



Parks
Canada

Parcs
Canada

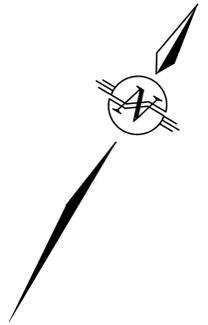
**RECAPITALIZATION OF
POINT WOLFE
STORMWATER SYSTEM
AND BANK STABILIZATION
FUNDY NATIONAL PARK,NB**

PROJECT NO. 1314

Sheet List Table

Sheet Number	Sheet Title
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C3	PLAN AND PROFILES
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C6	DETAILS
C7	DETAILS
C8	DETAILS – STILLING WELL COVER
C9	DETAILS – STILLING WELL COVER

Canada



LEGEND

- ELEVATION CONTOURS
- - - - - EXISTING EDGE OF GRAVEL
- EXISTING EDGE OF GRAVEL
- EXISTING TREE LINE
- DITCH LINE
- EXISTING STORM SEWER PIPE
- EXISTING TOP OF BANK
- TOP OF SLOPE
- BOTTOM OF SLOPE
- EXISTING STORM SEWER MH / CB
- PROPOSED STORM SEWER MH / CB
- SIGN
- POLE

NOTES:

- * ALL EXISTING UNDERGROUND DRAINAGE PIPE AND UTILITY INFORMATION SHOWN IS APPROXIMATE ONLY. SANITARY SEWER, WATER MAINS AND U/G ELECTRICAL LINES ARE NOT SHOWN. CONTRACTOR TO CONFIRM EXACT LOCATIONS AND INVERTS IN THE FIELD PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES TO THE ENGINEER.
- * ALL EXISTING STORMWATER PIPE IS CONCRETE UNLESS OTHERWISE NOTED.
- * ALL EXISTING ELEVATIONS SHOWN
- ** COORDINATES BASED ON EXISTING CONSTRUCTION MONUMENT AT POINT WOLFE COVERED BRIDGE
- ** EASTING: 342502.230
- ** NORTHING: 5046088.402
- ** ELEVATION: 14.344
- * POINT WOLFE COVERED BRIDGE HAS A LOAD RATING OF 30 TONNES.
- * BIDDERS TO BE AWARE OF A CONSTRICTED TURNING RADIUS AT SOUTH END OF BRIDGE.

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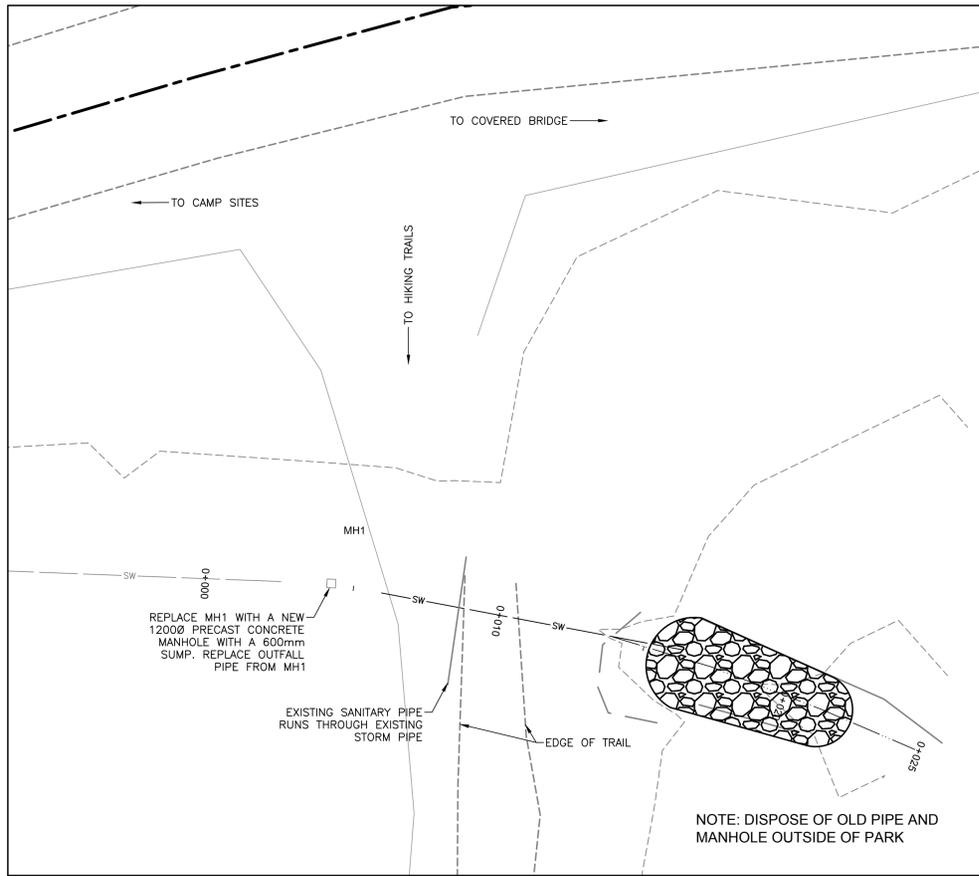
project **RECAPITALIZATION OF POINT WOLFE STORMWATER SYSTEM AND BANK STABILIZATION FUNDY NATIONAL PARK, NB**

drawing **EXISTING CONDITIONS** design

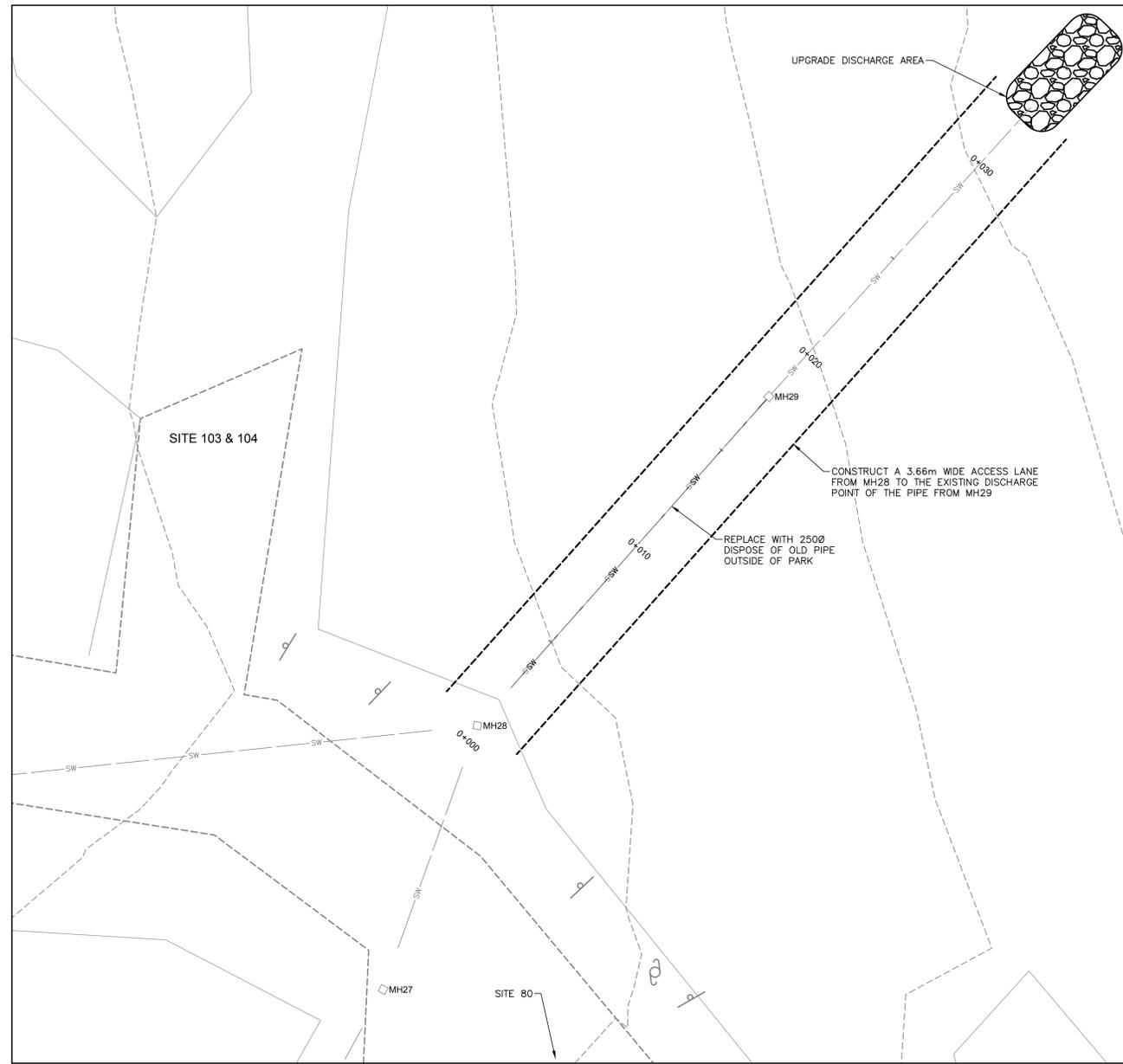
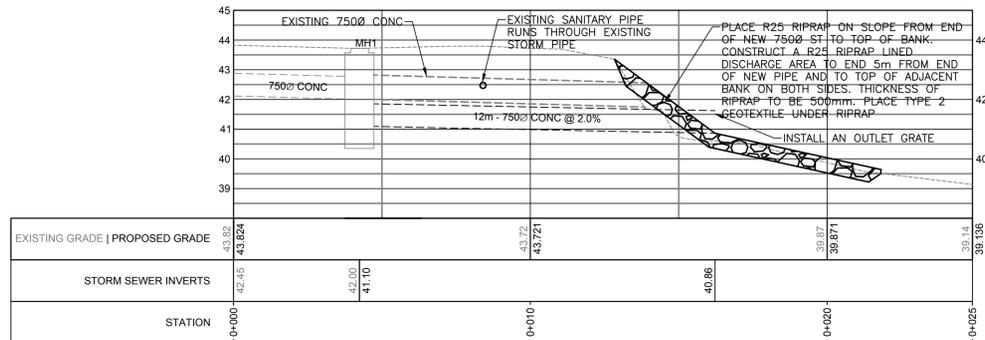
designed GRG	conçu
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date MAR, 2017	
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Tender ANNIE CAMPEAU	Soumission
PCA Project Manager	Administrateur de projets APC
project number	no. du projet
1314	
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C1	

SCALE : 1:750
0m 10m 20m 30m 40m 50m 60m 70m 80m 90m 100m

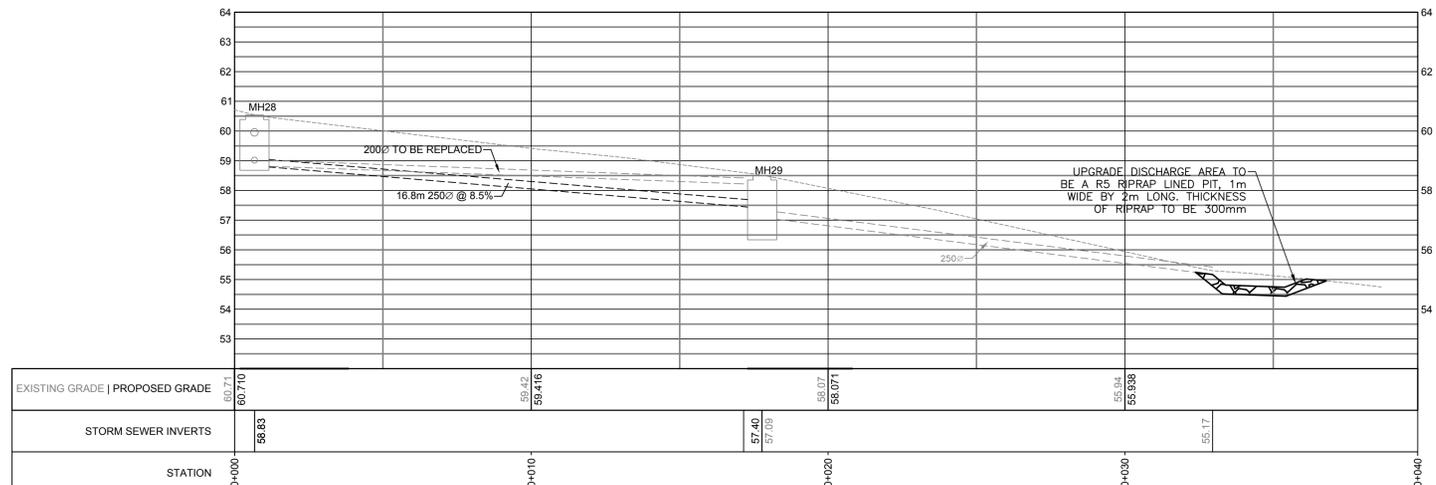
0 10 20mm 40 60 80 100 120 140 160 180 200mm



MH1 TO DISCHARGE PROFILE



MH 28 TO DISCHARGE PROFILE



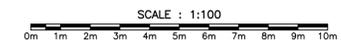
- NOTES:
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 - ** COORDINATES BASED ON EXISTING CONSTRUCTION MONUMENT AT POINT WOLFE COVERED BRIDGE.
 - ** EASTING: 342820.530
 - ** NORTHING: 5046588.402
 - ** ELEVATION: 14.344
 - GEOTEXTILE TO BE PLACED UNDER ALL RIPRAP.
 - TOPSOIL TO BE PLACED ONLY IN AREAS BEING MOWED OR WITH THE SURFACE RESTORATION FOR SUBDRAINS.

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project
RECAPITALIZATION OF POINT WOLFE STORMWATER SYSTEM AND BANK STABILIZATION FUNDY NATIONAL PARK, NB

drawing
PLAN AND PROFILES

designed	GRC	conçu
date	MAR, 2017	
drawn	MN	dessiné
date	MAR, 2017	
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date	MAR, 2017	
Tender	ANNE CAMPEAU	Administrateur de projets APC
PCA Project Manager		
project number	1314	no. du projet
drawing no.	C3	no. du dessin





PLANTING SCHEDULE

COMMON NAME	SCIENTIFIC NAME	PLANTING SPACING (m)
RED OSIER DOGWOOD	CORMUS SERICEA	1 m
HOBBLEBUSH	VIBURNUM ALNIFOLIUM	2 to 3 m
WILD RAISIN	VIBURNUM CASSINOIDES	1m
CANADIAN ELDER	SAMBUCUS CANADENSIS	1m
FLY HONEYSUCKLE	LONICERA CANADENSIS	1m

CONTRACTOR TO SELECT A MINIMUM OF THREE (3) OF THE ABOVE NOTED SHRUBS TO PLANT ON THE FORESLOPE AND BACKSLOPE IN THE SLOPE STABILIZATION AREA. TOTAL NUMBER OF PLANTINGS TO BE 300 SHRUBS, PLANTED IN A RANDOM PATTERN TO ENHANCE THE STABILIZATION OF THE SLOPE.

Parcs Canada

GEMTEC
CONSULTING ENGINEERS AND SCIENTISTS

REGISTERED PROFESSIONAL ENGINEER
G. R. Giggie
#2437
P. Eng. P. Eng.
PROVINCE OF NEW BRUNSWICK

POINT WOLFE RIVER

SEE PLANTING SCHEDULE FOR VEGETATION SPECIES AND SPACING IN STABILIZATION AREA

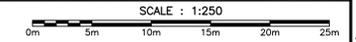
STILLING WELL DRAIN PIPE AND RIPRAP AREA

6000 CULVERT

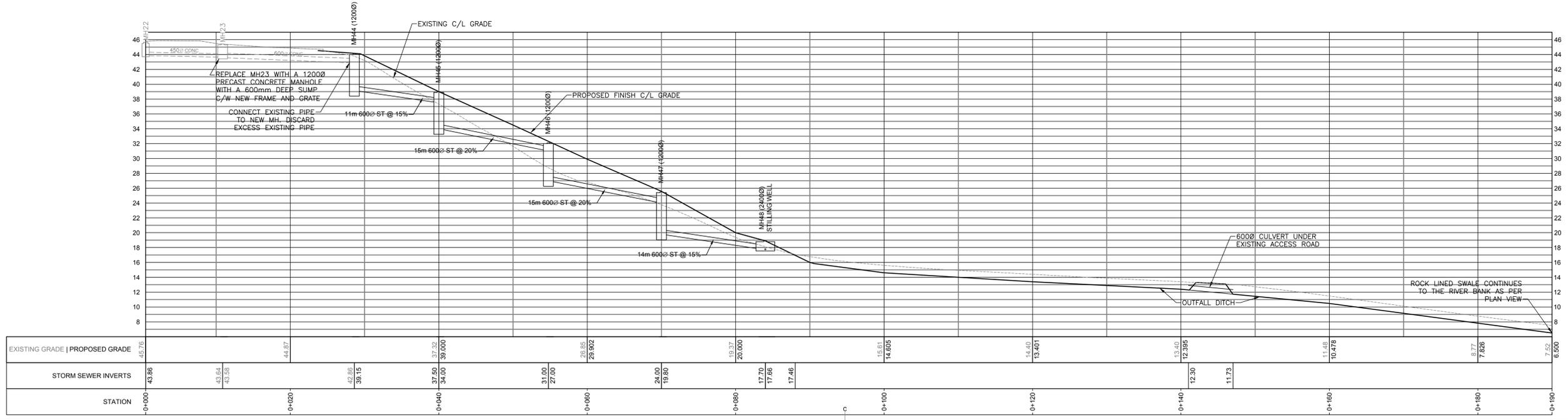
DISCHARGE DITCH

PLACE R25 RIPRAP (4m X 4m) AS A SPLASH PAD FOR FLOW FROM DITCH

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 - EASTING: 342820.530
 - NORTHING: 504658.402
 - ELEVATION: 14.344
 - REMOVE FALLEN TREES FROM SLOPE STABILIZATION WORK AREA



MH 22 TO RIVER PROFILE

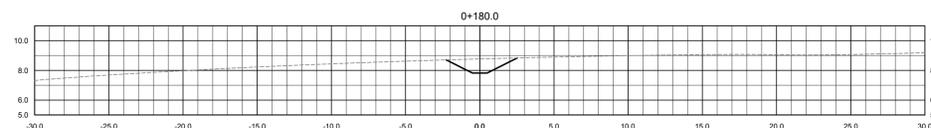
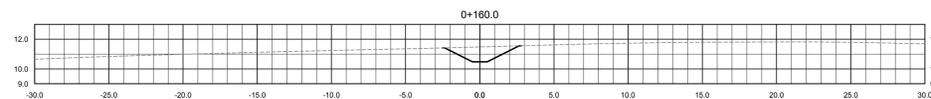
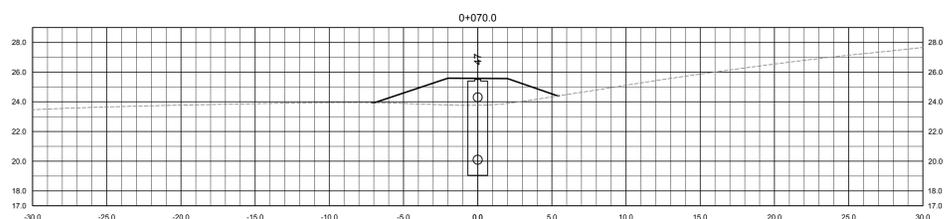
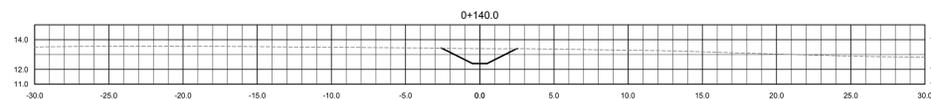
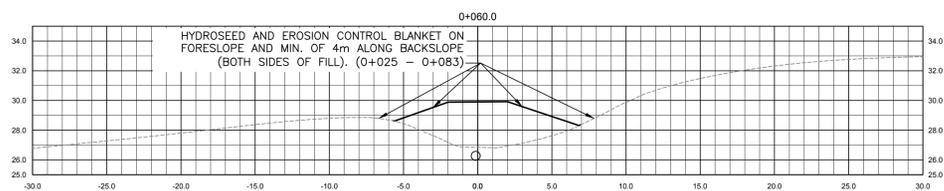
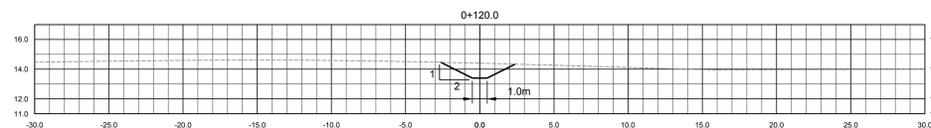
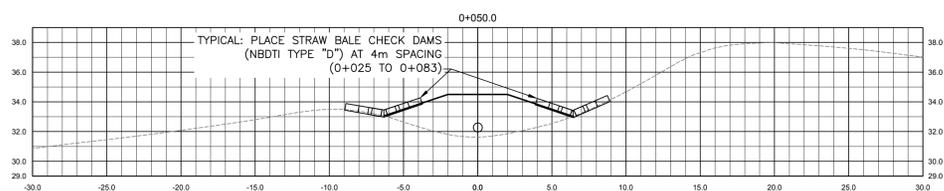
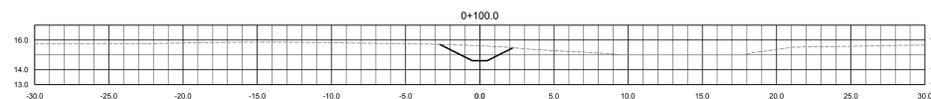
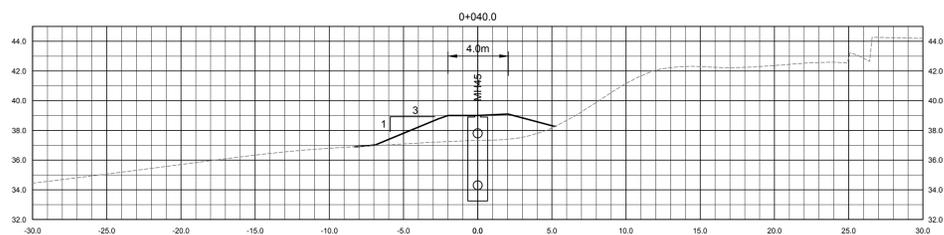
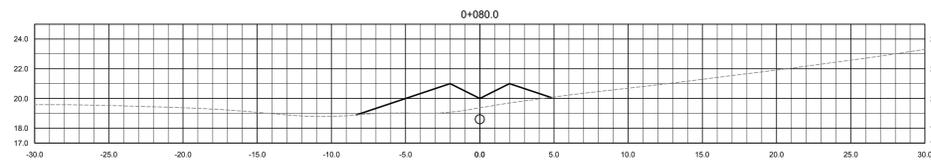
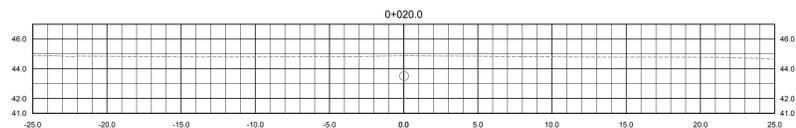


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project
RECAPITALIZATION OF POINT WOLFE STORMWATER SYSTEM AND BANK STABILIZATION FUNDY NATIONAL PARK, NB

drawing
MH 22 OUTFALL PLAN AND PROFILE

designed	GRG	conçu
date	MAR, 2017	
drawn	MN	dessiné
date	MAR, 2017	
approved	GRG	approuvé
date	MAR, 2017	
Tender	ANNE CAMPEAU	Submission
PCA Project Manager	Administrateur de projets APC	
project number	1314	no. du projet
drawing no.	C4	no. du dessin



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 - NORTING: 5046558.402
 - ELEVATION: 14.344

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revisions		date

project project
RECAPITALIZATION OF POINT WOLFE STORMWATER SYSTEM AND BANK STABILIZATION FUNDY NATIONAL PARK, NB

drawing dessin

MH 22 OUTFALL SECTIONS

designed GRG conçu

date MAR, 2017

drawn MN dessiné

date MAR, 2017

approved GRG approuvé

date FEB, 2017

Tender ANNIE CAMPEAU Soumission

PCA Project Manager Administrateur de projets APC

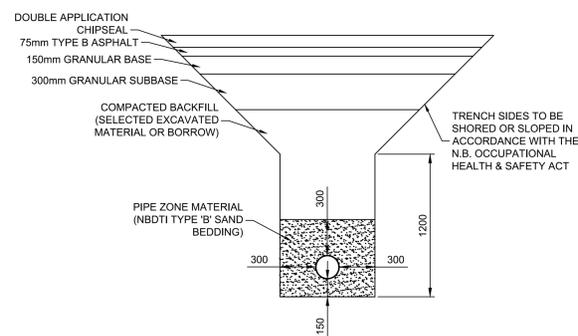
project number no. du projet

1314

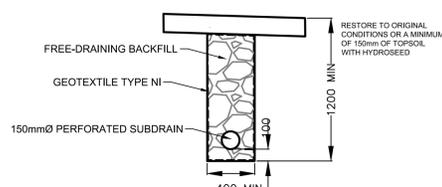
drawing no. no. du dessin

C5

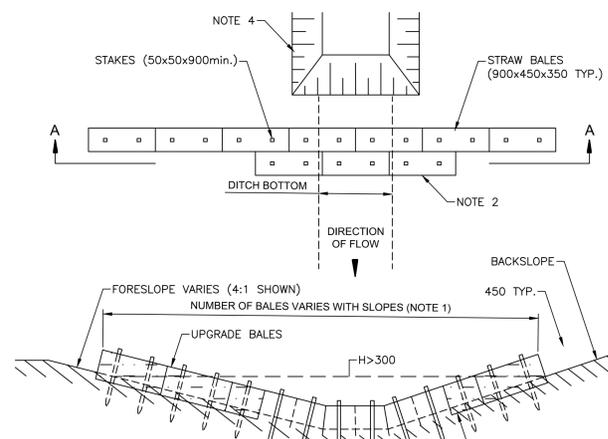




RESTORATION OF TRENCH (PAVED AREA)
N.T.S.



TYPICAL SUBDRAIN INSTALLATION
N.T.S.

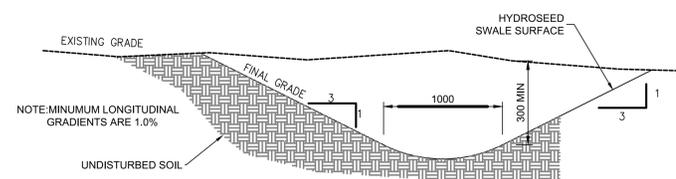


FORESLOPE/ BACKSLOPE	No. OF BALES	
	FS	BS
2:1 / 2:1	2	2
3:1 / 2:1	3	2
3:1 / 3:1	3	3
4:1 / 3:1	4	3
6:1 / 3:1	5	3
WIDE SWALES	AS REQUIRED	

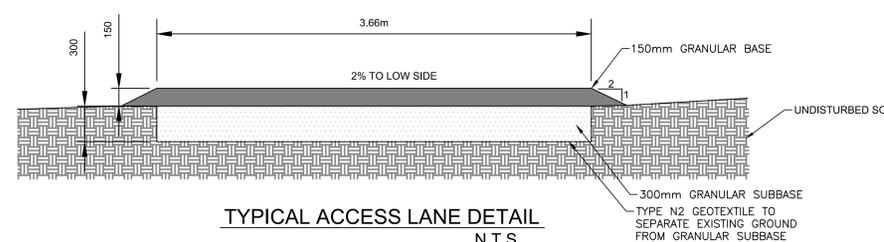
SECTION A-A

- NOTES:
- SEE TABLE FOR TYPICAL NUMBER OF UPSTREAM BALES WHICH ARE REQUIRED TO ENSURE MIN. 300mm FOR HEIGHT 'H' (FROM TOP OF BALES AT DITCH CENTER TO POINT WHERE HIGHEST BALES INTERCEPT SLOPES.)
 - INSTALL MINIMUM OF 3 BALES DOWNGRADE AS REINFORCEMENT. JOINTS OF DOWNGRADE BALES SHOULD BE STAGGERED FROM UPSTREAM BALES.
 - IF TRENCH FOR BALE EMBEDMENT IS EXCAVATED WIDER THAN BALES, BACKFILL WITH EXCAVATED MATERIAL.
 - THE SEDIMENT PIT OF STANDARD DWGS 605-50 AND 605-6 IS REQUIRED FOR TYPE 'D' STRUCTURE.

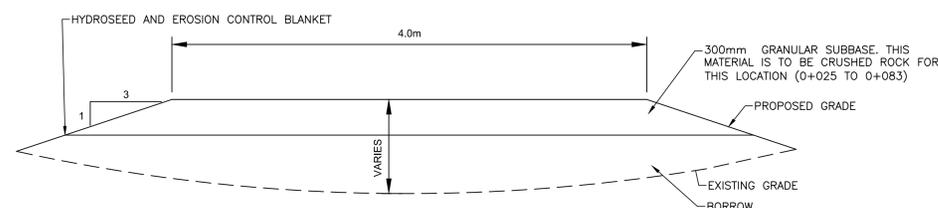
NBDTI TYPE 'D' EROSION CONTROL STRUCTURE
N.T.S.



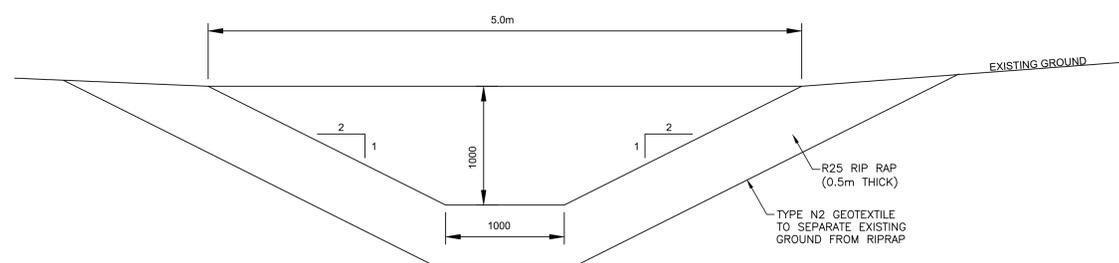
TYPICAL SWALE SECTION
N.T.S.



TYPICAL ACCESS LANE DETAIL
N.T.S.



TYPICAL SECTION FOR STABILIZATION OF ERODED SLOPE
(0+025 TO 0+083)
N.T.S.



OUTFALL DITCH DETAIL (0+090 - 0+220)
N.T.S.

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 - NORTHING: 5046558.402
 - ELEVATION: 14.344

rev	description	date
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project project
**RECAPITALIZATION OF
POINT WOLFE
STORMWATER SYSTEM
AND BANK STABILIZATION
FUNDY NATIONAL PARK, NB**

drawing dessin

DETAILS

designed GRG conçu

date MAR, 2017

drawn MN dessiné

date MAR, 2017

approved GRG approuvé

date MAR, 2017

Tender Annie Campeau Submission

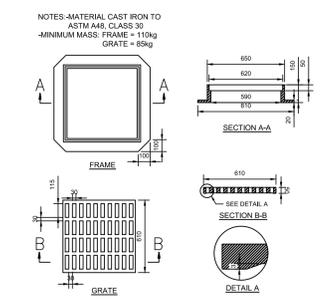
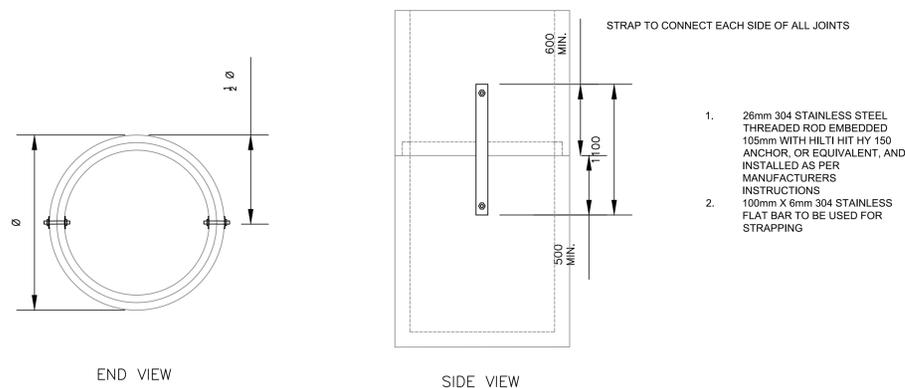
PCA Project Manager Administrateur de projets APC

project number no. du projet

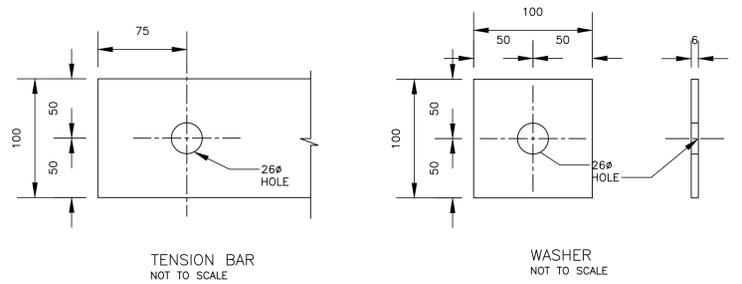
1314

drawing no. no. du dessin

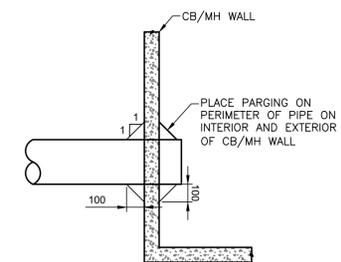
C6



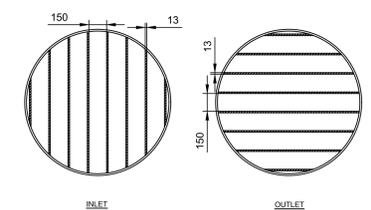
SQUARE FRAME AND GRATE
N.T.S.



MANHOLE RESTRAINING STRAPS
N.T.S.



PARGING DETAIL
N.T.S.



STORM INLET / OUTLET GRATE
N.T.S.

NOTE: GRATE TO BE SECURELY CONNECTED TO PIPE

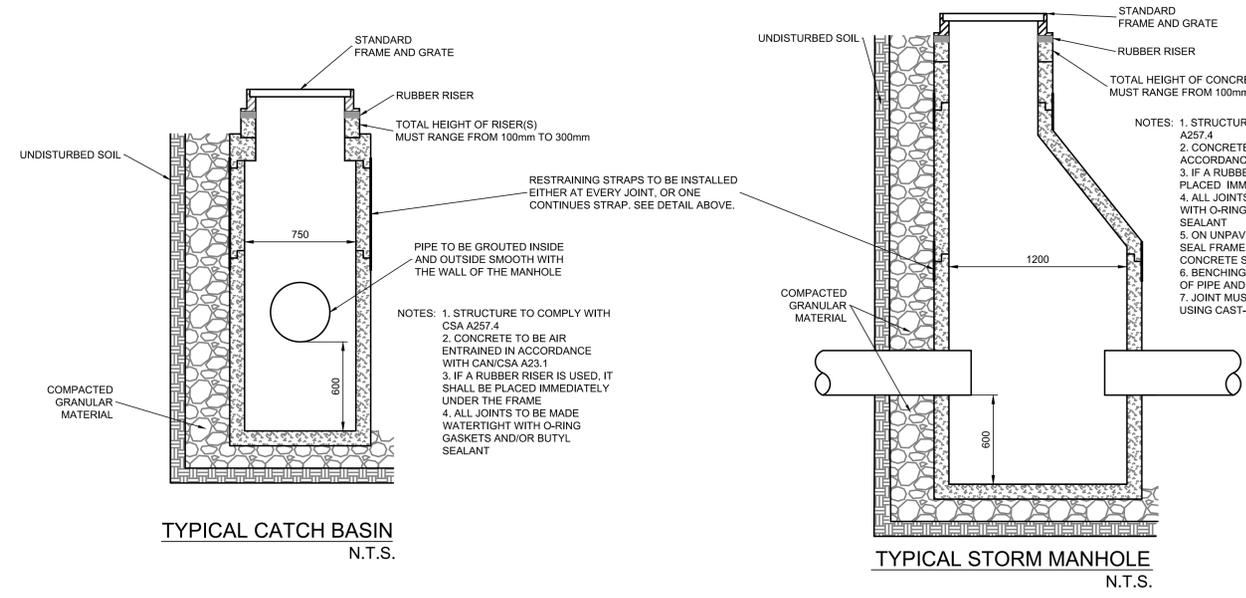
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project **RECAPITALIZATION OF POINT WOLFE STORMWATER SYSTEM AND BANK STABILIZATION FUNDY NATIONAL PARK, NB**

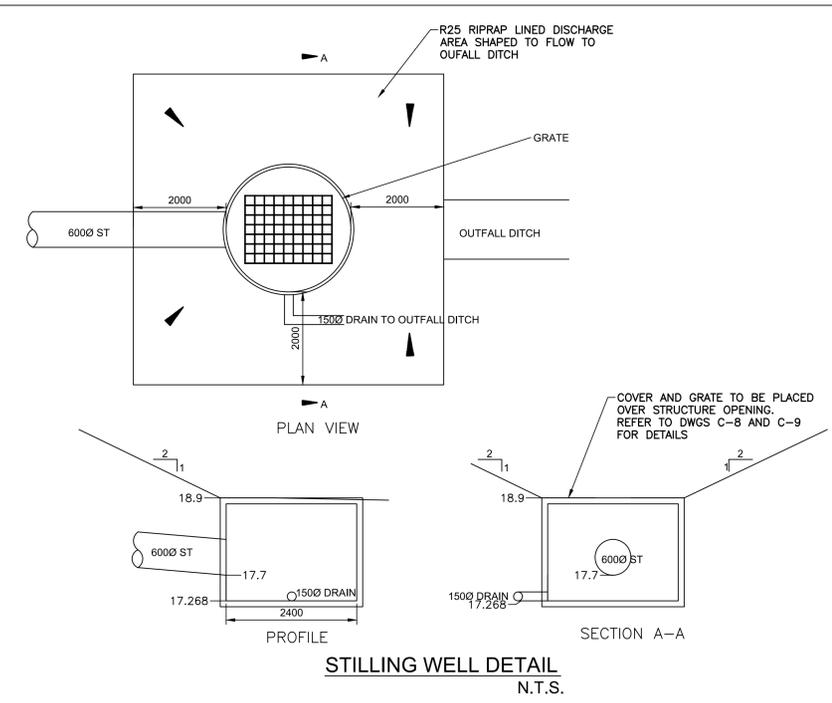
DETAILS

designed	GRG	conçu
date	MAR, 2017	
drawn	MN	dessiné
date	MAR, 2017	
approved	GRG	approuvé
date	MAR, 2017	
Tender	ANNIE CAMPEAU	Soumission
PCA Project Manager	Administrateur de projets APC	
project number		no. du projet
	1314	
drawing no.		no. du dessin
	C7	

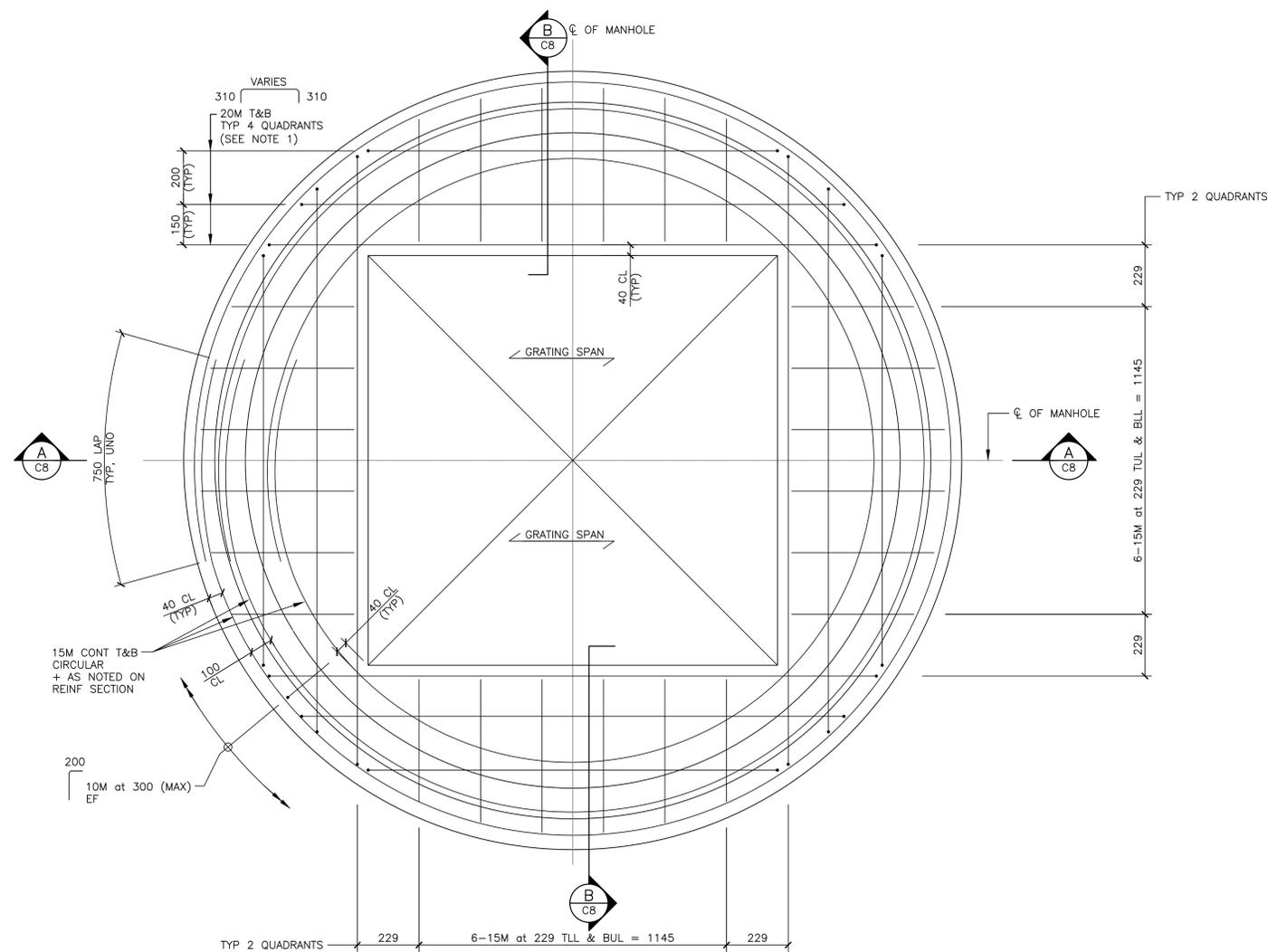


TYPICAL CATCH BASIN
N.T.S.

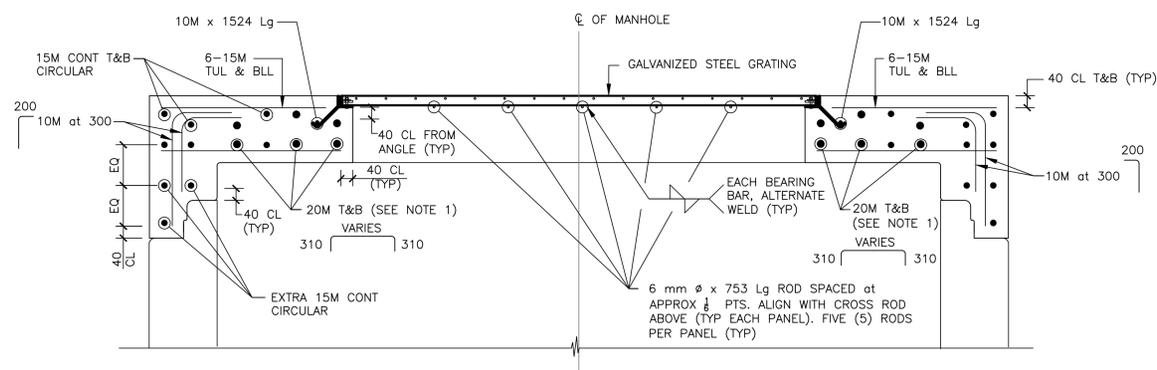
TYPICAL STORM MANHOLE
N.T.S.



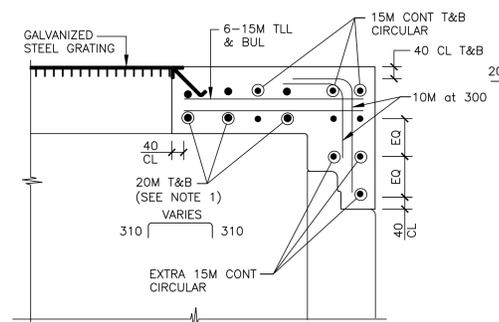
STILLING WELL DETAIL
N.T.S.



PLAN OF COVER — REINFORCING
1:10



SECTION THROUGH COVER — REINFORCING (A)
1:10



SECTION THROUGH COVER — REINFORCING (B)
1:10

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project
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drawing
DETAILS STILLING WELL COVER

designed GRG
date MAR, 2017
drawn MN
date MAR, 2017
approved GRG
date MAR, 2017

Tender ANNIE CAMPEAU
PCA Project Manager Administrateur de projets APC

project number 1314
drawing no. C8



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 project

drawing
DETAILS STILLING WELL COVER
 dessin

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Tender	ANNE CAMPEAU	Soumission
PCA Project Manager	Administrateur de projets APC	
project number	1314	no. du projet
drawing no.	C9	no. du dessin

CONCRETE NOTES

- GENERAL - THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- ALL CONCRETE WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF CSA A23.1-09 AND THE NATIONAL BUILDING CODE OF CANADA, 2010 EDITION.
- ALL CONCRETE MATERIALS SHALL CONFORM TO:
 CEMENT: CAN/CSA A3001, TYPE GU
 AGGREGATES: CSA A23.1-09
 AIR ENTRAINING: ASTM C260-06
 CHEMICAL ADMIXTURES: ASTM C494/C494M-08a
 DESIGN MIX: CSA A23.1-09
 REINF. BAR: CAN/CSA-G30.18-M92 - GRADE 400W
- CONCRETE SHALL BE PROPORTIONED IN ACCORDANCE WITH CSA A23.1-09 TO GIVE THE FOLLOWING MIX DESIGNS:
 MIX 1 - MANHOLE COVER: 30 MPa
 STRENGTH CLASS: F1
 EXPOSURE: 80 mm
 SLUMP: 5-8%
 AIR CONTENT: 5-8%
- CONCRETE MIX DESIGNS SHALL BE SUBMITTED FOR REVIEW BY THE ENGINEER 48 HOURS PRIOR TO USE. OBTAIN ENGINEER'S APPROVAL BEFORE USING CONCRETE ADMIXTURES. USE OF CALCIUM CHLORIDE WILL NOT BE PERMITTED.
- CONCRETE TESTING SHALL CONFORM TO CSA A23.2-09. TESTING TO BE CARRIED OUT BY THE OWNER TO VERIFY THAT THE SPECIFIED REQUIREMENTS. MINIMUM TESTING SHALL INCLUDE 3 STRENGTH TESTS FOR EVERY CONCRETE POUR. SLUMP AND AIR TESTS TO ACCOMPANY CYLINDER TESTING. THE CONTRACTOR SHALL COOPERATE FULLY WITH TESTING PERSONNEL AND PROVIDE 48 HOURS NOTICE PRIOR TO PLACING ANY CONCRETE. CONCRETE NOT MEETING THE SPECIFIED REQUIREMENTS WILL BE REJECTED AND MUST BE REMOVED FROM THE SITE AT THE CONTRACTOR EXPENSE.
- REINFORCING - BILLET STEEL, GRADE 400W, DEFORMED BARS TO CAN/CSA-G30.18-M92. ALL DEFORMED CONCRETE REINFORCING BARS ARE TO BE SUPPLIED AND INSTALLED BY THE CONTRACTOR.
- CONCRETE COVER FOR REINFORCING STEEL UNO:
 40 mm BOTTOM
 40 mm TOP & SIDES
- USE SPACERS AND CHAIRS TO ACCURATELY LOCATE AND SUPPORT REINFORCING STEEL AND SECURE IN POSITION TO PREVENT DISPLACEMENT DURING CONCRETE PLACEMENT. CONTINUOUS SUPERVISION BY THE CONTRACTOR SHALL BE PROVIDED TO ENSURE THAT REINFORCING BARS ARE MAINTAINED IN POSITION.
- SHOP DRAWINGS - SUBMIT SHOP DRAWINGS FOR REVIEW BY ENGINEER PRIOR TO FABRICATING REINFORCING STEEL. CLEARLY INDICATE BAR SIZES, SPACINGS, LOCATION AND QUANTITIES OF REINFORCEMENT, MESH, CHAIRS, SPACERS AND HANGERS WITH IDENTIFYING CODE MARKS TO PERMIT CORRECT PLACEMENT WITHOUT REFERENCE TO STRUCTURAL DRAWINGS. TO CSA A23.3-09, TO REINFORCING STEEL MANUAL OF STANDARD PRACTICE - 2004 BY REINFORCING STEEL INSTITUTE OF CANADA. DETAIL PLACEMENT OF REINFORCING WHERE SPECIAL CONDITIONS OCCUR.
- CONCRETE FORMWORK SHALL BE CONSTRUCTED FROM PLYWOOD SHEETS MEETING THE REQUIREMENTS OF CSA 0121-M1978. PLYWOOD SHEETS OF NEW MATERIAL TO BE CLEAN, SOUND, FREE FROM DEFECTS DETRIMENTAL TO THE QUALITY OF FINISHED CONCRETE SURFACES. ARRANGE PLYWOOD SHEETS TO A UNIFORM JOINT PATTERN. CONSTRUCT FORMWORK TO RESIST FLUID PRESSURE FROM WET CONCRETE AND ALL OTHER CONSTRUCTION LOADINGS WITHOUT BULGING, MOVEMENT OR DISTORTION. REUSE OF FORMWORK SUBJECT TO THE REQUIREMENTS OF CSA A23.1-09.
- MINIMUM TIME FOR FORMWORK REMOVAL TO BE AS FOLLOWS:
 - 72 HOURS AND ADEQUATE STRENGTH.
- THE LOCATION OF ALL OPENINGS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER.
- ALL CONCRETE SHALL BE VIBRATED USING HIGH FREQUENCY VIBRATORS. VIBRATION PRACTICES TO BE IN ACCORDANCE WITH ACI 308R-96.
- EMBEDMENTS - SET ANCHOR RODS, ANGLES, INSERT PLATES, SLEEVES AND OTHER ITEMS EMBEDDED IN CONCRETE ACCURATELY TO EXACT GRADE AND LOCATION SHOWN ON PROJECT DRAWINGS OR AS DIRECTED BY OWNER'S SITE REPRESENTATIVES. SECURE TO PREVENT DISPLACEMENT DURING CONCRETE PLACEMENT. DO NOT CUT OR RELOCATE REINFORCING STEEL FOR PLACEMENT OF EMBEDDED PARTS. IF INSERTS CANNOT BE LOCATED AS SPECIFIED, OBTAIN APPROVAL OF ALL MODIFICATIONS FROM ENGINEER BEFORE PLACING.
- CONCRETE CURING AND PROTECTION SHALL CONFORM TO CSA A23.1-09.
- COLD WEATHER CONCRETE SHALL BE PLACED AND PROTECTED IN ACCORDANCE WITH THE REQUIREMENTS OF CSA A23.1-09. COLD WEATHER PROTECTION AND CURING SHALL BE APPLIED IN ORDER TO MAINTAIN THE TEMPERATURE AT OR ABOVE 10°C FOR THE TIME OF CURING PERIODS SPECIFIED IN TABLE 20 OF CSA A23.1-09. PROVIDE CONTROLLED COOL DOWN PERIOD TO PREVENT SURFACE CRACKING AT END OF PROTECTION PERIOD. ENSURE THAT NO CONCRETE IS PLACED ON OR AGAINST FROZEN SUBGRADE, FORMWORK, OR REINFORCING STEEL.
- FORMED CONCRETE SURFACES SHALL BE SURFACE FINISHED AS SOON AS PRACTICAL AND NOT LATER THAN 8 HOURS FOLLOWING FORMWORK REMOVAL. REMOVE ALL FORM TIES, FINS AND PROJECTIONS. PATCH THE HOLES, INDENTATIONS AND OTHER SURFACE IRREGULARITIES WITH SAND CEMENT PATCHING MORTAR $f_c = 30$ MPa. FILL AND REPAIR HONEYCOMB AND HOLES.
- USE WIND BREAKS/SUN SCREENS, ETC., AS REQUIRED TO PREVENT PREMATURE DRYING OF CONCRETE SLABS PRIOR TO FINISHING. SCREENS TO BE USED WHEN AIR TEMPERATURE, RELATIVE HUMIDITY, CONCRETE TEMPERATURE AND WIND VELOCITIES ARE SUCH TO CREATE SURFACE MOISTURE EVAPORATION RATES IN EXCESS OF 0.75 kg/(sq.m-h). PROTECTION OF CONCRETE TO BE IN ACCORDANCE WITH CSA A23.1-09.

STRUCTURAL STEEL NOTES

- PRIOR TO FABRICATION, THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD TO ENSURE NEW MATERIAL IS DETAILED AND FABRICATED TO SUIT PRECAST STRUCTURE DIMENSIONS AND ELEVATIONS.
- GENERAL - THE STRUCTURAL STEEL CONTRACTOR TO SUPPLY FOR PLACING AND VERIFY LOCATIONS AND ELEVATIONS OF ANCHOR RODS AND EMBEDDED ANGLES, PLATES, ETC. IN PLACE, PRIOR TO DELIVERY OF STRUCTURAL STEEL TO THE SITE AND REPORT ANY DISCREPANCIES TO THE ENGINEER/CONSULTANT.
- COMPANY CERTIFICATION TO MEET THE REQUIREMENTS OF THE NATIONAL BUILDING CODE OF CANADA. ALL WELDING ON THIS PROJECT TO BE DONE ONLY BY COMPANIES CERTIFIED TO DIVISION 1 OR 2 OF CSA W47.1-09 (R2014). CERTIFICATION OF COMPANIES FOR FUSION WELDING OF STEEL.
- FABRICATION AND ERECTION - ALL STEEL WORK SHALL CONFORM TO THE REQUIREMENTS OF CAN/CSA-S16-09, S136-07 AND TO THE NATIONAL BUILDING CODE OF CANADA, 2010 EDITION.
- STRUCTURAL STEEL WORK SHALL CONFORM TO THE REQUIREMENTS OF CAN/CSA-G40.21/G40.21-04 AND CSA S136-07.
- MATERIAL PROPERTIES, (UNO):
GRATING AND ANGLE FRAME
 STEEL ANGLE, PLATE AND ROD: CAN/CSA-G40.21-04-300W
 HIGH STRENGTH BOLTS: ASTM A307
 c/w WASHER & NUT
 SEAL WELD ALL LOCATIONS.
- SHOP DRAWINGS - SUBMIT SHOP DRAWINGS FOR REVIEW BY ENGINEER PRIOR TO FABRICATING STRUCTURAL STEEL. EACH DRAWING SUBMITTED SHALL BEAR THE SIGNATURE AND STAMP OF A QUALIFIED PROFESSIONAL ENGINEER REGISTERED IN NEW BRUNSWICK. CLEARLY INDICATE SHOP AND ERECTION DETAILS INCLUDING CUTS, COPEES, CONNECTIONS, HOLES, THREADED FASTENERS AND WELDS. INDICATE WELDS BY AWS WELDING SYMBOLS AS DEFINED IN CSA W59-13.
- CONNECTIONS - ALL WELDED CONNECTIONS SHALL CONFORM TO CSA W59-13. ALL WELDING TO CONFORM TO CSA W59-13 AND AWS USING E60XX ELECTRODES FOR CARBON STEEL. ROD CONNECTIONS TO BE BEARING TYPE. ONLY QUALIFIED WELDING MECHANICS CERTIFIED TO CSA W47.1-09 (R2014) SHALL BE EMPLOYED TO PERFORM WELDING.
- LOADS DURING CONSTRUCTION - ALL STRUCTURAL MEMBERS SHALL BE PROTECTED AGAINST LOADS EXCEEDING THE DESIGN CAPACITY DURING CONSTRUCTION.
- GALVANIZED STEEL GRATING TO BE:
 32mm DEEP x 3.2mm, CARBON STEEL WELDED BAR GRATING,
 BEARING BARS at 30mm c/c AND CROSS BARS at 100mm c/c BANDED ALL AROUND.
 MAXIMUM ALLOWABLE FIBRE STRESS OF 124 MPa.
- SHOP GALVANIZING - HOT DIP GALVANIZED WHERE NOTED WITH A MINIMUM COATING OF 0.6 kg/sq.m TO CAN/CSA-G164-M92, UNLESS NOTED OTHERWISE. ALL STEEL WORK TO BE CLEARED OF LOOSE MILL SCALE, RUST, DIRT AND ALL FOREIGN MATTER TO SSPC-SP10, NEAR-WHITE BLAST CLEANING. FIELD REPAIR DAMAGED AREAS USE AN INORGANIC ZINC-RICH PAINT WITH MATCHING COLOUR. DO NOT HOT DIP GALVANIZED STEEL EMBEDDED INTO CONCRETE.
- ERECT STRUCTURAL STEELWORK TRUE AND PLUMB TO LINES AND GRADES INDICATED AND TO TOLERANCES SPECIFIED BY CISC HANDBOOK OF STEEL CONSTRUCTION, 2010 EDITION.

