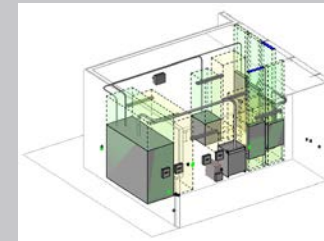
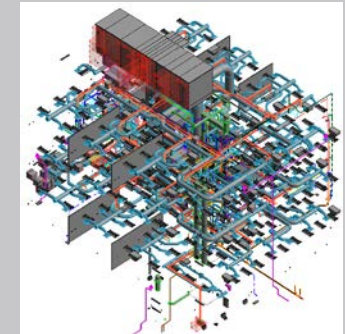
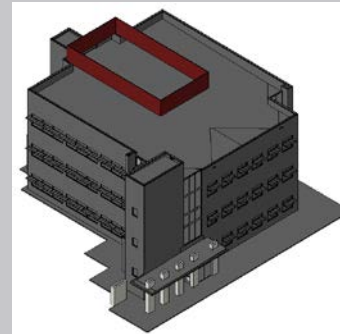


# SNL Facilities Organization

## BIM Program

2017 Update

*Exceptional service  
in the national interest*



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# 2015 BIM Program Focus & Goals Refresher

Development of BIM Standards

Development of Model Progression Management & Meetings

Development of Revision Management for Projects

Development of SNL Facilities BIM Revit Files Template

Include 3D Scanning into the As-built Process



# 2016 BIM Program Focus & Goals

Create Revit BIM Template

Establish a Project Browser Standard Format

Establish a Standard Parameter Naming Convention

Install SNL FMOC BIM Server Hardware

Implement IMAGINiT's Clarity Software for BIM Viewing

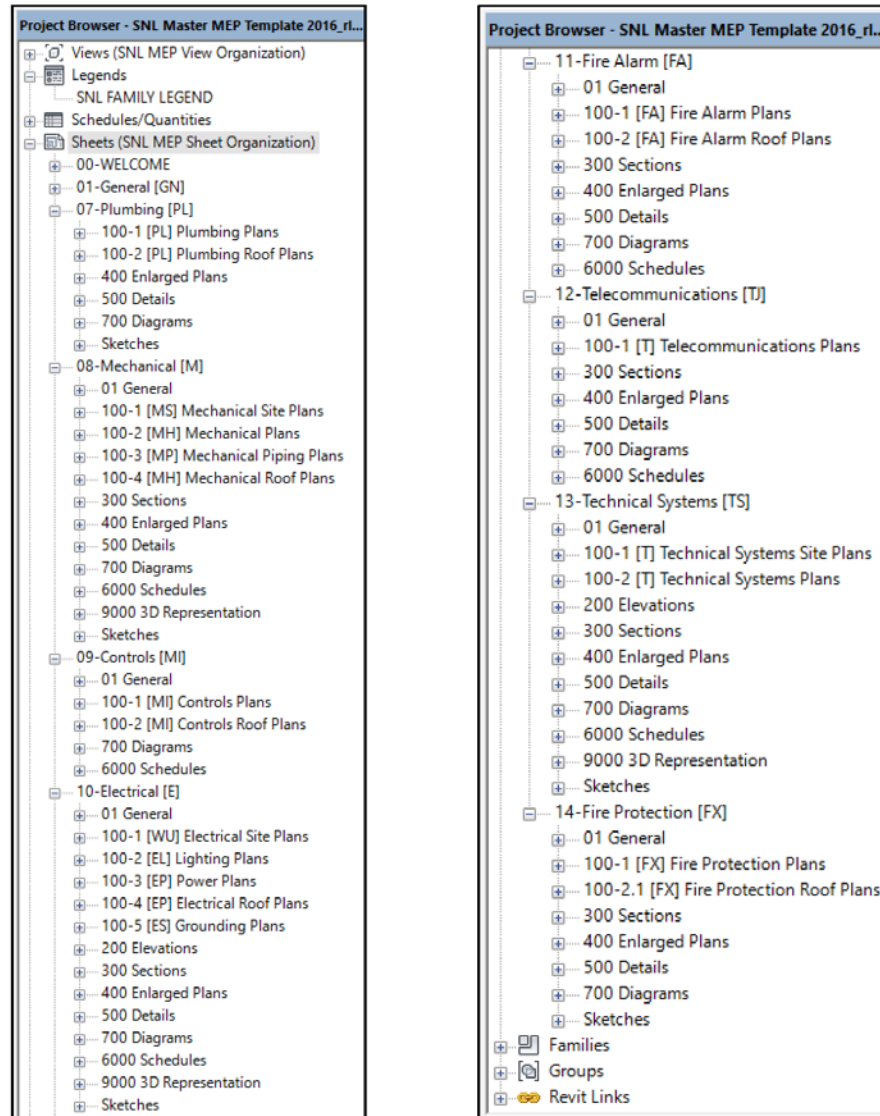
Pilot the use of Revit BIM for Fabrication

White Paper on BIM Platform Neutral Deliverables



# Project Browser Layout

Refer to image below for first two levels of sheet organization in SNL MEP Master Revit Template:





# Parameter Naming Convention

## Sheet & View Organization

### Title Block Population

Project Parameters

Parameters available to elements in this sheet

- SNL Sheet Discipline
- SNL Sheet Discipline Order
- SNL Sheet Set Organization
- SNL Sheet Submitted
- SNL View Organization
- SNL\_11X17\_8.5X11 ASI-RFI
- SNL\_11X17\_8.5X11 ASI-RFI TTTL
- SNL\_11X17\_8.5X11 DATE
- SNL\_11X17\_8.5X11 REFERENCE S
- SNL\_11X17\_8.5X11 REFERENCED
- SNL\_JAE PROJECT NUMBER
- SNL\_IBLDG NUMBER
- SNL\_IDISCIPLINE
- SNL\_IDISCIPLINE SUB
- SNL\_IP.O. NUMBER
- SNL\_IPROJECT DESCRIPTION

## Project Submittal Information

Project Parameters

Parameters available to elements in this sheet

- SNL\_IREV CKD A
- SNL\_IREV CKD B
- SNL\_IREV CKD C
- SNL\_IREV CKD D
- SNL\_IREV CKD E
- SNL\_IREV CKD F
- SNL\_IREV CKD G
- SNL\_IREV DWN A
- SNL\_IREV DWN B
- SNL\_IREV DWN C
- SNL\_IREV DWN D
- SNL\_IREV DWN E
- SNL\_IREV DWN F
- SNL\_IREV DWN G
- SNL\_ISEQ NUMBER
- SNL\_ISUBMITTAL INFO

## General Building Information

### MEL Equipment & Revision Tracking

Project Parameters

Parameters available to elements in this sheet

- SNL\_BLDG FLOORS
- SNL\_BLDG NAME
- SNL\_BLDG SQ FT
- snl\_MEL Equip Class
- snl\_MEL Maximo Number
- snl\_MEL New Remove Replace
- snl\_MEL Quadrant
- snl\_MEL Tech Area
- snl\_revision A
- snl\_revision B
- snl\_revision C
- snl\_revision D
- snl\_revision E
- snl\_revision F
- snl\_revision G
- SNL\_TA-NUMBER

Note: "SNL\_11X17" and "SNL\_I" designations in Parameter names indicate **Shared Parameters** in Title Block Family - these Parameters should not be edited.

### Mechanical Equipment Parameters

Additional Parameters were created for reporting Mechanical Equipment information. These parameters are designated with the naming format of "z\_SNL ..." and are shown in the images below. These parameters are currently **Project Parameters** but may be replaced by **Shared Parameters** depending on data transfer solutions.

z\_sn1\_M\_AHU CC MIN ROWS

z\_sn1\_M\_AHU CC S.H. MBH

z\_sn1\_M\_AHU CC T.H. MBH

z\_sn1\_M\_AHU CC VOL GAL

z\_sn1\_M\_AHU CC WATER PD FT

z\_sn1\_M\_AHU CC WB IN

z\_sn1\_M\_AHU CC WB LVG

z\_sn1\_M\_AHU HC AIR PD IN WG

z\_sn1\_M\_AHU HC CLG CFM

z\_sn1\_M\_AHU HC EAT DEG. F

z\_sn1\_M\_AHU HC EWT DEG. F

z\_sn1\_M\_AHU HC GPM

z\_sn1\_M\_AHU HC LAT DEG. F

z\_sn1\_M\_AHU HC LWT DEG. F

z\_sn1\_M\_AHU HC MBH

z\_sn1\_M\_AHU HC MIN ROWS

z\_sn1\_M\_AHU HC VOL GAL

z\_sn1\_M\_AHU HC WATER PD FT.

z\_sn1\_M\_AHU HZ

z\_sn1\_M\_AHU LOCATION

z\_sn1\_M\_AHU OPER. WEIGHT

z\_sn1\_M\_AHU PHASE

z\_sn1\_M\_AHU RET BHP

z\_sn1\_M\_AHU RET EXT. SP. IN.

z\_sn1\_M\_AHU RET FAN RPM

z\_sn1\_M\_AHU RET FAN WHEEL SI

z\_sn1\_M\_AHU RET HP

z\_sn1\_M\_AHU RET TOT SP. IN.

z\_sn1\_M\_AHU RET TOTAL CFM

z\_sn1\_M\_AHU SERVICE

z\_sn1\_M\_AHU SUP BHP

z\_sn1\_M\_AHU SUP CFM FAN

z\_sn1\_M\_AHU SUP EXT. SP. IN.

z\_sn1\_M\_AHU SUP FAN QUAN

z\_sn1\_M\_AHU SUP FAN RPM

z\_sn1\_M\_AHU SUP FAN WHEEL SI

z\_sn1\_M\_AHU SUP HP

z\_sn1\_M\_AHU SUP MIN OSA CFM

z\_sn1\_M\_AHU SUP TOT SP. IN.

z\_sn1\_M\_AHU VOLTS

z\_sn1\_M\_BLOWER COIL AIR P.D.

z\_sn1\_M\_BLOWER COIL CFM

z\_sn1\_M\_BLOWER COIL ENT DB (°F)

z\_sn1\_M\_BLOWER COIL ENT WB (°F)

z\_sn1\_M\_BLOWER COIL EWT (°F)

z\_sn1\_M\_BLOWER COIL GPM

z\_sn1\_M\_BLOWER COIL HP

z\_sn1\_M\_BLOWER COIL HZ



# Families Convention

## Families

Custom Families contained in the SNL Master Template files are focused on Annotation Families. These custom families have the prefix of “**SNL\_**” followed by a description of the annotation, or a single discipline designator followed by a description of the annotation. SNL Revit Template model Annotation Families are listed below:

Project Browser - BP_MEP SNL Master 2016	
<ul style="list-style-type: none"><li>Families<ul style="list-style-type: none"><li>Air Terminals</li><li>Annotation Symbols<ul style="list-style-type: none"><li>Area Tag</li><li>Automatic Up/Down Direction</li><li>Elevation Mark Body_Circle</li><li>Elevation Mark Body_Square</li><li>Elevation Mark Pointer_Circle</li><li>Elevation Mark Pointer_Square</li><li>Fixed Up Direction</li><li>Grid Head - Circle</li><li>Grid Head - No Bubble</li><li>Level Head - Circle</li><li>Level Head - No Bubble</li><li>SNL_BORDER_8.5x11</li><li>SNL_BORDER_11x17</li><li>SNL_BORDER_D+</li><li>SNL_COVER SHEET</li><li>SNL_DEMO EXTENT</li><li>SNL_DETAIL CALLOUT</li><li>SNL_DOOR TAG</li><li>SNL_E CIRCUIT PANEL TAG</li><li>SNL_E CONDUIT SIZE TAG</li><li>SNL_E HOMERUN TAG</li><li>SNL_E MECHANICAL EQUIPMENT Tag</li><li>SNL_E PANEL TAG</li><li>SNL_E TRIANGLE Keynote</li><li>SNL_E TRIANGLE TAG Left</li><li>SNL_E TRIANGLE TAG Right</li><li>SNL_FIRE ALARM DEVICE CIRCUIT Tag</li><li>SNL_KEY PLAN FAMILY</li><li>SNL_KEYNOTE ELLIPSE</li><li>SNL_KEYNOTE REMOVAL</li><li>SNL_M CONTROL DIAMOND</li><li>SNL_M DIFFUSER CFM TAG</li><li>SNL_M DIFFUSER HEX TAG</li><li>SNL_M DUCT ABBV TAG</li><li>SNL_M DUCT ACC</li><li>SNL_M DUCT ACC2</li><li>SNL_M DUCT BOD TAG</li><li>SNL_M DUCT SIZE ROTATED TAG</li><li>SNL_M DUCT SIZE TAG</li><li>SNL_M FLEX DUCT TAG</li><li>SNL_M MECH SYMBOL HEX</li><li>SNL_M VAV CFM TAG</li><li>SNL_M VAV GPM TAG</li><li>SNL_NEW TO EXISTING</li><li>SNL_NORTH ARROW</li><li>SNL_NORTH ARROW SITE</li></ul></li></ul></li></ul>	<ul style="list-style-type: none"><li>SNL_PIPE ABBREVIATION Tag</li><li>SNL_PIPE FLEX Size Tag</li><li>SNL_PIPE SIZE AND ABBREVIATION Tag</li><li>SNL_PIPE SIZE ROTATED Tag</li><li>SNL_PIPE SIZE Tag</li><li>SNL_PLUMBING HEX SYMBOL</li><li>SNL_REFERENCE TITLE</li><li>SNL_REFERENCE TITLE NTS</li><li>SNL_REVISION TRIANGLE</li><li>SNL_REVISION TRIANGLE REMOVAL</li><li>SNL_ROOM Tag</li><li>SNL_SECDN</li><li>SNL_SECL</li><li>SNL_SECR</li><li>SNL_SECS</li><li>SNL_SECTION CALLOUT</li><li>SNL_SECTION TAIL</li><li>SNL_SECTION TITLE</li><li>SNL_SECTION TITLE NTS</li><li>SNL_SITE LOCATION ARROW</li><li>SNL_SPACE Tag</li><li>SNL_T CABLE TRAY SIZE TAG</li><li>SNL_T GPON OUTLET Annotation</li><li>SNL_T RED USER OUTLET Annotation</li><li>SNL_T TELEPHONE OUTLET Annotation</li><li>SNL_TBIRD</li><li>SNL_VIEW REFERENCE</li><li>SNL_VIEW TITLE</li><li>SNL_VIEW TITLE NTS</li><li>SNL_VIEW TITLE SHORT</li><li>SNL_WALL Tag</li><li>SNL_WELCOME BORDER</li><li>SNL_Window Tag</li><li>Spot Elevation - Crosshair</li><li>Spot Elevation - Target Filled</li><li>Wire Tag</li><li>Zone Tag</li></ul>



# Worksets Convention

## Worksets

Revit Worksets provide multiple users the ability to work in one file simultaneously. Worksets can also be used for manipulation of Revit Elements for improved Modification & Visibility Control. Default SNL Template Worksets are:

### Architectural Model Worksets

Worksets	
Active workset:	
*LINKED SITE (Not Editable) <input type="checkbox"/> Gray Inactive Work	
Name	Editable
*LINKED MEP	No
*LINKED SITE	No
*LINKED SNL 1site	No
*LINKED STRUCTURAL	No
*SCOPE BOXES	No
*SHARED LEVELS AND GRIDS	No
SNL_A_FURNITURE	No
SNL_A_INTERIOR	No
SNL_A_SHELL	No
SNL_A_SITWORK	No

### MEP Model Worksets

Worksets	
Active workset:	
*LINKED_ARCH (Not Editable) <input type="checkbox"/> Gray Inactive Work	
Name	Editable
*_SYNCHRONIZE	No
*GRIDS-ACTIVE	No
*LINKED SNL 1site	No
*LINKED_ARCH	No
*LINKED_STRCT	No
*SCOPE BOXES	No
SNL_E-FIRE ALARM	No
SNL_E-GROUNDING	No
SNL_E-LIGHTING	No
SNL_E-PANELBOARDS	No
SNL_E-POWER	No
SNL_E-RECEPTACLES	No
SNL_E-SITE	No
SNL_M-AIR TERMINALS	No
SNL_M-CONTROLS	No
SNL_M-DESIGN	No
SNL_M-EQUIPMENT	No
SNL_M-PIPING	No
SNL_M-TSAT	No
SNL_M-VAVS	No
SNL_P-EQUIPMENT	No
SNL_P-FIRE PRO	No
SNL_P-FIXTURE	No
SNL_P-GAS PIPING	No
SNL_P-PRESSURE PIPING	No
SNL_P-ROOF DRAINS	No
SNL_P-WASTE & VENT	No
SNL_T-AUDIO VISUAL	No
SNL_T-CABLE TRAY	No
SNL_T-NURSE CALL	No
SNL_T-PUBLIC ADDRESS	No
SNL_T-SECURITY	No
SNL_T-VOICE/DATA	No

### Structural Model Worksets

Worksets	
Active workset:	
SNL_S_MAIN (Not Editable) <input type="checkbox"/> Gray Inactive Work	
Name	Editable
*LINKED ARCH	No
*LINKED CAD	No
*LINKED MEP	No
*LINKED SNL 1site	No
*SCOPE BOXES	No
*SHARED LEVELS AND GRIDS	No
SNL_S_FOUNDATION	No
SNL_S_FRAMING	No
SNL_S_INTERIOR	No
SNL_S_MAIN	No
SNL_S_SHELL	No

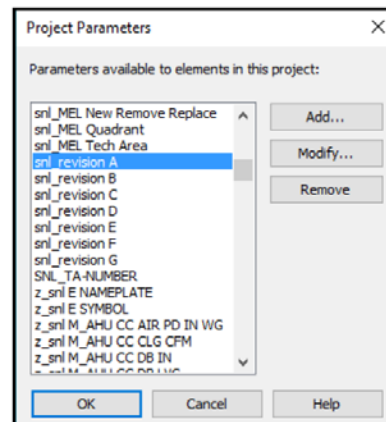


# Revision Tracking

## SNL Model Element Revision Tracking

SNL Revit Templates include a **Yes/No** Revit parameters named: **snl\_revision A - G** for model element categories. To activate these parameters, elements added or modified during a revision can be manually selected, after which the parameter for that element can be manually activated **Yes** (clicked on). Elements with the appropriate Revision parameter checked **Yes** will then be accessible for **Scheduling** or **Visibility Graphics Control with Filters**. Refer to **View Filters** and **Scheduling** sections of this document for more information on scheduling and filtering.

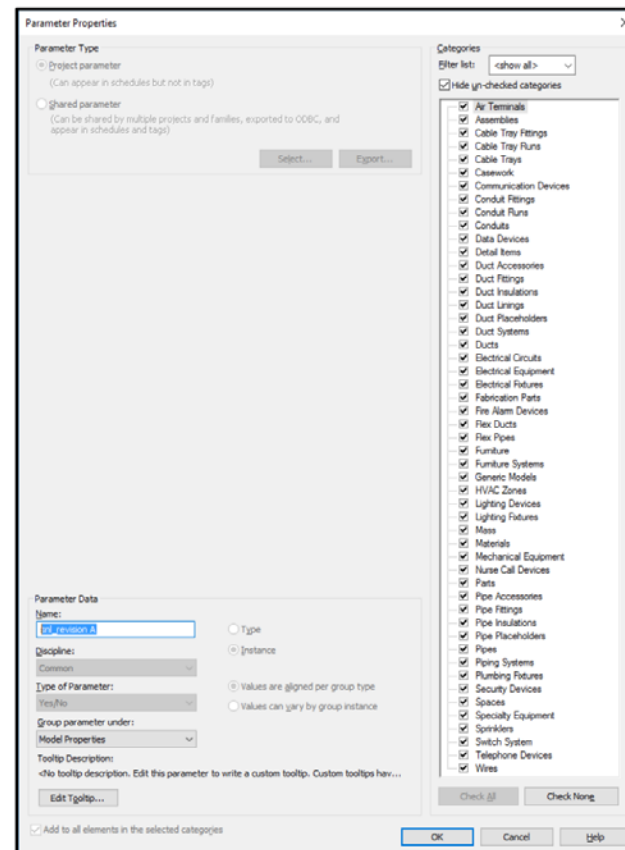
### Project Parameters:



### Project Element Browser:

Model Properties	
snl_revision A	<input checked="" type="checkbox"/>
snl_revision B	<input checked="" type="checkbox"/>
snl_revision C	<input checked="" type="checkbox"/>
snl_revision D	<input checked="" type="checkbox"/>
snl_revision E	<input checked="" type="checkbox"/>
snl_revision F	<input checked="" type="checkbox"/>
snl_revision G	<input checked="" type="checkbox"/>

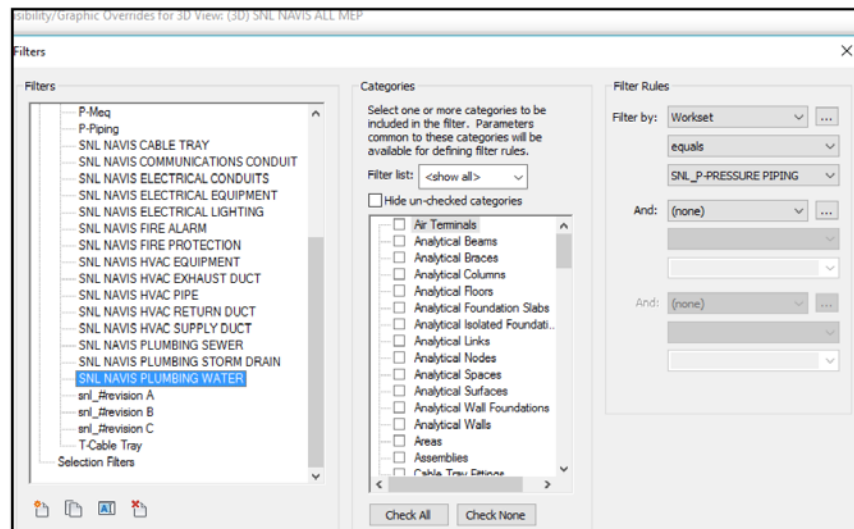
### Revision Parameter Model Element Categories:





# Navis Works Views for Export

Filter names beginning with **SNL Navis...**, are created using MEP model Worksets (1<sup>st</sup> image below) and applied to **[SNL] NAVIS 3D VIEWS**. These views are colored (2<sup>nd</sup> image below) to create colored MEP system differentiation for improved visualization and coordination or to export to *Navisworks* for collision detection.



Visibility/Graphic Overrides for 3D View: (3D) SNL NAVIS ALL MEP

Model Categories | Annotation Categories | Analytical Model Categories | Imported Categories | **Filters** | Worksets | Revit Links

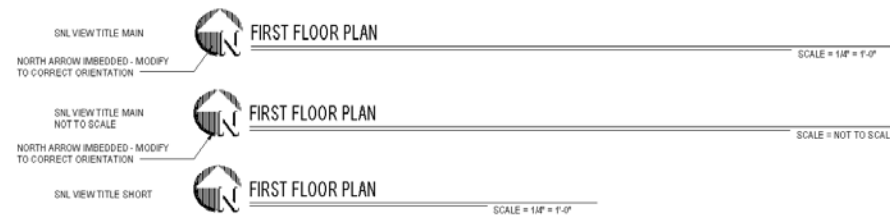
Name	Visibility	Projection/Surface		
		Lines	Patterns	Transparency
SNL NAVIS PLUMBING WATER	✓			
SNL NAVIS PLUMBING SEWER	✓			
SNL NAVIS PLUMBING STORM DRAIN	✓			
SNL NAVIS FIRE PROTECTION	✓			
SNL NAVIS HVAC PIPE	✓			
SNL NAVIS HVAC EQUIPMENT	✓			
SNL NAVIS HVAC SUPPLY DUCT	✓			
SNL NAVIS HVAC RETURN DUCT	✓			
SNL NAVIS HVAC EXHAUST DUCT	✓			
SNL NAVIS ELECTRICAL EQUIPMENT	✓			
SNL NAVIS ELECTRICAL LIGHTING	✓			
SNL NAVIS ELECTRICAL CONDUITS	✓			
SNL NAVIS COMMUNICATIONS CO...	✓			
SNL NAVIS CABLE TRAY	✓			
SNL NAVIS FIRE ALARM	✓			



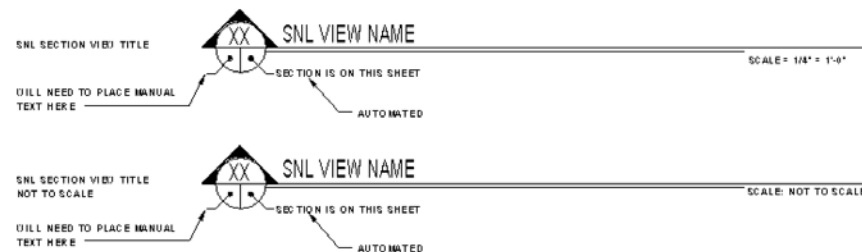
# SNL Facilities Theme Notation

SNL Annotation Families are shown in the **SNL FAMILY LEGEND** in each SNL Revit template and in images below.

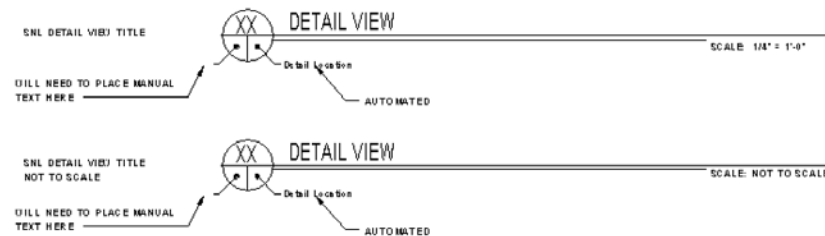
## VIEW TITLES ON SHEET



## SECTION VIEW TITLES ON SHEET



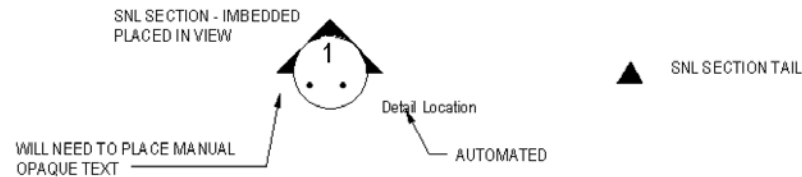
## DETAIL REFERENCE TITLES ON SHEET





# SNL Facilities Theme Notation

## SECTION CALLOUT - IN VIEW



## GENERAL SHEET INFO

1/8" TEXT - TRANSPARENT

1/8" TEXT - OPAQUE

1/8" TEXT - OPAQUE LOOP

NEW TO EXISTING

EXTENT OF REMOVAL

SNL KEYNOTE REMOVAL

SNL KEYNOTE ARROW

SNL KEYNOTE DOT FILLED

SNL KEYNOTE LOOP

SNL NORTH SHEET ARROW  
SELECT TO CHANGE DIRECTION  
YES/NO PARAMETERS

SNL KEYNOTES

SNL KEYNOTES

SNL KEYNOTES



DETAIL DOWN  
MANUAL ENTRY



DETAIL LEFT  
MANUAL ENTRY



DETAIL RIGHT  
MANUAL ENTRY

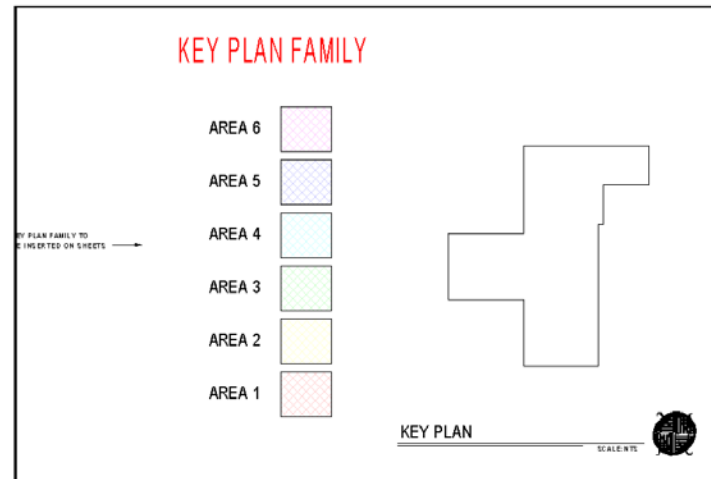
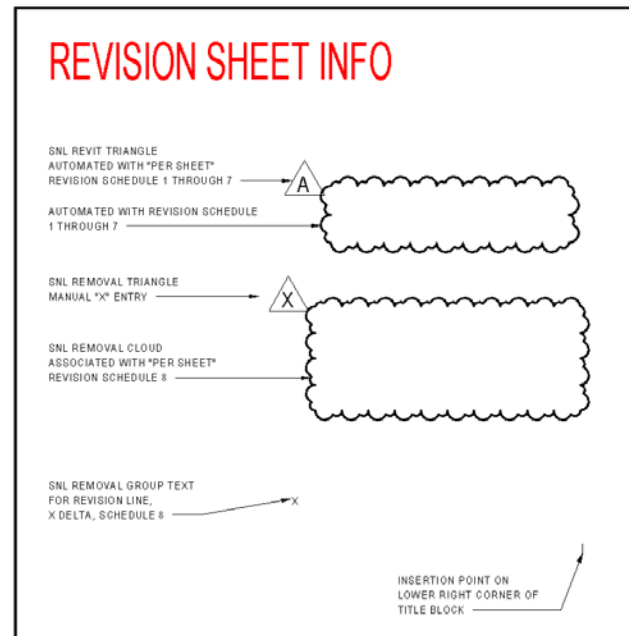


DETAIL SHORT  
MANUAL ENTRY





# SNL Facilities Theme Notation





# SNL Facilities Theme Notation




## ROOM TAGS - ARCH

SNL ROOM TAG	Room name XXXX
SNL ROOM w/SF TAG	Room name XXXX 150 SF
SNL ROOM w/VOL. TAG	Room name XXXX Volume
SNL DOOR TAG	
SNL WALL TAG	
SNL WINDOW TAG	


## SPACE TAGS

SNL SPACE TAG	Space Name 101
SNL SPACE w/SF TAG	Space Name 101 150 SF
SNL SPACE w/VOL. TAG	Space Name 101 Volume

## MECHANICAL INFO







MECHANICAL EQUIPMENT HEX SYMBOL USING MARK VALUE PARAMETER	
MECHANICAL DIFFUSER TAG USING FLOW PARAMETER	XXX
MECHANICAL DIFFUSER HEX USING MARK PARAMETER	
MECHANICAL ACCESSORIES TAG USING MARK PARAMETER	[FD]
MECHANICAL ACCESSORIES TAG USING MARK PARAMETER	[FD/SD]
MECHANICAL BOTTOM DUCT TAG USING BOTTOM ELEVATION PARAMETER	BOD=Bottom Elevation
MECHANICAL SIZE ROTATED TAG USING SIZE PARAMETER	Size
MECHANICAL SIZE TAG USING SIZE PARAMETER	Size
MECHANICAL FLEX DUCT SIZE TAG USING DIAMETER PARAMETER	Diameter
CONTROLS DIAMOND SYMBOL USING KEYNOTE PARAMETER	

## PLUMBING/PIPING INFO

PLUMBING FIXTURE HEX SYMBOL USING MARK VALUE PARAMETER	 NOTE
PIPING SIZE USING SIZE PARAMETER	Size
PIPING SIZE ROTATED USING SIZE PARAMETER	Size
PIPING ABBREVIATION ABBREVIATION PARAMETER	System Abbreviation
PIPING SIZE/ABBREVIATION USING SIZE & ABBREVIATION PARAMETER	Size System Abbreviation
PIPING FLEX SIZE TAG USING DIAMETER PARAMETER	Diameter



# SNL Facilities Theme Notation

ELECTRICAL INFO	
CONDUIT SIZE TAG USING SIZE PARAMETER	Size
CIRCUIT PANEL USING PANEL & CIRCUIT NUMBER PARAMETER	Panel - 1
HOMERUN USING PANEL PARAMETER	Panel
EQUIPMENT PANEL TAG USING MARK PARAMETER	1
ELECTRICAL TRIANGLE KEYNOTE ON SHEET	
ELECTRICAL EQUIPMENT ON VIEW - LEFT LEADER	
ELECTRICAL EQUIPMENT ON VIEW - RIGHT LEADER	
FIRE ALARM DEVICE CIRCUIT TAG USING PANEL & CIRCUIT NUMBER PARAMETER	Panel- Load Name
ELECTRICAL TAG FOR MECHANICAL EQUIPMENT USING PANEL & CIRCUIT NUMBER PARAMETER	XXXX-XX
GPOIN OUTLET ANNOTATION USING LABEL PARAMETER	
TELEPHONE OUTLET ANNOTATION USING LABEL PARAMETER	
RED USER OUTLET ANNOTATION USING LABEL PARAMETER	
CABLE TRAY SIZE TAG USING SIZE PARAMETER	Size







# Future – 2017 BIM Program Goals

Incorporate ARCH/STRUC into Revit BIM Template

Pilot the Extraction of SNL Facilities BIM Parameters

Create Clarity Data Sheets and Reports

Finalize the Navis Works Workflow for Viewing BIM

Incorporate Process Updates into BIM Standards



# Thanks for Having Listening!

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