

Noblesville Digital As-Built Submittals

Noblesville City Hall
February 24, 2011
1:30 PM

Items of note generated from the presentation's discussion and group/individual question/answer are shown in underlined italicized Times Roman font.

As-Built Submittal Statistics

- Late 2004 thru 2010
 - 164 as-builts submittals by 35 firms
 - 109 submittals accepted 1st attempt (66%)
 - Firms responsible for 70% of total submittals RSVP'd for today's training
- 2008 thru 2010
 - 60 as-builts submitted by 16 firms
 - 47 submittals accepted on 1st attempt (78%)
 - Firms responsible for 68% of total submittals RSVP'd for today's training

Reason/Purpose for As-Built

- As-builts provide accurate inventory of infrastructure for cost effective and efficient asset management
- General assurance infrastructure is constructed and functions as designed
- Required for compliance by multiple unfunded State and Federal mandates

The Documents

- Version 6.1 of the Submittal Requirements and Structure Data Table
- Version 5.1 of the Noblesville_Dig_AsBuilt_Sub_Sprdsht.xls
- Stormwater_BMP.xls
- Can be downloaded at:
<http://www.cityofnoblesville.org/department/division.php?fDD=13-67>
- *Similar in format to Carmel, Fishers, Hamilton County, and Westfield, but there are differences and it is the practitioner's responsibility to know different requirements*
- *Will place Watermark behind XLS spreadsheet worksheet to help distinguish it is a Noblesville submittal table to minimize potential confusion with other agencies*

General

Submitting Files

- 1 CD- ROM in a jewel case
- Or files can be zipped and emailed to Mike Morris at mmorris@noblesville.in.us and
- Carbon copy on email or transmittal Brian Gray (bgray@noblesville.in.us) and Rod Dougan (rdougan@noblesville.in.us)
- CD label or body of email will have:
 1. Engineering Company Name
 2. Project Name
 3. Date the data is burn on CD
 4. Designate submittal as As-built
- One (1) full size paper hard copy of as-built required to be sent to Engineering Department, attention Rod Dougan

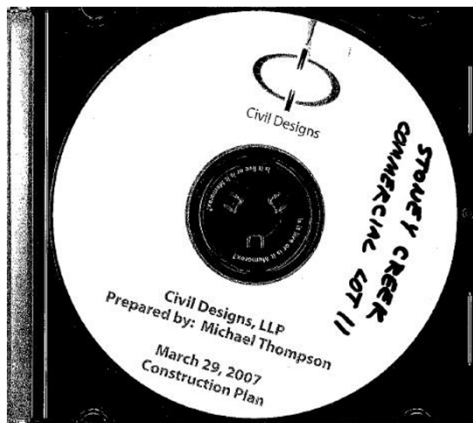
Incorrect CD Labels



2/24/2011 (Update with Presentation Q&A)

City of Noblesville - As Submittal Training

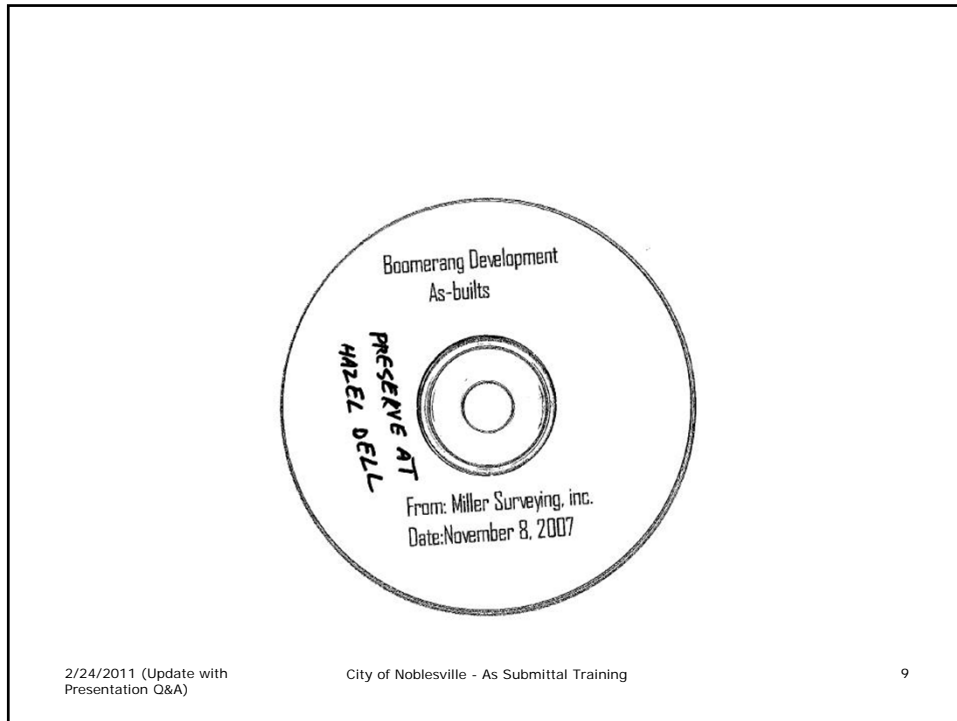
7



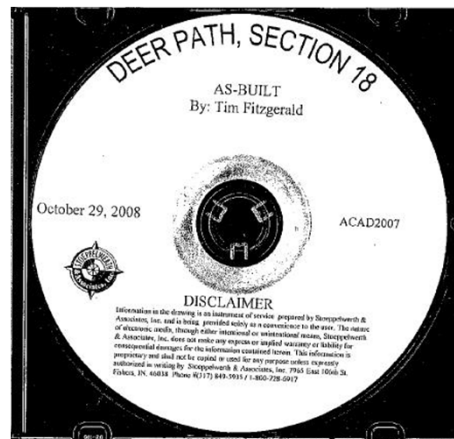
2/24/2011 (Update with Presentation Q&A)

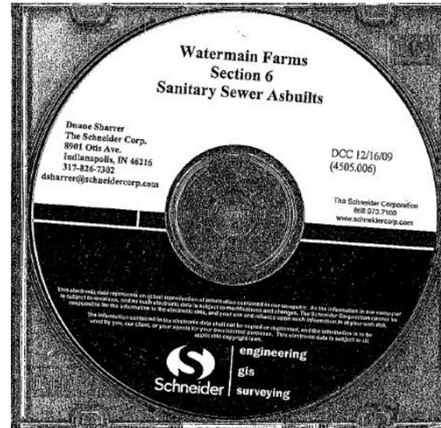
City of Noblesville - As Submittal Training

8



Correct CD Labels





Contents of CD or Email

- One (1) Overall File in DWG Format (we have the current AutoCad software)
 - Option if desired by preparer, 1 DWG for GIS submittal and 1 DWG of "hard copy" submittal. Clearly indicate in file name.
- Certified As-Built Plan & Profile Sheets in PDF
 - Signed, Stamped, & Dated and clearly note as "As-Built" on each page
 - Can be one PDF with many pages or many PDFs with one page per PDF
- One (1) Structure Data Table (XLS Spreadsheet)
- BMP Table (O&M Manual in PDF)
- BMP Data Table (XLS Spreadsheet)

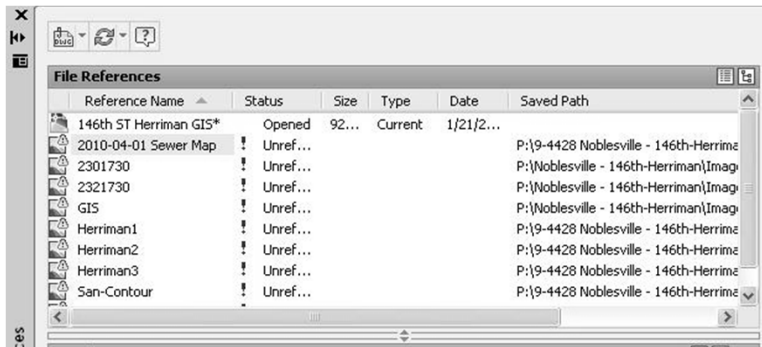
- Each file is for one section of the development
- If you have multiple sections, place them in separate directories on CD
- If emailing, than a separate zip file for each section
 - Email server can handle up to 10MB
- Acceptable to send link via email to FTP site for submittals packages larger than 10MB

The Overall CAD File

- File Names should make sense to reviewer
 - I.E. – Sagamore Sec9 asbuilts
- All pertinent drawing elements will reside in the overall file
- There will be no X-refs, cells, nodes, or proxy entities

No X-refs

- Bind all XREFs into the drawing



Layers

- Separate layers for structures, pipes, annotation, etc.
- Layer naming should make sense to reviewer
- Acceptable examples
 - Storm pipe
 - Storm structure
 - Storm text
 - Sanitary pipe
 - Sanitary str
 - sanitary txt
 - Sanitary force main
 - Sign
 - Sign label
 - Water line
 - Water hydrant
 - ...

Projection

- NAD 83 Indiana State Plane Coordinate System, East Zone, using US Survey feet and per Hamilton County datum

- Easements shall be drawn as closed polylines
- Show all off-site platted easements, right-of-ways, lot lines, etc
- Open Ditches will show flow line, toe of slope, top of bank, and sediment basins.



As-built Infrastructure

Overall file will have the exact As-built location of the following:

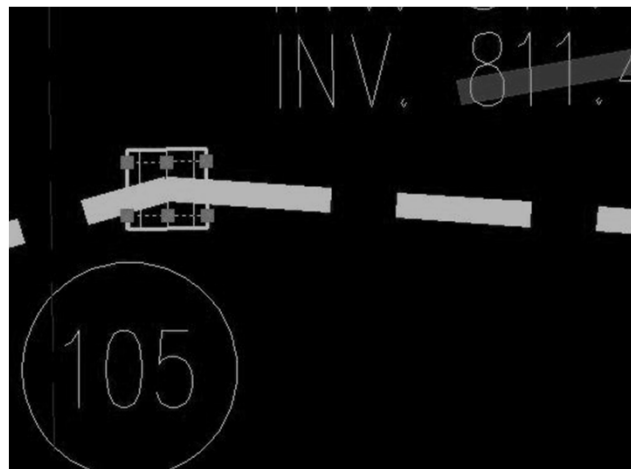
- Stormwater Manholes, Inlets, End Sections, Risers and Pipes
- Open Ditches and Swales, includes rear yard, side swales, etc. - Flowline, Top of Bank, and intermediate points to show actual constructed cross-section of open ditches at 100 foot intervals and horizontal geometry points (curves)
 - Only spot elevations are required along ditches and swales, no cross sections or profiles. Call out spot elevation labels as flowline, top of bank, etc.
- Detention- Retention Ponds with Normal Pool Elevation & Top of Bank drawn as closed polyline
- Sanitary Manholes, Gravity Lines, Lift Stations, Force Mains, Wyes and Laterals
- Air/ Vacuum relief manholes
- As-builts are only required for new or modified infrastructure.
 - For example, if there was already an existing water hydrant prior to the project that was not modified and/or adjusted as part of the project it is not required in the as-built submittal.

- Lateral markers
- End of stubs
- Hand holes and pavement loops
- Pipe Casing
- Water Mains, laterals, hydrants, valves and other water structures
 - Private utility, but is critical in 911 and Fire/Emergency Response
- BMP's
 - Shop drawings will have information to determine actual internal elevations. Requires coordination between owner, contractor, engineer, and surveyor
- Underground detention facilities
- Signage
 - Forthcoming update to comply with recent MUTCD/FHWA standards
 - Sign blocks can be a generic block/symbol and does not have to match appearance of actual sign
- Street Lights, Conduits, and Handholes

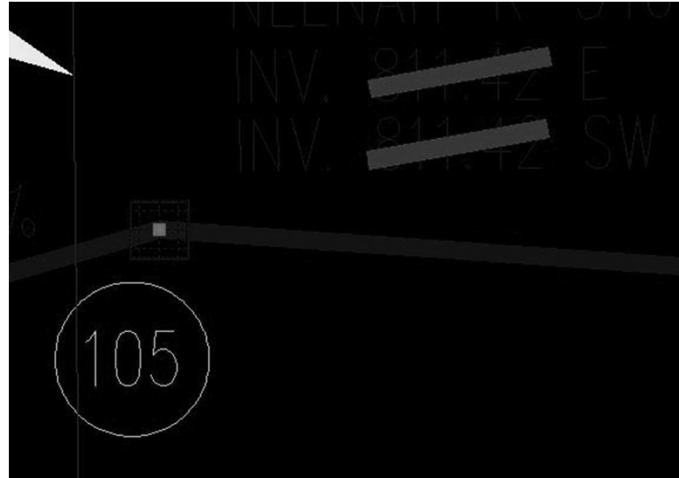
Structures

- Must be blocks or cells with a StructureID
- Cannot be polylines, circles or etc
- Block or object which is just a single insertion point is required

Wrong Structure



Good Structure



2/24/2011 (Update with
Presentation Q&A)

City of Noblesville - As Submittal Training

25

Infrastructure Lines

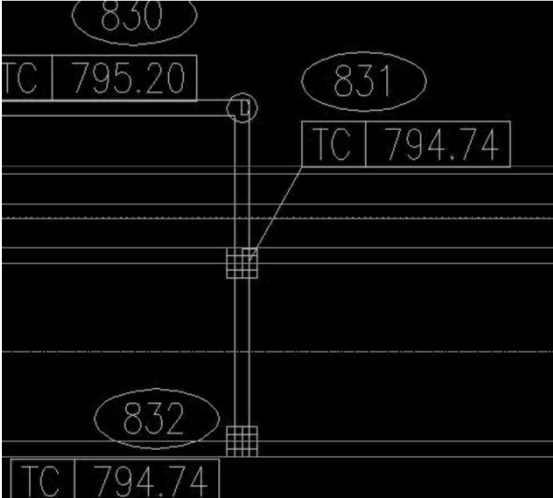
- Must be a single continuous polyline
 - Double lines which represent one (1) pipe is not acceptable
- Begin and end at a structure insertion point
- Drawn in direction of flow
- Polyline width does not have to match actual pipe size

2/24/2011 (Update with
Presentation Q&A)

City of Noblesville - As Submittal Training

26

Rejected Line Structure

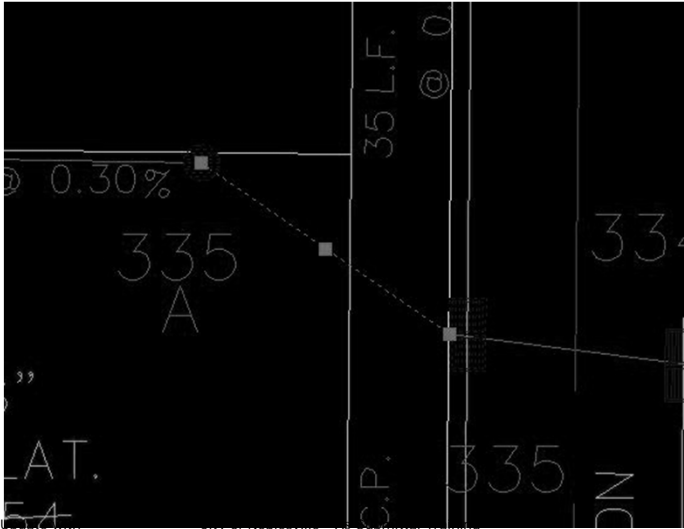


2/24/2011 (Update with Presentation Q&A)

City of Noblesville - As Submittal Training

27

Accepted Line Structure



2/24/2011 (Update with Presentation Q&A)

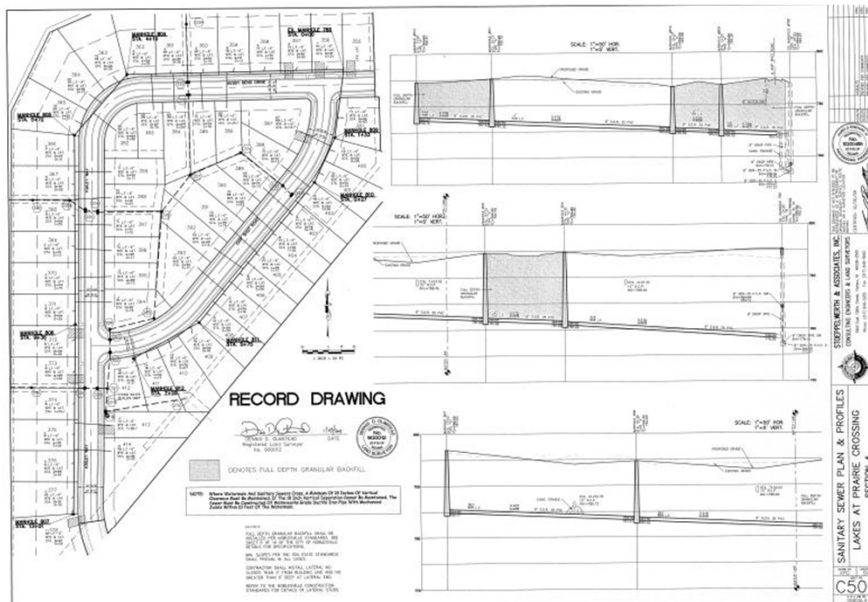
28

Additional Layers

- Lot Dimensions
- Lot Numbers
- Parcel Lines
- Perimeter Boundary Lines
- Right-of-way Lines
- Street Names
- Monumentation
- Signs (should be blocks)

Plan & Profile Sheets

- All storm and sanitary structures will have top of casting and invert elevations
- Design values for infrastructures shall be the as-built values
- Any construction values will be crossed out
- Infrastructure pipe will have
 - Length
 - Size (inches)
 - Material
 - Type (Class III, SDR 35)
 - Slope
- Signed, Stamped, & Dated and clearly note as “As-Built” on each page (See slide 12)

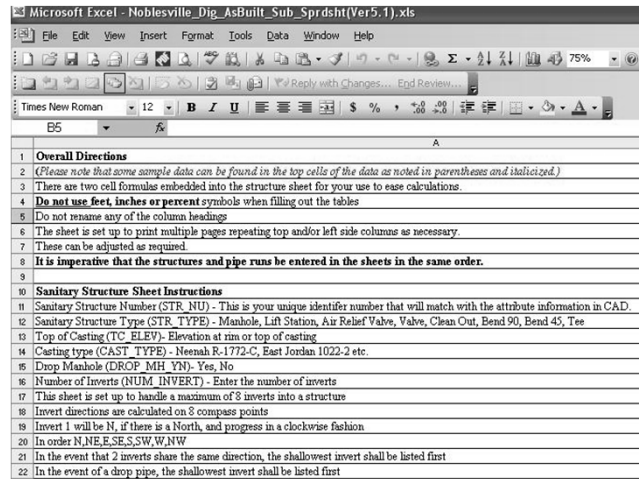


Additional PDF Sheets

- Cover Sheet
- Grading Plan
- Sanitary Sewer Plan & Profile
- Storm Sewer Plan & Profile
- Water Plan & Profile
- Lighting Plan
- Erosion/ Sediment Control
- Street Signs
- Private Utility Plan
- And additional detail specific to the project

As-built Structure Data Table

Details Page



Storm and Sanitary Structures

- If drop downs are available please use them
 - *Inform GIS staff if actual items is not in drop down list to add to list*
- Inverts should start at North and go clockwise- DO NOT SKIP COLUMNS
- Select who owns the structures
 - *For example:*
 - Noblesville
 - Private
 - Hamilton County Surveyor's Office (HCSO).
- As-builts are required for private infrastructure

Storm and Sanitary Pipe

- Slope should be entered as a decimal not a percent
- Backfill must be filled out when applicable
- No percent symbols or inches
- Select who owns the pipe
 - For example:
 - Noblesville
 - Private
 - Hamilton County Surveyor's Office (HCSO)
- As-builts are required for private infrastructure per the IDDE ordinances

2/24/2011 (Update with Presentation Q&A)

City of Noblesville - As Submittal Training

37

Noblesville Contacts

- Mike Morris, GISP
 - GIS Coordinator – Utility Department
 - Ph: (317) 776-6353
 - mmorris@noblesville.in.us
- Rick Ehlin, GISP
 - GIS Analyst – Utility Department
 - Ph: (317) 776-6353
 - rehlin@noblesville.in.us
- Jim Hellmann, PE
 - Project Manager - Engineering Department
 - Ph: (317) 776-6330
 - jhellmann@noblesville.in.us
- Ira Goldfarb, CESSWI
 - Stormwater Specialist – MS4 Department
 - Ph: (317) 776-6330
 - igoldfarb@noblesville.in.us

2/24/2011 (Update with Presentation Q&A)

City of Noblesville - As Submittal Training

38

QUESTIONS?

*Answers to questions specific to topics were added
that portion of the presentation.*