

Staff Report – Development Agreement Application for 228 Main Street	
Prepared by:	Chrystal Fuller of Brighter Community Planning
Subject:	Development Agreement Application for 228 Main Street (PID 55539670)
Date:	October 10, 2023
Purpose:	For Council to consider entering into a development agreement to permit the development of approximately eighty units at 228 Main Street
Recommendation:	Council gives first read to the draft development agreement attached.
Draft Motion	That Council gives first reading and forward to a public hearing the attached draft development agreement to permit a seventy-two unit grouped dwelling development at 228 Main Street.

Part 1: Background

The Town received an application for multi-residential development of the site on April 30, 2021. The Town’s Planning and Advisory Committee (PAC) considered the application on August 3, 2021, and the PAC approved a motion to recommend that Council approve the development subject to a series of conditions. A copy of the staff report and PAC recommendation is included as Attachment 1.

Following the PAC recommendation, the applicant provided new drawings in April 2022. The subsequent submissions were reviewed by the Traffic Authority, Public Works, the Fire Department, the Town Engineer, and Town Planners. Due to the size of the project, and consistent with recently adopted procedure, a Public Information Meeting was held on June 7, 2022 to gather public input on the proposal. The notes from the PIM are Attachment 2.

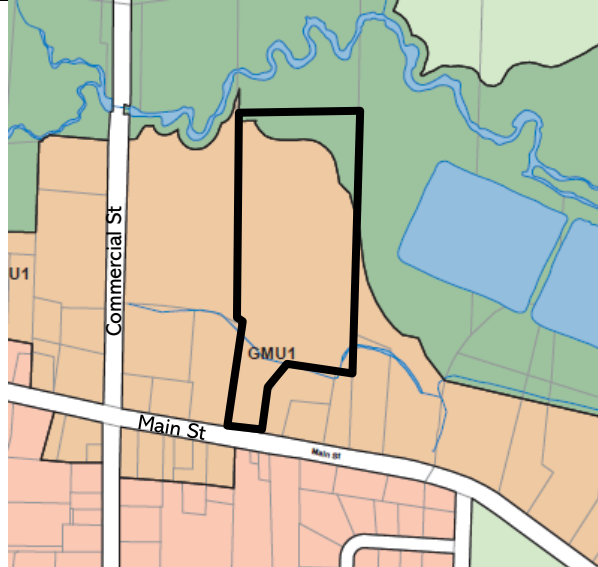
On August 9th, 2022 Council received a planning report with updates regarding the proposal. At that meeting, Council made the following motion, “ Council defer 1st Reading and direct staff to get additional information from the developer regarding onsite stormwater management.”

Since this date, the Town Engineer and Town planner have been working with the Developer to address issues related to infrastructure and stormwater. As a result of these extensive discussions, the site plan has changed to address stormwater issues. On August 21st, 2023 the Town’s Engineer issued a memo outlining his review. This memo is included as Attachment 3 to this report.

Although the configuration of the site plan is different then what was previously reviewed by Council in August of last year, the number of units is essentially the same. Council’s direction in August was to see additional information on stormwater and the review of this application uses 2021 policy review and the original policy analysis completed by the Town’s planning staff in 2021 along with some supplemental analysis in the attached policy table.

The Development Agreement was drafted in response to on the applicant’s proposal and subsequent submissions and is guided by the Town’s land use policies and regulations, community planning principles, and the servicing requirements of the site. The draft Development Agreement is included as Attachment 4.

1.1: Project Summary

Property Owner(s)	Town of Berwick
Civic Address	228 Main Street
Current Designation	Gateway Mixed Use and Conservation Designation
Current Zoning	Gateway Mixed Use (GMU1) and Conservation (OS2)
Subject Property	
Subject Property Area	Four hectares (9.88 acres)
Existing Land Use	Vacant
Adjacent Land Use	West – Legion, Fire Hall, Dental Clinic South – Low Density Residential Development East – Residential, Sewage Treatment Plant, Conservation North – Cornwallis River

1.2: Location

The Subject Property is located at 228 Main Street and is owned by the Town of Berwick, but is subject to a purchase and sale agreement with Kentfield Estates. This neighbourhood has a diverse mix of land uses including low density residential, institutional, and commercial. The property has frontage along Main Street which provides the only access to the site. The Cornwallis River is located north of the site and lands abutting the Cornwallis River are designated for conservation. The proposal is to develop only on the lands designated as Gateway Mixed Use. No development is proposed for lands designated as Conservation.

1.3: Proposal

The applicant is seeking a development agreement to permit approximately eighty dwelling units on

the site. The proposed site plan (Attachment 4) includes nine apartment buildings with eight units in each building, 109 surface parking spaces, landscaped amenity areas, and pedestrian walkways. The proposed buildings are two-storeys in height and each of the buildings contains eight dwelling units accessed from a common hallway and internal staircase.

The original site design submitted in 2021 proposed three building clusters with each cluster oriented around a common outdoor amenity space. The revised site plan submitted in August of 2023 contains eight building connected by a central driveway and connecting concrete pathways between buildings that connect to the street.

The applicant amended the site plan to better address stormwater issue and the required stormwater infrastructure. The site plan includes:

- Four stormwater management ponds
- A series of swales and ditches to manage stormwater.
- Connections to an offsite drainage ditch to drain water toward the river.
- Areas of lawn and soft landscaping to help manage stormwater flows. The drainage ditches and landscaped areas covers approximately 74% of the site.
- No development within the Conservation zone

The site plan identifies three large amenity areas for the use of residents. The site plan also identifies where existing vegetation will be retained or required. Vegetation helps reduce impacts on neighbours, caused by light, noise or other visual impacts. The applicant will provide private balconies for each of the units.

The development will be accessed from Main Street by a two-way drive aisle separated with a landscaped median. An internal one-way driveway loop provides access to surface parking areas. The applicant is currently proposing 109 parking stalls which exceeds the Land Use bylaw requirement of 1.5 stalls per unit.



Part 3: Policy Analysis

When considering development agreement applications, the policies of the Municipal Planning Strategy (MPS) guide decision making. The majority of the land property is designated Gateway Mixed Use Conservation on the Future Land Use Map while the forested area to the north near the Cornwallis River is designated as Conservation lands.

The initial staff report to PAC included policy analysis comparing the development proposal with the policies of the Municipal Planning Strategy (Attachment 1). The report also recommended that the applicant provide additional information prior to Council’s consideration to include details related to potable water, municipal servicing, outdoor lighting, landscaping, and sediment and erosion control. With the exception of drinking water approvals, this information has since been provided.

The site plan has been updated. Attached to this report is a brief policy analysis to supplement the original PAC report. Since the original PAC report, the Town has undertaken a desktop water study which concluded the additional development of up to five hundred new units may occur without further study.

Additionally, sewer studies are underway, and development may continue to occur. Capital projects will address any required improvement to wastewater.

Part 4: Public Input

As noted above, the Town held a public information meeting on June 7th, 2022, to get public feedback on this application.

The purpose of a PIM is to identify issues of concern to the public so that these concerns, if possible, can be addressed through the approval process or within the development agreement itself. Due to changes in the way planning applications are processed by the Town since PAC originally considered the Staff report, Planning staff in the Spring of 2022 recommended that a development of this size and scale would warrant input from the public before Council considered First Reading. This would allow a draft development agreement to address issues of concern, subject to the policies of the Municipal Government Act and the Town’s Municipal Planning Strategy. The PIM was held on June 7th, 2022.

Approximately fifty people attended the meeting and several people called or emailed prior to the meeting to discuss the proposal. Overall, it was acknowledged that the proposal would help to address the current housing shortage by providing much needed new rental housing units. However, there were a number of concerns identified, with the main one related to flooding and storm water management. The following chart provides a summary of the issues from the PIM, staff comments and if (or how) the draft DA responds to the issue.

Concern raised by the public	Staff Comments	Addressed within the DA
The development will cause additional flooding. More analysis and study are required to understand how this development will impact neighbours.	The 2021 staff report states that Public Works and the Town Engineer found the stormwater water plans acceptable. Wetland delineation has occurred	The revised site plan includes significant revisions to address stormwater management, which has been reviewed and approved by the Town engineer.
The smell from the STP needs to be addressed and concern was expressed about the smell	The Town continues to address STP issues but no short-term solution for the odour is	No ability to address the smell from the STP within the DA. Issues relating to the future

Concern raised by the public	Staff Comments	Addressed within the DA
from the STP on human health. The STP may need to be expanded in the future and the Town should keep the lands.	imminent.	expansion of the STP, and the sale of the lands is outside the scope and consideration of this planning report.
Traffic Impacts – concerns about road safety and capacity	Traffic Authority did not request a traffic impact statement. The Traffic Authority may reconsider the need for a TIS.	Off site traffic upgrades are not requested.
Does the school have enough capacity to accommodate these units?	According to the 2018 School Assessment report, Berwick School had a school utilization rate of 63% or 271 students in 2017. In 2022, they had a school population of ~290 students. According to the School Assessment report, the school population was projected to decrease is 221 by 2027. Berwick School feeds into West Kings District High School, which had a school utilization rate of 61% in 2017 (1 147 students).	N/A
Ground water impacts. How will this development impact the ground water supply of Berwick, and wells of the neighbours.	Last assessment of the groundwater was in 2004, which indicated that Berwick has high quality/quantity groundwater supply. No hydrological study was completed for this development	The DA requires water withdrawal permits, if required under legislation, to be provided before a development permit can be issued.
What is the impact of the proposed development on the RCMP services?	No Impact	N/A

Part 5: DA Summary

The application for the development of seventy-two multi-residential dwellings at 228 Main Street has been reviewed by staff for consistency with the policies of the Municipal Planning Strategy. While the proposed building design is not consistent with the design criteria of the Gateway lands, these policies are focused on improving the public streetscape through high quality building design and street improvements. The proposed buildings are setback quite far on the site and will not be very visible from the street so they will have minimal impact on the aesthetic of the streetscape. The Development Agreement does include the requirements for landscaping along the Main Street frontage to soften the street edge and provide an attractive entrance to the proposed development.

The draft development agreement is attached for review and includes the following provisions:

- Permits seventy-two residential units within nine buildings.
- Parking requirements
- Maximum height of thirty-five feet to a maximum of two stories.
- The construction of stormwater infrastructure as approved by the Municipal Engineer
- The submission of a master landscaping plan that provides adequate buffering from residential development.
- Phasing of the development that requires open space areas be constructed at certain points in the development process.
- Parking spaces at a one stall per unit and 1.25 stalls for 3-bedroom units.

Part 6: Recommendation

On August 3, 2021, PAC provided the following recommendation to Council.

“The developer is to be advised of all seven additional requirements. Once plans have been modified to sufficiently address these requirements, the application can go before Council.”

The addition requirements were:

Additional Requirements	Status	Staff Comments
Nova Scotia Department of Environment approval of the proposed sanitary sewer system	Not received	Recommend that this be included in DA as a requirement before DP is issued.
Confirmation from NSE that the proposed domestic water supply conforms with regulatory requirements for a Public Water Supply	Not received	Recommend that this be included in DA as a requirement before DP is issued.
The provision of a Construction Management and Erosion and Sedimentation Control Plans acceptable to the Town Engineer prepared by a qualified person;	Not received	Recommend that this be included in DA as a requirement before DP is issued.
The provision of a separate driveway access consistent with one-way internal circulation pattern or the construction of a median within a single driveway to a depth of 75 feet north of Main Street.	Developer agrees to build	This is a requirement of the DA.
The provision of an internal walkway enabling pedestrian transit through the development from the north (Phase 4) area to Main Street and connection with the existing Main Street sidewalk;	Developer agrees to build	This is a requirement of the DA.
The provision of overhead lighting along the driveway/internal vehicle circulation route;	No completed	The draft DA will require lighting
Landscaping at Main Street, which	Completed	A detailed landscaping

could include signage and be integrated into a median (if provided as an alternative to separated driveway access).		plan will be required before a DP is issued.
---	--	--

6.1: Options

Council has the following options regarding this application.

1. Give First Reading to the Draft DA and forward the application on to a Public Hearing.
2. Defer First Reading and direct staff to make changes to the Draft DA. Any significant amendments will need to be discussed with the Developer before First Reading is considered.
3. Refer the application back to staff with requests for additional information and updated staff report, including a policy analysis that incorporates the latest information.
4. Reject the Application. – This this option, the applicant would have the right to appeal Council's decision to the Utility and Review Board.

6.2: Planning Staff Recommendation

Given PAC's previous recommendation to proceed with the draft DA, and Council's direction regarding stormwater, Planning Staff prepared the attached development agreement for Council's review and consideration for First Reading.

Draft Motion

That Council gives first reading and forward to a public hearing the attached draft development agreement to permit a seventy-two unit grouped dwelling development at 228 Main Street.

It shall be the intention of Council that within the Gateway Mixed Use (GMU1) Zone all development, except single unit residential uses, shall be considered by Development Agreement and in addition to criteria contained in Policy IM7, consideration shall be given to the following:	
(a) The proposed development is generally consistent with the design and development principles identified in the Northern Gateway Strategy (2009);	Generally compliant.
(b) Those provisions are made, where appropriate and possible, for the integration of access to public open space, recreation and amenity space into the proposed site plan.	One site open space is identified, along with pathways and trails on site.
(c) That the proposed structure is generally compatible with existing dwellings on adjacent properties.	The buildings are compatible in terms of height and massing.
(d) That the design of the proposed structure and site reflects and is consistent with adjacent existing dwellings with respect to	
(1) Building Mass	The buildings are no more than 2 stories.
(2) Relationship to and setback from the street line	The buildings will have no relationship to the streets given the configuration of the lot and the length of the driveways.
(3) Roof line heights and orientations	No issues
(4) Building Height	Maximum height is permitted in the base zoning.
(5) Placement and Proportions of window and door openings along the primary façade;	No façade is street facing.
(6) Location of on-site parking	Parking is distributed throughout the site.
(7) Landscaping and landscaping treatment	Landscaping plan is adequate and designed to reduce stormwater flow and maintain permeable surfaces.
(e) That the site plan promotes the integration of the structure and use within the streetscape and pedestrian realm by means of locating primary parking areas in the rear of proposed structures and the provision of landscape features between the proposed building and street line	The property has minimal frontage and is not oriented toward the street.
In considering amendments to the Land Use By-law and/or the entering into a Development Agreement, in addition to the criteria set out in various policies of this Strategy, Council shall consider:	
(a) That the proposal is in conformance with the intents of this Strategy and with the requirements of all other Town By-laws and	Proposal is generally consistent with the Municipal Planning Strategy

regulations:	
(b) That the proposal is not premature or inappropriate by reasons of:	
(1) The financial capability of the Town to absorb any costs relating to the development	No known impact. Infrastructure installation is at the cost of the developer.
(2) The adequacy of sewer and ground water to support the proposed density of development;	The property can connect to municipal sewer and storm water is managed a designed storm water catchment system.
(3) The adequacy and proximity of school, recreation, and other community facilities;	No concerns
(4) The adequacy of road networks adjacent to, or leading to the development;	No concerns
(5) The potential for the contamination of watercourses or the creation of erosion or sedimentation	A sedimentation and erosion control plan will be required during construction activities. Compliance with provincial regulations is required.
(6) The potential for damage to or destruction of historical buildings and site;	N/A
(c) That controls are contained in a Land Use By-law or a Development Agreement so as to reduce conflict between the development and any other adjacent or nearby land use by reason of:	
(1) Type of use;	Up to 72 residential units
(2) Emissions including air and water pollutants and noise	No controls required
(3) Height, bulk and lot coverage of proposed building	Included in the DA site plan
(4) Traffic generation, access to and egress from the site, and parking;	No issues
(5) Open storage	Not permitted
(6) signs	Regulated by LUB
(7) similar matters of planning concern;	Regulated by LUB
(d) The suitability and development costs of the proposed site in terms of steepness of grades, soil and geological conditions, marshes, swamps, or bogs and proximity of highway ramps, railway rights-of-way and other nuisance factors;	Development is located near the Cornwallis River. Wetland delineation occurred and there is some wetland which will be altered, pending the applicant receiving a wetland alteration permit from NSECC.
(e) That provision is made for buffering, landscaping, screening and access control to reduce potential incompatibility with adjacent land uses and traffic;	Landscaping as proposed on site plan
(f) That the development is located so as not obstruct any natural drainage channels or watercourses	Wetland delineation occurred and there is some wetland which will be altered, pending the applicant receiving a wetland alteration permit from NSECC.

TOWN OF BERWICK
Engineering
Memorandum



To:	Chrystal Fuller, LPP, MCIP; Brighter Community Planning & Consulting	From:	Tim Bouter, P. Eng; Town Engineer
CC:	Jen Boyd, CAO; Town of Berwick		
Subject:	Review Comments Development Agreement PID 55539670 Kent Field Estates	Date:	August 21, 2023

The purpose of this memo is to provide you with engineering comments related to the detailed design drawings for the referenced development agreement. I am in receipt of the following documents for this application:

1. Site Plan; Plan No. 2020-293 Site Plan (Sheet 1 of 8); prepared by Eric Morse, P. Eng.; dated August 3, 2023.
2. General Servicing Plan; Plan No. 2020-293 GSP (Sheet 2 of 8); prepared by Eric Morse, P. Eng.; dated August 3, 2023.
3. Profile; Plan No. 2020-293 Profile (Sheet 3 of 8); prepared by Eric Morse, P. Eng.; dated August 3, 2023.
4. Grading Plan; Plan No. 2020-293 Grading (Sheet 4 of 8); prepared by Eric Morse, P. Eng.; dated August 3, 2023.
5. Details; Plan No. 2020-293 Details (Sheet 5 of 8); prepared by Eric Morse, P. Eng.; dated August 3, 2023.
6. Erosion and Sedimentation Control Plan; Plan No. 2020-293 E&SC Plan (Sheet 6 of 8); prepared by Eric Morse, P. Eng.; dated August 3, 2023.
7. Pre Development Drainage Plan; Plan No. 2020-293 Pre Dev (Sheet 7 of 8); prepared by Eric Morse, P. Eng.; dated August 3, 2023.
8. Post Development Drainage Plan; Plan No. 2020-293 Post Dev (Sheet 8 of 8); prepared by Eric Morse, P. Eng.; dated August 3, 2023.
9. Email Correspondence Regarding Drainage Plan; sent by Eric Morse, P. Eng.; dated May 16, 2023.

Engineering Review Comments:

My comments following a review of the documents noted above are as follows:

1. Driveway:

- a. The private driveway complies with the Town's requirements and meets the minimum width of 6.0m for access route design in the National Building Code. The layout of the driveway and parking areas to be approved by the Berwick & District Volunteer Fire Department.
- b. The 2.5m wide median at the entrance must not impede the existing sidewalk. **Engineer to update drawings.**
- c. Power and communications infrastructure (including utility poles and light posts if applicable) to be approved by the Berwick Electric Commission. Easements will likely be required for these utilities.

2. Water:

- a. Individual wells must comply with the NSE Water Well Construction Guide.

3. Sanitary Sewer:

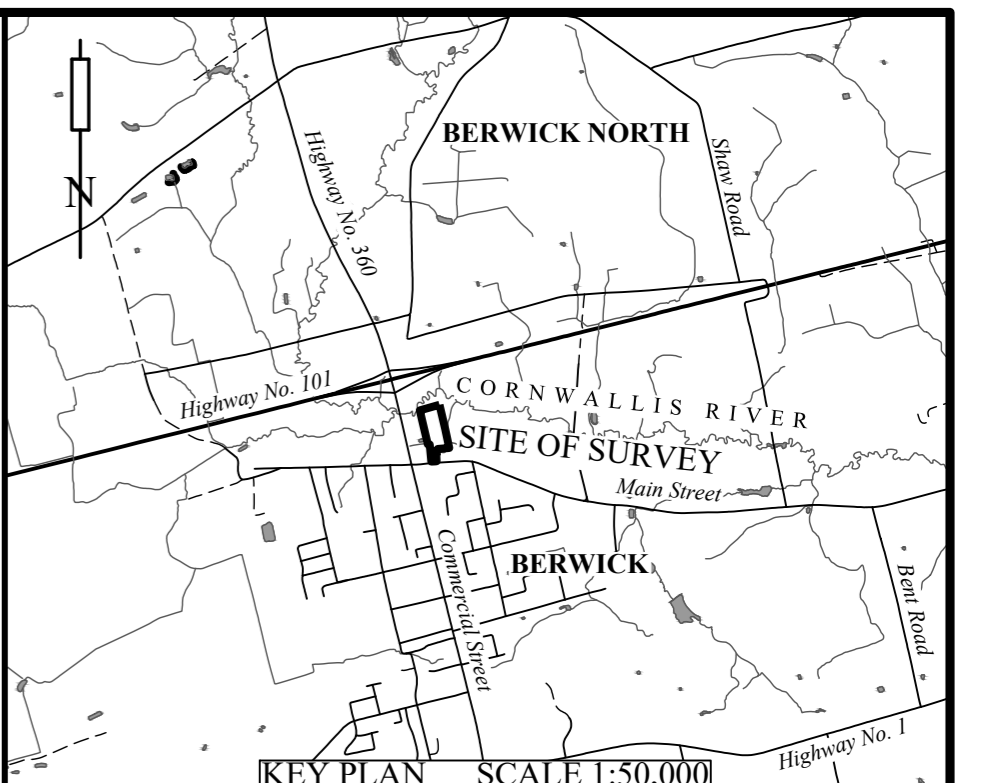
- a. The sanitary sewer collection system will be privately owned and maintained by the developer.
- b. The connection into the existing Town of Berwick manhole on Main Street complies with the Town's requirements for sanitary sewer.
- c. Approval from NSE for the private sanitary sewer collection system will be required at time of permitting.

4. Drainage and Erosion Controls:

- a. The culvert at Station 0+083 must be upsized to 1,200mm. **Engineer to update drawings.**
- b. The drainage plan complies with the Town's requirements for storm water management and the Provincial requirement for post development flow rates to be equal or less than existing conditions (net zero requirement).
- c. All drainage infrastructure will be privately owned and maintained by the developer.
- d. Following construction, the Town will require certification from the Engineer that the drainage works have been constructed in accordance with the plan.
- e. Any future negative impacts on neighboring properties resulting from inadequate implementation of the drainage plan or deviations to the

drainage plan would be dealt with as a private civil matter between property owners.

- f. Silt fencing and check dams must be installed during construction according to the Erosion and Sedimentation Control Plan to prevent material from washing into water courses.
- g. Wetland Alteration Permit for a small area in Wetland 1 (southwest corner of the property) to allow for the culvert extension and a portion of the roadway/sidewalk will be required at time of permitting.
- h. **This engineering drainage review is limited to an analysis of pre and post development flow rates for rainfall events on the development property (PID 55539670), and does not include an analysis of recommended development elevations in relation to current and future flooding impacts of the Cornwallis River or other overland flooding.** My understanding is that the development elevations have been set to match those of the Berwick Fire Hall and Wheaton's retail store, as recommended in a previous study.



REVISIONS

REVISIONS	DATE

TOTAL PARKING	Required 108
PARKING STALLS (6 m x 3 m)	100
ACCESSIBLE PARKING STALLS (6 m x 4.5 m)	9
TOTAL	109

LOT COVERAGE	
LOT "2020-1"	40494 sq. m (100%)
APARTMENT BUILDINGS	3690 sq. m (9%)
DRIVEWAYS / PARKING	6107 sq. m (15%)
WALKWAYS	900 sq. m (2%)
OPEN / GREEN SPACES, DITCHES	29797 sq. m (74%)

1. ISSUED FOR DEVELOPMENT AGREEMENT - AUGUST 9, 2023

- NOTES:**
1. ALL SANITARY SEWER WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR MUNICIPAL SERVICES 2023
 2. ALL STORM WATER DRAINAGE WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR MUNICIPAL SERVICES 2023
 3. CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UNDERGROUND SERVICES PRIOR TO CONSTRUCTION (CHECK WITH TOWN OF BERWICK)
 4. POTABLE WATER TO BE SUPPLIED BY DRILLED WELLS. EACH BUILDING WILL HAVE ITS OWN DRILLED WELL.

CONTROL TABLE
MTM ZONE 5, NAD 83(CSRS) (2010.0 V7)

POINT	NORTHING	EASTING	DESCRIPTION
ACS 250041	4971825.192	25447205.338	SMARTNET (PUBLISHED)

LEGEND

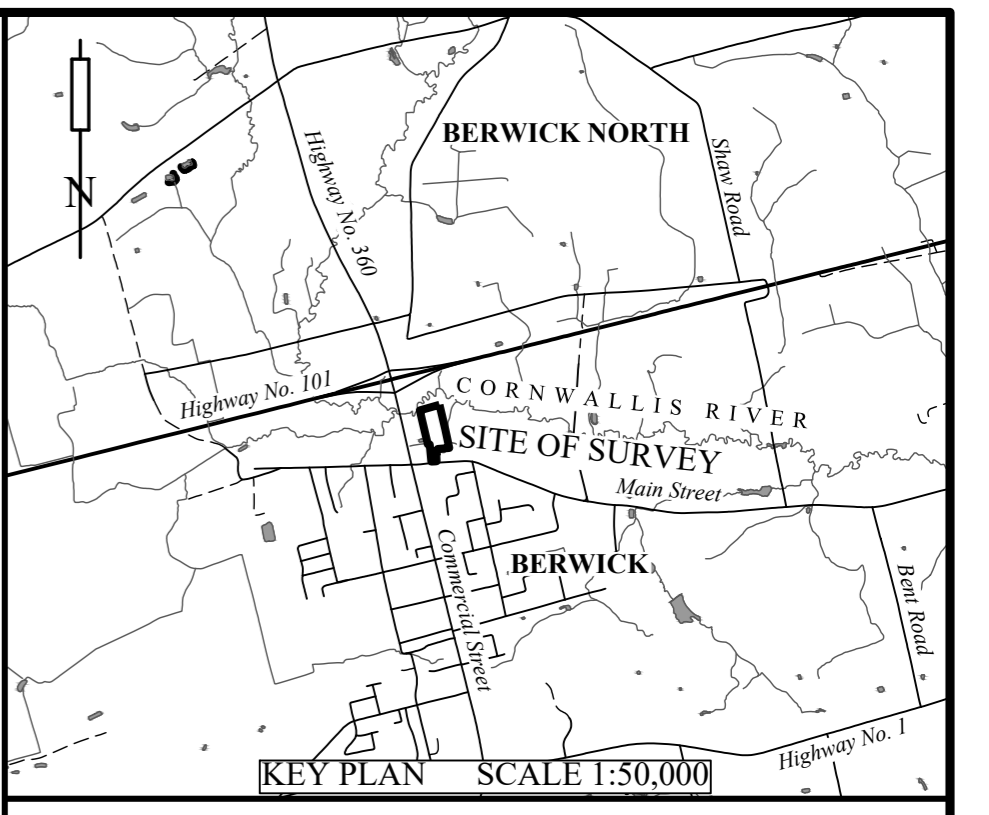
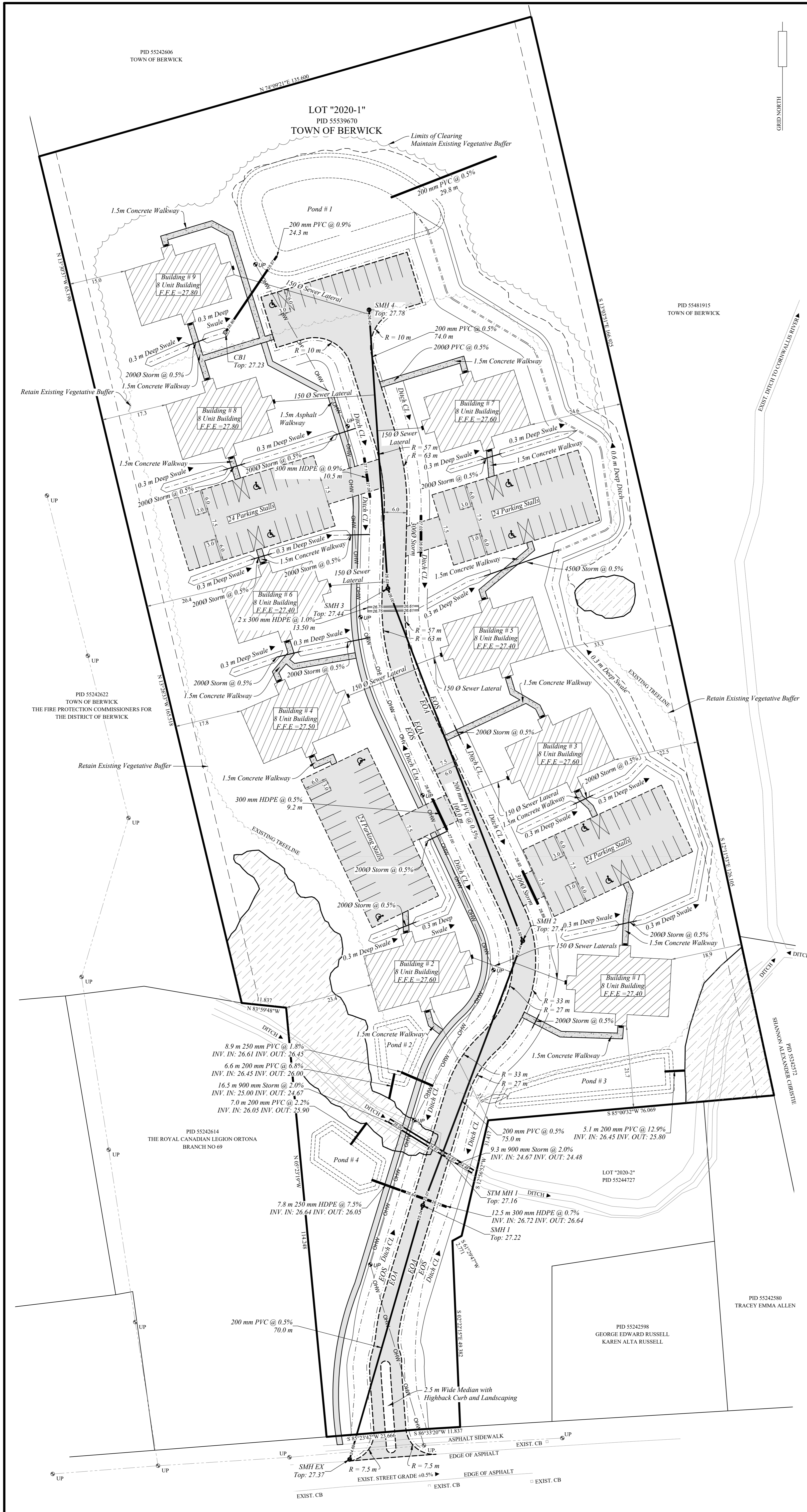
BEGINNING OF VERTICAL CURVE	BVC
END OF VERTICAL CURVE	EVC
POINT OF VERTICAL INTERSECTION	PVI
FINISHED GRADE	FG
CALCULATED	C
POINT OF CURVATURE	PC
POINT OF COMPOUND CURVATURE	PCC
CHORD	CH
MANHOLE (SANITARY)	MHS
MANHOLE (STORM)	MHST
CATCH BASIN	CB
FIRE HYDRANT	FH
WATER VALVE	WV
CALCULATED POINT	CP
UTILITY POLE	UP
RIGHT OF WAY	ROW
NOT TO SCALE	NTS
ANCHOR	ANCH
OVERHEAD WIRES	OHW
ELEVATION (EXISTING)	+7.83
ELEVATION (PROPOSED)	+17.75
PROPERTY LINE	PL
EDGE OF ASPHALT / SHOULDER	EOA / EOS
NEW OVERHEAD LIGHT	NEW OHL

SITE PLAN
FOR PROPOSED
MULTI UNIT DEVELOPMENT
FOR KENT FIELD ESTATES
ON LOTS OF
TOWN OF BERWICK
MAIN STREET
BERWICK
KINGS COUNTY, NS

HORIZONTAL SCALE 1:500
DESIGNED BY ERIC J. MORSE, P.ENG.

DeWOLFE & MORSE SURVEYING LIMITED
P.O. BOX 520 MIDDLETON
ANNAPOLIS COUNTY, N.S.
BOS - 1P0
Email: info@demosl.ca

DRAFTED ON AUGUST 3, 2023
PLAN No: 2020-293 SITE PLAN
SHEET 1 of 8



REVISIONS

NO.	DESCRIPTION
1.	ISSUED FOR DEVELOPMENT AGREEMENT - AUGUST 9, 2023

NOTES:

- ALL SANITARY SEWER WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR MUNICIPAL SERVICES 2023
- ALL STORM WATER DRAINAGE WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR MUNICIPAL SERVICES 2023
- CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UNDERGROUND SERVICES PRIOR TO CONSTRUCTION (CHECK WITH TOWN OF BERWICK)
- POTABLE WATER TO BE SUPPLIED BY DRILLED WELLS. EACH BUILDING WILL HAVE ITS OWN DRILLED WELL.

CONTROL TABLE

MTM ZONE 5, NAD 83(CSRS) (2010.0 V7)

POINT	NORTHING	EASTING	DESCRIPTION
ACS 250041	4971825.192	25447205.338	SMARTNET (PUBLISHED)

LEGEND

BEGINNING OF VERTICAL CURVE	BVC
END OF VERTICAL CURVE	EOVC
POINT OF VERTICAL INTERSECTION	PVI
FINISHED GRADE	FG
CALCULATED	C
POINT OF CURVATURE	PC
POINT OF COMPOUND CURVATURE	PCC
CHORD	CH
MANHOLE (SANITARY)	MHS
MANHOLE (STORM)	MHST
CATCH BASIN	CB
FIRE HYDRANT	FH
WATER VALVE	WV
CALCULATED POINT	CP
UTILITY POLE	UP
RIGHT OF WAY	ROW
NOT TO SCALE	NTS
ANCHOR	ANCH
OVERHEAD WIRES	OHW
ELEVATION (EXISTING)	-7.83
ELEVATION (PROPOSED)	+7.75
PROPERTY LINE	PL
EDGE OF ASPHALT / SHOULDER	EOA / EOS
NEW OVERHEAD LIGHT	NOL

GENERAL SERVICING PLAN

FOR PROPOSED
MULTI UNIT DEVELOPMENT
 FOR KENT FIELD ESTATES
 ON LANDS OF
TOWN OF BERWICK
 MAIN STREET
 BERWICK
 KINGS COUNTY, NS



HORIZONTAL SCALE 1:500
 DESIGNED BY ERIC J. MORSE, P.ENG.

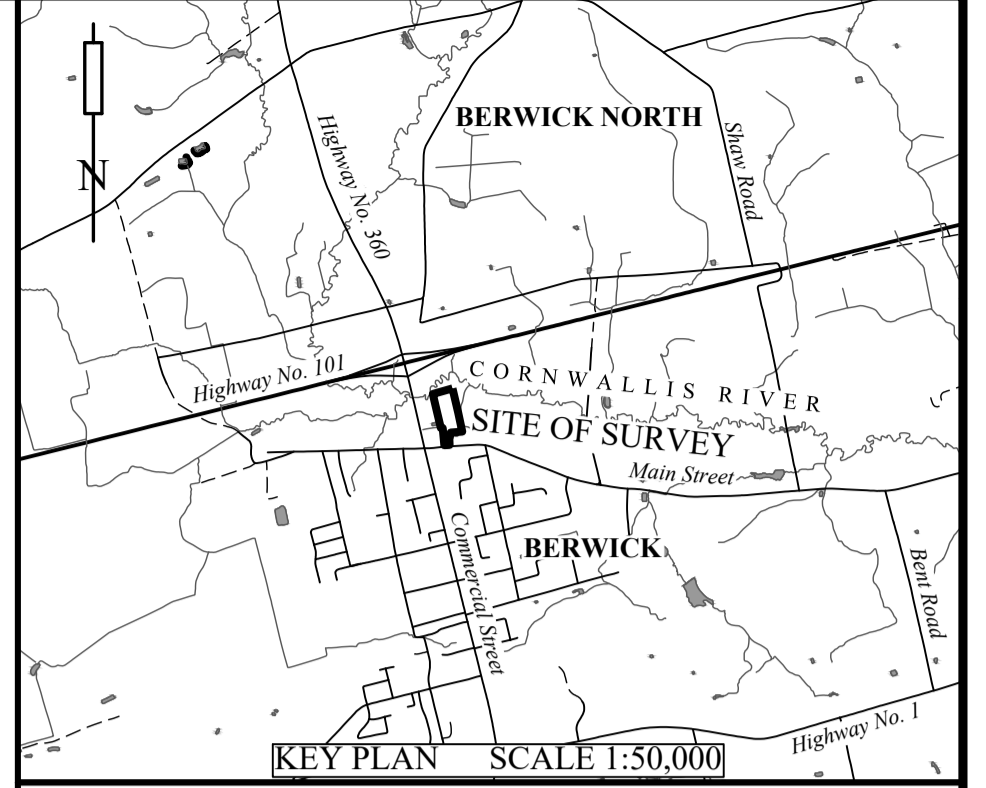
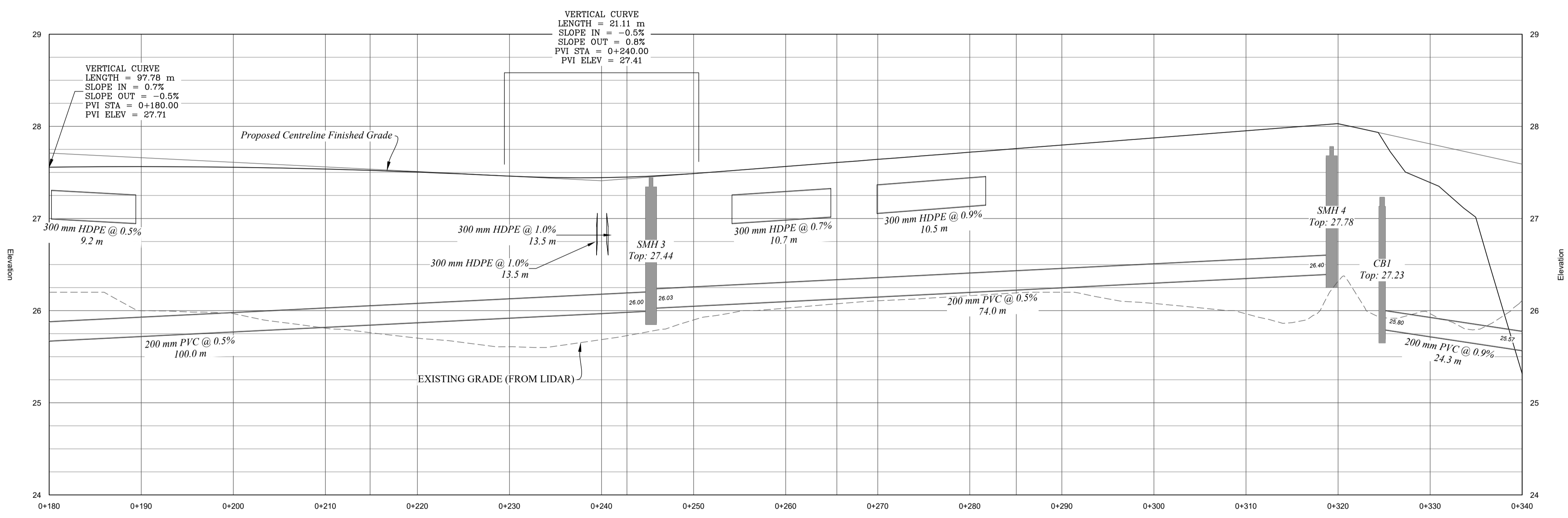
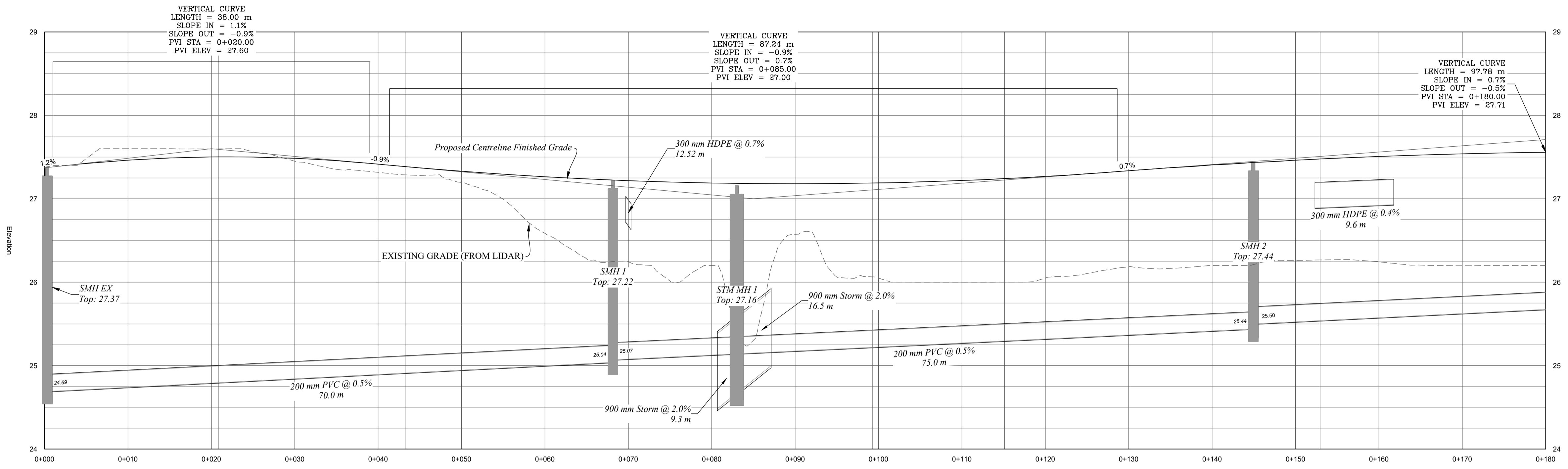
DeWOLFE & MORSE SURVEYING LIMITED

P.O. BOX 520 MIDDLETON
 ANNAPOLIS COUNTY, N.S.
 BOS - 1P0
 Email: info@demosl.ca

DRAFTED ON AUGUST 3, 2023

PLAN No: 2020-293 GSP

SHEET 2 of 8



REVISIONS

1. ISSUED FOR DEVELOPMENT AGREEMENT - AUGUST 9, 2023

NOTES:

- ALL SANITARY SEWER WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR MUNICIPAL SERVICES 2023
- ALL STORM WATER DRAINAGE WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR MUNICIPAL SERVICES 2023
- CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UNDERGROUND SERVICES PRIOR TO CONSTRUCTION (CHECK WITH TOWN OF BERWICK)
- POTABLE WATER TO BE SUPPLIED BY DRILLED WELLS. EACH BUILDING WILL HAVE ITS OWN DRILLED WELL.

CONTROL TABLE
 MTM ZONE 5, NAD 83(CSRS) (2010.0 V7)

POINT	NORTHING	EASTING	DESCRIPTION
ACS 250041	4971825.192	25447205.338	SMARTNET (PUBLISHED)

LEGEND

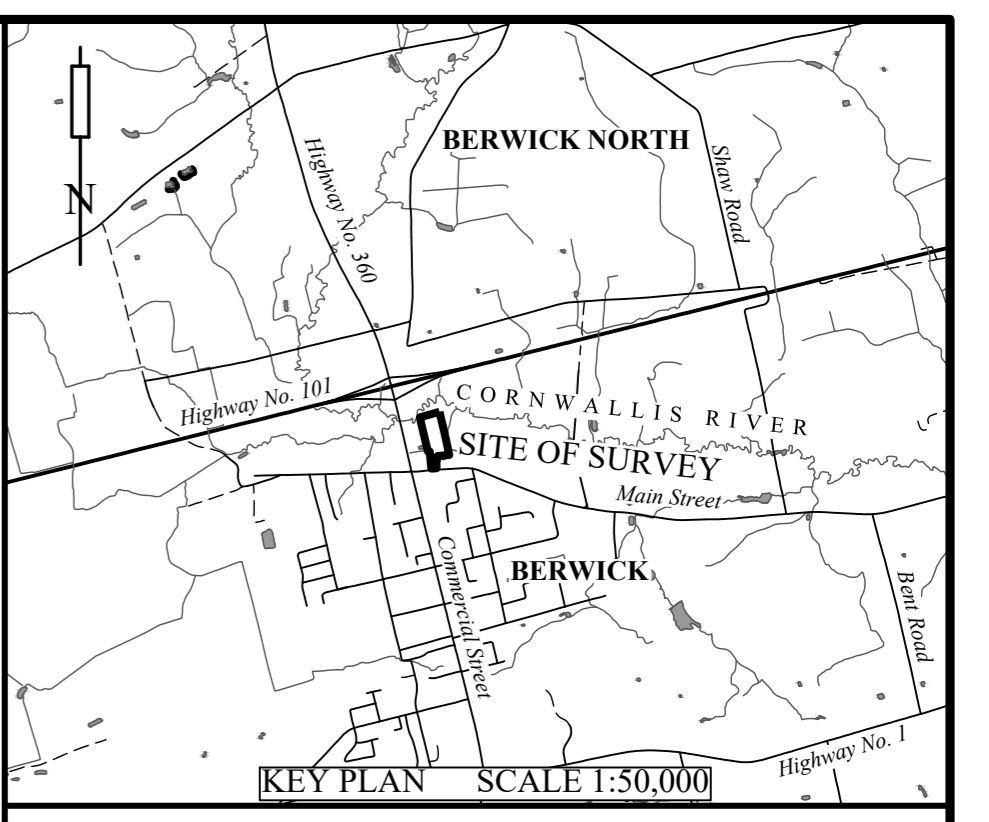
BEGINNING OF VERTICAL CURVE	.....	BVC
END OF VERTICAL CURVE	.....	EVC
POINT OF VERTICAL INTERSECTION	.....	PVI
FINISHED GRADE	.....	FG
CALCULATED	.....	C
POINT OF CURVATURE	.....	PC
POINT OF COMPOUND CURVATURE	.....	PCC
CHORD	.....	CH
MANHOLE (SANITARY)	.....	MHS
MANHOLE (STORM)	.....	MHST
CATCH BASIN	.....	CB
FIRE HYDRANT	.....	FH
WATER VALVE	.....	WV
CALCULATED POINT	.....	CP
UTILITY POLE	.....	UP
RIGHT OF WAY	.....	ROW
NOT TO SCALE	.....	—|—
ANCHOR	.....	—|—
OVERHEAD WIRES	.....	OHW
ELEVATION (EXISTING)	.....	+ 7.63
ELEVATION (PROPOSED)	.....	+ 7.75
PROPERTY LINE	.....	—|—
EDGE OF ASPHALT / SHOULDER	.....	EOA / EOS
NEW OVERHEAD LIGHT	.....	—|—

PROFILE
 FOR PROPOSED
MULTI UNIT DEVELOPMENT
 FOR KENT FIELD ESTATES
 ON LANDS OF
TOWN OF BERWICK
 MAIN STREET
 BERWICK
 KINGS COUNTY, NS

10 0 10 20
 SCALE 1:300

HORIZONTAL SCALE 1:300
 VERTICAL SCALE 1:30
 DESIGNED BY ERIC J. MORSE, P.ENG.

DeWOLFE & MORSE SURVEYING LIMITED
 P.O. BOX 520 MIDDLETON
 ANNAPOLIS COUNTY, N.S.
 B0S - 1P0
 Email: info@demosl.ca



REVISIONS

NO.	DESCRIPTION
1.	ISSUED FOR DEVELOPMENT AGREEMENT - AUGUST 9, 2023

NOTES:

1. ALL SANITARY SEWER WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR MUNICIPAL SERVICES 2023
2. ALL STORM WATER DRAINAGE WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR MUNICIPAL SERVICES 2023
3. CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UNDERGROUND SERVICES PRIOR TO CONSTRUCTION (CHECK WITH TOWN OF BERWICK)
4. POTABLE WATER TO BE SUPPLIED BY DRILLED WELLS. EACH BUILDING WILL HAVE ITS OWN DRILLED WELL.

CONTROL TABLE
MTM ZONE 5, NAD 83(CSRS) (2010.0 V7)

POINT	NORTHING	EASTING	DESCRIPTION
ACS 250041	4971825.192	25447205.338	SMARTNET (PUBLISHED)

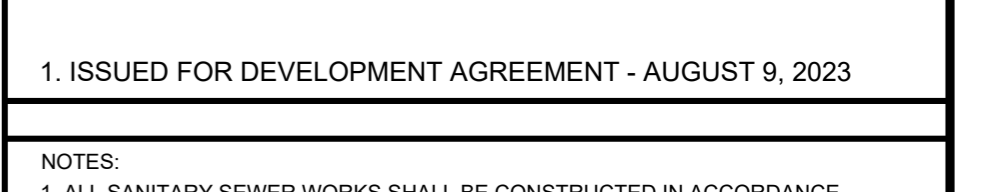
LEGEND

BEGINNING OF VERTICAL CURVE	BVC
END OF VERTICAL CURVE	EVC
POINT OF VERTICAL INTERSECTION	PVI
FINISHED GRADE	FG
CALCULATED	C
POINT OF CURVATURE	PC
POINT OF COMPOUND CURVATURE	PCC
CHORD	CH
MANHOLE (SANITARY)	MHS
MANHOLE (STORM)	MHST
CATCH BASIN	CB
FIRE HYDRANT	FH
WATER VALVE	WV
CALCULATED POINT	CP
UTILITY POLE	UP
RIGHT OF WAY	ROW
NOT TO SCALE	NTS
ANCHOR	ANCH
OVERHEAD WIRES	OHW
ELEVATION (EXISTING)	-7.63
ELEVATION (PROPOSED)	+7.75
PROPERTY LINE	PL
EDGE OF ASPHALT / SHOULDER	EOA / EOS
NEW OVERHEAD LIGHT	OL

GRADING PLAN

FOR PROPOSED
MULTI UNIT DEVELOPMENT
FOR KENT FIELD ESTATES
ON LANDS OF
TOWN OF BERWICK

MAIN STREET
BERWICK
KINGS COUNTY, NS



HORIZONTAL SCALE 1:500
DESIGNED BY ERIC J. MORSE, P.ENG.

DeWOLFE & MORSE SURVEYING LIMITED

P.O. BOX 520 MIDDLETON
ANNAPOLIS COUNTY, N.S.
BOS - 1P0
Email: info@demosl.ca

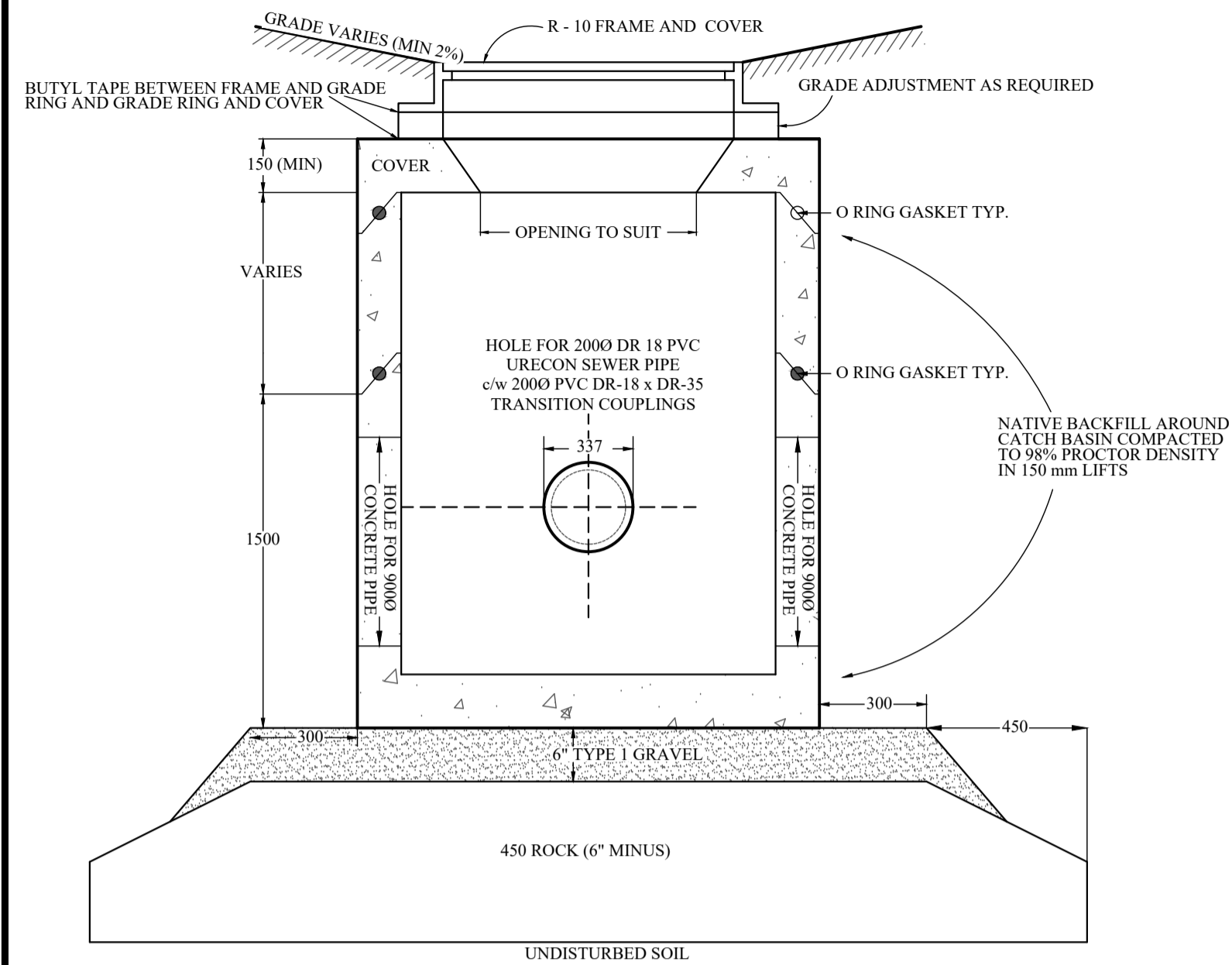
DRAFTED ON AUGUST 3, 2023

PLAN No: 2020-293 GRADING

SHEET 4 of 8

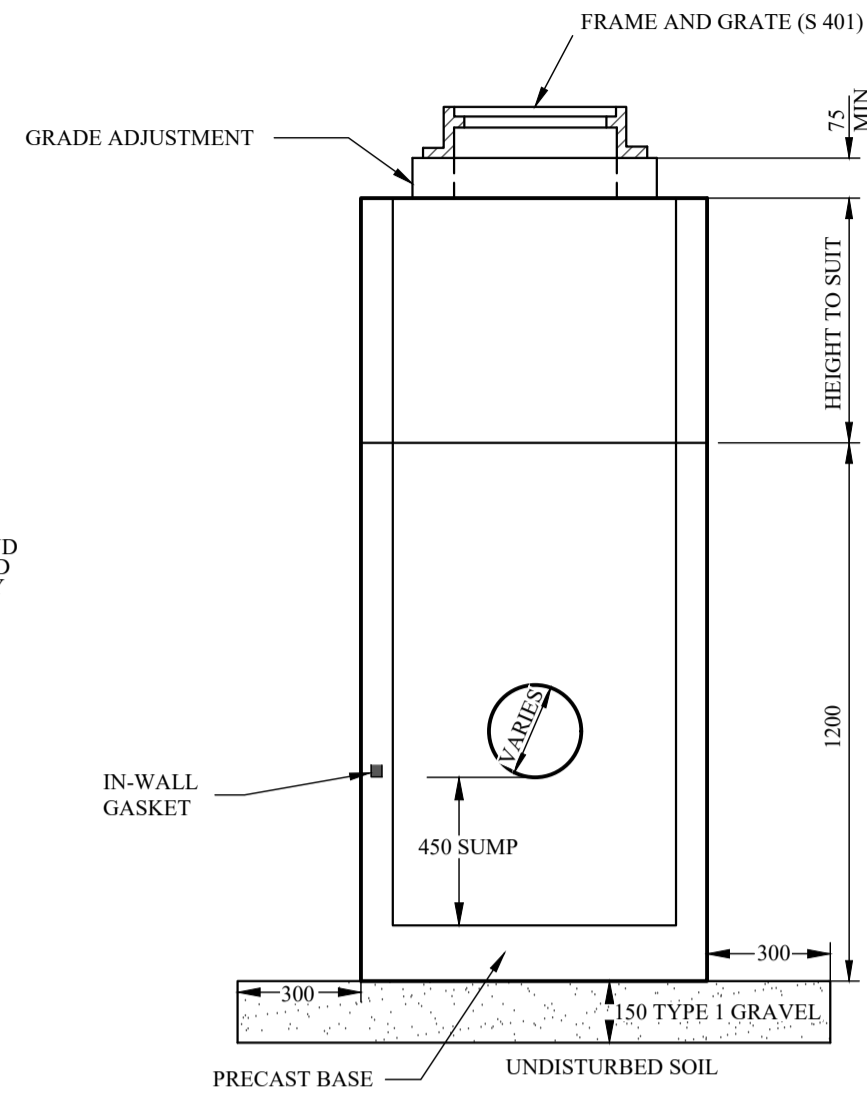
1500 mm DIA. PRECAST MANHOLE

NOT TO SCALE



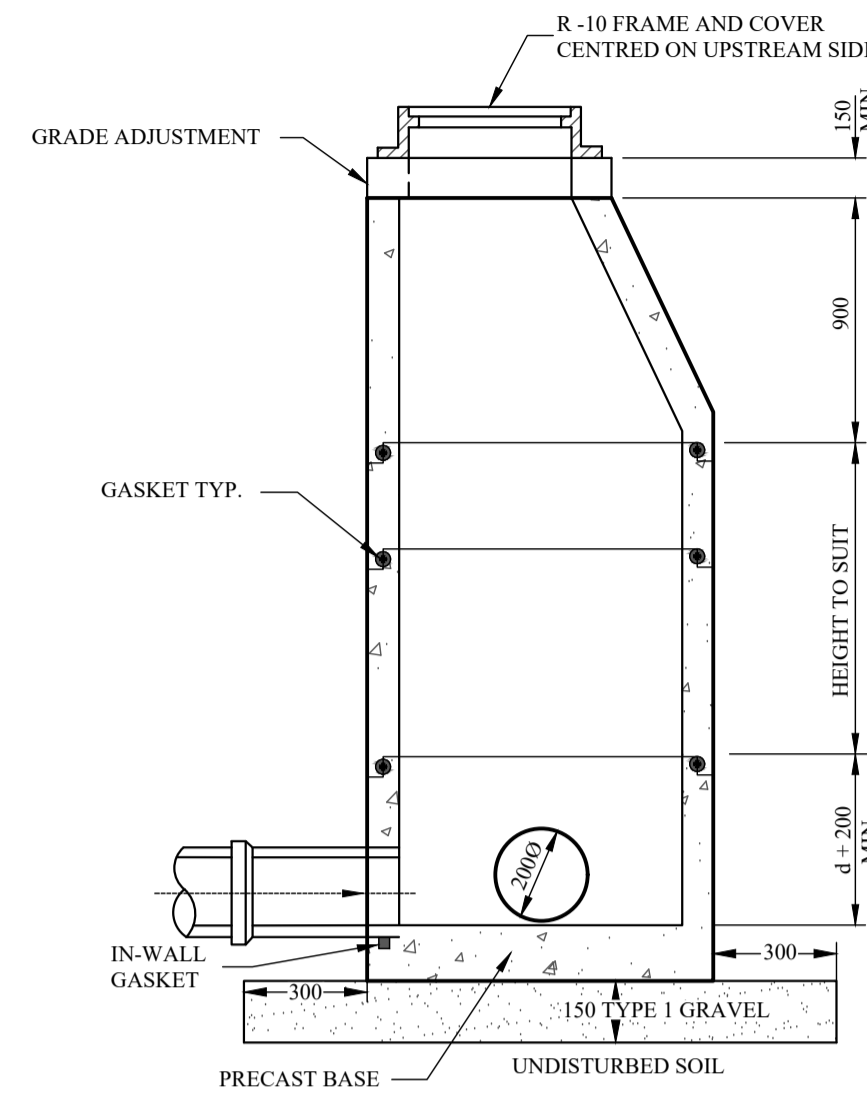
600 mm X 600 mm PRECAST CATCHPIT

NOT TO SCALE



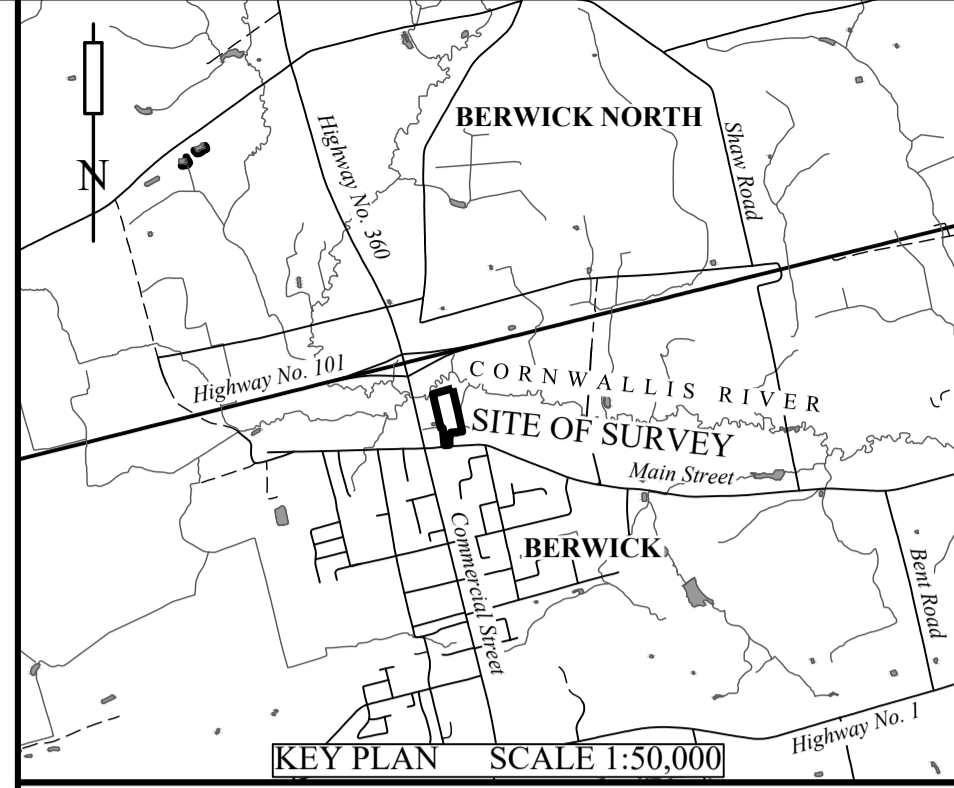
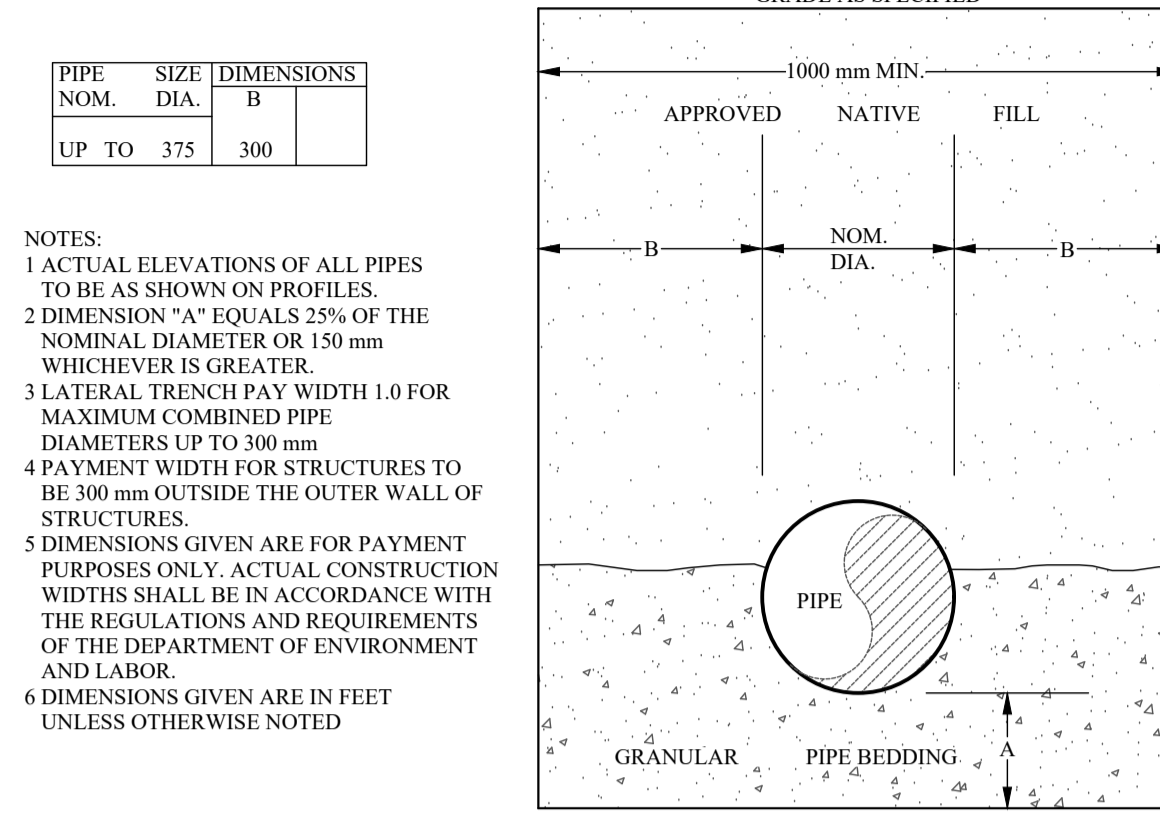
1050 mm DIA. PRECAST MANHOLE (SANITARY)

NOT TO SCALE



TYPICAL SINGLE PIPE TRENCH

NOT TO SCALE



REVISIONS

NO.	DESCRIPTION	DATE
1.	ISSUED FOR DEVELOPMENT AGREEMENT - AUGUST 9, 2023	

- NOTES:**
1. ALL SANITARY SEWER WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR MUNICIPAL SERVICES 2023
 2. ALL STORM WATER DRAINAGE WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR MUNICIPAL SERVICES 2023
 3. CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UNDERGROUND SERVICES PRIOR TO CONSTRUCTION (CHECK WITH TOWN OF BERWICK)
 4. POTABLE WATER TO BE SUPPLIED BY DRILLED WELLS. EACH BUILDING WILL HAVE ITS OWN DRILLED WELL.

CONTROL TABLE
MTM ZONE 5, NAD 83(CSRS) (2010.0 V7)

POINT	NORTHING	EASTING	DESCRIPTION
ACS 250041	4971825.192	25447205.338	SMARTMET (PUBLISHED)

LEGEND

BEGINNING OF VERTICAL CURVE	BVC
END OF VERTICAL CURVE	EVC
POINT OF VERTICAL INTERSECTION	PVI
FINISHED GRADE	FG
CALCULATED	C
POINT OF CURVATURE	PC
POINT OF COMPOUND CURVATURE	PCC
CHORD	CH
MANHOLE (SANITARY)	MHS
MANHOLE (STORM)	MHST
CATCH BASIN	CB
FIRE HYDRANT	FH
WATER VALVE	WV
CALCULATED POINT	CP
UTILITY POLE	UP
RIGHT OF WAY	ROW
NOT TO SCALE	1
ANCHOR	OHW
OVERHEAD WIRES	OHW
ELEVATION (EXISTING)	+ 7.63
ELEVATION (PROPOSED)	+ 7.75
PROPERTY LINE	EOA / EOS
EDGE OF ASPHALT / SHOULDER	EOA / EOS
NEW OVERHEAD LIGHT	

DETAILS
FOR PROPOSED
MULTI UNIT DEVELOPMENT
FOR KENT FIELD ESTATES
ON LANDS OF
TOWN OF BERWICK
MAIN STREET
BERWICK
KINGS COUNTY, NS

DETAIL SCALES AS NOTED
DESIGNED BY ERIC J. MORSE, P. ENG.

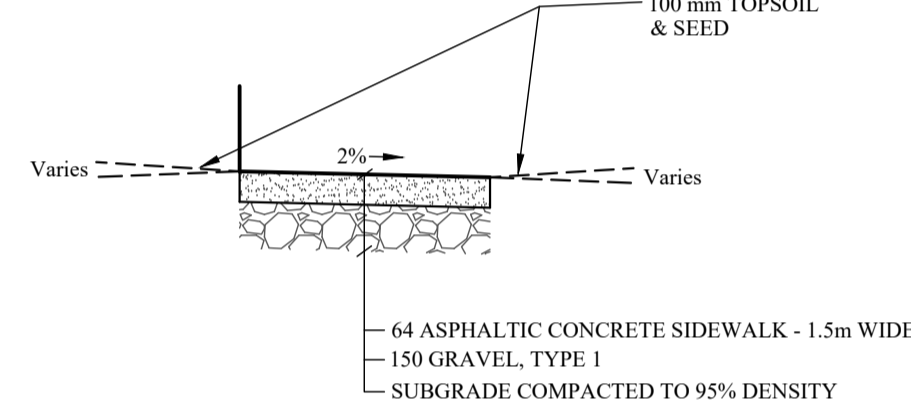
DeWOLFE & MORSE SURVEYING LIMITED
P.O. BOX 520 MIDDLETON
ANNAPOLIS COUNTY, N.S.
B0S - 1P0
Email: info@demosl.ca

ENVIRONMENTAL PROTECTION NOTES:

1. CLEAN EXISTING STREETS, AS DIRECTED, TO REMOVE ANY MUD THAT MAY BE TRACKED OFF-SITE BY THE CONSTRUCTION EQUIPMENT.
2. SILT FENCE TO BE INSTALLED ALONG THE PROPERTY BOUNDARIES AS REQUIRED, AS PER THE DETAILS SHOWN BEFORE GRUBBING OR PLACING OF FILL.
3. INSTALL ADDITIONAL PROTECTION BERMS, SILT FENCES, CUTOFF DITCHES, ETC., AS REQUIRED BY SITE CONDITIONS TO PREVENT SEDIMENT FROM ENTERING PONDS OR RIVER.
4. MAINTAIN A STOCK PILE OF APPROPRIATE EROSION AND ENVIRONMENTAL PROTECTION MATERIALS ON SITE AT ALL TIMES. THESE SHALL INCLUDE AS A MINIMUM:
 - 1. 200 LINEAL FEET OF SILT-FENCE
 - 2. 20 BALES OF HAY OR STRAW.
 - 3. A STOCK PILE OF 9 CUBIC METRES OF WOOD CHIPS.
 - 4. A STOCK PILE OF 18 CUBIC METRES OF TYPE 1 GRAVEL.
5. MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES FROM THE TIME OF INSTALLATION UNTIL AFTER ALL AREAS DRAINING TOWARDS THEM HAVE BEEN TOTALLY STABILIZED.
6. STABILIZE SLOPES AND CRITICAL AREAS BY SODDING, OR AS SHOWN ON THE LANDSCAPING DETAILS.
7. ANY DISTURBED AREAS WHICH MAY BE REWORKED SHALL BE STABILIZED USING WOOD CHIPS OR OTHER APPROVED METHODS WITHIN TWO WEEKS OF THE DISTURBANCE OR BEFORE A FORECAST OF A SIGNIFICANT RAINFALL EVENT. MAINTAIN IN PLACE UNTIL PLACEMENT OF PERMANENT STABILIZATION OR LANDSCAPING.
8. REMOVE SILT ACCUMULATIONS AT SILT FENCES AND OTHER PROTECTION DEVICES BY CAREFUL HAND EXCAVATION. DISPOSE OF ACCUMULATED SILT BY REMOVING FROM SITE OR PLACING AND BURYING IT IN FILL AREAS.
9. DEWATERING OF EXCAVATIONS SHALL BE DIRECTED THROUGH GRAVEL BERMS.
10. DO NOT PUMP, OR DRAIN WATER CONTAINING SUSPENDED MATERIALS INTO PONDS OR RIVER.
11. COVER SOIL STOCKPILES WITH PLASTIC SHEETS OR APPROVED EQUAL WHEN SO DIRECTED.
12. PRIOR TO CARRYING OUT WORK, CHECK THE LONG RANGE WEATHER FORECAST TO ENSURE THAT THERE IS ADEQUATE TIME BEFORE FORECAST HEAVY RAIN STORMS TO STABILIZE THE WORK.
13. DO NOT PERMIT DISCOLOURED WATER TO ENTER PONDS OR RIVER. INSPECT SEDIMENT AND EROSION CONTROL MEASURES ON A REGULAR BASIS AND MAINTAIN AS NECESSARY.
14. HAVE PERSONNEL ON CALL TO PROVIDE EMERGENCY REPAIRS TO SEDIMENT AND EROSION CONTROL MEASURES AT ALL TIMES.

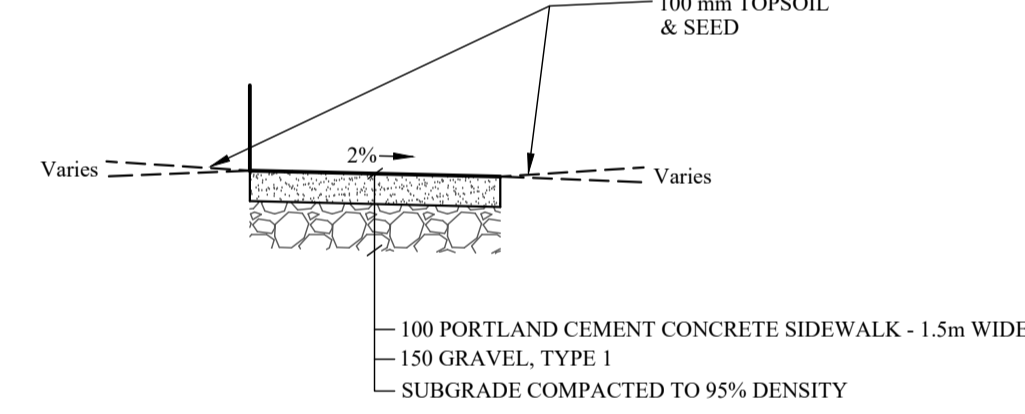
ASPHALT WALKWAY CROSS SECTION

NOT TO SCALE



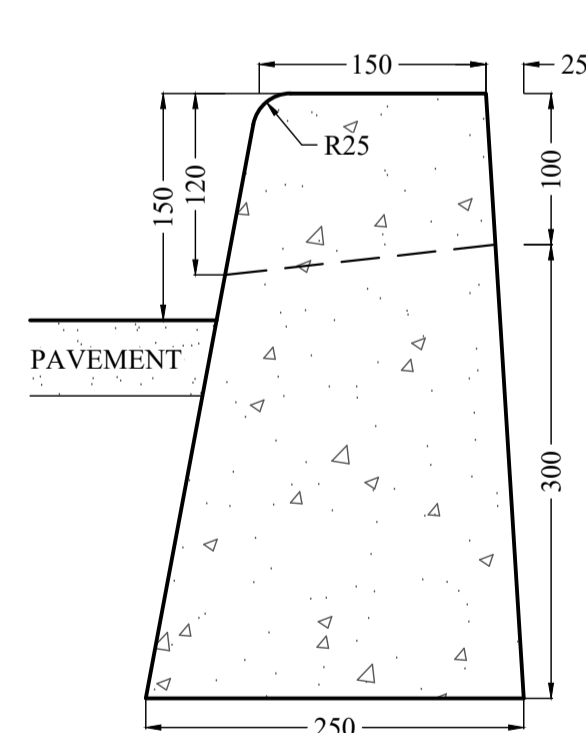
CONCRETE WALKWAY CROSS SECTION

NOT TO SCALE



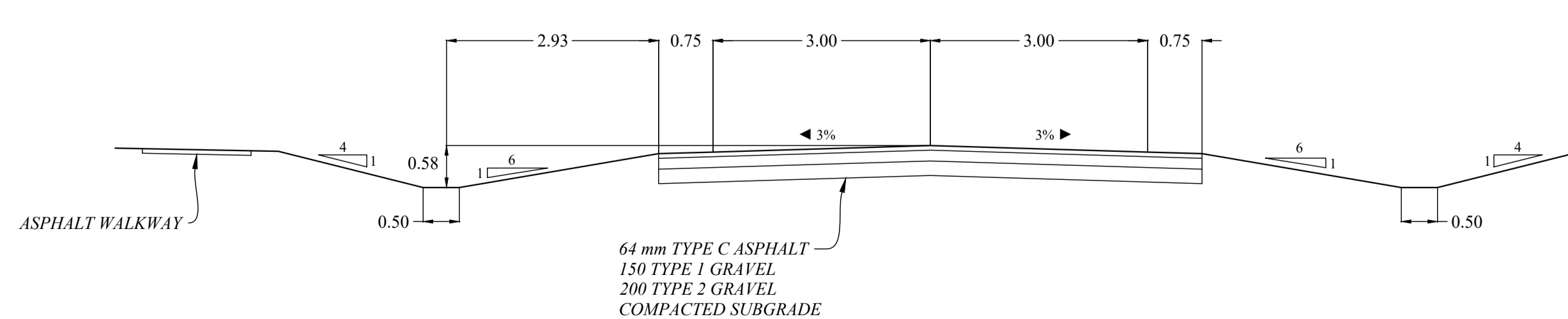
HIGH BACK CURB

NOT TO SCALE



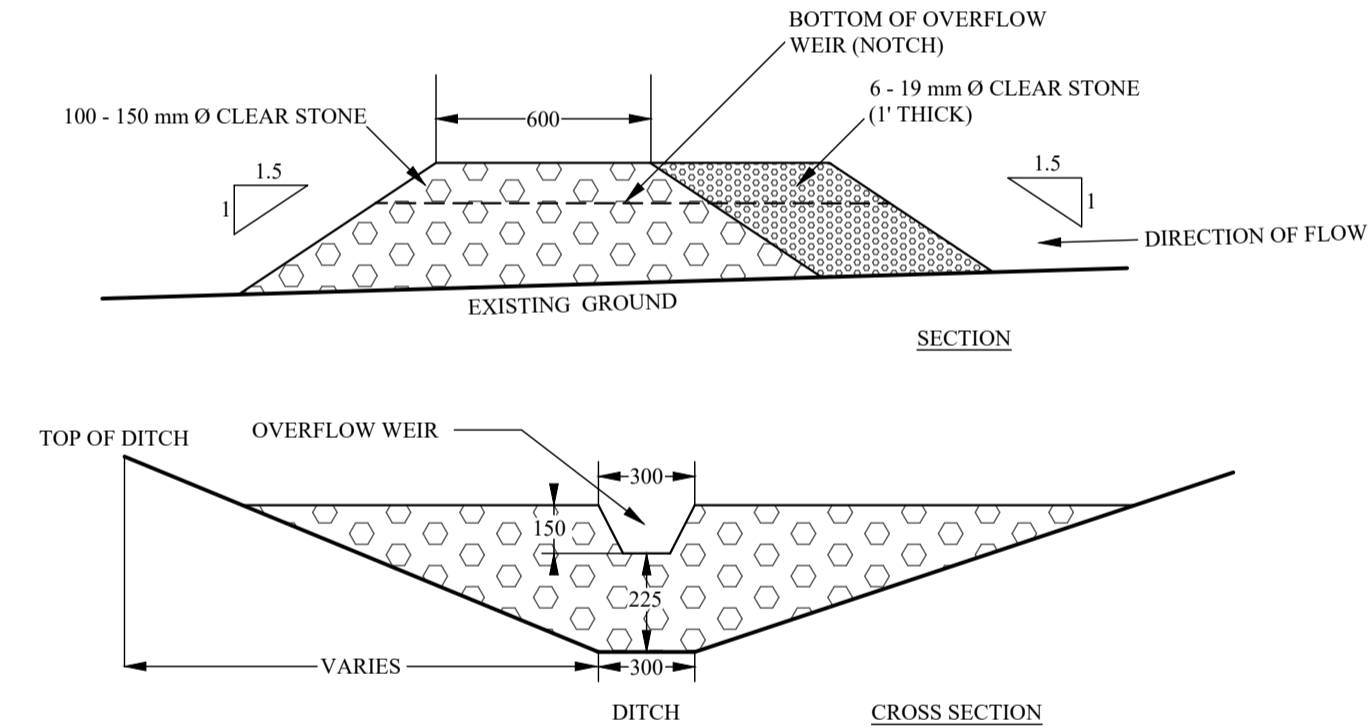
TYPICAL ROAD CROSS SECTION

NOT TO SCALE



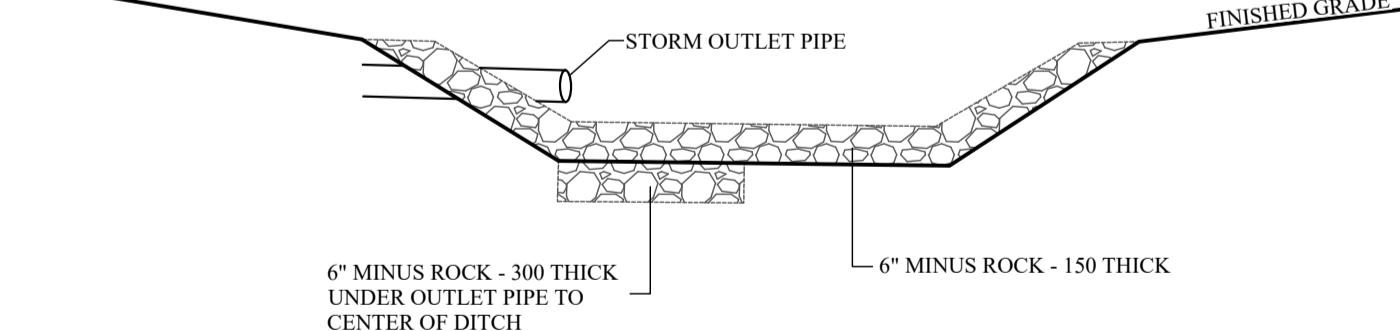
FLOW CHECK DAM

NOT TO SCALE



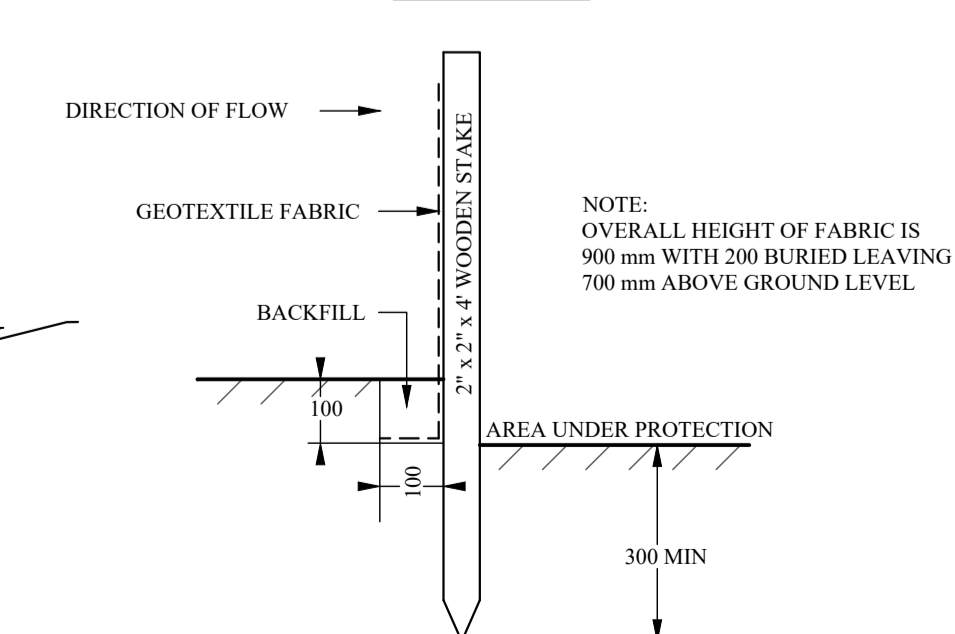
ROCK LINED DITCH CROSS SECTION

NOT TO SCALE

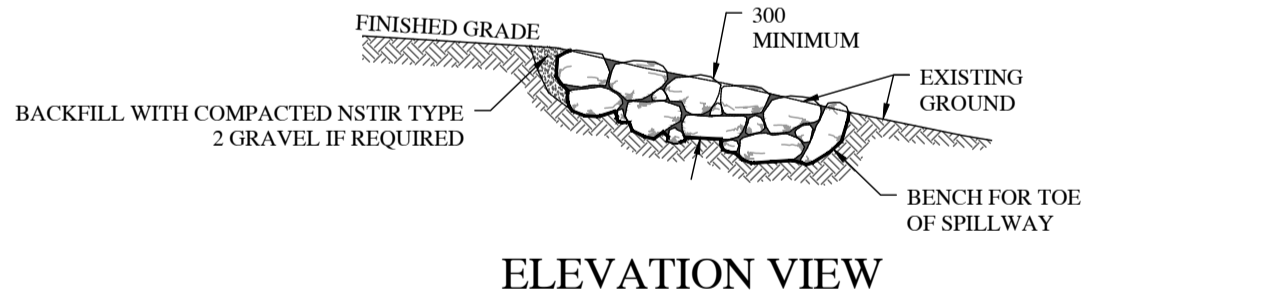
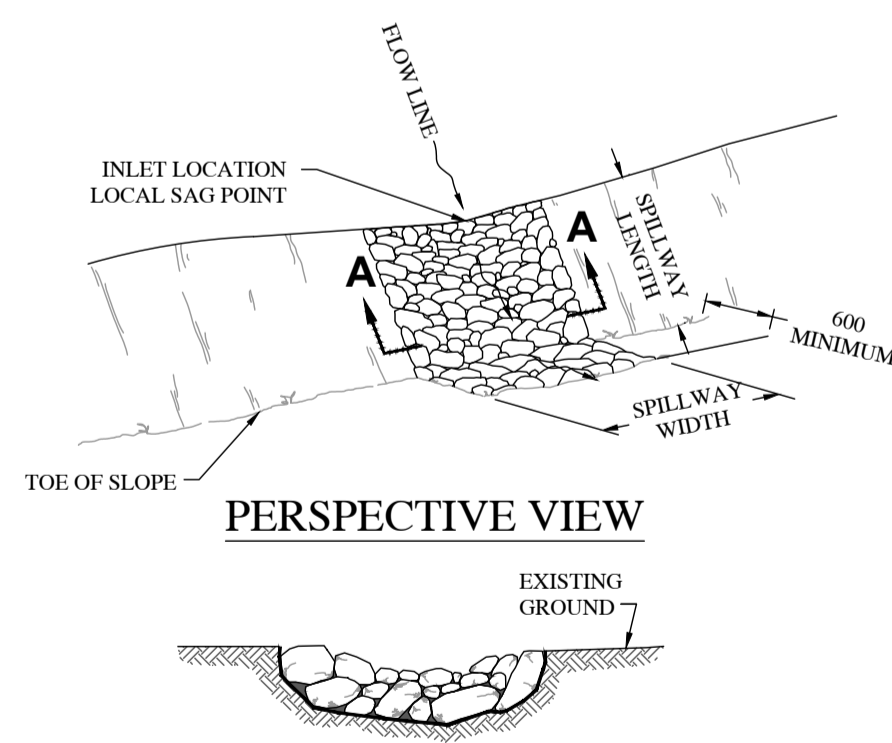


SILT FENCE DETAIL

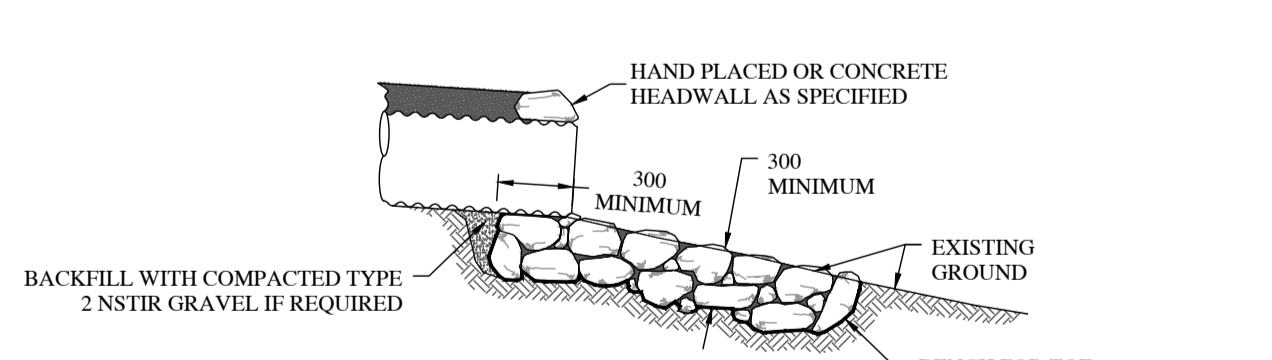
NOT TO SCALE



SECTION A-A



ROCK SPILLWAY FOR DAYLIGHT DRAINAGE LOCATION



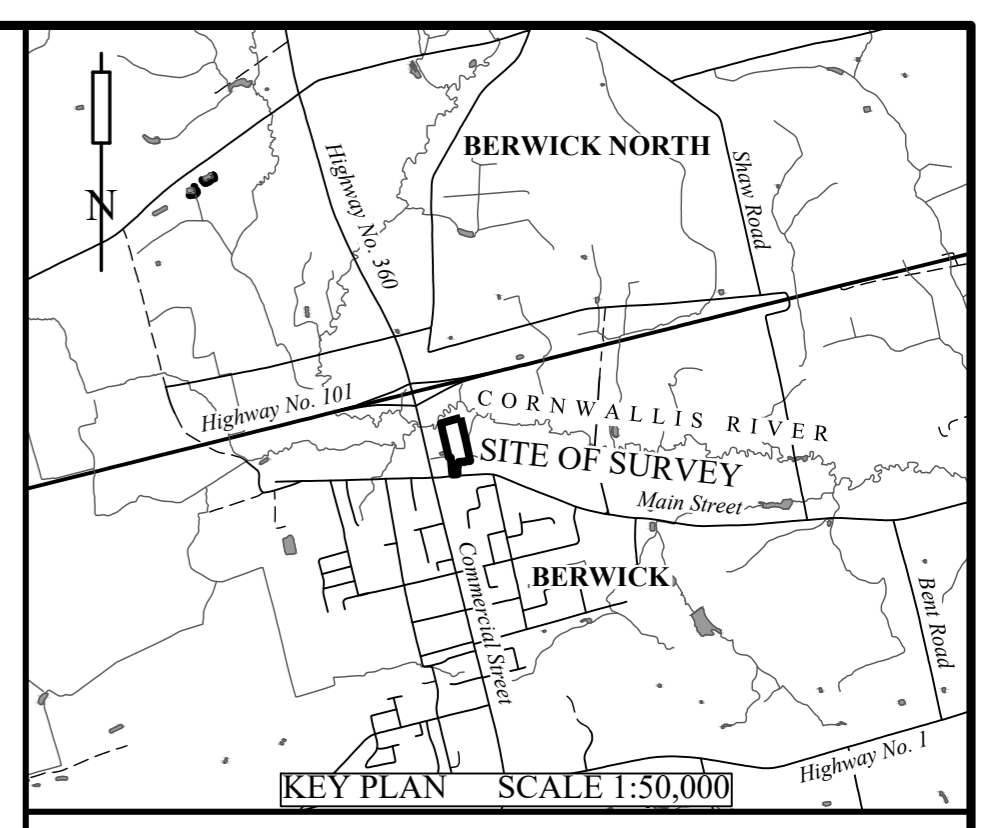
ROCK SPILLWAY FOR CULVERT OUTLET

NOTES

1. COMPACT BACKFILL IN 150mm LIFTS UNTIL NO VISUAL DISPLACEMENT.
2. UNLESS OTHERWISE SPECIFIED WHEN ROCK SPILLWAY IS REQUIRED DIMENSION SHALL BE 1000mm WIDE X 300mm DEEP X 1500mm LONG. THE AREA SHALL BE SUBEXCAVATED 300mm PRIOR TO PLACEMENT OF THE SPILLWAY SO THE FINISHED SURFACE OF THE RIPRAP WILL BE AT THE SAME ELEVATION AS THE ADJACENT FINISHED GRADE.
3. UNLESS OTHERWISE SPECIFIED SPILLWAY ROCK SHALL BE NS STANDARD SPECIFICATION FOR MUNICIPAL SERVICES CLASS 1 RIPRAP (70% between 200-450mm).

PID 55242606
TOWN OF BERWICK

LOT "2020-1"
PID 55539670
TOWN OF BERWICK



KEY PLAN SCALE 1:50,000

REVISIONS

1. ISSUED FOR DEVELOPMENT AGREEMENT - AUGUST 9, 2023

NOTES:

1. ALL SANITARY SEWER WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR MUNICIPAL SERVICES 2023
2. ALL STORM WATER DRAINAGE WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR MUNICIPAL SERVICES 2023
3. CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UNDERGROUND SERVICES PRIOR TO CONSTRUCTION (CHECK WITH TOWN OF BERWICK)
4. POTABLE WATER TO BE SUPPLIED BY DRILLED WELLS. EACH BUILDING WILL HAVE ITS OWN DRILLED WELL.

CONTROL TABLE
MTM ZONE 5, NAD 83(CSRS) (2010.0 V7)

POINT	NORTHING	EASTING	DESCRIPTION
ACS 250041	4971825.192	25447205.338	SMARTNET (PUBLISHED)

LEGEND

BEGINNING OF VERTICAL CURVE	BVC
END OF VERTICAL CURVE	EVC
POINT OF VERTICAL INTERSECTION	PVI
FINISHED GRADE	FG
CALCULATED	C
POINT OF CURVATURE	PC
POINT OF COMPOUND CURVATURE	PCC
CHORD	CH
MANHOLE (SANITARY)	MHS
MANHOLE (STORM)	MHST
CATCH BASIN	CB
FIRE HYDRANT	FH
WATER VALVE	WV
CALCULATED POINT	CP
UTILITY POLE	UP
RIGHT OF WAY	ROW
NOT TO SCALE	—|—
ANCHOR	—>
OVERHEAD WIRES	OHW
ELEVATION (EXISTING)	+7.83
ELEVATION (PROPOSED)	+7.75
PROPERTY LINE	—|—
EDGE OF ASPHALT / SHOULDER	EOA / EOS
NEW OVERHEAD LIGHT	—|—

EROSION AND SEDIMENTATION CONTROL PLAN

FOR PROPOSED

MULTI UNIT DEVELOPMENT

FOR KENT FIELD ESTATES

ON LOTS OF

TOWN OF BERWICK

MAIN STREET

BERWICK

KINGS COUNTY, NS

SCALE 1:500

HORIZONTAL SCALE 1:500

DESIGNED BY ERIC J. MORSE, P.ENG.

DeWOLFE & MORSE SURVEYING LIMITED

P.O. BOX 520 MIDDLETON

ANNAPOLIS COUNTY, N.S.

BOS - 1P0

Email: info@demosl.ca

DRAFTED ON AUGUST 3, 2023

PLAN No: 2020-293 E&S PLAN

SHEET 6 of 8



GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

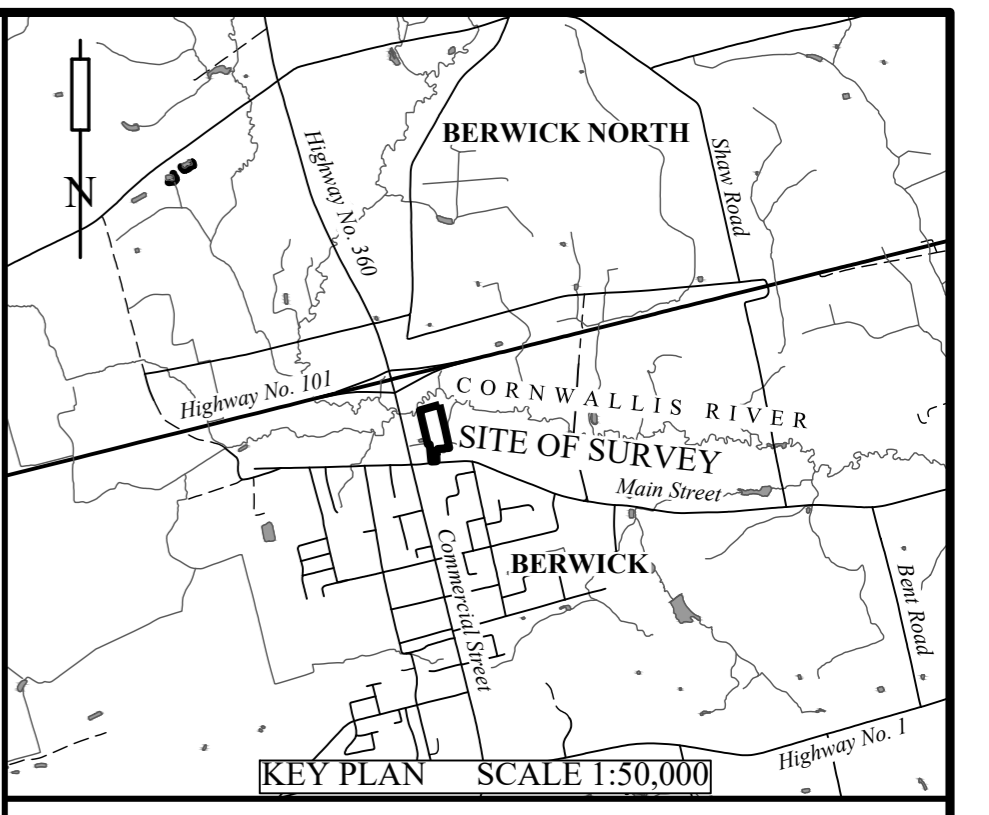
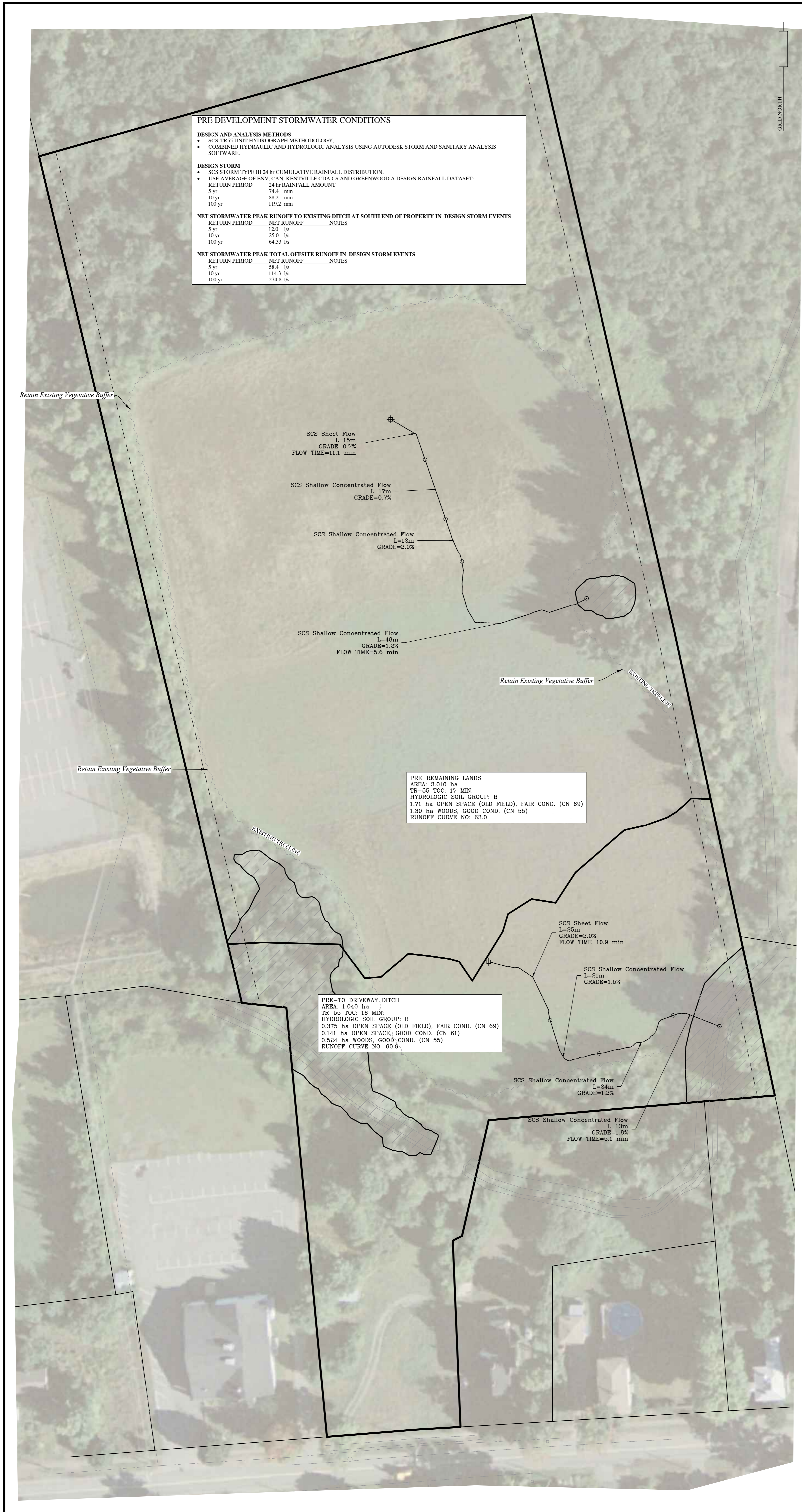
GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH

GRID NORTH



REVISIONS

1. ISSUED FOR DEVELOPMENT AGREEMENT - AUGUST 9, 2023

- NOTES:**
- ALL SANITARY SEWER WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR MUNICIPAL SERVICES 2023
 - ALL STORM WATER DRAINAGE WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR MUNICIPAL SERVICES 2023
 - CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UNDERGROUND SERVICES PRIOR TO CONSTRUCTION (CHECK WITH TOWN OF BERWICK)
 - POTABLE WATER TO BE SUPPLIED BY DRILLED WELLS. EACH BUILDING WILL HAVE ITS OWN DRILLED WELL.

CONTROL TABLE
 MTM ZONE 5, NAD 83(CSRS) (2010.0 V7)

POINT	NORTHING	EASTING	DESCRIPTION
ACS 250041	4971825.192	25447205.338	SMARTNET (PUBLISHED)

LEGEND

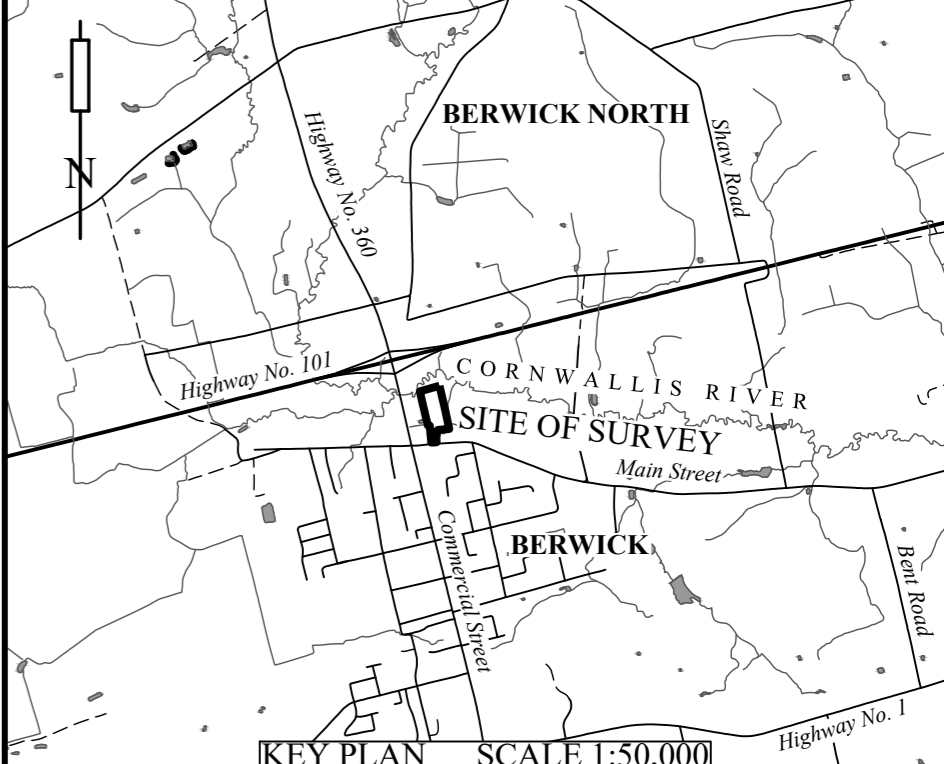
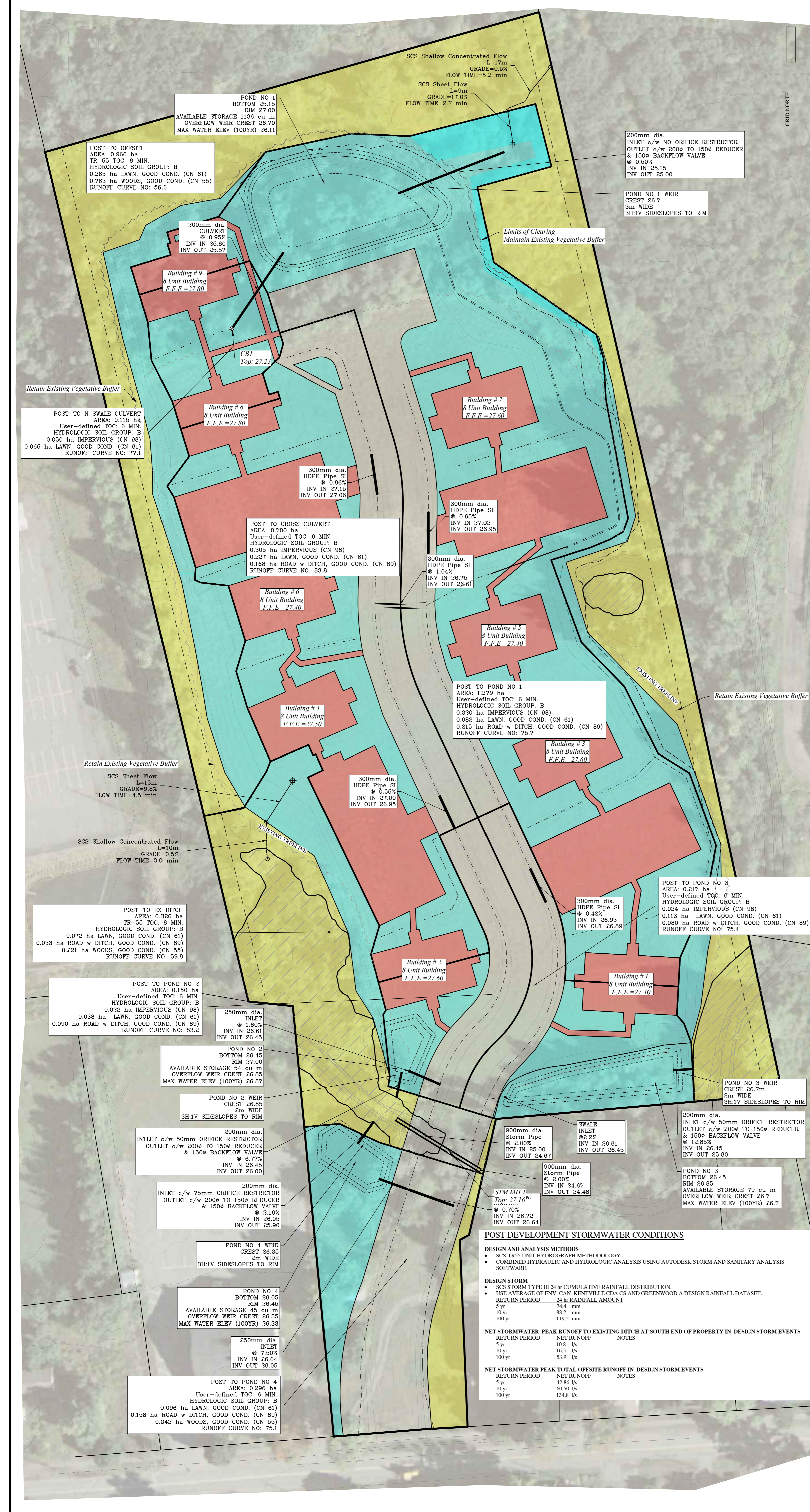
BEGINNING OF VERTICAL CURVE	.....	BVC
END OF VERTICAL CURVE	.....	EVC
POINT OF VERTICAL INTERSECTION	.....	PVI
FINISHED GRADE	.....	FG
CALCULATED	.....	C
POINT OF CURVATURE	.....	PC
POINT OF COMPOUND CURVATURE	.....	PCC
CHORD	.....	CH
MANHOLE (SANITARY)	.....	MHS
MANHOLE (STORM)	.....	MHST
CATCH BASIN	.....	CB
FIRE HYDRANT	.....	FH
WATER VALVE	.....	WV
CALCULATED POINT	.....	CP
UTILITY POLE	.....	UP
RIGHT OF WAY	.....	ROW
NOT TO SCALE	.....	NTS
ANCHOR	.....	ANCH
OVERHEAD WIRES	.....	OHW
ELEVATION (EXISTING)	.....	+7.63
ELEVATION (PROPOSED)	.....	+7.75
PROPERTY LINE	.....	PL
EDGE OF ASPHALT / SHOULDER	.....	EOA / EOS
NEW OVERHEAD LIGHT	.....	NOL

PRE DEVELOPMENT DRAINAGE PLAN
 FOR PROPOSED
MULTI UNIT DEVELOPMENT
 FOR KENT FIELD ESTATES
 ON LANDS OF
TOWN OF BERWICK
 MAIN STREET
 BERWICK
 KINGS COUNTY, NS

10 0 10 20 30 40
 SCALE 1 : 500

HORIZONTAL SCALE 1:500
 DESIGNED BY ERIC J. MORSE, P.ENG.

DeWOLFE & MORSE SURVEYING LIMITED
 P.O. BOX 520 MIDDLETON
 ANNAPOLIS COUNTY, N.S.
 B0S - 1P0
 Email: info@demosl.ca



REVISIONS

1. ISSUED FOR DEVELOPMENT AGREEMENT - AUGUST 9, 2023

- NOTES:**
1. ALL SANITARY SEWER WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR MUNICIPAL SERVICES 2023
 2. ALL STORM WATER DRAINAGE WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR MUNICIPAL SERVICES 2023
 3. CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UNDERGROUND SERVICES PRIOR TO CONSTRUCTION (CHECK WITH TOWN OF BERWICK)
 4. POTABLE WATER TO BE SUPPLIED BY DRILLED WELLS. EACH BUILDING WILL HAVE ITS OWN DRILLED WELL.

CONTROL TABLE
MTM ZONE 5, NAD 83(CSRS) (2010.0 V7)

POINT	NORTHING	EASTING	DESCRIPTION
ACS 250041	4971825.192	25447205.338	SMARTNET (PUBLISHED)

LEGEND

BEGINNING OF VERTICAL CURVE	BVC
END OF VERTICAL CURVE	EVC
POINT OF VERTICAL INTERSECTION	PVI
FINISHED GRADE	FG
CALCULATED	C
POINT OF CURVATURE	PC
POINT OF COMPOUND CURVATURE	PCC
CHORD	CH
MANHOLE (SANITARY)	MHS
MANHOLE (STORM)	MHST
CATCH BASIN	CB
FIRE HYDRANT	FH
WATER VALVE	WV
CALCULATED POINT	CP
UTILITY POLE	UP
RIGHT OF WAY	ROW
NOT TO SCALE	→
ANCHOR	→
OVERHEAD WIRES	OHW
ELEVATION (EXISTING)	+ 7.83
ELEVATION (PROPOSED)	+ 7.75
PROPERTY LINE	→
EDGE OF ASPHALT / SHOULDER	EOA / EOS
NEW OVERHEAD LIGHT	→

POST DEVELOPMENT DRAINAGE PLAN
FOR PROPOSED
MULTI UNIT DEVELOPMENT
FOR KENT FIELD ESTATES
ON LANDS OF
TOWN OF BERWICK

MAIN STREET
BERWICK
KINGS COUNTY, NS



HORIZONTAL SCALE 1:500
DESIGNED BY ERIC J. MORSE, P.ENG.

DeWOLFE & MORSE SURVEYING LIMITED
P.O. BOX 520 MIDDLETON
ANNAPOLIS COUNTY, N.S.
BOS - 1P0
Email: info@demosl.ca

DRAFTED ON AUGUST 3, 2023
PLAN No: 2020-293 POST DEV

SHEET 8 of 8

POST DEVELOPMENT STORMWATER CONDITIONS

DESIGN AND ANALYSIS METHODS

- SCS TR55 UNIT HYDROGRAPH METHODOLOGY.
- COMBINED HYDRAULIC AND HYDROLOGIC ANALYSIS USING AUTODESK STORM AND SANITARY ANALYSIS SOFTWARE.

DESIGN STORM

- SCS STORM TYPE III 24 hr CUMULATIVE RAINFALL DISTRIBUTION.
- USE AVERAGE OF ENV. CAN. KENTVILLE CDA CS AND GREENWOOD A DESIGN RAINFALL DATASET:

RETURN PERIOD	24 hr RAINFALL AMOUNT
5 yr	74.4 mm
10 yr	85.2 mm
100 yr	119.2 mm

NET STORMWATER PEAK RUNOFF TO EXISTING DITCH AT SOUTH END OF PROPERTY IN DESIGN STORM EVENTS

RETURN PERIOD	NET RUNOFF	NOTES
5 yr	10.8 l/s	
10 yr	16.5 l/s	
100 yr	53.9 l/s	

NET STORMWATER PEAK TOTAL OFFSITE RUNOFF IN DESIGN STORM EVENTS

RETURN PERIOD	NET RUNOFF	NOTES
5 yr	42.86 l/s	
10 yr	60.50 l/s	
100 yr	134.8 l/s	