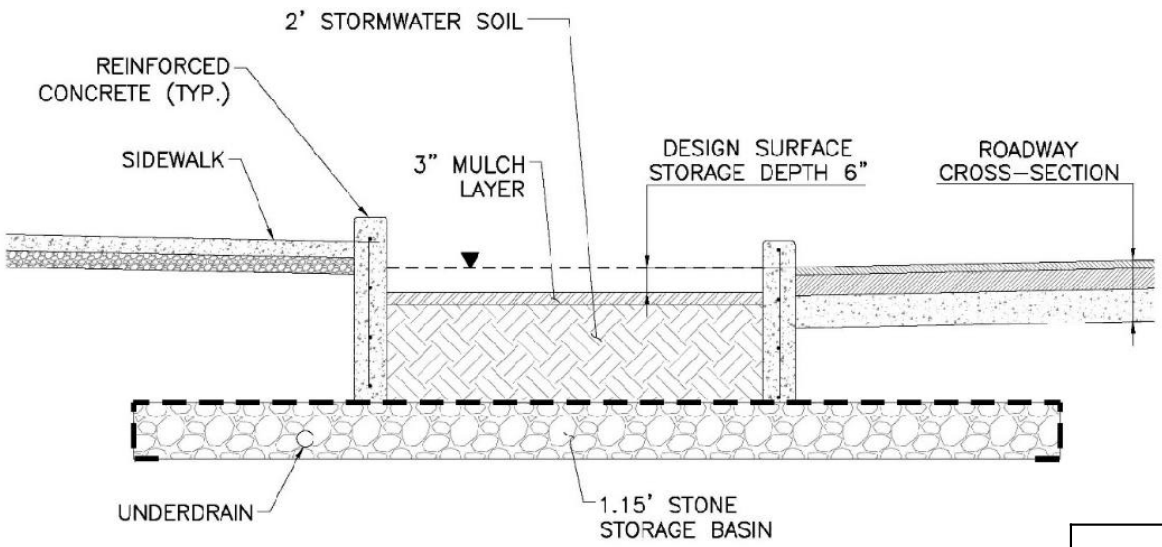


# Gilman Area GSI Evaluation

Project Update

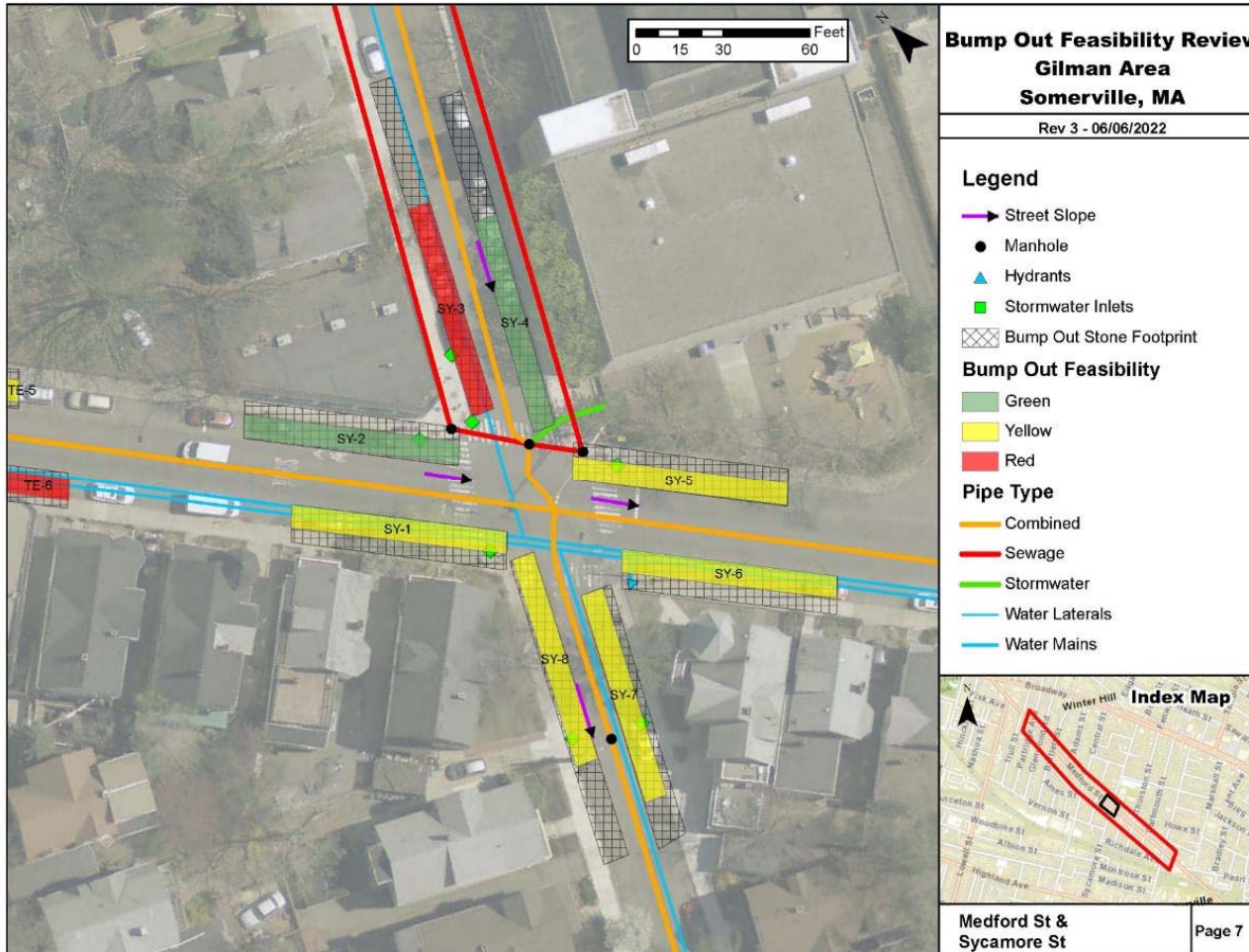
June 23, 2022

# Stormwater Bumpout Properties



Design Parameter	Surface System	Subsurface System
Average Impervious Cover per Drainage Area (sf)	15,000	
Design Footprint Loading Ratio (X:1)	25	10
Design Footprint Area (sf)	600	1,500
Design Footprint Width (ft)	8	Varies
Design Footprint Length (ft)	75	Varies
Soil Void Ratio	20%	
Stone Void Ratio	40%	
Surface Ponding Depth (ft)	0.5	
Soil and Mulch Media Depth (ft)	2.25	
Stone Storage Media Depth (ft)	1.15	

## Typical Map Detailing Bumpout Feasibility



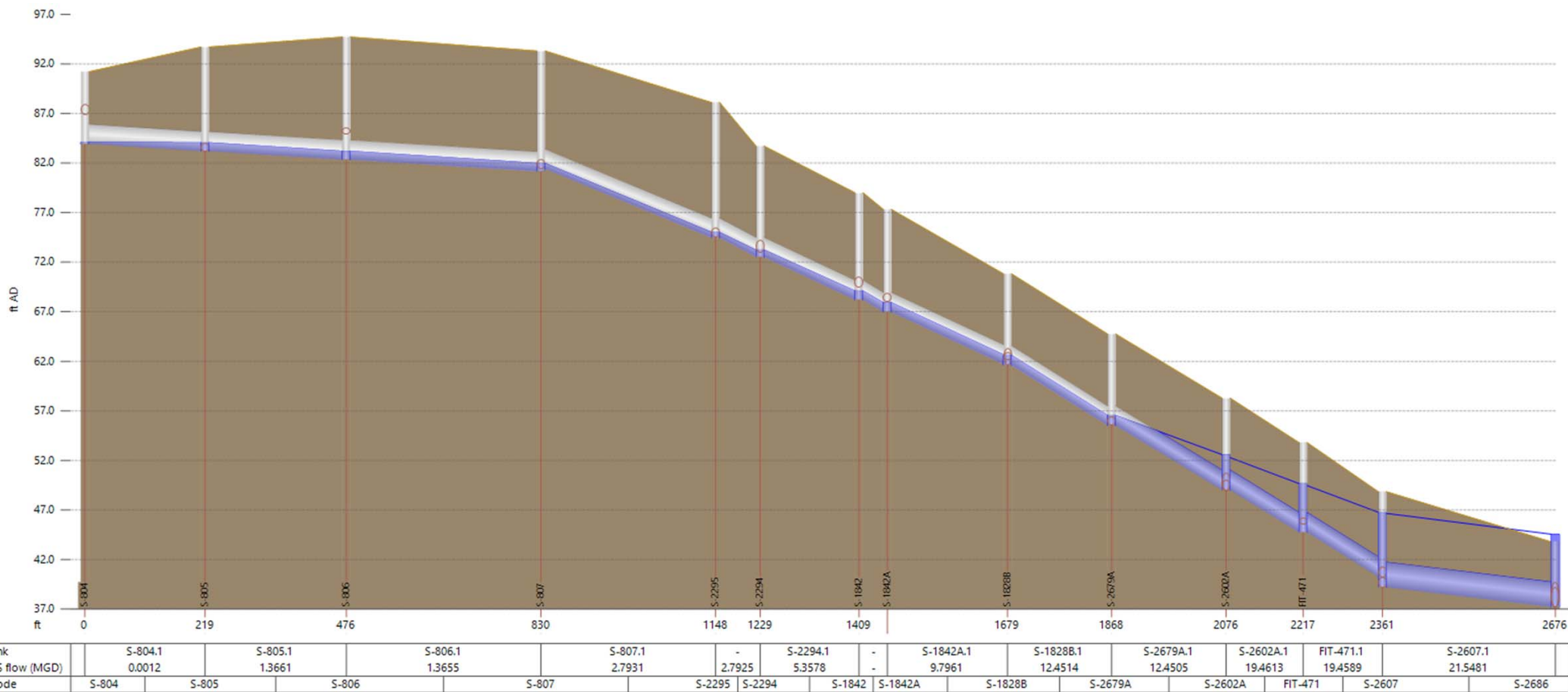
Location Summary	
Green = Feasible	14 (18%)
Yellow = Challenging	40 (50%)
Red = Infeasible	26 (32%)
<b>Total:</b>	<b>80</b>



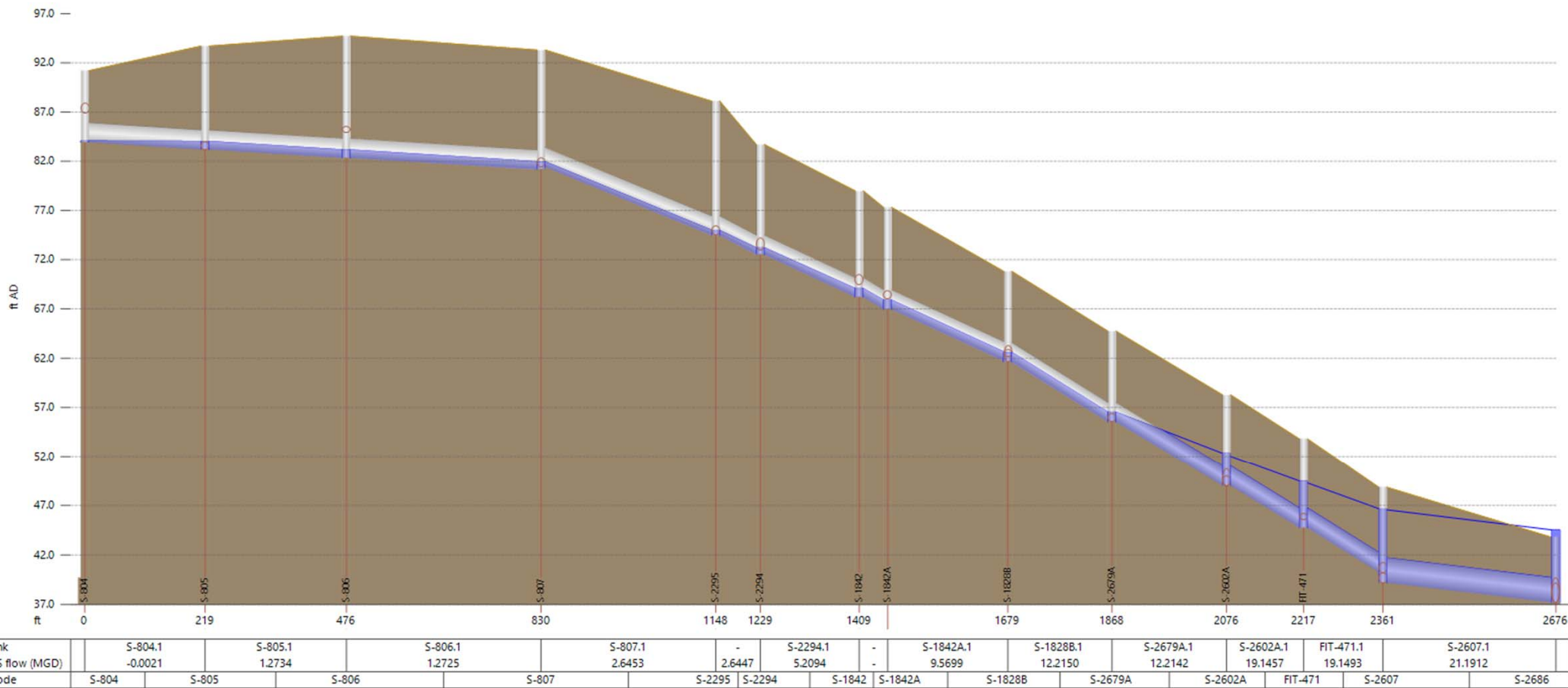
# Map of Peak Flood Conditions – 2yr 24hr Event, After Constructing Bumpouts



## Peak HGL Profile of Combined Sewer in Medford Street – Partridge to School 2yr 24hr Event – Existing Conditions



## Peak HGL Profile of Combined Sewer in Medford Street – Partridge to School 2yr 24hr Event – After Constructing Bumpouts



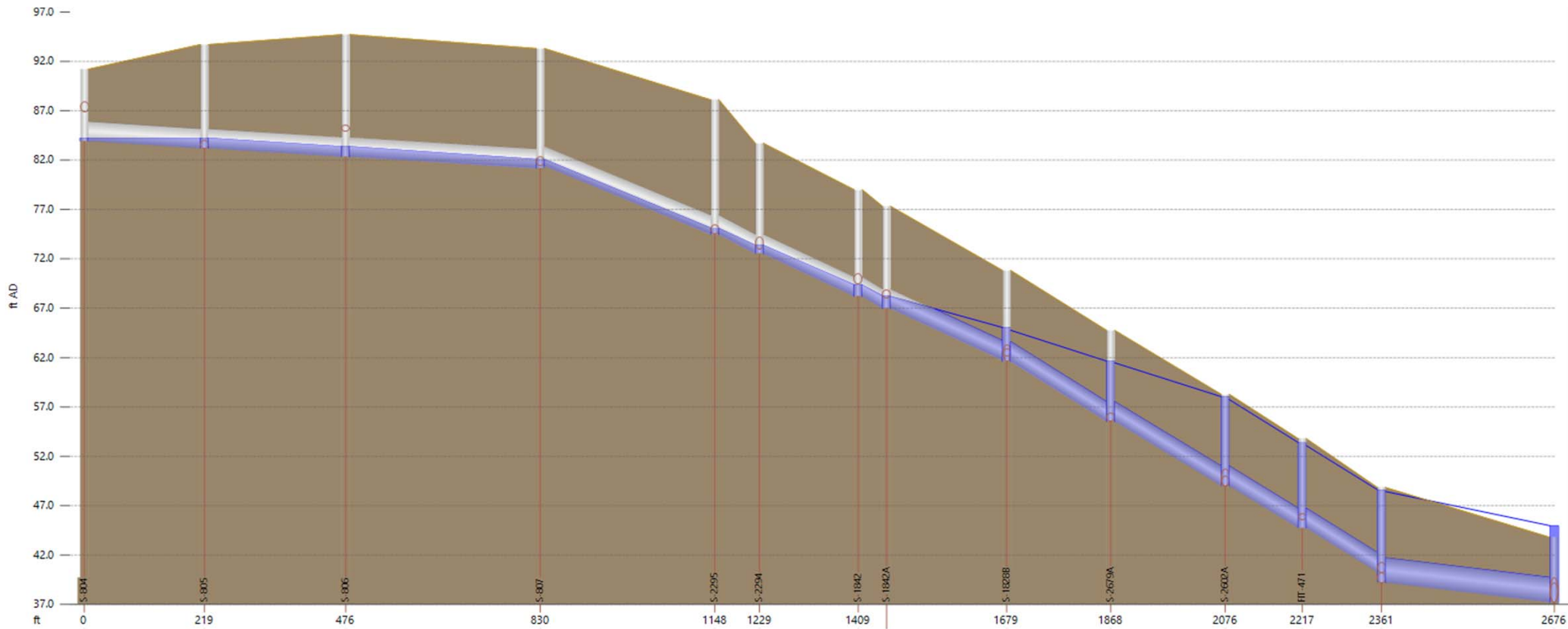




Map of Peak Flood Conditions – 10yr 24hr Event, After Constructing Bumpouts

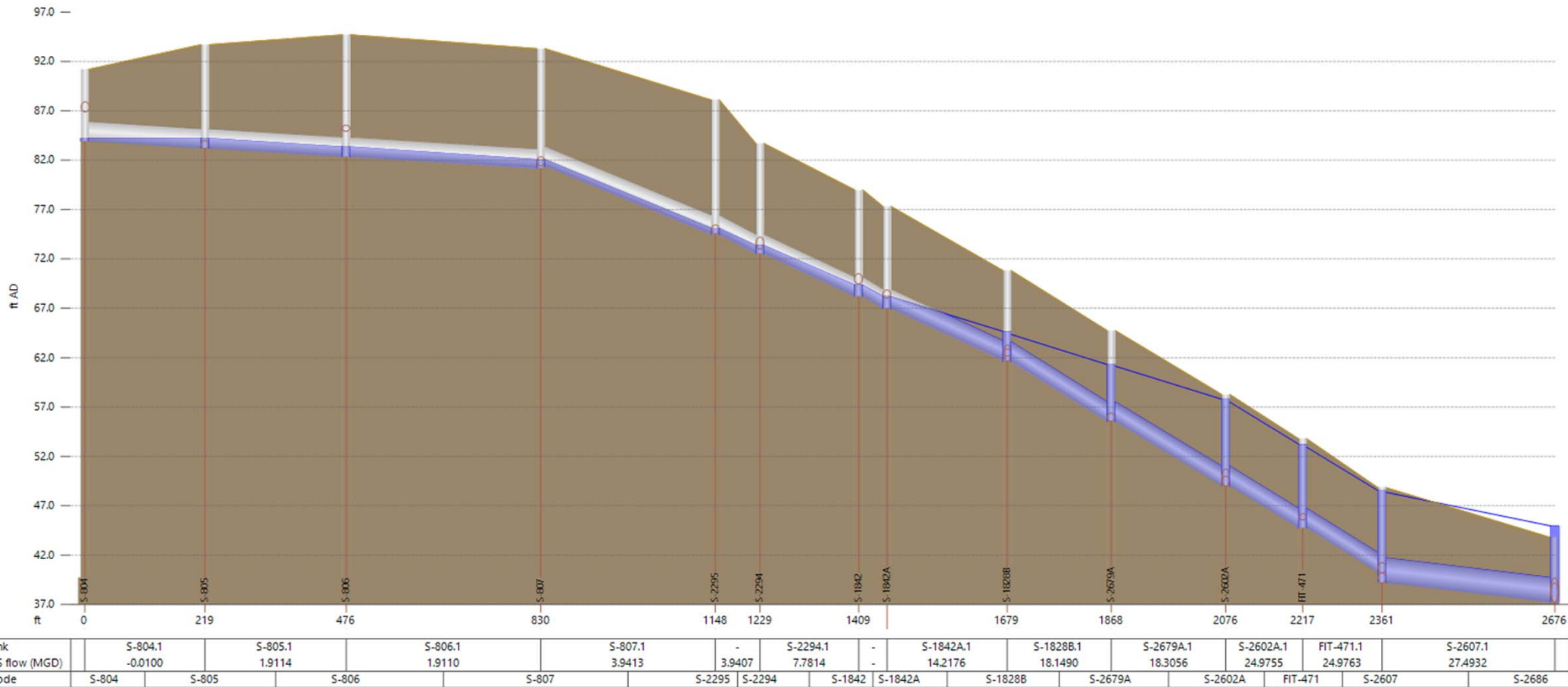


## Peak HGL Profile of Combined Sewer in Medford Street – Partridge to School 10yr 24hr Event – Existing Conditions



Link	S-804.1	S-805.1	S-806.1	S-807.1	-	S-2294.1	-	S-1842A.1	S-1828B.1	S-2679A.1	S-2602A.1	FIT-471.1	S-2607.1	
US flow (MGD)	0.0052	1.9983	1.9978	4.0797	4.0791	7.9204	-	14.4305	18.3500	18.5045	25.2139	25.2093	27.7436	
Node	S-804	S-805	S-806	S-807	S-2295	S-2294	S-1842	S-1842A	S-1828B	S-2679A	S-2602A	FIT-471	S-2607	S-2686

## Peak HGL Profile of Combined Sewer in Medford Street – Partridge to School 10yr 24hr Event – After Constructing Bumpouts



# Modeling Results for Analyzing Flood Reduction from Bumpouts in Medford Street

Event	Flood Volumes (MG)		
	Existing Conditions	With Bumpouts	Reduction
2yr, 24hr (3.3 inches, 0.87 in/hr peak)	110,200	99,400	10,800 (10%)
10yr, 24hr (4.7 inches, 1.24 in/hr peak)	220,200	218,000	2,200 (1%)