



Design and Plan Reviews

SWAP Projects - Iowa DOT Lettings

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Project Development Tools

- Instructional Memorandums to Local Public Agencies (I.M.s)
- District (and Ames) Local Systems Staff
- **USE THE I.M. CHECKLISTS IN PREPARING YOUR SUBMITTAL!!!**

4 Key Stages in Project Development

- ✓ Programming/Activation
 - ✓ Environmental clearances/
 - ✓ Design criteria
 - ✓ Check plans
 - ✓ Final plans and contract items



Design Guidelines

New Rural Construction or Complete Reconstruction

- Design Aids Tables (Aids) – IM 3.210
 - Use to determine initial design parameters
 - Values below those in the Aids table will be considered on a project-by-project basis if explanation is provided
- AASHTO Guidelines Tables (Guides)- IM 3.210
 - Use if Aids Table design values cannot be met
 - Design exception is required if Guidelines Table values cannot be met

Design Guidelines

New Construction or Complete Reconstruction, Urban

- Statewide Urban Design and Specifications (SUDAS) Chapter 5 Roadway Design
 - Section 5C-1 Geometric Design Tables provides design element values based on classification, land use, and design speed
 - Use “Preferred” tables to determine initial design values; “Acceptable” tables may be used if explanation is provided
 - Design exception is needed if “Acceptable” values cannot be met

Design Guidelines

Resurfacing, Restoration, or Rehabilitation (3R) Projects

- 3R Tables for Rural Collectors and Urban Arterials and Collectors – IM 3.214
 - Rural Table design values based on project impact and design volume ADT
 - Urban Table design values based on roadway classification and number of lanes
 - 7 Safety Considerations must be addressed for all 3R projects (including urban projects)
 - Design exception is needed for values below those in the 3R table

Design Guidelines

All Highway Projects

■ Additional Information

- IM 3.213 Traffic Barriers (Guardrail & Bridge Rail) – SWAP project funds can be used.
- IM 3.215 Clear Zone Guidelines – provides values for rural roadways based on design speed, traffic volume and sideslopes
- Clear Zone Tables - SUDAS Chapter 5, Section 5C-1 provide preferred/acceptable values for urban roadways based on design speed, traffic volume, and side slopes
- IM 3.218 Design Exception Process – use and document if needed

Design Guidelines

Bicycle and Pedestrian Facilities

- AASHTO Guide for the Design of Bicycle Facilities
 - Chapter 12 in both DOT Design Manual and SUDAS Urban Design Standards, contain the same guidance
 - Plans should include signing and pavement markings per MUTCD Part 9 “Traffic Control for Bicycle Facilities”
 - Be aware of ADA requirements affecting shared use facilities
- Accessibility Exceptions Certification
 - Required if the AASHTO design values are not met
 - Certification Form 517118 must be prepared and submitted
 - Include supporting documentation as appropriate



Design Guidelines

DOT/SUDAS Compatible Specifications

- Technical aspects are common in the following specification sections:
 - Trench and Trenchless
 - Sanitary Sewers
 - Storm Sewers
 - Water Mains
 - Miscellaneous Landscaping
 - Retaining Walls

Design Guidelines

DOT/SUDAS Shared Figures/Standards

| | | | |
|--|--|-------------------------|----------|
|  SUDAS |  Iowa Department of Transportation | REVISION | |
| | | New | 04-19-11 |
| FIGURE 7010.101 | STANDARD ROAD PLAN | PV-101 | |
| | | SHEET 1 of 8 | |
| REVISIONS: New. Replaces PV-1. Added Detail D-2 to sheet 4 and combined with SUDAS. | | | |
| <i>Paul D. Wiegand</i> | | <i>Deanna Maifield</i> | |
| SUDAS DIRECTOR | | DESIGN METHODS ENGINEER | |
| JOINTS | | | |

Items not required for SWAP Projects

- **Preliminary Plans** – LPA may request
 - **Hydraulic Review** (Bridge projects)
LPA may request
 - **Structural Review** (Bridge projects)
Non standard bridges – LPA may request

Check Plans

■ Purpose

- Obtain an acceptable set of plans for letting through the Iowa DOT
- Check Plans should be **100% complete**

■ Guidelines

- Both check and final plans are required for all projects let through the DOT
- DOT specifications must be used
 - Limited opportunity for editing
 - Bid items

Check Plans

- Should be **100% COMPLETE**
- Are they **BIDDABLE** and **CONSTRUCTABLE**?
- No review without Environmental clearances!



Check Plans

■ Preparation – All Projects

- Apply IM 3.505 Check and Final Plans
- Use I.M. 3.505 Attachment B (Check and Final Plan Checklist) in plan development
 - DOT plan format
 - STIP Description and location
 - Letting date
 - SWAP program amounts
 - Current Design Details and Road Standards
 - Sheet Index



Check Plans (Cont'd)

■ Preparation – All Projects

□ I.M. 3.505 Attachment B items

- Certified plant inspection
- Bid items: Codes, estimate reference information, method of measurement/basis of payment, etc.
- Typical sections (existing and proposed)
- Salvaged items
- Tabulations
- Permits: ACOE, Floodplain, NPDES storm water



Check plans

- Topsoil and NPDES Permits
 - If a general NPDES permit is required, project must provide for at least four inches (4”) of topsoil on “non-surfaced” disturbed areas
 - Individual NPDES permits may have other requirements
 - Default strip and placement thicknesses are included in specs for the available bid items:
 - Strip/Salvage/Spread: common, easily applied
 - Furnish/Spread: contractor-provided
 - Spread: from existing stockpile
 - Review the site - bid items for temporary erosion control

Check Plans (Cont'd)

- Preparation – All Projects
 - I.M. 3.505 Attachment B items
 - Pollution Prevention Plan (PPP)
 - Pavement removals
 - Existing and proposed right-of-way
 - Vertical profile data
 - Traffic control
 - Utilities
 - Sidewalks



Check plans

- Pedestrian Facilities During Construction
 - Pedestrian traffic must be addressed in the project traffic control plan and/or staging
 - Design activities include:
 - Determine the current level of accessibility
 - Evaluate the project impact on pedestrian facilities
 - Develop pedestrian accommodations to provide the best accessibility practical during all stages of work
 - Consider local input where additional needs should be addressed (transit stops, schools, medical facilities, public facilities, etc.)

Check plans

- Pedestrian Facilities During Construction (cont.)
 - Consider the following options:
 - Keep facility open with “on-site detour”; safety and accessibility must be addressed
 - Close facility and provide “off-site detour” consistent with accessibility present in the route being closed
 - Provide alternate means (e.g. accessible shuttles or other forms of assistance)
 - Close the pedestrian facility
 - Temporary pedestrian facilities must be firm, stable, and slip resistant.
 - For more information, see DOT Design Manual Ch. 12, Section 12A-4

Check plans

■ Preparation – Structural Projects

- Apply IM 3.510 Check and Final Bridge or Culvert Plans
- Use I.M. 3.510 Attachment A (Bridge or Culvert Supplementary Checklist)
 - Standard Design – DOT Bridge/Culvert Standards
 - Non-Standard Design – modified standards or custom details
 - Bridge fund participation limits, shop drawings, etc.
 - Centerline section, situation plan, sounding data, etc.
 - Existing Structure: materials, disposal, etc.

Check Plans

■ Submittal

- All projects per IM 3.505 Check and Final Plans, including
 - Transmittal letter
 - Check or final plans
 - Detailed project cost estimate

- Structure projects per IM 3.510 Check and Final Bridge or Culvert Plans

Check Plans



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■ Review

□ District Local Systems Staff

- Current bid items
- Acceptable estimate reference information notes
- Date-sensitive details (standards, typicals, etc.)
- Environmental clearance conditions, if required

□ LPA revises and resubmits plans as necessary

Final Plan Submittal

■ SUBMITTAL ITEMS:

- Final Plan set (fully signed)
- FM Worksheet (if applicable)
- Cost estimate
- Project Development Certification form (signed)
- Corps permit (bridge projects)
- Cover letter - contract time, tied projects
- Special Provisions (if applicable)
- Public Interest Finding (if applicable)
- Bid Item Application

Final Plan Submittal

- Should be 100% complete and address all comments from check plan review
- What does the District check for?
 - Check plan comments
 - Plan quantities = Bid Item Application
 - STIP and CFYP programming
 - FM worksheet
 - Public Interest Finding



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Final Plan Submittal

- Project Development Certificate (PDC) - required
 - Confirms letting process may begin for project
 - LPA certifies railroad, utility, work on primary roadway, environmental, and right of way clearances
 - Office of Right of Way review may be needed
 - Fully executed PDC must be on file with Office of Contract before advertising for bids
 - For more information, see IM 3.750, Project Development Certification Instructions

Final Plan Submittal

- US Army Corps of Engineers (COE) Permit – as needed
 - If COE 404/401 permit is required, a copy must be on file with DOT for use by bidders
 - Submit with check plans if possible, final plans if necessary; otherwise, PIF is required
- National Pollution Discharge Elimination System (NPDES) Permit – as needed
 - If individual NPDES permit is required, a copy must be on file with DOT for use by bidders
 - Need is determined by Iowa DNR
 - e.g. Outstanding Iowa Waters locations

Final Plan Submittal

- Special Provisions (SP) – as needed
 - Used to modify existing or create new specifications
 - SP number assigned in Bid Items Application
 - Must address five areas of interest
 - Description of work
 - Material requirements
 - Construction methods/procedures
 - Method of measurement
 - Basis of Payment
 - For more information:
www.iowadot.gov/specifications/requirements/RequirementsforSubmittingSpecialProvisions.pdf

Final Plan Submittal

- Public Interest Finding (PIF) – as needed
 - Grants an exception for an established policy or rule
 - May only be used for certain conditions
 - Condition may be temporary (e.g. required project clearance is missing) or permanent (e.g. proprietary items are specified)
 - Temporary conditions must be resolved before project will be advertised for letting
 - For more information, see IM 3.760 Public Interest Findings

Final Plan Submittal

- Bid Item Application (BIA) File - required
 - Web-based process for submitting bid item data for letting
 - LPAs or their consultants must have an **Enterprise A&A** account using their exact email address used in TPMS
 - BIA file is created on-line and automatically retrieved by the Office of Contracts
 - For more information, IM 3.520 Electronic Bid Item Information

Final Plan Submittal

- Railroad Agreement – as needed
 - Railroad agreement is required when work is performed within a railroad's right-of-way
 - Submit when available, with final plans if necessary; otherwise, PIF is required
 - Office of Contracts uses information to assemble railroad data for bidders
 - Railroad insurance and/or flaggers bid items may or may not apply
 - For more information, see IM 3.670 Work on Railroad Right-of-Way



Project Turn In

If all final plan submittal items are deemed acceptable by District staff, these materials are submitted to the Office of Contract for the requested IDOT letting.

Questions?



- Reference Documents:
 - I.M. 3.005 - Project Development Submittal Dates and Information
 - As listed in previous slides
- Iowa DOT Contact Person:
 - See Iowa DOT Contact List for appropriate Administering Office staff.