# Plans Reviewer Training

Rob Quigley

# Agenda

- Who?

- What?

- When?

- Where?

- Why?

- How?

**Plans Review**

# Agenda

- Why? -     Objectives, Background & Overview

- Who? -     Roles & Responsibilities

- What? -    Things to Know prior to Review

- When? -    Production & Review Schedules

- Where? -  Review Tools & Resources

- How? -     Review Criteria, Expectations & Guidelines

# Agenda

- **Why?**

  - Who?

  - What?

  - When?

  - Where?

  - How?

# Why?

- Training Objectives

- Background

- Overview

# TRAINING OBJECTIVES

- **Bring consistency and efficiency to the overall review process**
  - By Preparing Reviewers to review submittals

  - By Providing Reviewers an understanding of the Review Process

  - By Providing Guidance & Best Practices

  - By Preventing/avoiding/minimizing unnecessary expenditure of time and money on comments

OBJECTIVES

# WHY is this important???

- Every comment made causes the Department and the Consultant to spend:
    - Time
    - Money
    - Resources
    - Effort

    *(…so beware of comments that don't add value!*)

- Non-value added comments become expensive and can impact production

- Everyone must understand their role in the review process… and understand that the EOR is ultimately responsible for the final product

# Training Objectives

- **Bring consistency and efficiency to the overall review process... by eliminating comments that are:**

  - Redundant
  - Editorial/Format QC
  - Inappropriate
  - Incomplete
  - Preferential
  - Untimely
  - Unphasely
  - Untrackable
  - Unnecessary
  - Uncoordinated
  - Un-understandable

  - Sarcastic
  - Repeating Standards or Specs
  - Outside the scope of the review
  - Outside the scope of work
  - Outside the scope of services
  - Cover too many issues
  - Non-value-added
  - Non-specific
  - Too Broad/General
  - Repetitive
  - Redundant

# So… why are we here???

# Because of the Comments

- "None of your pay items show quantities." (@ Phase 2 Review)

- "Please make sure to deliver your Project with the correct digital delivery format."

- "All of my comments are in the attached document."

- "All of the 'ROAD WORK AHEAD' signs for the side streets on the north side of the road are upside down. Please revise."

- " 'F.D.O.T.' should be 'FDOT'.  Fix everywhere."

- "Have you considered shifting the alignment to widen to the left instead of the right?" (@ Phase 3 Review)

**WHY?** **Because of the Comments**

- "Add the following plan note to emphasize FDOT Specification xxx-x…"

- "The project is on a bus route."

- "Plans look great."

- "I have the same comment as I had last time."

- "The proposed ditch profile doesn't match the existing ditch profile."
  (@ Phase 3 on a job to add a ditch where there is no existing ditch)

**WHY?** **Because of the Comments**

- "The sign on Sheet S-8 is about as beneficial as throwing a rock at a tiger!"

# BACKGROUND

- PLANS REVIEW STUDIES presentation by District 4 Program Management at the Executive Workshop (2/2015)

- Plans Review Process studies (2012 - 2015)

# Background

- PLANS REVIEW STUDIES Executive Workshop presentation addressed:
  1. Plans Review Comments Database Report
  2. Initial Engineering Design - Plans Review Process Study
  3. Plan Review Comment Analysis

# Background

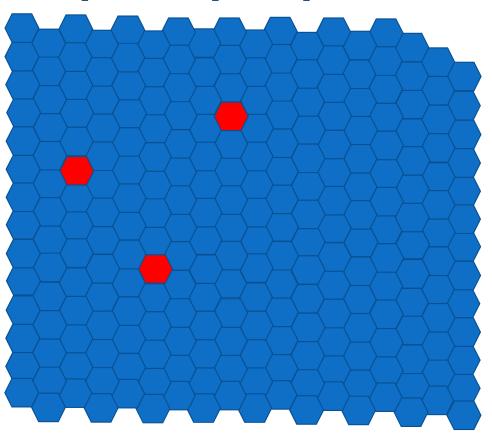## 1. PLANS REVIEW COMMENTS DATABASE REPORT

- Reviews from September 1996 thru January 1998

- Final Plans Review in District 4

- At Phase IV/Production - Design related comments were 29% of the total comments

# Background

**2. INITIAL ENGINEERING DESIGN-PLANS REVIEW PROCESS STUDY**

- Reviews from 2000 and 2001
- Conducted by Central Office Roadway Design
- Identify opportunities for improvement in the current plans review process.
- 85% of the engineering comments were made by seven primary functional areas
- 40% of the Phase I and Phase II review comments related to engineering.
- Only 3% of engineering comments resulted in plan changes

# ... put in perspective...

# Background

## 3. PLAN REVIEW COMMENT ANALYSIS

- Reviews from 2013 and 2014 for Districts 1 and 4

- Analysis to investigate the effectiveness of current review processes

- Recommended
  - District to clearly document reviews and **train reviewers**
  - Only one set of comments comes from each group
  - Comment category should be based on the technical area of the review, not the group the reviewer is from
  - Additional training /documentation regarding what comments are appropriate during each project phase

# Background

**Recommendation:**

Identify a Task Team to review and implement the improvements suggested

**Innovators:**

Innovation List Item #32:
"Cut all Audit Functions in half
– Plans Reviews, Part 1"



**Result:**

Formation of Plans Review Task Team

That's why we are where we are now…

…but to get where we're going, we need to know: why do we even need to review submittals?

**OVERVIEW**

- Why do we even need to review submittals?

**WHY?**

# Purpose of Reviews

- Subsection 20.23(3)(a), Florida Statutes requires a Quality Control Process.
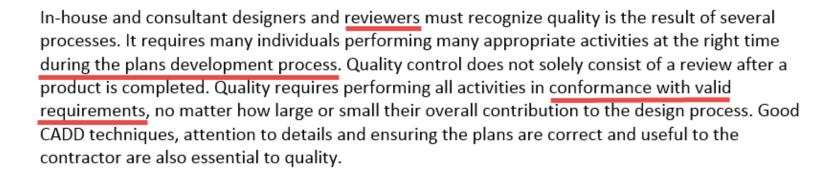
(3)(a)   The central office shall establish departmental policies, rules, procedures, and standards and shall monitor the implementation of such policies, rules, procedures, and standards in order to ensure uniform compliance and quality performance by the districts and central office units that implement transportation programs. Major transportation policy initiatives or revisions shall be submitted to the commission for review.

**WHY?** # Purpose of Reviews

- FDOT Design Manual states:
  - Each District shall have a **District Quality Control Plan** (Pt1 Ch124)
  - Each Project shall have a **Project Quality Control Plan** (Pt1 Ch124)

In-house and consultant designers and reviewers must recognize quality is the result of several processes. It requires many individuals performing many appropriate activities at the right time during the plans development process. Quality control does not solely consist of a review after a product is completed. Quality requires performing all activities in conformance with valid requirements, no matter how large or small their overall contribution to the design process. Good CADD techniques, attention to details and ensuring the plans are correct and useful to the contractor are also essential to quality.

**WHY?**

# Purpose of Reviews

- FDOT Design Manual also states:
  - About Reviewers (Pt1 Ch120):
    - **making timely decisions**
    - **confirm that the requirements have been met**
    - **transfer technical information**
    - **confirming the project objectives**

  - About the EOR (Pt3 Ch301):
    - **The technical accuracy** required for the design **is the responsibility of the Engineer of Record.**



FDOT DESIGN MANUAL
DEVELOPMENT AND PROCESSES
TOPIC 625-000-002
JANUARY 2018

**WHY?**

# Purpose of Reviews
## What they are for:

Reviews are conducted to ensure:

- Project scope is met

- We get what we pay for

- Expectations met

- Department standards and criteria followed

- Compliance with other requirements (like permits, ADA)

- Clarity, consistency and functionality

- Biddability

- Constructability

- Quantities & calculations are reasonable/accurate

- Quality

**WHY?**

# Purpose of Reviews
## What they are **NOT** for:

They're NOT for:

- doing an editorial check for format & spelling

- incorporating personal preferences

- redesigning the project

- making first review at last submittal

- focusing on other discipline issues

- adding plan notes that repeat Standards or Specs

- breaking your personal record for most comments made in a phase review


- **For example....**

**WHY?** Purpose of Reviews

*A Health Inspector walks into a bar…*

*…(or a restaurant)…*

*…to review how the establishment follows health codes for:*

**WHY?** # Purpose of Reviews

- *Cleanliness*
- *Food Preparation*
- *Food Storage*
- *Food Service*
- *Other code violations*

Employees must wash hands before returning to work. Guests are encouraged to wash hands as well. ☺

**WHY?** # Purpose of Reviews

*The inspector is NOT there to comment on:*
- *Spelling errors on the billboard*
- *Mistakes on the menu*
- *Word spacing issues on the sign*

**WHY?**

**"But what if, after a cursory review, I see a bunch of format mistakes or typos???"**

- Notify the FDOT Project Manager
- The PM can:
  - request QC review documentation
  - document concerns on the Consultant Quality Evaluation
  - reject submittal

# Agenda

- Why?

- **Who?**

- What?

- When?

- Where?

- How?

# Who?

- Project Team Roles & Responsibilities

**WHO?** ▶ Project Team

- FDOT Project Manager (PM)

- Plans Reviewer / Lead Reviewer

- Engineer of Record (EOR) / Design PM

**WHO?** # FDOT Project Manager (PM)

- Responsible for **Ensuring:**
  - Submittal properly loaded into the ERC system
  - Submittal package is complete
  - Consultant performed Quality Control
  - Review team includes appropriate individuals
  - Review team members are providing timely input
  - EOR responds to all plan review comments

**WHO?** FDOT Project Manager (cont.)

- Responsible for **Coordinating**:
  - Submittal review effort and timeline
  - Repetitive or conflicting comments
  - Non-value added comments
  - Interdisciplinary issues
  - Rejected responses with reviewer and EOR
  - Closure of comments prior to the next phase

**Roles & Responsibilities**

**WHO?** Plans Reviewer

- **Train** - complete this training
- **Accept** - own this responsibility
- **Understand** - get to know the project
- **Plan** - budget time for reviews
- **Review** - conduct a timely review
- **Coordinate** - discuss issues with other reviewers
- **Comment** - make good comments
- **Submit** - prior to comment deadline
- **Resolve** - accept/reject comment responses
- **Discuss** - go to FDOT PM on rejected responses
- **Verify** - ensure comments were addressed

## WHO? Discipline Lead Reviewer

- **Build** - assign reviewers to unit review team
- **Train** - ensure discipline review staff are trained
- **Coordinate** – discuss issues with PM and other disciplines
- **Filter** - review comments within unit
- **Consolidate** - submit comments as a unit
- **Monitor** - oversee discipline reviewers and their progress

**Roles & Responsibilities**

**WHO?**

# EOR / Design PM

- **Designs** the project
- **Performs** Quality Control
- **Prepares** the submittal
- **Communicates** anything special about the submittal
- **Reviews** comments and provides responses
- **Coordinates** with FDOT PM on comment resolution
- **Implements** the agreed upon changes from comments
- **Accepts** responsibility for the design

# Agenda

- Why?

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- **What?**

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# Things to Know

- Plans Development Process

- Project Information

- Quality Assurance / Quality Control

- Submittal Requirements

**WHAT?** # Plans Development Process

## 1 – 2 – 3 – 4

- 30% Plans
- 60% Plans
- 90% Plans
- 100% Plans
- Final Plans

- Phase 1 Plans
- Phase 2 Plans
- Phase 3 Plans
- Phase 4 Plans
- Final Plans (PS&E)

- Initial Plans
- Constructability
- Biddability
- Plans Complete
- Production Complete

And remember…

➥ Account for reduced number of submittals

➥ Except for the last submittal, the plans are **Incomplete**

**WHAT?** Project Information

Scope of Work

- What is the Project Purpose and Need?
- What is the expected end result?

Scope of Services

- What will the Consultant need to do?
- What submittals are required?
- What deliverables are required at each submittal?

- *What about Design/Build (D/B) Projects?*
  - *Request for Proposal (RFP)*

**WHAT?** Project Information

Scope Creep
- What is it ?
- What can you do to prevent it?

**WHAT?**

# Quality Assurance

- **What is Quality Assurance?**
  - **Quality Assurance** (QA) is the planned, coordinated and continued activities performed to **measure** processes **against predetermined critical requirements.** (FDM, Pt1 Ch124)

- **What is the District Quality Assurance Plan?**
  - Where do you find it?
  - What is in it?
  - How does it apply to you?
  - What are the Phase submittal expectations?

**WHAT?** # Quality Control

- **What is Quality Control?**
  - **Quality Control** (QC) Quality Control is the **process performed to ensure conformance with valid requirements**. This process includes quality planning, training, providing clear decisions and directions, constant supervision, **immediate review of completed activities for accuracy and completeness**, and documenting all decisions, assumptions and recommendations. (FDM, Pt1 Ch124)

- **What is the Project Quality Control Plan?**
  - Who prepares it?
  - Where do you find it?
  - What is in it?
  - How does it apply to you?
  - What are the Phase submittal expectations?

**WHAT?** # Submittal Requirements

- Knowing what should be in a submittal will help you know what to comment on

- Scope of Services outlines submittals and deliverables

- Project Quality Control Plan outlines submittals

- Discipline specific requirements

- FDOT Design Manual (FDM) Pt3 Ch301 gives some guidance on what should be in each plan submittal

**WHAT?**

### Table 301.2.1 Summary of Phase Submittals

*Provide the sheets listed as applicable*

| ITEM | PHASE I | PHASE II* | PHASE III | PHASE IV |
|---|---|---|---|---|
| Key Sheet | P | P | C | F |
| Signature Sheet | | P | C | F |
| Summary of Pay Items | | P | C | F |
| Drainage Map | P | P | C | F |
| Interchange Drainage Map | P | P | C | F |
| Typical Section | P | C | C | F |
| Summary of Drainage Structures | | P | C | F |
| Optional Materials Tabulation | | P | C | F |
| Project Layout | P | C | C | F |
| Project Control | P | C | C | F |
| Roadway Plan-Profile | P | P | C | F |
| Traffic Monitoring Site | | P | C | F |
| Special Profile | P | P | C | F |
| Back-of-Sidewalk Profile | P | C | C | F |
| Interchange Layout | P | P | C | F |
| Ramp Terminal Details | | P | C | F |
| Intersection Layout/Detail | P | P | C | F |
| Drainage Structures | | P | C | F |
| Lateral Ditch Plan-Profile | | P | C | F |
| Lateral Ditch Cross Section | | P | C | F |
| Retention/Detention Ponds | | P | C | F |
| Cross Section Pattern | | P | C | F |
| Roadway Soil Survey | | P | C | F |
| Cross Sections | P | P | C | F |
| Stormwater Pollution Prevention Plan | | P | C | F |
| Temporary Traffic Control Plans | P | P | C | F |
| Utility Adjustments | | P | C | F |
| Selective Clearing and Grubbing | | P | C | F |
| Developmental Standard Plans | | C | C | F |
| Mitigation Plans | | P | C | F |
| Miscellaneous Structures Plans | | P | C | F |
| Signing and Pavement Marking Plans | | P | C | F |
| Signalization Plans | | P | C | F |
| Intelligent Transportation System (ITS) Plans | | P | C | F |
| Lighting Plans | | P | C | F |
| Landscape Plans | P | P | C | F |
| Utility Work by Highway Contractor Agreement Plans | | | C | F |
| Summary of Quantities | | | C | F |
| Toll Facility Plans | | | | |
| Site/Civil | P | P | C | F |
| Architectural | P | P | C | F |
| Structural | P | P | C | F |
| Electrical | | P | C | F |
| Mechanical | | P | C | F |
| Plumbing | | P | C | F |
| Communications | P | C | F | |
| Systems | | P | C | F |

**Status Key:**    P - Preliminary     C - Complete but subject to change     F - Final

*\* Projects with structures plans component must submit the latest set with the 60% roadway submittal.*

## FDOT DESIGN MANUAL
### PLANS PRODUCTION
TOPIC 625-000-002

**FDOT**

**JANUARY 2018**

# Agenda

- Why?

- Who?

- What?

# When?

- Where?

- How?

# When?

- Production & Review Schedules
  - Project Schedule
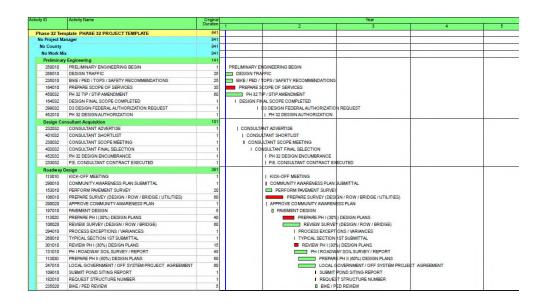  - Review Schedule

**WHEN?** # Project Schedule

- What is the Project Schedule?
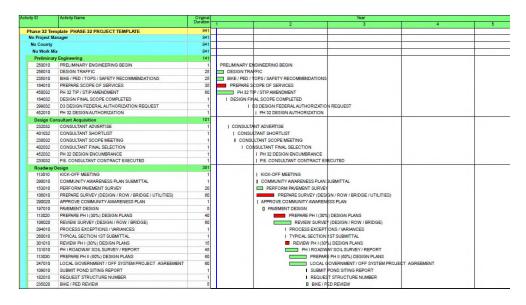
**WHEN?** # Project Schedule

- When are the phase submittals for this project?
- When are the submittal dates for other deliverables?
- When is the next submittal and what is expected?

**WHEN?** # Project Schedule

- At what point in the Project Schedule are the plans?
- What **should/shouldn't** be in this submittal?
- What deliverables are complete or due soon?
- What should you / shouldn't you comment on?

**WHEN?**

# Review Schedule

- What is the Review Schedule?
  - What is the review timeframe?
  - What are the review deadlines?

**WHEN?** # Review Schedule

- When is a submittal expected in ERC?

- When should you begin your review?

- When should you complete your review?

- When are your comments due in ERC?

- Budget review time accordingly (DON'T PROCRASTINATE!)

- Allow time for coordination and communication

**WHEN?** # Review Schedule

- Submittal → Review → Respond → Resolve → Close

- Review Timeframe is generally:
  - 20 business days for comments
  - 20 business days for responses
  - 5 business days for acceptance/follow up/rejection of comments
  - 5 business days for final acceptance and closure of comments/responses

- Review schedule requirements may vary by project

# Agenda

- Why?

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- **Where?**

- How?

# **Where?**

- Review Tools & Resources

**WHERE?** Tools & Resources

- ERC
- PSEE
- Scope
- Schedule
- Criteria
- Standards
- Specifications
- Policies
- Procedures
- Rules

- Statutes
- Field Reviews
- Video Log
- Project Reports
- R/W Maps
- GIS
- Value Engineering Study
- Risk Register
- Notes to Reviewer
- RFP (D/B projects)

➡ Anything else?
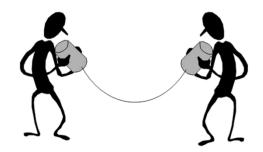
**WHERE?** # Reviewer Tools

- What tools should you be able to use as a reviewer?

  - Electronic Review Comments (ERC) System - https://fdotwp1.dot.state.fl.us/ElectronicReviewComments/

  - Project Suite Enterprise Edition (PSEE) - http://fdotwp2.dot.state.fl.us/ProjectSuiteEnterpriseEdition/Pages/Home/Home.aspx

## WHERE? Communication Tools

- What Communication Tools do you have at your disposal?
    - Talking in-person
    - Phone
    - Email
    - Teleconference / Online Meeting
    - ERC

- How should you communicate issues, questions or concerns?

**WHERE?** Notes to Reviewer

NOTES TO REVIEWER
==================

1. AFTER THE PHASE I (30%) SUBMITTAL, A CHANGE WAS MADE TO THE TCP CONCEPT FROM PROVIDING TWO LANES OF TRAFFIC IN EACH PHASE, TO PROVIDING FOUR LANES OF TRAFFIC IN EACH PHASE. THIS CONCEPT IS SHOWN IN THE TRAFFIC CONTROL PLANS. FURTHER DETAILS WILL BE ADDED THROUGHOUT THE DESIGN PROCESS.

2. REGULATORY DOCUMENTS HAVE BEEN SIGNED AND APPROVED TO INCREASE THE SPEED LIMIT FROM 45 MPH TO 55 MPH BEGINNING 1000' EAST OF BRICKYARD ROAD (CMP 12.502) UP TO THE OCHLOCKONEE RELIEF BRIDGE. THIS CHANGE IS SHOWN ON THE TYPICAL SECTION AND THE SPEED LIMIT SIGNS ARE SHOWN IN THE SIGNING AND PAVEMENT MARKING PLANS.

3. BUFFERED BIKE LANES ARE CURRENTLY BEING DISCUSSED WITH THE DEPARTMENT, AND THE FINAL DECISION WILL BE REFLECTED IN THE PHASE III (90%) SUBMITTAL.

4. ADDITIONAL SOIL BORINGS WILL BE INCLUDED IN THE PHASE III (90%) SUBMITTAL FOR THE PROPOSED TURN LANES LOCATED AT THE OCHLOCKONEE POINTE APARTMENTS AND OCHLOCKONEE RIVER BOAT RAMP.

| | REVISIONS | | | | STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION | | | | SHEET NO. |
| DATE | DESCRIPTION | DATE | DESCRIPTION | | | | | | |
| | | | | | ROAD NO. | COUNTY | FINANCIAL PROJECT ID | NOTES TO REVIEWER | 1A |

# Agenda

- Why?

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- **How?**

# How?

- Review Criteria, Expectations & Guidelines: Commenting

**HOW?**

# Commenting

- Value-Added / Non-Value Added
- Phase Appropriate Comments
- Specialty Comments
- Off-specialty Comments
- Other Considerations
- Comment Follow-up

**HOW?** ▶ Commenting

- Value-added comment
  - Would implementation of comment result in savings in project cost or time, or improved safety
  - Enhances and adds quality to the project
  - Identifies a violation of a requirement (Requires a response)
  - Engineering comments (Requires a response)
  - Informational FYI – (Notate in ERC: "No Response Required")

**HOW?** Commenting

- Non-value-added
  - May not really need to be submitted as a formal comment (talk to PM)
  - Editorial or Format comments (Did EOR QC?)
  - Other "FYI" comments

**HOW?** # Commenting

Phase Appropriate Comments

- Don't bring up things that are missing if they are not actually due at this phase

- Major conceptual comments should be the focus of the initial reviews

- At later submittals, plans should be reviewed to ensure that the initial comments were addressed and that newly added details are acceptable

- Don't comment on things you should have commented on at an earlier submittal (just because you didn't budget your time properly)

- Waiting until the Final Submittal to start your review (or to do your first thorough review), is TOO LATE!

**HOW?** Commenting

Specialty Comments
- **Focus** on own specialty
- **Understand** own role and the project
- **Budget** review time accordingly
- **Coordinate** comments internally

**HOW?** # Commenting

Off-Specialty Comments

- **Make note** of issues related to other specialties
- **Review** comments by other reviewers in ERC
- **Coordinate** with PM & other specialty reviewer(s)

**HOW?** # Commenting

Other Considerations

- Understand the project

- Understand the review timeframe

- Budget your time

- When is a "typo" more than a typo?

- Reference the requirements

- Don't ask for plan notes that repeat or paraphrase the Standards or Specifications

**HOW?**

# Commenting - Best Practices

- Try to not repeat a comment, if it is made by someone else already.

- When an error is present on multiple sheets, identify the sheets in a single comment instead of making a separate comment for each sheet.

- Try to select the appropriate **ERC Comment Category** associated with the issue or component reviewed (i.e.: Lighting, Roadway, Structures, Signalization).

- The comments should not be open ended such as "do you meet ADA?". They should be specific and reference the appropriate requirement.

- Should not comment on adding digital signature note, until the last phase review.

- If a comment is informational, identify it as "FYI" or "No Response Required".

- If you have no comment, check the box… don't write a comment to state that.

**HOW?**

# Comment Follow-up

- Accept / Reject Responses

- Review Timeframe Applies

- Verification / Validation

- Closing Comments

**HOW?**

# Examples –
# What's wrong with these comments?

- "None of your pay items show quantities." (@ Phase 2 Review)

- "Please make sure to deliver your Project with the correct digital delivery format."

- "All of my comments are in the attached document."

- "All of the 'ROAD WORK AHEAD' signs for the side streets on the north side of the road are upside down. Please revise."

- " 'F.D.O.T.' should be 'FDOT'.  Fix everywhere."

- "Have you considered shifting the alignment to widen to the left instead of the right?" (@ Phase 3 Review)

**HOW?**

# Examples –
# What's wrong with these comments?

- "Add the following plan note to emphasize FDOT Specification xxx-x…"

- "The project is on a bus route."

- "Plans look great."

- "I have the same comment as I had last time."

- "The proposed ditch profile doesn't match the existing ditch profile."
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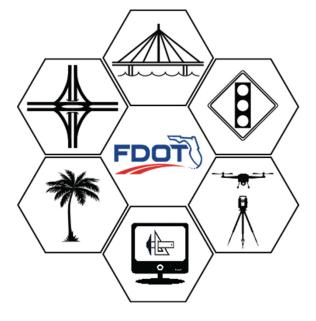- "The sign on Sheet S-8 is about as beneficial as throwing a rock at a tiger!"

# **Summary**

- Why?

- Who?

- What?

- When?

- Where?

- How?

**Plans
Review**

**Thank you for attending!!!**

# Plans Reviewer Training

**FDOT Central Office**

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# QUESTIONS?