Contractor Training

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Materials & Research

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Topics of Discussion

- Precast Prestressed Concrete Pavements
  - What are they?
  - Why are they used?
  - What are their benefits?
  - Future use?
- Developer Memorandum of Agreements
  - Background
  - Implementation

Precast-Prestressed Concrete Pavement

- Roadway slabs that are cast off-site.
- Varying widths, depths, and lengths can be cast.
- Dimensions are mostly controlled by transportation.
- Varying reinforcement can be used.
- Various methods available – some are proprietary.

PPCP - Location (cont)

- Looked for an application for the last few years.
- Several locations have been reviewed by industry, FHWA, and consultants.
- Most posed some logistical issue.
- Finally, a location was reviewed and seemed to be a good candidate.

PPCP - Location (cont)

- Location has adequate work space.
- Multi-lanes so traffic can be maintained during construction.
- High traffic count location to test the reliability of the PPCP.
- Large enough quantity to make the project attractive to bidders.
- Pioneering groups within DelDOT wanted to try it…..

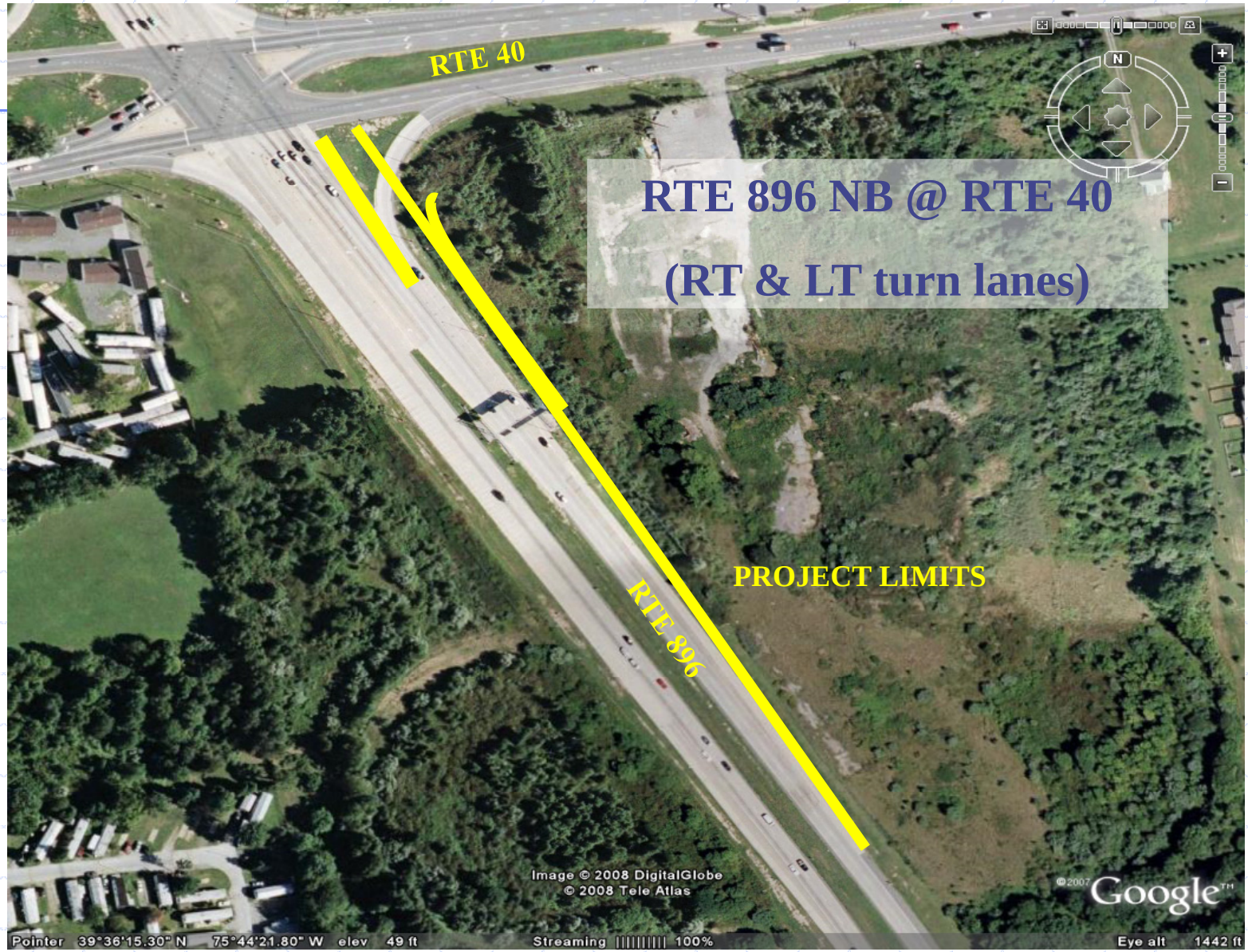
PPCP - Location (cont)

- SR 896 NBR & SR 40 EBR
- Severe deterioration of the existing PCC joints due to ASR.
- Has been on the Pavement Management list for rehabilitation.
- Rehab needed both at intersection and other joints in the area.

PPCP - Location (cont)

- Construction Contract is a combination of PPCP and conventional high-early strength PCC patches.
- Plan is to have contractor pour conventional PCC patches while PPCP are being prepared.

PROJECT OVERVIEW: Location

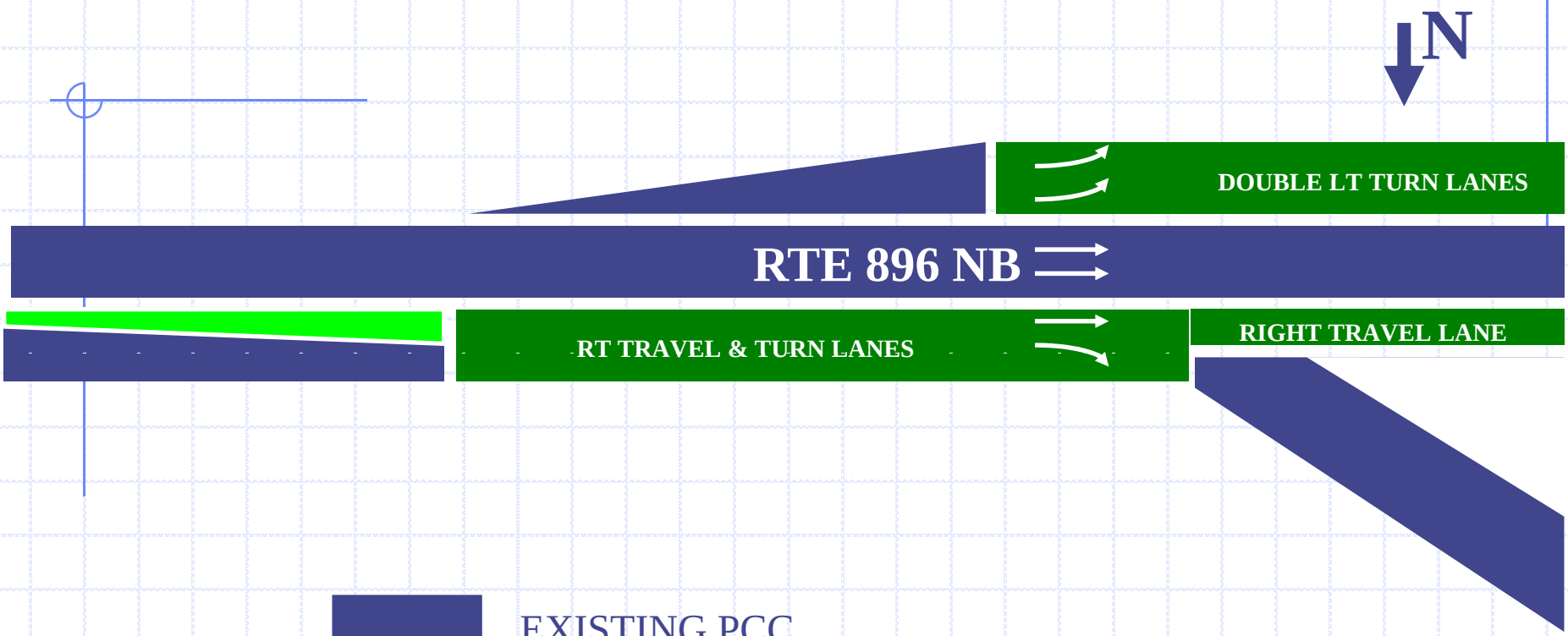


PROJECT OVERVIEW – Fact Sheet

Fact Sheet:

- Functional Class – Principal Arterial.
- AADT – 37,679; % Trucks – 9%.
- Existing Pavement Section – 12” PCC over 8” stone.
- Replace failing jointed plain concrete pavement within the right and left turn lanes with Precast-Prestressed Concrete Pavement (PPCP). 8” PPCP over 4” pervious concrete

PROJECT OVERVIEW – PPCP Replacement Area



EXISTING PCC

CAST-IN-PLACE

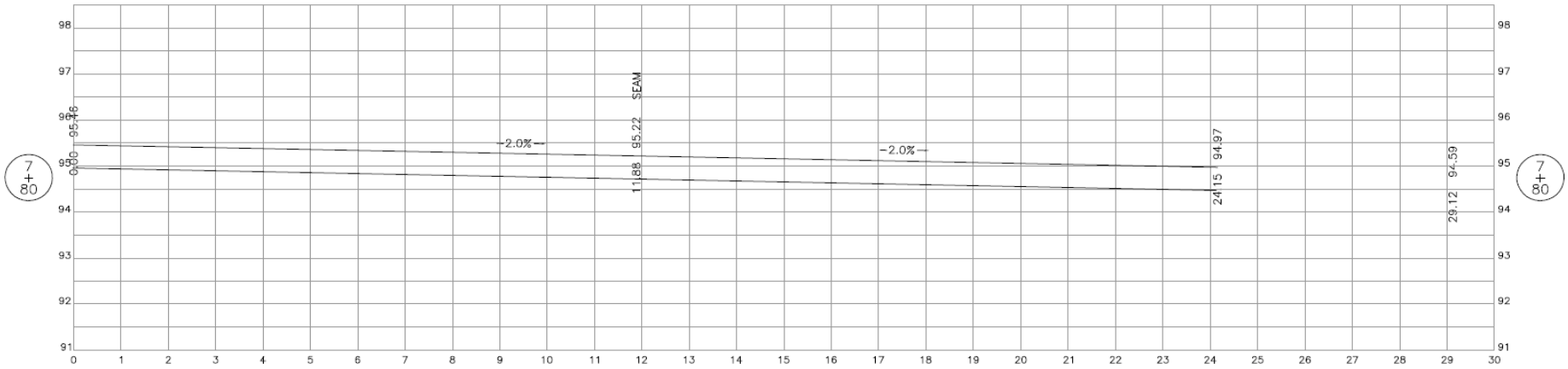
PPCP REPLACEMENT AREA

PROJECT OVERVIEW – PPCP Replacement Area

RIGHT TRAVEL & TURN LANES

656’ L x 24’ W = 15,744 SF

82 pieces – 8’ L x 24’ W

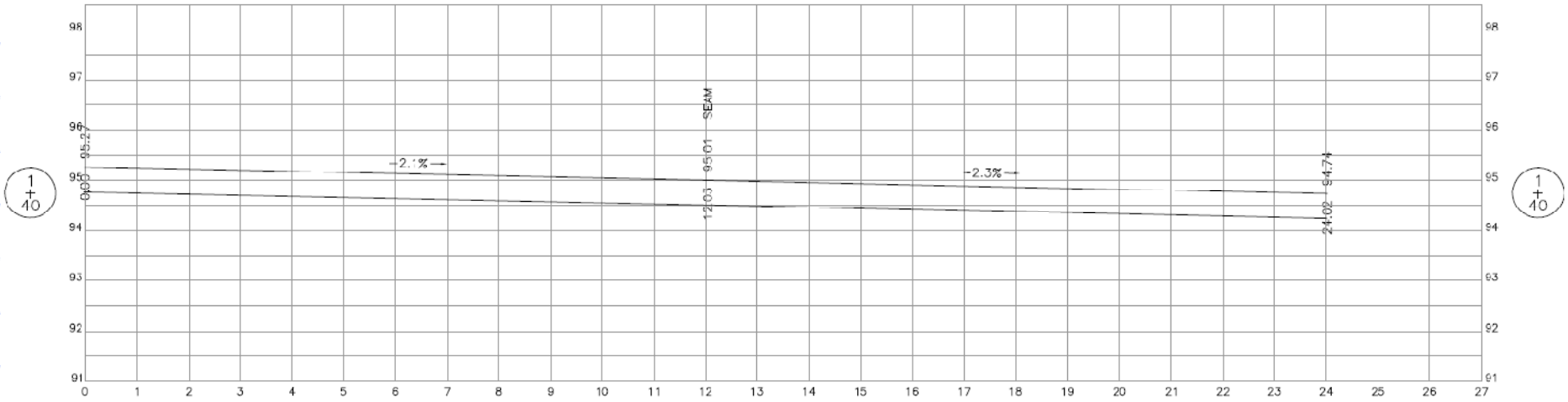


PROJECT OVERVIEW – PPCP Area

DOUBLE LEFT TURN LANES

392’ L x 24’ W = 9,408 SF

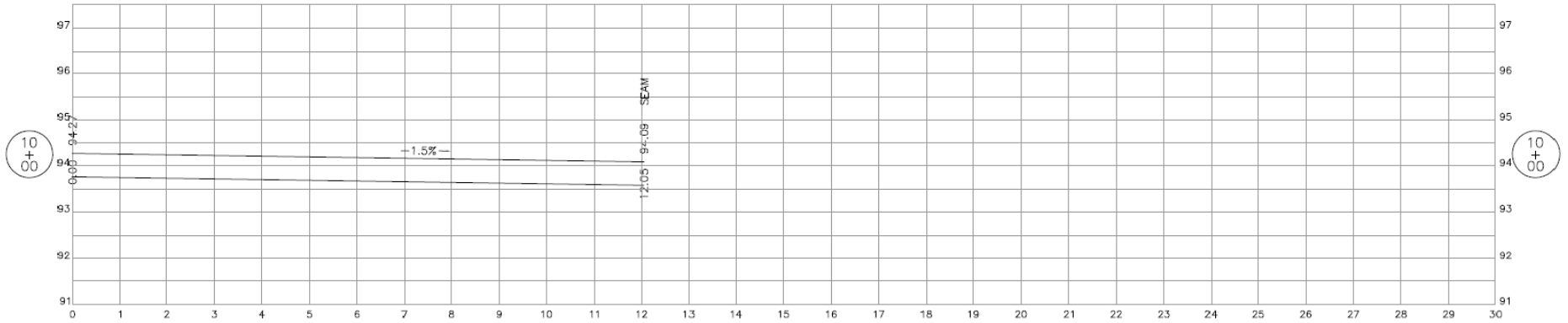
49 pieces – 8’ L x 24’ W



PROJECT OVERVIEW – PPCP Area

RIGHT TRAVEL LANE 248’ L x 12’ W = 2,976 SF

31 pieces – 8’ L x 12’ W



PPCP – Project Development

- **May 25** – Precast Concrete Supplier Meeting.
- **June** – complete slab design; review/PE stamp.
- **July** – PS&E bid package completed
- **August** – advertise project
- **September** – mandatory pre-bid meeting

PPCP – Project Development (cont)

- **October 16** – bids taken
- Four bidders:
  - **1 - $2,379,388.97 - A-Del Construction**
  - 2 - $2,676,692.97 – JJID
  - 3 - $2,999,240.72 – Diamond Materials
  - 4 - $3,059,506.72 – Eastern Highway Specialists

PPCP – Project Development (cont)

- Construction
  - Proposed Schedule: Sunday evening through Friday morning.
  - Restricted Working Hours: 7:30 PM – 5:30 AM
  - All lanes restored to unrestricted use at the end of each workday.

PPCP – Project Development (cont)

- Additional Project Points ….
  - ✓ 10 precast suppliers had expressed an interest in this project.
  - ✓ Contract was advertised to supply and install PPCP panels.
  - ✓ Design alternates will not be considered.
  - ✓ Optimum size for panel fabrication - 8’ L X 24’ W & 8’ L X 12’ W
  - ✓ Contract timing will permit 6-8 weeks for fabrication.
  - ✓ Stored Material Payments in accordance w/ Standard Specifications.
  - ✓ An on-site area will be made available for material storage.

DelDOT Expectations

- Success of a new product/process.
- New option for PCC patching.
- Gain further experience.
- Department is always open to new ideas and technologies.

Thanks to the following for their work on this project….

North District Construction

Pavement Management

Developer MOA's

- MOA – Memorandum of Agreement
- Used when material on subdivisions or entrance permits does not meet specifications and we are not "paying" as we do on a capital project. However, material must meet spec requirements.
- M&R tests the material at the plant as we do any other DOT project

Developer MOA's (cont)

- If material does not meet spec, we inform the appropriate District personnel.
- An MOA is completed to the developer advising them of the out of spec material.
- Developer has two options:
  - 1. Remove and replace the material in question,
  - 2. Sign the MOA and pay the associated loss of service fee.

Developer MOA's (cont)

- The monies for the loss of service fee can come from any source – developer, lay-down contractor, or material supplier.
- However, developer must sign the MOA since they have the binding contract with the Department. They are acting as the GC similarly to capital projects.

Thank you for your time and attention….

Any questions or comments?