Day 1

General Session: These Changing Times **Derrick Grey, Bentley**	Everything changes, yet the changes seem to be occurring exponentially faster in our modern age. In this keynote, we'll explore how technology has changed our business over the last 30 years – and try to have some fun while doing it! In addition, we'll set aside some time for Q&A for those interested in what changes may be coming in the future.
General Session: NCDOT and HDR Digital Delivery	
General Session: NCBELS Ethics - David J. Evans	
NCDOT - Structures Workshop **Nick Pierce & James Hawk, NCDOT**	
Getting Started with 3D in MicroStation CONNECT Edition	Learning 3 Dimensional drawing with MicroStation Connect Edition is an extension of your knowledge of 2 Dimensional drawing. If you can draw in 2 Dimensions (2D), then all that is needed is to learn how to manipulate the AccuDraw compass in 3 Dimensional (3D) space
Understanding Terrain Models **Ethan Schwartz, Bentley**	Learn the tools and techniques behind these dynamic terrain models as well as the do's and don'ts with managing multiple terrain models.
Civil Labeler - tips and tricks **Christiana Holmes, Bentley**	Learn more about the Civil Labeler and what you can do for your plan labeling with this new toolset
Plans Preparation Methodology and More **Christiana Holmes, Bentley**	A detailed look at plans preparation methods including Named Boundaries, Labeling and Sheet assembly best practices.
View Control **Oak Thammavong, NCDOT**	
Beyond the Basics: **Value Add Propositions for any 3D Design** **Andrew Poszich, RS&H**	
WorkSpace, WorkSets and Roles **Oak Thammavong, NCDOT**	In this lecture we will discuss how the NCDOT CONNECT WorkSpace has evolved through the years with Bentley's help. We will demonstrate the proper out-of-box use as well as customizing it for multiple DOT WorkSpaces in the PEF environment. The lecture is perfectly suited for regular users and CADD Administrators.

Day 2

What, Why and How for Public Meeting Maps **Diana Wilson, NCDOT Public Involvement**	
Corridor Modeling & Superelevation (Highlights) **Oak Thammavong, NCDOT**	In this training we will go over the major key aspects of corridor modeling and superelevation. With the allotted timeframe, only major highlights from Module 6 - Initial Corridor Modeling, Module 8 – Superelevation, Module 10 - Intermediate Corridor Modeling are covered. This course prepares the users for more advanced modeling techniques and concepts in Module 11 - Detailed Modeling where it is no longer considered “corridor” modeling, but get further into at-grade intersection design and modeling using Linear and Surface Templates
Modeling and Managing Features in 3D in MicroStation CONNECT Edition	This course is for MicroStation CONNECT Edition users from any discipline, involved in 3D solid modeling. It covers the approach where features are added to a primitive solid to build the final solid model. Different ways of accessing and modifying these features are then laid out. The latter part deals with Variables and Expressions for a more advanced user; which are used to correlate feature parameters so that the solid responds coherently to change without deviating from the design goals. Finally Variations are introduced as a means of storing and implementing standard/commonly used sizes of a solid
Getting Started with Parametric Surfaces in MicroStation CONNECT Edition	This course provides a basic knowledge of NURB surfaces and provides knowledge of Parametric Surface extrusion, revolution and lofting techniques while designing a decorative concrete column and a bridge pier.
Civil Acudraw **Ethan Schwartz, Bentley**	-Using Civil AccuDraw -Creating horizontal geometry lines -Creating horizontal geometry arcs -Creating complex (alignment/chain) horizontal geometry -Defining Stationing -Editing geometry elements -Editing with the Table Editor -Appending geometry elements -Using Complex Redefine -Verifying geometry layout with Design Standards -Civil Message Center -Annotating Geometry -Display profile model -Create vertical geometry lines -Create vertical geometry parabolic curves -Create complex vertical geometry -Display intersection of another alignment on the profile -Edit Vertical Geometry with the Table Editor -Edit Vertical Geometry with Right Click -Append Vertical Geometry Elements
Advanced Techniques with Quantities and Earthworks **Christiana Holmes, Bentley**	This presentation will cover the many nuances with computing quantities and calculating earthwork such as unsuitable materials, multiple substrata, and complex volumes.
Templates Deconstructed **Ethan Schwartz, Bentley**	Deep dive into the template editor and a breakdown of the template structure and how it gets processed to help the user design better/more usable templates

Why OpenRoads Designer for Drainage and Utilities **Christiana Holmes, Bentley**	A presentation about why OpenRoads should be part of your Drainage and Utilities workflow. In today's BIM world, a 3D model of drainage and utilities is becoming a necessity. However, road design, drainage design and utilities modelling are often done by separate teams, with different software. This siloed approach can lead to a lack of coordination between disciplines, costly mistakes from out-of-date data, and missed opportunities to find and address conflicts.
Cross Section Annotation **Ethan Schwartz, Bentley**	Learn more about cross section annotation automation and setup
Grading - It's not just Dirt **Christiana Holmes, Bentley**	This presentation introduces some non-corridor approaches to solving advanced grading problems.
NCDOT Drainage Update **Bill Elam, Karl Dauber, Jordan Bendl, and Nelson King**	This session will cover short presentatin on NCDOT Drainage Update, update on ditch manual, update on drainage summary sheet, and KCA's approach to the hydro bridge report.
NCDOT Drainage Ask the Expert **Bill Elam, Karl Dauber, Jordan Bendl, and Nelson King**	This session will be a open round table discussion on drainage. Please feel free to send your questions beforehand to bill.elam@aecom.com.
NCDIT Engineering Design and CADD Services Curent Technology Updates **Jeff Garland, NCDIT**	
A Deep Dive into the Power of Point Features **Andrew Poszich, RS&H**	
Introduction to Rules-Based Designed with OpenRoads Designer (Part 1) **Jason Johnson, Gannett Fleming**	Join us for a beginner-friendly exploration of rules-based design. Learn the basics of creating and applying rules to automate design tasks for transportation infrastructure projects using OpenRoads Designer. Discover how this approach can enhance your engineering workflow and streamline the design process.
Introduction to Rules-Based Designed with OpenRoads Designer (Part 2) **Jason Johnson, Gannett Fleming**	Join us for a beginner-friendly exploration of rules-based design. Learn the basics of creating and applying rules to automate design tasks for transportation infrastructure projects using OpenRoads Designer. Discover how this approach can enhance your engineering workflow and streamline the design process.

Day 3

NCDOT ROW sheeting process for Surveyors **Brian Barwatt, NCDOT**	This workshop will review the steps on how to create each of the five different types of ROW sheets (RW01, RW02C, RW02D, RW03E, & RW04…) in OpenRoads Designer. Participants will be given an example data set to use to create each of these sheets.
NCDOT Plans Production **Lily Cloud, NCDOT**	Although the focus in primarily for Roadway Design plans, the basic concepts of creating sheets is universal for all NCDOT Units. Module 13 – Sheeting will be covered in this training from the basics of named boundaries, design, drawing, and sheet models, scaling and annotations, NCDOT Unit specific Title Block, WorkSet DGNWS, Sheet Indexing and PDF Creation. Plan, Profile, XS as well as Title and Typical Section Sheets are discussed. Time permitting, Module 13A - Design Scripts and Pen Tables and Module 13B - Annotations Labels and Dimensioning can be briefly discussed.
3D Meshes in MicroStation CONNECT Edition	This course is for MicroStation CONNECT users from any discipline, modeling in 3D and using meshes along with solids and surfaces. It covers various methods of Mesh creation such as from a pair of Curves, Contours, Points, Grid etc. Subsequent mesh operations like Trim, Extrude, Boolean Difference (Subtract), Project, Analyse (Measure Volume) etc. are covered.
Generating 3D Models with ContextCapture (on-premises)	Get an introduction to ContextCapture and discover how easy it is to generate 3D models to provide real-world digital context to your infrastructure projects. Learn about the latest ContextCapture technology updates and see what new capabilities and help streamline your workflows.
Bring your designs to life with ContextCapture and LumenRT	See how to easily transform your 3D reality meshes into a cinematic quality visualization for presentation to stakeholders and clients. Quickly produce 3D reality models with ContextCapture. Seamlessly export the 3D reality mesh to Bentley LumenRT. Easily enliven and add digital nature to your 3D model.
Generating 3D Models with Bentley's Reality Modeling Cloud Service	Discover how you can quickly create 3D reality meshes of existing conditions with ContextCapture Cloud Processing Service using ContextCapture Mobile and ContextCapture Console. Once a 3D model is create, see how easily you can share and stream the model across project teams and applications using the latest cloud technology.
iTwin Capture – Solution overview & what's new **Mike Barkasi, Bentley**	
iTwin Capture Modeler & OpenRoads Designer **Mike Barkasi, Bentley**	
iTwin Experience – Solution overview **Mike Barkasi, Bentley**	

Getting the Model Right! **Ethan Schwartz, Bentley**	
Designing a Pond **Christiana Holmes, Bentley**	This class will look at how to create a pond from a terrain model and to add attenuation to the drainage system. The software was used to build a pond and a terrain from that pond, so it is all fully parametric. The file has been referenced into the imported drainage network file. You can modify the volume and the terrain of this pond at any time you can come back to this file, change the values and ther model will automatically update and therefore you can use this for your pond hydraulics.
Questions...Tips/Tricks **Christiana Holmes/Ethan Schwartz**	
Value Management Programs at NCDOT	
Uncovering the Full Potential of Civil Geometry Andrew Poszich, RS&H	
Utilizing UAS For Earthwork Volumes & Quantities	This presentation will explore the benefits of utilizing Unmanned Aerial Systems (UAS) for accurate measurement and calculation of earthwork volumes and quantities. We will discuss how UAS technology, equipped with high-resolution camera(s) can efficiently capture aerial data of construction sites, enabling precise calculations of cut and fill volumes. By employing UAS for earthwork measurements, construction teams can streamline operations, reduce costs, and improve project planning and execution.
L&S ORD File Naming Convention **Tim VanGelder, NCDOT**	
L&S ORD Ask the Expert **NCDOT L&S ORD Support Staff**	