



December 9, 2021

Questions and Answers Report



Mayor Steve Adler

Council Member Natasha Harper-Madison, District 1

Council Member Vanessa Fuentes, District 2

Council Member Sabino "Pio" Renteria, District 3

Council Member Gregorio Casar, District 4

Council Member Ann Kitchen, District 5

Council Member Mackenzie Kelly, District 6

Council Member Leslie Pool, District 7

Council Member Paige Ellis, District 8

Council Member Kathie Tovo, District 9

Council Member Alison Alter, District 10

The City Council Questions and Answers Report was derived from a need to provide City Council Members an opportunity to solicit clarifying information from City Departments as it relates to requests for council action. After a City Council Regular Meeting agenda has been published, Council Members will have the opportunity to ask questions of departments via the City Manager's Agenda Office. This process continues until 5:00 p.m. the Tuesday before the Council meeting. The final report is distributed at noon to City Council the Wednesday before the council meeting.

QUESTIONS FROM COUNCIL

Item #8: Approve a resolution to authorize the Circuit Events Local Organizing Committee to act on behalf of the City for the Texas Major Events Reimbursement Program for the purpose of conducting economic studies, submitting applications, and submitting any required funding to the Texas Office of the Governor for Formula 1 U. S. Grand Prix events to be held at the Circuit of the Americas facility.

COUNCIL MEMBER FUENTES' OFFICE

- 1) *As part of the agreement, CELOC issues compliance reports on an annual basis. Can you talk us through the success in complying with the standards laid out in Exhibit A?*

Please see the attached Exhibit A Compliance Chart showing each of the Exhibit A requirements. Exhibit A compliance reports are posted at <https://austintexas.gov/page/cota-celoc-documents> for 2012 through 2018. Since COTA was closed for most of 2020, the review of 2019 is still underway.

- 2) *What is the economic impact of F1? Over the last 10 years?*

According to the attached executive summary by Angelou Economics, the total economic output of Formula 1 events at COTA between 2012 and 2021 is \$5.3 billion.

- 3) *How does F1 impact Austin's Airport and Hotel industries?*

Austin hotels sell out each year during F1 weekend with increased rates, and ABIA announced that a record 35,000 passengers passed through the airport the day after the 2021 F1 event.

Please see the attached letter from the Texas Hotel & Lodging Association supporting Austin continuing as the endorsing municipality under the Texas Major Events Reimbursement Program to maintain the F1 United States Grand Prix in Austin.

- 4) *What does the Miami Florida F1 agreement entail? Do they receive local support?*

EDD has not seen Miami Gardens' F1 agreement, and we aren't aware of how funding for the event is handled. We were not able to find answers to this question in the time allotted.

- 5) *To confirm, does the City currently contribute to the Major Events Trust Fund?*

The City does not, and has never, contributed to the Major Events Trust Fund (now the Major Events reimbursement Program) for F1 or any event held at COTA.

- 6) *What is the latest update on the number and types of jobs created through F1 in Austin?*

Please see attached executive summary by Angelou Economics

- 7) *Where can I find attendance figures on the 10 year's worth of F1 events in Austin?*

Attendance for the F1 United States Grands Prix at COTA from 2012 through 2021 are as follows:

Year	Friday	Saturday	Sunday	3-Day Total
2012	not tracked	not tracked	117,249	117,249
2013	not tracked	not tracked	113,162	113,162
2014	74,271	76,121	107,778	258,170
2015	56,056	56,531	100,286	212,873
2016	83,507	89,401	99,991	272,899
2017	80,240	85,083	93,943	259,266
2018	81,256	84,932	97,258	263,446
2019	90,784	87,477	104,903	283,164
2021	135,841	140,208	134,476	410,525

8) *What is the overall cost to the promoters to host F1 in Austin?*

The overall cost to the promoters of hosting the F1 United States Grand Prix in Austin is approximately \$65 million per year.

COUNCIL MEMBER TOVO'S OFFICE

1) *Regarding COTA's previous commitments related to the creation of youth-focused STEM programs for area youth, please provide a comprehensive list from the Circuit of the Americas about what programs are currently in place for area youth and at which sites, how long these programs have been in effect, and how many children are served annually.*

Program	Years	Students annually	Comments
F1 in Schools	2012-2021	40-60	
Formula Sun Grand Prix (FSGP)	2014, 2015, 2017, 2019	800-1500	
UT Society of Automotive Engineers	2020	30	
Del Valle High School	2021	70	the health science technology class came out and helped with mass vaccinations also, took data and prepped vials for distribution
Tour program for Schools:	2014-2021	200-300	Local school tours, provide STEM information program to groups
Del Valle ISD - High School			
Del Valle ISD - Creedmoore Elementary			
Eastside Memorial High School			
Akin High School			
UT Charter School			

Westminister Senior

Primrose Westlake

Primrose school SW Austin

YMCA - Extend A Care

Bluebonnet Elementary

For more information, please see the attached presentation regarding COTA Student Education Engagement.

- 2) *Please provide a full copy of human trafficking prevention plan for the Formula 1 U. S. Grand Prix events to be held at the Circuit of the Americas facility.*

Please see the attached 2021 USGP HTPP.

Items #14 and #69: Approve an ordinance creating the Tax Increment Reinvestment Zone No. 19 for the South-Central Waterfront to be located within the area bounded on the west by South 1st Street from Lady Bird Lake south to Bouldin Creek, on the south by Bouldin Creek from South 1st Street east to Riverside Drive, on the east by the Ann and Roy Butler Hike and Bike Trail from Riverside Drive north to Lady Bird Lake, and on the north by Lady Bird Lake from South 1st Street east to the Ann and Roy Butler Hike and Bike Trail between Lady Bird Lake and Riverside Drive, and excludes the area bounded to the west by South 1st Street between Riverside Drive and Barton Springs Road, bounded to the east by Barton Springs Road between South 1st Street and Riverside Drive, and bounded to the north by Riverside Drive between South 1st Street and Barton Springs Road; and establishing a Board of Directors for the zone, and related matters. Related to Item #69.

Conduct a public hearing and consider an ordinance creating the proposed Tax Increment Reinvestment Zone No. 19 for the South-Central Waterfront to be located within the area bounded on the west by South 1st Street from Lady Bird Lake south to Bouldin Creek, on the south by Bouldin Creek from South 1st Street east to Riverside Drive, on the east by the Ann and Roy Butler Hike and Bike Trail from Riverside Drive north to Lady Bird Lake, and on the north by Lady Bird Lake from South 1st Street east to the Ann and Roy Butler Hike and Bike Trail between Lady Bird Lake and Riverside Drive, and excludes the area bounded to the west by South 1st Street between Riverside Drive and Barton Springs Road, bounded to the east by Barton Springs Road between South 1st Street and Riverside Drive, and bounded to the north by Riverside Drive between South 1st Street and Barton Springs Road; and establishing a Board of Directors for the zone, and related matters. Related to Item #14.

COUNCIL MEMBER TOVO'S OFFICE

- 1) *After the Council approves the TIRZ and the creation of the Board, what are the next steps toward implementation of the SCW Plan?*

The newly identified Board from the Creation Ordinance would task Staff and AEDC to work on the final project plan and financing plan, and providing any direction that should be considered in finalizing that plan. It is recommended that this process be collaborative and include the directly related departments (Finance, EDD, HPD, Parks and AEDC for example). The development of the project and financing plan can include many steps including updates to the

2016 framework plan, re examination of costs and timeline related to implementation, and advancement of the terms/roles and relationships for various parties that will be involved in the implementation of the TIRZ. The formal TIRZ agreement codifies these roles and responsibilities and is usually presented with a final Project and Financing Plan.

311 TIRZ Statute outlines the statutory requirements for a final project and finance plan, and there is latitude for how detailed this plan should be, and if Council has any specific details to be included in these plans (including work sessions/process) s they should let staff know in their directive to staff.

This is a helpful guide to the overall TIRZ process/components. [Chapter 311 Frequently Asked Questions \(texas.gov\)](#)

- 2) *According to the ILA, this project was to be in the portfolio of the AEDC—at what point will this project be transferred to the AEDC?*

ILA Addendum 1 outlines an advisory role for AEDC during the preparation of the preliminary and final plans ,and the specific scope to be implemented by AEDC.

- 3) *Please describe the AEDC's involvement in the construction of the TIRZ. Did they review drafts and provide feedback?*

Veronica Briseno (AEDC Interim CEO) and Rosie Truelove (AEDC Board President) were both extensively involved in the construction of the TIRZ, review of the draft Preliminary Project and Financing Plan, and associated documents. As noted in the responses to the other questions on these items, the AEDC will be responsible for administration of the TIRZ. City of Austin Financial Services Department staff will be responsible for monitoring the financial performance of the zone and associated debt issuances.

- 4) *How will the administrative costs be used?*

The specific scope requiring any administrative funds will need to be worked out in tandem with the Final Financing/Project Plan ,and will be codified in the TIRZ agreement. Generally for TIRZ they include monies to hire staff, consultants and other overhead costs related to the specific work of the TIRZ. Happy to provide a more detailed scope document, especially with a district such as South Central Waterfront with significant private ownership. Staff/consultant fees costs will be higher than a district with fewer owners.

- 5) *Please describe how the 46% property tax cap was determined. Please list the percentage of property tax dedicated to other TIRZs here in the city.*

As noted in staff's presentation to Council on November 16th, the TIRZ contribution increment would be calculated to exclude the Austin Transit Partnership (ATP) portion of tax rate and limit the City's portion of the tax rate to apply only to the additional increment that would not have occurred "but-for" the public investment so to hold the General Fund harmless. The ATP accounts for approximately 16% of the overall tax rate (including both the O&M and debt service portions), leaving 84% solely related to City of Austin. Based on the market analysis completed by Capitol Market Research, approximately 55% of projected value growth would be

attributed to the public investments associated with the South Central Waterfront Vision. By multiplying 84% by 55%, it results in a 46% TIRZ contribution increment.

Previous City of Austin TIRZs have dedicated 100% of the tax increment. Due to changes in State law (the 3.5% cap) that greatly impact the General Fund and the ATP component of the City's tax rate, a 100% contribution is no longer possible nor recommended.

Items #15 and #31: Ratify a contract with Massbur, LLC d/b/a Restoration 1 of Austin to provide emergency winter weather damage mitigation, clean up, and repair services at Zach Scott Theatre, in the amount of \$136,373.

Authorize execution of a construction contract with Massbur, LLC d/b/a Restoration 1 of Austin for the Zach Scott Theatre Emergency Repairs, in an amount not to exceed \$569,000.

COUNCIL MEMBER TOVO'S OFFICE

- 1) *Does the City have contracts with other organizations operating on city-owned land that require the city to pay for repair, maintenance, and custodial services as well as insurance? Please list the total costs of these services on an annual basis for the last 5-10 years.*

Staff is glad to review existing City contracts and provide the requested information. As there may be a number of contracts subject to this request, including the time needed to review and collect data from each, staff is unable to gather and report on the requested information prior to the December 9th Council Meeting.

Item 15 is a request for Council to ratify the contract, as the work was urgently needed following the winter storm earlier this year. As this contract has already been completed, staff is glad to postpone Item 15 to collect the requested information and to allow more time to answer Council's questions in this regard.

Item 31 is a request for Council to authorize a construction/repair contract, needed in order to allow the theatre to resume operations. Staff recommends approving this item at the December 9th Council Meeting, so that the needed repairs can be completed, and the theatre can resume normal operations as soon as possible.

If one or both Items are approved, staff is glad to provide the requested information as soon as possible.

- 2) *Please explain the reference to the \$100,000 deductible. Is that "per occurrence deductible" the total deductible for all city losses due to the winter storm? Which were the top 3 departments that suffered the most damage?*

Yes, the \$100,000 deductible is the "per occurrence deductible", as set by the insurance company, for the Winter Storm and reflects the total anticipated deductible amount for all city losses due to the winter storm. Presently, the three Departments that suffered the most damages are: Building Services, Austin Water, and Parks and Recreation.

Item #20: Authorize an amendment to the contract with KUBRA Arizona, Inc. to upgrade the current Storm Center software at Austin Energy, to increase the amount by \$925,547 and to extend the term by one year, for a revised total contract amount not to exceed of \$3,234,767. (Note: This contract is exempt from the City Code Chapter 2-9C Minority Owned and Women Owned Business Enterprise Procurement Program; therefore, no subcontracting goals were established).

COUNCIL MEMBER ALTER'S OFFICE

- 1) *Please provide more details on the enhanced capabilities that outage map users and text subscribers can anticipate as a result of this contract, and the timeline for operationalizing the adjustments.*

Reference the highlighted section below (or p.15 on the attached report). In addition to the expected benefits, Austin Energy will be including an email communication channel in addition to the existing SMS text channel. The target go-live for this upgrade is June 2022.

- 2) *Please also provide the section of the Austin Energy Winter Storm Uri after action report where this recommendation was highlighted.*

Page 15 of the attached report, excerpt below:

Follow-Up Actions

OA 1.12 – Improve Austin Energy website messaging to better educate the public regarding outages. (Completed Qtr. 2, 2021)

OA 1.13 – Update the 'outage restored' text message to clarify the status and expectation to respond if a nested outage exists. (Completed Qtr. 3, 2021)

OA 1.14 – Resolve ADMS issues that caused messaging to be inconsistent with the customer's incident experience. (Completed Qtr. 3, 2021)

OA 1.15 – Continue delivery of the next Outage Map and Text Alert Application, scheduled to be upgraded in 2022. Expected benefits include features such as natural language processing, a highly configurable interface to create new map views on-demand, low-impact change product configuration updates, social media integration, a solution for displaying the magnitude of master metered properties on the outage map, and an improved graphical outage history tracking and improved user interface. (Qtr. 2, 2022)

Item #23: Ratify a construction contract with Technical Structural Repair Group, LLC for the Austin City Hall Parking Garage Emergency Structural Repairs in an amount not to exceed \$356,514.

COUNCIL MEMBER KELLY'S OFFICE

- 1) *Please provide a copy of the forensic engineering report.*

Attached

Item #30: Authorize negotiation and execution of an amendment to the professional services agreement with CH2M Hill Engineers, Inc. for additional engineering services for the Walnut Creek Wastewater Treatment Plant Secondary Process Improvements project in the amount of \$548,758.37 for a total contract amount not to exceed \$4,279,460.87. [Note: This amendment will be awarded in

compliance with City Code Chapter 2-9B (Minority Owned and Women Owned Business Enterprise Procurement Program) Current participation to date is 9.08% MBE and 21.74% WBE participation.]

COUNCIL MEMBER ALTER'S OFFICE

- 1) *The RCA notes that this item was pending review by the city's Change Control Committee. Please provide their determination.*

This item has passed the CCC with a 5-0 vote.

Item #35: Authorize negotiation and execution of a contract with Llama, LLC to provide a real estate management solution, for a term of five years in an amount not to exceed \$2,600,000. (Note: This solicitation was reviewed for subcontracting opportunities in accordance with City Code Chapter 2-9C Minority Owned and Women Owned Business Enterprise Procurement Program. For the services required for this solicitation, there were insufficient subcontracting opportunities; therefore, no subcontracting goals were established).

COUNCIL MEMBER ALTER'S OFFICE

- 1) *Please provide additional details regarding the specific deliverables associated with this contract. The RCA indicates this will allow "a migration away from legacy systems, tools, and processes that rely heavily on manual input." Please provide information regarding the specific anticipated cost savings this referenced migration will facilitate and please detail when we anticipate that reduction of manual input by staff would materialize. Please provide additional details about how this will better facilitate strategic decisions about key City real estate assets.*

The deliverables for this proposal are largely driven by the May 2019 "Audit Report: City Leases" from the Office of the City Auditor. In order to meet department space needs and effectively use City-owned space, it was recommended that Real Estate Services (RES) should create a comprehensive space inventory of all properties owned by the City and also include the properties leased by the City. Real Estate Services worked with the Communications and Technology Management (CTM) department to use Maximo as a repository for City-owned fee simple properties. However, in working with CTM and the Building Services Department (BSD), RES found there were no adjacencies that could be made across the system with regards to overall real estate portfolio management. To address deficiencies outlined in the audit and the lack of centralized repository of real estate data, it was determined that a comprehensive real estate management solution was needed.

Real Estate Services underwent requirements gathering efforts to determine what would be needed to address the audit, as well as broader data and operations needs that were detailed in the Request for Proposal's (RFP) Statement of Work (SoW) - RFP 5600 GAZ3010REBID. The vendor, Llama llc, responded in their proposal with the following key deliverables:

- A comprehensive and current real estate management solution (REMS)
 - Specifically, the proposed solution is IBM's TRIRIGA
 - The solution will support the needs of all key areas of Real Estate Services including Acquisitions, Appraisals, Leasing, and its Support Services team

- A 24-week delivery schedule from the start of the project, including planning, configuration, training, and go-live (i.e., when the department will begin using the solution as a complete replacement for old processes and legacy systems)
 - Training will be driven by a Change Management oriented model and will include separate sessions for administrators and end-users, with a specific focus on roles within the solution
- The solution will be provided using the Software as a Service (SaaS) model, where the software is hosted and general maintenance is handled by the vendor, in-line with current best practices and requirements from the City's IT department (CTM) and the City's Information Technology Security Office (ITSO)
 - The vendor will provide a once-per-year no-cost upgrade of the solution
 - The City's data stored in the solution will be encrypted in transit and at rest (i.e., when being sent, received, and stored)
 - The City's data will only be stored inside the continental United States
 - The solution will integrate with the City's login system through Single Sign-On (SSO) for efficiency and security
- The solution will be compliant with the Governmental Accounting Standards Board (GASB)
 - This is to include compliance with the upcoming GASB 87 standards that will affect other City departments, such as Financial Services in tracking and reporting on City leased assets
- The vendor will provide comprehensive documentation for internal use and distribution, including system administrator guides, end-user guides, and technical references, necessary for understanding and integrating the solution with other City systems
- The solution will support public portals (websites) to give people outside the City the ability to interact with key and controlled elements of the solution, such as providing tenants and property managers the ability to view invoices, submit requests, and to (potentially) submit payments
- The vendor will provide tools and guidance to assist the City migrating its real estate data from various disparate locations into the new solution
- The vendor will provide ongoing maintenance and support (for a regular fee)

Currently, Real Estate Services estimates the value of employee time spent working with inefficient systems and disparate data locations amounts to approximately \$820,000 a year. By consolidating our data into a comprehensive single solution, we could eliminate two-thirds of the time spent on tasks related to manually updating, collecting, supporting, and generating reports with our existing processes, producing a cost savings of roughly \$540,000 a year.

The cost savings based on the reduction in manual input and use of disparate systems would begin materializing after the proposed solution goes live (i.e., after it's officially launched for full-time use by the City). Based on the vendor's proposal, go-live would be at the completion of their 24-week delivery schedule. A specific date cannot be provided at this time, because it depends on when the implementation project would start with the vendor.

The proposed solution will provide Real Estate Services with a real-time and more precise mechanisms for analyzing City real estate assets. It will assist in more effective space planning and decision-making for future space needs. It will also assist in analyzing current space

utilization, cost savings, and the transition from leased space to City-owned facilities. The solution will replace inefficient manual tools and aid in strategic decisions with more timely data, automations, and centralizing workflows.

The proposed solution also offers the option of adding Facility Assessment and Capital Planning modules in the future. This would allow Real Estate Services to assess, identify, and record City facilities' physical and functional conditions and the associated systems. The reporting tools will enable us to analyze deferred maintenance items and component renewal dates for all City buildings. Access to this data will allow us to conduct cost vs. condition impact analyses to prioritize projects and make better investment decisions.

Item #40: Authorize negotiation and execution of a multi-term contract with Touchstone Golf, LCC to provide golf course and tennis court qualified management services, for up to 18 years for a total contract amount not to exceed \$1,737,000.

COUNCIL MEMBER FUENTES' OFFICE

- 1) *Please provide the annual operating budget for the Grey Rock golf and tennis club.*

The annual operating budget for the Grey Rock golf and tennis club is \$3,044,706.

- 2) *What is the current membership of this club?*

The current membership of this club is \$679

Item #47: Approve a resolution adopting the Texas Term Sheet for the global opioid settlement in Texas Opioid Multi-District Litigation, In Re: Texas Opioid Litigation, MDL No. 2018-63587, in the 152nd District Court of Harris County, Texas.

COUNCIL MEMBER ALTER'S OFFICE

- 1) *Please provide a copy of the Texas Term Sheet. Please confirm that the reference to \$26 million in lines 15-16 of the resolution is the correct number.*

The Texas Term Sheet is now uploaded and attached to the revised resolution as Attachment 1.

The revised resolution includes a change to lines 15-16 from 26 million to 26 billion. This number is the total amount of financial compensation as part of the two settlements.

Law has sent a memo with additional background details related to Item #47

Item #57: Approve a resolution directing the City Manager to explore the establishment of a Veterans and Military Affairs Office, identify possible funding sources for the office, and return to Council with a report before April 2022.

COUNCIL MEMBER KELLY'S OFFICE

- 1) *How does this item differ from the already existing Veterans services office within the city of Austin?*

Link: <https://www.austintexas.gov/department/veterans-services-office>

Response provided by Council Member Renteria's office: Currently, our Veterans Service Office is inward-facing office aimed at assisting city employees who served in the armed forces. The

Department of Veteran & Military Affairs would be an outward-facing office centralizing veteran resources for anyone living within the City of Austin.

- 2) *Could you please provide council with the job descriptions of the roles for the office?*

Response provided by Council Member Renteria's office: Of course structure will be left up to the City Manager, but I'd assume there will be a department head and veteran constituent services roles.

- 3) *Could you please provide a copy of the resolution and any relevant backup information from when the office was established?*

Attached. Link for the item [here](#).

Item #62: Approve a resolution directing the City Manager to perform an analysis of the cost of producing housing in Austin and to identify potential options for reducing this cost.

QUESTIONS FROM WORK SESSION

- 1) *To the extent possible, can staff provide an estimate for what it would take to produce the requested information?*

The Development Services Department (DSD) reached out to the Purchasing Office to determine if there are any contracts of similar size and scope for the purposes of understanding previous costs and timeframes. Once this information is available, we will update our response.

- 2) *What type of consultant would be needed and how would we plug that consultant into our staff work?*

The Development Services Department will work with the 12 partner departments involved in the development review process to identify relevant cost components such as fees and review times. There may be a need for multiple consultants in the event we are unable to find a single consultant who can provide all of the requested information. DSD will assign a project lead to work with the consultant(s) and partner departments to assist with connecting the consultant(s) with the City staff.

- 3) *Is the budget something that is derived from DSD fees that are paid or is it general fund dollars? If DSD had to spend funds for this, what part of the budget would it come from, and what would those funds have went to otherwise.*

The Development Services Department (DSD) receives 90% of its revenue from the fees associated with development review, inspection, and permitting process, which cover 85% of the FY2021-22 DSD expense budget. Since the beginning of the pandemic in March of 2020, DSD has seen significant savings in the areas of its Contractuals and Commodities budgets; specifically in relation to Seminar-Training and Educational Travel expenses (combined savings of \$165K in FY21, with current year savings of \$300K as of December) due to many professional conferences either going on-line or being cancelled altogether last year and many scaled back or remaining online this current fiscal year.

- 4) *Please provide the document previously sent to Council regarding the exemptions to permitting for homeowners.*

Attached

5) *Please provide an update on the tree canopy and a health disparity analysis.*

As of 2018 our City's tree canopy cover is 36%. Currently, we receive and process tree canopy data every four years. Therefore, our next canopy update should be in 2022. However, DSD and WPD are exploring an emerging technology that appears to be just as accurate, but more frequent and faster to process. This would be of benefit as our City now has a long-range tree canopy goal. When City Council adopted the Climate Equity Plan in September 2021 Council established a city-wide canopy cover goal of 50% by 2050 focusing on distributing canopy cover equitably across the City. We are working on substantially tree funding investments with our public partners to increase tree plantings across the City, particularly in moderate to high need areas.

Regarding health impacts there are two resources of substantial importance. First, our Community Tree Priority Map (link [here](#)) identifies priority areas for tree planting and urban forest investment. Priority areas are assessed based on environment, social vulnerability, community investment, and health and well-being categories. For public health disparities we look at CDC data on physical and mental health and CAMPO air quality data. Based on this data our City's highest priority areas are in the eastern crescent. The second resource is the 2014 U.S. Forest Service Urban Forest Inventory Analysis for Austin (report [here](#)). That report concluded trees in Austin are foundational to reducing negative health outcomes by reducing air pollution by 1,253 tons/year. The economic value is \$2.8 million of avoid human health impacts.

6) *Please identify what information is readily available and what information will the consultant provide.*

Information that is available includes land costs and City costs. Consultants would likely need to provide information about design and construction costs, financing costs, and other relevant cost components, as they are market-based expenditures that the City's systems don't track.

7) *Please provide a fiscal note.*

The fiscal impact of this item is unknown at this time. Upon approval, staff will begin work on conducting the cost analysis in accordance with Council's direction, which will include determining any potential costs and funding sources.

AHFC Item #2: Authorize negotiation and execution of an agreement with Foundation Communities and Guadalupe Neighborhood Development Corporation, or another qualified respondent, to develop approximately 7.96 acres for affordable housing purposes located at or near 3811 Tannehill Lane.

MAYOR ADLER'S OFFICE

1) *Why was the recommended respondent selected when it was ranked lower?*

As detailed in the backup memo provided, the AHFC solicitation included both a quantitative component (e.g., scoring by the evaluation panel) and a qualitative component (e.g., community feedback provided through a variety of mechanisms). Applicants were scored based on development priorities, including maximizing the number of affordable units, maximizing the proportion of affordable multi-bedroom units for families, prioritizing affordable units for

households who have been displaced or are at risk of displacement, and minimizing city subsidy. The HPD recommendation takes into consideration both the objective and subjective components of the solicitation process.

- 2) *Does this include homelessness permanent supportive housing or Continuum of Care units? Was the homeless strategy officer involved?*

The Housing and Planning Department works collaboratively with the Homeless Strategy Office (HSO) throughout our programming and policies. HPD Staff and the HSO meet weekly to discuss Continuum of Care pipeline, program deployment, funding, and policies related to housing for people experiencing homelessness. The recommended proposal includes 10% of rental units (14 units) dedicated to Foundation Communities' Children's Home Initiative (CHI) for families experiencing homelessness. Based on experience with prior AHFC solicitations, staff anticipates that additional CoC units will be negotiated during the Exclusive Negotiating Period.

- 3) *Are we requiring standardized reporting that we ask all our partners and vendors to participate in?*

HPD staff has worked collaboratively with the HSO to incorporate CoC units into our Rental Housing Development Assistance (RHDA) program. HPD has worked to incorporate incentives for CoC units (including enhanced RHDA subsidy and locally funded Project Based Rental Assistance). AHFC staff will work with the successful proposer to increase CoC units within the development. As detailed in the RHDA program guidelines and scoring criteria, all CoC units will require a Memorandum of Understanding with the Ending Community Homelessness Coalition (ECHO), the local Continuum of Care agency.

COUNCIL MEMBER TOVO

- 1) *Was childcare included in the request for proposals as directed by a previous council resolution? Does Council need to pass another IFC to extend that childcare direction to the AHFC?*

AHFC released the Request for Proposals on June 9, 2021, with a submission deadline of August 5, 2021. The resolution referenced by CM Tovo was passed on August 26, 2021. The solicitation prioritized a variety of community benefits but did not explicitly include a requirement for onsite childcare. According to Children at Risk, the 78721-zip code, where this property is located, is not considered a Subsidized Child Care Desert because there are too few children in the zip code. It is important to note that the adjacent Norman-Sims Elementary has full-day pre-K3 that is supported by AISD.

The recommended proposal includes an onsite Community Learning Center, providing a range of services for residents of Norman Crossing and nearby neighbors as well. The Learning Center will enhance the educational experience of students and families at Norman-Sims Elementary School. Foundation Communities has a demonstrated track record of visioning, financing, staffing, and managing comprehensive and community-based learning centers. Foundation Communities – in partnership with Open Door preschools – offers quality (accredited by the National Association for the Education of Young Children) care for children from infancy to pre-Kindergarten. In addition, in partnership with Jeremiah Austin, GNDC provides a fully licensed child development center for families moving out of poverty.



COTA STUDENT EDUCATION ENGAGEMENT

F1 in Schools

F1 in Schools is dedicated to introducing students to engineering, project management, branding and marketing, and teamwork from a young age through racing. F1 in Schools includes an international STEM competition for school children, in which groups of 3–6 students have to design and manufacture a miniature car out of the official Model Block using CAD/CAM design tools. The student teams, integrate design techniques, engineering applications, marketing plans, computer simulations models, CAD skills, and teamwork into various levels of competition. Circuit of The Americas has hosted the F1 in Schools World Championship twice.



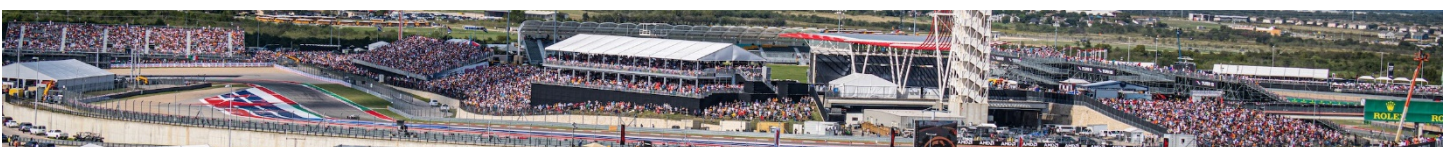
Longhorn Racing SAE International

Circuit of The Americas supports, sponsors and hosts The Society of Automotive Engineers located at the University of Texas. The Longhorn Racing program is a student chapter of The Society of Automotive Engineers located at The University of Texas. We are a cooperative student organization comprised of three Collegiate Design Series Teams that provide its members with the opportunity to explore different engineering fields and grow their tangible skills through a collaborative and innovative environment.



Formula Sun

COTA is home to the Formula Sun Grand Prix powered by Austin Energy. 20 student teams from around the world will race solar-powered electric vehicles that they designed and built. This unique engineering competition is powered solely by the sun and is based on the teams' innovation, speed and endurance.





COTA STUDENT EDUCATION ENGAGEMENT

Educational Tours

Circuit of The Americas has hosted many tours over the years for K through 12 as well as college students. Notably, the Ann Richards School came out several times to conduct STEM programs, along with Skill-point Alliance and many other area school districts.



Mazda STEM

COTA was the local facilitator for the Mazda STEM program as well as Andretti Sports STEM program. These were implemented in Austin several times during Lonestar Lemans and IndyCar. The teams and automakers reached out to local schools and made STEM presentations which included bringing drivers and race cars to the local campuses to talk about science and racing.

Del Valle Culinary Program

We work with the Del Valle culinary program to make desserts for the MotoGP teams made entirely of the local organically grown ingredients including honey made from rescued honeybees that live on-site at COTA.

F1 Teacher Program

For multiple Formula 1 grand prix COTA provided free access to STEM teachers to thank them for all of their work. We also organized and facilitated tours of garages for STEM students at both local school districts as well as with UT

Net Impact Sustainability Program

This business organization at Texas State University is made up of students interested in green business. The students helped us staff and plan for our sustainability implementation plan for practically every major event from our inaugural 2012 Formula 1 United States Grand Prix through to the 2019 F1 USGP.

Mini Solar Car Workshop

COTA hosted solar car building workshops for young children at multiple events. We hosted this during several formula Sun events as well as during some of our early F1 events.



Human Trafficking Prevention Plan

Qualifications

This plan is based on information gathered from the National Human Trafficking Resource Center website and the Texas Attorney General website. This plan is a work in progress and will continue to develop as information becomes readily available. Public safety and emergency services are the highest priority in the development of this plan.

Overview

COTA will include in its Event Action Plan “EAP” a suspicious activity document which will identify the red flags for human trafficking and the steps to take if suspicion arises. COTA Command will call the National Human Trafficking Hotline 1-888-3737-88. COTA Command will work with local law enforcement to identify any suspicious activity as it relates to the trafficking of humans. During this major event COTA will have on duty law enforcement officers throughout the facility.

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Austin City Hall Parking Garage

Structural Assessment

301 West Second Street
Austin, Texas



FINAL REPORT

June 4, 2021

WJE No. 2020.6981

DO 21010703902

PREPARED FOR:

Mr. Karim Helmi, PE

Quality Management Division

City of Austin

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Austin, Texas 78744

PREPARED BY:

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Austin City Hall Parking Garage

Structural Assessment

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Austin, Texas

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INTRODUCTION

At the request of the City of Austin (CoA), Wiss, Janney, Elstner Associates, Inc. (WJE) performed a structural and materials assessment of the parking garage in the Austin City Hall Building, located at 301 West 2nd Street, Austin, Texas 78701. The assessment was prompted by concrete distress in the form of cracking and spalling in select interior columns reported by CoA. Most of the reported distress corresponded to columns supporting the parking garage ramps; however, widespread cracking was also observed in the concrete slab. In response, the City of Austin requested that WJE perform an assessment of the parking garage, propose conceptual repair recommendations, and develop pertinent repair designs, as required.

The objectives of the current project phase are as follows:

- Characterize the current condition of the existing parking garage.
- Determine the possible cause(s) of the observed distress.
- Identify and prioritize structural elements for rehabilitations.

This report summarizes the project background, assessment approach, field investigation methods and findings, materials sampling, laboratory evaluation results, and conceptual repair recommendations.

PROJECT BACKGROUND

Austin City Hall provides approximately 150,000 square feet of above-ground space and 275,000 square feet of underground parking. Construction for the parking garage was completed in 2001, whereas the above-ground portion was completed more than 3 years later. The Architect-of-Record for the project was Cotera+Reed Architects, and Datum Engineers (Datum) was the Structural Engineer-of-Record. The scope of work for this assessment was limited to the below-grade parking garage structure.

Description of Structure

The underground parking garage features conventionally reinforced concrete walls, columns, beams, piers, and slabs. The structure was cast-in-place and consists of three levels of parking referred to as P1, P2, and P3 (P1-top level, P2-middle level, and P3-bottom level). For consistency in our assessment, structural elements above a given floor slab was considered as part of that level. The classification of levels is illustrated in Figure 1 and Figure 2. An additional floor near the entrance of the garage is referred to as Floor B1.

The original structural drawings indicated the reinforced concrete columns range from 24 to 36 inches in diameter with a design concrete compressive strength of 6,000 pounds per square inch (psi). The longitudinal reinforcement varies by column but includes the use of No. 7, No. 9, and No. 11 bar sizes. For transverse reinforcement, No. 4 bars were specified if longitudinal bars were No. 11 bars or larger, otherwise No. 3 bars were specified. Spacing of transverse reinforcement was dependent of column diameter and longitudinal reinforcement bar size. Additional transverse reinforcement ties were scheduled 3 inches above and below the intersection of a floor or ramp slab (Figure 3). Three additional transverse reinforcement ties were specified at 3 inches on center at locations of column splices (Figure 4).

The elevated reinforced concrete slabs (P1 and P2) were likely designed as a two-way slab system, except near the perimeter walls where the slab may span in the shorter direction. The P3 floor system is a slab-

on-grade. The design concrete compressive strength was 4,000 psi and the design slab thickness varies from 9 to 10 inches. Top and bottom reinforcement are defined by middle strips and column strips and include No. 4, 5, 6, and 7 bars at varying spacing. Typical slab drop panels at column locations were detailed to be 4 inches deep and extend 5 feet each orthogonal direction from the column centerline (Figure 5). No additional reinforcement was specified in the drop panels. The interior edge of the parking garage ramps intersects with the centerline of the ramp column and feature a total of eight dowels, four aligned with the top reinforcement and four aligned with the bottom reinforcement of the ramp slab. These dowels extend 6 inches down into the column core (Figure 6).

Initial On-site Observations

Katelyn Low, PE and Carl J. Larosche, PE, both of WJE, made a preliminary site visit on November 3, 2020 to observe conditions at the parking garage to facilitate development of a scope of work. During this site visit, personnel from the City of Austin walked the site with WJE and indicated areas of concern. The site visit involved limited observations of concrete spalls at the ramp columns and slab cracking throughout the three garage levels.

SCOPE OF WORK AND ASSESSMENT APPROACH

The scope involved a structural and materials assessment of Austin City Hall Parking Garage with the objectives of identifying the extent of distress, understanding the underlying cause of distress, and developing rehabilitation strategies. The assessment involved the following:

1. **Overall Assessment** - An overall visual assessment was performed for accessible slabs, columns, and walls using the following techniques.
 - a. *Limited Visual Survey.* A limited visual assessment of accessible slabs, columns, CMU walls, and exterior retaining walls.
 - b. *Mechanical Sounding Survey.* Mechanical sounding was performed by hammer sounding of the ramp columns and chain dragging at select locations on the suspended P1 and P2 floor slabs. Chain dragging was not performed on the P3 slab-on-grade as there were no observable signs of distress.
 - c. *Cursory Mapping to Differentiate levels of Crack Distress in Slabs.* Observed conditions and distress of slabs were photographed and recorded electronically using our WJE Planannotate system. Cracks and delamination quantities were recorded by size including crack width, crack length, and approximate delaminated area to assist with the overall condition assessment of the garage.
 - d. *Detailed Survey of Select Members.* A more detailed visual assessment and hammer sounding survey was performed at column and slab locations that exhibited high amounts of distress, determined from the previous limited visual and sounding surveys. The detailed survey included increased documentation of distress by recording estimated quantities (i.e. spall area, crack length, crack width).
2. **In-Depth Assessment** - An in-depth assessment was performed at select column and slab locations with a range of observed conditions (i.e. both sound and unsound) using the following techniques.
 - a. *Concrete Core Sampling.* Drilled core samples were obtained to facilitate a concrete petrographic evaluation and to determine concrete compressive strength.

-
- b. Reinforcement Verification.* Slab and column reinforcement locations were verified at limited locations using a GSSI StructureScan Mini XT ground penetrating radar (GPR). The GPR was calibrated by drilling and recording the physical cover depth.
 - c. Elevation Survey.* A relative elevation survey was performed in select slab bays using a Technidea Ziplevel Pro-2000. Elevation surveys were performed to measure the maximum deflection in the middle of a bay relative to the supports.
 - 3. **Laboratory Testing** - Laboratory tests were performed on collected material samples to determine the general quality, integrity, and strength characteristics of the concrete.
 - a. Petrographic Analysis.* Concrete cores were evaluated using applicable methods of ASTM C856, *Petrographic Examination of Hardened Concrete*, to characterize composition and general quality of the concrete, as well as to identify the presence of potential distress mechanisms.
 - b. Compressive Strength Testing.* Concrete cores from the slabs and columns were evaluated in accordance with ASTM C42, *Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete*, to define the compressive strength of the concrete.
 - 4. **Structural Analysis** - The observed distress in slabs prompted a limited structural analysis of the slab capacity compared to code required loading demands of the structure.

FIELD INVESTIGATION

WJE representatives, Ms. Low; Dr. Jeremiah Fasl, PhD, PE; Mr. Lane Thompson; and Ms. Maggie Becker, performed a field investigation of the Austin City Hall parking garage between February 2 and February 5, 2021. The on-site investigation primarily focused on the slabs and columns within Levels P1, P2, and P3, but also included a limited assessment of the CMU walls, exterior retaining walls, and various reinforced concrete elements in Level B1. Emphasis was placed on elements that showed severe distress including columns where ramp slabs and floor slabs frame in at different elevations and select floor slabs.

The as-built construction drawings were used to locate and document the observed conditions. Some areas, such as closed off storage or utility rooms and areas with vehicle parking, were inaccessible due to locked doors and gates. These locations did not appear to be near typical distress areas in the garage nor exhibit visual signs of distress from what could be observed and therefore were omitted from this investigation.

Overall Visual and Sounding Inspection

Visual condition surveys were performed on various reinforced concrete elements in the parking garage. The visual survey of the columns supporting both the ramp and floor slab also included crack mapping and hammer sounding. These include the fourteen columns along Gridlines 3.5 and 9.5 (Figure 7). The survey of the suspended slabs included crack mapping of select bays and chain dragging at isolated locations.

Column Visual and Sounding Inspection

The survey was performed on select columns in the parking garage to determine levels of distress. Areas of distress appeared to be mainly located along Gridlines 3.5 and 9.5. Columns along these gridlines support the free-end of intersecting ramp slabs and floor slabs (Figure 8 and Figure 9). This strip of

columns will be referred to as the “columns supporting slab free-ends” herein. Typical conditions of the columns supporting free-end slabs included a combination of the following.

- Spalls and delaminations of the column above or below the intersecting slab (Figure 10 through Figure 12).
- Spalls and delaminations of the intersecting ramp or floor slab near the slab-to-column interface.
- Circumferential cracks around the column perimeter at the slab-to-ramp interface (Figure 13).
- Vertical cracks along the column height at the slab-to-ramp interface (Figure 14).
- Evidence of previous repairs (Figure 15 and Figure 16).

A total of fourteen columns were inspected along these gridlines. The four end columns, 3.5D, 9.5D, 3.5K, and 9.5K, as shown in Figure 7, did not show any signs of distress and therefore will be excluded from further discussion in this section. Of the ten members exhibiting distress, a total of thirty-one delaminations were observed in the column either above or below the slab/ramp connection. Individual delamination areas were estimated based on sounding and visible cracking and ranged from 0.5 square feet to 15 square feet. The total estimated area of column delaminations was approximately 155 square feet. Of the thirty-one column delaminations, twenty-four were observed on the ramp side of the column (77 percent) and seven were observed on the floor slab side of the column (23 percent). Roughly two-thirds of the delaminations recorded were above the slab/ramp-to-column connection (Figure 12) and the remaining third were observed below the ramp/floor slab intersection (Figure 11). A summary of delamination locations and quantities is shown in Table 1 and Sheets S1 and S2 of Appendix A.

Table 1. Column Delamination Summary

E/W Gridline	N/S Gridline	Ramp-Column Connection			Floor Slab-Column Connection		
		Quantity of Observed Delaminations		Estimated Delamination Area (sq. ft.)	Quantity of Observed Delaminations		Estimated Delamination Area (sq. ft.)
		Above Ramp	Below Ramp		Above Floor Slab	Below Floor Slab	
3.5 (WEST)	E	1	1	18	2	1	10
	F	2	2	17	0	0	0
	G	2	0	4	0	0	0
	H	2	0	3	2	0	15
	J	2	2	19	0	0	0
9.5 (EAST)	E	1	0	3	0	0	0
	F	2	1	17	0	1	0.5
	G	2	1	23	0	0	0
	H	1	1	11	0	0	0
	J	1	0	3	1	0	10
TOTAL		16	8	118	5	2	35.5

In addition to the column delaminations, cracks were observed along the column-to-slab interface (Figure 13 and Figure 14). Crack surveys were performed on each column that exhibited distress (ten total), both on the floor slab side and ramp slab side (total of six surveys per column). Of the column surveys on the ramp side, 73 percent exhibited vertical cracking along the slab-column interface and 70 percent

exhibited circumferential cracking around the column perimeter. Of the column surveys on the floor slab side, 57 percent exhibited vertical cracking along the slab-column interface and 80 percent exhibited circumferential cracking around the column perimeter. Cracking, spalling, and delaminations were also observed on approximately 60 percent of the slabs directly adjacent to the columns.

Previous column concrete repairs were noted in approximately half of the surveyed locations. In general, the repairs appeared to be located where the slab was intersecting with the column, observed on both the faces where the slab was intersecting (Figure 15 and Figure 16). While no documentation of previous repairs was provided, the repair material is generally located in the same areas as the new/current column delaminations. WJE mechanically sounded the repairs and found delaminations at approximately 30 percent of the previously repaired locations.

Slab Visual and Mechanical Sounding Inspection

A limited visual survey was performed on all accessible slabs above the P3 slab-on-grade up to the top of the P1 ramp. Mechanical sounding was performed at select locations to provide an understanding of the presence of potential global slab delaminations. The visual survey characterized cracks found in middle spans, column strips, and radial cracks fanning outward from columns (Figure 17). The presence of efflorescence and/or staining on the slab surface was also documented.

A qualitative rating system (none, minor, moderate, and severe) was developed based on conditions observed including crack widths, total lengths of cracks, and presence of efflorescence and staining. Typical slab conditions for each distress classification are described in Table 2. The visual assessment results for the parking garage are presented in Table 3 through Table 5. These tables summarize the distress for the total quantity of surveyed locations. The middle span cracking summarized in Table 3 was documented by bay, the column strip cracking summarized in Table 4 was documented between adjacent columns, and the radial cracking fanning from columns summarized in Table 5 was documented at each interior column location.

Middle span cracks were observed and surveyed above and below the slabs and typically consisted of diagonal cracks, longitudinal cracks, or a combination of both (Figure 18). The middle span rating was determined based on the estimated total length of cracks in each given bay, the estimated crack width, and moisture related distress including efflorescence and/or staining. In a number of slabs, full depth drilled holes were observed near the center of the bay. WJE was informed by CoA staff that these were drilled to relieve ponding water during construction. Column strip cracks and column radial cracks were only observed on the top surface of Slabs P1 and P2. Column strip cracks were typically linear between column lines. The severity was primarily determined based on total crack length for the given strip. In the most severe locations, four full-length cracks spanned between column supports. Slab cracks fanning from columns were observed at most interior column locations (Figure 19 and Figure 20). The radial crack length from the face of support and estimated crack widths were used to determine the degree of severity. Fanning cracks were observed to have radial crack lengths varying from 0.5 to 5 feet.

Locations of severe to moderate middle slab cracks were frequently observed adjacent to locations of severe/moderate column strip cracks and radial cracking around the column. The following bays on Level P2 were observed to contain high levels of distress from the various categories described in Table 2 below: 3C-4D, 4C-5D, 9B-10C, and 9C-10D.

Table 2. Severity Rating Descriptions for Slab Visual Survey.

Visual Assessment Type	None	Minor	Moderate	Severe
Slab Middle Span	<ul style="list-style-type: none"> No visible distress 	<ul style="list-style-type: none"> 0 to 30 ft. of cracking Minor staining or efflorescence, if present 	<ul style="list-style-type: none"> 30-80 ft. of cracking Most show evidence of efflorescence and/or staining 	<ul style="list-style-type: none"> 80+ ft. of cracking Likely evidence of efflorescence and staining
Slab Column Strip	<ul style="list-style-type: none"> No visible distress 	<ul style="list-style-type: none"> 0 to 30 ft. of cracking 	<ul style="list-style-type: none"> 30 to 90 ft. of cracking 	<ul style="list-style-type: none"> 90+ ft. of cracking
Slab around Column	<ul style="list-style-type: none"> No visible distress 	<ul style="list-style-type: none"> Maximum distance cracks extend from column: 1 ft. Crack width 0-15 mils 	<ul style="list-style-type: none"> Maximum distance cracks extend from column: 2.5 ft. Crack width 15-20 mils 	<ul style="list-style-type: none"> Maximum distance cracks extend from column: 2.5+ feet Crack width 20+ mils

Table 3. Slab Cracking Visual Assessment Summary – Cracking within Middle Spans

Middle Span Bay Classification Totals						
Level	Face	None	Minor	Moderate	Severe	Total Bays Surveyed
P1	Slab	9	60	36	0	105
P1	Soffit	5	42	62	20	129
P2	Slab	9	69	42	2	122
P2	Soffit	4	45	81	16	146

Table 4. Slab Cracking Visual Assessment Summary – Cracking along Column Strips

Column Strip Cracking Classification Totals						
Level	Face	None	Minor	Moderate	Severe	Total Column Strips Surveyed
P1	Slab	54	47	50	1	152
P2	Slab	42	61	96	1	200

Table 5. Slab Cracking Visual Assessment Summary – Radial Cracks Fanning from Columns

Level	Face	Radial Cracking Classification Total				Total Columns Surveyed
		None	Minor	Moderate	Severe	
P1	Slab	25	47	23	3	98
P2	Slab	6	34	65	5	110

Perimeter Retaining Walls, CMU Walls, Level B1, and Secondary Structures

The perimeter retaining wall, CMU walls, and Level B1 were included in the assessment. Limited distress was observed along the perimeter retaining walls. Distress generally consisted of vertical and/or diagonal cracking between placement joints (Figure 21). In general, no efflorescence or staining was observed at these locations.

Evidence of previously repaired distress was observed at the elevator shaft and interior stairwell G4 (Figure 22 and Figure 23). On Level P3, approximately 4 square feet of impact damage was observed at the CMU wall surrounding storage space next to the center stairwell (Figure 24). Near the soffit of Level P1, a 5 square foot spall was observed on the column to the west of the ventilation chase (Figure 25). Several cracks were observed along the CMU walls surrounding Staircases G1 and G3 (Figure 22). A majority of the cracks appeared to align with an opening or were located at the corner wall intersection (Figure 26 and Figure 27). Some cracks were observed in the CMU wall near the support locations in the steel stairwell (Figure 28). Additionally, deteriorated sealant was observed at a number of locations throughout the garage (Figure 29 and Figure 30).

The north section of the west ramp on Level P1 did not feature a traffic or pedestrian barrier (Figure 31). The open section is a fall hazard and appeared large enough for a vehicle to fit through.

The visual survey of the north end of B1 included elements along Gridlines A, B, and C (Figure 32). At that level, a separation was observed in the top course(s) of several CMU walls (Figure 33 and Figure 34).

Reinforcement Survey

WJE performed a nondestructive evaluation at select locations using GPR. GPR utilizes electromagnetic waves to identify differences in materials within a relatively homogenous material (i.e. steel reinforcement in concrete). The purpose of the investigation was to verify the presence of reinforcement with respect to the as-design conditions. Depth measurements for the slab were calibrated by physical measurements to the top reinforcing bars.

Reinforcement Survey - Slabs

Slab reinforcement was designated by middle strips and column strips according to the as-built construction drawings. Since the slab is a two-way system, the reinforcement was designed to span in both the E/W and N/S directions. According to the drawings, the E/W bars were the exterior layer for both the bottom and top reinforcement. The design concrete cover for the exterior layer was 1.5 inches for the top and bottom slab faces. The expected clear cover for interior layer bars would be 1.5 inches plus the diameter of the perpendicular exterior bar for that section. The average cover depth to the top of

reinforcing bars and average spacing between bars was measured for each scan. As anticipated, larger cover depths were generally observed in bars spanning N/S indicating these bars were placed interior to the E/W bars. The largest average clear from the top face of the slab to the top mat was 3.1 inches, while the smallest average distance from the top face of the slab to the top of bottom mat was 6.7 inches, where the measured slab thickness was approximately 8.6 inches. A summary of the results of the GPR scans from Level P2 are summarized in Table 6 below.

Table 6. GPR Scan Summary

Scan Location	Bar Direction	Average Depth Center of Top Mat Reinforcement (in)	Average Bar Spacing (in)	Average Depth Center of Bottom Mat Reinforcement (in)	Average Bar Spacing (in)
9C.5-11C.5	N/S	-	-	8.0	11.5
9.5B-9.5D	E/W	3.0	12.8	8.8	12.1
9C-9D	E/W	3.1	12.0	-	-
9C-10C	N/S	3.9	11.2	-	-
10C-10D	E/W	3.1	12.5	-	-
8B.5-10B.5	N/S	-	-	8.2	11.1
4C.5-5C.5	N/S	-	-	6.7	11.1
4.5D-4.5B	E/W	-	-	7.2	11.7
3C-5C	N/S	2.3	11.3	-	-
3C-3D	E/W	1.7	11.5	-	-
3D-4D	N/S	3.6	13.3	7.0	9.9
4D-5D	N/S	2.4	10.3	-	-
3.5D-3.5B	E/W	-	-	6.9	11.4

Reinforcement Survey - Columns

A GPR survey was performed on the ten columns that exhibited distress along Gridlines 9.5 and 3.5. The survey included all transverse reinforcement (ties) in the column from the top of the P3 slab to approximately 4.5 feet above the P1 ramp. Longitudinal reinforcement and slab dowels extending into the column (Figure 6) were verified in limited locations.

Tie spacing was specified depending on column diameter and longitudinal reinforcement. Of the columns investigated, specified stirrup spacing was either 14 inches or 18 inches on center except Column 3.5J, which had a specified spacing of 22 inches. According to the as-built construction drawings (Figure 4 and Figure 3), three additional stirrups at a 3-inch spacing were required below the slab at locations of column splices, while one additional stirrup was required above and below each slab intersection.

The results of tie reinforcement in columns supporting free-end slabs is summarized in Table 7. The survey indicated stirrup placement was inconsistent, with numerous instances of ties spaced more than two times larger than what was specified. The average stirrup spacing was generally consistent with the specified spacing, yet the results are highly variable as evident from the large standard deviation. In addition, only a few of the columns at a few slab intersections had stirrups at a 3-inch spacing above and below each intersecting slab.

Table 7. Transverse Reinforcement Survey for Columns Supporting Free-end Slabs

	Gridline 3.5 (West)					Gridline 9.5 (East)				
	E	F	G	H	J	E	F	G	H	J
Specified Spacing (in)	18	14	14	14	22	18	14	14	14	14
Average Spacing (in)	13	15	13	16	16	15	16	14	14	14
Standard Deviation (in)	9	6	7	11	12	8	7	9	6	6
Largest Recorded Spacing (in)	39	27	34	57	56	30	28	45	25	29
Stirrup Not detected 3" Above or Below Slab/Ramp Intersection	2	1	2	3	1	0	6	3	4	3

Relative Elevation Survey

Relative elevation surveys were performed on four bays that were representative of typical moderate and severe distress conditions. Each slab was surveyed independently, and no single benchmark was used to relate elevations from different bays. For ease of documentation, the highest recorded elevation, typically near column supports, was referenced as zero and served as the benchmark for that bay. Measurements were then recorded relative to the benchmark locations. Maximum deflections were consistently in the middle of the bay. Surveys were performed on Level P1 for Slab Bay 3C-4D and Level P2 for Slab Bays 3C-4D, 3K-4L, and 9C-10D. The maximum relative elevation difference was 3.4 inches, 2.9 inches, 2.3 inches, and 1.9 inches, respectively. The detailed relative elevation surveys are attached in Sheet S3 in Appendix A.

Material Sampling

WJE obtained nine concrete cores, in general accordance with ASTM C42, *Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete*, four from the slab and five from the columns to perform laboratory analysis. WJE performed GPR scanning prior to coring to ensure the cores removed for compressive strength testing did not cut or remove any reinforcing steel. Cores obtained were nominally 4 inches in diameter and varied in length from 3.2 to 10 inches. The slab cores were full-depth and removed from areas with a specified thickness of 9 inches. After coring, WJE patched the holes in the structure.

LABORATORY EVALUATION

WJE performed a petrographic analysis on four cores that contained either cracking or spalling and five core samples without distress were selected for compressive strength testing. The following sections summarize the laboratory analysis, and a more detailed description of the petrographic analysis can be found in Appendix B. Details of each core are presented in Table 8, including sample location, evaluation performed, and general comments.

Table 8. Concrete Core Samples

Sample ID	Member Type	Location	Description and Comments	Evaluation
C1	Slab	Floor P2 - Bay 3C-4D	<ul style="list-style-type: none"> Located in NE corner of bay Cored through diagonal crack Sample size: 8.6 inches in length 	Petrographic evaluation
C2	Slab	Floor P2 - Bay 5C-6D	<ul style="list-style-type: none"> Located on east side of bay Sample size: 9.5 inches in length 	Compressive strength
C3	Slab	Floor P2 - Bay 9C-10D	<ul style="list-style-type: none"> Located in center of bay Cored through conjoining diagonal cracks Sample size: 9.2 inches in length 	Petrographic evaluation
C4	Slab	Floor P2 - Bay 9D-10E	<ul style="list-style-type: none"> Located in center of bay Sample size: 9.7 inches in length 	Compressive strength
C5	Column	Floor P2 – 9.5G	<ul style="list-style-type: none"> Located on ramp side of column near Sample size: 3.3 inches in length 	Petrographic evaluation
C6	Column	Floor P2 – 9.5F	<ul style="list-style-type: none"> 6 inches from base of slab Sample size: 3.3 inches in length 	Petrographic evaluation
C7	Column	Floor P1 – K3.5	<ul style="list-style-type: none"> Located mid-height of column Sample size: 9.1 inches in length 	Compressive strength
C8	Column	Floor P1 – K9.5	<ul style="list-style-type: none"> Located near the top of column Sample size: 7.7 inches in length 	Compressive strength
C9	Column	Floor P1 – H9.5	<ul style="list-style-type: none"> Located on ramp side of column Sample size: 9.1 inches in length 	Compressive strength

Petrographic Evaluation

Petrographic studies were performed on Cores C1, C3, C5, and C6 in accordance with ASTM C856. The objective of the petrographic examination was to assess the general material properties of the concrete and to aid in determination of the likely cause(s) of cracking.

Concrete Composition

The concrete contained by the four cores likely represented two different mixes. The concrete represented by Core C1 and C3, both taken from the slab, was air entrained and consisted of crushed dolomite coarse

aggregate, natural siliceous sand fine aggregate, portland cement, and fly ash. The estimated bulk water-to cement ratio (w/cm) was in the range of 0.42 to 0.47 and the estimated total cementitious materials content was 550 to 600 pounds per cubic yard (pcy) with 20 to 25 percent fly ash replacement. The air content was estimated to be 6-1/2 to 7-1/2 percent for Core C1 and 4 to 5 percent for Core C3.

Core C5 and C6 were taken from columns. Both cores were marginally air entrained and contained similar materials to Cores C1 and C3 but had different mix proportions. The estimated bulk w/cm was in the range of 0.37 to 0.42 and the estimated total cementitious materials content was 620 to 670 pcy with 20 to 25 percent fly ash replacement. The air content was estimated to be 2-1/2 to 4 percent, with Core C6 slightly higher than that of Core C5. Core C6 also contained a mortar layer that was tightly bonded to the concrete. No internal expansion mechanisms, such as ASR or DEF, were detected. In addition, the overall quality of the concrete appeared to be good.

Concrete Distress and Depth of Carbonation

The concrete cores were taken from cracked locations in the garage and visually assessed with the aid of carbonation testing. The depth of carbonation is typically used to determine corrosion potential, but in the interest of this study, the depth of carbonation was used to provide insight on the estimated time of crack formation.

Core C1 contained a full depth vertical crack that propagated through coarse aggregate. The depth of carbonation was 1/16 inch from the top surface, but the paste along the crack was carbonated to a depth of more than 2-1/2 inches. Core C3 had multiple full-depth vertical cracks that propagated through aggregates. Similar to Core C1, the top surface was carbonated to a depth of 1/8 inch from the top surface but paste along the crack was carbonated to a depth of more than 2-1/2 inches from the top surface.

Core C5 and C6 had similar horizontal cracks that propagated through coarse aggregate. The top surface of Core C5 was noted to only have surface carbonation to a depth of 1-16 inch, and Core C6 contained a 30-mil mortar layer that was completely carbonated. No carbonation was noted within the cracked column locations.

Strength Evaluation

Concrete compressive testing was performed in accordance with ASTM C42. The average compressive strength from samples taken from slabs was 6,400 psi, which is 1.6 times higher than the specified design strength of 4,000 psi. Similarly, the compressive strength from samples taken from columns was approximately 1.5 times higher than the specified strength with the average tested strength and design strength being 8950 and 6000 psi, respectively. The compressive strength results along with design strengths and equivalent specified strengths according to ACI 562-19¹ are summarized in Table 9.

¹ ACI 562-19. "Code Requirements for Assessment, Repair, and Rehabilitation of Existing Concrete Structures and Commentary.

Table 9. Summary of Concrete Compressive Strength Results

Member Type	Design Strength (psi)	Number of Samples	Results from Laboratory Testing	
			Average Compressive Strength (psi)	Equivalent Specified Strength (psi)
Slab	4,000	2	6,400	5,236
Column	6,000	3	8,950	7,550

LIMITED STRUCTURAL ANALYSIS

The field investigation identified several slabs that exhibited severe cracking with relatively high deflections, radial cracking in slabs around interior columns, and spalling/delaminations of columns supporting both ramps and floor slabs (along Gridlines 3.5 and 9.5). A limited structural analysis of the two-way slabs was performed to determine possible cause(s) of distress and to verify the structural adequacy of the members. An initial analysis was performed using as-designed material properties, loading conditions, and specified dimensions. WJE performed a subsequent analysis using as-built properties and a reduced live load consistent with current code requirements.

Gravity Load Analysis

A gravity load analysis was performed for select slabs considering self-weight, superimposed dead load, and live load. The loads used in analysis are described as follows:

- Self-weight of concrete members was estimated based on member size and a concrete unit weight of 150 pounds per cubic foot. Member sizes were determined from structural drawings provided.
 - Tributary areas were determined by centerline of columns.
 - The slab thickness was assumed to be 9 inches per original construction drawings.
 - The self-weight of the drop panels was evenly distributed along column strips.
- Superimposed dead loads
 - Suspended dead load from piping was assumed to be 5 pounds per square foot based on field observations.
- Live Loads
 - Live load reduction was neglected.
 - Automobile parking live load was required to be 50 pounds per square foot according to the original construction drawings and the governing building code (UBC 1994). The minimum live load for parking garages is now 40 pounds per square foot according to the most recently adopted code by the City of Austin (IBC 2015).

Tributary areas for the slabs and columns were analyzed in accordance with IBC 2015. The governing gravity load combination used for analysis was factored by $1.2 \times \text{Dead Load} + 1.6 \times \text{Live Load}$.

Two-Way Slab Strength Analysis

Two-way slab analysis was performed on the slab bay confined by columns at Gridlines 4C, 5C, 4D, and 5D (slab 4C-5D) on Level P2 of the parking garage. This slab was analyzed since it represents a typical two-way slab in the garage that has no additional restraint (i.e. additional column or exterior wall).

Flexural Analysis

The flexural analysis was performed using the direct design method and considering the required demands cited above. The direct design method is a lower-bound theory that can be used as a conservative design tool. It assumes the two-way slab is divided into middle strips and column strips, which are further segregated into sections of negative moment and positive moment. The design is completed for each section individually and must be performed in both spanning directions.

Analysis using the direct design method was performed in accordance with ACI 318-14. The as-designed slab capacity was determined and compared against the strength demand considering the uniformly distributed loads previously discussed. Since this bay had equal span lengths and the same scheduled reinforcement in both the E/W and N/S direction, the analysis only differs when considering the effective depth for reinforcement. For analysis, the interior bars (spanning in the N/S direction) were considered since the smaller effective depth will result in smaller flexural capacities. For comparison, the cracking moment was also calculated. Results from the as-designed direct analysis method are shown in Table 10.

Table 10. Direct Design Method – As-Designed Flexural Analysis of Bay 4C-5D Spanning in the N/S Direction

Strip	Bending Moment Direction	Design Reinforcement	Factored Moment Demand (M_u) Kip-ft	Moment Capacity (ϕM_n) Kip-ft	Cracking Moment (M_{cr}) Kip-ft	Demand-to-Capacity Ratio
Column Strip	Positive	15 #5	131	132	96	1.0
	Negative	14 #7	338	369	200	0.92
Middle Strip	Positive	17 #4	88	100	96	0.87
	Negative	17 #5	113	149	96	0.75

Note: Positive bending = compression on top of slab, negative bending = compression on bottom of slab.

Shear Analysis

The slab capacity for punching shear was determined based on the provisions in ACI 318-14. The shear strength was determined by analyzing two critical punching shear sections. The first section considered the height of the drop panel (13 inches for total slab height) while the second critical section was just outside of the drop panel, only considering the shear capacity of the typical slab height (9 inches). There was no shear reinforcement in the slabs, therefore the capacity was dependent on the concrete shear capacity alone. The required shear capacity for these critical sections is determined from direct shear stress, and shear stress from an unbalanced moment at the column location. Following ACI 318-14 guidelines, shear demand-to-capacity ratios for both critical sections was less than one. The column design punching strength is presented in Table 11, along with calculated shear demand, and demand-to-capacity ratios.

Table 11. Slab Punching Shear Analysis Results

Critical Section Considered	Design Punching Shear Strength (ϕv_{uv}) psi	Punching Shear Stress Demand (v_u) psi	Demand-to-Capacity Ratio
Around Column Perimeter (Including drop panel in slab height)	188	71	0.37
Around Drop Panel Perimeter (Not including drop panel in slab height)	141	61	0.43

As-Designed vs Observed Conditions Analysis

As discussed previously, observed conditions that differed from design assumptions included the concrete compressive strength, concrete slab thickness, and average reinforcement concrete cover depth. The slab thickness and concrete cover were measured at a select slab location classified as severe during the visual assessment. An as-built analysis was performed using the measured information, the equivalent concrete compressive strength from tested samples, and the current live load for parking structures (40 psf) (Table 12). The as-built analysis indicates the observed deviations from the original design do not result in strength deficiencies at this select location.

Table 12. Direct Design Method – As-Built Flexural Analysis of Bay 4C-5D Spanning in the N/S Direction

Strip	Bending Moment Direction	Design Reinforcement	Factored Moment Demand (M_u) Kip-ft	Moment Capacity (ϕM_n) Kip-ft	Cracking Moment (M_{cr}) Kip-ft	Demand-to-Capacity Ratio
Column Strip	Positive	15 #5	128	148	115	0.89
	Negative	14 #7	331	354	236	0.99
Middle Strip	Positive	17 #4	85	112	115	0.79
	Negative	17 #5	110	139	115	0.89

DISCUSSION AND RECOMMENDATIONS

Considering the age of the structure, the parking garage is generally in sound condition. The notable observed conditions and recommended actions will be discussed in more detail in the sections below.

Concrete

Concrete is a construction material that has a propensity for cracking due to internal forces, such as member shrinkage or internal expansion, external forces, such as loading from gravity loads, and thermal fluctuations under restraint conditions. In general, cracks form in concrete when the tensile strength of the material has been exceeded. In early-age concrete, cracking can occur as a result of the natural reduction in volume as concrete loses water, often called drying shrinkage. Drying shrinkage generally occurs within the first months to a year after placement, prior to the application of large external forces. Cracks associated with drying shrinkage are characteristically through thickness.

Slabs

The two-way slab bays generally featured cracking on the top and bottom faces of the middle spans, on the slab top face along column strips, and on the slab top face radiating (fanning) from interior column locations.

Middle Span Cracking

The bottom face middle span cracking pattern appears to be consistent of a two-way slab with positive bending causing diagonal cracks between supports, forming an "X" pattern. Many slabs that exhibit this "X" shaped cracking pattern on the bottom face in this garage appeared to have a similar pattern on the top face. If the cracks were solely due to flexure, once the section reached its cracking moment the bottom layer reinforcement would engage and cause the top fiber to be in compression. As such, a separate distress mechanism may be influencing the middle span cracking.

Two core samples were taken from slabs with these types of cracks and investigated by petrographic evaluation. Full-depth, through-aggregate cracking and carbonation in the paste within the cracks were observed in both samples. The carbonation depth on the surface was approximately 1/16 inch but reached a depth of 2-1/2 inches within the cracks, indicating the cracking likely occurred early in the life of the structure. Since the observed cracking was through aggregate, the cracks likely formed some time after initial hydration. Based on our observations and the relatively low cracking moment, the slab cracking may have initiated from early-age flexural stresses and extended through the depth of the section as a result of long term drying shrinkage and/or thermal expansion/contraction (or vis-a-versa). The early-age flexural cracking may have been a result of the ponding water or other construction loading such as shoring and reshoring.

Column Strip Cracking

The column strip cracking observed on the top face consisted of nearly linear cracks spanning from column-to-column. The cracks appeared to be consistent with negative bending along the column strips. However, WJE drilled exploratory openings at select locations of these column line cracks, which revealed that the depth of cracks were approximately 0.5 inch or less. If the cracks were due to negative bending, the crack depth would have been expected to reach the depth of the tensile reinforcement (at least 1.5 inches from the top of the slab).

The frequent shallow-depth cracks may be due to improper placement or finishing. If a surface is finished too early, excess bleed water can get trapped in the top layer, which causes a weakened concrete material due to an increased water-to-cement ratio.

Radial Cracking

Radial cracks fanning from the column was observed in the majority of interior columns. The radial cracking emanating from the column supports is not necessarily indicative of structural distress or of a life safety-issue². Radial cracks are frequently observed in parking garages since the cracks are visible (no floor

² Paret, T.F., Searer, G.R., Rosenboom, O.A., and Pandya, K.P. *Radial Cracking in Reinforced Concrete Flat Plate Slabs*. 2010 Structures Congress – ASCE, 2010.

to cover the distress) and the slab is exposed to weather and therefore usually has a larger concrete cover (flexural cracking is generally proportional to concrete cover thickness³).

The relatively high stiffness of the columns can cause tension reinforcing bars immediately adjacent to a column to yield prior to bars further away from the column. The yielding of the tension reinforcing bars will increase local rotations of the slab and potentially lead to a flexure-driven punching shear failure. This behavior is now recognized in ACI 318-19, section 8.6.1.2 that requires a minimum amount of reinforcement around supports for two-way slabs based upon the shear demand. This minimum reinforcement helps to bridge any cracking that may develop as a result of the increased localized stresses. The shear demand in the parking garage is relatively low and does not require additional flexural reinforcement to satisfy this new code requirement.

The radial cracking appears to be related to bending near the column exceeding the cracking moment, however the slab strength capacity remains adequate for the imposed demands.

Deflection

The in-situ slab deflections from our four relative elevation surveys were relatively large. Many slab bays had drilled holes near the center that were reportedly installed during original construction due to significant buildup of ponding water. The ponding likely contributed to the initial high deflections. The ponding event(s) may have imposed flexural stresses exceeding the cracking capacity of the slabs, initiating the observed cracking.

There is currently no industry standard or consensus that can estimate the deflections of two-way flat slabs with accuracy. Methods exist, yet the process can be very complicated. The ACI 318-14 code provides guidelines for two-way slab deflection by recommending a slab thickness based on clear span length. The recommended slab thickness according to ACI 318-14 for the garage is 9.3 inches and the measured in situ slab thickness average was 9.2 inches. One sample taken from P2 – Bay 3C-4D had a slab thickness of 8.6 inches, which was the only sample that had a smaller slab thickness than the designed thickness of 9 inches.

The observed cracking in the slab reduces the slab stiffness which increases deflections, but the cracking contribution to slab deflections is difficult to quantify. Top mat bars at select locations were placed lower than specified, some exceeding the tolerance of ACI 117-10⁴, which decreases the flexural strength at supports. This can decrease the punching shear capacity, increase slab cracking potential, increase crack widths, and ultimately decrease the slab stiffness resulting in higher deflections when loaded. In addition, the slab core samples were measured to be as long as 9.7 inches. The addition of just 0.7 inches adds approximately 10 pounds per square foot of factored dead load onto the slab.

Neither the as-designed nor as-built flat slab in the current study meets ACI 318-14 minimum thickness recommendations which may have contributed to the high crack volume observed throughout the garage.

³ ACI Committee 318. "Building Code Requirements for Structural Concrete (ACI 318-19) and Commentary." Farmington Hills, MI: American Concrete Institute, 2019.

⁴ ACI 117-10. "Specifications for Tolerances for Concrete Construction and Materials" Farmington Hill, MI: American Concrete Institute, 2010.

Additionally, the observed cracking (possibly from volume change or early loading) and deviation in vertical placement of reinforcement may also have contributed to the large measured deflections.

Based on our limited analysis, the slab cracking does not indicate a strength concern. Although the extent of carbonation appears to be larger at the cracked locations, minimal evidence of efflorescence and staining was observed. As such, the anticipated exposure conditions for the suspended slabs does not pose a significant durability concern. Nonetheless, routing and sealing the cracks or installing a concrete coating could be implemented to improve the long-term durability. Both of these systems would require routine maintenance. Given required routine maintenance associated with these repair options, WJE would not recommend repairs at this time; provided the slab cracks are not aesthetically objectionable to CoA.

Columns

Observed column distress includes spalling above or below the intersecting slab, cracking along the column-to-slab interface, and spalling in the adjacent slab concrete. Delaminations were only observed in columns supporting the free end of ramp and floor slabs. The ramp and floor slab frame in at the same elevation in four columns while the other ten columns along gridlines 3.5 and 9.5 between N/S Gridlines E through J, all have the ramp slab and floor slab framing in at different elevations (Figure 8 and Figure 9).

Delaminations were observed on the ramp side of the column three times as often as on the floor slab side. Of the delaminations observed on the ramp side, it was two times as likely for distress to be above the slab than below the slab. The locations of delaminations on both the top and bottom of the slabs indicates the distress is likely not due to bending, or deflections, as those conditions would cause an increase in stress below the slab. Additionally, vibration of the ramp due to vehicular traffic is likely resolved within the slab that spans between the two interior ramp columns. Rather the distress appears to be related to restrained volume change (concrete shrinkage and thermal expansion/contraction) of the concrete slabs, which is exacerbated by the variability in column stirrup spacing.

The more frequent delaminations observed on the ramp side versus the floor slab is consistent with additional restraint provided by the perimeter retaining walls on the far side of the ramp. Therefore, the floor slab is able to undergo more uniform shrinkage as compared to the ramp slab. Additionally, the spacing between where the ramp and floor slab frame into the column affects the local column restraint. As such, more frequent and larger delaminations were typically observed on the three interior columns along Gridline 9.5, where the spacing between ramp and floor intersections was greater. Along Gridline 3.5, there is a retaining wall that runs between P3 and P2. This retaining wall increases the stiffness of these columns along Levels P3 and P2, decreasing the frequency of delaminations along Ramp P3.

The severity of delamination and spalling in several of the columns has likely diminished the bearing area supporting the slab. While this distress does not appear to be currently compromising the structural integrity of the parking garage, repairs are recommended to mitigate future deterioration. In its current state, water and other fluids can more easily penetrate to the reinforcing steel, which may reduce the expected service life of these columns. Due to the potential for future distress, we would recommend performing localized concrete removal and replacement of delaminated and cracked locations. If repair is desired, the following rehabilitation objectives are recommended:

1. Install a temporary shoring system prior to beginning concrete repair.
2. Removal of cracked and delaminated concrete in affected columns.
 - a. The size and depth of concrete will be as-required to reach sound concrete. An estimate of each repair size is shown in drawing Sheet S1 and S2 attached in Appendix A.
3. Repair columns with high-quality, low permeability repair concrete.
4. Wrap the column with Fiber Reinforced Polymer (FRP) strips.
 - a. Given the time of the original repairs is unknown, and thermal volume changes will continue to occur. The addition of the FRP can provide added strength and confinement to the ramp columns, by helping to compensate for the variable stirrup spacing and minimizing the potential for spalling in the future.

Perimeter Retaining Walls

The exterior perimeter retaining wall distress generally consisted of regularly spaced shrinkage cracking between placement joints, that did not exhibit efflorescence or staining. As discussed previously, shrinkage cracks extend the full depth of the concrete member. The lack of staining and efflorescence indicates that the below grade waterproofing system is performing adequately, and repairs are not warranted at this time.

CMU

The distress at the CMU walls varied throughout the parking garage. The CMU walls appear to be non-load bearing and were therefore likely detailed in the architectural drawings. Unfortunately, only limited notes were present on the three architectural sheets provided; there is no reference to the CMU walls in Datum's Structural Drawings. Based on the notes provided on Sheet A000, the partition walls were to be constructed of 8 inch thick (nominal) CMU. It does not indicate whether the CMU was to be partially or fully grouted.

One location of impact damage was observed on Level P3. At the CMU walls surrounding the staircases for G1 and G3, the cracks appeared to align with the door openings or at the wall corners/intersection. The relatively uniform vertical crack width along the height of the wall is likely an indication that the intersecting walls do not allow for sufficient movement of the CMU as it expands and contracts with thermal changes. At these locations the CMU cracks could be repaired, and the joints repointed. In order to develop CMU repairs, additional investigation would be required to determine reinforcement locations and confirm whether the walls are grouted.

Based on our observations, it appears that there are anchors attaching the steel staircases to the CMU partition walls at discrete locations. The cracking below and above these landing attachments is likely indicative of restraint and/or load transfer into the non-load bearing CMU. In order to better understand the connection of the staircase to CMU wall, a destructive opening should be performed during the development of construction documents to confirm whether the walls are grouted and determine how the landings are attached to the CMU walls. Once this connection is better understood, an appropriate repair should be developed to mitigate future cracking at this support, if required.

The deterioration of the sealant joint at select locations throughout the garage appears to be due to normal wear and tear and can be repaired with typical maintenance. At Level B1, the cracking along the horizontal CMU joint at the bottom of the block directly below the concrete beam, appears to be due to the concrete-to-CMU joint being more rigid than the CMU to CMU joint. This is likely due to the number of penetrations at this joint location causing a weak plane. As such, movement in the concrete beam above is resolved in this CMU joint rather than the expansion joint directly below the concrete beam. Given that these walls are non-load bearing, an expansion joint could be installed at this horizontal joint location to better accommodate future movement.

Barrier Cables

The opening along the west ramp on Level P1 appears to be large enough for a vehicle to roll off or a small child to fall off the edge of the ramp. WJE recommends that a modified barrier system be installed at this opening to prevent a fall hazard and/or vehicles rolling off the edge.

Recommendation Summary

The repair recommendations detailed above are summarized below into high, medium, and low priority categories based on the relative severity and importance of the observed conditions to assist CoA with the planning of future repair work. In general, WJE recommends high priority items be addressed within the next 6 months to a year, medium priority items be addressed within 1 to 5 years, and low priority items addressed within 5 to 10 years.

High Priority

1. Columns: Install temporary shoring, repair cracked and delaminated concrete, and wrap column with FRP strips.
2. West Ramp Barrier Cables on P1: Install a modified barrier system to prevent a fall hazard and/or vehicles rolling off the edge.
3. CMU Wall Crack at Stair Landings: Investigate wall grouting and landing attachment and repair condition if required.

Medium Priority

1. Slab Topside: Route and seal cracks with widths greater than 35 mils or apply a traffic coating membrane to improve long-term durability.
2. CMU Impact Damage on P3: Repair damaged CMU.
3. Cracked CMU at Door Openings and Wall Intersections: Investigate wall grouting and repoint cracks and joints in wall.

Low Priority

1. CMU Sealant Joint Repair: Perform routine maintenance of sealant joints throughout the CMU walls of the garage and install expansion joint at Level B1.

No Specific Recommendation Except to Inspect on a Five to Ten Year Basis

1. Retaining Walls: Perform routine inspection of perimeter retaining walls to determine whether below-grade waterproofing system has been compromised.
2. Slab Soffits: Perform routine inspection of slab soffits to document whether corrosion staining and efflorescence has increased.

CLOSING

Our conclusions and recommendations are based on review of available documents, visual field observations at the time of our assessment, results of our laboratory analysis, and information provided by CoA. Other conditions or information may exist, or may become available over time, which were not found during the development of this report. WJE reserves the right to modify our findings should additional information become available. This report was prepared on behalf of, and for the exclusive use of, the City of Austin.

FIGURES

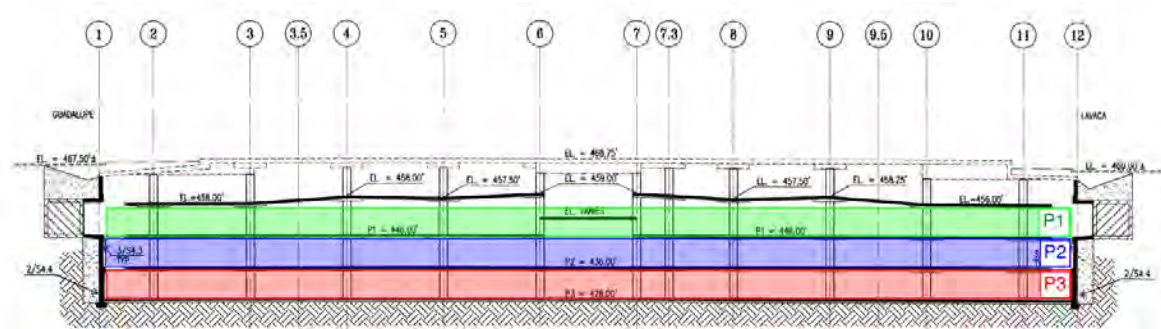


Figure 1. Parking garage levels – where P1 is outlined in green, P2 in blue, and P3 in red.

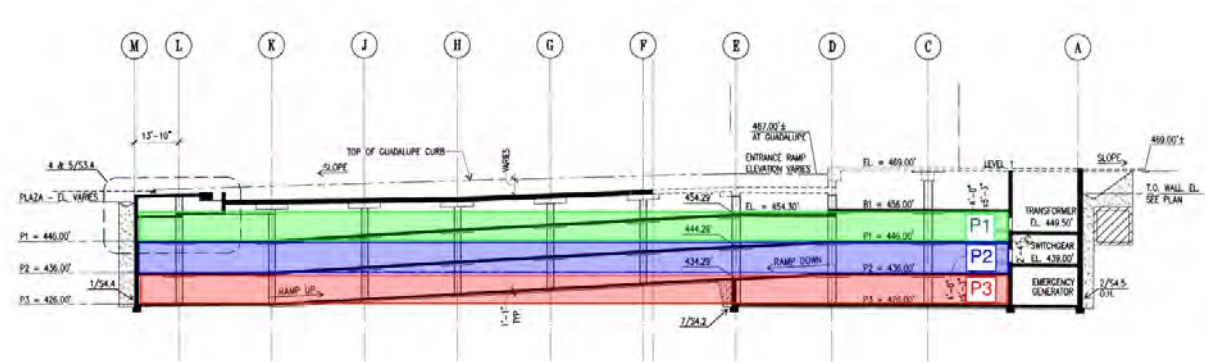
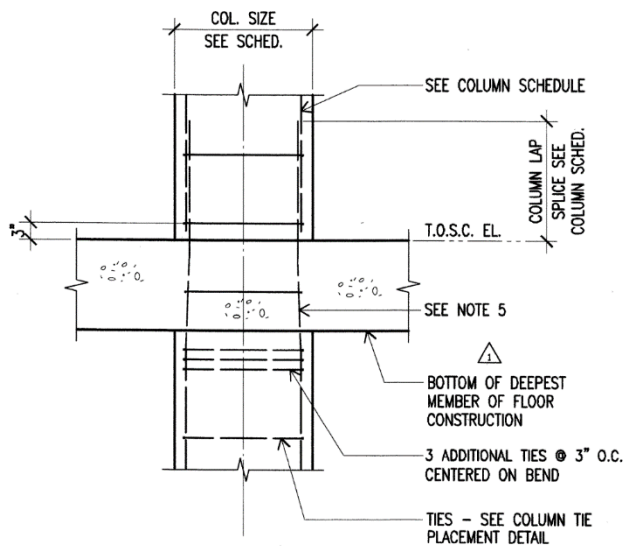


Figure 2. Parking garage levels – showing ramp classification where P1 is outlined in green, P2 in blue, and P3 in red.

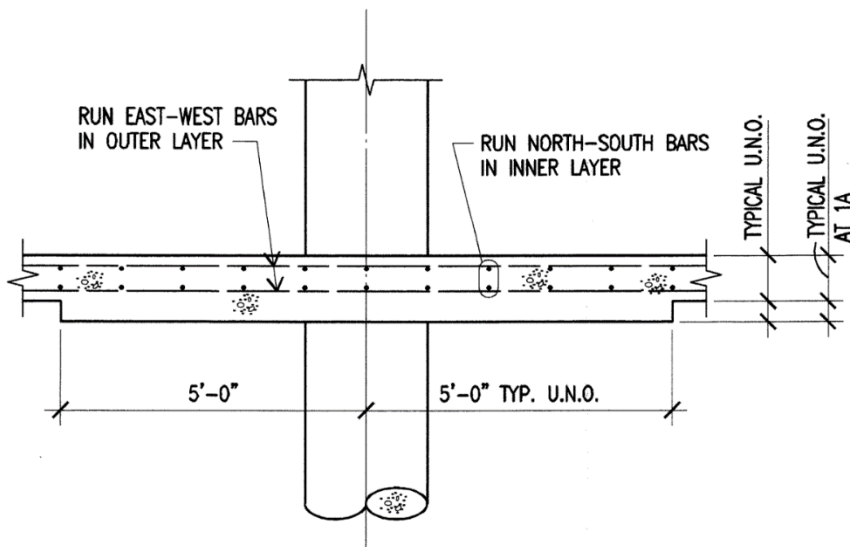
7. PLACE A COLUMN TIE 3" ABOVE THE TOP OF THE FOUNDATION OR INTERSECTING SLAB AT ANY LEVEL AND 3" BELOW THE LOWEST HORIZONTAL REINFORCING IN THE SLAB OF THE FLOOR OR ROOF FRAMING ABOVE AND SPACE TIES AS REQUIRED IN BETWEEN. WHERE BEAMS FRAME FROM FOUR DIFFERENT DIRECTIONS INTO A COLUMN, TIES MAY BE TERMINATED WITHIN THE FLOOR FRAMING 3" BELOW THE LOWEST HORIZONTAL REINFORCING IN THE SHALLOWEST BEAM.

Figure 3. Note 7 from Sheet S5.0.



**COLUMN SPICE
TYPICAL DETAIL**

Figure 4. Column intersecting with slab detail per structural drawings Sheet S5.0 Detail 7.



**DROP PANEL
TYPICAL DETAIL**

Figure 5. Typical drop panel detail per structural drawings on Sheet S5.1 Detail 1.

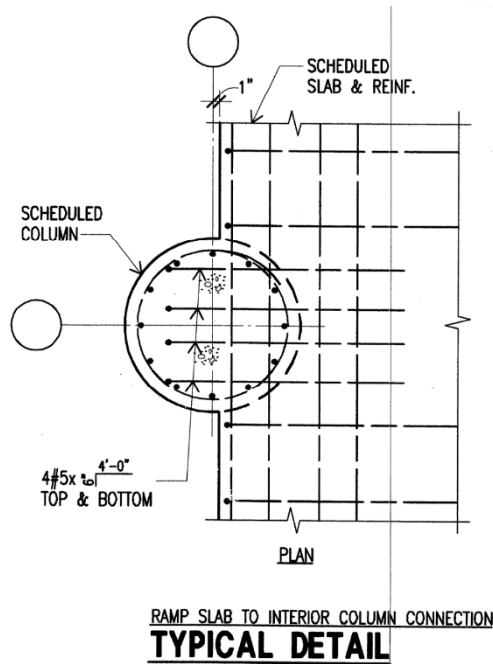


Figure 6. Ramp slab to column detail per structural drawings Sheet S5.0 Detail 9.

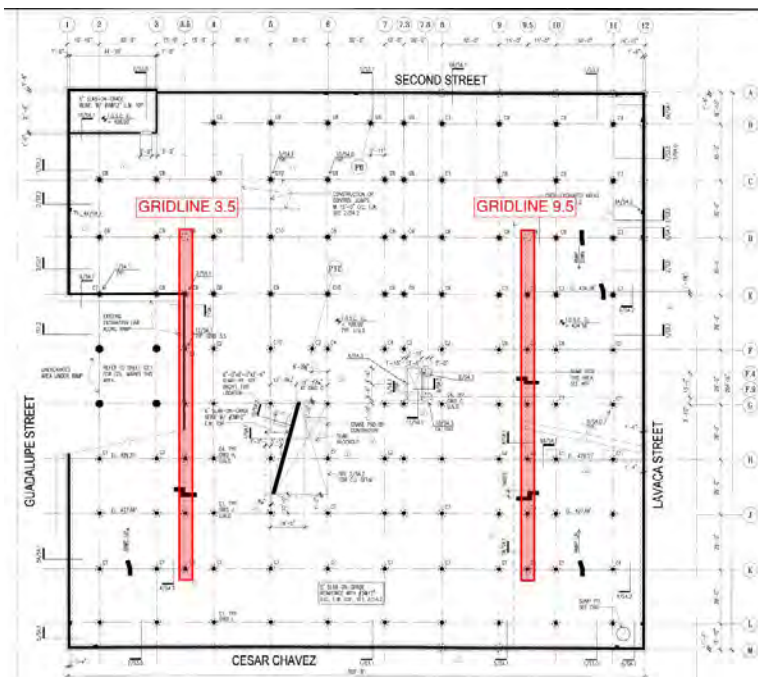


Figure 7. Gridlines of columns included in assessment.

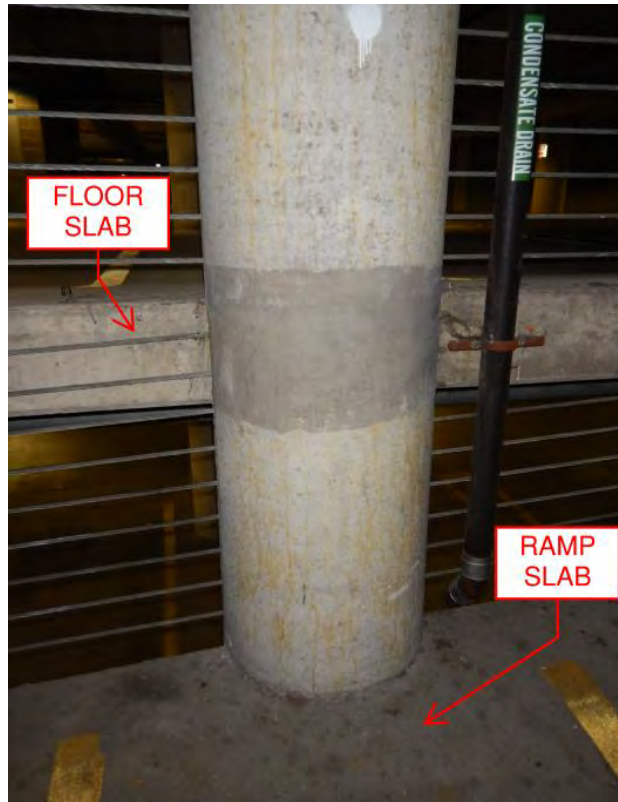


Figure 8. Column along Gridline 3.5 and 9.5 where floor slab and ramp slab intersect with column at different elevations.



Figure 9. Column along Gridline 3.5 and 9.5 where floor slab and ramp slab intersect with column at the same elevation.



Figure 10. Observed column spalling above ramp.



Figure 11. Column delamination (red) and cracks above the intersection slab.



Figure 12. Column delamination and cracks below the intersecting slab.



Figure 13. Column-to-ramp/slab perimeter crack.



Figure 14. Column-to-ramp/slab interface vertical crack.



Figure 15. Previous column repair at intersection of slab.



Figure 16. Previous column repair at intersection of ramp slab.

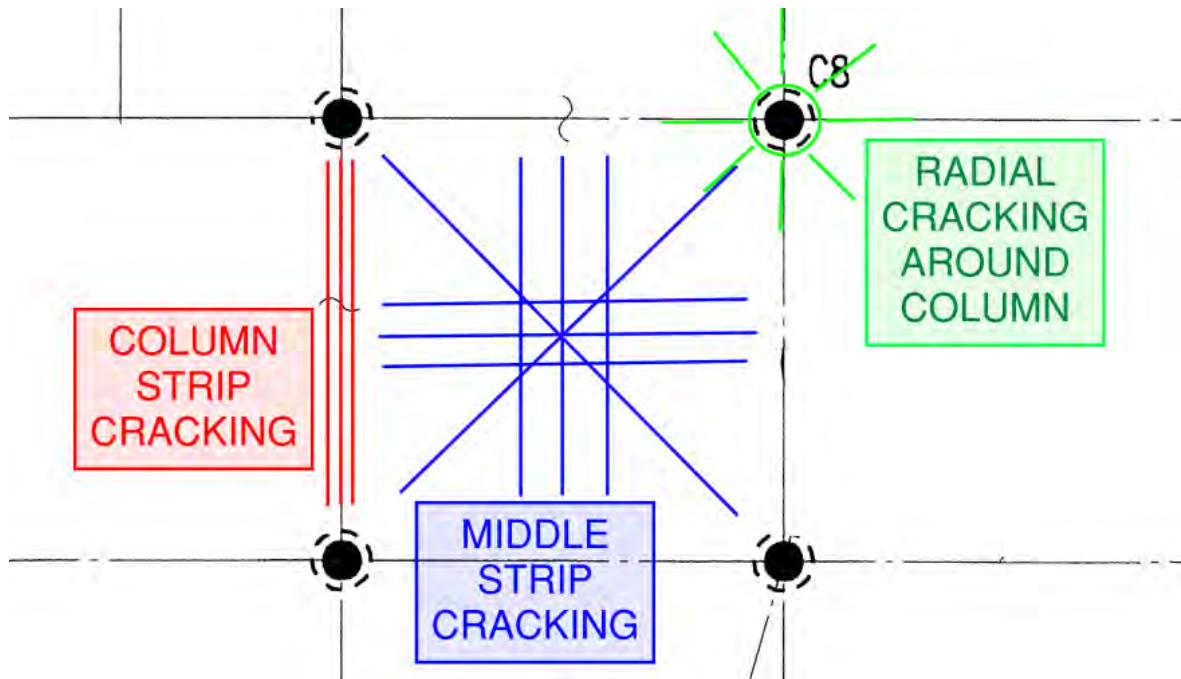


Figure 17. Slab cracking characterization examples.

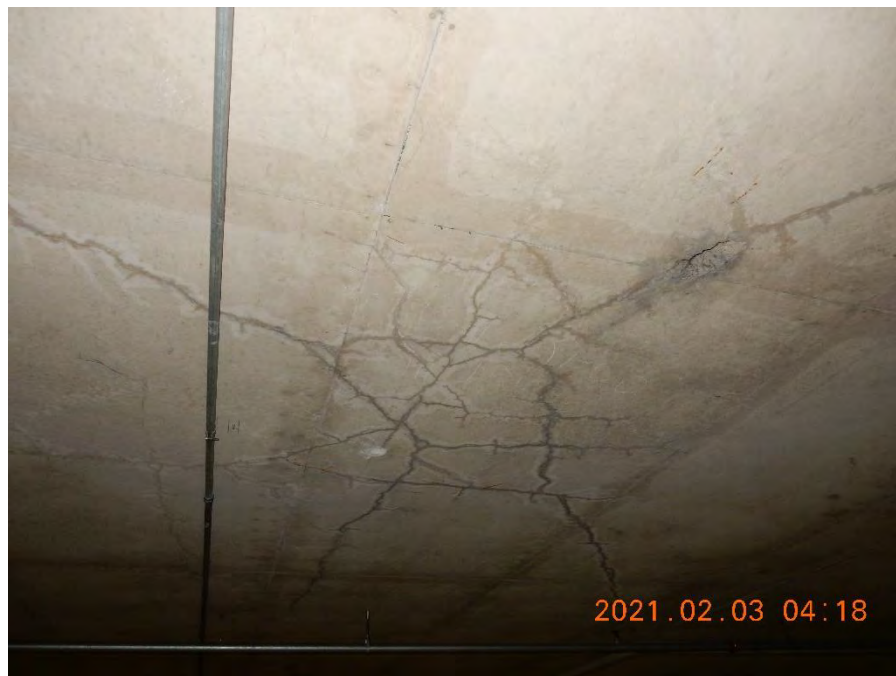


Figure 18. Slab middle strip cracking – diagonal and longitudinal cracks.



Figure 19. Slab radial cracking around column.



Figure 20. Observed radial cracking from columns.



Figure 21. Typical diagonal crack observed in perimeter walls noted in red.

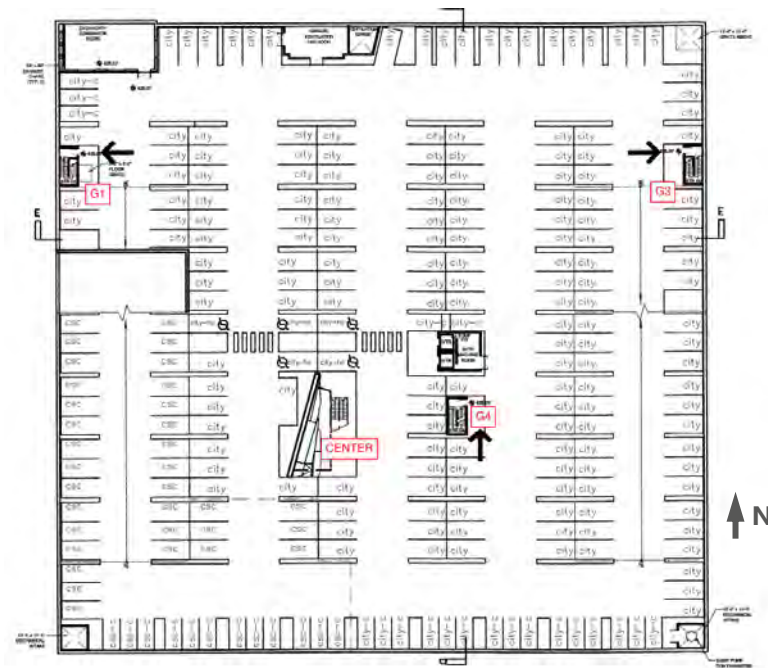


Figure 22. Parking garage stairwell layout.



Figure 23. Evidence of previous CMU wall repair at wall intersection.

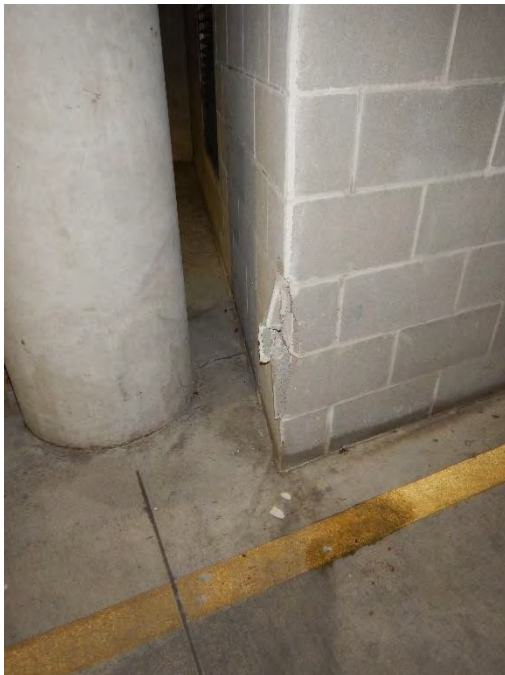


Figure 24. Evidence of impact damage on Level P3.



Figure 25. Delamination observed near the soffit of P1 adjacent to the ventilation chase (highlighted in red).



Figure 26. CMU cracking adjacent to wall opening.



Figure 27. Stair step cracking at wall intersection.



Figure 28. Cracking originating from platform connection noted in red.

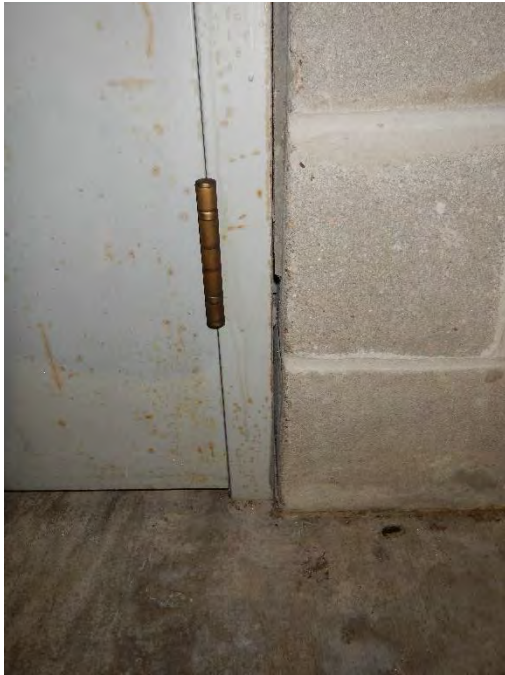


Figure 29. Deteriorated sealant on Level P1.

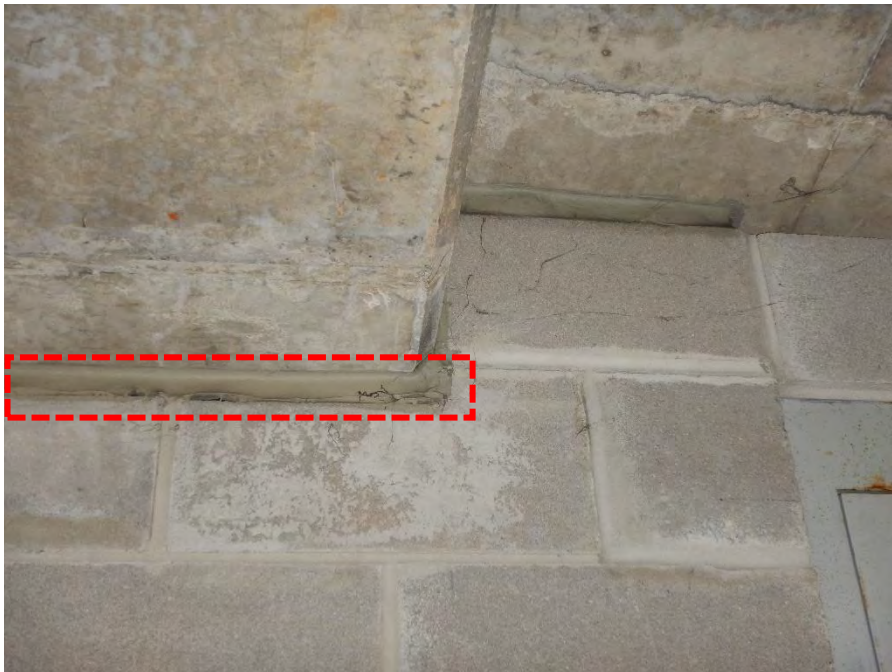


Figure 30. Deteriorated sealant beneath beam on level P1.



Figure 31. Ramp section without barrier cables.

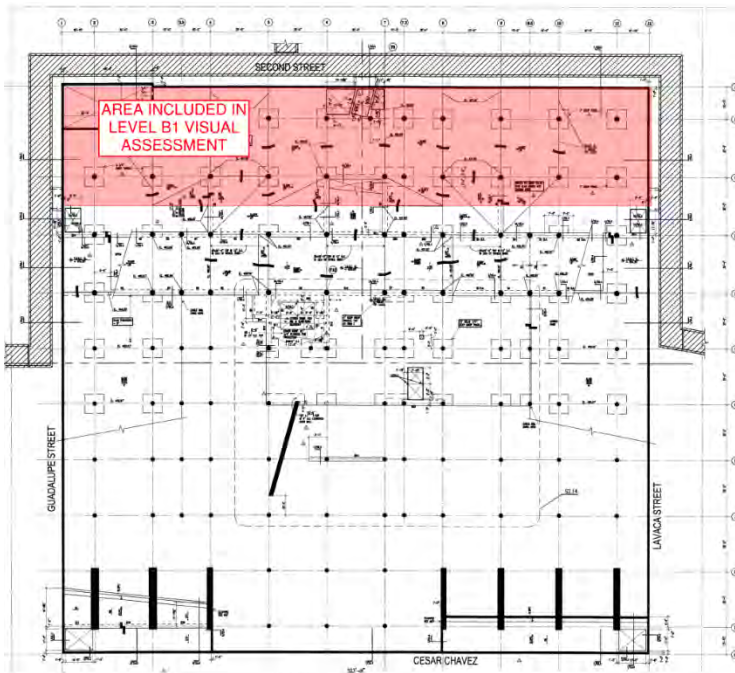


Figure 32. Level B1 area included in the visual assessment.

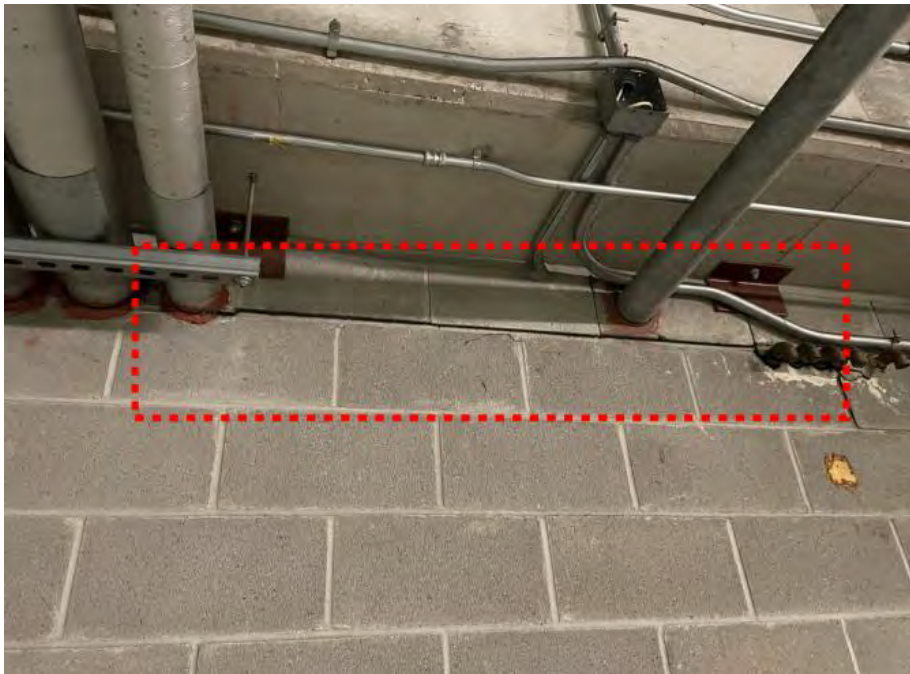


Figure 33. Separation along the horizontal CMU joint.

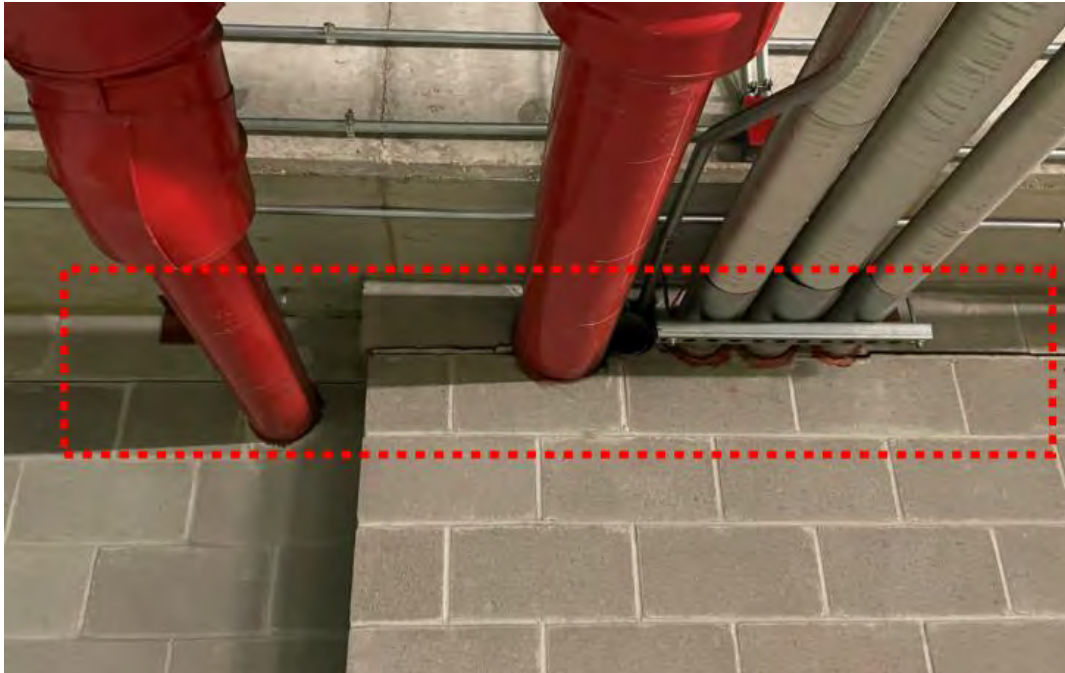
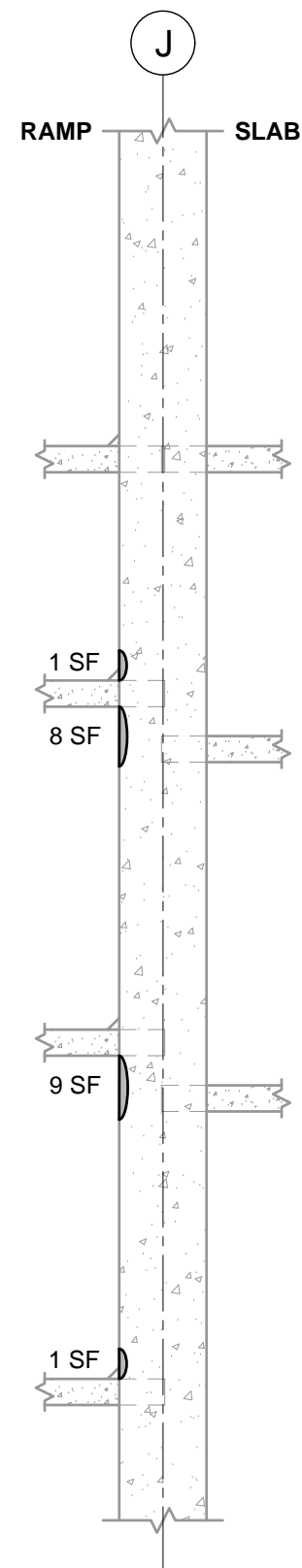
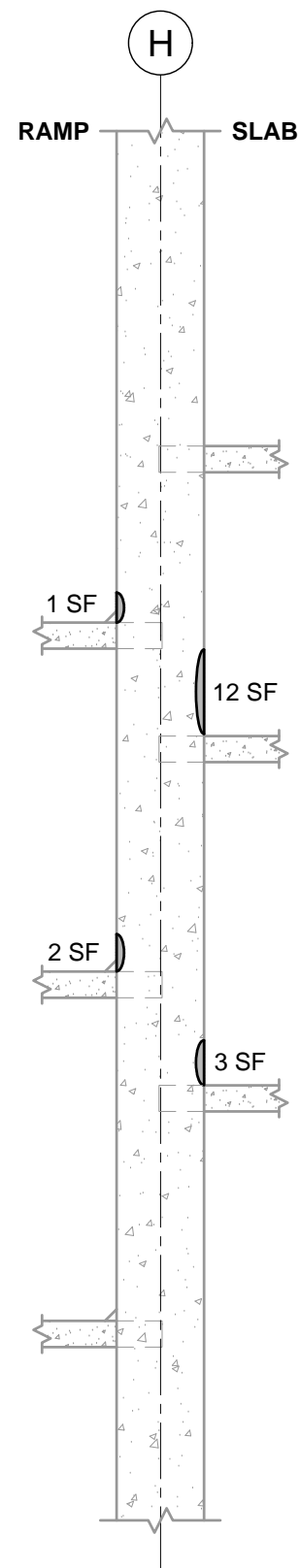


Figure 34. Separation along the horizontal CMU joint.

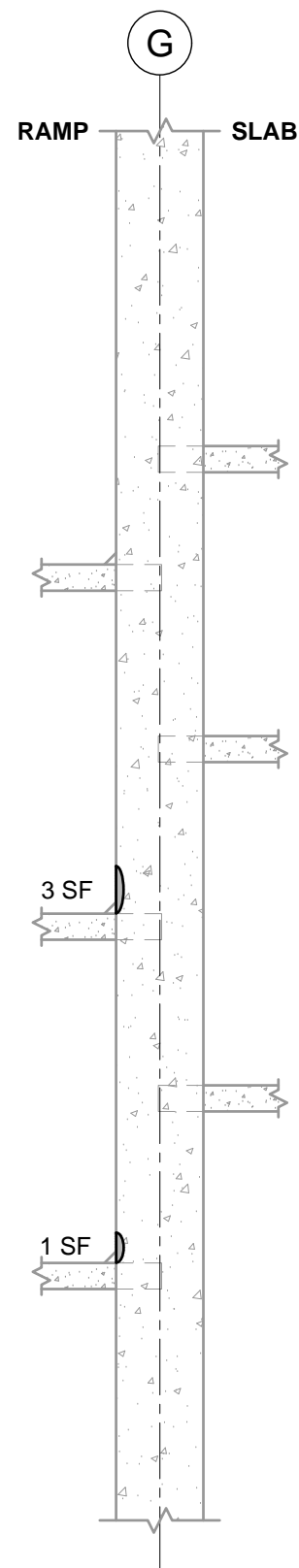
APPENDIX A – COLUMN DELAMINATION AND SLAB ELEVATION SURVEY



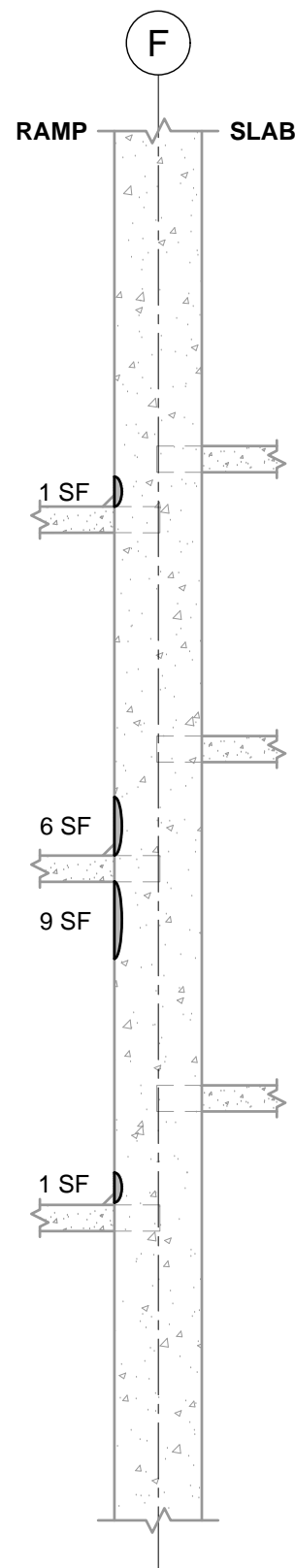
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GRID LINES 3.5 & J**



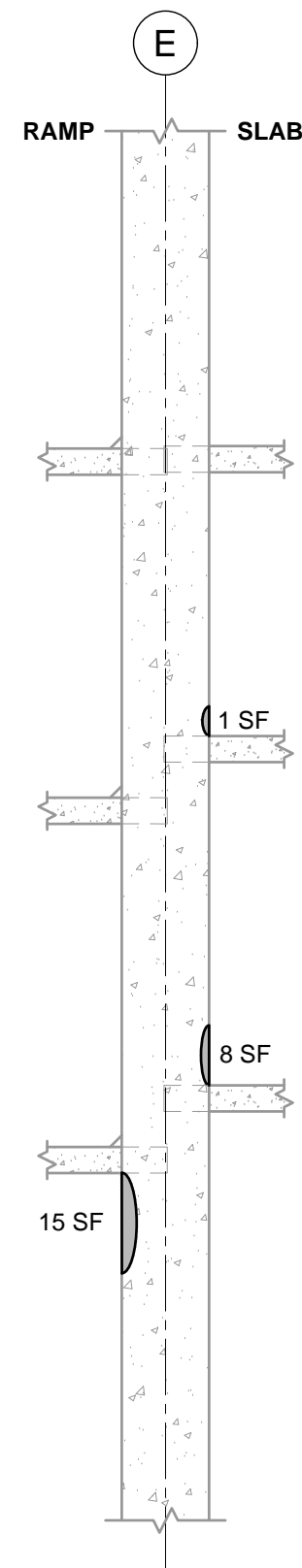
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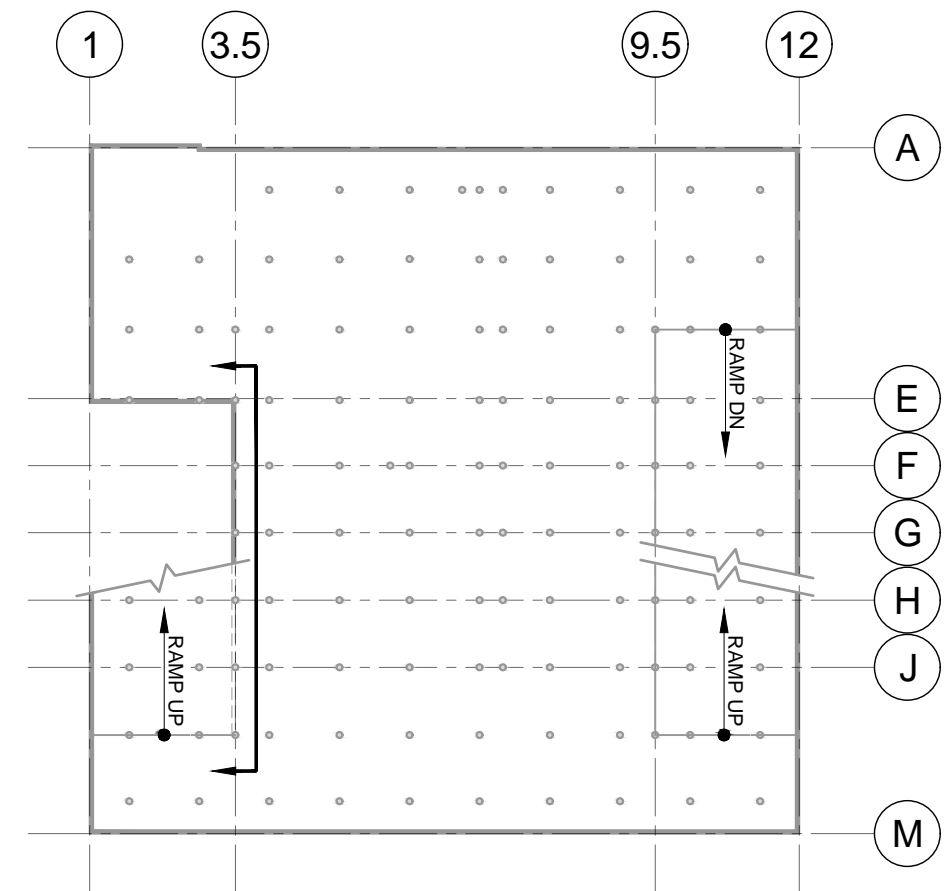
**COLUMN AT
GRID LINES 3.5 & G**



**COLUMN AT
GRID LINES 3.5 & F**

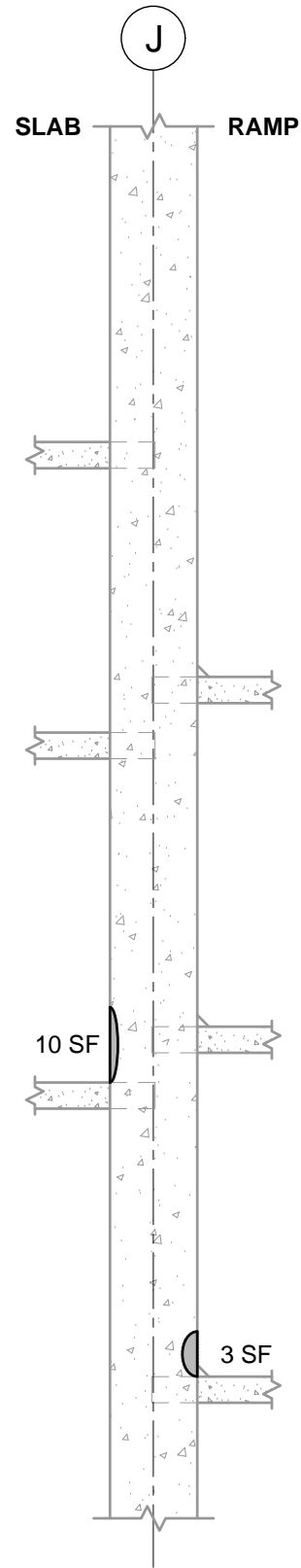


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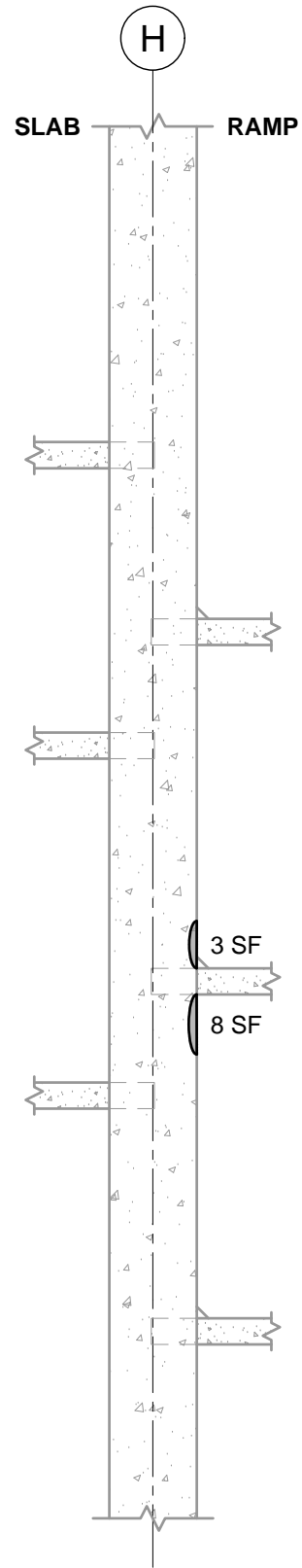


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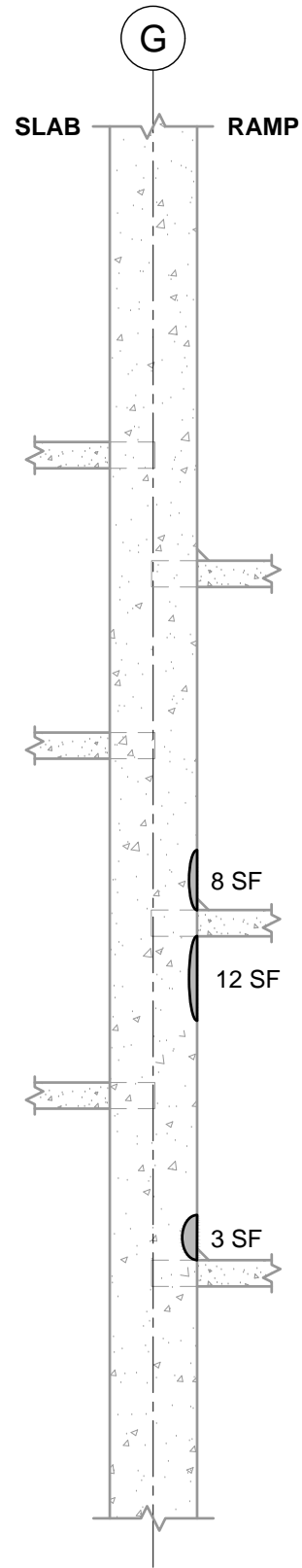




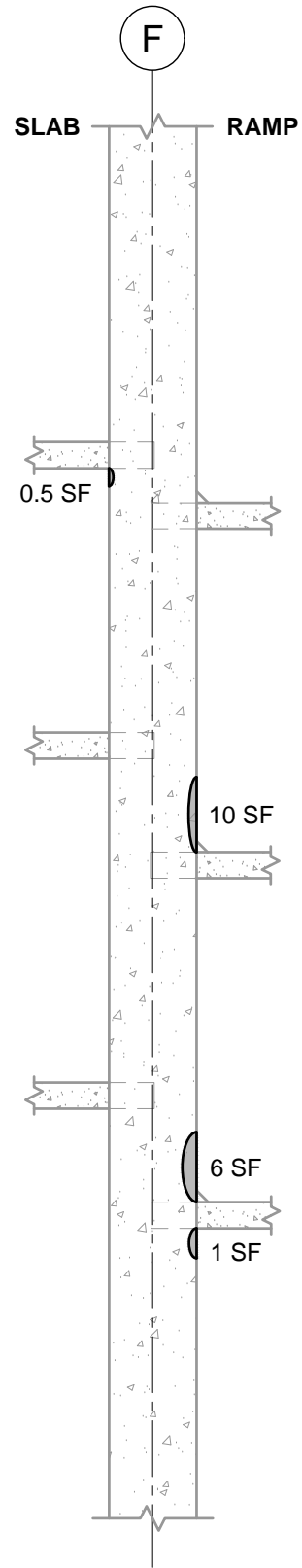
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GRID LINES 9.5 & J**



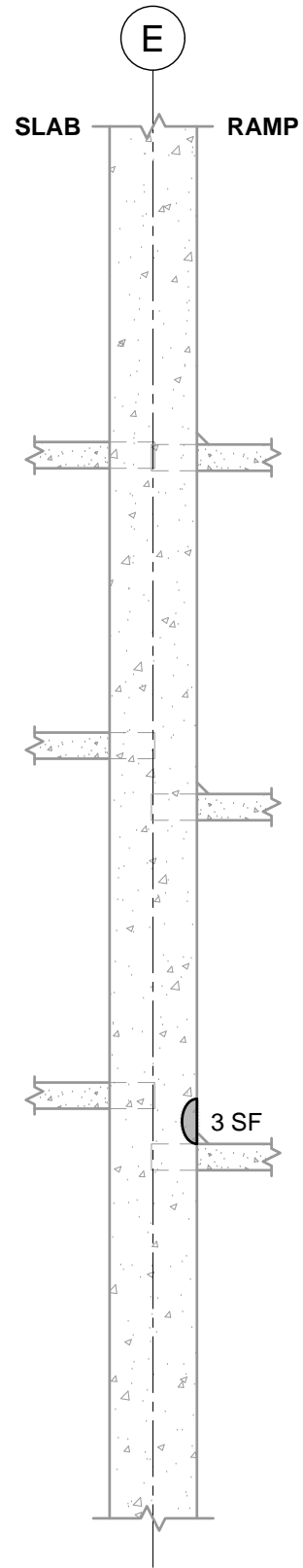
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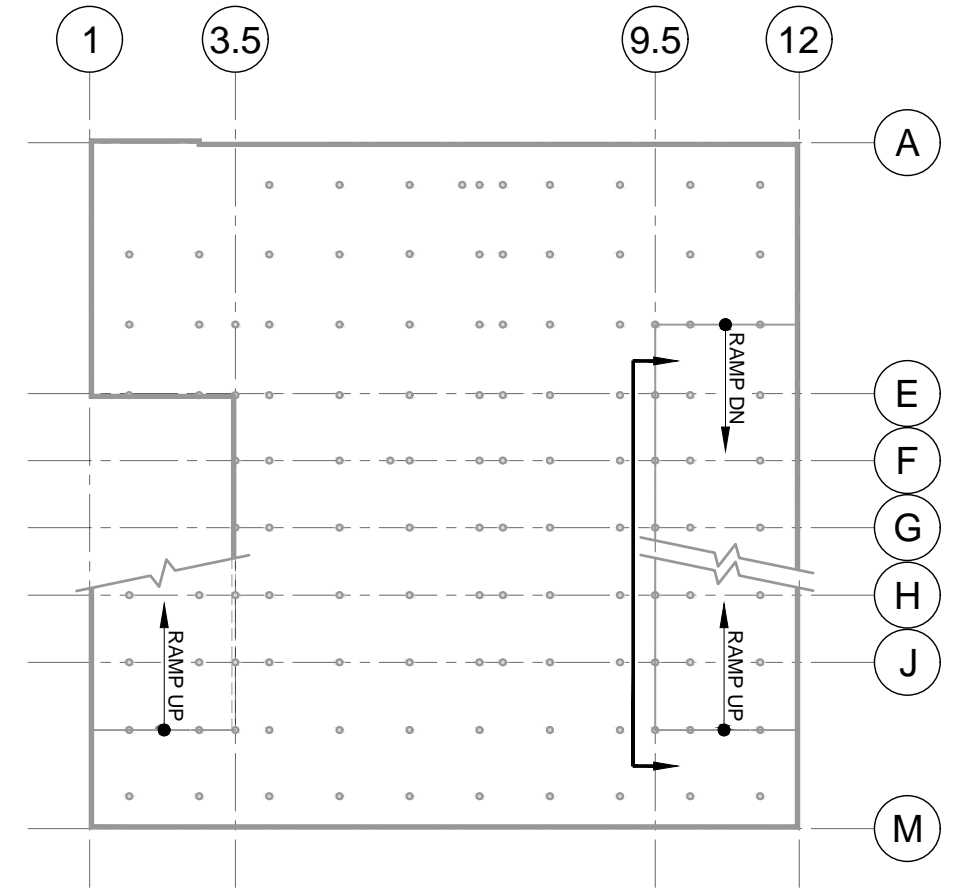
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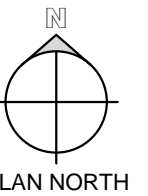
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GRID LINES 9.5 & F**

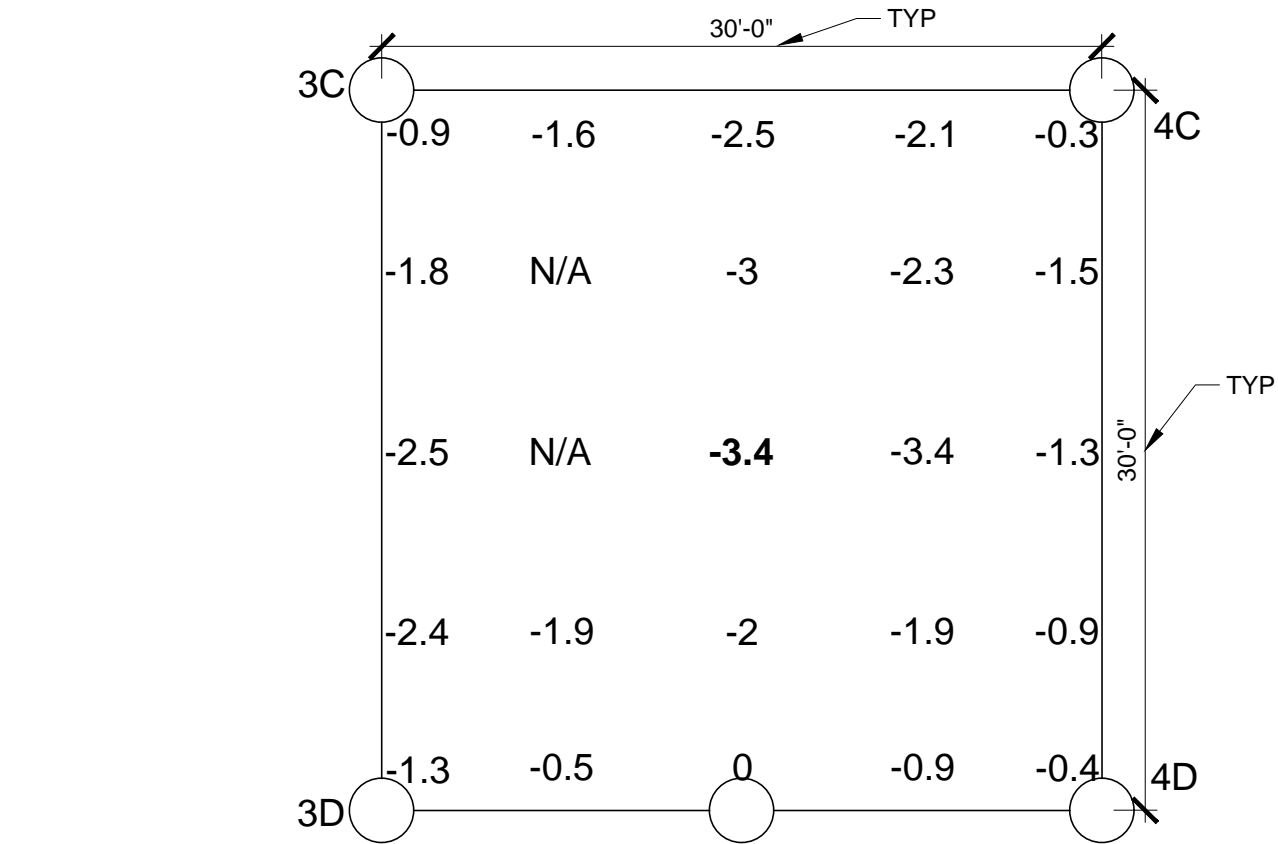


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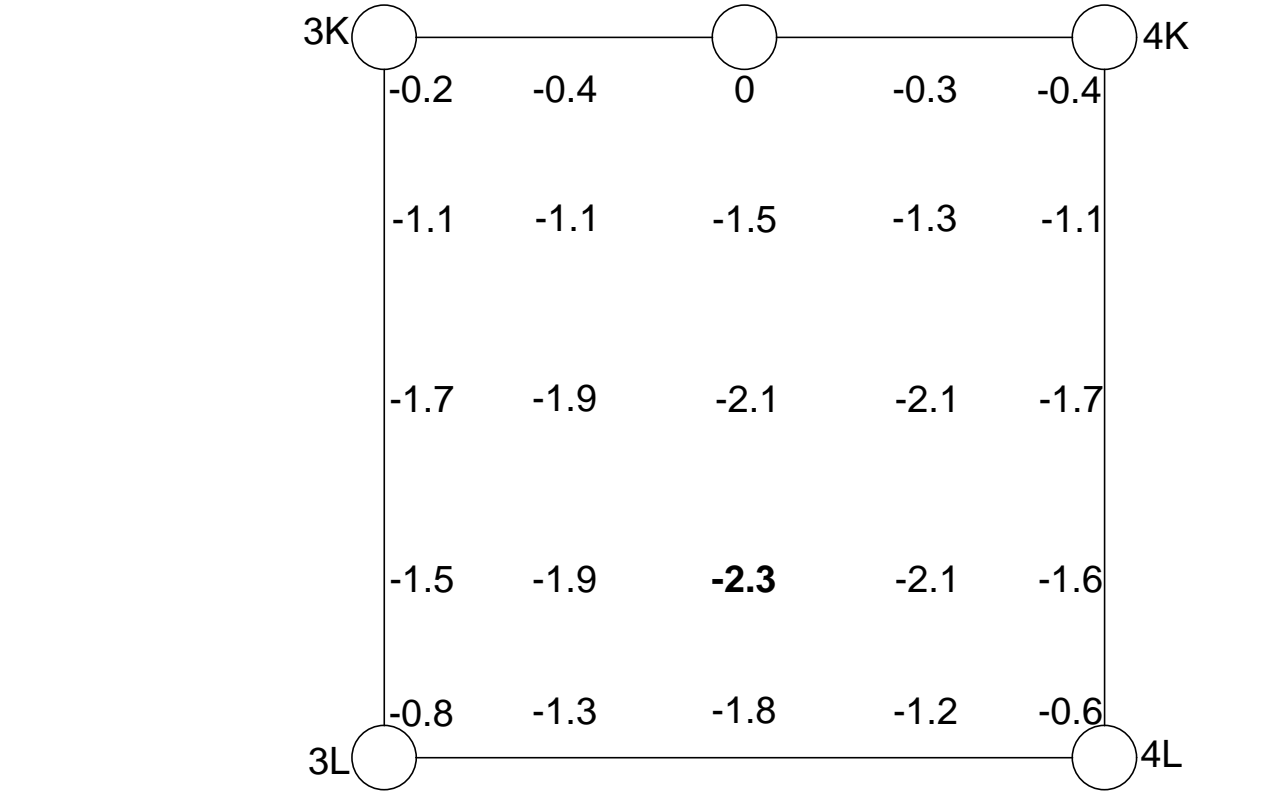


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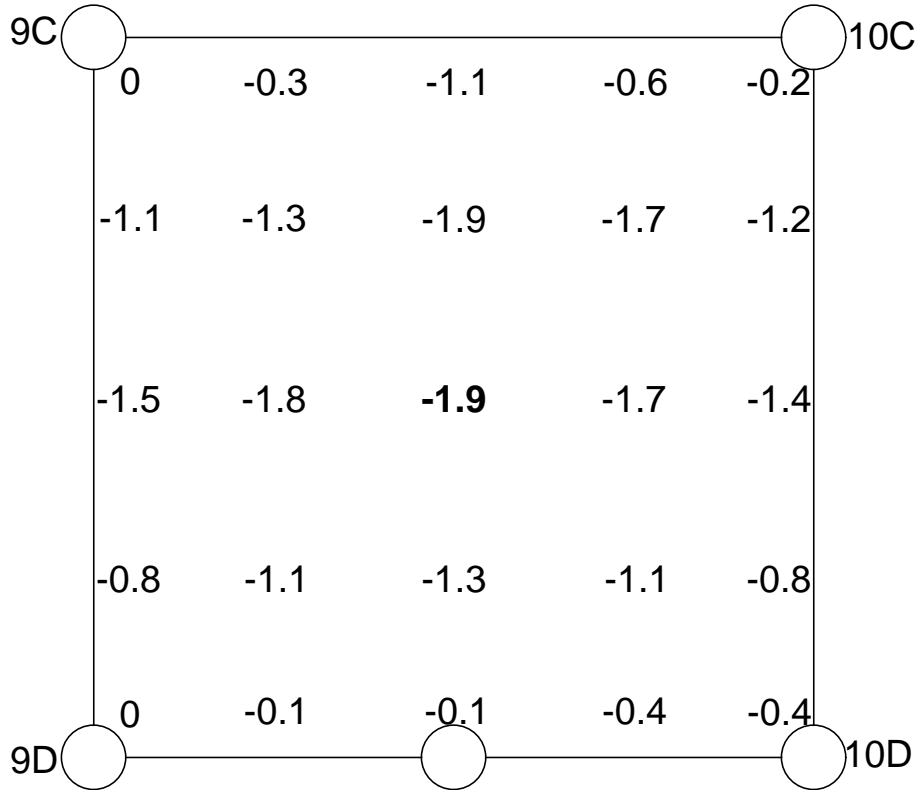




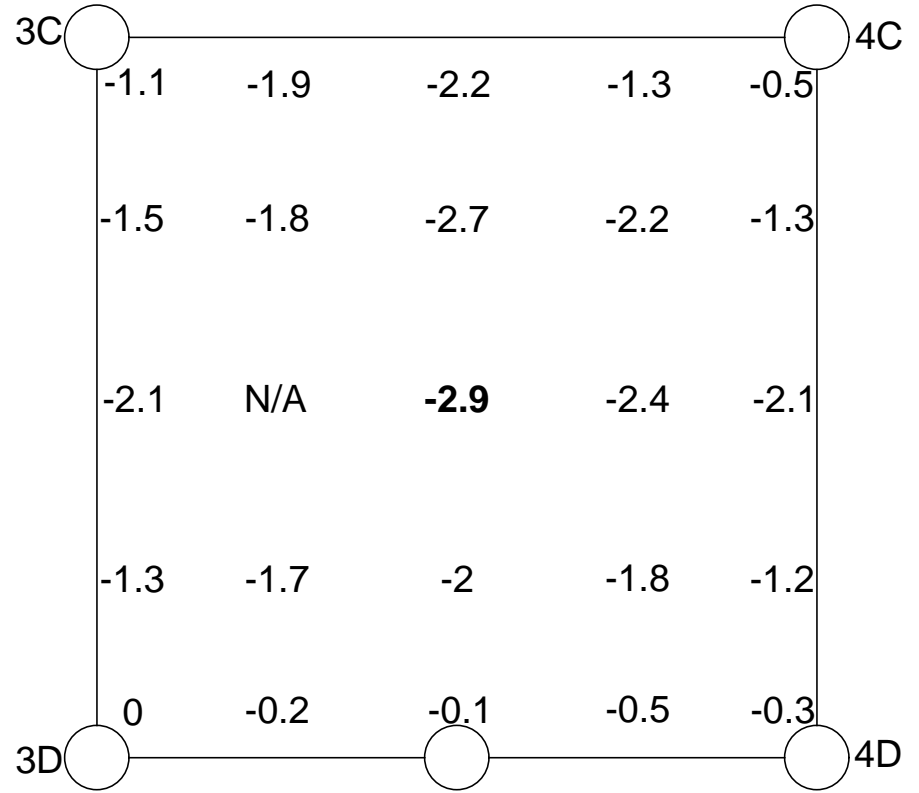
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1/8" = 1'-0"



3 LEVEL P2 3K-4L
1/8" = 1'-0"

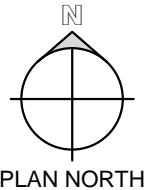


2 LEVEL P2 9C-10D
1/8" = 1'-0"



4 LEVEL P2 3C-4D
1/8" = 1'-0"

- NOTES**
1. ALL DIMS IN INCHES.
 2. **BOLD** INDICATES GREATEST DEFLECTION.



APPENDIX B – PETROGRAPHIC EVALUATION



MEMORANDUM | March 19, 2021

Austin City Hall Parking Garage **Petrographic Examination of Concrete Cores**

WJE PROJECT NO. 2020.6981

TO Katelyn Low, PE
WJE Austin

FROM Derek Cong, PhD

Per your request, the WJE Austin Laboratory performed a petrographic examination of four concrete cores removed from the underground parking garage at the Austin City Hall. We understand that the garage was completed in 1998 and exhibited cracking. The objective of the petrographic examination was to assess the material properties of the concrete and identify the likely cause(s) of the cracking. As such, the cores were examined in accordance with ASTM C856, *Standard Practice for Petrographic Examination of Hardened Concrete*.

No concrete mix design was available for review. Based on the information available, the concrete slabs were designed for 4,000 psi, and the columns were designed for 6,000 psi.

SAMPLES AND TESTS

As requested, four concrete cores, identified as C1, C3, C5, and C6, were selected for the petrographic examination (Figure 1 and Figure 2). The cores were 3-3/4 inches in diameter and had variable lengths. Core C1 was approximately 8-1/2 inches in length and contained a full depth vertical crack. Core C3 was approximately 9-1/8 inches in length and also contained a full depth vertical crack. Both cores were reportedly taken from the concrete slab and contained a broom finished top surface that was intact. The bottom surfaces of the cores were formed and intact.

Core C5 was approximately 3-1/4 inches in length and contained a sub-horizontal crack near the bottom. Core C6 was approximately 3-1/4 inches in length and contained no macroscopical cracks. Both cores were reportedly taken horizontally from the columns of the garage and contained formed top surfaces and fractured bottom surfaces.

For the petrographic examination, the cores were first stabilized using a clear epoxy and then cut longitudinally and essentially perpendicular to the crack planes, if present, using a diamond blade rock saw. One longitudinal section from each core was lapped with progressively finer grinding media to form a smooth surface suitable for microscopy. Freshly fractured surfaces were induced in the laboratory from the remaining pieces of the cores. The lapped sections and freshly fractured surfaces were examined using a computer-controlled stereomicroscope (Leica M205C) at magnifications up to 160X. Blue-dyed epoxy-impregnated thin sections were fabricated from the surface region of each core for better assessment of the paste features. The thin sections were approximately 2 inches by 3 inches and 25 microns in thickness and transparent. Powder mounts of the paste and areas of interest were also prepared from the fractured surfaces. The thin sections and powder mounts were examined using a petrographic (polarized light) microscope at magnifications up to 600X.

The depth of carbonation was determined by measuring the depth of color change from the surface after applying a phenolphthalein solution to a freshly fractured surface. The water-to-cementitious materials ratio (w/cm) was estimated based on the paste features, including, but not limited to paste color, hardness, porosity, residual cement particles, hydration products, and aggregate/paste bond. The scratching hardness of the paste was measured using a Mohs' Hardness Kit. A higher hardness typically indicates a lower w/cm. The total cementitious materials content was estimated based on the estimated w/cm and estimated paste content.

FINDINGS

The concrete represented by the four cores was similar in composition and but differed in mix proportions. The following general description applies to all cores, except as noted otherwise. The description of cracking-related features is given following the general description. A summary of findings for all cores is given in Table 1.

General

Aggregate

The coarse aggregate was crushed dolomite with a nominal maximum size of 3/4 inch. The dolomite was brown to light pinkish gray, hard, dense, equant, and angular. The fine aggregate was natural siliceous sand consisting of mainly quartz, feldspar, and chert. The fine aggregate was subangular to subrounded clear to brown, hard, dense, and mostly equant.

The aggregates were uniformly distributed and well graded (Figure 3 through Figure 6). The aggregate was tightly bonded to the paste, with laboratory-induced fractures propagating mostly through coarse aggregate particles.

Paste

The paste was generally gray in color, hard, dense, and had a semiconchoidal texture. The Mohs' hardness of the paste was 3.0 to 3.5 for Cores C1 and C3 and slightly greater than 3.5 for Cores C5 and C6. A moderate to moderately abundant amount of residual and unhydrated cement particles were detected, most of which were belite and ferrite phases (Figure 7 and Figure 8). Different colored spheres of fly ash particles were abundant. No other supplementary cementitious materials, such as slag cement or silica fume, were detected. Calcium hydroxide crystals from cement hydration were moderately abundant in concentration and moderate in particle size. The calcium hydroxide appeared to be larger in size and more abundant in Cores C1 and C3 than Cores C5 and C6. The degree of cement hydration was normal for the age of the concrete.

The compositional and textural characteristics of the paste indicated a moderate to moderately low w/cm estimated in the range of 0.42 to 0.47 for Cores C1 and C3 and 0.37 to 0.42 for Cores C5 and C6. The total cementitious materials content was estimated to be in the range of 550 to 600 pounds per cubic yard (pcy) for Cores C1 and C3 and 620 to 670 pcy for Cores C5 and C6. The fly ash content was estimated to be 20 to 25 percent by mass of the total cementitious materials. The class of the fly ash could not be identified.

Air Void System

The concrete represented by Core C1 was air entrained, and the total air content was estimated to be 6-1/2 to 7-1/2 percent. Voids were mostly fine and spherical, consistent with purposeful air entrainment (Figure 9). Air voids were not uniformly distributed, and clusters around coarse aggregate particles were detected (Figure 10). Some voids were filled with secondary ettringite, suggesting moisture movement through the concrete.

Core C3 was air entrained with an estimated total air content of 4 to 5 percent. Most voids were fine and spherical, consistent with entrained air void system (Figure 11). Voids were essentially uniformly distributed, and many were filled with secondary ettringite deposits, indicating moisture movement through the concrete.

Cores C5 and C6 were both marginally air entrained with a total estimated air content of 2-1/2 to 3-1/2 percent and 3 to 4 percent, respectively. Air voids varied from large and irregular, due to entrapment, to fine and spherical from purposeful entrainment. Air voids were uniformly distributed with some voids filled with a thin layer of secondary ettringite (Figure 12 and Figure 13).

Surface Features and Cracking

Core C1

The concrete received a broom finish, which was essentially intact and contained a densified surface layer (DSL), up to 1/16 inch (Figure 14). The DSL was harder, denser, and darker than the interior paste and had a slightly lower w/cm. The DSL was formed due to densification of the finishing operation, which resulted in a more durable surface layer. Large, irregular water voids were also detected in the surface region, but no evidence of incipient delamination was detected. The top surface of the core was carbonated to a depth of 1/16 inch.

The core contained a full depth vertical crack, which propagated through aggregate particles and separated the core into two portions at the edge of the lapped section (Figure 3 and Figure 15). It was also observed that the paste along the crack was carbonated to a depth of more than 2-1/2 inches from the top surface (Figure 16), whereas the top surface was only carbonated to a depth of 1/16 inch. This observation suggests that the crack was formed a long time ago, allowing the carbonation to develop along the crack to a much deeper depth than the top surface. The overall characteristics of the crack indicate that the crack was likely induced by long term drying shrinkage under restraint.

No evidence of alkali-silica reaction (ASR), delayed ettringite formation (DEF), or sulfate attack was detected.

Core C3

The concrete received a broom finish, which was intact and contained no DSL. The top surface of the core was carbonated to a depth of 1/4 inch.

The core contained a full depth vertical crack that branched out as multiple vertical cracks on the lapped section (Figure 4 and Figure 17). The crack propagated through aggregate particles and was 8 to 32 mils in width for different cracks. The branching of the cracks was due to the location of the core, not an indication of significance in crack formation. The core was taken from an area with cracks from multiple

directions intersecting, which translated into multiple vertical cracks on the lapped section. It was also observed that the paste along the crack was carbonated to a depth of more than 2-1/2 inches from the top surface (Figure 18), whereas the top surface was only carbonated to a depth of 1/4 inch. This observation suggests that the crack was formed a long time ago, allowing the carbonation to develop along the crack to a much deeper depth than the top surface. The overall characteristics of the crack indicates that the crack was likely induced by long term drying shrinkage under restraint.

No evidence of ASR, DEF, or sulfate attack was detected.

Core C5

The concrete received a formed finish, which was intact and not densified. The top surface of the core was carbonated to a depth of 1/16 inch.

The core contained a horizontal crack near the bottom of the core, which separated the core into multiple sections (Figure 5 and Figure 19). The crack propagated through aggregate particles. The exact cause of the crack could not be determined solely based on the petrographic examination of the core. It could be a preexisting crack in the column or formed during coring process.

No evidence of ASR, DEF, or sulfate attack was detected.

Core C6

The concrete received a formed finish, which was not densified. The top surface contained a mortar layer that was up to 30 mils thick and tightly bonded to the concrete (Figure 20). The mortar consisted of natural quartz sand portland cement and hydrated lime (Figure 21). The mortar was air entrained, relatively soft, and completely carbonated.

The core also contained a horizontal crack near the bottom of the core, which separated the core into multiple sections (Figure 6 and Figure 22). Similar to the crack in Core C5, this crack propagated through aggregate particles and could be a preexisting crack in the column or formed during coring process.

No evidence of ASR, DEF, or sulfate attack was detected.

DISCUSSION AND CONCLUSION

Based on the petrographic examination, the concrete represented by the four cores likely represented two mixes. The concrete represented by Core C1 and C3, both taken from the slab, was air entrained and consisted of crushed dolomite coarse aggregate, natural siliceous sand fine aggregate, portland cement, and fly ash. The estimated bulk w/cm was in the range of 0.42 to 0.47 and the estimated total cementitious materials content was 550 to 600 pcy with 20 to 25 percent fly ash replacement. The air content was estimated to be 6-1/2 to 7-1/2 percent for Core C1 and 4 to 5 percent for Core C3.

Core C5 and C6 represented concrete from columns. Both cores were marginally air entrained and contained similar materials to Cores C1 and C3 but had different mix proportions. The estimated bulk w/cm was in the range of 0.37 to 0.42 and the estimated total cementitious materials content was 620 to 670 pcy with 20 to 25 percent fly ash replacement. The air content was estimated to be 2-1/2 to 4 percent, with Core C6 slightly higher than that of Core C5. Core C6 contained a mortar layer that was tightly bonded to the concrete.

While no concrete mix designs were provided for review, the four cores represented two different mixes with the column cores, C5 and C6, marginally better than the slab cores, C1 and C3. This was consistent with the provided information. No internal expansion mechanisms, such as ASR or DEF, was detected. The overall quality of the concrete appeared to be good.

Both Cores C1 and C3 contained full depth vertical cracks that propagated through aggregate particles. These cracks were likely due to drying shrinkage under constraint. Core C5 and C6 contained horizontal cracks that could represent vertical cracks subparallel to the surface of the columns. Alternatively, these cracks could be due to damage during coring or sample retrieving process.

NOTE: Samples will be discarded after 60 days unless we are instructed otherwise in written form. Charges will be incurred for additional storage and handling.

TABLES AND FIGURES

Table 1. Summary of Findings of Petrographic Examination

Core ID	C1	C3	C5	C6
Coarse aggregate	Crushed dolomite with a nominal maximum of 3/4 inch, hard, dense, and angular			
Fine aggregate	Natural siliceous sand containing quartz, feldspar, and chert			
Paste Feature	Gray, hard, dense, and had a semiconchoidal texture			
Mohs' Hardness	3.0 to 3.5	3.0 to 3.5	Slightly greater than 3.5	
Paste Composition	A moderate amount of residual cement particles and fly ash, and moderately large and abundant calcium hydroxide		An abundant residual cement particles and fly ash particles, moderate calcium hydroxide in size and concentration	
Estimated w/cm	0.42 to 0.47	0.42 to 0.47	0.37 to 0.42	0.37 to 0.42
Estimated cementitious materials content	550 to 600 pcy with 20 to 25 percent fly ash replacement		620 to 670 pcy with 20 to 25 percent of fly ash replacement	
Estimated air Content (%)	6-1/2 to 7-1/2	4 to 5	2-1/2 to 3-1/2	3 to 4
Void distribution	Air trained, non-uniformly distributed and had clusters around coarse aggregate	Air entrained and essentially uniformly distributed	Marginally air entrained, uniformly distributed	Marginally air entrained and uniformly distributed
Depth of Carbonation (In.)	1/16	1/4	1/16	1/16
Surface conditions	Broom finished and intact. Contained DSL up to 1/16 inch	Broom finished and intact	Form finished and intact	Form finished and contained a 30-mil thick mortar layer
Cracking	Full depth vertical crack near the edge of the core, and separate the core	Full depth vertical crack	A nearly horizontal crack near the bottom and separated the core	A nearly horizontal crack near the bottom and separated the core
Crack width at top	--	UP to 32 mils	--	--
Crack features	Crack through aggregate particles, carbonation along crack up to 2-1/2 inches.	Crack through aggregates and contained many branching cracks	Crack through aggregate and may be due to coring	Crack through aggregate and may be due to coring

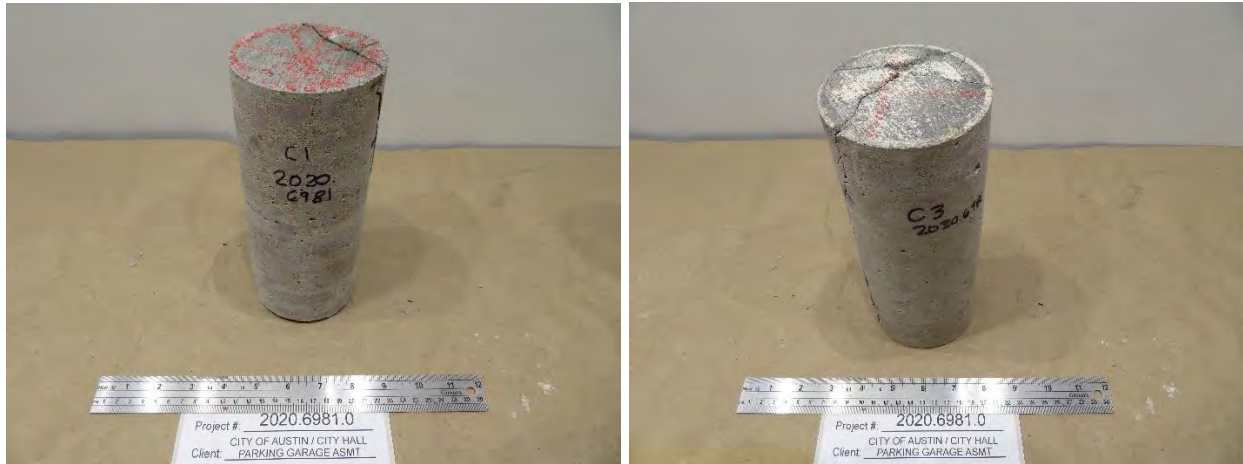


Figure 1. As-received Core C1 and Core C3. Both contained full depth vertical cracks.



Figure 2. As-received Core C5 and C6, with Core C5 broken near the bottom.

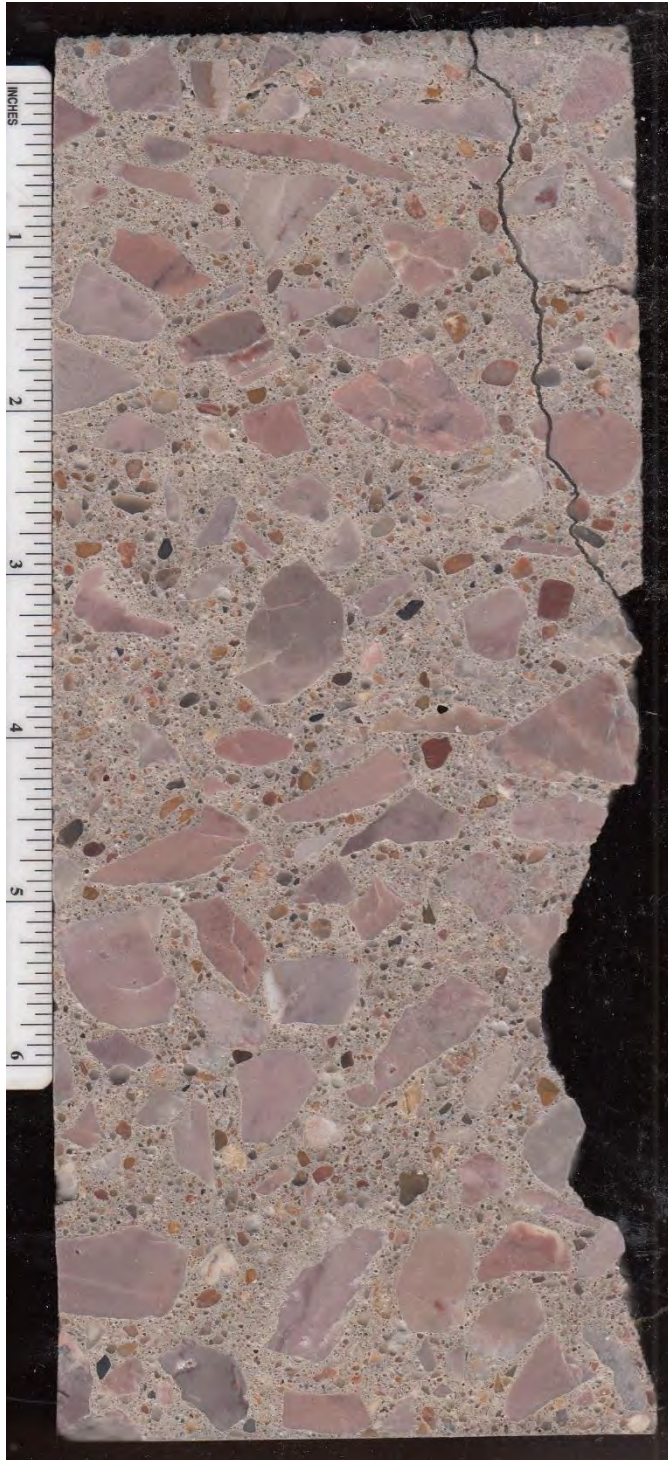


Figure 3. Lapped section of Core C1 showing the uniform distribution of aggregate particles. Note the vertical crack toward the right edge of the core.

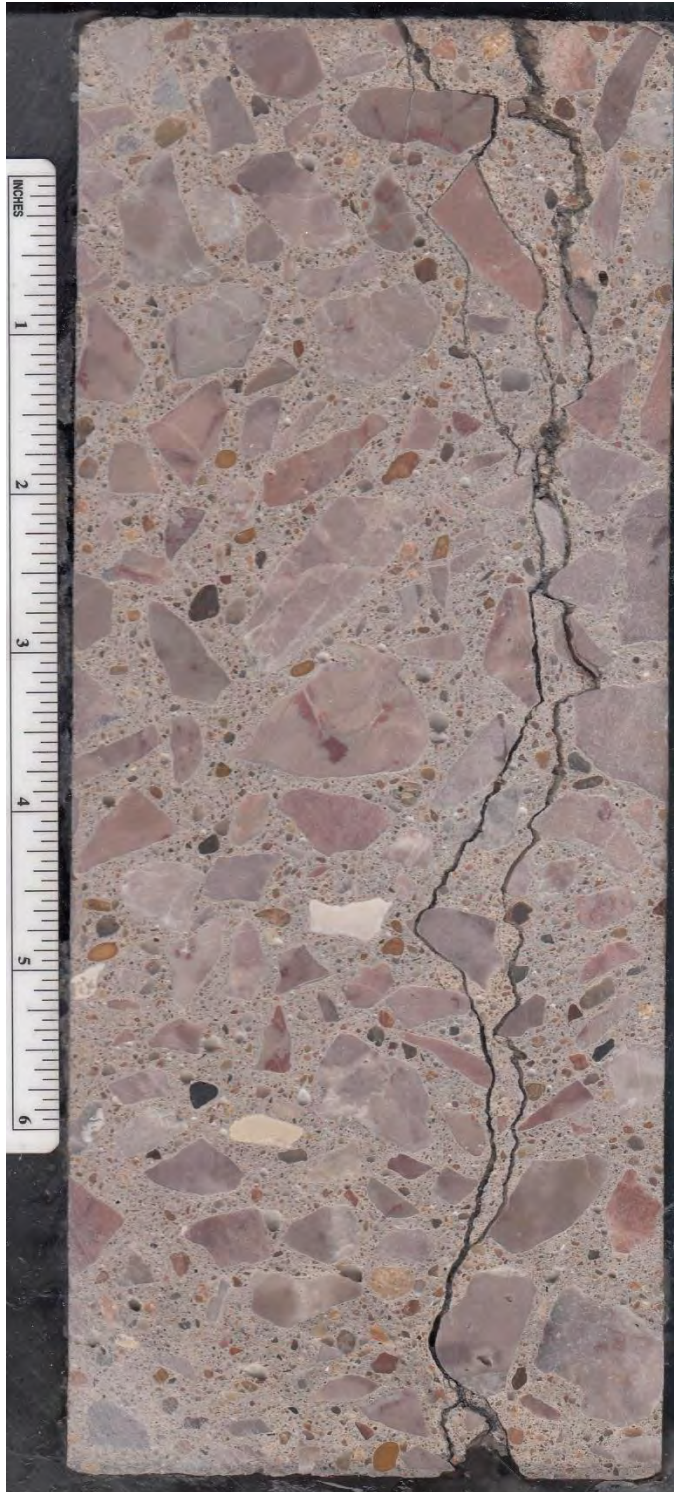


Figure 4. Lapped section of Core C3 showing the uniform distribution of aggregate particles. Note the full depth vertical crack with many branches.

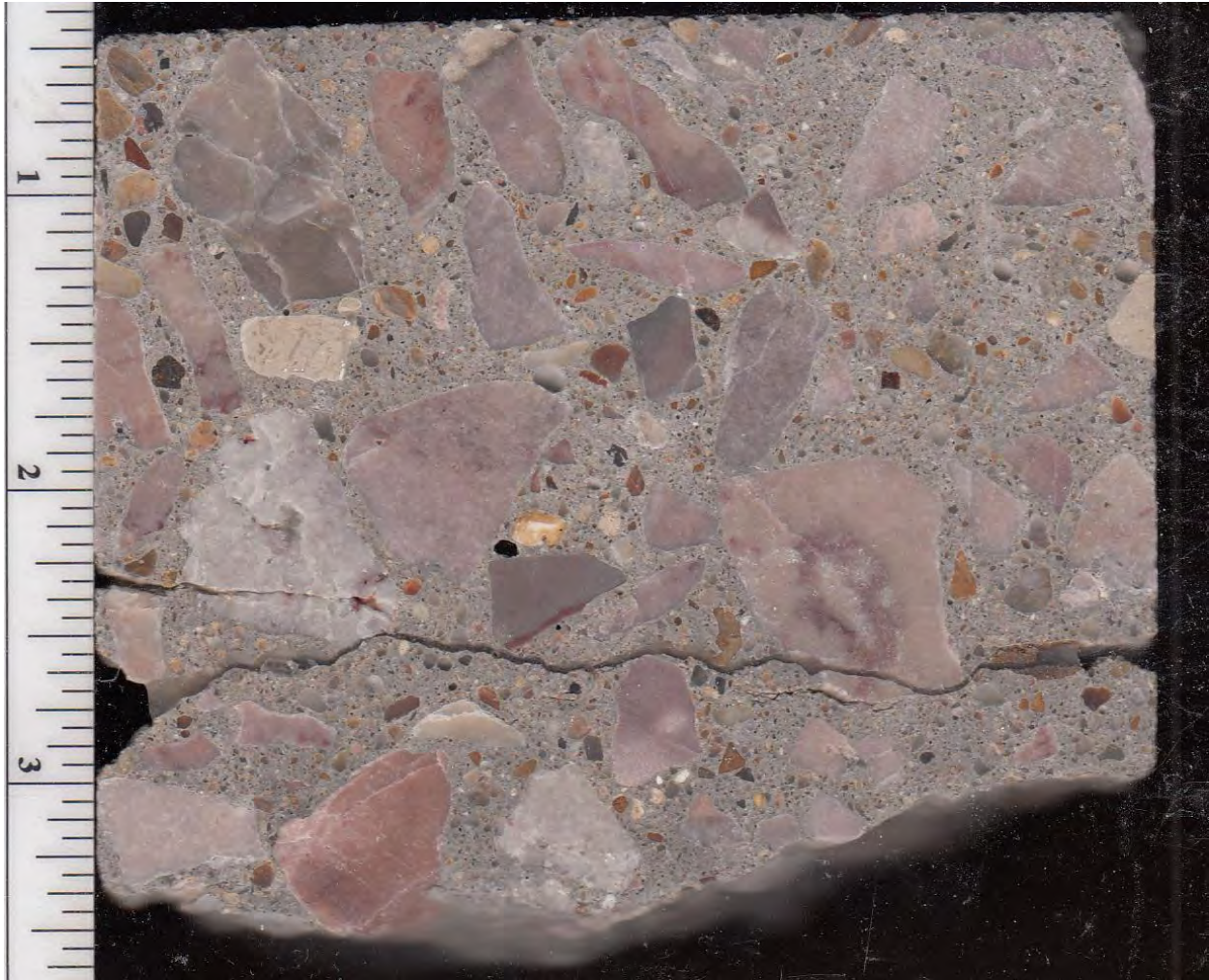


Figure 5. Lapped section of Core C5 showing the uniform distribution of aggregate particles and the horizontal crack.

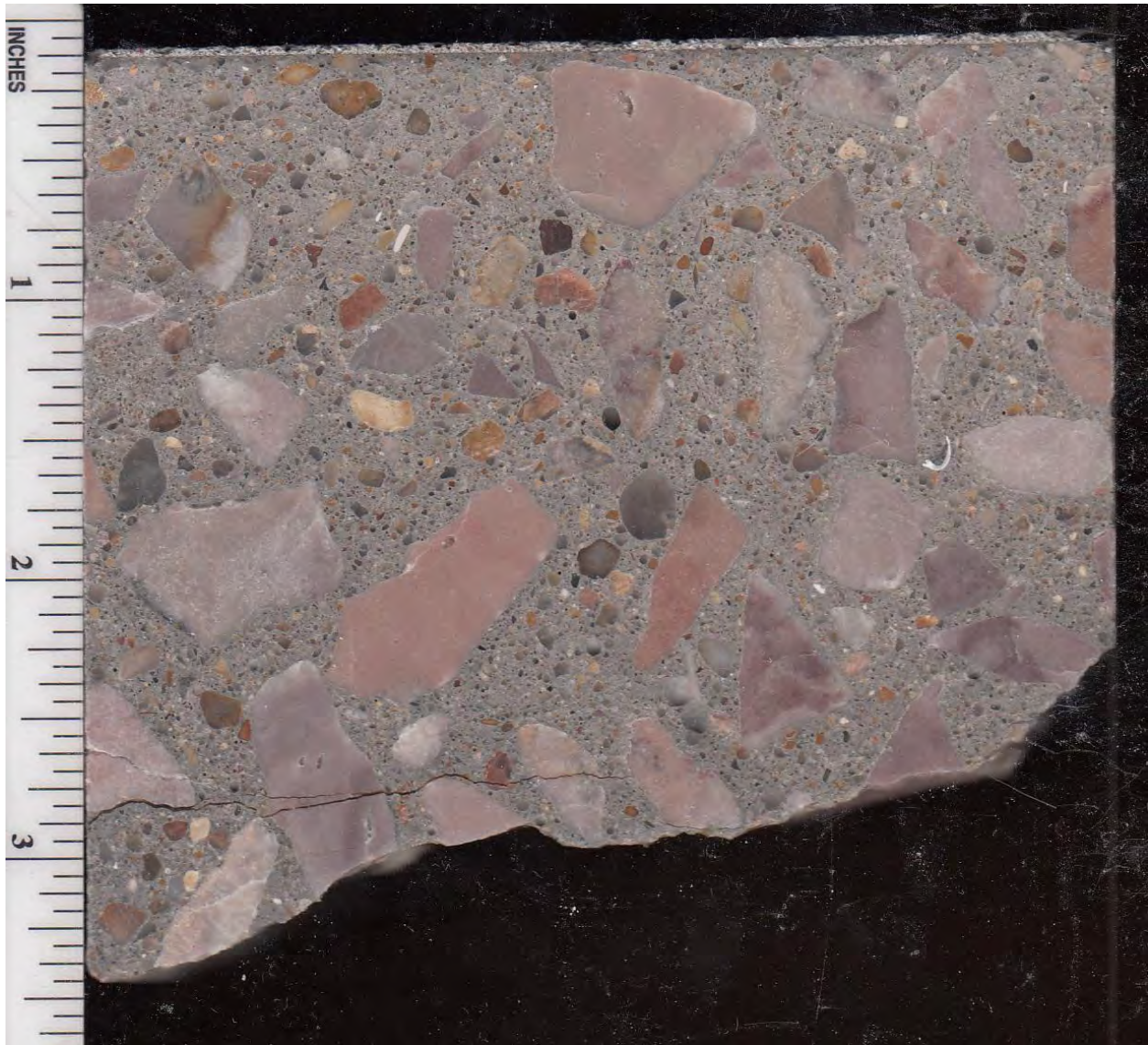


Figure 6. Lapped section of Core C6 showing the uninform distribution of aggregate particles. Note the horizontal crack.

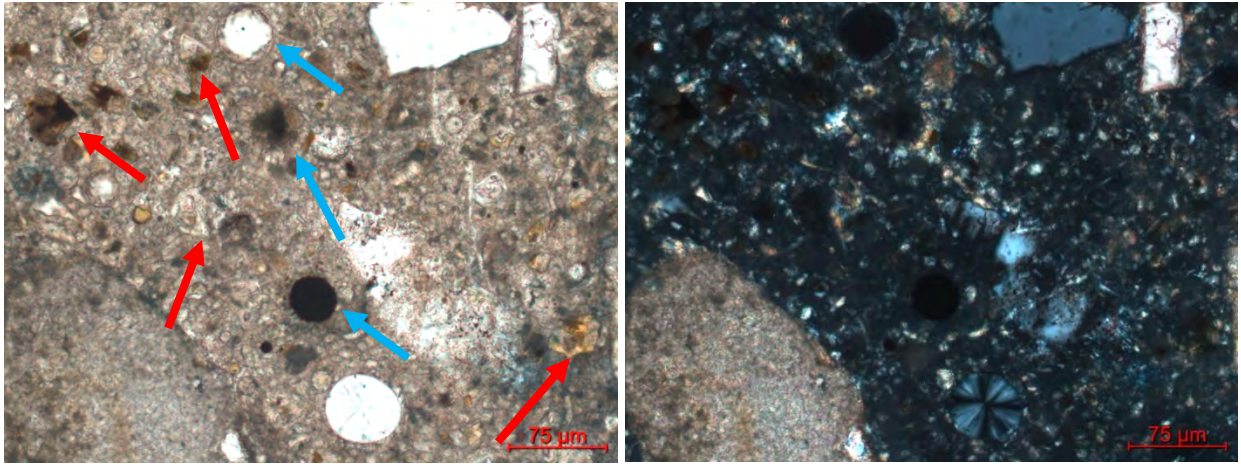


Figure 7. Photomicrographs of the same field of view of a thin section of Core C1 taken under plan polarized light (left) and crossed polars (right) of a petrographic microscope showing moderate residual cement particles (red arrows), abundant fly ash particles (blue arrows), and calcium hydroxide (small light gray particles in the right image).

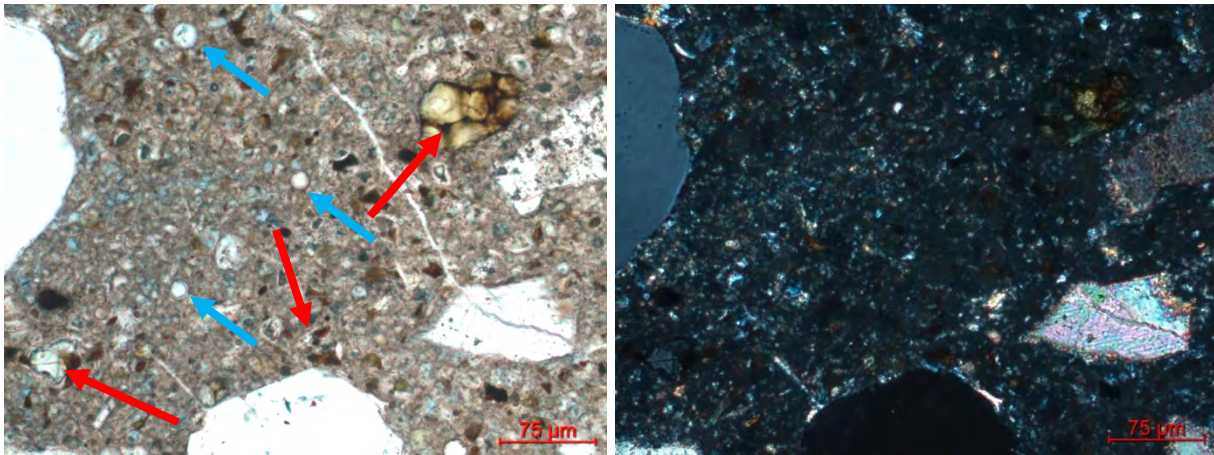


Figure 8. Photomicrographs of the same field of view of a thin section of Core C5 taken under plan polarized light (left) and crossed polars (right) of a petrographic microscope showing moderate residual cement particles (red arrows), abundant fly ash particles (blue arrows), and calcium hydroxide (small light gray particles in the right image).

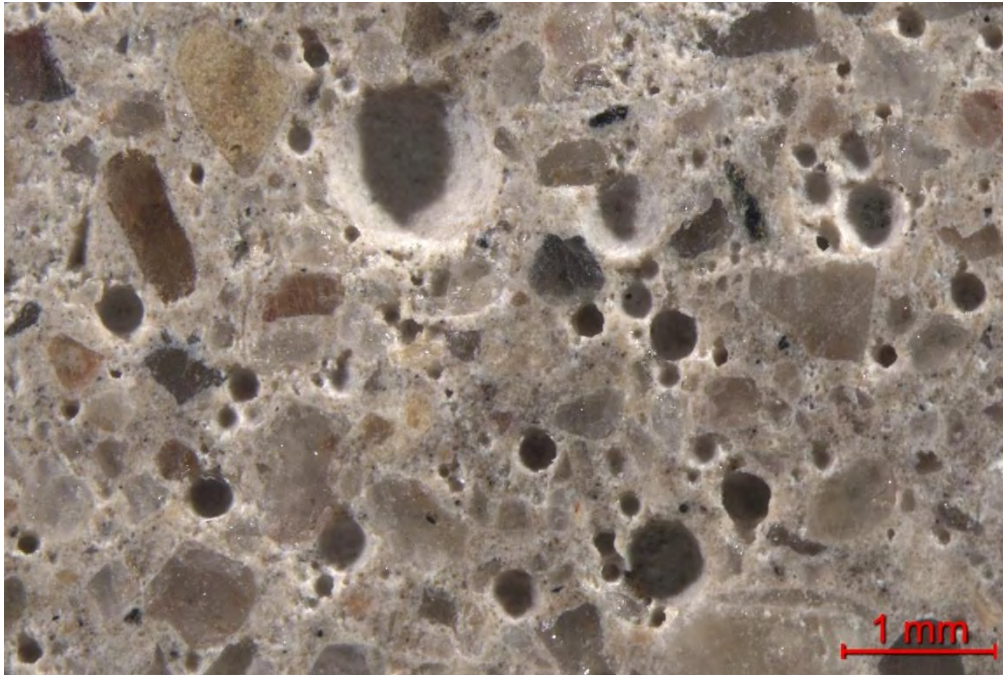


Figure 9. Lapped section of Core C1 showing the entrained air void system.

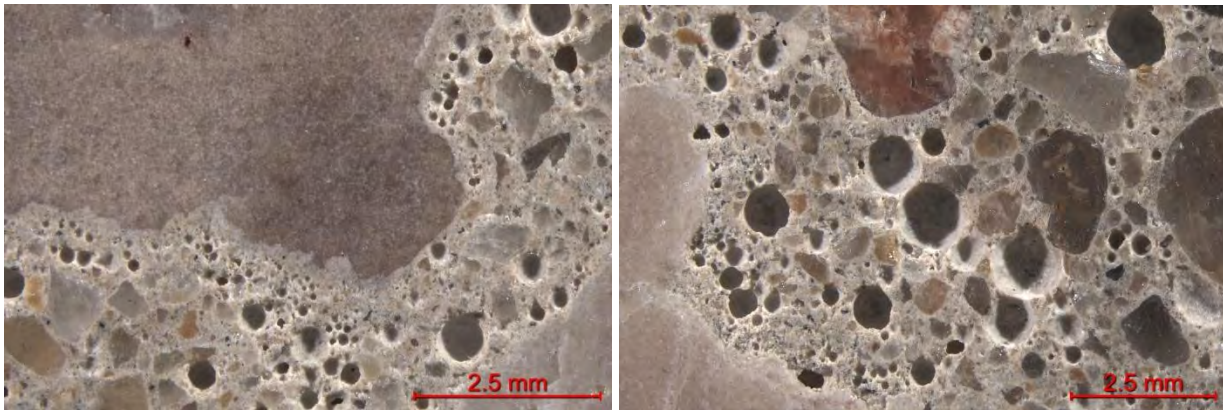


Figure 10. Lapped section of Core C1 showing clusters of air voids.

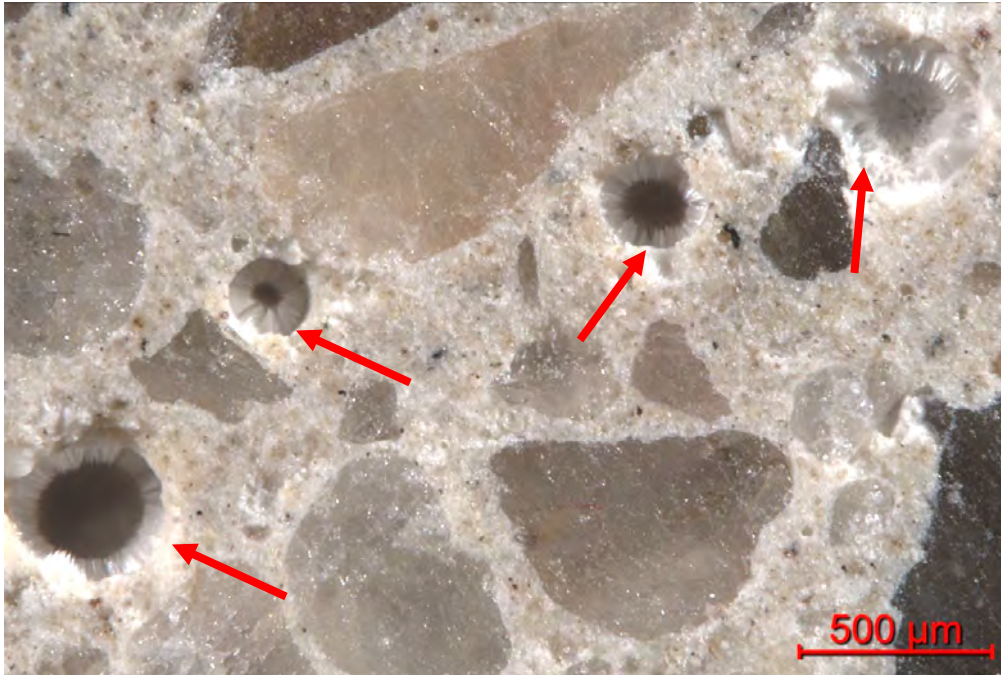


Figure 11. Lapped section of Core C3 showing the entrained air voids coated with secondary ettringite (arrows).

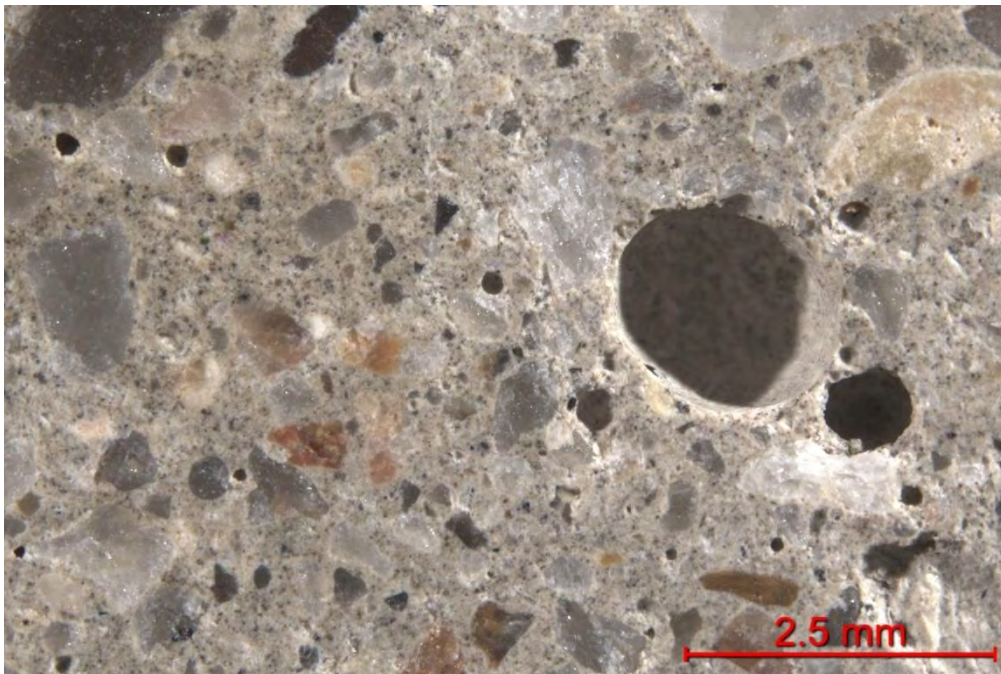


Figure 12. Lapped section of Core C5 showing the marginal air void system.

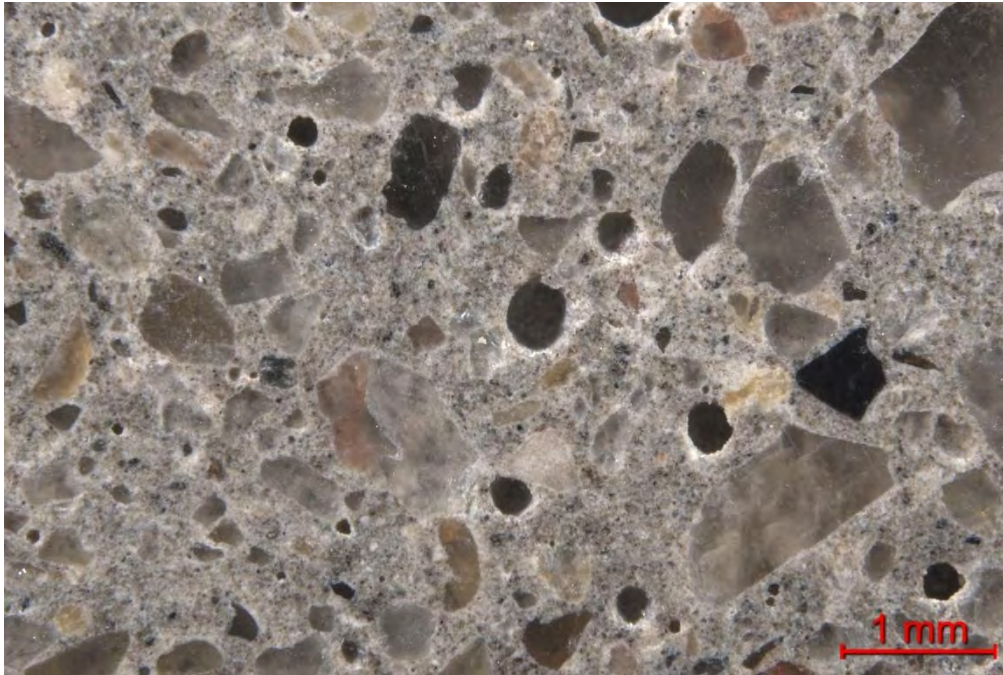


Figure 13. Lapped section of Core C6 showing the marginal air void system.

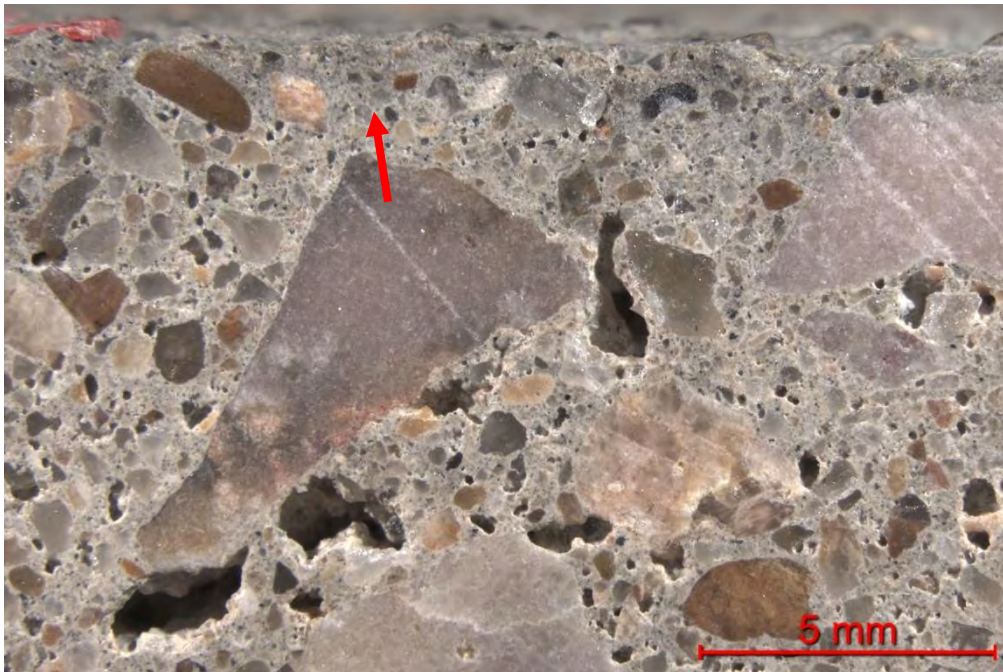


Figure 14. Lapped section of Core C1 showing the DSL (arrow) and relatively abundant water voids (large and irregular voids) in the surface region.

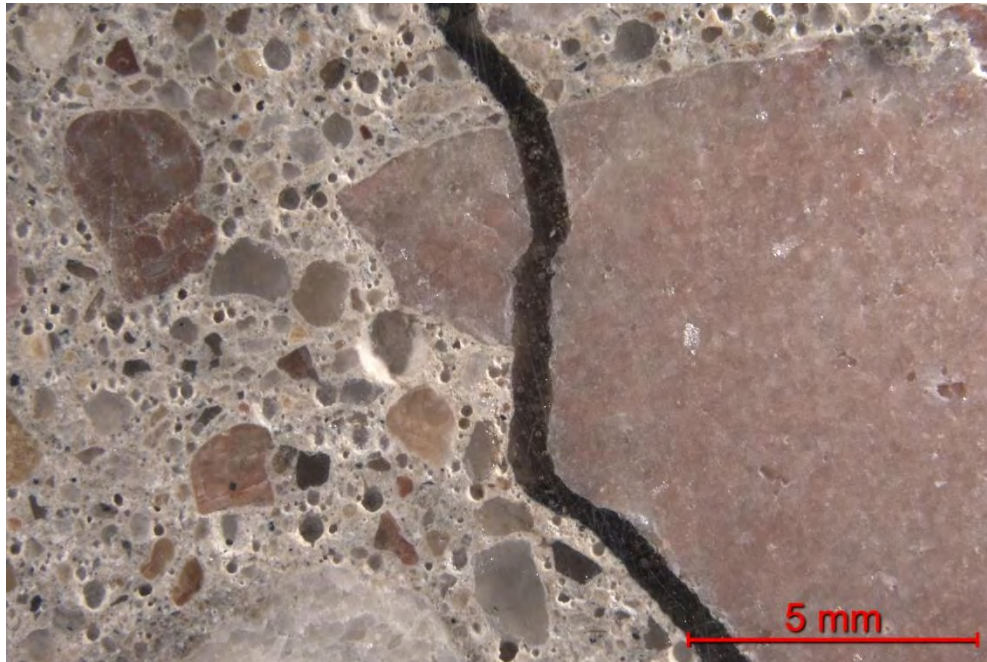


Figure 15. Lapped section of Core C1 showing the vertical crack through a coarse aggregate particle.

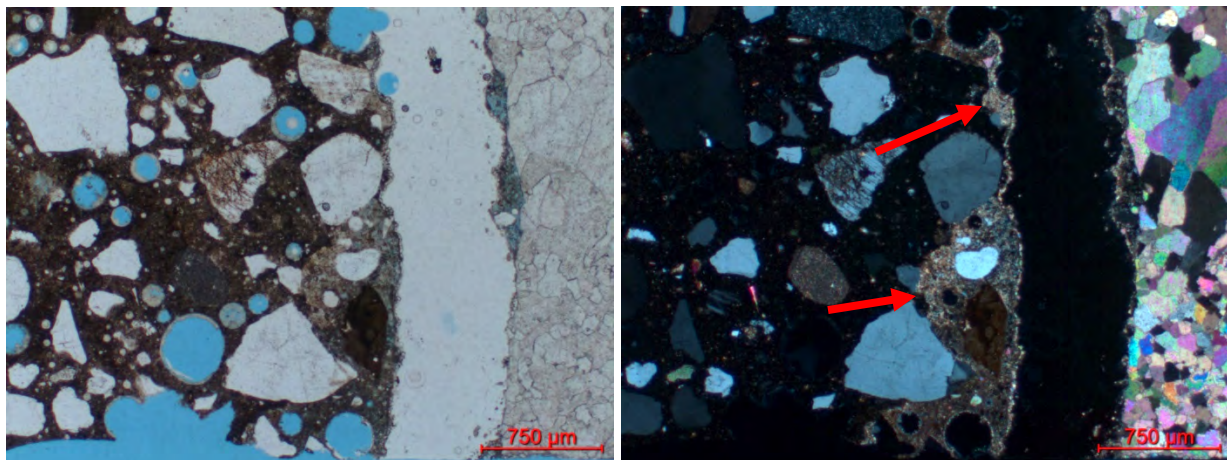


Figure 16. Photomicrographs of the same field of view of a thin section of Core C1 taken under plan polarized light (left) and crossed polars (right) of a petrographic microscope showing the carbonation along the crack near the bottom of the thin section (arrows).

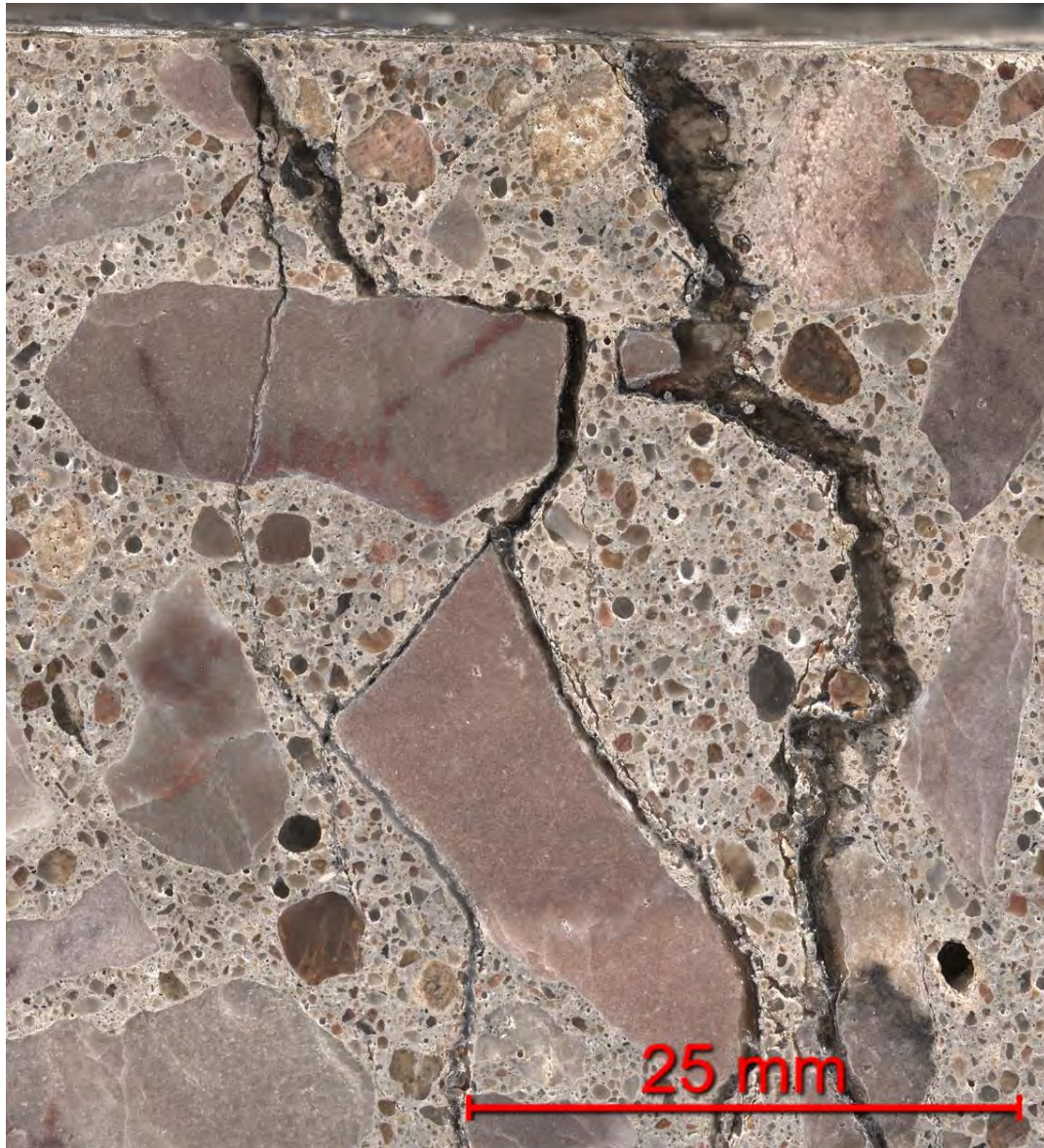


Figure 17. Lapped section of Core C3 showing the multiple vertical cracks.

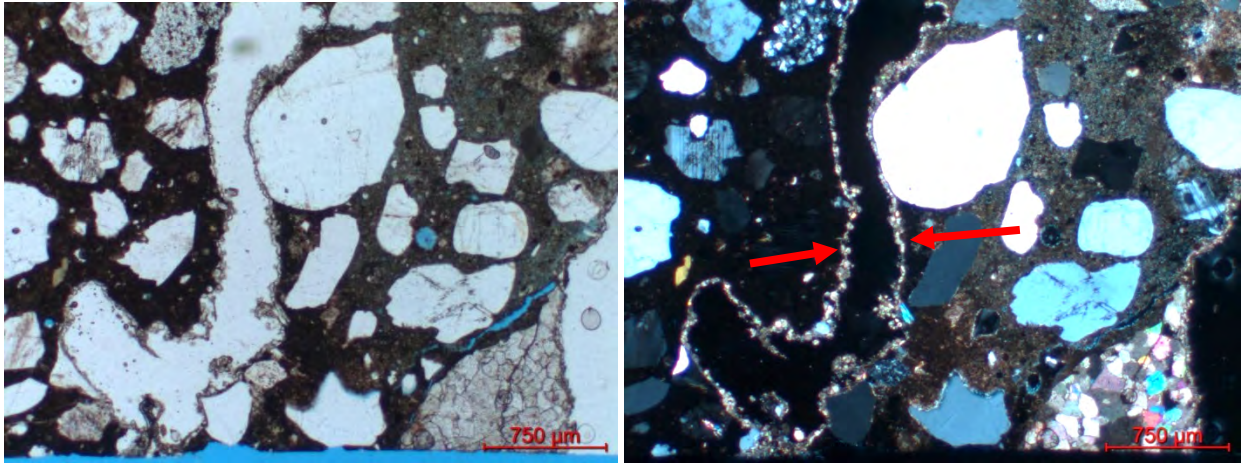


Figure 18. Photomicrographs of the same field of view of a thin section of Core C3 taken under plan polarized light (left) and crossed polars (right) of a petrographic microscope showing the carbonation along the crack near the bottom of the thin section (arrows).

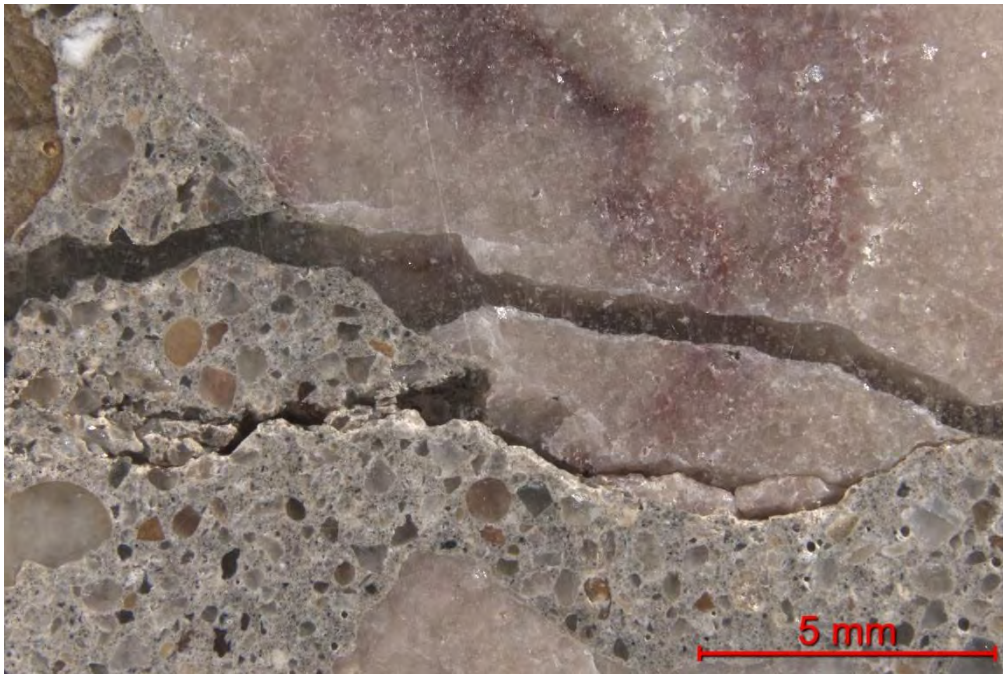


Figure 19. Lapped section of Core C5 showing the horizontal cracking of the core.

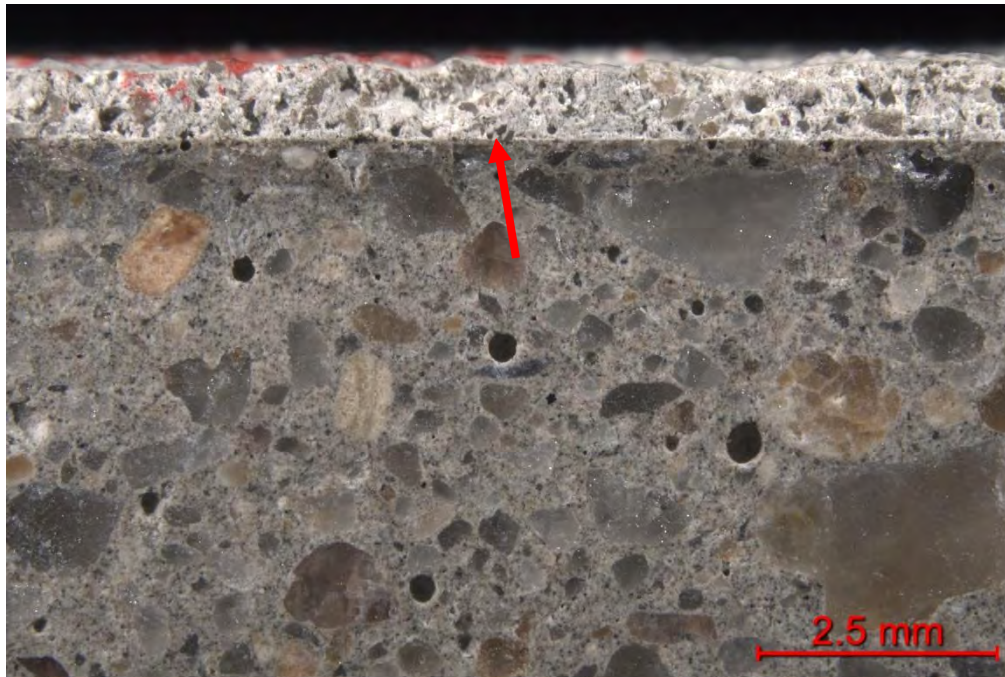


Figure 20. Lapped section of Core C6 showing the mortar topping on the surface (arrow).

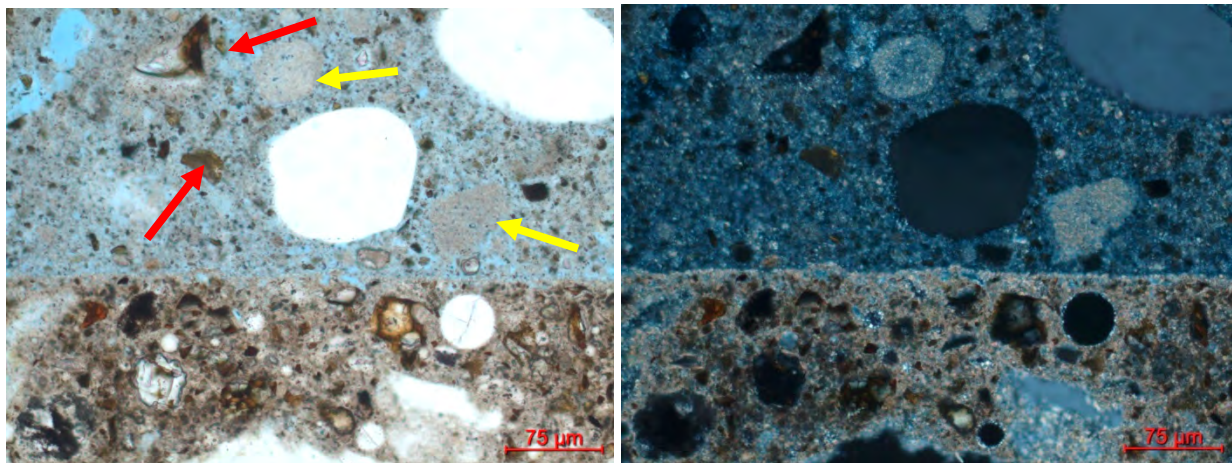


Figure 21. Photomicrographs of the same field of view of a thin section of Core C6 taken under plan polarized light (left) and crossed polars (right) of a petrographic microscope showing the interface of surface mortar and concrete. Note that the mortar contained residual cement particles (red arrows) and hydrated lime (yellow arrows).

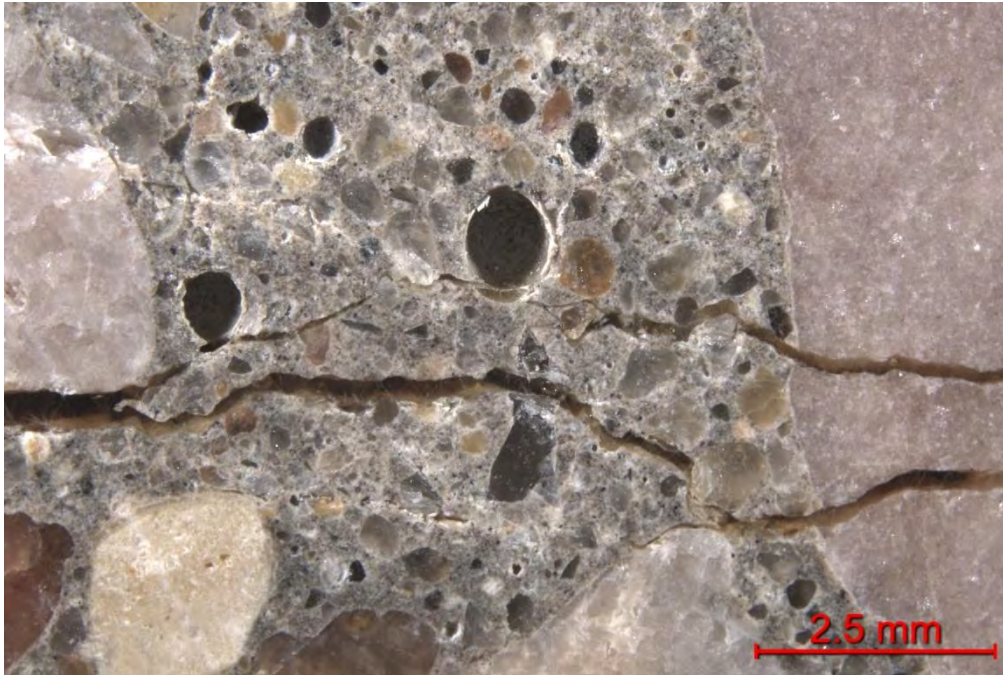


Figure 22. Lapped section of Core C6 showing the horizontal crack in the core.



MEMORANDUM

TO: Veteran's Service Providers of Austin, TX
FROM: Joya Hayes, Director, Human Resources *JH*
DATE: August 30, 2017
SUBJECT: Veterans Resource Center

The purpose of this memorandum is to gauge the interest of stakeholders and service providers who are currently serving the local veterans community and able to participate in the Veteran Resource Center. On June 22, 2017 Austin City Council passed the attached resolution supporting the creation of a Veteran Resource Center. The Resource Center will serve as a clearinghouse and allow certain veteran service providers to have offices and representatives serving the Veteran Community of Austin.

The goal of the Veteran Resource Center is to establish partnerships and develop collaborations with community agencies and organizations, create a network of support, increase the capacity of community institutions and volunteer organizations to assist local veterans, focus on employment assistance, education, reintegration, partner with the Veterans Administration to assist veterans with expedited access to health care services including substance abuse prevention and treatment and mental and physical health services, and enhance business opportunities for veteran military service member and their families.

The Veteran Resource Center's goal would become a comprehensive one-stop-shop that provides assistance and support with:

- Employment and Education Assistance
- Military Reintegration
- Veteran Small Business/Veteran Entrepreneurship
- VA Benefits and Legal Assistance
- Veteran Homelessness
- Nutritional Services
- Behavioral Health Services
- Peer-to-Peer Support

Staff is currently working on creating a plan to present back to Council, and will present to Council a list of service providers interested in participating in the Veteran Resource Center. Your support for the Veteran Resource Center is important to its success, and the success of our ongoing Veteran's services program. If you would like additional information about the center or our program, please contact Sylba Everett at 512-974-3473 or Sylba.Everett@austintexas.gov.

RESOLUTION NO. 20170622-035

WHEREAS, the City of Austin has identified the homelessness of military veterans in the city as a priority issue, and the city council created the Veterans Affairs Commission in 2013 to recommend solutions alleviating veterans' difficulties in obtaining housing, employment, education, training, mental health assistance, women and family counseling, and counseling for Veterans Affairs benefits; and

WHEREAS, the Commission passed Commission Recommendation Number 20150318-B004 and Budget Resolution Recommendation Number 2017050419-4.d with several findings supporting a recommendation to allocate funds for the purchase and lease of office space for the formation and implementation of a Veterans Resource Center.

WHEREAS, the Commission found that homelessness of military veterans is complicated by the lack of affordable housing in the city and public transportation within close proximity to employers, infrastructure, and providers of support services for military veterans; and

WHEREAS, the Commission also found that employment, education, training, mental health assistance, healthcare, and various counseling services for military veterans are decentralized and scattered throughout the city; making access to vital and necessary services difficult for veterans with disabilities and limited economic, mobility, and transportation resources; and

WHEREAS, the Commission recognized Veterans Non-Profit Corporations, Veterans Service Organizations, and Veterans Court Services play a vital role in the lives of veterans and are capable of providing services in one location with the Texas Veterans Commission and other important support and benefit organizations for veterans (referred to as "Veterans service providers"); and

WHEREAS, the Commission therefore advised the City Council to allocate funds to establish a Veterans Resource Center that is located central to transportation, has a Veteran Plaza and department staff, and will serve as a clearinghouse in which all the Veterans service providers will have offices with representatives to meet and provide their services to military veterans and their families in a "One Stop Shop"; **NOW, THEREFORE,**

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF AUSTIN:

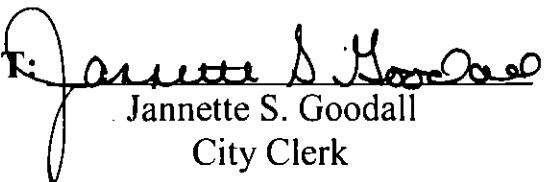
The City Council directs the City Manager to complete and prepare to present a Business Plan to City Council within six months of the effective date of this Resolution. The City Manager shall address in the Business Plan the needs, costs, potential funding, and work steps associated with establishing the Veterans Resource Center. As a component of the Business Plan, the City Manager shall conduct a needs assessment for veterans' services (Assessment) that demonstrates what service gaps exist and provide recommendations on how to approach and narrow such gaps. The Assessment shall also propose metrics for measuring success and demonstrate how a Veterans Resource Center would help meet those goals.

BE IT FURTHER RESOLVED:

In completing the Business Plan, the City Manager will consider and address, but not be limited to the following work steps recommended by the Veterans Affairs Commission:

1. Locate an office building within the City's property inventory, or an available lease facility, with space large enough to accommodate the director and staff of the City of Austin's Veterans Program office and the satellite informational resource offices of Veterans service providers;
2. Ensure the office space is at least 5,500 square feet and the City has the budget to remodel a network floorplan, furnish and integrate a network database to follow the veterans from beginning to end of the network of services.
3. Invite Veterans service providers to have their representatives available at this location and provide their contact, application, and other information regarding their services. The Veterans service providers will include but not be limited to: proven local Veterans Non-Profit Corporations and state and federal Veterans service providers, such as the Texas Veterans Commission, Texas Workforce Commission, and the Veterans Administration.
4. The Veterans Resource Center staff will create an interactive website that links all Veterans services providers in the city and will market and advocate for the inclusion of all Veterans Non-profit Corporations and Veterans Service Organizations in the city.
5. Take additional steps deemed necessary or desirable in establishing the Veterans Resource Center, including assessing the possibility of federal, state, county, and private funding sources.

ADOPTED: June 22, 2017

ATTEST: 
Jannette S. Goodall
City Clerk



MEMORANDUM

TO: Mayor and Council

FROM: Joya Hayes, Director Human Resources Department *JH*

DATE: December 15, 2017

SUBJECT: Update on Council Resolution 20170622-035 regarding City of Austin Business Plan for a Veterans Resource Center

The purpose of this memorandum is to provide a status update on Resolution 20170622-035 regarding a business plan for a Veterans Resource Center.

On June 22, 2017, the Austin City Council passed a resolution directing the City Manager to provide a business plan that addresses the needs, costs, potential funding, and work steps associated with establishing a Veterans Resource Center (VRC). As a component of the business plan, the City Manager was also asked to include a needs assessment for veterans' services that demonstrates what service gaps exist, how to narrow the identified gaps and propose metrics for measuring success. Staff was further instructed to consider multiple work steps as recommended by the Commission on Veterans Affairs.

Staff reached out to 48 local veteran service providers to gauge interest in the VRC and as of today, twelve (12) service providers have responded and expressed interest in participating. Interest varies from having part time staff or office hours to providing educational information. Those that have expressed interest include:

Agency/Organization	Educational Items	Staff/Office Hours
Texas Veterans Commission		
Texas Workforce Commission - Texas Veterans Leadership Program	X	X
Veterans Business Outreach Center at University of Texas Arlington	X	
Veterans of Foreign Wars Post 4443 Highland Hills-Oak Hill	X	
Team Red White and Blue		
Texas Center Point		X
Central Texas Veterans Health Care System		X
Austin Community College - Veteran Affairs	X	
St. Edwards University - Office of Veterans Affairs	X	X
University of Texas - Student Veterans Services	X	
Army Wounded Warrior Project		
Combined Arms of Houston	X	

Staff initiated meetings with multiple departments over the last few months including the Office of Real Estate Services, Communications and Technology Management, Austin Public Health, Building Services, Purchasing and the Communications and Public Information Office in order to collaborate next steps in this planning process and to better understand the scope and associated costs of setting up the VRC. Identifying a building was

identified as one of the initial steps in order to move forward with business planning. The Office of Real Estate (ORES) was able to provide us with more information, and while there is not currently a building in the City's inventory that is available, there may be options in the future that can be considered. In the absence of a building within the City inventory, ORES was able to provide two leasing estimates; these estimates are based on costs for South East Austin representing a lower base rent range and Downtown Austin representing a higher base rent range. This provides a spectrum of both low and high to consider. Additionally the estimates below are based on the low-end of the rent and operating costs, estimating a 5,500 Square Foot space:

Southeast Austin Base Rent \$18 - \$25/psf Operating Cost \$10 - \$18/psf			Downtown Austin Base Rent \$40 - \$60/psf Operating Cost \$20 - \$25/psf Parking \$200/Per Space/Per Month		
Lease Year	Cost Per Square Foot	Cost Per Year	Lease Year	Cost Per Square Foot	Cost Per Year
1 st year	\$ 28.00	\$ 154,000.00	1 st year	\$ 60.00	\$ 330,000.00
2 nd year	\$ 29.12	\$ 160,160.00	2 nd year	\$ 62.40	\$ 343,200.00
3 rd year	\$ 30.29	\$ 166,595.00	3 rd year	\$ 64.90	\$ 356,950.00
4 th year	\$ 31.50	\$ 173,250.00	4 th year	\$ 67.50	\$ 371,250.00
5 th year	\$ 32.76	\$ 180,180.00	5 th year	\$ 70.20	\$ 386,100.00
5 Year Lease Total:		\$ 834,185.00	5 Year Lease Total:		\$ 1,787,500.00

Communications and Technology Management (CTM) was also able to provide an estimate on City provided network connectivity vs. service provided network connectivity, as well as an estimate for the LAN cabling and site connectivity within a 5,500 sq. ft. space. Those estimates are included below:

CTM Budgetary Estimate	
Veteran's Office PC Lab Sub Total (includes 25 PC for Staff and Public)	\$ 38,856.00
Cabling Sub Total	\$ 18,000.00
Site Connectivity with COATN Sub Total	\$ 20,000.00
GRAND TOTAL with COATN Connectivity	\$ 76,856.00
Site Connectivity with Provider ISP Sub Total	\$ 10,000.00
Annual Operating Cost Sub Total (included in Dept. Operating Budget)	\$ 30,408.00
GRAND TOTAL with ISP Service Provider	\$ 97,264.00

Building Services was able to provide an estimate for furnishing an office of 5,500 sq. ft., that estimate is included below:

Furniture Estimate	5 offices & 2 conference rooms	10 offices & 4 conference rooms
Offices	\$ 62,500.00	\$ 76,000.00
Conference Rooms	\$ 16,000.00	\$ 32,000.00
Signage	\$ 1,500.00	\$ 2,000.00
Asbestos/Lead/Mold review	\$ 5,000.00	\$ 5,000.00
TOTAL	\$ 85,000.00	\$ 115,000.00

Staff also researched veteran needs assessments in Texas and within the City of Austin. In each example the needs assessment was completed in partnership with an external consultant, and often times with a task force or stakeholder group. Based on this research, it is a best practice to partner with an external consultant in order to conduct a comprehensive needs assessment. This will be valuable to not only the City of Austin but to those working with the Veteran community in the central Texas region.

Staff will provide updates throughout the process and as more information becomes available. If you have any questions, please do not hesitate to contact me.

RESOLUTION NO. 20170622-035

WHEREAS, the City of Austin has identified the homelessness of military veterans in the city as a priority issue, and the city council created the Veterans Affairs Commission in 2013 to recommend solutions alleviating veterans' difficulties in obtaining housing, employment, education, training, mental health assistance, women and family counseling, and counseling for Veterans Affairs benefits; and

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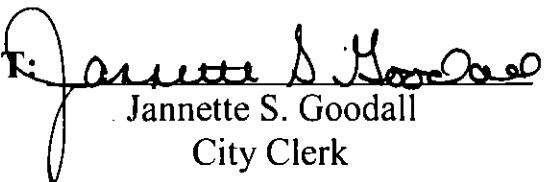
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BE IT FURTHER RESOLVED:

In completing the Business Plan, the City Manager will consider and address, but not be limited to the following work steps recommended by the Veterans Affairs Commission:

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4. The Veterans Resource Center staff will create an interactive website that links all Veterans services providers in the city and will market and advocate for the inclusion of all Veterans Non-profit Corporations and Veterans Service Organizations in the city.
5. Take additional steps deemed necessary or desirable in establishing the Veterans Resource Center, including assessing the possibility of federal, state, county, and private funding sources.

ADOPTED: June 22, 2017

ATTEST: 
Jannette S. Goodall
City Clerk



MEMORANDUM

TO: Mayor and City Council Members

FROM: J. Rodney Gonzales, Director
Development Services Department

DATE: April 5, 2018

SUBJECT: Response to Family Homestead Initiative Resolution No. 20171109-048

At the November 9, 2017 Council meeting, Council adopted Resolution No. 20171109-048 which directed the establishment of a Family Homestead Initiative. As part of the Family Homestead Initiative, Council directed the creation of a proposal to do the following:

- Streamline or scale systems for smaller residential projects, including a potential separate track or team focusing on Family Homestead Initiatives;
- Create written guidance for the requirements and fees related to expanding or remodeling a single-family structure or constructing a secondary dwelling unit;
- Explore options to address the permitting determinations that are made in error related to expanding or remodeling single-family structures or constructing secondary dwelling units; and
- Explore options where the written guidance controls in the event of a conflict in the permitting process.

Attached is the Development Services Department response to the Council resolution which includes proposals for the Family Homestead Initiative. A future work session presentation will be scheduled to present the proposals to Council as requested by the Council resolution. If you have further questions or need additional information, please contact me at (512) 974-2313.

cc: Spencer Cronk, City Manager
Joe Pantaloni, Interim Assistant City Manager

Report on the Family Homestead Initiative

Development Services Department
Response to Council Resolution
No. 20171109-048

April 5, 2018

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Executive Summary

On November 9, 2017, the Austin City Council adopted Resolution No. 20171109-048 directing the establishment of a Family Home Initiative. Specifically, the resolution directed the following:

1. City Manager to establish a Family Homestead Initiative which will identify the following:
 - 1.1 All Land Development Code and Criteria Manual requirements that are related to expanding or remodeling a residential structure with three or fewer dwelling units or constructing a secondary dwelling unit; and
 - 1.2 All fees associated with expanding or remodeling a residential structure with three or fewer dwelling units or constructing a secondary dwelling unit.
 - 1.3 This should include:
 - a. A list of the most common permits applied for by homeowners; and
 - b. How many of each permit is received annually by the City; and
 - c. Fees associated with those permit requests.
2. The Family Homestead Initiative is to include the creation of a proposal to:
 - 2.1 Streamline or scale systems for smaller residential projects, including a potential separate track or team focusing on Family Homestead Initiatives;
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 - 2.4 Explore options where the written guidance controls in the event of a conflict in the permitting process.
3. Present a preliminary proposal at a Council work session before February 2, 2018, including:
 - 3.1 Next steps and actions that could be included in the CodeNEXT approval process.

This report provides responses to Council direction in Resolution No. 20171109-048.

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Section 1.0 Family Homestead Initiative – Data Request

1.1 LAND DEVELOPMENT CODE (LDC) AND CRITERIA MANUAL REQUIREMENTS

Council requested a listing of all the Land Development Code (LDC) and Criteria Manual requirements that are related to expanding or remodeling a residential structure with three or fewer dwelling units or constructing a secondary dwelling unit.

Residential Projects that Contain Three (3) or More Units

For buildings that contain three (3) or more dwelling units, a more extensive site plan is required in addition to the building plan. Mostly all chapters and sections of Title 25 of the LDC apply to residential projects containing three (3) or fewer dwelling units. Title 25 chapters that apply to three (3) or more dwelling units include the following:

- Chapter 25-1 General Requirements and Procedures
- Chapter 25-2 Zoning
- Chapter 25-3 Traditional Neighborhood District
- Chapter 25-4 Subdivision
- Chapter 25-5 Site Plans
- Chapter 25-6 Transportation
- Chapter 25-7 Drainage
- Chapter 25-8 Environment
- Chapter 25-9 Water and Wastewater
- Chapter 25-11 Building, Demolition, and Relocation Permits; Special Requirements for Historic Structures
- Chapter 25-12 Technical Codes

With regard to residential projects that contain three (3) or more units, the following technical criteria manuals apply:

- Drainage Criteria Manual
- Environmental Criteria Manual
- Standards Specifications Manual
- Transportation Criteria Manual
- Utilities Criteria Manual

Residential Projects that Contain Two (2) or Less Units

For buildings that contain two (2) or fewer dwelling units, a site plan is not required. However, certain chapters/sections of Title 25 of the LDC will apply. These chapters/sections include the following:

LDC Chapter 25-1 General Requirements and Procedures

Section/Description
<u>25-1-21 Definitions</u> - <u>"Standard Lot", 5750 square feet</u>
<u>25-1-22 Measurements</u> - <u>Minimum lot area (5750 square feet), flag lots</u>
<u>25-1-23 Impervious Cover Measurement</u> - <u>Impervious materials (45% max)</u>
<u>25-1-61 Order of Process</u> - <u>Concurrent submittal (subdivision and building permit)</u>
<u>25-1-365 Exemption from Compliance</u> - <u>"Amnesty Certificate of Occupancy"; illegal ADUs and duplexes created prior to 1986</u>

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LDC Chapter 25-2 Zoning

Section/Description

25-2-3 Residential Uses Described

- Land Use definitions of single-family residential, duplex residential, and two-family residential (often referred to as an "ADU")

25-2 Subchapter A Article 2 Division 2

- Zoning District designations (LA, RR, SF-1, SF-2, SF-3, SF-4A, SF-5, SF-6)

25-2-164 Conditional Overlay (CO) Combining District Purpose

- Conditional Overlays (added to zoning ordinances)

25-2-173 Neighborhood Conservation Combining District Purpose

- "NCCDs"; Hyde Park, North University, Fairview (Travis Heights), E 11th, E 12th

25-2 Subchapter B Article 2 Division 2

- Zoning ordinances with conditional overlays (CO)

25-2 Subchapter B Article 2 Division 4

- Neighborhood Conservation Combining Districts (NCCDs)

25-2-491 Permitted, Conditional, and Prohibited Uses

- Permitted Uses Chart

25-2-492 Site Development Regulations

- Lot size, width, building coverage, impervious cover, height, etc.

25-2-511 Dwelling Unit Occupancy Limit

- Residential use occupancy limitations

25-2-515 Rear Yard of Through Lot

- Rear yard setback equal to front yard setback for through lots

25-2-516 Development Near a Hazardous Pipeline

- Limitations on construction within a hazardous pipeline area

25-2-555 Family Residence (SF-3) District Regulations

- Rear yard setback reduction for non-dwellings; duplex regulations

25-2-773 Duplex Residential Use

- Duplex-specific regulations (common wall, number of stories, porches, minimum lot size, etc.)

25-2-774 Two-family Residential Use

- ADU specific regulations (gross floor area, number of stories, distance from primary structure, etc.)

25-2-778 Front Yard Setback for Certain Residential Uses

- Front yard setback averaging provisions

25-2-893 Accessory Uses for a Principal Residential Use

- Guest houses, accessory dwellings for employees

25-2-901 Accessory Apartments

- Allowance for a 2nd dwelling in any residential district under certain circumstances

25-2 Subchapter D Article 4

- "Secondary Apartment Special Use"; largely mimics "two-family residential use" regulations

25-2-1603 Impervious Cover and Parking Placement Restrictions

- Front yard impervious cover regulations

25-2-1604 Garage Placement

- Regulations related to location and placement of carports and garages

25-2 Subchapter F

- "McMansion" ordinance; limitations on FAR, rear yard setbacks, height, etc.
-

LDC Chapter 25-6 Transportation

Section/Description
<u>25-6-353 Sidewalk Installation with Building or Relocation Permit</u>
- <u>“sidewalk ordinance”; public sidewalk installation required for “new building”</u>
<u>25-6 Appendix A</u>
- <u>Parking table; quarter-mile provision for reduction in parking</u>

LDC Chapter 25-7 Drainage

Section/Description
<u>25-7-32 Director Authorized to Require Erosion Hazard Zone Analysis</u>
- <u>Erosion Hazard Zone review</u>
<u>25-7-92 Encroachment on Floodplain Prohibited</u>
- <u>Floodplain Review</u>
<u>25-7-93 General Exceptions</u>
- <u>Exception not applicable to “two-family residential” use</u>

LDC Chapter 25-8 Environment

Section/Description
<u>25-8-63 Impervious Cover Calculations</u>
- <u>Impervious materials</u>
<u>25-8-181 Erosion and Sedimentation Control</u>
- <u>Silt fencing required on site</u>
<u>25-8-341 Cut Requirements</u>
- <u>4 foot limitation on cuts on a tract of land</u>
<u>25-8-342 Fill Requirements</u>
- <u>4 foot fill limitation on fill on a tract of land</u>
<u>25-8 Subchapter B</u>
- <u>Tree regulations</u>

LDC Chapter 25-11 Building, Demolition, and Relocation Permits; Special Requirements for Historic Districts

Section/Description
<u>25-11-2 Historic Landmarks</u>
- <u>Historic Review and Historic Landmark Commission</u>
<u>25-11-37 Demolition Permit Requirement</u>
- <u>Total and Partial Demolition Application paperwork</u>
<u>25-11-213 Building, Demolition, and Relocation Permits and Certificates of Appropriateness to Certain Buildings, Structures or Sites</u>
- <u>Historic Review</u>

LDC Chapter 25-12 Technical Codes

Section/Description	2 or Less Units	3 or More Units
<u>25-12 Article 1</u>		✓
- <u>International Building Code (includes Flood Plain review for structure)</u>		
<u>25-12 Article 4</u>		✓
- <u>National Electrical Code</u>		
<u>25-12 Article 5</u>		✓
- <u>Uniform Mechanical Code</u>		
<u>25-12 Article 6</u>	✓	✓
- <u>Uniform Plumbing Code</u>		
<u>25-12 Article 7</u>		✓
- <u>International Fire Code</u>		
<u>25-12 Article 9</u>	✓	✓
- <u>International Property Maintenance Code</u>		
<u>25-12 Article 10</u>		✓
- <u>International Existing Building Code</u>		
<u>25-12 Article 11</u>	✓	
- <u>International Residential Code (includes Flood Plain review for structure)</u>		
<u>25-12-243 Local Amendments to the International Residential Code (IRC)</u>		
- <u>"Visitability Ordinance"; required for all new dwellings</u>	✓	
- <u>Note: The Visitability Ordinance applies to 3 or more units by virtue of the LDC, this ordinance was added as an amendment to the IRC</u>		
<u>25-12 Article 12</u>	✓	✓
- <u>International Energy Conservation Code</u>		

Section 4 of this report contains more specific citations of the LDC and Criteria Manuals as they apply to site plans and residential building plans. The checklists shown in Section 4 are posted to the Development Services Department (DSD) website to assist customers with understanding the various regulations that apply to building construction and site development.

1.2 FEES ASSOCIATED WITH EXPANDING OR REMODELING A RESIDENTIAL STRUCTURE

Council requested a list of all fees associated with expanding or remodeling a residential structure with three or fewer dwelling units or constructing a secondary dwelling. The fee tables listed in Section 5 indicate the various fees associated with expanding or remodeling a residential structure. As described previously, the degree of requirements varies between two or fewer dwelling unit residential structures (including secondary dwelling units) and three or more dwelling unit residential structures.

1.3 PERMIT AND FEE COLLECTION DATA

Council requested a list of the most common permits applied for by homeowners, how many of each permit is received annually, and the fees associated with those permit requests. Data is not collected by applicant type, such as homeowner, agent, contractor, developer, etc. For this reason, permits applied for by "homeowners" cannot be provided. However, by excluding new home construction, staff is able to provide permit and fee data for projects tied to existing homes. This information can be found in Tables A and B for plan reviews/building permits and trade permits for five (5) full fiscal years and partial data for the current Fiscal Year 2017/18.

The following table represents the number of plan reviews/building permit applications by common permit type for existing homes. This same information is within Table A except that it excludes total amount of fees collected and includes a description of the permit categories and project types.

Counts of Plan Reviews by Common Permit Categories/Type for Existing Homes (FY 2017/18 Partial Year)

Common Permit Categories/Type	FY 2012/13	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18
R-102 Secondary Apartment (New)						
- This category includes accessory dwelling unit projects.	45	59	64	112	176	28
R-329 Residential Structures Other than Building (New)						
- Permitted projects within this category can include a swimming pool, spa, pergola, open cabana, free standing patio cover, or deck.	396	390	376	406	493	105
R-330 Accessory Use to Primary (New)						
- Permitted projects within this category can include a storage building, shed, guest house, home office, studio, or pool house.	84	71	102	56	100	29
R-434 Addition & Alterations (Addition)						
- This category of permits is for the addition of square footage to the building. However, if remodeling of the existing building is part of the project, then the "Addition and Remodel" category applies.						
- Permitted projects within this category can include a garage/carport/patio conversion, an attached deck or balcony, an attached patio cover or screened porch, the addition of another floor, and an attached bedroom, kitchen, bathroom, office, sunroom, or closet.	474	408	286	10	59	29
R-434 Addition & Alterations (Addition and Remodel)						
- This category of permits is for the addition of square footage to the building in addition to remodeling the existing building.						
- Permitted projects within this category can include a garage/carport/patio conversion, or an interior remodel.	677	739	1,155	1,633	1,649	335
R-435 Renovations/Remodel (Remodel)						
- Permitted projects within this category can include a fence, a change of use for a sales office to a garage (typical project for production builders of new subdivisions), or an amnesty Certificate of Occupancy.	1,352	914	572	370	156	26
R-435 Renovations/Remodel (Repair)						
- Permitted projects within this category can include replacing windows and/or exterior doors (same size/location), adding/removing siding or brick, repairing a foundation (not increasing impervious cover), removing/replacing drywall (in excess of 64 square feet), and adding/replacing insulation.	2,343	3,024	3,773	3,825	3,703	998
R-438 Residential Garage/Carport Addition (New)						
- Permitted projects within this category can include a detached garage or carport.	25	29	34	23	29	4

Staff further researched the specific permit applications to provide Council a listing of the most common permit types and a comparison of the fees from FY 2016/17 to FY 2017/18. The table below provides the most common types of permits requested for existing homes and the associated fees.

Fees for Common Residential Permits

Residential Permit Types <i>(Includes Plan Review and Inspection Fees Only)</i>	FY 2016/17 Fee	FY 2017/18 Fee	Increase/ (Decrease)
Addition (typically 1,000 square feet)	\$928	\$1,524	\$596
Swimming Pool (Up to 1,000 square feet)	\$844	\$1,426	\$582
Express Permit, not Including Trade Permits/Inspections - Trade Permits include specialized work like changes to electrical wiring, plumbing, or heating and cooling.	\$214	\$118	(\$96)
Express Permit, including Trade Permits/Inspections	\$639	\$756	\$117

For FY 2017/18, DSD's proposed fee structure separated out certain residential plan reviews that require less staff time. Previously, all residential plan review fees did not make this distinction and were based on estimated construction costs. For residential plan reviews that take 30 minutes or less staff time, the new fee category of "Small Projects" was created for four permit types. The result is that the plan review fee for these permit types has decreased.

Fees for Common Homeowner Projects Now Classified as Small Project Permits

Small Project Permits <i>(Includes Plan Review and Inspection Fees Only)</i>	FY 2016/17 Fee	FY 2017/18 Fee	Increase/ (Decrease)
Fence (8 feet or taller) - Note: The recently adopted modification to the Building Code increased the height of fences that are exempted from requiring a permit. Previously, the exemption was for fences under 7 feet tall. The height was raised to 8 feet tall meaning that the majority of fence construction is now exempt from requiring a permit.	\$564	\$373	(\$191)
Interior Remodel	\$1,453	\$1,012	(\$441)
Garage/Carport/Porch Conversion (typically less than 1,000 square feet) - Note: This fee increased because of the increase in inspections fees.	\$886	\$1,012	\$126
Amnesty Certificate of Occupancy - Note: Used in instances where an existing building does not have a certificate of occupancy but the current use existed on or before March 1, 1986 and the zoning district allowed that use at the time.	\$564	\$373	(\$191)

Table A: Plan Reviews & Building Permits for Existing Homes (Note: FY 2017/18 is a partial year)

Subtype/ Work Description	FY 2012/13		FY 2013/14		FY 2014/15		FY 2015/16		FY 2016/17		FY 2017/18	
	Plan Reviews & Building Permits	Payments	Plan Reviews & Building Permits	Payments	Plan Reviews & Building Permits	Payments	Plan Reviews & Building Permits	Payments	Plan Reviews & Building Permits	Payments	Plan Reviews & Building Permits	Payments
ADUs (R- 102 Secondary Apartment)												
New	45	89,709	59	328,167	64	286,185	112	645,028	176	812,644	28	136,257
R- 329 Res Structures Other Than Bldg												
Addition	1	-	-	-	-	-	-	-	-	-	-	-
New	396	213,431	390	637,703	376	610,447	406	911,881	493	1,051,668	105	324,512
R- 330 Accessory Use to Primary												
New	84	71,398	71	182,402	102	252,961	56	207,796	100	270,107	29	91,161
Remodel	-	-	-	-	1	711	-	-	-	-	-	-
R- 434 Addition & Alterations												
Addition	474	334,702	408	609,306	286	465,157	10	28,374	59	164,751	29	126,997
Addition and Remodel	677	1,649,950	739	3,533,197	1,155	4,991,353	1,633	8,681,658	1,649	7,040,906	335	1,253,019
Repair	-	-	1	-	-	-	-	-	-	-	-	-
R- 435 Renovations/Remodel												
Addition and Remodel	1	2,477	-	-	-	-	-	-	-	-	-	-
Remodel	1,352	925,909	914	1,337,269	572	1,088,672	370	218,939	156	141,888	26	52,055
Repair	2,343	320,582	3,024	542,642	3,773	810,611	3,825	1,523,541	3,703	1,926,293	998	198,499
R- 438 Residential Garage/Carport Addn												
Addition	2	453	-	-	2	1,810	-	-	1	1,606	-	-
Addition and Remodel	1	173	2	3,869	-	-	-	-	-	-	-	-
New	25	9,234	29	51,103	34	38,338	23	40,786	29	38,994	4	3,878
R- 645 Demolition One Family Homes												
Demolition	427	125,527	627	213,571	700	321,762	795	833,858	793	1,059,650	157	52,464
Life Safety	-	-	-	-	-	-	-	-	1	-	-	-
R- 646 Demolition Two Family Bldgs												
Demolition	16	5,624	21	8,066	16	4,024	8	16,981	19	28,343	5	799
R- 649 Demolition All Other Bldgs Res												
Demolition	129	22,382	139	41,327	145	38,438	90	50,691	121	50,092	21	3,878
R-2001 Relocation Residential												
Relocation	51	18,200	47	19,282	45	26,667	48	55,087	47	46,987	10	2,720
Grand Total	6,021	3,789,751	6,467	7,507,904	7,268	8,937,135	7,373	13,214,620	7,344	12,633,929	1,745	2,246,237

Table B: Trade Permits for Existing Homes (Note: FY 2017/18 is a partial year)

Subtype/ Work Description	FY 2012/13		FY 2013/14		FY 2014/15		FY 2015/16		FY 2016/17		FY 2017/18	
	Trade Permits	Payments	Trade Permits	Payments	Trade Permits	Payments	Trade Permits	Payments	Trade Permits	Payments	Trade Permits	Payments
ADUs (R- 102 Secondary Apartment)												
New	151	30,097	198	62,581	219	71,216	351	142,604	442	123,334	44	1,682
R- 329 Res Structures Other Than Bldg												
Addition	-	-	-	-	-	-	-	-	-	-	-	-
New	724	57,987	752	98,764	709	104,481	740	195,823	820	195,648	124	28,998
R- 330 Accessory Use to Primary												
New	169	17,437	158	32,992	230	50,084	129	40,989	175	35,695	29	2,526
Remodel	-	-	-	-	-	-	-	-	-	-	-	-
R- 434 Addition & Alterations												
Addition	624	68,994	479	74,320	371	68,414	10	3,884	95	24,280	22	1,983
Addition and Remodel	1,814	365,977	2,037	597,885	2,853	1,007,077	3,716	1,687,195	3,469	1,030,108	515	95,551
Repair	-	-	-	-	-	-	-	-	-	-	-	-
R- 435 Renovations/Remodel												
Addition and Remodel	3	493	-	-	-	-	-	-	-	-	-	-
Remodel	1,527	166,030	1,197	183,324	871	167,487	214	58,074	85	23,424	22	5,655
Repair	503	32,296	896	89,355	1,080	160,648	1,381	360,775	1,629	462,671	257	56,173
R- 438 Residential Garage/Carport Addn												
Addition	1	45	-	-	1	-	-	-	1	270	-	-
Addition and Remodel	-	-	2	471	-	-	-	-	-	-	-	-
New	22	3,327	35	6,504	40	5,633	30	8,057	23	4,004	1	-
R- 645 Demolition One Family Homes												
Demolition	53	2,757	423	32,211	460	61,526	504	99,028	543	140,290	98	2,370
Life Safety	-	-	-	-	-	-	-	-	-	-	-	-
R- 646 Demolition Two Family Bldgs												
Demolition	1	75	21	2,449	13	1,600	3	499	12	4,992	1	-
R- 649 Demolition All Other Bldgs Res												
Demolition	-	-	17	1,151	12	1,685	10	1,830	13	1,331	-	-
R-2001 Relocation Residential												
Relocation	1	-	15	1,435	23	2,392	22	3,827	26	3,048	4	110
Grand Total	5,593	745,516	6,230	1,183,443	6,882	1,702,245	7,110	2,602,584	7,333	2,049,097	1,117	195,049

Section 2.0 Family Homestead Initiative – Previous Actions and New Proposals

2.1 CURRENT AND PROPOSED ACTIONS TO STREAMLINE/SCALE SYSTEMS

Council requested staff streamline or scale systems for smaller residential projects, including a potential separate track or team focusing on Family Homestead Initiatives. The information below provides actions previously taken and new proposals to assist homeowners.

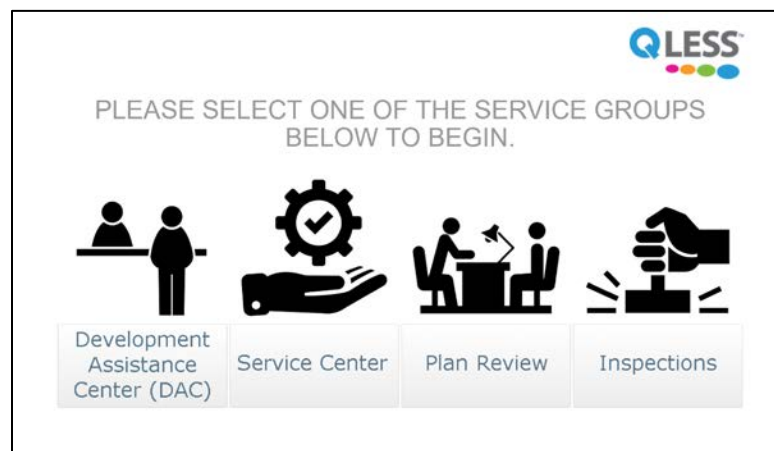
Previous Actions to Streamline and Scale Systems

DSD has completed other actions that have decreased wait time, reduced customer cost, improved communication, and improved customer's accessibility to services. The actions are in alignment with the Family Homestead Initiative, and the DSD staff culture is to continuously improve service delivery and lower cost to customers.

1. QLess Queuing System

The QLess system has reduced customer wait time by allowing customers who come in for permits to sign up remotely. Previously, customers needed to be on site in order to put themselves in the queue to be assisted. Not only was this an inconvenience, but customers waited hours before they could be assisted. QLess benefits include the following:

- Customer queues in using the QLess smart phone application or Internet. A customer can still join in person with a receptionist or self-serve kiosk available on the 1st and 2nd floors of One Texas Center.
- The customer is provided an estimated wait time for their service.
- The customer's name or last four digits of their phone number along with their expected wait time appears on the monitor marking their place in the queue
- If signed in on site, the customer then proceeds to wait in the lobby or elsewhere.
- If signed in remotely, the customer can wait offsite at home, work, or elsewhere then arrive to the lobby when their expected service time nears. The customer will receive updates on their mobile device regarding their status in line. The customer can utilize the QLess options from their mobile device to request more time, leave the line, or rejoin the line.



2. Online Permitting and Payments

Electrical, Mechanical, Plumbing, and Tree permits can now be applied for online, and customers can make online payments for these and other types of permits as well. Making permits and payments available online saves customers travel and lobby wait times. The greater number of transactions performed online also creates a staffing efficiency that has reduced the need for additional staffing in the Service Center despite continued increase in total annual permit transactions. As illustrated below, the total number of Trade Permits (electrical, mechanical, and plumbing) increased from 43,341 in FY 2013/14 to 49,827 in FY 2016/17, a 15% increase. However, during this same time period, online permit applications increased from 9.48% of total permits to 55.03%, which is a 5x increase. As DSD has increased the availability of permits online, more and more customers are utilizing this as a means to apply for permits rather than making an application on-site at the Service Center.

Similarly, online payments have increased significantly. For Fiscal Year 2014/15, 17.2% of payments were made online. This percentage has more than doubled since that time. For Fiscal Year 2016/17, 36.8% of payments were made online. For Fiscal Year 2017/18, 42.4% of payments have been made online, which demonstrates that customers are increasing their usage of online payment capabilities rather than making payment on-site at the Service Center.

Fiscal Year	# of Trade Permits			Percent to Total (# of Permits)		
	Online	Staff	Total	Online	Staff	Total
2013/14	4,107	39,234	43,341	9.48%	90.52%	100.00%
2014/15	10,009	33,779	43,788	22.86%	77.14%	100.00%
2015/16	17,665	29,523	47,188	37.44%	62.56%	100.00%
2016/17	27,419	22,408	49,827	55.03%	44.97%	100.00%

3. Electronic Plan Review

DSD has successfully launched electronic plan (ePlan) review for building plan applications and general permit applications. This new technology platform provides a convenient central hub to complete the entire plan review process online, from the initial application stage to final approved plan sets. ePlan Review will save customers time and money by reducing the need to file a plan review application on-site at One Texas Center and reducing the need to print multiple copies of required documents. Process efficiencies will be gained by electronic distribution of plans (versus manual distribution) and by collaboratively reviewing plans through this new platform. In 2017, 50 commercial plan, residential plan, and general permit applications were approved through ePlan Review.

4. Exempting Certain Residential Projects from Providing Structural Drawings

Certain home projects such as low, small decks, modification to existing structures 10 years or older, garage conversions, and non-habitable accessory structures less than 500 square feet go through the standard residential plan review. As part of the standard review, a structural drawing is mandatory, which requires a preparation cost on the part of the applicant.

DSD has exempted low, small decks, modification to existing structures 10 years or older, garage conversions, and non-habitable accessory structures less than 500 square feet from having to submit structural drawings. This exemption saves the homeowner/applicant time and money associated with the change.

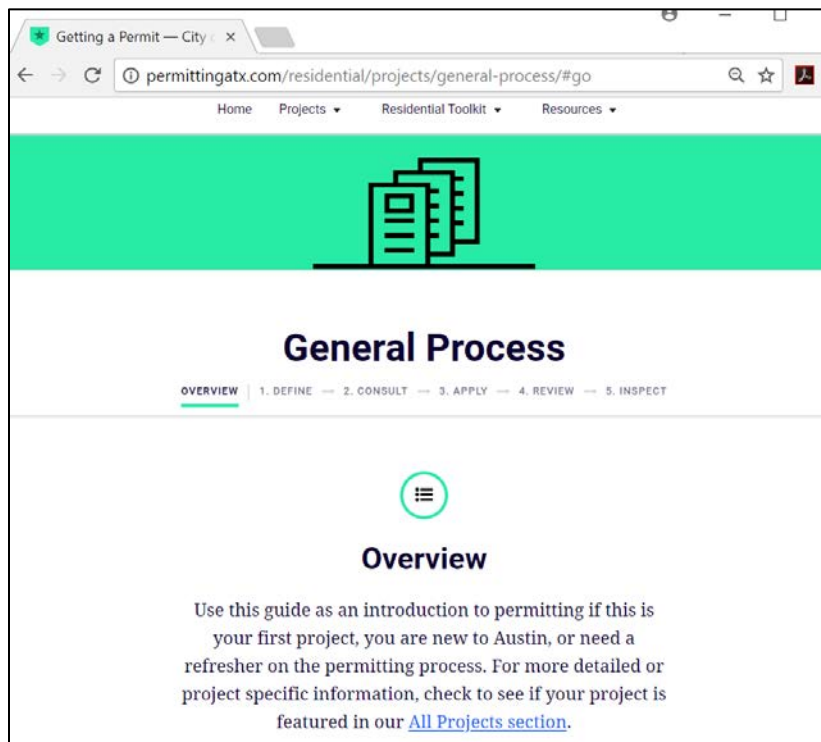
5. Expanding Call Answering Times for the DSD Main Customer Line (512-978-4000)

DSD and 3-1-1 are well underway with transitioning the DSD Main Customer Line call answering to 3-1-1 as part of a contract for services initiated this fiscal year. There are approximately 7,000 incoming calls per month to the Main Customer Line. Utilizing 3-1-1 will increase DSD's call answer rate from 75% to 100% with 3-1-1 Ambassadors answering the phone line 24 hours a day, 7 days a week. Currently, the DSD Main Customer Line is answered Monday-Friday from 8am to 5pm.

From a customer perspective, all calls will be answered regardless of time and regardless of day of the week. As an example, a homeowner at Lowe's on Saturday at 2pm wondering what type of permit is needed to replace a water heater can call the Main Customer Line and pose this question. By virtue of scripts developed with DSD staff, 3-1-1 Ambassadors will have answers to most frequently asked questions such as water heater permits required.

6. PermittingATX.com

In August 2016, the Development Services Department and the Office of Innovation initiated a partnership to design a navigation tool to help residents with understanding the permitting process for the most frequent types of permits. The partnership, dubbed the Permitting Initiative, culminated in the creation of a residential permitting website (PermittingATX.com) that was launched in August 2017. The website provides a simplistic, guided walk through of the permitting process. The interactive tool allows a customer to “click through” the General Process steps involved in permitting. Along the way, a customer is provided additional information such as work exempted from permitting, common zoning regulations, information on protected trees, how to sign up for free consultation, how to submit and application and the required documentation, and how to schedule inspections.



Thus far, the analytics (shown below) of the navigation tool have shown the following:

- Usage has increased from the initial launch period by 150%
- Users are staying on the site and not leaving it immediately as indicated by the low bounce rate
- Duration time is down, and this metric will continue to be monitored

Time Period	Number of Unique Visitors	Total Number of Sessions	Bounce Rate	Duration
Oct-Dec 2017	1,033	1,467	1.50%	3 minutes, 5 seconds
Jan-Mar 2018	2,552	3,192	0.22%	2 minutes, 32 seconds

7. Reorganized Residential Plan Review Webpage

DSD reorganized the department web pages related to [Residential Plan Review](#). The goal was to provide a consolidated source of data for homeowners that contains all relevant information for residential projects. The website was improved for the following:

- Dynamic links are used to direct customers directly to various City Code and Regulations.
- Handouts were created and provided online which include the most frequently needed building code requirements.
- A plan review checklist was provided which lists items that will be needed to review the project.
- As seen in the graphic below, a link to the PermittingATX.com navigation tool and the QLess sign in system were inserted as a prominent feature on the Residential Plan Review webpage.

Residential Plan Review | x

austintexas.gov/page/residential-building-review

Residential Plan Review

Demolition / Relocation

NEW CUSTOMER SERVICE PROCESS

VIRTUAL CHECK IN

CLICK HERE SAVE TIME

Residential permitting process

Learn about common projects that require permits.

Development Services Department

RESIDENTIAL PLAN REVIEW

The Residential Plan Review Division reviews new construction, additions, interior remodeling and demolition of single-family, duplex or two family houses and/or accessory buildings on one lot. Residential construction projects are reviewed for compliance with Chapter 25-2 of the Land Development Code, the 2015 International Residential Code, and Chapter 25-12, Technical Codes (local amendments).

Depending on the type of construction and location, residential plans may also be reviewed for compliance with the following applicable regulations:

- **Residential Design and Compatibility Standards (McMansion Ordinance)**
These regulations were adopted to protect the character of Austin's older neighborhoods.
- **Zoning and Overlays**
Check the zoning to determine if the property is within a zoning district that allows for that use.
- **Tree Ordinance compliance**
View submittal requirements and application instructions
- **Neighborhood Plan compliance**
Check if the property is located within a Neighborhood Planning area.
- **Conservation Corridor District compliance**
Check to see if the property is within an approved district.
- **Subdivision plat / Legal Lot Status**
If the project is on a tract of land that is not platted in a subdivision filed on record with the City of Austin, the applicant will be directed to the Development Assistance Center to determine if the project qualifies for a platting exception.
- **Floodplain proximity**
Projects within 100' of the 100-year floodplain will require additional floodplain review.
- **Historic applicability**
Any structures 40 years old or older will be forwarded for review by the Historic Preservation Office.
- **Hazardous Pipeline Applicability**
- **Drainage Review requirements for South Lamar Area**

Residential Review Requirements

- View the submittal requirements for new construction and Visitability Ordinance requirements.
- Visitability Plan Example
- Visitability Exterior Route Waiver Request Example
- Building Technical Review Handout - Provides code requirements for residential structures.
- Residential Technical Review Checklist - for use as a reference tool for frequently overlooked code requirements.
- Demolition and Relocation Requirements

Before submitting an application:

- Separate permits are required for plumbing, mechanical (air conditioning and heating), and electrical work.
- All necessary forms and documents must be submitted with each application.
- Relocation and demolition applications are forwarded to the Historic Preservation Office for review of historic applicability if the structure is over 40 years old.
- All expired permits must be resolved. [Click here to view permit history](#) (complete "Search by Property" fields and date range.)
- View Residential Building Review applications and checklists.

Express Permits - Same Day Service

Certain projects qualify for an Express permit provided there are no unresolved issues. [View a list of projects that qualify as Express projects.](#)

An Express Permit application may be submitted in person during Walk-In Hours (see below), or via email at pdrexpresspermits@austintexas.gov. Please allow 3-5 business days for processing if submitted via e-mail.

Small Projects - Reduced Plan Review Fee

The following application types will be billed at the Small Projects Plan Review rate as per the adopted [fee schedule](#):

- Residential Interior Remodel Permit Application
- Residential Fence Permit Application
- Amnesty Certificate of Occupancy Application

8. Shifting Volume Builder Applications to a Third-Party Service to Create Staff Efficiencies

DSD Residential Review staff receive applications from a variety of customers, including homeowners, agents, house flippers, and volume builders. It is a common occurrence for volume builders to submit plans for 300+ homes, resulting in substantial staff time being spent in this area. DSD is in the process of shifting the Volume Builder application reviews to a third-party service. The funding and contract for this service were approved by City Council. By shifting this workload to a third-party service, DSD Residential Review staff can focus more attention on infill construction, including homeowner projects. This new model of doing business has the additional benefit of improving the timeliness of Volume Builder applications.

9. Residential Express Permits

A Residential Express Permit is issued when the scope of work doesn't change the home's footprint or doesn't require demolition of walls. If the scope of work exceeds that allowed by a Residential Express Permit, a customer will need to submit a Residential New Construction and Addition Application which is processed through the standard residential review process.

The cost of a Residential Express Permit (including building inspection fees) is \$118 for FY 2017/18, which is a \$97 decrease from FY 2016/17. A customer can apply in person for a Residential Express Permit and receive the permit the same day provided the project qualifies. A customer can also email an application and receive a permit in 3-5 business days.

By creating this scaled down list of common homeowner projects, DSD has saved homeowners the time and money associated with going through the standard residential review process. The following list of projects qualify for a Residential Express Permit.

- Replacing windows (size for size)
- Replacing exterior doors (size for size)
- Adding / removing siding
- Adding / removing brick
- Adding / removing insulation
- Repairing a roof to the extent of replacing decking boards
- Repairing foundation without increasing impervious cover
- Bathroom remodel (tub / shower conversions) & kitchen remodel
 - Only tub / shower / sink surround drywall can be removed
 - Walls cannot be relocated or removed
 - Plumbing fixtures cannot be relocated or added
- Interior non-structural exploratory
 - Remove drywall / insulation only for purposes of structural observation or evaluation
 - Smoke detectors and co alarms must be to code
- Drywall repair only
 - Repair in excess of 32 square feet
 - Smoke detectors and Carbon Monoxide alarms must meet code requirements

10. Homestead Permit for Certain Electrical, Mechanical, and Plumbing Work

A person who is not licensed to perform electrical, mechanical and plumbing work may perform this specialized type of work within a residence and on property owned by the person provided certain requirements are met. In order to qualify for a Homestead Permit, a resident must provide a homestead exemption filed with Travis Central Appraisal District.

The premise for developing a Homestead Permit is to allow homeowners the ability to save money associated with contracting out this work. Most projects include specialized work like changes to electrical wiring, plumbing, or heating and cooling. Licensed professionals do this work because of the specialized nature and the potential for life safety concerns. The Homeowner assumes all liability for the work performed.

The main eligibility requirements for a Homestead Permit are as follows:

- The homeowner is responsible for the work performed and is required to request inspections through DSD's automated inspection request system.
- The residence is the person's homestead and principal residence.
- The work does not include electrical, mechanical and plumbing work that involves (a) the main electric service; (b) reclaiming and charging a ducted heating and air-conditioning system containing refrigerant; (c) natural gas plumbing systems, liquefied petroleum plumbing systems and auxiliary water system.
- The person has not secured a homestead permit for another residence within the prior 12-month period.
- The person must have owned and occupied the property as of January 1st of the tax year in which the person applies for a homestead permit.
- A person must apply for a homestead permit in person and must file an affidavit stating that the location at which the work is to be done is the person's homestead.
- A person may not transfer a permit to another person.
- A homestead permit will not be issued for electrical, mechanical and plumbing work on a mobile home, modular or manufactured home unless the homeowner owns the land on which the mobile, modular or manufactured home is located. A homestead permit shall not be issued if the mobile, modular or manufacture home is located in a mobile home park, mobile home community or other commercial premises.

By comparison, the City of San Antonio does not allow a homeowner to perform electrical or mechanical work on the person's homestead. Rather, the City of San Antonio only allows a Homestead Permit for plumbing work.

11. Small Projects Plan Review Fee Category

DSD has developed a new fee structure category that reduces fees for certain residential projects. Staff identified common residential projects that take one-half an hour or less to review and removed these projects from the standard residential plan review category. The following four (4) project types are within the Small Projects Plan Review Fee Category:

- Fences (Greater than 8 feet tall)
- Interior remodels
- Garage/carport/porch conversions
- Amnesty Certificates of Occupancy

This new fee category for Small Projects was approved by Council as part of the FY 2017/18 DSD Fee Schedule. With the exception of Garage/carport/porch conversion projects, the permit fees associated with these project types decreased from FY 2016/17 as illustrated in above.

12. Expanded List of Residential Repair Work that is Exempt from Permits

The International Code Council (ICC) develops codes and standards for safe construction through various committees and member seminars. The International Residential Code (IRC) is one of the codes published by the ICC, and it is revised every three (3) years. DSD is an ICC member, and DSD staff participate in the code development process. When it is time to update the IRC, DSD staff proposes local amendments to the IRC which customizes the IRC for the Austin community. Within this list of amendments, DSD includes a recommendation of residential repairs/minor projects that should be exempt from permitting requirements. The premise for developing the exemption list is that the residential repairs/minor projects are minimal in nature and do not pose a life safety concern. The result is that homeowners save time and money by not being required to obtain a permit. This also creates a staffing efficiency by reducing the number of permit applications reviewed for projects of this type. In April 2017, City Council adopted the 2015 IRC which included DSD's recommendation for expanding the list of residential repairs that are exempt from permits.

The current work exempt from permitting is as follows:

Building
<ul style="list-style-type: none">• A one-story detached accessory structure that is no more than 200 square feet (18.58 m²) of floor area, no more than 15 feet (4572 mm) in height, does not create a dwelling, contains no plumbing, and is not located within a flood hazard area.• Unless located within a flood hazard area, a fence that is not over 8 feet (2438 mm) high. <i>(Previously 6 feet.)</i>• Unless supporting a surcharge or located within a flood hazard, a retaining wall that is not over 4 feet (1219 mm) in height measured from the bottom of the footing to the top of the wall.• A water tank that is supported directly upon grade if the tank's capacity does not exceed 5,000 gallons and the ratio of height to diameter or width does not exceed 2 to 1, and the tank is not located within a flood hazard area.• A sidewalk or driveway that is not located in the public right-of-way. <i>(Previously sidewalks 30" above grade or above a basement required a permit.)</i>• Painting, papering, tiling, carpeting, cabinets, counter tops, and similar work.• A swimming pool that is prefabricated and less than 24 inches (610 mm) deep.• Playground equipment, including a swing.• A window awning that does not project more than 54 inches (1372 mm) from the exterior wall and the only required support is the exterior wall.

- A deck that is no more than 200 square feet (18.58 m²) in area, is no more than 30 inches (762 mm) above grade at any point, is not attached to a dwelling, does not provide egress from the dwelling, and is not located within a flood hazard area.
- A gypsum board repair that does not exceed 64 square feet, is not part of a fire resistance rated construction assembly, a shear-wall assembly, or a tub and shower surround. *(Previously 32 square feet.)*
- Asphalt shingles that replace existing asphalt shingles.
- A foundation repair that does not exceed 64 square feet. *(New exemption.)*
- A floor decking repair that does not exceed 64 square feet. *(New exemption.)*
- A non-structural exterior deck repair that is limited to the existing deck boards and does not include guardrails or handrails. *(New exemption.)*
- Repairing or replacing exterior trim components including wood fascia, trim, and soffits. *(New exemption.)*
- Siding that does not exceed 64 square feet and is not part of a fire-resistance rated assembly.
- Roof decking that does not exceed 64 square feet. *(New exemption.)*
- Replacing or installing an overhead garage door on a garage. *(New exemption.)*
- Other work as determined by the building official. *(New exemption.)*

Mechanical

- A portable heating appliance.
- A portable ventilation appliance.
- A portable cooling unit.
- A steam, hot- or chilled-water pipe within heating or cooling equipment regulated by the Residential Code.
- Replacing a minor part of equipment that does not alter its approval or make it unsafe.
- A portable evaporative cooler.
- A self-contained refrigeration system that contains 10 pounds (4.54 kg) or less of refrigerant or that is actuated by motors of 1 horsepower (746 W) or less.
- A portable-fuel-cell appliance that is not connected to a fixed pipe system and is not interconnected to a power grid.
- Replacing three or fewer supply and return duct runs.
- Replacing an exhaust or dryer duct run measuring less than 15 feet (4572 mm) in length. *(New exemption.)*

Plumbing

- Work required to stop a leak in a drain, soil, waste, or vent pipe if it is not necessary to remove and replace a defective concealed trap, drain, pipe, solid, waste, or vent pipe with new device;
- Work required to clear a stoppage, including removing and reinstalling a water closet or to repair a leak in a pipe, valve, or fixture if the repair does not involve or require the valves, pipes, or drains be replaced or rearranged;
- Work required to repair or replace fixtures and to replace exposed traps, continuous waste piping, fixture supply valves, or faucets if the work does not involve other city departments or inspections from other trades.

Electrical

A permit is not required:

- to replace an approved cable or cord and plug connected motor or portable appliance;
- to replace components of approved equipment or to a fixed approved appliance of same type and rating, in the same location;
- to install temporary holiday decorative lighting;
- when the maximum voltage is 480 and the maximum ampacity is 30, to replace a snap, single, three-way, or four-way or dimmer switch, receptacle, ceiling paddle fan, or luminaire;

- to reinstall a receptacle with a ground-fault circuit interrupter receptacle, a tamper-resistance receptacle, an arc-fault circuit interrupter receptacle, or weather-resistance receptacle;
- when the service will not be de-energized, to replace an overcurrent protection device or fuse of same voltage and amperage and in the same location;
- to repair or replace an electrode or transformer of the same size and capacity for a sign or gas tube system;
- to replace insulating material to a splice;
- to remove electrical and communication wiring;
- to install temporary wiring for experimental purposes in a suitable experimental laboratory;
- to install wiring for a temporary theater, motion picture, or television stage set;
- to install or repair an electrical device, appliance, apparatus, equipment, or electrical wiring operating at less than 25 volts and not capable of supplying more than 50 watts of energy;
- to install or repair a low-energy power, control and signal circuit of Class II or Class III as defined in the 2017 Electrical Code;
- for the following activities, if performed in connection with the transmission of electrical energy: to install, alter, or repair electrical wiring, apparatus, equipment, or the generation, transmission, distribution, or metering of electrical energy;
- to operate signals or to transmit intelligence by a public or private utility in the exercise of its function as a serving utility; or
- except for activities related to electrical service, for electrical work in a building or structure owned and occupied by the State of Texas or the federal government.

For comparison purposes, below is a screenshot of the City of San Antonio list of projects that are exempt from permitting.

The screenshot shows a web browser window with the address bar displaying www.sanantonio.gov/DSD/Constructing/Residential/No-Permit. The browser's address bar also shows several open tabs: "No Permit Required List", "Apps", "AustinTexas.gov", "COA SharePoint Sites", "DSD Director's Share", "SEEN", "HR Portal", and "CitySpace".

The webpage header features the City of San Antonio logo and navigation buttons for **RESIDENTS**, **VISITORS**, **BUSINESS**, **YOUR GOVERNMENT**, and **GET CONNECTED**. Below the header, the page title is **DEVELOPMENT SERVICES**, and the breadcrumb trail reads: [sa.Gov Home](#) > [DSD](#) > [Constructing in San Antonio](#) > [Residential](#) > [No Permit Required List](#).

NO PERMIT REQUIRED LIST

DEVELOPMENT SERVICES HOME

ABOUT >

BOARDS AND COMMISSIONS >

BUILDSA

BUSINESS OWNERS >

CONSTRUCTING IN SAN ANTONIO >

CONTRACTOR REGISTRATION & LICENSING

CODE ENFORCEMENT >

RESOURCES >

ONLINE SERVICES >

SA.GOV RELATED SITES

FIRE MARSHAL

OFFICE OF HISTORIC PRESERVATION

STORM WATER

NO PERMIT REQUIRED

The following list of construction or remodeling projects typically do not require a permit.

- One-story detached accessory structures used as tool and storage sheds, playhouses and similar uses, provided the floor area does not exceed 300 sq.ft.
- Cabinets & counter tops
- Carpeting and wood/laminate flooring
- Painting, plastering, repairing of sheet rock, wallpapering and tiling
- Retaining walls less than 4 ft. (See [IB 171](#) for specific requirements)
- Sidewalks and driveways inside your property line
- Swings and playground equipment
- Window repair (replacing of broken glass only)
- Replacing of existing doors on current hinges
- Replacing of new siding over existing siding

While the above list may not require our department's services, if your property is located in a Historic, Neighborhood Conservation or Corridor District, there may be restrictions on the design and materials used. For more information, please call 210.207.1111.

13. Quick Turnaround for Interior Remodel Projects of Three-Unit Residential Structures

For interior remodel projects of three-unit residential structures, DSD offers the Quick Turnaround program. The program allows for same day or next day, low cost permits for interior remodels. The plan review fee associated with this program and project type is currently \$68.

14. Free Consultation Services for Residents

DSD offers free 20 minute in-person consultations for residents who have general questions about their project. A total of 12 hours per week of consultation is provided by the Residential Review team. The consultation saves time and helps make the permitting process easier. There are two ways residents can sign up for an in-person consultation:

- In-person at the QLess Kiosk, or
- Remotely using the QLess website or mobile device application.

DSD provides a Project Scoping sheet online for customers to complete prior to the consultation. The information on the Project Scoping sheet asks pertinent questions about the property and project that allows the reviewer to assess what type of permits are needed for project. The following are examples of questions in the Project Scoping sheet:

- What is the address of the property you are working on?
- Will you move or demolish any interior or exterior walls?
- Will you need to replace or change your roof?
- Will you add to or remove any square footage from your home or property?
- Will you increase your home's square footage by fifty percent or more?
- Will you demolish or change any existing property features such as a patio, a driveway, or a walkway?
- Will you change or add electrical wiring, plumbing, or a heating and cooling system?
- Will you make any cosmetic changes that would require a Residential Express Permit?
- Do you have any trees larger than 19 inches in diameter on your property?
- Is your home more than 40 years old?

DSD also provides the ability for customers to request a Preliminary Plan Review meeting. The purpose of the meeting is for the customer and staff to discuss applicable codes requirements prior to the customer completing the project design. A preliminary plan review meeting cost \$136 per hour, per discipline (example: building, arborist, zoning).

The actions listed above are pertinent to the Family Homestead Initiative; however, they do not represent all actions to streamline and scale systems. Other actions not listed in this report include the following:

- Revise, standardize, and publicize all plan review applications and create fillable forms
- Consolidate the residential plan and tree plan applications
- Implement an Expedited Building Plan Review Program for residential and commercial projects

New Proposals to Streamline and Scale Systems

15. CodeNEXT Missing Middle Proposal

Very few small, multi-family projects (3 to 6 units) are proposed or submitted for review due to the development cost required to meet full site plan requirements and the time associated with a full site plan process. The development costs reportedly make this type of project economically unfeasible.

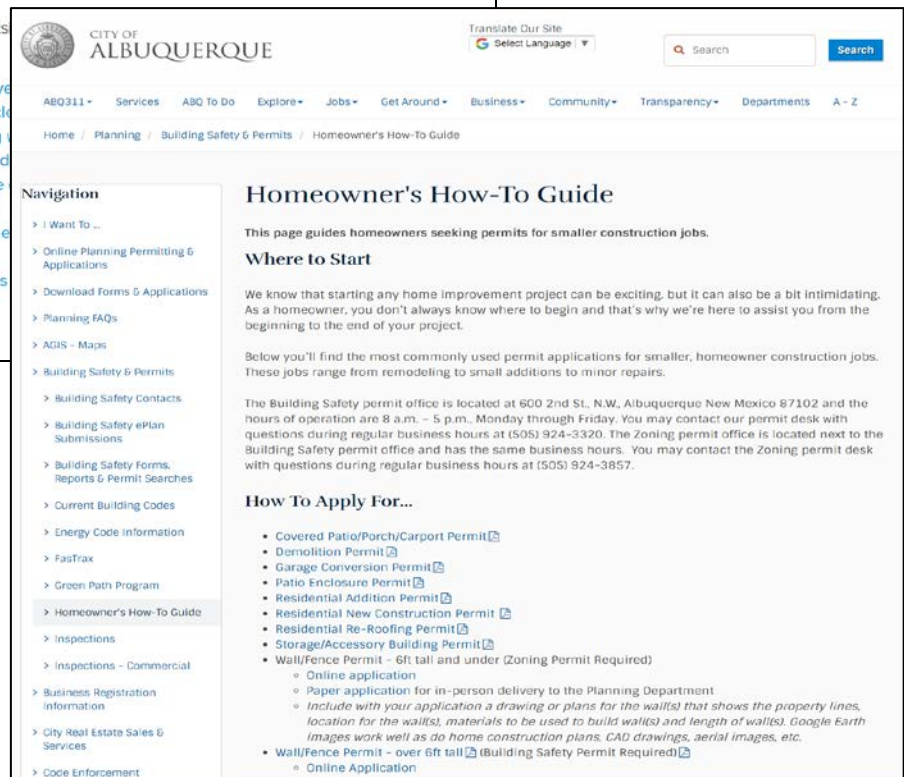
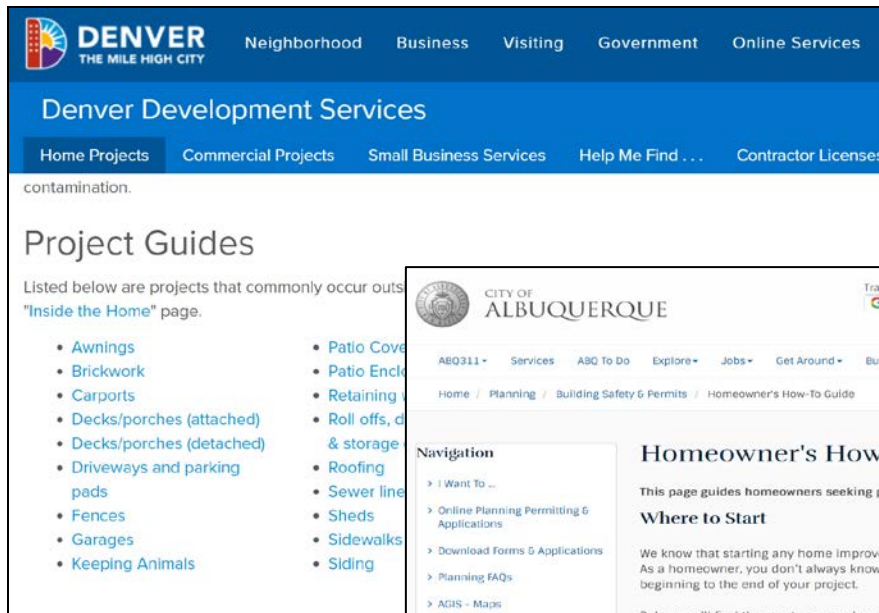
This CodeNEXT proposal will create a new, scaled and streamlined permit process for 3 to 6 unit development on residentially-platted lots. Qualifying projects will not be required to submit a full site plan but must be located outside the Barton Springs Zone, cannot exceed 45% impervious cover, and cannot require a Land Use Commission variance. Engineered plans will be required to demonstrate compliance with Austin Water, Fire, and Transportation related requirements. This proposal can lead to a diversification of housing types while maintaining impervious cover and resulting environmental and drainage impacts at current levels. These types of projects will be reviewed for compliance with the following requirements:

- Zoning impervious cover limits and all other applicable zoning regulations
- Engineer's certification that any drainage changes will not negatively impact adjacent properties, if the construction, remodel, or expansion is larger than 300 square feet and is located on an unplatted tract or within a subdivision approved more than 5 years previously
- 100-year floodplain regulations
- Erosion hazard zone regulations
- Creek buffers based on subdivision date and within 75 feet of the shoreline of Lake Austin.
- Construction on slopes requirements, for properties subdivided on or after May 18, 1986 (except Urban watersheds)
- Cut/fill limits (except Urban watersheds)
- Erosion and sedimentation controls
- Tree protections
- Applicable restrictions from plat note or restrictive covenant
- Scaled tree mitigation rates (when project is SMART Housing certified)
- Scaled Austin Energy requirements

16. Helpful How-To Permitting Guides for Common Home Projects

Depending upon the complexity of a home project, the permit requirements and inspection process will vary. As a homeowner not versed in construction, a home improvement project can be daunting by itself. As a homeowner not versed in City codes and regulations, it is also difficult to know where to begin. The How-To Permitting Guides will provide beginning-to-end information for homeowner projects.

At the beginning of a project, helpful guides can lay the foundation for the process, what to expect, how to apply for permits, and how to pass inspections. DSD will be developing How-To Permitting Guides for Common Home Projects; however, the guides will not be developed until after CodeNEXT is adopted. If the guides were developed now, they would reference citations from current code, which will change under CodeNEXT. It is envisioned that the How-To Permitting Guides would be available online, in print, and in multiple languages. Below are examples of online guides from Denver and Albuquerque.



17. Homeowner's Ombudsperson Program

DSD will develop a proposal for a Homeowner's Ombudsperson Program within the Development Assistance Center. Modeled after the Washington, D.C. Homeowner's Assistance Center, the program will be devoted to helping homeowners get building permits for home improvement projects.

Unlike the free 20 minute consultation service described above, this program will provide continuous support and resources to homeowners including providing general information about permit regulations and procedures; explaining application requirements for projects; and serving as an ombudsperson for issues encountered during plan review and inspections.

18. Homeowner's Expansion/Remodeling Permit Payment Assistance Program

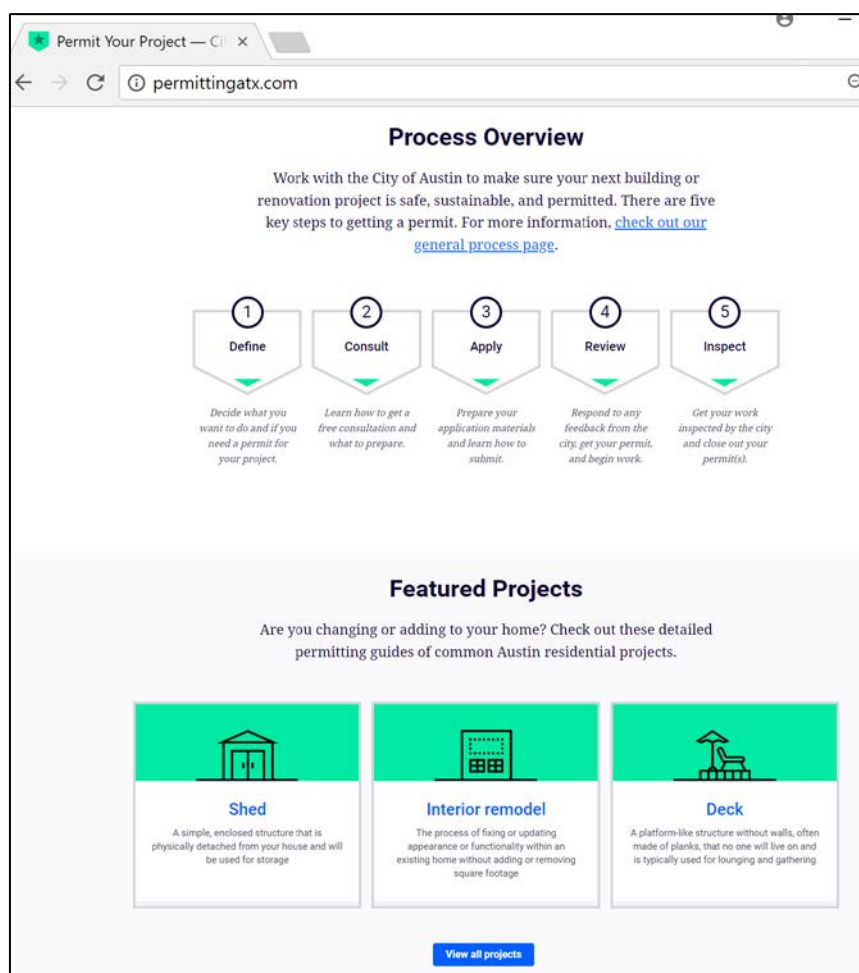
Similar to grant programs that assist homeowner's with the cost of making needed home repairs, this program would assist homeowner's with paying permit fees for expanding/remodeling a homestead. DSD will seek stakeholder input to develop criteria for the program. A funding source has not been identified and would be needed to financially support the program.

2.2 WRITTEN GUIDANCE FOR PERMITTING REQUIREMENTS AND FEES

Council requested written guidance for the requirements and fees related to expanding or remodeling a single-family structure or constructing a secondary dwelling unit.

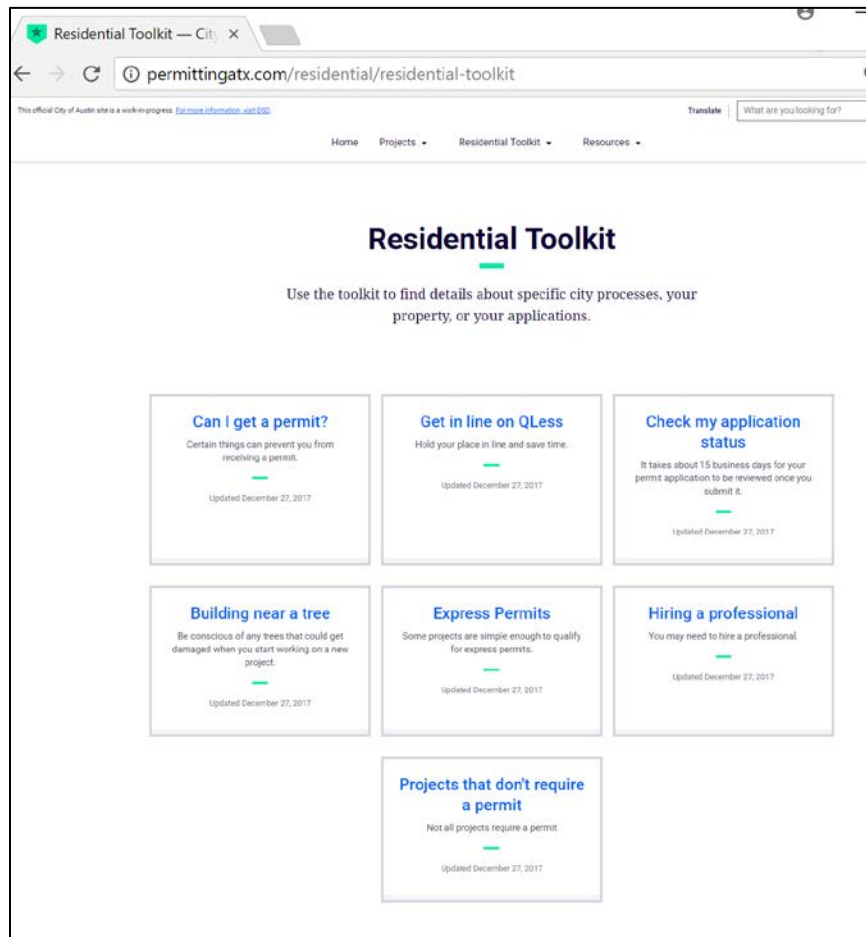
PermittingATX.com

In August 2016, the Development Services Department and the Office of Innovation initiated a partnership to design a navigation tool to help residents with understanding the permitting process for the most frequent types of permits. The partnership, dubbed the Permitting Initiative, culminated in the creation of a residential permitting website (PermittingATX.com) that was launched in August 2017. The website provides simplistic guidance for homeowners seeking permits for interior remodels, sheds, and decks.



The new tool was developed following many interview sessions with staff, customers, and other users. The outcome is that staff and customers are able to communicate more effectively. The permitting process for the three areas notes above are synthesized into easy to understand terms, and customers are better prepared when entering the permitting process.

The website includes a Residential Tool Kit which provides valuable information such as information on impervious cover, building near a tree, projects that qualify for an Express Permit, and projects that don't require a permit.



DSD plans to expand upon the Featured Projects within PermittingATX.com so that more written guidance can be provided for other frequent residential permit types.

2.3 CODE PROVISIONS RELATING TO PERMITTING DETERMINATIONS MADE IN ERROR

Council requested staff to explore options to address permitting determinations that are made in error related to expanding or remodeling single-family structures or constructing secondary dwelling units.

The charge of staff is to ensure that all projects comply with all City Council adopted codes and ordinances. With regard to zoning regulations, errors must be corrected. Where codes and ordinances are either unclear or conflicting, staff endeavors to ensure that projects meet the intent of the code. The LDC provides the following guidance when errors in permitting are made:

§ 25-1-411 - SUSPENSION OF A PERMIT OR LICENSE

(A) The accountable official may suspend a permit or license if the official determines that:

- (1) The permit or license was issued in error; or
- (2) The permit or license holder has not complied with the requirements of this title.

(B) A suspension is effective until the official determines that the permit holder has complied with the requirements of this title.

§ 25-11-66 - ERRORS IN PERMIT SUPPORT DOCUMENTS

If the building official discovers an error in the plans, specifications, or other data submitted in support of a permit application, the building official may:

- (1) Require an applicant to correct the error; and
- (2) Stop building operations at the site if the error results in a violation of City regulations.

The Technical Codes allow for greater discretionary authority for the Building Official than does the LDC by allowing the Building Official to review and accept Alternate Methods of Compliance and Modifications to the adopted Technical Codes. The alternate methods must achieve the same desired result and meet the intent of the Technical Code. This flexibility is needed as the construction industry is always evolving and new products and methods enter the market before they can be vetted thru the Technical Code development process.

2015 International Building Code:

[A] 105.4 Validity of permit.

The issuance or granting of a permit shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of this code or of any other ordinance of the jurisdiction. Permits presuming to give authority to violate or cancel the provisions of this code or other ordinances of the jurisdiction shall not be valid. The issuance of a permit based on construction documents and other data shall not prevent the building official from requiring the correction of errors in the construction documents and other data. The building official is authorized to prevent occupancy or use of a structure where in violation of this code or of any other ordinances of this jurisdiction.

2015 International Residential Code:

R105.4 Validity of permit.

The issuance or granting of a permit shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of this code or of any other ordinance of the jurisdiction. Permits presuming to give authority to violate or cancel the provisions of this code or other ordinances of the jurisdiction shall not be valid. The issuance of a permit based on construction documents and other data shall not prevent the building official from requiring the correction of errors in the construction documents and other data. The building official is authorized to prevent occupancy or use of a structure where in violation of this code or of any other ordinances of this jurisdiction.

Staff has sufficient flexibility within the LDC and Technical Codes to address errors in permitting and does not recommend any changes to the LDC nor Technical Codes.

2.4 WRITTEN GUIDANCE IN THE EVENT OF A CONFLICT IN THE PERMITTING PROCESS

Council requested staff explore options where the written guidance controls in the event of a conflict in the permitting process.

In consultation with the Legal Department, written guidance cannot supersede City Code, specifically the LDC. Section 25-1-3(A) promulgates that the LDC requirements control over other ordinances, rules, or regulations. And because written guidance is not an ordinance, the written guidance could not serve to amend the LDC per Section 2-5-1 below.

§ 25-1-3 - CONFLICTS

(A) Requirements of this title are cumulative of requirements that are imposed by other ordinances, rules, or regulations, or by private easements, covenants, restrictions, or agreements. If a conflict occurs, the requirements of this title control.

§ 2-5-1 - FORM OF COUNCIL ACTION

(C) Except as provided in the Code, the council must adopt an ordinance to amend an action originally adopted by ordinance.

Staff does not propose the use of written guidance to control in the event of conflicts.

Section 3.0 Next Steps

3.1 NEW PROPOSALS TO BE PRESENTED TO CITY COUNCIL

In accordance with the Council Resolution, staff will develop a presentation for Family Homestead Initiative proposals contained in this report. The following proposals will be presented:

- CodeNEXT Missing Middle Proposal
- How-to Permitting Guides for Common Home Projects
- Homeowner's Ombudsperson Program
- Homeowner Expansion/Remodeling Permit Assistance Program

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Section 4.0 Regulations

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CITY OF AUSTIN

Development Services Department

One Texas Center | Phone: 512.978.4000

505 Barton Springs Road, Austin, Texas 78704

Consolidated Site Plan Overview and Review Procedures Administrative and Land Use Commission (C Plan)

The following information provides General Information and a summary of the Review Procedures to obtain a consolidated site plan permit within the City of Austin jurisdiction (full-purpose and limited-purpose city limits).

General Information

What Is a Site Plan?

Chapter 25-5-1 of the City of Austin Land Development Code (LDC) requires that a site plan be submitted, approved, and released before an applicant can develop or change the use of their property, or a building permit can be issued. A site plan illustrates the proposed development and its intended use within the context of the site. Existing conditions typically included in site plans are topography, watercourses, floodplains, significant vegetation, other environmental features, and any existing improvements on the site. Within this framework, a site plan illustrates the proposed development and provides details on features such as access, utilities, parking, landscaping, buffers, general architectural features, building footprint, and location of new structures.

What a Site Plan Is Not

A site plan is not a building permit and does not authorize the construction, demolition, or relocation of buildings. The applicant is responsible for requesting building, demolition, and relocation permits once the site plan is approved.

When Is a Project Exempt from the Site Plan Process?

Chapter 25-5-2 of the City Code specifies when a project can be exempt from site plan submittal. Generally, certain types of minor development that do not have a site plan already on file do not require formal site plan review. This includes construction of single-family and most duplex residences, and other types of development that increase impervious cover by 1,000 square feet or less, and have limits of construction of 3,000 square feet or less. This development must meet the requirements of Section 25-5-2, Site Plan Exemptions. A Site Development Determination form (formerly called an Exemption) should be completed and filed with the Development Assistance Center in order to request an exemption.

Who Approves Site Plan Permits?

Administrative Approval

If review by the Land Use Commission is not required, the Director of Development Services Department may approve the site plan administratively. Administrative site plans within the city limits that include building construction must be **consolidated**. A consolidated site plan consists of two major elements that are submitted and reviewed concurrently:

- The **Land Use Element** includes information on the land use, site design, and layout (such as building height, setbacks, density, and parking) and demonstrates compliance with zoning, site development, and transportation
- The **Construction Element** includes detailed information on the construction aspects of the site design (such as grading, detention, filtration, erosion/sedimentation controls, landscaping, and tree protection) and demonstrates compliance with drainage, water quality, and environmental regulations

Land Use Commission Approval

Approval of the land use element of the site plan is required by the Land Use Commission under Section 25-5-142 of the City Code for:

- Conditional Use Permits when required by Chapter 25-2, Subchapter C
- Construction of improvements within a 1000-foot Hill Country Roadway Corridor

Site plans requiring approval by the Land Use Commission can be either **consolidated** (as described above) or **non-consolidated**. A non-consolidated site plan consists of two separate submittals: One for the land use element and one for the construction element. With a non-consolidated submittal, approval of the land use element by the Land Use Commission may be obtained before the detailed engineering work required for the construction element is performed. **For a non-consolidated submittal, the Land Use Commission Site Plan Application and Non-Consolidated Site Plan Application should be used instead of the Consolidated Site Plan Application.** Once the land use element is approved by the Commission, the construction element may be reviewed and approved administratively, however, both the land use element and the construction element must be released concurrently.

Consolidated Site Plan Review Procedures

The procedures for review and approval of site plans are based on Volume III, Chapter 25 of the City of Austin Land Development Code (LDC). The process is summarized below:

Step 1: Development Assessment (Optional)

A person may request an assessment of a proposed development **prior** to formal submittal by contacting the Development Assistance Center (DAC). The assessment is based on the information provided by the applicant at the time that an assessment is requested. An assessment of the project includes applicable code requirements pertaining to the site and identification of major development issues. A Development Assessment Application (see <http://www.austintexas.gov/page/land-use-applications#site>) can be submitted any work day with an appointment to the Intake Office.

Contact:

City of Austin
Development Assistance Center
505 Barton Springs Road
Austin, Texas 78704
Phone: (512) 978-4000

Step 2: Completeness Check

In order to submit a site plan for review, an application for Completeness Check must be submitted to the **Intake** staff. No appointment is necessary. Intake reviews the application and pertinent information to determine if all required administrative items have been submitted. Intake then

forwards it to the completeness check team, which determines whether the technical items needed for review have been submitted.

An application for completeness check must include:

- Site Plan Application
- Site Plan Review - Completeness Check fee (check, cash, money order, or credit card): see <http://www.austintexas.gov/department/fees>
- 2 copies of Site Plan sealed by professional engineer and/or Landscape Architect, as required by state licensing regulations
- All Items listed on the completeness checklist, located in the Intake Office and available online at <http://www.austintexas.gov/page/land-use-applications#site>

The completeness check review takes a maximum of 10 business days from the date of submittal. The applicant will be notified via email or fax whether the application is approved or additional information is required for submittal. When the application is approved, the plans can be formally submitted for a detailed review. **The application must be submitted formally within 45 calendar days of the initial completeness check or it will expire and a new completeness check will be required.**

Contact:

City of Austin
Land Use Review – Intake Section
505 Barton Springs Road
Austin, Texas 78704
Phone: (512) 978-4000

Step 3: Formal Submittal Review Process

The next step is to submit the Consolidated Site Plan Application (Administrative and Land Use Commission) to Intake to start the review process. Electronic copies of the application are available online at <http://www.austintexas.gov/page/land-use-applications#site>.

Applications may be submitted to Intake Monday through Friday. **An appointment is necessary.** Please contact Intake at the number listed above to schedule an appointment. For submittal the applicant will need to provide additional copies of plans and engineering reports, along with the remaining balance of the fee (which will be listed on the completeness check response).

Electronic submittal of CADD files and other documents is also required for the initial submittal, as described in Exhibit VIII (Consolidated Site Plan Application Instructions). A final version of the plans and reports incorporating all changes made during the review process must be submitted electronically prior to release of the site plan.

A Case Manager with the Land Use Review Division is assigned to coordinate interdisciplinary reviews and provide guidance on code requirements and procedures. A review team is also assigned to the project. The team reviews the plans and prepares a Master Comment Report that contains specific areas of non-compliance. The initial review of the plans by the team can take up to 28 days from the date that the plans were formally submitted. If the site plan complies with the provisions of the code and other applicable state and federal regulations, and Commission approval is not required, the site plan will be approved administratively. The Master Comment Report can be viewed on the City of Austin website at <http://www.austintexas.gov/page/interactive-development-review-permitting-and-inspection>.

Step 4: Update

If it is determined that the site plan does not comply, the applicant must file an update in order to bring it into compliance. **Contact Intake staff to schedule an appointment and submit the update.** Staff reviews the updates within 14 days of receipt, and the Case Manager will issue additional Master Reports identifying remaining items to be addressed. Updates will be required until the site plan is in compliance or the site plan expires.

Updates to the plan must be filed by the applicant within 180 days after the site plan has been filed. An applicant can request an extension to the 180-day update period if the request is made prior to the 180-day deadline. The request must be made in writing and the reason for the extension should be specified. Extensions may be granted for good cause at the Director's discretion for up to 180 days. All comments must be cleared prior to the expiration date, or the application will expire and a new application must be submitted.

Step 5: Site Plan Approval and Release

Once all code requirements have been met, the Case Manager will notify the applicant that the site plan can be approved administratively or scheduled for Land Use Commission approval if necessary. If Commission approval is necessary, the Case Manager will inform you of the date and time of the public hearing. Commission-approved site plans may be appealed by the applicant or an interested party to the City Council. An appeal must be filed within 14 days of the Commission's action. If the plan is appealed, you will be notified of the date and time of the public hearing before the City Council.

Prior to release of the site plan, an original mylar copy of the plans must be provided that will be signed by the Case Manager and retained in the City's files. Copies of the mylar will be made for distribution to other City departments, and you may request additional copies to be made for your personal use for an additional fee. An electronic submittal of the final plan is also required, as described in Exhibit VIII (Consolidated Site Plan Application Instructions). A Site Development Permit will also be prepared to authorize site work on the property, except for work that requires a building, demolition, or relocation permit.

Prior to site plan approval all fees must be paid. Additional fees may include but are not limited to: Landscape Inspection, Parkland Dedication, Variance, Notification, Phasing Fee, and Fiscal Surety. The Case Manager will inform you of any required fees prior to preparing the Site Development Permit.

Once all fees have been paid, plans have been copied, and the appeal period has passed, you will be advised that the site plan has been released and will be told when you can pick up the approved plans and permit.

∞ COMPLETENESS CHECK REVIEW GUIDELINES ∞

Consolidated Site Plan

Site Plan Review

- Correct type of application for proposed project
- Summary letter included
- Commission approval required (CUP, HCR, East Austin Overlay)
- Zoning application needed (check conditional overlay)
- Legal description, and Land Status Report if applicable
- Legal description on plan matches tax certificate (unless tax exempt)
- Signature on application matches owner on tax certificate or warranty deed
- Boundary lines with bearings and dimensions
- All zoning districts on or near the site
- Existing land uses on adjoining tracts (& across street if compatibility)
- Site table indicating:
 - total area of site
 - FAR for each zoning district (except MF-1, MF-2, and MF-6)
 - impervious cover for each zoning district (sq. ft. and %)
 - building coverage for each zoning district (sq. ft. and %)
- Building table indicating:
 - proposed use and sq. ft. for each use
 - number of stories
 - actual height
 - total square footage for building
- Hill Country Roadway (if applicable):
 - slope map
 - table showing floor area & FAR by slope category (exc. SW Pkwy)
- Commercial Design Standards addressed
 - Correct roadway type
 - Building placement
 - Sidewalk layout correctly shown
 - Alternative equivalent compliance noted, if requested
- Compatibility elevations and cross-sections (if applicable)
- Demolitions referred to Historic Preservation Officer
- Airport Hazard Area
- Small project?
- Chapter 245 application included and signed
- Correct tax plats (not required for small projects) - current & to scale

Water Quality and Drainage Construction Review

- Engineer's seal (w/o qualifiers), signature & date on all unbound sheets & front page of bound documents containing engineering work
- Copy of recorded Final Plat (or concurrent submittal) or legal tract determination
- Engineer's project summary letter (signed, sealed and dated by P.E.)

Consolidated Site Plan continued

- Discussion of compliance with 2-year peak flow control and water quality requirements
- Provision (or copy of formal request to Watershed Engineering Division for RSMP or waiver) for flood control compliance
- Standard details from application packet
- Private and public roadways - layout and geometric data
- Floodplain delineations and drainage easements (or ROW) for fully developed condition flows
- Drainage area map (off-site and on-site) with flow patterns
- Drainage/2-year peak flow control/water quality study with hydrologic & hydraulic data for associated infrastructure
- Detailed drainage/2-year peak flow control/ water quality plan and physical data (existing and proposed) for associated infrastructure
- Access, operation and maintenance easements for flood, 2-year peak flow control and water quality controls
- Drainage layout map with drainage system layout
- Street and drainage plans with station and elevation
- Street and drainage profiles with support data
- Detention pond and standard details
- Applicable ECM R Table for water quality on water quality plan sheet

FEMA Floodplain Review

- Floodplain note on the cover page with correct FEMA FIRM Panel number and revision letter (suffix), as well as correct effective date
- Lowest Finished Floor Elevation (FFE) on all proposed structures in relation to Mean Sea Level (MSL) (regardless of whether or not proposed structure is in the floodplain) (see Building Criteria Manual Ch. 58, Art. 8, C. 1. A.)
- FEMA 100-year floodplain is clearly delineated
- Do the topographic lines indicate a defined channel on or near the site? If so, have they dedicated an easement (with easement document note) for this channel if the drainage area is less than 64 acres? If the drainage study is greater than 64 acres, have they provided a floodplain study?
- If there's parking in the fully developed 100-year floodplain, is the average depth less than eight inches and the greatest depth no more than twelve inches? (see DCM 25-7-95)
- No development in the fully developed 25-year floodplain (see DCM 25-7-92)

Environmental Review

- Chapter 245 determination
- Identify variances - 25-8-41, 42, 43
- Erosion sedimentation control plan – 25-8-181
- Tree protection plan – 25-8-604
- Tree Survey for trees over 8" – 25-8-181
- Slope map (except in urban watersheds) – 25-8-301
- Grading plan – 25-8-181
- Appendix Q1/Q2 – 25-8-62, 63

Consolidated Site Plan continued

- Critical Environmental Features identified – 25-8-281
- All trenching in the Recharge Zone that is greater than (5') five feet deep requires inspection by a geologist, per the Void and Water Flow Mitigation Rule
- Environmental Resource Inventory (if required by code) – 25-8-121
 - Add the ERI if any of the following conditions exist:
 - Over the recharge zone
 - Over the contributing zone
 - With a gradient of more than 15%
 - In a floodplain
 - In a CWQZ
 - In a WQTZ

Please provide an ERI that meets the criteria described in LDC 25-8-121 to 125 and ECM 1.3.0

- Engineer's report - Application
- Landscape plans, Appendix C, notes and details
- Plat notes – ECM Appendix P
- CWQZ/WQTZ and 100 year floodplains delineated – 25-8-92, 93
- Watershed status and standard notes - Application
- Restrictive covenants - Application
- Storm Water Pollution Prevention Plan (if over 1 acre LOC and if infrastructure is proposed) – ECM 1.4.0

Transportation Review

- Driveway spacing:
 - adjacent driveways within 200 ft.
 - offsets from opposing driveways (undivided streets only)
- Parking table:
 - proposed use and sq. ft.
 - # of required and provided parking spaces
- Parking spaces:
 - width, depth, and angle of stalls
 - aisle width
- ADA accessible routes, ramps, and parking spaces
- Existing right-of-way width
- TXDOT station numbers (if access is proposed to State highway)
- Sidewalks, deferral note, or waiver request (except on certain State highways where sidewalks are not required).
- Traffic Impact Analysis (TIA) determination form and a TIA (report and technical addendum), if required. **(See attachment at end of this document)**
- Identify the Principal Street by roadway type, including internal circulation routes

Austin Water Utility General Requirements

- Add a copy of the W/WW Service Extension Request to the cover sheet. A completed and signed SER is not necessary for completeness check. However, an application should have been submitted.
- Pressure Zone and Service Extension Number are required on cover sheet.

Consolidated Site Plan continued

- A general location map (Showing Grid number & Mapsco Page number)
- Standard and updated Austin Water Utility construction notes. (See attachment at end of this document)
- Size, pipe material and location of main with respect to the easements and rights-of way.
- Location, size and material of all existing water and wastewater mains, lines and services.
- Indicate wastewater flow direction on all plan views for both existing and proposed wastewater mains.
- Location, size and description of other utilities where they may conflict with water or wastewater mains or other service lines.
- If new force mains or lift stations are part of the plans, an additional set of the plans and an engineer's report, in accordance to chapter 217 of the TCEQ rules, shall be submitted to 625 E. 10th St., Suite 400, Austin, Texas. Review by the Facility Engineering Division will be concurrent to the Pipeline Engineering review.

AWU Water System Check List

All plan view drawings shall include all applicable items listed in the General Requirements above plus the following items.

- Stations of all proposed connections to existing or proposed water mains. Provide water ID numbers and water intersection numbers at all water connection points.
- Calculated design pressure at highest and lowest lot served and provide fire flow demand in gpm per the International Fire Code (Show information on Cover Sheet).
- Retaining walls, including geo-grid, straps, tie-backs and all other components.

All profile views shall be provided for all water mains (identify and public or private); it shall show all applicable items listed in the General Requirements plus the following items:

- The existing ground profile and proposed street finish grade or subgrade.
- Station numbers and elevations of all utility crossings.
- Identify pipe size, percent grade and pipe material to be used including ASTM and/or AWWA designation. If an alternate material is to be allowed, both should be listed (example "D.I. Class 350 or 250 or DR14 C900 PVC").
- Station numbers and elevations for starting points, ending points, point of intersection, grade breaks, valves, fire hydrants, air release valves, pressure/flow regulating valves and at intermediate points every 100 feet.
- Retaining walls, including geo-grid, straps, tie-backs and all other components.

AWU Wastewater System Check List

All plan view drawings shall include all applicable items listed in the General Requirements mentioned above plus the following items:

- Station numbers at all proposed connections to existing or proposed wastewater mains.
- Provide manhole ID numbers and profile numbers or City Job numbers at all wastewater connection points.
- The location, alignment and structural features of the wastewater main, including

Consolidated Site Plan continued

- manholes and concrete retards, if applicable.
- Station numbers for beginning points, ending points, manholes, clean-outs and other appurtenances.
- Location of all existing and proposed wastewater services, mains and manholes.
- Retaining walls, including geo-grid, straps, tie-backs and all other components.

A profile view shall be provided for all wastewater mains (identify and public or private) and shall include all applicable items listed in the general requirements above plus the following items:

- The existing ground profile and proposed street finish grade or subgrade or finished grade if not under pavement.
- Station numbers and elevations of all utility crossings.
- Identify the pipe size, percent grade and pipe material to be used including ASTM and/or AWWA designation. If an alternate material is to be allowed, both should be listed (example "DI class 350 or SDR 26 PVC").
- Station numbers and elevations for starting points, ending points, manholes, clean-outs and at intermediate points every 100 feet.
- Elevations shall be indicated on the profile showing the finish floor elevations of all existing structures. If the structure has an active septic tank or other disposal system, the flow line elevation of the plumbing where it exits from the structure is to be indicated.
- If a lot or tract is vacant, side shots may be required from the middle of each lot to ensure gravity service is possible from the lot to the main.
- Design flows, minimum and maximum, and flow velocities at minimum and maximum dry weather flows.
- Retaining walls, including geo-grid, straps, tie-backs and all other components.
- Culverts, bridges and other drainage structures.

Austin Energy

- Show standard Austin Energy notes (See attachment at end of this document)
- Show existing electric facilities

Right-of-Way Management

- Required TCP Details: Appropriate 804s series
- Lane Closures and Flagging
- Sidewalk affected
- Devices
 - Cones
 - Barricades
 - Signs
- Work area protection
 - Temporary Paving (1100s4 series)
 - Steel Plates (or backfill each day)
 - Fencing
 - Material and Equipment Storage
- Covered Walkways for all overhead activities
- Stabilized Const. Entrance

Consolidated Site Plan continued

- Detours
- General Notes

*If an engineered Traffic Control Plan (T.C.P.) is not provided, work specific details must be called out in the plan view.

- Other Considerations (FYI'S):
 - AULCC clearance for all utility extensions over 300' outside DAPCZ and over 25' in DAPCZ
 - Parking
 - Utilizing public parking (metered spaces)
 - Restoration
 - Asphalt/Pavement (1100s series details)
 - Sidewalk (sidewalk repair details)
 - Driveways (appropriate 400s series)
 - Curb Repair (appropriate 400s series)
 - Pipe installation and Trench Repair
 - Pavement Marking
- Show standard Austin Energy notes (See attachment at end of this document)

Characteristics of Permanent Encroachments

Cannot be removed within 90 days. Includes examples such as:

- Structural Improvements
- Parking Garages
- Enclosed Balconies
- Tunnels
- Sky Bridges
- Sub-surface facilities

Extension of superstructure. Includes examples such as:

- Cantilevered balcony
- Cantilevered walkway cover
- Cantilevered enclosed space
- Basements

** does not include "Juliet Balconies", which are bolted into the side of a building and can be removed. However, removal of these requires subsequent safety remediation.*

Removal of improvement conflicts with code or other regulatory requirement

- Handicap Ramps
- Stairs
- Fire Escapes (if the escape provides the only secondary means of egress)
- Building access features (if the removal of the feature would impair building access, or create a code or safety violation).

Consolidated Site Plan continued

- Any improvement which prohibits future utility placement
- Private force mains
- Private utility conduits (perpendicular placement in ROW)

Austin Energy

- **AUSTIN ENERGY STANDARD NOTES**

- EL. ADD THE FOLLOWING NOTE:
 - Austin Energy has the right to prune and/or remove trees, shrubbery and other obstructions to the extent necessary to keep the easements clear. Austin Energy will perform all tree work in compliance with Chapter 25-8, Subchapter B of the City of Austin Land Development Code.
- EL. ADD THE FOLLOWING NOTE:
 - The owner/developer of this subdivision/lot shall provide Austin Energy with any easement and/or access required, in addition to those indicated, for the installation and ongoing maintenance of overhead and underground electric facilities. These easements and/or access are required to provide electric service to the building and will not be located so as to cause the site to be out of compliance with Chapter 25-8 of the City of Austin Land Development Code.
- EL. ADD THE FOLLOWING NOTE:
 - The owner shall be responsible for installation of temporary erosion control, revegetation and tree protection. In addition, the owner shall be responsible for any initial tree pruning and tree removal that is within ten feet of the center line of the proposed overhead electrical facilities designed to provide electric service to this project. The owner shall include Austin Energy's work within the limits of construction for this project.
- EL. ADD THE FOLLOWING NOTE:
 - The owner of the property is responsible for maintaining clearances required by the National Electric Safety Code, Occupational Safety and Health Administration (OSHA) regulations, City of Austin rules and regulations and Texas state laws pertaining to clearances when working in close proximity to overhead power lines and equipment. Austin Energy will not render electric service unless required clearances are maintained. All costs incurred because of failure to comply with the required clearances will be charged to the owner.

**CITY OF AUSTIN
TRAFFIC IMPACT ANALYSIS (TIA) DETERMINATION WORKSHEET**

APPLICANT MUST FILL IN WORKSHEET PRIOR TO SUBMITTING FOR TIA DETERMINATION

PROJECT NAME: _____

LOCATION: _____

APPLICANT: _____ TELEPHONE NO: _____

APPLICATION STATUS: DEVELOPMENT ASSESSMENT: _____ ZONING: _____ SITE PLAN: _____

EXISTING:

FOR OFFICE USE ONLY

TRACT NUMBER	TRACT ACRES	BLDG SQ.FT.	ZONING	LAND USE	I.T.E CODE	TRIP RATE	TRIPS PER DAY

PROPOSED

FOR OFFICE USE ONLY

TRACT NUMBER	TRACT ACRES	BLDG SQ.FT.	ZONING	LAND USE	I.T.E CODE	TRIP RATE	TRIPS PER DAY

ABUTTING ROADWAYS

FOR OFFICE USE ONLY

STREET NAME	PROPOSED ACCESS?	PAVEMENT WIDTH	CLASSIFICATION

FOR OFFICE USE ONLY

- A traffic impact analysis is required. The consultant preparing the study must meet with a Transportation planner to discuss the scope and requirements of the study before beginning the study.
- A traffic impact analysis is NOT required. The traffic generated by the proposal does not exceed the thresholds established in the LDC.
- The traffic impact analysis has been waived for the following reason: _____
- A neighborhood traffic analysis will be performed by the City for this project. The applicant may have to collect existing traffic counts. See a Transportation planner for information.

REVIEWED BY: _____ DATE: _____

DISTRIBUTION: _____ FILE _____ CAP. METRO _____ TXDOT _____ TRANS. REV. _____ TRAVIS CO. _____ ATD _____ TOTAL COPIES: _____

NOTE: A TIA determination must be made prior to submittal of any zoning or site plan application, therefore, this completed and reviewed form MUST ACCOMPANY any subsequent application for the IDENTICAL project. CHANGES to the proposed project will REQUIRE a new TIA determination to be made.

AUSTIN WATER UTILITY GENERAL CONSTRUCTION NOTES

August 21, 2013

- 1. THE CITY STANDARD CONSTRUCTION SPECIFICATIONS CURRENT AT THE TIME OF BIDDING SHALL COVER MATERIAL AND METHODS USED TO DO THIS WORK.**
- 2. CONTRACTOR MUST OBTAIN A STREET CUT PERMIT FROM WATERSHED PROTECTION AND DEVELOPMENT REVIEW DEPARTMENT, RIGHT OF WAY MANAGEMENT DIVISION BEFORE BEGINNING CONSTRUCTION WITHIN THE RIGHT-OF-WAY OF A PUBLIC STREET OR ALLEY.**
- 3. AT LEAST 48 HOURS BEFORE BEGINNING ANY WATER AND WASTEWATER CONSTRUCTION IN PUBLIC R.O.W. OR PUBLIC EASEMENT, THE CONTRACTOR SHALL NOTIFY WATERSHED PROTECTION AND DEVELOPMENT REVIEW INSPECTION OR WATER AND WASTEWATER UTILITY TAPS INSPECTION AT THE NUMBER INDICATED ON THE PLANS BY THE AWU PLAN REVIEWER.**
- 4. THE CONTRACTOR SHALL CONTACT THE AUSTIN AREA "ONE CALL" SYSTEM AT 1-800-344-8377 FOR EXISTING UTILITY LOCATIONS PRIOR TO ANY EXCAVATION IN ADVANCE OF CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES TO BE EXTENDED, TIED TO, OR ALTERED, OR SUBJECT TO DAMAGE/INCONVENIENCE BY THE CONSTRUCTION OPERATIONS. THE CITY OF AUSTIN WATER AND WASTEWATER MAINTENANCE RESPONSIBILITY ENDS AT R.O.W./EASEMENT LINES.**
- 5. NO OTHER UTILITY SERVICE/APPURTENANCES SHALL BE PLACED NEAR THE PROPERTY LINE, OR OTHER ASSIGNED LOCATION DESIGNATED FOR WATER AND WASTEWATER UTILITY SERVICE THAT WOULD INTERFERE WITH THE WATER AND WASTEWATER SERVICES.**
- 6. THE CITY SPECIFICATION ITEM 509S WILL BE REQUIRED AS A MINIMUM TRENCH SAFETY MEASURE.**
- 7. ALL MATERIALS TESTS, INCLUDING SOIL DENSITY TESTS AND DETAILED SOIL ANALYSES, SHALL BE CONDUCTED BY AN INDEPENDENT LABORATORY AND FUNDED BY THE OWNER IN ACCORDANCE WITH CITY STANDARD SPECIFICATION ITEM 1804S.04.**
- 8. PRESSURE TAPS SHALL BE IN ACCORDANCE WITH CITY STANDARD SPECIFICATION ITEM 510.3(24). THE CONTRACTOR SHALL PERFORM EXCAVATION ETC., AND SHALL FURNISH, INSTALL AND AIR TEST THE SLEEVE AND VALVE. WHEN CONTRACTORS MAKE THE TAP A CITY INSPECTOR MUST BE PRESENT AND 2 WORKING DAYS (MIN.) NOTICE MUST BE GIVEN. "SIZE ON SIZE" TAPS WILL NOT BE PERMITTED, UNLESS, IT HAS BEEN DEMONSTRATED THAT A MORE ACCEPTABLE CONNECTION WOULD INVOLVE CONSIDERABLE HARDSHIP TO THE UTILITY SYSTEM. ALL TAPS SHALL BE MADE BY USE OF AN APPROVED FULL CIRCLE-GASKETED CAST IRON OR DUCTILE IRON TAPPING SLEEVE. CONCRETE BLOCKING SHALL BE PLACED UNDER ALL TAP SLEEVES PRIOR TO MAKING THE PRESSURE TAP AND THE USE OF PRECAST BLOCKS MAY BE USED TO HOLD THE TAP IN ITS CORRECT POSITION PRIOR TO BLOCKING. THE BLOCKING BEHIND AND UNDER THE TAP SHALL HAVE A MINIMUM OF 24 HOURS CURING TIME BEFORE THE VALVE CAN BE RE-OPENED FOR SERVICE FROM THAT TAP.**
- 9. THRUST RESTRAINT SHALL BE IN ACCORDANCE WITH CITY STANDARD SPECIFICATION ITEM 510.3 (22).**

10. ALL BRANCH CONNECTIONS SHALL HAVE THE VALVE BOLTED TO THE MAIN BY METHODS OF FLANGE OR SWIVEL TEES. FOSTER ADAPTORS MAY BE USED IN LIEU OF FLANGE OR SWIVEL TEES WHEN CALLED OUT ON THE PLANS BY THE DESIGN ENGINEER.
11. A). FIRE HYDRANTS SHALL BE SET IN ACCORDANCE WITH CITY STANDARD SPECIFICATION ITEM 511S.4 B). FIRE HYDRANTS SHALL BE PAINTED FLYNT ALUMINUM OR EQUAL.
12. WATER LINE TESTING AND STERILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH CITY STANDARD SPECIFICATION ITEMS 510.3 (27)-(29). FORCE MAIN PRESSURE TESTING SHALL BE CONDUCTED AND FALL UNDER THE SPECIFICATIONS AS WATER LINES (PRESSURE PIPE) OR AT THE PRESSURES SHOWN ON THE APPROVED PLANS.
13. ALL MATERIAL USED ON THIS PROJECT MUST BE LISTED ON THE STANDARD PRODUCTS LISTING. ANY MATERIAL NOT LISTED HAS TO GO THROUGH THE REVIEW OF THE STANDARDS COMMITTEE FOR REVIEW AND APPROVAL PRIOR TO START OF PROJECT. TESTING AND EVALUATION OF PRODUCTS ARE REQUIRED BEFORE APPROVAL WILL BE GIVEN ANY CONSIDERATION.
14. WHEN WATER SERVICES ARE DAMAGED AND THE SERVICE MATERIAL IS PE, THE LINE SHALL BE REPAIRED ONLY BY HEAT FUSION WELD OR REPLACED THE FULL LENGTH WITH TYPE K COPPER MATERIAL. ANY TIME PB IS DAMAGED OR TAMPERED WITH IN ANY WAY, THE SERVICE LINE SHALL BE REPLACED FULL LENGTH WITH TYPE K COPPER MATERIAL. NOTE: FULL LENGTH IS FROM CORPORATION STOP TO METER.
15. WHEN AN EXISTING WATERLINE SHUT OUT IS NECESSARY AND POSSIBLE, THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION INSPECTOR WHO WILL THEN NOTIFY THE AUSTIN WATER UTILITY DISPATCH AND THE AFFECTED CUSTOMERS A MINIMUM OF SEVENTY-TWO (72) HOURS IN ADVANCE.
16. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION INSPECTOR SO THAT HE CAN NOTIFY THE AUSTIN WATER UTILITY AT 972--0000 AT A MINIMUM OF 72 HOURS PRIOR TO RELOCATING ANY DOMESTIC OR FIRE DEMAND WATER METERS. THE CONTRACTOR SHALL CAREFULLY REMOVE ALL METERS AND METERS BOXES THAT ARE INDICATED TO BE RELOCATED OR SALVAGED. THE CONTRACTOR SHALL INSTALL THE REMOVED METER OR CITY PROVIDED METER AT THE NEW LOCATION INDICATED ON THE CONSTRUCTION PLANS.
17. ALL MANHOLES IN UNPAVED AREAS PROVIDING DIRECT ACCESS TO A WASTEWATER LINE SHALL BE WATERTIGHT AND BEAR THE WORDING AND INSIGNIA FOR THE CITY OF AUSTIN.
18. THE CONTRACTOR SHALL VERIFY ALL VERTICAL AND HORIZONTAL LOCATIONS OF EXISTING UTILITIES PRIOR TO STARTING ONSITE UTILITY WORK.
19. ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. APPROVAL OF THESE PLANS BY THE CITY OF AUSTIN DOES NOT REMOVE THESE RESPONSIBILITIES.
20. REVIEW BY THE AUSTIN WATER UTILITY APPLIES ONLY TO FACILITIES WITHIN PUBLIC STREETS OR PUBLIC UTILITY EASEMENTS. ALL OTHER WATER AND WASTEWATER FACILITIES INSIDE PRIVATE PROPERTY ARE UNDER THE JURISDICTION OF BUILDING INSPECTION.
21. ALL WATER AND WASTEWATER MAINS SHALL BE INSTALLED IN ACCORDANCE WITH THE SEPARATION DISTANCES INDICATED IN CHAPTER 290 – *DRINKING WATER STANDARDS*, AND CHAPTER 217 – *DESIGN CRITERIA FOR SEWAERAGE SYSTEMS*, OF TCEQ RULES.
22. CONTRACTOR'S PERSONNEL THAT PERFORM BUTT FUSION AND ELECTROFUSION ON OR TO HDPE PIPE AND FITTINGS MUST HAVE CURRENT QUALIFICATION TRAINING CERTIFICATE ISSUED BY MCELROY OR COMPARABLE TRAINING PROGRAM.
23. SHOP DRAWINGS SHALL BE SUBMITTED FOR AWU APPROVAL FOR LARGE DIAMETER PRE-CAST MANHOLES, JUNCTION BOXES, WET WELLS, AND SIMILAR STRUCTURES. THE SHOP DRAWINGS SHALL INCLUDE FLOWLINE ELEVATIONS OF ALL INCOMING AND OUTGOING PIPES, ELEVATION OF TRANSITION FROM LARGE DIAMETER SECTIONS TO 48" ID SECTION, TOP OF MANHOLE ELEVATION, SURROUNDING GROUND ELEVATION, AS WELL AS SPECIAL CONSTRUCTION CONSIDERATIONS THAT ARE SPECIFIED IN THE CONTRACT DRAWINGS.

24. VALVE STEM EXTENSIONS SHALL CONSIST OF A SINGLE PIECE OF IRON ROD OF THE REQUIRED LENGTH WITH A SOCKET ON ONE END AND NUT ON THE OTHER.
25. ASBESTOS CONCRETE PIPE (AC PIPE) HAS BEEN INSTALLED IN THE PAST AS PART OF AUSTIN WATER UTILITY'S WATER DISTRIBUTION AND WASTEWATER COLLECTION SYSTEMS. AUSTIN WATER UTILITY'S INFRASTRUCTURE INCLUDES AC PIPE THAT IS CURRENTLY IN SERVICE AS WELL AS AC PIPE THAT HAS BEEN ABANDONED AND IS NO LONGER IN SERVICE. RECORD INFORMATION MAY NOT BE COMPLETE IN YOUR PROJECT AREA. CONTRACTORS AND SUBCONTRACTORS MUST BE ALERT TO THE PRESENCE AC PIPE AND BE KNOWLEDGABLE OF HOW TO IDENTIFY IT. DISTURBANCE, REMOVAL OR CUTTING OF ASBESTOS CONTAINING PIPE IS TO BE CONDUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF TEXAS ADMINISTRATIVE CODE 25, SECTION 15, ARTICLE 4477-3A AND 29 CFR 1926.1101. REFERENCE STANDARD SPECIFICATION SECTION 01901. CONTACT THE CITY OF AUSTIN ASBESTOS MANAGER AT 512-974-7154 THIRTY (30) DAYS PRIOR TO THE PLANNED DISTURBANCE OF THE AC PIPE. ONLY LICENSED PERSONNEL ARE PERMITTED TO DISTURB, REMOVE, TRANSPORT AND DISPOSE OF AC PIPE.

DISCLAIMER: Due to the variety of applications and regulations being addressed during the completeness check review process, additional information may be required depending on the specifics of each application.



Residential Technical Review Handout

This handout serves as a guide for code requirements that are commonly overlooked. Please note, this document does not replace code requirements contained in the [2015 International Residential Code](#), or [Local Amendments](#).

EGRESS REQUIREMENTS

Emergency escape and rescue required

Basements, habitable attics, and every sleeping room shall have at least one operable emergency escape and rescue opening with a window sill height of not more than 44 inches above finished floor (AFF). *Reference* R310.1 and R310.2.2.

Minimum opening area

All emergency escape and rescue openings shall have a minimum net clear opening of 5.7 sq. ft. *Reference* R310.2.1 **Exception:** *Grade floor* or below grade openings (sill $\leq 44"$ above or below finished ground level) shall have a minimum net clear opening of 5 sq. ft.

Minimum opening height

The minimum net clear opening height shall be not less than 24 inches. *Reference* R310.2.1

Minimum opening width

The minimum net clear opening width shall be not less than 20 inches. *Reference* R310.2.1

Door type and size

The required exit door shall be a single-hinged door not less than 32" clear in width and 78" inches clear in height (Typically must be a 3'0" wide x 6'8" high door to meet requirements). *Reference* R311.2

Retrofit Windows

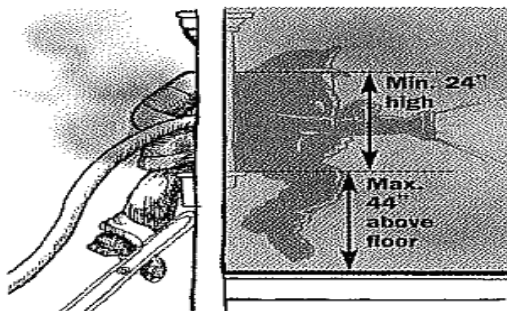
Requirements for Retrofit Windows, *reference* local amendment AJ102.4.3 Emergency Escape and Rescue Openings.

Floors and landings at exterior doors

There shall be a landing or floor on each side of each exterior door with a minimum width of the door served. These landings at the required egress door will not be more than 1 ½" inches lower than the top of the threshold. Exterior landings may not be more than 7 ¾" below the top of the threshold provided the door does not swing over the landing. *Reference* R311.3.1

Bedroom Window Egress

The second exit required in a bedroom is usually a window. The dimensions of the openings are to ensure the residents an escape route, but equally important, they are designed to allow a firefighter with a backpack to enter. The opening must be at least 24" high and at least 20" wide, with a net area at least 5.7sq.ft., per T15. The window sill must not be higher than 44" from the floor.



MINIMUM ROOM AREAS/CEILING HEIGHT

Minimum area

Habitable rooms shall have a floor area of not less than 70 sq. ft. *Reference* R304.1

Exception: Kitchens

Minimum dimensions

Habitable rooms shall not be less than 7 feet in any horizontal dimension. *Reference* R304.2

Exception: Kitchens

Height effect on room area

Portions of a room with a sloping ceiling measuring <5' or furred ceiling measuring <7' above finished floor (AFF) shall not be considered as contributing to the minimum required habitable area for that room. *Reference* R304.3

Minimum height

Habitable space, hallways, and portions of basements containing these spaces shall have a height of not less than 7 feet AFF. Bathrooms, toilet rooms and laundry rooms shall have a ceiling height of 6'-8". *Reference* R305.1

Exception: Items 1-3 listed on page 57 of 2015 IRC & R305.1.1 Basements.

SMOKE ALARMS REQUIREMENTS

Listings

Smoke alarms shall be listed in accordance with UL 217. *Reference* R314.1.1

Location

Smoke alarms shall be installed in the following locations: **Each sleeping room, outside each sleeping area** in the immediate vicinity of the bedrooms, **on each additional story** of the dwelling, and not less than 3 feet from a door to a bathroom with tub or shower except when this requirement would prevent the installation of a smoke alarm in a required location. **Note:** When more than one smoke alarm is required to be installed, the devices shall be hard-wired and interconnected, with battery back-up. Interconnection not required when listed wireless alarms are installed and they all sound upon activation of one. *Reference* R314.3 and R314.4

Alterations, repairs and additions

When alterations, repairs or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be equipped with smoke alarms located as required for new dwellings; the smoke alarms shall be interconnected and hard wired.

Exceptions: Exterior work such as roofing or siding, replacement or addition of windows and doors, addition of a porch or deck, and mechanical and plumbing work are exempted from providing smoke alarms as required for new construction. Interconnection and hard wiring of existing areas is not required unless there is existing access through attic, basement or crawl space, or access is possible as a result of work being done. *Reference* R314.2.2, R314.4, and R314.6

CARBON MONOXIDE ALARMS REQUIREMENTS

Listings

Carbon monoxide alarms shall be listed in accordance with UL 2034. *Reference* R315.1.1

Where Required

For new construction, carbon monoxide alarms shall be installed in dwelling units within which fuel-fired appliances are installed and in dwelling units that have attached garages with a door that connects the garage with the residence. Carbon monoxide alarms shall be hard wired with battery backup, except for CO alarms in buildings without commercial power which can be battery operated. *Reference* R315.2 and R315.5

Locations

For new construction, an approved carbon monoxide alarm shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms. Required inside bedrooms with fuel burning appliances within the bedroom or attached bathroom. *Reference* R315.3

Alterations, repairs and additions

Where work requiring a permit occurs in existing dwellings that have attached garages or in existing dwellings within which fuel-fired appliances exist, carbon monoxide alarms shall be installed as stated above.

Exceptions: Exterior work such as roofing or siding, replacement or addition of windows and doors, addition of a porch or deck, and mechanical and plumbing work are exempted from the above. Carbon monoxide alarms for alterations, repairs and additions can be battery operated. *Reference* R315.2.2 and R315.5

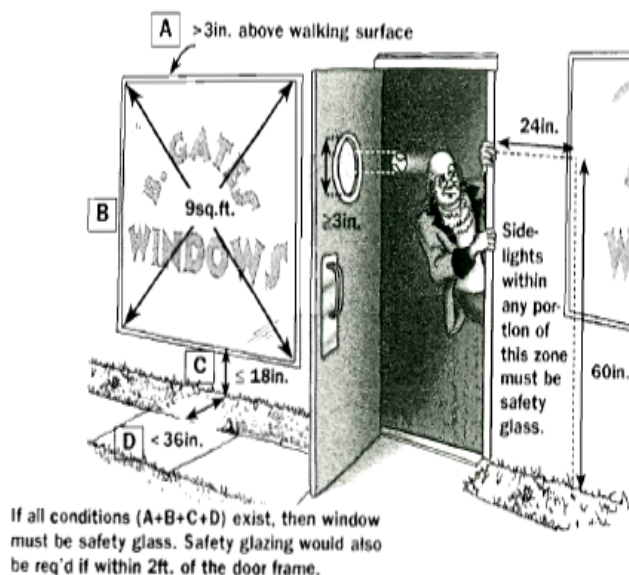
SAFETY GLAZING

Hazardous locations requiring safety glazing *Reference* R308.4

The following locations/uses (but not limited to) require tempered safety glass:

- Panels on doors, except for glazed openings through which a 3" dia. sphere cannot pass, or decorative glazing
- Panels adjacent to door that are less than 60" above walking surface provided that panel is in the same plane of the door in a closed position and within 24 inches of either side of the door or where panel is perpendicular and within 24" of the hinge side of an in-swing door.
- Panels in windows where individual panel exceeds 9sf, and bottom of glazing is 18" above floor, and to edge is over 36" above floor, and walking surface is within 36" of glazing measured horizontally and in straight line.
- Guards and railings
- Walls, enclosures or fences containing or facing hot tubs, spas, whirlpools, saunas, steam rooms, bathtubs, showers and swimming pools where bottom of edge of glazing is less than 60" from walking surface. **Exception:** Glazing more than 60" from edge of bathtub, hot tub, spa, whirlpool or pool, shower, sauna, or steam room.
- Panels less than 36" above a stair landing and within 60" from landing measured horizontally
- Skylights and Sloped Glazing

Note: The above is a condensed list of the most common safety glazing situations. There are many variables and exceptions not listed above which can be found on pages 55-58 of 2012 IRC.



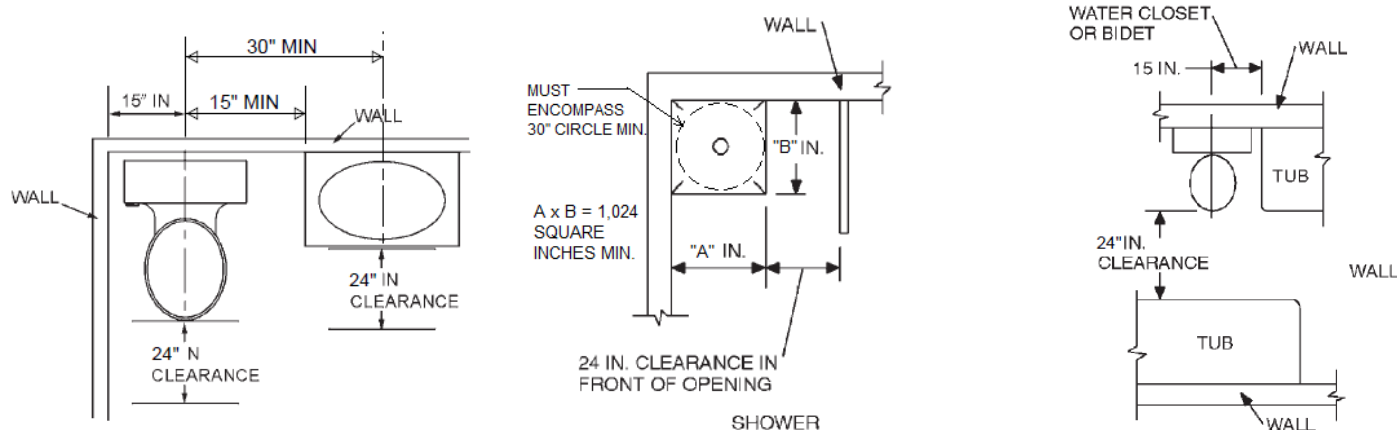
Safety glazing is required when a walk-through hazard exists, defined as meeting **ALL** of the following:

- Exposed area of glazing >9sq. ft. +
- Bottom edge <18in above floor or ground +
- Top edge >36in above floor or ground +
- Within 36in horizontal of walking surface
- **Exception:** Min 1½in high protective guard installed 34–38in above floor

TOILET, BATH AND SHOWER SPACES

Space Required

Fixtures shall be spaced as per figure below. *Reference R307 Figure 307.1. and 2012 UPC 402.5*



HANDRAILS/GUARDRAILS

Handrails

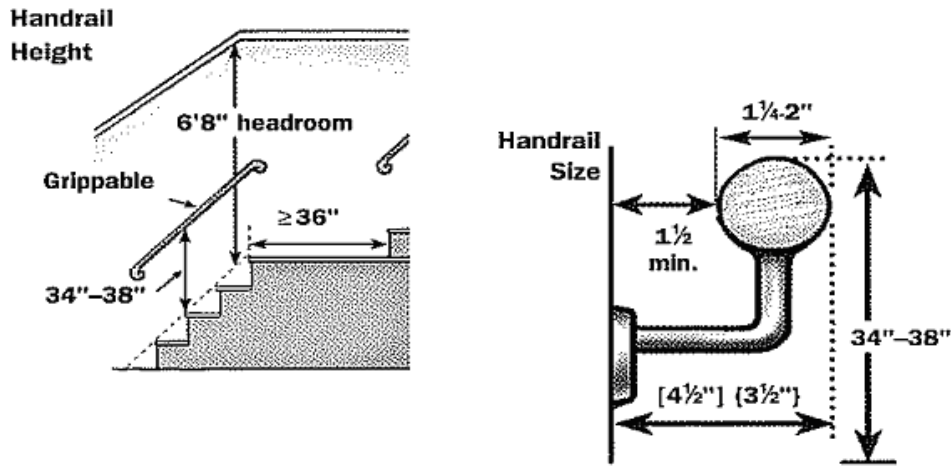
Provided on at least one side of each continuous run of treads or flight with four or more risers. *Reference 311.7.8*

Height

Measured vertically from the sloped plane of stairs or ramp shall not be less than 34 inches and not more than 38 inches. *Reference 311.7.8.1*

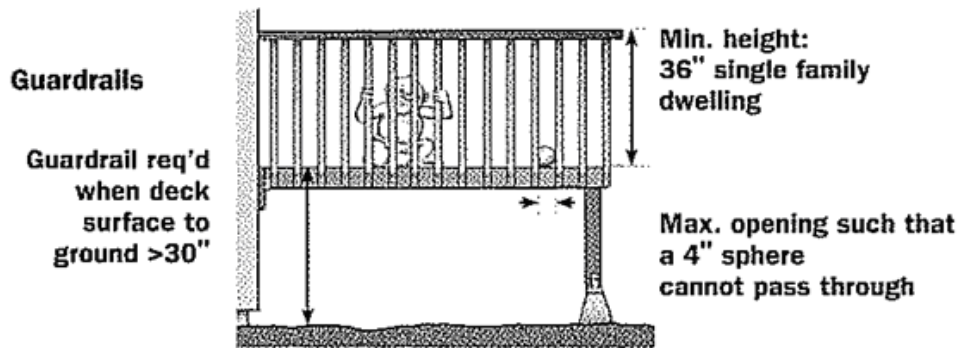
Continuity

Shall be continuous for the full length of the flight, from directly above the top riser to directly above the lowest riser and shall be returned. *Reference R311.7.8.2*



Guardrails

Porches, balconies, ramps or raised floor surfaces located more than 30 inches above floor or grade below at any point within 36" horizontally to the edge shall have guards not less than 36 inches in height with a maximum 4 inch opening. *Reference 312.1*



STAIRWAYS

Width

Shall be not less than 36 inches in clear width above handrail height and below headroom height. Handrails shall not project more than 4.5 inches on either side and minimum clear width shall not be less than 31.5 inches where handrail is provided on one side and 27 inches where handrails are provided on both sides. *Reference R311.7.1*

Headroom

Minimum headroom in all parts of the stairway shall not be less than 6 feet 8 inches. *Reference R311.7.2*

Vertical Rise

A flight of stairs shall not have a vertical rise larger than 12'-3" (147 inches) between floor levels or landings. *Reference R311.7.3*

Riser height

Maximum riser height shall be 7 ¾ inches. The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 inch. *Reference 311.7.5. 1*

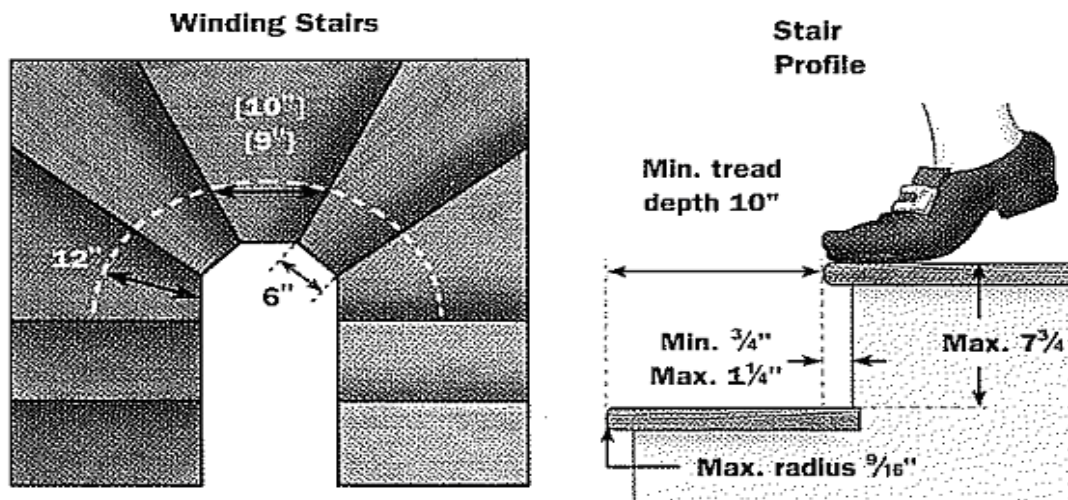
Tread depth

Minimum tread depth shall be 10 inches. The greatest tread depth within any flight of stairs shall not exceed the smallest by more than 3/8 inch. *Reference 311.7.5. 2*

Landings

There shall be a floor or landing at the top and bottom of each stairway. The width of each landing shall not be less than the width of the stairway served and shall have a minimum dimension of 36 inches in the direction of travel.

Exception: A floor or landing is not required at the top of an interior flight of stairs, including the stairs in an enclosed garage, provided that a door does not swing over the stair. *Reference 311.7.6*



EXTERIOR WALLS

Exterior wall location *References* IRC Table R302.1(1) and R302.1 Local Amendments

Construction, projections, openings and penetrations of exterior walls of dwellings and accessory buildings shall comply with table below. These provisions shall not apply to walls, projections, openings or penetrations in walls that are perpendicular to the line used to determine fire separation distance.

Exceptions: Detached tool sheds and storage sheds, playhouses and similar structures exempted from permits are not required to provide wall protection based on location on the lot. Projections beyond the exterior wall shall not extend over the lot line. 2. Detached garages accessory to a dwelling located within 2 feet (610 mm) of a lot line are permitted to have roof eave projections not exceeding 4 inches (102 mm). 3. Foundation vents installed in compliance with this code are permitted.

EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls	(Fire-resistance rated)	1 hour-tested in accordance with ASTM E 119 or UL 263 with exposure <i>from both sides</i>	< 5 feet
	(Not fire-resistance rated)	0 hours	≥ 5 feet
Projections	Not allowed	N/A	< 2 feet
	(Fire-resistance rated)	1 hour on the underside ^{a, b}	≥ 2 feet to < 5 feet
	(Not fire-resistance rated)	0 hours	≥ 5 feet
Openings in walls	Not allowed	N/A	< 3 feet
	25% maximum of wall area	0 hours	3 feet
	Unlimited	0 hours	5 feet
Penetrations	All	Comply with Section <i>R302.4</i>	< 3 feet
		None required	3 feet

^a Roof eave fire-resistance shall be permitted to be reduced to 0 hours on the underside of eave if fireblocking is provided from the wall top plate to underside of roof sheathing

^b Roof eave fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of eave provided gable vent openings are not installed

VISITABILITY

Visitability applies to new dwellings units subject to the IRC with habitable space in the first floor.

Detailed plans must be prepared by a Texas-Registered Architect or Certified Building Designer holding a National Council of Building Designers Certification seal. Drawings and notes must be provided specific to project.

- Exterior route originating from garage, driveway, public street or public sidewalk to visitable entrance.
- No-step visitable entrance 32" clear (36" door) with beveled threshold 1/2" or less and landing.
- 32" clear accessible route from entrance through living/dining/kitchen to visitable bathroom.
- Water closet/bathroom located on the first floor shall have a net clear opening of at least 30 inches (32" door) and 2x6 blocking @ 34" height from finished floor for grab bars. Door swings shall not impede the 30" x 30" clear floor space within the visitable bathroom.
- Light switches & environmental controls no higher than 48" and outlets no lower than 15" above the floor.

Waiver of Exterior Visitable Route

A waiver for exterior route can be requested with permit application for:

1. Lots with 10% or greater slope prior to development; or
2. Properties for which compliance cannot be achieved without the use of switchbacks.

*S.M.A.R.T. Housing waivers must be approved by Neighborhood Housing and Community Development.

http://www.austintexas.gov/sites/default/files/files/Housing/Application_Center/SMART_Housing/smart_guide_0708.pdf

Reference R320 local amendment <http://www.austintexas.gov/edims/document.cfm?id=205386>.

Note: Refer to **Building Criteria Manual section 4.4.7 Visitability** for additional information:

https://library.municode.com/tx/austin/codes/building_criteria_manual?nodeId=S4RECO_4.4.0RESURE_4.4.7VI

CRITERIA FOR STRUCTURAL PLANS

Suspended Foundations:

- Pier/Footing locations/dimensions
- Pier/footing sizes and depth below grade
- Footing details (materials, reinforcing, etc.)
- Joist/beam layout (size and spacing)
- Details for anchorage of structure to foundation
- Foundation requirements at braced wall panels
- Connection to existing foundation where applicable

Slab-on-grade Foundations:

- Slab layout (beam locations, changes in slab elevation, slab openings)
- Beam sizes (width and depth)
- Concrete compressive strength
- Reinforcing details
- Details for anchorage of structure to foundation
- Foundation requirements at braced wall panels
- Connection to existing foundation where applicable

Footings (for decks, pergolas, carports, etc.):

- Footing locations/dimensions
- Footing sizes and depth below grade
- Footing details (materials, reinforcing, etc.)
- Connection details for superstructure to foundation

Wood Framed Walls:

- Stud spacing/ wood grade
- Headers – size/span/material type
- Foundation/floor/ceiling connection details
- Anchor requirements to foundation

Wood Framed Floors:

- Live loads supported
- Joist sizes
- Joist layout/spacing
- Intermediate girder size and location
- Floor sheathing information (type, thickness)

Wood Framed Roofs:

- Live load supported
- Ceiling joist size/layout/spacing
- Rafter size/layout/spacing
- Ridge boards
- Roof sheathing information (type, thickness)
- Collar ties
- Rafter ties

Trusses/I-joists:

- Truss layout and spacing
- Support structure framing (headers, beams, walls, columns)
- Truss package due at field inspections

Wind Bracing Plans:

- Braced wall lines layout
- Braced wall methods used
- Braced wall panel locations
- Fasteners/nail pattern
- Details for methods used

Structural design must meet the prescriptive requirements of the 2015 International Residential Code; otherwise a Texas-licensed engineer or architect must provide and seal the structural drawings. A Texas-licensed engineer is required for foundations on expansive soil.

STRUCTURAL VERIFICATIONS

A Structural Verification Report, completed by a Texas Registered Architect or Engineer, can be submitted in lieu of structural drawing requirements for the following conditions:

1. Conversion of a carport with an existing foundation, open on no more than 2 sides, to a single-story habitable space.
2. Projects eligible for a Remodel/Repair permit where no additions to the proposed building are proposed
3. Change of use with remodel work only where no additions to the building are proposed
4. Verification of existing foundations less than 10 years in age
5. Verification of existing framing and wall bracing for structures between 5 to 10 years of age
6. As required by the reviewer to complete a review for technical code compliance

This verification should include at the minimum:

1. Date of the site visit
2. Areas of the property observed
3. Detailed foundation and framing information of existing structure
4. Current condition of existing structure
5. Engineer's/Architect's opinion of the adequacy of the existing structure to support the anticipated loads
6. Engineer's/Architect's repair plan, if required, to bring the structure up to the adequacy required to support the anticipated loads

The Structural Verification Report Form can be found at:

https://library.municode.com/tx/austin/codes/building_criteria_manual?nodeId=S4RECO_4.4.0RESURE_4.4.4STPL_4.4.4.7STVERERE

Reference: Rule of Adoption R161-15.19 Building Criteria Manual, Section 4: Residential Construction <http://www.austintexas.gov/edims/document.cfm?id=245752>

ETHICS AND FINANCIAL DISCLOSURE INFORMATION

If you or your agent/representative were City of Austin employees or officials within the past 24 months, you may be subject to the City's Ethics and Financial Disclosure requirements (see City Code Chapter 2-7). Copies of Chapter 2-7 are available at the City Clerk's Office.



Residential Technical Review Checklist

This document is intended for internal use by reviewers, however it is being provided as a reference tool for our customers. The following are some of the basic or frequently overlooked code requirements. This list is not intended to be exhaustive of all possible requirements. The more comprehensive list is contained in the 2015 International Residential Code and City of Austin local amendments. Neither this checklist nor the adopted building codes may be construed to allow deed restriction violation.

GENERAL

- ☐ Check for professional designer/engineer seal – engineers and architects are required to stamp documents prepared by them for regulatory approval.
- ☐ Check scale
- ☐ Verify if text disclaimer will void arch plans
- ☐ Application completeness (ESPA/AWU/Demo)
- ☐ Expired permits check
- ☐ Verify Job Valuation
- ☐ Owner's Letter of Authorization

ARCHITECTURAL SETS: SEALED AND UNSEALED

MIN. SUBMITTAL REQUIREMENTS:

- ☐ Refer to BCM Sec. 4.4.0
- ☐ Plot Plan
- ☐ Floor Plans & Elevations
- ☐ Structural (see structural checklist)
- ☐ Orientation on all plans matches
- ☐ Options clearly selected

VISITABILITY ORDINANCE City code Ch. 25-12 article 11. (100% New construction with habitable space in the first floor only)

- ☐ Architect or Certified Building Designer (RDP)
- ☐ Visitable Exterior Route or Waiver
- ☐ Visitable Entrance clearly indicated
- ☐ Visitable Exterior Route WAIVER when applicable
 - ☐ Prof. Land Surveyor Survey
 - ☐ RDP Substantiation including calculations
 - ☐ A review of the calculations will not be performed.
 - ☐ S.M.A.R.T. – needs waiver from NHCD

EXTERIOR WALL/ PROJECTION LOCATION

- (TABLES R302.1 (1) AND (2))
- ☐ Refer to Table R302.1(1) or (2) for fire rating requirements and opening restrictions (unlimited, 25%, not allowed)
 - ☐ No fire resistance rating if $\geq 5'$, or $\geq 3'$ with sprinklers
 - ☐ Unprotected roof overhangs allowed with fireblocking at less than 5ft but not less than 2ft from lot line

- ☐ No overhangs allowed at less than 2ft of lot line
Exception: detached garage accessory to a dwelling within 2ft of lot line may have a 4" max. roof eave projection
- ☐ Approved assembly identified (UL, Gypsum Association, or IBC 722 assembly and detail)

TOWNHOUSES R302.2

- ☐ Separation Requirements:
 - ☐ 1hr common wall shared by two townhouses
 - ☐ Rated from both sides
 - ☐ (no plumbing, mech. equipment, ducts or vents)
 - ☐ Extending to and tight against exterior walls and underside of roof sheathing
 - ☐ Or 2 fire rated wall assemblies as required by table R302.1(2) for exterior walls
- ☐ Wall section from foundation to roof (roof parapet) showing fire rated wall assembly
- ☐ Approved assembly identified (UL, Gypsum Association, or IBC 722 assembly and detail)
- ☐ Wall section matches UL Assembly
- ☐ UL rated assembly shown is for the right condition
- ☐ Wall section and details reflect correct orientation of trusses in truss layout
- ☐ Continuity R302.2.1: Fire resistant rating extends full length of wall and wall extensions separating attached accessory structures
- ☐ 30" Parapet required or exception R302.2.2
- ☐ fire sprinkler system required

TWO-FAMILY DWELLINGS R302.3

- ☐ Separation by a wall and/or floor/ceiling assembly 1-hr rating
 - ☐ 1/2hr rating allowed with sprinklers
 - ☐ Wall assemblies not extending through attic comply with R302.3 Exception 2
- ☐ R302.3.1 Construction supporting a fire rated floor assembly (i.e. bearing walls) has equal or greater fire rating

- ☐ Continuity: Fire rated floor/ceiling assemblies extend to and are tight against exterior wall and wall assemblies extend from foundation to underside of roof deck
- ☐ Fire rated wall and floor/ceiling assembly shown in section and details. Approved assembly identified (UL, Gypsum Association, or IBC 722 assembly)

ARCHITECTURAL– UNSEALED DRAWINGS:

GARAGE SEPARATIONS R302.5

- ☐ Zero penetrations to sleeping rooms
- ☐ Solid wood door 1-3/8" min. thickness, Solid or honeycomb core steel door 1-3/8" min. thickness, or 20 minutes fire rated door
- ☐ Self-closing device on garage to home door
- ☐ Walls and ceilings with attic space above: 1/2" gyp board.
- ☐ Ceilings with habitable rooms above – 5/8" Type-X gypsum board
- ☐ Garages less than 3' from dwelling unit on same lot: 1/2" gyp bd. on interior side of exterior walls

FIRE PROTECTION OF FLOORS R302.13

- ☐ Floor assemblies not required to be rated have 1/2" gypsum or 5/8" wood structural panel or equivalent on underside of floor framing members

LIGHT, VENTILATION R303

- ☐ Ventilation – Ducted? Window opening 4% floor
- ☐ Illumination – Glazing min 8% floor area
- ☐ Bathroom glazing – min 3 sqft, one half openable

MINIMUM ROOM AREAS R304

- ☐ Habitable rooms ≥ 70 sqft
- ☐ Habitable room walls $\geq 7'$
- ☐ Sloping ceiling $< 5'$ or furred $< 7'$ AFF shall not contribute to habitable area

CEILING HEIGHT R305

- ☐ Min height 7'
- ☐ Bathrooms and laundry rooms: min. 6'-8"
- ☐ Sloped ceilings: required floor area has ceiling height $\geq 5'$. 50% of req. area has a ceiling height $\geq 7'$
- ☐ Basements w/o habitable space: min. 6'-8"
- ☐ Ceiling obstructions like beams and ducts in basements: 6'-4"

TOILET, BATH AND SHOWER SPACES R307

- ☐ Refer to 2012 UPC for shower pan size (1,024 sq. in. & fit min 30" circle), water closet spacing (15" clear from center, 21" clear from front, 24" from front per UPC)
- ☐ Refer to 2015 UPC starting September 13, 2017

HAZARDOUS GLAZING R308

- ☐ Glazing in doors

- ☐ Glazing adjacent to doors when $< 60"$ above floor or walking surface *and*:
 - ☐ Glazing is within 24" of door in the same plane of the door in closed position OR
 - ☐ Glazing perpendicular to door in closed position within 24" of hinge side when door swings towards the glazing and not away from it
- ☐ Glazing in guards and railings
- ☐ Glazing surrounding wet surfaces: within 60" horizontally in all directions under 60" vertically
- ☐ Glazing in windows when *all* below is met:
 - ☐ In excess of 9 sf
 - ☐ bottom less than 18" above floor
 - ☐ top more than 36" above floor
 - ☐ walking surface within 36" horizontally
- ☐ Skylights, roofs, and sloped glazing
- ☐ Adjacent to stairs and ramps and bottom less than 36"
- ☐ Adjacent to bottom of stair landing when lower than 36", and within a 60" horizontal *arc*. (Fig. R308.4.7)

EMERGENCY AND RESCUE OPENINGS R310

- ☐ Basements, habitable attics and every sleeping room
 - ☐ Opens to public way, *yard* (defined in code), or court opening to a public way
 - ☐ Sill max. height: 44" aff.
 - ☐ Min net clear opening 5.7sf (821 sq. in.),
 - ☐ *Grade floor openings* and below-grade openings: min. net clear opening 5sf (720 sq. in.) (*sill height not more than 44" above or below finished ground level adjacent to opening)
 - ☐ Min opening height 24"
 - ☐ Min opening width 20"
- (typical: 2650 @ *Grade floor openings*; 3050 everywhere else)

MEANS OF EGRESS R311

- ☐ Continuous, and unobstructed vertical and horizontal path from all portions of dwelling
- ☐ Exit door side hinged, min clear width 32" and clear height 78" (3'0" x 6'8") opening to public way, yard or court
- ☐ Min width of hallway 36"
- ☐ Egress door landings:
 - ☐ width = width of door min
 - ☐ depth: 36" min. in direction of travel
 - ☐ Interior side $\leq 1 \frac{1}{2}"$ drop from threshold
 - ☐ Exterior side $\leq 7 \frac{3}{4}"$ drop from threshold
 - ☐ 2% max slope
 - ☐ Exterior landing is anchored to structure or self-supported. No nails or toe-nails

STAIRWAYS R311.7

- ☐ Minimum width $\geq 36"$
- ☐ Handrails do not project more than 4-1/2"
- ☐ Headroom: 6'-8"

- ☐ Minimum landing width = stair width
- ☐ Minimum landing depth = 36"
- ☐ Max rise 7 ¾", variation no more than 3/8"
- ☐ Tread depth ≥ 10"
- ☐ Landings at top and bottom
- ☐ Vertical rise ≤ 147" (12'-3")
- ☐ Open risers over 30" from floor or grade, max. 4" openings
- ☐ Alternating Thread devices and Ship Ladders not used as a means of egress

HANDRAILS R311.7.8

- ☐ Height not < 34" or > 38"
- ☐ Required for stairs with 4 or more risers
- ☐ Required on one side. Required at both sides in Ship Ladders and Alternating Thread devices
- ☐ Continuous for full length of flight

SPIRAL STAIRS R311.7.10.1

- ☐ Clear width 26"
- ☐ Walkline radius 24-1/2"
- ☐ Thread depth min. 6-3/4" at walkline
- ☐ Identical threads
- ☐ Risers 9-1/2" max.
- ☐ Headroom 6'-6" min.
- ☐ No opening limitation on risers

ALTERNATING TREAD DEVICES AND SHIP LADDERS

- ☐ Shall NOT be used as an element of a means of egress
- ☐ Handrails required at both sides
- ☐ Refer to R311.7.11 for Alternating Tread Devices requirements
- ☐ Refer to R311.7.12 for Ships Ladders requirements

GUARDRAILS R312.1

- ☐ Porches, balconies, ramps, raised floor surfaces 30" above floor or grade
- ☐ Height ≥ 36". On open side of stairs ≥ 34".
- ☐ When serving as handrails height is 34"-38"
- ☐ Height measured from adjacent walking surfaces (adj. fixed seating excluded)
- ☐ Maximum 4" opening

SMOKE ALARMS R314

- ☐ Hard-wired, interconnected, battery backup (Battery powered allowed at remodels). Wireless alarms allowed when one triggers the others.
- ☐ In each sleeping room
- ☐ Outside each sleeping area in immediate vicinity
- ☐ On each additional story within the dwelling unit including basements, habitable attics
- ☐ Min. distance 3' from full bathroom door unless not possible

- ☐ Ionization smoke alarms not allowed within 20' of cooking appliance or within 10' with silencing switch.
- ☐ Photoelectric alarm not allowed within 6' from cooking appliance
- ☐ Fire alarm system complying with NFPA 72 installed as a permanent fixture plus smoke detectors, in lieu of smoke alarms

CO ALARMS R315

- ☐ Hard-wired, interconnected, battery backup
- ☐ Battery powered at remodels and buildings without commercial power
- ☐ Dwelling unit with attached garage with an opening communicating to the dwelling
- ☐ Dwelling unit with fuel-fired appliances
- ☐ Locations: immediate vicinity of sleeping areas
- ☐ Inside bedroom where fuel-burning appliance is located in bedroom or attached bath

MEZZANINES R325

- ☐ Definition: Intermediate level between floor and ceiling of any story. A Loft is a Mezzanine (see local amendments- loft definition)
- ☐ Ceiling Height: ≥ 7 ft.
- ☐ Area limitation: ≤ 1/3 of room
- ☐ Compliance with R311 egress requirements
- ☐ Must open to room. **Exceptions:**
 - ☐ 10% or less can be enclosed;
 - ☐ Openness not required if ≤ 2 stories above *grade plane* with sprinkler system, or if 2 or more means of egress are provided

ATTICS R807.1

- ☐ Min access 22"x30" rough opening
- ☐ Ventilation - 1/150th of total area (1/8" wire mesh)
- ☐ Live loads limit check (Table R301.5)
- ☐ Ceiling joists or floor joists? Determine use
- ☐ Habitable Attic? Egress, stairs, SD, CO

FOR STRUCTURAL REVIEW CHECKLIST SEE NEXT PAGE

STRUCTURAL CHECKLIST – SEALED DRAWINGS

- ☐ Check for engineer seal on foundation plans
- ☐ Check for architect or engineer seal on framing and bracing plans
- ☐ Foundation plan matches orientation and outline of floor plan
- ☐ Foundation details including anchorage to foundation
- ☐ Floor framing plans
- ☐ Roof framing plans
- ☐ Truss layout (direction and spacing)
- ☐ Truss support structure (headers, beams, walls, columns)
- ☐ Typical framing details (wall-to-floor, wall-to-roof)
- ☐ Braced wall plan with braced wall lines (Ref. IRC R106.1.3 and BCM 4.4.4.3)
- ☐ Bracing information (Ref. R106.1.3):
 - ☐ methods used (fasteners/nail pattern, specific bracing method details, portal frame details)
 - ☐ location and length of braced wall panels
 - ☐ foundation requirements of braced wall panels at top and bottom

STRUCTURAL CHECKLIST – UNSEALED DRAWINGS: BELOW AND RIGHT

ENGINEER SEAL REQUIRED

Engineer stamp required for the following (BCM 4.4.4.4):

- ☐ Foundation Plans and Details on expansive soils
- ☐ Unsupported spans greater than 24 feet
- ☐ Pre-engineered systems and components

ENGINEER OR ARCHITECT SEAL REQUIRED

- ☐ Framing plans and details, wall bracing plans and details for buildings that are:
 - ☐ More than one story
 - ☐ Do not meet prescriptive methods
 - ☐ Designed as per IBC
 - ☐ Decks over 4 feet in height measured vertically at any point within 36" horizontally

FOOTING PLANS R403.1.4

- ☐ Footing material depth and dimensions (depth below surface min 12")
- ☐ Footing locations/dimensions
- ☐ Footing details
- ☐ Connection details

slabs on expansive soil shall be designed by a registered engineer

piers and masonry piers shall be designed by a registered engineer per R404.1.9.4

WOOD FRAMED WALLS

- ☐ Stud spacing/wood grade - R602.3
- ☐ Headers – size/span/material - R602.7
- ☐ Typical wall details
- ☐ Foundation/floor/ceiling connection details
- ☐ Foundation anchorage – R403.1.6

WOOD FRAMED FLOORS

- ☐ Live loads supported – Table R301.5
- ☐ Joist size, spacing, wood grade – R502.3
- ☐ Girders – R502.5
- ☐ Floor sheathing – R503.1
- ☐ Framing layout – Figure R502.2

WOOD FRAMED ROOFS

- ☐ Live load supported – Table R301.6
- ☐ Ceiling joist size, spacing and grade – R802.4
- ☐ Rafter size, spacing and grade – R802.5
- ☐ Roof sheathing – R803.1
- ☐ Rafter Ties and Collar Ties – R802.3.1
- ☐ Purlins – R802.5.1

WALL BRACING R602.10

- ☐ Braced wall lines layout – Fig. R602.10.1.1
- ☐ Braced wall methods used – Table R602.10.4
- ☐ Braced wall panel locations – R602.10.2
- ☐ Minimum length of braced wall panels – R602.10.5
- ☐ End requirements for continuous sheathing – R602.10.7
- ☐ Sheathing attachment – Table R602.3(3)
- ☐ Details for portal frames – R602.10.6



Residential Tree Review Checklist

This checklist is intended to clarify the review process and reduce review time by ensuring compliance with the tree preservation standards. This is only a general list and is not intended to address all circumstances. This checklist includes standard comments made by City Arborist review staff that will help you submit compliant plans and help speed up the review process. These comments address code and rule requirements, while helping better protect the urban forest during development.

Questions? Contact cityarborist@austintexas.gov or your assigned reviewer as shown on your Austin Build + Connect account and within the review comment report.

Please verify the following before submitting your plans – all items must be complete:

Permits and Plans

- ☐ Check "Yes" to protected size trees on the PR application
 - This is how City Arborist staff is distributed on the residential plan review submittal.
 - A Tree Ordinance Review is required when Protected Trees (19" diameter or larger on single-family property) are impacted (see the [Environmental Criteria Manual Section 3.5.2](#) for impacts) on the property and/or on adjacent properties that have Critical Root Zones that extend into the subject property.
- ☐ There is a tree review fee required at the time of plan submittal.
 - If the City Arborist staff determines that a review is not required for your project, we will notify you during the review cycle and issue a refund.

General

- ☐ Provide a plot plan that depicts all Protected or Heritage Trees on site and/or on adjacent properties that have Critical Root Zones that extend onto the subject property.
- ☐ If impacting the Critical Root Zone of three (3) or more Protected or Heritage Trees, provide a separate Tree Preservation Plan sheet in the plan submittal.
- ☐ Show **trees to be preserved** as solid concentric circles.
- ☐ Show **trees to be removed** by either a dashed concentric circle or a call out stating the tree(s) to be removed.
 - Proposed removals will require proper justification and may require mitigation if approved for removal.
- ☐ Accurately identify the diameters and species of all Protected Trees (ex. Live Oak, Post Oak, Cedar Elm, American Elm, etc. - not just Oak or Elm).
 - A Tree Schedule/Legend is recommended for clarity on a site with multiple trees.

Critical Root Zone (CRZ)

- ☐ Represent to scale and label the ¼, ½, and full Critical Root Zones of all Protected and Heritage Trees on the plot plan.
 - If any Critical Root Zones overlap proposed foundation, represent to scale and label the ¼, ½, and full Critical Root Zones of all Protected and Heritage Trees on the foundation plan.
- ☐ Show or note the proposed access routes, material staging, dumpster and spoils placement, as applicable – these cannot be within the ½ CRZ of any Protected Trees.
- ☐ Show the area designated for portable toilet and concrete washout. Alternatively, identify and dimension the area where these activities cannot occur in the CRZ.
- ☐ Show existing and proposed underground and overhead utility routes and meter locations (water, waste water, gas, electric).
 - Clearly identify utilities to remain. Alternatively, identify and dimension the area where these activities cannot occur.
- ☐ Identify placement of pool equipment. Pool equipment and associated trenching must avoid the ½ CRZs of all Protected Trees, or else air excavation by a Certified Arborist may be required.

- ☐ Show the specific locations of tree protection on the plan per requirements of Environmental Criteria Manual section 3.5.2.
- ☐ Account for forms, bracing, positive drainage, working areas, etc. when setting the foundation proximity to the ½ CRZ.
- ☐ Proposed sidewalks & driveways:
 - Avoid the ½ CRZ of Protected Trees if at all possible. Alternative designs and construction techniques will have to be considered if these items cannot avoid the ½ CRZ of Protected Trees.
 - There is a low impact driveway detail in Environmental Criteria Manual Appendix V Figure 3-13 (or the like) that may be used. Note location of existing/previous sidewalks and driveways, if applicable in the CRZ.
- ☐ Calculations of full Critical Root Zone impacts per Protected Tree may be required (in square feet and percentage).
 - Environmental Criteria Manual section 3.5.2 requires a minimum of 50% of Critical Root Zone be preserved at natural grade with natural ground cover.

Tree Canopy

- ☐ Recommended: Provide a letter from a privately hired Certified Arborist which states the percentage of canopy they evaluate necessary for removal for the proposed structure, construction methods needed to build the structure, and/or a summary of the health of the tree.
 - **Letter is required during review** if there is proposed construction within the ½ CRZ of a Protected Tree and/or if there are obvious conflicts between the tree(s) and the proposed construction.

Requested Tree Removal

- ☐ If applying to remove a Protected or Heritage Tree, it is recommended to provide a plot plan depicting any/all trees less than protected size that are planned for preservation.
- ☐ If removal of a Protected Tree is proposed for condition related reasons, submit a letter from a privately hired Certified Arborist that provides their professional analysis on the health of the tree via an ISA Risk Assessment form.
- ☐ If removal of a Protected Tree is proposed for development purposes, the request will require proper justification and may require mitigation if approved for removal. Proposed removal of a healthy Heritage Tree will require an Administrative or Commission Variance process and related fees.



Residential Inspection Checklist – Building Final

The intended use of this checklist is for the preparation of an inspection. This is only a general list and is not intended to address all circumstances. Please refer to the latest adopted International Residential Code (IRC) and the City of Austin Land Development Code (LDC) for code sections listed below.

- IRC: <https://codes.iccsafe.org/public/collections/I-Codes>
- LDC: https://library.municode.com/tx/austin/codes/land_development_code?nodeId=THCOAUTE_CH25-12TECO_ART11RECO

Please verify the following before calling for the Building Final Inspection:

Permits and Plans

- ☐ Prior to scheduling the final building inspection, the contractor or person doing the work has reviewed the approved plans and can assure that the construction being inspected is consistent and ready for inspection.
- ☐ Job address is posted in a visible location per IRC section R319.1.
- ☐ Permit and approved city stamped plans are on site and accessible to inspector.
- ☐ All other finals are approved required inspections have passed per section R109.4
- ☐ If required by permit, obtain copy of FEMA Elevation Certificate based upon finished construction and provide to floodplain office for review.

Exterior

- ☐ House numbers are plainly visible & legible from the street or road fronting the property with minimum 4" height and of contrasting color. [R319.1]
- ☐ All exterior windows, penetrations and openings have been caulked.
- ☐ Chimney terminations are 2' above any roof/structure within 10' and not less than 3' above the highest point where the chimney passes through the roof. [R1003.9]
- ☐ Spark arresters installed on top of chimney. [R1003.9.2]
- ☐ There is at least 6" distance from soil to bottom of wood siding/trim. [R317.1, #5]
- ☐ There is at least 6" distance from soil to bottom of masonry. [Figure R606.11(3)]
- ☐ The grade at the foundation falls away from the building a minimum of 6" within the first 10'. Where this is infeasible, drains or swales shall be constructed to ensure drainage away from the structure. [R401.3 & exception]
- ☐ A controlled method of water disposal from roofs that will collect and discharge roof drainage to the ground surface not less than 5' from foundation walls or to an approved drainage system shall be provided for expansive or collapsible soils [R801.3]
- ☐ Exterior doors have landings, minimum 36" in the direction of travel by not less than the door served for width. [R311.3]
- ☐ The floor or landing at the required egress door shall not be more than 1.5" lower than the top of the threshold. [R311.3.1]
- ☐ The landing or floor on the exterior side of the required egress door shall not be more than 7-3/4" below the top of the threshold provided the door does not swing over the stairway. [R311.3.1 exception]
- ☐ The floor or landing at doors other than the egress door may step down 7 3/4" below the top of the threshold.
- ☐ Where a stairway of two or fewer risers is located on the exterior side of a door, other than the required egress door, a landing is not required for the exterior side of the door. [R311.3.2 exception]
- ☐ Steel lintels shall bear not less than 4" and be painted for corrosion resistance. [R703.8.3]
- ☐ Flashing has been installed at exterior window and door openings and other locations per R703.4. [R703.4]
- ☐ For exterior plaster construction, weep screeds have been provided [R703.7.2.1]
- ☐ For masonry construction, flashing has been provided [R703.8.5]
- ☐ For masonry construction, weep holes have been provided [R703.8.6]
- ☐ Drip edge has been provided at eaves and rake edges of shingle roofs [R905.2.8.5]
- ☐ Egress window well ladders have been installed if applicable [R310.2.3.1]
- ☐ The impervious cover has not been exceeded by additional flat work not shown on the approved site plan.

Decks

- ☐ Verify that deck placement, setback, size and materials are per approved plans.
- ☐ Deck is positively attached and supports both lateral and live loads (40lb/sq.ft. minimum) R301.5, R502.2.
- ☐ All deck material treated or naturally resistant to decay. Cuts, notches, and holes are treated with preservative. (R317.1, R317.1.1, R317.1.5 & R317.2)
- ☐ Fasteners and hardware for pressure preservative and fire-retardant-treated wood shall be of hot-dipped galvanized steel, stainless steel, silicon bronze or copper. (R317.3, R317.3.1 and manufacturer's requirements)
- ☐ Joists can be untreated if approved weatherproof decking membrane is used. Note: soffits allowed when ventilated.
- ☐ Ledger for decks bolted/lagged to structure in accordance with table 507.2.1 or per approved plan. (R507.2)
- ☐ Deck lateral connections require a minimum (2) 1,500 lb. hold-down tension devices, installed in not less than two locations (ends) per deck, installed and connected to interior parallel joists per IRC figure 507.2.3 (exception decks < 30" above grade).
- ☐ Cantilevers blocked at bearing line if >12". (Table R502.3.3(2), note 'e')
- ☐ Bottom of footings are minimum 12" below grade for freeze protection. (Table R301.2.(1) – local jurisdiction, R403.1.4)
- ☐ Where deck is >30" vertical above the grade plane, within 3' horizontal, a guard is installed. (R312.1.1)

Guardrails and Handrails

- ☐ Guards adjacent to open-sided walking surfaces over 30" from adjacent floor or grade are a minimum 36" height to the top of the guard. [R312.1.1 & R312.1.2]
- ☐ Open sides of stairs with a total rise of 30" above the floor or grade below have guards minimum 34" in height when measured vertically from the stair nosing to the top of the guard. [R312.1.2 exceptions 1 & 2]
- ☐ Guards don't allow passage of 4" sphere. [R312.1.3]
- ☐ Triangle formed by riser, tread and bottom element of guardrail doesn't allow passage of 6" sphere. [R312.1.3 Exception1]
- ☐ Guards installed at the open sides of stairs don't allow the passage of 4 3/8" sphere. [R312.1.3 Exception 2]
- ☐ Handrails and guardrails shall be capable of withstanding a 200 lb. concentrated load. [IBC 1607.8.1.1]
- ☐ Handrail at stairs with 4 or more risers. [R311.7.8]
- ☐ Handrail height shall be a minimum 34" to maximum 38" above nose of tread to top of handrail. [R311.7.8.1]
- ☐ Type I handrail provided with circular cross sections 1 1/4" - 2" diameter. [R311.7.8.3 #1]
- ☐ Type I handrails with noncircular cross sections have a perimeter dimension of 4" – 6 1/4" with a maximum cross section of 2 1/4". (R311.7.8.3 #1)
- ☐ Type II handrails with perimeters greater than 6 1/4" require a graspable finger recess area on both sides of the profile. The minimum & maximum width above the recess is 1 1/4" – 2 3/4". [R311.7.8.3 #2]
- ☐ Handrail returns to wall, maximum 4 1/2" off wall with minimum 1 1/2" clear space from inside of rail to wall. [R311.7.1, R311.7.8.2]

Interior

- ☐ Doors from conditioned space to unconditioned spaces are weatherstripped and insulated to a level equivalent to the insulation on the surround surfaces. [IECC R402.2.4]
- ☐ 1 3/8" solid door or 20-minute fire-rated door equipped with a self-closing device between house and garage. [R302.5.1]
- ☐ Window opening control device to be installed on operable windows with top of sill less than 24" above the finished floor and greater than 72" above the finished grade or other surface below on the exterior of the building [R312.2.1, R312.2.2]
- ☐ Tempered glass has been installed per the requirements of section R308.4 [R308.4]
- ☐ Pull down stairs have been installed per manufacturer with approved fasteners
- ☐ Smoke alarms are hard-wired, interconnected with battery back-up and installed in each sleeping room, outside each separate sleeping area in the immediate vicinity of the bedrooms, on each additional story and not less than 3' horizontally from the door or opening of a bathroom that contains a bathtub or shower [R314.3, R314.4, R314.6]. Each smoke alarm has been individually tested.
- ☐ Carbon monoxide detectors are hard-wired with battery back-up and installed outside of each separate sleeping area in the immediate vicinity of the bedrooms and where a fuel-burning appliance is located within a bedroom or its attached bathroom, a carbon monoxide alarm is installed within the bedroom. [R315.3, R315.5]. Each carbon monoxide detector has been individually tested.



Residential Inspection Checklist – Foundation

The intended use of this checklist is for the preparation of an inspection. This is only a general list and is not intended to address all circumstances. Please refer to the latest adopted International Residential Code (IRC) and the City of Austin Land Development Code (LDC) for code sections listed below.

- IRC: <https://codes.iccsafe.org/public/collections/I-Codes>
- LDC: https://library.municode.com/tx/austin/codes/land_development_code?nodeId=THCOAUTE_CH25-12TECO_ART11RECO

Please verify the following before calling for the Foundation Inspection:

Permits and Plans

- ☐ (If applicable) **The plumbing pre-pour and electrical grounding inspections must pass prior to placing concrete.**
- ☐ Prior to scheduling the foundation inspection, the contractor or person doing the work has reviewed the approved plans and can assure that the construction being inspected is consistent and ready for inspection.
- ☐ Job address is posted in a visible location per IRC section R319.1.
- ☐ Permit and approved city stamped plans are on site and accessible to inspector.

General

- ☐ For Pier and Beam foundations:
 - Grade under girders/beams is 12" minimum. Otherwise, framing is to be pressure-treated. [R317.1]
 - Grade under joisting is 18" minimum. Otherwise, framing is to be pressure-treated. [R317.1]
- ☐ Verify lowest floor elevations for any construction identified as being in flood hazard areas, if applicable.
- ☐ Inspection of the foundation shall be made after poles or piers are set or trenches or basement areas are excavated, any required forms erected, and any required reinforcing steel is in place and supported prior to the placing of concrete. [Local amendment R109.1.1]
- ☐ The foundation inspection shall include excavations for thickened slabs intended for the support of bearing walls, partitions, structural supports, or equipment, and special requirements for wood foundations.
- ☐ The foundation and footing inspection must be performed by a **registered design professional** for all permitted structures. [Local amendment R109.1.1]
 - Exception:
 1. An uncovered deck built independent of another structure not more than 4' from the top of the decking measured vertically to the floor or grade at any point within 36" horizontally, is less than 200 square feet in floor area, and built in accordance to the prescriptive methods of the IRC.
 2. Repairs to a foundation limited to a maximum of 64 square feet and no damage to reinforcement or beams have occurred.
- ☐ Foundation letter from the registered design professional is on site for pick up or has been uploaded through the city's website. If it has been uploaded to the city's website, it must be properly identified as such in the Detail section with communication to the inspector via the comments section of the website.



Residential Inspection Checklist – Framing

The intended use of this checklist is for the preparation of an inspection. This is only a general list and is not intended to address all circumstances. Please refer to the latest adopted International Residential Code (IRC) and the City of Austin Land Development Code (LDC) for code sections listed below.

- IRC: <https://codes.iccsafe.org/public/collections/I-Codes>
- LDC: https://library.municode.com/tx/austin/codes/land_development_code?nodeId=THCOAUTE_CH25-12TECO_ART11RECO

Please verify the following before calling for the Framing Inspection – all items must be complete:

Permits and Plans

- ☐ Prior to scheduling the framing inspection, the contractor or person doing the work has reviewed the approved plans and can assure that the construction being inspected is consistent and complete.
- ☐ Building is safe and accessible.
- ☐ Job address is posted in a visible location per IRC section R319.1.
- ☐ Permit, Residential Framing Checklist, approved city stamped plans, roof specifications, and engineered floor system information is on site and accessible to inspector.
- ☐ **For all new construction:** the framing, mechanical, plumbing, and fire sprinkler (*if applicable*) rough inspections are to be called in for the same day – this is referred to as a frame group inspection. The electrical rough inspection is required to be inspected prior to.

General

- ☐ The roof is complete with radiant barrier (if required) and exterior moisture barriers are installed. [R703.1]
- ☐ Window and roof flashings are complete. [R703.4]
- ☐ There is no significant moisture remaining in the wood framing.
- ☐ Plate anchorage is installed to code.
- ☐ Required fire blocking is installed and approved fire blocking materials are in place. The penetrations at top and bottom plates, soffits, ceiling lines, etc. are sealed with fireblocking installed where required. [R302.11]
- ☐ Penetrations through a fire-rated assembly have been fire caulked per the UL Through-penetration detail.
- ☐ The installation of plumbing, mechanical, electrical, or fire sprinkler system rough-in work has not damaged the wall framing, floor joists, or roof framing. [R502.8, R602.6]
- ☐ Plumbing openings to crawl spaces and to living space above are protected by secured metal screens or collars with no openings greater than 1/2". [UPC 312.12]
- ☐ Smoke alarm and carbon monoxide wiring is installed at all required. [R314, R315]
- ☐ Tempered glazing is installed at all the required areas. [R308.4]
- ☐ Provide attic access to areas exceeding 30 square feet and vertical height of 30" or greater. The rough framed opening is a minimum 22" x 30" with a minimum 30" of unobstructed headroom above the access. [R807]
- ☐ Verify insulation dams at garages, porches, and pulldown attic stairs have been installed.
- ☐ Verify air barriers at dropped ceilings and hot walls have been installed.
- ☐ Verify insulation baffles if applicable.
- ☐ Verify recessed light cans are airtight and IC rated.
- ☐ Verify dampers on bath, utility, and kitchen exhaust fans/ducts.
- ☐ Verify fireplace installation when applicable.
- ☐ Visitable route matches approved plans for new construction only.
- ☐ At least one first floor bathroom or half-bath meets the visitability requirements for new construction only.
- ☐ Adequate attic ventilation has been provided.
- ☐ Light switch is at each floor level for an interior stairway [R303.7]
- ☐ Attic access has been provided to attic areas that have a vertical height of 30" or greater over an area of not less than 30 square feet [R807.1]

Construction Tips – Fireblocking & Draftstopping

- ☐ Fireblocking is required [R3002.11.1]:
 - in stud walls and furred spaces, vertically at the ceiling and floor levels, and horizontally at intervals not exceeding 10'.
 - at interconnections between concealed vertical and horizontal spaces such as soffits and drop ceilings.
 - in openings around vents, pipes, ducts, chases, tub traps, and similar openings at ceiling and floor levels.
 - at the underside of the stairs and stair stringers.
- ☐ Draftstopping is required in floor-ceiling assemblies for every 1,000 square feet. [R302.12]

Walls

- ☐ Wall studs are sized per plan and per code. [Table R602.3(5)]
- ☐ All framing members have been nailed per IRC nailing schedule. [Table R602.3(1), R602.3(2)]
- ☐ All vertical and horizontal framing members that have been notched or bored meet R602.6; Figure R502.8, Figure R602.6(1), Figure R602.6(2), Figure R602.6.1, Figure R802.7.1.1, Figure R802.7.1.2.
- ☐ Verify wall bracing has been installed to code per plan.
- ☐ All point loads continue to the foundation.
- ☐ Correct number of jack studs has been installed under headers, lintels and beams. [Table R602.7(1), R602.7(2)]
- ☐ All point loads continue to the foundation.
- ☐ Top plate splices less than 24", or plates over-notched or over-bored, are strapped with a minimum 16 gage x 1.5 inch wide metal tie with 8-16d nails per side. [R602.3.2, R602.6.1]
- ☐ The plans have been checked for installation and securing of special blocking – i.e. handrail or guardrail blocking, blocking for visitable future grab bars.
- ☐ The fastener types and sizes are per code.
- ☐ When cripple wall studs exceed 48", the studs are the size required for an additional story. [R602.9]
- ☐ The sheathing panel end joints occur over framing. [R602.10.10]

Windows

- ☐ Verify all glazing complies with the currently adopted energy.
- ☐ Verify glazing is tempered per R308.4 (as applicable).
- ☐ Verify emergency escape and rescue openings are in place and installed to code. [R310.1]
- ☐ Where a window is provided as the emergency escape and rescue opening, the sill height shall be not more than 44" above the floor [R310]
- ☐ Window fall protection has been provided for operable windows with openings more than 6' above grade or the surface below, where the lowest part of the clear opening is less than 24" above the interior finished floor and has openings through which a 4" sphere can pass. [R312.2]

Stairs – R311.7 (see code for any allowed exceptions)

- ☐ Verify stair head height, width, rises and runs have been installed to code. [R311.7]
- ☐ Minimum clear width is 36" at all points above handrail and below required headroom. [R311.7.1]
- ☐ Stairway headroom clearance is 6'8" minimum measured vertically from the sloped line adjoining the tread nosing or from the floor surface of the landing or platform on that portion of the stairway. [R311.7.2]
- ☐ Maximum vertical rise is 12'3" between floor levels or landings. [R311.7.3]
- ☐ Maximum riser height is 7-3/4". Greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8". [R311.7.5.1]
- ☐ Minimum tread depth is 10". Greatest tread depth within any flight of stairs shall not exceed the smallest by more than 3/8". [R311.7.5.2]
- ☐ 3/4" to 1-1/4" stair nosing required at all solid risers except when tread depth is at least 11". Radius of curvature at nosing shall not be greater than 9/16". [R311.7.5.3]
- ☐ Floor or 36" deep landing at top and bottom of each stair run or stairways. Landings of shapes other than square or rectangular are permitted provided the depth at the walk like and total area is not less than that of a quarter circle with a radius equal to the landing width. [R311.7.6]
- ☐ Handrail(s) is provided per R311.7.8.
- ☐ Illumination to be provided per R303.7.

Hold-downs and Hardware

- ☐ The proper type and size of fasteners are used for each application. [Table R602.3(1)]
- ☐ The mechanical connectors, straps, hold-downs, clips, hangers, are installed per plan and per manufacturer's specifications.
- ☐ Fasteners and hardware for pressure preservative and fire-retardant-treated wood shall be of hot-dipped galvanized steel, stainless steel, silicon bronze, or copper. [R317.3 or manufacturer's requirements]
- ☐ Joisting at decks shall be of preservative treated lumber unless approved weatherproof decking membrane is used. [R317.1.3]
- ☐ Full height studs are installed at all hold-downs, strapping, etc. Nailing into all studs at hold-downs and straps are complete. [See manufacturer's specifications]
- ☐ Anchor bolting is installed per shear wall schedule when specified and at a minimum of 2 per plate, maximum 6' o.c., maximum 12" from plate ends and not less than seven bolt diameters from end of each piece. [R403.1.6]

Floor

- ☐ Crawl space venting requirements have been met at 1 square foot for each 150' of under-floor space. [R408.1]
- ☐ Floor crawl space access of 18" x 24" has been provided if applicable. [R408.4]
- ☐ Review floor plan for joists, beams, and posts.
- ☐ Dimensional joist bearing to be minimum 3" on concrete or masonry and 1-1/2" on wood. [R502.6]
- ☐ Floor cantilevers are in accordance with Table R502.3.3(1) and/or R502.3.3(2).
- ☐ Joists bearing and beams are supported laterally at ends and at bearing points by solid blocking. [R502.7]
- ☐ Nailing of joists, double joists, rims, etc. are per plan and code. [Table R602.3(1)]
- ☐ If wood I-joists are being used, verify layout and installation guides are onsite. Check that blocking detail, bearing requirements, etc. are per manufacturer's specifications.
- ☐ Check areas where plumbing may cause problems, such as toilet flanges centered on joists, plumbing walls, etc.

Trusses

- ☐ The truss specifications and drawings, stamped and signed by an engineer registered in the State of Texas, are on site. [R106.1, R802.10.1]
- ☐ The truss configuration meets the design drawings; no trusses or TJIs have been flipped.
- ☐ The roofing material has not changed since the original design.
- ☐ Trusses have bearing as noted on truss specifications. [R802.10.1 #3]
- ☐ The lumber grade marks and sizes match the design specifications. [R802.10.1 #8]
- ☐ The connection plate sizes, gauges, and locations are per specifications. [R802.10.1 #9: 9.1, 9.2, 9.3]
- ☐ The truss bracing has been completed as noted and shown on the truss engineers plans. [R802.10.3]
- ☐ Any cut or damaged truss will require a letter of approval from the truss engineer.

Boring & Notching

- ☐ Boring and/or notching conform to R502.8, R602.6, R602.6.1, R802.7, or per the manufacture's recommendations.

Roof

- ☐ The ridges, hips, and valleys have been designed as beams for roof slopes less than 3 units vertical in 12 units horizontal. [R802.3]
- ☐ The rafters are framed opposite each other at the ridges. [R802.3]
- ☐ Notches on the ends of rafters do not exceed 1/4 the nominal joist depth. [R802.7.1.1]
- ☐ Notches in the top or bottom of rafters do not exceed 1/6 of the nominal depth and are not located in the middle 1/3 of the span. [R802.7.1, R502.8.1]
NOTE: Notching that is not longer than 1/3 of the nominal depth is permitted in the top of the rafter, if not located in the middle third of the rafter.
- ☐ Holes are not within 2" of the top or bottom of the rafter and the diameter is not greater than 1/3 the nominal depth. For I-joists, refer to manufacturer's specifications. [R802.7.1, R502.8.1]
- ☐ Rafter ties are completed if required. [R802.3.1]
- ☐ Purlins and struts are installed as required. [R802.5.1]



Residential Inspection Checklist – Insulation

The intended use of this checklist is for the preparation of an inspection. This is only a general list and is not intended to address all circumstances. Please refer to the latest adopted International Residential Code (IRC), International Energy Conservation Code (IECC) and the City of Austin Land Development Code (LDC) for code sections listed below.

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- LDC: https://library.municode.com/tx/austin/codes/land_development_code?nodeId=THCOAUTE_CH25-12TECO_ART11RECO

Please verify the following before calling for the Insulation Inspection:

Permits and Plans

- ☐ Prior to scheduling the insulation inspection, the contractor or person doing the work has reviewed the approved plans and can assure that the construction being inspected is consistent and ready for inspection.
- ☐ Job address is posted in a visible location per IRC section R319.1.
- ☐ Permit and approved city stamped plans are on site and accessible to inspector.
- ☐ Previous required inspections have passed per section R109.4
- ☐ Spray foam letter, if applicable, is on site

General

- ☐ The newly constructed area is dried in (roofing is complete and air barriers are installed). [R701.2]
- ☐ Insulation is installed at roof (unless blown-in insulation is being used in the attic), walls, and floors at the thickness indicated per the local amendments to the Energy Code.
- ☐ Any insulation with facings, air barriers, or breathable papers, installed within floor/ceiling or roof/ceiling assemblies, walls, crawl spaces, under-stair voids, or attics, is required to have a minimum flame spread rating of less than 25 and a smoke density not to exceed 450. [R302.10.1]
- ☐ Foam plastic shall have a flame spread index of not more than 75 and shall have a smoke-developed index of not more than 450 [R316.3]
- ☐ Unless otherwise allowed in section R316.5, foam plastic shall be separated from the interior of a building by an approved thermal barrier of not less than 1/2" gypsum wallboard, 23/32" wood structural panel or other code allowed material... [R316.4]
- ☐ For foam plastic, an ignition barrier of 1-1/2" thick mineral wool fiber insulation, 1/4" thick wood structural panel, 3/8" particleboard, 1/4" hardboard, 3/8" gypsum board, corrosion-resistant steel having a base metal thickness of 0.016", 1-1/2" thick cellulose insulation or 1/4" fiber-cement panel unless the foam plastic has been tested in accordance with Section R316.6. [R316.5.3 item 3]
- ☐ All recessed light fixtures are IC (insulation contact) rated or enclosed within a sealed assembly.
- ☐ No vapor retarder is installed on the conditioned side of the wall due to Austin's climate

Access Hatches and Doors

- ☐ Access doors from conditioned spaces to unconditioned spaces are weather-stripped and insulated to a level equal to the insulation at surrounding surfaces [IECC R402.2.4].
- ☐ Where loose-fill insulation is installed, wood framing or equivalent retainer is installed around the perimeter of the attic access to the height of surrounding insulation to prevent insulation from spilling and to maintain the R-value at the access. [IECC R402.2.4].

Attic Insulation

- ☐ For air permeable insulations in vented attics, baffles are installed adjacent to soffit and eave vents. [IECC R402.2.3]
- ☐ For blown or sprayed fiberglass or cellulose insulations, thickness markers shall be affixed to the trusses or joists showing the initial installed thickness every 300 square feet with numbers not less than 1" in height and visible from the attic access. [IECC R303.1.1.1]

Wall and Ceiling Insulation

- ☐ Insulation meets the currently adopted IECC or performance documentation is submitted substantiating the discrepancy.



Residential Inspection Checklist – Layout

The intended use of this checklist is for the preparation of an inspection. This is only a general list and is not intended to address all circumstances. Please refer to the latest adopted International Residential Code (IRC) and the City of Austin Land Development Code (LDC) for code sections listed below.

- IRC: <https://codes.iccsafe.org/public/collections/I-Codes>
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Please verify the following before calling for the Layout Inspection:

Permits and Plans

- ☐ If this is a legal non-complying structure or is a non-conforming use, a preconstruction inspection must be called first. Please call 512-978-4000 extension 3 to have this inspection added if required.
- ☐ Prior to scheduling the layout inspection, the contractor or person doing the work has reviewed the approved plans and can assure that the construction being inspected is consistent and ready for inspection.
- ☐ Job address is posted in a visible location per IRC section R319.1.
- ☐ Permit and approved city stamped plans are on site and accessible to inspector. After which, plans are to be kept in a protective container or box.
- ☐ Permit description meets the project scope. Review the Conditions section of the permit for other possible requirements.

General

- ☐ Form survey with lot square footage and finish floor elevations is on site for inspector review and pick up.
- ☐ Elevation certificate, if required due to floodplain, is on site for inspector pick up.
- ☐ Verify that lot size matches approved plans.
- ☐ Verify setbacks, building lines, and zoning requirements are compliant per city approved site plan.
- ☐ Verify required distance from AE power lines if applicable.
- ☐ Identify PUEs on property, if applicable, to ensure no encroachment issues exist such as overhangs.
- ☐ Verify footprint and form elevations match plans for setbacks, height, and tent locations if applicable.
- ☐ Verify building separation and wall location requirements (interior and exterior; zipper configuration) are addressed if applicable.
- ☐ Verify type of fire-rated wall assembly is documented with plans. If it is missing, the layout inspection will be failed.
- ☐ If new construction on an infill lot, the total demo building permit and associated plumbing permit both have been finalized. If not, a hold will be placed on the BP until these items are completed.
- ☐ If new construction on an infill lot, verify that sewer yard line is capped 5' from the property line within the lot.
- ☐ Tree protection is to be in place (upright fence at critical root zone, 10" of mulch where fence constraints exist). If not, the layout inspection will be failed.
- ☐ Verify that silt fencing with safety caps on all posts and erosion controls are in place downstream of work as required. If not, the layout inspection will be failed.
- ☐ Review the total proposed impervious cover. If it is within 5% of the maximum, an impervious cover survey will be required at the final building inspection.
- ☐ Review plans to address possible technical code issues: egress, firewall detail(s), habitable space requirements, tempered glass, habitable attic.
- ☐ Verify number of off-street parking spots and allowable surface. Verify that alley meets parking requirements if applicable (24' minimum required for backing into an alley, measured from front of parking and can include alley width).
- ☐ Verify water meter size requirement.
- ☐ Review for any possible site drainage issues.
- ☐ Verify if a cut and fill permit is required.



Residential Inspection Checklist – Wallboard

The intended use of this checklist is for the preparation of an inspection. This is only a general list and is not intended to address all circumstances. Please refer to the latest adopted International Residential Code (IRC) and the City of Austin Land Development Code (LDC) for code sections listed below.

- IRC: <https://codes.iccsafe.org/public/collections/I-Codes>
- LDC: https://library.municode.com/tx/austin/codes/land_development_code?nodeId=THCOAUTE_CH25-12TECO_ART11RECO

Please verify the following before calling for the Wallboard Inspection:

Permits and Plans

- ☐ Prior to scheduling the wallboard inspection, the contractor or person doing the work has reviewed the approved plans and can assure that the construction being inspected is consistent and ready for inspection.
- ☐ Job address is posted in a visible location per IRC section R319.1.
- ☐ Permit and approved city stamped plans are on site and accessible to inspector.
- ☐ Previous required inspections have passed per section R109.4

General Nailing and Screwing

- ☐ All fasteners are approved gypsum board type. [R702.3.5 and Table R702.3.5]
- ☐ All screws are gypsum board type "W" or "S" unless otherwise noted and long enough to penetrate a minimum 5/8" into wood and 3/8" into steel. [R702.3.5.1 and Table R702.3.5]
- ☐ The nailing pattern on walls is 8" on center at the ends and in the field. The nailing pattern on the ceiling is 7" on center at the ends and in the field. [Table R702.3.5]
- ☐ The screw pattern on the walls is 16" for 16" on center framing and 12" for 24" on center framing. [Table R702.3.5]
- ☐ The screw pattern on the ceiling is 12" on center for framing spaced 16" or 24" on center. [Table R702.3.5]
- ☐ Gypsum shear walls are installed per approved plans or the prescriptive wall bracing requirements of Chapter 6.
- ☐ Drywall edges and ends occur on the framing members [R702.3.5]

Water-resistant Gypsum Backing Board

- ☐ The use of water-resistant gypsum backing board is permitted on ceilings [R702.3.7].
- ☐ Water-resistant gypsum backing board shall not be installed over a Class I or II vapor retarder in a shower or tub compartment [R702.3.7]
- ☐ Cut or exposed edges, including those at wall sections, are to be sealed as recommended by the manufacturer [R702.3.7]
- ☐ Water-resistant gypsum backing board shall not be used where there will be direct exposure to water, or in areas subject to continuous high humidity, such as saunas, steam rooms, indoor pools, etc. [R702.3.7.1]
- ☐ Materials used as backers for wall tile in tub and shower areas and wall panels in shower areas shall be of materials listed in Table R702.4.2 and installed per manufacturers' recommendations. [R702.4.2]

Garage Separation

- ☐ Garages beneath habitable rooms shall be separated by 5/8" Type X gypsum board or equivalent. [R302.6]
- ☐ The nailing pattern is 6" on center with 1-7/8" 6d coated nails (or equivalent drywall screws. Screws shall comply with R702.3.5.1)
- ☐ Framing supporting garage ceiling separation is protected by 1/2" gypsum board. [Table R302.6]
- ☐ Any ducting penetrating the wall or ceiling between the house and garage, that is not a minimum 26-gauge sheet metal, is enclosed within a protective assembly such as a shaft, chase, or soffit and has no openings into the garage. [R302.5.2]

Section 5.0 Fees

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Residential Building Plan Review & Permit Fees (1 of 4)

- A 4% Development Services Surcharge fee will be added to all permit fees.
- The review fee is payable at the time of submittal and is non-refundable unless the fee is collected in error by the City of Austin.
- The permit fee is payable at the time of permit issuance for building and trade permits.

Residential Building Plan Review Fees

One & Two Family Dwellings

	DSD Fees	4% Surcharge	Total
Residential Plan Review Application Processing Fee	\$63.00	\$2.52	\$65.52
Combined Plan Review Fee	\$564.00	\$22.56	\$586.56
Small Projects Plan Review	\$71.00	\$2.84	\$73.84
Residential Plan Review Resubmittal	\$282.00	\$11.28	\$293.28
Residential Plan Revision Fee			
Minor Plan Revision	\$45.00	\$1.80	\$46.80
Major Plan Revision <i>(per hour)</i>	\$179.00	\$7.16	\$186.16 /hour
Express Residential Plan Review	\$42.00	\$1.68	\$43.68
Demolition/Relocation Processing Fee	\$42.00	\$1.68	\$43.68
Driveway Review Fee	\$36.00	\$1.44	\$37.44
Restamp Fee	\$35.00	\$1.40	\$36.40
Consultation Fee <i>(per hour, 1-hour minimum)</i>	\$182.00	\$7.28	\$189.28
New Construction (Volume Builder Program)			
Volume Builder Registration Fee - Initial	\$639.00	\$25.56	\$664.56
Volume Builder Registration Fee - Renewal	\$479.00	\$19.16	\$498.16
Zoning Review Fee	\$406.00	\$16.24	\$422.24
Prototype Plan Review Fee	\$285.00	\$11.40	\$296.40
Volume Builder Plan Review <i>(per unit)</i>	\$68.00	\$2.72	\$70.72 /unit

Residential Building Plan Review & Permit Fees (2 of 4)

Miscellaneous Fees

	DSD Fees	4% Surcharge	Total
Alternate Methods of Compliance	\$81.00	\$3.24	\$84.24
Residential Express Permits/Kitchen Remodels - Inspection	\$71.00	\$2.84	\$73.84
Residential Change-Out Program Permits			
HVAC (<i>first system</i>)	\$86.00	\$3.44	\$89.44
each additional system	\$27.00	\$1.08	\$28.08
Water Heater (<i>first appliance</i>)	\$86.00	\$3.44	\$89.44
each additional appliance	\$27.00	\$1.08	\$28.08
Retrofit Windows	\$86.00	\$3.44	\$89.44
After Hours Inspection Fee			
First Hour	\$150.00		\$150.00
each additional hour	\$49.00		\$49.00
Reinspection Fee The fee will be charged for a scheduled inspection each time: (1) work is not complete; (2) corrections from prior deficiency were not completed; or (3) the site is not accessible.	\$53.00		\$53.00
Inspections for Standalone Projects	\$53.00	\$2.12	\$55.12
Per inspection after two inspections	\$26.00	\$1.04	\$27.04
Demolition Permit (<i>each</i>)	\$46.00	\$1.84	\$47.84 /each
Relocation Permit (<i>each</i>)	\$50.00	\$2.00	\$52.00 /each
Boat Dock New Construction Permit	\$204.00	\$8.16	\$212.16
Municipal Utility District (MUD)/ETJ Inspections (<i>electric & plumbing</i>)	\$36.00	\$1.44	\$37.44
Permits Outside the City Limits	\$16.00		\$16.00
Electric Service Planning Application Processing/DPGA <i>Required when there is a new or change in electric service load on the property.</i>	\$8.00	\$0.32	\$8.32
Electric Service Inspection Fee in COA	\$113.00	\$4.52	\$117.52
Electric Service Inspection Fee in PESD	\$129.00	\$5.16	\$134.16
Electrical Special Inspection Program Fee			
Initial Application	\$12.00	\$0.48	\$12.48
Annual Renewal	\$4.00	\$0.16	\$4.16

Residential Building Plan Review & Permit Fees (3 of 4)

Miscellaneous Fees (continued)

	DSD Fees	4% Surcharge	Total
Plan Review - Floodplains			
Floodplain	\$255.00	\$10.20	\$265.20
Erosion Hazard Zone	\$170.00	\$6.80	\$176.80
Grading & Drainage	\$255.00	\$10.20	\$265.20
Duplicate Certificate of Occupancy	\$18.00		\$18.00
Temporary Certificate of Occupancy - Building Only (<i>Expires after 90 days</i>)	\$71.00	\$2.84	\$73.84
Temporary Certificate of Occupancy Renewal - Building Only	\$54.00	\$2.16	\$56.16
Contractors Expired Permits (<i>Building, Electrical, Mechanical or Plumbing</i>)	\$16.00	\$0.64	\$16.64 /per discipline
Escrow Accounts - Establishment of Escrow Account	\$24.00		\$24.00
Registration (<i>Mechanical, Irrigation</i>)			
New	\$24.00		\$24.00
Annual Renewal	\$8.00		\$8.00
Overtime Plan Review Fee (<i>per discipline, per hour, two-hour minimum</i>)	\$107.00	\$4.28	\$111.28
Service Center Copy Fee per page (+ tax)	\$0.20	\$0.01	\$0.21 + tax

Residential New Construction, Remodel, Repair & Alterations Permit Fees

	Building	Electrical	Mechanical	Plumbing	Energy
Single Family, Duplex, Townhouse, and other Residential Structures					
≤ 1,000 sq. ft.	\$287.76	\$330.12	\$94.81	\$188.93	\$42.36
≤ 2,000 sq. ft.	\$287.76	\$330.12	\$94.81	\$188.93	\$42.36
per additional 100 over 1,000	\$6.59	\$3.06	\$1.41	\$3.29	\$0.47
≤ 3,000 sq. ft.	\$353.65	\$360.71	\$108.92	\$221.88	\$47.06
per additional 100 over 2,000	\$6.59	\$8.71	\$1.41	\$3.29	\$0.47
≤ 4,000 sq. ft.	\$419.54	\$447.78	\$123.04	\$254.82	\$51.77
per additional 100 over 3,000	\$6.59	\$3.53	\$1.41	\$3.29	\$0.47
≤ 5,000 sq. ft.	\$485.43	\$483.08	\$137.16	\$287.76	\$56.48
per additional 100 over 4,000	\$6.59	\$10.12	\$2.82	\$6.59	\$1.41
> 5,000 sq. ft.	\$551.32	\$584.26	\$165.40	\$353.65	\$70.59
per additional 1,000 over 5,000	\$65.89	\$87.07	\$14.12	\$32.94	\$4.71

Residential Building Plan Review & Permit Fees (4 of 4)

Residential Tree Permit Review & Inspection Fees

	DSD Fee	4% Surcharge	Total
Pre-Development Consultation	\$223.00	\$8.92	\$231.92
Plan Review	\$348.00	\$13.92	\$361.92
Update Fee	\$114.00	\$4.56	\$118.56
Inspection			
New Construction	\$482.00	\$19.28	\$501.28
All Other Residential Projects	\$322.00	\$12.88	\$334.88
Re-Inspections	\$289.00	\$11.56	\$300.56
Utility Repair/Replacement			
Review	\$109.00	\$4.36	\$113.36
Inspection	\$143.00	\$5.72	\$148.72
Non-Development Tree Review <i>Fees waived for dead, diseased, or imminent hazard trees</i>	\$163.00	\$6.52	\$169.52
Heritage Tree Review Variance			
Administratively Approved	\$420.00	\$16.80	\$436.80
Commission Approved	\$3,415.00	\$136.60	\$3,551.60
Protected Tree Review Commission Appeal	\$3,415.00	\$136.60	\$3,551.60

Refunds on Permits

- For detailed information regarding refunds, see the Technical Criteria Manual.
- No refund shall be granted if the purchaser has paid the minimum fee established for the specific type of permit.
- No refund shall be granted if any work governed by the permit has been performed.
- No refund shall be granted if an inspection has been performed, scheduled, or requested on the permit.
- Refunds for permits equal 75% of the original permit less the minimum permit fee established for the specific type of permit.
- Refund claims must be submitting in writing with a copy of the permit receipt.
- Only active fees may be refunded.



Tree Review & Inspection Fees

	DSD Fees	4% Surcharge	Total
Pre-Development Consultation			
Residential	\$223.00	\$8.92	\$231.92
Commercial or Subdivision	\$344.00	\$13.76	\$357.76
Tree Plan Review			
Residential	\$348.00	\$13.92	\$361.92
Commercial Site Plan Exemption	\$424.00	\$16.96	\$440.96
Update Fee			
Residential	\$114.00	\$4.56	\$118.56
Commercial Site Plan Exemption	\$212.00	\$8.48	\$220.48
Utility Repair/Replacement Review	\$109.00	\$4.36	\$113.36
Heritage Tree Review			
<= 5 trees	\$628.00	\$25.12	\$653.12
<= 20 trees	\$942.00	\$37.68	\$979.68
<= 50 trees	\$1,256.00	\$50.24	\$1,306.24
> 50 trees	\$1,256.00	\$50.24	\$1,306.24
per additional 5 trees	\$105.00	\$4.20	\$109.20
Tree Inspections			
Residential - New Construction	\$482.00	\$19.28	\$501.28
Residential - All Other Projects	\$322.00	\$12.88	\$334.88
Commercial	\$241.00	\$9.64	\$250.64
Tree Re-Inspections	\$289.00	\$11.56	\$300.56
Utility Repair/Replacement Inspection	\$143.00	\$5.72	\$148.72
Non-Development Tree Review	\$163.00	\$6.52	\$169.52
<i>Fees waived for dead, diseased, or imminent hazard trees</i>			
PUD Arborist Review	\$8,698.00	\$347.92	\$9,045.92
MUD Arborist Review	\$5,442.00	\$217.68	\$5,659.68
Heritage Tree Review Variance			
Administratively Approved Variance	\$420.00	\$16.80	\$436.80
Commission Approved Variance	\$3,415.00	\$136.60	\$3,551.60
Protected Tree Review Commission Appeal	\$3,415.00	\$136.60	\$3,551.60

SITE PLAN REVIEW FEES

Effective: October 1, 2017 Updated: March 21, 2018

A completeness check is required on all site plan and subdivision applications. If applicable, the Chapter 245 Review fee will be collected at the time of the completeness check.

Once your completeness check is approved, call the Intake staff at the following number to schedule an appointment to submit your application:

512-974-1770

Intake Staff is available to assist you in calculating your fees and advise you on any requirements. They are located on the **4th floor** of One Texas Center, 505 Barton Springs, Road.

A 4% surcharge has been added to all applicable fees.

Mailing Address:

City of Austin
Development Intake
One Texas Center - 4th Floor
PO Box 1088
Austin, TX 78767-1088

Contractors must contact the City Of Austin - Site and Subdivision Inspection Division to submit required documentation, pay construction inspection fees, and schedule the required Subdivision pre-construction meeting. This meeting must be held prior to any construction activities in the R.O.W. or public easements. Please visit <http://austintexas.gov/page/commercial-site-and-subdivision-inspections> for a list of submittal requirements, information concerning fees, and contact information.

Key to Symbols

- < Less than
- ≤ Less than or equal to
- > Greater than
- ≥ Greater than or equal to

Desired Development Zone Fees	Total	Revisions
Land Use Only - "A" Site Plan^B		
Land Use Site Plan - Permitted Use	\$6,530.42	\$3,655.96
Land Use Site Plan - Conditional Use		
< 2 acres	\$4,618.90	\$2,700.20
< 5 acres	\$4,964.18	\$2,872.84
≤ 10 acres	\$5,310.50	\$3,046.00
> 10 acres	\$5,310.50	\$3,046.00
+ Per acre over 10 acres	+	\$82.16 + \$41.08

Construction Element Only - "B" Site Plan^{B,C}		
Site Plan - Construction Element		
< 2 acres	\$7,359.30	\$5,096.88
< 5 acres	\$7,532.98	\$5,209.31
≤ 10 acres	\$7,759.70	\$5,365.41
> 10 acres	\$7,759.70	\$5,365.41
+ Per acre over 10 acres	+	\$110.24 + \$63.54

Consolidated - "C" Site Plan^{B,C}		
Site Plan - Consolidated		
< 2 acres	\$9,184.50	\$6,009.48
< 5 acres	\$9,616.10	\$6,250.87
≤ 10 acres	\$10,103.86	\$6,537.49
> 10 acres	\$10,103.86	\$6,537.49
+ Per acre over 10 acres	+	\$170.56 + \$93.70

"D" Site Plan		
Building, Parking & Other Site Work^{B,C}	\$6,244.42	\$4,522.28
+ Per acre over 10 acres	+	\$110.24 + \$63.54
Drainage and Channel Improvements^B		
< 1,000 linear feet	\$3,006.90	\$2,300.74
< 5,000 linear feet	\$3,345.94	\$2,571.97
≤ 10,000 linear feet	\$3,684.98	\$2,843.20
> 10,000 linear feet	\$3,684.98	\$2,843.20
+ Per 5,000 linear feet over 10,000	+	\$1,050.40 + \$840.32

Street & Drainage Water Quality, Drainage & Transportation^{B,C}		
< 1,000 linear feet	\$3,684.98	\$2,843.20
< 5,000 linear feet	\$4,024.02	\$3,114.44
≤ 10,000 linear feet	\$4,363.06	\$3,385.67
> 10,000 linear feet	\$4,363.06	\$3,385.67
+ Per 5,000 linear feet over 10,000	+	\$1,218.88 + \$975.10

^A Austin Water Utility UDS Engineering Plan Review Fee covers updates 1 - 3. Fee increases on 4th and subsequent updates to \$536.25 each.

^B Additional Watershed Protection fee might also apply.

^C Additional Drainage Construction Engineering fee might also apply.

Drinking Water Protection Zone Fees	Total	Revisions
Land Use Only - "A" Site Plan^B		
Land Use Site Plan - Permitted Use	\$6,970.34	\$4,007.90
Land Use Site Plan - Conditional Use		
< 2 acres	\$5,058.82	\$3,052.14
< 5 acres	\$5,404.10	\$3,224.78
≤ 10 acres	\$5,750.42	\$3,397.94
> 10 acres	\$5,750.42	\$3,397.94
+ Per acre over 10 acres	+	\$82.16 + \$41.08

Construction Element Only - "B" Site Plan^{B,C}		
Site Plan - Construction Element		
< 2 acres	\$8,450.26	\$5,969.65
< 5 acres	\$8,672.82	\$6,121.18
≤ 10 acres	\$8,979.62	\$6,341.35
> 10 acres	\$8,979.62	\$6,341.35
+ Per acre over 10 acres	+	\$82.16 + \$41.08

Consolidated - "C" Site Plan^{B,C}		
Site Plan - Consolidated		
< 2 acres	\$10,275.46	\$6,882.25
< 5 acres	\$10,755.94	\$7,162.74
≤ 10 acres	\$11,323.78	\$7,513.43
> 10 acres	\$11,323.78	\$7,513.43
+ Per acre over 10 acres	+	\$187.20 + \$107.02

"D" Site Plan		
Building, Parking & Other Site Work^{B,C}	\$7,303.14	\$5,369.26
+ Per acre over 10 acres	+	\$118.56 + \$70.20
Drainage and Channel Improvements^B		
< 1,000 linear feet	\$3,447.86	\$2,653.51
< 5,000 linear feet	\$3,786.90	\$2,924.74
≤ 10,000 linear feet	\$4,125.94	\$3,195.97
> 10,000 linear feet	\$4,125.94	\$3,195.97
+ Per 5,000 linear feet over 10,000	+	\$1,490.32 + \$1,192.26

Street & Drainage Water Quality, Drainage & Transportation^{B,C}		
< 1,000 linear feet	\$4,802.98	\$3,737.60
< 5,000 linear feet	\$5,142.02	\$4,008.84
≤ 10,000 linear feet	\$5,481.06	\$4,280.07
> 10,000 linear feet	\$5,481.06	\$4,280.07
+ Per 5,000 linear feet over 10,000	+	\$1,829.36 + \$1,463.49

Site Plan Review Fees (Page 2 of 2)

Other Site Plan Fees		Total
Utility and Storm Sewers ^B		\$2,569.06
+ Per acre over 10 acres	+	\$88.40
Transportation Site Plan		
As part of other site plan		\$1,592.24
Stand alone		\$3,185.52

Small Project Fees	Total	Revisions
Construction Element Only - "BS" Site Plan ^{B,C}	\$1,900.08	\$1,098.76
Consolidated - "CS" Site Plan ^{B,C}	\$2,591.68	\$1,444.56
Telecommunication Tower (Full Purpose) ^{B,C}	\$2,850.64	\$1,444.56
"DS" Site Plan ^{B,C}	\$1,727.44	\$1,012.44
Telecommunication Tower (ETJ) ^{B,C}	\$1,986.40	\$1,012.44
Boat Dock		
Small Project ^B	\$4,962.88	\$2,519.30
Non-Small Project ^B	\$6,021.60	\$2,519.30

Miscellaneous Fees	Total
Site Plan Extension	
First Extension	\$3,221.92
Commission Approved Extension	\$5,833.36
Drainage Construction Engineering	
< 1,000 linear feet	\$1,653.60
< 5,000 linear feet	\$2,251.60
≤ 10,000 linear feet	\$2,590.64
> 10,000 linear feet	\$2,590.64
+ Per 5,000 linear feet over 10,000	+ \$169.52
Phasing Fee (<i>first phase is free</i>)	\$126.88
Variance/Waiver	
Administratively Approved	
Transportation Planning	\$205.92
Transportation Engineering	\$416.00
Environmental	\$71.76
Drainage	\$881.92
ERI	\$152.88
Commission Approved	
Transportation Planning	\$3,425.76
Transportation Engineering	\$3,336.32
Zoning - Other	\$3,101.28
Compatibility	\$3,189.68
Environmental	\$6,019.52
Council Approved Code Amendment	
Environmental	\$7,459.92

Miscellaneous Fees (continued)	Total
Withdraw and Resubmit	\$556.40 + 50% of current fees
Appeal of Site Plan Commission Decision	\$4,498.00
Site Plan Public Hearing Preparation	\$2,420.08
Fast Track Certification Fee	
Initial application	\$220.48
Annual renewal	\$88.40
Fast Track Review fee	\$941.20 + cost of Consolidated Environmental Site Plan Fee
Completeness Check	\$297.44
Chapter 245 Review	
Chapter 245 Verification	\$175.76
Determination	\$1,386.32
Managed Growth Agreement	\$11,327.68
Project Consent Agreement	\$12,760.80
Fair Notice Fee	\$527.28
Commercial Site Plan Exemption	\$190.32
Site Plan Correction	\$180.96
Landscape Inspection	
≤ 1 acre	\$130.00 per phase
> 1 acre	\$260.00 per phase
Landscape Re-inspection	
≤ 1 acre per phase	\$97.76
> 1 acre per phase	\$194.48
License Agreement Landscape Review	\$130.00
Watershed Protection Fees	
Completeness Check	\$23.92
Floodplain Modification	\$958.88
Site Plan Correction Fee	\$80.08
Site Plan Consultation fee (per hour, 2-hour max)	\$319.28
Site Plan Revision	\$160.16
Administratively Approved Variance	\$264.16
Commission Approved Variance	\$4,674.80
ERI Waiver	\$152.88
Preliminary Clearing without full development	\$2,315.04
Rough Cut without full development	\$2,315.04

^A Austin Water Utility UDS Engineering Plan Review Fee covers updates 1 - 3. Fee increases on 4th and subsequent updates to \$536.25 each.

^B Additional Watershed Protection fee might also apply.

^C Additional Drainage Construction Engineering fee might also apply.

Subdivision Plan Review Fees

Effective: October 1, 2017

Updated: January 23, 2018

A completeness check is required on all site plan and subdivision applications. Once your completeness check is approved, call the intake staff to schedule an appointment to submit your application at one of the following number:

512-974-1770

Intake staff is available to assist you in calculating your fees and advising you on any requirements. They are located on the **4th floor** of One Texas Center at 505 Barton Springs Road.

Mailing Address:

City of Austin
Development Intake
One Texas Center - 4th Floor
PO Box 1088
Austin, TX 78767-8810

Constructors must contact the City Of Austin - Site and Subdivision Inspection Division to submit required documentation, pay construction inspection fees, and schedule the required Subdivision pre-construction meeting. This meeting must be held prior to any construction activities in the R.O.W. or public easements. Please visit <http://austintexas.gov/page/commercial-site-and-subdivision-inspections> for a list of submittal requirements, information concerning fees, and contact information.

Desired Development Zone				
Additional Watershed and/or Drainage Construction Engineering fees may apply.	Total			
Preliminary ^C	\$8,721.70	+	\$45.76	/acre
Final with Preliminary ^{C,E}	\$5,689.06	+	\$45.76	/acre
Final without Preliminary ^{C,E}	\$7,519.46	+	\$45.76	/acre
Construction Plans				
Concurrent	\$6,522.10	+	\$69.68	/acre
Non-concurrent	\$6,192.42	+	\$55.12	/acre
Plat Vacation				
Administratively Approved	\$4,369.04	+	\$14.56	/acre
Commission Approved ^D	\$4,546.88	+	\$14.56	/acre

Desired Development Zone - Revisions	Total		
Administrative Revision to Preliminary Plan			
Minor Revision	\$3,035.76	+	80% of current Env/Drainage fee
Minor Deviation	\$536.64	+	80% of current Env/Drainage fee
Extension of Approved Preliminary Plan <i>(Travis County Chapter 30 - 2 year request)</i>	\$1,299.22		
Administrative Revision to a Construction Plan	\$0.00	+	80% of current Env/Drainage fee
Amendment <i>(Amended Plat)</i> ^C			
Basic <i>Scrivener's Error/Name Change for Approved Subdivision</i>	\$3,694.08		
Advanced <i>Non-Scrivener's Error</i>	\$5,150.34		

Drinking Water Protection Zone	Total			
Additional Watershed and/or Drainage Construction Engineering fees may apply.				
Preliminary ^C	\$9,441.38	+	\$54.08	/acre
Final with Preliminary ^{C,E}	\$5,689.06	+	\$54.08	/acre
Final without Preliminary ^{C,E}	\$8,239.14	+	\$54.08	/acre
Construction Plans				
Concurrent	\$7,580.82	+	\$78.00	/acre
Non-concurrent	\$7,251.14	+	\$63.44	/acre
Plat Vacation				
Administratively Approved	\$4,728.88	+	\$17.68	/acre
Commission Approved ^D	\$4,906.72	+	\$17.68	/acre

^A Includes LUR, Environmental and WPD Completeness Check fees

^B Austin Water Utility UDS Engineering Plan Review Fee covers updates 1 - 3. Fee increases on 4th and subsequent updates to \$536.25 each.

^C Subdivision Public Hearing Preparation fee might also apply.

^D Subdivision Public Hearing Preparation Fee will always apply.

^E If Resubdivision, Subdivision Public Hearing Preparation fee, Basic Notification fee, and Newspaper Notification fee also apply.

^F May be subject to Basic Notification fee.



Development
CITY OF AUSTIN
SERVICES DEPARTMENT

Building a Better and Safer Austin Together

505 Barton Springs Road | Austin, TX 78704 | Phone: 512-978-4000 Website: DevelopmentATX.com

Subdivision Plan Review Fees (Page 2 of 2)

Watershed Protection Fees	Total
Preliminary	
Environmental Review	\$1,598.48
Environmental Review - Floodplain Modification	\$1,598.48
Environmental Review - Recharge Zone	\$2,645.76
Final with Preliminary	
Environmental Review	\$799.76
Environmental Review - Floodplain Modification	\$799.76
Environmental Review - Recharge Zone	\$1,322.88
Final without Preliminary	
Environmental Review	\$1,598.48
Environmental Review - Floodplain Modification	\$1,598.48
Environmental Review - Recharge Zone	\$2,645.76
Construction Plans	
Environmental Review	\$1,279.20
Environmental Review - Floodplain Modification	\$1,598.48
Environmental Review - Recharge Zone	\$1,984.32
Miscellaneous Fees	
Completeness Check	\$35.36
Administratively Approved Variance	\$264.16
Commission Approved Variance	\$4,674.80

Miscellaneous Fees	Total
Drainage Construction Engineering	\$508.56 + \$16.64 \$16.64 /acre
Subdivision Public Hearing Preparation	\$886.08
Variance/Waiver	
Administratively Approved	
Subdivision	\$354.64
Transportation Planning	\$188.24
Transportation Engineering	\$377.52
Environmental	\$143.52
Drainage	\$881.92
Tree	\$436.80
Commission Approved	
Subdivision	\$1,854.32
Transportation Planning	\$1,773.20
Transportation Engineering	\$1,725.36
Environmental	\$6,019.52
Tree	\$3,810.56
Council Approved	
Environmental	\$7,200.96
Protected Tree Review Commission Appeal	\$3,810.56
Withdraw and Resubmit	\$0.00 + 50% of current DSD and Env/Drainage fees
Completeness Check	\$310.96
County Recordation Courier Fee	\$886.08
Tree Fees	
Predevelopment Consultation	\$357.76
Utility Repair/Replacement Review	\$113.36
Utility Repair/Replacement Inspection	\$148.72
Legal Description	\$275.00



ZONING AND SPECIAL DISTRICT PLAN REVIEW FEES

Effective: October 1, 2017

Updated: January 23, 2018

Our Development intake staff is available to assist you with calculating your fees and advise you on intake requirements. Please call for an appointment to submit your application:

512-974-1770

Development intake is located on the **4th floor** of One Texas Center at 505 Barton Springs Road.

Mailing Address:

City of Austin
Development Intake
One Texas Center - 4th Floor
PO Box 1088
Austin, TX 78767-1088

Key to Symbols

- < Less than
- ≤ Less than or equal to
- > Greater than
- ≥ Greater than or equal to

Zoning Plan Review Fees	Total
Regular Rezoning	
< .25 acres	\$4,333.68
< .5 acres	\$4,906.72
< 1 acre	\$5,479.76
< 10 acres	\$5,479.76 + \$95.68 /acre over 1 acre
≤ 15 acres	\$6,338.80 + \$286.00 /acre over 10 acres
> 15 acres	\$7,770.88 + \$107.12 /acre over 15 acres
Historic Zoning Application	\$1,953.12
Local Historic Zoning Application	\$1,029.60
Land Use Determination	\$962.00
Restrictive Covenant Amendment/Termination	\$4,706.00
Signs <i>(flat fee, max 3 signs) per street frontage</i>	\$255.84
Zoning Site Plan Deletion <i>(Complete Deletion)</i>	\$1,804.40
Zoning Site Plan Revision	\$2,077.92
Capital View Corridor Building Height Determination	
General	\$1,701.40
Specific	\$3,589.40
Neighborhood Plan Amendment Application Fee - Individual Property	\$3,255.20
Neighborhood Plan Amendment Application Fee - Areawide Amendment	\$2,737.28
Research/Data Request	\$167.44 per hour up to 8 hrs
Legal Description	\$275.00
Traffic Engineering Fees	
Traffic Impact Analysis (TIA) Review	\$9,417.20
TIA Scoping Fee	\$2,087.28
TIA Waiver Fee	\$2,762.24
TIA Public Hearing Preparation	\$6,469.84
Neighborhood Traffic Analysis	\$2,993.12

^A Additional newspaper notification fee applies to Land Plan amendments

^B Additional WPD fee may apply

^C Additional Tree fee may apply

Special Distric Plan Review Fees	Total
Formal Development Assessments	\$4,697.68 + \$335.92 /acre over 5 acres
Formal Development Assessments for PUDs	\$12,247.04 + \$371.28 /acre over 5 acres
Development Assessment Conceptual Site Plan (Option Fair Notice) ^{A,B}	
< 2 acres	\$4,792.38
< 5 acres	\$5,215.66
≤ 10 acres	\$5,639.98
> 10 acres	\$5,639.98 + \$30.16 /acre over 10 acres
Municipal Utility District	
Creation	\$235,703.52
Administratively Approved Amendment ^A	\$4,831.84
Council Approved Amendment ^A	\$12,130.56
Out-of-district Service Request ^B	\$11,019.84
Annexation ^B	\$10,264.80 + \$338.00 if not in approved subdivision
Planned Development Area Creation	
< 10 acres	\$56,291.04
< 50 acres	\$60,568.56
≤ 250 acres	\$63,737.44
> 250 acres	\$63,737.44 + \$131.04 /acre over 250 acres
Administratively Approved Amendment ^B	\$1,146.08
Commission Approved Amendment ^{B,C}	\$9,155.12
Planned Unit Development Creation	
< 10 acres	\$93,477.28
< 50 acres	\$102,051.04
≤ 250 acres	\$110,662.24
> 250 acres	\$110,662.24 + \$239.20 /acre over 250 acres
Administratively Approved Amendment	\$1,919.84
Commission Approved Amendment	\$9,474.40
Public Improvement District ^B	\$85,700.16
Roadway Utility District ^B	\$8,803.60

Development Assistance Center Fees

Effective: October 1, 2017 Updated: December 29, 2017

Intake staff is available to assist you with calculating your fees and advise you on any requirements. Please call 512-974-6370 for information.

The Development Assistance Center is located on the **1st floor** of One Texas Center at 505 Barton Springs Road.

Mailing Address:

City of Austin
Development Assistance Center
One Texas Center - 1st Floor
PO Box 1088
Austin, TX 78767-1088

Fees	Total
Alcoholic Beverage Waiver	\$3,117.92
Board of Adjustments	
Zoning Variance	\$1,782.56
Special Exceptions	\$1,994.72
Sign variance - Commercial	\$1,782.56
City Outdoor Advertising (sign) License	
New/Annual Renewal	\$29.00
Commercial Site Plan Exemption	\$55.12
Document Sales - <i>Not eligible for refunds</i>	
Copies of Site Plans/Maps	
Letter (8.5"x11") + tax	\$0.84
Small (11"x17") + tax	\$1.12
Medium (18"x24") + tax	\$2.25
Large (24"x36") + tax	\$3.37
Imagine Austin Book + tax	\$13.80
Zoning Verification Letter	\$17.68
Zoning Compliance Letter	\$71.76
Address Verification Letter (<i>each</i>)	\$17.00 /each
Sign Review Fees	
Free Standing, Roof Sign, Projecting Sign	\$121.68
Wall Signs and Awnings	\$30.16
Historic District	\$30.16
Billboard Relocation	\$189.28
Temporary Use Permit	\$192.40
Mobile Retail Permit	\$42.64
Site Plan Correction Fee	\$152.88
Land Status Determination (<i>Legal Tract Determination</i>)	\$142.48
Sound Amplification Permits	
After Hours Concrete Pouring in Central Business District	\$94.64
Outdoor Music Venue ^{A, B}	\$448.24
Multi-Day Sound Amplification ^{A, B}	\$511.68
Single-Day Sound Amplification ^A	\$94.64
All Other Sound Amplification Permits ^A	\$63.44

^A Additional fees from the Economic Development Department may apply.

^B Basic Notification fee of \$258.96 can be waived if applicant prepares notifications.



Development
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SERVICES DEPARTMENT

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Expedited Plan Review Fees

	DSD Fees	4% Surcharge	Total
Completeness Check	\$255.00	\$10.20	\$265.20
Residential Plan Review <i>per hour, minimums apply</i>	\$822.00	\$32.88	\$854.88
Commercial Plan Review <i>per hour, minimums apply</i>	\$1,462.00	\$58.48	\$1,520.48
Follow Up Review / Preliminary Plan Review <i>per hour, one-hour minimum</i>			
Building	\$131.00	\$5.24	\$136.24
Mechanical	\$131.00	\$5.24	\$136.24
Electrical	\$131.00	\$5.24	\$136.24
Plumbing	\$131.00	\$5.24	\$136.24
Zoning	\$131.00	\$5.24	\$136.24
Arborist	\$131.00	\$5.24	\$136.24
Structure	\$146.00	\$5.84	\$151.84
Energy	\$131.00	\$5.24	\$136.24
Fire	\$154.00	\$6.16	\$160.16
Health	\$117.00	\$4.68	\$121.68
Industrial Wastewater	\$131.00	\$5.24	\$136.24
Quick Turnaround Fee <i>per discipline</i>	\$65.00	\$2.60	\$67.60



Planning and Zoning Department

One Texas Center
505 Barton Springs Road, 5th Floor
Austin, TX 78704
Phone: 512.974.2727

Historic Preservation Fees

	PAZ	DSD	Subtotal	4% Surcharge	Total
Commercial Review Fee for Demolition/Relocation					
Commercial located within a historic district or 40 years or older ¹	\$59.00		\$59.00	\$2.36	\$61.36
Residential Review Fee for Demolition/Relocation Permit					
Partial demolition or relocation review (principal building) ¹	\$209.00		\$209.00	\$8.36	\$217.36
Total or partial demolition or relocation review (accessory building) ¹	\$50.00		\$50.00	\$2.00	\$52.00
Public hearing preparation fee (if case will be heard by Historic Landmark Commission)	\$780.00		\$780.00	\$31.20	\$811.20
Historic Landmark Commission Processing Fees					
Certificate of Appropriateness ¹	\$291.00		\$291.00	\$11.64	\$302.64
Building permit application within a National Register historic district ¹	\$214.00		\$214.00	\$8.56	\$222.56
Historic District Sign Review	\$168.00	\$29.00	\$197.00	\$7.88	\$204.88
Local Historic District Zoning Application²	\$945.00	\$540.00	\$1,485.00	\$59.40	\$1,544.40
Historic Zoning Application²	\$945.00	\$540.00	\$1,485.00	\$59.40	\$1,544.40
Landmark Plaque	\$123.00		\$123.00	\$4.92	\$127.92

¹ Additional basic notification fee (\$249) and sign fee (\$246) required if the case will be heard by the Historic Landmark Commission.

² Includes a sign fee (\$246) in PAZ fees and a basic notification fee (\$249) in DSD fees.

Mailing Address:

City of Austin
Planning and Zoning Department
Historic Preservation
PO Box 1088
Austin, TX 78767-1088

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Austin Water Fee Information

Austin Water does not require a service line upgrade, second meter, or wastewater line upgrade for a secondary dwelling except in certain cases. Policy memoranda are attached as are the fees for new water meters. Specifically, the protocols provide the following exceptions.

- **Exception Policy for Service Line Upgrade (Single-Family Residential Homes):** Existing 3/4-inch or larger water service lines will not need to be upgraded to 2-inch copper if the increased bath count remains 4.5 or less, a total Water Supply Fixture Unit is equal to 48 or less, and the proposed water meter is equal to or less than 3/4-inch. This also applies to proposed redeveloped properties.
- **Exception Policy for Accessory Dwelling Units (ADU):** If the primary house remains and the total bath count with the ADU is 4.5 or less and a total Water Supply Fixture Unit is equal to 48 or less, a single 3/4-inch meter may service both structures. The customer will also be allowed to retain existing water service lines if they are 3/4-inch or larger.
- **Exception Policy for Wastewater Service Line Upgrade (Single-Family Homes, Duplexes, ADU's):** A 4-inch wastewater service line does not need to be upgraded to a 6-inch line for two or less existing or proposed structures on a lot unless there are known deficits in the line, conflicts with other structures or trees, or the line legally crosses a lot line.

Austin Energy Fee Information

Austin Energy does not require an ESPA (Electrical Service Planning Application) for all secondary dwellings. It is only required when there is a new or change in electric service load on the property.

Single-Family Home Residential Water Meter and Service Line Upgrade Exception Protocol

Purpose:

The purpose of this document is to establish Austin Water's internal policy for processing water meter upgrades for existing or proposed single-family residential homes currently served by water service lines that are $\frac{3}{4}$ " in diameter or larger.

Background:

A water service line must be upgraded by the property owner from the main to the property line when a property owner is upgrading, remodeling, or rebuilding a single-family home (to be in alignment with the Utility Criteria Manual after October 1, 2014 when Austin Water transferred the upgrading responsibility to the property owners). This requirement has resulted in cost and schedule impacts which has raised many concerns.

A typical example would be an existing single-family home that is currently served by a $\frac{3}{4}$ " water service line with a $\frac{5}{8}$ " water meter. This existing home is being remodeled to increase the bathroom count from 2 to 3.5. Generally, this remodel would require both meter and service line size upgrades.

In consideration of the City of Austin City Council and Staff's desire to minimize cost and schedule impacts to the customer for more affordable redevelopment of single-family homes, effective immediately, Austin Water's policy will NOT require a property owner who has an existing meter on a water service line that is $\frac{3}{4}$ " or larger to upgrade the service line if the remodeled, upgraded, or proposed single-family home has a total bath count of $4\frac{1}{2}$ or less and total Water Supply Fixture Unit of 48 or less. This policy will still require an increase in meter size to $\frac{3}{4}$ " (if bathroom count is 3.5 to 4.5) but the owner will be allowed to be served by the existing water service line. In this case, Austin Water will be responsible for maintenance and future upgrade, when necessary, of the service line.

Austin Water Responsibilities:

Austin Water Tap's Permitting Office will evaluate on a case-by-case basis, the sizing of existing infrastructure versus the proposed demand of the single-family home development to determine if a meter and/or a water service line upgrade will be required. If the proposed development meets the policy described above, the property owner will only be required to apply for the meter upgrade and pay the applicable fees. In the event the proposed development does not meet the policy described above, the property owner shall submit a formal Utility Tap Plan for Austin Water's review and follow the normal tap application process. This policy shall remain effective until replaced by a subsequent policy.


Greg Meszaros, Austin Water Director


Date

Criteria for exception from the secondary water meter requirements for a proposed secondary dwelling structure also known as accessory dwelling units (ADU).

The Austin Water Utility Criterial Manual requires under Section 2.9.2 F.1. "That those properties with two, three, or four living units shall have an individual water meter serving each living unit". The Utility may make an exception regarding the secondary water meter requirement for existing property owners desiring to build an ADU, provided **all of** the following criteria are met:

1. The property is a "legal lot" as deemed by the requirements of the Texas Local Government Code, Chapter 212.
2. Private water and wastewater lines serving the existing and proposed dwelling units do not cross property lines, unless allowed by a recorded easement.
3. The property's zoning and land use is deemed residential and is only requesting to add one ADU as an accessory to the primary dwelling unit.
4. The total combined bathroom count of both the primary dwelling unit and the ADU are less than or equal to 4 ½ baths, and less than or equal to 48 water supply fixture units.
5. The property is connected to the City of Austin wastewater collection system.
6. The property owner has been informed that the City of Austin will bill water and wastewater services for both dwelling units on one utility bill, and that these services will be billed at the residential rate.
7. The property agrees to upgrade an existing 5/8" water meter to a ¾" water meter and pay required fees, if applicable.



Greg Meszaros, Austin Water Director



Date

Residential Wastewater Service Line Upgrade Exception Protocol

Purpose:

The purpose of this document is to establish Austin Water's internal policy for requiring wastewater service line upgrades for sites served by an existing 4-in wastewater service line and with two or less existing (or proposed) dwelling units (i.e., single family homes, duplexes, main homes with no more than one additional dwelling unit).

Background:

On October 1, 2014 Austin Water transferred the responsibility of upgrading water and wastewater services to the property owner. For customers served by an existing 4-in wastewater service line, this means replacing an existing 4-in with a 6-in wastewater service line. This transfer of responsibility has resulted in cost and scheduling impacts to owners and has raised concerns regarding affordability.

In consideration of the City Council and Staff's desire to minimize cost and scheduling impacts to customers for more affordable housing, effective immediately, Austin Water's policy will NOT require a property owners of sites with two or less dwelling units (as described above) to upgrade from an existing 4-in wastewater service line to a 6-in wastewater service line unless there are known defects on the existing wastewater service line (as defined by City Code 15-11-4-E), there are known conflicts (such as the wastewater service line is located within $\frac{1}{2}$ of the critical root zone of a protected tree), or the location of the existing wastewater service line will cause the private sewer yard line to illegally cross lot lines.

Austin Water Responsibilities:

Austin Water Tap's Office will evaluate via the review of the completed Water Wastewater Service Plan Verification Form, on a case-by-case basis, the location of existing infrastructure to determine if there are conflicts with the existing wastewater service. If there no known conflicts or defects, the property owner will be allowed to retain the existing 4-in wastewater service line. In the event there are known conflicts or defects, the property owner will be required to submit a formal Utility Tap Plan for Austin Water's review, and follow the normal tap application process, Austin Water policies, and the City's Utilities Criteria Manual. This policy shall remain effective until replaced by a subsequent policy.

Customer Responsibilities:

The property owner will continue to be required to report any known blockages or sanitary sewer overflows result of a defective wastewater service line to Austin Water Tap's office.



Greg Meszaros, Austin Water Director

9/4/15

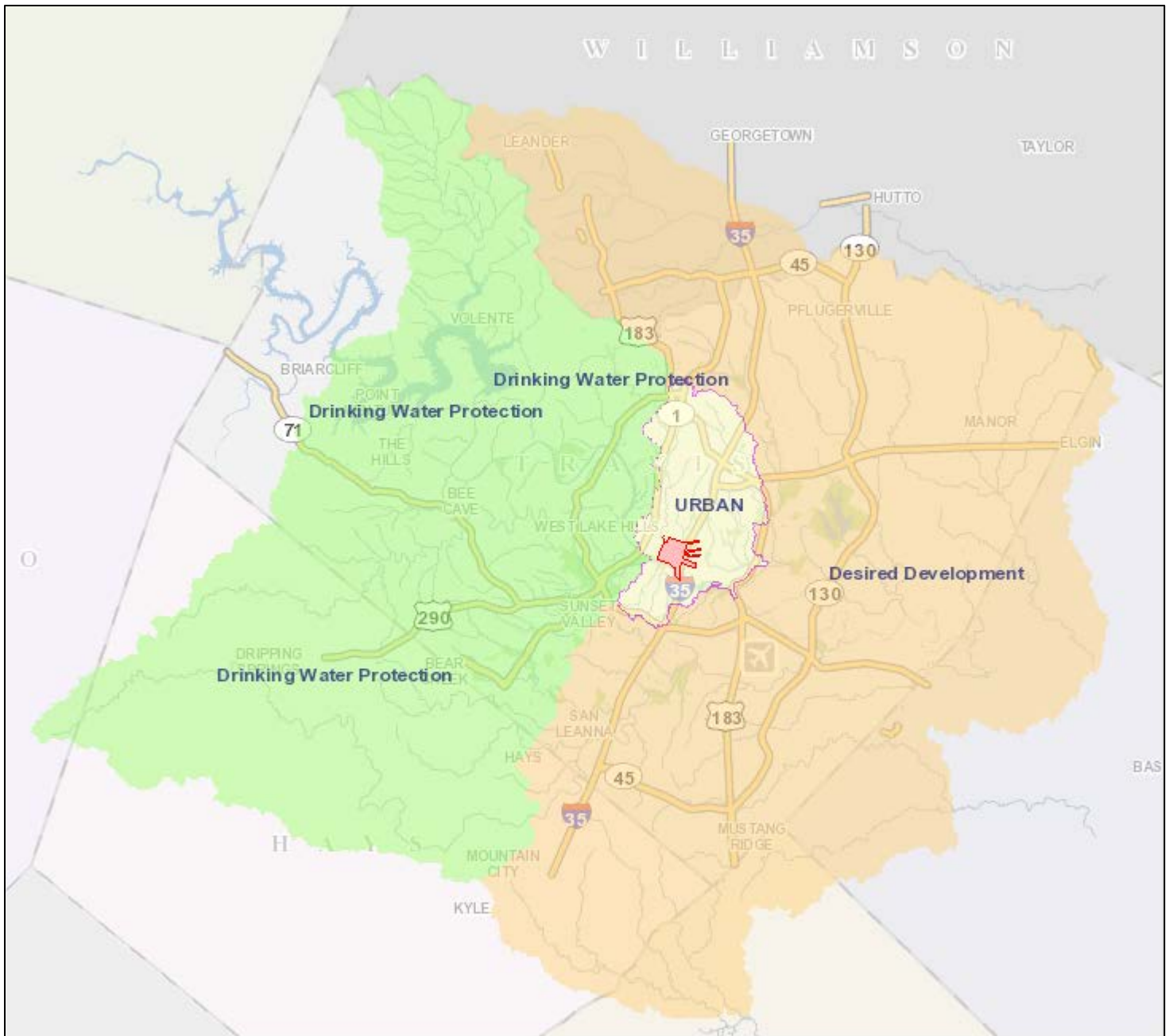
Date

Austin Water/Wastewater Fees (typically 5/8" or 3/4" for 1-2 single family residences)

		Zone					
		Core	Urban	Desired Development (inside city)	Desired Development (outside city)	Drinking Water Protection (inside city)	Drinking Water Protection (outside city)
Platted Before 1/1/2007	Meter charge	\$ 52.39	\$ 52.39	\$ 52.39	\$ 52.39	\$ 52.39	\$ 52.39
	Water CRF	\$ 500.00	\$ 600.00	\$ 700.00	\$ 1,300.00	\$ 1,500.00	\$ 1,700.00
	Wastewater CRF	\$ 300.00	\$ 400.00	\$ 400.00	\$ 800.00	\$ 1,200.00	\$ 1,300.00
	Drop-in Fee	\$ 172.00	\$ 172.00	\$ 172.00	\$ 172.00	\$ 172.00	\$ 172.00
	Inspection Fee	\$ 68.50	\$ 68.50	\$ 68.50	\$ 68.50	\$ 68.50	\$ 68.50
	Total	\$ 1,092.89	\$ 1,292.89	\$ 1,392.89	\$ 2,392.89	\$ 2,992.89	\$ 3,292.89
Platted Between 1/1/2007 and 1/1/2014	Meter charge	\$ 52.39	\$ 52.39	\$ 52.39	\$ 52.39	\$ 52.39	\$ 52.39
	Water CRF	\$ 700.00	\$ 800.00	\$ 1,000.00	\$ 1,800.00	\$ 2,200.00	\$ 2,500.00
	Wastewater CRF	\$ 400.00	\$ 500.00	\$ 600.00	\$ 1,000.00	\$ 1,200.00	\$ 1,400.00
	Drop-in Fee	\$ 172.00	\$ 172.00	\$ 172.00	\$ 172.00	\$ 172.00	\$ 172.00
	Inspection Fee	\$ 68.50	\$ 68.50	\$ 68.50	\$ 68.50	\$ 68.50	\$ 68.50
	Total	\$ 1,392.89	\$ 1,592.89	\$ 1,892.89	\$ 3,092.89	\$ 3,692.89	\$ 4,192.89
Platted After 1/1/2014	Meter charge	\$ 52.39					
	Water CRF	\$ 5,400.00					
	Wastewater CRF	\$ 2,200.00					
	Drop-in Fee	\$ 172.00					
	Inspection Fee	\$ 68.50					
	Total	\$ 7,892.89					

		Zone					
		Core	Urban	Desired Development (inside city)	Desired Development (outside city)	Drinking Water Protection (inside city)	Drinking Water Protection (outside city)
Platted Before 1/1/2007	Meter charge	\$ 73.47	\$ 73.47	\$ 73.47	\$ 73.47	\$ 73.47	\$ 73.47
	Water CRF	\$ 750.00	\$ 900.00	\$ 1,050.00	\$ 1,950.00	\$ 2,250.00	\$ 2,550.00
	Wastewater CRF	\$ 450.00	\$ 600.00	\$ 600.00	\$ 1,200.00	\$ 1,800.00	\$ 1,950.00
	Drop-in Fee	\$ 172.00	\$ 172.00	\$ 172.00	\$ 172.00	\$ 172.00	\$ 172.00
	Inspection Fee	\$ 68.50	\$ 68.50	\$ 68.50	\$ 68.50	\$ 68.50	\$ 68.50
	Total	\$ 1,513.97	\$ 1,813.97	\$ 1,963.97	\$ 3,463.97	\$ 4,363.97	\$ 4,813.97
Platted Between 1/1/2007 and 1/1/2014	Meter charge	\$ 73.47	\$ 73.47	\$ 73.47	\$ 73.47	\$ 73.47	\$ 73.47
	Water CRF	\$ 1,050.00	\$ 1,200.00	\$ 1,500.00	\$ 2,700.00	\$ 3,300.00	\$ 3,750.00
	Wastewater CRF	\$ 600.00	\$ 750.00	\$ 900.00	\$ 1,500.00	\$ 1,800.00	\$ 2,100.00
	Drop-in Fee	\$ 172.00	\$ 172.00	\$ 172.00	\$ 172.00	\$ 172.00	\$ 172.00
	Inspection Fee	\$ 68.50	\$ 68.50	\$ 68.50	\$ 68.50	\$ 68.50	\$ 68.50
	Total	\$ 1,963.97	\$ 2,263.97	\$ 2,713.97	\$ 4,513.97	\$ 5,413.97	\$ 6,163.97
Platted After 1/1/2014	Meter charge	\$ 73.47					
	Water CRF	\$ 5,400.00					
	Wastewater CRF	\$ 2,200.00					
	Drop-in Fee	\$ 172.00					
	Inspection Fee	\$ 68.50					
	Total	\$ 7,913.97					

Map of Zones Related to Austin Water/Wastewater Meter Fees





Single Family Home Residential & Solar Electric Meter and Service Requirements

Purpose:

The purpose of this document is to establish Austin Energy's internal policy for establishing new or upgraded electric service requirements for residential use.

New or upgraded service installation:

Austin Energy requires an Electric Service Planning Application (ESPA) containing electrical load information to be filled out and submitted by the Master Electrician. This application is required when submitting for an electric permit for service work being performed on new or upgraded customer-owned equipment. This document may be submitted electronically to www.aebspaespa.com or submitted in person at the Development Assistance Center and will be reviewed by AE staff in the DAC within 24 hours.

Solar installation:

Austin Energy requires a Distributed Generation Planning Application (DGPA) containing electrical load information pertaining to solar ampacity to be filled out and submitted by the solar contractor. This application is required when submitting for a solar permit on new customer-owned solar equipment. Please see Austin Energy's interconnection guide contained within AE's Design Criteria Manual.

Austin Energy's Design Criteria Manual contains more specific information with regards to metering requirements, sizing, solar requirements etc. Check out Austin Energy's website www.austinenergy.com and search for design guidelines and specifications.

Per Metered Service

Load size	Meter size	Meter cost	Voltage	Class	Wire size	Distance	Cost of Wire Type	Total cost
150/200amp	2-S meter	\$199	120/240	200	1/0	0-75'	\$201.00 Res.OH	\$400.00
320 SLR	2-S meter	\$192	120/240	320	4/0	0-55'	\$208.00 Res.OH	\$400.00
150 amp	2-S meter	\$199	120/240	200	1/0	0-150'	\$601.00 Res. UG	\$800.00
200 amp	2-S meter	\$199	120/240	200	3/0	0-150'	\$601.00 Res. UG	\$800.00
320 SLR	2-S meter	\$192	120/240	320	4/0	0-150'	\$1,408.00 Res. UG	\$1,600.00
Electric Service Planning Application Review Fee								\$100.00
Distributed Generation Planning Application Review Fee								\$100.00
Austin Energy Hot Tie Fee								\$600.00
Austin Energy Reinspection Fee								\$75.00
Austin Energy Meter Tampering Fee								\$850.00
Austin Energ Trip Fee								\$250.00

Revised Schedule Proposed To AEDC Board in February 2021 (Pending Approval)

March 2021

Step 1: City Council Forms TIRZ

- Review preliminary financing plan
- Accept but-for analysis
- Host public hearing on TIRZ Approve ordinance establishing
- TIRZ Board of Directors (SCWAB)
- Freeze tax increment base

May 2021

Step 2: City Council Votes on TIRZ Financing Plan

- Finance to review/approve final Financing Plan
- Housing & Planning to review/approve final Regulating Plan
- AEDC to approve final Project Plan and explore partnership(s) with other taxing units via Real Estate Committee

2021-beyond

Step 3: Board & City Council Implement TIRZ

- Contracts with AEDC to administer TIRZ
- AEDC & TIRZ Board negotiate development agreements
- Bonds issuance to fund infrastructure & affordable housing (requires City Council approval)