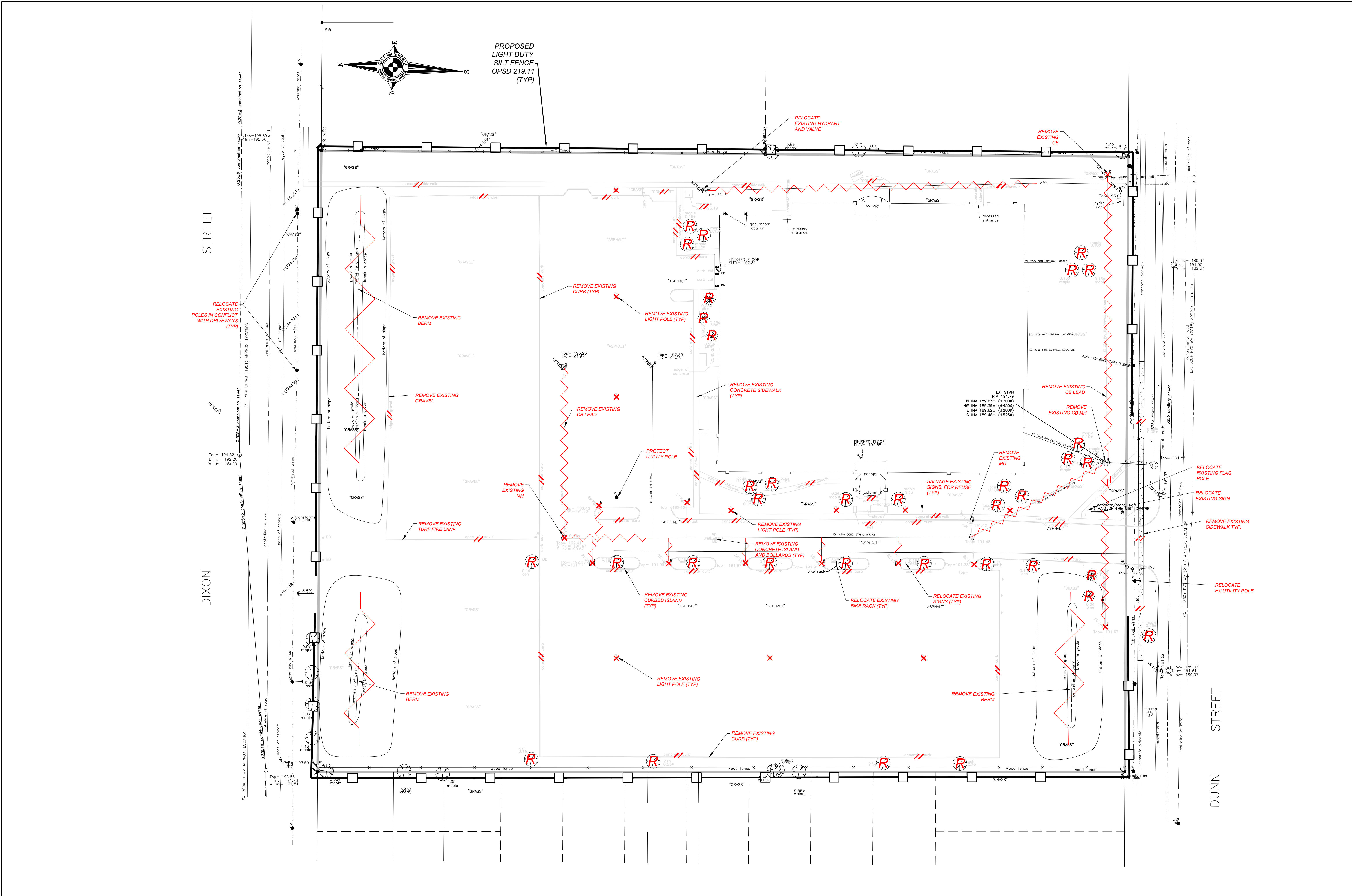


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X-REFERENCES: 20240126 Site Plan [\\network\Site Plan 20240125\20240126 Site Plan.dwg]

DRAWING NAME: Z:\VDA\Projects\2024\1\001\1-102-5881 Dunn Street RFR(CAD)\5881 Dunn St. Development 2024\0209.dwg

DATE: 2024/02/09  
 DRAWN BY: MM  
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 APPROVED BY: MM



NO.	REVISION	DATE	INIT.
3	ISSUED FOR SITE PLAN APPLICATION	2024/02/09	MM
2	ISSUED FOR DESIGN COORDINATION	2023/08/15	MM
1	ISSUED FOR DESIGN COORDINATION	2023/04/14	MM
0	ISSUED FOR DESIGN COORDINATION	2022/05/26	MM

**NOTES**

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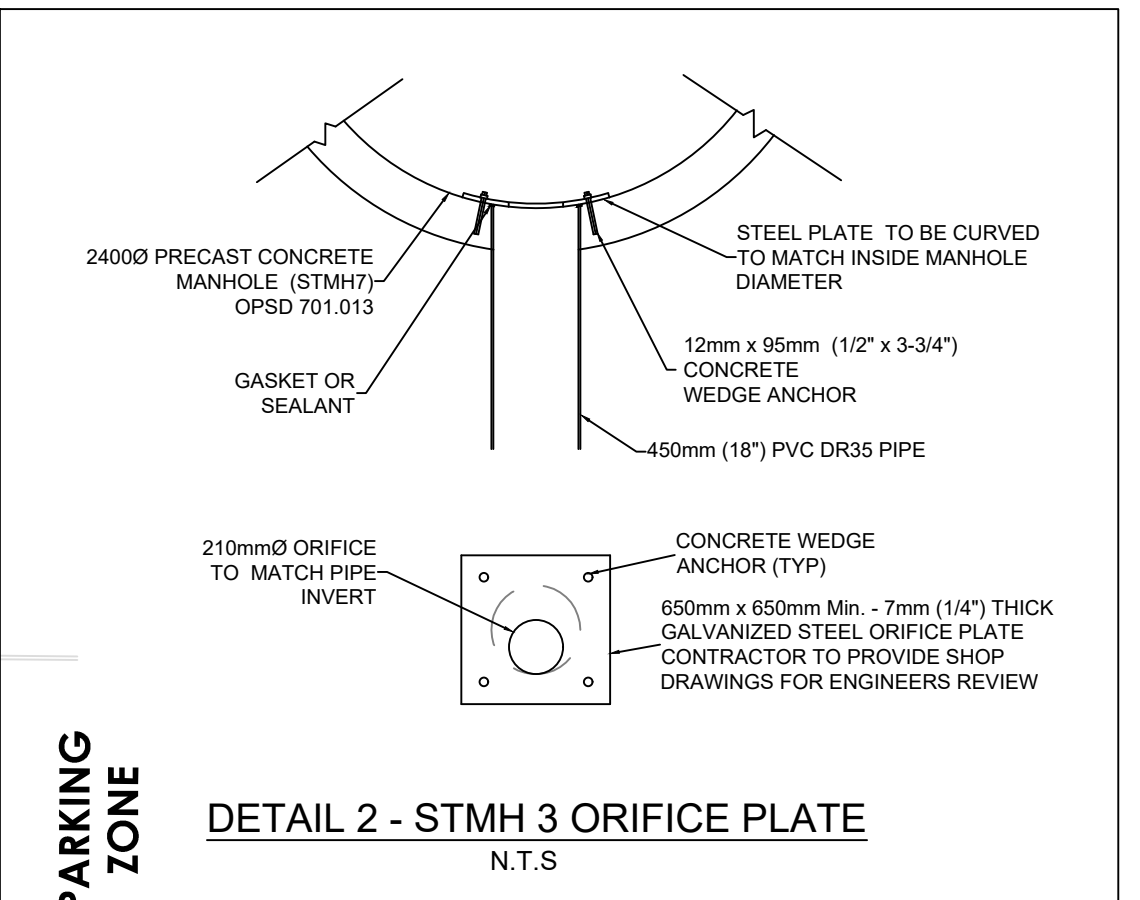
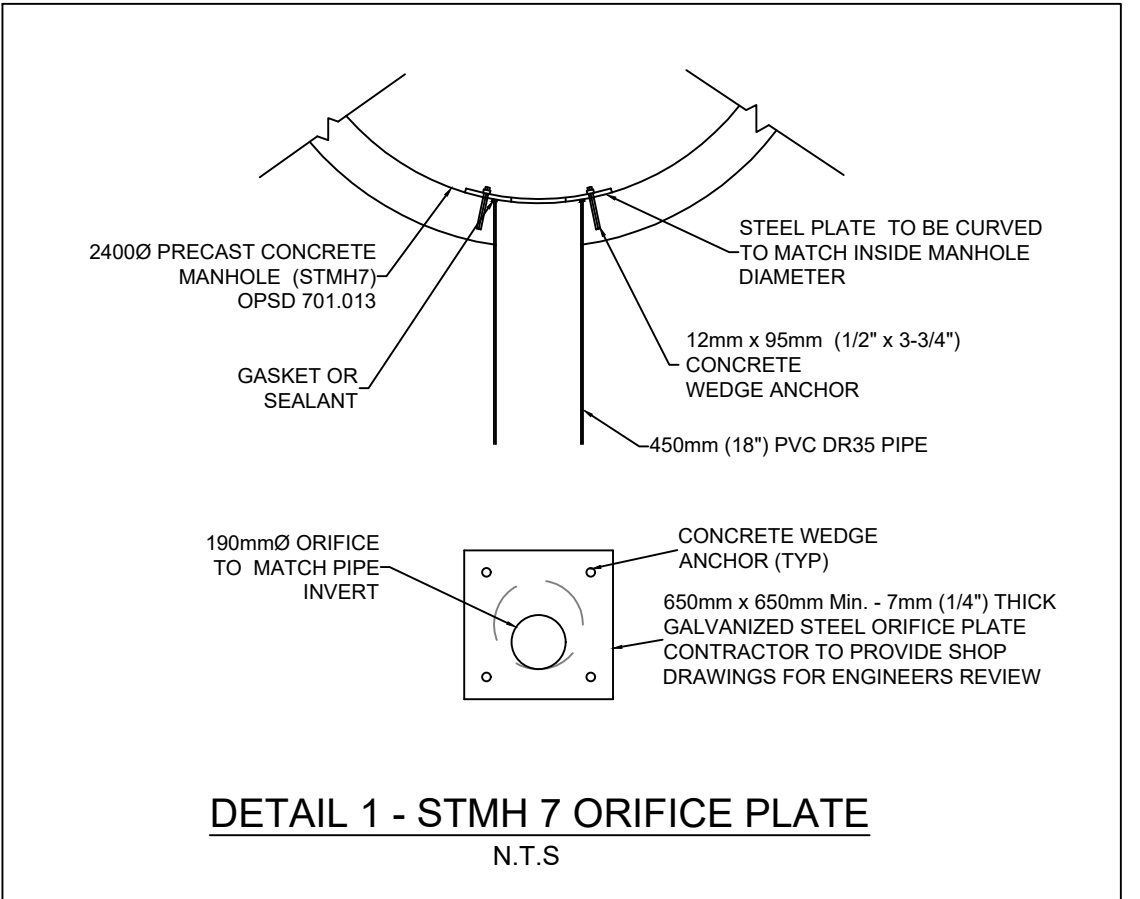
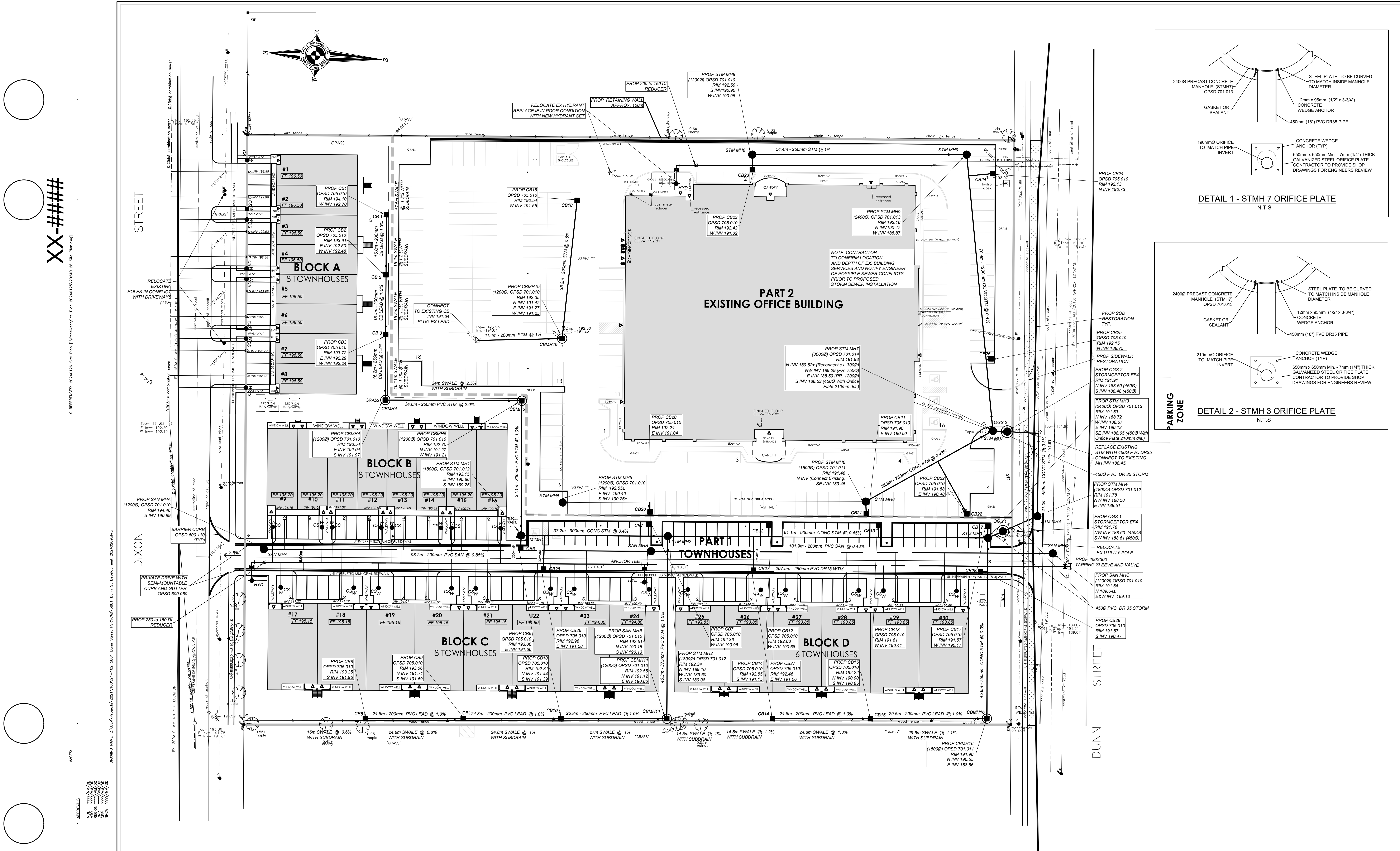
**Niagara Falls**  
 City of Niagara Falls  
 4310 Queen Street  
 Niagara Falls, ON, Canada  
 L2E 6X5 T: 905-556-7521

**UEM** URBAN & ENVIRONMENTAL MANAGEMENT INC.  
 PROFESSIONAL CORP. (S. 2008)

**5881 DUNN STREET  
 PART 1 RESIDENTIAL &  
 PART 2 CORPORATE**

EXISTING CONDITIONS AND REMOVALS PLAN

CONSULTANT FILE No. 21-102	DATE 2022/03/14	SCALE HOR: 1:400 m
SHEET No. 1	DWG No.	REV. 3
REM		



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X-REFERENCES: 2024/0126 Site Plan [\\network\Site Plan 2024\0126\20240126 Site Plan.dwg]

DRAWING NAME: Z:\VDA\Projects\2024\1001\102-5881 Dunn Street (SP)\CAD\5881 Dunn St. Development 2024\0209.dwg

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DATE	BY	CHKD	APPD
2024/02/09	MM	MM	MM
2023/08/15	MM	MM	MM
2023/04/14	MM	MM	MM
2022/05/26	MM	MM	MM

NOTES

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4310 Queen Street  
Niagara Falls, ON, Canada  
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URBAN & ENVIRONMENTAL MANAGEMENT INC.  
PROFESSIONAL CONSULTANTS

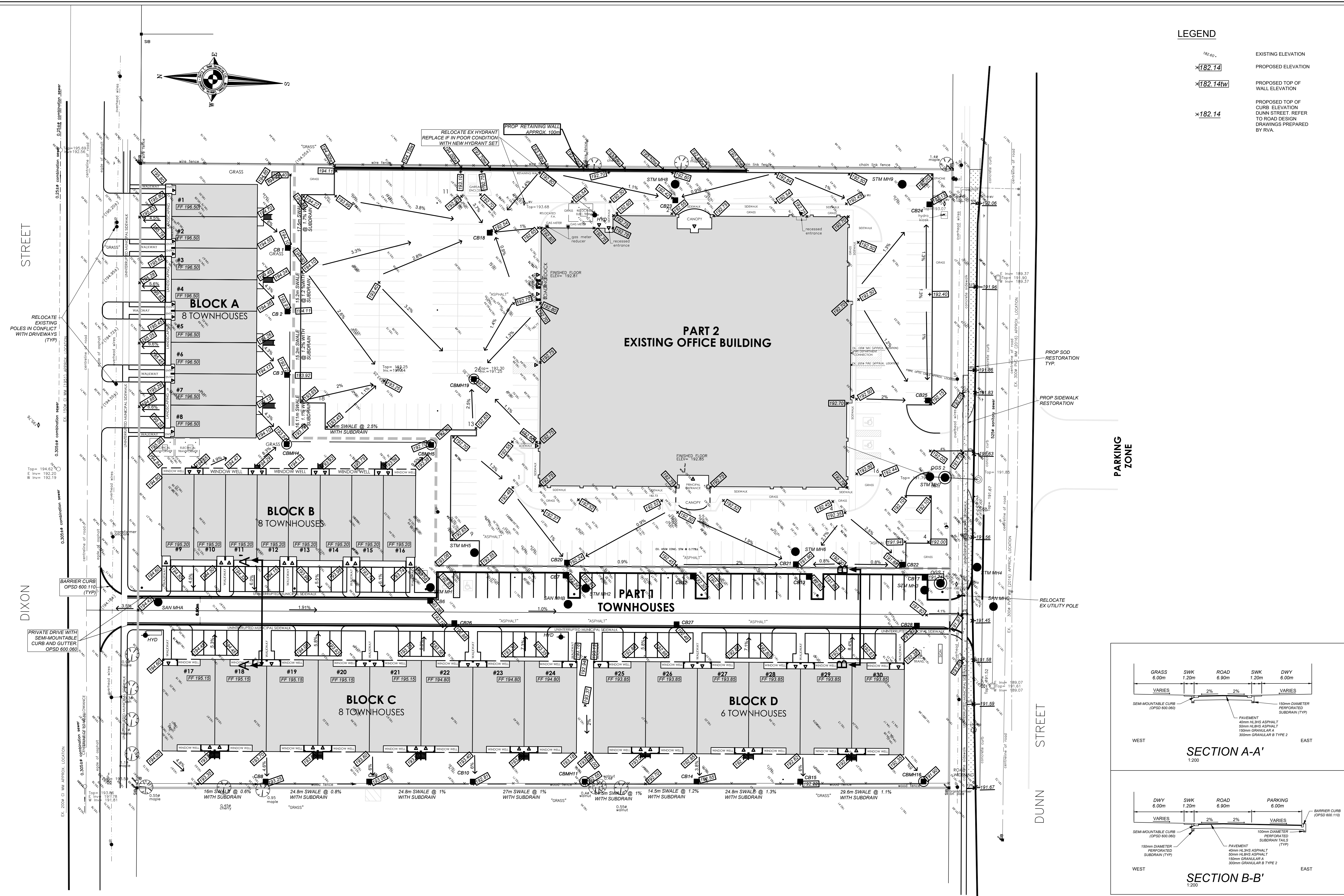
5881 DUNN STREET PART 1 RESIDENTIAL & PART 2 CORPORATE		CONSULTANT FILE No. 21-102
GENERAL SERVICING PLAN		DATE 2022/03/14
		SCALE HOR: 1:400 m
		SHEET No. 2
DWG No. C01	REV. 3	

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X-REFERENCES: 2024/01/26 Site Plan [\\network\Site Plan 2024\01\26\20240126 Site Plan.dwg]

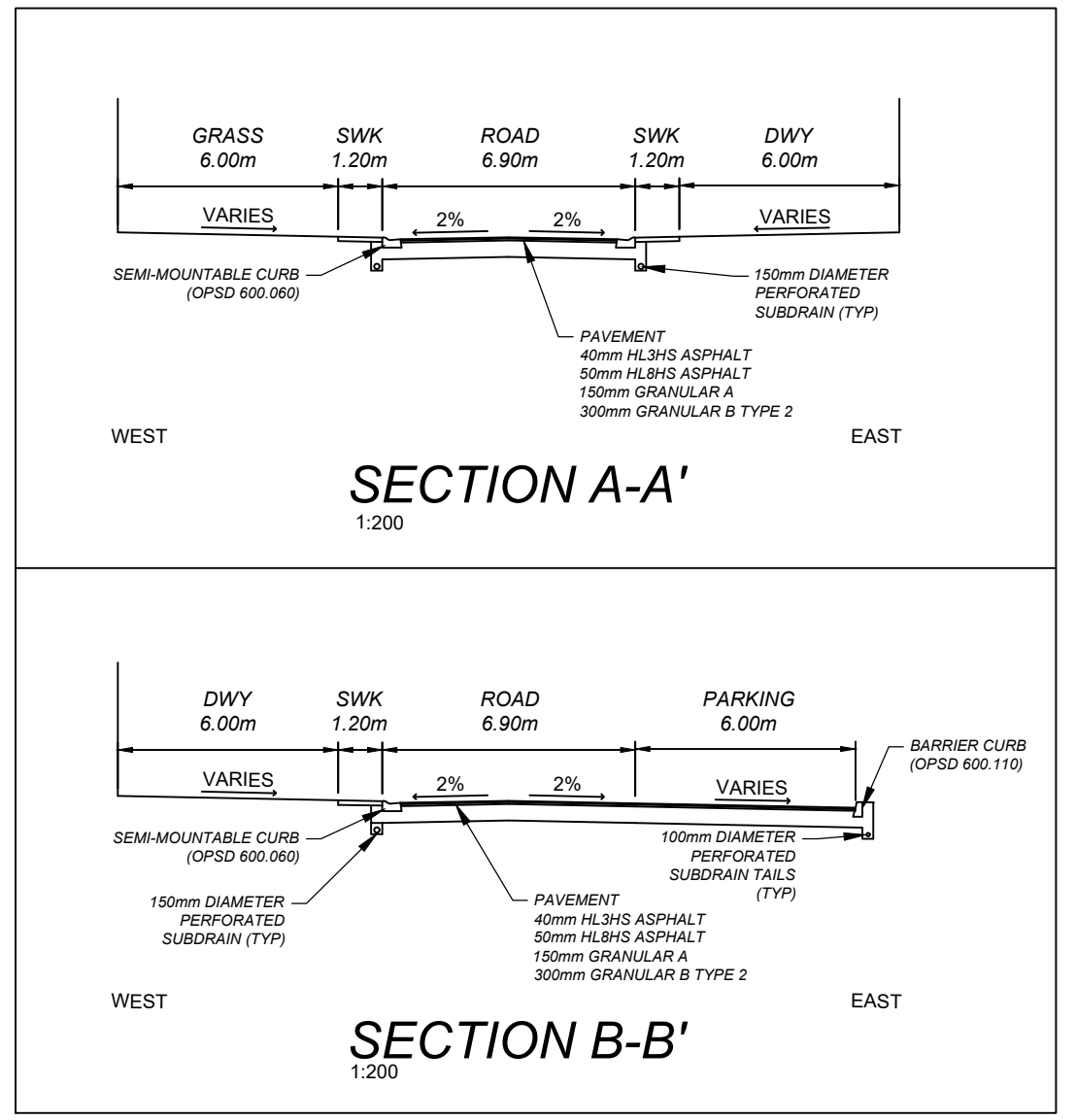
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DATE: 2024/02/09  
 DRAWN BY: MM  
 CHECKED BY: MM  
 APPROVED BY: MM



**LEGEND**

182.60	EXISTING ELEVATION
×182.14	PROPOSED ELEVATION
×182.14tv	PROPOSED TOP OF WALL ELEVATION
×182.14	PROPOSED TOP OF CURB ELEVATION
	PROPOSED TOP OF DUNN STREET. REFER TO ROAD DESIGN DRAWINGS PREPARED BY RVA.



**NOTES**

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0	ISSUED FOR DESIGN COORDINATION	2022/05/26	MM

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APPROVED BY	MM		

**BENCHMARK DATUM**  
 (# 8010867083)  
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**City of Niagara Falls**  
 4310 Queen Street  
 Niagara Falls, ON, Canada  
 L2E 6X5 T: 905-556-7521

**UEM**  
 URBAN & ENVIRONMENTAL MANAGEMENT INC.  
 PROFESSIONAL ENGINEERS & ARCHITECTS

ELEVATION - 194.51m

**5881 DUNN STREET  
 PART 1 RESIDENTIAL &  
 PART 2 CORPORATE**

**GENERAL GRADING PLAN**

CONSULTANT FILE No. 21-102  
 DATE 2022/03/14  
 SCALE HOR: 1:400 m

SHEET No. 3

DWG No. C02

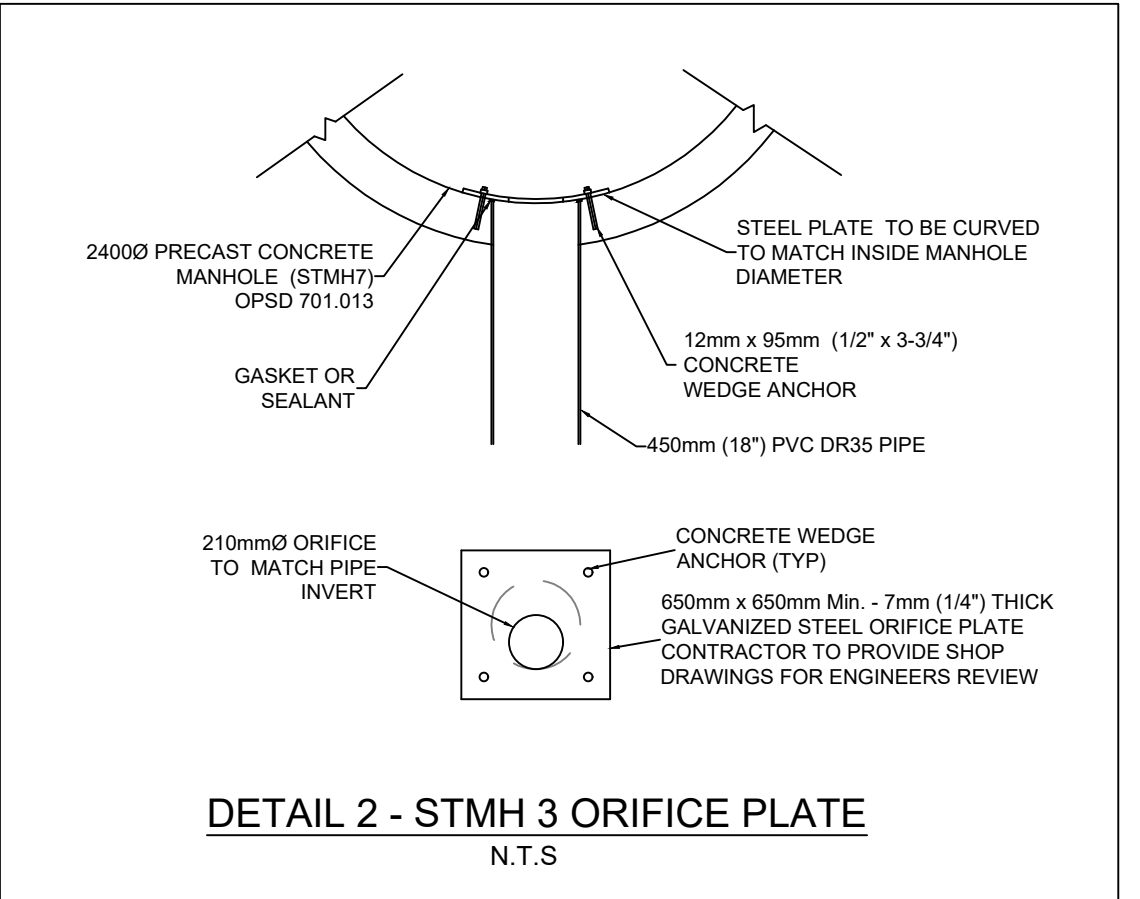
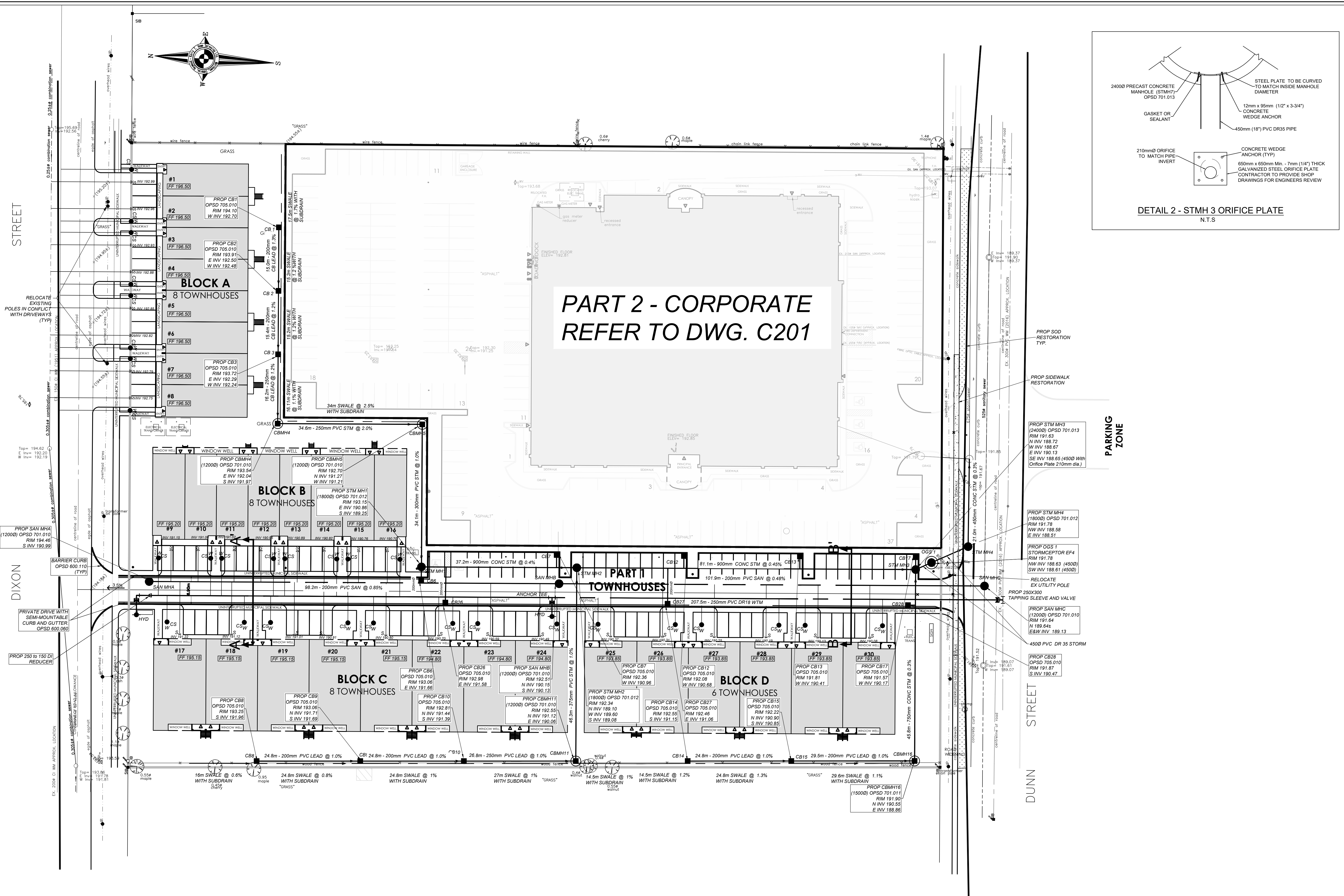
REV. 3

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X-REFERENCES: 2024/01/26 Site Plan [Viewed/Title Plan 2024/01/25 2024/01/26 Site Plan.dwg]

DRAWING NAME: Z:\VDA\Projects\2024\1001\102-5881 Dunn Street (SP)\CAD\5881 Dunn St. Development 2024/02/09.dwg

DATE: 2024/02/09  
 ISSUE: 3  
 REVISION: 1  
 DATE: 2024/02/09  
 ISSUE: 2  
 DATE: 2023/08/15  
 ISSUE: 1  
 DATE: 2023/04/14  
 ISSUE: 0  
 DATE: 2022/05/26



PART 2 - CORPORATE  
 REFER TO DWG. C201

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**Niagara Falls**  
 City of Niagara Falls  
 4310 Queen Street  
 Niagara Falls, ON, Canada  
 L2E 6X5 T: 905-536-7521

**U&EM**  
 URBAN & ENVIRONMENTAL MANAGEMENT INC.  
 PROFESSIONAL ENGINEERING SERVICES

**5881 DUNN STREET  
 PART 1 RESIDENTIAL  
 GENERAL SERVICING PLAN**

CONSULTANT FILE No. 21-102  
 DATE: 2022/03/14  
 SCALE: HOR: 1:400 m  
 SHEET No. 4  
 DWG No. C101  
 REV. 3

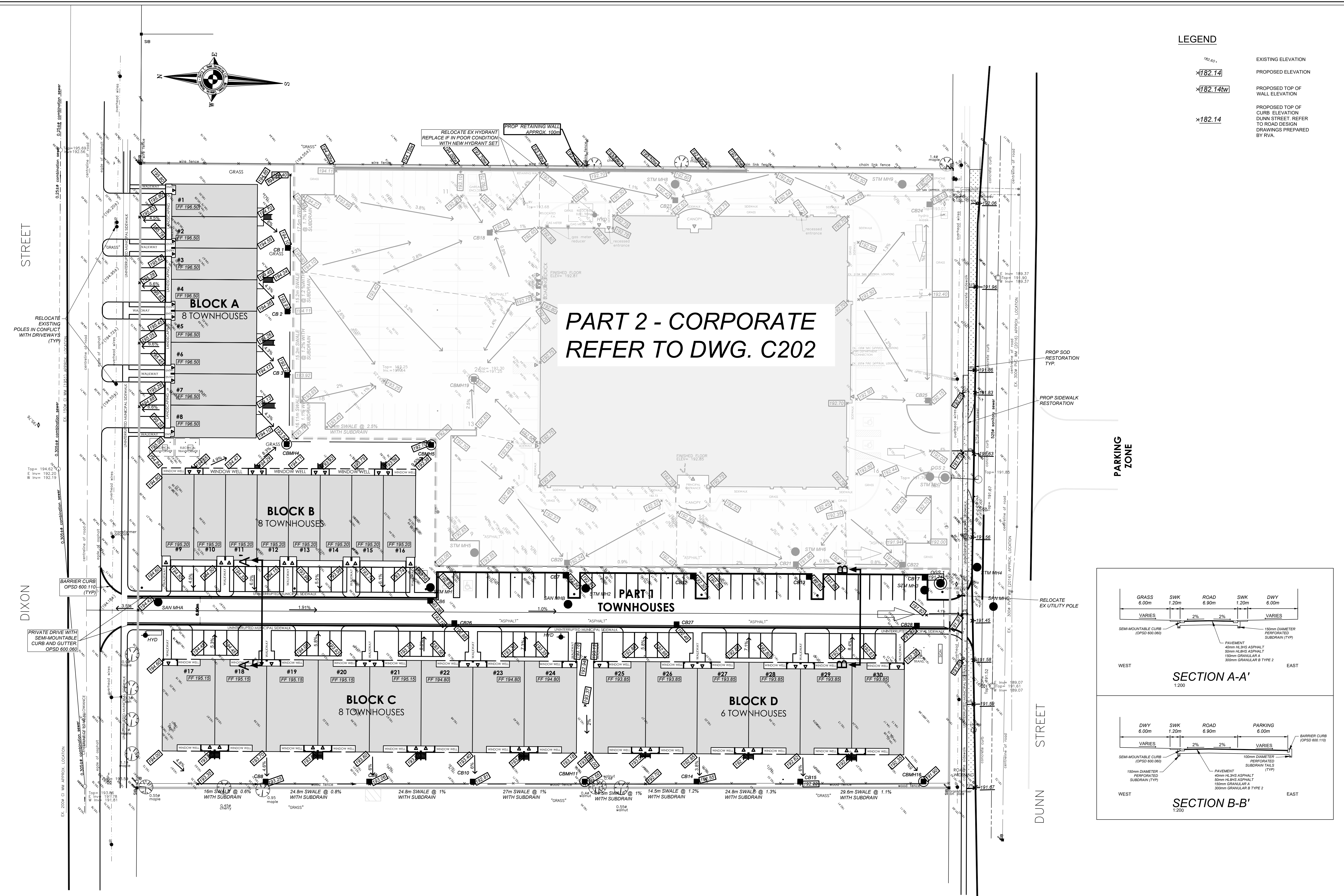
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X-REFERENCES: 20240126 Site Plan [\\network\Site Plan\20240126\20240126 Site Plan.dwg]

DRAWING NAME: Z:\VDA\Projects\2024\1001\102-5881 Dunn Street (RFP\CAD)\5881 Dunn St. Development\_2024\0209.dwg

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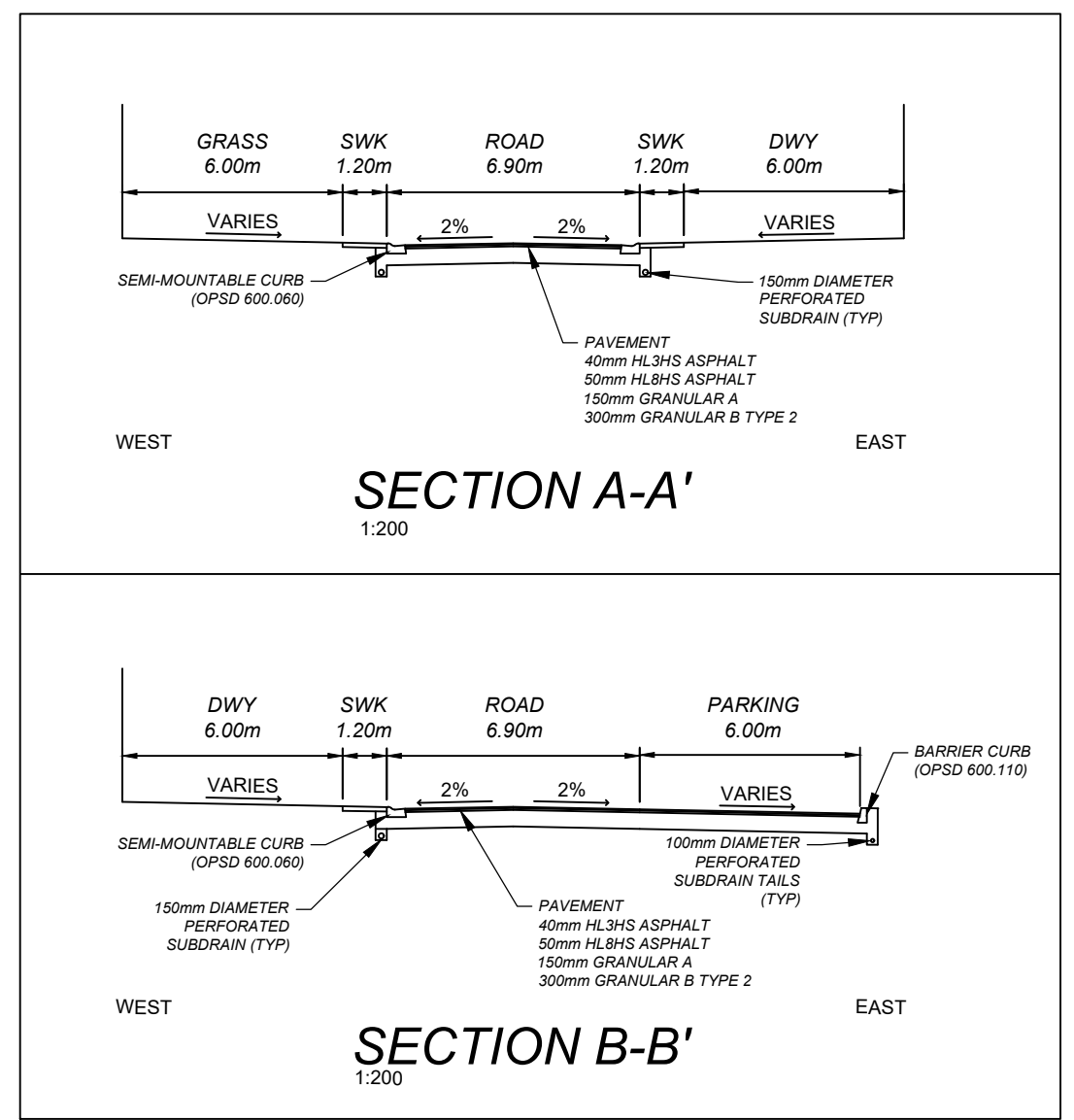
DATE: 2024/02/09  
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CHECKED BY: MM  
APPROVED BY: MM



PART 2 - CORPORATE REFER TO DWG. C202

**LEGEND**

182.80	EXISTING ELEVATION
x182.14	PROPOSED ELEVATION
x182.14w	PROPOSED TOP OF WALL ELEVATION
182.14	PROPOSED TOP OF CURB ELEVATION DUNN STREET. REFER TO ROAD DESIGN DRAWINGS PREPARED BY RVA.



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4310 Queen Street  
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UEM  
URBAN & ENVIRONMENTAL MANAGEMENT INC.  
PROFESSIONAL CORPORATION

5881 DUNN STREET PART 1 RESIDENTIAL GENERAL GRADING PLAN		CONSULTANT FILE No. 21-102	
DATE: 2022/03/14		SCALE: HOR: 1:400 m	
SHEET No. 5		REV. 3	
DWG No. C102			

GENERAL NOTES:

- 1.1 ALL MEASUREMENTS ARE IN METRIC UNITS UNLESS OTHERWISE NOTED.
1.2 CONTRACTOR TO VERIFY LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.
1.3 CIVIL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ARCHITECTURAL SITE PLAN, LANDSCAPE PLAN AND MECHANICAL DRAWINGS.
1.4 THE CONTRACTOR SHALL FIELD CHECK EXISTING CONDITIONS, VERIFY ALL DIMENSIONS, ELEVATIONS AND REPORT ANY DISCREPANCIES TO THE CONSULTANT PRIOR TO COMMENCEMENT OF ANY WORK.
1.5 ALL WORK SHALL BE IN ACCORDANCE WITH THE RELEVANT SECTIONS OF THE ONTARIO BUILDING CODE, ONTARIO PROVINCIAL STANDARD DRAWINGS AND SPECIFICATIONS, THE CITY OF NIAGARA FALLS REQUIREMENTS WHOEVER IS MORE STRINGENT UNLESS OTHERWISE NOTED ON THE DRAWINGS OR IN THE SPECIFICATIONS.
1.6 THE COST AND SUBMISSION OF ALL PERMITS ARE THE RESPONSIBILITY OF THE CONTRACTOR. PERMITS REQUIRED INCLUDE BUT MAY NOT BE LIMITED TO THE FOLLOWING: CITY OF NIAGARA FALLS PLUMBING PERMIT, NIAGARA REGION CONSTRUCTION ENCROACHMENT AND ENTRANCE PERMIT.
1.7 THE CONTRACTOR SHALL PROVIDE APPROPRIATE SHORING FOR TRENCH EXCAVATION IN ACCORDANCE WITH THE ONTARIO OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS.
1.8 SELECT NATIVE MATERIAL SHALL BE USED FOR SEWER AND WATER MAIN TRENCH BACKFILL, EXCEPT UNDER EXISTING PAVEMENT WHERE BACKFILL SHALL BE GRANULAR 'A' MATERIAL.
1.9 ALL GRANULAR BACKFILL MATERIAL SHALL BE COMPACTED TO 98% STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD). ALL NATIVE BACKFILL SHALL BE COMPACTED TO 90% SPMDD UNLESS OTHERWISE NOTED.
1.10 ALL DISTURBED AREAS SHALL BE RESTORED BY THE CONTRACTOR TO MATCH EXISTING CONDITIONS OR BETTER (I.E. EXISTING PAVEMENT, CURBS, LANDSCAPED AREAS, SIDEWALK, ETC.) OR AS NOTED ON THE DRAWINGS. HARD SURFACE MATCH LINES SHALL BE SAWCUT.
1.11 THE CONTRACTOR SHALL KEEP WORK SITE CLEAN AND FREE OF ALL CONSTRUCTION DEBRIS DURING CONSTRUCTION AND LEAVE THE SITE CLEAN UPON COMPLETION OF WORK OR PORTIONS OF WORK.
1.12 ALL PROPERTY BARS SHALL BE PROTECTED. ANY DAMAGED PROPERTY BARS SHALL BE REPLACED BY THE CONTRACTOR AT HIS OWN EXPENSE.
1.13 ALL DEVIATIONS FROM THE WORKING DRAWINGS MUST BE APPROVED BY THE CONSULTANT. THE CONTRACTOR MUST KEEP AN ACCURATE RECORD OF ALL CHANGES FROM THE ORIGINAL CONSTRUCTION DRAWINGS AND SPECIFICATIONS.
1.14 ASBUILT DRAWINGS ARE TO BE PROVIDED TO THE ENGINEER WITH FINAL SITE GRADING ELEVATIONS, VALVE LOCATIONS, MANHOLE AND CATCHBASIN STRUCTURE RIM ELEVATIONS AND INVERTS, AND ANY CHANGES TO THE DESIGN.

STORM AND SANITARY SEWERS

- 2.1 ALL SEWERS IN EARTH SHALL HAVE GRANULAR 'A' EMBEDMENT MATERIAL IN ACCORDANCE WITH OPSD 802.010 FOR FLEXIBLE PIPE, AND OPSD 802.021 CLASS B BEDDING FOR RIGID PIPE.
2.2 ALL PVC SEWER PIPE FOR STORM AND SANITARY SYSTEMS, SHALL HAVE PIPE JOINTS AND FITTINGS RATED FOR 50 PSI PRESSURE (PEX RING TIE OR APPROVED EQUIVALENT) AND WHERE THERE IS LESS THAN 24mm SPIRAL SEPARATION FROM WATER MAIN OR WATER SERVICE, SEWERS SHALL BE MANDREL TESTED AND LOW PRESSURE AIR TESTED AS PER OPSD 410 AT 5 PSI.
2.3 FROST PROTECTION SHALL BE PROVIDED FOR SEWERS WITH LESS THAN 1.2 M COVER AS PER DETAIL.
2.4 STORM SEWER PIPE 375mm OR SMALLER SHALL BE PVC DR35, IN CONFORMANCE WITH CSA B182.2. PVC PROFILE PIPE WILL NOT BE ACCEPTED.
2.5 STORM SEWER PIPE 450mm OR LARGER SHALL BE REINFORCED CONCRETE PIPE CANCSA A27.2 (M) UNLESS NOTED OTHERWISE.
2.6 SUBDRAIN SHALL BE 100mm DIA. PERFORATED HIGH DENSITY POLYETHYLENE (HDPE) PIPE WITH KNITTED GEOTEXTILE SOCK AS PER OPSD 405, UNLESS NOTED OTHERWISE.
2.7 ALL PAVING LOT CATCHBASINS TO HAVE 3m LONG SUBDRAIN TAILS INSTALLED IN TWO DIRECTIONS WITH ENDS CAPPED.
2.8 ALL CATCHBASIN LEADS SHALL BE MINIMUM 200mm PVC DR35, UNLESS NOTED OTHERWISE ON PLANS.
2.9 SANITARY LATERALS SHALL BE 100mm PVC DR28 IN CONFORMANCE WITH CSA B182.2.
2.10 SANITARY SEWER PIPE SHALL BE 200mm PVC DR35 IN CONFORMANCE WITH CSA B182.2.
2.11 SANITARY SEWER PIPE CONNECTIONS TO CONCRETE STRUCTURES SHALL BE MADE USING KOR-N-SEAL FITTING OR APPROVED EQUAL.
2.12 ALL SEWERS SHALL BE FLUSHED AND VIDEO INSPECTED AS PER OPSD 409. SEWER FLUSHING SHALL BE DONE PRIOR TO VIDEO INSPECTION AND SHALL INCLUDE CLEANING OF ALL SWAYS AND BENCHES. FLUSHED MATERIAL IS TO BE KEPT OUT OF THE MUNICIPAL SYSTEM. THREE (3) COPIES OF THE VIDEO AND REPORT SHALL BE SUBMITTED TO THE CONTRACT ADMINISTRATOR.

WATER

- 3.1 CONSTRUCTION OF ALL WATERMANS, WATER SERVICES, AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE OPSD'S AND THE CITY OF NIAGARA FALLS STANDARDS, WHICHEVER IS MORE STRINGENT.
3.2 WATER MAIN SHALL BE PVC DR 18, CSA B137.3 CONFORMING TO AWWA C900 CLASS 150.
3.3 WATER MAIN AND WATER SERVICES SHALL BE INSTALLED WITH 1.5m COVER AND SHALL BE CAPPED AND MARKED WITH A 2X4 STAKE PAINTED BLUE.
3.4 WATER SERVICE PIPING SHALL BE 50mm (2") CROSS LINKED POLYETHYLENE (PEX) PIPING OR 38mm (1-1/2") TYPE K SOFT COPPER.
3.5 VALVES SHALL BE AS PER CITY OF NIAGARA FALLS STANDARDS.
3.6 VALVE BOXES, TYPES AND SIZES, SHALL BE AS PER CITY OF NIAGARA FALLS REQUIREMENTS.
3.7 CATHODIC PROTECTION SHALL BE PROVIDED ON ALL WATER MAIN VALVES, BENDS AND FITTINGS WITH 11.0 kg ZINC ANODES. WATER SERVICES SHALL HAVE 5.0 kg ZINC ANODES INSTALLED AT CURB STOPS.
3.8 CITY TO BE NOTIFIED 48 HOURS PRIOR TO CONNECTION TO THE MUNICIPAL WATER SERVICE. THE CONNECTION SHALL BE MADE BY A LICENSED DRINKING WATER OPERATOR QUALIFIED TO PERFORM THE WORK.
3.9 ALL VALVE BOXES AND CURB BOXES SHALL BE SET FLUSH WITH FINAL GRADE. SHALL BE KEPT OPERATIONAL AND SHALL BE PROTECTED FROM DAMAGE.
3.10 TRACER WIRE SHALL BE 8 GAUGE 7 STRAND INSULATED WIRE AND SHALL BE INSTALLED ON ALL PVC PIPE. TRACER WIRE SHALL TERMINATE AT VALVE BOX.
3.11 THRUST BLOCKS FOR WATERMANS SHALL BE AS PER OPSD 1103.010 & OPSD 1103.020.
3.12 JOINT RESTRAINT SHALL BE MEGALUG PVC SERIES 2000 PV OR STAINLESS STEEL BOLTS OR APPROVED EQUAL.
3.13 FIRE HYDRANT SHALL MEET CITY OF NIAGARA FALLS SPECIFICATIONS AND SHALL BE PAINTED TO NIAGARA FALLS STANDARD COLOURS.
3.14 HYDRANT SETS SHALL INCLUDE 150mm PVC DR18 HYDRANT LEAD, RESTRAINTS, TRACER WIRE, ANCHOR TEE AND VALVE, AND RISER ADJUSTMENTS AS REQUIRED.

CONCRETE STRUCTURES

- 4.1 MANHOLES AND CATCHBASIN SIZES AND TYPES AS NOTED ON THE DRAWINGS.
4.2 ALL SANITARY MANHOLES SHALL HAVE MONOLITHIC BASES AND SHALL BE INSTALLED WITH BENCHING AS PER OPSD 701.021.
4.3 ALL SANITARY MANHOLES SHALL BE SUPPLIED WITH FLEXIBLE CONNECTIONS (KOR-N-SEAL RUBBER BOOTS OR APPROVED EQUAL).
4.4 ALL SANITARY MANHOLES SHALL HAVE PRECAST JOINTS WRAPPED.
4.5 ALL MANHOLE FRAME AND COVERS SHALL BE CLOSED TYPE 'A' AS PER OPSD 401.010.
4.6 ALL TOPS OF MANHOLES SHALL BE SET FLUSH WITH FINAL GRADES. ADDITIONAL LADDER RUNGS SHALL BE INSTALLED AS REQUIRED.
4.7 CATCH BASIN FRAME AND GRATES SHALL BE FLAT TYPE AS PER OPSD 400.020.
4.8 ALL TOPS OF CATCH BASINS SHALL BE SET FLUSH WITH FINAL GRADES.
4.9 CONCRETE ADJUSTMENT UNITS AS PER OPSD 704.010 SHALL BE PROVIDED AS REQUIRED TO SET RIM ELEVATION FLUSH WITH FINAL ELEVATION.
4.10 ALL CATCHBASIN GRATES SHALL BE WRAPPED WITH NONWOVEN GEOTEXTILE (TERRAFIX 270R) OR EQUIVALENT FOR SEDIMENT CONTROL. CONTRACTOR TO CLEAN AND MAINTAIN SEDIMENT CONTROL MEASURES. CONTRACTOR TO REMOVE GEOTEXTILE FROM GRATES AT COMPLETION OR AS DIRECTED BY THE CONTRACT ADMINISTRATOR.
4.11 OIL GREASE SEPARATORS SHALL BE A STORMCEPTOR EF MODEL AS NOTED ON PLAN OR APPROVED EQUIVALENT. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR ENGINEER REVIEW AND APPROVAL. SEE INSTRUCTIONS. CONTRACTOR SHALL CLEAN OUT UNIT AFTER COMPLETION OF SITE WORKS AND SITE LANDSCAPING AND PROVIDE ENGINEER WITH CONFIRMATION OF CLEANING AND THREE (3) COPIES OF THE OPERATIONS AND MAINTENANCE MANUAL.

MUNICIPAL WORKS

- 5.1 THE CONTRACTOR IS TO OBTAIN A REGIONAL CONSTRUCTION ENCROACHMENT AND ENTRANCE PERMITS FROM THE TRANSPORTATION SERVICES DIVISION, PUBLIC WORKS DEPARTMENT, FOR ANY WORKS TAKING PLACE WITHIN THE REGIONAL ROAD ALLOWANCE. PERMITS, AS REQUIRED, FROM THE REGION AND CITY OF NIAGARA FALLS, SHALL BE OBTAINED AND PAID FOR BY THE CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION ON MUNICIPAL PROPERTY.
5.2 ALL WORK CARRIED OUT ON MUNICIPAL PROPERTY SHALL BE IN ACCORDANCE WITH THE APPLICABLE CITY OF NIAGARA FALLS REQUIREMENTS.
5.3 CONTRACTOR IS TO PREPARE A TRAFFIC CONTROL PLAN AS PER ONTARIO TRAFFIC MANUAL BOOK 7 REQUIREMENTS.
5.4 CONCRETE CURB AND GUTTER SHALL BE AS PER APPLICABLE MUNICIPALITY REQUIREMENTS.
5.5 ASPHALT PAVEMENT RESTORATION SHALL BE AS PER APPLICABLE MUNICIPALITY REQUIREMENTS.
5.6 BOLLIVARD RESTORATION OF LANDSCAPED AREAS SHALL BE WITH TOPSOIL AND SOD AS PER APPLICABLE MUNICIPALITY REQUIREMENTS.

RELEVANT SPECIFICATIONS

Table with 2 columns: Specification Code and Description. Includes OPSD 206 Grading, OPSD 310 Hot Mix Asphalt, OPSD 314 Unreinforced Granular Concrete Sidewalk, OPSD 381 Concrete Curb and Gutter Systems, OPSD 401 Trenching, Backfilling and Compacting, OPSD 402 Excavating, Backfilling and Compacting for Mr's, Cb's, D's and V's, OPSD 405 Subdrains, OPSD 407 Maintenance Holes, Catch Basin, Ditch Inlet and Valve Chamber Installation, OPSD 409 Closed-Circuit Television Inspection of Pipelines, OPSD 410 Pipe Sewer Installation in Open Cut, OPSD 441 Watermain Installation in Open Cut, OPSD 501 Compacting, OPSD 510 Removal, OPSD 516 Control of Water from Dewatering Operations, OPSD 802 Topsoil, OPSD 803 Sodding, OPSD 804 Seed and Cover, OPSD 805 Temporary Erosion and Sediment Control Measures.

RELEVANT STANDARD DRAWINGS

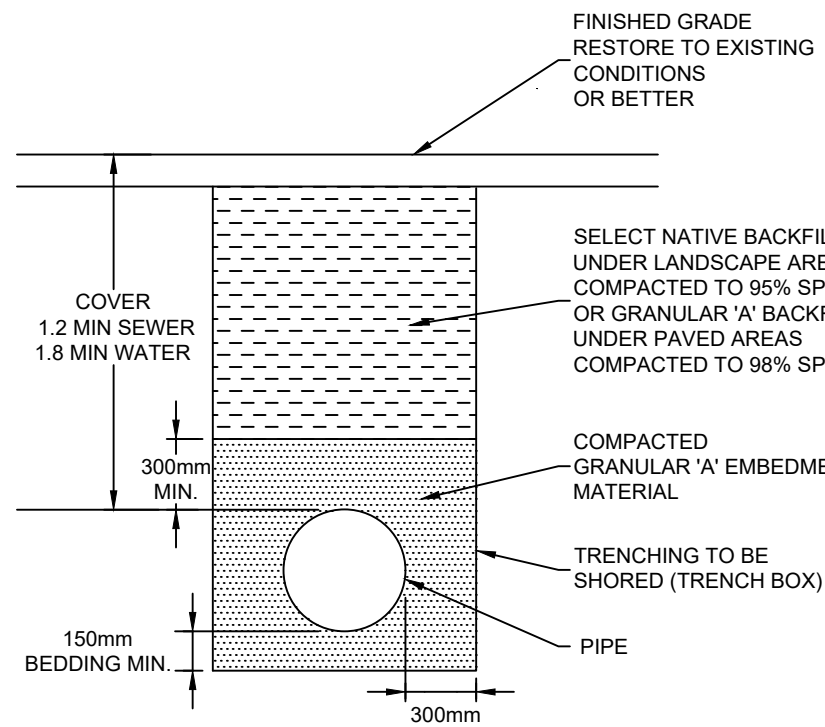
Table with 2 columns: Drawing Code and Description. Includes OPSD 219.110 Light Duty 5ft Fence Barrier, OPSD 219.180 Stone Base Flow Check Dam, OPSD 310.010 Concrete Sidewalk, OPSD 400.020 Catch Basin Frame and Flat Grate (Herring Bone), OPSD 401.010 Manhole Frame and Closed Cover (Type 'A'), OPSD 600.090 Concrete Reinforced Curb with Standard Curb, OPSD 600.110 Concrete Barrier Curb, OPSD 701.010 Precast Concrete Maintenance Hole, 1200mm Diameter, OPSD 701.011 Precast Concrete Maintenance Hole, 1500mm Diameter, OPSD 701.012 Precast Concrete Maintenance Hole, 2000mm Diameter, OPSD 701.013 Precast Concrete Maintenance Hole, 2400mm Diameter, OPSD 701.014 Precast Concrete Maintenance Hole, 3000mm Diameter, OPSD 701.021 Maintenance Hole Benchmarking Details and Sizing, OPSD 705.010 Precast Concrete Catch Basin 600x600 mm with sump, OPSD 802.010 Flexible Pipe Encasement and Backfill, Earth Excavation, OPSD 802.031 Rigid Pipe Bedding, Cover and Backfill, Type 3 Soil Earth Excavation, OPSD 1103.010 Concrete Thrust Block (Horizontal), OPSD 1103.020 Concrete Thrust Block (Vertical), OPSD 1106.010 Water Service Connection 18 and 25mm Diameter Sizes.

OPSD 1108.011 Cathodic Protection

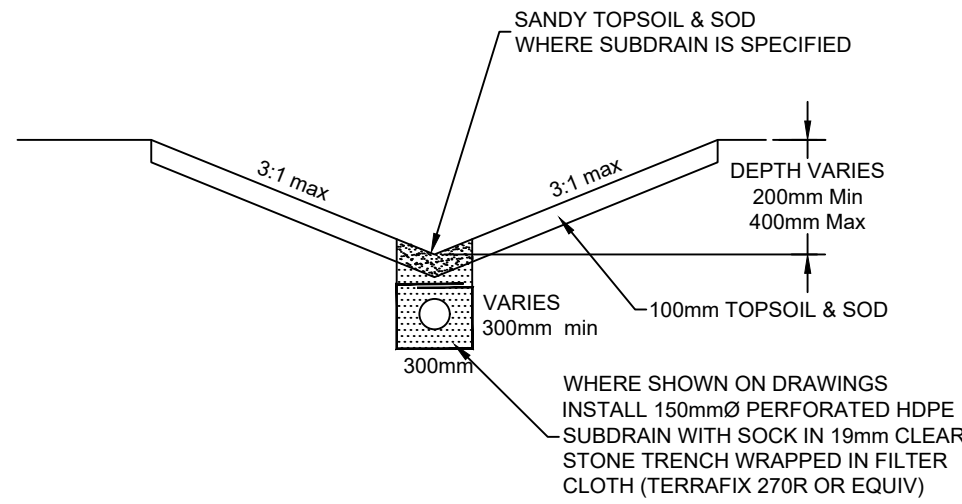
LEGEND

- EXISTING ELEVATION
EXISTING ELEVATION INTERPOLATED
EXISTING MANHOLE
EXISTING CATCHBASIN
EXISTING FIRE HYDRANT
EXISTING WATER VALVE
EXISTING CURB STOP
EXISTING STORM SEWER
EXISTING SANITARY SEWER
EXISTING WATER LINE
EXISTING GAS LINE
PROPOSED ELEVATION
PROPOSED ELEVATION TOP OF CURB
PROPOSED ENTRANCE
PROPOSED MANHOLE
PROPOSED CATCHBASIN
PROPOSED HYDRANT
PROPOSED WATER VALVE
PROPOSED CURBSTOP

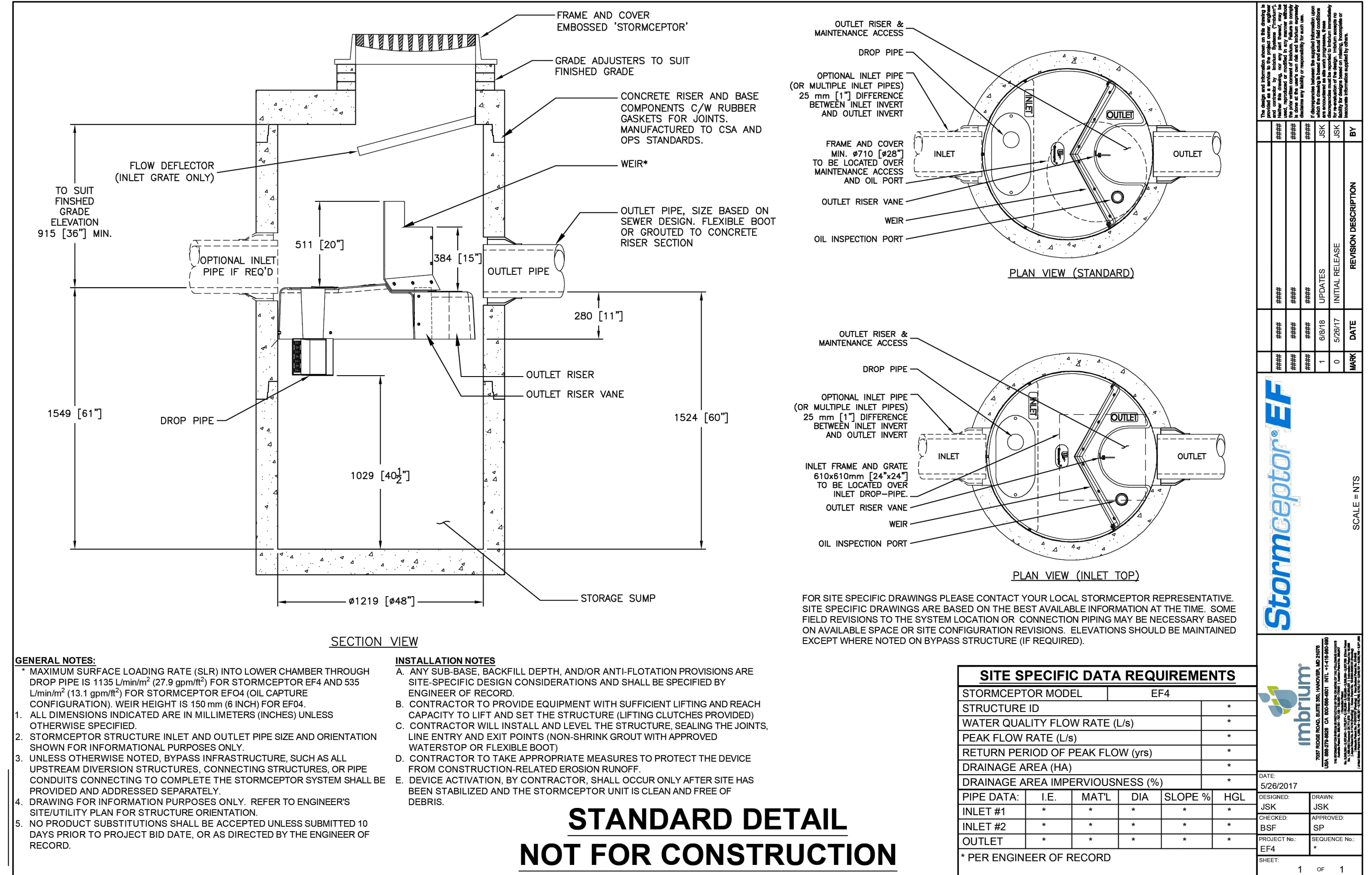
- PROPOSED WATER
PROPOSED SANITARY SEWER
PROPOSED STORM SEWER
PROPOSED SWALE
PROPOSED SUBDRAIN
PROPOSED SILT FENCE
DRAINAGE BREAKLINE
FLOW DIRECTION
OVERLAND FLOW



TYPICAL TRENCH DETAIL N.T.S.



TYPICAL SWALE DETAIL N.T.S.



STANDARD DETAIL NOT FOR CONSTRUCTION

GENERAL NOTES:

- 1. MAXIMUM SURFACE LOADING RATE (SLR) INTO LOWER CHAMBER THROUGH DROP PIPE IS 1135 L/min/m² (27.9 gpm/ft²) FOR STORMCEPTOR EF4 AND 535 L/min/m² (13.1 gpm/ft²) FOR STORMCEPTOR EF04 (OIL CAPTURE CONFIGURATION). WEIR HEIGHT IS 150 mm (6 INCH) FOR EF04, OTHERWISE SPECIFIED.
2. STORMCEPTOR STRUCTURE INLET AND OUTLET PIPE SIZE AND ORIENTATION SHOWN FOR INFORMATIONAL PURPOSES ONLY.
3. UNLESS OTHERWISE NOTED, BYPASS INFRASTRUCTURE, SUCH AS ALL UPSTREAM DIVERSION STRUCTURES, CONNECTING STRUCTURES, OR PIPE CONDUITS CONNECTING TO COMPLETE THE STORMCEPTOR SYSTEM SHALL BE PROVIDED AND ADDRESSED SEPARATELY.
4. DRAWING FOR INFORMATION PURPOSES ONLY. REFER TO ENGINEER'S SITE/UTILITY PLAN FOR STRUCTURE ORIENTATION.
5. NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

INSTALLATION NOTES

- A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT).
D. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT THE DEVICE FROM CONSTRUCTION-RELATED EROSION RUNOFF.
E. DEVICE ACTIVATION, BY CONTRACTOR, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE STORMCEPTOR UNIT IS CLEAN AND FREE OF DEBRIS.

SITE SPECIFIC DATA REQUIREMENTS

Table with columns: Stormceptor Model, Structure ID, Water Quality Flow Rate (L/s), Peak Flow Rate (L/s), Return Period of Peak Flow (yrs), Drainage Area (HA), Drainage Area Imperviousness (%). Includes a table for Pipe Data with columns: Pipe #1, Pipe #2, Inlet, Outlet, Material, Diameter, Slope, Height.

Revision table and project information including Stormceptor EF logo, imbrum logo, and project details.

XX-####

Drawings Name: Z:\VDA\Projects\2024\1001-102-5881 Dunn Street (SP)CAD\5881 Dunn St. Development\_20240209.dwg

Vertical text on the left margin: LINES, DIMS, HATCH, etc.

NOTES

- 1. The position of pole lines, conduits, watermains, sewers, and other underground and above ground 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 identify the exact location of all such utilities and structures and shall assume liability for change if any.
2. Check of dimensions and report any inaccuracies to the Engineer before proceeding with the work - DO NOT SCALE DIMENSIONS.
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Table with columns: DRAFTING (EL/JS), DESIGN (EL/JS), CHECKED BY (MM), APPROVED BY (MM).

Table with columns: STAMP, STAMP.

BENCHMARK DATUM (# 8010867083) ELEVATIONS ARE GEODETIC ORIGIN DERIVED FROM THE GEODETIC BENCHMARK, LOCATED



5881 DUNN STREET PART 1 RESIDENTIAL

DETAILS, LEGEND AND NOTES

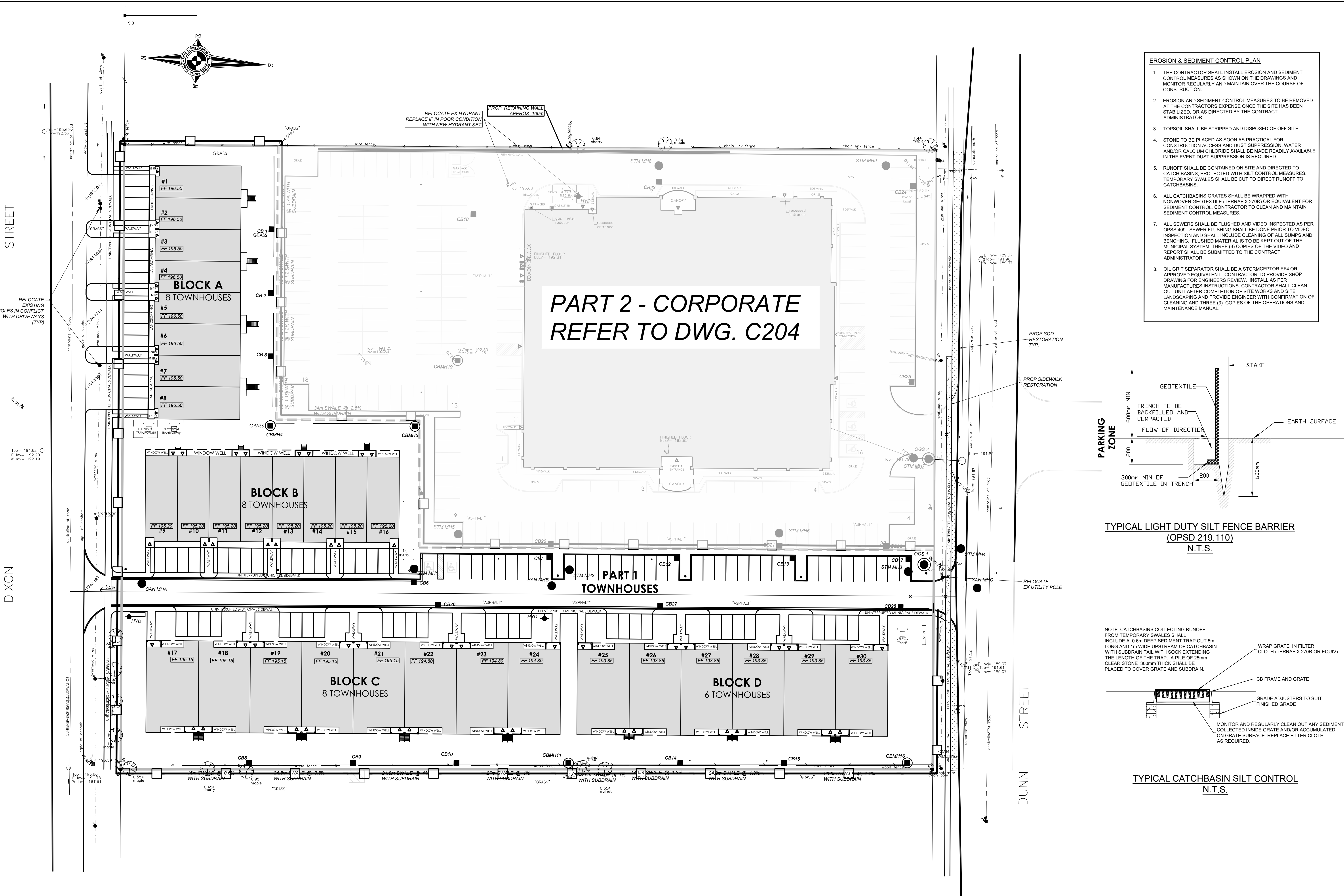
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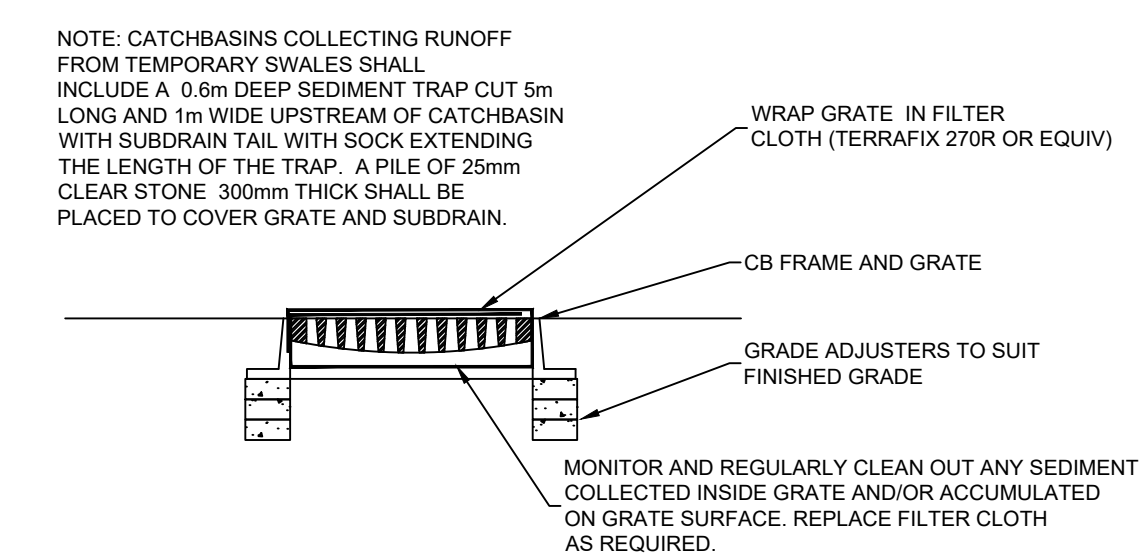
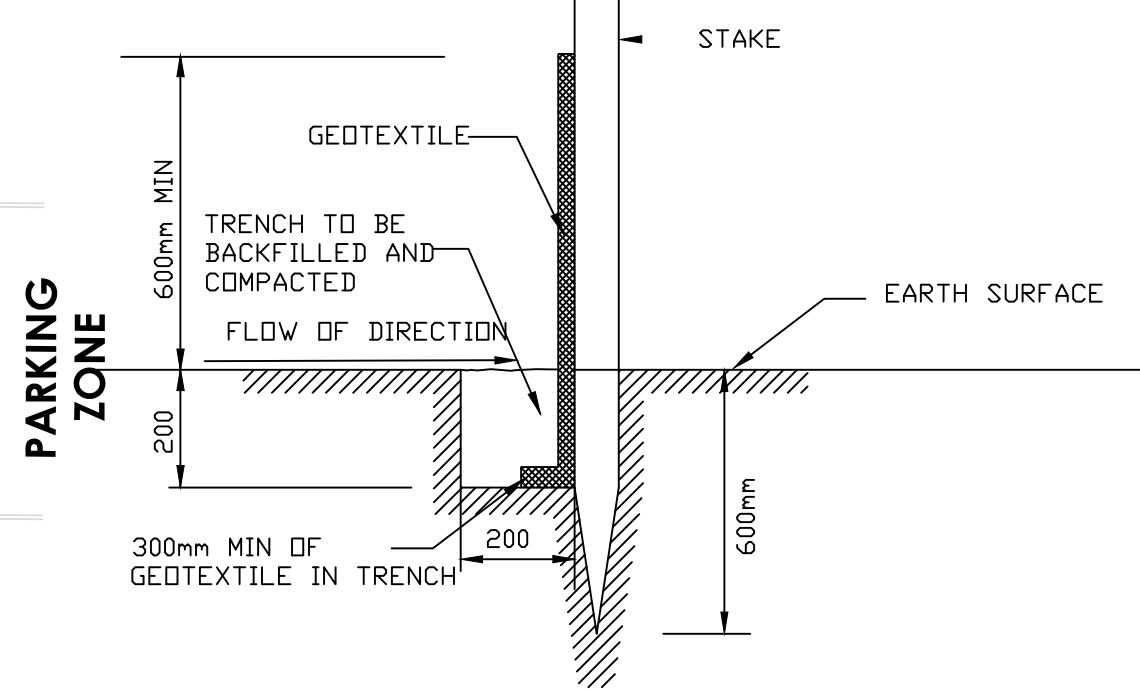
X-REFERENCES: 20240126 Site Plan [\\network\Site Plan 20240126\20240126 Site Plan.dwg]

DRAWING NAME: Z:\VDA\Projects\2024\100\1-102-5881 Dunn Street ESR\CAD\5881 Dunn St. Development 20240209.dwg

DATE: 2024/02/09  
 DESIGNED BY: MM  
 CHECKED BY: MM  
 APPROVED BY: MM



- EROSION & SEDIMENT CONTROL PLAN**
1. THE CONTRACTOR SHALL INSTALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON THE DRAWINGS AND MONITOR REGULARLY AND MAINTAIN OVER THE COURSE OF CONSTRUCTION.
  2. EROSION AND SEDIMENT CONTROL MEASURES TO BE REMOVED AT THE CONTRACTOR'S EXPENSE ONCE THE SITE HAS BEEN STABILIZED, OR AS DIRECTED BY THE CONTRACT ADMINISTRATOR.
  3. TOPSOIL SHALL BE STRIPPED AND DISPOSED OF OFF SITE.
  4. STONE TO BE PLACED AS SOON AS PRACTICAL FOR CONSTRUCTION ACCESS AND DUST SUPPRESSION. WATER AND/OR CALCIUM CHLORIDE SHALL BE MADE READILY AVAILABLE IN THE EVENT DUST SUPPRESSION IS REQUIRED.
  5. RUNOFF SHALL BE CONTAINED ON SITE AND DIRECTED TO CATCH BASINS. PROTECTED WITH SILT CONTROL MEASURES. TEMPORARY SWALES SHALL BE CUT TO DIRECT RUNOFF TO CATCHBASINS.
  6. ALL CATCHBASIN GRATES SHALL BE WRAPPED WITH NONWOVEN GEOTEXTILE (TERRAFIX 270R) OR EQUIVALENT FOR SEDIMENT CONTROL. CONTRACTOR TO CLEAN AND MAINTAIN SEDIMENT CONTROL MEASURES.
  7. ALL SEWERS SHALL BE FLUSHED AND VIDEO INSPECTED AS PER OPS 409. SEWER FLUSHING SHALL BE DONE PRIOR TO VIDEO INSPECTION AND SHALL INCLUDE CLEANING OF ALL SUMP AND BENCHING. FLUSHED MATERIAL IS TO BE KEPT OUT OF THE MUNICIPAL SYSTEM. THREE (3) COPIES OF THE VIDEO AND REPORT SHALL BE SUBMITTED TO THE CONTRACT ADMINISTRATOR.
  8. OIL GRIT SEPARATOR SHALL BE A STORMCEPTOR EP4 OR APPROVED EQUIVALENT. CONTRACTOR TO PROVIDE SHOP DRAWING FOR ENGINEERS REVIEW. INSTALL AS PER MANUFACTURER'S INSTRUCTIONS. CONTRACTOR SHALL CLEAN OUT UNIT AFTER COMPLETION OF SITE WORKS AND SITE LANDSCAPING AND PROVIDE ENGINEER WITH CONFIRMATION OF CLEANING AND THREE (3) COPIES OF THE OPERATIONS AND MAINTENANCE MANUAL.



**NOTES**

1. The position of pole lines, conduits, watermains, sewers, and other underground and above ground utilities and structures is not necessarily shown on the contract drawings, and where the accuracy of the position of such utilities and structures is not guaranteed. Before starting work, the contractor shall identify the exact location of all such utilities and structures and shall assume liability for change in them.
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DESIGN EL/JS		
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BENCHMARK DATUM  
 (# 8010867083)  
 ELEVATIONS ARE GEODETIC ORIGIN DERIVED FROM THE GEODETIC BENCHMARK, LOCATED

City of Niagara Falls  
 4310 Queen Street  
 Niagara Falls, ON, Canada  
 L2E 6X5 T: 905-556-7521

URBAN & ENVIRONMENTAL MANAGEMENT INC.  
 PROFESSIONAL CORPORATION

**5881 DUNN STREET  
 PART 1 RESIDENTIAL  
 EROSION AND SEDIMENT CONTROL PLAN**

CONSULTANT FILE No. 21-102
DATE 2022/03/14
SHEET No. 7
DWG No. C104
REV. 3

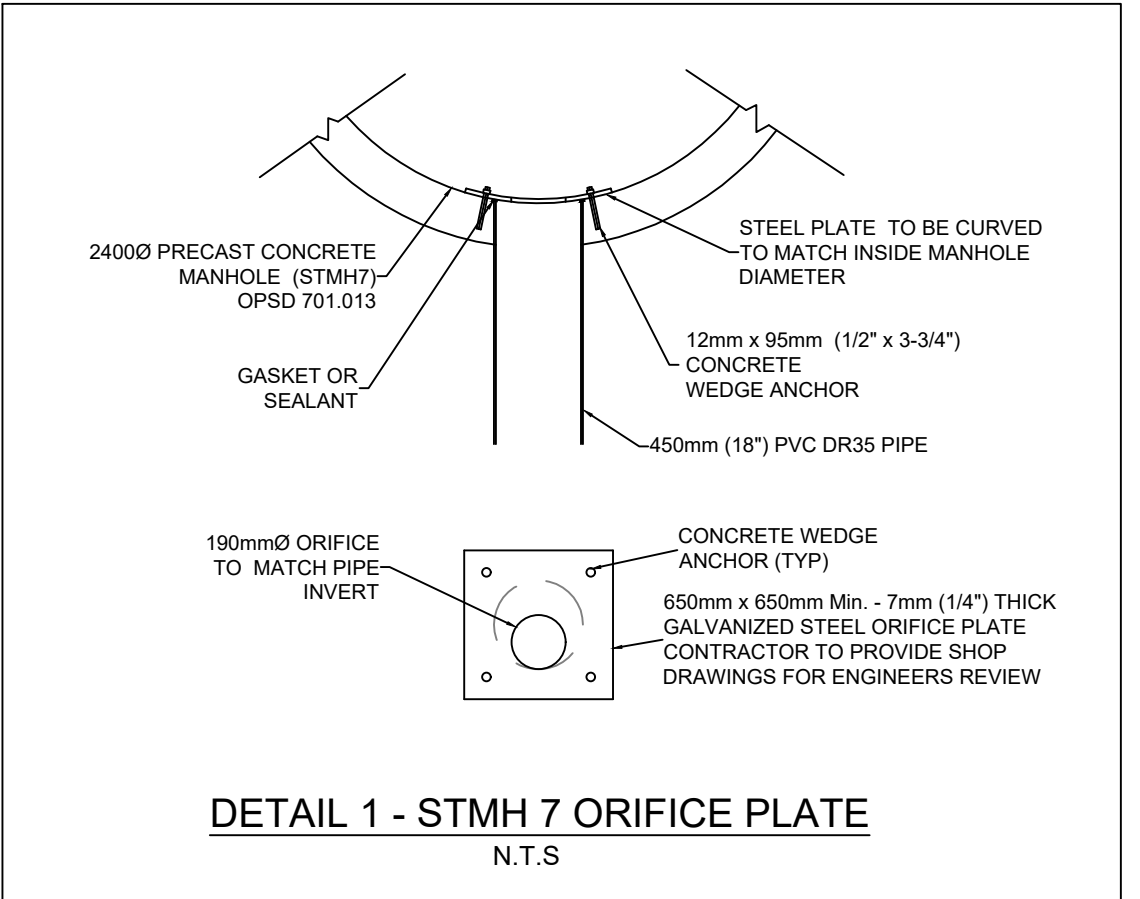
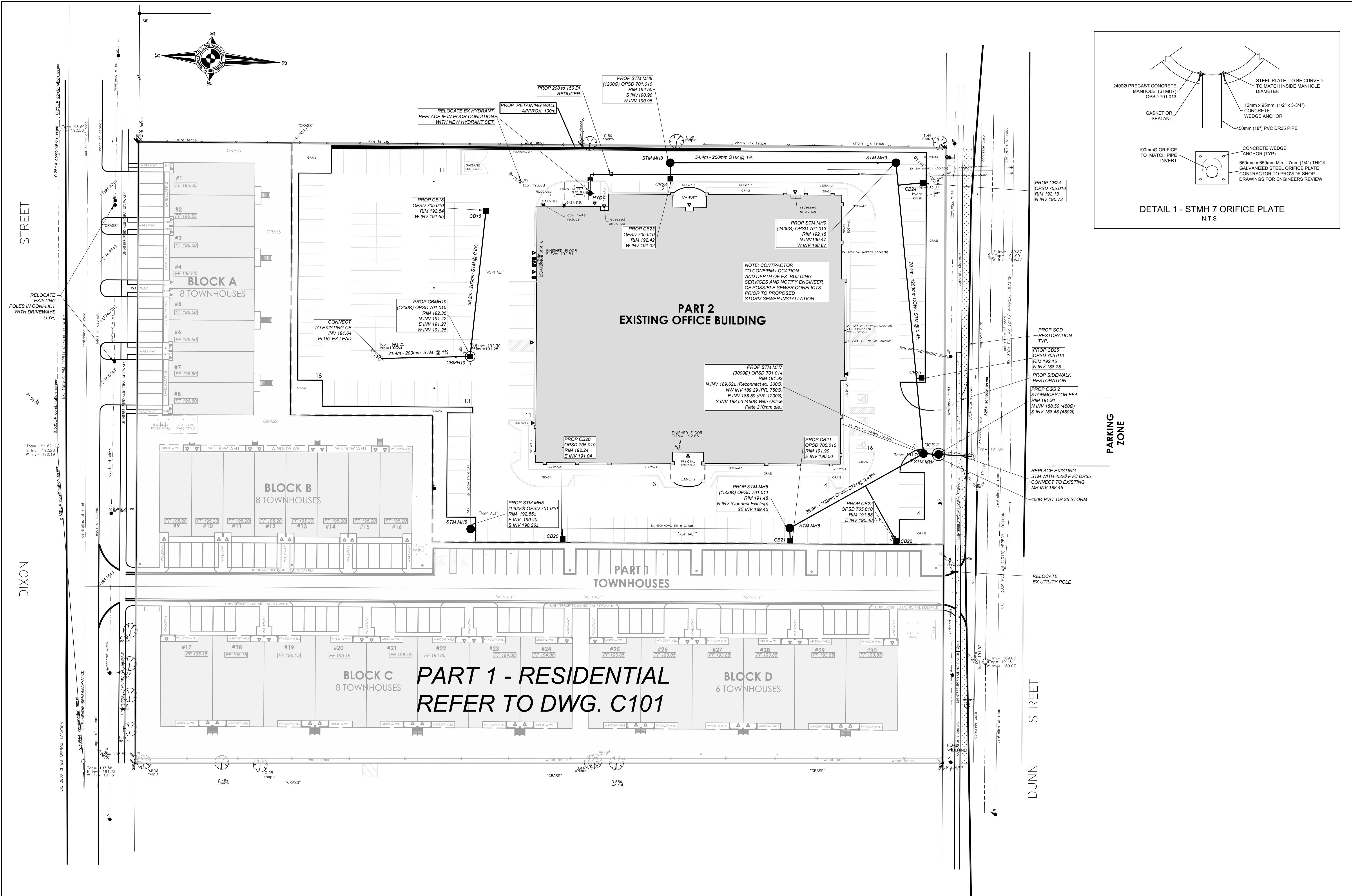
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X-REFERENCES: 20240126 Site Plan [\\network\Site Plan 2024\0126 20240126 Site Plan.dwg]

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ISSUES

NO.	REVISION	DATE	INIT.
3	ISSUED FOR SITE PLAN APPLICATION	2024/02/09	MM
2	ISSUED FOR DESIGN COORDINATION	2023/08/15	MM
1	ISSUED FOR DESIGN COORDINATION	2023/04/14	MM
0	ISSUED FOR DESIGN COORDINATION	2022/05/26	MM



**NOTES**

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 4310 Queen Street  
 Niagara Falls, ON, Canada  
 L2E 6X5 T: 905-556-7521

**5881 DUNN STREET  
 PART 2 CORPORATE  
 GENERAL SERVING PLAN**

CONSULTANT FILE No. 21-102	DATE 2022/03/14
SHEET No. 8	SCALE HOR: 1:400 m
DWG No. C201	REV. 3



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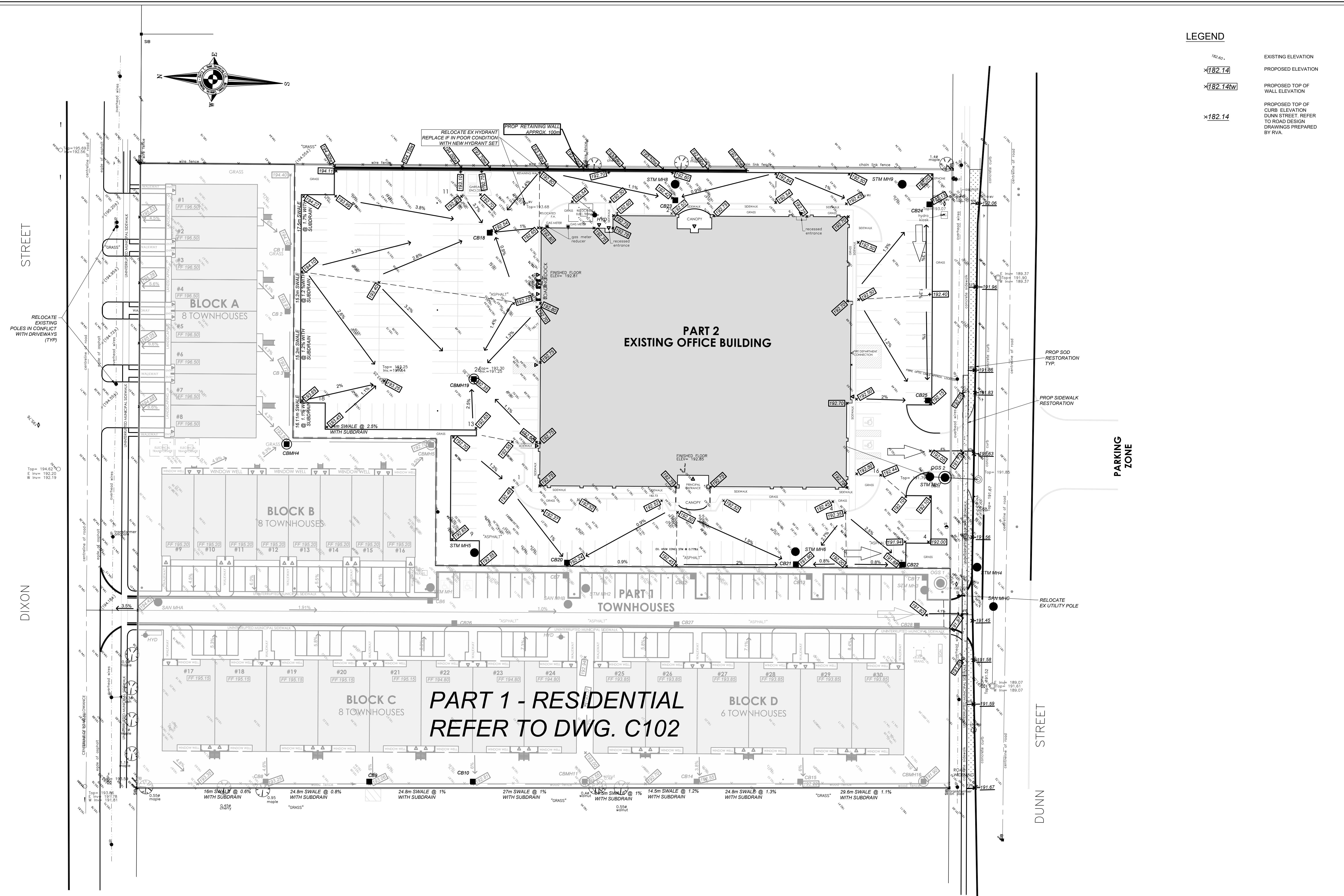
X-REFERENCES: 20240126 Site Plan [\\network\Site Plan 2024\0126 20240126 Site Plan.dwg]

DRAWING NAME: Z:\VDA\Projects\2024\2024-102-5881 Dunn Street (P)CAD\5881 Dunn St. Development 2024\0209.dwg

IMAGES:

REFERENCES:

DATE	BY	APP'D
2024/02/09	MM	MM
2023/08/15	MM	MM
2023/04/14	MM	MM
2022/05/26	MM	MM



**LEGEND**

192.60	EXISTING ELEVATION
X182.14	PROPOSED ELEVATION
X182.14w	PROPOSED TOP OF WALL ELEVATION
X182.14	PROPOSED TOP OF CURB ELEVATION DUNN STREET. REFER TO ROAD DESIGN DRAWINGS PREPARED BY RVA.

NO.	REVISION	DATE	INIT.
3	ISSUED FOR SITE PLAN APPLICATION	2024/02/09	MM
2	ISSUED FOR DESIGN COORDINATION	2023/08/15	MM
1	ISSUED FOR DESIGN COORDINATION	2023/04/14	MM
0	ISSUED FOR DESIGN COORDINATION	2022/05/26	MM

**NOTES**

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(# 8010867083)  
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City of Niagara Falls  
4310 Queen Street  
Niagara Falls, ON, Canada  
L2E 6X5 T: 905-536-7521

URBAN & ENVIRONMENTAL MANAGEMENT INC.  
PROFESSIONAL CORPORATION

5881 DUNN STREET PART 2 CORPORATE GENERAL GRADING PLAN		CONSULTANT FILE No. 21-102
DATE 2022/03/14		SCALE HOR: 1:400 m
SHEET No. 9		
DWG No. C202	REV. 3	

- GENERAL NOTES:**
- 1.1 ALL MEASUREMENTS ARE IN METRIC UNITS UNLESS OTHERWISE NOTED.
  - 1.2 CONTRACTOR TO VERIFY LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.
  - 1.3 CIVIL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ARCHITECTURAL SITE PLAN, LANDSCAPE PLAN AND MECHANICAL DRAWINGS.
  - 1.4 THE CONTRACTOR SHALL FIELD CHECK EXISTING CONDITIONS, VERIFY ALL DIMENSIONS, ELEVATIONS AND REPORT ANY DISCREPANCIES TO THE CONSULTANT PRIOR TO COMMENCEMENT OF ANY WORK.
  - 1.5 ALL WORK SHALL BE IN ACCORDANCE WITH THE RELEVANT SECTIONS OF THE ONTARIO BUILDING CODE, ONTARIO PROVINCIAL STANDARD DRAWINGS AND SPECIFICATIONS, THE CITY OF NIAGARA FALLS REQUIREMENTS WHICH EVER IS MORE STRINGENT UNLESS OTHERWISE NOTED ON THE DRAWINGS OR IN THE SPECIFICATIONS.
  - 1.6 THE COST AND SUBMISSION OF ALL PERMITS ARE THE RESPONSIBILITY OF THE CONTRACTOR. PERMITS REQUIRED INCLUDE BUT MAY NOT BE LIMITED TO THE FOLLOWING: CITY OF NIAGARA FALLS PLUMBING PERMIT, NIAGARA REGION CONSTRUCTION ENCROACHMENT AND ENTRANCE PERMIT.
  - 1.7 THE CONTRACTOR SHALL PROVIDE APPROPRIATE SHORING FOR TRENCH EXCAVATION IN ACCORDANCE WITH THE ONTARIO OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS.
  - 1.8 SELECT NATIVE MATERIAL SHALL BE USED FOR SEWER AND WATER MAIN TRENCH BACKFILL, EXCEPT UNDER EXISTING PAVEMENT WHERE BACKFILL SHALL BE GRANULAR 'A' MATERIAL.
  - 1.9 ALL GRANULAR BACKFILL MATERIAL SHALL BE COMPACTED TO 95% STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD). ALL NATIVE BACKFILL SHALL BE COMPACTED TO 90% SPMDD UNLESS OTHERWISE NOTED.
  - 1.10 ALL DISTURBED AREAS SHALL BE RESTORED BY THE CONTRACTOR TO MATCH EXISTING CONDITIONS OR BETTER (I.E. EXISTING PAVEMENT, CURBS, LANDSCAPED AREAS, SIDEWALK, ETC.) OR AS NOTED ON THE DRAWINGS. HARD SURFACE MATCH LINES SHALL BE SAWCUT.
  - 1.11 THE CONTRACTOR SHALL KEEP WORK SITE CLEAN AND FREE OF ALL CONSTRUCTION DEBRIS DURING CONSTRUCTION AND LEAVE THE SITE CLEAN UPON COMPLETION OF WORK OR PORTIONS OF WORK.
  - 1.12 ALL PROPERTY BARS SHALL BE PROTECTED. ANY DAMAGED PROPERTY BARS SHALL BE REPLACED BY THE CONTRACTOR AT HIS OWN EXPENSE.
  - 1.13 ALL DEVIATIONS FROM THE WORKING DRAWINGS MUST BE APPROVED BY THE CONSULTANT. THE CONTRACTOR MUST KEEP AN ACCURATE RECORD OF ALL CHANGES FROM THE ORIGINAL CONSTRUCTION DRAWINGS AND SPECIFICATIONS.
  - 1.14 ASBUILT DRAWINGS ARE TO BE PROVIDED TO THE ENGINEER WITH FINAL SITE GRADING ELEVATIONS, VALVE LOCATIONS, MANHOLE AND CATCHBASIN STRUCTURE RIM ELEVATIONS AND INVERTS, AND ANY CHANGES TO THE DESIGN.

- STORM AND SANITARY SEWERS**
- 2.1 ALL SEWERS IN EARTH SHALL HAVE GRANULAR 'A' EMBEDMENT MATERIAL IN ACCORDANCE WITH OPSD 802.010 FOR FLEXIBLE PIPE, AND OPSD 802.021 CLASS B BEDDING FOR RIGID PIPE.
  - 2.2 ALL PVC SEWER PIPE FOR STORM AND SANITARY SYSTEMS, SHALL HAVE PIPE JOINTS AND FITTINGS RATED FOR 50 PSI PRESSURE (PEX RING TIE OR APPROVED EQUIVALENT) AND WHERE THERE IS LESS THAN 24mm SPIRAL SEPARATION FROM WATER MAIN OR WATER SERVICE, SEWERS SHALL BE MANDREL TESTED AND LOW PRESSURE AIR TESTED AS PER OPSD 410 AT 5 PSI.
  - 2.3 FROST PROTECTION SHALL BE PROVIDED FOR SEWERS WITH LESS THAN 1.2 M COVER AS PER DETAIL.
  - 2.4 STORM SEWER PIPE 375mm OR SMALLER SHALL BE PVC DR35, IN CONFORMANCE WITH CSA B182.2. PVC PROFILE PIPE WILL NOT BE ACCEPTED.
  - 2.5 STORM SEWER PIPE 450mm OR LARGER SHALL BE REINFORCED CONCRETE PIPE CANCSA A27.2 (M) UNLESS NOTED OTHERWISE.
  - 2.6 SUBDRAIN SHALL BE 100mm DIA. PERFORATED HIGH DENSITY POLYETHYLENE (HDPE) PIPE WITH KNITTED GEOTEXTILE SOCK AS PER OPSD 405, UNLESS NOTED OTHERWISE.
  - 2.7 ALL PAVING LOT CATCHBASINS TO HAVE 3m LONG SUBDRAIN TAILS INSTALLED IN TWO DIRECTIONS WITH ENDS CAPPED.
  - 2.8 ALL CATCHBASIN LEADS SHALL BE MINIMUM 200mm PVC DR35, UNLESS NOTED OTHERWISE ON PLANS.
  - 2.9 SANITARY LATERALS SHALL BE 100mm PVC DR28 IN CONFORMANCE WITH CSA B182.2.
  - 2.10 SANITARY SEWER PIPE SHALL BE 200mm PVC DR35 IN CONFORMANCE WITH CSA B182.2.
  - 2.11 SANITARY SEWER PIPE CONNECTIONS TO CONCRETE STRUCTURES SHALL BE MADE USING KOR-N-SEAL FITTING OR APPROVED EQUAL.
  - 2.12 ALL SEWERS SHALL BE FLUSHED AND VIDEO INSPECTED AS PER OPSD 409. SEWER FLUSHING SHALL BE DONE PRIOR TO VIDEO INSPECTION AND SHALL INCLUDE CLEANING OF ALL SLEEPS AND BENCHES. FLUSHED MATERIAL IS TO BE KEPT OUT OF THE MUNICIPAL SYSTEM. THREE (3) COPIES OF THE VIDEO AND REPORT SHALL BE SUBMITTED TO THE CONTRACT ADMINISTRATOR.

- WATER**
- 3.1 CONSTRUCTION OF ALL WATERMANS, WATER SERVICES, AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE OPSD'S AND THE CITY OF NIAGARA FALLS STANDARDS, WHICHEVER IS MORE STRINGENT.
  - 3.2 WATER MAIN SHALL BE PVC DR 18, CSA B137.3 CONFORMING TO AWWA C900 CLASS 150.
  - 3.3 WATER MAIN AND WATER SERVICES SHALL BE INSTALLED WITH 1.5m COVER AND SHALL BE CAPPED AND MARKED WITH A 2X4 STAKE PAINTED BLUE.
  - 3.4 WATER SERVICE PIPING SHALL BE 50mm (2") CROSS LINKED POLYETHYLENE (PEX) PIPING OR 38mm (1-1/2") TYPE K SOFT COPPER.
  - 3.5 VALVES SHALL BE AS PER CITY OF NIAGARA FALLS STANDARDS.
  - 3.6 VALVE BOXES, TYPES AND SIZES, SHALL BE AS PER CITY OF NIAGARA FALLS REQUIREMENTS.
  - 3.7 CATHODIC PROTECTION SHALL BE PROVIDED ON ALL WATER MAIN VALVES, BENDS AND FITTINGS WITH 11.0 kg ZINC ANODES. WATER SERVICES SHALL HAVE 5.0 kg ZINC ANODES INSTALLED AT CURB STOP.
  - 3.8 CITY TO BE NOTIFIED 48 HOURS PRIOR TO CONNECTION TO THE MUNICIPAL WATER SERVICE. THE CONNECTION SHALL BE MADE BY A LICENSED DRINKING WATER OPERATOR QUALIFIED TO PERFORM THE WORK.
  - 3.9 ALL VALVE BOXES AND CURB BOXES SHALL BE SET FLUSH WITH FINAL GRADE. SHALL BE KEPT OPERATIONAL AND SHALL BE PROTECTED FROM DAMAGE.
  - 3.10 TRACER WIRE SHALL BE 8 GAUGE 7 STRAND INSULATED WIRE AND SHALL BE INSTALLED ON ALL PVC PIPE. TRACER WIRE SHALL TERMINATE AT VALVE BOX.
  - 3.11 THRUST BLOCKS FOR WATERMANS SHALL BE AS PER OPSD 1103.010 & OPSD 1103.020.
  - 3.12 JOINT RESTRAINT SHALL BE MEGALUG PVC SERIES 2000 PV OR STAINLESS STEEL BOLTS OR APPROVED EQUAL.
  - 3.13 FIRE HYDRANT SHALL MEET CITY OF NIAGARA FALLS SPECIFICATIONS AND SHALL BE PAINTED TO NIAGARA FALLS STANDARD COLOURS.
  - 3.14 HYDRANT SETS SHALL INCLUDE 150mm PVC DR18 HYDRANT LEAD, RESTRAINTS, TRACER WIRE, ANCHOR TEE AND VALVE, AND RISER ADJUSTMENTS AS REQUIRED.

- CONCRETE STRUCTURES**
- 4.1 MANHOLES AND CATCHBASIN SIZES AND TYPES AS NOTED ON THE DRAWINGS.
  - 4.2 ALL SANITARY MANHOLES SHALL HAVE MONOLITHIC BASES AND SHALL BE INSTALLED WITH BENCHING AS PER OPSD 701.021.
  - 4.3 ALL SANITARY MANHOLES SHALL BE SUPPLIED WITH FLEXIBLE CONNECTIONS (KOR-N-SEAL RUBBER BOOTS OR APPROVED EQUAL).
  - 4.4 ALL SANITARY MANHOLES SHALL HAVE PRECAST JOINTS WRAPPED.
  - 4.5 ALL MANHOLE FRAME AND COVERS SHALL BE CLOSED TYPE 'A' AS PER OPSD 401.010.
  - 4.6 ALL TOPS OF MANHOLES SHALL BE SET FLUSH WITH FINAL GRADES. ADDITIONAL LADDER RUNGS SHALL BE INSTALLED AS REQUIRED.
  - 4.8 ALL CATCH BASINS SHALL HAVE 600mm DEEP SUMPS.
  - 4.7 CATCH BASIN FRAME AND GRATES SHALL BE FLAT TYPE AS PER OPSD 400.020.
  - 4.8 ALL TOPS OF CATCH BASINS SHALL BE SET FLUSH WITH FINAL GRADES.
  - 4.9 CONCRETE ADJUSTMENT UNITS AS PER OPSD 704.010 SHALL BE PROVIDED AS REQUIRED TO SET RIM ELEVATION FLUSH WITH FINAL ELEVATION.
  - 4.10 ALL CATCHBASIN GRATES SHALL BE WRAPPED WITH NONWOVEN GEOTEXTILE (TERRAFIX 270R) OR EQUIVALENT FOR SEDIMENT CONTROL. CONTRACTOR TO CLEAN AND MAINTAIN SEDIMENT CONTROL MEASURES. CONTRACTOR TO REMOVE GEOTEXTILE FROM GRATES AT COMPLETION OR AS DIRECTED BY THE CONTRACT ADMINISTRATOR.
  - 4.11 OIL DRIFT SEPARATOR(S) SHALL BE A STORMCEPTOR EF MODEL AS NOTED ON PLAN OR APPROVED EQUIVALENT. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR ENGINEER REVIEW AND APPROVAL. SEE INSTRUCTIONS. CONTRACTOR SHALL CLEAN OUT UNIT AFTER COMPLETION OF SITE WORKS AND SITE LANDSCAPING AND PROVIDE ENGINEER WITH CONFIRMATION OF CLEANING AND THREE (3) COPIES OF THE OPERATIONS AND MAINTENANCE MANUAL.

- MUNICIPAL WORKS**
- 5.1 THE CONTRACTOR IS TO OBTAIN A REGIONAL CONSTRUCTION ENCROACHMENT AND ENTRANCE PERMITS FROM THE TRANSPORTATION SERVICES DIVISION, PUBLIC WORKS DEPARTMENT, FOR ANY WORKS TAKING PLACE WITHIN THE REGIONAL ROAD ALLOWANCE. PERMITS, AS REQUIRED, FROM THE REGION AND CITY OF NIAGARA FALLS, SHALL BE OBTAINED AND PAID FOR BY THE CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION ON MUNICIPAL PROPERTY.
  - 5.2 ALL WORK CARRIED OUT ON MUNICIPAL PROPERTY SHALL BE IN ACCORDANCE WITH THE APPLICABLE CITY OF NIAGARA FALLS REQUIREMENTS.
  - 5.3 CONTRACTOR IS TO PREPARE A TRAFFIC CONTROL PLAN AS PER ONTARIO TRAFFIC MANUAL BOOK 7 REQUIREMENTS.
  - 5.4 CONCRETE CURB AND GUTTER SHALL BE AS PER APPLICABLE MUNICIPALITY REQUIREMENTS.
  - 5.5 ASPHALT PAVEMENT RESTORATION SHALL BE AS PER APPLICABLE MUNICIPALITY REQUIREMENTS.
  - 5.6 BOLLIVARD RESTORATION OF LANDSCAPED AREAS SHALL BE WITH TOPSOIL AND SOD AS PER APPLICABLE MUNICIPALITY REQUIREMENTS.

- RELEVANT SPECIFICATIONS**
- |          |  |
|----------|--|
| OPSD 206 | Grading  |
| OPSD 310 | Hot Mix Asphalt  |
| OPSD 314 | Unreinforced Granular  |
| OPSD 381 | Concrete Sidewalk  |
| OPSD 383 | Concrete Curb and Gutter Systems   |
| OPSD 401 | Trenching, Backfilling and Compacting                                      |
| OPSD 402 | Excavating, Backfilling and Compacting for Mr's, Cb's, D's and V's         |
| OPSD 405 | Subdrains  |
| OPSD 407 | Maintenance Holes, Catch Basin, Ditch Inlet and Valve Chamber Installation |
| OPSD 409 | Closed-Circuit Television Inspection of Pipelines                          |
| OPSD 410 | Pipe Sewer Installation in Open Cut  |
| OPSD 441 | Watermain Installation in Open Cut   |
| OPSD 501 | Compacting   |
| OPSD 510 | Removal  |
| OPSD 516 | Control of Water from Dewatering Operations                                |
| OPSD 802 | Topsoil  |
| OPSD 803 | Sodding  |
| OPSD 804 | Seed and Cover   |
| OPSD 805 | Temporary Erosion and Sediment Control Measures                            |

- RELEVANT STANDARD DRAWINGS**
- |               |  |
|---------------|--|
| OPSD 219.110  | Light Duty Sit Fence Barrier   |
| OPSD 219.180  | Shore Bank Flow Check Dam  |
| OPSD 310.010  | Concrete Sidewalk  |
| OPSD 400.020  | Catch Basin Frame and Flat Grate (Herring Bone)                      |
| OPSD 401.010  | Manhole Frame and Closed Cover (Type 'A')                            |
| OPSD 600.090  | Concrete Reinforced Curb with Standard Cutter                        |
| OPSD 600.110  | Concrete Barrier Curb  |
| OPSD 701.010  | Precast Concrete Maintenance Hole, 1200mm Diameter                   |
| OPSD 701.011  | Precast Concrete Maintenance Hole, 1500mm Diameter                   |
| OPSD 701.012  | Precast Concrete Maintenance Hole, 1800mm Diameter                   |
| OPSD 701.013  | Precast Concrete Maintenance Hole, 2400mm Diameter                   |
| OPSD 701.014  | Precast Concrete Maintenance Hole, 3000mm Diameter                   |
| OPSD 701.021  | Maintenance Hole Benching Details and Sizing                         |
| OPSD 705.010  | Precast Concrete Catch Basin 600x600 mm with sump                    |
| OPSD 802.010  | Flexible Pipe Encasement and Backfill, Earth Excavation              |
| OPSD 802.031  | Rigid Pipe Bedding, Cover and Backfill, Type 3 Soil Earth Excavation |
| OPSD 1103.010 | Concrete Thrust Block (Horizontal)                                   |
| OPSD 1103.020 | Concrete Thrust Block (Vertical)                                     |
| OPSD 1106.010 | Water Service Connection 18 and 25mm Diameter Sizes                  |

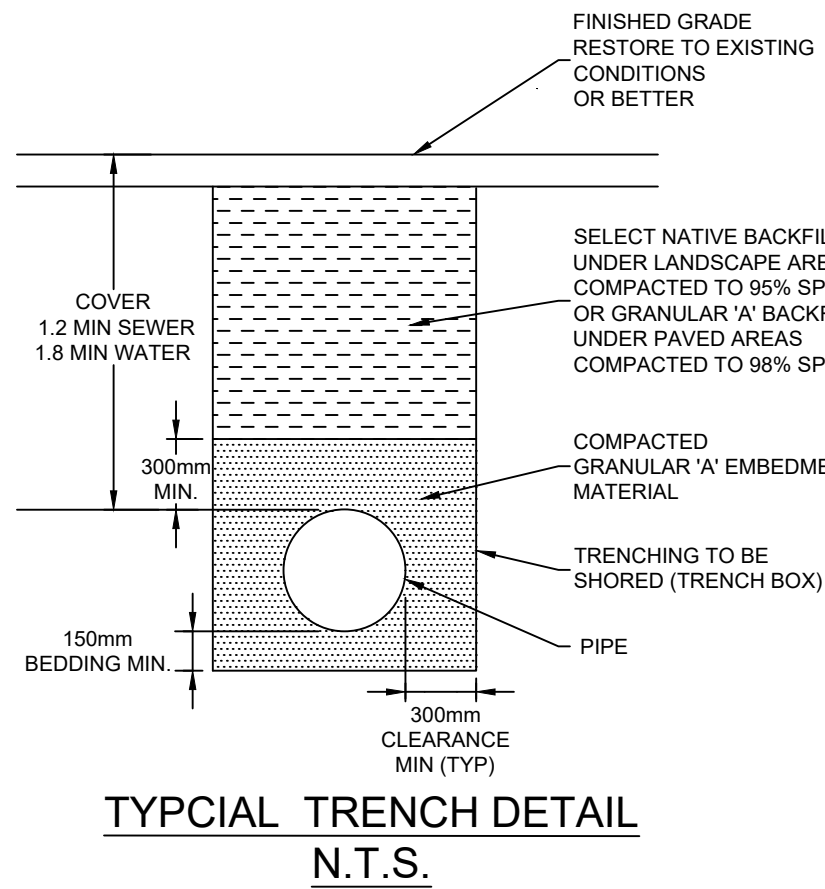
OPSD 1108.011 Cathodic Protection

**LEGEND**

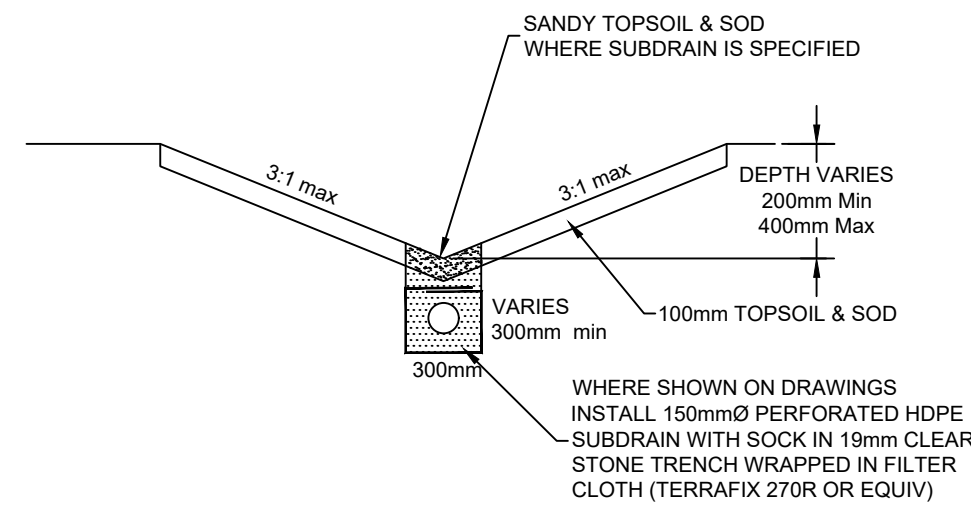
- |                       |                                 |
|-----------------------|---------------------------------|
| × 194.19              | EXISTING ELEVATION              |
| × (194.19±)           | EXISTING ELEVATION INTERPOLATED |
| ○MH                   | EXISTING MANHOLE                |
| □CB                   | EXISTING CATCHBASIN             |
| ○FH                   | EXISTING FIRE HYDRANT           |
| ○WV                   | EXISTING WATER VALVE            |
| ○CS                   | EXISTING CURB STOP              |
| — ST — ST — ST — ST — | EXISTING STORM SEWER            |
| — S — S — S — S —     | EXISTING SANITARY SEWER         |
| — W — W — W — W —     | EXISTING WATER LINE             |
|                       | EXISTING GAS LINE               |

- |          |                                |
|----------|--------------------------------|
| ×194.39  | PROPOSED ELEVATION             |
| ×194.39± | PROPOSED ELEVATION TOP OF CURB |
| ○MH      | PROPOSED ENTRANCE              |
| ○CB      | PROPOSED MANHOLE               |
| ○FH      | PROPOSED CATCHBASIN            |
| ○WV      | PROPOSED HYDRANT               |
| ○CS      | PROPOSED WATER VALVE           |
|          | PROPOSED CURBSTOP              |

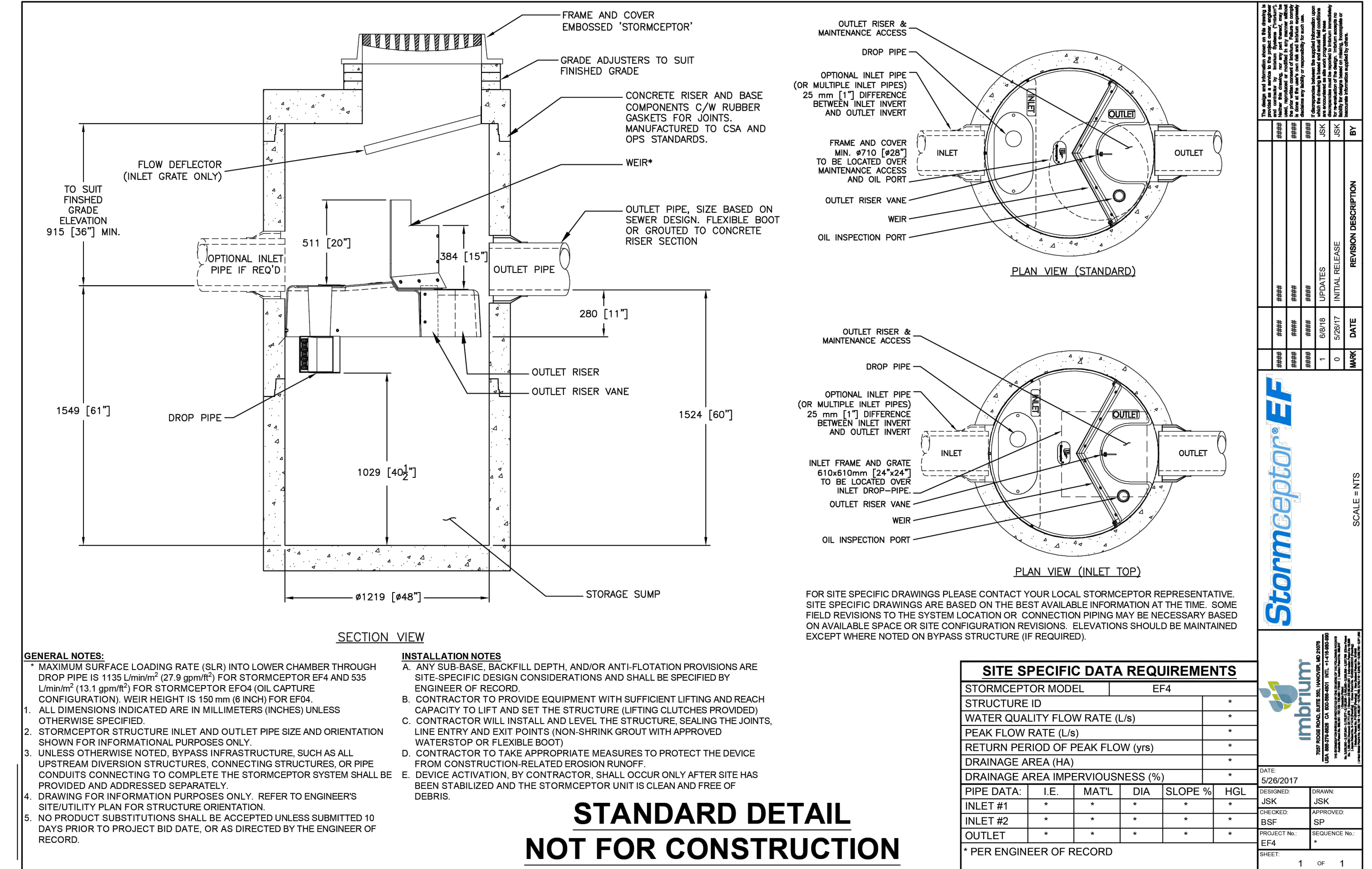
- |   |                         |
|---|-------------------------|
| — | PROPOSED WATER          |
| — | PROPOSED SANITARY SEWER |
| — | PROPOSED STORM SEWER    |
| — | PROPOSED SWALE          |
| — | PROPOSED SUBDRAIN       |
| — | PROPOSED SILT FENCE     |
| — | DRAINAGE BREAKLINE      |
| → | FLOW DIRECTION          |
| → | OVERLAND FLOW           |



**TYPICAL TRENCH DETAIL N.T.S.**



**TYPICAL SWALE DETAIL N.T.S.**



**STANDARD DETAIL NOT FOR CONSTRUCTION**

SITE SPECIFIC DATA REQUIREMENTS					
STORMCEPTOR MODEL	EF-4				
STRUCTURE ID					
WATER QUALITY FLOW RATE (L/s)	*				
PEAK FLOW RATE (L/s)	*				
RETURN PERIOD OF PEAK FLOW (yrs)	*				
DRAINAGE AREA (HA)	*				
DRAINAGE AREA IMPERVIOUSNESS (%)	*				
PIPE DATA:	I.E.	MATL.	DIA.	SLOPE %	HGL.
INLET #1	*	*	*	*	*
INLET #2	*	*	*	*	*
OUTLET	*	*	*	*	*
* PER ENGINEER OF RECORD					

X-REFERENCES: 2024/0126 Site Plan [Viewsheet] Site Plan [Viewsheet] Plan 2024/0125 2024/0126 Site Plan [Viewsheet]

DRAWING NAME: Z:\VDA\Projects\2024\1001\102-5881 Dunn Street (SP)CAD\3681 Dunn St. Development\_2024/02/09.dwg

LITERATURE:

YYY/AM/20	REVISED
YYY/AM/20	ISSUED FOR DESIGN COORDINATION
YYY/AM/20	ISSUED FOR DESIGN COORDINATION
YYY/AM/20	ISSUED FOR DESIGN COORDINATION
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YYY/AM/20	ISSUED FOR DESIGN COORDINATION

APPROVED:

DESIGN	EL/JS
CHECKED BY	MM
APPROVED BY	MM

**NOTES**

1. The position of pole lines, conduits, watermains, sewers, and other underground and above ground 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 identify the exact location of all such utilities and structures and shall assume liability for change to them.
2. Check of dimensions and report any inaccuracies to the Engineer before proceeding with the work - DO NOT SCALE DRAWINGS.
3. This drawing is an instrument of Professional Service and is intended for use only in connection with the project covered by the Engineering Agreement.
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DESIGN	EL/JS	STAMP	
CHECKED BY	MM		
APPROVED BY	MM		

BENCHMARK DATUM (# 8010867083)  
 ELEVATIONS ARE GEODETIC ORIGIN DERIVED FROM THE GEODETIC BENCHMARK, LOCATED



5881 DUNN STREET PART 2 CORPORATE  
 DETAILS, LEGEND AND NOTES

CONSULTANT FILE No. 21-102  
 DATE 2022/03/14  
 SCALE HOR: 1:400 m

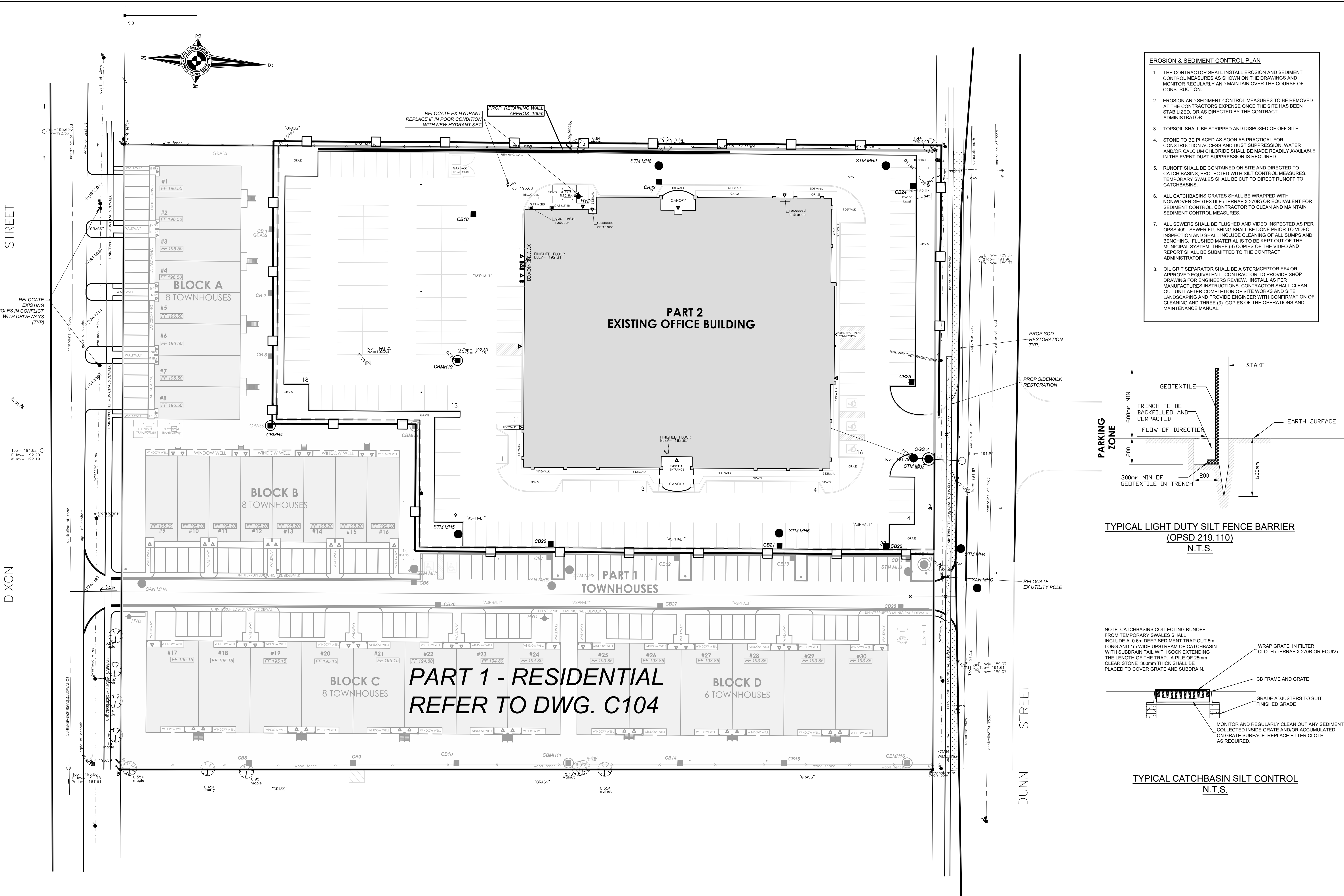
SHEET No. 10  
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 REV. 3

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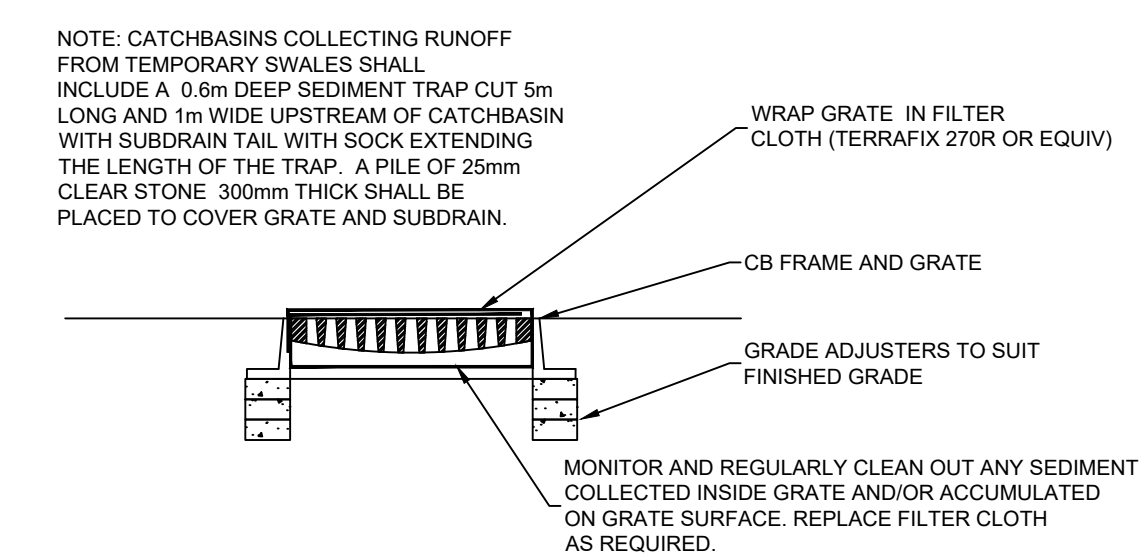
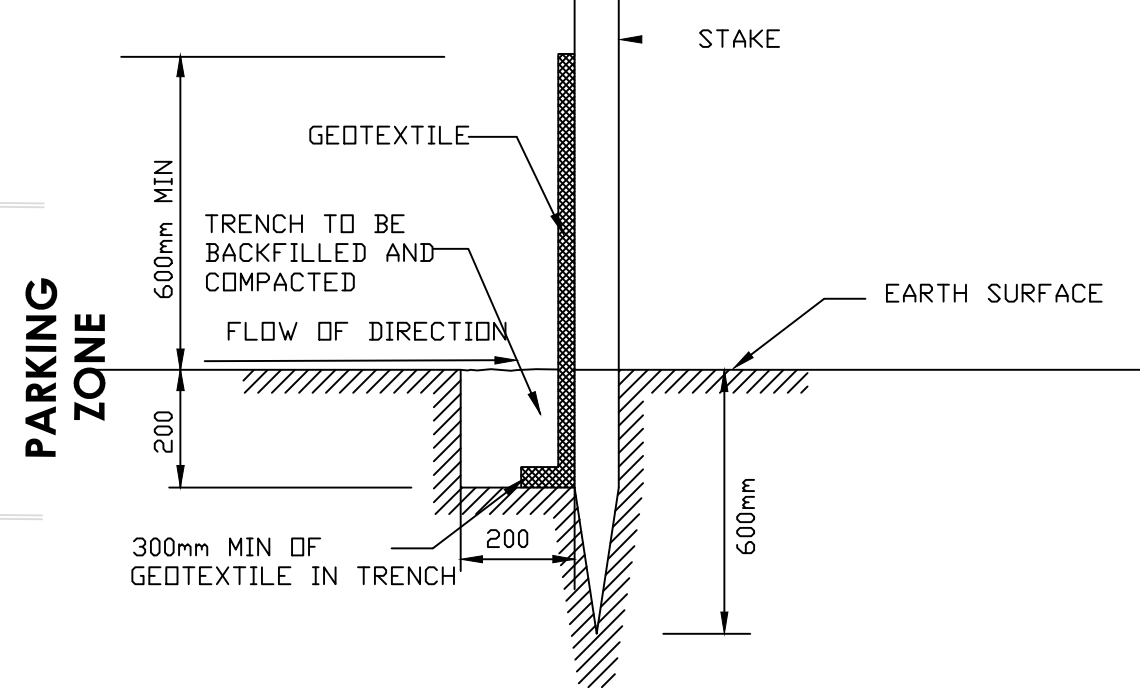
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DRAWING NAME: Z:\VDA\Projects\2024\100\1-102-5881 Dunn Street ESR\CAD\5881 Dunn St. Development 2024\0209.dwg

DATE: 2024/02/09  
 DESIGNED BY: MM  
 CHECKED BY: MM  
 APPROVED BY: MM



- EROSION & SEDIMENT CONTROL PLAN**
- THE CONTRACTOR SHALL INSTALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON THE DRAWINGS AND MONITOR REGULARLY AND MAINTAIN OVER THE COURSE OF CONSTRUCTION.
  - EROSION AND SEDIMENT CONTROL MEASURES TO BE REMOVED AT THE CONTRACTORS EXPENSE ONCE THE SITE HAS BEEN STABILIZED, OR AS DIRECTED BY THE CONTRACT ADMINISTRATOR.
  - TOPSOIL SHALL BE STRIPPED AND DISPOSED OF OFF SITE.
  - STONE TO BE PLACED AS SOON AS PRACTICAL FOR CONSTRUCTION ACCESS AND DUST SUPPRESSION. WATER AND/OR CALCIUM CHLORIDE SHALL BE MADE READILY AVAILABLE IN THE EVENT DUST SUPPRESSION IS REQUIRED.
  - RUNOFF SHALL BE CONTAINED ON SITE AND DIRECTED TO CATCH BASINS, PROTECTED WITH SILT CONTROL MEASURES. TEMPORARY SWALES SHALL BE CUT TO DIRECT RUNOFF TO CATCHBASINS.
  - ALL CATCHBASIN GRATES SHALL BE WRAPPED WITH NONWOVEN GEOTEXTILE (TERRAFIX 270R) OR EQUIVALENT FOR SEDIMENT CONTROL. CONTRACTOR TO CLEAN AND MAINTAIN SEDIMENT CONTROL MEASURES.
  - ALL SEWERS SHALL BE FLUSHED AND VIDEO INSPECTED AS PER OPS 409. SEWER FLUSHING SHALL BE DONE PRIOR TO VIDEO INSPECTION AND SHALL INCLUDE CLEANING OF ALL SUMPS AND BENCHING. FLUSHED MATERIAL IS TO BE KEPT OUT OF THE MUNICIPAL SYSTEM. THREE (3) COPIES OF THE VIDEO AND REPORT SHALL BE SUBMITTED TO THE CONTRACT ADMINISTRATOR.
  - OIL GRIT SEPARATOR SHALL BE A STORMCEPTOR EP4 OR APPROVED EQUIVALENT. CONTRACTOR TO PROVIDE SHOP DRAWING FOR ENGINEERS REVIEW. INSTALL AS PER MANUFACTURERS INSTRUCTIONS. CONTRACTOR SHALL CLEAN OUT UNIT AFTER COMPLETION OF SITE WORKS AND SITE LANDSCAPING AND PROVIDE ENGINEER WITH CONFIRMATION OF CLEANING AND THREE (3) COPIES OF THE OPERATIONS AND MAINTENANCE MANUAL.



NOTE: CATCHBASINS COLLECTING RUNOFF FROM TEMPORARY SWALES SHALL INCLUDE A 60mm DEEP SEDIMENT TRAP CUT 5m LONG AND 1m WIDE UPSTREAM OF CATCHBASIN WITH SUBRAIN TAIL WITH SOCK EXTENDING THE LENGTH OF THE TRAP. A FILE OF 25mm CLEAR STONE 300mm THICK SHALL BE PLACED TO COVER GRATE AND SUBRAIN.

**NOTES**

- The position of pole lines, conduits, watermains, sewers, and other underground and above ground 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 identify the exact location of all such utilities and structures and shall assume liability for change in them.
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DESIGN EL/JS		
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BENCHMARK DATUM  
 (# 8010867083)  
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**5881 DUNN STREET  
 PART 2 CORPORATE  
 EROSION AND SEDIMENT CONTROL PLAN**

CONSULTANT FILE No. 21-102
DATE 2022/03/14
SHEET No. 11
DWG No. C204
REV. 3