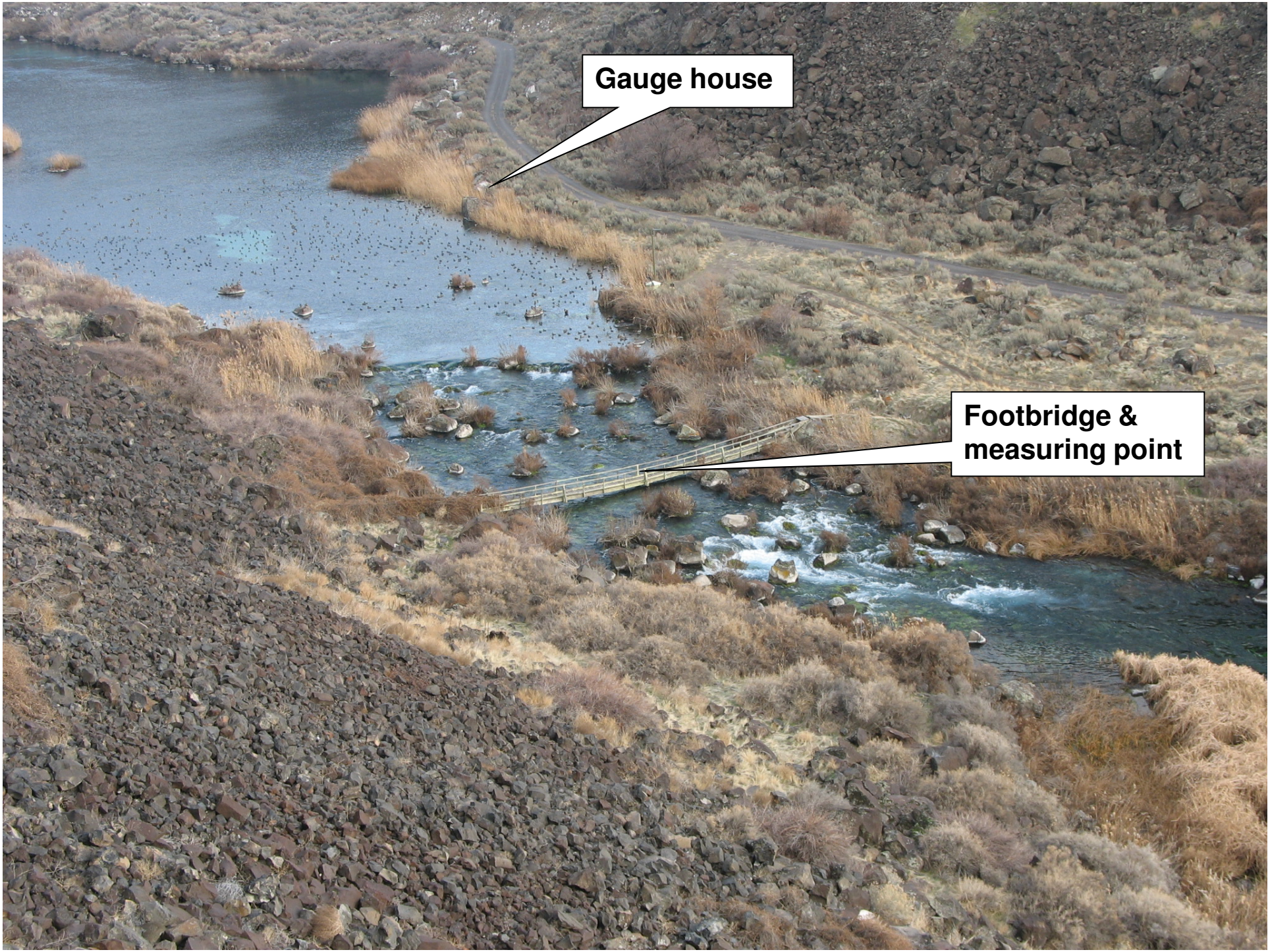
Blue Lakes Spring Stream Gauge Improvement Project

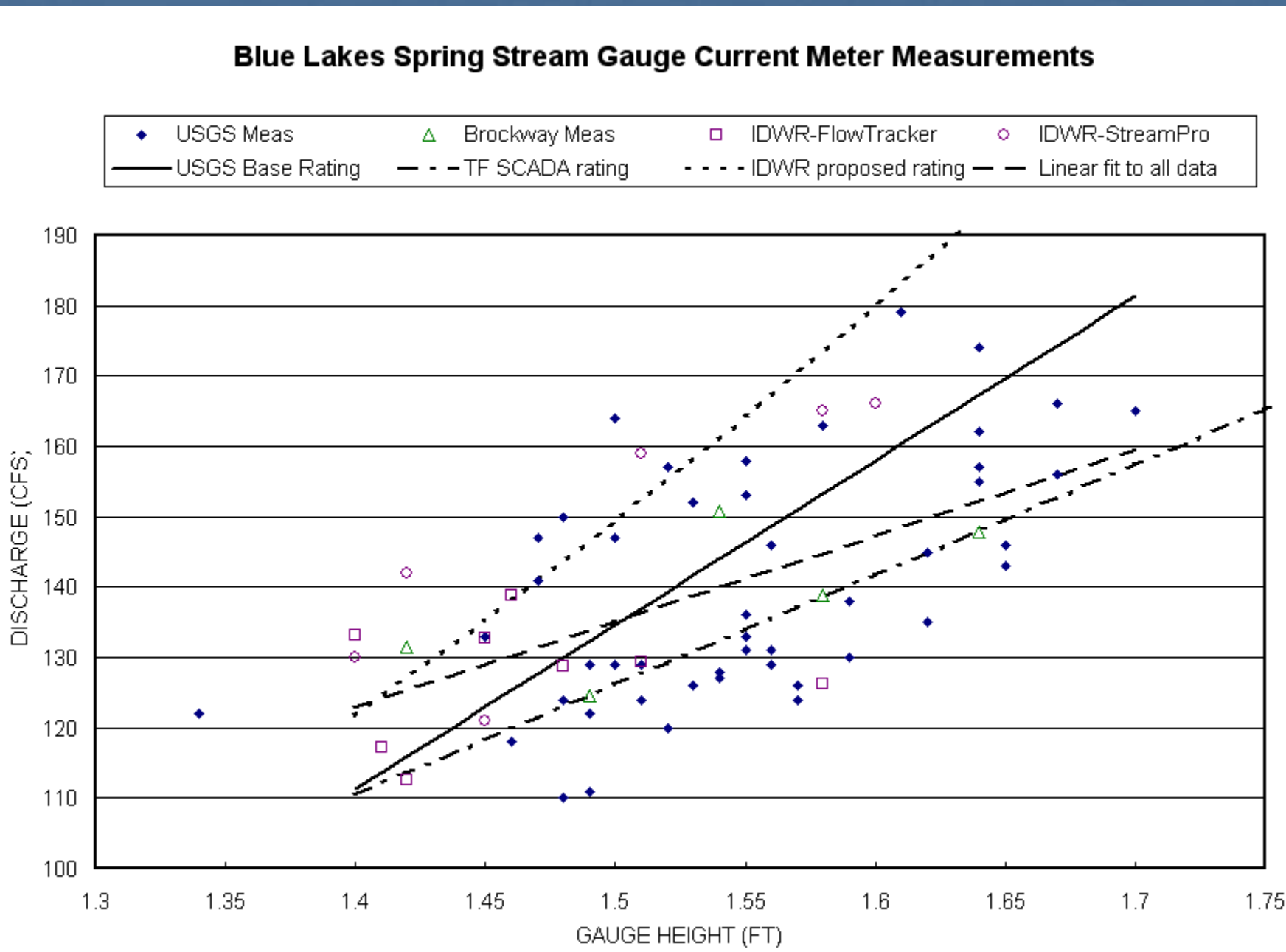
City of Twin Falls

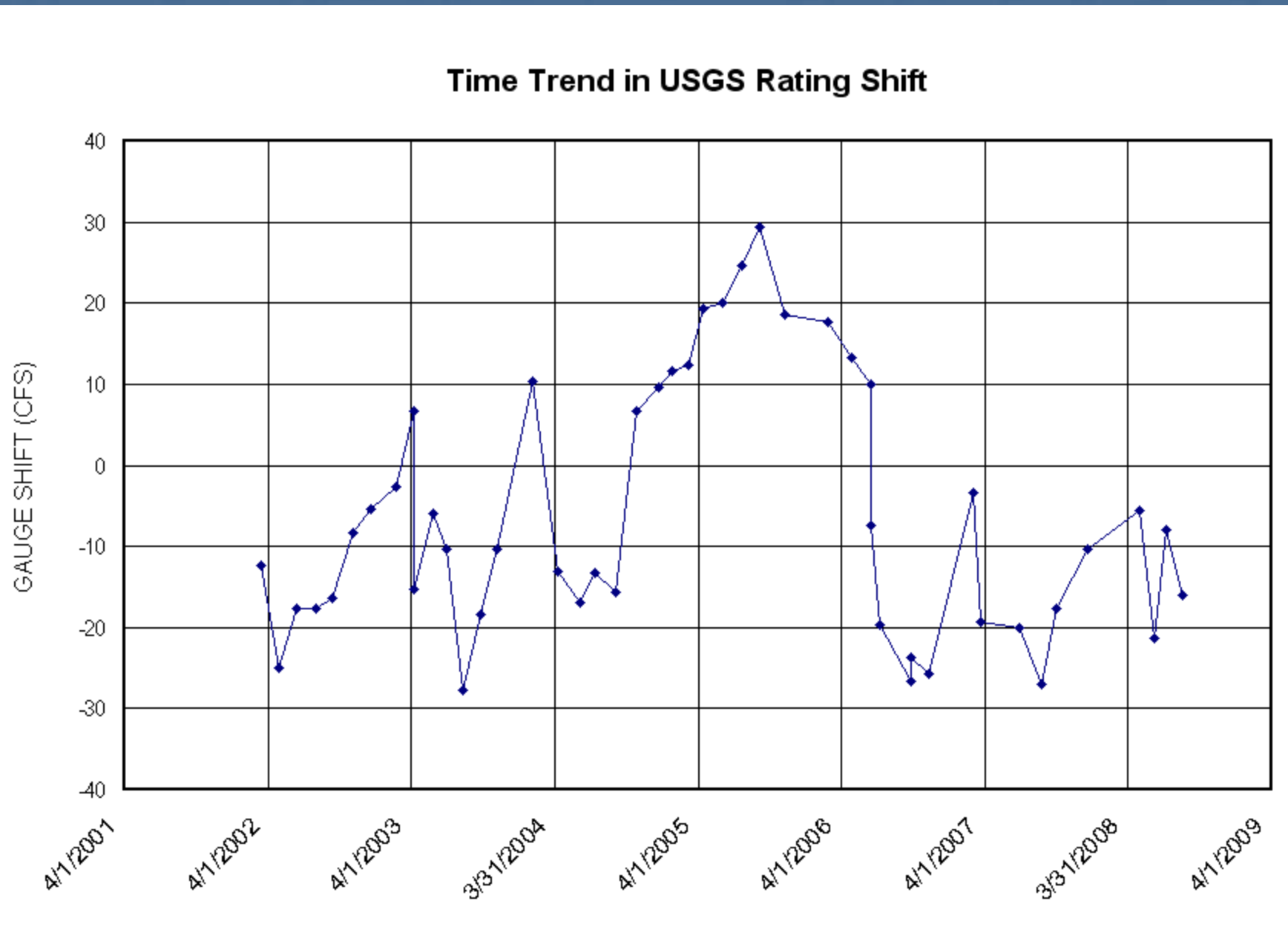
BROCKWAY ENGINEERING


Gauge house
Footbridge &
measuring point

Measurements

- USGS – maintained from inception through 2008
  - 47 current measurements since 2002
- Brockway Engineering
  - 4 current meter measurements in 2004 and 2007
- IDWR – maintained from early 2009
  - 9 measurements since March 2009


Blue Lakes Spring Stream Gauge Current Meter Measurements
USGS Meas
Brockway Meas
IDWR-FlowTracker
IDWR-StreamPro
USGS Base Rating
TF SCADA rating
IDWR proposed rating
Linear fit to all data
DISCHARGE (CFS)
190
180
170
160
150
140
130
120
110
100
1.3
1.35
1.4
1.45
1.5
1.55
1.6
1.65
1.7
1.75
GAUGE HEIGHT (FT)


Time Trend in USGS Rating Shift
GAUGE SHIFT (CFS)
40
30
20
10
0
-10
-20
-30
-40
4/1/2001
4/1/2002
4/1/2003
3/31/2004
4/1/2005
4/1/2006
4/1/2007
3/31/2008
4/1/2009

Conclusion

- Accurate measurement cannot be made at this stream section regardless of type of equipment
- Target: ±10% or better
- Vegetative growth affects the H-Q relationship at the gauging station to an unknown degree

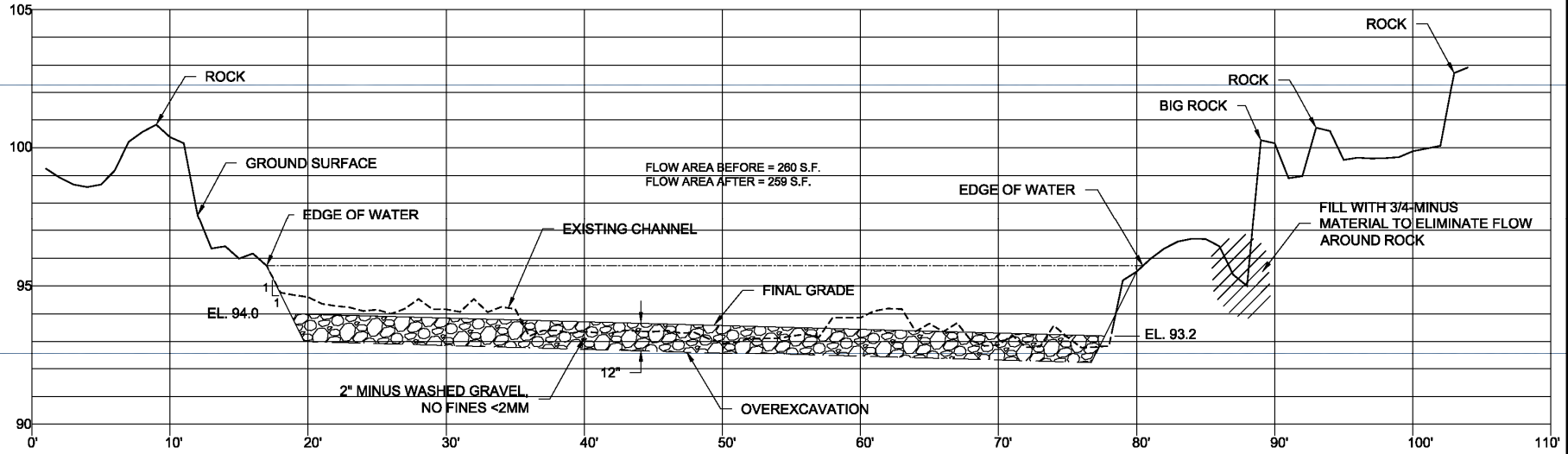
Recommendations

- 1. Improve the channel section to allow accurate current meter measurements and improve the bridge
- 2. Investigate utilization of an existing observation well directly up-gradient of the springhead in lieu of the gauge in the upper lake

Channel Improvement

GENERAL SPECIFICATIONS:

1. REMOVE FOOTBRIDGE PRIOR TO CONSTRUCTION. REPLACE AFTER CONSTRUCTION WITH TENSION SUFFICIENT TO RAISE LOWEST CHORD 0.5 FEET ABOVE WATER LEVEL
2. STREAMWISE LENGTH OF WORK TO BE 25 FEET: 15 FEET NORTH OF FOOTBRDIGE AND 10 FEET SOUTH.
3. CONSTRUCT TEMPORARY PLATFORM AS NEEDED TO REACH WEST SIDE USING WASHED GRAVEL.
4. EXCAVATE EXISTING BOULDERS IN CHANNEL, AND/OR USE ROCK BREAKER AS NEEDED.
5. BACKFILL MATERIAL TO BE WASHED AND FREE OF FINES, UNIFORM GRADATION FROM 2 MM TO 2".
6. FINISHED CHANNEL GRADE TO BE FLAT AND UNIFORM. TO THE EXTENT POSSIBLE, LEAVE NO BOULDERS PROTRUDING ABOVE FINISHED GRADE.
7. NO FINE MATERIAL LESS THAN 200 MESH ALLOWED IN WATERWAY.
8. RE-GRADE AND RESTORE BANKS, REVEGETATE WITH NATIVE GRASSES.



REV	DESCRIPTION	DATE	APPD.	REFERENCE DRAWINGS
A	PRELIMINARY CONCEPT	4-1-2010		

DESIGNED BY | DRAFTED BY

SCALE: AS SHOWN (11 X 17 DWG ONLY)

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CITY OF TWIN FALLS
BLUE LAKES GAUGE SECTION IMPROVEMENT

CONCEPTUAL CROSS-SECTION

PROJECT # 246-33-2007

DWG # 1

REV A

Observation Well

500'