

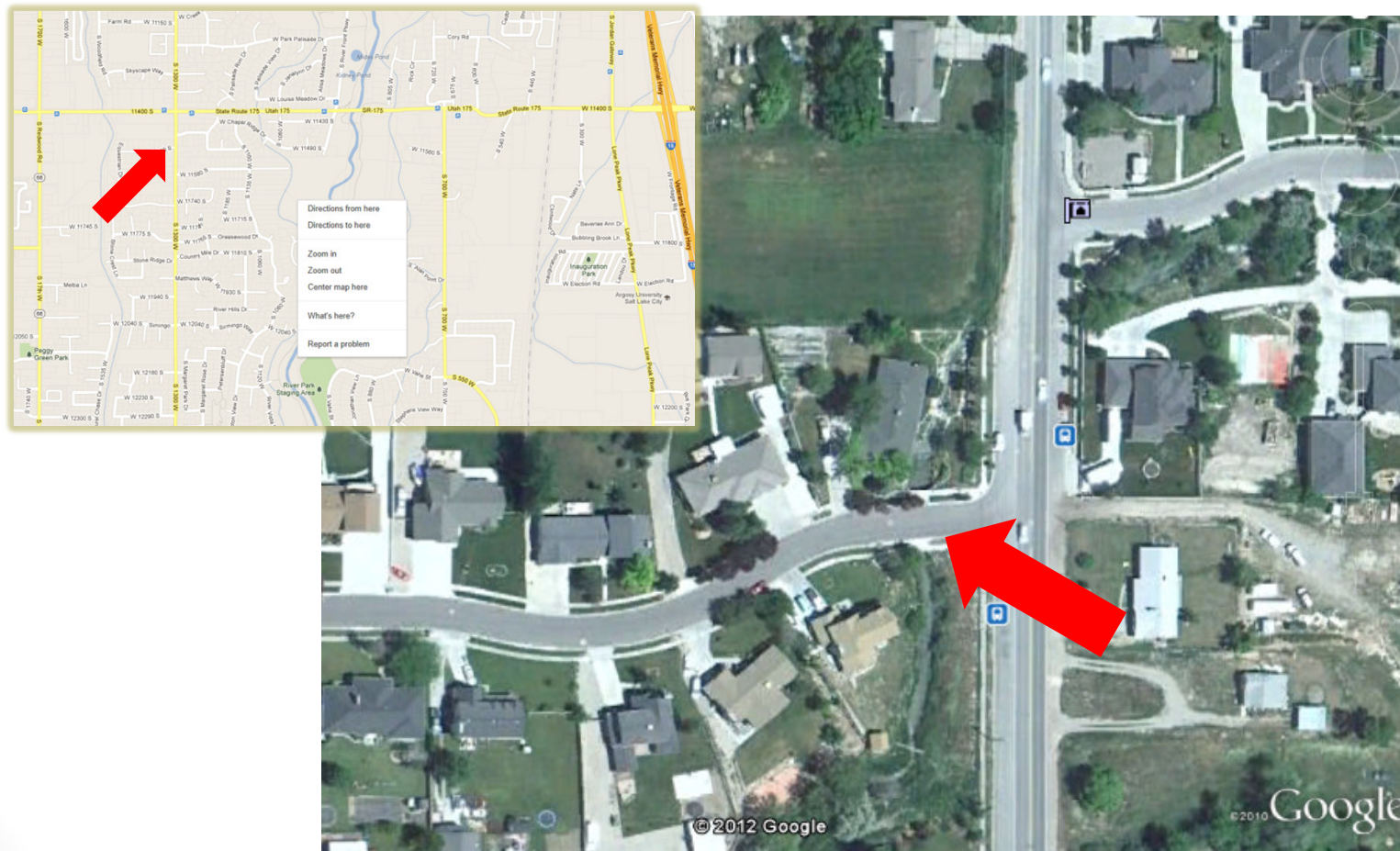


2012 MIDAS CREEK PROJECT

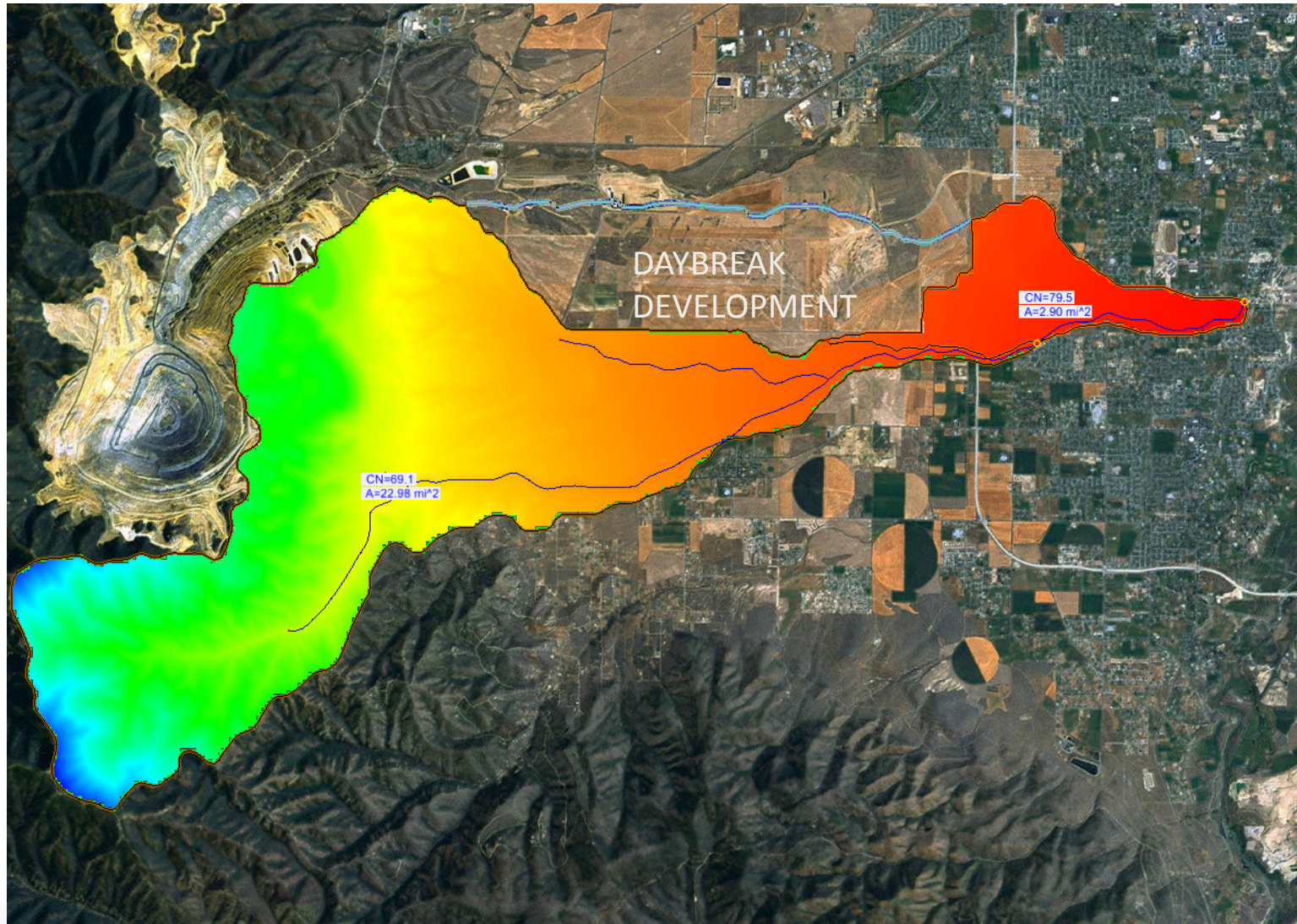
PRELIMINARY DESIGN REPORT
BY SKR HYDROTECH
4/9/2012

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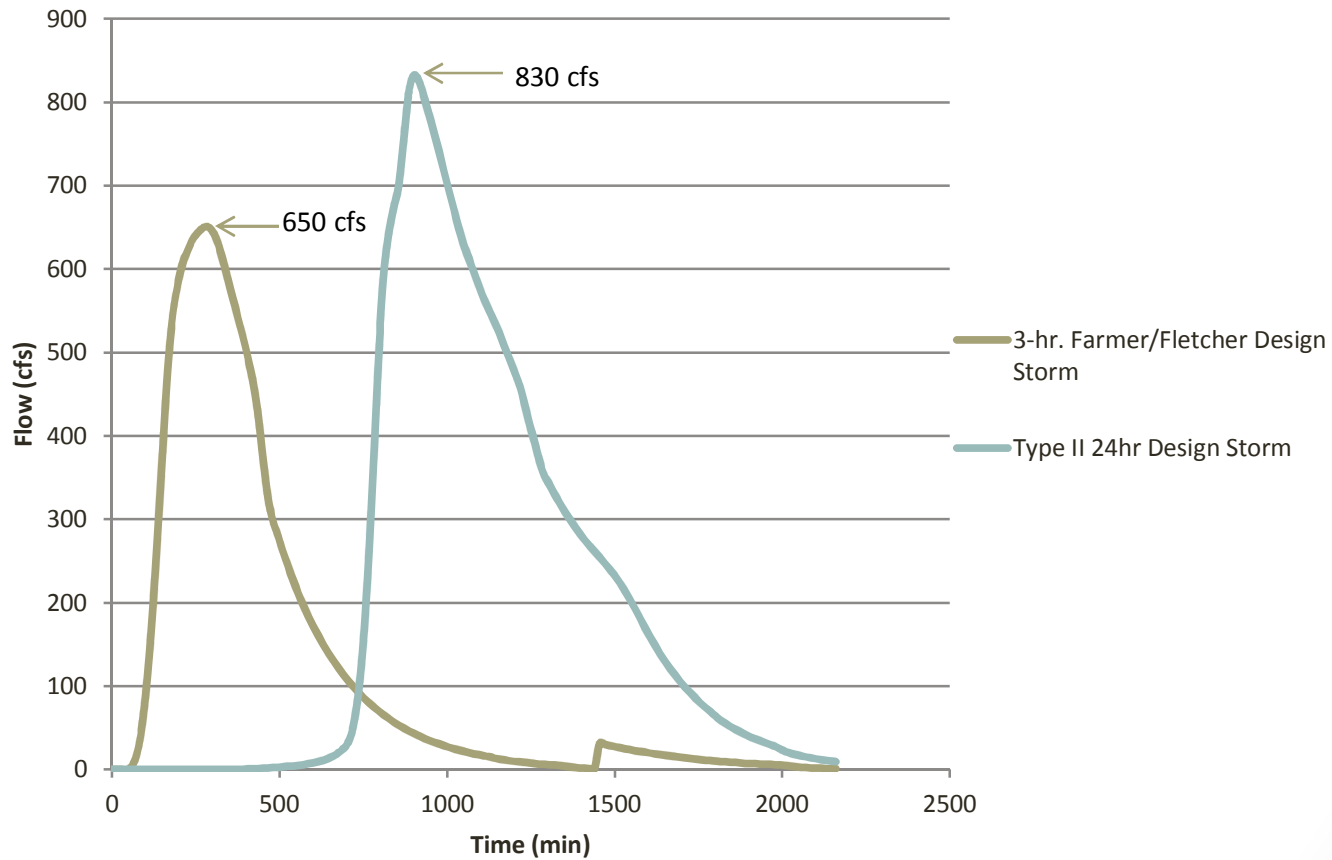
- Existing structure location 1300 W and 11500S



Hydrologic Model



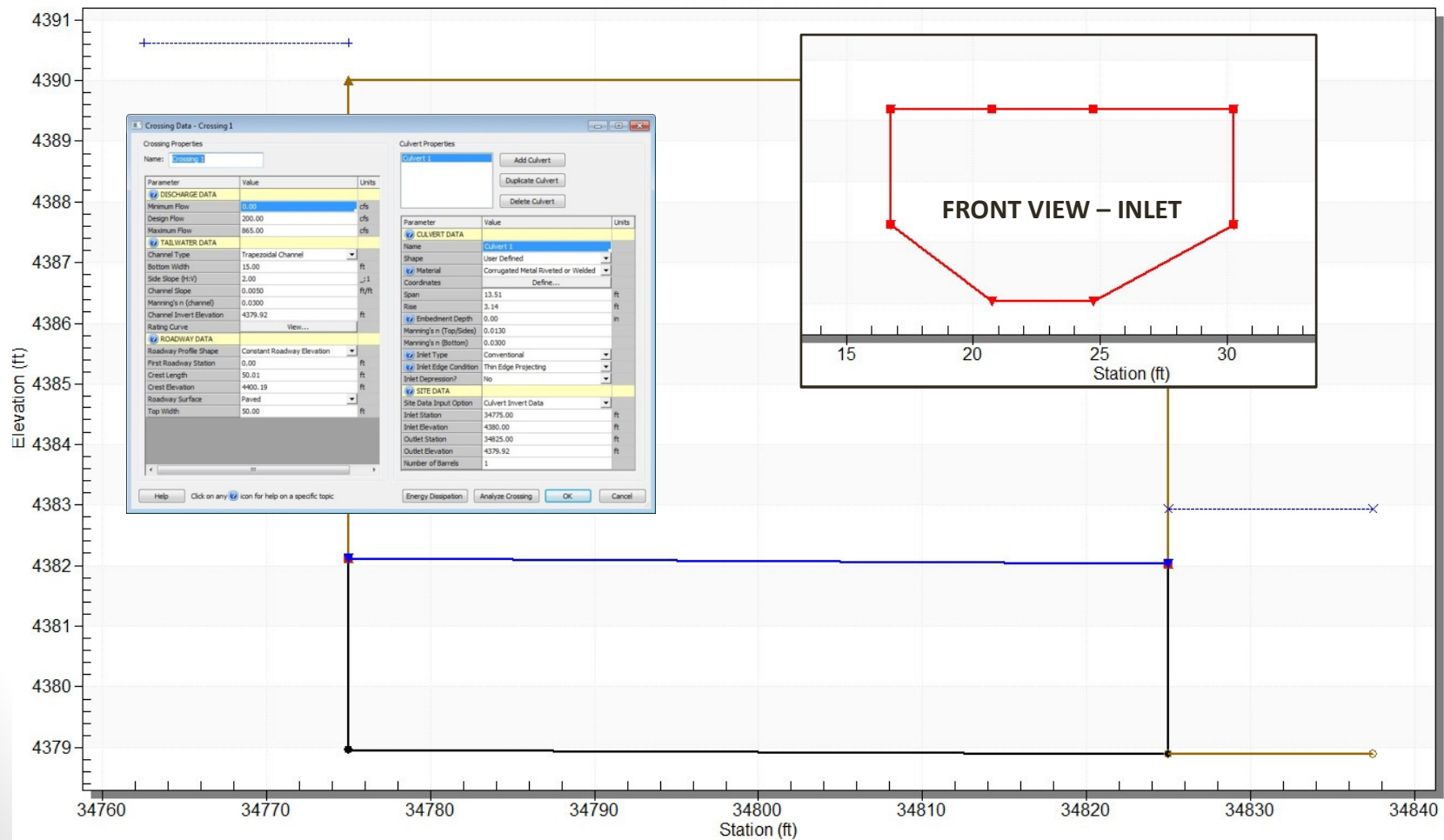
Outflow Hydrograph for 100 yr. Storm



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Existing structure Hydraulics – Inlet Shape $Q = 577.2$ cfs

Crossing - Existing Culvert Crossing-Inlet, Design Discharge - 650.0 cfs
Culvert - Inlet, Culvert Discharge - 577.2 cfs

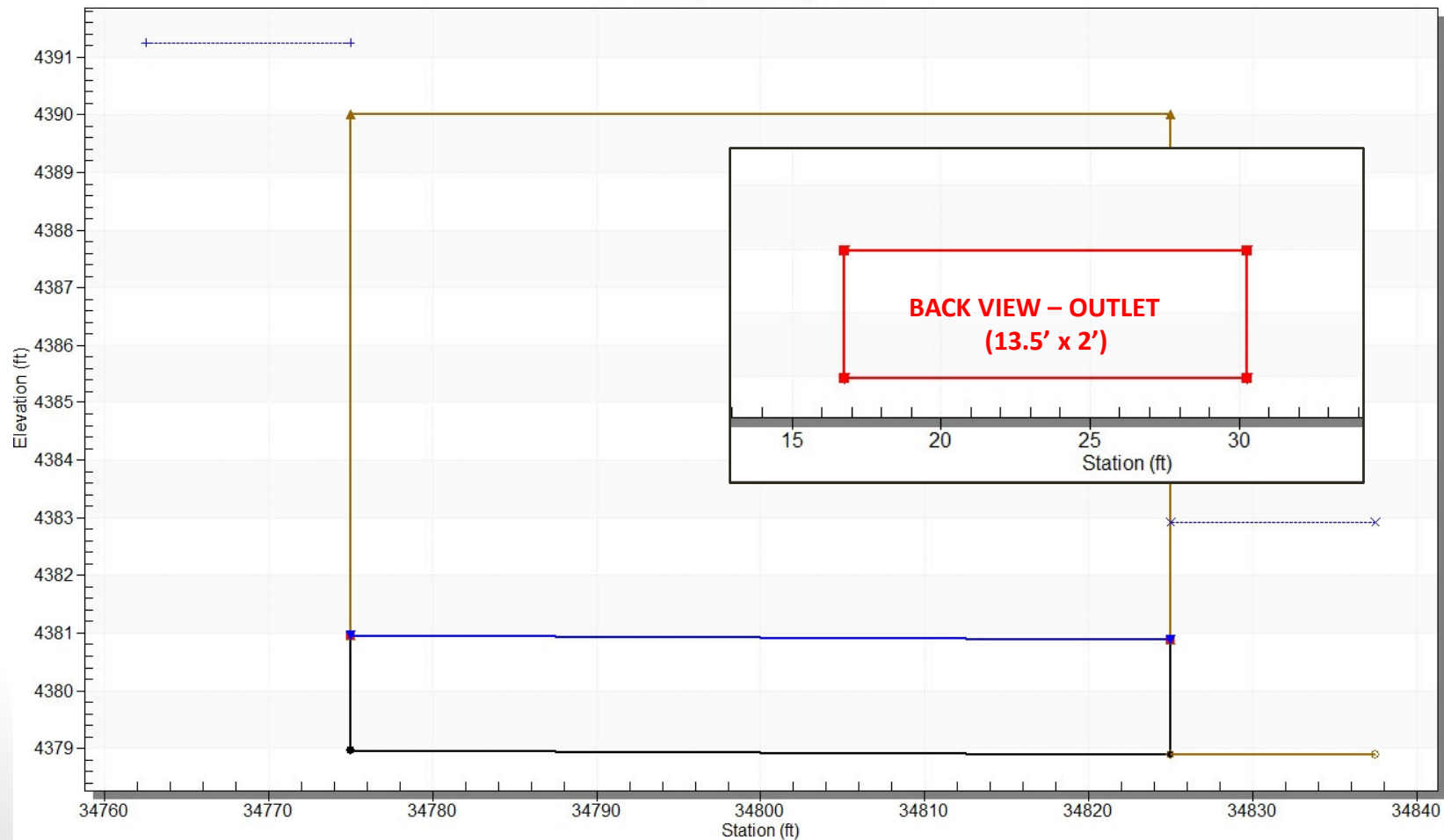


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Existing Structure Hydraulics – Outlet Shape Q = 440 cfs

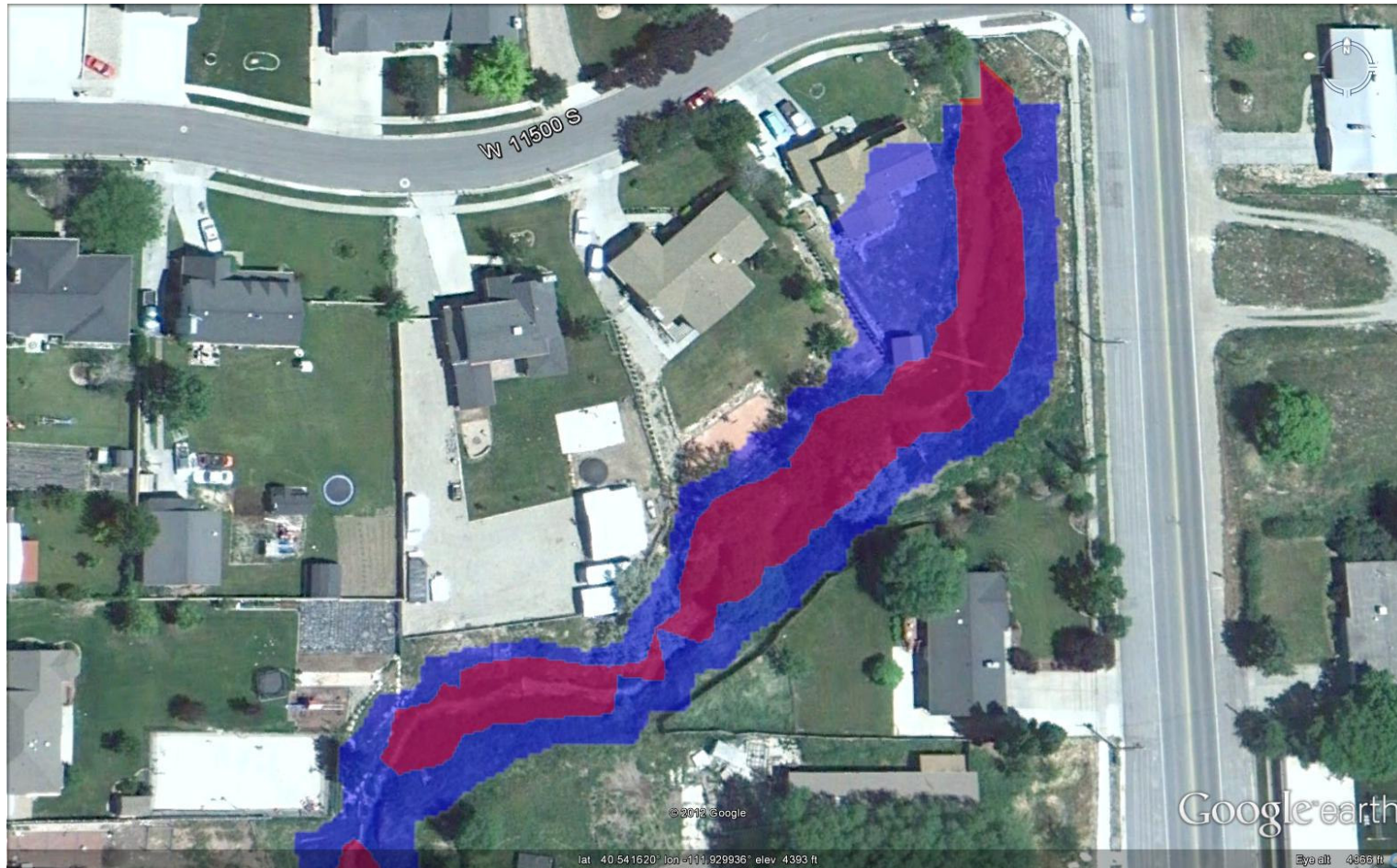
Crossing - Existing Culvert Crossing-Outlet, Design Discharge - 650.0 cfs

Culvert - Outlet, Culvert Discharge - 439.9 cfs



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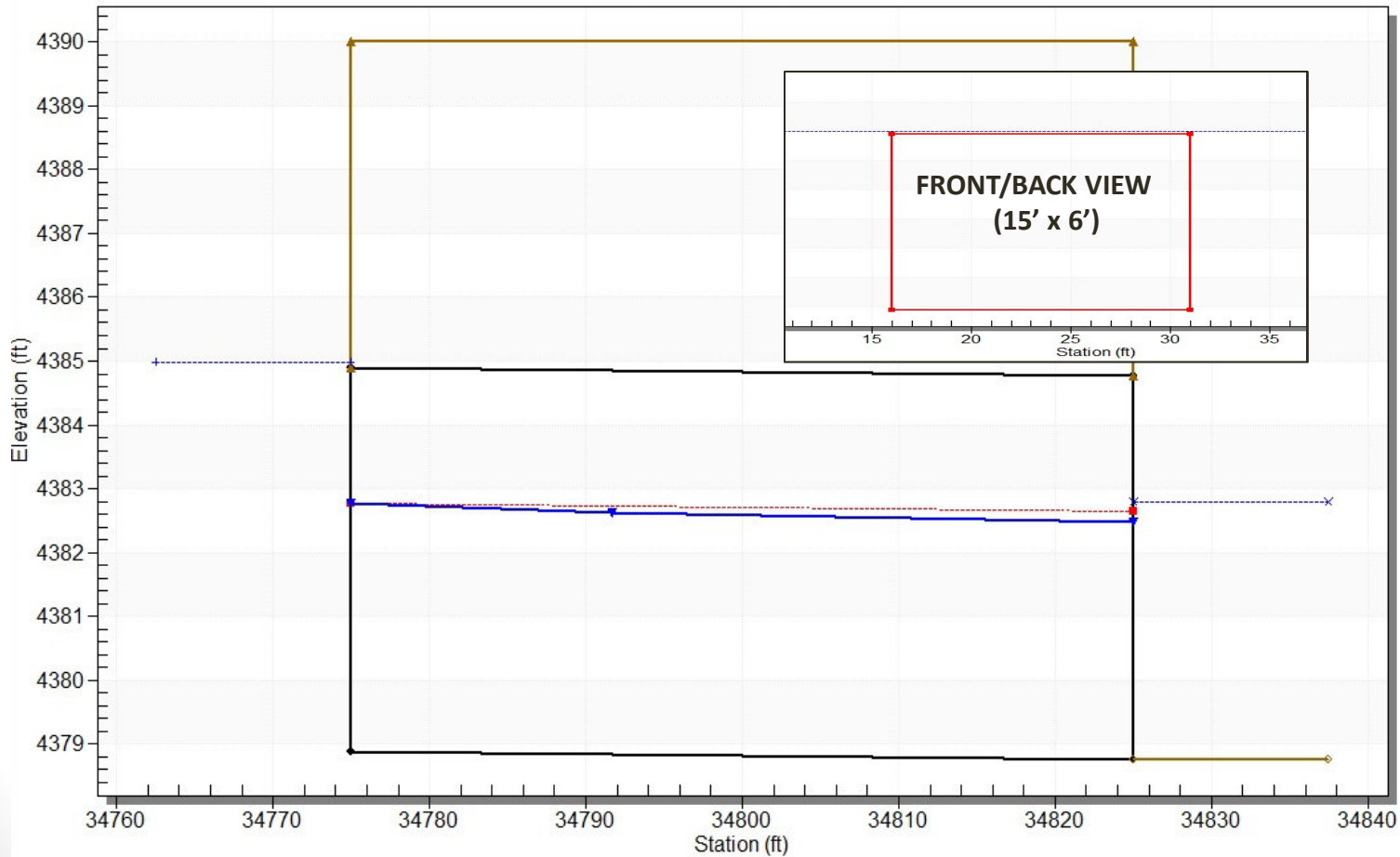
Flooding based on 650cfs (100-Year Storm Peak Discharge)



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Proposed Culvert - Q = 650 cfs

Crossing - Proposed Culvert Crossing - 650 CFS, Design Discharge - 650.0 cfs
Culvert - Proposed Culvert - 650 CFS, Culvert Discharge - 650.0 cfs



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EXISTING VS. PROPOSED CULVERT ANALYSIS		
	EXISTING BRIDGE CULVERT	PROPOSED BOX CULVERT
SPAN	13.5'	15'
RISE	VARIES 2' TO 3'	6'
CAPACITY	440 CFS	650 CFS
NEARBY HOUSE FF EL	4386'	4386'
HEADWATER EL	4391'	4385'
FREEBOARD	-5' (FLOODING)	1'

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Roadway Elevation: 4390'

Nearby House Finish Floor Elevation: 4386'

Top of Channel Bank: 4385'



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ESTIMATE OF PROBABLE CONSTRUCTION COST					
ITEM NO	DESCRIPTION OF ITEM	UNIT	QTY	UNIT COST	TOTAL COST
1	UNCLASSIFIED EXCAVATION	CY	650	\$ 15	\$ 9,750
2	DEMOLITION	SY	250	\$ 30	\$ 7,500
3	HAND RAILS	LF	84	\$ 20	\$ 1,680
4	15'X6' CULVERT	LF	50	\$ 775	\$ 38,750
5	NEW BOX CULVERT INSTALLATION	LF	50	\$ 400	\$ 20,000
6	NEW WING WALL	EA	2	\$ 5,000	\$ 10,000
7	EXIST BOX CULVERT REMOVAL	LF	50	\$ 200	\$ 10,000
8	NEW PCC PAVEMENT SECTION	SY	250	\$ 100	\$ 25,000
9	DEWATERING	LS	1	\$ 5,000	\$ 5,000
10	UTILITY CONFLICTS	LS	1	\$ 10,000	\$ 10,000
CONTINGENCY (20%)					\$ 27,536
GRAND TOTAL					\$ 165,216

If Recommendation isn't followed, damage to residential structure is unknown.

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ENGINEERING DESIGN SERVICES				
	CIVIL DESIGN LEADER	CIVIL ENGINEERING	CIVIL ENGINEERING	TOTAL
	J. SNEED	G. RILEY	K. KIM	
MEETING	6	9	7.5	22.5
SITE SURVEY	6	10.5	11	27.5
HYDROLOGICAL MODELING (WMS)	43	10	-	53
CULVERT DESIGN (HY-8)	-	28.5	24	52.5
REPORTS AND POSTER	19.5	20.5	21	61
TOTAL LABOR HOURS	74.5	78.5	63.5	216.5
HOURLY RATE	\$ 45.00	\$ 35.00	\$ 25.00	
3.0 MULTIPLIER	\$ 135.00	\$ 105.00	\$ 75.00	
TOTAL	\$ 10,057.50	\$ 8,242.50	\$ 4,762.50	\$ 23,062.50

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Any Questions?