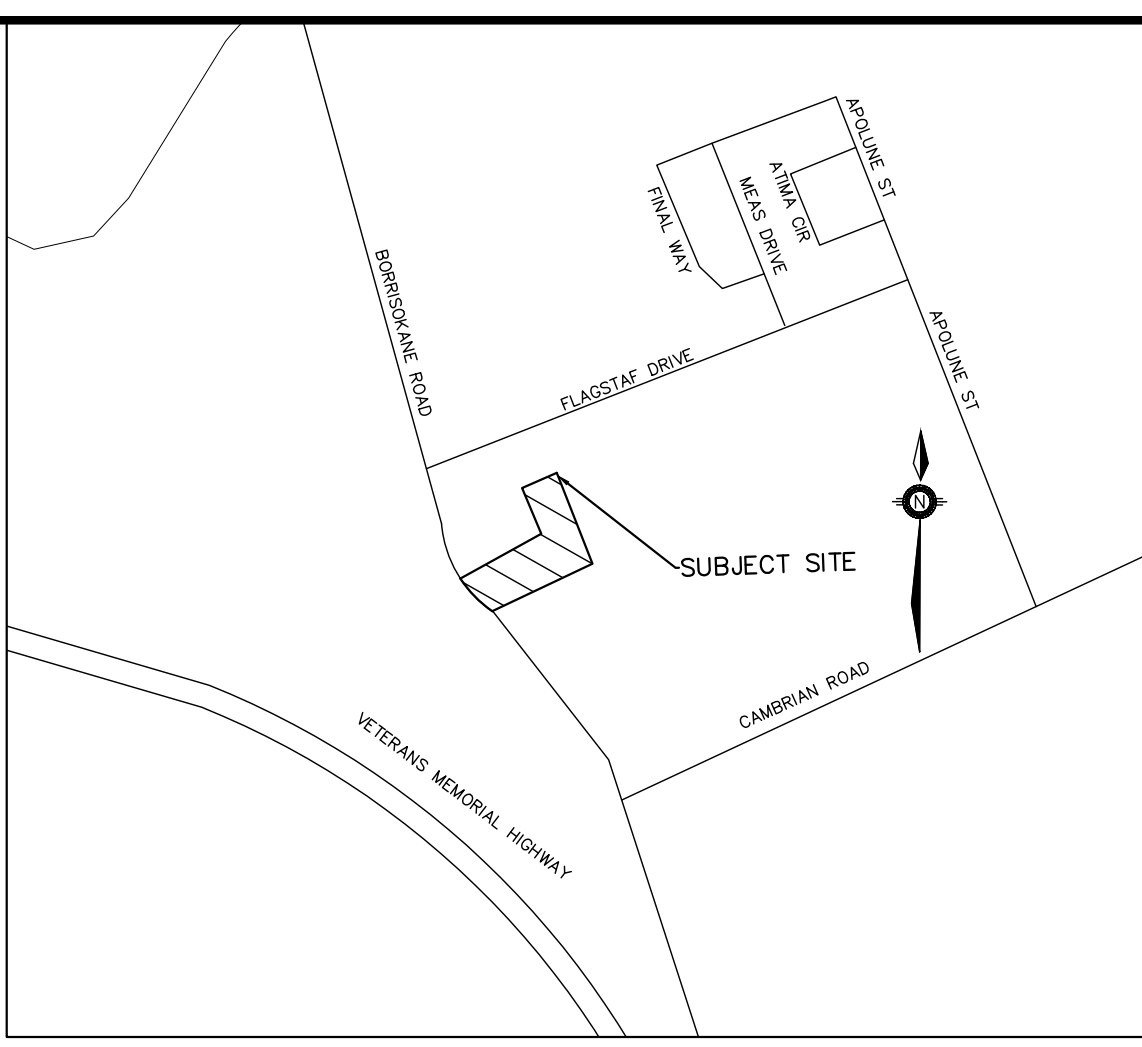
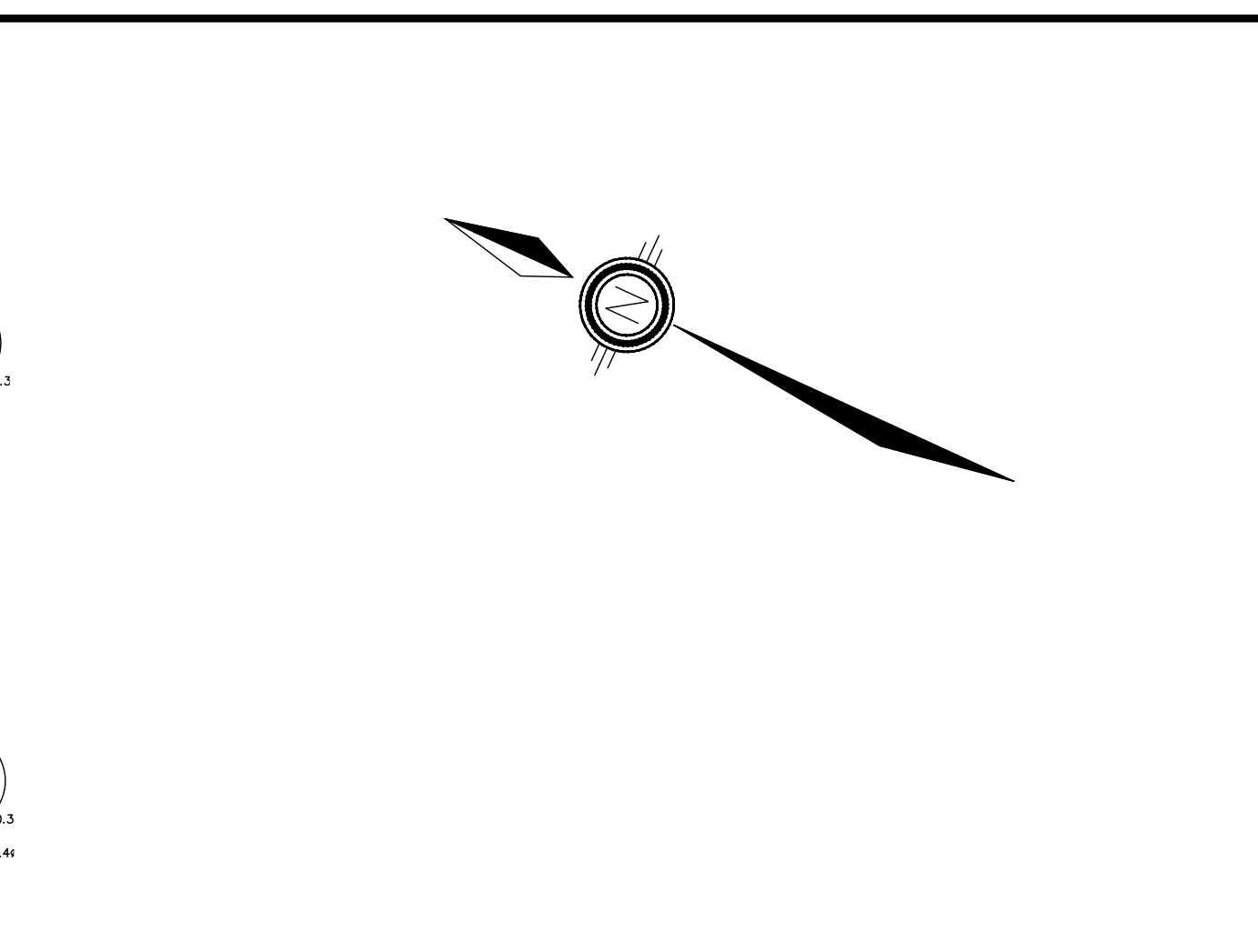
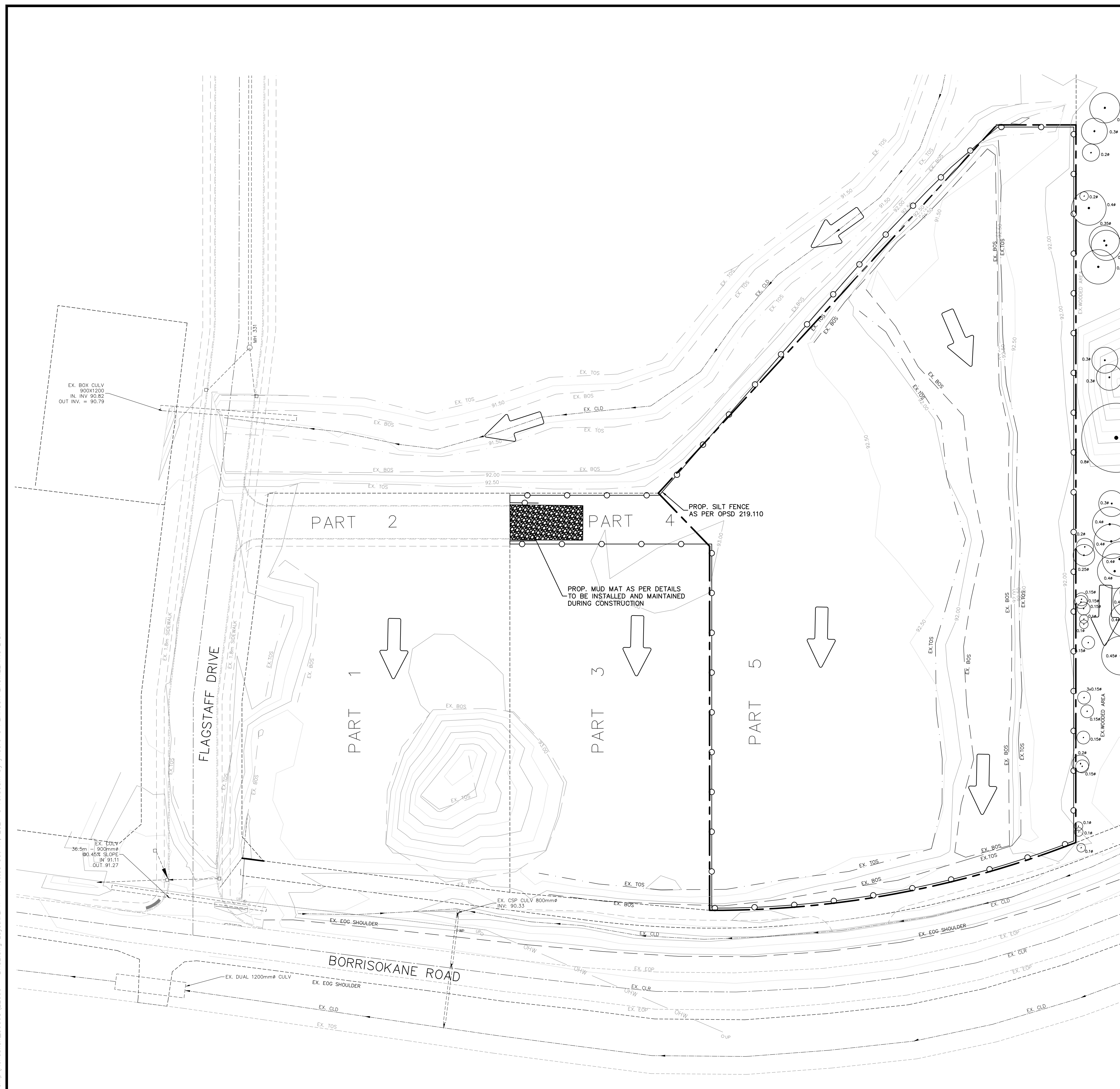


KOREAN COMMUNITY CHURCH
3555 BORRISOKANE ROAD
CITY OF OTTAWA

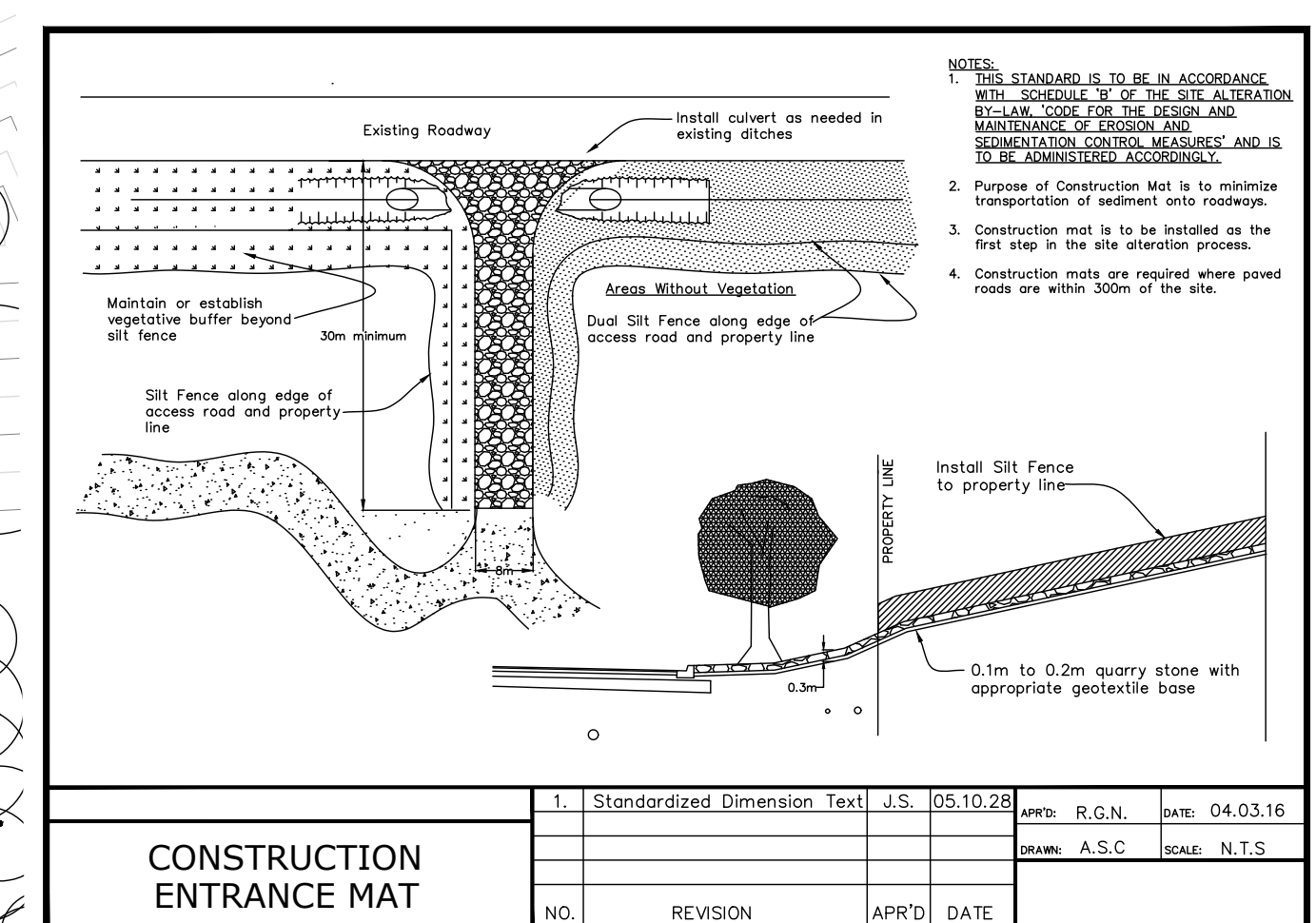
POST-DEVELOPMENT STORM
CATCHMENT PLAN



DESIGNED BY	NW/MWD	HORIZ SCALE	1:500	PROJECT #	22099
DRAWN BY	JM	VERT SCALE	N/A	DRAWING #	STM-2
CHECKED BY	MWD	DATE	JUNE 2023	REVISION #	5



KEYMAP NTS



LEGEND

- EX. CB
- EX. DCB
- ⊙ EX. CBMH
- EX. MH
- EX. MH
- HYD.
- ▽ VB
- PROP. SILT FENCE
- PROPERTY LINE
- ➔ OVERLAND FLOW ROUTE

SEQUENCE OF CONSTRUCTION

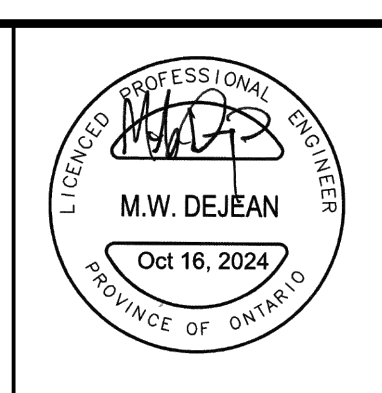
1. ENGINEER TO BE NOTIFIED PRIOR TO INITIATION OF ANY ON SITE WORKS.
2. SILT FENCE AS PER OPSD 219.110
3. VEGETATION REMOVAL MAY COMMENCE AFTER ALL SILT FENCE IS INSTALLED AND APPROVED BY THE ENGINEER.
4. COMMENCE WITH EARTH WORKS AND SITE SERVICING.
5. INSTALLATION OF PROPOSED INFILTRATION FACILITIES TO THE TIME OF LANDSCAPING WORKS.
6. EROSION CONTROL MEASURES TO BE MAINTAINED AS DIRECTED BY THE ENGINEER DURING THE CONSTRUCTION PERIOD. ADDITIONAL CONTROL MEASURES MAY BE REQUIRED AT THE DISCRETION OF THE ENGINEER.
7. ALL DISTURBED GROUND LEFT INACTIVE FOR MORE THAN 30 DAYS SHALL BE STABILIZED WITH SEED, SOO, MULCH OR OTHER ADEQUATE COVERING, AS INSTRUCTED BY THE ENGINEER.

NOTES FOR SEDIMENT & EROSION CONTROL

1. DISTURBED AREAS THAT HAVE FAILED TO HAVE STABLE GROUND COVER ESTABLISHED BY OCTOBER 30TH SHALL BE PROTECTED WITH A SILTATION CONTROL FENCE OR STRAW MULCH ETC. AND MAINTAINED BY THE CONTRACTOR UNTIL VEGETATION BECOMES ESTABLISHED IN THE SUBSEQUENT GROWING SEASON.
2. ANY DEWATERING WASTE SHALL BE DISCHARGED TO A VEGETATED AREA AT LEAST 30m FROM ANY WATERCOURSE AND FILTERED. FILTERING METHODS MUST BE APPROVED BY THE SITE ADMINISTRATOR.
3. SILT FENCE SHALL BE PUT IN PLACE PRIOR TO AND MAINTAINED DURING ALL GRADING. SILT FENCE TO BE INSPECTED PRIOR TO COMMENCEMENT OF EARTH GRADING ACTIVITIES. SILT FENCE TO BE INSPECTED AND REPAIRED OR REPLACED IF DAMAGED AS DIRECTED BY THE SITE ADMINISTRATOR. SILT CONTROLS TO BE INSPECTED ON A REGULAR BASIS AND AFTER EVERY RAIN EVENT. INSTALLATION SHALL BE TO THE MANUFACTURER'S RECOMMENDED SPECIFICATIONS.
4. THE CONTRACTOR SHALL BE PREPARED FOR UNEXPECTED CONDITIONS AND ACCORDINGLY HAVE STOCKPILED MATERIALS ON SITE FOR NECESSARY REPAIRS AS A RESULT OF FAILED OR INADEQUATE CONTROL MEASURES. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE A WEEK, AND AFTER EVERY RAINFALL EVENT.
6. CONTRACTOR SHALL OBTAIN A CURRENT COPY AND BECOME FAMILIAR WITH OPSD 577, CONSTRUCTION SPECIFICATION FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AS WELL AS ALL APPLICABLE MUNICIPAL STANDARDS.
7. THE CONTRACTOR MAY CONSIDER ALTERNATIVE SEDIMENT AND EROSION CONTROL MEASURES. SUCH MEASURES SHOULD BE PRESENTED IN WRITING FOR APPROVAL OF THE SITE ADMINISTRATOR AND MUST BE APPROVED IN WRITING BY THE MUNICIPALITY AND CONSERVATION AUTHORITY.
8. THE TOPS OF ALL FILTER FABRIC MUST BE A MINIMUM OF 1.0 METRES ABOVE THE GROUND LEVEL AND ATTACHED TO THE FENCE WITH A CONTINUOUS STEEL WIRE. ALTERNATIVELY, THE FILTER FABRIC MUST BE FOLDED OVER THE TOP OF THE FENCE AND ATTACHED TO THE FENCE WITH WIRE LOOPED THROUGH THE FABRIC ON BOTH SIDES OF THE FENCE. FILTER FABRIC IS TO BE TERRAFIX 270R OR EQUIVALENT.
9. ALL DISTURBED GROUND LEFT FOR MORE THAN 30 DAYS SHALL BE STABILIZED BY SEEDING, SODDING, MULCHING, OR COVERING OR OTHER EQUIVALENT CONTROL MEASURES. THIS PERIOD OF INACTIVITY SHALL BE AT THE DISCRETION OF THE CITY OF OTTAWA BUT SHALL NOT EXCEED THIRTY DAYS OR SUCH LONGER PERIOD DEEMED ADVISABLE BY THE CITY OF OTTAWA'S PLANNING, INFRASTRUCTURE AND ECONOMIC DEVELOPMENT DEPARTMENT.
10. CONTRACTOR RESPONSIBLE FOR MUD TRACKING, PREVENTION, AND MAINTENANCE ON BORRISKANE RD.
11. ROADS TO BE LEFT IN A BROOM SWEEP CONDITION AT THE END OF EACH WORK DAY.
12. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES, TO PROVIDE FOR PROTECTION OF THE AREA DRAINAGE SYSTEM AND THE RECEIVING WATERCOURSE, DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR ACKNOWLEDGES THAT FAILURE TO IMPLEMENT APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES MAY BE SUBJECT TO PENALTIES IMPOSED BY ANY APPLICABLE REGULATORY AGENCY.

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BENCHMARK
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 ELEV: 92.96



KOREAN COMMUNITY CHURCH
 3555 BORRISKANE ROAD
 CITY OF OTTAWA

EROSION PROTECTION AND REMOVALS PLAN

PEARSONENGINEERING.COM PH. 705.719.4785

DESIGNED BY	NW/MWD	HORIZ SCALE	1:500	PROJECT #	22099
DRAWN BY	JM	VERT SCALE	N/A	DRAWING #	EPR-1
CHECKED BY	MWD	DATE	JUNE 2023	REVISION #	5

Appendix C Landscape Plan





TOPOGRAPHICAL PLAN OF SURVEY OF PART OF LOT 11 CONCESSION 3 (RIDEAU FRONT) Geographic Township of Nepean CITY OF OTTAWA
 Surveyed by Annis, O'Sullivan, Vollebakk Ltd.
 PARTS 4 & 5 OF PLAN 4R-34600

TYPICAL PLANTING BLOCK - DECIDUOUS (DEC.)

- LEGEND**
- SERVICEBERRY 2 m O.C.
 - BLUE BEECH
 - YELLOW BIRCH
 - RED MAPLE
 - BURR OAK
 - ⊕ SNOUBERRY 1 m O.C.

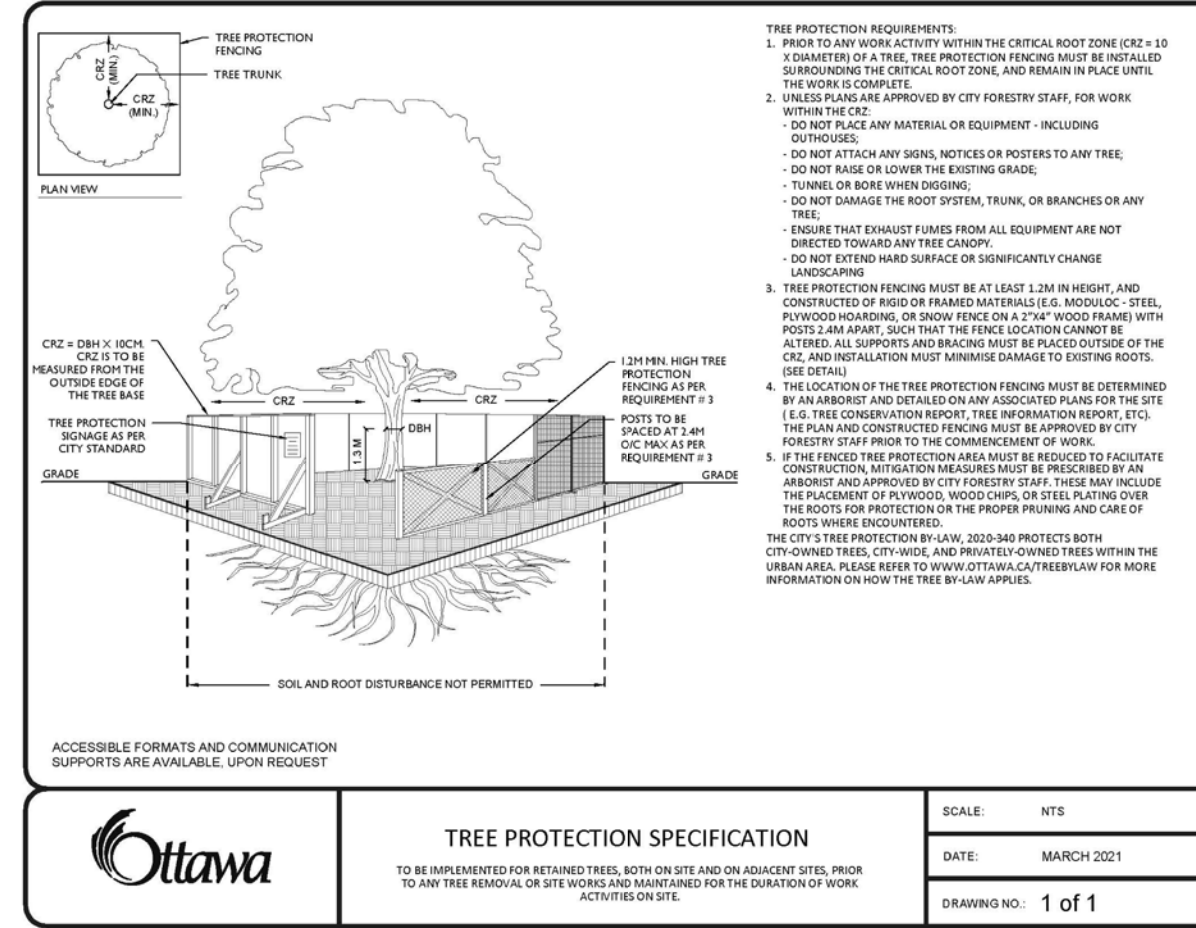
TYPICAL PLANTING BLOCK - CONIFEROUS (CON.)

- LEGEND**
- △ TAMARACK
 - ⊗ EASTERN WHITE CEDAR

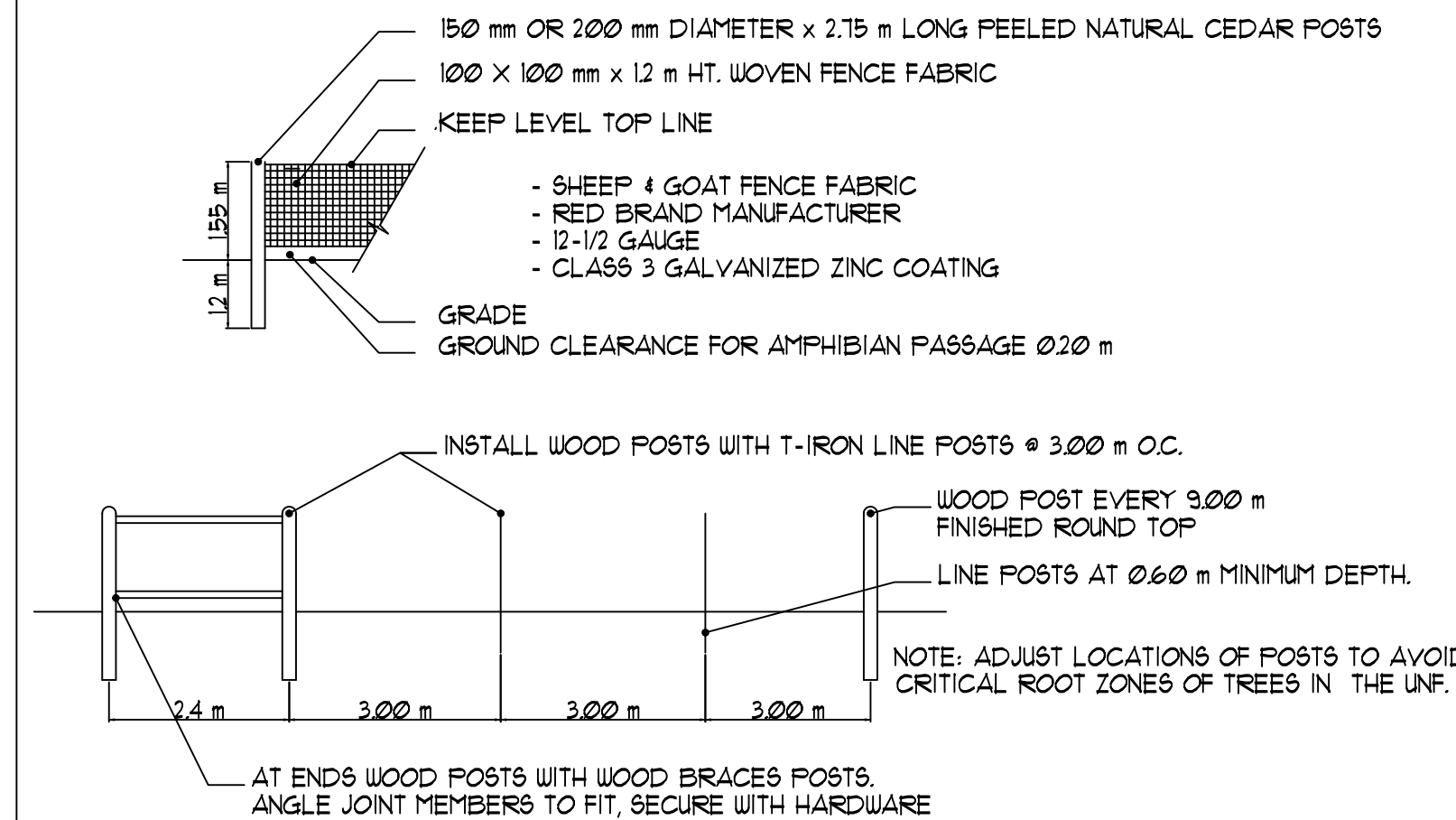
- LEGEND**
- ▨ CONCRETE SIDEWALKS
 - TREE PROTECTION FENCE ALONG SOUTH PROPERTY LINE (SEE DETAIL ABOVE)

GENERAL NOTES:

- LANDSCAPE BUFFER TO BE MULCHED WITH APPROVED MATERIAL.
- SUBMIT SAMPLE IN ADVANCE FOR APPROVAL

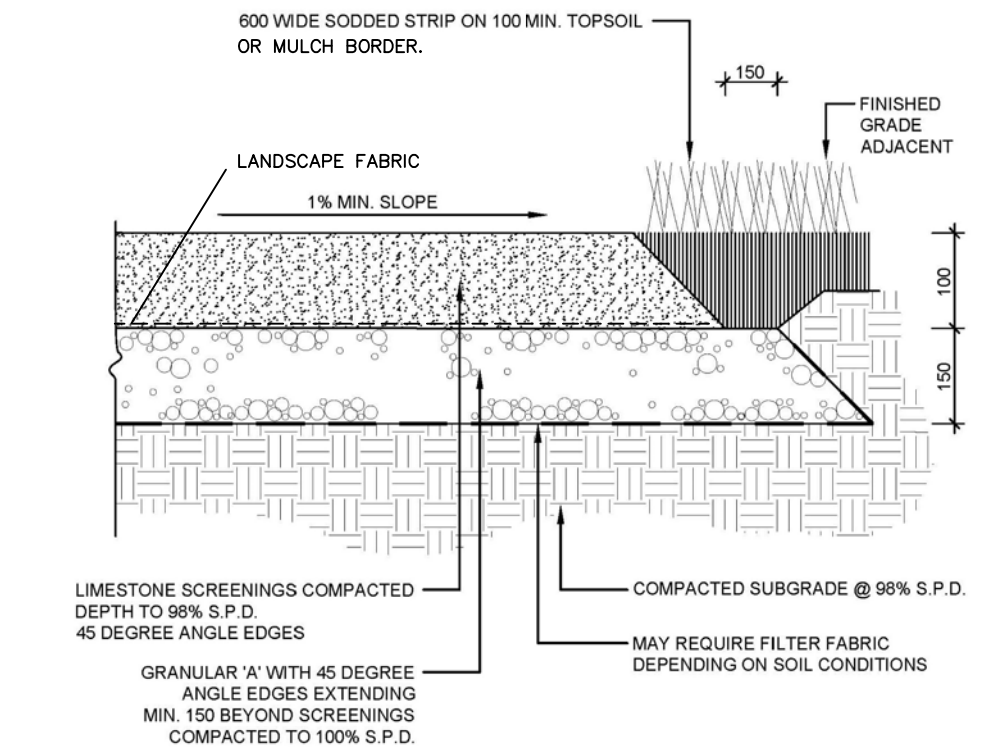


POSTS & FENCE DETAIL



GENERAL NOTES:

- INSTALL WITH POST SURFACE 50 mm INSIDE PROPERTY LINE AND WITH FENCE FABRIC TO INSIDE.
- USE SUITABLE GALVANIZED METAL FASTENERS
- BUILD WIRE MESH BOUNDARY FENCE AND, ATTACH AND SUBSEQUENT REMOVAL OF TEMPORARY SILT CONTROL FENCE FABRIC TO MAINTAIN INTEGRITY OF THE NEW PERMANENT BOUNDARY FENCE



NOTE: 1. ALL MEASUREMENTS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
 STONEDUST PATH DETAIL (PP-06) (CITY OF OTTAWA)

PROTECTION OF EXISTING TREES & VEGETATION AREAS

1. Trees, individual or groups, and areas of existing vegetation have been identified on this plan. Report any discrepancies to the landscape consultant immediately and prior to commencing work.
2. Prior to commencement of construction on site, erect temporary barrier fences around protected trees and areas. At minimum, fences to be located beyond outer edge of tree canopies, i.e. drip line plus 1 metre. Any variation shall be subject to approval.
3. Temporary barrier shall be preservation hoarding as per City of Ottawa detail.
4. The existing grade within the protected root zone area shall remain undisturbed during construction, and storage of materials or equipment shall be prohibited. No soil or debris shall be placed over root systems of trees and plants within protective fencing. No contaminants shall be dumped, drained or flushed over feeder roots e.g. exhaust of standing vehicles, watering down of concrete trucks, etc. At time of site grading and related site work, remove barrier fence and all related accessories. Disposal shall remain the responsibility of the Contractor.
5. After construction of building footings and when trees are in full and mature leaf, assess trees and prune out dead wood. Where necessary, trees shall be pruned and shaped to restore overall balance between roots and top growth, and to restore appearance of the tree. A meeting with the landscape consultant is required prior to trimming operations. Trim limbs away from building and utility lines, and prune lower branches on selected trees to clear minimum 1800mm above grade for sight lines, near paths and path junctions. Dispose of debris as part of this contract. Woody material free of disease and insect infestation may be chipped and stored on site for use as mulch on paths and shrub beds.
6. At time of site grading, use small machine to smooth surface at base of trees and over root zone to facilitate lawn cutting in areas designated as lawn. Minimized disturbance to roots and in particular fibrous feeder roots. Ensure positive drainage. Grades within root zone not to alter more than 50mm from existing. Fill deeper depressions with sandy topsoil. Refer landscape plan for sodding and planting instructions. If grades around trees or selected areas are deemed to require substantial change, precautions such as dry welling, retaining walls and root feeding shall be undertaken as directed.
7. Leave site in tidy condition.
8. Protected trees shall be reassessed after construction by a tree management professional. All trees that have died or have been damaged beyond repair shall be removed and replaced by the General Contractor and/or Owner.

SITE PLAN STATISTICS

- SITE PLAN = PARTS 2, 4, 5
- SITE AREA = 19923 M²
- BUILDING AREA = 29135 M² (20.9%)
- PARKING AREA = 4566 M² (32.8%)
- SIDEWALKS AREA = 871 M² (6.2%)
- LANDSCAPE AREA = 55105 M² (40%)
- PARKING REQUIRED = 110 SPACES + LOADING
- PARKING PROVIDED = 135 SPACES + 1 LOADING

GENERAL LANDSCAPING NOTES

- Verify servicing and locate utilities prior to excavation.
- Confirm site readiness and advise landscape architecture consultant of installation schedule.
- Verify listed quantities with plan. Report discrepancies immediately. Ensure soil mixture including topsoil is suitable for work.
- Mark out locations of trees for approval prior to planting.
- Set out shrubs and ground covers for approval prior to planting.
- All tree sources, planters and shrub beds to be mulched.
- Any rejected material shall be replaced immediately.
- Ensure adequate watering of plantings to first winter dormancy.
- Temporary staking to be removed by landscape contractor following acceptance at one year warranty review. Protect existing trees and natural areas to remain.
- Where there is a discrepancy between drawings and Municipal specifications, the Municipal specifications shall prevail.

TREE PLANTING

- Select specimen to suit location, setting plant in same level and orientation it grew, i.e. north side of trunk facing north. Set nursery grown plants in planting pit and make minor adjustment to place plant for best appearance from main views. Set tree plumb in pit and coordinate installation to remove rope and wire basket as pit is backfilled, clipping the basket away in pieces without disturbing the tree. Remove all debris from planting pit. A mixture of 2 parts soil with 1 part soil specified amendment. Tamp in 150mm layers, water thoroughly to saturate pit and surrounding soil. It is imperative the wire basket be removed and planting technique ensure the establishment of the tree.
- Stake securely with 2 L-irons set plumb and at equal height. The tree to stakes with #9 gauge galvanized wire encased in 2-ply rubber hose encircling tree so that no wire is in direct contact with the tree. Ensure wire is securely attached to stakes and twist wire ends to eliminate exposed cuts. Do not pierce root ball with stakes. For deciduous trees, tie tree about height of first main branch. For coniferous trees, tie tree about half height of tree. Trees planted in exposed locations or on slopes may require three stakes. 100mm layer approved mulch such as shredded leaf litter or screened composted manure or dark coloured shredded wood.
- Burlap wrapping shall be removed for inspection of trunk, and replaced. Install for length of trunk to first main branch. In addition, for trees not planted in beds, provide an approved plastic moving guard, such as a 200mm length 'big' foot. For trees which may be susceptible to rodent damage, an approved plastic guard shall be required instead, refer to plant list. Create saucer at base of tree with most edge at perimeter of saucer. Neatly tool edge of mulched saucer to create 1m diameter circles at base of tree. Trim only injured plant parts; retaining natural shape. Ensure binding in branches is removed. Damaged or poorly structured plants are unacceptable. Bark damage including loose bark, unhealed wounds and splits in trunk bark is cause for rejection of tree.

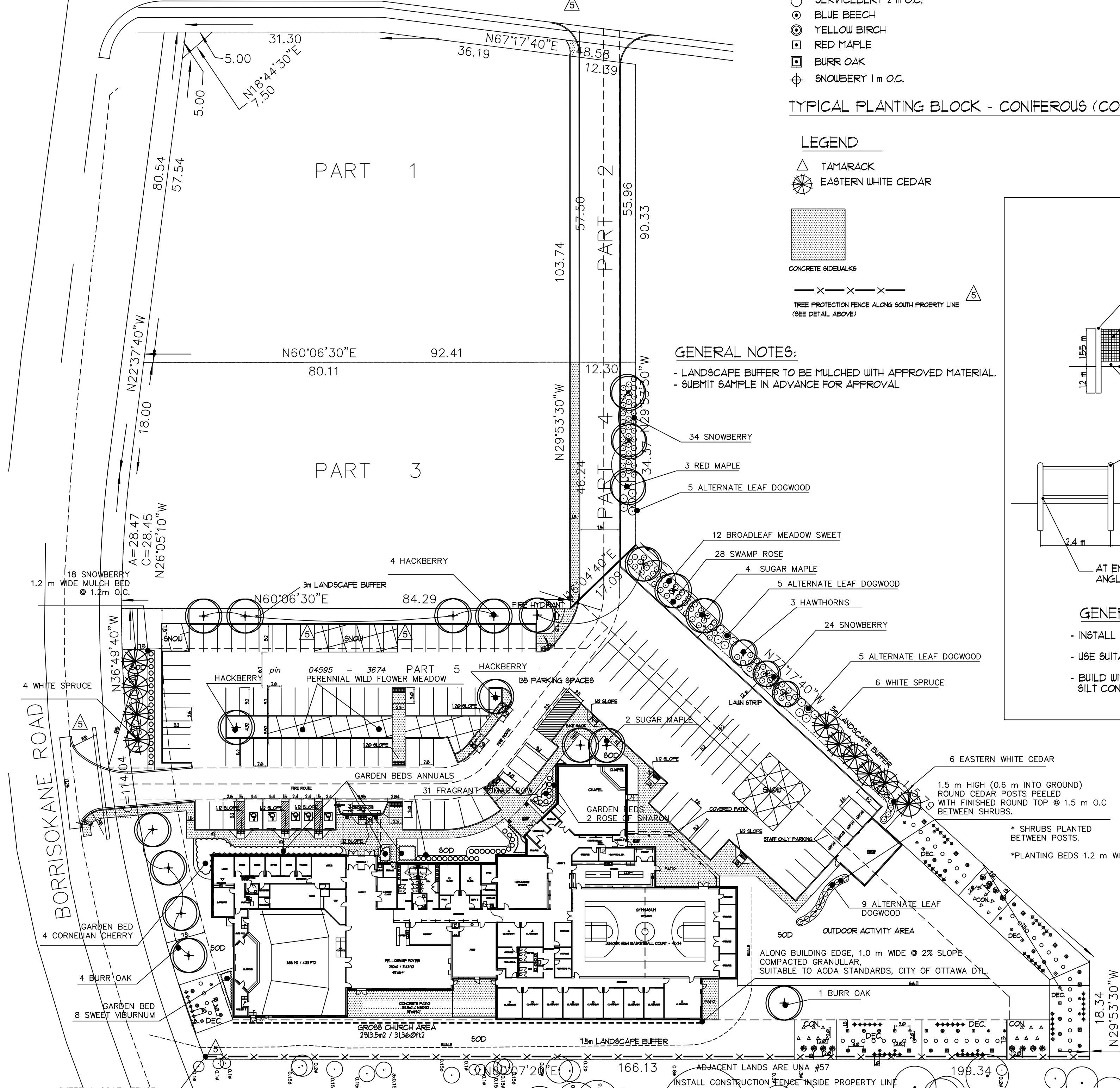
SODDING AND SEEDING

- After rough grading is approved and topsoil has been spread and finish graded to depth specified in contract or, a minimum 100mm compacted depth (which ever is more), inspect site readiness for sodding. Dampen soil surface to minimize dust. Respect governing regulations with respect to pollution control. Apply any required fertilizer as determined by contract soil testing and robe into top 100mm topsoil. Roll to consolidate topsoil, leaving smooth and firm against deep footprints. Just prior to sodding or seeding, machine rake soil to smooth surface and eliminate minor irregularities.
- Sod shall be #1 nursery sod for lawns, uniformly thick and freshly cut. Cultivar blend consistent throughout. Do not supply sod with plastic based soil. Lay sod within 36 hours of cutting. Store in shade and keep cool until installed. Sod must be set with tight joints which are not visible upon completion. Do not overlap edges. Water sod within one hour of installation to thoroughly saturate sod and top 150mm of soil. Apply water by sprayer method or similar temporary irrigation method which applies water in a manner which does not displace sod or soil. After sod has dried sufficiently, roll sodded area to ensure a good bond between sod and soil and to remove minor irregularities in the lawn surface. Peg lawn pieces on slopes where necessary. Do not use metal pegs.
- All sodded and seeded areas are subject to a one year warranty from date of acceptance. Unless noted otherwise, grass are to be sodded.
- Seed as specified on drawings. Refer also to Golder Associates Report on Stormwater Management dated April 2017 for erosion and sediment control measures during construction.

SHRUB & GROUND COVER PLANTING

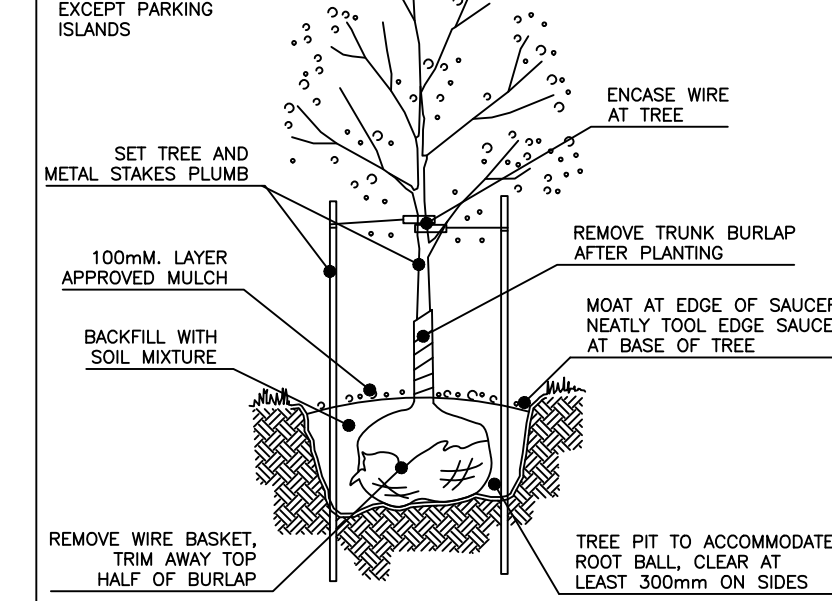
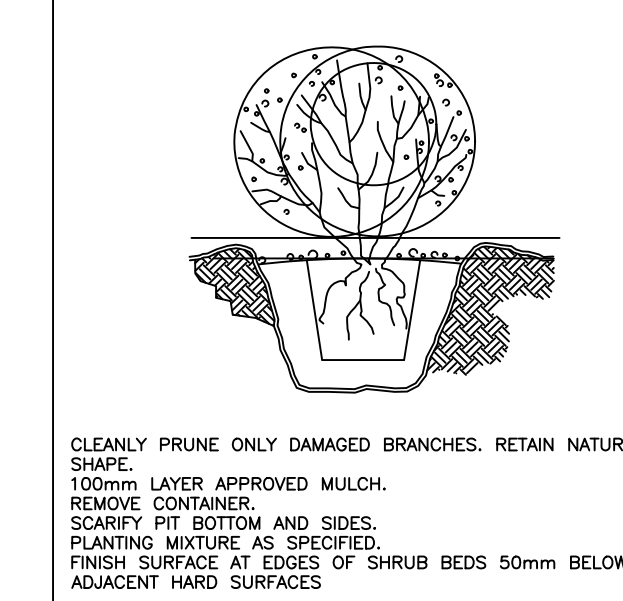
- PLANTING BEDS AND SOIL MIXTURE
- Shrubs and ground covers, to be contained in a continuous bed. Planting beds to be neatly set out and tool edged to create a smooth line with lawn. Generally, shrubs to be set evenly spaced from edge of planting bed or walkway or curb, minimum 60cm. Soil mixture for planting beds and tree pits to be horticultural quality topsoil free of weeds and grass roots. May be available from stockpile. Topsoil to be blended with aged screened soil amendment such as commercially prepared leaf litter or barnyard manure. 2 parts topsoil and 1 part soil amendment. Prepare planting beds to 45cm depth, crown beds, meet walkway 50mm below finish grade of walk. Remove all containers, plant and create a saucer at the base of each plant to facilitate watering. Water each plant thoroughly prior to placement of mulch. Install approved dark coloured mulch to a depth of 100mm in beds. Provide mulch sample for approval. See mulch notes on planting details.

Quantity	Size	Botanical Name	Common Name
DECIDUOUS TREES			
14	50mm cal	Acer rubrum	Red Maple
6	50mm cal	Acer saccharum	Sugar Maple
4	40mm cal	Betula alleghaniensis	Yellow Birch
20	40mm cal	Carpinus caroliniana	Blue Beech
3	45mm cal	Cataegus spp.	Native Hawthorn
16	40mm cal	Quercus macrocarpa	Burr Oak
6	50mm cal	Q. coccinea	Hackberry
CONIFEROUS TREES			
10	100 cm	Picea glauca	White Spruce
20	150 cm	Larix laricina	Tamarack
18	150 cm	Tsuga occidentalis	Eastern White Cedar
DECIDUOUS SHRUBS			
41	100 cm	Anastachya canadensis	Serviceberry
4	100 cm	Cornus mas	Common Cherry
2	150 cm	Hibiscus syriacus 'Bluebird'	Blue Bird Rose of Sharon
31	40 cm	Rhus aromatica	Fragrant Sumac
342	50 cm	Symphoricarpos albus	Snowberry
24	100 cm	Cornus alternifolia	Alternate Leaf Dogwood
28	40 cm	Rosa palustris	Swamp Rose
10	60 cm	Spiraea latifolia	Broadleaf Meadowsweet
6	60 cm	Viburnum lentago	Sweet (highberry) Viburnum
CONIFEROUS SHRUBS			
PERENNIALS, plug trays, total 1250 plants			
		Anemone canadensis	Canada Anemone
		Buckeye tulipide	Black-eyed Susan
		Symphoricarpos albus	Skj Blue Aster
		Tellium pubescens	Tall Meadows Rue



LANDSCAPE PLAN - OVERALL

- The following mitigation measures shall be applied during site preparation and construction to minimize potential impacts to the Cambrian Woods UNF:
- Erect construction fencing 45 cms. inside the southern property line to prevent unnecessary damage to the roots and soils of the UNF during construction works. The fence must be highly visible (orange construction fence) and remain in place until all construction work is completed. Fencing at this location will be situated beyond the critical root zone (CRZ, i.e. 10 x the trunk diameter at breast height) of the trees of the UNF;
 - Do not place any material or equipment within the CRZ of the tree;
 - Do not attach any signs, notices or posters to any tree;
 - Do not raise or lower the existing grade within the CRZ without approval;
 - Do not damage the root system, trunk or branches of any tree;
 - Tunnel or bore when digging within the CRZ of a tree; and
 - Ensure that exhaust fumes from equipment are not directed towards the tree canopy in the UNF.
- Environmental Impact Study and Tree Conservation Report for 3555 Borrisokane Road, Ottawa PAI1461 2023-10-02 Kilgour & Associates Ltd. 15



All dimensions to be checked and verified on the job. Any discrepancies are to be reported to the Consultant. All drawings remain the property of the Consultant. Only latest approved drawings to be used for construction.

Miriam L.R. Mutton
 OALA CSLA
 Landscape Architect
 Cobourg, Ontario
 (905) 372-1151

Project
 OTTAWA KOREAN COMMUNITY CHURCH
 3555 BORRISOKANE ROAD
 OTTAWA, ONTARIO

LANDSCAPE AND TREE PRESERVATION PLAN

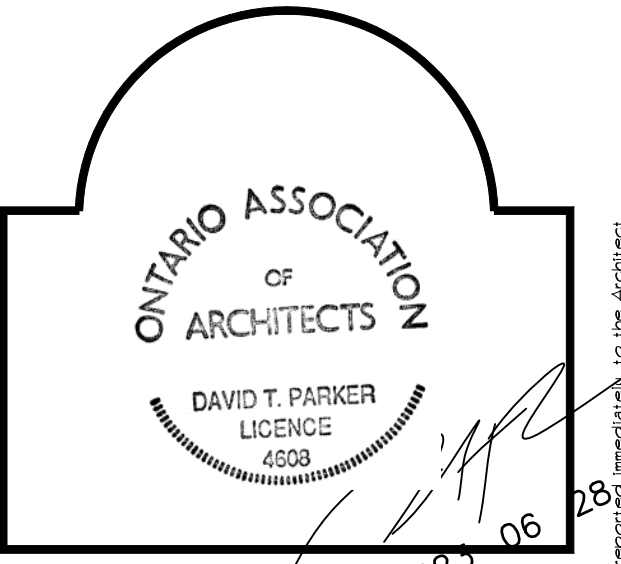
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FILE NUMBER D07-12-24-0063
 PLAN NUMBER #18788

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Appendix D Elevations Drawings





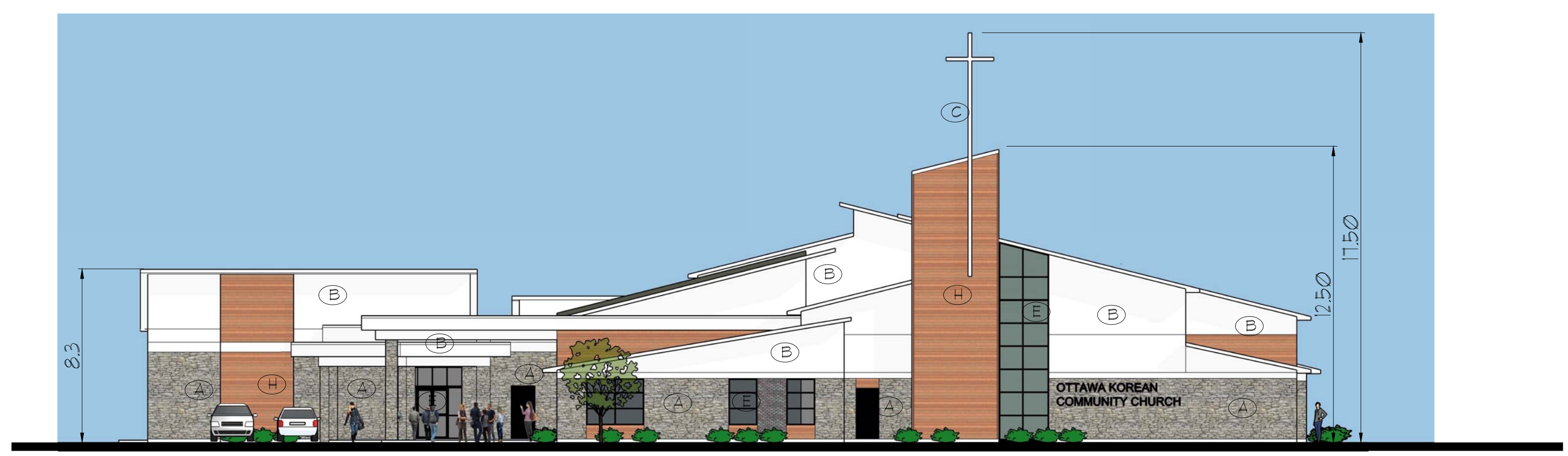
REVISIONS		
1	SITE PLAN SUBMISSION	JUNE 28/23
2	SITE PLAN APPLICATION	MAY 10/24
3	SITE PLAN APPLICATION	JULY 11/24
4	SITE PLAN APPLICATION	SEPT. 18/24
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FRONT (NORTHWEST) ELEVATION
SCALE 1:150

FACADE MATERIALS

- (A) STONE
- (B) STUCCO FINISH (EIFS)
- (C) METAL CROSS
- (D) ASPHALT SHINGLES
- (E) DOOR & WINDOW (TINTED GLASS)
- (F) GARAGE DOOR & MAN DOOR
- (G) AVI PROTEK E ETCHED (BIRD SAFE GLASS) PATTERN 211 VERTICAL
- (H) WOOD LOOK METAL SIDING



LEFT (SOUTHWEST) ELEVATION
SCALE 1:150

OTTAWA KOREAN COMMUNITY CHURCH
 3555 BORRISOKANE ROAD
 OTTAWA, ONTARIO

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 156 St. Paul Street
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SPA3.1	
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scale	1:150
NL 22 - 106	date JUNE 28, 2023

File Number D07-12-24-0063
Plan Number #18188

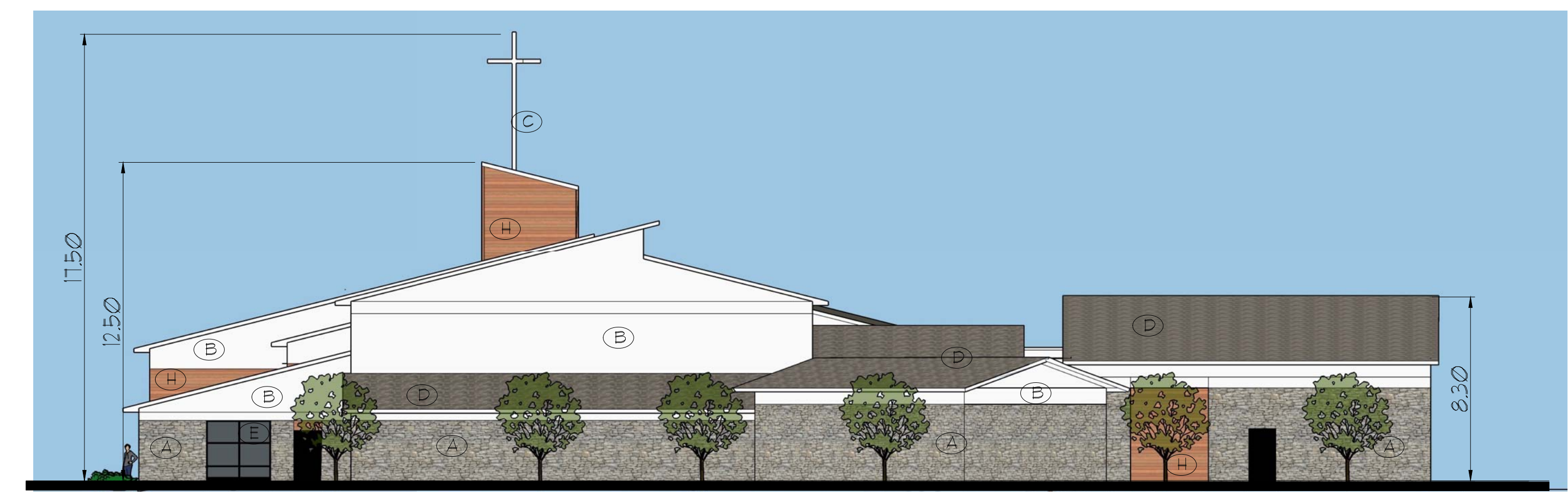
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1	SITE PLAN APPLICATION	JUNE 28/23
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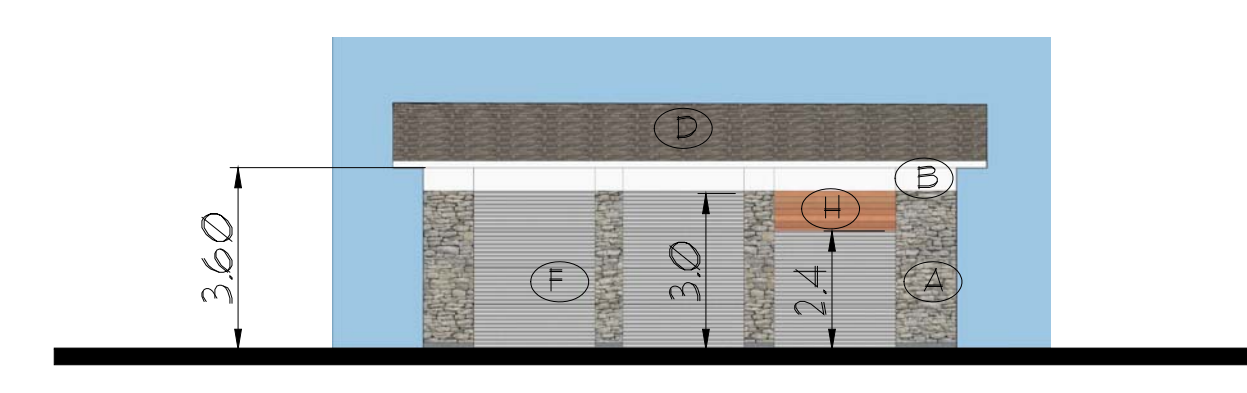


REAR (SOUTHEAST) ELEVATION
SCALE 1:150

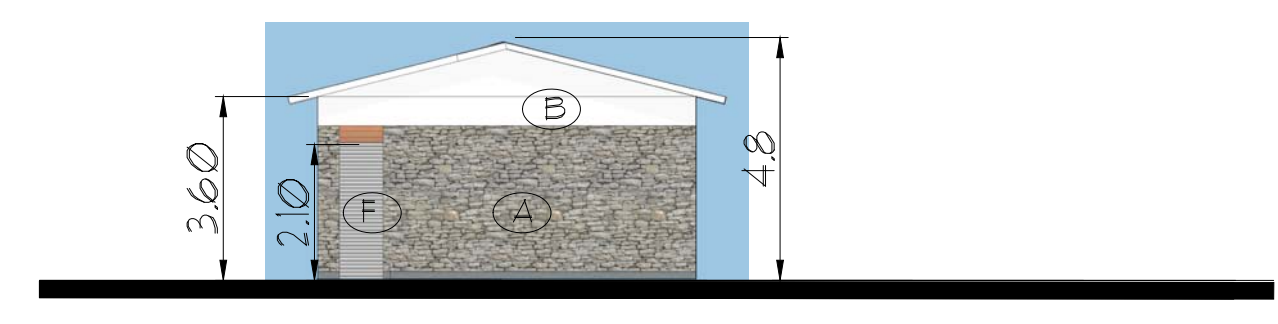


RIGHT (NORTHEAST) ELEVATION
SCALE 1:150

- FACADE MATERIALS
- (A) STONE
 - (B) STUCCO FINISH (EIFS)
 - (C) METAL CROSS
 - (D) ASPHALT SHINGLES
 - (E) DOOR & WINDOW (TINTED GLASS)
 - (F) GARAGE DOOR & MAN DOOR
 - (G) AVI PROTEK E ETCHED (BIRD SAFE GLASS) PATTERN 211 VERTICAL
 - (H) WOOD LOOK METAL SIDING



GARAGE FRONT ELEVATION
SCALE 1:150



GARAGE SIDE ELEVATION
SCALE 1:150

OTTAWA KOREAN COMMUNITY CHURCH
3555 BORRISOKANE ROAD
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NL 22 - 106	date JUNE 28 2023

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Plan Number #18188

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VIEW OF SOUTHWEST FACADE FROM BORRISOKANE ROAD



VIEW OF NORTHEAST FACADE



REVISIONS		
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2	SITE PLAN SUBMISSION	MAY 10/24
3	SITE PLAN SUBMISSION	JULY 11/24
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NL 22 - 106	date JUNE 28 2023

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 Plan Number #18188

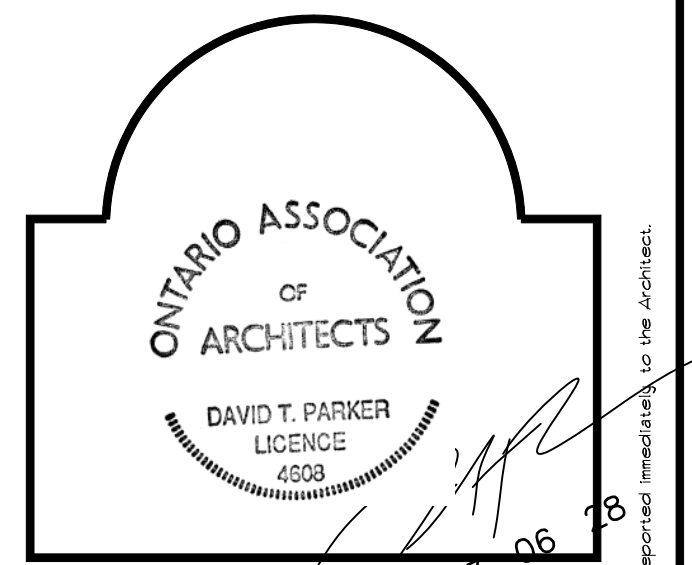
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AERIAL VIEW OF NORTHEAST FACADE



AERIAL VIEW OF SOUTHWEST FACADE



REVISIONS		
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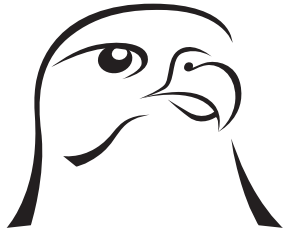
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 Plan Number #18788

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AviProtek[®]E

Walker bird friendly glass with Vitro
high-performance Solarban[®] low-e



In collaboration with Vitro Architectural Glass



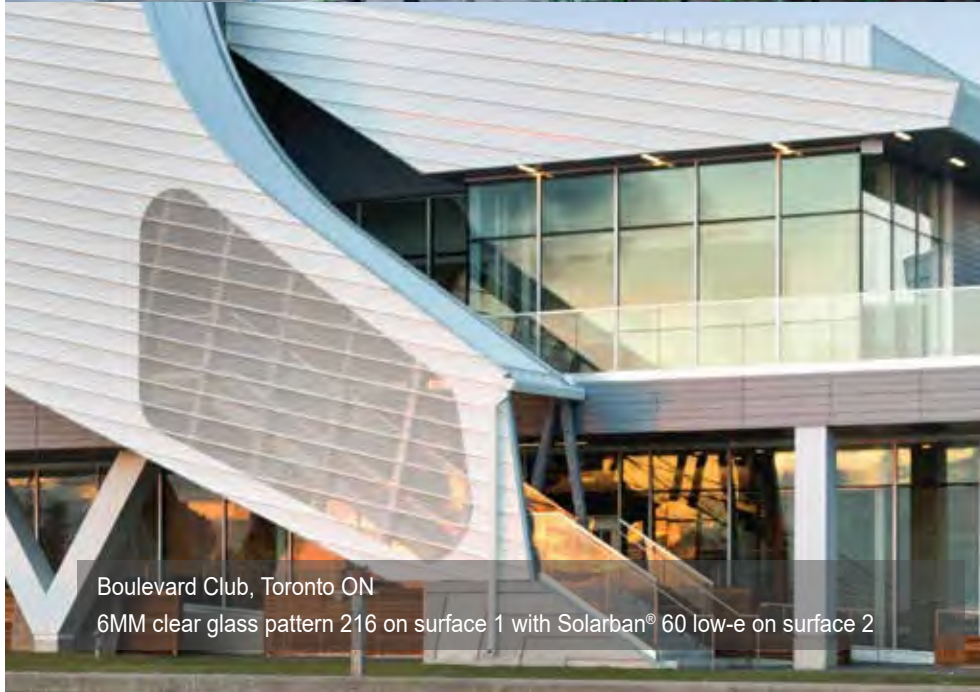
Proven to be effective time and time again...



Oregon Zoo – Portland, OR – LEED Platinum Certified – LEED Credit 55 Bird Deterrence
6MM clear glass pattern 211 surface 1 with Solarban® 70 low-e on surface 2



University of Saskatchewan, Saskatoon, SK
6MM clear glass pattern 217 on surface 1 with Solarban® 70 low-e on surface 2



Boulevard Club, Toronto ON
6MM clear glass pattern 216 on surface 1 with Solarban® 60 low-e on surface 2



University of Minnesota, Falcon Heights MN
6MM clear glass pattern 215 on surface 1 with Solarban® 70 low-e on surface 2

Saving birds and energy!

Patterns on surface 1



211 Vertical



213 Horizontal



214 Organic



215 2" x 2"



216 4" x 4"



217 2" x 2"

Low-e coatings on surface 2

Solarban® Solar Control Low-e Glass Products by Vitro Architectural Glass

Solarban® glass is a spectrally selective glass option which reduces long and short wave (infrared) heat energy, while at the same time allowing visible light to be transmitted through the glass. Solarban® glass products by Vitro Glass let you specify larger spans of glass that maximize natural daylighting without sacrificing thermal efficiency.

With a range of options, the Solarban® family of glass products feature a clear aesthetic with among the highest light-to-solar gain (LSG) ratios in the industry.



Glass

AviProtek Pattern (1) with	VLT	VLR		NFRCU / Winter		SHGC	LSG
		Ext. %	Int. %	Night-time	Argon		
Solarban® 60 (2) + Clear	70	11	12	0.29	0.24	0.39	1.79
Solarban® 70 (2) + Clear	64	12	13	0.28	0.24	0.27	2.37

Due to the low density of the AviProtek® patterns, they have no significant impact on the values above.

Other coatings are available on demand. Please contact your Walker representative.

Bird collisions with glass building facades are the major cause of bird mortality, claiming the lives of hundreds of millions of birds each year. The magnitude of the problem is such that an important trend in making buildings safer for birds has emerged across North America. Municipalities, states and provinces have, and continue to enact bird deterrence legislation. Leading scientists have proven that the use of visual markers on the **exterior (1st) surface** of the glass provides birds with the best chance to identify a solid barrier and avoid collision. Furthermore, the CSA A460 standard requires the use of visual markers being placed on the exterior (1st) surface of the glass.

The AviProtek® E bird friendly glass solution combines acid-etched visual markers on the 1st surface with Vitro's Solarban® high performance low-e coatings on the 2nd surface, creating the most effective bird friendly glazing solution on the market. Architects and building owners alike can now achieve their environmental goals and earn LEED credits while meeting solar performance targets.



Sustainable solution

The AviProtek® E is the ONLY bird friendly glass product available that possesses an EPD – Environmental Product Declaration. Our environmentally responsible solution allows architects to secure an additional LEED point for their projects using Pilot Credit 55 related to bird deterrence. It also meets California building legislation requirement (AB262) to be enacted in 2020.

Product Specifications

Thickness: 6MM (1 /4")

Dimension: 96" x 130" only

Substrates: Clear and Starphire Ultra-Clear™ glass, standard tints available on demand subject to glass availability.

Availability: AviProtek® E glass products are only available from members of the Vitro Certified™ Network.

Quantity: Subject to a minimum of one block of 4,000 lbs or 1,000 sq ft of glass.

Low-e: Available with Solarban® 60 VT, Solarban® 70 VT by Vitro Glass, other coatings are available on demand.

Warranty for the acid-etching: 10 year limited warranty on surface degradation. For all terms and conditions of the Walker Textures® warranty, please contact our Customer Service Department.

Warranty for the low-e coating: For more information, please contact the Vitro Glass Customer Service Department.

Solarban, Starphire, Starphire Ultra-Clear, Vitro and Vitro Certified are trademarks owned by Vitro.