



Office of Design Update

Brian Smith, P.E.

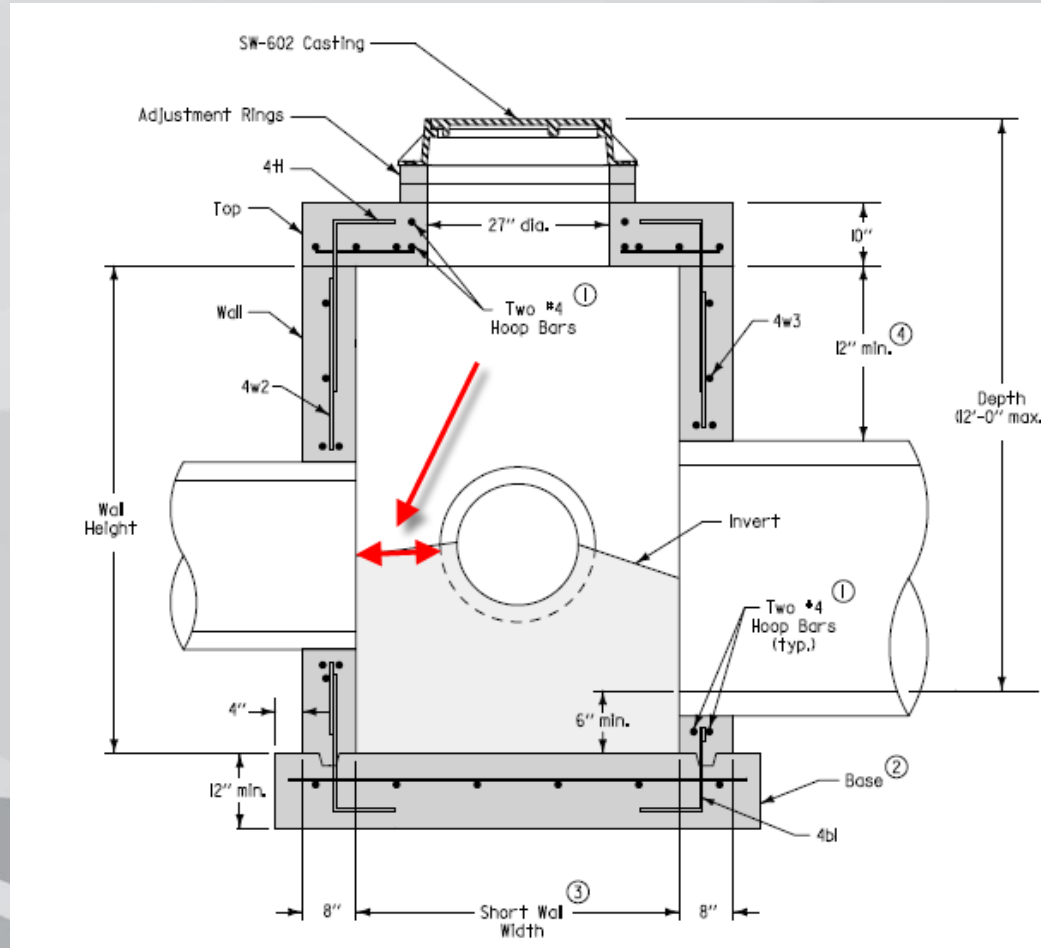
Thomas Hamski, P.E.

Discussion Topics

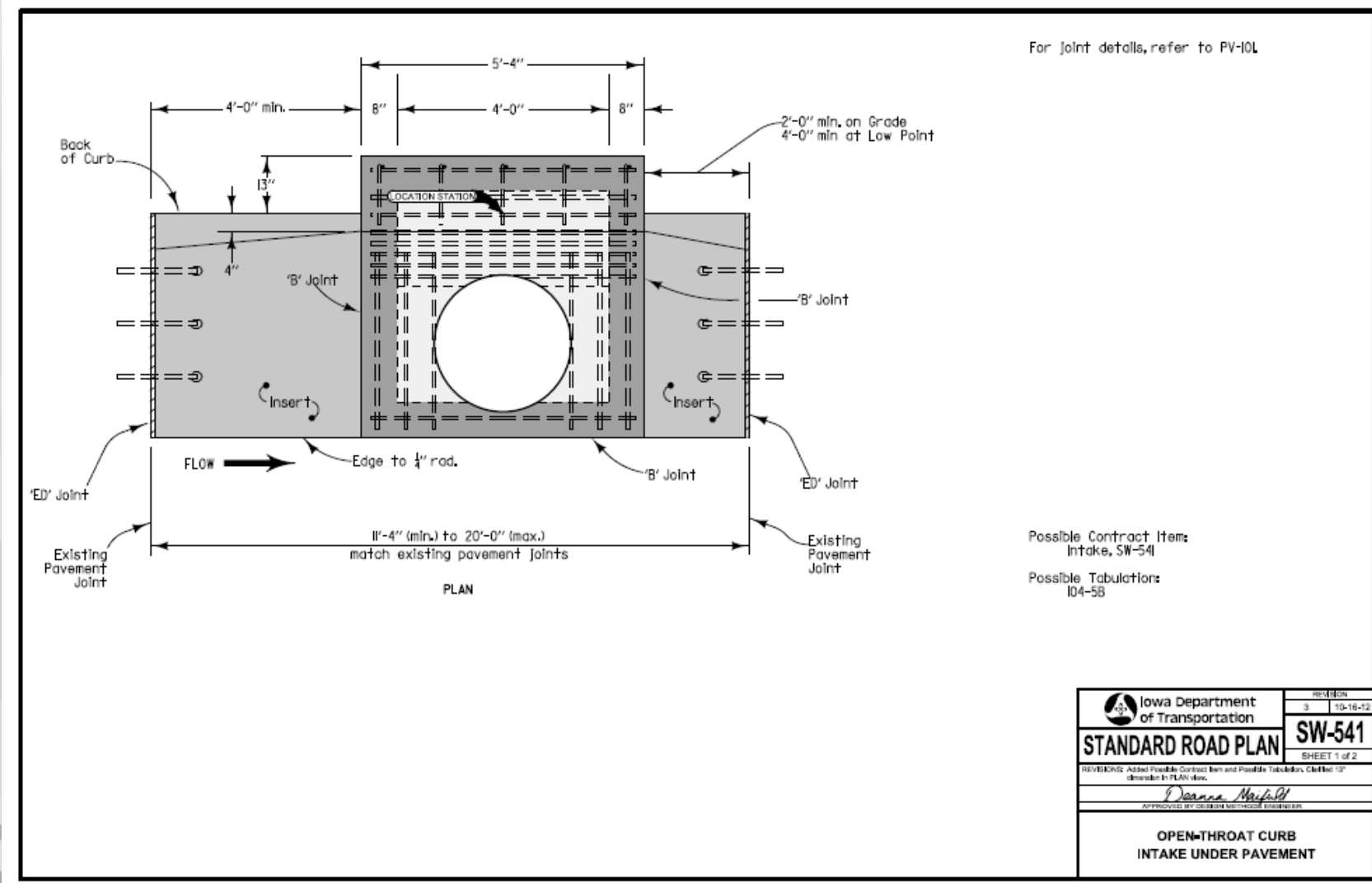
- Standards
- Plan Quality
- Plan Review Comments
- RCB backfill
- Earth Work
- Topsoil
- In Service Guardrail Reviews
- Cost Estimating
- Access Policy Update

Standards Update

- Intake Maximum Pipe size
 - Several DOT only intakes do not currently have a maximum pipe size
 - We would like a minimum of 6 inches of wall past the outside of the pipe



Standards update

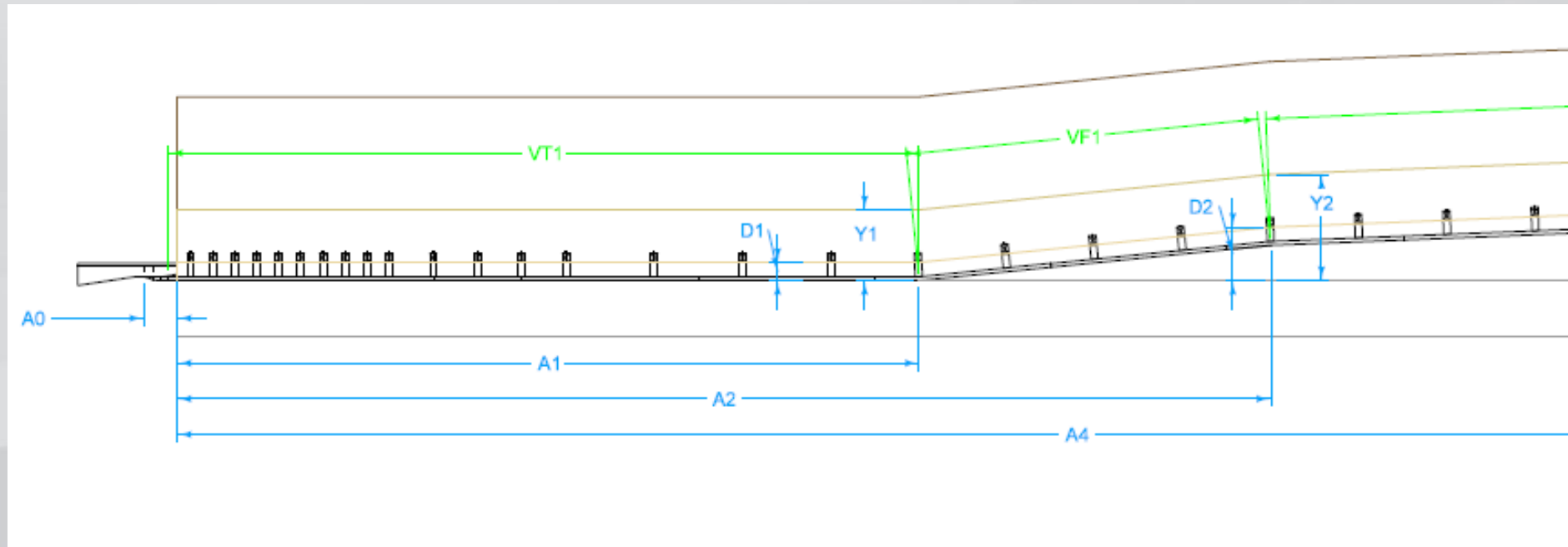


Standards Update

- **We have recently added a center line joint to our 16 foot wide ramps**
 - There has been an issue with uncontrolled cracks developing down the centerline
 - Recently it has been the practice to add a center line joint during construction
- **Layouts for Guardrail and paving at bridges**
 - Moving to a detail sheet of each bridge end
 - Dimensions will be setup so they can be laid out with a tape
 - Dimensions will use the 3 bolt hole location as a base line
 - Existing Bridges will have field measurements taken to the 3 bolt location
 - Details will have information for guardrail, paving and grading layouts

Standards Update

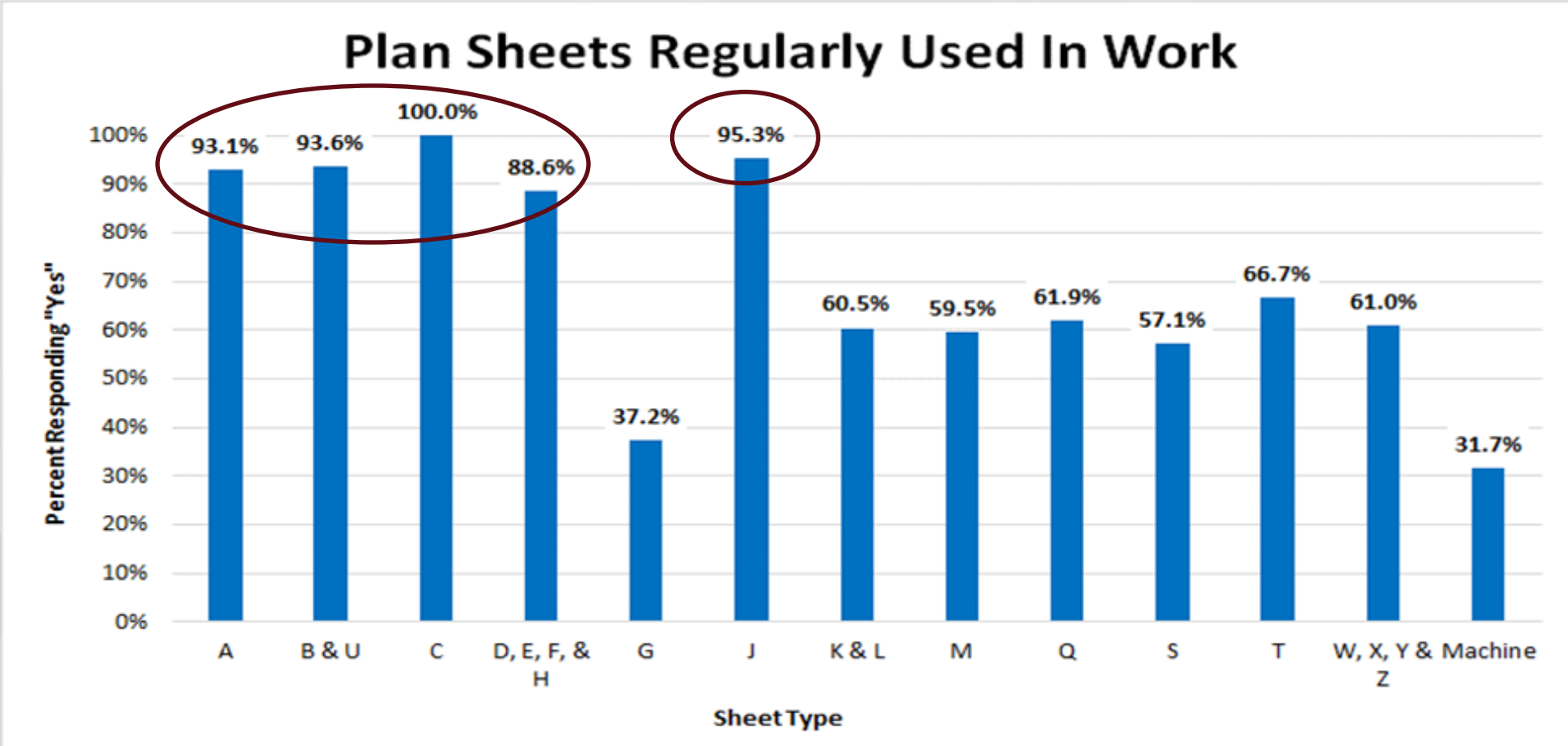
- Guardrail layout



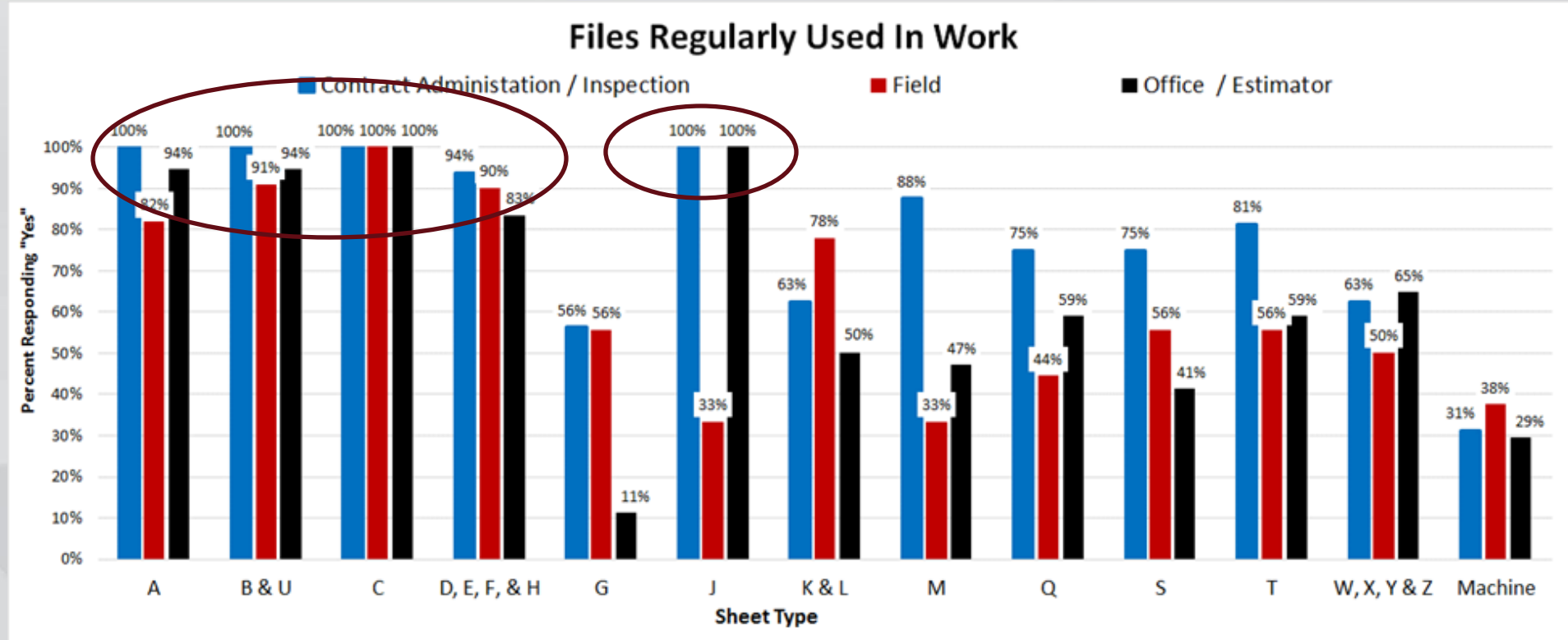
Plan Quality survey

- We recently conducted a plan quality survey with Contractors and DOT Inspectors
- To clarify responses we met with the Contractors on Monday
- In the future we will have a plan quality survey as part of the construction contract close out process.
- The next several slides show highlights of the result

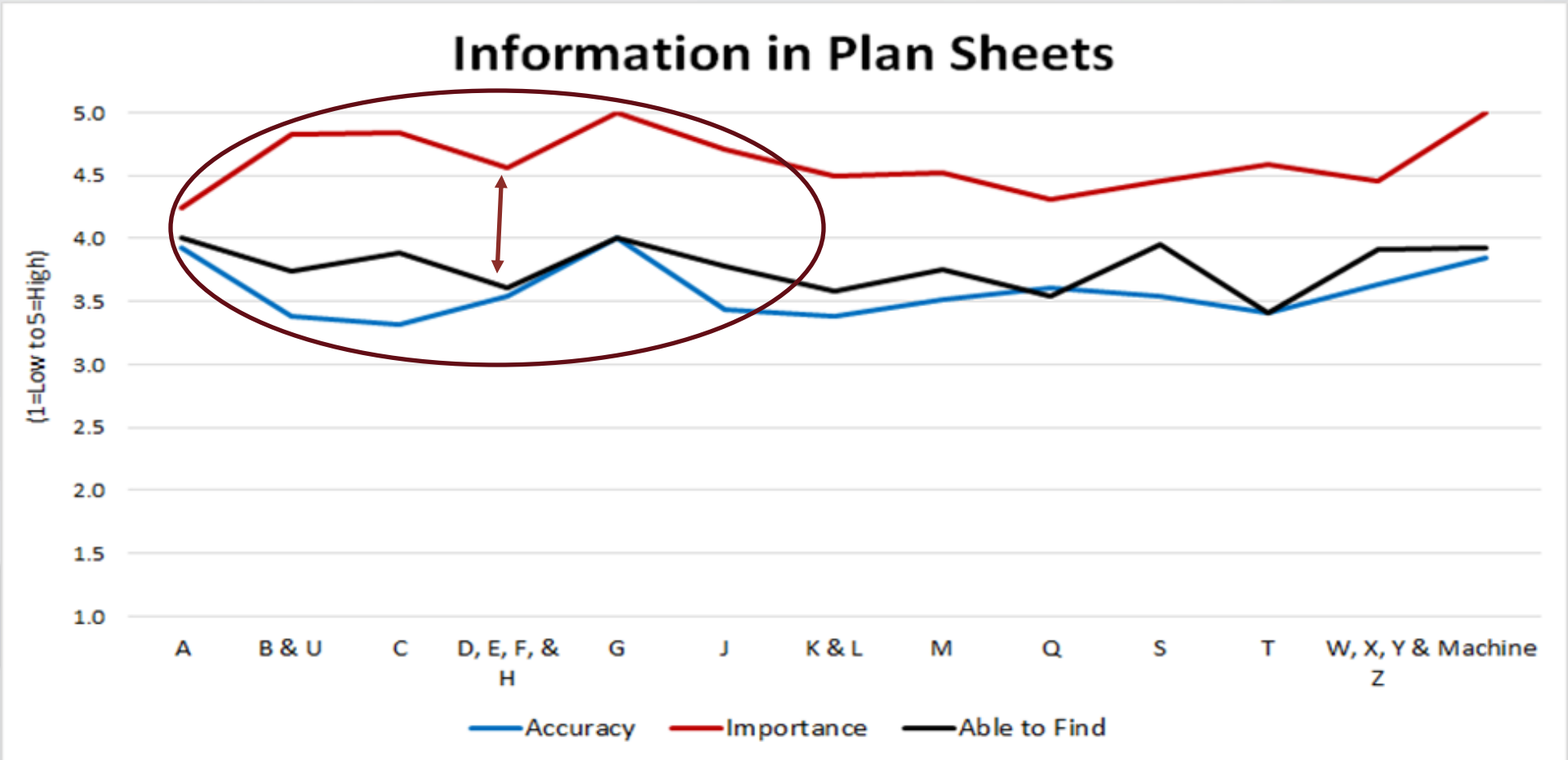
Plan Quality survey



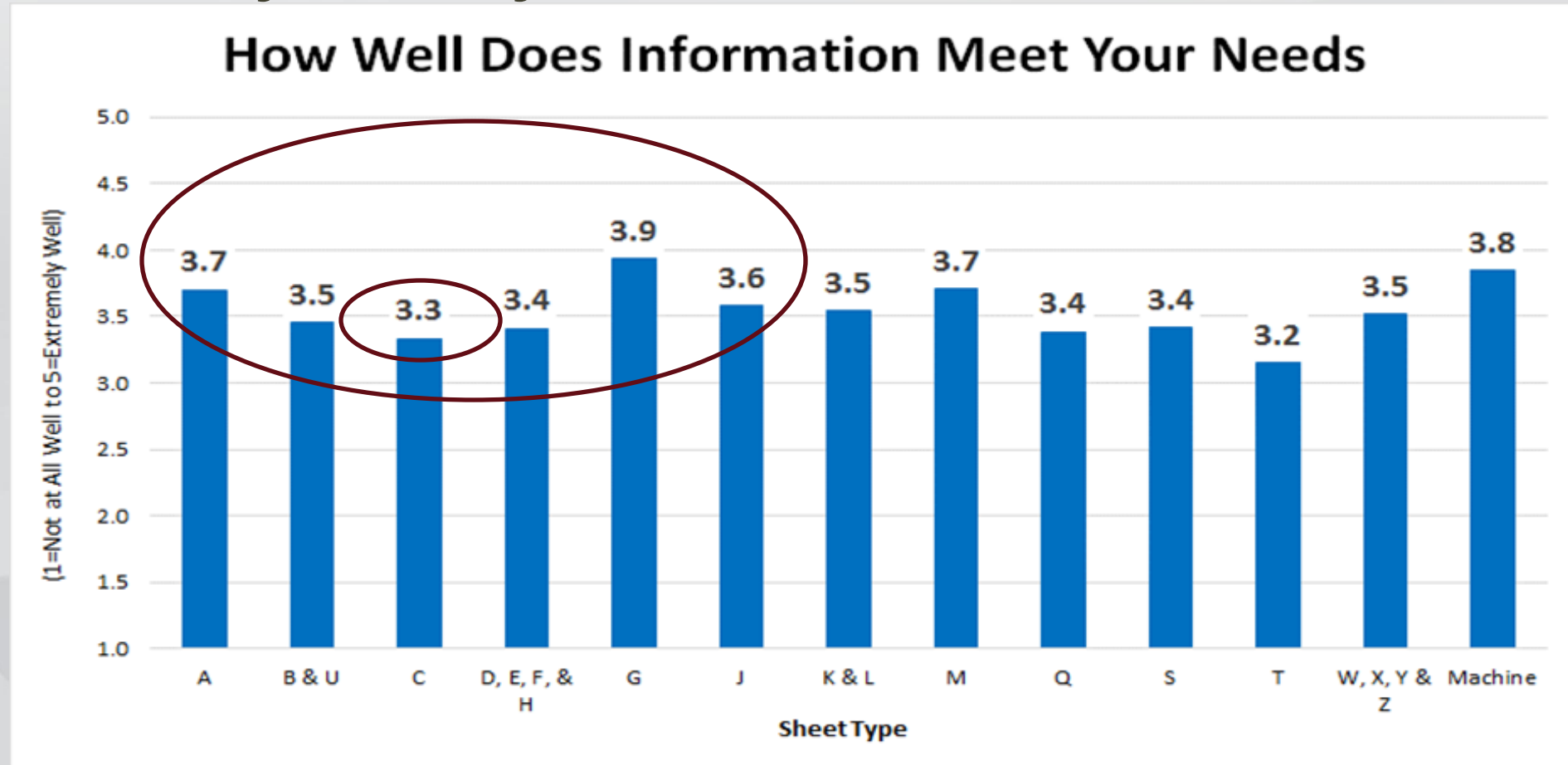
Plan Quality survey



Plan Quality survey



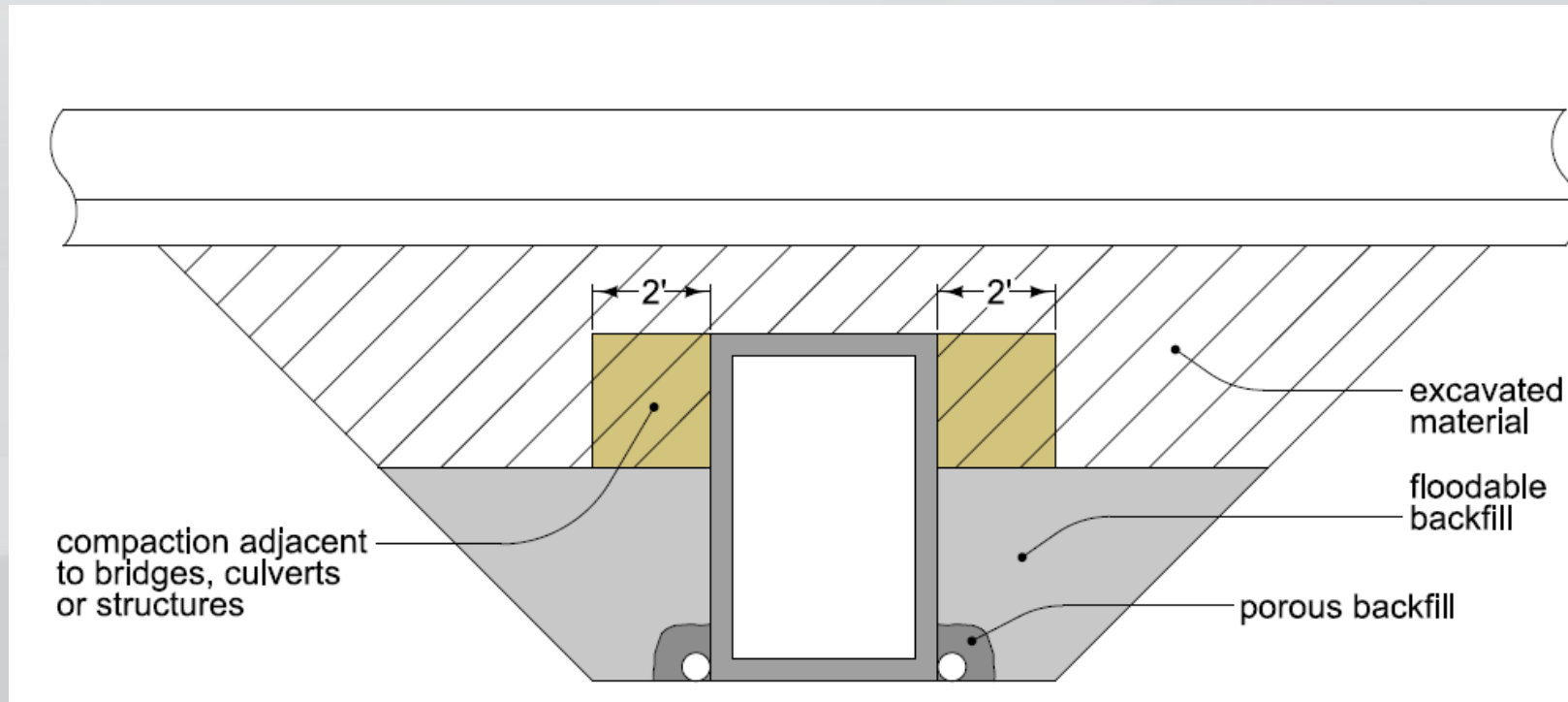
Plan Quality survey



Plan review comments

- Pavement thickness
 - To avoid last minute changes with plans make sure you contact the pavement design group as early as you can
- **Erosion control**
 - Should be reviewed with Roadside section to assure that the best erosion control practices are being used
- **Additional Rows** at the bottom of tabulations
 - The field has asked repeatedly that we leave extra rows at the bottom of our tabulations. This allows them a space to add additional items or add notes that will be incorporated into the as-built plans
- **Mileage Summaries**
 - Are no longer needed. That information should know be shown on the location map

RCB backfill



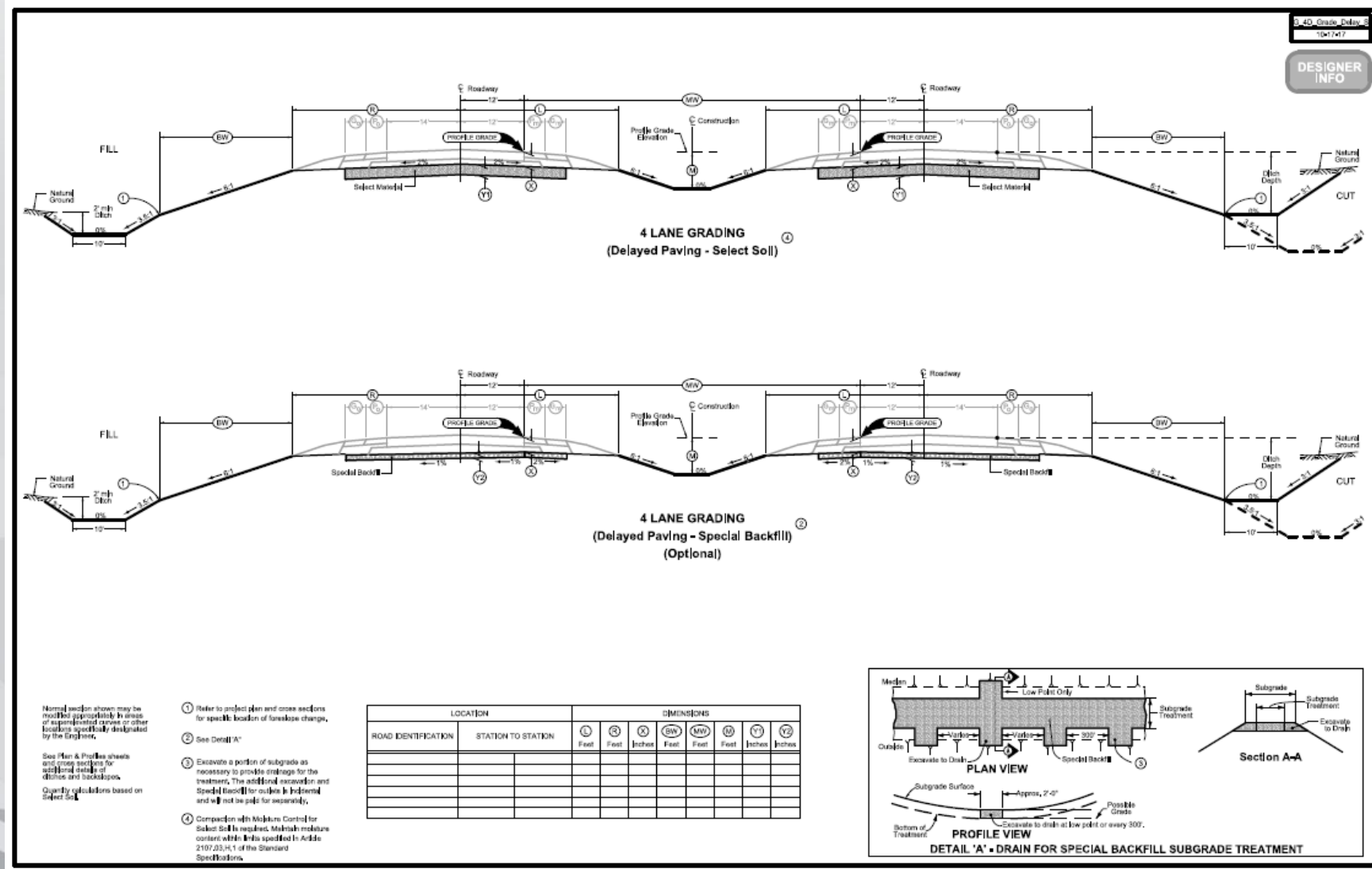
Earthwork

- Adjusted Earthwork Process a little over a year ago
- Make sure to review the chapter 5s before doing earthwork and take a look at the examples in 1F-20
- Highlight of changes
 - Moved the shrink back to the fill side
 - Added Topsoil to the T sheets
 - Added a legend sheet to clarify what the various columns mean
 - Column headings should match legend labels
 - **Subgrade treatment options**
 - Bid Contractor provided treatment when treatment is required
 - If select soil is available in the roadway cut treat it as class 10 but, make sure to note the quantity available in the class 10
 - **Waste**
 - Bid waste if you have material in excess of the fill need.
 - Do not deduct select soil from the waste quantity

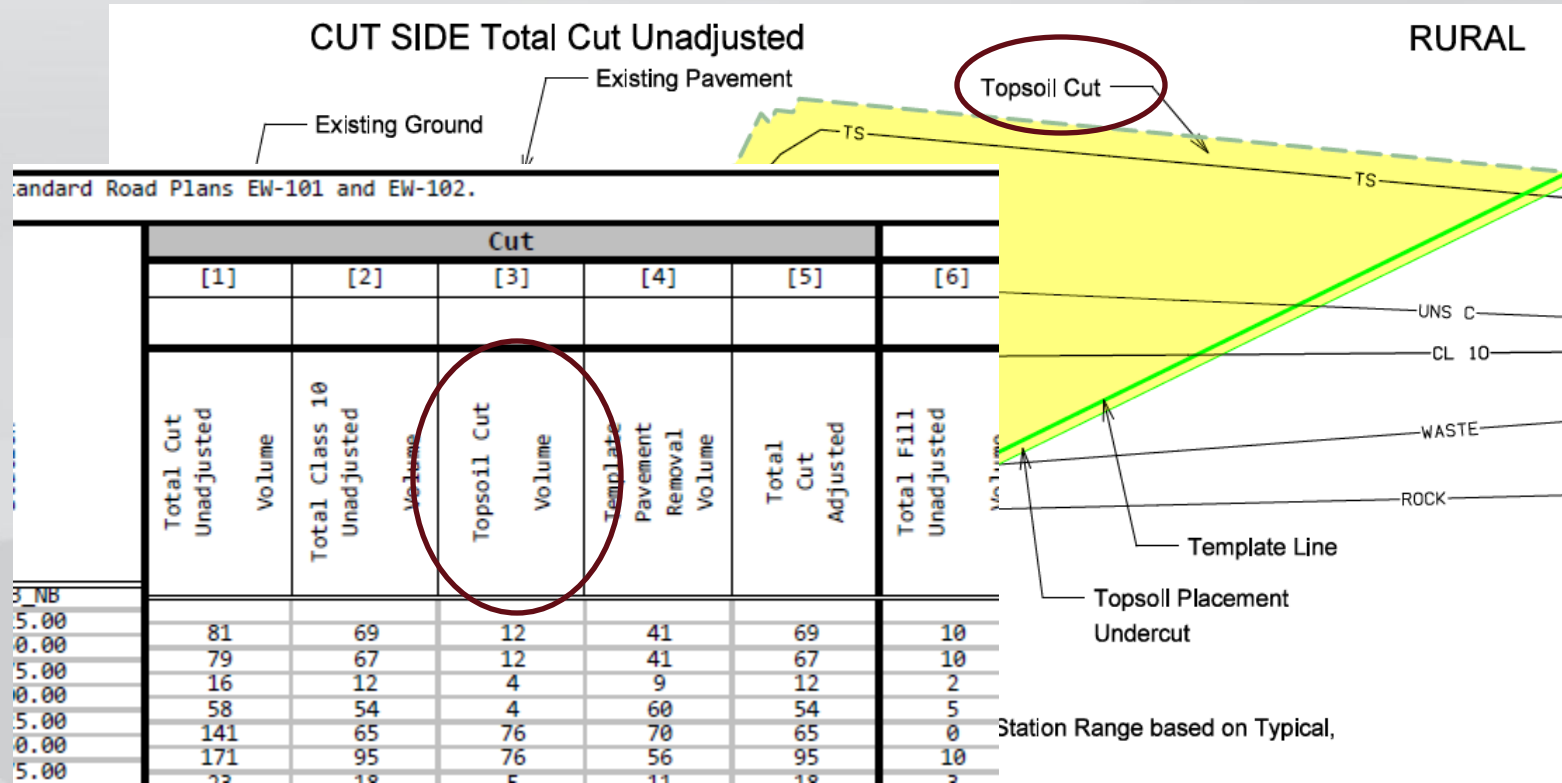
Earthwork Subgrade Treatment

- It is very important to involve our Soils section with your subgrade treatment need and selection.
- There are several ways to approach subgrade treatment and they will vary greatly depending on the materials that are available on the project and staging

Earthwork Subgrade Treatment



Earthwork Legend



- "Total Cut Unadjusted" does not include and Existing Pavement values inside or outside the cut template as shown on cross sections.
- Tabulated Plowing and Shaping operations are included in the "Total Cut Unadjusted" values.

Earthwork

- Clarification on bidding earthwork
 - Overall rule. We need to pay the contractor for the material that they cut
 - Since you are paying for the material that is cut, shrink should not be considered
 - When Contractor borrow is needed we pay for the material in place or the fill quantity without shrink added
 - **Embankment-in-Place**
 - Used when the borrow quantity is less than 10,000
 - A reference note is required that indicates it is contractor provided
 - Material submittals are not required by the contractor
 - **Embankment-in-Place, Contractor Furnished**
 - Used when the borrow quantity is greater than 10,000
 - Material submittals are required by the contractor
 - When you waste material you do not shrink it, it should be the quantity cut
 - Shrink should only be considered when you are placing material cut within the project
 - Plan to add information to the design manual to clarify
 - The T sheets should have quantity summaries on each sheet at minimum

Earthwork / topsoil

- Topsoil should be shown in the T sheets
 - This helps the contractor understand where topsoil is generated and where it is needed
- **As much as possible we should avoid contractor provided topsoil**
 - Topsoil is very difficult for contractors to obtain and expensive
- **Strip as much topsoil as you have available to avoid a need for borrow**
- **Adjust the placement thickness of your topsoil to match what is available**
- **A minimum of 4 of inches topsoil is always required**

In service guardrail reviews

- To help us make good decisions on our roadside safety hardware, we are working with several groups within the DOT to develop a data collection process that will allow us to review how the various roadside safety features are performing



Cost Estimating

- Highlights of New Software
 - Goal is to give designers more tools to develop good estimates
 - Quantity Regression is part of the tool
 - It is now possible to filter letting results by Work type, District, Season and more
 - It is possible to see the historical estimates for a project at milestone events
 - There are tools to compare two estimates
 - There is a reporting tool that shows a percentage breakdown of work within and average project and how yours estimate compares to that percentage
 - Estimates from all the disciplines are available in the same location
 - We are hoping to have all annual cost estimates completed in this system this year

Cost Estimating Regression

Item #: 2102-2710070 (EXCAVATION, CL 10, RDWY+BORROW) Show all items in Chart Exclude Outliers

Project Number	Route	Bid Date	Work Type	Quantity	Unit	Unit Price	Excl.
BRFN-038-2(33)--39-16	IOWA 38	01/21/2015	3511-GRADING	1,413.00	CY	\$1.23	<input type="checkbox"/>
IMX-029-5(236)101--02-67	I-29	01/21/2015	1013-PCC PAVEMENT - GRADE AND NEW	5,543.00	CY	\$1.23	<input type="checkbox"/>
IMX-029-5(236)101--02-67	I-29	01/21/2015	1013-PCC PAVEMENT - GRADE AND NEW	5,543.00	CY	\$1.31	<input type="checkbox"/>
STPN-196-1(21)--2J-81	IOWA 196	01/21/2015	1014-PCC PAVEMENT - GRADE & REPLACE	432,651.00	CY	\$1.37	<input type="checkbox"/>
STPN-196-1(21)--2J-81	IOWA 196	01/21/2015	1014-PCC PAVEMENT - GRADE & REPLACE	432,651.00	CY	\$1.42	<input type="checkbox"/>
IMX-029-5(236)101--02-67	I-29	01/21/2015	1013-PCC PAVEMENT - GRADE AND NEW	5,543.00	CY	\$1.63	<input type="checkbox"/>

Average Value: \$4.83 Median Value: \$7.80 Predicted Value: \$6.45
 # of Samples: 283 High Value: \$77.58 Low Value: \$1.23
 R²: 0.32 Standard Deviation: 33.57 Suggestion Range: \$5.84 - \$7.12

Item Trend Chart



Updated By: EXCEL_IMPORT Update Date: 01/31/3017

Export
Reset Items
Modify Filter
Accept
Cancel

Cost Estimating TREND Filter

Main | Locations | Work Type | Estimate Parameters


Item Trend Lookup Filter

* Begin Date:  * End Date: 

Min bidders per contract: Max bidders per contract:



Min Item Price: Max Item Price:

Min Item Quantity: Max Item Quantity:

Project Delivered By: 

All bidders Awarded bidders Top three bidders

Season of Letting:

Unassigned:		Assigned:
FALL (SEP21-DEC20)		<input type="text"/>
SPRING (MAR21-JUN20)		
SUMMER (JUN21-SEP20)		
WINTER (DEC21-MAR20)		

Cost Estimating TREND Filter

Main Locations Work Type Estimate Parameters

Urban: Rural:

District:

Unassigned:		Assigned:
DISTRICT 1	>	
DISTRICT 2	<	
DISTRICT 3		
DISTRICT 4		

County:

Unassigned:		Assigned:
Statewide	>	
Adair	<	
Adams		
Allamakee		

Cost Estimating TREND Filter

Main Locations **Work Type** Estimate Parameters

Project Work Type

- + 000-GENERAL
- + 010-ROADWAY
- + 020-STRUCTURE
- + 030-LANDSCAPING
- + 040-EROSION CONTROL
- + 050-SIGNING
- + 060-SIGNALS
- + 070-LIGHTING
- + 080-UTILITIES
- + 090-RAILROAD
- + 100-RIGHT OF WAY
- + 110-FACILITIES
- + 120-PROFESSIONAL SERVICES











* Assigned Work Type

010-ROADWAY

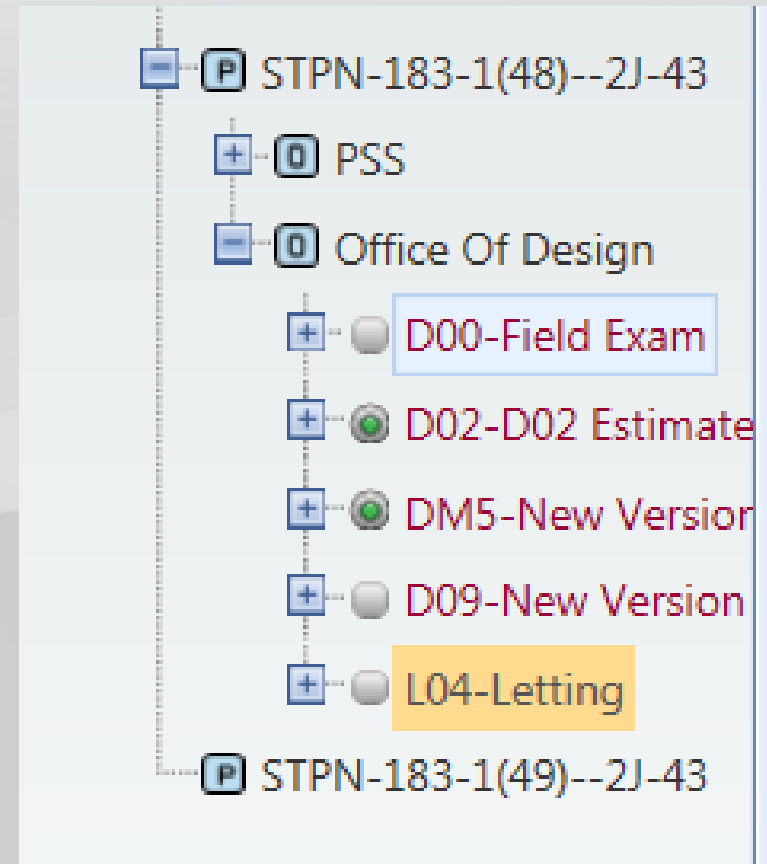
Add

Remove

Cost Estimating Project parameters

Main	Locations	Work Type	Estimate Parameters
Project Complexity (\$ per day): <input type="text"/> 			
Project Size: <input type="text"/> 			
Bridge Parameters 			
Roadway Parameters 			
Interchange Function: <input type="text"/> 			
Interchange Type: <input type="text"/> 			
Topography: <input type="text"/> 			
Paving Type: <input type="text"/> 			
Paving Rating: <input type="text"/> 			
Geotech: <input type="text"/> 			

Cost Estimating history



Cost Estimating estimate comparison

Compare Version

Compare Versions

Select Version: ✕ 📄 Close

1 of 2 Export to the selected format Export 🖨️ 📄

Version Comparison
Between D02-D02 Estimate (Project STPN-183-1(48)--2J-43) and D00-Field Exam (Project STPN-183-1(48)--2J-43)

Item Number	Item Description	STPN-183-1(48)--2J-43 D02-D02 Estimate			STPN-183-1(48)--2J-43 D00-Field Exam			Delta			
		Quantity	Unit Price	Ext. Price	Quantity	Unit Price	Ext. Price	Quantity	Unit Price	Ext. Price	% Diff
GENERAL		\$0.00			\$5,694.08			(\$5,694.08)			
2528-8445110	TRAFFIC CONTROL	0.00	\$0.00	\$0.00	1.00	\$5,263.75	\$5,263.75	-1.00	(\$5,263.75)	(\$5,263.75)	-100.00 %
2528-8445113	FLAGGER	5.00	\$0.00	\$0.00	1.00	\$430.33	\$430.33	4.00	(\$430.33)	(\$430.33)	-100.00 %
2533-4980005	MOBILIZATION	0.00	\$0.00	\$0.00	0.00	\$0.00	\$0.00	0.00	\$0.00	\$0.00	0.00 %
2602-0000309	PERIMETER+SLOPE SEDIMENT CNTL DEVICE, 9"	20.00	\$0.00	\$0.00	0.00	\$0.00	\$0.00	20.00	\$0.00	\$0.00	0.00 %
2602-0010010	MOBILIZATION, EROSION CONTROL	1.00	\$0.00	\$0.00	0.00	\$0.00	\$0.00	1.00	\$0.00	\$0.00	0.00 %
ROADWAY		\$0.00			\$649,050.64			(\$649,050.64)			
2101-0850002	CLEAR+GRUBB	0.00	\$0.00	\$0.00	1.00	\$201.56	\$201.56	-1.00	(\$201.56)	(\$201.56)	-100.00 %
2101-1001000	RMVL OF FLOOD DEBRIS	0.00	\$0.00	\$0.00	1.00	\$16,279.34	\$16,279.34	-1.00	(\$16,279.34)	(\$16,279.34)	-100.00 %
2102-2625001	EMBANKMENT-IN-PLACE, CONTRACTOR FURNISH	0.00	\$0.00	\$0.00	7,800.00	\$15.58	\$121,524.00	-7,800.00	(\$15.58)	(\$121,524.00)	-100.00 %
2102-2710070	EXCAVATION, CL 10, RDWY+BORROW	0.00	\$0.00	\$0.00	53,000.00	\$5.64	\$298,920.00	-53,000.00	(\$5.64)	(\$298,920.00)	-100.00 %
2102-2713090	EXCAVATION, CL 13, WASTE	3.30	\$0.00	\$0.00	0.00	\$0.00	\$0.00	3.30	\$0.00	\$0.00	0.00 %
2435-0250900	INTAKE, SW-509	0.00	\$0.00	\$0.00	2.00	\$6,029.96	\$12,059.92	-2.00	(\$6,029.96)	(\$12,059.92)	-100.00 %
2435-0251000	INTAKE, SW-510	0.00	\$0.00	\$0.00	2.00	\$7,660.91	\$15,321.82	-2.00	(\$7,660.91)	(\$15,321.82)	-100.00 %
2503-0110030	STORM SWR GRAVITY MAIN, TRENCHED, 30"	0.00	\$0.00	\$0.00	200.00	\$111.22	\$22,244.00	-200.00	(\$111.22)	(\$22,244.00)	-100.00 %
2503-0110042	STORM SWR GRAVITY MAIN, TRENCHED, 42"	0.00	\$0.00	\$0.00	325.00	\$500.00	\$162,500.00	-325.00	(\$500.00)	(\$162,500.00)	-100.00 %
2510-6745850	RMVL OF PAVT	159.53	\$0.00	\$0.00	0.00	\$0.00	\$0.00	159.53	\$0.00	\$0.00	0.00 %
2511-6745900	RMVL OF SIDEWALK	2,429.30	\$0.00	\$0.00	0.00	\$0.00	\$0.00	2,429.30	\$0.00	\$0.00	0.00 %

Cost Estimating estimate comp. to Bid

Dashboard Cost Estimating Compare Estimate with Bid

1 of 5 Export to the selected format Export

Bid and Version Comparison

Between bid "HOFFMAN CONSTRUCTION COMPANY & SUBSIDIARIES (HO170)" and version "D06-BriansTest" in project "NHSX-032-1(36)--3H-31"

Item Number	Item Description	D06-BriansTest			HOFFMAN CONSTRUCTION COMPANY & SUBSIDIARIES (HO170)			Delta			
		Quantity	Unit Price	Ext. Price	Quantity	Unit Price	Ext. Price	Quantity	Unit Price	Ext. Price	% Diff
000-GENERAL				\$0.00			\$695,450.00				-100.00 %
000-000-MOBILIZATION				\$0.00			\$595,850.00				-100.00 %
2533-4980005	MOBILIZATION	0.00	\$0.00	\$0.00	1.00	\$593,300.00	\$593,300.00	-1.00	(\$593,300.00)	(\$593,300.00)	-100.00 %
2601-2643300	MOBILIZATION FOR WATERING	0.00	\$0.00	\$0.00	3.00	\$350.00	\$1,050.00	-3.00	(\$350.00)	(\$1,050.00)	-100.00 %
2602-0010010	MOBILIZATION, EROSION CONTROL	0.00	\$0.00	\$0.00	1.00	\$500.00	\$500.00	-1.00	(\$500.00)	(\$500.00)	-100.00 %
2602-0010020	MOBILIZATION, EMERGENCY EROSION CONTROL	0.00	\$0.00	\$0.00	1.00	\$1,000.00	\$1,000.00	-1.00	(\$1,000.00)	(\$1,000.00)	-100.00 %
000-010-PROJECT MANAGEMENT				\$0.00			\$50,000.00				-100.00 %
2590-0000020	PROJECT MANAGEMENT	0.00	\$0.00	\$0.00	1.00	\$50,000.00	\$50,000.00	-1.00	(\$50,000.00)	(\$50,000.00)	-100.00 %
000-030-GENERAL CONSTRUCTION				\$0.00			\$49,600.00				-100.00 %
2518-6910000	SAFETY CLOSURE	0.00	\$0.00	\$0.00	22.00	\$100.00	\$2,200.00	-22.00	(\$100.00)	(\$2,200.00)	-100.00 %
2520-3350015	FIELD OFFICE	0.00	\$0.00	\$0.00	1.00	\$10,000.00	\$10,000.00	-1.00	(\$10,000.00)	(\$10,000.00)	-100.00 %
2526-8285000	CONSTRUCTION SURVEY	0.00	\$0.00	\$0.00	1.00	\$25,200.00	\$25,200.00	-1.00	(\$25,200.00)	(\$25,200.00)	-100.00 %
2528-8445110	TRAFFIC CONTROL	0.00	\$0.00	\$0.00	1.00	\$3,200.00	\$3,200.00	-1.00	(\$3,200.00)	(\$3,200.00)	-100.00 %
2528-8445113	FLAGGER	0.00	\$0.00	\$0.00	20.00	\$450.00	\$9,000.00	-20.00	(\$450.00)	(\$9,000.00)	-100.00 %
010-ROADWAY				\$0.00			\$4,217,404.64				-100.00 %
010-000-ROADWAY REMOVALS				\$0.00			\$38,523.60				-100.00 %
2510-6745850	RMVL OF PAVT	0.00	\$0.00	\$0.00	99.70	\$10.00	\$997.00	-99.70	(\$10.00)	(\$997.00)	-100.00 %

Cost Est. % of Project Comparison

Dashboard Cost Estimating Estimate Percentage Comparison

1 of 3 Export to the selected format Export

Item Number	Item Description	Project Percentage			Work Type Percentage		Delta
		% of Project	Extended Price		% of Project	Extended Price	% Diff
GENERAL		6.22 %	\$1,221,156.93		7.47 %	\$1,466,566.29	-1.25 %
PCT-000	GENERAL (000)				7.47%	\$1,466,566.29	
MOBILIZATION		4.44 %	\$871,694.02		4.53 %	\$889,363.49	-0.09 %
2533-4980005	MOBILIZATION	1.00	\$871,694.02	\$871,694.02			
PCT-000-000	MOBILIZATION (000-000)				4.53%	\$889,363.49	
PROJECT MANAGEMENT		1.38 %	\$270,931.92		1.38 %	\$270,931.92	0.00 %
2590-0000020	PROJECT MANAGEMENT	1.00	\$270,931.92	\$270,931.92			
PCT-000-010	PROJECT MANAGEMENT (000-010)				1.38%	\$270,931.92	
ENVIRONMENTAL		0.00 %	\$0.00		2.35 %	\$461,369.58	-2.35 %
PCT-000-020	ENVIRONMENTAL (000-020)				2.35%	\$461,369.58	
GENERAL CONSTRUCTION		0.40 %	\$78,530.99		1.07 %	\$210,070.41	-0.67 %
2526-8285000	CONSTRUCTION SURVEY	1.00	\$78,530.99	\$78,530.99			
PCT-000-030	GENERAL CONSTRUCTION (000-030)				1.07%	\$210,070.41	
PAYMENT ADJUSTMENTS		0.00 %	\$0.00		2.23 %	\$437,810.28	-2.23 %
PCT-000-040	PAYMENT ADJUSTMENTS (000-040)				2.23%	\$437,810.28	
ENGINEERING		0.00 %	\$0.00		0.00 %	\$0.00	0.00 %
PCT-000-050	ENGINEERING (000-050)				0.00%	\$0.00	
ROADWAY		67.35 %	\$13,222,655.88		70.27 %	\$13,795,932.13	-2.92 %
PCT-010	ROADWAY (010)				70.27%	\$13,795,932.13	
ROADWAY REMOVALS		0.00 %	\$0.00		0.51 %	\$100,127.02	-0.51 %
PCT-010-000	ROADWAY REMOVALS (010-000)				0.51%	\$100,127.02	

Cost Estimating

- Next Steps
- Email to active consultants to set up administrators
 - Each consultant can have one or two admins that can add and remove people in the system
- **There is a help built into the software and we are also nearly complete with some design manual guidance**
- **Training model will be train the trainer**
 - Two or Three people from each active consultant will be trained
 - As other consultants have need we will setup additional classes
 - Online training will be setup in the very near future

Access Policy Update

- Chapter 112 in the Iowa Code will be revised.
- Chapter 3K-2 in the Design Manual will be revised with new content.
- An Access Management Manual will be implemented. This covers the process of acquiring an access permit from the department.
- We will be implementing a category system for the classification of routes on our roadway network that will replace the current priority system.
- We are adding a Type D access for field accesses and accesses to utility substations etc.
- We are introducing the concept of functional area of intersections/interchanges and how accesses will be handled within those areas.
- We are revising the distances from the first public road and private accesses to the at grade and free flow ramp terminals at interchanges.
- We are revising the warrants for turn lanes at accesses.

AUTOMATION UPDATES

Digital Contract Documents

- Internal DOT projects current state of practice to apply SP for digital contract documents to selected internal projects
- QC process/criteria to be published end of this month.
- Turn in process for digital contract documents to be published next month.
- Will pilot select consultant projects for digital contract documents in coming months.
- Will continue conversations with ACEC/AGC/DOT meetings to keep concerns of all parties addressed.

Digital contract documents

- Digital files currently elevated through use of Special Provision.
- Intention to place into General Specifications in future.
 - Listing of contract documents to be moved from SP to plans at that time.



**SPECIAL PROVISIONS
FOR
CONFORMITY WITH AND COORDINATION OF THE CONTRACT DOCUMENTS**

**Story County
IM-035-4(182)109--13-85**

**Effective Date
January 18, 2017**

THE STANDARD SPECIFICATIONS, SERIES 2015, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.


150184.01 DIGITAL CONTRACT FILES.

- A.** Digital Files contained within the bid order package, associated with this project number, listed below (files are listed in descending order of precedence):
 - 1.** LandXML Geometry file(s): All LandXML files starting with the prefix "hv_dsn_" within the "Alignment_Data_Files" subfolder.
 - 2.** LandXML surface files: All LandXML files within the "Machine_Control_Surfaces" subfolder.
 - 3.** Three dimensional line string CADD files: All DGN files contained within the "3D_LineString_Files" subfolder.

Appendix A: Digital Contract Files Listing

The digital files listed below are contained within the bid order package, associated with the project number XXX-XXXX-999-9(999)999--99-99 available for download at:

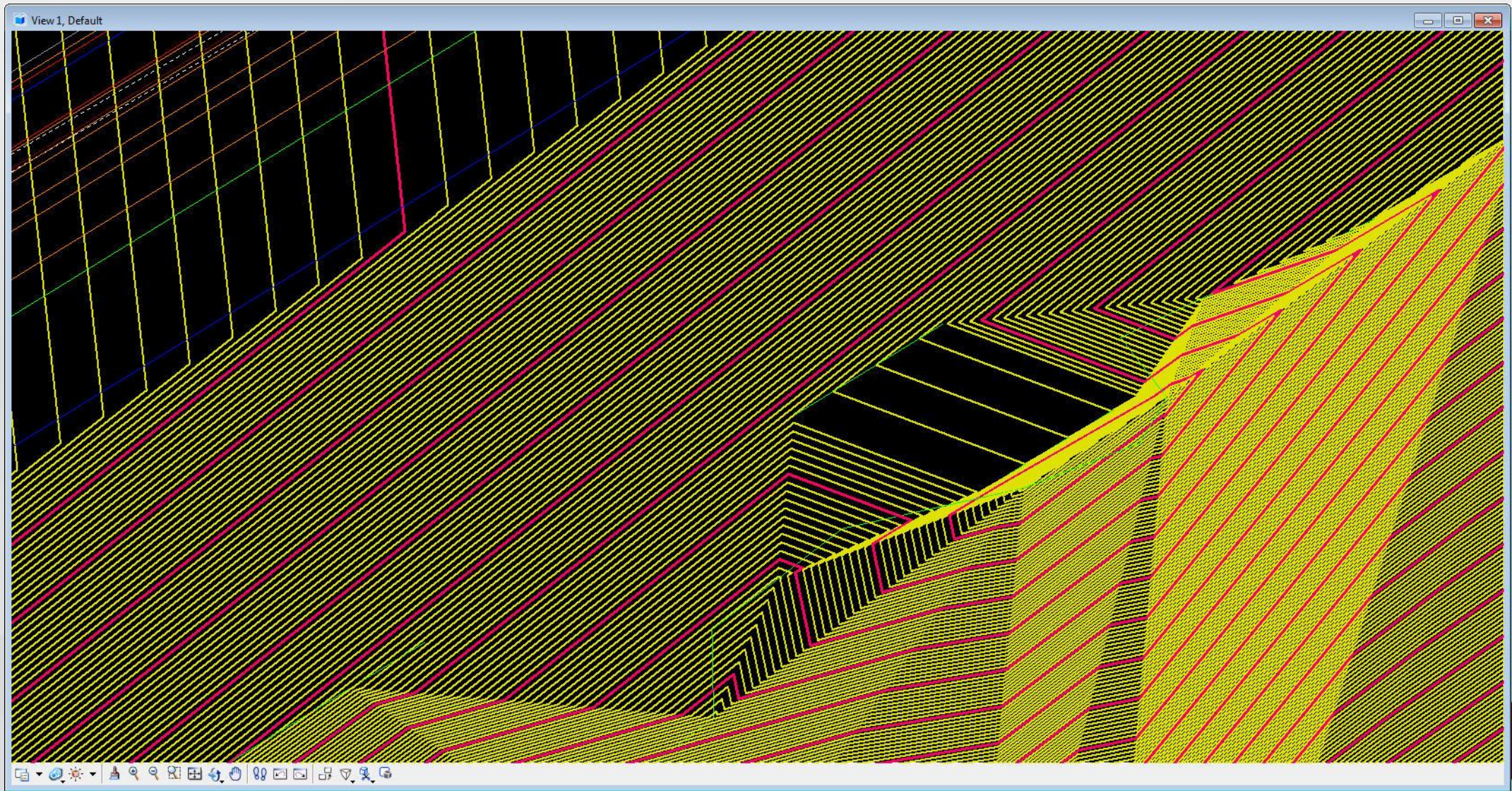
<http://www.iowadot.gov/contracts/lettings.html>

ROADWAY DESIGN					
	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.				
	<table><tr><td><i>Thomas M. Hamski</i></td><td>8/17/2017</td></tr><tr><td>Signature</td><td>Date</td></tr></table>	<i>Thomas M. Hamski</i>	8/17/2017	Signature	Date
	<i>Thomas M. Hamski</i>	8/17/2017			
Signature	Date				
<table><tr><td>Thomas M. Hamski</td></tr><tr><td>Printed or Typed Name</td></tr><tr><td>My license renewal date is December 31, 2017</td></tr></table>	Thomas M. Hamski	Printed or Typed Name	My license renewal date is December 31, 2017		
Thomas M. Hamski					
Printed or Typed Name					
My license renewal date is December 31, 2017					
Digital files shown in the table below are covered by this seal listed in pages: 1					

\eFiles_Example\
Machine_Control_Surfaces\
prop_surf_ML141_Stage1_subgrade_053.xml
prop_surf_ML141_Stage2_subgrade_053.xml
existing surface prelim survev 053.xml

Digital file Quality Assurance

- 20B-72 & 20B-73 to be published describing DOT's QC process for digital files
- 20B-72 will describe what to check in digital data
 - Numerically and visually
- 20B-73 will describe methods to check the digital data
 - Native software and contractor used softwares



ML065_file - Business Center - HCE

File Project View Edit CAD Surface Corridor Point Clouds Applications Support

Zoom Extents Zoom In Zoom Out Pan Zoom Precise Pan Precise

Manager Coordinate Scroll Flags Pane Command Pane Plan View 3D View Station View Walk-Through Google Earth Top 3D Drive View Profile View

Superelevation Cross-Section View Limit Box Defined Views Presentation Mode Points Photo Point Feature

Toggle Gridlines Toggle Line Marking Filter Line Marking New Horizontal Tab Group Float View

View Filter Manager Plan View [My Filter] Start Page

My Filter <Everything>

Layers

- 0
- 142_east
- 142_west_1
- 142_west_2
- 50065139
- Contours
- Drill Plans
- New Layer 1
- New Layer 2
- PhoBridge
- PhoBuilding
- PhoConcreteSlab
- PhoCulvert
- PhoDikeDam
- phoDrainageArrowDown
- PhoEdgeBank
- PhoEdgeEntrancePaved
- PhoEdgeEntranceUnpave
- PhoEdgeParkingUnpaved
- PhoEdgeRoadGravel
- PhoEdgeRoadPaved
- PhoEdgeShoulderPaved
- PhoEdgeShoulderUnpave
- PhoEdgeSidewalk
- PhoEdgeWater
- phoFenceChainLink
- phoFenceWire

Point Display Options

- Show point IDs
- Show point symbols
- Show feature code
- Show elevation
- Show disconnected points
- Show feature symbol only

Project Explorer View Filter Ma...

Properties (15) CAD Point

CAD Point (15)

Appearance

Color: By Layer

Layer

Layer: 142_east

Coordinate

Northing: *Varies*

Easting: *Varies*

Elevation: *Varies*

Layer: The layer of the object.

Close

Layer

■ Snap US Survey Foot Grid 15 1183.558 ft, 1956.210 ft

W:\Projects\IowaDOTStand

- CivilGeometry
 - Alignments To Lay
 - HorizontalAlignm
 - HorizontalAlignm
 - HorizontalAlignm
 - HorizontalAlignm
 - HorizontalAlignm
 - HorizontalAlignm
 - HorizontalAlignm
 - HorizontalAlignm
 - HorizontalAlignm
 - HorizontalAlignm
 - HorizontalAlignm
 - HorizontalAlignm
 - HorizontalAlignm
 - HorizontalAlignm
 - HorizontalAndVe
 - HorizontalElemen
 - HorizontalElemen
 - HorizontalElemen
 - SettingOut Table
 - SettingOut Table
 - Traverse.xml
 - TraverseCurveA
 - TraverseCurveA
 - TraverseCurveA
 - TraverseEditASC
 - TraversePoints
 - VerticalAlignmen
 - VerticalAlignmen
 - VerticalAlignmen
 - VerticalAlignmen
 - VerticalAlignmen
 - VerticalAlignmen
 - VerticalAlignmen
 - CivilSurvey
 - Clearance
 - ComidorModeling
 - Custom
 - DataCollection
 - Evaluation
 - Geometry

Horizontal Alignment Review Report

Report Created: 8/23/2017
Time: 12:16pm

Project: Default
Description:
File Name: W:\Highway\Design\AutomationSection\Personnel\ThomasHamski\Working\leFilesQC\luStation_QC\GEO_ML169.dgn
Last Revised: 8/23/2017 12:16:27

Note: All units in this report are in feet unless specified otherwise.

Alignment Name: ML169
Alignment Description:
Alignment Style: dsnAlignment

			Station	Northing	Easting
Element: Linear					
	POB	()	1000+07.30 R1	3651700.793	4726111.900
	PC	()	1033+93.92 R1	3655005.659	4725372.285
	Tangential Direction:		N 12°36'52.9" W		
	Tangential Length:		3386.6166		
Element: Circular					
	PC	()	1033+93.92 R1	3655005.659	4725372.285
	PI	()	1037+85.92 R1	3655388.202	4725286.674
	CC	()		3655839.861	4729099.799
	PT	()	1041+75.19 R1	3655780.159	4725280.547
		Radius:	3819.7190		
		Delta:	11°43'08.9" Right		
		Degree of Curvature (Arc):	1°30'00.0"		
		Length:	781.2754		
		Tangent:	392.0053		

W:\Highway\Design\AutomationSection\Personnel\ThomasHamski\Working\FilesQC CME Portal Alignment Geometry Report

McAfee

Office of Design - Iowa D... AASHTO - Subcommittee... Iowa Department of Trans...

Find: dotdocs Previous Next Options

Project File Data		Coordinate System	
Name:	C:\Users\thamski\Documents\Business Center - HCE\ML065_file.vce	Name:	United States/State Plane 1983
Size:	69 MB	Datum:	NAD 1983 (Conus)
Modified:	5/15/2017 11:31:42 AM (UTC:-5)	Zone:	Iowa South 1402
Time zone:	Central Standard Time	Geoid:	GEOID12B (Conus)
Reference number:		Vertical datum:	
Description:			
Comment 1:			
Comment 2:			
Comment 3:			

Alignment Geometry Report

Alignment: ML065

Units	Length	Spiral Type	POB	Northing	Easting	Station
US survey foot	6930.066	Clothoid		660723.164	1695239.518	1005+00.00
Line						
North Azimuth	Distance			Northing	Easting	Station
			PT	660723.164	1695239.518	1005+00.00
313°16'40"	2636.388		PC	662530.507	1693320.129	1031+36.39
Arc						
				Northing	Easting	Station

Change Notification Management

- DOT has developed method of tracking changes to standards, instructions, details, etc.
- Spreadsheet to initially be available online with filtering to query information.
- Information to be shared:
 - Implementation Date
 - Whether change is a new publication
 - Affected Publication
 - Office
 - Brief & Detailed descriptions of the change
 - Up to 3 contacts on the change

Change Notification Management XLS

	A	B	C	D	E	F	G	H	J	K	L
1	Implementation Date	Affected Publication Type	Affected Publication	Revision Type	Office	Description	New Publication	History of Change	Contact1	Contact2	Contact3
2	6/20/2017	Road Design Detail	Tab 110-12A	Special	Design-Methods	Tabulation updated to reflect the anti	FALSE	The DNR is ch	Brian Smith	Melissa Serio	Mike Heller
3	8/1/2017	CADD Standard	Geopak Drainage Setting	Standard	Design-Automation	Updated aprons to be inlets and Outl	FALSE	longer descri	Thomas Hamski		
4	9/1/2017	Design Manual	21M-101	Standard	Design-Automation	How to extract a digital certificate fro	TRUE	Details instru	Thomas Hamski		
5	9/1/2017	Design Manual	21M-100	Standard	Design-Automation	Digitally signing electronic files	TRUE	Details instru	Thomas Hamski		
6	9/1/2017	Design Manual	20B-73	Standard	Design-Automation	QC/QA methods of checking content	TRUE	Instructional	Thomas Hamski		
7	9/1/2017	Design Manual	20B-72	Standard	Design-Automation	QC/QA process for electronic contrac	TRUE	Brand new ch	Thomas Hamski		
8	9/1/2017	Design Manual	1H-05	Standard	Design-Automation	Digital Contract Documents Turn-In, r	TRUE	Description o	Thomas Hamski	Brian Smith	
9	9/1/2017	Design Manual	21M-102	Standard	Design-Automation	Creating eFiles Listing for Special Pro	TRUE	New publicat	Thomas Hamski		
10											

Updates to Geopak Drainage

- Removed the comma from element name of the SW-512 items so they no longer will produce an extra column.
- Added metal aprons.
- Added a CMP elbow.
- Changed aprons to be on the dsnSewerStormUA level.
- Added aprons to “Other” so they are now listed under Outlets and Other.

Videolog available externally

- Road view video log has been made available to external connections.
- Only works on desktop currently and utilizes Silverlight, IE11 or Firefox recommended.
- Accessible from URL: <http://rams.iowadot.gov/pathweb/>
- Advantage over Google Street view of knowing the date driven.

<http://rams.iowadot.gov/pathweb/>
CME Portal PathWeb

McAfee
Office of Design - Iowa D...
AASHTO - Subcommittee...
Iowa Department of Trans...

Find:
Previous Next Options

101.740 125.956

Find Road Section Help Share this Location Save Current Images

Roadway

Cycle:

County:

System:

Route:

Section:

Milepost:

No Image

No Image

No Image

No Image

GPS Map Map Settings

Image Control ● PathWeb

Perspective Play Speed
 Right Shoulder
 Left Shoulder
 Rear View
 Road Surface
 IRI Graph
 Trans Profile Graph
 Assets
 GPS Map

ft.

Route: No Data
 Direction: No Data
 Milepost: No Data

Attribute Table

esri

Browser: <http://rams.iowadot.gov/pathweb/> | CME Portal | PathWeb


Office of Design - Iowa D... | AASHTO - Subcommittee... | Iowa Department of Trans...

Find: dotdocs | Previous | Next | Options

101.740 | 125.956


Find Road Section | Help | Share this Location | Save Current Images

Roadway



|Route I 35 N|County Story|Route ID S001910035N|Milepost 101.741|Dir Increasing|Date 05/26/16|

GPS Map | Map Settings




Story Point

Attribute Table

POWERED BY esri

Road Surface



Surface Image | Surface Elevation

Image Control PathWeb

- Perspective
- Right Shoulder
- Left Shoulder
- Rear View
- Road Surface
- IRI Graph
- Trans Profile Graph
- Assets
- GPS Map

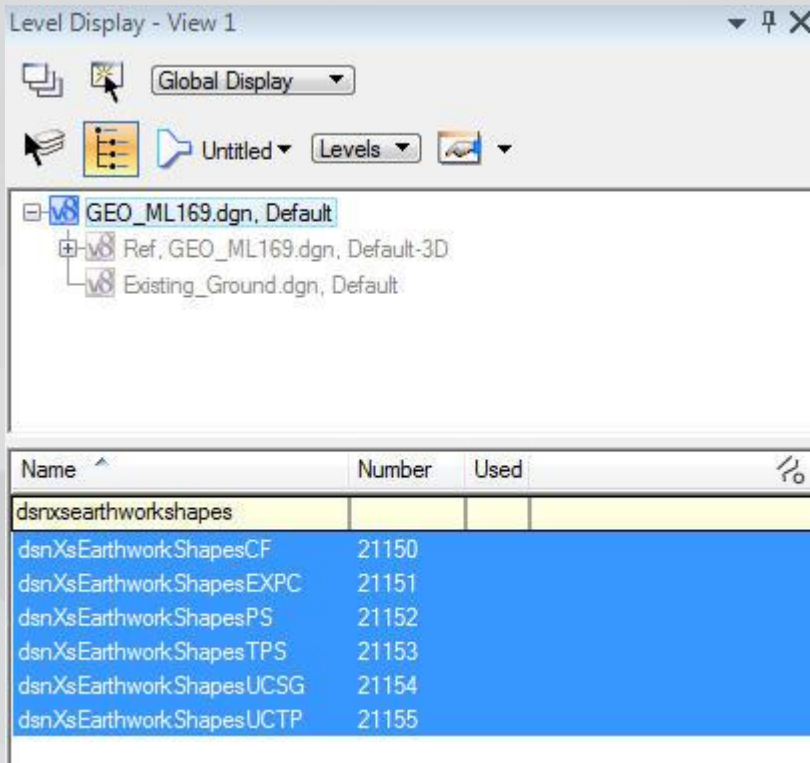
Play Speed

100.0 ft. Change Skip

Route: I 35 N
Direction: Increasing
Milepost: 101.741

Earthwork Updates

- New MicroStation levels that match input file runs



ProjectWise Updates

- Will need to use different versions of ProjectWise Explorer depending on operating system.
- 21F-1 to be updated with link to new instructions on using Windows 10 & ProjectWise Explorer
- New Section: 21F-25, Reference Scanning CADD Documents

OPENROADS UPDATE

Terminology

- Geopak SS2: Legacy civil design software suite which includes COGO, Corridor Modeler. Uses ancillary files to store information .TIN, .GPK, .DTM, .ALG, .DAT, .etc.
- Geopak SS4: Current civil design software suite used by Office of Design. Uses OpenRoads technology for modeling and geometry. Still relies on .GPK file for some tools.
- OpenRoads Technology: Technology (tools) introduced in Geopak SS3 where Bentley reworked many tools to work exclusively in the MicroStation .DGN file format.
- OpenRoads Designer: CONNECT edition (v10.0) of the civil design software from Bentley Systems. Only relies on .DGN files for information.
- CONNECT Edition: Bentley's terminology for the most currently released versions of their programs and services.

Geopak SS2 support in the future

- ODAC is targeting August 31, 2018 as the end of support for Geopak SS2 software & workflow. End of support means:
 - SS2 workspace would no longer be updated
 - Cell libraries
 - Levels
 - Custom VBA tools
 - Geopak configurations
 - Seed files
- If a custom Iowa DOT tool breaks, ODAC may not fix specifically for SS2.
- If a Bentley update breaks a tool in legacy SS2 and is not used in SS4 ODAC may not spend resources on a solution.

New Projects using Geopak SS4 in DOT PW

- New projects should be using Geopak SS4
 - Newly created project directories are set up for SS4 workspace (Design, Photo, PrelimSurvey, Soils)
- Prior to starting a job in the DOT PW system check the IA_GROUP property of the project folder
 - If IA_GROUP is not set to **Design Open Roads** contact thomas.Hamski@iowadot.us and eric.weigel@iowadot.us prior to creating any files.
 - The IA_GROUP determines the seed files copied by the CopySeed program.

SS4 workspace in PW

Project Properties

General | Statistics | Workflow & State | Resources
Properties | View | Audit Trail | Participants | Workspace

Project Type: IDOT_Design_Project_Number
Description: Project Number for Road Design

Project Properties	
DSN_IA_PROJ_ID	
DSN_PIN_NUM	
DSN_PROJ_NUM	
IA_GROUP	Design
DSN_DISTRICT_NUMBER	
DSN_COUNTY_NO1	
DSN_COUNTY_NAME	
DSN_SYSTEM_ROUTE	
DSN_STATUS	
DSN_TYPE_OF_PLANS	

OK Cancel Apply

Project Properties

General | Statistics | Workflow & State | Resources
Properties | View | Audit Trail | Participants | Workspace

Project Type: IDOT_Design_Project_Number
Description: Project Number for Road Design

Project Properties	
DSN_IA_PROJ_ID	
DSN_PIN_NUM	
DSN_PROJ_NUM	
IA_GROUP	Design Open Roads
DSN_DISTRICT_NUMBER	
DSN_COUNTY_NO1	
DSN_COUNTY_NAME	
DSN_SYSTEM_ROUTE	
DSN_STATUS	
DSN_TYPE_OF_PLANS	

IA_GROUP
IDOT Group Definition

OK Cancel Apply

Upgrading Project to SS4

- All new prelim Survey is being developed in SS4
- After September 5th, 2017 the Office of Design will no longer make .TIN or .GPK files available to outside offices on SS4 projects.
- Projects in progress where there are few negative impacts to cost or schedule should be upgraded to Geopak SS4 software/workflows.

Upgrading to SS4

- Where there are negative cost and/or schedule impacts to projects that are currently in progress, upgrading the project if it meets any of the following bullets is not mandatory:
 - The letting of the project or the last letting of a corridor's projects is prior to July 1st, 2018.
 - The grading projects will be let prior to July 1st, 2018 and only paving or miscellaneous projects with minimal grading (less than 10,000 CY of Class 10 bid item) will remain.
 - The project is a normal bridge replacement.
 - The project is in the planning or NEPA phase and the consultant hasn't been asked to provide final plan development.
- When negative impacts are identified to an **consultant** designed project; the Project Management Office, the lead office, the consultant, and the district; will make the upgrade determination with guidance from ODAC.

Storm Sewer design in SS4

- SUDA's lack of adequate plan production tools has lead the DOT to continue to use GEOPAK Drainage as the design tool for storm sewer design.
- Bentley's SUE tools may be used for clash detection if Quality Level A or B locates have been done with survey.
- Prelim Survey is using SUE tools to create existing 3D roadway pipes.

OpenRoads Designer (ORD) CONNECT Edition Civil

- With commercial release available ODAC has started evaluation of potential workflow issues with new software.
 - Still some features needed for full production missing from the current build.
- ODAC has been tasked with implementation of ORD to take a little time as possible.
 - ODAC cannot release specific timeline until Bentley releases a product with all tools needed.
- ODAC is proposing MicroStation/Civil users implement ORD **concurrently** over a much shorter transition than Geopak SS2 -> Geopak SS4.

OpenRoads Designer Advantages

- Legacy tools are eliminated, eliminating ancillary GPK file.
 - New P&P sheeting tools
 - New Annotation tools (plan view, profile view, stationing, etc.)
 - New feature definition types
- 64-bit software that will allow better utilization of hardware.
 - Allows processing of larger data sets.
- Bentley actively updating the software

ACEC / DOT SS4 coordination

- 08/04/2017 – phone conversation with several ACEC members and DOT discussing issues relating to SS4
- DOT to coordinate with ACEC to have monthly remote meetings to continue discussions relating to SS4 issues.
- At IDDEA conference DOT Design to host roundtable discussion for SS4.

Civil software rumors

- Currently evaluating civil software used to ensure it is the best solution to meet the needs of the Iowa DOT.