

# **On-Site Sewage System (OSS) Commercial Designer Workshop**

## **Commercial OSS Designer Checklist**



Indiana State  
Department of Health

# Commercial Designer Checklist

## ISDH On-Site Sewage System (OSS) Plan Review Checksheet - (V2017-10-31)

Project #:

Designer Name:

Project Name:

Date:

Design Daily Flow (DDF):  (Gallons per Day)

Soil Loading Rate:  (gpd/ft<sup>2</sup>)





Plan Reviewer:

Date on Plans:

### ISDH USE ONLY

YES	N/A		Meets or Exceeds	Does Not Meet	Additional Information	N/A	Row #
<input type="checkbox"/>	<input type="checkbox"/>	<b>GENERAL PLAN REQUIREMENTS</b> <a href="#">[see 410 IAC 6-10.1-51]</a>					
<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">Completed Application</a>	<input checked="" type="checkbox"/>				12
<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">Onsite Soil Evaluation Completed by an Indiana Registered Soil Scientist</a>					14
<input type="checkbox"/>	<input type="checkbox"/>	Onsite System Evaluation Completed ( <i>only if reusing existing system component(s)</i> )					16
<input type="checkbox"/>	<input type="checkbox"/>	Property Lines Shown on Plans (for extremely large parcels, distances may be indicated)					18
<input type="checkbox"/>	<input type="checkbox"/>	Structures on Plans (roads, parking lots) - Existing and Proposed (see Minimum Separation Distances below)					20
<input type="checkbox"/>	<input type="checkbox"/>	Bodies of Water, Field Tiles - Existing and Proposed					22
<input type="checkbox"/>	<input type="checkbox"/>	Water and Geothermal Wells (within 300 feet of proposed OSS system)					24
<input type="checkbox"/>	<input type="checkbox"/>	<b>All</b> Soil Boring Locations on Plans					26
<input type="checkbox"/>	<input type="checkbox"/>	Sufficient borings to describe proposed soil absorption field					28
<input type="checkbox"/>	<input type="checkbox"/>	North Direction Arrow					30

# General Items

- Excel 2013 macro enabled spreadsheet (part of Microsoft Office 2013);
- Any version of Excel 2007;
- “Snipping Tool” for Windows (Windows Vista (2007) and beyond); 
- Apple “Snipping Tool”; 
- Clicking on “Enable Content” button at the top allows for the use of the external rule links; and,
- Checklist is a dynamic document (Version Date).

# General Items (Cont'd)

- Yellow boxes represent data/information that you may need to enter;
- White boxes represent either ISDH staff areas or cells that perform a calculation and do not need anything entered;
- Some yellow boxes have instructions/comments built into them. They will “pop up” once you are in that particular cell; and,
- The green checkmark to the left near the top of the 1<sup>st</sup> page is for your use. The green checkmark to the right is for ISDH use only.

# General Items (Cont'd)

- |     |     |
|-----|-----|
| YES | N/A |
|-----|-----|

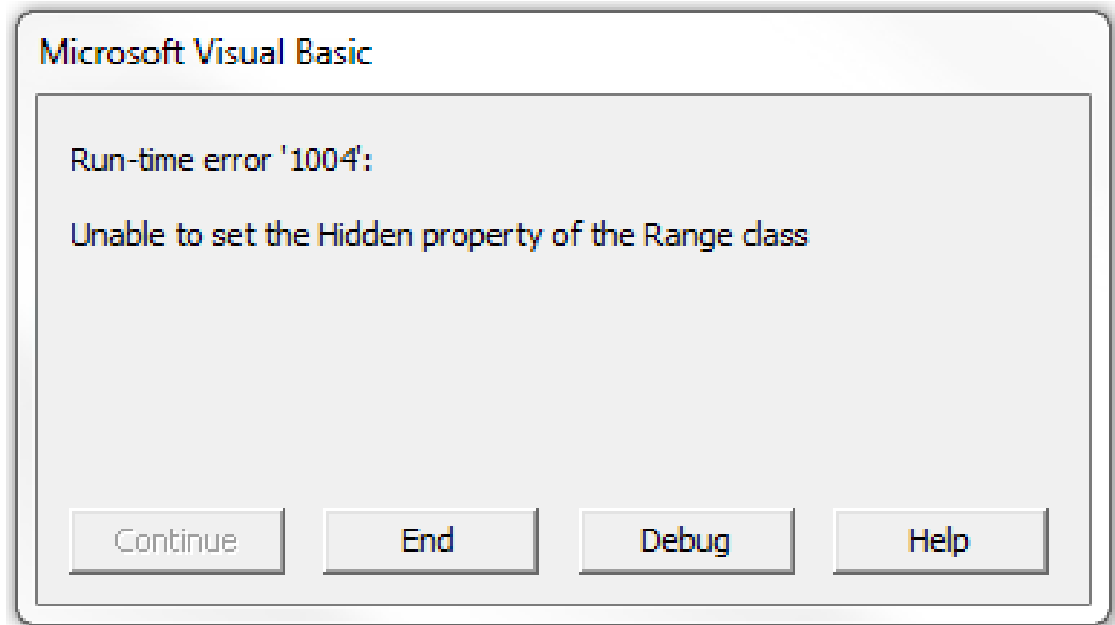
 - Cut and paste green checkmark or enter an X into the “Yes” box if it is applicable to your design **and** you have completed it. Or, do the same for the “N/A” box if the item is not applicable to your design;
- Blue colored text underlined represents a link to either an internal tab within the document or an external web page;
- Comments from ISDH plan reviewer will correspond to the Row # on the right hand side of the spreadsheet; and,
- Red colored text represents an issue/area that ISDH plan reviewer’s have frequently commented on or a recently changed/new requirement for the Commercial Plan Review program (i.e. cemetery issue).

# General Items (Cont'd)

- ISDH will check one of the 4 options to the right during the review;
- “Meets or Exceeds”;
- “Does Not Meet” – information was provided but the design did not meet 410 IAC 6-10.1, the applicable Sand Line System Indiana design manual, ISDH approved materials list, or other ISDH guidelines;
- “Additional Information” – not enough information was provided for a determination to whether or not the proposed design meets the requirements;
- “N/A” – area of review not applicable; and,
- Red vs green checkboxes.

# General Items (Cont'd)

- Check boxes are available at the top of most sections. Check box if section is not applicable to your project. Since document is “locked”, you will get a run-time error (see below). Click on “End” button and scroll down to next section.



# General Items (Cont'd)

- Comment box at the end of the checklist;
  - Plan is to add checkbox and comment section that is unlocked for your use;
- Additional “tabs” containing sample drawings;
- Minimize duplication efforts (clipping tools); and,
- Use of checklist is not required.



# General Plan Requirements Section

- “Completed Application” – not applicable if you submit plans/fee through the Department of Homeland Security system (<https://secure.in.gov/apps/dhs/drs/>);
- “Onsite System Evaluation Completed” – only applicable if you are reusing any of the existing components. If you are, must have components inspected and the report must be submitted with plans for review;
- Property Lines – must include them on plans. For large parcels, distances from property lines on plans okay; and,
- All wells within 300 feet of proposed on-site sewage system must be shown on plans. If none, state it on the plans.

# General Plan Requirements Section

- Locate **all** soil borings/pits on the plans;
- “Sufficient Borings” – we are looking to make sure proposed design of “soil absorption field” is covered by soil borings/pit;
- “Failing On-Site Sewage System” – if existing system is in failure, it must be inspected and the inspection report provided with plans. If it can be determined, the report needs to include potential reasons for the failure; and,
- “High Strength Waste” – will be applicable if “Secondary Treatment Required” box is checked on the Tech Data Sheet.

# General Plan Requirements Section

- “Regulatory Flood Elevation” – verify and note on plans if proposed system is located within flood zone/plain. All trench bottoms and existing grade for elevated sand mounds must be above the RFE; and
- “Easements” – if any portion of the proposed on-site sewage system (including dispersal area, perimeter drain and/or outlets...) cross a property line, a signed copy of a legal easement allowing for such must be submitted to ISDH prior to an approval being issued.

# Minimum Separation Requirements Section

- Soil loading rate determines separation distance requirements;
- Public water supply well separation requirement of 200 feet:
  - Includes all community system wells (i.e. cities and towns, regional water districts, mobile home parks...);
  - Includes non-community system wells with “susceptible populations (i.e. schools, correctional facilities, health care facilities and ag labor camps); and,
  - Separation requirement reduced to 100 feet if well is continuously disinfected.

# Minimum Separation Requirements Section (Cont'd)

- We will use online map programs to see if any of the listed items in the table are near the proposed system. For ones near, show on plans and their nearest separation distances to the proposed system. If none near, check not applicable;
- Show all existing items on the plans;
- For existing and proposed wells, show 100' radius (200' if applicable) on plans along with waterlines from the well to the building(s); and,
- If cemetery adjacent to the property or within 100' feet of proposed system, note that on the plans.

# Grease Trap Section

- “Grease Trap” box on Tech Data Sheet will be checked if we are requiring a grease trap; and
- For external grease traps, use “Sizing Grease Trap” section in checklist to determine minimum sizing of grease trap.

	Grease Trap #1	Grease Trap #2	Grease Trap #3
Tank Manufacturer:			
Material:			
Capacity:			

				152
--	--	--	--	-----

## Sizing Grease Trap [\[see 410 IAC 6-10.1-66\(d\)\]](#)

				159
--	--	--	--	-----

M (meals served at peak hour) =

W (waste flow rate) =  (gallons) **(Choose applicable W, R and S below)**

R (retention time) =  (hours)

S (storage factor) =

Calculated Grease Trap Size =  (gallons)


*NOTE: Final size for external grease trap must be at least 1,000 gallons and does not need to exceed 2,000 gallons!*

# Sewer Lift Station and Sewer Force Mains Section

- Only applies when sewage containing solids (i.e. not ran through a septic tank yet) is pumped;
- Duplex pumps required if Design Daily Flow is  $> 750$  gallons per day;
- Show audio/visual alarm on plans; and
- Utilize “Sewage Lift Station” calculations/float setting section as a check for your design.

# Septic Tank and Effluent Sewer Pipe Section

- Fill out septic tank table and cut and paste on plans;
- Must include tank connector manufacturer and model # (see ISDH approved list);
- If reusing existing septic tank, must have it inspected and report provided with plans for review;
- If not using existing septic tank, must note on plans how it will be properly abandoned (410 IAC 6-10.1-98);
- If multiple septic tanks, largest must be “upstream”;
- Childproof plugs recommended on all commercial projects; and,
- Use effluent sewer slope table to verify you meet minimum slope requirements.



# Dosing Tank, Pump and Force Main Section

- Fill out dosing tank table and cut and paste on plans;
- Multiple pumps and guide rail required if  $DDF > 750$ ;
- Provide gallons/inch for dose tank on plans;
- Pump must be submerged at all times; therefore, pump off elevation must be set at pump height or higher;
- Show hydraulic profile for force main(s) to show if any “high points” and therefore, the need of an automatic air relief valve. If no “high points” and all will drain back to dose tank, show weep hole in piping within dose tank; and,
- Note list of dose volumes in checklist for the different types of systems.

# Dosing Tank, Pump and Force Main Section

- Example Dose Tank (DDF = 500 gpd, flood dose system)

Gallons/inch = 20.5

Tank Floor = 900.2'

Pump Height = 18" (14" plus 4" pad)

DB = 100' of 2" force main =  $100 * 0.174 = 17.4$  gallons (18)

Dose Volume = DDF = 500 gallons

Invert of Inlet = 905.2'

- Conclusions:

Proposed dose tank will work

Guiderails not required

Multiple pumps not required

# Distribution Box and Header Pipes Section

- Provide cross section of distribution box on plans;
- Show interior dimensions (all must be at least 12 inches);
- Show on plans which baffling option chosen;
- Check header pipe slopes using table provided in this section;
- Copy and paste table on plans; and,
- If perimeter drain required, distribution box must be at least 10 feet from it.

# Subsurface Soil Absorption Fields Section

- **NEW REQUIREMENT:** Beginning, middle and end ground and invert elevations provided for each lateral on plans and a note is placed on the plans stating: “Existing grade shots obtained on-site are provided for the soil absorption field. The affixed stamp of the engineer or architect certifies that this has been done and that the grade shots provided for the soil absorption field were not extrapolated from computer generated topography for the purposes of establishing contour lines.”

