STORMATER MANAGEMENT FACILITY
OPERATION & MAINTENANCE MANUAL

LEITH – BAYSHORE ROAD

MUNICIPALITY OF MEAFORD
GREY COUNTY

PREPARED BY:

C.F. CROZIER & ASSOCIATES INC.
1 FIRST STREET, SUITE 200
COLLINGWOOD, ON L9Y 1A1

SEPTEMBER 2022

CFCA FILE NO. 903-3780

CROZIER
CONSULTING ENGINEERS

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1.0 INTRODUCTION

C.F. Crozier & Associates Inc. (Crozier) was retained by Don and Daphne McCullough to complete a Stormwater Management Facility Operations and Maintenance Manual to support the Severance Application to create five (5) new lots in the Municipality of Meaford, County of Grey. The 4.16 ha property is bound by Bayshore Road to the west, Sideroad 23 to the south, and rural residential land uses to the east and north. Figure 1 illustrates the Site Location.

The subject lands front onto Bayshore Road north of the Village of Leith (ROLL # 42-10510-004-07110-000); however, there is currently no vehicular access to this property from Bayshore Road. Based on consultations with the Municipality and Grey Sauble Conservation Authority (GSCA) it was deemed to be unreasonable and not feasible to pursue obtaining the required approvals and permits for driveway access from Bayshore Road due to the significant grade change.

To the south and west of the proponent's property there was an existing unopened municipal road allowance that is connected to 23rd Sideroad. In December 2014 the proponent applied for permission from the Municipality to use this unopened road allowance to access their property, and in the summer of 2015 the Municipality authorized the potential sale of this road allowance through a severance application. It was the proponent's intent to purchase a portion of this road allowance for the potential future construction of a permanent driveway to their property. In support of this application our office provided input on the required engineering issues associated with this driveway and its associated design constraints.

Following the severance and sale of the road allowance, our office issued a Terms of Reference to outline the scope of work required to sever the parcel into five (5) lots to the Municipality of Meaford for approval. The approved TOR included the preparation of a Grading and Drainage Plan for the proposed lots, which details the on-site services (i.e. well and septic), proposed drive-way alignment, grading and stormwater management (SWM) strategies for the site. For more detailed information on servicing and SWM, please refer to the Functional Servicing and Stormwater Management Report prepared for the Subject Lands, dated July 2022.

The proposed internal private roadway will be a rural section complete with ditches to convey stormwater. To control stormwater, sand filters have been included below the ditches or drainage channels downstream of the roadside ditches.

This manual has been prepared for the Municipality to provide a detailed summary of the operation and maintenance procedures, and to assist the Municipality to ensure the long-term successful operation of the sand filters.

2.0 FACILITY DESCRIPTION

The Leith-Bayshore Residential development servicing strategy incorporates the Municipality's modified rural cross section of a 10 m and 20 m public road allowance, containing a 4 m wide granular platform with 1m granular shoulders, complete with roadside ditches, and utilities. Access to the site is provided via a connection to 23rd Sideroad to the south. Runoff from the proposed roadway is collected in the roadside ditches and conveyed to proposed drainage channels, which outlet to existing drainage features on site.

The management of stormwater and site drainage for the development must comply with the policies and standards of the various agencies including the Municipality, Grey Sauble Conservation Authority (GSCA), and the Ministry of Environment, Conservation and Parks. The development incorporates sand filters below the drainage channels, located downstream of the roadside ditches, to provide quality control for stormwater runoff.

The sand filters consist of a sub excavated pit that is filled with a sand filter media and clear stone layer. The pit is covered with topsoil and grass. Each sand filter is connected to multiple area drains located at the bottom of the drainage channel to capture and convey flows from the channel to the sand filters for treatment. Within the sand filter, stormwater is stored in the voids of the sand media and stone material. This stored water is conveyed downstream to the existing drainage features via subdrains in the clear stone layer.

The location and size of the sand filters are presented in **Drawing C101** and cross-sections / profiles of the sand filters are shown on **Drawing C102B**. Refer to **Table 1** for the sand filter lengths and storage volumes.

Table 1: Sand Filter Lengths & Storage Volumes

Sand Filter No.	Filter Length (m)	Filter Width (m)	Filter Storage (m^3)
1	35.0	2.0	28.7
2	75.0	3.0	78.8
3	15.0	4.0	21.0
Total	**125**	**-**	**128.5**

3.0 OPERATIONS AND MAINTENANCE

Sand filters are generally a low maintenance feature and do not require significant effort to keep in operational state. The most important maintenance aspect of the sand filter is the maintenance of the ditches that drain to the sand filter, protection of inlets and outlets that connects to sand filters, and sediment/debris accumulation in the sand media.

3.1 Maintenance Schedule and Operations for Sand Filters

In order to ensure the long-term functionality of the infiltration trenches, the following maintenance schedule should be conducted.

Ditch Cleaning and Drainage Area Cleaning: Trash, debris and sediment should be removed biannually or quarterly.

Area Drain Cleaning: Trash, debris and sediment should be removed biannually. Debris should be removed using a bucket strainer and floating oils and grease should be removed from the surface using a petroleum absorbing sponge. A hydrovac truck should be used to wash and vacuum out water and sediment.

Sand Media Cleaning: Filter media should be replaced as necessary. If the sand filter is clogged or partially clogged, remove the top few inches of media, cultivate the surface, and replace media with material meeting the design specifications. Replace any filter fabric that has become clogged.

Stockpiling of soil, sand, compost, or unwashed gravel within the contributing drainage area should be prohibited to prevent clogging of the underground storage.

3.1.1 Inspections

Inspections are to be conducted after every significant storm event during the first 2 years to ensure proper functioning. After this period inspections should be conducted annually. A suggested inspection routine is listed in **Table 2**, and a typical inspection checklist is provided in **Appendix A**.

Table 2: Inspection Routine for Sand Filter

Observation	Inspected Component	Maintenance Required
Elevated sediment depth	Drainage Area	Remove built-up sediment. This may occur particularly in spring when snowmelt causes depositions of sand. Check drainage area of ditch inlet for abnormal sources of sediment.
Elevated sediment depth	Area Drain	Remove built-up sediment. This may occur particularly in spring when snowmelt causes depositions of sand.
Drawdown Times >24hr	Sand Filter Surface Area	Remove built-up sediment. Clear debris from inlets/outlets. Clear sand media and reinstate new approved media.

During these inspections, if an oily sheen or abnormal colouring of the water in the facility is noted it may indicate that an industrial spill may have occurred. MECP Spills Action Centre should be contacted immediately.

4.0 CONTACT INFORMATION

A list of agencies and firms involved with this project and contact numbers is provided in **Appendix B**.

5.0 SUMMARY

Sand filters have been included below the drainage channels to capture and infiltrate runoff from the roadways and residential lots. These sand filters provide stormwater quality controls for the Leith-Bayshore Development. Routine maintenance and inspection measures have been outlined in this document. With proper maintenance, sand filters should continue to function as designed for years.

6.0 REFERENCES

This O&M Manual was developed based on recommendations from:

1. Ministry of the Environment *Stormwater Planning and Design Manual* (2003)
2. TRCA and CVC *Low Impact Development Stormwater Management Manual* (2008)
3. Virginia Department of Conservation & Recreation *Virginia Stormwater Management Program*
4. Sustainable Technologies Evaluation Program *Inspection and Maintenance of Stormwater Best Management Practices Underground Infiltration System Fact Sheet* (2018)

Respectfully Submitted,

C.F. CROZIER & ASSOCIATES INC.

George Cooper, P.Eng.
Project Engineer

J:\900\903 - McCullough\3780 - Leith Bayshore Rd\Reports\ 2022.08.05_O&M Manual

APPENDIX A

Typical Inspection Checklist for Sand Filters

SAND FILTER INSPECTION CHECKLIST

Inspection Date: _____

Inspector (and Contact Information):_____

Weather: _____

Item Description	Results	Recommendations
Ditch Inlet Structure (condition, debris, water level)		
Ditch Inlet Sediment Depth		
Filter Bed Sediment Buildup		
Filter Bed Standing Water/Permanent Water Level		
Filter Fabric Condition		
Surface Erosion (Y/N)		
Flow Bypassing Facility (Y/N)		
Drainage Area Condition		
Other		

APPENDIX B

Contact Information

CONTACT INFORMATION

Agency	Contact Information	Contact Person
Grey Sauble Conservation Authority	R.R. # 4 #237897 Inglis Falls Road Owen Sound, On N4K 5N6 Tel: (519) 376-3076 ext. 227 Fax: (519) 371-0437 Email: t.lanthier@greysauble.on.ca	Tim Lanthier, Chief Administrative Officer
MOE Spill Action Centre	5775 Yonge Street 5th floor North York ON M2M 4J1 **Toll Free: 1-800-268-6060** Tel: (416) 325-3000 Fax (416) 325-3011	
C.F. Crozier and Associates	1 First Street, Suite 200 Collingwood, ON L9Y 1A1 Tel: (705) 446-3510 Email: gcooper@cfcrozier.ca	George Cooper, P.Eng.

Legend

= SUBJECT LANDS

Project

LEITH BAYSHORE ROAD
THE COUNTY OF GREY

Drawing

SITE LOCATION

CROZIER CONSULTING ENGINEERS
Admiral Building
1 First Street, Suite 200
Collingwood, ON, L9Y 1A1
705-446-3510 T
705-446-3520 F
www.cfcrozier.ca
info@cfcrozier.ca

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N.L.	N.L./G.C.	903-3780

Scale	Date	Check By	Drawing
N.T.S.	06/30/2020	G.C.	FIG. 1

LEITH-BAYSHORE ROAD

MUNICIPALITY OF MEAFORD

COUNTY OF GREY

MUNICIPALITY

MUNICIPALITY OF MEAFORD
21 TROWBRIDGE STREET
MEAFORD, ONTARIO, N4L 1N2

DEVELOPER

DON AND DAPHNE McCULLOUGH
53 GEORGIAN MEADOWS DRIVE
COLLINGWOOD, ONTARIO, L9Y 5H4

DEVELOPER'S ENGINEER

CROZIER CONSULTING ENGINEERS
ADMIRAL BUILDING
1 FIRST STREET, SUITE 200
COLLINGWOOD, ON, L9Y 1A1
705-446-3510 T
705-446-3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

DRAWING	TITLE
C100	TITLE PAGE
C101	MASTER SERVICING AND GRADING PLAN
C102A	CROSS SECTIONS
C102B	CROSS SECTIONS & PROFILES FOR SAND FILTERS
C103A	PLAN & PROFILE (STA. 0+000 – 0+154)
C103B	PLAN & PROFILE (STA. 0+154 – 0+440)
C104	EROSION & SEDIMENT CONTROL PLAN
C105	CONSTRUCTION NOTES AND DETAILS

MASTER LEGEND

EXISTING FEATURES (EX.)

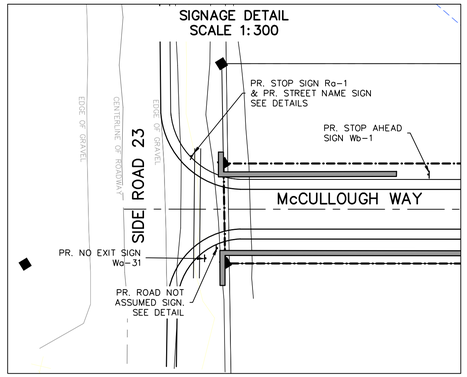
- XXX.X — EX. CONTOUR
- +XXX.XX — EX. GRADE
- EX. TREELINE
- EX. WATERCOURSE
- EX. DITCH
- HP — EX. HYDRO POLE
- EX. SIGN
- BM# — EX. BENCHMARK NUMBER & LOCATION

PROPOSED FEATURES (PR.)

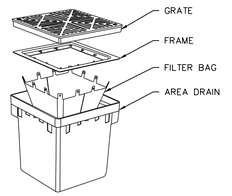
- PR. PROPERTY LIMITS
- +XXX.XX — PR. ELEVATION
- +XXX.XX — PR. ELEVATION (MATCH EX. ELEVATION)
- X.X% — PR. SWALE & SLOPE
- PR. DITCH DRAINAGE
- PR. DITCH INLET CATCHBASIN
- PR. STORM CATCHMENT
- 102 — CATCHMENT AREA ID
- 0.23 / 0.78 — RUNOFF COEFFICIENT / DRAINAGE AREA (ha)
- PR. FENCE
- PR. BUILDING ENVELOPE
- HDSF — PR. HEAVY DUTY SILT FENCE
- PR. STRAW BALE CHECK FLOW
- PR. INFILTRATION TRENCH
- PR. SLOPE (3:1 MAX.)
- PR. SEPTIC LOCATION
- RIP RAP
- PROPOSED WELL LOCATION
- ENVIRONMENTAL PROTECTED/HAZARD AREAS
- PROPOSED RESIDENCE (325m²)
- PROPOSED OVERLAND FLOW DIRECTION
- INTERCEPTOR SWALE
- RETAINING WALL
- PROPOSED WEST DITCH
- PROPOSED EAST DITCH
- PROPOSED CENTER LINE
- TREE REMOVAL AREA

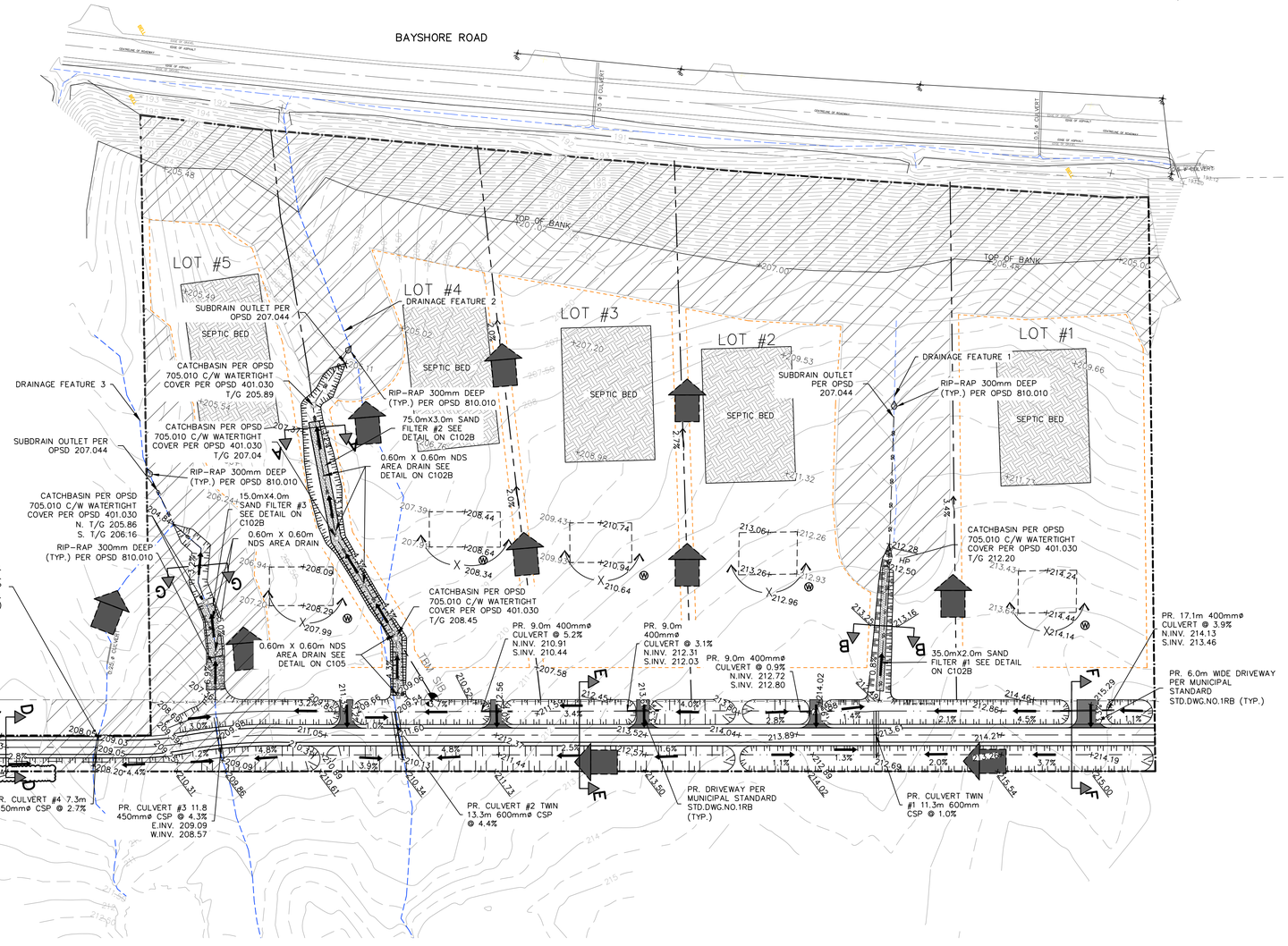
PROJECT No.: 903-3780
ISSUED FOR 3RD SUBMISSION

SIGNAGE DETAIL
SCALE 1:300



TYPICAL AREA DRAIN





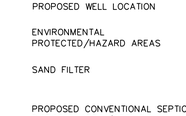
LEGEND

- PROPOSED BUILDING ENVELOPE
- PROPOSED SUBDRAIN
- PROPOSED WELL LOCATION
- ENVIRONMENTAL PROTECTED/HAZARD AREAS
- SAND FILTER
- PROPOSED CONVENTIONAL SEPTIC DISPOSAL AREA (950m²)
- PROPOSED RESIDENCE (325m²)
- PROPOSED SWALE (2.5%)
- EXISTING GRADE (+213.05)
- PROPOSED GRADE (+213.05)
- PROPOSED GRADE (MATCH EXISTING) (+212.89)
- PROPOSED OVERLAND FLOW DIRECTION
- INTERCEPTOR SWALE
- RETAINING WALL
- RIP RAP
- PROPOSED DRIPLINE

SIGN DETAILS

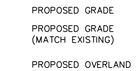
60cmx60cm
Ra-1 STOP SIGN

75cmx75cm
Wb-1 STOP AHEAD SIGN



ROAD NOT ASSUMED SIGN

STREET NAME SIGN



45cmX45cm
Wa-31 NO EXIT SIGN

GENERAL GRADING NOTES:

1. REFER TO DRAWING C102 FOR CROSS-SECTION DETAILS
2. PROPOSED SAND FILTER HAVE BEEN DESIGNED TO PROVIDE THE REQUIRED QUANTITY CONTROLS FOR FULL BUILD-OUT OF THE DEVELOPMENT AND QUALITY FOR THE PROPOSED ROADWAY. QUALITY CONTROLS FOR INDIVIDUAL LOTS TO BE DESIGNED BY OTHERS AT BUILDING PERMIT STAGE (IF REQUIRED)
3. 150mmø RIP RAP (300mm DEEP) TO BE PROVIDED IN DITCHES THAT EXCEED A SLOPE OF 5.0%

GENERAL SERVICING NOTES:

1. DETAILED SEPTIC DESIGN AND LOCATION, AND WELL LOCATION TO BE CONFIRMED AT TIME OF DETAILED LOT DESIGN/BUILDING PERMIT
2. SEPTIC BEDS TO MAINTAIN MINIMUM 15m SEPARATION FROM PROPOSED WELLS AND SAND FILTERS.
3. SEPTIC BEDS TO MAINTAIN MINIMUM 3m SEPARATION FROM PROPERTY LINES.

TEMPORARY BENCHMARKS

TBM#1- SQUARE IRON BAR (SIB), ELEVATION = 210.299
SURVEY COMPLETED BY VAN HARTEN ON JANUARY 29TH 2019

Town

No.	ISSUE	DATE: MM/DD/YYYY
0	ISSUED FOR CLIENT REVIEW	07/28/2020
1	RE-ISSUED FOR CLIENT REVIEW	08/18/2021
2	ISSUED FOR SECOND SUBMISSION	11/18/2021
3	ISSUED FOR THIRD SUBMISSION	09/19/2022

Engineer: LICENSED PROFESSIONAL ENGINEER R.A. ALEXANDER 100213093 September 19, 2022 PROVINCE OF ONTARIO

Engineer: LICENSED PROFESSIONAL ENGINEER G.F. COOPER 100532614 Sept. 19, 2022 PROVINCE OF ONTARIO

Project: LEITH-BAYSHORE ROAD
MUNICIPALITY OF MEAFORD

Drawing: MASTER SERVICING & GRADING PLAN

CROZIER CONSULTING ENGINEERS
ADMIRAL BUILDING
1 FIRST STREET, SUITE 200
COLLINGWOOD, ON, L9Y 1A1
705-446-3510 T
705-446-3520 F
WWW.CFCROZIER.CA
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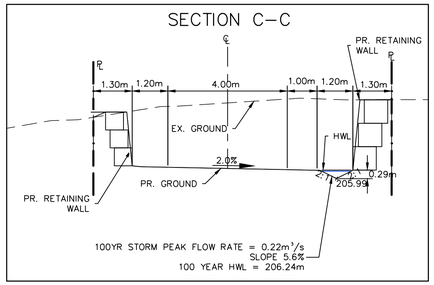
N.L.	N.L./G.C.	903-3780	
Check By	Check By	Scale	Drawing
G.C.	R.A.	1:750	C101

SECTION C–C



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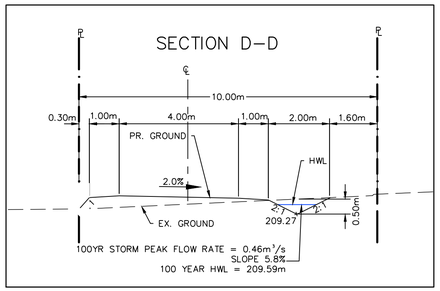
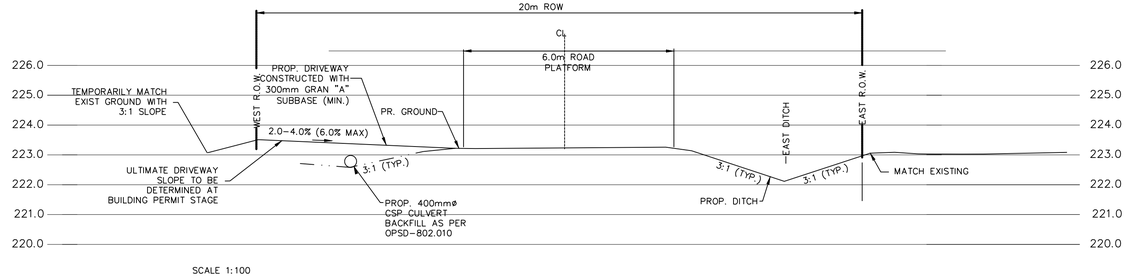


TYPICAL DRIVEWAY SECTION



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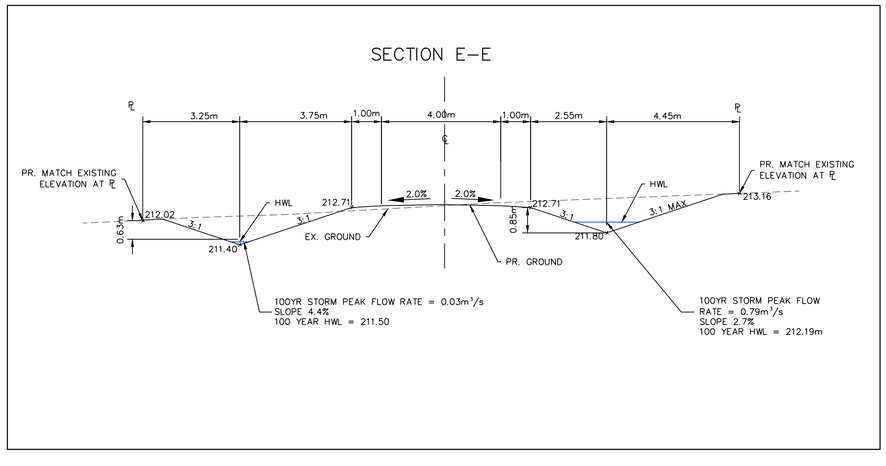
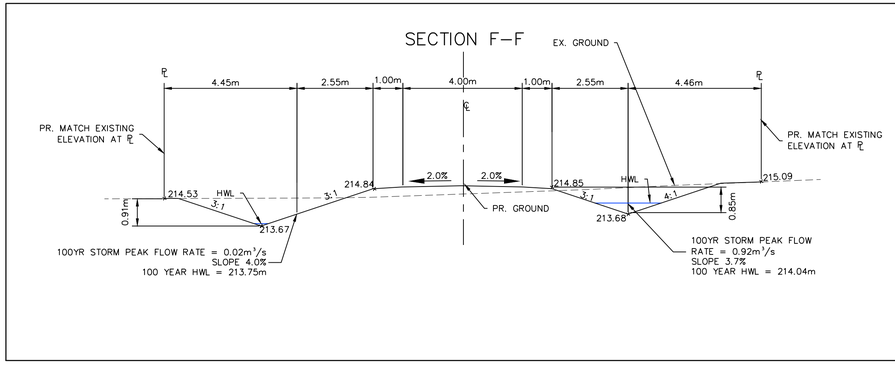


SECTION F–F



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TEMPORARY BENCHMARKS

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Engineer: LICENSED PROFESSIONAL ENGINEER — G.F. COOPER — 100532614 — Sept. 19, 2022 — PROVINCE OF ONTARIO

Project: LEITH–BAYSHORE ROAD
MUNICIPALITY OF MEAFORD

Drawing: CROSS SECTIONS

CROZIER CONSULTING ENGINEERS
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1 FIRST STREET, SUITE 200
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705-446-3510 T
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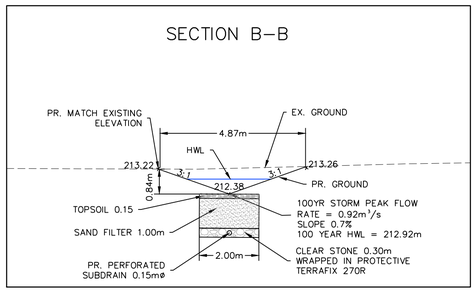
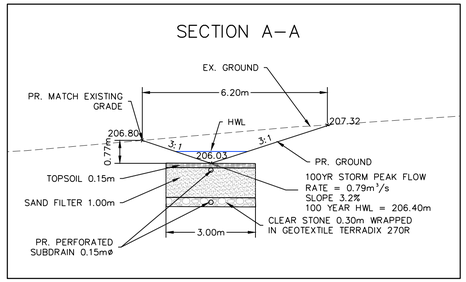
Check By	Check By	Scale	Drawing
G.C.	R.A.	1:100	C102A

SECTION B–B



SECTION A–A



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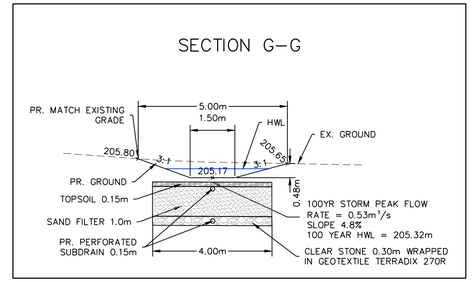
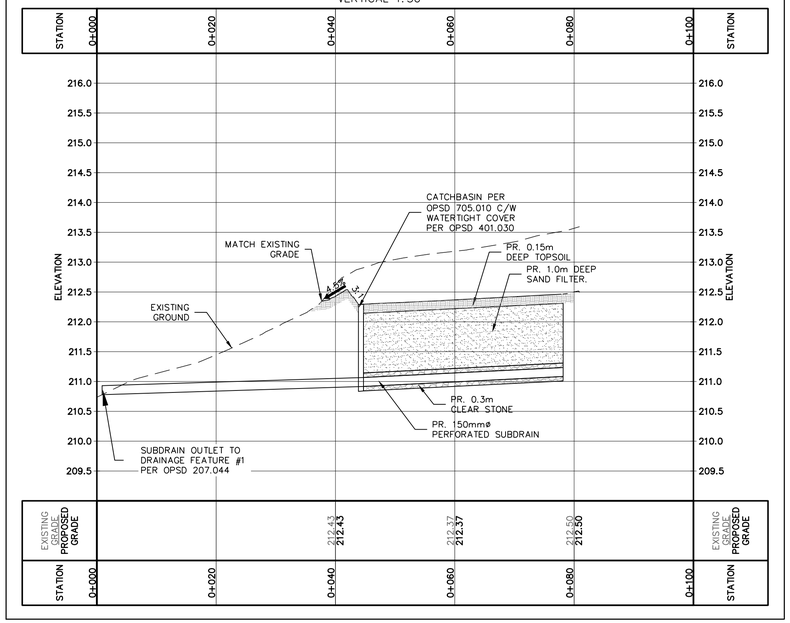


SAND FILTER #1 PROFILE

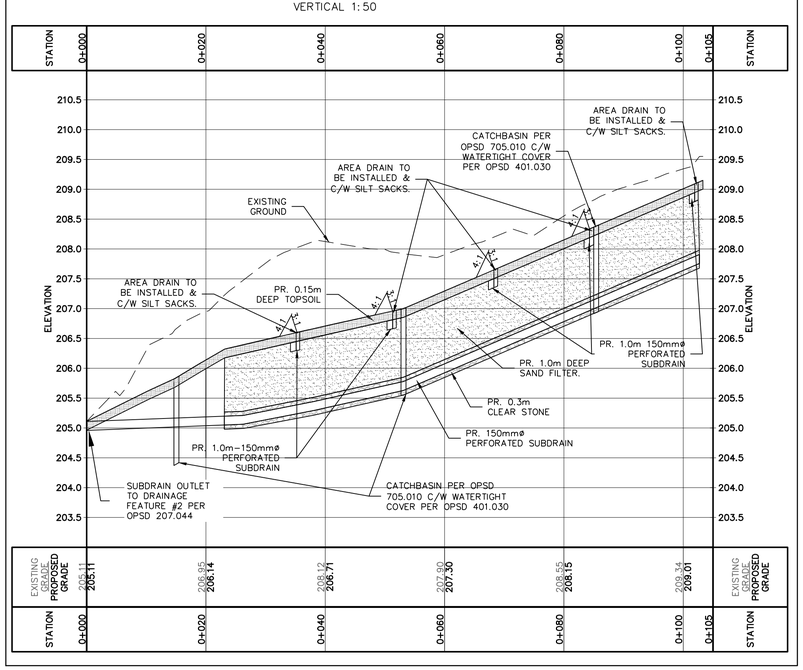
SCALE: HORIZONTAL 1:500
VERTICAL 1:50



2 0m 2 4 6 8
SCALE: 1:100

SAND FILTER #2 PROFILE

SCALE: HORIZONTAL 1:500
VERTICAL 1:50



SAND FILTER #3 PROFILE

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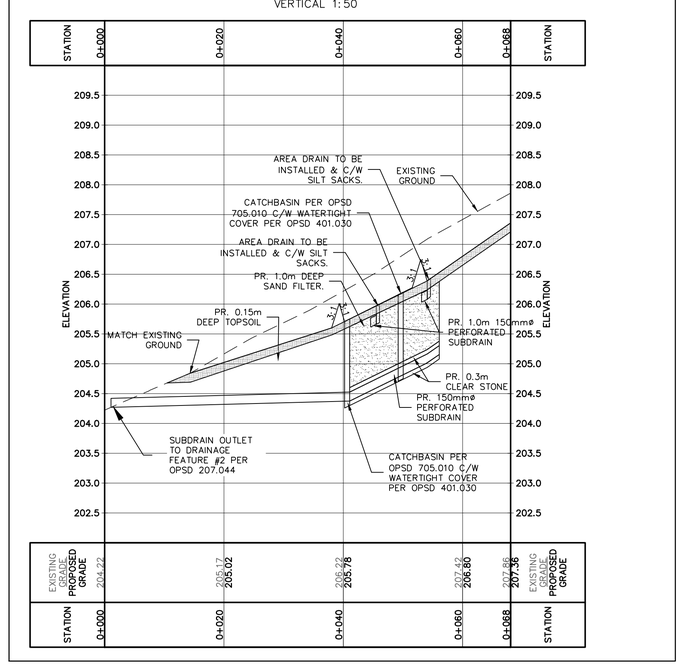
VERTICAL 1:50



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2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, AND DATUMS ON SITE AND REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO CONSTRUCTION.
3. THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT.
4. DO NOT SCALE THE DRAWINGS.
5. ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

TEMPORARY BENCHMARKS

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Engineer: LICENSED PROFESSIONAL ENGINEER — G.F. COOPER — 100532614 — Sept. 19, 2022 — PROVINCE OF ONTARIO

Project: LEITH–BAYSHORE ROAD
MUNICIPALITY OF MEAFORD

Drawing: CROSS SECTIONS & PROFILES FOR SAND FILTER

CROZIER CONSULTING ENGINEERS
ADMIRAL BUILDING
1 FIRST STREET, SUITE 200
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705-446-3510 T
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WWW.CFCROZIER.CA
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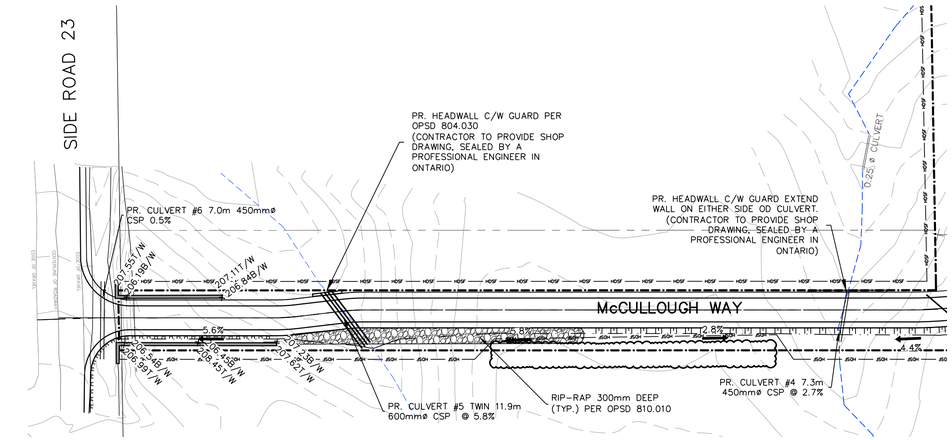
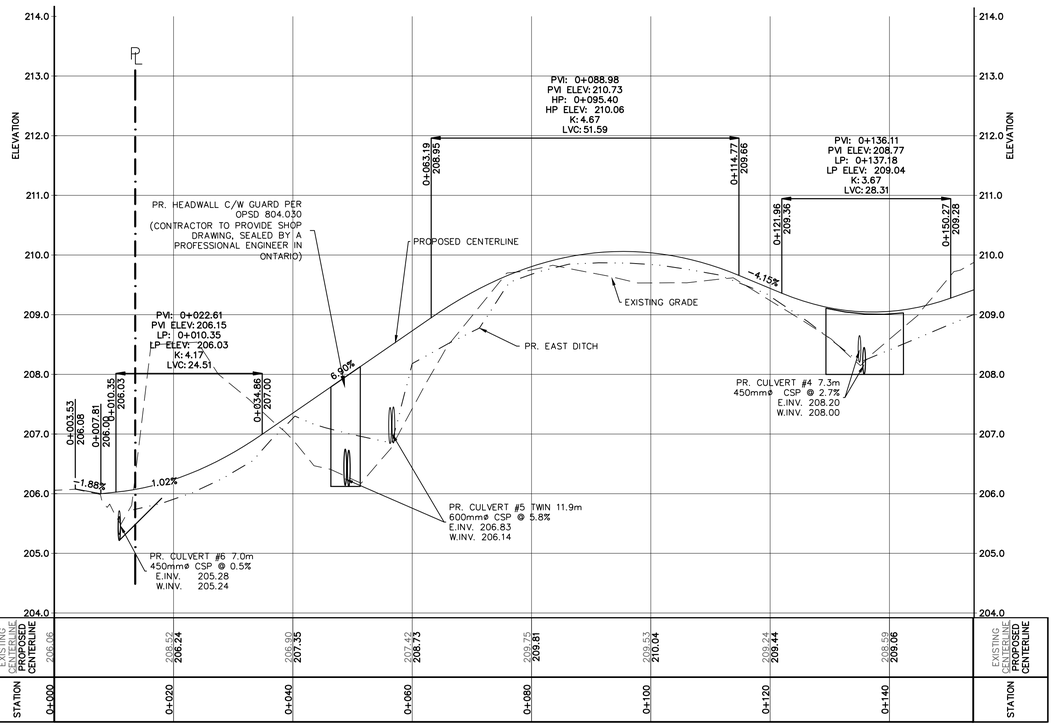
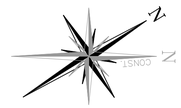
Check By	G.C.	Check By	R.A.	Scale	1:100
				Drawing	C102B







LEGEND

- PROPOSED WEST DITCH
- PROPOSED EAST DITCH
- PROPOSED CENTER LINE
- TOP SLOPE
- EXISTING GRADE
- PROPOSED DRIPLINE
- PROPERTY BOUNDARY
- PR. HEAVY DUTY SILT FENCE
- X.X% PR. SLOPE & DIRECTION
- PR. RIP-RAP

10 0m 10 20 30 40
SCALE: 1:500

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TEMPORARY BENCHMARKS

TBM#1- SQUARE IRON BAR (SIB), ELEVATION = 210.299
SURVEY COMPLETED BY VAN HARTEN ON JANUARY 29TH 2019

Town

No.	ISSUE	DATE: MM/DD/YYYY
0	ISSUED FOR CLIENT REVIEW	07/28/2020
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3	ISSUED FOR THIRD SUBMISSION	09/19/2022

Engineer: LICENSED PROFESSIONAL ENGINEER R.A. ALEXANDER 100213093 September 19, 2022 PROVINCE OF ONTARIO

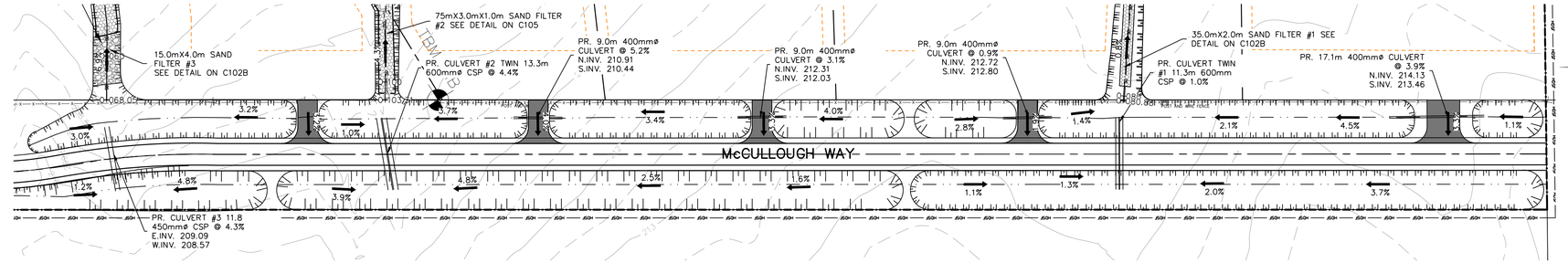
Engineer: LICENSED PROFESSIONAL ENGINEER G.F. COOPER 100532614 Sept. 19, 2022 PROVINCE OF ONTARIO

Project: LEITH-BAYSHORE ROAD
MUNICIPALITY OF MEAFORD

Drawing: PLAN & PROFILE (STA. 0+000 TO 0+154)

CROZIER CONSULTING ENGINEERS
ADMIRAL BUILDING
1 FIRST STREET, SUITE 200
COLLINGWOOD, ON, L9Y 1A1
705-446-3510 T
705-446-3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

Drawn By	Design By	Project	
N.L.	N.L./G.C.		903-3780
Check By	Check By	Scale	Drawing
G.C.	R.A.	1:500	C103 A



LEGEND

- PROPOSED WEST DITCH
- PROPOSED EAST DITCH
- PROPOSED CENTER LINE
- TOP SLOPE
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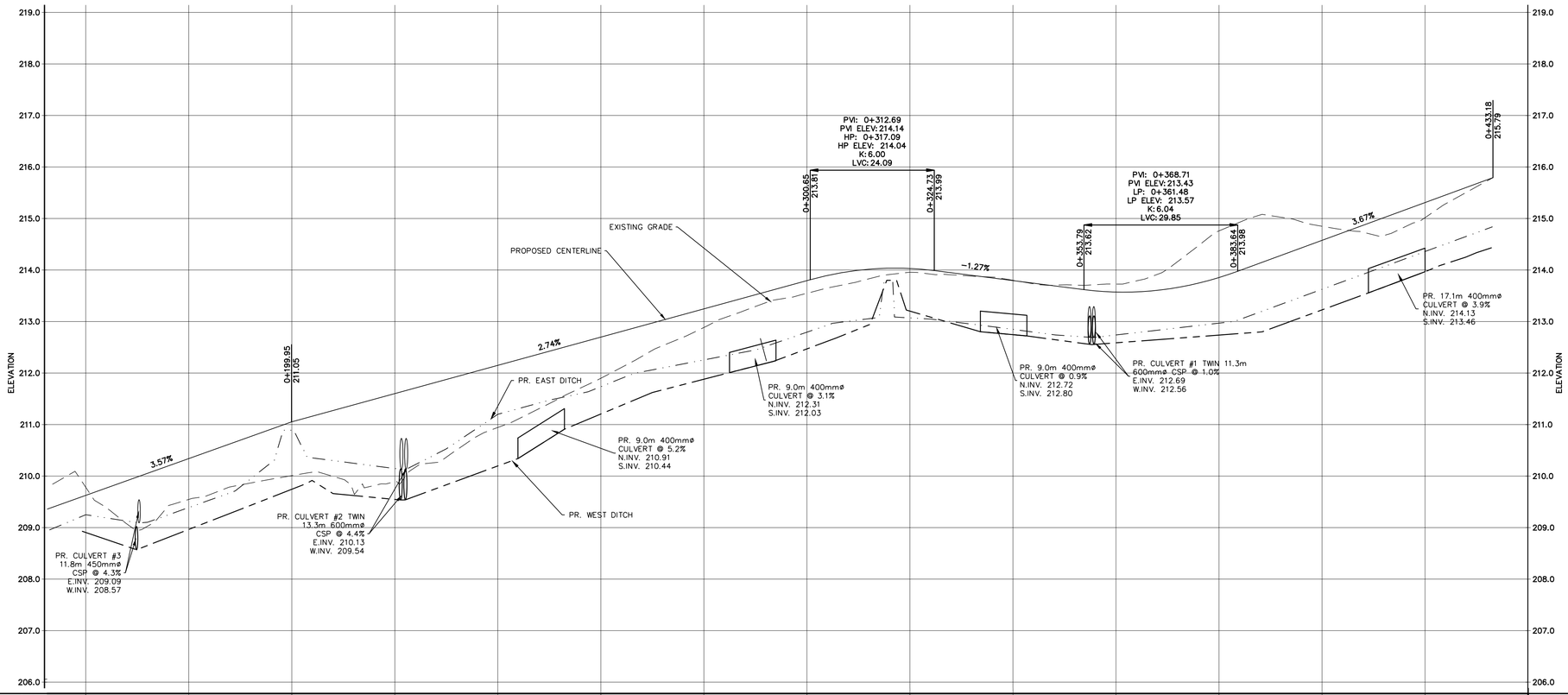
- PROPERTY BOUNDARY
- PR. HEAVY DUTY SILT FENCE
- X.X% PR. SLOPE & DIRECTION



EXISTING CENTERLINE	PROPOSED CENTERLINE	STATION
209.78	209.63	0+160
209.55	210.34	0+180
210.01	211.05	0+200
209.88	211.60	0+220
210.94	212.15	0+240
211.00	212.70	0+260
212.88	213.25	0+280
213.35	213.79	0+300
213.86	214.03	0+320
213.28	213.79	0+340
213.73	213.57	0+360
214.26	213.85	0+380
214.85	214.58	0+400
215.07	215.31	0+420
		0+440

10 0m 10 20 30 40
SCALE: 1:500

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Engineer: LICENSED PROFESSIONAL ENGINEER G.F. COOPER 100532614 Sept. 19, 2022 PROVINCE OF ONTARIO

Project: LEITH–BAYSHORE ROAD
MUNICIPALITY OF MEAFORD

Drawing: PLAN & PROFILE (STA. 0+154 TO 0+440)

CROZIER CONSULTING ENGINEERS
ADMIRAL BUILDING
1 FIRST STREET, SUITE 200
COLLINGWOOD, ON, L9Y 1A1
705-446-3510 T
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WWW.CFCROZIER.CA
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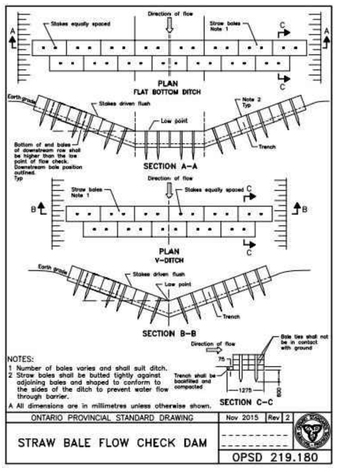
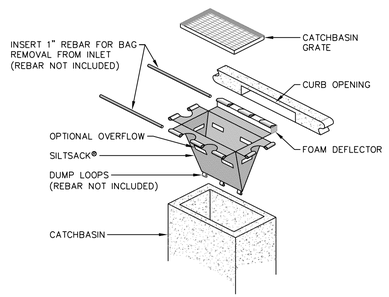
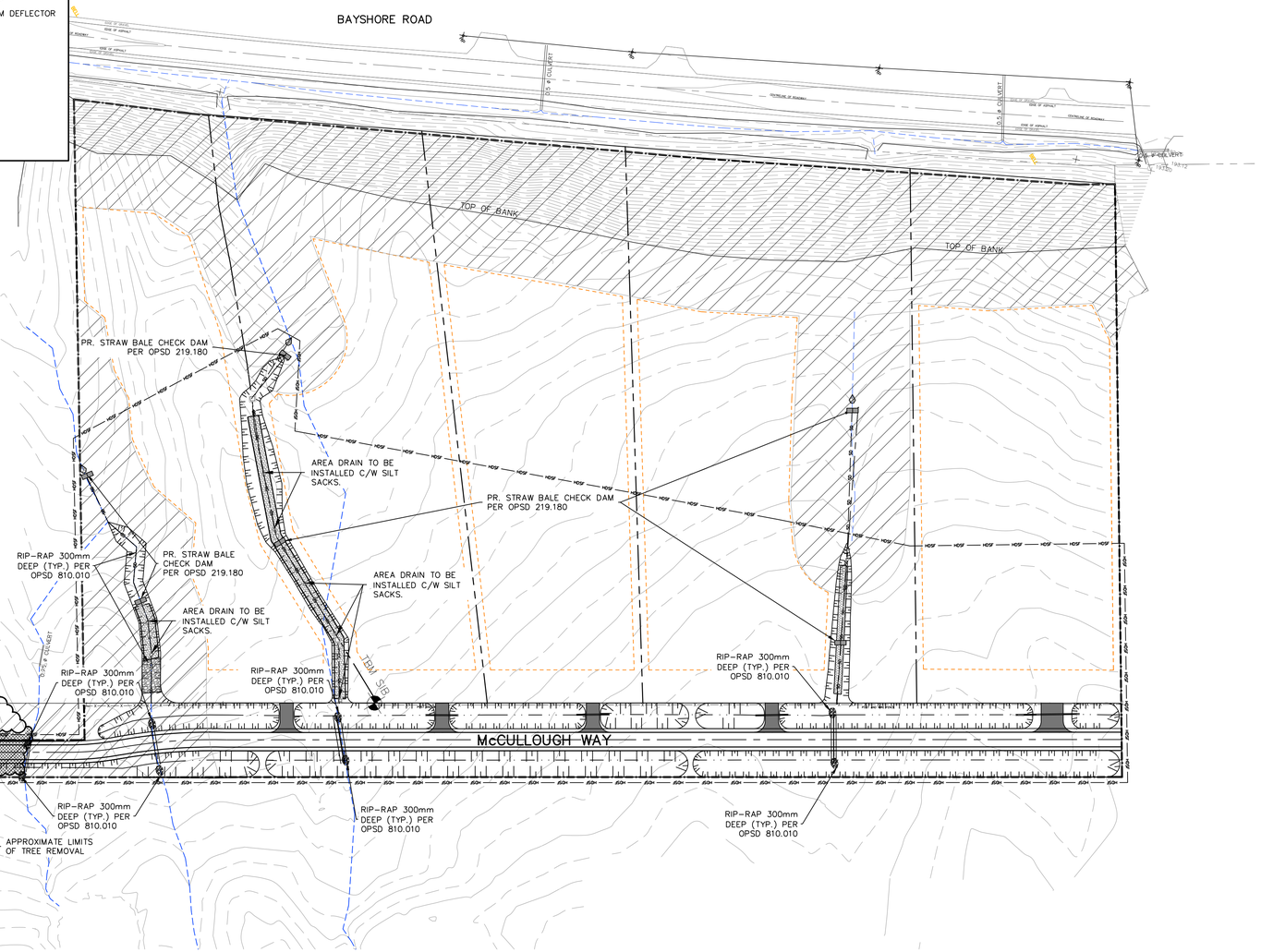
Drawn By	Design By	Project
N.L.	N.L./G.C.	903–3780
Check By	Check By	Scale / Drawing
G.C.	R.A.	1:500 / C103 B



'SILT SACK' DETAIL

SCALE: N.T.S.

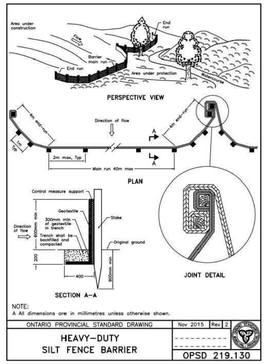


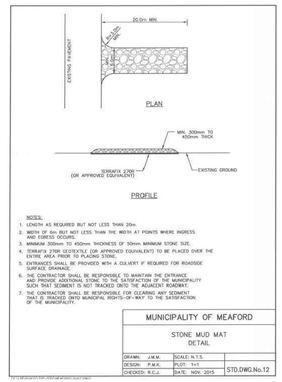


15 0m 15 30 45 60
SCALE: 1:750

LEGEND

- ENVIRONMENTAL PROTECTED/HAZARD AREAS
- SAND FILTER
- 2.5% PROPOSED SWALE
- RETAINING WALL
- HDSF HEAVY DUTY SILT FENCE
- TREE REMOVAL AREA





NOTE:
THE HEAVY DUTY SILT FENCE HAS BEEN SHOWN OFF-SET OF THE PROPERTY LINE FOR VISUAL PURPOSES; HOWEVER, DURING CONSTRUCTION THE SILT FENCE WILL BE INSTALLED INSIDE THE PROPERTY

TEMPORARY BENCHMARKS

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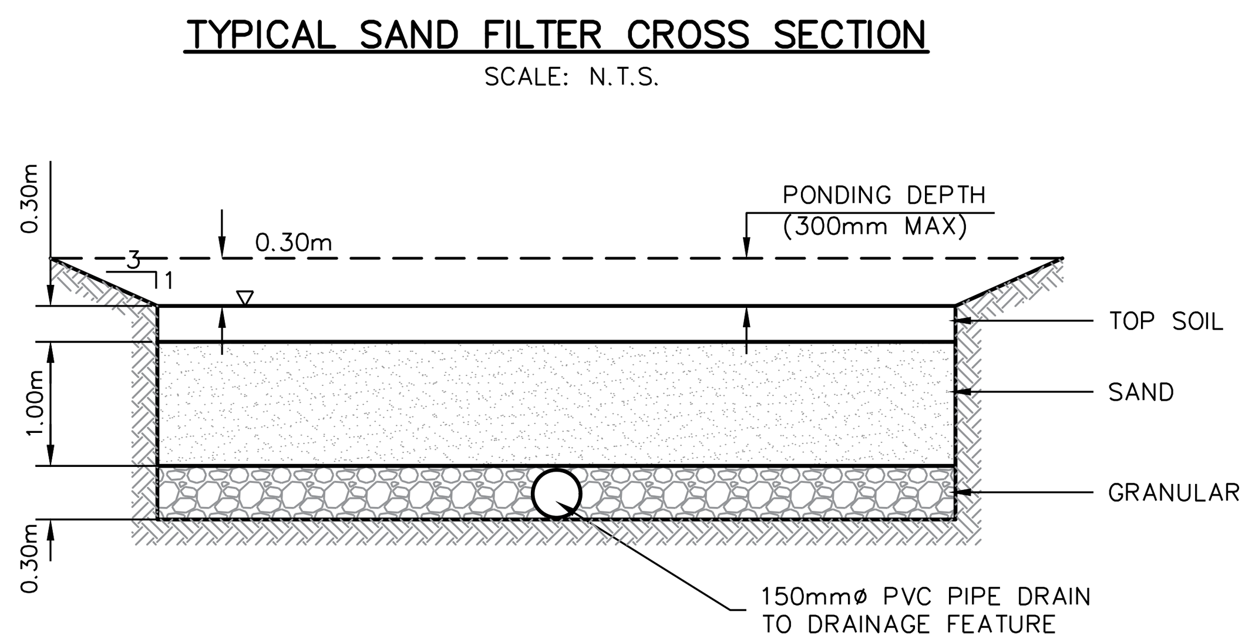
Engineer: LICENSED PROFESSIONAL ENGINEER G.F. COOPER 100532614 Sept. 19, 2022 PROVINCE OF ONTARIO

Project: LEITH-BAYSHORE ROAD
MUNICIPALITY OF MEAFORD

Drawing: EROSION & SEDIMENT CONTROL PLAN

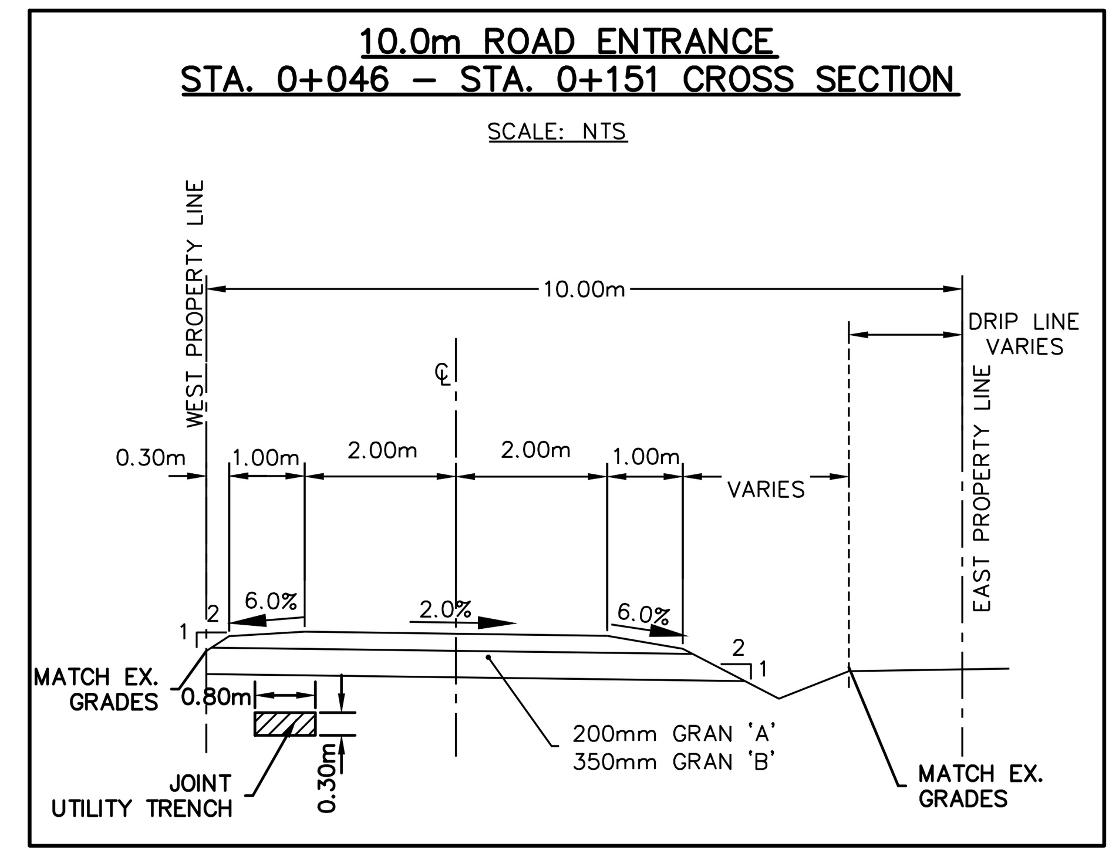
CROZIER CONSULTING ENGINEERS
ADMIRAL BUILDING
1 FIRST STREET, SUITE 200
COLLINGWOOD, ON, L9Y 1A1
705-446-3510 T
705-446-3520 F
WWW.CFCROZIER.CA
INFO@CFCROZIER.CA

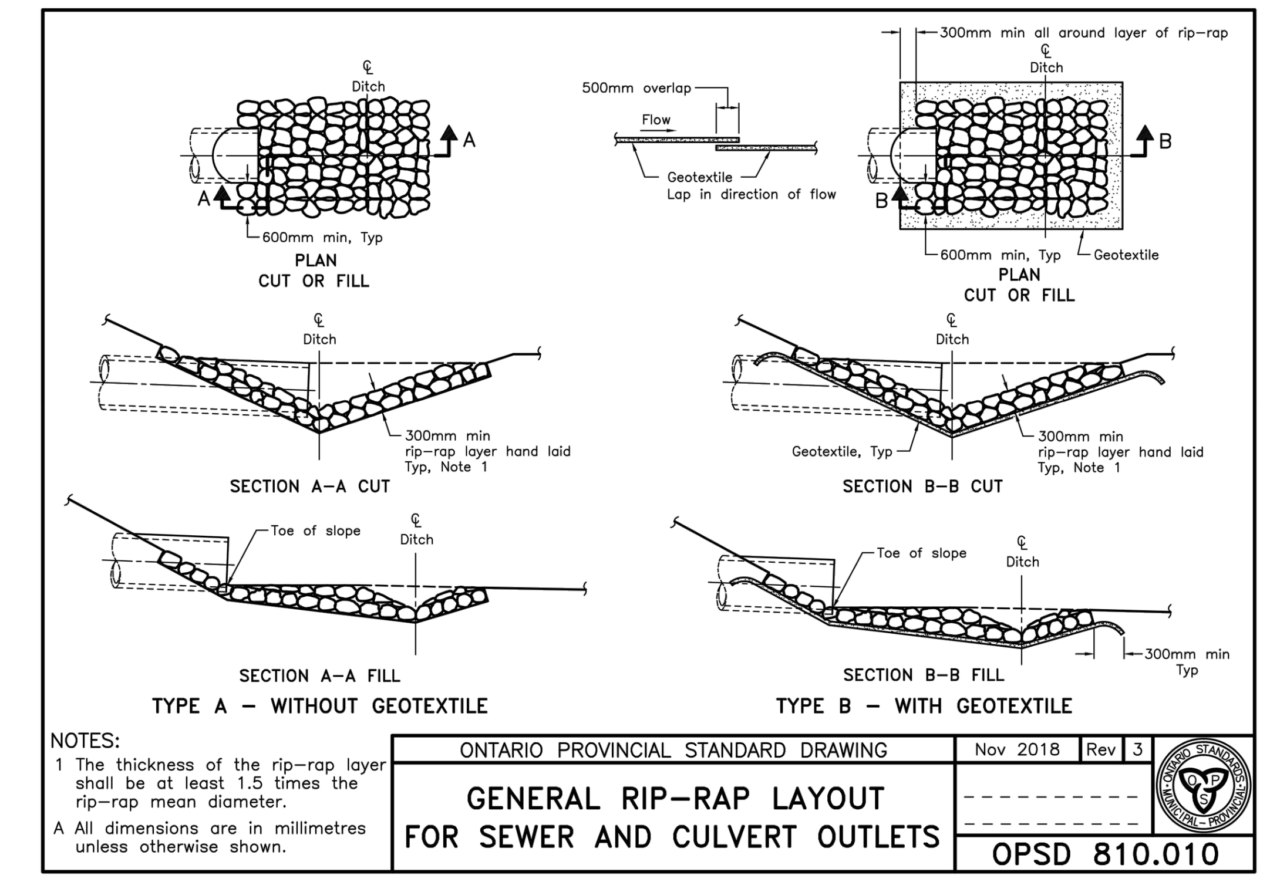
Drawn By	Design By	Project	Drawing
N.L.	N.L./G.C.	903-3780	
Check By G.C.	Check By R.A.	Scale 1:750	C104

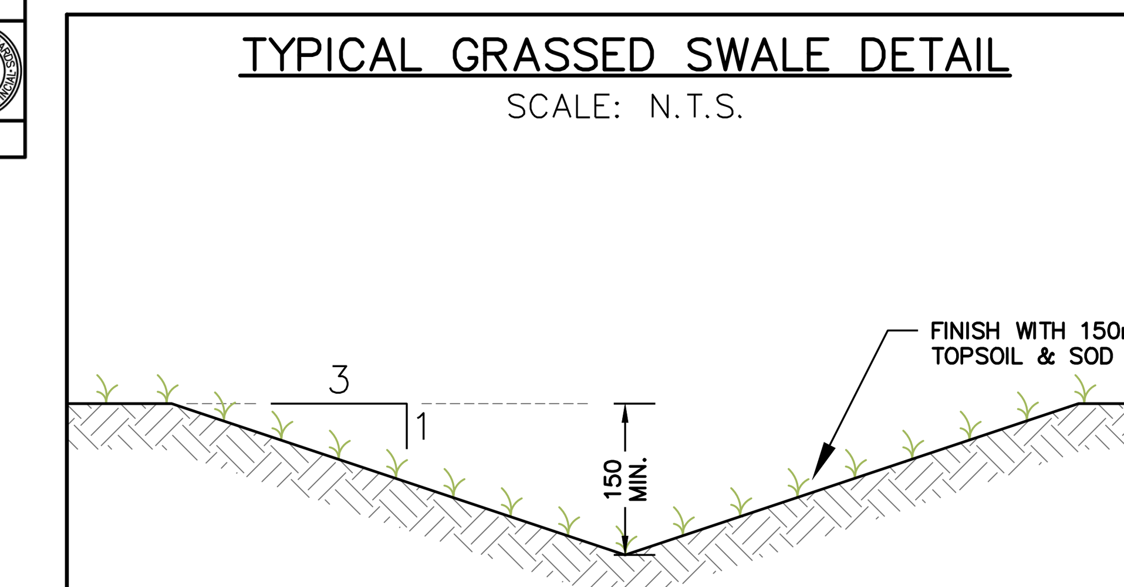


NOTES:

1. CONSTRUCTION TRAFFIC OVER AREA OF PROPOSED SAND FILTER TO BE LIMITED PRIOR TO CONSTRUCTION OF THE FILTER. AFTER PLACEMENT OF TOP SOIL, VEHICULAR OR FOOT TRAFFIC ON OR IN THE FILTER IS TO BE AVOIDED.
2. CONSTRUCTION OF THE SAND FILTER AND PLACEMENT OF THE BED MEDIA SHOULD OCCUR AFTER CONSTRUCTION OF ROADWAY. DISCHARGE OF STORMWATER TO THE FILTER IS TO BE AVOIDED UNTIL THE REMAINDER OF THE SITE IS STABILIZED AND CLEANED.
3. CONSTRUCTION OF THE FILTER SHOULD OCCUR IN DRY CONDITIONS. EXCAVATION OF THE FILTER SHOULD BE FOLLOWED WITH SCARIFICATION OF THE NATIVE SUBBASE TO PROMOTE EXFILTRATION FROM THE CELL. FILTER MEDIUM SHOULD BE PLACED IN 300MM LIFTS. EACH LIFT TO BE SATURATED WITH WATER AND ALLOWED TO DRAIN PRIOR TO PLACEMENT OF THE NEXT LIFT. UPON PLACEMENT OF THE FINAL LIFT, THE ENTIRE BED SHOULD BE SATURATED AND ALLOWED TO DRAIN. ADDITIONAL PLANTING MEDIUM MAY THEN BE PLACED TO MEET FINAL GRADE OF FILTER MEDIUM.







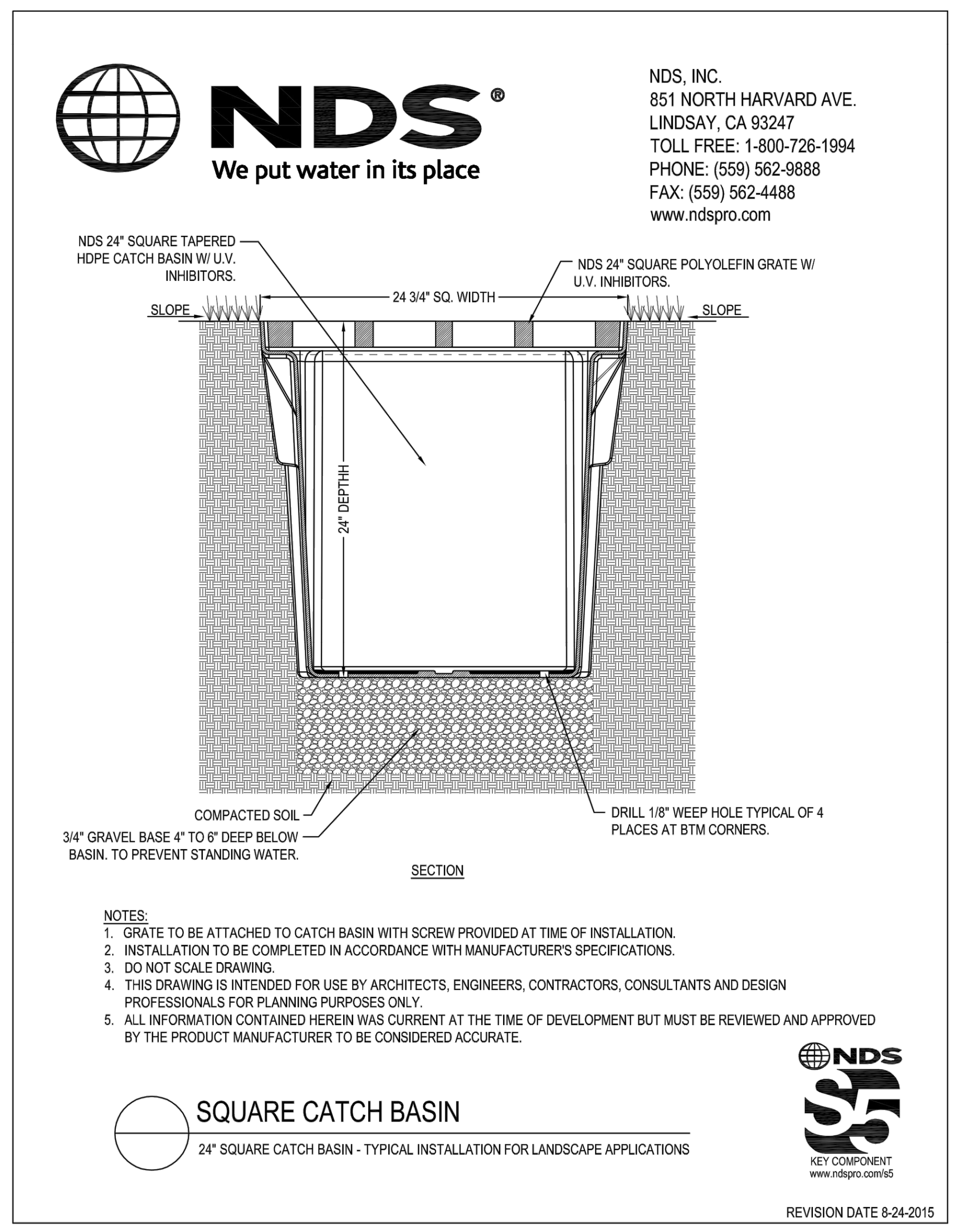
NOTE:
ALL DIMENSIONS ARE IN MILLIMETERS.

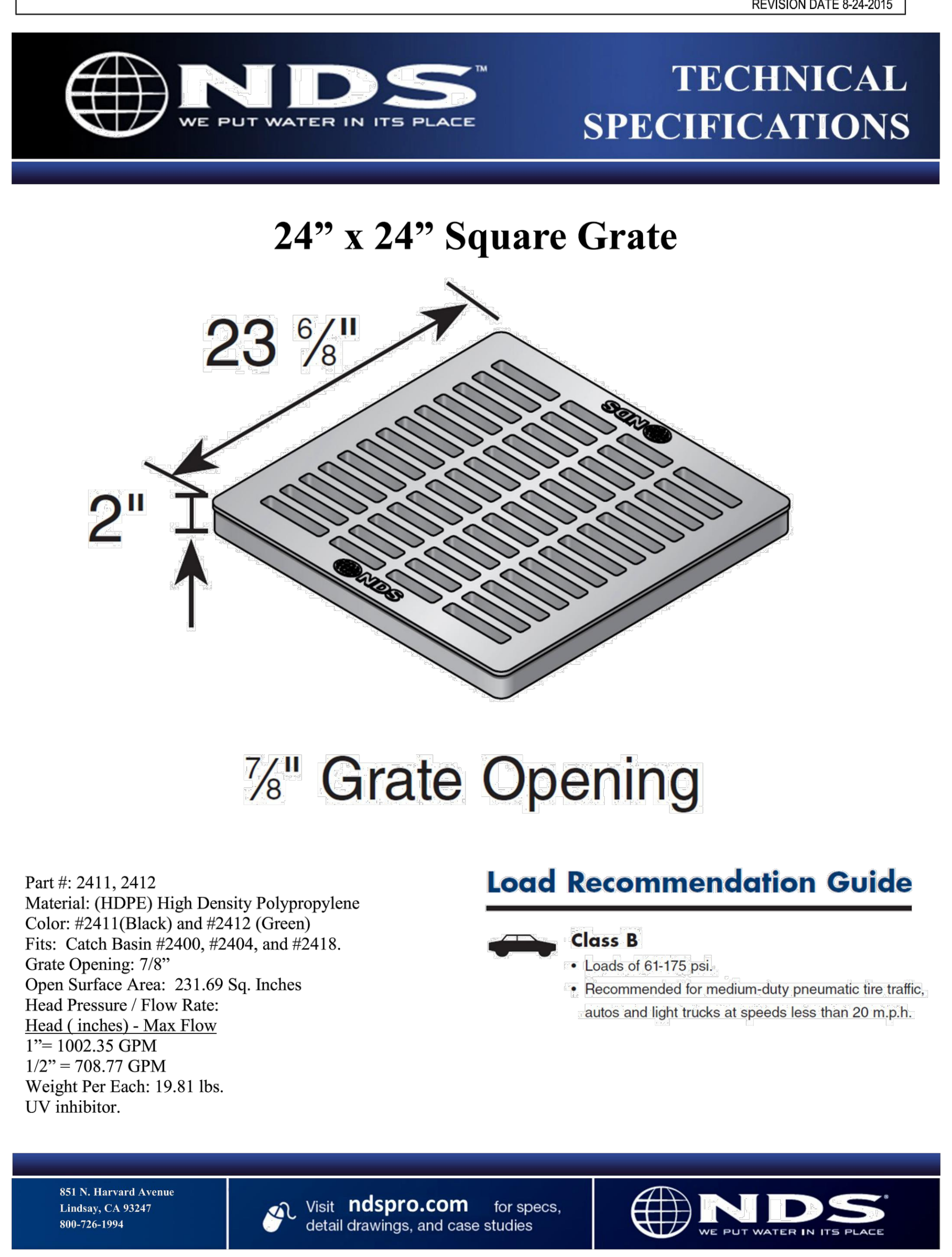
SEDIMENT & EROSION CONTROL NOTES:

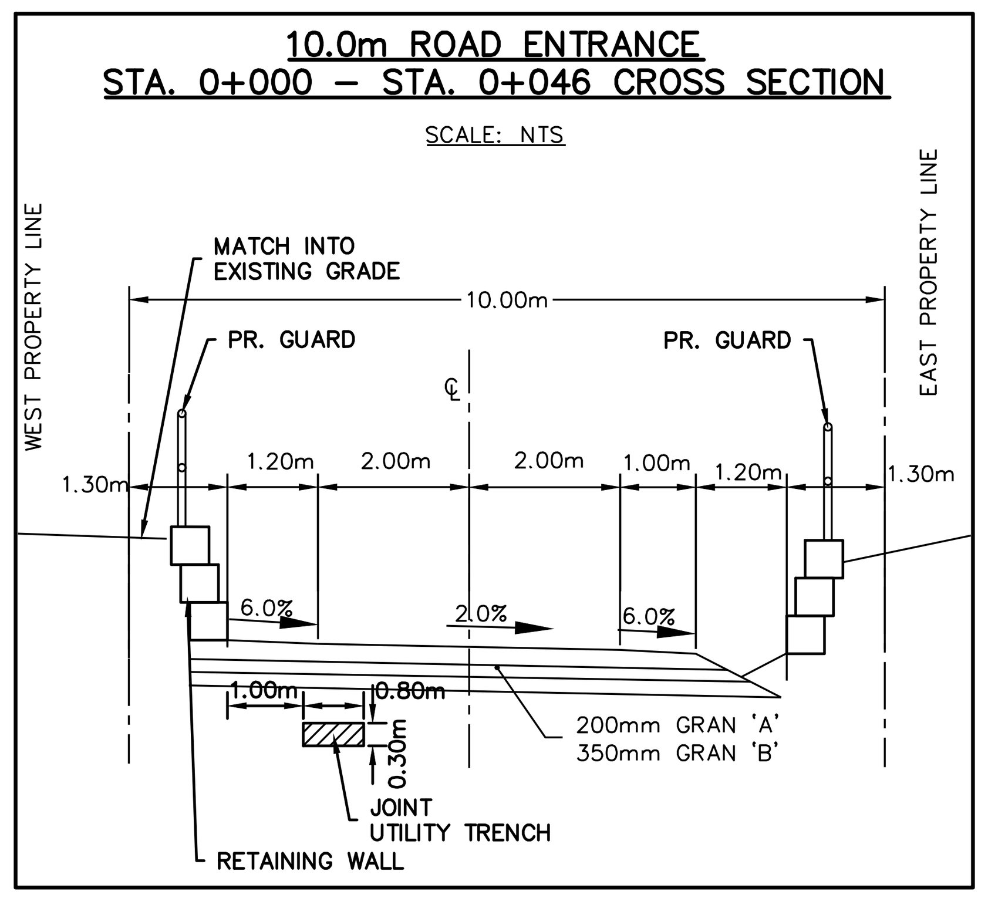
1. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL ALL DISTURBED AREAS HAVE BEEN STABILIZED. SEDIMENT AND EROSION CONTROL MEASURES THAT ARE DESIGNED TO CONTROL RUNOFF FROM SPECIFIC AREAS MUST BE INSTALLED PRIOR TO ANY DISTURBANCE OF THAT PART OF THE SITE.
2. THE CONTRACTOR MAY CONSIDER ALTERNATIVE SEDIMENT AND EROSION CONTROL MEASURES. SUCH MEASURES MUST BE PRESENTED IN WRITING FOR APPROVAL OF THE CONTRACT ADMINISTRATOR AND THE CONSERVATION AUTHORITY.
3. THE CONTRACTOR SHALL HAVE MATERIALS AVAILABLE ON–SITE TO REPAIR SEDIMENT AND EROSION CONTROL MEASURES IN THE EVENT OF UNFORESEEN CONDITIONS: HIGH WATER, EXTREME RAINFALL EVENTS, ETC.

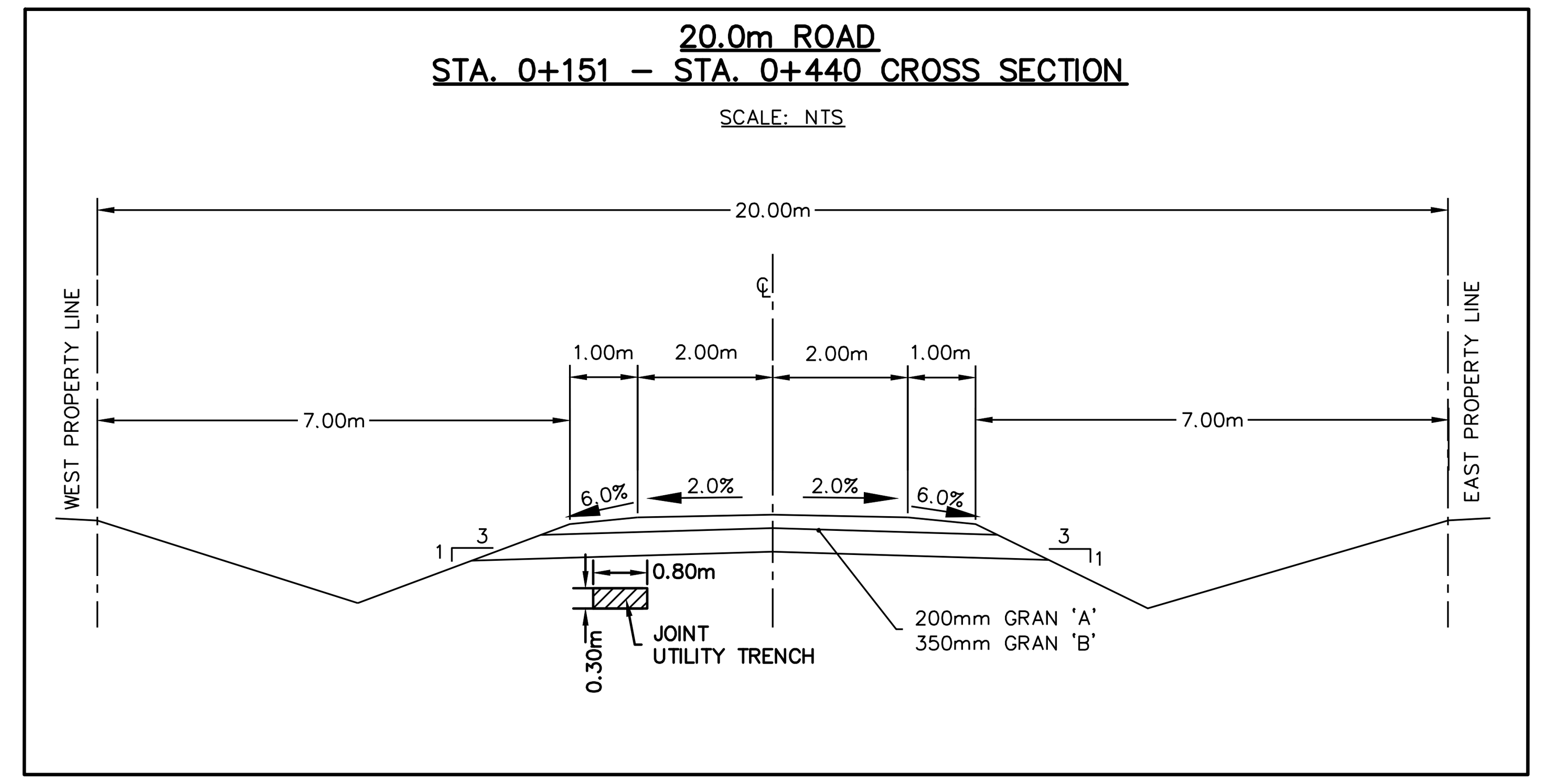
GENERAL NOTES:

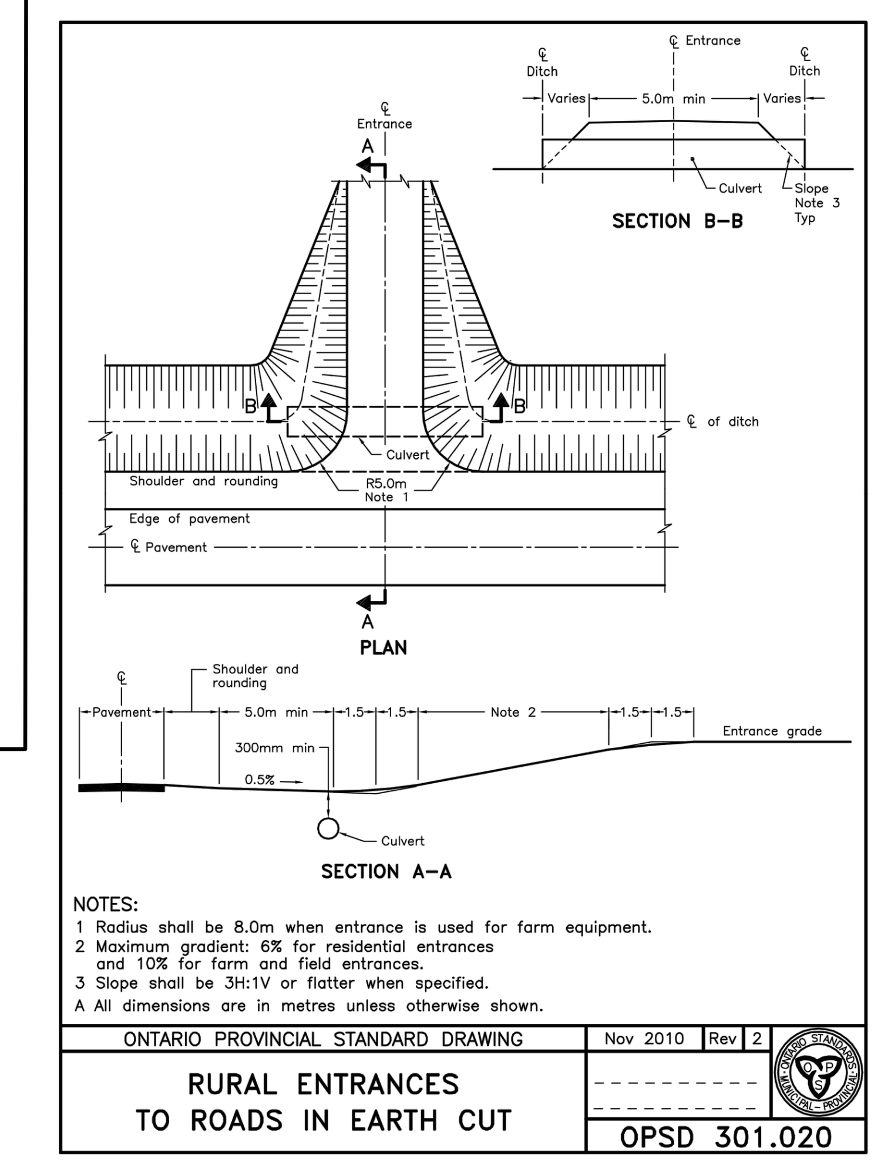
1. ALL CONSTRUCTION EQUIPMENT TO USE MAIN ACCESS POINT, LOCATED AT SIDE ROAD 23, AS INDICATED ON THIS DRAWING. MUD MAT TO BE CONSTRUCTED AT ACCESS POINT.
2. NO MAINTENANCE OR REPAIR WORK ON CONSTRUCTION EQUIPMENT IS ALLOWED WITHIN 30 METRES OF AN EXISTING WATER COURSE OR DITCH.
3. ALL SEDIMENT AND EROSION CONTROL FACILITIES AND WORKS ARE TO BE CONSTRUCTED AND IN PLACE TO THE APPROVAL OF THE SITE ENGINEER PRIOR TO ANY GRADING OPERATIONS COMMENCING. TYPICAL WORKS INCLUDE SILT FENCES, INTERCEPTOR SWALES, AND STRAW BALE CHECK DAMS.
4. ALL TEMPORARY TOPSOIL STOCKPILES ARE TO BE PROVIDED WITH THE NECESSARY SEDIMENT AND EROSION CONTROL FEATURES. IF STOCKPILES ARE TO REMAIN FOR A PERIOD LONGER THAN 30 DAYS, STOCKPILES SHALL BE HYDROSEEDED AND SURROUNDED WITH SILT FENCE.
5. ALL INTERCEPTOR SWALES ARE TO BE SEEDED TO STABILIZE THEIR BANKS IMMEDIATELY FOLLOWING CONSTRUCTION.

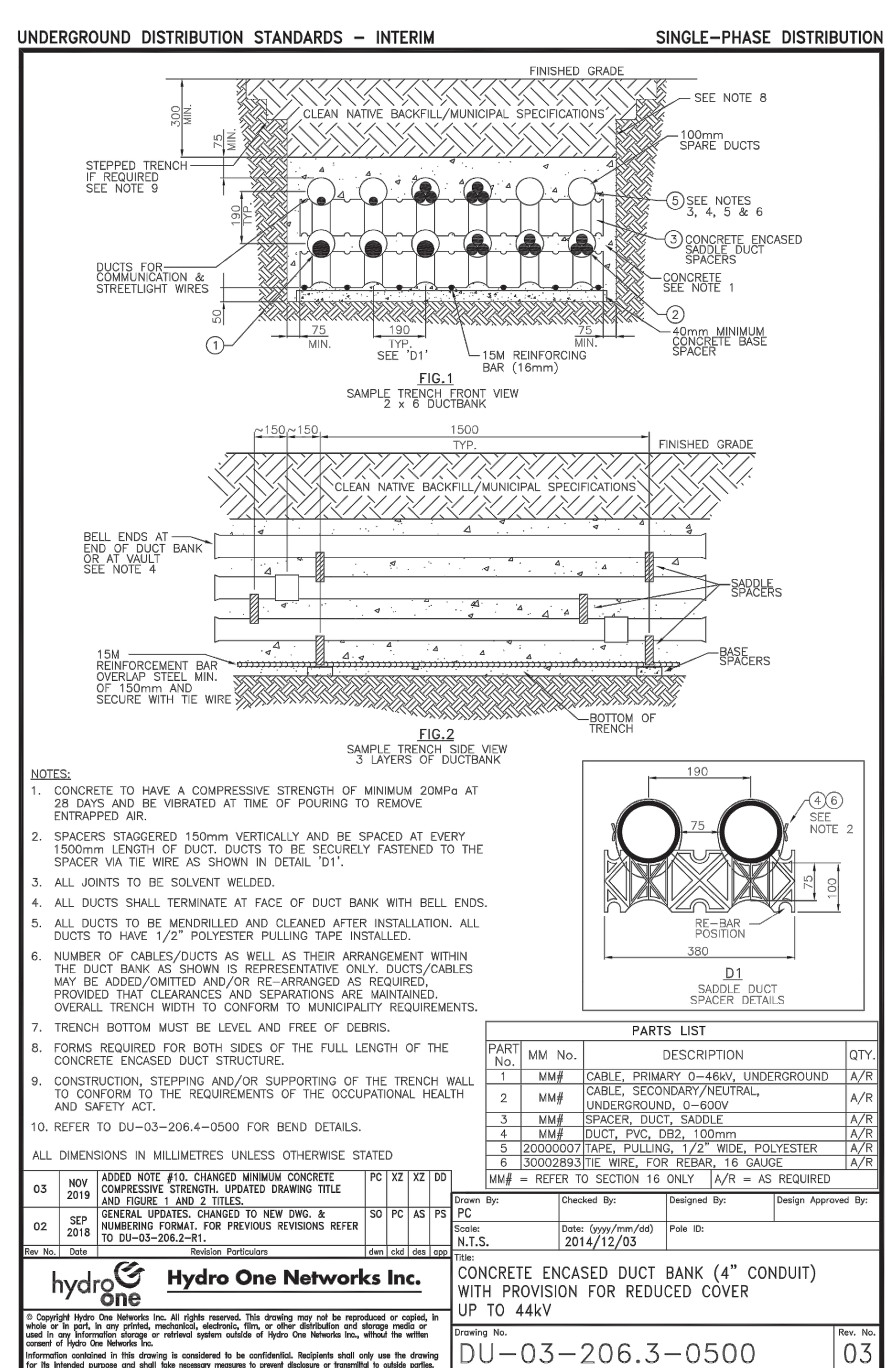


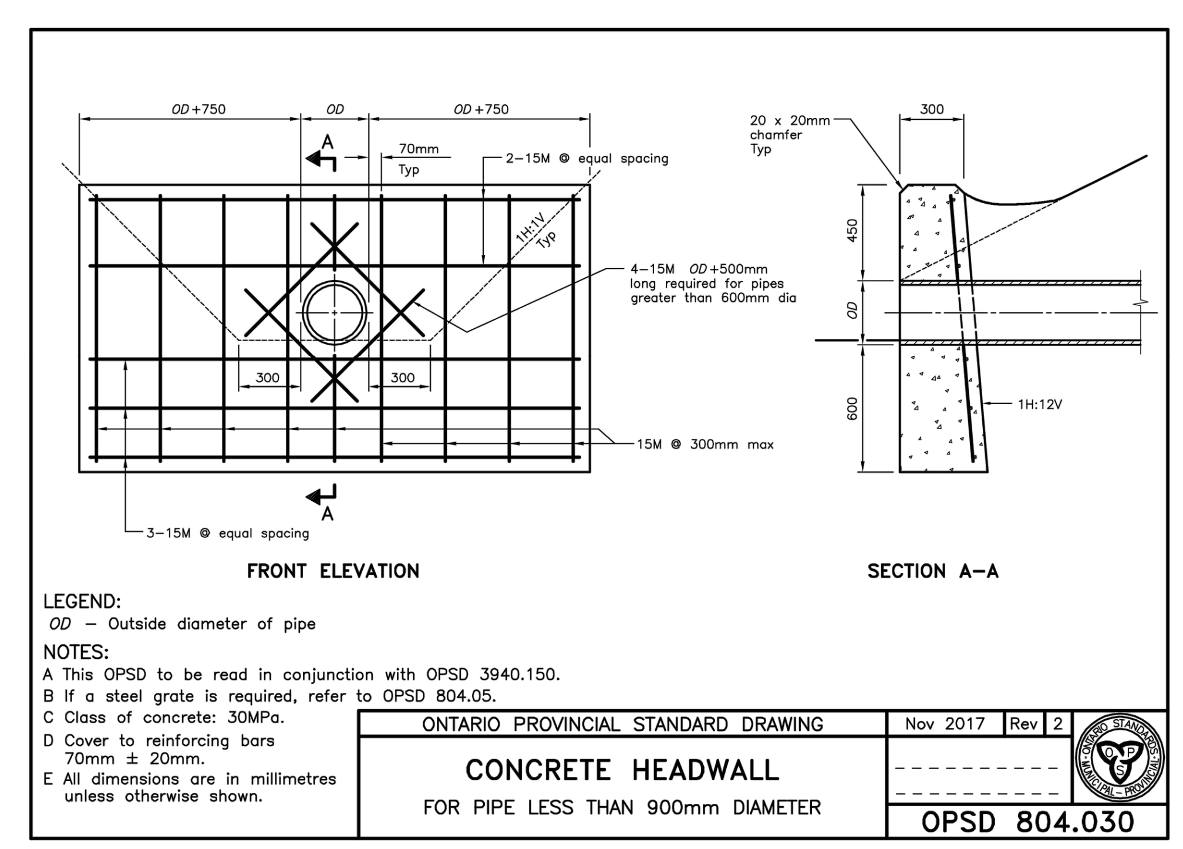


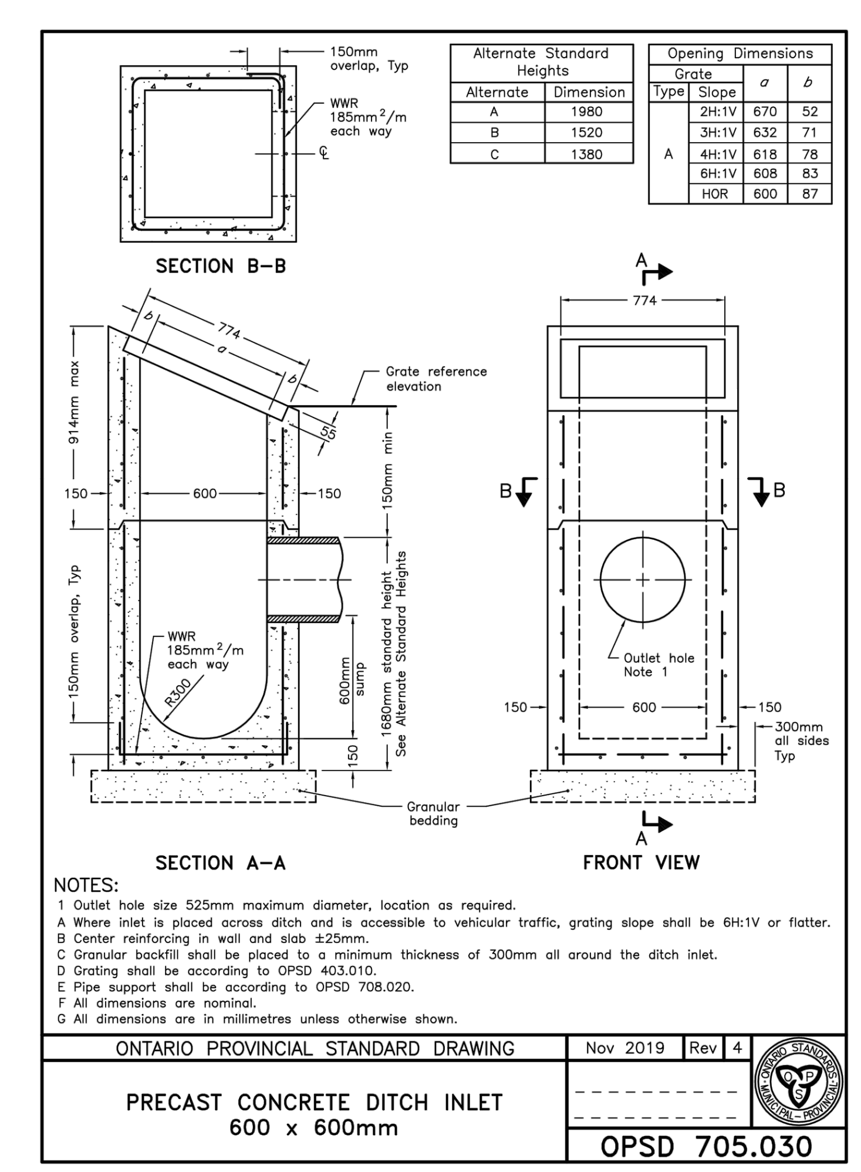


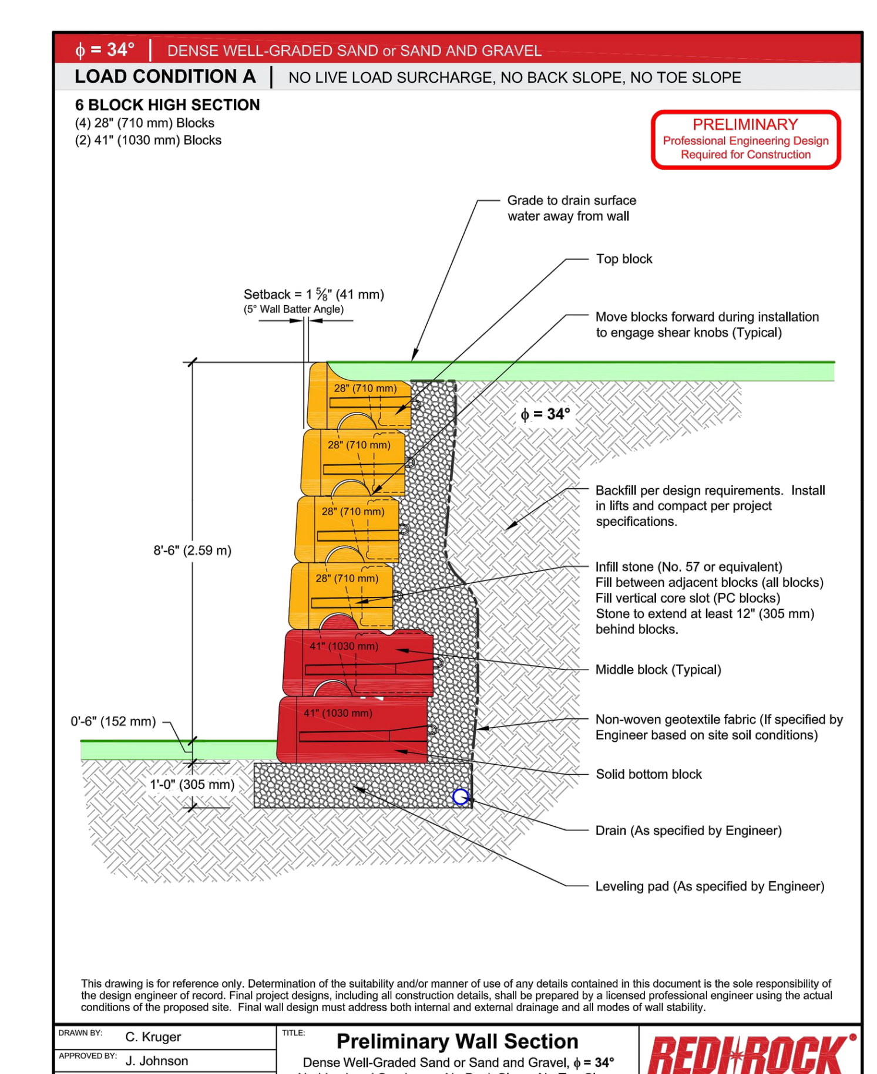


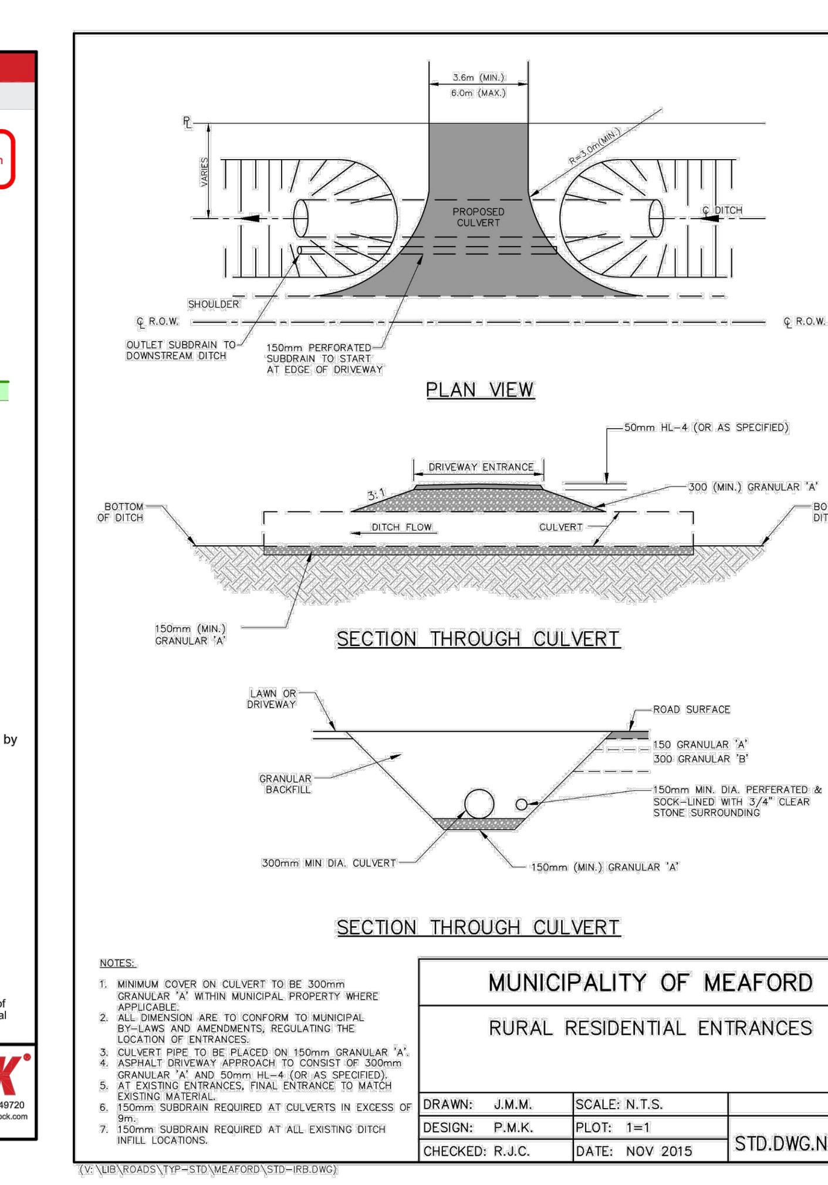












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Project: LEITH–BAYSHORE ROAD MUNICIPALITY OF MEAFORD

Drawing: CONSTRUCTION NOTES AND DETAILS

CROZIER CONSULTING ENGINEERS
ADMIRAL BUILDING
1 FIRST STREET, SUITE 200
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705-446-3510 T
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Check By	G.C.	Check By	R.A.	Scale N.T.S.	Drawing C105