

ERINVIEW REDEVELOPMENT

Functional Servicing Report

Project Location: 2132 Dundas Street West Mississauga, Ontario

Prepared for: Sifton Properties Limited 195 Dufferin Avenue Suite 800 London, ON N6A 1K7

Prepared by: MTE Consultants Inc. 520 Bingemans Centre Drive Kitchener, ON N2B 3X9

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Site Plan Sigma Engineer Group Limited's Drawing (approved 1978)

1.0 INTRODUCTION

MTE Consultants Inc. was retained by Sifton Properties Limited to complete a Functional Servicing Report (FSR) for the Erinview redevelopment to be constructed at 2132 Dundas Street West (herein referred to as 'the Site') in the City of Mississauga in support of the Zoning By-Law Amendment Application. The current zoning of the Site is Residential RM4-23.

The Site has a total development area of approximately 1.02 ha, and is legally described as Pt Lt 31, Con I Sds Tt, As In Ro698 1 68; Mississauga. The property is bounded to the north by the intersection of Dundas Street West and Fifth Line West, to the northwest/west by Dundas Street West and the Christ our King Lutheran Church, to the southeast by existing residential development, and to the northeast by Fifth Line West. For the exact location of the Site, refer to **Figure 1.0 – Location Plan**.

The redevelopment of the Site is proposed in two phases. Phase 1 consists of the partial demolition of the existing building and construction of a four to five-storey retirement community building, with associated parking and a new driveway to Fifth Line West. Phase 2 consists of the demolition of the remainder of the existing building and construction of the second part of the retirement community building with associated covered and uncovered parking as well as landscaped areas.

The purpose of this study is to support the Zoning By-Law Amendment Application, which is seeking relief on setbacks and building height, as outlined in the Planning Justification Report (Y316AB) by MHBC, dated January 2017. This will be accomplished by reviewing the opportunities and constraints for the subject property with respect to servicing, grading, and stormwater management; reviewing the requirements of the reviewing agencies; describing the development concept; and demonstrating the functional serviceability of the property. Site Plan Approval (SPA) is running concurrently with the Zoning By-Law Amendment Application.



2.0 EXISTING CONDITIONS

2.1 Existing Topography

The Site encompasses an area of 1.02 ha and currently comprises an existing retirement community building with associated courtyards and parking. In the existing condition, surface runoff from the Site drains into the existing on-site storm system before outletting into the Dundas Street West municipal storm system. There is an elevation difference of approximately 2.5 meters between the western and eastern corners of the Site, which have approximate elevations of 139.93 m, and 137.43 m, respectively.

2.2 Existing Servicing

Plan and profile drawings obtained from the City of Mississauga were reviewed in order to determine the size and location of existing municipal infrastructure along Dundas Street West and Fifth Line West. Please refer to MTE Drawings C1.1 and C1.2 for details. The locations, depths, and inverts of existing services will be confirmed by CCTV survey, which was pending at the time of publication of this report.

2.2.1 Water

There is an existing 250 mm diameter municipal watermain along Fifth Line West. There is a municipal fire hydrant at the approximate midpoint of the property line shared with Fifth Line West. There is also a fire hydrant on the far side of Fifth Line West, at the southeast side of the property. An existing on-site fire hydrant is located near the western property corner. The Site is currently serviced with a 150 mm diameter watermain which splits at the property line into a 100 mm diameter domestic line and a 150 mm diameter fire line.

2.2.2 Sanitary

There is an existing 250 mm diameter sanitary sewer running along Fifth Line West, draining towards the southeast. There does not appear to be a sanitary sewer along the Site's frontage on Dundas Street West. The closest existing sanitary manhole to the existing building is located near the Site's southeastern corner; it has an approximate depth of 1.46 m. The Site is currently serviced by a 200 mm diameter sanitary sewer which connects into this manhole on Fifth Line West.

2.2.3 Storm

There is an existing 450 mm diameter storm sewer along Fifth Line West. There are two existing manholes located northeast of the site, along Fifth Line Road. These are at depths of approximately 1.45 m (most north-easterly) and 1.48 m.

The existing 450 mm diameter storm sewer changes to a 600 mm diameter at the Fifth Line West and Dundas Street West intersection, immediately to the north of the property. There are three existing manholes/catchbasin manholes along this stretch of sewer. From east to west, their approximate respective depths are 1.89 m, 2.22 m, and 2.47 m.

There is an existing 300 mm diameter storm sewer along the southeastern side of Dundas Street West, which connects into the Fifth Line West 600 mm sewer at the intersection. Based on the plans provided by the City of Mississauga, there does not appear to be any existing manholes along the Site's Dundas Street West frontage.

The Site is currently serviced by a 300 mm diameter storm sewer that connects to the manhole located at the Fifth Line West and Dundas Street West intersection. There are currently no existing stormwater management quantity or quality controls in place on the Site.

2.3 Existing Soils Information

Six (6) boreholes were advanced by Chung & Vander Doelen Engineering Ltd. as part of the Geotechnical Investigation Report, published February 10, 2016, in order to determine the underlying soil conditions on the Site. The subsurface stratigraphy is generally comprised of pavement overlying fill, topsoil, sandy clayey silt till, and hard, weathered grey shale.

Groundwater was contacted in boreholes 1 and 2 at approximately 2.40 to 3.65 m below grade, or 135.88 m to 135.44 m elevation, respectively. For additional details, refer to the Geotechnical Investigation Report by Chung & Vander Doelen, February 10, 2016 (G15224).

2.4 Reviewing Agencies

The City of Mississauga will be responsible for the review of the proposed re-zoning, site plans, site servicing, grading, storm water management, lighting and landscape design.

3.0 PROPOSED GRADING AND SERVICING STRATEGY

Grading and servicing strategies for the proposed development have been developed based on the topographic survey, plan and profile information, and Site Plan prepared by James Fryett Architects Inc, dated January 5th, 2017. Please refer to the enclosed MTE Drawings C3.1 and C3.2.

3.1 Proposed Grading

The proposed ultimate development will include one building used as a retirement residence, and two driveways, one along the northwestern property line onto Dundas Street West, and one along the southeastern property line, onto Fifth Line West. Two associated parking areas and a raised landscaped area are also part of the proposed site plan concept.

The proposed grading strategy respects the existing grades along the northwest, northeast and southeast property lines. Proposed grading along the southwestern property line extends to the edge of the church's parking lot. Permission will be required from the church prior to this grading work being undertaken.

The proposed finished floor elevation of the Phase 1 and 2 buildings is 138.00 m. The proposed grading scheme allows for barrier-free access from Fifth Line West to the building's entrances along the northeastern building face. At the southwestern side of the building, there will be a raised terrace area with entrances to the second floor of the building at an elevation of 141.40 m. The adjacent southwestern parking area will be at an elevation of approximately 139.50 m, with a retaining wall separating the two areas. The southeastern side of the building will have a sunken patio area at the finished floor elevation of 138.00 m. The north side of the building will have a raised active façade at an elevation of 141.40 m, complete with terracing down to the existing grades along the property line.

3.2 Proposed Servicing

The following sections describe the proposed on-site servicing strategy. This strategy is subject to change based on results of CCTV inspection of existing site services, which, as mentioned, was pending at the time of submission of this report. Refer to MTE Drawings C2.2 and 3.2 for the proposed servicing details.

3.2.1 Water

As mentioned, the Site is currently serviced by an existing 150 mm diameter watermain which connects into Fifth Line West's 250 mm diameter municipal watermain. It is proposed that a new 150 mm diameter connection is made to the Site's existing 150 mm diameter watermain during the construction of Phase 1. Verification that the existing 150 mm diameter watermain to the property provides adequate pressure and flow to service the proposed development will be required during detailed design. The water service will run parallel to the existing building before connecting into the Phase 1 building. The existing watermain running to the existing building will remain active during Phase 1, and be capped and removed, to the new tee, during Phase 2 construction. The proposed building will be sprinklered and have a fire department connection near the southeastern entrance (Phase 1 building). The fire department connection is within 45 m of an existing municipal hydrant, so no new on-site hydrant is proposed.

3.2.2 Sanitary

As mentioned, the Site is currently serviced by an existing 200 mm diameter sanitary sewer. During the Phase 1 construction, a proposed 200 mm diameter sanitary sewer will connect the existing on-site sanitary manhole to the proposed Phase 1 building. The existing 200 mm sanitary pipe connecting into the existing building will remain active. During Phase 2, the existing 200 mm diameter sewer that serviced the existing building will be capped in place and abandoned. The private sanitary sewer will be installed at a slope that provides depth for the servicing of the buildings while maintaining adequate capacity. The services' sizes, locations, and inverts for Phases 1 and 2 are shown on MTE Drawings C2.2 and C3.2, respectively.

3.2.3 Storm

As mentioned, the Site is currently serviced with an existing on-site storm sewer system. During Phase 1, new temporary and permanent area drains, catchbasins and storm sewer will be installed to service the Phase 1 development and will connect into the existing on-site storm system, which ultimately outlets into the Dundas Street West municipal storm sewer system.

Phase 2 will see the replacement of the balance of the existing on-site storm system. New area drains are proposed for the Dundas Street West ground-level patios and the southwestern raised landscaped area. Further, new catchbasins will be installed in the Phase 2 parking areas and all Phase 1 temporary structures will be removed. The system configuration for Phases 1 and 2 is shown on MTE Drawings C2.2 and C3.2, respectively.

Flow control roof drains (FCRD) are proposed for the roofs of both Phase 1 and Phase 2 buildings, and are discussed in section 4.2 of this report.

4.0 PROPOSED STORM WATER MANAGEMENT DESIGN

4.1 Storm Water Management Criteria

The stormwater management design criterion for the subject Site, located within the Loyalist Creek (CVC), East of Winston Churchill Blvd, as established by the City of Mississauga, is as follows:

i) Attenuation of the post-development peak flows for the 10 year storm events to the pre-development (existing) peak flows.

4.2 Water Quantity Control

In the existing condition, the site is 77% impervious. In the ultimate development condition, the site will be 74% impervious. This represents a decrease in total site imperviousness of 3%, as discussed in the previously submitted SWM Brief (January 5, 2017). Refer to **Figures 2.0** and **3.0**. In addition, it is proposed that FCRDs be installed on the roofs of the Phase 1 and 2 buildings to further attenuate runoff rates.

A MIDUSS model was created to determine the required number of FCRDs for the proposed buildings for both Phase 1 and Phase 2, as well as the corresponding peak flow rates. Three (3) and eight (8) FCRDs, single-notch, are proposed to be installed on the rooftop for Phase 1, and Phase 2, respectively. A maximum of 0.15m of ponding is permitted on the rooftop. The runoff generated from the rooftop will be conveyed to CBMH2, which will also collect runoff generated within the parking area. The flow will then be conveyed to the municipal storm sewer located in the Dundas Street West right-of-way.

4.3 Water Quality Control

Since the imperviousness of the ultimate development condition is less than that of the existing condition, no on-site water quality control is proposed at this time.

4.4 Erosion & Sediment Control

In order to minimize the effects of erosion during the grading of the Site, sediment control fencing will be installed around the perimeter of the Site and around any stockpiles and catch-basins during construction. Any sediment that is tracked onto the road way during the course of construction will be cleaned by the contractor. To help minimize the amount of mud being tracked onto the road way, a mud mat will be installed at the primary construction entrance. These measures are shown on the detailed design drawings.





5.0 CONCLUSIONS

Based on the foregoing analysis, it is concluded that:

- i) Existing municipal infrastructure for water, sanitary and storm is available along Fifth Line West. Existing municipal infrastructure for storm is available along Dundas Street West.
- ii) The Phase 1 building will be serviced by a connection to the existing 150 mm diameter watermain that services the property. No new water servicing is proposed during Phase 2.
- iii) The existing 200 mm diameter sanitary service connection off of Fifth Line West will continue to service the existing building during Phase 1. A new connection to the Site's existing sanitary manhole will service the proposed Phase 1 building. During Phase 2 construction, the existing connection to the existing building will be capped and abandoned.
- iv) Temporary and permanent storm structures will be installed during Phase 1 and connected to the existing on-site storm sewer system. During Phase 2, the balance of the on-site storm sewer system will be replaced as required to suit the ultimate development condition, complete with a new connection to the Dundas Street West municipal storm system.
- v) The SWM criterion has been achieved due to the reduction in post-development imperviousness over the pre-development condition, and therefore additional on-site stormwater management quantity and quality controls are not required.

All of which is respectfully submitted.

MTE CONSULTANTS INC.

Andréa McKay, E.I.T. *Designer*

AXM:clt



Lynn Ingram, P.Eng. *Design Engineer*



APPENDIX A

MIDUSS OUTPUT

Drawing on experience...Building on

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		CONTRACTORS MUST CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE
		PROCEEDING WITH THE WORK. ALL DRAWINGS REMAIN THE PROPERTY OF THE ENGINEER
		AND SHALL NOT BE REPRODUCED OR REUSED WITHOUT THE ENGINEER'S WRITTEN PERMISSION.
		THE OWNER/ARCHITECT/CONTRACTOR IS ADVISED THAT M.T.E. CONSULTANTS INC. CANNOT CERTIFY ANY COMPONENT OF THE SITE WORKS NOT INSPECTED DURING CONSTRUCTION
		IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO NOTIFY M.T.E. CONSULTANTS INC. PRIOR TO COMMENCEMENT OF CONSTRUCTION TO ARRANGE FOR INSPECTION
		NOTE
		1. THIS PLAN IS PART OF A SET OF PLANS WHICH
		COMPRISE OF THE FOLLOWING: C1.1, C2.1, C2.2 AND C2.3.
		8.
		7. 6.
		5. 4. REVISED PER CITY COMMENTS 1XS JAN 03/17
		3. ISSUED FOR APPROVAL LXS DEC.22/16
		2. COURTYARD GRADES ADDED LXS SEPT.29/16 1. ISSUED TO CLIENT KLC JAN.15/16
		No. REVISION BY DATE
FEATURES		A ATC
SITE BOUNDARY		
		Engineers Scientists Survevors
EAD HING CONTOURS		(519) 743-6500 MMMM mte85.com
EXISTING SANITARY S	SEWER	
EXISTING WATERMAIN		STROFESSION AL GR
EXISTING STORM SEW	/ER	L.E. INGRAM
EXISTING CURB		100120779 Van 3/17
EXISTING BUILDING		BOWINCE OF ONTART
EXISTING FENCE		CLIENT
EXISTING RETAINING	WALL	SIFTON PROPERTIES
EXISTING RIP RAP		LIMIIED 195 DUFFERIN AVENUE LONDON
EXISTING DOWNSPOL	алан алан алан алан Алан алан алан алан Төрөөд алан алан алан алан алан алан алан ала	PROJECT
EXISTING BOLLARD		ERIN MILLS LODGE
EXISTING MAN DOOR		2132 DUNDAS STREET WEST MISSISSAUGA
REMOVALS		EXISTING CONDITIONS
HARD SURFACE REM	OVALS	AND REMOVALS
		PLAN
		Project Manager Project No.
		L.SANFORD 40602-100 Design By Checked By
		Drawn By AJS/PXL Checked By AXM
		Surveyed By CWT
		Date Aug.12/15 C1.1
		Scale 1:250 Sheet 1 of 4



Ex. WV



SITE PLAN #SPA 10319

CITY OF MISSISSAUGA DWG. No. C105





SITE PLAN #SP 17 - 10 W2 CITY OF MISSISSAUGA DWG. No. C105



LEGEND	OF EXIS	STING	FEATURES



999993

() Ex. 05.

Setterd

EXISTING RETAINING WALL

EXISTING RIP RAP

EXISTING DOWNSPOUT

- A Inv.=139.917

T/G=140.71

™É×. CB

Ex. 150mm VTM

EXISTING BOLLARD

LEGEND OF PROPOSED FEATURES

14.6m-200mmø SAN @ 1.5%

1.3m-300mmø STM @ 1.3%

CONC. CURB & GUTTER

FCRD

200mmø WTM _V.

HYD. SET-

(DROP CURB)

EMBANKMENT (SLOPE AS NOTED)

SANITARY SEWER

STORM SEWER

WATERMAIN

SHALLOW PIPE INSULATION (SEE DETAIL)

_____ PROPOSED BUILDING

MAN DOOR

CONCRETE CURB

RETAINING WALL

/ Ex. Asphalt

0

16.2m-300mmø STM @ 0.35%-

FLOW CONTROL ROOF DRAIN ZURN MODEL Z105* SINGLE NOTCH (8.95 lpm/cm OF HEAD) *OR APPROVED EQUAL

FILE No: 40602-100 -C2. SITE SERVICING PLA

NA



CONSTRUCTION NOTES AND SPECIFICATIONS

- 1. GENERAL
- 1.1. THESE PLANS NOT FOR CONSTRUCTION UNTIL SIGNED AND SEALED BY ENGINEER AND APPROVED BY THE LOCAL MUNICIPALITY.
- 1.2. THESE PLANS ARE TO BE USED FOR SERVICING AND GRADING ONLY: ANY OTHER INFORMATION SHOWN IS FOR ILLUSTRATION PURPOSES ONLY. THESE PLANS MUST NOT BE USED TO SITE THE PROPOSED BUILDING.
- 1.3. NO CHANGES ARE TO BE MADE WITHOUT THE APPROVAL OF THE DESIGN ENGINEER.
- 1.4. THESE PLANS ARE NOT TO BE REPRODUCED IN WHOLE OR IN PART WITHOUT THE PERMISSION OF MTE CONSULTANTS INC. 1.5. PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST:
- 1.5.1. CHECK AND VERIFY ALL EXISTING CONDITIONS, LOCATIONS AND ELEVATIONS WHICH INCLUDES BUT IS NOT LIMITED TO THE BENCHMARK ELEVATIONS, EXISTING SERVICE CONNECTIONS AND EXISTING INVERTS. REPORT ALL DISCREPANCIES TO THE ENGINEER PRIOR TO PROCEEDING.
- 1.5.2. OBTAIN ALL UTILITY LOCATES AND REQUIRED PERMITS AND LICENSES. 1.5.3. VERIFY THAT THE FINISHED FLOOR ELEVATIONS AND
- BASEMENT FLOOR ELEVATIONS (WHICH MAY APPEAR ON THIS PLAN) COMPLY WITH THE FINAL ARCHITECTURAL DRAWINGS. 1.5.4. CONFIRM ALL DRAWINGS USED FOR CONSTRUCTION ARE OF
- THE MOST RECENT REVISION. 1.6. THE CONTRACTOR SHALL ASSUME ALL LIABILITY FOR ANY

DAMAGE TO EXISTING WORKS.

- 1.7. ALL WORKS ON A MUNICIPAL RIGHT-OF-WAY WILL BE INSTALLED BY MUNICIPALITY UPON APPLICATION BY OWNER AT OWNER'S EXPENSE OR OWNER'S CONTRACTOR MAY INSTALL WORKS IN RIGHT OF WAY UPON APPLICATION AND APPROPRIATE PAYMENT TO CITY. THE CONTRACTOR IS TO MAKE CONNECTION TO THE SERVICES AND RESTORE ALL AFFECTED PROPERTY TO ORIGINAL CONDITION. THE CONTRACTOR IS RESPONSIBLE FOR RESTORATION OF ALL BOULEVARD AREAS.
- 1.8. ALL UNDERGROUND SERVICES ARE TO BE CONSTRUCTED IN FULL COMPLIANCE WITH THE ONTARIO PROVINCIAL BUILDING CODE (PART 7, PLUMBING), THE ONTARIO PROVINCIAL STANDARD SPECIFICATIONS (OPSS) AND IN COMPLIANCE WITH LOCAL APPLICABLE CODES AND REGULATIONS; WHICH CODES AND REGULATIONS SHALL SUPERSEDE ALL OTHERS.
- 1.9. CONTRACTOR IS RESPONSIBLE FOR CONTACTING ENGINEER 48 HRS PRIOR TO COMMENCING WORK TO ARRANGE FOR INSPECTION. ENGINEER TO DETERMINE DEGREE OF INSPECTION AND TESTING REQUIRED FOR CERTIFICATION OF UNDERGROUND SERVICE INSTALLATION AS MANDATED BY ONTARIO BUILDING CODE, DIVISION C, PART 1, SECTION 1.2.2, GENERAL REVIEW. FAILURE TO NOTIFY ENGINEER WILL RESULT IN EXTENSIVE POST CONSTRUCTION INSPECTION AT CONTRACTORS EXPENSE.
- 1.10. PLAN TO BE READ IN CONJUNCTION WITH MTE DRAWING C1.1, C2.1 AND C2.2.
- 1.11. SITE PLAN INFORMATION AND LEGAL INFORMATION TAKEN FROM PLAN PREPARED BY JAMES FRYETT ARCHITECT, DATED DECEMBER 15, 2016
- 1.12. EXISTING TOPOGRAPHIC INFORMATION TAKEN FROM PLAN PREPARED BY MTE CONSULTANTS INC, DATED JULY 30, 3015, JANUARY 13, 2016 AND SEPTEMBER 28, 2016.
- 1.13. RETAINING WALLS TO BE DESIGNED BY OTHERS, FOR WALLS EXCEEDING 1.0m IN HEIGHT, SHOP DRAWINGS MUST BE SUBMITTED FOR REVIEW AND APPROVAL AND BUILDING PERMIT MUST BE OBTAINED. WALLS OVER 0.6m IN HEIGHT REQUIRE GUARDS. HIGH SIDE OF RETAINING WALLS TO BE BACKFILLED WITH FREE DRAINING MATERIAL.
- 1.14. SITE SERVICING CONTRACTOR TO TERMINATE ALL SERVICES 1.0 METER FROM FOUNDATION WALL
- 1.15. FILTER FABRIC TO BE TERRAFIX 200R OR APPROVED EQUIVALENT.
- 1.16. MAXIMUM GRASSED SLOPE TO BE 3:1. SLOPES GREATER THAN 3:1 TO BE LANDSCAPED WITH LOW MAINTENANCE GROUND
- 1.17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC AND SAFETY MEASURES DURING THE CONSTRUCTION PERIOD INCLUDING THE SUPPLY, INSTALLATION AND REMOVAL OF ALL NECESSARY SIGNALS, DELINEATORS, MARKERS, AND BARRIERS, ALL SIGNS, ETC. SHALL CONFORM TO THE STANDARDS OF THE LOCAL MUNICIPALITY AND THE MTO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- 1.18. THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
- 1.19. CONTRACTOR TO MAINTAIN A 'CONFINED TRENCH CONDITION' IN ALL SEWER AND SERVICE TRENCHES.
- 1.20. FOLLOWING COMPLETION OF PROPOSED WORKS AND PRIOR TO OCCUPANCY INSPECTION, ALL STORM AND SANITARY SEWERS ARE TO BE FLUSHED, AND ALL CATCHBASIN AND CATCHBASIN MANHOLE SUMPS ARE TO BE CLEANED OF DEBRIS AND SILT.
- 2. STORM SEWERS
- 2.1. PIPE BEDDING FOR RIGID PIPE TO BE CLASS "B" AS PER OPSD 802.030, 802.031, OR 802.032. PIPE BEDDING FOR FLEXIBLE PIPE TO BE AS PER OPSD 802.010. BEDDING MATERIAL AND COVER MATERIAL TO BE GRAN. "A". TRENCH BACKFILL TO BE NATIVE MATERIAL REPLACED IN 300mm LIFTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
- 2.2. STORM SEWERS, 150mm AND SMALLER, SHALL BE POLYVINYL CHLORIDE (PVC) PIPE DR28 ASTM-D3034 WITH INTEGRAL BELL AND SPIGOT UTILIZING FLEXIBLE ELASTOMERIC SEALS.
- 2.3. STORM SEWERS 200mm TO 375mm SHALL BE POLYVINYL CHLORIDE (PVC) PIPE DR35 ASTM-D3034 OR RIBBED PVC SEWER PIPE CSA B182,4-M90 ASTM-F794 WITH INTEGRAL BELL AND SPIGOT UTILIZING FLEXIBLE ELASTOMERIC SEALS. RIBBED PVC NOT TO BE USED WITHIN RIGHT-OF-WAY.
- 2.4. FACTORY FABRICATED WYES SHALL BE USED FOR ALL SERVICE CONNECTIONS.
- 2.5. MANHOLES AND MANHOLE CATCHBASINS TO BE 1200mm DIAMETER PRECAST WITH ALUMINIUM STEPS AT 300mm CENTRES AS PER OPSD 701.010 UNLESS OTHERWISE SPECIFIED.
- 2.6. MANHOLES TO BE BENCHED PER OPSD 701.021.
- 2.7. CATCHBASINS TO BE 600mm SQUARE PRECAST AS PER OPSD 705.010
- 2.8. AREA DRAINS LOCATED WITHIN ASPHALT/CONCRETE AREA(S) TO BE ZURN Z675 SQUARE (150mmø, NH) OR APPROVED EQUIVALENT UNLESS OTHERWISE SPECIFIED BY ARCHITECT.
- 2.9. CATCHBASIN MANHOLES AND CATCHBASINS TO HAVE A MINIMUM 600mm DEEP SUMP. WHEN THE STRUCTURE INCLUDES THE INSTALLATION OF A SNOUT (OR APPROVED EQUIVALENT) THE SUMP DEPTH TO BE MIN 2.5 TIMES THE OUTLET PIPE DIAMETER
- 2.10. MANHOLE AND CATCHBASIN, FRAMES, GRATES, CASTINGS AND LIDS TO BE QUALITY GREY IRON ASTM A48 CLASS 30B.

- 2.11. STORM MANHOLE LIDS TO BE PER OPSD 401.010 TYPE 'B' CATCHBASIN AND CATCHBASIN MANHOLE GRATES TO BE PER OPSD 400.100, DITCH INLET CATCHBASIN GRATES TO BE PER OPSD 403.010.
- 2.12. STORM SEWERS AND SERVICES TO HAVE MINIMUM 1.4m COVER TO TOP OF PIPE. WHERE COVER TO TOP OF PIPE IS DEFICIENT. CONTRACTOR SHALL INSTALL SHALLOW BURIED SEWER PIPE IN ACCORDANCE WITH APPLICABLE "SEWER PIPE INSULATION DETAIL" INDICATED IN DRAWING DETAILS. INSULATION SHALL BE RIGID EXTRUDED POLYSTYRENE (EPS) BOARD, WITH THICKNESS SUFFICIENT TO PROVIDE AN RSI-1.76 (R10) INSULATING FACTOR (TYPICALLY 50-65mm), INSULATION BOARD WIDTH SHALL BE 1.8m FOR UP TO 200mm NOMINAL PIPE DIAMETER, 2.4m FOR 201mm-800mm DIAMETER AND 3.0m FOR 801mm-1400mm. ALL JOINTS SHALL BE TIGHTLY BUTTED TOGETHER (TAPE OR OTHERWISE SECURE JOINTS TO RESIST MOVEMENT DURING BACKFILL COVER). RIGID EPS BOARD SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 140kPa (20psi), AND A MAXIMUM WATER ABSORPTION RATE OF 2.0% BY VOLUME. ACCEPTABLE PRODUCTS ARE DOW STYROFOAM-SM OR -HI (FULL LINE), OWENS CORNING FOAMULAR (200, 250, OR
- UNDER NO CIRCUMSTANCES SHALL THE BUILDING FOUNDATION DRAINS BE CONNECTED DIRECTLY TO THE STORM SEWER SYSTEM

HIGHER), PLASTISPAN HD-M28 OR OTHER ENGINEER-APPROVED

- 2.14 ALL WEEPING TILE DRAINAGE TO BE PUMPED TO THE STORM SEWER SYSTEM
- 2.15. FLOW CONTROL ROOF DRAINS TO BE ZURN MODEL Z105 -SINGLE NOTCH (8.951pm/cm of head) OR APPROVED EQUIVALENT
- SANITARY SEWERS

EQUIVALEN

- PIPE BEDDING FOR RIGID PIPE TO BE CLASS "B" AS PER OPSD 802.030. PIPE BEDDING FOR FLEXIBLE PIPE TO BE AS PER OPSD 802.010. BEDDING MATERIAL AND COVER MATERIAL TO BE GRAN. "A". TRENCH BACKFILL TO BE NATIVE MATERIAL REPLACED IN 300mm LIFTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
- 3.2. SANITARY SEWERS 200mm TO 600mm INCLUSIVE SHALL BE POLYVINYL CHLORIDE (PVC) PIPE DR35 ASTM-D3034 WITH INTEGRAL BELL AND SPIGOT UTILIZING FLEXIBLE ELASTOMERIC SEALS.
- 3.3. MANHOLES TO BE 1200mm DIAMETER PRECAST WITH ALUMINIUM STEPS AT 300mm CENTRES AS PER OPSD 701.010 UNLESS OTHERWISE SPECIFIED.
- 3.4. MANHOLES TO BENCHED PER OPSD 701.021.
- SANITARY MANHOLE LIDS TO BE PER OPSD 401.010 TYPE 3.5.
- 3.6. MANHOLE FRAMES, CASTINGS AND LIDS TO BE QUALITY GREY IRON ASTM A48 CLASS 30B.
- 3.7. FACTORY FABRICATED WYES SHALL BE USED FOR ALL SERVICE CONNECTIONS.
- SANITARY SEWERS AND SERVICES TO HAVE MINIMUM 1.4m 3.8. COVER ON TOP OF PIPE. WHERE COVER TO TOP OF PIPE IS DEFICIENT. CONTRACTOR SHALL INSTALL SHALLOW BURIED PIPE IN ACCORDANCE WITH APPLICABLE "SEWER PIPE INSULATION DETAIL" INDICATED IN DRAWING DETAILS. INSULATION SHALL BE RIGID EXTRUDED POLYSTYRENE (EPS) BOARD, WITH A THICKNESS SUFFICIENT TO PROVIDE AN RSI-1.76 (R10) INSULATING FACTOR (TYPICALLY 50-65mm), INSULATION BOARD WIDTH SHALL BE 1.8m FOR UP TO 200mm NOMINAL PIPE DIAMETER, 2.4m FOR 201mm-800mm DIAMETER AND 3.0m FOR 801mm-1400mm, ALL JOINTS SHALL BE TIGHTLY BUTTED TOGETHER (TAPE OR OTHERWISE SECURE JOINTS TO RESIST MOVEMENT DURING BACKFILL PLACEMENT). RIGID EPS BOARD SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 140kPa (20psi), AND A MAXIMUM WATER ABSORPTION RATE OF 2.0% Y VOLUME. ACCEPTABLE PRODUCTS ARE DOW STYROFOAM-SM OR -HI (FULL LINE), OWENS CORNING FOAMULAR (200, 250, OR HIGHER), PLASTISPAN HD-M28 OR OTHER ENGINEER-APPROVED FOUIVALENT
- 3.9. CONTRACTOR RESPONSIBLE FOR TESTING OF SANITARY SEWERS IN ACCORDANCE WITH OPSS 410.
- WATERMAINS
- 4.1. PIPE BEDDING FOR RIGID PIPE TO BE CLASS "B" AS PER OPSD 802.030. PIPE BEDDING FOR FLEXIBLE PIPE TO BE AS PER OPSD 802.010. BEDDING MATERIAL AND COVER MATERIAL TO BE GRAN. "A". TRENCH BACKFILL TO BE NATIVE MATERIAL REPLACED IN 300mm LIFTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
- 4.2. WATERMAINS 100mm AND LARGER SHALL BE PVC C900 CLASS 150 INSTALLED WITH MINIMUM 2.0 METRES OF COVER. FITTINGS 100mm AND LARGER SHALL BE PC CLASS 150 (DR18) CSA B137.3
- 4.3. WATERMAIN FITTINGS TO BE SUPPLIED WITH MECHANICAL JOINT RESTRAINTS. FOR WATERMAIN PIPE SIZES 150mmø OR LESS ALL PIPE JOINTS TO BE RESTRAINED WITHIN 5.0m FROM ALL FITTINGS, IN EACH DIRECTION, UNLESS SHOWN OTHERWISE ON THE CONTRACT DRAWINGS. FOR WATERMAIN PIPE SIZES GREATER THAN 150mmø ALL PIPE JOINTS TO BE RESTRAINED WITHIN 10.0m FROM ALL FITTINGS, IN EACH DIRECTION, UNLESS SHOWN OTHERWISE ON THE CONTRACT DRAWINGS. ALL TEE'S TO HAVE MINIMUM 2.0m SOLID PIPE LENGTH ON EACH RUN OF THE TEE, OR PROVIDE A THRUST BLOCK PER OPSD 1103.010.
- ALL METALLIC FITTINGS (EXCLUDING CURB/MAIN STOP AND 4.4. BRASS FITTINGS) AND APPURTENANCES INCLUDING SADDLES, VALVES, TEES, BENDS ETC ARE TO BE WRAPPED WITH AN APPROVED PETROLATUM SYSTEM CONSISTING OF PASTE, MASTIC AND TAPE. PARTICULAR ATTENTION SHALL BE PAID TO ANODE INSTALLATION. CONTRACTOR TO REFER TO THE MOST RECENT EDITION OF AREA MUNICIPALITIES DESIGN GUIDELINES AND SUPPLEMENTAL SPECIFICATIONS FOR MUNICIPAL SERVICES FOR WRAPPING DETAILS.
- WATERMAIN VALVES 100mm AND LARGER SHALL BE AS PER 4.5. AWWA C509 - MUELLER A2360-23 OR APPROVED EQUIVALENT (OPEN LEFT) INCLUDING VALVE BOX AND 2.3Kg ANODE INCLUDING ANODE PROTECTION INSTALLED PER MUNICIPALITY STANDARDS.
- 4.6. PVC WATERMAIN SHALL HAVE TWU STRANDED COPPER, AWG8 TRACER WIRE STRAPPED TO TOP AT 5 METRE INTERVALS. TRACER WIRE SHALL BE BROUGHT TO THE SURFACE AT ALL HYDRANTS AND CAD WELDED TO THE LOWER FLANGE OF THE HYDRANT.
- 4.7. WATER CONNECTIONS MAY BE PLACED IN THE SAME TRENCH WITH A STORM OR SANITARY CONNECTION ONLY IF A MINIMUM VERTICAL SEPARATION OF 500mm IS MAINTAINED BETWEEN THE WATER SERVICE AND ANY OTHER PIPE, IN ACCORDANCE WITH SECTION 7.3.5.7.(2)(a)(i) OF THE ONTARIO BUILDING CODE
- ALL WATERMAINS AND SERVICES TO HAVE MINIMUM 2.0m 4.8. COVER ON TOP OF PIPE. WHERE COVER TO TOP OF PIPE IS DEFICIENT, CONTRACTOR SHALL INSTALL SHALLOW BURIED PIPE IN ACCORDANCE WITH APPLICABLE "WATER PIPE INSULATION DETAIL" INDICATED IN DRAWING DETAILS. INSULATION SHALL BE RIGID EXTRUDED POLYSTYRENE (EPS) BOARD, WITH A THICKNESS SUFFICIENT TO PROVIDE AN RSI-3.52 (R20) INSULATING FACTOR (TYPICALLY 100-130mm). INSULATION BOARD WIDTH SHALL BE 2.4m FOR UP TO 200mm NOMINAL PIPE DIAMETER, 3.0m FOR 201mm-305mm DIAMETER. INSULATION BOARD SHALL BE INSTALLED WITH

en : 5 -100 NOT 0602-S AND I

MINIMUM2-LAYERS, OVERLAPPED MINIMUM 300mm AT ALI JOINTS. ALL JOINTS SHALL BE TIGHTLY BUTTED TOGETHER (TAPE OR OTHERWISE SECURE JOINTS TO RESIST MOVEMENT DURING BACKFILL PLACEMENT). RIGID EPS BOARD SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 140kPa (20psi), AND A MAXIMUM WATER ABSORPTION RATE OF 2.0% BY VOLUME. ACCEPTABLE PRODUCTS ARE DOW STYROFOAM-SM OR -HI (FULL LINE). OWENS CORNING FOAMULAR (200. 250. O HIGHER), PLASTISPAN HD-M28 OR OTHER ENGINEER-APPROVED EQUIVALENT. LOCAL MUNICIPALITY TO SUPPLY WATER METER. CONTRACTOR

O INSTALL CHAMBER, METER, ALL VALVES, PIPING AND REMOTE METER READOUT AT LOCATION ON BUILDING EXTERIOR ACCEPTABLE TO MUNICIPALITY 4.10. ALL WATERMAIN TO BE PRESSURE TESTED IN ACCORDANCE

WITH OPSS 441. DISINFECT ALL WATERMAIN IN ACCORDANCE WITH AWWA C651-05 INCLUDING CHLORINATION, BACKFLOW PREVENTOR AND 24 HOUR DUPLICATE SAMPLING. ALL TESTING AND DISINFECTION TO BE COMPLETED UNDER THE SUPERVISION OF THE ENGINEER. (CONTRACTOR TO SUBMIT WATER COMMISSIONING PLAN IN ACCORDANCE WITH DGSSMS. THIS PLAN MUST BE APPROVED BY THE CITY OF WATERLOO PRIOR TO ANY WATERMAIN WORK).

5. EROSION AND SEDIMENT CONTROL

5.2.

5.5.

5.6.

6.2.

CONTRACTOR TO INSTALL EROSION CONTROL MEASURES AS SHOWN PRIOR TO CONSTRUCTION AND MAINTAIN IN GOOD CONDITION UNTIL CONSTRUCTION IS COMPLETED AND VEGETATIVE COVER IS ESTABLISHED.

ALL SILT FENCING TO BE INSTALLED PRIOR TO ANY AREA GRADING, EXCAVATING OR DEMOLITION COMMENCING. 5.3. EROSION CONTROL FENCING TO BE INSTALLED AROUND BASE

OF ALL STOCKPILES. EROSION PROTECTION TO BE PROVIDED AROUND ALL STORM AND SANITARY MHs AND CBs.

MUD MATS TO BE PROVIDED ON-SITE AT ALL LOCATIONS WHERE CONSTRUCTION VEHICLES EXIT THE SITE. MUD MATS SHALL BE A MINIMUM OF 3.0m WIDE, 15.0m LONG (LENGTH MAY VARY DEPENDING ON SITE LAYOUT) AND 0.3m DEEP AND SHALL CONSIST OF 200mm CLEAR STONE MATERIAL OR APPROVED FOULVALENT, CONTRACTOR TO ENSURE ALL VEHICLES LEAVE THE SITE VIA THE MUD MAT AND THAT THE MAT IS MAINTAINED IN A MANNER TO MAXIMIZE EFFECTIVENESS AT ALL

ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AS SITE DEVELOPMENT PROGRESSES. CONTRACTOR TO PROVIDE ALL ADDITIONAL EROSION CONTROL STRUCTURES.

EROSION CONTROL STRUCTURES TO REMAIN IN PLACE UNTIL ALL DISTURBED GROUND SURFACES HAVE BEEN RESTABILIZED. NO ALTERNATE METHODS OF EROSION PROTECTION SHALL B

PERMITTED UNLESS APPROVED BY THE ENGINEER AND THE DEPARTMENT OF PUBLIC WORKS. 5.9. CONTRACTOR TO CLEAN ROADWAY AND SIDEWALKS OF

SEDIMENTS RESULTING FROM CONSTRUCTION TRAFFIC FROM THE SITE EACH DAY.

5.10. CONTRACTOR MUST REMOVE EROSION AND SEDIMENTATION FENCING PRIOR TO COMPLETION OF PROJECT. CONTRACTOR TO HAVE EROSION AND SEDIMENTATION FENCE INSPECTED WHEN VEGETATION HAS ESTABLISHED, BUT PRIOR TO FENCE BECOMING OVERGROWN. ENGINEER'S REPRESENTATIVE TO DETERMINE VEGETATION HAS REACHED THE CRITICAL POINT AND WILL THEN INSTRUCT CONTRACTOR TO REMOVE FENCE. 6. MAINTENANCE RECOMMENDATIONS

EROSION CONTROL STRUCTURES TO BE MONITORED REGULARLY AND ANY DAMAGE REPAIRED IMMEDIATELY. SEDIMENTS TO BE REMOVED WHEN ACCUMULATIONS REACH A MAXIMUM OF 1/3 THE HEIGHT OF THE FENCE.

OWNER'S REPRESENTATIVE TO MONITOR EROSION CONTROL STRUCTURES TO ENSURE FENCING IS INSTALLED AND MAINTENANCE IS PERFORMED TO CITY REQUIREMENTS.

320
Ex. 300mmø SAN.
Ex. HYD. SET
Ex. 375mmø STM.
Ex. Drap. Curb
XXX
⊙ Ex. DS
Ex. Bollard
F CRD
(TOP)
x(326.00)

FEATURES
SITE BOUNDARY
EXISTING CONTOURS
EXISTING SANITARY SEWER
EXISTING WATERMAIN
EXISTING STORM SEWER
EXISTING CURB
EXISTING BUILDING
EXISTING MAN DOOR
EXISTING FENCE
EXISTING RETAINING WALL
EXISTING RIP RAP
EXISTING DOWNSPOUT
EXISTING BOLLARD
EX. FLOW CONTROL ROOF DRAIN
EMBANKMENT (SLOPE AS NOTED)
EXISTING DESIGN GRADES REFER TO PHASE 1 DWG (C2.1)
EXISTING DIRECTION OF DRAINAGE/SI

STING STORM SEWER	
STING CURB	
STING BUILDING	
STING MAN DOOR	
STING FENCE	
STING RETAINING WALL	
STING RIP RAP	
STING DOWNSPOUT	
STING BOLLARD	
FLOW CONTROL ROOF DRAIN	
BANKMENT (SLOPE AS NOTED)	
STING DESIGN GRADES ER TO PHASE 1 DWG (C2.1)	
STING DIRECTION OF DRAINAGE/SWALE	
FFATURES	
<u>remoneo</u>	
POSED SPOT ELEVATIONS =MAINTAIN EXISTING = TOP OF CASTING/GRATE	
=INVERT ELEVATION =FINISHED FLOOR ELEVATION	
=INVERT ELEVATION =FINISHED FLOOR ELEVATION ECTION OF DRAINAGE/SWALE NNAGE SPLIT DGE)	
=INVERT ELEVATION =FINISHED FLOOR ELEVATION ECTION OF DRAINAGE/SWALE NINAGE SPLIT OGE) BANKMENT OPE AS NOTED)	
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=INVERT ELEVATION =FINISHED FLOOR ELEVATION ECTION OF DRAINAGE/SWALE NAGE SPLIT OGE) BANKMENT OPE AS NOTED) OPOSED BUILDING N DOOR	
=INVERT ELEVATION =FINISHED FLOOR ELEVATION ECTION OF DRAINAGE/SWALE NAGE SPLIT DGE) BANKMENT DPE AS NOTED) POSED BUILDING N DOOR NCRETE CURB	
=INVERT ELEVATION =FINISHED FLOOR ELEVATION ECTION OF DRAINAGE/SWALE NAGE SPLIT OGE) BANKMENT OPE AS NOTED) OPOSED BUILDING N DOOR ICRETE CURB AINING WALL	
=INVERT ELEVATION =FINISHED FLOOR ELEVATION ECTION OF DRAINAGE/SWALE ANAGE SPLIT DGE) BANKMENT DPE AS NOTED) POSED BUILDING N DOOR AN DOOR AN DOOR AN DOOR AN OOR AN MODEL ZIOS* SINGLE NOTCH D5 Ipm/cm OF HEAD) APPROVED EQUAL	
=INVERT ELEVATION =FINISHED FLOOR ELEVATION ECTION OF DRAINAGE/SWALE ANAGE SPLIT DGE) BANKMENT DPE AS NOTED) POSED BUILDING N DOOR ICRETE CURB AINING WALL W CONTROL ROOF DRAIN RN MODEL Z105* SINGLE NOTCH D5 Ipm/cm OF HEAD) APPROVED EQUAL RLAND FLOW ROUTE JOR STORM)	
=INVERT ELEVATION =FINISHED FLOOR ELEVATION ECTION OF DRAINAGE/SWALE ANAGE SPLIT DGE) BANKMENT DPE AS NOTED) POSED BUILDING N DOOR ICRETE CURB AINING WALL W CONTROL ROOF DRAIN RN MODEL ZIO5* SINGLE NOTCH D5 Ipm/cm OF HEAD) APPROVED EQUAL IRLAND FLOW ROUTE JOR STORM) IMENT CONTROL FENCE E DETAIL)	
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	KEY PLAN N.T.S.				
	NOTE TO CONTRACTOR : DO NOT SCALE DRAWINGS.				
	CONTRACTORS MUST CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK				
	ALL DRAWINGS REMAIN THE PROPERTY OF THE ENGINEER AND SHALL NOT BE REPRODUCED OR REUSED WITHOUT THE				
	ENGINEER'S WRITTEN PERMISSION. THE OWNER/ARCHITECT/CONTRACTOR IS ADVISED THAT M.T.F. CONSULTANTS INC. CANNOT CERTIFY ANY COMPONENT				
	OF THE SITE WORKS NOT INSPECTED DURING CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO NOTIFY M.T.E. CONSULTANTS INC. PRIOR TO COMMENCEMENT				
	OF CONSTRUCTION TO ARRANGE FOR INSPECTION.				
	ELEVATION ARE GEODETIC AND ARE DERIVED FROM THE CAN-NET GPS REFERENCE STATION NETWORK.				
	SITE BENCHMARK ELEV. = 139.852m				
	SIB LOCATED NORTH WEST CO OFF OF DUNDAS STREET WEST	RNER OF SITE, BY ENTRANCE T.			
	NOTE:				
	1. THIS PLAN IS PART OF A SET OF PLANS WHICH				
	COMPRISE OF THE FOLLOWING: C1.2, C3.1, C3.2 AND C3.3.				
	6.				
	4.				
	2. 1. ISSUED FOR APPROVAL	LXS JAN.16/17			
	No. REVISION	BY DATE			
		NTE			
	Engineers Scier	ntists Surveyors			
	Site Develop	ment Division			
	Ph. (519)743-6500	www.mte85.com			
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	PHASE 2				
	Project Manager	Project No.			
	Design ByAXM	Checked By			
	Drawn By PXL/AJS	Checked By AXM			
	Date lan 00 /17	C.3 1			
	Scale 1:250	Sheet 2 of 4			

SITE PLAN #SP 17 - 10 W2 CITY OF MISSISSAUGA DWG. No. C100

LEGEIND OF EAL	STING FLATURES	LEGEND OF PROPUS	ED FEATURES
	SITE BOUNDARY	(TOP)	EMBANKMENT (SLOPE AS NOTED)
326	EXISTING CONTOURS	(BOTTOM) MH 21.3m-300mmø STM @ 1.3%	STORM SEWER
Ex. 300mmø SAN.	EXISTING SANITARY SEWER	///////////////////////////////////////	SHALLOW PIPE INSULATION (SEE DETAIL)
Ex. 200mmø WTM.	EXISTING WATERMAIN		PROPOSED BUILDING
Ex. 375mmø STM.	EXISTING STORM SEWER		MAN DOOR
Ex. Brop-Curi	EXISTING CURB	(DROP CURB)	
	EXISTING BUILDING	CONC. CURB & GUTTER	CONCRETE CURB
	EXISTING FENCE		
	EXISTING RETAINING WALL	FCRD	FLOW CONTROL ROOF DRAIN ZURN MODEL Z105* SINGLE NOTCH (8.95 lpm/cm OF HEAD)
	EXISTING RIP RAP		TOR APPROVED EQUAL
⊚ Ex. DS	EXISTING DOWNSPOUT		
🔿 Ex. Bolland	EXISTING BOLLARD		
	EXISTING MAN DOOR		Ex. A
FCRD	EX. FLOW CONTROL ROOF DRAI	N	
(TOP) 3:1 (BOTTOM)	EMBANKMENT (SLOPE AS NOTE	D)	7
MH 14.6m-200mm@ SAN. 0	PHASE 1 SANITARY SEWER (RE	FER TO DWG C2.2)	
MH 21.3m-300mm@ STM (PHASE 1 STORM SEWER (REFER	TO DWG C2.2)	
HYD. SE	Г-ф.	· · · · · · · · · · · · · · · · · · ·	
200mmø WIM V.	PHASE 1 WATERMAIN (REFER T	0 DWG C2.2)	

1 A Inv.=139.91

⇔Éx. CB

T/G=140.71

/CBMH4

T/G=13

/ Ex. Asphalt

0

16.2m-375mmø STM @ 0.5%

January 16, 2017 - 2:49 PM - Pedja Liz

C3.2

0

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- PURPOSES ONLY. THESE PLANS MUST NOT BE USED TO SITE THE PROPOSED BUILDING. 1.3. NO CHANGES ARE TO BE MADE WITHOUT THE APPROVAL OF THE DESIGN ENGINEER.
- 1.4. THESE PLANS ARE NOT TO BE REPRODUCED IN WHOLE OR IN PART WITHOUT THE PERMISSION OF MTE CONSULTANTS INC.
- 1.5. PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST: 1.5.1. CHECK AND VERIFY ALL EXISTING CONDITIONS. LOCATIONS
- AND ELEVATIONS WHICH INCLUDES BUT IS NOT LIMITED TO THE BENCHMARK ELEVATIONS. EXISTING SERVICE CONNECTIONS AND EXISTING INVERTS. REPORT ALI DISCREPANCIES TO THE ENGINEER PRIOR TO PROCEEDING.
- 1.5.2. OBTAIN ALL UTILITY LOCATES AND REQUIRED PERMITS AND LICENSES.
- 1.5.3. VERIFY THAT THE FINISHED FLOOR ELEVATIONS AND BASEMENT FLOOR ELEVATIONS (WHICH MAY APPEAR ON THIS PLAN) COMPLY WITH THE FINAL ARCHITECTURAL DRAWINGS. 1.5.4. CONFIRM ALL DRAWINGS USED FOR CONSTRUCTION ARE OF
- THE MOST RECENT REVISION. 1.6. THE CONTRACTOR SHALL ASSUME ALL LIABILITY FOR ANY

DAMAGE TO EXISTING WORKS.

- 1.7. ALL WORKS ON A MUNICIPAL RIGHT-OF-WAY WILL BE INSTALLED BY MUNICIPALITY UPON APPLICATION BY OWNER AT OWNER'S EXPENSE OR OWNER'S CONTRACTOR MAY INSTALL WORKS IN RIGHT OF WAY UPON APPLICATION AND APPROPRIATE PAYMENT TO CITY. THE CONTRACTOR IS TO MAKE CONNECTION TO THE SERVICES AND RESTORE ALL AFFECTED PROPERTY TO ORIGINAL CONDITION. THE CONTRACTOR IS RESPONSIBLE FOR RESTORATION OF ALL BOULEVARD AREAS.
- 1.8. ALL UNDERGROUND SERVICES ARE TO BE CONSTRUCTED IN FULL COMPLIANCE WITH THE ONTARIO PROVINCIAL BUILDING CODE (PART 7, PLUMBING), THE ONTARIO PROVINCIAL STANDARD SPECIFICATIONS (OPSS) AND IN COMPLIANCE WITH LOCAL APPLICABLE CODES AND REGULATIONS; WHICH CODES AND REGULATIONS SHALL SUPERSEDE ALL OTHERS.
- 1.9. CONTRACTOR IS RESPONSIBLE FOR CONTACTING ENGINEER 48 HRS PRIOR TO COMMENCING WORK TO ARRANGE FOR INSPECTION. ENGINEER TO DETERMINE DEGREE OF INSPECTION AND TESTING REQUIRED FOR CERTIFICATION OF UNDERGROUND SERVICE INSTALLATION AS MANDATED BY ONTARIO BUILDING CODE, DIVISION C, PART 1, SECTION 1.2.2, GENERAL REVIEW. FAILURE TO NOTIFY ENGINEER WILL RESULT IN EXTENSIVE POST CONSTRUCTION INSPECTION AT CONTRACTORS EXPENSE.
- 1.10. PLAN TO BE READ IN CONJUNCTION WITH MTE DRAWING C1.2, C3.1 AND C3.2.
- 1.11. SITE PLAN INFORMATION AND LEGAL INFORMATION TAKEN FROM PLAN PREPARED BY JAMES FRYETT ARCHITECT, DATED JANUARY 05. 2017
- 1.12. EXISTING TOPOGRAPHIC INFORMATION TAKEN FROM PLAN PREPARED BY MTE CONSULTANTS INC, DATED JULY 30, 2015, JANUARY 13, 2016 AND SEPTEMBER 28, 2016.
- 1.13. RETAINING WALLS TO BE DESIGNED BY OTHERS. FOR WALLS EXCEEDING 1 Om IN HEIGHT SHOP DRAWINGS MUST BE SUBMITTED FOR REVIEW AND APPROVAL AND BUILDING PERMIT MUST BE OBTAINED. WALLS OVER 0.6m IN HEIGHT REQUIRE GUARDS. HIGH SIDE OF RETAINING WALLS TO BE BACKFILLED WITH FREE DRAINING MATERIAL.
- 1.14. SITE SERVICING CONTRACTOR TO TERMINATE ALL SERVICES 1.0 METER FROM FOUNDATION WALL.
- 1.15. FILTER FABRIC TO BE TERRAFIX 200R OR APPROVED EQUIVALENT.
- 1.16. MAXIMUM GRASSED SLOPE TO BE 3:1. SLOPES GREATER THAN 3:1 TO BE LANDSCAPED WITH LOW MAINTENANCE GROUND COVER.
- 1.17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC AND SAFETY MEASURES DURING THE CONSTRUCTION PERIOD INCLUDING THE SUPPLY, INSTALLATION AND REMOVAL OF ALL NECESSARY SIGNALS, DELINEATORS, MARKERS, AND BARRIERS ALL SIGNS, ETC. SHALL CONFORM TO THE STANDARDS OF THE LOCAL MUNICIPALITY AND THE MTO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- 1.18. THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
- 1.19. CONTRACTOR TO MAINTAIN A 'CONFINED TRENCH CONDITION' IN ALL SEWER AND SERVICE TRENCHES.
- 1.20. FOLLOWING COMPLETION OF PROPOSED WORKS AND PRIOR TO OCCUPANCY INSPECTION, ALL STORM SEWERS ARE TO BE FLUSHED, AND ALL CATCHBASIN AND CATCHBASIN MANHOLE SUMPS ARE TO BE CLEANED OF DEBRIS AND SILT.
- 2. STORM SEWERS
- 2.1. PIPE BEDDING FOR RIGID PIPE TO BE CLASS "B" AS PER OPSD 802.030, 802.031, OR 802.032. PIPE BEDDING FOR FLEXIBLE PIPE TO BE AS PER OPSD 802.010. BEDDING MATERIAL AND COVER MATERIAL TO BE GRAN. "A". TRENCH BACKFILL TO BE NATIVE MATERIAL REPLACED IN 300mm LIFTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
- 2.2. STORM SEWERS, 150mm AND SMALLER, SHALL BE POLYVINYL CHLORIDE (PVC) PIPE DR28 ASTM-D3034 WITH INTEGRAL BELL AND SPIGOT UTILIZING FLEXIBLE ELASTOMERIC SEALS.
- 2.3. STORM SEWERS 200mm TO 375mm SHALL BE POLYVINYL CHLORIDE (PVC) PIPE DR35 ASTM-D3034 OR RIBBED PVC SEWER PIPE CSA B182.4-M90 ASTM-F794 WITH INTEGRAL BELL AND SPIGOT UTILIZING FLEXIBLE ELASTOMERIC SEALS. RIBBED PVC NOT TO BE USED WITHIN RIGHT-OF-WAY.
- 2.4. STORM SEWERS, 450mm AND LARGER, SHALL BE CONCRETE PIPE, CSA-A257.2 65-D WITH RUBBER GASKET JOINT OR RIBBED PVC SEWER PIPE CSA B182.4-M90 ASTM-F794 WITH INTEGRAL BELL AND SPIGOT UTILIZING FLEXIBLE ELASTOMERIC SEALS. RIBBED PVC NOT TO BE USED WITHIN RIGHT-OF-WAY.
- 2.5. FACTORY FABRICATED WYES SHALL BE USED FOR ALL SERVICE CONNECTIONS.
- 2.6. MANHOLES AND MANHOLE CATCHBASINS TO BE 1200mm DIAMETER PRECAST WITH ALUMINIUM STEPS AT 300mm CENTRES AS PER OPSD 701.010 UNLESS OTHERWISE SPECIFIED.
- 2.7. MANHOLES TO BE BENCHED PER OPSD 701.021. 2.8. CATCHBASINS TO BE 600mm SQUARE PRECAST AS PER OPSD 705.010.
- 2.9. AREA DRAINS LOCATED WITHIN ASPHALT/CONCRETE AREA(S) TO BE ZURN Z675 SQUARE (150mmø, NH) OR APPROVED EQUIVALENT UNLESS OTHERWISE SPECIFIED BY ARCHITECT.
- 2.10. AREA DRAINS LOCATED WITHIN GRASSED AREAS TO BE ZURN Z610 {SQUARE}(pipe 381mm dia, NH) OR APPROVED EQUIVALENT UNLESS OTHERWISE SPECIFIED BY ARCHITECT.

- 2.11. MANHOLE AND CATCHBASIN, FRAMES, GRATES, CASTINGS AND LIDS TO BE QUALITY GREY IRON ASTM A48 CLASS 30B.
- 2.10. CATCHBASIN MANHOLES AND CATCHBASINS TO HAVE A MINIMUM 600mm DEEP SUMP. WHEN THE STRUCTURE INCLUDES THE INSTALLATION OF A SNOUT (OR APPROVED EQUIVALENT) THE SUMP DEPTH TO BE MIN 2.5 TIMES THE OUTLET PIPE DIAMETER
- 2.11. STORM MANHOLE LIDS TO BE PER OPSD 401.010 TYPE 'B' CATCHBASIN AND CATCHBASIN MANHOLE GRATES TO BE PER OPSD 400.100. DITCH INLET CATCHBASIN GRATES TO BE PER OPSD 403.010.
- 2.12. STORM SEWERS AND SERVICES TO HAVE MINIMUM 1.4m COVER TO TOP OF PIPE. WHERE COVER TO TOP OF PIPE IS DEFICIENT, CONTRACTOR SHALL INSTALL SHALLOW BURIED SEWER PIPE IN ACCORDANCE WITH APPLICABLE "SEWER PIPE INSULATION DETAIL" INDICATED IN DRAWING DETAILS. INSULATION SHALL BE RIGID EXTRUDED POLYSTYRENE (EPS) BOARD, WITH A THICKNESS SUFFICIENT TO PROVIDE AN RSI-1.76 (R10) INSULATING FACTOR (TYPICALLY 50-65mm). INSULATION BOARD WIDTH SHALL BE 1.8m FOR UP TO 200mm NOMINAL PIPE DIAMETER, 2.4m FOR 201mm-800mm DIAMETER AND 3.0m FOR 801mm-1400mm. ALL JOINTS SHALL BE TIGHTLY BUTTED TOGETHER (TAPE OR OTHERWISE SECURE JOINTS TO RESIST MOVEMENT DURING BACKFILL COVER). RIGID EPS BOARD SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 140kPa (20psi), AND A MAXIMUM WATER ABSORPTION RATE OF 2.0% BY VOLUME. ACCEPTABLE PRODUCTS ARE DOW STYROFOAM-SM OR -HI (FULL LINE), OWENS CORNING FOAMULAR (200, 250, OR HIGHER), PLASTISPAN HD-M28 OR OTHER ENGINEER-APPROVED EQUIVALENT
- 2.13. UNDER NO CIRCUMSTANCES SHALL THE BUILDING FOUNDATION DRAINS BE CONNECTED DIRECTLY TO THE STORM SEWER SYSTEM.
- 2.14. ALL WEEPING TILE DRAINAGE TO BE PUMPED TO THE STORM SEWER SYSTEM.
- 2.15. FLOW CONTROL ROOF DRAINS TO BE ZURN MODEL Z105 -SINGLE NOTCH (8.95lpm/cm of head) OR APPROVED EQUIVALENT.
- 3. EROSION AND SEDIMENT CONTROL
- 3.1 CONTRACTOR TO INSTALL EROSION CONTROL MEASURES AS SHOWN PRIOR TO CONSTRUCTION AND MAINTAIN IN GOOD CONDITION UNTIL CONSTRUCTION IS COMPLETED AND VEGETATIVE COVER IS ESTABLISHED.
- 3.2. ALL SILT FENCING TO BE INSTALLED PRIOR TO ANY AREA GRADING, EXCAVATING OR DEMOLITION COMMENCING.
- 3.3. EROSION CONTROL FENCING TO BE INSTALLED AROUND BASE OF ALL STOCKPILES.
- 3.4. EROSION PROTECTION TO BE PROVIDED AROUND ALL STORM AND SANITARY MHs AND CBs.
- 3.5. MUD MATS TO BE PROVIDED ON-SITE AT ALL LOCATIONS WHERE CONSTRUCTION VEHICLES EXIT THE SITE. MUD MATS SHALL BE A MINIMUM OF 3.0m WIDE, 15.0m LONG (LENGTH MAY VARY DEPENDING ON SITE LAYOUT) AND 0.3m DEEP AND SHALL CONSIST OF 200mm CLEAR STONE MATERIAL OR APPROVED EQUIVALENT. CONTRACTOR TO ENSURE ALL VEHICLES LEAVE THE SITE VIA THE MUD MAT AND THAT THE MAT IS MAINTAINED IN A MANNER TO MAXIMIZE EFFECTIVENESS AT ALL TIMES.
- 3.6. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AS SITE DEVELOPMENT PROGRESSES. CONTRACTOR TO PROVIDE ALL ADDITIONAL EROSION CONTROL STRUCTURES.
- 3.7. EROSION CONTROL STRUCTURES TO REMAIN IN PLACE UNTIL ALL DISTURBED GROUND SURFACES HAVE BEEN RESTABILIZED.
- 3.8. NO ALTERNATE METHODS OF EROSION PROTECTION SHALL BE PERMITTED UNLESS APPROVED BY THE ENGINEER AND THE DEPARTMENT OF PUBLIC WORKS.
- 3.9. CONTRACTOR TO CLEAN ROADWAY AND SIDEWALKS OF SEDIMENTS RESULTING FROM CONSTRUCTION TRAFFIC FROM THE SITE EACH DAY
- 3.10. CONTRACTOR MUST REMOVE EROSION AND SEDIMENTATION FENCING PRIOR TO COMPLETION OF PROJECT. CONTRACTOR TO HAVE EROSION AND SEDIMENTATION FENCE INSPECTED WHEN VEGETATION HAS ESTABLISHED, BUT PRIOR TO FENCE BECOMING OVERGROWN. ENGINEER'S REPRESENTATIVE TO DETERMINE IF VEGETATION HAS REACHED THE CRITICAL POINT AND WILL THEN INSTRUCT CONTRACTOR TO REMOVE FENCE.
- MAINTENANCE RECOMMENDATIONS
- 4.1. EROSION CONTROL STRUCTURES TO BE MONITORED REGULARLY AND ANY DAMAGE REPAIRED IMMEDIATELY. SEDIMENTS TO BE REMOVED WHEN ACCUMULATIONS REACH A MAXIMUM OF 1/3 THE HEIGHT OF THE FENCE.
- 4.2. OWNER'S REPRESENTATIVE TO MONITOR EROSION CONTROL STRUCTURES TO ENSURE FENCING IS INSTALLED AND MAINTENANCE IS PERFORMED TO CITY REQUIREMENTS.

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PAVEMENT STRUCTURE

DESIGNATED ACCESS FOR ALL CONSTRUCTION TRAFFIC.

INSTALL 'MUD MAT', AS PER DETAIL BELOW, PRIOR TO ANY

OTHER CONSTRUCTION. MAT TO BE MAINTAINED IN GOOD

WORKING ORDER UNTIL GRADING WORKS ARE COMPLETED

7 x 15m

CONSTRUCTION ACCESS DETAIL

0.3m THICK

N.T.S.

AND GRANULAR "A" & "B" HAVE BEEN PLACED.

MUD MAT

FILTER FABRIC

BENEATH STONES

MATERIAL		RECOMMENDED THICKNESS		
		LIGHT TRAFFIC	HEAVY TRAFFIC	
ASPHALTIC	HL3	40mm	40mm	
CONCRETE	HL4 OR HL8	40mm	50mm	
GRANULAR 'A' BASE		150mm	150mm	
GRANULAR 'B' SUBBASE		300mm	450mm	

BASED ON GEOTECHNICAL INVESTIGATION PREPARED BY: CHUNG AND VANDERDOELEN - FEBRUARY 10, 2016

