



**Heritage Impact Assessment –
185-205 Derry Road West,
Mississauga, Ontario**

FINAL REPORT

April 3, 2020

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Executive Summary

Jacobs Engineering Inc. (Jacobs) on behalf of the Regional Municipality of Peel retained Stantec Consulting Ltd. (Stantec) to prepare a Heritage Impact Assessment (HIA) for the property located at 185-205 Derry Road West, in the City of Mississauga (the City), within the Regional Municipality of Peel (Region of Peel), Ontario. This property contains the Hunter House, which was designated in 1981 under Part IV of the *Ontario Heritage Act* through City By-law 339-41. The cultural heritage value or interest of the property is based on the architectural value of the Hunter House and its historical association with James Hunter. No landscape components or other buildings on the property are included in the designation by-law. Accordingly, the study area for this HIA focuses exclusively on the Hunter House.

Jacobs was retained by the Region of Peel to complete engineering services for the construction of a new 2,400 millimetre (mm) sanitary trunk sewer as per the *Schedule C Municipal Class Environmental Assessment (EA)* for the *East to West Wastewater Diversion Strategy* (the Project), prepared in 2016 by GM BluePlan Engineering. The EA identified a preferred strategy to divert a portion of wastewater from the east trunk sewer, located on Derry Road East east of Bramalea Road, to the west trunk sewer, located at Creditview Road and Argentia Road. The preferred strategy will consist of the construction of an 11 kilometre long gravity trunk sewer using tunnel boring machines. The sewer will include a total of nine tunnel access shafts to facilitate the tunnel boring machine work and diversion of other sewer flows along the proposed alignment.

In 2016, as part of the EA, a *Cultural Heritage Overview Report* was prepared by Golder Associates Ltd. to assess the existing heritage conditions and provide recommendations for further assessment (Golder Associates Ltd. 2016). Since its completion, the project layout has been modified and now crosses a protected heritage property. As such, the City requested an HIA to determine the impacts of the proposed undertaking on 185-205 Derry Road West and to provide recommendations to mitigate those impacts, if any (City of Mississauga 2019). This HIA was prepared according to the City's HIA Terms of Reference (provided by City staff).

The Hunter House located at 185-205 Derry Road West is designated under Part IV of the *Ontario Heritage Act*. The late 19th century residence displays a high degree of craftsmanship and is a unique example of the Gothic Revival style with Italianate architectural elements. The house is historically associated with James Hunter, a prominent member of the historic hamlet of Derry West. The Hunter House is also the last remaining 19th century residence connected to Derry West and is historically linked to the Derry West Cemetery and Derry West historic plaque situated east of the residence.

The impact assessment determined the potential for indirect impacts from land disturbances related to vibration effects from Project activities. It is understood that Project activities are required within the 50 m buffer suggested. Therefore, in order to establish safe and acceptable vibration levels, it is recommended that a construction vibration assessment be carried out to determine the Zone of Influence (ZOI) for building damage from Project activities, to determine a conservative buffer distance from the residence for certain activities, and to develop site-specific vibration mitigation strategies to address potential



impacts on the residence. This assessment will need to be completed by a qualified engineer or building scientist retained by the selected contractor so that adjustments to machinery can be made, as needed. As part of the vibration assessment, a site appropriate buffer distance should be established and demarcated on all construction drawings (i.e. contractor's proposed site plan). On site, the buffer should be marked using a site appropriate material (i.e. fencing, ropes, etc.). In summary, the following actions are recommended to mitigate the potential for indirect impacts in the form of construction related vibration:

- Vibration studies for the Hunter House should be prepared by a qualified engineer to determine the maximum acceptable vibration levels, or peak particle velocity (PPV) levels, and the appropriate buffer distance between Project activities and the residence
- Provide construction marking on drawings and ground to define the areas around the residence where construction should not occur, based on the results of the vibration study
- Monitor construction within the defined area at appropriate points to confirm that acceptable PPV levels are not exceeded

The Executive Summary highlights key points from the report only; for complete information and findings the reader should examine the complete report.



Project Personnel

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1.0 INTRODUCTION

Jacobs Engineering Inc. (Jacobs) on behalf of the Regional Municipality of Peel retained Stantec Consulting Ltd. (Stantec) to prepare a Heritage Impact Assessment (HIA) for the property located at 185-205 Derry Road West, in the City of Mississauga (the City), within the Regional Municipality of Peel (Region of Peel), Ontario (Figure 1). This property contains the Hunter House which was designated in 1981 under Part IV of the *Ontario Heritage Act* through City By-law 339-41 (Appendix A). The cultural heritage value or interest of the property is based on the architectural value of the Hunter House and its historical association with James Hunter. No landscape components or other buildings on the property are included in the designation by-law. Accordingly, the study area for this HIA focuses exclusively on the Hunter House (Figure 2).

Jacobs was retained by the Region of Peel to complete engineering services for the construction of a new 2,400 millimetres (mm) sanitary trunk sewer as per the *Schedule C Municipal Class Environmental Assessment (EA) for the East to West Wastewater Diversion Strategy* (the Project) prepared in 2016 by GM BluePlan Engineering. The EA identified a preferred strategy to divert a portion of wastewater from the east trunk sewer, located on Derry Road East east of Bramalea Road, to the west trunk sewer, located at Creditview and Argentia Roads. The preferred strategy will consist of the construction of an 11 kilometre (km) long gravity trunk sewer using tunnel boring machines. The sewer will include a total of nine tunnel access shafts to facilitate the tunnel boring machine work and diversion of other sewer flows along the proposed alignment.

In 2016, as part of the EA, a *Cultural Heritage Overview Report* was prepared by Golder Associates Ltd. to assess the existing heritage conditions and provide recommendations for further assessment (Golder Associates Ltd. 2016). Since its completion, the Project layout has been modified and now crosses a protected heritage property. As such, the City has requested the completion of a HIA to determine the impacts of the proposed undertaking on 185-205 Derry Road West and to provide recommendations to mitigate those impacts, if any (City of Mississauga 2019). This HIA was prepared according to the *City of Mississauga Heritage Impact Assessment Terms of Reference* (TOR), provided by City staff (see Section 2.1).



- Legend**
- 185-205 Derry Road West Property Boundary
 - Expressway / Highway
 - Major Road
 - Minor Road
 - Railway
 - Hydro Line
 - Unknown Transmission Line
 - Watercourse (Intermittent)
 - Watercourse (Permanent)
 - Waterbody
 - Wooded Area
 - Lot
 - Municipal Boundary, Upper
 - Municipal Boundary, Lower
 - Hunter House



- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2020.



Project Location: 160940704 REVA
 City of Mississauga, ON Prepared by BCC on 2020-04-02

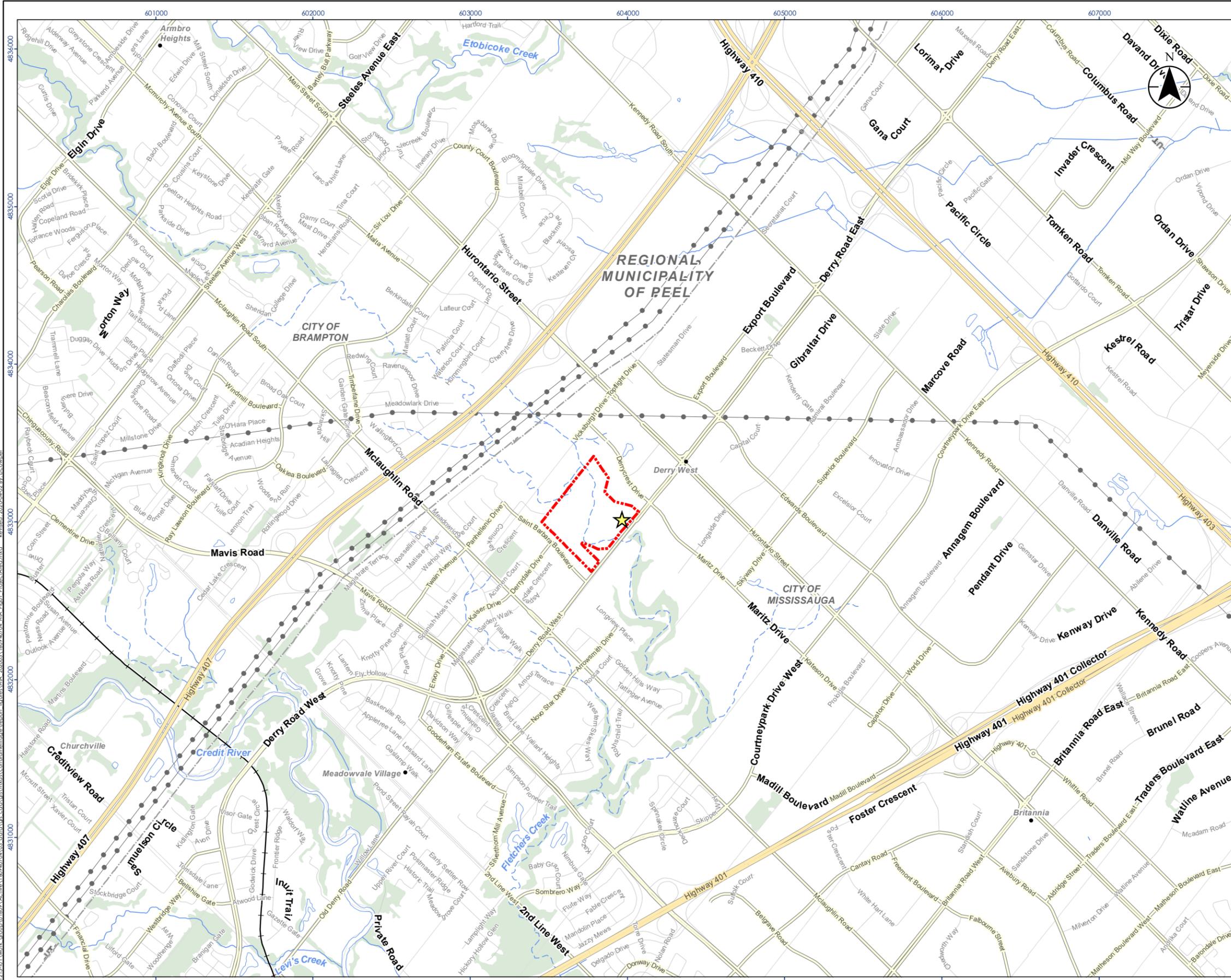
Client/Project: JACOBS
 HERITAGE IMPACT ASSESSMENT –
 185-205 DERRY ROAD WEST

Figure No.

1

Title

Project Location

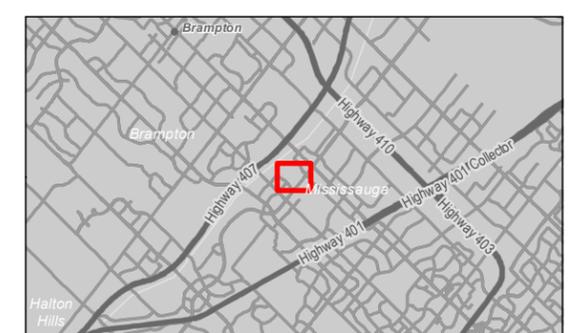




- Legend**
- 185-205 Derry Road West Property Boundary
 - Property Boundary (Approximate)
 - Watercourse (Intermittent)
 - Waterbody
- Designated Heritage Building (Part IV OHA)**
- ★ Hunter House



- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2020.
 3. Orthoimagery © First Base Solutions, 2020, imagery date 2019.



Project Location: City of Mississauga, ON
 160940704 REVA
 Prepared by BCC on 2020-04-02

Client/Project: JACOBS
 HERITAGE IMPACT ASSESSMENT –
 185-205 DERRY ROAD WEST

Figure No.: **2**
 Title: **Study Area**

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Methodology

2.0 METHODOLOGY

2.1 CITY OF MISSISSAUGA'S HERITAGE IMPACT ASSESSMENT TERMS OF REFERENCE

This HIA was prepared according to the City's TOR (City of Mississauga 2017). In consultation with the City's Heritage Planning staff, it was confirmed that all the minimum requirements requested in the HIA TOR should be included except for a detailed site history (land title records), interior documentation of the residence, and the preparation of measured drawings of the Hunter House. As described in the TOR, this HIA includes:

- Site assessment to determine the presence of heritage attributes as indicated within the designation by-law
- Site description, including photography, and the notation of any discrepancies between the designation by-law and current conditions
- Site mapping
- Clear statement of the conclusions regarding the significance and heritage attributes of the property
- Documentation of the existing conditions related to the heritage resource, including:
 - External photographs from each elevation
 - Historical photographs, drawings, or other archival material that may be available or relevant
- An outline of the proposed development, its context, and how it will impact the heritage resource and neighbouring properties
- An assessment of alternative development options and mitigation measures
- A summary of conservation principles and how they will be used must be included as provided by Parks Canada or the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI)
- Proposed demolition/alterations must be explained as to the loss of cultural heritage value or interests in the site and the impact on the streetscape and sense of place

2.2 POLICY FRAMEWORK

2.2.1 Planning Act

The *Planning Act* provides a framework for land use planning in Ontario, integrating matters of provincial interest in municipal and planning decisions. Part I of the *Planning Act* identifies that the Minister, municipal councils, local boards, planning boards, and the Municipal Board shall have regard for provincial interests, including:

(d) The conservation of features of significant architectural, cultural, historical or scientific interest

(Government of Ontario 2019a)



Methodology

2.2.2 The 2014 Provincial Policy Statement

The Provincial Policy Statement (PPS) was updated in 2020 and is intended to provide policy direction for land use planning and development with regard to matters of provincial interest. Cultural heritage is one of many interests contained within the PPS. Section 2.6.1 of the PPS states that, “significant built heritage resources and significant cultural heritage landscapes shall be conserved”.

The PPS stipulates that development adjacent to protected heritage properties must be considered, in policy 2.6.3:

Planning authorities shall not permit development and site alteration on adjacent lands to protected heritage property except where the proposed development and site alteration has been evaluated and it has been demonstrated that the heritage attributes of the protected heritage property will be conserved.

Under the PPS definition, conserved means:

The identification, protection, management and use of built heritage resources, cultural heritage landscapes and archaeological resources in a manner that ensures their cultural heritage value or interest is retained. This may be achieved by the implementation of recommendations set out in a conservation plan, archaeological assessment, and/or heritage impact assessment that has been approved, accepted or adopted by the relevant planning authority and/or decisionmaker. Mitigative measures and/or alternative development approaches can be included in these plans and assessments.

Under the PPS definition, significant means:

Resources that have been determined to have cultural heritage value or interest. Processes and criteria for determining cultural heritage value or interest are established by the Province under the authority of the Ontario Heritage Act.

Under the PPS, “protected heritage property” is defined as follows:

Property designated under Parts IV, V or VI of the Ontario Heritage Act; property subject to a heritage conservation easement under Parts II or IV of the Ontario Heritage Act; property identified by the Province and prescribed public bodies as provincial heritage property under the Standards and Guidelines for Conservation of Provincial Heritage Properties; property protected under federal legislation, and UNESCO World Heritage Sites.

(Government of Ontario 2020)



Methodology

2.2.3 City of Mississauga Official Plan

The study area, 185-205 Derry Road West, is designated under Part IV of the *Ontario Heritage Act* (Government of Ontario 2019b). Section 7.4 of the City's *Official Plan* (2019) contains the following policies that are relevant to this project:

- 7.4.1.3 *Mississauga will require development to maintain locations and settings for cultural heritage resources that are compatible with and enhance the character of the cultural heritage resource.*
- 7.4.1.10 *Applications for development involving cultural heritage resources will be required to include a Heritage Impact Assessment prepared to the satisfaction of the City and other appropriate authorities having jurisdiction.*
- 7.4.1.12 *The proponent of any construction, development, or property alteration that might adversely affect a listed or designated cultural heritage resources or which is proposed adjacent to a cultural heritage resource will be required to submit a Heritage Impact Assessment prepared to the satisfaction of the City and other appropriate authorities having jurisdiction.*
- 7.4.2.3 *Development adjacent to a cultural heritage property will be encouraged to be compatible with the cultural heritage property.*

(City of Mississauga 2019)

2.2.4 Designation By-Law

The Hunter House was designated in 1981 through City of Mississauga By-law 339-81 (see Appendix A). The designation by-law is focused on the Hunter House itself; no landscape features of the property are identified. The text contained in the by-law that relates to the heritage value of the house includes reference to the Hunter-Holmes House as opposed to the Hunter House which is referenced on all other documents including a municipal plaque. The text provided as part of the by-law is provided verbatim below:

The Hunter-Holmes House is recommended for designation on the architectural grounds that it is a particularly fine example of the Gothic Revival Style, combined with prominent Italianate elements. The one-and-a-half storey, three bay façade form with projecting gabled frontispiece and ornate bargeboard are rural Canadian characteristics of domestic Gothic architecture. The eaves brackets, Tuscan Gothic dormer window, polychrome quoins, imbrication, and flat-arch radiating voussoirs with keystones are the Italianate detailing. The Tuscan motif carries into the round-headed sidelights, consoles, and paneling of the embrasured doorcase. Historically, it is believed to have been built by James Hunter, a farmer, in 1870.

(City of Mississauga 1981)



2.3 BACKGROUND HISTORY

Background land-use history for this project was obtained through review of aerial photography, county directories, and secondary sources. Research was conducted at the Brampton Public Library. To familiarize the study team with the study area, historical, and topographic mapping and aerial photographs were consulted to identify the presence of structures, and other potential heritage resources in the vicinity. Specifically, mapping material was reviewed of the study area from 1859, 1877, 1909, 1915, 1918, 1922, 1929, 1931, 1933, 1938, 1942, 1954, 1961, 1962, and 1974.

2.4 FIELD PROGRAM

A site assessment of the study area was undertaken on March 5, 2020 by Senior Cultural Heritage Specialist, Meaghan Rivard, and Cultural Heritage Specialist, Laura Walter, both with Stantec. Surqualb Ali, Civil Design Specialist with Jacobs accompanied Ms. Rivard and Ms. Walter to provide a Project overview in relation to the Hunter House. The weather conditions were cool and sunny. The field program consisted of visually assessing and photographing the study and Project area and confirming the previously identified heritage value in the Hunter House designation by-law.

2.5 EVALUATION OF CULTURAL HERITAGE VALUE OR INTEREST

2.5.1 Ontario Regulation 9/06

The criteria for determining cultural heritage value or interest is defined by *Ontario Regulation (O. Reg.) 9/06*. In order to identify cultural heritage value or interest at least one of the following criteria must be met:

1. *The property has design value or physical value because it:*
 - i. *is a rare, unique, representative or early example of a style, type, expression, material or construction method*
 - ii. *displays a high degree of craftsmanship or artistic merit*
 - iii. *demonstrates a high degree of technical or scientific achievement*
2. *The property has historical value or associative value because it:*
 - i. *has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community*
 - ii. *yields, or has the potential to yield, information that contributes to an understanding of a community or culture*
 - iii. *demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community*



Methodology

3. *The property has contextual value because it:*
 - i. *is important in defining, maintaining or supporting the character of an area*
 - ii. *is physically, functionally, visually or historically linked to its surroundings*
 - iii. *is a landmark*

(Government of Ontario 2006a)

2.6 ASSESSMENT OF IMPACTS

The assessment of impacts is based on impacts defined in the Ministry of Heritage, Sport, Tourism and Culture Industries' (MHSTCI) *InfoSheet #5 Heritage Impact Assessments and Conservation Plans* (InfoSheet #5) (Government of Ontario 2006b). Impacts to heritage resources may be direct or indirect. Direct impacts include:

- *Destruction of any, or part of any, significant heritage attributes or features*
- *Alteration that is not sympathetic, or is incompatible, with the historic fabric and appearance*

Indirect impacts do not result in the direct destruction or alteration of the feature or its heritage attributes, but may indirectly affect the cultural heritage value or interest of a property by causing:

- *Shadows created that alter the appearance of a heritage attribute or change the viability of a natural feature or plantings, such as a garden*
- *Isolation of a heritage attribute from its surrounding environment, context or a significant relationship*
- *Direct or indirect obstruction of significant views or vistas within, from, or of built and natural features*
- *A change in land use such as rezoning a battlefield from open space to residential use, allowing new development or site alteration to fill in the formerly open spaces*
- *Land disturbances such as a change in grade that alters soil and drainage patterns that adversely affect an archaeological resource*

In addition to direct impacts related to destruction, this HIA also evaluated the potential for indirect impacts resulting from the vibrations of construction and the transportation of project components and personnel. This was categorized together with land disturbance. **Although the effect of traffic and construction vibrations on historic period structures is not fully understood, vibrations may be perceptible in buildings with a setback of less than 50 metres (m) from the curbside (Crispino and D'Apuzzo 2001; Ellis 1987; Rainer 1982; Wiss 1981). The proximity of the proposed Project activities to heritage resources was considered in this assessment.**



Historical Summary

3.0 HISTORICAL SUMMARY

3.1 INTRODUCTION

The study area is located at 185-205 Derry Road West, in the City of Mississauga, within the Region of Peel (Figure 2). It is situated on Lot 11, Concession 1 West of Hurontario Street (WHS), former Township of Toronto, County of Peel. The City is located within the Greater Toronto Area and is bounded by the Region of Halton to the west, City of Brampton to the north, City of Toronto to the east and by Lake Ontario to the south. The study area is contained within the municipal boundary of 185-205 Derry Road West and the focus of the HIA is the Gothic Revival style house on the property. The house is exclusive subject of the designation by-law.

The following sections outline the historical development of the study area from the time of Euro-Canadian settlement to the present.

3.2 PHYSIOGRAPHY

The study area is situated within the Peel Plain physiographic region (Chapman and Putnam 1984: 113). The region consists of a level to rolling tract of clay soils covering 483 km² between the Regions of York and Halton. The general elevation of the region ranges from 152 to 229 m above sea level with a gradual slope towards Lake Ontario. The underlying material of the Peel Plain is a till that contains large amounts of shale and limestone (Chapman and Putnam 1984: 174).

The study area is located within the Credit Valley Watershed. It is comprised of 1,000 km² of land drained by the Credit River and its 1,500 km of tributaries (Credit Valley Conservation [CVC] 2005: 3). Its headwaters are in Orangeville, Erin, and Mono, from which it meanders southeast draining into Lake Ontario at Port Credit, within the City of Mississauga (CVC n.d.). As the Credit River cuts across the Peel Plain, it cuts deep valleys, leaving no large undrained depressions. The study area is specifically within the Fletcher's Creek subwatershed, which lies within the lower third of the Credit River watershed. The subwatershed drains an area of approximately 45 km² and is 18 km long (CVC 2012:16). Fletcher's Creek flows west of Hunter House under Derry Road West (Plate 1).

After the Peel Plain had been cleared in the early 19th century, its fertile clay soils provided arable land for settlers. Wheat was one of the main crops that was produced in the region. It could be easily transported to the City of Toronto or exported to the United States by way of ports on Lake Ontario. Until 1940, most of the land within the City of Mississauga was used for agriculture (Chapman and Putnam 1984: 175-176).



Historical Summary



Plate 1: Fletcher's Creek looking south

3.3 SURVEY AND SETTLEMENT

The survey of the Township of Toronto was completed in two separate parts. The first survey, known as the old survey, was undertaken in 1806 by Deputy Provincial Surveyor Samuel Street Wilmot (Association of Ontario Land Surveyors [AOLS] 2013). It was completed from Lake Ontario north to Eglinton Avenue. Concessions within the survey were laid out north and south of Dundas Street which had previously been opened through the township in 1798. The construction of Dundas Street was initiated under Lieutenant Governor John Graves Simcoe in 1793 and named for the Honorable Henry Dundas, the Colonial Secretary. The roadway was opened by the Queen's Rangers under the leadership of Captain Samuel Smith and Augustus Jones (Hicks 2005: xiii). South of Dundas Street, the Lakeshore Road was surveyed in 1791, along an aboriginal trail on the north shore of Lake Ontario (Etobicoke Historical Society n.d.).

The name of the township was chosen by Alexander Grant, who served as the administrator of the First Executive and Legislative Council of Upper Canada from 1805 to 1806 (Corporation of the County of Peel 1967: 15). It was laid out using the single-front system, whereby each concession was comprised of long and narrow lots that were approximately 200 acres in size (Plate 2). Each lot fronted and backed onto a road.



Historical Summary

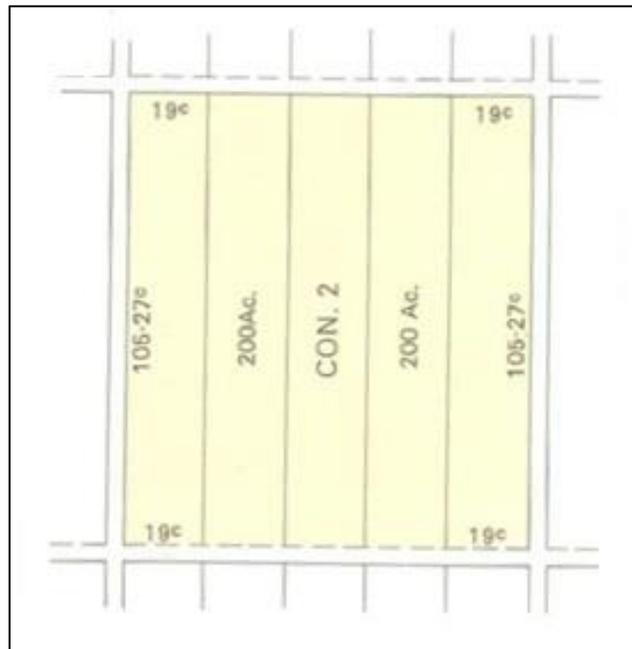


Plate 2: Single-Front System (Dean 1969)

The survey of the northern portion of the township, known as the new survey, was completed by Timothy Street and Richard Bristol in 1819. The township was surveyed with six concessions east and west of Hurontario Street. It was originally known as Street Road after the surveyor (Hicks 2004: xv). It was laid out using the double-front system which produced a rectangular pattern of ten 100-acre lots roughly square in shape and surrounded by road allowances (Plate 3).



Plate 3: Double-front survey system (Dean 1969)



Historical Summary

The first settler in the township was Colonel Thomas Ingersoll who operated the Government House and Ferry at the Port Credit prior to 1806 (Walker & Miles 1877: 86). The earliest families to arrive in the township included those of Philip Cody, Daniel Harris, Joseph Silverthorn, Absalom Wilcox, Allen Robinet, and William Barber (Hicks 2004: xii).

3.4 19TH CENTURY DEVELOPMENT

Settlement in the Township of Toronto developed primarily along the waterways which acted as a source of power for mills as well as at road intersections. The first settlements in the township were Sydenham (later named Dixie) and Harrisville (later named Cooksville), both located along Dundas Street. The War of 1812 increased traffic along the roads which influenced road improvements and the demand for goods in the township (Corporation of the County of Peel 1967: 196).

Following the new survey in 1819, north-south roads soon developed to connect the two surveys. The main settlement roads to the new survey included Hurontario Street (Centre Road), Mono Road, and the Gore Road. Just east of the study area, Hurontario Street was opened in 1819 and named in 1834 by Surveyor General Thomas Ridout for its connection between Lake Ontario and Lake Huron (Hicks 2004: xv). In 1847, the street was planked from Port Credit to the north end of the township (Corporation of the County of Peel 1967: 270).

With its close proximity to the Town of York, and easy accessibility from Lake Ontario, settlers flocked to the township in the early 19th century. One of the large groups to arrive that influenced the development of the study area was 150 Irish families that immigrated from New York in 1819. United Empire Loyalists John and James Beatty and Joseph Carter petitioned the Upper Canada government in 1818 for land in the township. The grant was approved with 5,000 acres in the Township of Toronto set aside for 150 families (Hicks 2004: 3). By 1821, the population of the township was 803, with 2,924 acres of cleared land (Walker & Miles 1877: 84).

With the spread of positive reports by settlers, a large surge of immigrants arrived in the 1830s. In 1834, the population of the township was over 4,000 and by 1836 most of the land within the township had been taken up by settlers (Corporation of the County of Peel 1967: 270). In 1851, following the *Municipal Corporations Act* (Baldwin Act), the Township of Toronto was incorporated with Joseph Wright as the first reeve (Corporation of the County of Peel 1967: 19). At this time, the township had a population of 7,539, with 36,179 acres under cultivation out of a total 60,634 acres (Corporation of the County of Peel 1967: 270).

In relation to the study area, the hamlet of Derry West developed at the intersection of Hurontario Street and Derry Road. The settlement was founded by George Graham, an Irishman who arrived with the group of Irish families in 1819. Graham was granted Lot 12, Concession 1 East of Hurontario Street (EHS), northeast of the study area. He constructed a residence on the property and began to farm the land. When the post office opened in the settlement on August 6, 1851, Graham suggested the name



Historical Summary

Derry Walls in honour of his forefathers who were involved in holding the gates of Londonderry, during the Battle of Boyne in 1690. The name Derry West was accepted by the postal department (Hicks 2004: 246). Derry West developed as a small hamlet surrounded by agricultural lands. Other prominent farmers in Derry West were William Beckwith Reeve and John and James Tilt (Hicks 2004: 254).

The 1859 Map of the County of Peel shows the development of the small hamlet at the intersection of two major roadways (Figure 3). The map lists at the intersection a Church of England, a schoolhouse, post office, Presbyterian Church, an inn, and two stores. Six years later a large fire swept through Derry West halting its growth (Hicks 2004: 256). The 1874 *Directory of the County of Peel* lists Derry West as a small village in the Township of Toronto, with a population of about 100 (Lynch 1874: 100). The Toronto Township map in the 1877 *Illustrated Historical Atlas of the County of Peel, Ontario* shows that the hamlet remained stable in the late 19th century, with minimal growth when compared to 1861 (Figure 3). In 1877, Derry West included two churches, a school, a Temperance hall, an Orange hall, a post office, and a grocery store (Walker & Miles 1877: 86).

While Derry West was slowly developing, the Villages of Streetsville and Meadowvale, west of the study area witnessed increased development with the construction of the Credit Valley Railway through the township between 1877 and 1879. The line was opened through the Township of Toronto, between the City of Toronto and Orangeville. In 1883, the line was taken over by the Canada Pacific Railway (Boles n.d.). Elsewhere in the township agriculture remained the primary industry. By 1884, the County of Peel had the largest percentage of cleared land with 78.2% compared to the average Ontario county of 49.4% (Corporation of the County of Peel 1967: 36).

3.5 20TH CENTURY DEVELOPMENT

In the early 20th century, the study area continued to be part of a rural hamlet surrounded by primarily agricultural lands. Within the Township of Toronto, development occurred in the Villages of Streetsville, Meadowvale, Malton, Cooksville, Dixie, and Port Credit through the influence of the railway lines. In 1901, the population of the township was 4,690, with 57,043 acres under cultivation out of a total 63,928 acres (Corporation of the County of Peel 1967: 270).

With the improvement in roadways during the 1920s, growth occurred in the township as improved accessibility allowed for industrial and residential development in the area. In 1920, the Department of Public Highways of Ontario assumed Hurontario Street between Cooksville and Orangeville as a provincial highway. In 1925, the highway was paved between Cooksville and Brampton and renumbered as Highway 10. The province retained control of the highway until the 1980s when the portion of Highway 10 near the study area was transferred to the City of Mississauga (Bever 2017). Other 20th century highway development in vicinity to the study area includes Highway 401 and 407.

Industrial development occurred in the township throughout the 20th century. By 1967, the township had 365 industries in operation. One of the largest areas of industrial development was at the Village of Dixie, where 750 acres of land had been sold in 1955 as part of an industrial park. By 1966, the population of the township had reached 85,309, a large increase from the 1952 population of 22,882 (Corporation of the County of Peel 1967: 270).



HERITAGE IMPACT ASSESSMENT – 185-205 DERRY ROAD WEST, MISSISSAUGA, ONTARIO

Historical Summary

In 1968, the Town of Mississauga was created through the amalgamation of the of the Township of Toronto and the Villages of Clarkson, Lakeview, Cooksville, Erindale, Sheridan, Dixie, Meadowvale, and Malton. In 1974, the town was incorporated as the City of Mississauga (City of Mississauga n.d.). By 1975, the City had a population of 234,975. Due in large part to its proximity to the City of Toronto, Mississauga prospered throughout the end of the 20th century, with a population of 528,000 in 1995. Today, the City is one of the largest in Canada and the third largest in the province. In 2016, the population of the City increased to 721,599 (Statistics Canada 2017). The City remains a fast-growing City within the Greater Toronto Area.



Site Description

4.0 SITE DESCRIPTION

4.1 LANDSCAPE SETTING

The study area, 185-205 Derry Road West is located on the north side of Derry Road West between Derrycrest Drive and Saint Barbara Boulevard. The residence is set back on a rise approximately 50 m from Derry Road West (Plate 4). From the residence the property slopes south towards the roadway. It is set behind a line of spruce trees off of a circular paved driveway (Plate 5). The driveway to the house also facilitates access to the Derrydale Golf Course, situated west and north of the residence. The main clubhouse for the course is situated north of the property (Plate 6 and Plate 7). The residence remains in its original location, but the landscape of the property has changed since the establishment of the Derrydale Golf Course in 1970.

Immediately in front (south) of the residence are ornamental gardens with coniferous and deciduous shrubs. The front entry door is accessed by an interlocking brick walkway set within timber surrounds (Plate 8). The residence is surrounded by intermediate spruce trees and deciduous trees. To the rear of the residence is a mobile residence and multiple gabled roof outbuildings (Plate 9 to Plate 14). The gabled roof outbuildings appear to date from the mid to late 20th century.

The broader golf course property is set within an urban area of the City that is surrounded by recent developments. West of the property are a modern commercial plaza and residential neighbourhoods (built between 2007 and 2009). To the south is a mixture of natural area with modern commercial properties (built between 2005 and 2006) and two residential properties. Directly to the east is the Chartwell Retirement Residence that is currently under construction (Plate 15). To the north are Highway 407, a hydro transmission corridor and yard, and vacant lands. The only remaining connection of the residence to the former hamlet of Derry West is the Derry West Cemetery and Derry West historic plaque located at the northwest corner of Derry Road and Hurontario Street.

The Hunter House is partially visible from Derrycrest Road but is mostly screened from view by vegetation associated with the golf course (Plate 16).



Site Description



Plate 4: Hunter House looking northeast



Plate 5: Spruce trees in front of Hunter House looking east



Plate 6: Derrydale Golf Course clubhouse set back from Hunter House looking northeast



Plate 7: Derrydale Golf Course clubhouse looking northeast



HERITAGE IMPACT ASSESSMENT – 185-205 DERRY ROAD WEST, MISSISSAUGA, ONTARIO

Site Description



Plate 8: Front walkway to Hunter House looking north



Plate 9: Mobile residence to the rear of Hunter House looking northwest



Plate 10: Rear outbuilding looking northwest



Plate 11: Rear outbuilding looking northeast



Plate 12: Rear outbuilding looking east



Plate 13: Rear outbuilding looking south



Site Description



Plate 14: Looking south from Derrydale Golf Course clubhouse parking lot towards Hunter House



Plate 15: Chartwell Retirement Residence looking east



Plate 16: Looking north from Derry Road West towards Hunter House

4.2 RESIDENCE EXTERIOR

The Hunter House is a one and one half storey structure with a medium-pitched cross gable roof with asphalt shingles and a brick chimney (Plate 17). The residence has a T-shaped plan with rear modern additions. The structure has wide eaves with decorative wood brackets and moulded frieze (Plate 18). Below the eaves is dichromatic brickwork that consists of imbrication and dentils. The residence has a red brick exterior with buff brick corner quoins, and window and door surrounds.



HERITAGE IMPACT ASSESSMENT – 185-205 DERRY ROAD WEST, MISSISSAUGA, ONTARIO

Site Description

The south facing three-bay front façade is symmetrical with a central projecting gabled frontispiece that has ornate wood bargeboard with either acanthus or pineapple motif (Plate 19). Below the gable is a Tuscan Gothic pointed wood window with buff brick label and wood lug sill. The central entrance contains a wood paneled door with wood paneled narrow semi-circular sidelights, wood consoles, and rectangular flat headed transom (Plate 20). Above the transom is a buff brick flat-arch radiating voussoir, with central keystone that includes a date stone 'A.D 1871.' Flanking the entrance bay are two flat headed 2/2 wood sash windows with exterior storm windows (Plate 21 and Plate 22). The windows each have wood louvered shutters, a buff brick flat-arch radiating voussoir with keystone, and a wood lug sill. A municipal plaque commemorating the heritage significance of the house is located on the south side of the front façade (Plate 23).

The east elevation contains the gable end of the front section of the house, the one and one half storey tail, and a one storey enclosed porch addition (Plate 24 and Plate 25). The front section has three flat headed 2/2 wood sash windows with exterior wood storm windows. The upper storey windows each have a buff brick flat-arch window head with central keystone and a wood lug sill (Plate 26). The bottom window has a buff brick flat-arch radiating voussoir with central keystone that has a date stone 'AD. 1871' (Plate 27 and Plate 28). The east elevation of the one and one half storey tail has dichromatic brickwork below the eaves and buff brick quoins (Plate 29). The elevation has a modern horizontal sliding window. A wood paneled door and sash six-over-six window are visible through the windows of the enclosed porch addition. The enclosed porch has a flat roof with wood railing (Plate 30). Its exterior is clad in vinyl siding and has modern windows and doors. The porch is set on a concrete foundation.

The north elevation is heavily altered with additions (Plate 30 and Plate 31). Only the upper storey of the original one and one half storey tail end is visible. The tail end has returned eaves and buff brick quoins. The west side of the elevation contains a doorway with a metal screen door and concrete sill.

The west elevation of the house is similar to the east elevation and contains the gable end of the front section of the house, the one and one half storey tail, and a shed roof addition. The front section has three flat headed 2/2 wood sash windows with exterior wood storm windows (Plate 32). The upper storey windows each have a buff brick flat-arch window head with central keystone and a wood lug sill (Plate 33). The bottom window has a buff brick flat-arch radiating voussoir with central keystone that has a date stone 'AD. 1871' (Plate 34). The stone foundation of the residence is visible on part of the west elevation although renovations are also evident where a recent trench has been dug and filled (Plate 35 and Plate 36). The west elevation of the one and one half storey tail has dichromatic brickwork below the eaves and buff brick quoins (Plate 31). The elevation has a modern horizontal sliding window, and a wood 1/1 window. The shed roof addition is clad in red brick.



HERITAGE IMPACT ASSESSMENT – 185-205 DERRY ROAD WEST, MISSISSAUGA, ONTARIO

Site Description



Plate 17: Front (south) façade looking west



Plate 18: Close-up of eaves, moulded frieze, brackets, and dichromatic brickwork

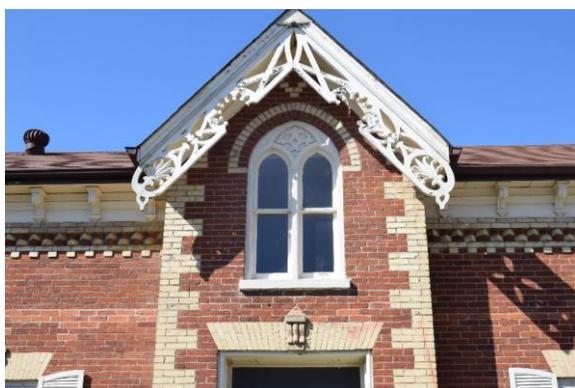


Plate 19: Bargeboard gable and Tuscan Gothic window looking north



Plate 20: Front entrance looking north



HERITAGE IMPACT ASSESSMENT – 185-205 DERRY ROAD WEST, MISSISSAUGA, ONTARIO

Site Description



Plate 21: West window on front façade looking north



Plate 22: East window on front façade looking north

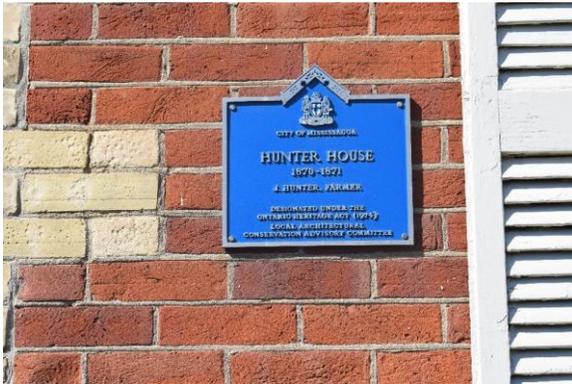


Plate 23: Municipal plaque on west side of front façade



Plate 24: Southeast corner looking northwest



Plate 25: East elevation looking west



Site Description



Plate 26: East elevation upper storey windows and eaves



Plate 28: Close-up of date keystone above west window on east elevation



Plate 27: East elevation north window



Plate 29: East elevation looking southwest



Plate 30: Northeast elevation looking southwest



HERITAGE IMPACT ASSESSMENT – 185-205 DERRY ROAD WEST, MISSISSAUGA, ONTARIO

Site Description



Plate 31: Northwest elevation looking southeast



Plate 32: Southwest corner looking northeast



Plate 33: West elevation upper storey windows



Plate 34: West elevation lower storey window with date keystone

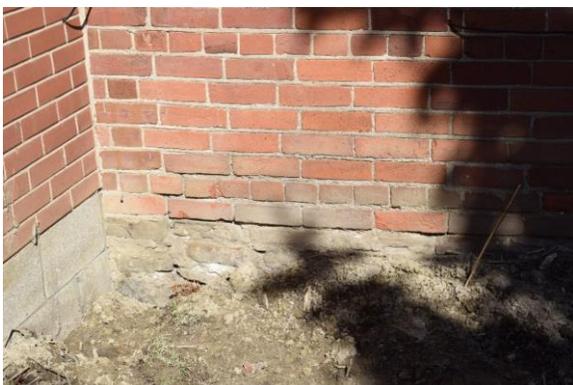


Plate 35: Stone foundation on west elevation



Plate 36: Recent renovation work on west side of the residence



5.0 EVALUATION OF CULTURAL HERITAGE OR INTEREST

The Hunter House was designated under Part IV of the *Ontario Heritage Act* in 1981 through City By-law 339-81 (Appendix A). While the Hunter House has cultural heritage value or interest, the designation by-law does not include a list of heritage attributes or a statement of significance as it was designated prior to the requirement to do so. Accordingly, the evaluation of the Hunter Home against O. Reg. 9/06 (see Section 2.5.1) is provided below to identify heritage attributes and create a statement of significance.

5.1.1 Design/Physical Value

The Hunter House is a unique late 19th century residence that blends Gothic Revival style with Italianate architectural elements. The house displays a high degree of craftsmanship, which is most notable in the dichromatic brickwork on all elevations, the carved keystones, and the detailed roofline, which includes a projecting eaves with decorative brackets and moulded frieze. The architectural elements related to the Gothic Revival style include the one and one half storey scale, T-shaped plan, and symmetrical three-bay façade with projecting, gabled, frontspiece and ornate bargeboard. The Italianate style elements include the decorative brackets, Tuscan Gothic dormer window, dichromatic brickwork, buff brick quoins, imbrication, and flat-arch radiating voussoirs with carved keystones. The front entryway is also reflective of Italianate style in its semi-circular sidelights, consoles, a transom, and moulded paneling.

The house was determined to have design value and to satisfy two criteria (1.i and 1.ii) of O. Reg. 9/06 as it a unique house that blends two architectural styles and has a high degree of craftsmanship present on all exterior building elevations.

5.1.2 Historic/Associative Value

The Hunter House was built in 1870/71 by James Hunter, a farmer and prominent member of the local community. Hunter was of Irish descent and was married to Eliza Anderson. Hunter purchased the property from William D. Cummings in 1868. He donated the southeast corner of the property for the construction of a Temperance Hall in 1870. Hunter was a prominent member of the hamlet of Derry West and is listed as a 'farmer' in the 1877 *Illustrated Historical Atlas of the County of Peel, Ontario*. In 1881, Hunter willed the 150-acre property to his son Robert Hunter and sold the remaining 50-acre parcel on the west half of the property to James McCracken. Hunter died on October 18, 1883. The Hunter House is the last remaining residence of the historical hamlet of Derry West.

The house was determined to have historical or associative value and satisfy one criterion (2.i) of O. Reg. 9/06 due to its association with the Hunter family who were farmers and prominent citizens in the history of Toronto Township.



Evaluation of Cultural Heritage or Interest

5.1.3 Contextual Value

The Hunter House is the last remaining 19th century residence associated with the former hamlet of Derry West. It is a remnant late 19th century structure in an urban area that has been the focus of recent 21st century development. The only other remnant of Derry West is the Derry West Cemetery and the Derry West historic plaque, both situated at the northwest corner of Derry Road West and Hurontario Street. The Hunter House is historically connected to the Derry West Cemetery and Derry West historic plaque.

The Hunter House is set back approximately 50 m from Derry Road West and is largely screened from view by tree cover. The immediate surrounding context is comprised of Derrydale, a golf course that was established in the 1970s. The adjacent properties contain modern buildings primarily built after 2005. Given its distance from the road and screened tree cover, the Hunter House does not define the area and does not act as a landmark.

The property was determined to have contextual value and satisfy one criterion (3.ii) of O. Reg. 9/06 as the Hunter House is historically linked to the nearby Derry West Cemetery and Derry West historic plaque, all remnants of the former hamlet.

5.1.4 Summary of O. Reg. 9/06

Table 1: Evaluation According to Ontario Regulation 9/06

Criteria of O. Reg 9.06	Y/N	Discussion
Design or Physical Value		
Is a rare, unique, representative or early example of a style, type, expression, material or construction method	Y	The Hunter House is a unique example of a late 19 th century Gothic Revival style residence with Italianate architectural elements. The Gothic Revival style is seen in its one and one half storey scale, T-shaped plan, symmetrical three-bay front façade with projecting, gabled, frontpiece with ornate wood bargeboard. The Italianate architectural elements include the decorative wood brackets, Tuscan Gothic dormer window, dichromatic brickwork, buff brick quoins, imbrication, and flat-arch radiating voussoirs with central keystones. The front entryway is also reflective of the Italianate style with its semi-circular sidelights, consoles, transom, and moulded paneling.
Displays a high degree of craftsmanship or artistic merit	Y	The Hunter House displays a high degree of craftsmanship in its Gothic Revival and Italianate design elements composed of wood, brick, and stone materials.
Demonstrates a high degree of technical or scientific achievement	N	The Hunter House does not demonstrate a high degree of technical or scientific achievement.



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Evaluation of Cultural Heritage or Interest

Historic or Associative Value		
Has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community	Y	The Hunter House is directly associated with the Hunter family. James Hunter built the house in 1807/1871. Hunter was a farmer and prominent member in the local community of Derry West.
Yields, or has the potential to yield, information that contributes to an understanding of a community or culture	N	The Hunter House does not have the potential to yield information that contributes to an understanding of a community or culture.
Demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community	N	The Hunter House does not demonstrate or reflect the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community.
Contextual Value		
Is important in defining, maintaining or supporting the character of an area	N	The Hunter House is a remnant 19 th century residence in an urban area surrounded by modern commercial and residential developments. The residence does not define, maintain, or support the character of the area.
Is physically, functionally, visually or historically linked to its surroundings	Y	The Hunter House is historically connected to the Derry West Cemetery and Derry West historical plaque, as the only remaining connections to the former hamlet of Derry West.
Is a landmark	N	The Hunter House is not a landmark structure. The structure is set back from the roadway behind a line of mature spruce trees. It is situated on the golf course property surrounded by modern commercial and residential developments.

5.1.5 Statement of Cultural Heritage Value or Interest

5.1.5.1 Description of Property

The Hunter House is located at 185-205 Derry Road West, in the City of Mississauga, within the Region of Peel. It is situated on part Lot 11, Concession 1 West of Hurontario Street, in the former Township of Toronto. The residence is situated on the north side of Derry Road West between Derrycrest Drive and Saint Barbara Boulevard.

5.1.5.2 Cultural Heritage Value

The Hunter House is a unique 19th century residence that blends Gothic Revival Style with Italianate architectural elements. The house displays a high degree of craftsmanship, which is most notable in the dichromatic brickwork on all elevations, the carved keystones, and the detailed roofline, which includes a projecting eaves with brackets and moulded frieze. The architectural elements related to the Gothic



HERITAGE IMPACT ASSESSMENT – 185-205 DERRY ROAD WEST, MISSISSAUGA, ONTARIO

Evaluation of Cultural Heritage or Interest

Revival style include the one and one half storey scale, T-shaped plan, and symmetrical three-bay front façade with projecting, gabled, frontspiece and ornate bargeboard. The Italianate style elements include the brackets, Tuscan Gothic dormer window, dichromatic brickwork, buff brick quoins, imbrication, and flat-arch radiating voussoirs with carved keystones. The front entryway is also reflective of Italianate style in its round headed sidelights, consoles, a transom, and moulded paneling.

The Hunter House was built in 1870/71 by James Hunter, a farmer. Hunter was of Irish descent and was married to Eliza Anderson. Hunter purchased the property from William D. Cummings in 1868. Hunter donated the southeast corner of the property for the construction of a temperance hall in 1870. In 1881 Hunter left the 150-acre property in a will to his son Robert Hunter and sold the remaining 50-acre parcel on the west half of the property to James McCracken. Hunter died on October 18, 1883. The Hunter House is one of the last remaining 19th century buildings of the historical hamlet of Derry West. The Hunter House remains in its original location and is historically linked to the Derry West Cemetery and Derry West historic plaque situated to the east of the residence.

The Hunter House has local significance for design/physical, historical/associative, and contextual reasons. This residence has cultural heritage value or interest and is designated under Part IV of the *Ontario Heritage Act*.

5.1.5.3 Heritage Attributes

The following heritage attributes have been identified for the Hunter House:

- Gothic Revival house with Italianate style details
- One and one half storey scale
- T-shaped plan
- Cross gable roof with projecting, returned eaves
- Projecting, gabled frontspiece
- Tuscan Gothic dormer window
- Red brick exterior with dichromatic brickwork
- Buff brick quoins
- Ornate bargeboard
- Decorated roofline that includes brackets, moulded frieze, imbrication, and dentils
- Flat-arch radiating voussoirs with carved keystones
- Front entryway with round headed sidelights, transom, consoles, and moulded paneling
- Wood frame, multi-pane sash windows on the south (front façade), west, and east elevations
- Municipal plaque noting the historical significance of the house and connection to the Hunter family
- Original location, approximately 50 metres northwest of Derry Road West



6.0 ASSESSMENT AND MITIGATION

6.1 DESCRIPTION OF PROJECT UNDERTAKING

Jacobs is working with the Region of Peel on the Project, which includes the construction of a new 11 km sanitary trunk sewer, 2,400 mm in diameter starting from the east side of Bramalea Road on Derry Road, continuing most of its alignment along Derry Road and terminating with a 500 m section from Derry Road along Creditview Road. The construction of this new sanitary trunk sewer is to occur over nine shaft locations, with shafts varying from 17 m to 47 m in depth, and from 8 m to 12 m in diameter. The Project is split into two contracts, with Contract 1 utilizing the Rock Tunnel-Boring Machine (TBM) methodology while Contract 2 using Earth-Pressure Boring Machine (EPBM).

As documented in the Region's 2013 *Water and Wastewater Master Plan*, the Project is required to meet their capacity needs to support the Region's future approved and planned growth. The Project will also aid in fulfilling the Region's obligation to the Regional Municipality of York, an agreement cemented under the York-Peel Water Supply Agreement (2002). It will also aid the Region in balancing the capacity in the sanitary trunk sewer network with the available wastewater treatment capacity and allows for flows over capacity to be diverted to treatment plants that have available capacity. A *Schedule C Municipal Class Environmental Assessment for the East to West Wastewater Diversion Strategy*, was completed in 2016 by GM BluePlan Engineering.

Contract 1 100% Design drawings were completed for the Project (Project No. 16-2291) in January 2020 and detail the Project related activity planned for the 185-200 Derry Road West property (Appendix B). The proposed Site 4 shaft, drop structure (DS-4), diversion chamber (DC-4) and associated sewer infrastructure is proposed southwest of Hunter House (Plate 37 to Plate 39) (Figure 4). Existing infrastructure associated with the 1,200 sanitary sewer line is located southwest of the residence adjacent to Fletcher's Creek (Plate 40). All proposed infrastructure will be installed within the permanent easements. Easements are currently under negotiations with the owner. The layout of the permanent and temporary easement in the Design drawings (Appendix B) and on Figure 4 are still subject to change. The easement negotiations will be completed prior to Project initiation.

At this particular site the 2,400 mm diameter gravity sewer will be tunneled through the shale bedrock and overburden at a depth of approximately 41:5 m below ground surface, with the 1200 mm diameter gravity sewer in the overburden will be laid out using open-cut methods. . In Contract 1, six vertical service shafts are proposed to be installed at intervals ranging from 40 m to 2.6 km apart. The 2,400 mm diameter sewer, inside the proposed 4000 mm diameter tunnel was selected based on the capacity required for the sewer to service projected wastewater flows in the future including to 2041 and beyond.



Assessment and Mitigation

The following is an overview of Project construction activities:

- Site preparation:
 - Removal of trees and installation of tree protection fences
 - Silt soxx and silt fences
 - Construction of temporary access road for golf carts/Relocation of existing sidewalks
 - Compound set-up
 - Construction hoarding
 - Excavation for the drop structure (DS-4)
 - Excavation for the diversion chamber (DC-4)
 - Open-cut for the 1200 mm sanitary sewer
 - Excavations and open cuts
- Site construction:
 - Installation of 2,400 mm pipe and tunnel alignment
 - Installation of drop structure (DS-4)
 - Installation of diversion chamber (DC-4)
 - Installation of an electrical duct
 - Testing and commissioning

Site restoration:

- Re-grading
- Restoration of existing sidewalk, removal of temporary access road for golf carts
- Installation of asphalt pavements to access the chambers
- Re-planting
- Removal of site compound

As part of the Project, geotechnical instrumentation and monitoring will be carried out to measure and monitor ground, structure, and excavation perimeter movements within, around, and above open excavations, workshafts, and tunnel excavations. The monitoring will minimize the potential for construction activities to impact the existing structures and facilities. The geotechnical scope of work will include pre-construction and post-condition surveys, the installation of geotechnical equipment, as well as a vibration monitoring program that will be executed by the contractor. The plan 'Geotechnical Monitoring Plan 9' (SMP-009) in Appendix B provides the locations for the installation of geotechnical monitoring equipment.

Tree protection zones and the use of tree protection fencing around particular trees have also been established on the property. See the plan, 'Existing Site Plan Tree Removals and Tree Protection' (4-SP-001) in Appendix B.



HERITAGE IMPACT ASSESSMENT – 185-205 DERRY ROAD WEST, MISSISSAUGA, ONTARIO

Assessment and Mitigation



Plate 37: Proposed Project work area looking southeast



Plate 38: Proposed Site 4 Shaft location looking northwest



Plate 39: Proposed Diversion Chamber location looking northwest



Plate 40: Existing 1200 sanitary sewer



6.2 ASSESSMENT OF IMPACTS

As discussed in Section 2.6, the assessment of impacts to Hunter House is based on the impacts defined in InfoSheet #5. Table 2 provides an overview of potential direct impacts, and Table 3 includes an overview of potential indirect impacts to Hunter House.

Table 2: Evaluation of Potential Direct Impacts

Direct Impact	Relevance to Hunter House
Destruction of any, or part of any, <i>significant heritage attributes</i> or features.	Construction activities associated with the Project will be contained within the permanent and temporary easements south and west of the Hunter House. No destruction related impacts are anticipated to the Hunter House. Therefore, no mitigation measures are required.
Alteration that is not sympathetic, or is incompatible, with the historic fabric and appearance.	Construction activities associated with the Project will be contained within the permanent and temporary easements south and west of the Hunter House. No alterations are proposed to the residence. Therefore, no mitigation measures are required.

Table 3: Evaluation of Potential Indirect Impacts

Indirect Impact	Relevance to Hunter House
Shadows created that alter the appearance of a <i>heritage attribute</i> or change the viability of a natural feature or plantings, such as a garden	The majority of project infrastructure will be installed below ground, while Shaft 4 and the Diversion Chamber (DC-4) will be flush with the grade. Accordingly, no impacts related to shadows are anticipated. Therefore, no mitigation measures are required.
Isolation of a <i>heritage attribute</i> from its surrounding environment, context or a <i>significant</i> relationship	The Hunter House is set in a golf course that dates to the 1970s. Accordingly, the surrounding environment and context of the Hunter House is already highly altered and no isolation related impacts resulting from the Project are anticipated. Therefore, no mitigation measures are required.
Direct or indirect obstruction of <i>significant</i> views or vistas within, from, or of built and natural features	The Hunter House is set back approximately 50 m from Derry Road West and is screened on all sides by tree cover. As such, no views have been identified as heritage attributes. Accordingly, no direct or indirect views to or from the Hunter House will be obstructed by the Project. Therefore, no mitigation measures are required.
A change in land use such as rezoning a battlefield from open space to residential use, allowing new <i>development</i> or <i>site alteration</i> to fill in the formerly open spaces	The land use is anticipated to be returned to residential and recreational following construction activities. A small portion of the land is being purchased as a permanent easement to install and maintain the proposed infrastructure. Both the golf course area and the sidewalk within the permanent easement will be returned to their current use following Project activities. Therefore, no mitigation measures are required.



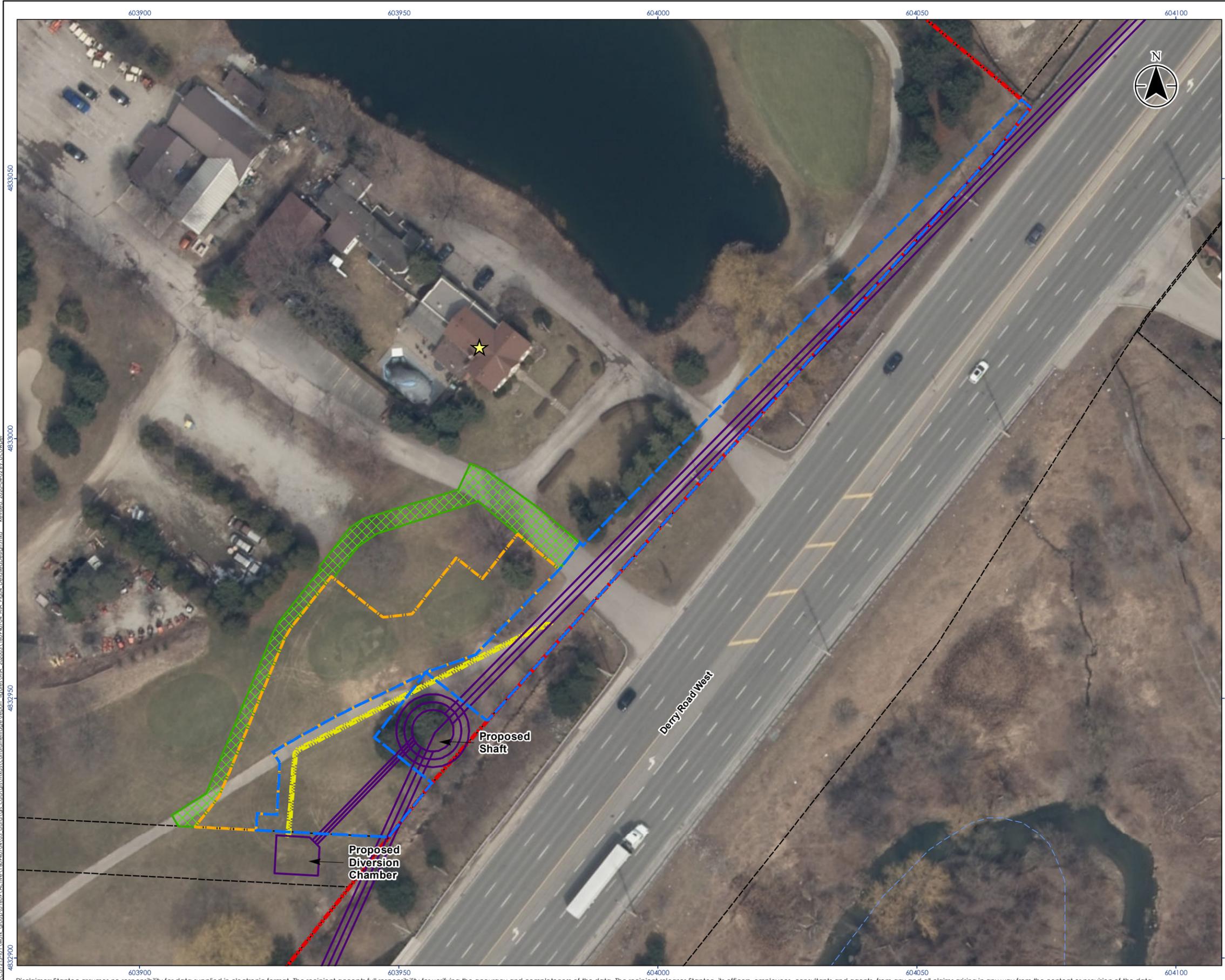
Table 3: Evaluation of Potential Indirect Impacts

Indirect Impact	Relevance to Hunter House
<p>Land disturbances such as a change in grade that alters soil, and drainage patterns that adversely affect an <i>archaeological resource</i></p>	<p>Project activities are proposed south and west of the Hunter House. The proposed site shaft 4, drop structure, and diversion chamber are proposed more than 60 m southwest from the residence. The 2,400 mm sanitary sewer is proposed within 37 m of the residence; however, it has a depth of approximately 43 m below ground surface. The temporary asphalt roadway is proposed within 20 m of the residence; however, there is already an existing asphalt roadway in this location for the golf members to access the golf course. The proposed temporary asphalt working surface is within 30 m of the residence as well. Overall, the position of identified heritage attributes within 50 m of project activities has the potential for indirect impacts resulting from land disturbances during construction activities.</p> <p>Therefore, measures must be prepared to mitigate potential indirect impacts.</p>

6.2.1 Summary of Impact Assessment

Direct impacts are not anticipated to the Hunter House. However, there may be potential for indirect impacts to the Hunter House related to land disturbances from proposed Project construction activities. As outlined in Section 2.6, while impacts of vibration of heritage buildings are not well understood, to offer a conservative approach, this HIA has used a 50 m buffer from Project activities including site preparation, site construction, and site restoration. While the proposed site shaft 4, drop structure, diversion chamber, and the main construction activities associated with vibration are proposed more than 60 m from the residence, the 2,400 m sanitary sewer, temporary asphalt roadway, and proposed temporary asphalt working surface are within 50 m of the residence. If left unaddressed, these could result in longer-term issues for the maintenance, continued use, and conservation of the residence.





- Legend**
- 185-205 Derry Road West Property Boundary
 - - - Property Boundary (Approximate)
 - - - Watercourse (Intermittent)
- Design Features**
- Permanent Easement
 - Proposed Sanitary Pipe
 - Temporary Easement
 - Electrical Duct Bank
 - Temporary Asphalt Sidewalk
 - ★ Hunter House



- Notes**
1. Coordinate System: NAD 1983 UTM Zone 17N
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2020.
 3. Orthoimagery © First Base Solutions, 2020, imagery date 2019.



Project Location: City of Mississauga, ON
 160940704 REVA
 Prepared by BCC on 2020-04-02

Client/Project: JACOBS
 HERITAGE IMPACT ASSESSMENT –
 185-205 DERRY ROAD WEST

Figure No. **4**
 Title: **Detailed Design for East to West Diversion Strategy Class EA**

7.0 MITIGATION, IMPLEMENTATION, AND MONITORING

7.1 POTENTIAL MITIGATION MEASURES

Project activities have the potential to result in indirect impacts to the Hunter House and as such, mitigation measures are required. InfoSheet #5 provides methods of minimizing or avoiding potential impacts on the Hunter House resulting from Project activities. In this case, given the position of the Hunter House in relation to the temporary asphalt roadway, temporary asphalt working surface, and proposed 2,400 mm sanitary sewer, the potential for vibration effects were identified. Of the options presented in InfoSheet #5, the establishment of buffer zones, site plan controls, and other planning mechanisms best avoid impacts related to potential vibration effects.

7.2 MITIGATION DISCUSSION

Potential vibration impacts on the Hunter House can be mitigated with planning mechanisms and vibration assessments to identify whether vibration from construction activities has affected historic materials. Prior to initiating project activity, further assessment to refine the areas of potential impact may be beneficial as ground movements induced by construction vibration are found to dissipate with distance from the source. The severity of soil movements depends primarily on type and compactness and/or consistency of the surrounding soils particularly between the source, receiver, and groundwater levels. The source, duration, frequency of occurrences of vibration, and the foundation-footing interaction also contribute to the strains induced in structures. As a result, there is a variance in what buffer may be appropriate.

Where construction activities are anticipated within close proximity to heritage resources, monitoring activities can gauge whether construction activities exceed maximum acceptable vibration levels, or peak particle velocity (PPV) levels, as determined by a qualified engineer or building scientist. Establishing the Zone of Influence (ZOI) for potential indirect impacts related to Project activities, will determine the PPV threshold and help to define the conservative buffer distance from the residence for certain activities. Subsequently, construction within this defined buffer zone would require monitoring to confirm that acceptable PPV levels are not exceeded. All vibration-related construction activities would cease if levels are exceeded until an acceptable solution can be identified.

To supplement these proactive measures, consideration may be given to isolating heritage resources from construction activities. Site plan controls can be put in place prior to construction to prevent potential indirect impacts to the residence. The site plan control methods will be determined in advance of construction to indicate where project activities are restricted and may include construction fencing, traffic cone or pylon delineation, or taped off areas to indicate where project activities are prohibited. In order to make sure all team members are aware of the restriction or buffer zones, these controls should be indicated on all construction mapping (i.e. contractor's proposed site preparation plan) and communicated to the construction team leads. Where construction activities unexpectedly enter into this area, consultation with a qualified building condition specialist or geotechnical engineer will inform next steps.



HERITAGE IMPACT ASSESSMENT – 185-205 DERRY ROAD WEST, MISSISSAUGA, ONTARIO

Mitigation, Implementation, and Monitoring

Typically, this involves an immediate stop work order and evaluation of the heritage resource by an appropriately trained building specialist or geotechnical engineer who could advise on appropriate actions.

The City of Toronto Construction Vibration By-Law (514-2008) offers good general guidance for vibration monitoring and could be considered during the development of a site-specific vibration program. This by-law requires a contractor to identify any protected heritage properties in their vibration control strategy. Furthermore, it understands that heritage properties may require additional consideration given the propensity for historic construction materials. As per Section 4(c), heritage is one of eight considerations for establishing an appropriate zone of influence. Among soil conditions and the relationship to the water table, this by-law acts as an appropriate template for heritage requirements related to vibration effects.



Recommendations

8.0 RECOMMENDATIONS

8.1 SITE PLAN CONTROLS AND VIBRATION MONITORING

The Hunter House, located at 185-205 Derry Road West, has cultural heritage value or interest and is designated under Part IV of the *Ontario Heritage Act*. It is understood that Project activities are required within the 50 m buffer suggested. Therefore, **in order to establish safe and acceptable vibration levels, it is recommended that a construction vibration assessment be carried out to determine the ZOI for building damage from Project activities, to determine a conservative buffer distance from the residence for certain activities, and to further develop site-specific vibration mitigation strategies to address potential impacts on the residence. This assessment will need to be completed by a qualified engineer or building scientist retained by the selected contractor so that adjustments to machinery can be made, as needed. As part of the vibration assessment, a site appropriate buffer distance should be established and demarcated on all construction drawings (i.e. contractor's proposed site plan). On site, the buffer should be marked using a site appropriate material (ie. fencing, ropes, etc.).**

In summary, the following actions are recommended to mitigate the potential for indirect impacts in the form of construction related vibration:

- Vibration studies for the Hunter House should be prepared by a qualified engineer to determine the maximum acceptable vibration levels, or peak particle velocity (PPV) levels and the appropriate buffer distance between Project activities and the residence
- Provide construction marking on drawings and ground to define the areas around the residence where construction should not occur, based on the results of the vibration study
- Monitor construction within the defined area at appropriate points to confirm that acceptable PPV levels are not exceeded

8.2 DEPOSIT COPIES

To assist in the retention of historic information, copies of this report should be deposited with local repositories of historic material. Therefore, it is recommended that this report be deposited at the following locations:

City of Mississauga
Heritage Advisory Committee
300 City Centre Drive
Mississauga, ON, L5B 3C1

City of Mississauga Public Library
Central Branch
301 Burnhamthorpe Road West
Mississauga, ON, L5B 3Y3



Closure

9.0 CLOSURE

This report has been prepared for the sole benefit of Jacobs and the Regional Municipality of Peel. The report may not be used by any third party without the express written consent of Stantec Consulting Ltd., Jacobs or the Regional Municipality of Peel. Any use which a third party makes of this report is the responsibility of such third party.

We trust this report meets your current requirements. Please do not hesitate to contact us should you require further information or have additional questions about any facet of this report.

Yours truly,

STANTEC CONSULTING LTD.



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**APPENDIX A:
CITY OF MISSISSAUGA BY-LAW 339-81**



185 Derry Rd. W.



BY-LAW NUMBER *339-81*

To designate the Hunter Holmes House, Part of Lot 11, ~~Conc.~~ *Concession 1, W.H.S. West of Hurontario Street*

WHEREAS the Ontario Heritage Act, S.O. 1974, Chapter 122, Section 29(6), authorizes the Council of a municipality to enact by-laws to designate real property including all the buildings and structures thereon, to be of historic or architectural value or interest; and

WHEREAS notice of intention to so designate the Hunter Holmes House, Part of Lot 11, ~~Conc.~~ *Concession 1 West of Hurontario Street*, having been duly published and served and no notice of objection to such designation having been received by the Council of The Corporation of the City of Mississauga.

WHEREAS the reasons for the said designation are set out as Schedule "A" hereto;

THEREFORE the Council of the Corporation of the City of Mississauga enacts as follows:

1. That the real property, more particularly described in Schedule "A" hereto, known as the Hunter Holmes House, Part of Lot 11, ~~Conc.~~ *Concession 1 West of Hurontario Street*, be designated as being of architectural and historic value or interest.
2. That the City Clerk is hereby authorized to cause a copy of this by-law to be served upon the owner of the aforesaid property and upon the Ontario Heritage Foundation and to cause notice of this by-law to be published in a newspaper having general circulation in the City of Mississauga.

ENACTED AND PASSED this *11th* day of *May*, 1981.

[Signature]
CITY OF MISSISSAUGA

[Signature]
MAYOR
[Signature]
CITY CLERK

APPROVED
AS TO FORM
City Solicitor
MISSISSAUGA
[Signature]

SCHEDULE "A" TO BY-LAW 339-81
OF THE CITY OF MISSISSAUGA

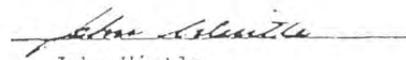
Reasons for the designation of the Hunter-Holmes House,

Part of Lot 11, ~~Conc. 1, W.H.S.~~ *Concession 1 West of Hurontario Street*

The Hunter-Holmes House is recommended for designation on the architectural grounds that it is a particularly fine example of the Gothic Revival Style, combined with prominent Italiante elements. The one-and-a-half storey, three bay facade form with projecting gabled frontispiece and ornate bargeboard are rural Canadian characteristics of domestic Gothic architecture. The eaves brackets, Tuscan Gothic dormer window, polychrome quoins, imbrication, and flat-arch radiating voussoirs with keystones are the Italiante detailing. The Tuscan motif carries into the round-headed sidelights, consoles, and panelling of the embrasured doorcase. Historically, it is believed to have been built by James Hunter, a farmer, in 1870.

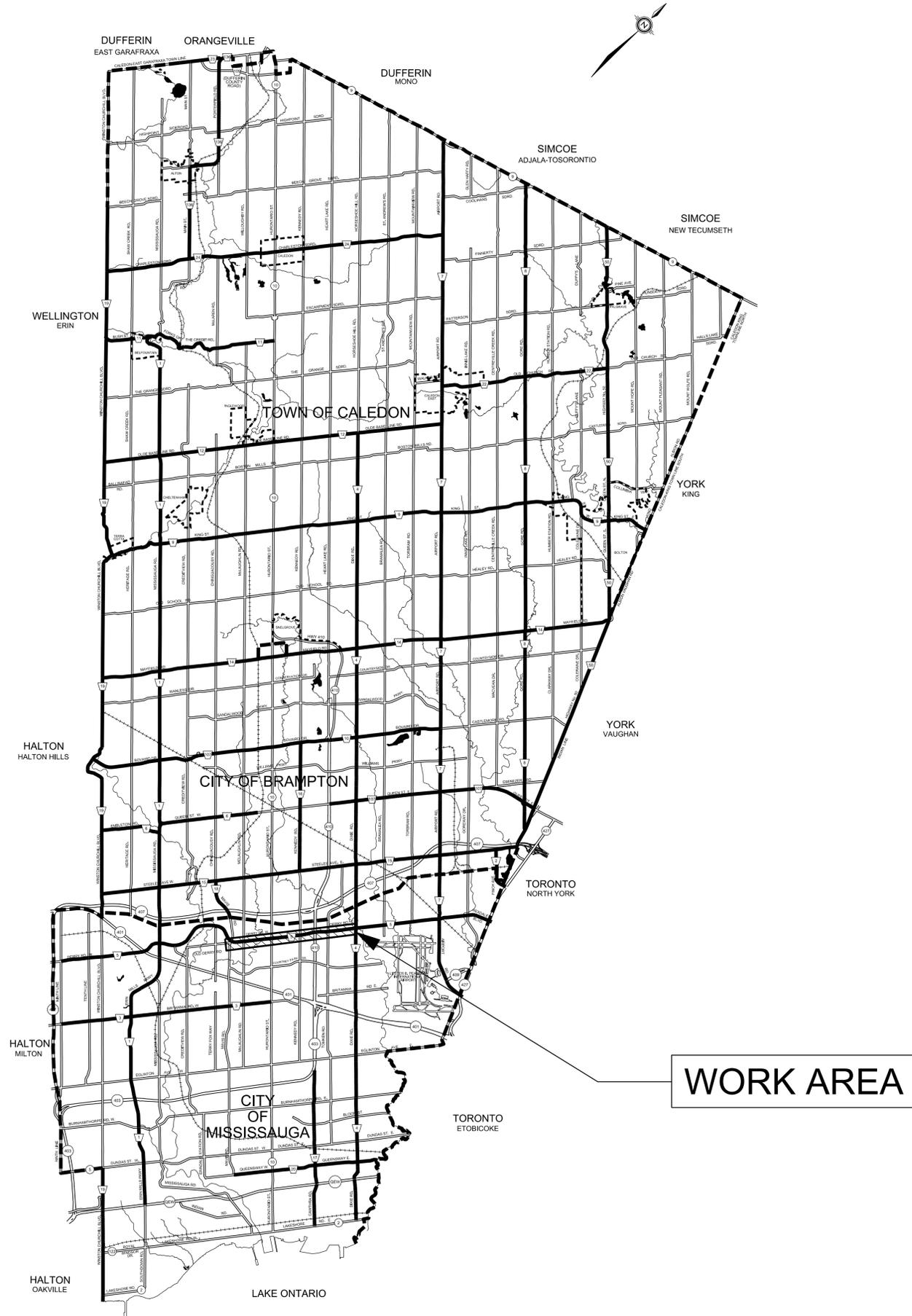
DESCRIPTION: Part of Lot 11,
Concession 1 West of Hurontario Street

ALL AND SINGULAR, that certain parcel or tract of land and premises situate, lying and being in the City of Mississauga, Regional Municipality of Peel, (formerly in the Township of Toronto, County of Peel), Province of Ontario and being composed of that part of Lot 11 in the First Concession West of Hurontario Street in the said City designated as Part 1 on a reference plan deposited in the Land Registry Office for the Registry Division of Peel (No. 43) as 43R-8757.


John Wintle,
Ontario Land Surveyor.

APPENDIX B: DETAILED DESIGN DRAWINGS





PROJECT No. 16-2291

EAST TO WEST
 DIVERSION SANITARY TRUNK SEWER
 DERRY ROAD
 CONTRACT 1
 CITY OF MISSISSAUGA

100% DESIGN
 REVIEW
 JANUARY 2020

WORK AREA



REVISIONS		
DATE	DETAILS	INIT.
10/25/2018	ISSUED FOR 30% DESIGN REVIEW	S.F.
08/01/2019	ISSUED FOR 50% DESIGN REVIEW	S.F.
11/15/2019	ISSUED FOR 90% DESIGN REVIEW	C.K.
01/23/2020	ISSUED FOR 100% DESIGN REVIEW	C.K.

LIST OF DRAWINGS

GENERAL

- 1. COVER COVER SHEET
- 2. G-1-002 DRAWING INDEX
- 3. G-1-003 ABBREVIATIONS, LEGEND AND GENERAL NOTES
- 4. G-1-004 GENERAL NOTES (2)
- 5. G-1-005 KEY MAP PROJECT LIMITS AND CONSTRAINTS
- 6. G-1-006 KEY MAP AND SURVEY CONTROL MONUMENTS
- 7. G-1-007 TUNNEL CURVE DATA
- 8. GS-1-001 STRUCTURAL GENERAL NOTES

SETTLEMENT MONITORING PLANS

- 9. SMP-007 GEOTECHNICAL MONITORING PLAN (7)
- 10. SMP-008 GEOTECHNICAL MONITORING PLAN (8)
- 11. SMP-009 GEOTECHNICAL MONITORING PLAN (9)
- 12. SMP-010 GEOTECHNICAL MONITORING PLAN (10)
- 13. SMP-011 GEOTECHNICAL MONITORING PLAN (11)
- 14. SMP-012 GEOTECHNICAL MONITORING PLAN (12)
- 15. SMP-013 GEOTECHNICAL MONITORING PLAN (13)
- 16. SMP-014 GEOTECHNICAL MONITORING PLAN (14)
- 17. SMP-015 GEOTECHNICAL MONITORING PLAN (15)
- 18. SMP-016 GEOTECHNICAL MONITORING PLAN (16)
- 19. SMP-017 GEOTECHNICAL MONITORING PLAN (17)
- 20. SMP-018 GEOTECHNICAL MONITORING PLAN (18)
- 21. SMP-022 GEOTECHNICAL MONITORING DETAILS

PLAN AND PROFILES

- 22. C-013 PLAN AND PROFILE - STA. 4+140 TO STA. 4+420
- 23. C-014 PLAN AND PROFILE - STA. 4+420 TO STA. 4+700
- 24. C-015 PLAN AND PROFILE - STA. 4+700 TO STA. 4+980
- 25. C-016 PLAN AND PROFILE - STA. 4+980 TO STA. 5+260
- 26. C-017 PLAN AND PROFILE - STA. 5+260 TO STA. 5+540
- 27. C-018 PLAN AND PROFILE - STA. 5+540 TO STA. 5+820
- 28. C-019 PLAN AND PROFILE - STA. 5+820 TO STA. 6+100
- 29. C-020 PLAN AND PROFILE - STA. 6+100 TO STA. 6+380
- 30. C-021 PLAN AND PROFILE - STA. 6+380 TO STA. 6+660
- 31. C-022 PLAN AND PROFILE - STA. 6+660 TO STA. 6+940
- 32. C-023 PLAN AND PROFILE - STA. 6+940 TO STA. 7+220
- 33. C-024 PLAN AND PROFILE - STA. 7+220 TO STA. 7+500
- 34. C-025 PLAN AND PROFILE - STA. 7+500 TO STA. 7+780
- 35. C-026 PLAN AND PROFILE - STA. 7+780 TO STA. 8+060
- 36. C-027 PLAN AND PROFILE - STA. 8+060 TO STA. 8+300
- 37. C-028 PLAN AND PROFILE - STA. 8+300 TO STA. 8+480
- 38. C-029 PLAN AND PROFILE - STA. 8+480 TO STA. 8+760
- 39. C-030 PLAN AND PROFILE - STA. 8+760 TO STA. 9+040
- 40. C-031 PLAN AND PROFILE - STA. 9+040 TO STA. 9+320
- 41. C-032 PLAN AND PROFILE - STA. 9+320 TO STA. 9+600
- 42. C-033 PLAN AND PROFILE - STA. 9+600 TO STA. 9+880
- 43. C-034 PLAN AND PROFILE - STA. 9+880 TO STA. 10+160
- 44. C-035 PLAN AND PROFILE - STA. 10+160 TO STA. 10+440
- 45. C-036 PLAN AND PROFILE - STA. 10+440 TO STA. 10+720

SITE 2

- 46. 2-SP1-001 SITE NO. 2 - EXISTING SITE PLAN TREE REMOVALS AND TREE PROTECTION
- 47. 2-SP1-002 SITE NO. 2 - SITE PREPARATION PLAN
- 48. 2-SP1-003 SITE NO. 2 - REDUCED SITE LAYDOWN PLAN
- 49. 2-ES1-001 SHAFT NO. 2A - EXCAVATION SUPPORT
- 50. 2-ES1-002 SHAFT NO. 2B - EXCAVATION SUPPORT
- 51. 2-S-201 OVERALL PLAN - DROP STRUCTURE 2A (DS-2A) AND DIVERSION CHAMBERS (DC-2A, DC-2B & DC-2C)
- 52. 2-S-202 DC-2A - STRUCTURAL DIVERSION CHAMBER PLANS
- 53. 2-S-203 DC-2A - STRUCTURAL DIVERSION CHAMBER SECTIONS
- 54. 2-S-204 DC-2B - STRUCTURAL DIVERSION CHAMBER PLANS
- 55. 2-S-205 DC-2B - STRUCTURAL DIVERSION CHAMBER SECTIONS
- 56. 2-S-206 DC-2B - STRUCTURAL DIVERSION CHAMBER SECTIONS
- 57. 2-S-207 DS-2A - STRUCTURAL DROP SHAFT PLANS
- 58. 2-S-208 DS-2A - STRUCTURAL DROP SHAFT SECTIONS
- 59. 2-S-209 DS-2A - STRUCTURAL DROP SHAFT DETAILS
- 60. 2-PR-202 DIVERSION CHAMBER DC-2A PLANS
- 61. 2-PR-203 DIVERSION CHAMBER DC-2A SECTIONS
- 62. 2-PR-204 DIVERSION CHAMBER DC-2B PLANS
- 63. 2-PR-205 DIVERSION CHAMBER DC-2B SECTIONS
- 64. 2-PR-207 DIVERSION CHAMBER DC-2C PLANS AND SECTIONS
- 65. 2-E-001 ELECTRICAL PARTIAL SITE PLAN
- 66. 2-E-002 ELECTRICAL POWER DISTRIBUTION AND LAYOUT
- 67. 2-R1-001 SITE NO. 2 - SITE RESTORATION PLAN

SITE 3

- 68. 3-SP-001 SITE NO. 3 - EXISTING SITE PLAN TREE REMOVALS AND TREE PROTECTION
- 69. 3-SP-002 SITE NO. 3 - SITE PREPARATION PLAN
- 70. 3-SP-003 SITE NO. 3 - SEWER RELOCATION PLAN
- 71. 3-ES-001 SHAFT NO. 3 - EXCAVATION SUPPORT
- 72. 3-S-201 MH-3 - STRUCTURAL PLANS
- 73. 3-S-202 MH-3 - STRUCTURAL SECTIONS
- 74. 3-S-203 MH-3 - STRUCTURAL DETAILS
- 75. 3-R-001 SITE NO. 3 - SITE RESTORATION PLAN

SITE 4

- 76. 4-SP-001 SITE NO. 4 - EXISTING SITE PLAN TREE REMOVALS AND TREE PROTECTION
- 77. 4-SP-002 SITE NO. 4 - SITE PREPARATION PLAN
- 78. 4-ES-001 SHAFT NO. 4 - EXCAVATION SUPPORT
- 79. 4-S-201 DC-4 - STRUCTURAL DIVERSION CHAMBER PLANS
- 80. 4-S-202 DC-4 - STRUCTURAL DIVERSION CHAMBER SECTIONS
- 81. 4-S-203 DS-4 - STRUCTURAL DROP SHAFT PLANS
- 82. 4-S-204 DS-4 - STRUCTURAL DROP SHAFT SECTIONS
- 83. 4-S-205 DS-4 - STRUCTURAL DROP SHAFT DETAILS
- 84. 4-PR-201 DIVERSION CHAMBER DC-4 PLANS
- 85. 4-PR-202 DIVERSION CHAMBER DC-4 SECTIONS
- 86. 4-E-001 ELECTRICAL PARTIAL SITE PLAN
- 87. 4-E-002 ELECTRICAL POWER DISTRIBUTION AND LAYOUT
- 88. 4-R-001 SITE NO. 4 - SITE RESTORATION PLAN

SITE 5

- 89. 5-SP1-001 SITE NO. 5 - EXISTING SITE PLAN TREE REMOVALS AND TREE PROTECTION
- 90. 5-SP1-002 SITE NO. 5 - SITE PREPARATION PLAN
- 91. 5-SP1-003 SITE NO. 5 - REDUCED SITE LAYDOWN PLAN
- 92. 5-ES1-001 SHAFT NO. 5 - EXCAVATION SUPPORT
- 93. 5-ES1-002 SHAFT NO. 5B - EXCAVATION SUPPORT

INSTRUMENTATION & CONTROLS

- 94. 1-N-001 LEGEND (1)
- 95. 1-N-002 LEGEND (2)
- 96. 1-N-003 P&ID - DIVERSION CHAMBER 2
- 97. 1-N-004 P&ID - DIVERSION CHAMBER 4
- 98. 1-N-005 CONTROL PANEL LAYOUT
- 99. 1-N-006 CONTROL PANEL POWER DISTRIBUTION
- 100. 1-N-007 CONTROL PANEL WIRING DETAIL (1)
- 101. 1-N-008 CONTROL PANEL WIRING DETAIL (2)
- 102. 1-N-009 INSTRUMENT DETAIL

MISCELLANEOUS DETAILS

- 103. D-1-002 GRADING SECTION DETAILS
- 104. D-1-002A GRADING SECTION DETAILS
- 105. D-1-003 RESTORATION DETAILS (1)
- 106. D-1-004 RESTORATION DETAILS (2)
- 107. STG-001 DIVERSION CHAMBER - STAGE 1
- 108. STG-002 DIVERSION CHAMBER - STAGE 2
- 109. STG-003 DIVERSION CHAMBER - STAGE 3
- 110. T-1-001 SHAFT DETAIL - SHAFT AND HANDMINING EXCAVATION SUPPORT DETAILS
- 111. T-1-002 TUNNEL DETAIL - EXCAVATION SUPPORT DETAIL
- 112. T-1-003 TUNNEL DETAIL - MONITORING DETAILS
- 113. T-1-004 TUNNEL DETAIL - SAN PIPE IN TUNNEL DETAIL
- 114. DS-1-001 STRUCTURAL STANDARD DETAILS (1)
- 115. DS-1-002 STRUCTURAL STANDARD DETAILS (2)
- 116. DS-1-003 STRUCTURAL STANDARD DETAILS (3)
- 117. DS-1-004 STRUCTURAL STANDARD DETAILS (4)
- 118. DS-1-005 CONCRETE BEAM SCHEDULE

STANDARD DETAILS

- 119. STD-1-001 REGION OF PEEL STANDARD DETAIL DRAWINGS (1)
- 120. STD-1-002 REGION OF PEEL STANDARD DETAIL DRAWINGS (2)
- 121. STD-1-003 REGION OF PEEL STANDARD DETAIL DRAWINGS (3)
- 122. STD-1-004 REGION OF PEEL STANDARD DETAIL DRAWINGS (4)
- 123. STD-1-005 CITY OF MISSISSAUGA STANDARD DETAIL DRAWINGS (5)
- 124. STD-1-006 CITY OF MISSISSAUGA STANDARD DETAIL DRAWINGS (6)
- 125. STD-1-007 ONTARIO PROVINCIAL STANDARD DETAIL DRAWINGS (7)
- 126. STD-1-008 ONTARIO PROVINCIAL STANDARD DETAIL DRAWINGS (8)

TRAFFIC MANAGEMENT

- 127. TMP-1-001 TRAFFIC MANAGEMENT PLAN - SITE 2 & 3
- 128. TMP-1-002 TRAFFIC MANAGEMENT PLAN - SITE 4 & 5

	Approved by _____				
 <p>Region of Peel working with you</p>					
<p>DRAWING INDEX</p>					
CAD Area	X-XX	Area	Z-41 to Z-45	Project No.	16-2291
Checked by	C.K.	Drawn by	C.A.	Plan No.	G-1-002
Date	JAN 2020	Sheet	2 of 128		

REVISIONS		
DATE	DETAILS	INIT.
10/25/2018	ISSUED FOR 30% DESIGN REVIEW	S.F.
08/01/2019	ISSUED FOR 50% DESIGN REVIEW	S.F.
11/15/2019	ISSUED FOR 90% DESIGN REVIEW	C.K.
01/23/2020	ISSUED FOR 100% DESIGN REVIEW	C.K.

ABBREVIATIONS

ABD	ABANDONED	H	HYDRO	TL	TRAFFIC LIGHT
ARCH	ARCHITECTURAL	H. DEFL	HORIZONTAL DEFLECTION	TMH	TELECOMMUNICATIONS MANHOLE
AV	AIR VALVE	HP	HYDRO POLE	TPZ	TREE PROTECTION ZONE
B	BELL	G	GAS MAIN	TRCA	TORONTO REGION CONSERVATION AUTHORITY
BH	BORE HOLE	GV	GATE VALVE	TS	TRAFFIC SIGN
BOL	BOLLARD	IB	IRON BAR	TV	TELEVISION
BT	BELL TELECOM	I.E.	INVERT ELEVATION	V. DEFL	VERTICAL DEFLECTION
BV	BUTTERFLY VALVE	LS	LIGHT STANDARD	VB	VALVE BOX
C.E.	COVER ELEVATION	LSHP	LIGHT STANDARD HYDRO POLE	VC	VALVE CHAMBER
C.I.	CAST IRON	M.O.E.	MINISTRY OF ENVIRONMENT	VIT	VITREOUS CLAY
CL	CENTERLINE	MIN	MINIMUM	WM	WATER MAIN
CLR	CLEARANCE	MAX	MAXIMUM	WV	WATER VALVE
CLF	CHAIN LINK FENCE	MB	MAIL BOX	WK	WATER KEY
CB	CATCH BASIN	MH	MAINTENANCE HOLE	WS	WATER SERVICES
CONC	CONCRETE	NO.	NUMBER		
COP	COPPER	PB	POWER BOX		
CPP	CONCRETE PRESSURE PIPE	PE	POLYETHYLENE		
CSP	CORRUGATED STEEL PIPE	PLYRSN	POLY RESIN		
CVC	CREDIT VALLEY CONSERVATION	PROP	PROPERTY		
CW	COMPLETE WITH	PVC	POLYVINYL CHLORIDE		
DBH	DIAMETER AT BREST HEIGHT	RIM EL.	RIM ELEVATION		
DC	DIVERSION CHAMBER	RCP	REINFORCED CONCRETE PIPE		
D.I.	DUCTILE IRON	RFO	ROGERS FIBER OPTIC		
DIA	DIAMETER	SAN	SANITARY SEWER		
DS	DROP STRUCTURE	SL	STREET LIGHT		
DV	DRAIN VALVE	ST	STEEL		
ESC	EROSION AND SEDIMENT CONTROL	STA	STATION		
EX	EXISTING	STM	STORM SEWER		
FH	FIRE HYDRANT				
FM	FORCE MAIN				
FOC	FIBRE OPTIC CABLE				

GENERAL NOTES

- ALL WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE AGENCY, CITY OF MISSISSAUGA, CCDC STANDARDS AND SPECIFICATIONS UNLESS STATED OTHERWISE.
- ALL EXISTING BURIED AND OVERHEAD UTILITIES INFORMATION HAS BEEN SHOWN IN ACCORDANCE WITH THE AVAILABLE RECORDS. THE VENDOR SHALL VERIFY EXACT LOCATION OF ALL EXISTING UTILITIES IN THE FIELD PRIOR TO COMMENCING THE WORK. ALL OVERHEAD CLEARANCE SHOWN ON DRAWINGS ARE APPROXIMATE, VENDOR TO FIELD VERIFY.
- VENDOR SHALL BE RESPONSIBLE FOR ALL PROTECTION, SUPPORT AND/OR TEMPORARY RELOCATION OF UNDERGROUND AND ABOVE GROUND UTILITIES PRIOR TO AND DURING CONSTRUCTION. PROTECTION OF ALL UTILITIES PRIOR TO AND DURING CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE SERVICE PROVIDER.
- ALL WORK ADJACENT TO ROAD PAVEMENT SHALL BE CARRIED OUT USING VERTICAL WALL TRENCH INSTALLATION SO AS TO MINIMIZE THE IMPACT ON TRAFFIC.
- CONSTRUCTION AND DETOUR SIGNS REQUIRED SHALL BE IN ACCORDANCE WITH "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" AND LATEST REVISION OF THE ONTARIO MINISTRY OF TRANSPORTATION "TRAFFIC CONTROL MANUAL OF ROADWAY WORKS OPERATIONS."
- ALL SHORING SHALL COMPLY WITH OHSA 235 (2). THE SUPPORT SYSTEM SHALL CONSIST OF AN ENGINEERED SUPPORT SYSTEM DESIGNED FOR THE SPECIFIC LOCATION OF THE PROJECT.
- REMOVE AND REINSTATE STREET FURNITURE (I.E. SIGNS, MAIL BOXES, GUIDE RAILS, CULVERTS, LIGHTS, SIGNAL POSTS ETC) AS NECESSARY. REINSTATE TO ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE ENGINEER AND THE AGENCY UPON COMPLETION.
- CULVERTS, POLES ETC. NOT REMOVED ARE TO BE PROTECTED. SHORE AND/OR BRACE TO PREVENT DAMAGE OR MOVEMENT. IF DAMAGED BY VENDOR, REINSTATE TO ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE ENGINEER AND THE AGENCY UPON COMPLETION.
- CONSTRUCTION RELATED ACTIVITIES OUTSIDE THE TEMPORARY AND PERMANENT EASEMENTS ARE STRICTLY PROHIBITED.
- ENBRIDGE CONSUMERS GAS MINIMUM HORIZONTAL (FROM EDGE OF GAS TO EDGE OF EXCAVATION) AND VERTICAL CLEARANCES TO BE MAINTAINED AS PER ENBRIDGE'S THIRD PARTY MANUAL TABLE 2-5, 2-6, AND 2-7. EXCAVATION PROCEDURES AND BACKFILLING EXPOSED GAS MAINS WITH UNSHRINKABLE FILL AS OUTLINED BY ENBRIDGE'S THIRD PARTY MANUAL.
- VENDOR SHALL CONFIRM THE LOCATION OF GAS MAINS AND SERVICES BY FIELD LOCATING AND DAYLIGHTING. FREQUENCIES AND LOCATION OF TEST HOLES AS PER TABLE 2-2 AND 2-3 OF ENBRIDGE'S THIRD PARTY MANUAL. CALL ONTARIO AT 1-800-400-2255, 5 DAYS IN ADVANCE.
- OPERATION OF HEAVY EQUIPMENT OVER THE GAS MAIN IS NOT PERMITTED UNLESS APPROVED BY ENBRIDGE. VEHICULAR LOADS IN EXCESS LISTED IN TABLE 3-1 OF ENBRIDGE'S THIRD PARTY MANUAL ARE NOT PERMITTED UNLESS APPROVED BY ENBRIDGE. PRIOR TO CONSTRUCTION, THE VENDOR SHALL SUBMIT A SHAFT CONSTRUCTION COMPOUND PLAN SHOWING THE PROPOSED LAYOUT OF SITE COMPOUNDS.
- VIBRATION LEVELS SHALL BE MONITORED AS PER THE CITY OF TORONTO BY-LAW 514-2008.
- VENDOR IS RESPONSIBLE FOR SAFETY AND SECURITY AT ALL TIMES DURING CONSTRUCTION OF THIS PROJECT.
- ALL AREAS IMPACTED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR BETTER, TO THE SATISFACTION OF THE ENGINEER AND THE AGENCY.
- APPROXIMATE TOP OF ROCK SHOWN IN PROFILE ARE FOR GENERAL PRESENTATION PURPOSES ONLY. VENDOR SHALL REFER TO GEOTECHNICAL BASELINE REPORT (GBR).

TREE PROTECTION PLAN NOTES

- THE TREE PROTECTION ZONES (TPZ) ARE IDENTIFIED IN THE ARBORIST REPORT INCLUDED IN THE TENDER DOCUMENTS.
- NO CONSTRUCTION ACTIVITY INCLUDING GRADE CHANGES, SURFACE TREATMENTS OR EXCAVATIONS OF ANY KIND IS PERMITTED WITHIN THE AREA IDENTIFIED ON THIS PLAN AS TREE PROTECTION ZONE (TPZ). NO ROOT CUTTING IS PERMITTED. NO STORAGE OF MATERIAL OR FILL IS PERMITTED. NO MOVEMENT OR STORAGE OF VEHICLES OR EQUIPMENT IS PERMITTED WITHIN THE TPZ. THE AREA(S) IDENTIFIED AS TPZ MUST REMAIN UNDISTURBED AT ALL TIMES.
- TREE PROTECTION BARRIERS FOR TREES SITUATED ON THE CITY ROAD ALLOWANCE WHERE VISIBILITY MUST BE MAINTAINED OR WITHIN CITY PARKS. TO BE A MINIMUM 1.2m HIGH AND CONSIST OF ORANGE WEB SNOW FENCING ON A 2" x 4" WOOD FRAME (SEE CITY OF MISSISSAUGA STD DETAIL 02830-6). ALL SUPPORTS AND BRACING USED TO SECURE THE BARRIER SHOULD BE LOCATED OUTSIDE THE TPZ. WHERE SOME FILL OR EXCAVATE HAS TO BE TEMPORARILY LOCATED NEAR A TREE PROTECTION BARRIER, PLYWOOD MUST BE USED TO ENSURE NO MATERIAL ENTERS THE TPZ.
- PRIOR TO COMMENCEMENT OF ANY SITE ACTIVITY THE TREE PROTECTION BARRIERS SPECIFIED ON THIS PLAN MUST BE INSTALLED AND WRITTEN NOTICE PROVIDED TO THE AGENCY, URBAN FORESTRY SERVICES. THE TREE PROTECTION BARRIERS MUST REMAIN IN EFFECTIVE CONDITION UNTIL ALL SITE ACTIVITIES INCLUDING LANDSCAPING ARE COMPLETE. A SIGN AS SPECIFIED MUST BE ATTACHED TO ALL SIDES OF THE BARRIER.
- TPZ DISTANCES ARE TO BE MEASURED FROM THE OUTSIDE EDGE OF THE TREE BASE.
- IF TREES ARE BEING ADVERSLY AFFECTED BY CONSTRUCTION, A WATERING AND FERTILIZING PROGRAM IS TO BE IMPLEMENTED TO THE SATISFACTION OF THE URBAN FORESTRY SERVICES.
- TREES IDENTIFIED FOR PRESERVATION BUT WHICH DIE, OR ARE DAMAGED BEYOND REPAIR, SHALL BE REPLACED AT THE VENDOR'S EXPENSE WITH A SIZE AND SPECIES OF TREE APPROVED BY THE URBAN FORESTRY SERVICES.
- ANY ROOTS OR BRANCHES WHICH EXTEND BEYOND THE TREE PROTECTION ZONE(S) INDICATED ON THIS PLAN WHICH REQUIRE PRUNING MUST BE PRUNED BY A QUALIFIED ARBORIST OR OTHER TREE PROFESSIONAL AS APPROVED BY URBAN FORESTRY SERVICES. ALL PRUNING OF TREE ROOTS AND BRANCHES MUST BE IN ACCORDANCE WITH GOOD ARBORICULTURAL STANDARDS. THE ARBORIST/TREE PROFESSIONAL MUST CONTACT FORESTRY SERVICES NO LESS THAN 48 HOURS PRIOR TO CONDUCTING ANY SPECIFIED WORK.
- PROTECTION OF THE TREES INDICATED ON THIS PLAN MUST BE IN ACCORDANCE WITH THE CITY OF MISSISSAUGA STREET TREE BY-LAW.
- ANY QUESTIONS SHOULD BE DIRECTED TO THE ENGINEER OR CONTRACT ADMINISTRATOR.

DIMENSIONING

- ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
- ALL ELEVATIONS ARE IN METRES (m) UNLESS NOTED OTHERWISE.

LEGEND OF SYMBOLS

	PROPOSED WATERMAIN		CUT AND PLUG
	PROPOSED SANITARY		STANDARD IRON BAR
	PROPOSED SANITARY LATERAL		IRON BAR
	EXISTING WATERMAIN		ROUND IRON BAR
	EXISTING SANITARY PIPE & MANHOLE		SLOPE
	EXISTING STORM PIPE & MANHOLE		FIRE HYDRANT
	EXISTING GAS MAIN		FIRE HYDRANT VALVE
	EXISTING BELL LINE		ELECTRICAL JUNCTION BOX
	EXISTING CABLE LINE		LIGHT STANDARD
	EXISTING HYDRO LINE		BELL MANHOLE
	MISCELLANEOUS TREE		SANITARY MANHOLE
	BOLLARD		STORM MANHOLE
	HYDRO LIGHT POLE		BELL PEDESTAL
	HYDRO POLE		CABLE TV PEDESTAL
	ELECTRICAL HAND WELL		RAILWAY SIGNALS
	CURB STOP WATER SERVICE		STOP SIGN
	DOUBLE CATCH BASIN		TRAFFIC LIGHT
	DITCH INLET CATCH BASIN		TRAFFIC SIGN - OTHER
	BOREHOLE - SEE GEOTECHNICAL INVESTIGATION REPORT		POTENTIAL TREE REMOVAL
	FLAG POLE		YIELD SIGN
	FENCE GATE		WATER VALVE CHAMBER
	GAS MARKER		REDUCER
	TV MARKER		EX. VALVE & BOX
	HANDICAP		END PLUG
	HORIZONTAL CONTROL MONUMENT		EXISTING V.B., V.C. OR HYDRANT TO BE REMOVED
	VERTICAL CONTROL MONUMENT (BENCHMARK)		EXISTING VALVE IN PROFILE
	SUBSURFACE SETTLEMENT MARKER		
	SUBSURFACE SETTLEMENT POINT		
	IN-PLACE INCLINOMETER (2 POINTS)		
	TEST PIT		

Approved by _____

working with you

ABBREVIATIONS, LEGEND, AND GENERAL NOTES

CAD Area	X-XX	Area	Z-41 to Z-45	Project No.	16-2291
Checked by	C.K.	Drawn by	C.A.	Plan No.	G-1-003
Date	JAN 2020	Sheet	3 of 128		

SITE SURVEY RESPONSIBILITIES

- VERTICAL DATUM: CANADIAN GEODETIC DATUM, 1928 (NOT 1978 SOUTHERN ONTARIO ADJUSTMENT). HORIZONTAL DATUM: NAD83(ORIGINAL) - UTM ZONE 17N.
- ANY DISCREPANCIES BETWEEN SITE CONDITIONS AND THE DRAWINGS MUST BE REPORTED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND APPROPRIATE ACTION TAKEN TO THE SATISFACTION OF THE AGENCY.
- ALL SURVEY POINTS SHALL BE VERIFIED IN THE FIELD BY THE VENDOR PRIOR TO CONSTRUCTION. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE LAYOUT SHALL BE REPORTED TO THE ENGINEER AND THE ENGINEER SHALL NOTIFY THE AGENCY OF THE NECESSARY CHANGES.
- EXISTING UTILITIES AND PIPE LINES ARE SHOWN IN APPROXIMATE LOCATION BASED UPON RECORD PLANS AND INFORMATION. VENDOR TO CONFIRM EXISTING DIMENSIONS, ELEVATIONS AND LOCATION OF ALL UTILITIES AND PIPE LINES, STRUCTURES AND FACILITIES AS REQUIRED, CONFIRMING CLEARANCE FOR CONSTRUCTION PRIOR TO COMMENCEMENT OF WORKS.
- COORDINATES SHOWN FOR MAINTENANCE HOLES ARE TO CENTRE OF BASE SLAB.
- ELEVATIONS GIVEN ARE FINISHED GRADE, TOP OF PAVEMENT, TOP OF STRUCTURES, OR TOP OF SIDEWALK UNLESS OTHERWISE NOTED.
- SOURCE OF TOPOGRAPHY SHOWN ON THE DRAWINGS ARE BASE MAPS PROVIDED BY FIELD SURVEY. EXISTING CONDITIONS MAY VARY FROM THOSE SHOWN. THE VENDOR SHALL VERIFY EXISTING CONDITIONS AND ADJUST WORK PLAN ACCORDINGLY PRIOR TO BEGINNING CONSTRUCTION. SURVEY MARGIN OF ERROR IS +/-20mm.

ENVIRONMENTAL MANAGEMENT NOTES

- AN ENVIRONMENTAL BRIEFING WILL BE HELD WITH THE VENDOR PRIOR TO THE START OF CONSTRUCTION TO REVIEW THE ENVIRONMENTAL MANAGEMENT, PROTECTION AND RESTORATION MEASURES AND REQUIREMENTS.
- ALL EROSION, SEDIMENTATION AND VEGETATION PROTECTION CONTROL MEASURES SHALL BE PROPERLY INSTALLED, MONITORED AND MAINTAINED THROUGHOUT CONSTRUCTION AND REMAIN IN PLACE IN GOOD CONDITION UNTIL SUCH TIME AS AREAS ARE STABILIZED AND VEGETATIVE COVER IS ESTABLISHED AND APPROVED BY THE ENGINEER.
- ALL ACTIVITIES, INCLUDING VEHICLE MAINTENANCE PROCEDURES AND FUELING SHALL BE CONTROLLED TO PREVENT THE ENTRY OF PETROLEUM PRODUCTS, DEBRIS, RUBBLE, CONCRETE OR THE DELETERIOUS SUBSTANCES INTO THE WATER. EQUIPMENT AND VEHICULAR MAINTENANCE SHALL BE CONDUCTED AWAY FROM THE WATER, SANITARY AND STORM SEWER SYSTEMS AND/OR WATER COURSE AS PER PERMIT REQUIREMENTS.
- ALL AREAS IMPACTED BY CONSTRUCTION ACTIVITIES SHALL BE RESTORED TO ORIGINAL CONDITIONS OR TO THE RESTORATION REQUIREMENTS SPECIFIED. VEGETATION RESTORED WILL BE WITH NATIVE/NON INVASIVE OR AS SPECIFIED IN DRAWINGS OR CONTRACT DOCUMENTS UPON COMPLETION OF THE WORK ON A ONE TO ONE BASIS. VENDOR REMOVE ALL EXCESS FILL RESULTING FROM CONSTRUCTION WITHIN THE REGIONAL FLOOD PLAIN. GRADES WITHIN THE REGIONAL FLOOD PLAIN SHALL BE MAINTAINED.
- ALL HEAVY MACHINERY AND OTHER SUCH ITEMS CONTAINING FUEL/POLLUTANTS SHALL BE STORED OUTSIDE THE REGIONAL STORM FLOODPLAIN.

SITE PREPARATION GENERAL NOTES

- ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE NOTED.
- ALL CONSTRUCTION EQUIPMENT AND MATERIALS TO BE CONTAINED WITHIN THE COMPOUND LIMITS AT ALL TIMES.
- VENDOR TO VERIFY LOCATION OF EX. UTILITIES PRIOR TO COMMENCEMENT OF ANY WORKS AND TAKE APPROPRIATE MEASURES TO PROTECT THEM. VENDOR TO NOTIFY CONTRACT ADMINISTRATOR OF ANY DISCREPANCIES IN LOCATES.
- VENDOR SHALL NOTIFY THE AGENCY PRIOR TO ANY TREE REMOVAL OR TREE PRUNING. ALSO SEE TREE PROTECTION PLAN NOTES ON DWG. G-1-003.
- VENDOR TO TREAT WATER FROM DEWATERING OPERATIONS PRIOR TO DISCHARGE IN EXISTING SEWER SYSTEMS OR DITCH OR WATER COURSE. VENDOR MUST RECEIVE APPROVAL FROM THE REGULATORY AGENCY PRIOR TO DISCHARGE. VENDOR WILL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH PERMITS AND DISCHARGE.
- EXISTING PEDESTRIAN ACCESS OR PEDESTRIAN DETOUR ROUTES TO BE MAINTAINED AT ALL TIMES, UNLESS NOTED OTHERWISE.

EROSION AND SEDIMENT CONTROL

GENERAL

- EROSION AND SEDIMENT CONTROL (ESC) MEASURES (INCLUDING SILT FENCES AND SILT SOCKS) WILL BE IMPLEMENTED PRIOR TO, AND MAINTAINED DURING THE CONSTRUCTION PHASES; TO BE PLACED PRIOR TO ANY TOPSOIL STRIPPING OR PRE-GRADING OPERATIONS. ESC MEASURES SHALL PREVENT ENTRY OF SEDIMENT INTO THE WATERCOURSE/NATURAL AREAS AND AVOID SURFACE RUNOFF FROM LEAVING THE SITE "UNTREATED". ALL SILT FENCE SHALL BE PER PEEL STD. DWG. 5-2-13
- VENDOR TO FLUSH EXISTING ON-SITE STORM SEWERS AND CULVERTS AND CLEAR ANY DEBRIS AT THE INLETS AND OUTLETS PRIOR TO AND AFTER THE SITE CONSTRUCTION ACTIVITIES.
- IMPLEMENT AND MAINTAIN EROSION AND SEDIMENT CONTROL DEVICES DURING CONSTRUCTION. EROSION AND SEDIMENTATION CONTROLS ARE TO BE KEPT IN PLACE AND FUNCTIONAL UNTIL THE SITE IS STABILIZED.
- ALL EROSION AND SEDIMENT CONTROLS ARE TO BE INSPECTED ON A WEEKLY BASIS (AND AFTER ANY STORM EVENT) AND CLEARED OR REPLACED, AS REQUIRED. ALL DAMAGED EROSION AND SEDIMENT CONTROL MEASURES SHOULD BE REPAIRED AND/OR REPLACED IMMEDIATELY AND WITHIN 48 HOURS OF THE INSPECTION.
- EXISTING CATCH BASIN COVERS TO BE WRAPPED IN FILTER CLOTH PER CITY OF MISSISSAUGA STANDARD 2930.040 WHICH WILL BE MONITORED, MAINTAINED AND REPLACED WHEN NECESSARY. VENDOR SHALL BE RESPONSIBLE FOR ANY FLOODING RESULTING FROM BLOCKED OR IMPAIRED DRAINAGE SYSTEMS.
- REMOVE SILT FROM DEWATERING AND OTHER PUMPING OPERATIONS PRIOR TO DISCHARGE. DEWATERING DISCHARGE SHALL MEET RECEIVING BODY REQUIREMENTS AS DEFINED BY THE APPROPRIATE SEWER USE BY-LAWS PRIOR TO DISCHARGE. VENDOR TO APPLY FOR PERMIT WITH CITY OF MISSISSAUGA (STORM) PER BY-LAW 259-05 AND/OR REGION OF PEEL (SANITARY) PER BY-LAW 53-2010.
- PROVIDE DUST CONTROL AT ALL TIMES INCLUDING THE MAINTENANCE AND CLEANUP (WHEN NECESSARY) OF ROADS ADJACENT TO THE PROJECT. CLEAN OFF TRUCKS AND EQUIPMENT PRIOR TO LEAVING THE SITE TO PREVENT MUD AND DIRT TRACKING ONTO ROADS.
- EXTRACTED GROUND WATER SHALL BE DIRECTED INTO PORTABLE SEDIMENT CONTROL TANK(S) IN ORDER TO ENSURE THAT SEDIMENT LOADED WATER DOES NOT ENTER WATERCOURSES. DISCHARGE OF SILT AND SEDIMENT LADEN WATER TO ANY WATERCOURSE IS PROHIBITED. THE DISCHARGE FROM DIRECT DEWATERING PUMPS SHOULD BE DISPERSED THROUGH VEGETATED AREAS AT LEAST 30m FROM ANY WATERCOURSE AND INCLUDE EROSION CONTROL MEASURES AND ENERGY DISSIPATION MEASURES AS PER THE CITY OF MISSISSAUGA PERMIT REQUIREMENTS.
- ALL EROSION, SEDIMENTATION AND VEGETATION PROTECTION CONTROL MEASURES SHALL BE PROPERLY INSTALLED, MONITORED AND MAINTAINED THROUGHOUT CONSTRUCTION AND REMAIN IN PLACE IN GOOD CONDITION. DISTURBED AREAS SHALL BE MINIMIZED TO THE EXTENT POSSIBLE, AND TEMPORARILY OR PERMANENTLY STABILIZED OR RESTORED AS THE WORK PROGRESSES WITH NATIVE/NON-INVASIVE SPECIES AS APPROVED BY THE TRCA/CVC ENFORCEMENT OFFICER.
- THE VENDOR'S PROJECT MANAGER AND THE AGENCY'S CONTRACT ADMINISTRATOR/REPRESENTATIVE WILL ATTEND THE SITE TO INSPECT ALL NEW CONTROLS, AS WELL AS ON A REGULAR BASIS, OR FOLLOWING RAIN/SNOWMELT EVENT, TO MONITOR ALL WORKS, AND IN PARTICULAR WORKS RELATED TO EROSION AND SEDIMENT CONTROLS, DEWATERING OR UNWATERING, RESTORATION AND IN- OR NEAR- WATER WORKS. SHOULD CONCERNS ARISE ON SITE THE CONTRACT ADMINISTRATOR WILL CONTACT THE PROPONENT, TRCA/CVC ENFORCEMENT OFFICER, AND ANY OTHER APPROPRIATE PARTIES.
- ALL CONSTRUCTION ACTIVITIES, INCLUDING MAINTENANCE PROCEDURES, WILL BE CONTROLLED TO PREVENT THE ENTRY OF PETROLEUM PRODUCTS, DEBRIS, RUBBLE, CONCRETE, SEDIMENTS, OR OTHER DELETERIOUS SUBSTANCES INTO THE WATER. EQUIPMENT MAINTENANCE AND VEHICULAR REFUELING WILL BE CONDUCTED A MINIMUM OF 30 METERS FROM THE WATERCOURSE/WETLAND.
- ALL DEWATERING/UNWATERING SHALL BE TREATED AND RELEASED TO THE ENVIRONMENT AT LEAST 30 METRES FROM A WATERCOURSE OR WETLAND AND ALLOWED TO DRAIN THROUGH A WELL-VEGETATED AREA. NO DEWATERING EFFLUENT SHALL BE SENT DIRECTLY TO ANY WATERCOURSE, WETLAND OR FOREST, OR ALLOWED TO DRAIN ONTO DISTURBED SOILS WITHIN THE WORK AREA; DISCHARGE IS TO BE RELEASED TO AN UNDISTURBED NATURAL AREA. THESE CONTROL MEASURES SHALL BE MONITORED FOR EFFECTIVENESS AND MAINTAINED OR REVISED TO MEET THE OBJECTIVE OF PREVENTING THE RELEASE OF SEDIMENT LADEN WATER AND ACHIEVING THE WATER QUALITY TARGETS.
- THE EROSION AND SEDIMENT CONTROL STRATEGIES OUTLINED ON THE PLANS ARE NOT STATIC AND MAY NEED TO BE UPGRADED/AMENDED AS SITE CONDITIONS CHANGE TO MINIMIZE SEDIMENT LADEN RUNOFF FROM LEAVING THE WORK AREAS. IF THE PRESCRIBED MEASURES ON THE PLANS ARE NOT EFFECTIVE IN PREVENTING THE RELEASE OF A DELETERIOUS SUBSTANCE, INCLUDING SEDIMENT, THEN ALTERNATIVE MEASURES MUST BE IMPLEMENTED IMMEDIATELY TO MINIMIZE POTENTIAL ECOLOGICAL IMPACTS. CONTRACT ADMINISTRATOR AND/OR TRCA/CVC ENFORCEMENT OFFICER, WHICHEVER APPLICABLE, SHOULD BE IMMEDIATELY CONTACTED. ANY DEVIATION FROM APPROVED PLANS MUST BE DESIGNED BY A QUALIFIED PROFESSIONAL. ADDITIONAL ESC MATERIALS (I.E. SILT FENCE, FILTER SOCKS, STRAW BALES, CLEAR STONES, ETC.) ARE TO BE KEPT ON SITE FOR EMERGENCIES AND REPAIRS.
- ALL IN-WATER AND NEAR WATER WORKS WILL BE CONDUCTED IN THE DRY WITH APPROPRIATE EROSION AND SEDIMENT CONTROLS. PLAN THE WORK ACCORDINGLY WITH THE WEATHER FORECAST. ALL ACCESS TO THE WORK SITE SHALL BE FROM EITHER SIDE OF THE WATERCOURSE OR WETLAND. NO EQUIPMENT OR VEHICLES ARE PERMITTED TO CROSS THROUGH THE WATERCOURSE OR WETLAND UNLESS APPROVED BY TRCA/CVC, WHICHEVER IS APPLICABLE.
- ALL EROSION CONTROL AND TEMPORARY ROADS, STRUCTURES AND FACILITIES TO BE REMOVED FOLLOWING CONSTRUCTION AND AREAS RESTORED TO THE SATISFACTION OF THE ENGINEER.
- PERSON RESPONSIBLE FOR ECS MEASURES: JESSICA LI, Li, Jessica.LI@jacobs.com, 416-499-9000 EXT. 73853.

ADDITIONAL CONSERVATION AUTHORITY (CA) EROSION AND SEDIMENT CONTROL NOTES:

- ALL WORKS SHALL BE CONDUCTED IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF CA PERMIT.
- ALL GRADES WITHIN THE REGULATORY FLOOD PLAIN WILL BE MAINTAINED OR MATCHED.
- THE VENDOR SHALL MONITOR THE WEATHER SEVERAL DAYS IN ADVANCE OF THE ONSET OF THE PROJECT TO ENSURE THAT THE WORKS WILL BE CONDUCTED DURING FAVORABLE WEATHER CONDITIONS. SHOULD AN UNEXPECTED STORM ARISE, THE VENDOR WILL REMOVE ALL UNFIXED ITEMS FROM THE REGIONAL STORM FLOOD PLAIN THAT WOULD HAVE THE POTENTIAL TO CAUSE A SPILL OR AN OBSTRUCTION TO FLOW, E.G., FUEL TANKS, PORT-A-POTTIES, MACHINERY, EQUIPMENT, CONSTRUCTION MATERIALS, ETC.
- THE VENDOR SHALL MONITOR WEATHER FORECASTS TO ENSURE THAT THE WORKS WILL BE CONDUCTED IN FAVORABLE WEATHER. THE VENDOR IS RESPONSIBLE FOR REMOVING ALL CONSTRUCTION EQUIPMENT AND MATERIALS THAT WOULD HAVE POTENTIAL TO CAUSE A SPILL OR OBSTRUCTION (I.E. FUEL TANKS, PORTABLE TOILETS, MACHINERY, ETC.), FROM THE 100 YEAR FLOODPLAIN IN THE CASE OF A LARGE STORM EVENT. *OR SITE-SPECIFIC STORM EVENT
- IN ORDER TO COMPLY WITH THE MIGRATORY BIRDS CONVECTION ACT, CA RECOMMENDS THAT TREE REMOVALS BE COMPLETED BETWEEN AUGUST 1 AND APRIL 1. TO PROTECT LOCAL FISH POPULATIONS DURING THEIR SPAWNING, NURSERY AND MIGRATORY PERIODS, IN-WATER ACTIVITIES, MAY ONLY OCCUR DURING THE PERIODS SPECIFIED BY CA.
- BE ADVISED THAT CONSERVATION AUTHORITY MAY, AT ANY TIME, WITHDRAW THIS PERMISSION. IF, IN THE OPINION OF THE AUTHORITY, THE CONDITIONS OF THE PERMIT ARE NOT BEING COMPLIED WITH. THIS APPROVAL DOES NOT EXEMPT THE PROPERTY OWNER/APPLICANT/AGENT FROM THE PROVISIONS OF ANY OTHER FEDERAL, PROVINCIAL OR MUNICIPAL STATUTES, REGULATIONS OR BY-LAWS, OR ANY RIGHTS UNDER COMMON LAW.
- PLEASE REFER TO ESC GUIDELINE FOR URBAN CONSTRUCTION (DECEMBER 2006) FOR THE DESIGN AND DESIGN ALTERATION OF ESC MEASURES.
- THE PROJECT PROPONENT OR THEIR REPRESENTATIVE IS ULTIMATELY RESPONSIBLE FOR CONTROLLING SEDIMENT AND EROSION WITHIN THE CONSTRUCTION SITE FOR THE TOTAL PERIOD OF THE CONSTRUCTION.
- ALL CA-REGULATED DISTURBED GROUND LEFT INACTIVE FOR MORE THAN 30 DAYS SHALL BE STABILIZED USING APPROPRIATE EROSION CONTROL MEASURES AND AN APPROPRIATE NATIVE NON-INVASIVE SEED MIX OR WITH THE FINAL APPROVED RESTORATION PLAN.
- ANY SEDIMENT SPILL FROM THE SITE SHOULD BE REPORTED TO MINISTRY OF ENVIRONMENT (SPILL ACTION CENTER) AT 1-800-268-6060.
- IF EXCESSIVE SILTATION RESULTS FROM THE CONSTRUCTION ACTIVITIES, THE ONSITE SUPERVISOR/INSPECTOR AND/OR CA RESERVE THE RIGHT TO REQUEST ADDITIONAL ESC MEASURES WHICH WOULD BE INSTALLED PRIOR TO FURTHER CONSTRUCTION ACTIVITIES.
- AN AFTER-HOURS CONTACT NUMBER IS TO BE VISIBLY POSTED ON-SITE FOR EMERGENCIES. ALL THE PLANS SHOULD HAVE NAME AND CONTACT INFO OF THE PERSON RESPONSIBLE FOR ESC MEASURES.

REVISIONS		
DATE	DETAILS	INIT.
10/25/2018	ISSUED FOR 30% DESIGN REVIEW	S.F.
08/01/2019	ISSUED FOR 50% DESIGN REVIEW	S.F.
11/15/2019	ISSUED FOR 90% DESIGN REVIEW	C.K.
01/23/2020	ISSUED FOR 100% DESIGN REVIEW	C.K.

GENERAL NOTES FOR PRECAST CIRCULAR OR RECTANGULAR MAINTENANCE HOLES

- PRECAST MAINTENANCE HOLES TO BE SUPPLIED BY A MANUFACTURER CERTIFIED UNDER THE OCCPA PLANT PREQUALIFICATION PROGRAM (STD. DWG. 2-0-1)
- PROVIDE MONOLITHIC BASE SECTIONS FOR ALL MAINTENANCE HOLES UNLESS ALTERNATE APPROVED AND SPECIFIED ON PROJECT SPECIFIC REQUIREMENTS.
- USE ALTERNATIVE BASE, TOP, PIPE SUPPORT OR CONNECTOR, STEPS, FRAME AND COVER AND/OR BENCHING ONLY WHERE APPROVED AND SPECIFIED ON PROJECT SPECIFIC REQUIREMENTS. PROVIDE BASE EXTENSIONS FOR UPLIFT PREVENTION ON PRECAST MAINTENANCE HOLES 1200mm DIAMETER OR GREATER WHERE REQUIRED. REFER TO CONTRACT DRAWINGS AND SPECIFICATIONS AND GEOTECHNICAL REPORT FOR PROJECT SPECIFIC REQUIREMENTS.
- SPECIAL BASE DESIGN REQUIRED FOR DEPTHS GREATER THAN 9.0m.
- SEE NOTES ON PEEL STD. DWG. 2-0-1
- APPROVED ADJUSTMENT UNITS AND APPROVED FRAME AND COVER SYSTEMS TO BE INSTALLED AS PER MANUFACTURER'S INSTRUCTIONS (STD. DWGS. SECTION 2-6).
- FILL LIFTING HOLES WITH 1:3 NON SHRINK MORTAR MIX.
- FROST STRAPS SHALL BE INSTALLED AT ALL RISER, TOP AND BASE SECTION JOINTS ON ALL PRECAST MAINTENANCE HOLES TO A MAXIMUM DEPTH OF 3.0m FROM FINISHED GRADE (STD. DWG. 2-5-23).
- WATERPROOF MEMBRANE SHALL BE APPLIED AROUND ALL RISER, TOP AND BASE SECTION JOINTS AND ADJUSTMENT UNIT JOINTS ON ALL MAINTENANCE HOLES. WATERPROOF MEMBRANE TO BE "MEL-ROL" BY W.R. MEADOWS OF MILTON ONTARIO OR APPROVED EQUAL. EXTEND COMPLETELY AROUND ALL RISER SECTION JOINTS WITH A MINIMUM 300mm WIDE STRIP. WATERPROOF ABOVE GRADE SURFACES WITH "CEM-KOTE FLEX ST" BY W.R. MEADOWS OF MILTON ONTARIO OR APPROVED EQUAL (STD. DWG. 2-5-25).
- FRP SAFETY PLATFORMS BY ACCESS INDUSTRIAL OF MISSISSAUGA ONTARIO, OR ALUMINUM SAFETY PLATFORMS, WHERE REQUIRED, TO BE INSTALLED IN MAINTENANCE HOLES 1200mm DIAMETER OR GREATER (STD. DWGS. SECTION 2-6). PLATFORMS TO BE ANCHORED USING 316 SS HILTI KWIK BOLTS OR ENGINEER APPROVED EQUAL.
- FRP LADDERS BY ACCESS INDUSTRIAL OF MISSISSAUGA ONTARIO, OR ALUMINUM LADDERS, TO BE INSTALLED IN ALL MAINTENANCE HOLES 1200mm DIAMETER OR GREATER (STD DWGS. SECTION 2-6). LADDERS TO BE ANCHORED USING 316 SS HILTI KWIK BOLTS OR ENGINEER APPROVED EQUAL.
- BENCHING TO BE CONSTRUCTED TO THE OBVERT OF THE PIPE IN ALL CASES WITH 15MPa CONCRETE UNLESS OTHERWISE INDICATED (STD. DWG. 2-5-20). BENCHING AS PER OPSS PROV 1350, MATERIAL SPECIFICATION FOR CONCRETE MATERIALS AND PRODUCTION.
- FOR PVC PIPE, USE A FLEXIBLE WATERTIGHT CONNECTOR WITH GRANULAR BEDDING (STD. DWG. 2-5-15).
- FOR RIGID PIPE, SUPPORT FROM MAINTENANCE HOLE TO FIRST JOINT WITH MIN. 20 MPa. CONCRETE CRADLE (STD. DWG. 2-5-16).
- IF MONOLITHIC RISER OR PRECAST RISER SECTIONS ARE USED, THEN THE LADDER (OR FIRST STEP) CAN BE ANCHORED INTO THE SECTION TO MEET THE MAX. 300mm DISTANCE FROM SURFACE. IF COMPOSITE SECTIONS ARE USED, THEN FRP LADDER MUST ANCHOR INTO TOP OF CONE OR TOP OF BARREL SECTION AND EXTEND TO WITHIN 300mm OF SURFACE.
- ALL CHAMBERS LOCATED OUTSIDE OF R.O.W. OR WITHIN PARK SETTINGS MUST HAVE A 1500mm HIGH SANITARY CHAMBER MARKING POST (GREEN IN COLOUR), WITHIN 600mm OF CHAMBER COVER (STD. DWG. 2-5-24).

GENERAL NOTES FOR PIPING

- SUBMIT CONCRETE PRESSURE PIPE SHOP DRAWINGS TO THE ENGINEER FOR INFORMATION. ALL DRAWINGS SHALL BEAR THE SIGNATURE AND SEAL OF A PROFESSIONAL ENGINEER LICENSED TO PRACTISE IN ONTARIO.
- REFER TO STD. DWG. 2-7-11 FOR MAXIMUM PIPE SIZES IN PRECAST MAINTENANCE HOLES OR CHAMBERS.
- THE CONCRETE PRESSURE PIPE SHALL BE DESIGNED FOR INTERNAL PRESSURE TESTING TO 50psi (435kPa) AT SPRINGLINE OF PIPE WITHIN PRESSURE TEST AREA. AIR TESTING IS NOT PERMITTED.

TEMPORARY SHAFT LOCATION

DWG. NO.	SHAFT/MH NO.	ROAD CHAINAGE	NORTHING	EASTING
C-036	SH-2A	10+553.729	4 836 832.681	606 958.362
C-036	SH-2B	10+608.723	4 836 875.639	606 992.708
C-026	SH-3	7+910.392	4 834 740.971	605 347.187
C-018	SH-4	5+635.708	4 832 943.715	603 956.580
C-013	SH-5B	4+312.913	4 831 890.119	603 156.360
C-013	SH-5	4+261.908	4 831 850.309	603 124.481

PERMANENT MH AND CHAMBER LOCATION

DWG. NO.	SHAFT/MH NO.	ROAD CHAINAGE	NORTHING	EASTING
C-036	DS-2A	10+553.729	4 836 832.681	606 958.362
C-036	DC-2A	10+512.258	4 836 804.290	606 927.390
C-036	DC-2B	10+523.738	4 836 817.330	606 929.393
C-036	DC-2C	10+541.629	4 836 827.347	606 945.535
C-026	MH-3	7+910.392	4 834 740.971	605 347.187
C-026	MH-3A	7+899.053	4 834 730.115	605 342.911
C-026	MH-3B	7+905.868	4 834 732.833	605 350.893
C-026	MH-3C	7+916.019	4 834 741.636	605 356.022
C-026	MH-3D	7+921.887	4 834 749.731	605 354.713
C-026	MH-3E	7+898.582	4 834 727.792	605 345.396
C-026	MH-3F	7+903.528	4 834 729.765	605 351.189
C-026	MH-3G	7+918.698	4 834 742.920	605 358.853
C-026	MH-3H	7+923.091	4 834 748.981	605 357.873
C-018	DS-4	5+635.708	4 832 943.715	603 956.580
C-018	DC-4	5+600.620	4 832 919.658	603 930.429
C-013	MH-5B	4+312.913	4 831 890.119	603 156.360



Approved by _____

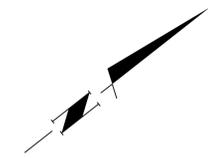
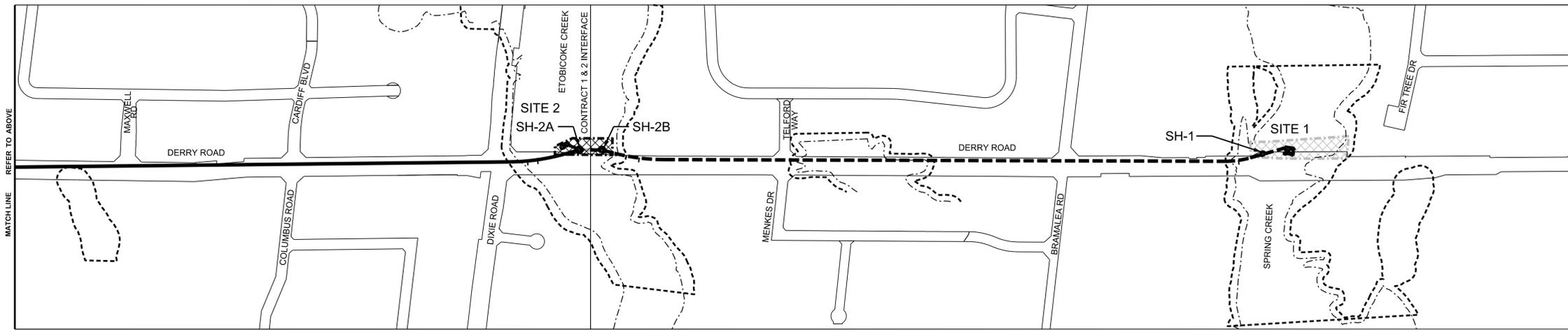
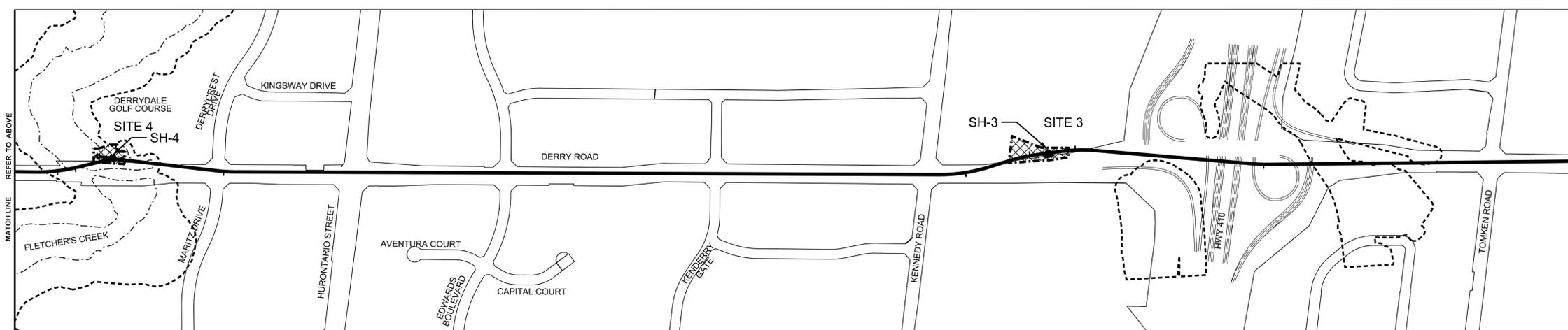
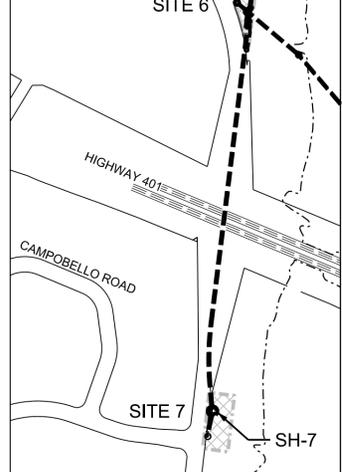
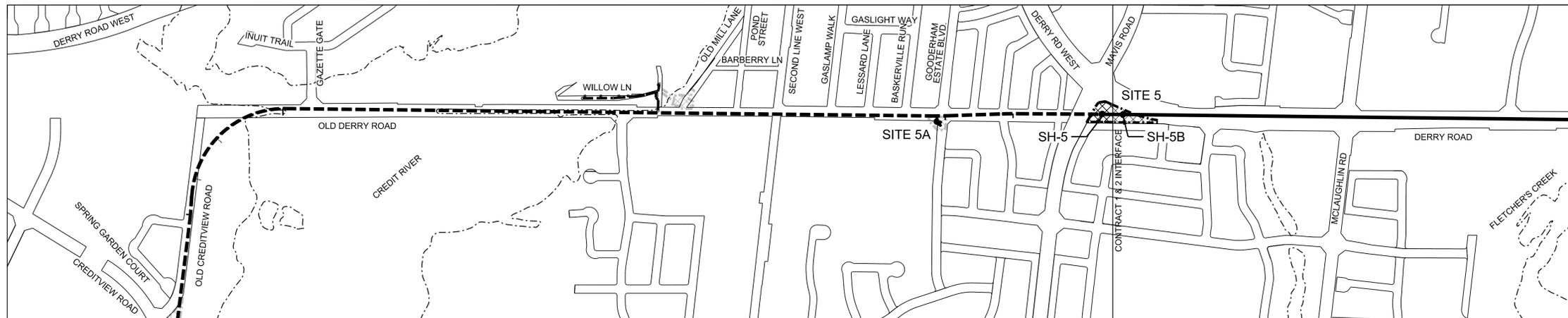


working with you

ABBREVIATIONS, LEGEND, AND GENERAL NOTES (2)

CAD Area	X-XX	Area	Z-41 to Z-45	Project No.	16-2291
Checked by	C.K.	Drawn by	C.A.	Plan No.	G-1-004
Date	JAN 2020	Sheet	4 of 128		

REVISIONS		
DATE	DETAILS	INIT.
11/15/2019	ISSUED FOR 90% DESIGN REVIEW	P.D.
01/23/2020	ISSUED FOR 100% DESIGN REVIEW	P.D.



LEGEND:

-  CONTRACT 1 TUNNEL - AWARD JUNE 1, 2019
-  CONTRACT 1 SITE COMPOUND LAYDOWN AREA
-  CONTRACT 2 - BY OTHERS
-  CONSERVATION AUTHORITY REGULATION LIMITS
-  FLOOD LINE LIMITS

NOTES:

1. CONTRACT 1 IDENTIFIES WORK LOCATIONS AT SITES 2 & 5, WHICH WILL BE TRANSFERRED TO CONTRACT 2. THE DATE OF THE TRANSFERS ARE:
 SITE 2 - JULY 22, 2022
 SITE 5 - JUNE 3, 2022
 SEE SPECIFICATIONS FOR WORK SEQUENCING AND SCHEDULE CONSTRAINTS/ REQUIREMENTS TO MEET THE ABOVE DATES.
 CONTRACT 1 LAYDOWN AREA IS SHOWN ON SITE PREPARATION PLAN 2-SP1-002 FOR SITE 2 AND 5-SP1-002 FOR SITE 5. WHEN PART OF THE LAYDOWN AREAS ARE TRANSFERRED TO CONTRACT 2, AT THE DATES SHOWN ABOVE, THE LAYDOWN AREA WILL BE REDUCED AS SHOWN ON REDUCED SITE LAYDOWN PLAN 2-SP1-003 FOR SITE 2 AND 5-SP1-003 FOR SITE 5.
2. A SCHEDULE THAT IDENTIFIES SUGGESTED CONSTRUCTION SEQUENCING PLAN TO MEET ABOVE CONSTRAINTS IS AVAILABLE. THIS IS A SUGGESTED SEQUENCE PLAN. THE VENDOR MAY PROPOSE A NEW PLAN OR CHANGES TO THE PLAN. HOWEVER, ALL REVISIONS MUST BE APPROVED BY THE AGENCY TO ENSURE IT MEETS THE CONSTRAINTS IDENTIFIED PRIOR TO IMPLEMENTATION. APPROVAL OF A NEW PLAN IS FOR CONCEPT ONLY AND VENDOR WILL BE REQUIRED TO CARRY THE COST OF ANY CHANGES, DIRECT OR INDIRECT THAT RESULT FROM THE NEW PLAN.
3. FINAL SITE RESTORATION OF SITE 2 AND 5 IS IDENTIFIED AS A PROVISIONAL ITEM. AGENCY WILL DIRECT UNDER WHICH CONTRACT THIS WORK WILL BE COMPLETED.
4. REGULATORY BODY FOR CREEK CROSSINGS:
 - CVCA CREDIT RIVER AND FLETCHER'S CREEK
 - TRCA ETOBICOKE CREEK AND SPRING CREEK

JACOBS

Approved by _____

Region of Peel
working with you

KEY MAP
PROJECT CONSTRAINTS

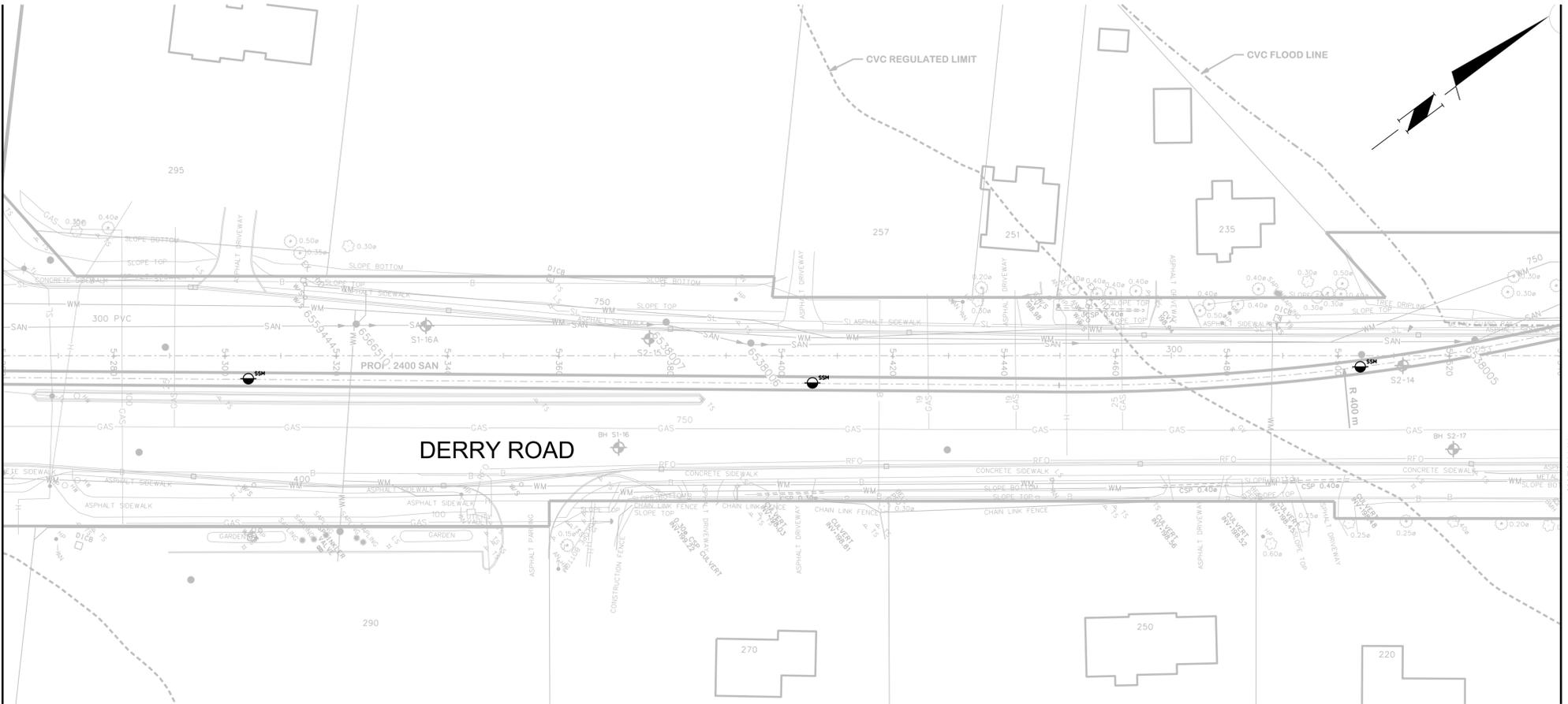


CAD Area	X-XX	Area	Z-41 to Z-45	Project No.	16-2291
Checked by	P.D.	Drawn by	D.A.	Sheet	5 of 128
Date	JAN 2020	Plan No.	G-1-005		

REFER TO DWG. No. SMP-008
STA. 5+260

REFER TO ABOVE
STA. 5+540

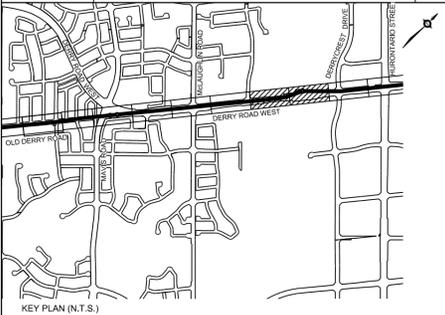
MATCH LINE



REFER TO BELOW
STA. 5+540

SERVICE DATA					
SERVICE	DATE	INIT.	SERVICE	DATE	INIT.
SAN SEWERS			GAS MAINS		
STORM SEWERS			BELL U/G CABLE		
WATERMANS			HYDRO U/G CABLE		
TRANSIT			HYDRO ONE		
PARKS & REC.			CTV		
ONT. CLEAN WATER			COMMUNIC. CABLES		

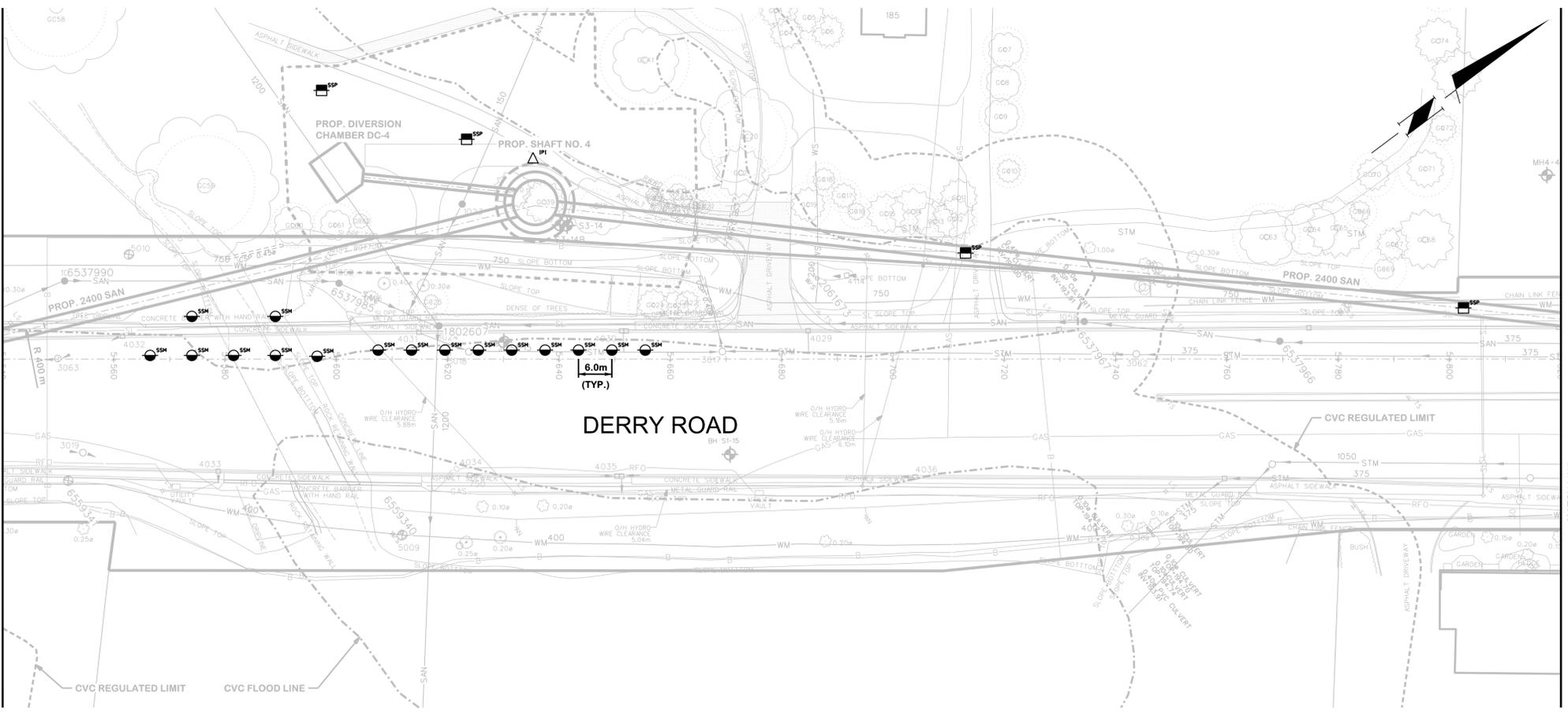
REVISIONS		
DATE	DETAILS	INIT.
11/15/2019	ISSUED FOR 90% DESIGN REVIEW	C.Q.
01/23/2020	ISSUED FOR 100% DESIGN REVIEW	C.Q.



- NOTES:**
- VENDOR MAY PROPOSE THE USE OF HEAVY DUTY STICKERS INSTEAD OF SSMs ON BUILDINGS.
 - LOCATION OF THE SSPs AND SSMs MAY BE ADJUSTED ON SITE.
 - REFER TO DETAILS 1, 2A, 2B AND 4 ON DWG. SMP-022 FOR SETTLEMENT MONITORING INSTRUMENTATION.
 - VENDOR SHALL COMPLY WITH CONDITIONAL REGULATORY PERMIT AND REQUIREMENTS OF SECTION 02480 FOR THE MONITORING POINTS.
- LEGEND:**
- SSP SUBSURFACE SETTLEMENT POINT
 - SSM SURFACE SETTLEMENT MARKER
 - IP IN-PLACE INCLINOMETER (2 POINTS)

REFER TO BELOW
STA. 5+260

MATCH LINE



REFER TO ABOVE
STA. 5+540

General Notes

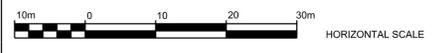
All Driveways Are ASPHALT Unless Otherwise Noted
 All Water And Sanitary Service Locations Are Approximate And Must Be Located Accurately In The Field
 All Horizontal And Vertical Bends Are In Degrees
 All Pipes Size In mm
 20C Existing Water Service, Size In mm
 WS25 Proposed Water Service, Size In mm
 B.M. No. Description Elev.
 Location
 The Contractor Is Responsible For Locating And Protecting All Existing Utilities Prior To And During Construction. Location Of Existing Utilities Approximate Only, To Be Verified In Field By Contractor.



NOTICE TO CONTRACTOR

48 HOURS PRIOR TO COMMENCING WORK NOTIFY THE FOLLOWING

THE REGIONAL MUNICIPALITY OF PEEL	CABLE TELEVISION/FIBROPTIC PROVIDERS:
CITY OF MISSISSAUGA WORKS DEPT.	BELL CANADA
CITY OF BRAMPTON WORKS DEPT.	ENERSOURCE TELECOM
TOWN OF CALEDON WORKS DEPT.	HYDRO ONE TELECOM
BELL CANADA	ROGERS CABLE
ENBRIDGE INCORPORATED-GAS DISTRIBUTION	ALLSTREAM
ONTARIO MINISTRY OF TRANSPORTATION	PSN (PUBLIC SECTOR NETWORK)
ONTARIO CLEAN WATER AGENCY	FUTUREWAY (FCI BROADBAND)
HYDRO ONE NETWORKS	
ENERSOURCE, HYDRO MISSISSAUGA	
HYDRO ONE BRAMPTON	



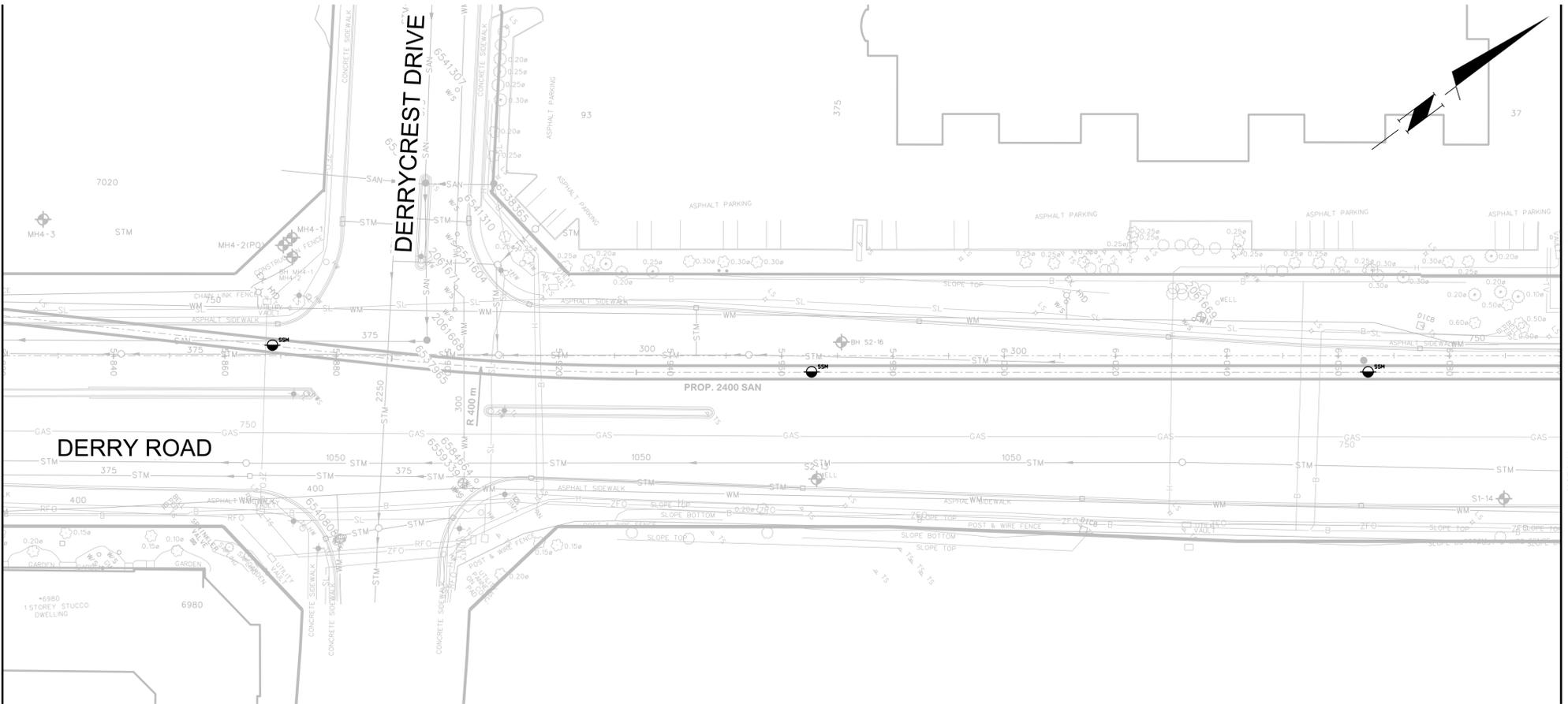
DERRY ROAD
GEOTECHNICAL MONITORING PLAN 9

STA. 5+260	TO STA. 5+820
CAD Area X-XX	Area Z-41 to Z-45
Checked by C.Q.	Drawn by K.K.
Date JAN 2020	Sheet 11 of 128
Project No. 16-2291	Plan No. SMP-009

STA. 5+820

REFER TO DWG. No. SMP-009

MATCH LINE



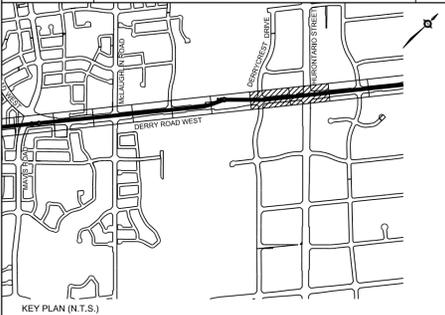
STA. 6+100

REFER TO BELOW

MATCH LINE

SERVICE DATA					
SERVICE	DATE	INIT.	SERVICE	DATE	INIT.
SAN SEWERS			GAS MAINS		
STORM SEWERS			BELL U/G CABLE		
WATERMANS			HYDRO U/G CABLE		
TRANSIT			HYDRO ONE		
PARKS & REC.			CTV		
ONT. CLEAN WATER			COMMUNIC. CABLES		

REVISIONS		
DATE	DETAILS	INIT.
11/15/2019	ISSUED FOR 90% DESIGN REVIEW	C.Q.
01/23/2020	ISSUED FOR 100% DESIGN REVIEW	C.Q.



NOTES:

- VENDOR MAY PROPOSE THE USE OF HEAVY DUTY STICKERS INSTEAD OF SSMs ON BUILDINGS.
- LOCATION OF THE SSPs AND SSMs MAY BE ADJUSTED ON SITE.
- REFER TO DETAILS 1, 2A, 2B AND 4 ON DWG. SMP-022 FOR SETTLEMENT MONITORING INSTRUMENTATION.
- VENDOR SHALL COMPLY WITH CONDITIONAL REGULATORY PERMIT AND REQUIREMENTS OF SECTION 02480 FOR THE MONITORING POINTS.

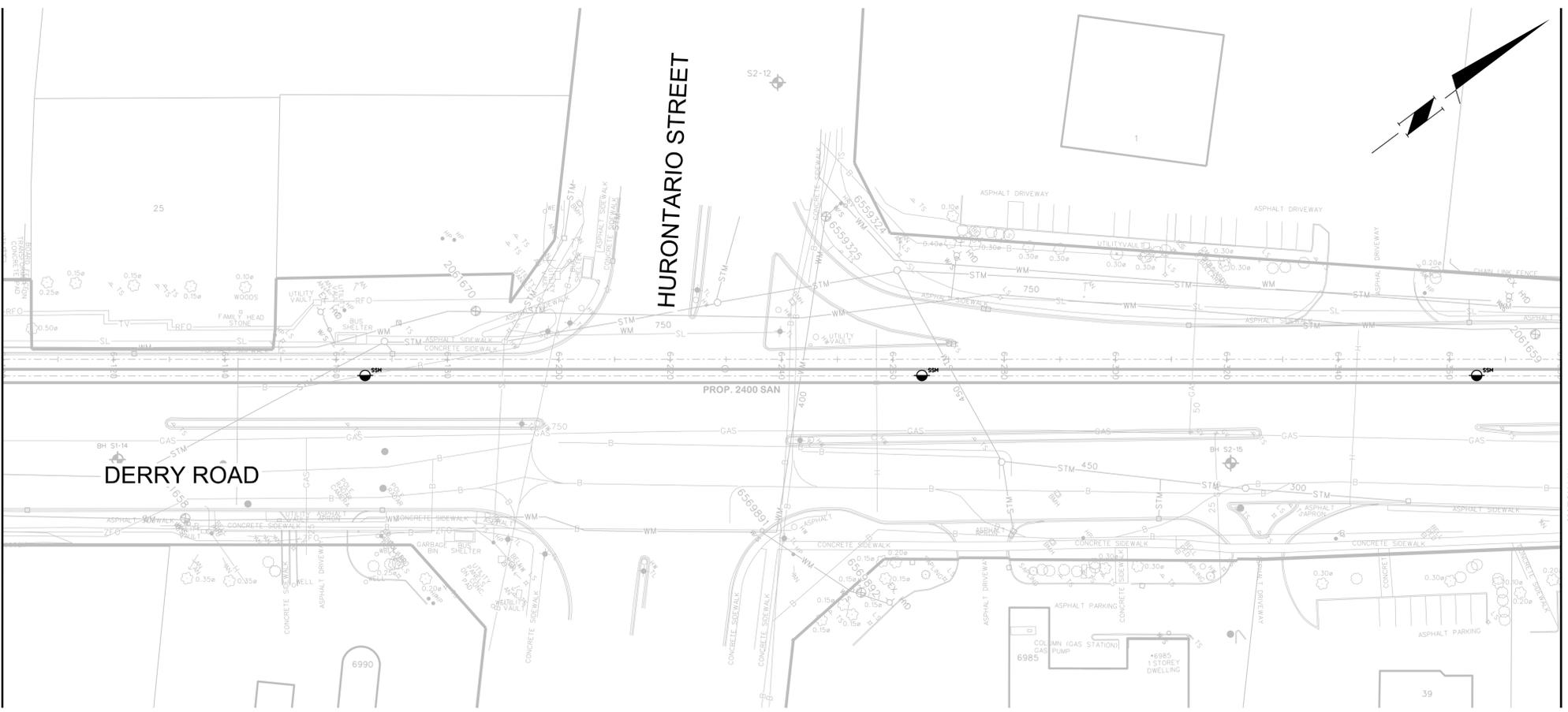
LEGEND:

- SSP SUBSURFACE SETTLEMENT POINT
- SSM SURFACE SETTLEMENT MARKER
- IP IN-PLACE INCLINOMETER (2 POINTS)

STA. 6+100

REFER TO ABOVE

MATCH LINE



STA. 6+380

REFER TO DWG. No. SMP-011

MATCH LINE

General Notes

All Driveways Are ASPHALT Unless Otherwise Noted
 All Water And Sanitary Service Locations Are Approximate And Must Be Located Accurately In The Field
 All Horizontal And Vertical Bends Are In Degrees
 All Pipes Size In mm
 Existing Water Service, Size In mm
 WS25 Proposed Water Service, Size In mm
 B.M. No. Elev.
 Description
 Location
 The Contractor Is Responsible For Locating And Protecting All Existing Utilities Prior To And During Construction, Location Of Existing Utilities Approximate Only, To Be Verified In Field By Contractor.



Approved by

NOTICE TO CONTRACTOR

48 HOURS PRIOR TO COMMENCING WORK NOTIFY THE FOLLOWING

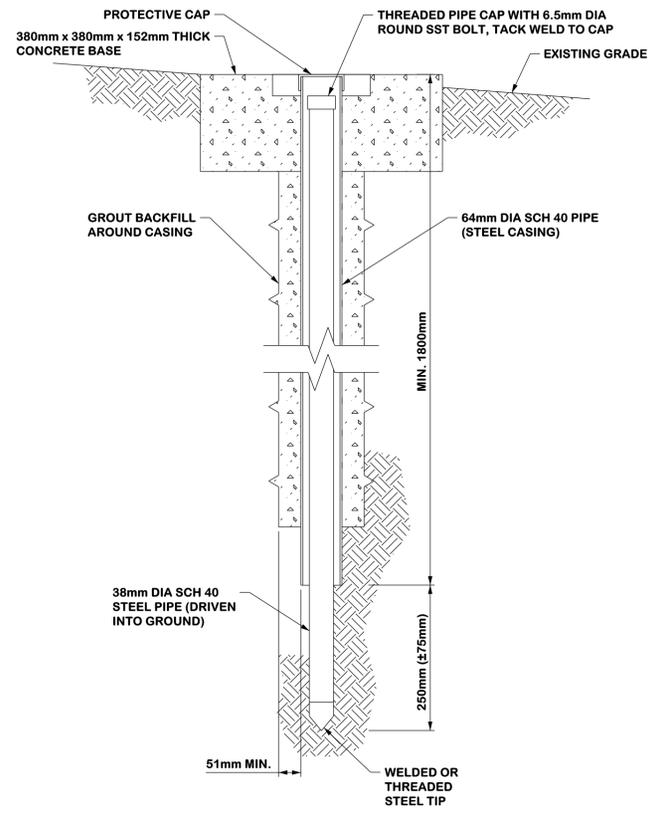
THE REGIONAL MUNICIPALITY OF PEEL	CABLE TELEVISION/FIBROPTIC PROVIDERS:
CITY OF MISSISSAUGA WORKS DEPT.	BELL CANADA
CITY OF BRAMPTON WORKS DEPT.	ENERSOURCE TELECOM
TOWN OF CALEDON WORKS DEPT.	HYDRO ONE TELECOM
BELL CANADA	ROGERS CABLE
ENBRIDGE INCORPORATED-GAS DISTRIBUTION	ALLSTREAM
ONTARIO MINISTRY OF TRANSPORTATION	PSN (PUBLIC SECTOR NETWORK)
ONTARIO CLEAN WATER AGENCY	FUTUREWAY (FCI BROADBAND)
HYDRO ONE NETWORKS	
ENERSOURCE, HYDRO MISSISSAUGA	
HYDRO ONE BRAMPTON	



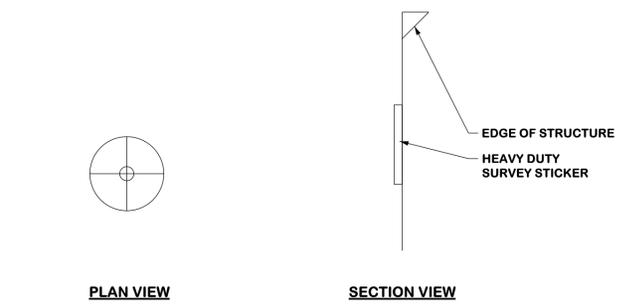
DERRY ROAD
 GEOTECHNICAL MONITORING PLAN 10

STA. 5+820		TO STA. 6+380	
CAD Area	X-XX	Area	Z-41 to Z-45
Checked by	C.Q.	Drawn by	K.K.
Date	JAN 2020	Sheet	12 of 128
Project No. 16-2291		Plan No. SMP-010	

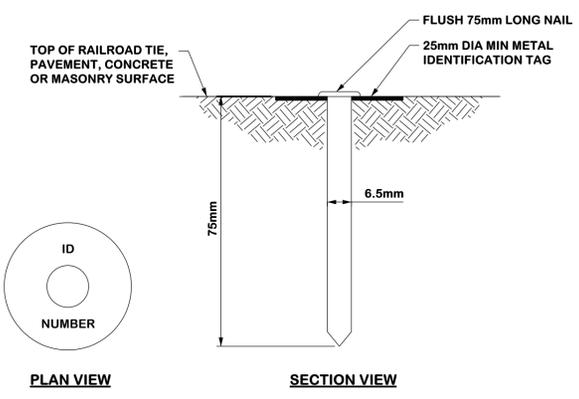
REVISIONS		
DATE	DETAILS	INIT.
11/15/2019	ISSUED FOR 90% DESIGN REVIEW	C.Q.
01/23/2020	ISSUED FOR 100% DESIGN REVIEW	C.Q.



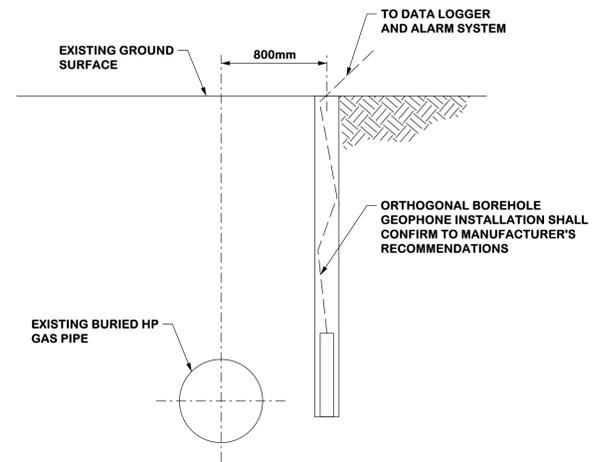
1
-
N.T.S.
SUBSURFACE SETTLEMENT POINT (SSP)



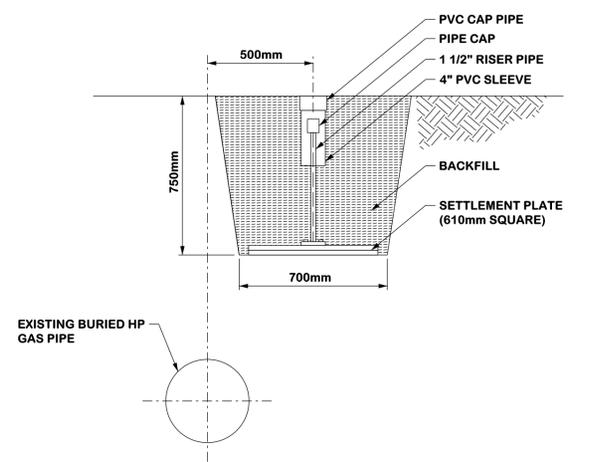
2A
-
N.T.S.
SURFACE SETTLEMENT MARKER (SSM) ON POLES/STRUCTURES



2B
-
N.T.S.
SURFACE SETTLEMENT MARKER (SSM) ON PAVEMENT



3
-
N.T.S.
VIBRATION MONITORING SYSTEM (BH-GEO)



4
-
N.T.S.
EMBEDDED SETTLEMENT PLATE (SP)

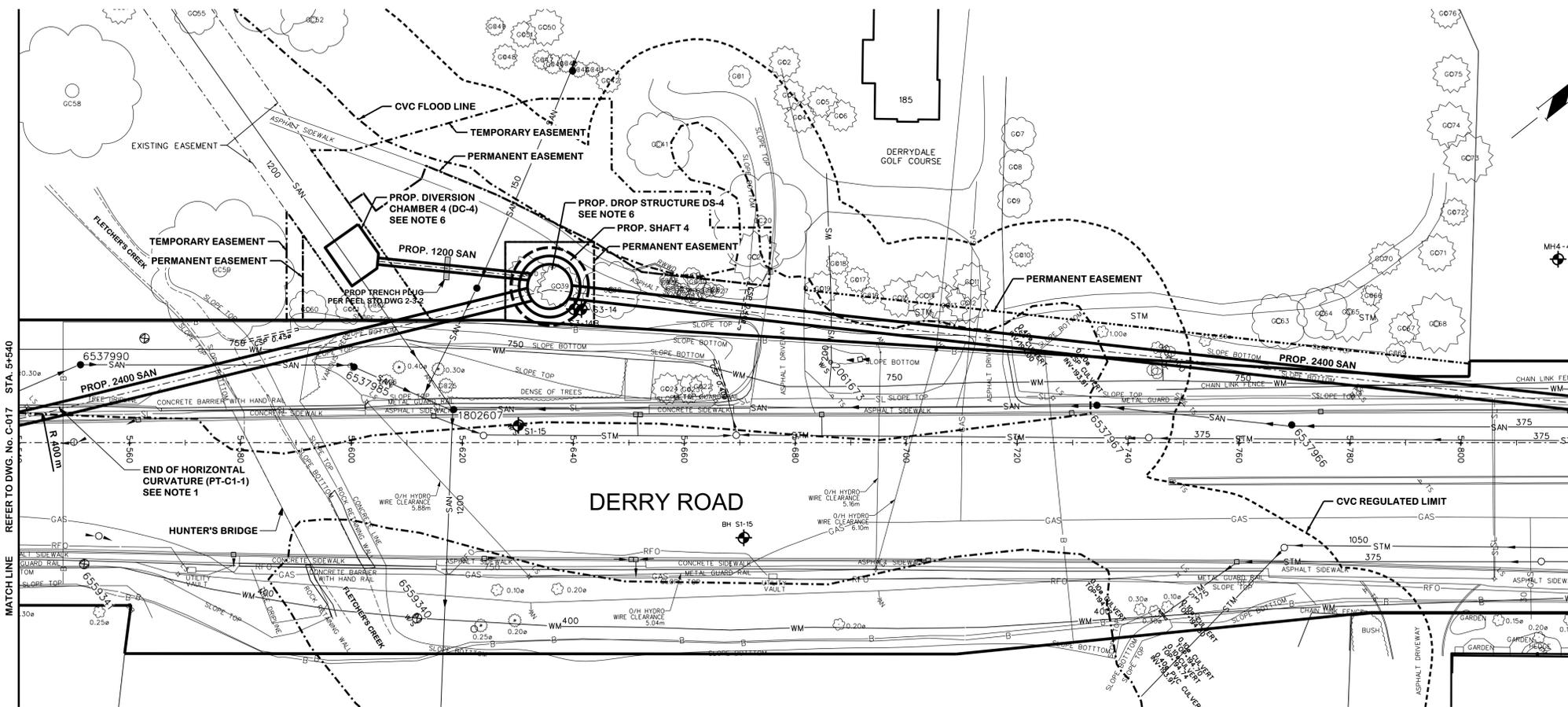
JACOBS

Approved by _____



VIBRATION AND SETTLEMENT MONITORING DETAILS

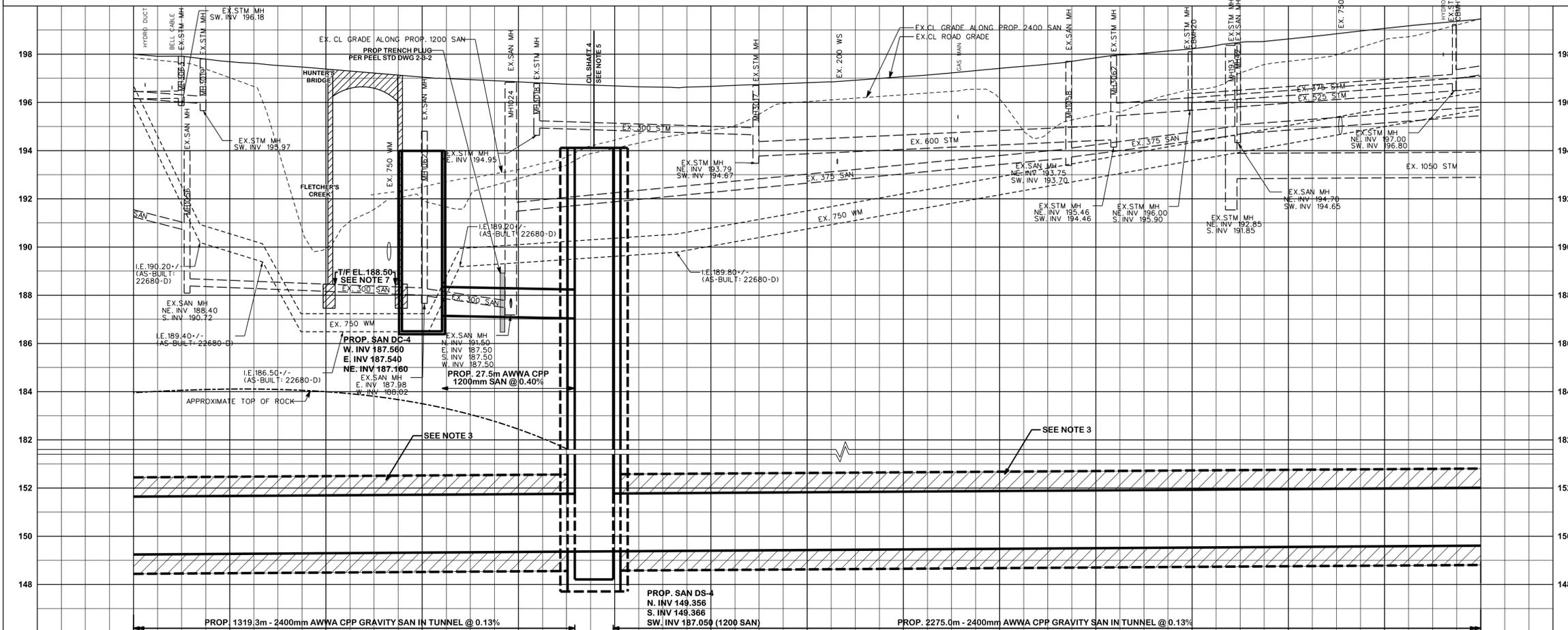
CAD Area	X-XX	Area	Z-41 to Z-45	Project No.	16-2291
Checked by	C.Q.	Drawn by	C.A.	Sheet	21 of 128
Date	JAN 2020	Plan No.	SMP-022		



SERVICE DATA					
SERVICE	DATE	INIT.	SERVICE	DATE	INIT.
SAN SEWERS			GAS MAINS		
STORM SEWERS			BELL U/G CABLE		
WATER MAINS			HYDRO U/G CABLE		
TRANSIT			HYDRO ONE		
PARKS & REC.			CTV		
ONT. CLEAN WATER			COMMUNIC. CABLES		

REVISIONS		
DATE	DETAILS	INIT.
10/25/2018	ISSUED FOR 30% DESIGN REVIEW	S.F.
08/01/2019	ISSUED FOR 50% DESIGN REVIEW	C.K.
11/15/2019	ISSUED FOR 90% DESIGN REVIEW	C.K.
01/23/2020	ISSUED FOR 100% DESIGN REVIEW	C.K.

- NOTES:**
- REFER TO DWG. G-1-007 FOR TUNNEL CURVE DATA.
 - REFER TO DWG. T-1-002 FOR TUNNEL EXCAVATION SUPPORT DETAILS.
 - GROUT TUNNEL ANNULAR SPACE, SEE DETAIL 1 ON DWG. T-1-004.
 - REFER TO DWG. 4-SP-001 FOR EXISTING CONDITIONS AND DWG. 4-SP-002 FOR SITE PREPARATION DETAILS.
 - REFER TO DWG. 4-ES-001 FOR SHAFT EXCAVATION SUPPORT DETAILS.
 - REFER TO DWG. 4-PR-201 AND 4-S-203 FOR DC-4 AND DS-4 DETAILS RESPECTIVELY.
 - BRIDGE INFORMATION SHOWN IN PROFILE IS BASED ON REGION OF PEEL ASBUILTS.



General Notes

All Driveways Are ASPHALT Unless Otherwise Noted
 All Water And Sanitary Service Locations Are Approximate And Must Be Located Accurately In The Field
 All Horizontal And Vertical Bends Are In Degrees
 All Pipes Size In mm
 Existing Water Service, Size In mm
 WS25 Proposed Water Service, Size In mm
 B.M. No. Description Elev.
 Location
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JACOBS

Approved by _____

NOTICE TO CONTRACTOR

48 HOURS PRIOR TO COMMENCING WORK NOTIFY THE FOLLOWING

THE REGIONAL MUNICIPALITY OF PEEL	CABLE TELEVISION/FIBROPTIC PROVIDERS:
CITY OF MISSISSAUGA WORKS DEPT.	BELL CANADA
CITY OF BRAMPTON WORKS DEPT.	ENERSOURCE TELECOM
TOWN OF CALEDON WORKS DEPT.	HYDRO ONE TELECOM
BELL CANADA	ROGERS CABLE
ENBRIDGE INCORPORATED-GAS DISTRIBUTION	ALLSTREAM
ONTARIO MINISTRY OF TRANSPORTATION	PSN (PUBLIC SECTOR NETWORK)
ONTARIO CLEAN WATER AGENCY	FUTUREWAY (FCI BROADBAND)
HYDRO ONE NETWORKS	
ENERSOURCE, HYDRO MISSISSAUGA	
HYDRO ONE BRAMPTON	

10m 0 10 20 30m 1:500 HORIZONTAL SCALE
 2m 0 2 4 6m 1:100 VERTICAL SCALE

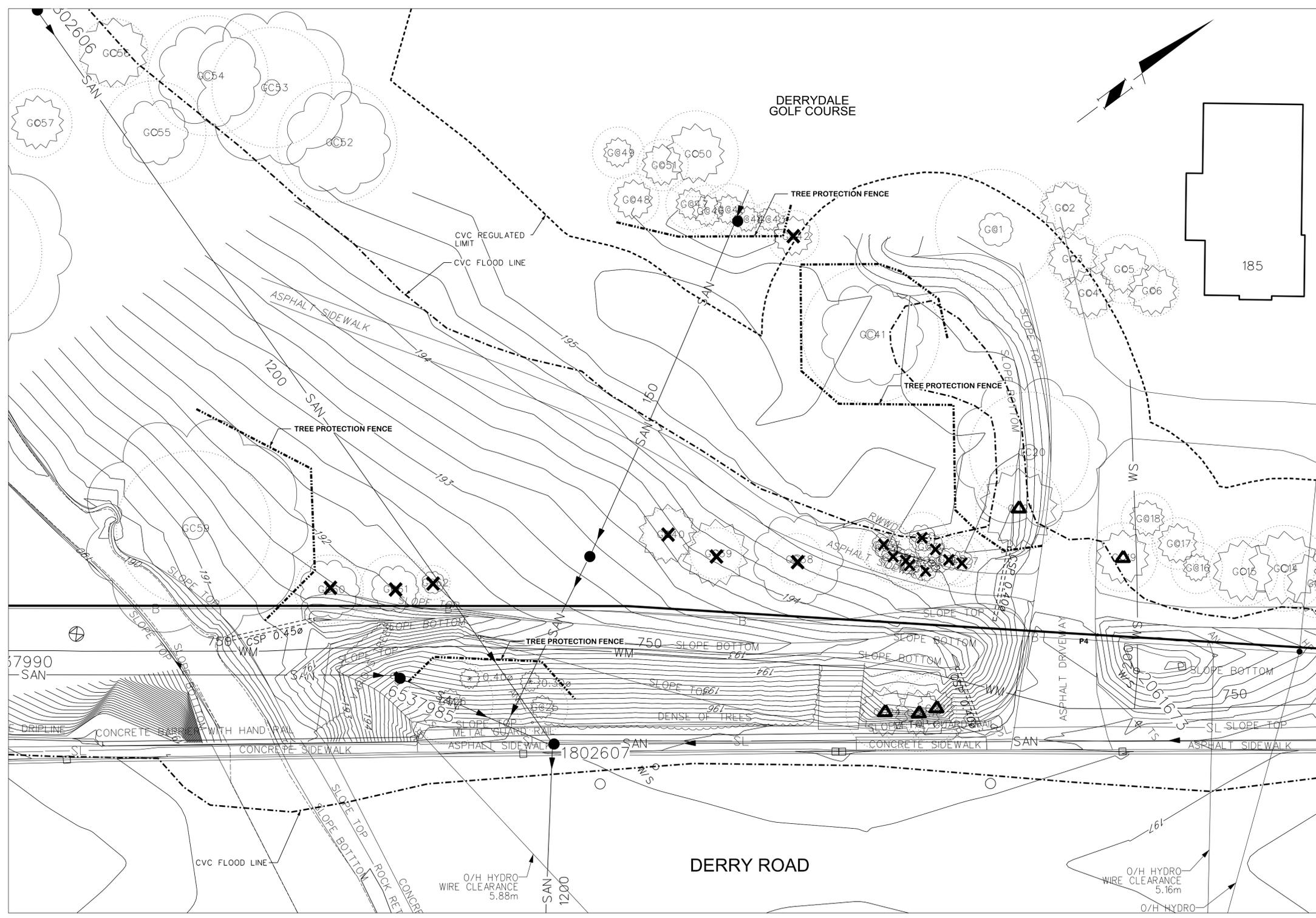
Region of Peel
 working with you

DERRY ROAD
 FROM MAVIS ROAD TO DIXIE ROAD
 PROP. 2400mm SANITARY SEWER

STA. 5+540 TO STA. 5+820

149.24	198.01	197.70	191.07	194.51	196.86	196.70	196.68	196.83	197.08	197.42	197.86	198.24	198.64	199.08	199.47	149.60	INV. EL. OF SAN.
5+540	5+560	5+580	5+600	5+620	5+640	5+660	5+680	5+700	5+720	5+740	5+760	5+780	5+800	5+820	ROAD CHAINAGE	EX. ROAD ELEV.	

Checked by C.K. Drawn by C.A. Project No. 16-2291
 Date JAN 2020 Sheet 27 of 128 Plan No. C-018



SERVICE DATA					
SERVICE	DATE	INIT.	SERVICE	DATE	INIT.
SAN SEWERS			GAS MAINS		
STORM SEWERS			BELL U/G CABLE		
WATERMANS			HYDRO U/G CABLE		
TRANSIT			HYDRO ONE		
PARKS & REC.			CTV		
ONT. CLEAN WATER			COMMUNIC. CABLES		

REVISIONS		
DATE	DETAILS	INIT.
08/01/2019	ISSUED FOR 50% DESIGN REVIEW	S.F.
11/15/2019	ISSUED FOR 90% DESIGN REVIEW	P.D.
01/23/2020	ISSUED FOR 100% DESIGN REVIEW	P.D.

General Notes

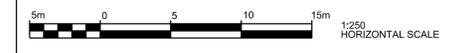
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 WS25 Proposed Water Service, Size In mm
 B.M. No. Description Location
 Elev.
 The Contractor Is Responsible For Locating And Protecting All Existing Utilities Prior To And During Construction. Location Of Existing Utilities Approximate Only, To Be Verified In Field By Contractor.



NOTICE TO CONTRACTOR

48 HOURS PRIOR TO COMMENCING WORK NOTIFY THE FOLLOWING

THE REGIONAL MUNICIPALITY OF PEEL	CABLE TELEVISION/FIBROPTIC PROVIDERS:
CITY OF MISSISSAUGA WORKS DEPT.	BELL CANADA
CITY OF BRAMPTON WORKS DEPT.	ENERSOURCE TELECOM
TOWN OF CALEDON WORKS DEPT.	HYDRO ONE TELECOM
BELL CANADA	ROGERS CABLE
ENBRIDGE INCORPORATED-GAS DISTRIBUTION	ALLSTREAM
ONTARIO MINISTRY OF TRANSPORTATION	PSN (PUBLIC SECTOR NETWORK)
ONTARIO CLEAN WATER AGENCY	FUTUREWAY (FCI BROADBAND)
HYDRO ONE NETWORKS	
ENERSOURCE, HYDRO MISSISSAUGA	
HYDRO ONE BRAMPTON	



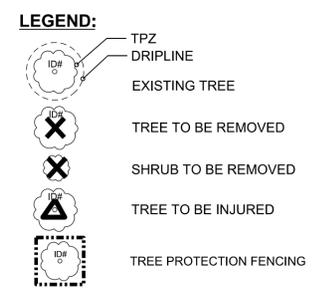
SITE NO. 4 - EXISTING SITE PLAN AND TREE REMOVALS

SCALE: 1:250

PROPERTY: DERRY ROAD
 OWNER: DERRYDALE GOLF COURSE
 ADDRESS: 185 DERRY ROAD WEST

- NOTES:**
- NOTIFY AGENCY BEFORE TREE REMOVAL OR TREE PRUNING.
 - TREE PROTECTION PER CITY OF MISSISSAUGA STD. DETAIL 02830-6. TREE PROTECTION TO BE APPROVED BY CITY OF MISSISSAUGA URBAN FORESTRY PRIOR TO VENDOR COMMENCING ANY WORKS.
 - TREE PROTECTION FENCE SHALL BE INSTALLED BEFORE COMMENCEMENT OF CONSTRUCTION AS PER LICENSED ARBORIST'S INSTRUCTIONS.

- TREE SURVEY NOTES:**
- TREE DATA BASED ON ARBORIST REPORT PREPARED BY MATRIX AND DATED DECEMBER 17, 2019.
 - POTENTIAL INJURY TO TREE MAY OCCUR WHEN CONSTRUCTION ACTIVITIES TAKE PLACE WITHIN RECOMMENDED MINIMUM TREE PROTECTION ZONE. REFER TO TYPICAL TREE PROTECTION DETAIL FOR ADDITIONAL INFORMATION.



ABBREVIATIONS:

DBH - DIAMETER AT BREAST HEIGHT; MEASUREMENT OF TREE STEM TAKEN AT 1.37m ABOVE GROUND.
 TPZ - TREE PROTECTION ZONE DISTANCES ARE TO BE MEASURED FROM THE OUTSIDE EDGE OF THE TREE BASE.

Tag #	Species Scientific Name	Species Common Name	DBH (cm)	Radial TPZ (m)	Radial Dripline (m)	Tree Protection Measures			
						No Injury	Protection	Injury	Removal
GC1	Acer saccharum	Silver Maple	64	7.68	7.0	X			
GC2	Picea pungens	Blue Spruce	20	2.40	3.0	X			
GC3	Picea pungens	Blue Spruce	35	4.20	3.0	X			
GC4	Picea pungens	Blue Spruce	21	2.52	3.0	X			
GC5	Picea glauca	White Spruce	28	3.36	4.0	X			
GC6	Picea glauca	White Spruce	20	2.40	3.0	X			
GC16	Picea glauca	White Spruce	14	1.68	3.0	X			
GC17	Picea glauca	White Spruce	20	2.40	3.0	X			
GC18	Picea glauca	White Spruce	18	2.16	3.0	X			
GC19	Picea glauca	White Spruce	27	3.24	4.0			X	
GC20	Acer saccharinum	Silver Maple	74	8.88	7.0	X			
GC21	Picea pungens	Blue Spruce	40	4.80	5.0	X			
GC22	Picea resinosa	Red Pine	19	2.28	4.0		X		
GC23	Picea resinosa	Red Pine	23	2.76	4.5		X		
GC24	Picea resinosa	Red Pine	25	3.00	4.5		X		
GC25	Picea resinosa	Red Pine	12	1.44	3.0	X			
GC26	Picea resinosa	Red Pine	12	1.44	5.0	X			
GC27	Juglans nigra	Black Walnut	10	1.20	3.0	X			
GC28	Juglans nigra	Black Walnut	11	1.32	3.0	X			

EXISTING TREE INVENTORY:

Tag #	Species Scientific Name	Species Common Name	DBH (cm)	Radial TPZ (m)	Radial Dripline (m)	Tree Protection Measures			
						No Injury	Protection	Injury	Removal
GC29	Juglans nigra	Black Walnut	12	1.44	3.0				X
GC30	Juglans nigra	Black Walnut	14	1.68	3.0				X
GC31	Juglans nigra	Black Walnut	13	1.56	3.0				X
GC32	Juglans nigra	Black Walnut	12	1.44	3.0				X
GC33	Juglans nigra	Black Walnut	10	1.20	3.0				X
GC34	Juglans nigra	Black Walnut	11	1.32	3.0				X
GC35	Juglans nigra	Black Walnut	12	1.44	3.0				X
GC36	Juglans nigra	Black Walnut	11	1.32	3.0				X
GC37	Juglans nigra	Black Walnut	12	1.44	3.0				X
GC38	Acer saccharinum	Silver Maple	44	5.28	6.0				X
GC39	Picea glauca	White Spruce	34	4.08	5.0				X
GC40	Picea glauca	White Spruce	30	3.60	5.0				X
GC41	Robinia pseudoacacia	Black Locust	50	6.00	8.0		X		
GC42	Thuja occidentalis	Eastern White Cedar	20	2.40	3.0				X
GC43	Thuja occidentalis	Eastern White Cedar	12	1.44	2.0			X	
GC44	Thuja occidentalis	Eastern White Cedar	13	1.56	2.0			X	
GC45	Thuja occidentalis	Eastern White Cedar	15	1.80	3.0			X	
GC46	Thuja occidentalis	Eastern White Cedar	16	1.92	3.0			X	
GC47	Thuja occidentalis	Eastern White Cedar	16	1.92	3.0			X	

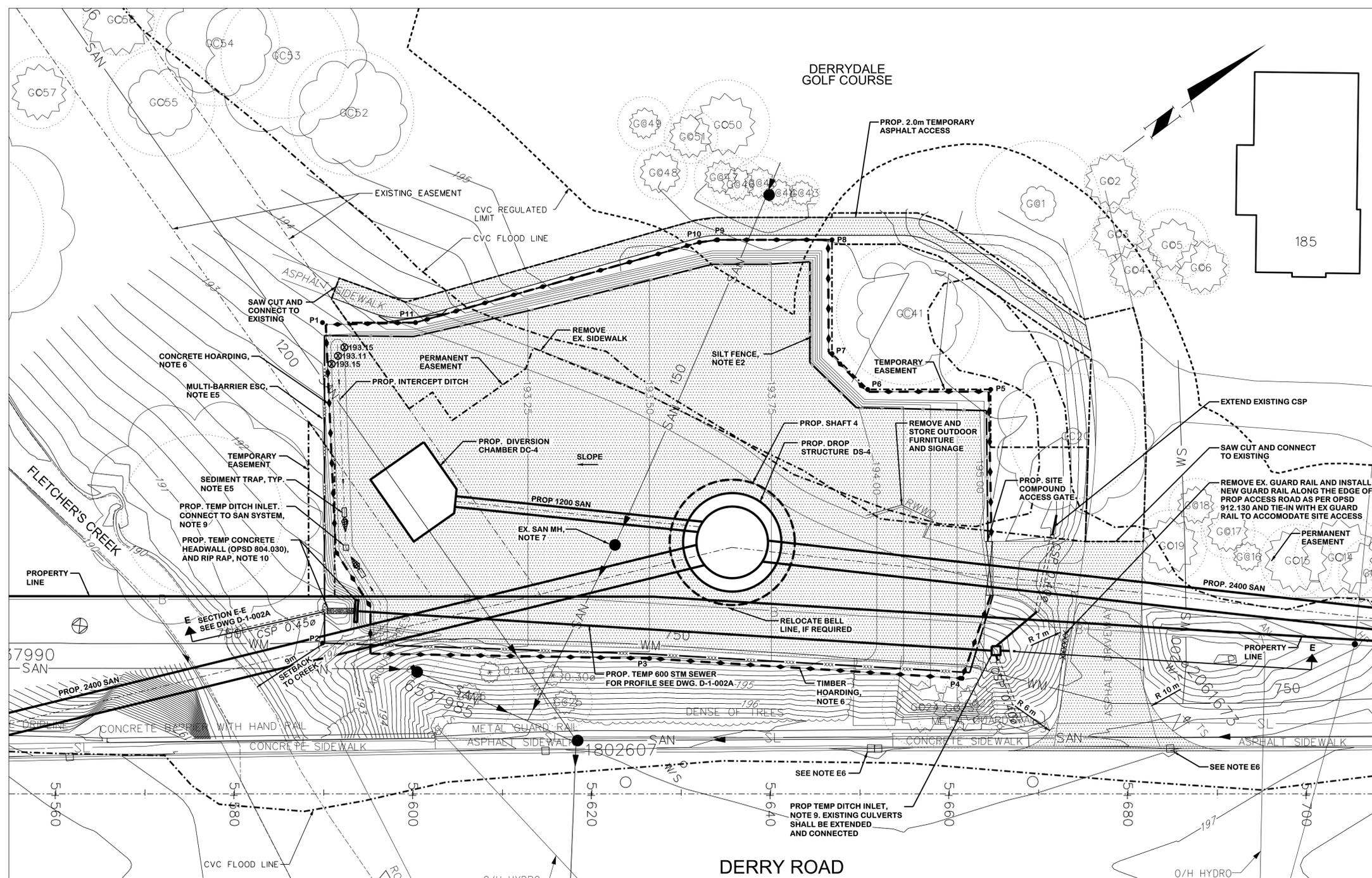
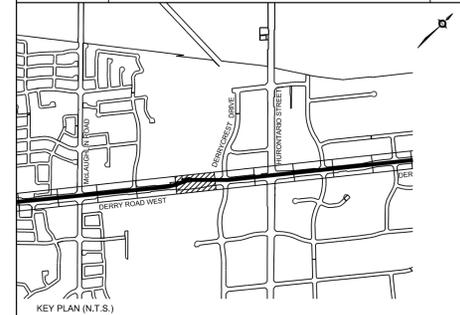
Tag #	Species Scientific Name	Species Common Name	DBH (cm)	Radial TPZ (m)	Radial Dripline (m)	Tree Protection Measures			
						No Injury	Protection	Injury	Removal
GC48	Thuja occidentalis	Eastern White Cedar	20	2.40	3.0	X			
GC49	Thuja occidentalis	Eastern White Cedar	15	1.80	3.0	X			
GC50	Picea resinosa	Red Pine	30	3.60	5.0	X			
GC51	Thuja occidentalis	Eastern White Cedar	21	2.52	3.0	X			
GC52	Fraxinus sp.	Ash Sp.	51	6.12	7.0	X			
GC53	Robinia pseudoacacia	Black Locust	76	9.12	7.0	X			
GC54	Robinia pseudoacacia	Black Locust	50	6.00	7.0	X			
GC55	Fraxinus sp.	Ash Sp.	32	3.84	6.0	X			
GC56	Picea pungens	Blue Spruce	35	4.20	4.0	X			
GC57	Picea glauca	White Spruce	27	3.24	4.0	X			
GC58	Salix sp.	Willow Sp.	102	12.24	9.0	X			
GC59	Salix sp.	Willow Sp.	109	13.08	9.0		X		
GC60	Fraxinus sp.	Ash Sp.	29	3.48	4.0		X		
GC61	Fraxinus sp.	Ash Sp.	23	2.76	4.0		X		
GC62	Acer glaberrimum	King Crimson Maple	11	1.32	2.0			X	

DERRY ROAD
 SITE NO. 4
 EXISTING SITE PLAN
 TREE REMOVALS AND TREE PROTECTION

CAD Area	X-XX	Area	Z-41 to Z-45	Project No.	16-2291
Checked by	P.D.	Drawn by	K.K.		
Date	JAN 2020	Sheet	76 of 128	Plan No.	4-SP-001

SERVICE DATA					
SERVICE	DATE	INIT.	SERVICE	DATE	INIT.
SAN SEWERS			GAS MAINS		
STORM SEWERS			BELL U/G CABLE		
WATERMANS			HYDRO U/G CABLE		
TRANSIT			HYDRO ONE		
PARKS & REC.			CTV		
ONT. CLEAN WATER			COMMUNIC. CABLES		

REVISIONS		
DATE	DETAILS	INIT.
08/01/2019	ISSUED FOR 50% DESIGN REVIEW	S.F.
11/15/2019	ISSUED FOR 90% DESIGN REVIEW	P.D.
01/23/2020	ISSUED FOR 100% DESIGN REVIEW	P.D.



PROPERTY: DERRY ROAD
 OWNER: DERRYDALE GOLF COURSE
 ADDRESS: 185 DERRY ROAD WEST
 PROPOSED COMPOUND AREA: 2904 sq.m.
 PROPOSED COMPOUND PERIMETER: 227 m

LAYOUT COORDINATES:

PT NO.	NORTHING	EASTING
P1	4 832 922.94	603 908.90
P2	4 832 900.76	603 936.98
P3	4 832 928.71	603 960.63
P4	4 832 957.26	603 985.97
P5	4 832 977.00	603 961.11
P6	4 832 966.20	603 952.58
P7	4 832 965.54	603 946.96
P8	4 832 973.42	603 936.99
P9	4 832 963.36	603 929.06
P10	4 832 961.59	603 928.01
P11	4 832 931.11	603 915.35

LEGEND:

	EASEMENT
	PROPOSED CONTOURS
	PROPOSED SHAFT
	PROPOSED SANITARY
	PROPOSED CONSTRUCTION HOARDING
	PROPOSED ACCESS GATE
	LIGHT-DUTY SILT FENCE
	MULTI-BARRIER ESC
	EXISTING TREE
	TEMPORARY ASPHALT WORKING SURFACE
	RIP RAP PROTECTION PER OPSD 810.010

SITE NO. 4 - SITE PREPARATION PLAN

SCALE: 1:250

EROSION AND SEDIMENT CONTROL NOTES:

- E1. VENDOR TO SUBMIT ESC PLAN AS PER SPECIFICATION INCLUDING OPSD 805 (CONSTRUCTION SPECIFICATION FOR TEMP. ESC MEASURES), PLAN TO COMPLY WITH DFO AND TRCA PERMIT ACQUIRED BY THE AGENCY (A COPY OF THESE PERMITS IS INCLUDED IN THE SPECIFICATIONS). IN ADDITION TO EROSION CONTROL DEVICES THE ESC PLAN SHALL INCLUDE A MAINTENANCE AND MONITORING PLAN AND AN EMERGENCY SPILL CONTROL AND RESPONSE PLAN. GENERAL NOTES RELATED TO ESC ARE SHOWN ON DWG. G-1-004.
- E2. EXISTING CATCH BASIN COVERS TO BE WRAPPED IN FILTER CLOTH PER CITY OF MISSISSAUGA STANDARD 2930.040. THIS DETAIL SHALL ALSO BE USED WHERE TEMPORARY CATCH BASINS ARE USED TO CAPTURE SURFACE RUNOFF.
- E3. TREATED WATER FROM DEWATERING OPERATIONS, TUNNEL OPERATIONS TO BE DISCHARGED TO REGION OF PEEL SANITARY SEWER. VENDOR TO OBTAIN PERMIT TO DISCHARGE FLOWS AFTER PROVIDING ADEQUATE TREATMENT TO COMPLY WITH REGION OF PEEL BY-LAW 53-2010.
- E4. SEDIMENT TRAP DETAIL AS PER OPSD 219.220. THE SIZE OF THE SEDIMENT TRAP SHALL BE AS NEEDED TO MEET DISCHARGE PERMIT REQUIREMENTS BUT BE NOT LESS THAN 1.0 m x 2.0 m BY 0.5 m MIN DEPTH.
- E5. VENDOR TO IMPLEMENT A MULTI-BARRIER ESC MEASURES BY INSTALLING SILT FENCE (REGION OF PEEL STD DETAIL 5-2-13) AND SILT SOCKS (OPSD 219.120) AT LOCATIONS INDICATED ON THE PLAN DRAWING. SILT SOCKS SHALL BE INSTALLED ON THE CONSTRUCTION SIDE AND AGAINST SILT FENCE. VENDOR ALSO TO INSTALL SILT FENCE (REGION OF PEEL STD DETAIL 5-2-13) AT LOCATION OTHER THAN MULTI-BARRIER ESC AS SHOWN ON PLAN DRAWING.
- E6. THIS SITE PREPARATION PLAN SHOWS THE ESC CONCEPT PLAN TO ACHIEVE WORKSITE ISOLATION WITH A MULTI BARRIER APPROACH APPROVED FOR SURFACE DRAINAGE. HOWEVER, THE VENDOR WILL SUBMIT A DETAILED ESC PLAN WITH ANY CHANGES AND MODIFICATIONS BASED ON THE PROPOSED CONSTRUCTION METHODOLOGY AND OPERATIONAL LAYOUT OF THE SITE COMPOUND AREA. SURPLUS EXCAVATED MATERIAL IS NOT PERMITTED WITHIN THE FLOODPLAIN. IF STOCKPILING IS NEEDED IN AN EMERGENCY ADDITIONAL SILT CONTROL MEASURES MUST BE IN PLACE TO CONTAIN ANY SEDIMENTS TRANSPORT.

NOTES:

1. GENERAL PREPARATION OF THE SITE FOR CONSTRUCTION ACTIVITIES ARE SHOWN ON THIS DRAWING AND DETAILED IN THE SPECIFICATIONS. THE VENDOR SHALL SUBMIT A DETAILED SITE LAYOUT PLAN FOR APPROVAL. VENDOR MAY PROPOSE CHANGES TO THE SITE LAYOUT OR PROPOSE A NEW SITE LAYOUT. HOWEVER, THE VENDOR SHALL INCLUDE THE COST OF CHANGES, DIRECT OR INDIRECT THAT RESULT FROM THE NEW PLAN.
2. VENDOR TO PROVIDE AND MAINTAIN TEMPORARY ASPHALT WORKING SURFACE ACROSS THE ENTIRE LAYDOWN AREA, SEE DETAIL 6 ON DWG. D-1-003. GRADE TEMPORARY WORKING SURFACE TO CAPTURE SURFACE RUNOFF TO SEDIMENT TRAPS/CATCH BASINS. PROVIDE A TRUCK CLEANING PAD FOR ALL VEHICLES EXITING THE SITE TO LIMIT TRACKING MUD TO ROADWAYS.
3. CURBS TO BE CUT TO ALLOW FOR ACCESS TO SITE COMPOUNDS. PROVIDE TEMPORARY ASPHALT DRIVEWAY TO PROPOSED SITE ACCESS GATES.
4. VENDOR SHALL INSTALL ALARMS IN ADDITION TO SIGNAGE TO WARN OPERATOR IF EQUIPMENT IS CLOSE TO AERIAL HYDRO CABLES. ALL O.H. INFRASTRUCTURE INCLUDING GUY WIRES WITHIN OR ADJACENT TO WORKING AREAS ARE TO BE PROTECTED.
5. REFER TO TRAFFIC MANAGEMENT PLANS FOR SIGNAGE REQUIREMENTS. ACCESS AT GATE CONTROLLED DURING WORKING HOURS BY TRAFFIC CONTROL PERSON. MAINTAIN PEDESTRIAN ACCESS ALONG ROADWAY AT ALL TIMES.
6. CONSTRUCTION HOARDING 3.6 m HEIGHT TIMBER HOARDING SEE SPECIFICATIONS. TIMBER HOARDING ACCEPTABLE ALONG DERRY ROAD ONLY.
7. EX. MAINTENANCE HOLES AND CATCH BASIN TO BE RESET TO PROPOSED WORKING GRADES WITHIN CONSTRUCTION LIMITS.
8. NOTE A PORTION OF THE SITE COMPOUND WILL BE TRANSFERRED TO OTHERS AS IDENTIFIED ON DWG. G-1-005 AND 2-SP1-003. ERECT 2.4 m HIGH TIMBER HOARDING PRIOR TO HAND OVER OF PART OF THE SITE COMPOUND TO CONTRACT 2.
9. WORK LIMITS ARE WITHIN THE FLOODPLAIN OF ETOBICOKE CREEK: 100 YEAR FLOOD ELEVATION 192.7 m, REGIONAL FLOOD ELEVATION 195.9 m.
10. PROPOSED TEMPORARY WORKING SURFACES, STM SEWER, MAINTENANCE HOLE, DITCH INLET, HEAD WALL, RIPRAP AND OTHER TEMPORARY WORKS SHALL BE REMOVED PRIOR TO SITE RESTORATION SHOWN ON DWG. 4-R-001.



Approved by _____

NOTICE TO CONTRACTOR

48 HOURS PRIOR TO COMMENCING WORK NOTIFY THE FOLLOWING

THE REGIONAL MUNICIPALITY OF PEEL	CABLE TELEVISION/FIBROPTIC PROVIDERS:
CITY OF MISSISSAUGA WORKS DEPT.	BELL CANADA
CITY OF BRAMPTON WORKS DEPT.	ENERSOURCE TELECOM
TOWN OF CALEDON WORKS DEPT.	HYDRO ONE TELECOM
BELL CANADA	ROGERS CABLE
ENBRIDGE INCORPORATED-GAS DISTRIBUTION	ALLSTREAM
ONTARIO MINISTRY OF TRANSPORTATION	PSN (PUBLIC SECTOR NETWORK)
ONTARIO CLEAN WATER AGENCY	FUTUREWAY (FCI BROADBAND)
HYDRO ONE NETWORKS	
ENERSOURCE, HYDRO MISSISSAUGA	
HYDRO ONE BRAMPTON	



DERRY ROAD

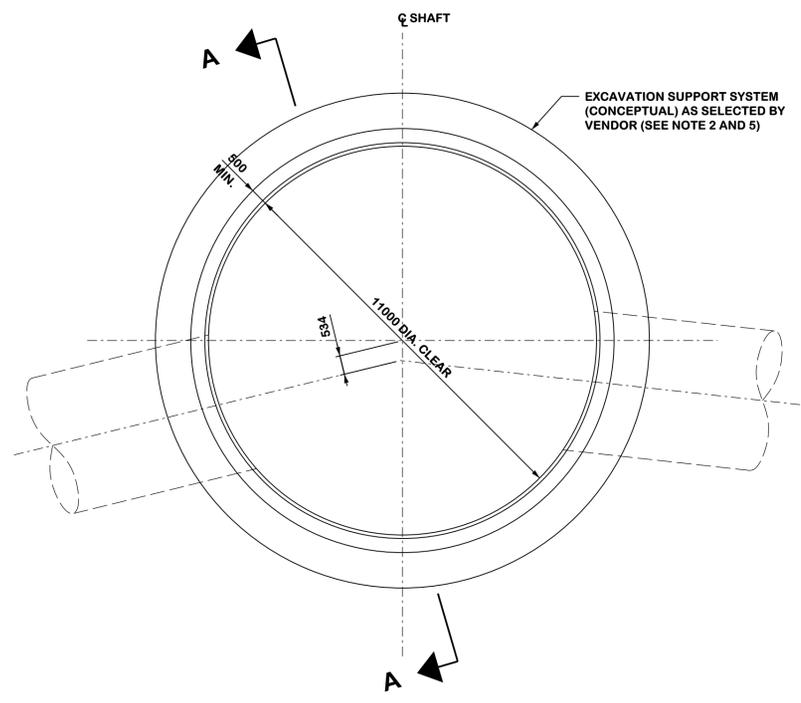
SITE NO. 4 SITE PREPARATION PLAN

CAD Area	X-XX	Area	Z-41 to Z-45	Project No.	16-2291
Checked by	C.K.	Drawn by	C.A.	Sheet	77 of 128
Date	JAN 2020	Sheet	77 of 128	Plan No.	4-SP-002

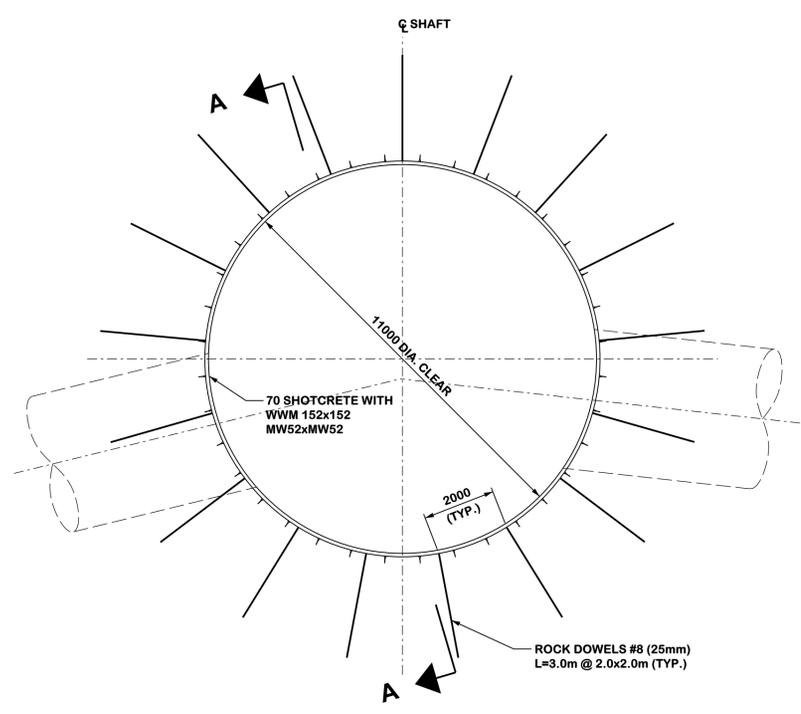
REVISIONS		
DATE	DETAILS	INIT.
11/15/2019	ISSUED FOR 90% DESIGN REVIEW	C.Q.
01/23/2020	ISSUED FOR 100% DESIGN REVIEW	C.Q.

NOTES:

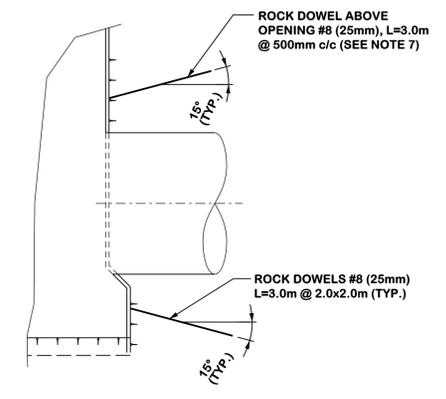
- ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT WHERE SHOWN OTHERWISE.
- VENDOR SHALL SELECT, DESIGN, INSTALL AND MAINTAIN AN OVERBURDEN EXCAVATION SUPPORT SYSTEM UNTIL THE FINAL CONCRETE LINING IS PLACED. THE OVERBURDEN EXCAVATION SUPPORT SYSTEM SHALL BE COMPATIBLE WITH SURFACE AND SUBSURFACE CONDITIONS AS SHOWN ON THE DRAWINGS AND AS STATED IN THE SPECIFICATIONS. GEOTECHNICAL DATA REPORT AND SHALL BE CONSISTENT WITH BASELINES STATED IN THE GEOTECHNICAL BASELINE REPORT.
- THE ROCK SUPPORT MEASURES SHOWN ARE THE MINIMUM MEASURES REQUIRED TO BE INSTALLED. VENDOR SHALL INSTALL ADDITIONAL ROCK DOWELS OR OTHER ROCK SUPPORT MEASURES IN ADDITION TO ROCK SUPPORT SHOWN AS REQUIRED TO MAINTAIN EXCAVATION STABILITY.
- VENDOR MAY VARY EXCAVATION DIAMETER IN ROCK FROM THAT SHOWN TO SUIT ITS SELECTED MEANS AND METHODS FOR SHAFT AND TUNNEL CONSTRUCTION. SHAFT CLEAR DIAMETER AND DESIGN SHOWN ON THESE DRAWINGS SHOW MINIMUM REQUIRED. VENDOR IS REQUIRED TO SUBMIT A DESIGN FOR TEMPORARY SUPPORT IN ROCK, PREPARED AND SIGNED BY AN INDIVIDUAL HOLDING A P. ENG IN THE PROVINCE OF ONTARIO. ANY VARIATION IN EXCAVATED DIAMETER SHALL ACCOMMODATE PERMANENT STRUCTURES, PIPING, SUBSURFACE UTILITIES AND ANY DESIGN DETAILS OR RESTRICTIONS SHOWN ON OTHER DRAWINGS OR STATED IN THE SPECIFICATIONS.
- EXTEND OVERBURDEN EXCAVATION SUPPORT BELOW TOP OF ROCK TO MINIMUM 2m OR AS DETERMINED BY VENDOR'S DESIGN ENGINEER, CONSISTENT WITH VENDOR'S SELECTED MEANS AND METHODS OF CONSTRUCTION.
- ROCK DOWEL LENGTHS SHOWN SHALL BE EMBEDDED LENGTH IN ROCK. ADDITIONAL LENGTH SHALL BE PROVIDED FOR NUT AND BEARING PLATE CONNECTION AS RECOMMENDED BY MANUFACTURER. INSTALLATION SHALL CONFORM TO OTHER REQUIREMENTS AS SHOWN OR STATED ON DETAIL DRAWING.
- VENDOR TO SELECT, DESIGN AND INSTALL ROCK REINFORCEMENT ABOVE TUNNEL EYE FOR EACH TUNNEL PRIOR TO TUNNEL HOLE THROUGH INTO SHAFT. REINFORCEMENT SHALL COVER AT LEAST 120 DEGREES OF TUNNEL CIRCUMFERENCE CENTERED ON TUNNEL CENTERLINE.
- VENDOR SHALL BE RESPONSIBLE FOR ADDITIONAL SUPPORT AND BACKFILL THAT MAY BE REQUIRED AS A RESULT OF EXCAVATION AND OVER BREAK BEYOND EXCAVATION LINE SHOWN IN ROCK.
- FOR ROCK DOWEL PLACEMENT SEE DETAIL 1 ON DRAWING No. T-1-001.
- REFER TO O.REG 231/91, PART IV.
- FOR WORKING GRADE SEE DRAWING No. 4-SP-002.



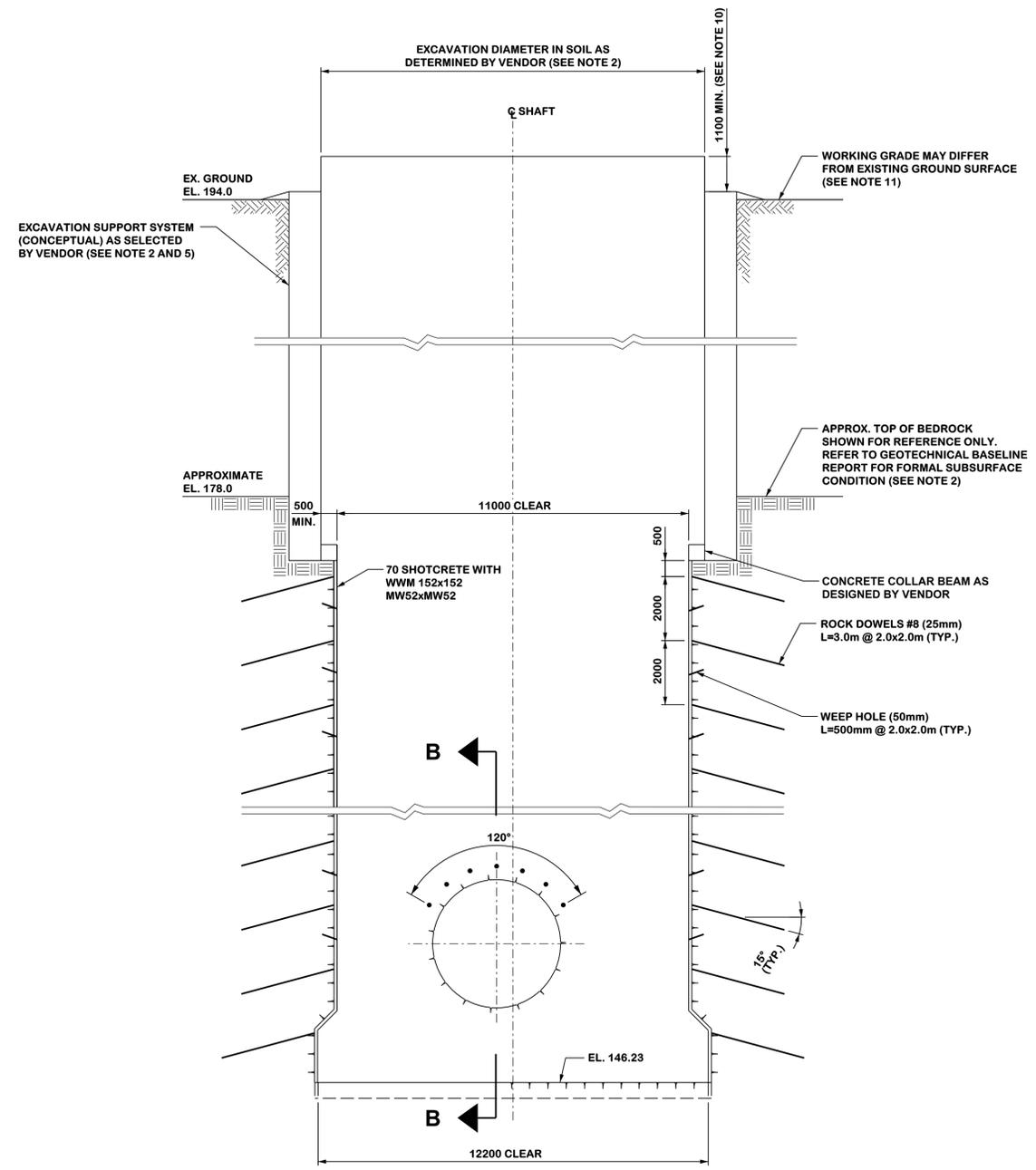
SHAFT EXCAVATION ABOVE EL. 176.0
SCALE: 1:100



SHAFT EXCAVATION BELOW EL. 176.0
SCALE: 1:100



SECTION B
SCALE: 1:100



SECTION A
SCALE: 1:100

JACOBS

Approved by _____

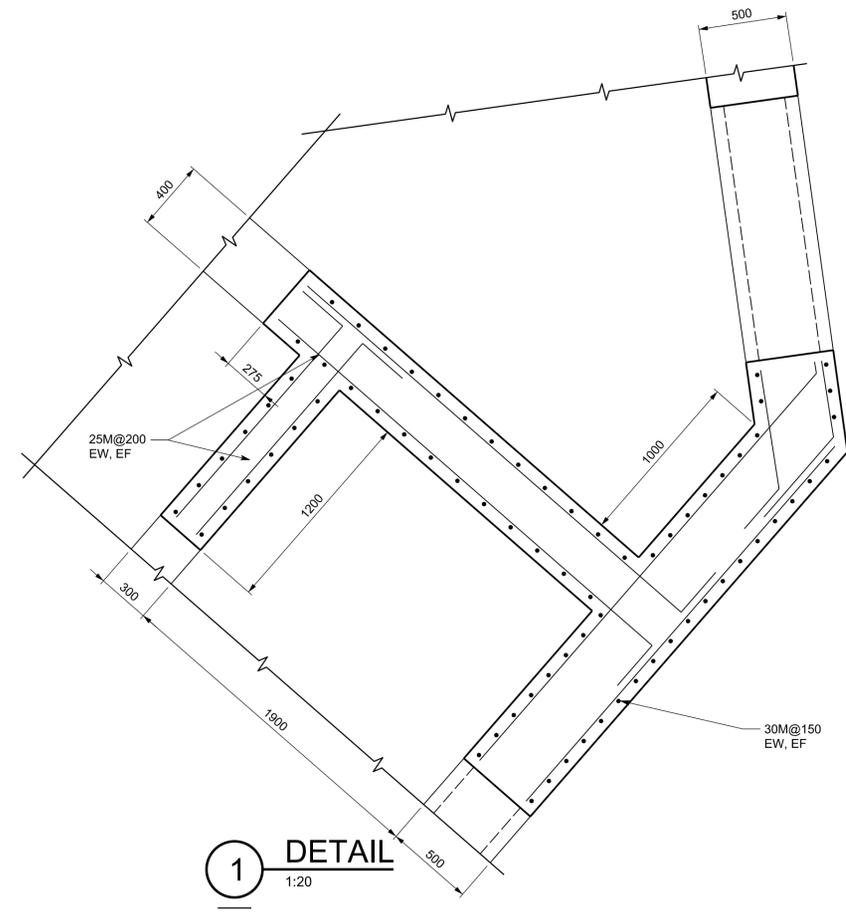
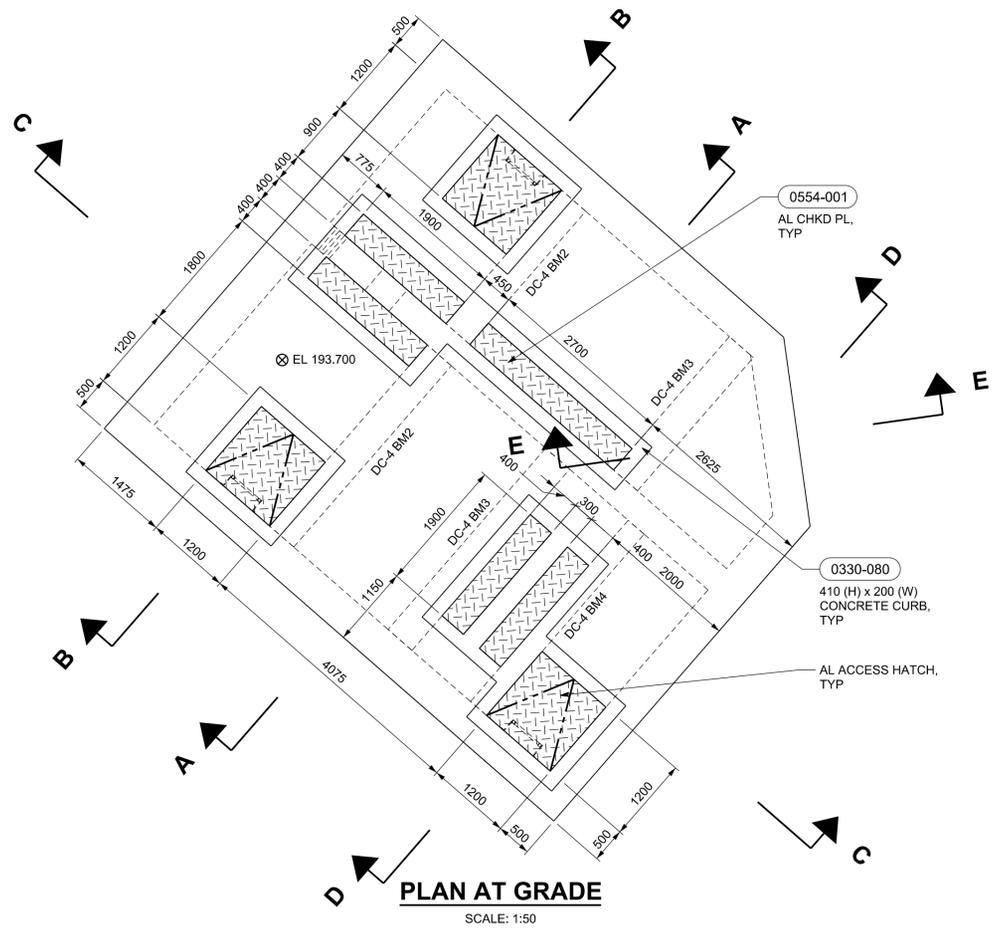
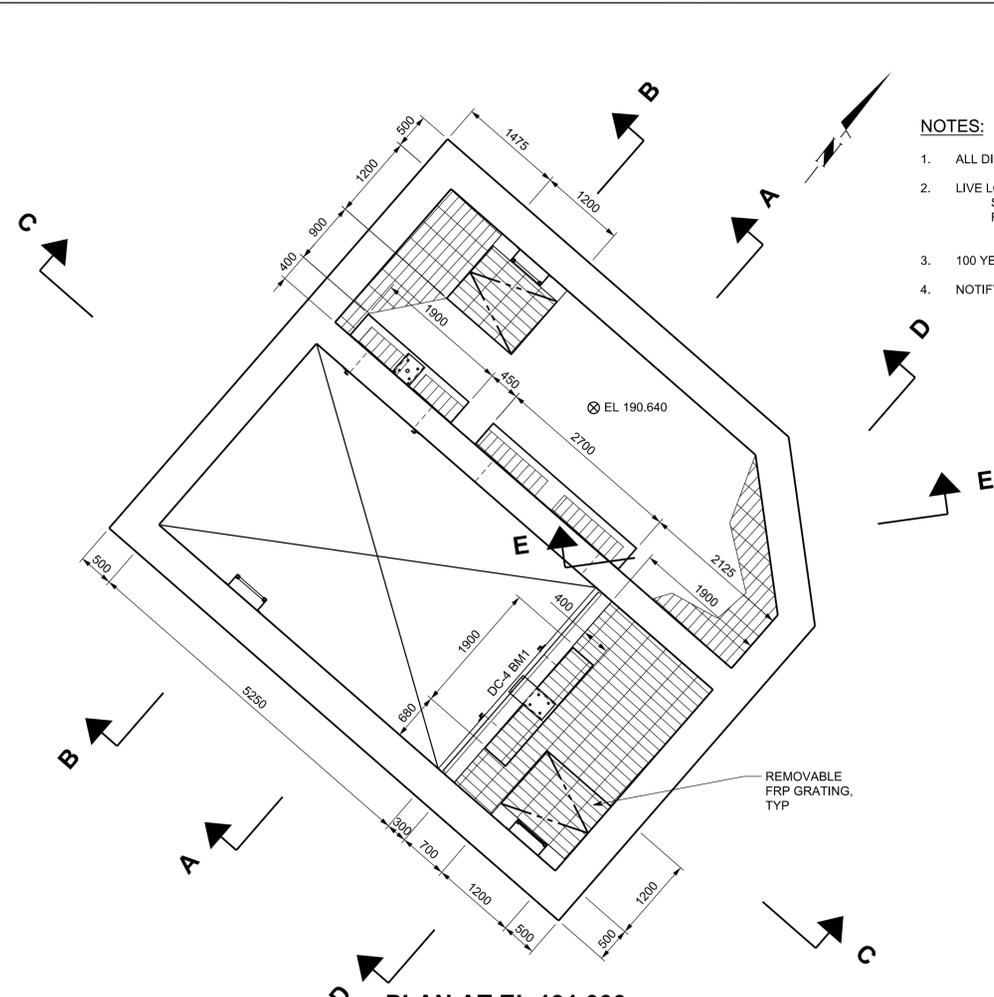
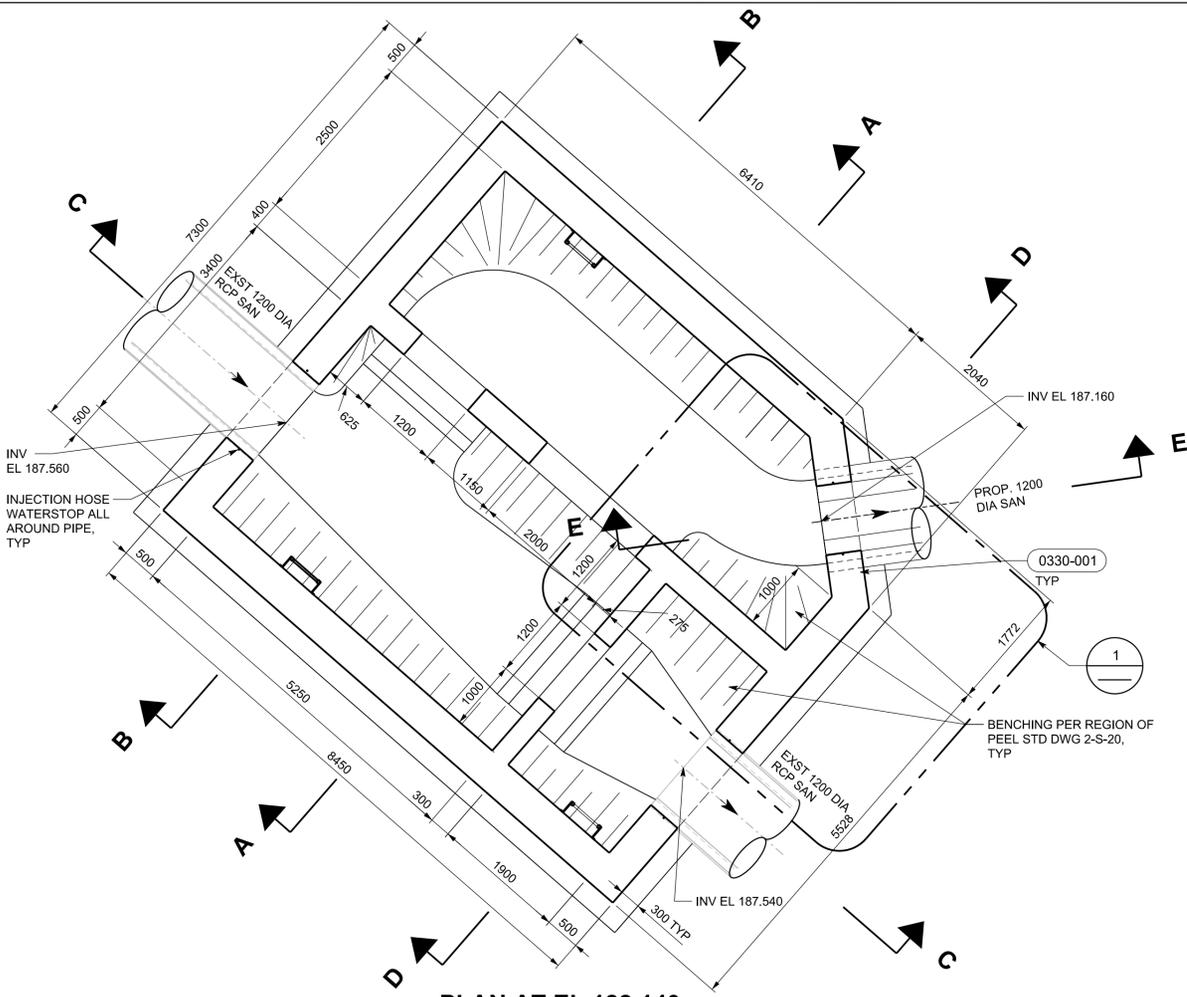
Region of Peel
working with you

EXCAVATION SUPPORT
SHAFT 4

CAD Area	X-XX	Area	Z-41 to Z-45	Project No.	16-2291
Checked by	C.Q.	Drawn by	C.A.	Plan No.	4-ES-001
Date	JAN 2020	Sheet	78 of 128		

REVISIONS		
DATE	DETAILS	INIT.
01/23/2020	ISSUED FOR 100% DESIGN REVIEW	J.J.T.

- NOTES:**
- ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT WHERE SHOWN OTHERWISE.
 - LIVE LOAD:
STAIRS, CONCRETE LANDINGS AND FRP PLATFORMS 9.6 kPa
ROOF SLAB HIGHWAY LOADING AS PER CSA S6-14 INCLUDING CL-625-ONT TRUCK LOADING
 - 100 YEAR FLOOD ELEVATION: 192.67 (FOR SITE 4 ONLY)
 - NOTIFY ENGINEER OF ANY DISCREPANCIES



STRUCTURAL DRAWINGS UNDER QC REVIEW
FINAL DWG WILL BE SUBMITTED FEBRUARY 6, 2020 OR BEFORE IF COMPLETED
01/23/2020



JACOBS

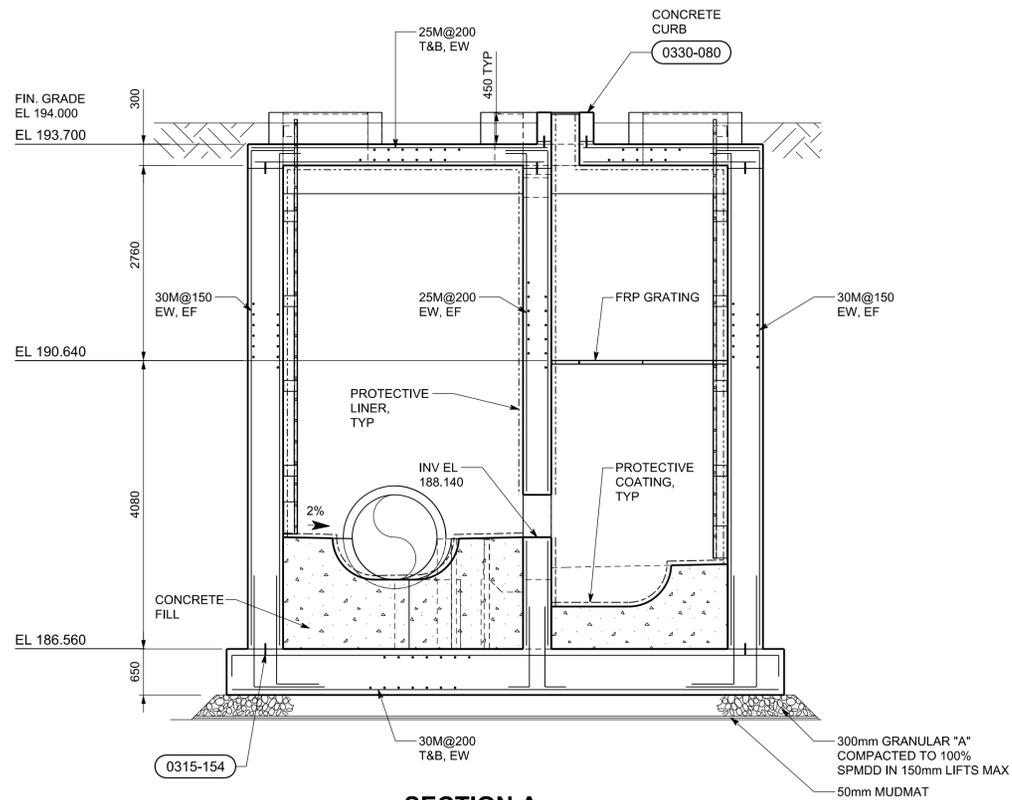
Approved by _____

Region of Peel
working with you

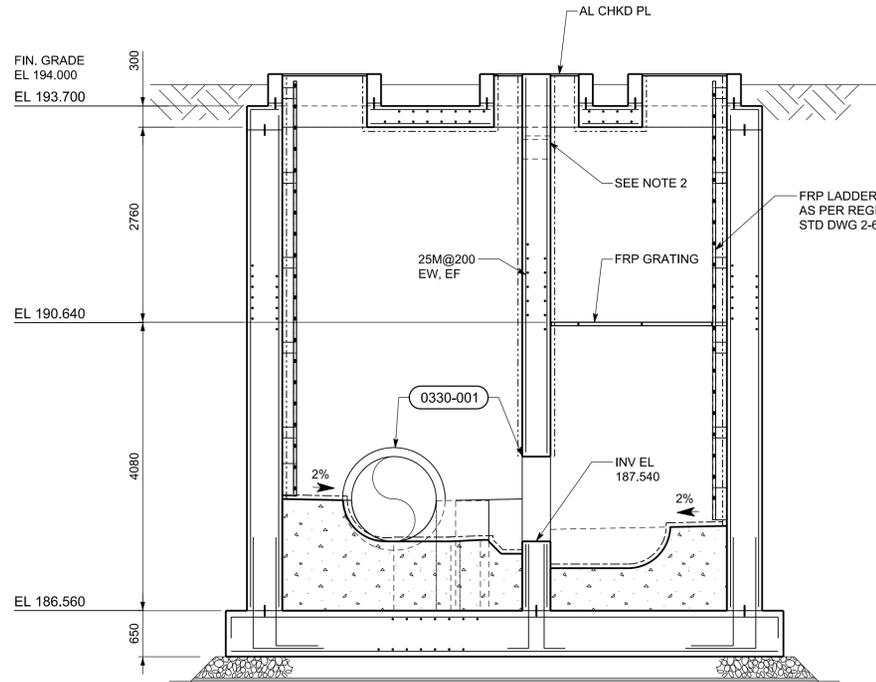
STRUCTURAL
DIVERSION CHAMBER 4 (DC-4)
PLANS

CAD Area	X-XX	Area	Z-41 to Z-45	Project No.	16-2291
Checked by	J.J.T.	Drawn by	G.O.	Plan No.	4-S-201
Date	JAN 2020	Sheet	79 of 128		

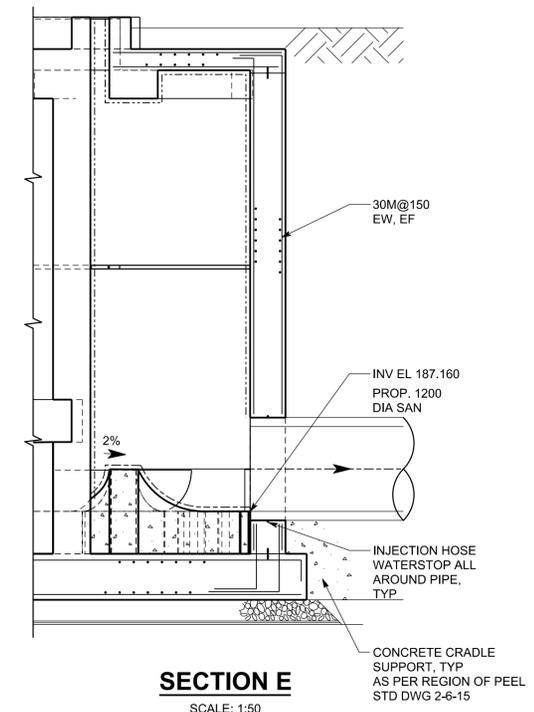
REVISIONS		
DATE	DETAILS	INIT.
01/23/2020	ISSUED FOR 100% DESIGN REVIEW	J.J.T.



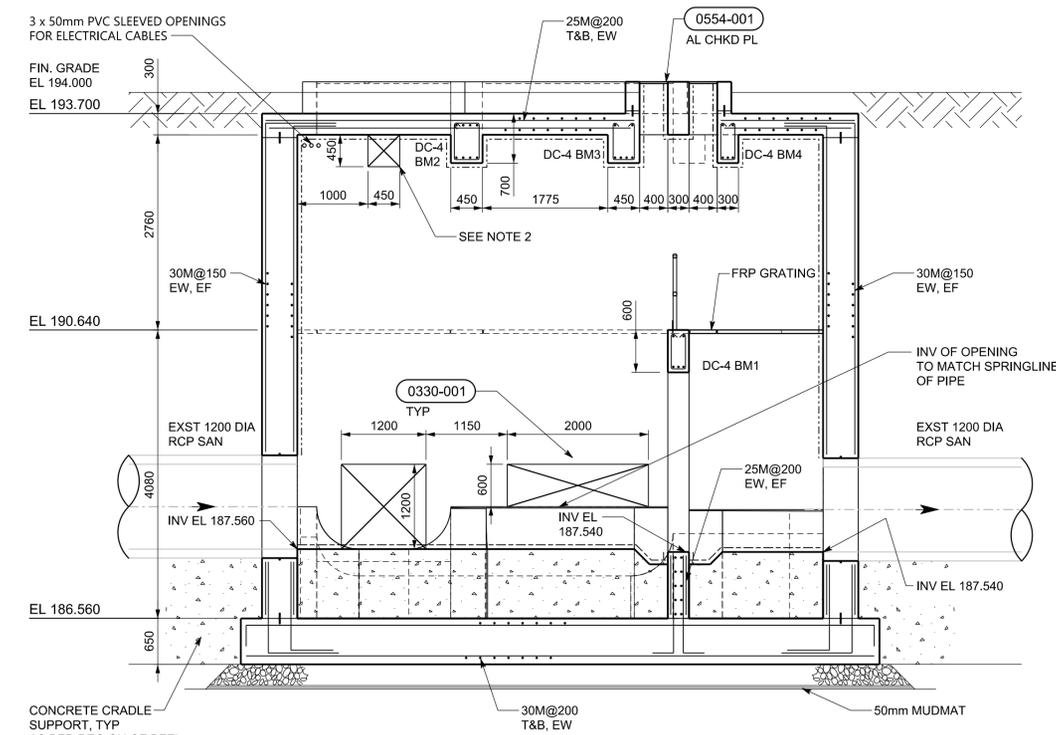
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SCALE: 1:50



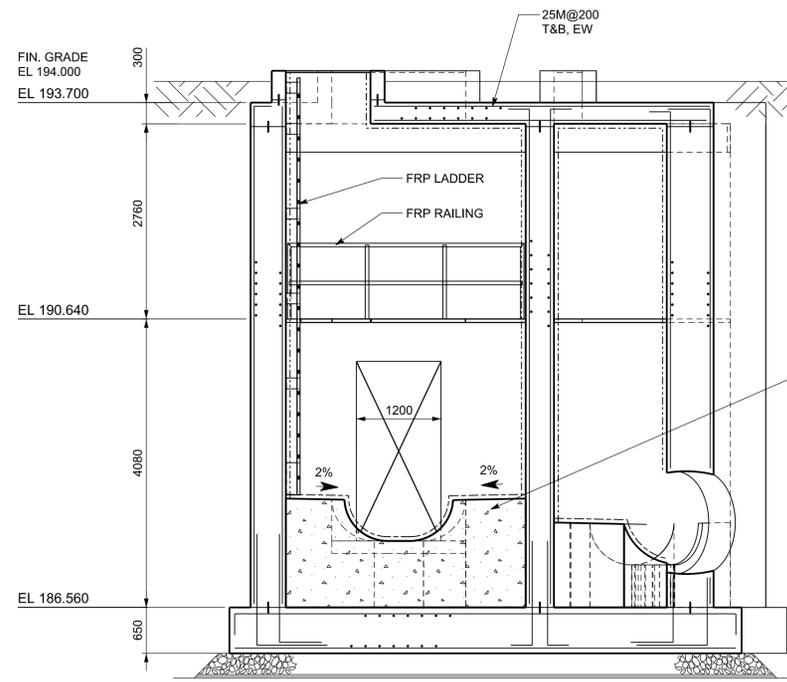
SECTION B
SCALE: 1:50



SECTION E
SCALE: 1:50



SECTION C
SCALE: 1:50



SECTION D
SCALE: 1:50

NOTES:

- ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT WHERE SHOWN OTHERWISE.
- 450x450 OPENING TO PERMIT VENTING BETWEEN CHAMBERS.
- FOR REINF NOT SHOWN OR NOTED SEE SECTION A.
- REFER TO SPECIFICATION 06500 - FRP PRODUCTS AND FABRICATION FOR FRP LADDER, PLATFORM AND RAILING REQUIREMENTS. CONTRACTOR TO SUBMIT STAMPED SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
- COORDINATE LINER PENETRATION DETAILS WITH SUPPLIER FOR LADDERS, PIPE PENETRATIONS, PLATFORMS, EMBEDDED GATES, ETC.
- SUBGRADE TO BE ASSESSED BY GEOTECHNICAL ENGINEER BEFORE INSTALLATION OF GRANULAR A AND MUD MAT. REMOVE INADEQUATE SOILS AND REPLACE WITH GRANULAR A (COMPACTED TO 100% SPMDD UNDER SUPERVISION OF GEOTECHNICAL FIELD TECHNICIAN). MINIMUM REQUIRED BEARING CAPACITY IS 300kPa.



**STRUCTURAL DRAWINGS
UNDER QC REVIEW**
FINAL DWG WILL BE SUBMITTED FEBRUARY 6, 2020
OR BEFORE IF COMPLETED
01/23/2020

JACOBS

Approved by _____

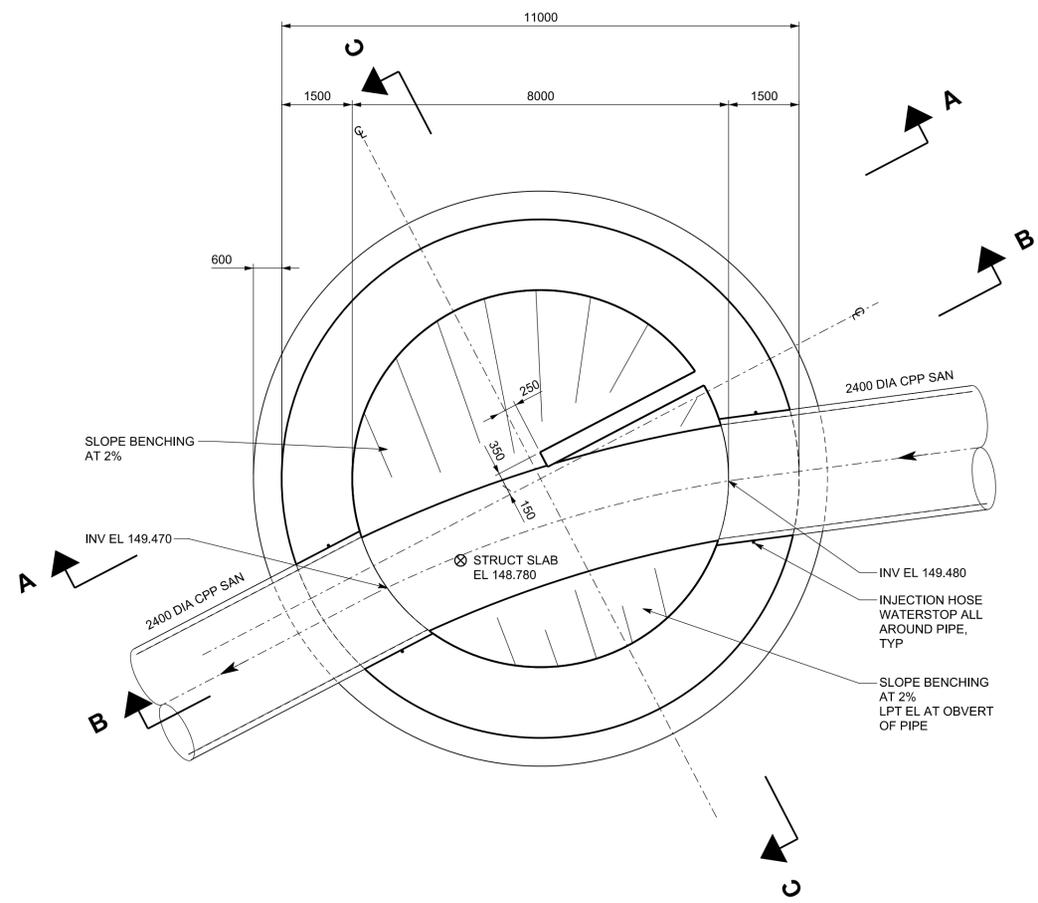
Region of Peel
working with you

STRUCTURAL
DIVERSION CHAMBER 4 (DC-4)
SECTIONS

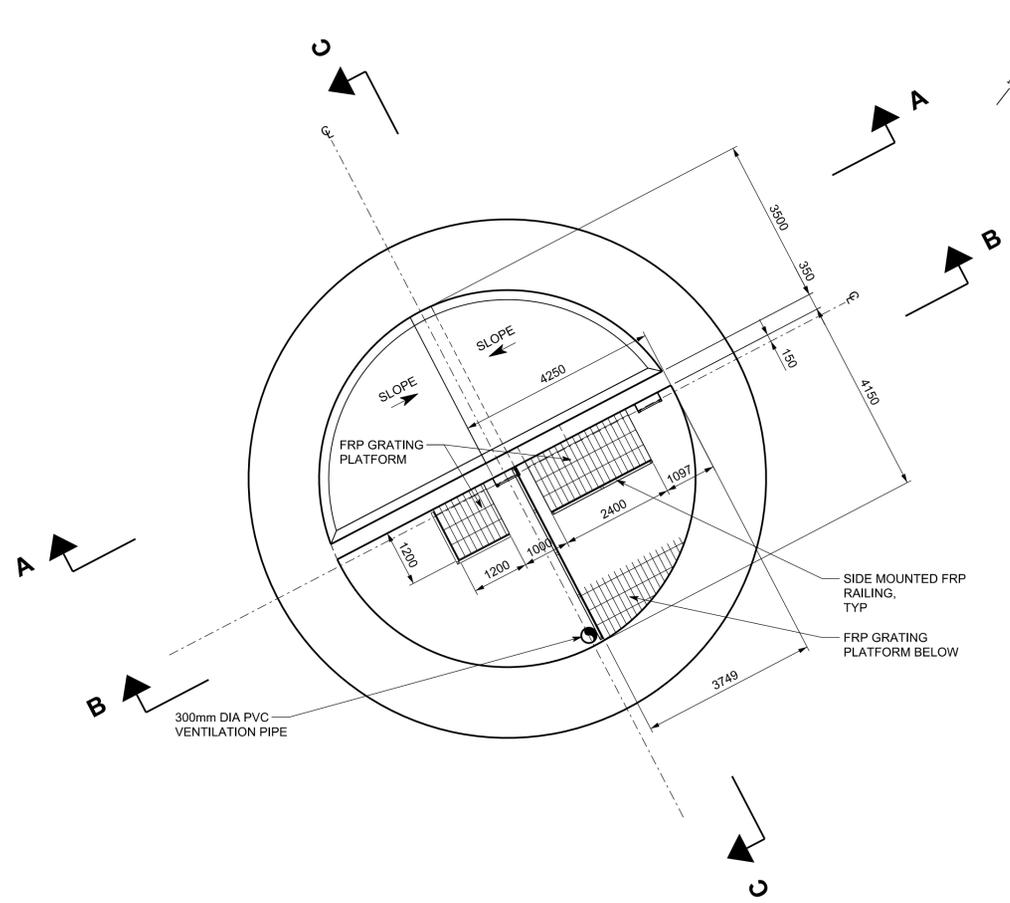
CAD Area	X-XX	Area	Z-41 to Z-45	Project No.	16-2291
Checked by	J.J.T.	Drawn by	G.O.	Date	JAN 2020
Date	JAN 2020	Sheet	80 of 128	Plan No.	4-S-202

REVISIONS		
DATE	DETAILS	INIT.
01/23/2020	ISSUED FOR 100% DESIGN REVIEW	J.J.T.

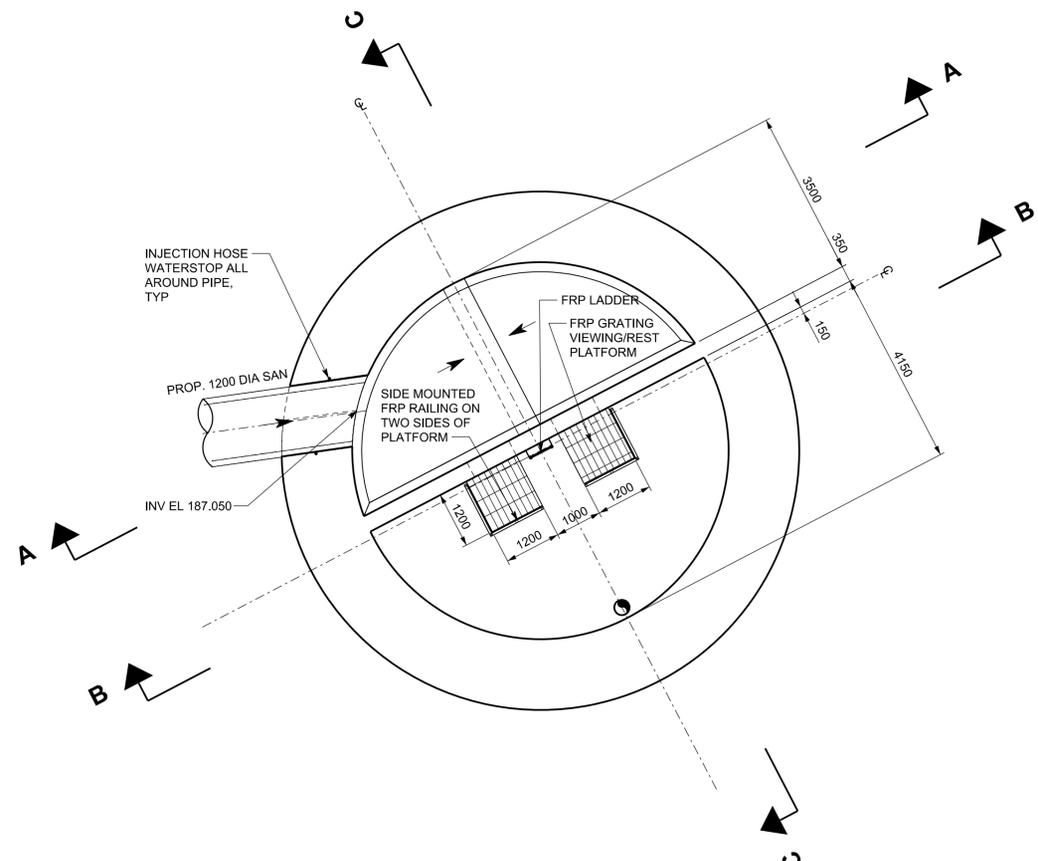
- NOTES:**
- ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT WHERE SHOWN OTHERWISE.
 - LIVE LOAD:
FRP PLATFORMS 9.6 kPa
ROOF SLAB HIGHWAY LOADING AS PER CSA S6-14 INCLUDING CL-625-ONT TRUCK LOADING
 - GROUND WATER ELEVATION AT GRADE.
 - 100 YEAR FLOOD ELEVATION: 192.67 (FOR SITE 4 ONLY)
 - NOTIFY ENGINEER OF ANY DISCREPANCIES



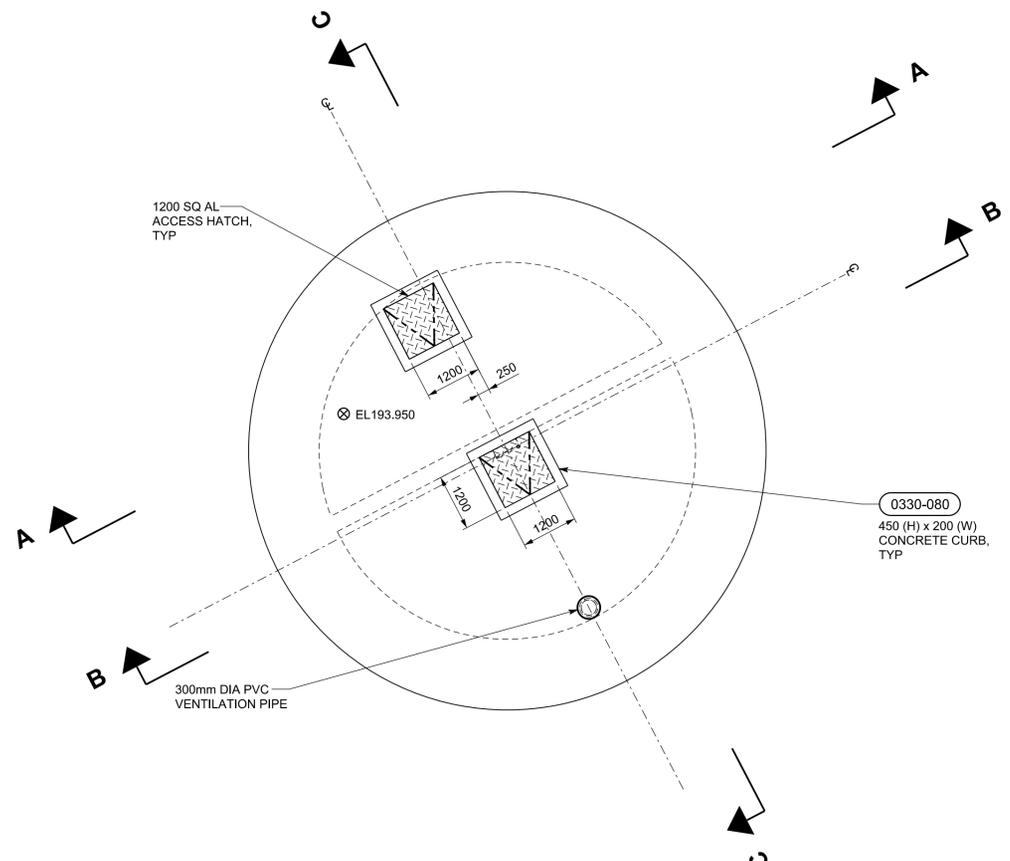
PLAN AT EL 150.800
SCALE: 1:75



PLAN AT EL 162.200
SCALE: 1:75

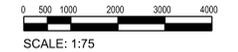


PLAN AT EL 192.100
SCALE: 1:75



PLAN AT GRADE
SCALE: 1:75

**STRUCTURAL DRAWINGS
UNDER QC REVIEW**
FINAL DWG WILL BE SUBMITTED FEBRUARY 6, 2020
OR BEFORE IF COMPLETED
01/23/2020



JACOBS

Approved by _____

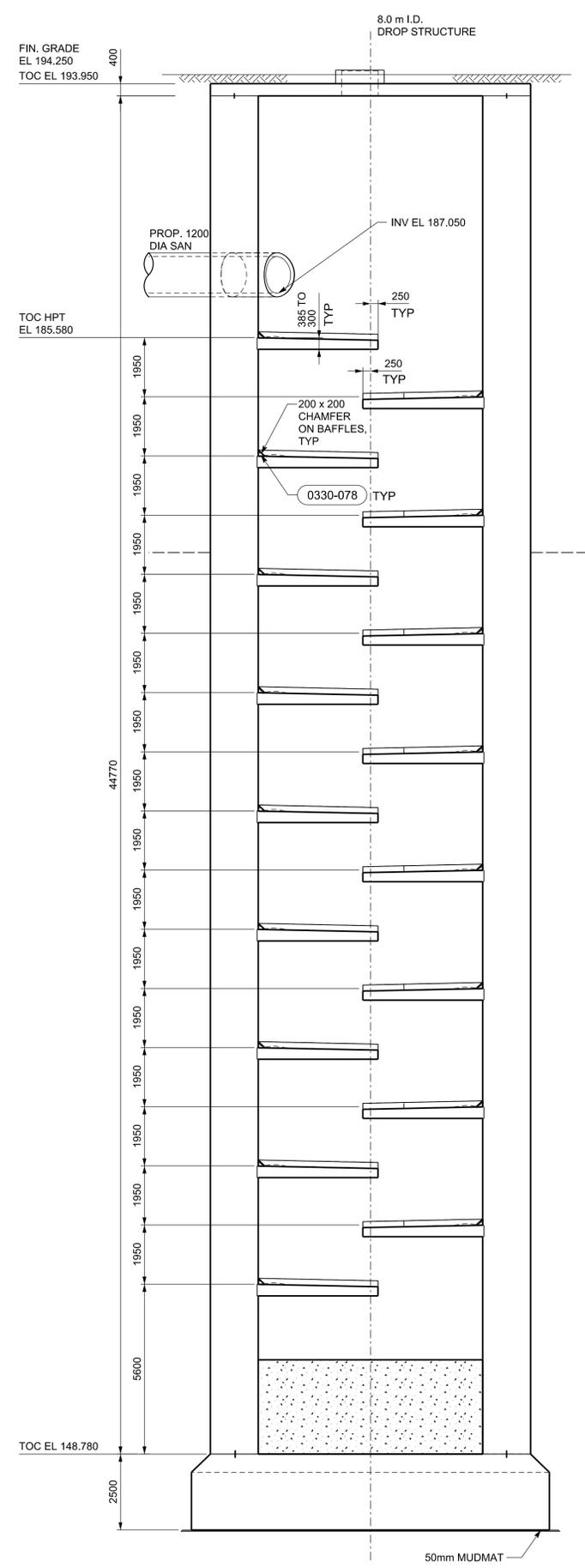
Region of Peel
working with you

STRUCTURAL
DROP STRUCTURE 4 (DS-4)
PLANS

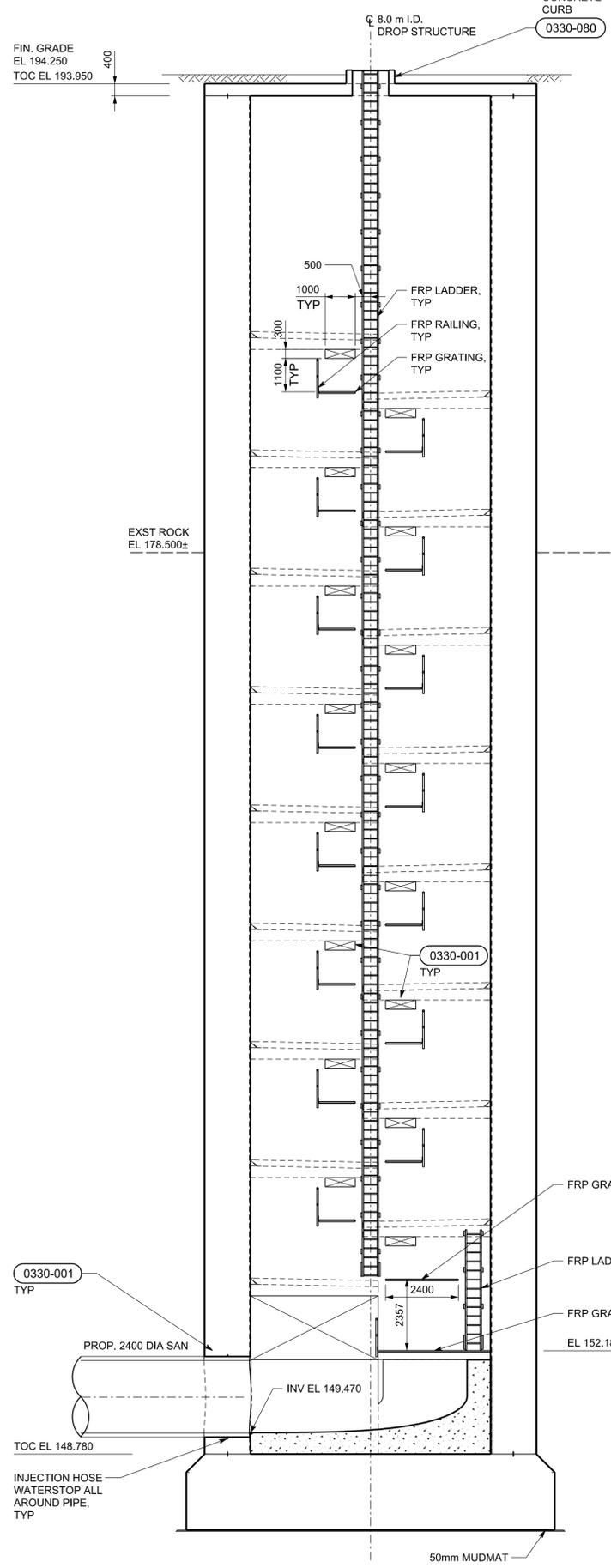
CAD Area	X-XX	Area	Z-41 to Z-45	Project No.	16-2291
Checked by	J.J.T.	Drawn by	G.O.	Date	JAN 2020
Date	JAN 2020	Sheet	81 of 128	Plan No.	4-S-203

REVISIONS		
DATE	DETAILS	INIT.
01/23/2020	ISSUED FOR 100% DESIGN REVIEW	J.J.T.

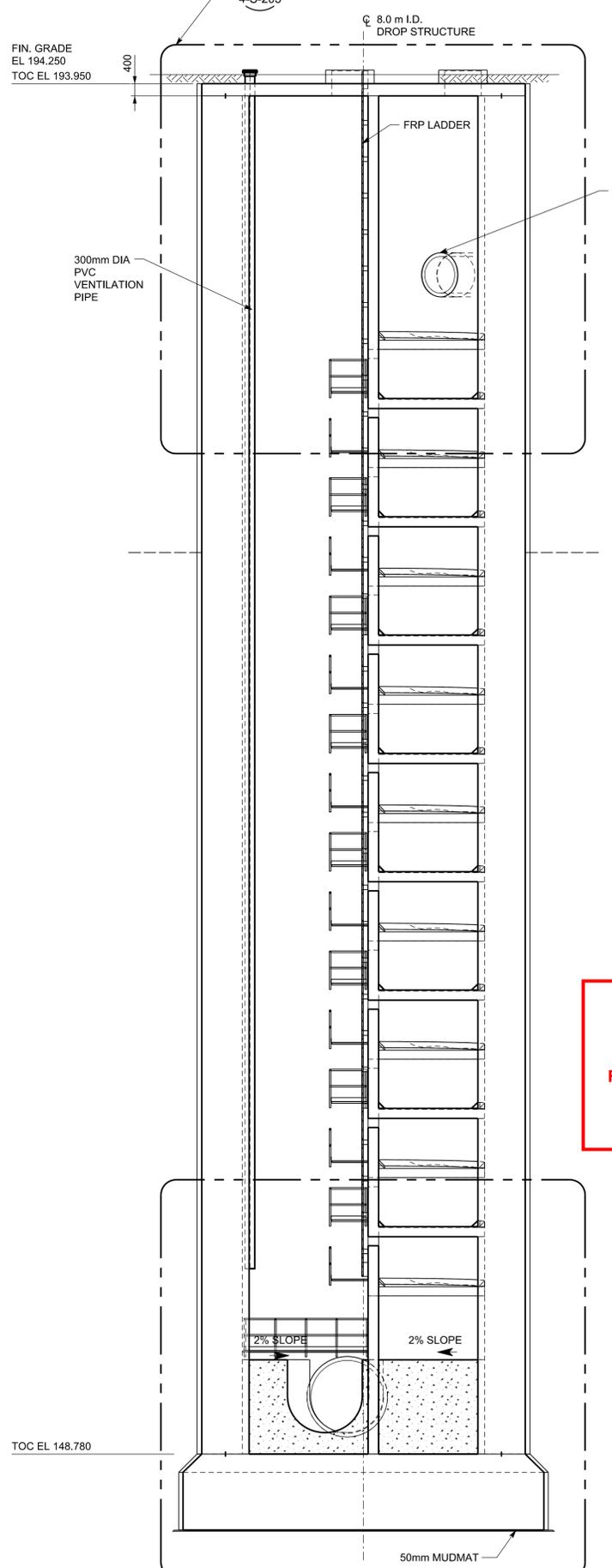
NOTES:
 1. ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT WHERE SHOWN OTHERWISE.



SECTION A
SCALE: 1:100



SECTION B
SCALE: 1:100



SECTION C
SCALE: 1:100

STRUCTURAL DRAWINGS UNDER QC REVIEW
 FINAL DWG WILL BE SUBMITTED FEBRUARY 6, 2020 OR BEFORE IF COMPLETED
 01/23/2020



Approved by _____

JACOBS

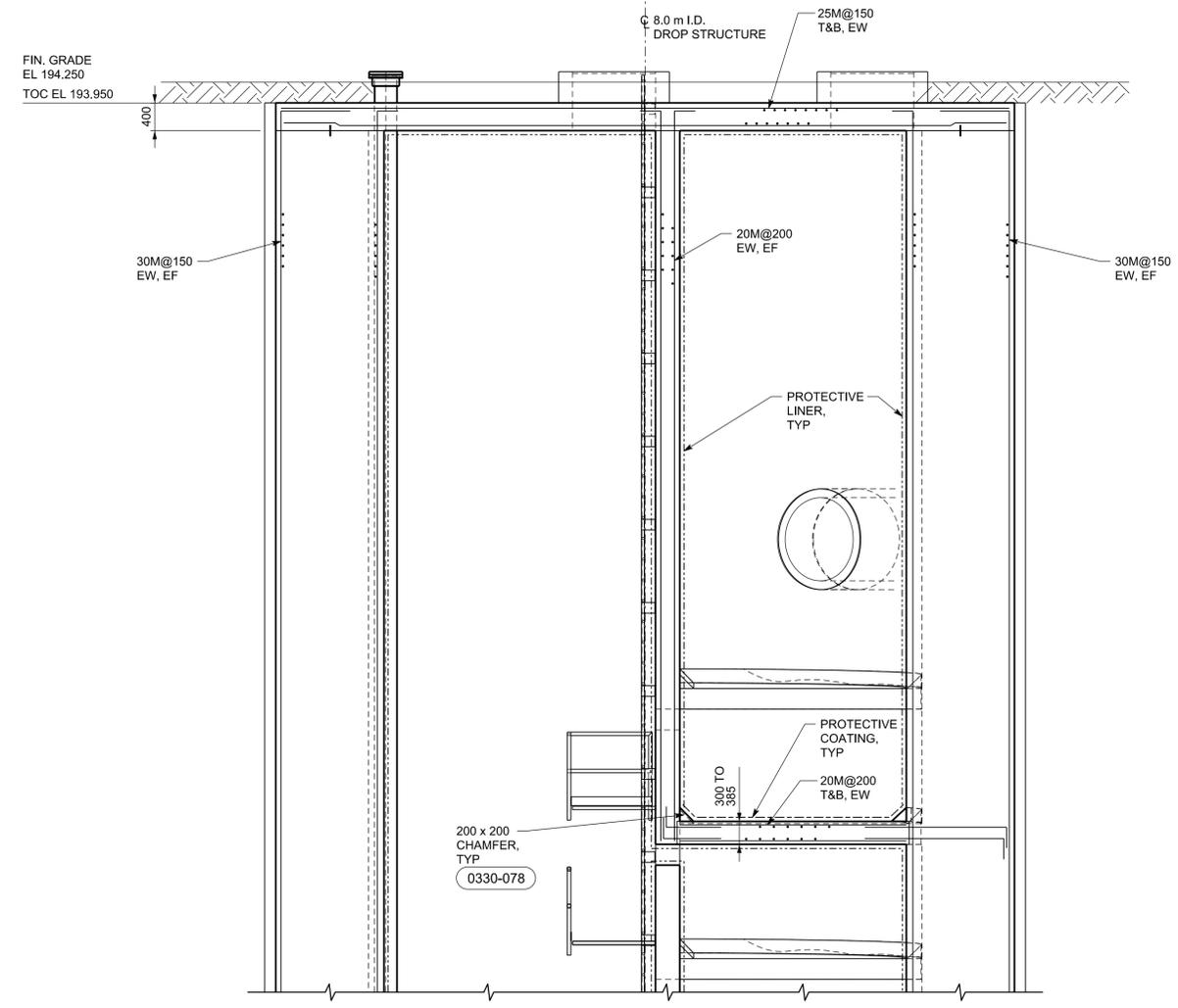
Region of Peel
working with you

STRUCTURAL
DROP STRUCTURE 4 (DS-4)
SECTIONS

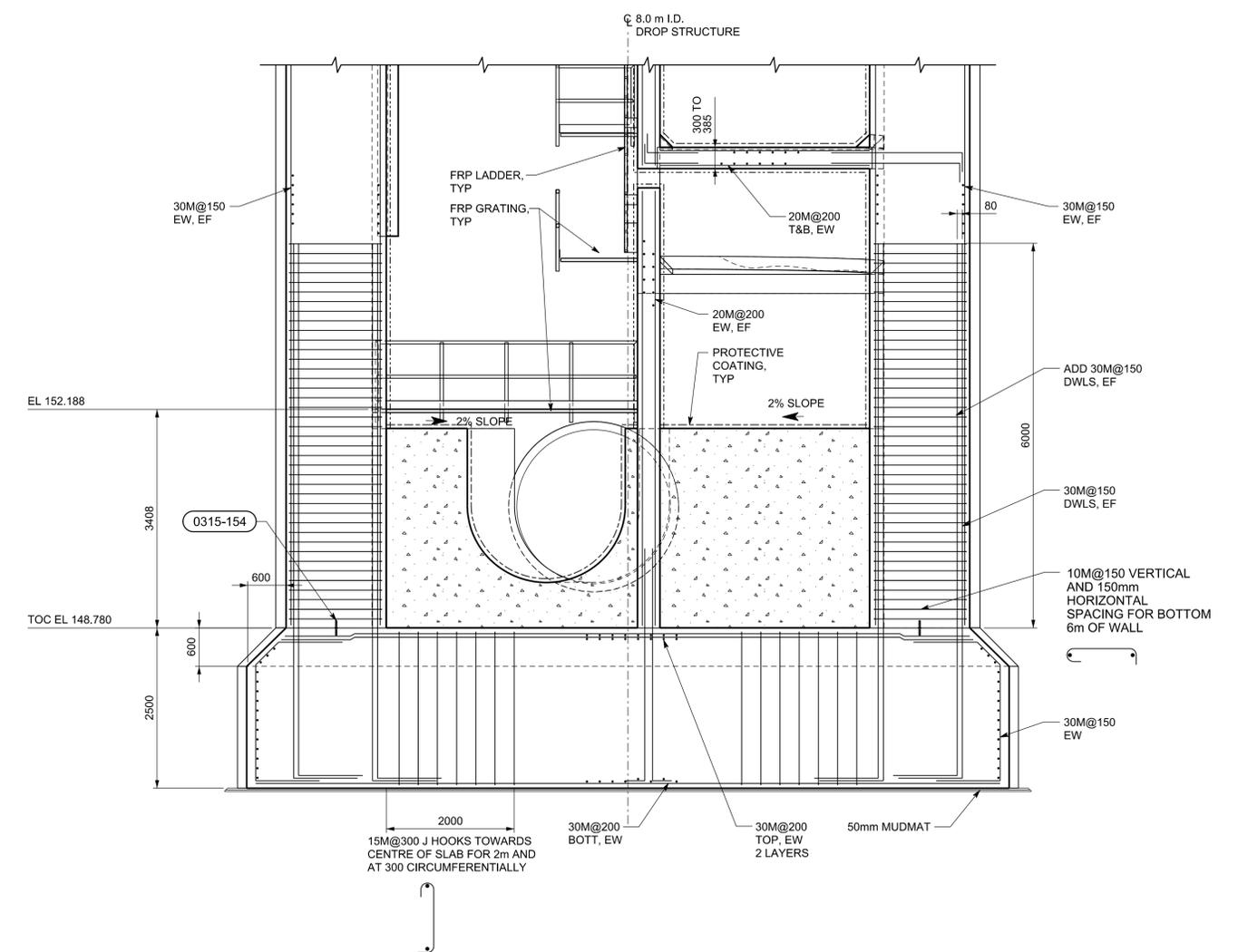
CAD Area	X-XX	Area	Z-41 to Z-45	Project No.	16-2291
Checked by	J.J.T.	Drawn by	G.O.	Sheet	82 of 128
Date	JAN 2020	Plan No.	4-S-204		

REVISIONS		
DATE	DETAILS	INIT.
01/23/2020	ISSUED FOR 100% DESIGN REVIEW	J.J.T.

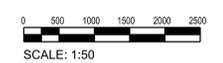
NOTES:
 1. ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT WHERE SHOWN OTHERWISE.



1 DETAIL
 1:50
 4-S-204



2 DETAIL
 1:50
 4-S-204

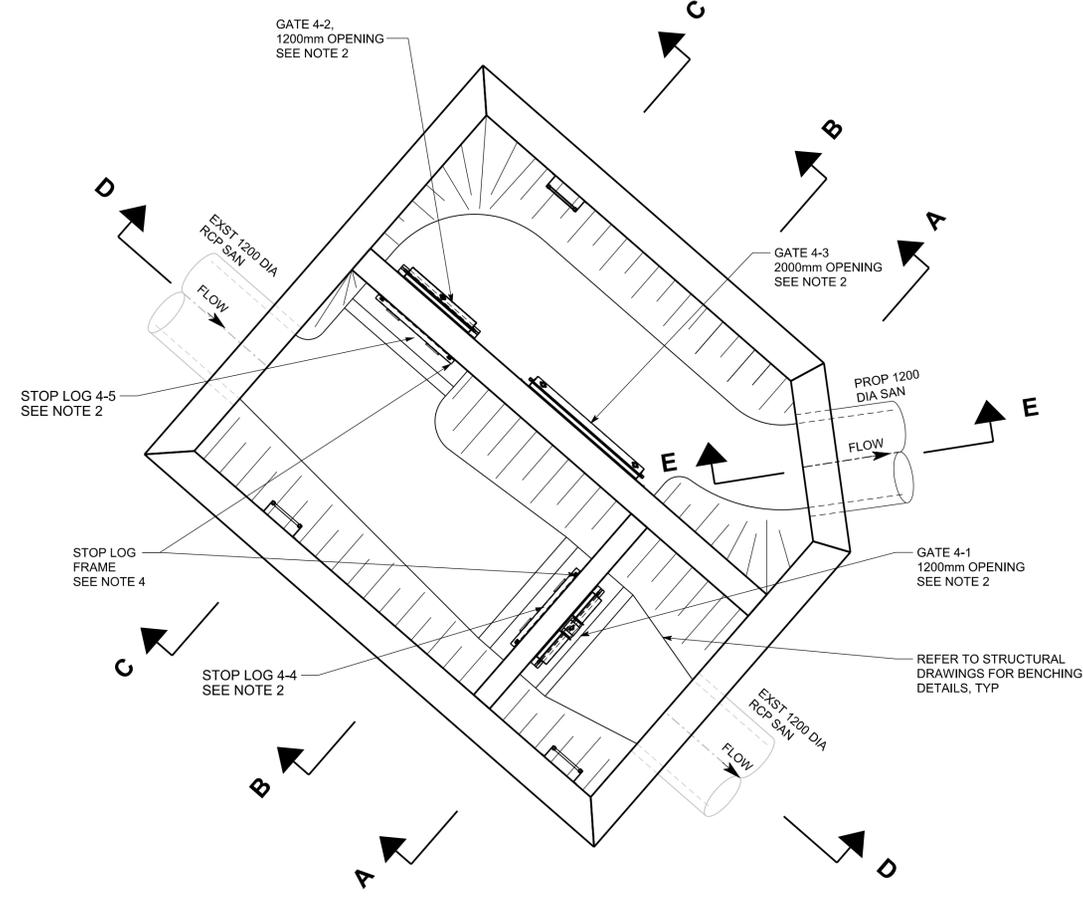


**STRUCTURAL DRAWINGS
 UNDER QC REVIEW**
 FINAL DWG WILL BE SUBMITTED FEBRUARY 6, 2020
 OR BEFORE IF COMPLETED
 01/23/2020

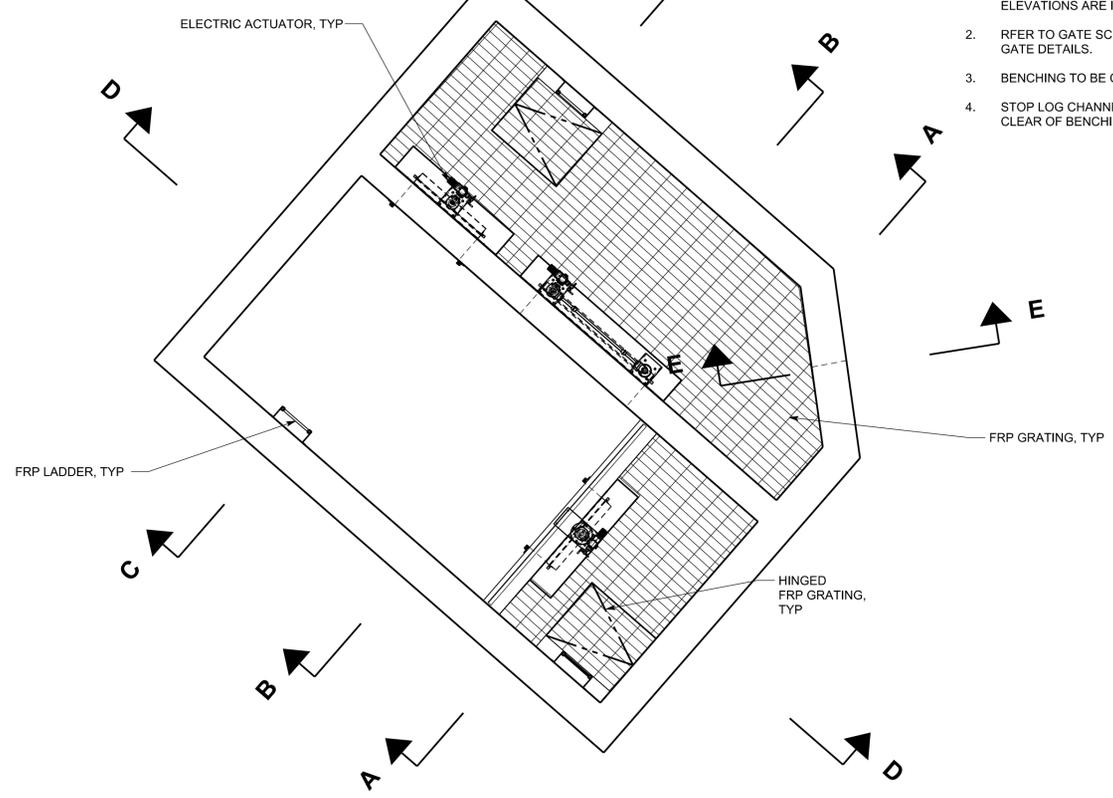
JACOBS	Approved by _____
Region of Peel working with you	
STRUCTURAL DROP STRUCTURE 4 (DS-4) DETAILS	
CAD Area X-XX Area Z-41 to Z-45 Project No. 16-2291	Checked by J.J.T. Drawn by G.O. Date JAN 2020 Sheet 83 of 128 Plan No. 4-S-205

REVISIONS		
DATE	DETAILS	INIT.
08/01/2019	ISSUED FOR 50% DESIGN REVIEW	J.W.
11/15/2019	ISSUED FOR 90% DESIGN REVIEW	J.W.
01/23/2020	ISSUED FOR 100% DESIGN REVIEW	P.D.

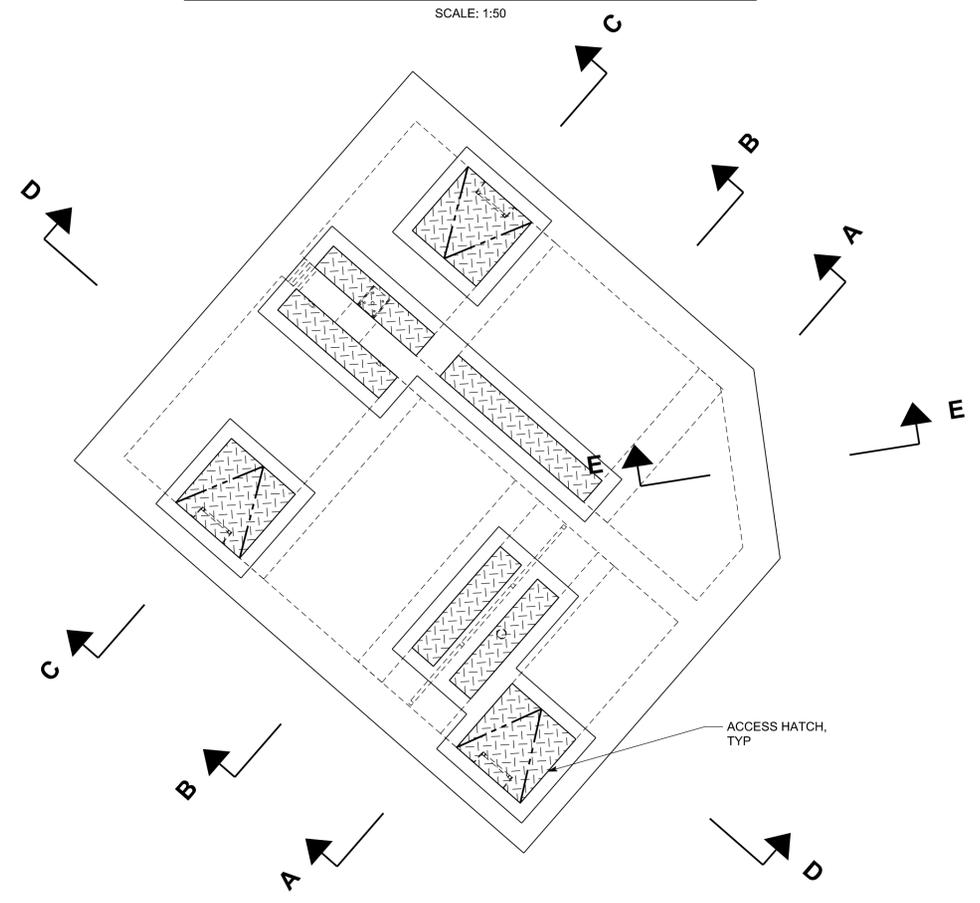
- NOTES:**
- ALL DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS NOTED OTHERWISE. ALL ELEVATIONS ARE IN METERS (m) UNLESS OTHERWISE NOTED.
 - REFER TO GATE SCHEDULE TABLE IN SPECIFICATION SECTION 11280 FOR GATE DETAILS.
 - BENCHING TO BE CLEAR OF GATE AND FRAME.
 - STOP LOG CHANNEL TO BE SET FOR 1500 WIDE STOP LOGS. KEEP CLEAR OF BENCHING.



DIVERSION CHAMBER NO. 4 PLAN AT EL 187.50
SCALE: 1:50



DIVERSION CHAMBER NO. 4 PLAN AT EL 190.64
SCALE: 1:50



DIVERSION CHAMBER NO. 4 PLAN AT EL 193.70
SCALE: 1:50



JACOBS

Approved by _____

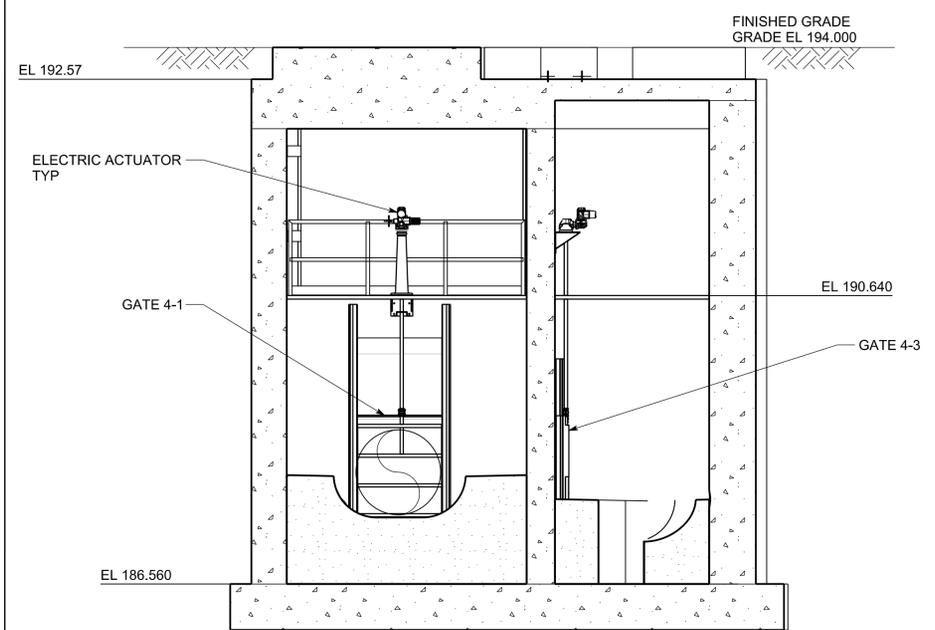
Region of Peel
working with you

PROCESS MECHANICAL
DIVERSION CHAMBER DC-4
PLANS

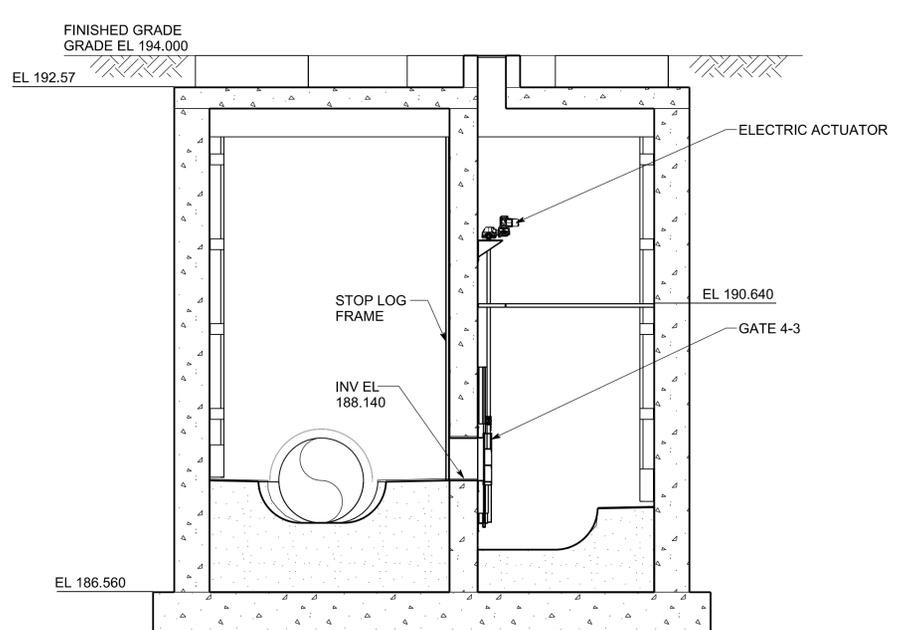
CAD Area	X-XX	Area	Z-41 to Z-45	Project No.	16-2291
Checked by	P.D.	Drawn by	C.P.	Plan No.	4-PR-201
Date	JAN 2020	Sheet	84 of 128		

REVISIONS		
DATE	DETAILS	INIT.
08/01/2019	ISSUED FOR 50% DESIGN REVIEW	J.W.
11/15/2019	ISSUED FOR 90% DESIGN REVIEW	J.W.
01/23/2020	ISSUED FOR 100% DESIGN REVIEW	P.D.

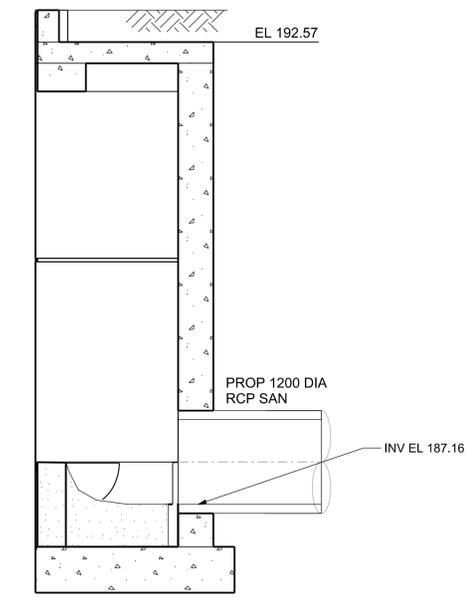
- NOTES:**
- ALL DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS NOTED OTHERWISE. ALL ELEVATIONS ARE IN METERS (m) UNLESS OTHERWISE NOTED.
 - REFER TO GATE SCHEDULE TABLE IN SPECIFICATION SECTION 1128 FOR GATE DETAILS.



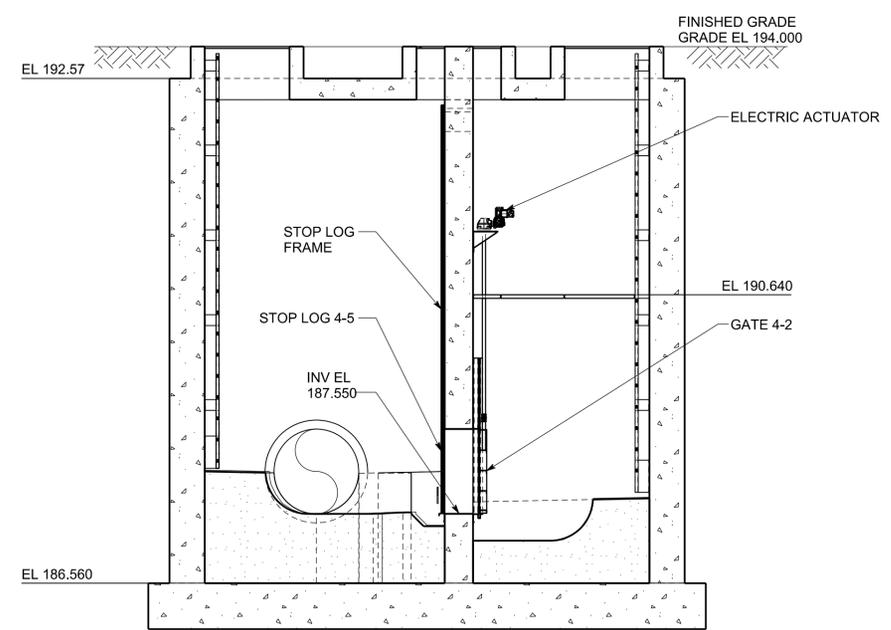
DIVERSION CHAMBER NO. 4 SECTION A
SCALE: 1:50



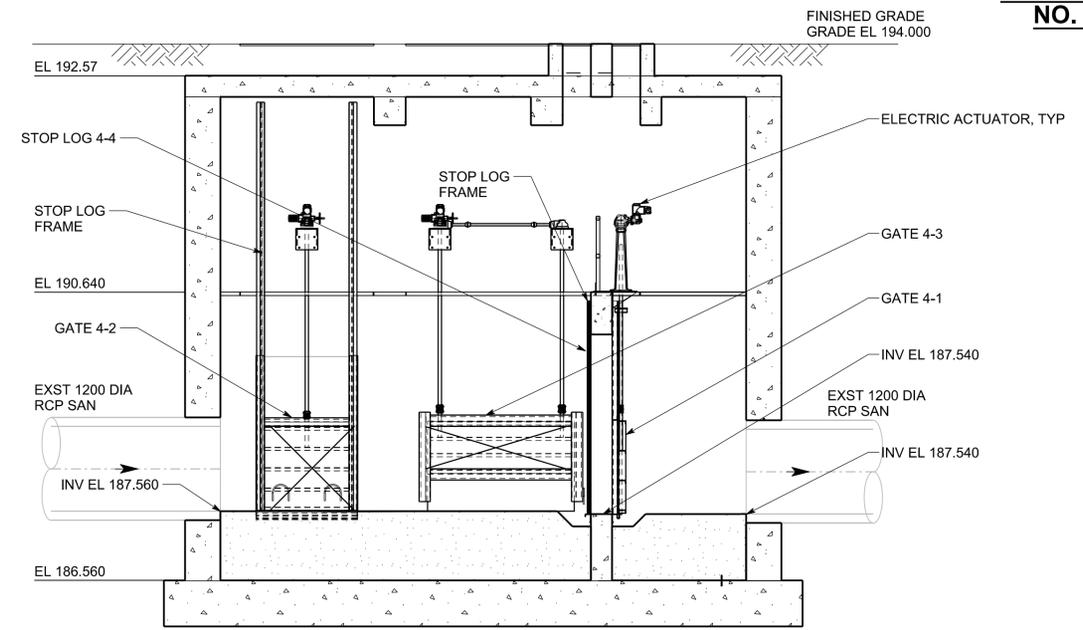
DIVERSION CHAMBER NO. 4 SECTION B
SCALE: 1:50



DIVERSION CHAMBER NO. 4 SECTION E
SCALE: 1:50



DIVERSION CHAMBER NO. 4 SECTION C
SCALE: 1:50



DIVERSION CHAMBER NO. 4 SECTION D
SCALE: 1:50



JACOBS

Approved by _____

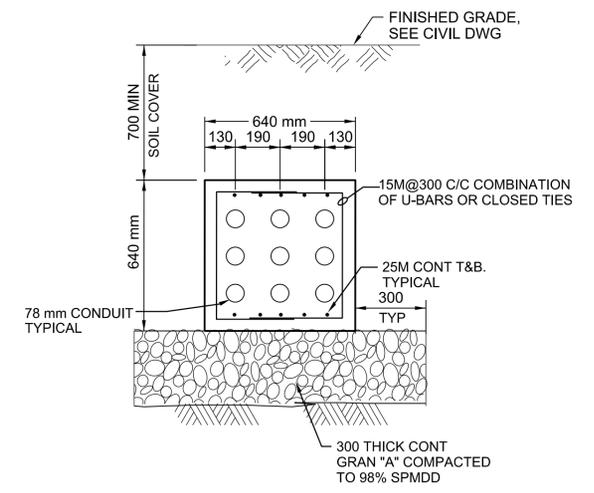
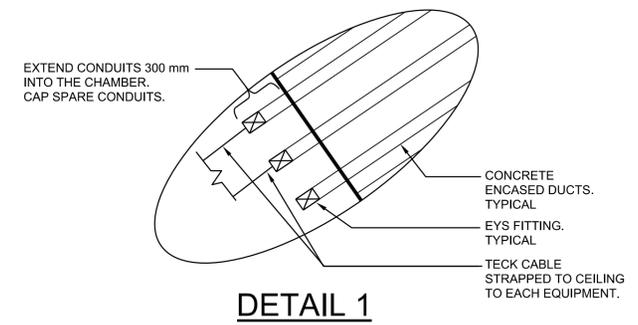
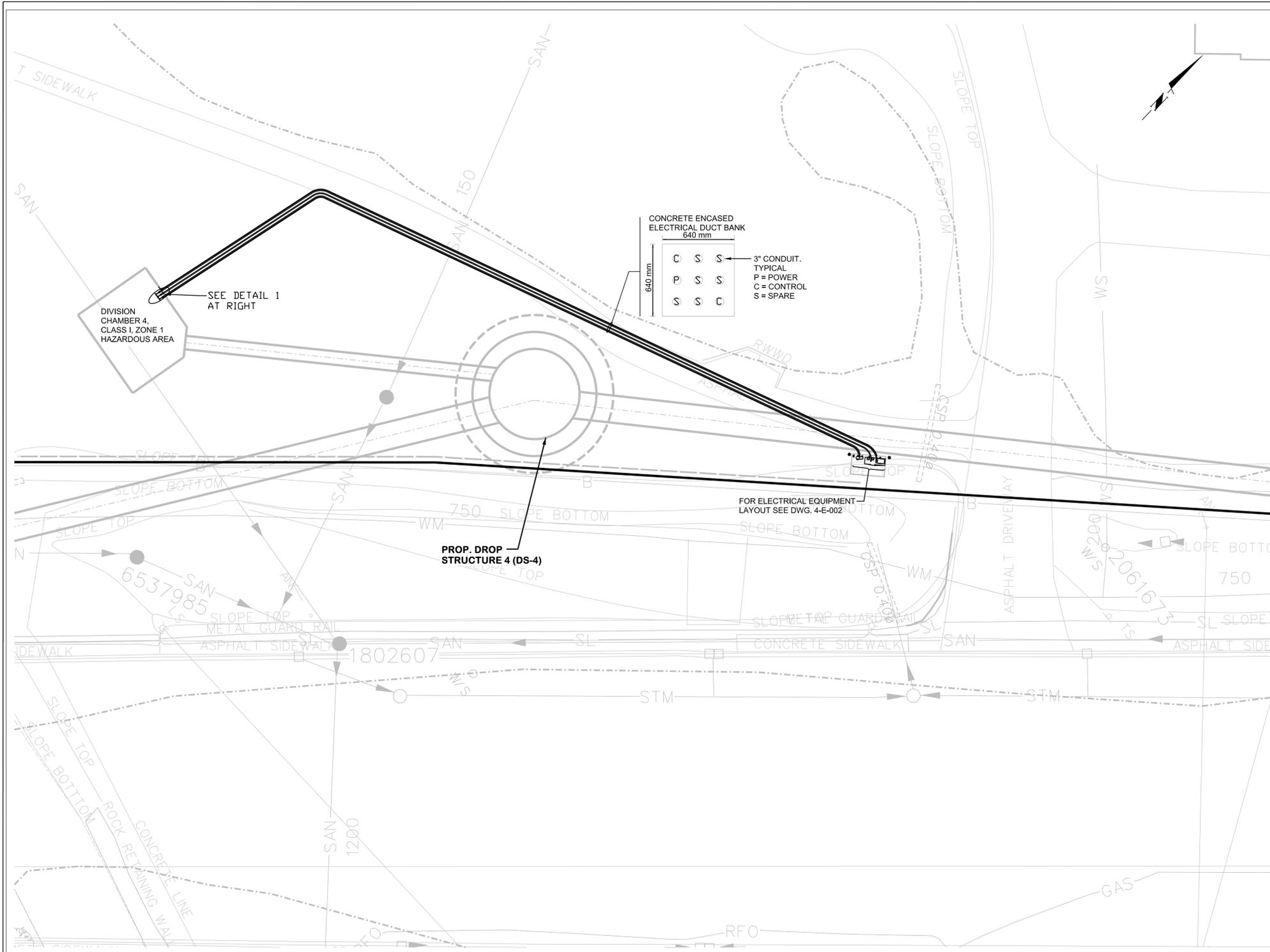
Region of Peel
working with you

PROCESS MECHANICAL

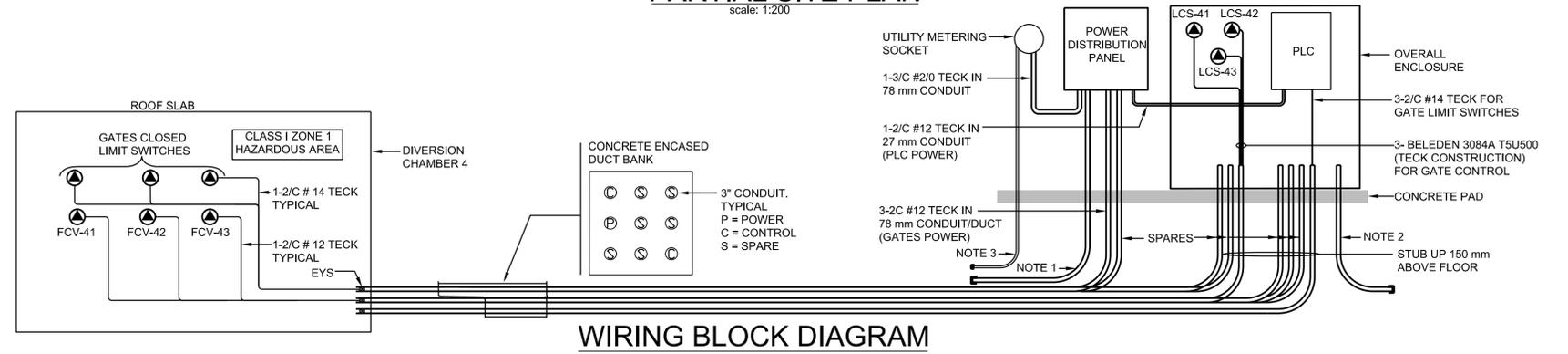
DIVERSION CHAMBER DC-4
SECTIONS

CAD Area	X-XX	Area	Z-41 to Z-45	Project No.	16-2291
Checked by	P.D.	Drawn by	C.P.	Sheet	85 of 128
Date	JAN 2020	Sheet	85 of 128	Plan No.	4-PR-202

REVISIONS		
DATE	DETAILS	INIT.
01/31/2020	ISSUED FOR 100% DESIGN REVIEW	J.T.



PARTIAL SITE PLAN
scale: 1:200



- NOTES:**
1. PROVIDE 1-78 mm CONDUIT SLEEVE TERMINATED INTO THE POWER DISTRIBUTION PANEL AND EXTENDING 600 mm OUT OF THE CONCRETE PAD FOR FUTURE USE. CAP THE BURIED END.
 2. PROVIDE 1-78 mm CONDUIT SLEEVE TERMINATED INTO THE OVERALL ENCLOSURE, STUBBED UP 150 mm ABOVE FLOOR AND EXTENDING 600 mm OUT OF THE CONCRETE PAD FOR FUTURE USE. CAP BOTH ENDS.
 3. PROVIDE 1-27" CONDUIT SLEEVE FOR UTILITY METERING, STUBBED UP TO THE METER HEIGHT AND EXTENDING 600 mm OUT OF THE CONCRETE PAD FOR USE BY ALECTRA (UTILITY).

JACOBS

Approved by _____

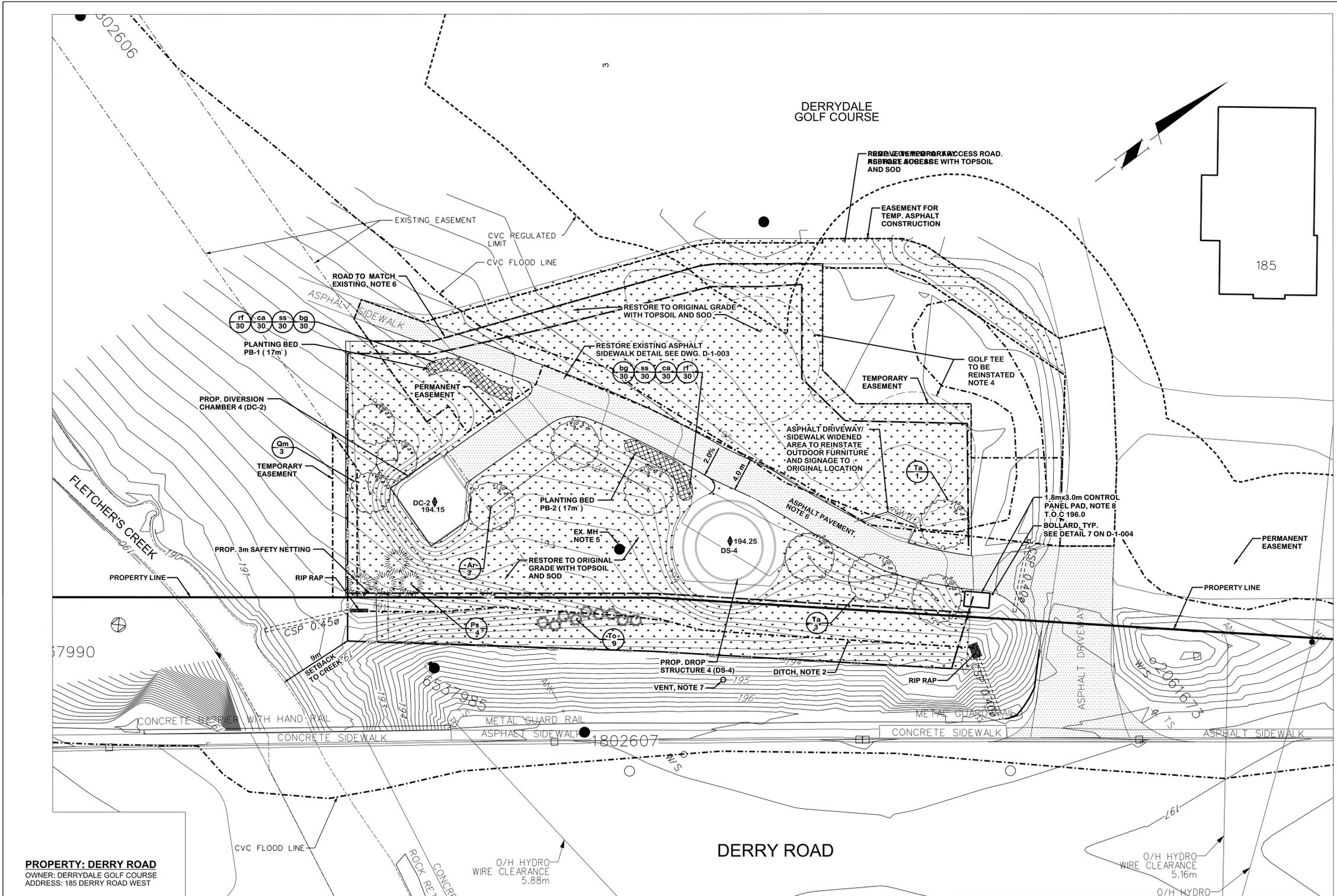
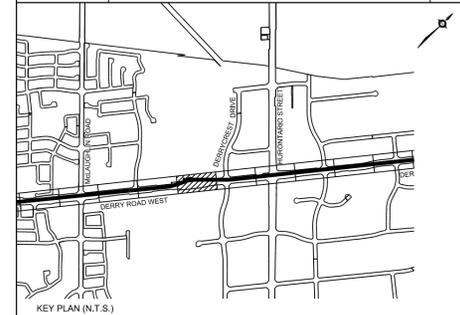
Region of Peel
working with you

ELECTRICAL
PARTIAL SITE PLAN

CAD Area	X-XX	Area	Z-41 to Z-45	Project No.	16-2291
Checked by	W.T.	Drawn by	J.T.	Date	JAN 2020
Date	JAN 2020	Sheet	86 of 128	Plan No.	4-E-001

SERVICE DATA					
SERVICE	DATE	INIT.	SERVICE	DATE	INIT.
SAN SEWERS			GAS MAINS		
STORM SEWERS			BELL U/G CABLE		
WATERMANS			HYDRO U/G CABLE		
TRANSIT			HYDRO ONE		
PARKS & REC.			CTV		
ONT. CLEAN WATER			COMMUNIC. CABLES		

REVISIONS		
DATE	DETAILS	INIT.
08/01/2019	ISSUED FOR 50% DESIGN REVIEW	S.F.
11/15/2019	ISSUED FOR 90% DESIGN REVIEW	P.D.
01/23/2020	ISSUED FOR 100% DESIGN REVIEW	P.D.



PROPERTY: DERRY ROAD
 OWNER: DERRYDALE GOLF COURSE
 ADDRESS: 185 DERRY ROAD WEST

LEGEND:	
	EASEMENT
	EXISTING CONTOURS
	PROPOSED CONTOURS
	ASPHALT PAVEMENT/DRIVEWAY ENTRANCE
	LIGHT-DUTY SILT FENCE SILT FENCE
	MULTI-BARRIER ESC
	RIP RAP PROTECTION PER OPSD 810.010
	CONCRETE SIDEWALK
	PROPOSED ELEV
	PROPOSED ACCESS HATCH ELEV
	PLANT KEY
	PROPOSED DECIDUOUS TREE
	PROPOSED CONIFEROUS TREE
	TOPSOIL AND SOD
	TOPSOIL AND SEED
	PLANTING BED
	EXISTING TREE
	SAFETY NETTING

SITE NO. 4 - SITE RESTORATION PLAN

SCALE: 1:250

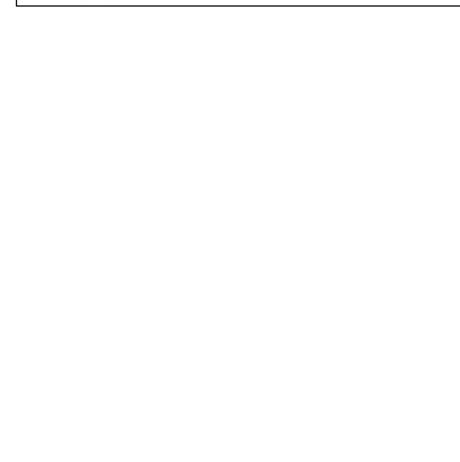
- NOTES:**
- REMOVE TEMP. WORK SHOWN ON SITE PREPARATION DRAWING: TEMPORARY ASPHALT, GRANULAR BASE, FILL, HOARDING, GATES, TEMPORARY ACCESS, STORM SEWERS/CULVERTS, HEADWALLS, DITCH INLETS, RIP-RAP, MAINTENANCE HOLES, SEDIMENT TRAPS, ETC. TO FACILITATE RESTORATION.
 - REGRADE SITE LAYDOWN AREA TO PROPOSED GRADES SHOWN ON THIS DRAWING. REESTABLISH DRAINAGE DITCH TO MATCH EXISTING CONDITION.
 - MAINTAIN PERIMETER EROSION SEDIMENT CONTROL MEASURES UNTIL NEW SURFACE VEGETATION/PLANTING HAS BEEN ESTABLISHED. AT SUCH TIME AND WITH APPROVAL OF THE AGENCY, REMOVE EROSION AND SEDIMENT CONTROL MEASURES.
 - RESTORE DISTURBED TEE DECKS WITH 'GHG TEES AND FAIRWAYS BENTGRASS' AND FAIRWAY WITH 'GHG PREMIUM BLUEGRASS' SUPPLIED BY GREENHORIZONS SOD FARMS (519-653-7494 OR 519-389-1315). GOLF COURSE OWNER TO PROVIDE THE LOCATION OF TEE DECKS.
 - EX. MAINTENANCE HOLES AND CATCH BASIN TO BE RESET TO PROPOSED WORKING GRADES.
 - REFER TO DETAIL 4 ON DWG. D-1-003 FOR PERMANENT ACCESS ROAD PAVEMENT REQUIREMENTS. REFER TO DETAIL 3 ON DWG D-1-003 FOR PAVEMENT CONNECTION.
 - STAINLESS STEEL VENT PER REGION OF PEEL STD DWG 2-5-22.
 - CABINET TO HOUSE ELECTRICAL&C CONTROLS ON CONCRETE PAD. CONCRETE PAD DETAIL SEE ELECTRICAL DRAWING 4-E-001. CONCRETE PAD SURROUNDED BY 1.8m CHAIN LINK FENCE WITH 1.2m WIDE GATE TO CITY OF MISSISSAUGA STD. DWG. 2850.010 & 2850.020.
 - PLANT TREES AS PER REGION OF PEEL STANDARD DETAILS 5-4-1, AND 5-4-5.
 - PLANT ORNAMENTAL GRASSES AND PERENNIAL AS PER DWG D-1-003 DETAIL 8.

PLANTING SCHEDULE:

QTY	KEY	BOTANICAL NAME	COMMON NAME	SIZE AT INSTALLATION		PLANT SPACING	ROOT CONTAINMENT	REMARKS
				CALIPER [mm]	HEIGHT [cm]			
13		EVERGREEN CONIFEROUS TREES						
4	Ps	PRINUS STROBUS	WHITE PINE	-	300	3.0m O.C.	B&B / W.B.	BRANCHED TO GROUND
9	Tc	TRIAJIA OCCIDENTALIS	EASTERN WHITE CEDAR	-	300	1.5m O.C.	B&B / W.B.	BRANCHED TO GROUND
10		DECIDUOUS CALIPER TREES						
3	Ar	ACER RUBRUM	RED MAPLE	60	-	AS SHOWN	B&B / W.B.	FULL AND EQUAL FORM
4	Qm	QUERCUS MACROCARPA	BUR OAK	60	-	9.0m O.C.	B&B / W.B.	FULL AND EQUAL FORM
3	Ta	TILIA AMERICANA	AMERICAN BASSWOOD	60	-	9.0m O.C.	B&B / W.B.	FULL AND EQUAL FORM
180		ORNAMENTAL GRASSES						
00	bg	BOUTELOUA GRACILIS 'BLONDE AMBITION'	BLONDE AMBITION BLUE GRAMA	-	-	0.4m O.C.	2 GAL POT	
00	ca	CALAMAGROSTIS ACUTIFLORA 'KAHL FOESTER'	FEATHER REED GRASS	-	-	0.4m O.C.	2 GAL POT	
00	ss	SCHIZACHYRIUM SCOPARIUM 'STANDING OVATION'	STANDING OVATION LITTLE BLUESTEM	-	-	0.4m O.C.	2 GAL POT	
00		PERENNIALS						
00	rt	RUBICEONIA FULGIDA 'GOLDBRUM'	BLACK-EYED SUSAN	-	-	0.4m O.C.	2 GAL POT	

- REFER TO SITE RESTORATION PLAN FOR DESIGNATION OF TREES PLANTING BEDS
 - SOURCE OF PLANT MATERIALS TO BE PROVIDED BY CONTRACTOR
 - ALL ACER SPECIES TO BE SPRUNG DUG TO PREVENT DIE BACK
 - ALL SUBSTITUTIONS TO THE SPECIES ON THIS LIST MUST BE APPROVED BY CONTRACT ADMINISTRATOR

ABBREVIATIONS:
 W.B. - WIRE BASKET
 B&B - BALLED AND BURLAPPED



General Notes

All Driveways Are ASPHALT Unless Otherwise Noted
 All Water And Sanitary Service Locations Are Approximate And Must Be Located Accurately In The Field
 All Horizontal And Vertical Bends Are In Degrees
 All Pipes Size In mm
 20C Existing Water Service, Size In mm
 WS25 Proposed Water Service, Size In mm
 B.M. No. Elev.
 Description Location
 The Contractor Is Responsible For Locating And Protecting All Existing Utilities Prior To And During Construction. Location Of Existing Utilities Approximate Only. To Be Verified In Field By Contractor.

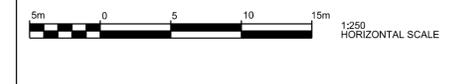


NOTICE TO CONTRACTOR

48 HOURS PRIOR TO COMMENCING WORK NOTIFY THE FOLLOWING

THE REGIONAL MUNICIPALITY OF PEEL
 CITY OF MISSISSAUGA WORKS DEPT.
 CITY OF BRAMPTON WORKS DEPT.
 TOWN OF CALEDON WORKS DEPT.
 BELL CANADA
 ENBRIDGE INCORPORATED-GAS DISTRIBUTION
 ONTARIO MINISTRY OF TRANSPORTATION
 ONTARIO CLEAN WATER AGENCY
 HYDRO ONE NETWORKS
 ENERSOURCE, HYDRO MISSISSAUGA
 HYDRO ONE BRAMPTON

CABLE TELEVISION/FIBROPTIC PROVIDERS:
 BELL CANADA
 ENERSOURCE TELECOM
 HYDRO ONE TELECOM
 ROGERS CABLE
 ALLSTREAM
 PSN (PUBLIC SECTOR NETWORK)
 FUTUREWAY (FCI BROADBAND)



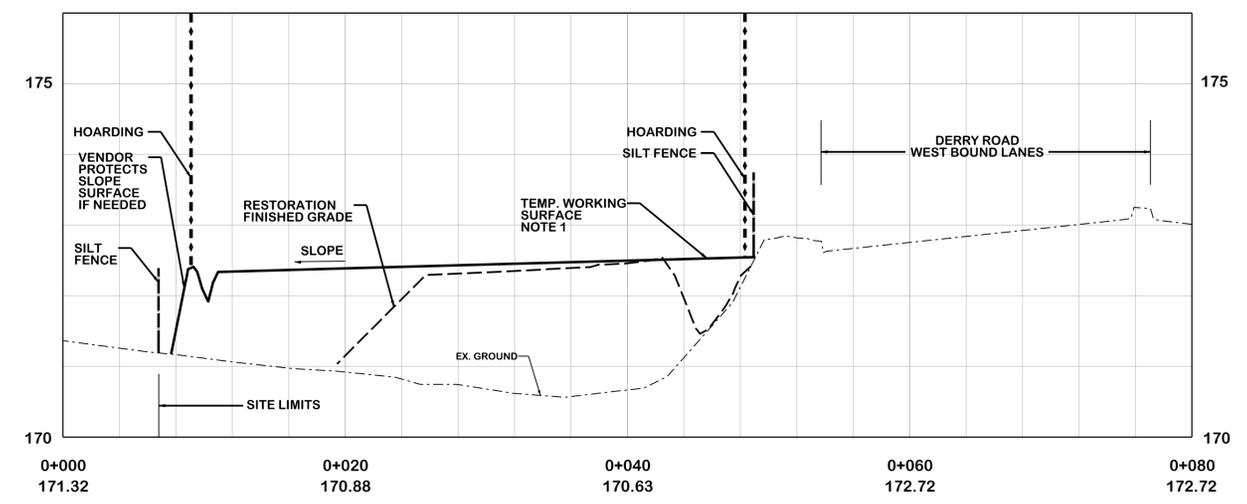
Region of Peel
 working with you

DERRY ROAD

SITE NO. 4
SITE RESTORATION PLAN

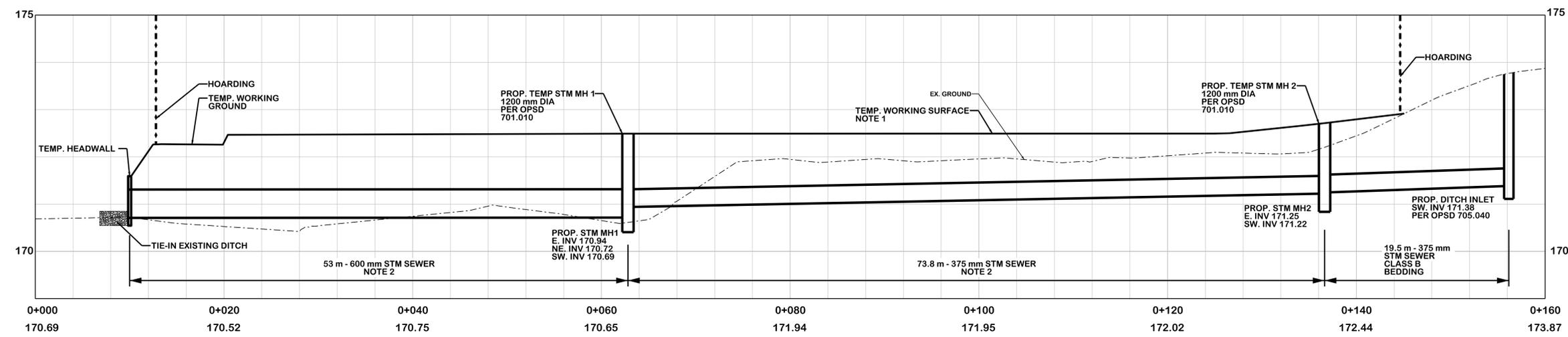
CAD Area	X-XX	Area	Z-41 to Z-45	Project No.	16-2291
Checked by	P.D.	Drawn by	K.K.	Date	JAN 2020
Date	JAN 2020	Sheet	88 of 128	Plan No.	4-R-001

REVISIONS		
DATE	DETAILS	INIT.
08/01/2019	ISSUED FOR 50% DESIGN REVIEW	S.F.
11/15/2019	ISSUED FOR 90% DESIGN REVIEW	P.D.
01/23/2020	ISSUED FOR 100% DESIGN REVIEW	P.D.

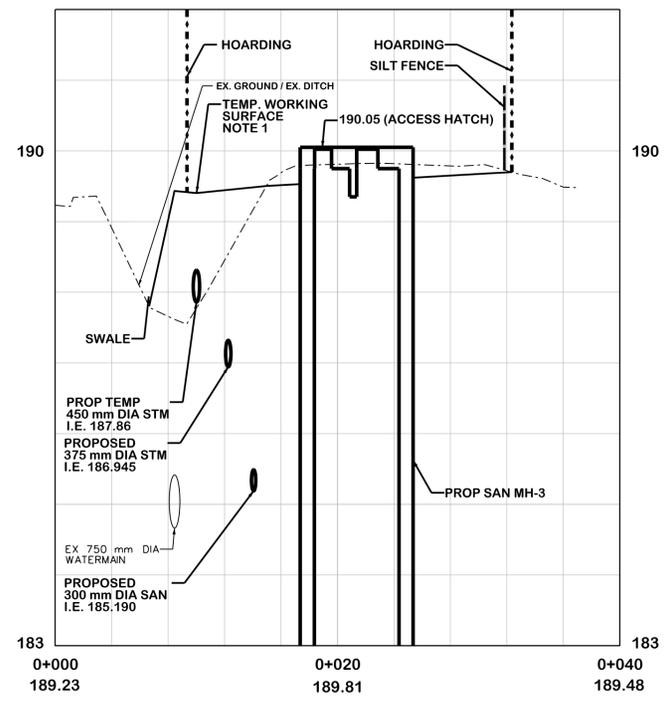


A GRADING CROSS SECTION A-A AT SITE 2
SITE 2 HORIZ: 1:250, VERT 1:50

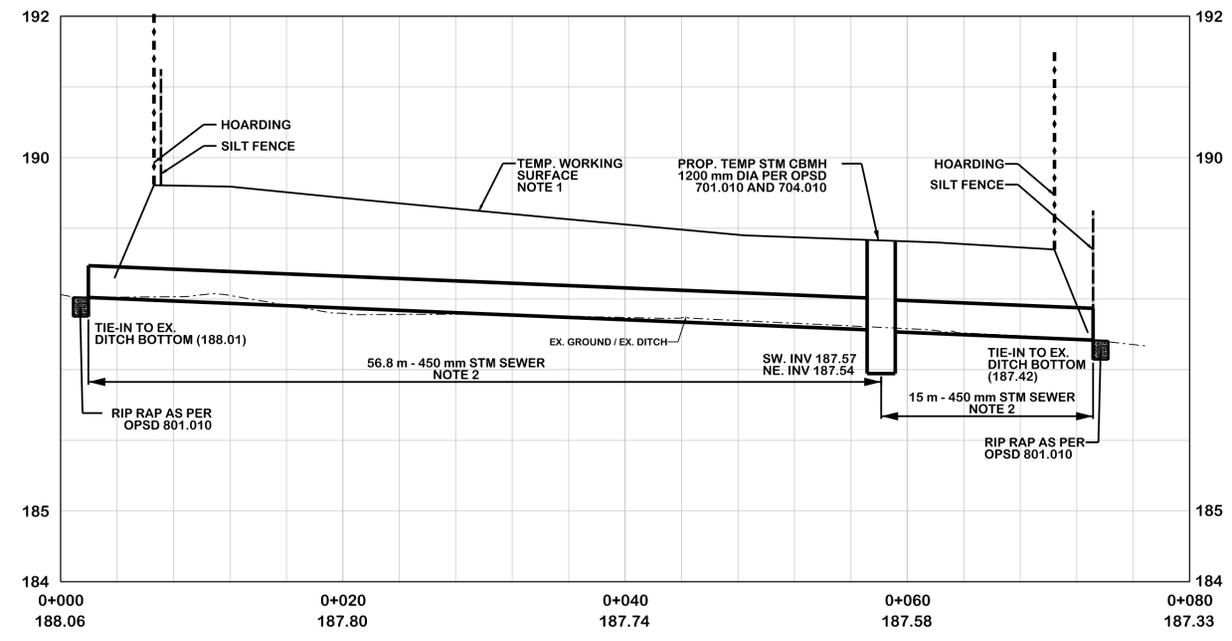
- NOTES:**
- WORKING SURFACE WITHIN SITE COMPOUND TO BE TO DETAIL 6 DWG D-1-003.
 - TEMP. STORM SEWER TO BE CONCRETE /PVC/HDPE SMOOTH WALL INSIDE, DESIGNED FOR VENDOR EQUIPMENT LOADING, PLACED WITH MINIMUM CLASS B BEDDING TO REGION OF PEEL DETAIL S-2-18.



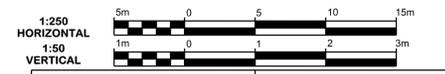
B GRADING CROSS SECTION B-B AT SITE 2
SITE 2 HORIZ: 1:250, VERT 1:50



C GRADING CROSS SECTION C-C AT SITE 3
SITE 5 HORIZ: 1:250, VERT 1:500



D GRADING CROSS SECTION D-D AT SITE 3
SITE 5 HORIZ: 1:250, VERT 1:500



JACOBS

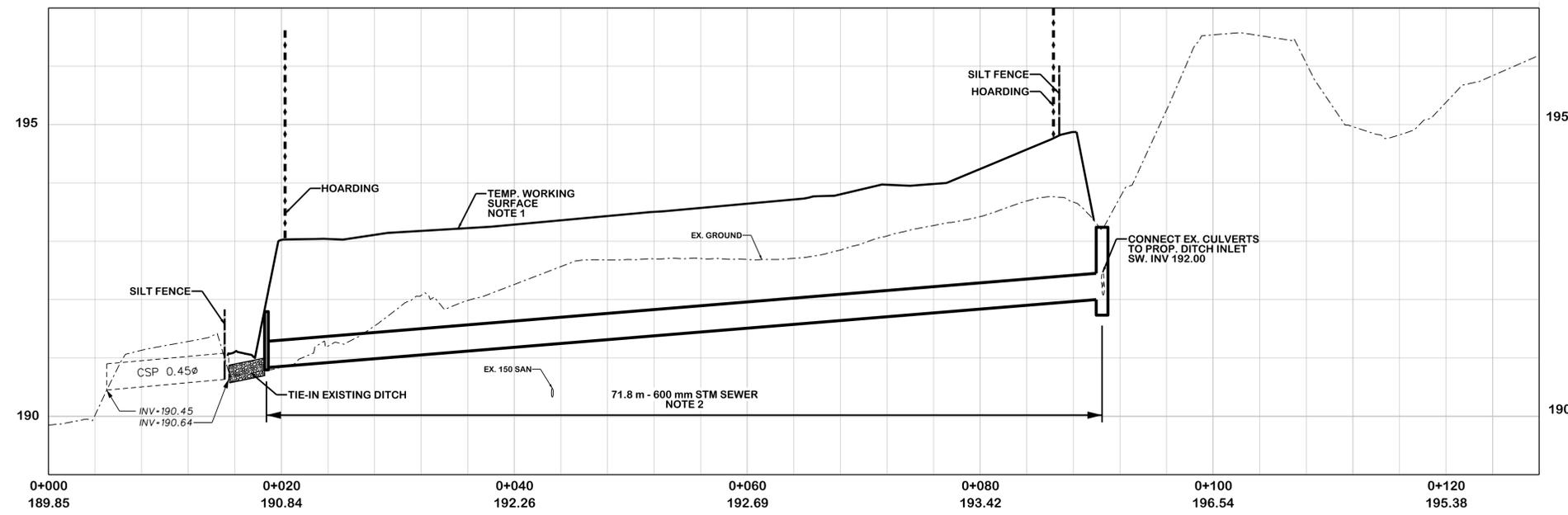
Approved by _____

Region of Peel
working with you

GRADING SECTION DETAILS

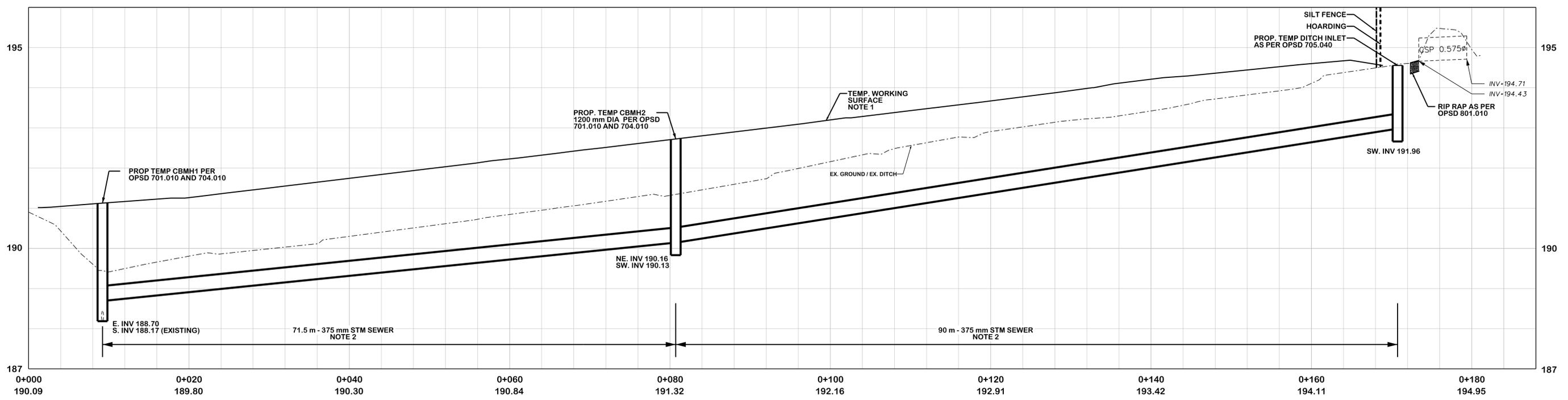
CAD Area	X-XX	Area	Z-41 to Z-45	Project No.	16-2291
Checked by	P.D.	Drawn by	C.A.	Sheet	103 of 128
Date	JAN 2020	Plan No.	D-1-002		

REVISIONS		
DATE	DETAILS	INIT.
08/01/2019	ISSUED FOR 50% DESIGN REVIEW	S.F.
11/15/2019	ISSUED FOR 90% DESIGN REVIEW	P.D.
01/23/2020	ISSUED FOR 100% DESIGN REVIEW	P.D.



E GRADING CROSS SECTION E-E AT SITE 4
SITE 4 / HORIZ: 1:250, VERT 1:50

- NOTES:**
1. WORKING SURFACE WITHIN SITE COMPOUND TO BE TO DETAIL 6 DWG D-1-003.
 2. TEMP. STORM SEWER TO BE CONCRETE (PVC/HDPE SMOOTH WALL INSIDE, DESIGNED FOR VENDOR EQUIPMENT LOADING, PLACED WITH MINIMUM CLASS B BEDDING TO REGION OF PEEL DETAIL S-2-18.



F GRADING CROSS SECTION F-F AT SITE 5
SITE 5 / HORIZ: 1:250, VERT 1:500



JACOBS

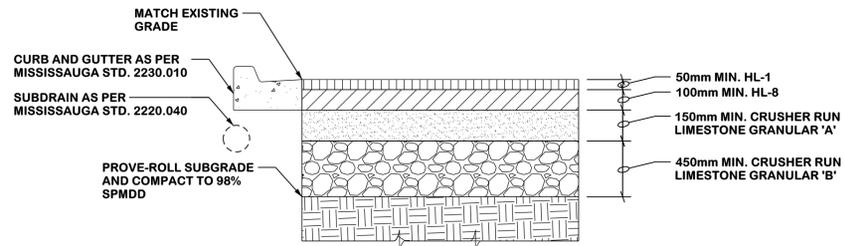
Approved by _____

Region of Peel
working with you

GRADING SECTION DETAILS

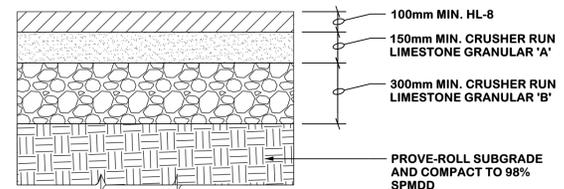
CAD Area	X-XX	Area	Z-41 to Z-45	Project No.	16-2291
Checked by	P.D.	Drawn by	C.A.	Plan No.	D-1-002A
Date	JAN 2020	Sheet	104 of 128		

REVISIONS		
DATE	DETAILS	INIT.
08/01/2019	ISSUED FOR 50% DESIGN REVIEW	S.F.
11/15/2019	ISSUED FOR 90% DESIGN REVIEW	C.K.
01/23/2020	ISSUED FOR 100% DESIGN REVIEW	C.K.



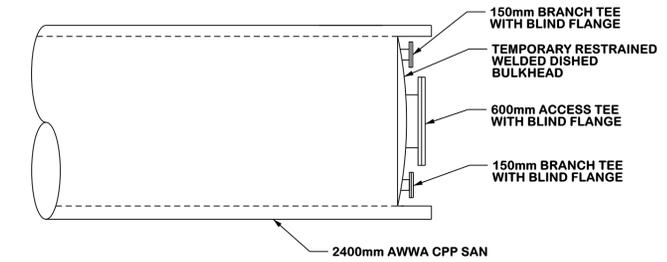
NOTE:
ALL MATERIAL MUST BE VIRGIN, NO RECYCLED MATERIAL ALLOWED (RAP OR CRUSHED CONCRETE/GLASS). ALL GRANULAR MATERIAL TO BE COMPACTED TO 100% SPMDD.

1 PERMANENT PAVEMENT WITH CURB & GUTTER
N.T.S. TYP. SECTION

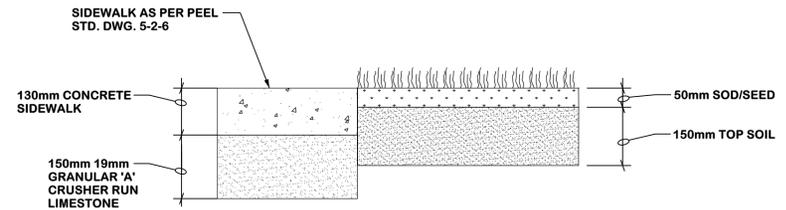


NOTE:
ALL MATERIAL MUST BE VIRGIN, NO RECYCLED MATERIAL ALLOWED (RAP OR CRUSHED CONCRETE/GLASS). ALL GRANULAR MATERIAL TO BE COMPACTED TO 100% SPMDD.

4 PERMANENT CHAMBER ACCESS ROAD
N.T.S. TYP. SECTION

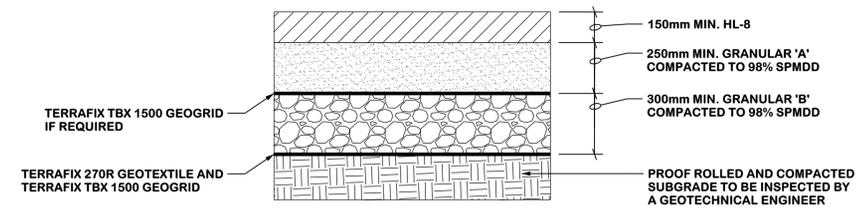


7 INTERNAL DISH BULKHEAD
N.T.S.



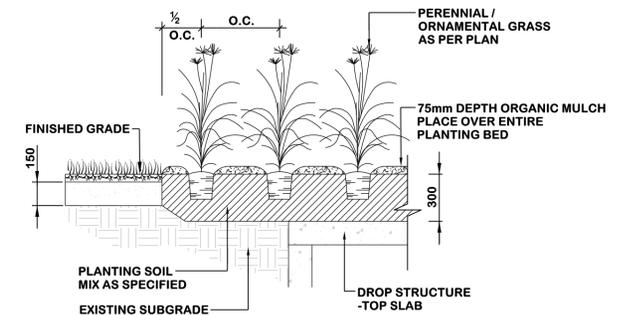
NOTE:
1. ALL MATERIAL MUST BE VIRGIN, NO RECYCLED MATERIAL ALLOWED (RAP OR CRUSHED CONCRETE/GLASS). ALL GRANULAR MATERIAL TO BE COMPACTED TO 100% SPMDD.
2. REFER TO REGION OF PEEL CONCRETE SIDEWALK STANDARD DETAIL 5-2-6.

2 BOULEVARD/SHOULDER WITH CONCRETE SIDEWALK
N.T.S. TYP. SECTION



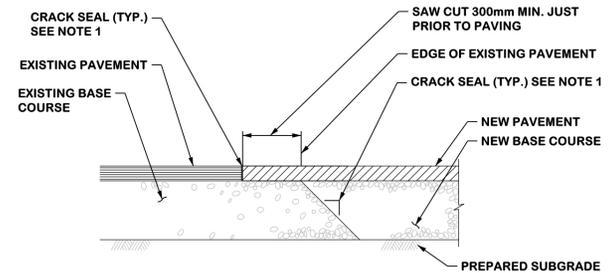
NOTE:
SEE SPECIFICATIONS AND ENBRIDGE REQUIREMENTS FOR ANY WORK IN THE VICINITY OF THE GAS MAIN.

5 SITE 5 PROPOSED TEMPORARY HEAVY-DUTY ASPHALT ROAD PROFILE OVER GAS MAIN
N.T.S.



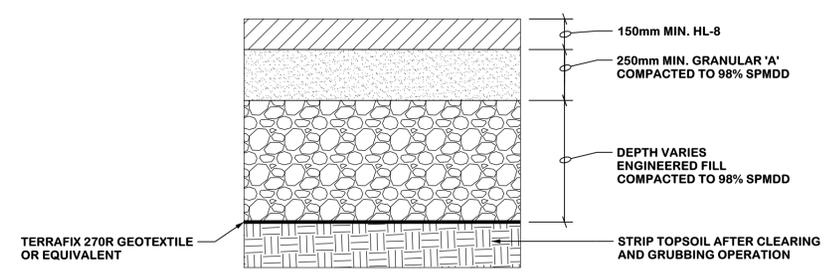
NOTE:
1. LOCATE PLANTS IN A TRIANGULAR PATTERN SPACED EQUAL DISTANT FROM EACH OTHER.
2. REFER TO PLANT SCHEDULE FOR SPACING OF INDIVIDUAL SPECIES (O.C. SPACING).
3. MINIMUM SETBACK FROM PLANTING BED OR PERMANENT ACCESS ROAD SHOULD EQUAL 1/2 O.C. SPACING.
4. CONTRACTOR TO PLANT ALL PERIMETER OF BED AREA FIRST AND THEN PLANT THE REMINDER IN TRIANGULAR PATTERN AS INDICATED.
5. PLACE TOP 1/3 OF ROOT BALL ABOVE FINISHED GRADE.
6. WEED FABRIC NOT RECOMMENDED.

8 ORNAMENTAL GRASS / PERENNIAL PLANTING
N.T.S. CONTAINER GROWN



NOTE:
1. PAINT EDGE OF EXISTING ASPHALT WITH TACK COAT PRIOR TO PAVING. CRACK SEAL JOINT AFTER PAVING OPERATION HAS BEEN COMPLETED.

3 PAVEMENT CONNECTION
N.T.S.



NOTE:
SEE SPECIFICATIONS AND ENBRIDGE REQUIREMENTS FOR ANY WORK IN THE VICINITY OF THE GAS MAIN.

6 TEMPORARY WORKING SURFACE WITHIN SITE COMPOUNDS
N.T.S.

JACOBS

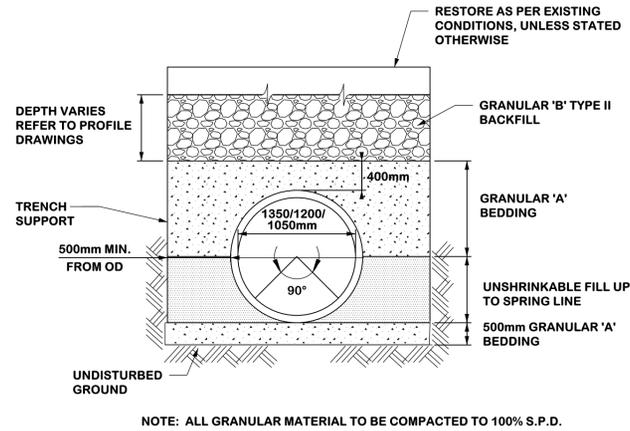
Approved by _____

Region of Peel
working with you

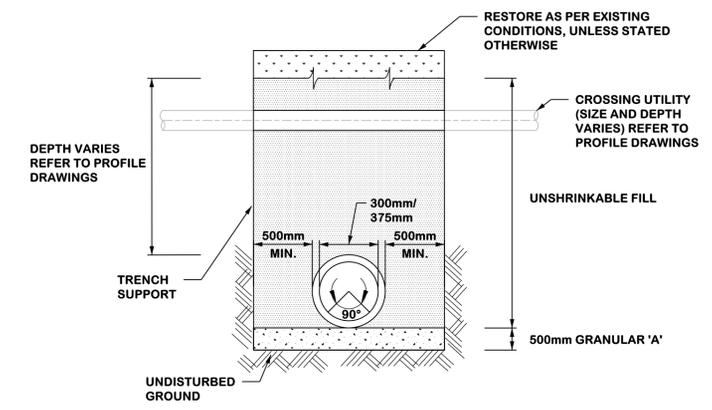
RESTORATION DETAILS (1)

CAD Area	X-XX	Area	Z-41 to Z-45	Project No.	16-2291
Checked by	C.K.	Drawn by	C.A.	Plan No.	D-1-003
Date	JAN 2020	Sheet	105 of 128		

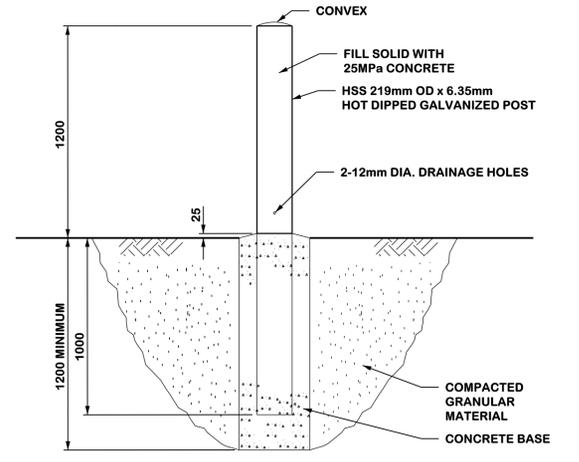
REVISIONS		
DATE	DETAILS	INIT.
08/01/2019	ISSUED FOR 50% DESIGN REVIEW	S.F.
11/15/2019	ISSUED FOR 90% DESIGN REVIEW	C.K.
01/23/2020	ISSUED FOR 100% DESIGN REVIEW	C.K.



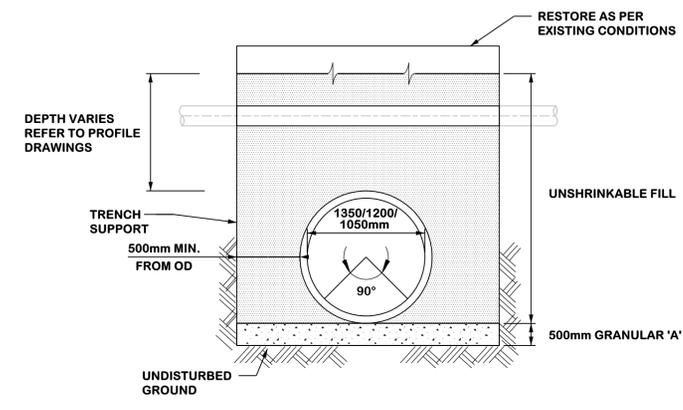
1 CPP STANDARD TRENCH DETAIL
- N.T.S.



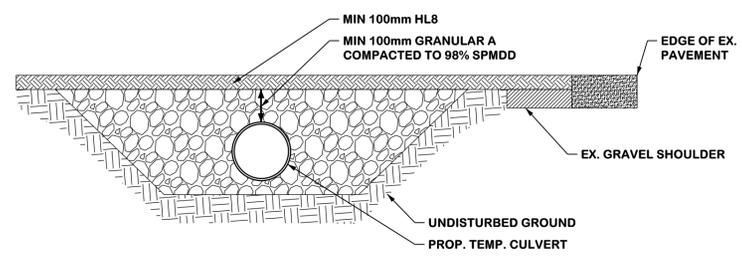
4 PVC SEWER UTILITY CROSSING TRENCH DETAIL
- N.T.S.



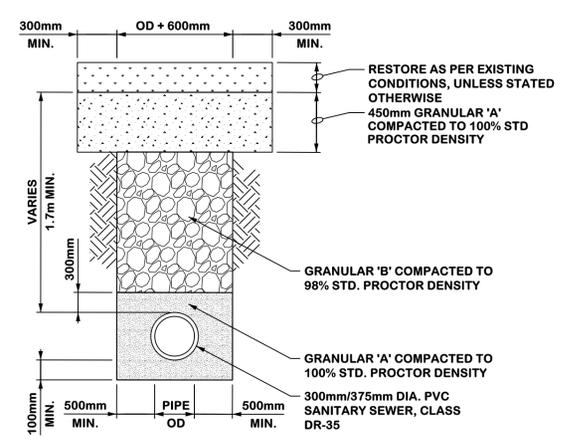
7 STEEL BOLLARD IN GRADE
- N.T.S.



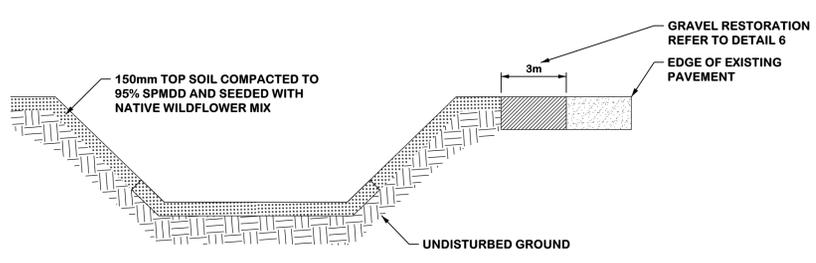
2 CPP UTILITY CROSSING TRENCH DETAIL
- N.T.S.



5 CULVERT INSTALLATION DETAIL
- N.T.S.



3 PVC SEWER TRENCH BACKFILL/ BEDDING & RESTORATION DETAIL
- N.T.S.



- NOTES:**
- RESTORATION SHALL BE TO PRE-CONSTRUCTION ELEVATIONS, WIDTHS, SLOPES, ETC.
 - CONDUCT PRE-CONSTRUCTION SURVEY TO DETERMINE EXISTING ELEVATIONS, DIMENSIONS, CROSS SECTIONS, SLOPES, ALIGNMENTS, ETC.
 - NATIVE WILDFLOWER MIX SHALL BE EITHER PICKSEED NATURE PRO NATIVE SLOPE MIX OR ONTARIO SEED COMPANY ROAD SIDE MIX.
 - PROTECT WITH EROSION CONTROL BLANKET AS REQUIRED TO PREVENT LOSS OF SEED AND SOIL.

6 DITCH RESTORATION DETAIL
- N.T.S.

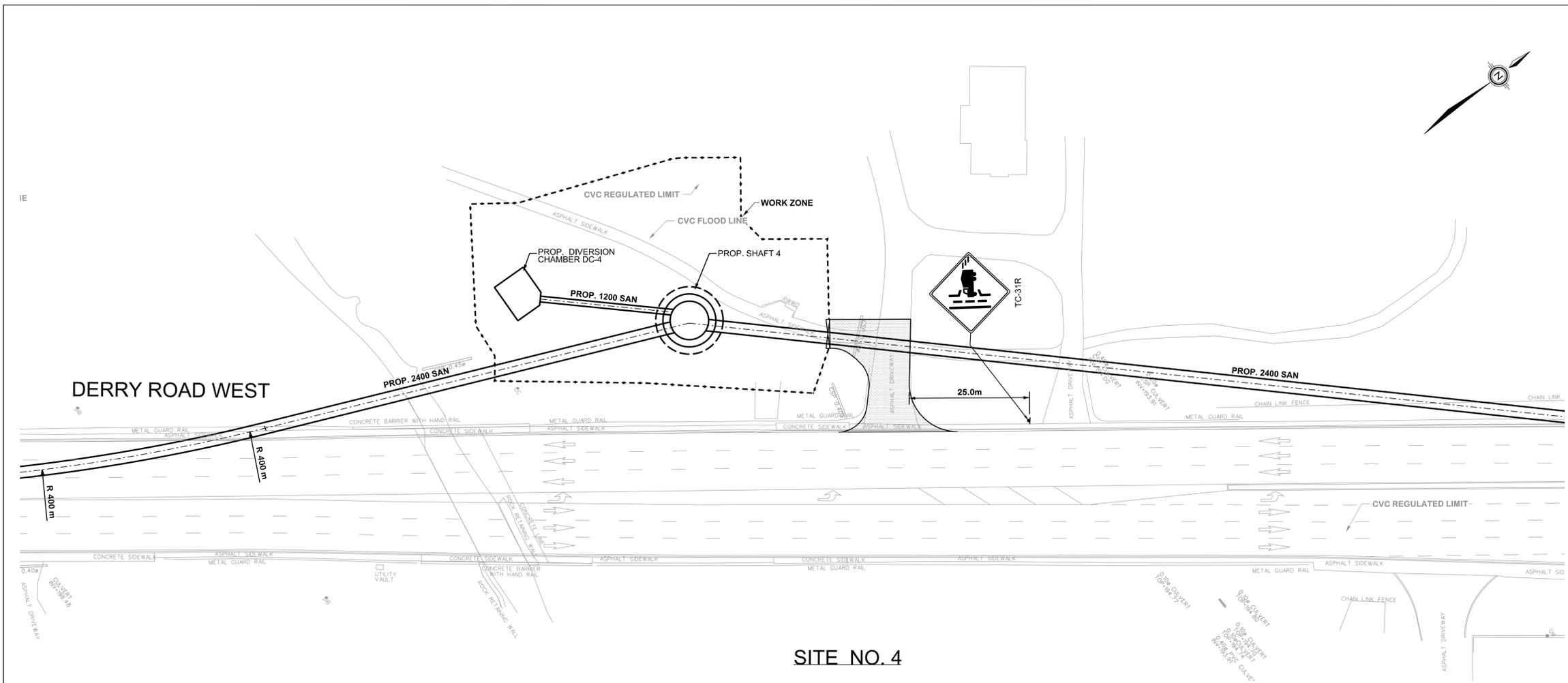
JACOBS

Approved by _____

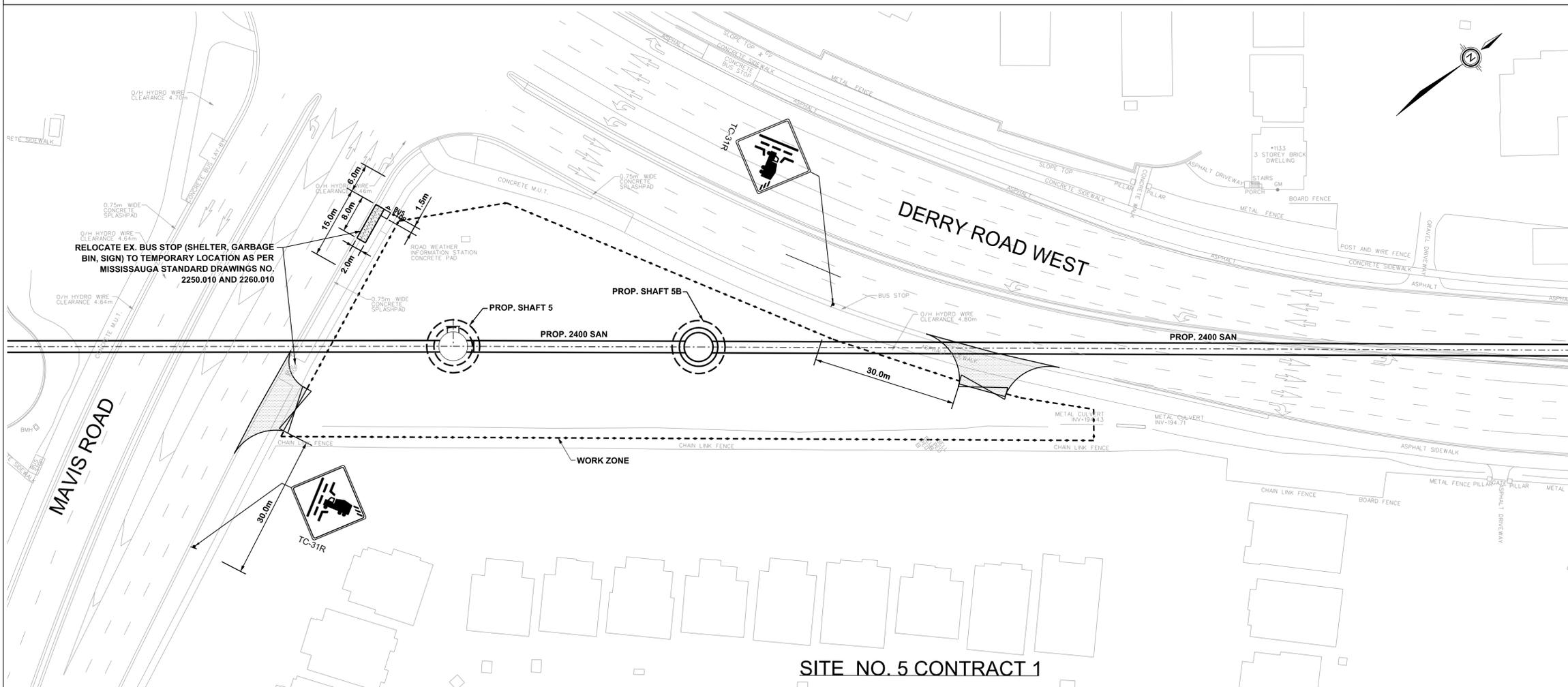
Region of Peel
working with you

RESTORATION DETAILS (2)

CAD Area	X-XX	Area	Z-41 to Z-45	Project No.	16-2291
Checked by	C.K.	Drawn by	C.A.	Plan No.	D-1-004
Date	JAN 2020	Sheet	106 of 128		



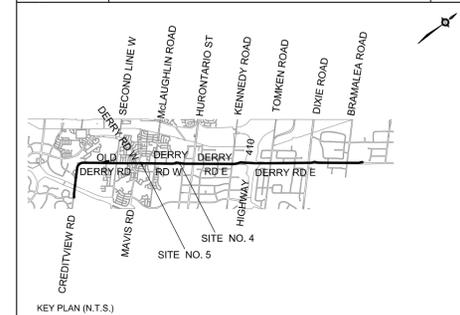
SITE NO. 4



SITE NO. 5 CONTRACT 1

SERVICE DATA					
SERVICE	DATE	INIT.	SERVICE	DATE	INIT.
SAN SEWERS			GAS MAINS		
STORM SEWERS			BELL U/G CABLE		
WATER MAINS			HYDRO U/G CABLE		
TRANSIT			HYDRO ONE		
PARKS & REC.			CTV		
ONT. CLEAN WATER			COMMUNIC. CABLES		

REVISIONS		
DATE	DETAILS	INIT.



KEY PLAN (N.T.S.)

General Notes

All Driveways Are ASPHALT Unless Otherwise Noted
 All Water And Sanitary Service Locations Are Approximate And Must Be Located Accurately In The Field
 All Horizontal And Vertical Bends Are In Degrees
 All Pipes Size In mm
 20C Existing Water Service, Size In mm
 WS25 Proposed Water Service, Size In mm
 B.M. No. Elev.
 Description Location
 The Contractor Is Responsible For Locating And Protecting All Existing Utilities Approximate Only, To Be Verified In Field By Contractor.

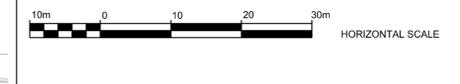
IBI GROUP
 100-75 Galaxy Boulevard
 Toronto ON M9W 0C9 Canada
 Tel: 416-676-1930 Fax: 416-676-4820 ibigroup.com

Approved by _____

NOTICE TO CONTRACTOR
 48 HOURS PRIOR TO COMMENCING WORK NOTIFY THE FOLLOWING

THE REGIONAL MUNICIPALITY OF PEEL
 CITY OF MISSISSAUGA WORKS DEPT.
 CITY OF BRAMPTON WORKS DEPT.
 TOWN OF CALEDON WORKS DEPT.
 BELL CANADA
 ENBRIDGE INCORPORATED-GAS DISTRIBUTION
 ONTARIO MINISTRY OF TRANSPORTATION
 ONTARIO CLEAN WATER AGENCY
 HYDRO ONE NETWORKS
 ENERSOURCE, HYDRO MISSISSAUGA
 HYDRO ONE BRAMPTON

CABLE TELEVISION/FIBROPTIC PROVIDERS:
 BELL CANADA
 ENERSOURCE TELECOM
 HYDRO ONE TELECOM
 ROGERS CABLE
 ALLSTREAM
 PSN (PUBLIC SECTOR NETWORK)
 FUTUREWAY (FCI BROADBAND)



Region of Peel
 working with you

DERRY ROAD
 SITE NO. 4 & SITE NO. 5 CONTRACT 1
 TRAFFIC MANAGEMENT PLAN

CAD Area	X-XX	Area	Z-41 to Z-45	Project No.	XX-XXXX
Checked by	D.T.	Drawn by	J.S.	Date	JAN. 2020
Date	JAN. 2020	Sheet	128 of 128	Plan No.	TMP-1-002