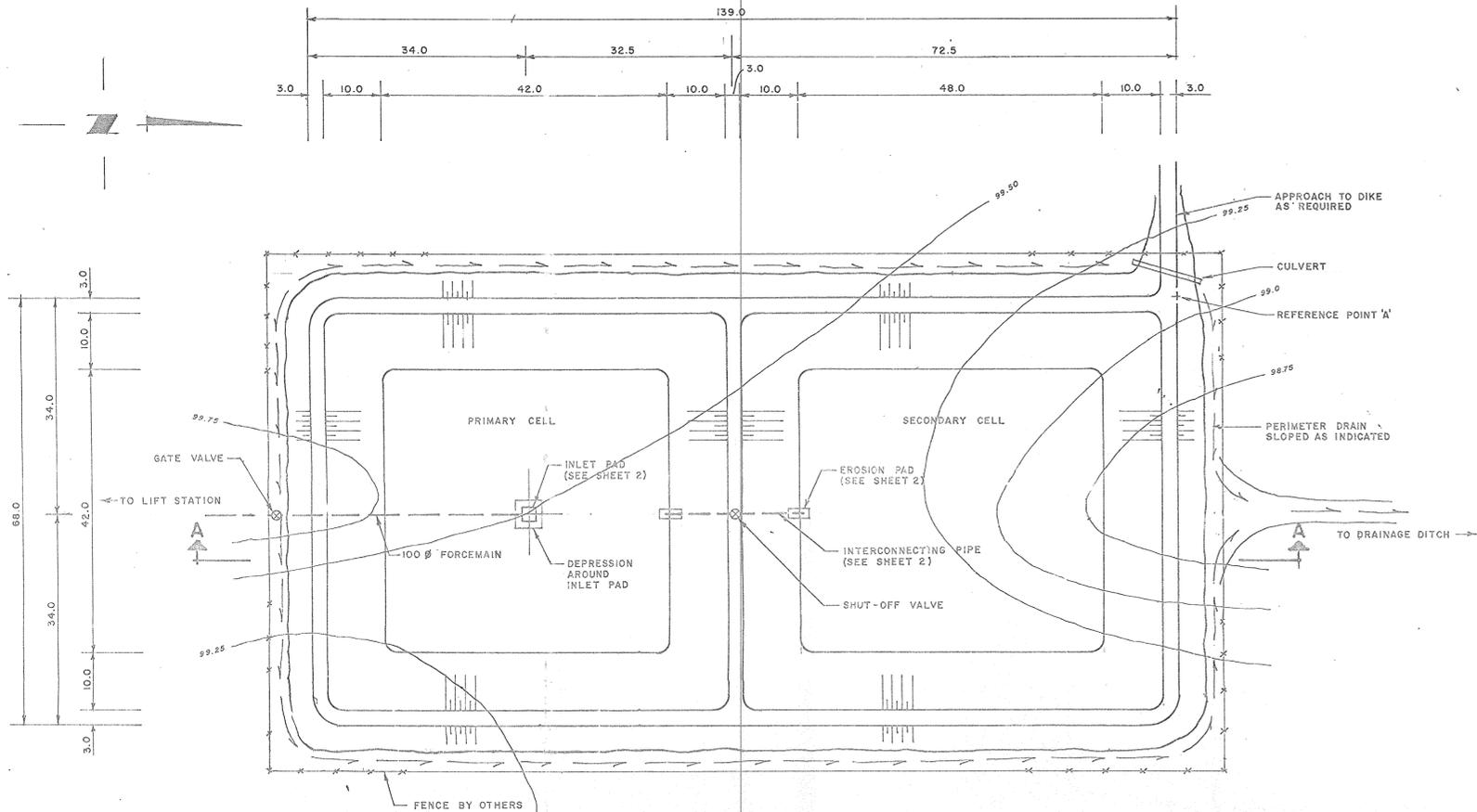


APPENDIX C

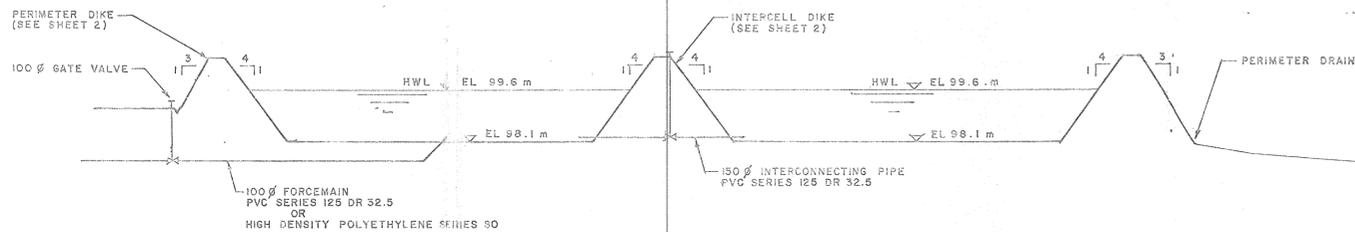
Design Drawings (1989 and 2013)



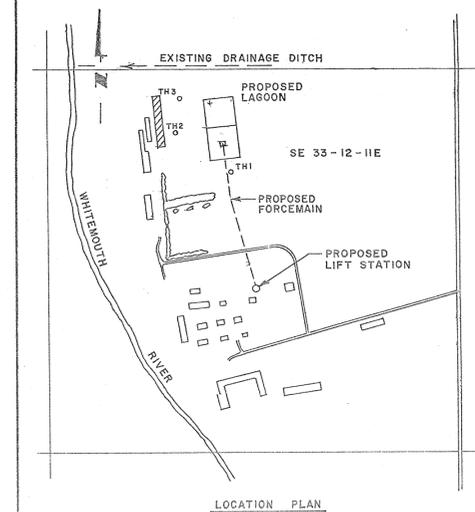
PLAN

1:500

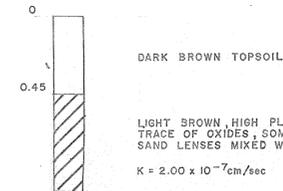
- NOTE
- TEMPORARY B.M. AT SW CORNER OF CONCRETE PAD AT SW CORNER OF MOST NORTHERLY HOG BARN (ASSUMED EL. 100.00m). ALL ELEVATIONS WITH RESPECT TO TEMPORARY B.M.
 - WEST SIDE OF TOP OF DIKE TO BE LOCATED 95m EAST OF MOST NORTHERLY HOG BARN (DIKE TO BE PARALLEL WITH HOG BARN)
 - REFERENCE POINT 'A' TO BE 10m SOUTH OF NORTH WALL OF HOG BARN AND 95m EAST OF HOG BARN
 - ALL DIMENSIONS AND ELEVATIONS ARE IN METERS



SECTION A-A

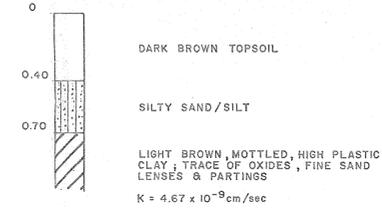


TH 1 (TAKEN 1988)

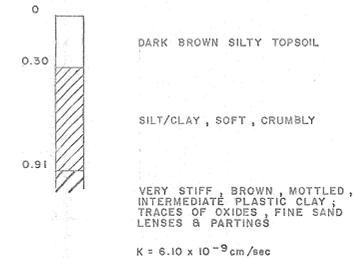


TH 2 (TAKEN 1988)

DEPTH IN METERS



TH 3 (TAKEN 1988)



SOIL LOGS

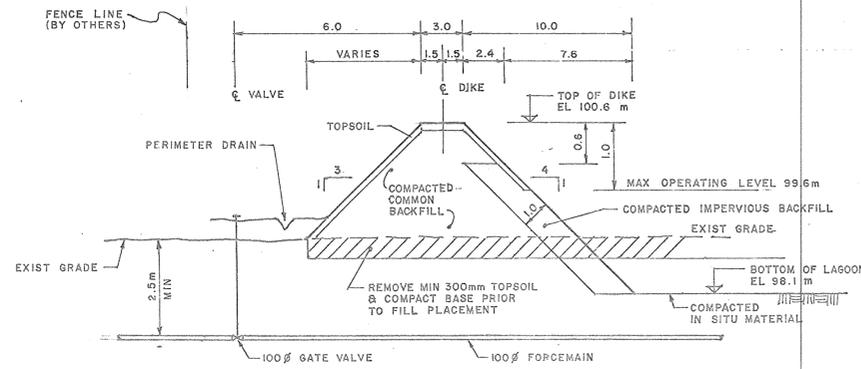
NO.	REVISIONS	BY	DATE



SURVEYED	BOOK NO.
DRAWN	D. F. B.
DESIGNED	S. K. FEDENIUK
CHECKED	
REVIEWED	

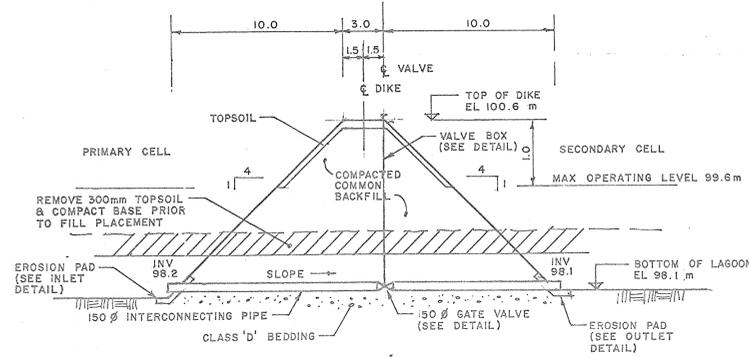
PROVINCE OF MANITOBA	
THE MANITOBA WATER SERVICES BOARD	
DEPARTMENT OF RURAL DEVELOPMENT	
SUBMITTED	APPROVED
CHIEF ENGINEER	GENERAL MANAGER

RM OF WHITEMOUTH WHITESHELL COLONY				
SEWAGE LAGOON				
PLAN & SECTION				
SCALE	DATE	PROJECT NO.	REV.	SHEET
AS SHOWN	05 MAY 89			1 OF 2



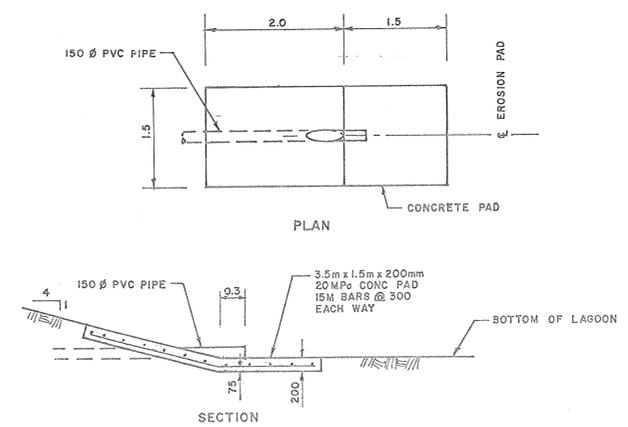
PERIMETER DIKE SECTION

NTS



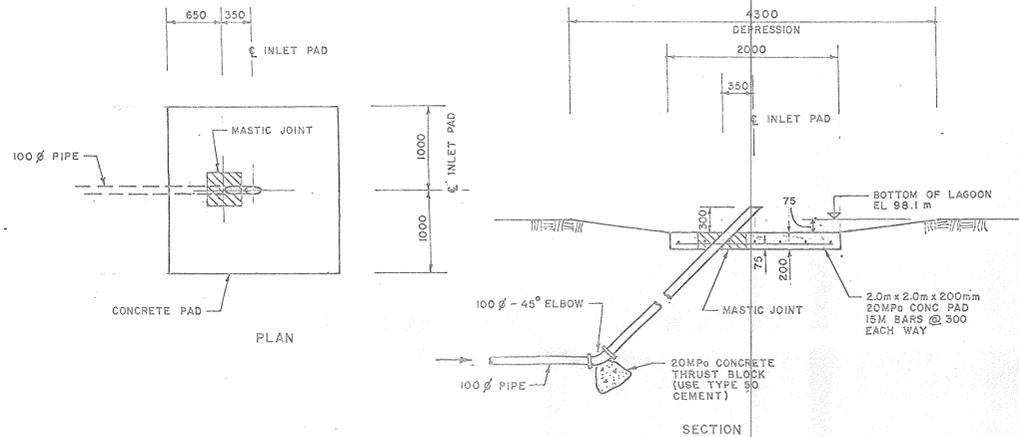
INTERCONNECTING PIPE DETAIL

NTS



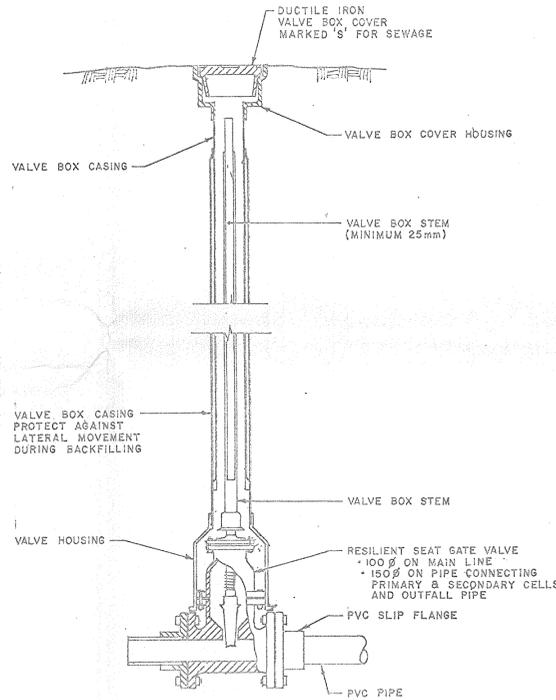
EROSION PAD DETAIL (OUTLET)

1:50



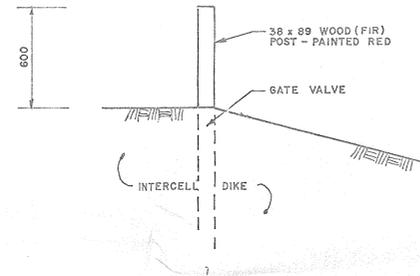
INLET PAD DETAIL

NTS



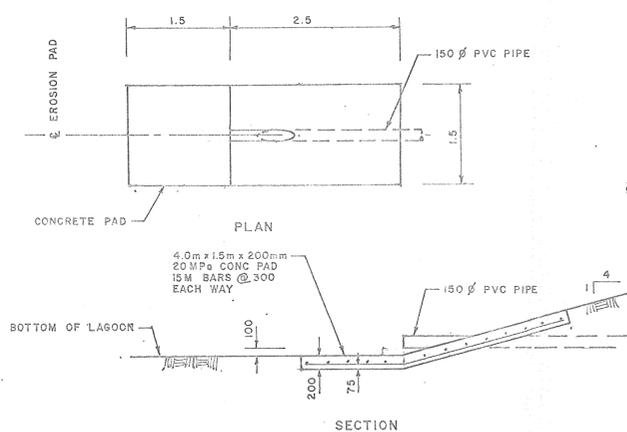
SHUT-OFF VALVE DETAIL

NTS



VALVE MARKER DETAIL

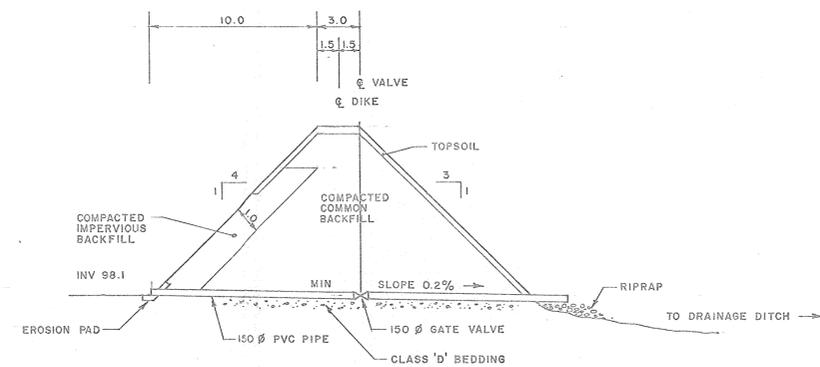
1:20



EROSION PAD DETAIL (INLET)

1:50

- NOTE
- REMOVE MINIMUM 300mm OF TOPSOIL AND ANY SILT OR SAND DEPOSITS PRIOR TO PLACING ANY FILL
 - WATER SHALL BE ADDED OR REMOVED AS REQUIRED FOR WORKABILITY
 - MINIMUM 8 PASSES OF SHEEPSFOOT ROLLER ON INSIDE DIKE FACES AND LAGOON FLOOR



OUTFALL PIPE DETAIL (DELETE)

NTS

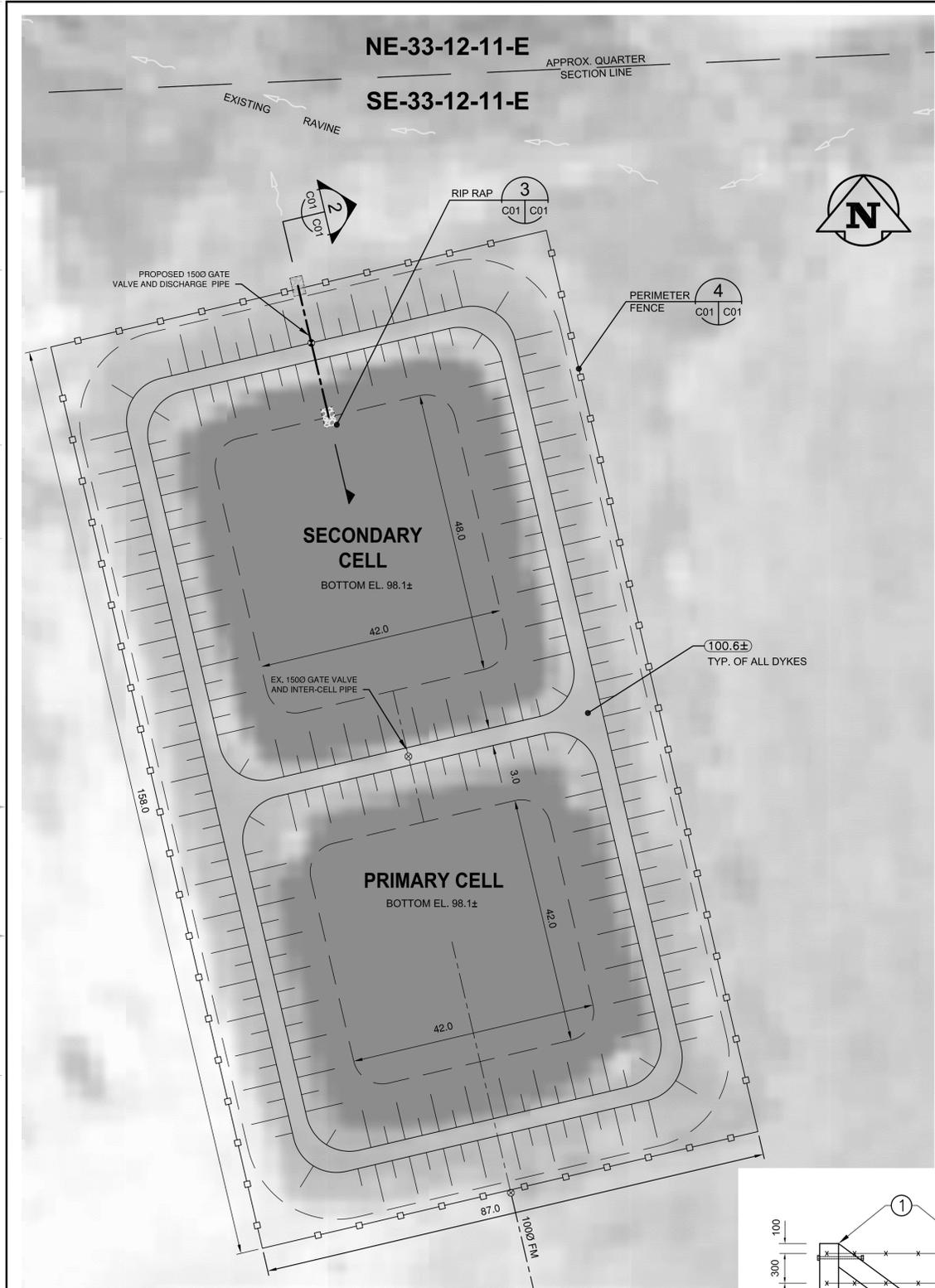
NO.	REVISIONS	BY	DATE



SURVEYED	BOOK NO.
DRAWN	D. F. B.
DESIGNED	S. K. FEDENIUK
CHECKED	
REVIEWED	

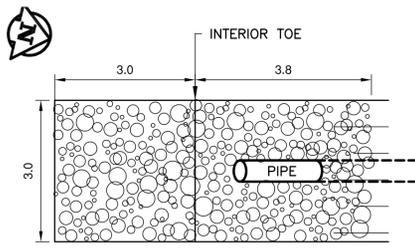
PROVINCE OF MANITOBA	
THE MANITOBA WATER SERVICES BOARD	
DEPARTMENT OF RURAL DEVELOPMENT	
SUBMITTED	APPROVED
CHIEF ENGINEER	DATE

RM OF WHITEMOUTH		WHITESHELL COLONY	
SEWAGE LAGOON		DETAILS	
SCALE	DATE	PROJECT NO.	REV.
AS SHOWN	05 MAY 89		
SHEET		2 OF 2	

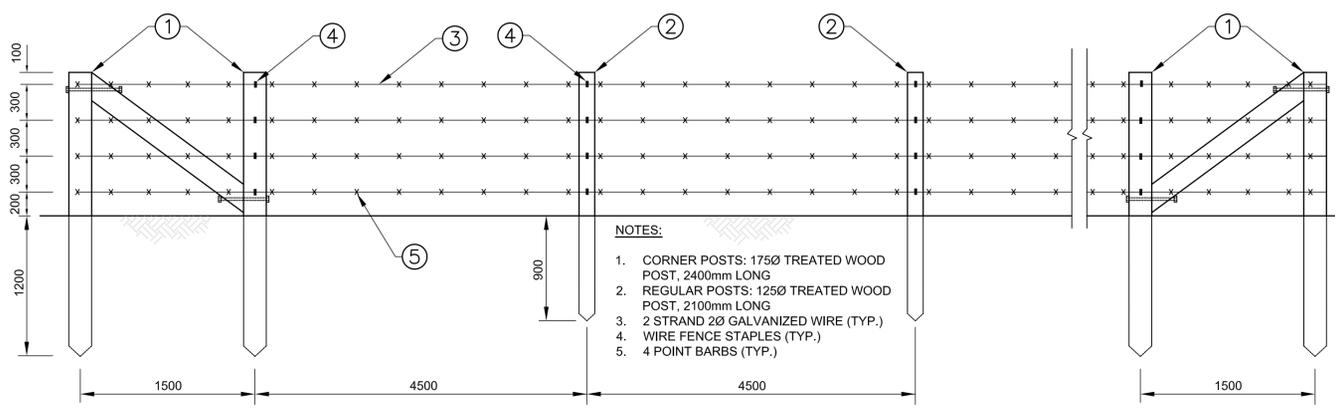


1
PROPOSED SITE PLAN
1:500

2
DISCHARGE PIPE SECTION
NTS



3
PIPING RIP RAP DETAIL
NTS



4
PERIMETER FENCE DETAIL
NTS

- SHORT FORM CONSTRUCTION SPECIFICATIONS**
- ALL PRODUCTS INCORPORATED IN THE WORK SHALL CONFORM TO ASTM AND AWWA STD. SPECIFICATIONS. ALL CONSTRUCTION SHALL CONFORM TO SPECIFICATIONS.
 - VALVES SHALL BE AWWA C509, (LEFT-HAND OPENING) C/W DEPTH ADJUSTABLE BOXES.
 - FITTINGS (TEES, ELBOWS, ETC.) SHALL BE OF THE SAME CLASS AS THE PIPE. ALL FITTINGS SHALL BE INSTALLED WITH A CONCRETE THRUST BLOCK AND RESTRAINT.
 - SEWER LINES SHALL BE INSTALLED TO GRADES AND ALIGNMENTS SHOWN ON THE PLANS OR AS STAKED BY THE ENGINEER. VALVE BOXES SHALL BE INSTALLED PLUMB.
 - ALL AREAS SUBJECTED TO CONSTRUCTION OPERATIONS SHALL BE RESTORED TO THE CONDITION IN WHICH THEY EXISTED PRIOR TO CONSTRUCTION. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO PAVEMENT REPAIRS, REGRAVELLING, TRENCH SETTLEMENT CORRECTION AND RESEEDING OF GRASSED AREAS.
 - ALL BACKFILL AND BEDDING MATERIAL THROUGH DYKES SHALL BE CLAY HAVING THE SAME PROPERTIES AS THE CLAY LINER AND COMPACTED TO 95% STANDARD PROCTOR DRY DENSITY. WASTEWATER SEWER PIPE THROUGH CELL CLAY LINER SHALL BE CLAY OR CLAY BENTONITE MATERIAL PACKED FOR THE WIDTH OF THE PIPE TRENCH.
 - EMBANKMENT MATERIAL SHALL BE PLACED AND COMPACTED IN 150mm (MAX.) LIFTS UNTIL THE DENSITY ACHIEVED IS 95% OF STANDARD PROCTOR DRY DENSITY. THE MOISTURE CONTENT OF THE EMBANKMENT MATERIAL SHALL BE MINUS ONE PERCENT TO PLUS THREE PERCENT OF OPTIMUM MOISTURE AS DETERMINED BY THE STANDARD PROCTOR TEST.
 - ALL RELEVANT UTILITIES (WATERWORKS, HYDRO, MTS, GAS, HIGHWAYS, ETC.) SHALL BE NOTIFIED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION. CONTROLS (INCLUDING VALVES) SHALL BE OPERATED BY PERSONNEL OF THE RESPECTIVE UTILITIES.
 - ALL RELATIVE AND APPLICABLE FEDERAL, PROVINCIAL AND LOCAL STATUTES, BY-LAWS, CODES AND REGULATIONS SHALL BE OBSERVED IN THE COURSE OF CONSTRUCTION. WHERE REQUIRED, THE CONTRACTOR SHALL SECURE AND PAY FOR THE APPROPRIATE CONSTRUCTION PERMITS.
 - WASTEWATER SEWER PIPE SHALL BE HDPE 21 OR PVC SERIES 125 (SDR 32.5).
 - INTER-CELL AND DISCHARGE PIPE BEDDING SHALL BE CLASS C.
 - TEM TO BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION.
 - WWSP TO BE CONSTRUCTED IN ACCORDANCE WITH ENVIRONMENT ACT LICENCE, DESIGN DRAWINGS AND THE ENVIRONMENT ACT PROPOSAL (EAP) REPORT CONDITIONS. IN THE EVENT OF A DISCREPANCY BETWEEN THE MINIMUM REQUIREMENTS OF THE EAP AND THESE DESIGN DRAWINGS THE LATTER SHALL GOVERN.
 - THE CONTRACTOR SHALL NOTIFY THE ASSIGNED ENVIRONMENT OFFICER NOT LESS THAN TWO WEEKS PRIOR TO BEGINNING CONSTRUCTION OF THE DEVELOPMENT. THE NOTIFICATION SHALL INCLUDE THE INTENDED STARTING DATE OF CONSTRUCTION.

EXISTING	LEGEND	PROPOSED
---	WATERMAIN	---
---	WASTEWATER	---
---	LAND DRAINAGE SEWER	---
---	LOW PRESSURE SEWER	---
⊗	GATE VALVE	⊗
○	MANHOLE	○
◇	HYDRANT	◇
●	UTILITY POLE	●
—	GUY WIRE	—
□	CATCH BASIN	□
△	CURB INLET	△
⊠	HYDRO TOWER	⊠
▽	SIGN	▽
⊞	MTS PEDESTAL	⊞
⊞	SURVEY BAR	⊞
---	CULVERT	---
---	DITCH / SWALE	---
---	TREE OR SHRUB LINE	---
---	FENCE LINE	---
---	HYDRO	---
---	GAS MAIN	---
---	MTS	---
---	DIRECTION OF FLOW	---
---	WICK DRAIN	---
---	WEEPING TILE	---
---	RIP RAP	---
99.000	GROUND ELEVATION	99.000
99.000	DITCH ELEVATION	99.000
99.000	ROAD/DYKE ELEVATION	99.000

NOTES:

- LOCATION OF UNDERGROUND STRUCTURES AS SHOWN IS BASED ON THE BEST INFORMATION AVAILABLE, BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE CONSULTANT OF ANY ERROR OR OMISSION IN THE LOCATION OF ALL EXISTING UTILITIES SHOWN ON THE DRAWING.
- DESCRIPTION OF PROPERTY LIMITS, AND EXISTING AND/OR PROPOSED FEATURES RELATIVE TO THESE LIMITS AS SHOWN ON THIS DRAWING DO NOT REPRESENT A LEGAL SURVEY. GENIVAR MAKES NO REPRESENTATION OR GUARANTEE THAT THE PROPERTY LIMIT INFORMATION IS ACCURATE. GENIVAR ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY ANY THIRD PARTY AS A RESULT OF DECISIONS OR ACTIONS BASED ON THIS DRAWING.
- THIS DOCUMENT HAS BEEN PREPARED IN PART BASED ON INFORMATION IN THE MANITOBA WATER SERVICES BOARD DRAWINGS (1989). GENIVAR HAS NOT VERIFIED THE ACCURACY AND/OR COMPLETENESS OF THIS INFORMATION AND IS NOT RESPONSIBLE FOR ANY OMISSIONS THAT MAY BE ENCOUNTERED AS A RESULT OF INFORMATION PROVIDED BY OTHERS.

NOTES:

- GEOTEXTILE FABRIC (FILTER CLOTH) SHALL BE NON-WOVEN TYPE, LAYFIELD LP7, ARMETE 230 OR APPROVED EQUIVALENT. THE GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE RIP RAP. THE GEOTEXTILE FABRIC SHALL BE PLACED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND BENEATH THE RIP RAP WITH A MINIMUM OF 600 mm OF OVERLAP REQUIRED ON ALL ABUTTING LENGTHS.
- RIP RAP SHALL BE FREE FROM ORGANICS, ROOTS, SILTS, SAND, CLAY, SNOW, ICE OR ANY OTHER MATERIAL THAT WOULD DETRACT FROM THE STRENGTH OR DAMAGE THE UNDERLYING FABRIC AND/OR LINER. THICKNESS OF RIP RAP PLACEMENT SHALL BE 300 mm. THE LARGER ROCKS SHALL BE UNIFORMLY DISTRIBUTED AND THE SMALLER ROCKS AND COBBLE SHALL FILL THE SPACES IN BETWEEN RESULTING IN A WELL-KEYED, VOID FREE AND STABLE SURFACE.
- RIP RAP SHALL BE EITHER DURABLE FIELDSTONE OR ROCK FRAGMENTS. SHOULD THE CONTRACTOR CHOOSE TO USE LIMESTONE, IT SHALL BE DURABLE WHITE CRYSTALLINE LIMESTONE. SOFTER BUFF TO YELLOW DOLOMITE OR DOLOSTONE SHALL NOT BE ACCEPTED. RIP RAP SHALL MEET THE FOLLOWING SIZE REQUIREMENTS:
 D150 - 200 - 75% OF RIP RAP SHALL BE 150 mm DIAMETER OR GREATER.
 D MAX. = 200 - MAXIMUM SIZE OF RIP RAP SHALL BE 200 mm DIAMETER.
 D MIN. = 100 - MINIMUM SIZE OF RIP RAP SHALL BE 100 mm DIAMETER.



CONSULTANT:

SEAL:

CLIENT:

CLIENT REF. #:

PROJECT:

KEY PLAN:

DISCLAIMER:

COPYRIGHT:

ISSUED FOR - REVISION:

IS	RE	DATE	DESCRIPTION
1		2013/09/17	EAP SUBMISSION

PROJECT NO: 121-23047-00 DATE: 2013/09/17

ORIGINAL SCALE: AS SHOWN IF THIS BAR IS NOT 25mm LONG, ADJUST YOUR PLOTTING SCALE.

DESIGNED BY: JSB

DRAWN BY: JSB

CHECKED BY: RWV

DISCIPLINE: CIVIL

TITLE: SITE PLAN AND DETAILS

SHEET NUMBER: C01

SHEET #: 1 OF 1

ISSUE: EAP SUBMISSION

DATE OF: 2013/09/17

REV # 0

REDUCED DRAWING
DO NOT SCALE

PRELIMINARY
NOT FOR CONSTRUCTION

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES