Runway Status Lights (RWSL)

Challenges of the RWSL Program

IES Aviation Lighting Committee

October 19, 2010

FAA Installation / Operation on airport

- Implementing one agencies system on another agencies facility
  - ✓ Non-Navigational lights in runways & taxiways
- Combining FAA standards with Advisory Circulars
  - ✓ FAA Specifications
  - ✓ FAA Standards
  - ✓ FAA Advisory Circulars
  - ✓ Military Standards & Handbooks
  - ✓ Federal Documents
  - ✓ Federal Orders
  - ✓ Non-Government Documents

Standardization

- Shelters vs. Existing Facilities
  - ✓ Provide a standard product across the NAS
  - ✓ Shelter is independent of the RWSL system design
  - ✓ Site shelter on Airport property as a non-navigational facility
  - ✓ Provide minimal installation conditions during construction
  - ✓ Reduce ARC Flash rating of equipment inside shelter to “0”
- Field Lighting System Designs
  - ✓ Fixture and conduit installation in pavement and asphalt
  - ✓ Duct bank installation
  - ✓ Airfield Lighting Circuitry

RWSL Shelter Exterior

RWSL Shelter Interior

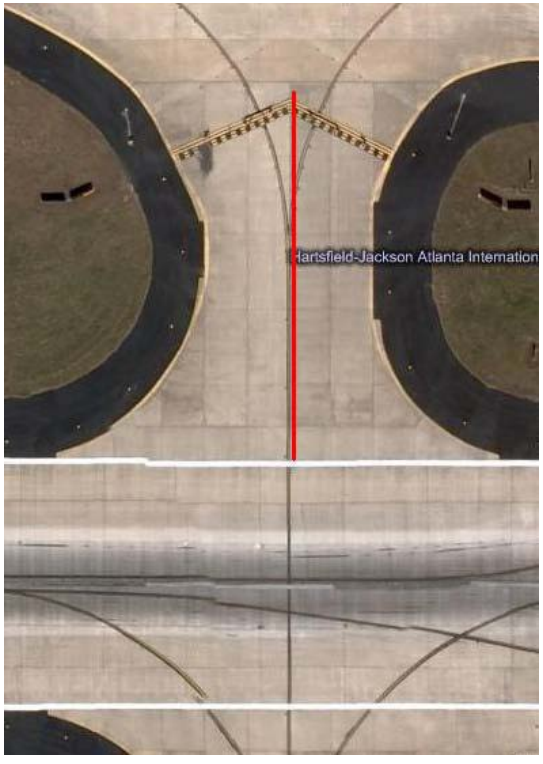
Gathering Existing Information

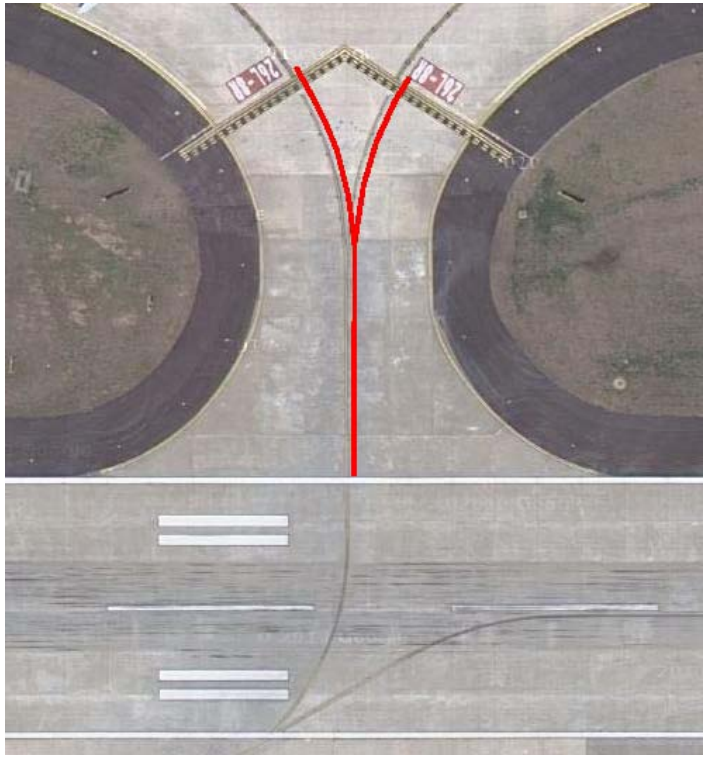
- Initial information search conducted by the FAA
  - ✓ More efficient to utilize as-builds
  - ✓ Verify information with site visit
  - ✓ Hire Sub-contractors to obtain critical information

New Program – Working out issues on the fly

- Evolving technology
  - ✓ Shielded power cable to eliminate circuit noise in shared duct bank
  - ✓ Fixture path
  - ✓ Fixture aiming due to fixture path
  - ✓ Provide minimal installation conditions during construction
  - ✓ Reduce ARC Flash rating of equipment inside shelter to “0”
- Hardware / Software developed but not infrastructure
  - ✓ Field Lighting System
- How to implement FAA facility standards on an airfield
  - ✓ General compliance with FAA-STD-019 vs AC 150/5340-30

Runway Entrance Light Layout

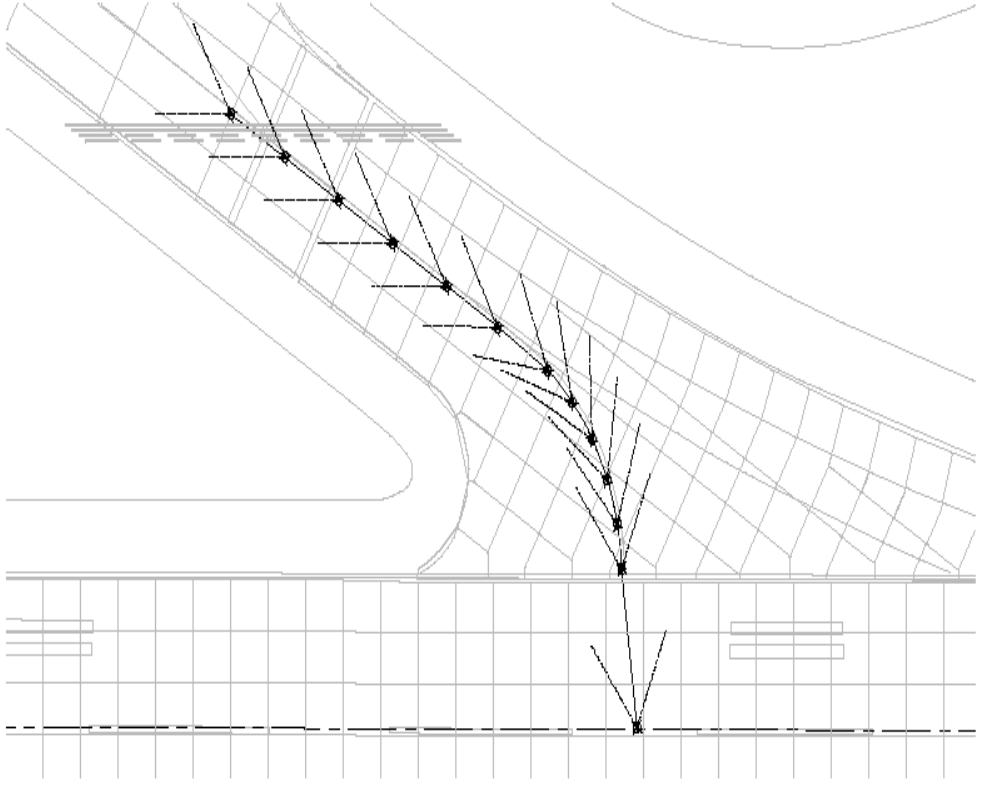




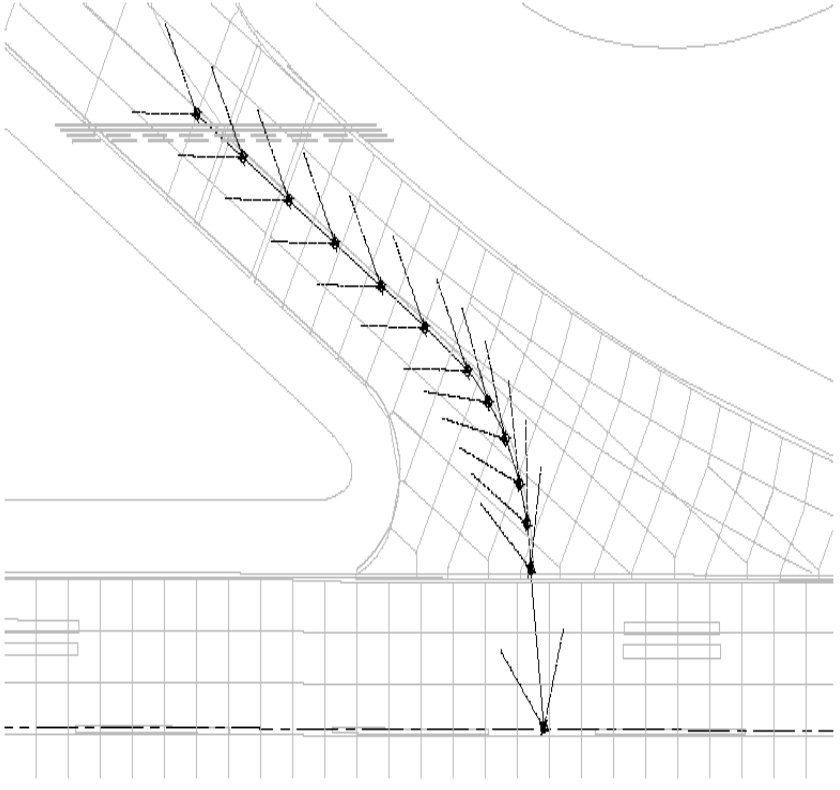
Runway Entrance Light Layout

Runway Entrance Light Aiming

4 Equal Spaces



Tangent to Centerline



Program Costs – How to reduce

- Use of existing duct banks
  - ✓ Use existing duct bank for communication routing
  - ✓ Use existing power duct bank
  - ✓ Develop new details to conserve costs
  - ✓ Use directional drilling instead of pavement trenching

Construction Approach

- Design
  - ✓ Coordinate design to integrate with Airfield Projects
  - ✓ Utilize existing communications duct bank, design interface connections only
  - ✓ Design all new electrical duct bank to power RWSL lights
  - ✓ How to implement FAA facility standards on an airfield
  - ✓ General compliance with FAA-STD-019 vs AC 150/5340-30
- Construction
  - ✓ Typical nighttime closure for each Runway: 23:30 – 06:30; only 1 Runway closed at a time
  - ✓ Extended weekend closures to be proposed for THL installations
  - ✓ Extended Taxiway closures (Runway open/Taxiway closed to traffic) to be proposed for REL installations
  - ✓ Partial THL installation in existing Runway and stub out conduit for future connection by extension project

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QUESTIONS?