



Colony Park Wellness Center 6420 Helen Miller View Austin, TX

Evaluation related to the Jet A fuel pipeline

COFFMAN PROJECT NO. 253506

May 20, 2026

Revised June 24, 2026

**Colony Park Wellness Center
Evaluation related to the Jet A fuel pipeline**

FOR

HKS

Project Number: 253506

PREPARED BY:

**COFFMAN ENGINEERS, INC.
19500 SH 249, Suite 320
Houston, TX 77070
CONTACT:
Mike Crowley
281.946.6235**

Introduction

The Colony Park Wellness Center located at 6420 Helen Miller View, Austin, TX was identified in drawing review comments as needing to comply with the City of Austin development requirements of 25-2-516. This regulation requires the structure have a performance-based design that provides an adequate time period for occupant evacuation to a safe place in the event of a pipeline leak or fire associated with the pipeline. Colony Park Wellness Center at the closest point is approximately 370 feet from the pipeline. The pipeline is located on the opposite side of Loyola Lane. Attachment 1 shows dimensions of the site and building from the existing pipeline. 2025-083664 PR was reviewed by Austin Fire and comments were issues on 5/1/26. Those comments are addressed in this report. **(F1 to F5 see Attachment 6).**

General Building Configuration and Parameters

This project is a Type II-B construction 4 Level (story) Medical Office Building greater than 5000 square feet provided with automatic sprinkler protection throughout, standpipe system, and the fire detection and alarm system with voice alarm communication system.

Egress Evaluation

Egress for the building consists of two stairs stair A and stair B. In addition to the stairs there is grade access to the Lower Level, Level 1 (North), and Level 2 (East side). Stairs have two-hour fire resistive enclosures. The site has a substantial elevation change. Stair A discharges into the grade Level lobby on Level 2 **(F2)**. Stair B Discharges on Lower-Level directly to grade. Stair B **(F2)** discharge has a retaining wall approximately 8 feet tall shielding the exit path to shelter in place.

Stair A discharge to grade Level 2 is approximately 500 feet from the pipeline. This exit area is beyond the 500-foot range.

Exit capacity meets and exceeds the code minimum. There is a combination of doors to grade Lower Level, Level 1 and Level 2 and stairs that provide the exit capacity. Egress capacity and occupant load is in Table 1 below. Travel distance and occupant loads are from current life safety plans for the building.

Table 1 Egress capacity exceeds the occupant loading on all Levels.

Level	Capacity in Persons	Occupant load – Persons
Lower Level	480 doors	46
1	440 Stair plus 480 doors to Exterior	46
2	220 stairs plus 720 doors to Exterior	219
3	445 stairs	179

Excess egress capacity is provided.

Travel distance to the egress is:

Level	Maximum Travel Distance in Feet
Lower	138 Office support
Lower	200 Parking
1	112
2	112
3	105

Maximum code allowed travel distance for the Medical Office Building (MOB) is 300 feet. Maximum code allowed travel distance for parking is 400 feet. Attachment 4 are floor plans with basic travel distances and occupant loads.

Timed Egress Evaluation

Egress times using SFPE Fire Protection Engineering Handbook 5th edition Chapter 59 (SFPE FPDH) (**F1**). Travel distance and occupant loads are from current life safety plans for the building. The occupant arrangement is low density .05 persons/sq ft and modified to reflect 50% of normal travel speeds horizontally and vertically SFPE FPEH Table 59.4. The effective width of the egress elements are calculated per SFPE FPEH boundary layer. Using formulas 59.5 and 59.7 to determine travel speed and flow time through egress elements.

Hydraulic Calculated Egress Time (SFPE FPEH)

Level	Distance Feet	Travel Speed	Effective width (include boundary layer)	Flow rate	Occupant load	Travel Time	Flow Time
Lower	138	117 feet / min	5 feet	6.25person/min/ft	48 persons	1.2 min	.89 min
Lower Parking	200	117 feet / min	5 feet	6.25person/min/ft	48 persons	1.7 min	.89 min
1	112	117 feet / min	5.5 feet	6.25person/min/ft	48 persons	.96 min	1.4 min
2 Vertical down	15	84 feet /min***	6.4 feet**	9.25 person/min/ft*	219 persons	.18 min	3.7 min
3 Vertical down	30	84 feet /min***	6.4 feet**	9.25 person/min/ft	179 persons	.36 min	3.0 min

*Table 59.5 reduced by 50%

**Total stair width 89 inches – 12 boundary layer = 77 inches (6.41 feet)

*** Travel speed in the vertical direction down.

Time to egress from Level 3 to grade is the flow time from Level 2 plus flow time from Level 3 (3.7 + 3.0 = 6.7 minutes. Safety factor of 2; exit time would be 13.4 minutes. Once egress starts the building should clear in 13.4 minutes. Travel to a shelter in place would be the horizontal travel time from the doors to the exterior to the area to shelter in place. The Lower-Level parking area is shielded from exposure from a pipeline fire. Occupants can access the parking area without being exposed by using the south Stair B as access.

If required, the exit capacity of North Stair A (Per IBC) can accommodate the total building occupant load on each Level and discharge the occupants outside the Ordinance's 500-foot separation. This building is a medical clinic. Clients are ambulatory similar to office buildings. The Level 3 Dental clinic may use low levels of sedation. There will be no hard piped medical gases in the building. These dental clients will not be deeply sedated and are easily made alert and capable of unassisted egress. Level 1 has a pharmacy; pharmacy pick up and kitchen (Not for public use). Occupants at Level 1 have similar mobility to an office building. No clinical procedures occur on lower Level and Level 1.

General Building Exposure

Building orientation has limited glazed opening facing South. The South wall is approximately 370 feet from the gas pipeline. The wall facing South has the following area of glazed openings:

Level	Amount of opening Facing South
Lower	0%
1	0%
2	56.5%
3	42.4%

North wall is facing away from the pipeline and is beyond 500 feet. The East walls have glazed openings on Levels 2 and 3. The West walls have glazing on level 1, 2 and 3.

Topography

Pipeline elevations exceed the Lower Level and Level 1. The impact of the topography is difficult to evaluate due to the trees and vegetation but anticipated to provide a benefit due to elevation changes in relation to exit discharge from Stair B. The area between the pipeline and building has not been developed. See Attachment 1.

Pipeline Characteristics

The pipeline is a 16-inch line transporting Jet-A fuel, which has a flashpoint in the range of 118 - 125°F depending on the fuel formulation (Class II combustible liquid). The likelihood of a 5,500-gallon Jet A fuel pool fire or a 2 inch hole in the pipeline with ignition is low, as the conditions required for such an event are significantly demanding.

Leak Detection

Type of Leak detection provided on the pipeline is provided based on public information the pipeline owner has posted. Details are not available. The details have been requested but not provided by the pipeline owner(F5). See Attachment 5 page 41 from Flint Hill Stewardship Report.

We have evaluated the product and due to the 370 feet of separation distance there is not commercially available hydrocarbon detector that would be useful in this configuration. Hydrocarbon detection would add no value to the site safety.

Emergency Response

Emergency responders have fire department access lanes as required by the Fire Code. Access roadways are provided on 3 sides of the building. The primary building access point is the Northeast area of the building. This area is outside the 500-foot separation. Secondary building access point would be the Southwest Stair B discharge on Lower Level. The area is shielded by a retaining wall and topography. Emergency response equipment can be located on the north side of the building outside the 500 feet from the pipeline **(F4)**.

City of Austin development requirements of 25-2-516 B. (Copy from MuniCodes below)

- (l) retirement housing (large site).
- (b) A use requiring evacuation assistance is prohibited in a structure intended for human occupancy that is located within 500 feet of a hazardous pipeline. This prohibition does not apply to a structure that is located between 200 and 500 feet of a hazardous pipeline if by resolution the council determines, after receiving a recommendation from the fire chief, that:
- (1) the structure has a performance-based design that provides an adequate time period for occupant evacuation to a safe place in the event of a pipeline leak or fire associated with the pipeline, after considering:
- (a) the requirements of Chapter 25-12, Article 7 (*Uniform Fire Code*) and the 2000 edition of the National Fire Protection Association 101 Life Safety Code;
 - (b) the site and structure design;
 - (c) the structure's building materials;
 - (d) the structure's distance from the pipeline;
 - (e) the use of radiant energy barriers;
 - (f) access to the site and the structure by emergency responders;
 - (g) available on-site resources for emergency responders;
 - (h) the topography and other natural features;
 - (i) the use of the structure; and
 - (j) the evacuation capability of the occupants;
- (2) the structure incorporates a system for the early detection and notification of a pipeline leak, if the fire chief determines that an appropriate system is commercially available; and
- (3) the performance-based design for occupant evacuation and the early detection and notification system are certified and sealed by an engineer registered in Texas.

This section will address the development ordinance 25-2-516B. The bold titles are the response to the ordinance requirement by paragraph number.

This building is located between 200 and 500 feet from the Flint Hill Jet A pipeline along Loyola Lanet. The Austin Fire Chief is allowed to recommend the use of the building if items 25-2-516 B (1) (a) to (j), 25-2-516 B (2) and 25-2-516 B (3) are addressed and acceptable. The following is the section-by-section response to the ordinance requirements.

25-2-516 B (1)

Response: This building has adequate exit capacity to egress all the occupants from the building to exit discharge areas greater than 500 feet from the pipeline. Egress time to clear the building once evacuation has started around 13.4 minutes. Egress movement can be initiated using the fire alarm voice communications system. The building and lower-level parking are available as a shelter in place locations.

The time to detect the leak is not known. Flint Hill operates the pipeline and claims to have a leak detection system. The notification of a leak when announced to the public and recognized by the building management would be to start the shelter in place announcements on the fire alarm **(F5)**. The fire scenarios are large and would be reported by the passing public on Loyola Lane.

25-2-516 B (a) (1)

Response: The civil drawings show compliance with the current fire department access. The ordinance requires compliance with Uniform Fire Code 25-12 (No editions references- Note last edition of the UFC was in 1997). This code is out of print. The 25-12 section in previous editions of UFC address fire department access. Fire department access around the building complies with the current IFC with City of Austin Local Amendments. Access to the site and structure by emergency responders is only from Loyola Lane to Helen Miller View **(6)**. Fire responders can be shielded from the jet fire by parking at the North side of the building. That point is greater than 500 feet and shielded from radiant energy**(F4)**.

NFPA 101 2000 edition is reference for compliance. The building meets the egress requirements for travel distance; dead end corridors exit arrangement and exit discharge of NFPA 101 2000 edition.

25-2-516 B (1) (b)

Response: The site is a sloping site with the pipeline at or above the elevation of the building lower level. The land between is undeveloped soil. Leaks will likely be absorbed into the soil if the leak crosses Loyola Drive. The structure will be a Type II B structure in accordance with the current Austin Building Code with City of Austin Local Amendments.

25-2-516 B (1) (c)

Response: The building is Type IIB nonrated noncombustible structure with noncombustible exterior walls with limited glazing Level 2 and 3 (See exposure paragraph above) facing south.

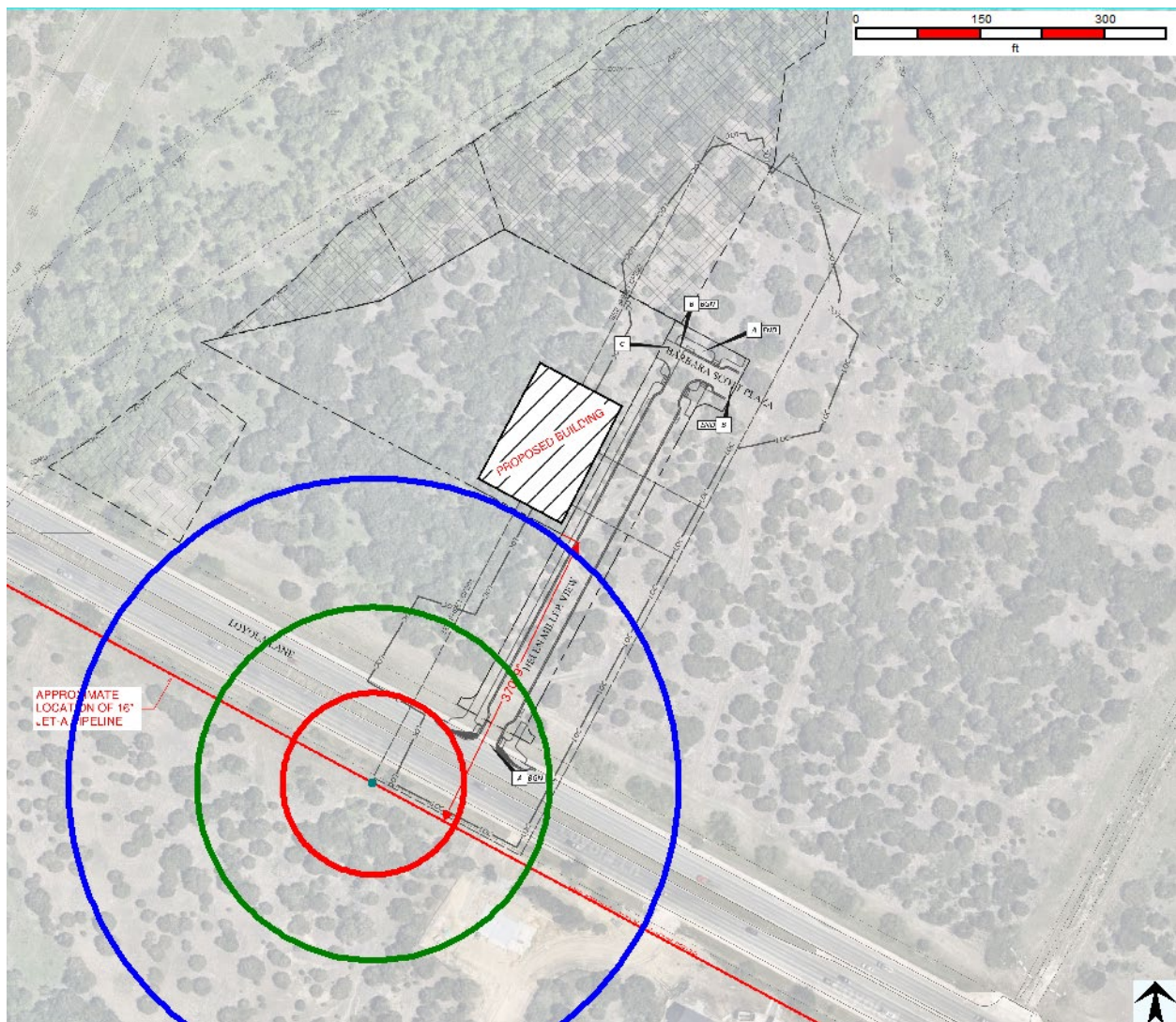
25-2-516 B (1)(d)

Response: The closest point to the pipeline is 370 feet. The pipeline is below grade. See Attachment 1 for a plan view.

25-2-516 B (1)(e)

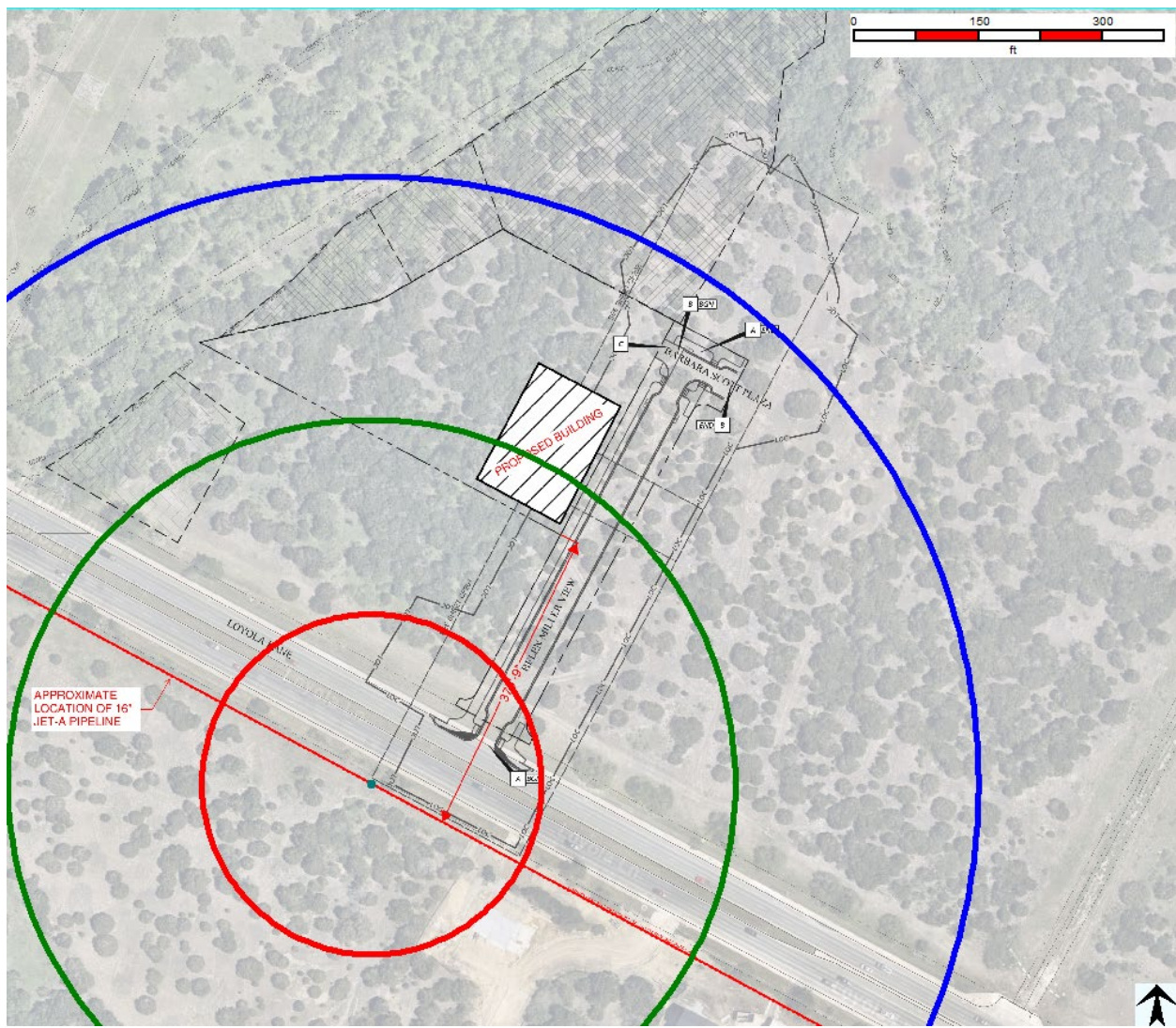
Response: To evaluate radiant barriers, a fire model is required. The computer program PHAST was used to model two fire scenarios**(F1)**. Fuel for both fires is Jet A fuel (kerosene). The first scenario is a 5500-gallon pool fire at grade level. The second fire scenario is a simulated pipe puncture. For modeling purposes, we assumed a vessel with unlimited supply with a 2-inch puncture from a backhoe at 120 to 180 psi. This puncture causes a jet fire into the air above the pipeline. This is an EPA leak scenario.

Based on the radiant energy calculation, exposure to the pool fire is below the HUD exposure levels for open areas (450 Btu/sq ft/hr). No radiant energy barriers are needed for a 5500-gallon spill fire.



Above is the pool fire exposure. The blue line is the radiant energy level is 450 Btu/sq ft/hr about 370 feet. The red line is 10,000 Btu/sq ft/hr. The green line is 1585 Btu/sq ft/hr, which is the threshold for human exposure (Second degree burns after 30 seconds) used in oil and gas from jet/pool fires(NFPA 59A and CFR 193) .

However, a simulated jet fire by a 2-inch hole in a vessel (pipe) will exceed the 450 Btu/sq ft/hr at 370 feet of separation. In the jet fire, the building is exposed to about 2346 Btu/sq ft/hr at 370 feet from the pipeline. HUD threshold is 10,000 Btu /sq ft/hr exposure for buildings. The exposure from the jet fire is less than the 25 % of the allowable HUD exposure level for a building. The exterior of the building is noncombustible. The building has a shelter in place option to protect the building occupants.



Above is the Jet fire exposure. The blue line is the radiant energy level is 450 Btu/sq ft /hr about 720 feet. The red line is 10,000 Btu/sq ft/hr. The green line is 1585 Btu/sq ft /hr, which is the threshold for human exposure used in oil and gas from jet/pool fires.

25-2-516 B (1)(f) &(g)

Response: Emergency responders have Austin Fire Code compliance access around the building. Attachment 2 shows fire department access, Knox box location, FDC, and egress areas beyond 500 feet (**F3 & F4**).

25-2-516 B (1)(h)

Response: Attachment 1 and 3 shows the topography of the site.

25-2-516 B (1)(i)

Response: This building is a Group B occupancy with parking and storage. There is a kitchen for food preparation. The building includes a public pharmacy, office, primary care clinic and dental clinic.

25-2-516 B (1)(j)

Response: This building occupants will be assumed to be mobile to limited mobility. The timed exit evaluation above has mobility speeds at $\frac{1}{2}$ of the average occupant travel speeds and flow speeds reflecting mobility impairment as a safety factor.

25-2-516 B (2)

Response: Flint Hill resources claim to have leak detection. Notifications would be sent to the general public if possible. We have requested information from the Pipeline operator concerning the leak detection and public notification of the leak. We have not received a response from Flint Hill Resources. There are no commercially available hydrocarbon detectors that would be effective within 370 feet of the pipeline(F5). Hydrocarbon detection would add no value to the site safety.

25-2-516 B (3)

Response: The calculated amount of time is 13.4 minutes to egress the building. Travel time to the shelter in place will be in the 1-to-2-minute range for the Lower-Level garage. Sheltering in place for the building directions would be an announcement not to leave the building. Initial movement will be initiated by voice commands from the fire alarm system. The building fire alarm system has voice notification. Live announcements and prerecorded messages will be provided to guide evacuation or shelter in place during a fuel leak emergency. Use of live announcements and prerecorded messages will be a portion of the emergency response plan. Signage will be provided at the fire alarm panel with instructions directing occupants to relocate to the Parking Garage and the Fire Department is enroute to an emergency near the Wellness Center.

Conclusions

Based on the exit capacity and travel distance, prompt egress, or relocation to a shelter in place emergency response plan will be developed to shelter in place. The more than code required exit capacity and low occupant load will allow all of the occupants to relocate or exit using a single stair if required. The use of Stair B has a retaining wall blocking direct line of sight to a potential pipeline jet fire and allows movement to the Lower-Level parking area also shielded. The topography shields Stair B from direct line of sight to the pipeline also. The mobility of the occupants will be similar to an office building however we used mobility impaired speed for this evaluation to reflect elderly. The building has automatic sprinkler protection throughout, standpipe system, and the fire detection and alarm system with voice alarm communication system. Any notification to the building management of a leak will initiate the emergency response and manually active warning of incidents by the fire alarm system live voice announcements. This fire alarm voice system will provide special instructions for this emergency and other than fire emergencies. The structure design (noncombustible exterior walls) provides shelter in place protection for occupant relocation to the Lower-Level garage, shelter in place in the building or exit to a point north beyond 500 feet in the event of a pipeline leak and fire.

Based on our conclusions above, egress from the building in the proposed scenario is not recommended. The building is designed to withstand the proposed fire exposure and provide shelter in place locations both inside and in the parking garage to the west. There is adequate egress capacity to move occupants to shelter in place or egress the building beyond the 500 feet of separation to the underground pipeline.

Coffman Engineers
TX Firm # 6691

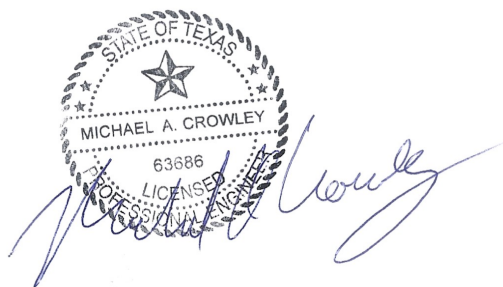


Michael A Crowley P. E. FSFPE
Operation Manager Texas
Principal Advisor, Fire Protection Engineering

Reviewed By:



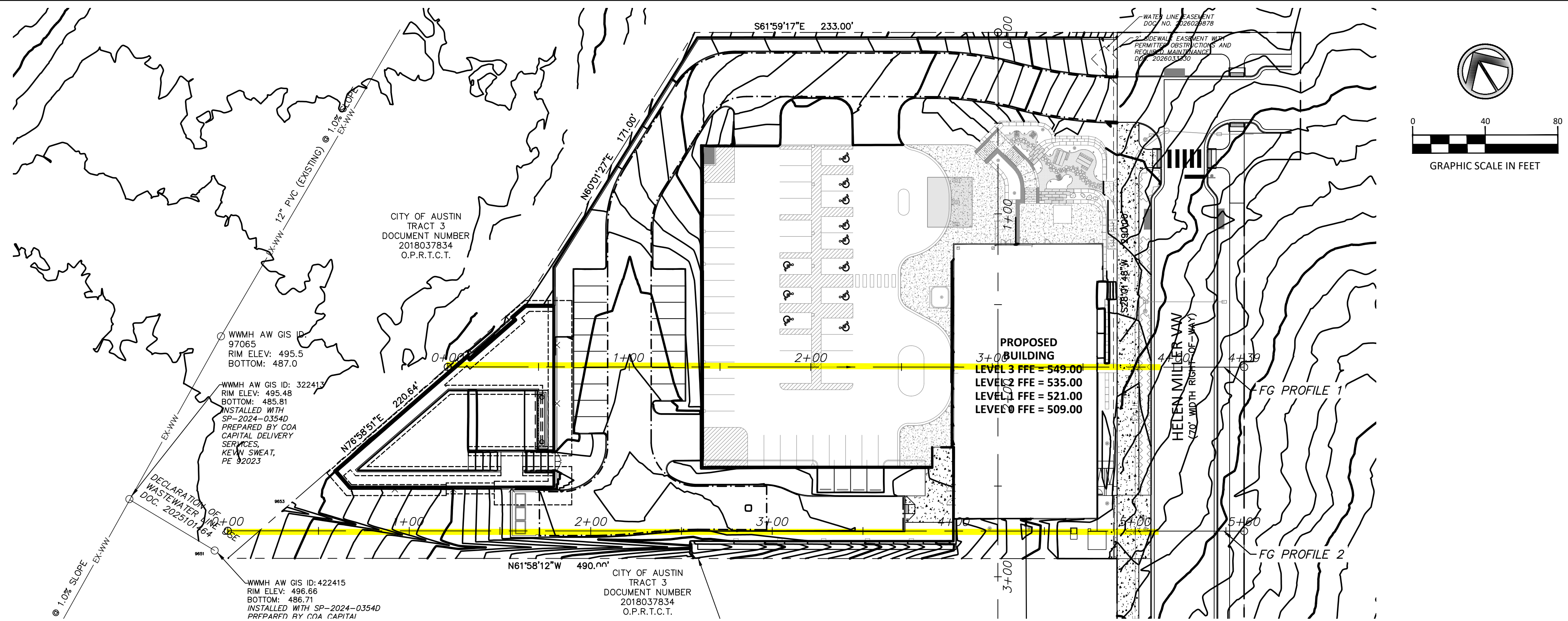
David Gramlich PE
Discipline Manger
Fire Protection



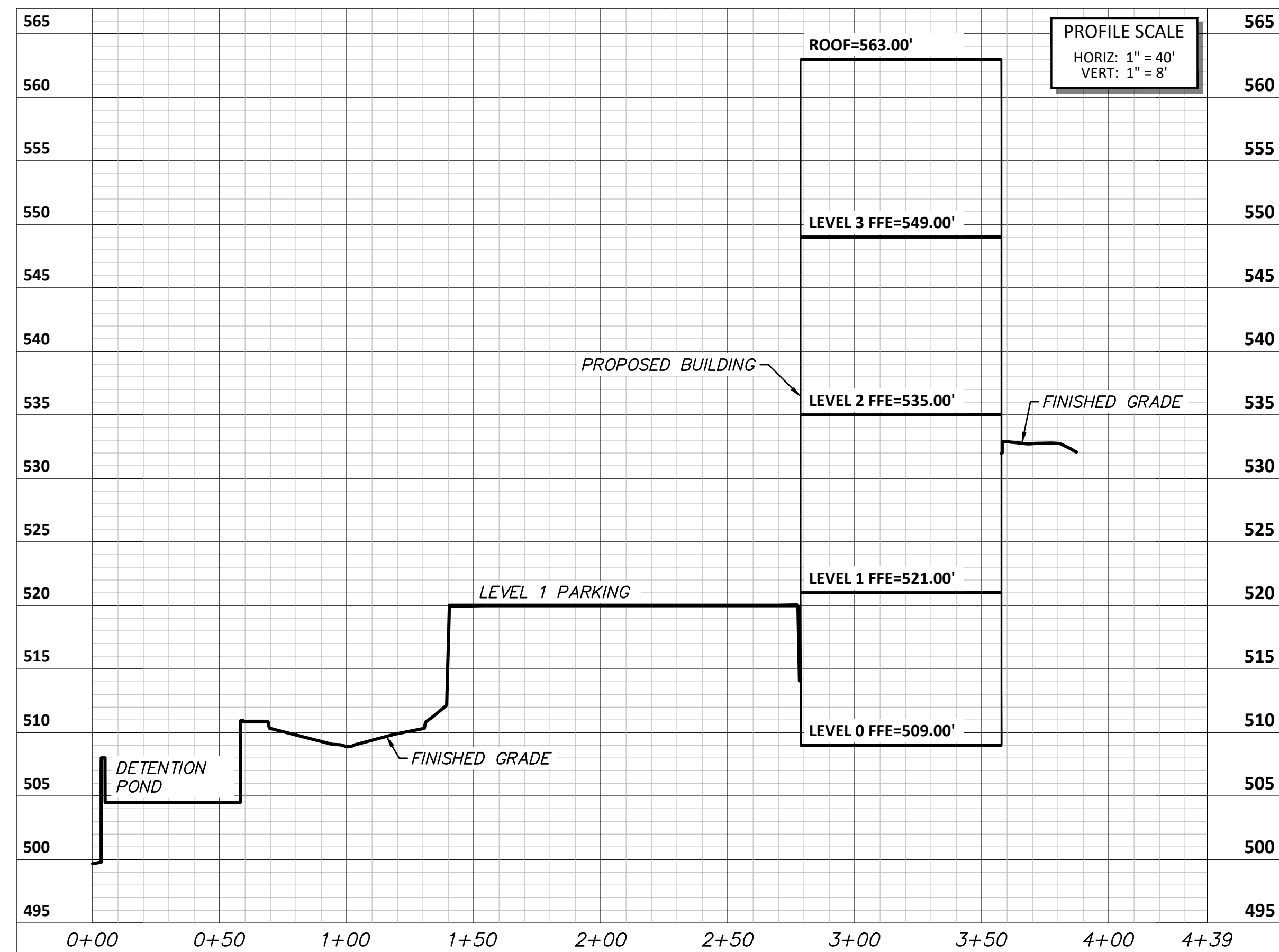
ATTACHMENT 1
SITE AND PIPELINE LOCATION

ATTACHMENT 2
SITE ACCESS AND FIRE LANES

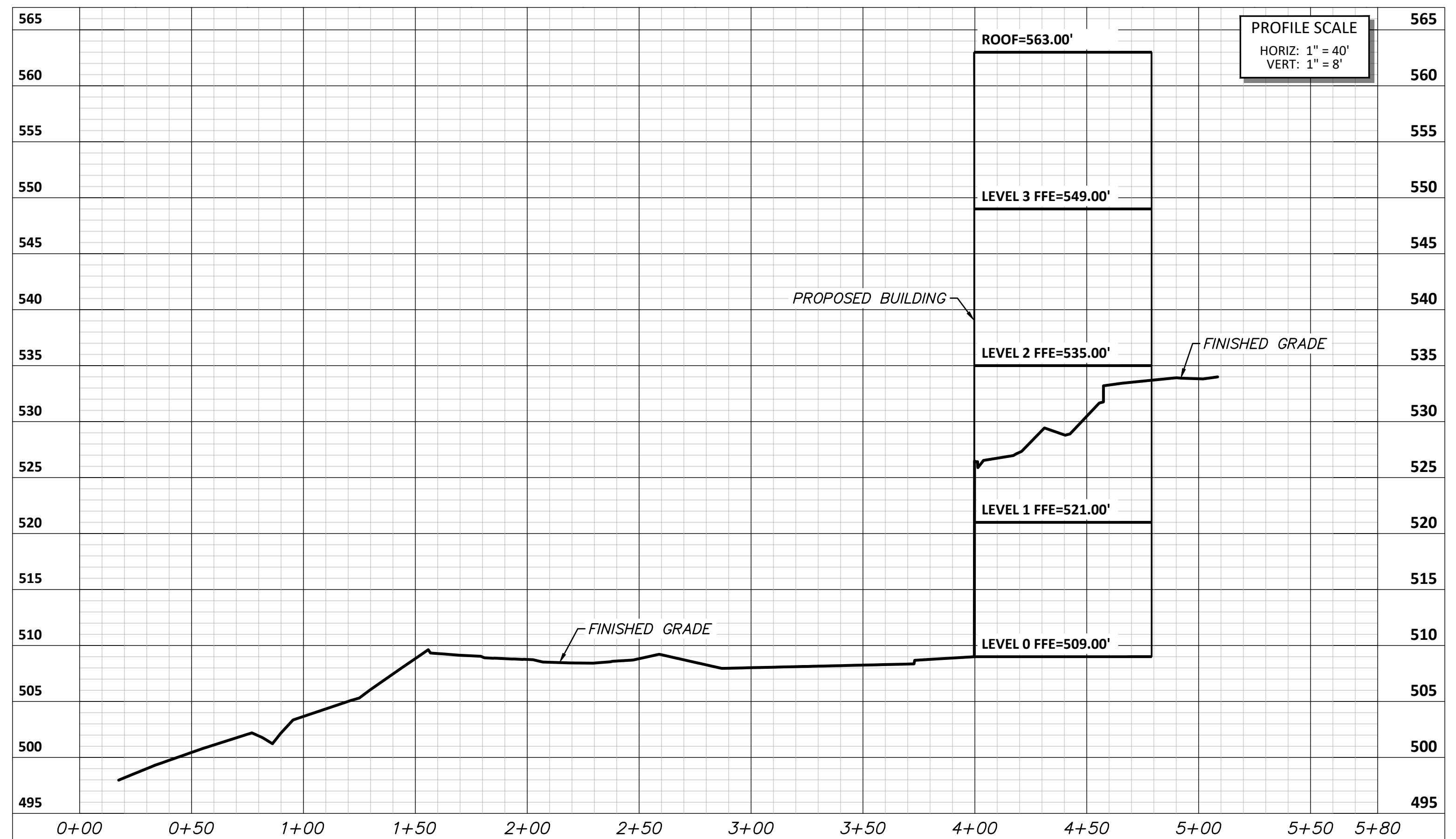
ATTACHMENT 3
TOPOGRAPHIC SITE SECTIONS



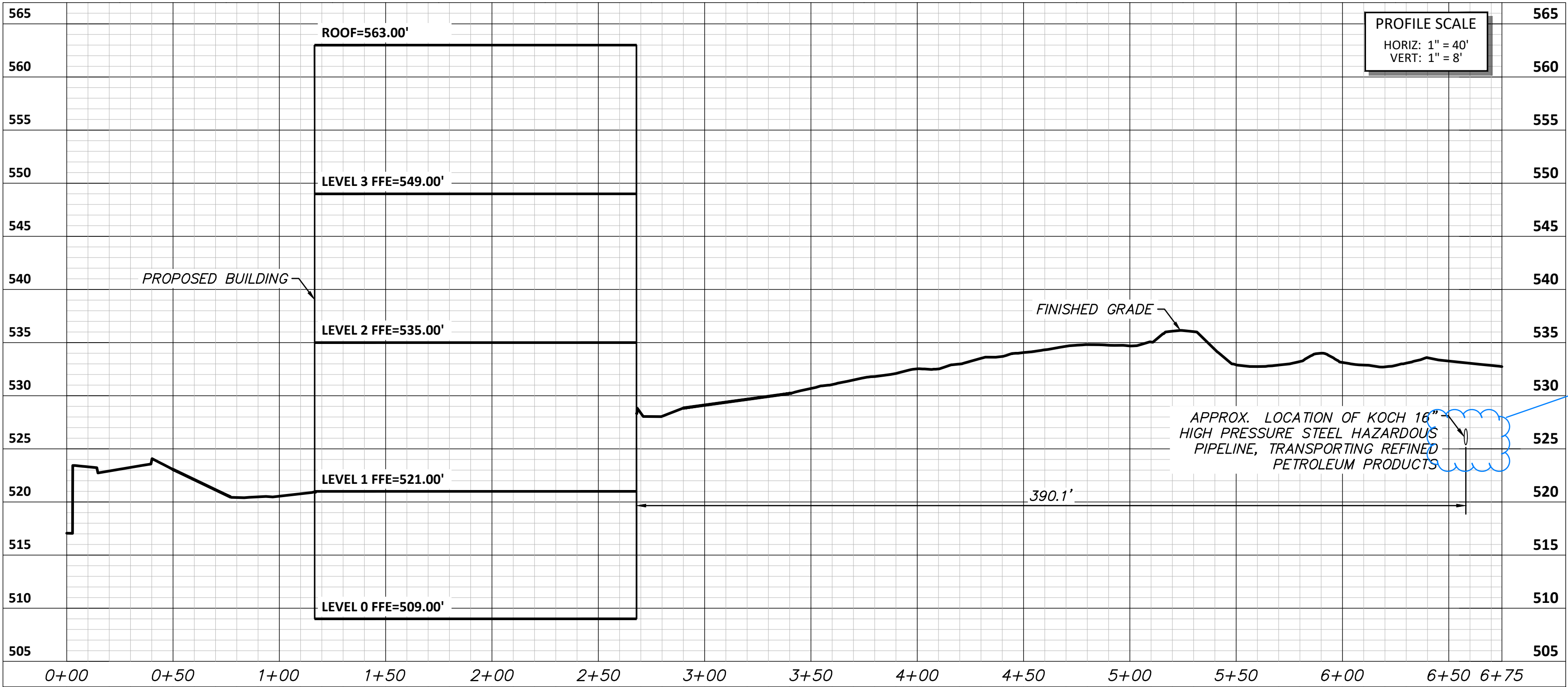
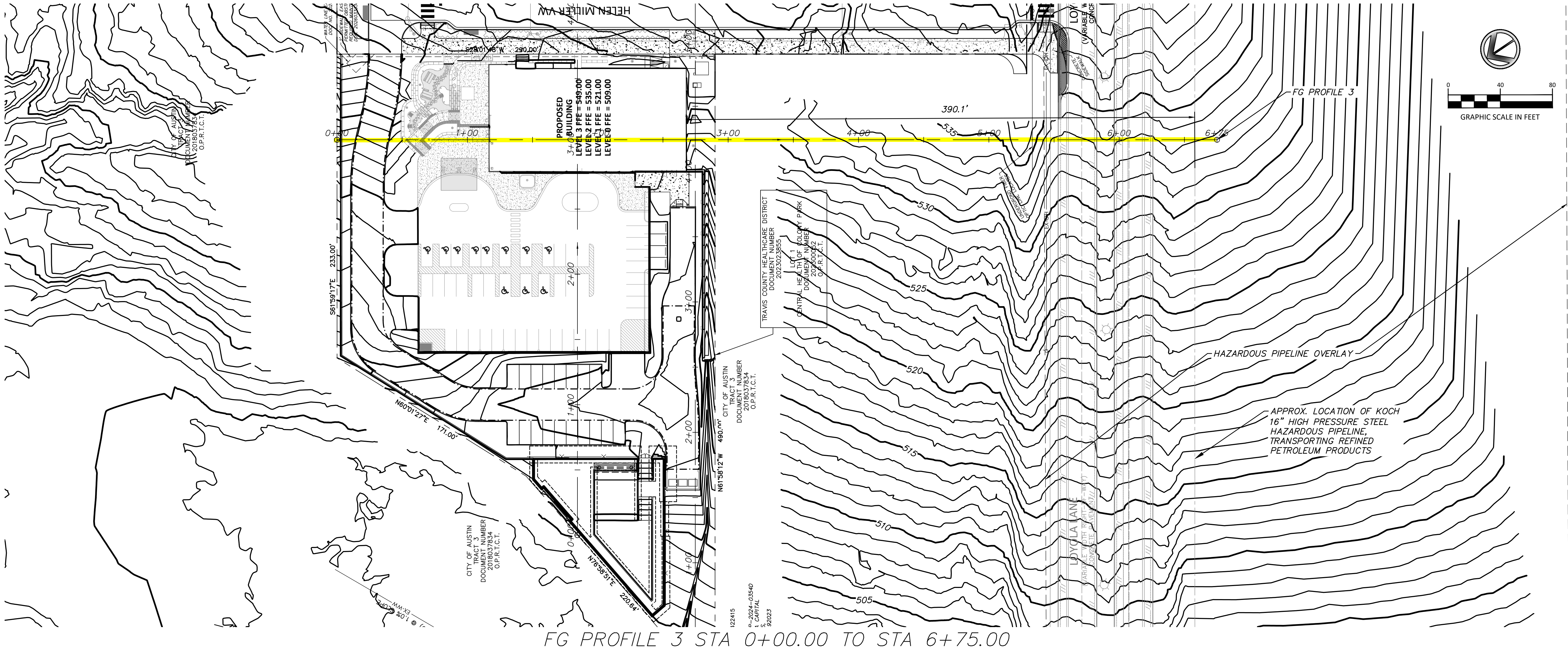
FG PROFILE 1 STA 0+00.00 TO STA 4+38.80



FG PROFILE 2 STA 0+00.00 TO STA 5+80.00

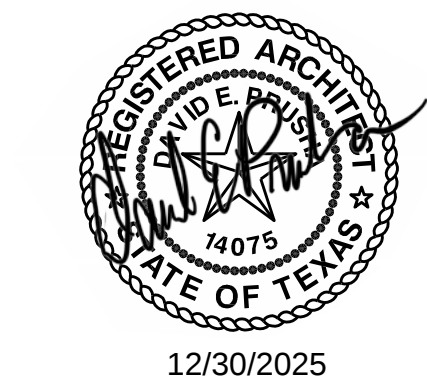


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Pipeline location

ATTACHMENT 4
GENERAL EGRESS DRAWINGS



12/30/2025

KEY PLAN



REVISION NO.	DESCRIPTION	DATE
1.	ADDENDUM 01	08/03/2025
2.	ADDENDUM 02	09/30/2025
3.	ADDENDUM 03	12/31/2025

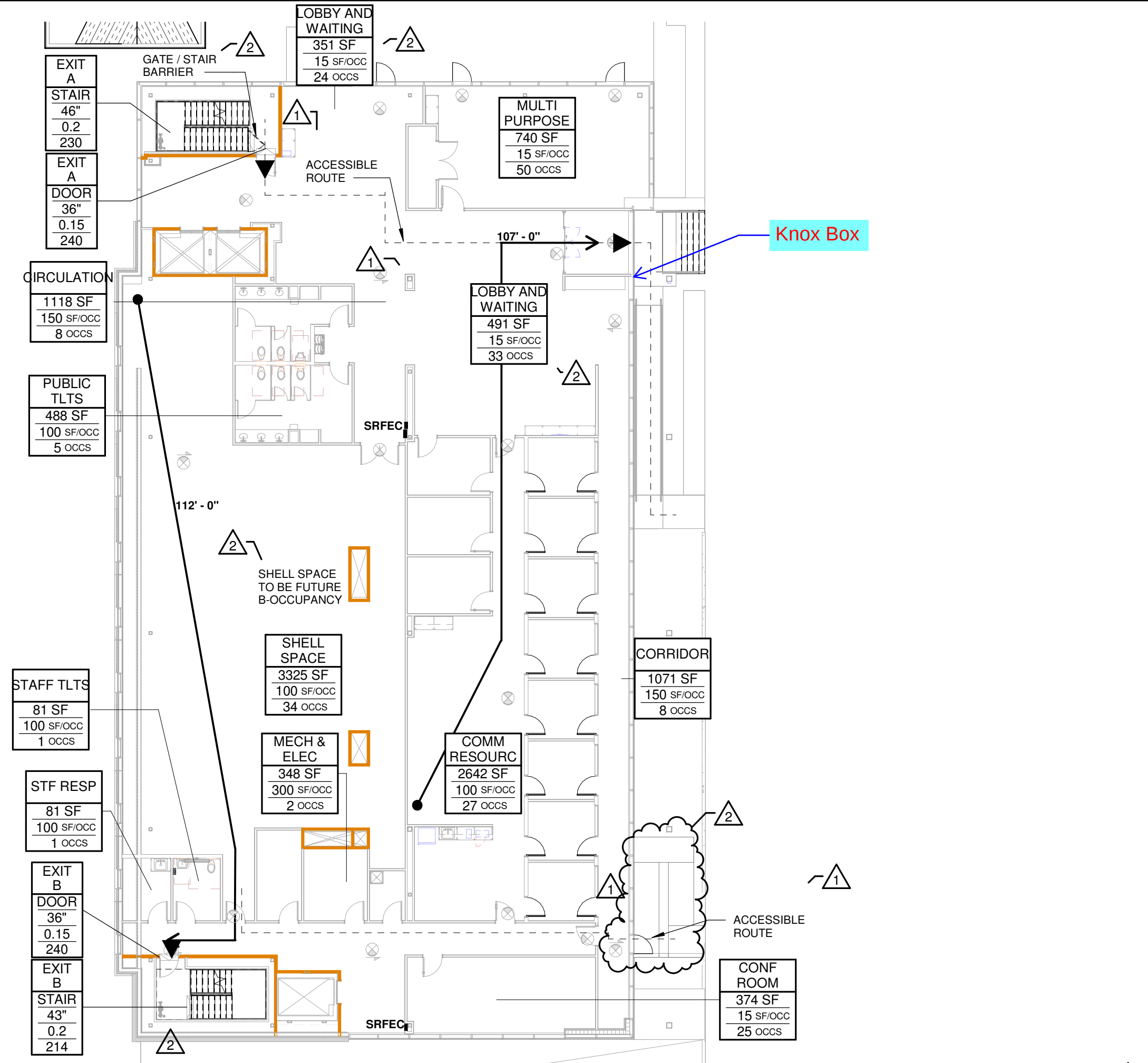
HKS PROJECT NUMBER
26369.000
DATE
07/08/2025
ISSUE
ISSUE FOR PERMIT

SHEET TITLE
LIFE SAFETY PLANS

SHEET NO.

A1.20

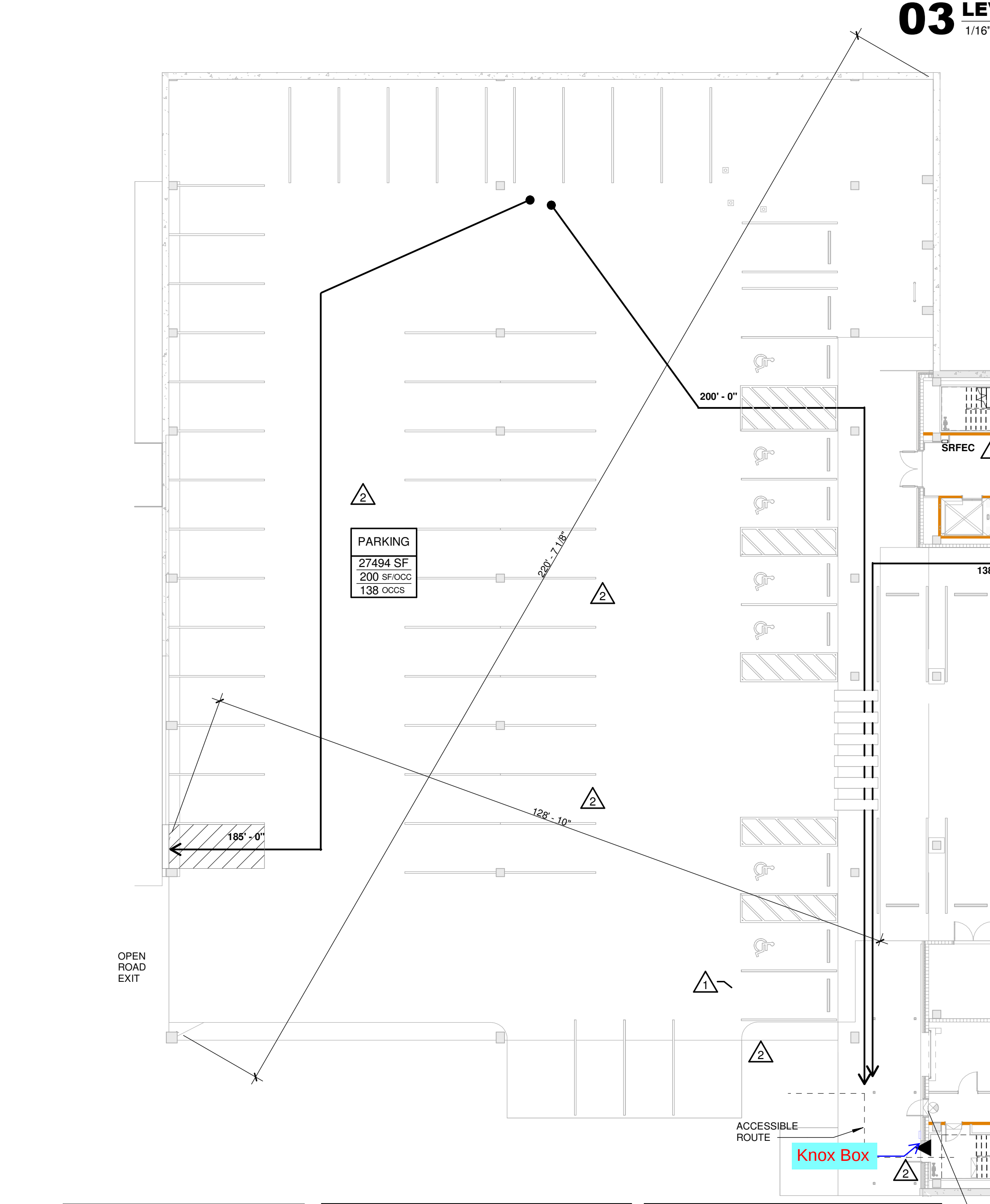
LIFE SAFETY LEGEND	
ROOM NAME	NAME AND AREA
150 SF	1 HR FIRE BARRIER
	1 HR SMOKE BARRIER
	2 HR FIRE BARRIER
	2 HR SMOKE BARRIER
	SMOKE PARTITION (NON RATED)
	NON RATED WALL
	EXIT ENCLOSURE
	EXIT CORRIDOR
	SUITE
	BUS OCCUPANCY
	ASSEMBLY
	STORAGE
	EXIT SIGN - HATCH
	INDICATES EXIT
	TEXT & ARROW
	INDICATES DIRECTION
	TRAVEL DISTANCE FROM THE MOST REMOTE POINT TO THE CLOSEST EXIT
	TRAVEL DISTANCE WITHIN A SMOKE ZONE TO AN ADJACENT SMOKE ZONE
	EXIT TAG
	AREA TAG
	NAME
	AREA
	FACITOR
	OCC LOAD
	Life Safety Primary Use Schedule
	Key Name
	Occupancy Factor
	ASSEMBLY (150)
	ASSEMBLY (150)
	BUSINESS
	CIRCULATION
	EDUCATION
	EXERCISE
	KITCHEN
	LOCKERS
	MECHANICAL
	OUTPATIENT
	PARKING
	RESIDENTIAL
	SHELL
	SLEEPING
	STORAGE
	TREATMENT
	DOOR OPERATION KEYNOTE LEGEND
	1. PROVIDE DELAYED EGRESS IN THE PATH OF TRAVEL
	2. PROVIDE DELAYED EGRESS ON BOTH SIDES OF THE DOOR
	3. PROVIDE PANIC HARDWARE



LEVEL 02 LIFE SAFETY OCCUPANT SUMMARY	
PRIMARY USE	Area
ASSEMBLY (150)	15 SF
BUSINESS	100 SF
CIRCULATION	150 SF
MECHANICAL	348 SF
Grand total:	1184 SF

LEVEL 02 EXIT SUMMARY	
EXIT TYPE	EXIT FACTOR
DOOR	15
DOOR	15
Grand total:	480

LEVEL 02 STAIR SUMMARY	
EXIT TYPE	EXIT FACTOR
STAIR	15
STAIR	15
Grand total:	444

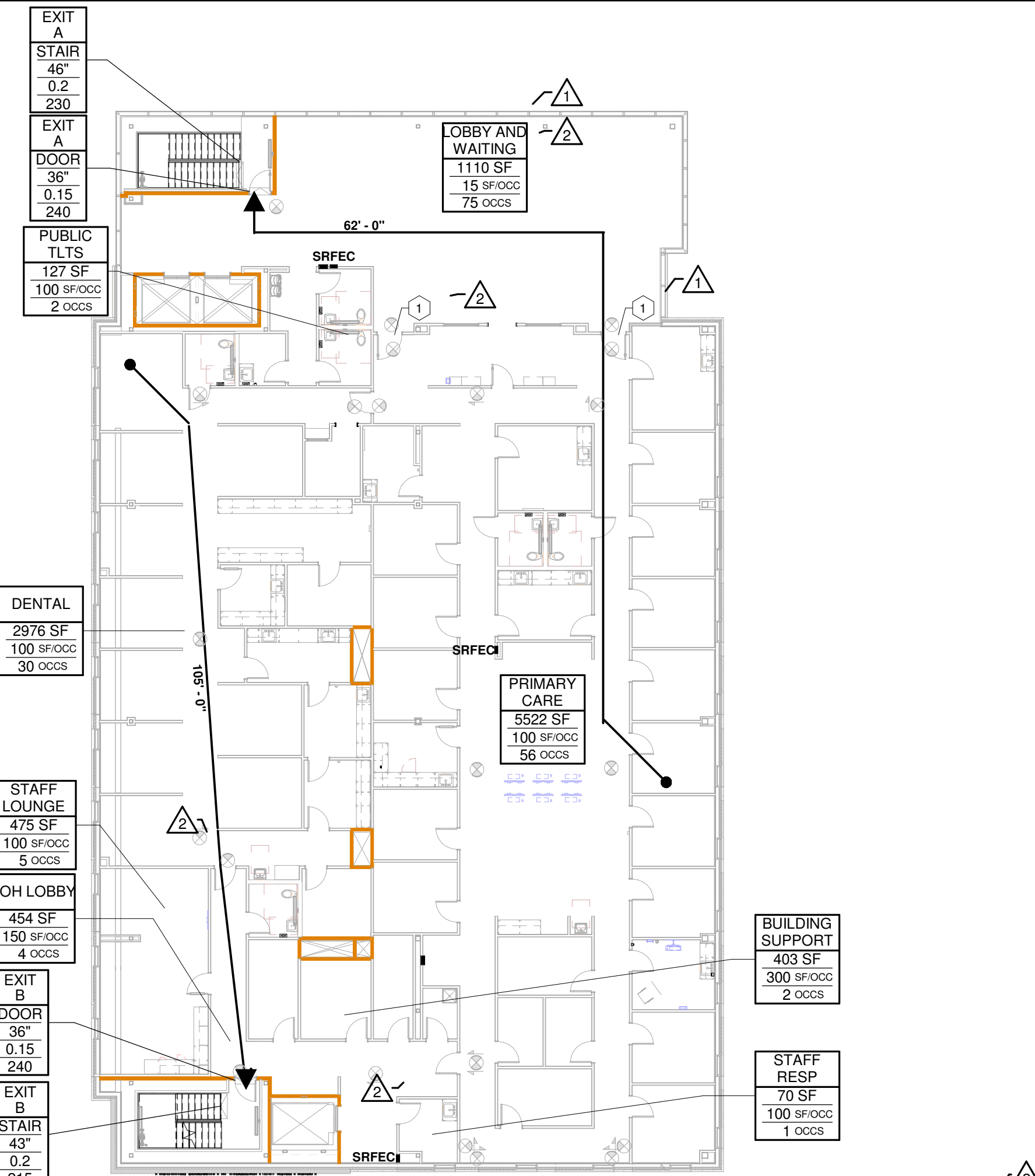


LEVEL 03 LIFE SAFETY OCCUPANT SUMMARY	
PRIMARY USE	Area
ASSEMBLY (150)	15 SF
BUSINESS	100 SF
CIRCULATION	150 SF
MECHANICAL	348 SF
Grand total:	1184 SF

LEVEL 03 EXIT SUMMARY	
EXIT TYPE	EXIT FACTOR
DOOR	15
DOOR	15
Grand total:	480

LEVEL 03 STAIR SUMMARY	
EXIT TYPE	EXIT FACTOR
STAIR	15
STAIR	15
Grand total:	444

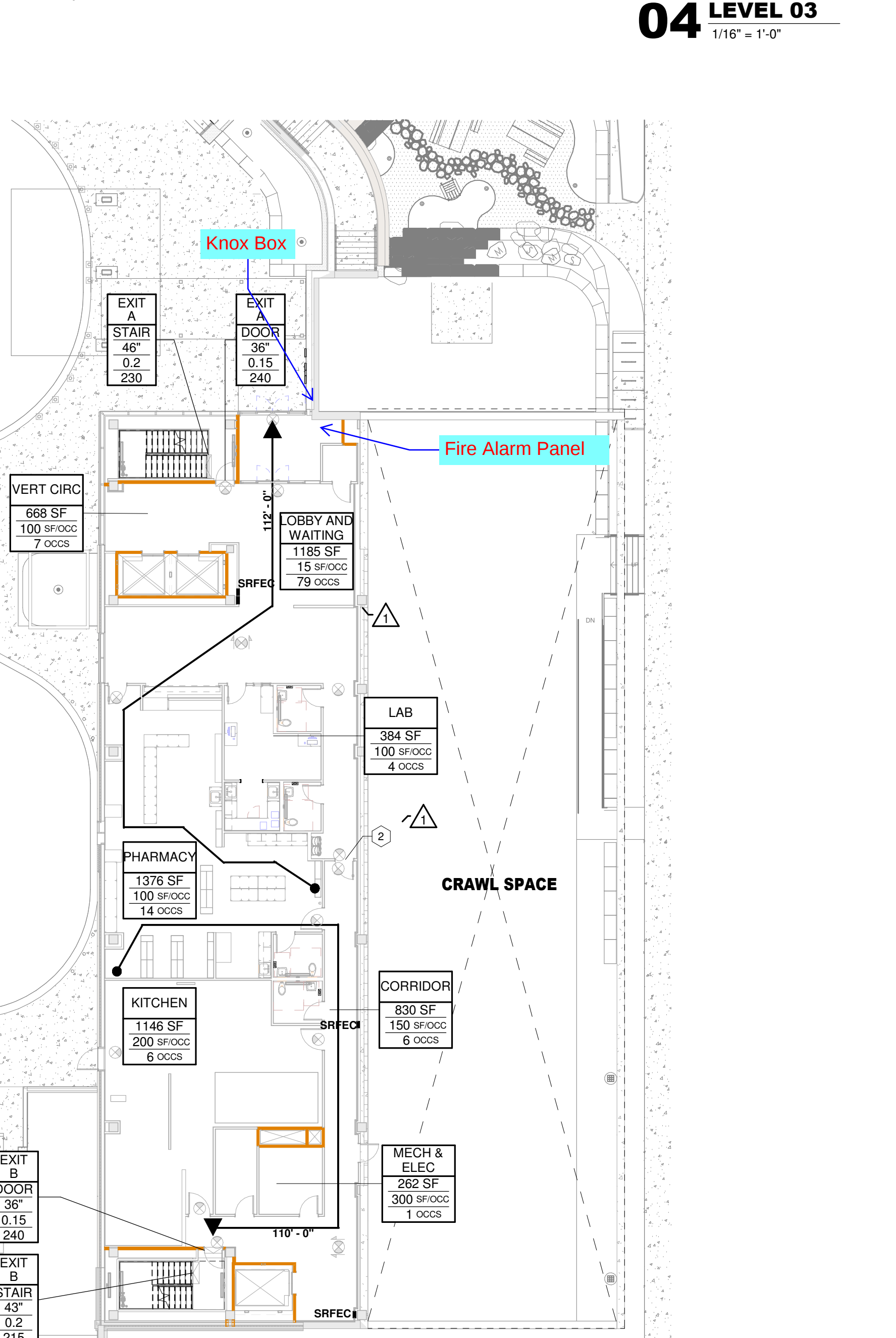
03 LEVEL 02
1/16" = 1'-0"



LEVEL 04 LIFE SAFETY OCCUPANT SUMMARY	
PRIMARY USE	Area
ASSEMBLY (150)	15 SF
BUSINESS	100 SF
CIRCULATION	150 SF
MECHANICAL	348 SF
Grand total:	1184 SF

LEVEL 04 EXIT SUMMARY	
EXIT TYPE	EXIT FACTOR
DOOR	15
DOOR	15
Grand total:	480

LEVEL 04 STAIR SUMMARY	
EXIT TYPE	EXIT FACTOR
STAIR	15
STAIR	15
Grand total:	444



LEVEL 01 LIFE SAFETY OCCUPANT SUMMARY	
PRIMARY USE	Area
ASSEMBLY (150)	15 SF
BUSINESS	100 SF
CIRCULATION	150 SF
MECHANICAL	348 SF
Grand total:	1184 SF

LEVEL 01 EXIT SUMMARY	
EXIT TYPE	EXIT FACTOR
DOOR	15
DOOR	15
Grand total:	480

LEVEL 01 STAIR SUMMARY	
EXIT TYPE	EXIT FACTOR
STAIR	15
STAIR	15
Grand total:	444

04 LEVEL 03
1/16" = 1'-0"

02 LEVEL 01
1/16" = 1'-0"

01 LOWER LEVEL
1/16" = 1'-0"

ATTACHMENT 5
FLINT HILL STEWARDSHIP REPORT
SEE PAGE 41 LEAK DETECTION

This is extracted from Flint Hill Resources Stewardship Report.

Leak Detection Sensing Network (LDSN)

Our refineries and pipeline systems contain more than a half million hardware components. Inspections and leak detection are an essential part of daily operations to prevent hydrocarbons escaping from pump seals, flanges and valves. We collaborated with our affiliate company, Molex, to design and implement a digital area monitoring system to enhance safety and reduce emissions.

Traditional leak detection is time-intensive and requires technicians to perform manual monitoring in challenging industrial environments. The transformative solution from Molex involves hundreds of digital sensors constantly taking measurements and combining the information with meteorological data, such as wind speed and direction, and making it available

to operators in real time, 24/7. Flint Hills refineries, pipelines and terminals have successfully implemented the leak detection sensor network (LDSN) throughout those operations, along with optical gas imaging cameras and drones, to help us keep our operations running smoothly.

By finding leaks quicker, the maintenance team can make repairs sooner. The new system helps increase personal and process safety at our facilities, and has the potential to reduce emissions by as much as 70 tons per year.



ATTACHMENT 6
PLAN REVIEW RESPONSE LOCATIONS

Responses to the items below are in the main report with F1 to F5 noted after the report response.

On May 1, 2026, at 4:48 PM, McGuinness, Kayla <Kayla.McGuinness@austintexas.gov> wrote:

Hi Tim,

Could you send the following comments to Mike with the fire protection group? I don't have his email.

F1. A performance-based design should be done to identify the hazard – in this situation it's a pipeline rupture and fire. It must define the most likely fire scenario, evaluate the impact on the building and its occupants, and recommend mitigation. Provide evacuation times. **See Page 2 and 6**

F2. In the report under the egress section says there is an 8' retaining wall at stair A is stated to shield the exit path away from the pipeline. However, the emergency response and the conclusion sections say Stair B has a retaining wall. Clarify which stair has the retaining wall. Provide any other radiant energy barriers if any. **See Page 1**

F3. For access to the site and structure by emergency responders, add a statement of the actual conditions about it only being accessed from Loyola Lane to Helen Miller View. **See Page 5 and 6**

F4. For on-site resources for emergency responders provide on-site resources besides the fire lane. **See page 4 , 5 and 6**

F5. What is the procedure for getting notified of a leak? How is early detection occurring? I know this one is difficult but even a procedure for how a 911 phone call is handled or what you do once notified. **See Page 4, % and 7 .**

I am off on Monday, so please direct your questions on Monday to Colin. I'll be back Tuesday.



Kayla McGuinness, PE
Engineer C- Expedited Permitting Group
Austin Fire
512-974-2426
kayla.mcguinness@austintexas.gov

