INDOT Office of Hydraulics Updates and Upcoming Prequalification Requirements

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Hydraulics Updates

Three main areas for updates:

• Adjustments to how things are done
• Updates to the Hydraulics website
• Prequalification Requirements
Hydraulics Updates

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Adjustments to How Things are Done (hydrology)

Clearly defined which Huff Distributions are to be used in which county
Hydraulics Updates

Adjustments to How Things are Done (small structures)

Modeling haunches in HY-8 for box and three-sided flat top culverts
Hydraulics Updates

Adjustments to How Things are Done (small structures)

Modeling haunches in HY-8 for box and three-sided flat top small structures
Hydraulics Updates

Adjustments to How Things are Done (small structures)

Inlet conditions to use in HY-8 for various situations

<table>
<thead>
<tr>
<th>End-Treatment Type</th>
<th>Pipe Material Type</th>
<th>$K_E$</th>
<th>HY-8 Inlet Edge Condition Used</th>
<th>Standard Drawing</th>
<th>Picture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single or Multiple-Projecting Pipe With Concrete Anchor</td>
<td>Corrugated metal, smooth metal, HDPE, or PVC projecting from fill</td>
<td>0.9</td>
<td>Thin Edge Projecting</td>
<td>E 715-SPCA, E 715-MPCA</td>
<td></td>
</tr>
<tr>
<td>Single or Multiple-Projecting Pipe With Concrete Anchor</td>
<td>Corrugated Metal Pipe-Arch, projecting from fill</td>
<td>0.9</td>
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</tbody>
</table>

Find the entire document at: http://www.in.gov/indot/files/Culvert%20Inlet%20Coefficient.pdf
Adjustments to How Things are Done (small structures)

Does the **inlet** need riprap for scour protection? Need to check
Hydraulics Updates

Adjustments to How Things are Done (small structures)

Small structure design memo will need to be added to your review submittal.

Find memo templates on the Hydraulics website under Sample Documents.

The structure number and document name need to conform to the standard naming conventions.
Hydraulics Updates

Adjustments to How Things are Done (small structures)

Small Structure Naming Convention

CV 045 – 007 – 56.98

“CV” for a span of 4 feet or greater.

Route number (3 digits)

County number (also 3 digits)

Reference post number

“SC” for a span of less than 4 feet. (usually)
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Adjustments to How Things are Done (keep up!)

Stay current by checking the INDOT Hydraulics webpage at: http://www.in.gov/indot/3595.htm

Developing Design Guidance

The following list contains design guidance that may not be reflected in the Indiana Design Manual (IDM).

- The invert of a jack and bored pipes will be set to a minimum of 1 ft above the invert of the existing pipe to be lined. If this is not feasible due to site constraints, please coordinate with the Office of Hydraulics.
- All liner options should have the inverts of the pipes raised by the liner thickness. Backwater should then be calculated by taking the existing culvert’s backwater and subtract the difference of the headwaters.
- HY-8 v.7.2 is currently the only version permitted for use by the INDOT Office of Hydraulics. The link to upload the software is on the Active Design Memoranda page under number 16-34.
- Jack and bore pipes as part of a culvert liner project under the interstate are required to have a minimum inner diameter of 18 inches.
- For consistency of sump requirements and without more detailed information, if the soil map unit description contains the word sand, the required sump from IDM Fig 203-2E should be based off of the "Sump Required for Stream Bed of Sand" column.
- Reinforced concrete boxes and 3 sided structures under 18 ft span should incorporate corner haunches as produced by the manufacturer. The spreadsheet provided below, under Other Links and Forms, includes the haunch data from the manufactures.
Helpful features on the Hydraulics Website

Do you need to check the status of your submittal?

- Hydraulic Department Project List
- Pipe Lining Design
- Developing Design Guidance
- Sample Documents
- Submitting Documents
- Prequalification to Submitting Projects
- Upcoming Training
- Related Links and Documents
- Frequently Asked Questions
- Contact Information

Click this link
Get this list
Hydraulics Updates

Helpful features on the Hydraulics Website

Try scrolling down to *Other Links and Forms*...

- Field Data Form
- Safety Briefing Form
- INDOT Traffic Count Database System
- 5" Paved Invert Worksheet
- Minimum Culvert Cover Worksheet
- Elliptical HDPE Pipe Lining Worksheet
- Huff Distribution Regions
- CIPP Lining Worksheet
- Specialty Structure Coordinate Generator
- TR-20 Input Files

A variety of useful spreadsheets (but not guaranteed...)

*Plus other helpful resources*
Hydraulics Updates

Prequalification for Hydraulic Design Work

Four Unique Categories for Prequalification

- **Driveway Permits**: Any project that drains onto INDOT Right of Way
- **Storm Sewers and Detention**: Inlets, pipes, manholes and any method used to control the stormwater release rate
- **Small Structures**: Any structure that has a span of 20 feet or less
- **Bridges**: Any structure that has a span of more than 20 feet
Prequalification for Hydraulic Design Work

What does it take to be prequalified?

What makes a company prequalified?

_George Washington University_

_ABC Engineering_

_The people who work there!_

A two people are required for all categories other than driveway permits.

Driveway permits only require one engineer for the prequalification.
Prequalification for Hydraulic Design Work

What does it take to be prequalified?

What makes an engineer qualified?

- An Indiana professional engineer license
- Certification by passing the training course for the respective category
- The right kind of education and continuing education credits
- Experience with a minimum of 5 projects in the category (except for driveway permits)
Prequalification for Hydraulic Design Work

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Prequalification for Hydraulic Design Work

What is the process of applying for prequalification?

http://www.in.gov/indot/2732.htm
Prequalification for Hydraulic Design Work

When will this go into effect?

It is a process...

**Mid-March:** Proposed updates to the Consultant Prequalification Manual sent to ACEC for review and comment

**Start of April:** Proposed updates to the Consultant Prequalification Manual sent to FHWA for review and comment

**May 1st (or sooner):** Updated Consultant Prequalification Manual is published and e-mail notification e-mails sent to the consultant listserv

**August 1st (or later):** Prequalification is required for RFP’s and for Hydraulics submittals
INDOT Drainage Design for Driveway Permits Training Course

To get started, click the NEXT button.
Pros of E-Learning Classes

• Easy for Learner
• Cost Effective
• Interactive
• Reports
Questions? Contact 
Hydraulics@indot.in.gov

Want to register? Send your name and email address to Hydraulics@indot.IN.gov
Special Thanks

The entire INDOT hydraulics staff:

David Finley
Bill Schmidt
Tony Cox
Alex Schwinghamer
Jim Emerick
James Boehm
Merril Dougherty
Meagan Froman
HE-2 (Senior Hydraulics Engineer) – t.b.d.
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