June 19 - 20, 2025
Hollywood, FL

TRANSPORTATION SYMPOSIUM

Unlocking Quality – Lessons for Designers from Final Plans & Operations

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Matt Carlock, P.E., District 4 Construction Engineer

Transportation Symposium Website
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Unlocking Quality – Lessons for Designers from Final Plans & Operations

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FDOT – District 4

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District Construction Engineer
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Go with Your "Gut".... And Your Expertise

- FDM: LREs – Before Constructability (Including Annual WPUC)
  DQE / Designer Interface – Constructability Phase Submittal and Beyond
  - Important to Develop Better Project Costs
  - Helps to Identify Specification and Pay Item Needs
- In LRE – Use Available System Tools (i.e.: Cost Factors, X-Items, Edit Details)
  - Do not Rely on what the “Program Spits Out”
  - Does it Look Right?..... What Were Costs of Previous, Similar Structures Nearby?
  - Don’t Just let the System do the Work – Use your Knowledge and Expertise
    - Especially Important During the Annual WPUC (Work Program Update Cycle)
    - If Project Costs have Significant Increases, the Project May be Deferred or Canceled

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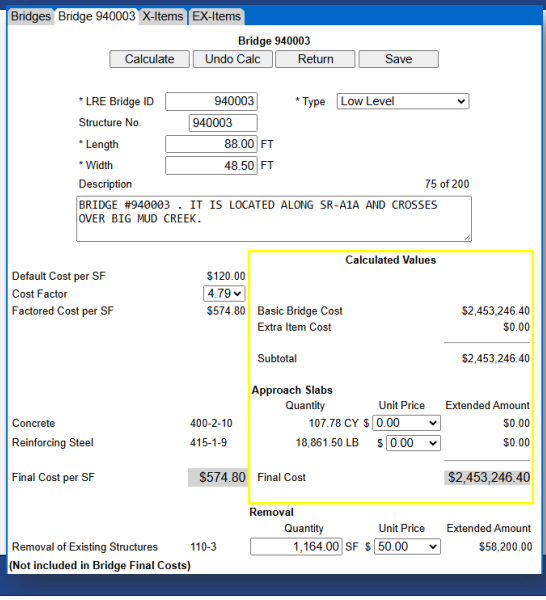
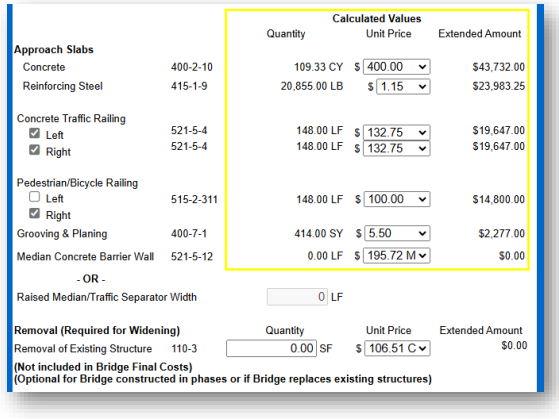
Go with Your "Gut".... And Your Expertise





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Does it Make Sense?

- Item Unit Cost vs. Total Item Cost / Project Cost
  - Calculate the numbers!
    - Verifying it makes sense
  - Depending on the location, complexity, and overall project cost
    - Engineer's Full Project Cost
    - EOR / Designer is Most Knowledgeable about the Project
  - Example: Clearing & Grubbing
    0.027 AC x $71,872.44 (Historical Cost) = **$ 1,940.56 (Total Item Cost)**

    Quantity Bid History on similar projects.....
    @ 0.03 AC Contractor Bids Ranging from **$230K to $4.9M (Total Item Cost)**

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Pay Item Back-up Information Needed

- Lump Sum, Non-Standard, and Project Specific Pay Items
  - Provide Everything Included in the Pay Item
  - Determine / Provide the Unit Cost
    - Contact Manufactures / Suppliers
    - EOR / Designer is Most Knowledgeable about the Project
  - Include at Biddability Phase Submittal

- Without Sufficient Funding the project may get Deferred or Cancelled

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What's Happening Between Biddability and Production

- ERC Biddability Comments Follow-up: List of “where it has been implemented”, plus what else has been changed between Biddability and Production
  - Responses to Phase Reviews
  - Changes between Biddability and Production Memo
    - Pdf in the Administrative folder (**Changes_memo_btn_BidProd.pdf**)
  - What are we looking for:
    - Scope Changes
    - New Pay Items / Removed Pay Items
    - Compare “Big Ticket Item” changes to quantities [*Continue to complete the 3-way checklist*]

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Pay Item Requests

- Follow both Basis of Estimates Manual and Basis of Estimates Application
- Per BOE, Ch 3 - Coordinate with the District Final Plans Office (QC Coordinator, Specifications, and/or Estimates) for any Non-standard Specification or Pay Item Needs at Constructability Phase
- Understand prior to requesting what is the ask:
  - Non-Standard Pay Item
  - Project Specific Pay Item
- Provide all Pertinent Information
  - Example: 0715516110
    LIGHT POLE COMPLETE-SPECIAL DESIGN, F&I, POLE TOP MOUNT, ALUMINUM, 10'
    EA

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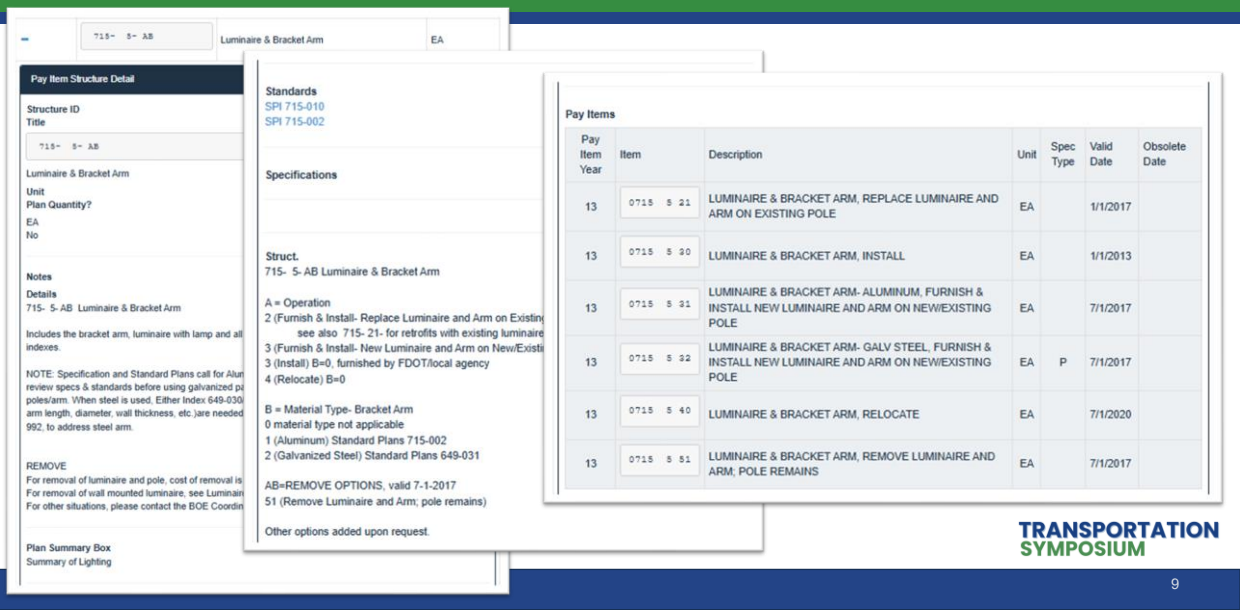
Pay Item Requests



715- 5- AB | Luminaire & Bracket Arm | EA

Pay Item Structure Detail

Structure ID
Title
715- 5- AB
Luminaire & Bracket Arm
Unit
Plan Quantity?
EA
No

Notes
Details
715- 5- AB Luminaire & Bracket Arm

Includes the bracket arm, luminaire with lamp and all
indexes.

NOTE: Specification and Standard Plans call for Alur
review specs & standards before using galvanized pi
poles/arm. When steel is used, Either Index 649-030
arm length, diameter, wall thickness, etc.)are needed
992, to address steel arm.

REMOVE
For removal of luminaire and pole, cost of removal is
For removal of wall mounted luminaire, see Luminair
For other situations, please contact the BOE Coordin

Plan Summary Box
Summary of Lighting

Standards
SPI 715-010
SPI 715-002

Specifications

Struct.
715- 5- AB Luminaire & Bracket Arm

A = Operation
2 (Furnish & Install- Replace Luminaire and Arm on Existin
see also 715- 21- for retrofits with existing luminaire
3 (Furnish & Install- New Luminaire and Arm on New/Existi
3 (Install) B=0, furnished by FDOT/local agency
4 (Relocate) B=0

B = Material Type- Bracket Arm
0 material type not applicable
1 (Aluminum) Standard Plans 715-002
2 (Galvanized Steel) Standard Plans 649-031

AB=REMOVE OPTIONS, valid 7-1-2017
51 (Remove Luminaire and Arm; pole remains)

Other options added upon request.

Pay Items

Pay Item Year	Item	Description	Unit	Spec Type	Valid Date	Obsolete Date
13	0715 5 21	LUMINAIRE & BRACKET ARM, REPLACE LUMINAIRE AND ARM ON EXISTING POLE	EA		1/1/2017	
13	0715 5 30	LUMINAIRE & BRACKET ARM, INSTALL	EA		1/1/2013	
13	0715 5 31	LUMINAIRE & BRACKET ARM- ALUMINUM, FURNISH & INSTALL NEW LUMINAIRE AND ARM ON NEW/EXISTING POLE	EA		7/1/2017	
13	0715 5 32	LUMINAIRE & BRACKET ARM- GALV STEEL, FURNISH & INSTALL NEW LUMINAIRE AND ARM ON NEW/EXISTING POLE	EA	P	7/1/2017	
13	0715 5 40	LUMINAIRE & BRACKET ARM, RELOCATE	EA		7/1/2020	
13	0715 5 51	LUMINAIRE & BRACKET ARM, REMOVE LUMINAIRE AND ARM; POLE REMAINS	EA		7/1/2017	

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Production Submittals

- Submit a well-QC'd Production Package on time
  - Best not to wait for pending items (i.e.: permits, clear letters, etc.)
  - Completeness Report will capture any missing documents
  - Final Plans review will begin while any outstanding documents are collected
- Shipping dates do not change
- When Production submissions are late, less time will be afforded to the Designer to respond to and submit updates for Change Memos

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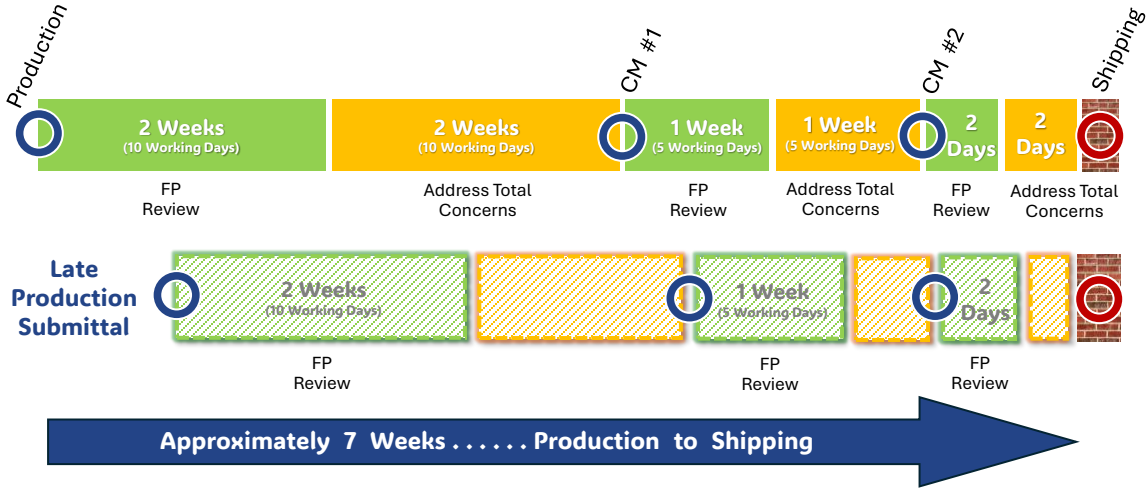
Production Submittals



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The "R" Word.....(Revisions)

- **Revisions:** Changes made to a proposal after acceptance of the PS&E submittal, prior to advertisement.
- **Addendum:** Changes made to a proposal after advertisement, but prior to the letting.

- If the thought is....."*We'll take care of it in a revision*."
  - Change that Culture

- District 4 Process:
  - Draft Revision Package – Review Memo and Information; Submit to **D4-DOFP**
    - Please QC the Revision Memo
  - Final Revision Package – Submit through CADD Support

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ERC Comments and closing the loop

- Comments not being addressed in future submittals
- Consider Operations Centers comments and if needed, schedule a meeting to discuss
- If project is “shelved” for an extended period of time suggest another review prior to production
  - Changed field conditions could lead to construction impacts

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Plan Quantity and major overruns

- Asphalt overruns
  - Missed shapes, turn lanes, areas
  - Project limits leave gaps of pavement
  - Contingency quantity
- Secondary Unit verifications
  - Clearing & Grubbing
  - Lump Sum items
  - Special detours
- Daily items
  - Signal Maintenance and detection and missed intersections
  - Fiber locates
  - Traffic Control Officers
  - Maintenance of Traffic (MOT) devices

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Coordination with Maintenance and Traffic Operations

- Inclusion of Operations Center and District Maintenance during initial scoping
- Determine reoccurring issues
  - Flooding
  - Pavement issues
  - Lighting outages
  - Etc.
- Existing and new ITS
  - Maintenance of Communication plans
  - Impacts to managed lane network
  - Condition and location of fiber backbone
- Maintenance Responsibility during construction
- Traffic Signal Maintaining Agencies

Signalization & Lighting

- Service Point changes and transformers
  - Moving locations of service point
  - Requesting new transformer to provide service
  - Verify service point voltage
    - Is a step-down transformer needed?
- Following maintaining agency requirements
  - Should there be a proprietary product certification?
  - Preferences vs. APL

Signalization & Lighting

- Verify Local Agency will maintain new lights
- Lighting load centers
  - Verify voltage of service

EXAMPLE: Unforeseen Discrepancy Between Planned and Existing Electrical Systems

- Plans specified retrofitting existing light poles to a 220V system, construction team verified that the existing poles and circuits operated at 480V.
- **Total cost due to this plan error is:** $444,875.36
- **Time Extension:** 30 days

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Proprietary Certifications

- Include certifications in bid documents
  - Impacts bidding process
- Device requirements vs. APL
  - Signal System
  - Traffic Management Center
- Software integration and testing

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License Agreements (LA) and Temporary Construction Easements (TCE)

- Needs to be executed prior to letting
  - Contracts that had pending LA or TCE's
  - Potential for additional costs and delays
  - What happens if the property owner says "no"?
- Reach out to construction staff to determine the space needed for the agreements if ensure
- Coordination duration of agreements with construction

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Public Outreach during design and CAP

- Community Awareness Plan (CAP) Level
- Leverage local knowledge with your operations center staff
  - Construction public involvement input
  - Invite construction staff to design open house for support
- Are there hot issues on the corridors?
  - Tree removals
  - Drainage concerns
  - Special events

The Department has determined a Community Awareness Plan ***Level 1*** as being appropriate for the following reasons:

- Project is considered noncontroversial and causes no accessibility impacts.
- Lack of adjacent residential and business communities along the corridor.
- Minimal to no anticipated impacts to the surrounding environmentally sensitive conservation areas associated with the proposed work effort.
- Minimal traffic disruption due to construction activities.

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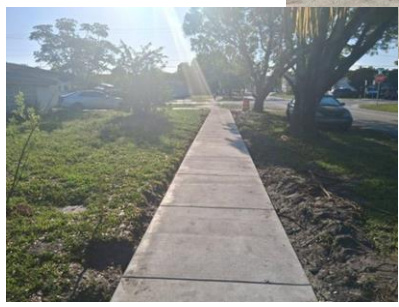
Verifying existing conditions

- Field Survey
  - Sod type
  - Grades
  - Plans reflect field conditions
- ADA Curb ramps
  - Does the ramp fit the location?
  - Direction of walkway
- Tree canopies and root impacts
- Items to be removed
  - Fences
  - Mailboxes
  - landscaping



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Verifying existing conditions

BEFORE CONDITIONS

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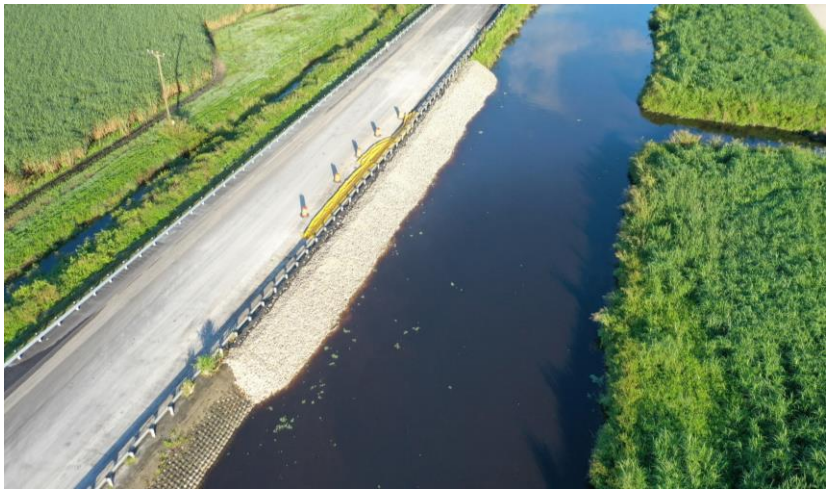
Verifying existing conditions



AFTER

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Utility Work Schedules (UWS)

- UWS Reviews
  - Effects Construction Time Estimates (CTE)
  - Needed early to perform detailed reviews
  - Recommend construction concurrence
- No conflicts when clear conflicts
  - Utilities in drainage cross sections
  - Utility within construction footprint
- Be mindful of all utilities on an existing pole
  - The pole company can't be during construction if other companies are prior to
- UWS phasing does not match MOT phasing!
- One of the biggest impacts in construction program
  - Time & Money

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MOT Plans, lane closure timeframes and contractor work areas

- MOT/TTCP phasing coordination with design and construction staff
  - TTCP should include any temporary striping quantities
- Consider lateral offsets for walls
- Managed Lane Network
  - Ingress/egress locations
  - Tolling impacts
- Work Zones should consider contractor work areas
- Lane closure timeframes and local knowledge
  - Ensuring detours and extended hours are communicated to the public and local municipalities during design
  - Be mindful of location for day and closure timeframes

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Safety Message

2025 National Tire Safety Week:

June 30 -July 4, 2025

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Contact Us

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June 19 - 20, 2025
Hollywood, FL

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Please be sure to **certify your attendance** before leaving this event or no later than **Monday, June 30**, in order to receive PDH/CEC.
Detailed instructions are available on the Transportation Symposium website.

Transportation Symposium Website

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