

Session 6

Rusty Birchall

Cone & Graham, Inc.

Plans Issues - A Contractors Point of View

Topic Description

Contactor's Perspective on Plan and Design Issues

Speaker Biography

Rusty Birchall is a Civil Engineering graduate of Georgia Tech. He has 15 years experience in road and bridge construction in Florida, and has been employed by Cone & Graham for 13 of those years. Major project experience includes I-4, Segment 2 in Hillsborough County, US-19 in Pinellas County, the Lakeland InTown Bypass and the Suncoast Parkway , Section 2.

Session 6

Jeff Nelson

David Nelson Construction

Plans Issues - A Contractors Point of View

Topic Description

Contractor's perspective on plan and design issues

Speaker Biography

Jeff Nelson began his career in construction in the mid 1970's as involuntary labor when his parents began a small construction company doing site work for modular homes. As the company grew and began taking on larger, more complicated projects, he found a love for the challenge and rewards presented by this industry. He joined the family business full time in 1990 after he graduated from the University of Florida, Rinker School of Building Construction and has held his contractors license since 1992. Since then, he has been involved in numerous projects including the widening of US 19 in Pasco County, SR 60 through Brandon, I-275 in Tampa as well as the Marion Street Transit Mall and Bayshore Boulevard. Nelson Construction also does vertical construction and has built Rest Areas, Fire Stations, and the Toll Plazas on the Veterans Expressway and at both ends of the Skyway Bridge.

Session 6

Scott Pittman

Ajax Paving Industries, inc.

Plans Issues - A Contractors Point of View

Topic Description

Contractor's perspective on plan and design issues.

Speaker Biography

Scott Pittman is a Professional Engineer and a Civil Engineering Graduate of the University of Florida currently pursuing his Masters of Engineering. He is currently the Area Manager of the Tampa Division of Ajax Paving Industries, a leading asphalt and road construction contractor in Florida. He has been employed with Ajax for the past 10 years. Right now, he would rather be golfing at Bay Hill.

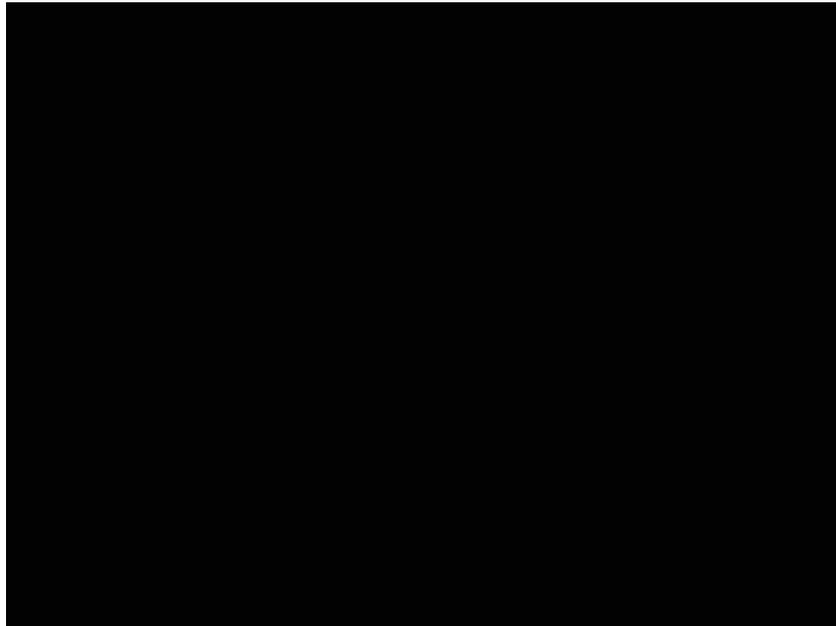


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A Contractor's Point of View on Plan Issues



Contractor's Perspective

- Contractors and Designers just think differently
 - Look at requirements for speakers for the Construction Conference vs. Design Conference

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- Designers/Engineers tend to be more structured and rigid in the thought process (mathematical)
- Contractors tend to be less structured

- Designers/Engineers tend to be process driven (look at all manuals you have to follow)
- Contractors tend to be more result driven



- Designers/Engineers are “Professionals” and are expected to produce a “perfect” set of plans
- Contractors are expected to build a “perfect” job

- However, our perceptions of “Perfect” are different-
 - Designers/Engineers define perfect as-
 - No conflicting notes
 - Method of payment is clear
 - All of the math makes sense
 - All of the procedures are followed
 - It is constructible
 - All of the possible eventualities are covered
 - Everything has to be “perfect”

- Contractor's define perfect as-
 - It rides nice
 - It looks nice
 - It drains nice
 - It functions as intended
- Now that's the perfect job!

- Contractors DO NOT expect the designers to be perfect, because we know we're not
- Nobody is
- There has never been a perfect set of plans
- There has never been a perfect estimate

- We DO expect to be treated fairly when there is a conflict or an ambiguity
- If we're talking about it during construction, odds are-
 - we didn't catch it in our bid, or
 - we thought our interpretation was pretty clear

- If it had been clear, it would have been in our bid and the owner would have paid for it
- If it's not clear, it shouldn't be expected to come out of our pocket

- A biddable set of documents is the culmination of months or even years of hard work and review
- Contractors only have a few days or weeks to review the documents for pricing purposes; not for constructability errors or design issues

- The FHWA's project management manual on claims and disputes says a bidder has a limited amount of time to review and interpret the documents so they need to be as clear as possible
- It is incumbent upon the drafter of the documents to be as clear as possible, they have years and opportunity to do so

- Because the contractor has no input into the development of the documents, he gets to be the interpreter of the documents
- As long as a Contractor's interpretation is reasonable, then his interpretation is given the greatest weight in a dispute

- Here's a situation where someone did not interpret a situation correctly



- We are the only reviewers not being paid to review the documents
- Our obligation is to report errors when we find them, not to seek them out

- Designers think- “Some of these errors could be caught if contractors spent more time reviewing the plans”
 - but in most cases we just don’t have time
- Consider the dilemma of a mid-size contractor who identifies a need to pick up about \$20M in work

- Upcoming Bid Schedule (20 bids)
 - 1st- Airport project (\$10M)
 - 3rd- City of Tampa (\$13M)
 - 5th- Pinellas County (\$17M)
 - 6th- Private developer (\$3M)
 - 8th- Hillsborough County (\$7M)
 - 10th- Housing Authority (\$14M)
 - 14th- 2 bids- Private developer (\$5M)
 - 15th- 2 bids- Pasco County (\$17M) and Private developer (\$3M)
 - 18th- 2 bids- School Board (\$7M) and Port Authority (\$12M)
 - 19th- 3 bids- DOT (3 projects approx \$20M)
 - 22nd- City of Clearwater (\$7M)
 - 24th- City of St. Pete (\$3M)
 - 27th- 2 bids- City of Largo (\$2M) and City of Bartow (\$1.5M)
 - 29th- Hillsborough County (\$14M)

- Since a contractor typically only gets about 10% of what they bid, they have to have backup plan
- He will rank the jobs and target several of those as his “most favored projects” where he will get the most aggressive on
 - either he likes the owner or the main type of work is his specialty.
- If he had his choice he would have the jobs bid in the order of his preference.

- Upcoming Bid Schedule (20 bids) Preferred projects
 - 1st- Airport project (\$10M)
 - 3rd- City of Tampa (\$13M)
 - 5th- Pinellas County (\$17M)
 - 6th- Private developer (\$3M)
 - 8th- Hillsborough County (\$7M)
 - 10th- Housing Authority (\$14M)
 - 14th- 2 bids- Private developer (\$5M)
 - 15th- 2 bids- Pasco County (\$17M) and Private developer (\$3M)
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 - 29th- Hillsborough County (\$14M)

- Upcoming Bid Schedule (20 bids)
 - 1st- Airport project (\$10M)- *low bidder of 4 (\$12M)*
 - 3rd- City of Tampa (\$13M)- *2nd of 5*
 - 5th- Pinellas County (\$17M)- *3^d of 4*
 - 6th- Private developer (\$3M)- *don't know for 2 to 4 weeks*
 - 8th- Hillsborough County (\$7M)- *3^d of 5*
 - 10th- Housing Authority (\$8M)- *5th of 7*
 - 14th- 2 bids- Private developer (\$5M each)- *won't know*
 - 15th- Pasco County (\$17M)- *low bidder of 4 (\$17M) –*
 - Private developer (\$3M)- *won't know*
 - 16th- Airport calls- *over-budget; rejecting bids*
 - 17th- estimator goes to hospital

- Upcoming Bid Schedule (20 bids)
 - 18th- School Board (\$7M) and Port Authority (\$12M)- *pass to go after DOT*
 - Which one?
 - What if I pick the one everybody else picked to bid on?
 - I need to bid all three in hopes of getting one
 - What's my bonding agent going to say when I ask him for \$60M in bonds all in one letting?
 - What's he going to say if I get all three?
 - 19th- DOT (\$28M) *low and only but over budget; probably won't get awarded*
 - DOT (\$18M) *2nd out of 2*
 - DOT (\$17M) *2nd out of 2*

- 20th developer calls, permits are in on job you bid 6 weeks ago and he wants a building pad in 2 weeks
- 21st- Pasco County called; 2nd bidder protested, so all bids are being thrown out to avoid lawsuit
- 22nd- City of Clearwater (\$7M) 3^d of 5
- 24th- City of St. Pete (\$3M) 5th of 6
- 27th- City of Largo (\$2M) 5th of 7
- 27th- City of Bartow (\$1.5M) 5th of 5
- 28th- City of Tampa called about bid on 3rd, low bidder made a mistake so they are awarding job to you
- 29th- Hillsborough County (\$14M)- *can't bid because did not get time to review*
- 30th - Estimator shows up drunk in his underwear and quits

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- That is why we don't look at the plans as thoroughly as you might like
- Or, we tend to submit our questions at the last minute
 - Also, you don't want us to submit our questions 1 at a time
 - We don't want to ask a dumb question, we keep looking to see if the answer is buried in the plans

- So how can a contractor look at all of that work and put out a number he feels comfortable with?
- Unit Price Bidding
- But the single biggest thing is:

- **Consistency
in Plan
Preparation**

- The Specs are the same from job to job
 - Any changes to these are generally well called out in plan notes
- What's to be included in each unit price generally stays the same

- When things deviate from this consistency is when we start to have conflicts and arguments
- When notes get buried in the back of plans instead of upfront they tend to get missed

- Whenever possible, don't change what's to be included in a given unit price by plan note when a separate pay item is more appropriate

– For example, don't include the cost of a \$60k weir wall in the cost of the structures by saying "cost of all skimmers to be included in the cost of the structures"

- 100+ structures and only 3 have skimmers
- Those 3 all have different pay items (3 of 20)
- Calling the weir wall a "skimmer" doesn't make it one
- Where do we put the money for this assuming we catch it?

– Another example is the inclusion of the cost of truncated domes in the cost of the sidewalk

- Difficult to tell how much is at each ramp
 - how do you takeoff and price?
- Difficult to renegotiate price when design changes several times through the life of the project
 - i.e. “how much did you include in the cost of the sidewalk for the domes?”
- When any sidewalk is added, owner pays portion for truncated domes when there isn't any

• If you have to include something in another bid item, please quantify it

- Give us a baseline to include in our bid
 - MOT does for temp paving

MOT pay item

A 2102-1

PAY ITEM FOOTNOTES

INCLUDES ALL ITEMS FOR MAINTENANCE OF TRAFFIC NOT INCLUDED FOR PAYMENT UNDER SEPARATE ITEMS. INCLUDES ALL COSTS OF RESTORING TO ORIGINAL CONDITION ALL AREAS WHICH ARE DAMAGED BY THE DIVERSION OF TRAFFIC DURING MAINTENANCE OF TRAFFIC. INCLUDES APPROX. 13 485 M2 OF TEMPORARY ASPHALT PAVEMENT, 551 M2 OF TEMPORARY ASPHALT SIDEWALK, 149.1 M OF TEMPORARY PIPE, 4 TEMPORARY DRAINAGE STRUCTURES, AND 10 TEMPORARY DRAINAGE STRUCTURE TOPS. INCLUDES COST OF TEMPORARY PAVING OF COMMERCIAL DRIVEWAYS, AS DETERMINED BY THE ENGINEER.

- 13,485 m2 temp asphalt pavement
- 551 m2 temp asphalt sidewalk
- 149.1 m temp pipe
- 4 temp drainage structures
- 10 temp structure tops
- However,
 - "Includes cost of temporary paving of commercial driveways, as determined by the Engineer"
 - How do we price that?

Clean existing structures

- This note was on a 5 mile, lump sum project

2) EXISTING DRAINAGE STRUCTURES WITHIN THE CONSTRUCTION LIMITS SHALL BE CLEARED OR REPLACED IF NECESSARY. ALL OTHER DRAINAGE STRUCTURES SHALL REMAIN UNLESS OTHERWISE NOTED.

- "Existing structures within the construction limits shall be cleared or replaced if necessary"
 - Who decides what is necessary?
 - How do we price this unknown?
 - Contractor is likely to put money in to clean all of them and may only do half; State is paying for work that is not happening

Lighting maintenance

8. ANY DAMAGE DURING CONSTRUCTION TO THE LIGHTING SYSTEM, SURVEILLANCE SYSTEM AND/OR CALL BOX AIDE SYSTEM WILL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST.

- "Any damage during construction to the lighting system shall be repaired or replaced by the contractor at no additional cost"
- This is often interpreted as maintenance
- How does the contractor know how many lights are going to burn out?

- Lump Sum Clearing and Grubbing-
 - Tell us what thickness to expect for removal of existing asphalt
 - Even if you don't know the asphalt is 26" deep, neither do we; your guess is as good as ours
 - If you say "assume 6" average depth" there will be a fair baseline for all bidders

- Regular Excavation or Embankment-
 - when you say “unsuitable material is likely to be encountered” and included in this unit price, give us an approximate quantity

- Remember, we are awarded work based upon the low bid
- Absent any reason to expect otherwise, we have assume the best otherwise we’ll never get work

- Imagine how many arguments could be avoided if an anticipated quantity were provided

- The first question the FDOT asks is "how much did you include in your bid?"
 - And it's never the right number
- If there is going to be a dispute, let's establish a baseline for our disagreement up front

- This new method of Dispute Resolution is not likely to catch on



- There's three main reasons contractors ask questions
 - Something doesn't make sense
 - Something contradicts something else
 - Something is changed and doesn't seem right

- Although we may not review the plans as closely as you may like, when we do ask a question, please answer it appropriately
- Don't say "Bid it as you see it"
 - Eventually there will be a battle and most likely a DRB hearing over this issue
 - A little effort now will save everyone a lot of trouble later

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- Some recent questions and responses-

- Question: The pay item 102-104-1 Temp Signals Portable, the quantity is only 6, this is not correct.

- Answer : It appears to be a plan error. 102-104-1 is an ED Item and should have days included for quantity.

- Bid quantity was not corrected

- Question: There is no pay item for TYPE B Stabilization. Stations 341+50 to 362+00 show complete reconstruction with Type B Stabilization.

- Answer: Due to the oversight of the Designer, the pay item for the Type B Stabilization was omitted. Please keep this in mind when bidding this job.

- Where do we put the money for this?

- Question: ... it appears that we are to connect a new 8" line into an existing 6" line. It is highly unusual to connect two different size gravity sewer lines without a structure. If this is correct, is there a detail as to how you want this done? It is even more unusual to flow a larger pipe into a smaller pipe. Is this correct?
- Answer: There is no detail.
- Follow up question: Ok, then what are we to bid on?

- Question: Item 0180 72 SUBBASE STABILIZED (6"), 0285715 BASE OPTIONAL (BASE GROUP 15), 0522 1 SIDEWALK CONC (4" THICK) have no associated specification and/or measurement and payment section. We can assume these are for restoration of areas disturbed by the installation of the ...utilities, but the specifications never actually say that. If that is what they are for, then the question arises what are the pay limits and how were the quantities arrived at?
- Answer: (SY), (SY), (SY)
- Follow up question: Is our assumption correct? Are there pay limits? How were the quantities arrived at? Is the restoration to be paid for in the cost of the pipe or under these pay items?
- Follow up answer: none

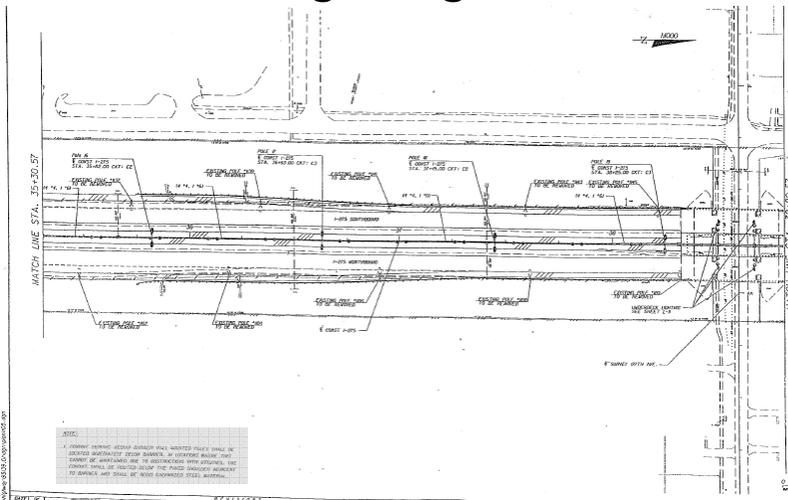
- In the contractor's mind, the current system for answering questions is not working. That much is clear. We need to come up with a better system. You should want to answer questions. It is to everyone's benefit to have questions resolved PRIOR to bid!

- When a contractor sees an unusual note, he assumes it is there for a reason
 - Why ask a question when it is "clear what the intent is?"
 - Consider the following notes:

17. ALL EROSION CONTROL ITEMS ARE TO BE REMOVED AT THE COMPLETION OF THE PROJECT BY THE ENGINEER.

- "All Erosion Control items are to be removed at the completion of the project by the Engineer"

Interstate lighting

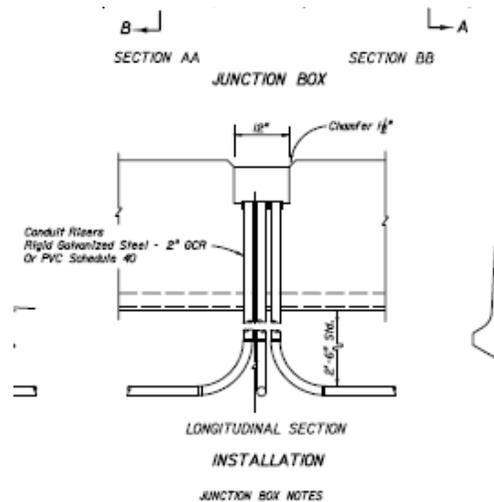


NOTE:

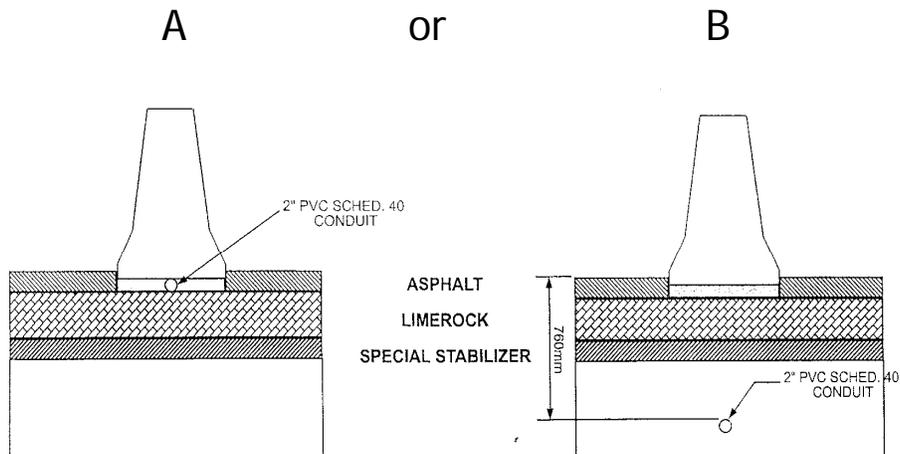
1. CONDUIT SERVING MEDIAN BARRIER WALL MOUNTED POLES SHALL BE LOCATED IMMEDIATELY BELOW BARRIER. IN LOCATIONS WHERE THIS CANNOT BE MAINTAINED DUE TO OBSTRUCTIONS WITH UTILITIES, THE CONDUIT SHALL BE ROUTED BELOW THE PAVED SHOULDER ADJACENT TO BARRIER AND SHALL BE RIGID GALVANIZED STEEL MATERIAL.

- "Conduit serving median barrier wall mounted poles shall be located **immediately below** barrier."
 - This note appeared 29 times in the plans

Standard Index



Which conduit is "Immediately Below the Barrier wall"?



- Contractor chose option "A" and started work
- The CEI chose option "B" and stopped the work
 - directed the work that had been done, removed and conduit buried
- The DRB chose option "A"
 - Cost the Department 90 days and about \$350k

- Contractor was not asking for additional money to build option "A"
- The designer had no idea this dispute was going on had no problem with option "A"

- If the designer had been involved in the progress meetings, and assuming the Department would have allowed him to have the authority to accept option "A", there would have been no dispute nor additional cost to the owner

“Relocate Existing Sign”

- Relocate to where? How do you move this?
 - Move it back or down the road to the other entrance
- The 28 ea “SIGN EXISTING (RELOCATE) (SINGLE POST)” were clearly marked in the plans
- So was the 1 “SIGN PANEL (RELOCATE)”
- What is the scope of this work and where does the contractor put the money for this?

- Other design issues-
- Better investigate existing conditions
 - Do more surveying during the design phase
 - It will save money during the construction phase

- Utility and JPA work seems to be where most of the conflicts arise
- Contractors would love to see more money spent up front on utility investigation
 - There seems to be a mindset that it is cheaper to make the contractor fight to recover unforeseen costs in a claim than to have them include them in their bid by identifying issues up front
 - This may be one reason there are less bidders on FDOT projects lately

- Provide better Geo-Tech data, particularly for utility work and signalization
- Make the JPA's follow the PPM
 - They are supposed to in the agreement
 - But they never really do
 - They usually include the cost of unsuitable removal and temporary sheeting in the If price of the pipe
 - Require JPA utilities to conform to FDOT specifications for applicable items.

- Make the JPA's look at the MOT plan for constructability issues
 - Are there enough valve's to allow construction in accordance with the MOT plans
 - Don't tell the contractor that if he needs to add valves to construct it per MOT that is at his cost
 - Use more directional bores when possible

- Don't combine projects by different designers
 - Different intent
 - Different methods of payment
 - Off duty law-enforcement
 - Different pay items for same work
 - Missing pay items

- Check final quantities and pay items against final plans to ensure all changes in plans are reflected in pay items so there are not unneeded pay items or quantities at bid time

- Better, more thorough constructability reviews
 - We can't place 14" of asphalt in 2" lifts during a 6 hour lane closure

- Night work only where needed
 - Risky and bad for morale
 - Requires additional management which costs money and resources
 - Less time for performance
 - Lower production rates
 - More difficult to achieve desired quality
 - Given the choice between a night job and a day one, most contractors will choose the day one

- When possible, spell out the designer's intent about why something may be called to be done in an unorthodox way
 - Sometimes we see things and wonder "what was he thinking" and there may be a perfectly logical explanation for it

- We need better communication
 - We don't always hear what was actually said





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