Structure Types

September 13, 2006

	Structure Type	Structure Base Cost* (2006 $)	Advantages	Disadvantages	Advance?
	15th Avenue Overpass Structure Types				
A	**Prestressed Concrete Girders**	$ 3,000,000	▪ Lower cost ▪ Straightforward to construct, no temporary shoring ▪ Shorter construction duration ▪ Low maintenance	▪ Span limitations on curved alignments ▪ Girder depth step changes ▪ Less aesthetically pleasing	
B	**Haunched Cast-in-Place Concrete Box Girder**	$ 3,100,000	▪ Average cost ▪ Accommodates curved alignments well ▪ Low maintenance ▪ Aesthetic haunched shape over 15th Ave ▪ Long span capability	▪ Longer construction duration ▪ Requires temporary shoring ▪ Increased impacts below bridge during construction	
C	**Straight Cast-in-Place Concrete Box Girder**	$ 3,100,000	▪ Average cost ▪ Accommodates curved alignments well ▪ Low maintenance ▪ Aesthetically pleasing ▪ Long span capability	▪ Longer construction duration ▪ Requires temporary shoring ▪ Increased impacts below bridge during construction	
	Steel Plate I-Girders (Not shown, appearance similar to Prestressed Concrete Girders)	$ 3,400,000	▪ Average cost ▪ Accommodates curved alignments well ▪ Shorter construction duration ▪ Minimal temporary shoring ▪ Long span capability ▪ Lower seismic loads due to less weight; Reduced foundations	▪ Higher superstructure cost ▪ High maintenance/Life cycle costs	
	Mainline Structure Types				
A	**Prestressed Concrete Girders**	$ 19,500,000	▪ Lower cost ▪ Straightforward to construct, no temporary shoring ▪ Shorter construction duration ▪ Low maintenance	▪ Does not accommodate width transitions well ▪ Less aesthetically pleasing	
B	**Straight Cast-in-Place Concrete Box Girder**	$ 20,800,000	▪ Average cost ▪ Accommodates width transitions well ▪ Low maintenance ▪ Aesthetically pleasing	▪ Longer construction duration ▪ Requires temporary shoring ▪ Increased impacts below bridge during construction ▪ Steel Box Girder over railroad	
	Steel Plate I-Girders (Not shown, appearance similar to Prestressed Concrete Girders)	$ 20,000,000	▪ Average cost ▪ Accommodates width transitions well ▪ Shorter construction duration ▪ Minimal temporary shoring ▪ Lower seismic loads due to less weight; Reduced foundations	▪ Higher superstructure cost ▪ High maintenance/Life cycle costs	

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Structure Types

September 13, 2006

	Structure Type	Structure Base Cost* (2006 $)	Advantages	Disadvantages	Advance?
	23rd Avenue Ramps Structure Types				
A	**Prestressed Concrete Girders**	$ 6,500,000	▪ Lower cost ▪ Straightforward to construct, no temporary shoring ▪ Reduced environmental permitting required for construction ▪ Shorter construction duration ▪ Low maintenance	▪ Less aesthetically pleasing	
B	**Straight Cast-in-Place Concrete Box Girder**	$ 6,700,000	▪ Average cost ▪ Low maintenance ▪ Aesthetically pleasing ▪ Long span capability	▪ Longer construction duration ▪ Requires temporary shoring ▪ Increased environmental permitting required for construction ▪ Increased impacts below bridge during construction	
	Steel Plate I-Girders (Not shown, appearance similar to Prestressed Concrete Girders)	$ 7,100,000	▪ Average cost ▪ Shorter construction duration ▪ Minimal temporary shoring ▪ Reduced environmental permitting required for construction ▪ Long span capability ▪ Lower seismic loads due to less weight; Reduced foundations	▪ Higher superstructure cost ▪ High maintenance/Life cycle costs	
	Magnolia Bluff Structure Types				
A	**Prestressed Concrete Girders**	$ 18,900,000	▪ Lower cost ▪ Straightforward to construct, no temporary shoring ▪ Shorter construction duration ▪ Low maintenance	▪ Span limitations on curved alignments ▪ Less aesthetically pleasing	
B	**Haunched Cast-in-Place Concrete Box Girder**	$ 19,800,000	▪ Average cost ▪ Accommodates curved alignments well ▪ Low maintenance ▪ Aesthetically pleasing ▪ Long span capability	▪ Longer construction duration ▪ Requires temporary shoring ▪ Increased impacts below bridge during construction	
	Haunched Steel Box Girder (Not shown, appearance similar to Cast-in-Place Concrete Box Girder)	$ 27,200,000	▪ Higher cost ▪ Accommodates curved alignments well ▪ Shorter construction duration ▪ Minimal temporary shoring ▪ Long span capability ▪ Lower seismic loads due to less weight; Reduced foundations	▪ Higher superstructure cost ▪ High maintenance/Life cycle costs	

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Structure Types

September 13, 2006

Structure Type	Structure Base Cost* (2006 $)	Advantages	Disadvantages	Advance?
Column Type (Cost provided based on Bluff Structure Columns)				
Curved Flare Column	$6,000,000	▪ Texture opportunity on surfaces ▪ Positive relationship to haunched bridge type ▪ Classic appearance	▪ Custom forms ▪ May require minor repairs post seismic activity	
Angular Flare Column	$5,800,000	▪ Texture opportunity on surfaces ▪ Positive relationship to haunched bridge type ▪ Timeless architectural style	▪ Custom forms ▪ May require minor repairs post seismic activity	
Tapered Column	$5,600,000	▪ Reduced forming costs ▪ Clean appearance	▪ Limited opportunity for textures and highlights	

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