



CITY OF WEST LAKE HILLS, TEXAS
NOTICE OF CITY COUNCIL REGULAR MEETING
Wednesday, June 8, 2022 at 7:00 PM

Notice is hereby given that the City Council of the City of West Lake Hills, Texas, will hold a Regular Meeting on the 8th day of June 2022 at 7:00 p.m., in the Council Chamber, Municipal Building, 911 Westlake Drive, West Lake Hills, Texas, at which time the following items will be discussed, to-wit:

1. Call to Order
2. Citizen Communications The City Council Welcomes Public Comments at this Point on any Issue. If the Issue is Listed on the Agenda, the Speaker May Choose to Comment During the Public Comment Period or When the Specific Agenda item is Taken Up by the Council Later in the Meeting. The Council Cannot Respond to Matters Not Listed on the Agenda Until a Future Meeting. Speakers Shall Limit Their Comments to Five (5) Minutes Each
3. Consent Agenda All Consent Agenda Items Listed are Considered to be Routine by the City Council and Will be Enacted by One (1) Motion. No Separate Discussion or Action on any of the Items is Necessary Unless Desired by a Council Member or Citizen
 - a. Approval of the May 25, 2022 Regular Meeting Minutes.
4. Land Use **3421 Bee Cave Road:** Discuss and consider action on an application for variance requests to encroach in a driveway setback, encroach in a building setback, remove two trees with trunk diameters of fourteen inches or greater, exceed the maximum allowed cut and fill and retaining wall in the front setback, and exceed the maximum allowed impervious cover (West Lake Hills Code Section 22.03.249, 22.03.281, 22.03.304, and 22.03.210). Applicant Ramon Aguirre.

DUAL ACTION ITEM

5. Land Use **5902 Bee Cave Road:** Discuss and consider action on an application for a variance request to encroach in a front setback, exceed the maximum allowable impervious cover and remove one tree with a trunk diameter of fourteen inches or greater (West Lake Hills Code Section 22.03.281 and 22.03.304). Applicant Hat Creek Burgers WLRE LLC

(Scott Brown).

DUAL ACTION ITEM

6. Administration Discussion and update on Bond Items regarding implementation of Proposition A Street and Drainage Projects and Proposition B New City Hall.
7. Adjournment

Approved by: Linda Anthony, Mayor

Certificate

I certify that the above Notice of the June 8, 2022 City Council Regular Meeting was posted on the bulletin board at the Municipal Building, 911 Westlake Drive, West Lake Hills, Texas on June 3, 2022 by 5:00 pm. and will remain posted continuously until said meeting is convened.

Signed by: Ashby Grundman, City
Secretary Designee

The City of West Lake Hills is committed to compliance with the Americans with Disabilities Act. Reasonable accommodations and equal access to communications will be provided upon request.

All items on the agenda are for discussion and/or action. City Council reserves the right to adjourn into executive session at any time during the course of this meeting to discuss any of the matters listed above, as authorized by Texas Government Code Sections 551.071 (Consultation with Attorney), 551.072 (Deliberations about Real Property), 551.073 (Deliberations about Gifts and Donations), 551.074 (Personnel Matters), 551.076 (Deliberations about Security Devices), and 551.086 (Economic Development).

CITY OF WEST LAKE HILLS, TEXAS
MINUTES OF A CITY COUNCIL REGULAR MEETING
Wednesday, May 25, 2022, at 7:00 PM

1. Call to Order

With a quorum present, Mayor Anthony called the meeting to order at 7:01 p.m. Members in attendance were Mayor Linda Anthony, Mayor Pro Tem Walker, Councilmembers Rhonda McCollough, Brian Plunkett, Beth South, and Gordon Bowman

2. Administration Swearing in of new elected officers: Mayor, Councilmember Place 2 and Councilmember Place 4

Judge Henry swore in Mayor Linda Anthony, Councilmember Place 2 Brian Plunkett and Councilmember Place 4 Darin Walker,

3. Proclamation Recognizing the Month of May as Wildfire Awareness Month

Mayor Anthony read the proclamation. Battalion Chief Walter Groman from ESD #9 gave brief presentation on Wildfire.

4. Citizen Communications The City Council Welcomes Public Comments at this Point on any Issue. If the Issue is Listed on the Agenda, the Speaker May Choose to Comment During the Public Comment Period or When the Specific Agenda item is Taken Up by the Council Later in the Meeting. The Council Cannot Respond to Matters Not Listed on the Agenda Until a Future Meeting. Speakers Shall Limit Their Comments to Five (5) Minutes Each

None present.

5. Consent Agenda All Consent Agenda Items Listed are Considered to be Routine by the City Council and Will be Enacted by One (1) Motion. No Separate Discussion or Action on any of the Items is Necessary Unless Desired by a Council Member or Citizen

Motion. Councilmember Walker moves to approve the Consent Agenda. Seconded by Councilmember Plunkett. Unanimously approved.

6. Land Use **3312 Bee Cave Road:** Discussion/recommendation on an application for a variance request to exceed the maximum allowed fence height for a new fence. (West Lake Hills Code Section 22.03.173). Applicant Martin and Missy Taylor.

Councilmember Plunkett motions to approve the variance with 8 feet on the east side and 6 feet on the west side. Seconded by Councilmember South. Unanimously approved.

7. Public Works Discussion and possible action on traffic and traffic calming measures for Ridgewood Road.

Residents John Peck, Patrick Stewart, Brad Emerson and Greg Machon spoke in favor of additional traffic calming measures.

City Council gave staff direction to pursue options with the City Engineer and report back at the July 13th City Council Meeting.

8. Administration Discussion and Update on Bond Items including the new City Hall Property

No action. Staff gave update on the bond projects.

9. Executive Session An Executive Session may be held in accordance with the contained in Texas Government Code, Section 551.071 for:

- a. Discuss pending litigation in Cause No. D-1-GN-21-007357; *Alvarez v. City of West Lake Hills Board of Adjustment*, 200th District Court, Travis County, Texas – 1505 Wildcat Hollow
- b. Consultation with City Attorney Regarding Pending Litigation on the Denial of the Moore Estates Subdivision Application: Project 16329 located at 803 Westlake Drive. (Texas Government Code Section 551.071)
- c. Consultation with City Attorney regarding pending litigation in Cause No D-1- GN-22-000843; *Taylor v. City of West Lake Hills Board of Adjustment*, 261st District Court, Travis County, Texas - 1109 Yaupon Valley Road

Council goes into Executive Session at 8:06 p.m. Council returns to open meeting at 8:47 p.m.

10. Administration Take Any Necessary or Appropriate Action on Matters Posted for Consideration in Closed/Executive Session.

No action.

11. Adjournment

Motion: Councilmember Walker moves to adjourn. Seconded by Councilmember Plunkett. Unanimously approved. Meeting adjourns at 8:47 p.m.

Respectfully submitted,

LINDA ANTHONY, MAYOR

ATTEST:

Ashby Grundman, City Secretary Designee

These minutes were approved on _____, 2022.



**DRIVEWAY ENCROACHMENT, BUILDING SETBACK ENCROACHMENT AND TREE VARIANCES
STAFF REPORT**

JUNE 8, 2022

Project Address: 3421 Bee Cave Road

Project Number: 2022-1029

Agenda Item: Land Use: 3421 Bee Cave Road: Discussion/recommendation on an application for variance requests to encroach in a driveway setback, encroach in a building setback, remove two trees with trunk diameters of fourteen inches or greater, exceed the maximum allowed cut and fill and retaining wall in the front setback, and exceed the maximum allowed impervious cover (West Lake Hills Code Section 22.03.249, 22.03.281, 22.03.304, and 22.03.210). Applicant Ramon Aguirre.

Applicant Information: Ramon Aguirre

Hearing Dates:

April 20, 2022,	ZAPCO (ZAPCO meeting was cancelled)
May 18, 2022,	ZAPCO
June 8, 2022,	Board of Adjustment/City Council

Location: The subject property is located along the south side of Bee Cave Road, between the Beaver Trail and Walsh Tarleton Lane.

Property Information, Zoning & Site Characteristics:

Owner: Clear Terra Group LLC

Legal Description: 0.7754 Acres of Lot 2A, First Resubdivision of Lot 2 Brodie Keene Subdivision

Lot Size: 0.7754 (33,665.40 square feet)

Zoning: O – Office

The site is surrounded by commercial properties (Office, B1 and B2 zoned properties) on all sides.

Background & Analysis:

This is a proposal for a new office building at 3421 Bee Cave Road. The variances requested are as follows:

- Driveway Setback Encroachment – proposed driveway comes up to approximately 2-feet from the property line, an 8-foot encroachment into the driveway setback.
- Side Building Setback Encroachment – proposed building is 15-feet from the side property line, a 10-foot encroachment into the 25-foot side setback.
- Tree Removal- removal of two trees with trunk diameters of 14-inches or greater (T2 – 18-Inch Cedar Elm, T8 – 18-Inch Live Oak).
- Cut/Fill in a Setback – Asking for up to five (5) feet of cut/fill in the front setback for the detention pond.
- Impervious Cover – Code allows 30% plus incentives. They get up to 38% with incentives. Applicant is asking for 42.3%.
- There are letters of support in the packet from two adjacent commercial property owners.

Variance Criteria Review:

When applying for a variance, the applicant has established by competent evidence that:

1. The strict or literal enforcement of the terms of this chapter, because of special conditions, will result in unnecessary hardship to the applicant.
The application states – *“The hardship results from the shape of the site – a long rectangle shape. Applying the four setbacks would leave only 37% of the site buildable, 63% of the site would be allocated for the setbacks if the ordinance is literally enforced. This creates a significant constraint for any development on this site.”*
2. There will not be unreasonable disruption of the natural terrain or unreasonable destruction of existing flora.
The application states – *“The plan for development is to maintain the natural state of the property to the greatest extent possible while providing improvements to sufficiently meet the economical and physical needs of the proposed development. We are proposing to remove only 2 trees >14” in diameter.”*
3. There is no reasonable alternative to the requisite variance that will alleviate the difficulty or hardship complained of.
The application states – *“This project has had several iterations. Each of them had a challenging time providing adequate and safe access within impervious cover limitations and side yard setback requirements. At the early stages we had a large amount of cut and fill. This approach was abandoned in favor of reducing the amount of cut by design the building as a long rectangle to conform to the shape of the lot.”*
4. The variance will not be greater than the minimum required to alleviate the difficulty or hardship complained of.
The application states – *“The site we propose is the third iteration of the site design and the best that can be accomplished given the existing topography.”*
5. The variance does not violate the intent of the Zoning Ordinance or goals of the Comprehensive Plan.
The application states – *“The City Master Plan has defined Bee Cave Road Corridor as the commercial development corridor for the city. Therefore, we believe the proposed office building is an appropriate use. Also, two areas of vegetative screening will be added in one side of the building and to screen the proposed detention pond.”*
6. The variance will not adversely affect neighboring properties or interfere with the enjoyment of these properties by their owners.



The application states –

“3421 Bee Caves Rd is surrounded by the parking lots and driveways of the adjacent commercial properties, to the east, west, and south. (See above picture)3

The neighboring properties are zoned B-1 and O. The proposed “O” building would not be near the neighboring buildings as these driveways and parking areas provide a buffer between the properties. Also, we will also be adding two areas of vegetative screening as showing in our site plan.

As required, we will comply with the drainage and erosion code ordinances and the Preliminary Drainage Plan is being submitted with this rezoning application (Please see attached Drainage Analysis.)

We intend to comply with the dark-sky guidelines on outdoor lighting, controlling direction and height of the light fixtures to mitigate light pollution. Fixtures will also point downwards.”

Outdoor Lighting

Outdoor lighting is not proposed with this variance request. Any outdoor lighting will need to comply with the City’s Code.

Compliance with Adopted Uniform Building Code

The property and future construction will have to comply with all applicable City codes.

Subdivision

This request will not change the subdivision.

Comprehensive Planning Analysis

The existing and future land use is in conformance with the City of West Lake Hills Master Plan.

Zoning and Planning Commission Recommendation

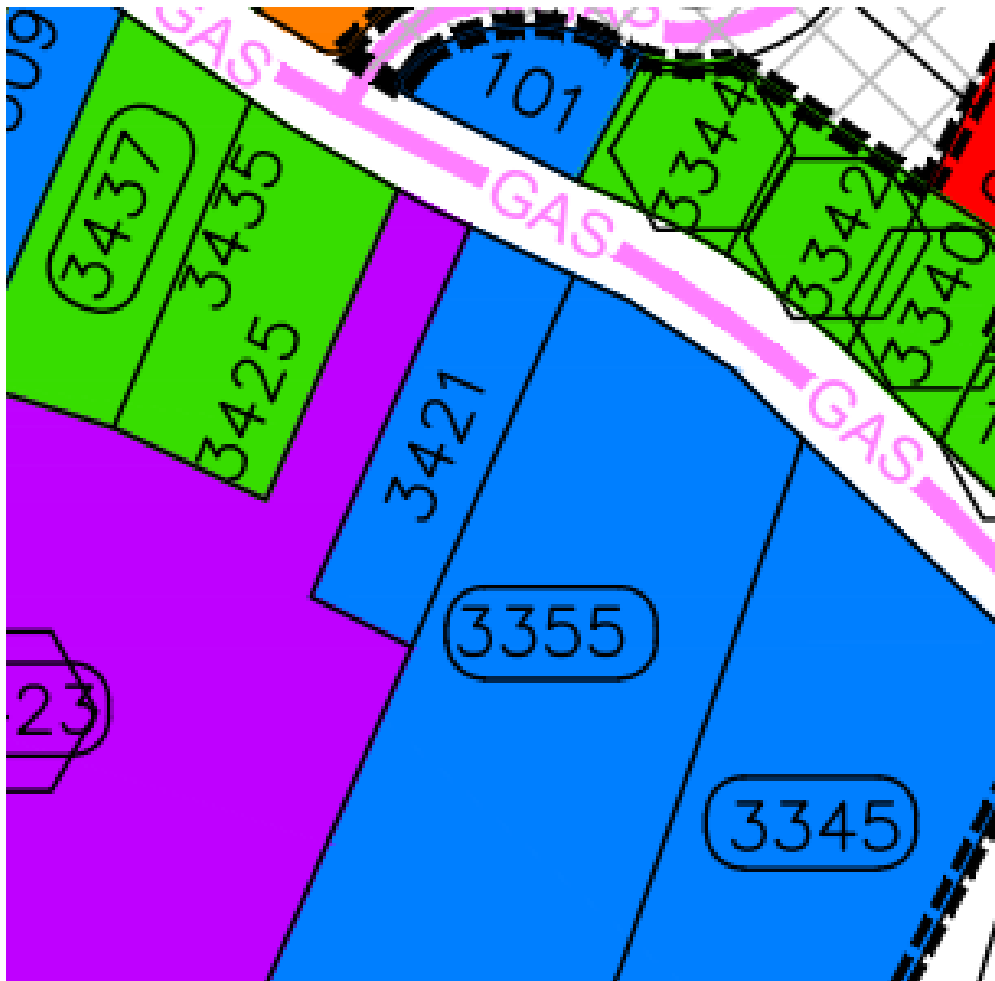
ZAPCO voted to recommend denial, unanimously, 4-0.

Staff Recommendation

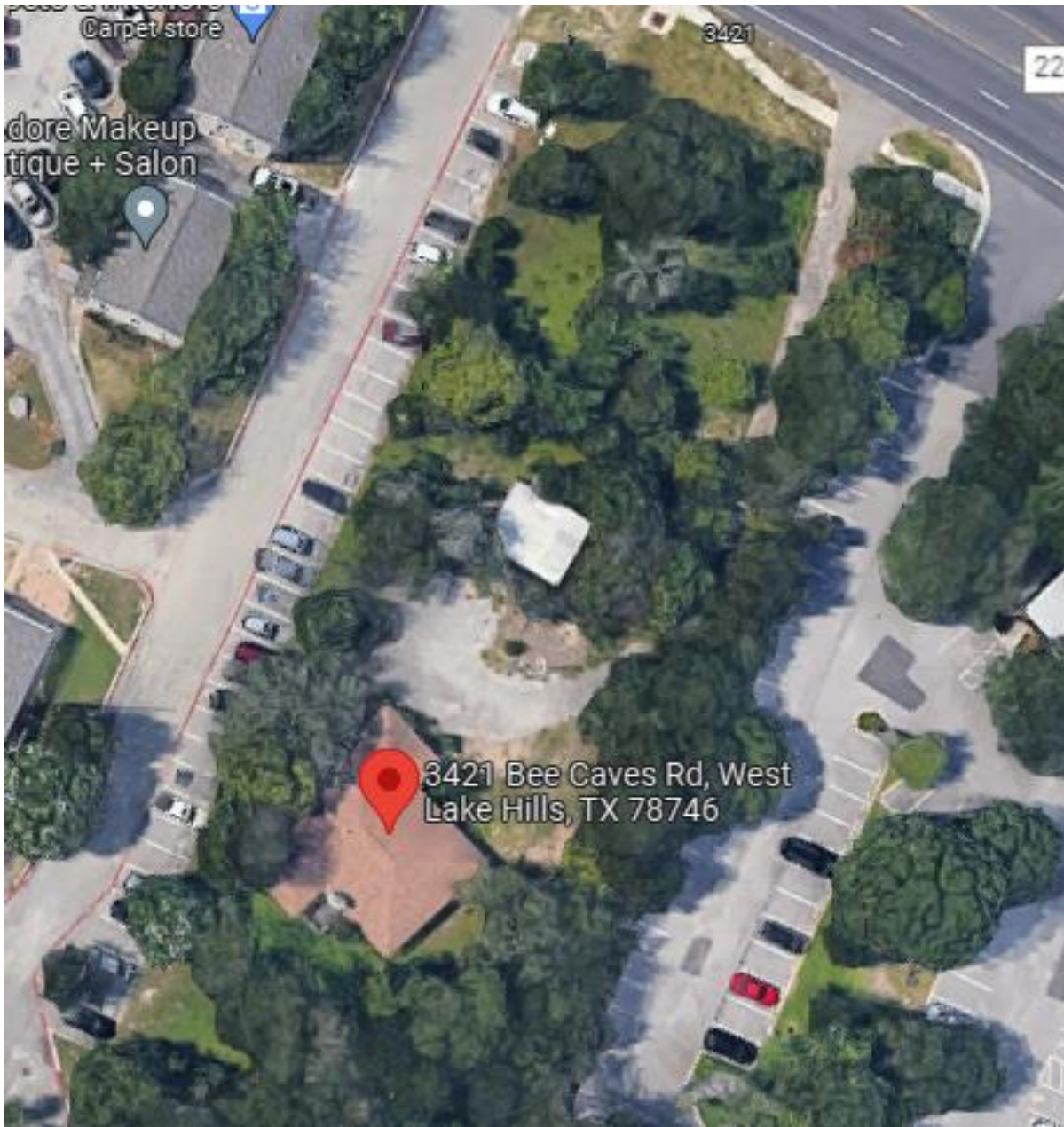
Staff recommends: APPROVAL of the variances requested. This is a challenging lot, and this proposal minimizes the variances requested.

Links to Relevant Code:

- | | |
|----------------------------------|---|
| • Sec. 22.03.281 | Schedule of Regulations |
| • Sec. 22.03.514 | Criteria and process required for granting variance |
| • Sec. 22.03.304 | Tree and vegetation removal and replacement |
| • Sec. 22.03.210 | Site Disturbance |
| • Sec. 22.03.170 | Site Disturbance (Excavation, Grading or Filling) |



AERIAL PHOTO





PO BOX 160775
Austin TX 78716-0775

February 15, 2022

Chairman Robert Meisel
West Lake Hills Zoning and Planning Commission
911 Westlake Drive
West Lake Hills, TX 78746

**Re: Variances Request
Clear Terra Group LLC
3421 Bee Cave Road
West Lake Hills, TX 78746**

Dear Mr. Meisel:

We are applying for a set of variances for 3421 Bee Cave Rd to replace the 1970's house and shed for a new modern building and construct a new fire lane and water detention facilities. The new building will be Type 1B non-combustible construction with a full fire-sprinkler and alarm systems.

A variance to sections 22.03.249(b)(2), 22.03.281(b), 22.03.304(a)(4), 22.03.210 and 22.03.281 IX of the Westlake Hills Code of Ordinances is hereby requested in conjunction with the proposed Clear Terra Group development located at 3421 Bee Caves Road. An overview and efforts to minimize requested variances are as followed:

- **Variance to Section 22.03.249(b)(2):**
 - *To allow for the proposed driveway to encroach within the 25-foot driveway setback for O zoned properties located to the East of the development.*
 - The long rectangular shape of the lot imposes a width limitation. We are constructing the fire lane as well and thus the driveway needs to extend within this setback area.
- **Variance to Section 22.03.281(b):** (minimum building setbacks from side lot lines for O zoned properties):
 - *To allow for the proposed office building, to encroach within the limits of the building setback from side lot lines.*
 - The long rectangular shape of the lot imposes a width limitation. To provide adequate building space for office operations, in tandem with minimizing as much impervious cover as feasible for

parking and driveway approaches, the proposed office building must encroach within the 25-foot minimum side setback that is required for O zoned properties that are located adjacent to O or B-1 zoned properties.

- **Variance to Section 22.03.304(a)(4)**

- To allow for the removal of 2 trees greater than or equal to 14 inches located onsite.
- In order to provide adequate access and placement of proposed facilities (detention pond and office building) we need to remove these 2 trees. The plan for development is to maintain the natural state of the property to the greatest extent possible while providing improvements to sufficiently meet the economical and physical needs of the proposed development.

- **Variance to Section 22.03.210** (subsequent sections ***22.03.170(b) Drainage and Erosion Criteria Manual Section 7.4.1***):

- To allow for the practical excavation activities (up to 5-feet of cut) to adequately develop a detention pond for drainage control.

- **Variance to Section 22.03.281 IX.(a)(1)** (Impervious Cover for “O” office zoning):

- The maximum allowable base Impervious Cover for “O” office zoning is 30%, with a possible incentive of an additional 8% for providing an off-site public sewerage disposal system. This provides a total of allowable **38%** impervious cover. **The layout and location of the proposed building and parking requires a 42.3%** total impervious cover.

We trust that you will find this letter and accompanying materials acceptable for the intended purpose of approving the requested variances for the proposed project. Please do not hesitate to contact me should you have any questions or require additional information.

Respectfully submitted,

Clear Terra Group

Ramon Aguirre

Ramon Aguirre
Director of Operations

APPLICATION COVER SHEET

Property Address: 3421 Bee Caves Road, West Lake Hills, TX 78746
Applicant Name: Ramon Aguirre
Designated Agent (if any, Power of Attorney Required): N/A
Applicant Phone Number: 512-417-3494 Email Address: [REDACTED]
Date Application was Submitted: 2/20/2022
Variance(s) Requested:

Variances to City of West Lake Hills Code Sections 22.03.249, 22.03.281, 22.03.304(a)(4), 22.03.210 and 22.03.281 IX

(See attached letter for complete details)

Applicant completes above section; City Staff completes the section below:

Variance File Number: _____ [A sequential identifier based on application date and noted in a Variance Application Log maintained by staff. Examples: 20110903A, 20110903B, 20111021A, etc.]

Application Fees Due: \$ _____ ☐ Fees Received on _____ by _____

DRAFT APPLICATION PACKET MATERIALS

Draft Application Packet Received on _____ by _____
☐ Letter to ZAPCO Chairperson ☐ Variance Approval Criteria Answers
☐ Site Plan Coversheet ☐ Site Plan Drawings
☐ Elevation Views and Floor Plans (new structures only)
☐ Septic Assessment (new structures only)
☐ Additional Support Materials (if any): _____
☐ Power of Attorney (if any) – Designated Representative: _____
Staff Analysis completed on _____ by _____
Staff Analysis sent to Applicant on _____ by _____

FINAL APPLICATION PACKET

Final Application Packet Reviewed and Approved on _____ by _____
Notice to Proceed Letter sent to Applicant on _____ by _____
• Notification Letter must be postmarked by _____ ☐ Confirmed by _____
• Sign must be posted by _____ ☐ Confirmed by _____
15 Copies of Final Packet received on _____ ☐ Confirmed by _____

ZAPCO

Scheduled for ZAPCO Hearing on: _____
ZAPCO Action Letter sent on _____ by _____
ZAPCO Recommendation: _____
Conditions/Comments (if any): _____
Modified application and materials (if any) received on _____ by _____

BOA/CITY COUNCIL

Scheduled for BOA/Council Hearing on: _____
BOA/Council Action: _____
Conditions/Comments (if any): _____
BOA/Council Action Letter sent on _____ by _____

FOLLOW-UP

Follow-up dates (vegetative screening installed, survival verification, etc.): _____
• Notifications added to Incode on _____ by _____

Postponement History (if any): _____
Notes: _____

ANSWERS TO VARIANCE APPROVAL CRITERIA QUESTIONS

1. DESCRIBE IN DETAIL ANY SPECIAL CONDITIONS YOU BELIEVE WILL RESULT IN UNNECESSARY HARDSHIP TO YOU IF THE TERMS OF THIS ORDINANCE ARE STRICTLY OF LITERALLY ENFORCED.

The hardship results from the shape of this site – a long rectangle site. At only 100' wide, applying the 4 setbacks would leave just 37% of the site buildable. 63% of the site would be allocated to the setbacks if the ordinance is literally enforced. This creates a significant constraint for any development of this site. Applying the two 25' side setbacks would leave only a 50' wide area for the construction of:

- 1) A 20' Fire Lane,
- 2) The new building, and
- 3) The parking area.

This is unfeasible and thus the narrow shape of the lot represents a hardship for this project.

2. WHY DO YOU THINK THE NATURAL TERRAIN AND EXISTING FLORA WILL NOT BE UNREASONABLE DISRUPTED OR DESTROYED IF THE VARIANCE YOU ARE REQUESTING IS GRANTED?

The plan for development is to maintain the natural state of the property to the greatest extent possible while providing improvements to sufficiently meet the economical and physical needs of the proposed development. The proposed development includes a rectangular building to minimize the lateral setbacks encroachment. We are proposing to remove only 2 trees > 14" in diameter and will mitigate by replacing them on a 150% basis.

The back of the lot will be left in its natural state (12,323 SF – 36.8% of lot area).

3. WHAT OTHER REASONABLE ALTERNATIVES HAVE YOU CONSIDERED? WHY WON'T THESE OTHER OPTIONS ALLEVIATE THE DIFFICULTY OR HARSHIP THAT YOU THINK EXISTS?

This project has had several iterations. Each of them had a challenging time providing adequate and safe access within impervious cover limitations and side yard setback requirements. At the early stages we had a large impervious cover percentage. This approach was abandoned in favor designing most of the parking to be covered parking.

Also, by designing the building as a long rectangle, to conform to the shape of the lot, we were able to reduce the encroachment of the side setbacks.

4. WHY DO YOU BELIEVE THE VARIANCE YOU ARE REQUESTING IS THE MINIMUM REQUIRED TO ALLEVIATE THE DIFFICULTY OR HARSHIP YOU THINK EXISTS?

The need for the variances is a result of the unique characteristics of this lot. Unfortunately, the property cannot reasonably be developed in a manner consistent with the existing zoning. We believe the reduction of the side setback areas is the most sensitive way to solve the physical challenges this site presents. We are also required to construct a full fire lane with compliant hammerhead turnaround, this fire lane alone accounts for 3,000 SF or 22% of the proposed impervious cover.

Most of the parking is covered parking, which minimizes the overall impervious cover.

5. WHY DO YOU BELIEVE YOUR VARIANCE DOES NOT VIOLATE THE INTENT OF THE ZONING ORDINANCE OR THE GOALS OF THE CITY'S COMPREHENSIVE PLAN?

The City Master Plan has defined the Bee Cave Road Corridor as the commercial development corridor for the city. Therefore, we believe the proposed office building is an appropriate use. Also, two areas of vegetative screens will be added in one side of the building and to screen the proposed detention pond.

6. WHY DO YOU BELIEVE YOUR VARIANCE WILL NOT ADVERSELY AFFECT NEIGHBORING PROPERTIES OR INTERFERE WITH THE ENJOYMENT OF THESE PROPERTIES BY THEIR OWNERS?

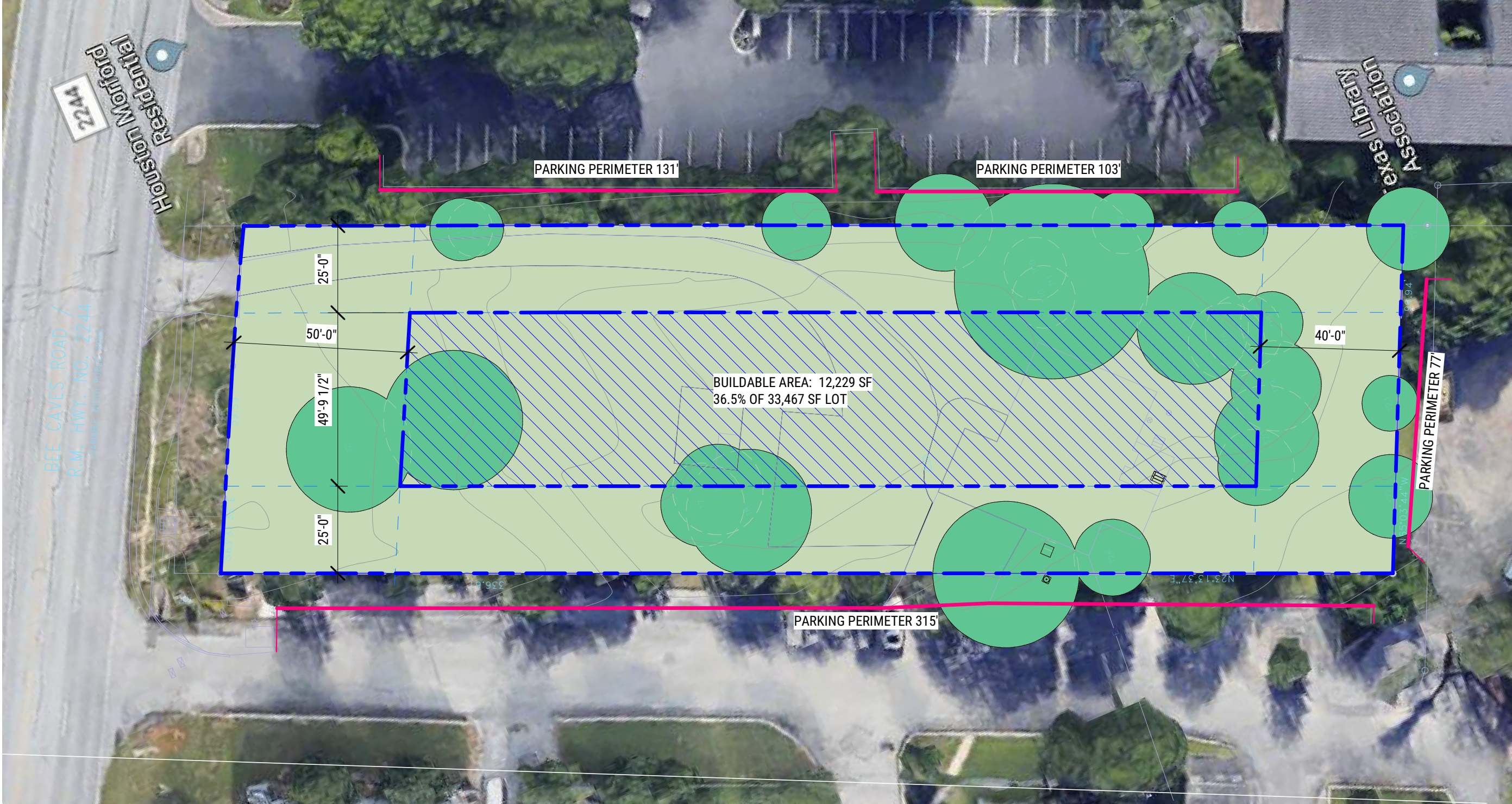


We have the support of our adjacent neighbor to the east (see letter of support from Hill Country Specialists, owners of 3423 Bee Cave Rd) and the support of the owners of the Bee Cave Center at 3425 Bee Cave Rd (see email of support).

3421 Bee Caves Rd is surrounded by the parking lots and driveways of the adjacent commercial properties, to the east, west, and south. (See above picture)

The neighboring properties are zoned B-1 and O. The proposed office building would not be near the neighboring buildings as these driveways and parking areas provide a buffer between the properties. Also, we will also be adding two areas of vegetative screening as showing in our site plan.

As required, we will comply with the drainage and erosion code ordinances and the Preliminary Drainage Plan is being submitted with this application (Please see attached Drainage Analysis.)



1 BUILDABLE AREA AFTER APPLYING SETBACKS: 36.5% OF LOT
1" = 30'-0"



SPECIAL POWER OF ATTORNEY FORM

KNOW ALL PERSONS BY THIS DOCUMENT that I, RAMON AQUIRRE
have made, constituted and appointed LUKE STEWART
to be my duly authorized representative in connection with an application dated 2-15-22
to be heard by the Building Design Committee, Zoning & Planning Commission, and City
Council/Board of Adjustment of the City of West Lake Hills, Texas. All representations, whether
oral or written, made by the representative in support of the request have the full force and effect
of the applicant's approval. I do by this document constitute the above named representative as
my true and lawful attorney-in-fact to act in my name, place and stead, to do and perform any act
in connection with such application which I myself might perform or do if I was personally present.

CLEAR TERRA GROUP/RAMON AQUIRRE
Property Owner/Applicant Name

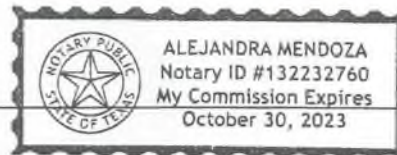
Ramon Aquirre
Property Owner/Applicant Signature

3421 BEE CAVE RD AUSTIN TX 78746
Street Address City State Zip Code

512-417-3494
Property Owner/Applicant Phone Number

This instrument was acknowledged before me on this the 6th day of April, 20 22.

Alejandra Mendoza
Notary Public in and for the State of Texas





SPECIAL POWER OF ATTORNEY FORM

KNOW ALL PERSONS BY THIS DOCUMENT that I, RAMON AGUIRRE
have made, constituted and appointed GABRIEL T. HOVDEY
to be my duly authorized representative in connection with an application dated _____,
to be heard by the Building Design Committee, Zoning & Planning Commission, and City
Council/Board of Adjustment of the City of West Lake Hills, Texas. All representations, whether
oral or written, made by the representative in support of the request have the full force and effect
of the applicant's approval. I do by this document constitute the above named representative as
my true and lawful attorney-in-fact to act in my name, place and stead, to do and perform any act
in connection with such application which I myself might perform or do if I was personally present.

CLEAR TERRA GROUP / RAMON AGUIRRE
Property Owner/Applicant Name

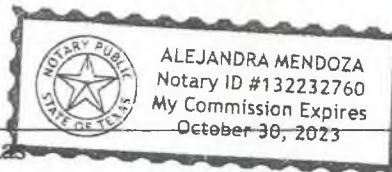
Ramon Aguirre
Property Owner/Applicant Signature

3421 BEE CAVE RD AUSTIN TX 78746
Street Address City State Zip Code

512-417-3494
Property Owner/Applicant Phone Number

This instrument was acknowledged before me on this the 6th day of April, 20 22.

Alejandra Mendoza
Notary Public in and for the State of Texas





SPECIAL POWER OF ATTORNEY FORM

KNOW ALL PERSONS BY THIS DOCUMENT that I, RAMON AGUIRRE
have made, constituted and appointed DAVID POLKINGHORN
to be my duly authorized representative in connection with an application dated 2/15/2022
to be heard by the Building Design Committee, Zoning & Planning Commission, and City
Council/Board of Adjustment of the City of West Lake Hills, Texas. All representations, whether
oral or written, made by the representative in support of the request have the full force and effect
of the applicant's approval. I do by this document constitute the above named representative as
my true and lawful attorney-in-fact to act in my name, place and stead, to do and perform any act
in connection with such application which I myself might perform or do if I was personally present.

ClearTERRA GROUP / RAMON AGUIRRE

Property Owner/Applicant Name

Ramon Aguirre

Property Owner/Applicant Signature

3421 BEE CAVE RD AUSTIN TX 78746

Street Address

City

State

Zip Code

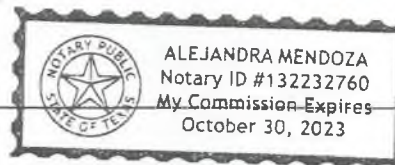
512-417-3494

Property Owner/Applicant Phone Number

This instrument was acknowledged before me on this the 6th day of April, 20 22

Alejandra Mendoza

Notary Public in and for the State of Texas





Southwest Engineers

Civil | Environmental | Land Development

ENGINEERING DRAINAGE REPORT

FOR

3421 BEE CAVES ROAD
OFFICE DEVELOPMENT
WEST LAKE HILLS, TX 78746

Prepared For:

CLEAR TERRA GROUP, LLC
3305 HICKORY CREEK COVE
AUSTIN, TEXAS 78735

Prepared By:

SOUTHWEST ENGINEERS, INC

205 CIMARRON PARK LOOP, SUITE B
BUDA, TX 78610

P: 512.312.4336 | F: 830.672.2034

www.swengineers.com | TBPE NO. F-1909

LS

DECEMBER 2021

SWE Project #: 0906-001-20

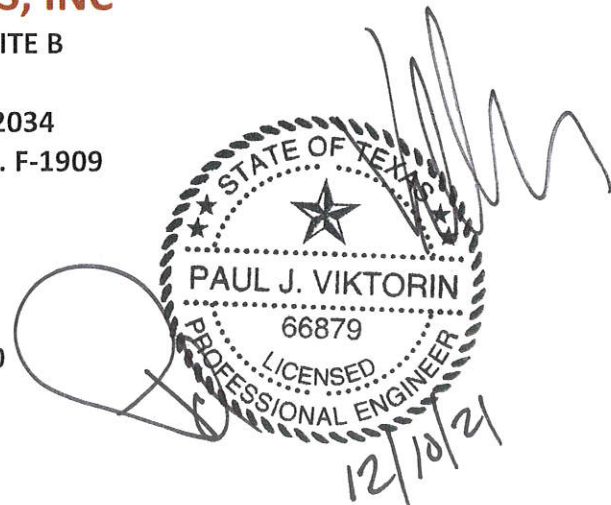


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EXHIBITS

- A. LOCATION MAP
- B. FEMA FLOOD INSURANCE RATE MAP (FIRM - PANEL #48453C0605K)
- C. PRELIMINARY DRAINAGE PLAN
- D. NRCS SOIL SURVEY

Engineering Drainage Report for 3421 BEE CAVES ROAD

INTRODUCTION

This report, calculations, and preliminary drainage plan are submitted in support of the proposed development for the property located at 3421 Bee Caves Road (RM 2244), in the City of West Lake Hills (COWLH). The purpose of this report is to summarize the methodologies used to analyze the existing and proposed runoff from the site. The proposed development will comply with the regulations set in place by the COWLH in regards to stormwater management per the proposed drainage plan and design. As required by the COWLH, runoff will be collected, detained, and then released in a manner that is equal to or less than what is currently considered existing conditions. Additionally, any runoff generated by the proposed improvements will first be treated by water quality control measures according to the Texas Commission on Environmental Quality (TCEQ) requirements before being detained.

The property is a ± 0.77 acre tract located at 3421 Bee Caves Road in the Full Purposed Jurisdiction of the COWLH, in Travis County, Texas, and is currently comprised of two vacant one-story buildings with associated driveway and parking area. The proposed development consists of a $\pm 6,527$ square-foot (sf) new office building with surface parking and parking also located underneath the primary structure, and corresponding driveway and utilities. Please refer to Location Map in **Exhibit A**.

Access to the development will be provided through Bee Caves Road, in a similar fashion to what currently exists, with a single driveway located on the northeast side of the property. The site is located within the Sanderling Trail Service Area of the COWLH's Wastewater Collection System, and service is to be provided via an existing 8" Polyvinyl Chloride (PVC) gravity fed wastewater main located along the rear of the property. Water supply is to be provided by Travis Country Water District 10 via an existing 6" Cast Iron (CI) main located within the Bee Caves Road R.O.W.

FLOODPLAIN

No portion of the site is located within a mapped FEMA Floodplain according to the FEMA Map Panel No. 48453C0445K, effective January 22, 2020. Please refer to the FEMA FIRMETTE in **Exhibit B**.

WATERSHED AND EDWARDS AQUIFER

The property lies within the Eanes Creek watershed, which is classified as a Suburban Watershed. Per the City of Austin GIS information, the site does lie within the Edwards Aquifer Recharge Zone. As such, a Water Pollution Abatement Plan (WPAP) must be submitted and reviewed by TCEQ prior to construction of the proposed improvements.

IMPERVIOUS COVER

The property is currently zoned as Office (O) based on the Official Zoning Map of the COWLH. The zoning designation of this property allows for 30% impervious cover, according to the schedule of regulations described in Section 22.03.281(b)(IX) of the COWLH Code of Ordinances. Also stated in Section 22.03.281(b)(IX), are impervious cover incentives to increase the maximum allowable impervious coverage to 42%, which will be requested. The total amount of on-site impervious cover proposed with this development is approximately ±13,830 sf, or ±41.3%.

TOPOGRAPHY

Topographic information for the site was obtained from Crichton and Associates, Inc. by a survey performed on October 11, 2019. The site generally drains away to the north and south directions from a centrally located high point via overland sheet flow, with the northern half being conveyed toward the Bee Caves Road Right-of-Way (ROW), and the southern half draining towards the property's rear boundary, as seen on the Preliminary Drainage Plan (***Exhibit C***).

DRAINAGE ANALYSIS

Under existing conditions, the project pre-development drainage area map consists of three (3) on-site drainage areas, EX-A, EX-B, and EX-C. Additionally, an off-site drainage area conveying runoff toward the northwestern property boundary has been identified and listed at OS-A. Runoff from drainage areas EX-A and OS-A converge and are ultimately calculated together at the Point-of-Analysis A (POA-A), which then is captured by an existing Texas Department of Transportation (TxDOT) 4'x4' grate inlet, and furthermore conveyed via a 24" storm sewer main located within the Bee Caves Road ROW. Drainage area EX-B drains off-site in a northeast fashion, with runoff directed to the Bee Caves Road ROW as well, and calculated at POA-B, and ultimately collected by another TxDOT 4'x4' grate inlet located downstream of the property to the east. Runoff originating from drainage area EX-C flows downhill towards the southern property line and is calculated at POA-C, which eventually drains to a downstream storm water detention facility, located to the southwest, that serves the surrounding area.

In proposed conditions, the project post-development drainage area map depicts four (4) drainage areas located on-site, PR-A, BYP-A, PR-B, and PR-C. Drainage area PR-A will be comprised of the improvements associated with this development, and the runoff generated

from this area will be routed to the required water quality and detention facilities by a series of on-site inlets and storm sewer pipes. After treatment and detention, runoff will be released into the Bee Caves Road ROW and captured by the existing TxDOT 4'x4' grate inlet, along with the runoff produced from drainage areas OS-A and BYP-A, which bypasses the proposed water quality/detention controls. POA-A in proposed conditions consists of the runoff from drainage areas OS-A and BYP-A, and the controlled discharge of the detention facility belonging to drainage area PR-A. Drainage areas PR-B and PR-C consist of less area than those present in existing conditions (EX-B, EX-C) and will remain undeveloped, with runoff flowing off-site, uncontrolled via sheet flow at a rate less than existing conditions. Calculations for these areas are taken at POA-B and POA-C, respectively. All runoff for off-site flows (OS-A) will remain unchanged from existing conditions after the site related improvements proposed with this project. The use and design of temporary and possible permanent erosion control measures, in accordance with the COWLH Drainage and Erosion Control Design Manual (DECDM), will achieve sheet flow conditions for any bypassing off-site flows.

Development runoff calculations, based on peak flow rates equal to the 2-yr, 10-yr, 25-yr, and 100-yr frequency storm events (based on NOAA Atlas 14 rainfall data for the City of West Lake Hills), and defined by the COWLH DECDM, are shown in existing and proposed conditions on the Drainage Area Maps within the Preliminary Drainage Plan included in **Exhibit C**. Drainage analysis has been completed using Bentley PondPack (V10.02.00.01) Software. The *Urban Hydrology for Small Watersheds Technical Release 55*, was used to determine the CN and Tc values for each drainage area. The CN values used for existing and proposed conditions were based on the hydrologic soil group rating from the SCS Soils Conservation Survey for Travis County, Texas and existing and proposed impervious cover. According to the survey, the soils within the drainage areas predominately have a hydrologic soil group rating D, as seen in **Exhibit D**.

A final detention pond design, using the SCS/NRCS Routing Methodology, will be required to show all release flow rates for proposed conditions to be less than flows in existing conditions.

EXHIBIT A
LOCATION MAP



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Buda, Texas 78610
(512) 312-4336

LOCATION MAP

OFFICE DEVELOPMENT
3421 BEE CAVES ROAD
WEST LAKE HILLS, TX 78746

Date: 12/09/2021
File: Exhibit
Scale: N.T.S.
Tech: LS
Project No.: 0906-001-20

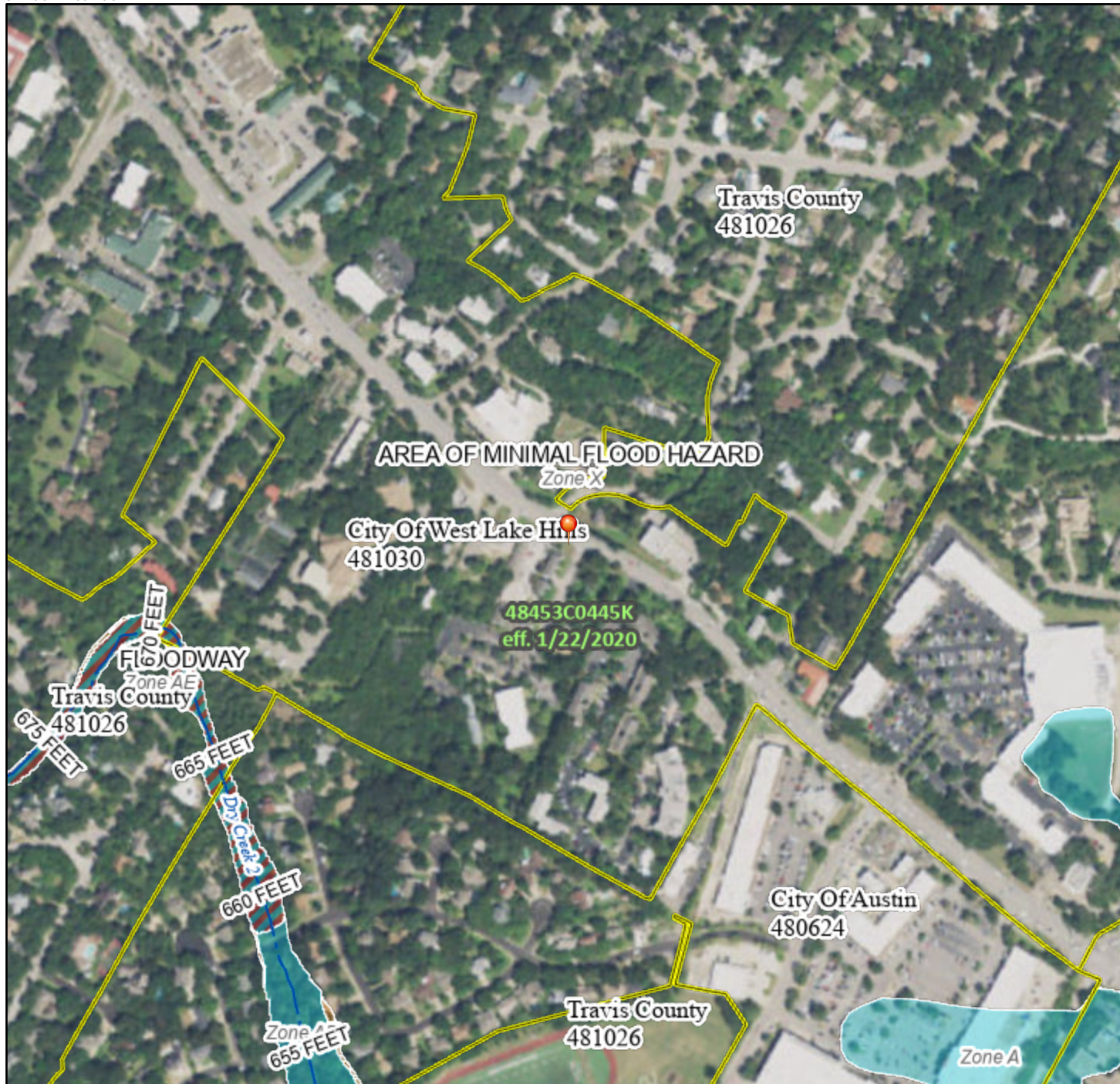
EXHIBIT B

**FEMA FLOOD INSURANCE RATE MAP
(FIRMETTE – PANEL #48453C0605K)**

National Flood Hazard Layer FIRMette



97°48'31"W 30°16'51"N



0 250 500 1,000 1,500 2,000 Feet 1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
MAP PANELS		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

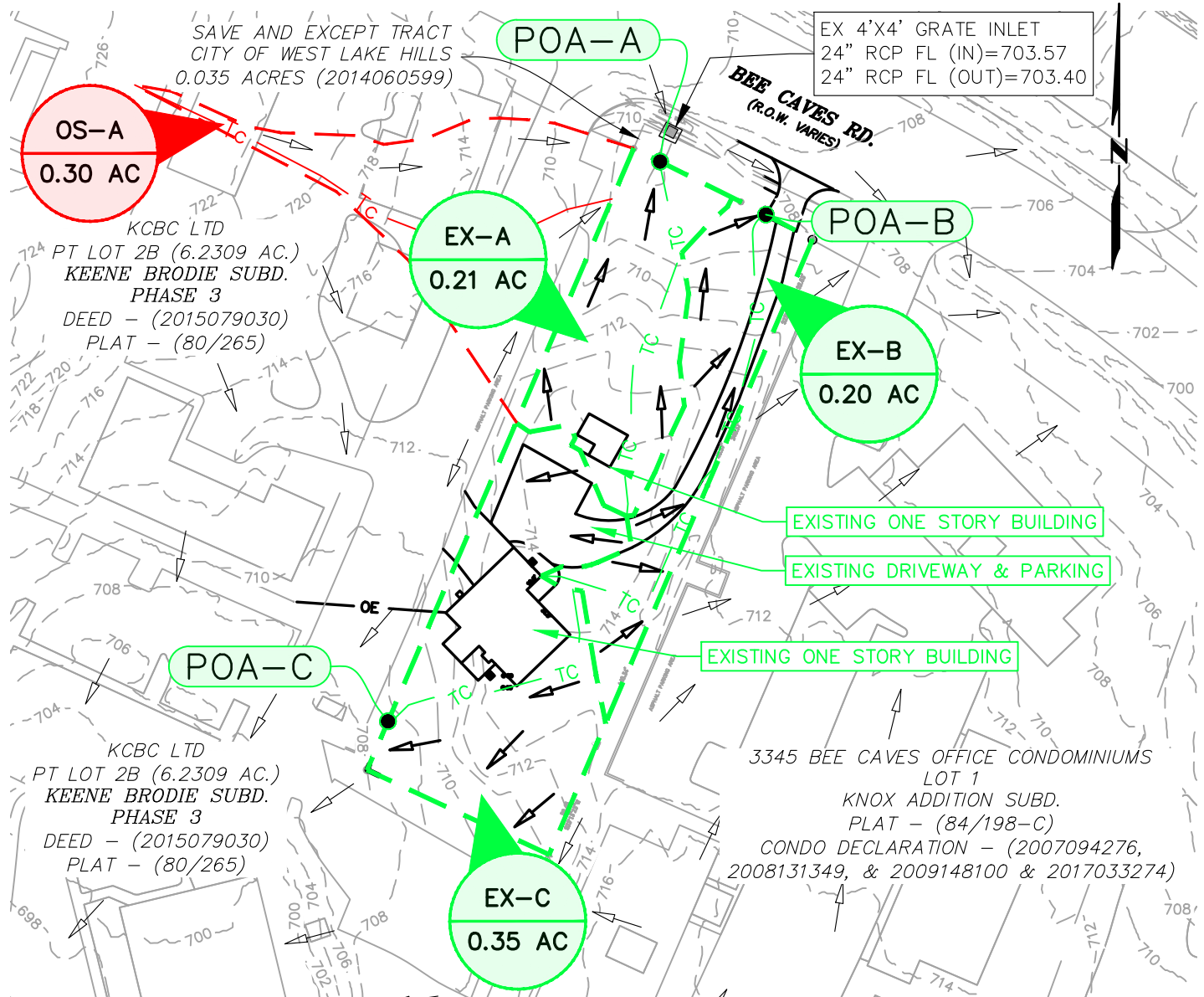
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **11/16/2021 at 11:27 AM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

EXHIBIT C

PRELIMINARY DRAINAGE PLAN



HYDROLOGIC SUMMARY TABLE (SCS METHOD)

AREA NAME	EX-A	OS-A	EX-A + OS-A (POA-A)	EX-B (POA-B)	EX-C (POA-C)
Drainage Area (ac.)	0.21	0.30	---	0.20	0.35
CN #	81	---	---	84	86
% Impervious	4.31%	91.18%	---	19.82%	35.75%
Tc (min)	10.0	10.0	---	14.3	10.5
2 year Discharge (cfs)	0.65	1.35	2.00	0.59	1.25
10 year Discharge (cfs)	1.22	2.08	3.30	1.06	2.17
25 year Discharge (cfs)	1.61	2.56	4.17	1.37	2.78
100 year Discharge (cfs)	2.23	3.35	5.57	1.87	3.75

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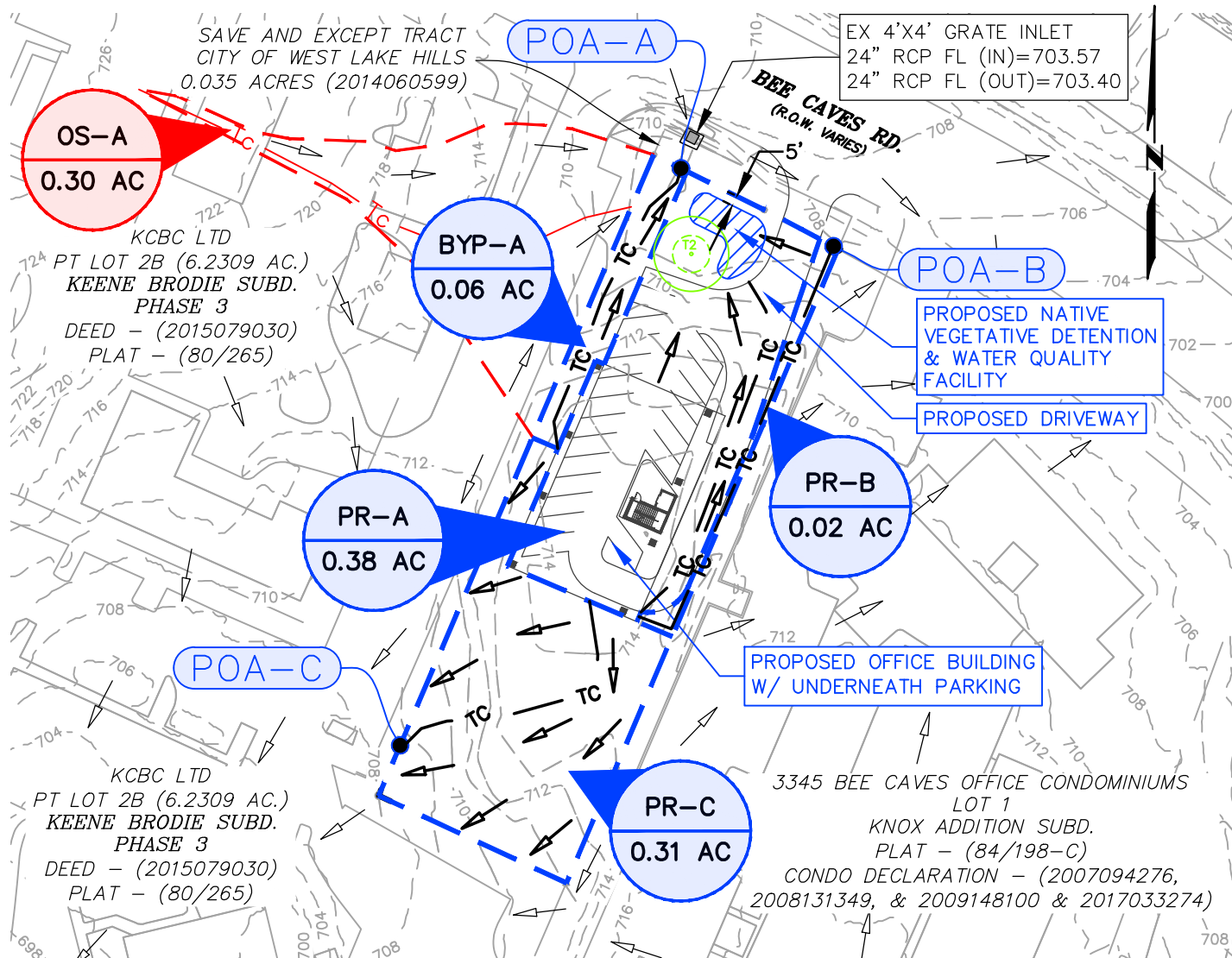
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EXISTING DRAINAGE EXHIBIT

OFFICE BUILDING
3421 BEE CAVES RD,
WEST LAKE HILLS, TX 78746

Date: 12/10/2021
File: Exhibit
Scale: 1" = 80'
Tech: LS
Project No.: 0906-001-20

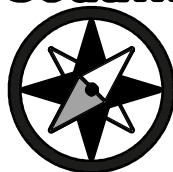


HYDROLOGIC SUMMARY TABLE (SCS METHOD)

AREA NAME	PR-A (DETENTION PROVIDED)	BYP-A	OS-A	**PR-A + BYP- A + OS-A (POA-A)	PR-B (POA-B)	PR-C (POA-C)
Drainage Area (ac.)	0.38	0.06	0.30	---	0.02	0.31
CN #	95	80	0	---	80	80
% Impervious	85.14%	0.00%	91.18%	---	0.00%	0.00%
Tc (min)	10.0	10.0	10.0	---	14.0	10.8
2 year Discharge (cfs)	1.69	0.16	1.35	2.00	0.06	0.88
10 year Discharge (cfs)	2.62	0.31	2.08	3.30	0.12	1.69
25 year Discharge (cfs)	3.23	0.41	2.56	4.17	0.15	2.23
100 year Discharge (cfs)	4.23	0.58	3.35	5.57	0.22	3.12

**** Detention Pond for drainage area 'PR-A' shall be designed to return proposed runoff flowrates to less than or equal to those present under existing conditions.**

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PROPOSED DRAINAGE EXHIBIT

OFFICE BUILDING
3421 BEE CAVES RD,
WEST LAKE HILLS, TX 78746

Date: 04/04/2022
File: Exhibit
Scale: 1" = 80'
Tech: LS
Project No.: 0906-001-20

EXHIBIT D

**NATURAL RESOURCES CONSERVATION SERVICE (NRCS)
SOIL SURVEY**



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Travis County, Texas**

3421 Bee Caves Rd



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Travis County, Texas
Survey Area Data: Version 23, Sep 10, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 27, 2018—Nov 16, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
PuC	Purves clay, 1 to 5 percent slopes	0.8	100.0%
Totals for Area of Interest		0.8	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Travis County, Texas

PuC—Purves clay, 1 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2ylvf
Elevation: 400 to 1,800 feet
Mean annual precipitation: 33 to 37 inches
Mean annual air temperature: 65 to 69 degrees F
Frost-free period: 220 to 260 days
Farmland classification: Not prime farmland

Map Unit Composition

Purves and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Purves

Setting

Landform: Ridges
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Residuum weathered from limestone

Typical profile

Ak1 - 0 to 10 inches: clay
Ak2 - 10 to 16 inches: clay
Bk - 16 to 19 inches: clay
R - 19 to 40 inches: bedrock

Properties and qualities

Slope: 1 to 5 percent
Depth to restrictive feature: 8 to 20 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 50 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: D
Ecological site: R081CY574TX - Shallow 29-35 PZ
Hydric soil rating: No

Minor Components

Eckrant

Percent of map unit: 4 percent
Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R081CY360TX - Low Stony Hill 29-35 PZ
Hydric soil rating: No

Brackett

Percent of map unit: 3 percent
Landform: Ridges
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: R081CY355TX - Adobe 29-35 PZ
Hydric soil rating: No

Doss

Percent of map unit: 2 percent
Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R081CY574TX - Shallow 29-35 PZ
Hydric soil rating: No

Rock outcrop

Percent of map unit: 1 percent
Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

References

- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
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Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

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Southwest Engineers

Civil | Environmental | Land Development

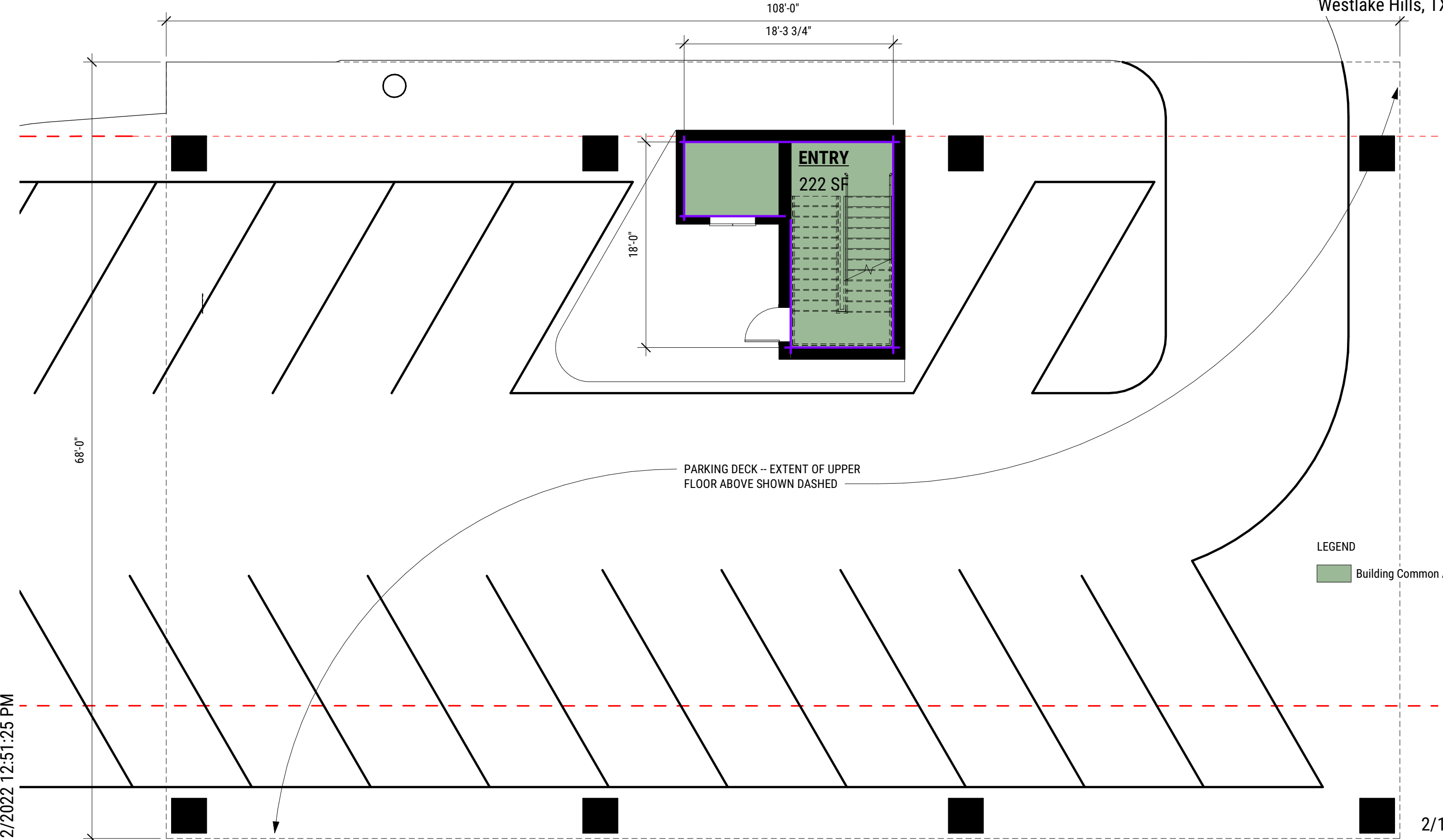
SOUTHWEST ENGINEERS, INC

205 CIMARRON PARK LOOP, SUITE B

BUDA, TX 78610

P: 512.312.4336 | F: 830.672.2034

www.swengineers.com | TBPE NO. F-1909



LEGEND
Building Common Area

PARKING DECK -- EXTENT OF UPPER
FLOOR ABOVE SHOWN DASHED

ENTRY
222 SF

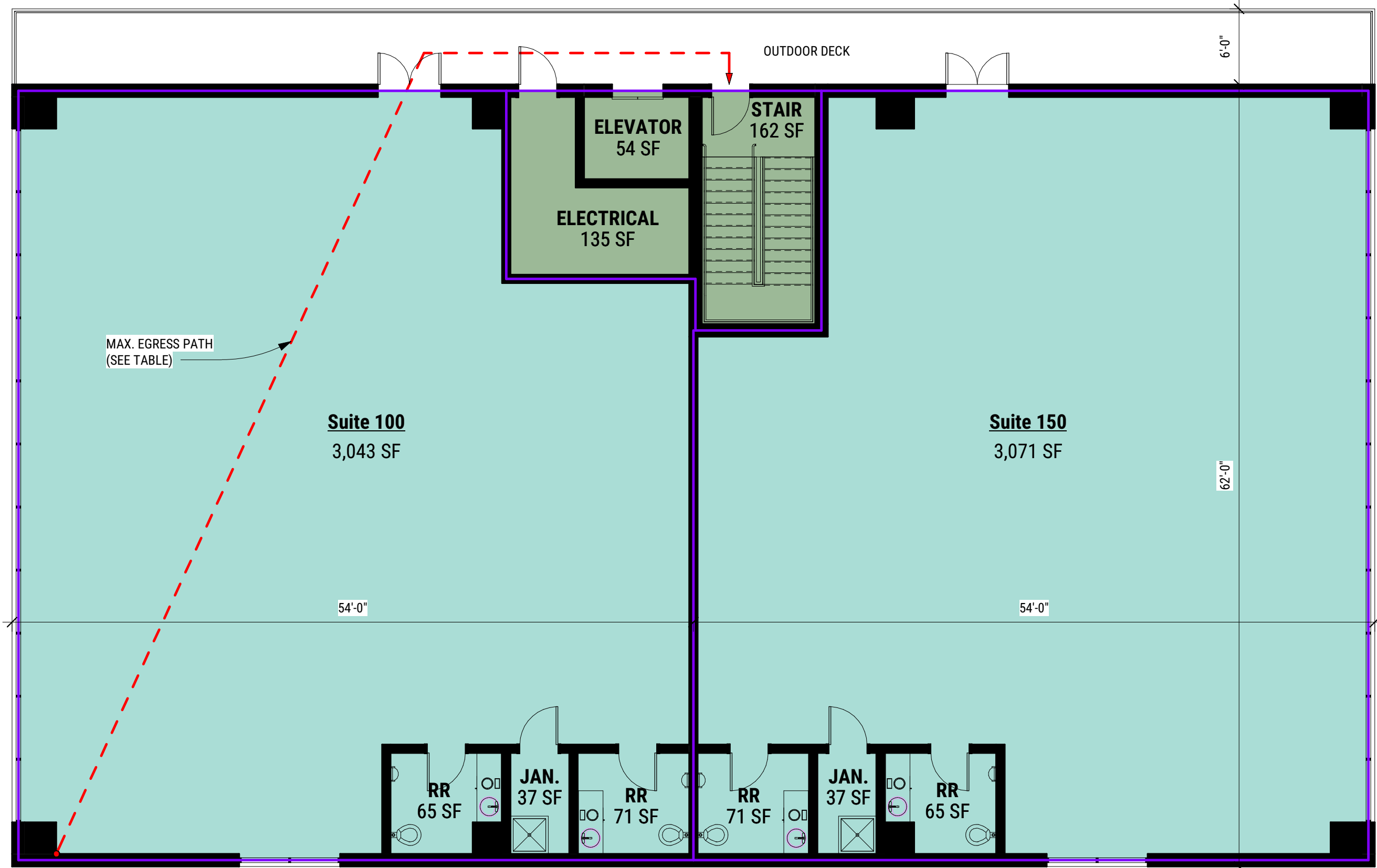
18'-0"

108'-0"

18'-3 3/4"

68'-0"

1 LOWER LEVEL PLAN
1/8" = 1'-0"



LEGEND

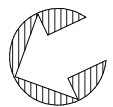
Building Common Area

Office Area

EGRESS DISTANCE SCHEDULE	
Egress Path	Egress Line Length
A	96'-6 3/4"

1 UPPER LEVEL PLAN

1/8" = 1'-0"



TRUE
NORTH



PROJECT
NORTH

2/12/2022

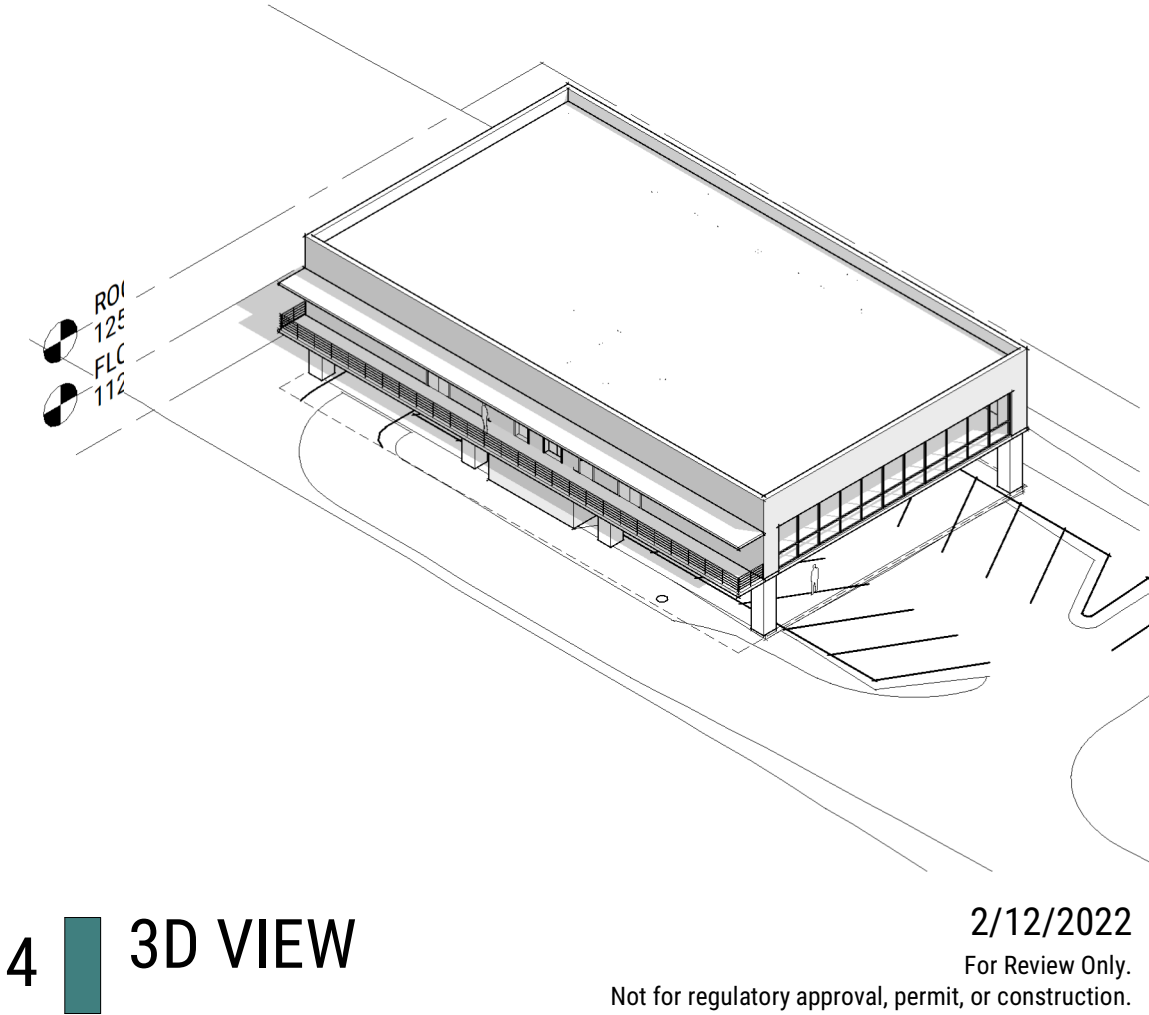
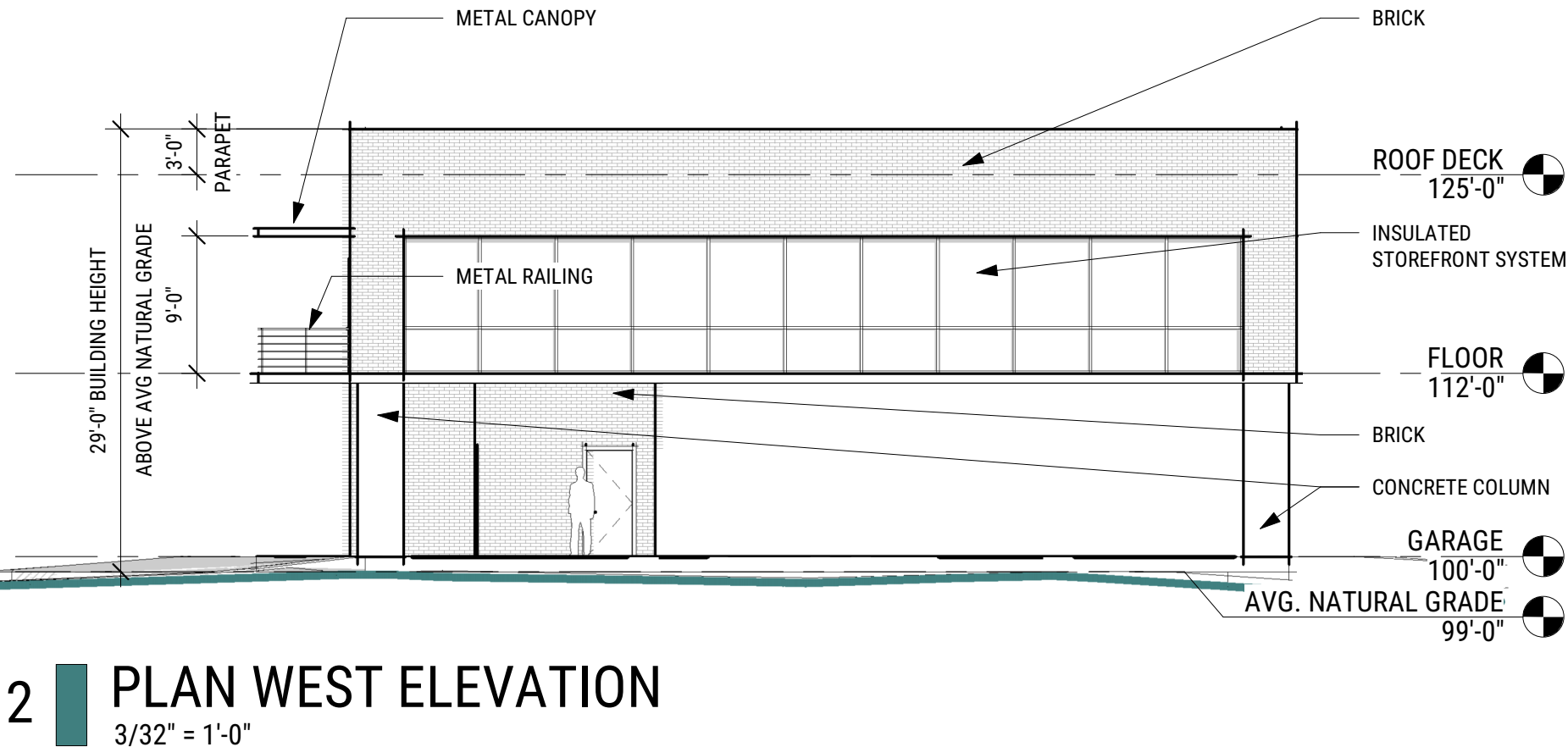
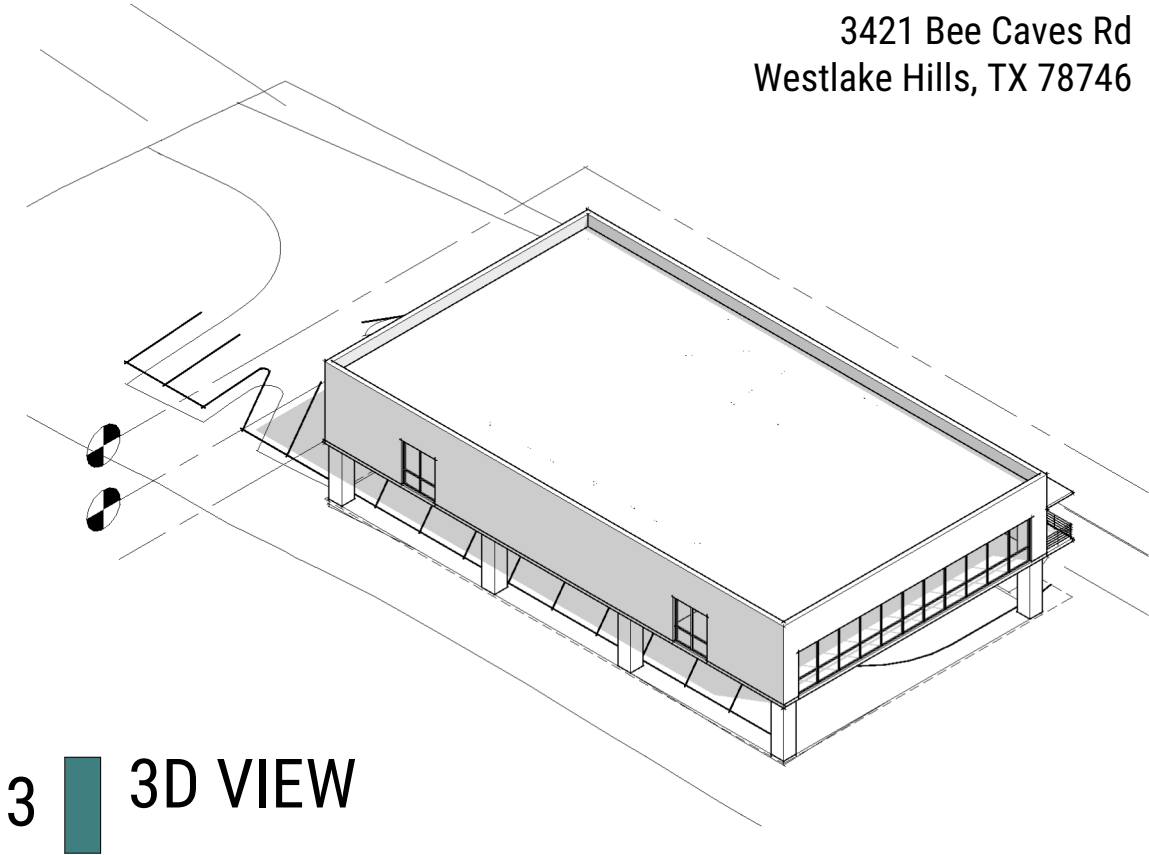
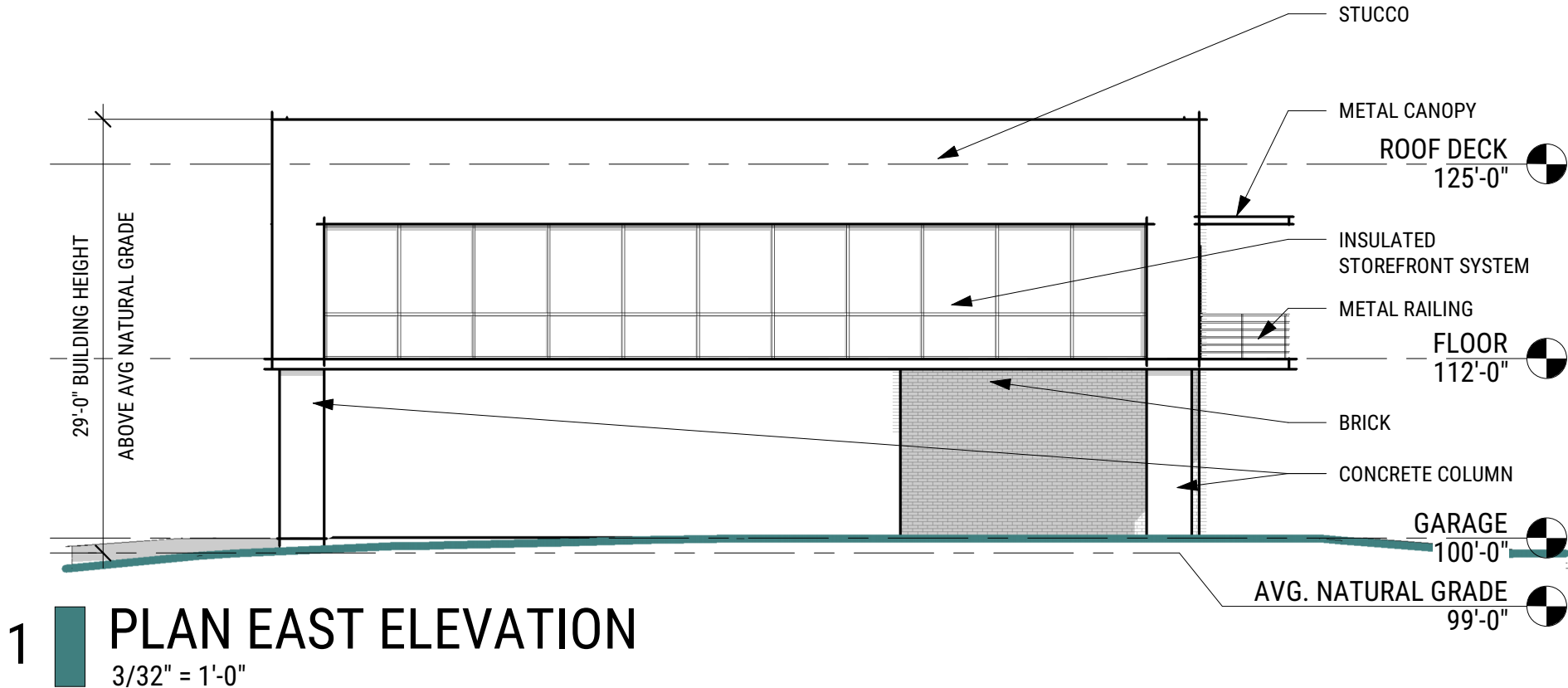
For Review Only.

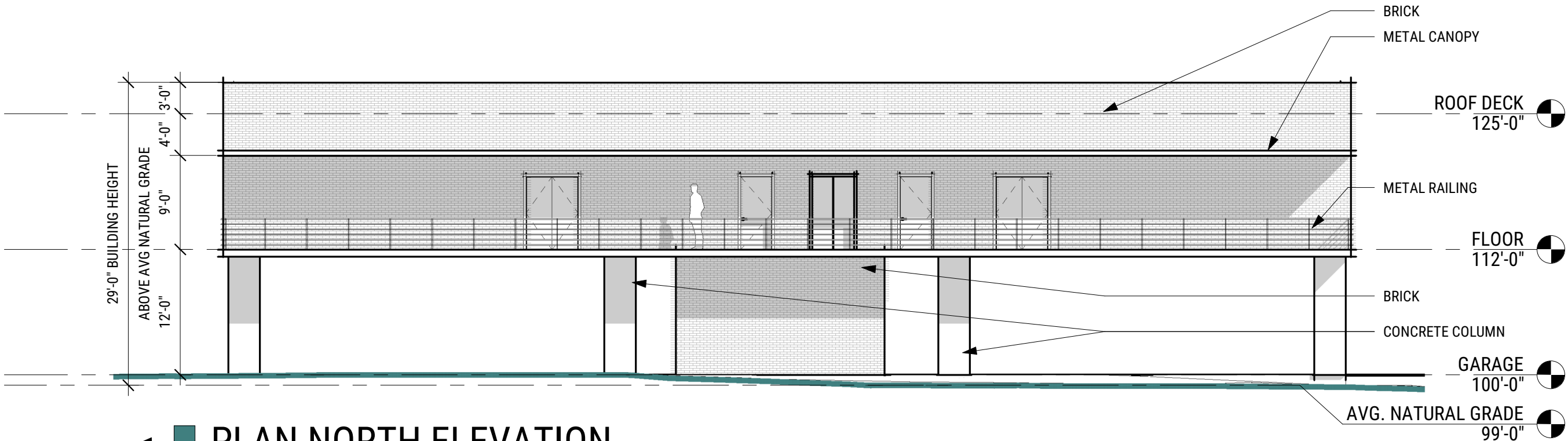
Not for regulatory approval, permit, or construction.

David Polkinghorn, Registered Architect

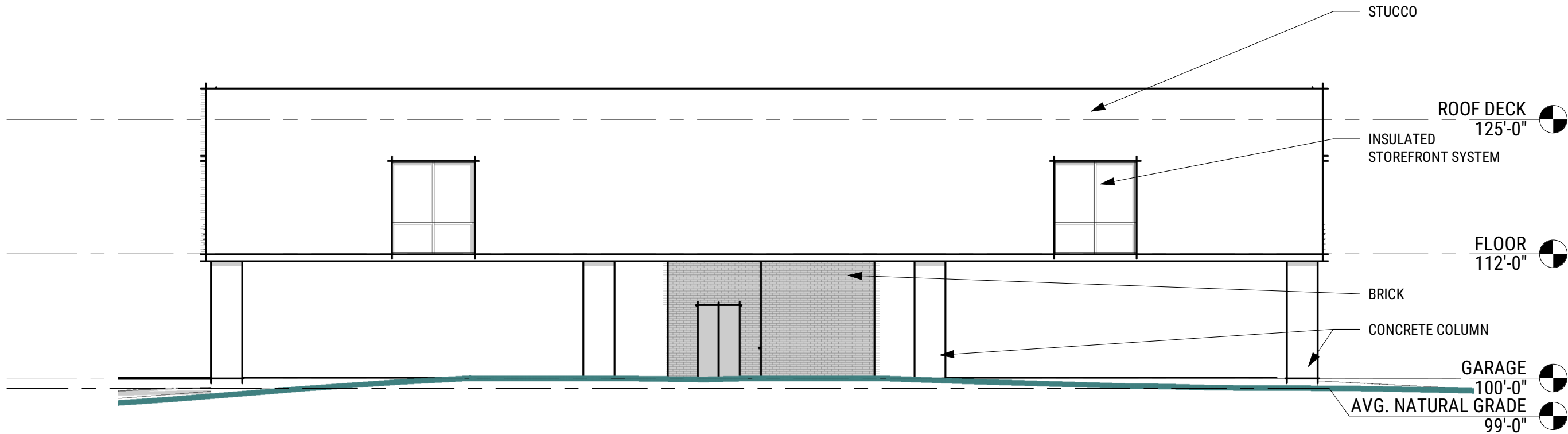
Texas Registration #23473

Page 55 of 135





1 PLAN NORTH ELEVATION
3/32" = 1'-0"



2 PLAN SOUTH ELEVATION
3/32" = 1'-0"

LEGEND

- 1/2" IRON PIPE FOUND
- 1/2" REBAR FOUND
- 1/2" REBAR SET
- WIRE FENCE
- WOOD FENCE
- RECORD INFORMATION
- WATER METER
- AIR CONDITIONER
- INSIDE OF SUBJECT BOUNDARY
- CONCRETE MONUMENT FOUND
- 60D NAIL FOUND

BEE CAVES ROAD
(HIGHWAY 2244 - 100' R.O.W.)
(S 63°00' E, 100.00')
(S 25°24' W, 109.63')

EDGE OF ROAD
0.035 ACRE
(DOC. 2014060599)
SAVE AND EXCEPT AREA
(S 61°52'39" E, 59.59')
RADIUS = 989.87'
S 60°42'29" E, 40.23'
ARC = 40.27'

LOT 2A
0.77 ACRES
(33,456.5 SQ. FT.)
SAVE AND EXCEPT
0.035 ACRES
(DOC. 2014060599)

LOT 2B
7.281 ACRES
COMMERCIAL

DELIAH BLACK
VOL. 4246, PG. 632

WOOD BUILDING
ON BLOCKS
COVERED
WOOD
DECK

ASPHALT
DRIVE
CONCRETE

CONCRETE
SINGLE STORY
STONE
BUILDING

COVERED
WOOD
DECK



TO THE LIEN HOLDER AND / OR OWNERS OF THE PREMISES SURVEYED AND TO:

AUSTIN TITLE

I DO HEREBY CERTIFY THAT THIS SURVEY WAS MADE ON THE GROUND UNDER MY SUPERVISION AND TO THE BEST OF MY KNOWLEDGE OF THE PROPERTY LEGALLY DESCRIBED HEREON AND THAT THERE ARE NO BOUNDARY LINE CONFLICTS, ENCROACHMENTS OVERLAPPING OF IMPROVEMENTS, OR ROADS IN PLACE, EXCEPT AS SHOWN HEREON, AND CERTIFIES ONLY TO THE LEGAL DESCRIPTION AND EASEMENTS SHOWN ON THE REFERENCED TITLE COMMITMENT. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE.

RESTRICTIONS

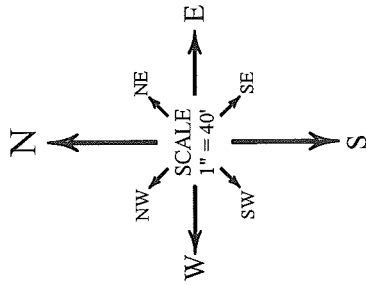
SUBJECT TO RESTRICTIONS RECORDED IN VOL. 76, PG. 158 (TRACT 1) AND VOL. 80, PG. 265 (TRACT 2)
SUBJECT TO BUILDING SETBACK LINE IN VOL. 76, PG. 158.
SUBJECT TO ELECTRIC LINES AND SYSTEMS AND TELEPHONE LINES EASEMENT GRANTED TO THE CITY OF AUSTIN, RECORDED IN VOL. 4626, PG. 2261.
SUBJECT TO EASEMENT GRANTED TO JAMES VINSON IN VOL. 7684, PG. 818, AS AFFECTED BY PARTIAL RELEASE OF EASEMENT FOR INGRESS AND EGRESS IN DOC. NO. 2014060600.
SUBJECT TO BOUNDARY LINE AGREEMENT IN VOL. 9901, PG. 596.
SUBJECT TO INGRESS AND EGRESS EASEMENT GRANTED TO JAMES VINSON RECORDED IN VOL. 7684, PG. 818.

LEGAL DESCRIPTION

LOT 2A, FIRST RESUBDIVISION OF LOT 2, BRODIE KEENE SUBDIVISION, ACCORDING TO THE MAP OR PLAT THEREOF, RECORDED IN VOL. 76, PG. 158, PLAT RECORDS, TRAVIS COUNTY, TEXAS, SAVE AND EXCEPT THAT CERTAIN 0.035 ACRES FOR ROAD PURPOSES RECORDED IN DOCUMENT NUMBER 2014060599, OFFICIAL PUBLIC RECORDS, TRAVIS COUNTY, TEXAS, TOGETHER WITH ANY AND ALL RIGHTS OF INGRESS AND EGRESS AS SET OUT IN INSTRUMENT RECORDED IN VOLUME 7684, PAGE 818, DEED RECORDS OF TRAVIS COUNTY, TEXAS.

F.I.R.M. MAP INFORMATION

ALLSTAR
Land surveying
9020 ANDERSON MILL RD
AUSTIN, TEXAS 78729
(512) 249-8149 PHONE
(512) 331-5217 FAX
TBPLS FIRM NO. 10135000



CLEAR TERRA GROUP, LLC
3421 BEE CAVES ROAD
AUSTIN, TRAVIS COUNTY, TEXAS

ADDRESS

SURVEY DATE:	JULY 16, 2018	FILED BY:	EDWARD RUMSEY	07/13/2018
TITLE CO.:	AUSTIN TITLE	CALC. BY:	CHRIS ZOTTER	07/16/2018
G.F. NO.:	AUT-60-104-AUT16003405	DRAWN BY:	DANIEL TREVINO	04/18/2007
JOB NO.:	A0704918 - A0421207	UPDATE BY:	SEAN SUTTON	07/16/2018
		RPLS CHECK:	EDWARD RUMSEY	07/16/2018

Hill Country Specialists
701 S Lamar Blvd Suite C
Austin, TX 78704

RE: 3421 Bee Cave Rd new building project.

Zoning and Planning Commission:

As the Owner of the property at 3423 Bee Caves Rd that is adjacent to this address, I am writing in support of the proposed development at 3421 Bee Caves Road. I believe that this office building will be additive to the West Lake Hills community and complementary with surrounding businesses.

3421 Bee Caves is located at the commercial corridor of desirable Westlake Hills. The proposed project will be a new modern office building that will replace the existing old house and shed which served as offices of professionals providing mental health services. The new building will aim to attract the same type of tenants.

The back of the property will be left undeveloped and in its natural state, where a good number of trees and vegetation screen it from the businesses behind it.

In conclusion, I believe this project will enhance the commercial corridor of the City and has my full support.

Thank you for your consideration.



Daryl Kunik
Manager

From:

Subject:

Date:

3421 Bee Caves Rd

Thursday, May 12, 2022 9:59:29 AM

Dear Zoning & Planning Committee,

Thirty years ago, My business partner, Brian Rodgers, and my father, Kevin Reichle, purchased the Bee Cave Center at [3425 Bee Caves Road](#). As a neighbor The Bee Cave Center would be the most affected from the proposed office building at [3421 Bee Caves Rd](#), and we fully support the project. We believe in supporting local businesses and local owners.

This seems to us to be the exact kind of improvement we would want to see on Bee Cave road, the commercial corridor of Westlake Hills. The proposed use is something that is needed in a growing community with our demographics.

This project has our full support. We hope you vote in its favor.

Thank you,

Brian Rodgers

Logan Reichle

Landon Reichle



**FRONT SETBACK, IMPERVIOUS COVER AND TREE VARIANCES
STAFF REPORT**

JUNE 8, 2022

Project Address: 5902 Bee Cave Road (Hat Creek Burgers)

Project Number: 2022-1037

Agenda Item: Land Use: **5902 Bee Cave Road:** Discussion/recommendation on an application for a variance request to encroach in a front setback, exceed the maximum allowable impervious cover and remove one tree with a trunk diameter of fourteen inches or greater (West Lake Hills Code Section 22.03.281 and 22.03.304). Applicant Hat Creek Burgers WLRE LLC (Scott Brown).

Applicant Information: Scott Brown

Hearing Dates:

April 20, 2022,	ZAPCO (ZAPCO meeting cancelled)
May 18, 2022,	ZAPCO
June 8, 2022,	Board of Adjustment/City Council

Location: The subject property is located at the northeast corner of Bee Cave Road and Loop 360.

Property Information, Zoning & Site Characteristics:

Owner: Hat Creek Burgers WLRE LLC
Legal Description: Lot 3 Collins & Bates Subdivision
Lot Size: 1.138 acres (49,571 square feet)
Zoning: B2 – Business 2

The site is surrounded by commercial properties to the north and east, and roadways to the south and west

Background & Analysis:

The lot is currently Hat Creek Burgers, and this is a proposed remodel and small addition. They are proposing to add two restrooms on the west side of the lot, which encroach in the front setback along Loop 360. They are also proposing to add to the roof, to make it match their other restaurants.

They are proposing an impervious cover of 78.65%. This site, with the incentives is allowed 43% impervious cover, and the existing site already exceeds the maximum allowable impervious cover. The total addition of impervious cover is 89 square feet. They are adding a dumpster pad for recycling.

They are requesting the removal of one tree, a 16-inch Live Oak, and will be required to replace 24 inches for this tree. The tree currently sits in the footprint of the outdoor dining area.

Variance Criteria Review:

When applying for a variance, the applicant has established by competent evidence that:

1. The strict or literal enforcement of the terms of this chapter, because of special conditions, will result in unnecessary hardship to the applicant.
The application states – *“The setback on Loop 360 is 75' which bisects the existing building. The expansion of the roof size increases the encroachment. The existing tree in the deck cannot remain because it would penetrate the roof. The resulting impervious cover is less than existed on the site under the previous site use as a nursery, and an impervious cover variance was granted for the original Hat Creek Burgers site plan.”*
2. There will not be unreasonable disruption of the natural terrain or unreasonable destruction of existing flora.
The application states – *“The site has previously been graded, and the changes to grading and existing vegetation are very minor. The tree proposed for removal from the deck area has the entire root zone covered by roof and deck material and is limited in it's growth potential since it is surrounded by building structure.”*
3. There is no reasonable alternative to the requisite variance that will alleviate the difficulty or hardship complained of.
The application states – *“The site is quite small and has very small limits for alternative designs. There appear to not be any other alternatives to accomplish the proposed changes due to the existing site conditions.”*
4. The variance will not be greater than the minimum required to alleviate the difficulty or hardship complained of.
The application states – *“The entire roof expansion is above existing impervious cover, and the building is already sited across the 75' front building line. Additional structures in front of the building line are slated for removal. The dumpster site expansion adds the ability to add recycling to the site. The two additional parking spaces in the rear are being located over existing impervious cover, limiting the impact to the site.”*
5. The variance does not violate the intent of the Zoning Ordinance or goals of the Comprehensive Plan.
The application states – *“The proposed improvements create only limited changes to the site, and are mostly located on the Loop 360 side, or shielded from the north adjacent property by vegetation. The change in roof structure is proposed to bring the site into a standard presentation for the other Hat Creek locations. No change in use is proposed.”*
6. The variance will not adversely affect neighboring properties or interfere with the enjoyment of these properties by their owners.
The application states – *“The proposed improvements are shielded from the property owner to the north by vegetation that will remain unchanged. The east side property is likewise unaffected since the improvements are located primarily away from them. Both are commercial businesses.”*

Outdoor Lighting

Outdoor lighting is not proposed with this variance request. Any outdoor lighting will need to comply with the City's Code.

Compliance with Adopted Uniform Building Code

The property and future construction will have to comply with all applicable City codes.

Subdivision

This request will not change the subdivision.

Comprehensive Planning Analysis

The existing and future land use is in conformance with the City of West Lake Hills Master Plan.

Zoning and Planning Commission Recommendation

ZAPCO voted to recommend approval of the setback and impervious cover variances but denial of the tree, unanimously, 4-0.

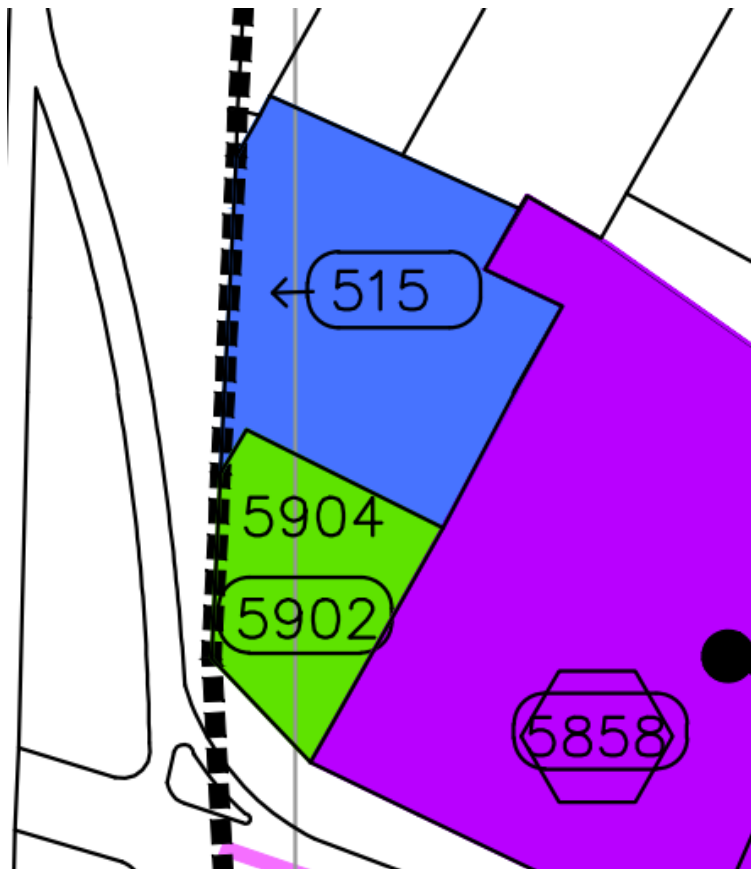
Staff Recommendation

Staff recommends: APPROVAL of the variance request as the lot already exceeds the maximum allowed impervious cover and the proposed improvements will help improve the functionality of the property.

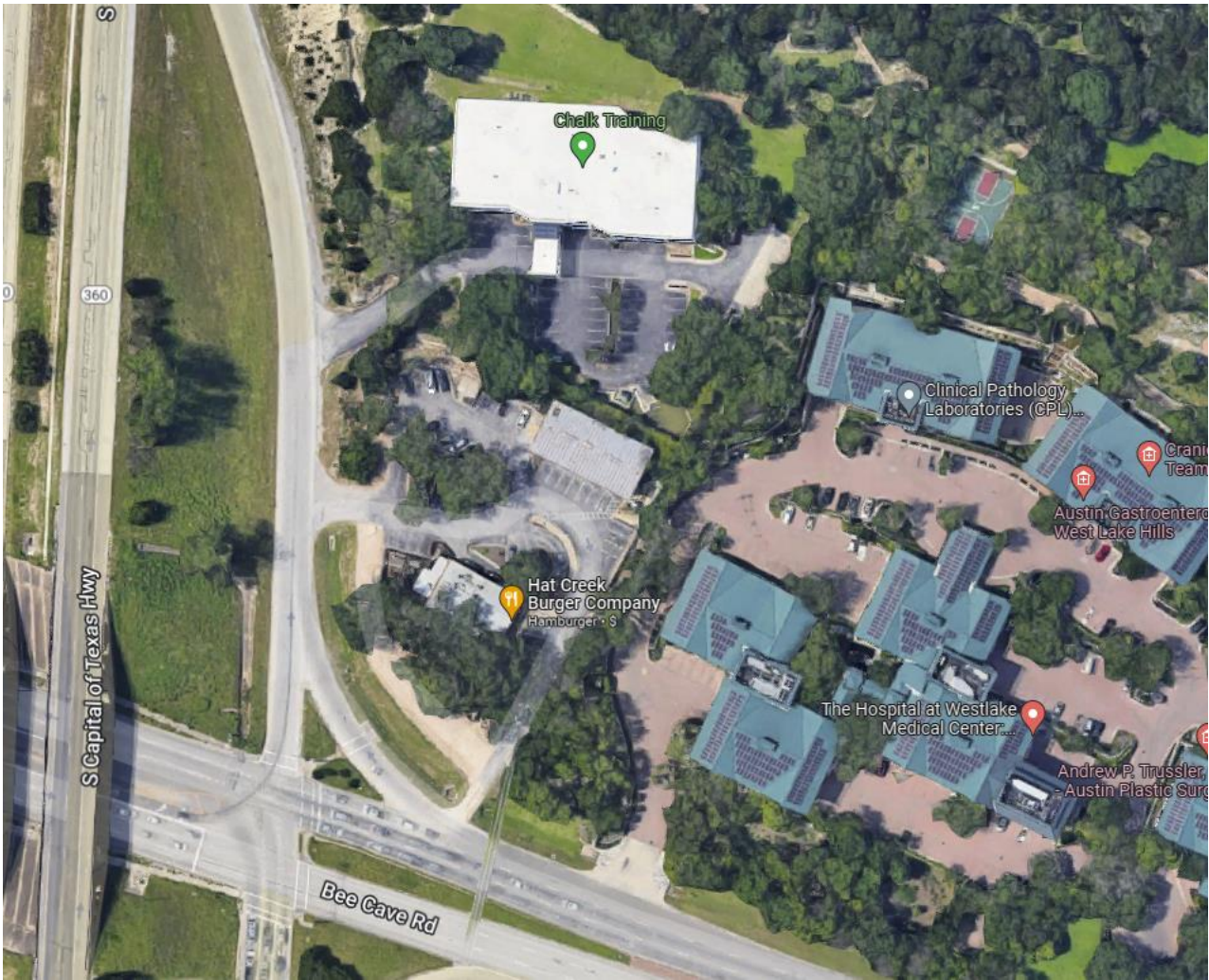
Links to Relevant Code:

- | | |
|----------------------------------|---|
| • Sec. 22.03.281 | Schedule of Regulations |
| • Sec. 22.03.514 | Criteria and process required for granting variance |
| • Sec. 22.03.304 | Tree and vegetation removal and replacement |

ZONING MAP



AERIAL PHOTO





March 21, 2022

Ashby Grundman
Director of Building and Development Services
City of West Lake Hills
911 Westlake Drive
West Lake Hills, Texas 78746

**RE: Eanes Aquatics Site Plan Improvements
4300 Westbank Drive
Austin Texas, 78746
Engineer's Summary Letter and Drainage Analysis**

Dear Mr. Grundman:

Bleyl Engineering is pleased to present the attached construction drawings for the proposed modifications to the Hat Creek Burgers site located on the northeast corner of Bee Cave Road and Capital of Texas Highway South. The project is located in the full purpose jurisdiction of the City of West Lake Hills in the Eanes Creek watershed and the Contributing Zone of the Edwards Aquifer. The property is Lot 3, Collins and Bates Subdivision.

Existing Conditions

The site existed as a nursery business prior to development by the Hat Creek Burger Company in 2011. At that time, the site was processed through the City for approval with variances and has operated in its current configuration since that approval.

Proposed Conditions

The proposed modifications to the site include a reconfiguration of the exterior roof structure, relocation of the restroom facilities parking lot modifications and expansion of the dumpster enclosure. The roof structure is being modified to coincide with all other locations of the Hat Creek enterprise to facilitate in the current branding theme of their other locations. This site was the initial restaurant in the business, and branding was not essential at the time the previous nursery building was remodeled into the existing restaurant.

The expansion of the dumpster enclosure will allow Hat Creek to add a second dumpster for recycling purposes and effectively manage the solid waste generated by the business. The expansion of the dumpster will necessitate the removal of 1 parking space(s) from the site. These spaces are being reconfigured in the location of existing impervious cover along the northern edge of the site. The total impervious cover for the site will now be 78.65%, which represents an insignificant increase of 0.13%. The increase is reflected on the Site Plan. The impervious cover

remains significantly lower than existed from the time when the site was utilized as a nursery. A variance to the now existing impervious cover amount to exceed the amount allowed by code was approved by the City in 2011.

Drainage

We have performed a drainage analysis for the site. The drainage patterns for the site are not changed with the proposed site modifications. The increase in impervious cover causes an also insignificant increase in the rate of stormwater runoff when compared with the existing site plan. However, as is demonstrated on the Drainage Plan, the amount of runoff leaving the site is still substantially less than when the site operated under a previous use.

No public utility modifications are proposed with the remodel of the site. Water and wastewater plumbing lines will be reconnected to the newly proposed restroom location.

Temporary erosion and sedimentation controls are proposed to contain the runoff of sediment from the modifications to the parking lot. No stabilized construction entrance is proposed since both entry points to the site are already paved.

Thank you for your consideration of the Hat Creek Burgers Site Plan Modifications. I trust this letter and the accompanying documents will be sufficient for you to process this application through the City of West Lake Hills.

I can be reached at any time if you have questions about the project.

Sincerely,



Kenny Watkins, P.E.
Bleyl Engineering
Project Manager

h:\jobfiles\hcb (hat creek burgers)\hcb 70359 (hat creek burgers plan revision)\03 engineering\02 reports\hcb engineering summary letter.docx



SPECIAL POWER OF ATTORNEY FORM

KNOW ALL PERSONS BY THIS DOCUMENT that I, Scott Brown
have made, constituted and appointed Bleyl Engineering
to be my duly authorized representative in connection with an application dated 03-21-2022,
to be heard by the Building Design Committee, Zoning & Planning Commission, and City
Council/Board of Adjustment of the City of West Lake Hills, Texas. All representations, whether
oral or written, made by the representative in support of the request have the full force and effect
of the applicant's approval. I do by this document constitute the above named representative as
my true and lawful attorney-in-fact to act in my name, place and stead, to do and perform any act
in connection with such application which I myself might perform or do if I was personally present.

Scott Brown

Property Owner/Applicant Name

Property Owner/Applicant Signature

4407 Bee Caves Rd WestlakeHills TX

78746

Street Address

City

State

Zip Code

(512)

Property Owner/Applicant Phone Number

This instrument was acknowledged before me on this the _____ day of _____, 20 ____.

Notary Public in and for the State of Texas

NOTICE TO NEIGHBORS OF VARIANCE REQUESTS

DATE OF NOTICE: March 22, 2022

Greetings. You are hereby notified that Hat Creek Burger WLRE, LLC, the recorded owner of a property located at 5902 Bee Cave Road in the City of West Lake Hills, Texas have filed an Application with the City of West Lake Hills, Texas requesting variances according to the following Sections of the City's Code of Ordinances:

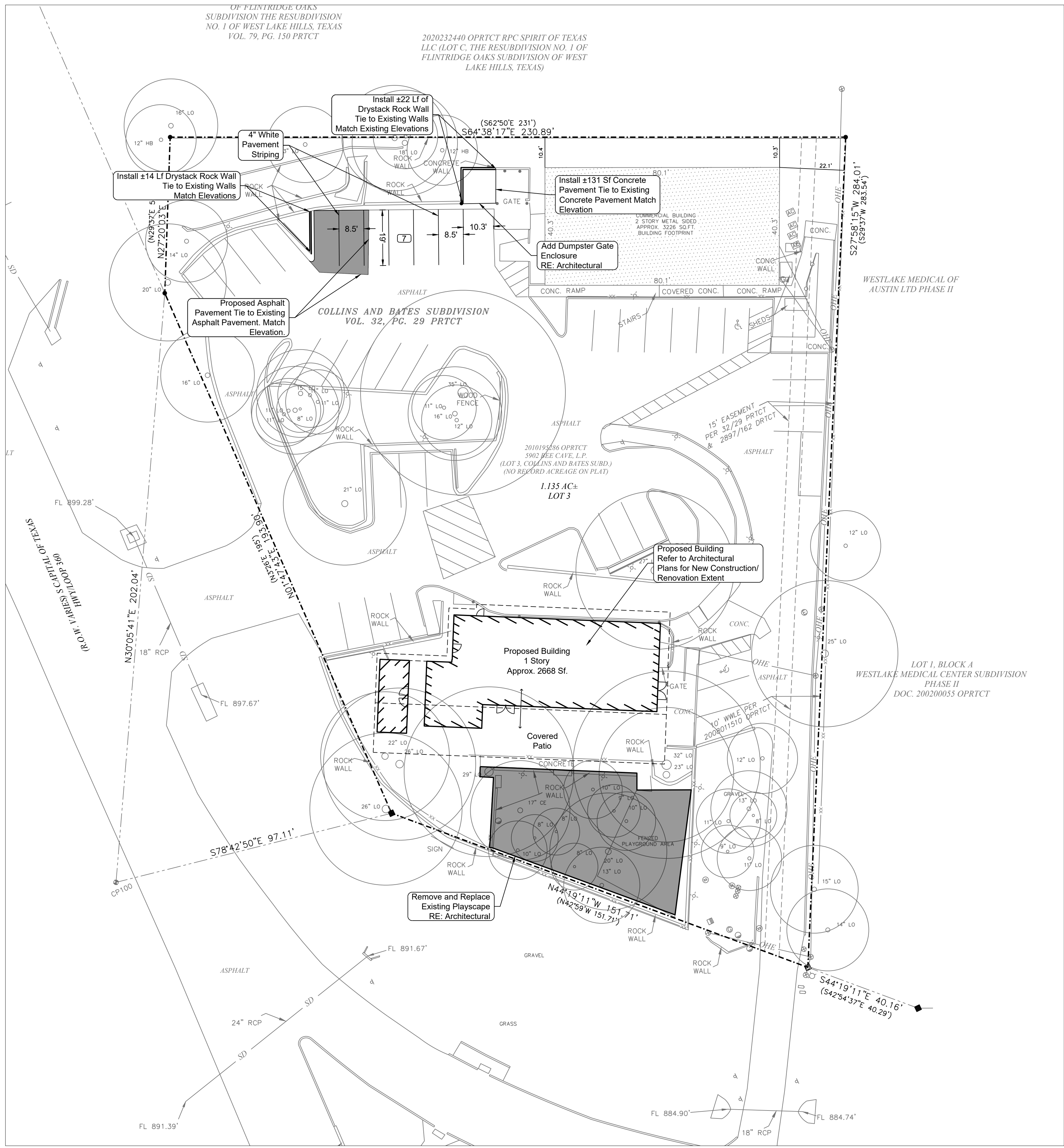
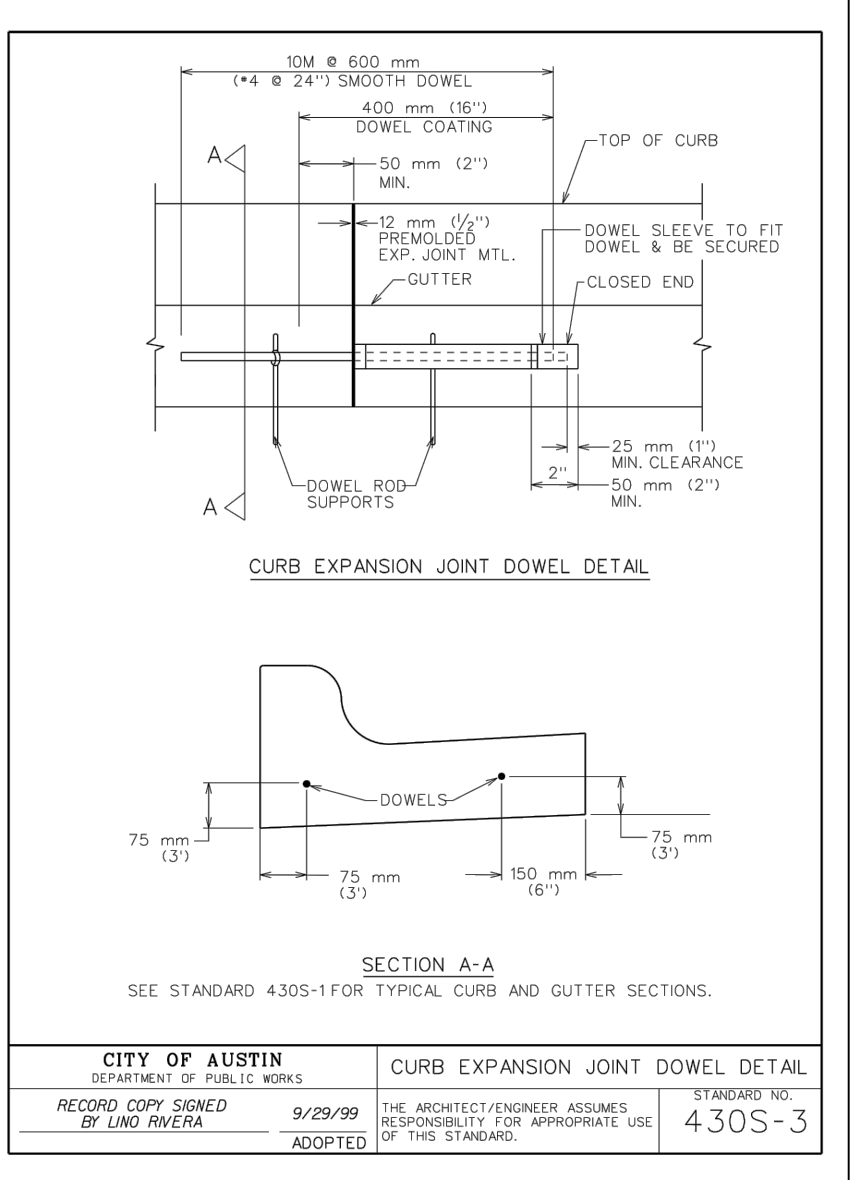
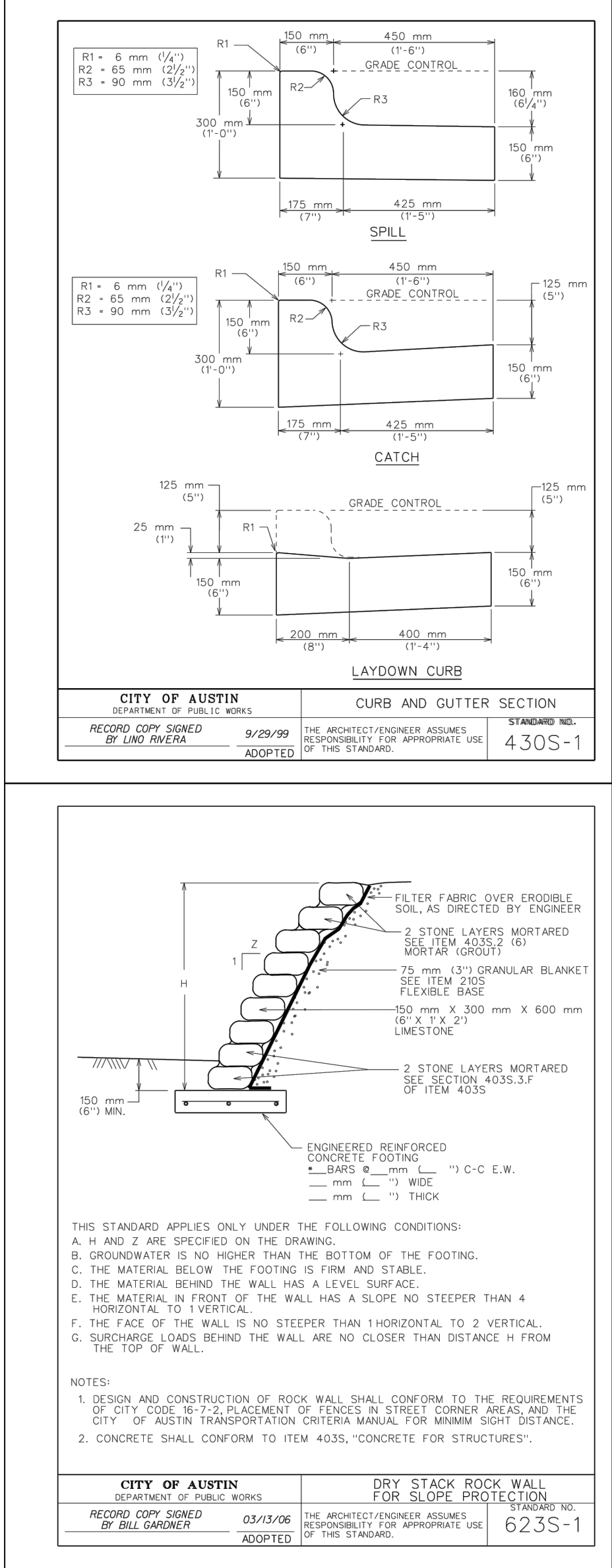
- Section 22.03.281 – Encroachment into front building setback;
- Section 22.03.281(b) – Exceed maximum approved impervious cover; and
- Section 33.03.304 – Removal of a 16" Live Oak Tree.

The request is so that the property owners may: Expansion and improvement to a site plan.

This application is scheduled to be considered at public hearings held by the Zoning and Planning Commission on April 20, 2022 at 6:30 p.m. and City Council/BOA on May 11, 2022 at 7:00 p.m. at West Lake Hills City Hall, located at 911 Westlake Drive, West Lake Hills, Texas. Please review the agenda packet, which will be posted online at <https://www.westlakehills.org/281/Agendas-Minutes> the Friday before the meetings by 5:00 p.m., to view the application and instructions on how to participate in the meetings. There shall include an opportunity for all interested persons to be heard. Please call City Hall at 512-327-3628 or email agrundman@westlakehills.gov if you have any questions. Thank you!



Mark Littrell, Zoning & Planning Secretary



Legal Description
Lot 3, Collins and Bates Subdivision.

Benchmarks
TBM - Bee Caves entrance culvert 18" RCP east flowline.
Elevation = 884.74'

The location of all existing utilities shown on these plans has been based upon record information only and may not match locations as constructed. The contractor shall contact Texas 811 for assistance in determining existing utility locations prior to beginning construction. Contractor shall field verify locations of utility crossings prior to beginning construction.

Release of this application does not constitute a verification of all data, information and calculations supplied by the applicant. The engineer of record is solely responsible for the completeness, accuracy and adequacy of his/her submittal, whether or not the application is reviewed for Code compliance by City engineers.

BLEYL ENGINEERING
PLANNING • DESIGN • MANAGEMENT
12007 Technology Blvd, Ste 150, Austin TX 78727
Texas Firm Registration No. F-678
Tel. 512-454-2400
www.bleylengineering.com

Site Plan
Hat Creek Burgers
5902 Bee Caves Road
Austin, Texas 78746
Travis County

This Document is Released for the
Purpose of Interim Review Under
Authority of
Kenny Watkins, P.E. (TX # 64738)
3/21/2022
Date
It is not to be used for Construction

Design: KW, CS
CAD: CS Review: KW
Project No: HCB 70359
Sheet: 4 of TBD

Drew Gressett
Hat Creek Burgers
4407 Bee Cave Road, Ste 511
Austin, Texas 78746

Revision	Date	By	App	Comment



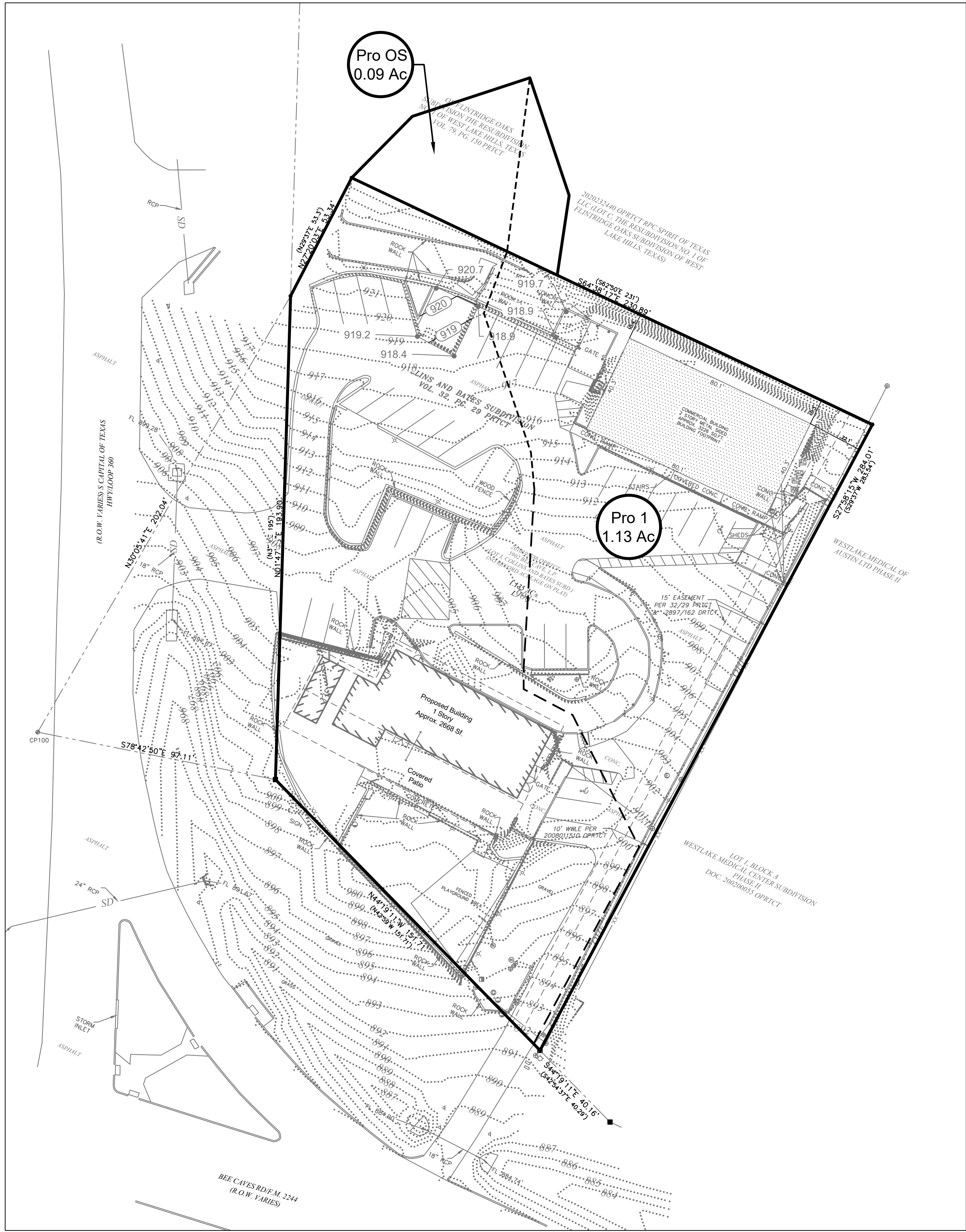
Existing Drainage Area Map

Existing Atlas 14 Rational Method Runoff Calculations (2011 - Predeveloped Nursery Site)																	
Private Post-Development Rational Method Calculations																	
Basin Name	Area (ac)	Impervious Cover (%)	Impervious Area (ac)	Pervious Area (ac)	T _c (min)	2-Year Storm			10-Year Storm			25-Year Storm			100-Year Storm		
						Coefficient (C)	Intensity, I (in/hr)	Runoff, Q (cfs)	Coefficient (C)	Intensity, I (in/hr)	Runoff, Q (cfs)	Coefficient (C)	Intensity, I (in/hr)	Runoff, Q (cfs)	Coefficient (C)	Intensity, I (in/hr)	Runoff, Q (cfs)
Ex OS	0.09	0.00	0.00	0.09	5	0.34	6.31	0.19	0.40	9.61	0.35	0.44	11.79	0.47	0.51	15.42	0.71
Ex 1	1.13	90.84	1.03	0.10	5	0.71	6.31	5.06	0.78	9.61	8.47	0.83	11.79	11.06	0.92	15.42	16.03

Proposed Atlas 14 Rational Method Runoff Calculations (2011 - Original Hat Creek Burgers Site Plan)																	
Private Post-Development Rational Method Calculations																	
Basin Name	Area (ac)	Impervious Cover (%)	Impervious Area (ac)	Pervious Area (ac)	T _c (min)	2-Year Storm			10-Year Storm			25-Year Storm			100-Year Storm		
						Coefficient (C)	Intensity, I (in/hr)	Runoff, Q (cfs)	Coefficient (C)	Intensity, I (in/hr)	Runoff, Q (cfs)	Coefficient (C)	Intensity, I (in/hr)	Runoff, Q (cfs)	Coefficient (C)	Intensity, I (in/hr)	Runoff, Q (cfs)
Pro OS	0.09	0.00	0.00	0.09	5	0.34	6.31	0.19	0.40	9.61	0.35	0.44	11.79	0.47	0.51	15.42	0.71
Pro 1	1.13	78.52	0.89	0.24	5	0.65	6.31	4.61	0.73	9.61	7.93	0.79	11.79	10.53	0.86	15.42	14.91

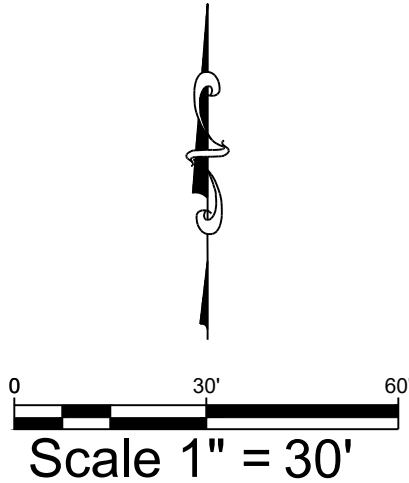
Post-Developed Atlas 14 Rational Method Runoff Calculations (2022)																	
Private Post-Development Rational Method Calculations																	
Basin Name	Area (ac)	Impervious Cover (%)	Impervious Area (ac)	Pervious Area (ac)	T _c (min)	2-Year Storm			10-Year Storm			25-Year Storm			100-Year Storm		
						Coefficient (C)	Intensity, I (in/hr)	Runoff, Q (cfs)	Coefficient (C)	Intensity, I (in/hr)	Runoff, Q (cfs)	Coefficient (C)	Intensity, I (in/hr)	Runoff, Q (cfs)	Coefficient (C)	Intensity, I (in/hr)	Runoff, Q (cfs)
Pro OS	0.09	0.00	0.00	0.09	5	0.34	6.31	0.19	0.40	9.61	0.35	0.44	11.79	0.47	0.51	15.42	0.71
Pro 1	1.13	78.65	0.89	0.24	5	0.65	6.31	4.61	0.73	9.61	7.93	0.79	11.79	10.53	0.86	15.42	14.92

CN Calculations					
Drainage Area	Open Space (Lawns, parks, golf courses, cemeteries, etc.) Good Condition - 80			Total Area	Average Sum CN
	Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil D - 98				
ID	AC	AC	AC	CN	
	80	98			
EX OS	0.090	0.000	0.09	80	
EX 1	0.104	1.027	1.13	96	
PRO OS	0.090	0.000	0.09	80	
PRO 1	0.241	0.889	1.13	94	



Proposed Drainage Area Map

TIME OF CONCENTRATION																
Drainage Area ID	OVERLAND SHEET FLOW					SHALLOW CONCENTRATED FLOW						TOTAL	TOTAL	TOTAL	TOTAL	TOTAL
	n	Length	P ₂	Slope	Overland Travel Time	Slope	Distance	Surface ("Paved" or "Unpaved")	Velocity Coefficient**	Velocity	Shallow Concentrated Flow Travel Time	Travel Distance	Time of Concentration (calculated)	Time of Concentration (Computational)	Lag Time (Calculated)	Time of Concentration (Computational)
Name	none	ft	inches	ft/ft	min	ft/ft	ft	type	none	ft/s	min	ft	min	min	min	min
EX 1	0.150	100.00	4.14	0.1570	3.78	0.0900	251.00	Paved	20.33	6.10	0.69	351.00	4.46	5.00	2.68	3.00
EX OS	0.015	70.00	4.14	0.1000	0.54	0.0000	0.00	Unpaved	16.13	0.00	0.00	70.00	0.54	5.00	0.32	3.00
PRO OS	0.015	70.00	4.14	0.1000	0.54	0.0000	0.00	Unpaved	16.13	0.00	0.00	70.00	0.54	5.00	0.32	3.00
PRO 1	Developed											351.00	4.46	5.00	2.68	3.00



Drainage Area Map

Hat Creek Burgers
5902 Bee Caves Road
Austin, Texas 78746
Travis County

BLEYL ENGINEERING
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12007 Technology Blvd, Ste 150, Austin TX 78727
Texas Firm Registration No. F-678
Tel. 512-454-2400
www.bleylengineering.com

Prepared For:

Drew Gressett
Hat Creek Burgers
4407 Bee Cave Road, Ste 511
Austin, Texas 78746

Design: KW, CS
CAD: CS Review: KW
Project No: HCB 70359
Sheet: **5** of **TBD**

Revision

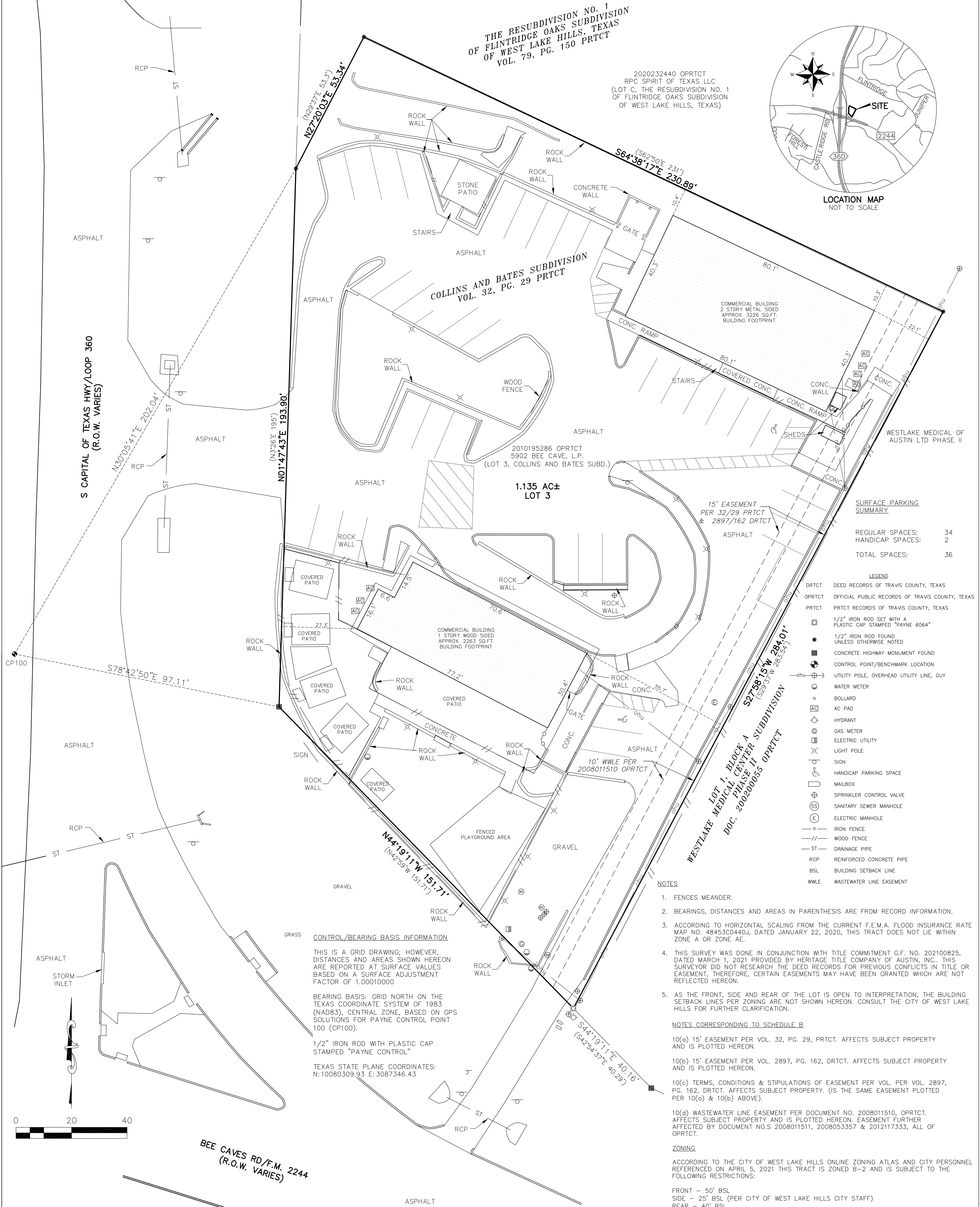
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By

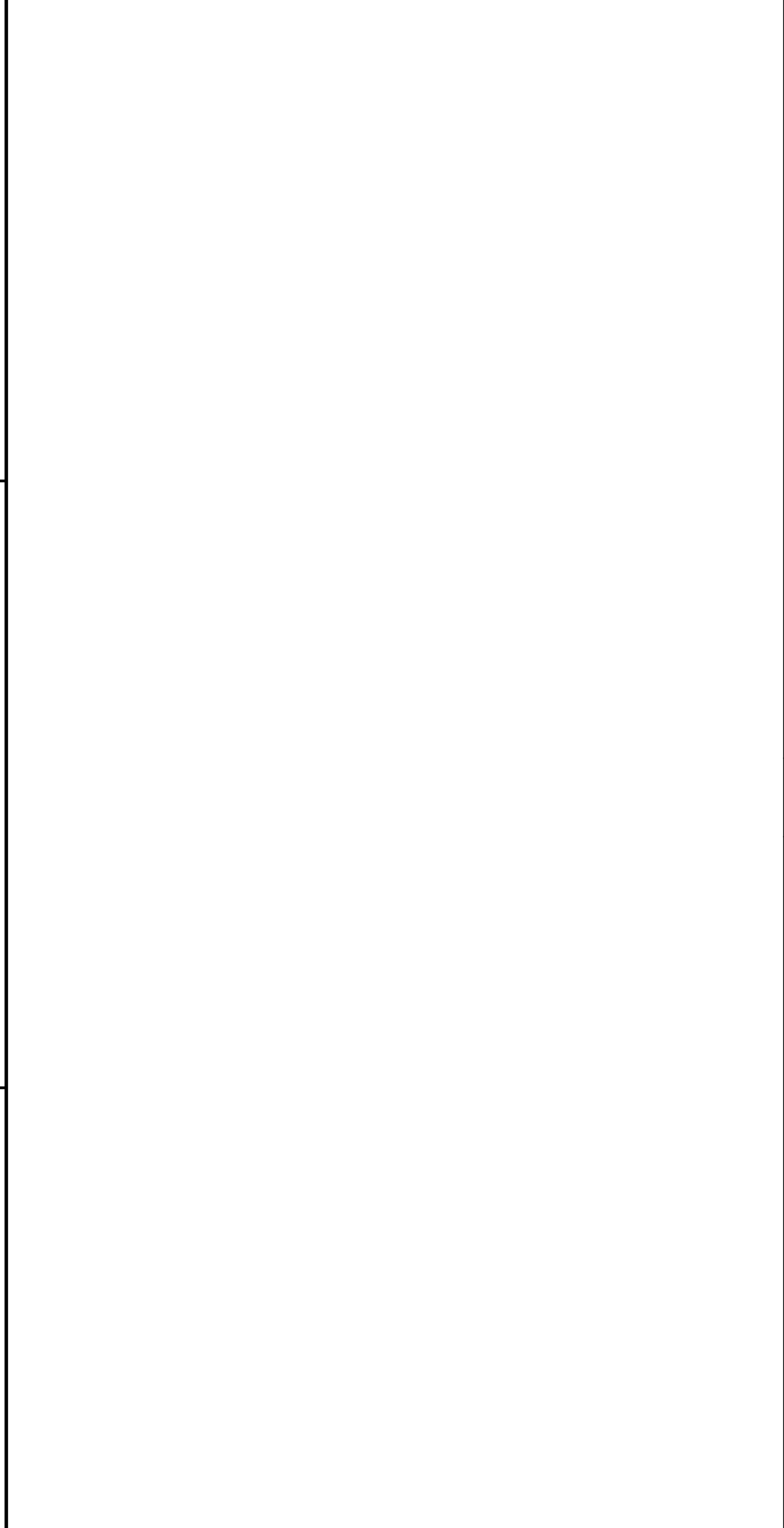
App

Comment

Page 73 of 135



OWNER PROVIDED CHART							
#	ITEM	SUPPLIED BY OWNER	INSTALLE D BY GC	INSTALLED BY OWNER	FINISHING TOUCHES REQUIRED BY GC-SUB	NOTES	REMARKS
1	WALK-IN COOLERS, CONDENSERS, COILS	X		X	X		
2	REFRIGERATION LINES TO ICE MACHINES AND WALK-INS		X				
3	STAINLESS STEEL WALL PANELING AT COOKLINE, PREP LINE AND DISHWASH AREA		X				
4	STAINLESS STEEL CORNER GUARDS		X				
5	STAINLESS STEEL CUSTOM KITCHEN EQUIPMENT	X		X			
6	KITCHEN EQUIPMENT	X		X	X		
7	ALL LIGHT FIXTURES, LIGHT BULBS, AS INDICATED PER PLANS		X				LIGHT PACKAGE SUPPLIED AND INSTALLED BY G.C.
8	INTERIOR DECOR PACKAGE, ARTWORK	X					
9	TELEVISION	X		X			
10	BUILDING SIGNS	X		X			ROUGH INS BY G.C.
11	LANDSCAPE AND IRRIGATION						CHASES BY G.C.
12	PYLON, AND/OR MONUMENT SIGN	X		X	X		FOUNDATION, CONDUIT AND WIRING BY G.C.
1. ADA SIGNS FOR RESTROOM BY G.C. MISC. STICK ON SIGNS, DESIGNATING VARIOUS UTILITY ROOMS AND DELIVERY HOURS, THAT ARE FURNISHED BY OWNER, TO BE INSTALLED BY G.C.							
2. G.C. TO PROVIDE CONDUIT WITH PULL STRINGS							
3. RECEIVE AND PROTECT EQUIPMENT, COORDINATE WITH MEP TRADES AND SUPPLIER. GREASE PIPING FURNISHED AND INSTALLED BY G.C.							



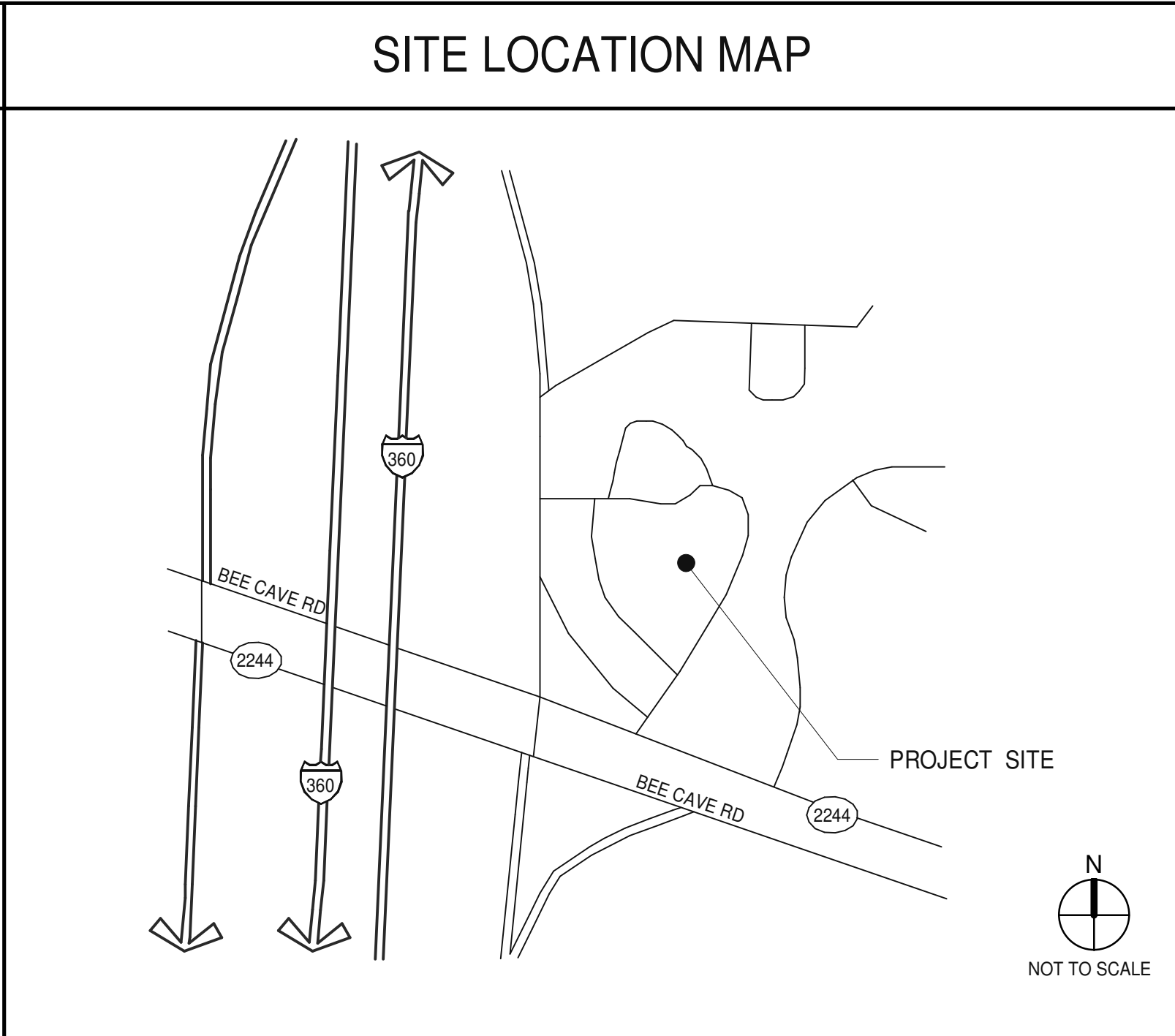
SYMBOL LEGEND	
	ALIGN
	OFFICE
	ROOM NAME
	ROOM NUMBER
	DOOR NUMBER
	EXISTING DOOR
	DETAIL REFERENCE
	DETAIL SECTION REFERENCE
	SECTION REFERENCE
	EXT. ELEVATION REFERENCE
	INTERIOR ELEVATION REFERENCE
	SHEET NUMBER
	WALL MATERIAL TYPE
	WALL NOTE
	FLOOR MATERIAL TYPE
	FLOOR NOTE
	MISC. MATERIAL TYPE
	TYPE NUMBER
	KEYNOTE INDICATOR
	WALL TAG
	FINISH INDICATOR
	REVISION CLOUD & DELTA NUMBER
	FIRE EXTINGUISHER
	FIRE EXTINGUISHER CABINET W/ FIRE EXTINGUISHER
	WALL-MOUNTED FIRE EXTINGUISHER

HAT CREEK - WEST LAKE

5902 BEE CAVE RD WEST LAKE HILLS, TEXAS 78746

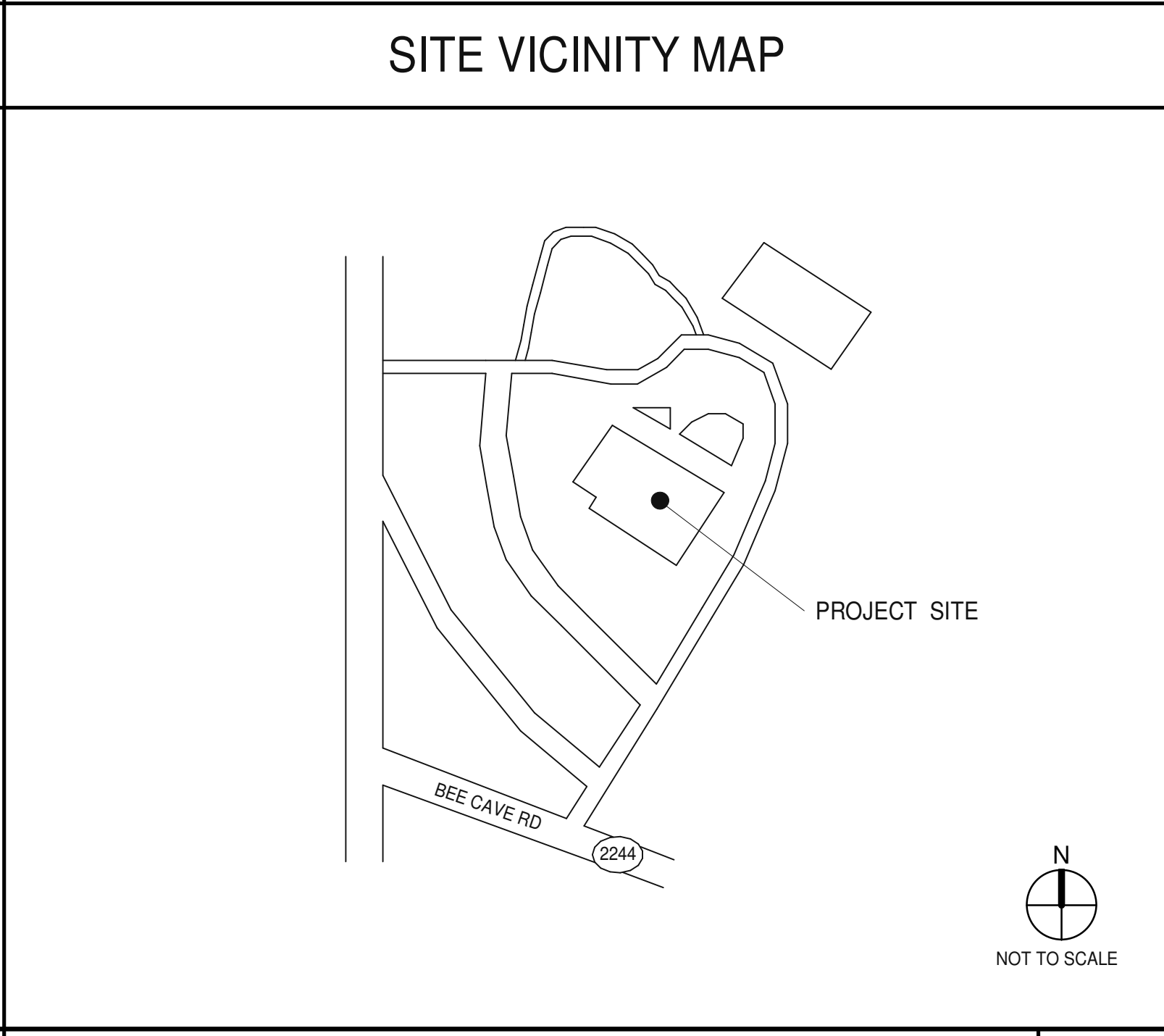
ARCHITECT'S CONSULTANTS	
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MECHANICAL ENGINEER NOVA ENGINEERING 4819 TX-121 #12 THE COLONY, TX 75056	BRIAN MCFADDEN PH: (972) 323 7300 bmcfadden@nova-engineering.net
PLUMBING ENGINEER NOVA ENGINEERING 4819 TX-121 #12 THE COLONY, TX 75056	BRIAN MCFADDEN PH: (972) 323 7300 bmcfadden@nova-engineering.net
ELECTRICAL ENGINEER NOVA ENGINEERING 4819 TX-121 #12 THE COLONY, TX 75056	BRIAN MCFADDEN PH: (972) 323 7300 bmcfadden@nova-engineering.net

OWNER'S CONSULTANTS	
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KITCHEN VENDOR TOP SHELF DESIGN	JIMMY DOBBS PH: (214) 499 5096 jimmy@topshelfdesigngroup.com



OWNER CONTACT	
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GENERAL CONTRACTOR	
ALLIANCE BUILDERS ALLIANCE BUILDERS 15436 FISHER ISLAND DR AUSTIN, TX 78717	BRAD WHITE PH: (512) 584-5083 brad@alliancebuilders.us
ARCHITECTURAL CONTACT	
WARE MALCOMB 1919 MCKINNEY AVENUE #100 DALLAS, TX 75201	STEVEN COX P 583.5379 scoc@waremalcomb.com PH: (281) 954 2514 ext. 1712 (940) 389 8835

DEFERRED SUBMITTALS	
DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ARCHITECT AND ENGINEERS OF RECORD WHO SHALL REVIEW AND PROVIDE NOTATION INDICATING DOCUMENTS HAVE BEEN REVIEWED AND FOUND TO BE IN GENERAL CONFORMANCE WITH THE BUILDING DESIGN. SUBMITTAL MATERIALS SHALL INCLUDE PLANS, DETAILS AND CALCULATIONS PREPARED AND SIGNED BY A STATE REGISTERED ENGINEER. CONTRACTOR SHALL SUBMIT ARCHITECT AND ENGINEER REVIEWED SUBMITTAL MATERIALS TO THE BUILDING OFFICIAL FOR REVIEW AND PERMIT APPROVAL. DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED PRIOR TO OBTAINING THE BUILDING OFFICIAL'S APPROVAL OF THE SUBMITTAL. 1. EXTERIOR BUILDING SIGNAGE.	



SHEET INDEX		TOTAL SHEETS	
		64	
SHEET ISSUED ON DATE INDICATED, WITH MODIFICATIONS		ISSUE	
SHEET ISSUED ON DATE INDICATED, NO MODIFICATIONS			
ARCHITECTURAL			
T1.1	TITLE SHEET		
T1.1a	PROJECT DATA		
A0.2	GENERAL NOTES		
A0.2a	GENERAL NOTES		
A0.3	ACCESSIBILITY DETAILS		
A1.0	SITE PLAN		
A1.1	OCCUPANCY AND EGRESS PLAN		
A00.1	DEMOLITION FLOOR PLAN		
A00.2	DEMOLITION CEILING PLAN		
A00.3	DEMOLITION ROOF PLAN		
A00.4	DEMOLITION EXTERIOR ELEVATIONS		
A00.5	DEMOLITION EXTERIOR ELEVATIONS		
A2.0	FOUNDATION PLAN		
A2.1	FLOOR PLAN		
A2.2	REFLECTED CEILING PLAN		
A2.3	FINISH PLAN AND SCHEDULE		
A3.0	ROOF PLAN		
A4.1	EXTERIOR ELEVATIONS		
A4.2	EXTERIOR ELEVATIONS		
A5.0	BUILDING SECTIONS		
A5.1	BUILDING SECTIONS		
A5.2	WALL SECTIONS		
A5.3	WALL SECTIONS		
A6.1	ENLARGED RESTROOM PLAN AND RESTROOM ELEVATIONS		
A6.2	INTERIOR ELEVATIONS		
A6.3	INTERIOR ELEVATIONS		
A6.4	INTERIOR ELEVATIONS		
A7.1	DOOR SCHEDULE AND WINDOW SCHEDULE		
A8.1	EXTERIOR DETAILS		
A8.2	WINDOW, DOOR AND INTERIOR DETAILS		
SP.1	SPECIFICATIONS		
SP.2	SPECIFICATIONS		
SP.3	SPECIFICATIONS		
SP.4	SPECIFICATIONS		
SP.5	SPECIFICATIONS		
SP.6	SPECIFICATIONS		
SP.7	SPECIFICATIONS		
SP.8	SPECIFICATIONS		
SP.9	SPECIFICATIONS		
SP.10	SPECIFICATIONS		
SP.11	SPECIFICATIONS		
SP.12	SPECIFICATIONS		
ARCHITECTURAL SHEET COUNT: 42			
STRUCTURAL			
S-000	COVER SHEET		
S-100	GENERAL NOTES		
S-101	SPECIAL INSPECTIONS		
S-200	FOUNDATION PLAN		
S-210	LOW FRAMING PLAN		
S-211	HIGH FRAMING PLAN		
S-300	TYPICAL FOUNDATION DETAILS		
S-301	TYPICAL FOUNDATION DETAILS		
S-500	TYPICAL FRAMING DETAILS		
S-501	TYPICAL FRAMING DETAILS		
S-502	ENLARGED FRAMING DETAILS		
S-503	ENLARGED FRAMING DETAILS		
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MECHANICAL			
MEP1.00	COVERSHEET - MEP		
MEP1.01	SPECIFICATIONS - MEP		
ME2.01	FLOOR PLAN - MECHANICAL		
MECHANICAL SHEET COUNT: 3			
PLUMBING			
P2.00	UNDERFLOOR PLAN - PLUMBING		
P2.01	FLOOR PLAN - PLUMBING		
P5.01	SCHEDULES AND DETAILS - PLUMBING		
PLUMBING SHEET COUNT: 3			
ELECTRICAL			
E2.01	FLOOR PLAN - ELECTRICAL		
ELECTRICAL SHEET COUNT: 1			

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CIVIL ENGINEERING
BUILDING MEASUREMENT

HAT CREEK Burger Company

HAT CREEK - WEST LAKE
5902 BEE CAVE RD
WEST LAKE HILLS, TEXAS 78746

TITLE SHEET	
DATE	08/03/2022
ISSUE FOR PERMIT	
REMARKS	

PA/PM:	STEVEN COX
DRAWN BY:	C.B.
JOB NO.:	DAL21-0063-00

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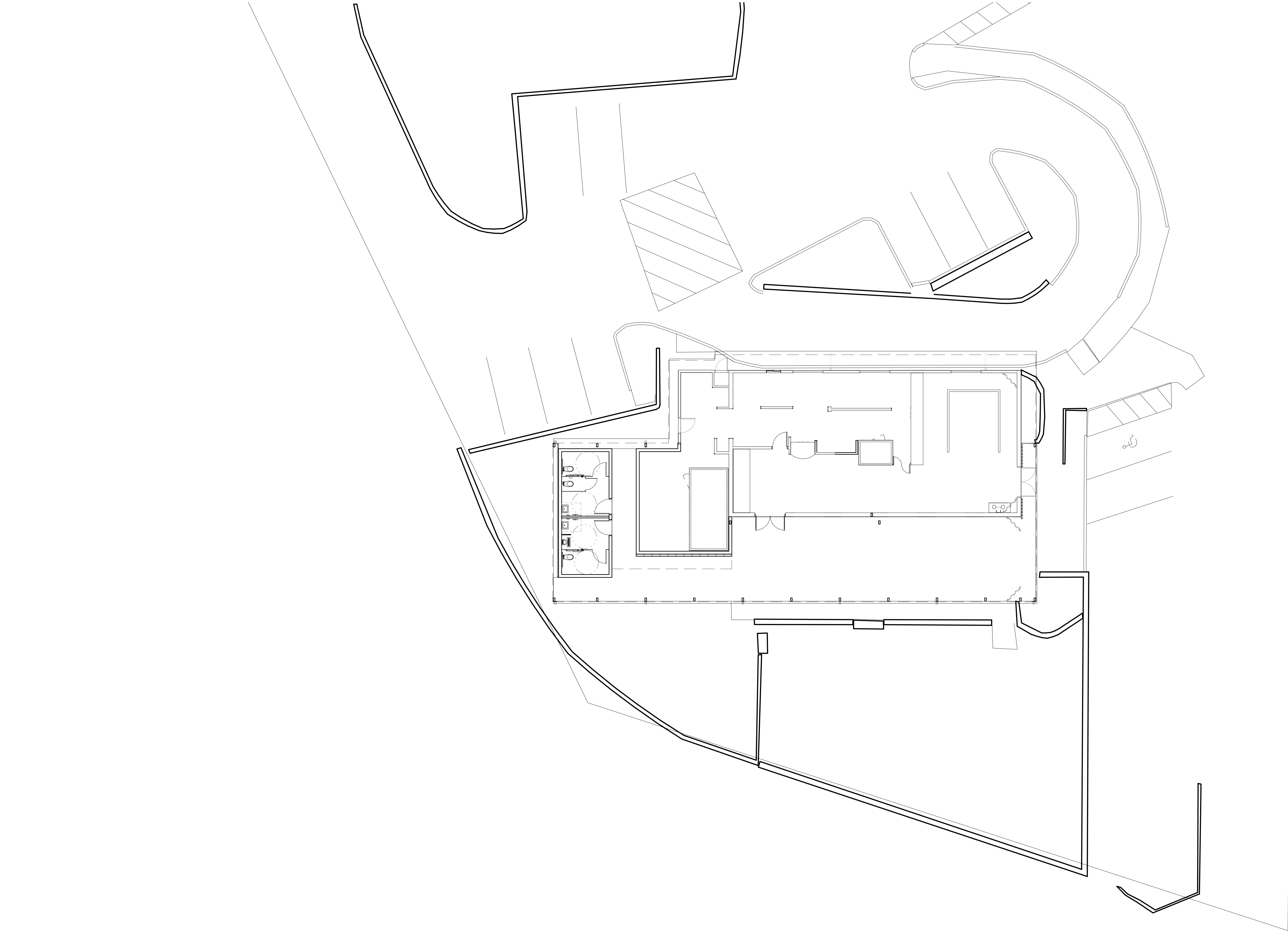
ON-CIRCULAR CROSS SECTION
FIG. 609.2.2

GRAB BARS

SCALE: 1/4" = 1'-0"

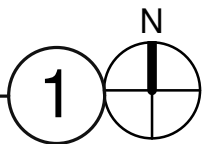
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1"=10'
0 5' 10' 20' 50'

SITE PLAN
SCALE: 1" = 10'-0"



KEY PLAN

GENERAL NOTES

SEE SHEET A0.2 & A.02a FOR GENERAL NOTES

KEYNOTES: -

SEE SHEET A0.2 & A.02a FOR GENERAL NOTES

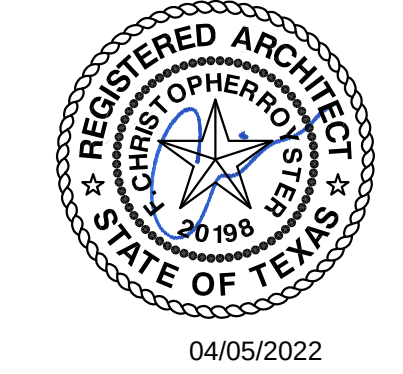
SITE PLAN	
DATE	REMARKS
08/02/2022	ISSUE FOR PERMIT

P.A.P.M.:	STEVEN COX
DRAWN BY.:	C.B.
JOB NO.:	DAL21-0063-00

SHEET
A1.0

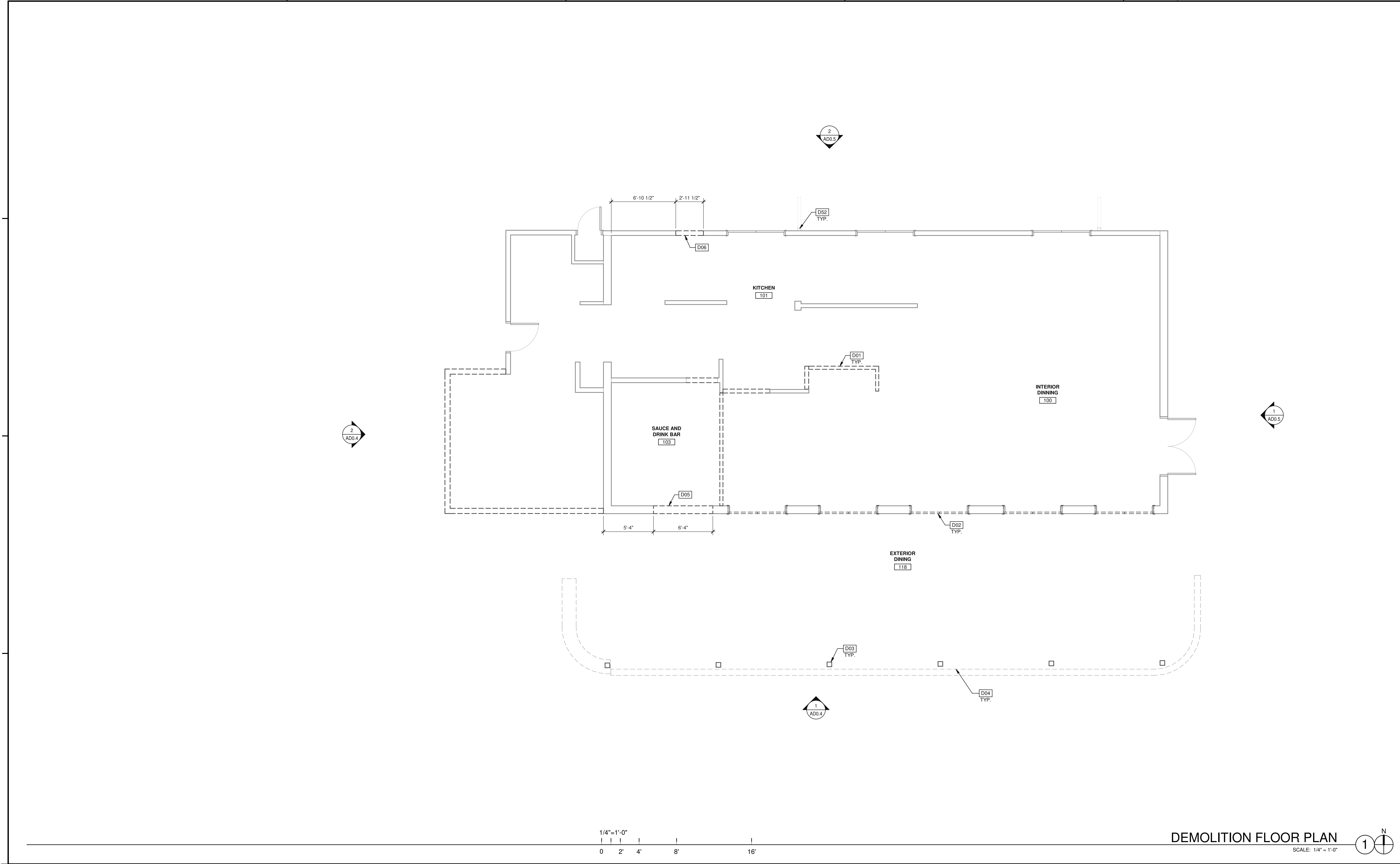
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LEGENDS

- EXISTING WALL
- EXISTING CONSTRUCTION TO BE DEMOLISHED

KEYNOTES:

- D01 REMOVE PARTITIONS AND RELATED ELECTRICAL OUTLETS AS INDICATED. TERMINATE ELECTRICAL LINES BACK TO POINT OF ORIGIN.
- D02 REMOVE DOOR ASSEMBLY.
- D03 REMOVE COLUMN.
- D04 REMOVE LOW WALL.
- D05 CUT-IN SECTION OF WALL AS REQUIRED FOR NEW PAIR OF 3'-0" DOORS.
- D06 CUT-IN SECTION OF WALL AS REQUIRED FOR NEW WINDOW.
- D02 EXISTING DOWNSPOUT TO REMAIN.

DEMOLITION FLOOR PLAN NOTES

- SEE SHEET A0.2 & A.02a FOR GENERAL NOTES
- THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES OR CONFLICTS THAT MIGHT ARISE.

DEMOLITION FLOOR PLAN

REMARKS

DATE 03/02/2022

ISSUE FOR PERMIT

P.A.P.M.: STEVEN COX

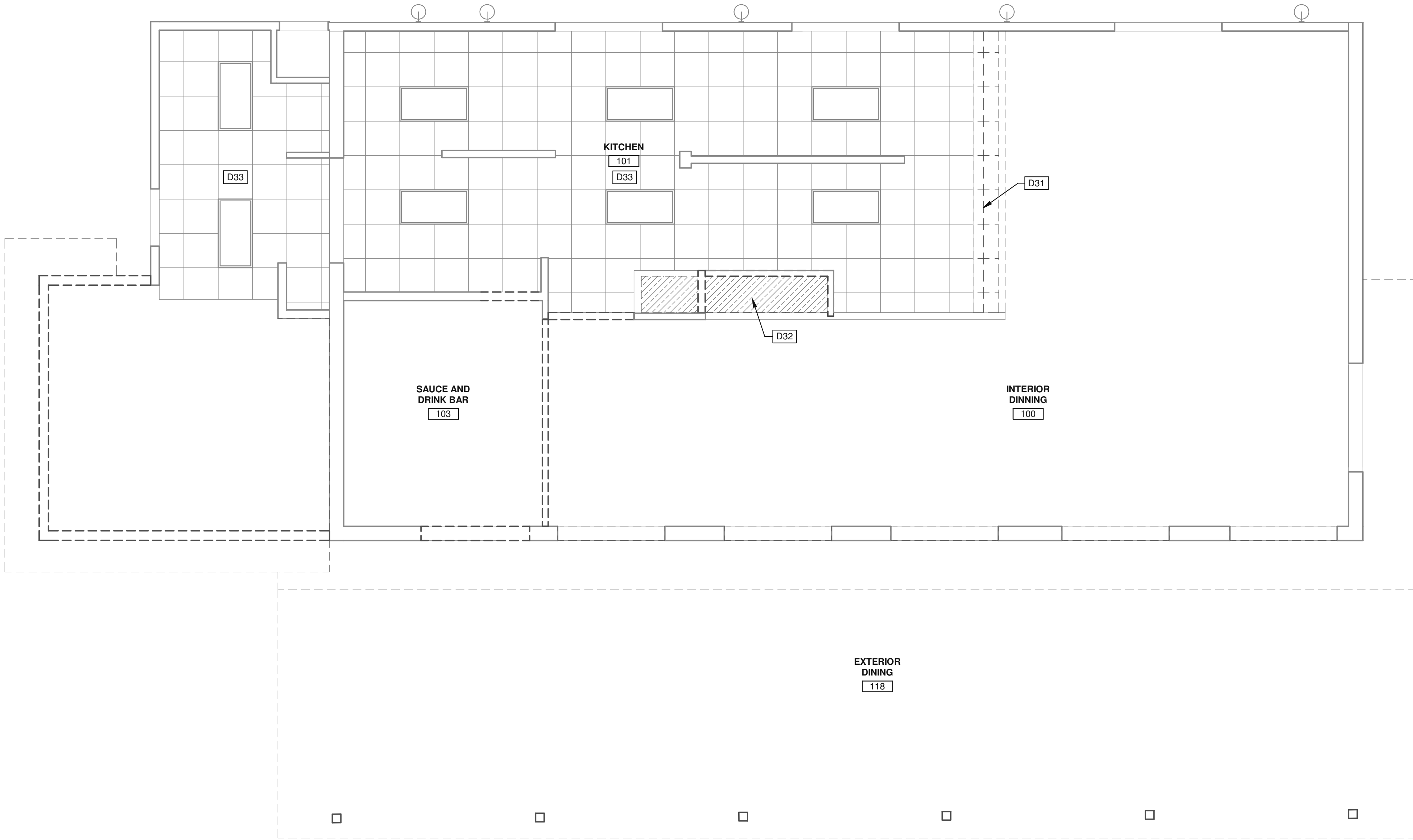
DRAWN BY.: C.B.

JOB NO.: DAL21-0063-00

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1/4" = 1'-0"
0 2' 4' 8' 16'

DEMOLITION CEILING PLAN
SCALE: 1/4" = 1'-0" 1 N

LEGENDS

- EXISTING SUSPENDED CEILING GRID & TILES TO REMAIN
- EXISTING SUSPENDED CEILING GRID & TILES TO BE REMOVED
- EXISTING GYPSUM BOARD CEILING TO BE REMOVED
- EXISTING 2'x4' LIGHT FIXTURE TO REMAIN

KEYNOTES: D

- D31 REMOVE EXISTING CEILING GRID & TILES IN THIS AREA.
- D32 REMOVE EXISTING GYPSUM BOARD CEILING IN THIS AREA.
- D33 THE CEILING AND LIGHTING IN THIS AREA IS EXISTING TO REMAIN.

DEMOLITION CEILING PLAN NOTES

- SEE SHEET A0.2 & A.02a FOR GENERAL NOTES
- THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES OR CONFLICTS THAT MIGHT ARISE.

DEMOLITION CEILING PLAN

REMARKS

DATE
03/03/2022

ISSUE FOR PERMIT

P.A.P.M.: STEVEN COX

DRAWN BY.: C.B.

JOB NO.: DAL21-0063-00

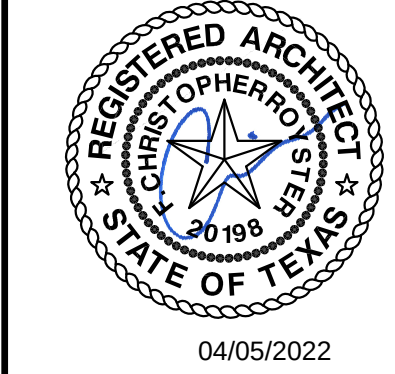
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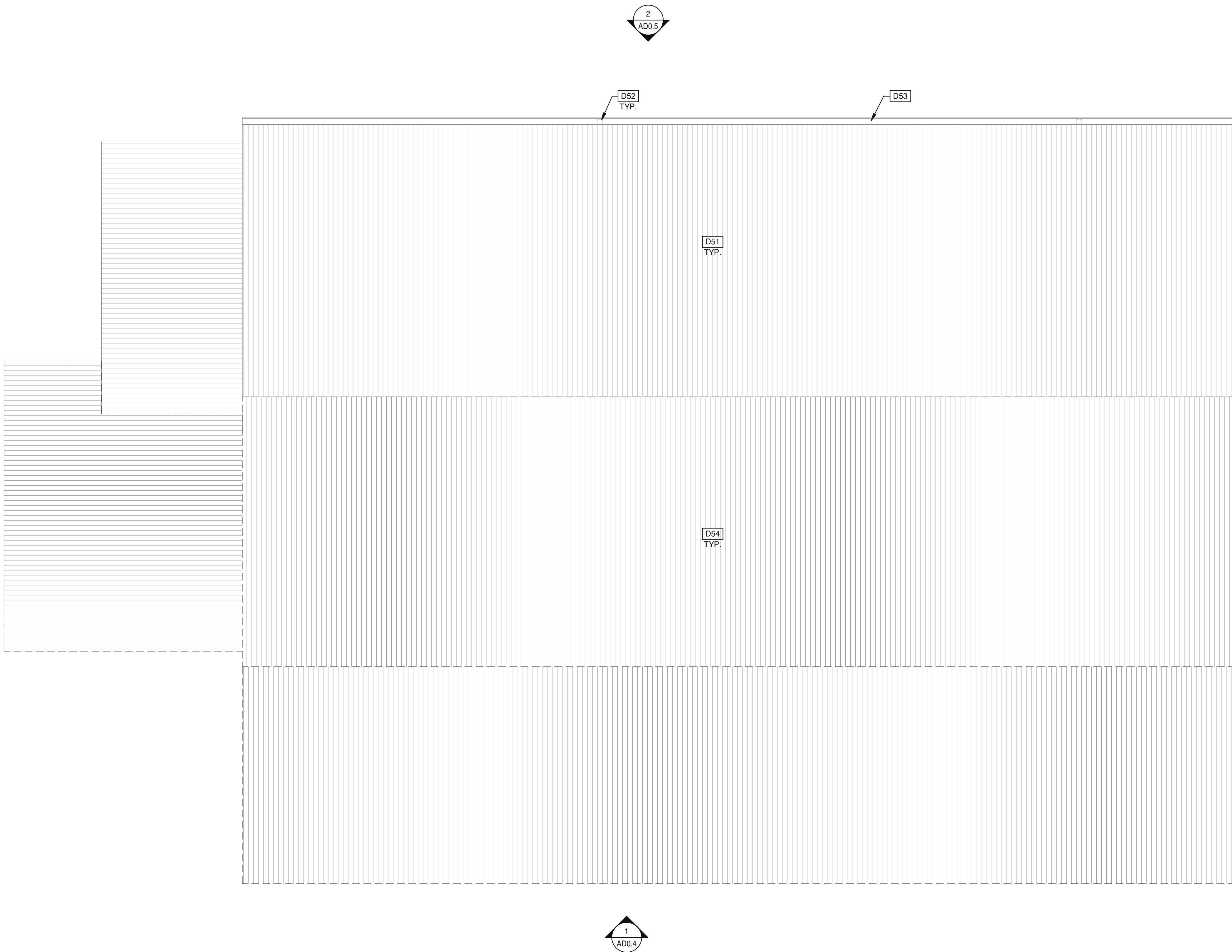
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BM 301 (DAL21-0063-00) Job Owner: West Lake Remodel0003_A003.rvt



1/4" = 1'-0"
0 2' 4' 8' 16'

DEMOLITION ROOF PLAN
SCALE: 1/4" = 1'-0"

KEYNOTES:

D51 EXISTING ROOF TO REMAIN.
D52 EXISTING DOWNSPOUT TO REMAIN.
D53 EXISTING METAL GUTTER TO REMAIN.
D54 EXISTING METAL ROOF TO BE DEMOLISHED.

DEMOLITION ROOF PLAN NOTES
SEE SHEET A0.2 & A.02a FOR GENERAL NOTES

- THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES OR CONFLICTS THAT MIGHT ARISE.

DEMOLITION ROOF PLAN	
DATE	REMARKS
03/02/2022	ISSUE FOR PERMIT

P.A.P.M.:	STEVEN COX
DRAWN BY.:	C.B.
JOB NO.:	DAL21-0063-00

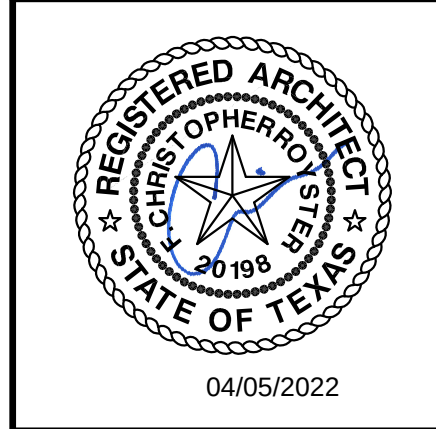
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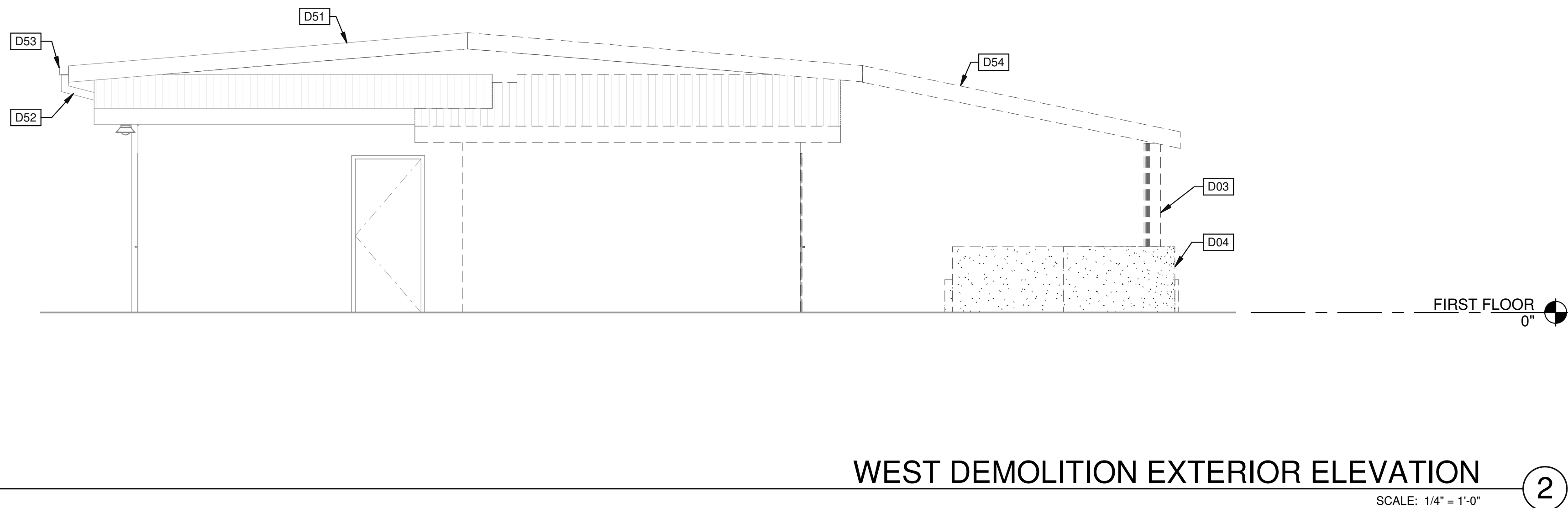
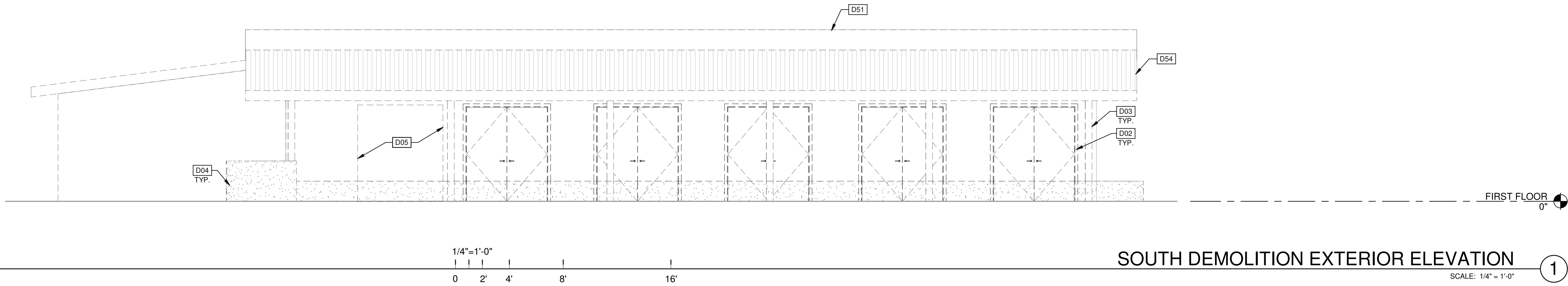
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LEGEND

EXISTING ROOF TO BE DEMOLISHED.

EXISTING LOW WALL TO BE DEMOLISHED.**KEYNOTES:**

D02 REMOVE DOOR ASSEMBLY.

D03 REMOVE COLUMN.

D04 REMOVE LOW WALL.

D05 CUT-IN SECTION OF WALL AS REQUIRED FOR NEW PAIR OF 3'-0" DOORS.

D61 EXISTING ROOF TO REMAIN.

D62 EXISTING DOWNSPOUT TO REMAIN.

D63 EXISTING METAL GUTTER TO REMAIN.

D64 EXISTING METAL ROOF TO BE DEMOLISHED.

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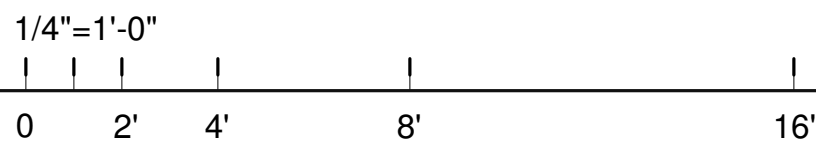
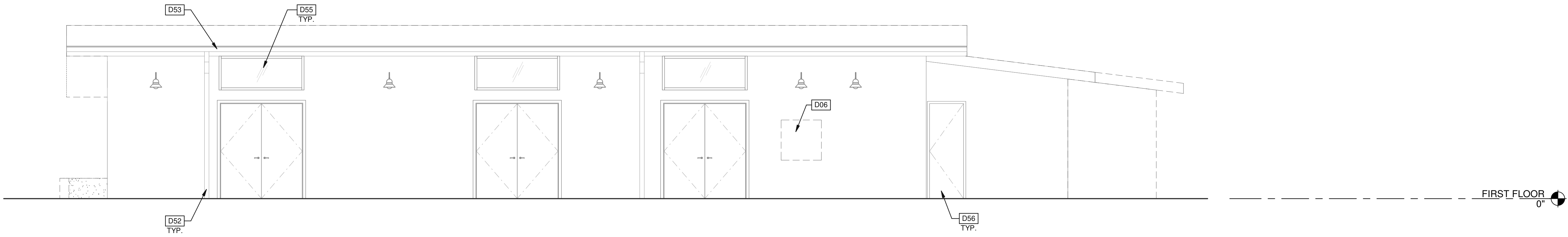
DEMOLITION EXTERIOR ELEVATIONS		
DATE	ISSUE FOR PERMIT	REMARKS
03/03/2022		

PA/PM:	STEVEN COX
DRAWN BY:	C.B.
JOB NO.:	DAL21-0063-00

SHEET

AD0.4

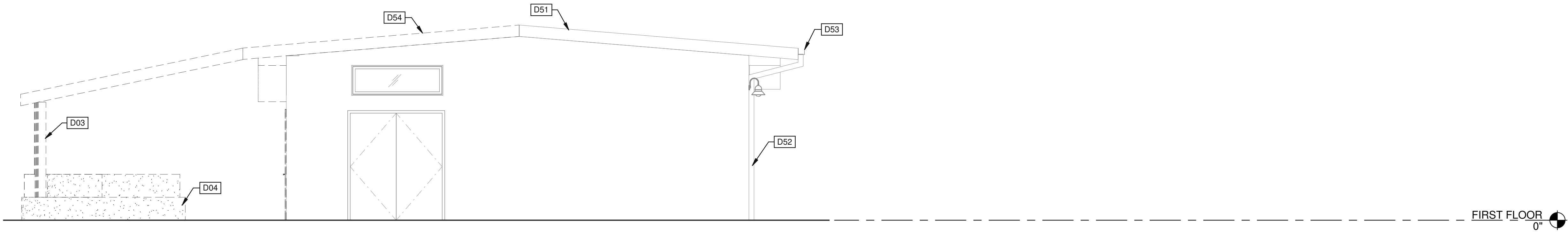
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NORTH DEMOLITION EXTERIOR ELEVATION

SCALE: 1/4" = 1'-0"

2

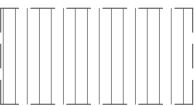


EAST DEMOLITION EXTERIOR ELEVATION

SCALE: 1/4" = 1'-0"

1

LEGEND



EXISTING ROOF TO BE DEMOLISHED.



EXISTING LOW WALL TO BE DEMOLISHED.

KEYNOTES: -

- D03 REMOVE COLUMN.
- D04 REMOVE LOW WALL.
- D06 CUT-IN SECTION OF WALL AS REQUIRED FOR NEW WINDOW.
- D51 EXISTING ROOF TO REMAIN.
- D52 EXISTING DOWNSPOUT TO REMAIN.
- D53 EXISTING METAL GUTTER TO REMAIN.
- D54 EXISTING METAL ROOF TO BE DEMOLISHED.
- D55 EXISTING WINDOW TO REMAIN.
- D56 EXISTING DOOR TO REMAIN.

DEMOLITION EXTERIOR ELEVATIONS

DATE 08/03/2022

ISSUE FOR PERMIT

REMARKS

PA/PM: STEVEN COX
DRAWN BY: C.B.
JOB NO.: DAL21-0063-00

SHEET
AD0.5

HAT CREEK - WEST LAKE

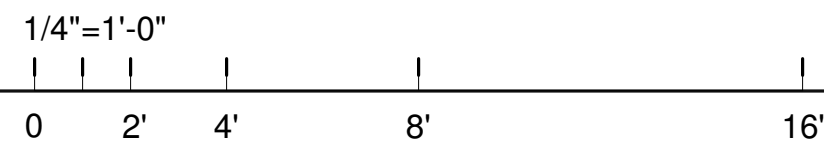
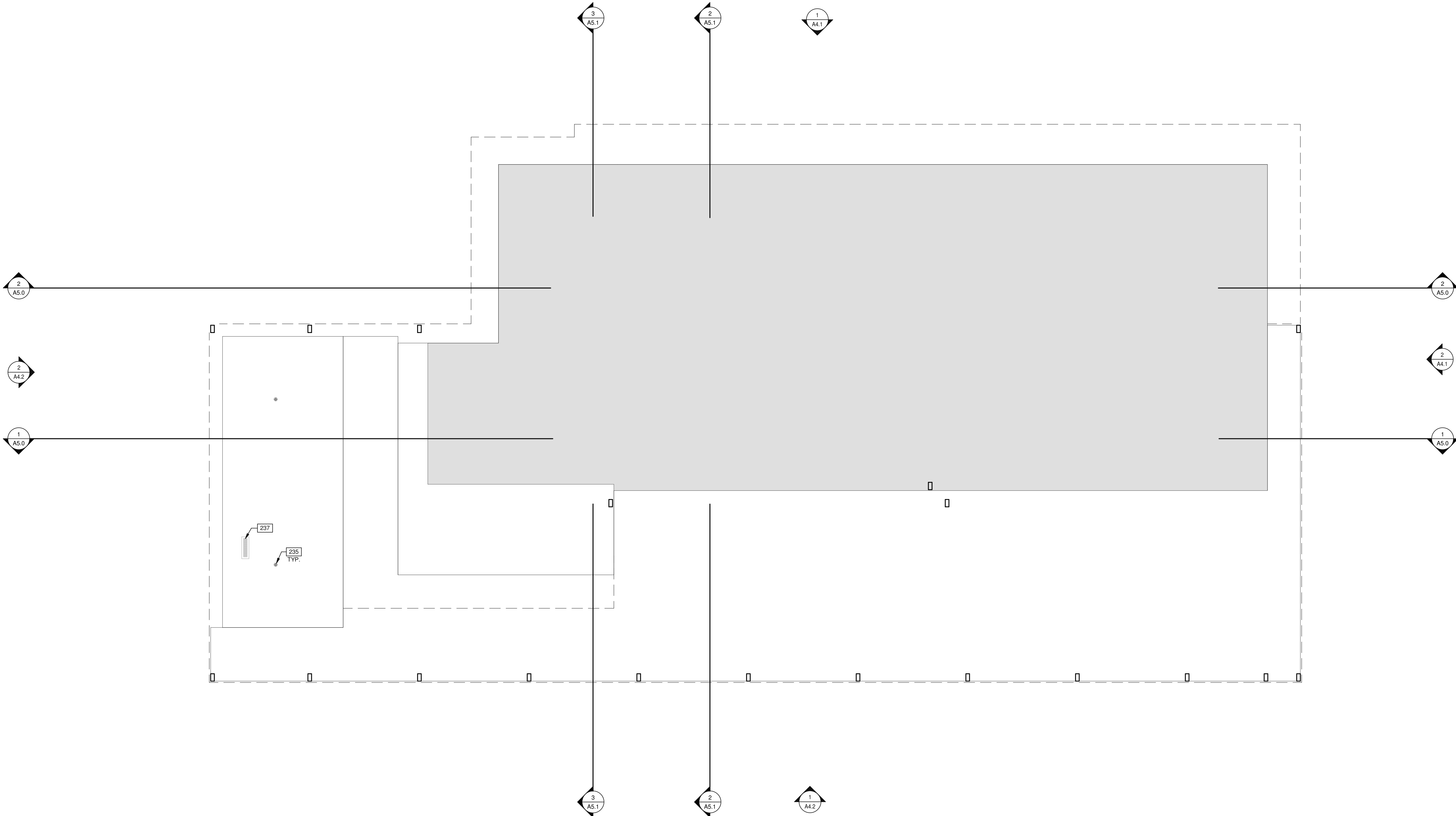
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BM 3051 DAL21-0063-00_Rev 0001 - West Lake Remodel0000_A0201.rvt



FOUNDATION PLAN
SCALE: 1/4" = 1'-0" 1 N

- KEYNOTES: 235 FLOOR DRAIN.
 237 FLOOR TRENCH DRAIN.

- LEGEND
 NEW SLAB
 EXISTING SLAB

FOUNDATION PLAN	
DATE	REMARKS
08/03/2022	ISSUE FOR PERMIT

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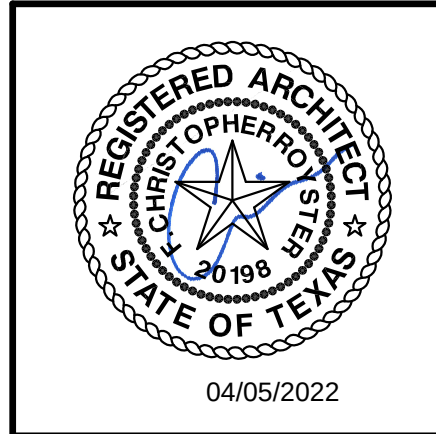
SHEET

A2.0

3/30/2022 6:53:31 PM



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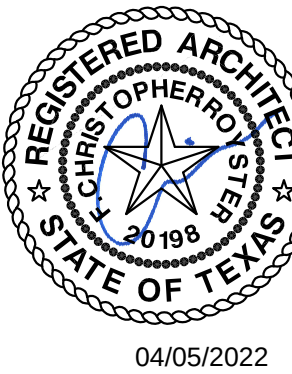
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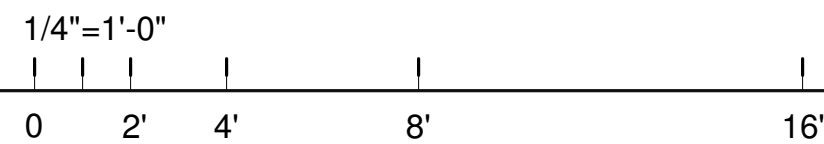
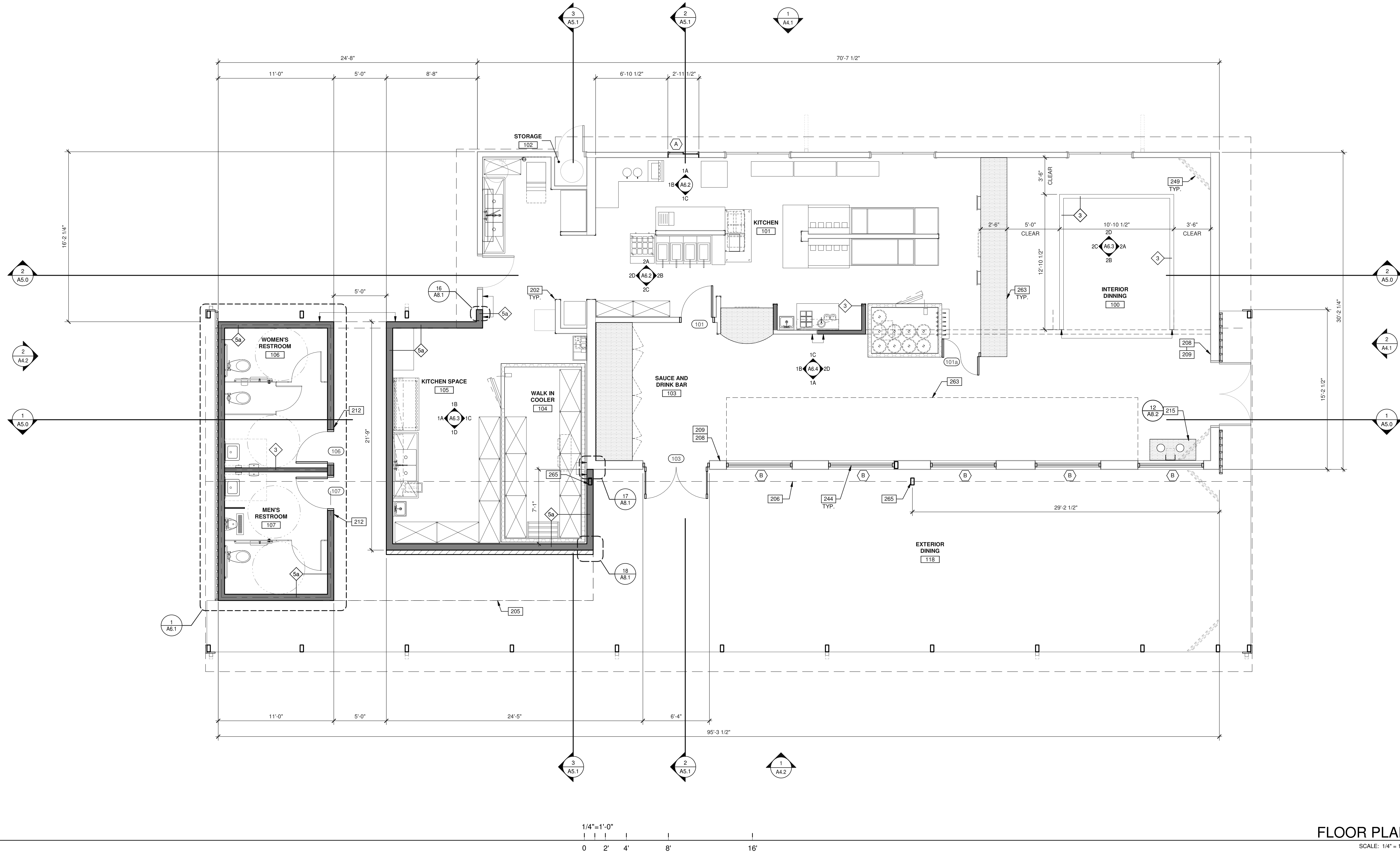


HAT CREEK - WEST LAKE
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FLOOR PLAN		REMARKS
DATE	ISSUE FOR PERMIT	
09/05/2022		

PA/PM: STEVEN COX
DRAWN BY: C.B.
JOB NO.: DAL21-0063-00

SHEET
A2.1



FLOOR PLAN
SCALE: 1/4" = 1'-0"

- LEGEND**
- FIRE EXTINGUISHER
 - DOOR TAG - SEE DOOR SCHEDULE ON SHEET A7.1

- WALL LEGEND**
- FULL HEIGHT WALL
 - FULL HEIGHT WALL WITH SOUND BATT INSULATION
 - PARTIAL HEIGHT WALLS
 - ACME FULL SIZE BRICK
 - COOLER / FREEZE WALL, BY KEC
 - EXISTING WALL

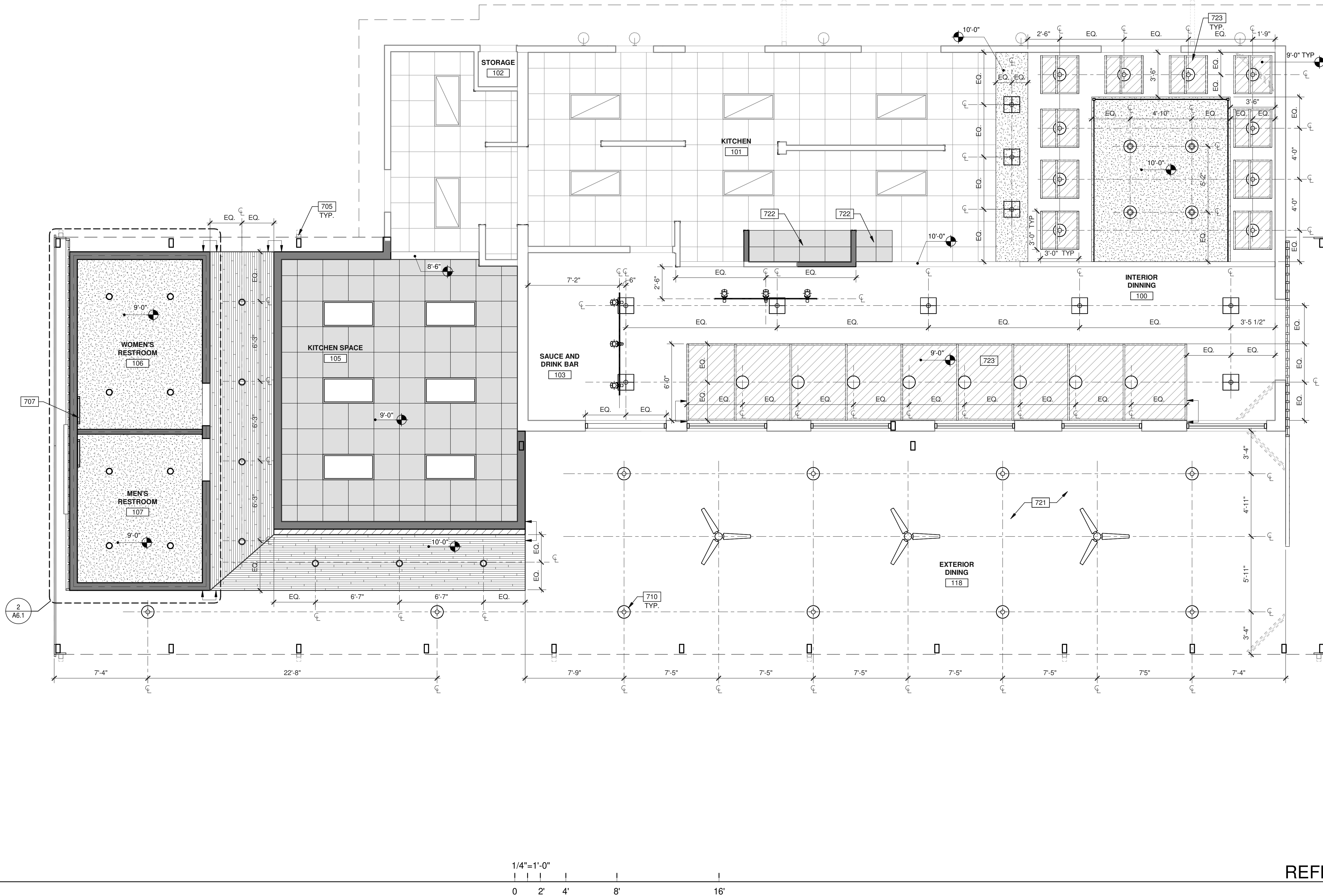
- KEYNOTES:**
- 202 STAINLESS STEEL CORNER GUARD.
 - 205 LINE OF ROOF OVERHANG ABOVE.
 - 206 LINE OF ROOF RIDGE / VALLEY ABOVE.
 - 208 OCCUPANCY LOAD SIGN, VERIFY EXACT LOCATION WITH FIRE MARSHAL PRIOR TO INSTALLATION.
 - 209 TACTILE "EXIT ROUTE" SIGN, VERIFY FINAL LOCATION AND WORDING WITH FIRE MARSHAL PRIOR TO INSTALL.
 - 212 RESTROOM SIGNAGE.
 - 215 STEEL TRASH RECEPTACLE.
 - 244 WINDOW AS SCHEDULED.
 - 249 NEW TELEVISION, REFER TO ELECTRICAL DRAWINGS.
 - 263 OUTLINE OF CEILING ABOVE.
 - 265 NEW COLUMN, REFER TO STRUCTURAL DRAWINGS.

- GENERAL NOTES**
- SEE SHEET A0.2 & A.02a FOR GENERAL NOTES
- GENERAL CONTRACTOR SHALL PROVIDE EXTENSION PIECES AND LONGER FASTENERS, SHEET METAL COLLARS THRU EXTERIOR FINISHES FOR LIGHT FIXTURE, FA DEVICES, HBS, ETC.



HAT CREEK - WEST LAKE

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REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0"

LEGEND

- EXISTING SUSPENDED CEILING GRID & TILES TO REMAIN
- NEW SUSPENDED CEILING SYSTEM THROUGHOUT TO BE ARMSTRONG/USG 2'x2' WHITE TILE
- NEW 5/8" GYPSUM BOARD CEILING OR SOFFIT - USE RATED MATERIAL & CONSTRUCTION WHERE REQUIRED.
- NEW 1/2" WOOD SOFFIT - USE RATED MATERIAL & CONSTRUCTION WHERE REQUIRED.
- NEW METAL SCREEN SUSPENDED.
- EXISTING 2'x4' LIGHT FIXTURE TO REMAIN.
- NEW 2'x4' LED LIGHT FIXTURE.

- RECESSED 6" OR 8" LED DOWNLIGHT.
- PENDANT LIGHT FIXTURE. INSTALL AT +10'-0" A.F.F.
- PENDANT LIGHT FIXTURE. INSTALL AT +7'-0" A.F.F.
- WALL-MOUNTED EXIT SIGN WITH BATTERY BACKUP, SHADED QUADRANT INDICATES FACE OF LETTERING, SIGN TO INCLUDE DIRECTIONAL ARROW AS INDICATED.

NOTE: ADDITIONAL DIRECTIONAL EXIT SIGNS MAY BE REQUIRED PRIOR TO FINAL INSPECTION AND SUBJECT TO BUILDING INSPECTOR.

KEYNOTES:

- 705 PREFINISHED METAL DOWNSPOUT AND GUTTERS.
- 707 CENTER LIGHT OVER RESTROOM LAVATORY.
- 710 MOUNT LIGHT FIXTURE TO WOOD SLEEPERS.
- 721 EXISTING HEATERS (CORNERS FACING PLAY GROUND) AND TVs (CLEARANCE OF FANS AND LIGHTS).
- 722 NEW LAY-IN CEILING TO MATCH EXISTING.
- 723 NEW METAL SUSPENDED SCREEN WITH METAL STUD FRAMING.

CEILING PLAN NOTES

- THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES OR CONFLICTS THAT MIGHT ARISE.
- NOTIFY ARCHITECT OF ANY DISCREPANCIES BETWEEN ARCHITECTURAL, ELECTRICAL, AND MECHANICAL DRAWINGS BEFORE PROCEEDING WITH INSTALLING THE WORK.
- SEE FIXTURE SCHEDULE FOR FIXTURE TYPE DESIGNATIONS, AND TYPICAL MOUNTING HEIGHTS (U.O.N.). COORDINATE MOUNTING OPTIONS WITH OWNER'S REPRESENTATIVE & ARCHITECT. NOTIFY OWNER/ARCHITECT OF ANY CONFLICTS WITH OTHER ELEMENTS PRIOR TO INSTALLATION.
- ALL MATERIALS USED WITHIN CEILING PLENUM SHALL BE NON-COMBUSTIBLE.
- IN GYPSUM BOARD CEILINGS THE LIGHTS, HVAC ELEMENTS, FIRE DEVICES, ETC. ARE TO ALIGN IN A NEAT AND REGULAR PATTERN. REVIEW LAYOUT WITH ARCHITECT PRIOR TO ROUGH-IN.
- DEVICES IN ACOUSTICAL CEILING TILES TO BE CENTERED IN A 2'x2' TILE, OR 2'x2' PORTION OF A 2'x4' TILE, U.O.N.
- GENERAL CONTRACTOR TO IDENTIFY QUANTITY AND LOCATIONS OF ALL ACCESS PANELS TO CEILING PLENUM SPACES IN GYPSUM BOARD CEILINGS. ACCESS PANELS TO BE AVOIDED WHERE POSSIBLE. IF AN ACCESS PANEL IS REQUIRED, COORDINATE LOCATION WITH ARCHITECT. CEILING ACCESS PANELS TO BE FLUSH FRAMELESS GYPSUM BOARD INFILL PANELS.
- SEE KEYNOTE INFORMATION FOR ANY REQUIRED CEILING INSULATION.
- ALL ACOUSTICAL CEILING GRIDS & TILE TO BE CENTERED WITHIN A ROOM, U.O.N.
- WHERE LIGHTING IS WITHIN MILLWORK OR WALL ELEMENTS SUCH AS MIRRORS, GC IS RESPONSIBLE TO COORDINATE WITH ALL ELECTRICAL TRADES.

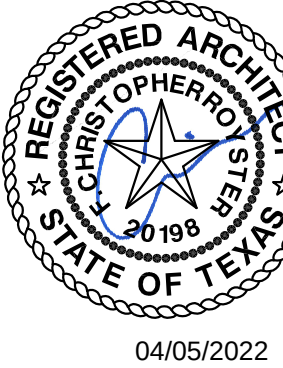
REFLECTED CEILING PLAN

DATE	ISSUE FOR PERMIT	REMARKS
08/02/2022		

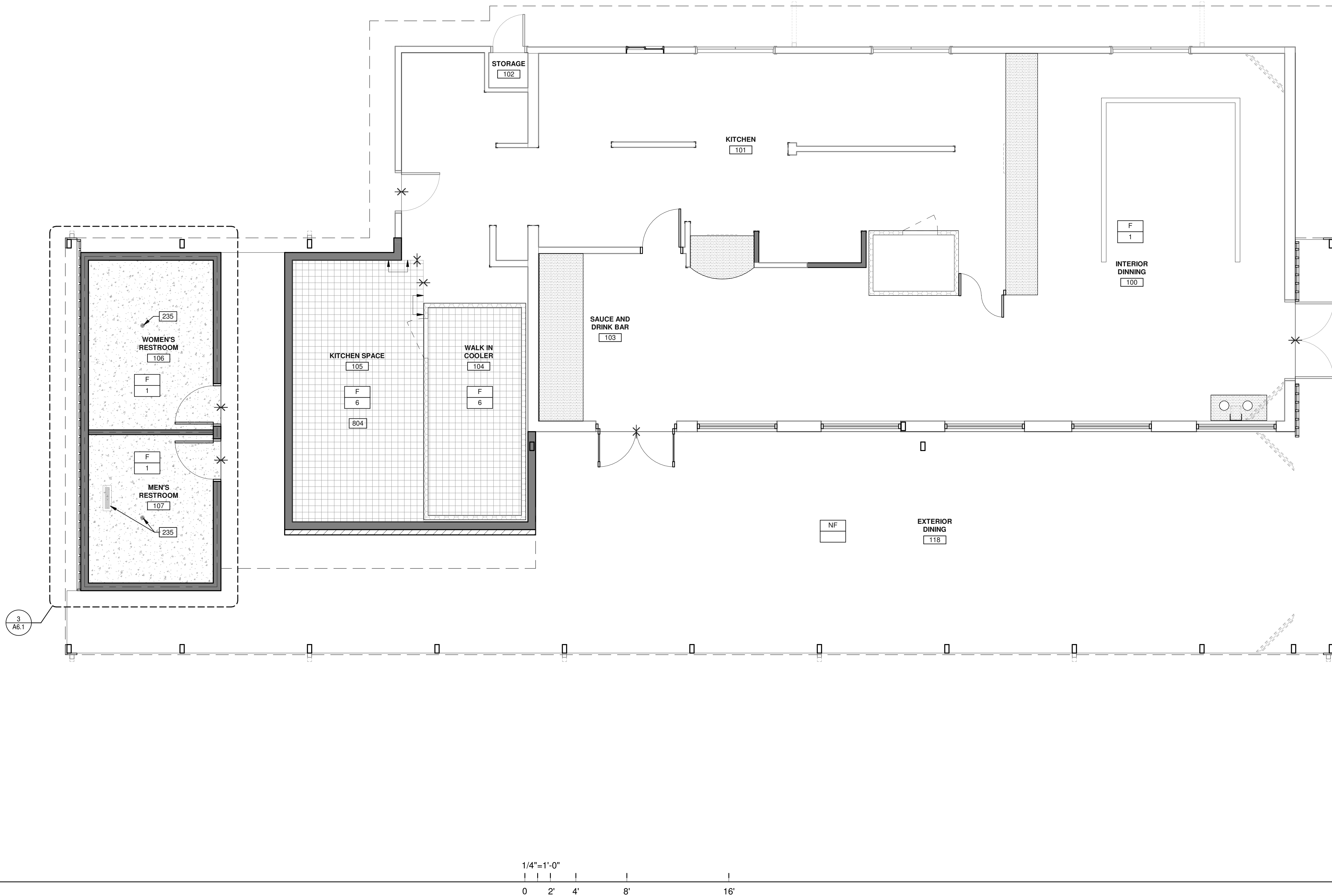
PAPM: STEVEN COX
DRAWN BY: C.B.
JOB NO.: DAL21-0063-00

SHEET
A2.2

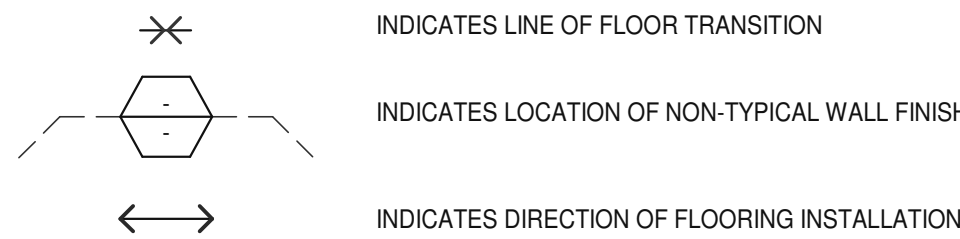
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FINISHES



WALL FINISHES

P 2	ITEM: MANUF.: DETAILS: FINISH:	WHITE PAINT SHERWIN WILLIAMS IBIS WHITE, SW7000 EGGSHELL
---------------	---	---

BASE FINISHES

B 1	ITEM: MANUF.: DETAILS:	STAINLESS STEEL BASE DIAMOND LIFE BASE MOLDING MX, 4" BRUSHED STAINLESS STEEL
B 2	ITEM: MANUF.: DETAILS:	QUARRY TILE BASE DAL-TILE 0082 STORM GRAY
B 3	ITEM: MANUF.: DETAILS:	METAL COVE BASE SCHLUTER SYSTEMS BRUSHED CHROME

WALL FINISHES

WC 5	ITEM: MANUF.: DETAILS:	CERAMIC TILE CONCEPT SURFACES, COLOR: BOND GREY SIZE: 12" X 24" VERTICAL STACK BOND, SEMI-POLISHED, STRAIGHT EDGE (NO BEVEL) GROUT: LATICRETE, #45 RAVEN
----------------	------------------------------	--

FLOOR FINISHES

F 1	ITEM: MANUF.: COLOR/NO.:	INTEGRAL BLACK POLISHED CONCRETE MICRO GUARD BASE SEALER: CONCRETE CLEAR WATERPROOFING SEALER: #AD702, SURFACE SEALER: HARD TILE CLEAR MATTE FINISH TREATMENT, #AD706, GRIND AND SEAL AFTER POUR
F 6	ITEM: MANUF.: COLOR/NO.:	GRAY QUARRY TILE DAL-TILE 0082 STORM GRAY
NF	ITEM: MANUF.: COLOR/NO.:	NO FINISH

GENERAL NOTES

- SEE SHEET A0.2 FOR GENERAL NOTES
- THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES OR CONFLICTS THAT MIGHT ARISE.
 - CONTRACTOR TO INCLUDE ALL FLOOR PREPARATIONS IN BASE BID.
 - SEE ENLARGED PLANS, ELEVATIONS AND DETAILS FOR ADDITIONAL FINISH INFORMATION.
 - PREPARE WALLS TO RECEIVE (2) COATS EGGSHELL PAINT, U.O.N.
 - PROVIDE LEVEL 5 FINISH FOR WALLS UNDER SKYLIGHTS & AT WALL-WASH LIGHT FIXTURES.
 - COORDINATE WITH OTHER TRADES AT LOCATIONS OF SPECIALTY WALL FINISHES, BRANDING OR SIGNAGE FOR SPECIFIC WALL PREP.
 - ALL AREAS WITHIN PROJECT BOUNDARY TO RECEIVE PAINT (P-1A), RUBBER BASE (B-1) AND CARPET (CP-1), U.O.N.
 - ALL GYPSUM BOARD CEILINGS AND SOFFITS TO RECEIVE PAINT (P-1B), U.O.N.
 - PAINT DECK ABOVE AND ALL EXPOSED MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION DUCTWORK AND PIPING IN OPEN CEILING AREAS.
 - ALL FINISHES TO BE INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS.
 - ALL FINISH TRANSITIONS AT DOORS TO BE LOCATED CENTERED UNDER THE DOOR, U.O.N.
 - PROVIDE FLOORING TRANSITIONS AS FOLLOWS, U.O.N.:
 - RUBBER REDUCING STRIP AT ALL TRANSITIONS BETWEEN CARPET AND RESILIENT FLOORING OR CONCRETE.
 - STAINLESS STEEL TRIM BY SCHLUTER OR EQUAL, AT ALL TRANSITIONS BETWEEN TILE/STONE AND OTHER FINISHES.

KEYNOTES:

235	FLOOR DRAIN
804	G.C. TO VERIFY MATERIAL SQ.FT. IN FIELD.

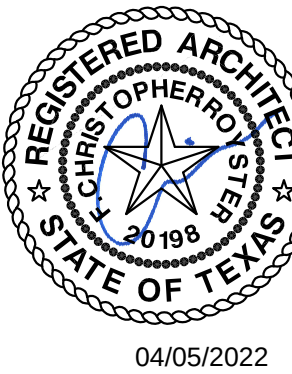
FINISH PLAN AND SCHEDULE

DATE	ISSUE FOR PERMIT	REMARKS
08/03/2022		

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JOB NO.:	DAL21-0063-00

SHEET
A2.3

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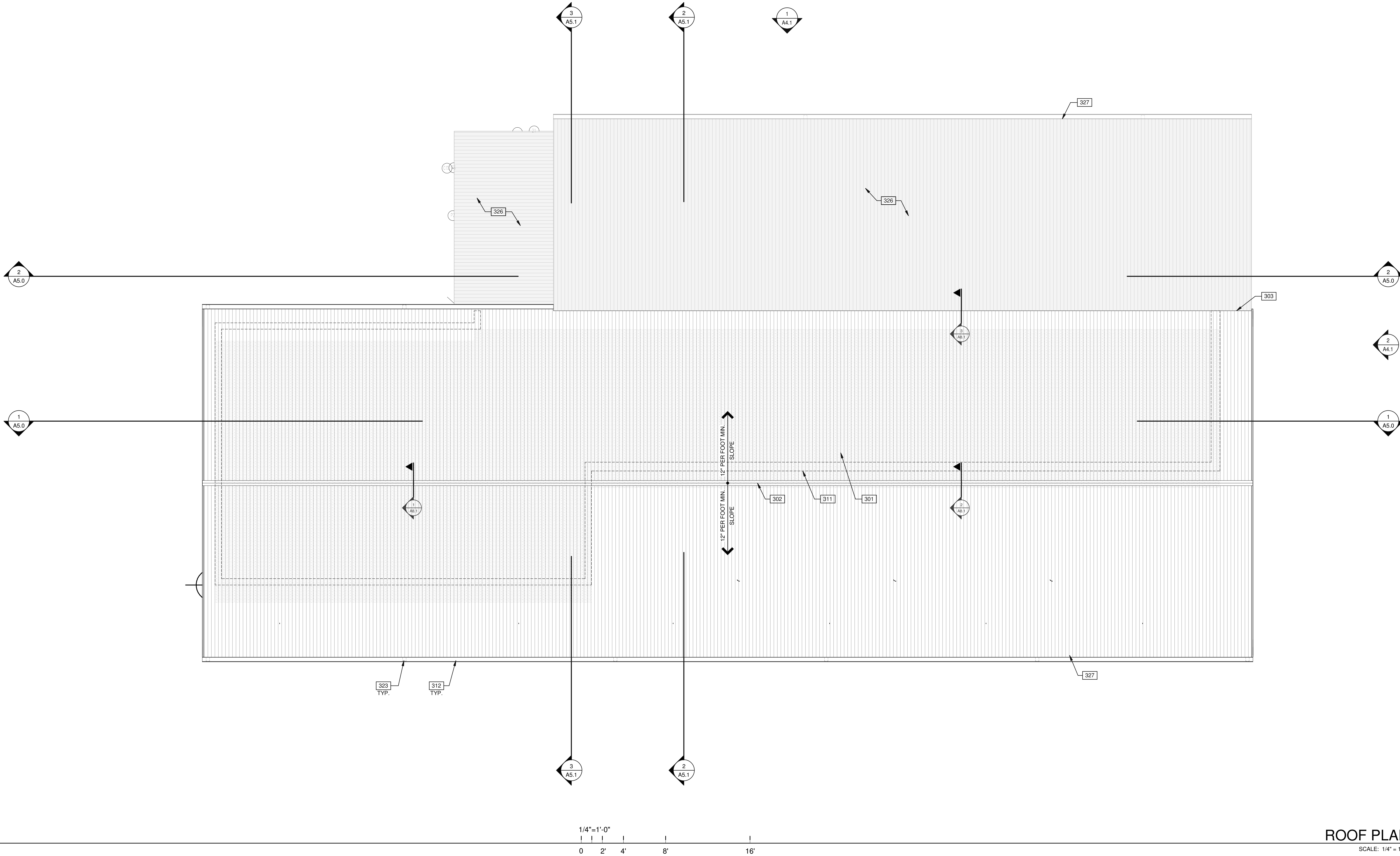


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ROOF PLAN	
DATE	REMARKS
09/05/2022	ISSUE FOR PERMIT

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DRAWN BY.:	C.B.
JOB NO.:	DAL21-0063-00

SHEET
A3.0



ROOF PLAN
SCALE: 1/4" = 1'-0"

ROOF FINISHES

R 1	ITEM: MANUF.: COLOR/NO.:	STANDING SEAM METAL - GRAY (THIS COLOR NEEDS TO BE APPROVED BY SCOTT BROWN PRIOR TO ORDER AND INSTALLATION)
R 2	ITEM: MANUF.: COLOR/NO.:	PVC MEMBRANE DUROLAST WHITE
R 3	ITEM: MANUF.: COLOR/NO.:	PVC MEMBRANE DUROLAST BLACK
	DETAILS:	40 MIL PVC SINGLE PLY MEMBRANE PROVIDES AND INSTALLED BY KITCHEN VENDOR ON TOP OF EXTERIOR COOLER

LEGEND

MATERIALS	
	R-1 STANDING SEAM METAL
	EXISTING STANDING SEAM METAL
	INDICATE INTERIOR OF BUILDING BELOW OF ROOF

ABBREVIATIONS

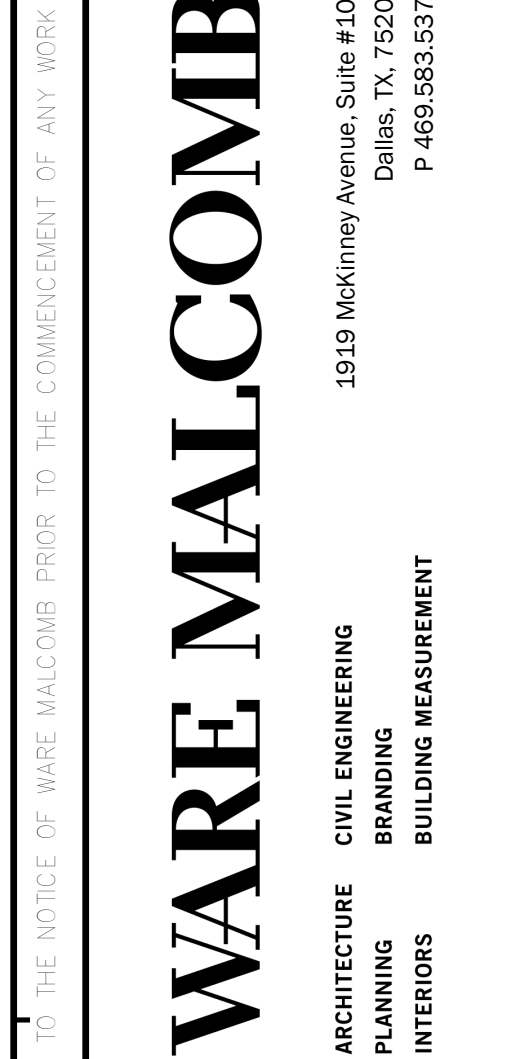
T.O.P. =	TOP OF PARAPET
H.P. =	TOP OF ROOFING - HIGH POINT
M.P. =	TOP OF ROOFING - MID POINT
L.P. =	TOP OF ROOFING - LOW POINT

KEYNOTES:

SEE SHEET A0.2 & A0.2a FOR GENERAL NOTES	
301	ROOF MEMBRANE FLASHING BELOW CORRUGATED METAL ROOFING AT ALL ENCLOSED AREAS.
302	ROOF RIDGE METAL CAP.
303	ROOF VALLEY.
311	LINE OF WALL BELLOW.
312	PREFINISHED METAL GUTTER.
323	PREFINISHED METAL DOWNSPOUT CONNECTED TO STORM DRAIN.
326	EXISTING ROOF.
327	PAINT EXISTING ROOFS TO MATCH NEW R-1 ROOFING COLOR.

GENERAL NOTES

1. ALL PIPES SHALL BE PAINTED ON THE ROOF.
2. GAS PIPES SHALL BE PAINTED SAFETY YELLOW.
3. VENT PIPES SHALL BE PAINTED WHITE.
4. ALL VENT PIPES SHALL HAVE A CHARCOAL AIR FILTER INSTALLED WITH THEM.



EXTERIOR ELEVATIONS

REMARKS
ISSUE FOR DEBIT

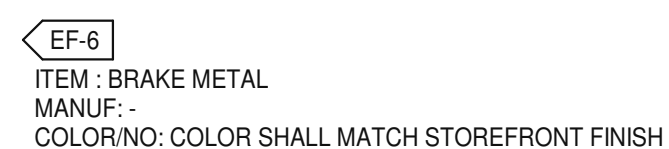
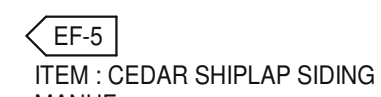
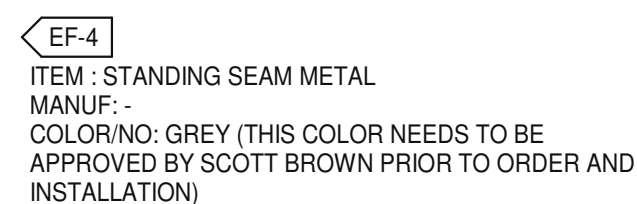
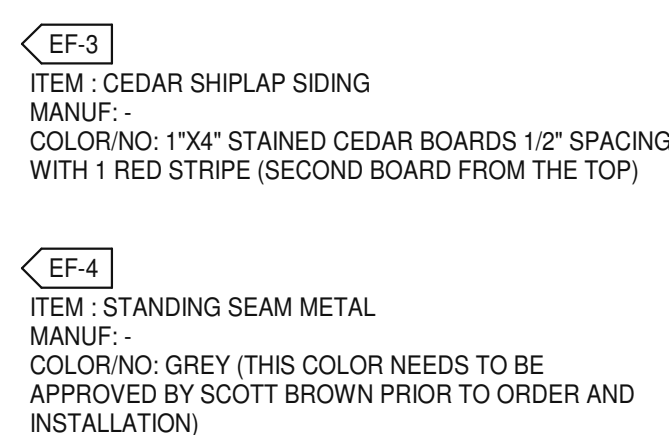
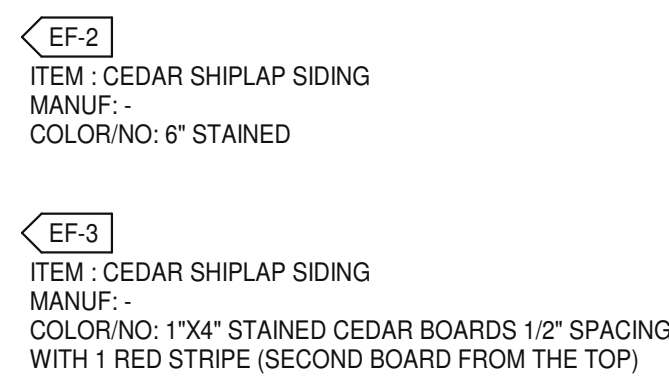
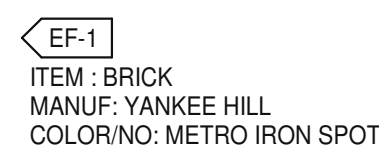
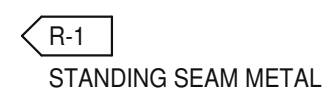
NAME:	STEVEN COX
BY:	C.B.
NO.:	DAL21-0063-00

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A4.1

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MATERIALS:

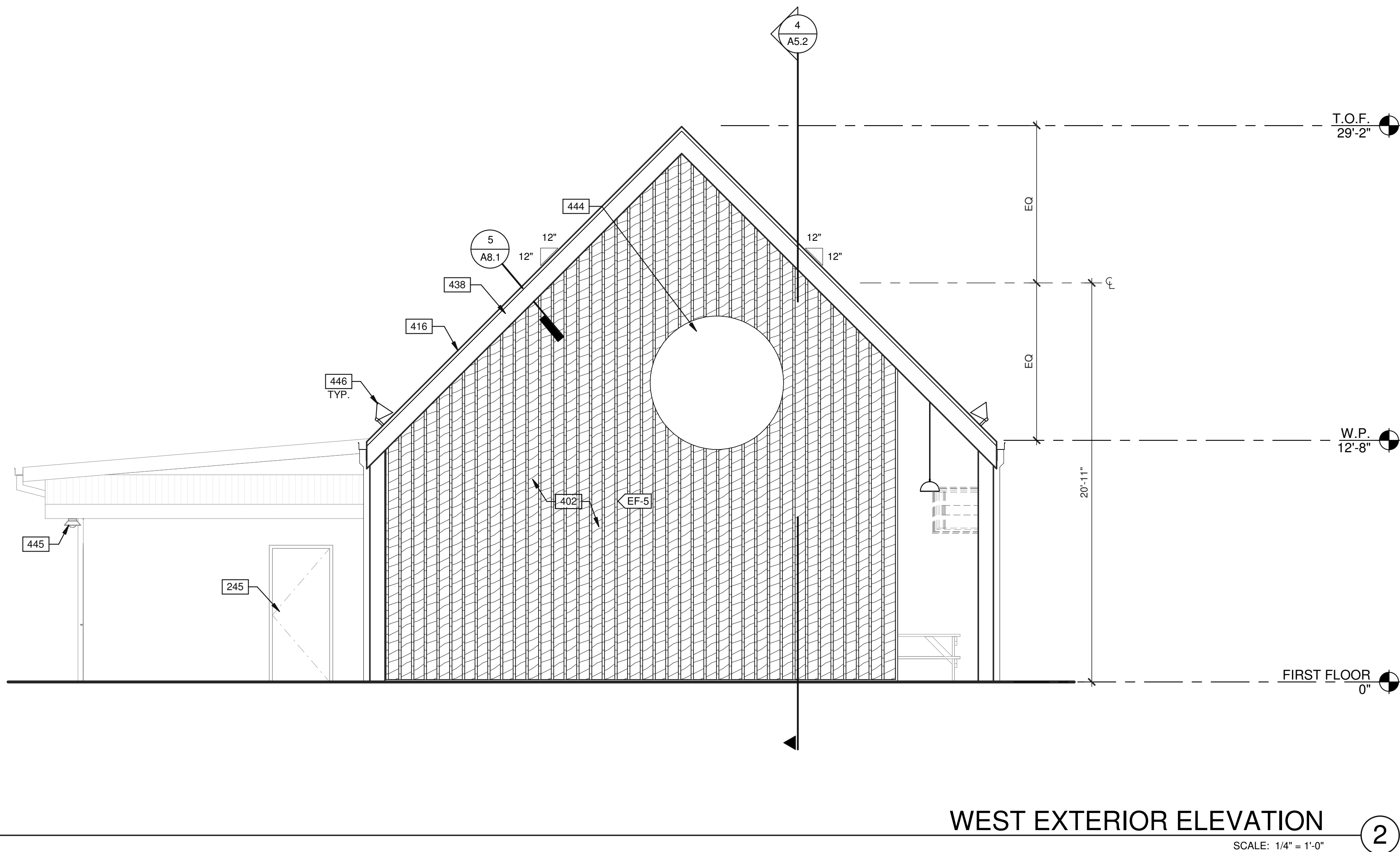
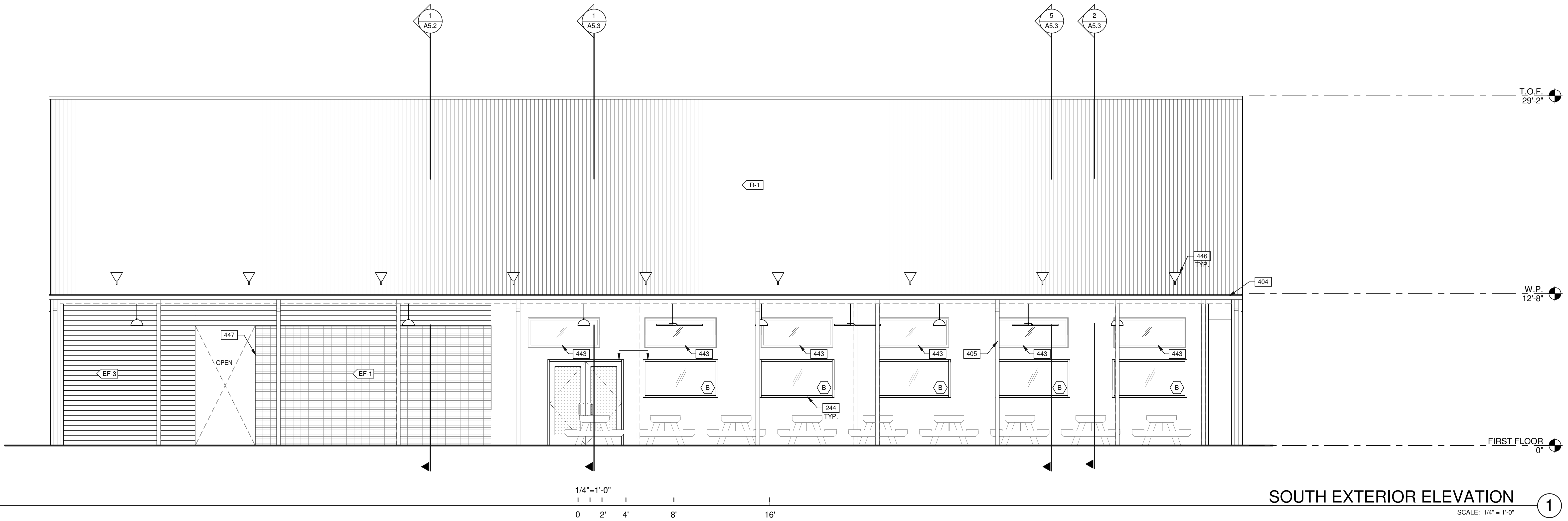


GLASS:



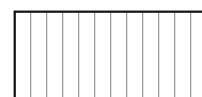
ALL GLASS USED ON THE ENVELOPE OF THE BUILDING TO BE:
XXXXXXX
U FACTOR = 0.28 AND SHGC = 0.28
GLASS WIND LOAD RESISTANCE CALCULATIONS ARE UNDER SEPARATE PERMIT

244 WINDOW AS SCHEDULED.
302 ROOF RIDGE METAL CAP.
402 WOOD SLAT SCREEN WALL WITH 1" GAPS BETWEEN BOARDS. PAINT
PLYWOOD BEHIND SLATS BLACK ON PLAYSIGN SHEAR WALLS.
404 PRE-FINISHED METAL GUTTER.
405 4"x4" PRE-FINISHED DOWNSPOUT.
406 PRE-FINISHED METAL FINISH MATCH STANDING SEAM METAL ROOFING.
438 2x WOOD FASCIA WITH PRE-FINISHED METAL FINISH.
445 WALL MOUNTED LIGHT FIXTURE.
446 ROOF MOUNTED UPLIGHT FIXTURE.
448 EXISTING RED PAINT.

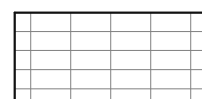


LEGEND

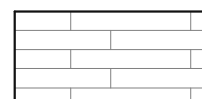
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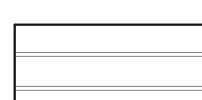
R-1
ITEM: STANDING SEAM METAL



EF-1
ITEM: BRICK
MANUF: YANKEE HILL
COLOR/NO: METRO IRON SPOT



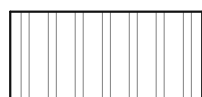
EF-2
ITEM: CEDAR SHIPLAP SIDING
MANUF: -
COLOR/NO: 6" STAINED



EF-3
ITEM: CEDAR SHIPLAP SIDING
MANUF: -
COLOR/NO: 1"x4" STAINED CEDAR BOARDS 1/2" SPACING
WITH 1 RED STRIPE (SECOND BOARD FROM THE TOP)



EF-4
ITEM: STANDING SEAM METAL
MANUF: -
COLOR/NO: GREY (THIS COLOR NEEDS TO BE
APPROVED BY SCOTT BROWN PRIOR TO ORDER AND
INSTALLATION)



EF-5
ITEM: CEDAR SHIPLAP SIDING
MANUF: -
COLOR/NO: 6" STAINED



EF-6
ITEM: BRAKE METAL
MANUF: -
COLOR/NO: COLOR SHALL MATCH STOREFRONT FINISH

GLASS:



VISION GLASS

ALL GLASS USED ON THE ENVELOPE OF THE BUILDING TO BE:
XXXXXX
U FACTOR = 0.28 AND SHGC = 0.28
GLASS WIND LOAD RESISTANCE CALCULATIONS ARE UNDER SEPARATE PERMIT

KEYNOTES:

- 244 WINDOW AS SCHEDULED.
245 DOOR AS SCHEDULED.
402 WOOD SLAT SCREEN WALL WITH 1" GAPS BETWEEN BOARDS. PAINT
PLYWOOD BEHIND SLATS BLACK ON PLAYSIGN SHEAR WALLS.
404 PRE-FINISHED METAL GUTTER.
405 4"x4" PRE-FINISHED DOWNSPOUT.
416 PRE-FINISHED METAL FINISH MATCH STANDING SEAM METAL ROOFING.
438 2x WOOD FASCIA WITH PRE-FINISHED METAL FINISH.
443 EXISTING TRANSOM WINDOWS.
444 SIGNAGE BY OWNER, COORDINATE POWER REQUIREMENTS.
445 WALL MOUNTED LIGHT FIXTURE.
446 ROOF MOUNTED UPLIGHT FIXTURE.
447 CONTROL JOINT IN BRICK SHALL ALIGN WITH ALUMINIUM COWLING
AROUND WINDOW.

EXTERIOR ELEVATIONS

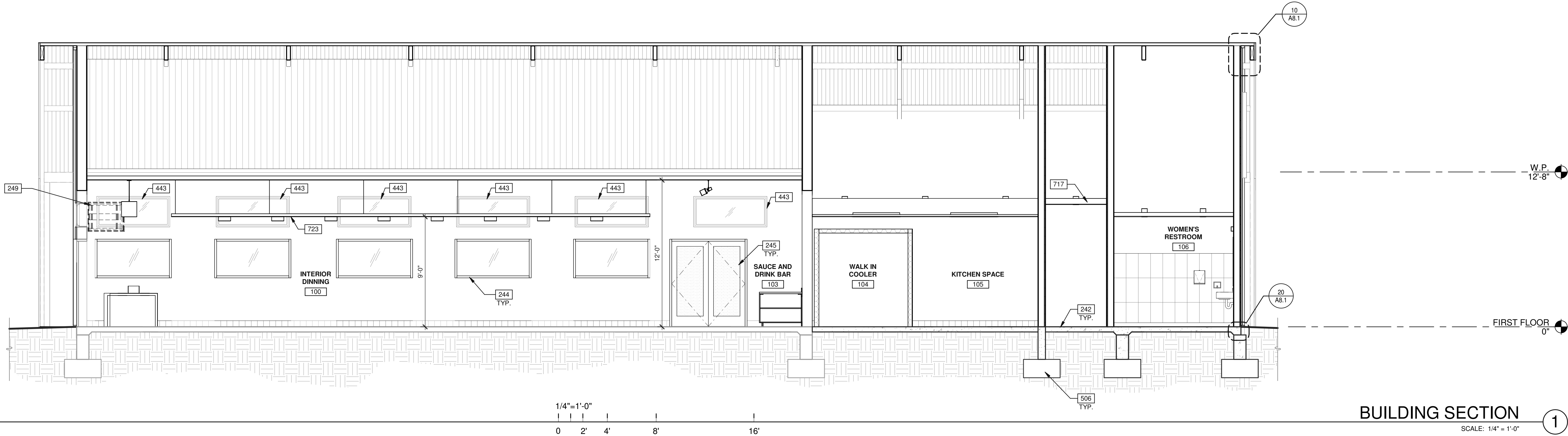
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REMARKS

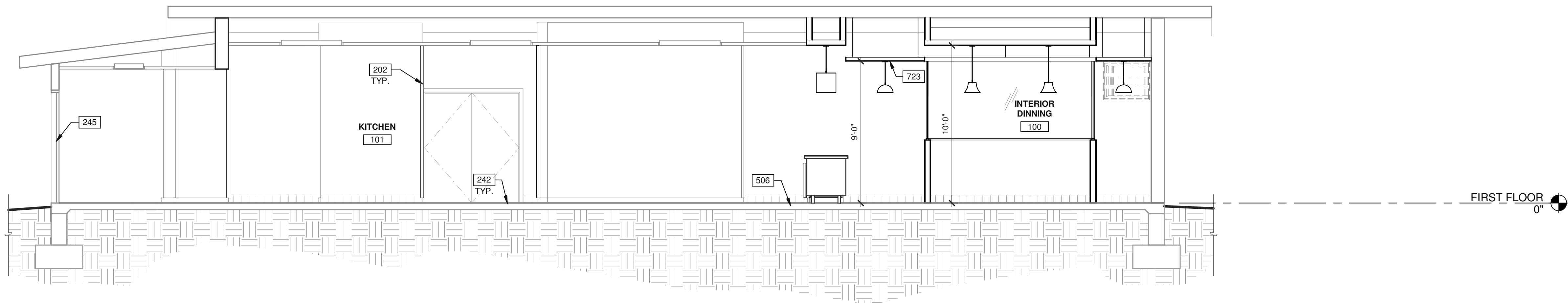
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DRAWN BY: C.B.
JOB NO.: DAL21-0063-00

SHEET

A4.2



BUILDING SECTION 1
SCALE: 1/4" = 1'-0"



BUILDING SECTION 2
SCALE: 1/4" = 1'-0"

KEYNOTES:

- SEE SHEET A0.2 & A.02a FOR GENERAL NOTES
- 202 STAINLESS STEEL CORNER GUARD.
 - 242 FLOORING AS SCHEDULED.
 - 244 WINDOW AS SCHEDULED.
 - 245 DOOR AS SCHEDULED.
 - 249 NEW TELEVISION. REFER TO ELECTRICAL DRAWINGS.
 - 443 EXISTING TRANSOM WINDOWS.
 - 506 STRUCTURAL FOUNDATION.
 - 717 LAY-IN CEILING AS SCHEDULED.
 - 723 NEW METAL SUSPENDED SCREEN.

BUILDING SECTIONS

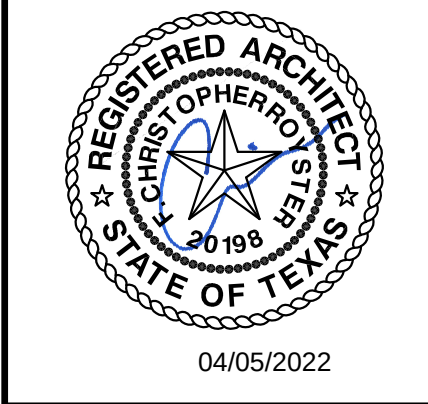
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SHEET
A5.0



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BUILDING SECTIONS

REMARKS

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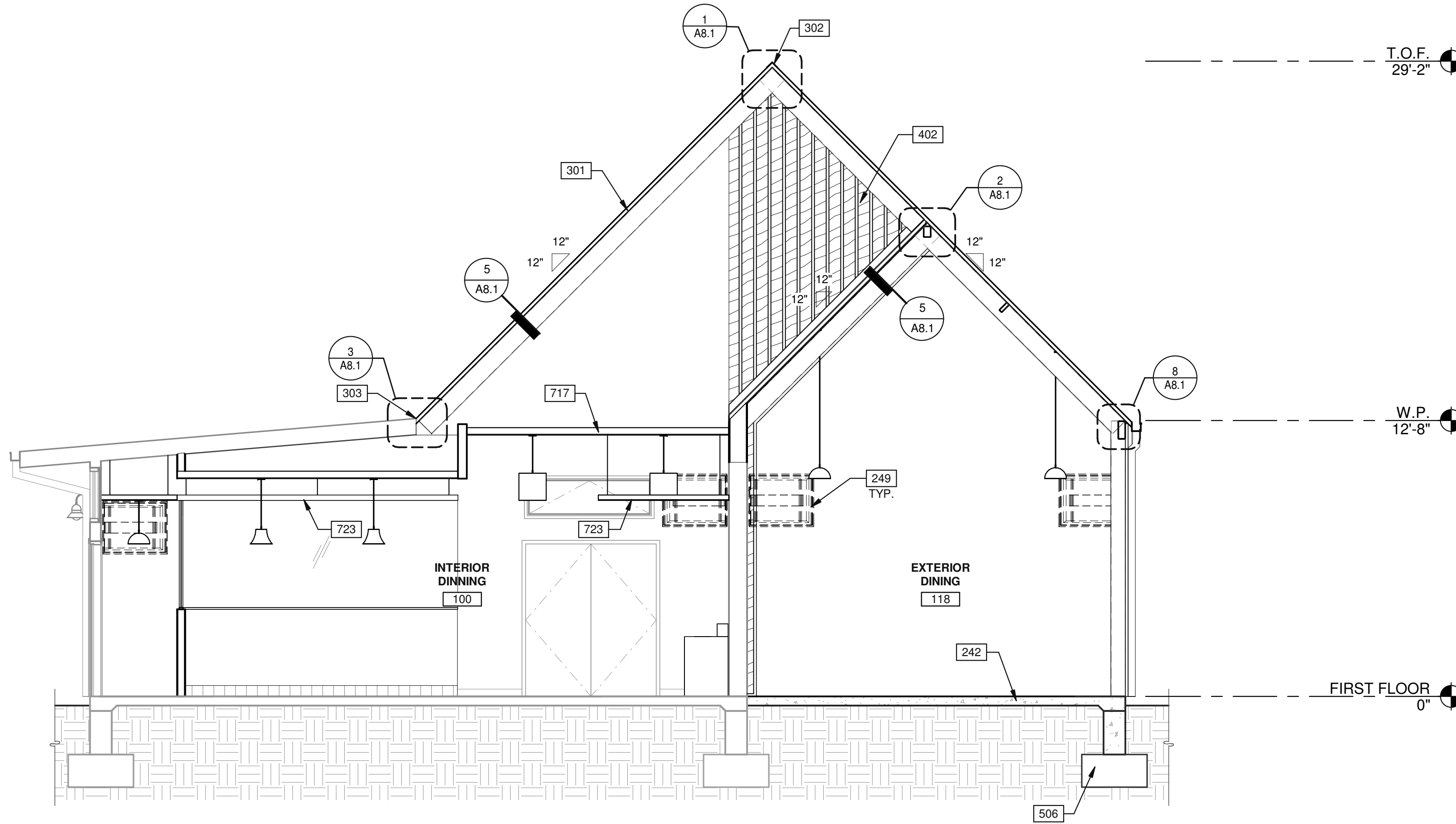
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JOB NO.: DAL21-0063-00

SHEET

A5.1

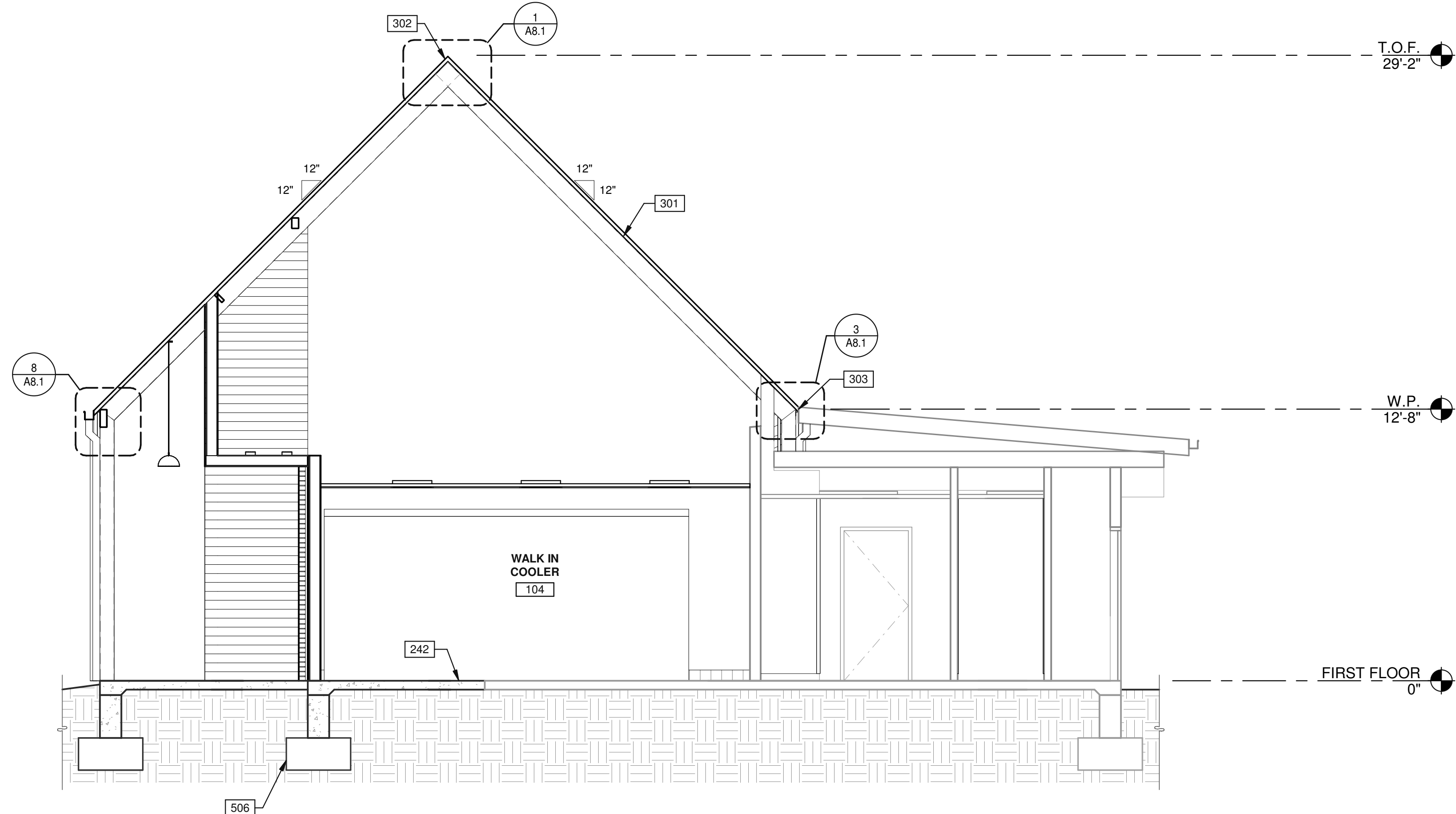
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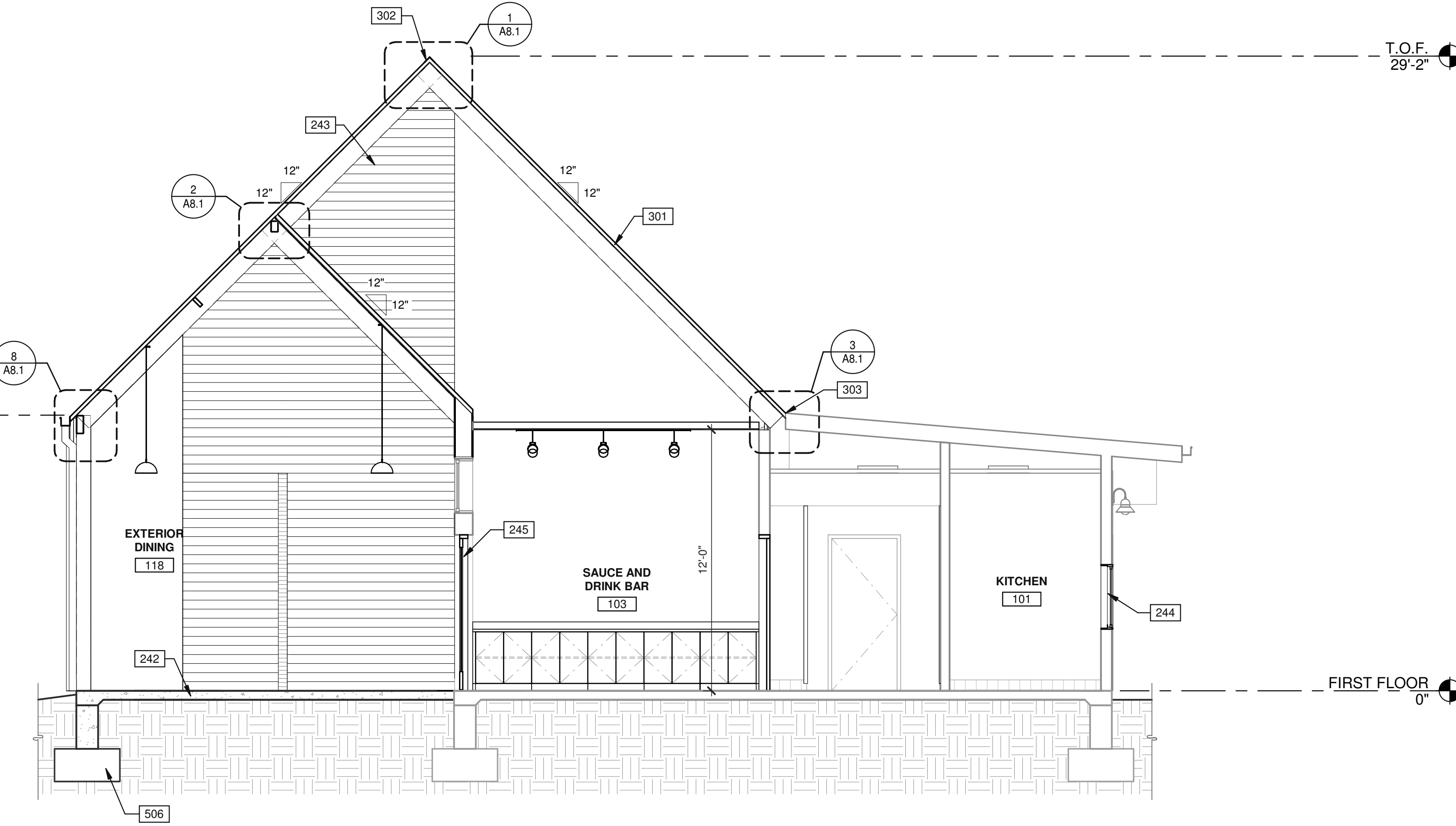
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SCALE: 1/4" = 1'-0"



BUILDING SECTION 3

SCALE: 1/4" = 1'-0"



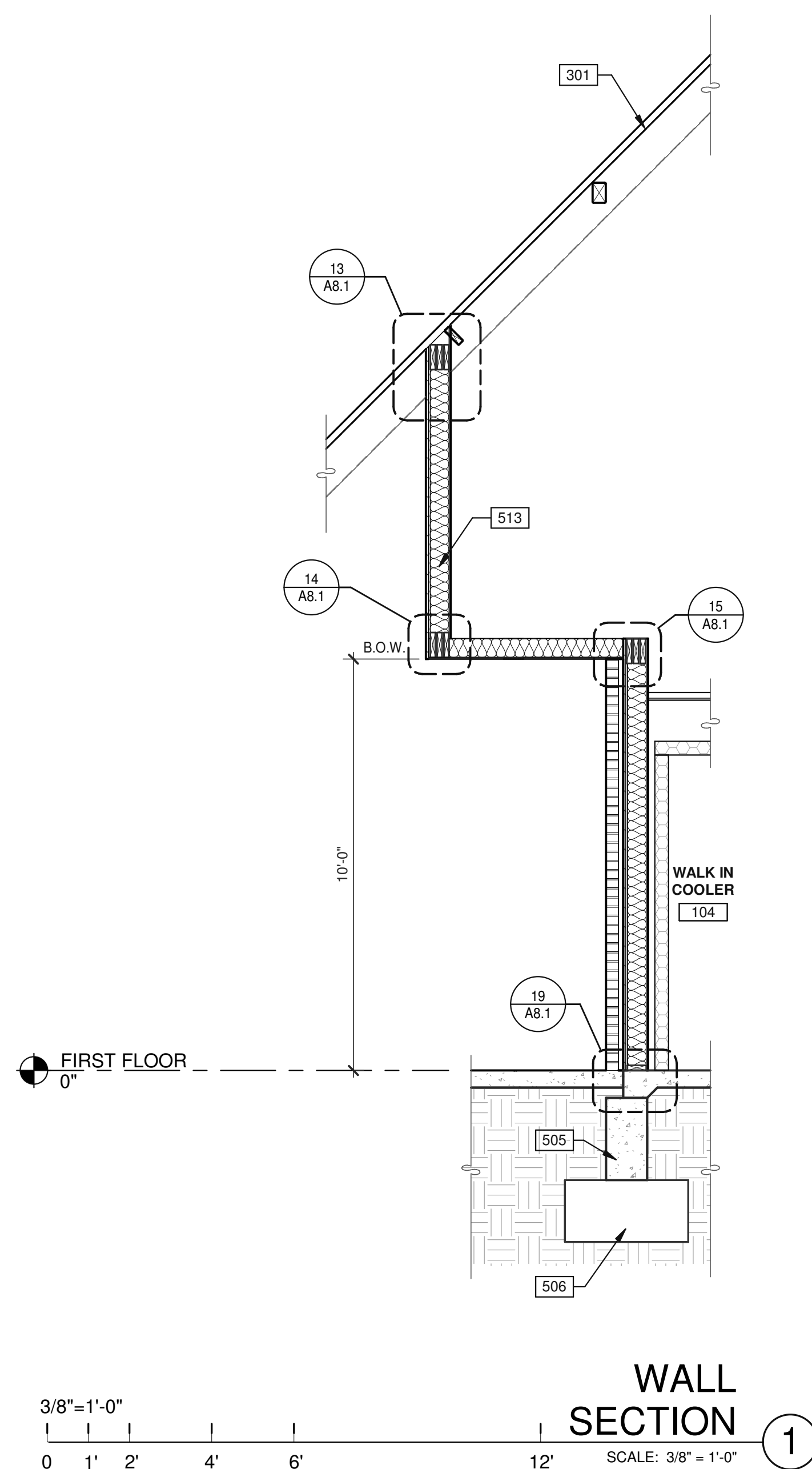
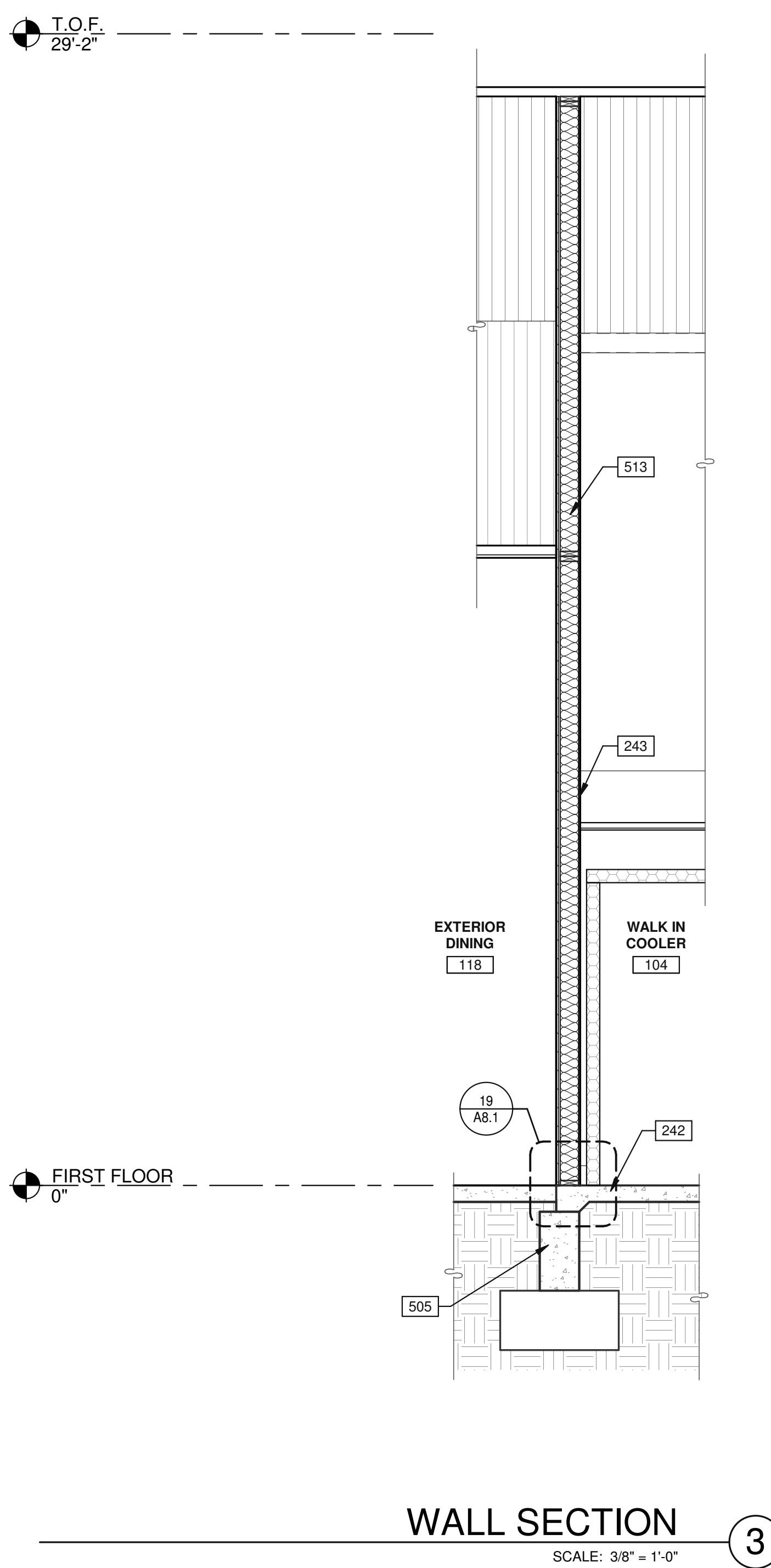
BUILDING SECTION 2

SCALE: 1/4" = 1'-0"

KEYNOTES:

SEE SHEET A0.2 & A.02a FOR GENERAL NOTES

- 242 FLOORING AS SCHEDULED.
- 243 WALL FINISH AS SCHEDULED.
- 244 WINDOW AS SCHEDULED.
- 245 DOOR AS SCHEDULED.
- 249 NEW TELEVISION. REFER TO ELECTRICAL DRAWINGS.
- 301 ROOF MEMBRANE FLASHING BELOW CORRUGATED METAL ROOFING AT ALL ENCLOSED AREAS.
- 302 ROOF RIDGE METAL CAP.
- 303 ROOF VALLEY.
- 402 WOOD SLAT SCREEN WALL WITH 1" GAPS BETWEEN BOARDS. PAINT PLYWOOD BEHIND SLATS BLACK ON PLAYSIGN SHEAR WALLS.
- 506 STRUCTURAL FOUNDATION.
- 717 LAY-IN CEILING AS SCHEDULED.
- 723 NEW METAL SUSPENDED SCREEN.



	FULL HEIGHT WALL
	FULL HEIGHT WALL WITH SOUND BATT INSULATION
	PARTIAL HEIGHT WALLS
	ACME FULL SIZE BRICK
	COOLER / FREEZE WALL, BY KEC
	EXISTING WALL

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SHEET

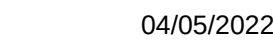
A5.2



- FULL HEIGHT WALL
- FULL HEIGHT WALL WITH SOUND BATT INSULATION
- PARTIAL HEIGHT WALLS
- ACME FULL SIZE BRICK
- COOLER / FREEZE WALL, BY KEC
- EXISTING WALL

A5.3

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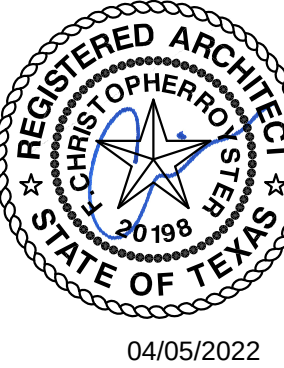


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KEYNOTES:

SEE SHEET A0.2 & A.02a FOR GENERAL NOTES
249 NEW TELEVISION. REFER TO ELECTRICAL DRAWINGS.
723 NEW METAL SUSPENDED SCREEN.

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INTERIOR ELEVATIONS
DATE: 08/03/2022
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SHEET
A6.2
3/30/2022 6:54:01 PM

- 1B -

- 1A -

- 1C -

INTERIOR ELEVATIONS

SCALE: 3/8" = 1'-0"

1

- 2B -

- 2A -

- 2C -

- 2D -

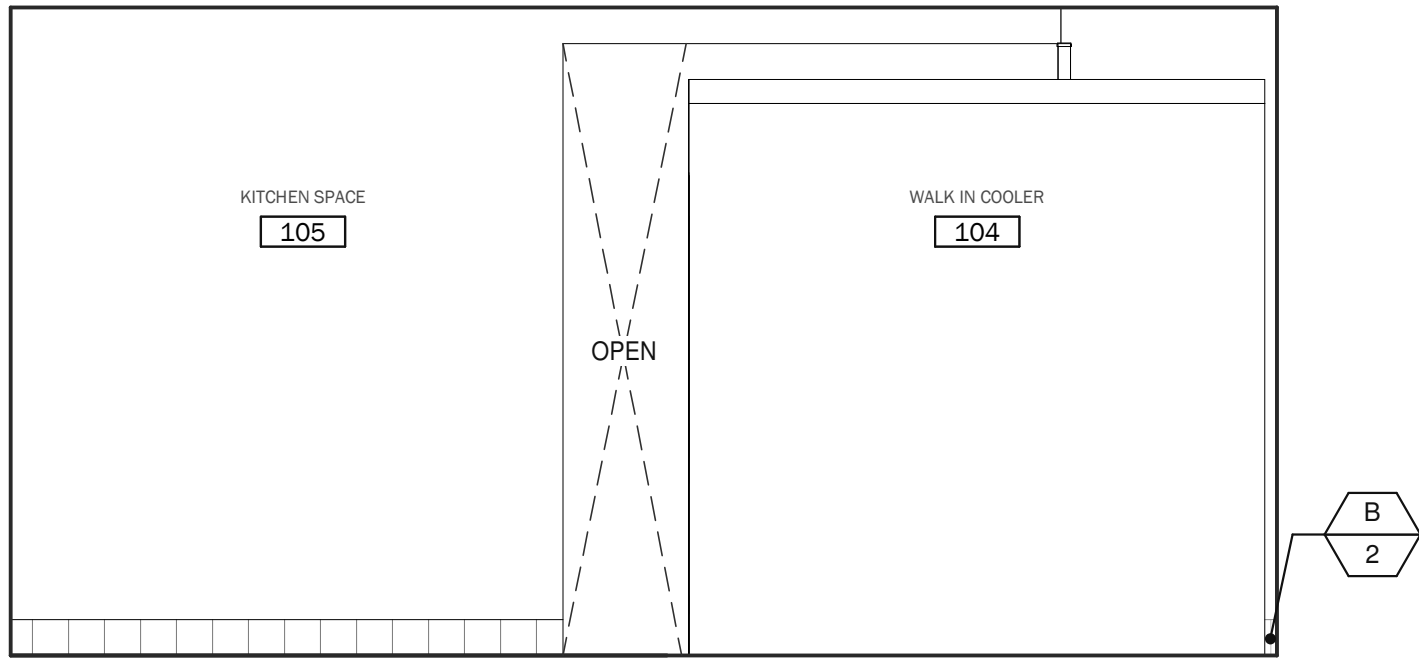
INTERIOR ELEVATIONS

SCALE: 3/8" = 1'-0"

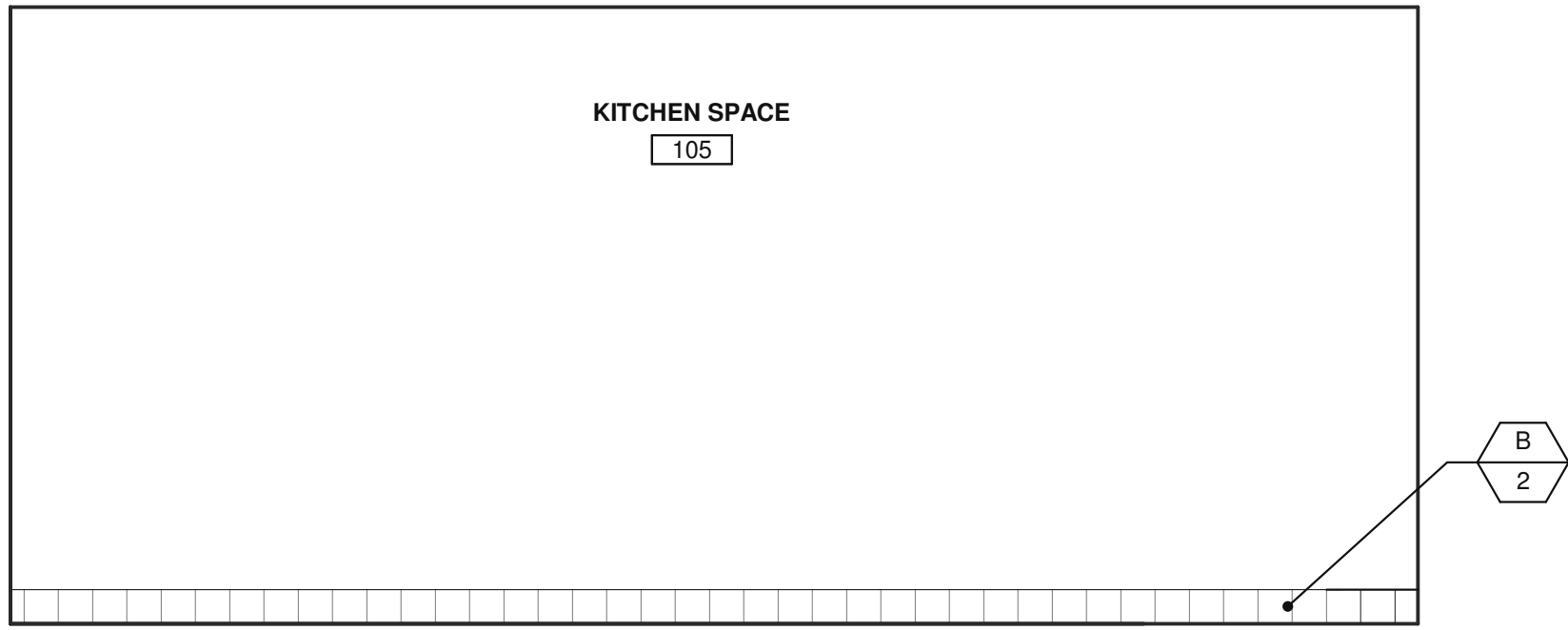
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KEYNOTES:

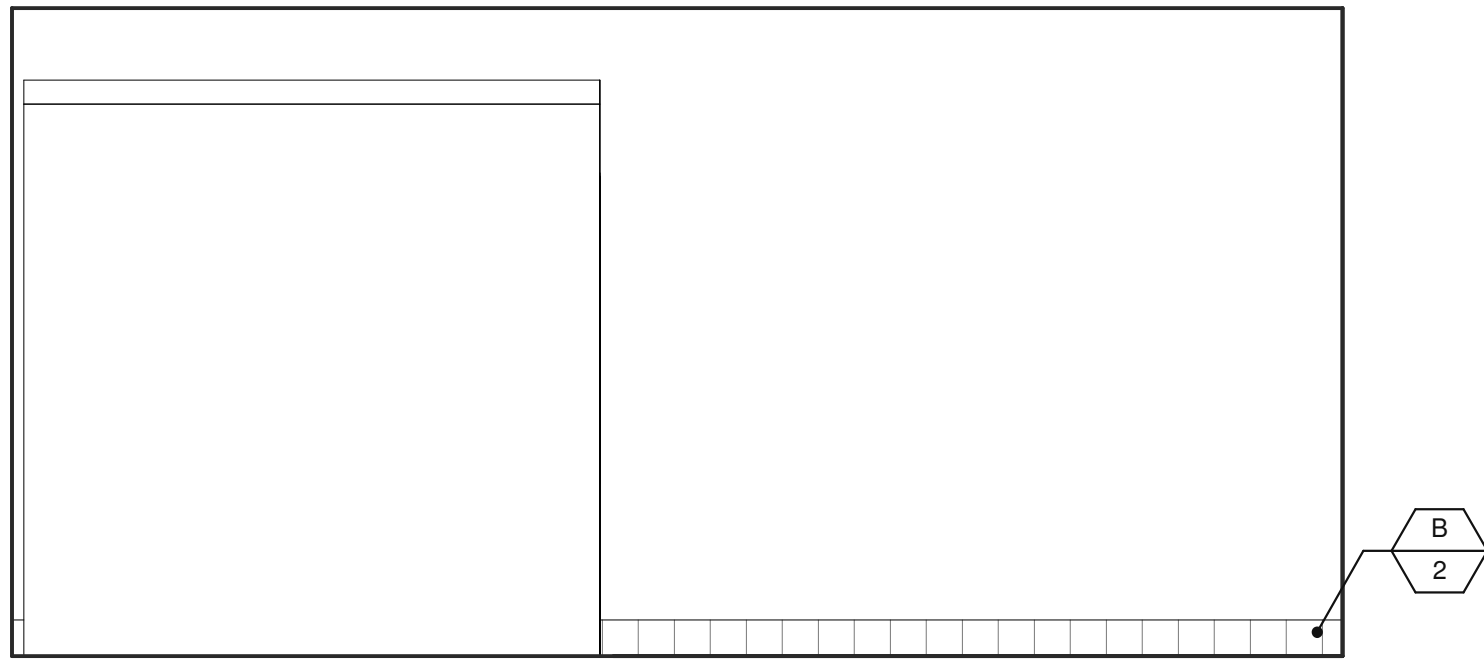
SEE SHEET A0.2 & A.02a FOR GENERAL NOTES
249 NEW TELEVISION. REFER TO ELECTRICAL DRAWINGS.
723 NEW METAL SUSPENDED SCREEN.



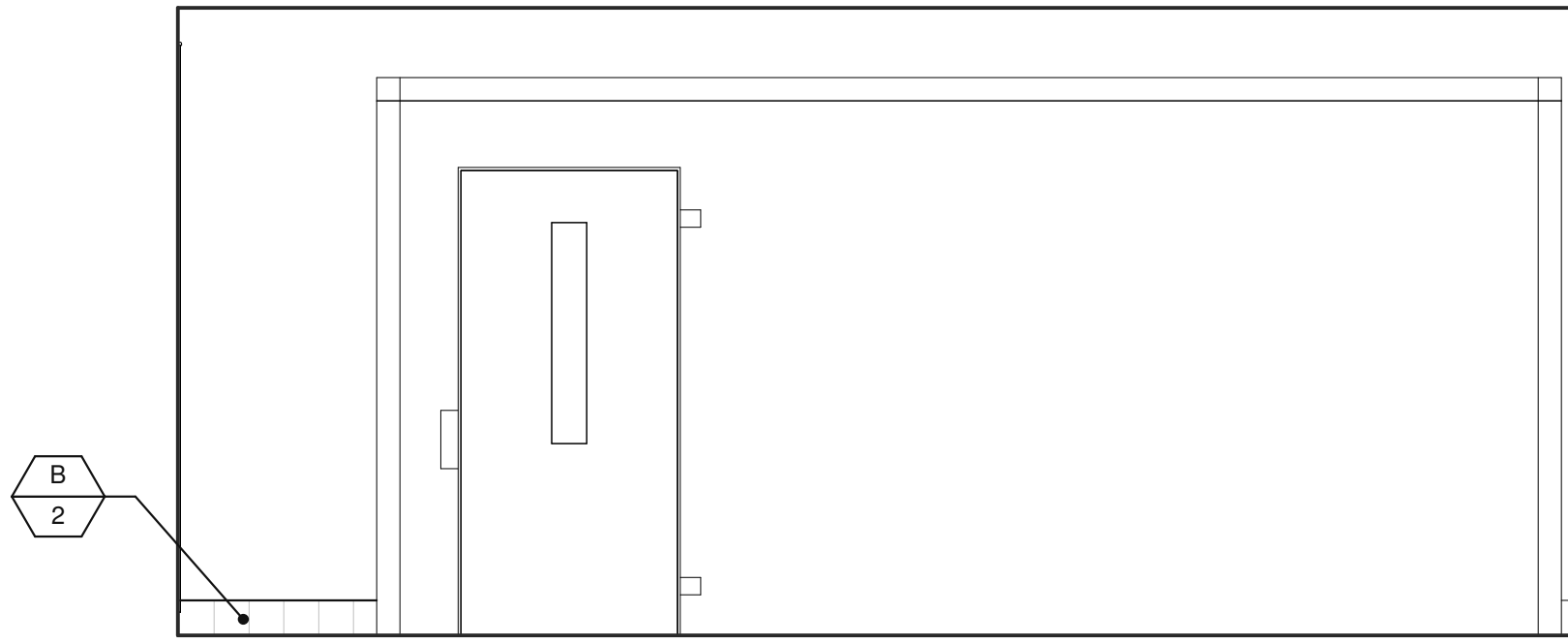
- 1B -



- 1A -



- 1D -

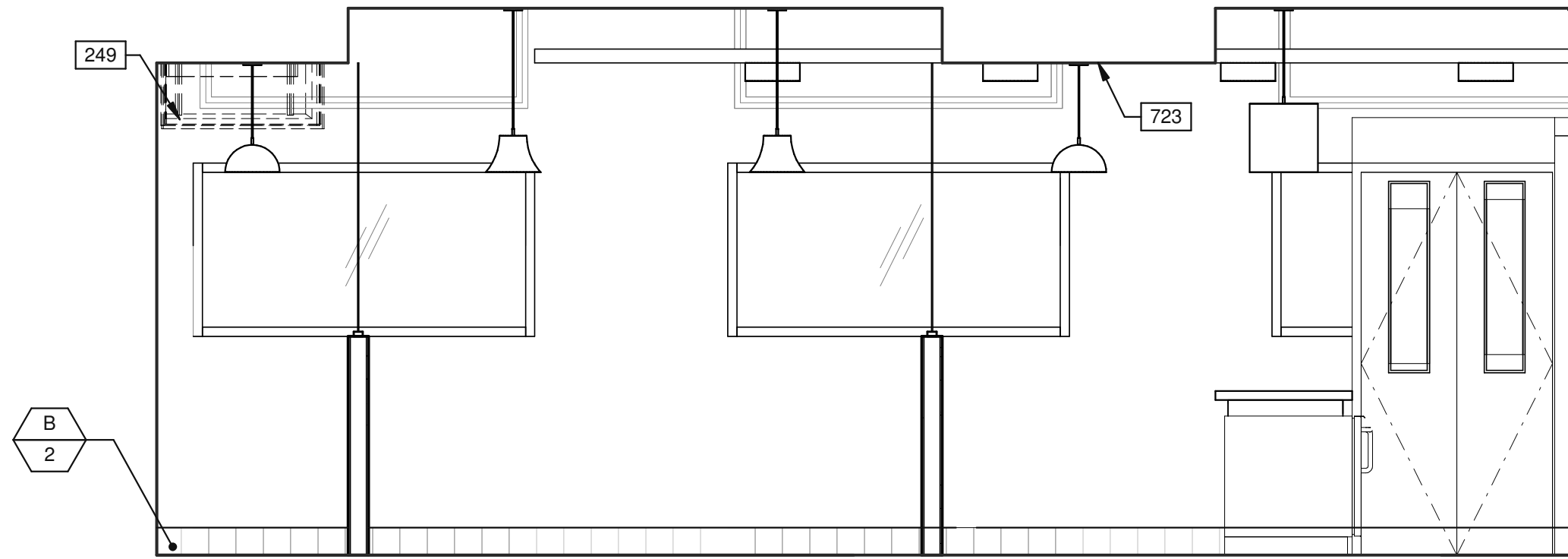


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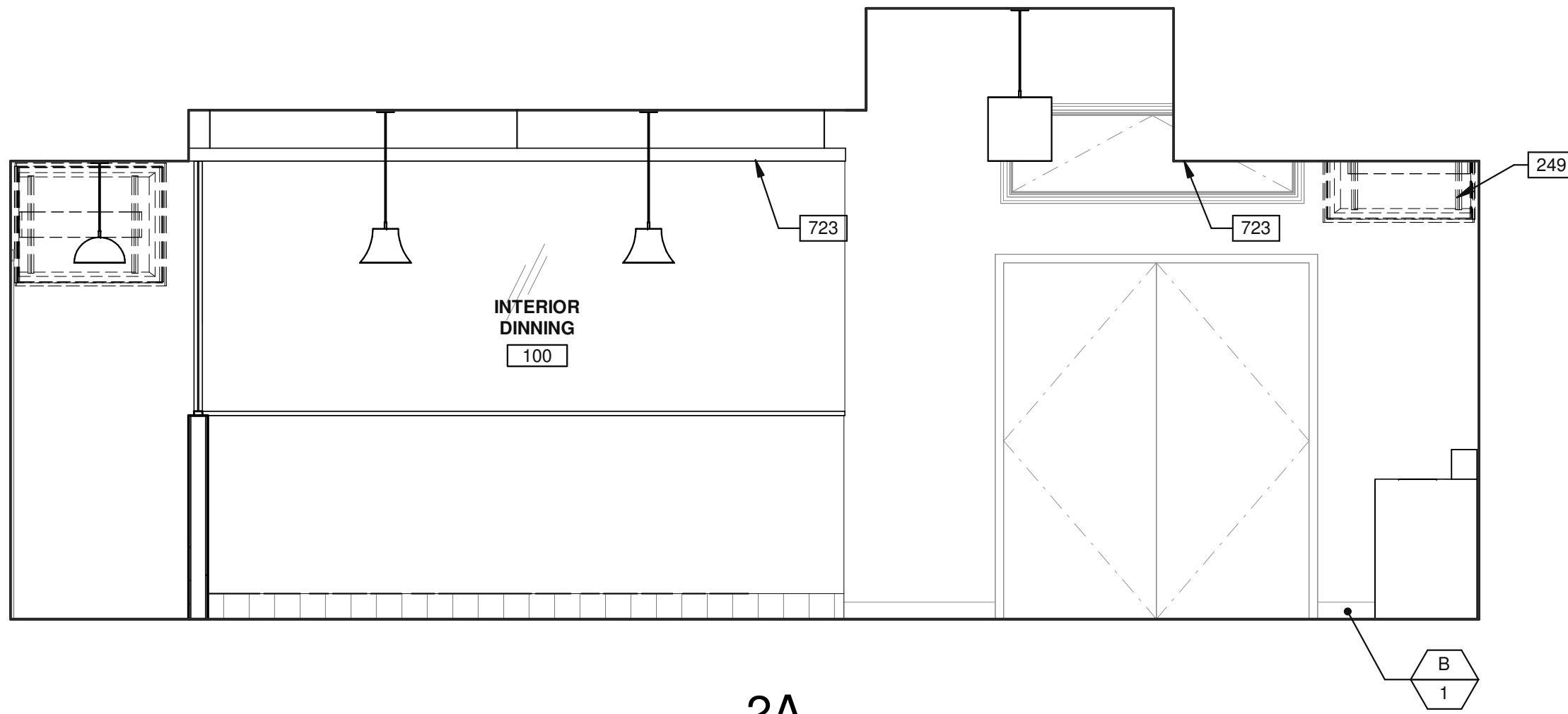
INTERIOR ELEVATIONS

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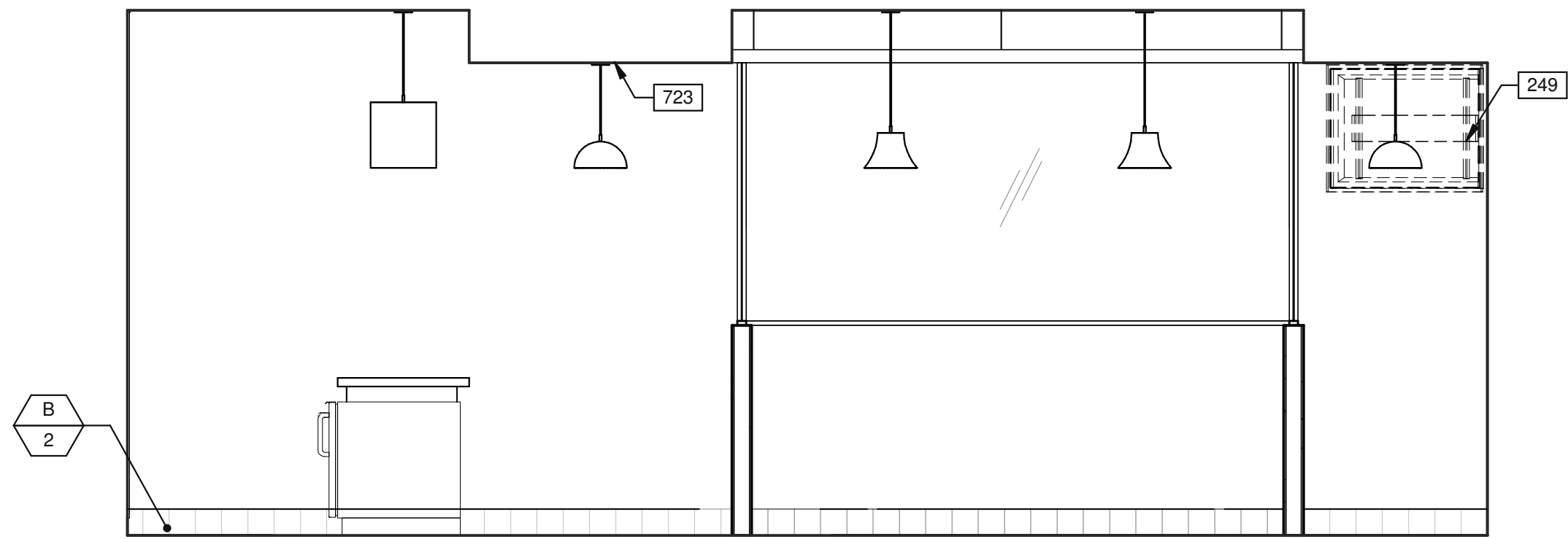
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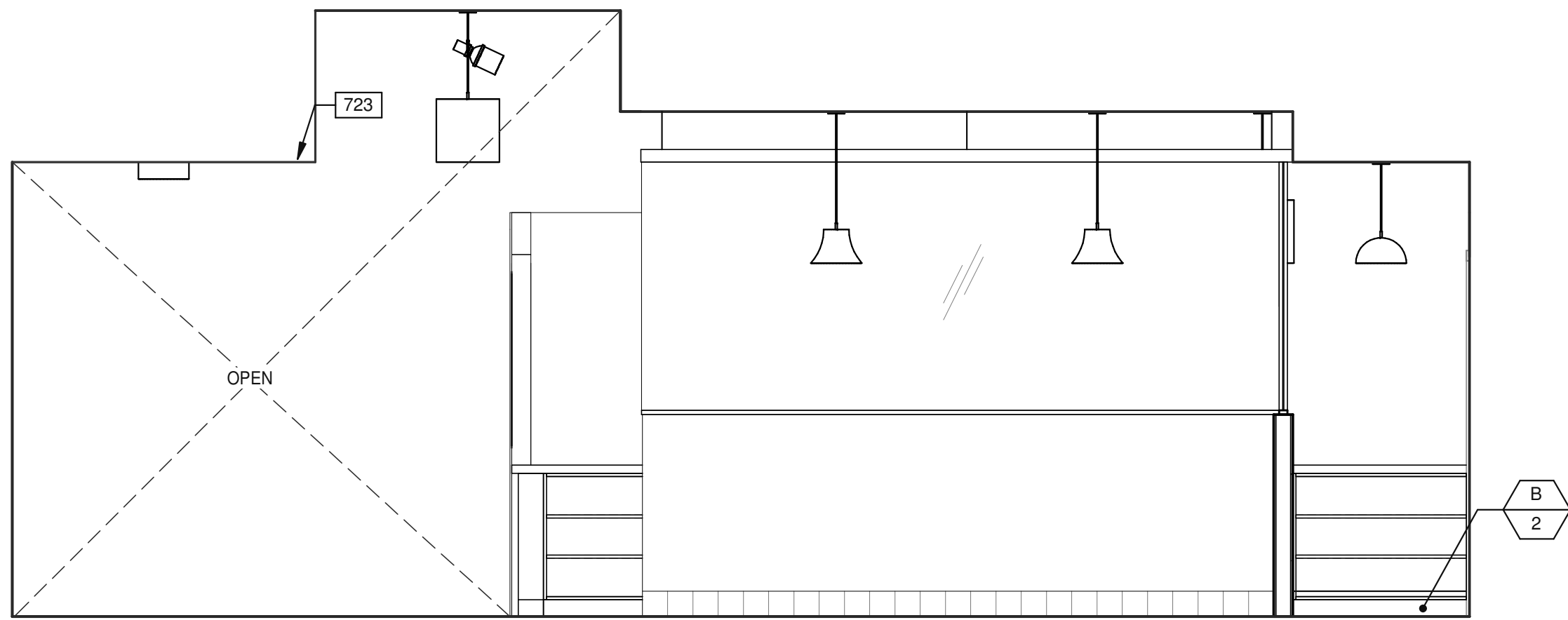
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- 2A -



- 2D -



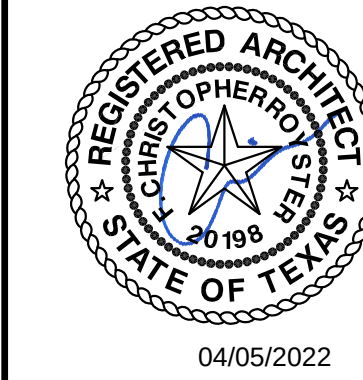
- 2C -

INTERIOR ELEVATIONS

SCALE: 3/8" = 1'-0"

2

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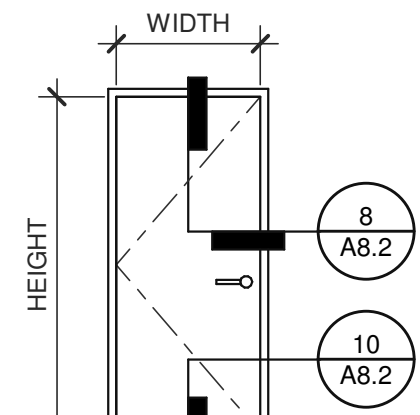
INTERIOR ELEVATIONS

DATE	ISSUE FOR PERMIT	REMARKS
03/03/2022		

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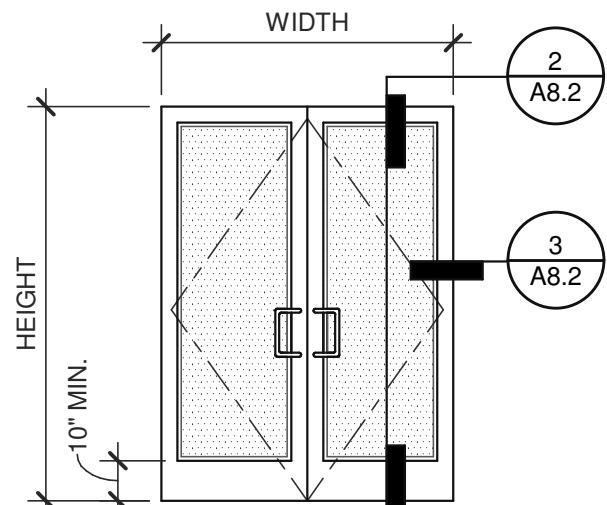
SHEET
A6.3

DOOR TYPES



F1

SOLID FLUSH



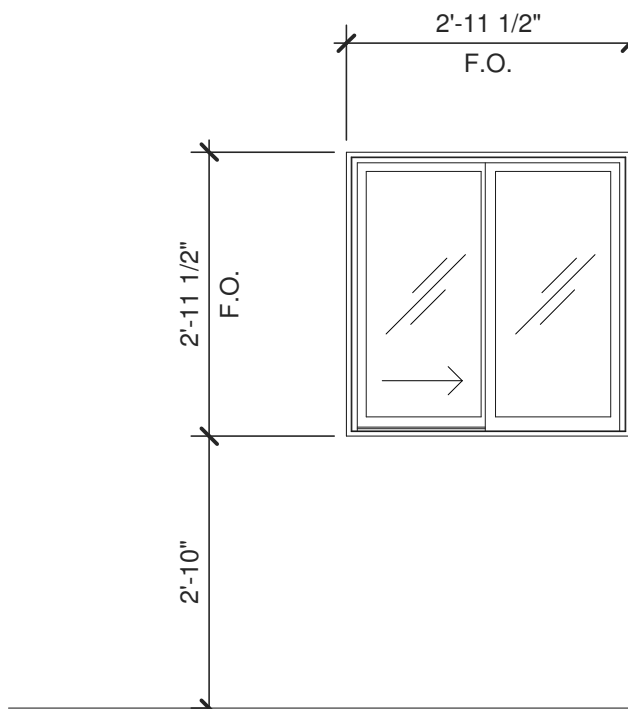
SF2

DOUBLE
STOREFRONT

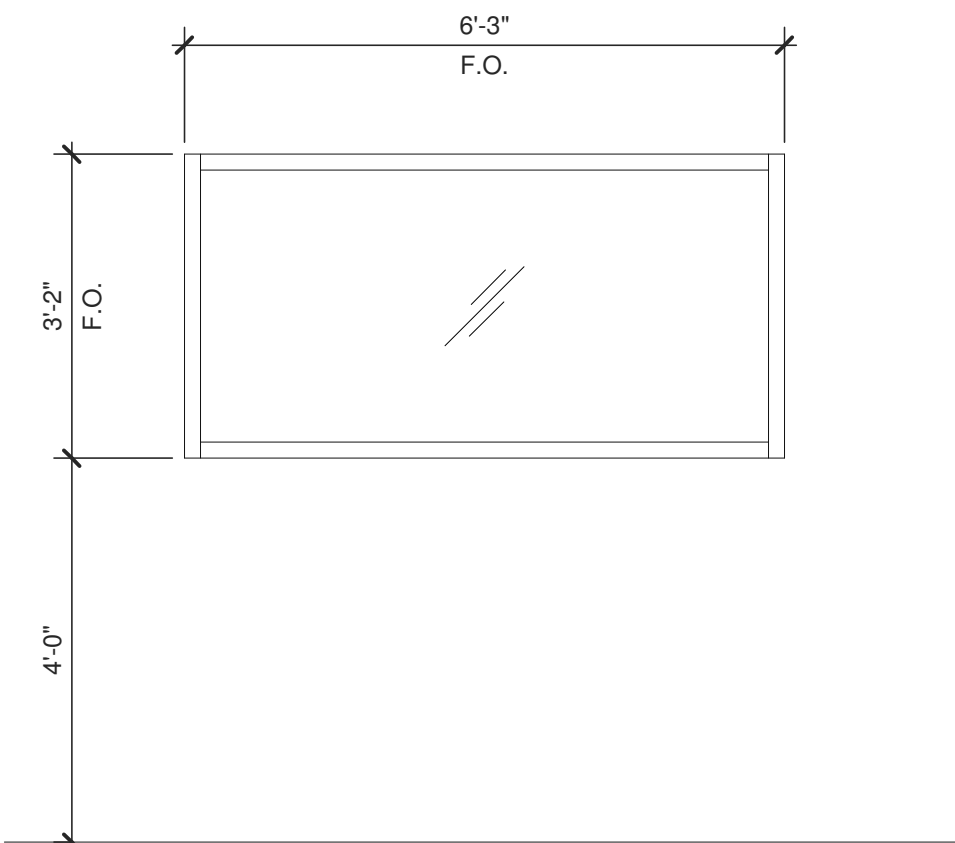
DOOR SCHEDULE

DOOR NO.	ROOM NAME	DOOR						FRAME		FIRE RATING	H/DWARE NO.	CARD READER	COMMENTS
		TYPE	WIDTH	HEIGHT	THICK	MATERIAL	FINISH	MATERIAL	FINISH				
101	SAUCE AND DRINK BAR	F1	3'-0"	7'-0"	1 3/4"	HOLLOW METAL	PAINTED	HOLLOW METAL	PAINTED				
101a	INTERIOR DINNING	E1	3'-6"	7'-0"	1 3/4"	HOLLOW METAL	PAINTED	STEEL	PAINTED				
103	EXTERIOR DINING	SF2	6'-0"	7'-0"	1 3/4"	ALUMINUM STOREFRONT	CLEAR ANODIZED	ALUMINUM STOREFRONT	CLEAR ANODIZED		81		
106	WOMEN'S RESTROOM	F1	3'-0"	7'-0"	1 3/4"	WOOD	STAINED	HOLLOW METAL	PAINTED		84		
107	MEN'S RESTROOM	F1	3'-0"	7'-0"	1 3/4"	WOOD	STAINED	HOLLOW METAL	PAINTED		84		

WINDOW TYPES



 WINDOW TYPE



 WINDOW TYPE

DOOR HARDWARE

B1-STANDARD DOOR - RECEIVING			
Each Assembly to have:			
1EA	CONTINUOUS HINGE	CFM HD1xDOOR HEIGHT	
1EA	EXIT DEVICE	DG1 8804 PSB	US32D
1EA	DOOR CLOSER	351 PS	EN
1EA	KICK PLATE	K1050 10"x2" LDW 4BE CSK	US32D
1EA	DOOR STOP	466	BLACK
1EA	PANIC THRESHOLD	2005AT M5E5SSSS+OPENING WIDTH	EN
1EA	GASKING	2893 AS (HEAD AND JAMBS)	PH
1EA	RAIN GUARD	346C#FRAME WIDTH	PH
1EA	SWEEP	345AND#DOOR WIDTH	PH
1EA	VIEWER	622	STNN
B3-FIRE RISER DOOR			
Each Assembly to have:			
1EA	CONTINUOUS HINGE	CFM HD1xDOOR HEIGHT	
1EA	STOREROOM LOCK	DG1 28 10304 LL	US26D
1EA	DOOR CLOSER	351 PS	EN
1EA	PANIC THRESHOLD	2005AT M5E5SSSS+OPENING WIDTH	PH
1EA	GASKING	303CS (HEAD AND JAMBS)	PH
1EA	RAIN GUARD	346C#FRAME WIDTH	PH
1EA	SWEEP	345AND#DOOR FRAME	PH
B4-RESTROOM DOOR			
Each Assembly to have:			
3EA	HINGE	T42714 4 1/2"x4-12"	US26D
1EA	PUSH PLATE	70E	US 32D
1EA	DOOR PULL	111 MTG-TYPE 1	US32D
1EA	DOOR CLOSER	143 1/2"PS (AS REQUIRED)	EN
1EA	KICK PLATE	K1050 10"x2" LDW 4BE CSK	US32D
1EA	DOOR STOP	406 441H (AS REQUIRED PER APPLICATION)	US32D
1EA	SILENCER	608	R
B5 WOOD SINGLE DOOR -SERVICE VAD W PANIC HARDWARE			
Each Assembly to have:			
2EA	HINGE		
1EA	PULL		
1EA	EXIT DEVICE (EXTERIOR RATED)		
1EA	CLOSER		
1EA	ARMOR PLATE	8x2 LDW FH-CSK .050	EN
			BLACK

HARDWARE LEGEND

MK	McKINNEY
PE	PEMCO
RO	ROCKWOOD MANUFACTURING CO., WWW.ROCKWOODMFG.COM 1.800.458.2424
AD	ADAMS RITE
SA	SARGENT

REMARK KEY NOTES

1. FLOOR STOPS SHALL BE INSTALLED 18" AWAY FROM DOOR FRAME

GENERAL NOTES

SEE SHEET A0.2 FOR GENERAL DOOR NOTES

1. REFER TO THE PARTITION PLAN AND SPECIFICATIONS (IF PROVIDED) FOR ADDITIONAL DOOR INFORMATION.
2. SOLID CORE TO BE LAMINATED WITH _____
3. DOOR FRAMES TO BE WESTERN INTEGRATED TIMELY.
4. HOLLOW METAL DOORS TO BE PAINTED SAME COLOR AS THE ADJACENT WALL FINISH TO BE SEMI-GLOSS. SEE _____ FINISH SCHEDULE FOR ADDITIONAL INFORMATION.
5. PROVIDE RATED WIRE GLASS IN RATED ASSEMBLIES, U.O.N.
6. FIELD VERIFY OPENING WIDTH AND HEIGHT FOR ALL NEW _____ DOORS IN EXISTING OPENINGS.
7. ALL HOLLOW METAL FRAMES TO BE WELDED TYPE, U.O.N.
8. RATED DOORS SHALL HAVE AUTOMATIC CLOSERS AND COMPLY WITH REQUIREMENTS OF ALL GOVERNING CODES & STANDARDS.

DOOR SCHEDULE AND WINDOW SCHEDULE

[illegible]

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SHEET

A7.1

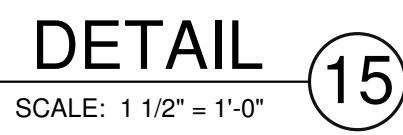
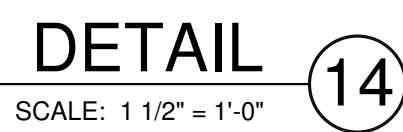


**HAT
CREEK**
Burger Company

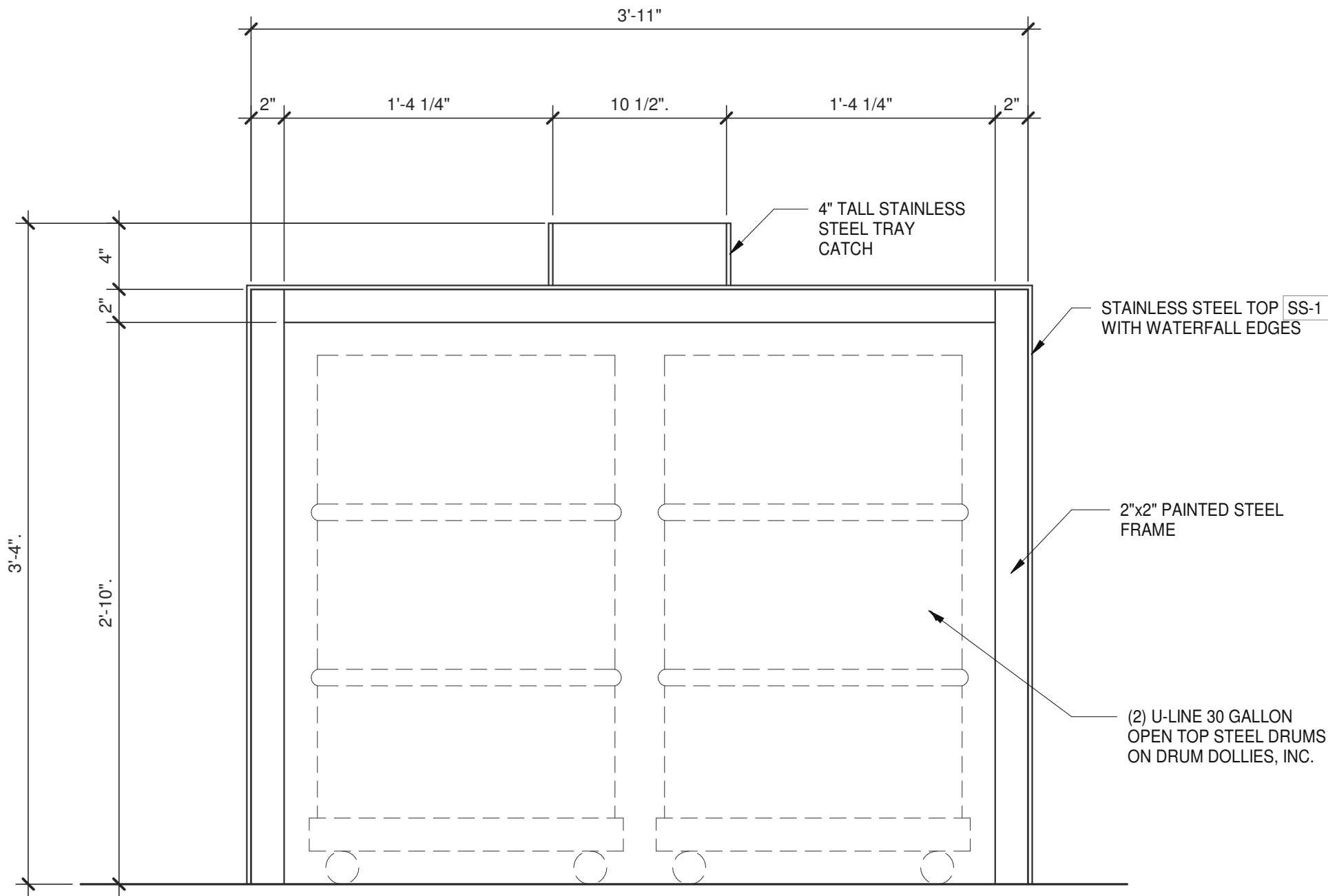
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WEST LAKE HILLS, TEXAS 78746



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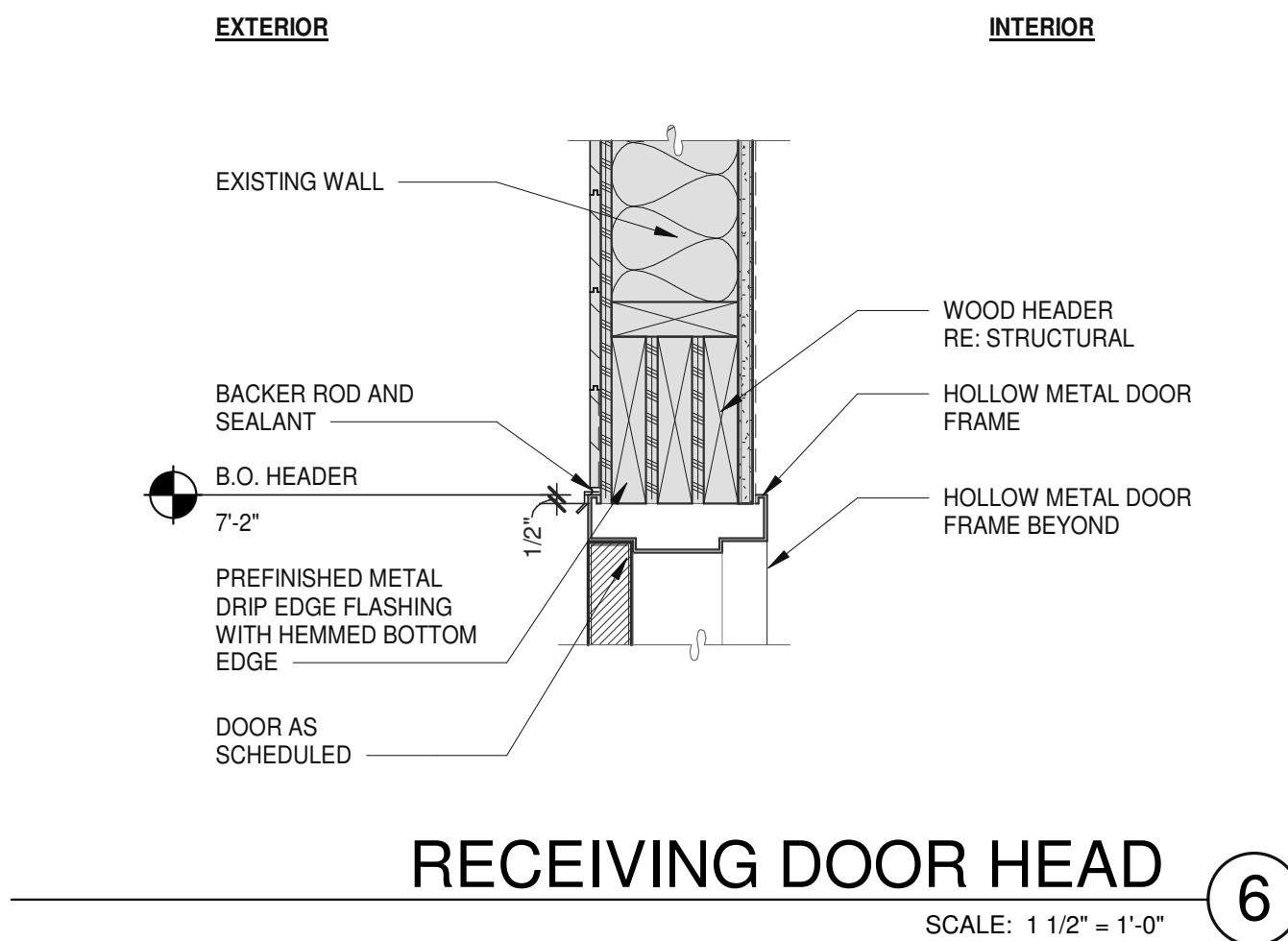
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TRASH CAN ELEVATION

SCALE: 1 1/2" = 1'-0"

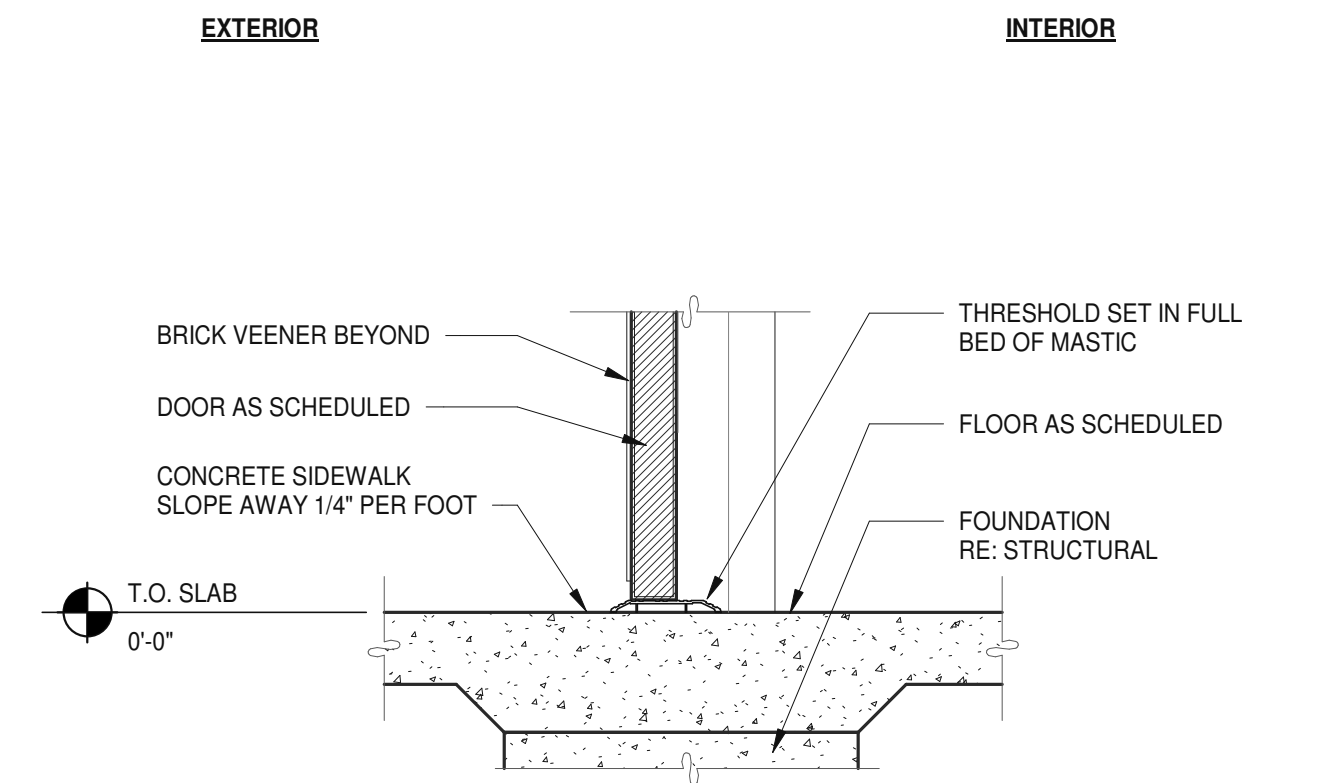
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RECEIVING DOOR HEAD

SCALE: 1 1/2" = 1'-0"

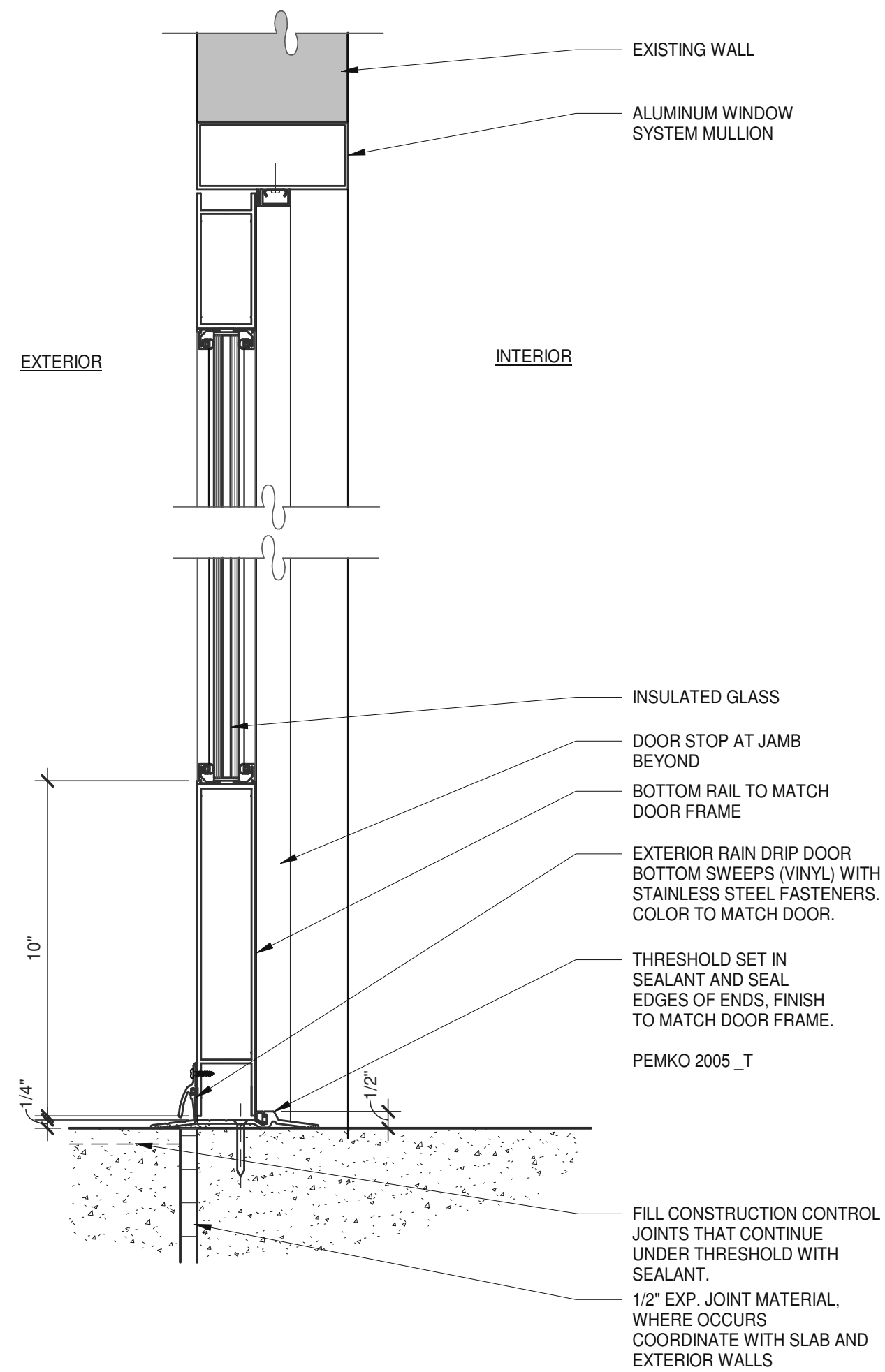
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MECHANICAL DOOR SILL

SCALE: 1 1/2" = 1'-0"

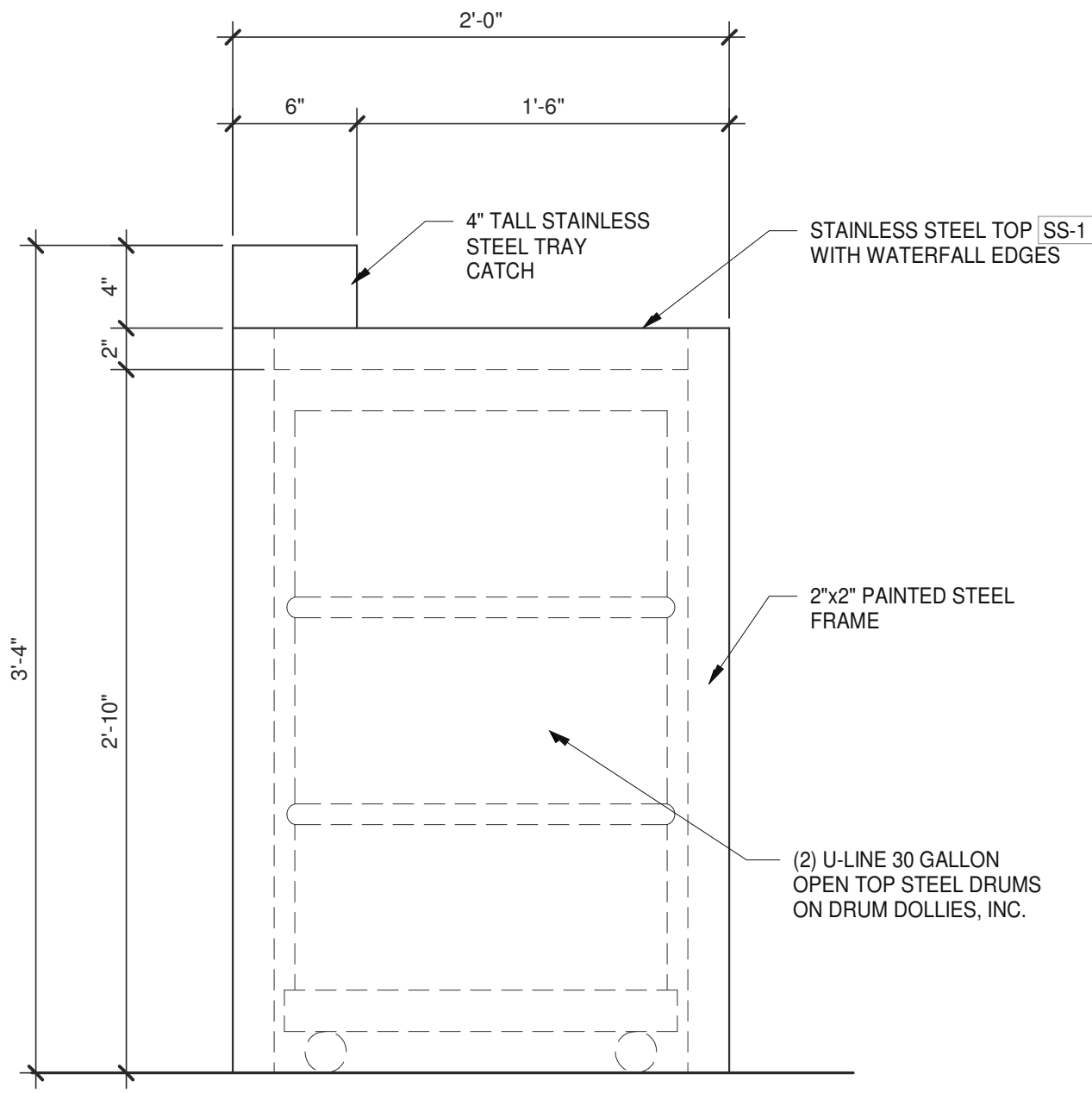
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STOREFRONT DOOR

SCALE: 3" = 1'-0"

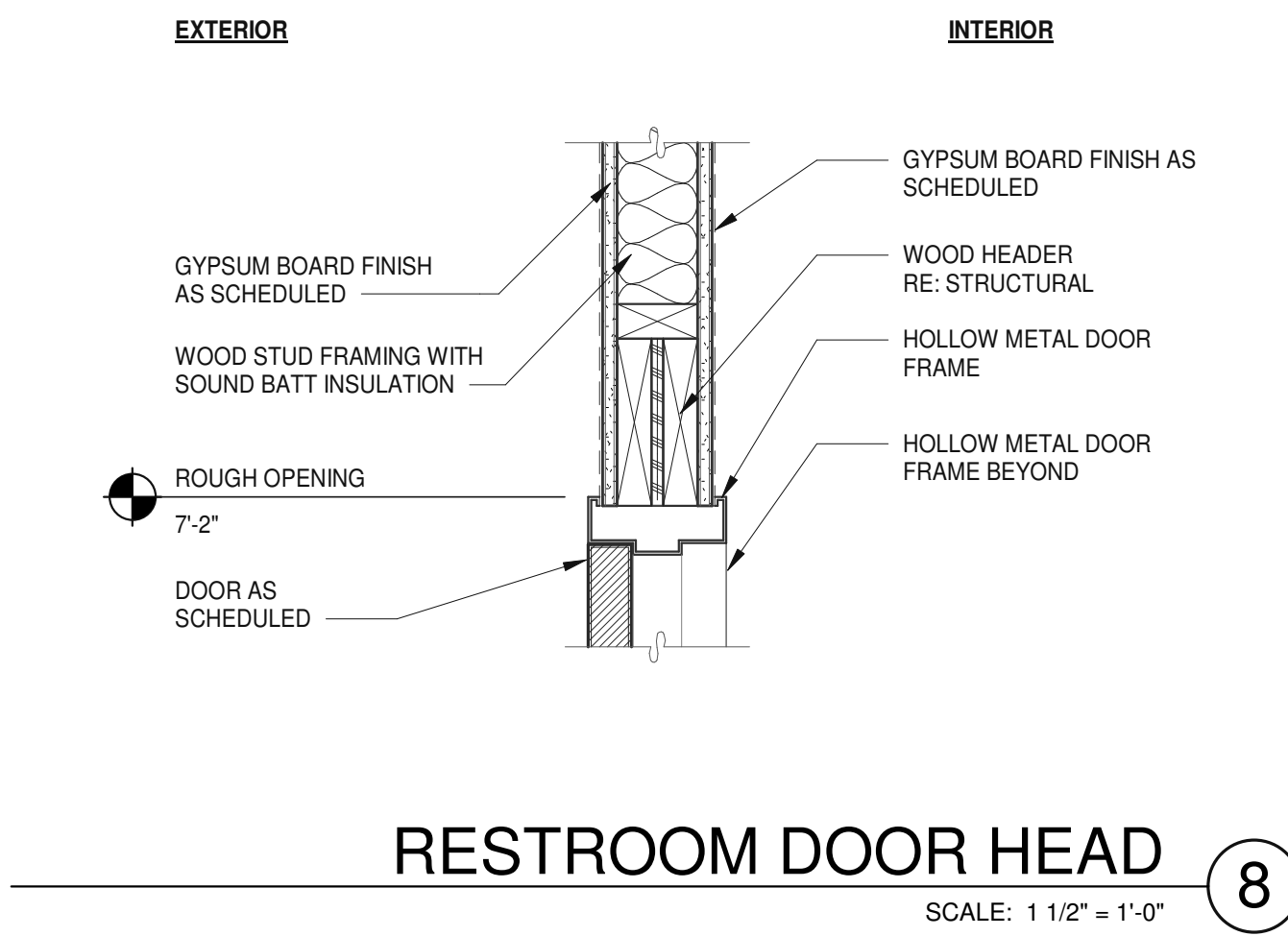
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TRASH CAN ELEVATION

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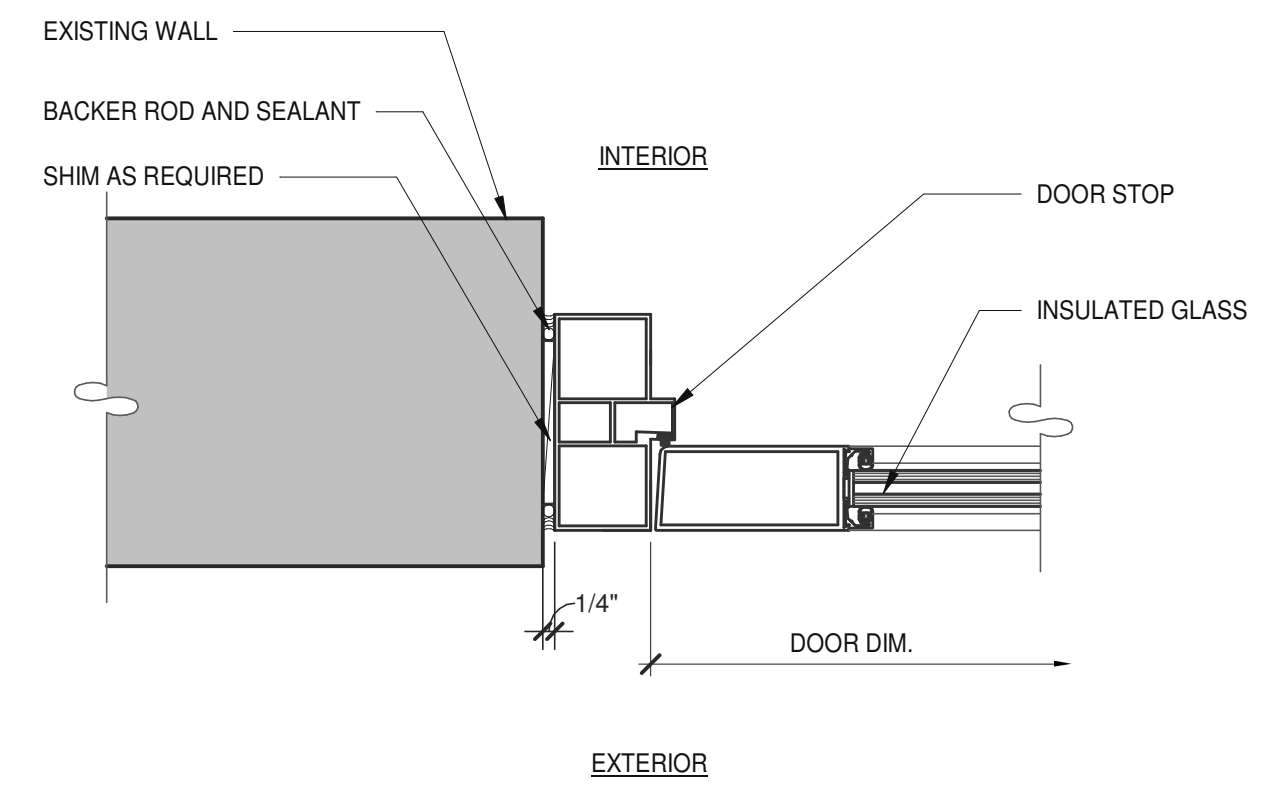
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RESTROOM DOOR HEAD

SCALE: 1 1/2" = 1'-0"

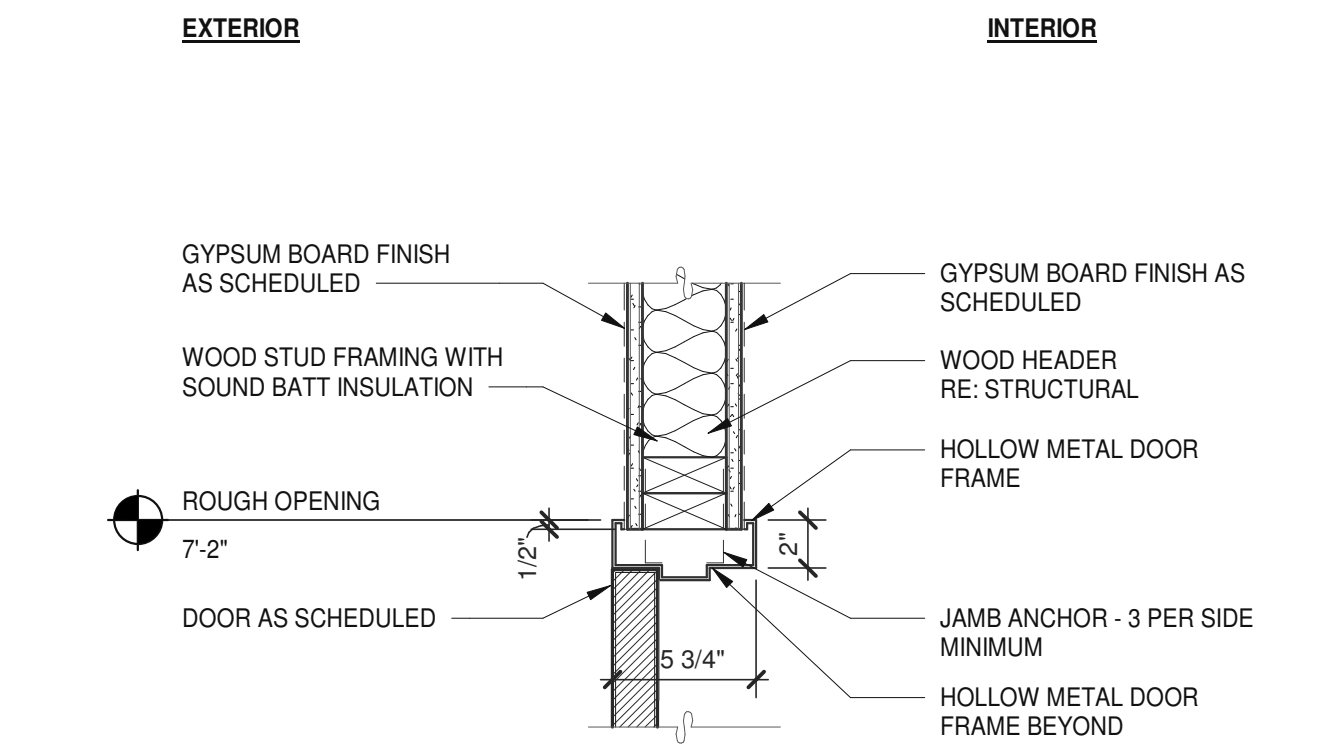
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STOREFRONT DOOR JAMB @ WALL

SCALE: 3" = 1'-0"

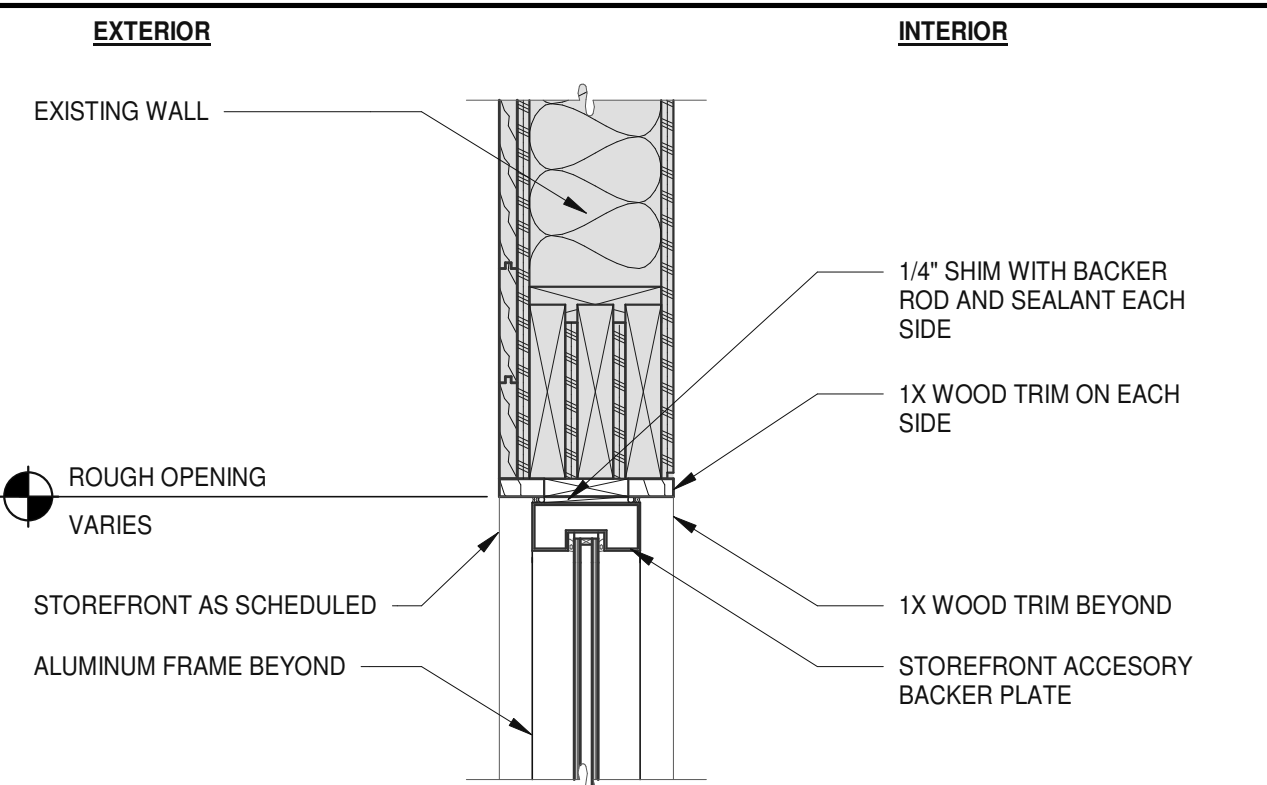
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RESTROOM DOOR JAMB

SCALE: 1 1/2" = 1'-0"

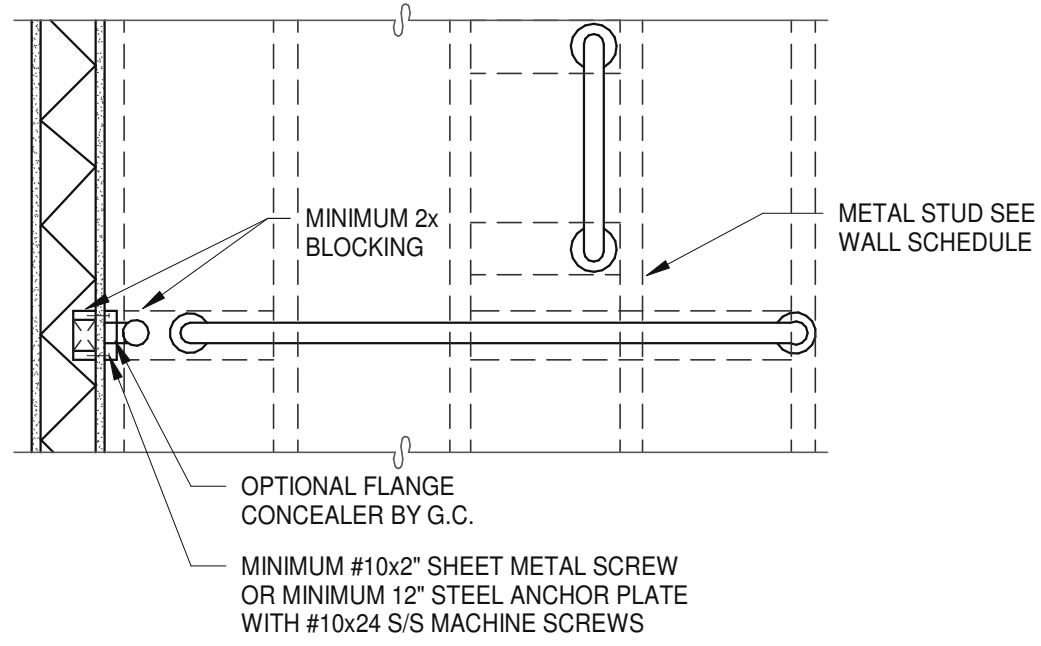
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TRANSOM HEAD (JAMB & SILL SIM)

SCALE: 1 1/2" = 1'-0"

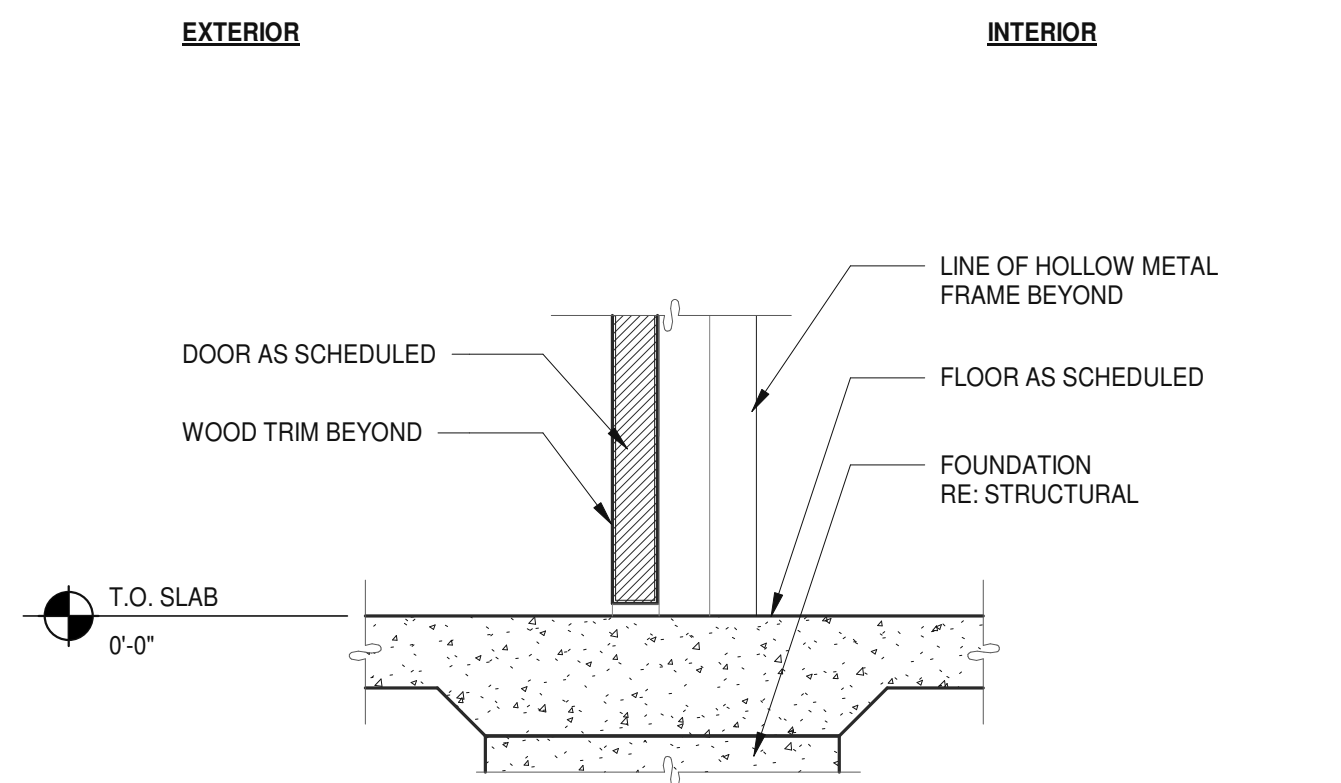
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TYPICAL GRAB BAR BLOCKING DETAIL

SCALE: 3" = 1'-0"

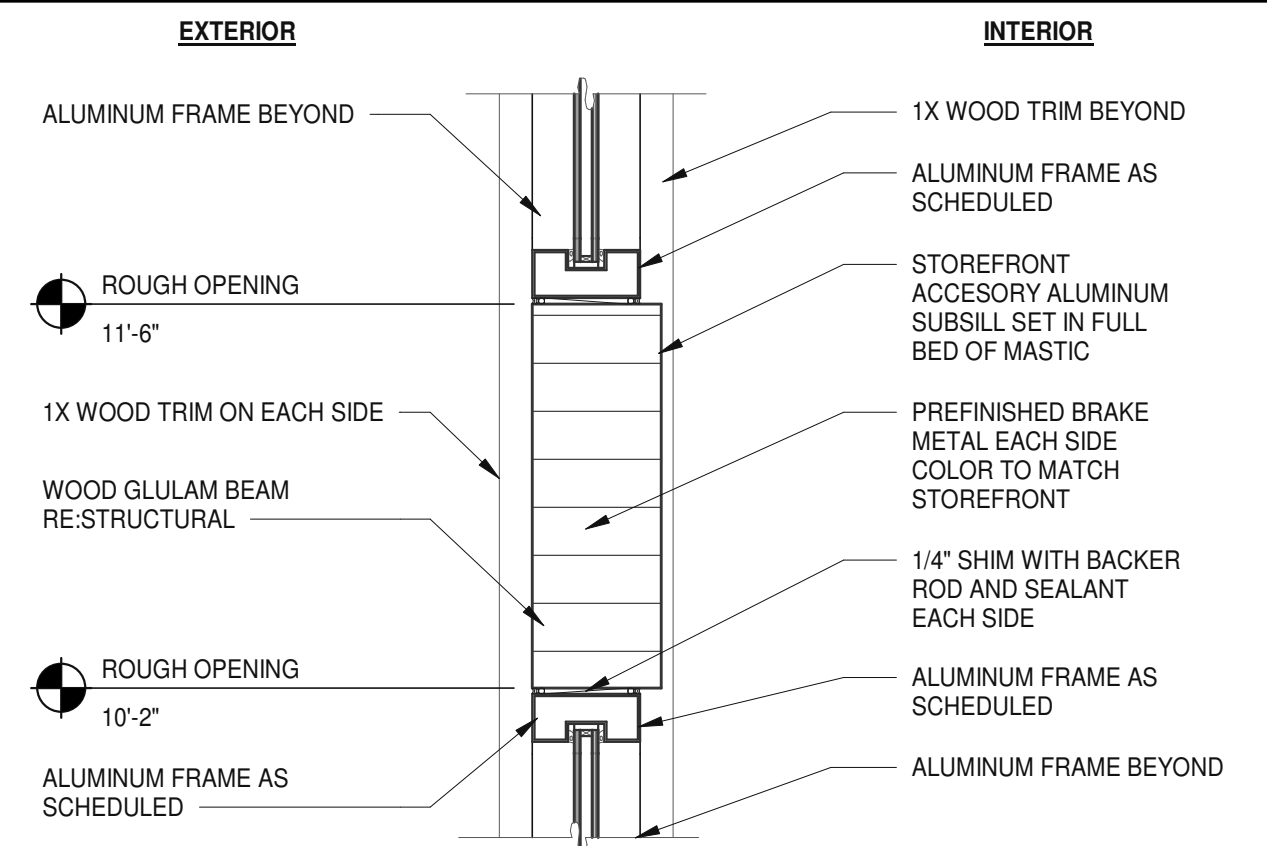
15



RESTROOM DOOR SILL

SCALE: 1 1/2" = 1'-0"

10



HEAD/TRANSOM SILL

SCALE: 1 1/2" = 1'-0"

5

CAUTION: IF THIS SHEET IS NOT 30"x42" IT IS A REDUCED PRINT

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HAT CREEK - WEST LAKE

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WINDOW, DOOR AND INTERIOR DETAILS

DATE: 03/03/2022

ISSUE FOR PERMIT

REMARKS

P.A.P.M.: STEVEN COX

DRAWN BY: C.B.

JOB NO.: DAL21-0063-00

SHEET

A8.2

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HAT CREEK BURGER - PROTOTYPE 1.1

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DIVISION 02 - SITEWORK- CONTINUED

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- A. CONCRETE PEDESTRIAN TRAFFIC SURFACES (WALKS, RAMPS, ETC.)
 - B. CONCRETE VEHICULAR TRAFFIC SURFACES
 - C. CONCRETE CURBS AND GUTTERS
 - D. CONCRETE TRAFFIC APPROACHES
2. REFERENCE PUBLICATIONS AND STANDARDS
- A. GOVERNING AUTHORITY: APPLICABLE STANDARDS AND REGULATIONS OF STATE AND NATIONAL AGENCIES HAVING GOVERNING AUTHORITY OVER THE WORK SPECIFIED IN THIS SECTION SHALL TAKE PRIORITY OVER ITEMS SPECIFIED HEREIN AND SHOWN ON THE DRAWINGS UNLESS THE REQUIREMENTS SET FORTH HEREIN REQUIRE A SUPERIOR QUALITY WORK.
 - B. MATERIAL STANDARDS: AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM)
 - C. CONCRETE STANDARDS: AMERICAN CONCRETE INSTITUTE (ACI) ACI 317 STANDARD SPECIFICATIONS FOR CONCRETE PAVEMENT AND BASES ACI 306 MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE
3. SUBMITTALS
- A. TESTING LABORATORY REPORTS: FURNISH ELECTRONIC COPIES OF THE TEST REPORTS TO THE OWNER INDICATING RESULTS OF THE CYLINDER TEST.
4. BASIC MATERIALS
- A. CONCRETE AND REINFORCING STEEL: AS SPECIFIED IN CAST-IN-PLACE CONCRETE.
5. MISCELLANEOUS MATERIALS
- A. AIR ENTRAINING AGENT: ASTM C626, MASTER BUILDERS OR EQUAL, DISPERSING ADMIXTURE, ASTM C 494, MASTER BUILDERS OR EQUAL.
 - B. CURING COMPOUND: ASTM C 309, NO. 40B BY C. HORN COMPANY OR EQUAL.
 - C. JOINT FILLER: ASTM D1751, FINE-MOLDED FIBER FILLS, UNLESS SHOWN OTHERWISE ON THE DRAWINGS.
 - D. JOINT SEALER: ASTM D 1190, CODE 2351.

6. CONCRETE MIX DESIGN
- A. CONTRACTOR SHALL EMPLOY AND PAY FOR, AS A PART OF THE CONTRACT PRICE, THE SERVICES OF AN OWNER APPROVED INDEPENDENT TESTING LABORATORY TO DETERMINE ACTUAL DESIGN STRENGTH AND SLUMP OF CONCRETE. MINIMUM 3000 PSI AT 28 DAYS. REFER TO STRUCTURAL AND CIVIL DOCUMENTS FOR MORE RESTRICTIVE REQUIREMENTS.

7. INSPECTION OF SUBGRADE
- A. INSPECT SUBGRADGES PREPARED AS SPECIFIED ELSEWHERE IN THESE SPECIFICATIONS AND REPORT ANY DEFICIENCIES TO THE OWNER BEFORE BEGINNING WORK.
 - B. COMMENCEMENT OF WORK SHALL INDICATE ACCEPTANCE OF SUBGRADGES BY THIS CONTRACTOR.

8. CONSTRUCTION
- A. GENERAL: DELIVER AND PLACE CONCRETE AS SPECIFIED IN PLACE CONCRETE.
 - B. CURBS AND GUTTERS:
 - 1. CONFIGURATIONS: CONSTRUCT TO CROSS-SECTIONAL DETAILS SHOWN ON DRAWINGS AND AT INDICATED LOCATIONS. CURBS MAY BE FULLY FORMED OR PULLED AND TROWELED TO CONFORM TO THE DETAILS SHOWN ON THE DRAWINGS.
 - 2. REINFORCEMENT: REINFORCE AS INDICATED ON THE DRAWINGS WITH CONTINUOUS REINFORCING BARS LAPPED 30 BAR DIAMETERS AND SECURELY TIED AT ALL SPLICES. METAL CHAIRS SHALL BE USED TO HOLD THE REINFORCING STEEL IN THE PROPER PLANE.
 - 3. EXPANSION JOINTS: CONSTRUCT 1/2" WIDE EXPANSION JOINTS WITH JOINT FILLER ACROSS LENGTHS OF CURB AT ALL TANGENT POINTS AND AT NOT MORE THAN TWENTY FOOT INTERVALS. CONSTRUCT ONE INCH WIDE EXPANSION JOINTS WITH JOINT FILLER BETWEEN CURBS AND CONCRETE PAVING. ALL FIXED OBJECTS, SUCH AS BUILDINGS, POLES, PIPES, CATCH BASINS, ETC., WITHIN OR ABUTTING THE CONCRETE SHALL BE SEPARATED FROM THE CONCRETE BY EXPANSION JOINTS.
 - 4. FINISHING: FINISH SURFACES WITH DENSE UNIFORM TEXTURE EQUIV TO BURLAP DRAG AND CROSS-SMOOTH WITH 1/4" DEEP CROSS JOINTS AT TEN FOOT INTERVALS WITH EDGES SMOOTHED 1/8".
 - 5. JOINTS: FILL EXPANSION JOINTS WITH JOINT FILLER EXCEPT FOR SPACE 3/4" DEEP AT SURFACE. AFTER CONCRETE HAS SET, CLEAN THE OPEN JOINT ABOVE FILLER AND FILL WITH JOINT SEALER IN ACCORDANCE WITH INSTRUCTIONS OF SEALER MANUFACTURER.

- C. TRAFFIC APPROACHES AND VEHICULAR TRAFFIC SURFACES:
 - 1. CONFIGURATION: CONSTRUCT TO CROSS-SECTIONAL DETAILS SHOWN ON DRAWINGS AND AT INDICATED LOCATIONS.
 - 2. REINFORCEMENT: REINFORCE WITH #3 MINIMUM SIZE REINFORCING BARS 18 INCHES ON CENTER BOTH WAYS, UNLESS OTHERWISE INDICATED OR NOTED ON THE DRAWINGS.
 - 3. EXPANSION AND CONSTRUCTION JOINTS: AT INTENTIONAL POINTS FOR STORAGE OF CONCRETE PLACING, USE EXPANSION JOINTS AT UNINTENTIONAL POINTS OF STOPPAGE OF CONCRETE PLACING, USE CONTINUATION OF REINFORCING THROUGH JOINTS. CONSTRUCT 1/2 INCH WIDE EXPANSION JOINTS WITH JOINT FILLER AT LOCATIONS SHOWN ON THE DRAWINGS OR AT NOT MORE THAN TWENTY FOOT INTERVALS EACH WAY. IF NOT SHOWN, CONSTRUCT 1/2 INCH WIDE EXPANSION JOINTS WITH JOINT FILLER BETWEEN CURBS AND CONCRETE PAVING. ALL FIXED OBJECTS, SUCH AS BUILDINGS, POLES, PIPES, CATCH BASINS, ETC., WITHIN OR ABUTTING THE CONCRETE SHALL BE SEPARATED FROM THE CONCRETE BY EXPANSION JOINTS.
 - 4. JOINT FILLING AND SEALING: FILL EXPANSION JOINTS WITH JOINT FILLER EXCEPT FOR SPACE 3/4" DEEP AT SURFACE. AFTER CONCRETE HAS SET, CLEAN THE OPEN JOINT ABOVE FILLER AND FILL WITH JOINT SEALER IN ACCORDANCE WITH INSTRUCTIONS OF SEALER MANUFACTURER.
 - 5. FINISHING: VIBRATE, SCREED AND FLOAT CONCRETE TO LEVEL AND TEST THE SURFACE, WHICH SHALL NOT VARY OVER 1/4" IN TEN FEET WHEN TESTED WITH TEN FOOT STRAIGHT EDGE. FINISH SURFACE TO GRITTY TEXTURE WITH BURLAP DRAG OR STRAIGHT CONTINUOUS STROKES WITH A STIFF BRISTLE PUSH BROOM. FINISH ALL EDGES SMOOTH WITH 1/8" OR 1/4" RADIUS.

- D. WALKS:
- 1. CONFIGURATIONS: CONSTRUCT TO CROSS-SECTIONAL DETAILS SHOWN ON DRAWINGS AND AT INDICATED LOCATIONS.
 - 2. SAND COURSE: CONCRETE SHALL BE PLACED OVER A SAND COURSE PLACED ON THE STABILIZED SUBGRADE AS SHOWN ON THE DRAWINGS OR A MINIMUM OF 1" THICK IF NOT SHOWN ON THE DRAWINGS.
 - 3. REINFORCING: REINFORCE WITH 6 X 6 X W/4, W.W.F. MINIMUM REINFORCING UNLESS OTHERWISE INDICATED OR NOTED ON THE DRAWINGS.
 - 4. EXPANSION JOINTS: CONSTRUCT EXPANSION JOINTS AS DETAILED IN LOCATIONS SHOWN ON THE DRAWINGS.
 - 5. FINISHING: FINISH SURFACES NOT NOTED ON THE DRAWINGS TO BE FINISHED OTHERWISE TO A "LIGHT BROOM" OR "BURLAP DRAG" GRITTY SURFACE. TOOL ALL JOINTS AND ALL EDGES TO PROVIDE A SMOOTH BORDER TO EACH SECTION OR DIVISION OF THE WALK. FINISH ALL VERTICAL SURFACES IN A MANNER THAT LEAVES THE EXPOSED SURFACES FREE OF "HONEYCOMBS" AND FORM MARKS. ANY DAMAGED SURFACES SHALL BE REPAIRED AND STONE-BROUGHT TO MATCH ADJACENT FINISHED SURFACES OR REPLACED AT OWNER'S CONSTRUCTION MANAGERS DISCRETION.

9. CURING CONCRETE
- A. APPLY A WHITE PIGMENTED TYPE CURING COMPOUND AT A UNIFORM RATE OF APPROXIMATELY 200 SQ. FT. / GALLON, OR AS RECOMMENDED BY CURING COMPOUND MANUFACTURER AS SOON AS THE FINISHING OPERATION HAS BEEN COMPLETED AND THE CONCRETE HAS LOST ITS WATER SHEEN. THE CURING PROCEDURE MUST PROTECT THE CONCRETE, INCLUDING ALL EXPOSED SURFACES AGAINST LOSS OF MOISTURE AND RAPID TEMPERATURE CHANGE FOR A PERIOD OF NOT LESS THAN FOUR DAYS FROM THE BEGINNING OF THE CURING OPERATION AND WITHOUT DAMAGE TO, OR MARKING OF THE FINISHED CONCRETE SURFACE. TRAFFIC SHALL NOT BE ALLOWED ON FINISHED CONCRETE FOR A MINIMUM PERIOD OF SEVEN DAYS.

10. TESTING
- A. INDEPENDENT TESTING LABORATORY: OWNER SHALL EMPLOY AND PAY FOR THE SERVICES OF AN INDEPENDENT TESTING LABORATORY TO PERFORM CONCRETE CYLINDER TESTING. TEST CYLINDERS SHALL BE TAKEN AND CURED BY THE CONTRACTOR AND TESTED BY THE TESTING LABORATORY FOR EACH DIFFERENT CLASS OF CONCRETE POURED IN ANY ONE DAY. CYLINDERS SHALL BE TAKEN FROM EACH CYLINDER WITH ASTM C31, AND CURED AND TESTED IN ACCORDANCE WITH ASTM C39. ONE SET OF THREE CYLINDERS IS REQUIRED FOR EACH 50 CUBIC YARDS OF CONCRETE OR LESS. PLACED IN ANY ONE DAY. ONE CYLINDER SHALL BE TESTED AT 7 DAYS. ONE CYLINDER SHALL BE TESTED AT 28 DAYS AND ONE CYLINDER SHALL BE HELD AS A SPARE FROM EACH SET OF THREE CYLINDERS AS SPECIFIED ABOVE.
 - B. LABORATORY TESTS:
 - 1. SLUMP TESTS: SLUMP TESTS SHALL BE TAKEN BY THE CONTRACTOR WHEN CYLINDERS ARE TAKEN, AND SHALL SHOW MAXIMUM SLUMP 5" AND MINIMUM SLUMP WITHIN 2".
 - 2. AIR ENTRAINMENT: AIR CONTENT BY VOLUME: 5% TO 7%, BASED ON MEASUREMENTS MADE IN CONCRETE MIXTURES AT POINT OF DISCHARGE AT JOB SITE AT TIME SLUMP TESTS ARE MADE. AIR CONTENT BY VOLUME SHALL BE DETERMINED IN ACCORD WITH ASTM C231.

11. CLEANING CONCRETE
- A. CONCRETE APPROACHES, SIDEWALKS AND RELATED WORK SHALL BE HOSED DOWN WITH WATER, SCRUBBED WITH FIBER BRUSHES AND APPROPRIATE CLEANER, ALLOWED TO DRY AND BE LEFT BROOM CLEAN AND IN CONDITION ACCEPTABLE TO THE OWNER. DO NOT POWER WASH SIDEWALKS.

SECTION 02511 - "ASPHALTIC" CONCRETE PAVING

1. SECTION INCLUDES
- A. PAVING BASE
 - B. BASE COURSE AND SURFACE COURSE
2. REFERENCE STANDARDS
- A. AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS (AASHTO)
 - B. AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM)
 - C. GOVERNING AUTHORITY: APPLICABLE PUBLICATIONS OF GOVERNING BODIES HAVING JURISDICTION OVER THE WORK
3. SUBMITTALS
- A. SUBMIT DESIGN MIX TEST REPORTS TO OWNER PER SUBMITTAL REQUIREMENTS.

4. MATERIALS
- A. SUB-BASE: IF REQUIRED: AS SHOWN ON THE SITE PLAN (SP) DRAWINGS AND SPECIFIED IN OTHER SECTIONS OF THESE SPECIFICATIONS
 - B. BASE COURSE (BINDER): UNLESS OTHERWISE SHOWN ON THE DRAWINGS, UNIFORM MIX OF COARSE AGGREGATE AND ASPHALT AS DETERMINED BY "DESIGN MIX"
 - C. SURFACE COURSE: UNLESS OTHERWISE SHOWN ON THE DRAWINGS, UNIFORM MIX OF COARSE AGGREGATE AND FINE AGGREGATE (PEA GRAVEL WILL NOT BE ACCEPTABLE), MINERAL FILLER AND ASPHALT AS DETERMINED BY "DESIGN MIX"
 - D. CONCRETE CURBS AND GUTTERS: CONTRACTOR EMPLOY AND PAY FOR THE SERVICES OF AN OWNER APPROVED INDEPENDENT TESTING LABORATORY TO DETERMINE DESIGN MIXES FOR BASE AND SURFACE COURSES, INCLUDING ASPHALT BITUMEN CONTENT, ASTM D272, LATEST EDITION, ENTITLED, "QUANTITATIVE EXTRACTION OF BITUMEN FROM BITUMINOUS PAVING MIXTURES"
5. GRADE CONTROL
- A. ESTABLISH AND MAINTAIN LINES AND GRADES SHOWN ON DRAWINGS BY MEANS OF LINE AND GRADE STAKES.
6. TRANSPORTATION
- A. TRAFFIC PAVING MIXES FROM APPROVED MIXING PLANT TO SITE IN TIGHT VEHICLES WITH METAL BODIES PREVIOUSLY CLEANED OF FOREIGN MATERIALS. VEHICLES SHALL BE SUTRIALLY INSULATED TO AVOID HEAT LOSSES. COVER EACH LOAD TO PREVENT COOLING AND LOSS OF INGREDIENTS.

7. PLACING
- A. GENERAL: THICKNESS SHOWN ON CIVIL DRAWINGS, UNLESS OTHERWISE SHOWN ON THE DRAWINGS, PLACE ASPHALTIC CONCRETE IN TWO COURSES: FIRST A COARSE GRADED BASE COURSE, AND SECOND A FINE GRADED SURFACE COURSE. APPLY BASE COURSE TO PREPARED SUB-BASE, WHEN AVAILABLE, OR PAVEMENT WHICH HAS BEEN PRIMED WITH ASPHALT MC-1, APPLICATION TEMPERATURE 50 TO 120 DEGREES F, AT A RATE OF 0.15 TO 0.40 GAL/SQ YD, APPLY SURFACE COURSE TO BASE COURSE TO WHICH HAS BEEN APPLIED A TACK COAT OF ASPHALT FC-2, APPLICATION TEMPERATURE 100 TO 175 DEGREES F, AT RATE OF 0.05 TO 0.25 GAL/SQ YD, PLACE EACH COURSE UNDER TEMPERATURE CONDITIONS OF 40 TO 50 DEGREES F.
 - B. MEANS: DUMP AND SPREAD MIXTURE ON PRIME BASE WITH SPREADING AND FINISHING MACHINE, SO THAT AFTER COMPACTION, SURFACE WILL BE SMOOTH, OF UNIFORM DENSITY AND MEET REQUIREMENTS FOR TYPICAL CROSS-SECTION SHOWN, OTHER PLACING MEANS MAY BE PROPOSED.
 - C. TIME AND TEMPERATURE: PLACE AND INITIALLY ROLL DURING DAYLIGHT HOURS. MIXTURE PLACING TEMPERATURE: BETWEEN 225 AND 325 DEGREES F.
 - D. PROTECTION OF CURBS AND GUTTERS: PREVENT SPATTERING OF ADJACENT CURBS, GUTTER, CONCRETE PAVING AND STRUCTURES. HAND SPREADING MAY BE EMPLOYED WHERE MACHINE IS IMPRACTICAL.
 - E. FINISH GRADINGS: APPROXIMATELY 6 INCHES BELOW ADJACENT CONCRETE SIDEWALKS, AND/OR CURBS, EXCEPT AS SPECIFICALLY SHOWN OTHERWISE ON THE DRAWINGS, TRUE TO GRADES SHOWN AND STRAIGHT WITHIN 1/4 INCH IN 10 FEET WHEN CHECKED WITH A STRAIGHT EDGE. NO "BIRD BATHS" WILL BE ALLOWED.
8. ROLLING
- A. GENERAL: AFTER ROLLING WITH MEDIUM WEIGHT STEEL WHEELED ROLLER, ROLL WITH PNEUMATIC, THREE WHEEL, OR TANDEM ROLLERS LONGITUINALLY AT SIDES AND PROCEED TOWARD CENTER OF PAVEMENT, OVERLAPPING ON SUCCESSIVE TRIPS BY AT LEAST 1/2 WHEEL WIDTH OF REAR WHEELS. ALTERNATE TRIPS OF ROLLER SHALL BE SLIGHTLY DIFFERENT IN LENGTH.
 - B. COMPRESSION AND ROLLER MARKS: ROLL UNTIL NO FURTHER COMPRESSION CAN BE OBTAINED AND ROLLER MARKS ARE ELIMINATED. IF REQUIRED, ROLL DIAGONALLY ACROSS EACH DIRECTION WITH TANDEM ROLLER WITH SECOND DIAGONAL ROLLING CROSSING LINE OF FIRST ROLLING.
 - C. THICKNESS TEST: DETERMINE BY TEST BORINGS. MAKE ONE TEST FOR EACH 5,000 SQ FT OF PAVING SURFACE. IF AVERAGE THICKNESS IS DEFICIENT BY NO MORE THAN 1/4 INCH, AND NO INDIVIDUAL THICKNESS IS DEFICIENT BY MORE THAN 5/8 INCH, DEFICIENCY SHALL BE HELD TO MEET REQUIREMENTS. IF AVERAGE THICKNESS IS DEFICIENT BY MORE THAN 1/4 INCH, OR IF ANY INDIVIDUAL THICKNESS DETERMINATION IS DEFICIENT BY MORE THAN 5/8 INCH, PAVEMENT THICKNESS WILL BE HELD TO NOT MEET REQUIREMENTS. DEFICIENT AREAS SHALL BE DEFINED, REMOVED AND REPLACED, OR ADJUSTED TO DESIGN THICKNESS BY METHODS ACCEPTABLE TO THE OWNER.

SECTION 02580 - PAVEMENT MARKING

1. GENERAL
- A. MARKING PAINT SHALL CONFORM TO AASHTO M248 (CHLORINATED RUBBER-ALKYD). TYPE II APPLICATIONS OF A WIDE STRIPES (OR SYMBOLS AS INDICATED) IN ONE COAT OF 125 SQ. FT. PER GALLON. COLOR OF PAINT SHALL BE WHITE. WHEN CONCRETING IS COMPLETED, IT SHALL BE CARRIED ON AS A CONTINUOUS OPERATION UNTIL THE PLACING OF THE PANEL OR SECTION IS COMPLETED.
 - B. CONCRETE SHALL BE MAINTAINED IN A MOIST CONDITION FOR SEVEN (7) DAYS AFTER PLACING BY ONE OF THE FOLLOWING METHODS:
 - a. WET COVERINGS
 - b. SPRAYING
 - c. CURING COMPOUND
 - D. CURING METHOD SHALL BE COMPATIBLE WITH FLOOR COATINGS OR COVERINGS.
 - E. ASPHALT FORMULA MAY BE USED IN LIEU OF CURING COMPOUND (PART 3). THIS MATERIAL SHALL BE APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
 - F. ADEQUATE PRECAUTIONS SHALL BE TAKEN FOR COLD WEATHER OR HOT WEATHER CONCRETING. (ACI 308 OR ACI 309)

SECTION 02630 - ORNAMENTAL FENCES AND GATES

1. MATERIALS
- A. WOOD RAIL FENCE:
 - B. COMPONENTS: ALL FASTENERS SHALL BE STAINLESS STEEL, WITH A ZINC DICHROMATE COATING FOR ENHANCED CORROSION RESISTANCE. PHILLIPS HEAD SCREWS SHALL BE USED TO ATTACH THE RAILS TO THE POSTS.
 - C. ACCESSORIES: ALL SYSTEMS USED FOR POST CAPS, RAILBASE ATTACHMENTS AND LATCHES SHALL BE MADE FORM EITHER ZINC OR ALUMINUM. ONLY STAINLESS STEEL FASTENERS MAY BE USED WITH THESE ACCESSORIES. ALL ACCESSORIES SHALL BE PAINTED TO MATCH TO MATCH THE FENCE.
2. PRODUCTS
- A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY AVAILABLE MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK WHICH MEET THE FOLLOWING MINIMUM REQUIREMENTS.
 - B. COMPONENTS:
 - 1. END, CORNER, LINE AND GATE POSTS: 4 BY 4 INCHES NOMINAL CEDAR
 - 2. HORIZONTAL RAILS OR FILLING: 2 BY 4 INCHES NOMINAL CEDAR (6 RAILS)
 - 3. POST SPACING: 4 FEET 0 INCHES ON CENTER
 - 4. POST DEPTH: 18" DEEP TO 12" DIAMETER CONCRETE ENCASED

3. CONSTRUCTION
- A. FENCE: FENCING SHALL BE MANUFACTURED ACCORDING TO THE INDUSTRY STANDARD APPLIED OR ALLOWED TO PUDDLE OR COLLECT IN JOINT INDENTATIONS.
 - B. GATES: GATES SHALL BE MANUFACTURED ACCORDING TO HEAVY DUTY USE METHODS. INSTALL GATES: LEVEL, PLUMB, AND SECURE FOR FULL OPENING WITHOUT INTERFERENCE. ATTACH HARDWARE USING TAMP-RESISTANT OR CONCAVED MEANS. INSTALL GROUND SET ITEMS IN CONCRETE FOR ANCHORAGE. ANCELLED HARDWARE FOR SMOOTH OPERATION AND LUBRICATE WHERE NECESSARY.
 - C. STRENGTH: ASSEMBLED SECTIONS MUST BE ABLE TO SUPPORT A MINIMUM LOAD OF 400 POUNDS AT THE MID-POINT OF ANY HORIZONTAL RAIL WITHOUT PERMANENT DEFORMATION.

SECTION 02854 - PARKING BUMPERS (WHEEL STOPS)

1. SECTION INCLUDES
- A. PARKING BUMPER (WHEEL STOP)
2. WHEEL STOPS
- A. PRECAST CONCRETE, SEMI. CIRCULAR OR REVEALED SQUARE IN CROSS SECTION, 8' 0" LONG X 6" HIGH X 2" WIDE, WITH HOLES FOR THREE DOWELS CAST THROUGH EACH UNIT, AND TWO 6 INCH X 3/4 INCH DRAINAGE SLOTS.
3. DOWELS
- A. NOT LESS THAN 2 - 3/4" ROUND X 12" LONG (MINIMUM) STEEL DOWELS AS RECOMMENDED BY WHEEL STOP MANUFACTURER.
4. GENERAL
- A. INSTALL WHEEL STOPS IN LOCATIONS AND IN ACCORD WITH DETAILS SHOWN ON THE DRAWINGS.
5. INSTALLATION
- A. COUNTERSINK STEEL DOWELS TO A POINT 1/2" TO 3/4" BELOW THE TOP SURFACE OF THE WHEEL STOP AND SET IN SUCH A MANNER AS TO AVOID CHIPPING OR CRACKING THE CONCRETE DURING INSTALLATION, AND SEAL REAR, WITH SILICONE GRAFTING FLUSH.
6. CLEAN UP
- A. UPON COMPLETION OF WORK OF THIS SECTION, REMOVE RELATED DEBRIS FROM PREMISES.

DIVISION 03 - CONCRETE

SECTION 03300 CAST-IN-PLACE CONCRETE

1. SCOPE
- A. THE CONTRACTOR SHALL FURNISH LABOR, MATERIALS AND EQUIPMENT NECESSARY TO INSTALL ALL ITEMS OF CAST-IN-PLACE CONCRETE, AND ALL NECESSARY ITEMS AS SHOWN ON THE DRAWINGS, INCLUDING ANCHOR BOLTS FOR COLUMNS, ITEMS SPECIFIED HEREIN, AND ITEMS REQUIRED FOR A COMPLETE INSTALLATION.
2. REFERENCES:
- A. THE ACI "MANUAL OF CONCRETE PRACTICE" AND THE CRSI "MANUAL OF STANDARD PRACTICE" SHALL APPLY UNLESS MODIFIED HEREIN.
3. MATERIALS
- A. CEMENT: THE CEMENT USED SHALL BE PORTLAND CEMENT, CONFORMING TO ASTM C 150, TYPE I, ONE BRAND SHALL BE USED FOR THE COMPLETE PROJECT.
 - B. HIGH EARLY STRENGTH CONCRETE MAY BE USED AT GENERAL CONTRACTORS DISCRETION.
 - C. AGGREGATES:
 - 1. COARSE AGGREGATE SHALL CONFORM TO ASTM C-33 SPECIFICATIONS WITH MAXIMUM SIZE 3/4" IN. THE MATERIAL SHALL CONSIST OF CRUSHED STONE, GRAVEL, OR OTHER HARD, STRONG, DURABLE, UNCOATED PIECES.
 - 2. FINE AGGREGATE SHALL CONFORM TO ASTM C-33, AND MAY BE NATURAL SAND OR MANUFACTURED SAND.
 - D. ADMIXTURES:
 - 1. AIR ENTRAINMENT AGENTS CONFORMING TO ASTM C-260 SHALL BE USED IN CONCRETE EXPOSED TO WEATHER, AND MAY BE USED IN ALL CONCRETE ON THIS PROJECT. AIR ENTRAINMENT ADMIXTURES SHALL BE USED TO PRODUCE 3% TO 6% AIR BY VOLUME IN THE CONCRETE.
 - 2. EQUALIZER ADMIXTURE (SUPER PLASTICIZER) MEETING REQUIREMENTS OF ASTM C 494 MAY BE USED AT THE DISCRETION OF THE CONTRACTOR.
- E. CONCRETE SEALERS:
- 1. MATERIALS:
 - a. BASE SEALER: MICRO GUARD CONCRETE CLEAR WATERPROOFING SEALER, # 40708.
 - b. SURFACE SEALER: MICRO GUARD HARD TILE CLEAR MATTE FINISH TREATMENT, #40708.
 - c. ADMIXTURE: MICRO GRIP ANTI-SKID FLOOR MEDIA ADDITIVE, # A05-050.
 - F. WATER: WATER USED FOR MIXING OF CONCRETE SHALL BE POTABLE.
- G. REINFORCING BARS: ALL REINFORCING BARS SHALL CONFORM TO ASTM A615 - GRADE 60, ALL BARS SHALL BE FREE OF LOOSE AND/OR EXCESSIVE RUST OR OTHER MATERIALS WHICH WILL PREVENT BOND.
- H. EXPANSION JOINT MATERIAL: EXPANSION JOINT MATERIAL SHALL CONFORM TO ASTM D1751.
- I. MILL TESTS: REPORTS MAY BE REQUIRED ON ANY AND ALL MATERIAL AT THE ENGINEER'S DISCRETION AND DIRECTION. COSTS OF THESE REPORTS SHALL BE BORNE BY THE CONTRACTOR.
- J. NO FLY ASH OR CALCIUM CHLORIDE SHALL BE USED ON THIS PROJECT.

4. CONCRETE QUALITY

- A. STRENGTH: ALL CAST-IN-PLACE CONCRETE SHALL HAVE A MAXIMUM WEIGHT OF 150 POUNDS CUBIC FOOT AND MINIMUM STRENGTH AT 28 DAYS (ULTIMATE STRENGTH OF 3000 PSI).
- B. PROPORTIONING OF THE CONCRETE MIXTURE:
- 1. THE PROPORTION OF THE AGGREGATE TO CEMENT FOR ANY CONCRETE SHALL BE SUCH AS TO PRODUCE A MIXTURE WHICH WILL FLOW READILY INTO THE CORNERS AND ANGLES OF THE FORMS AND AROUND REINFORCEMENT WITH THE METHOD OF PLACING EMPLOYED ON THE WORK, BUT WITHOUT PERMITTING THE MATERIALS TO SEGREGATE OR EXCESS FREE WATER TO COLLECT ON THE SURFACE.
 - 2. THE MATERIALS USED FOR THE CONCRETE SHALL BE MEASURED BY WEIGHT.
 - 3. MEASURE, BATCH, MIX AND DELIVER CONCRETE WITH PIGMENTS, WHERE NOTED, IN ACCORDANCE WITH MANUFACTURER'S WRITING INSTRUCTIONS.
- C. TESTS:
- 1. THE CONTRACTOR SHALL ASSIST OWNER'S TESTING LABORATORY TO RECEIVE, MARK, CURE, AND TEST CYLINDERS IN ACCORDANCE WITH ASTM C-39. THE TEST REPORT BY THE LABORATORY SHALL INCLUDE THE LOCATION OF THE CONCRETE SAMPLED, DATE, SLUMP, AIR CONTENT AND OTHER NECESSARY INFORMATION. THE LABORATORY SHALL SEND ELECTRONIC COPIES OF THE REPORTS TO THE OWNER.
 - 2. THE OWNER SHALL BE RESPONSIBLE AND PAY FOR ALL TESTS. EQUIPMENT NEEDED AT THE SITE SHALL BE FURNISHED BY THE CONTRACTOR.
 - 3. ROUTINE TESTS OF CONCRETE SHALL CONSIST OF:
 - a. SLUMP TEST FOR EACH 100 YD OF READY-MIXED CONCRETE.
 - b. COMPRESSIVE STRENGTH TEST FOR EACH FOUR DAYS POUR AND/OR EACH 50 CUBIC YARDS OF CONCRETE POURED. THIS TEST SHALL CONFORM TO ASTM C-31, AND CONSIST OF 4 CYLINDERS.

4. OWNER'S APPROVAL: THE CONTRACTOR SHALL NOTIFY THE OWNER 48 HOURS PRIOR TO SCHEDULE PLACEMENT OF CONCRETE. THE FORMS, STEEL AND OTHER CONDITIONS MUST BE APPROVED PRIOR TO PLACEMENT OF CONCRETE.

6. MIXING AND PLACING CONCRETE

- A. ALL CONCRETE FOR THIS PROJECT SHALL BE FROM AN APPROVED CENTRAL MIXING PLANT. MIXING AND DELIVERY SHALL CONFORM TO ASTM C-64.
- B. CONCRETE SHALL BE CONVEYED FROM THE MIXER TO THE PLACE OF FINAL DEPOSIT BY METHODS WHICH WILL PREVENT THE SEPARATION OR LOSS OF MATERIALS.
- C. CONCRETE SHALL BE DEPOSITED AS NEARLY AS PRACTICABLE IN ITS FINAL POSITION TO AVOID SEGREGATION. CONCRETE SHALL BE PLACED IN SUCH A MANNER THAT IT CAN BE STARTED, IT SHALL BE CARRIED ON AS A CONTINUOUS OPERATION UNTIL THE PLACING OF THE PANEL OR SECTION IS COMPLETED.
- D. CONCRETE SHALL BE MAINTAINED IN A MOIST CONDITION FOR SEVEN (7) DAYS AFTER PLACING BY ONE OF THE FOLLOWING METHODS:
 - a. WET COVERINGS
 - b. SPRAYING
 - c. CURING COMPOUND
- D. CURING METHOD SHALL BE COMPATIBLE WITH FLOOR COATINGS OR COVERINGS.
- E. ASPHALT FORMULA MAY BE USED IN LIEU OF CURING COMPOUND (PART 3). THIS MATERIAL SHALL BE APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- F. ADEQUATE PRECAUTIONS SHALL BE TAKEN FOR COLD WEATHER OR HOT WEATHER CONCRETING. (ACI 308 OR ACI 309)

7. FORM WORK AND CONSTRUCTION DETAILS

- A. FORMS
- 1. FORMS SHALL CONFORM TO SHAPES, LINES AND DIMENSIONS OF THE MEMBERS AS CALLED FOR ON THE PLANS, AND SHALL BE SUFFICIENTLY TIGHT TO PREVENT THE LEAKAGE OF MORTAR. THEY SHALL BE PROPERLY BRACED OR TIED TOGETHER SO AS TO MAINTAIN POSITION AND SHAPE.
 - 2. FORM MATERIAL SHALL BE OF:
 - a. PLYWOOD: APA PLYFORM CONFORMING TO PS 174
 - b. METAL FORMS
 - 3. BEFORE PLACING THE CONCRETE AND REINFORCING STEEL, THE CONTACT SURFACES OF ALL FORMS SHALL BE THOROUGHLY WETTED WITH WATER OR COATED WITH AN APPROVED FORM OIL. THE FORM OIL SHALL BE APPLIED WITH A BRUSH OR SPRAY SO AS TO COVER THE FORM EVENLY WITHOUT EXCESS DRIP. FORM COATING MATERIAL USED TO COAT FORMWORK TO FACILITATE THE REMOVAL THEREOF SHALL NOT CAUSE SOFTENING OR PERMANENT STAINING OF THE CONCRETE SURFACE.
 - B. REMOVAL OF FORMS: FORMS NOT REQUIRED FOR STRUCTURAL SUPPORT SHALL BE REMOVED AS SOON AS CONCRETE HAS HARDENED SUFFICIENTLY TO RESIST DAMAGE DURING REMOVAL OF FORMS.

4. FINISHES
- A. STEEL TROWEL FINISH SHALL BE APPLIED TO ALL FLOOR SLABS IN THE BUILDING, UNLESS OTHERWISE NOTED.
 - B. LIGHT BROOM FINISH PERPENDICULAR TO TRAFFIC SHALL BE APPLIED TO ALL EXTERIOR WALKWAYS. A 3/4" TRANSVERSE CONSTRUCTION JOINT SHALL BE FORMED WITH A TOOL DESIGNED FOR THAT PURPOSE AT EQUAL INTERVALS NOT EXCEEDING THE WIDTH OF THE WALKWAY. ALL EDGES OF JOINTS IN THE FLOOR GROUND LINE SHALL BE ROUNDED WITH A 1/4" EDGER. EXPANSION JOINTS SHALL NOT EXCEED 20'.
- C. CONCRETE SEALER:
- 1. STEP ONE, CONCRETE CLEAR SEALER:
 - a. CONCRETE TO BE SEALED MUST HAVE AGED A MINIMUM OF 28 DAYS PRIOR TO SEALER INSTALLATION.
 - b. IMMEDIATELY PRIOR TO APPLYING CONCRETE SEALER, THE CONCRETE MUST BE THOROUGHLY CLEANED. THE SURFACE SHOULD BE SWEEP THEN SCRUBBED USING A TROWEL OR FLAT MACHINE. THE SURFACE MUST BE RINSED AFTER CLEANING UNTIL THE RINSE WATER IS COMPLETELY CLEAN. AFTER DRYING, IT SHOULD BE INSPECTED CLOSELY, AND ADDITIONAL OR SPOT CLEANING SHOULD BE PERFORMED IF NECESSARY.
 - c. SURFACES MUST BE PROPERLY PREPARED AS PRESCRIBED IN MANUFACTURER'S INSTRUCTIONS. SURROUNDING AREAS AND ADJACENT SURFACES MUST BE MASKED OR PROTECTED FROM OVERSPRAY. SPILLS, TRAILS, AND SPRAYED MATERIAL, THE WORK AREA MUST BE ROPED OFF AND CLOSED TO TRAFFIC.
 - d. IMMEDIATELY PRIOR TO USE, THE LIQUID MATERIAL MUST BE THOROUGHLY POWER MIXED AS DESCRIBED IN MANUFACTURER'S INSTRUCTIONS. APPLICATION MUST BE MADE FULL STRENGTH (UNTHINNED) AT THE COVERAGE RATE RECOMMENDED AND WITH EQUIPMENT RECOMMENDED BY MANUFACTURERS.
 - e. BASE SEALER MUST BE APPLIED THINLY AND UNIFORMLY. A WET EDGE SHOULD BE MAINTAINED, AND OVERLAP CONTROLLED. MATERIAL SHOULD NOT BE OVER-APPLIED OR ALLOWED TO PUDDLE OR COLLECT IN JOINT INDENTATIONS.
 - f. BASE SEALER MUST BE ALLOWED TO DRY COMPLETELY, NORMALLY A MINIMUM OF 12 TO 48 HOURS, BEFORE IT IS SUBJECTED TO TEMPERATURES BELOW 42 DEGREES FAHRENHEIT OR TO WATER FROM ANY SOURCE.
 - 2. FINAL STEP, CLEAR SEALER:
 - a. IMMEDIATELY PRIOR TO USE, THE LIQUID MATERIAL MUST BE THOROUGHLY POWER MIXED AS DESCRIBED IN MANUFACTURER'S INSTRUCTIONS. APPLICATION MUST BE MADE FULL STRENGTH (UNTHINNED) AT THE COVERAGE RATE RECOMMENDED AND WITH EQUIPMENT RECOMMENDED BY MANUFACTURERS.
 - b. HARD TILE SEALER SHALL BE APPLIED THINLY AND UNIFORMLY UTILIZING A CONVENTIONAL FINE MIST SPRAYER PER MANUFACTURERS WRITING INSTRUCTIONS.
 - c. WHILE SPRAYING CLEAR SEALER, BROADCAST ANTI-SKID FLOOR MEDIA ADDITIVE USING MANUFACTURERS SPECIAL APPLICATION GUN, WITH COVER LAYER OF FINE SAND OR SILICA SAND. THE MEDIA SHALL BE APPLIED TO THE SURFACE AND THE FINAL COAT MAY BE WALKED ON THE NEXT DAY, BUT FIVE DAYS SHOULD ELAPSE BEFORE THE SURFACE IS SUBJECTED TO HEAVY USE OR ROUGH TREATMENT.

- (D). VARIATION IN CONCRETE SLABS SHALL NOT EXCEED 1/8" IN TEN FEET FROM TRUE GRADE.
 - (E). ALL EXPOSED CONCRETE, EXCEPT PATIO, WALKWAYS AND FLOOR SLABS, SHALL HAVE A RUBBED FINISH, SATISFACTORY TO THE OWNER'S CONSTRUCTION MANAGER. "WHITE WASHING" BY USE OF SEPARATELY MIXED GROUT WILL NOT BE PERMITTED.
9. SHOP DRAWINGS
- (A). THE CONTRACTOR SHALL PREPARE AND SUBMIT FOR REVIEW SHOP DRAWINGS ACCORDING TO THE REQUIREMENTS OF THE GENERAL CONDITIONS.

10. REINFORCEMENT
- (A). REINFORCEMENT SHALL BE ACCURATELY PLACED AND SECURELY SUPPORTED ON METAL OR PLASTIC CHAIRS.

DIVISION 04 - MASONRY

SECTION 04210 - BRICK MASONRY

1. SECTION INCLUDES
- (A). BRICK MASONRY
 - (B). JOINT REINFORCING
 - (C). BUILT IN ITEMS FURNISHED AND LOCATED BY OTHER TRADES.
2. REFERENCE STANDARDS
- (A). AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM)
 - (B). BRICK INSTITUTE OF AMERICA (BIA): "TECHNICAL NOTES ON BRICK CONSTRUCTION"
3. MOCK-UP
- (A). CONSTRUCT BRICK MASONRY MOCK-UP, 4 FEET LONG BY 4 FEET WIDE, WHICH INCLUDES MASONRY ANCHOR ACCESSORIES, SILL FLASHINGS, AND CORNER CONDITION.
 - (B). LOCATE WHERE DIRECTED BY OWNER.
 - (C). MOCK-UP MAY REMAIN AS PART OF THE WORK.
4. BRICK MASONRY UNITS
- (A). FACE BRICK USED FOR THE PROJECT SHALL BE AS NOTED ON THE FINISH SCHEDULE IN THE DRAWINGS, NORMAN SIZE, OF A CONSISTENT COLOR RANGE APPROVED BY OWNER'S CONSTRUCTION MANAGER.
 - (B). COMMON BRICK: CONTRACTOR MAY, AT HIS OPTION, SUPPLY AND INSTALL A COMMON, MODULAR SIZE FACE BRICK WHERE BRICK WILL BE CONCEALED UPON PROJECT COMPLETION. ALL BRICK EXPOSED TO VIEW MUST BE AS SELECTED BY OWNER AS NOTED ABOVE.
5. ACCESSORIES
- (A). JOINT REINFORCING: HOFFMANN & BERNARD PRODUCTS, VENEER ANCHORS DW-10 WITH GALVANIZED MASONRY WIRE TIES, VEE-TIES, LENGTHS AS REQUIRED FOR 2% MINIMUM EMBEDDED IN.
 - (B). CELLULAR PLASTIC WEEPVENT: HOFFMANN AND BERNARD PRODUCTS — QUADRO VENT
 - (C). CAVITY DAMAGE MATERIAL: MORTAR NET USA, LTD. — MORTAR NET
 - (D). MISCELLANEOUS: AS SHOWN ON THE DRAWINGS OR AS REQUIRED TO PROVIDE MASONRY INSTALLATIONS WHICH ARE WELL TIED (ANCHORED) TO BUILDING FRAME, CONSULT WITH ARCHITECT PRIOR TO BIDDING IF CLARIFICATION OF THIS REQUIREMENT IS NEEDED.
6. MORTAR
- (A). TYPE: ASTM C270 WITH MINIMUM COMPRESSIVE STRENGTH OF 1800 PSI, TYPE M OR S, COLOR STANDARD GRAY TO MATCH BLOCK. MASONRY CEMENT WILL NOT BE ALLOWED.
 - (B). MATERIALS:
 - 1. PORTLAND CEMENT: ASTM C150, TYPE I, ONE BRAND ONLY.
 - 2. HYDRATED LIME: ASTM C207, TYPE S
 - 3. SAND: WELL SCREENED, CLEAN, RAIL, SILICEOUS PARTICLES FREE FROM LOAM, ALKALI, SALT, ORGANIC MATTER AND OTHER IMPURITIES, COMPOSED OF GRAINS OF VARYING SIZE WHICH PASS AN 8-MESH SCREEN, UNIFORMLY GRADED FROM COARSE TO FINE.
 - 4. WATER: CITY TAP WATER.
7. GROUT
- (A). TYPE: MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI, ASTM C476, TYPE M OR S.
8. PRODUCT DELIVERY, STORAGE AND HANDLING
- (A). STORE MORTAR MATERIALS ON DUNNAGE IN A DRY PLACE. MASONRY UNITS STORES ABOVE GROUND ON LEVEL PLATFORMS, COVER AND PROTECT UNITS AND ACCESSORIES AS NECESSARY FROM ELEMENTS.
9. CONDITIONS
- (A). HOT WEATHER INSTALLATION: PROTECT MASONRY, ERECTED WHEN AMBIENT AIR TEMPERATURE IS MORE THAN 90° F, IN SHADE, AND RELATIVE HUMIDITY IS LESS THAN 50%, FROM DRYING EXPOSURE TO WIND. PROVIDE PROTECTION FROM DRYING EXPOSURE FOR 12 HOURS AFTER INSTALLATION. ALL WORK SHALL COMPLY WITH ACI 530.1/ASCE 6/MS 602.
 - (B). COLD WEATHER INSTALLATION: DO NOT BUILD UPON FROZEN WORK, BEFORE ERECTING MASONRY DURING TEMPERATURES BELOW 40° F. SUBMIT A WRITTEN STATEMENT AND RECEIVE ACCEPTANCE OF METHODS PROPOSED TO HEAT MASONRY MATERIALS AND PROTECT MASONRY FROM FREEZING. MORTAR SHALL BE PLACED AT TEMPERATURES BELOW 35° F, UNLESS AUTHORIZED IN WRITING. ALL WORK SHALL COMPLY WITH ACI 530.1/ASCE 6/MS 602.
10. PREPARATION (MORTAR)
- (A). ACCURATELY MEASURE AND MIX MORTAR MATERIALS WITH WATER TO PRODUCE A CONSISTENT MORTAR. MORTAR SHALL BE PLACED IN A CONTAINER WITHIN 2-12 HR AFTER MIXING. DISCARD MORTAR NOT USED OR THAT HAS STARTED TO SET WITHIN THIS TIME.

11. SCAFFOLDING

- (A). PROVIDE SCAFFOLDING NECESSARY FOR MASONRY WORK AND MAKE SAME AVAILABLE TO OTHER TRADES REQUIRED TO EXECUTE WORK IN CONJUNCTION WITH MASONRY WORK.
 - (B). DESIGN AND ENGINEERING OF FORMWORK AND SCAFFOLDING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ADEQUATELY SHORE BLOCK BARS, AND SIMILAR MEMBERS TO SAFELY SUPPORT ALL LOADS AND LATERAL PRESSURES LIABLE TO COME ON THE CONSTRUCTION, PROVIDE CLEAN-OUT OPENINGS AT EACH VERTICAL BAR AT BOTTOM COURSE OR IN FOUNDATION WALL WHEN WALL IS ERECTED IN MORE THAN 5'-FOOT LITS.
12. MASONRY CONSTRUCTION
- (A). GENERAL: DO NOT LAY UNITS HAVING WATER OR FROST FILM ON SURFACES. LAY PLUMB, TRUE TO LINE, WITH LEVEL COURSES ACCURATELY SPACED. KEEP BOND PATTERN PLUMB THROUGHOUT. CORNERS AND REVEALS PLUMB AND TRUE. SHOVE VERTICAL JOINTS TIGHT. ADJUST EACH UNIT TO ALIGNMENT FROM TOP TO BOTTOM TOGETHER WITH FRESH MORTAR. REMOVE ANY UNIT DISTURBED AFTER MORTAR HAS STIFFENED AND RELAY WITH FRESH MORTAR.
 - (B). LAYING UNITS: WET IN SUCH MANNER THAT EACH UNIT IS NEARLY SATURATED, SURFACE DRY WHEN LAID. DO NOT USE BRICK THAT IS CORED, RECESSED, OR HAS OTHER MAJOR DEFORMATIONS WHERE DEFORMATIONS WILL BE EXPOSED TO VIEW. FILL HEAD AND BED JOINTS COMPLETELY WITH MORTAR. DO NOT EXCEED 38 INCHES. INSTALL WEEP HOLES IN FACE OF BRICK EXPOSED. LAY IN STACKED BOND AND SPECIAL RELIEF AND PATTERNS SHOWN ON THE DRAWINGS. JOINTS NOT TO EXCEED 38 INCHES. INSTALL WEEP HOLES IN HEAD JOINTS BUT NOT MORE THAN 2" O.C.
 - (C). CUTTING AND FITTING: USE, WHEREVER POSSIBLE, FULL UNITS OF PROPER SIZE IN LIEU OF CUT UNITS. EDGES CLEAN, TRUE, AND SHARP. CAREFULLY CUT, FORM, OR OTHERWISE NEATLY MAKE OPENINGS FOR RECESSED ITEMS AND FOR ELECTRICAL, PLUMBING, OR OTHER MECHANICAL INSTALLATIONS SO THAT WALL PLATES, COVER PLATES, OR ESCUTCHEONS WILL COMPLETELY CONCEAL OPENINGS AND HAVE BOTTOMS IN ALIGNMENT WITH LOWER EDGE OF MASONRY JOINTS.
 - (D). EMBEDDED ITEMS: POINT OPENINGS AROUND FLUSH MOUNTED ELECTRICAL OUTLET BOXES IN WET LOCATIONS. FLUSH WITH SURFACE INCLUDING FLUSH JOINT ABOVE BOX. BUILD IN ANCHORS, TIES, WALL PLUGS, ACCESSORIES, FLASHINGS, PIPE SLEEVES, AND OTHER ITEMS AS THE MASONRY WORK PROGRESSES. ANCHORS AND TIES FULLY EMBEDDED IN MORTAR.
 - (E). UNFINISHED WORK: STEP BACK FOR JOINING WITH CONTINUING NEW WORK. RESORT TO TOOTHING ONLY WHEN SPECIFICALLY ACCEPTED. BEFORE LAYING NEW WORK, REMOVE LOOSE MORTAR, AND CLEAN EXPOSED JOINTS, DAMPEN SURFACES OF BRICK AFTER CLEANING.
 - (F). JOINTING:
 - 1). TYPE: UNLESS NOTED OTHERWISE ON DRAWING FINISH SCHEDULE, CLIPPED JOINTS; MORTAR THOROUGHLY COMPACTED AND PRESSED AGAINST EDGES OF UNITS. TOOL WHEN MORTAR IS THUMPRINT HARD.
 - 2). WIDTH: EQUAL TO DIFFERENCE BETWEEN ACTUAL AND NOMINAL DIMENSIONS OF UNITS IN EITHER HEIGHT OR LENGTH; AVERAGE WIDTH OF ANY THREE ADJACENT JOINTS NOT LESS THAN 1/4 INCH NOR MORE THAN 1/2 INCH. VERTICAL JOINTS, SAME WIDTH AS HORIZONTAL JOINTS. PROVIDE PROVISIONS FOR VARIATIONS REQUIRED TO MAINTAIN BOND.

13. POINTING AND CLEANING

- (A). COMPLETELY REMOVE MORTAR DAUBS OR SPLASHINGS FROM EXPOSED MASONRY SURFACES BEFORE SETTING. CLEAN MASONRY SURFACES, OTHER THAN REMOVING EXCESS SURFACE MORTAR, SHALL BE DONE AFTER MORTAR HAS HARDENED. LEAVE SURFACES FREE OF MORTAR DAUBS, DIRT, STAINS AND DISCOLORATION, INCLUDING SCUM FROM CLEANING OPERATIONS. DO NOT USE METAL TOOLS AND METAL BRUSHES FOR CLEANING. BEFORE CLEANING PERMANENT

DIVISION 05 - METALS SECTION 05120 - STRUCTURAL STEEL 1. SUBMITTALS A. SHOP DRAWINGS: SUBMIT TO ARCHITECT, INDICATE SIZES, SPACING, AND LOCATIONS OF STRUCTURAL MEMBERS, OPENINGS, CONNECTIONS, CAMBERS, LOADS, AND WELDED CONNECTIONS. B. PROVIDE SETTING DRAWINGS, TEMPLATES, AND DIRECTIONS FOR INSTALLATION OF ANCHOR BOLTS AND OTHER ANCHORAGE TO BE INSTALLED AS WORK OF OTHER SECTIONS. 2. REFERENCE STANDARDS A. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES". B. AISC "SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS," INCLUDING "COMMENTARY". C. "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A 325 OR A 490 BOLTS" APPROVED BY RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS. D. AMERICAN WELDING SOCIETY (AWS) D1.1 "STRUCTURAL WELDING CODE - STEEL." 3. QUALITY ASSURANCE A. PERFORM DESIGN UNDER DIRECT SUPERVISION OF A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF THE PROJECT. 4. DELIVERY, STORAGE, AND HANDLING A. STORE MATERIALS TO PERMIT EASY ACCESS FOR INSPECTION AND IDENTIFICATION. KEEP STEEL MEMBERS OFF GROUND BY USING PALLETS, PLATFORMS, OR OTHER SUPPORTS. PROTECT STEEL MEMBERS AND PACKAGES MATERIALS FROM EROSION AND DETEIORATION. IF BOLTS AND NUTS BECOME DRY OR RUSTY, CLEAN AND RE-LUBRICATE BEFORE USE. 5. MATERIALS A. STRUCTURAL STEEL SHAPES, PLATES, AND BARS: ASTM A 36. B. STRUCTURAL STEEL TUBING: ASTM A500, GRADE B. C. ANCHOR BOLTS: ASTM A308, NON-HEADED TYPE UNLESS OTHERWISE INDICATED. D. QUENCHED AND TEMPERED MEDIUM-CARBON STEEL BOLTS, NUTS, AND WASHERS, COMPLYING WITH ASTM A 325. E. ELECTRODES FOR WELDING: E70XX, COMPLY WITH AWS CODE. F. STRUCTURAL STEEL PRIMER PAINT: TM60C-10-89 (OR EQUAL). G. NONMETALLIC SHRAPNEL-RESISTANT GROUT: PREMIXED, NONMETALLIC, NON-CORROSIVE, NON-STAINING PRODUCT CONTAINING SELECTED SILICA SANDS, PORTLAND CEMENT, SHRINKING AGENT, COMPENSATING AGED SANDS, PLASTICS AND WATER-REDUCING AGENTS, COMPLYING WITH CE-CRD-0821. 6. FABRICATION A. SHOP FABRICATION AND ASSEMBLY: FABRICATE AND ASSEMBLE STRUCTURAL ASSEMBLIES IN SHOP TO SPECIFIED EXTENT POSSIBLE. B. PROPERLY MARK AND MATCH MARK MATERIALS FOR FIELD ASSEMBLY. C. CONNECTIONS: WELD OR BOLT SHOP CONNECTIONS, AS INDICATED. BOLT FIELD CONNECTIONS, EXCEPT WHERE WELDED CONNECTIONS OR OTHER CONNECTIONS ARE INDICATED. D. HIGH-STRENGTH BOLT CONSTRUCTION: INSTALL HIGH-STRENGTH THREADED FASTENERS IN ACCORDANCE WITH AISC "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A 325 OR A 490 BOLTS". E. CUT, DRILL, OR PUNCH HOLES PERPENDICULAR TO METAL SURFACE. DO NOT FLAME-CUT HOLES OR ENLARGE HOLES BY BURNING. F. SHOP PAINTING: SHOP PAINT ALL STRUCTURAL STEEL. G. IMMEDIATELY AFTER SURFACE PREPARATION, APPLY STRUCTURAL STEEL PRIMER PAINT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND AT A RATE TO PROVIDE DRY FILM THICKNESS OF NOT LESS THAN 1.5 MILS. USE PAINTING METHODS THAT RESULT IN FULL COVERAGE OF JOINTS, CORNERS, EDGES, AND EXPOSED SURFACES. 8. ERECTION A. TEMPORARY SHORING AND BRACING: PROVIDE TEMPORARY SHORING AND BRACING MEMBERS WITH CONNECTIONS OF SUFFICIENT STRENGTH TO BEAR IMPOSED LOADS AND AS REQUIRED BY APPLICABLE LAWS AND REGULATIONS. B. FIELD ASSEMBLY: SET STRUCTURAL STEEL ACCURATELY TO LINES AND ELEVATIONS INDICATED. ALIGN AND ADJUST VARIOUS MEMBERS FORMING PART OF COMPLETE FRAME OR STRUCTURE BEFORE PERMANENTLY FASTENING. CLEAN BEARING SURFACES AND OTHER SURFACES THAT WILL BE IN PERMANENT CONTACT BEFORE ASSEMBLY. MAKE NECESSARY ADJUSTMENTS TO COMPENSATE FOR DISCREPANCIES IN ELEVATIONS AND ALIGNMENT. LEVEL AND PLUMB INDIVIDUAL MEMBERS OF STRUCTURE WITHIN SPECIFIED ASG. TOLERANCES. SPlice MEMBERS ONLY WHERE INDICATED AND ACCEPTED ON SHOP DRAWINGS. SECTION 05500 METAL FABRICATIONS 1. SUMMARY A. WORK OF THIS SECTION CONSISTS OF INSTALLING ALL MATERIALS FURNISHED UNDER THIS SECTION, INCLUDING ALL EQUIPMENT, LABOR, SERVICES, AND INCIDENTAL ITEMS REQUIRED TO COMPLETE WORK AS SHOWN ON DRAWINGS AND SPECIFIED IN THIS SECTION. 1. MISCELLANEOUS FRAMING AND SUPPORTS FOR WORK IN OTHER SECTIONS TO INCLUDE APPLICATIONS WHERE FRAMING AND SUPPORTS ARE NOT SPECIFIED IN OTHER SECTIONS. 2. STEEL UNITS, SLUG CUPS, ETC. 3. STEEL PIPE BOLLARDS. 4. STEEL PLATE WINDOW COUPLINGS 5. STEEL PLATE CANOPY 6. GATES AT DUMPMSTER AREA 7. STEEL TUBE FRAMEWORK FOR NO CLIMB NETTING 8. STEEL LADDERS 9. TENSION ROD TURNBUCKLE MEDALLION 2. SUBMITTALS A. WELDER CERTIFICATES SIGNED BY CONTRACTOR CERTIFYING WELDERS COMPLY WITH REQUIREMENTS OF THIS SECTION. B. FABRICATOR SHALL BE RESPONSIBLE FOR DESIGN OF CONNECTIONS NOT SPECIFICALLY SHOWN ON THE DRAWINGS AND FOR MEMBER DIMENSIONS AND FIT. 3. QUALITY ASSURANCE A. QUALIFICATIONS: 1. WELDING AND WELDERS: a. QUALIFY WELDING PROCESSES AND WELDING OPERATORS IN ACCORDANCE WITH AWS D1.1, STRUCTURAL WELDING CODE - STEEL; D1.3, STRUCTURAL WELDING CODE SHEET STEEL; AND D1.2, STRUCTURAL WELDING CODE - ALUMINUM. b. CERTIFY EACH WELDER HAS QUALIFICATION PASSED AWS QUALIFICATION TEST FOR WELDING PROCESSES INVOLVED AND IF PERTINENT, HAS UNDERGONE RECERTIFICATION. 4. MATERIALS A. FERROUS METALS: 1. METAL SURFACES: GENERAL: FOR FABRICATION OF MISCELLANEOUS METAL WORK WHICH WILL BE EXPOSED TO VIEW, USE ONLY MATERIALS WHICH ARE FREE OF SURFACE BLEMISHES INCLUDING PITTING, SEAM MARKS, ROLLED TRADE NAMES, AND ROUGHNESSES. 2. STEEL PLATES, SHAPES AND BARS: ASTM A36. 3. STEEL TUBING: COLD-FORMED, ASTM A500; GRADE A, UNLESS OTHERWISE INDICATED OR REQUIRED FOR DESIGN LOADS. 4. STEEL TUBING: HOT-FORMED, ASTM A501 FOR EXTERIOR INSTALLATIONS AND WHERE INDICATED PROVIDED WITH HOT-DIP GALVANIZED COATING PER ASTM A53. 5. BRACKETS, FLANGES AND ANCHORS: CAST OR FORMED METAL, OF SAME TYPE MATERIAL AND FINISH AS SUPPORTED PARTS, UNLESS OTHERWISE INDICATED. 6. STEEL DECK PANELS AT SERVICE YARD GATES: ASTM A446 WITH G30 GALVANIZED COATING, STEEL ASTM A616, GRADE C, SHOP PRIMED. 7. CONCRETE INSERTS: a. THREADED ROD WEDGE - TYPE: GALVANIZED FERROUS CASTINGS, EITHER MALLEABLE IRON, ASTM A47, OR CAST STEEL, ASTM A7. b. PROVIDE BOLTS, WASHERS AND SHIMS AS REQUIRED; HOT-DIP GALVANIZED, ASTM A153. 8. DECORATIVE PLATE STEEL, WALL INSTALLATION: 1. GAUGE STEEL PLATE, NO FRIMER, NO FINISH. 2. SEALER: JONES BLAIR "ACRYLATHANE 23 CLEAR COAT". C. GROUT: 1. NONSHRINKING NONMETALLIC GROUT: a. PREMIXED, FACTORY PACKAGED, NON-STAINING, NON-CORROSIVE, NON-GASEOUS GROUT COMPLYING WITH CE-CRD-0821. b. PROVIDE GROUT SPECIFICALLY RECOMMENDED BY MANUFACTURER FOR INTERIOR AND EXTERIOR APPLICATIONS OF TYPE SPECIFIED IN THIS SECTION. DIVISION 06 - WOOD AND PLASTICS SECTION 06100 - ROUGH CARPENTRY 1. SECTION INCLUDES A. STRUCTURAL WALL, AND ROOF FRAMING AND SHEATHING. B. RESERVATIVE AND FIRE RETARDANT TREATMENT OF WOOD. C. CONSTRUCTION AND MATERIALS FOR CONSTRUCTION BLOCKING FOR SUPPORT OF TOILET AND BATH ACCESSORIES, WALL CABINETS, WOOD TRIM, AND TABLES. 2. REFERENCES A. AFWPA C20 - STRUCTURAL LUMBER - FIRE RETARDANT TREATMENT BY PRESSURE PROCESSES, AMERICAN WOOD-PRESERVERS' ASSOCIATION, 2002. B. AFWPA U1 - USE CATEGORY SUSTEM - USER SPECIFICATION FOR TREATED WOOD; AMERICAN WOOD - PRESERVERS' ASSOCIATION 2005. C. PS 1 - CONSTRUCTION AND INDUSTRIAL PLYWOOD; NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (DEPARTMENT OF COMMERCE), 1985. D. PSB 20 - AMERICAN SOFTWOOD LUMBER STANDARD; NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (DEPARTMENT OF COMMERCE), 1985. E. SPIB (GR) - GRADING RULES; SOUTHERN PINE INSPECTION BUREAU, INC., 2002. F. WCLB (GR) - STANDARD GRADING RULES FOR WEST COAST LUMBER NO. 17; WEST COAST LUMBER INSPECTION BUREAU, 2004. G. WMPA G-5 - WESTERN LUMBER GRADING RULES; WESTERN WOOD PRODUCTS ASSOCIATION, 2005. 3. QUALITY ASSURANCE A. LUMBER: COMPLY WITH PS 20 AND APPROVED GRADING RULES AND INSPECTION AGENCIES. B. EXPOSED-TO-VIEW ROUGH CARPENTRY: SUBMIT MANUFACTURER'S CERTIFICATE THAT PRODUCTS MEET OR EXCEED SPECIFIED REQUIREMENTS, IN LIEU OF GRADE STAMPING. PRESERVATIVE-TREATED WOOD: PROVIDE LUMBER AND PLYWOOD MARKED OR STAMPED BY AN A.C.C. ACCREDITED TESTING AGENCY, CERTIFYING LEVEL AND TYPE OF TREATMENT IN ACCORDANCE WITH AFWPA STANDARDS. 5. DIMENSION LUMBER FOR CONCEALED APPLICATIONS A. SIZES: NOMINAL SIZES AS INDICATED ON DRAWINGS, S4S UNLESS ROUGH LUMBER IS SPECIFICALLY INDICATED OTHERWISE. B. MOISTURE CONTENT: S-DRY OR MC19. C. STUD FRAMING (2X2 THROUGH 2X6): 1. SPECIES: DOUGLAS FIR, SOUTHERN, WESTERN CEDARS, OR SITKA SPRUCE. 2. GRADE: NO. 2. D. JOIST, RAFTER, AND SMALL BEAM FRAMING (2X6 THROUGH 4X16): 1. SPECIES: DOUGLAS FIR, SOUTHERN PINE, SPRUCE-PINE-FIR (SOUTH), WESTERN CEDARS, OR WESTERN WOODS. 2. GRADE: NO. 2. E. MISCELLANEOUS FRAMING, FURRING, AND NAILERS: 1. LUMBER: S4S, NO. 2 OR FURNISHED GRADE. 6. EXPOSED DIMENSION LUMBER A. SIZES: NOMINAL SIZES AS INDICATED ON DRAWINGS, S4S. B. MOISTURE CONTENT: S-DRY OR MC19. C. STUD FRAMING (2X2 THROUGH 2X6): 1. SPECIES: SOUTHERN PINE. 2. GRADE: NO. 1. 7. CONSTRUCTION PANELS A. CONCEALED PERFORMANCE - RATED STRUCTURAL USE PANELS: 1. GENERAL: WHERE STRUCTURAL USE PANELS ARE INDICATED FOR THE FOLLOWING CONCEALED TYPES OF APPLICATIONS, PROVIDE APA PERFORMANCE-RATED PANELS COMPLYING WITH REQUIREMENTS DESIGNATED UNDER EACH APPLICATION FOR GRADE, SPAN RATING, EXPOSURE - DURABILITY CLASSIFICATIONS, EDGE DETAIL, WHERE APPLICABLE. 2. WALL SHEATHING: APART RATED SHEATHING, EXTERIOR WITH SPAN RATING TO SUIT STUD SPACING. 3. ROOF SHEATHING: APA RATED STRUCTURAL 1 RATED SHEATHING, EXTERIOR WITH SPAN RATING TO SUIT RAFTER SPACING. B. OTHER APPLICATIONS: 1. CONCEALED PLYWOOD: PS 1, C-C PLUGGED, EXTERIOR GRADE. 2. EXPOSED PLYWOOD: PS 1, A-D, INTERIOR GRADE. 3. ELECTRIC COMPONENT MOUNTING: APA RATED SHEATHING, FIRE RETARDANT TREATED. 8. ACCESSORIES A. FASTENERS AND ANCHORS: 1. METAL AND FINISH: HOT-DIP GALVANIZED STEEL, PER ASTM A 153A 153M FOR HIGH HUMIDITY AND PRESERVATIVE - TREATED WOOD UNLESS OTHERWISE SPECIFIED ELSEWHERE. 2. NAILS, WIRE, BRACKETS AND STAPLES: PS-FN-105. 3. POWER DRIVEN FASTENERS: NATIONAL EVALUATION REPORT NER-272. 4. WOOD SCREWS: ANSI D16.1. 5. LAS BOLTS: ANSI B18.1. 6. BOLT SCREWS: COMPLYING WITH ASTM A307, GRADE A; WITH ASTM A563 HEX NUTS AND, WHERE INDICATED, PLAT WASHERS. B. JOIST HANGERS: HOT-DIP GALVANIZED STEEL, SIZED TO SUIT FRAMING CONDITIONS. 9. FACTORY WOOD TREATMENT A. TREATED LUMBER AND PLYWOOD: COMPLY WITH REQUIREMENTS OF AFWPA U1 - USE CATEGORY SYSTEM FOR WOOD TREATMENTS DETERMINED BY USE CATEGORIES, EXCEPTED SERVICE CONDITIONS, AND SPECIFIC APPLICATIONS. B. FIRE RETARDANT TREATMENT: AFWPA TREATMENT C20, EXTERIOR TYPE, CHEMICAL TREATMENT PRESERVATIVE IMPREGNATED; CAPABLE OF PROVIDING A MAXIMUM FLAME SPREAD/SMOKE DEVELOPMENT RATING OF 2500 MINUTE DURATION. C. PRESERVATIVE PRESURE TREATMENT OF LUMBER ABOVE GRADE: AFWPA USE CATEGORY U20B, COMMODITY SPECIFICATION 1 (TREATMENT C2) USING WATERBORNE PRESERVATIVE TO 10 LBS/FT³ RETENTION. 1. KILN DRY LUMBER AFTER TREATMENT TO MAXIMUM MOISTURE CONTENT OF 19 PERCENT. 2. TREAT LUMBER IN CONTACT WITH ROOFING, FLASHING OR WATERPROOFING. 3. TREAT LUMBER IN CONTACT WITH MASONRY OR CONCRETE. D. PRESURE TREATMENT OF LUMBER IN CONTACT WITH SOIL AND CONCRETE: AFWPA TREATMENT C2 USING PRESERVATIVE TO 10 LBS/FT³ RETENTION. 1. PRESERVATIVE FOR FIELD APPLICATION TO CUT SURFACES: AS RECOMMENDED BY MANUFACTURER OF FACTORY TREATMENT CHEMICALS FOR BRUSH APPLICATION IN THE FIELD. 10. FRAMING INSTALLATION A. SET STRUCTURAL MEMBERS LEVEL, PLUMB, AND TRUE TO LINE. DISCARD PIECES WITH DEFECTS THAT WOULD LOWER REQUIRED STRENGTH OR RESULT IN UNDESIRABLE APPEARANCE OR EXPOSED MEMBERS. B. MAKE PROPER CONNECTIONS TO EXISTING STRUCTURE, AND PROVIDE TEMPORARY BRACING SUFFICIENT TO MAINTAIN STRUCTURE IN TRUE ALIGNMENT AND SAFE CONDITION UNTIL COMPLETION OF ERECTION AND INSTALLATION OF PERMANENT BRACING. C. INSTALL STRUCTURAL MEMBERS FULL LENGTH WITHOUT SPLICES UNLESS OTHERWISE SPECIFICALLY DETAILLED. D. COMPLY WITH MEMBER SIZES, SPACING, AND CONFIGURATIONS INDICATED, AND FASTENER SIZE AND SPACING INDICATED, BUT NOT LESS THAN REQUIRED BY APPLICABLE CODES AND AFWPA WOOD FRAME CONSTRUCTION MANUAL. E. CONSTRUCT DOOR AND WINDOW HEADS AT FLUSH AND CEILING OPENINGS AND UNDER WALL STUD PARTITIONS THAT ARE PARALLEL TO FLOOR JOISTS; USE METAL JOIST HANGERS UNLESS OTHERWISE DETAILLED. F. FRAME OPENINGS WITH TWO OR MORE STUDS AT EACH JAMB; SUPPORT HEADERS ON CRIPPLE STUDS. SECTION 06160 - SHEATHING (ZIP SYSTEM SHEATHING) 1. SUMMARY A. SECTION INCLUDES 1. WALL SHEATHING WITH INTEGRAL WATER-RESISTIVE BARRIER AND AIR BARRIER. 2. REFERENCES A. ASTM INTERNATIONAL (ASTM): 1. ASTM A153A153M - STANDARD SPECIFICATION FOR ZINC COATING (HOT-DIP) ON IRON AND STEEL, HARDWARE. 2. ASTM D698 - STANDARD TEST METHODS FOR WATER VAPOR TRANSMISSION OF MATERIALS. 3. ASTM E119 - STANDARD TEST METHODS FOR FIRE TESTS OF BUILDING ASSEMBLIES. 4. ASTM E2387 - STANDARD TEST METHOD FOR DETERMINING AIR LEAKAGE OF AIR BARRIER ASSEMBLIES. B. INTERNATIONAL CODE COUNCIL (ICC): 1. ICC BC - INTERNATIONAL BUILDING CODE. 2. ICC EVALUATION SERVICE, INC. (ICC-ES): a. ICC-ES AC308 - ACCEPTANCE CRITERIA FOR WEATHER RESISTIVE BARRIERS. b. ICC-ES AC116 - ACCEPTANCE CRITERIA FOR NAILS AND SPIKES. c. ICC-ES AC148 - ACCEPTANCE CRITERIA FOR FLEXIBLE FLASHING MATERIALS. d. ICC-ES AC209 - ACCEPTANCE CRITERIA FOR WATER-RESISTIVE MEMBRANES FACTORY-BONDED TO WOOD-BASED STRUCTURAL SHEATHING, USED AS WATER-RESISTIVE BARRIERS. e. ICC-ES ESR-1526 - POWER DRIVEN STAPLES AND NAILS FOR USE IN ENGINEERED AND NON-ENGINEERED CONNECTIONS. f. ICC-ES NER-272 - POWER DRIVEN STAPLES AND NAILS FOR USE IN ALL TYPES OF BUILDING CONSTRUCTION. 3. SUBMITTALS A. PRODUCT DATA: FOR EACH TYPE OF SHEATHING PRODUCT SPECIFIED. B. EVALUATION REPORTS: FROM ICC-ES, FOR WOOD SHEATHING AND SEAM TAPE. C. PRODUCT CERTIFICATIONS: FROM MANUFACTURER, INDICATING THAT SHEATHING PRODUCTS COMPLY WITH ALL APPLICABLE CODES AND STANDARDS. D. FLORIDA BUILDING CODE SUPPLEMENT: SUBMIT DOCUMENTATION INDICATING THAT PRODUCTS COMPLY WITH REQUIREMENTS OF FLORIDA BUILDING CODE FOR PROJECTS IN THAT STATE. E. WARRANTY: EXECUTED COPY OF MANUFACTURER SPECIAL WARRANTIES. 4. QUALITY ASSURANCE A. PROVIDE WALL SHEATHING PRODUCTS MEETING REQUIREMENTS FOR WATER-RESISTIVE BARRIER IN ACCORDANCE WITH ICC-ES AC308. B. FLORIDA BUILDING CODE COMPLIANCE: PROVIDE SHEATHING COMPLYING WITH FLORIDA BUILDING CODE PRODUCT AND INSTALLATION REQUIREMENTS FOR LOCATIONS IN FLORIDA AND OUTSIDE OF HIGH WIND/VIBRANT WIND ZONE. 5. DELIVERY, STORAGE, AND HANDLING A. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS FOR PROTECTION OF SHEATHING PRODUCTS FROM WEATHER PRIOR TO INSTALLATION. 6. WARRANTY A. SPECIAL MANUFACTURER'S WARRANTY: MANUFACTURERS STANDARD 30 YEAR WARRANTY FOLLOWING DATE OF SUBSTANTIAL COMPLETION. 7. MANUFACTURERS A. BASIS—OF—DESIGN PRODUCT: PROVIDE SHEATHING PRODUCTS MANUFACTURED BY HUBER ENGINEERED WOODS LLC, CHARLOTTE NC. PHONE: (800) 933-9220; WEBSITE: WWW.ZIPSYSTEM.COM. 8. PERFORMANCE REQUIREMENTS A. FIRE—TEST RESPONSE CHARACTERISTICS: 1. EXTERIOR FIRE—TEST EXPOSURE: ASTM E108, CLASS A, WHEN COVERED WITH APPROVED CLASS COVERINGS. 2. FIRE—RESISTANCE RATINGS: WHERE INDICATED, PROVIDE ASSEMBLIES TESTED FOR FIRE RESISTANCE RATING TO WITHSTAND FIRE EXPOSURE CONDITIONS AS AT TEMPERATURE AND HUMIDITY CONDITIONS RECOMMENDED BY MANUFACTURER. 3. AIR—BARRIER ASSEMBLY AIR LEAKAGE: LESS THAN 0.04 CFM/50 FT. AT 1.57 IBF/50 FT. PER ASTM E2375. 4. WATER—VAPOR PERFORMANCE, FACTER: MINIMUM 12 PERMS, ASTM E96/E96M. 5. WEATHER EXPOSURE: MANUFACTURER WARRANTY APPLIES FOR MAXIMUM ALLOWABLE EXPOSURE PERIOD OF 180 DAYS. 9. WOOD PANEL PRODUCTS A. SINGLE SOURCE LIMITATIONS: PROVIDE WALL SHEATHING BY A SINGLE MANUFACTURER. B. ORIENTED STRAND BOARD: DOG PS 2, MADE WITH BINDER CONTAINING NO ADDED UREA FORMALDEHYDE. 10. WALL SHEATHING WITH INTEGRAL WATER-RESISTIVE BARRIER AND AIR BARRIER A. ORIENTED-STRAND-BOARD WALL SHEATHING, EXPOSURE 1 SHEATHING WITH FACTORY-LAMINATED WATER-RESISTIVE BARRIER FACER WITH PRINTED FASTENER LOCATION SYMBOLS. 1. BASIS—OF—DESIGN PRODUCT: PROVIDE HUBER ENGINEERED WOODS LLC, ZIP SYSTEM SHEATHING. 2. SPAN RATING, PANEL GRADE AND PERFORMANCE CATEGORY: NOT LESS THAN 32/16: STRUCTURAL 1, 1/2 PERFORMANCE CATEGORY. 3. EDGE PROFILE: SQUARE EDGE. 4. FACER: MEDIUM-DENSITY, PHENOLIC-IMPREGNATED SHEET MATERIAL QUALIFYING -AS-A GRADE D WEATHER-RESISTIVE BARRIER IN ACCORDANCE WITH ICC AC308. a. PROVIDE FASTENER SPACING SYMBOLS ON FACER FOR 16-INCH AND 24-INCH ON CENTER SPACING. 5. DELIVERY, STORAGE, AND HANDLING A. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS FOR PROTECTION OF SHEATHING PRODUCTS FROM WEATHER PRIOR TO INSTALLATION. 6. WARRANTY A. SPECIAL MANUFACTURER'S WARRANTY: MANUFACTURERS STANDARD 30 YEAR WARRANTY FOLLOWING DATE OF SUBSTANTIAL COMPLETION. 7. MANUFACTURERS A. BASIS—OF—DESIGN PRODUCT: PROVIDE SHEATHING PRODUCTS MANUFACTURED BY HUBER ENGINEERED WOODS LLC, CHARLOTTE NC. PHONE: (800) 933-9220; WEBSITE: WWW.ZIPSYSTEM.COM. 8. PERFORMANCE REQUIREMENTS A. FIRE—TEST RESPONSE CHARACTERISTICS: 1. EXTERIOR FIRE—TEST EXPOSURE: ASTM E108, CLASS A, WHEN COVERED WITH APPROVED CLASS COVERINGS. 2. FIRE—RESISTANCE RATINGS: WHERE INDICATED, PROVIDE ASSEMBLIES TESTED FOR FIRE RESISTANCE RATING TO WITHSTAND FIRE EXPOSURE CONDITIONS AS AT TEMPERATURE AND HUMIDITY CONDITIONS RECOMMENDED BY MANUFACTURER. 3. AIR—BARRIER ASSEMBLY AIR LEAKAGE: LESS THAN 0.04 CFM/50 FT. AT 1.57 IBF/50 FT. PER ASTM E2375. 4. WATER—VAPOR PERFORMANCE, FACTER: MINIMUM 12 PERMS, ASTM E96/E96M. 5. WEATHER EXPOSURE: MANUFACTURER WARRANTY APPLIES FOR MAXIMUM ALLOWABLE EXPOSURE PERIOD OF 180 DAYS. 9. WOOD PANEL PRODUCTS A. SINGLE SOURCE LIMITATIONS: PROVIDE WALL SHEATHING BY A SINGLE MANUFACTURER. B. ORIENTED STRAND BOARD: DOG PS 2, MADE WITH BINDER CONTAINING NO ADDED UREA FORMALDEHYDE. 10. WALL SHEATHING WITH INTEGRAL WATER-RESISTIVE BARRIER AND AIR BARRIER A. ORIENTED-STRAND-BOARD WALL SHEATHING, EXPOSURE 1 SHEATHING WITH FACTORY-LAMINATED WATER-RESISTIVE BARRIER FACER WITH PRINTED FASTENER LOCATION SYMBOLS. 1. BASIS—OF—DESIGN PRODUCT: PROVIDE HUBER ENGINEERED WOODS LLC, ZIP SYSTEM SHEATHING. 2. SPAN RATING, PANEL GRADE AND PERFORMANCE CATEGORY: NOT LESS THAN 32/16: STRUCTURAL 1, 1/2 PERFORMANCE CATEGORY. 3. EDGE PROFILE: SQUARE EDGE. 4. FACER: MEDIUM-DENSITY, PHENOLIC-IMPREGNATED SHEET MATERIAL QUALIFYING -AS-A GRADE D WEATHER-RESISTIVE BARRIER IN ACCORDANCE WITH ICC AC308. a. PROVIDE FASTENER SPACING SYMBOLS ON FACER FOR 16-INCH AND 24-INCH ON CENTER SPACING. 11. FASTENERS A. FASTENERS, GENERAL: SIZE AND TYPE COMPLYING WITH MANUFACTURER'S WRITTEN INSTRUCTIONS FOR PROJECT CONDITIONS AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION. 1. CORROSION RESISTANCE: HOT-DIP ZINC COATING, ASTM A153A153M. 2. NAILS, BRACKETS, AND STAPLES: ICC AC116 AND ICC AC209. 3. POWER-DRIVEN FASTENERS: ICC-ES ESR-1526 OR NER-272. 4. WOOD SCREWS: ASME B18.1. 12. SHEATHING JOINTS—AND—PENETRATION TREATMENT A. SELF-ADHERING SEAM AND FLASHING TAPE: PRESSURE-SENSITIVE, SELF-ADHERING, COLD-APPLIED, SEAM TAPE CONSISTING OF POLYOLEFIN FILM WITH ACRYLIC ADHESIVE. B. JOINT HANGERS: HOT-DIP GALVANIZED STEEL, SIZED TO SUIT FRAMING CONDITIONS. 9. FACTORY WOOD TREATMENT A. TREATED LUMBER AND PLYWOOD: COMPLY WITH REQUIREMENTS OF AFWPA U1 - USE CATEGORY SYSTEM FOR WOOD TREATMENTS DETERMINED BY USE CATEGORIES, EXCEPTED SERVICE CONDITIONS, AND SPECIFIC APPLICATIONS. B. FIRE RETARDANT TREATMENT: AFWPA TREATMENT C20, EXTERIOR TYPE, CHEMICAL TREATMENT PRESERVATIVE IMPREGNATED; CAPABLE OF PROVIDING A MAXIMUM FLAME SPREAD/SMOKE DEVELOPMENT RATING OF 2500 MINUTE DURATION. C. PRESERVATIVE PRESURE TREATMENT OF LUMBER ABOVE GRADE: AFWPA USE CATEGORY U20B, COMMODITY SPECIFICATION 1 (TREATMENT C2) USING WATERBORNE PRESERVATIVE TO 10 LBS/FT³ RETENTION. 1. KILN DRY LUMBER AFTER TREATMENT TO MAXIMUM MOISTURE CONTENT OF 19 PERCENT. 2. TREAT LUMBER IN CONTACT WITH ROOFING, FLASHING OR WATERPROOFING. 3. TREAT LUMBER IN CONTACT WITH MASONRY OR CONCRETE. D. PRESURE TREATMENT OF LUMBER IN CONTACT WITH SOIL AND CONCRETE: AFWPA TREATMENT C2 USING PRESERVATIVE TO 10 LBS/FT³ RETENTION. 1. PRESERVATIVE FOR FIELD APPLICATION TO CUT SURFACES: AS RECOMMENDED BY MANUFACTURER OF FACTORY TREATMENT CHEMICALS FOR BRUSH APPLICATION IN THE FIELD. 10. FRAMING INSTALLATION A. SET STRUCTURAL MEMBERS LEVEL, PLUMB, AND TRUE TO LINE. DISCARD PIECES WITH DEFECTS THAT WOULD LOWER REQUIRED STRENGTH OR RESULT IN UNDESIRABLE APPEARANCE OR EXPOSED MEMBERS. B. MAKE PROPER CONNECTIONS TO EXISTING STRUCTURE, AND PROVIDE TEMPORARY BRACING SUFFICIENT TO MAINTAIN STRUCTURE IN TRUE ALIGNMENT AND SAFE CONDITION UNTIL COMPLETION OF ERECTION AND INSTALLATION OF PERMANENT BRACING. C. INSTALL STRUCTURAL MEMBERS FULL LENGTH WITHOUT SPLICES UNLESS OTHERWISE SPECIFICALLY DETAILLED. D. COMPLY WITH MEMBER SIZES, SPACING, AND CONFIGURATIONS INDICATED, AND FASTENER SIZE AND SPACING INDICATED, BUT NOT LESS THAN REQUIRED BY APPLICABLE CODES AND AFWPA WOOD FRAME CONSTRUCTION MANUAL. E. CONSTRUCT DOOR AND WINDOW HEADS AT FLUSH AND CEILING OPENINGS AND UNDER WALL STUD PARTITIONS THAT ARE PARALLEL TO FLOOR JOISTS; USE METAL JOIST HANGERS UNLESS OTHERWISE DETAILLED. F. FRAME OPENINGS WITH TWO OR MORE STUDS AT EACH JAMB; SUPPORT HEADERS ON CRIPPLE STUDS. SECTION 06170 - LAMINATED VENEER STRUCTURAL TIMBER 1. SECTION INCLUDES A. LAMINATED VENEER LUMBER (LV) FRAMING MEMBERS. B. HARDWARE AND CONNECTORS. 2. QUALITY ASSURANCE A. BASIS FOR QUALIFICATIONS: MANUFACTURER EXPERIENCE IN LAMINATED VENEER STRUCTURAL TIMBER PRODUCTION, AND CAPABLE OF PROVIDING FIELD SERVICE REPRESENTATION DURING CONSTRUCTION. 3. REFERENCE STANDARDS A. ASTM D2559 STANDARD SPECIFICATION FOR ADHESIVES FOR STRUCTURAL LAMINATED WOOD PRODUCTS FOR USE UNDER TENSILE OR SHEAR EXPOSURE CONDITIONS. B. ASTM D5456 SPECIFICATION FOR EVALUATION OF STRUCTURAL COMPOSITE LUMBER PRODUCTS. C. NATIONAL CODE SPECIFICATION FOR WOOD CONSTRUCTION (NCS). D. MATERIALS SHALL COMPLY WITH ESR REPORT ESR-2693. 4. SUBMITTALS A. SUBMIT TO ARCHITECT PER SUBMITTALS SECTION FOR ACCEPTANCE PRIOR TO START OF FABRICATION, SHOW LUMBER COMBINATIONS (AT) AND AFWPA COMBINATION SYMBOLS FOR IDENTIFICATION, DETAILS, METHODS AND SEQUENCES OF ASSEMBLY, ERECTION DIAGRAMS AND INSTRUCTIONS FOR USE IN FIELD. B. MANUFACTURER'S PRODUCT AND MATERIAL SAFETY DATA SHEETS, FOR ALL SPECIFIED PRODUCTS. C. SHOP DRAWINGS: SUBMIT DATA SHOWING PRODUCT COMPONENTS, INCLUDING FINISH. 5. MATERIALS A. BASIS FOR DESIGN: REDBUILT REDLAM TIMBER. B. DOUGLAS FIR, LARCH OR HEMLOCK, TOUCH SANDED, E = 2,025 PSI, FB = 2800 PSI, AND SHAPES AND PROFILES AS INDICATED IN CONTRACT DOCUMENTS. C. GRADE STAMPS: ALL REDLAM LV MATERIALS SHALL COMPLY WITH NBS REPORT NO. NER-481 OR CMCC REPORT NO. 11161-R. D. HARDWARE: FURNISH CONNECTIONS FOR JOINING MEMBERS TO EACH OTHER AND/OR SUPPORTS. 4. QUALITY ASSURANCE A. PROVIDE WALL SHEATHING PRODUCTS MEETING REQUIREMENTS FOR WATER-RESISTIVE BARRIER IN ACCORDANCE WITH ICC-ES AC308. B. FLORIDA BUILDING CODE COMPLIANCE: PROVIDE SHEATHING COMPLYING WITH FLORIDA BUILDING CODE PRODUCT AND INSTALLATION REQUIREMENTS FOR LOCATIONS IN FLORIDA AND OUTSIDE OF HIGH WIND/VIBRANT WIND ZONE. 6. FABRICATION A. LV SHALL BE MANUFACTURED IN A PLANT LISTED IN THE ABOVE REFERENCED REPORTS UNDER THE SUPERVISION OF AN APPROVED THIRD-PARTY INSPECTION AGENCY. IT SHALL BE MANUFACTURED IN A CONTINUOUS PROCESS WITH ALL GRAIN PARALLEL WITH THE LENGTH OF THE MEMBERS. B. LV SHALL BE MANUFACTURED IN A CONTINUOUS PROCESS FROM WOOD FIBER WITH ALL STRANDS ORIENTED TO THE LENGTH OF THE MEMBER AND THEN FED INTO A PRESS. ALL MEMBERS ARE TO BE FREE OF FINGER OR SCARF JOINTS. C. ADHESIVES SHALL BE OF WATERPROOF TYPE CONFORMING TO THE REQUIREMENTS OF ASTM D2559. D. PRESERVATIVE TREATMENT: PRESURE TREAT MEMBERS OR PORTIONS OF MEMBERS IN CONTACT WITH CONCRETE OR EXPOSED TO WEATHER TO CONFORM TO AFWPA STANDARD C-28; RETENTION 0.3 LBS/CU FT. OF WOOD. E. PROTECTION: INDIVIDUALLY WRAP EACH MEMBER. 7. STORAGE AND PROTECTION OF MATERIALS A. CONTRACTOR RECEIVE, UNLOAD AND STORE MATERIALS, STORE MATERIALS PROTECTED FROM EXPOSURE TO HARMFUL WEATHER CONDITIONS AND AT TEMPERATURE AND HUMIDITY CONDITIONS RECOMMENDED BY MANUFACTURER. 8. ERECTION A. COMPLIANCE: COMPLY WITH MANUFACTURER'S PRODUCT DATA, INCLUDING PRODUCT TECHNICAL BULLETINS, PRODUCT CATALOG INSTALLATION INSTRUCTIONS AND PRODUCT CARTON INSTRUCTIONS FOR INSTALLATION. B. GENERAL: HANDLE WITH NON-MARKING SLINGS. ERECT IN ACCORD WITH ACCEPTED SHOP DRAWINGS. 1. MINOR MISFITS: CORRECTION OF MINOR MISFITS BY MODERATE USE OF DRIFT PINS, AND MODERATE AMOUNT OF HEAVING, CHIPPING OR CUTTING IS CONSIDERED PART OF ERECTION. IMMEDIATELY REPORT ERRORS WHICH PREVENT PROPER ASSEMBLY OF PARTS BY THESE MEASURES TO ARCHITECT FOR AUTHORIZATION OF CORRECTION MEASURES PRIOR TO ASSEMBLY. 2. INSTALL PER THE CONTRACT DOCUMENTS AND MANUFACTURER'S RECOMMENDATIONS. IF CUTS OR NOTCHES NOT SHOWN ON THE CONTRACT DOCUMENTS SHALL NOT BE PERMITTED. 9. PROTECTION OF COMPLETED WORK A. KEEP PROTECTIVE WRAPPINGS IN PLACE UNTIL MEMBERS ARE ENCLOSED WITHIN BUILDING, GRADUALLY BRING INITIAL BUILDING HEAT OR COOLING TO DESIRED LEVEL TO MINIMIZE CHECKING, DO NOT REDUCE RELATIVE HUMIDITY OF BUILDING RAPIDLY. SECTION 06192 - WOOD CHORD METAL TRUSSES 1. SECTION INCLUDES A. WOOD CHORD METAL TRUSSES. B. BRIDGING, BRACING AND ANCHORAGE. C. FRAMING FOR OPENINGS. 2. QUALITY ASSURANCE A. MANUFACTURER: COMPANY SPECIALIZING IN MANUFACTURE OF PLYWOOD WEB JOISTS WITH 3 YEARS MINIMUM EXPERIENCE. B. DESIGN: UNDER DIRECT SUPERVISION OF PROFESSIONAL ENGINEER EXPERIENCED IN STRUCTURAL FRAMING DESIGN, VERIFICATION OF DESIGN OF JOISTS BY COMPLETE CALCULATIONS TO BE SUBMITTED AS REQUIRED HERETOBY WITH INDICATED TOLERANCES. C. THESE PRODUCTS SHALL BE DESIGNED AND MANUFACTURED TO THE STANDARDS SET FORTH IN THE ICC ES REPORT NO. ESR-1774. 3. SUBMITTALS A. PRODUCT DATA: SUBMIT FABRICATOR'S SPECIFICATIONS AND INSTALLATION INSTRUCTIONS FOR REQUIRED MATERIALS, INCLUDING HARDWARE, FABRICATION PROCESS, TREATMENT (IF ANY), HANDLING AND ERECTION. 1. SUBMIT CERTIFICATION, SIGNED BY AN OFFICER OF FABRICATING FIRM, INDICATING THAT TRUSSES TO BE USED ARE IN ACCORD WITH THE SPECIFICATIONS AND REQUIREMENTS. 2. SHOP DRAWINGS: SUBMIT SHOP DRAWINGS SHOWING: SPECIES, SIZES AND STRESS GRADATIONS OF LUMBER; CAMBER, BOSS CONFIGURATION AND SPACING FOR EACH TYPE OF TRUSS REQUIRED; TYPE, MATERIAL, FINISH, DESIGN VALUE AND LOCATION OF METAL CONNECTOR PLATES; AND BEARING AND ANCHORAGE DETAILS. 1. FABRICATOR SHALL SUBMIT DESIGN ANALYSIS INDICATING LOADING, SECTION MODULUS, ASSUMED ALLOWABLE STRESS CALCULATIONS, AND SIMILAR INFORMATION NEEDED FOR ANALYSIS AND TO ENSURE THAT TRUSSES COMPLY WITH DESIGN STANED FINISH. ii. SHOP DRAWINGS SHALL BE SIGNED AND STAMPED BY A STRUCTURAL ENGINEER LICENSED TO PRACTICE IN THE STATE WHERE TRUSSES ARE TO BE ERECTED. C. THE STANDARDS OF THE MANUFACTURER FOR QUALITY, ENGINEERING AND FABRICATION SHALL GOVERN THE WORK OF THIS SECTION. 4. MANUFACTURER A. THE DRAWINGS WERE PREPARED AND THIS SPECIFICATION WRITTEN ON THE BASIS OF USING THE PRODUCTS OF THE REDBUILT LLC, BOISE, IDAHO. 5. TRUSSES A. TRUSSES SHALL BE FACTORY MANUFACTURED WITH STEEL WEBS, TRUE PIN CONNECTIONS AND STRUCTURAL WOOD CHORDS. B. TOP AND BOTTOM CHORDS: CHORD MEMBERS SHALL BE OF MACHINE STRESS RATED LUMBER OF APPROVED GRADE AND KILN DRIED TO A MAXIMUM MOISTURE CONTENT OF 19%. C. CHORD MEMBERS: ACCURATELY DIE STAMPED FROM ELECTRICALLY WELDED, COLD ROLLED STEEL TUBING HAVING A MINIMUM YIELD STRENGTH OF 45,000 PSI. D. CONNECTING PINS AND BEARING MEMBERS: MATERIAL, AND SIZE AS REQUIRED BY DESIGN. E. TOP AND BOTTOM CHORDS: CHORD MEMBERS SHALL BE OF MACHINE STRESS RATED LUMBER OF APPROVED GRADE AND KILN DRIED TO A MAXIMUM MOISTURE CONTENT OF 19%. 6. HANDLING AND STORAGE A. PROTECT TRUSSES AND ACCESSORIES FROM DAMAGE WHEN STORED AT THE JOB SITE. B. FINISHED MEMBERS SHALL BE FREE OF BENDS, TWISTS OR OPEN JOINTS. REPLACE WARPED, BOWED OR DAMAGED TRUSSES AT THE JOB SITE. C. HANDLE AND INSTALL IN A MANNER TO PREVENT BENDING, WARPING, TWISTING OR OTHER DAMAGE. D. STORE TRUSSES IN A VERTICAL POSITION AND PROTECT FROM WEATHER. 7. INSTALLATION A. INSTALL JOISTS IN ACCORD WITH MANUFACTURER'S INSTRUCTIONS, TRUE TO LINE AND LEVEL. PROVIDE TEMPORARY BRACING TO POSITION JOISTS IN PLACE UNTIL PERMANENTLY SECURED. PLACE PERMANENT BRIDGING, BRACING AND ANCHORS TO MAINTAIN JOISTS STRAIGHT AND IN CORRECT POSITION BEFORE INSTALLATION OF DECKING. B. ANY PRODUCT SPECIFIED ELSEWHERE IN THESE SPECIFICATIONS DESIGNED TO BE SUSPENDED BY ANY MEANS FROM PLYWOOD WEB JOIST SHALL BE SUSPENDED FROM TOP FLANGE OF JOIST SPECIFICALLY IDENTIFIED IN THE SPECIFICATIONS AND DETAILED IN STRUCTURAL DRAWINGS TO BE APPLIED TO BOTTOM FLANGE OF JOIST. 8. PROTECTION OF WORK IN PROGRESS A. TEMPORARY CONSTRUCTION LOADS WHICH CAUSE MEMBER STRESSES BEYOND DESIGN LIMITS ARE NOT PERMITTED. SECTION 06196 - PLYWOOD WEB JOISTS 1. SECTION INCLUDES A. PLYWOOD WEB JOISTS. B. BRIDGING, BRACING AND ANCHORAGE. C. FRAMING FOR OPENINGS. 2. QUALITY ASSURANCE A. MANUFACTURER: COMPANY SPECIALIZING IN MANUFACTURE OF PLYWOOD WEB JOISTS WITH 3 YEARS MINIMUM EXPERIENCE. B. DESIGN: UNDER DIRECT SUPERVISION OF PROFESSIONAL ENGINEER EXPERIENCED IN STRUCTURAL FRAMING DESIGN, VERIFICATION OF DESIGN OF JOISTS BY COMPLETE CALCULATIONS TO BE SUBMITTED AS REQUIRED HEREIN. 3. REFERENCE STANDARDS A. AMERICAN LUMBER STANDARDS COMMITTEE (ALSC) B. AMERICAN PLYWOOD ASSOCIATION (APA) C. DOUGLAS FIR PLYWOOD ASSOCIATION (DFPA) 4. MTTALS A. SUBMIT SHOP DRAWINGS PER SUBMITTALS SECTION TO THE ARCHITECT FOR ACCEPTANCE—INDICATE FRAMING SYSTEM, SIZES AND SPACING OF JOISTS, LOADS AND JOIST CAMBERS, BEARING AND ANCHOR DETAILS, BRIDGING AND BRACING, AND FRAMED OPENINGS. B. INSTRUCTIONS: SUBMIT MANUFACTURER'S INSTALLATION INSTRUCTIONS. 5. MANUFACTURER A. THE DRAWINGS WERE PREPARED AND THIS SPECIFICATION WRITTEN ON THE BASIS OF USING THE PRODUCTS OF THE REDBUILT LLC, BOISE, IDAHO. IT IS NOT THE INTENT TO LIMIT COMPETITIVE BIDDING. PRODUCTS WITH EQUAL CHARACTERISTICS BY OTHER MANUFACTURERS ARE ACCEPTABLE UNDER THE CONDITIONS OF THESE SPECIFICATIONS. 6. BASIC MATERIALS A. RED—PLYWOOD WEB JOIST: 1. FLANGES: MACHINE STRESS RATED LUMBER ONLY, NO SUBSTITUTIONS ALLOWED. NOTE THAT TOP AND BOTTOM FLANGES SHALL BE OF CONSISTENT SIZE THROUGHOUT PROJECT, REGARDLESS OF SPAN. 2. WEBS: APA STRUCTURAL 1 GRADE PLYWOOD. 3. GUE: WATERPROOF. B. BRIDGING, TYPE, SIZE AND SPACING REQUIRED BY JOIST MANUFACTURER. 7. ANCHORS AND CONNECTORS A. GALVANIZED STEEL: TYPE TO SUIT APPLICATION. 8. FABRICATION A. INSTALL WEBS IN FLANGES WITH GRAIN RUNNING IN VERTICAL DIRECTION OF JOIST AND BUTT JOINTS TO FORM CONTINUOUS WEB. PRESURE FORM WEB AND FIT INTO A GROOVE IN CENTER OF WIDE FLANGE OF FLANGE MEMBERS SO AS TO FORM A PRESSURED GUE JOINT AT THAT JUNCTION. 9. DELIVERY AND STORAGE A. TRANSPORT AND STORE JOISTS IN VERTICAL POSITION RESTING ON BEARING ENDS. PROTECT JOISTS FROM MOISTURE, WARPING, AND DISTORTION DURING TRANSIT AND WHEN SITE STORED. 10. INSTALLATION A. INSTALL JOISTS IN ACCORD WITH MANUFACTURER'S INSTRUCTIONS; TRUE TO LINE AND LEVEL. PROVIDE TEMPORARY BRACING TO POSITION JOISTS IN PLACE UNTIL PERMANENTLY SECURED. PLACE PERMANENT BRIDGING, BRACING AND ANCHORS TO MAINTAIN JOISTS STRAIGHT AND IN CORRECT POSITION BEFORE INSTALLATION OF DECKING. B. ANY PRODUCT SPECIFIED ELSEWHERE IN THESE SPECIFICATIONS DESIGNED TO BE SUSPENDED BY ANY MEANS FROM PLYWOOD WEB JOIST SHALL BE SUSPENDED FROM TOP FLANGE OF JOIST ONLY. NO LOADS MAY BE APPLIED TO BOTTOM FLANGE OF JOIST. 11. PROTECTION OF WORK IN PROGRESS A. TEMPORARY CONSTRUCTION LOADS WHICH CAUSE MEMBER STRESSES BEYOND DESIGN LIMITS ARE NOT PERMITTED. SECTION 06200 - FINISH CARPENTRY 1. SECTION INCLUDES A. FINISH CARPENTRY ITEMS. 2. REFERENCES A. ANIWAAMAC (QSI) — ARCHITECTURAL WOODWORK QUALITY STANDARDS ILLUSTRATED; ARCHITECTURAL WOODWORK INSTITUTE AND ARCHITECTURAL WOODWORK MANUFACTURERS ASSOCIATION OF CANADA; 2006, 8TH ED., VERSION 2.0. B. ANPLA C2 — LUMBER, TIMBER, BRIDGE TIES AND NINE TEST — PRESERVATIVE TREATMENT BY PRESSURE PROCESSES; AMERICAN WOOD—PRESERVERS' ASSOCIATION; 2002. 3. QUALITY ASSURANCE A. PERFORM WORK IN ACCORDANCE WITH ANIWAAMAC ARCHITECTURAL WOODWORK QUALITY STANDARDS ILLUSTRATED, CUSTOM GRADE. 4. DELIVERY, STORAGE, AND HANDLING A. PROTECT WORK FROM MOISTURE DAMAGE. 5. LUMBER MATERIALS A. SOFTWOOD LUMBER: 1. SOUTHERN YELLOW PINE #2, C&BTR 2. TEXTURE: SURFACED SMOOTH, BOTH SIDES. B. HARDWOOD LUMBER: 1. POPLAR, DOUGLAS FIR OR RED CEDAR AS INDICATED ON THE DRAWINGS. 2. TEXTURE: SURFACED SMOOTH, BOTH SIDES; DISTRESSED WHERE NOTED. C. RECLAIMED LUMBER: 1. EXTERIOR: RECLAIMED BARN WOOD SIDDING, RANDOM LENGTHS AND WIDTHS. 2. INTERIOR: RECLAIMED RE—MILLED PINE. 6. ADHESIVE A. ADHESIVE: TYPE RECOMMENDED BY LAMINATE MANUFACTURER TO SUIT APPLICATION. 7. FASTENERS A. HOT DIPPED GALVANIZED FOR EXTERIOR AND HIGH HUMIDITY LOCATIONS, UNTREATED STEEL ELSEWHERE. B. CONCEALED JOINT FASTENERS, THREADED STEEL. 8. WOOD TREATMENT A. PRESERVATIVE BY PRESSURE TREATMENT (PT TYPE); AFWPA TREATMENT C2 USING WATER BORNE PRESERVATIVE WITH 0.25 PERCENT RETAINAGE. 9. FABRICATION A. SHOP ASSEMBLE WORK FOR DELIVERY TO SITE, PERMITTING PASSAGE THROUGH BUILDING OPENINGS. B. WHEN NECESSARY TO CUT AND FIT ON SITE, PROVIDE MATERIALS WITH AMPLE ALLOWANCE FOR CUTTING. PROVIDE TRIM FOR SCRIBING AND SUE CUTTING. 10. INSTALLATION A. SET AND SECURE MATERIALS AND COMPONENTS IN PLACE, PLUMB AND LEVEL. B. CAREFULLY SCRIBE AND MATCH MATERIALS TO EXISTING CONDITIONS AND AT MAXIMUM GAPS OF 1/32 INCH. DO NOT USE ADDITIONAL OVERLAY TRIM TO CONCEAL LARGE GAPS. 11. ERECTION TOLERANCES A. MAXIMUM VARIATION FROM TRUE POSITION: 1/16 INCH. B. MAXIMUM OFFSET FROM TRUE ALIGNMENT WITH ADJOINING MATERIALS: 1/32 INCH. 12. SCHEDULE A. EXTERIOR: 1. SIDING: a. SPECIES AND GRADE: 1X6 SHIP LAP WESTERN RED CEDAR, WMPA OR WCLB, B DE BETTER-1. b. BETTER-1 = 2 CLEAR VERTICAL GRAIN (PROVIDE RECLAIMED WOOD WHERE NECESSARY). c. TEXTURE: S4S. d. FURNISH SURFACED LUMBER FOR SIDING AND TRIM INDICATED TO RECEIVE STAIN FINISH. 2. WOOD SCREENING: a. SPECIES AND GRADE: 1X6 WESTERN RED CEDAR, WMPA OR WCLB, B DE BETTER-1. b. TEXTURE: S4S. c. FURNISH SURFACED LUMBER FOR SCREENING AND FENCING INDICATED TO RECEIVE STAINED FINISH. B. INTERIOR: 1. STANDING AND RUNNING TRIM — TRANSPARENT FINISH: a. QUALITY STANDARD: COMPLY WITH AWI 300 CUSTOM GRADE. b. BACKS: BACK OUT OR GROOVE BACKS OF FLAT TRIM MEMBERS, KEF BACKS OF OTHER BACKS. c. MAXIMUM VARIATION FROM TRUE POSITION: 1/16 INCH. d. MAXIMUM OFFSET FROM TRUE ALIGNMENT WITH ADJOINING MATERIALS: 1/32 INCH. SECTION 06410 - CUSTOM CABINETS 1. SECTION
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HAT CREEK BURGER - PROTOTYPE 1.1 TABLE OF CONTENTS

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

SECTION 07212 - BOARD AND BATT INSULATION

1. SECTION INCLUDES
- A. BATT INSULATION IN EXTERIOR WALL AND CEILING CONSTRUCTION.
 - B. BATT INSULATION FOR FLING PERIMETER WINDOW AND DOOR SHIM SPACES AND CREVICES IN EXTERIOR WALL AND ROOF.
 - C. NAIL-LINE ROOF INSULATION BOARD AT SLOPED METAL ROOFING.

2. REFERENCES
- A. ASTM C 578 - STANDARD SPECIFICATION FOR RIGID, CELLULAR POLYSTYRENE THERMAL INSULATION, 2005A.
 - B. ASTM C 665 - STANDARD SPECIFICATION FOR MINERAL-FIBER BLANKET THERMAL INSULATION FOR LIGHT FRAME CONSTRUCTION AND MANUFACTURED HOUSING, 2001.
 - C. ASTM C 1289 - STANDARD SPECIFICATION FOR FACED RIGID CELLULAR POLYISOCYANURATE THERMAL INSULATION BOARD, 2006.
 - D. ASTM D 2842 - STANDARD TEST METHOD FOR WATER ABSORPTION OF RIGID CELLULAR PLASTIC, 2001.
 - E. ASTM E 84 - STANDARD TEST METHOD FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS, 2005.
 - F. ASTM E 136 - STANDARD TEST METHOD FOR BEHAVIOR OF MATERIALS IN A VERTICAL TUBE FURNACE AT 750 DEGREES C, 2004.

3. BATT INSULATION MATERIALS
- A. BATT INSULATION: ASTM C 665; PREFORMED BATT; FRICTION FR, CONFIRMING TO THE FOLLOWING:
 - 1. COMBUSTIBILITY: NON-COMBUSTIBLE, WHEN TESTED IN ACCORDANCE WITH ASTM E 136, EXCEPT FOR FACING, IF ANY.
 - 2. THERMAL RESISTANCE: R OF 21 IN WALLS, 30 IN ROOF.
 - 3. FACING: ALUMINUM FOIL OR KRAFT PAPER FACED, ONE SIDE.
 - 4. APPROVED MANUFACTURERS:
 - A. CERTAINTED CORPORATION: WWW.CERTAINTED.COM.
 - B. JOHNS MANVILLE CORPORATION: WWW.JM.COM.
 - C. OWENS CORNING CORP: WWW.OWENSCORNING.COM.

5. NAILABLE ROOF INSULATION
- A. NAIL-BASE BOARD INSULATION: 2.5 INCH THICK NAIL-BASE ROOF INSULATION, POLYISOCYANURATE FOAM CORE BONDED TO 716 INCH ORIENTED STRUCTURAL BOARD OVER 1 INCH POLYISOCYANURATE RIGID INSULATION BOARD.
 - 1. FLAME SPREAD INDEX: 50 OR LESS, WHEN TESTED IN ACCORDANCE WITH ASTM E 84.
 - 2. SMOKE DEVELOPED INDEX: 450 OR LESS, WHEN TESTED IN ACCORDANCE WITH ASTM E 84.
 - 3. COMPRESSIVE STRENGTH: 20 PSI
 - 4. BOARD SIZE: 48 X 96 INCH.
 - 5. THERMAL RESISTANCE: R-VALUE OF 12 FOR COMPOSITE BOARD R-VALUE OF 18 FOR INSULATION BOARD FOR TOTAL OF R-30.

6. APPROVED MANUFACTURERS:
- A. JOHNS MANVILLE, "NAILBOARD": WWW.SPECIM.COM
 - B. R-MAX, "NAILABLE BASE 3": WWW.RMAX.COM
 - C. ATLAS ROOFING CORP., "ACFOAM NAILBOARD": WWW.ATLASROOFING.COM
 - D. HOMASOTE COMPANY, "THERMASOTE NALBASE": WWW.HOMASOTE.COM

7. ACCESSORIES
- A. TAPE: BRIGHT ALUMINUM SELF-ADHERING TYPE, MESH REINFORCED, 2 INCH WIDE.
 - B. INSULATION FASTENERS: IMPALING CLIP OF UNFINISHED STEEL WITH WASHER RETAINER AND CLIPS, TO BE ADHERED TO SURFACE TO RECEIVE INSULATION, LENGTH TO SUIT INSULATION THICKNESS AND SUBSTRATE, CAPABLE OF SECURELY AND RIGIDLY FASTENING INSULATION IN PLACE.
 - C. ADHESIVE: TYPE RECOMMENDED BY INSULATION MANUFACTURER FOR APPLICATION.

8. BATT INSULATION
- A. INSTALL INSULATION IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
 - B. INSTALL IN EXTERIOR WALL AND ROOF SPACES WITHOUT GAPS OR VOIDS, DO NOT COMPRESS INSULATION.
 - C. TRIM INSULATION NEATLY TO FIT SPACES. INSULATE MISCELLANEOUS GAPS AND VOIDS.
 - D. FIT INSULATION TIGHTLY IN CAVITIES AND TIGHTLY TO EXTERIOR SIDE OF MECHANICAL AND ELECTRICAL SERVICES WITHIN THE PLANE OF THE INSULATION.
 - E. INSTALL INSULATION IN WALLS WITH FACED SIDE FACING THE BUILDING INTERIOR.
 - F. TAPE INSULATION BATTS IN PLACE.

9. BOARD INSULATION AT SLOPED ROOFING
- A. INSTALL RIGID ROOF INSULATION OVER ENTIRE SLOPING ROOF AREA WITH VENT STRIPS PARALLEL TO ROOF IN ACCORD WITH MANUFACTURERS INSTALLATION INSTRUCTIONS.
 - B. OVERLAY NAIL BASE INSULATION ON TOP OF RIGID INSULATION BOARD WITH STAGGERED SEAMS IN PERPENDICULAR DIRECTION.
 - C. ALLOW 1/8" SPACING BETWEEN UNITS. USE MANUFACTURER'S RECOMMENDED FASTENERS. INSULATION FASTENERS OF SUFFICIENT LENGTH TO PENETRATE INSULATION BOARD BELOW AND A MINIMUM 1" INTO ROOF DECK SUBSTRATE, BUT NOT THROUGH THE DECK, AT APPLICABLE INTERVALS TO ACHIEVE FM-I-90 RATING OR AS REQUIRED BY LOCAL CODE.

10. SILL SEALER GASKET
- 1. SECTION INCLUDES
 - A. SILL SEALER GASKET AT EXTERIOR WALLS.
 - 2. DELIVERY, STORAGE AND HANDLING
 - A. STORE SILL SEALER IN A DRY AREA ABOVE 60° BEFORE USE.
 - 3. SILL SEALER
 - A. SILL SEALER "PROTECTO TRIPLE GUARD ENERGY SILL SEALER BY PROTECTO WRAP (1-800-759-9727), PROTECTO TRIPLE GUARD ENERGY SILL SEALER IS AVAILABLE IN 3 1/2" AND 6 1/2" WIDTHS AND 1 1/4" THICK.

4. ACCESSORIES
- A. PRIMER: #100 PRIMER BY PROTECTO WRAP.
 - 5. PREPARATION
 - A. AREAS TO BE SEALED MUST BE CLEAN AND DRY, KNOCK OFF AND REMOVE ANY ROUGH OR JAGGED EDGES.
 - 6. INSTALLATION
 - A. ROLL OUT PROTECTO ENERGY PLATE LINER AND ALIGN WITH PERIMETER OF SLAB. PEEL OFF THE RELEASE LINER FROM THE BOTTOM OF THE ENERGY PLATE LINER AND PLACE THE EXPOSED ADHESIVE SIDE DOWN ON TOP OF THE FOUNDATION.
 - B. PRESSING THE ADHESIVE BOTTOM OF THE PROTECTO ENERGY PLATE LINER IN PLACE IS ESSENTIAL TO PROPERLY ADHERE THE PRODUCT TO THE FOUNDATION.
 - C. FOR RE BAR OR ANCHOR BOLTS COMING OUT OF THE FOUNDATION, MAKE AN "X" CUT IN THE BACK OF THE PROPERTY LINER AND SLIDE OVER THE PROTRUSION PRESSING FIRMLY IN PLACE.

7. COLD WEATHER REQUIREMENTS
- A. FOR INSTALLATIONS BELOW 40° F:
 - 1. KEEP PROTECTO ENERGY PLATE LINER SEALER IN A WARM HEATED SPACE ABOVE 60° F BEFORE USE.
 - 2. PRIME THE TOP OF THE FOUNDATION WITH #100 PRIMER AND ALLOW PRIMER TO TACK UP. DO NOT APPLY ENERGY PLATE LINER TO WET PRIMER.
 - 3. PEEL AND STICK THE PROTECTO ENERGY PLATE LINER SILL SEALER IN PLACE.
 - 4. PROTECTO WRAP PROTECTO-TAK 16.25 OZ. SPRAY ADHESIVE MAY BE USED IN PLACE OF # 100 PRIMER.

8. SHEET SEAL MATERIALS
- A. VAPOR RETARDER: STEGO WRAP VAPOR BARRIER (10 MIL) BY STEGO INDUSTRIES LLC FOR UNDERSLAB APPLICATIONS.
 - B. MOISTURE BARRIER: 30 LB FELT FOR HORIZONTAL APPLICATIONS.

3. ACCESSORIES
- A. VAPOR RETARDER SEAM TAPE:
 - 1. PERFORMANCE LESS THAN 0.3 PERMS PER ASTM F 1249 OR ASTM E 96
 - 2. STEGO TAPE BY STEGO INDUSTRIES LLC
 - B. AIR BARRIER SEAM TAPE:
 - 1. PERFORMANCE LESS THAN 0.3 PERMS PER ASTM F 1249 OR ASTM E 96
 - 2. TYVEK SEAM TAPE
 - C. PIPE BOOTS
 - 1. CONSTRUCT PIPE BOOTS FROM VAPOR BARRIER MATERIAL, PRESSURE SENSITIVE TAPE AND/OR MASTIC PER MANUFACTURERS INSTRUCTIONS.

4. INSTALLATION
- A. INSTALL MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
 - 1. SECTION INCLUDES
 - A. STANDING SEAM ROOF PANELS
 - B. MATCHING METAL TRIM AND FLASHING
 - C. CONCEALED FASTENERS
 - D. SHOP DRAWINGS
 - E. SAMPLES

2. REFERENCES
- A. SMACNA (ASMM) - ARCHITECTURAL SHEET METAL MANUAL: SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION.
 - B. ASTM A762-89: STANDARD SPECIFICATION FOR STEEL SHEET, ALUMINUM-ZINC ALLOY COATED BY THE HOT-DIP PROCESS, GENERAL REQUIREMENTS
 - 3. SUBMITTALS
 - A. SUBMIT SHOP DRAWINGS PER SUBMITTALS SECTION PRIOR TO FABRICATION, FOR OWNERS ACCEPTANCE. SHOW GAUGES, PROFILES, FASTENER TYPES AND LOCATIONS, AND FLASHING DETAILS.
 - B. SUBMIT SAMPLES OF PANEL PROPOSED WITH COLOR SAMPLES ON ACTUAL MATERIAL, FOR OWNERS ACCEPTANCE AND COLOR SELECTION.

4. QUALITY ASSURANCE
- A. WIND UPLIFT: PROVIDE ROOF PANEL SYSTEM INCLUDING SUPPORTS MEETING REQUIREMENTS OF UNDERWRITERS LABORATORIES, INC. FOR CLASS 90 WIND UPLIFT RESISTANCE.
 - 5. WARRANTY
 - A. METAL PANEL MANUFACTURER, UPON FINAL ACCEPTANCE FOR PROJECT, FURNISH A WARRANTY COVERING BASE METAL AGAINST RUPTURE, STRUCTURAL FAILURE, AND PERFORMANCE DUE TO NORMAL ATMOSPHERIC CORROSION EXPOSURE FOR A PERIOD OF 25 YEARS.
 - B. METAL PANEL MANUFACTURER, UPON FINAL ACCEPTANCE FOR PROJECT, FURNISH A WARRANTY COVERING PANEL FINISH AGAINST CRACKING, CHECKING, BLISTERING, PEELING, FLAKING, CHIPPING, CHALKING, AND FADING FOR A PERIOD OF 25 YEARS.
 - C. UL (RMSD)-ROOFING MATERIALS AND SYSTEMS DIRECTORY: UNDERWRITERS LABORATORIES INC.; CURRENT EDITION.

6. SHEET METAL PANELS
- A. MCELROY METAL, BOSSIER CITY, LA
 - 1. SHEET ROOF PANELS: FLAT PANS WITH 1 1/2 INCH HIGH RIBS AT 16 INCHES ON CENTER; 24 GAUGE (UL 90 RATED); PRE-COATED GALVALUME STEEL SHEET SUBSTRATE, 0.5 OUNCES/SQUARE FOOT COMPLYING WITH ASTM A 446 WITH G30 COATING COMPLYING WITH ASTM A 525.
 - B. FINISH: MANUFACTURER'S STANDARD KYMAR 500 COATING, COLOR AS NOTED ON DRAWINGS.

7. METAL TRIM AND FLASHINGS
- A. FABRICATE FROM SAME THICKNESS AND FINISH MATERIAL AS ROOFING PANELS.
 - 8. FASTENERS
 - A. CONCEALED, CORROSION RESISTANT, WEATHER TIGHT, TYPE AND SIZE REQUIRED BY MANUFACTURER'S SPECIFICATIONS. STAINLESS STEEL FASTENING SHALL BE USED FOR CONNECTING DISSIMILAR METALS.

9. CLOSURES
- A. MANUFACTURER'S STANDARD, MATCH PANELS, TO FIT CONFIGURATION OF THE PANEL SPECIFIED.
 - 10. UNDERLAYMENT
 - A. W. R. GRACE COMPANY, ICE AND WATER SHIELD
 - 11. JOINT SEALANTS
 - A. AS SPECIFIED IN SEALANTS AND CAULKING.

12. HANDLING
- A. PERFORM IN A MANNER TO PREVENT BENDING, WARPING, TWIST, OR OTHER DAMAGE. DO NOT USE DAMAGED OR BENT MATERIALS.
 - 13. STORAGE
 - A. STORE UNITS ON RAISED SUPPORT AND PROTECT FROM WEATHER.
 - 14. WORKMANSHIP
 - A. USE ONLY SKILLED AND EXPERIENCED PERSONNEL. WORKMANSHIP SHALL BE EQUAL TO THE BEST PRACTICE OF MODERN METAL ROOFING INSTALLATION.

15. INSTALLATION
- A. GENERAL REQUIREMENTS:
 - 1. ROOFING SHEETS: PROVIDE THE FINISHED DIMENSIONS, SEAM TO SEAM. FURNISH CONTINUOUS SHEETS, SINGLE PIECES LESS THAN EIGHT (8) FEET LONG MAY BE USED TO CONNECT TO SHOP FABRICATED INSIDE AND OUTSIDE CORNERS.
 - 2. INSTALLATION: INSTALL PANELS WEATHER TIGHT, WITHOUT WAVES, WARPS, BUCKLES, FASTENING STRESSES OR DISTORTION, ALLOWING FOR EXPANSION AND CONTRACTION. INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS AND APPROVED SHOP DRAWINGS.
 - 3. DISSIMILAR MATERIALS CONTACT: WHERE SHEET METAL IS SHOWN CONTACTING CONCRETE, MASONARY MATERIALS, STEEL, OTHER DISSIMILAR METAL, OR A CONTACTING WOOD, KEEP SHEET METAL FROM DIRECT CONTACT WITH THE DISSIMILAR MATERIALS BY A COAT OF BITUMINOUS OINT APPLIED TO A THICKNESS OF 12 TO 14 MILS.

16. ROOFING:
- 1. UNDERLAYMENT: COVER ROOF DECKS TO RECEIVE SHEET METAL ROOFING WITH ONE LAYER OF UNDERLAYMENT. TURN UNDERLAYMENT UP 8 INCHES ON ABUTTING VERTICAL SURFACES. DOUBLE UNDERLAYMENT IN VALLEYS, OVER HIPs AND AT RIDGES. FASTEN TO ROOF DECKS AND SHEATHING PER MANUFACTURER'S WRITTEN STANDARDS.
 - 2. SHEET METAL: LAY SHEATHING WITH LONG DIMENSION AS INDICATED ON THE DRAWINGS. PANELS SHALL BE CONTINUOUS FROM RIDGE TO EAVE. SECURE METAL TO DECKING WITH APPROVED FASTENERS.
 - 3. SEAMS: MAKE FINISHED SEAMS STRAIGHT, UNIFORM AND ACCURATELY V-CUT.
 - B. GABLE AND RAKE EDGES: HOOK EDGES OF ROOFING SHEETS OVER PREVIOUSLY INSTALLED CONTINUOUS EDGE STRIP, UNLESS DETAIL OTHERWISE NOTED ON DRAWINGS.
 - C. EAVES: SAME AS FOR GABLES AND RAKE EDGES.
 - D. ABUTTING WALLS: FORM A LOOSE-LOCKED JOINT NEAR THE WALL LINE WITH A CLEATED BASE FLASHINGS. EXTEND METAL BASE FLASHINGS UP ON VERTICAL SURFACES AT LEAST SIX (6) INCHES AND TERMINATE AS INDICATED.
 - E. CUTTING AND FITTING: CUTTING, FITTING, DRILLING, AND OTHER OPERATIONS IN CONNECTION WITH SHEET METAL REQUIRED TO ACCOMMODATE THE WORK OF OTHER TRADES SHALL BE PERFORMED BY SHEET METAL MECHANICS.
 - F. FLASHING: INSTALL AT INTERSECTIONS OF ROOF WITH VERTICAL SURFACES AND AT PROJECTIONS THROUGH ROOF, WHERE SHEET METAL ABUTS OR EXTENDS INTO ADJACENT MATERIALS, THE JUNCTURE SHALL BE EXECUTED IN A MANNER TO ASSURE WEATHER-TIGHT CONNECTION.

- SECTION 07460 - FIBER-CEMENT SIDING AND TRIM
- 1. SECTION INCLUDES
 - A. FIBER CEMENT SIDING TRIM, FASCIA, SOFFIT AND ACCESSORIES.
 - 2. ENGINEERING DESIGN
 - A. SUBCONTRACTOR FOR THE WORK OF THIS SECTION SHALL BE RESPONSIBLE FOR FINAL DESIGN OF INSTALLATION SYSTEMS AND SHALL INSURE PROPER DESIGN FOR SPACING OF SUB-FRAMING AND ALL ATTACHMENTS. SUBCONTRACTOR MUST HAVE NOT LESS THAN THREE (3) YEARS SUCCESSFUL EXPERIENCE IN INSTALLATION OF SIMILAR CLADDING SYSTEMS.
 - 3. REFERENCE STANDARDS
 - A. AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM)

4. SUBMITTALS
- A. SUBMIT SHOP DRAWINGS PER SUBMITTALS SECTION PRIOR TO FABRICATION, FOR ARCHITECT'S APPROVAL. DRAWINGS SHALL SHOW FINISH, PROFILES, FASTENER TYPES AND LOCATIONS, AND FLASHING DETAILS.
 - B. SUBMIT SAMPLE PANEL OF PROPOSED CONSTRUCTION FINISH WITH COLOR SAMPLES ON ACTUAL MATERIAL FOR APPROVAL.

5. WARRANTY
- A. PRODUCT WARRANTY: LIMITED PRODUCT WARRANTY AGAINST MANUFACTURING DEFECTS.
 - 1. HARDOFFIT PANELS FOR 30 YEARS.
 - 2. HARDO TRIM AND HARDO FASCIA FOR 10 YEARS.
 - B. WORKMANSHIP WARRANTY: APPLICATION WARRANTY FOR 2 YEARS.
 - 6. COORDINATION
 - A. CONTRACTOR SHALL BE RESPONSIBLE FOR DIMENSIONS, DETAILING, FABRICATION, FITTING AND ALIGNMENT OF THE WORK OF THIS SECTION.
 - 7. MANUFACTURER
 - A. THE DRAWINGS WERE PREPARED AND THIS SPECIFICATION WRITTEN ON THE BASIS OF USING THE PRODUCTS OF JAMES HARDIE BUILDING PRODUCTS, INC., MISSION VIEJO, CA. WWW.JAMESHARDIECOMMERCIAL.COM. PRODUCTS WITH EQUAL CHARACTERISTICS BY OTHER MANUFACTURERS ARE ACCEPTABLE UNDER THE CONDITIONS OF THESE SPECIFICATIONS.

8. PRODUCTS
- A. FIBER CEMENT TRIM, FASCIA, VENTED SOFFIT AND ACCESSORIES SHALL BE COMPOSED OF AUTOCLAVED, NON-ASBESTOS, FIBER-CEMENT COMPLYING WITH THE PROVISIONS OF ASTM C1186. PRODUCT SHALL PROVIDE THE FOLLOWING MINIMUM PROPERTIES: MODULUS OF RUPTURE (EQUILIBRIUM) >1450 PSI, ASTM C1185, DENSITY 80 PCF ASTM C1185, FLAME SPREAD/SMOKE DEVELOPMENT 00 ASTM E84.
 - B. REFER TO FINISH SCHEDULE ON DRAWINGS FOR SPECIFIC PRODUCTS, FINISH, SIZES, ETC., FOR ALL FIBER CEMENT TRIM, FASCIA AND VENTED SOFFIT PRODUCTS USED ON PROJECT.
 - C. FACTORY PRIMER: PROVIDE FACTORY APPLIED UNIVERSAL PRIMER.
 - D. TEXTURE: SMOOTH

9. FASTENERS
- A. CONCEALED, GALVANIZED, CORROSION RESISTANT, TYPE AND SIZE REQUIRED BY DESIGN.
 - 10. JOINT SEALANTS
 - A. AS SPECIFIED IN SEALANTS AND CAULKING
 - 11. HANDLING
 - A. PERFORM IN A MANNER TO PREVENT BENDING, WARPING, TWISTING OR OTHER DAMAGE. ALL MATERIAL SHALL BE CLEAN AND STRAIGHT, DAMAGED OR BENT MATERIALS SHALL NOT BE USED.

12. STORAGE
- A. STORE UNITS ON RAISED SUPPORT AND PROTECT FROM THE WEATHER.
 - 13. WORKMANSHIP
 - A. USE ONLY SKILLED AND EXPERIENCED PERSONNEL. ALL WORKMANSHIP SHALL BE EQUAL TO THE BEST PRACTICE OF MODERN SIDING INSTALLATION.

14. ERECTION
- A. ERECT IN COMPLETE ACCORD WITH APPROVED SHOP DRAWINGS AND MANUFACTURER'S WRITTEN INSTRUCTIONS. USE FULL LENGTH PANELS WHENEVER POSSIBLE TO MINIMIZE END JOINTS.
 - SECTION 07530 - ELASTOMERIC MEMBRANE ROOFING
 - 1. SECTION INCLUDES
 - A. ELASTOMERIC ROOFING MEMBRANE, MECHANICALLY FASTENED CONVENTIONAL APPLICATION.
 - B. INSULATION, FLAT AND TAPERED.

2. REFERENCES
- A. ASTM C 1289- STANDARD SPECIFICATION FOR FACED RIGID CELLULAR POLYISOCYANURATE THERMAL INSULATION BOARD, 2006.
 - B. BRCS 25 MIL THK NRCA ROOFING AND WATERPROOFING MANUAL: NATIONAL ROOFING CONTRACTORS ASSOCIATION, 11TH EDITION, WITH INTERIM UPDATES.
 - C. UL (RMSD)-ROOFING MATERIALS AND SYSTEMS DIRECTORY: UNDERWRITERS LABORATORIES INC.; CURRENT EDITION.

3. QUALITY ASSURANCE
- A. PERFORM WORK IN ACCORDANCE WITH NRCA ROOFING AND WATERPROOFING MANUAL AND MANUFACTURER'S INSTRUCTIONS.
 - 4. ENVIRONMENTAL REQUIREMENTS
 - A. DO NOT APPLY ROOFING MEMBRANE DURING UNSUITABLE WEATHER.
 - B. DO NOT APPLY ROOFING MEMBRANE WHEN AMBIENT TEMPERATURE IS BELOW 40 DEGREES F OR ABOVE 120 DEGREES F.
 - C. DO NOT APPLY ROOFING MEMBRANE TO DAMP OR FROZEN DECK SURFACE OR WHEN PRECIPITATION IS EXPECTED OR OCCURRING.
 - D. DO NOT EXPOSE MATERIALS DIRECTLY TO WATER OR SUN DAMAGE IN QUANTITIES GREATER THAN CAN BE WEATHERPROOFED THE SAME DAY.

5. WARRANTY
- A. PROVIDE MANUFACTURER'S STANDARD WRITTEN FULL ROOFING SYSTEM REPAIR AND/OR REPLACEMENT 15-YEAR NDL WARRANTY AT NO ADDITIONAL COST. COVERING MATERIALS AND LABOR. WARRANTY SHALL INCLUDE LOSS OF CONSEQUENTIAL DAMAGES DUE TO FAILURE OF THE ROOF SYSTEM AND CONTAIN NO EXCLUSIONS FOR PONDING WATER OR BIOLOGICAL GROWTH. UPON WARRANTY INSPECTION AND ACCEPTANCE OF THE ROOF, THE WARRANTY SHALL BE TURNED OVER TO THE CONTRACTOR ON BEHALF OF OWNER BY A MANUFACTURER'S QUALITY ASSURANCE SPECIALIST.

6. APPROVED MANUFACTURERS
- A. IB ROOFING SYSTEMS, WWW.IBROOF.COM
 - B. DURO-LAST ROOFING, WWW.DURO-LAST.COM
 - 7. ROOFING
 - A. APPROVED ELASTOMERIC MEMBRANE ROOFING SYSTEMS:
 - 1. IB ROOFING SYSTEMS, 40 MIL PVC ROOFING SYSTEMS, TO INCLUDE MANUFACTURER'S DECKING AND INSULATION PREPARATION, BASE FLASHINGS, FASTENERS AND FLASHING ACCESSORIES.
 - 2. DURO-LAST, 40 MIL PVC SINGLE PLY, PVC ROOFING SYSTEM, TO INCLUDE MANUFACTURER'S DECKING AND INSULATION PREPARATION, BASE FLASHINGS, FASTENERS AND FLASHING ACCESSORIES.

8. ROOFING ASSEMBLY REQUIREMENTS:
- 1. ROOF COVERING EXTERNAL FIRE-RESISTANCE CLASSIFICATION: UL CLASS A
 - 2. SEALANT MINIMUM VALUE (R), MINIMUM: R-30; PROVIDE INSULATION OF THICKNESS REQUIRED.
 - 3. ACCEPTABLE INSULATION TYPES:
 - 1. 2 LAYERS OF 2-1/2 INCH POLYISOCYANURATE BOARD RUN PERPENDICULAR TO MINIMIZE JOINT ALIGNMENT.

9. ACCESSORIES
- A. ALL ROOFING COMPONENTS USED AT ROOF PENETRATIONS SHALL BE PROVIDED BY THE MANUFACTURER OF THE PENETRATION. PROVIDE SUFFICIENT LENGTH TO PENETRATE INSULATION BOARD BELOW AND A MINIMUM 1" INTO ROOF DECK SUBSTRATE, BUT NOT THROUGH THE DECK, AT APPLICABLE INTERVALS TO ACHIEVE FM-I-90 RATING OR AS REQUIRED BY LOCAL CODE.
 - B. INSULATION FASTENERS: APPROPRIATE FOR PURPOSE INTENDED AND APPROVED BY ROOFING MANUFACTURER.
 - C. WALKWAY PADS: MANUFACTURER'S STANDARD 30 X 60 INCH, MEMBRANE PADS.

10. INSULATION - UNDER MEMBRANE
- A. ROOF INSULATION SHALL BE INSTALLED WITH APPROVED FASTENERS AND DISTRIBUTION PLATES PLACED ACCORDING TO THE MANUFACTURER'S MOST RECENT PUBLISHED SPECIFICATIONS FOR THE USE UNDER THE MANUFACTURER'S SYSTEM AND FOR ISSUANCE OF THE WARRANTY.
 - B. ATTACHMENT OF INSULATION:
 - 1. MECHANICALLY FASTEN INSULATION TO DECK IN ACCORDANCE WITH ROOFING MANUFACTURER'S INSTRUCTIONS.
 - C. STAGGER INSULATION BOARDS 50% FROM ROW TO ROW.
 - D. LAY BOARDS WITH EDGES IN MODERATE CONTACT WITHOUT FORCING. CUT INSULATION TO FIT NEATLY TO PERIMETER BLOCKINGS AND AROUND PENETRATIONS THROUGH ROOF.
 - E. DO NOT APPLY MORE INSULATION THAN CAN BE COVERED WITH MEMBRANE IN SAME DAY.

11. MEMBRANE APPLICATION
- A. INSTALL THE ROOFING SYSTEM TO COMPLY WITH MANUFACTURER'S MOST RECENT PUBLISHED SPECIFICATIONS.
 - B. ROLL OUT MEMBRANE, FREE FROM WRINKLES OR TEARS. PLACE SHEET INTO PLACE WITHOUT STRETCHING.
 - C. MECHANICAL ATTACHMENT: APPLY MEMBRANE AND MECHANICAL ATTACHMENT DEVICES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
 - D. ON ALL PARAPET LOCATIONS, WRAP PARAPET WITH NEW PRE-MANUFACTURED PARAPET FLASHINGS BY MANUFACTURER AND TERMINATE ON EXTERIOR OF WALL.
 - E. AROUND ROOF PENETRATIONS, SEAL FLANGES AND FLASHINGS WITH FLEXIBLE FLASHING.
 - F. AT ALL ROOF MOUNTED EXHAUST FANS ABOVE TYPE 1 HOODS SHALL RECEIVE SECOND LAYER OF ROOFING 10'X10' SQUARE CENTERED ON EXHAUST FAN.

12. PROTECTION
- A. PROTECT INSTALLED ROOFING AND FLASHINGS FROM CONSTRUCTION OPERATIONS.
 - B. WHERE TRAFFIC MUST CONTINUE OVER FINISHED ROOF MEMBRANE, PROTECT SURFACE USING DURABLE MATERIALS.

- SECTION 07820 - SHEET METAL FLASHING AND TRIM
- 1. SECTION INCLUDES
 - A. FABRICATED SHEET METAL ITEMS, INCLUDING FLASHINGS, COUNTER FLASHINGS, GUTTERS, CONDUCTOR HEAD AND DOWNSPOUTS.
 - 2. REFERENCES
 - A. AAMA 611 - VOLUNTARY SPECIFICATION FOR ANODIZED ARCHITECTURAL ALUMINUM: AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION; 1998.
 - B. ASTM A 653/A 653M - STANDARD SPECIFICATION FOR STEEL SHEET, ZINC-COATED (GALVANIZED) OR ZINC-IRON ALLOY-COATED (GALVANNEAL) BY THE HOT-DIP PROCESS; 2005A.
 - C. ASTM B 209 - STANDARD SPECIFICATION FOR ALUMINUM AND ALUMINUM-ALLOY SHEET AND PLATE, 2004.
 - D. ASTM B 209M - STANDARD SPECIFICATION FOR ALUMINUM AND ALUMINUM-ALLOY SHEET AND PLATE, METRIC; 2004.
 - E. ASTM D 226 - STANDARD SPECIFICATION FOR ASPHALT-SATURATED ORGANIC FELT USED IS ROOFING AND WATERPROOFING; 2005.
 - F. ASTM D 4586 - STANDARD SPECIFICATION FOR ASPHALT ROOF CEMENT, ASBESTOS-FREE; 2000.
 - G. SMACNA (ASMM) - ARCHITECTURAL SHEET METAL MANUAL: SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION; 2003.

3. SHEET MATERIALS
- A. GALVANIZED STEEL: ASTM A 653/A 653M, WITH G90/Z275 ZINC COATING; MINIMUM 0.02 INCH THICK BASE METAL.
 - 4. ACCESSORIES
 - A. FASTENERS: SAME MATERIAL AND FINISH AS FLASHING METAL, WITH SOFT NEOPRENE WASHERS.
 - B. PRIMER: ZINC CHROMATE TYPE.
 - C. PLASTIC CEMENT: ASTM D 4956, TYPE I.

5. FABRICATION
- A. FORM SECTIONS TRUE TO SHAPE, ACCURATE IN SIZE, SQUARE, AND FREE FROM DISTORTION OR DEFECTS.
 - B. FABRICATE CLEATS OF SAME MATERIAL AS SHEET, MINIMUM 4 INCHES WIDE, INTERLOCKING WITH SHEET.
 - C. FORM PIECES IN LONGEST POSSIBLE LENGTHS.
 - D. HEM EXPOSED EDGES ON UNDERSIDE 1/2" INCH; MITER AND SEAM CORNERS.
 - E. FORM MATERIAL WITH FLAT LOCK SEAMS, EXCEPT WHERE OTHERWISE INDICATED. AT MOVING JOINTS, USE SEALED LAPPED, BAYONET-TYPE OR INTERLOCKING HOOKED SEAMS.
 - F. FABRICATE CORNERS FROM ONE PIECE WITH MINIMUM 18 INCH LONG LEGS; SEAM FOR RIGIDITY, SEAL WITH SEALANT.

6. GUTTER AND DOWNSPOUT FABRICATION
- A. GUTTERS: SQUARE PROFILE AS INDICATED.
 - B. DOWNSPOUTS: SQUARE PROFILE AS INDICATED.
 - C. GUTTERS AND DOWNSPOUTS: TYPE FOR RAINFALL INTENSITY DETERMINED BY A STORM OCCURRENCE OF 1 IN 5 YEARS IN ACCORDANCE WITH SMACNA ARCHITECTURAL SHEET METAL MANUAL. ALL GUTTERS AND DOWNSPOUTS SHALL BE SEAMLESS.
 - D. TWENTY (20) GAUGE

7. THROUGH WALL SCUPPERS AND CONDUCTOR HEAD FABRICATION
- A. SCUPPERS: RECTANGULAR PROFILE AS INDICATED.
 - B. SIZE: SCUPPER OPENING AND CONDUCTOR HEADS FOR RAINFALL INTENSITY DETERMINED BY A STORM OCCURRENCE OF 1 IN 5 YEARS IN ACCORDANCE WITH SMACNA ARCHITECTURAL SHEET METAL MANUAL. ALL SCUPPERS SHALL BE SEAMLESS WITH MINIMUM 2 INCH FLANGES. SCUPPERS SHALL EXTEND THE ENTIRE DEPTH OF WALL AND OVERLAPPED BY ROOFING MEMBRANE MINIMUM 4 INCHES.
 - C. TWENTY (20) GAUGE
 - D. CONDUCTOR HEADS SHALL HAVE PREFABRICATED OVERFLOW OPENING LOCATED 1" ABOVE SCUPPER OPENING WITH HEMMED EDGES.

8. FASCIA TRIM
- A. TRIM: RECTANGULAR PROFILE AS INDICATED TO COVER FASCIA BOARD AND RETURN TO BACK FACE.
 - B. TWENTY FOUR (24) GAUGE.
 - C. ACCESSORIES: PROFILED TO SUIT TRIM
 - 1. ANCHORAGE DEVICES: IN ACCORDANCE WITH SMACNA REQUIREMENTS.
 - E. FINISH: POWDER COATED, PRE-FINISHED, GALVALUME TO MATCH ROOFING.
 - F. SEAL METAL JOINTS.

9. INSTALLATION
- A. SECURE FLASHINGS IN PLACE USING CONCEALED FASTENERS. USE EXPOSED FASTENERS ONLY WHERE PERMITTED.
 - B. APPLY PLASTIC CEMENT COMPOUND BETWEEN METAL FLASHINGS AND FELT FLASHINGS.
 - C. FIT FLASHINGS TIGHT IN PLACE. MAKE CORNERS SQUARE, SURFACES TRUE AND STRAIGHT IN PLACES, AND LINED ACCURATE TO PROFILES.
 - D. SECURE GUTTERS AND DOWNSPOUTS IN PLACE USING CONCEALED FASTENERS.
 - E. SLOPE GUTTERS 1/4" INCH PER FOOT MINIMUM.
 - F. CONNECT CONDUCTOR HEADS TO THROUGH WALL SCUPPER WITH HEMMED FLANGES AND ATTACH TO WALL WITH CONCEALED FASTENERS.

- SECTION 07700 - MANUFACTURED ROOF SPECIALTIES
- 1. SECTION INCLUDES
 - A. COPINGS AND GRAVEL GUTS:
 - 1. ARCHITECTURAL PRODUCTS: CO, PRODUCT TYPE AP STANDARD COPING: WWW.ARPROD.COM.
 - 2. W.P. HICKMAN CO, PRODUCT PERMANAP COPING: WWW.WPH.COM.
 - 3. MM SYSTEMS CORP, PRODUCT SNAP-LOCK COPING: WWW.MMSYSTEMSCORP.COM.
 - 4. SUBSTITUTIONS: SEE SECTION 01600 - PRODUCT REQUIREMENTS.
 - B. ROOF HATCH: BILCO CO, WWW.BILCO.COM.
 - C. ROOF LADDER SAFETY POST: BILCO CO, WWW.BILCO.COM.

2. METAL COVERS: STEEL, ZINC COATED AND CHROMATE SEALED, UNLESS OTHERWISE INDICATED OR REQUIRED BY MANUFACTURER.
 - A. LIFTING MECHANISMS: COMPRESSION SPRING OPERATOR WITH SHOCK ABSORBERS THAT AUTOMATICALLY OPENS UPON RELEASE OF LATCH; CAPABLE OF LIFTING COVERS DESPITE 10 PSF LOAD.
 - B. HINGES: HEAVY DUTY PIVTLE TYPE.
 - C. HOLD OPEN ARM WITH VINYL-COATED HANDLE FOR MANUAL RELEASE.
 - D. LATCH: UPON CLOSING, ENGAGE LATCH AUTOMATICALLY AND RESET MANUAL RELEASE.
 - E. MANUAL RELEASE: PULL HANDLE ON INTERIOR.
 - F. LOCKING: PADLOCK HASP ON INTERIOR.

4. SAFETY POST: BILCO LADDER/UP SAFETY POST, MODEL LU-1; TELESCOPING TUBULAR SECTION THAT LOOKS AUTOMATICALLY WHEN FULLY EXTENDED.
4. INSTALLATION
- A. INSTALL COMPONENTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
 - B. PROVIDE BLOCKING IN WALLS AS REQUIRED. ADJUST BRACKET LENGTHS TO ACCOMMODATE DIFFERENT WALL ELEVATIONS AS REQUIRED.
- SECTION 07900 - JOINT SEALERS
- 1. SECTION INCLUDES
 - A. SEALANTS AND JOINT BACKING.
 - 2. ENVIRONMENTAL REQUIREMENTS
 - A. MAINTAIN TEMPERATURE AND HUMIDITY RECOMMENDED BY THE SEALANT MANUFACTURER DURING AND AFTER INSTALLATION.
 - 3. SEALANTS
 - A. SEALANTS AND PRIMERS - GENERAL: PROVIDE ONLY PRODUCTS HAVING LOWER VOLATILE ORGANIC COMPOUND (VOC) CONTENT THAN REQUIRED BY THE MORE STRINGENT OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE NO.1168.
 - B. RESTROOM/TILE SEALANT: WHITE SILICONE; ASTM C 920, USES I, M AND A SINGLE COMPONENT.
 - C. INTERIOR FLOOR JOINT SEALANT: POLYURETHANE, SELF-LEVELING; ASTM C 930, GRADE P, CLASS 25, USES T, M AND A SINGLE COMPONENT.
 - D. INTERIOR WALL AND CEILING JOINT SEALANT: POLYURETHANE, SELF-LEVELING; ASTM C 930, GRADE P, CLASS 25, USES T, M AND A SINGLE COMPONENT.
 - E. INTERIOR WALL AND CEILING JOINT SEALANT: POLYURETHANE, SELF-LEVELING; ASTM C 930, GRADE P, CLASS 25, USES T, M AND A SINGLE COMPONENT.
 - F. SILICONE SEALANT: ASTM C 920, GRADE NS, CLASS 25, USES NT, A, G, M, O. SINGLE COMPONENT, SOLVENT CURING, NON-SAGGING, NON-STAINING, FUNGUS RESISTANT, NON-BLEEDING.
 - G. COLOR: CLEAR.
 - H. APPLICATIONS: USE FOR: A. EQUIPMENT SEALANT IN FOOD SERVICE AREAS.

5. FABRICATION
- A. FORM SECTIONS TRUE TO SHAPE, ACCURATE IN SIZE, SQUARE, AND FREE FROM DISTORTION OR DEFECTS.
 - B. FABRICATE CLEATS OF SAME MATERIAL AS SHEET, MINIMUM 4 INCHES WIDE, INTERLOCKING WITH SHEET.
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 - D. LATCH: UPON CLOSING, ENGAGE LATCH AUTOMATICALLY AND RESET MANUAL RELEASE.
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 - B. PROVIDE BLOCKING IN WALLS AS REQUIRED. ADJUST BRACKET LENGTHS TO ACCOMMOD

HAT CREEK BURGER - PROTOTYPE 1.1

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DIVISION 07 - THERMAL AND MOISTURE PROTECTION

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5. DELIVERY, STORAGE, AND HANDLING	A. DELIVERY: DELIVER MATERIALS TO SITE IN MANUFACTURER'S ORIGINAL UNOPENED CONTAINERS AND PACKAGING, WITH LABELS CLEARLY IDENTIFYING PRODUCT NAME AND MANUFACTURER, SETTING BLOCKS, AND SPACERS, 2005. B. STORAGE: STORE MATERIALS IN CLEAN, DRY AREA INDOORS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. C. HANDLING: PROTECT MATERIALS AND FINISH FROM DAMAGE DURING HANDLING AND INSTALLATION.
6. MANUFACTURER	A. READY ACCESS, INC., 1815 ARTHUR DRIVE, WEST CHICAGO, ILLINOIS 60185. TOLL FREE (800) 621-5045. PHONE (830) 876-7766. FAX (830) 876-7767. WEB SITE WWW.READY-ACCESS.COM. E-MAIL: READY@READY-ACCESS.COM.
7. FLUSH-MOUNT PASS-THRU WINDOWS	A. FLUSH-MOUNT PASS-THRU WINDOWS: 275 SINGLE PANEL MANUAL OPEN/SELF-CLOSING SLIDER WINDOW. 1. SERVICE OPENING: AS NOTED ON CONSTRUCTION DOCUMENTS.
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16. FASTENERS: STAINLESS STEEL RIVETS AND HEX-HEAD ZINC-PLATED SELF-THREADING MACHINE SCREWS.	
17. HANDLE: BLACK DELRIN HANDLE WITH PRESSED-IN STAINLESS STEEL SPRING PINS. STAINLESS STEEL HANDLE MOUNTING BRACKET. STAINLESS STEEL SPRING-LOADED MOUNTING BASE.	
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27. PROTECTION	A. PROTECT INSTALLED PASS-THRU WINDOWS TO ENSURE THAT, EXCEPT FOR NORMAL WEATHERING, PASS-THRU WINDOWS WILL BE WITHOUT DAMAGE OR DETERIORATION AT TIME OF SUBSTANTIAL COMPLETION.
SECTION 08710-DOOR HARDWARE	
1. SECTION INCLUDES	A. HARDWARE FOR WOOD AND HOLLOW STEEL DOORS.
2. REFERENCES	A. ANSI/HCO A117.1 - AMERICAN NATIONAL STANDARD FOR ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES; INTERNATIONAL CODE COUNCIL, 2003. B. BHMA A156.1 THRU 156.1 - BUILDERS HARDWARE MANUFACTURERS ASSOCIATION, INC.; 2005. C. DHI A115 SERIES - SPECIFICATIONS FOR STEEL DOORS AND FRAME PREPARATION FOR HARDWARE; DOOR AND HARDWARE INSTITUTE, 2000. D. DHI (DOCS) - RECOMMENDED LOCATIONS FOR ARCHITECTURAL HARDWARE FOR STANDARD STEEL DOORS AND FRAMES; DOOR AND HARDWARE INSTITUTE, 2004. E. DHI WDHS 3 - RECOMMENDED LOCATIONS FOR ARCHITECTURAL HARDWARE FOR FLUSH WOOD DOORS; DOOR AND HARDWARE INSTITUTE, 1996.
3. SUBMITTALS	A. SHOP DRAWINGS: 1. INDICATE LOCATIONS AND MOUNTING HEIGHTS OF EACH TYPE OF HARDWARE, SCHEDULES, CATALOG NOS., ELECTRICAL CHARACTERISTICS AND CONNECTION REQUIREMENTS. 2. SUBMIT MANUFACTURER'S PARTS LISTS AND TEMPLATES. B. MAINTENANCE DATA: INCLUDE DATA ON OPERATING HARDWARE, LUBRICATION REQUIREMENTS, AND INSPECTION PROCEDURES RELATED TO PREVENTATIVE MAINTENANCE. C. KEYS: DELIVER WITH IDENTIFYING TAGS TO OWNER BY SECURITY SHIPMENT DIRECT FROM HARDWARE SUPPLIER. D. WARRANTY: SUBMIT MANUFACTURER'S WARRANTY AND ENSURE THAT FORMS HAVE BEEN COMPLETED IN OWNER'S NAME AND REGISTERED WITH MANUFACTURER.
4. COORDINATION	A. COORDINATE THE WORK WITH OTHER DIRECTLY AFFECTED SECTIONS INVOLVING MANUFACTURE OR FABRICATION OF INTERNAL REINFORCEMENT FOR DOOR HARDWARE.
5. GENERAL REQUIREMENTS FOR DOOR HARDWARE PRODUCTS	A. PROVIDE PRODUCTS THAT COMPLY WITH THE FOLLOWING: 1. APPLICABLE PROVISIONS OF FEDERAL, STATE, AND LOCAL CODES. 2. PROVIDE PRODUCTS FROM THE MANUFACTURERS AND FINISH LISTED IN THE SCHEDULE LOCATED IN THE CONSTRUCTION DOCUMENTS. NO SUBSTITUTION ALLOWED WITHOUT WRITTEN APPROVAL. B. FINISHES: IDENTIFIED IN SCHEDULE LOCATED IN THE CONSTRUCTION DOCUMENTS.

6. KEYING	A. DOOR LOCKS: MASTER KEYED. 1. INCLUDE CONSTRUCTIONS KEYING AND CONTROL WITH REMOVABLE CORE CYLINDERS. B. SUPPLY KEYS IN THE FOLLOWING QUANTITIES: 1. 4 MASTER KEYS 2. STAMP ALL PERMANENT MASTER KEYS WITH A SET NUMBER AND "DO NOT DUPE" 3. 4 CONSTRUCTION KEYS. 4. 3 CONTROL KEYS AND 4 EXTRA CYLINDER COPIES. 5. 4 CHANGE KEYS FOR EACH LOCK. 6. RE-KEY ENTIRE BUILDING AT BUILDING TURNOVER.
7. EXAMINATION	A. VERIFY THAT DOORS AND FRAMES ARE READY TO RECEIVE WORK AND DIMENSIONS ARE AS INDICATED ON SHOP DRAWINGS.
8. INSTALLATION	A. INSTALL HARDWARE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPLICABLE CODES. B. USE TEMPLATES PROVIDED BY HARDWARE ITEM MANUFACTURER. C. MOUNTING HEIGHTS FROM HARDWARE FROM FINISHED FLOOR TO CENTER LINE OF HARDWARE ITEM: 1. FOR STEEL DOORS AND FRAMES, COMPLY WITH DHI "RECOMMENDED LOCATIONS FOR ARCHITECTURAL HARDWARE FOR STEEL DOORS AND FRAMES." 2. FOR WOOD DOORS: COMPLY WITH DHI "RECOMMENDED LOCATIONS FOR ARCHITECTURAL HARDWARE FOR WOOD FLUSH DOORS." D. ADJUST HARDWARE FOR SMOOTH OPERATION.
SECTION 08800 - GLAZING	
1. SECTION INCLUDES	A. GLASS. B. GLAZING COMPOUNDS AND ACCESSORIES.
2. REFERENCES	A. FC CR 1201 - SAFETY STANDARD FOR ARCHITECTURAL GLAZING MATERIALS; CURRENT EDITION. B. ASTM C 864 - STANDARD SPECIFICATION FOR DENSE ELASTOMERIC COMPRESSION SEAL GASKETS; SETTING BLOCKS, AND SPACERS; 2005. C. ASTM C 920 - STANDARD SPECIFICATION FOR ELASTOMERIC JOINT SEALANTS; 2005. D. ASTM C 1036 - STANDARD SPECIFICATION FOR FLAT GLASS; 2001. E. ASTM C 1038 - STANDARD SPECIFICATION FOR HEAT-TREATED FLAT GLASS-KIND HS, KIND FT COATED AND UNCOATED GLASS; 2004. F. ASTM C 1193 - STANDARD GUIDE FOR USE OF JOINT SEALANTS; 2005a. G. ASTM E 2190 - STANDARD SPECIFICATION FOR INSULATING GLASS UNIT PERFORMANCE AND EVALUATION; 2002.
3. PERFORMANCE REQUIREMENTS	A. PROVIDE GLASS AND GLAZING MATERIALS FOR CONTINUITY OF BUILDING ENCLOSURE VAPOR RETARDER AND AIR BARRIER: 1. IN CONJUNCTION WITH VAPOR RETARDER AND JOINT SEALER MATERIALS DESCRIBED IN OTHER SECTIONS. 2. TO MAINTAIN A CONTINUOUS AIR BARRIER AND VAPOR RETARDER THROUGHOUT THE GLAZED ASSEMBLY FROM GLASS PANE TO HEE BEAD OF GLAZING SEALANT.
4. SUBMITTALS	A. PRODUCT DATA ON GLASS TYPES: PROVIDE STRUCTURAL, PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS, SIZE LIMITATIONS, SPECIAL HANDLING OR INSTALLATION REQUIREMENTS. B. PROVIDE DATA ON GLAZING COMPOUNDS: PROVIDE CHEMICAL, FUNCTIONAL, AND ENVIRONMENTAL CHARACTERISTICS, LIMITATIONS, SPECIAL APPLICATION REQUIREMENTS. IDENTIFY AVAILABLE COLORS. C. CERTIFICATES: CERTIFY THAT PRODUCTS MEET OR EXCEED SPECIFIED REQUIREMENTS.
5. QUALITY ASSURANCE	A. PERFORM WORK IN ACCORDANCE WITH GANA GLAZING MANUAL AND FGMA SEALANT MANUAL FOR GLAZING INSTALLATION METHODS.
6. FLAT GLASS MATERIALS	A. CLEAR FLOAT GLASS: CLEAR, FULLY TEMPERED. 1. COMPLY WITH ASTM C 1036, TYPE I, TRANSPARENT FLAT, CLASS 1 CLEAR, QUALITY Q3 (GLAZING SELECT). 2. COMPLY WITH ASTM C 1048. 3. 6 MM MINIMUM THICK. B. SAFETY GLASS: CLEAR, FULLY TEMPERED WITH HORIZONTAL TEMPERING. 1. COMPLY WITH ASTM C 1036, TYPE I, TRANSPARENT FLAT, CLASS 1 CLEAR, QUALITY Q3 (GLAZING SELECT) AND ASTM C 1048. 2. COMPLY WITH 16 CFR 1201 TEST REQUIREMENTS FOR CATEGORY II. C. WALL MIRROR: 1. PLATE GLASS, EPOXY FLOTTED AND BAKED FOR CORROSION RESISTANCE. 2. THICKNESS: 1/4". 3. COLOR: CLEAR. 4. DO NOT ALLOW FIELD CUTTING OF MIRROR.
7. SEALED INSULATING GLASS MATERIALS	A. INSULATED GLASS UNITS: DOUBLE PANE WITH LOW E GLASS TO ELASTOMER EDGE SEAL. 1. DURABILITY: CERTIFIED BY AN INDEPENDENT TESTING AGENCY TO COMPLY WITH ASTM E 2190. 2. PURGE INTERPANE SPACE WITH DRY HERMETIC AIR. 3. TOTAL UNIT THICKNESS OF 1" INCH MINIMUM.

8. GLAZING COMPOUNDS	A. BUTYL SEALANT: SINGLE COMPONENT; ASTM C 920, GRADE NS, CLASS 12-12; USES M AND A; SHORE A HARDNESS 20 TO 25; 0.000" COLOR: NON-SKINNING. B. SILICONE SEALANT: SINGLE COMPONENT; NEUTRAL CURING; CAPABLE OF WATER IMMERSION WITHOUT LOSS OF PROPERTIES; NON-BLEEDING, NON-STAINING; ASTM C 920, TYPE 3, GRADE NS, CLASS 25; USES M, A, AND G; CURED SHORE A HARDNESS OF 15 TO 25; COLOR AS NOTED IN FINISH SCHEDULE ON DRAWINGS.
9. GLAZING ACCESSORIES	A. SETTING BLOCKS: NEOPRENE, 80 TO 90 SHORE A DUROMETER HARDNESS, ASTM C 864 OPTION 1 LENGTH OF 0.1 INCH FOR EACH SQUARE FOOT OF GLAZING OR MINIMUM 4 INCH X WIDTH OF GLAZING RABBIT SPACE MINUS 1/16 INCH X HEIGHT TO SUIT GLAZING METHOD PANE WEIGHT AND AREA. B. SPACER SHIMS: NEOPRENE, 50 TO 60 SHORE A DUROMETER HARDNESS, ASTM C 864 OPTION 1. C. GLAZING TAPE: PREFORMED BUTYL COMPOUND WITH INTEGRAL RESILIENT TUBE SPACING DEVICE, 10 TO 15 SHORE A DUROMETER HARDNESS; COILED ON RELEASE PAPER; SIZE AS RECOMMENDED BY GLASS MANUFACTURER; BLACK COLOR. 1. MANUFACTURERS: a. PECORA CORPORATION: WWW.PECORA.COM b. TREMO: WWW.TREMO.COM c. SUBSTITUTIONS: REFER TO SECTION 01600 - PRODUCT REQUIREMENTS. D. GLAZING GASKETS: RESILIENT SILICONE EXTRUDED SHAPE TO SUIT GLAZING CHANNEL. E. GLAZING CLIPS: STAINLESS STEEL. F. GLAZING FILM: NEUTRAL ANTI-GLARE WINDOW FILM. SOFT HORIZONS V338 SR CDF BY VISTA WINDOW FILM: WWW.VISTA-FILMS.COM OR APPROVED SUBSTITUTION.
10. PREPARATION	A. PRIME SURFACES SCHEDULED TO RECEIVE SEALANT. B. INSTALL SEALANTS IN ACCORDANCE WITH ASTM C 1193 AND FGMA SEALANT MANUAL. C. INSTALL SEALANT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
11. INSTALLATION - EXTERIOR WETDOY METHOD (PREFORMED TAPE AND SEALANT)	A. CUT GLAZING TAPE TO LENGTH AND SET AGAINST PERMANENT STOPS, 3/16 INCH BELOW SIGHT LINE, BEAD CORNERS BY BUTTING TAPE AND DABBING WITH BUTYL SEALANT. B. APPLY HEE BEAD OF BUTYL SEALANT ALONG INTERSECTION OF PERMANENT STOP WITH FRAME ENSURING PROPER SEAL BETWEEN GLASS AND FRAME TO COMPLETE THE CONTINUITY OF THE AIR AND VAPOR SEAL. C. PLACE SETTING BLOCKS AT 1/4 POINTS WITH EDGE BLOCK NO MORE THAN 6 INCHES FROM CORNERS. D. REST GLAZING ON SETTING BLOCKS AND PUSH AGAINST TAPE AND HEE BEAD OF SEALANT WITH SUFFICIENT PRESSURE TO ATTAIN FULL CONTACT AT PERIMETER OF PANE OR GLASS UNIT. E. INSTALL REMOVABLE STOPS, WITH SPACER STRIPS INSERTED BETWEEN GLAZING AND APPLIED STOPS, 1/4 INCH BELOW SIGHT LINE. PLACE GLAZING TAPE ON GLAZING PANE OR UNIT WITH TAPE FLUSH WITH SIGHT LINE. F. FILL GAP BETWEEN GLAZING AND STOP WITH SEALANT TO DEPTH EQUAL TO BITE OF FRAME ON GLAZING, BUT NOT MORE THAN 3/8 INCH BELOW SIGHT LINE. G. APPLY CAP BEAD OF SEALANT ALONG VOID BETWEEN THE STOP AND THE GLAZING, TO UNIFORM LINE, FLUSH WITH SIGHT LINE. TOOL OR WIPE SEALANT SURFACE SMOOTH.
12. INSTALLATION - INTERIOR DRY METHOD (TAPE AND TAPE)	A. CUT GLAZING TAPE TO LENGTH AND SET AGAINST PERMANENT STOPS, PROJECTING 1/16 INCH (1.6MM) ABOVE SIGHT LINE. B. PLACE SETTING BLOCKS AT 1/4 POINTS WITH EDGE BLOCK NO MORE THAN 6 INCHES FROM CORNERS. C. REST GLAZING ON SETTING BLOCKS AND PUSH AGAINST TAPE FOR FULL CONTACT AT PERIMETER OF PANE OR GLASS UNIT. D. PLACE GLAZING TAPE ON FREE PERIMETER OF GLAZING IN SAME MANNER DESCRIBED ABOVE. E. INSTALL REMOVABLE STOP WITHOUT DISPLACEMENT OF TAPE. EXERT PRESSURE ON TAPE FOR FULL CONTINUOUS CONTACT. F. KNIFE TRIM PROTRUDING TAPE.
13. INSTALLATION - GLAZING FILM	A. INSTALL FILM PER MANUFACTURER'S RECOMMENDATIONS. B. PROVIDE NEW FILM AT ALL EXTERIOR GLAZING.
14. INSTALLATION - WALL MIRRORS	A. SET IN 2"x2" STEEL ANGLE WITH CLEAR TAPE. B. PROVIDE BOTTOM SUPPORT FOR MIRRORS FOR 3 DAYS UNTIL ADHESIVE HAS SET. C. TOLERANCES: 1. OFFSET IN ALIGNMENT OF ADJOINING EDGES: MAX 1/16 INCH. 2. OFFSET IN FACE ALIGNMENT OVER WALL SURFACE: MAX 1/8 INCH. 3. NO GAP BETWEEN ADJACENT MEMBERS.
15. CLEANING	A. REMOVE GLAZING MATERIALS FROM FINISH SURFACES. B. REMOVE LABELS AFTER WORK IS COMPLETE. C. CLEAN GLASS AND ADJACENT SURFACES.
16. PROTECTION	A. AFTER INSTALLATION, MARK PANE WITH "X" BY USING REMOVABLE PLASTIC TAPE OR PASTE; DO NOT MARK HEAT ABSORBING OR REFLECTIVE GLASS UNITS.
SECTION 09 - FINISHES	
SECTION 09200 - GYPSUM BOARD ASSEMBLIES	
1. SECTION INCLUDES	A. FIRE RATED WALLS. B. ACOUSTIC INSULATION. C. GYPSUM TILE BACKER BOARD. D. GYPSUM WALLBOARD. E. JOINT TREATMENT AND ACCESSORIES. F. METAL FRAMING.
2. REFERENCES	A. ANSI A108.11 AMERICAN NATIONAL STANDARD FOR INTERIOR INSTALLATION OF CEMENTITIOUS BACKER UNITS; 1999 (R2005). B. ANSI A118.9 AMERICAN NATIONAL STANDARD SPECIFICATIONS FOR TEST METHODS AND SPECIFICATIONS FOR CEMENTITIOUS BACKER UNITS; 1999 (R2005). C. ASTM C 475/C 475M STANDARD SPECIFICATION FOR JOINT COMPOUND AND JOINT TAPE FOR FINISHING GYPSUM BOARD; 2002. D. ASTM C 840 STANDARD SPECIFICATION FOR APPLICATION AND FINISHING OF GYPSUM BOARD; 2005. E. ASTM C 1396/C 1396M STANDARD SPECIFICATION FOR GYPSUM BOARD; 2004. F. ASTM E 72 STANDARD TEST METHODS OF CONDUCTING STRENGTH TESTS OF PANELS FOR BUILDING CONSTRUCTION; 2005.
3. GYPSUM BOARD MATERIALS	A. MANUFACTURERS: 1. BPE AMERICA INC: WWW.BPE-NA.COM 2. G-P GYPSUM CORPORATION: WWW.GP.COM/GYPSUM 3. NATIONAL GYPSUM COMPANY: WWW.NATIONALGYPSUM.COM 4. USG: WWW.USG.COM B. GYPSUM WALLBOARD: ASTM C 1396/C 1396M. SIZES TO MINIMIZE JOINTS IN PLACE; ENDS SQUARE CUT. 1. REGULAR TYPE: A. APPLICATION: USE FOR VERTICAL SURFACES, UNLESS OTHERWISE INDICATED. B. EDGES: TAPERED. C. FIRE RESISTANT TYPE: COMPLYING WITH TYPE X REQUIREMENTS; UL OR WH RATED. A. AT ASSEMBLIES INDICATED WITH FIRE-RATINGS: USE TYPE REQUIRED BY INDICATED TESTED ASSEMBLY. B. THICKNESS: 5/8 INCH. C. EDGES: TAPERED. D. APPLICATION: CEILINGS, UNLESS OTHERWISE INDICATED. B. THICKNESS: 5/8 INCH. C. EDGES: TAPERED. C. WATER-RESISTANT GYPSUM BACKING BOARD: ASTM C 1396/C 1396M; ENDS SQUARE CUT. 1. APPLICATION: VERTICAL SURFACES BEHIND THINSET TILE, EXCEPT IN WET AREAS. 2. CORE TYPE: REGULAR AND TYPE X, AS INDICATED. 3. THICKNESS: 5/8 INCH. 4. EDGES: TAPERED.
4. FIBERGLASS REINFORCED BOARD MATERIALS	A. GYPSUM TILE BACKER BOARD: ASTM C1178 STANDARD SPECIFICATION FOR GLASS MAT WATER-RESISTANT GYPSUM BACKING PANEL, 5/8 INCH THICK.
5. ACCESSORIES	A. ACOUSTIC INSULATION: ASTM C 685; PREFORMED GLASS FIBER, FRICTION FIT TYPE, UNFACED. B. FINISHING ACCESSORIES: ASTM C 1047, GALVANIZED STEEL, UNLESS OTHERWISE INDICATED. 1. TYPES: AS DETAILED OR REQUIRED FOR FINISHED APPEARANCE. C. JOINT MATERIALS: ASTM C 475 AND AS RECOMMENDED BY GYPSUM BOARD MANUFACTURER FOR PROJECT CONDITIONS. 1. TAPE: 2 INCH WIDE, COATED GLASS FIBER TAPE FOR JOINTS AND CORNERS, EXCEPT AS OTHERWISE INDICATED. 2. TAPE: 2 INCH WIDE, CREASED PAPER TAPE FOR JOINTS AND CORNERS, EXCEPT AS OTHERWISE INDICATED. 3. READY-MIXED VINYL-BASED JOINT COMPOUND. D. FASTENERS: SCREWS, PER ASTM 1002; 1-1/4" TYPE "W" BUGLE HEAD INTO WOOD FRAMING 1-1/8" TYPE "S" BUGLE HEAD INTO STEEL FRAMING, AND 3/8" TYPE "S-12" PAN (OR LOW PROFILE) HEAD FOR STEEL TO STEEL FRAMING CONNECTIONS.

6. EXAMINATION	A. VERIFY THAT PROJECT CONDITIONS ARE APPROPRIATE FOR WORK OF THIS SECTION TO COMMENCE.
7. ACOUSTIC ACCESSORIES INSTALLATION	A. ACOUSTIC INSULATION: PLACE TIGHTLY WITHIN SPACES, AROUND CUT OPENINGS, BEHIND AND AROUND ELECTRICAL AND MECHANICAL ITEMS WITH PARTITIONS, AND TIGHT TO ITEMS PASSING THROUGH PARTITIONS. B. ACOUSTIC SEALANT: INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
8. FRAMING	A. WOOD FRAMING: BOARD APPLICATION AND FINISH STANDARDS: SUDGING SHALL BE 1/6" O.C. UNLESS OTHERWISE NOTED. B. INSTALL CEILING BOARDS IN THE DIRECTION AND MANNER WHICH WILL MINIMIZE THE NUMBER OF END-BUTT JOINTS, AND WHICH WILL AVOID END JOINTS IN THE CENTRAL AREA OF EACH CEILING BAY. END JOINTS AT LEAST 4'-0". C. INSTALL WALL PARTITION BOARDS VERTICALLY TO AVOID END-BUTT JOINTS WHEREVER POSSIBLE. D. LOCATE EITHER EDGE OR END JOINTS OVER SUPPORTS. STAGGER JOINTS OVER DIFFERENT STUDS ON OPPOSITE SIDES OF PARTITIONS. E. SPACE FASTENERS IN GYPSUM BOARD IN ACCORDANCE WITH REFERENCED STANDARDS AND MANUFACTURER'S RECOMMENDATIONS, EXCEPT AS OTHERWISE INDICATED. 1. PARALLEL APPLICATIONS: 12" O.C. IN FIELD; 8" O.C. ALONG EDGES. 2. PERPENDICULAR APPLICATIONS: 12" O.C. IN FIELD; 12" O.C. ALONG EDGES.
10. GYPSUM BOARD INSTALLATION	A. COMPLY WITH ASTM C 840 AND MANUFACTURER'S INSTRUCTIONS. INSTALL TO MINIMIZE BUTT END JOINTS, ESPECIALLY IN HIGHLY VISIBLE LOCATIONS. B. SINGLE-LAYER NON-RATED: INSTALL GYPSUM BOARD IN MOST ECONOMICAL DIRECTION, WITH ENDS AND EDGES OCCURRING OVER TRIM BEARING. C. FIRE-RATED CONSTRUCTION: INSTALL GYPSUM BOARD IN STRICT COMPLIANCE WITH REQUIREMENTS OF LISTING AUTHORITY. D. TILE BACKING BOARD: INSTALL OVER FRAMING MEMBERS WHERE INDICATED, IN ACCORDANCE WITH ANSI A108.11 AND MANUFACTURER'S INSTRUCTIONS. E. INSTALLATION ON FRAMING: USE SCREWS FOR ATTACHMENT OF ALL GYPSUM BOARD. F. SUPPORT FIXTURE LOADS USING SUPPLEMENTARY HANGERS LOCATED WITHIN 6 INCHES OF EACH CORNER, OR SUPPORT COMPONENTS INDEPENDENTLY. G. ALL GYPSUM BOARD CEILING INSTALLATIONS TO HAVE A LEVEL 3 FINISH IN ALL PUBLIC AREAS, NO LESSER FINISH WILL BE ALLOWED.
12. JOINT TREATMENT	A. CORNER BEADS: INSTALL AT EXTERNAL CORNERS, USING LONGEST PRACTICAL LENGTHS. B. JOINT TREATMENT: 1. FINISH ALL GYPSUM BOARD IN ACCORDANCE WITH ASTM C 840 LEVEL 4. 2. TAPE, FILL, AND SAND EXPOSED JOINTS, EDGES, AND CORNERS TO PRODUCE SMOOTH SURFACE READY TO RECEIVE FINISHES. 1. FEATHER COATS OF JOINT COMPOUND SO THAT CAMBER IS MAXIMUM 1/32 INCH. 2. TAPING, FILLING, AND SANDING IS NOT REQUIRED AT JOINTS BEHIND ADHESIVE APPLIED CERAMIC TILE AND FIXED CABINETRY.
13. TOLERANCES	A. MAXIMUM VARIATION OF FINISHED GYPSUM BOARD SURFACE FROM TRUE FLATNESS: 1/8 INCH IN 10 FEET IN ANY DIRECTION.
SECTION 09300 - TILE	
1. SECTION INCLUDES	A. TILE FOR FLOOR APPLICATIONS. B. TILE FOR WALL APPLICATIONS. C. FIBERGLASS REINFORCED GYPSUM BOARD AS TILE SUBSTRATE. D. ALUMINUM TRIM. E. WATERPROOFING SHEET MEMBRANE.
2. REFERENCES	A. ANSI A108 SERIES/ A118 SERIES/ A136.1 - AMERICAN NATIONAL STANDARD SPECIFICATIONS FOR THE INSTALLATION OF CERAMIC TILE (COMPENDIUM); 2005. 1. TCA (NB) - HANDBOOK FOR CERAMIC TILE INSTALLATION; TILE COUNCIL OF NORTH AMERICA, INC.; 2014.
3. QUALITY ASSURANCE	A. MAINTAIN ONE COPY OF TCA HANDBOOK AND ANSI A108 SERIES/ A118 SERIES ON SITE.
4. DELIVERY, STORAGE, AND HANDLING	A. PROTECT ADHESIVES FROM FREEZING OR OVERHEATING IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
5. EXTRA MATERIALS	A. PROVIDE 10 SQ. FT. FOR EACH SIZE, COLOR, AND SURFACE FINISH OF TILE SPECIFIED.
6. TILE	A. REFER TO FINISH SCHEDULE ON THE CONSTRUCTION DOCUMENTS FOR MATERIAL SELECTIONS.
7. TRIM AND ACCESSORIES	A. TRIM: MATCHING BULLNOSE, SURFACE BULLNOSE, COVE BASE, AND COVE CERAMIC SHAPES AS SCHEDULED IN SIZES COORDINATED WITH FIELD TILE. 1. APPLICATIONS: USE IN THE FOLLOWING LOCATIONS: A. OPEN EDGES: SCHLUTER EDGE AS NOTED ON DRAWINGS AT ALL CONDITIONS. B. INSIDE CORNERS: SCHLUTER INSIDE EDGE AS NOTED ON DRAWINGS IN RESTROOMS. C. FLOOR TO WALL JOINTS: SCHLUTER COVE BASE AS NOTED ON DRAWINGS IN RESTROOMS. 2. MANUFACTURER: SCHLUTER.
8. WATERPROOFING SHEET MEMBRANE: NOBLESEAL TS AS MANUFACTURED BY NOBLE COMPANY, AND HANSEN, INC.	A. COMPOSITE SHEET MEMBRANE OF NON-PLASTICIZED CHLORINATED POLYETHYLENE, 30 MILS THICK.
9. ADHESIVE MATERIALS	A. ORGANIC ADHESIVE: ANSI A136.1, THINSET BOND TYPE; USE TYPE I IN AREAS SUBJECT TO PROLONGED MOISTURE EXPOSURE. B. EPOXY ADHESIVE: ANSI A118.3, THINSET BOND TYPE.
10. GROUT MATERIALS	A. STANDARD GROUT: ANY TYPE SPECIFIED ANS A118.6 OR A118.7. B. EPOXY GROUT: CUSTOM BUILDING PRODUCTS, CEG-IG, ANSI A118.8, MODIFIED EPOXY EMULSION GROUT.
11. EXAMINATION	A. VERIFY THAT SUB-FLOOR SURFACES ARE SMOOTH AND FLAT WITHIN THE TOLERANCES SPECIFIED FOR THAT TYPE OF WORK AND ARE READY TO RECEIVE TILE. B. VERIFY THAT WALL SURFACES ARE SMOOTH AND FLAT WITHIN THE TOLERANCES SPECIFIED FOR THAT TYPE OF WORK, ARE DUST-FREE, AND ARE READY TO RECEIVE TILE. C. VERIFY THAT SUB-FLOOR SURFACES ARE DUST-FREE AND FREE OF SUBSTANCES WHICH WOULD IMPAIR BONDING OF SETTING MATERIALS TO SUB-FLOOR SURFACES. D. VERIFY THAT CONCRETE SURFACES ARE READY FOR TILE INSTALLATION BY TESTING FOR MOISTURE EMISSION RATE AND ALKALINITY; OBTAIN INSTRUCTIONS IF TEST RESULTS ARE NOT WITHIN LIMITS RECOMMENDED BY TILE MANUFACTURER AND SETTING MATERIALS MANUFACTURER.
12. PREPARATION	A. PROTECT SURROUNDING WORK FROM DAMAGE. B. VACUUM CLEAN SURFACES AND DAMP CLEAN. C. SEAL SUBSTRATE SURFACE CRACKS WITH FILLER, LEVING EXISTING SUBSTRATE SURFACES TO ACCEPTABLE FLATNESS TOLERANCES. D. INSTALL CEMENTITIOUS BACKER BOARD IN ACCORDANCE WITH ANSI A108.11 AND BOARD MANUFACTURER'S INSTRUCTIONS FOR JOINTS AND CORNERS, COVER WITH SKIM COAT OF DRY-SET MORTAR TO A FEATHER EDGE. E. PREPARE SUBSTRATE SURFACES FOR ADHESIVE INSTALLATION IN ACCORDANCE WITH ADHESIVE MANUFACTURER'S INSTRUCTIONS.
13. INSTALLATION - GENERAL	A. INSTALL WATERPROOFING MEMBRANE ALONG WALL BASE AND UP WALL SURFACE MINIMUM 1 FOOT ON BOTH SURFACES. B. INSTALL WATERPROOFING MEMBRANE, TILE AND GROUT IN ACCORDANCE WITH APPLICABLE REQUIREMENTS OF ANSI A108.11 THROUGH A108.13, MANUFACTURER'S INSTRUCTIONS, AND TCA HANDBOOK RECOMMENDATIONS. C. LAY TILE TO PATTERN INTERIOR TILE PATTERN THROUGH OPENINGS D, CUT AND FIT TILE TO PENETRATIONS THROUGH TILE, LEAVING SEALANT JOINT SPACE, FORM CORNERS AND BASES NEATLY, ALIGN FLOOR JOINTS. D. ALLOW TILE TO SET FOR A MINIMUM OF 48 HOURS PRIOR TO GROUTING. E. CAULK ALL JOINTS AND ALL ROUNDOUS WITH SILICONE SEALANT. F. EXCESS GROUT: 1. FORM INTERNAL ANGLES SQUARE AND EXTERNAL EDGE TRIMS AS SCHEDULED. G. SOUND TILE AFTER SETTING. REPLACE HOLLOW SOUNDING UNITS. H. KEEP EXPANSION JOINTS FREE OF ADHESIVE OR GROUT. APPLY SEALANT TO JOINTS. I. ALLOW TILE TO SET FOR A MINIMUM OF 48 HOURS PRIOR TO GROUTING. J. GROUT TILE JOINTS. USE STANDARD GROUT UNLESS OTHERWISE INDICATED. K. APPLY SEALANT TO JUNCTION OF TILE AND DISMILLAR MATERIALS AND JUNCTION OF DISMILLAR PLANES SEALANT SHALL BE COLOR MATCHED TO GROUT COLOR.
14. INSTALLATION - FLOORS - THIN-SET METHODS	A. OVER INTERIOR CONCRETE SUBSTRATES, INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD F113. DRY-SET OR LATEX- PORTLAND CEMENT BOND COAT, WITH STANDARD GROUT, UNLESS OTHERWISE INDICATED. 1. WHERE EPOXY BOND AND GROUT ARE INDICATED, INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD F131.
15. INSTALLATION - WALL TILE	A. OVER FIBERGLASS REINFORCED BACKER BOARD, INSTALL IN ACCORDANCE WITH TCA HANDBOOK METHOD W223. ORGANIC ADHESIVE.
16. CLEANING	A. CLEAN TILE AND GROUT SURFACES.

SECTION 09511 - SUSPENDED ACOUSTICAL CEILINGS	
1. SECTION INCLUDES	A. SUSPENDED METAL GRID CEILING SYSTEM. B. SUSPENSION ACCESSORIES.
2. REFERENCES	A. ASTM C 635 - STANDARD SPECIFICATION FOR THE MANUFACTURE, PERFORMANCE, AND TESTING OF METAL SUSPENSION SYSTEM FOR ACOUSTICAL TILE AND LAY-IN PANEL CEILINGS; 2004. B. ASTM C 636 - STANDARD PRACTISE FOR INSTALLATION OF METAL CEILING SUSPENSION SYSTEM FOR ACOUSTICAL TILE AND LAY-IN PANELS; 2004. C. ASTM E 580 - STANDARD PRACTICE FOR APPLICATION OF METAL CEILING SUSPENSION SYSTEM FOR ACOUSTICAL TILE AND LAY-IN PANELS IN JOINTS REQUIRING SEISMIC RESISTANT; 2002. D. ASTM E 1264 - STANDARD CLASSIFICATION FOR ACOUSTICAL CEILING PRODUCTS; 1998 (REAPPROVED 2005).
3. EXTRA MATERIALS	A. SEE SECTION 01600 - PRODUCT REQUIREMENTS, FOR ADDITIONAL PROVISIONS. B. PROVIDE FIVE PERCENT OF TOTAL ACQUICAL UNIT AREA OF EACH TYPE OF ACOUSTICAL UNIT FOR OWNERS USE IN MAINTENANCE OF PROJECT.
4. ACOUSTICAL UNITS	A. UNITED STATES GYPSUM, USG 1. MANUFACTURERS: A. USG: WWW.USG.COM. B. ACOUSTICAL UNITS - GENERAL: ASTM E 1264, CLASS A. 1. PRODUCT, MODEL NUMBER AND FINISH AS SCHEDULED IN THE CONSTRUCTION DOCUMENTS.
5. SUSPENSION SYSTEM(S)	A. MANUFACTURERS: 1. USG: "DOWN A/C", 16"X16" EXPOSED TEE B. SUSPENSION SYSTEM - GENERAL: ASTM C 635; ALUMINUM, DIE CUT AND INTERLOCKING COMBINATION, WITH STABILIZER STRIPS, CLIPS, SPACERS, PERIMETER MOLDINGS, AND HOLD DOWN CLIPS AS REQUIRED. PRE-FINISHED TO MATCH CEILING TILE COLOR OR AS NOTED ABOVE.
6. ACCESSORIES	A. SUPPORT CHANNELS AND HANGERS: GALVANIZED STEEL; SIZE AND TYPE TO SUIT APPLICATION, SEISMIC REQUIREMENTS SPECIFIED. B. PERIMETER MOLDINGS: SAME MATERIAL AND FINISH AS GRID. 1. AT EXPOSED GRID: PROVIDE L-SHAPED MOLDING FOR MOUNTING AT SAME ELEVATION AS FACE OF GRID.
7. INSTALLATION - SUSPENSION SYSTEM	A. INSTALL SUSPENSION SYSTEM IN ACCORDANCE WITH ASTM C 636, ASTM E 580, AND MANUFACTURER'S INSTRUCTIONS AND AS SUPPLEMENTED IN THIS SECTION. B. RIGIDLY SECURE SYSTEM, INCLUDING INTEGRAL MECHANICAL AND ELECTRICAL COMPONENTS, FOR MAXIMUM DEFLECTION OF 1/360". C. INSTALL AFTER MAJOR ABOVE-CEILING WORK IS COMPLETE. COORDINATE THE LOCATION OF HANGERS WITH OTHER TRADE WORK. D. HANG SUSPENSION SYSTEM INDEPENDENT OF WALLS, COLUMNS, DUCTS, PIPES AND CONDUIT, WHERE CARRYING MEMBERS ARE SPLICED, AVOID VISIBLE DISPLACEMENT OF FACE PLANE OF ADJACENT MEMBERS. E. WHERE DUCTS OR OTHER EQUIPMENT PREVENT THE REGULAR SPACING OF HANGERS, REINFORCE THE NEAREST AFFECTED HANGERS AND RELATED CARRYING CHANNELS TO SPAN THE EXTRA DISTANCE. F. DO NOT SUPPORT COMPONENTS ON MAIN RUNNERS OR CROSS RUNNERS IF WEIGHT CAUSES TOTAL DEAD LOAD EXCEED DEFLECTION CAPABILITY. G. SUPPORT FIXTURE LOADS USING SUPPLEMENTARY HANGERS LOCATED WITHIN 6 INCHES OF EACH CORNER, OR SUPPORT COMPONENTS INDEPENDENTLY. H. DO NOT ECCENTRICALLY LOAD SYSTEM OR INDUCE ROTATION OF RUNNERS. I. PERIMETER MOLDING: INSTALL AT INTERSECTION OF CEILING AND VERTICAL SURFACES AND AT JUNCTIONS WITH OTHER INTERRUPTIONS. 1. USE LONGEST PRACTICAL LENGTHS. 2. OVERLAP AND RIVET CORNERS.
8. INSTALLATION - ACOUSTICAL UNITS	A. INSTALL ACOUSTICAL UNITS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. B. FIT ACOUSTICAL UNITS IN PLACE, FREE FROM DAMAGED EDGES OR OTHER DEFECTS DETRIMENTAL TO APPEARANCE AND FUNCTION. C. FIT BORDER TRIM NEATLY AGAINST ABUTTING SURFACES. D. INSTALL UNITS AFTER ABOVE-CEILING WORK IS COMPLETE. E. INSTALL ACOUSTICAL UNITS LEVEL, IN UNIFORM PLANE, AND FREE FROM TWIST, WARP AND DENTS. F. CUTTING ACQUICAL UNITS: 1. MAKE FIELD CUT EDGES OF SAME PROFILE AS FACTORY EDGES.
SECTION 09711 - PREFINISHED PANELS	
1. SECTION INCLUDES	A. PREFINISHED PANEL SYSTEM FOR ADHESIVE MOUNTING.
2. APPROVED MANUFACTURERS	A. KEMLE B. MARLITE
3. FIBERGLASS REINFORCED PANEL (FRP)	A. THICKNESS: 3/32" B. PEBBLES C. COLOR: AS SCHEDULED ON CONSTRUCTION DOCUMENTS. D. MOLDINGS: SOLID VINYL, WIDE PROFILE AND MATCH THE COLOR OF THE PANELS. E. CLOSURES: SOLID VINYL, WIDE PROFILE TO MATCH THE COLOR OF THE PANELS.
4. SEALANT	A. ONE PART OF SILICONE RUBBER, ASTM C820 AND PS TT-S-001543A, FDA APPROVED, OR AS RECOMMENDED BY FRP MANUFACTURER. B. COLOR: CLEAR TO TRANSLUCENT
5. INSTALLATION	A. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. B. USE THE ADHESIVES RECOMMENDED BY THE PANEL MANUFACTURER UNLESS PROHIBITED BY LOCAL REGULATIONS; OBTAIN MANUFACTURER'S APPROVAL OF ALTERNATIVE ADHESIVES. C. AVOID CONTAMINATION OF PANEL FACES; CLEAN AS NECESSARY AND REPLACE IF NOT POSSIBLE TO REPAIR TO ORIGINAL CONDITION. D. INSTALL PANELS OVER WATER RESISTANT DRYWALL IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, USING NON-FLAMMABLE ADHESIVE (100% COVERAGE). 1. DRYWALL MUST BE INSTALLED (AND ALL JOINTS TAPED) FLOOR TO CEILING TO PROVIDE A GOOD BONDABLE SURFACE TO ACCEPT INSTALLATION OF FRP PANELS. E. DISCARD UNITS OF MATERIAL WHICH ARE UNSOUND, WARPED, BOWED, TWISTED, IMPROPERLY TREATED, OR TOO SMALL TO FABRICATED. WORK WITH MINIMUM OF JOINTS OR OPTIMUM JOINTING ARRANGEMENTS, OR WHICH ARE OF DEFECTIVE MANUFACTURE WITH RESPECT TO SURFACES, SIZES, OR PATTERNS. F. SCORE AND CUT WORK TO FIT ADJOINING WORK. G. CAULK ALL JOINTS AND ALL ROUNDOUS WITH SILICONE SEALANT.
SECTION 09900 - PAINTS AND COATINGS	
1. SECTION INCLUDES	A. SURFACE PREPARATION. B. FIELD APPLICATION OF PAINTS, STAINS, VARNISHES, AND OTHER COATINGS.
2. DELIVERY, STORAGE, AND HANDLING	A. DELIVER PRODUCTS TO SITE IN SEALED AND LABELED CONTAINERS; INSPECT TO VERIFY ACCEPTABILITY. B. CONTAINER LABEL: INCLUDE MANUFACTURER'S NAME, TYPE OF PAINT, BRAND NAME, LOT NUMBER, BRAND CODE, COVERAGE, SURFACE PREPARATION, DRYING TIME, CLEANUP REQUIREMENTS, COLOR DESIGNATION, AND INSTRUCTIONS FOR MIXING AND REDUCING. C. PAINT MATERIALS: STORE AT MINIMUM AMBIENT TEMPERATURE OF 45 DEGREES F AND A MAXIMUM OF 90 DEGREES F; IN VENTILATED AREA, AND AS REQUIRED BY MANUFACTURER'S INSTRUCTIONS.
3. ENVIRONMENTAL REQUIREMENTS	A. DO NOT APPLY MATERIALS WHEN SURFACE AND AMBIENT TEMPERATURES ARE OUTSIDE THE TEMPERATURE RANGES REQUIRED BY THE PAINT PRODUCT MANUFACTURER. B. PROVIDE LIGHTING LEVEL OF 80 FT CANDLES MEASURED MID-HEIGHT AT SUBSTRATE SURFACE.
4. SUBMITTALS	A. PREPARE TWO (2) COLOR/TEXTURE SAMPLES FOR EACH COLOR FOR EACH TYPE OF SUBSTRATE TO BE PAINTED OR STAINED PER SUBMITTALS. B. MAKE SAMPLES NOT LESS THAN TWELVE INCHES (12") SQUARE. C. SUBMIT MANUFACTURER'S PRINTED LITERATURE ON EACH COATING SYSTEM TO BE USED.
5. EXTRA MATERIALS	A. SUPPLY 1 GALLON OF EACH COLOR; STORE WHERE DIRECTED. B. LABEL EACH CONTAINER WITH COLOR IN ADDITION TO THE MANUFACTURER'S LABEL.
6. MANUFACTURERS	A. PAINT AND COATING MANUFACTURERS SHALL BE AS SCHEDULED HEREIN AND ON THE DRAWINGS.
7. PAINTS AND COATING - GENERAL	A. PAINTS AND COATINGS: READY MIXED, EXCEPT FIELD-CATALYZED COATINGS. PREPARE PIGMENTS TO A SOFT PASTE CONSISTENCY, CAPABLE OF BEING READILY AND UNIFORMLY DISPERSED TO A HOMOGENEOUS COATING. B. VOLATILE ORGANIC COMPOUND (VOC) CONTENT: 1. PROVIDE COATINGS THAT COMPLY WITH THE MOST STRINGENT REQUIREMENTS SPECIFIED IN 40 CFR 59,

HAT CREEK BURGER - PROTOTYPE 1.1

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DIVISION 09 - FINISHES - CONTINUE

SECTION 09000 - PAINTS AND COATINGS

INTERIOR SURFACES

1. WOOD BEAMS, JOIST OR TRUSSES "STAINED"
SHERWIN WILLIAMS
1ST COAT: MINWAX PRE-STAIN WOOD CONDITIONER, 154-8866
2ND COAT: S-W WOODCLASSICS OIL STAIN, A48 SERIES
- GLIDDEN PROFESSIONAL
1ST COAT: MINWAX PRE-STAIN WOOD CONDITIONER, 154-8866
2ND COAT: GLIDDEN PROFESSIONAL, 1700 WOODPRIDE INTERIOR WOOD FINISHING STAIN
2. WOOD DOORS, "STAINED"
SHERWIN WILLIAMS
1ST COAT: MINWAX PRE-STAIN WOOD CONDITIONER, 154-8866
2ND COAT: S-W WOODCLASSICS OIL STAIN, A48 SERIES
3RD COAT: S-W WOODCLASSICS WATERBORNE POLYURETHANE VARNISH, A68P90 SERIES, SATIN
- GLIDDEN PROFESSIONAL
1ST COAT: MINWAX PRE-STAIN WOOD CONDITIONER, 154-8866
2ND COAT: GLIDDEN PROFESSIONAL, 1700 WOODPRIDE INTERIOR WOOD FINISHING STAIN
3RD COAT: GLIDDEN PROFESSIONAL, 1902 WOODPRIDE INTERIOR POLYURETHANE SATIN VARNISH
3. GYPSUM WALLBOARD
SHERWIN WILLIAMS
1ST COAT: S-W PROMAR 200 INTERIOR LATEX PRIMER, B26W8200
2ND COAT: S-W PROMAR 200 LATEX SEMI-GLOSS, B51W2200 SERIES
3RD COAT: SAME AS SECOND COAT
- GLIDDEN PROFESSIONAL
1ST COAT: 1000 H-HIDE WATER - BASED PRIMER-SEALER
2ND COAT: GLIDDEN PROFESSIONAL ULTRA HIDE 150 LATEX EGGSHELL 1412
3RD COAT: SAME AS SECOND COAT
4. FERROUS METAL AND EXPOSED GAS LINES, DOORS, DOOR FRAMES
SHERWIN WILLIAMS
1ST COAT: S-W DTM ACRYLIC SEMI-GLOSS, B66-200 SERIES
2ND COAT: S-W DTM ACRYLIC SEMI-GLOSS, B66-200 SERIES
- GLIDDEN PROFESSIONAL
1ST COAT: DEVCO COATINGS DEVXLEF 4216 HP SEMI-GLOSS
2ND COAT: SAME AS SECOND COAT
5. WOOD TRIM AND PANELING "STAINED"
SHERWIN WILLIAMS
1ST COAT: MINWAX PRE-STAIN WOOD CONDITIONER, 154-8866
2ND COAT: S-W WOODCLASSICS OIL STAIN, A48 SERIES
3RD COAT: S-W WOODCLASSICS WATERBORNE POLYURETHANE VARNISH, A68P90 SERIES, SATIN
4TH COAT: SAME AS THIRD COAT
- GLIDDEN PROFESSIONAL
1ST COAT: MINWAX PRE-STAIN WOOD CONDITIONER, 154-8866
2ND COAT: S-W WOODCLASSICS OIL STAIN, A48 SERIES
3RD COAT: S-W WOODCLASSICS WATERBORNE POLYURETHANE VARNISH, A68P90 SERIES, SATIN
4TH COAT: SAME AS THIRD COAT

DIVISION 10 - SPECIALTIES

SECTION 10167 - STAINLESS STEEL TOILET COMPARTMENTS

1. SECTION INCLUDES
- A. STAINLESS STEEL TOILET COMPARTMENTS AND URINAL SCREENS.

2. MANUFACTURERS

- A. TOILET COMPARTMENTS:
1. AMERICAN SANITARY PARTITION CORP.: WWW.AM.SANITARY-PARTITION.COM
2. GLOBAL PARTITIONS: WWW.GLOBALPARTITIONS.COM
3. FRY SPECIALTY COMPANY, SANTEE, CA.: 619-562-6446
4. ACCURATE PARTITIONS, LYONS, IL.: 708-442-8800
5. GLOBAL PARTITIONS, EASTONVILLE, GA.: 706-827-2700
6. SUBSTITUTIONS: SECTION 01000 - PRODUCT REQUIREMENTS

3. COMPONENTS

- A. TOILET COMPARTMENTS: EQUAL TO TYPE SS-FF, FULL FLUSH, AMERICAN SANITARY PARTITION CORP., COOCE, FL. (407) 656-0611. FLOOR ANCHORED OVERHEAD BRACED
- B. DOOR AND PANEL DIMENSIONS:
1. STAINLESS STEEL TYPE #304 - #4 FINISH.
2. CLEAR, FLANGE AND DOORS SHALL BE STAINLESS STEEL CONSTRUCTION, LAMINATED TO A HONEYCOMB CORE.
3. EDGES SHALL BE FORMED TO INTERLOCK WITH FACE PANELS, ALL CORNERS WELDED AND GRINDING SMOOTH.
4. ALL FITTINGS SHALL BE STAINLESS STEEL #4 FINISH AND PROVIDE MEANS FOR ADJUSTMENT.
- C. URINAL SCREENS: WALL MOUNTED WITH TWO PANEL BRACKETS, AND FLOOR-TO-CEILING VERTICAL UPRIGHT CONSISTING OF PILASTER ANCHORED TO FLOOR AND CEILING.
1. SIZE: 18 X 42
2. TO MATCH TOILET COMPARTMENT AS SPECIFIED.

4. ACCESSORIES

- A. ALL FITTINGS SHALL BE STAINLESS STEEL, WITH #4 FINISH AND ADJUSTABLE TO KEEP TIGHT AND LEVELS CLEAR FROM WALLS. TIE COVER BASES SHALL BE 3" HIGH, OF NO. 304 STAINLESS STEEL.
- B. PLASTER BRACKETS: POLISHED STAINLESS STEEL.
- C. PLASTER BRACKETS: POLISHED STAINLESS STEEL.
- D. ATTACHMENTS, SCREWS AND BOLTS: STAINLESS STEEL, TAMPER PROOF TYPE.
- E. FOR ATTACH PANELS AND PLISTERS TO BRACKETS, THROUGH-BOLTS AND NUTS, TAMPER PROOF.
- F. HARDWARE: POLISHED STAINLESS STEEL:
1. PIVOT HINGES, GRAVITY TYPE, ADJUSTABLE FOR DOOR CLOSE POSITIONING; TWO PER DOOR.
2. DOOR LATCH: SLIDE TYPE WITH EXTERIOR EMERGENCY ACCESS FEATURE.
3. DOOR STRIKE AND KEYSER WITH RUBBER BUMPER, MOUNTED ON PLASTER IN ALIGNMENT WITH DOOR LATCH.
4. COAT HOOK WITH RUBBER BUMPER, ONE PER COMPARTMENT, MOUNTED ON DOOR.
5. PROVIDE DOOR PULL FOR OUTSWINGING DOORS.

5. EXAMINATION

- A. VERIFY THAT FIELD MEASUREMENTS ARE AS INDICATED.
- B. VERIFY CORRECT SPACING OF AND BETWEEN PLUMBING FIXTURES.
- C. VERIFY CORRECT LOCATION OF BUIL-IN FRAMING, ANCHORAGE, AND BRACING.

6. INSTALLATION

- A. INSTALL PARTITIONS SECURE, RIGID, PLUMB, AND LEVEL IN ACCORDANCE WITH MANUFACTURERS' INSTRUCTIONS.
- B. MAINTAIN 3/8 TO 1/2 INCH SPACE BETWEEN WALL AND PANELS AND BETWEEN WALL AND END PLASTERS.
- C. ATTACH PANEL BRACKETS SECURELY TO WALLS USING ANCHOR DEVICES.
- D. ATTACH PANELS AND PLASTERS TO BRACKETS. LOCATE HEAD RAIL JOINTS AT PILASTER CENTER LINE.
- E. FIELD TOUCH-UP OF SCRATCHES OR DAMAGED FINISH WILL NOT BE PERMITTED. REPLACE DAMAGED OR SCRATCHED MATERIALS WITH NEW MATERIALS.

7. ERECTION TOLERANCES

- A. MAXIMUM VARIATION FROM TRUE POSITION: 1/4 INCH.
- B. MAXIMUM VARIATION FROM PLUMB: 1/8 INCH.

8. ADJUSTING

- A. ADJUST AND ALIGN HARDWARE TO UNIFORM CLEARANCE AT VERTICAL EDGE OF DOORS.
- B. RETURN EXCEEDING 3/16 INCH.
- C. ADJUST HINGES TO POSITION DOORS IN PARTIAL OPENING POSITION WHEN UNLATCHED.
- D. RETURN OUT SWINGING DOORS TO CLOSED POSITION.
- E. ADJUST ADJACENT COMPONENTS FOR CONSISTENCY OF LINE OR PLANE.

SECTION 1044Z - ARCHITECTURAL SIGNAGE

1. DESIGN AND FABRICATION
- A. PROVIDE OPENINGS FOR FABRICATION, REGARDLESS OF PRODUCTION TECHNIQUE, METHOD, OR PROCESS SPECIFIED, SHALL BE APPROVED BY THE OWNER PRIOR TO PRODUCTION IN ORDER TO ENSURE CONFORMITY TO DESIGN WITH REGARD TO LETTER FORM AND HEIGHT, WORDING, SPELLING, CAPITALIZATION, PUNCTUATION, LETTER SPACING, LEADING AND LAYOUT OR COMPOSITION.
2. MANUFACTURER
- A. INTERIOR SIGNAGE: THE DRAWINGS WERE PREPARED AND THIS SPECIFICATION WRITTEN ON THE BASIS OF USING THE PRODUCTS OF KROY SIGN SYSTEMS, SCOTTSDALE, ARIZONA.
- B. STREET ADDRESS SIGNAGE: THE DRAWINGS WERE PREPARED AND THIS SPECIFICATION WRITTEN ON THE BASIS OF USING THE PRODUCTS OF WESTON LETTERS, NORTH HOLLYWOOD, CA.
- C. IT IS THE INTENT TO LIMIT COMPETITIVE BIDDING. PRODUCTS WITH EQUAL CHARACTERISTICS BY OTHER MANUFACTURERS ARE ACCEPTABLE UNDER THE CONDITIONS OF THESE SPECIFICATIONS.
3. GENERAL
- A. REGULATORY SIGNAGE SERIES OPAQUE ACRYLIC, MATTE FINISH PLQUES, WITH FRONT SURFACE, NOT 3/4 INCH DEPTH. IN LOW PROFILE FRAME. CONFIGURATION SHOWN ON DRAWINGS TO CONFORM WITH AMERICANS WITH DISABILITIES ACT REQUIREMENTS.
- B. PROVIDE ONE SIGN UNIT FOR EACH RESTROOM DOOR OPENING FOR PUBLIC FACILITIES.
- C. STREET ADDRESS SIGNAGE: LETTERING TO BE 6" TALL, TWENTIETH CENTURY BOLD, COLOR: NATURAL ANODIZED ALUMINUM, 3/4 INCH STANDOFFS. LETTERING TO BE ORDERED FROM: http://www.westonletters.com/index_23.php?catId=23&file=N+--+Styles.htm
4. INSTALLATION
- A. INSTALLATION SHALL BE STARTED AT THE TIME ESTABLISHED BY THE GENERAL CONTRACTOR. HOWEVER, NO SIGN WORK SHALL BE PERMITTED IN THE BUILDING BEFORE THE BUILDING IS COMPLETELY ENCLOSED AND ALL PAINTING AND WORK OF OTHER TRADES IS FINISHED.
- B. INSTALL SIGNS IN ACCORD WITH APPROVED SHOP DRAWINGS. INSTALL TRUE TO LINE, PLUMB, LEVEL, SQUARE, IN PROPER PLACES WITH OTHER WORK AND FREE FROM OBJECTIONABLE DEFECTS. ANCHOR TO ADEQUATELY RESIST ALL NORMALLY SUBJECTED STRESSES.

SECTION 1052Z - FIRE EXTINGUISHERS AND ACCESSORIES

1. SECTION INCLUDES
- A. FIRE EXTINGUISHERS
- B. ACCESSORIES.
2. REFERENCES
- A. NFPA 10-STANDARD FOR PORTABLE FIRE EXTINGUISHERS; NATIONAL FIRE PROTECTION ASSOCIATION
- B. UL (FED.) FIRE PROTECTION EQUIPMENT DIRECTORY; UNDERWRITERS LABORATORIES INC.; CURRENT EDITION.
3. MANUFACTURERS
- A. FIRE EXTINGUISHERS AND ACCESSORIES:
1. LARSEN'S MANUFACTURING CO.: WWW.LARSENSMFG.COM
- C. USE ONLY MECHANICAL SKILLED IN THE WORK THEY ARE TO PERFORM AND HAVE A COMPETENT REPRESENTATIVE ON THE JOB WHEN ANY WORK IS BEING DONE.
- D. NO WORK SHALL BE DONE UNLESS THE SUPERINTENDENT OF THE CONTRACTOR IS ON THE JOB AND THE WORK SHALL BE PROPERLY PROTECTED. ALL RUBBER REMOVED PROMPTLY, AND EXPOSED WORK SHALL BE CAREFULLY CLEANED PRIOR TO FINAL ACCEPTANCE.
- E. THE TERM "PROVIDE" SHALL INCLUDE LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO FURNISH AND INSTALL, COMPLY WITH ALL CODES, ORDINANCES, AND REGULATIONS.
- F. IN DECISIONS ARISING FROM DISCREPANCIES, INTERPRETATION OF DRAWINGS AND SPECIFICATIONS, SUBSTITUTES, AND OTHER PERTINENT MATTERS, THE DECISION OF THE OWNER'S REPRESENTATIVE'S APPROVAL SHALL BE FINAL.
2. SPECIFICATIONS AND DRAWINGS
- A. PLANS SHOW LOCATION OF FIXTURES AND EQUIPMENT AND ARE INTENDED TO DEPICT THE GENERAL INTENT OF THE WORK IN SCOPE, LOCATION AND QUALITY OF WORKMANSHIP. THEY ARE NOT INTENDED TO SHOW IN MINUTE DETAIL EVERY OR ALL ACCESSORIES.
- B. ADDITIONAL EXTINGUISHERS LOCATED PER LOCAL FIRE OFFICIAL DIRECTION IF NEEDED.
- C. WET CHEMICAL TYPE
1. CLASS: K
2. SIZE: 10
3. SIZE AND CLASSIFICATION AS SCHEDULED.
4. MODEL: WP10
5. BRACKET: B2
6. QUANTITY: 1. LOCATE FIRST ONE (1) WHERE NOTED ON DRAWINGS, WITH ONE (1) ADDITIONAL EXTINGUISHERS LOCATED PER LOCAL FIRE OFFICIAL DIRECTION IF NEEDED.
7. ACCESSORIES
- A. EXTINGUISHER BRACKETS: FORMED STEEL, CHROME-PLATED.
8. INSTALLATION
- A. INSTALL IN ACCORDANCE WITH MANUFACTURERS' INSTRUCTIONS.
- B. SECURE RIGIDLY IN PLACE.

SECTION 10800 - TOILET ACCESSORIES

1. SECTION INCLUDES
- A. TOILET ACCESSORIES TO BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS NOTED OTHERWISE.
- B. COORDINATE ROUGH-IN, OPENINGS AND WOOD BLOCKING.
2. PRODUCTS
- A. SEE SCHEDULE ON DRAWINGS FOR ACCESSORIES.
3. INSTALLATION
- A. INSTALL FIXTURES, ACCESSORIES AND ITEMS IN ACCORDANCE WITH MANUFACTURERS' INSTRUCTIONS, AND WHERE AFFECTED, AT HEIGHTS OR LOCATIONS FOR THE HANDICAPPED AS NOTED ON DRAWINGS.
- B. INSTALL TRUE, PLUMB AND LEVEL, SECURELY AND RIGIDLY ANCHORED TO SUBSTRATE.

DIVISION 11 - EQUIPMENT

SECTION 11400 - FOOD SERVICE EQUIPMENT

1. SECTION INCLUDES
- A. INSTALLATION OF OWNER PROVIDED FOOD SERVICE EQUIPMENT.
- B. EQUIPMENT SHALL BE FURNISHED, ASSEMBLED, AND SET IN PLACE UNDER SEPARATE CONTRACT, WITH FINAL UTILITY CONNECTION BY GENERAL CONTRACTOR.
2. RELATED SECTIONS
- A. MECHANICAL AND ELECTRICAL SERVICES AND FINAL CONNECTIONS TO EQUIPMENT.
3. OWNER / CONTRACTOR RESPONSIBILITIES
- A. OWNER WILL PROVIDE EQUIPMENT MANUFACTURERS' INSTALLATION INSTRUCTIONS AND OPERATION/MAINTENANCE DATA FOR CONTRACTOR'S USE.
- B. COORDINATE SITE OF ACCESS AND ROUTE TO PLACE INSTALLATION.
- C. FOOD SERVICE EQUIPMENT (NIC):
1. EQUIPMENT SCHEDULED ON THE DRAWINGS AS (NIC).
2. WALK-IN COOLERS AND FREEZERS WITH THERMOSTATS.
3. MOTOR STARTERS.
- D. FOOD SERVICE EQUIPMENT (BY OWNER):
1. EQUIPMENT SCHEDULED ON THE DRAWINGS AS (B.O.).
2. MECHANICAL REFRIGERATION SYSTEMS, INCLUDING COMPRESSOR UNITS, CONDENSERS, EVAPORATOR COILS, AND CONTROL VALVES.
3. STAINLESS STEEL TRIM STRIPS, SUPPORTS AND CONNECTIONS, ATTACHMENT DEVICES, AND ACCESSORIES.
4. EXHAUST HOOD AND ANKUL SYSTEM.
- E. REFRIGERANT SYSTEM INSTALLATION (BY KES):
1. FITTINGS: WROUGHT COPPER OR BRASS DESIGNED FOR USE WITH HIGH TEMPERATURE SOLDER.
2. PIPING JOINTS: MADE WITH SILVER SOLDER (SIL-FOS).
3. PIPING: PROPERLY SUSPENDED FROM AN ANCHOR TO THE STRUCTURE WITH ADJUSTABLE HANGERS 8" O.C. MAXIMUM.
4. SUCTION LINES: SIZE TO HAVE MAXIMUM PRESSURE DROP OF TWO POUNDS IN MEDIUM TEMPERATURE SYSTEMS, ONE POUND IN LOW TEMPERATURE SYSTEM.
5. LIQUID LINES: SIZED TO GIVE MAXIMUM PRESSURE TO PREVENT TRAPPING OF OIL.
6. RIGID INSTALLATION ON ALL SUCTION LINES TO BE MAXIMUM R-10 INSULATION BY ARMSTRONG-1" THICK AT MEDIUM TEMP, 1-1/2" THICK AT LOW TEMP. REFRIGERANT LINES IN PVC OR EMT CONDUIT TO BE SEALED AT BOTH ENDS WITH DEW CORNING 3-6548 SILICONE RTV FOM.
7. EVACUATION AND CHARGING: AFTER COMPLETION OF THE PRESSURE TEST, THE SYSTEM SHALL BE EVACUATED USING AN APPROVED VACUUM PUMP. CONNECTIONS FOR EVACUATIONS TO BE IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS.
4. DELIVERY, HANDLING AND STORAGE
- A. DELIVERY: UPON RECEIVING EQUIPMENT BY KITCHEN EQUIPMENT SUPPLY VENDOR, CHECK CRATES/CARTONS IDENTIFICATION LABELS WITH RECEIVING P.O., ASSURE CORRECT ITEM HAS BEEN RECEIVED.
- B. HANDLING: UNCRATE EQUIPMENT IN ORGANIZED MANNER. TAKE CARE NOT TO IMPLUSE LOOSE PARTS, ACCESSORIES, ASSEMBLY, AND OPERATING INSTRUCTIONS, AND WARNING CARDS. KEEP UTILITY HOOKUP NOTES AND TAGS ON EQUIPMENT UNTIL AFTER CONNECTIONS ARE MADE. ASSEMBLE IN WORKMANSHIP MANNER IN ACCORD WITH MANUFACTURERS' DIRECTIONS. TAKING CARE TO MAKE SURE FASTENERS ARE TIGHT AND COMPONENTS ARE ALIGNED AND SQUARE.
- C. STORAGE: STORE EQUIPMENT CLEAR OF FLOOR IN MANNER TO PREVENT WARPING, TWISTING, OR SAGGING.
5. INSTALLATION
- A. INSTALL ITEMS IN ACCORD WITH MANUFACTURERS' INSTRUCTIONS AND FABRICATORS' SHOP DRAWINGS. INSTALL IN ACCORD WITH LOCAL GOVERNING HEALTH, BUILDING, AND SAFETY, AND FIRE PROTECTION CODES AND REGULATIONS AND NEMA, UL, AIA, ASME AND NFPA.
- B. ELECTROLYSIS: INSULATE TO PREVENT ELECTROLYSIS BETWEEN DISSIMILAR METALS.
- C. PROVIDE SEALANT TO ACHIEVE CLEAN JOINT WITHOUT CREVICES.

- C. EQUIPMENT
- GENERAL: SET IN PLACE AND POSITION PER KITCHEN EQUIPMENT PLAN; READY FOR UTILITY HOOK UP. AFTER UTILITY HOOKUPS ARE MADE, LEVEL AND SECURE DISHABLES TO TOWARD DISHWASHER, COMPLETELY CLOSE AND SEAL GAPS, JOINTS AND SEAMS. REPAIR ALL FINISHES, EQUIPMENT AND WALLS, GELING AND FLOORS WITH STAINLESS STEEL TRIM STRIPS AND/OR CLEAR SILICONE SEALANT. DO NOT USE SEALANT IN JOINTS OR SEAMS OVER 3/16 INCH WIDE.
2. REFRIGERANT PIPING: INSTALL COPPER TUBING AND FITTINGS, CUT WITH PIPE CUTTERS AND RESHAPES WITH SIZING TOOL. EXPOSE PIPING TO VIEW AS REQUIRED BY AMERICAN SAFETY COUNCIL FOR THE INSTALLATION OF REFRIGERATION. EXPOSED AREAS OR ACCESSIBLE UNDER CEILING SPACES. USE HARD COPPER TUBING, RUN EXPOSED TUBING IN SUCH MANNER AS TO PREVENT DAMAGE FROM ACTIVITIES IN AREAS, OTHERWISE RUN TUBING OF CONDUIT WITH PROTECTIVE COVERING.
- A. SUCTION LINES: SIZE TO GIVE MAX PRESSURE DROP FROM EVAPORATOR TO MACHINE OF 2 LB. FOR HIGH TEMP SYSTEM AND 1 IN. FOR FREEZER SYSTEM, ALLOWING GAS VELOCITIES OF NOT LESS THAN 750 RPM IN HORIZONTAL RUNS AND 1500 RPM IN VERTICAL RISERS. SIZE LIQUID LINES TO GIVE MAX PRESSURE DROP OF 3 BS. FROM RECEIVER TO EVAPORATOR.
- B. TUBING RUNS: GRADE TO PREVENT TRAPPING OF OIL.
- C. PLIES: SECURE SUCTION AND LIQUID LINES FOR EACH SYSTEM TOGETHER, EXCEPT WHEN RUN THROUGH CONDUIT; 24 INCH INTERVALS WITH BLACK PLASTIC ELECTRICAL TAPE.
- D. INSULATION: INSULATE REFRIGERANT SUCTION LINES OUTSIDE OF REFRIGERATED COMPARTMENTS BACKING TO COMPRESSORS.
- E. HANGERS AND SUPPORTS: PROVIDE ADJUSTABLE HANGERS, ANCHORS OR STRAPS REQUIRED FOR PROPER SUPPORT OF PIPING NOT RUN IN CONDUIT. SPACE HANGERS NOT TO EXCEED 10 FEET O.C. AND CLOSER WHERE REQUIRED FOR PROPER SUPPORT OF SMALL PIPING. PROVIDE INSULATED REFRIGERANT PIPING WITH APPROVED TYPE SLEEVES AT HANGER POINTS.
3. WALK-IN COOLER FREEZER BAYS: TRANSIT LEVEL FLOOR SCREENS PRIOR TO WALL AND CEILING PANEL ERECTION. SEAL WALL AND OVER CEILING PENETRATIONS FOR ELECTRICAL OR GAS. PROVIDE REFRIGERANT PIPING AND CONDUIT THEREOF. PROVIDE ALL BUIL-UP ELECTRICAL CONDUITS, ON EXTERIOR OR BOX.
- C. TEMPERATURE, HUMIDITY, PRESSURE AND SIMILAR CONTROLS ESSENTIAL TO THE OPERATION OF MECHANICAL SYSTEMS. PROVIDE EXPOSED OIL RETURN LINES WITH SHUT-OFF VALVES OF PACKLESS STEEL TYPE.
- S. EVAPORATOR COILS: SUPPORT BY HANGERS UTILIZING FISH PAIL OF TOP OF WALK-IN COOLER. CLEAR BAY FLOOR UNDER INSIDE OF CEILING PANELS.
- D. MOTOR CONTROLS: PROVIDE UNDER DIVISION 15 MECHANICAL OF CAPACITY REQUIRED TO OPERATE EQUIPMENT SPECIFIED, BUT SHALL NOT BE LESS THAN THAT SPECIFIED.
- E. ALL LOW VOLTAGE (120V AND UNDER) TEMPERATURE CONTROL WIRING FOR EQUIPMENT SHALL BE PROVIDED UNDER THIS DIVISION.
- F. CONDUIT WHEN REQUIRED FOR CONTROL WIRING SHALL BE PROVIDED UNDER THIS DIVISION.
4. MOTORS
- A. ALL MOTORS SHALL BE FURNISHED AND INSTALLED UNDER DIVISION 15 MECHANICAL AND SHALL BE WIRED UNDER DIVISION 16 ELECTRICAL.
- B. ALL MOTORS SHALL BE BUILT IN ACCORDANCE WITH THE CURRENT APPLICABLE IEEE, ASA, AND NEMA STANDARDS. ALL MOTORS SHALL BE PROVIDED UNDER DRIIP-PROOF MACHINES FOR INSTALLATION. INDOORS AND/OR IN PROTECTED LOCATIONS, TOTALLY ENCLOSED FAN COOLED (TEFC) MOTORS SHALL BE USED IN ALL AREAS OF EXPOSURE TO WEATHER OR OTHER ENVIRONMENTAL CONDITIONS. MOTORS SHALL BE RATED EXPLOSION PROOF WHEN LOCATED IN HAZARDOUS ATMOSPHERES. TYPE II WEATHER PROTECTED MOTORS MAY BE USED IN LIEU OF TEFC MOTORS ON ROOF MOUNTED FANS AND SIMILAR EQUIPMENT.
- C. IF THE CONTRACTOR PROPOSES TO FURNISH MOTORS VARYING IN HORSEPOWER AND/OR CHARACTERISTIC FROM THOSE SPECIFIED, HE SHALL FIRST INFORM THE OWNER OF THE CHANGE AND THE OWNER SHALL APPROVE THE CHANGE AND SHALL PAY ALL ADDITIONAL CHARGES IN CONNECTION WITH THE CHANGE.
5. REMOVAL OF RUBBISH
- A. CONTRACTOR SHALL KEEP PREMISES FREE FROM ACCUMULATIONS OF WASTE MATERIAL OR RUBBISH CAUSED BY HIS EMPLOYEES OR WORK. AT COMPLETION OF WORK, HE SHALL REMOVE ALL HIS TOOLS, SCAFFOLDING, SURPLUS MATERIALS, AND RUBBISH FROM BUILDING AND SITE. HE SHALL LEAVE PREMISES AND HIS WORK IN A CLEAN ORDERLY CONDITION ACCEPTABLE TO THE OWNER.
6. QUIET OPERATION AND VIBRATION
- A. ALL EQUIPMENT PROVIDED UNDER THIS SECTION SHALL OPERATE UNDER ALL CONDITIONS OF LOAD FREE OF QUESTIONABLE SOUND AND VIBRATION. SOUND AND VIBRATION CONDITIONS CONSIDERED QUESTIONABLE SHALL BE CORRECTED IN AN APPROVED MANNER.
7. EXAMINATION OF EXISTING CONDITIONS
- A. VISIT AND CAREFULLY EXAMINE THOSE PORTIONS OF THE SITE AND/OR PRESENT BUILDINGS AFFECTED BY THIS WORK SO AS TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK BEFORE SUBMITTING PROPOSALS.
- B. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH EXAMINATION HAS BEEN MADE AND LATER CLAIMS FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED, WHICH COULD HAVE BEEN FORESEEN AND SUCH EXAMINATION BEEN MADE, WILL NOT BE RECOGNIZED.
8. CLEANING AND ADJUSTMENTS
- A. UPON COMPLETION OF WORK, CONTRACTOR SHALL CLEAN AND LUBRICATE FANS, MOTORS AND OTHER MECHANICAL EQUIPMENT. THE GENERAL CONDITIONS AND ALL REQUIREMENTS OF THE LOCAL UTILITY COMPANIES, THE GENERAL CONDITIONS AND ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS SHALL APPLY TO ALL WORK OF THIS SECTION. WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE CODES NOTED ON THE TITLES OF THE CONTRACT DOCUMENTS.
- B. COOPERATE WITH ALL OTHER TRADES AND INSTALL WORK AS FAST AS THE PROGRESS OF THE JOB WILL PERMIT.
- C. USE ONLY MECHANICAL SKILLED IN THE WORK THEY ARE TO PERFORM AND HAVE A COMPETENT REPRESENTATIVE ON THE JOB WHEN ANY WORK IS BEING DONE.
- D. NO WORK SHALL BE DONE UNLESS THE SUPERINTENDENT OF THE CONTRACTOR IS ON THE JOB AND THE WORK SHALL BE PROPERLY PROTECTED. ALL RUBBER REMOVED PROMPTLY, AND EXPOSED WORK SHALL BE CAREFULLY CLEANED PRIOR TO FINAL ACCEPTANCE.
- E. THE TERM "PROVIDE" SHALL INCLUDE LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO FURNISH AND INSTALL, COMPLY WITH ALL CODES, ORDINANCES, AND REGULATIONS.
- F. IN DECISIONS ARISING FROM DISCREPANCIES, INTERPRETATION OF DRAWINGS AND SPECIFICATIONS, SUBSTITUTES, AND OTHER PERTINENT MATTERS, THE DECISION OF THE OWNER'S REPRESENTATIVE'S APPROVAL SHALL BE FINAL.
2. SPECIFICATIONS AND DRAWINGS
- A. PLANS SHOW LOCATION OF FIXTURES AND EQUIPMENT AND ARE INTENDED TO DEPICT THE GENERAL INTENT OF THE WORK IN SCOPE, LOCATION AND QUALITY OF WORKMANSHIP. THEY ARE NOT INTENDED TO SHOW IN MINUTE DETAIL EVERY OR ALL ACCESSORIES.
- B. ADDITIONAL EXTINGUISHERS LOCATED PER LOCAL FIRE OFFICIAL DIRECTION IF NEEDED.
- C. WET CHEMICAL TYPE
1. CLASS: K
2. SIZE: 10
3. SIZE AND CLASSIFICATION AS SCHEDULED.
4. MODEL: WP10
5. BRACKET: B2
6. QUANTITY: 1. LOCATE FIRST ONE (1) WHERE NOTED ON DRAWINGS, WITH ONE (1) ADDITIONAL EXTINGUISHERS LOCATED PER LOCAL FIRE OFFICIAL DIRECTION IF NEEDED.
7. ACCESSORIES
- A. EXTINGUISHER BRACKETS: FORMED STEEL, CHROME-PLATED.
8. INSTALLATION
- A. INSTALL IN ACCORDANCE WITH MANUFACTURERS' INSTRUCTIONS.
- B. SECURE RIGIDLY IN PLACE.

8. CUTTING, PATCHING, EXCAVATION, BACKFILL, AND LAYOUT
- GENERAL: SET IN PLACE AND POSITION PER KITCHEN EQUIPMENT PLAN; READY FOR UTILITY HOOK UP. AFTER UTILITY HOOKUPS ARE MADE, LEVEL AND SECURE DISHABLES TO TOWARD DISHWASHER, COMPLETELY CLOSE AND SEAL GAPS, JOINTS AND SEAMS. REPAIR ALL FINISHES, EQUIPMENT AND WALLS, GELING AND FLOORS WITH STAINLESS STEEL TRIM STRIPS AND/OR CLEAR SILICONE SEALANT. DO NOT USE SEALANT IN JOINTS OR SEAMS OVER 3/16 INCH WIDE.
2. REFRIGERANT PIPING: INSTALL COPPER TUBING AND FITTINGS, CUT WITH PIPE CUTTERS AND RESHAPES WITH SIZING TOOL. EXPOSE PIPING TO VIEW AS REQUIRED BY AMERICAN SAFETY COUNCIL FOR THE INSTALLATION OF REFRIGERATION. EXPOSED AREAS OR ACCESSIBLE UNDER CEILING SPACES. USE HARD COPPER TUBING, RUN EXPOSED TUBING IN SUCH MANNER AS TO PREVENT DAMAGE FROM ACTIVITIES IN AREAS, OTHERWISE RUN TUBING OF CONDUIT WITH PROTECTIVE COVERING.
- A. SUCTION LINES: SIZE TO GIVE MAX PRESSURE DROP FROM EVAPORATOR TO MACHINE OF 2 LB. FOR HIGH TEMP SYSTEM AND 1 IN. FOR FREEZER SYSTEM, ALLOWING GAS VELOCITIES OF NOT LESS THAN 750 RPM IN HORIZONTAL RUNS AND 1500 RPM IN VERTICAL RISERS. SIZE LIQUID LINES TO GIVE MAX PRESSURE DROP OF 3 BS. FROM RECEIVER TO EVAPORATOR.
- B. TUBING RUNS: GRADE TO PREVENT TRAPPING OF OIL.
- C. PLIES: SECURE SUCTION AND LIQUID LINES FOR EACH SYSTEM TOGETHER, EXCEPT WHEN RUN THROUGH CONDUIT; 24 INCH INTERVALS WITH BLACK PLASTIC ELECTRICAL TAPE.
- D. INSULATION: INSULATE REFRIGERANT SUCTION LINES OUTSIDE OF REFRIGERATED COMPARTMENTS BACKING TO COMPRESSORS.
- E. HANGERS AND SUPPORTS: PROVIDE ADJUSTABLE HANGERS, ANCHORS OR STRAPS REQUIRED FOR PROPER SUPPORT OF PIPING NOT RUN IN CONDUIT. SPACE HANGERS NOT TO EXCEED 10 FEET O.C. AND CLOSER WHERE REQUIRED FOR PROPER SUPPORT OF SMALL PIPING. PROVIDE INSULATED REFRIGERANT PIPING WITH APPROVED TYPE SLEEVES AT HANGER POINTS.
3. WALK-IN COOLER FREEZER BAYS: TRANSIT LEVEL FLOOR SCREENS PRIOR TO WALL AND CEILING PANEL ERECTION. SEAL WALL AND OVER CEILING PENETRATIONS FOR ELECTRICAL OR GAS. PROVIDE REFRIGERANT PIPING AND CONDUIT THEREOF. PROVIDE ALL BUIL-UP ELECTRICAL CONDUITS, ON EXTERIOR OR BOX.
- C. TEMPERATURE, HUMIDITY, PRESSURE AND SIMILAR CONTROLS ESSENTIAL TO THE OPERATION OF MECHANICAL SYSTEMS. PROVIDE EXPOSED OIL RETURN LINES WITH SHUT-OFF VALVES OF PACKLESS STEEL TYPE.
- S. EVAPORATOR COILS: SUPPORT BY HANGERS UTILIZING FISH PAIL OF TOP OF WALK-IN COOLER. CLEAR BAY FLOOR UNDER INSIDE OF CEILING PANELS.
- D. MOTOR CONTROLS: PROVIDE UNDER DIVISION 15 MECHANICAL OF CAPACITY REQUIRED TO OPERATE EQUIPMENT SPECIFIED, BUT SHALL NOT BE LESS THAN THAT SPECIFIED.
- E. ALL LOW VOLTAGE (120V AND UNDER) TEMPERATURE CONTROL WIRING FOR EQUIPMENT SHALL BE PROVIDED UNDER THIS DIVISION.
- F. CONDUIT WHEN REQUIRED FOR CONTROL WIRING SHALL BE PROVIDED UNDER THIS DIVISION.
4. MOTORS
- A. ALL MOTORS SHALL BE FURNISHED AND INSTALLED UNDER DIVISION 15 MECHANICAL AND SHALL BE WIRED UNDER DIVISION 16 ELECTRICAL.
- B. ALL MOTORS SHALL BE BUILT IN ACCORDANCE WITH THE CURRENT APPLICABLE IEEE, ASA, AND NEMA STANDARDS. ALL MOTORS SHALL BE PROVIDED UNDER DRIIP-PROOF MACHINES FOR INSTALLATION. INDOORS AND/OR IN PROTECTED LOCATIONS, TOTALLY ENCLOSED FAN COOLED (TEFC) MOTORS SHALL BE USED IN ALL AREAS OF EXPOSURE TO WEATHER OR OTHER ENVIRONMENTAL CONDITIONS. MOTORS SHALL BE RATED EXPLOSION PROOF WHEN LOCATED IN HAZARDOUS ATMOSPHERES. TYPE II WEATHER PROTECTED MOTORS MAY BE USED IN LIEU OF TEFC MOTORS ON ROOF MOUNTED FANS AND SIMILAR EQUIPMENT.
- C. IF THE CONTRACTOR PROPOSES TO FURNISH MOTORS VARYING IN HORSEPOWER AND/OR CHARACTERISTIC FROM THOSE SPECIFIED, HE SHALL FIRST INFORM THE OWNER OF THE CHANGE AND THE OWNER SHALL APPROVE THE CHANGE AND SHALL PAY ALL ADDITIONAL CHARGES IN CONNECTION WITH THE CHANGE.
5. REMOVAL OF RUBBISH
- A. CONTRACTOR SHALL KEEP PREMISES FREE FROM ACCUMULATIONS OF WASTE MATERIAL OR RUBBISH CAUSED BY HIS EMPLOYEES OR WORK. AT COMPLETION OF WORK, HE SHALL REMOVE ALL HIS TOOLS, SCAFFOLDING, SURPLUS MATERIALS, AND RUBBISH FROM BUILDING AND SITE. HE SHALL LEAVE PREMISES AND HIS WORK IN A CLEAN ORDERLY CONDITION ACCEPTABLE TO THE OWNER.
6. QUIET OPERATION AND VIBRATION
- A. ALL EQUIPMENT PROVIDED UNDER THIS SECTION SHALL OPERATE UNDER ALL CONDITIONS OF LOAD FREE OF QUESTIONABLE SOUND AND VIBRATION. SOUND AND VIBRATION CONDITIONS CONSIDERED QUESTIONABLE SHALL BE CORRECTED IN AN APPROVED MANNER.
7. EXAMINATION OF EXISTING CONDITIONS
- A. VISIT AND CAREFULLY EXAMINE THOSE PORTIONS OF THE SITE AND/OR PRESENT BUILDINGS AFFECTED BY THIS WORK SO AS TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK BEFORE SUBMITTING PROPOSALS.
- B. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH EXAMINATION HAS BEEN MADE AND LATER CLAIMS FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED, WHICH COULD HAVE BEEN FORESEEN AND SUCH EXAMINATION BEEN MADE, WILL NOT BE RECOGNIZED.
8. CLEANING AND ADJUSTMENTS
- A. UPON COMPLETION OF WORK, CONTRACTOR SHALL CLEAN AND LUBRICATE FANS, MOTORS AND OTHER MECHANICAL EQUIPMENT. THE GENERAL CONDITIONS AND ALL REQUIREMENTS OF THE LOCAL UTILITY COMPANIES, THE GENERAL CONDITIONS AND ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS SHALL APPLY TO ALL WORK OF THIS SECTION. WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE CODES NOTED ON THE TITLES OF THE CONTRACT DOCUMENTS.
- B. COOPERATE WITH ALL OTHER TRADES AND INSTALL WORK AS FAST AS THE PROGRESS OF THE JOB WILL PERMIT.
- C. USE ONLY MECHANICAL SKILLED IN THE WORK THEY ARE TO PERFORM AND HAVE A COMPETENT REPRESENTATIVE ON THE JOB WHEN ANY WORK IS BEING DONE.
- D. NO WORK SHALL BE DONE UNLESS THE SUPERINTENDENT OF THE CONTRACTOR IS ON THE JOB AND THE WORK SHALL BE PROPERLY PROTECTED. ALL RUBBER REMOVED PROMPTLY, AND EXPOSED WORK SHALL BE CAREFULLY CLEANED PRIOR TO FINAL ACCEPTANCE.
- E. THE TERM "PROVIDE" SHALL INCLUDE LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO FURNISH AND INSTALL, COMPLY WITH ALL CODES, ORDINANCES, AND REGULATIONS.
- F. IN DECISIONS ARISING FROM DISCREPANCIES, INTERPRETATION OF DRAWINGS AND SPECIFICATIONS, SUBSTITUTES, AND OTHER PERTINENT MATTERS, THE DECISION OF THE OWNER'S REPRESENTATIVE'S APPROVAL SHALL BE FINAL.
2. SPECIFICATIONS AND DRAWINGS
- A. PLANS SHOW LOCATION OF FIXTURES AND EQUIPMENT AND ARE INTENDED TO DEPICT THE GENERAL INTENT OF THE WORK IN SCOPE, LOCATION AND QUALITY OF WORKMANSHIP. THEY ARE NOT INTENDED TO SHOW IN MINUTE DETAIL EVERY OR ALL ACCESSORIES.
- B. ADDITIONAL EXTINGUISHERS LOCATED PER LOCAL FIRE OFFICIAL DIRECTION IF NEEDED.
- C. WET CHEMICAL TYPE
1. CLASS: K
2. SIZE: 10
3. SIZE AND CLASSIFICATION AS SCHEDULED.
4. MODEL: WP10
5. BRACKET: B2
6. QUANTITY: 1. LOCATE FIRST ONE (1) WHERE NOTED ON DRAWINGS, WITH ONE (1) ADDITIONAL EXTINGUISHERS LOCATED PER LOCAL FIRE OFFICIAL DIRECTION IF NEEDED.
7. ACCESSORIES
- A. EXTINGUISHER BRACKETS: FORMED STEEL, CHROME-PLATED.
8. INSTALLATION
- A. INSTALL IN ACCORDANCE WITH MANUFACTURERS' INSTRUCTIONS.
- B. SECURE RIGIDLY IN PLACE.

SECTION 15000 - PIPES AND PIPE FITTINGS

1. RELATED DOCUMENTS
- A. DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO WORK OF THIS SECTION.
- B. THIS SECTION IS A DIVISION 15 BASIC MECHANICAL, MATERIALS AND METHODS SECTION, AND IS PART OF EACH DIVISION 15 SECTION MAKING REFERENCE TO PIPES AND PIPE FITTINGS SPECIFIED HEREIN.
2. DESCRIPTION OF WORK
- A. EXTENT OF PIPES AND PIPE FITTINGS REQUIRED BY THIS SECTION IS INDICATED ON DRAWINGS AND/OR SPECIFIED IN OTHER DIVISION 15 SECTIONS.
- B. PIPES AND PIPE FITTINGS SPECIFIED IN THIS SECTION INCLUDE THE FOLLOWING:
1. STEEL PIPES.
2. COPPER TUBE.
3. BRASS PIPES.
4. CAST-IRON SOIL PIPES.
5. PLASTIC PIPES.
- C. PIPES AND PIPE FITTINGS FURNISHED AS PART OF FACTORY-FABRICATED EQUIPMENT, ARE SPECIFIED AS PART OF EQUIPMENT ASSEMBLY IN OTHER DIVISION 15 SECTIONS.
3. SUBMITTALS
- A. PRODUCT DATA: SUBMIT MANUFACTURERS' TECHNICAL PRODUCT DATA, INSTALLATION INSTRUCTIONS, AND DIMENSIONED DRAWINGS FOREACH TYPE OF PIPE AND PIPE FITTING. SUBMIT PIPING SCHEDULE SHOWING MANUFACTURER, PIPE OR TUBE WEIGHT, FITTING TYPE FOR EACH PIPING SYSTEM.
4. GENERAL
- A. PIPING MATERIALS: PROVIDE PIPE AND TUBE OF TYPE, JOINT TYPE, GRADE, SIZE AND WEIGHT (WALL THICKNESS OR CLASS) INDICATED FOR EACH SERVICE, WHERE TYPE, GRADE OR CLASS IS NOT INDICATED, PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER FOR INSTALLATION REQUIREMENTS, AND COMPLY WITH GOVERNING REGULATIONS AND INDUSTRY STANDARDS.
- B. PIPING MATERIALS: PROVIDE FACTORY-FABRICATED FITTINGS OF TYPE, MATERIALS, GRADE, CLASS AND PRESSURE RATING INDICATED FOR EACH SERVICE AND PIPE SIZE. PROVIDE SIZES AND TYPES MATCHING PIPE, TUBE, OR EQUIPMENT CONNECTION IN EACH CASE. WHEN NOT OTHERWISE INDICATED, COMPLY WITH GOVERNING REGULATIONS AND INDUSTRY STANDARDS FOR SELECTIONS, AND WITH PIPE MANUFACTURERS' RECOMMENDATIONS WHERE APPLICABLE.
5. STEEL PIPES AND PIPE FITTINGS
- A. BLACK STEEL PIPE: ASTM A53, A106 OR A120; EXCEPT COMPLY WITH ASTM A53 OR A106 WHERE CLOSE COIL OR BENDING IS REQUIRED.
- B. GALVANIZED STEEL PIPE: ASTM A53 OR A120; EXCEPT COMPLY WITH ASTM A53 WHERE CLOSE COILING OR BENDING IS REQUIRED.
- C. PIPE NIPPLES: FABRICATED FROM SAME PIPE AS USED FOR CONNECTED PIPE; EXCEPT DO NOT USE LESS THAN SCHEDULE 80 PIPE WHERE LENGTH REMAINING UNTHREADED IS LESS THAN 1'-1/2"; AND WHERE PIPE SIZE IS LESS THAN 1'-1/2", AND DO NOT THREAD NIPPLES FULL LENGTH (NO CLOSE NIPPLES).
6. COPPER TUBE AND FITTINGS
- A. COPPER TUBE: TYPE K, TYPE M (WALL THICKNESS) AS INDICATED FOR EACH SERVICE; HARD-DRAWN TEMPER, EXCEPT AS OTHERWISE INDICATED.
- B. CAST-COPPER SOLDER JOINT FITTINGS: ANSI B16.18.
- C. WROUGHT-COPPER SOLDER JOINT FITTINGS: ANSI B16.22.
- D. COPPER TUBE UNIONS: PROVIDE STANDARD PRODUCTS RECOMMENDED BY MANUFACTURER FOR USE IN SERVICE INDICATED.
7. PLASTIC PIPES AND PIPE FITTINGS
- A. POLYVINYL CHLORIDE PIPE (PVC): ASTM D1785.
- B. POLYETHYLENE GLYCOL PIPE (PE): ASTM D2665.
- C. SOLVENT CEMENT: ASTM D2560.
- D. PVC FITTINGS:
1. WROUGHT-COPPER SOLDER JOINT FITTINGS: ANSI B16.22.
2. DWV SCKET: ASTM D2665.
3. SOLVENT CEMENT: ASTM D2564.
8. MISCELLANEOUS PIPING MATERIALS/PRODUCTS
- A. SOLVING MATERIALS: EXCEPT AS OTHERWISE INDICATED, PROVIDE SOLDERING MATERIALS AS DETERMINED BY INSTALLER TO COMPLY WITH INSTALLATION REQUIREMENTS.
- B. TIN-LEAD SOLDER: ASTM B32, GRADE 90A.
- C. TIN-ANTIMONY SOLDER: ASTM B32, GRADE 95TA.
- D. SILVER-LEAD SOLDER: ASTM B32, GRADE 96TS.
- E. PIPING CONNECTORS FOR DISSIMILAR LOW PRESSURE PIPE: ELASTOMERIC ANNULAR RING, INSERT, OR ELASTOMERIC FLEXIBLE COUPLING SECURED AT EACH END WITH STAINLESS STEEL CLAMPS, SIZED FOR EXACT FIT TO PIPE ENDS AND SUBJECT TO APPROVAL BY PLUMBING CODE.
9. INSTALLATION
- A. GENERAL: INSTALL PIPES AND PIPE FITTINGS IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES WHICH WILL ACHIEVE PERMANENTLY LEAKPROOF PIPING SYSTEMS, CAPABLE OF PERFORMING EACH INDICATED SERVICE WITHOUT PIPING FAILURE. INSTALL EACH RUN PERMANENTLY AND SECURELY, AND PROVIDE PROPER SUPPORT AND ANCHORAGE. REMOVE CUTTINGS AND MAINTAIN PERMANENT REPLACEMENT OF VALVES AND EQUIPMENT. REDUCE SIZES (WHERE INDICATED) BY USE OF REDUCING FITTINGS. ALIGN PIPING ACCORDATELY WITH ALL GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION. COMPLY WITH ANSI B31 CODE FOR PRESSURE PIPING.
- B. LOCATE PIPING RUNS, EXCEPT AS OTHERWISE INDICATED, VERTICALLY AND HORIZONTALLY TO MATCH THE GENERAL INTENT OF THE WORK IN SCOPE, LOCATION AND QUALITY OF WORKMANSHIP. HORIZONTAL RUNS PARALLEL WITH WALLS AND COLUMN LINES. LOCATE RUNS AS SHOWN OR DESCRIBED BY DIAGRAMS, DETAILS AND NOTATIONS OR, IF NOT OTHERWISE INDICATED, REMOVE CUTTINGS AND MAINTAIN PERMANENT REPLACEMENT OF VALVES AND EQUIPMENT. REDUCE SIZES (WHERE INDICATED) BY USE OF REDUCING FITTINGS. ALIGN PIPING ACCORDATELY WITH ALL GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION. COMPLY WITH ANSI B31 CODE FOR PRESSURE PIPING.
- C. LOCATE PIPING RUNS, EXCEPT AS OTHERWISE INDICATED, VERTICALLY AND HORIZONTALLY TO MATCH THE GENERAL INTENT OF THE WORK IN SCOPE, LOCATION AND QUALITY OF WORKMANSHIP. HORIZONTAL RUNS PARALLEL WITH WALLS AND COLUMN LINES. LOCATE RUNS AS SHOWN OR DESCRIBED BY DIAGRAMS, DETAILS AND NOTATIONS OR, IF NOT OTHERWISE INDICATED, REMOVE CUTTINGS AND MAINTAIN PERMANENT REPLACEMENT OF VALVES AND EQUIPMENT. REDUCE SIZES (WHERE INDICATED) BY USE OF REDUCING FITTINGS. ALIGN PIPING ACCORDATELY WITH ALL GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION. COMPLY WITH ANSI B31 CODE FOR PRESSURE PIPING.
- D. OVERHEAD CONSTRUCTION, COLUMNS AND OTHER STRUCTURAL AND PERMANENT ANCHORAGE: PROVIDE INSIDE AND OUTSIDE NON-STEAM STEAM VALVES WHERE HEADROOM PREVENTS FULL OPENING OF OS&Y VALVES.
- E. VALVE SYSTEM: SELECT AND INSTALL VALVES WITH OUTSIDE SCREW AND YOKE STEMS, EXCEPT PROVIDE INSIDE AND OUTSIDE NON-STEAM STEAM VALVES WHERE HEADROOM PREVENTS FULL OPENING OF OS&Y VALVES.
- F. NON-METALLIC DISCS: LIMIT SELECTION AND INSTALLATION OF VALVES WITH NON-METALLIC DISCS TO LOCATIONS INSIDE AND OUTSIDE NON-STEAM STEAM VALVES. SYSTEM CAN BE EXPECTED TO PREVENT TIGHT SHUT-OFF OF METAL SEATED VALVES.
- G. RENEWABLE SEALS: SELECT AND INSTALL VALVES WITH RENEWABLE SEALS, EXCEPT WHERE OTHERWISE INDICATED.
- H. FLUID CONTROL: EXCEPT AS OTHERWISE INDICATED, INSTALL GATE, BALL, GLOBE, AND BUTTERFLY VALVES TO COMPLY WITH ANSI B31.8, WHERE THROTTLING IS INDICATED OR RECOGNIZED AS PRINCIPAL REASON FOR VALVE. INSTALL GLOBE OR BUTTERFLY VALVES.
10. PIPING SYSTEM JOINTS
- A. GENERAL: PROVIDE JOINTS OF TYPE INDICATED IN EACH PIPING SYSTEM.
- B. SOLDERING: PROVIDE SOLDER JOINTS IN ACCORDANCE WITH ANSI B31.8.
- C. SOLDER COPPER T

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 - THIS SECTION IS A DIVISION—15 BASIC MECHANICAL MATERIALS AND METHODS SECTION, AND IS PART OF EACH DIVISION—15 SECTION MAKING REFERENCE TO PIPING SPECIALTIES SPECIFIED HEREIN.
- B. DESCRIPTION OF WORK
- EXTENT OF PIPING SPECIALTIES WORK REQUIRED BY THIS SECTION IS INDICATED ON DRAWINGS AND SCHEDULES AND BY REQUIREMENTS OF THIS SECTION.
 - TYPES OF PIPING SPECIALTIES SPECIFIED IN THIS SECTION INCLUDE THE FOLLOWING:
 - PIPE ESCUTCHEONS
 - PIPE STRAINERS
 - PIPELINE STRAINERS
 - ELECTRIC UNIONS
 - MECHANICAL SLEEVE SEALS
 - PIPE BARRIER PENETRATION SEALS
 - WATER HAMMER ARRESTERS
 - DRIP PANS
 - PIPE SLEEVES
 - SLEEVE SEALS
- A. PIPING SPECIALTIES FURNISHED AS PART OF FACTORY—FABRICATED EQUIPMENT, ARE SPECIFIED AS PART OF EQUIPMENT ASSEMBLY IN OTHER DIVISION—15 SECTIONS.
3. CODES AND SUBMITTALS
- FOI COMPLIANCE: TEST AND RATE "Y" TYPE STRAINERS IN ACCORDANCE WITH FCJ 7-1 "PRESSURE RATING STANDARD FOR "Y" TYPE STRAINERS," TEST AND RATE OTHER TYPE STRAINERS IN ACCORDANCE WITH FCJ 7B-1 "PRESSURE RATING STANDARD FOR PIPELINE STRAINERS OTHER THAN "Y" TYPE."
4. SUBMITTALS
- PRODUCT DATA: SUBMIT MANUFACTURER'S TECHNICAL PRODUCT DATA, INCLUDING INSTALLATION INSTRUCTIONS, AND DIMENSIONED DRAWINGS FOR EACH TYPE OF MANUFACTURED PIPING, INCLUDING DRIP PANS, HANGERS, AND SUPPORTS, AS PART FOR EACH TYPE AND SIZE OF PIPELINE STRAINER. SUBMIT SCHEDULE SHOWING MANUFACTURER'S FIGURE NUMBER, SIZE, LOCATION, AND FEATURES FOR EACH REQUIRED PIPING SPECIALTY.
5. PIPING SPECIALTIES
- GENERAL: PROVIDE FACTORY—FABRICATED PIPING SPECIALTIES RECOMMENDED BY MANUFACTURER FOR USE IN SERVICE INDICATED, PROVIDE PIPING SPECIALTIES OF TYPES AND PRESSURE RATINGS INDICATED FOR EACH SERVICE, OR IF NOT INDICATED, PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER. PROVIDE MATERIALS AND METHODS SECTION REQUIREMENTS, PROVIDE SIZES AS INDICATED, AND CONNECTIONS, WHICH PROPERLY MATE WITH PIPE, TUBE, AND EQUIPMENT CONNECTIONS, WHERE MORE THAN ONE TYPE IS INDICATED, SELECTION IS INSTALLER'S OPTION.

6. FABRICATED PIPING SPECIALTIES

- DRIP PANS: PROVIDE DRIP PANS FABRICATED FROM CORROSION—RESISTANT SHEET METAL WITH WATERIGHT JOINTS, AND WITH EDGES TURNED UP 2-1/2" REINFORCE TOP, EITHER BY STRUCTURAL ANGLES OR BY ROLLING TOP OVER 1/4" STEEL ROD, PROVIDE HOLE, GASKET, AND FLANGE AT LOW POINT FOR WATERIGHT; JOINT AND "D" DRAIN LINE.
 - PIPE SLEEVES: PROVIDE PIPE SLEEVES OF ONE OF THE FOLLOWING:
 - SHEET METAL: FABRICATE FROM GALVANIZED SHEET METAL: ROUND TUBE CLOSED WITH SNAPLOCK JOINT, WELDED SPIRAL SEAMS, OR WELDED LONGITUDINAL JOINT, FABRICATED FROM THE FOLLOWING GAGES: 3" AND SMALLER, 20 GAGE; 4" TO 16" GAGE, OVER 6" 14 GAGE.
 - STEEL—PIPE: FABRICATE FROM SCHEDULE 40 GALVANIZED STEEL PIPE, REMOVE BURRS.
 - IRON—PIPE: FABRICATE FROM CAST-IRON OR DUCTILE-IRON PIPE; REMOVE BURRS.
 - PLASTIC—PIPE: FABRICATE FROM SCHEDULE 80 PVC PLASTIC PIPE; REMOVE BURRS.
 - SLEEVE SEALS: PROVIDE SLEEVE SEALS FOR SLEEVES LOCATED ON UNDERGROUND WALLS BELOW GRADE, OR IN EXTERIOR WALLS, OF ONE OF THE FOLLOWING:
 - LEAD AND OAKUM: CAULKED BETWEEN SLEEVE AND PIPE.
 - MECHANICAL SLEEVE SEALS: INSTALLED BETWEEN SLEEVE AND PIPE.
7. INSTALLATION OF PIPING SPECIALTIES
- PIPE ESCUTCHEONS: INSTALL PIPE ESCUTCHEONS ON EACH PIPE PENETRATION THRU FLOORS, WALLS, PARTITIONS, AND CEILINGS WHERE PENETRATION IS EXPOSED TO VIEW; AND ON EXTERIOR OF BUILDING, SECURE ESCUTCHEON TO PIPE OR INSULATION SO ESCUTCHEON COVERS PENETRATION HOLE, AND IS FLUSH WITH ADJACENT SURFACE.
 - "Y" TYPE STRAINERS: INSTALL "Y" TYPE STRAINERS FULL SIZE OF PIPELINE, IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS. INSTALL PIPE NIPPLE AND SHUTOFF VALVE IN STRAINER BELLOW DOWN CONNECTION, FULL SIZE OF CONNECTION, EXCEPT FOR STRAINERS 2" AND SMALLER INSTALLED AHEAD OF CONTROL VALVES FEEDING INDIVIDUAL TERMINALS, WHERE INDICATED, PROVIDE DRAIN LINE FROM SHUTOFF VALVE TO PLUMBING DRAIN, FULL SIZE OF BLOW DOWN CONNECTION, FULL SIZE OF CONNECTION.
 - LOCATE "Y" TYPE STRAINERS IN SUPPLY LINE AHEAD OF THE FOLLOWING EQUIPMENT, AND ELSEWHERE AS INDICATED, IF INTEGRAL STRAINER IS NOT INCLUDED IN EQUIPMENT:
 - PUMPS
 - STEAM TRAPS SERVING STEAM MAIN DRIPS
 - TEMPERATURE CONTROL VALVES
 - PRESSURE REGULATING VALVES
 - TEMPERATURE OR PRESSURE REGULATING VALVES
 - ELECTRIC UNIONS: INSTALL AT EACH PIPING JOINT BETWEEN FERROUS AND NON-FERROUS PIPING, CONJUNCTION WITH MANUFACTURERS INSTALLATION INSTRUCTIONS.
 - MECHANICAL SLEEVE SEALS: LOOSELY ASSEMBLE RUBBER LUNGS AROUND PIPE WITH BOLTS AND PRESSURE PLATES LOCATED UNDER EACH BOLT HEAD AND NUT, PUSH INTO SLEEVE AND CENTER, TIGHTEN BOLTS UNTIL LINKS HAVE EXPANDED TO FORM WATERIGHT SEAL.
 - PIPE BARRIER PENETRATION SEALS: FILL ENTIRE OPENING WITH SEALING COMPOUND, ADHERE TO MANUFACTURERS INSTALLATION INSTRUCTIONS.
 - WATER HAMMER ARRESTERS: INSTALL IN UPRIGHT POSITION, IN LOCATIONS AND OF SIZES IN ACCORDANCE WITH PDI STANDARD WH—201, AND ELSEWHERE AS INDICATED.

8. INSTALLATION OF FABRICATED PIPING SPECIALTIES

- DRIP PANS: HANG FROM STRUCTURE WITH RODS AND BUILDING ATTACHMENTS, WELD RODS TO SIDES OF DRIP PAN, BRACE TO PREVENT SAGGING OR SWAYING, CONNECT "D" DRAIN LINE TO DRAIN CONNECTION, AND RUN TO NEAREST PLUMBING DRAIN OR ELSEWHERE AS INDICATED.
- PIPE SLEEVES: INSTALL PIPE SLEEVES OF TYPES INDICATED WHERE PIPING PASSES THROUGH WALLS, FLOORS, CEILINGS, AND ROOFS, DO NOT INSTALL SLEEVES THROUGH STRUCTURAL MEMBERS OF WORK, EXCEPT AS DETAILED ON DRAWINGS, OR AS REVIEWED BY ARCHITECT/ENGINEER. INSTALL SLEEVES ACCURATELY CENTERED ON PIPE, FULL SIZE SLEEVES SO THAT PIPING AND INSULATION (IF ANY) WILL HAVE FREE MOVEMENT IN SLEEVE, INCLUDING ALLOWANCE FOR THERMAL EXPANSION, BUT NOT LESS THAN 2 PIPE SIZES LARGER THAN PIPING RUN, WHERE INSULATION INCLUDES VAPOR—BARRIER JACKET, PROVIDE SLEEVE WITH SUFFICIENT CLEARANCE FOR INSTALLATION, INSTALL LENGTH OF SLEEVE EQUAL TO THICKNESS OF CONSTRUCTION PENETRATED, AND FINISH FLUSH TO SURFACE, EXCEPT FOR FLOOR SLEEVES, 4" ABOVE FLOOR FINISH, AND 3/4" ABOVE FLOOR FINISH SLOPE TO DRAIN, PROVIDE TEMPORARY SUPPORT OF SLEEVES DURING PLACEMENT OF CONCRETE AND OTHER WORK AROUND SLEEVES, AND PROVIDE TEMPORARY COUPLER TO PREVENT CONCRETE AND OTHER MATERIALS FROM ENTERING SLEEVES.
 - INSTALL SHEET—METAL SLEEVES AT INTERIOR PARTITIONS AND CEILINGS OTHER THAN SUSPENDED CEILING.
 - INSTALL IRON—PIPE SLEEVES AT EXTERIOR PENETRATIONS, BOTH ABOVE AND BELOW GRADE.
- INSTALL STEEL—PIPE OR PLASTIC—PIPE SLEEVES EXCEPT AS OTHERWISE INDICATED, SLEEVE SEALS, INSTALL IN ACCORDANCE WITH THE FOLLOWING:
 - LEAD AND OAKUM: FILL AND PACK ANNULAR SPACE BETWEEN SLEEVE AND PIPE WITH OAKUM, CAULK WITH LEAD, ON BOTH SIDES.

SECTION 15140 - SUPPORTS AND ANCHORS

1. RELATED DOCUMENTS
- DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION—1 SPECIFICATION SECTIONS, APPLY TO WORK OF THIS SECTION.
 - THIS SECTION IS DIVISION—15 BASIC MECHANICAL MATERIALS AND METHODS SECTION, AND IS PART OF EACH DIVISION—15 SECTION MAKING REFERENCE TO SUPPORTS AND ANCHORS SPECIFIED HEREIN.
- B. DESCRIPTION OF WORK
- EXTENT OF SUPPORTS AND ANCHORS REQUIRED BY THIS SECTION IS INDICATED ON DRAWINGS AND AS SPECIFIED IN OTHER DIVISION—15 SECTIONS.
 - TYPES OF SUPPORTS AND ANCHORS SPECIFIED IN THIS SECTION INCLUDE THE FOLLOWING:
 - HORIZONTAL—PIPING HANGERS AND SUPPORTS
 - VERTICAL—PIPING CLAMPS
 - HANGER—ROD ATTACHMENTS
 - BUILDING ATTACHMENTS
 - SADDLES AND SHELDS
 - MISCELLANEOUS MATERIALS
 - ROOF EQUIPMENT SUPPORTS
 - ANCHORS
 - EQUIPMENT SUPPORTS
 - SUPPORTS AND ANCHORS FURNISHED AS PART OF FACTORY—FABRICATED EQUIPMENT, ARE SPECIFIED AS PART OF EQUIPMENT ASSEMBLY IN OTHER DIVISION—15 SECTIONS.
3. QUALITY ASSURANCE
- CODES AND STANDARDS:
 - GENERAL: PROVIDE COMPLIANCE WITH APPLICABLE PLUMBING CODES PERTAINING TO PRODUCT MATERIALS AND INSTALLATION OF SUPPORTS AND ANCHORS.
 - UL AND FM COMPLIANCE: PROVIDE PRODUCTS WHICH ARE UL—LISTED AND FM APPROVED.
 - MSS STANDARD COMPLIANCE:
 - PROVIDE PIPE HANGERS AND SUPPORTS OF WHICH MATERIALS, DESIGN, COMPLY WITH MSS—68.
 - SELECT AND APPLY PIPE HANGERS AND SUPPORTS, COMPLYING WITH MSS SP—69.
 - FABRICATE AND INSTALL PIPE HANGERS AND SUPPORTS, COMPLYING WITH MSS SP—69, TECHNOLOGY USED IN THIS SECTION IS DEFINED IN MSS SP—90.
4. SUBMITTALS
- PRODUCT DATA: SUBMIT MANUFACTURER'S TECHNICAL PRODUCT DATA, INCLUDING INSTALLATION INSTRUCTIONS FOR EACH TYPE OF SUPPORT AND ANCHOR, SUBMIT PIPE HANGER AND SUPPORT SCHEDULE SHOWING MANUFACTURER'S FIGURE NUMBER, SIZE, LOCATION, AND FEATURES FOR EACH REQUIRED PIPING HANGER AND SUPPORT, AS PART FOR EACH TYPE AND SIZE OF PIPELINE STRAINER. SUBMIT SCHEDULE SHOWING MANUFACTURER'S FIGURE NUMBER, SIZE, LOCATION, AND FEATURES FOR EACH REQUIRED PIPING HANGER AND SUPPORT, AS PART FOR EACH TYPE AND SIZE OF PIPELINE STRAINER.
5. HORIZONTAL—PIPING HANGERS AND SUPPORTS
- GENERAL: EXCEPT AS OTHERWISE INDICATED, PROVIDE FACTORY—FABRICATED HORIZONTAL—PIPING HANGERS AND SUPPORTS COMPLYING WITH MSS SP—68, OF ONE OF THE FOLLOWING MSS TYPES LISTED, SELECTED BY INSTALLER TO SUIT VERTICAL PIPING SYSTEMS, IN ACCORDANCE WITH MSS SP—68 AND MANUFACTURERS PUBLISHED PRODUCT INFORMATION, USE ONLY ONE TYPE BY ONE MANUFACTURER FOR EACH PIPING SERVICE, SELECT SIZE OF HANGERS AND SUPPORTS TO EXACTLY FIT PIPE SIZE FOR BARE PIPE, AND TO EXACTLY FIT AROUND PIPING INSULATION WITH SADDLE OR SHIELD FOR INSULATED PIPING, PROVIDE COPPER—PLATED HANGERS AND SUPPORTS FOR COPPER—PIPING SYSTEMS.

6. VERTICAL—PIPING CLAMPS

- GENERAL: EXCEPT AS OTHERWISE INDICATED, PROVIDE FACTORY—FABRICATED VERTICAL—PIPING CLAMPS COMPLYING WITH MSS SP—68, OF ONE OF THE FOLLOWING TYPES LISTED, SELECTED BY INSTALLER TO SUIT HORIZONTAL—PIPING HANGERS AND BUILDING ATTACHMENTS, IN ACCORDANCE WITH MSS SP—68 AND MANUFACTURERS PUBLISHED PRODUCT INFORMATION, USE ONLY ONE TYPE BY ONE MANUFACTURER FOR EACH PIPING SERVICE, SELECT SIZE OF HANGERS AND BUILDING ATTACHMENTS TO SUIT HANGER RODS, PROVIDE COPPER—PLATED HANGER—ROD ATTACHMENTS FOR COPPER—PIPING SYSTEMS.
7. HANGER—ROD ATTACHMENTS
- GENERAL: EXCEPT AS OTHERWISE INDICATED, PROVIDE FACTORY—FABRICATED HANGER—ROD ATTACHMENTS COMPLYING WITH MSS SP—68, OF ONE OF THE FOLLOWING TYPES LISTED, SELECTED BY INSTALLER TO SUIT HORIZONTAL—PIPING HANGERS AND BUILDING ATTACHMENTS, IN ACCORDANCE WITH MSS SP—68 AND MANUFACTURERS PUBLISHED PRODUCT INFORMATION, USE ONLY ONE TYPE BY ONE MANUFACTURER FOR EACH PIPING SERVICE, SELECT SIZE OF HANGERS AND BUILDING ATTACHMENTS TO SUIT HANGER RODS, PROVIDE COPPER—PLATED HANGER—ROD ATTACHMENTS FOR COPPER—PIPING SYSTEMS.
8. BUILDING ATTACHMENTS
- GENERAL: EXCEPT AS OTHERWISE INDICATED, PROVIDE FACTORY—FABRICATED BUILDING ATTACHMENTS COMPLYING WITH MSS SP—68, OF ONE OF THE FOLLOWING MSS TYPES LISTED, SELECTED BY INSTALLER TO SUIT BUILDING SUBSTRATE CONDITIONS, IN ACCORDANCE WITH MSS SP—68 AND MANUFACTURERS PUBLISHED PRODUCT INFORMATION, SELECT SIZE OF BUILDING ATTACHMENTS TO SUIT HANGER RODS, PROVIDE COPPER—PLATED BUILDING ATTACHMENTS FOR COPPER—PIPING SYSTEMS.
9. SADDLES AND SHELDS
- GENERAL: EXCEPT AS OTHERWISE INDICATED, PROVIDE SADDLES OR SHELDS UNDER PIPING HANGERS AND SUPPORTS, FACTORY—FABRICATED, FOR ALL INSTALLED PIPING, SADDLES AND SHELDS FOR EXACT FIT TO MATE WITH WATER OR STEAM INSULATION.
10. MISCELLANEOUS MATERIALS
- METAL FRAMING: PROVIDE PRODUCTS COMPLYING WITH NEMA STD M.1.
 - STEEL PLATES, SHAPES, AND BARS: PROVIDE PRODUCTS COMPLYING WITH ASTM A36.
 - STEEL BRACKET: PROVIDE PRODUCTS COMPLYING WITH ASTM A36.
 - UNIFORMLY GRADED NATURAL SAND: ASTM C 404, SIZE NO. 2, MIX AT RATIO OF 10 PART CEMENT TO 30 PARTS SAND, BY VOLUME, WITH MINIMUM AMOUNT OF WATER REQUIRED FOR PLACEMENT AND HYDRATION.
11. ROOF EQUIPMENT SUPPORTS
- GENERAL: WHERE INDICATED, TO BE PROVIDED BY THE EQUIPMENT MANUFACTURER, PROVIDE SUPPORTS FOR ROOF EQUIPMENT SUPPORTS AS DETAILED ON CONSTRUCTION DOCUMENTS.
 - CONSTRUCT OF SIZES US INDICATED, COMPENSATE FOR SLOPE IN ROOF SO TOP OF SUPPORT IS DEAD LEVEL.
12. INSPECTION
- EXAMINE AREAS AND CONDITIONS UNDER WHICH SUPPORTS AND ANCHORS ARE TO BE INSTALLED, DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN MANNER ACCEPTABLE TO INSTALLER.

13. INSTALLATION OF BUILDING ATTACHMENTS

- INSTALL BUILDING ATTACHMENTS AT REQUIRED LOCATIONS WITHIN CONCRETE OR ON STRUCTURAL STEEL FOR PROPER PIPING SUPPORT, SPACE ATTACHMENT TO CONCRETE OR STEEL, MAXIMUM PIPING SPAN LENGTH INDICATED IN MSS SP—69, INSTALL ADDITIONAL CONCENTRATED LOADS, INCLUDING VALLS, FLANGES, GUIDES, STRAINERS, EXPANSION SUPERVISORY SWITCHES, AND AT CHANGES IN DIRECTION OF PIPING, INSTALL CONCRETE INSERTS, BEFORE CONCRETE IS PLACED, FASTEN INSERT SECURELY TO FORMS, WHERE CONCRETE WITH COMPRESSIVE STRENGTH LESS THAN 2500 PSI IS INDICATED, INSTALL REINFORCING BARS THROUGH OPENINGS AT TOP OF INSERTS.
14. INSTALLATION OF HANGERS AND SUPPORTS
- GENERAL: PROVIDE HANGERS, SUPPORTS, CLAMPS, AND ATTACHMENTS TO SUPPORT PIPING PROPERLY FROM BUILDING STRUCTURE, COMPLY WITH MSS SP—69, ARRANGE FOR GROUPING OF PARALLEL RUNS OF HORIZONTAL PIPING TO BE SUPPORTED TOGETHER ON PRESSURE RESTRICTING AND ANGLE HOSE VALVE, WITH CAST BRASS BODY AND SOLID CAST ALUMINUM ROD WHEEL HANDLE, UL LISTED AND FM APPROVED, FINISH: ROUGH BRASS.
 - INSTALL INSULATION PRODUCTS IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS, IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT INSULATION SERVES ITS INTENDED PURPOSE.
 - INSTALL INSULATION ON PIPE SYSTEMS SUBSEQUENT TO INSTALLATION OF HEAT TRACING, INSULATION, AND ANCHORS.
 - INSTALL INSULATION MATERIALS WITH SMOOTH AND EVEN SURFACES, INSULATE EACH INTERFACIAL SURFACE OF PIPING WITH ALL LENGTH UNITS OF INSULATION, WITH SINGLE CUT PIECE TO COMPLETE EACH SURFACE, AND USE CUT PIECES OF SCRAPS ABUTTING EACH OTHER, CLEAN AND DRY PIPE SURFACES PRIOR TO INSULATING, BUT INSULATION JOINTS FIRMLY TOGETHER TO ENSURE COVER AND TIGHT FIT OVER SURFACES TO BE COVERED.
 - MAINTAIN INTEGRITY OF VAPOR—BARRIER JACKETS ON PIPE INSULATION, AND PROTECT TO PREVENT PUNCTURE OR OTHER DAMAGE.
 - INTERMEDIATE SUPPORTS FOR SMALLER DIAMETER PIPE, DO NOT USE WIRE OR PERFORATED METAL TO SUPPORT PIPING, AND DO NOT SUPPORT PIPING FROM OTHER PIPING.
 - INSTALL HANGERS AND SUPPORTS COMPLETE WITH NECESSARY INSERTS, BOLTS, RODS, NUTS, WASHERS, AND OTHER ACCESSORIES, EXCEPT AS OTHERWISE INDICATED FOR EXPOSED CONTINUOUS PIPE RUNS, INSTALL HANGERS AND SUPPORTS OF SAME TYPE AND STYLE AS INSTALLED FOR ADJACENT SIMILAR PIPING.
 - SUPPORT FIRE—WATER PIPING INDEPENDENTLY OF OTHER PIPING.
15. PROVISIONS FOR MOVEMENT
- GENERAL: PROVIDE MEANS FOR MOVEMENT TO ALLOW CONTROLLED MOVEMENT OF PIPING SYSTEMS AND TO PERMIT FREEDOM OF MOVEMENT BETWEEN PIPE ANCHORS, AND TO FACILITATE ACTION OF EXPANSION JOINTS, EXPANSION LOOPS, EXPANSION BENDS, AND SIMILAR UNITS.
 - LOAD DISTRIBUTION: INSTALL HANGERS AND SUPPORTS SO THAT PIPING LINE AND DEAD LOADING AND STRESSES FROM MOVEMENT WILL NOT BE TRANSMITTED TO CONNECTED EQUIPMENT.
 - PIPE SLOPES: INSTALL HANGERS AND SUPPORTS TO PROVIDE INDICATED PIPE SLOPES, AND SO THAT MAXIMUM PIPE DEFLECTIONS ALLOWED BY ANSI B31 PRESSURE PIPING CODES ARE NOT EXCEEDED.
16. INSULATED PIPING: COMPLY WITH THE FOLLOWING INSTALLATION REQUIREMENTS
- CLAMPS: ATTACH CLAMPS, INCLUDING SPACERS (IF ANY), TO PIPING WITH CLAMPS PROJECTING THROUGH INSULATION, DO NOT EXCEED PIPE STRESSES ALLOWED BY ANSI B31.
 - SHELDS: WHERE LOW—COMPRESSIVE—STRENGTH INSULATION OR VAPOR BARRIER IS BEING INDICATED ON PIPE OR CHANGES IN DIRECTION OF PIPING, PROVIDE PROTECTIVE SHELDS, FOR PIPE 8" AND OVER, INSTALL WOOD INSULATION SADDLES.
 - SADDLES: WHERE INSULATION WITHOUT VAPOR BARRIER IS INDICATED, INSTALL PROTECTION SADDLES.
17. INSTALLATION OF ANCHORS
- GENERAL: PROVIDE ANCHORS AT PROPER LOCATIONS TO PREVENT STRESSES FROM EXCEEDING THOSE PERMITTED BY ANSI B31, AND TO PREVENT TRANSFER OF LOADS AND STRESSES TO CONNECTED EQUIPMENT.
 - FABRICATE AND INSTALL ANCHORS BY WELDING STEEL SHAPES, PLATES AND BARS TO PIPING AND TO STRUCTURE, COMPLY WITH ANSI B31 AND WITH AWS STANDARDS.
 - WHERE EXPANSION COMPENSATORS ARE INDICATED, INSTALL ANCHORS IN ACCORDANCE WITH EXPANSION COMPENSATOR MANUFACTURERS INSTALLATION INSTRUCTIONS, AND PROVIDE MEANS FOR MOVEMENT TO ALLOW CONTROLLED MOVEMENT OF PIPING AND FORCES TO MAXIMUMS RECOMMENDED BY MANUFACTURER FOR EACH UNIT.
 - ANCHOR SPACINGS: WHERE NOT OTHERWISE INDICATED, INSTALL ANCHORS AT ENDS OF PRINCIPAL PIPE—RUNS, AT INTERMEDIATE POINTS IN PIPE—RUNS BETWEEN EXPANSION LOOPS AND BENDS, PROVIDE PRESET OF ANCHORS AS REQUIRED TO ACCOMMODATE BOTH EXPANSION AND CONTRACTION OF PIPING.

SECTION 15250 - MECHANICAL INSULATION

1. RELATED DOCUMENTS
- DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION—1 SPECIFICATION SECTIONS, APPLY TO WORK OF THIS SECTION.
 - DIVISION—15 BASIC MECHANICAL MATERIALS AND METHODS SECTIONS APPLY TO WORK OF THIS SECTION.
- B. DESCRIPTION OF WORK
- EXTENT OF MECHANICAL INSULATION REQUIRED BY THIS SECTION IS INDICATED ON DRAWINGS AND SCHEDULES, AND BY REQUIREMENTS OF THIS SECTION.
 - TYPES OF MECHANICAL INSULATION SPECIFIED IN THIS SECTION INCLUDE THE FOLLOWING:
 - FLEXIBLE UNICELLULAR, 1/2" THICKNESS
 - DUCT WORK SYSTEM INSULATION: FIBERGLASS, 2" THICKNESS
 - DUCT WORK SYSTEM INSULATION: FIBERGLASS, 2" THICKNESS
 - REFER TO DIVISION 15 SECTION "SUPPORTS AND ANCHORS" FOR PROTECTION SADDLES, PROTECTION SHELDS, AND THERMAL HANGER SHELDS, NOT WORK OF THIS SECTION.
 - REFER TO DIVISION 15 SECTION "MECHANICAL IDENTIFICATION" FOR INSTALLATION OF IDENTIFICATION DEVICES FOR PIPING, DUCTWORK, AND EQUIPMENT; NOT WORK OF THIS SECTION.
3. QUALITY ASSURANCE
- FLAMEHOLD RATINGS: PROVIDE COMPOSITE MECHANICAL INSULATION (INSULATION, HANGERS, COVERINGS, SEALERS, MASTICS AND ADHESIVES) WITH FLAME—SPREAD INDEX OF 25 OR LESS, AND SMOKE—DEVELOPED INDEX OF 50 OR LESS, AS TESTED BY ASTM E 84 PFA 255 METHOD.
 - EXCEPTION: OUTDOOR MECHANICAL INSULATION MAY BE FLAME SPREAD INDEX OF 75 AND SMOKE DEVELOPED INDEX OF 150.
4. PIPING INSULATION MATERIALS
- FLEXIBLE UNICELLULAR PIPING INSULATION: ASTM C 554, TYPE I.
 - JACKETS FOR PIPING INSULATION: ASTM C 921, TYPE I FOR PIPING WITH TEMPERATURES BELOW AMBIENT, TYPE II FOR PIPING WITH TEMPERATURES ABOVE AMBIENT, TYPE I MAY BE USED FOR ALL PIPING AT INSTALLERS OPTION.
 - ENCASE PIPE FITTINGS INSULATION WITH OVERLAPPING PREMOULDED PVC FITTING COVERS, AS STENED AS PER MANUFACTURERS RECOMMENDATIONS.
 - ENCASE EXTERIOR PIPING INSULATION WITH ALUMINUM JACKET WITH WEATHERPROOF CONSTRUCTION.
 - APPROVED: BARS, WIRES, AND CEMENT: AS RECOMMENDED BY INSULATION MANUFACTURER FOR APPLICATIONS INDICATED.
 - ADHESIVES, SEALERS, AND PROTECTIVE FINISHES: AS RECOMMENDED BY INSULATION MANUFACTURER FOR APPLICATIONS INDICATED.
5. DUCTWORK INSULATION MATERIALS
- JACKETS FOR DUCTWORK INSULATION: ASTM C 921, TYPE I FOR DUCTWORK WITH TEMPERATURES BELOW AMBIENT, TYPE II FOR DUCTWORK WITH TEMPERATURES ABOVE AMBIENT.
6. DUCTWORK INSULATION ACCESSORIES: PROVIDE STRIPS, BANDS, WIRES, TAPES, ANCHORS, CORNER ANGLES AND SIMILAR ACCESSORIES AS RECOMMENDED BY INSULATION MANUFACTURER FOR APPLICATIONS INDICATED.

7. DUCTWORK INSULATION COMPOUNDS: PROVIDE CEMENTS, ADHESIVES, COATINGS, SEALERS, PROTECTIVE FINISHES AND SIMILAR COMPOUNDS AS RECOMMENDED BY INSULATION MANUFACTURER FOR APPLICATIONS INDICATED.

8. INSPECTION

 - EXAMINE AREAS AND CONDITIONS UNDER WHICH MECHANICAL INSULATION IS TO BE INSTALLED, DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN MANNER ACCEPTABLE TO INSTALLER.

9. PLUMBING PIPING SYSTEM INSULATION

 - INSULATION OMITTED: OMIT INSULATION ON CHROME—PLATED EXPOSED PIPING (EXCEPT FOR HANDICAPPED FIXTURES), AIR CHAMBERS, UNIONS, JOINTS, AND VALVES, AND ON SLEEVES, BALANCE COCKS, FLOW REGULATORS, DRAIN LINES FROM WATER COOLERS, DRAINAGE PIPING LOCATED IN CRAWL SPACES OR TUNNELS, BURIED PIPING, FIRE PROTECTION PIPING, AND PRE—INSULATED EQUIPMENT.

A. COLD PIPING

- APPLICATION REQUIREMENTS: INSULATE THE FOLLOWING GOLD PLUMBING PIPING SYSTEMS:
 - POTABLE COLD WATER PIPING.
 - INTERIOR ABOVE—GROUND SANITARY DRAIN PIPES WHICH CONDUCT CONDENSATE.
 - INTERIOR ABOVE—GROUND STORM WATER PIPING.
 - PLUMBING VENTS WITHIN A LINEAL FEET OF ROOF OUTLET.
 - ROOF DRAIN BODIES.
- HOT PIPING
- APPLICATION REQUIREMENTS: INSULATE THE FOLLOWING HOT PLUMBING PIPING SYSTEMS:
 - POTABLE HOT WATER PIPING.
 - POTABLE HOT WATER RECIRCULATING PIPING.
- HVAC PIPING SYSTEM INSULATION
 - INSULATION OMITTED: OMIT INSULATION ON HOT PIPING WITH RADIATION ENCLOSURES OR UNIT CABINETS, ON COLD PIPING WITHIN UNIT CABINETS PROVIDED PIPING IS LOCATED OVER DRAIN PAN, ON HEATING PIPING BEYOND CONTROL VALVE, LOCATED WITHIN HEATED SPACE, ON CONDENSATE PIPING BETWEEN STEAM TRAP AND UNION, AND ON UNIONS, FLANGES, STRAINERS, FLEXIBLE CONNECTIONS, AND EXPANSION JOINTS.
- SUB—ZERO PIPING (BELOW COF @ 1800):
 - APPLICATION REQUIREMENTS: INSULATE THE FOLLOWING SUB—ZERO HVAC PIPING SYSTEMS:
 - LOW TEMPERATURE REFRIGERANT PIPING.
- DUCTWORK SYSTEM INSULATION
 - DUAL TEMPERATURE DUCTWORK:
 - APPLICATION REQUIREMENTS: INSULATE THE FOLLOWING DUAL TEMPERATURE DUCTWORK:
 - HOT/COLD SUPPLY AND RETURN DUCTWORK BETWEEN FAN DISCHARGE OR HVAC UNIT DISCHARGE AND ROOM TERMINAL OUTLETS, APPLICATION LIMITED TO CONCEALED LOCATIONS.

10. INSTALLATION OF PIPING INSULATION

- GENERAL: INSTALL INSULATION PRODUCTS IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS, IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT INSULATION SERVES ITS INTENDED PURPOSE.
 - INSTALL INSULATION MATERIALS WITH SMOOTH AND EVEN SURFACES, INSULATE EACH INTERFACIAL SURFACE OF PIPING WITH ALL LENGTH UNITS OF INSULATION, WITH SINGLE CUT PIECE TO COMPLETE EACH SURFACE, AND USE CUT PIECES OF SCRAPS ABUTTING EACH OTHER, CLEAN AND DRY PIPE SURFACES PRIOR TO INSULATING, BUT INSULATION JOINTS FIRMLY TOGETHER TO ENSURE COVER AND TIGHT FIT OVER SURFACES TO BE COVERED.
 - MAINTAIN INTEGRITY OF VAPOR—BARRIER JACKETS ON PIPE INSULATION, AND PROTECT TO PREVENT PUNCTURE OR OTHER DAMAGE.
 - INTERMEDIATE SUPPORTS FOR SMALLER DIAMETER PIPE, DO NOT USE WIRE OR PERFORATED METAL TO SUPPORT PIPING, AND DO NOT SUPPORT PIPING FROM OTHER PIPING.
 - EXTEND DUCTWORK INSULATION WITHOUT INTERRUPTION THROUGH WALLS, FLOORS, AND SIMILAR PIPING PENETRATIONS, EXCEPT WHERE OTHERWISE INDICATED.
 - DUCTWORK EXPOSED TO WEATHER: PROTECT OUTDOOR INSULATION FROM WEATHER BY INSTALLING OUTDOOR PROTECTIVE FINISH OR JACKETING AS RECOMMENDED BY MANUFACTURER.
 - CORNER ANGLES: EXCEPT FOR OVEN AND HOOD EXHAUST DUCT INSULATION, INSTALL CORNER ANGLES ON EXTERNAL CORNERS OF INSULATION ON DUCTWORK IN EXPOSED FINISH LOCATIONS BEFORE COVERING WITH JACKETING.
12. PROTECTION AND REPLACEMENT
- REPAIR DAMAGE INSULATION WHICH CANNOT BE SATISFACTORILY REPAIRED, INCLUDING UNITS WITH VAPOR BARRIER DAMAGE AND MOISTURE SATURATED UNITS.
 - PROTECTION: INSULATION INSTALLER SHALL ADVISE CONTRACTOR OF REQUIRED PROTECTION OF INSULATION DURING REMANOR OF CONSTRUCTION PERIOD, TO AVOID DAMAGE AND DETEIORATION.

SECTION 15300 - FIRE PROTECTION

1. RELATED DOCUMENTS
- DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION—1 SPECIFICATION SECTIONS, APPLY TO WORK OF THIS SECTION.
 - DIVISION—15 BASIC MECHANICAL MATERIALS AND METHODS SECTIONS APPLY TO WORK OF THIS SECTION.
- B. DESCRIPTION OF WORK
- EXTENT OF FIRE PROTECTION WORK IS INDICATED ON DRAWINGS AND SCHEDULES, AND BY REQUIREMENTS OF THIS SECTION.
 - REFER TO DIVISION—2 SECTIONS FOR FIRE PROTECTION PIPING AND APPURTENANCES AND PRODUCTS, ARE TO BE PROVIDED BY OTHERS, EXCEPT WHERE OTHERWISE INDICATED.
 - REFER TO DIVISION—10 SECTIONS FOR FIRE EXTINGUISHERS, AND FIRE EXTINGUISHER CABINETS AND ACCESSORIES; NOT WORK OF THIS SECTION.
3. QUALITY ASSURANCE
- CODES AND STANDARDS:
 - GENERAL: PROVIDE COMPLIANCE WITH APPLICABLE PLUMBING CODES PERTAINING TO PRODUCT MATERIALS AND INSTALLATION OF SUPPORTS AND ANCHORS.
 - UL AND FM COMPLIANCE: PROVIDE PRODUCTS WHICH ARE UL—LISTED AND FM APPROVED.
 - MSS STANDARD COMPLIANCE:
 - PROVIDE PIPE HANGERS AND SUPPORTS OF WHICH MATERIALS, DESIGN, COMPLY WITH MSS—68.
 - SELECT AND APPLY PIPE HANGERS AND SUPPORTS, COMPLYING WITH MSS SP—69.
 - FABRICATE AND INSTALL PIPE HANGERS AND SUPPORTS, COMPLYING WITH MSS SP—69, TECHNOLOGY USED IN THIS SECTION IS DEFINED IN MSS SP—90.
4. SUBMITTALS
- PRODUCT DATA: SUBMIT MANUFACTURER'S TECHNICAL PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR FIRE PROTECTION MATERIALS AND PRODUCTS.
 - SHOP DRAWINGS: SUBMIT SCALED LAYOUT DRAWINGS FOR FIRE PROTECTION PIPE AND FITTINGS INCLUDING, BUT NOT NECESSARILY LIMITED TO, PIPE AND TUBE SIZES, LOCATIONS, ELEVATIONS, AND SLOPES OF HORIZONTAL RUNS, WALL AND FLOOR PENETRATIONS, AND CONNECTIONS. INDICATE INTERFACE AND SPATIAL RELATIONSHIP WITH THE FOLLOWING:
 - APPROVAL DRAWINGS: PREPARE APPROVAL DRAWINGS OF FIRE PROTECTION SYSTEMS INDICATING PIPE SIZES, PIPE LOCATIONS, FITTINGS, SHUTOFFS, EQUIPMENT, ETC. SUBMIT TO ARCHITECT FOR REVIEW, JURISDICTION, BEFORE PROCEEDING WITH INSTALLATION.
 - BEARING STAMP AND/OR SIGNATURE OF AGENCY HAVING JURISDICTION, BEFORE PROCEEDING WITH INSTALLATION.
 - APPROVAL CALCULATIONS: PREPARE HYDRAULIC CALCULATIONS OF FIRE PROTECTION SYSTEMS. SUBMIT TO AGENCY HAVING JURISDICTION FOR APPROVAL, SUBMIT ONE APPROVED COPY, BEARING STAMP AND/OR SIGNATURE OF AGENCY HAVING JURISDICTION, BEFORE PROCEEDING WITH INSTALLATION.
 - CERTIFICATE OF INSTALLATION: SUBMIT CERTIFICATE UPON COMPLETION OF FIRE PROTECTION PIPING WORK WHICH INDICATES THAT WORK HAS BEEN TESTED IN ACCORDANCE WITH NFPA 13, AND ALSO THAT SYSTEM IS OPERATIONAL, COMPLETE, AND HAS NO DEFECTS.
 - RECORD DRAWINGS: AT PROJECT CLOSEOUT, SUBMIT RECORD DRAWINGS OF INSTALLED FIRE PROTECTION PIPING AND PRODUCTS, IN ACCORDANCE WITH REQUIREMENTS OF DIVISION 1.
 - MAINTENANCE DATA: SUBMIT MAINTENANCE DATA AND PARTS LISTS FOR FIRE PROTECTION MATERIALS AND PRODUCTS, INCLUDE THIS DATA, PRODUCT DATA, SHOP DRAWINGS, APPROVAL DRAWINGS, APPROVAL CALCULATIONS, CERTIFICATE OF INSTALLATION, AND RECORD DRAWINGS IN MAINTENANCE MANUAL, IN ACCORDANCE WITH REQUIREMENTS OF DIVISION 1.
5. MATERIALS AND PRODUCTS
- GENERAL: PROVIDE PIPING MATERIALS AND FACTORY—FABRICATED PIPING PRODUCTS OF TYPES, TYPES, PRESSURE RATINGS, TEMPERATURE RATINGS, AND CAPACITIES AS INDICATED, WHERE NOT INDICATED, PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER TO COMPLY WITH INSTALLATION REQUIREMENTS, AND TYPES MATCHING PIPING AND EQUIPMENT CONNECTIONS; PROVIDE FITTINGS OF MATERIALS WHICH MATCH PIPE MATERIALS USED IN FIRE PROTECTION SYSTEMS, WHERE MORE THAN ONE TYPE OF MATERIALS OR PRODUCTS ARE INDICATED, SELECTION IS INSTALLER'S OPTION.
6. BASIC IDENTIFICATION
- GENERAL: PROVIDE IDENTIFICATION COMPLYING WITH DIVISION—15 BASIC MECHANICAL MATERIALS AND METHODS SECTION "MECHANICAL IDENTIFICATION", IN ACCORDANCE WITH THE FOLLOWING LISTING:
 - PIPE IDENTIFICATION: PROVIDE IDENTIFICATION COMPLYING WITH DIVISION—15 BASIC MECHANICAL MATERIALS AND METHODS SECTION "MECHANICAL IDENTIFICATION", IN ACCORDANCE WITH THE FOLLOWING LISTING:
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HAT CREEK BURGER - PROTOTYPE 1.1

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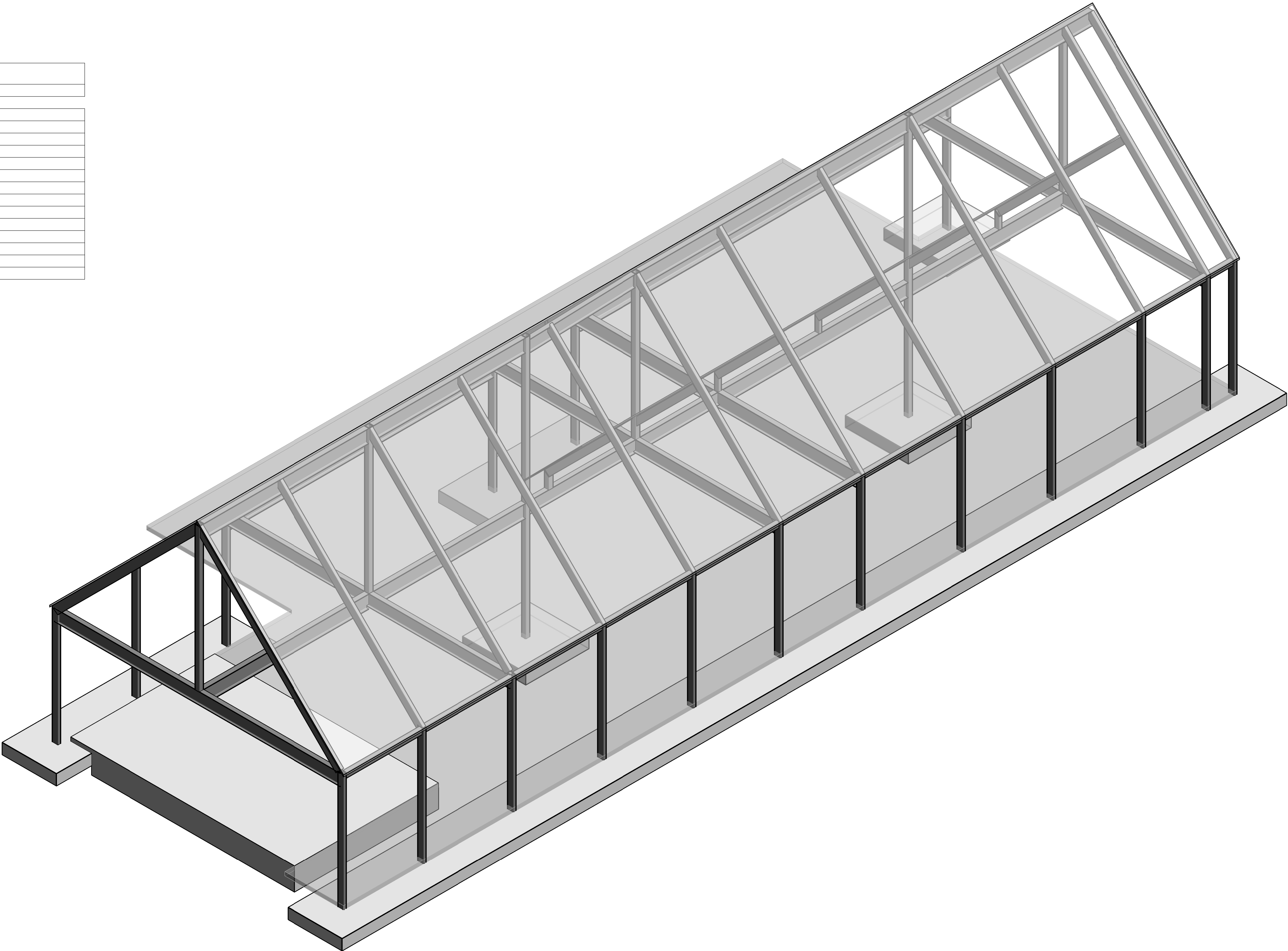
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|--|---|---|
| <div>10. FLOOR DRAINS:
A. GENERAL: PROVIDE FLOOR DRAINS OF SIZES AND TYPES AS INDICATED ON DRAWINGS</div> <div>11. TRAP PRIMERS:
A. GENERAL: PROVIDE BRONZE TRAP PRIMER VALVE WITH AUTOMATIC VACUUM BREAKER. COMPLY WITH ASSOCIATED 10/8 WITH 12" CONNECTIONS MATCHING MATING PIPING SYSTEM. TRAP PRIMERS SHALL BE CONCEALED WITHIN THE WALL FRAMING, AND FINISHED WITH A WALL MOUNTED ACCESSIBLE COVER PLATE.</div> <div>12. INSPECTION:
A. EXAMINE SUBSTRATES AND CONDITIONS UNDER WHICH SOIL AND WASTE SYSTEMS ARE TO BE INSTALLED, DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN MANNER ACCEPTABLE TO INSTALLER.</div> <div>13. INSTALLATION OF BASIC IDENTIFICATION:
A. GENERAL: INSTALL MECHANICAL IDENTIFICATION IN ACCORDANCE WITH DIVISION 15 BASIC MECHANICAL MATERIALS AND METHODS SECTION "MECHANICAL IDENTIFICATION".</div> <div>14. INSTALLATION OF ABOVE GROUND PIPING:
A. GENERAL: INSTALL SOIL AND WASTE PIPING IN ACCORDANCE WITH DIVISION 15 BASIC MECHANICAL MATERIALS AND METHODS SECTION "PIPES AND PIPE FITTINGS", AND WITH CODE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.</div> <div>15. INSTALLATION OF BUILDING DRAIN PIPING:
A. GENERAL: INSTALL UNDERGROUND BUILDING DRAINS AS INDICATED AND IN ACCORDANCE WITH THE CODE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION. LAY UNDERGROUND BUILDING DRAINS BEGINNING AT LOW POINT OF SYSTEMS, TRUE TO GRADES AND ALIGNMENT INDICATED WITH UNBROKEN CONTINUITY OF INVERT. PLACE BELL ENDS OF PIPING FACING UPSTREAM. INSTALL REQUIRED GASKETS IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATION FOR USE OF LUBRICANTS, GEMENTS, AND OTHER SPECIAL INSTALLATION REQUIREMENTS. CLEAN INTERIOR OF PIPING OF DIRT AND OTHER SUSPENDED MATERIALS. PROVIDE GREASE MAINTAIN SWAB OR DRAG LINE AND PULL PAST JOINT AS IT IS COMPLETED. FLUSH IN ENDS OF UNCOMPLETED PIPING AT END OF DAY OR WHENEVER WORK STOPS.</div> <div>16. INSTALLATION OF PIPING SPECIALTIES:
A. GENERAL: INSTALL PIPING SPECIALTIES IN ACCORDANCE WITH DIVISION 15 BASIC MECHANICAL MATERIALS AND METHODS SECTION "PIPING SPECIALTIES".</div> <div>17. INSTALLATION OF SUPPORTS AND ANCHORS:
A. GENERAL: PROVIDE CAST CONCRETE GREASE INTERCEPTORS AS DETAILED ON THE DRAWINGS.</div> <div>18. INSTALLATION OF DRAINAGE PIPING PRODUCTS:
A. CLEANOUTS: INSTALL FLOOR DRAINS AND BUILDING DRAIN PIPING AS INDICATED, AS REQUIRED BY CODE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION, AND AT EACH CHANGE IN DIRECTION OF PIPING GREATER THAN 45°. AT CONDITIONS: INTERFERE WITH OTHER PIPING 4" AND SMALLER AND 10" FOR LARGER PIPING, AND AT BASE OF EACH VERTICAL SOIL OR WASTE STACK, INSTALL FLOOR AND WALL CLEANOUT COVERS FOR CONCEALED PIPING. SELECT TYPE TO MATCH ADJACENT BUILDING FINISH. FLASHING FLASHING FLANGE AND CLAMPING DEVICE WITH EACH STACK AND CLEANOUT PASSING THROUGH WATERPROOF MEMBRANES.</div> <div>19. INSTALLATION OF FLOOR DRAINS:
A. GENERAL: INSTALL FLOOR DRAINS IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS AND IN LOCATIONS INDICATED.
B. COORDINATE FLASHING WORK WITH WORK OF WATERPROOFING AND ADJOINING FIRST AND SECOND FLOOR WORK.
C. COORDINATE WITH SOIL AND WASTE PIPING AS NECESSARY TO INTERFACE FLOOR DRAINS WITH DRAINAGE PIPING SYSTEMS.
D. NOTIFY LOCAL AGENCIES OF FINISHED POINTS OF SURFACE AREAS TO BE DRAINED, OR AS INDICATED, SET TOPS OF DRAINS FLUSH WITH FINISHED FLOOR.
E. INSTALL DRAIN FLASHING COILS OR FLANGE SO THAT NO LEAKAGE OCCURS BETWEEN DRAIN AND ADJOINING FLOORING. MAINTAIN INTEGRITY OF WATERPROOF MEMBRANES, WHERE PENETRATED.
F. POSITION DRAINS SO THAT THEY ARE ACCESSIBLE AND EASY TO MAINTAIN.</div> <div>20. INSTALLATION OF TRAP PRIMERS:
A. GENERAL: INSTALL TRAP PRIMERS AS INDICATED, AND IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS. PITCH PIPING TOWARD DRAIN TRAP, MINIMUM OF 1/8" PER FOOT (1%) ADJUST TRAP PRIMER FOR PROPER FLOW.</div> <div>21. EQUIPMENT CONNECTIONS:
A. PIPING ROUTINGS TO FIXTURES: PROVIDE SOIL AND WASTE PIPING ROUTINGS TO PLUMBING FIXTURES AND DRAINS, WITH APPROVED TRAP, OF SIZES INDICATED, BUT IN NO CASE SURFACE DRAIN, AND AS REQUIRED FOR COMPLETE INSTALLATION, WHERE MORE THAN ONE TYPE IS INDICATED. SELECTION IS INSTALLERS OPTION, BUT, ALL FIXTURES OF SAME TYPE MUST BE FURNISHED BY SINGLE MANUFACTURER, WHERE TYPE IS NOT OTHERWISE INDICATED, PROVIDE FIXTURES COMPLYING WITH GOVERNING REGULATIONS.</div> <div>22. FIELD QUALITY CONTROL:
A. GENERAL: INSPECT SOIL AND WASTE SYSTEMS IN ACCORDANCE WITH REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.</div> <div>23. ADJUSTING AND CLEANING:
A. CLEAN, FLUSH, AND INSPECT SOIL AND WASTE PIPING IN ACCORDANCE WITH REQUIREMENTS OF DIVISION 15 BASIC MECHANICAL MATERIALS AND METHODS SECTION "PIPES AND PIPE FITTINGS".</div> <div>24. PROTECTION:
A. PROTECT DRAINS DURING REMAINDER OF CONSTRUCTION PERIOD, TO AVOID CLOGGING WITH CONSTRUCTION MATERIALS AND DEBRIS, AND TO PREVENT DAMAGE FROM TRAFFIC AND CONSTRUCTION WORK.</div> <div>SECTION 15420 - PLUMBING EQUIPMENT</div> <div>1. RELATED DOCUMENTS:
A. DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATIONS SECTIONS, APPLY TO WORK OF THIS SECTION.</div> <div>2. DESCRIPTION OF WORK:
A. EXTENT OF PLUMBING EQUIPMENT WORK IS INDICATED ON DRAWINGS AND PROVISIONS OF THIS SECTION, INCLUDING SCHEDULES AND EQUIPMENT LISTS ASSOCIATED WITH EITHER DRAWINGS OR THIS SECTION.
B. TYPES OF PLUMBING EQUIPMENT REQUIRED FOR PROJECT INCLUDE THE FOLLOWING:
1. DOMESTIC WATER HEATERS:
a. COMMERCIAL GAS-FIRED WATER HEATERS
2. INTERCEPTORS:
a. GREASE INTERCEPTORS</div> <div>3. QUALITY ASSURANCE:
A. UL AND NEMA COMPLIANCE: PROVIDE ELECTRIC MOTORS AND ELECTRICAL COMPONENTS REQUIRED AS PART OF PLUMBING EQUIPMENT, WHICH HAVE BEEN LISTED AND LABELED BY UNDERWRITERS LABORATORIES AND COMPLY WITH NEMA STANDARDS.
B. NEC COMPLIANCE: PROVIDE ELECTRICAL EQUIPMENT, WHICH HAVE BEEN LISTED AND LABELED BY UNDERWRITERS LABORATORIES AND COMPLY WITH NEMA STANDARDS.
C. ANSI COMPLIANCE: PROVIDE FITTINGS OF MATERIALS WHICH MATCH PIPE MATERIALS USED IN NATURAL GAS SYSTEMS, WHERE TYPE MORE THAN ONE TYPE OF MATERIALS OR PRODUCTS ARE INDICATED, SELECTION IS INSTALLERS OPTION.</div> <div>4. SUBMITTALS:
A. PRODUCT DATA: SUBMIT TO THE ARCHITECT THE MANUFACTURERS PLUMBING EQUIPMENT SPECIFICATIONS, INCLUDING SPECIFICATIONS, CAPACITY RATINGS, DIMENSIONS, WEIGHTS, MATERIALS, ACCESSORIES FURNISHED, AND INSTALLATION INSTRUCTIONS.</div> <div>5. MATERIALS AND PRODUCTS:
A. GENERAL: PROVIDE COMMERCIAL GAS-FIRED WATER HEATERS OF SIZE AND CAPACITY AS INDICATED ON SCHEDULE, COMPLY WITH ANSHIRAHIES 90A FOR ENERGY EFFICIENCY. PROVIDE CERTIFICATION OF DESIGN BY A GAS UNDER VOLUME ILL TESTS FOR COMMERCIAL WATER HEATERS FOR DELIVERY OF 140°F (82°C) WATER.
B. HEATER: WORKING PRESSURE OF 150 PSI; BOILER-TYPE HAND-LOU CLEANOUT; MAGNESIUM ANODE ROD; TAPPING FOR RELIEF VALVE; GLASS LINING ON INTERNAL SURFACES EXPOSED TO WATER.
C. SAFETY CONTROLS: EQUIP WITH AUTOMATIC GAS SHUTOFF DEVICE TO SHUT OFF ENTIRE GAS SUPPLY IN EVENT OF EXCESSIVE TEMPERATURE IN TANK; AND PILOT SAFETY SHUTOFF.
D. DRAFT HOOD: EQUIP WITH A GAS CERTIFIED TRAP HOOD.
E. JACKET: INSULATE TANK WITH VERMI-PURF GLASS FIBER INSULATION, WITH BAKED ENAMEL FINISH OVER BONDERIZED UNDERCOATING.
F. WARRANTY: FURNISH 3 YEAR LIMITED WARRANTY FOR TANK LEAKAGE.
G. ACCESSORIES: PROVIDE BRASS DRAIN VALVE, 3/4" PRESSURE AND TEMPERATURE RELIEF VALVE; RADIANT FLOOR SHIELD.</div> <div>6. GREASE INTERCEPTORS:
A. GENERAL: PROVIDE CAST CONCRETE GREASE INTERCEPTORS AS DETAILED ON THE DRAWINGS.</div> <div>7. INSTALLATION OF GAS-FIRED WATER HEATERS:
A. GENERAL: INSTALL GAS-FIRED WATER HEATERS AS INDICATED, IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS, AND IN COMPLIANCE WITH APPLICABLE CODES.
B. SUPPORT SET: SETS ON CONTRACTOR PROVIDED CONCRETE BLOCKS, ORIENT SOIL CONTROLS AND DEVICES NEADING SERVICE AND MAINTENANCE HAVE ADEQUATE ACCESS. WATER HEATER SHALL BE SET LEVEL AND PLUMB.
C. GAS SUPPLY: CONNECT TO GAS LINE WITH DRIP LEG, TEE, GAS COCK, AND UNION; FULL SIZE OF UNIT INLET CONNECTION. LOCATE PIPING SO AS NOT TO INTERFERE WITH SERVICE OR REPLACEMENT OF THE UNIT.
D. PIPING: CONNECT HOT AND COLD WATER PIPING TO UNITS WITH SHUTOFF VALVES AND UNIONS. CONNECT RECIRCULATING WATER LINE TO UNIT WITH SHUTOFF VALVE, CHECK VALVE, AND UNION.
E. FLUE: CONNECT COMBUSTION AIR INTAKE AND EXHAUST DUCT AIR TIGHT.
F. START-UP: START-UP, TEST, AND ADJUST GAS-FIRED WATER HEATERS IN ACCORDANCE WITH MANUFACTURERS START-UP INSTRUCTIONS, AND UTILITY COMPANYS REQUIREMENTS. CHECK AND CALIBRATE CONTROLS, ADJUST BURNER FOR MAXIMUM EFFICIENCY.</div> <div>8. INSTALLATION OF INTERCEPTORS:
A. GENERAL: INSTALL INTERCEPTORS AS INDICATED, IN ACCORDANCE WITH THE DETAIL ON THE DRAWINGS, AND LOCAL CODES AND ORDINANCES.</div> | <div>1. RELATED DOCUMENTS:
A. DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATIONS SECTIONS, APPLY TO WORK OF THIS SECTION.
B. DIVISION 15 BASIC MECHANICAL MATERIALS AND METHODS SECTIONS APPLY TO WORK OF THIS SECTION.</div> <div>2. DESCRIPTION OF WORK:
A. EXTENT OF PLUMBING FIXTURES WORK REQUIRED BY THIS SECTION IS INDICATED ON DRAWINGS AND SCHEDULES, AND BY REQUIREMENTS OF THIS SECTION.
B. TYPES OF PLUMBING FIXTURES SPECIFIED IN THIS SECTION INCLUDE THE FOLLOWING:
1. WATER CLOSETS.
2. URINALS.
3. LAVATOIRES.
4. SERVICE SINKS.
C. REFER TO DIVISION 15 SECTIONS FOR POTABLE WATER SYSTEMS USED IN CONJUNCTION WITH PLUMBING FIXTURES, NOT WORK OF THIS SECTION.
D. METHODS FOR SOIL AND WASTE SYSTEMS USED IN CONJUNCTION WITH PLUMBING FIXTURES, NOT WORK OF THIS SECTION.</div> <div>3. QUALITY ASSURANCE:
A. MANUFACTURERS QUALIFICATIONS: FIRMS REGULARLY ENGAGED IN MANUFACTURE OF PLUMBING FIXTURES OF TYPE, STYLE AND CONFIGURATION REQUIRED, WHOSE PRODUCTS HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR NOT LESS THAN 3 YEARS.
B. CODES AND STANDARDS:
1. PLUMBING FIXTURE STANDARDS: COMPLY WITH APPLICABLE PORTIONS OF THE ADOPTED CODE OF THE AUTHORITY HAVING JURISDICTION PERTAINING TO MATERIALS AND INSTALLATION OF PLUMBING FIXTURES.
2. ANSI STANDARDS: COMPLY WITH APPLICABLE ANSI STANDARDS PERTAINING TO PLUMBING FIXTURES.
3. PDI COMPLIANCE: COMPLY WITH STANDARDS ESTABLISHED BY PDI PERTAINING TO PLUMBING FIXTURES.
4. FEDERAL STANDARDS: COMPLY WITH APPLICABLE FSI WW-P-541/SERIES SECTIONS PERTAINING TO PLUMBING FIXTURES.
5. ANSI COMPLIANCE: CONSTRUCT AND INSTALL BARRIER-FREE PLUMBING FIXTURES IN ACCORDANCE WITH AMERICANS WITH DISABILITIES ACT.</div> <div>4. SUBMITTALS:
A. PRODUCT DATA: SUBMIT TO THE ARCHITECT THE MANUFACTURERS TECHNICAL PRODUCT DATA, INCLUDING RATED CAPACITIES OF SELECTED MODEL, CLEARLY INDICATED, FURNISHED SPECIALTIES AND ACCESSORIES; AND INSTALLATION INSTRUCTIONS.</div> <div>5. PLUMBING FIXTURES:
A. GENERAL: PROVIDE FACTORY-FABRICATED FIXTURES OF TYPE, STYLE, AND MATERIAL AS INDICATED ON EACH TYPE, FIXTURE, PROVIDE FIXTURE MANUFACTURERS STANDARDS, TRIM, CARRIER, SEATS, AND VALVES AS INDICATED BY THEIR PUBLISHED PRODUCT INFORMATION, EITHER AS DESIGNED AND CONSTRUCTED, OR AS RECOMMENDED BY MANUFACTURER, AND AS REQUIRED FOR COMPLETE INSTALLATION, WHERE MORE THAN ONE TYPE IS INDICATED. SELECTION IS INSTALLERS OPTION, BUT, ALL FIXTURES OF SAME TYPE MUST BE FURNISHED BY SINGLE MANUFACTURER, WHERE TYPE IS NOT OTHERWISE INDICATED, PROVIDE FIXTURES COMPLYING WITH GOVERNING REGULATIONS.</div> <div>6. MATERIALS:
A. GENERAL: UNLESS OTHERWISE SPECIFIED, COMPLY WITH APPLICABLE FEDERAL SPECIFICATION WW-P-541/SERIES SECTIONS PERTAINING TO PLUMBING FIXTURES, FITTINGS, TRIM, METALS, AND FINISHES, COMPLY WITH REQUIREMENTS OF WW-P-541/SERIES SECTIONS PERTAINING TO QUALITY OF WARE, GLAZING, ENAMEL, COMPOSITION AND FINISH OF METALS, AIR GAPS, AND VACUUM BREAKERS, EVEN THOUGH SOME PLUMBING FIXTURES SPECIFIED IN THIS SECTION ARE NOT DESCRIBED IN WW-P-541/SERIES SECTIONS. MATERIALS WHICH HAVE BEEN SELECTED FOR THEIR SURFACE FLATNESS AND SMOOTHNESS, EXPOSED SURFACES WHICH EXHIBIT FITTING, SEAM MARKS, ROLLER MARKS, FOUNDRY SAND HOLES, STAINS, DECORATION, OR OTHER SURFACE DEFECTS, SHALL BE REJECTED. MATERIALS WHICH ARE NOT OTHERWISE SPECIFIED, COMPLY WITH THE FOLLOWING:
1. WHERE FITTINGS, TRIM, AND ACCESSORIES ARE EXPOSED OR SEMI-EXPOSED PROVIDE BRIGHTEST CHROME PLATED OR POLISHED STAINLESS STEEL UNITS. PROVIDE COPPER OR BRASS WHERE NOT EXPOSED.
2. STAINLESS STEEL SHEETS: ASTM A 167, TYPE 302/304, HARDEST WORKABLE TEMPER.
3. FINISH: NO. 4, BRIGHT, DIRECTIONAL, POLISH ON EXPOSED SURFACES.
4. VITREOUS CHINA: HIGH QUALITY, FREE FROM FRIE CRACKS, SPOTS, BUSTERS, PINHOLES, AND SPECKS; GLAZE EXPOSED SURFACES, AND TEST FOR CRAZING RESISTANCE IN ACCORDANCE WITH ASTM C 284.
5. SYNTHETIC STONE: HIGH QUALITY, FREE FROM DEFECTS, GLAZE ON EXPOSED SURFACES, STAIN RESISTANT.</div> <div>7. PLUMBING FITTINGS, TRIM, AND ACCESSORIES:
A. WATER OUTLETS: AT LOCATIONS WHERE WATER IS SUPPLIED BY MANUAL, AUTOMATIC OR REMOTE CONTROL, PROVIDE COMMERCIAL QUALITY FAUCETS, VALVES, OR DISPENSING DEVICES, OF TYPE AND SIZE INDICATED, AND AS REQUIRED FOR COMPLETE INSTALLATION, INCLUDE MANUAL SHUTOFF VALVES AND CONNECTING STEM PIPES TO PERMIT OUTLET SERVICING WITHOUT SHUT-DOWN OF WATER SUPPLY PIPING SYSTEMS.
B. VALVE BREAKERS: PROVIDE WITH FLUSH VALVES WHERE REQUIRED BY GOVERNING REGULATIONS, INCLUDING LOCATIONS WHERE WATER OUTLETS ARE EQUIPPED FOR HOSE ATTACHMENT.
C. HAND TRAPS: INCLUDE REMOVABLE P-TRAPS WHERE DRAINS ARE INDICATED FOR DIRECT CONNECTION TO DRAINAGE SYSTEM.
D. CARRIERS: PROVIDE CAST-IRON SUPPORTS FOR FIXTURES OF EITHER GRAPHIC RAY, IRON, DUCTILE IRON, OR MALLEABLE IRON AS INDICATED.
E. FIXTURE BOLT CAPS: PROVIDE MANUFACTURERS STANDARD EXPOSED FIXTURE BOLT CAPS FINISHED TO MATCH FIXTURE FINISH.
F. ESCUTCHEONS: WHERE FIXTURE SUPPLIES AND DRAINS PENETRATE WALLS IN EXPOSED LOCATIONS, PROVIDE CHROME-PLATED CAST BRASS ESCUTCHEONS WITH SET SCREW. AERATORS: PROVIDE AERATORS OF TYPES SPECIFIED IN THE CONSTRUCTION DRAWINGS. COMPLY WITH ADDITIONAL FITTING REQUIREMENTS CONTAINED IN FUTURE SCHEDULE ATTACHED TO THIS SECTION.</div> <div>8. INSTALLATION OF PLUMBING FIXTURES:
A. GENERAL: INSTALL PLUMBING FIXTURES OF TYPES INDICATED WHERE SHOWN AND AT INDICATED HEIGHTS, IN ACCORDANCE WITH FIXTURE MANUFACTURERS WRITTEN INSTRUCTIONS, INCLUDING IN DRAWINGS, AND WITH RECOGNIZED INDUSTRY PRACTICES. ENSURE THAT PLUMBING FIXTURES COMPLY WITH REQUIREMENTS AND SERVE INTENDED PURPOSES, COMPLY WITH APPLICABLE REQUIREMENTS OF THE ADOPTED CODE OF THE AUTHORITY HAVING JURISDICTION PERTAINING TO PLUMBING FIXTURES.
B. FASTEN PLUMBING FIXTURES SECURELY TO INDICATED SUPPORTS OR BUILDING STRUCTURE, AND ENSURE THAT FIXTURES ARE LEVEL AND PLUMB, SECURE PLUMBING UNITS BEHIND WITH WALL CONSTRUCTION SO AS TO BE RIGID, AND NOT SUBJECT TO PULL OR PUSH MOVEMENT.</div> <div>9. ADJUSTING AND CLEANING:
A. CLEAN PLUMBING FIXTURES, TRIM, AND STRAINERS OF DIRT AND DEBRIS UPON COMPLETION OF INSTALLATION.
B. ADJUST WATER PRESSURE AT FAUCETS AND FLUSH VALVES TO PROVIDE PROPER FLOW STREAM AND SPECIFIED GPM.</div> <div>SECTION 15488 - NATURAL GAS SYSTEMS</div> <div>1. RELATED DOCUMENTS:
A. DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATIONS SECTIONS, APPLY TO WORK OF THIS SECTION.
B. DIVISION 15 BASIC MECHANICAL MATERIALS AND METHODS SECTIONS APPLY TO WORK OF THIS SECTION.</div> <div>2. DESCRIPTION OF WORK:
A. EXTENT OF NATURAL GAS SYSTEMS WORK, IS INDICATED ON DRAWINGS AND SCHEDULES, AND BY REQUIREMENTS OF THIS SECTION.
B. TRENDING AND BACKFILL REQUIRED IN CONJUNCTION WITH GAS SERVICE PIPING IS SPECIFIED IN APPLICABLE DIVISION 2 SECTIONS, AND IS INCLUDED AS WORK OF THIS SECTION.
C. REFER TO DIVISION 2 SECTIONS FOR TRENDING AND BACKFILL REQUIRED IN CONJUNCTION WITH GAS SERVICE PIPING; NOT WORK OF THIS SECTION.</div> <div>3. CODES AND STANDARDS:
A. ANSI COMPLIANCE: FABRICATE AND INSTALL NATURAL GAS PIPING IN ACCORDANCE WITH ANSI B31.2 "FUEL GAS PIPING".
B. NFPA COMPLIANCE: FABRICATE AND INSTALL NATURAL GAS SYSTEMS IN ACCORDANCE WITH NFPA 84 "NATURAL FUEL GAS CODE".
C. UTILITY COMPLIANCE: FABRICATE AND INSTALL NATURAL GAS SYSTEMS IN ACCORDANCE WITH LOCAL GAS UTILITY COMPANY.</div> <div>4. SUBMITTALS:
A. PRODUCT DATA: SUBMIT MANUFACTURERS TECHNICAL, PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR NATURAL GAS SYSTEMS MATERIALS AND PRODUCTS.</div> <div>5. MATERIALS AND PRODUCTS:
A. GENERAL: PROVIDE PIPING MATERIALS AND FACTORY-FABRICATED PIPING PRODUCTS OF SIZES, TYPES, PRESSURE RATINGS, AND CAPACITIES AS INDICATED, WHERE NOT INDICATED, PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER.
B. GAS SUPPLY: PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER.
C. GAS SUPPLY: PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER.
D. GAS SUPPLY: PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER.
E. GAS SUPPLY: PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER.
F. GAS SUPPLY: PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER.
G. GAS SUPPLY: PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER.
H. GAS SUPPLY: PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER.
I. GAS SUPPLY: PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER.
J. GAS SUPPLY: PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER.
K. GAS SUPPLY: PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER.
L. GAS SUPPLY: PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER.
M. GAS SUPPLY: PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER.
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W. GAS SUPPLY: PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER.
X. GAS SUPPLY: PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER.
Y. GAS SUPPLY: PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER.
Z. GAS SUPPLY: PROVIDE PROPER SELECTION AS DETERMINED BY INSTALLER.</div> <div>6. BASIC IDENTIFICATION:
A. GENERAL: PROVIDE IDENTIFICATION COMPLYING WITH DIVISION 15 BASIC MECHANICAL MATERIALS AND METHODS SECTION "MECHANICAL IDENTIFICATION", IN ACCORDANCE WITH THE FOLLOWING LISTING:
1. BUILDING DISTRIBUTION PIPING: PLASTIC PIPE MARKERS.
2. GAS SERVICE: UNDERGROUND TYPE PLASTIC LINE MARKERS.
3. GAS VALVES: PLASTIC VALVE TAGS.</div> <div>7. BASIC PIPES AND PIPE FITTINGS:
A. GENERAL: PROVIDE PIPES AND PIPE FITTINGS COMPLYING WITH DIVISION 15 BASIC MECHANICAL MATERIALS AND METHODS SECTION "PIPES AND PIPE FITTINGS", IN ACCORDANCE WITH THE FOLLOWING LISTING:
1. PIPE SIZE: 2" AND SMALLER: BLACK STEEL PIPE; SCHEDULE 40, MALLEABLE-IRON THREADED FITTINGS.
2. PIPE SIZE 2 1/2" AND LARGER: BLACK STEEL PIPE; SCHEDULE 40; WROUGHT-STEEL BUTTWELDING FITTINGS.</div> <div>8. BASIC PIPING SPECIALTIES:
A. GENERAL: PROVIDE PIPING SPECIALTIES IN ACCORDANCE WITH DIVISION 15 BASIC MECHANICAL MATERIALS AND METHODS SECTION "PIPING SPECIALTIES", IN ACCORDANCE WITH THE FOLLOWING LISTING:
1. PIPE ESCUTCHEONS.
2. DIELECTRIC UNIONS.
3. PIPE SLEEVES.
4. SLEEVE SEALS.</div> | <div>9. BASIC SUPPORTS AND ANCHORS:
A. GENERAL: PROVIDE SUPPORTS AND ANCHORS COMPLYING WITH DIVISION 15 BASIC MECHANICAL MATERIALS AND METHODS SECTION "SUPPORTS AND ANCHORS", IN ACCORDANCE WITH THE FOLLOWING LISTING:
1. ADJUSTABLE SWIVEL PIPE RINGS FOR HORIZONTAL PIPING HANGERS AND SUPPORTS.
2. TIE RODS AND CLAMPS FOR VERTICAL PIPING SUPPORTS.
3. CONCRETE INSERTS, C-CLAMPS, AND STEEL BRACKETS FOR BUILDING ATTACHMENTS.
4. SIDE BEND CLAMPS.</div> <div>10. SPECIAL VALVES:
A. GENERAL: SPECIAL VALVES REQUIRED FOR NATURAL GAS SYSTEMS INCLUDE THE FOLLOWING:
B. GAS COCKS:
1. GAS COCKS 2" AND SMALLER: 150 PSI NON-SHOCK WOG, BRONZE STRAIGHTWAY COCK, FLAT OR SQUARE HEAD, THREADED ENDS.
2. GAS COCKS 2 1/2" AND LARGER: 125 PSI NON-SHOCK WOG, IRON BODY BRONZE MOUNTED, STRAIGHTWAY COCK, SQUARE HEAD, FLANGED ENDS.
C. CONTROL VALVES:
1. MASTER GAS CONTROL VALVE: BRONZE BODY, PACKLESS, SINGLE SEAT, MANUALLY OPERATED, NORMALLY CLOSED, LUL-APPROVED.
2. MASTER GAS CONTROL VALVE: BRONZE BODY, PACKLESS, SINGLE SEAT, MANUALLY OPERATED, NORMALLY CLOSED, LUL-APPROVED.
3. MASTER GAS CONTROL VALVE: BRONZE BODY, PACKLESS, SINGLE SEAT, MANUALLY OPERATED, NORMALLY CLOSED, LUL-APPROVED.
4. MASTER GAS CONTROL VALVE: BRONZE BODY, PACKLESS, SINGLE SEAT, MANUALLY OPERATED, NORMALLY CLOSED, LUL-APPROVED.
5. MASTER GAS CONTROL VALVE: BRONZE BODY, PACKLESS, SINGLE SEAT, MANUALLY OPERATED, NORMALLY CLOSED, LUL-APPROVED.
6. MASTER GAS CONTROL VALVE: BRONZE BODY, PACKLESS, SINGLE SEAT, MANUALLY OPERATED, NORMALLY CLOSED, LUL-APPROVED.
7. MASTER GAS CONTROL VALVE: BRONZE BODY, PACKLESS, SINGLE SEAT, MANUALLY OPERATED, NORMALLY CLOSED, LUL-APPROVED.
8. MASTER GAS CONTROL VALVE: BRONZE BODY, PACKLESS, SINGLE SEAT, MANUALLY OPERATED, NORMALLY CLOSED, LUL-APPROVED.
9. MASTER GAS CONTROL VALVE: BRONZE BODY, PACKLESS, SINGLE SEAT, MANUALLY OPERATED, NORMALLY CLOSED, LUL-APPROVED.
10. MASTER GAS CONTROL VALVE: BRONZE BODY, PACKLESS, SINGLE SEAT, MANUALLY OPERATED, NORMALLY CLOSED, LUL-APPROVED.</div> <div>11. PRESSURE REGULATING VALVES:
A. GENERAL: PROVIDE SINGLE STAGE, STEEL, JACKETED, CORROSION-RESISTANT GAS PRESSURE REGULATING VALVES, WITH ATMOSPHERIC INLET, ELEVATION COMPENSATORS, WITH THREADED ENDS FOR 2" AND SMALLER, FLANGED ENDS FOR 2 1/2" AND LARGER, FOR INLET AND OUTLET GAS PRESSURES, SPECIFIC GRAVITY, AND VOLUME FLOW INDICATED.</div> <div>12. GAS METER:
A. GENERAL: PROVIDE DIAPHRAGM TYPE, POSITIVE DISPLACEMENT GAS METERS WITH ALUMINUM CASES, TEMPERATURE COMPENSATED, WITH INTERNAL CORROSION-RESISTANT COMPONENTS, THREADED ENDS FOR 2" AND SMALLER, FLANGED ENDS FOR 2 1/2" AND LARGER, FOR GAS WORKING PRESSURES, SPECIFIC GRAVITY, AND VOLUME FLOW INDICATED.</div> <div>13. INSPECTION:
A. GENERAL: EXAMINE AREAS AND CONDITIONS UNDER WHICH NATURAL GAS SYSTEMS MATERIALS AND PRODUCTS ARE TO BE INSTALLED, DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN MANNER ACCEPTABLE TO INSTALLER.</div> <div>14. INSTALLATION OF BASIC IDENTIFICATION:
A. GENERAL: INSTALL MECHANICAL IDENTIFICATION IN ACCORDANCE WITH DIVISION 15 BASIC MECHANICAL MATERIALS AND METHODS SECTION "MECHANICAL IDENTIFICATION".</div> <div>15. INSTALLATION OF NATURAL GAS PIPING:
A. GENERAL: INSTALL NATURAL GAS PIPING IN ACCORDANCE WITH DIVISION 15 BASIC MECHANICAL MATERIALS AND METHODS SECTION "PIPES AND PIPE FITTINGS", AND WITH CODE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
B. SEALANTS ON METAL GAS PIPING THREADS WHICH ARE CHEMICALLY RESISTANT TO NATURAL GAS, USE SEALANTS SPARINGLY, AND APPLY TO ONLY MALE THREADS OF METAL FITTINGS.
C. REMOVE CUTTING AND THREADING BURRS BEFORE ASSEMBLING PIPING.
D. DO NOT INSTALL DEFECTIVE PIPING OR FITTINGS. DO NOT USE PIPE WITH THREADS WHICH ARE CHIPPED, STRIPPED, OR OTHERWISE DAMAGED.
E. PLUG EACH GAS OUTLET, INCLUDING VALVES, WITH THREADED PLUG OR CAP IMMEDIATELY AFTER INSTALLATION AND RETAIN UNTIL CONTINUING PIPING, OR EQUIPMENT CONNECTIONS ARE MADE.
F. GROUND GAS PIPING ELECTRICALLY AND CONTINUOUSLY WITHIN PROJECT, AND BOND TIGHTLY TO GROUNDING CONNECTION.
G. HANG GAS PIPING IN AREAS WHERE INDICATED, AND WHERE REQUIRED BY CODE OR REGULATION.
H. INSTALL "TEE" FITTING WITH BOTTOM OUTLET PLUGGED OR CAPPED, AT BOTTOM OF PIPE FITTING.
I. USE DIELECTRIC UNIONS WHERE DISSIMILAR METALS ARE JOINED TOGETHER.
J. INSTALL PIPING WITH 1/64" PER FOOT (1/8%) DOWNWARD SLOPE IN DIRECTION OF FLOW.
K. MANUFACTURERS SUBMITTALS: PROVIDE FITTINGS OF MATERIALS WHICH MATCH PIPE MATERIALS USED IN NATURAL GAS SYSTEMS, WHERE TYPE MORE THAN ONE TYPE OF MATERIALS OR PRODUCTS ARE INDICATED, SELECTION IS INSTALLERS OPTION.
L. INSULATE GAS PIPING EXPOSED TO FREEZING TEMPERATURES.
M. DO NOT UNDERCUT PIPING. PROVIDE PROPER SUPPORTS AND ANCHORS.
N. PROVIDE PROPER SUPPORTS AND ANCHORS.
O. PROVIDE PROPER SUPPORTS AND ANCHORS.
P. PROVIDE PROPER SUPPORTS AND ANCHORS.
Q. PROVIDE PROPER SUPPORTS AND ANCHORS.
R. PROVIDE PROPER SUPPORTS AND ANCHORS.
S. PROVIDE PROPER SUPPORTS AND ANCHORS.
T. PROVIDE PROPER SUPPORTS AND ANCHORS.
U. PROVIDE PROPER SUPPORTS AND ANCHORS.
V. PROVIDE PROPER SUPPORTS AND ANCHORS.
W. PROVIDE PROPER SUPPORTS AND ANCHORS.
X. PROVIDE PROPER SUPPORTS AND ANCHORS.
Y. PROVIDE PROPER SUPPORTS AND ANCHORS.
Z. PROVIDE PROPER SUPPORTS AND ANCHORS.</div> <div>16. GAS SERVICE:
A. GENERAL: ARRANGE WITH UTILITY COMPANY TO PROVIDE GAS SERVICE TO INDICATED LOCATION WITH SHUTOFF AT TERMINUS. CONSULT WITH UTILITY AS TO EXTENT OF ITS WORK, COSTS, FEES, AND PERMITS INVOLVED. PAY SUCH COSTS AND FEES; OBTAIN PERMITS FROM UTILITY COMPANY.
B. EXTEND SERVICE PIPING FROM UTILITY'S TERMINUS TO INSIDE BUILDING WALL, UNDER UTILITY'S DIRECTION.
C. PROVIDE SHUTOFF OUTSIDE BUILDING WHERE INDICATED, IN ADJUSTABLE GAS SERVICE VALVE BOX, WITH COVER SET FLUSH TO FINISHED GRADE.</div> <div>17. INSTALLATION OF PIPING SPECIALTIES:
A. GENERAL: PROVIDE PIPING SPECIALTIES IN ACCORDANCE WITH DIVISION 15 BASIC MECHANICAL MATERIALS AND METHODS SECTION "PIPING SPECIALTIES".</div> <div>18. INSTALLATION OF SUPPORTS AND ANCHORS:
A. GENERAL: PROVIDE SUPPORTS AND ANCHORS IN ACCORDANCE WITH DIVISION 15 BASIC MECHANICAL MATERIALS AND METHODS SECTION "SUPPORTS AND ANCHORS", IN ACCORDANCE WITH THE FOLLOWING LISTING:
1. ADJUSTABLE SWIVEL PIPE RINGS FOR HORIZONTAL PIPING HANGERS AND SUPPORTS.
2. TIE RODS AND CLAMPS FOR VERTICAL PIPING SUPPORTS.
3. CONCRETE INSERTS, C-CLAMPS, AND STEEL BRACKETS FOR BUILDING ATTACHMENTS.
4. SIDE BEND CLAMPS.</div> <div>19. FIELD QUALITY CONTROL:
A. GENERAL: INSPECT SOIL AND WASTE SYSTEMS IN ACCORDANCE WITH REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.</div> <div>20. ADJUSTING AND CLEANING:
A. GENERAL: EXAMINE AREAS AND CONDITIONS UNDER WHICH PACKAGED HEATING AND COOLING UNITS ARE TO BE INSTALLED, DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN MANNER ACCEPTABLE TO INSTALLER.</div> <div>21. PACKAGED HEATING AND COOLING UNITS:
A. GENERAL: PROVIDE FACTORY-ASSEMBLED AND TESTED PACKAGED HEATING AND COOLING UNITS AS INDICATED, CONSISTING OF CASING, COMPRESSOR, EVAPORATOR, FANS, FILTERS, AND UNIT CONTROLS. UNITS SHALL BE SPECIFICALLY DESIGNED FOR OUTDOOR INSTALLATION ON A CONCRETE PAD AND BE COMPLETELY FACTORY ASSEMBLED AND TESTED, PIPED, INTERLOCKED, AND SHUT DOWN FOR PROTECTION FROM WEATHER AND VIBRATION. UNITS SHALL BE FACTORY FINISHED, TESTED, AND BAKED EXTERIOR FINISH. REFER TO DETAILS ON THE DRAWINGS FOR DUCTWORK CONNECTIONS. PROVIDE REMOVABLE PANELS AND/OR ACCESS DOORS FOR INSPECTION AND ACCESS. INTERIOR FINISH SHALL BE FINISHED WITH THICK MINERAL WOOL INSULATION, AND COMPRESSOR COMPARTMENT WITH ACOUSTICAL INSULATION. PROVIDE KNOCKOUTS FOR ELECTRICAL AND PIPING CONNECTIONS.
B. REFRIGERATION CIRCUIT: PROVIDE REFRIGERANT THERMAL EXPANSION VALVE FOR REFRIGERANT CONTROL. SEE THE SECTION OF OPERATION ON THE PLANS.
C. COMPRESSORS: PROVIDE CONDENSER COILS, 1/2" THERMAL EXPANSION VALVE, OR SERVICABLE HERMETIC COMPRESSORS, 1750 RPM, PROVIDE CRANKSHAFTS, 1/2" EVAPORATOR COIL, CONSTRUCT OF COPPER TUBING AND ALUMINUM FINS, PRESSURE AND TEMPERATURE CONTROLS, AND UNIT CONTROLS.
D. FANS: PROVIDE DOUBLE INLET, FORWARD CURVED, CENTRIFUGAL FANS WITH ADJUSTABLE BELT DRIVE, PROVIDE PERMANENTLY LUBRICATED FAN AND MOTOR BEARINGS, AND THERMAL OVERLOAD PROTECTION.
E. FILTERS: PROVIDE 1" THICK THROWAWAY FILTERS DURING CONSTRUCTION, AND CHANGE TO FULL LENGTH FILTERS AT STORE TURNS.
F. AIR-COOLED CONDENSERS: PROVIDE CONDENSER COIL, CONSTRUCTED OF COPPER TUBES AND ALUMINUM FINS, FACTORY LEAK-TEST AT 1.5 TIMES WORKING PRESSURE, DEHYDRATE AND PROVIDE FULL CHARGE OF REFRIGERANT. PROVIDE SUBCOOLER AND ACCUMULATOR.
G. CONDENSER COILS: PROVIDE REMOVABLE PANELS AND/OR ACCESS DOORS FOR INSPECTION AND ACCESS. INTERIOR FINISH SHALL BE FINISHED WITH THICK MINERAL WOOL INSULATION, AND COMPRESSOR COMPARTMENT WITH ACOUSTICAL INSULATION. PROVIDE KNOCKOUTS FOR ELECTRICAL AND PIPING CONNECTIONS.
H. REFRIGERATION CIRCUIT: PROVIDE REFRIGERANT THERMAL EXPANSION VALVE FOR REFRIGERANT CONTROL. SEE THE SECTION OF OPERATION ON THE PLANS.
I. COMPRESSORS: PROVIDE CONDENSER COILS, 1/2" THERMAL EXPANSION VALVE, OR SERVICABLE HERMETIC COMPRESSORS, 1750 RPM, PROVIDE CRANKSHAFTS, 1/2" EVAPORATOR COIL, CONSTRUCT OF COPPER TUBING AND ALUMINUM FINS, PRESSURE AND TEMPERATURE CONTROLS, AND UNIT CONTROLS.
J. FANS: PROVIDE DOUBLE INLET, FORWARD CURVED, CENTRIFUGAL FANS WITH ADJUSTABLE BELT DRIVE, PROVIDE PERMANENTLY LUBRICATED FAN AND MOTOR BEARINGS, AND THERMAL OVERLOAD PROTECTION.
K. FILTERS: PROVIDE 1" THICK THROWAWAY FILTERS DURING CONSTRUCTION, AND CHANGE TO FULL LENGTH FILTERS AT STORE TURNS.
L. AIR-COOLED CONDENSERS: PROVIDE CONDENSER COIL, CONSTRUCTED OF COPPER TUBES AND ALUMINUM FINS, FACTORY LEAK-TEST AT 1.5 TIMES WORKING PRESSURE, DEHYDRATE AND PROVIDE FULL CHARGE OF REFRIGERANT. PROVIDE SUBCOOLER AND ACCUMULATOR.
M. CONDENSER COILS: PROVIDE REMOVABLE PANELS AND/OR ACCESS DOORS FOR INSPECTION AND ACCESS. INTERIOR FINISH SHALL BE FINISHED WITH THICK MINERAL WOOL INSULATION, AND COMPRESSOR COMPARTMENT WITH ACOUSTICAL INSULATION. PROVIDE KNOCKOUTS FOR ELECTRICAL AND PIPING CONNECTIONS.
N. REFRIGERATION CIRCUIT: PROVIDE REFRIGERANT THERMAL EXPANSION VALVE FOR REFRIGERANT CONTROL. SEE THE SECTION OF OPERATION ON THE PLANS.
O. COMPRESSORS: PROVIDE CONDENSER COILS, 1/2" THERMAL EXPANSION VALVE, OR SERVICABLE HERMETIC COMPRESSORS, 1750 RPM, PROVIDE CRANKSHAFTS, 1/2" EVAPORATOR COIL, CONSTRUCT OF COPPER TUBING AND ALUMINUM FINS, PRESSURE AND TEMPERATURE CONTROLS, AND UNIT CONTROLS.
P. FANS: PROVIDE DOUBLE INLET, FORWARD CURVED, CENTRIFUGAL FANS WITH ADJUSTABLE BELT DRIVE, PROVIDE PERMANENTLY LUBRICATED FAN AND MOTOR BEARINGS, AND THERMAL OVERLOAD PROTECTION.
Q. FILTERS: PROVIDE 1" THICK THROWAWAY FILTERS DURING CONSTRUCTION, AND CHANGE TO FULL LENGTH FILTERS AT STORE TURNS.
R. AIR-COOLED CONDENSERS: PROVIDE CONDENSER COIL, CONSTRUCTED OF COPPER TUBES AND ALUMINUM FINS, FACTORY LEAK-TEST AT 1.5 TIMES WORKING PRESSURE, DEHYDRATE AND PROVIDE FULL CHARGE OF REFRIGERANT. PROVIDE SUBCOOLER AND ACCUMULATOR.
S. CONDENSER COILS: PROVIDE REMOVABLE PANELS AND/OR ACCESS DOORS FOR INSPECTION AND ACCESS. INTERIOR FINISH SHALL BE FINISHED WITH THICK MINERAL WOOL INSULATION, AND COMPRESSOR COMPARTMENT WITH ACOUSTICAL INSULATION. PROVIDE KNOCKOUTS FOR ELECTRICAL AND PIPING CONNECTIONS.
T. REFRIGERATION CIRCUIT: PROVIDE REFRIGERANT THERMAL EXPANSION VALVE FOR REFRIGERANT CONTROL. SEE THE SECTION OF OPERATION ON THE PLANS.
U. COMPRESSORS: PROVIDE CONDENSER COILS, 1/2" THERMAL EXPANSION VALVE, OR SERVICABLE HERMETIC COMPRESSORS, 1750 RPM, PROVIDE CRANKSHAFTS, 1/2" EVAPORATOR COIL, CONSTRUCT OF COPPER TUBING AND ALUMINUM FINS, PRESSURE AND TEMPERATURE CONTROLS, AND UNIT CONTROLS.
V. FANS: PROVIDE DOUBLE INLET, FORWARD CURVED, CENTRIFUGAL FANS WITH ADJUSTABLE BELT DRIVE, PROVIDE PERMANENTLY LUBRICATED FAN AND MOTOR BEARINGS, AND THERMAL OVERLOAD PROTECTION.
W. FILTERS: PROVIDE 1" THICK THROWAWAY FILTERS DURING CONSTRUCTION, AND CHANGE TO FULL LENGTH FILTERS AT STORE TURNS.
X. AIR-COOLED CONDENSERS: PROVIDE CONDENSER COIL, CONSTRUCTED OF COPPER TUBES AND ALUMINUM FINS, FACTORY LEAK-TEST AT 1.5 TIMES WORKING PRESSURE, DEHYDRATE AND PROVIDE FULL CHARGE OF REFRIGERANT. PROVIDE SUBCOOLER AND ACCUMULATOR.
Y. CONDENSER COILS: PROVIDE REMOVABLE PANELS AND/OR ACCESS DOORS FOR INSPECTION AND ACCESS. INTERIOR FINISH SHALL BE FINISHED WITH THICK MINERAL WOOL INSULATION, AND COMPRESSOR COMPARTMENT WITH ACOUSTICAL INSULATION. PROVIDE KNOCKOUTS FOR ELECTRICAL AND PIPING CONNECTIONS.
Z. REFRIGERATION CIRCUIT: PROVIDE REFRIGERANT THERMAL EXPANSION VALVE FOR REFRIGERANT CONTROL. SEE THE SECTION OF OPERATION ON THE PLANS.</div> <div>22. FIELD QUALITY CONTROL:
A. GENERAL: START-UP PACKAGED HEATING AND COOLING UNITS, IN ACCORDANCE WITH MANUFACTURERS START-UP INSTRUCTIONS, TEST CONTROLS AND DEMONSTRATE PERFORMANCE WITH REQUIRED LOADS. PROVIDE FOLLOWING INFORMATION TO OWNER: 1. DISCHARGE, FAN MOTOR SHALL BE TOTALLY ENCLOSED AND PERMANENTLY LUBRICATED. 2. DISCHARGE, FAN MOTOR SHALL BE TOTALLY ENCLOSED AND PERMANENTLY LUBRICATED. 3. DISCHARGE, FAN MOTOR SHALL BE TOTALLY ENCLOSED AND PERMANENTLY LUBRICATED. 4. DISCHARGE, FAN MOTOR SHALL BE TOTALLY ENCLOSED AND PERMANENTLY LUBRICATED. 5. DISCHARGE, FAN MOTOR SHALL BE TOTALLY ENCLOSED AND PERMANENTLY LUBRICATED. 6. DISCHARGE, FAN MOTOR SHALL BE TOTALLY ENCLOSED AND PERMANENTLY LUBRICATED. 7. DISCHARGE, FAN MOTOR SHALL BE TOTALLY ENCLOSED AND PERMANENTLY LUBRICATED. 8. DISCHARGE, FAN MOTOR SHALL BE TOTALLY ENCLOSED AND PERMANENTLY LUBRICATED. 9. DISCHARGE, FAN MOTOR SHALL BE TOTALLY ENCLOSED AND PERMANENTLY LUBRICATED. 10. DISCHARGE, FAN MOTOR SHALL BE TOTALLY ENCLOSED AND PERMANENTLY LUBRICATED.</div> <div>23. INSPECTION:
A. GENERAL: EXAMINE AREAS AND CONDITIONS UNDER WHICH PACKAGED HEATING AND COOLING UNITS ARE TO BE INSTALLED, DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN MANNER ACCEPTABLE TO INSTALLER.</div> <div>24. INSTALLATION OF PACKAGED HEATING AND COOLING UNITS:
A. GENERAL: INSTALL PACKAGED HEATING AND COOLING UNITS IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS, INSTALL UNITS PLUMB AND LEVEL, WITH MINIMUM CLEARANCES AS INDICATED, AND MAINTAIN MANUFACTURERS RECOMMENDED CLEARANCES.
B. ELECTRICAL WIRING: INSTALL ELECTRICAL DEVICES FURNISHED BY MANUFACTURER BUT NOT SPECIFIED ON THE PLANS, IN ACCORDANCE WITH THE LATEST EDITION OF THE SMACNA "HVAC DUCT CONSTRUCTION STANDARDS, METAL AND FLEXIBLE" HANGERS AND SUPPORTS SECTION.
C. VERIFY THAT ELECTRICAL WIRING INSTALLATION IS IN ACCORDANCE WITH MANUFACTURERS SUBMITTALS, INCLUDING SPECIFICATIONS, CAPACITY RATINGS, DIMENSIONS, WEIGHTS, MATERIALS, ACCESSORIES FURNISHED, AND INSTALLATION INSTRUCTIONS.
D. DO NOT PROCEED WITH EQUIPMENT START-UP UNTIL WIRING INSTALLATION IS ACCEPTABLE TO EQUIPMENT INSTALLER.
E. DO NOT PROCEED WITH EQUIPMENT START-UP UNTIL WIRING INSTALLATION IS ACCEPTABLE TO EQUIPMENT INSTALLER.
F. DO NOT PROCEED WITH EQUIPMENT START-UP UNTIL WIRING INSTALLATION IS ACCEPTABLE TO EQUIPMENT INSTALLER.
G. DO NOT PROCEED WITH EQUIPMENT START-UP UNTIL WIRING INSTALLATION IS ACCEPTABLE TO EQUIPMENT INSTALLER.
H. DO NOT PROCEED WITH EQUIPMENT START-UP UNTIL WIRING INSTALLATION IS ACCEPTABLE TO EQUIPMENT INSTALLER.
I. DO NOT PROCEED WITH EQUIPMENT START-UP UNTIL WIRING INSTALLATION IS ACCEPTABLE TO EQUIPMENT INSTALLER.
J. DO NOT PROCEED WITH EQUIPMENT START-UP UNTIL WIRING INSTALLATION IS ACCEPTABLE TO EQUIPMENT INSTALLER.
K. DO NOT PROCEED WITH EQUIPMENT START-UP UNTIL WIRING INSTALLATION IS ACCEPTABLE TO EQUIPMENT INSTALLER.
L. DO NOT PROCEED WITH EQUIPMENT START-UP UNTIL WIRING INSTALLATION IS ACCEPTABLE TO EQUIPMENT INSTALLER.
M. DO NOT PROCEED WITH EQUIPMENT START-UP UNTIL WIRING INSTALLATION IS ACCEPTABLE TO EQUIPMENT INSTALLER.
N. DO NOT PROCEED WITH EQUIPMENT START-UP UNTIL WIRING INSTALLATION IS ACCEPTABLE TO EQUIPMENT INSTALLER.
O. DO NOT PROCEED WITH EQUIPMENT START-UP UNTIL WIRING INSTALLATION IS ACCEPTABLE TO EQUIPMENT INSTALLER.
P. DO NOT PROCEED WITH EQUIPMENT START-UP UNTIL WIRING INSTALLATION IS ACCEPTABLE TO EQUIPMENT INSTALLER.
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V. DO NOT PROCEED WITH EQUIPMENT START-UP UNTIL WIRING INSTALLATION IS ACCEPTABLE TO EQUIPMENT INSTALLER.
W. DO NOT PROCEED WITH EQUIPMENT START-UP UNTIL WIRING INSTALLATION IS ACCEPTABLE TO EQUIPMENT INSTALLER.
X. DO NOT PROCEED WITH EQUIPMENT START-UP UNTIL WIRING INSTALLATION IS ACCEPTABLE TO EQUIPMENT INSTALLER.
Y. DO NOT PROCEED WITH EQUIPMENT START-UP UNTIL WIRING INSTALLATION IS ACCEPTABLE TO EQUIPMENT INSTALLER.
Z. DO NOT PROCEED WITH EQUIPMENT START-UP UNTIL WIRING INSTALLATION IS ACCEPTABLE TO EQUIPMENT INSTALLER.</div> <div>25. FIELD QUALITY CONTROL:
A. GENERAL: START-UP PACKAGED HEATING AND COOLING UNITS, IN ACCORDANCE WITH MANUFACTURERS START-UP INSTRUCTIONS, TEST CONTROLS AND DEMONSTRATE PERFORMANCE WITH REQUIRED LOADS. PROVIDE FOLLOWING INFORMATION TO OWNER: 1. DISCHARGE, FAN MOTOR SHALL BE TOTALLY ENCLOSED AND PERMANENTLY LUBRICATED. 2. DISCHARGE, FAN MOTOR SHALL BE TOTALLY ENCLOSED AND PERMANENTLY LUBRICATED. 3. DISCHARGE, FAN MOTOR SHALL BE TOTALLY ENCLOSED AND PERMANENTLY LUBRICATED. 4. DISCHARGE, FAN MOTOR SHALL BE TOTALLY ENCLOSED AND PERMANENTLY LUBRICATED. 5. DISCHARGE, FAN MOTOR SHALL BE TOTALLY ENCLOSED AND PERMANENTLY LUBRICATED. 6. DISCHARGE, FAN MOTOR SHALL BE TOTALLY ENCLOSED AND PERMANENTLY LUBRICATED. 7. DISCHARGE, FAN MOTOR SHALL BE TOTALLY ENCLOSED AND PERMANENTLY LUBRICATED. 8. DISCHARGE, FAN MOTOR SHALL BE TOTALLY ENCLOSED AND PERMANENTLY LUBRICATED. 9. DISCHARGE, FAN MOTOR SHALL BE TOTALLY ENCLOSED AND PERMANENTLY LUBRICATED. 10. DISCHARGE, FAN MOTOR SHALL BE TOTALLY ENCLOSED AND PERMANENTLY LUBRICATED.</div> <div>26. INSPECTION:
A. GENERAL: EXAMINE AREAS AND CONDITIONS UNDER WHICH PACKAGED HEATING AND COOLING UNITS ARE TO BE INSTALLED, DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN MANNER ACCEPTABLE TO INSTALLER.</div> <div>27. PACKAGED HEATING AND COOLING UNITS:
A. GENERAL: PROVIDE FACTORY-ASSEMBLED AND TESTED PACKAGED HEATING AND COOLING UNITS AS INDICATED, CONSISTING OF CASING, COMPRESSOR, EVAPORATOR, FANS, FILTERS, AND UNIT CONTROLS. UNITS SHALL BE SPECIFICALLY DESIGNED FOR OUTDOOR INSTALLATION ON A CONCRETE PAD AND BE COMPLETELY FACTORY ASSEMBLED AND TESTED, PIPED, INTERLOCKED, AND SHUT DOWN FOR PROTECTION FROM WEATHER AND VIBRATION. UNITS SHALL BE FACTORY FINISHED, TESTED, AND BAKED EXTERIOR FINISH. REFER TO DETAILS ON THE DRAWINGS FOR DUCTWORK CONNECTIONS. PROVIDE REMOVABLE PANELS AND/OR ACCESS DOORS FOR INSPECTION AND ACCESS. INTERIOR FINISH SHALL BE FINISHED WITH THICK MINERAL WOOL INSULATION, AND COMPRESSOR COMPARTMENT WITH ACOUSTICAL INSULATION. PROVIDE KNOCKOUTS FOR ELECTRICAL AND PIPING CONNECTIONS.
B. REFRIGERATION CIRCUIT: PROVIDE REFRIGERANT THERMAL EXPANSION VALVE FOR REFRIGERANT CONTROL. SEE THE SECTION OF OPERATION ON THE PLANS.
C. COMPRESSORS: PROVIDE CONDENSER COILS, 1/2" THERMAL EXPANSION VALVE, OR SERVICABLE HERMETIC COMPRESSORS, 1750 RPM, PROVIDE CRANKSHAFTS, 1/2" EVAPORATOR COIL, CONSTRUCT OF COPPER TUBING AND ALUMINUM FINS, PRESSURE AND TEMPERATURE CONTROLS, AND UNIT CONTROLS.
D. FANS: PROVIDE DOUBLE INLET, FORWARD CURVED, CENTRIFUGAL FANS WITH ADJUSTABLE BELT DRIVE, PROVIDE PERMANENTLY LUBRICATED FAN AND MOTOR BEARINGS, AND THERMAL OVERLOAD PROTECTION.
E. FILTERS: PROVIDE 1" THICK</div> |
|--|---|---|

HAT CREEK
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| DRAWING LIST | |
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| Sheet Number | Sheet Name |
| S-000 | COVER SHEET |
| S-100 | GENERAL NOTES |
| S-101 | SPECIAL INSPECTIONS |
| S-200 | FOUNDATION PLAN |
| S-210 | LOW FRAMING PLAN |
| S-211 | HIGH FRAMING PLAN |
| S-300 | TYPICAL FOUNDATION DETAILS |
| S-301 | TYPICAL FOUNDATION DETAILS |
| S-500 | TYPICAL FRAMING DETAILS |
| S-501 | TYPICAL FRAMING DETAILS |
| S-502 | ENLARGED FRAMING DETAILS |
| S-503 | ENLARGED FRAMING DETAILS |
| X-001 | ISOMETRIC VIEW |
| X-002 | ISOMETRIC VIEW |



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| JOB NO.: | xxxx.xx.xxx |

SHEET
S-000

SPECIAL INSPECTIONS

1. Special Inspections shall be performed in accordance with Chapter 17 of the 2015 International Building Code (IBC) by a Special Inspector hired by the Owner to perform the Special Inspections listed below. The Special Inspector shall be qualified by an approved agency according to the City's building official to perform the special inspections for which they will be undertaking. The Contractor shall coordinate with and notify the Special Inspector of all tests. The Special Inspector shall be responsible to verify that the items detailed in the Construction Documents were built accordingly and shall prepare, sign, and furnish inspection reports to the building official and the Architect for all time spent at the site. The Inspector shall bring discrepancies to the immediate attention of the General Contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the building official and to the Architect prior to the completion of that phase of the work. These special inspections are in addition to the other inspections listed in these Structural Notes or Project Specifications.
2. Where structural load-bearing members and assemblies are shop fabricated, the Special Inspector shall verify that the fabricator maintains detailed fabrication and quality control procedures that provide a basis for inspection control of the workmanship and the fabricator's ability to conform to the Construction Documents and Referenced Standards, unless the fabricator is registered and approved to perform such work without special inspection.

| VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION (IBC TABLE 1705.3) | | | | | |
|---|---|----------------------|----------|---|--------------------------------|
| SPECIAL INSPECTION REQUIRED | VERIFICATION AND INSPECTION | INSPECTION FREQUENCY | | REFERENCED STANDARD | IBC REFERENCE |
| | | CONTINUOUS | PERIODIC | | |
| YES | 1. Inspection of reinforcing steel, including prestressing tendons, and placement. | -- | X | ACI 318 Ch. 20, 25.2, 25.3, 26.5.1-26.5.3 | 1908.4 |
| | 2. Reinforcing bar welding: | | | | |
| YES | a. Verify weldability of reinforcing bars other than ASTM A706 | -- | X | AWS D1.4
ACI 318:
26.5.4 | -- |
| YES | b. Inspect single-pass fillet welds, maximum 5/16" | -- | X | | |
| YES | c. Inspect all other welds. | X | -- | | |
| YES | 3. Inspection of anchors cast in concrete. | -- | X | ACI 318: 17.8.2 | -- |
| | 4. Inspection of post-installed anchors in hardened concrete. | | | | |
| YES | a. Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads. | X | -- | ACI 318: 17.8.2.4 | -- |
| YES | b. Mechanical anchors and adhesive anchors not defined in 4.a. | -- | X | ACI 318: 17.8.2 | |
| YES | Special Inspector must be certified by ACI/CRSI "Adhesive Anchor Installer. A report must be submitted to the licensed design professional and building official documenting, stating how each anchor was installed, including the Manufacturer's Printed Installation Instructions per ACI 318 | -- | -- | ACI 318: 17.8.2.2
17.8.2.4 | |
| YES | 5. Verify use of required design mix. | -- | X | ACI 318: Ch. 19, 26.4.3, 26.4.4 | 1904.1, 1904.2, 1908.2, 1908.3 |
| YES | 6. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete. | X | -- | ASTM C172
ASTM C31
ACI 318: 26.4.5, 26.12 | 1908.10 |
| YES | 7. Inspect concrete and shotcrete placement for proper application techniques. | X | -- | ACI 318: 26.4.5 | 1908.6, 1908.7, 1908.8 |
| YES | 8. Verify maintenance of specified curing temperature and techniques. | -- | X | ACI 318: 26.4.7-26.4.9 | 1908.9 |
| | 9. Inspection of prestressed concrete: | | | | |
| NO | a. Application of prestressing forces | X | -- | ACI 318: 26.9.2.1 | -- |
| NO | b. Grouting of bonded prestressing tendons | X | -- | ACI 318: 26.9.2.3 | |
| NO | 10. Inspect erection of precast concrete members. | -- | X | ACI 318: 26.8 | -- |
| NO | 11. Verify in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs. | -- | X | ACI 318: 26.10.2 | -- |
| YES | 12. Inspect formwork for shape, location and dimensions of the concrete member being formed. | -- | X | ACI 318: 26.10.1(b) | -- |

| VERIFICATION AND INSPECTION OF SOILS (IBC TABLE 1705.6) | | | |
|---|--|----------------------|----------|
| SPECIAL INSPECTION REQUIRED | VERIFICATION, INSPECTION AND TESTING | INSPECTION FREQUENCY | |
| | | CONTINUOUS | PERIODIC |
| NO | 1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity. | -- | X |
| YES | 2. Verify excavations are extended to proper depth and have reached proper material. | -- | X |
| YES | 3. Perform classification and testing of compacted fill materials. | -- | X |
| YES | 4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill. | X | -- |
| YES | 5. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly. | -- | X |

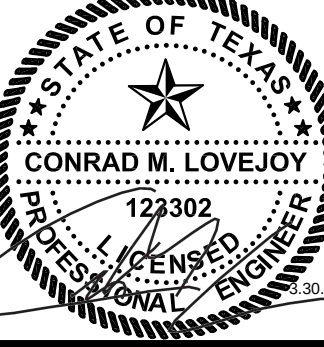
| VERIFICATION AND INSPECTION TASKS FOR WELDING OF STRUCTURAL STEEL ¹ (AISC 360-10 Table N5.4) | | | | | |
|---|--|----------------------|----------|------------------------------------|---------------|
| SPECIAL INSPECTION REQUIRED | VERIFICATION AND INSPECTION | INSPECTION FREQUENCY | | REFERENCED STANDARD | IBC REFERENCE |
| | | CONTINUOUS | PERIODIC | | |
| | 1. Inspection tasks prior to welding: | | | | |
| YES | a. Welding procedure specifications (WPSs) available | X | -- | AISC 360-10
N5.4-1:
AWS D1.1 | 1705.2.1 |
| YES | b. Manufacturer certifications for welding consumables available | X | -- | | |
| YES | c. Material identification (type/grade) ² | -- | X | | |
| YES | d. Welder identification system ² | -- | X | | |
| YES | e. Fit-up of groove welds (including joint geometry) ²
1) Joint preparation
2) Dimensions (alignment, root opening, root face, bevel)
3) Cleanliness (condition of steel surfaces)
4) Tacking (tack weld quality and location)
5) Backing type and fit (if applicable) | -- | X | | |
| YES | f. Configuration and finish of access holes. ² | -- | X | | |
| YES | g. Fit-up of fillet welds ²
1) Dimensions (alignment, gaps at root)
2) Cleanliness (condition of steel surfaces)
3) Tacking (tack weld quality and location) | -- | X | AISC 360-10
N5.4-2:
AWS D1.1 | 1705.2.1 |
| YES | h. Check welding equipment | -- | X | | |
| | 2. Inspection tasks during welding: | | | | |
| YES | a. Use of qualified welders | -- | X | | |
| YES | b. Control and handling of welding consumables ²
1) Packaging
2) Exposure control | -- | X | | |
| YES | c. No welding over cracked tack welds ² | -- | X | | |
| YES | d. Environmental conditions ²
1) Wind speed within limits
2) Precipitation and temperature | -- | X | AISC 360-10
N5.4-2:
AWS D1.1 | 1705.2.1 |
| YES | e. WPS followed ²
1) Settings on weld equipment
2) Travel speed
3) Selected welding materials
4) Shielding gas type/flow rate
5) Preheat applied
6) Interpass temperature maintained (min./max.)
7) Proper position (F, V, H, OH) | -- | X | | |
| YES | f. Welding techniques ²
1) Interpass and final cleaning
2) Each pass within profile limitations
3) Each pass meets quality requirements | -- | X | | |
| | 3. Inspection tasks after welding: | | | | |
| YES | a. Welds cleaned | -- | X | AISC 360-10
N5.4-2:
AWS D1.1 | 1705.2.1 |
| YES | b. Size, length and location of welds | X | -- | | |
| YES | c. Welds meet visual acceptance criteria
1) Crack prohibition
2) Weld/base-metal fusion
3) Crater cross section
4) Weld profiles
5) Weld size
6) Undercut
7) Porosity | X | -- | | |
| YES | d. Arc strikes | X | -- | | |
| YES | e. k-area ³ | X | -- | | |
| YES | f. Backing removed and weld tabs removed (if required) | X | -- | | |
| YES | g. Repair activities | X | -- | | |
| YES | h. Document acceptance or rejection of welded joint or member | X | -- | | |

1. Inspection tasks noted in this table are the responsibility of the Special Inspector or Quality Assurance Inspector (QAI). The fabricator and erector are responsible for all inspection tasks indicated in AISC 360-10 Section N5 and assigned to the Quality Control Inspector (QCI).
2. Inspection tasks may be coordinated with the fabricator or erector's Quality Control Inspector (QCI) where indicated with this footnote. All other tasks shall be performed by the Special Inspector.
3. When welding of doubler plates, continuity plates or stiffeners has been performed in the k-area, visually inspect the web k-area for cracks within 3 in. (75 mm) of the weld.

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SPECIAL INSPECTIONS

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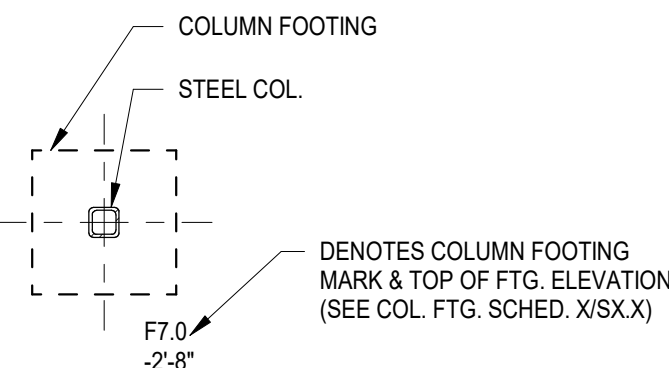
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Page 119 of 135

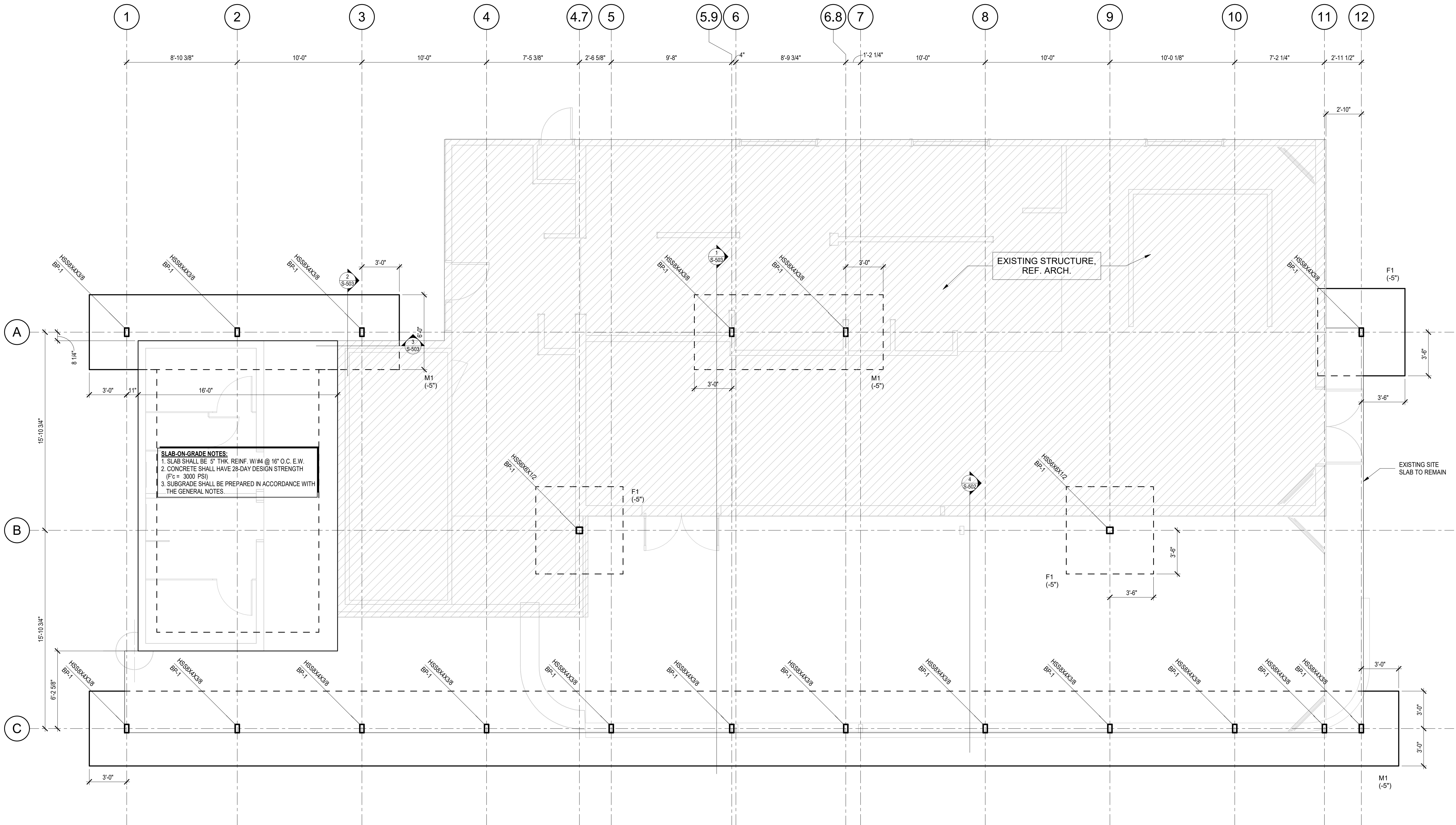
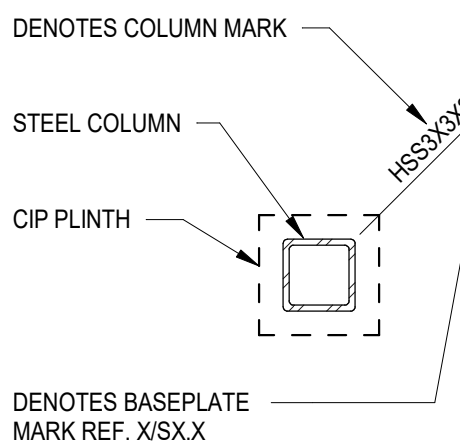
FOUNDATION NOTES:

1. FINISH FLOOR ELEVATION = 0'-0", UNLESS NOTED OTHERWISE.
2. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF FLOOR RECESSES, DROPS AND SLOPES NOT DIMENSIONED ON PLAN. REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR LOCATION AND DIMENSIONS OF FLOOR PENETRATIONS NOT DIMENSIONED ON PLAN. CONTRACTOR TO COORDINATE.
3. CENTERLINES OF FOUNDATIONS NOT SPECIFICALLY LOCATED ON PLAN BY NOTE OR DIMENSION SHALL BE LOCATED AS FOLLOWS:
 - A. SUPPORTING FREESTANDING COLUMNS: CENTERLINES OF COLUMN.
 - B. SUPPORTING GRADEBEAMS AND WALLS: CENTERLINE OF GRADEBEAM OR WALL IN ONE DIRECTION, GRID OR AS NOTED IN OTHER DIRECTION. AT CORNER CONDITIONS: CENTERLINES OF GRADEBEAMS OR WALLS.
 - C. COLUMNS EMBEDDED IN GRADEBEAMS OR WALLS (PILASTERS): CENTERLINES OF THE COLUMN.

ISOLATED FOOTING NOTES:



STEEL COLUMN NOTES:



SLAB-ON-GRADE NOTES:
1. SLAB SHALL BE 5" THK. REINF. W/ #4 @ 16" O.C. E.W.
2. CONCRETE SHALL HAVE 28-DAY DESIGN STRENGTH (F'c = 3000 PSI)
3. SUBGRADE SHALL BE PREPARED IN ACCORDANCE WITH THE GENERAL NOTES.

1 FOUNDATION PLAN
SCALE: 1/4" = 1'-0"

FOUNDATION PLAN

DATE: _____ REMARKS: _____

PA/PM: _____ Approver
DRAWN BY: _____ Author
JOB NO.: _____ xxxxxx

SHEET

S-200

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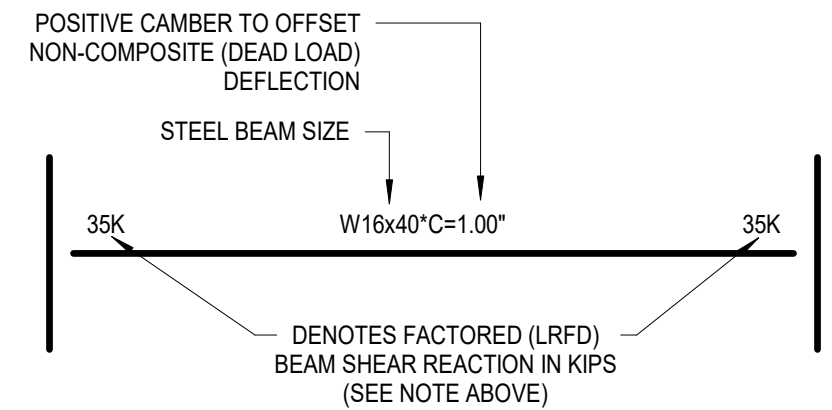
- STEEL FRAMING NOTES:
1. REF. S.X.X FOR STRUCTURAL NOTES, DESIGN DATA, SCHEDULES & LEGENDS.
 2. ALL CONTRACTORS ARE REQUIRED TO COORDINATE THEIR WORK WITH ALL DISCIPLINES TO AVOID CONFLICTS. THE MECHANICAL, ELECTRICAL, AND PLUMBING ASPECTS ARE NOT IN THE SCOPE OF THESE DRAWINGS. THEREFORE, ALL REQUIRED MATERIALS AND WORK MAY NOT BE INDICATED.
 3. ALL ELEVATIONS ARE REFERENCED FROM THE FIRST FLOOR FINISHED FLOOR ELEVATION +0'-0". REF. CIVIL DWGS.
 4. REF. ARCH. DRAWINGS FOR ALL DIMENSIONS NOT SHOWN. CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION AND IMMEDIATELY NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
 5. COORDINATE EXACT SIZE & LOCATION OF ANY MECHANICAL OPENINGS IN FLOOR SLAB, ROOF DECK, OR WALLS WITH THE M.E.P. CONTRACTOR. LOCATION & SIZE OF ALL DUCT OPENINGS, GRILLS, ETC. SHALL BE VERIFIED PRIOR TO CONSTRUCTION.
 6. ALL ELEVATIONS SHOWN ON PLAN INDICATE TOP OF STEEL BEAM UNLESS NOTED OTHERWISE.
 7. PROVIDE FRAMES AT ALL ROOF DRAINS, ROOF HATCHES & OTHER ROOF OPENINGS PER TYPICAL DETAILS ON S.X.X. COORDINATE EXACT NUMBER, LOCATIONS & DIMENSIONS WITH THE APPROPRIATE CONTRACTORS & THE ARCH. & M.E.P. DRAWINGS.
 8. WIDE-FLANGE BEAM & GIRDER NOTATION BEAM REACTIONS SHOWN IN KIPS (LRFD / FACTORED LOADS) TO BE USED FOR DESIGN OF SHEAR CONNECTION BY STEEL FABRICATOR. SIMPLE SPAN CONNECTIONS FOR BEAMS & GIRDERS LESS THAN 10 FEET IN LENGTH AND WITH NO REACTION SHOWN SHALL BE DESIGNED FOR 10 KIPS MINIMUM. SEE STEEL CONNECTION NOTES ON SHEET S.X.X FOR ADDITIONAL INFORMATION.

— R —
DENOTES 18 GA. 2.0D DOVETAIL STEEL ROOF DECK. MAX. DECK SPAN IS 11'-0" BETWEEN SUPPORTS. FASTEN DECK TO STRUC. WITH HILTI X-ENP19 PAF AT 24.5/4 PATTERN WITH #10 TEK SCREWS SIDE LAPS AT 8" O.C., TYP.

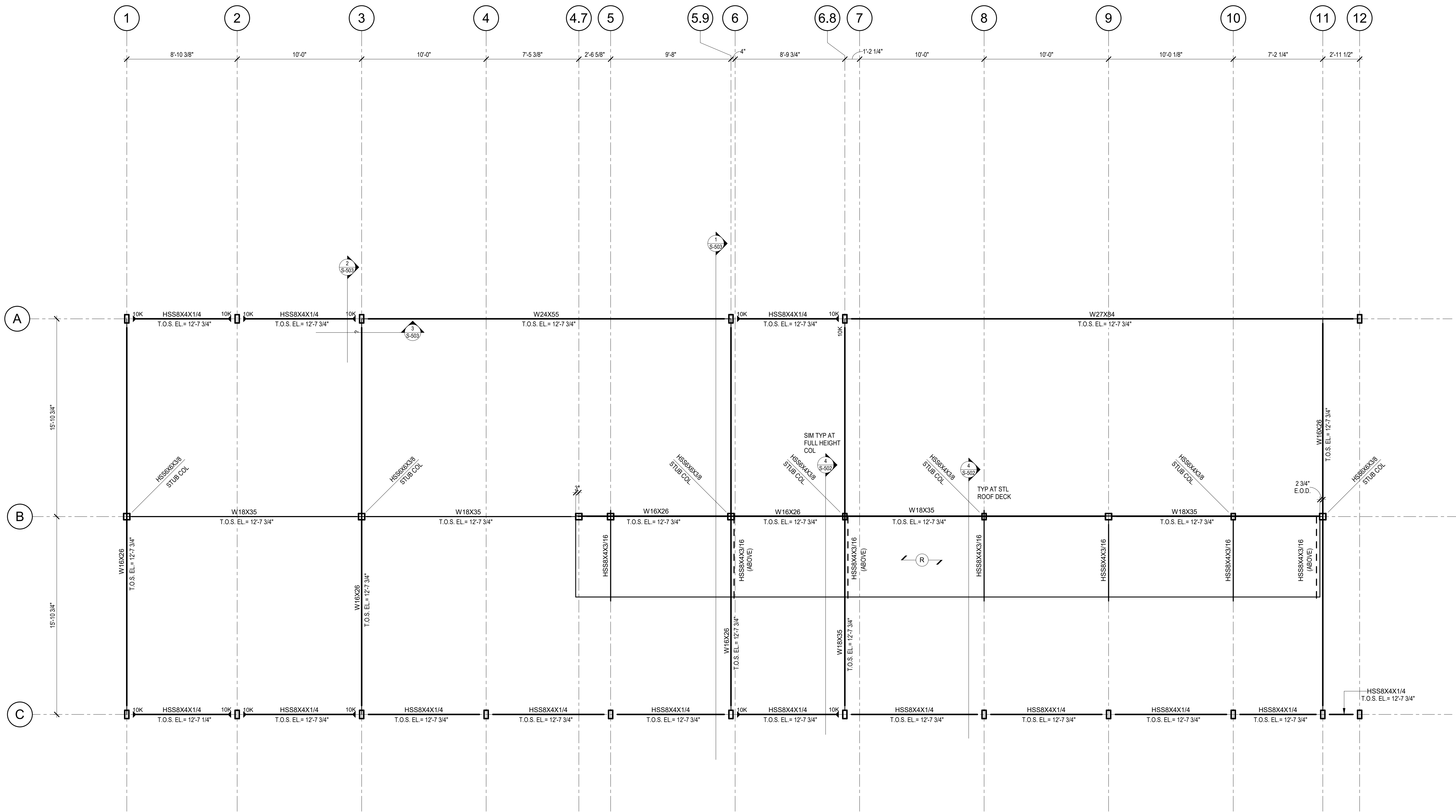
F.F.
DENOTES FIN. FLOOR

T.O.S. EL.
DENOTES TOP OF STEEL, SLAB, PIER, ETC.

—
DENOTES BEAM-TO-COLUMN MOMENT CONNECTION. REF. 15S-500 AND SPECIFIC SECTIONS & DETAILS FOR ADDL. INFO.



TYPICAL BEAM DIAGRAM



1 FRAMING PLAN
SCALE: 1/4" = 1'-0"

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CONRAD M. LOVEJOY
12300
12/30/03
12/30/03

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| LOW FRAMING PLAN | |
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A circular professional engineer seal for the State of Texas. The outer ring contains the text "STATE OF TEXAS" at the top and "PROFESSIONAL ENGINEER" at the bottom, separated by stars. In the center, there is a five-pointed star above the name "CONRAD M. LOVEJOY". Below the name is the license number "123302". A signature is written across the bottom half of the seal.

WESTLAKE EXPANSION

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WEST LAKE HILLS, TX 78746

HIGH FRAMING PLAN

REMARKS

DATE _____

PA/P

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| Approve |
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DRA

Author

JOB

XXXX.XX.

SHEET

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Page 122 of 150

1. REF. S.X. FOR STRUCTURAL NOTES, DESIGN DATA, SCHEDULES & LEGENDS.

2. ALL CONTRACTORS ARE REQUIRED TO COORDINATE THEIR WORK WITH ALL DISCIPLINES TO AVOID CONFLICTS. THE MECHANICAL, ELECTRICAL, AND PLUMBING AREAS ARE NOT IN THE SCOPE OF THESE DRAWINGS. ALL REQUIRED MATERIALS AND WORKMANSHIP SHALL BE INDICATED.

3. ALL ELEVATIONS ARE REFERENCED FROM THE FIRST FLOOR FINISHED FLOOR ELEVATION. DIMENSIONS SHALL BE INDICATED ON THE ARCH. DRAWINGS. FOR ALL DIMENSIONS NOT SHOWN TO CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ENGINEER OF ANY DISCREPANCIES.

4. COORDINATE EXISTING SIZE & LOCATION OF ANY MECHANICAL OPENINGS WITH THE FLOOR DECK, OR WALLS WITH THE M.E.P. CONTRACTOR. LOCATION & SIZE OF ALL DUCT OPENINGS, GRILLS, ETC. SHALL BE INDICATED ON THE ARCH. DRAWINGS.

5. ALL ELEVATIONS SHOWN ON PLAN INDICATE TOP OF STEEL BEAM UNLESS NOTED OTHERWISE.

6. ALL CONDUITS AT THE AREA OF DRAINS, ROOF HATCHES & OTHER ROOM OPENINGS PER TYPICAL DETAILS ON S.X. COORDINATE EXISTING ROOM, LOCATIONS & DIMENSIONS WITH THE APPROPRIATE CONTRACTORS & THE ARCHITECT.

7. WIDE-FLANGE BEAM & GIRDER NOTATION-BEAM REACTIONS SHOWN IN KIPS (LBS) (FACTORED LOADS) TO BE USED FOR DESIGN OF SHEAR AND MOMENT CONNECTIONS. GIRDER REACTIONS ARE TO BE USED FOR BEAMS & GIRDERS LESS THAN 10 FEET IN LENGTH AND WITH NO STRAIN CONNECTION SHALL BE DESIGNED FOR 10 KIPS MINIMUM. SEE SECTION CONNECTION NOTES ON SHEET S.X.6 FOR ADDITIONAL INFORMATION.

 DENOTES 18 GA. 2.0D DOVETAIL STEEL ROOF DECK. MAX. DECK SPAN IS 11'-0" BETWEEN SUPPORTS. FASTEN DECK TO STRUC. WITH HILTI X-ENP19 PAF AT 24.5/4 PATTERN WITH #10 TEK SCREWS SIDE LAPS AT 8" O.C., TYP.

F.F. DENOTES FIN. FLOOR

T.O.S. EL. DENOTES TOP OF STEEL, SLAB, PIER, ETC.

 DENOTES BEAM-TO-COLUMN MOMENT CONNECTION.
 REF. 15/S-500 AND SPECIFIC SECTIONS & DETAILS FOR
 ADD'L INFO.

POSITIVE CAMBER TO OFFSET
NON-COMPOSITE (DEAD LOAD)
DEFLECTION

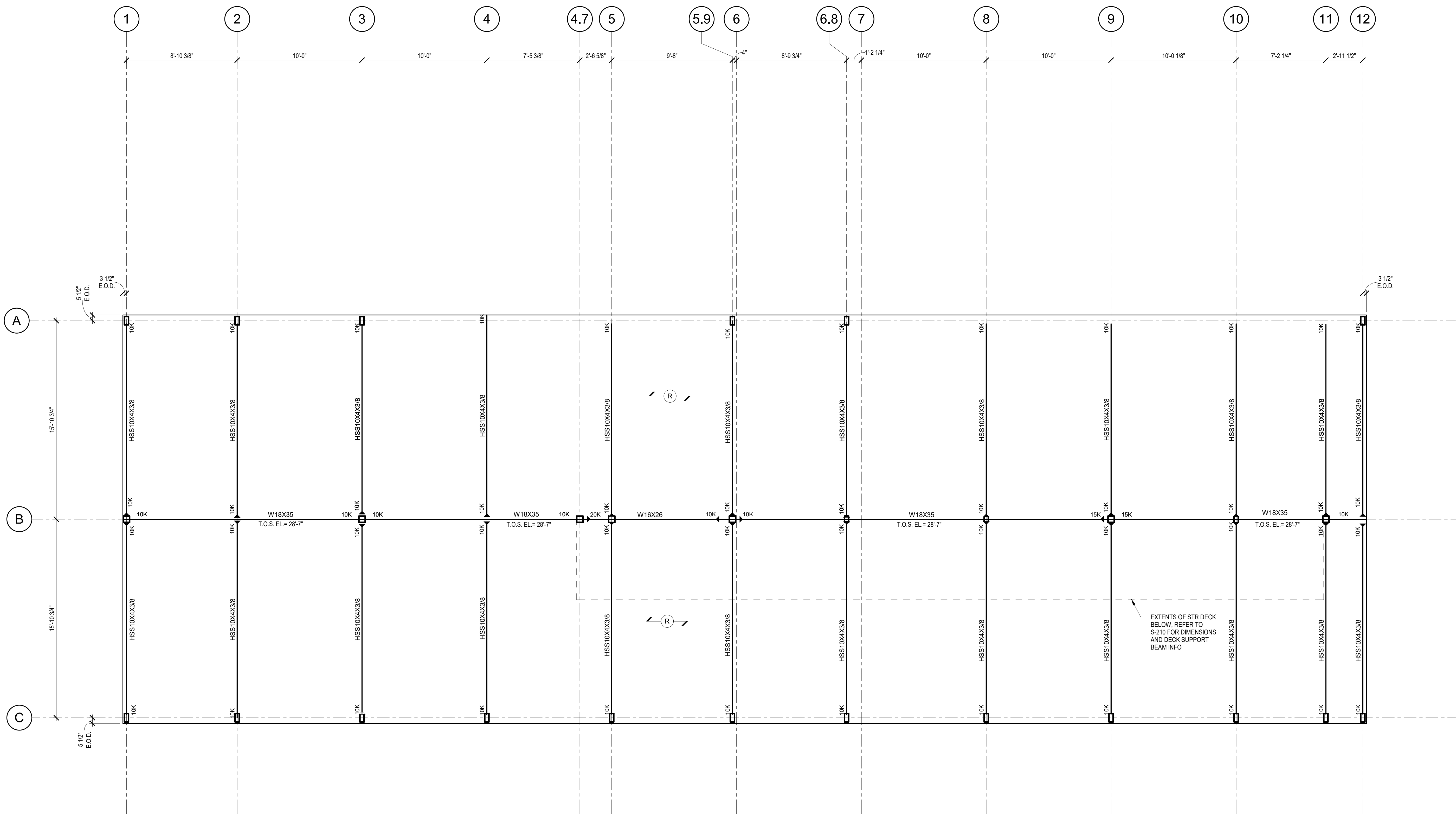
STEEL BEAM SIZE

— DENOTES FACTORED (LRFD)
BEAM SHEAR REACTION IN KIPS
(SEE NOTE ABOVE)

NOTE:

1. FOR MOMENT CONNECTIONS BETWEEN DIFFERENT-SIZED BEAMS, DESIGN CONNECTIONS FOR MAXIMUM MOMENT OF SMALLER BEAM
2. FOR BEAMS LESS THAN 8 FEET LONG WITH NO REACTION SHOWN ON PLAN, DESIGN CONNECTION FOR 10K SHEAR REACTION (UNFACTORED/ASD)
3. * INDICATES REQUIRED BOTTOM FLANGE BRACING REFER SX.X

TYPICAL BEAM DIAGRAM



1

FRAMING PLAN

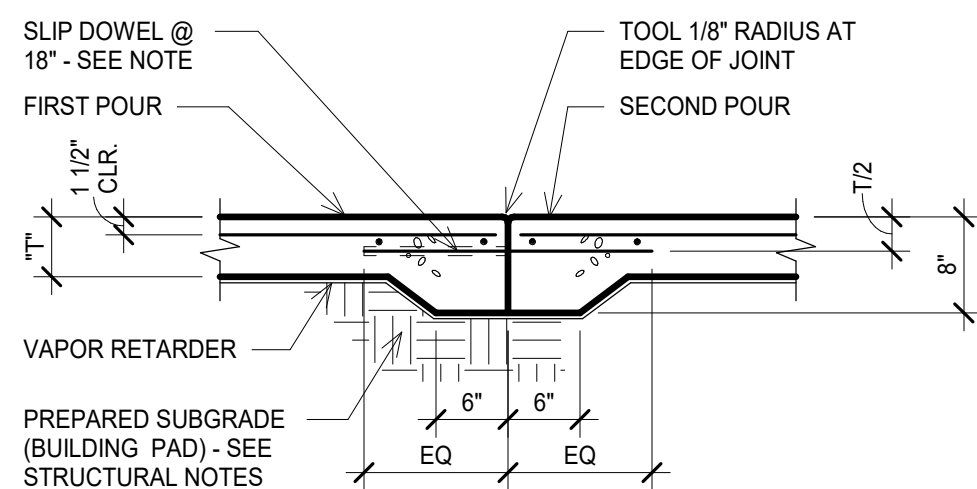
SCALE: 1/4" = 1'-0"

SHEET

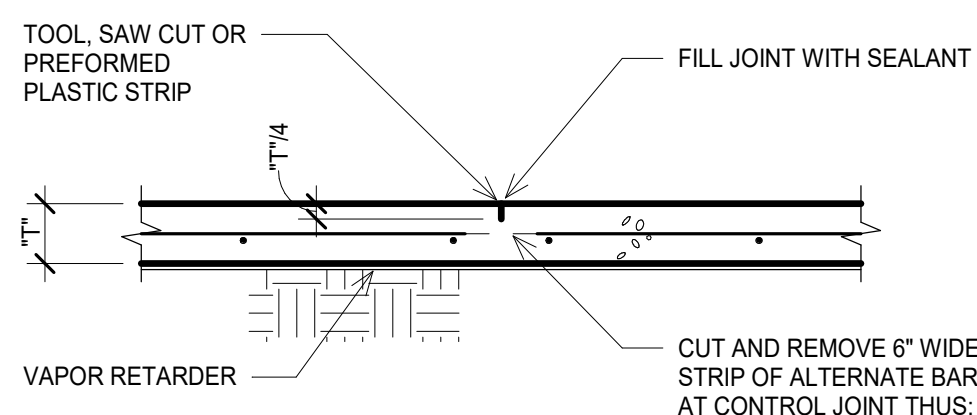
S-300

Architectural drawings of a column and slab joint. The top drawing is a **PLAN** view showing a square slab with a central column. It includes a **SLAB BLOCKOUT** for the column, a **2-#3 x 4'** reinforcement bar around the column, and a **4#4 x 4'-0" @ MID-DEPTH OF SLAB - TYP.** reinforcement. The bottom drawing is a **SECTION** view showing the **T.O.C. EL. - REF. PLAN** and **T.O. FTG. EL. - REF. PLAN**. It details the **VAPOR RETARDER**, **3" CLR.** (clearance), and **SEE FOOTING SCHED. FOR SIZE AND REINF.** (see footing schedule for size and reinforcement).

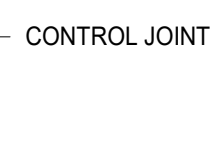
NOTE:
 PROVIDE ONE OF THE FOLLOWING SLIP DOWELS:
 - PNA CONSTRUCTION TECHNOLOGIES 1/4" x 4 1/2" x 4 1/2" "DIAMOND DOWEL"
 PLATE DOWEL SYSTEM.
 - GREENSTREAK 5/8" DIA. SMOOTH x 24" "SPEED DOWEL" SYSTEM.
 - 1/2" DIA. x 2'-0" A36 SMOOTH ROD.



CONSTRUCTION JOINT



CONTROL JOINT



- CONTROL JOINT

SLAB-ON-GRADE NOTES:

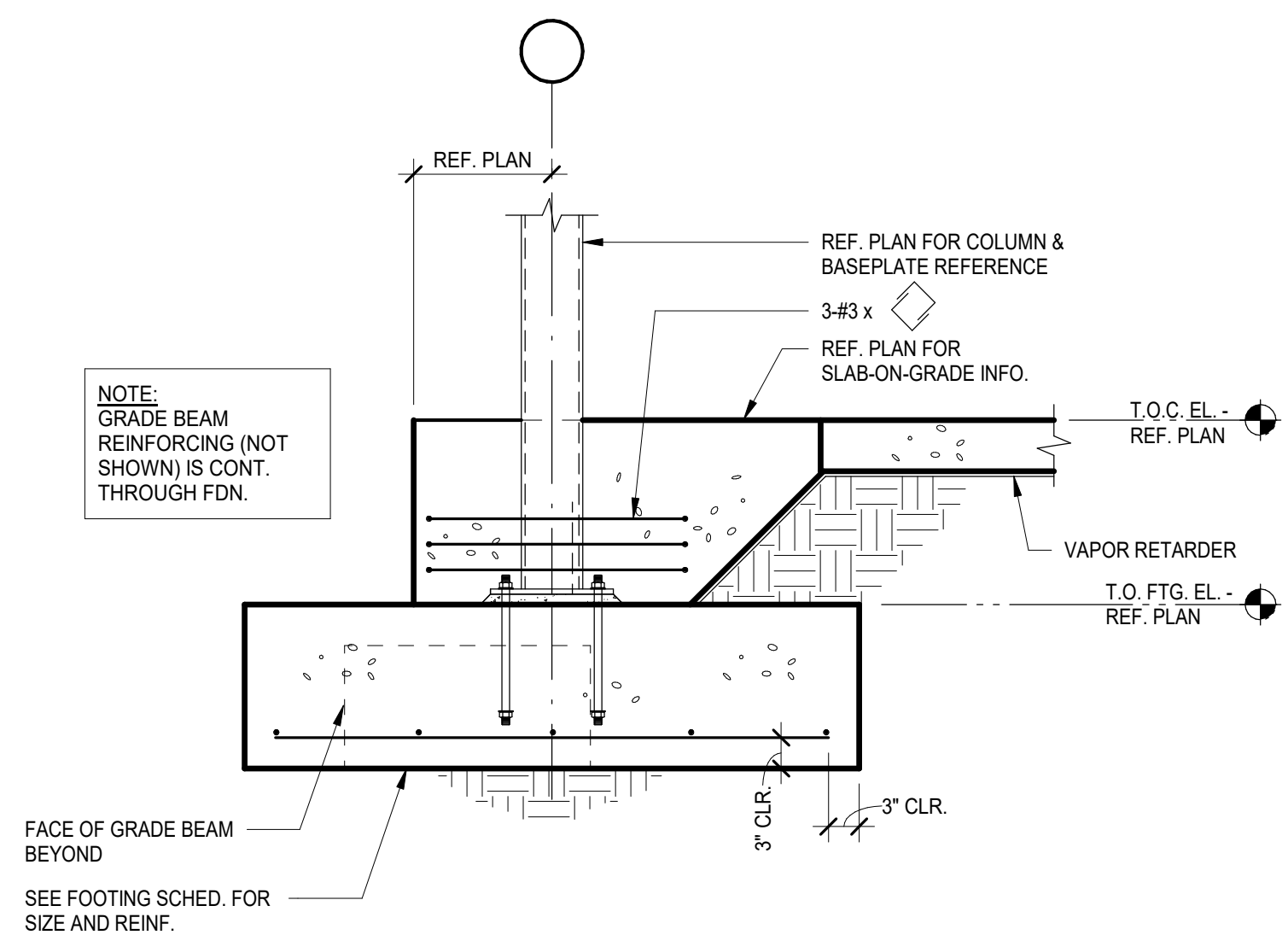
1. SEE PLAN FOR THICKNESS OF SLAB (T) AND REINFORCING.
2. SAWCUT JOINTS WITH IN THE TIME FRAME NOTED BELOW:
 - a. 4 HOURS FOR SLABS COVERED BY FINISHES OR NON PUBLIC SPACES.
 - b. 4 HOUR FOR SLABS EXPOSED TO PUBLIC VIEW OR WHERE NOTED "SOFF-CUT" BRAND SAW SHALL BE USED.
3. IF METAL FORMS ARE USED, REMOVE THEM BEFORE PLACING ADJACENT SLAB.
4. FOR SLABS WITH THICKNESS (T) GREATER THAN 6", THICKENED EDGES ARE NOT REQUIRED AT JOINTS.
5. PROVIDE A CONSTRUCTION OR A CONTROL JOINT ON THE CENTERLINES OF CENTERLINES.
6. LAP REINFORCING 38 BAR DIAMETER MINIMUM.

CS-0

1

TYPICAL ISOLATED EXTERIOR FOOTING DETAIL

SCALE: 3/4" = 1'-0"



1

TYPICAL ISOLATED EXTERIOR FOOTING DETAIL

SCALE: 3/4" = 1'-0"

TYPICAL FOUNDATION DETAILS

| DATE | REMARKS |
|------|---------|
|------|---------|

| | |
|--------|----------|
| PA/PM: | Approver |
|--------|----------|

| |
|--------|
| Author |
|--------|

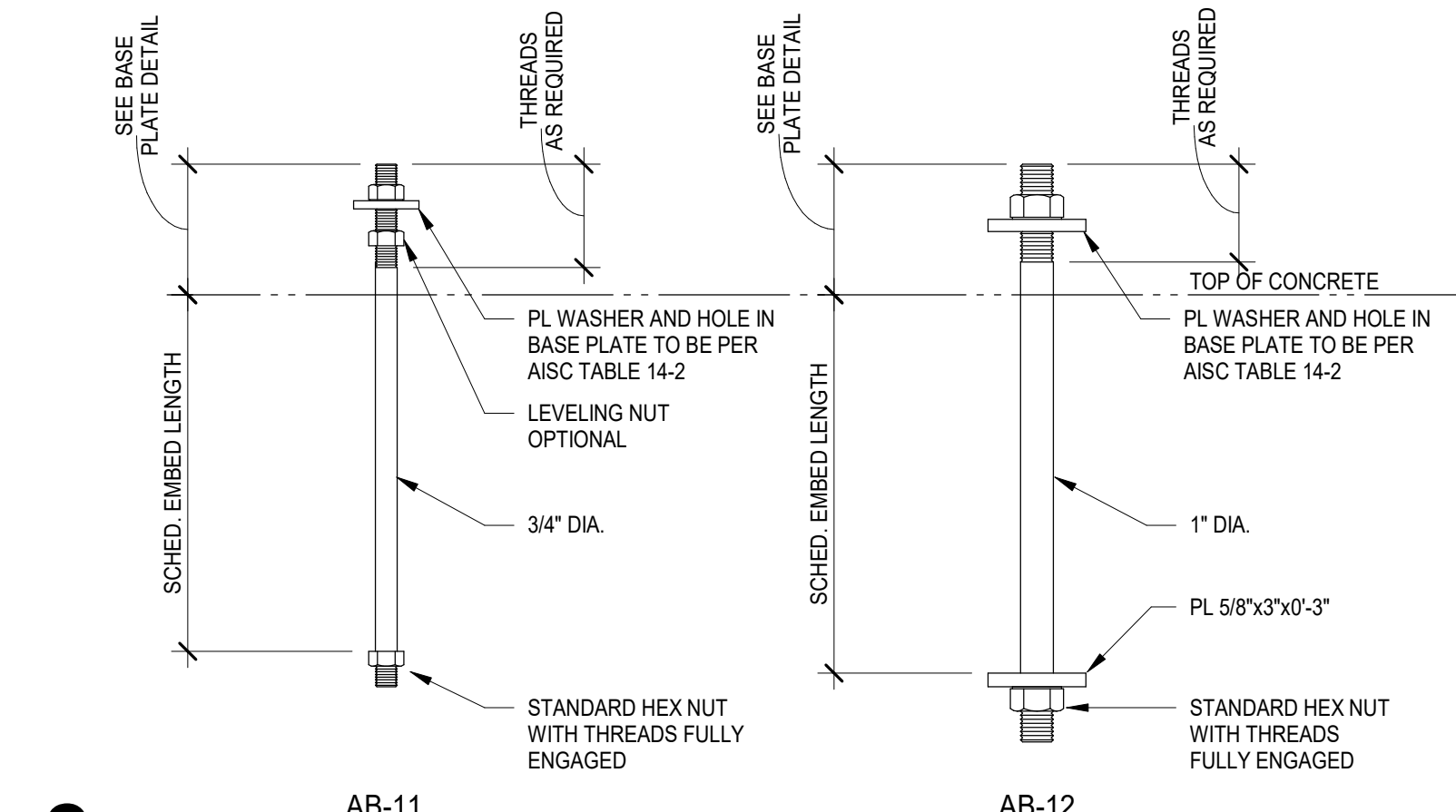
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| JOB NO.: | XXXX.XX.X |
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SHEET

S-301

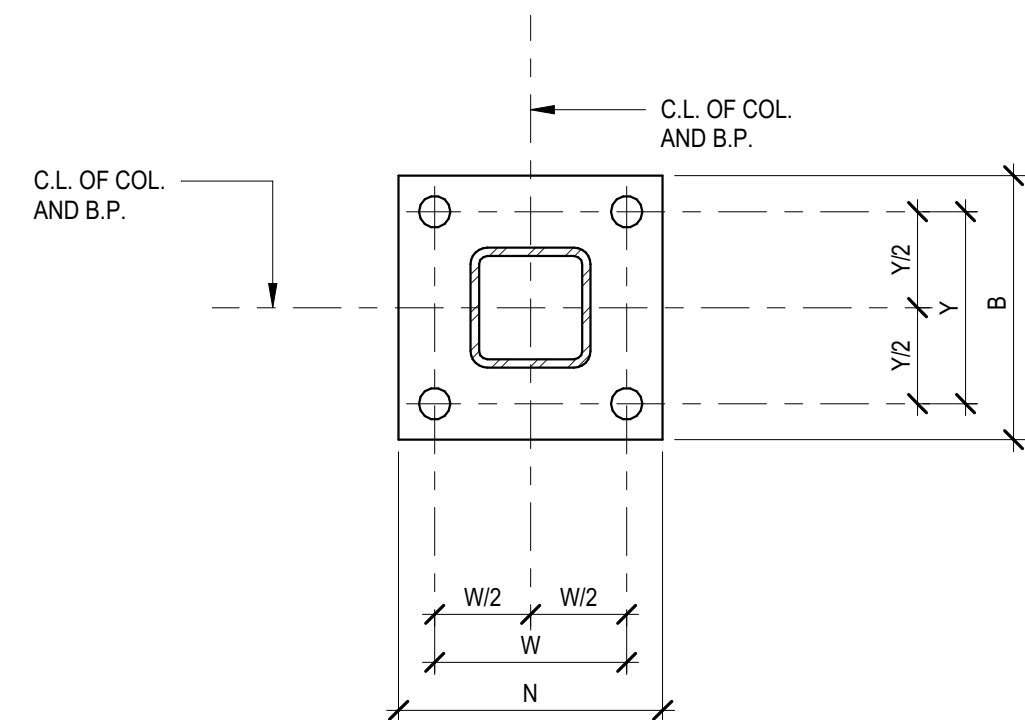
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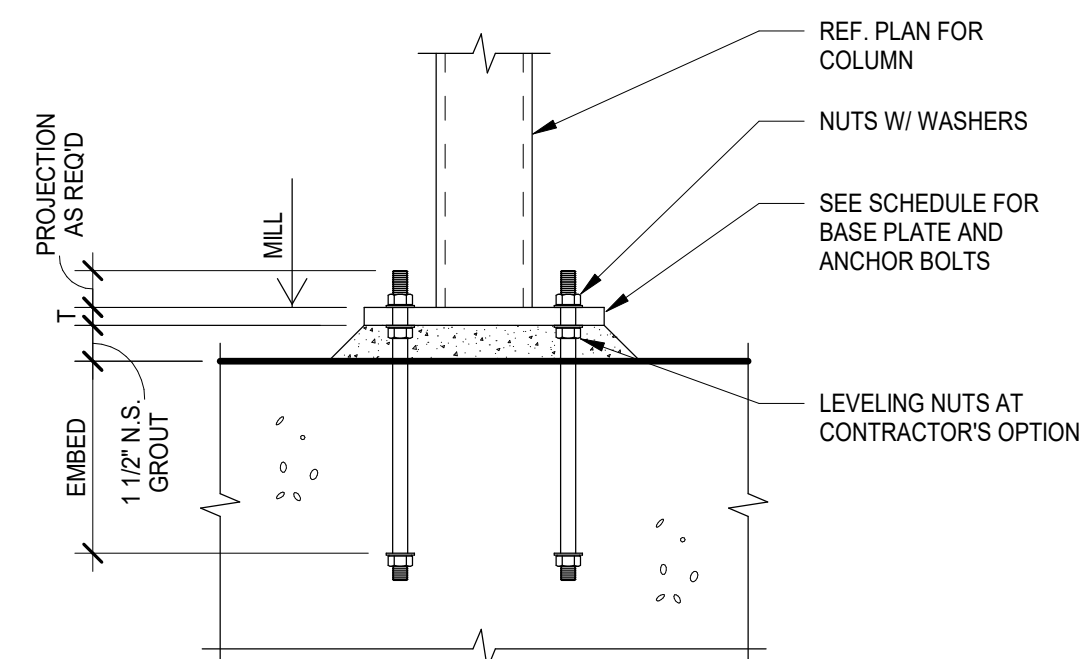
3 AB-11 TYPICAL ANCHOR BOLT TYPES

SCALE: 3/4" = 1'-0"



- NOTES:
1. WELD TO BE MINIMUM SIZE REQUIRED BY A.I.S.C. FOR THICKNESS OF BASE PLATE USED.
 2. REF. COLUMN BASE PLATE TYPICAL DETAIL - HSS FOR BASE PLATE ELEVATION.
 3. OVERSIZED BOLT HOLES NOT PERMITTED FOR LATERAL RESISTING BASE PLATES.

2 TYPICAL BASE PLATE DETAIL



ELEVATION

1 TYPICAL COLUMN BASE PLATE DETAIL

SCALE: 3/4" = 1'-0"

WESTLAKE EXPANSION

5902 BEE CAVE RD.
WEST LAKE HILLS, TX 78746

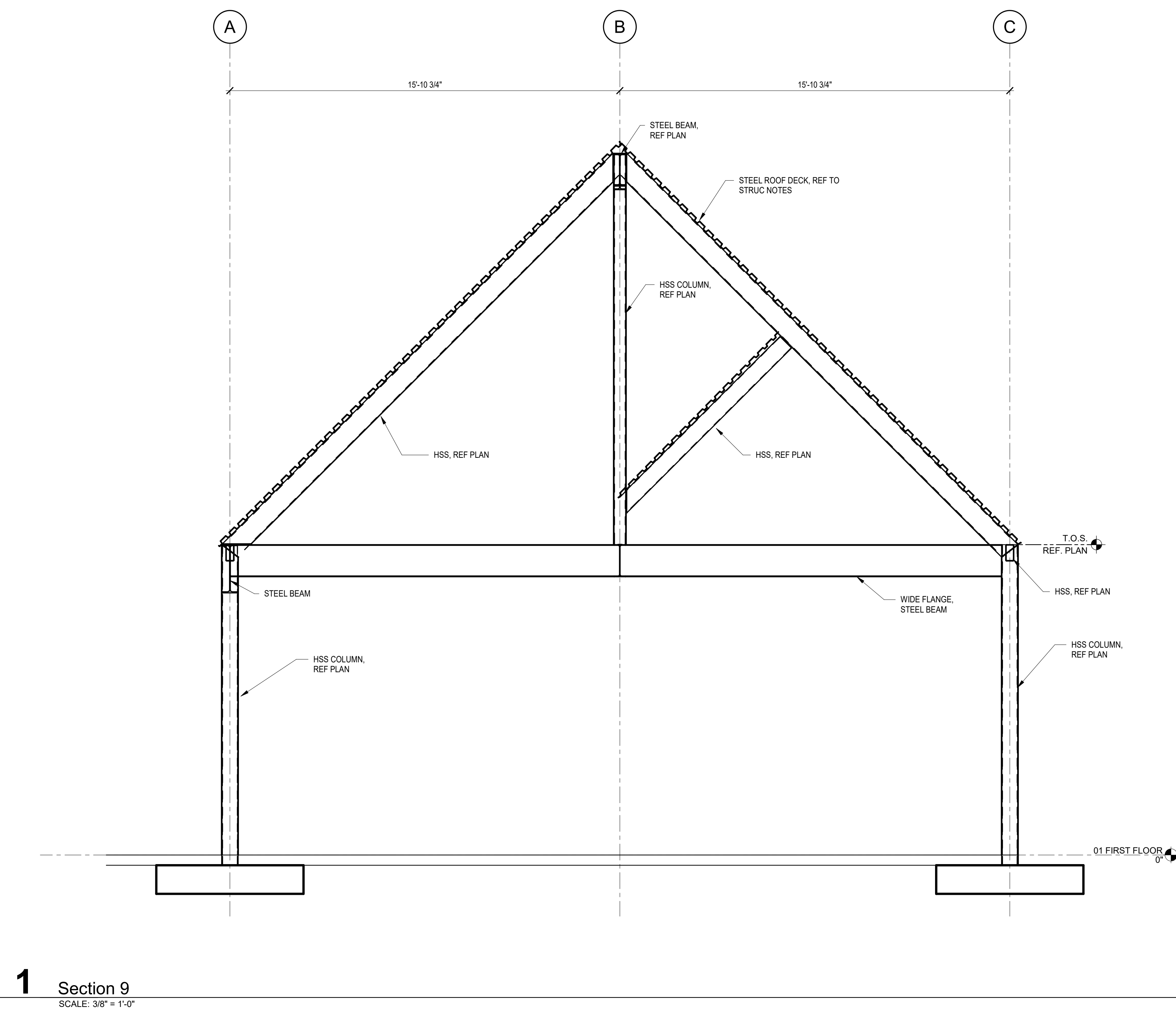
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|------------|-------------|
| PA/PM: | JMO |
| DRAWN BY.: | DJV/DEB |
| JOB NO.: | XXXX.XX.XXX |

SHEET

S-501

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RIGHT OF WARE MALCOMB AND SHALL NOT BE USED ON ANY
ENLARGED FRAMING DETAILS

| | |
|------------|-----------|
| PA/PM: | Approver |
| DRAWN BY.: | Author |
| JOB NO.: | xxxx.xx.x |

SHEET

S-503

WESTLAKE EXPANSION
5902 BEE CAVE RD.
WEST LAKE HILLS, TX 78746

WGI.

8144 Walnut Hill Lane, Suite 903, Dallas, TX 75231
Phone: 214.307.4767
TX Registered Engineering Firm F-15085

STATE OF TEXAS
★ ★ ★ ★ ★
CONRAD M. LOVEJOY
122302
LICENSED
PROFESSIONAL ENGINEER

architecture
planning
interiors
graphics
civil engineer

1919 McKinney
Dallas, TX 75201

WARE MALCOMB
Leading Design for Commercial Real Estate

MECHANICAL AND PLUMBING SYMBOLS

| SYMBOL | DESCRIPTION |
|--------|--|
| | THIN LINE WEIGHTS REPRESENT EXISTING WORK |
| | BOLD LINE WEIGHTS REPRESENT NEW WORK |
| | DASHED LINE REPRESENTS DEMO WORK |
| | CONDUIT |
| | UNDERGROUND/UNDERFLOOR CONDUIT |
| | FLEXIBLE CONDUIT |
| | PLUG MOLD |
| | WIRING, HOMERUN |
| | WIRING, NEUTRAL |
| | WIRING, HOT |
| | WIRING, SWITCHLEG |
| | WIRING, GROUND |
| | WIRING, ISOLATED GROUND |
| | CONTINUATION |
| | SIMPLEX RECEPTACLE |
| | DUPLEX RECEPTACLE |
| | FLUSH FLOOR MOUNTED DUPLEX RECEPTACLE |
| | CEILING MOUNTED DUPLEX RECEPTACLE |
| | ABOVE COUNTER DUPLEX RECEPTACLE MOUNT @ 44" AFF UNO |
| | IG RECEPTACLE |
| | QUADRAPLEX RECEPTACLE |
| | FLUSH FLOOR MOUNTED QUADRAPLEX RECEPTACLE |
| | CEILING MOUNTED QUADRAPLEX RECEPTACLE |
| | ABOVE COUNTER QUADRAPLEX RECEPTACLE MOUNT @ 44" AFF UNO |
| | IG QUADRAPLEX RECEPTACLE |
| | SPECIAL PURPOSE RECEPTACLE (VERIFY EXACT NEMA CONFIGURATION IN FIELD) |
| | FLUSH FLOOR MOUNTED SPECIAL PURPOSE RECEPTACLE (VERIFY EXACT NEMA CONFIGURATION IN FIELD) |
| | CEILING MOUNTED SPECIAL PURPOSE RECEPTACLE (VERIFY EXACT NEMA CONFIGURATION IN FIELD) |
| | DUPLEX RECEPTACLE ON EMERGENCY CIRCUIT |
| | ABOVE COUNTER DUPLEX RECEPTACLE ON EMERGENCY CIRCUIT MOUNT @ 44" AFF UNO |
| | QUADRAPLEX RECEPTACLE ON EMERGENCY CIRCUIT |
| | ABOVE COUNTER QUAD RECEPTACLE ON EMERGENCY CIRCUIT MOUNT @ 44" AFF UNO |
| | NURSE CALL, PROVIDE 3/4" EC AND PULL STRING TO 6" ABOVE ACCESSIBLE CEILING |
| | DUTY STATION, PROVIDE 3/4" EC AND PULL STRING TO 6" ABOVE ACCESSIBLE CEILING |
| | ZONE DOME |
| | TOILET HELP CALL, PROVIDE 3/4" EC AND PULL STRING TO 6" ABOVE ACCESSIBLE CEILING |
| | CORRIDOR DOME LIGHT, PROVIDE 3/4" EC AND PULL STRING TO 6" ABOVE ACCESSIBLE CEILING |
| | CODE CALL PANEL, PROVIDE 3/4" EC AND PULL STRING TO 6" ABOVE ACCESSIBLE CEILING |
| | MONITOR PANEL, PROVIDE 3/4" EC AND PULL STRING TO 6" ABOVE ACCESSIBLE CEILING |
| | DATA COMMUNICATIONS OUTLET WITH 1" EC AND PULL STRING TO 6" ABOVE ACCESSIBLE CEILING, CONDUIT SIZE IS BASED ON MAX OF (4) CAT6 CABLES, COORDINATE WITH OWNER PRIOR TO INSTALLATION. |
| | FLUSH FLOOR DATA COMMUNICATIONS OUTLET |
| | TELEPHONE OUTLET WITH 1" EC AND PULL STRING TO 6" ABOVE ACCESSIBLE CEILING |
| | FLUSH FLOOR TELEPHONE OUTLET |
| | TELEPHONE / DATA OUTLET WITH 1" EC AND PULL STRING TO 6" ABOVE ACCESSIBLE CEILING, CONDUIT SIZE IS BASED ON MAX OF (6) CAT6 CABLES, COORDINATE WITH OWNER PRIOR TO INSTALLATION. |
| | FLUSH FLOOR TELEPHONE / DATA OUTLET |
| | FLUSH FLOOR BOX FOR RECEPTACLES, COMMUNICATIONS AND/OR AV DEVICES, PROVIDE BOX SUITABLE FOR APPLICATION, MODEL <u>WIREMOLD</u> <u>EVOLUTION EFBASS</u> OR EQUAL. |
| | VERTICAL DROP POLE WITH 2 CHANNELS FOR POWER AND COMMUNICATIONS, MODEL SHALL BE <u>WIREMOLD #2SD1C</u> UNO ON PLANS, VERIFY LENGTH AND FINISH PRIOR TO INSTALLATION. |
| | USB OUTLET EXTENSION, PROVIDE WITH (2) PORTS AND EXTEND 3/4" CONDUIT BETWEEN LOCATIONS, COORDINATE EXACT REQUIREMENTS WITH OWNER. |
| | RECESSED COMBINATION AV (TELEVISION) OUTLET AND DUPLEX RECEPTACLE MOUNTED AT 84" AFF UNO ON PLANS, UTILIZE RECEPTACLE SHOWN ADJACENT TO DEVICE ON FLOOR PLAN, PROVIDE 3/4" EC AND PULL STRING TO 6" ABOVE ACCESSIBLE CEILING FOR LOW-VOLTAGE, MODEL SHALL BE <u>PASS 3</u> <u>SECMOUR #TV20M</u> . |
| | CEILING MOUNTED AV (TELEVISION) OUTLET |
| | JUNCTION BOX |
| | WALL MOUNTED JUNCTION BOX |
| | DISCONNECT SWITCH |
| | FUSED DISCONNECT SWITCH |
| | COMBINATION MOTOR STARTER |
| | VFD (VARIABLE FREQUENCY DRIVE) |
| | TVSS (TRANSIENT VOLTAGE SURGE SUPPRESSOR) |
| | MOTOR RATED SWITCH |
| | MOTOR |
| | MOTION DETECTOR, <u>ACUTY #WSXA</u> |
| | CEILING MOUNTED MOTION DETECTOR, <u>ACUTY #BCM PDT</u> |
| | OCCUPANCY SENSOR, <u>ACUTY #WSXA PDT</u> |
| | CEILING MOUNTED OCCUPANCY SENSOR, <u>ACUTY #BCM PDT</u> |
| | OCCUPANCY SENSOR DIMMER, <u>ACUTY #WSXA PDT D</u> |
| | VACANCY SENSOR, <u>ACUTY #WSXA PDT SA</u> |
| | CEILING MOUNTED VACANCY SENSOR, <u>ACUTY #BCM PDT</u> |
| | CURRENT LIMITER FOR TRACK LIGHTING WITH AMP RATING, <u>ACUTY #SILVER BULLET SERIES</u> |

NOTES:
1. ALL SYMBOLS MAY NOT APPEAR ON DRAWINGS.
2. PROVIDE TAMPER-RESISTANT RECEPTACLES IN ACCORDANCE WITH NEC 406.12.
3. ALL WALL MOUNTED DEVICES (POWER, DATA, TELEPHONE, ETC.) SHALL BE MOUNTED NO LESS THAN 15" ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE. DATA OUTLETS SHALL BE MOUNTED AT SAME HEIGHT AS ADJACENT RECEPTACLE.
4. ALL LIGHT CONTROLS (SWITCHES, DIMMERS AND/OR SENSORS) SHALL BE MOUNTED NO MORE THAN 48" ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE. LIGHT CONTROLS SHOWN SIDE BY SIDE ON FLOOR PLANS SHALL BE GANGED TOGETHER WITHIN THE SAME COVER PLATE.
5. COORDINATE FINISH OF ELECTRICAL DEVICES WITH ARCHITECT UNLESS NOTED OTHERWISE.
(2021.01)

ELECTRICAL AND LIGHTING SYMBOLS

| SYMBOL | DESCRIPTION |
|--------|--|
| | THIN LINE WEIGHTS REPRESENT EXISTING WORK |
| | BOLD LINE WEIGHTS REPRESENT NEW WORK |
| | DASHED LINE REPRESENTS DEMO WORK |
| | CONDUIT |
| | UNDERGROUND/UNDERFLOOR CONDUIT |
| | FLEXIBLE CONDUIT |
| | PLUG MOLD |
| | WIRING, HOMERUN |
| | WIRING, NEUTRAL |
| | WIRING, HOT |
| | WIRING, SWITCHLEG |
| | WIRING, GROUND |
| | WIRING, ISOLATED GROUND |
| | CONTINUATION |
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| | DUPLEX RECEPTACLE |
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| | CEILING MOUNTED DUPLEX RECEPTACLE |
| | ABOVE COUNTER DUPLEX RECEPTACLE MOUNT @ 44" AFF UNO |
| | IG RECEPTACLE |
| | QUADRAPLEX RECEPTACLE |
| | FLUSH FLOOR MOUNTED QUADRAPLEX RECEPTACLE |
| | CEILING MOUNTED QUADRAPLEX RECEPTACLE |
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| | CEILING MOUNTED SPECIAL PURPOSE RECEPTACLE (VERIFY EXACT NEMA CONFIGURATION IN FIELD) |
| | DUPLEX RECEPTACLE ON EMERGENCY CIRCUIT |
| | ABOVE COUNTER DUPLEX RECEPTACLE ON EMERGENCY CIRCUIT MOUNT @ 44" AFF UNO |
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| | DUTY STATION, PROVIDE 3/4" EC AND PULL STRING TO 6" ABOVE ACCESSIBLE CEILING |
| | ZONE DOME |
| | TOILET HELP CALL, PROVIDE 3/4" EC AND PULL STRING TO 6" ABOVE ACCESSIBLE CEILING |
| | CORRIDOR DOME LIGHT, PROVIDE 3/4" EC AND PULL STRING TO 6" ABOVE ACCESSIBLE CEILING |
| | CODE CALL PANEL, PROVIDE 3/4" EC AND PULL STRING TO 6" ABOVE ACCESSIBLE CEILING |
| | MONITOR PANEL, PROVIDE 3/4" EC AND PULL STRING TO 6" ABOVE ACCESSIBLE CEILING |
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| | FLUSH FLOOR DATA COMMUNICATIONS OUTLET |
| | TELEPHONE OUTLET WITH 1" EC AND PULL STRING TO 6" ABOVE ACCESSIBLE CEILING |
| | FLUSH FLOOR TELEPHONE OUTLET |
| | TELEPHONE / DATA OUTLET WITH 1" EC AND PULL STRING TO 6" ABOVE ACCESSIBLE CEILING, CONDUIT SIZE IS BASED ON MAX OF (6) CAT6 CABLES, COORDINATE WITH OWNER PRIOR TO INSTALLATION. |
| | FLUSH FLOOR TELEPHONE / DATA OUTLET |
| | FLUSH FLOOR BOX FOR RECEPTACLES, COMMUNICATIONS AND/OR AV DEVICES, PROVIDE BOX SUITABLE FOR APPLICATION, MODEL <u>WIREMOLD</u> <u>EVOLUTION EFBASS</u> OR EQUAL. |
| | VERTICAL DROP POLE WITH 2 CHANNELS FOR POWER AND COMMUNICATIONS, MODEL SHALL BE <u>WIREMOLD #2SD1C</u> UNO ON PLANS, VERIFY LENGTH AND FINISH PRIOR TO INSTALLATION. |
| | USB OUTLET EXTENSION, PROVIDE WITH (2) PORTS AND EXTEND 3/4" CONDUIT BETWEEN LOCATIONS, COORDINATE EXACT REQUIREMENTS WITH OWNER. |
| | RECESSED COMBINATION AV (TELEVISION) OUTLET AND DUPLEX RECEPTACLE MOUNTED AT 84" AFF UNO ON PLANS, UTILIZE RECEPTACLE SHOWN ADJACENT TO DEVICE ON FLOOR PLAN, PROVIDE 3/4" EC AND PULL STRING TO 6" ABOVE ACCESSIBLE CEILING FOR LOW-VOLTAGE, MODEL SHALL BE <u>PASS 3</u> <u>SECMOUR #TV20M</u> . |
| | CEILING MOUNTED AV (TELEVISION) OUTLET |
| | JUNCTION BOX |
| | WALL MOUNTED JUNCTION BOX |
| | DISCONNECT SWITCH |
| | FUSED DISCONNECT SWITCH |
| | COMBINATION MOTOR STARTER |
| | VFD (VARIABLE FREQUENCY DRIVE) |
| | TVSS (TRANSIENT VOLTAGE SURGE SUPPRESSOR) |
| | MOTOR RATED SWITCH |
| | MOTOR |
| | MOTION DETECTOR, <u>ACUTY #WSXA</u> |
| | CEILING MOUNTED MOTION DETECTOR, <u>ACUTY #BCM PDT</u> |
| | OCCUPANCY SENSOR, <u>ACUTY #WSXA PDT</u> |
| | CEILING MOUNTED OCCUPANCY SENSOR, <u>ACUTY #BCM PDT</u> |
| | OCCUPANCY SENSOR DIMMER, <u>ACUTY #WSXA PDT D</u> |
| | VACANCY SENSOR, <u>ACUTY #WSXA PDT SA</u> |
| | CEILING MOUNTED VACANCY SENSOR, <u>ACUTY #BCM PDT</u> |
| | CURRENT LIMITER FOR TRACK LIGHTING WITH AMP RATING, <u>ACUTY #SILVER BULLET SERIES</u> |

ELECTRICAL AND LIGHTING SYMBOLS

| SYMBOL | DESCRIPTION |
|--------|---|
| | SWITCH |
| | DOUBLE POLE SWITCH |
| | THREE-WAY SWITCH |
| | FOUR-WAY SWITCH |
| | DIMMER SWITCH, MODEL SHALL BE <u>CRESTRON CLW SERIES</u> , REFER TO DRAWINGS FOR LOAD AND LIGHT TYPE |
| | LOW-VOLTAGE CONTROLS |
| | PILOT LIGHT SWITCH |
| | TIMED LOCK SWITCH, MODEL SHALL BE <u>INTERMATIC ST7000</u> OR EQUAL. |
| | SPEAKER |
| | WALL MOUNTED VOLUME CONTROL (P.A.) |
| | CARD READER |
| | DOOR CONTACT |
| | KEY PAD |
| | MAG-LOCK |
| | GENERATOR |
| | SHUNT TRIP |
| | CLOCK |
| | METER |
| | KIRK-KEY INTERLOCK |
| | 120V/208Y OR 120/240V ELECTRICAL PANEL |
| | 277V/480Y ELECTRICAL PANEL |
| | TRANSFORMER |
| | GROUND BUS, PROVIDE 1/4" X 4" X 1/2" COPPER GROUND BUS ON ISOLATORS UNO ON PLANS |
| | VIA LIGHTING CONTACTOR |
| | SWITCH DESIGNATION |
| | LIGHT FIXTURE TYPE |
| | HATCH REPRESENTS EMERGENCY FIXTURE |
| | 2' X 4' LIGHT FIXTURE, REFERENCE LIGHT FIXTURE SCHEDULE. |
| | 2' X 2' LIGHT FIXTURE, REFERENCE LIGHT FIXTURE SCHEDULE. |
| | UTILITY STRIP, REFERENCE LIGHT FIXTURE SCHEDULE. |
| | DOWNLIGHT, REFERENCE LIGHT FIXTURE SCHEDULE. |
| | SCONCE, REFERENCE LIGHT FIXTURE SCHEDULE. |
| | WALL WASHER, REFERENCE LIGHT FIXTURE SCHEDULE. |
| | PENDANT, REFERENCE LIGHT FIXTURE SCHEDULE. |
| | UNDER CABINET LIGHT FIXTURE, REFERENCE LIGHT FIXTURE SCHEDULE. |
| | WALL PACK, REFERENCE LIGHT FIXTURE SCHEDULE. |
| | POLE MTD. SITE LIGHT FIXTURE, REFERENCE LIGHT FIXTURE SCHEDULE. |
| | EXIT SIGN CHEVRON |
| | SINGLE FACE EXIT SIGN SHADED AREA INDICATES ILLUMINATED FACE, MODEL SHALL BE <u>DUAL-LITE #ESDRWEI</u> UNO ON PLANS, CONFIRM FINISH |
| | DOUBLE FACE EXIT SIGN SHADED AREA INDICATES ILLUMINATED FACE, MODEL SHALL BE <u>DUAL-LITE #ESDRWEI</u> UNO ON PLANS, CONFIRM FINISH |
| | SINGLE FACE WALL MOUNTED EXIT SIGN, MODEL SHALL BE <u>DUAL-LITE #ESDRWEI</u> UNO ON PLANS, CONFIRM FINISH |
| | DOUBLE FACE WALL MOUNTED EXIT SIGN, MODEL SHALL BE <u>DUAL-LITE #ESDRWEI</u> UNO ON PLANS, CONFIRM FINISH |
| | COMBO EXIT SIGN AND EMERGENCY EGRESS LIGHTING FIXTURE, MODEL SHALL BE <u>DUAL-LITE #LJ21503L</u> UNO ON PLANS, CONFIRM FINISH |
| | EMERGENCY LIGHTING FIXTURE, MODEL SHALL BE <u>DUAL-LITE #LJ21503L</u> UNO ON PLANS, CONFIRM FINISH |
| | EXTERIOR EMERGENCY LIGHTING FIXTURE, MODEL SHALL BE <u>DUAL-LITE #ESDRWEI</u> UNO ON PLANS, CONFIRM FINISH |

FIRE ALARM SYMBOLS

| SYMBOL | DESCRIPTION |
|--------|--|
| | THIN LINE WEIGHTS REPRESENT EXISTING WORK |
| | BOLD LINE WEIGHTS REPRESENT NEW WORK |
| | DASHED LINE REPRESENTS DEMO WORK |
| | FM 200 ABORT SWITCH |
| | MANUAL FM 200 RELEASE PULL STATION |
| | DOOR HOLDER |
| | FIRE ALARM ANNUNCIATOR PANEL |
| | FIRE ALARM CONTROL PANEL |
| | FIRE ALARM SYSTEM FLOW SWITCH |
| | FIRE ALARM TAMPER SWITCH |
| | GENERATOR REMOTE ANNUNCIATOR PANEL |
| | ADA APPROVED FIRE ALARM HORN, MOUNT @ 80" AFF. |
| | ADA APPROVED FIRE ALARM HORN, CEILING MOUNTED. |
| | ADA APPROVED AUDIOVISUAL FIRE ALARM SIGNALING DEVICE, MOUNT @ 80" AFF. |
| | ADA APPROVED AUDIOVISUAL FIRE ALARM SIGNALING DEVICE, CEILING MOUNTED. |
| | ADA APPROVED STROBE ONLY FIRE ALARM DEVICE, MOUNT @ 80" AFF. |
| | ADA APPROVED STROBE ONLY FIRE ALARM DEVICE, CEILING MOUNTED. |
| | ADA APPROVED FIRE ALARM PULLSTATION DEVICE |
| | SMOKE DETECTOR |
| | UNDERFLOOR SMOKE DETECTOR |
| | DUCT MOUNTED SMOKE DETECTOR |
| | REMOTE PILOT LIGHT |
| | HEAT DETECTOR |
| | UNDERFLOOR HEAT DETECTOR |
| | FLAME DETECTOR |
| | FIRE ALARM SPEAKER |

ABBREVIATIONS

| TEXT | DESCRIPTION |
|------|--|
| ADA | AMERICANS WITH DISABILITIES ACT |
| AFF | ABOVE FINISHED FLOOR |
| B | EXISTING JUNCTION BOX WITH BLANK PLATE |
| BOD | BACKDRAFT DAMPER |
| BDD | BOTTOM OF DUCT |
| BFF | BELOW FINISHED FLOOR |
| BFP | BACKFLOW PREVENTER |
| BHP | BRAKE HORSEPOWER |
| C | CONDUIT |
| CB | CIRCUIT BREAKER |
| CD | CONDENSATE DRAIN |
| CFM | CUBIC FEET PER MINUTE |
| CHR | CHILLED WATER RETURN |
| CHS | CHILLED WATER SUPPLY |
| CO | CLEANOUT |
| CR | CONDENSER WATER RETURN |
| CS | CONDENSER WATER SUPPLY |
| CW | COPPER |
| CU | DOMESTIC COLD WATER |
| (D) | EXISTING TO BE DEMOLISHED |
| DCO | DOUBLE CLEANOUT |
| (E) | EXISTING TO REMAIN |
| EIA | EXHAUST AIR |
| EAT | ENTERING AIR TEMPERATURE |
| EC | EMPTY CONDUIT |
| EMT | ELECTRICAL METALLIC TUBING |
| ESP | EXTERNAL STATIC PRESSURE |
| EW | ELECTRIC WATER COOLER |
| EWI | ELECTRIC WATER HEATER |
| ENT | ENTERING WATER TEMPERATURE |
| 'F | DEGREES FAHRENHEIT |
| F | FIRE LINE |
| FCO | FLOOR CLEANOUT |
| FDS | FUSED DISCONNECT SWITCH |
| FLD | FLOOR DRAIN |
| FD | FIRE DAMPER |
| FS | FLOOR SINK |
| FSD | COMBINATION FIRE SMOKE DAMPER |
| G | GAS |
| GFI | GROUND FAULT INTERRUPTER |
| GRD | GROUND |
| GPM | GALLONS PER MINUTE |
| HG | REFRIGERANT HOT GAS |
| HP | HORSEPOWER |
| HR | HEATING HOT WATER RETURN |
| HS | HEATING HOT WATER SUPPLY |
| HW | HOT WATER SUPPLY |
| HWI | HOT WATER RETURN |
| IC | IN COUNTER |
| IG | ISOLATED GROUND |
| IMC | INTERMEDIATE METAL CONDUIT |
| KE | KITCHEN EXHAUST |
| KW | KILOWATT |
| L | LAVATORY |
| M/A | MAKE-UP AIR |
| MB | MOP BASIN |
| MTD | MOUNTED |
| (N) | NEW |
| NIC | NOT IN CONTRACT |
| N3R | NEMA 3R |
| OA | OUTSIDE AIR |
| OBD | OPPOSED BLADE DAMPER |
| OC | OVERFLOW CONDENSATE DRAIN |
| OCPD | OVERCURRENT PROTECTIVE DEVICE |
| OD | OVERFLOW ROOF DRAIN |
| OCI | OWNER FURNISHED, CONTRACTOR INSTALLED |
| PBD | PARALLEL BLADE DAMPER |
| PSI | POUNDS PER SQUARE INCH |
| (R) | EXISTING TO BE RELOCATED |
| RA | RETURN AIR |
| RD | ROOF DRAIN |
| RL | REFRIGERANT LIQUID |
| RMC | RIGID METALLIC CONDUIT |
| RS | REVERSE OSMOSIS |
| RO | REFRIGERANT SUCTION |
| S | SINK |
| S/A | SUPPLY AIR |
| SN | SANITARY SEWER |
| SD | STORM DRAIN |
| SIM | SIMILAR |
| SPD | SURGE PROTECTION DEVICE |

ABBREVIATIONS

| TEXT | DESCRIPTION |
|------|---|
| TP | TRAP PRIMER |
| TVSS | TRANSIENT VOLTAGE SURGE SUPPRESSOR |
| TWH | TANKLESS WATER HEATER |
| TW | TEMPERED WATER |
| U | URINAL |
| UF | UNDERFLOOR |
| UG | UNDERGROUND |
| UNO | UNLESS NOTED OTHERWISE |
| USB | UNIVERSAL SERIAL BUS, PROVIDE NEMA 5-20R DUPLEX RECEPTACLE WITH (2) USB TYPE 'A' PORTS RATED FOR 5.0 AMPS, PROVIDE HUBBELL USB0504W OR EQUAL. |
| USBC | UNIVERSAL SERIAL BUS, PROVIDE NEMA 5-20R DUPLEX RECEPTACLE WITH (1) USB TYPE 'A' PORT & (1) USB TYPE 'C' PORT RATED FOR 5.0 AMPS, PROVIDE HUBBELL USB0502CW OR EQUAL. |
| V | VENT |
| VFD | VARIABLE FREQUENCY DRIVE |
| VIF | VERIFY IN FIELD |
| VTR | VENT THROUGH ROOF |
| W | WALL MOUNTED |
| WC | WATER CLOSET |
| WCO | WALL CLEANOUT |
| WP | WEATHER PROOF |

MECHANICAL SYSTEMS COMMISSIONING

THESE SYSTEMS ARE EXEMPT FROM COMMISSIONING REQUIREMENTS.

- IN BUILDINGS WHERE TOTAL MECHANICAL EQUIPMENT CAPACITY IS < 480,000 BTU/H (40 TONS) COOLING CAPACITY AND < 600,000 BTU/H COMBINED SERVICE WATER HEATING AND SPACE-HEATING CAPACITY
- HVAC SYSTEMS BALANCED PER GENERALLY ACCEPTED ENGINEERING STANDARDS
- AIR AND WATER FLOW RATES MEASURED AND ADJUSTED TO DELIVER FINAL FLOW RATES WITHIN TOLERANCES IN PRODUCT SPECIFICATIONS
- TEST AND BALANCE ACTIVITIES TO INCLUDE AIR SYSTEM AND HYDRONIC SYSTEM BALANCING

C408.2.2 - AIR SYSTEMS BALANCING

- EACH SUPPLY AIR OUTLET AND ZONE TERMINAL DEVICE EQUIPPED WITH MEANS FOR AIR BALANCING PER CHAPTER 6 OF THE IMC
- NO DISCHARGE DAMPERS USED FOR AIR-SYSTEM BALANCING ON CONSTANT VOLUME FANS AND VARIABLE VOLUME FANS WITH MOTORS > 10 HP
- AIR SYSTEMS BALANCED IN A MANNER TO FIRST MINIMIZE THROTTLING LOSSES, THEN, FOR FANS WITH SYSTEM POWER > 1HP, FAN SPEED ADJUSTED TO MEET DESIGN FLOW CONDITIONS
- EXCEPTION - FANS WITH MOTORS < 1HP ARE NOT REQUIRED TO HAVE A MEANS FOR AIR BALANCING

C408.2.2.2 - HYDRONIC SYSTEMS BALANCING

- INDIVIDUAL HYDRONIC HEATING AND COOLING COILS EQUIPPED WITH MEANS FOR BALANCING AND MEASURING FLOW
- HYDRONIC SYSTEMS PROPORTIONATELY BALANCED IN A MANNER TO FIRST MINIMIZE THROTTLING LOSSES, THEN PUMP IMPELLER TO BE TRIMMED OR PUMP SPEED TO BE ADJUSTED TO MEET DESIGN FLOW CONDITIONS
- EACH HYDRONIC SYSTEM TO HAVE EITHER CAPABILITY TO MEASURE PRESSURE ACROSS THE PUMP, OR TEST PORTS AT EACH SIDE OF EACH PUMP
- EXCEPTIONS WITH A MEANS FOR BALANCING OR MEASURING FLOW:
 - PUMPS WITH PUMP MOTORS < 5HP
 - WHERE THROTTLING RESULTS IN < 5% OF NAMEPLATE HP DRAW ABOVE THAT REQUIRED IF THE IMPELLER WERE TRIMMED

C408.2.3.1 - FUNCTIONAL PERFORMANCE TESTING - EQUIPMENT

- TO DEMONSTRATE THE INSTALLATION AND OPERATION OF COMPONENTS, SYSTEMS, AND SYSTEM-TO-SYSTEM INTERFACING RELATIONSHIPS IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS, SUCH THAT OPERATION, FUNCTION, AND MAINTENANCE SERVICEABILITY FOR EACH OF THE COMMISSIONED SYSTEMS IS CONFIRMED
- TESTING TO INCLUDE ALL MODES AND SEQUENCE OF OPERATION, INCLUDING UNDER FULL-LOAD, PART-LOAD AND THE FOLLOWING EMERGENCY CONDITIONS:
 - ALL MODES AS DESCRIBED IN THE SEQUENCE OF OPERATION
 - REDUNDANT OR AUTOMATIC BACK-UP MODE
 - PERFORMANCE OF ALARMS, AND
 - MODE OF OPERATION UPON A LOST OFF POWER AND RESTORATION OF POWER
- EXCEPTION - UNITARY OR PACKAGED HVAC EQUIPMENT LISTED IN TABLES C403.2.3(1) THROUGH C403.2.3(3) THAT DON'T REQUIRE SUPPLY AIR ECONOMIZERS

C408.2.3.2 - FUNCTIONAL PERFORMANCE TESTING - CONTROLS

- HVAC AND SWH CONTROL SYSTEMS TO BE TESTED TO DOCUMENT THAT CONTROL DEVICES, COMPONENTS, EQUIPMENT, AND SYSTEMS ARE CALIBRATED, ADJUSTED AND OPERATE IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS
- SEQUENCES OF OPERATION TO BE FUNCTIONALLY TESTED TO DOCUMENT THEY OPERATE IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS

C408.2.3.3 - FUNCTIONAL PERFORMANCE TESTING -ECONOMIZERS

- AIR ECONOMIZERS TO UNDERGO A FUNCTIONAL TEST TO DETERMINE THEY OPERATE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS

FUNCTIONAL TESTING OF LIGHTING CONTROLS

C408.3.1.1 - OCCUPANT SENSOR CONTROLS

- CERTIFY LOCATION AND AIMING PER MANUFACTURER RECOMMENDATION
- TEST ALL SENSORS IF PROJECT < 7
- IF > 7 SENSORS, TEST FOR EACH UNIQUE COMBINATION OF SENSOR TYPE AND SPACE GEOMETRY
- WHERE MULTIPLES OF EACH UNIQUE COMBINATION OF SENSOR TYPE AND SPACE GEOMETRY ARE PROVIDED > 10%, BUT IN NO CASE < 1 OF EACH COMBINATION SHALL BE TESTED UNLESS THE CODE OFFICIAL OR DESIGN PROFESSIONAL REQUIRES A HIGHER PERCENTAGE TO BE TESTED
- WHERE >30% OF TESTED CONTROLS FAIL ALL REMAINING IDENTICAL COMBINATIONS MUST BE TESTED
- VERIFY THE FOLLOWING:
 - STATUS INDICATOR, VERIFY CORRECT OPERATION



1. COORDINATE FINAL PLACEMENT OF DIFFUSERS WITH ARCHITECTURAL RCP AND LIGHTING LAYOUT.
2. DUCTWORK IS DIAGONAL/IRREGULAR IN NATURE. BRANCH DUCTS THAT CROSS UNDER/OVER MAIN DUCT RUNS ARE SHOWN WITH BROKEN LINES. BRANCH DUCTS THAT ARE TO BE FITTED WITH TRANSITS TO ROUTE AROUND THE DUCTS ARE SHOWN WITH DOTTED LINES.
3. MAINTAIN A MINIMUM 10" OF CLEARANCE BETWEEN OUTSIDE AIR INTAKES AND BUILDING EXHAUST PER INTERNATIONAL MECHANICAL CODE.
4. ALL EXISTING MECHANICAL SYSTEMS SHALL BE TESTED PRIOR TO CONSTRUCTION TO VERIFY EXISTING CAPACITIES. CLEAN ALL COILS, CHANGE OIL ON ALL FILTERS, REPLACE ALL BELTS, AND TAKE THE FOLLOWING MEASUREMENTS TO DETERMINE THAT ALL EQUIPMENT CAPACITY IS IN PROPER WORKING CONDITION.
5. EXISTING DUCTWORK IS APPROXIMATE (BASED OFF EXISTING SITE PHOTOS). EXACT ROUTING WILL NOT BE VERIFIED FOR ANY MAJOR DISCREPANCIES. ALL EXISTING DUCTWORK THAT REMAINS SHALL BE CLEANED AND INSPECTED FOR LEAKS. REPAIR ANY LEAKS THAT MAY BE PRESENT AT THE TIME OF EXAMINATION.

① RS & RL LINES SIZED PER MANUFACTURER'S RECOMMENDATION. ROUTE TO RESPECTIVE INDOOR/OUTDOOR UNIT.

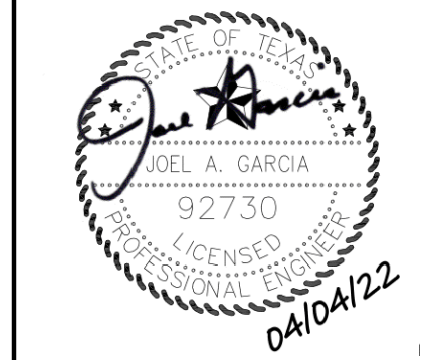


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| KITCHEN EQUIPMENT SCHEDULE | | | | | | | | | |
|----------------------------|-------------------------------|------|-------------|-----------|-------------|----------------|---------|-------------|---------------|
| ITEM # | DESCRIPTION | QTY. | CIRCUIT NO. | LOAD (VA) | VOLTAGE/PH. | WIRE | CONDUIT | TERMINATION | HEIGHT |
| C01 | CONVENIENCE OUTLET | 6 | ① | 1600 | 120V/1Ø | (2)#12 & #12G. | 3/4" | NEMA 5-20R | 18" AFF |
| C02 | CONVENIENCE OUTLET | 1 | ① | 1600 | 120V/1Ø | (2)#12 & #12G. | 3/4" | NEMA 5-20R | 18" AFF |
| E2 | POS SYSTEM | 2 | ① | 600 | 120V/1Ø | (2)#12 & #12G. | 3/4" | NEMA 5-20R | 18" AFF |
| E3 | WALK-IN REFRIGERATOR | 1 | ① | 600 | 120V/1Ø | (2)#12 & #12G. | 3/4" | NEMA 5-20R | 18" AFF |
| E4 | DOOR HEATER AND LIGHT CIRCUIT | 1 | ② | 1600 | 120V/1Ø | (2)#12 & #12G. | 3/4" | J-BOX | DFA |
| E4B | CO2 ALARM | 1 | ② | 1800 | 120V/1Ø | (2)#12 & #12G. | 3/4" | NEMA 5-20R | DFA |
| E4.1 | EVAPORATOR COIL | 1 | ② | 1206 | 208V/1Ø | (2)#12 & #12G. | 3/4" | J-BOX | DFA |
| E4.2 | REMOTE CONDENSING UNIT | 1 | ① | 1872 | 208V/1Ø | (2)#12 & #12G. | 3/4" | J-BOX | VERIFY |
| E7 | ICE CREAM MACHINE | 1 | ① | 2184 | 208V/1Ø | (2)#12 & #12G. | 3/4" | NEMA 6-20R | 18" AFF |
| E13 | REFRIGERATOR | 1 | ① | 600 | 120V/1Ø | (2)#12 & #12G. | 3/4" | NEMA 5-20R | 18" AFF |
| E16 | HEAT STRIP THRU CONTROLS | 1 | ① | 600 | 120V/1Ø | (2)#12 & #12G. | 3/4" | J-BOX | 54" AFF |
| E17 | HEAT STRIP THRU CONTROLS | 2 | ① | 996 | 120V/1Ø | (2)#12 & #12G. | 3/4" | J-BOX | 53" & 68" AFF |
| E18 | CHEESE MELTER | 1 | ① | 1656 | 120V/1Ø | (2)#12 & #12G. | 3/4" | NEMA 5-20R | DFA |
| E19 | REFRIGERATOR | 1 | ① | 600 | 120V/1Ø | (2)#12 & #12G. | 3/4" | NEMA 5-20R | 18" AFF |
| E21 | ICE MACHINE | 1 | ① | 2330 | 208V/1Ø | (2)#12 & #12G. | 3/4" | J-BOX | 84" AFF |
| E32 | DOOR HEATER AND LIGHT CIRCUIT | 1 | ① | 1600 | 120V/1Ø | (2)#12 & #12G. | 3/4" | J-BOX | DFA |
| E32B | TEMPERATURE MONITORING SYSTEM | 1 | ① | 1600 | 120V/1Ø | (2)#12 & #12G. | 3/4" | NEMA 5-20R | DFA |
| E32.1 | EVAPORATOR COIL | 1 | ① | 240 | 120V/1Ø | (2)#12 & #12G. | 3/4" | NEMA 5-20R | DFA |
| E32.2 | REMOTE CONDENSING UNIT | 1 | ① | 2496 | 208V/1Ø | (2)#12 & #12G. | 3/4" | NEMA 5-20R | VERIFY |
| E36 | SODA DISPENSER | 1 | ① | 1600 | 120V/1Ø | (2)#12 & #12G. | 3/4" | NEMA 5-20R | 48" AFF |
| E37 | ICE MACHINE | 2 | ① | 2600 | 208V/1Ø | (2)#12 & #12G. | 3/4" | J-BOX | 84" AFF |
| E38 | TEA BREWER | 2 | ① | 1600 | 120V/1Ø | (2)#12 & #12G. | 3/4" | NEMA 5-20R | 48" AFF |
| E40 | REFRIGERATED COLD PAN | 1 | ① | 864 | 120V/1Ø | (2)#12 & #12G. | 3/4" | NEMA 5-20R | 18" AFF |

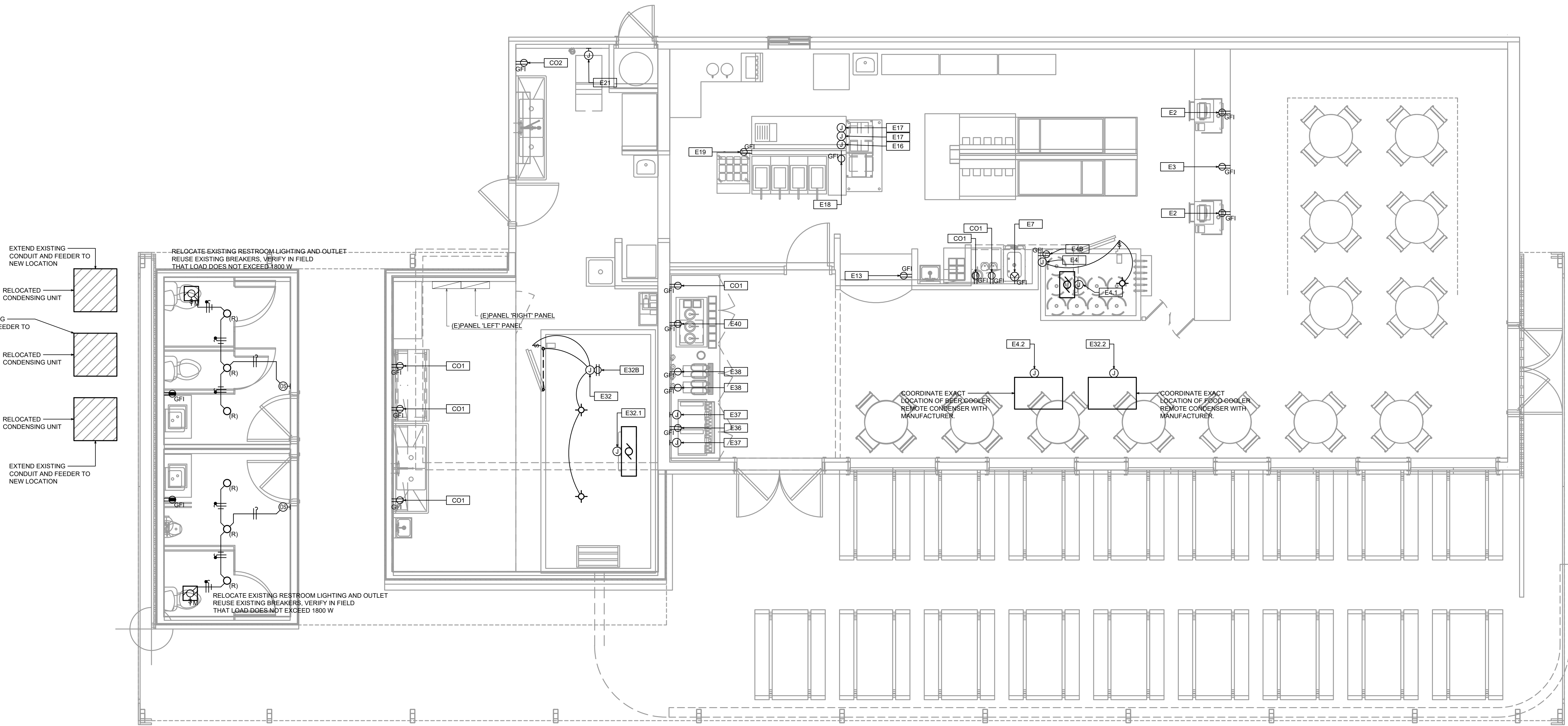
NOTE

ELECTRICAL CONTRACTOR SHALL COORDINATE LAYOUT AND ELECTRICAL REQUIREMENTS WITH FOOD SERVICE PLANS. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER.

2. REFER TO KITCHEN PLANS FOR DIMENSIONS. ELEVATIONS GIVEN ARE FROM FINISHED FLOOR TO CENTERLINE OF OUTLET. ALL CONVENIENCE OUTLETS ARE TO BE SET HORIZONTALLY.
3. ELECTRICAL TO CONNECT ALL ELECTRICAL EQUIPMENT AND FIXTURES AND DO ANY INTERNAL WIRING REQUIRED IN THE FIXTURES AS REQUIRED BY THE SPECIFICATIONS. ALL ELECTRICAL CABLET CONDUITS SHALL BE INSTALLED IN ACCORDANCE WITH THE SPECIFICATIONS FURNISHED BY THE ELECTRICIAN, AS WELL AS THE RECEPTACLE, UNLESS OTHERWISE NOTED. ALL NEW FEEDER LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE SPECIFICATIONS. GALVANIZED JUNCTION BOX IS THE FIXTURE CUTOFF TO RECEIVE THE RECEPTACLE, UNLESS OTHERWISE NOTED. ALL DISCONNECT SWITCHES REQUIRED ARE TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
4. ALL WORK TO BE PERFORMED IN FULL ACCORDANCE WITH ALL APPLICABLE CODES RELATING TO HOOK-UP, INSTALLATION AND WIRING OF EQUIPMENT.
5. ALL ELECTRICAL WORK FOR FABRICATED FOODSERVICE EQUIPMENT SHALL BE COMPLETED PRIOR TO THE EQUIPMENT BEING DELIVERED TO THE SITE OR PULL-BOX MOUNTED ON THE EQUIPMENT IN AN ACCESSIBLE POSITION. FINAL CONNECTIONS TO CURRENTLY EXISTING OR NEW ELECTRICAL PANELS SHALL BE MADE BY THE CONTRACTOR. ELECTRICAL WORK FROM PANEL BOARDS, TO BE BY THE ELECTRICAL CONTRACTOR.
6. FINAL CONNECTIONS TO ALL EQUIPMENT TO BE BY ELECTRICAL CONTRACTOR, INCLUDING MATERIALS.
7. ELECTRICAL CONTRACTOR TO FURNISH AND INSTALL THE FOLLOWING:
 - A. ALL JUNCTION-BOXES, ELECTRICAL OUTLETS, COVER PLATES/SWITCHES, ETC., NOT BUILT INTO FIXTURES OR EQUIPMENT. ALL OUTLETS, JUNCTION-BOXES, COVER PLATES, ETC., UNDISHOWN, OR AS INDICATED ON SCHEDULES, MUST BE VAPORPROOF.
 - B. ALL PLUGS AND CORDS AS NOTED ON THE DRAWINGS SHALL BE N.E.M.A.-RATED AND APPROVED FOR USE BY LISTED AND/OR MANUFACTURED EQUIPMENT.
8. WHERE PORTIONS OF A RACEWAY ARE KNOWN TO BE SUBJECTED TO DIFFERENT TEMPERATURES, WHERE CONDENSATION IS KNOWN TO BE A PROBLEM AS IN COLD STORAGE CASES, THE RACEWAY SHALL BE INSULATED.

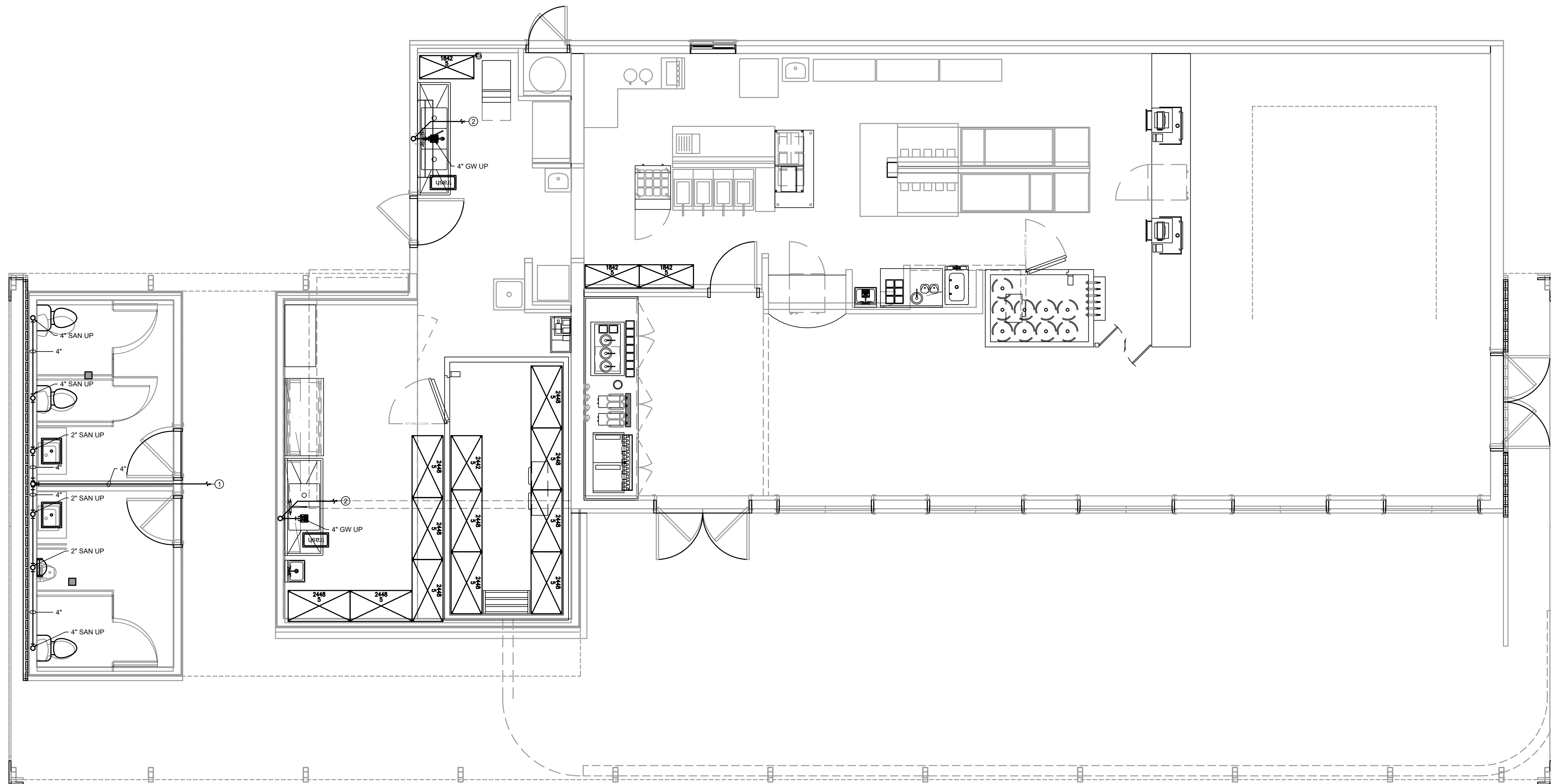
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|---|---|
| ① | REUSE EXISTING KITCHEN EQUIPMENT BREAKERS |
| ② | USE EXISTING SPARE BREAKERS |

1. CONTRACTOR TO VERIFY EXISTING FIELD CONDITIONS AND REPORT BACK DISCREPANCY



01 FLOOR PLAN - ELECTRICAL





01 UNDERFLOOR PLAN - PLUMBING

1. ALL EXISTING PLUMBING LINES SHOWN ARE APPROXIMATE. CONTRACTOR SHALL VERIFY EXACT LOCATIONS AND SIZES OF ALL EXISTING PLUMBING PRIOR TO BID.
2. CONTRACTOR SHALL PROVIDE ISOLATION SHUT-OFF VALVES ON THE INCOMING WATER LINES FOR EVERY PLUMBING FIXTURE.

- ① ROUTE NEW SANITARY SEWER TO NEAREST EXISTING SANITARY MAIN. FIELD VERIFY EXISTING SANITARY SEWER MAIN SIZE, LOCATION, DEPTH, AND DIRECTION OF FLOW PRIOR TO CONSTRUCTION.
- ② ROUTE NEW GREASE WASTE TO NEAREST EXISTING GREASE WASTE PIPING. FIELD VERIFY EXISTING SANITARY SEWER MAIN SIZE, LOCATION, DEPTH, AND DIRECTION OF FLOW PRIOR TO CONSTRUCTION.

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UNDERFLOOR PLAN - PLUMBING

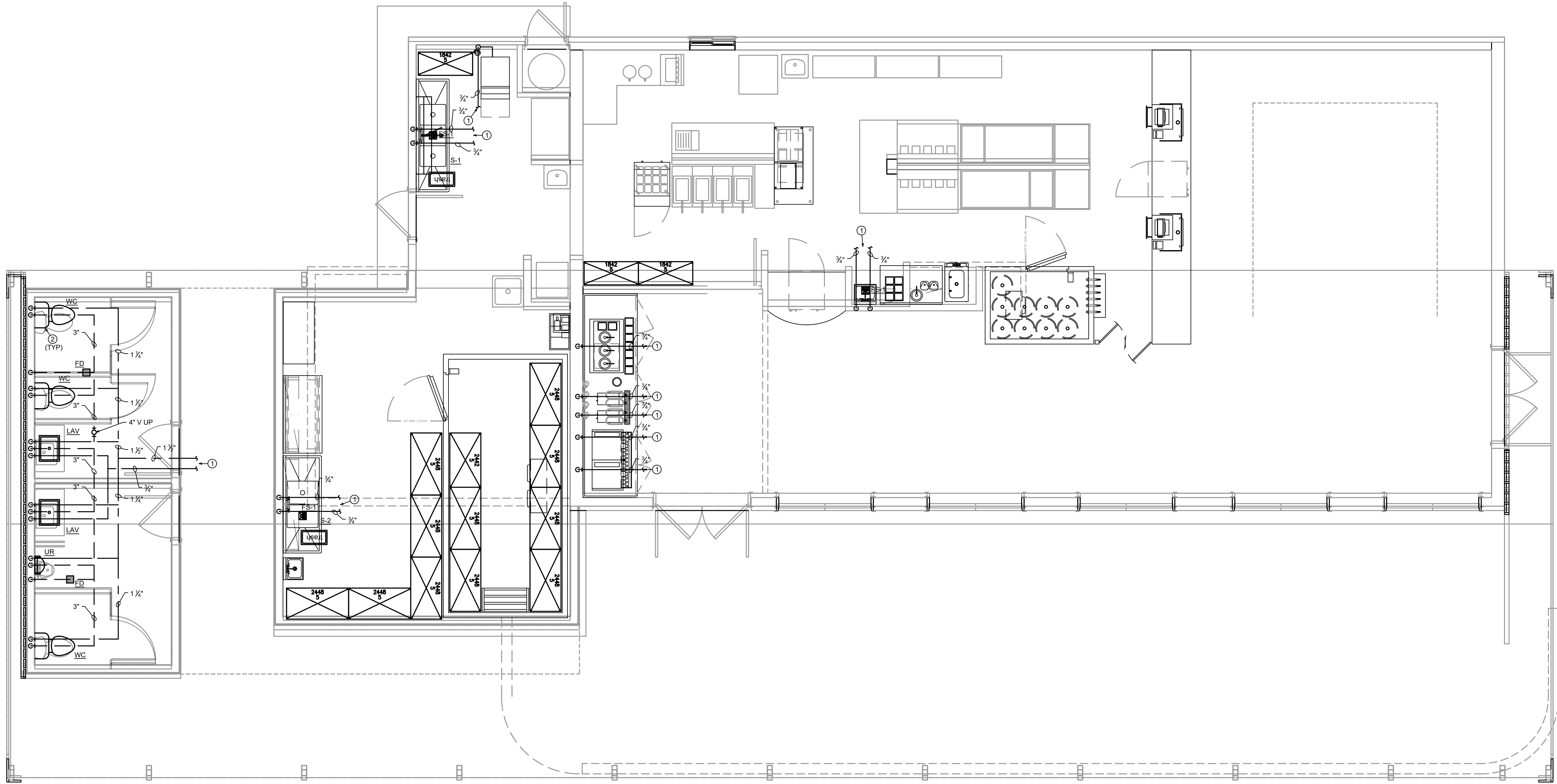
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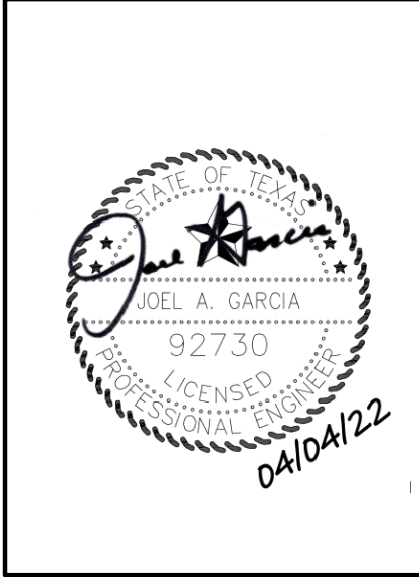


GENERAL NOTES:

1. ALL EXISTING PLUMBING LINES SHOWN ARE APPROXIMATE. CONTRACTOR SHALL VERIFY EXACT LOCATIONS AND SIZES OF ALL EXISTING PLUMBING PRIOR TO BID.
2. CONTRACTOR SHALL PROVIDE ISOLATION SHUT-OFF VALVES ON THE INCOMING WATER LINES FOR EVERY PLUMBING FIXTURE.

KEYED NOTES BY SYMBOL:

- ① ROUTE NEW CW AND HW PIPING TO NEAREST EXISTING CW AND HW MAIN PIPING. FIELD VERIFY EXISTING CW AND HW MAIN PIPING LOCATION AND SIZE PRIOR TO CONSTRUCTION.
- ② EXISTING PLUMBING FIXTURES TO BE RELOCATED TO NEW LOCATION.



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| FLOOR PLAN - PLUMBING | |
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01 FLOOR PLAN - PLUMBING
SCALE: 1/4" = 1'-0"



