Missouri Society of Professional Surveyors

2016 Annual Meeting

Resolving Boundary Disputes

Understanding the Boundaries of the Professional Surveyor

Presented by

Mark Wiley, P.L.S.

HEIDEMAN | ASSOCIATES, INC.
A Zak Company

Missouri Revised Statutes

Chapter 327
Architects, Engineers, Land Surveyors and Landscape Architects

Section 327.272.1

August 28, 2015

PRACTICE AS PROFESSIONAL LAND SURVEYOR DEFINED.

327.272. 1. A professional land surveyor shall include any person who practices in Missouri as a professional land surveyor who uses the title of "surveyor" alone or in combination with any other word or words including, but not limited to "registered", "professional" or "land" indicating or implying that the person is or holds himself or herself out to be a professional land surveyor who by word or words, letters, figures, degrees, titles or other descriptions indicates or implies that the person is a professional land surveyor or is willing or able to practice professional land surveying or who renders or offers to render, or holds himself or herself out as willing or able to render, or perform any service or work, the adequate performance of which involves the special knowledge and application of the principles of land surveying, mathematics, the related physical and applied sciences, and the relevant requirements of law, all of which are acquired by education, training, experience and examination, that affect real property rights on, under or above the land and which service or work involves:

(1) The determination, location, relocation, establishment, reestablishment, layout, or retracing of land boundaries and positions of the United States Public Land Survey System;

(2) The monumentation of land boundaries, land boundary corners and corners of the United States Public Land Survey System;

(3) The subdivision of land into smaller tracts and preparation of property descriptions;
(4) The survey and location of rights-of-way and easements;

(5) Creating, preparing, or modifying electronic or computerized data relative to the performance of the activities in subdivisions (1) to (4) of this subsection;

*(6) Consultation, investigation, design surveys, evaluation, planning, design and execution of surveys;

*(7) The preparation of any drawings showing the shape, location, dimensions or area of tracts of land;

(8) Monumentation of geodetic control and the determination of their horizontal and vertical positions;

(9) Establishment of state plane coordinates;

*(10) Topographic surveys and the determination of the horizontal and vertical location of any physical features on, under or above the land;

*(11) The preparation of plats, maps or other drawings showing elevations and the locations of improvements and the measurement and preparation of drawings showing existing improvements after construction;

(12) Layout of proposed improvements;

(13) The determination of azimuths by astronomic observations

2. None of the specific duties listed in subdivisions (4) to (13) of subsection 1 of this section are exclusive to professional land surveyors unless they affect real property rights. For the purposes of this section, the term "real property rights" means a recordable interest in real estate as it affects the location of land boundary lines. The validity of any document prepared between August 27, 2014, and August 28, 2015, by a provider of utility or communications services purporting to affect real property rights shall remain valid and enforceable notwithstanding that any legal description contained therein was not prepared by a professional land surveyor.
3. Professional land surveyors shall be in responsible charge of all drawings, maps, surveys, and other work product that can affect the health, safety, and welfare of the public within their scope of practice.
4. Nothing in this section shall be construed to preclude the practice of architecture or professional engineering or professional landscape architecture as provided in sections 327.091, 327.181, and 327.600.

DEFINITIONS - CONSULTATION, INVESTIGATION, DESIGN SURVEYS, EVALUATION, PLANNING, DESIGN AND EXECUTION OF SURVEYS

CONSULTATION (Merriam Dictionary)

- a meeting in which someone (such as a doctor or lawyer) talks to a person about a problem, question, etc.
- a discussion about something that is being decided.
- the act of looking for information in a book, on a map, etc.

INVESTIGATION (Merriam Dictionary)

- to try to find out the facts about (something, such as a crime or an accident) in order to learn how it happened, who did it, etc.
- to try to get information about (someone who may have done something illegal).

DESIGN SURVEYS (Wikiversity.org)

Surveys are commonly used in disciplines such as psychology, health, marketing, sociology, governance, and demographics.

Survey research is an efficient way of gathering data to help address a research question. The main challenge is developing reliable and valid measures and sampling representative data.

Survey design is critical in determining the quality of research. The potential for poor design is vast - whether intentionally on the part of the researcher or unintentionally.

For example, watch this [http://www.youtube.com/watch?v=G0ZZJXw4MTA 2 min. episode of *Yes, Minister*] about politicians trying to get the poll results they want.

EVALUATION (MERRIAM DICTIONARY)

- to judge the value or condition of (someone or something) in a careful and thoughtful way.

PLANNING (Merriam Dictionary)

- the act or process of making a plan to achieve or do something.

DESIGN AND EXECUTION OF SURVEYS (Explorable.com)

Survey design involves the planning of the whole survey project and then outlining the steps to take when conducting the survey. These steps start from the formulation of the survey goals and end at the interpretation of the survey results.

Topographic surveys and the determination of the horizontal and vertical location of any physical features on, under or above the land;

Topography is the study of the shape and features of the surface of the Earth and other observable astronomical objects including planets, moons, and asteroids. The topography of an area could refer to the surface shapes and features themselves, or a description (especially their depiction in maps).
This field of geoscience and planetary science is concerned with local detail in general, including not only relief but also natural and artificial features, and even local history and culture. This meaning is less common in the United States, where topographic maps with elevation contours have made "topography" synonymous with relief. The older sense of topography as the study of place still has currency in Europe. Topography in a narrow sense involves the recording of relief or terrain, the three-dimensional quality of the surface, and the identification of specific landforms. This is also known as geomorphometry. In modern usage, this involves generation of elevation data in digital form (DEM). It is often considered to include the graphic representation of the landform on a map by a variety of techniques, including contour lines, hypsometric tints, and relief shading. https://en.wikipedia.org/wiki/Topography

Topographic Survey Standards from Illinois.

A topographic survey is the delineation of horizontal and/or vertical locations of the existing natural or man-made features of a portion of the earth's surface, subsurface or airspace and the graphic representation of the results of such delineation.

Topographic surveys that also depict land boundaries shall be entitled "Boundary and Topographic Survey" or "ALTA/ACSM Land Title and Topographic Survey," and shall be subject to the current minimum standards established for the ALTA/ACSM Land Title Surveys or Boundary Surveys by this Part, except where differing federal, State or local laws, ordinances or rules may be more stringent. When the position and/or extent of a topographic survey is not defined by land boundaries, enough information must be shown on the survey to enable the client to locate the survey on the ground. A licensed professional engineer knowledgeable in topographical survey may perform a topographic survey specific to his/her design project. A licensed professional engineer may not, however, offer topographic surveying services independent of his/her specific design project.

Information Research Required. Sufficient information to perform the survey shall be furnished by the client or his/her agent or obtained by the surveyor by agreement with the client. The following appropriate factors must be evaluated by the surveyor.

A. A specific description of the survey site, along with designated areas outside the actual survey site where topographic information is required.

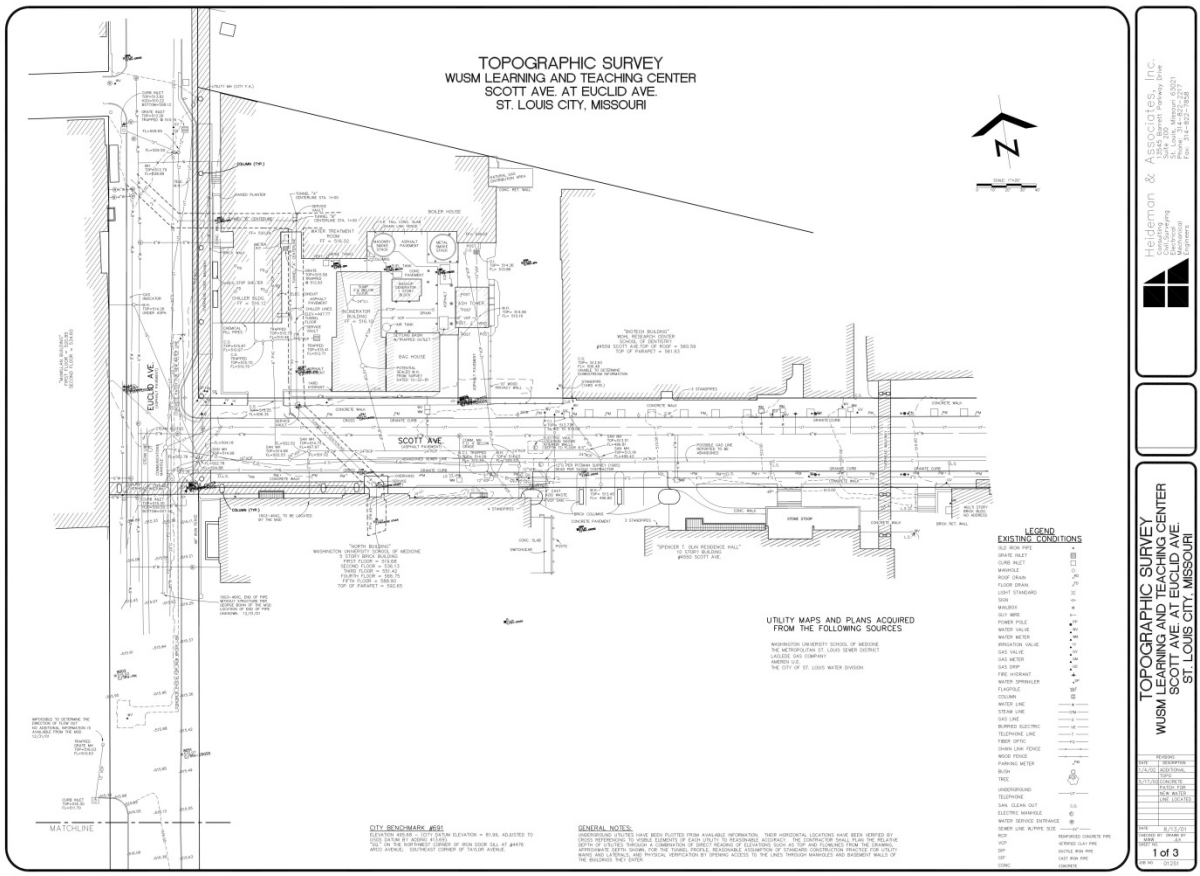
B. The location, description, datum and elevation of all benchmarks to be used for the survey. The datum should be based on a nationally accepted datum whenever practical, unless instructed otherwise by the client or as mandated by a governmental organization having jurisdiction in the area the survey is located.

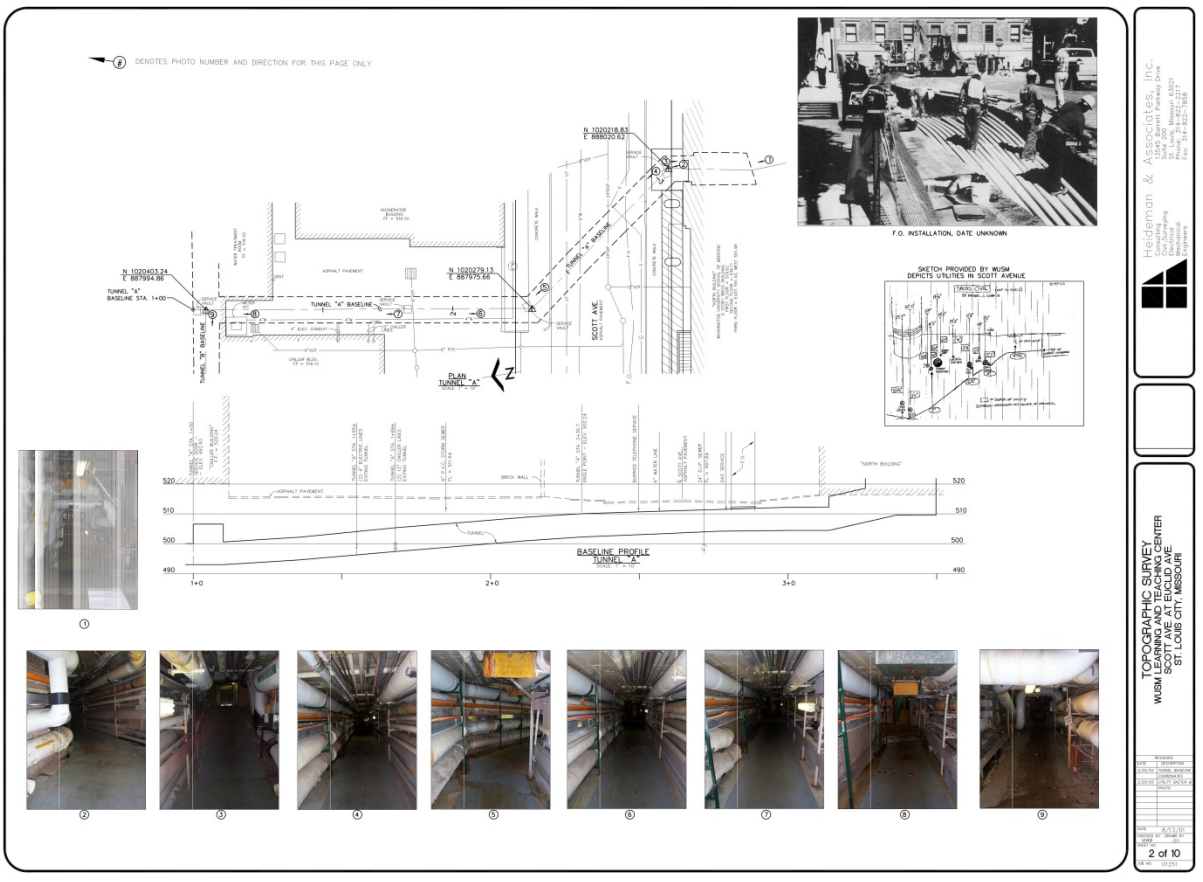
C. The location and description of all horizontal control points to be used for the survey.

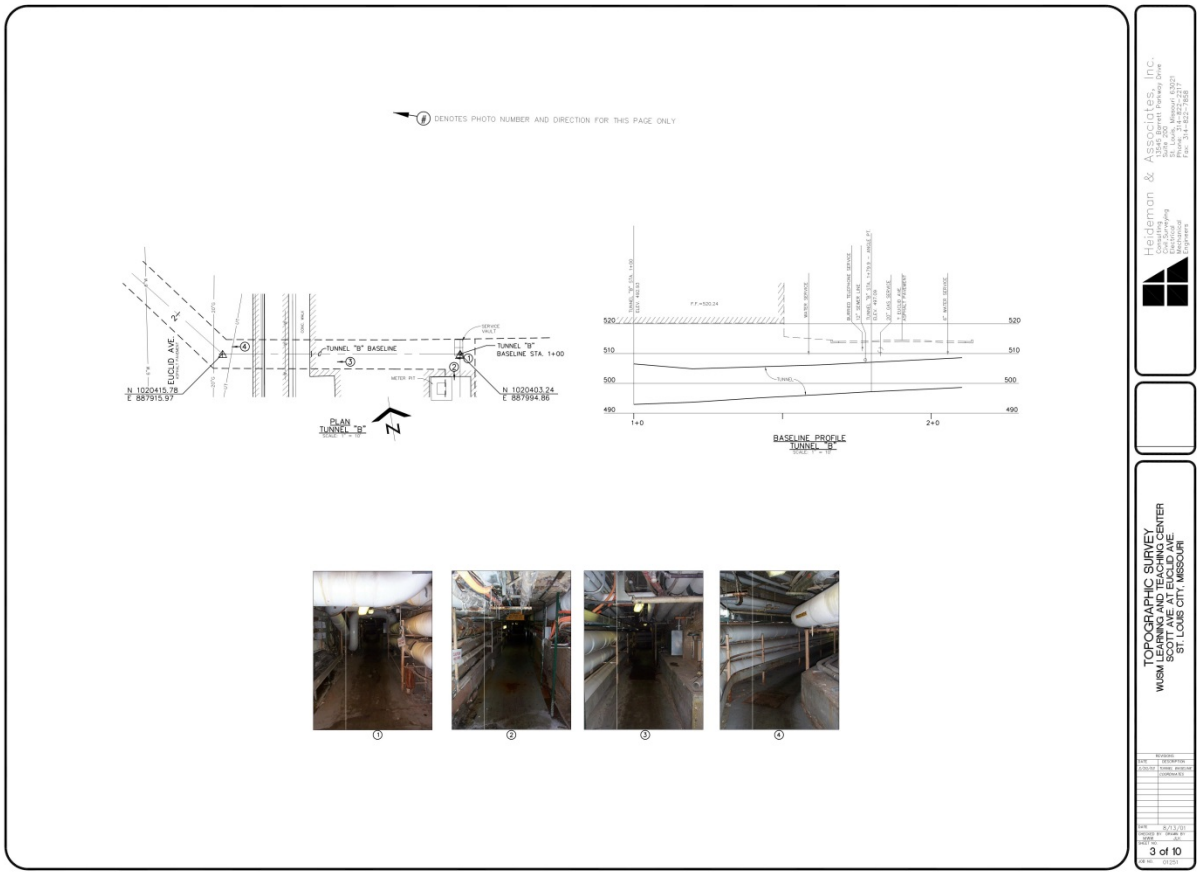
D. If contour lines are required by the client, the contour interval should be agreed upon by the surveyor and client.

E. Location and elevations of utilities is often an important part of a topographic survey. The surveyor and client must have a clear understanding of which utilities are to be located and what information on each utility is to be shown.

F. The surveyor shall be furnished a clear, concise description of the intended use of the survey.


TOPOGRAPHIC SURVEY
WUSM LEARNING AND TEACHING CENTER
SCOTT AVE. AT EUCLID AVE.
ST. LOUIS CITY, MISSOURI
SCOTT AVE
EUCLID AVE
MATCHLINE
LEGEND
EXISTING CONDITIONS
UTILITY MAPS AND PLANS ACQUIRED
FROM THE FOLLOWING SOURCES
CITY BENCHMARK #691
GENERAL NOTES:
Heiderman & Associates, Inc.
TOPOGRAPHIC SURVEY
WUSM LEARNING AND TEACHING CENTER
SCOTT AVE. AT EUCLID AVE.
ST. LOUIS CITY, MISSOURI
1 of 3


DENOTES PHOTO NUMBER AND DIRECTION FOR THIS PAGE ONLY
F.O. INSTALLATION, DATE UNKNOWN
SKETCH PROVIDED BY WUSM
DEPICTS UTILITIES IN SCOTT AVENUE
PLAN
TUNNEL "A"
BASELINE PROFILE
TUNNEL "A"
SCOTT AVE.
Heiderman & Associates, Inc.
TOPOGRAPHIC SURVEY
WUSM LEARNING AND TEACHING CENTER
SCOTT AVE. AT EUCLID AVE.
ST. LOUIS CITY, MISSOURI
2 of 10



Heidemann & Associates, Inc.
Civil Surveying
Civil Engineering
Mechanical
Electrical
Structural

TOPOGRAPHIC SURVEY
WUSM LEARNING AND TEACHING CENTER
SCOTT AVE. AT EUCLID AVE.
ST. LOUIS CITY, MISSOURI

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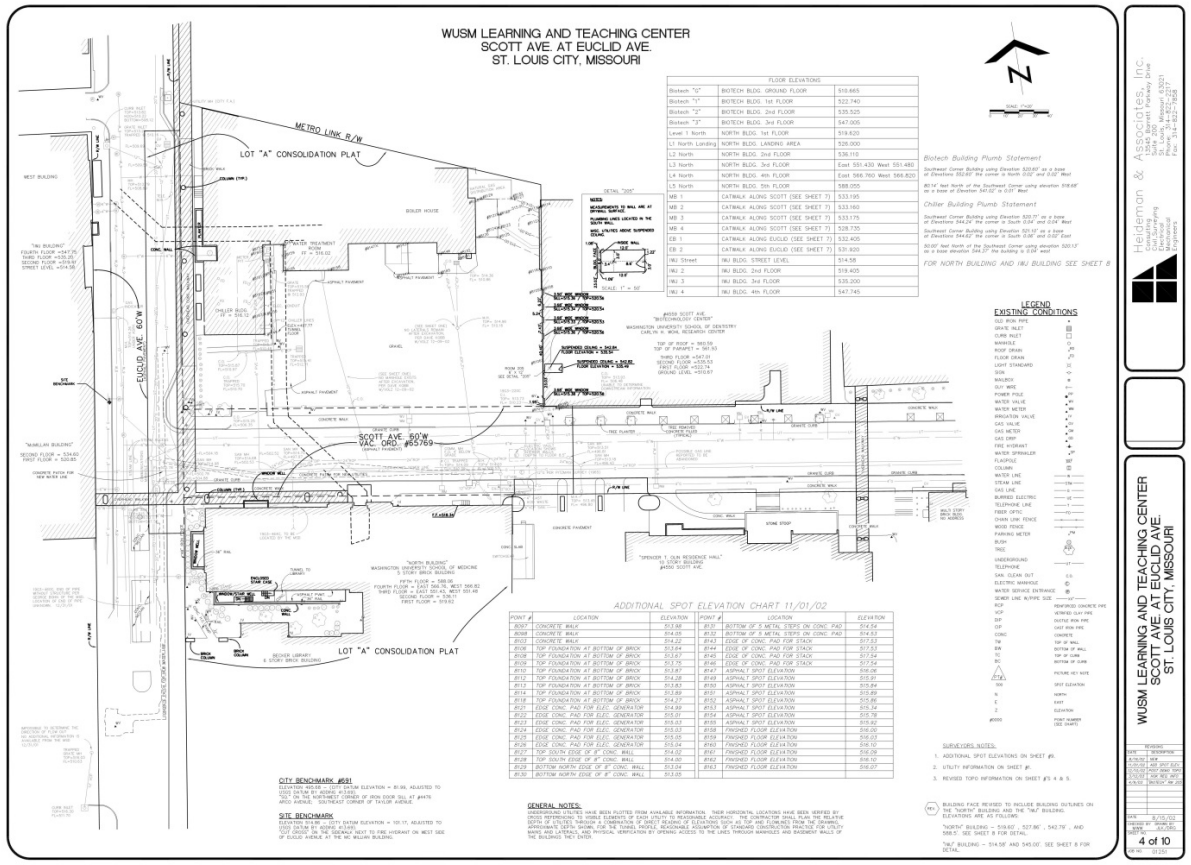

WUSM LEARNING AND TEACHING CENTER
SCOTT AVE. AT EUCLID AVE.
ST. LOUIS CITY, MISSOURI

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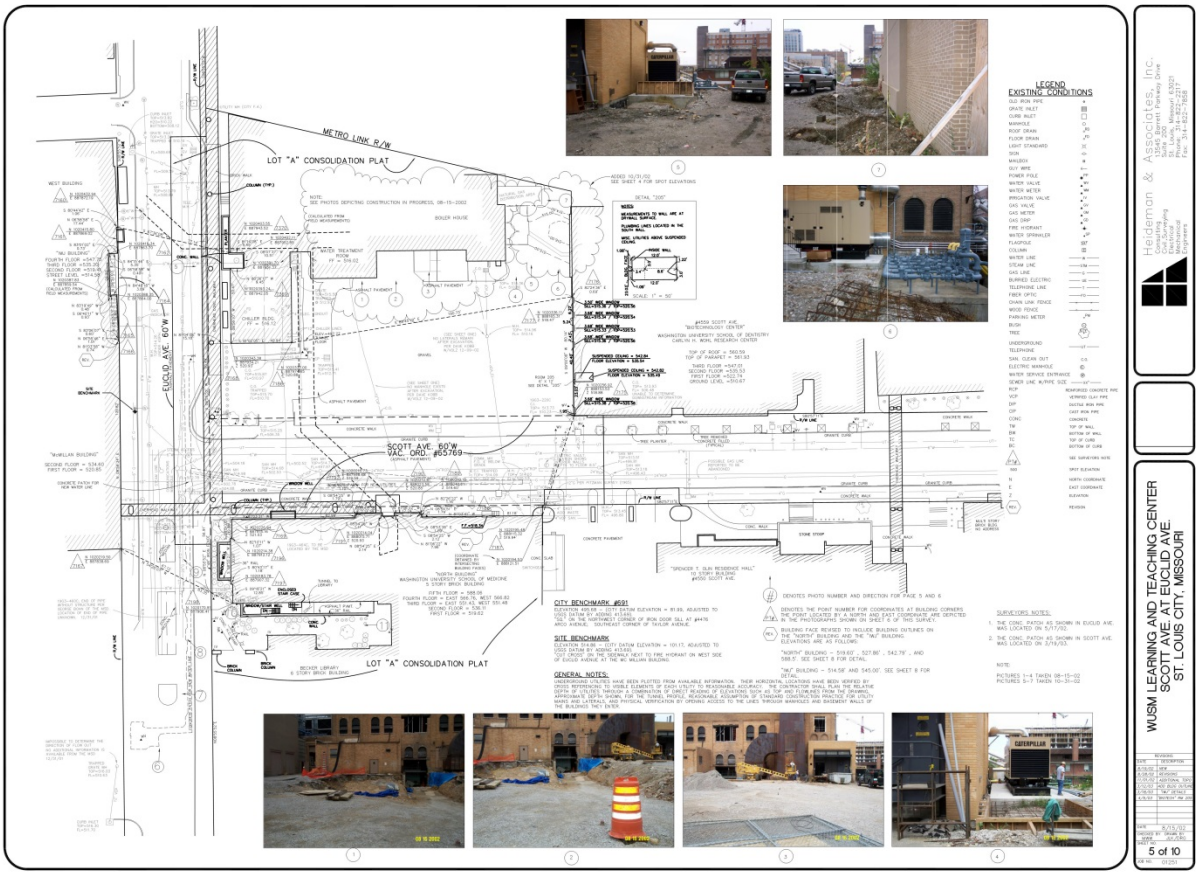
METRO LINK R/W
LOT "A" CONSOLIDATION PLAT
EUCLID AVE. 60'W
SCOTT AVE. 60'W
VAC. ORD. #50769
LOT "A" CONSOLIDATION PLAT
LEGEND
EXISTING CONDITIONS
CITY BENCHMARK #691
SITE BENCHMARK
GENERAL NOTES:
SURVEYORS NOTES:
WUSM LEARNING AND TEACHING CENTER
SCOTT AVE AT EUCLID AVE.
ST. LOUIS CITY, MISSOURI
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7176
INSIDE COR
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BLDG FACE
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WUSM LEARNING AND TEACHING CENTER
SCOTT AVE AT EUCLID AVE.
ST. LOUIS CITY, MISSOURI
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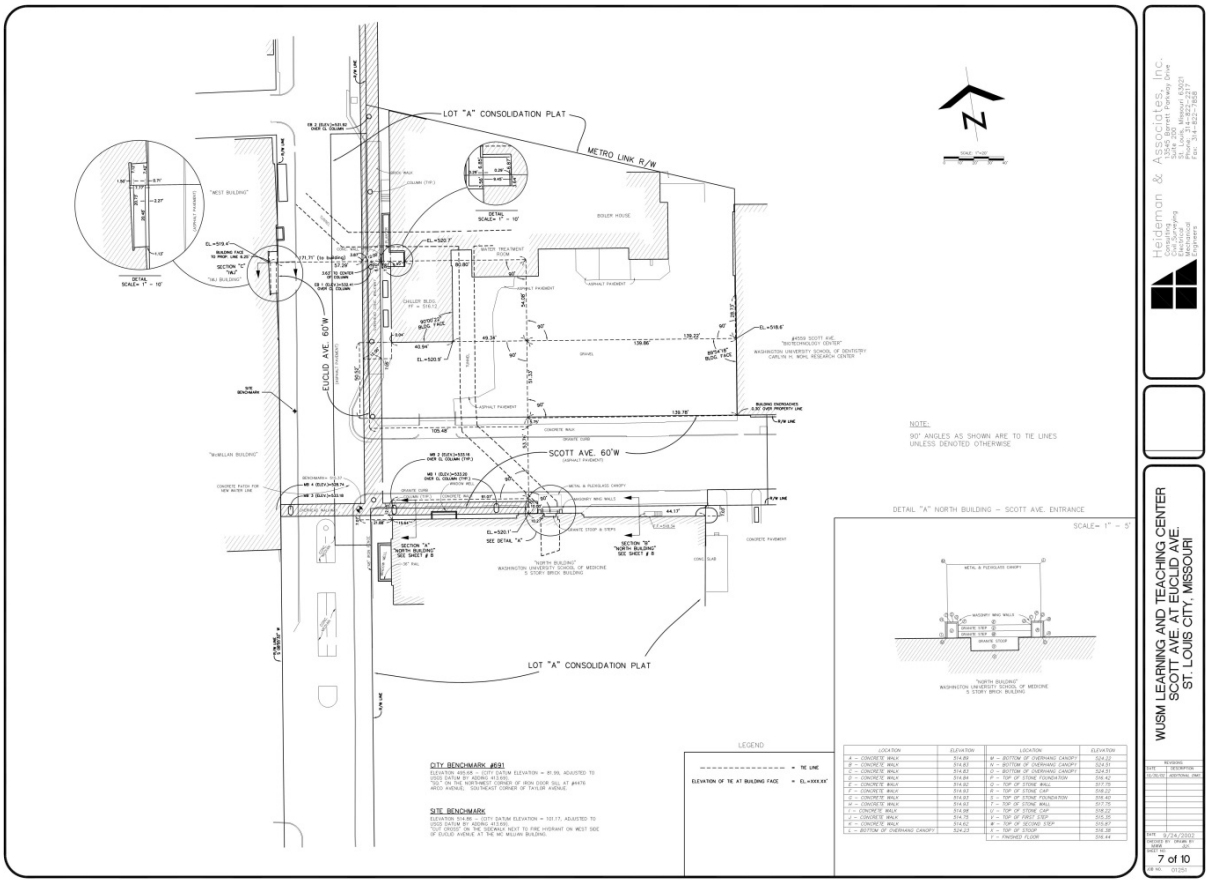
LOT "A" CONSOLIDATION PLAT
METRO LINK R/W
EUCLID AVE. 60'W
SCOTT AVE. 60'W
LOT "A" CONSOLIDATION PLAT
NOTE:
90° ANGLES AS SHOWN ARE TO TIE LINES UNLESS DENOTED OTHERWISE
DETAIL "A" NORTH BUILDING - SCOTT AVE. ENTRANCE
SCALE= 1" = 5'
LEGEND
= TIE LINE
ELEVATION OF TIE AT BUILDING FACE = EL.=XXX.XX'
CITY BENCHMARK #691
SITE BENCHMARK
WUSM LEARNING AND TEACHING CENTER
SCOTT AVE. AT EUCLID AVE.
ST. LOUIS CITY, MISSOURI
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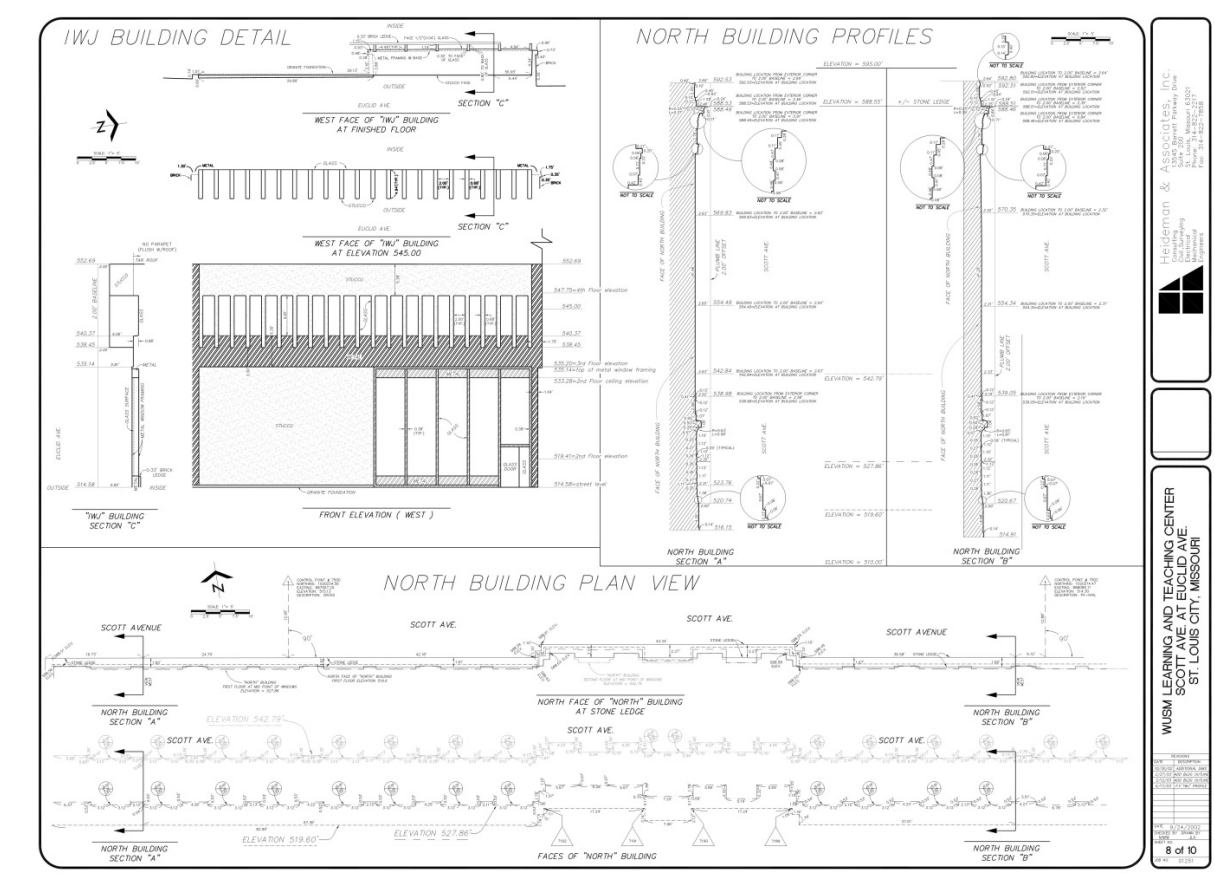
IWJ BUILDING DETAIL
WEST FACE OF "IWJ" BUILDING AT FINISHED FLOOR
WEST FACE OF "IWJ" BUILDING AT ELEVATION 545.00
"IWJ" BUILDING SECTION "C"
FRONT ELEVATION (WEST)
NORTH BUILDING PROFILES
NORTH BUILDING SECTION "A"
NORTH BUILDING SECTION "B"
NORTH BUILDING PLAN VIEW
SCOTT AVENUE
NORTH FACE OF "NORTH" BUILDING AT STONE LEDGE
FACES OF "NORTH" BUILDING
WUSM LEARNING AND TEACHING CENTER
SCOTT AVE. AT EUCLID AVE.
ST. LOUIS CITY, MISSOURI
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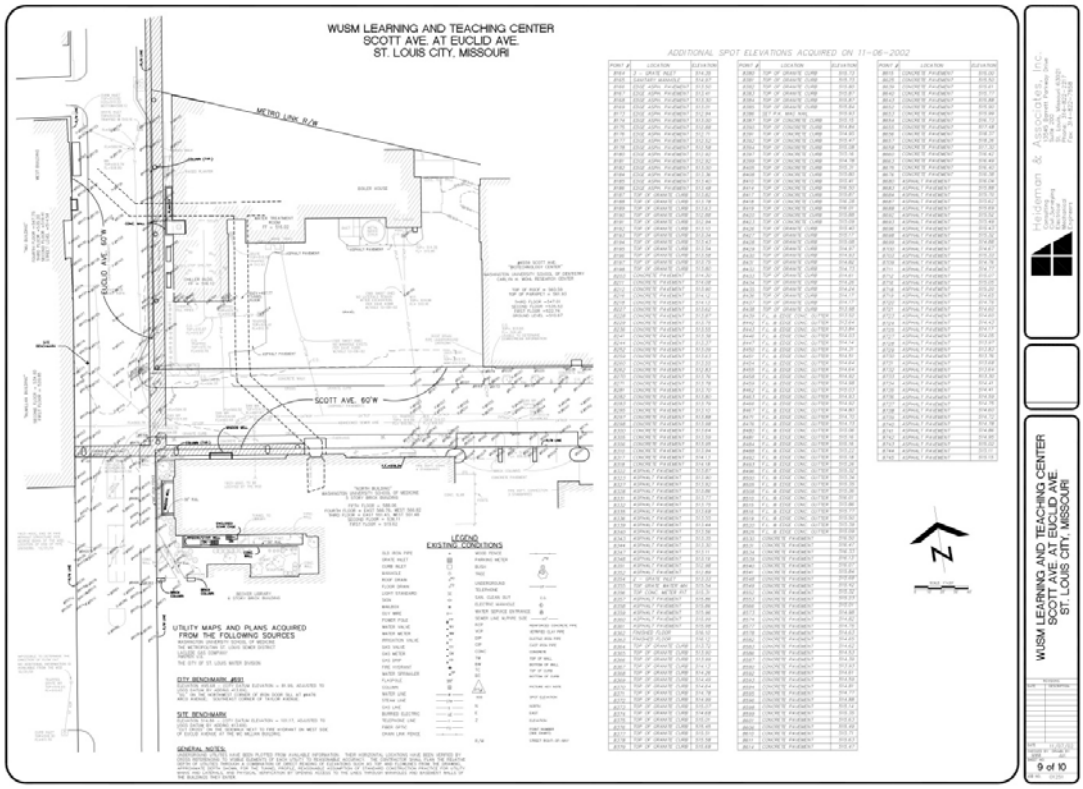
WUSM LEARNING AND TEACHING CENTER
SCOTT AVE. AT EUCLID AVE.
ST. LOUIS CITY, MISSOURI
ADDITIONAL SPOT ELEVATIONS ACQUIRED ON 11-06-2002
METRO LINK R/W
EUCLID AVE. 60'W
SCOTT AVE. 60'W
LEGEND
EXISTING CONDITIONS
UTILITY MAPS AND PLANS ACQUIRED FROM THE FOLLOWING SOURCES
CITY BENCHMARK #691
SITE BENCHMARK
GENERAL NOTES:
Heideman & Associates, Inc.
WUSM LEARNING AND TEACHING CENTER
SCOTT AVE. AT EUCLID AVE.
ST. LOUIS CITY, MISSOURI
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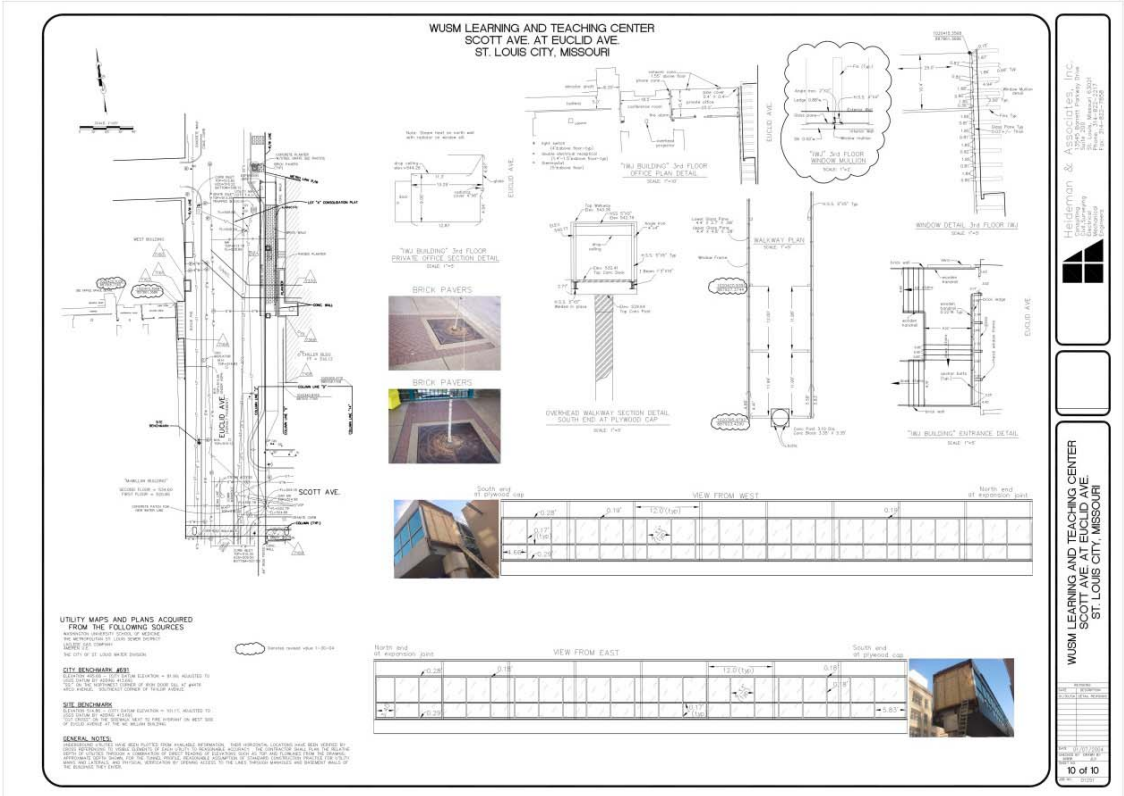
WUSM LEARNING AND TEACHING CENTER
SCOTT AVE. AT EUCLID AVE.
ST. LOUIS CITY, MISSOURI
"WU BUILDING" 3rd FLOOR OFFICE PLAN DETAIL
"WU" 3rd FLOOR WINDOW MULLION
"WU BUILDING" 3rd FLOOR PRIVATE OFFICE SECTION DETAIL
BRICK PAVERS
WINDOW DETAIL 3rd FLOOR (WU)
WALKWAY PLAN
OVERHEAD WALKWAY SECTION DETAIL SOUTH END AT PLYWOOD CAP
"WU BUILDING" ENTRANCE DETAIL
EUCLID AVE.
SCOTT AVE.
VIEW FROM WEST
VIEW FROM EAST
South end at plywood cap
North end at expansion joint
UTILITY MAPS AND PLANS ACQUIRED FROM THE FOLLOWING SOURCES
CITY BENCHMARK #691
SITE BENCHMARK
GENERAL NOTES:
Heideman & Associates, Inc.
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SCOTT AVE. AT EUCLID AVE.
ST. LOUIS CITY, MISSOURI
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(11) The preparation of plats, maps or other drawings showing elevations and the locations of improvements and the measurement and preparation of drawings showing existing improvements after construction;

As-built survey: a survey that documents the location of recently constructed elements of a construction project. As built surveys are done for record, completion evaluation and payment purposes. An as-built survey is also known as a 'works as executed survey'. As built surveys are often presented in red or redline and laid over existing plans for comparison with design information.

https://en.wikipedia.org/wiki/Surveying