

3.00.00 - DELIVERABLES

DESIGN AND CONSTRUCTION STANDARDS

DELIVERABLES

At Programming, Design and Construction Document Phases

Document Format

Number all pages of each document. Preferred sheet size is 24" X 36", maximum is 34" X 44". North shall be at top of sheet or to the left. Include graphic scales on all plan sheets.

Review Sets

For Major capital construction projects deliver review plans and bid set prints to UT Austin directly to the departments required:

- (3) copies to PM/CS at 1800 Manor Road Rm 3.102,
- (2) copies to U&EM at Services Building 100 W. 24th St Room 223,
- (1) copy to Telecommunications at Services Building 100 W. 24th St Room 232A
- (1) copy to EH&S at Service Building 304 E. 24th St Room 202,
- (1) copy to ad hoc building chairman.

Project Management and Construction Services Projects

Deliver five (5) copies to Project Management and Construction Services, FC1 Facilities Complex Bldg#1, 1301 East Dean Keeton. Austin, TX 78722.

Digital File Submittal

The PSP shall utilize a CADD drawing-layering standard comparable to the current AIA standard and shall review proposed standard with the Owner prior to commencing drawing preparation.

The PSP shall provide the University, at between one month and three months prior to Substantial Completion, with a complete current electronic set of the architectural floor plan drawings with room names, room numbers, and room square footages indicated. The PSP shall provide 2 copies of electronic media on CD Rom. The PSP shall not be relieved of responsibility when files are delivered if the files do not meet established requirements or are defective. University shall verify all files and The PSP shall be notified of acceptance.

Room data information is needed for each project so that the University can keep its facility inventory current and the Department of Institutional Studies can fulfill its obligation to notify The Texas Higher Education Coordinating Board of facility inventory changes. Room names, room numbers, and square footage shall be linked to data fields using appropriate attributes for text and number fields. Microsoft Access 2000 or newer shall be used as the database. The PSP shall provide data layering proposal for approval.

The PSP, as a basic service, shall utilize a CADD drawing-layering standard comparable to the current National CAD Standard version 3.1, in conjunction with the standards at PMCS and shall review proposed standard with the Owner prior to commencing drawing preparation. Provide all disciplines of required construction document drawings in electronic dwg file format readable by AutoCAD 2007 or latest version used by Owner. Verify database

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for correctness prior to delivering data files. Provide these files to owner no later than at the conclusion of the Bid or Pricing Phase. Provide 1 electronic copy on CD.

Utility Plans are to follow the UT Austin Utility and Energy Management layering protocol included at the end of this section.

At Construction Phase:

The PSP:

The PSP shall revise the drawings and specifications upon Final Completion of the construction, to incorporate all Addenda, all Change Orders for the Work, and any modifications recorded by the **Contractor** on the As-Built Drawings and Specifications maintained at the job site. The PSP shall label the revised drawings and specifications as “Record Drawings” and “Record Specifications” and shall deliver copies to the University for record purposes, as follows:

All project drawings: provide 2 copies of electronic media on CD readable/writeable using AutoCAD 14 or 2000 or newer. MicroStation J or SE or newer shall also be accepted for the deliverables, but Microstation users shall be required to save to Autocad format.

All project specifications in electronic format on CD ROM in MSWord 2003 or newer version.

Contractor (Construction Manager, or Design.Builder, UT construction personnel):

Contractor shall provide the University, at between one month and three months prior to Substantial Completion, with a complete set of the as-built Telecommunication Drawings and Telecommunication Port Log for the University’s use in coordinating selection and procurement of telephone/data equipment.

As a requirement for certification of Substantial Completion, **Contractor** shall reproduce two (2) copies of the current As-Built Drawings and Specifications maintained at the job site and provide these copies to the Owner. These documents shall be labeled “Interim Record Drawings and Specifications”, and are required to assist the Owner in the operation of the facility until Final Completion is accomplished and the final As-Built Drawings and Specifications are provided to the Project Architect to prepare the final “Record Drawings” and “Record Specifications”.

Project Management and Construction Services Projects

Provide Institutional Studies with room information and a copy of final design package. Update with any changes made during construction. The PSP and contractor shall provide deliverables as described above.

Site Utilities

Major capital construction projects

Design professional team shall review UT supplied survey and utility plans and obtain additional information on utilities from the City, Southwestern Bell, Southern Union Gas, etc., as necessary. Request verification excavations at any potential utility conflict points. Coordinate all required utility tie-ins. Review utility infrastructure and tie-in proposals with OFPC & UT Austin project representative. Obtain clearances for all utility tie-ins and City

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street/easement crossings prior to going to bid. Identify projected cost for permits, meters, etc., and include in budget. If a project requires that UT Austin utilities cross a City street, the consultant shall investigate and submit to UT Austin all City of Austin requirements for any license agreement(s) that may be required.

Site Usage

Design professional shall specify that Contractor observe UT Austin EHS requirements per Section 02070 of this standard and obtain any required permits and comply with City regulations for work within City easements or right-of-way. Documents shall note that parking is not available on campus except in public parking garages at posted rates, on an available basis. Therefore, contractor shall park offsite and shuttle workers to the job or park within the construction fencing.

1. Storm Water Pollution Prevention Plan (SWP3)

Design professional shall submit the SWP3 meeting all EPA requirements to UT Austin EH&S at least two weeks prior to the submission of final construction documents (bid set) plans and specifications to UT Austin which reference storm water controls.

Tree Protection

Conform to City of Austin guidelines for tree protection during construction. In general, fence off areas within tree driplines and prohibit all construction activity within fence. Cover area within dripline with 4" of shredded mulch and maintain ground moisture sufficiently to keep trees in a healthy growing condition throughout construction. Where the above is not possible, an arborist shall be hired to provide an appropriate tree protection plan and monitor tree health during construction.

Closeout Submittals

Major capital construction projects

Construction documents shall clearly require contractor to provide two (2) copies of the marked-up field set of as-builts and 2 copies of the draft O&M Manuals to UT Austin for use by building maintenance during user training/inspection. No later than two weeks prior to substantial completion, contractor shall deliver all required closeout submittals, including, O&M manuals, test reports, warranties, keys, and spare parts. Contractor shall submit one copy of final as-builts in digital form, one copy printed on mylar and two blueline prints as soon after substantial completion as is possible, but no later than 90 days after substantial completion.

Contractor shall maintain separate as-built drawings of water and sewer lines, not on the same drawing. Deliver (2) copies to Utilities & Energy Management Department.

Appendix to DELIVERABLES:

UNIVERSITY OF TEXAS AT AUSTIN

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UTILITIES AND ENERGY MANAGEMENT DEPARTMENT DRAFTING SECTION (7-20-01)

LAYER DEFINITION

GENERAL NOTES:

- 1) Each layer may have several linetypes or symbols. Be sure to use the correct color and linetype (*NOT* “bylayer”). Refer to separate linetype and symbol legends.
- 2) The overall goal is to strive for as few and as uniformly numbered layers as possible and mostly just to keep utility systems together. Separating (by layer) typically will do this according to system ownership. (UT, City of Austin, SW Bell, Southern Union Gas, etc.)
- 3) Text and leaders associated with a particular item (unless otherwise noted) will all go in the same layer as that item group, including depths, but *NOT* elevations.
- 4) Any item group described, as a system will have all symbols and text associated with that system also in the same layer. (Examples: Water piping has meters and irrigation systems, thrust blocks and some connection fittings; Grease traps have sanitary & vent piping, lids & CO’s; Pond and fountain piping systems have pumps; Storm piping has manholes and lids) Note that consideration was also given to layer separation to use to create and update keymaps. Written procedures for this facilities management task is forthcoming.
- 5) Utility component numbering will accumulate on layer “8” whenever separation is needed.
- 6) Text about utility elevations will accumulate on layer “9” of each particular utility file. (CM9, DU9, EL9, etc...) Depth info still resides in the layer of its item group. (TUNNEL.dwg has the only exception to this, since depth info also goes to layer TU9)
- 7) Only useful fittings are to be maintained. This includes water tees, water cross connectors, drop downs, *all* reducers, and *all* plugs & caps. (but *NOT* elbows or storm / sanitary wyes)
- 8) GRX4, GRX5... BUX2, BUX5... WAX2, WAX4... are layers created (only as needed) to retain “w-blocked” layer info for specific (project) areas of concern. These temporary layers are *always* left frozen whenever kept on F-Drive. They can be thawed to reference existing conditions (pre-construction) while the same area is being updated using the standard archive layers. Handling project areas this way will apply to any and all GR, BU, or any utility layer affected, but only a commonly needed example “GRX layer” is listed amongst the layers shown on the following pages. These layers are intended for temporary reference use only, and updated info will *not* go on these layers. Instead, any updated info will *always* go to standard layers that have no “X” in the layer name.
- 9) The **f** shown next to a layer name indicates that particular layer is to be frozen before a plot or and F-Drive update is made.

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GROUND.DWG (White unless otherwise noted)

- GR1 General and misc. notes (2'), street names (16'), parking lot (names (8'), lot number circles and related nos. (20')
- GR2 Ground features (linework, related text, retaining walls, some underground features)
- f* GR3 Updated ground within this border (Yellow)
- f* GR4 Outline of updated areas; used only if "ground" and "utilities" have been updated (yellow).
- GR5 Minor features like stair steps, fences, grade breaks, curb cut ramps (green)
- f* GR6 Spot shot elevations, surveyed utility paint markers, benchmarks, signs, trees, symbols now only relevant due to their z-value
- f* GRX2 Extra temporary copy of archive existing previous to project (selected project areas only)

Note: Temporary benchmarks are never to be saved or maintained in any of our archives.

BUILDING.DWG (Color 30 unless otherwise noted)

- BU1 General notes (2' text)
- BU2 UT buildings (underground/overhangs, dashedx2, linetype scale increments of 5, usually 10.0)
- f* BU3 Updated utilities within this border (Yellow)
- BU4 Non-UT buildings (white)
- BU5 Minor features (green)
- BU6 Building Names (white – 8' text)
- BU7 Abbreviations/Numbers (white - 20' text)
- f* BU8 Section grid lines (white)
- BU9 Partially surveyed buildings
- f* BUADDRESS Street address (white - 8', with number. parallel to pertinent street)

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COMM.DWG (Magenta)

- CM1 General notes (2' text)
- CM2 UT direct burial linework, overhead wires, and symbols, *including* ECB symbols with comm. conduits (always next to elec.cond.; refer EL2), but add *NO NEW* guy wires
- CM3 Updated utilities within this border (Yellow)
- CM4 City direct burial linework, overhead wires, and symbols (cable TV)
- CM5 SW Bell direct burial linework, overhead wires, and symbols
- f** CM9 Elevation notes (2' text)

DUCTBANK.DWG (Magenta)

- DU1 General notes (2' text)
- DU2 UT-vaults and ductbank hatching. UT lids and nos.; ductbank linework with hatching (use linework only for vaults)
- DU3 Updated utilities within this border (Yellow)
- DU4 City-vault with lids and nos., ductbank linework with hatching / linework only for vaults
- DU5 SW Bell-vault with lids and nos., ductbank linework with hatching / linework only for vaults
- f** DU9 Elevation notes (2' text)

Note: In the somewhat rare occurrence that changes are made to (DU4) City of Austin or (DU5) SW Bell, it will be required to make the identical changes to DUKEY.dwg to reflect those updates on our keymap as well.

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ELECTRIC.DWG (Magenta)

EL1 General Notes (2' text)

EL 2 UT underground, overhead and abandoned linework and symbols (MH lids, elec.conduit to ECB's [but emergency call boxes to go CM2 layer], sleeves for future, GUY symbols and wires, but *NO NEW* guy wires)

EL3 Updated utilities within this border (Yellow)

EL4 City linework and symbols (underground, OH, abandoned)

f EL9 Elevation notes (2' text)

Note: Some fountains and irrigation systems are not Utility Department responsibilities. However, we do indicate parts of electric service (i.e. solenoid valves) with no claim of current accuracy/completeness.

FUELTANK.DWG (Red)

FU1 General notes (2' text)

FU2 UT linework and symbols (includes monitoring wells and wires)

FU3 Updated utilities within this border (Yellow)

f FU9 Elevation notes (2' text)

GAS.DWG (Red)

GA1 General notes (2' text)

GA2 UT gas linework and symbols

GA3 Updated utilities within this border (Yellow)

GA4 Southern Union Gas linework and symbols (regulators and meters usually here) vaults, casing under IH35

f GA8VLV For gas main valve nos.(Gnnn) (2' text)

f GA9 Elevation notes (2'text)

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SANITARY.DWG (Color 32)

- SA1 General notes (2' text)
- SA2 UT linework and symbols, MH vaults and lids, flow direction arrows, grease trap specialty systems, acid dilution specialty systems (including specialty system MH lids, valves, CO's, etc...)
- SA3 Updated utilities within this border (Yellow)
- SA4 City linework and symbols (MH vaults and lids, flow direction arrows)
- SA6 UT manhole numbers (3 digit nos.)
- SA7 City manhole numbers (3 digit nos.)
- SA8SEP Numbering for all grease traps(GTnnn), oil/water separators(OWSnnn), acid dilution basins(ADBnnn), and sand/mud traps(SMTnn) (2' text)
- f* SA9 Sanitary elevation notes (2' text)

STORM.DWG (Green)

- ST1 General Notes, UT & city curb inlet boxes (2' text)
- ST2 UT linework and symbols, MH vaults and lids, flow direction arrows, CO's, headwalls, pond specialty systems (including specialty system MH lids, valves, CO's)
- ST3 Updated utilities within this border (Yellow)
- ST4 City linework and symbols, MH vaults and lids, flow direction arrows, CO's
- ST6 UT manhole numbers (4 digit nos.)
- ST7 City manhole numbers (4 digit nos.)
- ST8IN Curb Inlet numbers, Area Drain numbers, Trench Drains numbers (2' text)
- ST8OUT Outfall numbers, 15th St. reference "northing" numbers at bridges (2' text)
- ST8SEP Oil/Water Separators numbers (2' text)
- ST8VLV Storm valve numbers (2' text)
- f* ST9 Storm elevation notes (2' text)

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TUNNELS.DWG (Cyan)

- TU1 General notes (2' text)
- TU2 UT tunnel, expansion chamber and pipe chase linework (all double lined) as well as symbols, MH lids, intake/exhaust vents & access openings, tunnel width/height dimension notes, tunnel gates and retaining walls (See wall thickness notes below)
- TU3 Updated utilities within this border (Yellow)
- TU4CH Chilled water piping with with related text, sizes, leaders and symbols (drop downs, valves, reducers, plugs).
- TU4CT Cooling tower piping with related text, sizes, leaders and symbols (drop downs, valves, reducers, plugs).
- TU5 Steam and Condensate Return piping and related related text, sizes, leaders and symbols (drop downs, valves, reducers, plugs).
- TU6 Air piping (both instrument and utility) and related related text, sizes, leaders and symbols (drop downs, valves, reducers, plugs).
- TU7 Ric-wil (pipe casing) and related text, sizes, leaders and symbols.
- TU8CHA Chamber and Station numbers (2' text)
- f* TU9 Ric-wil elevation notes and tunnel elevation notes. (Also includes Ric-wil & tunnel floor/roof construction depths) (2' text)

Wall thickness notes:

All tunnel wall lines: offset .67' from outside wall face, inwardly.

All expansion chamber wall lines: offset 1.0' from inside wall face, outwardly.

All pipe chase wall lines: offset 1.0' from inside face of chase wall, outwardly.

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WATER.DWG (Blue)

- WA1 General Notes (2' text)
- WA2 UT linework and symbols (UT fire lines, fire hydrants, all valves [standard, solenoid and sprinkler], backflow preventors, thrust blocks, vaults)
- WA3 Updated utilities within this border (Yellow)
- WA4 City linework and symbols (city water meters, fire lines, fire hydrants, valves, thrust blocks, meter vaults)
- WA8VLV Water main valve(Wnnn) numbers (2' text)
- WA8HYD Fire Hydrant numbers, both city & UT (2' text)
- f* WA9 Elevation notes (2' text)