RS&H
IMPROVING YOUR WORLD

Myakka Road over Myakka River – Bridge Replacement

MRMCC - July 26, 2013

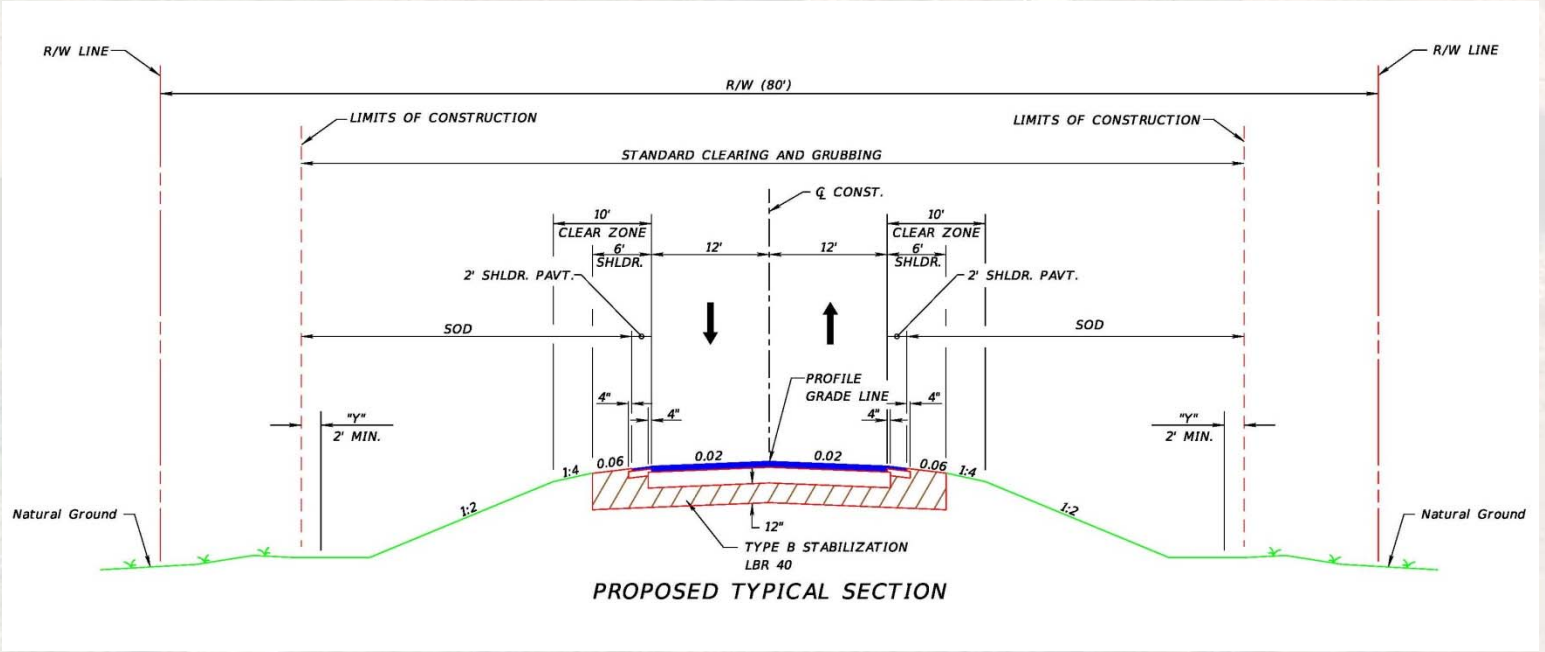
Sarasota County

Project Objective

- Replace Deficient Bridge
- Design Plan
  - ✓ Accelerate Design Schedule
  - ✓ Expedite Permitting Process
  - ✓ No Right-of-Way Impacts
  - ✓ Efficient Construction Process

Proposed Typical Sections

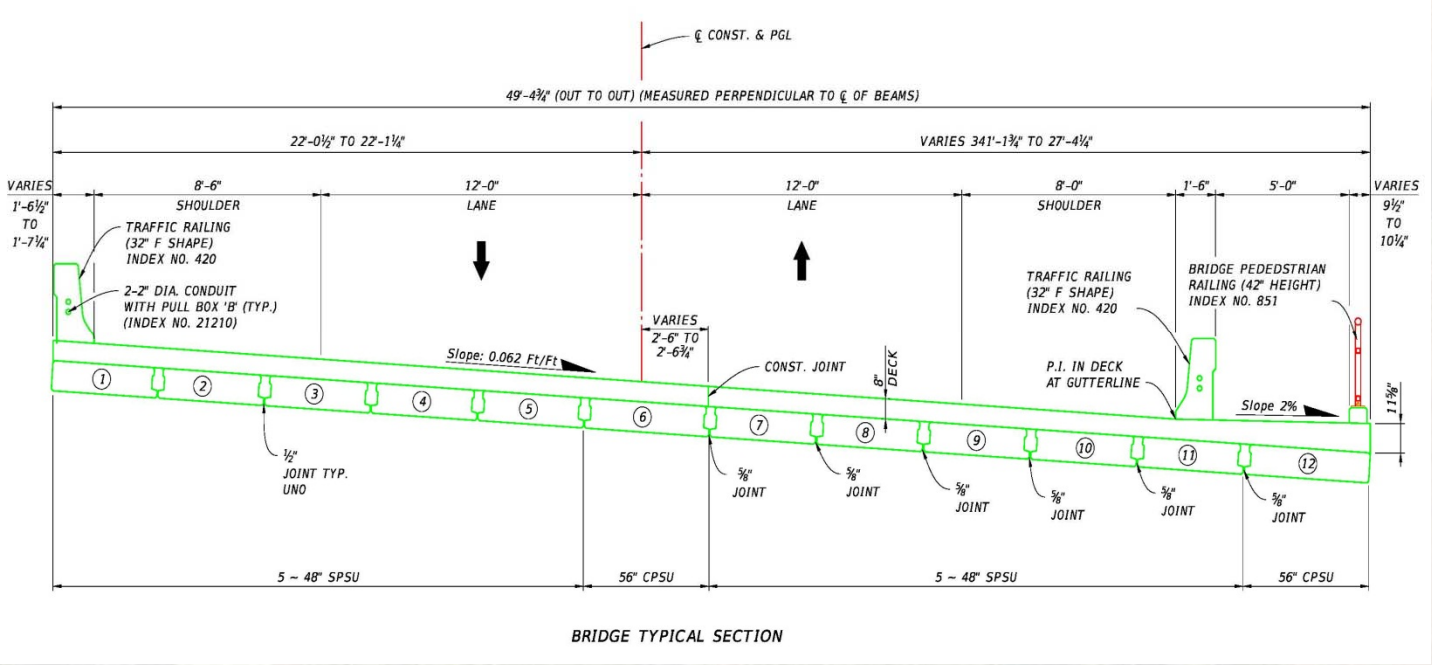
- Typical Section
  - ✓ Land Development Regulations
  - ✓ 2-Lane Collector/Arterial – Open Drainage



Roadway Typical Section

Proposed Typical Sections

- Typical Section
  - ✓ Land Development Regulations
  - ✓ 2-Lane Collector/Arterial – Open Drainage



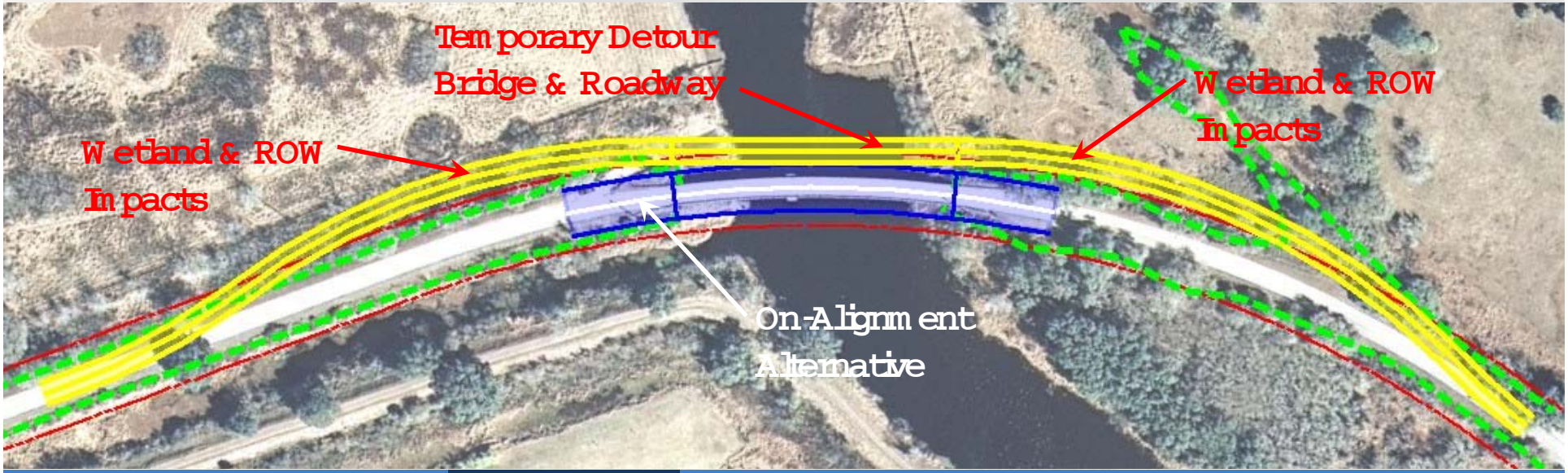
Bridge Typical Section

Roadway Alternatives

- Alignment Alternatives
  - ✓ Center Alignment
    - On Existing Alignment with Temporary Detour Bridge
  - ✓ Inside Alignment
    - Southern Shift with Phased Construction
  - ✓ Outside Alignment
    - Northern Shift with Phased Construction
    - Least Impacts

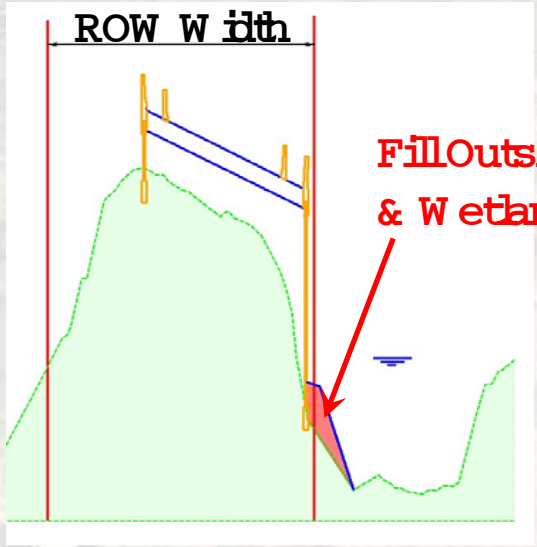
Center Alignment

- On Existing Alignment with Temporary Detour Bridge
- Impacts
  - ✓ Requires ROW / Severe Wetland Impacts
  - ✓ ACROW Style Bridges Require Straight Alignments
  - ✓ Temporary Construction = Wasted Dollars

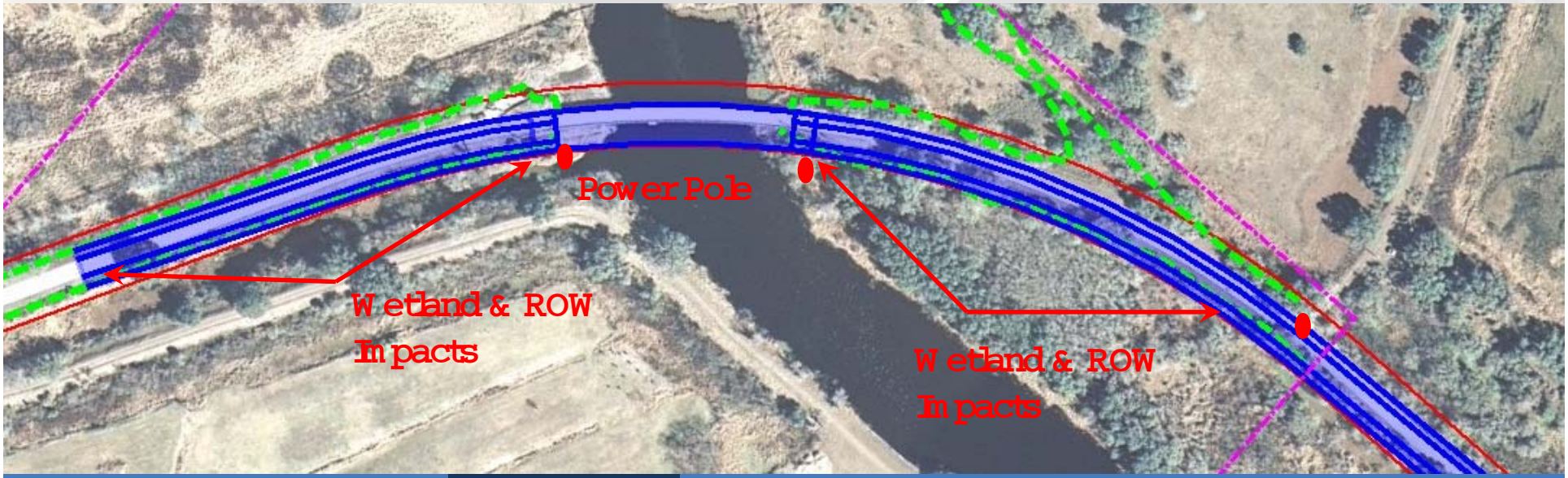


Inside Alignment

- Inside Alignment Shift with Phased Construction
- Impacts
  - ✓ Requires ROW /Wetland Impacts
  - ✓ Increase Construction Costs
  - ✓ Utility Relocations (Power Line, Telephone)
  - ✓ Myakka River Conservancy

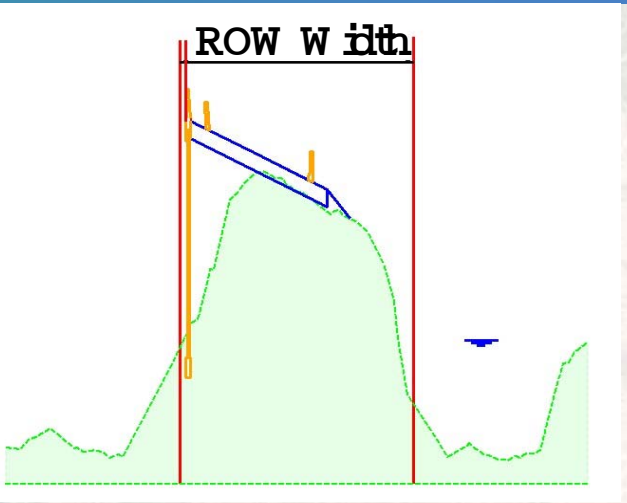


Typical Roadway Section

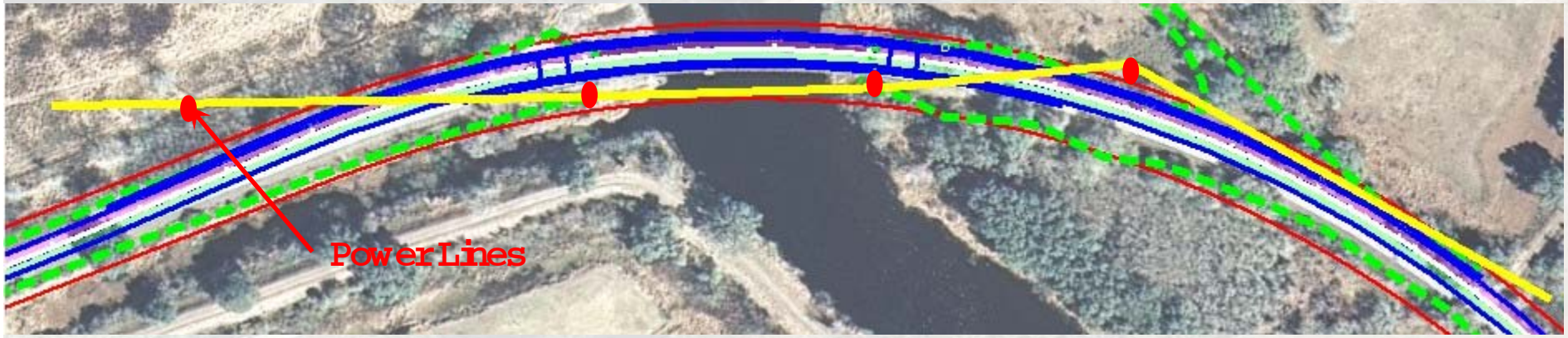


Outside Alignment - Preferred

- Outside Alignment Shift with Phased Construction
- Benefits
  - ✓ Least Wetland Impacts (Less than 0.50 acre)
  - ✓ Qualifies for Nationwide Permit
  - ✓ Utility Powerline MOT to Maintain 10 feet Clear to Power Lines
  - ✓ No ROW Impacts
  - ✓ Improved Sight Distance



Typical Roadway Section

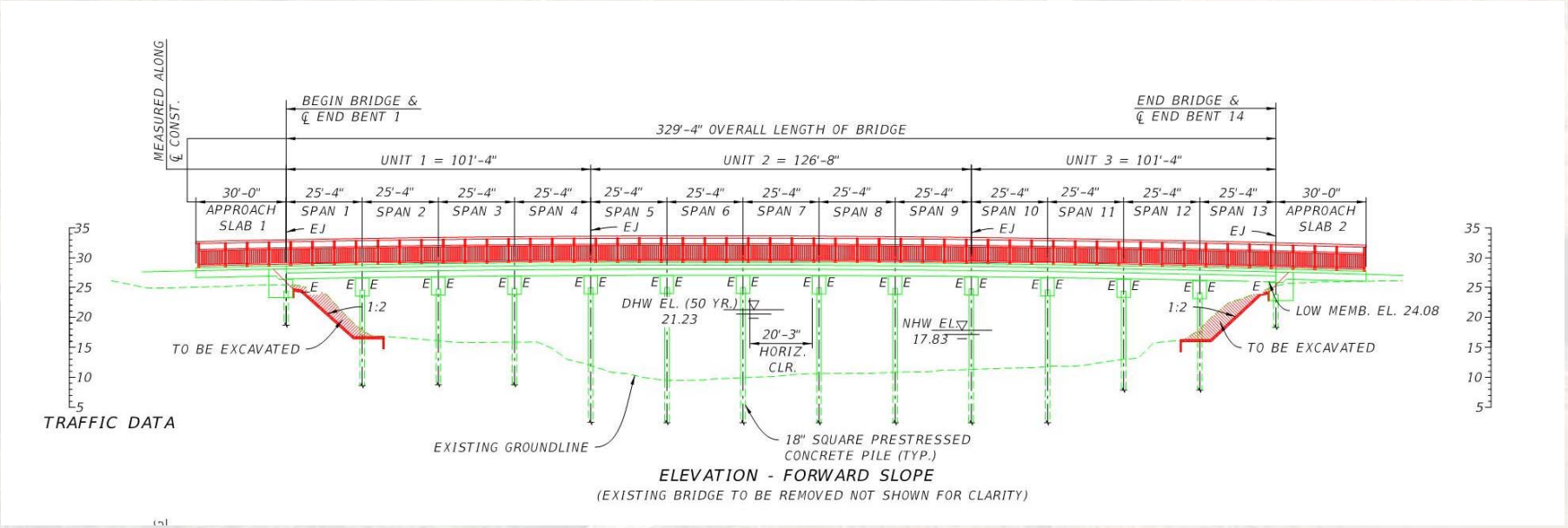


Structures Design

- Bridge Length
  - ✓ Set to Meet Hydraulic Requirements
  - ✓ Set to Meet Vertical Profile Increase
  - ✓ New Bridge Length: 329'-4"
  - ✓ Arrange New Pile Bents to Skip Over Crutch Bent
    - Bents 4 and 6

Arrange New Pile Bents to Skip Crutch Bents

Structures Design

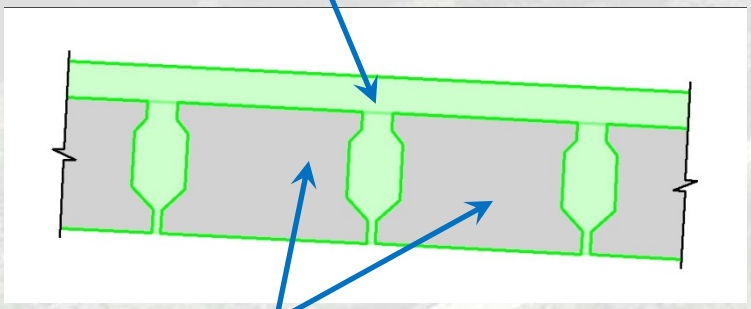


Bridge Elevation View

Structures Design

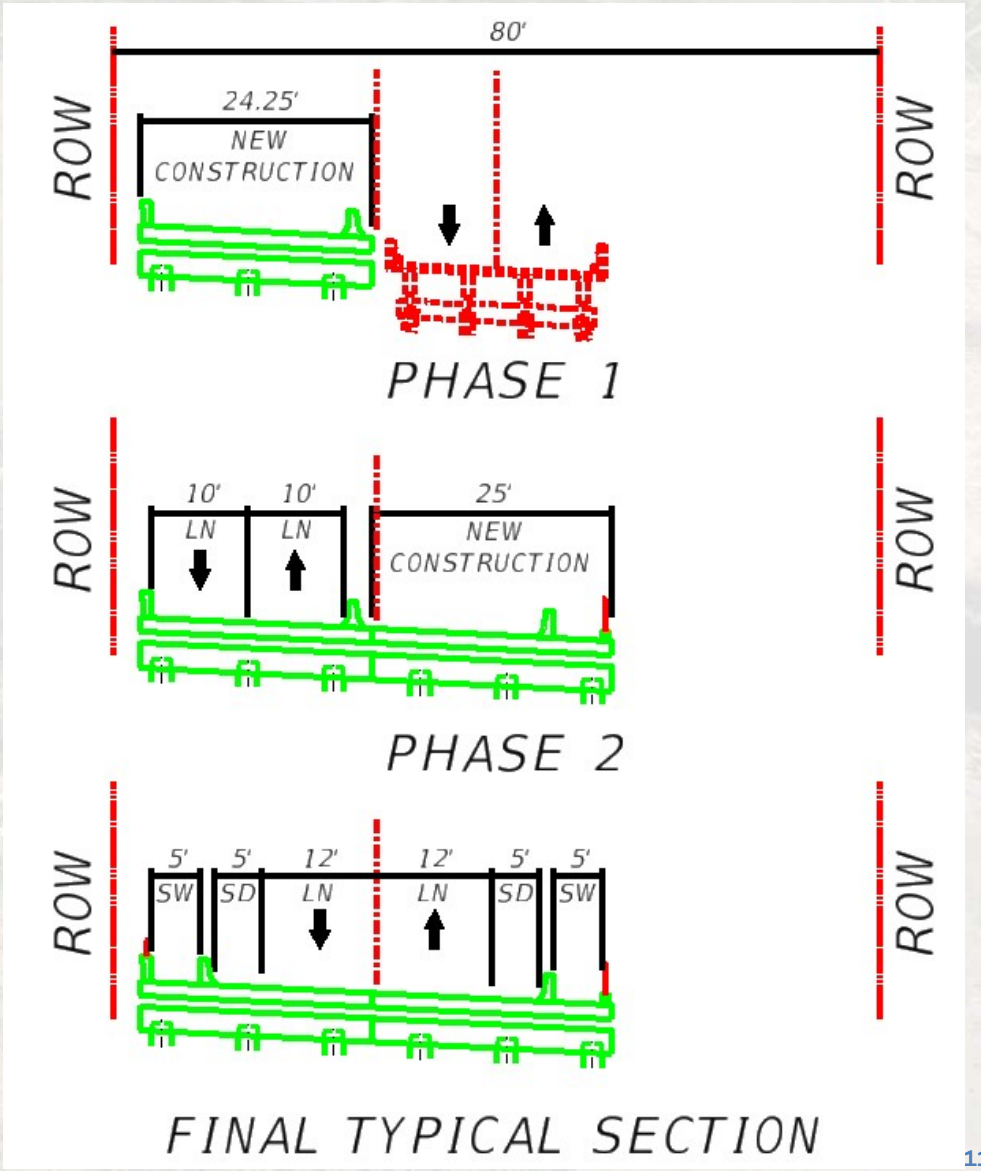
- Phased Construction
  - ✓ Precast Superstructure
  - ✓ CIP Bridge Deck Topping
  - ✓ Precast Pile Bent Caps

Cast-in-Place Concrete Deck & Closures



Precast Planks

Bridge Deck Sections



Structures Design Similar Projects

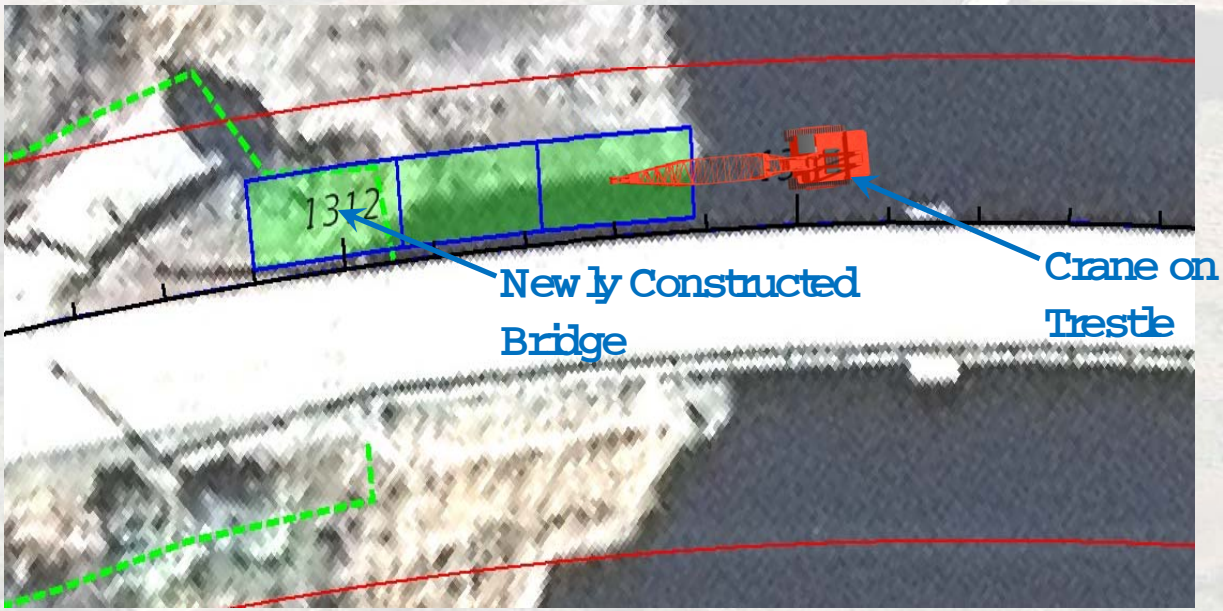
Fish Creek
Precast Plank Beam Ends

CR 150 – Madison Cty.
In-Line Construction

Bayside Bridge
Top-Down Construction

Structures Design

- In-Line Construction
  - ✓ Crane Operates on Independent Temporary Trestle
  - ✓ No Additional Impacts for Temporary Trestle
  - ✓ Maximizes Construction Speed

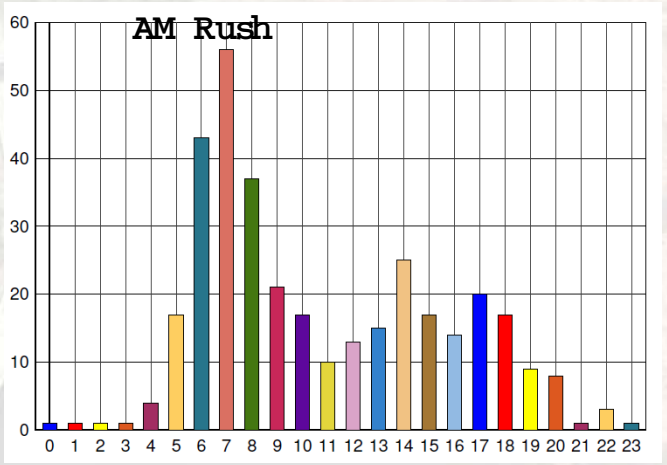


Maintenance of Traffic /Safety

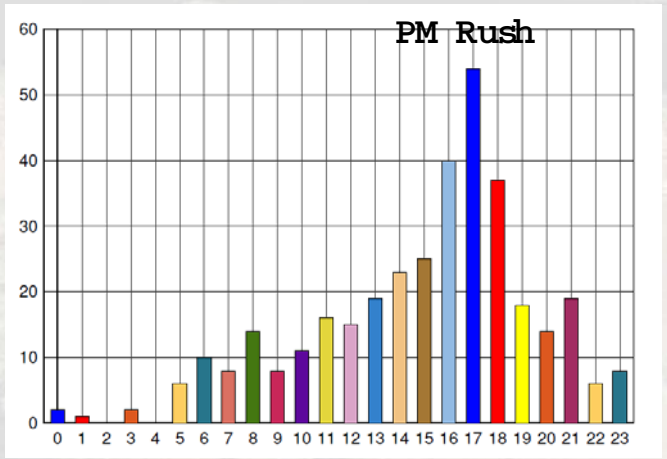
- Maintain Traffic During Construction
  - ✓ All Lanes Open
  - ✓ Single Lane Closures
    - Off Peak Hours
    - FDOT Index 600 Series

- Traffic Counts Conducted 9/20/2012
- Highly Directional
  - ✓ Northbound AADT – 352
  - ✓ Northbound Average Speed 44 MPH
  - ✓ Southbound AADT 356
  - ✓ Southbound Average Speed 42 MPH

NORTHBOUND



SOUTHBOUND



Maintenance of Traffic /Safety

- Safety is Priority - Motorists, Pedestrians & Work Crews
  - ✓ Off-duty Law Enforcement Officers during Construction per Index 600 Series
  - ✓ VMS Signs 24-7 during Construction Duration
- Provide Wildlife Crossings at Bridge Ends
  - ✓ New Bridge Length Provides Room for Wildlife Crossings

Public Information

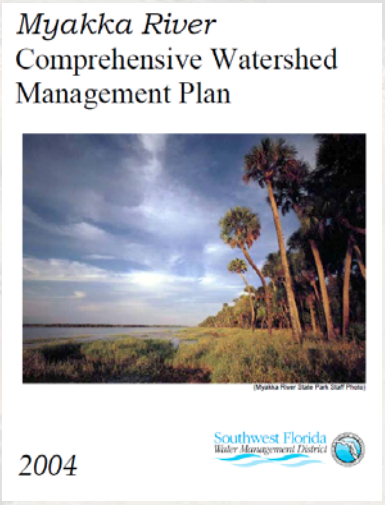
- Maintaining bi-directional traffic
- Increase safety
- Improve geometry
- Residents are anxious to get this bridge replaced ASAP

Environmental Permitting Agencies

- Florida Department of Environmental Protection
  - ✓ Myakka Wild and Scenic River
  - ✓ Sovereign and Submerged Lands
  - ✓ NPDES
- Southwest Florida Water Management District
  - ✓ Environmental Resource Permit
    - Wetland Impacts
    - Water Quality
- U.S. Army Corps of Engineers
  - ✓ Sec. 404 Dredge and Fill Permits

Wild and Scenic Rivers

- Myakka River in Sarasota County Designated by Florida Legislature in 1985
  - ✓ Limits new infrastructure
  - ✓ Sec 14 (does not limit maintaining or expanding existing facilities)
  - ✓ FDEP grants permits, provided that the project will not have an adverse impact on the resources in the river area
  - ✓ Section 15 prohibits airboats north of US 41 (vertical clearance)
  - ✓ Outstanding Florida Water designation

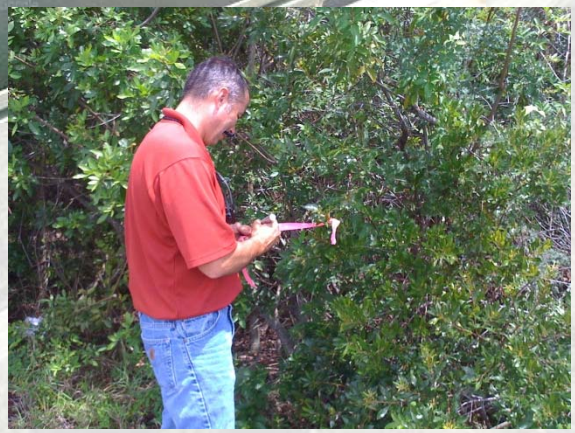


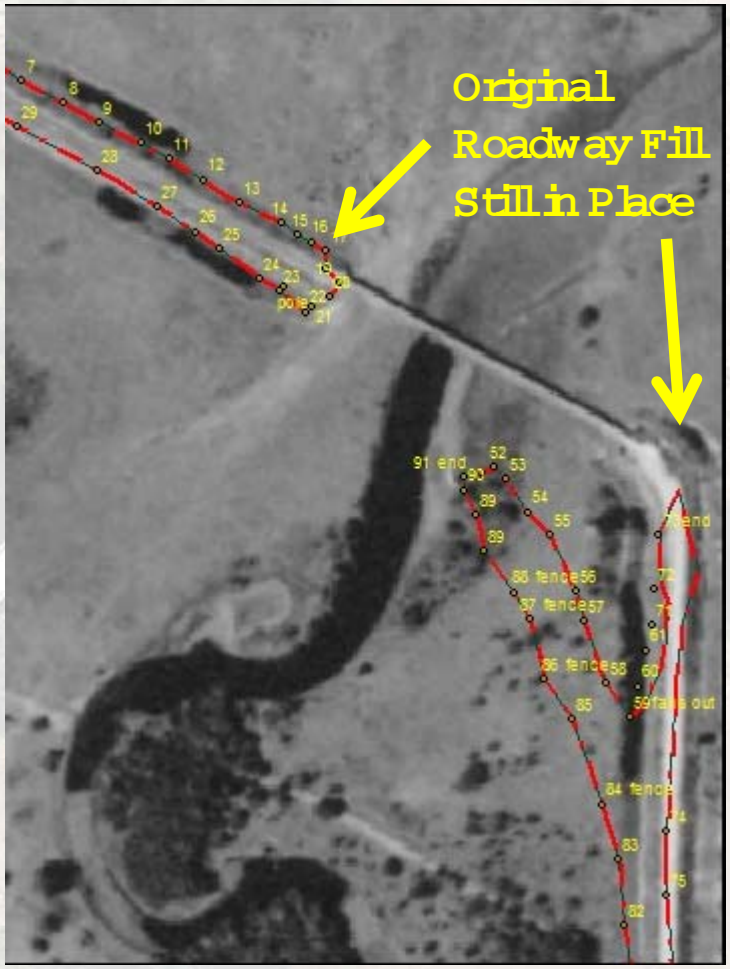
Sovereign and Submerged Lands

- Public easement likely required
- Jeff Gentry (FDEP SSL Office)
  - ✓ Noticed General Permit (unlinked)
    - Can be processed prior to submittal of ERP application
    - Process request in two weeks
  - ✓ Standard General Permit 18-21.00401 (Linkage)
    - Concurrent with permit submittal
    - 90 Days processing by statute

Wetland Permitting

- Wetland limits delineated January 2013
- Limits Field Verified SWFWMD February 2013





Wetland Permitting - SWFWMD

- Qualifies for 62-341.439 Noticed General Permit
  - ✓ Less than 0.5 acre wetland impact
  - ✓ No additional travel lanes
  - ✓ Sidewalks and shoulders are included
  - ✓ No treatment or attenuation required
  - ✓ Approval in 30-days

- SWFWMD Requests
  - ✓ Replanting of banks with natives
  - ✓ Removal of creosote piles below mudline
  - ✓ Process Sovereign and Submerged lands easement prior to submittal

Preliminary Wetland Impacts

Wetland Permitting - USACE

- Qualifies for Nationwide 14 (Linear Trans. Projects)
  - ✓ Less than 0.5 acre wetland impact
  - ✓ No additional travel lanes
  - ✓ Anticipated processing time 90-days

- USACE Requests
  - ✓ Compensatory Mitigation Proposal
    - Replanting of slopes with natives
    - Regional Offsite Mitigation Area (ROMA)
  - ✓ Minimize fill required

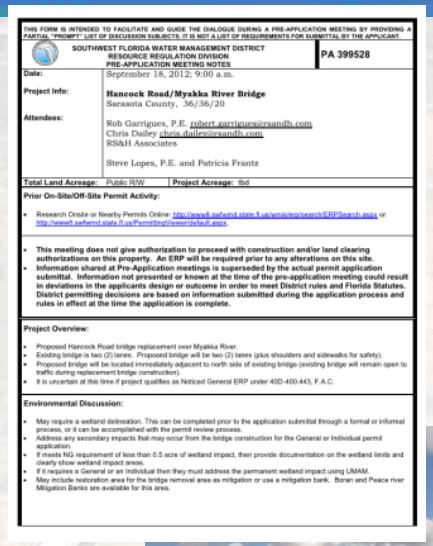
14. Linear Transportation Projects. Activities required for the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, airport runways, and taxiways) in waters of the United States. For linear transportation projects in non-tidal waters, the discharge cannot cause the loss of greater than 1/2-acre of waters of the United States. For linear transportation projects in tidal waters, the discharge cannot cause the loss of greater than 1/3-acre of waters of the United States. Any stream channel modification, including bank stabilization, is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project.

This NWP also authorizes temporary structures, fills, and work necessary to construct the linear transportation project. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

This NWP cannot be used to authorize non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars.

Drainage Design

- SWFWMD Pre-Application Meeting 9/16/12
  - ✓ Steve Lopes
  - ✓ Pat Frantz
  - ✓ No Treatment/Attenuation for NGP
- Bridge Hydraulics and Floodplain:
  - ✓ 100-year Design Storm Set Bridge Low Member
  - ✓ Provide No-rise Evaluation (25-year and 100-year)
  - ✓ Latest models obtained from SWFWMD
  - ✓ Existing 100-year Elevation ~ 23 ft.
  - ✓ New SWFWMD Hydraulic Model in Development
- Collection System (If Needed)
  - ✓ 10-year Design Storm
  - ✓ Ditches, Inlets, etc.



THIS FORM IS INTENDED TO FACILITATE AND GUIDE THE DIALOGUE DURING A PRE-APPLICATION MEETING BY PROVIDING A PARTIAL "PROMPT" LIST OF DISCUSSION SUBJECTS. IT IS NOT A LIST OF REQUIREMENTS FOR SUBMITTAL BY THE APPLICANT.

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
RESOURCE REGULATION DIVISION
PRE-APPLICATION MEETING NOTES

PA 399528

Date: September 18, 2012; 9:00 a.m.

Project Info: **Hancock Road/Myakka River Bridge**
Sarasota County, 36/36/20

Attendees: Rob Garrigues, P.E. robert.garrigues@rsandh.com
Chris Dailey chris.dailey@rsandh.com
RS&H Associates

Steve Lopes, P.E. and Patricia Frantz

Total Land Acreage: Public R/W **Project Acreage:** tbd

Prior On-Site/Off-Site Permit Activity:

- Research Onsite or Nearby Permits Online: http://www6.swfwmd.state.fl.us/wmis/ep/search/ERPSearch.aspx or http://www6.swfwmd.state.fl.us/Permitting/Viewer/default.aspx

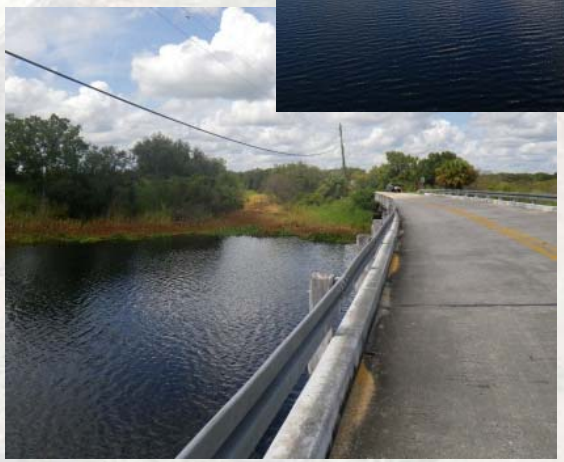
- This meeting does not give authorization to proceed with construction and/or land clearing authorizations on this property. An ERP will be required prior to any alterations on this site.
- Information shared at Pre-Application meetings is superseded by the actual permit application submittal. Information not presented or known at the time of the pre-application meeting could result in deviations in the applicants design or outcome in order to meet District rules and Florida Statutes. District permitting decisions are based on information submitted during the application process and rules in effect at the time the application is complete.

Project Overview:

- Proposed Hancock Road bridge replacement over Myakka River.
- Existing bridge is two (2) lanes. Proposed bridge will be two (2) lanes (plus shoulders and sidewalks for safety).
- Proposed bridge will be located immediately adjacent to north side of existing bridge (existing bridge will remain open to traffic during replacement bridge construction).
- It is uncertain at this time if project qualifies as Noticed General ERP under 40D-400.443, F.A.C.

Environmental Discussion:

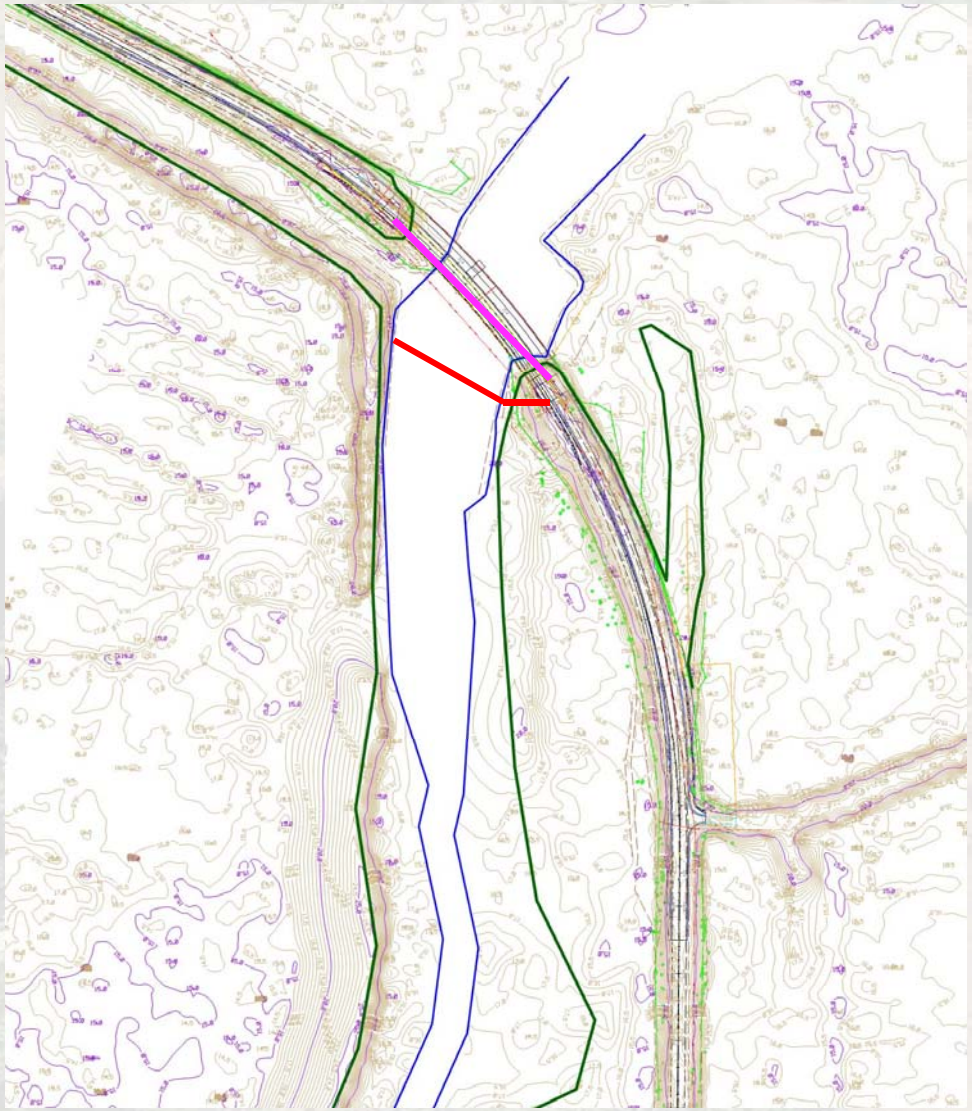
- May require a wetland delineation. This can be completed prior to the application submittal through a formal or informal process, or it can be accomplished with the permit review process.
- Address any secondary impacts that may occur from the bridge construction for the General or Individual permit application.
- If meets NG requirement of less than 0.5 acre of wetland impact, then provide documentation on the wetland limits and clearly show wetland impact areas.
- If it requires a General or an Individual then they must address the permanent wetland impact using UMAM.
- May include restoration area for the bridge removal area as mitigation or use a mitigation bank. Boran and Peace river Mitigation Banks are available for this area.



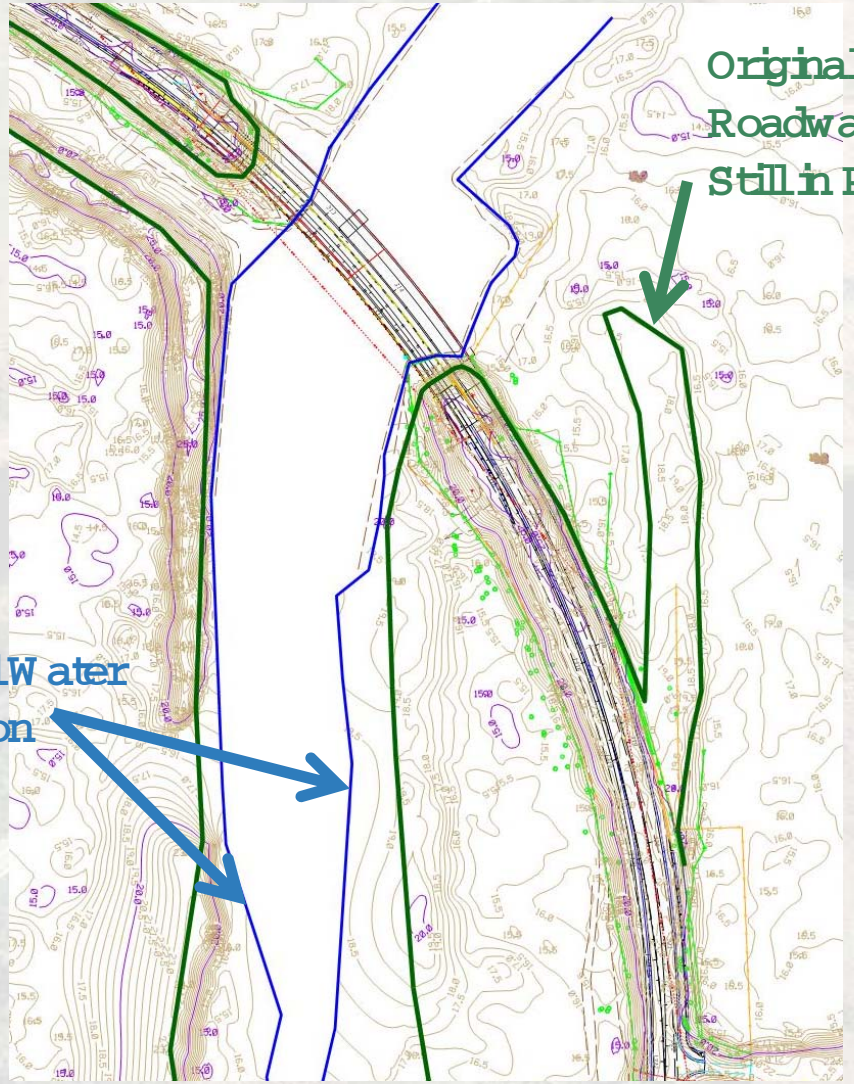
Drainage Design

Flow Area Comparison (SF)

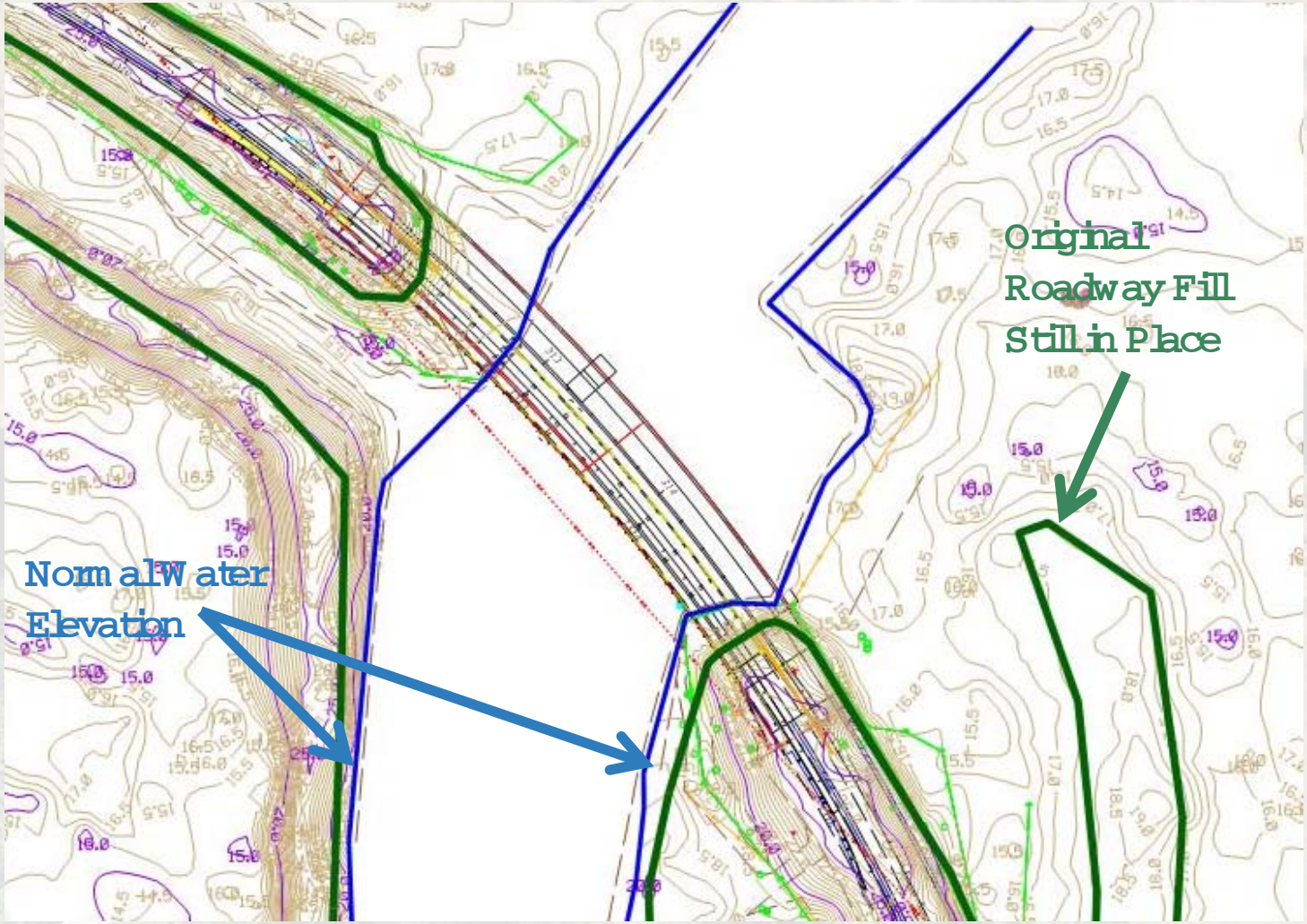
Location	25-yr	50-yr
Under Bridge	2078	2448
140' Down Stream	1854	2226



Drainage Design



Drainage Design



Questions