Effectively Leveraging CAD data in a GIS World

“The pursuit of TVC”

By Rene R. Ramirez
Who is Rene R. Ramirez

- 33 Years in the Mapping business
- 4 Years as a Mapper
- 11 Years Oil and Gas GIS & CAD Development and Management
- 18 Years as CEO of BSD Consulting, a GIS and CAD Development and Consulting firm
A few of our Customers:

Access Midstream; AECOM; All American Energy Services; Alliance Engineering; Allied Corrosion; Alpha Leak Detection & Pipeline Services; AMEC Paragon Engineering; Applied Consulting Field Services; Aspen Corrosion, Inc.; Atlas Engineering; Atwell; Audubon Field Solutions; Babcock Eagleton, Inc.; Baker Hughes; Bartlett & West; Bechtel; BL Companies; Blue Mountain, Inc.; Boardwalk Pipeline Partners LP; Bowman Consulting; BP; C.H. Fenstermaker & Associates, Inc.; Cadd Data, Inc.; CAMS Trident; Cardno, Inc.; CEM Resources, Inc.; CCC; CenterPoint Energy; Centurion Pipeline; CH2MHILL; Chenault Consulting, Inc.; Cheniere Energy; Chesapeake Energy; Chester Engineers; Chevron; Chippewa Resources; Cimarex; Cimarron Engineering, Ltd.; CobbFendley; Coler & Colantonio, Inc.; Consolidated Contract Company; Contract Land Staff; Cornerstone Engineering Services; CorrPro; CP Masters; Crestwood Midstream Partners LP; Cross Texas Land Services; Crossway Surveying; CSD Engineers LLC; D3 Survey and Mapping; Damian and Associates; Dawood Engineering, Inc.; DCP Midstream; Denbury Resources, Inc.; Devon Energy; Downtown Design Services Inc.; Doyle & Wachtstetter, Inc.; The EADS Group; EDM Services; EMC, Inc.; EMS Global, Inc.; EN Engineering; Enbridge; Encompass; Energy Management & Services Company; Energy Land & Infrastructure; Energy Transfer; Engineering Service; ENGlobal; EnSite; EQT Corporation; Equinox Engineering Ltd.; Equistar Chemicals; Erickson Contract Surveying; Ericsson; Excel Midstream; Fenstermaker; Fluor; Frank Surveying; Frontier Surveying Company; G2 Partners, LLC; GAI Consultants; Ganem & Kelly Surveying, Inc.; Gateway Services Group; Geophysical Data Management, Inc.; GeoTerra Integrated Resource System Ltd; Golden Field Service; Golder Associates; Gulf Interstate Engineering; Gullett & Associates, Inc.; Hanson Survey; Hatch Mott MacDonald; Herbert, Rowland, & Grubic, Inc.; Hiland Partners, LLC; Holland Engineering; Howland Engineering & Surveying Co.; Hunt, Guillot & Associates Pipeline Services, LLC; Ingenieria Dennis; Integrated Pipeline Services, Inc.; Jacobs Engineering Group, Inc.; Joe Hunt & Associates, Inc.; John Chance Land Surveys, Inc.; Johnston Vermette; KBR; Kestrel Engineering, Inc.; Kinder Morgan; Kleinfelder; KLI; L&S Surveying; Lake Superior Consulting; Lamb-Star Engineering; Landmark Survey and Mapping; Larson Design Group; Link Field Services; LIS Technology; LJA Engineering, Inc.; LT Mapping Services, Inc.; LW Survey; LyondellBasell Industries; M&H Energy Services; Markwest; Maverick Engineering; McElhanney Land Surveys; Meridian Surveying and Mapping; Messinger & Associates; Michael Baker Jr., Inc.; MidAmerican Energy; Midco Services, Inc.; Morris P. Herbert; Mustang Engineering; National Pipeline Services; Northern Natural Gas; NuStar Energy; Open Range Field Services, LLC; Oxy; Pelican Energy Partners; Percheron, LLC.; Petersen Engineering, Inc.; PetroFac; PetroIT; Petroleum Field Services; Pipeline Land Services; Plains All American Pipeline; Plantation Pipeline Company; Point Engineering; Project Consulting Services; Project Limited; Protech EIS Corp; QPS Engineering; R Squared; Raba Kistner Infrastructure, Inc.; Rapid Response; Rooney Engineering; Rose Rock Midstream, L.P.; RSH Engineering; Russell Corrosion; S&b; SAM, LLC.; SGC Engineering; Shafer, Kline, & Warren, Inc.; SNC Lavalin; Solaris Management Consultants Inc.; Southern Design Cadworks; Spartan Engineering; Spec Services; Spectra Energy; Stantec; Stewart Weir; Structural Integrity; STV, Inc.; Summit Midstream; Sunoco; Superior Appalachian Pipeline; T. Baker Smith, T.G. Mercer; Territorial Landworks, Inc.; Thresher Engineering; Three Streams Engineering Ltd.; Titan Corrosion; Topographic; TransCanada Pipelines; Transglobal Services, LLC; TRC Solutions; Trico Survey & Mapping; TROW Engineering; Uintah; Universal Enasco Inc.; Universal Geomatic Solutions; Universal Pegasus International; Universal Survey and Mapping; Upside Engineering; Vanasse Hangen Brustlin, Inc.; Wayne Acree, P.L.S., Inc.; Weiss Engineering & Surveying; West Company; Westwood; William H. Smith & Associates; Williams; Williams Gas Pipeline; Wilson & Company, Inc.; Wink Engineering LLC; Wood Group Mustang; WorleyParsons; Xcel Energy; Zero Degrees Surveying & Mapping Services.
Evolution of CAD and GIS Data

- History - An Industry in Transition
- Manual Drafting to CAD
- CAD and GIS
- Cloud/Web
- Traceable, Verifiable and Complete
Why CAD and GIS Integration

- Two Datasets that constantly diverge
- CAD is the standard design method for 75% of new construction projects
- Pipeline construction has reached record levels
- Too much data to type in manually
- Reduce cost in the oil downturn
- Traceable, Verifiable and Complete
Working with DWG’s in ARC
Legacy Conversion & As-Built Workflow

The Pursuit of ‘Traceable, Verifiable and Complete’
Path Forward – Is it Traceable, Verifiable and Complete

- Standardize Incoming Data
- Define QA/QC Pressure Points
- Assign a Data Coordinator
- Define the Survey Data Map to the Data Model
- Define Workflows based on Project Size
- Define Procurement Data Process
- Define the Document Linking and Indexing Strategy
The Future

Spatial Model

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