

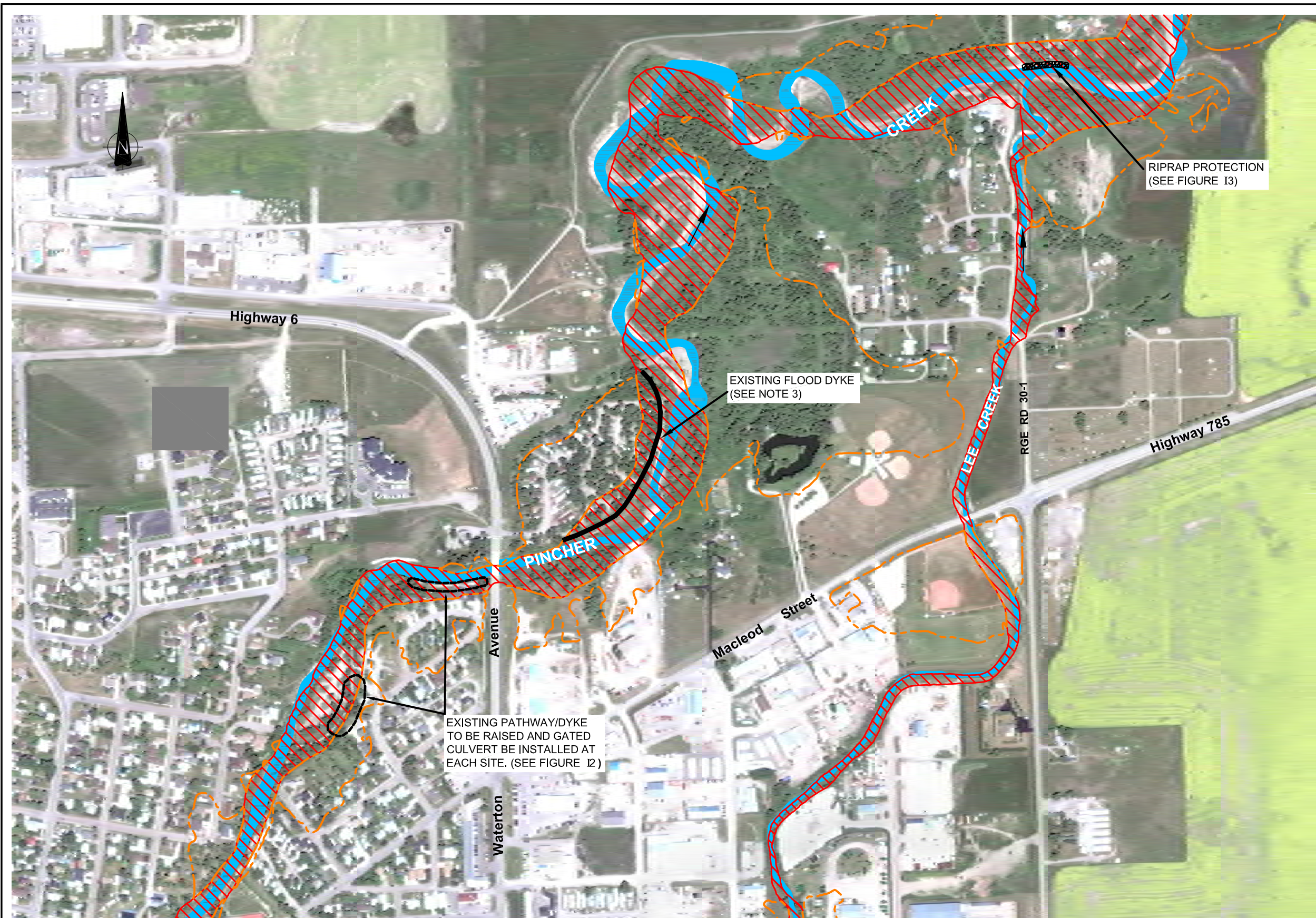


Appendix I

Conceptual Design of Mitigation Measures at Pincher Creek

Conceptual Cost Estimate
Pincher Creek Flood Defence Pathway/Dyke & Riprap Protection

Item No.	Item Description	Unit	Quantity	Unit Price	Extension
	ALLOWANCES				
1	Bigger Size Riprap	Allow.	Allowance		\$25,000
	TEMPORARY FACILITIES				
2	Mobilization and Demobilization	L.S.	1	Lump Sum	\$35,000
3	Existing and Temporary Roads	L.S.	1	Lump Sum	\$10,000
	SITE PREPARATION				
4	Clearing & Grubbing	ha	0	\$2,000.00	\$204
5	Topsoil & Subsoil Stripping	m ³	306	\$5.00	\$1,530
6	Care of Water	L.S.	1	Lump Sum	\$15,000
	EXCAVATION				
7	Common Excavation	m ³	100	\$6.50	\$650
	FILL PLACEMENT				
8	Low Permeable Fill	m ³	2000	\$10.00	\$20,000
	GRANULAR AND RIPRAP MATERIALS				
9	Riprap Zone 6B	tonnes	899	\$130.00	\$116,896
10	Riprap Zone 6A	tonnes	16	\$110.00	\$1,760
11	Gravel Armour Zone 5C	tonnes	540	\$40.00	\$21,600
12	Non-Woven Geotextile	m ²	963	\$3.00	\$2,889
	SITE CONSTRUCTION				
13	Ashphalt Concrete Pavement	tonnes	60	\$250.00	\$15,000
14	Gravel Base Course Zone 4A	tonnes	128	\$15.00	\$1,920
15	Tideflex Check Valve	ea	2	\$5,000.00	\$10,000
16	600 Dia. CSP Culvert Supply and Installation	m	20	\$200.00	\$4,000
	LANDSCAPING				
17	Topsoil & Subsoil Placement	m ²	1020	\$1.50	\$1,530
18	Turf Reinforcement Mat	m ²	1020	\$6.00	\$6,120
19	Hydroseeding	m ²	1020	\$3.50	\$3,570
	SUBTOTAL				\$292,669
	CONTINGENCIES @ 25%				\$73,167
	ENGINEERING @ 12%				\$35,120
	ESTIMATED TOTAL COST				\$401,000



- LEGEND:**
- WATER BODY
 - FLOW DIRECTION
 - RIPRAP PROTECTION (SEE FIGURE I3)
 - FLOODWAY
 - FLOOD FRINGE
 - EXISTING FLOOD DYKE

- NOTES:**
1. LIDAR DATA PROVIDED BY AIRBORNE IMAGING, SEPTEMBER 10, 2006
 2. AIR PHOTO PROVIDED BY GOOGLE EARTH PRO, JULY 2013.
 3. EXISTING FLOOD DYKE SHALL BE SURVEYED TO CHECK THE TOP ELEVATION OF DYKE IS HIGHER THAN HIGH WATER LEVEL, PER PINCHER CREEK FLOOD RISK MAPPING STUDY, (PHILIPS 1993).

EXISTING PATHWAY/DYKE TO BE RAISED AND GATED CULVERT BE INSTALLED AT EACH SITE. (SEE FIGURE I2)

EXISTING FLOOD DYKE (SEE NOTE 3)

RIPRAP PROTECTION (SEE FIGURE I3)

Scale: 1:3000
 0 37.5 75 Meters
 THIS DRAWING MAY HAVE BEEN REDUCED. ALL SCALE NOTATIONS INDICATED (i.e 1:1000 etc.) ARE BASED ON 22" X 34" FORMAT DRAWINGS

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△	29	05	2014	ISSUED FOR FINAL REPORT	H.M.	G.G.
△	17	03	2014	ISSUED FOR CLIENT REVIEW	H.M.	G.G.
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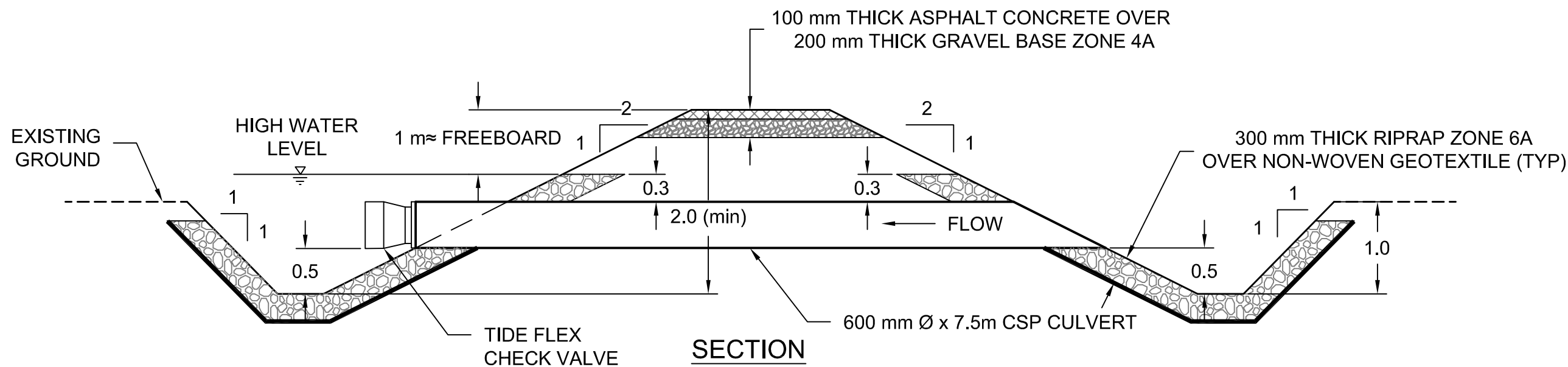
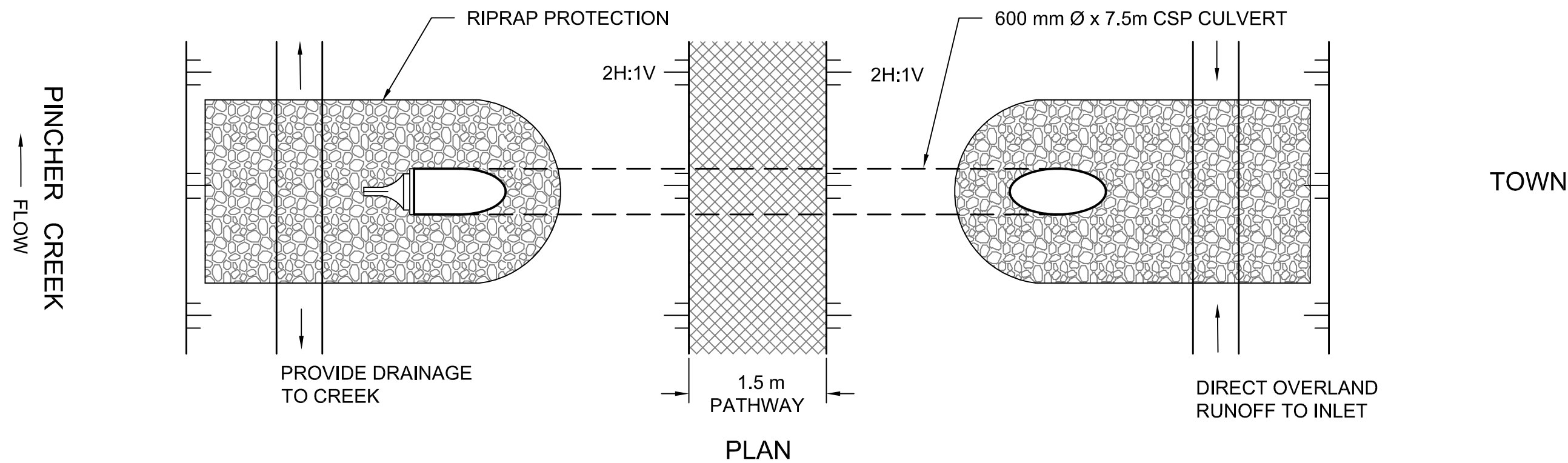
Client: SOUTHERN ALBERTA FLOOD RECOVERY TASK FORCE

Designed By:	MG
Drawn By:	BJ
Checked By:	GB
Approved By:	GG
Scale:	AS SHOWN

PROJECT:	FLOOD MITIGATION FEASIBILITY STUDY FOR BOW, ELBOW AND OLDMAN RIVER BASINS
TITLE:	PINCHER CREEK FLOOD DEFENCES CONCEPTUAL PLAN

Project No.:	CW2174
CADD File:	CW2174-PC01.dwg
Date:	MAY 2014
Drawing No.:	FIGURE 11
Sheet No.:	1 of 3

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TYPICAL DETAILS - GATED CULVERT
N.T.S.

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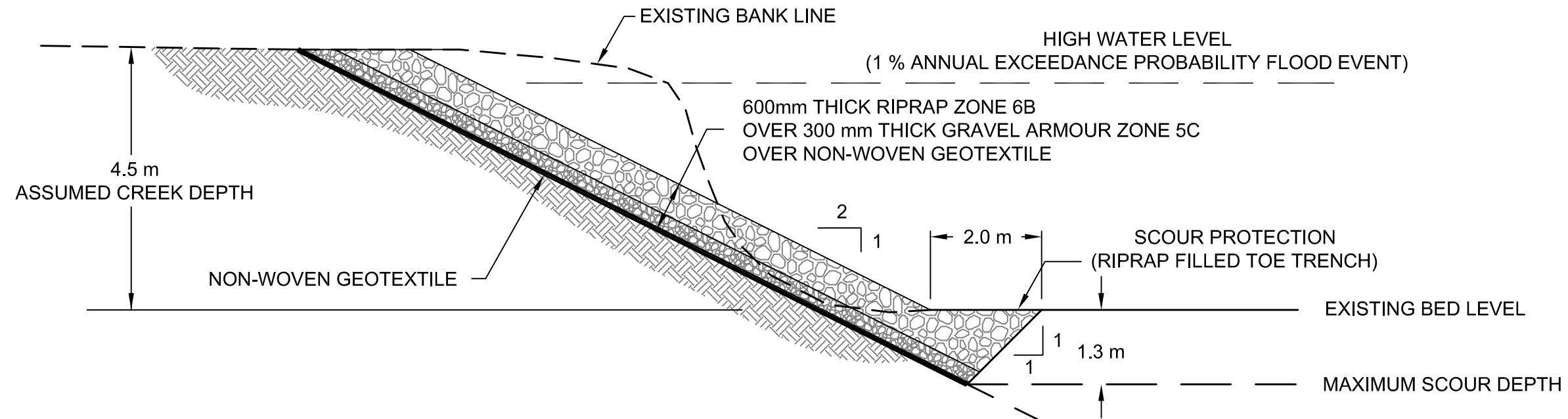
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CADD File:	CW2174-PC01.dwg	Date:	MAY 2014
TITLE:	PINCHER CREEK FLOOD DEFENCES TYPICAL DETAILS	Drawing No.:	FIGURE 12
		Sheet No.:	2 of 3

T:\Projects\2014\20140520\Flood Mitigation Task\PC01.dwg - FIGURE 12 - MAY 2014 - 1000mm - 1:1000



A CROSS SECTION OF TYPICAL RIPRAP REVETMENT
 Fig1 N.T.S.

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SOUTHERN ALBERTA FLOOD RECOVERY TASK FORCE



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 TITLE: PINCHER CREEK FLOOD DEFENCES TYPICAL DETAILS

Project No.:	CW2174
CADD File:	CW2174-PC01.dwg
Date:	MAY 2014
Drawing No.:	FIGURE 13
Sheet No.:	3 of 3