



**GRADING LEGEND:**

- 38.88 NEW GRADE ELEVATION
- 37.34 EXISTING GRADE ELEVATION
- ⊕ CB RIM EXISTING NEW CATCH BASIN
- INV. / 38.12 INVERT ELEVATION OF GRANULAR DRAIN
- 1.26% DIRECTION OF DRAINAGE AND PERCENTAGE OF SLOPE
- 4:1 4 HORIZONTAL / 1 VERTICAL SLOPE
- NEW UNDERGROUND GRANULAR DRAIN AND DIRECTION OF SLOPE
- - - INDICATES DRAINAGE RIDGE LINE
- - - LIMIT OF GRADING / SOD RESTORATION
- NEW 200 MM DIA. LDS LEAD

- NOTE:**
1. EXISTING GRADE ELEVATIONS AND SITE SURVEY IS BASED ON PHILLIPS AND STEVENS 3 DRAWINGS, FILE NO: 20130602, REVISION 1, DATED JUNE 11, 2013. FOR GEODETIC GRADES ADD 200.00 METRES.
  2. CONTACT MANITOBA HYDRO AND LOCATE AND PROTECT UNDERGROUND GAS LINE, PRIOR TO COMMENCING CONSTRUCTION. ALSO LOCATE AND PROTECT ALL UNDERGROUND UTILITIES, SURVEY MONUMENTS, ETC, PRIOR TO COMMENCING CONSTRUCTION.
  3. UNLESS NOTED OTHERWISE, ALL NEW GRADES SHALL BE A STRAIGHT LINE FROM ONE GRADE POINT TO ANOTHER.
  4. ALL LDS SEWERS TO BE INSTALLED IN ACCORDANCE WITH THE LATEST REVISION OF THE CITY OF WINNIPEG STANDARD CONSTRUCTION SPECIFICATIONS.
  5. INSTALL A SECOND WEST WEeping TILE PIPE INTO EACH CATCH BASIN, MINIMUM 3 METRE LENGTH, TO MAXIMIZE WATER FLOW INTO CATCH BASIN.
  5. THE CONTRACTOR SHALL ACCESS THE SITE VIA THE FUTURE ROAD APPROACH LOCATION.
  7. ALL ROUGH GRADING AND FINISH GRADING, MUST BE UNDERTAKEN USING EARTHMOVING EQUIPMENT WHICH IS GUIDED BY LASER OR GPS CONTROLLED DATA. COMPACTION FOR FILL MUST BE DONE IN MAXIMUM 150 MM LIFTS.

CONTRACTOR SHALL INSTALL A CULVERT WHERE THE FUTURE ROAD APPROACH WILL BE LOCATED AND USE THE FUTURE ROAD LOCATION AS AN ACCESS POINT TO THE WORK AREA. SEE DRAWING I-L2 FOR WORK IN THIS CONTRACT.

BUILT UP RIDGE TO CONTAIN WATER - 300 MM HEIGHT ABOVE TOP OF GRANULAR DRAIN

BROKEN LINE INDICATES OUTLINE OF EXISTING TREE STAND WHICH IS TO BE REMOVED

**LAND DRAINAGE NOTES:**

- Allowable unit release rate for this area is 20 L/s/ha.
- Total area is 3.83 ha
- Allowable discharge into the Silver Avenue ditch is 20 L/s/ha x 3.83 ha = 76.6 L/s

**Site Area - 3.83 ha**

- % impervious - 12.07%
- impervious - 0.4622 ha
- pervious - 3.3679 ha
- calculated storage - 1,622 cubic metres

**Areas at Catch Basins:**

- Total drainage area to Catch Basin #1 - 0.4046556 ha
- Total drainage area to Catch Basin #2 - 3.4249 ha

**Discharge and Storage:**

- the maximum total discharge to the Silver Avenue ditch is 76.6 L/s
- discharge from catch basin #1 - 33.98 L/s
- discharge from catch basin #2 - 42.48 L/s
- required storage in the catch basin #1 area - 101 cubic metres
- required storage in the catch basin #2 area - 1,590 cubic metres
- available storage in the catch basin #1 area - 104 cubic metres
- available storage in the catch basin #2 area - 2,270 cubic metres

**Orifice Design Catch Basin #1**

- South pipe from catch basin will be a 200 mm diameter pipe.
- Top of water at storage area 238.80
- Invert south 200 mm pipe - 237.80
- $Q = C_d A \sqrt{2gh} \quad C_d = 0.61 \quad Q = 33.98 \text{ L/s} \quad h = 0.9 \text{ metre}$
- Diameter of orifice is 130 mm
- Contractor to install a 130 mm orifice in the 200 mm pipe.
- The orifice shall be 300 mm long - see detail 4-L2

**Orifice Design Catch Basin #2**

- South pipe from catch basin will be a 200 mm diameter pipe.
- Top of water at storage area 239.30
- Invert south 200 mm pipe - 237.86
- $Q = C_d A \sqrt{2gh} \quad C_d = 0.61 \quad Q = 42.48 \text{ L/s} \quad h = 1.34 \text{ metre}$
- Diameter of orifice is 132 mm
- Contractor to install a 132 mm orifice in the 200 mm pipe.
- The orifice shall be 300 mm long - see detail 5-L2

**1 SITE GRADING PLAN**  
Scale: 1:600

SCALE 0 50 METRES

**LEGEND:**

- INDICATES AVAILABLE RAIN WATER STORAGE AREA WITHIN THE PERIMETER DYKE AREA OR DRAINAGE SWALES
- VOLUME OF AVAILABLE STORAGE FOR CATCH BASIN NO. 1 IS 104 CUBIC METRES
- TOTAL VOLUME OF AVAILABLE STORAGE FOR CATCH BASIN NO. 2 IS 2,270 CUBIC METRES
- TOTAL VOLUME OF AVAILABLE WATER STORAGE FOR BOTH CATCH BASINS IS 2,374 CUBIC METRES

**NOTE: THIS DRAWING IS FOR INFORMATION ONLY FOR THE CONTRACTOR, AND IS BEING USED TO OBTAIN THE LAND DRAINAGE PERMIT FROM THE WATERWORKS AND WASTE DEPT. THE WORK UNDER THIS CONTRACT IS FOR SOCCER FIELD NO: 1 WHICH LOCATION IS SHOWN ON DRAWING L-2**

Manitoba Association of Professional Engineers  
Feb. 10/2016

PROVINCE OF MANITOBA  
G. A. PRATT  
REGISTERED ENGINEER

**APEGM**  
Certificate of Authorization  
**G. A. Pratt & Associates Inc.**  
No. 758 Expiry: April 30, 2016

**GA PRATT & ASSOCIATES INC.**  
ENGINEERING CONSULTANTS

PROJECT TITLE	NO. 1	REVISIONS	BY	DATE
STURGEON ROAD ATHLETIC FIELDS	1	Revise land drainage notes to suit W&W Review	K.R.	Feb. 19/16
DRAWING TITLE	SCALE	SHEET NO.		
OVERALL SITE GRADING PLAN BASED ON DEVELOPMENT OF THE ENTIRE SITE AND WATER STORAGE	1:600	L1		
DRAWN BY K. Rech		DATE Feb. 19, 2016		REVISION 1
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FILE NO. 15-15		SCALE 1:600		REVISION 1

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