

## **Detailed Plan Design and Development Checklists**

The following checklists are provided:

- Plan Design and Development Checklist - General
- Plan Design and Development Checklist - Traffic Control Design (Signing, Pavement Marking, Guardrail, Lighting, Traffic Signals)

**PLAN DESIGN AND DEVELOPMENT CHECKLIST - GENERAL**

1. Review Reports and Resources
  - A. Review project concept report, summation and transcript of public hearing documents, and/or environmental documents (plan sheets should incorporate all necessary mitigation measures identified)
  - B. Review traffic operations report
  - C. Review surface thickness and material recommendations
  - D. Review linear soil survey recommendations
  - E. Review drainage report
  - F. Review 90-1 survey and safety review
  - G. Gather and review old plans for the proposed project area
  - H. Obtain and review survey data
  - I. Review milestone for critical activity dates
  - J. Schedule preliminary review, PS&E review, and plan completions dates
2. Coordination
  - A. Advise other sections, divisions, districts, city, and/or FHWA of changes made in alignment, drive locations, grades, etc.
  - B. Review environmental considerations with ETS Division – Environmental Services
    1. Army Corp of Engineers Section 404 Permit
      - a. Wetland mitigation
      - b. Large stream crossings
    2. Review need for erosion control and develop erosion control plan
    3. Satisfy flood plain requirements

- C. Review coordination of signing, marking, signals, lighting, and guardrail with Design Division – Traffic Section
- D. Review coordination of private utility relocations and adjustments with Design Division – Technical Support Section, Utility Engineer
  - 1. Submit preliminary plan and profile sheets and cross section sheets
- E. Review coordination of airport clearance with Design Division – Technical Support Section, Utility Engineer
- F. Review coordination of right of way, easements, encroachments, etc., with ETS Division – Right of Way Services.
- G. Review coordination of bridges and box culverts with Bridge Division
- H. Review coordination of special provisions (SP) with ETS Division – Technical Services.
  - 1. Review need of common special provisions:  
<http://www.ugpti.org/dotsc/prepguide/index.php>
  - 2. Submit required special provisions to ETS Division – Technical Services a minimum of 4 weeks prior to the PS&E
  - 3. Submit required TERO special provisions to ETS Division – Technical Services a minimum of 8 weeks prior to the PS&E
  - 4. SPs to be listed on Basis of Estimate of plans (include SPs from other sections and divisions)
- I. Review coordination of bench sections and stabilized earth retaining walls with Materials and Research Division
- J. Review coordination of Preliminary Engineering and Cost Maintenance Agreements with the Planning and Programming Division or Local Government Division

- K. Review coordination of railroad crossings with Planning and Programming Division – Railroad Section
  - 1. Submit preliminary plan and profile sheets and cross section sheets
  - 2. Determine if any crossings are to be abandoned or if the number of tracks be reduced
  - 3. Determine type of crossing: rubber, wood, or asphalt cement (check with city or district)
  - 4. Determine type of traffic control: signalized, not signalized
  - 5. Determine clearances
  - 6. Determine need for pipe crossings, jacked or bored (need standard drawing and railroad request forms for permit)
  - 7. Include standard drawings for railroad approach and pavement markings
  - 8. Include appropriate standard note(s) 107-111 to 107-115 (depending on Railroad Company) and pay item to require liability insurance
  - 9. Check for correct railroad names
- L. City utilities or city projects (participating funds or city funds only)
  - 1. NDDOT to complete design
  - 2. City to complete design
  - 3. Include in NDDOT plan sheets, separate plan sheets, tied or not-tied contracts
  - 4. Review need for city specifications
  - 5. Review bid items, existing, new, and coordination of similar items
  - 6. Obtain utility certification or disposition of relocations and adjustments
- M. Maintain project files (document meetings, telephone calls, decisions, etc)

3. General Plan Development

A. Develop Geometric Design

1. Horizontal alignments (tangents, curves, spirals, superelevation)
  - a. Check design vehicle
  - b. Check truck turning radii
2. Vertical alignments (grades, crest and sag curves, sight distances, passing zones)
  - a. Develop profile grades and PIs (vertical curve lengths calculated from design speed)
  - b. Check grade line and topography for hidden intersections or decision sight distance locations
  - c. Check grades to fit approaches, driveways, side streets, etc.
  - d. Check vertical clearance at bridges
  - e. Check grades to fit right of way constraints
3. Roadway cross section
  - a. Review recommended base and pavement structure
  - b. Determine profile grade point and cross slopes
  - c. Determine lane and shoulder widths
  - d. Determine foreslopes
  - e. Determine ditch sections and profiles
  - f. Determine cut and fill slopes and bench sections (bench sections should be reviewed with Materials and Research)
  - g. Determine backslopes

**B. Develop Intersection Design**

1. Develop intersection layout and/or type (Standard Drawing D 203 6, Type A and B, Radial "T", etc.)
  - a. Determine design vehicle and check turning radii
  - b. Determine channelization/median requirements
  - c. Check lane alignments and skew across intersection
  - d. Check sight distances
  - e. Check need for traffic islands
  - f. Check need for left turn lanes
  - g. Check need for right turn lanes
  - h. Check requirements for tapers and storage lengths
  - i. Review location for crosswalks and curb ramps
  - j. Review signal locations
  - k. Review need for parking restrictions

**C. Develop Earthwork Design**

1. Determine clearing and grubbing
2. Determine removal of structures
3. Determine classification of excavation
4. Determine subcuts
5. Review borrow
  - a. Determine borrow or waste requirements
  - b. Determine mandatory borrow or mandatory waste requirements

(i) Obtain public interest determination from FHWA for mandatory borrow and excavation sites

c. Submit requirements to ETS Division – Right of Way Services

6. Determine need for slope flattening
7. Determine shrink and swell factors
8. Balance earthwork and/or determine borrow needs
9. Compute haul
10. Develop mass diagrams
11. Review need of erosion control and protection

D. Develop Drainage Design

1. Determine drainage areas, size pipe, and compute quantities for:
  - a. Culverts (centerline and approaches)
  - b. Storm drains (pipe, inlets, manholes, castings, etc)
  - c. Lift stations

E. Develop Right of Way Design

1. Existing permanent right of way
2. New permanent right of way
3. Temporary construction easements
4. Temporary and permanent drainage easements
5. Access control requirements
6. Intersection sight distance requirements

- F. Prepare preliminary and final cost estimates
  - 1. Traffic Section quantities included
  - 2. Right of Way Services Section costs included
  - 3. Bridge Division quantities included
  - 4. Materials and Research Division quantities included
- 4. Plan Sheet Development

**A. Section 001 - Title Sheet**

- Project numbers (main funding number and secondary funding numbers)
- PCN number
- Design data (current and forecast traffic, HS bridge live load, pavement design life, etc.)
- Project description (county, project number, location, type of work)
- Governing specifications paragraph
- Length of project (gross and net miles)
- North arrow
- Legal Description (section, township, range)
- Project data/map (begin and end limits, reference points, stations, equations, bridges, exceptions, county lines, interchanges, and highways)
- Plan completion date and signature block
- Mile splits
- Clearzone distance
- Barrier striping diagram and legend
- Borrow sites and stockpile sites (may show as separate detail sheet)

**B. Section 002 - Table of Contents Sheet**

- Section Number, Sheet numbers, and Description
- Sheet numbers included for each contract on multiple contract projects
- List of Standard Drawings (do not number sheets)

**C. Section 004 - Scope of Work Sheet**

- Detail showing layout and type of work
- PE Signature Block

**D. Section 006 - Notes Sheets**

- Review list of standard notes and write any additional plan notes
- Check that all incidental items are included in the notes
- Check that all pay items listed in notes are included on the quantity sheets
- PE Signature Block

**E. Section 008 - Quantities Sheets**

- Check that the Item Description is exactly as it is written in the Mainframe or Annual Average Bid Price.
- Check that totals match plan sheet totals
- Check that subtotal match totals
- Show funding splits (participating, non participating, city funds only, alternatives, total)
- Check to include all quantities from other sections and divisions
- Check to include all quantities listed in plan notes and special provisions
- Contract bond, mobilization, railroad insurance, field lab (for tied projects show on the major project only)

**F. Section 010 - Basis of Estimate Sheets**

- Pavement Removal pay items
- Grading pay items:
  - Summary of quantity breakdown (excavation, embankment, etc.)
  - Water quantity for embankment, excavation, aggregate, and dust palliative
  - Topsoil removal (list depth and areas)
  - Additional Sheets
  - Base pay items
- Surfacing pay items
- Pavement marking pay items
- Erosion control pay items:
  - Sodding (list areas)
  - Seeding and temporary cover crop (list areas)
  - Mulching (list areas)
  - Erosion control devices
- List core locations and surfacing thickness data (blended base projects)
- List special provisions (number and description)
- PE Signature Block

**G. Section 011 - Data Tables, Concrete Pavement Repair Locations, Coring Data, Salvaged Base Summary, Earthwork Summary, Mass Diagram, Borrow Areas, Alternative Pipe Materials Pipe List Table**

- \_\_\_ Crown rates and superelevation tables
  - \_\_\_ Concrete Pavement Repair Locations
  - \_\_\_ Coring data and locations
  - \_\_\_ Salvage base summary
- \_\_\_ Earthwork
  - \_\_\_ Label locations and quantities of borrow entered into mass diagram
  - \_\_\_ Label locations and quantities of hauled materials from side roads etc. entered into mass diagram
  - \_\_\_ Label average haul
  - \_\_\_ Label locations and quantities of special excavation and subcut
  - \_\_\_ Label locations and quantities of clearing and grubbing and topsoil removal
  - \_\_\_ Label locations and quantities of topsoil borrow
  - \_\_\_ Label locations and quantities for approaches, drives, etc.
  - \_\_\_ Borrow areas
- \_\_\_ PE Signature Block

**H. Section 020 - General Details Sheets**

- \_\_\_ Review need of common details
  - \_\_\_ Grading
  - \_\_\_ Slope flattening
  - \_\_\_ Subgrade repair areas
  - \_\_\_ Pipe extensions
  - \_\_\_ Underdrain areas and associated drawings
  - \_\_\_ Flared intersection layouts and approach
  - \_\_\_ Bridge end and railroad crossing
  - \_\_\_ Erosion control details
  - \_\_\_ Milling
  - \_\_\_ PCC pavement (dowels, tie bars, joints, reinforcement over pipe, etc.)
  - \_\_\_ Ramp layouts
  - \_\_\_ Edgedrains and headwalls
  - \_\_\_ Edgedrain connection to manhole or inlet
  - \_\_\_ Median and turning lane details
  - \_\_\_ Cross over and ramp connections
  - \_\_\_ Energy dissipater details
  - \_\_\_ Lift station details
  - \_\_\_ Floating manhole casting
  - \_\_\_ Utility, Trench, Pipe backfill details
  - \_\_\_ Stabilized Construction Access

- Wetland easements
- Dimension clarity
- Cross referencing of details by sheet heading
- PE Signature Block

**I. Section 030 - Typical Sections Sheets (Existing and Proposed)**

- Dimensions
- Location by stations and Reference Points (RP)
- Profile and survey location
- Crown rates and superelevation
- Material classifications
- HBP: show aggregate and pavement width, thickness, and areas
- PCC: show aggregate and pavement width, thickness, areas, joints, dowel bars, reinforcing, and tiebars.
- Curb and gutter
- Edgedrains
- Pipe installations
- Foreslope, ditch width, and backslope if applicable
- Geotextile Fabric
- Excavation limits and/or areas (common, class, subcut, muck)
- Waste areas (within cross section)
- Sodding/Hydromulching limits
- Existing typical section should show patching with a variable depth (for blended base projects)
- PE Signature Block

**J. Section 040 - Removals**

- Layout of removal limits
- PE Signature Block

**K. Section 050 - Inlet and Manhole Summary**

- Drainage details
  - Culvert summary sheets (location, type, size, length)
- Hydraulic data for pipe greater than 30 inches (100 yr and design frequency yr)
- Storm drain summary sheets (location number, location, description, top elev., invert elev., base elev., riser length, casting type, position of incoming lines and inverts). This information may be shown on plan and profile for smaller projects.
- PE Signature Block

**L. Section 055 - Drainage Layouts**

- Show direction of drainage flows (ditches, culverts, storm drain)
- PE Signature Block

**M. Section 060 - Plan & Profile Sheets**

- Dimensional clarity
- North arrow
- Label businesses
- Show and label horizontal alignment control points and ties, curve data and superelevation rates, etc. (move survey and alignment information to layout sheets if sheets are too cluttered)
- Show and label vertical alignment grades, curve data, sight distance data, locations and stations of barrier stripes, etc.
- Show and dimension existing right of way, proposed right of way, construction easements, drainage easements, section lines, etc.
- Show and label driveway widths, lengths, and locations
- Show and label curb ramps
- Earthwork
  - Label mile split quantities
  - Label locations and quantities of borrow entered into mass diagram
  - Label locations and quantities of hauled materials from side roads etc. entered into mass diagram
  - Label average haul
  - Label locations and quantities of special excavation and subcut
- Label locations and quantities of clearing and grubbing and topsoil removal
- Label locations and quantities of topsoil borrow
- Label locations and quantities for approaches, drives, etc.
- Show and label bypass locations, horizontal and vertical alignments, and quantities
- Show and Label all ditch grades and ditch blocks
- Show and label Riprap foundation fill, erosion control locations, retaining walls, etc.
- Label and show erosion control (may include in basis of estimate or as detail sheet)
- Culverts
  - Label removal and/or plug locations
- Storm drains (inlets and manholes)
  - Check number of inlets or manholes to match summary and quantity sheets
  - Check type of inlet and casting
  - Check manhole size to accommodate storm drain line sizes

- Check elevations
- Check riser lengths to elevations shown
- Check offset locations (offset distance to center of riser)
- Check length of storm drain lines
- Check if city or district want insulation on inlets
- Check if city or district want a minimum depth for inlets
- Water and sanitary lines
  - Check with city on location and installation (may be shown on separate plan and profile sheets)
- Show and label direction of drainage flow (ditches, culverts, storm drain)
- Check existing underground utilities for details (elevation and location)
- Cross reference detail sheets that apply
- List pay item quantities
- Make sure all changes are corrected on related sheets and quantities
- PE Signature Block

**N. Section 070 - Contours Sheets**

- PE Signature Block

**O. Section 080 - Layouts Sheets (Survey Data, Fencing, etc.)**

- Survey control point data sheet included in plans
- If the plan and profile become cluttered, it may be necessary to provide separate sheets for the alignment data, removal data, etc.
- Dimension clarity
- PE Signature Block

**P. Section 090 - Paving Layout Sheets (information may be on plan and profile)**

- Dimension clarity
- Show survey and office location designation
- Show and label joint spacing, locations, type, tie bars, seal, etc.
- Show and label lane and shoulder widths
- Show and label pavement reinforcement over pipe
- Show and label driveways, sidewalks, curb ramps, median paving etc.
- List pay item quantities by page
- PE Signature Block

**Q. Section 100 - Work Zone Traffic Control Sheets**

- Develop work zone traffic control note (identify construction phasing, restrictions, maintenance of access, applicable standard drawings, etc.)
- Develop work zone traffic control details and layouts (construction phasing and/or special considerations, show and label signing, devices, markings, etc.)
- Develop "Traffic Control Devices List"
- Review need for special signs
- Review need for traffic control supervisor
- Review work zone speed limits guidelines
- Review edge drop off guidelines and notes
- Review warrants for portable changeable message signs
- Check if detours are required
- Check if temporary bypasses are required
- Give Traffic Section a copy of plans to review the traffic control
- PE Signature Block

**R. Sections 110 & 120 - Signing and Markings Sheets**

- Advise Design Division Traffic Section of changes and/or revisions
- Coordinate data for typical section, horizontal and vertical alignment
- Obtain estimated quantities, spec and code
- See Also: Plan Design and Development Checklist Traffic Control Design in this Appendix
- PE Signature Block

**S. Section 130 - Guardrail Sheets**

- Advise Design Division Traffic Section of changes and/or revisions
- Coordinate data for typical section, horizontal and vertical alignment
- Obtain estimated quantities, spec and code
- See Also: Plan Design and Development Checklist Traffic Control Design in this Appendix
- PE Signature Block

**T. Sections 140 & 150 - Lighting and Signals Sheets**

- Advise Design Division Traffic Section of changes and/or revisions
- Coordinate data for typical section, horizontal and vertical alignment
- Obtain estimated quantities, spec and code
- See Also: Plan Design and Development Checklist Traffic Control Design in this Appendix
- PE Signature Block

**U. Section 160 - ITS Sheets**

PE Signature Box

**V. Section 170 - Bridge and Box Culverts Sheets**

- Advise Bridge Division of changes and/or revisions
- Coordinate data for typical section, horizontal and vertical alignment
- Obtain estimated quantities, spec and code
- PE Signature Block

**W. Sections 175 & 180 - Soils Boring Logs & Pit Plats Sheets**

- Insert soil profile and/or cross section sheets form Materials and Research
- Insert pit plat sheets form Materials and Research
- Included in plans

**X. Section 190 - Haul Road Restrictions Sheets**

- Insert haul road restrictions sheets
- Included in plans

**Y. Section Right of Way Plot Sheets**

PE Signature Block

**Z. Cross Sections Sheets**

Included in plans

**AA. Section 200 - Cross Sections Sheets**

- If earthwork sheets are not included, add cut and fill quantities to sections
- Run cross sections with marked points for future reports generated by district
- Show and label inlets and manholes
- Cross reference to plan and profile
- Check slopes and grade line to match existing terrain and within right of way limits

**BB. Standard Drawings Sheets**

- \_\_\_ Review list of standard drawings and add appropriate drawings
- \_\_\_ Standard Drawings to be listed on Table of Contents of plans (include standards from other Sections and Divisions)
- \_\_\_ Include required Standard Drawings in the back of the original plans only. Print the required Standard Drawings from the web at <http://www.dot.nd.gov/manuals/design/designmanual/designmanual.htm> under Standard Drawings.

**PLAN DESIGN AND DEVELOPMENT CHECKLIST - TRAFFIC CONTROL DESIGN  
(SIGNING, PAVEMENT MARKING, GUARDRAIL, LIGHTING, TRAFFIC SIGNALS)**

**A. Signing**

1. Check safety review for recommendations for signs with A-frames and other substandard signs.

Comment. \_\_\_\_\_

2. Compare Sign Locations and Layout information with Sign Summary Sheet.

Comment. \_\_\_\_\_

3. Check Junction signing for placement and distance from intersections.

Comment. \_\_\_\_\_

- a. Stop Conditions, Route Turn Markers across the intersections.

Comment. \_\_\_\_\_

- b. Check lighting plans to see if signs can be placed on light standards.

Comment. \_\_\_\_\_

- c. Distance and Destination sign legends to be checked with District Maps from Operations Section in Planning and Programming Division.

Comment. \_\_\_\_\_

4. Sign Supports.

- a. Check lengths on summary sheets.

Comment. \_\_\_\_\_

- b. Check breakaway types - round pipe

1. Type A Single Post Signs

Comment. \_\_\_\_\_

2. Type B Two Post Signs with post spacing less than 8 feet.

Comment. \_\_\_\_\_

3. Type C Two Post or More Signs with post spacing 8 feet or more.

Comment. \_\_\_\_\_

4. Check fuse joint requirements.

Comment. \_\_\_\_\_

- c. Multi-Direction Breakaway Bases - Round pipe to be used at ramp terminals where post can be struck in any direction.

Comment. \_\_\_\_\_

- d. Sign Areas

1. Primary and Secondary Signs.

- a. Type 2 - Reflective Sheeting. All sign backgrounds except as listed in b.

Comment. \_\_\_\_\_

- b. Type 3a - Reflective Sheeting. Stop Signs, Yield Signs, Do Not Enter Signs, Wrong Way Signs, All Yellow Warning Signs, Legends of Green, Blue, and Brown Background Signs.

Comment. \_\_\_\_\_

2. Interstate Highway Signs.

- a. Check to see if signs have notes on layouts requiring type 3a retroreflective sheeting for signs.

Comment. \_\_\_\_\_

5. Check if standards drawings that are required have been provided.

Comment. \_\_\_\_\_

6. Check if special notes for this project are provided.

Comment. \_\_\_\_\_

7. Check if Standard Notes are provided. Section 754 Standard Notes can be found on the web at <http://www.ugpti.org/dotsc/prepguide/index.php> under Standard Notes.

Comment. \_\_\_\_\_

8. Check if cost estimate items and cost are correct.

Comment. \_\_\_\_\_

9. Check sign design layout sheets for station color and area.

Comment. \_\_\_\_\_

10. Check special assembly layouts for sign sizes and correct station.

Comment. \_\_\_\_\_

**B. Pavement Markings**

1. Check Pavement Marking Material Selection Chart. The materials shall meet these requirements.

Comment. \_\_\_\_\_

2. The center line for two-lane, two-way roadways shall be yellow.

Comment. \_\_\_\_\_

3. The left edge line for divided highways shall be yellow.

Comment. \_\_\_\_\_

4. Layouts shall have width and color of line shown.

Comment. \_\_\_\_\_

5. The pay items shall be listed on plan layouts showing the material, color, type of line and quantity. Each width of line shall be totaled. Check totals. Compare line widths and color with what is shown on layouts.

Comment. \_\_\_\_\_

6. Check if Standard Drawings have been provided.

Comment. \_\_\_\_\_

7. Check if special notes for this project are provided.

Comment. \_\_\_\_\_

8. Check if items and costs are provided.

Comment. \_\_\_\_\_

9. Check if Standard Notes are provided. Section 762 Standard Notes can be found on the web at <http://www.ugpti.org/dotsc/prepguide/index.php> under Standard Notes.

Comment. \_\_\_\_\_

10. Check if special notes are provided.

Comment. \_\_\_\_\_

**C. Guardrails**

1. Check safety reviews to see if guardrail is proposed.

Comment. \_\_\_\_\_

2. Review concept report for guardrail requirements.

Comment. \_\_\_\_\_

3. Determine if guardrail embankment is to be placed with grading or a separate item.

Comment. \_\_\_\_\_

4. Check to determine if special notes are required.

Comment. \_\_\_\_\_

5. Check if Standard Drawings have been provided.

Comment. \_\_\_\_\_

6. Check if items and costs are provided.

Comment. \_\_\_\_\_

7. Check if standard notes are provided. Section 764 Standard notes can be found on the web at <http://www.ugpti.org/dotsc/prepguide/index.php> under Standard Notes.

Comment. \_\_\_\_\_

**D. Lighting**

1. Interim Lighting.

- a. Check Layout to determine if permanent lighting will interfere with interim lighting.

Comment. \_\_\_\_\_

- b. Check to determine if pedestrians can negotiate around interim lighting and construction area.

Comment. \_\_\_\_\_

- c. Check to see that underground and overhead utilities do not interfere with placement of poles, anchors, and wires.

Comment. \_\_\_\_\_

- d. Check that permanent signal will fit while interims are operating.

Comment. \_\_\_\_\_

e. Check summary of quantities conduit and cable runs and notes.

1. Items to be bid as each.

Comment. \_\_\_\_\_

2. Permanent Lighting.

a. Check Layout to determine if permanent lighting will fit interim lighting.

Comment. \_\_\_\_\_

b. Check to determine if pedestrians will be able to negotiate around light poles.

Comment. \_\_\_\_\_

c. Check to see if break-away bases are required.

Comment. \_\_\_\_\_

d. Check location if in the way of construction.

Comment. \_\_\_\_\_

e. Check to see that underground and overhead utilities do not interfere with placement of poles and mast arms.

Comment. \_\_\_\_\_

f. Check if festoon circuit is required.

Comment. \_\_\_\_\_

g. Check that pull box locations are shown on the plan layout.

Comment. \_\_\_\_\_

h. Check if stations of layout items agree with quantity calculations and quantity sheet.

Comment. \_\_\_\_\_

- i. Check feed point location.

Comment. \_\_\_\_\_

- j. Check summary of quantities conduit and cable runs.

Comment. \_\_\_\_\_

- k. Check if special feed point requirements are needed and a layout.

Comment. \_\_\_\_\_

- l. Check if note is provided when removed equipment is not to become property of the state.

Comment. \_\_\_\_\_

- m. Check if all side street lighting has power provided.

Comment. \_\_\_\_\_

- n. Check if Lighting Standards have been provided.

Comment. \_\_\_\_\_

- o. Check if items and costs are provided.

Comment. \_\_\_\_\_

- 3. Check to determine if special notes are required.

Comment. \_\_\_\_\_

- 4. Check if standard notes are provided. Section 770 Standard notes can be found on the web at <http://www.ugpti.org/dotsc/prepguide/index.php> under Standard Notes.

Comment. \_\_\_\_\_

- 5. Check if Utility Company Feed Point Letter is Prepared.

Comment. \_\_\_\_\_

**E. Traffic Signals**

1. Interim Traffic Signal

- a. Check Layout to determine if permanent signals are behind interim signals.

Comment. \_\_\_\_\_

- b. Check to determine if pedestrian signals are needed. If replacing in-place signals that are in the way of construction, and pedestrian signals are in place, pedestrian signals are needed in the interim.

Comment. \_\_\_\_\_

- c. Check to see that underground and overhead utilities do not interfere with placement of poles, anchors and placement of span wires.

Comment. \_\_\_\_\_

- d. Check that poles and anchors do not interfere with pedestrians.

Comment. \_\_\_\_\_

- e. Check so that permanent signals will fit while interims are operating.

Comment. \_\_\_\_\_

- f. Check note on coiling enough cable for relocation of signal heads during different phases.

Comment. \_\_\_\_\_

- g. Check if interim item is placed on the plan layout.

Comment. \_\_\_\_\_

- h. Check if interim signal heads have 2 signal heads in each direction and have a dimension of at least 8 feet between.

Comment. \_\_\_\_\_

- i. Check cable runs with signal head numbers.

Comment. \_\_\_\_\_

- j. Check to see if signal head and traffic volume layouts are shown.

Comment. \_\_\_\_\_

- k. Check timing, phasing, cam breakout, notes and flashing requirements.

Comment. \_\_\_\_\_

- l. Check summary of quantities conduit and cable runs and notes.

- 1. Items to be bid as each.
- 2. State furnished items.
- 3. These items to be wood pole mounted.

Comment. \_\_\_\_\_

- m. Check if interim signals need to be coordinated.

Comment. \_\_\_\_\_

2. Permanent Traffic Signals.

- a. Check Layout to determine if permanent signals are behind interim signals.

Comment. \_\_\_\_\_

- b. Check if near side signals are required.

Comment. \_\_\_\_\_

- c. Check if the signal standards are within the clear zone.

Comment. \_\_\_\_\_

- d. Check to determine if pedestrian signals are needed.

Comment. \_\_\_\_\_

- e. Check location so that signal is not in the way of construction and that pedestrian signals are in place near crosswalk.

Comment. \_\_\_\_\_

- f. Check that lane width and all other street dimensions are shown.

Comment. \_\_\_\_\_

- g. Check to see that underground and overhead utilities do not interfere with placement of poles and mast arms.

Comment. \_\_\_\_\_

- h. Check the need for pedestrian actuation push buttons other than on signal poles.

Comment. \_\_\_\_\_

- i. Check if signals have 2 signal heads for through movement in each direction and have a dimension of at least 8 feet between.

Comment. \_\_\_\_\_

- j. Check that signal and pedestrian heads are positioned so they match standard drawings.

Comment. \_\_\_\_\_

- k. Check if pedestrian push button sign location number and direction it's facing are shown on plan layout.

Comment. \_\_\_\_\_

- l. Check that pull box locations are shown on the plan layout.

Comment. \_\_\_\_\_

- m. Check if emergency vehicle preemption location and number are shown on plans.

Comment. \_\_\_\_\_

- n. Check cable runs with signal head numbers and color coding.

Comment. \_\_\_\_\_

- o. Check that combination signal and light standards have lighting conductors only entering the pole base.

Comment. \_\_\_\_\_

- p. Check to see if signal head and traffic volume layouts are shown.

Comment. \_\_\_\_\_

- q. Check if stations of layout items agree with quantity calculations and quantity sheet.

Comment. \_\_\_\_\_

- r. Check timing, phasing, cam breakout, notes and flashing requirements.

Comment. \_\_\_\_\_

- s. Check if emergency vehicle preemption is used and that phasing is shown.

Comment. \_\_\_\_\_

- t. If existing signals are being removed, show layout and list removed items and quantity.

Comment. \_\_\_\_\_

- u. Check if note is provided when removed equipment is not to become property of the state.

Comment. \_\_\_\_\_

- v. Check traffic signal cross section to be sure the signal location and stationing agree with other layouts. Check if street name signs are the same as shown on signing plans.

Comment. \_\_\_\_\_

- w. Check controller location and direction of door opening.

Comment. \_\_\_\_\_

x. Check summary of quantities conduit and cable runs and notes.

1. Internal wiring note.
2. Emergency vehicle indicator light conductor.
3. Emergency vehicle detector cable.
4. Indicate internal wire quantities.

Comment. \_\_\_\_\_

y. Check if signal heads on signal poles at cross section are located correctly.

Comment. \_\_\_\_\_

z. Check if signs for signal head requirements are same as signing plan layouts.

Comment. \_\_\_\_\_

aa. Check if signal progression is required in plans and check progression layout for content, etc.

Comment. \_\_\_\_\_

bb. Check if emergency vehicle preemption needs advance detection.

Comment. \_\_\_\_\_

cc. Check to see if interconnect conductor to be placed between intersections. Interconnect shall be in separate conduit. Pull boxes shall be placed every 500 feet maximum.

Comment. \_\_\_\_\_

dd. Check to see if railroad signal interconnect is provided or necessary.

Comment. \_\_\_\_\_

ee. Detector loops shall be numbered, showing the number of amplifiers, number of turns, sizes, type of loop, number of preformed loops, and number of micro-loops both double and single prop sets.

Comment. \_\_\_\_\_

ff. Check if speed monitoring is required.

Comment. \_\_\_\_\_

- 3. Check if special feed point requirements and layout are needed.

Comment. \_\_\_\_\_

- 4. Check if Standard Drawings have been provided.

Comment. \_\_\_\_\_

- 5. Check if items and costs are provided.

Comment. \_\_\_\_\_

- 6. Check to determine if special notes are required.

Comment. \_\_\_\_\_

- 7. Check if standard notes are provided. Section 772 Standard notes can be found on the web at <http://www.ugpti.org/dotsc/prepguide/index.php> under Standard Notes

Comment. \_\_\_\_\_

- 8. Check if the utility company feed point letter is prepared.

Comment. \_\_\_\_\_