

ELLIOT WAY IMPROVEMENT PROJECT

ALTERNATES

Village of Croton-On-Hudson
Westchester County, New York

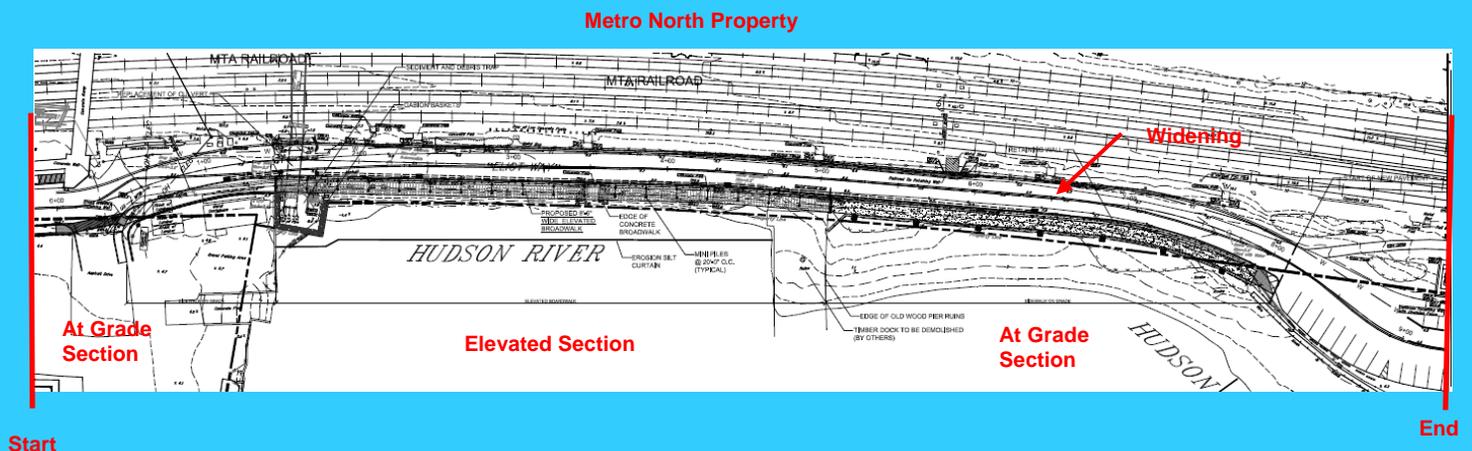




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Project Scope

- **Project Limits - North End of the Senasqua Park Parking Area to the Croton Yacht Club.**
- **Overall project length - 775 linear feet.**
- **Widening of Elliot Way – Two At-Grade Sections and an Elevated Section (340 lf)**
- **Additional Improvements - Road, Drainage and Water main Extension**
- **Widening will take place mainly on the west side of Elliot Way with no encroachment of the Metro North property to the east side of Elliot Way.**

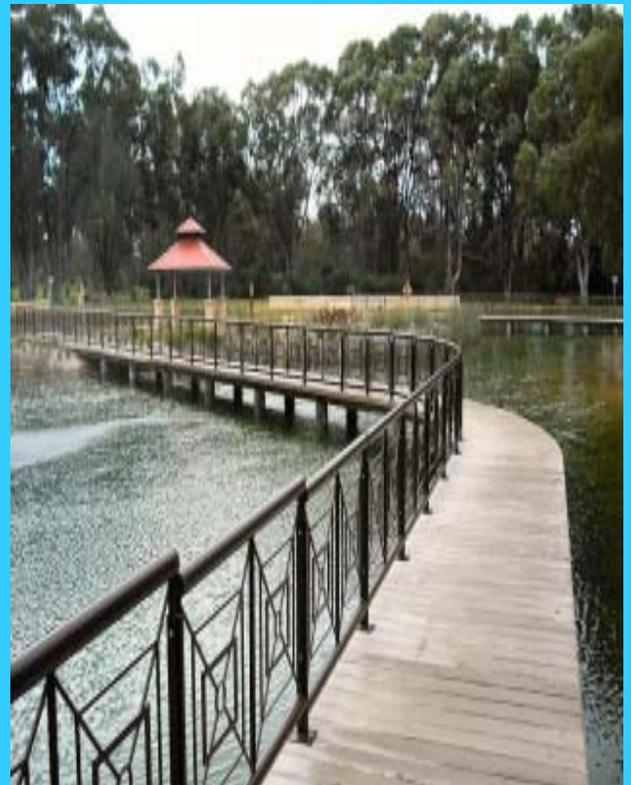




Alternates

- ▣ **Site Design Consultants Examined Four Project Alternates:**
 - **Alternate I – PermaTrak (Precast Concrete Alternate)**
 - **Alternate II – RediRock (Precast Retaining Wall Alternate)**
 - **Alternate III – Trex Elevations (Pre-engineered Steel Frame)**
 - **Alternate IV – Timber Frame**

Alternate I - PermaTrak

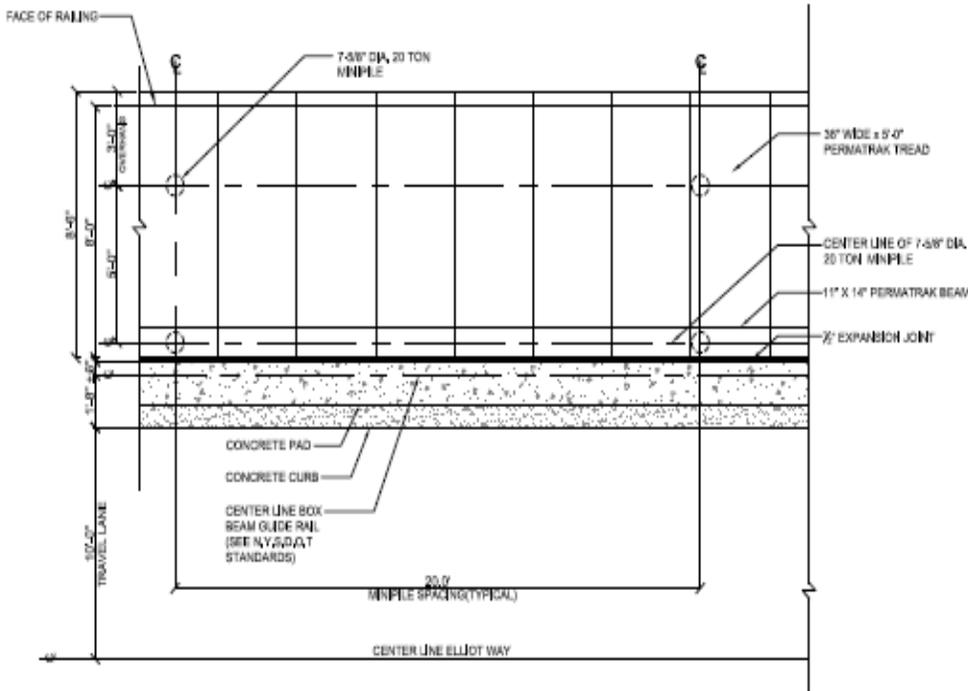


Shown with Alternate Railing

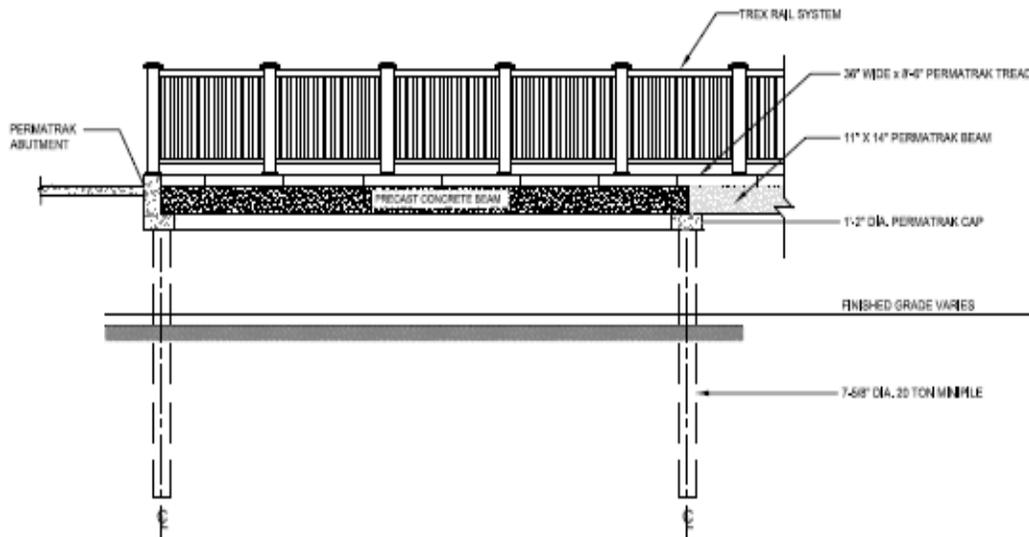
PERMA TRAK (PRECAST CONCRETE)



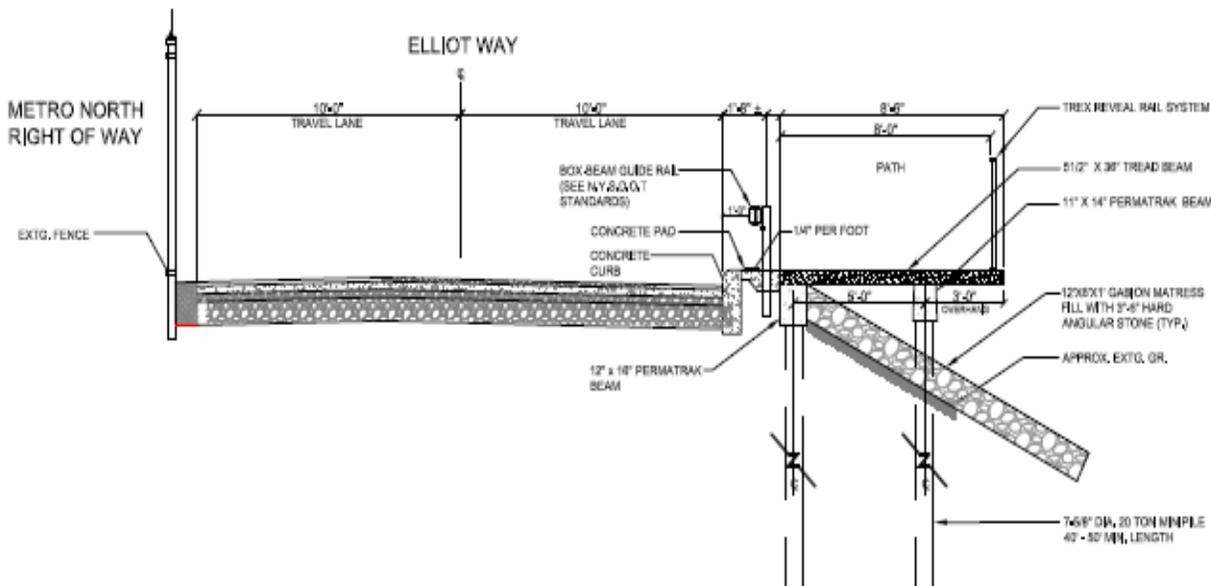
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PLAN - PERMA TRAK (CONCRETE)



TYPICAL ELEVATION - PERMA TRAK (CONCRETE)



TYPICAL SECTION - PERMATRAK (CONCRETE)



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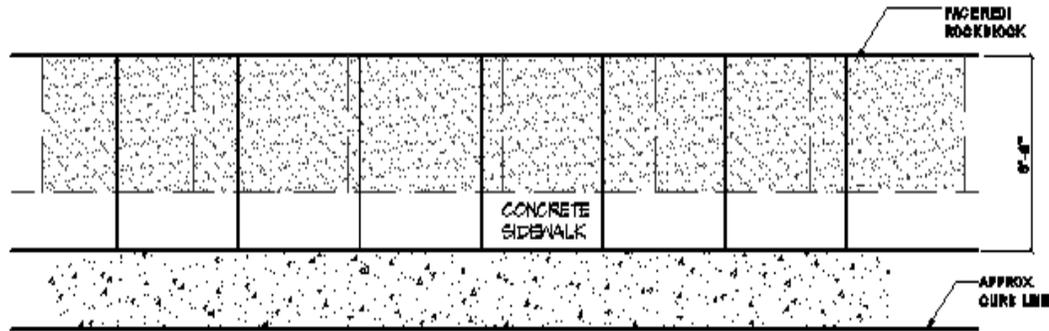
Alternate II - RediRock



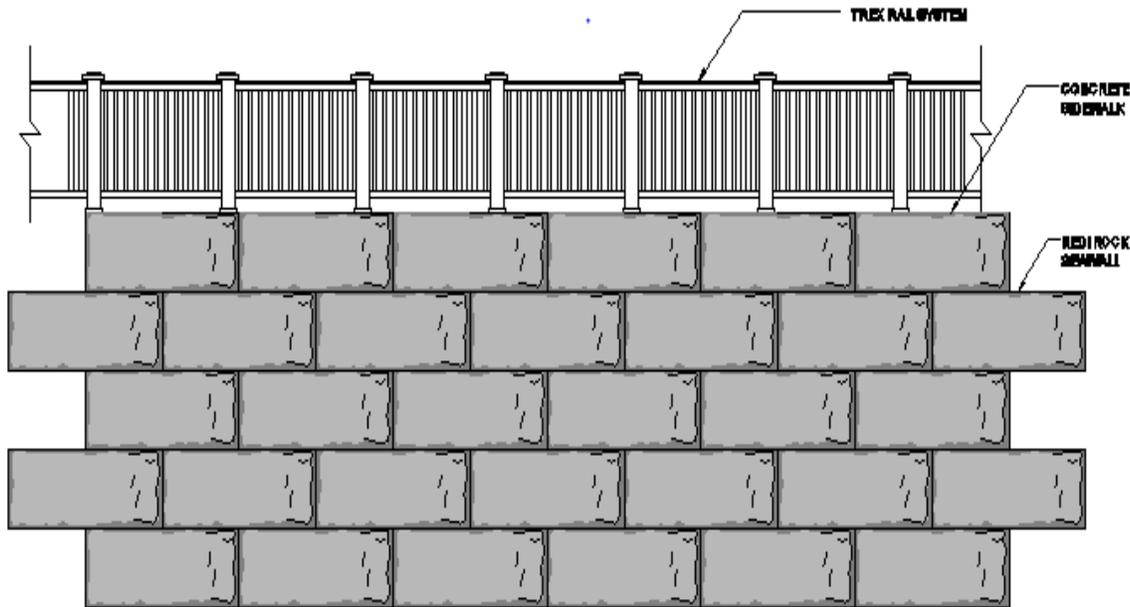
ALTERNATE II - REDIROCK WALL



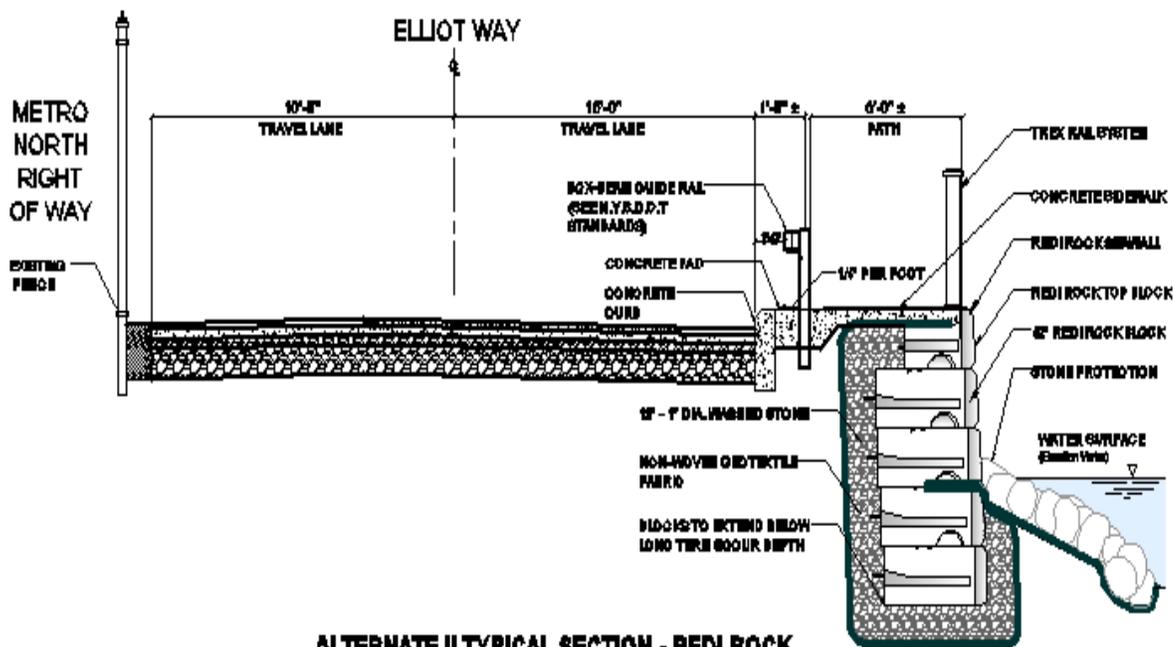
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ALTERNATE II PLAN - REDIROCK



ALTERNATE II TYPICAL ELEVATION - REDIROCK

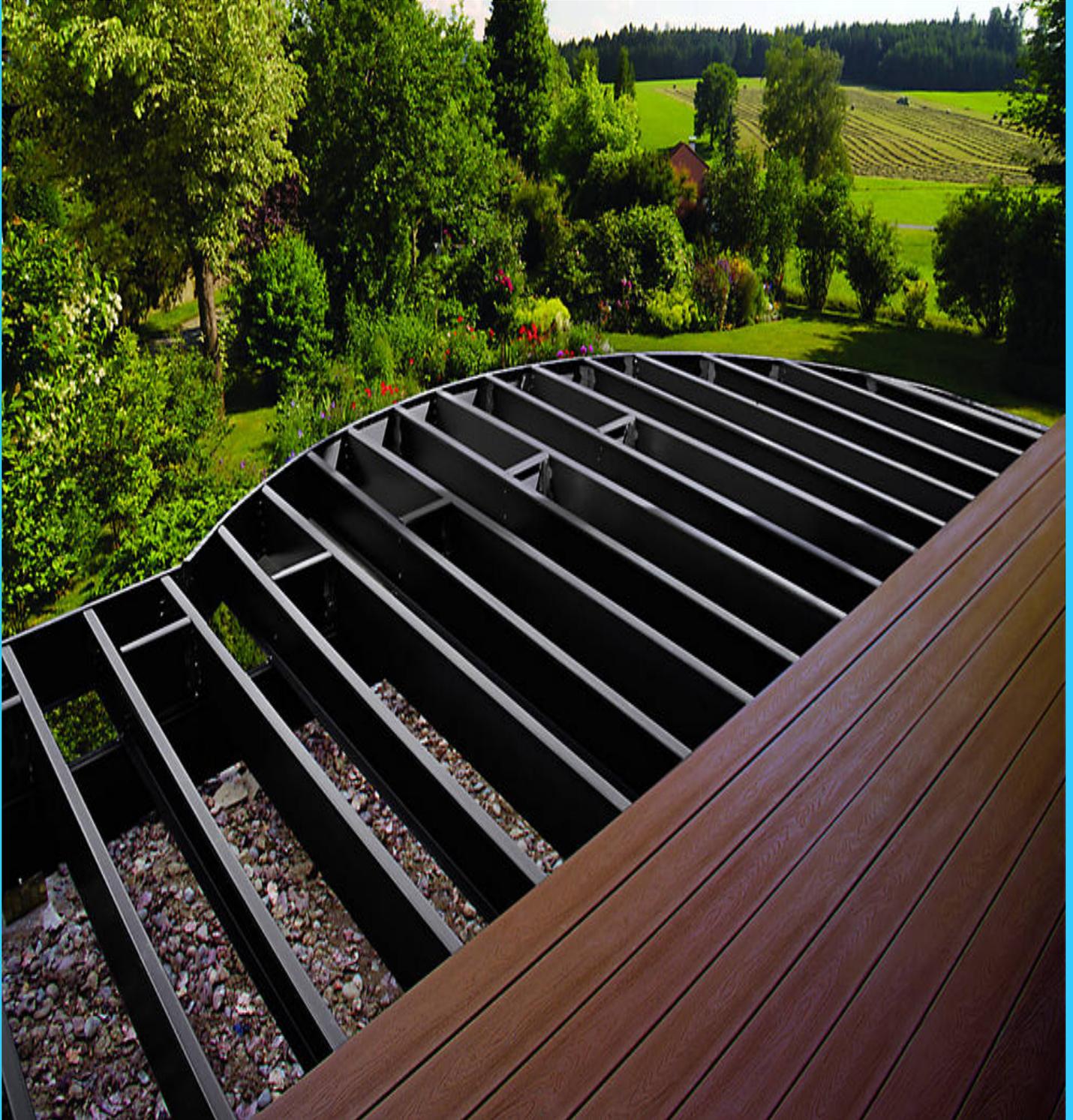


ALTERNATE II TYPICAL SECTION - REDIROCK



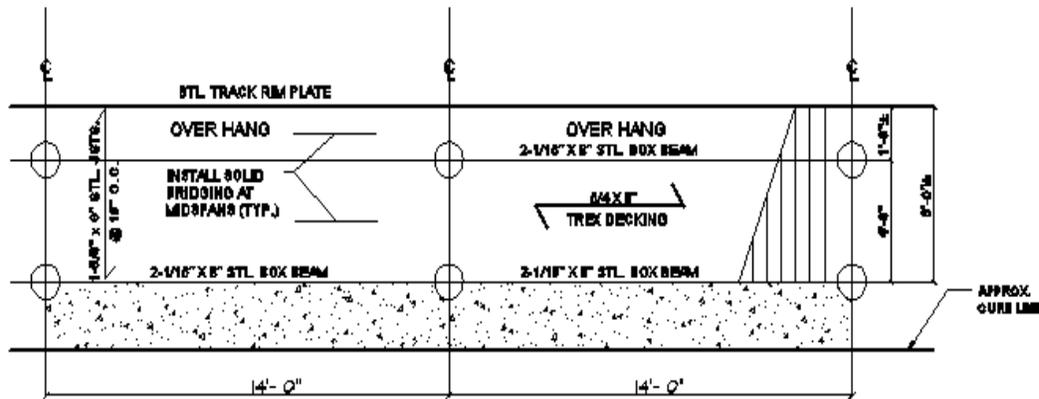
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Alternate III - Trex

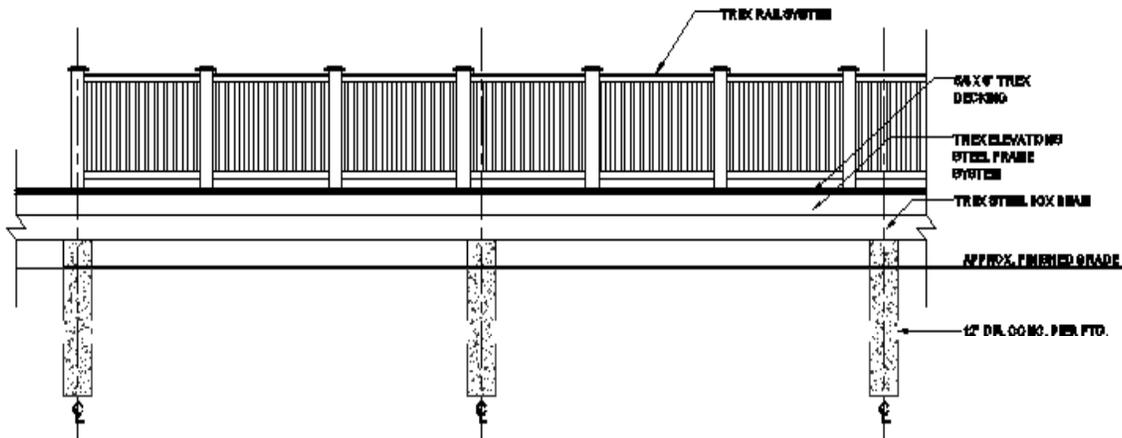




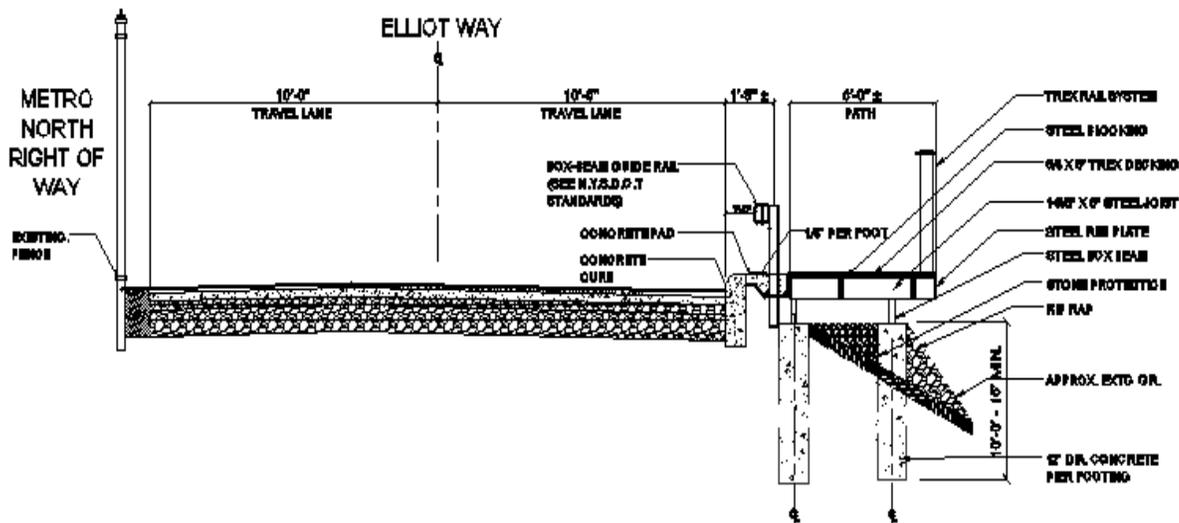
ALTERNATE III - TREX ELEVATIONS SYSTEM



ALTERNATE III PLAN - TREX ELEVATIONS SYSTEM



ALTERNATE III TYPICAL ELEVATION - TREX ELEVATIONS SYSTEM



ALTERNATE III TYPICAL SECTION - TREX ELEVATIONS SYSTEM



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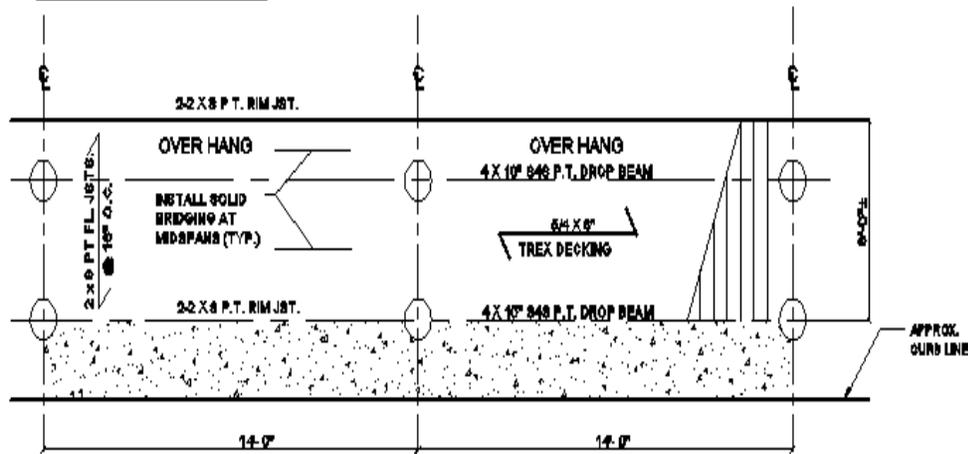
Alternate IV – Timber Frame



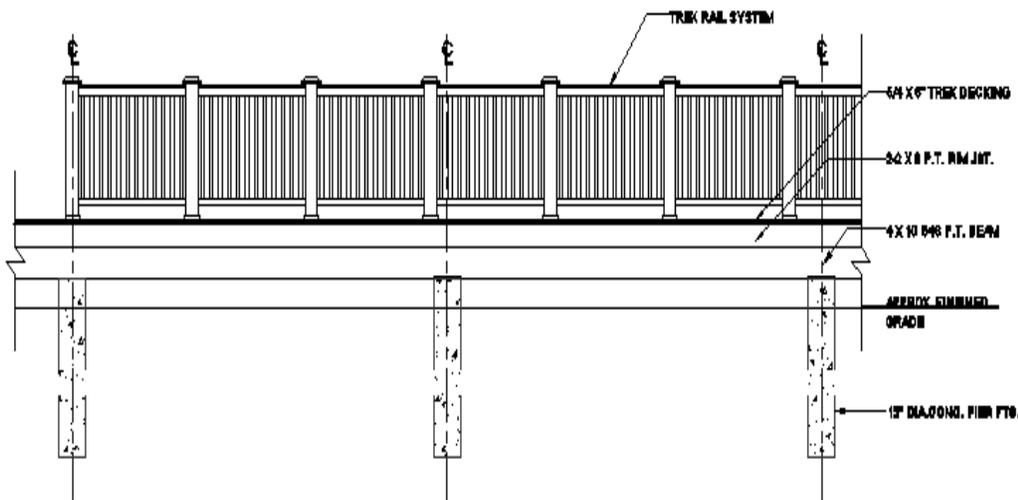


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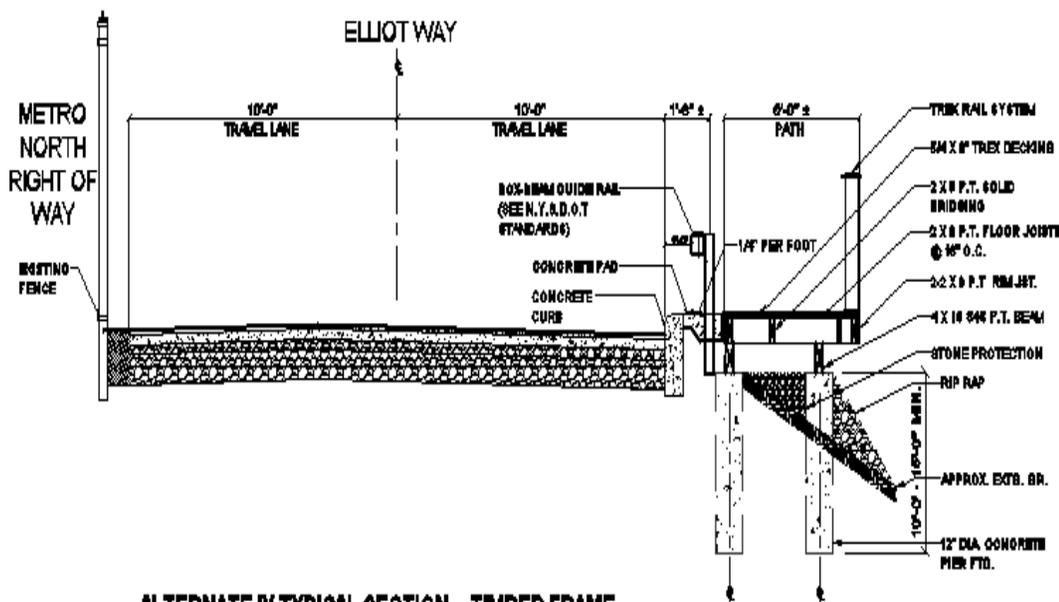
ALTERNATE IV - TIMBER FRAME



ALTERNATE IV PLAN - TIMBER FRAME/TREX RAIL SYSTEM



ALTERNATE IV TYPICAL ELEVATION - TIMBER FRAME/TREX RAIL SYSTEM



ALTERNATE IV TYPICAL SECTION - TIMBER FRAME



▣ Alternate I – PermaTrak (Pre-cast Concrete Alt.)

- ▶ **PermaTrak is a Proprietary System consisting of Structural Precast Concrete Elements that are Supported on Cast-in-Place Concrete Piers**
- ▶ **PermaTrak Structural Members include Precast Concrete Caps, Beams and Tread (deck)**
- ▶ **Utilizes – Multiple Railing Systems (Trex Rail System Used for Comparison)**
- ▶ **The Precast Concrete Material is Stable and Does Not Bend, Warp, Splinter or Rot**
- ▶ **Minimizes the Environmental Impact During Installation**
- ▶ **It has a Design Life of 50 to 75 Years with Little to No Maintenance.**
- ▶ **Typical Maintenance would Consist of the Occasional Power-Washing in the Event of Algae Growth or Dirt Buildup**

▣ Alternate II – RediRock (Pre-cast Alt.)

- ▶ **RediRock Retaining Walls are a Proprietary System of Precast Concrete Blocks that are Stacked to Form a Vertical Wall**
- ▶ **Utilize a Cast-in-Place Concrete Sidewalk & Trex Railing System**
- ▶ **Gravity Retaining Wall Structure which Supports the Soil Backfill**
- ▶ **Block Weight – 1 Ton +**
- ▶ **Installation is Simple; but requires heavy equipment**
- ▶ **Temporary Cofferdam Required**
- ▶ **Most Invasive to the Hudson River**
- ▶ **Most Protection of the Roadway.**
- ▶ **The RediRock Blocks have a Design Life of 50 to 75 years with No Maintenance Required.**



▣ Alternate III – Trex Elevations

(Steel Frame Alt.)

- ▶ **Trex Elevations is a Proprietary System of Steel Beams and Floor Joists that Form a Steel Frame**
- ▶ **The Steel is Triple-Coated, Durable and Stable**
- ▶ **The Steel does Not Warp, Rot and is Termite-Proof.**
- ▶ **Non-Combustible and Chemical Free – (Min. 25% recycled steel)**
- ▶ **Simple Installation - Pre-Fabricated Structural Elements**
- ▶ **Requires Certified Installers to Insure Manufacturers Compliance**
- ▶ **The Trex Decking and Railing System is Designed to Work Seamlessly with Trex Elevations.**
- ▶ **The Design Life of this System is Approximately 50 years**
- ▶ **Needs to be Inspected every 2 years.**
- ▶ **Maintenance Maybe Required**

▣ Alternate IV – Timber Frame

- ▶ **Wood Frame - Standard Heavy Timber Girders and Floor Joists**
- ▶ **Marine-Grade Southern Pine that is Pressure-Treated (Termite protection)**
- ▶ **A Trex Decking and Railing System would be Integrated into this Alternate.**
- ▶ **Simple Installation - Standard Construction Techniques**
- ▶ **The Initial Cost is Lower for a Timber Frame but is Susceptible to Deterioration from Decay, Insect Attack and Fire Damage**
- ▶ **The Design Life of this System is Approximately 50 Years**
- ▶ **Maintenance May Become an Issue as the Structure Gets Older**



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251-F Underhill Avenue • Yorktown Heights, NY 10598

914-962-4488 • 203-431-9504 • fax 914-962-7386

www.sitedesignconsultants.com

ENGINEER'S ESTIMATE

PROJECT: Elliot Way		DATE:	3/4/2015
LOCATION: Village of Croton-on-Hudson		BY:	TC
SDC JOB #	11-20		

SUMMARY

Estimated Cost

	Alternate + Base Bid	Comments
Alternate I - PermaTrak	\$514,900.00	
Base Bid	\$697,938.39	
Total	\$1,212,838.39	

As of April 2015 – Preliminary Estimate