



**LEGEND:**

(10)	CONSTRUCTION NOTE DESIGNATION	[Pattern]	RIP RAP
X-X	SNOW FENCE	[Pattern]	BANK WRAP
[Symbol]	LOG VANE	[Pattern]	STONE RIFFLE
[Symbol]	LOG CROSS VANE	[Pattern]	PROPOSED FILL EXISTING AVON CREEK
[Symbol]	TOE WOOD STRUCTURE	[Symbol]	APPROXIMATE GRADING LIMITS
[Symbol]	POOL	- - - 754 - - -	EXISTING CONTOURS

NOTE: CONTRACTOR SHALL RELOCATE ANY EXISTING SITE FEATURES (TABLES, BENCHES, FIRE PITS, ETC.) DURING CONSTRUCTION AND REPLACE SAID FEATURES BEYOND THE PROPOSED GRADING LIMITS OR PER THE OWNER'S DIRECTION DURING THE SITE RESTORATION PROCESS.

NOTE: EXISTING LEDGE ROCKS TO BE RELOCATED VARY IN SIZE AND SHAPE. EXACT LOCATION AND CONFIGURATION TO BE DETERMINED IN THE FIELD BY THE OWNER'S REPRESENTATIVE.

RELOCATED LEDGE ROCKS FROM SHEET 02 (SEE DETAIL SHEET 09)

PROTECT EX. FOOT BRIDGE TOP OF BRIDGE EL. = 753.41

PROTECT EXIST. SAN MH RIM = 752.52



NOTICE: ALL EXISTING UTILITIES SHOWN ON THIS TOPOGRAPHIC SURVEY HAVE BEEN TAKEN FROM VISUAL OBSERVATION AND RECORD MAPPING (WHEN AVAILABLE). NO GUARANTEE IS MADE OR SHOULD BE ASSUMED, AS TO THE COMPLETENESS OR ACCURACY OF THE UTILITIES SHOWN ON THIS DRAWING. PARTIES UTILIZING THIS INFORMATION SHALL FIELD VERIFY THE ACCURACY AND COMPLETENESS PRIOR TO CONSTRUCTION.

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**SEQUENCE OF CONSTRUCTION NOTES: BASE BID**

- BEGIN STATION ALIGNMENT 0+00 AT PREVIOUS STATION 24+00 (FROM PHASE III) OR 20' UPSTREAM OF THE EXISTING FOOTBRIDGE.
- INSTALL A SEDIMENT TRAP OR SEDIMAT AS MANUFACTURED BY INDIAN VALLEY INDUSTRIES AT STATION 4+25 PRIOR TO CONSTRUCTION. MONITOR SEDIMENT TRAP AND CLEAN OUT AS NECESSARY. UPON COMPLETION OF EARTH WORK, REMOVE SEDIMENTS, SEED ADJACENT BANKS AND STAKE MATS ALONG THE BANK.
- FILL THE ABANDONED AVON CREEK WITH EXCAVATED MATERIALS.
- RELOCATE THE CHANNEL FROM STA. 0+50 TO STATION 3+30 TO THE PROPOSED CHANNEL LOCATION.
- EXCAVATE A 1' DEEP X 8' WIDE RECTANGULAR CHANNEL PER PLAN VIEW, PROPOSED CROSS SECTIONS AND ELEVATIONS. EXCAVATE AN 8' WIDE BANKFULL BENCH ON BOTH SIDES TO THE CENTERLINE STAKED IN THE FIELD. GRADE BACKSLOPE TO 3:1 (H:V). THIS ITEM SHOULD BE PAID AS "Earth Work" PAY ITEM. TRANSPORT EXTRA EXCAVATED MATERIAL TO THE SPOIL PILE.
- STABILIZE OUTER BANK WITH TOE WOOD STRUCTURE ON NEW CHANNEL AT +/- STA. 0+27 TO +/- STA. 0+39 AND +/- STA. 0+46 TO +/- STA. 0+68 AND +/- STA. 3+35 TO +/- STA. 3+56 AND +/- STA. 3+70 TO +/- STA. 3+85 PER DETAIL SHEET 05.
- STABILIZE OUTER BANK WITH GEOWRAP STRUCTURE ON NEW CHANNEL AT +/- STA. 0+92 TO +/- STA. 1+24 AND +/- STA. 1+45 TO +/- STA. 1+80 AND +/- STA. 2+05 TO +/- STA. 2+35 AND +/- STA. 2+73 TO +/- STA. 3+02 PER DETAIL SHEET 05.
- INSTALL 10' LONG, LOW-PROFILE RIFFLE STRUCTURE (6 EACH).
- INSTALL 5' LONG, LOW-PROFILE RIFFLE STRUCTURE (4 EACH).
- INSTALL LOW-PROFILE RIFFLE STRUCTURE (1 EACH).

CONSTRUCT RIFFLES PER DETAIL SHEET 06. SEE PLAN AND PROFILE SHEETS FOR RIFFLE LOCATIONS. EXCAVATE A 2' DEEP POOL AT BENDS. AVERAGE RIFFLE CREST HEIGHT IS 5".

**RIFFLE MATERIALS:**  
25% 4" - 10" FIELD STONE  
75% 1/2" - 3" RIVER RUN GRAVEL

- INSTALL LOG CROSS VANE STRUCTURE AT STA. 3+58 AND STA. 4+13 PER DETAIL SHEET 06.
- INSTALL LOG VANE STRUCTURE AT STA. 0+40 AND STA. 2+00 PER DETAIL SHEET 06.
- INSTALL 6" - 12" RIP RAP UNDER THE FOOTBRIDGE, +/- STA. 0+09 TO +/- STA. 0+37.
- INSTALL THE RELOCATED LEDGE ROCKS FROM THE WEST SIDE OF THE SITE (SEE SITE ACCESS PLAN) TO STA. 0+80 +/-.
- EXCAVATE A FLOODPLAIN BENCH FROM STA. 4+02.5 (JUST D/S OF THE CULVERT) TO STA. 4+52 (EDGE OF CLINTON RIVER) TO REACH TO THE CLINTON RIVER BANKFULL ELEVATION.
- STABILIZE THE DISTURBED STREAMBANK, FLOODPLAIN AND SLOPE AREA WITH STRAW/COIR BLANKET (NAG SC1258N) PER DETAILS. SEE SHEET 06.

**SEQUENCE OF CONSTRUCTION NOTES: ALTERNATE BID**

- REMOVE EXISTING 48" RCP.
- REGRADE CHANNEL PER CROSS SECTIONS.
- RELOCATE PROPOSED RIFFLE AT STA. 4+05 TO STA. 3+90.

**QUANTITIES THIS SHEET - BASE BID**

No.	DESCRIPTION	UNIT	QTY.
1	MOBILIZATION	LSUM	1
2	EARTH WORK	LSUM	1
3	SEDIMENT TRAP OR SEDIMAT (2)	EA	1
4	SNOW FENCE	LFT	300
5	6" - 12" RIP RAP (1)	TONS	8
6	RIFFLE STRUCTURE (6)	EA	6
7	RIFFLE STRUCTURE (8)	EA	4
8	RIFFLE STRUCTURE (5)	EA	1
9	TOE WOOD STRUCTURE (6)	LFT	110
10	GEOTEXTILE BANK WRAP (7) (NAG SC250)	LFT	206
11	EROSION CONTROL BLANKET (NAG SC1258N)	SYD	1305
12	COMPACTED TOP SOIL	CYD	80
13	LOG CROSS VANE STRUCTURE (2)	EA	2
14	LOG VANE STRUCTURE (10)	EA	2
15	PLANT PLUGS	EA	962
16	SEED MIX	AC	0.40

**QUANTITIES THIS SHEET - ALTERNATE BID**

No.	DESCRIPTION	UNIT	QTY.
1	REMOVE 48" RCP	EA	1
2	REGRADE CHANNEL	LSUM	1

**ALTERNATE BID**  
15 REMOVE 48" RCP - 1 EA  
16 REGRADE CHANNEL PER CROSS SECTION - 1 LSUM  
17 SHIFT RIFFLE @ STA. 4+05 TO STA. 3+90

**BASE BID**  
PROTECT EXIST. 48" RCP  
U/S INV. = 745.34  
D/S INV. = 745.26



**HRC**  
HUBBELL, ROTH & CLARK, INC  
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DATE	ISSUED FOR	ADDITONS / REVISIONS
07-16-18	ISSUED FOR BIDS	
05-04-18	REV. PER MDEQ COMMENTS	
02-06-18	MDEQ REVIEW & PERMIT	
01-19-18	ISSUED FOR OWNER REVIEW	

DESIGNED: F.A.  
DRAWN: J.A.R.  
CHECKED: L.M.S.  
APPROVED: J.F.B.



CITY OF ROCHESTER HILLS  
AVON CREEK  
PHASE IV  
RESTORATION

**PROJECT PLAN**

HPC JOB NO. 20170057 SCALE 1" = 10'  
DATE JANUARY 2018 SHEET NO. 03