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ADDENDUM NO. 01
June 4, 2025

REGISTERED ARCHITECT
MELISSA A. KAPPLE
30374
STATE OF TEXAS
Melissa Kapple
06/04/2025

To Drawings and Specifications dated May 20, 2025.

New CTE Center & Hargrave High School Renovations

Prepared by: PBK
11 Greenway Plaza, 22nd Floor
Houston, TX 77046-1104
PBK Project No: 220430

Notice to Bidders

A. Receipt of this Addendum shall be acknowledged on the Bid Form.
B. This Addendum forms part of the Contract documents for the above referenced project and shall be incorporated integrally therewith.
C. Each bidder shall make necessary adjustments and submit his proposal with full knowledge of all modifications, clarifications, and supplemental data included therein. Where provisions of the following supplemental data differ from those of the original Contract Documents, this Addendum shall govern.

GENERAL

Item No. 01 See attached Structural Narrative
Item No. 02 See attached MEPT Narrative
Item No. 03 See attached Bidder Questions and Answers
Item No. 04 See attached Pre-Proposal Meeting Sign In Sheet
Item No. 05 See attached Pre-Proposal Meeting Agenda & Presentation
Item No. 06 See attached Geotechnical Report for Reference

SPECIFICATIONS

Item No. 07 **01 22 00 Unit Prices** – Delete section in its entirety.
Item No. 08 **01 23 00 A**lternates – Replace section in its entirety
Item No. 09 **02 52 00 Asbestos Remediation** – Delete section in its entirety.
Item No. 10 **03 35 43 Polished Concrete Finishing**: In paragraph 2.4 Add sub paragraph C as follows:
C. Surface Restoration Polymer:
1. Basis of Design SRG-1 Surface refinement Grout by Metzger/McGuler
Item No. 11 **03 52 16 Lightweight Insulating Concrete Deck System**: Add section in its entirety.
Item No. 12 **05 75 00 Decorative Formed Metal**: In paragraph 2.2 sub paragraph A, Revise as follows: A. Flooring Transition (MT-~~1~~2).
Item No. 13 **06 20 00 Finish Carpentry:** In paragraph 2.3 sub paragraph A, revise PL-3A to read **PL2** and revise PL-3B to read **PL3**.
Item No. 14 **07 24 00 Exterior Insulation and Finish Systems**: Add section in its entirety.
Item No. 15 **07 27 26 Fluid Applied Air Barrier**: Add section in its entirety.
Item No. 16 **07 42 13 Metal Wall Panels:** In paragraph 2.2 Sub Paragraph 2, Revise color to read as follows: d. Color: 1) MPU-2: Honey Walnut FW-1015. 2) MPU-3: Dark Bronze FW-1025.
Item No. 17 **08 80 00 Glazing**: In paragraph 4.1, Sub Paragraph C, Sub Sub Paragraph 3, Revise Interior light and Film of GI2 as follows:
3) Interior Lite: GL1
~~(a) Thickness: 1/4 inch (6 mm).~~
~~(b) Color: Clear.~~
~~(c) Coatings: None.~~
~~4) Film:~~
~~(a) F-1.~~

Item No. 18 **09 30 00 Tiling**: In paragraph 2.2 Sub Paragraph F, Revise color to read as follows: c. Color: ~~Lipstick Lef & Right BRI23.~~ Lipstick Red Gloss BRI23

Item No. 19 **09 51 00 Acoustical Ceilings:** In Paragraph 2.2 Sub, revise sub paragraph C as follows:

C. Acoustical Ceiling Panels (ACS-2): Mineral fiber with scrubbable finish, with the following characteristics:

1. Basis of Design:
    a. Kitchen Zone manufactured by Armstrong World Industries, Inc.
2. Classification: ASTM E1264 Type IX.
    a. Form: 2, water felted.
    b. Pattern: "G" - smooth.
3. Size: 24 by 24 inches (610 by 610 mm).
4. Thickness: 5/8 inch (16 mm).
5. Minimum Ceiling Attenuation Class (CAC): 33, determined in accordance with ASTM E1264.
6. Fire Performance: Class A determined in accordance with ASTM E84.
7. Panel Edge: Square.
8. Color: White
9. Suspension System: Exposed

Item No. 20 **09 67 00 Fluid- Applied Flooring**: In paragraphs 2.2 and 2.4 remove Duraflex as alternate product.

Item No. 21 **09 78 00 Interior Wall Paneling:** Delete Section in its entirety.

Item No. 22 **10 51 13 Metal Lockers**: Add Paragraph 2.4 As follows:

2.4 LOCKER BENCHES

A. Locker Benches: Stationary type; bench top of laminated birch; painted steel pedestals.
    1. Accessibility: Comply with ICC A117.1 and ADA Standards.
    2. Size: Refer to Drawings.

B. Locker Bench Support Brackets: Welded structural aluminum single arm floor mount pedestal bench support brackets; pre-drilled for bench top material attachment and for wall anchorage.
    1. Accessibility: Comply with ICC A117.1 and ADA Standards.
    2. Size: Refer to Drawings.
    3. Load Capacity per Bracket: 400 pounds (181 kg).
    4. Finish: Clear anodized.
    5. Bracket Spacing: 36 inches on center (914 mm on center), maximum. Project-specific spacing to be determined based on field measurements.
    6. Bracket-to-Wall Attachment: Fasteners/anchors recommended by bracket manufacturer for wall construction conditions encountered.
    7. Products:
        a. Rakks/Rangine Corporation; Bench Support Brackets: http://www.rakks.com/#sle.
        b. Substitutions: See Section 01 60 00 - Product Requirements.

Item No. 23 **11 53 00 Laboratory Equipment:** Add section in its entirety.

Item No. 24 **43 41 13.33 Ground Storage Tank:** Add section in its entirety.

DRAWINGS

CIVIL MASS GRADING

Item No. 25 C2.0A DEMOLITION PLAN (1OF 2)

A. Sidewalk removal quantity added for proposed agricultural center mechanical yard.
B. 8" water line to no longer be removed. New fire tank location no longer impacts this waterline.

Item No. 26 C2.1A DEMOLITION PLAN (2 OF 2)

A. Pavement removal quantity added for raised crosswalk installation.

Item No. 27 C3.0A OVERALL SITE PLAN

A. No design updates on this sheet. New location of fire tank added.

Item No. 28 C4.0A EROSION CONTROL PLAN (1 OF 2)

A. No design updates on this sheet. New location of fire tank added.

Item No. 29 C5.1A GRADING PLAN (1 OF 4)

A. No design updates on this sheet. Note added to reference landscape plans for sidewalk removal and replacement plan north of the gym addition.

Item No. 30 C5.2A GRADING PLAN (2 OF 4)

A. New location of fire tank added.
B. Paving and mountable curb added from Agricultural center mechanical yard to proposed fire lane.

Item No. 31 C5.3A GRADING PLAN (3 OF 4)

A. Paving and mountable curb added from Agricultural center mechanical yard to proposed fire lane.

Item No. 32 C6.1A PROPOSED DRAINAGE AREA MAP (2 OF 2)

A. No design updates on this sheet. New location of fire tank added.

Item No. 33 C7.1A STORM SEWER PLAN (2 OF 4)

A. No design updates on this sheet. New location of fire tank added.

Item No. 34 C8.1A DETENTION POND SERVICE AREA MAP

A. No design updates on this sheet. New location of fire tank added.

Item No. 35 C9.0A FLOODPLAIN MITIGATION PLAN

A. No design updates on this sheet. New location of fire tank added.

CIVIL SITE PLAN

Item No. 36 C2.0B OVERALL SITE PLAN

A. No design updates on this sheet. New location of fire tank and mechanical yard paving added.

Item No. 37 C3.0B FIRE PROTECTION PLAN (1 OF 2)

A. No design updates on this sheet. New location of fire tank added.

Item No. 38 C4.0B EROSION CONTROL PLAN (1 OF 2)

A. No design updates on this sheet. New location of fire tank added.

Item No. 39 C4.1B EROSION CONTROL PLAN (2 OF 2)

A. Silt fencing added for Landscape removal and replacement of sidewalk plan north of the gym addition.

Item No. 40 C5.0B DIMENSION CONTROL AND PAVING PLAN (1 OF 4)

A. Hatching of landscape paving added plan north and east of the gym addition.
B. Hatching of landscape paving added to the northeast entrance of Huffman MS.

Item No. 41 C5.1B DIMENSION CONTROL AND PAVING PLAN (2 OF 4)

A. Mountable curb and pavement from Ag building mechanical yard to proposed fire lane.
B. Proposed fire tank relocation and yellow no parking striping added.
C. Hatching of landscape paving added plan east of the cte building.
D. Hatching of landscape paving and decorative fence added for dog run at cte building.

Item No. 42 **C5.2B DIMENSION CONTROL AND PAVING PLAN (3 OF 4)**

A. Mountable curb and pavement from Ag building mechanical yard to proposed fire lane.
B. Proposed fire tank relocation and yellow no parking striping added.

Item No. 43 **C7.1B UTILITY PLAN (2 OF 4)**

A. Sanitary sewer stub location updated.
B. Waterline updates going to the CTE building stubs.
C. Waterline routing updated for new fire tank location.

Item No. 44 **C7.2B UTILITY PLAN (3 OF 4)**

A. No design updates on this sheet. New location of fire tank added.

CIVIL FIRE SUPPRESSION

Item No. 45 **C-001 0 INDEX, NOTES, AND LEGEND**

A. replace sheet in its entirety

Item No. 46 **C-002A – SURVEY (FOR INFORMATION ONLY)**

A. Replace sheet in its entirety

Item No. 47 **C-002B – SURVEY (FOR INFORMATION ONLY)**

A. Replace sheet in its entirety

Item No. 48 **C-002C – SURVEY (FOR INFORMATION ONLY)**

A. Replace sheet in its entirety

Item No. 49 **C-101 – SITE AND DIMENSIONAL CONTROL PLAN**

A. Replace sheet in its entirety

Item No. 50 **C-201 – UTILITY AND GRADING PLAN**

A. Replace sheet in its entirety

Item No. 51 **C-401 – DETAILS**

A. Replace sheet in its entirety

Item No. 52 **C-402 – DETAILS**

A. Replace sheet in its entirety

LANDSCAPING

Item No. 53 **L5.03 – IRRIGATION PLAN**

A. Replace sheet in its entirety

ARCHITECTURAL

Item No. 54 **G-001 - SHEET INDEX – NARRATIVE ONLY**

A. Revise sheet names as follows: A-404 - Enlarged Plans & Interior Elevations - Gym ; A-405 Enlarged Floor Plan Gym

Item No. 55 **G-202HJ- FIRE LANE PLAN**

A. HC review comment response; added fire lane plan to comply with HCF review; shown turnaround meeting appendix D of IFC 2021; this adds striping to ensure code compliance

Item No. 56 **G-203HJ - LIFE SAFETY EGRESS PLAN - FIRST FLOOR - AG**

A. HC review comment response; revised existing covered ag expo occupancy type and occupant count, revised new covered ag expo addition occupancy type and occupant count; added notes for clarification ; removed linework to clarify conditions, added Axo to show facility to express building conditions, added required fire extinguishers to ag expo area

Item No. 57 **G-302DE- LIFE SAFETY EGRESS PLAN COMPOSITE - HS**

A. Added sheet to satisfy HCF request for existing facility, added indicator of 2hr fire wall assembly

Item No. 58 **AS101HJ - ARCHITECTURAL SITE PLAN - AG**

A. SK-015; 28/AS101HJ revise chain-link fence gate detail to include headrail and closure at gate

Item No. 59 **AS403 - ARCHITECTURAL ENLARGED SITE PLANS**

A. 06/AS403 keynoted downspouts 13 34 19 and dimensioned width of canopy
B. 18/AS403, revised flashing note, counter flashing is not saw-in, apply per pemb stds.

C. Added H126 to gate schedule
D. 16/AS403 add note at gate, PROVIDE HEADER FOR CLF GATE, RE: 28/AS101HJ
E. 30/AS403 add callout to gate H126 to refer to 28/AS101HJ

Item No. 60 AD101HJ - 1ST FLOOR DEMOLITION PLAN – COMPOSITE – NARRATIVE ONLY

A. 06/AD101HJ remove notes related to existing fence line west of ag, fence is not in place so has no need to be in demo scope

Item No. 61 AD101H - 1ST FLOOR DEMOLITION PLAN - AREA H

A. 04/AD101H revise keynote legend to include work with existing shower and furring, existing shower. Scope of demolition revised to remove only existing shower pan, revise work in custodial E107, remove existing door south in floral, to be filled in.

Item No. 62 A-101D - 1ST FLOOR PLAN - AREA D

A. Added window shade (remark #1) to windows C146B AND C146C adding shades to these windows
B. Door C141 changed to 1.5 HR fire rating; BOY'S LOCKERS C144 TO BOY'S LOCKER C134
C. Added door C144A, 1.5 HR roll up door
D. Changed C146B to storefront door will be GI2 glass
E. Added to schedule this sheet.
F. Add furring at south wall in boys locker room (C144)

Item No. 63 A-101E - 1ST FLOOR PLAN - AREA E

A. SK-010; revise doors C152F AND C152E TO 1.5 HR rated doors. Added door glazing material in the door schedule

Item No. 64 A-101K1 - 1ST FLOOR SCHEDULES - AREA K

A. Windows 204C.1, 204C.2, 206A.1, AND 206A.2 added blackout window shades/remark #5;
B. Window 202B.1 added regular horizontal mounted window shade/remark #1.
C. Added dimensions for doors (201A.3, 201A.4, 202A.2, 202A.3)

Item No. 65 A-101K - 1ST FLOOR PLAN - AREA K

A. SK-001; revise IDF 211 and enlarge riser 213 to accommodate pump/riser system; change includes A-201K

Item No. 66 A-101L1- 1ST FLOOR SCHEDULES - AREA L

A. Remove window shade from 130A.2 (kennel sidelight at door); windows 111.2, 121.1, AND 127.1
B. Added regular horizontal mounted window shade/remark #1, not black out

Item No. 67 A-101L - 1ST FLOOR PLAN - AREA L – NARRATIVE ONLY

A. Remove keynote off counter (12 36 00.PLC IN VET TECH LAB) from floor plan
B. Changed keynote 12 22 00.CTN TO 10 21 23.CC1 (CURTAIN IN HEALTH LAB)

Item No. 68 A-102D - 2ND FLOOR PLAN - AREA D – NARRATIVE ONLY

A. Doors C250, C252, to have GI1 glazing material in storefront & curtain wall schedule

Item No. 69 A-201K - 1ST FLOOR CEILING PLAN - AREA K

A. SK-001; 06/A-201K; revise ACT ceiling in IDF 211 to match room size revisions

Item No. 70 A-402 - ENLARGED FLOOR PLANS – GYMNASIUM – NARRATIVE ONLY

A. 18/A-402 section at stair from new to existing gym changed flooring keynote from 06 20 00.HN1 to 09 64 66.WGM1

Item No. 71 A-403 - ENLARGED PLANS & INTERIOR ELEVATIONS – GYMNASIUM – NARRATIVE ONLY

A. 22/A-403, 23/A-403, AND 24/A-403 keynote changed from 12 36 00.PLC to 06 20 00.PLC1 in views

Item No. 72 A-404 - ENLARGED PLANS & INTERIOR ELEVATIONS – GYM

A. SK-011 02/A-404 ENLARGED PLAN OF RAMP, CONCORSE C141, dimensions added to ramp handrails at landing, handrails to extend 1'-0" at landings; RAS comment response

Item No. 73 A-405 - ENLARGED FLOOR PLANS GYM

A. SK-012 6/A-405; STORAGE C153, revised furring at north wall to 6" CMU
B. Revised dims and placement of furring to reflect change in structure

C. Keynote 13 34 16.53BLR changed to 12 66 13

Item No. 74 **A-408 - ENLARGED TOILET PLANS & INTERIOR ELEVATIONS - GYMNASIUM**

A. 03/A-408 AND 30/A-408 keynote changed from 12 36 00.PLC TO 06 20 00.PLC1

B. 10/A-408 AND 29/A-408 TA-1W(TYP.) was changed to TA-1W & TA-13 (TYP.) Was changed to TA-13

C. SK-013 21/A-408 MEN'S RR C142, min clear width for ADA changed to 5'-2", noted 7" clear from door to partition, to define adequate toe clearance, moved ambulatory stall to west, placed reg stall between ADA and ambulatory, RAS comment response

Item No. 75 **A-411 - ENLARGED FLOOR PLANS - AG**

A. 06/A-411 custodial E107 changed to adult restroom E107added fixtures and related notes; added elevations, relocated welding booths as required due to moving of electrical panels from E101 South wall, added column lines 2A and 3A to show estimated locations of existing mezzanine framing, at column 2A, added furring, existing furring will need to be removed to allow for new work associated with fire rating existing assembly, removed ceiling/ceiling fixtures legend from sheet, do not apply to floor plan; 07-10/A-411 added new interior elevations for adult restroom; added toilet accessories legend E107; revised locations of portable welders North and South walls, added door H102, align also with new wall to fill in opening from existing door shown removed in demolition AD101H

Item No. 76 **A-420 - ENLARGED PLAN - ADMIN**

A. SK-002; 03/A-420, ENLARGED PLAN - AREA K - ADMIN OFFICE, BREAKROOM 116 SOUTH WALL, moved north 2" to provide required ADA clearance for door 112.2 in ADMIN 112 CORRIDOR; corridor width is also now 5'-0" clear as required by ADA.

Item No. 77 **A-423 - ENLARGED TOILET PLANS - CTE**

A. SK-004; 06/A-423 added east-west dimension of 8'-0" from drain to wall and added toilet accessories annotation to clarify.

B. 14/A-423 removed paper towel dispenser from room, non-compliant, electrical hand dryer already present in space. RAS comment response

C. 06/A-423, RR 137 AND RR 139, accessible stall graphic issue corrected

D. SK-005 RR 207, 209 added note to call out accessories, elec. Hand dryer and soap dispenser (OFCI).

E. SK-006 15/A-423 paper towel dispenser in RR 118 moved to west wall

Item No. 78 **A-425 - ENLARGED STAIR PLANS & SECTIONS - CTE**

A. SK-006; revised 04/A-425 to show cane detection rail, aligns with detail on SHEET 02/A-547

Item No. 79 **A-501 - EXTERIOR ELEVATIONS - GYMNASIUM**

A. 06/A-501: removed enlarged elevation 09/a-524 callout annotation

B. 06/A-501 elevation revised to reflect change in door c146b to aluminum storefront

Item No. 80 **A-503 - EXTERIOR ELEVATIONS - AG**

A. 24/A-503; gabled end panel is noted in plan but was not properly noted or shown in elevation, added panel and notes to gabled end panel in exterior elevation; added notes to show HCF area is open pavilion

B. 06/A-503 AND 12/A-503 changed keynote from 07 62 00.DSP TO 13 34 19.DSP (2 instances).

C. Changed keynote 07 62 00.GTR TO 13 34 19.GTR (2 instances)

Item No. 81 **A-511 - ENLARGED EXTERIOR ELEVATIONS – GYMNASIUM**

A. 18/A-511 corrected to show missing items, view corrected to display properly.

Item No. 82 **A-521 - INTERIOR ELEVATIONS - GYM**

A. 06/A-521; north wall furring changed to full height; removed 45 degree kickback wall

B. 06/A-521 AND 18/A-521 changed keynote 13 34 16.53 TO 12 66 13

Item No. 83 **A-522 - INTERIOR ELEVATIONS – GYM – NARRATIVE ONLY**

A. VIEWS 06/A-522 & 18/A-522 CHANGED KEYNOTE 13 34 16.53 TO 12 66 13

Item No. 84 **A-523 - INTERIOR ELEVATIONS – GYM – NARRATIVE ONLY**

A. 14/A-523 KEYNOTE CHANGED FROM 12 36 00.PLC TO 06 20 00.PLC1; 20/A-523 INTERIOR ELEVATION LOBBY SOUTH C155; ADD INTUMECENT FIREPROFFING PAINT TO EXPOSED COLUMN; 24/A-523 INTERIOR ELEVATION LOBBY EAST C155; ADD INTUMECENT FIREPROFFING PAINT TO EXPOSED COLUMN.

Item No. 85 **A-524 - INTERIOR ELEVATIONS - GYM**

A. SK-014 16/A-524 added dimensions to existing opening that will get closed up to become a wall

Item No. 86 **A-531 - INTERIOR ELEVATIONS – AG – NARRATIVE ONLY**

A. 15/A-531 added finish keynote of 09 90 00.P1 to upper wall; added finish note to lower walls in intro welding lab, where possible, walls need to be covered in metal wall panels per owner

Item No. 87 **A-543 - INTERIOR ELEVATIONS – CTE – NARRATIVE ONLY**

A. 27/A-543 update greenscreen keynote from 11 52 00 TO 11 52 00.GS

Item No. 88 **A-544 - INTERIOR ELEVATIONS – CTE – NARRATIVE ONLY**

A. 22/A-544 changed keynote 12 36 00.PLC TO 06 20 00.PLC1 (two instances in same view)

Item No. 89 **A-547 - INTERIOR ELEVATIONS - CTE**

A. SK-007 02/A-547;AREA K - ENGINEERING LAB 201A - NORTH ELEV.; add cane detection system 05 52 00.CDS under engineering stair, RAS review comment response; clarify note to rail at engineering stair, change from 05 52 00 TO 05 52 00.MRS.

Item No. 90 **A-548 - INTERIOR ELEVATIONS - CTE**

A. 13/A-548, 17/A-548, AND 22/A-548 updated keynote of markerboard from 10 11 00.MBG TO 10 11 00.MBG1

B. 14/A-548 AND 20/A-548 updated keynote of smartboard from 12 52 00.M65 TO 11 52 00.SB1

C. 01/A-548 AREA L RECEPTION 110 north elevation added keynote 07 81 23.IIC of intumescent paint to column

D. 02/A-548 AREA L RECEPTION 110 WEST ELEVATION added keynote 07 81 23.IIC of intumescent paint to column.

Item No. 91 **A-621 - WALL SECTIONS – GYM**

A. SK-016 03/A-622 revised wall section to align with door revision to aluminum storefront

B. Revised canopy height

Item No. 92 **A-623 - WALL SECTIONS – GYM – NARRATIVE ONLY**

A. 02/A-623 AND 06/A-623 keynoted specified wall paint from general to color specific 09 90 00.P2

B. 04/A-623 AND 06/A-623 changed keynote from 09 64 66.WGM TO 09 64 66.WGM1

Item No. 93 **A-624 - WALL SECTIONS – GYM – NARRATIVE ONLY**

A. 01/A-624, 03/A-624, AND 06/A-624 UPDATE KEYNOTE 09 64 66.WGM TO 09 64 66. WGM1

Item No. 94 **A-701 - PLAN DETAILS - GYMNASIUM**

A. 02/A-701 PLAN AT GYM STOREFRONT , 04/A-701 TYP EXT COLUMN WRAP DETAIL , 05/A-701 LOBBY ENTRY, 08/A-701 COLUMN FURROUT , 10/A-701 NORTH EXT WALL AT GYM, 12/A-701 JOINT CONN. FOR EXIST. TO ADD. , 21/A-701 EXTERIOR COLUMN WRAP, AND 23/A-701 EXISTING TO ADDITION JOINT INSULATION TYPE CHANGED FROM 07 24 00.EFS (EXTERIOR INS) TO 07 21 00.XPS (POLYSTYRENE BOARD INS)

Item No. 95 **A-703 - PLAN DETAILS - CTE**

A. 02/A-703 PLAN DETAIL IDF 211, 03/A-703 PLAN DETAIL CULINARY CLASSROOM 202B, 15/A-703 PLAN DETAIL VET TECH LAB 130, AND 18/A-703 PLAN DETAIL HEALTH CLASSROOM 123 INSULATION TYPE CHANGED FROM 07 24 00.EFS (EXTERIOR INS) TO 07 21 00.XPS (POLYSTYRENE BOARD INS)

Item No. 96 **A-704 - PLAN DETAILS - CTE**

A. 02/A-704 PLAN DETAIL AT SECRETATY 111, 04/A-704 PLAN DETAIL AT AG SCI CLRM 134, AND 22/A-704 PLAN DETAIL AT EDUCATION 121 EXT WALL INSULATION TYPE CHANGED FROM 07 24 00.EFS (EXTERIOR INS) TO 07 21 00.XPS (POLYSTYRENE BOARD INS)

Item No. 97 A-720 - WALL SECTIONS DETAILS – CTE

A. SK- 008 13/A-720 added vertical dimension of 1' - 1 7/8" from roof system to treated plywd backup

Item No. 98 A-821 - WINDOW, CURTAINWALL & STOREFRONT ELEVATIONS – GYMNASIUM

A. Revise glazing material legend, consistent with SK-009

Item No. 99 A-822 - WINDOW, CURTAINWALL & STOREFRONT ELEVATIONS – CTE

A. Revise window elevations,

B. Revise glazing material legend, consistent with SK-009

Item No. 100 A-823 - WINDOW, CURTAINWALL & STOREFRONT ELEVATIONS – CTE

A. SK- 009 A-823 revise glazing materials legend

Item No. 101 A-842 - CASEWORK ELEVATION

A. 02/A-842, 04/A-842, 09/A-842, 10/A-842, 12/A-842, 14/A-842, 16/A-842, 18/A-842, 20/A-842, 21/A-842, 22/A-842, AND 28/A-842 keynote changed from 12 36 00.PLC TO 06 20 00.PLC

B. 04/A-842, 06/A-842, 08/A-842, 12/A-842, 14/A-842, 18/A-842, 24/A-842, AND 30/A-842 electrical outlet keynote changed from 10 51 13.ELC TO 26 00 00.ELC (GRAPHICAL ERROR)

C. 10/A-842 light switch keynote changed from 12 35 53.13SWT TO 26 00 00

D. 04/A-842 casework counter shown at incorrect high, corrected TO 2'- 10 1/2" ; response to RAS comment

Item No. 102 AF100 - FINISH SCHEDULE

A. Revised finish schedules, interior and exterior

BUILDING ENVELOPE

Item No. 103 A-301DE – ROOF PLAN – REROOF - GYM

A. Replace sheet in its entirety

END OF ADDENDUM NO. 01

Attachments include 264 additional sheets ending with TS-101.C

ADDENDUM NO. 1
June 4, 2025

STRUCTURAL ITEMS

To Drawings and Specifications dated May 20th, 2025.

Prepared by: Kubala Engineers
11 Greenway Plaza, Suite 1510
Houston, TX 77046-1104

KE Project No: 240157

Notice to Bidders:

A. Receipt of this Addendum shall be acknowledged on the Bid Form.
B. This Addendum forms part of the Contract documents for the above referenced project and shall be incorporated integrally therewith.
C. Each bidder shall make necessary adjustments and submit his proposal with full knowledge of all modifications, clarifications, and supplemental data included therein. Where provisions of the following supplemental data differ from those of the original Contract Documents, this Addendum shall govern.

a. Engineer and Architects approval. Contractor must have approved submittals stamped and dated from the Engineer and Architect minimum 10 days prior to bid.

SPECIFICATIONS

DRAWINGS

STRUCTURAL GYM PACKAGE

Item No 01 **S-100 - COMPOSITE STRUCTURAL SITE PLAN**
A. Structural Scope Items list updated. See clouded changes in reissued sheet.

Item No 02 **S-100A - STRUCTURAL SITE PLAN - AREA A**
A. Structural Scope Items list updated. See clouded changes in reissued sheet.

Item No 03 **S-100C - STRUCTURAL SITE PLAN - AREA C**
A. Structural Scope Items list updated. See clouded changes in reissued sheet.

Item No 04 **S-100D - STRUCTURAL SITE PLAN - AREA D**
A. Structural Scope Items list updated. See clouded changes in reissued sheet.

Item No 05 **S-101D - FOUNDATION PLAN - AREA D**
A. Grid dimensions added for Grid H. See clouded changes in reissued sheet.
B. Piers and grade beams revised. See clouded changes in reissued sheet.

Item No 06 **S-101E - FOUNDATION PLAN - AREA E**
A. Piers and grade beams revised. See clouded changes in reissued sheet.
B. Cantilever grade beam and pier layout revised. See clouded changes in reissued sheet.
C. Brace frame elevation 6/S-300 shifted. See clouded changes in reissued sheet.
D. New brace frame elevation 3/S-600 added. See clouded changes in reissued sheet.

Item No 07 **S-102D - SECOND FLOOR/LOW ROOF FRAMING PLAN - AREA D**

A. Infill framing and note shown at existing stairwell. See clouded changes in reissued sheet.

Item No 08 **S-103D - MID ROOF FRAMING PLAN - AREA D**

A. BFB shown for brace frame. See clouded changes in reissued sheet.

Item No 09 **S-104E - HIGH ROOF FRAMING PLAN - AREA E**

A. Section cuts revised. See clouded changes in reissued sheet.

Item No 10 **S-302 - GENERAL GRADE BEAM NOTES AND TYP DETAILS**

A. 1/S-300 - reinforcement for GB8* revised. See clouded changes in reissued sheet.

Item No 11 **S-303 - GENERAL FOUNDATION NOTES AND TYP DETAILS**

A. 1/S-303 – vertical reinforcement for 30/72 revised. See clouded changes in reissued sheet.

Item No 12 **S-320 - SITE ITEMS FOUNDATION SECTIONS AND DETAILS**

A. Detail 7 & 8 revised. See clouded changes in reissued sheet.

Item No 13 **S-321 - SITE ITEMS FOUNDATION SECTIONS AND DETAILS**

A. Details 1&4 revised. See clouded changes in reissued sheet.

B. Detail 2 & 3 removed from sheet.

STRUCTURAL AG SCIENCE BUILDING PACKAGE

Item No 14 **SD-101 - DEMO PLAN**

A. Additional areas of slab demo and replace at demoed underfloor piping added to demo plan. See clouded changes in reissued sheet.

Item No 15 **S-100 - COMPOSITE STRUCTURAL SITE PLAN**

A. New sheet added to set.

Item No 16 **S-100B - STRUCTURAL SITE PLAN - AREA B (AG BLDG)**

A. New sheet added to set.

Item No 17 **S-101J - FOUNDATION PLAN AREA J**

A. Additional areas of slab demo and replace at demoed underfloor piping added to demo plan. See clouded changes in reissued sheet.

B. Canopy foundations revised. See clouded changes in reissued sheet.

C. Piers added at gate in service yard area. See clouded changes in reissued sheet.

Item No 18 **S-102J - SCHEMATIC ROOF FRAMING PLAN AREA J**

A. Infilled openings at demoed exhaust fans added to plan. See clouded changes in reissued sheet.

Item No 19 **S-302 - GENERAL GRADE BEAM NOTES AND TYP DETAILS**

A. 1/S-300 – Width of GB2 revised. See clouded changes in reissued sheet.

B. 1/S-300 – GB3 added. See clouded changes in reissued sheet.

Item No 20 **S-311 - PEMB NOTES & DETAILS**

A. Detail 1 revised. See clouded changes in reissued sheet.

STRUCTURAL CTE BUILDING PACKAGE

Item No 21 **S-100 - COMPOSITE STRUCTURAL SITE PLAN**

A. New sheet added to set.

Item No 22 **S-100B - STRUCTURAL SITE PLAN - AREA B (CTE)**

A. New sheet added to set.

Item No 23 **S-101K - FOUNDATION PLAN - AREA K**

A. Extents of hatched areas indicating Note 2.2 revised. Notes in polished concrete finish areas revised to indicate they are intended for hatched area. See clouded changes in reissued sheet.

Item No 24 **S-101L - FOUNDATION PLAN - AREA L**

A. Extents of hatched areas indicating Note 2.2 revised. Notes in polished concrete finish areas revised to indicate they are intended for hatched area. See clouded changes in reissued sheet.
B. Slab note 2.1 added in unhatched areas. See clouded changes in reissued sheet.
C. Thickened slab and 2/S-311 cut at wide storefront. See clouded changes in reissued sheet.

Item No 25 **S-103L - LOW ROOF FRAMING PLAN - AREA L**

A. **Opening for exhaust fan added.** See clouded changes in reissued sheet.

Item No 26 **S-303 - GENERAL FOUNDATION NOTES AND TYP DETAILS**

A. Drilled & Underreamed Piers note 9 and 11 deleted. See clouded changes in reissued sheet.

Item No 27 **S-311 - FOUNDATION DETAILS**

A. Detail 2 added to sheet. See clouded changes in reissued sheet.

Item No 28 **S-320 - SITE ITEMS FOUNDATION SECTIONS AND DETAILS**

A. Details 8 & 9 added to sheet. See clouded changes in reissued sheet.

End of Structural Addendum

ADDENDUM #01
June 4, 2025
MEP/TS ITEMS

To Drawings and Specifications dated May 22, 2025

Prepared by: PBK
11 Greenway Plaza, 22nd Floor
Houston, TX 77046-1104
PBK Project No: 240157

Notice to Bidders:

A. Receipt of this Addendum shall be acknowledged on the Bid Form.
B. This Addendum forms part of the Contract documents for the above-referenced project and shall be incorporated integrally therewith.
C. Each bidder shall make necessary adjustments and submit his proposal with full knowledge of all modifications, clarifications, and supplemental data included therein. Where provisions of the following supplemental data differ from those of the original Contract Documents, this Addendum shall govern.

SPECIFICATIONS

MECHANICAL

Item No 01 23 09 93 – SEQUENCES OF OPERATION FOR HVAC CONTROLS - NARRATIVE ONLY

1. Chilled Water System:
   i. Add CHW Bypass Valve (AO) and Chiller Flow, each chiller (AI) control points.
   ii. Add to Chilled Water Differential Pressure Control Paragraph: Chilled water flow shall be measured at each chiller, and the bypass valve shall be modulated to maintain the minimum setpoint determined by the manufacturer.

ELECTRICAL

Item No 02 26 09 14 - ELECTRICAL CONTROLS - NARRATIVE ONLY

1. Specification removed in its entirety. No elevators have been provided for this project.

Item No 03 26 09 43 - NETWORKED DIGITAL LIGHTING CONTROLS - NARRATIVE ONLY

1. Specification removed in its entirety. Networked lighting controls have not been provided for this project.

Item No 04 33 71 74 - ELECTRIC UTILITY SERVICES – UNDERGROUND

1. Specification added for new underground utility service.

Item No 05 26 09 43 - DISTRIBUTED DIGITAL LIGHTING CONTROLS - NON NETWORKED

1. Specification added for lighting controls.

Item No 06 26 05 19 - LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

1. The manufacturer has been modified.

Item No 07 26 05 33 - REACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

1. The color code under 3.11 has been modified.

Item No 08 26 20 00 - ELECTRICAL DISTRIBUTION EQUIPMENT

1. The manufacturer has been modified.

Item No 09 26 50 00 – LIGHITNG

1. The manufacturer has been modified.

PLUMBING

Item No 10 21 30 00 – FIRE PUMPS AND EQUIPMENT

1. Add a new spec section in its entirety to complement the Civil specified fire pump, jockey pump, and pump controllers. Refer to Civil for specified make/models.

TECHNOLOGY

Item No 11 **27 10 00 – STRUCTURED CABLING SYSTEM**

1. Removal of all references to Panduit Products in the following Spec sections:
   - 1.4.B.2
   - 1.4.E.1
   - 2.2.D.1
   - 2.2.E
   - 2.3.B.1
   - 2.7.A.1
   - 2.8.B
   - 2.8.C.1

Item No 12 Acceptable product connectivity and cables shall be Uniprise by CommScope

DRAWINGS:

MECHANICAL

Item No 13 **MD-101D – 1ST FLOOR MECHANICAL DEMO PLAN – AREA D - NARRATIVE ONLY**

1. Sheet relabeled to MD-101D.G – 1ST FLOOR MECHANICAL DEMO PLAN – AREA D - GYM

Item No 14 **MD-101F – 1ST FLOOR MECHANICAL DEMO PLAN – AREA F - NARRATIVE ONLY**

1. Sheet relabeled to MD-101F.G – 1ST FLOOR MECHANICAL DEMO PLAN – AREA F - GYM

Item No 15 **MD-102D – 2ND FLOOR MECHANICAL DEMO PLAN – AREA D - NARRATIVE ONLY**

1. Sheet relabeled to MD-102D.G – 2ND FLOOR MECHANICAL DEMO PLAN – AREA D - GYM

Item No 16 **M-101D – 1ST FLOOR MECHANICAL PLAN – AREA D - NARRATIVE ONLY**

1. Sheet relabeled to M-101D.G – 1ST FLOOR MECHANICAL PLAN – AREA D – GYM

Item No 17 **M-101E – 1ST FLOOR MECHANICAL PLAN – AREA E - NARRATIVE ONLY**

1. Sheet relabeled to M-101E.G – 1ST FLOOR MECHANICAL PLAN – AREA E- GYM

Item No 18 **M-101F – 1ST FLOOR ENLARGED MECHANICAL PLAN – CENTRAL PLANT - NARRATIVE ONLY**

1. Sheet relabeled to M-101F.G – 1ST FLOOR ENLARGED MECHANICAL PLAN – CENTRAL PLANT - GYM

Item No 19 **M-102D – 2ND FLOOR MECHANICAL PLAN – AREA D - NARRATIVE ONLY**

1. Sheet relabeled to M-102D.G – 2ND FLOOR MECHANICAL PLAN – AREA D - GYM

Item No 20 **M-102E – 2ND FLOOR MECHANICAL PLAN – AREA E - NARRATIVE ONLY**

1. Sheet relabeled to M-102E.G – 2ND FLOOR MECHANICAL PLAN – AREA E - GYM

Item No 21 **M-202 – MECHANICAL ENLARGED PLAN (GYM)**

1. Sheet relabeled to M-202.G – MECHANICAL ENLARGED PLAN

Item No 22 **M-301 – MECHANICAL ROOF PLAN – AREA D AND AREA E**

1. Sheet relabeled to M-301.G – MECHANICAL ROOF PLAN – AREA D AND AREA E – GYM

Item No 23 **M-401 – CHILLED WATER PLANT PIPING DIAGRAM**

1. Sheet relabeled to M-401.G – CHILLED WATER PLANT PIPING DIAGRAM - GYM

Item No 24 **M-402 – MECH. CHILLED & HEATING WATER PLANT PIPING DIAGRAM**

1. Sheet relabeled to M-402.G – MECH. CHILLED & HEATING WATER PLANT PIPING DIAGRAM - GYM

Item No 25 **M-501 - MECHANICAL SCHEDULES**

1. Sheet relabeled to M-501.G – MECHANICAL SCHEDULES - GYM

Item No 26 **M-502 – MECHANICAL SCHEDULES**

1. Sheet relabeled to M-502.G – MECHANICAL SCHEDULES - GYM

Item No 27 **M-601 – MECHANICAL DETAILS**

1. Sheet relabeled to M-601.G – MECHANICAL DETAILS – GYM

Item No 28 **M-602 – MECHANICAL DETAILS**

1. Sheet relabeled to M-602.G – MECHANICAL DETAILS – GYM

Item No 29 **M-603 – MECHANICAL DETAILS**

1. Sheet relabeled to M-603.G – MECHANICAL DETAILS

Item No 30 **MD-101H – 1ST FLOOR MECHANICAL DEMO PLAN – AREA H - NARRATIVE ONLY**

1. Sheet relabeled to MD-101H.A – 1ST FLOOR MECHANICAL DEMO PLAN – AREA H

Item No 31 **MD-102H – 2ND FLOOR MECHANICAL DEMO PLAN – AREA H - NARRATIVE ONLY**

1. Sheet relabeled to MD-102H.A – 2ND FLOOR MECHANICAL DEMO PLAN – AREA H

Item No 32 **M-101H – 1ST FLOOR MECHANICAL PLAN – AREA H**

1. Sheet relabeled to M-101H.A – 1ST FLOOR MECHANICAL PLAN – AREA H
2. Provide fire dampers on the north side wall of Intro Welding Lab E101. Refer to the attached sheet.
3. Provide fire dampers on the north side wall on Tools Sto. E105.
4. Add keynote 17: EF-H-02 & EF-H-03 fan on/off switches for local control.

Item No 33 **M-102H– 2nd FLOOR MECHANICAL PLAN – AREA H**

1. Sheet relabeled to M-102H.A – 2nd FLOOR MECHANICAL PLAN – AREA H
2. Provide fire dampers on the side wall high level of Advanced Welding Lab E115. Refer to the attached sheet.

Item No 34 **M-501 – MECHANICAL SCHEDULES**

1. Sheet relabeled to M-501.A – MECHANICAL SCHEDULES

Item No 35 **M-601 – MECHANICAL DETAILS**

1. Sheet relabeled to M-601.A – MECHANICAL DETAILS

Item No 36 **M-602 – MECHANICAL DETAILS**

1. Sheet relabeled to M-602.A – MECHANICAL DETAILS

Item No 37 **M-101K – 1ST FLOOR MECHANICAL PLAN – AREA K – CTE - NARRATIVE ONLY**

1. Sheet relabeled to M-101K.C – 1ST FLOOR MECHANICAL PLAN – AREA K – CTE

Item No 38 **M-101L – 1ST FLOOR MECHANICAL PLAN – AREA L – CTE - NARRATIVE ONLY**

1. Sheet relabeled to M-101L.C – 1ST FLOOR MECHANICAL PLAN – AREA L – CTE

Item No 39 **M-102K – 2nd FLOOR MECHANICAL PLAN – AREA K – CTE - NARRATIVE ONLY**

1. Sheet relabeled to M-102K.C – 2nd FLOOR MECHANICAL PLAN – AREA K – CTE

Item No 40 **M-201 – MECHANICAL ENLARGED PLAN**

1. Sheet relabeled to M-201.C – MECHANICAL ENLARGED PLAN

Item No 41 **M-202 – MECHANICAL ENLARGED PLAN**

1. Sheet relabeled to M-202.C – MECHANICAL ENLARGED PLAN

Item No 42 **M-301 – MECHANICAL ROOF PLAN**

1. Sheet relabeled to M-301.C – MECHANICAL ROOF PLAN – CTE

Item No 43 **M-401 – MECHANICAL PIPING DIAGRAM**

1. Sheet relabeled to M-401.C – MECHANICAL PIPING DIAGRAM - CTE

Item No 44 **M-402 – MECHANICAL CHILLED WATER PIPING DIAGRAM**

1. Sheet relabeled to M-402.C – MECHANICAL CHILLED WATER PIPING DIAGRAM – CTE

Item No 45 **M-403 – MECHANICAL HEATING WATER PIPING DIAGRAM**

1. Sheet relabeled to M-403.C – MECHANICAL HEATING WATER PIPING DIAGRAM - CTE

Item No 46 **M-501 – MECHANICAL SCHEDULES**

1. Sheet relabeled to M-501.C – MECHANICAL SCHEDULES
2. Revised Hydronic Pump Schedule
3. SHWP-04: Revise motor to 10 hp and revise brake hp. to 8.01.
4. SCHWP-04 & 05: Revise brake hp. to 9.60.

Item No 47 **M-502 – MECHANICAL SCHEDULES**

1. Sheet relabeled to M-502.C – MECHANICAL SCHEDULES
2. Series Fan-Powered Air Terminal Unit with Hot Water Heat Schedule
3. CVB-B-01-02: Revise cooling air flow, max. to 850 cfm.
4. CVB-B-01-04: Revise cooling air flow, max. to 1,075 cfm.
5. CVB-B-01-06: Revise cooling air flow, max. to 850 cfm.
6. Building Meter Schedule
7. Add note 3: Prior to order, coordinate with plumbing contractor for the line size, capacity, and location of the meters.

Item No 48 **M-601 – MECHANICAL DETAILS**

1. Sheet relabeled to M-601.C – MECHANICAL DETAILS

Item No 49 **M-602 – MECHANICAL DETAILS**

1. Sheet relabeled to M-602.C – MECHANICAL DETAILS

Item No 50 **M-603 – MECHANICAL DETAILS**

1. Sheet relabeled to M-603.C – MECHANICAL DETAILS

Item No 51 **M-604.C – MECHANICAL DETAILS**

1. Sheet relabeled to M-604.C – MECHANICAL DETAILS

ELECTRICAL

Item No 52 **ES-101 – ELECTRICAL SITE PLAN**

1. Sheet relabeled to ES-101.G- ELECTRICAL SITE PLAN-GYM
2. Change circuit for motorized gates.

Item No 53 **ED-101D – 1ST FLOOR POWER DEMO PLAN - AREA D - NARRATIVE ONLY**

1. Sheet relabeled to ED-101.D- 1ST FLOOR POWER DEMO PLAN - AREA D-GYM

Item No 54 **ED-101E – 1ST FLOOR POWER DEMO PLAN - AREA E - NARRATIVE ONLY**

1. Sheet relabeled to ED-101.E- 1ST FLOOR POWER DEMO PLAN - AREA E-GYM

Item No 55 **ED-201D – 1ST FLOOR LIGHTING DEMO PLAN - AREA D - NARRATIVE ONLY**

1. Sheet relabeled to E-201D - 1ST FLOOR LIGHTING DEMO PLAN - AREA D-GYM

Item No 56 **E-101D – 1ST FLOOR POWER PLAN - AREA D- NARRATIVE ONLY**

1. Sheet relabeled to E-101D.G - 1ST FLOOR POWER PLAN - AREA D-GYM

Item No 57 **E-101E – 1ST FLOOR POWER PLAN - AREA E- NARRATIVE ONLY**

1. Sheet relabeled to E-101E.G - 1ST FLOOR POWER PLAN - AREA E-GYM

Item No 58 **E-101F – 1ST FLOOR POWER PLAN - AREA F-GYM**

1. Sheet relabeled to E-101F.G - 1ST FLOOR POWER PLAN - AREA F-GYM
2. Added keynote 16.
3. Added power for heat trace for mechanical heat trace.

Item No 59 **E-102D – 2ND FLOOR POWER PLAN - AREA D- NARRATIVE ONLY**

1. Sheet relabeled to E-102D.G – 2ND FLOOR POWER PLAN - AREA D-GYM

Item No 60 **E-201D.G – 1ST FLOOR LIGHTING PLAN - AREA D- NARRATIVE ONLY**

1. Sheet relabeled to E-201D.G – 1ST FLOOR LIGHTING PLAN - AREA D-GYM

Item No 61 **E-201E – 1ST FLOOR LIGHTING PLAN - AREA E- NARRATIVE ONLY**

1. Sheet relabeled to E-201E.G – 1ST FLOOR LIGHTING PLAN - AREA E-GYM

Item No 62 **E-201D.G – 1ST FLOOR LIGHTING PLAN - AREA D- NARRATIVE ONLY**

1. Sheet relabeled to E-201D.G – 1ST FLOOR LIGHTING PLAN - AREA D-GYM

Item No 63 **E-202D.G – 2ND FLOOR LIGHTING PLAN - AREA D- NARRATIVE ONLY**

1. Sheet relabeled to E-202D.G – 2NDFLOOR LIGHTING PLAN - AREA D-GYM

Item No 64 **E-202E – 2ND FLOOR LIGHTING PLAN - AREA E- NARRATIVE ONLY**

1. Sheet relabeled to E-202E.G – 2NDFLOOR LIGHTING PLAN - AREA E-GYM

Item No 65 **E-301 – ELECTRICAL ROOF PLAN**

1. Sheet relabeled to E-301.G - ELECTRICAL ROOF PLAN-GYM

Item No 66 **E-501 – ELECTRICAL ONE-LINE DIAGRAM**

1. Sheet relabeled to E-501.G - ELECTRICAL ONE-LINE DIAGRAM-GYM

Item No 67 **E-502 – ELECTRICAL RISER DIAGRAM**

1. Sheet relabeled to E-502.G - ELECTRICAL RISER DIAGRAM-GYM

Item No 68 **E-601-ELECTRICAL SYMBOL LEGEND AND CONTACTOR SCHEDULE**

1. Sheet relabeled to E-601.G-ELECTRICAL SYMBOL LEGEND AND CONTACTOR SCHEDULE-GYM

Item No 69 **E-602- ELECTRICAL DETAILS**

1. Sheet relabeled to E-602.G - ELECTRICAL DETAILS-GYM

Item No 70 **E-701- ELECTRICAL PANEL SCHEDULES**

1. Sheet relabeled to E-701.G - ELECTRICAL PANEL SCHEDULES-GYM

Item No 71 **E-702- ELECTRICAL PANEL SCHEDULES**

1. Sheet relabeled to E-702.G - ELECTRICAL PANEL SCHEDULES-GYM
2. Added panel remarks.

Item No 72 **E-703.G- ELECTRICAL PANEL SCHEDULES-GYM**

1. Added sheet in its entirety.

Item No 73 **ES-101 – ELECTRICAL SITE PLAN**

1. Sheet relabeled to ES-101.A - ELECTRICAL SITE PLAN-AG

Item No 74 **ED-101H – 1ST FLOOR POWER DEMO PLAN - AREA H – NARRATIVE ONLY**

1. Sheet relabeled to ED-101H.A - 1ST FLOOR POWER DEMO PLAN - AREA H-AG

Item No 75 **ED-102H – 2ND FLOOR POWER DEMO PLAN - AREA H – NARRATIVE ONLY**

1. Sheet relabeled to ED-102H.A - 2ND FLOOR POWER DEMO PLAN - AREA H-AG

Item No 76 **ED-201H – 1ST FLOOR LIGHTING DEMO PLAN - AREA H – NARRATIVE ONLY**

1. Sheet relabeled to ED-201H.A - 1ST FLOOR LIGHTING DEMO PLAN - AREA H-AG

Item No 77 **ED-301 – ELECTRICAL ROOF DEMO PLAN– NARRATIVE ONLY**

1. Sheet relabeled to ED-301.A - ELECTRICAL ROOF DEMO PLAN-AG

Item No 78 **E-101H – 1ST FLOOR POWER PLAN - AREA H**

1. Sheet relabeled to E-101H.A - 1ST FLOOR POWER PLAN - AREA H-AG
2. Added keynote 6.
3. Added switches to the exhaust fan.

Item No 79 **E-102H – 2ND FLOOR POWER PLAN - AREA H – NARRATIVE ONLY**

1. Sheet relabeled to E-102H.A - 2ND FLOOR POWER PLAN - AREA H-AG

Item No 80 **E-201H – 1ST FLOOR LIGHTING PLAN - AREA H – NARRATIVE ONLY**

1. Sheet relabeled to E-201H.A - 1ST FLOOR LIGHTING PLAN - AREA H-AG

Item No 81 **E-202J.A – 2ND FLOOR LIGHTING PLAN - AREA J-AG**

1. Issue sheet entirely

Item No 82 **E-301 – ELECTRICAL ROOF PLAN**

1. Sheet relabeled to E-301.A - ELECTRICAL ROOF PLAN-AG
2. Added notes to exhaust fan.

Item No 83 **E-502 – ELECTRICAL RISER DIAGRAM**

1. Sheet relabeled to E-502.A - ELECTRICAL RISER DIAGRAM-AG
2. Issue sheet entirely

Item No 84 **E-601-ELECTRICAL SYMBOL LEGEND AND CONTACTOR SCHEDULE**

1. Sheet relabeled to E-601.A - ELECTRICAL SYMBOL LEGEND AND CONTACTOR SCHEDULE-AG
2. Added GR1 fixtures.
3. Issue sheet entirely

Item No 85 **E-602- ELECTRICAL DETAILS**

1. Sheet relabeled to E-602.A - ELECTRICAL DETAILS-AG
2. Issue sheet entirely

Item No 86 **E-701- ELECTRICAL PANEL SCHEDULES**

1. Sheet relabeled to E-701.A - ELECTRICAL PANEL SCHEDULES-AG

2. Issue sheet entirely

Item No 87 ES-101 – ELECTRICAL SITE PLAN

1. Sheet relabeled to ES-101.C - ELECTRICAL SITE PLAN-CTE
2. Change circuit for motorized gate.

Item No 88 E-101K – 1ST FLOOR POWER PLAN - AREA K

1. Sheet relabeled to E-101K.C – 1ST FLOOR POWER PLAN - AREA K-CTE
2. Removed 1HAC panel.
3. Updated circuit power for 1HA-56,58,60.

Item No 89 E-101L – 1ST FLOOR POWER PLAN - AREA L – NARRATIVE ONLY

1. Sheet relabeled to E-101L.C – 1ST FLOOR POWER PLAN - AREA L-CTE

Item No 90 E-102K – 2ND FLOR POWER PLAN - AREA K– NARRATIVE ONLY

1. Sheet relabeled to E-102K.C – 2ND FLOOR POWER PLAN - AREA K-CTE

Item No 91 E-201K – 1ST FLOR LIGHTING PLAN - AREA K– NARRATIVE ONLY

1. Sheet relabeled to E-201K.C – 1ST FLOOR LIGHTING PLAN - AREA K-CTE

Item No 92 E-201L.C – 1ST FLOOR LIGHTING PLAN - AREA L– NARRATIVE ONLY

1. Sheet relabeled to E-201L.C – 1ST FLOOR LIGHTING PLAN - AREA L-CTE

Item No 93 E-202K–2ND FLOOR LIGHTING PLAN - AREA K– NARRATIVE ONLY

1. Sheet relabeled to E-202K.C – 2ND FLOOR LIGHTING PLAN - AREA K-CTE

Item No 94 E-301 – ELECTRICAL ROOF PLAN-CTE

1. Sheet relabeled to E-301.C - ELECTRICAL ROOF PLAN-CTE

Item No 95 E-401 – ENLARGED POWER PLAN- FOOD SERVICE– NARRATIVE ONLY

1. Sheet relabeled to E-401.C – ENLARGED POWER PLAN- FOOD SERVICE-CTE

Item No 96 E-402 – ENLARGED POWER PLAN- CENTRAL PLANT

1. Sheet relabeled to E-402.C – ENLARGED POWER PLAN- CENTRAL PLANT-CTE
2. Added keynote 6.
3. Provided power to mechanical chiller.
4. Added meter, and cable tap box.

Item No 97 E-501 – ELECTRICAL ONE-LINE DIAGRAM

1. Sheet relabeled to E-501.C - ELECTRICAL ONE-LINE DIAGRAM-CTE
2. Added fire pump.
3. Increase size of generator.
4. Added breaker to generator.
5. Added Jockey pump.
6. Rename 1ELS and 1ESB.
7. Added note 6.

Item No 98 E-502 – ELECTRICAL RISER DIAGRAM

1. Sheet relabeled to E-502.C - ELECTRICAL RISER DIAGRAM-CTE
2. Removed 1HAC panel.

Item No 99 E-601-ELECTRICAL SYMBOL LEGEND AND CONTACTOR SCHEDULE

1. Sheet relabeled to E-601.C - ELECTRICAL SYMBOL LEGEND AND CONTACTOR SCHEDULE-CTE

Item No 100 E-602- ELECTRICAL DETAILS-CTE

1. Sheet relabeled to E-602.C - ELECTRICAL DETAILS-CTE

Item No 101 E-701- ELECTRICAL PANEL SCHEDULES-CTE

1. Sheet relabeled to E-701.C - ELECTRICAL PANEL SCHEDULES-CTE
2. Issue sheet entirely

Item No 102 E-702.C- ELECTRICAL PANEL SCHEDULES-CTE

1. Sheet relabeled to E-702.C - ELECTRICAL PANEL SCHEDULES-CTE
2. Issue sheet entirely

Item No 103 E-703- ELECTRICAL PANEL SCHEDULES

1. Sheet relabeled to E-703.C - ELECTRICAL PANEL SCHEDULES- CTE

2. Issue sheet entirely

Item No 104 E-704- ELECTRICAL PANEL SCHEDULES

1. Sheet relabeled to E-704.C - ELECTRICAL PANEL SCHEDULES- CTE
2. Issue sheet entirely

Item No 105 E-705- ELECTRICAL PANEL SCHEDULES

1. Sheet relabeled to E-705.C - ELECTRICAL PANEL SCHEDULES- CTE
2. Issue sheet entirely

PLUMBING

Item No 106 PS-101 – PLUMBING SITE PLAN – OVERALL

1. Update plan reference callouts due to sheet name changes.
2. Clarify location of fire tank (by Civil).

Item No 107 PS-102 – PLUMBING SITE PLAN – CTE

1. Sheet relabeled to PS-102.C – PLUMBING SITE PLAN – CTE.
2. Update incoming/outgoing fire utility connections to accommodate fire pump room revision.
3. Update plan reference callouts due to sheet name changes.

Item No 108 PS-103 – PLUMBING SITE PLAN – GYM

1. Sheet relabeled to PS-103.G – PLUMBING SITE PLAN – GYM.
2. Extend new 4" waste line out to Civil by utilizing the existing sanitary waste system downstream of the abandoned grease trap and grease waste system.
3. Update plan reference callouts due to sheet name changes.

Item No 109 PS-104 – PLUMBING SITE PLAN – AG

1. Sheet relabeled to PS-104.A – PLUMBING SITE PLAN – AG.
2. Update plan reference callouts due to sheet name changes.

Item No 110 PUD-101D – 1ST FLOOR PLUMBING UNDERFLOOR DEMO PLAN – AREA D – NARRATIVE ONLY

1. Sheet relabeled to PUD-101D.G – 1ST FLOOR PLUMBING UNDERFLOOR DEMO PLAN – AREA D – GYM.

Item No 111 PUD-101E – 1ST FLOOR PLUMBING UNDERFLOOR DEMO PLAN – AREA E – NARRATIVE ONLY

1. Sheet relabeled to PUD-101E.G – 1ST FLOOR PLUMBING UNDERFLOOR DEMO PLAN – AREA E – GYM.

Item No 112 PUD-101HJ – 1ST FLOOR PLUMBING UNDERFLOOR DEMO PLAN – AREAS H, J

1. Sheet relabeled to PUD-101HJ.A – 1ST FLOOR PLUMBING UNDERFLOOR DEMO PLAN – AREAS H, J – AG.
2. Adjust piping to accommodate fixture swap and piping connections between CUSTODIAL E126F and ADULT RESTROOM E107.

Item No 113 PD-101D – 1ST FLOOR PLUMBING DEMO PLAN – AREA D – NARRATIVE ONLY

1. Sheet relabeled to PD-101D.G – 1ST FLOOR PLUMBING DEMO PLAN – AREA D – GYM.

Item No 114 PD-101E – 1ST FLOOR PLUMBING DEMO PLAN – AREA E – NARRATIVE ONLY

1. Sheet relabeled to PD-101E.G – 1ST FLOOR PLUMBING DEMO PLAN – AREA E – GYM.

Item No 115 PD-101HJ – 1ST FLOOR PLUMBING DEMO PLAN – AREAS H, J

1. Sheet relabeled to PD-101HJ.A – 1ST FLOOR PLUMBING DEMO PLAN – AREAS H, J – AG.
2. Demo existing floor cleanout where ADULT RESTROOM E107 will be located.
3. Adjust piping to accommodate fixture swap and piping connections between CUSTODIAL E126F and ADULT RESTROOM E107.

Item No 116 PD-102D – 2ND FLOOR PLUMBING DEMO PLAN – AREA D – NARRATIVE ONLY

1. Sheet relabeled to PD-102D.G – 2ND FLOOR PLUMBING DEMO PLAN – AREA D – GYM.

Item No 117 PD-102HJ – 2ND FLOOR PLUMBING DEMO PLAN – AREAS H, J – NARRATIVE ONLY

1. Sheet relabeled to PD-102HJ.A – 2ND FLOOR PLUMBING DEMO PLAN – AREAS H, J – AG.

Item No 118 PU-101D – 1ST FLOOR PLUMBING UNDERFLOOR PLAN – AREA D – NARRATIVE ONLY

1. Sheet relabeled to PU-101D.G – 1ST FLOOR PLUMBING UNDERFLOOR PLAN – AREA D – GYM.

Item No 119 PU-101E – 1ST FLOOR PLUMBING UNDERFLOOR PLAN – AREA E – NARRATIVE ONLY

1. Sheet relabeled to PU-101E.G – 1ST FLOOR PLUMBING UNDERFLOOR PLAN – AREA E – GYM.

Item No 120 PU-101HJ – 1ST FLOOR PLUMBING UNDERFLOOR PLAN - AREAS H, J

1. Sheet relabeled to PU-101HJ.A – 1ST FLOOR PLUMBING UNDERFLOOR PLAN – AREAS H, J – AG.
2. Swap fixtures and piping connections between CUSTODIAL E126F and ADULT RESTROOM E107. Shift piping to re-align with shifted architectural fixture locations.

Item No 121 PU-101K – 1ST FLOOR PLUMBING UNDERFLOOR PLAN – AREA K

1. Sheet relabeled to PU-101K.C – 1ST FLOOR PLUMBING UNDERFLOOR PLAN – AREA K – CTE.
2. Adjust underground pipe routing to accommodate fire pump room revision.
3. Add waste piping for two (2) added floor sinks.
4. Shift piping to re-align with shifted foodservice equipment locations.

Item No 122 PU-101L – 1ST FLOOR PLUMBING UNDERFLOOR PLAN – AREA L

1. Sheet relabeled to PU-101L.C – 1ST FLOOR PLUMBING UNDERFLOOR PLAN – AREA L – CTE.
2. Shift piping to re-align with shifted foodservice equipment locations.

Item No 123 P-101D – 1ST FLOOR PLUMBING PLAN – AREA D – NARRATIVE ONLY

1. Sheet relabeled to P-101D.G – 1ST FLOOR PLUMBING PLAN – AREA D – GYM.

Item No 124 P-101E – 1ST FLOOR PLUMBING PLAN – AREA E

1. Sheet relabeled to P-101E.G – 1ST FLOOR PLUMBING PLAN – AREA E – GYM.
2. Shift overflow drain into arch-provided furrout in STORAGE C153.

Item No 125 P-101HJ – 1ST FLOOR PLUMBING PLAN - AREAS H, J

1. Sheet relabeled to P-101HJ.A – 1ST FLOOR PLUMBING PLAN – AREAS H, J – AG.
2. Swap fixtures and piping connections between CUSTODIAL E126F and ADULT RESTROOM E107. Shift piping to re-align with shifted architectural fixture locations.
3. Add/remove/shift welding gas branches to align with added/removed/shifted architectural welding stations.

Item No 126 P-101K – 1ST FLOOR PLUMBING PLAN – AREA K

1. Sheet relabeled to P-101K.C – 1ST FLOOR PLUMBING PLAN – AREA K – CTE.
2. Adjust above ground pipe routing to accommodate fire pump room revision. Add enlarged plan callout (refer to sheet P-401.C).
3. Add fire pump, jockey pump, fire pump panel, and jockey pump panel (specified by others) to the fire suppression system inside the building. Add 12” incoming suction and 10” outgoing distribution line to site.
4. Add two (2) floor sinks.
5. Update plan reference callouts due to sheet name changes.

Item No 127 P-101L – 1ST FLOOR PLUMBING PLAN – AREA L

1. Sheet relabeled to P-101L.C – 1ST FLOOR PLUMBING PLAN – AREA L – CTE.
2. Shift piping to re-align with shifted foodservice equipment locations.

Item No 128 P-102D – 2ND FLOOR PLUMBING PLAN – AREA D – NARRATIVE ONLY

1. Sheet relabeled to P-102D.G – 2ND FLOOR PLUMBING PLAN – AREA D – GYM.

Item No 129 P-102K – 2ND FLOOR PLUMBING PLAN – AREA K

1. Sheet relabeled to P-102K.C – 2ND FLOOR PLUMBING PLAN – AREA K – CTE.
2. Adjust storm pipe routing to accommodate first floor fire pump room revision.
3. Update plan reference callouts due to sheet name changes.

Item No 130 P-302 – PLUMBING ROOF PLAN – CTE

1. Sheet relabeled to P-302.C – PLUMBING ROOF PLAN – CTE.
2. Shift piping to re-align with shifted foodservice equipment locations.

Item No 131 P-303 – PLUMBING ROOF PLAN – GYM – NARRATIVE ONLY

1. Sheet relabeled to P-303.G – PLUMBING ROOF PLAN – GYM.

Item No 132 P-401 – PLUMBING ENLARGED PLAN – CTE

1. Sheet relabeled to P-401.C – PLUMBING ENLARGED PLAN – CTE.

2. Add keynote #8 indicating location of gas flow meter at the main entry (customer-side) gas service.
3. Add keynote #17 indicating location of domestic water flow meter at the main entry domestic water service.
4. Add fire pump, jockey pump, fire pump panel, and jockey pump panel (specified by others) to the fire suppression system inside the building. Add 12” incoming suction and 10” outgoing distribution line to site.
5. Update incoming/outgoing fire utility connections to accommodate fire pump room revision.
6. Update plan reference callouts due to sheet name changes.

Item No 133 P-402 – PLUMBING ENLARGED PLAN – CTE

1. Sheet relabeled to P-402.C – PLUMBING ENLARGED PLAN – CTE.
2. Shift piping to re-align with shifted foodservice equipment locations.
3. Upsize gas main behind equipment from 1-1/4” to 2” in size.

Item No 134 P-501 – PLUMBING SCHEDULES

1. Sheet relabeled to P-501.C – PLUMBING SCHEDULES – CTE.
2. Reference FP-CIVIL and JP-CIVIL in the schedule for clarity. Pumps specified by Civil.

Item No 135 P-601 – PLUMBING DETAILS

1. Sheet relabeled to P-601.C – PLUMBING SCHEDULES – CTE.
2. Update detail #3 to reflect first floor fire pump room revision.

Item No 136 P-602 – PLUMBING DETAILS – NARRATIVE ONLY

1. Sheet relabeled to P-602.C – PLUMBING SCHEDULES – CTE.

Item No 137 P-603 – PLUMBING DETAILS

1. Sheet relabeled to P-603.C – PLUMBING SCHEDULES – CTE.
2. Add detail #5 to reflect first floor fire pump room revision.
3. Add detail #8 to clarify the riser room at the gymnasium compared to the CTE.

Item No 138 P-701.C – PLUMBING RISER DIAGRAMS

1. Sheet relabeled to P-701.C – PLUMBING RISER DIAGRAMS – CTE.
2. Add keynote #2 indicating location of gas flow meter at the main entry (customer-side) gas service.
3. Shift piping to re-align with shifted foodservice equipment locations.

Item No 139 P-702.G – PLUMBING RISER DIAGRAMS

1. Sheet relabeled to P-702.G – PLUMBING RISER DIAGRAMS – GYM.
2. Update plan reference callouts due to sheet name changes.

TECHNOLOGY

Item No 140 TS-101 TECHNOLOGY SITE PLAN

1. SHEET RELABELED TS-101.G SITE PLAN – GYM

Item No 141 T-001 – TECHNOLOGY SYSTEM NOTES AND LEGEND – CTE – NARRATIVE ONLY

1. SHEET RELABLED TO T-001.C – TECHNOLOGY SYSTEMS NOTES AND LEGEND - CTE

Item No 142 T-501 TECHNOLOGY MDF/IDF DETAILS

1. SHEET RELABLED TO T-501.C – TECHNOLOGY MDF/IDF DETAILS
2. ADDITION OF IDF DETAIL

Item No 143 TF-101K 1ST FLOOR FIRE ALARM PLAN – AREA K

1. SHEET RELABELED TO TF-101K.C 1ST FLOOR FIRE ALARM PLAN – AREA K – CTE
2. ADDITION OF FIRE ALARM RELAYS IN RISER ROOM 213

Item No 144 TF-101L 1ST FLOOR FIRE ALARM PLAN – AREA L - NARRATIVE ONLY

1. SHEET RELABELED TO TF-101L.C 1ST FLOOR FIRE ALARM PLAN AREA L – CTE

Item No 145 TF-102K 2ND FLOOR FIRE ALARM PLAN – AREA K - NARRATIVE ONLY

1. SHEET RELABLED TO TF-102K.C 2ND FLOOR FIRE ALARM PLAN – AREA K-CTE

Item No 146 TN-101 1ST FLOOR TECHNOLOGY PLAN - NARRATIVE ONLY

1. SHEET RELABLED TO TN-101.C 1ST FLOOR TECHNOLOGY PLAN – COM – CTE

Item No 147 TN-101K 1ST FLOOR TECHNOLOGY PLAN AREA K

1. SHEET RELABLED TO TN-101K.C 1ST FLOOR TECHNOLOGY PLAN- AREA K -CTE
2. ADDITION OF IDF RACK IN IDF RM 211

Item No 148 TN-101L 1ST FLOOR TECHNOLOGY PLAN – AREA L - NARRATIVE ONLY

1. SHEET RELABELED TO TN101L.C 1ST FLOOR TECHNOLOGY PLAN – AREA L – CTE

Item No 149 TS-101 TECHNOLOGY SITE PLAN

1. SHEET RELABELED TO TS-101.C TECHNOLOGY SITE PLAN – CTE

Item No 150 T-001 TECHNOLOGY SYSTEM NOTES AND LEGEND - NARRATIVE ONLY

1. SHEET RELABELED TO T-001.A TECHNOLOGY SYSTEM NOTES AND LEGEND - AG

Item No 151 TF-101 1ST FLOOR FIRE ALARM PLAN – COMPOSITE - NARRATIVE ONLY

1. SHEET RELABLED TO TF-101.A 1ST FLOOR FIRE ALARM PLAN – COMPOSITE – AG

Item No 152 TFD-101H 1ST FLOOR FIRE ALARM DEMO PLAN – COMPOSITE - NARRATIVE ONLY

1. SHEET RELABLED TO TFD-101H.A 1ST FLOOR FIRE ALARM DEMO PLAN COMPOSITE -AG

Item No 153 TN-101H 1ST FLOOR TECHNOLOGY PLAN – COMPOSITE - NARRATIVE ONLY

1. SHEET RELABLED TN-101H.A 1ST FLOOR TECHNOLOGY PLAN – COMPOSITE – AG

Item No 154 TND-101H 1ST FLOOR TECHNOLOGY DEMO PLAN – COMPOSITE - NARRATIVE ONLY

1. SHEET RELABELED TND-101H.A 1ST FLOOR TECHNOLOGY DEMO Plan- Composite AG

Item No 155 T-001 TECHNOLOGY SYSTEM NOTES AND LEGEND - NARRATIVE ONLY

1. SHEET RELABLED T001.G TECHNOLOGY SYSTEM NOTES AND LEGEND – GYM

Item No 156 TF-101D 1ST FLOOR FIRE ALARM – AREA D - NARRATIVE ONLY

1. SHEET RELABLED TF-101D.G 1ST FLOOR FIRE ALARM PLAN – AREA D – GYM

Item No 157 TF-101E 1ST FLOOR FIRE ALARM PLAN – AREA E - NARRATIVE ONLY

1. SHEET RELABELED TF-101E.G 1ST FLOOR FIRE ALARM PLAN – AREA E – GYM

Item No 158 TF-102D 2ND FLOOR FIRE ALARM PLAN – AREA D - NARRATIVE ONLY

1. SHEET RELABELED TF-102D.G 2ND FLOOR FIRE ALARM PLAN – AREA D- GYM

Item No 159 TF-102E 2ND FLOOR FIRE ALARM PLAN – AREA E - NARRATIVE ONLY

1. SHEET RELABLED TF-102E.G 2ND FLOOR FIRE ALARM PLAN – AREA E – GYM

Item No 160 TN-101D 1ST FLOOR TECHNOLOGY PLAN AREA D - NARRATIVE ONLY

1. SHEET RELABELED TN-101D.G 1ST FLOOR TECHNOLOGY PLAN – AREA D – GYM

Item No 161 TN101E 1ST FLOOR TECHNOLOGY PLAN AREA – E - NARRATIVE ONLY

1.SHEET RELABLED TN-101E.G 1ST FLOOR TECHNOLOGY PLAN – AREA E – GYM

Item No 162 TN-102D 2ND FLOOR TECHNOLOGY PLAN – AREA D - NARRATIVE ONLY

1. SHEET RELABELED TN102D.G 2ND FLOOR TECHNOLOGY PLAN AREA -D – GYM

End of MEP/TS Addendum #01

HARGRAVE HIGH SCHOOL NEW CTE & RENOVATIONS

Huffman Independent School District

General Contractor Bid Documents Questions

Addendum #01

June 4, 2025

1.	Could you please clarify where the 09 51 00.ACS3 perforated metal ceiling panels are located? We see ACS3 noted on the Lobby ceiling on page A-201D. However, the ceiling is also labeled ACS5, and the hatching matches the ACS5, not ACS3. **Response:** This is located in the concourse area. Refer to Addendum 2 for additional information.
2.	Specification section 02 82 00 for asbestos remediation. Is this required? If so, is there a report, specifically to the existing locations that are being remodeled? We'd like to request quantities, otherwise it is going to be difficult to provide accurate pricing for this scope (if required). There are general notes on the drawings regarding notifying the architect and owner if encountered, which we will do. We just can't price without quantities/scope. **Response:** Refer to addendum 01.
3.	Is a Geo-Technical Report available? It's referenced in section 00 30 00 – 1.3.C **Response:** Refer to addendum 01.
4.	Do the Sectional Overhead Door(s) Type OHSP **require** "Energy Code Compliance": **Air Infiltration Resistance** for IECC, ASHREA, HVAC Standards; with NFRC certification? Ex.: CA – Title 24, Texas Energy Code, or State Specific Energy Code, per NFRC 400, ASTM E283, or DASMA 105? **Response:** Door Type OHSP is only specified at interior locations and does not require energy code ratings.
5.	Does the Sectional Overhead Door Type OHSP require "Water Infiltration Resistance" to meet: ASTM E331 or ASTM E547? **Response:** Door Type OHSP is only specified at interior locations and does not require water infiltration resistance.
6.	Are Impact & Wind ratings required for Door Type OHSP, ASTM E1996 Small and Large Missile Testing? If so, please confirm pressures of +36/-41? **Response:** Door Type OHSP is only specified at interior locations and does not require impact and wind ratings.
7.	Verify dimensions of Door Type OHSP, Sheet A-101K1, as not listed on the Door Schedule. **Response:** Refer to addendum 01.
8.	There are a lot of indications that there is going to be Lightweight Insulating concrete on the New CTE addition and on the New Gym addition according to Sheets A-301KL (New CTE Addition) and A-302DE (New Gym addition). Please confirm that there is going to be LWIC on this project. Will there be a LWIC spec added? **Response:** Refer to addendum 01.

HARGRAVE HIGH SCHOOL NEW CTE & RENOVATIONS

Huffman Independent School District

General Contractor Bid Documents Questions

Addendum #01

June 4, 2025

9.	Regarding Spec section 09 91 00 – Translucent Panel Restoration – this specification is not mentioned in the Table of Contents. Is this spec section relevant? **Response:** Yes, this spec is needed for the project. SOW essentially is to clean/prep skylights, coat, replace fasteners and sealants at (3) skylights. This will be included in the addendum 01.
10.	Regarding Spec section 09 78 00 – Interior Wall Paneling - I see this specification section regarding Decorative Wood Paneling and Metal Interior Wall Paneling. Reviewing the finish schedule and interior elevations, I see P-Lam called out in several locations for wall paneling, but nothing specific to the American Architectural Millwork or Arktura products. Is this spec section relevant? **Response:** Refer to addendum 01.
11.	G. Windborne Debris Impact Resistance: 1. Pass missile impact and cyclic pressure tests when tested according to ASTM E1886 and testing information in ASTM E1996 for Wind Zone 2a: a. Large missile test: For glazed openings located within 30 feet (9.1 m) of grade. I don't believe Harris County falls in Wind Zone 1. I checked and it appears all counties that border the Gulf are either Tier 3 or 2. I believe Harris County is Wind Zone 3. Is this required for this project? **Response:** This project is not in a Windbore Debris Region and will not required missile impact testing for glazing. Refer to structural wind speed ratings for additional information.

PRE-PROPOSAL MEETING
NEW CTE & HARGRAVE HIGH SCHOOL RENOVATIONS
Huffman ISD
Sign-in Sheet
Wednesday, May 28, 2025

	Name	Company	Phone	Email
01	Brian Wildish	S&P	713 996 1300	houstonbids@satpon.com
02	Jeff Schafer	ICI	281-355-5151	bids@iciconstructioninc.com
03	Alexis Delgado	Division One	713 688 7330	bid@d1construction.com
04	Mike Brown	Joeris	281-732-5225	Mbrown@joeris.com
05	Drew Slayton	Ellisor	832-797-8837	drew@ellisorinc.com
06	Bryce Haws	Ellisor	254-444-7053	drew@ellisorinc.com
07	Will Carroll	S&P	713-996-1300	WCarroll@Satpon.com
08	Mackenley Hug	—	—	—
09	Nate Hutchinson	Drymalla	(832)713-1696	nhutchinson@drymalla.com
10	JUSTIN VADE	COMEX (GC)	832-878-3402	BID@COMEXCORP.COM
11	PHILLIP CANO	PRIME CONTRACTORS	281 999 0875	estimating@primecontractorsinc.com
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PBK

PRE-PROPOSAL MEETING AGENDA
NEW CTE & HARGRAVE HIGH SCHOOL RENOVATIONS

Huffman Independent School District

PBK Project Numbers: 240157

Wednesday, May 28, 2025
9:00 AM

I. Introduction of Personnel

A. OWNER: **Huffman ISD** ..... Phone: 281.324.1871

01 Dr. Adam Skinner ..... Chief Officer of Operations
02 Glenn Turner ..... Director of Facilities and Risk Management
03 Angie McDonald ..... Principal, Hargrave High School
04 Mackinley Kay ..... District Career and Technology Director

B. Program Manager: **Disasters, LLC**……Phone: 833.377.4357

01 Brad Boullion ..... Program Manager
02 James Peterman ..... Program Manager
03 Brandy Kneip ..... Coordinator

C. ARCHITECT: **PBK Architects, Inc.** ..... Phone: 713.965.0608

01 Brandon Ross ..... Managing Senior Principal
02 Manny Torres ..... Senior Principal
03 Melissa Kapple ..... Senior Project Manager
04 Andrew Pogue ..... Project Architect
05 Lexi Ward ..... Project Coordinator

II. Schedule

A.	Pre-Proposal Meeting	May 28, 2025 at 9:00 AM
B.	Subcontractor Site Walk	June 4, 2025 at 9:00 AM
C.	Last Date for Inquiries	June 9, 2025 at 4:00 PM
D.	Last Addendum Issued (if required)	June 16, 2025
E.	Proposal Questionnaire Due via Email	June 17, 2025 at 2:00 PM
F.	Receive Proposal Attachments & Forms from Ion Wave	June 19, 2025 at 2:00 PM
G.	Public Opening and Reading Proposal Results	June 19, 2025 at 2:00 PM
H.	Subcontractor Questionnaire Due via Email	June 20, 2025 at 2:00 PM
I.	Present to the School Board	July 28, 2025 at 7:00PM
J.	Notice to Proceed	July 29, 2025
K.	Substantial Completion	February 28, 2027

III. Documents & Deliverables

Proposal Questionnaire – Due June 17, 2025 at 2:00 PM via Email
Proposal Questionnaire – Provide answers to all questions in Proposal Questionnaire Section

Proposal Attachments and Forms – Due June 19, 2025 at 2:00 PM via Ion Wave.
Attachment A: Felony Conviction Form – Complete Form
Attachment B: Affidavit of Non-Collusion – Complete Form and Notarize
Attachment C: Owner Modified AIA Documents - A101-2017, A101-2017 Exhibit A, A201-2017 – Review Only
Attachment D: Project Information – Scope of Services – Review Only
Attachment E: Pricing Proposal – Complete Form
Attachment F: Unit Price Proposal – Complete Form
Attachment G: SB9 Contractor Certification Form – Complete Form
Attachment H: Terms and Conditions Certification – Signature Required
Form CIQ: Conflict of Interest Questionnaire – Please download and complete Texas Ethics Commission Form found at Form CIQ (Conflict of Interest Questionnaire) (state.tx.us)
Form 1295: Certificate of Interested Parties – Complete Form 1295 and file it electronically, provide a completed copy. Form 1295 can be found at 1295 Filing Info (state.tx.us)
W-9 – Provide a copy of your W-9
Bid Bond – Payable to the Huffman ISD, for no less than 5% of amount proposed (including alternates)

Subcontractor Questionnaire – Due June 20, 2025 at 2:00 PM via Email
Subcontractor Questionnaire – Provide answers to Subcontractor Questionnaire Section and provide A305s as applicable.

IV. Allowances (01 21 00)

A. Owners Contingency Allowance: $2,000,000.00

V. Alternates (01 23 00)

A. Alternate 1: Direct Digital Controls – Unify Energy Solutions
B. Alternate 2: Scroll Water Chillers Air- Cooled (CTE Building) & Rotary-Screw Water Chillers- Air Cooled (High School)
   - 2A Daikin
   - 2B Carrier
   - 2C Trane
   - 2D JCI
C. Alternate 3: Modular Indoor- Central Station Air-Handling Units
   - 3A Daikin
   - 3B Carrier
   - 3C Trane
   - 3D JCI
D. Alternate 4: Ductless Mini Split-System Air- Conditioners – Daikin
E. Alternate 5: Fan Coil Units
   - 5A Daikin
   - 5B Carrier
   - 5C Trane
   - 5D JCI

VI. Unit Prices (01 22 00)

A. Refer to Spec

VII. Description of the Projects

A. **Budget:** $43,226,017.00

B. **Summary:**

i. Career and Technical Education Center

1. A new 46,000 square foot single story steel structure building including an administrative suite, culinary kitchen, vet tech lab, health science lab, flexible classrooms, flexible shop / lab spaces to support engineering, agricultural sciences, carpentry, business, law, and audio-visual career pathways, facility support spaces, and a central plant. Other amenities include an aluminum walkway canopy to connect to the existing Ag Mech building, concrete parking lot, and a landscaped entrance.

ii. Renovation and Addition to existing Ag Mech

1. Renovation and reconfiguration of existing classroom and lab spaces to create an additional welding lab and a adult restroom. Existing student restrooms will not be modified. Exterior improvements include a 9,000 square foot roof addition onto the existing open air pavilion.

iii. Hargrave High School Renovation and Addition

1. A new 18,000 square foot gymnasium and athletics addition with 1,200 spectator seats, a training suite with office, locker room addition, mezzanine expansion, minor renovations to portions of the existing locker room spaces as required for incorporation of new addition, and roofing renovations. Exterior improvements include new security fencing, modification of existing sidewalks and drives adjacent to the gymnasium addition as required for incorporation of new addition.

VIII. Questions

NEW CTE & HARGRAVE HS ADDITION & RENOVATIONS
PRE-PROPOSAL MEETING

MAY 28, 2025

PBK

1

PROJECT TEAM

Owner: Huffman ISD

1. Dr. Adam Skinner	Chief Officer of Operations
2. Glenn Turner	Director of Facilities and Risk Management
3. Angie McDonald	Principal, Hargrave High School
4. Mackinley Kay	District Career and Technology Director

Program Manager: Disasters, LLC

1. Brad Boullion	Program Manager
2. James Peterman	Program Manager
3. Brandy Kneip	Coordinator

Architect: PBK Architects, Inc.

1. Brandon Ross	Managing Senior Principal
2. Manny Torres	Senior Principal
3. Melissa Kapple	Senior Project Manager
4. Andrew Pogue	Project Architect
5. Lexi Ward	Project Coordinator

PBK 2

2

SCHEDULE

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3

DOCUMENTS & DELIVERABLES

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ii. Attachment B: Affidavit of Non-Collusion – Complete Form and Notarize
iii. Attachment C: Owner Modified AIA Documents - A101-2017, A101-2017 Exhibit A, A201-2017 – Review Only
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vi. Attachment F: Unit Price Proposal – Complete Form
vii. Attachment G: SB9 Contractor Certification Form – Complete Form
viii. Attachment H: Terms and Conditions Certification – Signature Required
ix. Form CIQ: Conflict of Interest Questionnaire ***1**
x. Form 1295: Certificate of Interested Parties ***2**
xi. W-9 – Provide a copy of your W-9
xii. Bid Bond ***3**

Subcontractor Questionnaire – Due June 20, 2025 at 2:00 PM via Email

i. Subcontractor Questionnaire – Provide answers to Subcontractor Questionnaire Section and provide A305s as applicable.

***1** - Please download and complete Texas Ethics Commission Form found at Form CIQ (Conflict of Interest Questionnaire) (state.tx.us)
***2** - Complete Form 1295 and file it electronically, provide a completed copy. Form 1295 can be found at 1295 Filing Info (state.tx.us)
***3** - Payable to the Huffman ISD, for no less than 5% of amount proposed (including alternates)

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4

DOCUMENTS & DELIVERABLES

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A. Owners Contingency Allowance: $2,000,000.00

i. **Alternates (01 23 00)**
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B. Alternate 2: Scroll Water Chillers Air- Cooled (CTE Building) & Rotary-Screw Water Chillers- Air Cooled (High School)
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- 5A Daikin
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i. **Unit Prices (01 22 00)**
A. Refer to Spec

PBK 5

5

DESCRIPTION OF PROJECTS

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B. Summary:

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1. Renovation and reconfiguration of existing classroom and lab spaces to create an additional welding lab and a adult restroom. Existing student restrooms will not be modified. Exterior improvements include a 9,000 square foot roof addition onto the existing open air pavilion.

iii. Hargrave High School Renovation and Addition
1. A new 18,000 square foot gymnasium and athletics addition with 1,200 spectator seats, a training suite with office, locker room addition, mezzanine expansion, minor renovations to portions of the existing locker room spaces as required for incorporation of new addition, and roofing renovations. Exterior improvements include new security fencing, modification of existing sidewalks and drives adjacent to the gymnasium addition as required for incorporation of new addition.

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HUFFMAN ISD

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PLANS

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HUFFMAN ISD - CTE

EXISTING SITE

PBK

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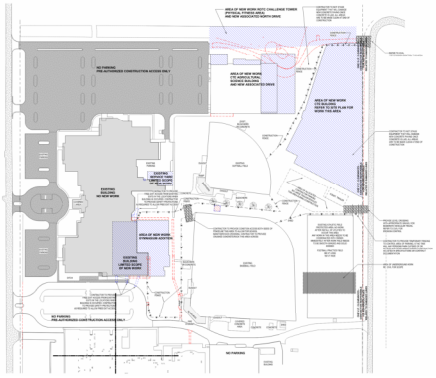
HUFFMAN ISD - CTE

CONSTRUCTION PHASING

CONSTRUCTION PHASING NOTES



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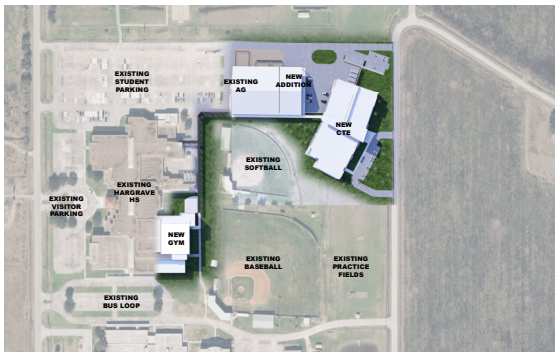
HUFFMAN ISD - CTE

NEW SITE PLAN



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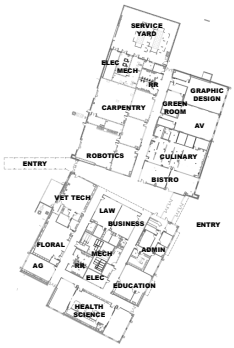
HUFFMAN ISD - CTE

FLOOR PLAN - CTE



PBK

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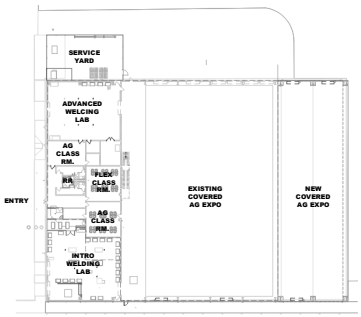
HUFFMAN ISD - CTE

FLOOR PLAN - AG



PBK

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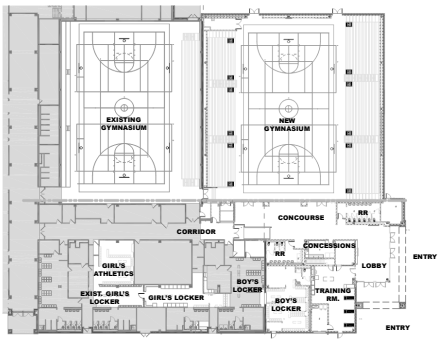
HUFFMAN ISD - CTE

FLOOR PLAN - GYMNASIUM



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HUFFMAN ISD

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EXTERIOR CTE DESIGN

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HUFFMAN ISD - CTE

MAIN ENTRY

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HUFFMAN ISD - CTE

MAIN ENTRY

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HUFFMAN ISD - CTE

STUDENT ENTRY

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INTERIOR CTE DESIGN

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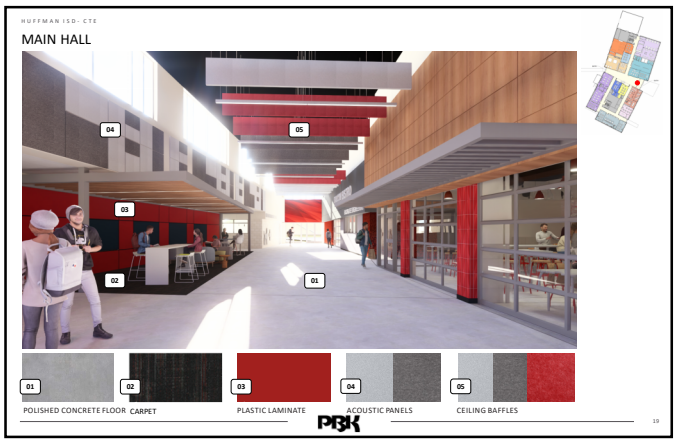

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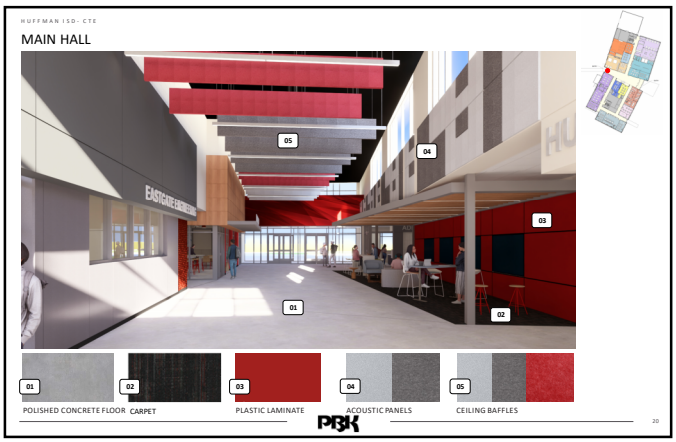

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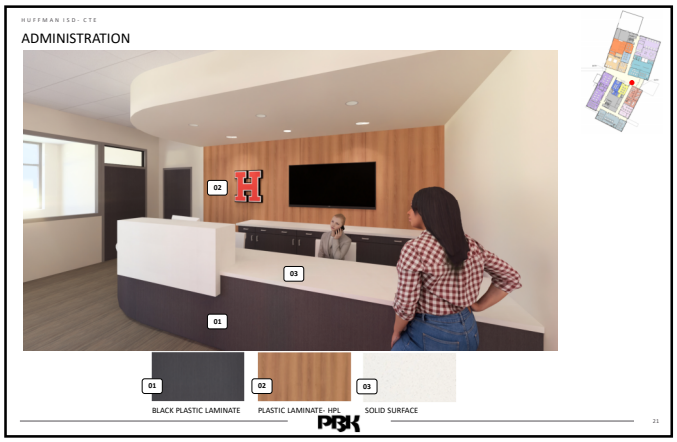

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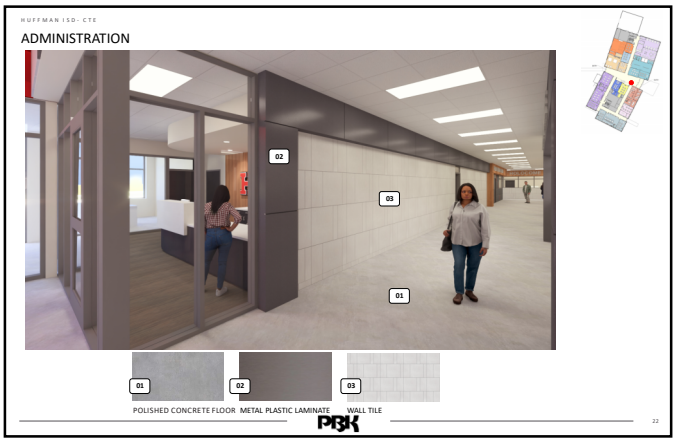

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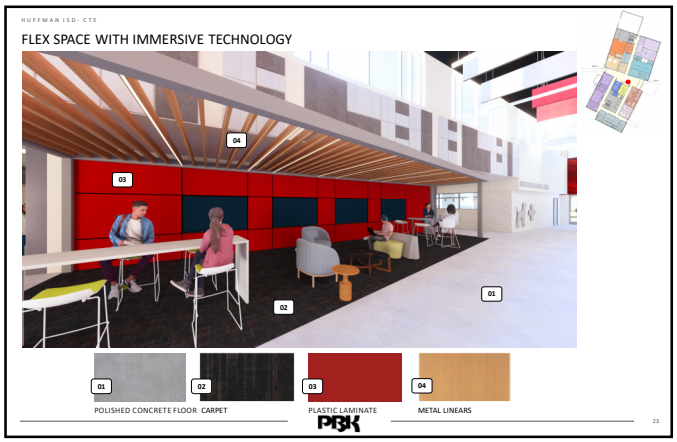

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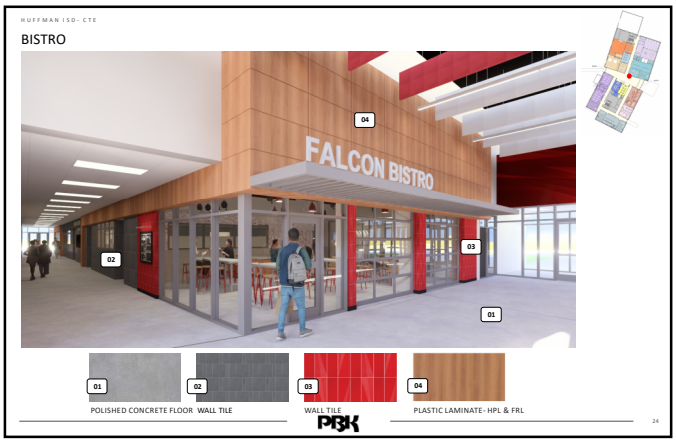

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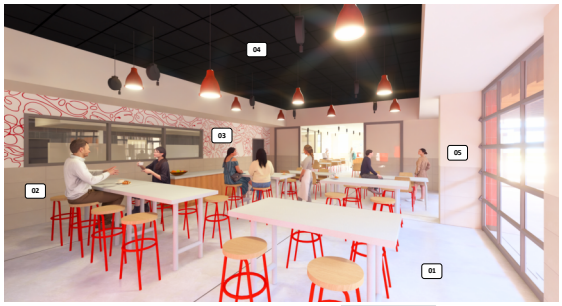
HUFFMAN ISD - CTE

BISTRO



01 POLISHED CONCRETE FLOOR
02 WAINSCOT TILE
03 CUSTOM GRAPHICS
04 BLACK ACT
05 FIELD PAINT

PBK

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HUFFMAN ISD - CTE

BISTRO

01 POLISHED CONCRETE FLOOR
02 WAINSCOT TILE
03 FIELD PAINT
04 CUSTOM GRAPHICS

PBK

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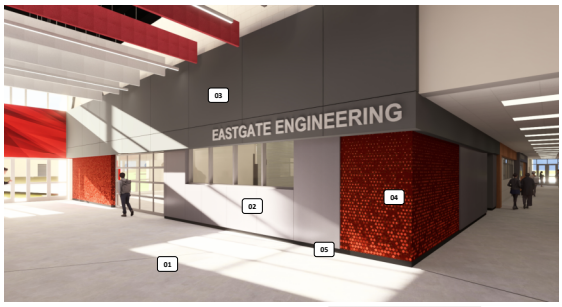
HUFFMAN ISD - CTE

ROBOTICS & ENGINEERING



01 POLISHED CONCRETE FLOOR
02 METAL PLASTIC LAMINATE
03 PAINT
04 FRL PLASTIC LAMINATE- CUSTOM GRAPHICS
05 RUBBER BASE

PBK

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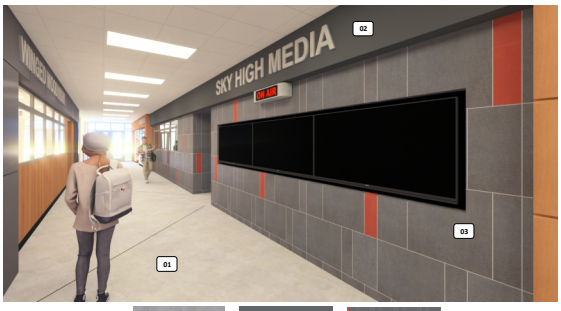
HUFFMAN ISD - CTE

A/V



01 POLISHED CONCRETE FLOOR
02 PAINT
03 WALL TILE

PBK

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HUFFMAN ISD - CTE

CARPENTRY

01 POLISHED CONCRETE FLOOR
02 METAL PLASTIC LAMINATE
03 PLASTIC LAMINATE- HPL
04 WALL TILE
05 RUBBER BASE

PBK

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HUFFMAN ISD - CTE

GRAPHIC DESIGN

01 POLISHED CONCRETE FLOOR
02 PLASTIC LAMINATE- HPL
03 FRL PLASTIC LAMINATE- CUSTOM GRAPHICS
04 GLASS MARKERBOARD
05 RUBBER BASE

PBK

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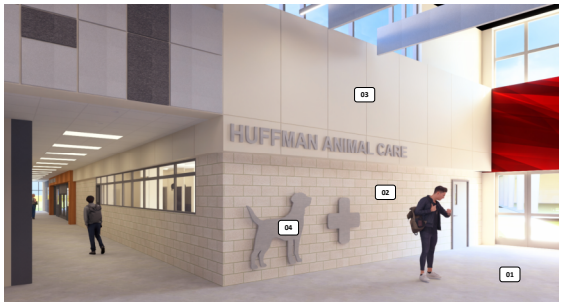
HUFFMAN ISD - CTE

VET TECH



01 POLISHED CONCRETE FLOOR
02 BURNISHED BLOCK
03 PAINT
04 ALUMINUM CUT OUTS
EPOXY FLOORING

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HUFFMAN ISD - CTE

LAW

01 POLISHED CONCRETE FLOOR
02 METAL PLASTIC LAMINATE
03 WALL TILE
04 PLASTIC LAMINATE

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FLORAL

01 POLISHED CONCRETE FLOOR
02 PLASTIC LAMINATE
03 WALL TILE
04 PLASTIC LAMINATE

PBK

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HUFFMAN ISD - CTE

HEALTHCARE

01 POLISHED CONCRETE FLOOR
02 PLASTIC LAMINATE
03 WALL TILE
HOMOGENOUS FLOORING
ACROVYN WALL PROTECTION

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HUFFMAN ISD - CTE

EDUCATION

01 POLISHED CONCRETE FLOOR
02 PLASTIC LAMINATE
03 WALL TILE
MARMOLEUM FLOORING

PBK

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HUFFMAN ISD - CTE

EDUCATION

01 MARMOLEUM
02 MARMOLEUM

PBK

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HUFFMAN ISD - CTE

BUSINESS

POLISHED CONCRETE FLOOR PLASTIC LAMINATE WALL TILE

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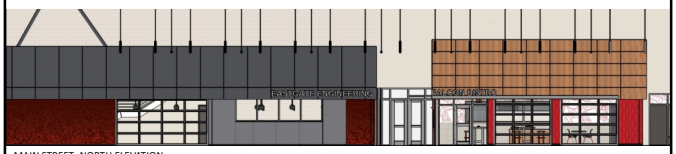
ELEVATIONS



MAIN STREET- NORTH ELEVATION

MAIN STREET- SOUTH ELEVATION

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HUFFMAN ISD - CTE

ELEVATIONS

NORTH WING- EAST CORRIDOR

NORTH WING- WEST CORRIDOR

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HUFFMAN ISD - CTE

ELEVATIONS

SOUTH WING- EAST CORRIDOR

SOUTH WING- EAST CORRIDOR

SOUTH WING- SOUTH CORRIDOR

SOUTH WING- WEST CORRIDOR

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HUFFMAN ISD

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NEW GYM DESIGN

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HUFFMAN ISD - NEW GYM

GYM ENTRY

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HUFFMAN ISD - NEW GYM

GYM LOBBY

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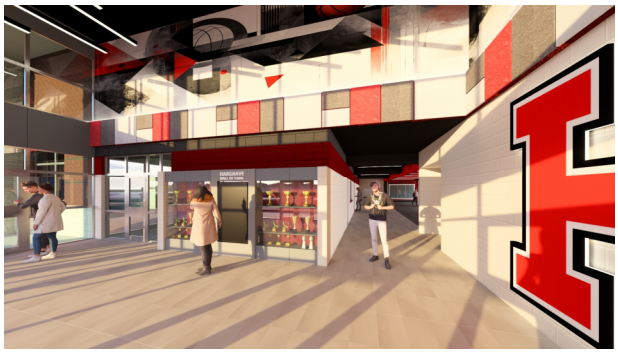
HUFFMAN ISD - NEW GYM

GYM LOBBY



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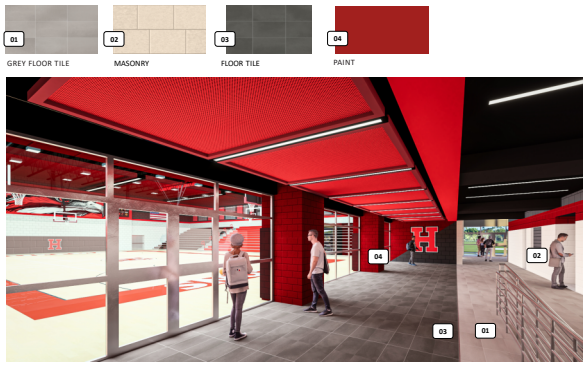
HUFFMAN ISD - NEW GYM

GYM CORRIDOR



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HUFFMAN ISD - NEW GYM

GYM CORRIDOR

PBK 46

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HUFFMAN ISD - NEW GYM

GYM COURT

PBK 47

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HUFFMAN ISD - NEW GYM

GYM COURT

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1155 Clay Road, Suite 100
Houston, TX 77043
P (713) 690-8989
Terracon.com

November 8, 2024

PBK Architects
11 Greenway Plaza, Suite 2210
Houston, Texas 77046

Attn: Ms. Melisa Kapple, RA – Associate Principal, Senior Project Manager
P: (713) 965-0608
E: melissa.kapple@pbk.com

RE: Cost Estimate for Geotechnical Engineering Services
Huffman ISD Hargrave High School Improvements
25400 Willy Lane
Huffman, Texas
Terracon Cost Estimate No. P92245454.Revision1

Dear Ms. Kapple:

Terracon Consultants, Inc. understands that we have been selected based on qualifications to provide geotechnical engineering services for the above referenced project. This document outlines our understanding of the scope of services to be performed by Terracon for this project and provides an estimate of the cost of our services. The following are exhibits to the attached Agreement for Services.

Exhibit A	Project Understanding
Exhibit B	Scope of Services
Exhibit C	Compensation and Project Schedule
Exhibit D	Site Location
Exhibit E	Anticipated Exploration Plan

Our base fees to perform the Scope of Services described in this document and consideration of additional services are provided in **Exhibit C**.

Your authorization for Terracon to proceed in accordance with this document can be issued by signing and returning a copy of the attached Agreement for Services to our office. If you have any questions, please do not hesitate to contact us.

Sincerely,

Terracon Consultants, Inc.
(Texas Firm Registration No.: F-3272)

Jonathan N. Han, E.I.T.
Staff Geotechnical Engineer

Ranadeep Ravula, P.E.
Group Manager

Bobbie S. Hood, P.E.
Senior Engineer (Conroe)

Reference Number: P92245454

AGREEMENT FOR SERVICES

This **AGREEMENT** is between PBK Architects, Inc. ("Client") and Terracon Consultants, Inc. ("Consultant") for Services to be provided by Consultant for Client on the Huffman ISD Hargrave High School Improvements project ("Project"), as described in Consultant's Proposal dated 11/08/2024 ("Proposal"), including but not limited to the Project Information section, unless the Project is otherwise described in Exhibit A to this Agreement (which section or Exhibit is incorporated into this Agreement).

1. **Scope of Services.** The scope of Consultant's services is described in the Proposal, including but not limited to the Scope of Services section ("Services"), unless Services are otherwise described in Exhibit B to this Agreement (which section or exhibit is incorporated into this Agreement). Portions of the Services may be subcontracted. When Consultant subcontracts to other individuals or companies, then consultant will collect from Client on the Subcontractors' behalf. Consultant's Services do not include the investigation or detection of, nor do recommendations in Consultant's reports address the presence or prevention of biological pollutants (e.g., mold, fungi, bacteria, viruses, or their byproducts) or occupant safety issues, such as vulnerability to natural disasters, terrorism, or violence. If Services include purchase of software, Client will execute a separate software license agreement. Consultant's findings, opinions, and recommendations are based solely upon data and information obtained by and furnished to Consultant at the time of the Services.
2. **Acceptance/ Termination.** Client agrees that execution of this Agreement is a material element of the consideration Consultant requires to execute the Services, and if Services are initiated by Consultant prior to execution of this Agreement as an accommodation for Client at Client's request, both parties shall consider that commencement of Services constitutes formal acceptance of all terms and conditions of this Agreement. Additional terms and conditions may be added or changed only by written amendment to this Agreement signed by both parties. In the event Client uses a purchase order or other form to administer this Agreement, the use of such form shall be for convenience purposes only and any additional or conflicting terms it contains are stricken. This Agreement shall not be assigned by either party without prior written consent of the other party. Either party may terminate this Agreement or the Services upon written notice to the other. In such case, Consultant shall be paid costs incurred and fees earned to the date of termination plus reasonable costs of closing the Project.
3. **Change Orders.** Client may request changes to the scope of Services by altering or adding to the Services to be performed. If Client so requests, Consultant will return to Client a statement (or supplemental proposal) of the change setting forth an adjustment to the Services and fees for the requested changes. Following Client's review, Client shall provide written acceptance. If Client does not follow these procedures, but instead directs, authorizes, or permits Consultant to perform changed or additional work, the Services are changed accordingly and Consultant will be paid for this work according to the fees stated or its current fee schedule. If project conditions change materially from those observed at the site or described to Consultant at the time of proposal, Consultant is entitled to a change order equitably adjusting its Services and fee.
4. **Compensation and Terms of Payment.** Client shall pay compensation for the Services performed at the fees stated in the Proposal, including but not limited to the Compensation section, unless fees are otherwise stated in Exhibit C to this Agreement (which section or Exhibit is incorporated into this Agreement). If not stated in either, fees will be according to Consultant's current fee schedule. Fee schedules are valid for the calendar year in which they are issued. Fees do not include sales tax. Client will pay applicable sales tax as required by law. Consultant may invoice Client at least monthly and payment is due upon receipt of invoice. Client shall notify Consultant in writing, at the address below, within 15 days of the date of the invoice if Client objects to any portion of the charges on the invoice, and shall promptly pay the undisputed portion. Client shall pay a finance fee of 1.5% per month, but not exceeding the maximum rate allowed by law, for all unpaid amounts 30 days or older. Client agrees to pay all collection-related costs that Consultant incurs, including attorney fees. Consultant may suspend Services for lack of timely payment. It is the responsibility of Client to determine whether federal, state, or local prevailing wage requirements apply and to notify Consultant if prevailing wages apply. If it is later determined that prevailing wages apply, and Consultant was not previously notified by Client, Client agrees to pay the prevailing wage from that point forward, as well as a retroactive payment adjustment to bring previously paid amounts in line with prevailing wages. Client also agrees to defend, indemnify, and hold harmless Consultant from any alleged violations made by any governmental agency regulating prevailing wage activity for failing to pay prevailing wages, including the payment of any fines or penalties.
5. **Third Party Reliance.** This Agreement and the Services provided are for Consultant and Client's sole benefit and exclusive use with no third party beneficiaries intended. Reliance upon the Services and any work product is limited to Client, and is not intended for third parties other than those who have executed Consultant's reliance agreement, subject to the prior approval of Consultant and Client.
6. **LIMITATION OF LIABILITY. CLIENT AND CONSULTANT HAVE EVALUATED THE RISKS AND REWARDS ASSOCIATED WITH THIS PROJECT, INCLUDING CONSULTANT'S FEE RELATIVE TO THE RISKS ASSUMED, AND AGREE TO ALLOCATE CERTAIN OF THE ASSOCIATED RISKS. TO THE FULLEST EXTENT PERMITTED BY LAW, THE TOTAL AGGREGATE LIABILITY OF CONSULTANT (AND ITS RELATED CORPORATIONS AND EMPLOYEES) TO CLIENT AND THIRD PARTIES GRANTED RELIANCE IS LIMITED TO THE GREATER OF $50,000 OR CONSULTANT'S FEE, FOR ANY AND ALL INJURIES, DAMAGES, CLAIMS, LOSSES, OR EXPENSES (INCLUDING ATTORNEY AND EXPERT FEES) ARISING OUT OF CONSULTANT'S SERVICES OR THIS AGREEMENT. PRIOR TO ACCEPTANCE OF THIS AGREEMENT AND UPON WRITTEN REQUEST FROM CLIENT, CONSULTANT MAY NEGOTIATE A HIGHER LIMITATION FOR ADDITIONAL CONSIDERATION IN THE FORM OF A SURCHARGE TO BE ADDED TO THE AMOUNT STATED IN THE COMPENSATION SECTION OF THE PROPOSAL. THIS LIMITATION SHALL APPLY REGARDLESS OF AVAILABLE PROFESSIONAL LIABILITY INSURANCE COVERAGE, CAUSE(S), OR THE THEORY OF LIABILITY, INCLUDING NEGLIGENCE, INDEMNITY, OR OTHER RECOVERY. THIS LIMITATION SHALL NOT APPLY TO THE EXTENT THE DAMAGE IS PAID UNDER CONSULTANT'S COMMERCIAL GENERAL LIABILITY POLICY.**
7. **Indemnity/Statute of Limitations.** Consultant and Client shall indemnify and hold harmless the other and their respective employees from and against legal liability for claims, losses, damages, and expenses to the extent such claims, losses, damages, or expenses are legally determined to be caused by their negligent acts, errors, or omissions. In the event such claims, losses, damages, or expenses are legally determined to be caused by the joint or concurrent negligence of Consultant and Client, they shall be borne by each party in proportion to its own negligence under comparative fault principles. Neither party shall have a duty to defend the other party, and no duty to defend is hereby created by this indemnity provision and such duty is explicitly waived under this Agreement. Causes of action arising out of Consultant's Services or this Agreement regardless of cause(s) or the theory of liability, including negligence, indemnity or other recovery shall be deemed to have accrued and the applicable statute of limitations shall commence to run not later than the date of Consultant's substantial completion of Services on the project.
8. **Warranty.** Consultant will perform the Services in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the same locale. **EXCEPT FOR THE STANDARD OF CARE PREVIOUSLY STATED, CONSULTANT MAKES NO WARRANTIES OR GUARANTEES, EXPRESS OR IMPLIED, RELATING TO CONSULTANT'S SERVICES AND CONSULTANT DISCLAIMS ANY IMPLIED WARRANTIES OR WARRANTIES IMPOSED BY LAW, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.**
9. **Insurance.** Consultant represents that it now carries, and will continue to carry: (i) workers' compensation insurance in accordance with the laws of the states having jurisdiction over Consultant's employees who are engaged in the Services, and employer's liability insurance ($1,000,000); (ii) commercial general liability insurance ($2,000,000 occ / $4,000,000 agg); (iii) automobile liability insurance ($2,000,000 B.I. and P.D. combined single

limit); (iv) umbrella liability ($5,000,000 occ / agg); and (v) professional liability insurance ($1,000,000 claim / agg). Certificates of insurance will be provided upon request. Client and Consultant shall waive subrogation against the other party on all general liability and property coverage.

10. **CONSEQUENTIAL DAMAGES. NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR LOSS OF PROFITS OR REVENUE; LOSS OF USE OR OPPORTUNITY; LOSS OF GOOD WILL; COST OF SUBSTITUTE FACILITIES, GOODS, OR SERVICES; COST OF CAPITAL; OR FOR ANY SPECIAL, CONSEQUENTIAL, INDIRECT, PUNITIVE, OR EXEMPLARY DAMAGES.**
11. **Dispute Resolution.** Client shall not be entitled to assert a Claim against Consultant based on any theory of professional negligence unless and until Client has obtained the written opinion from a registered, independent, and reputable engineer, architect, or geologist that Consultant has violated the standard of care applicable to Consultant's performance of the Services. Client shall provide this opinion to Consultant and the parties shall endeavor to resolve the dispute within 30 days, after which Client may pursue its remedies at law. This Agreement shall be governed by and construed according to Texas law.
12. **Subsurface Explorations.** Subsurface conditions throughout the site may vary from those depicted on logs of discrete borings, test pits, or other exploratory services. Client understands Consultant's layout of boring and test locations is approximate and that Consultant may deviate a reasonable distance from those locations. Consultant will take reasonable precautions to reduce damage to the site when performing Services; however, Client accepts that invasive services such as drilling or sampling may damage or alter the site. Site restoration is not provided unless specifically included in the Services.
13. **Testing and Observations.** Client understands that testing and observation are discrete sampling procedures, and that such procedures indicate conditions only at the depths, locations, and times the procedures were performed. Consultant will provide test results and opinions based on tests and field observations only for the work tested. Client understands that testing and observation are not continuous or exhaustive, and are conducted to reduce - not eliminate - project risk. Client shall cause all tests and inspections of the site, materials, and Services performed by Consultant to be timely and properly scheduled in order for the Services to be performed in accordance with the plans, specifications, contract documents, and Consultant's recommendations. No claims for loss or damage or injury shall be brought against Consultant by Client or any third party unless all tests and inspections have been so performed and Consultant's recommendations have been followed. Unless otherwise stated in the Proposal, Client assumes sole responsibility for determining whether the quantity and the nature of Services ordered by Client is adequate and sufficient for Client's intended purpose. Client is responsible (even if delegated to contractor) for requesting services, and notifying and scheduling Consultant so Consultant can perform these Services. Consultant is not responsible for damages caused by Services not performed due to a failure to request or schedule Consultant's Services. Consultant shall not be responsible for the quality and completeness of Client's contractor's work or their adherence to the project documents, and Consultant's performance of testing and observation services shall not relieve Client's contractor in any way from its responsibility for defects discovered in its work, or create a warranty or guarantee. Consultant will not supervise or direct the work performed by Client's contractor or its subcontractors and is not responsible for their means and methods. The extension of unit prices with quantities to establish a total estimated cost does not guarantee a maximum cost to complete the Services. The quantities, when given, are estimates based on contract documents and schedules made available at the time of the Proposal. Since schedule, performance, production, and charges are directed and/or controlled by others, any quantity extensions must be considered as estimated and not a guarantee of maximum cost.
14. **Sample Disposition, Affected Materials, and Indemnity.** Samples are consumed in testing or disposed of upon completion of the testing procedures (unless stated otherwise in the Services). Client shall furnish or cause to be furnished to Consultant all documents and information known or available to Client that relate to the identity, location, quantity, nature, or characteristic of any hazardous waste, toxic, radioactive, or contaminated materials ("Affected Materials") at or near the site, and shall immediately transmit new, updated, or revised information as it becomes available. Client agrees that Consultant is not responsible for the disposition of Affected Materials unless specifically provided in the Services, and that Client is responsible for directing such disposition. In no event shall Consultant be required to sign a hazardous waste manifest or take title to any Affected Materials. Client shall have the obligation to make all spill or release notifications to appropriate governmental agencies. The Client agrees that Consultant neither created nor contributed to the creation or existence of any Affected Materials conditions at the site and Consultant shall not be responsible for any claims, losses, or damages allegedly arising out of Consultant's performance of Services hereunder, or for any claims against Consultant as a generator, disposer, or arranger of Affected Materials under federal, state, or local law or ordinance.
15. **Ownership of Documents.** Work product, such as reports, logs, data, notes, or calculations, prepared by Consultant shall remain Consultant's property. Proprietary concepts, systems, and ideas developed during performance of the Services shall remain the sole property of Consultant. Files shall be maintained in general accordance with Consultant's document retention policies and practices.
16. **Utilities.** Unless otherwise stated in the Proposal, Client shall provide the location and/or arrange for the marking of private utilities and subterranean structures. Consultant shall take reasonable precautions to avoid damage or injury to subterranean structures or utilities. Consultant shall not be responsible for damage to subterranean structures or utilities that are not called to Consultant's attention, are not correctly marked, including by a utility locate service, or are incorrectly shown on the plans furnished to Consultant.
17. **Site Access and Safety.** Client shall secure all necessary site related approvals, permits, licenses, and consents necessary to commence and complete the Services and will execute any necessary site access agreement. Consultant will be responsible for supervision and site safety measures for its own employees, but shall not be responsible for the supervision or health and safety precautions for any third parties, including Client's contractors, subcontractors, or other parties present at the site. In addition, Consultant retains the right to stop work without penalty at any time Consultant believes it is in the best interests of Consultant's employees or subcontractors to do so in order to reduce the risk of exposure to unsafe site conditions. Client agrees it will respond quickly to all requests for information made by Consultant related to Consultant's pre-task planning and risk assessment processes.

Consultant:	**Terracon Consultants, Inc.**	Client:	**PBK Architects, Inc.**
By:	Bobbie Sue Hood	Date: **11/8/2024**	By:	Date:
Name/Title:	**Bobbie Sue Hood / Principal**	Name/Title:	
Address:	**11555 Clay Rd, Ste 100**	Address:	
	Houston, TX 77043-1239		
Phone:	**(713) 690-8989** Fax: **(713) 690-8787**	Phone:	Fax:
Email:	**Bobbie.Hood@terracon.com**	Email:	

Exhibit A – Project Understanding

Our Scope of Services is based on our understanding of the project as described by PBK Architects, Inc. (PBK) as described below. We have not visited the project sites to confirm the information provided. Aspects of the project, undefined or assumed, are highlighted as shown below. We request the design team verify all information prior to our initiation of field exploration activities.

Planned Construction

Item	Description
Proposed Improvements[1]	▪ A single-story CTE building planned with an approximate footprint area of 49,000 square feet (sf.). ▪ A single-story gymnasium building addition with an approximate footprint area of 18,000 square feet (sf.). ▪ A single-story ag barn building addition with an approximate footprint area of 11,000 square feet (sf.). ▪ One dry detention pond with a footprint area of approximately 8.24 acres are planned to be located in the north portion of the site. The pond is planned to have a maximum depth of 9 feet with sideslope declinations of 3 horizontal to 1 vertical (3H:1V). We assume the pond is planned to be privately owned and maintained by Huffman ISD. ▪ Associated pavements.
Building Construction[1]	Either steel-frame or concrete masonry unit (CMU) construction.
Finished Floor Elevation	**CTE Building:** ▪ Within approximately two feet above existing grade. **Building Additions:** ▪ Within approximately one foot above existing grade and to match the finished floor elevation of the existing building.
Maximum Loads[1]	**Grade-supported floor slab:** ▪ Columns: Up to 350 kips ▪ Walls: 2 to 4 kips per linear foot (klf) ▪ Slabs: 125 pounds per square foot (psf) **Structurally suspended and supported floor slab system:** ▪ Columns: Up to 450 kips ▪ Walls: 4 to 6 kips per linear foot (klf) ▪ Slabs: 125 pounds per square foot (psf)

Item	Description
Anticipated Foundation Systems	Drilled-and-underreamed footings or drilled straight shafts
Pavements	We understand a rigid (concrete) pavement section is being considered. We anticipate that traffic will consist primarily of passenger vehicles in the parking areas and passenger vehicles combined with garbage trucks, and large multi-axle delivery trucks and buses from time-to-time in driveway areas.

1. Information provided by Kubala Engineers and PBK.

Site Location and Anticipated Conditions

Item	Description
Parcel Information	The project site is located within the existing Hargrave High School campus located at 25400 Willy Lane in Huffman, Texas. See **Exhibit D**
Existing Improvements	Based on available site photographs and information provided by the client, the site is currently occupied by an existing school building, tennis courts, sports fields, and associated pavements.
Current Ground Cover	Grass, weeds, concrete pavements, and scattered trees.
Existing Topography	Relatively level.
Site Access	We expect the site, and all exploration locations, are accessible with our all-terrain vehicle (ATV) mounted drilling equipment and support vehicles during normal business hours.

Exhibit B - Scope of Services

Our proposed Scope of Services consists of field exploration, laboratory testing, and engineering/project delivery. These services are described in the following sections.

Field Exploration

Based on input provided by PBK, and our experience with similar projects in the vicinity of the project site, we propose the following field exploration program as described below:

Number of Borings	Planned Boring Depth (feet) [1]	Planned Location [2]
8 (B-1 through B-8)	30	Proposed CTE building area
2 (B-9 and B-10)	30	Proposed ag barn building addition area
3 (B-11 through B-13)	30	Proposed gymnasium building addition area
3 (B-14 through B-16)	5	Associated pavement areas
2 (B-17 and B-18)	20	Proposed detention pond
18	**445**	**Total**

1. Below existing grade.
2. The planned boring locations are shown on the attached **Anticipated Exploration Plan**.

Boring Layout and Elevations: We will use handheld GPS equipment to locate borings with an estimated horizontal accuracy of +/-25 feet. Field measurements from existing site features may be utilized.

Subsurface Exploration Procedures: We will advance borings with an ATV-mounted drill rig using continuous flight augers and/or rotary wash boring techniques. Samples will be obtained in the upper 12 feet of each boring and at intervals of 5 feet thereafter. Soil sampling is typically performed using open-tube and/or split-barrel sampling procedures. The split-barrel samplers are driven in accordance with the standard penetration test (SPT). The samples will be placed in appropriate containers, taken to our soil laboratory for testing, and classified by a Geotechnical Engineer. In addition, we will observe and record groundwater levels during drilling and sampling.

Our exploration team will prepare field boring logs as part of standard drilling operations including sampling depths, penetration distances, and other relevant sampling information. Field logs include visual classifications of materials observed during drilling

and our interpretation of subsurface conditions between samples. Final boring logs, prepared from field logs, represent the Geotechnical Engineer's interpretation and include modifications based on observations and laboratory tests.

Property Disturbance: Terracon will take reasonable efforts to reduce damage to the property. However, it should be understood that in the normal course of our work some disturbance could occur including rutting of the ground surface and damage to landscaping.

We will backfill borings with auger cuttings and cap with a concrete cylinder upon completion. Pavements will be patched with ready mixed concrete, where appropriate. Our services do not include repair of the site beyond backfilling our boreholes. Excess auger cuttings will be dispersed in the general vicinity of the boreholes. Because backfill material often settles below the surface after a period, we recommend boreholes to be periodically checked and backfilled, if necessary. We can provide this service or grout the boreholes for additional fees at your request.

Site Access: Terracon must be granted access to the site by the property owner. Without information to the contrary, we consider acceptance of this document as authorization to access the property for conducting field exploration in accordance with the Scope of Services. Our proposed fees do not include time to negotiate and coordinate access with landowners or tenants. Terracon will conduct field services during normal business hours (Monday through Friday between 7:00am and 5:00pm).

Safety

Terracon is not aware of environmental concerns at this project site that would create health or safety hazards associated with our exploration program; thus, our Scope considers standard OSHA Level D Personal Protection Equipment (PPE) appropriate. Our Scope of Services does not include environmental site assessment services, but identification of unusual or unnatural materials observed while drilling will be noted on our logs.

Exploration efforts require borings (and possibly excavations) into the subsurface, therefore Terracon will comply with Texas 811, a free utility locating service, to help locate public utilities within dedicated public easements. We will consult with the landowner/client regarding potential utilities or other unmarked underground hazards. Based upon the results of this consultation, we will consider the need for alternative subsurface exploration methods as the safety of our field crew is a priority.

Private utilities should be marked by the owner/client prior to commencement of field exploration. Terracon will not be responsible for damage to private utilities not disclosed to us.

Terracon proposes to subcontract or perform an in-house private utility locating service. Fees associated with this service are included in our Scope of Services.

The detection of underground utilities is dependent upon the composition and construction of the utility line; some utilities are comprised of non-electrically conductive materials and may not be readily detected. The use of a private utility locate service would not relieve the landowner/client of their responsibilities in identifying private underground utilities.

Site Access: Terracon must be granted access to the site by the property owner. Without information to the contrary, we consider acceptance of this cost estimate as authorization to access the property for conducting field exploration in accordance with the Scope of Services. Our proposed fees do not include time to negotiate and coordinate access with landowners or tenants. Terracon will conduct field services during normal business hours (Monday through Friday between 7:00am and 5:00pm). If our exploration must take place over a weekend or at night, please contact us so we can adjust our schedule and fee.

Laboratory Testing

The project engineer will review field data and assign laboratory tests. Based on our understanding of the project, assigned tests may include the following.

- ASTM D2216 Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
- ASTM D7263 Standard Test Methods for Laboratory Determination of Density (Unit Weight) of Soil Specimens
- ASTM D4318 Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
- ASTM D1140 Standard Test Method for Determining the Amount of Materials Finer than No. 200 Sieve in Soils by Washing
- ASTM D2166/D2166M Standard Test Method for Unconfined Compressive Strength of Cohesive Soil

Our laboratory testing program includes examination of soil samples by an engineer. Based on the results of our field and laboratory programs, we will describe and classify soil samples in accordance with the Unified Soil Classification System (USCS).

Engineering and Project Delivery

The results of our field and laboratory programs will be evaluated, and a geotechnical engineering report will be prepared under the supervision of a licensed professional engineer. The geotechnical engineering report will provide recommendations for the following:

- Boring logs with field and laboratory data
- Stratification based on visual soil classification
- Groundwater levels observed during and after the completion of drilling
- Site Location and Exploration Plan
- Subsurface exploration procedures
- Description of subsurface conditions
- Earthwork recommendations including site/subgrade preparation
- Foundation design parameters and construction recommendations
- Detention pond construction considerations
- Pavement design guidelines

In addition to an emailed report, your project will also be delivered using our **Compass**. Upon initiation, we provide you and your design team the necessary link and password to access the website (if not previously registered). Each project includes a calendar to track the schedule, an interactive site map, a listing of team members, access to the project documents as they are uploaded to the site, and a collaboration portal. We welcome the opportunity to have project kickoff conversations with the team to discuss key elements of the project and demonstrate features of the portal. The typical delivery process includes the following:

- Project Planning – Cost Estimate information, schedule, and anticipated exploration plan
- Site Characterization – Findings of the site exploration and laboratory results
- Geotechnical Engineering Report

When services are complete, we upload a printable version of our completed Geotechnical Engineering report, including the professional engineer's seal and signature, which documents our services. Previous submittals, collaboration, and the report are maintained in our system. This allows future reference and integration into subsequent aspects of our services as the project goes through final design and construction.

Exhibit C - Compensation and Project Schedule

Compensation

Based upon our understanding of the site, the project as summarized in **Exhibit A**, and our planned Scope of Services outlined in **Exhibit B**, our base fee is shown in the following table:

Task	Lump Sum Fee
Subsurface Exploration, Laboratory Testing, Geotechnical Consulting and Reporting	$26,900
Private Utility Locate Service[1]	$2,000
Total	**$26,900**

1. We plan to subcontract a private utility locating firm and/or utilize geophysical equipment, to mark existing private utilities. The detection of underground utilities is dependent upon the composition and construction of utility lines. Some utilities are comprised of non-electrically conductive materials and may not be readily detected. The use of a private locate service does not relieve the owner of their responsibilities in identifying private underground utilities.

Our Scope of Services does not include services associated with site clearing, wet ground conditions, tree or shrub clearing, or repair of/damage to existing landscape. If such services are desired by the owner/client, we should be notified so we can adjust our Scope of Services.

Additional consultation (such as attendance on a project conference call, engineering analysis, review of project documents, etc.) requested will be performed on a time-and-materials basis. The fee to provide additional consultation services will be in excess of the above provided fee to complete the geotechnical services and will not be incurred without prior approval of the client.

Unless instructed otherwise, we will submit our invoice(s) to the address shown at the beginning of this cost estimate. If conditions are encountered that require Scope of Services revisions and/or result in higher fees, we will contact you for approval, prior to initiating services. A supplemental cost estimate stating the modified Scope of Services as well as its effect on our fee will be prepared. We will not proceed without your authorization.

Project Schedule

We developed a schedule to complete the Scope of Services based upon our existing availability and understanding of your project schedule. However, our schedule does not account for delays in field exploration beyond our control, such as weather conditions, delays resulting from utility clearance, permit delays, or lack of permission to access the boring locations. In the event the schedule provided is inconsistent with your needs, please contact us so we may consider alternatives.

Delivery on Client Portal	Schedule [1, 2]
Project Planning	5 working days after notice to proceed
Field Work Mobilization	7 to 10 working days after notice to proceed
Site Characterization[3]	15 working days after completion of field program
Geotechnical Engineering Report[3]	20 working days after completion of field program

1. Upon receipt of your notice to proceed we will activate the schedule component on **Compass** with specific, anticipated dates for the delivery points noted above as well as other pertinent events.
2. Standard workdays. We will maintain an activities calendar within on **Compass**. The schedule will be updated to maintain a current awareness of our plans for delivery.
3. Delivery based on completion of field program in four days.

Exhibit D – Site Location

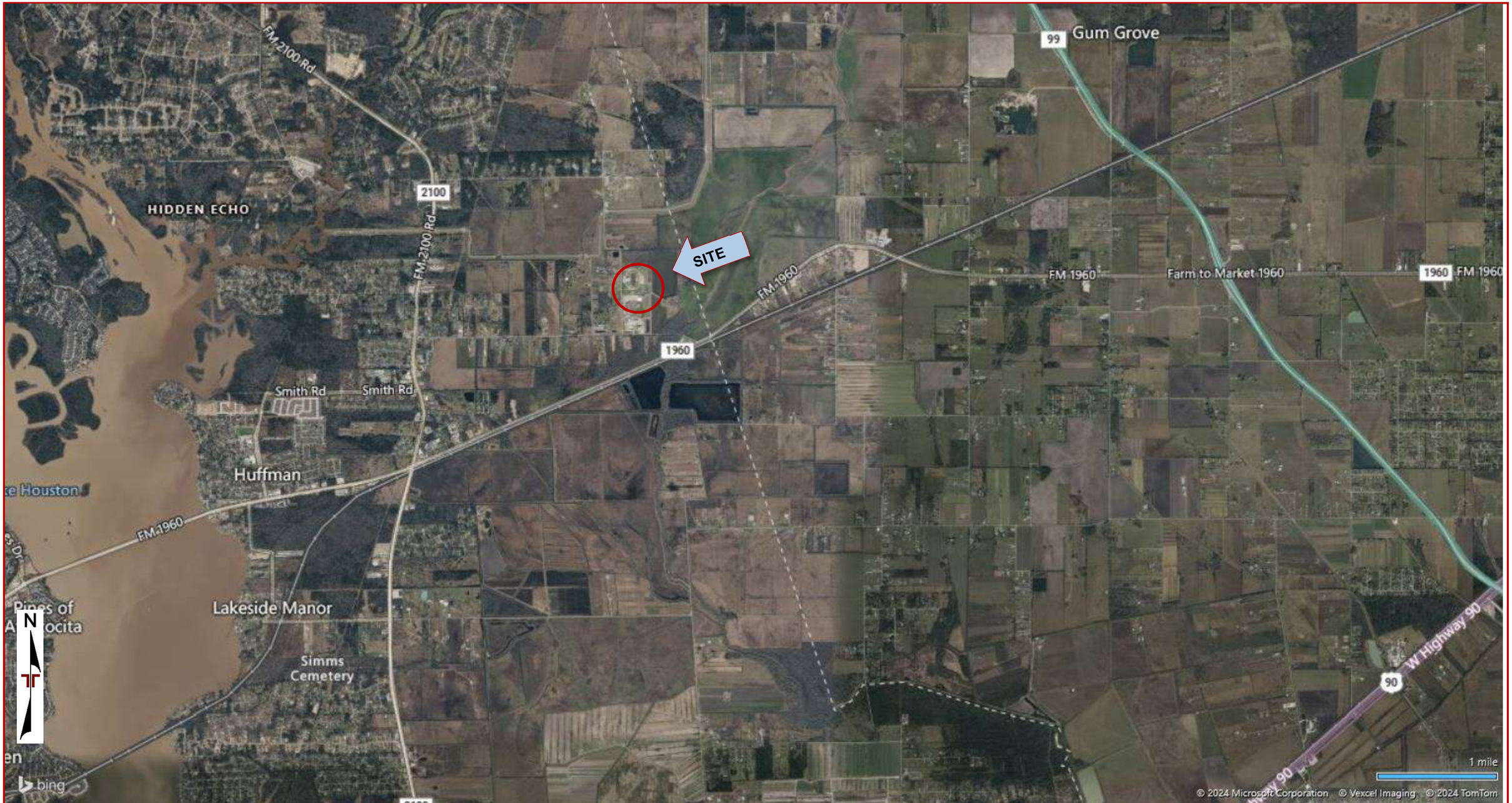

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

Exhibit E – Anticipated Exploration Plan

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

SECTION 01 23 00 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes: Administrative and procedural requirements for alternates.

1.3 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain Work defined in the bidding requirements that may be added to or deducted from the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
   1. Alternates described are part of the Work when enumerated in the Agreement.
   2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

A. Coordination: Revise or adjust affected adjacent Work as necessary to completely integrate Work of the alternate into Project.
   1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Notification: Forty-eight (48) hours following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated revisions to alternates.

C. Execute accepted alternates under the same conditions as other Work of the Contract.

D. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the Work described under each alternate.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Alternate Number 1: 23 09 23 – Direct Digital Controls – **Unify Energy Solutions**
   1. This Alternate shall establish the amount to adjust the Base Proposal for the cost of furnishing and installing Direct Digital Controls manufactured by Reliable Controls– Installed by **Unify Energy Solutions – Houston**. This alternate shall include the pricing for all materials and labor for proper completion. Refer to specs and drawings for additional information.

B. Alternate Number 2a: 23 64 23 – Scroll Water Chillers Air-Cooled (CTE Building) & 23 64 27 – Rotary-Screw Water Chillers Air-Cooled (High School) – **Daikin**
   1. This Alternate shall establish the amount to be added to the Base Proposal for the Contractor to furnish Scroll Water Chillers Air-Cooled and Rotary-Screw Water Chillers Air-Cooled (High School), manufactured by **Daikin** as shown and scheduled on the drawings and as specified. Alternate chiller price shall include (5) five-year parts, labor, refrigerant, etc. extended warranty (re: 1.11 Warranty) as well as (5) five year Preventative Maintenance Service (re: 1.12 Preventative Maintenance Service); there are no chillers included in the base bid.

C. Alternate Number 2b: 23 64 23 – Scroll Water Chillers Air-Cooled (CTE Building) & 23 64 27 – Rotary-Screw Water Chillers Air-Cooled (High School) – **Carrier**
   1. This Alternate shall establish the amount to be added to the Base Proposal for the Contractor to furnish Scroll Water Chillers Air-Cooled and Rotary-Screw Water Chillers Air-Cooled (High School), manufactured by **Carrier** as shown and scheduled on the drawings and as specified. Alternate chiller price shall include (5) five-year parts, labor, refrigerant, etc. extended warranty (re: 1.11 Warranty) as well as (5) five year Preventative Maintenance Service (re: 1.12 Preventative Maintenance Service); there are no chillers included in the base bid.

D. Alternate Number 2c: 23 64 23 – Scroll Water Chillers Air-Cooled (CTE Building) & 23 64 27 – Rotary-Screw Water Chillers Air-Cooled (High School) – **Trane**
   1. This Alternate shall establish the amount to be added to the Base Proposal for the Contractor to furnish Scroll Water Chillers Air-Cooled and Rotary-Screw Water Chillers Air-Cooled (High School), manufactured by **Trane** as shown and scheduled on the drawings and as specified. Alternate chiller price shall include (5) five-year parts, labor, refrigerant, etc. extended warranty (re: 1.11 Warranty) as well as (5) five year Preventative Maintenance Service (re: 1.12 Preventative Maintenance Service); there are no chillers included in the base bid.

E. Alternate Number 2d: 23 64 23 – Scroll Water Chillers Air-Cooled (CTE Building) & 23 64 27 – Rotary-Screw Water Chillers Air-Cooled (High School) – **JCI**
   1. This Alternate shall establish the amount to be added to the Base Proposal for the Contractor to furnish Scroll Water Chillers Air-Cooled and Rotary-Screw Water Chillers Air-Cooled (High School), manufactured by **JCI** as shown and scheduled on the drawings and as specified. Alternate chiller price shall include (5) five-year parts, labor, refrigerant, etc. extended warranty (re: 1.11 Warranty) as well as (5) five year Preventative Maintenance Service (re: 1.12 Preventative Maintenance Service); there are no chillers included in the base bid.

F. Alternate Number 3a: 23 73 13 – Modular Indoor Central-Station Air-Handling Units – **Daikin**
   1. This Alternate shall establish the amount to be added to the Base Proposal for the Contractor to furnish Modular Indoor Central-Station Air- Handling Units, manufactured by **Daikin** as shown and scheduled on the drawings and as specified; there are no Modular Indoor Central -Station Air-Handling Units included in the base bid.

G. Alternate Number 3b: 23 73 13 – Modular Indoor Central-Station Air-Handling Units – **Trane**
   1. This Alternate shall establish the amount to be added to the Base Proposal for the Contractor to furnish Modular Indoor Central-Station Air- Handling Units, manufactured by **Trane** as shown and scheduled on the drawings and as specified; there are no Modular Indoor Central -Station Air-Handling Units included in the base bid.

H. Alternate Number 3c: 23 73 13 – Modular Indoor Central-Station Air-Handling Units – **Carrier**
   1. This Alternate shall establish the amount to be added to the Base Proposal for the Contractor to furnish Modular Indoor Central-Station Air- Handling Units, manufactured by **Carrier** as shown and scheduled on the drawings and as specified; there are no Modular Indoor Central -Station Air-Handling Units included in the base bid.

I. Alternate Number 3d: 23 73 13 – Modular Indoor Central-Station Air-Handling Units – **JCI**
   1. This Alternate shall establish the amount to be added to the Base Proposal for the Contractor to furnish Modular Indoor Central-Station Air- Handling Units, manufactured by **JCI** as shown and scheduled on the drawings and as specified; there are no Modular Indoor Central -Station Air-Handling Units included in the base bid.

J. Alternate Number 3e 23 73 13 – Modular Indoor Central-Station Air-Handling Units – **Temtrol**
   1. This Alternate shall establish the amount to be added to the Base Proposal for the Contractor to furnish Modular Indoor Central-Station Air- Handling Units, manufactured by **Temtrol** as shown and scheduled on the drawings and as specified; there are no Modular Indoor Central -Station Air-Handling Units included in the base bid

K. Alternate Number 4: 23 81 26 – Ductless Mini-Split-System Air-Conditioners– **Daikin**
   1. This Alternate shall establish the amount to be added to the Base Proposal for the Contractor to furnish Ductless Mini Split System Air Conditioners, manufactured by **Daikin** as shown and scheduled on the drawings and as specified; there are no Ductless Mini Split System Air Conditioners included in the base bid.

L. Alternate Number 5a: 23 82 19.13 – Fan Coil Units – **Daikin**
   1. This Alternate shall establish the amount to be added to the Base Proposal for the Contractor to furnish Fan Coil Units, manufactured by **Daikin** as shown and scheduled on the drawings and as specified; there are no Fan Coil Units included in the base bid.

M. Alternate Number 5b: 23 82 19.13 – Fan Coil Units – **Carrie**
   1. This Alternate shall establish the amount to be added to the Base Proposal for the Contractor to furnish Fan Coil Units, manufactured by **Carrier** as shown and scheduled on the drawings and as specified; there are no Fan Coil Units included in the base bid.

N. Alternate Number 5c: 23 82 19.13 – Fan Coil Units – **Trane**
   1. This Alternate shall establish the amount to be added to the Base Proposal for the Contractor to furnish Fan Coil Units, manufactured by **Trane** as shown and scheduled on the drawings and as specified; there are no Fan Coil Units included in the base bid.

O. Alternate Number 5d: 23 82 19.13 – Fan Coil Units – **JCI**
   1. This Alternate shall establish the amount to be added to the Base Proposal for the Contractor to furnish Fan Coil Units, manufactured by **JCI** as shown and scheduled on the drawings and as specified; there are no Fan Coil Units included in the base bid.

END OF SECTION 01 23 00

SECTION 03 52 16 - LIGHTWEIGHT INSULATING CONCRETE DECK SYSTEM

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. It is the intent of this Section,
   1. to include the lightweight insulating concrete, and EPS roof insulation for all areas of existing roof construction, and
   2. that all Work be performed by the lightweight insulating concrete Sub-contractor.

1.2 RELATED WORK

A. All Sections of Work pertinent to the roofing system, including mechanical, plumbing and electrical items penetrating metal deck, lightweight insulating concrete, rough carpentry, roof insulation, subsequent roofing and sheet metal flashing and trim.

1.3 SUBMITTALS

A. Product Data:
   1. Manufacturer's specifications, instructions and other data needed for proper placement of the lightweight insulating concrete roof insulation system.
   2. Manufacturer's installation instructions.

B. Mix Design: Indicate materials and proportions of proposed mix.

C. Applicator's Qualifications: Submit a letter from the proposed lightweight insulating concrete system supplier confirming that the Contractor is approved to install the proposed lightweight insulating concrete system. Refer also to Paragraph 1.5, A.

D. Certifications:
   1. Manufacturer's affidavit that materials used in Project contain no asbestos.
   2. On completion of installation, furnish Architect with Certificate signed by a representative of the manufacturer and by the applicator stating that insulating concrete was prepared and applied in accordance with manufacturer's recommendations.
   3. Manufacturer's certification that system meets or exceeds UL-90 wind up-lift and UL Class A fire rating.
   4. Manufacturer's certification that system meets or exceeds Factory Mutual Research Corp. FM I-90 wind up-lift rating.

E. Warranty:
   1. Submit a sample copy of the warranty covering the proposed lightweight insulating concrete system.
   2. Submit a sample copy of the roof system warranty covering the proposed lightweight insulating concrete system and roof membrane system.
   3. Refer to the roofing system specification section and coordinate the lightweight insulating concrete system warranty with the roof system warranty.

1.4 REFERENCES

A. Comply with all applicable recommendations of the referenced standards. In any conflict between referenced standards, the more stringent requirements shall govern.
   1. American National Standards Institute/Underwriters' Laboratories, Inc. (ANSI/UL)

2. American Society for Testing and Material (ASTM)
   a. A525, Specification for General Requirements for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process
   b. C150, Standard Specification for Portland Cement
   c. C177, Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus
   d. C332, Standard Specification for Lightweight Aggregates for Lightweight Concrete
   e. C495, Standard Test Method for Compressive Strength of Lightweight Insulating Concrete
   f. E119, Standard Test Methods for Fire Tests of Building Construction and Materials
3. National Roofing Contractors Association (NRCA)
4. Occupational Safety and Health Administration (OSHA)
5. Underwriters' Laboratories, Inc. (UL)
   a. Wind Uplift Class 90 - UL-90
   b. Fire Ratings - Class A
6. Vermiculite Association (VA)

1.5 QUALITY ASSURANCE

A. Applicator:
   1. A firm regularly engaged in and properly equipped for the installation of lightweight fill, and acceptable to the fill manufacturer, which has installed at least five (5) million square feet in the last five (5) years.
   2. Key Person Requirement: A thoroughly trained and experienced employee of the Installer, who is acceptable to the Roofing Consultant, shall be present at all times during the execution of work specified in this Section, and direct that work.
   3. Approved in writing by manufacturer to install the roof lightweight insulating concrete deck system.
   4. Responsible for ensuring positive drainage.
   5. **No ponding** water will be acceptable.
   6. Perform water test prior to application of roof system. Architect will be present, provide 48 hours' notice in advance of water testing.

B. Agency Approvals: Provide products, execution, and material thickness to conform to the applicable code requirements for the required fire resistance ratings, wind uplift classifications, insulation values, and diaphragm values.

C. Diaphragm Construction: Incorporate metal decking thickness, welding pattern, and minimum compressive strength of the lightweight insulating concrete to achieve diaphragm design values for edge and field conditions as specified to meet applicable code requirements.

D. Fire Resistance Classifications: Provide a lightweight insulating concrete system meeting the following fire resistance standards:
   1. Tested by UL in accordance with the procedures of ASTM E119 and listed in the UL "Fire Resistance Directory".
   2. Approval Rating: Class A

E. Wind Uplift Classifications: Provide a lightweight insulating concrete system meeting the following wind uplift standards:
   1. Tested by UL in accordance and listed in the UL "Roofing Materials Directory" for wind uplift resistance.
   2. Approval Rating: UL-90
   3. Tested and approved by Factory Mutual Research Corp. for wind up-lift rating of I-90.

F. Inspection and Testing Laboratory Services:
   1. Test results shall meet or exceed established Standards. Refer to Section 01115, Inspection and Testing Laboratory Services.
   2. The Owner will select the Inspection and Testing Laboratory and pay for the cost of tests to determine the dry density and compressive strength.
   3. Compressive strength shall be determined in accordance with ASTM C495.
   4. Wet and dry density range shall be in accordance with ASTM C495.
   5. Polystyrene (EPS) density shall be in accordance with ASTM C578.

G. Building / Construction Components: Meet or exceed established standards.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in manufacturer's original unopened packaging fully identified as to manufacturer, brand or other identifying data as approved in submittal documents.

B. Store materials under cover, and in a dry location until ready for installation. Roofing insulation must always be covered or stored in a dry area when not being used.

C. No storage of materials shall be permitted on roof areas other than those materials that are to be installed the same day. Any exception must be in written form. Do not place materials or equipment in such a manner as to overload the structure.

D. Familiarize every member of the installation crew with the manufacturer’s material safety data sheets and with fire and safety regulations recommended by OSHA, NRCA, and as required by governing codes of authorities having jurisdiction.

1.7 PROJECT / SITE CONDITIONS

A. When air temperatures of 40 degrees F or above are predicted to occur within the first 24 hours after placement, normal application procedures may be used.

B. When air temperatures of 32 degrees F - 40 degrees F are predicted to occur within the first 24 hours after placement, warm water not exceeding 90 degrees F may be used.

C. Do not place the lightweight insulating concrete system when air temperatures are below 40 degrees F, including wind chill.

D. Insulating Lightweight Concrete Fill Installer shall be responsible for protecting the new insulating lightweight concrete deck from all adverse conditions until roofing begins.

1.8 SEQUENCING AND SCHEDULING

A. Sequence and coordinate application of lightweight insulating concrete roof insulation with work in other sections so as not to interfere with efficient roof insulation application.

1.9 WARRANTY

A. Manufacturer’s Warranty: Warrant the decking and associated Work in conjunction with the roofing manufacturer from the project date of Substantial Completion as follows:
   1. The warranty shall be a NDL “No Dollar Limit” / no penal sum type, with total replacement cost. Refer to roof system specification section for length of warranty period.
   2. The warranty shall provide manufacturer’s maximum extended wind rated coverage (up to Hurricane force winds) as defined by the Beaufort Scale.

3. The warranty shall guarantee the entire roof system and associated work against defective materials and workmanship of installation, with NO exclusion for ponding water.
4. The full system warranty including lightweight insulating concrete deck, roofing insulation, flashing, metal work, labor, and material shall be guaranteed against failure of workmanship and materials. Repair of the system, including materials and labor, shall be done at no cost to the Owner.

B. Contractor Warranty: Jointly with any subcontractors employed by him, shall guarantee the work required and performed under this contract will be free from defects in workmanship and materials, and that the lightweight insulating concrete deck will be and remain in good condition for a five (5) year warranty period, after the Architect accepts the work as substantially complete. The warranty shall be in approved notarized written form, to obligate the Contractor, and subcontractors, to make good the requirements of the warranty.

C. Make arrangements with the roofing manufacturer to provide the required warranty. Final warranty shall be submitted to Owner at time of Substantial Completion.

PART 2 - PRODUCTS

2.1 APPROVED MANUFACTURERS

A. Products and manufacturers listed whose products meet or exceed the specifications are approved for use on the Project. Other manufacturers must have a minimum of five (5) years experience manufacturing products meeting or exceeding the specifications and comply with Division 1 requirements regarding substitutions to be considered.
1. Elastizell Corp. of America
2. Siplast, Inc.
3. Vermiculite Products Inc.
4. Celcore, Inc.
5. Mearlcrete

2.2 MATERIALS

A. Metal Deck: Refer to Section 05 31 00. Corrugated steel decking incorporating a pre-applied galvanized coating conforming to ASTM A653, minimum Class G-90 and having slots in flutes equal to a minimum of 0.75 percent of the deck area. Refer to Structural Drawings for size, type and section modulus of metal deck and for welding pattern of deck.

B. Insulation Board:
1. Type: Expanded polystyrene (EPS) insulation board Type I by ASTM C578 and containing approximately three (3) percent open area.
2. Thickness: 6 inches thick minimum, unless shown otherwise.
3. Approved Products / Manufacturers:
   a. "Insulperm" manufactured by Siplast, Irving, Texas (800) 922-8800.
   b. “Starrfoam-HB” manufactured by Starrfoam Manufacturing, Inc., Fort Worth, Texas (817) 654-4688.
   c. “Vermaperm” manufactured by Vermiculite Products Inc., Houston, Texas (713) 869-6663.
   d. “Holey Board” manufactured by Houston Foam Plastics, Houston, Texas, (713) 224-3612.
   e. PowerFoam, manufactured by PowerFoam, Midolathian Texas 972-299-5556

C. Water: Potable water that is clean and free of deleterious amounts of acid, alkali, and organic materials – (Drinkable).

D. Cement: Portland type, conforming to ASTM C150, Type I or III.

E. Foam Concentrate: Protein based foam concentrate conforming to ASTM C 869 and ASTM C 796.

F. Vermiculite Aggregate: Any one (1) of the following products from a single manufacturer is approved for use on this Project:
   1. Vermiculite: Comply with ASTM C332, produced by a current member of VA. Mix shall be 1:6 with 300 (min) psi at 28 days compressive strength; 48 to 60 pcf wet density, and 25 to 32 pcf dry density.
   2. Cellular: Mix shall be 1:3 with minimum compressive strength of 300 psi, cast density of 34-42 pcf, manufactured by Elastizell Corporation of America, Ann Arbor, MI (734) 761-6900

G. Admixtures: Air entraining types and superplacticizer (water reducer) types as recommended by insulating concrete material manufacturer. Admixtures may be injected into material at the plant. The use of calcium chloride is not permitted.

H. Expansion Joint Material: One (1) inch thick of type recommended by insulating concrete material supplier for expansion joints in structural system.

I. Reinforcing: 3/4 inch long, polypropylene fiber, Fibermix as manufactured by Fibermesh Co. for cellular concrete only.

J. Nailers: (Refer to Section 06 10 00, Rough Carpentry) As shown on drawings. Install required thickness of wood to align with specified thickness of lightweight insulating concrete.

PART 3 - EXECUTION

3.1 INSPECTION

A. Prior to placing reinforcing and insulating concrete, inspect to ensure all piping, curbs, wood nailers, etc., have been raised to the proper height and the substrate is free of any foreign materials.

B. Ensure perimeter edge and penetrations are sealed in a watertight fashion.

C. Ensure temporary roof is installed as specified in Section 07 52 19.

3.2 PREPARATION

A. Notify other trades of dates of pouring in ample time for each to install his work.

B. Review required finishes and allowable tolerances for surface defects.

C. Set screeds so various deck thicknesses are maintained uniformly in place with all slopes as shown and detailed on drawings.

D. Verify with the appropriate type instrument that all roof areas have positive drainage. Areas lacking positive drainage are unacceptable and shall be removed and re-poured at Contractor's expense.

3.3 INSTALLATION

A. Metal Deck: Place sheets with corrugation edges upon the perpendicular to supports with end laps centered over supports. Attach to supports with plug welds through welding washers. Refer to Structural Drawings for additional requirements.

B. Expansion Joint Material: Install at the following locations.
   1. Perimeter of deck.
   2. Changes in direction of roof deck.
   3. Structural roof penetrations and expansion joints

C. Provide equipment and installation procedures conforming to the materials manufacturer's installation instructions.

D. Mix Portland cement and aggregate in a mix ratio design with water in accordance with manufacturer's instructions to achieve the specified wet density, minimum dry density, and minimum compressive strength.

E. Install slurry coat of lightweight insulating concrete over metal deck to minimum thickness of 1/4 inch over top of flutes of metal decking.

F. Place insulation boards into slurry within 30 minutes of applying lightweight insulating concrete in accordance with manufacturer's instructions.

G. Place insulation board with joints staggered in a brick-like running bond pattern.

H. Hold board back two (2) inches from the perimeter of the roof areas and all roof top units.

I. Butt boards together and place so as to provide full contact of slurry with board, causing insulating concrete fill to enter the locking/keying openings in the insulation board.

J. Walk insulation board into slurry to ensure proper embedding of insulation boards into lightweight insulating concrete and keying with insulation holes.

K. Fill holes in the insulation boards and place a two (2) inch minimum thickness of lightweight insulating concrete over top of the insulation boards within four (4) hours after installation of insulation boards.

L. Build all crickets and saddles shown with lightweight insulating concrete sloped to drain as indicated on drawings.

M. Deposit insulating concrete fill and screed (without troweling, rodding, tamping, or vibrating) immediately after mixing. Place on surfaces clean and free of loose material. Place no concrete when temperature is 40 degrees F or falling.

N. All wood blocking for deck penetrations support and low roof deck to rise wall blocking shall be installed one (1) inch higher than designed lightweight fill thickness. Install fill in a two (2) foot tapered edge condition.

O. Allow insulating concrete fill to dry as thoroughly as possible before application of roofing, and not less than the minimum time recommended by the manufacturer. Begin roofing when the insulating concrete fill can withstand construction traffic (usually two (2) to three (3) days after placement), verify / confirm with manufacturer's recommendations. Do not leave insulating concrete fill deck surface exposed for longer than ten (10) days. Install no more insulating concrete fill than can be roofed within the ten (10) day time limit. Maximum unroofed insulating concrete deck shall be 5,000 square feet; no exceptions.

P. Where material is to be pumped, equipment shall be in good condition and well maintained to avoid equipment failure and delays.

Q. Install and cure lightweight insulating concrete in accordance with manufacturer's instructions.

R. Avoid roof-top traffic over the lightweight insulating concrete deck system until 24 hours have elapsed after last placement of lightweight insulating concrete.

S. Allow lightweight insulating concrete to dry as thoroughly as possible before application of roofing. Testing Laboratory may perform tests to determine moisture content of lightweight insulating concrete.

T. Add two (2) pounds of fiber reinforcing per cubic yard of lightweight insulating concrete if cellular concrete is used.

3.4 FIELD QUALITY ASSURANCE

A. The Owner will select the independent inspection and testing laboratory and pay for the cost of tests in accordance with Division 1.

B. The independent inspection and testing laboratory will randomly sample and verify the following:
   1. Thermal insulation value in accordance with ASTM C177.
   2. Mix design compressive strength in accordance with ASTM C495.
   3. Mix design wet and dry density range in accordance with ASTM C495.
   4. Polystyrene insulation density in accordance with ASTM C578.

C. Contractor shall provide base ply fastener pull tests prior to installation of roofing system, following the installation of the lightweight insulating concrete to ensure a minimum withdrawal resistance of 40 pounds per fastener.

D. Results of all tests will be made available to all concerned parties.

E. Water Test: Run water on the finished deck for the Architect's observation. The lightweight insulating concrete shall slope to drain and no ponding of water will be accepted. No slopes less than 1/4 inch per foot will be allowed.

F. Certification: On completion of installation, furnish Architect with certificate signed by a representative of the manufacturer and by the applicator stating that insulating concrete was prepared and applied in accordance with manufacturer's recommendations.

3.5 ADJUSTING AND CLEANING

A. Remove ridges, surface depressions and other surface irregularities which are unacceptable to the roofing contractor and Architect.

B. Completely remove all insulating concrete fill from any surface on which it is not intended to be placed.

C. Perform all patching and repairing of insulating concrete using Zono-Patch or other materials approved by the lightweight insulating concrete supplier.

3.6 PATCHING AND REPAIRING

A. Perform all patching and repairing of lightweight insulating concrete using the same materials specified in this Section or materials approved by the system manufacturer.

B. The party responsible for damage will be charged for repairs.

3.7 PROTECTION

A. Lightweight insulating concrete installer shall be responsible for protecting newly applied decks from all adverse conditions until Roofing Contractor begins installation of specified roof system.

B. General Contractor shall be responsible for protection of roof deck from other trades until it has been approved for traffic by installer.

END OF SECTION

SECTION 07 24 00 - EXTERIOR INSULATION AND FINISH SYSTEMS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Exterior Insulation and Finish System (EIFS), consisting of a secondary weather resistive barrier, adhesive, expanded polystyrene insulation board (EPS), base coat, reinforcing mesh, and finish.

B. Related Sections:
   1. Section 05 40 00 - Cold Formed Metal Framing.
   2. Section 06 10 00 - Rough Carpentry.
   3. Section 06 16 00 - Sheathing.

1.3 REFERENCE STANDARDS

A. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2023.

B. Exterior Insulation Manufacturers Association (EIMA)
   1. Guideline Specification for Exterior Insulation and Finish Systems, Class PB and Class PM.

1.4 SYSTEM DESCRIPTION

A. Exterior Insulation and Finish System: EIMA Class PB system.

1.5 SUBMITTALS

A. Refer to Section 01 33 00 - Submittal Procedures for submittal procedures.

B. Product Data: Manufacturer's Safety Data Sheets (M.S.D.S) for each specified product.

C. Shop Drawings: Indicate details of construction including attachments, joint patterns, penetrations, interface with flashings and adjacent materials.

D. Quality Assurance Submittals:
   1. Certificates: Contractor's certification that:
      a. Products of this Section, as provided, meet or exceed specified requirements.
      b. Manufacturers of products of this Section meet specified qualifications.
      c. Applicator of products of this Section meets specified qualifications.
   2. Manufacturer's instructions:
      a. Printed installation instructions for each specified product.

E. Samples: Submit two samples of the EIFS System for each finish, texture and color to be used on the project. Samples shall be of sufficient size to accurately represent each color and texture being utilized on the project.

F. Test Reports: When requested, the Contractorshall submit copies of selected test reports verifying the performance of the EIFS System.

G. Closeout Submittals: Warranty documents, issued and executed by manufacturer of EIFS System materials.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum of 5 years' experience.

B. Applicator: Company knowledgeable in the proper installation of the EIFS System and experienced and competent in the installation of Exterior Insulation and Finish Systems. Additionally, the contractor shall be a current factory trained applicator.

1.7 MOCKUP

A. Provide mock-up of system materials illustrating method of attachment located where directed by Architect.

B. Construct mock-up 10 feet-0 inch long x 10 feet-0 inch wide, including sheathing board substrate, drainage system, insulation, surface finish, color, texture, perimeter and control joints, and typical interface with adjacent construction for Architect's approval.

C. Approved mock-up shall be part of the finished work and will become the basis of standard for color, texture and workmanship for which all EIFS work will be judged.

D. If mockup is not approved, remove mockup and construct new mockup until approved by Architect.

1.8 PRE-INSTALLATION CONFERENCE

A. Refer to Section 01 31 00 - Project Management and Coordination.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Refer to Section 01 74 19 - Construction Waste Management and Disposal for packaging waste requirements.

B. Delivery: Deliver materials to project site in manufacturer's original, unopened containers with labels intact. Inspect materials and notify manufacturer of any discrepancies.

C. Storage: Store materials as directed by manufacturer's written instructions.
   1. Protect adhesives and finish materials from freezing, temperatures below 40 degrees F (4 degrees C) and temperatures in excess of 90 degrees F (32 degrees C).
   2. Protect Portland cement based materials from moisture and humidity. Store under cover off the ground in a dry location.
   3. Protect insulation materials from exposure to sunlight.

1.10 SEQUENCING AND SCHEDULING

A. Schedule Work with other construction trades to maintain integrity of exterior wall to prevent water penetration behind EIFS. Allow sufficient time for curing of EIFS materials prior to sealant application.

1.11 FIELD CONDITIONS

A. Do not prepare materials or apply EIFS under conditions other than those described in the manufacturer's written instructions.

B. Do not prepare materials or apply EIFS during inclement weather unless areas of installation are protected. Protect installed EIFS areas from inclement weather until dry.

C. Do not install coatings or sealants when ambient temperature is below 40 degrees F (5 degrees C).

D. Do not leave installed insulation board exposed to sunlight for extended periods of time.

1.12 WARRANTY

A. Warrant the work specified herein for 7 years against defects in materials and against becoming unserviceable or causing an objectionable appearance resulting from defective or nonconforming workmanship.

B. Defects shall include, but not be limited to the following:
   1. Cracking.
   2. Peeling or other delaminating or releasing from substrate.
   3. Noticeable deterioration or discoloring.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with specification requirements, products by the listed manufacturers or fabricators may be submitted for use in the Work.
   1. Exterior Insulation and Finish Systems:
      a. Dryvit Systems, Inc.: www.dryvit.com.
      b. Finestone, a brand of Master Building Solutions: www.finestone.master-builders-solutions.com.
      c. Parex, Inc.: www.parex.com.
      d. Senergy, a brand of Master Building Solutions: www.senergy.master-builders-solutions.com.
      e. Sto Finish Systems Div., Sto Corp.: www.stocorp.com.
   2. Pre-Coated Foam Shapes:
      a. Architectural Products, Inc.:
      b. Decorawall Construction Systems, Inc.: www.decorawall.com.
      c. Prime Stucco & Mouldings: www.primestucco.com.

B. Substitutions: Refer to Section 01 25 13 - Product Substitution Procedures.
   1. Manufacturers and fabricators not listed must have a minimum of 5 years' experience manufacturing products meeting or exceeding the specifications and comply with Division 01 requirements regarding substitutions to be considered. Submit as a substitution.

2.2 BASIS OF DESIGN PRODUCTS

A. Outsulation Plus MD manufactured by Dryvit Systems, Inc..

B. Products manufactrued by Finestone.

C. Products manufactured by Parex, Inc.

D. Products manufactured by Senergy.

E. Products manufactured by Sto Finish Systems Div..

2.3 COMPONENTS

A. Exterior Sheathing Board: As specified in Section 06 16 00 - Sheathing.

B. Air/Weather Barrier: An air and secondary weather barrier for the specified sheathing substrate, including the 100 percent acrylic barrier material, tapes, flashings, and all other materials and components recommended by the EIFS system manufacturer.

C. Adhesive: Manufacturer's recommended adhesive to adhere drainage material.

D. Track: Manufacturer's recommended UV treated PVC "J" channels with weep holes, with and without drip edge as recommended by manufacturer or required.

E. Drainage Strip: Manufacturer's recommended corrugated plastic strip installed to allow weepage at base of wall and at the heads of all penetrations and at expansion/control joints of EIFS system as instructed by manufacturer.

F. Adhesives: Manufacturer's recommended type used to adhere the insulation board to the air/weather barrier. Note: Always use a vertical notched trowel adhesive pattern to adhere insulation board as instructed by manufacturer. Apply the adhesive so that the ribbons run vertically when the insulation board is placed on the wall.

G. Base Coats: Manufacturer's recommended type used to embed the reinforcing mesh on the face of the insulation board. Backwrap all exposed edges as instructed by manufacturer.

H. Insulation Board: Manufacturer's recommended expanded Polystyrene (EPS) insulation board.

I. Reinforcing Meshes: Manufacturer's recommended balanced, open weave, glass fiber fabric treated for compatibility with other system materials, in sizes and weights recommended to suit intended use.

J. Finish Coat Materials: Manufacturer's recommended finish type in color and texture selected by Architect from manufacturer's standard water-based, acrylic coatings with integral color and texture, and formulated with DPR (Dirt Pickup Resistance) chemistry.

2.4 ACCESSORIES

A. Insulation Adhesive: Type recommended by manufacturer to suit intended use.

B. Insulation Fasteners: Type recommended by manufacturer to suit intended use.

C. Trim and Control Joints: Provide Galvanized steel, with attachment flanges of type recommended by manufacturer to suit intended use.

D. Sealant Materials: Type specified in Section 07 92 00 - Joint Sealants.

2.5 PRE-COATED FOAM SHAPES

A. Architectural Shapes and Details: As indicated on Drawings.
   1. Mouldings
   2. Details, Trim, Keystones

B. Joint Reinforcing Mesh: Self adhering glass fiber mesh (Joint Tape type) weighing a minimum of 2.8 oz/sq.yd. as instructed by foam shape manufacturer.

C. Glass fiber mesh: balanced, open weave, 3.5 oz/sq yd as instructed by foam shape manufacturer

D. Rigid Insulation Core: expanded polystyrene (EPS) conforming to physical properties of ASTM C578, Type I, 1.0 lb/cu.ft. density.

E. Adhesive: As instructed my foam shape manufacturer.

F. Pre-coat: lightweight polymer-modified acrylic cementitious coating applied to EPS shape, in minimum thickness of 1/8 inch (3 mm).

G. Primer and Finishes: Acrylic polymer based primer and finish by manufacturer approved by foam shape manufacturer for compatibility with pre-coat cementitious coating.

H. Fasteners: corrosion resistant, mechanical fasteners with plastic washer as instructed by foam shape manufacturer for temporary fastening of foam shapes during installation

I. Basis of Design Products:
   1. Products manufactured by Architectural Products, Inc.
   2. Promould manufactrued by Decorawall Construction Systems, Inc.
   3. Products manufactured by Prime Stucco & Mouldings.

2.6 OTHER MATERIALS

A. Provide other materials, not specifically described but required for a complete and proper installation.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify substrate is of correct type.

B. Verify substrate is dry and flat within 1/4 inch in 48 inch (6 mm in 1,219 mm) radius, with tight connections, and that there are no surface voids, projections, or other conditions that may interfere with EIFS System installation.

C. Verify that all needed flashings and other waterproofing details have been completed, if such completion is required prior to EIFS System application.

D. Notify the Architect of all discrepancies and do not start work until such discrepancies are corrected.

E. Beginning Work of this Section before unacceptable conditions have been corrected is prohibited.

3.2 PREPARATION AND PROTECTION OF SUBSTRATE

A. EIFS System materials shall be protected by permanent or temporary means from weather and other damage prior to, during, and following application until dry.

B. Protect adjoining work and property during installation.

C. Substrate shall be free of foreign materials such as oil, dust, dirt, form release agents, efflorescence, paint, wax, water repellants, moisture, frost, and any other condition that may inhibit adhesion.

3.3 INSTALLATION

A. Install EIFS System in accordance with the manufacturer's application instructions.

B. Overall minimum base coat thickness shall be sufficient to fully embed the mesh in accordance with manufacturer's instructions.

C. EIFS System surfaces in contact with sealant shall be coated in accordance with manufacturer's instructions. Sealants shall not be applied directly to textured finishes or base coat surfaces.

D. Foam Shapes:
   1. Surface Preparation: The substrate shall be of a material approved by the foam shape manufacturer for compatibility with adhesive. The surface of the substrate shall be clean and free of debris, and level, plane and true, being 1/4 inch in 48 inch (6 mm in 1,219 mm).
   2. Properly back wrap foam shapes with manufacturer approved mesh.
   3. Apply adhesive to the entire back surface of the using a notched trowel. Immediately, while adhesive is wet, apply by firmly pressing and properly positioning the foam shape on to the substrate base coat as instructed by manufacturer. Apply mechanical fasteners as required by manufacturer.
   4. Peel mesh on the back face of the shape along the entire length and fold over to extend the mesh at the bottom and top of the shape on the substrate. Apply base coat on the mesh extended from the shape onto the substrate and trowel to an acceptable smooth finish for application of finish coat.
   5. Mitre and butt joints shall have fiber mesh tape applied with at least 2 inches (51 mm) of tape applied to each side of joint. Apply cementitious base coat after mesh installation. Allow to dry and sand smooth.
   6. Apply sealant in accordance with manufacturer’s instruction, and sealant systems at expansion joints with exposed foam shape surfaces treated with base coat and reinforcing fiber mesh.
   7. Apply finish coat.

3.4 FIELD QUALITY CONTROL

A. Contractor shall be responsible for the proper application of EIFS System materials.

3.5 CLEANING

A. All excess materials shall be removed from the job site by the Contractor.

B. All surrounding areas, where EIFS System has been applied, shall be left free of debris and foreign substances resulting from Work of this Section.

3.6 PROTECTION

A. EIFS System shall be protected from weather and other damage until permanent protection in the form of flashings, sealants, etc. are installed.

END OF SECTION 07 24 00

SECTION 07 27 26 - FLUID APPLIED AIR BARRIER SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Fluid-applied air barrier membrane in exterior wall assemblies.

B. Materials to bridge and seal the following air leakage pathways and gaps:
1. Connections of the walls to the roof air barrier.
2. Connections of the walls to the foundation air barrier.
3. Seismic and expansion joints.
4. Openings and penetrations of window frames, storefront, curtain wall and mechanical, electrical and plumbing systems.
5. Barrier precast concrete and other envelope systems.
6. Door frames.
7. Piping, conduit, duct and similar penetrations.
8. Masonry ties, screws, bolts and similar penetrations.
9. All other air leakage pathways in the building envelope.

C. Related Work in other Sections includes but is not limited to the following:
1. Section 01 45 00 – Quality Control
2. Section 01 50 00 – Temporary Facilities and Controls
3. Section 03 30 00 – Cast-In-Place Concrete
4. Section 04 20 00 – Unit Masonry
5. Section 07 41 13 – Prefinished Metal Roofing
6. Section 07 52 19 – Modified Bitumen “Cool Roof” Membrane Roofing System
7. Section 07 65 00 – Flexible Flashing
8. Section 07 90 00 – Joint Sealants
9. Section 09 21 16 – Gypsum Wallboard Systems (Exterior Sheathing)

1.3 PERFORMANCE REQUIREMENTS

A. Material Performance: Provide air barrier materials which have an air permeance not to exceed 0.004 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot (0.004 cfm / ft2 @ 1.57 psf), when tested in accordance with ASTM E2178 (unmodified).

B. Provide materials with a water vapor permeance of 10.0 US perms or greater, determined in accordance with ASTM E96 Water method (Procedure B).

C. Assembly Performance: Provide a continuous air barrier in the form of an assembly that has an air leakage not to exceed 0.04 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot (0.04 cfm/ft2 @ 1.57 psf) when tested in accordance with ASTM E2357. The assembly shall accommodate movements of building materials by providing expansion and control joints as required. Expansion / control joints, changes in substrate and perimeter conditions shall have appropriate accessory materials at such locations.

1. The air barrier assembly shall be capable of withstanding combined design wind, fan and stack pressures, both positive and negative on the envelope without damage or displacement, and shall transfer the load to the structure.
2. Fluid applied air barriers shall not displace adjacent materials in the air barrier assembly under full load.
3. The air barrier assembly shall be joined in an airtight and flexible manner to the air barrier materials of adjacent assemblies, allowing for the relative movement of assemblies due to thermal and moisture variations, creep, and anticipated seismic movement.

D. Connections to Adjacent Materials: Provide connections to prevent air leakage at the following locations:

1. Foundation and walls, including penetrations, ties and anchors.
2. Walls, windows, curtain walls, storefronts, louvers or doors.
3. Different wall assemblies, and fixed openings within those assemblies.
4. Wall and roof connections.
5. Floors over unconditioned space.
6. Walls, floor and roof across construction, control and expansion joints.
7. Walls, floors and roof to utility, pipe and duct penetrations.
8. Seismic and expansion joints.
9. All other potential air leakage pathways in the building envelope.

1.4 PRE-INSTALLATION CONFERENCE

A. Refer to Section 01 31 13 – Project Coordination

1.5 SUBMITTALS

A. Submittals: Submit in accordance with Division 1 requirements.

B. Installer Qualifications: Submit evidence of current Contractor accreditation and Installer certification under the Air Barrier Association of America's (ABAA). Submit accreditation number of the Contractor and certification number(s) of the ABAA Certified Installer(s).

C. Product Data: Submit material Manufacturer's Product Data, material Manufacturer's instructions for evaluating, preparing, and treating substrate, temperature and other limitations of installation conditions, Technical Data, and tested physical and performance properties.

1. Submit letter from primary air barrier material Manufacturer indicating approval of materials that are proposed to be used that are not currently listed in the accessories section of this specification for that Manufacturer's material.
2. Include statement from the primary air barrier material Manufacturer that the materials used in their air barrier assembly which will be used to adhere to the underlying substrate are chemically compatible to the substrate material.

D. Samples: Submit clearly labeled samples, three (3) inch by four (4) inch minimum size of each material specified.

E. Field Test Results of Mock-Up: Submit test results of air leakage test and water leakage test of mock-up in accordance with specified standards, including retesting if initial results are not satisfactory.

F. Compatibility: Submit letter from primary material Manufacturer stating that materials proposed for use are permanently chemically compatible and adhesively compatible with adjacent materials proposed for use.

1.6 QUALITY ASSURANCE

A. Air Barrier Installer Qualifications: Air barrier Subcontractor(s) shall be accredited at the time of bidding and during the complete installation period by the Air Barrier Association of America (ABAA).

1. Fluid-applied membrane air barrier Installer(s) shall be certified in accordance with the requirements outlined by ABAA. Installers shall have their photo identification air barrier certification cards in their possession and available on the project site, for inspection upon request.

B. Manufacturer: Obtain primary ABAA Evaluated Materials from a single ABAA Evaluated Manufacturer regularly engaged in manufacturing specified fluid-applied membranes. Obtain secondary materials from a source acceptable to the primary materials Manufacturer.

C. Accredited Laboratory Testing for Materials: Laboratory accredited by International Accreditation Service Inc. (IAS), American Association for Laboratory Accreditation (A2LA), or the Standards Council of Canada (SCC).

D. VOC Regulations: Provide products which comply with applicable regulations controlling the use of volatile organic compounds.

E. Preconstruction Meeting: Convene a minimum of two weeks prior to commencing Work of this Section. Agenda shall include, at a minimum, construction of mock-up, sequence of construction, coordination with substrate preparation, air barrier materials approved for use, compatibility of materials, coordination with installation of adjacent and covering materials, and details of construction and chemical/fire safety plans. Attendance is required by the Fluid Applied Air Barrier System Manufacturer’s field representative, representatives of related trades including covering materials, substrate materials and adjacent materials.

F. Mock-Ups: Build mock-up representative of primary air barrier assemblies and glazing assemblies including backup wall and typical penetrations as acceptable to the Architect. Mock-up shall be dimensioned no less than eight (8) feet long by eight (8) feet high and include the air barrier materials and air barrier accessories proposed for use in the exterior wall assembly. The mock-ups shall remain visible and intact for the duration of the fluid applied air barrier system work scopes. Mock-ups shall be suitable for field testing.

G. Mock-Up Tests for Air and Water Infiltration: The General Contractor shall provide testing of the window and door opening(s) in the mock-up for air and water infiltration. The testing shall be in accordance with AAMA 501.2 (hand wand field testing), ASTM E1186 (air leakage location), ASTM E783 (air leakage quantification) at a pressure differential of 1.57 lb/ft² (75 Pa) and ASTM E1105 (water penetration). Use smoke tracer to locate sources of air leakage. If deficiencies are found, the air barrier Contractor shall reconstruct mock-up at their cost for retesting until satisfactory results are obtained. Deficiencies include air leakage beyond values specified, uncontrolled water leakage, unsatisfactory workmanship.

H. Air Barrier Assembly Testing: Verify air barrier assembly testing by the material Manufacturer by visiting the ABAA website to ensure an ASTM E2357 test has been completed and to obtain results. Visit the ABAA website for the reported air barrier assembly leakage rate and illustrations or CAD details which includes the methods in which the assembly test mock-ups shall be assembled.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in original packages with seals unbroken, labeled with material Manufacturer's name, product, date of manufacture, and directions for storage.

B. Store materials in their original undamaged packages in a clean, dry, protected location and within temperature range required by material Manufacturer. Protect stored materials from direct sunlight and other sources of ultra-violet light.

C. Handle materials in accordance with Manufacturer's recommendations.

1.8 PROJECT CONDITIONS

A. Temperature: Install fluid-applied air barrier material within range of ambient and substrate temperatures recommended by material Manufacturer. Do not apply air barrier to a damp or wet substrate.

B. Field Conditions: Do not install air barrier in snow, rain, fog, or mist. Do not install air barrier when the temperature of substrate surfaces and surrounding air temperatures are below those recommended by the Manufacturer.

C. Sequencing: Do not install air barrier material before the roof assembly has been sufficiently installed to prevent a buildup of water in the interior of the building.

D. Compatibility: Do not allow air barrier materials to come in contact with chemically incompatible materials.

E. Ultra-violet exposure: Do not expose air barrier materials to sunlight longer than as recommended by the material Manufacturer.

1.9 WARRANTY

A. Material Warranty: Provide Manufacturer's standard product warranty, for a minimum 20 years from date of Substantial Completion.

B. Subcontractor (approved by ABAA and Manufacturer) Installation Warranty: Provide a five (5) year installation warranty from date of Substantial Completion, including all accessories and materials of the air barrier assembly, against failures including loss of air tight seal, loss of watertight seal, loss of attachment, loss of adhesion and failure to cure properly.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Fluid Applied Membrane Air Barrier: Use regular, high temperature or low-temperature formulation depending on site conditions, within temperature ranges specified by Manufacturer. Subject to compliance with requirements, provide one of the following:

1. BASF Corporation: MasterSeal AWB 660, Enershield HP, Finestop RA, Senershield R, Acrostop R and Sonowall FT R. Thickness for products are as specified by Manufacturer. www.wallsystems.basf.com:

a. AIR BARRIER MATERIAL PROPERTIES:

1) Air permeance for this material has been tested and reported as being 0.0000 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot (0.0000 cfm/ft^2 @ 1.57 psf), at 10 mils (wet) when tested in accordance with ASTM E2178 (unmodified).
2) Water vapor permeance for this material has been tested and reported as being 1004 nanograms of water vapor passing through each square meter of area per

second for each Pascal of vapor pressure differential (1004 ng/(Pa·s·m^2) / 17.6 US perms) at 10 mils (wet) when tested in accordance with ASTM E96 (water method – unmodified).

b. AIR BARRIER ACCESSORY MATERIALS:

1) Fabric Reinforcement: Sheathing fabric to be saturated with BASF Fluid-Applied Membrane for use at sheathing joints, penetrations and window rough openings.
2) Flashing and Transition Membrane: WS Wrap polyester-faced 30-mil self-adhesive membrane or WS Membrane 20-mil self-adhesive membrane.
3) Water-based Primer for Self-Adhesive Membranes: WS Flashing Primer.
4) Mastics: As recommended by Manufacturer.

2. Carlisle Coatings and Waterproofing: Fire-Resist Barritech VP at 60 mils thick (wet). www.carlisle-ccw.com:

a. AIR BARRIER MATERIAL PROPERTIES:

1) Air permeance for this material has been tested and reported as being 0.0002 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot (0.0002 cfm/ft^2 @ 1.57 psf), at 65 mils (wet), when tested in accordance with ASTM E2178 (unmodified).
2) Water vapor permeance for this material has been tested and reported as being 817 nanograms of water vapor passing through each square meter of area per second for each Pascal of vapor pressure differential (817 ng/(Pa·s·m^2) / 14.295 US perms) at 60 mils (wet) [40 mils (dry)] when tested in accordance with ASTM E96 (water method – unmodified).

b. AIR BARRIER ACCESSORY MATERIALS:

1) Detail Flashing: Fire-Resist 705 FR.
2) Counter-flashing for Metal Wall Flashings: Fire-Resist 705 FR.
3) Water-Based Primer for Detail Flashing: CCW-702 WB.
4) Solvent-Based Primer for Detail Flashing: CCW-702 or CCW-702 LV.
5) Solvent-Based Aerosol Primer for Detail Flashing: CAV-GRIP.
6) Reinforcing Fabric: DCH Reinforcing Fabric.
7) Glass Mat: LiquiFiber-W.
8) Termination Mastic: SURE-SEAL Lap Sealant.
9) Fill Compound: CCW-201 or CCW-703 V.

3. Dow Corning: DefendAir 200 at 15 mils thick (dry). www.buildabetterbarrier.com:

a. AIR BARRIER MATERIAL PROPERTIES:

1) Air permeance for this material has been tested and reported as being 0.0010 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot (0.0010 cfm/ft2 @ 1.57 psf), [0.0049 liters per square meter per second under a pressure differential of 75 Pa (0.0049 L/(s·m2) @ 75 Pa)] at 15 mils (dry), when tested in accordance with ASTM E2178 (unmodified).
2) Water vapor permeance for this material has been tested and reported as being 1387.7 nanograms of water vapor passing through each square meter of area per second for each Pascal of vapor pressure differential (1387.7 ng/(Pa·s·m2) [24.26 US perms] at 15 mils (dry) when tested in accordance with ASTM E96 (water method – unmodified).

b. AIR BARRIER ACCESSORY MATERIALS:

1) Solvent-Based Primer: Dow Corning® DefendAir Primer
2) Sealants: Dow Corning® 791 Silicone Weatherseal Sealant, Dow Corning® 756 SMS Silicone Sealant, Dow Corning® 795 Silicone Building Sealant, Dow Corning® 758 Silicone Weather Barrier Sealant
3) Transition Membrane for details and terminations: Dow Corning® 778, Dow Corning® Silicone Transition Strip
4) Flashing at Transition Membrane: Dow Corning® Silicone Transition Strip
5) Counterflashing for Through-Wall Flashings: Dow Corning® Silicone Transition Strip
6) Through-Wall Flashings or Shelf Angle Flashings: Dow Corning® 778 below the flexible through wall flashing system.
7) Substrate Joint Treatment: Dow Corning® 791 Silicone Weatherseal Sealant

4. Dryvit Systems, Inc: Backstop NT at 12 mils thick (dry). www.dryvit.com:

a. AIR BARRIER MATERIAL PROPERTIES:

1) Air permeance for this material has been tested and reported as being 0.000118 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot (0.000118 cfm/ft2 @ 1.57 psf), [0.0006 liters per square meter per second under a pressure differential of 75 Pa (0.0006 L/(s·m2) @ 75 Pa)] at 12 mils (dry), when tested in accordance with ASTM E2178 (unmodified).
2) Water vapor permeance for this material has been tested and reported as being 1810 nanograms of water vapor passing through each square meter of area per second for each Pascal of vapor pressure differential (1810 ng/(Pa·s·m2) [31.65 US perms] at 20 mils (dry) when tested in accordance with ASTM E96 (water method – unmodified).

b. AIR BARRIER ACCESSORY MATERIALS:

1) Transition Membrane for details and terminations: Dryvit AquaFlash and AquaFlash Mesh
2) Reinforcing / Joint Tape: Dryvit Grid Tape
3) Flashing at Transition Membrane: Dryvit AquaFlash
4) Substrate Joint Treatment: Dryvit Grid Tape with Backstop NT

5. DuPont Building Innovations: Tyvek Fluid Applied WB at 25 mils thick (wet), 25 mils thick (dry). www.Weatherization.Tyvek.com:

a. AIR BARRIER MATERIAL PROPERTIES:

1) Air permeance for this material has been tested and reported as being 0.0002 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot (0.0002 cfm/ft^2 @ 1.57 psf), at 25 mils (dry), when tested in accordance with ASTM E2178 (unmodified).
2) Water vapor permeance for this material has been tested and reported as being 1384 nanograms of water vapor passing through each square meter of area per second for each Pascal of vapor pressure differential (1384 ng/(Pa·s·m^2) / 24.23 US perms) at 25 mils (dry) when tested in accordance with ASTM E96 (water method – unmodified).

b. AIR BARRIER ACCESSORY MATERIALS:

1) Solvent Based Primer for Flashing, Transition Strip and Detail Membranes: 3M High Strength 90; Denso Butyl (used with self-adhered membranes only).

2) Through-Wall Flashings or Shelf Angle Flashings: DuPont recommended through-wall flashing.
3) Sealants, Mastics, Adhesives and Tapes: DuPont Sealant for Tyvek Fluid Applied System; DuPont Tyvek Flashing and Joint Compound; fiberglass mesh tape.
4) Transition, Termination, and Detailing Membrane: DuPont StraightFlash, or DuPont Tyvek Flashing and Joint Compound (60mil).
5) Penetrations and Termination Sealant: DuPont Sealant for Tyvek Fluid Applied System.
6) Window Flashing Membrane: DuPont Tyvek Fluid Applied Flashing and Joint Compound, or DuPont Tyvek Fluid Applied Flashing – Brush Formulation, or DuPont StraightFlash with DuPont FlexWrap.
7) Joint Treatment: None (≤ 1/16" gaps); DuPont Tyvek Flashing and Joint Compound (≤ 1/4" gaps); DuPont Tyvek Flashing and Joint Compound w/ fiberglass mesh tape (≤ 1/2" gaps); DuPont StraightFlash (≤ 1" gaps).

6. Grace Construction Products: Perm-A-Barrier VP, 90 mils thick (wet), 45 mils thick (dry). www.na.graceconstruction.com:

a. AIR BARRIER MATERIAL PROPERTIES:

1) Air permeance for this material has been tested and reported as being 0.0004 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot (0.0004 cfm/ft^2 @ 1.57 psf), at 69 mils (wet), when tested in accordance with ASTM E2178 (unmodified).
2) Water vapor permeance for this material has been tested and reported as being 741.6 nanograms of water vapor passing through each square meter of area per second for each Pascal of vapor pressure differential (741.6 ng/(Pa·s·m^2) / 12.9 US perms) at 40 mils (dry) when tested in accordance with ASTM E96 (water method – unmodified).

b. AIR BARRIER ACCESSORY MATERIALS:

1) Membrane for details and Terminations: Bituthene Liquid Membrane.
2) Water-Based Primer for Flashing, Transition Strip and Detail Membrane: Perm-A-Barrier WB Primer or Perm-A-Barrier Primer Plus.
3) Solvent-Based Primer for Flashing, Transition Strip and Detail Membrane: Bituthene Primer B-2 and Bituthene Primer B2 LVC or Bituthene Primer B2.
4) Through-Wall Flashings or Shelf Angle Flashings: Perm-A-Barrier Wall Flashing below the flexible through wall flashing system.
5) Sealants, Mastics, Adhesives and Tapes: As recommended by Grace Construction Products.
6) Transition Membrane: Perm-A-Barrier Detail Membrane, Perm-A-Barrier Aluminum Flashing and Perm-A-Barrier Wall Flashing.
7) Penetrations and Termination Sealant: Bituthene Liquid Membrane and as recommended by Grace Construction Products.
8) Window Flashing and Detail Membrane: Perm-A-Barrier Detail Membrane, Perm-A-Barrier Aluminum Flashing and Perm-A-Barrier Wall Flashing.
9) Joint Sealant: Refer to Technical Letter 1 for details on compatible waterproofing sealants.

7. Henry Company: Air Bloc 17MR at 48 mils (wet) - *Medium build option*. www.henry.com:

a. AIR BARRIER MATERIAL PROPERTIES:

1) Air permeance for this material has been tested and reported as being 0.00024 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot (0.0001 cfm/ft^2 @ 1.57 psf), at 48 mils (wet) when tested in accordance with ASTM E2178 (unmodified).
2) Water vapor permeance for this material has been tested and reported as being 28 US perms at 25 mils (dry) when tested in accordance with ASTM E96 (water method – unmodified).

b. AIR BARRIER ACCESSORY MATERIALS:

1) Liquid Applied Flashing: Air-Bloc LF.
2) Transition Membrane: Blueskin SA and Blueskin SALT for low-temperature applications.
3) Sheathing Joint Membrane: Blueskin VP160.
4) Spray Adhesive: Blueskin Adhesive and Blueskin LVC Adhesive.
5) Water-Based Primer for Transition Membrane: Aquatac Primer.
6) Counterflashing for Metal Panel Through-Wall Flashing: Blueskin TWF.
7) Sealant: HE 925 BES Sealant.
8) Reinforcing Tape: HE 183 Yellow Glass Fabric.
9) Insulation Adhesive: Air-Bloc 21.

8. Momentive Performance Materials, Inc.: GE Elemax 2600 at 17 mils (dry). www.ge.com/silicones:

a. AIR BARRIER MATERIAL PROPERTIES:

1) Air permeance for this material has been tested and reported as being 0.0006 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot (0.0006 cfm/ft^2 @ 1.57 psf), at 17 mils (dry) when tested in accordance with ASTM E2178 (unmodified).
2) Water vapor permeance for this material has been tested and reported as being 581 nanograms of water vapor passing through each square meter of area per second for each Pascal of vapor pressure differential (581 ng/(Pa·s·m^2) / 10.16 US perms) at 17 mils (dry) when tested in accordance with ASTM E96 (water method – unmodified).

b. AIR BARRIER ACCESSORY MATERIALS:

1) Solvent-Based Primer: SS80.
2) Sealants: Elemax 5000 Liquid Flashing; SilPruf SCS2000; SilPruf SCS9000; SilPruf SCS2700; SWS.
3) Transition Membrane for details and terminations: Elemax 5000 Liquid Flashing; UltraSpan UST2200; UltraSpan USM pre-formed silicone molded corners parts.
4) Substrate Joint Treatment: Elemax 5000 Liquid Flashing; SilPruf SCS2000; SilPruf SCS9000; SilPruf SCS2700; SWS.
5) Reinforcing Fabric: RF100.

9. Pecora USA: Pecora XL-Perm ULTRA VP by Pecora USA at 9 – 12 mils (dry). www.pecora.com:

a. AIR BARRIER MATERIAL PROPERTIES:

1) Air permeance for this material has been tested and reported as being 0.00024 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot (0.00024 cfm/ft^2 @ 1.57 psf), 0.0012 liters per square meter per

second under a pressure differential of 75 Pa (0.0012 L/(s·m^2) @ 75 Pa)] at 12 mils (dry) when tested in accordance with ASTM E2178 (unmodified).

2) Water vapor permeance for this material has been tested and reported as being 727.01 nanograms of water vapor passing through each square meter of area per second for each Pascal of vapor pressure differential (727.01 ng/(Pa·s·m2) (12.71 US perms) at 9 mils - dry when tested in accordance with ASTM E96 (water method – unmodified).

b. AIR BARRIER ACCESSORY MATERIALS:

1) Sealants: 890NST Silicone Sealant, AVB Silicone Sealant
2) Transition Membrane for details and terminations: XL Span
3) Flashing at Transition Membranes: XL Flash Liquid Flashing & Joint Filler
4) Counter-Flashing for Through-Wall Flashings: XL Flash Liquid Flashing & Joint Filler with Flexible Flashing.
5) Through-Wall Flashings or Shelf Angle Flashings: XL Flash Liquid Flashing & Joint Filler below the flexible through wall flashing system.
6) Substrate Joint Treatment: XL Flash Liquid Flashing & Joint Filler, 890 NST Silicone Sealant, AC-20 Latex Sealant, AVW-920 Latex Sealant, Dynatrol I-XL-345 Tru White STPU Sealant

10. PROSOCO, Inc.: Spray Wrap MVP at 10 mils (wet). www.prosoco.com:

a. AIR BARRIER MATERIAL PROPERTIES:

1) Air permeance for this material has been tested and reported as being 0.00086 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot (0.00086 cfm/ft^2 @ 1.57 psf), when tested in accordance with ASTM E2178 (unmodified).
2) Water vapor permeance for this material has been tested and reported as being 1430 nanograms of water vapor passing through each square meter of area per second for each Pascal of vapor pressure differential (1430 ng/(Pa·s·m^2) / 25 US perms) at 10 mils (wet) when tested in accordance with ASTM E96 (water method – unmodified).

b. AIR BARRIER ACCESSORY MATERIALS:

1) Water-Based Primer: PROSOCO R-GUARD PorousPrep for cut gyp board edged in rough openings.
2) Sealants: PROSOCO R-GUARD AirDam for interior perimeter seal in window installations.
3) Transition Membrane for details and terminations: PROSOCO R-GUARD SureSpan EX
4) Flashing at Transition Membrane: PROSOCO R-GUARD FastFlash
5) Counter-flashing for Through-Wall Flashings: Combination of PROSOCO R-GUARD Joint & Seam Filler and PROSOCO R-GUARD FastFlash or FastFlash alone as a fill and flashing product.
6) Through-Wall Flashings or Shelf Angle Flashings: Combination of PROSOCO R-GUARD Joint & Seam Filler and PROSOCO R-GUARD FastFlash or FastFlash alone as a fill product and flashing below the flexible through wall flashing system.
7) Substrate Joint Treatment: PROSOCO R-GUARD FastFlash and / or PROSOCO R-GUARD Joint & Seam Filler.
8) Rough Openings: PROSOCO R-GUARD Joint and Seam Filler followed by PROSOCO R-GUARD FastFlash.

11. PROSOCO, Inc.: Cat 5 at 12 - 15 mils (wet). www.prosoco.com:

    a. AIR BARRIER MATERIAL PROPERTIES:

        1) Air permeance for this material has been tested and reported as being 0.00018 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot (0.00018 cfm/ft^2 @ 1.57 psf), when tested in accordance with ASTM E2178 (unmodified).
        2) Water vapor permeance for this material has been tested and reported as being 1015 nanograms of water vapor passing through each square meter of area per second for each Pascal of vapor pressure differential (1015 ng/(Pa·s·m^2) / 17.71 US perms) at 12 – 15 mils (wet) when tested in accordance with ASTM E96 (water method – unmodified).

    b. AIR BARRIER ACCESSORY MATERIALS:

        1) Water-Based Primer: PROSOCO R-GUARD GypPrime for cut gyp board edged in rough openings.
        2) Sealants: PROSOCO R-GUARD AirDam for interior perimeter seal in window installations.
        3) Counter-flashing for Through-Wall Flashings: PROSOCO R-GUARD Joint and Seam Filler followed by PROSOCO R-GUARD FastFlash.
        4) Through-Wall Flashings or Shelf Angle Flashings: PROSOCO R-GUARD Joint and Seam Filler followed by PROSOCO R-GUARD FastFlash below the flexible through wall flashing system.
        5) Substrate Joint Treatment: PROSOCO R-GUARD Joint & Seam Filler for sheathing seams, PROSOCO R-GUARD Joint & Seam Filler covered by PROSOCO R-GUARD FastFlash in rough opening.

12. Protecto Wrap: Protecto Wall Liquid Air Barrier VP by at 10 mils (dry). www.protectowrap.com:

    a. AIR BARRIER MATERIAL PROPERTIES:

        1) Air permeance for this material has been tested and reported as being 0.00086 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot (0.000864 cfm/ft2 @ 1.57 psf), 0.0043 liters per square meter per second under a pressure differential of 75 Pa (0.0043 L/(s·m2) @ 75 Pa)] at 10 mils (dry) when tested in accordance with ASTM E2178 (unmodified).
        2) Water vapor permeance for this material has been tested and reported as being 660.8 nanograms of water vapor passing through each square meter of area per second for each Pascal of vapor pressure differential (660.8 ng/(Pa·s·m^2) [11.5 US perms] at 22 mils (dry) when tested in accordance with ASTM E96 (water method – unmodified).

    b. AIR BARRIER ACCESSORY MATERIALS:

        1) Water-Based Primer: Universal Water Based Primer.
        2) Solvent-Based Primer: BT Primer.
        3) Solvent-Based Aerosol Primer: Protecto-Tak Spray Adhesive.
        4) Sealants: Protecto Wall Board to Baord Joint Sealant.
        5) Transition Membrane for details and terminations: Protecto Wall Transition Tape.
        6) Solvent-Based Primer for Flashing, Transition Strip and Detail Membrane: BT Primer.

7) Water-Based Primer for Flashing, Transition Strip and Detail Membrane: Universal Water Based Primer.
8) Substrate Joint Treatment: Protecto Wall Board to Board Joint Sealant.

13. Sika Corporation: Sikagard 530 Liquid Applied Vapor Permeable Air Barrier at 30 mils (dry). www.sika.com:

a. AIR BARRIER MATERIAL PROPERTIES:

1) Air permeance for this material has been tested and reported as being < 0.0001 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot (< 0.0001 cfm/ft^2 @ 1.57 psf), at 20 mils (dry) when tested in accordance with ASTM E2178 (unmodified).
2) Water vapor permeance for this material has been tested and reported as being 661 nanograms of water vapor passing through each square meter of area per second for each Pascal of vapor pressure differential (661 ng/(Pa·s·m^2) / 11.5 US perms) at 22 mils (dry) when tested in accordance with ASTM E96 (water method – unmodified).

b. AIR BARRIER ACCESSORY MATERIALS:

1) Water-Based Primer: Sikagard 530.
2) Solvent-Based Primer: Sikagard 510.
3) Termination Mastic: Sikaflex 11FC.
4) Sealants: Sikaflex 11FC.
5) Transition Membrane for details and terminations: SikaMultiSeal 515.
6) Reinforcing/Joint Tape: SikaMultiSeal 515.
7) Counterflashing for Through-Wall Flashings: SikaMultiSeal Plus with Flexible Flashing.
8) Through-Wall Flashings or Shelf Angle Flashings: SikaMultiSeal Plus below the flexible through wall flashing system.
9) Substrate Joint Treatment: Sikaflex 11FC.

14. Soproma: Sopraseal LM 202 VP at 10 mils (wet) www.soprema.us

a. AIR BARRIER MATERIAL PROPERTIES:

1) Air permeance for this material has been tested and reported as being 0.00004 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot (0.00004 cfm/ft2 @ 1.57 psf), [0.0002 liters per square meter per second under a pressure differential of 75 Pa (0.0002 L/(s·m2) @ 75 Pa)] at 10 mils (wet) when tested in accordance with ASTM E 2178 (unmodified).
2) Water vapor permeance for this material has been tested and reported as being 1004 nanograms of water vapor passing through each square meter of area per second for each Pascal of vapor pressure differential (1004 ng/(Pa·s·m^2) [17.6 US perms] at 10 mils (wet) when tested in accordance with ASTM E96 (water method – unmodified).

b. AIR BARRIER ACCESSORY MATERIALS:

1) Water Based Primer: Soprema Elastocol Stick H20 Primer
2) Solvent-Based Primer: Soprema Sopraseal Stick primer
3) Sealants: Soprema Sopraseal sealant
4) Transition Membrane for details and terminations: Soprema Sopreseal Stick 1100T or Soprema Soprsolin HD
5) Substrate Joint Treatment: Soprema Sopreseal Mesh

15. Sto Corp: Emerald Coat at 20 mils (dry). www.stocorp.com:

    a. AIR BARRIER MATERIAL PROPERTIES:

        1) Air permeance for this material has been tested and reported as being 0.000024 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot (0.00024 cfm/ft^2 @ 1.57 psf), [0.00020 liters per square meter per second under a pressure differential of 75 Pa (0.00020 L/(s·m^2) @ 75 Pa)] at 20 mils (dry) when tested in accordance with ASTM E2178 (unmodified).
        2) Water vapor permeance for this material has been tested and reported as being 797.94 nanograms of water vapor passing through each square meter of area per second for each Pascal of vapor pressure differential (797.94 ng/(Pa·s·m^2) [13.95 US perms] at 12 mils (dry) when tested in accordance with ASTM E96 (water method – unmodified).

    b. AIR BARRIER ACCESSORY MATERIALS:

        1) Joint and Rough Opening Treatments: Sto Gold Fill with StoGuard Mesh, StoGuard Rapid Seal with StoGuard Mesh, Sto EmeraldCoat with SToGuard Fabric, StoGuard Tape
        2) Joint Reinforcements: StoGuard Mesh, StoGuard Fabric, StoGuard RediCorner
        3) Transition Membranes: Sto Gold Fill with StoGuard Mesh, StoGuard RapidSeal or StoGuard RapidSeal with StoGuard Mesh, Sto Emerald Cost with StoGuard Fabric, StoGuard Tape
        4) Water-Based Primer for use with Flashing Transition: StoGuard

16. STS Coatings: Wall Guardian FW-100-A (Acrylic-based component) 40 mils (wet), 20 mils (dry). www.wallguardian.com:

    a. AIR BARRIER MATERIAL PROPERTIES:

        1) Air permeance for this material has been tested and reported as being 0.0001 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot (0.0001 cfm/ft^2 @ 1.57 psf), at 20 mils (dry) when tested in accordance with ASTM E2178 (unmodified).
        2) Water vapor permeance for this material has been tested and reported as being 661 nanograms of water vapor passing through each square meter of area per second for each Pascal of vapor pressure differential (661 ng/(Pa·s·m^2) / 11.5 US perms) at 22 mils (dry) when tested in accordance with ASTM E96 (water method – unmodified).

    b. AIR BARRIER ACCESSORY MATERIALS:

        1) Water-Based Primer for Flashing, Transition Strip and Detail Membrane: None.
        2) Solvent-Based Primer for Flashing, Transition Strip and Detail Membrane: BP-40 Primer for use with UT-40 Universal Tape.
        3) Through-Wall Flashings or Shelf Angle Flashings: Gorilla Flash VF-1000.
        4) Mastics: None.
        5) Adhesives and Tapes: Universal Tape UT-40, a butyl based tape and Great Seal LT-100, a low voc elastomeric sealant for deflection joints and details.
        6) Transition Strip: Universal Tape, UT-40.
        7) Termination Mastic: Great Seal LT-100.
        8) Window Flashing and Detail Membrane: Universal Tape UT-40.

17. TK Products: TK-AirMax 2103 at 40+ mils (wet). www.tkproducts.com:

a. AIR BARRIER MATERIAL PROPERTIES:

1) Air permeance for this material has been tested and reported as being 0.00097 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot (0.00097 cfm/ft^2 @ 1.57 psf), 0.00492 liters per square meter per second under a pressure differential of 75 Pa (0.00492 L/(s·m^2) @ 75 Pa)] at 40 mils (wet) when tested in accordance with ASTM E2178 (unmodified).
2) Water vapor permeance for this material has been tested and reported as being 857 nanograms of water vapor passing through each square meter of area per second for each Pascal of vapor pressure differential (857 ng/(Pa·s·m^2) [15.0 US perms] at 20 mils (dry) when tested in accordance with ASTM E96 (water method – unmodified).

b. AIR BARRIER ACCESSORY MATERIALS:

1) Through-Wall Flashings or Shelf Angle Flashings: TK-Climate Flash, TK-Butyl Bond, TK-SS Flashing, TK-TWF-18 below the flexible through wall flashing system.
2) Caulk: TK-Super Seal
3) Adhesives and Tapes: TK-AirMax 2200 All Weather Flashing (TK Products), TK Air Max 2203 Caulk, TK-AirMax 2201 Red Sheathing Facing Tape (Venture Tape, a 3M Company), 3M All-Weather Flashing Tape 8067 (3M Company), VentureStop VB 400 (Venture Tape, a 3M Company), Venture-1585 CW-2 Red Sheating Facing Tape (Venture Tape, a 3M Company)
4) Transition Membranes: TK-Climate Flash, TK-Butyl Bond, TK-SS Flashing, TK-TWF-18
5) Reinforcing / Joint Tape: TK-Climate Flash, TK-Butyl Bond, TK-SS Flashing, TK-TWF-18
6) Termination of Caulk: TK-AirMax Caulk 2203 (TK Products), Manus-Bond 75AM (Manus Products, Inc.)
7) Flashing (Counter) for at Through-Wall Flashings or Transition Membranes: TK-Climate Flash, TK-Butyl Bond, TK-SS Flashing, TK-TWF-18

18. TK Products: TK-AirMax 2104 at 40+ mils (wet). www.tkproducts.com:

a. AIR BARRIER MATERIAL PROPERTIES:

1) Air permeance for this material has been tested and reported as being 0.0008 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot (0.0008 cfm/ft^2 @ 1.57 psf), at 40+ mils (wet) when tested in accordance with ASTM E2178 (unmodified).
2) Water vapor permeance for this material has been tested and reported as being 1007 nanograms of water vapor passing through each square meter of area per second for each Pascal of vapor pressure differential (1007 ng/(Pa·s·m^2) / 17.6 US perms) at 14 mils (dry) when tested in accordance with ASTM E96 (water method – unmodified).

b. AIR BARRIER ACCESSORY MATERIALS:

1) Through-Wall Flashings or Shelf Angle Flashings: TK-Climate Flash, TK-Butyl Bond, TK-SS Flashing, TK-TWF-18 below the flexible through wall flashing system.
2) Caulk: TK-Super Seal.
3) Adhesives and Tapes: TK-AirMax 2200 All Weather Flashing (TK Products), TK Air Max 2203 Caulk, TK-AirMax 2201 Red Sheathing Facing Tape (Venture

Tape, a 3M Company), 3M All-Weather Flashing Tape 8067 (3M Company), VentureStop VB 400 (Venture Tape, a 3M Company), Venture-1585 CW-2 Red Sheating Facing Tape (Venture Tape, a 3M Company).

4) Transition Membranes: TK-Climate Flash, TK-Butyl Bond, TK-SS Flashing, TK-TWF-18.
5) Reinforcing / Joint Tape: TK-Climate Flash, TK-Butyl Bond, TK-SS Flashing, TK-TWF-18.
6) Termination of Caulk: TK-AirMax Caulk 2203 (TK Products), Manus-Bond 75AM (Manus Products, Inc.)
7) Flashing (Counter) for at Through-Wall Flashings or Transition Membranes: TK-Climate Flash, TK-Butyl Bond, TK-SS Flashing, TK-TWF-18.

19. Tremco, Inc.: ExoAir 230 at 40 mils (wet) www.tremcosealants.com

a. AIR BARRIER MATERIAL PROPERTIES:

1) Air permeance for this material has been tested and reported as being 0.0003 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot (0.0003 cfm/ft^2 @ 1.57 psf), at 40 mils (wet) when tested in accordance with ASTM E2178 (unmodified).
2) Water vapor permeance for this material has been tested and reported as being 1677 nanograms of water vapor passing through each square meter of area per second for each Pascal of vapor pressure differential (1677 ng/(Pa·s·m^2) at 29 mils (dry) when tested in accordance with ASTM E 96 (water method – unmodified).

b. AIR BARRIER ACCESSORY MATERIALS:

1) Solvent Based Primer: ExoAir Primer
2) Termination Mastic: ExoAir Termiantion Mastic
3) Sealants: Tremflex 834, Dymonic 100, Spectrem 1
4) Transition Membrane for Details and Terminations: ExoAir 110, ExoAir 111, ExoAir TWF, Dymonic 100
5) Reinforcing / Joint Tape: Tremco 2011 mesh
6) Flashing at Transition Membrane: ExoAir 111, ExoAir TWF, Dymonic 100
7) Counterflashing for Through Wall Flashings: ExoAir TWF
8) Through Wall Flashings or Shelf Angle Flashings: ExoAir TWF below the flexible through wall flashing system.
9) Solvent Based Primer for Flashing, Transition Strip and Detail Membrane: ExoAir Primer
10) Substrate Joint Treatment: Tremflex 834, Dymonic 100 depending on substrate.

20. W.R. Meadows, Inc.: Air-Shield LMP, at 60 mils (wet), 30 mils (dry). www.wrmeadows.com:

a. AIR BARRIER MATERIAL PROPERTIES:

1) Air permeance for this material has been tested and reported as being 0.000096 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot (0.000096 cfm/ft2 @ 1.57 psf), [0.00048 liters per square meter per second under a pressure differential of 75 Pa (0.00048 L/(s·m2) @ 75 Pa)] at 20 mils (dry) when tested in accordance with ASTM E2178 (unmodified).
2) Water vapor permeance for this material has been tested and reported as being 598 nanograms of water vapor passing through each square meter of area per second for each Pascal of vapor pressure differential (598 ng/(Pa·s·m^2) [10.47

US perms] at 30 mils (dry) when tested in accordance with ASTM E 96 (water method – unmodified).

b. AIR BARRIER ACCESSORY MATERIALS:

1) Water-Based Primer: None required for Air Shield LMP.
2) Solvent-Based Primer: None required for Air Shield LMP.
3) Solvent-Based Aerosol Primer: None required for Air Shield LMP.
4) Termination Mastic: Pointing Mastic or BEM.
5) Transition Membrane for details and terminations: Air Shield.
6) Reinforcing / Joint Tape: Reinforcing Fabric HCR.
7) Flashing at Transition Membrane: Air Shield Thru-Wall Flashing.
8) Counter-flashing for Through-Wall Flashings: Air Shield Thru-Wall Flashing.
9) Through-Wall Flashings or Shelf Angle Flashings: Air Shield Thru-Wall Flashing below the flexible through wall flashing system.
10) Solvent-Based Primer for Flashing, Transition Strip and Detail Membrane: Mel-Prime VOC.
11) Water-Based Primer for Flashing, Transition Strip and Detail Membrane: Mel-Prime WB.
12) Substrate Joint Treatment: Air Shield Joint Filler.

2.2 AUXILIARY MATERIALS

A. Transition Membrane Between Air and Vapor Barrier Membrane and Roofing and Other Adjacent Materials: Comply with both air barrier Manufacturer's recommendations and roofing material Manufacturer's recommendations.

B. Provide primers, glass fabric scrim tape, mastic, and other materials not specifically described, but required for a complete and proper installation as instructed by the air barrier system Manufacturer or required to provide a continuous the air barrier assembly.

PART 3 - EXECUTION

3.1 EXAMINATION

A. The ABAA Certified Air Barrier Contractor shall examine substrates, areas, and conditions under which the air barrier assembly will be installed, with ABAA Certified Installer present, for compliance with requirements.

1. Confirm site access logistics and scheduling requirements, including but not limited to use of scaffolding, lifts and staging.
2. Verify that surfaces and conditions are suitable prior to commencing work of this section. Do not proceed with installation until unsatisfactory conditions have been corrected.
3. Ensure that the following conditions are met:
   a. Surfaces are sound, dry, even, and excess mortar and / or other contaminants.
   b. Inspect and confirm substrates to be smooth and without large voids or sharp protrusions. Inform General Contractor if substrates are not acceptable and need to be repaired by the substrate Subcontractor.
   c. Inspect and confirm masonry joints to be reasonably flush and completely filled, and ensure all excess mortar accumulated on masonry ties has been removed. Inform General Contractor if masonry joints are not acceptable and need to be repaired by the masonry Subcontractor.
   d. Masonry joints are flush and completely filled with mortar, and all excess mortar sitting on masonry ties has been removed.

4. Verify substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263 and take suitable measures until substrate passes moisture test.
5. Verify sealants are compatible with membrane proposed for use. Perform field peel-adhesion test on materials to which sealants are adhered.
6. Notify Architect in writing of anticipated problems using air and vapor barrier over substrate prior to proceeding.

3.2 SURFACE PREPARATION

A. Clean, prepare, and treat substrate according to material Manufacturer's written instructions. Provide clean, dust-free, and dry substrate for air barrier application.

1. Ensure that penetrating work by other trades is in place and complete.
2. Prepare surfaces by brushing, scrubbing, scraping, grinding or compressed air to remove loose mortar, dust, oil, grease, oxidation, mill scale and other contaminants which will affect adhesion of the fluid-applied membrane.
3. Wipe down metal surfaces to remove release agents or other non-compatible coatings using clean sponges or with a material chemically compatible with the primary air material.

B. Prime substrate for installation of sheet membrane transition strips as recommended by material Manufacturer and as follows:

1. Prime masonry, concrete substrates with conditioning primers.
2. Prime glass-fiber surfaced gypsum sheathing an adequate number of coats to achieve required bond, with adequate drying time between coats.
3. Prime wood, metal, and painted substrates with primer.
4. Prepare, treat, and seal vertical and horizontal surfaces at terminations and penetrations through air barrier at protrusions.

C. Prime substrate for installation of fluid-applied air barrier if recommended by material Manufacturer based on project conditions.

D. Protection from spray-applied materials as recommended by material Manufacturer and as follows:

1. Mask and cover adjacent areas to protect from over-spray.
2. Ensure any required foam stop or back up materials are in place to prevent over-spray and achieve complete seal.

3.3 INSTALLATION

A. Fluid Applied Membrane Air Barrier: Install air barrier accessories and fluid-applied membrane air barrier material to provide continuity throughout the building envelope in a shingle fashion. Install materials in accordance with material Manufacturer's instructions and the following (unless Manufacturer recommends other procedures in writing based on project conditions or particular requirements of their recommended materials):

1. Install veneer anchors as per air barrier Manufacturer installation sequencing.
2. Apply treatment to exterior gypsum joints and screw heads as per air barrier material Manufacturer.
3. Apply primer for transition material at the rate instructed by the air barrier material Manufacturer for 1 inch beyond terminating edge of transition membrane. Allow primer to set / cure completely before transition strip application.
4. Position subsequent sheets of transition material so that membrane overlaps the membrane sheet below by a minimum of 2 inches, unless greater overlap is recommended

by the material Manufacturer. Ensure transition membrane is securely sealed onto substrate with roller.

5. Overlap horizontally adjacent pieces of transition material a minimum of 2 inches, unless greater overlap is recommended by the material Manufacturer. Roll all areas of transition strip including seams with roller.
6. Seal around all penetrations with termination mastic / sealant, membrane counterflashing or other procedure in accordance with material Manufacturer's instructions, ensuring chemical compatibility amongst adjoining materials.
7. Connect air barrier in exterior wall assembly continuously to the air barrier of the roof, to concrete below-grade structures, to windows, curtain wall, storefront, louvers, exterior doors, other intersection conditions and transitions from wet cavity to dry cavity and seal penetrations using accessory materials in accordance with the material Manufacturer's instructions.
8. Provide transition material at changes in substrate plane (with bead of sealant / mastic, membrane counter-flashing or other material recommended by material Manufacturer) under membrane to eliminate all sharp 90 degree inside corners and to make a smooth transition from one plane to another.
9. Provide mechanically fastened non-corrosive metal sheet or other Manufacturer approved transition material to span gaps greater than 1 inch in substrate plane and to make a smooth transition from one plane to the other. Transition membrane shall be installed continuously from air barrier material onto sheet metal maintaining 2 inch overlap on both edges.
10. Lap transition material over top edge of through-wall flashing and head-flashing.
11. Provide backup for the membrane to accommodate anticipated movement or use other Manufacturer approved transition material at deflection and control joints.
12. Provide transition material to joint assemblies at expansion and seismic joints.
13. Provide backup for the fluid applied air barrier to accommodate anticipated movement at deflection and control joints as recommended by material Manufacturer.
14. Apply a bead or trowel coat of mastic along membrane seams at reverse lapped seams, rough cuts, and / or as otherwise recommended by the material Manufacturer.
15. Seal top edge of the self-adhered membrane to substrate with termination mastic at end of each working day.
16. Inspect installation prior to enclosing assembly and repair punctures, damaged areas and inadequately lapped seams with a patch of membrane lapped as recommended by material Manufacturer.
17. Install primer for fluid-applied air barrier if instructed by material Manufacturer.
18. Install fluid-applied membrane using equipment and methods recommended by Manufacturer to achieve a dry film thickness as required by the material Manufacturer.
19. Do not allow materials to come in contact with chemically incompatible materials.
20. Do not expose membrane to sunlight / ultraviolet light longer than as recommended by the Manufacturer.
21. Turn flashing membrane into window opening at sill, jambs and heads. Terminate just before interior sealant bead.

3.4 FIELD QUALITY CONTROL

A. Owner's Inspection and Testing: Cooperate with Owner's testing agency as applicable. Allow access to work areas and staging. Notify Owner's testing agency in writing of schedule for Work of this Section to allow sufficient time for testing and inspection. Do not cover Work of this Section until testing and inspection is accepted.

B. Manufacturer's Field Representative Review: Contractor is not to commence any work other than staging until contact and meeting with the Manufacturer's Field Representative on site. The Manufacturer's Field Representative is to visit the jobsite a minimum of four (4) times to review work processes and / or work completed prior to work commencement, at 10% completion, at 50% completion and prior to the work being covered by finish materials.

3.5 PROTECTING AND CLEANING

A. Protect air barrier materials from damage during installation and the remainder of the construction period, according to material Manufacturer's written instructions.

1. Coordinate with installation of materials which cover the air barrier assemblies, to ensure exposure period does not exceed that recommended by the air barrier Manufacturer.

B. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by Manufacturer of affected construction and acceptable to the primary material Manufacturer.

END OF SECTION

SECTION 11 53 00 - LABORATORY EQUIPMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Flammable Liquids Storage Cabinets.

B. Safety Goggle Compartment Case.

1.2 REFERENCE STANDARDS

A. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.3 ADMINISTRATIVE REQUIREMENTS

A. Coordination: Coordinate installation of laboratory equipment with laboratory casework and Owner-furnished, Owner-installed laboratory equipment.

B. Preinstallation Meeting: Convene one week before starting work of this section.

C. Sequencing: Ensure that utility connections are achieved in an orderly and expeditious manner.

1.4 SUBMITTALS

A. Refer to Section 01 40 00 - Quality Requirements for submittal procedures.

B. Product Data: Provide equipment dimensions and construction; equipment capacities; physical dimensions; utility and service requirements, clearances, and locations; required accessories and optional features; point loads.

C. Shop Drawings: Indicate equipment locations, large scale plans, elevations, cross sections, rough-in and anchor placement dimensions and tolerances, installation and servicing clearances required.

D. Samples: Submit two samples of exposed finish surfaces, in size illustrating color and finish.

E. Operation Data: Include description of equipment operation and required adjusting and testing .

F. Maintenance Data: Identify system maintenance requirements, servicing cycles, lubrication types required and local spare part sources.

G. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.5 QUALITY ASSURANCE

A. Manufacturer: Company specializing in manufacturing the types of products specified in this section, with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with minimum three years of documented experience and approved by manufacturer.

C. Preconstruction Testing: Factory-test each type of equipment.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Package each piece of equipment to ensure protection from damage during shipment and delivery. Legibly indicate on the exterior of each container or crate, the shipping address and a brief description of its contents. Outside of the container, fasten a waterproof envelope containing a packing list and complete instructions for uncrating and setting the equipment in place.

B. Protect finished surfaces during handling and installation with protective covering of polyethylene film or another suitable material.

1.7 WARRANTY

A. Refer to Section 01 77 00 - Closeout Procedures for additional warranty requirements.

B. Correct defective Work within a two year period after Date of Substantial Completion.

PART 2 PRODUCTS

2.1 SAFETY GOGGLE COMPARTMENT CASES

A. Basis of Design: Model #SE-1000 furnished with 36 pairs of non-ventilated goggles with fog-free lens as manufactured by Flinn Scientific, Inc. or Architect approved equal.
   1. Type/ Construction: Provide 15 minute Timer.
   2. Dimensions: 28-1/2 inches H by 26-1/4 inches W by 10-1/4 inches D.
   3. Number/Location: As shown on Drawings.
   4. Fasteners: Of Type, size, and finish recommended by manufacturer to suit application.

2.2 FLAMMABLE CABINET

A. Basis of Design: Model SE5434 as manufactured by Flinn Scientific.
   1. Capacity: 30 - Gallons.
   2. Self-Closing, Double Swinging doors.
   3. (1) adjustable shelf.
   4. OSHA and NFPA compliant.
   5. 18-gauge steel.
   6. Two-inch deep, pan type bottom.
   7. Dimensinos: 43 inches Wide by 18 unches Deep by 44 inches High.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that utility connections, rough-in frames, anchors and supports are accurately placed and deliver building services at specified characteristics and/or within acceptable functional ranges.

B. Examine areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of equipment.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install in accordance with standards required by authority having jurisdiction.

C. Large Components: Ensure that large components can be moved into final position without damage to other construction.

D. Mounting: Anchor equipment securely in place.
   1. Mount equipment in compliance with SMACNA (SRM) requirements.

E. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner, and their locations are coordinated with equipment rough-in requirements.
   1. Require manufacturer's installer to supervise connection to utilities being performed by mechanical and electrical trades.
   2. Make connections between ferrous and nonferrous metallic pipe with dielectric waterways and flanges having temperature and pressure rating equal to or greater than that specified for the connecting piping. Use dielectric waterways internally lined with an insulator specifically designed to prevent current flow between dissimilar metals.
   3. Connect steam lines on equipment to building source only after building steam lines have been cleaned of preservatives and materials that may be harmful to the equipment.

F. Touch-up minor damaged surfaces caused during installation. Replace damaged components as directed by Architect.

3.3 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for additional requirements.

B. Perform functional testing in accordance with referenced specification requirements. Test one item or similar model, as necessary or appropriate, to ensure that it is operational and installation complies with specification requirements.

3.4 ADJUSTING

A. Adjust operating equipment to efficient operation.

3.5 CLOSEOUT ACTIVITIES

A. See Section 01 78 00 - Closeout Submittals, for closeout submittals.

B. See Section 01 79 00 - Demonstration and Training, for additional requirements.

C. Final Acceptance: Remove labels, fingerprints, and clean all surfaces both inside and out. Repair any marred or damaged surfaces that affect appearance, such as both interior and exterior of cabinets in a manner acceptable to Owner. Replace any parts that cannot be repaired in such a manner.

END OF SECTION 11 53 00

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43 41 13.33 - GROUND STORAGE TANK

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

CONDITIONS OF THE CONTRACT AND DIVISION 1, as applicable, apply to this Section.

PART 1 - GENERAL

NOTE: “Tank” & “Reservoir” used interchangeably

1.1 SECTION INCLUDES

A. Design Criteria for liquid storage reservoir.
B. Structural steel components for the liquid storage reservoir.
C. Accessories for liquid storage reservoir.
D. Coating materials and procedures for liquid storage reservoir.
E. Erection materials and procedures for liquid storage reservoir.

1.2 RELATED SECTIONS

A. Section 03300 Cast in Place Concrete

B. Section 15051 Specialized Mechanical Materials and Methods for Process Piping

C. Section 15150 Equipment Installation

D. Section 09900 Coatings

1.3 REFERENCES

A. AWWA D 103 Standards of the American Water Works Association
B. ANSI
C. ASTM
D. SSPC
E. NSF Additives Standard No. 61
F. OSHA
G. NFPA 22

1.4 SUBMITTALS

A. Shop drawings covering tank, anchorage (if required), accessories, appurtenances and coatings shall be submitted.

1.5 QUALIFICATION/EXPERIENCE

A. The tank manufacturer shall be a specialist in the design, fabrication with a minimum of (10) years documented experience and erection of factory coated bolted steel tanks. The manufacturer shall be a 3rd party quality certified, having an active ISO-9001 and API-Q1 registration.

1.6 DELIVERY, STORAGE AND HANDLING

A. All plates, supports, members, and miscellaneous parts shall be packaged for shipment in such a manner to prevent abrasion or scratching of the finish coating.

1.7 WARRANTY

A. The tank manufacturer shall warrant the tank against any defects in workmanship and materials for a period of one (1) year starting ten (10) days after the final erection of the tank. In the event a defect should appear, it shall be reported in writing to the manufacturer during the warranty period.

PART 2 - PRODUCTS

2.1 WATER STORAGE TANK

A. Acceptable Manufacturers

1. CST Industries, Inc., Kansas City, MO
2. Superior Tank Company Inc, Rosenberg TX
3. Forge, Houston, TX
4. Pre-Approved Equal

B. Bolted Tank Design Criteria
1. Type of Liquid - Water
2. Specific Gravity –
3. Seismic Zone – IBC 2006 to 2015
4. Wind – 150 MPH
5. Deck Live Load – 25 psf
6. NFPA 22

C. Bolted Tank Structure

1. The materials, design, fabrication, and erection of the bolted steel tank shall conform to the Principles of Standard Specification 12B of the American Petroleum Institute, or to the manufacturer's specifications which are derived from engineering principles, industry experiences, and the aforementioned standards and specifications.

*****Vertical tank seams shall be staggered. Straight seam 4-corner joints are not acceptable***.

2. Standard shell height and diameter meeting requirements for the selected capacity.

3. Storage Capacity: 250,000 Gallons (Nominal)

4. Tank Diameter: 44'-6 ¾"

5. Tank Height: 24'-1 ½"

6. Steel
   a. Hot Rolled Steel Sheets and Plates
      1) Hot Rolled Steel Sheets and Plates shall meet or exceed the requirements of ASTM A1011 Grade 40 with a minimum yield strength of 40,000 psi.
      2) Minimum thickness shall be 12 gauge (0.0972 in.)

   b. Structural Shapes
      1) Structural shapes shall conform to ASTM A36 or ASTM A992.
      2) Other grades of carbon steel that meet or exceed these standards may be utilized.

7. Bolts/Nuts/Washers

   a. Galvanized Bolts

1) Galvanized bolts, nuts, washers used in tank joints shall be minimum ½" diameter and shall meet or exceed the requirements of API 12B or AWWA D103.

b. Encapsulated Bolts
   1) Encapsulated bolt heads shall be used for additional corrosion protection.

c. Anchor Bolts
   1) Anchor bolts shall meet or exceed the requirements of ASTM A36 or ASTM A325.

d. Other Bolts
   1) Other bolts shall meet or exceed the requirements of ASTM A307 or ASTM A325.

8. Gaskets
   a. All bolted connections shall incorporate an EPDM prefabricated gasket with a minimum width of 1-3/4".
   b. A single piece double punched gasket shall be used at vertical seams which require two vertical rows of punching.
   c. Field caulking will be allowed only when joining a discontinuous gasket section and at certain joint connections.
   d. Neoprene backed steel washers shall be provided at all bolts in contact with the stored liquid.
   e. Sealants <u>may not</u> be used in place of gasket material for vertical or horizontal seams.

D. Coating

1. All metal plates, supports, members, and miscellaneous parts, except bolts, certain accessories, and appurtenances, shall be factory coated in accordance with the provisions of these specifications.

2. Field coating, except for touch-up will not be permitted.

3. Surface Preparation
   a. Tank parts are to be thoroughly washed (Alkaline at 130 deg F) and rinsed to remove grease, oil and foreign matter.
   b. Parts are then to be immediately oven dried.
   c. Parts are to be grit-blasted to SSPC-SP 10 (Near-White Blast Cleaning) to 1-2 mils profile.
   d. All parts must be coated by Automated Powder Applicators on both sides within 15 minutes after blasting, and no further processing other then coating application shall be done.

4. Interior Coating
   a. Thermally cured modified epoxy powder, Trico-Bond EP by CST Storage (includes underside of the steel floor)
   b. First coat is to be a powder application of NSF approved modified epoxy Trico-Bond EP, 7.0 mils average dry film thickness.
   c. Coating system to have 7.0 mils average dry film thickness.

5. Exterior Coating
   a. Thermally cured modified epoxy powder, Trico-Bond EP and acrylic polyurethane by CST Storage
   b. First coat is to be a powder application of modified epoxy Trico-Bond EP, 3.0 mils average dry film thickness.
   c. Second coat of acrylic polyurethane, 1.5 mil average dry film thickness.
   d. Coating system to have 4.5 mils average dry film thickness.

6. Curing
   a. Baking ovens to be used after each coat
   b. Initial curing shall take place after powder is applied. A combination of IR boosters and convection ovens will be used to heat parts to approximately 300 deg. F to gel the powder (partial cross-linking).
   c. Final curing shall take place after top coat is applied. A combination of IR boosters and convection ovens will be used to heat parts to approximately 350 deg. F for 5-6 minutes to finish curing powder and topcoat.

7. Inspection

   a. MEK rub test to verify proper curing of coating.
   b. Wet sponge test to check for holidays.
   c. Mill thickness test for uniform epoxy coverage.

8. Preparation for Transport
   a. Material to be marked or tagged with part number for ease of field assembly.
   b. Tank materials to be placed in racks or on pallets to facilitate transportation to jobsite.
   c. Touch-up paint with instructions for application by erection personnel.

E. Appurtenances

1. The contractor shall furnish and install the appurtenances as shown in the contract drawings and as specified below. Unless otherwise noted, standard appurtenances shall be as follows:

2. Hatch
   a. The tank roof hatch shall have a curbed, upward opening 24” square.
   b. The curb shall extend at least 4” above the roof surface.
   c. The hatch cover shall be hinged and have provisions for locking.
   d. The hatch cover lip shall extend 2” below the top of the 4” curb.

3. Inlet and Outlet Connections
   a. Inlet, outlet, and overflow connections shall conform to the sizes and locations specified on the contract drawings.

4. Vent
   a. A mushroom screened vent shall be furnished above maximum water level of sufficient size to accommodate normal inlet and outlet flow.
   b. The overflow pipe shall not be considered to be a tank vent.
   c. The vent shall be galvanized steel and so designed and constructed as to prevent the entrance of birds, animals, or insects.

5. Flush Cleanout Door/Shell Manway (Optional)
   a. The flush cleanout door shall measure 24” x 46” and be located as shown on the contract drawings.
   b. The shell manway shall have a 24” opening complete with hinged cover, and shall be located as shown on the contract drawings. (Optional)

6. Outside Ladder
   a. An outside galvanized ladder, meeting OSHA specifications, shall be furnished at the location shown on the contract drawings.

7. Guardrail and Toeboards
   a. Galvanized guardrail with toeboard shall be furnished at the location(s) shown on the contract drawings.

PART 3 - EXECUTION

3.1 Installation

A. Erection

1. Field erection of factory coated bolted steel tanks shall be in strict accordance with the tank manufacturers recommendations.

2. Particular care shall be exercised in handling and bolting of the tank plates, supports, and members to avoid abrasion or scratching of the coating.

3. Touch-up coating shall be done in accordance with the tank manufacturer's recommendations where and as directed.

B. Testing

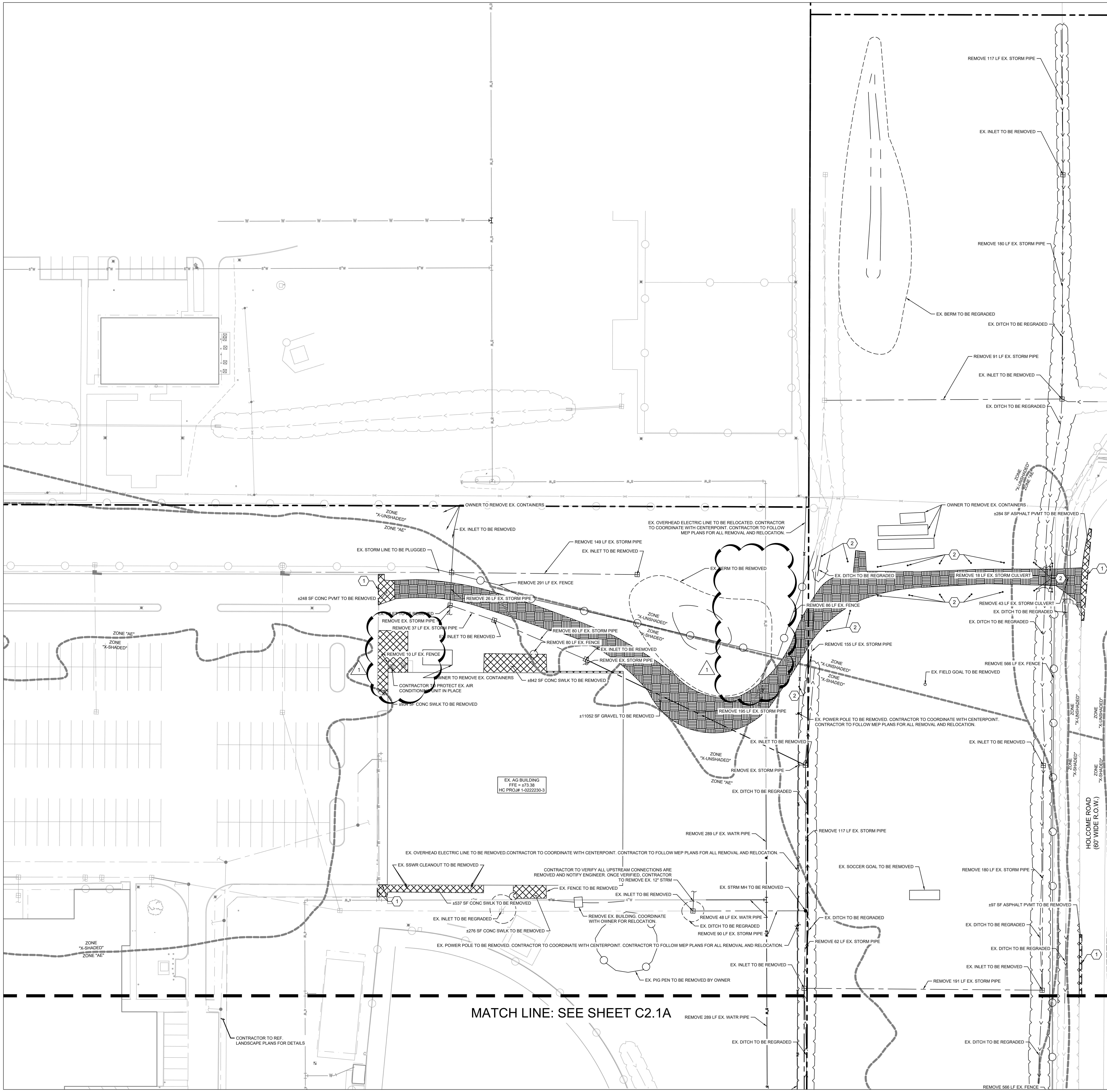
1. Following completion of erection and cleaning of the tank, the tank shall be tested for liquid tightness by filling the tank to its overflow elevation.

2. Any leaks disclosed by this test shall be corrected by the erection contractor in accordance with the tank manufacturer's recommendations.

3. The Owner shall provide clean water free of charge at the time of erection completion, for hydrostatically testing the tank.

4. Filling and emptying the tank shall be the responsibility of the Contractor.

END OF SECTION 43 41 13.33



NORTH

GRAPHIC SCALE IN FEET
0 15 30 60

LEGEND

(crosshatch)	EXISTING PAVEMENT, CURB, SIDEWALK AND INTERIOR LANDSCAPE ISLANDS TO BE REMOVED. CONTRACTOR TO REMOVE FULL DEPTH OF PAVEMENT. (THE FULL DEPTH OF THE EXISTING PAVEMENT SECTION IS TO BE REMOVED INCLUDING ANY GRANULAR BASE MATERIALS AND/OR STABILIZED SUBGRADE.)
(basketweave hatch)	EXISTING GRAVEL TO BE REMOVED. CONTRACTOR TO REMOVE FULL DEPTH OF GRAVEL.
(dashed line)	SAWCUT LINE

KEYED NOTES

1	CONTRACTOR TO SAWCUT AND REMOVE EXISTING CONCRETE PAVEMENT TO EXPOSE REINFORCING.
2	CONTRACTOR TO REMOVE EX. BOLLARD

GENERAL NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL DEBRIS FROM THE SITE AND DISPOSING THE DEBRIS IN A LAWFUL MANNER. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR DEMOLITION AND DISPOSAL.

2. LOCATIONS OF PUBLIC AND PRIVATE UTILITIES SHOWN ARE APPROXIMATE AND MAY NOT BE COMPLETE. CONTRACTOR SHALL CALL 713-223-4567 AT LEAST 48 HOURS PRIOR TO COMMENCING DEMOLITION OR CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL CONTACT ANY OTHER UTILITY COMPANIES WHO DO NOT SUBSCRIBE TO THE TEXAS ONE CALL PROGRAM FOR LINE MARKINGS. THE CONTRACTOR BEAR SOLE RESPONSIBILITY FOR VERIFYING LOCATIONS OF EXISTING UTILITIES, SHOWN OR NOT SHOWN, AND FOR ANY DAMAGES DONE TO THESE FACILITIES.

3. ALL EXISTING UTILITIES SHOWN ARE LOCATED ACCORDING TO THE INFORMATION AVAILABLE TO THE ENGINEER AT THE TIME THE DRAWINGS ARE PREPARED AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR THE ENGINEER. GUARANTEE IS NOT MADE THAT ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN OR THAT THE LOCATION OF THOSE SHOWN ARE ACCURATE. FINDING THE ACTUAL LOCATION OF ANY EXISTING UTILITIES IS THE CONTRACTORS RESPONSIBILITY AND SHALL BE DONE BEFORE HE COMMENCES ANY WORK, IN THE VICINITY. FURTHERMORE, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ANY AND ALL DAMAGE DUE TO THE CONTRACTORS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE OWNER OR ENGINEER WILL ASSUME NO LIABILITY FOR ANY DAMAGES SUSTAINED OR COST INCURRED BECAUSE OF THE OPERATIONS IN THE VICINITY OF EXISTING UTILITIES OR STRUCTURES, NOR FOR TEMPORARY BRACING AND SHORING OF SAME. IF IT IS NECESSARY TO SHORE, BRACE, SWING OR RELOCATE A UTILITY, THE UTILITY COMPANY OR DEPARTMENT AFFECTED SHALL BE CONTACTED BY THE CONTRACTOR AND THEIR PERMISSION OBTAINED REGARDING THE METHOD TO USE FOR SUCH WORK.

4. ANY DISCREPANCIES ON THE DRAWINGS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER BEFORE COMMENCING WORK. NO FIELD CHANGES OR DEVIATIONS FROM DESIGN ARE TO BE MADE WITHOUT PRIOR APPROVAL OF THE OWNER AND NOTIFICATION TO THE ENGINEER. NO CONSIDERATION WILL BE GIVEN TO CHANGE ORDERS FOR WHICH THE OWNER AND ENGINEER WERE NOT CONTACTED PRIOR TO CONSTRUCTION OF THE AFFECTED ITEM.

5. CONTRACTOR MUST PROTECT THE PUBLIC AT ALL TIMES WITH FENCING, BARRICADES, ENCLOSURES, ETC., TO THE BEST PRACTICES AND APPROVED BY THE OWNER.

6. PRIOR TO DEMOLITION OCCURRING, ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED PER THE PLANS.

7. DAMAGE TO ALL EXISTING CONDITIONS TO REMAIN WILL BE REPLACED AT CONTRACTOR'S EXPENSE.

8. ALL DEMOLITION WORK OR CONSTRUCTION VEHICLE TRAFFIC WITHIN 10 FEET OF THE CANOPY OF ANY TREE TO BE SAVED SHALL BE CLOSELY COORDINATED WITH TREE PRESERVATION ACTIVITIES.

9. CONTRACTOR SHALL COMPLY TO THE FULLEST EXTENT WITH THE LATEST OSHA STANDARDS FOR EXCAVATION AND TRENCHING PROCEDURES. CONTRACTOR SHALL USE SUPPORT SYSTEMS, SLOPING, BENCHING, ETC. AS NECESSARY FOR THESE OPERATIONS, AND SHALL COMPLY WITH ALL OSHA PERFORMANCE CRITERIA.

10. CONTRACTOR TO REMOVE FULL DEPTH OF PAVEMENT (ASPHALT AND CONCRETE). REFERENCE SURVEY FOR LIMITS OF PAVEMENT.

11. CONTRACTOR TO EPOXY ALL EXPOSED REBAR.

12. CONTRACTOR IS RESPONSIBLE FOR MANAGING STORM WATER RUNOFF WITHIN THE PROJECT AREA DURING CONSTRUCTION, INCLUDING PROVIDING MEASURES FOR TEMPORARY CONVEYANCE OF FLOW WHICH MAY CONSIST OF DIVERSION SWALES OR PUMPING OF WATER TO EXISTING STORM OUTFALL LOCATIONS FROM PROJECT AREA TO MATCH EXISTING DRAINAGE PATTERNS PER THE EXISTING CONDITIONS DRAINAGE AREA MAP.

13. CONTRACTOR SHALL SUBMIT A SEQUENCING/PHASING PLAN FOR THE PROPOSED STORM SEWER MODIFICATIONS IN THE SCOPE OF THIS PROJECT TO KIMLEY-HORN FOR REVIEW PRIOR TO COMMENCING CONSTRUCTION. THE STORM SEWER SEQUENCING/PHASING PLAN SHALL INCLUDE THE PROPOSED MEASURES TO BE IMPLEMENTED BY CONTRACTOR FOR MANAGING STORM WATER RUNOFF WITHIN THE PROJECT AREA DURING CONSTRUCTION TO ENSURE RUNOFF IS ROUTED TO MATCH THE EXISTING DRAINAGE PATTERNS.

FLOODPLAIN INFORMATION

(dashed grey line)	LIMITS OF FLOODPLAIN

NORTHING/EASTING COORDINATES NOTE
THE NORTHING/EASTING COORDINATE POINTS PROVIDED ON THIS PLAN ARE PLAN COORDINATES. CONTRACTOR IS RESPONSIBLE FOR TYING THE PLAN COORDINATED PROVIDED ON THIS PLAN TO THE HORIZONTAL SURVEY CONTROL SYSTEM USED IN THE SURVEY/STAKING OF THE SUBJECT SITE. PLAN COORDINATES ARE PROVIDED ON CERTAIN PROPERTY CORNERS TO THE TIE-IN OF THE PLAN COORDINATES SO THE HORIZONTAL CONTROL SYSTEM CAN BE VERIFIED AT THOSE FIXED LOCATIONS.

811
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NEW CTE CENTER & HARGRAVE HIGH SCHOOL ADDITIONS & RENOVATIONS - MASS GRADING

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

KEY PLAN

Civil
STATE OF TEXAS — KYLE MOLITOR — 126028 — LICENSED PROFESSIONAL ENGINEER — 06/03/2025

CLIENT: HUFFMAN ISD

DATE	PROJECT NUMBER
06/03/2025	240157

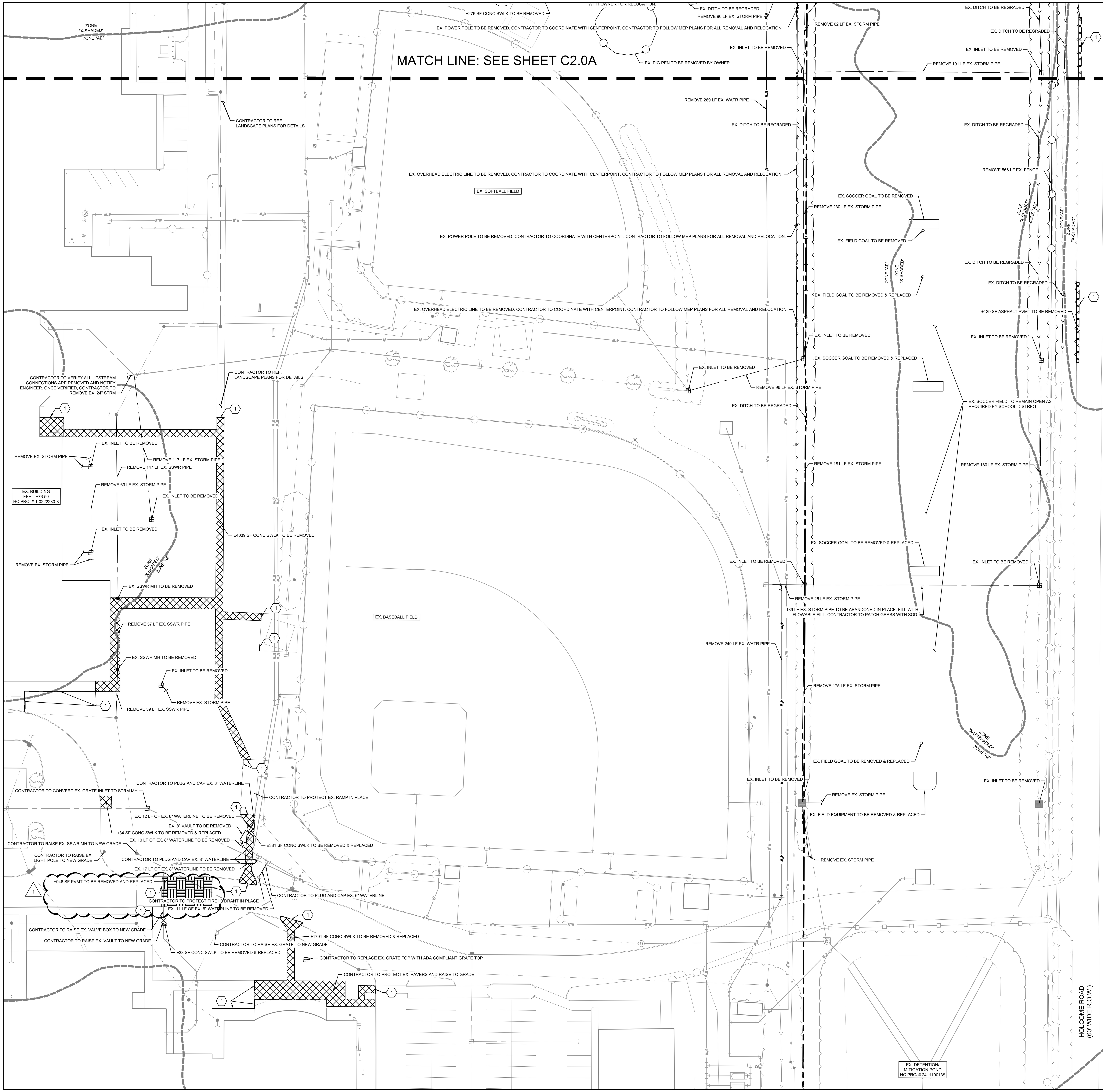
DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: KLM
DRAWN BY: KEM

DEMOLITION PLAN (1 OF 2)

C2.0A



NORTH

GRAPHIC SCALE IN FEET

0 15 30 60

LEGEND

(crosshatch)	EXISTING PAVEMENT, CURB, SIDEWALK AND INTERIOR LANDSCAPE ISLANDS TO BE REMOVED. CONTRACTOR TO REMOVE FULL DEPTH OF PAVEMENT. (THE FULL DEPTH OF THE EXISTING PAVEMENT SECTION IS TO BE REMOVED INCLUDING ANY GRANULAR BASE MATERIALS AND/OR STABILIZED SUBGRADE.)
(gravel pattern)	EXISTING GRAVEL TO BE REMOVED. CONTRACTOR TO REMOVE FULL DEPTH OF GRAVEL.
— — —	SAWCUT LINE

KEYED NOTES

1	CONTRACTOR TO SAWCUT AND REMOVE EXISTING CONCRETE PAVEMENT TO EXPOSE REINFORCING.
2	CONTRACTOR TO REMOVE EX. BOLLARD

GENERAL NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL DEBRIS FROM THE SITE AND DISPOSING THE DEBRIS IN A LAWFUL MANNER. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR DEMOLITION AND DISPOSAL.

2. LOCATIONS OF PUBLIC AND PRIVATE UTILITIES SHOWN ARE APPROXIMATE AND MAY NOT BE COMPLETE. CONTRACTOR SHALL CALL 713-223-4567 AT LEAST 48 HOURS PRIOR TO COMMENCING DEMOLITION OR CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL CONTACT ANY OTHER UTILITY COMPANIES WHO DO NOT SUBSCRIBE TO THE TEXAS ONE CALL PROGRAM FOR LINE MARKINGS. THE CONTRACTOR BEAR SOLE RESPONSIBILITY FOR VERIFYING LOCATIONS OF EXISTING UTILITIES, SHOWN OR NOT SHOWN, AND FOR ANY DAMAGES DONE TO THESE FACILITIES.

3. ALL EXISTING UTILITIES SHOWN ARE LOCATED ACCORDING TO THE INFORMATION AVAILABLE TO THE ENGINEER AT THE TIME THE DRAWINGS ARE PREPARED AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR THE ENGINEER. GUARANTEE IS NOT MADE THAT ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN OR THAT THE LOCATION OF THOSE SHOWN ARE ACCURATE. FINDING THE ACTUAL LOCATION OF ANY EXISTING UTILITIES IS THE CONTRACTORS RESPONSIBILITY AND SHALL BE DONE BEFORE HE COMMENCES ANY WORK IN THE VICINITY. FURTHERMORE, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ANY AND ALL DAMAGE DUE TO THE CONTRACTORS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE OWNER OR ENGINEER WILL ASSUME NO LIABILITY FOR ANY DAMAGES SUSTAINED OR COST INCURRED BECAUSE OF THE OPERATIONS IN THE VICINITY OF EXISTING UTILITIES OR STRUCTURES, NOR FOR TEMPORARY BRACING AND SHORING OF SAME. IF IT IS NECESSARY TO SHORE, BRACE, SWING OR RELOCATE A UTILITY, THE UTILITY COMPANY OR DEPARTMENT AFFECTED SHALL BE CONTACTED BY THE CONTRACTOR AND THEIR PERMISSION OBTAINED REGARDING THE METHOD TO USE FOR SUCH WORK.

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FLOODPLAIN INFORMATION

(dashed grey line)	LIMITS OF FLOODPLAIN

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ISSUE FOR PROPOSAL

KEY PLAN

Civil

STATE OF TEXAS · KYLE MOLITOR · 126028 · LICENSED PROFESSIONAL ENGINEER · 06/03/2025

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
06/03/2025	240157

DRAWING HISTORY

No.	Description	Date
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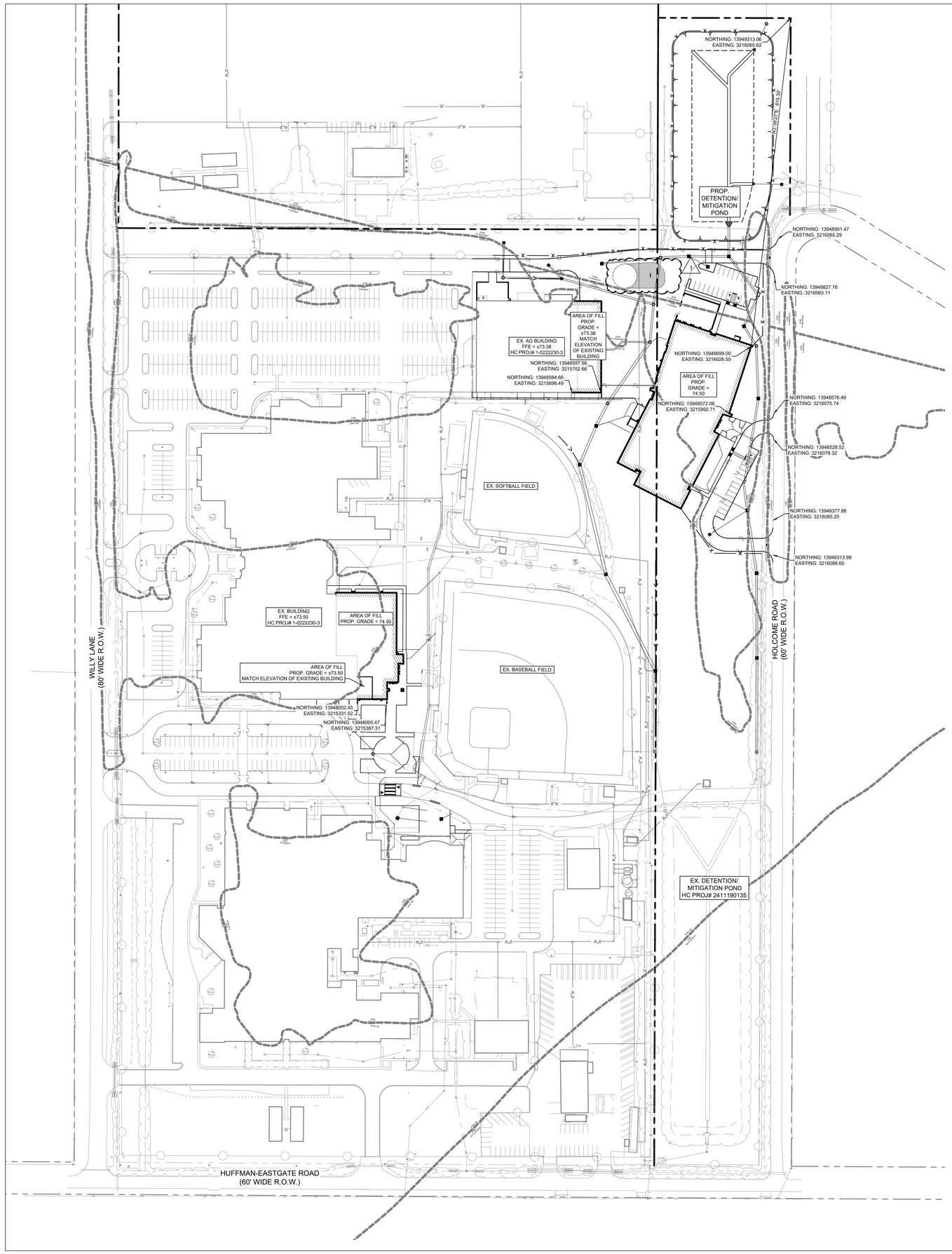
CHECKED BY: KLM
DRAWN BY: KEM

DEMOLITION PLAN (2 OF 2)

C2.1A



NORTH

GRAPHIC SCALE IN FEET
0 40 80 160

LEGEND	
	PROPERTY LINE
FL	FIRE LANE STRIPING
4	PARKING COUNT
	CURB RAMP NOT IN PUBLIC ROW
	ACCESSIBILITY SPACE

GENERAL NOTES

1. DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.

2. ALL RADII 2' UNLESS OTHERWISE NOTED.

3. REFER TO ARCHITECTURAL PLANS FOR SITE LIGHTING POLES AND FIXTURES AND ELECTRICAL PLAN PRIOR TO PLACING PAVEMENT.

4. REFER TO ARCHITECTURAL PLANS FOR EXACT BUILDING DIMENSIONS.

5. SIDEWALKS TO HAVE A 5% MAXIMUM RUNNING SLOPE AND A 2% MAXIMUM CROSS SLOPE IN ACCORDANCE WITH ADA REQUIREMENTS.

6. FIELD VERIFY ADA GRADES PRIOR TO PLACING PAVEMENT. CONTRACTOR SHALL CONSTRUCT ALL ACCESSIBLE ROUTES IN ACCORDANCE WITH ADA STANDARDS AND TAS.

7. REF. IRRIGATION PLANS PRIOR TO PLACING PAVEMENT.

8. CONTRACTOR SHALL BUDGET FOR ACCESSIBLE STALL STRIPING, FIRE LANE STRIPING, DIRECTIONAL ARROWS, ETC.

9. SITE LIGHTING IS BY OTHERS. REF. SITE LIGHTING PLANS FOR LOCATIONS AND DETAILS PRIOR TO PLACING PAVEMENT.

10. REF. BUILDING PLANS FOR ALL EXTERIOR STAIR DETAILS.

11. CONTRACTOR TO ADJUST EXISTING SANITARY SEWER MANHOLES, STORM SEWER MANHOLES, ELECTRICAL MANHOLES, FIRE HYDRANTS, VALVE BOXES, WATER METERS, ETC. TO MATCH PROPOSED FINISHED GRADES IF NECESSARY.

FLOODPLAIN INFORMATION	
	LIMITS OF FLOODPLAIN

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PROP. BUILDINGS AND PARKING INCLUDED FOR REFERENCE ONLY. REF. HC ILMS #2502130151 FOR DETAILS

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T 713-965-0608
MEP
LEAF ENGINEERS
T 713-965-0908
ACOUSTIC
BAY TEC
T 713-782-0964
TUBE/FIB
CONSULTANT NAME
T 000-000-0000
FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS
T 281-350-2223
ENVELOPE CONSULTANT
CONSULTANT NAME
T 713-965-0908

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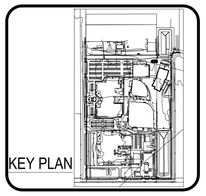


Civil

STATE OF TEXAS
KYLE MOLITOR
126028
LICENSED
PROFESSIONAL ENGINEER
06/03/2025

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
06/03/2025	240157

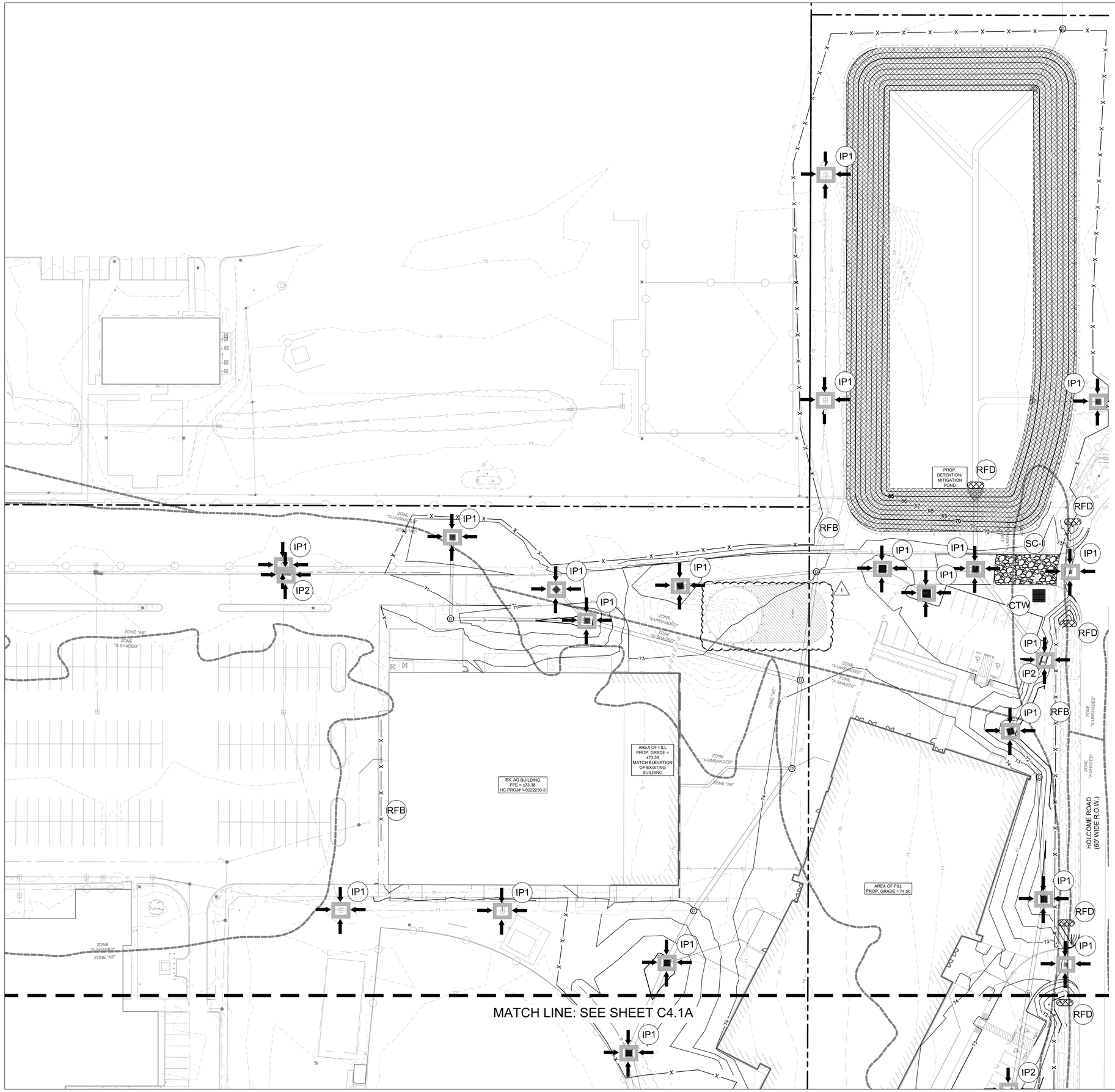
DRAWING HISTORY

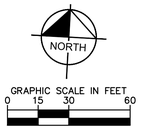
No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: KLM
DRAWN BY: KEM

OVERALL SITE PLAN

C3.0A





LEGEND	
138	EXISTING CONTOUR ELEVATIONS
138	PROPOSED CONTOUR ELEVATIONS
EROSION DETAILS	
IP1	INLET PROTECTION BARRIER FOR STAGE I INLETS (SEE DETAIL C4.2A)
IP2	INLET PROTECTION BARRIER FOR STAGE II INLETS (SEE DETAIL C4.2A)
RFB	REINFORCED FILTER FABRIC BARRIER (SEE DETAIL C4.2A)
SC-I	STABILIZED CONSTRUCTION ACCESS (SEE DETAIL C4.2A)
CTW	CONCRETE TRUCK WASHOUT AREA (SEE DETAIL C4.2A)
	PROJECTED FLOW DIRECTION
	FLEXTERRA HP-FGM (SEE NOTE BELOW)

EROSION CONTROL NOTES

1. CONTRACTOR IS SOLELY RESPONSIBLE FOR SELECTION, IMPLEMENTATION, MAINTENANCE, AND EFFECTIVENESS OF ALL SWPPP CONTROLS - CONTROLS SHOWN ON THIS SITE MAP ARE SUGGESTED CONTROLS ONLY.

2. CONTRACTOR SHALL RECORD INSTALLATION, MAINTENANCE OR MODIFICATION, AND REMOVAL DATES FOR EACH BMP EMPLOYED (WHETHER CALLED OUT ON ORIGINAL SWPPP OR NOT) DIRECTLY ON THIS SITE MAP.

3. DRAINAGE PATTERNS ARE SHOWN ON THIS PLAN BY PROPOSED AND EXISTING CONTOURS.

4. TEMPORARY AND PERMANENT STABILIZATION PRACTICES AND BMP'S SHALL BE INSTALLED AT THE EARLIEST POSSIBLE TIME DURING THE CONSTRUCTION SEQUENCE. AS AN EXAMPLE, PERIMETER SILT FENCE SHALL BE INSTALLED BEFORE COMMENCEMENT OF ANY GRADING ACTIVITIES. OTHER BMP'S SHALL BE INSTALLED AS SOON AS PRACTICABLE AND SHALL BE MAINTAINED UNTIL FINAL SITE STABILIZATION IS ATTAINED. CONTRACTOR SHALL ALSO REFERENCE CIVIL PLANS SINCE PERMANENT STABILIZATION IS PROVIDED BY LANDSCAPING AND SITE PAVING..

5. BMP'S HAVE BEEN LOCATED AS INDICATED ON THIS PLAN IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING PRACTICES IN ORDER TO MINIMIZE SEDIMENT TRANSFER. FOR EXAMPLE: SILT FENCES LOCATED AT TOE OF SLOPE AND INLET PROTECTION FOR INLETS RECEIVING SEDIMENT FROM SITE RUN-OFF.

6. SANITARY SEWER EFFLUENT IS DISPOSED OF VIA AN ONSITE SEWER SYSTEM CONNECTED TO A MUNICIPAL SEWER SYSTEM.

7. CONTRACTOR TO PROVIDE INLET PROTECTION IN PUBLIC ROW ONLY DURING EARTH MOVING ACTIVITIES. CONTRACTOR TO ENSURE PONDING DOES NOT OCCUR IN PUBLIC ROW OR ON ADJACENT PROPERTIES AT ANY TIME DURING CONSTRUCTION.

8. CONSTRUCTION ENTRANCE SHALL BE LOCATED SO AS TO PROVIDE THE LEAST AMOUNT OF DISTURBANCE TO THE FLOW OF TRAFFIC IN AND OUT OF THE SITE. ADDITIONALLY, THE CONSTRUCTION ENTRANCE SHALL BE LOCATED TO COINCIDE WITH THE PHASING OF THE PARKING LOT CONSTRUCTION.

9. CONTRACTOR SHALL PROVIDE INLET PROTECTION FOR ANY AFFECTED INLETS DOWNSTREAM OF THE PROPOSED IMPROVEMENTS, IF NEEDED.

10. THE NATURE OF THIS SITE'S CONSTRUCTION CONSISTS OF CLEARING & SITE PREPARATION, EARTHWORK, PAVING AND LANDSCAPING.

11. SEDIMENTATION BASIN: NEITHER A TEMPORARY NOR PERMANENT SEDIMENTATION BASIN HAS BEEN PROVIDED ON THIS SITE BECAUSE THE SITE IS LESS THAN 10 ACRES IN AREA.

12. POST CONSTRUCTION STORM WATER POLLUTION CONTROL MEASURES INCLUDE STABILIZATION BY PERMANENT PAVING AND LANDSCAPING.

13. DISTURBED PORTIONS OF SITE MUST BE STABILIZED. STABILIZATION PRACTICES MUST BE INITIATED WITHIN 14 DAYS IN PORTIONS OF THE SITE WHERE CONSTRUCTION HAS BEEN EITHER TEMPORARILY OR PERMANENTLY CEASED, UNLESS EXCEPTED WITHIN THE OPDES PERMIT. CONTRACTOR SHALL REMOVE TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF STABILIZATION.

14. CONTRACTOR IS RESPONSIBLE FOR MODIFYING THE SWPPP/SITE MAP TO INCLUDE BMP'S FOR ANY OFF-SITE MATERIAL WASTE, BORROW OR EQUIPMENT STORAGE AREAS.

15. CONTRACTOR IS RESPONSIBLE FOR SUBMITTAL OF NOI, NOT, POSTING OF SITE NOTICES, AND ANY ADDITIONAL INFORMATION OR SUBMITTALS REQUIRED BY TCEQ, EPA, OR LOCAL JURISDICTION.

16. CONTRACTOR TO MAINTAIN NO MORE THAN 10 ACRES OF DRAINAGE TO ANY SINGLE OUTFALL LOCATION DURING CONSTRUCTION.

SWPPP NOTE

ANY OFF-SITE STAGING AREA UTILIZED BY THE OPERATOR OF THIS SITE MUST BE INCLUDED IN THE SWPPP NARRATIVE PLAN AND TO SWPPP SITE PLAN AS REQUIRED BY THE TPDES TEXAS GENERAL PERMIT TXR150000 (SECTION F). ANY SUCH AREA INCLUDED IN THE SWPPP WILL BE TREATED BY THE OPERATOR AS ANY OTHER PART OF THE CONSTRUCTION ACTIVITY FOR THE PURPOSES OF STORM WATER POLLUTION PREVENTION.

FLEXTERRA NOTE

IMMEDIATELY AFTER COMPLETION OF OF THE GRADING AND COMPACTION OF THE DETENTION POND AND SIDE SLOPES, CONTRACTOR SHALL APPLY FLEXTERRA HIGH PERFORMANCE GROWTH MEDIUM (HP-FGM), OR AN APPROVED EQUIVALENT SLOPE STABILIZATION PRODUCT, ON THE SIDE SLOPES WITH A SEED MIX SPECIFIED BY THE VENDOR THAT IS APPROPRIATE FOR THE SEASON OF APPLICATION AND THE SITE TOP SOIL CONDITIONS. THE CONTRACTOR SHALL SUBMIT THE PROPOSED SEED MIX TO THE LANDSCAPE ARCHITECT FOR REVIEW PRIOR TO IMPLEMENTATION.

FLOODPLAIN INFORMATION

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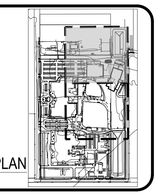
ISSUE FOR PROPOSAL

KEY PLAN



Civil
06/03/2025
STATE OF TEXAS
KYLE MOLITOR
126028
LICENSED
PROFESSIONAL ENGINEER

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
06/03/2025	240157

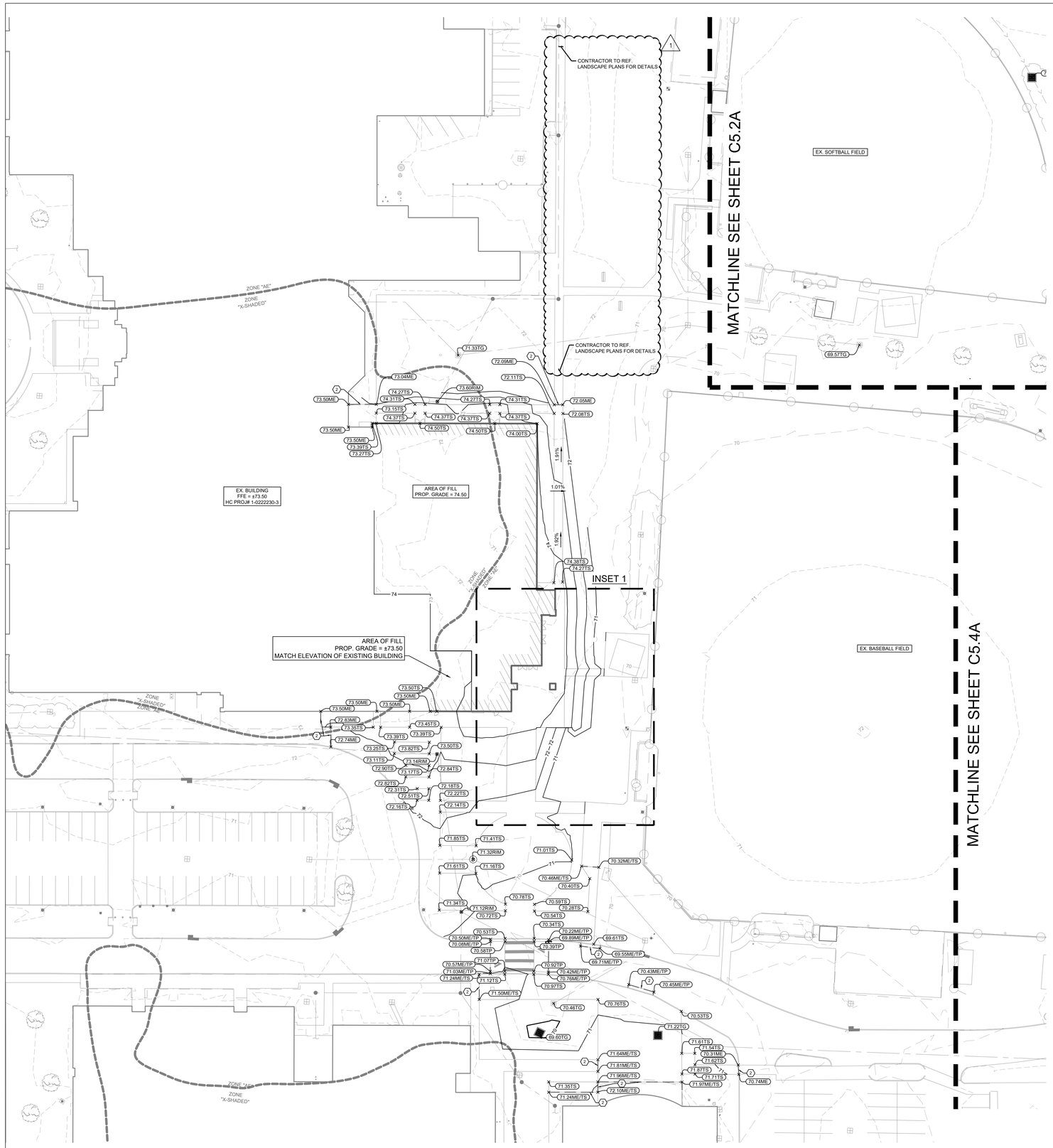
DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: KLM
DRAWN BY: KEM

EROSION CONTROL PLAN (1 OF 2)

C4.0A



NORTH

GRAPHIC SCALE IN FEET
0 15 30 60

LEGEND	
130	PROPOSED CONTOURS
130	EXISTING CONTOURS
129.75	PROPOSED SPOT ELEVATION
129.33ME	MATCH EXISTING GRADE
129.55TG	TOP OF GRATE INLET
129.55TP	TOP OF PAVEMENT
129.55HP	HIGH POINT
129.55RIM	RIM ELEVATION
129.55TS	TOP OF SIDEWALK
129.55BW	BOTTOM OF WALL
129.55TW	TOP OF WALL
	HIGH POINT
	SAWCUT LINE
	PROPOSED STORM INLET
	PROPOSED STORM MANHOLE
	PROPOSED SWALE
	PROPOSED CURB INLET

KEYED NOTES	
1	ACCESSIBLE RAMP
2	MATCH EXISTING PAVEMENT

FLOODPLAIN INFORMATION	
	LIMITS OF FLOODPLAIN

GENERAL NOTES

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3. ALL SIDEWALKS AND ACCESSIBLE ROUTES, INCLUDING DRIVEWAY CROSSWALKS, SHALL NOT EXCEED A RUNNING SLOPE OF 5% (1:20) WITHOUT A RAMP, AND SHALL NOT EXCEED A 2% CROSS SLOPE (1:50).

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TITLE: HUFFMAN ISD HARGRAVE HIGH SCHOOL IMPROVEMENTS GEOTECHNICAL ENGINEERING REPORT
BY: TERRACON CONSULTANTS, INC.
DATED: FEBRUARY 27, 2025

INCLUDING ALL REVISIONS AND ADDENDA TO THIS REPORT THAT MAY HAVE BEEN RELEASED AFTER THE NOTED DATE.

Know what's **below.**
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CAUTION!!

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CONSULTANT NAME
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FOODSERVICE DESIGN PROFESSIONALS
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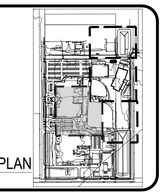
NEW CTE CENTER & HARGRAVE HIGH SCHOOL ADDITIONS & RENOVATIONS - MASS GRADING

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

KEY PLAN



Civil

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06/03/2025

CLIENT
HUFFMAN ISD

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DRAWING HISTORY

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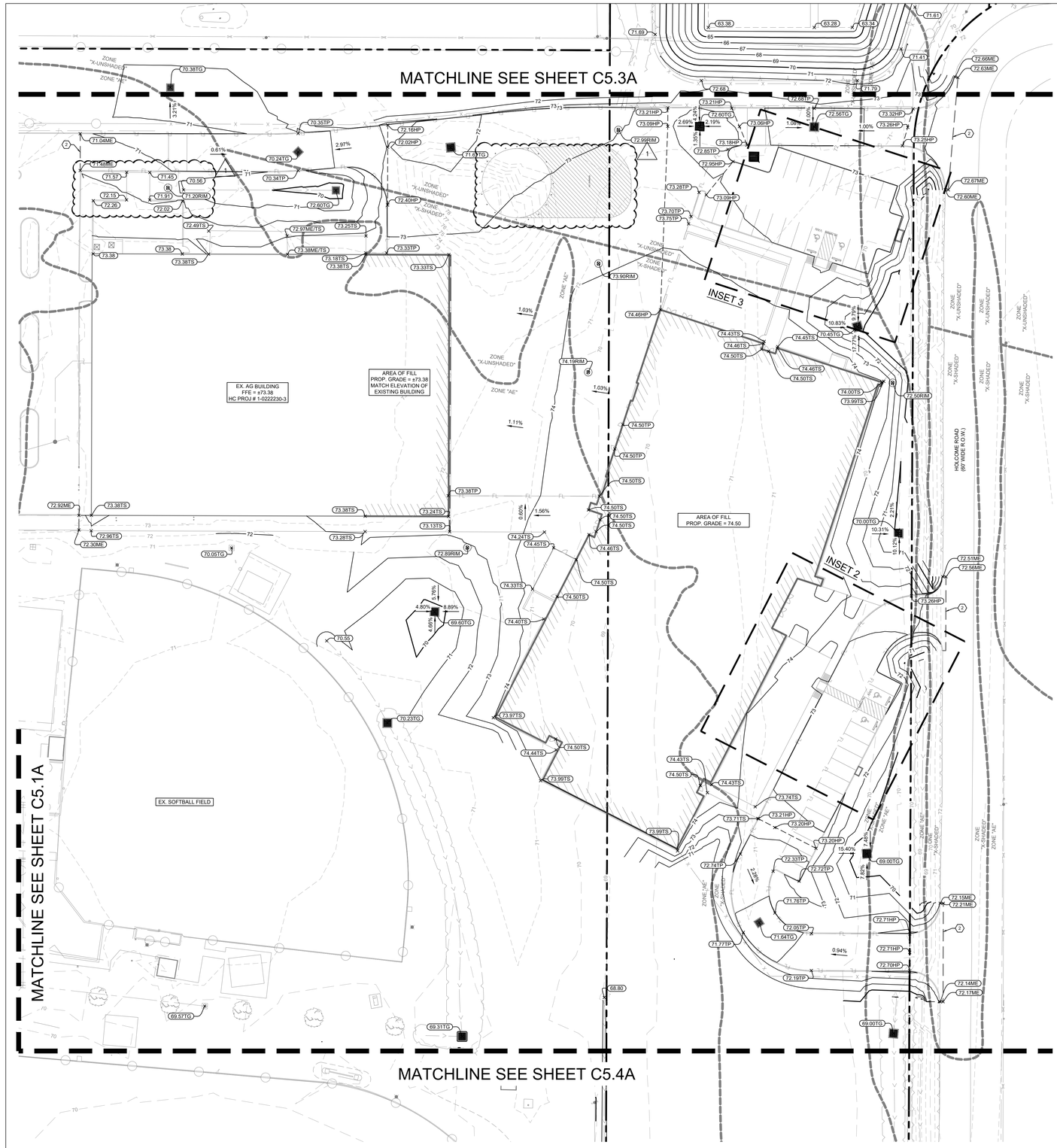
1	ADDENDUM 01	06/03/2025

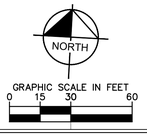
CHECKED BY: KLM

DRAWN BY: KEM

GRADING PLAN (1 OF 4)

C5.1A





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	LIMITS OF FLOODPLAIN

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NEW CTE CENTER & HARGRAVE HIGH SCHOOL ADDITIONS & RENOVATIONS - MASS GRADING

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

KEY PLAN

Civil

STATE OF TEXAS
KYLE MOLITOR
126028
LICENSED
PROFESSIONAL ENGINEER
06/03/2025

CLIENT	
HUFFMAN ISD	
DATE 06/03/2025	PROJECT NUMBER 240157

DRAWING HISTORY

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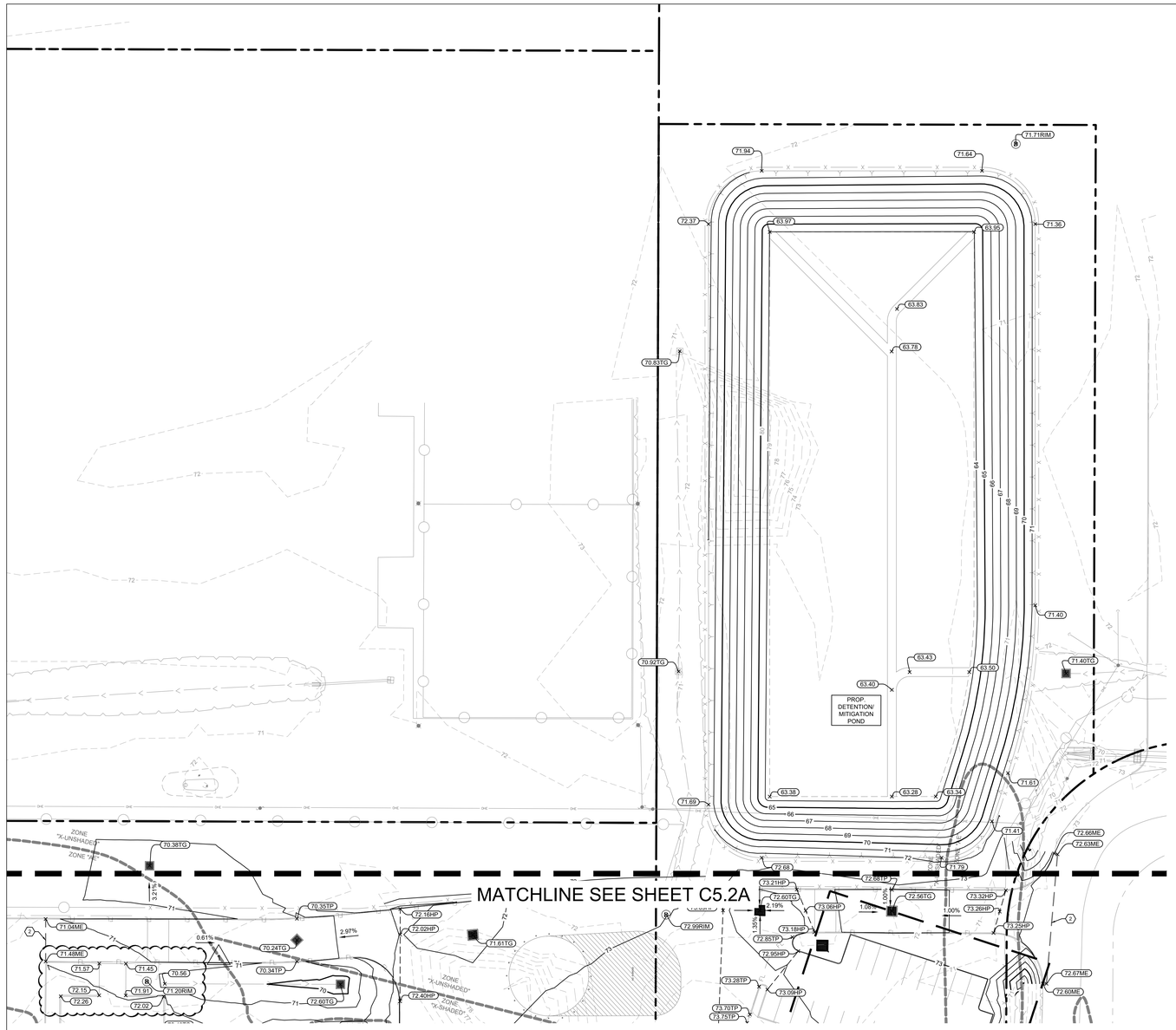
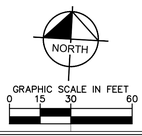
CHECKED BY: KLM
DRAWN BY: KEM

GRADING PLAN (2 OF 4)

C5.2A





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06/03/2025	240157

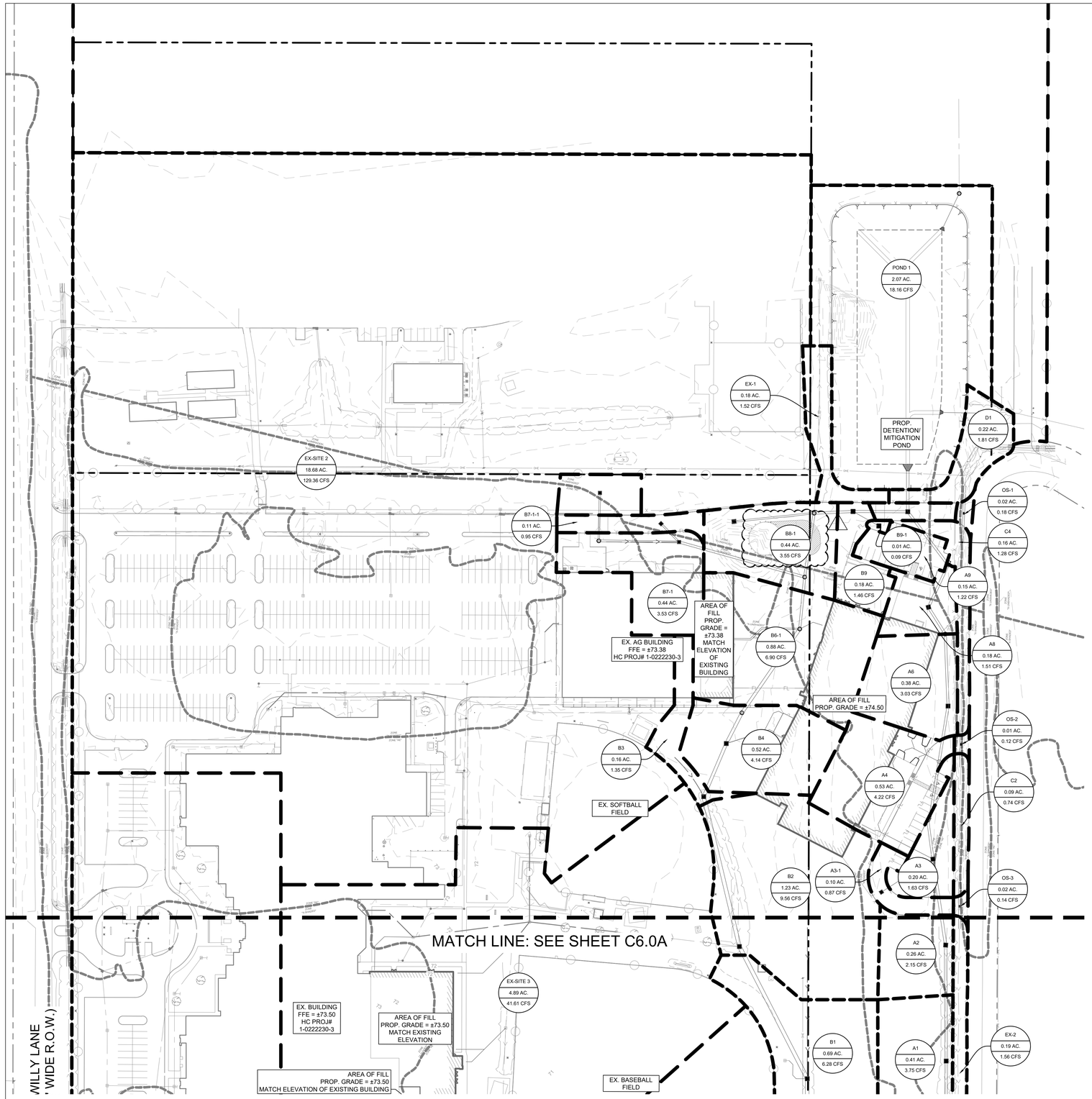
DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: KLM
DRAWN BY: KEM

GRADING PLAN (3 OF 4)

C5.3A



NORTH

GRAPHIC SCALE IN FEET
0 30 60 120

LEGEND

A-1 / 1.62 / 15.25	DRAINAGE AREA NUMBER
	DRAINAGE AREA (ACRES)
	FLOW (CFS) 100-YR
170	EXISTING CONTOUR ELEVATIONS
170	PROPOSED CONTOUR ELEVATIONS
	DRAINAGE AREA
	FLOW ARROW
	100-YR EXTREME EVENT FLOW PATH

DRAINAGE AREA TABLE

DRAINAGE AREA	RUNOFF COEFFICENT "C"	T_c (min.)	RAINFALL INTENSITY I_2 (in/hr)	RAINFALL INTENSITY I_{100} (in/hr)	AREA (ac)	TOTAL FLOW Q_2 (cfs)	TOTAL FLOW Q_{100} (cfs)
A0	0.800	23.358	3.994	9.28	0.36	1.15	3.35
A1	0.800	23.530	3.979	9.25	0.41	1.29	3.75
A2	0.800	22.904	3.826	8.16	0.26	0.80	2.15
A3	0.800	22.519	3.860	8.23	0.20	0.61	1.63
A3-1	0.800	21.716	3.933	8.37	0.10	0.33	0.87
A4	0.800	23.940	3.738	7.98	0.53	1.58	4.22
A6	0.800	23.417	3.782	8.07	0.38	1.14	3.03
A8	0.800	22.417	3.869	8.25	0.18	0.57	1.51
A9	0.800	22.138	3.894	8.30	0.15	0.46	1.22
B0	0.800	23.891	3.948	9.19	0.51	1.62	4.71
B1	0.800	24.367	3.908	9.11	0.69	2.16	6.28
B2	0.800	25.376	3.624	7.76	1.23	3.57	9.56
B3	0.800	22.268	3.883	8.27	0.16	0.51	1.35
B4	0.800	23.907	3.741	7.99	0.52	1.55	4.14
B6-1	0.800	24.775	3.671	7.85	0.88	2.58	6.90
B7-1	0.800	23.652	3.762	8.03	0.44	1.32	3.53
B7-1-1	0.800	21.825	3.923	8.35	0.11	0.36	0.95
B7-3	0.800	22.099	3.898	8.30	0.14	0.45	1.19
B8-1	0.800	23.662	3.761	8.03	0.44	1.33	3.55
B9	0.800	22.371	3.873	8.25	0.18	0.55	1.46
B9-1	0.800	19.425	4.161	8.84	0.01	0.03	0.09
B10	0.800	21.147	3.987	8.48	0.06	0.20	0.54
C2	0.800	21.512	3.952	8.41	0.09	0.28	0.74
C4	0.800	22.202	3.889	8.28	0.16	0.48	1.28
D1	0.800	22.663	3.847	8.20	0.22	0.68	1.81
EX-1	0.800	22.423	3.869	8.24	0.18	0.57	1.52
EX-2	0.800	22.464	3.865	8.24	0.19	0.59	1.56
EX-SITE-1	0.800	34.427	3.057	6.64	43.43	106.22	288.44
EX-SITE 2	0.800	31.745	3.202	6.93	18.68	47.85	129.36
EX-SITE 3	0.800	28.225	3.616	8.51	4.89	14.15	41.61
EX-SITE 4	0.800	30.327	3.476	8.22	11.30	31.42	92.88
EX. POND	0.800	27.243	3.685	8.65	3.16	9.30	27.30
OS-1	0.800	20.027	4.098	8.71	0.02	0.07	0.18
OS-2	0.800	19.673	4.135	8.78	0.01	0.04	0.12
OS-3	0.800	19.803	4.122	8.76	0.02	0.05	0.14
OS-4	0.800	30.421	3.470	8.21	11.70	32.49	96.04
POND 1	0.800	26.364	3.750	8.79	2.07	6.20	18.16

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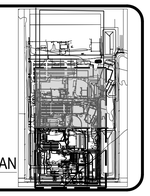

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DATE	PROJECT NUMBER
06/03/2025	240157

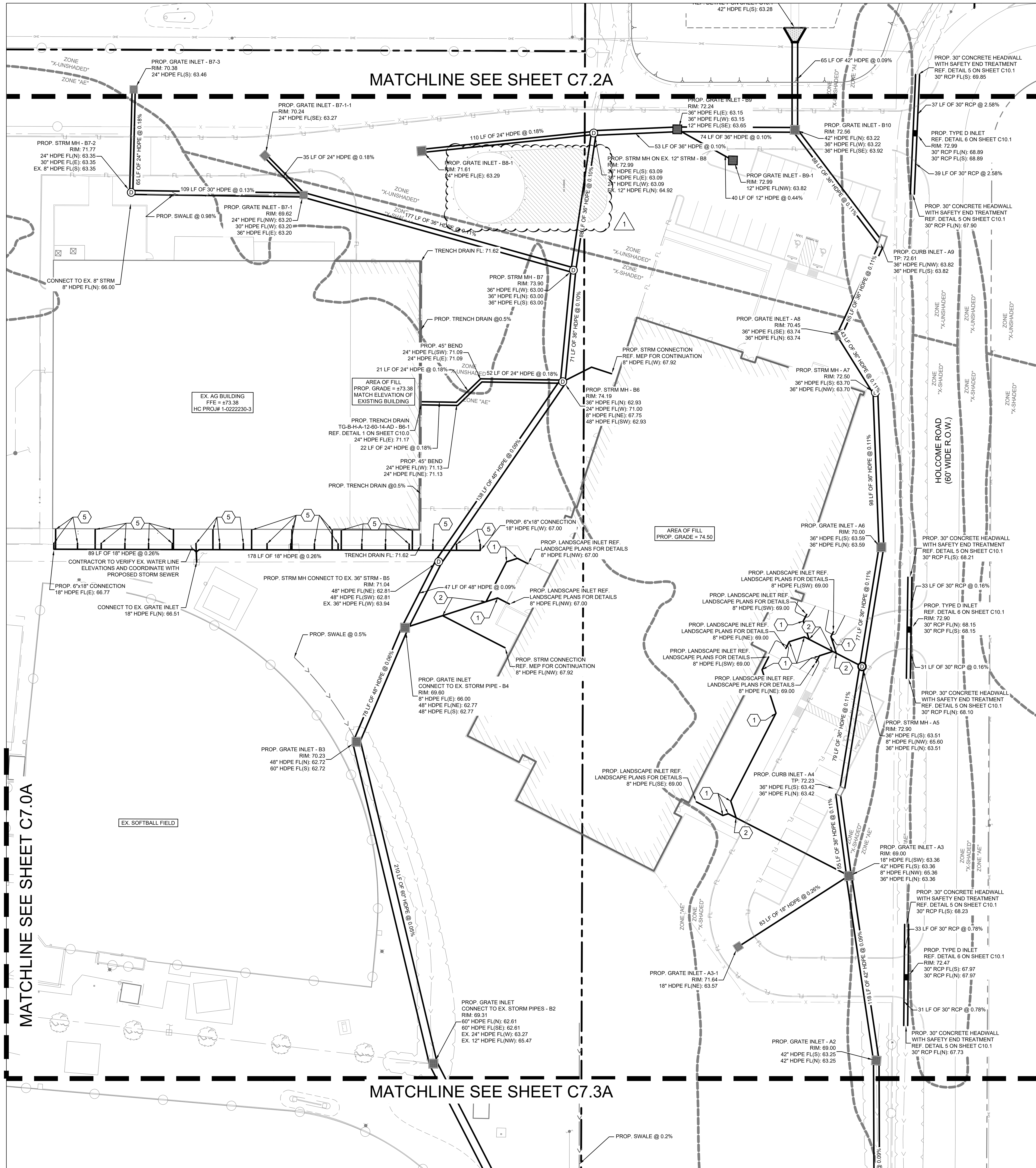
DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: KLM
DRAWN BY: KEM

PROPOSED DRAINAGE AREA MAP (2 OF 2)

C6.1A



NORTH

GRAPHIC SCALE IN FEET
0 15 30 60

LEGEND	
	PROPERTY LINE
	PROPOSED UTILITY EASEMENT
	EXISTING UTILITY EASEMENT
	PROPOSED STORM LINE
Ⓓ	PROPOSED STORM MANHOLE REF. DETAIL 4 ON SHEET C10.0A
	PROPOSED GRATE INLET REF. DETAIL 2 ON SHEET C10.0A
	PROPOSED CURB INLET REF. DETAIL 8 ON SHEET C10.1A
	PROPOSED WATER LINE
	PROPOSED SSWR LINE
Ⓢ	PROPOSED SSWR MANHOLE
	PROPOSED FIRE HYDRANT
UGE	PROPOSED UNDERGROUND ELECTRIC
GAS	PROPOSED GAS LINE
COMM	PROPOSED COMMUNICATIONS LINE
OHE	PROPOSED OVERHEAD ELECTRIC
TEL	PROPOSED TELEPHONE LINE
FIB	PROPOSED FIBER OPTIC LINE
	EXISTING SSWR LINE
	EXISTING WATERLINE
	EXISTING STORM SEWER LINE

STORM SEWER NOTES

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS ARE BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES.

2. CONTRACTOR SHALL FIELD VERIFY THE EXACT HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING UTILITIES IN FIELD PRIOR TO COMMENCING CONSTRUCTION. NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

3. PUBLIC STORM LINES AS WELL AS CONNECTIONS TO EXISTING PUBLIC LINES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LOCAL MUNICIPALITIES STANDARD SPECIFICATIONS AND DETAILS WITH ALL ADDENDA AND AMENDMENTS THERETO.

4. STORM PIPE SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:

A) RCP = ASTM C-76 CLASS III - REQUIRED IN PUBLIC RIGHT OF WAY AND CONNECTION POINTS TO PUBLIC STORM SEWER.

B) HDPE = N-12 DUAL WALL PIPE WITH BEDDING AND BACKFILL PER MANUFACTURER RECOMMENDATIONS.

C) PVC = ASTM D 3034 SDR35.

5. ALL EXISTING AND PROPOSED PIPES AND STRUCTURES ARE TO BE CLEANED OUT AT THE COMPLETION OF CONSTRUCTION TO REMOVE ALL SILT AND DEBRIS.

6. ALL STORM PIPE ENTERING STRUCTURES SHALL BE GROUTED TO ASSURE CONNECTION AT STRUCTURE IS WATER TIGHT.

7. ALL STORM SEWER MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT, AND SHALL HAVE TRAFFIC BEARING RING & COVERS. LIDS SHALL BE LABELED "STORM SEWER".

8. TOPS OF EXISTING MANHOLES SHALL BE RAISED AS NECESSARY TO BE FLUSH WITH PROPOSED PAVEMENT ELEVATIONS, OR TO BE 2"-4" ABOVE THE PROPOSED GRADE ELEVATIONS IN LANDSCAPE AREAS.

9. ALL STORM STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED MORTAR FROM INVERT IN TO INVERT OUT.

FLOODPLAIN INFORMATION	
	LIMITS OF FLOODPLAIN

KEYED NOTES	
1	PROP. 8" x 45° BEND
2	PROP. 8" x 8" WYE
3	PROP. 10" x 45° BEND
4	PROP. 10" x 10" WYE
5	PROP. 6" ROOF DRAIN CONNECTION FROM BUILDING OR CANOPY REF. ARCH FOR DETAILS

811
Know what's **below.**
Call before you dig.

CAUTION!!

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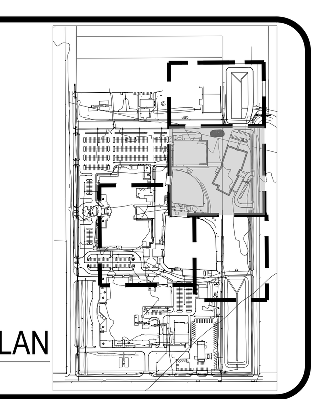
MEPT
LEAF ENGINEERS
T 713-965-0608
ACOUSTIC
BAI, LLC
T 512-476-3464
THEATER
CONSULTANT NAME
T 000-000-0000
FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS
T 281-350-2323
ENVELOPE CONSULTANT
CONSULTANT NAME
T 713-965-0608

NEW CTE CENTER & HARGRAVE HIGH SCHOOL ADDITIONS & RENOVATIONS - MASS GRADING

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL



KEY PLAN

Civil

STATE OF TEXAS
KYLE MOLITOR
126028
LICENSED PROFESSIONAL ENGINEER
06/03/2025

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
06/03/2025	240157

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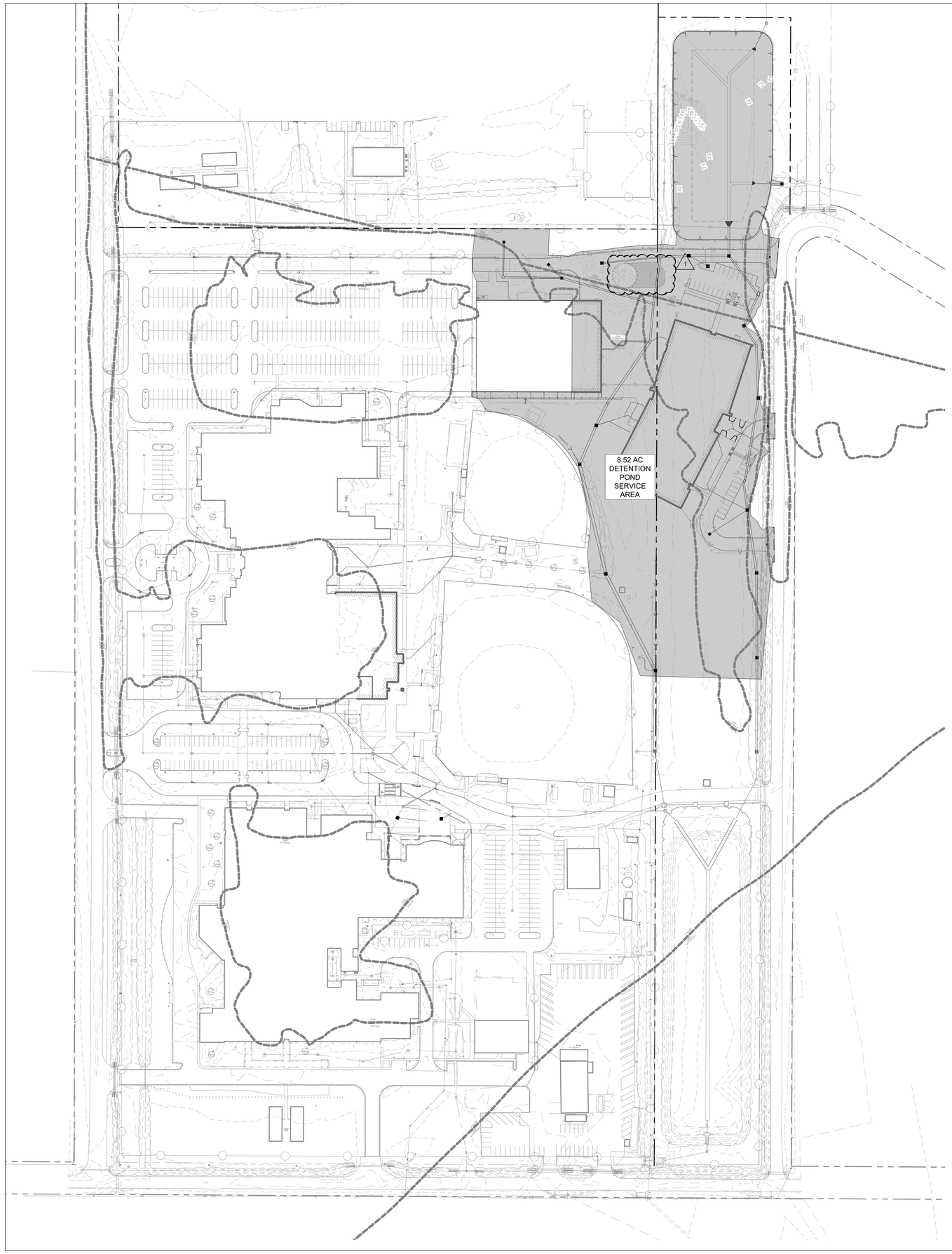
STORM SEWER PLAN (2 OF 4)

C7.1A



NORTH

GRAPHIC SCALE IN FEET
0 40 80 160

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MEP
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ACOUSTIC
BALTER
T 713-782-5664
TUSCATER
CONSULTANT NAME
T 000-000-0000
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ENVELOPE CONSULTANT
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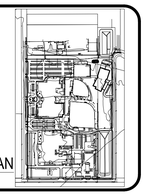
KEY PLAN



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06/03/2025

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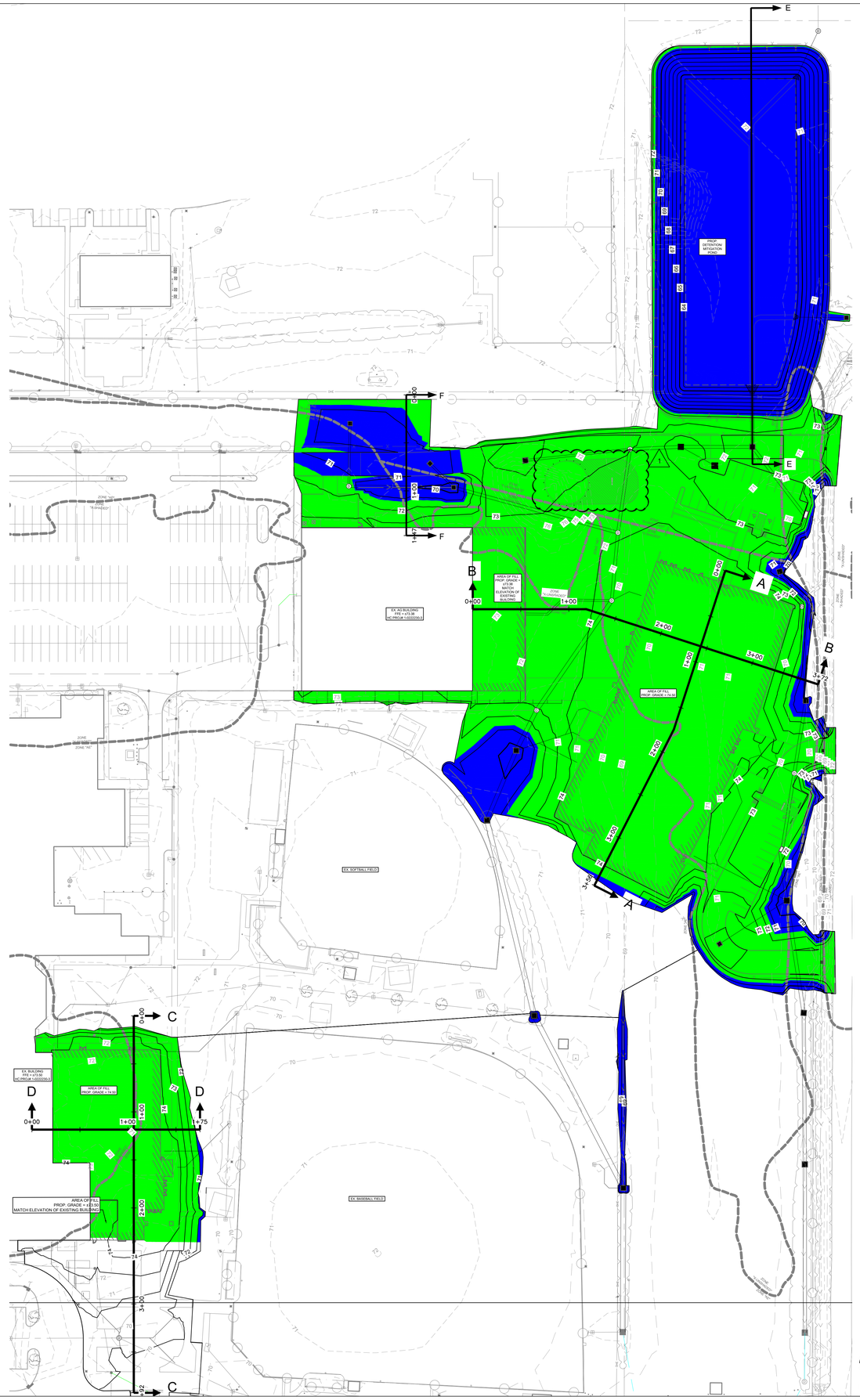
DETENTION POND SERVICE AREA MAP

C8.1A



PLAN NORTH TRUE NORTH

1 **POND AND FLOODPLAIN MITIGATION PLAN**
1" = 50'

NORTH

GRAPHIC SCALE IN FEET
0 25 50 100

LEGEND	
PROPOSED AREAS ABOVE 500 YR BFE	
PROPOSED AREAS BELOW 500 YR BFE	

FLOODPLAIN MITIGATION SUMMARY	
DISTURBED AREA/POND	7.71 AC
NET NEW DEVELOPED IMPERVIOUS AREA	5.73 AC
TOTAL FILL BELOW FLOODPLAIN	1,228.94 CY
TOTAL CUT BELOW FLOODPLAIN	11,716.62 CY
VOLUME CREDIT AVAILABLE FOR DETENTION (CUT IN FLOODPLAIN - FILL IN FLOODPLAIN)	10,487.68 CY
DETENTION VOLUME REQUIRED	9244.4 CY
EXCESS STORAGE BELOW FLOODPLAIN FOR FUTURE DETENTION OR FLOODPLAIN MITIGATION NEEDS (VOLUME CREDIT - DETENTION VOLUME REQUIRED)	1,243.28 CY

0.44 AC-FT EXCESS DETENTION PROVIDED BY HC PROJ #2411190135

***CALCULATIONS BASED ON MODEL CREATED USING CIVIL 3D 2024. ALL CUT PROVIDED IN THIS PLAN SET IS FOR FLOODPLAIN MITIGATION. THERE IS NO DETENTION PROVIDED IN THIS PLAN SET.

811 Know what's below. Call before you dig.

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NEW CTE CENTER & HARGRAVE HIGH SCHOOL ADDITIONS & RENOVATIONS - MASS GRADING

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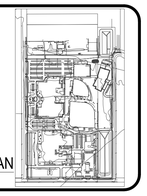

KEY PLAN

Civil

STATE OF TEXAS
KYLE MOLITOR
126028
LICENSED PROFESSIONAL ENGINEER
06/03/2025

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
06/03/2025	240157

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1	ADDENDUM 01	06/03/2025

CHECKED BY: KLM
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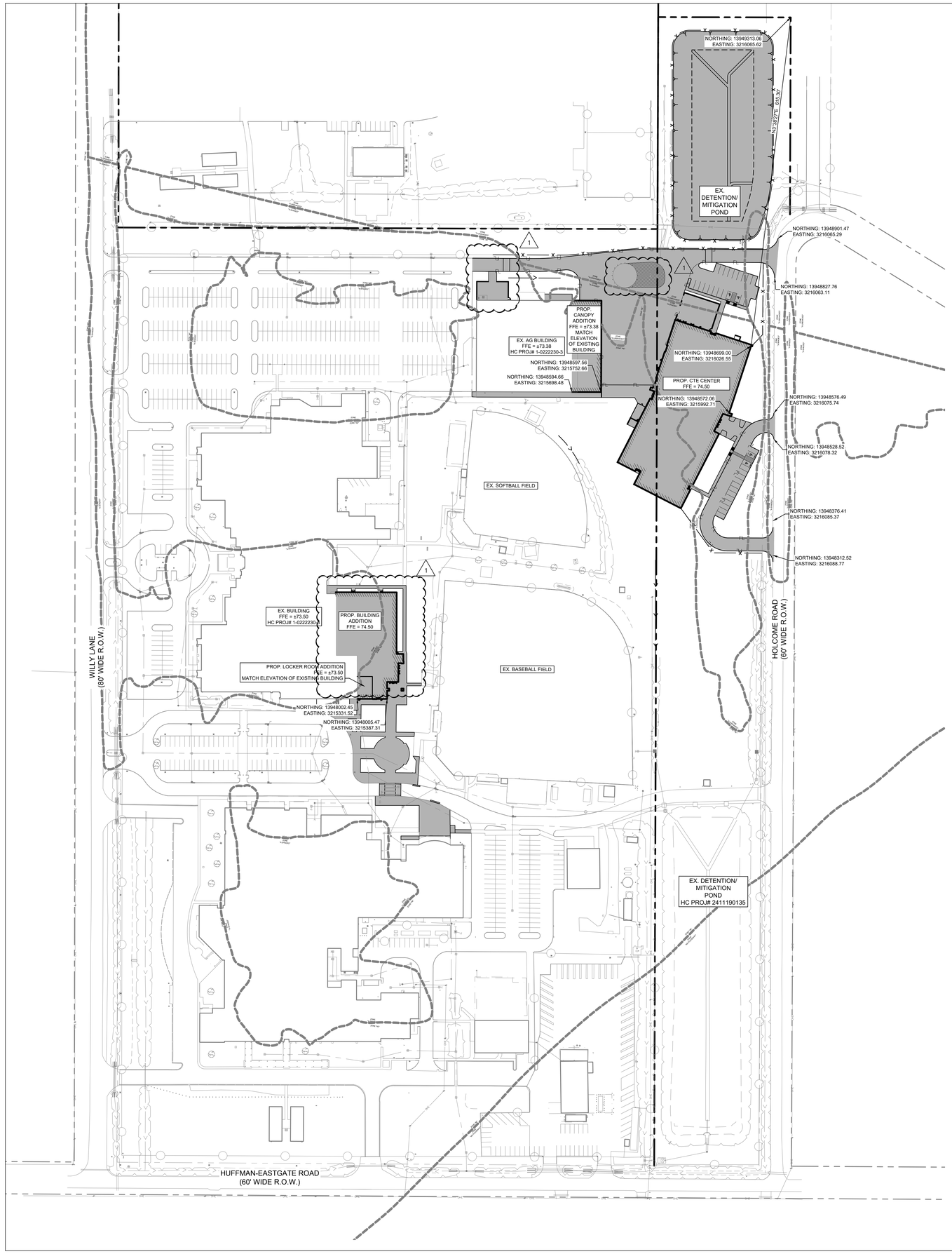
FLOODPLAIN MITIGATION PLAN

C9.0A



NORTH

GRAPHIC SCALE IN FEET
0 40 80 160

LEGEND	
	PROPERTY LINE
FL	FIRE LANE STRIPING
4	PARKING COUNT
	CURB RAMP NOT IN PUBLIC ROW REF. DETAIL 8 ON SHEET C8.0B
	ACCESSIBILITY SPACE
	PROPOSED IMPERVIOUS COVER (5.73 AC)

GENERAL NOTES

1. DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.

2. ALL RADII 2' UNLESS OTHERWISE NOTED.

3. REFER TO ARCHITECTURAL PLANS FOR SITE LIGHTING POLES AND FIXTURES AND ELECTRICAL PLAN PRIOR TO PLACING PAVEMENT.

4. REFER TO ARCHITECTURAL PLANS FOR EXACT BUILDING DIMENSIONS.

5. SIDEWALKS TO HAVE A 5% MAXIMUM RUNNING SLOPE AND A 2% MAXIMUM CROSS SLOPE IN ACCORDANCE WITH ADA REQUIREMENTS.

6. FIELD VERIFY ADA GRADES PRIOR TO PLACING PAVEMENT. CONTRACTOR SHALL CONSTRUCT ALL ACCESSIBLE ROUTES IN ACCORDANCE WITH ADA STANDARDS AND TAS.

7. REF. IRRIGATION PLANS PRIOR TO PLACING PAVEMENT.

8. CONTRACTOR SHALL BUDGET FOR ACCESSIBLE STALL STRIPING, FIRE LANE STRIPING, DIRECTIONAL ARROWS, ETC.

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11. CONTRACTOR TO ADJUST EXISTING SANITARY SEWER MANHOLES, STORM SEWER MANHOLES, ELECTRICAL MANHOLES, FIRE HYDRANTS, VALVE BOXES, WATER METERS, ETC. TO MATCH PROPOSED FINISHED GRADES IF NECESSARY.

FLOODPLAIN INFORMATION	
	LIMITS OF FLOODPLAIN

NORTHING/EASTING COORDINATES NOTE
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T 713-965-0608
ACOUSTIC
BAY TECH
T 713-782-5364
THEATER
CONSULTANT NAME
T 000-000-0000
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FOODSERVICE DESIGN PROFESSIONALS
T 281-320-2323
EXISTING BUILDING CONSULTANT
SCAN PROFESSIONALS
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NEW CTE CENTER & HARGRAVE HIGH SCHOOL ADDITIONS & RENOVATIONS

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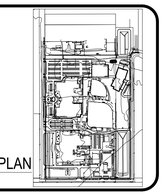
ISSUE FOR PROPOSAL

KEY PLAN



Civil

STATE OF TEXAS
KYLE MOLITOR
126028
LICENSED PROFESSIONAL ENGINEER
06/03/2025

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
06/03/2025	240157

DRAWING HISTORY

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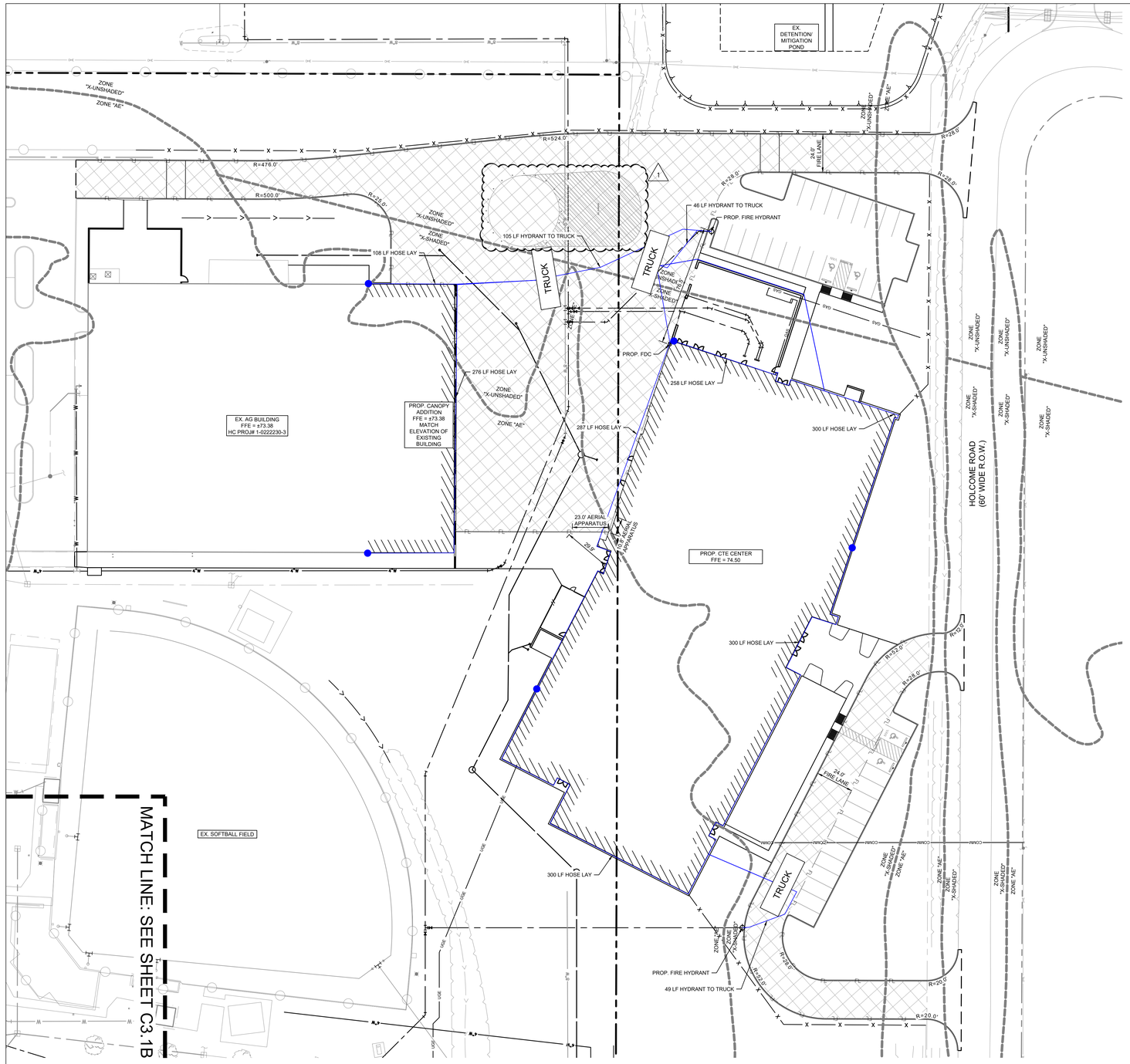
CHECKED BY: KLM
DRAWN BY: KEM

OVERALL SITE PLAN

C2.0B



NORTH

GRAPHIC SCALE IN FEET
0 15 30 60

LEGEND	
	PROPERTY LINE
FL	FIRE LANE STRIPING
4	PARKING COUNT
	CURB RAMP NOT IN PUBLIC ROW
	ACCESSIBILITY SPACE
	HOSE LAY
	END OF HOSE LAY
PAVING MATERIAL LEGEND	
	PROPOSED FIRE LANE

GENERAL NOTES

1. DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
2. ALL RADII 2' UNLESS OTHERWISE NOTED.
3. REFER TO ARCHITECTURAL PLANS FOR SITE LIGHTING POLES AND FIXTURES AND ELECTRICAL PLAN PRIOR TO PLACING PAVEMENT.
4. REFER TO ARCHITECTURAL PLANS FOR EXACT BUILDING DIMENSIONS.
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FLOODPLAIN INFORMATION	
	LIMITS OF FLOODPLAIN

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BAY TEC
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NEW CTE CENTER & HARGRAVE HIGH SCHOOL ADDITIONS & RENOVATIONS

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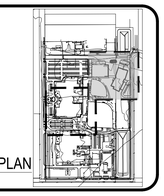
KEY PLAN



Civil

STATE OF TEXAS
KYLE MOLITOR
126028
LICENSED
PROFESSIONAL ENGINEER
06/03/2025

CLIENT	
HUFFMAN ISD	
DATE 06/03/2025	PROJECT NUMBER 240157

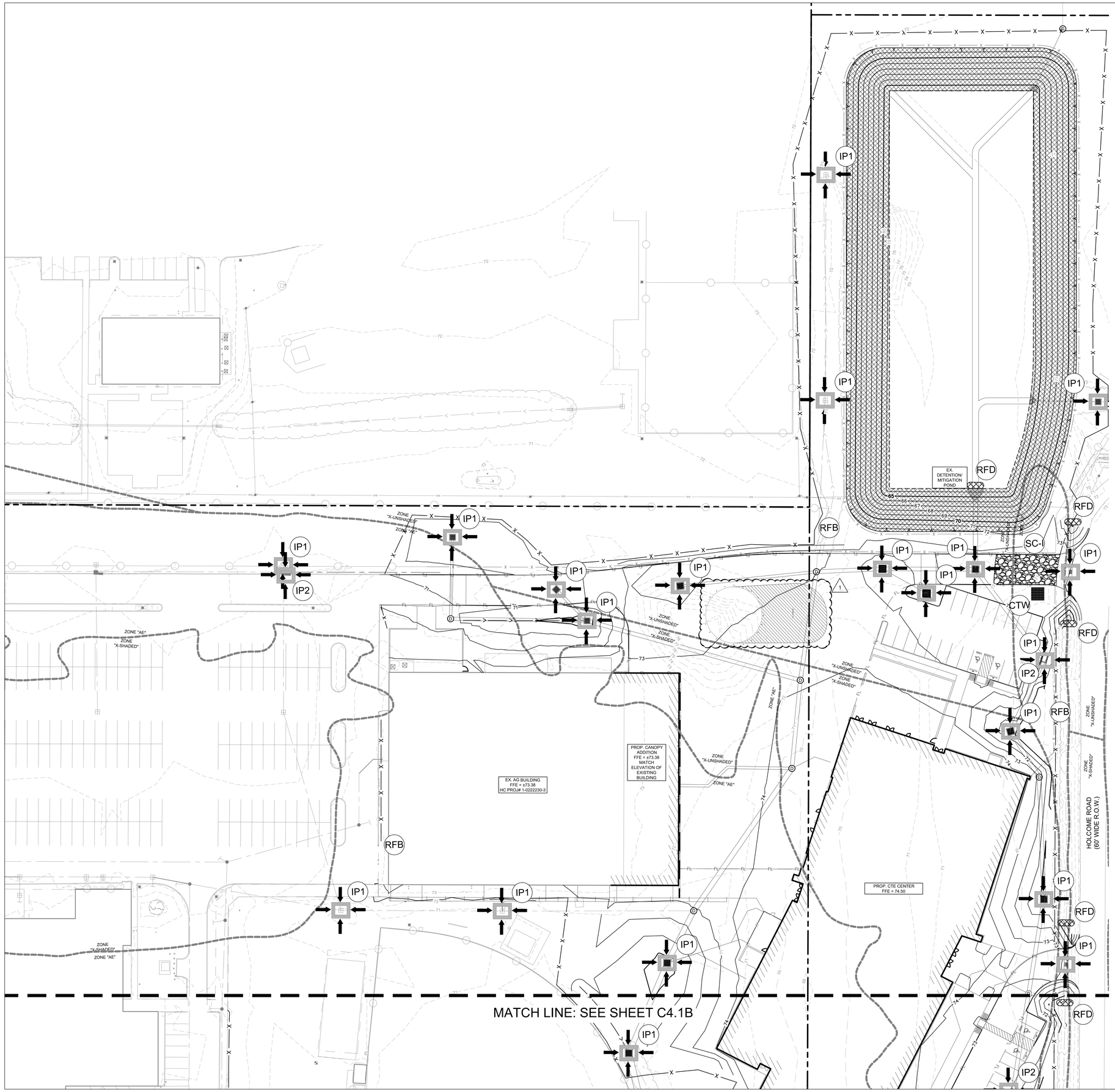
DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: KLM
DRAWN BY: KEM

FIRE PROTECTION PLAN (1 OF 2)

C3.0B



NORTH

GRAPHIC SCALE IN FEET
0 15 30 60

LEGEND	
138	EXISTING CONTOUR ELEVATIONS
138	PROPOSED CONTOUR ELEVATIONS
EROSION DETAILS	
IP1	INLET PROTECTION BARRIER FOR STAGE I INLETS (SEE DETAIL C4.2B)
IP2	INLET PROTECTION BARRIER FOR STAGE II INLETS (SEE DETAIL C4.2B)
RFB	REINFORCED FILTER FABRIC BARRIER (SEE DETAIL C4.2B)
SC-I	STABILIZED CONSTRUCTION ACCESS (SEE DETAIL C4.2B)
CTW	CONCRETE TRUCK WASHOUT AREA (SEE DETAIL C4.2B)
	PROJECTED FLOW DIRECTION
	FLEXTERRA HP-FGM (SEE NOTE BELOW)

EROSION CONTROL NOTES

1. CONTRACTOR IS SOLELY RESPONSIBLE FOR SELECTION, IMPLEMENTATION, MAINTENANCE, AND EFFECTIVENESS OF ALL SWPPP CONTROLS - CONTROLS SHOWN ON THIS SITE MAP ARE SUGGESTED CONTROLS ONLY.

2. CONTRACTOR SHALL RECORD INSTALLATION, MAINTENANCE OR MODIFICATION, AND REMOVAL DATES FOR EACH BMP EMPLOYED (WHETHER CALLED OUT ON ORIGINAL SWPPP OR NOT) DIRECTLY ON THIS SITE MAP.

3. DRAINAGE PATTERNS ARE SHOWN ON THIS PLAN BY PROPOSED AND EXISTING CONTOURS.

4. TEMPORARY AND PERMANENT STABILIZATION PRACTICES AND BMP'S SHALL BE INSTALLED AT THE EARLIEST POSSIBLE TIME DURING THE CONSTRUCTION SEQUENCE. AS AN EXAMPLE, PERIMETER SILT FENCE SHALL BE INSTALLED BEFORE COMMENCEMENT OF ANY GRADING ACTIVITIES. OTHER BMP'S SHALL BE INSTALLED AS SOON AS PRACTICABLE AND SHALL BE MAINTAINED UNTIL FINAL SITE STABILIZATION IS ATTAINED. CONTRACTOR SHALL ALSO REFERENCE CIVIL PLANS SINCE PERMANENT STABILIZATION IS PROVIDED BY LANDSCAPING AND SITE PAVING..

5. BMP'S HAVE BEEN LOCATED AS INDICATED ON THIS PLAN IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING PRACTICES IN ORDER TO MINIMIZE SEDIMENT TRANSFER. FOR EXAMPLE: SILT FENCES LOCATED AT TOE OF SLOPE AND INLET PROTECTION FOR INLETS RECEIVING SEDIMENT FROM SITE RUN-OFF.

6. SANITARY SEWER EFFLUENT IS DISPOSED OF VIA AN ONSITE SEWER SYSTEM CONNECTED TO A MUNICIPAL SEWER SYSTEM.

7. CONTRACTOR TO PROVIDE INLET PROTECTION IN PUBLIC ROW ONLY DURING EARTH MOVING ACTIVITIES. CONTRACTOR TO ENSURE PONDING DOES NOT OCCUR IN PUBLIC ROW OR ON ADJACENT PROPERTIES AT ANY TIME DURING CONSTRUCTION.

8. CONSTRUCTION ENTRANCE SHALL BE LOCATED SO AS TO PROVIDE THE LEAST AMOUNT OF DISTURBANCE TO THE FLOW OF TRAFFIC IN AND OUT OF THE SITE. ADDITIONALLY, THE CONSTRUCTION ENTRANCE SHALL BE LOCATED TO COINCIDE WITH THE PHASING OF THE PARKING LOT CONSTRUCTION.

9. CONTRACTOR SHALL PROVIDE INLET PROTECTION FOR ANY AFFECTED INLETS DOWNSTREAM OF THE PROPOSED IMPROVEMENTS, IF NEEDED.

10. THE NATURE OF THIS SITE'S CONSTRUCTION CONSISTS OF CLEARING & SITE PREPARATION, EARTHWORK, PAVING AND LANDSCAPING.

11. SEDIMENTATION BASIN: NEITHER A TEMPORARY NOR PERMANENT SEDIMENTATION BASIN HAS BEEN PROVIDED ON THIS SITE BECAUSE THE SITE IS LESS THAN 10 ACRES IN AREA.

12. POST CONSTRUCTION STORM WATER POLLUTION CONTROL MEASURES INCLUDE STABILIZATION BY PERMANENT PAVING AND LANDSCAPING.

13. DISTURBED PORTIONS OF SITE MUST BE STABILIZED. STABILIZATION PRACTICES MUST BE INITIATED WITHIN 14 DAYS IN PORTIONS OF THE SITE WHERE CONSTRUCTION HAS BEEN EITHER TEMPORARILY OR PERMANENTLY CEASED, UNLESS EXCEPTED WITHIN THE OPDES PERMIT. CONTRACTOR SHALL REMOVE TEMPORARY EROSION CONTROL DEVICES UPON COMPLETION OF STABILIZATION.

14. CONTRACTOR IS RESPONSIBLE FOR MODIFYING THE SWPPP/SITE MAP TO INCLUDE BMP'S FOR ANY OFF-SITE MATERIAL WASTE, BORROW OR EQUIPMENT STORAGE AREAS.

15. CONTRACTOR IS RESPONSIBLE FOR SUBMITTAL OF NOI, NOT, POSTING OF SITE NOTICES, AND ANY ADDITIONAL INFORMATION OR SUBMITTALS REQUIRED BY TCEQ, EPA, OR LOCAL JURISDICTION.

16. CONTRACTOR TO MAINTAIN NO MORE THAN 10 ACRES OF DRAINAGE TO ANY SINGLE OUTFALL LOCATION DURING CONSTRUCTION.

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IMMEDIATELY AFTER COMPLETION OF OF THE GRADING AND COMPACTION OF THE DETENTION POND AND SIDE SLOPES, CONTRACTOR SHALL APPLY FLEXTERRA HIGH PERFORMANCE GROWTH MEDIUM (HP-FGM), OR AN APPROVED EQUIVALENT SLOPE STABILIZATION PRODUCT, ON THE SIDE SLOPES WITH A SEED MIX SPECIFIED BY THE VENDOR THAT IS APPROPRIATE FOR THE SEASON OF APPLICATION AND THE SITE TOP SOIL CONDITIONS. THE CONTRACTOR SHALL SUBMIT THE PROPOSED SEED MIX TO THE LANDSCAPE ARCHITECT FOR REVIEW PRIOR TO IMPLEMENTATION.

FLOODPLAIN INFORMATION

LIMITS OF FLOODPLAIN

NORTHING/EASTING COORDINATES NOTE
THE NORTHING/EASTING COORDINATE POINTS PROVIDED ON THIS PLAN ARE PLAN COORDINATES. CONTRACTOR IS RESPONSIBLE FOR TYING THE PLAN COORDINATED PROVIDED ON THIS PLAN TO THE HORIZONTAL SURVEY CONTROL SYSTEM USED IN THE SURVEY/STAKING OF THE SUBJECT SITE. PLAN COORDINATES ARE PROVIDED ON CERTAIN PROPERTY CORNERS TO THE TIE-IN OF THE PLAN COORDINATES SO THE HORIZONTAL CONTROL SYSTEM CAN BE VERIFIED AT THOSE FIXED LOCATIONS.

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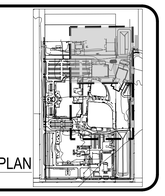
KUBENTAYLOR ENGINEERS
T:713-865-0808
MEP/FP
LEAF ENGINEERS
T:713-905-0505
ACOUSTIC
BALLINGER
T:713-782-0064
THEATER
CONSULTANT NAME
T:000-000-0000
FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS
T:281-320-2323
EXVIT/LIGHTING CONSULTANT
SCAPE PROFESSIONALS
T:713-965-0505

NEW CTE CENTER & HARGRAVE HIGH SCHOOL ADDITIONS & RENOVATIONS

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

KEY PLAN



Civil

STATE OF TEXAS
KYLE MOLITOR
126028
LICENSED
PROFESSIONAL ENGINEER
06/03/2025

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
06/03/2025	240157

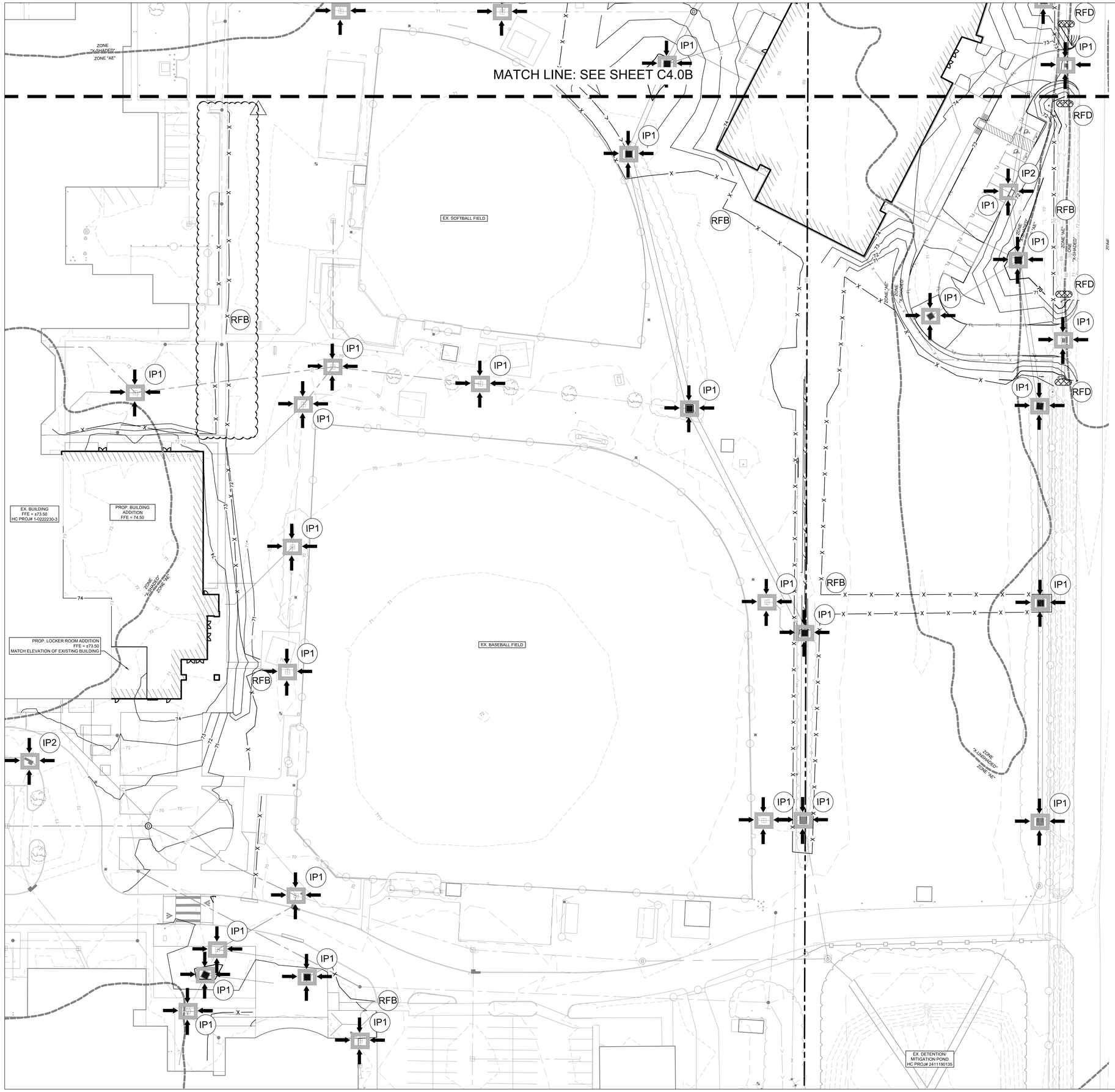
DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: KLM
DRAWN BY: KEM

EROSION CONTROL PLAN (1 OF 2)

C4.0B



NORTH

GRAPHIC SCALE IN FEET
0 15 30 60

LEGEND	
138	EXISTING CONTOUR ELEVATIONS
138	PROPOSED CONTOUR ELEVATIONS
EROSION DETAILS	
IP1	INLET PROTECTION BARRIER FOR STAGE I INLETS (SEE DETAIL C4.2B)
IP2	INLET PROTECTION BARRIER FOR STAGE II INLETS (SEE DETAIL C4.2B)
RFB	REINFORCED FILTER FABRIC BARRIER (SEE DETAIL C4.2B)
SC	STABILIZED CONSTRUCTION ACCESS (SEE DETAIL C4.2B)
CTW	CONCRETE TRUCK WASHOUT AREA (SEE DETAIL C4.2B)
	PROJECTED FLOW DIRECTION
	FLEXTERRA HP-FGM (SEE NOTE BELOW)

EROSION CONTROL NOTES

1. CONTRACTOR IS SOLELY RESPONSIBLE FOR SELECTION, IMPLEMENTATION, MAINTENANCE, AND EFFECTIVENESS OF ALL SWPPP CONTROLS - CONTROLS SHOWN ON THIS SITE MAP ARE SUGGESTED CONTROLS ONLY.

2. CONTRACTOR SHALL RECORD INSTALLATION, MAINTENANCE OR MODIFICATION, AND REMOVAL DATES FOR EACH BMP EMPLOYED (WHETHER CALLED OUT ON ORIGINAL SWPPP OR NOT) DIRECTLY ON THIS SITE MAP.

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BALLARD*KING
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TUSCATER
CONSULTANT NAME
T 000-000-0000
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FOODSERVICE DESIGN PROFESSIONALS
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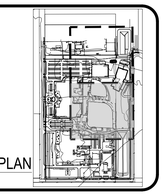

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STATE OF TEXAS
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126028
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06/03/2025

CLIENT
HUFFMAN ISD

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06/03/2025	240157

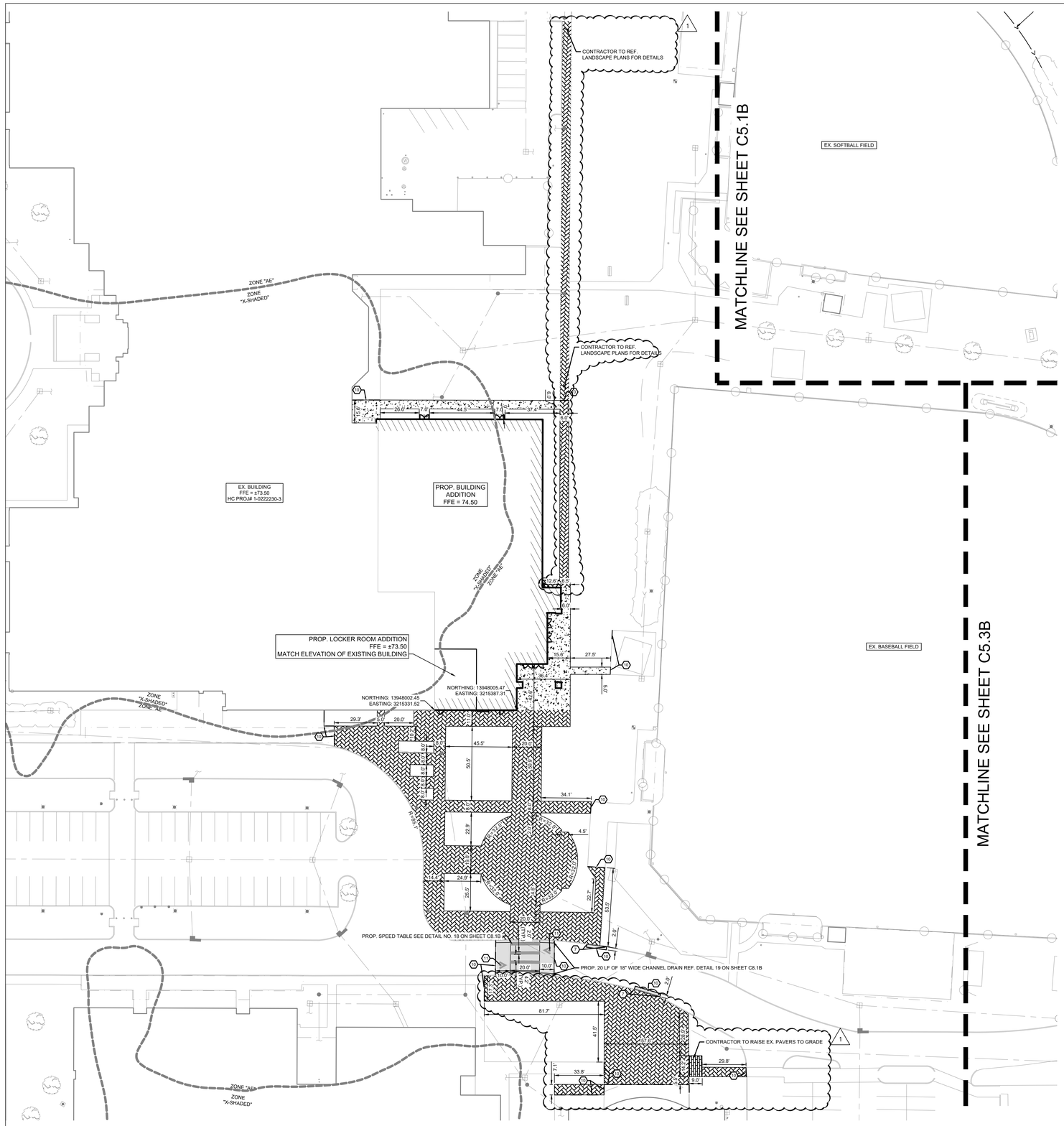
DRAWING HISTORY

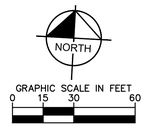
No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: KLM
DRAWN BY: KEM

EROSION CONTROL PLAN (2 OF 2)

C4.1B





LEGEND	
	PROPERTY LINE
FL	FIRE LANE STRIPING
4	PARKING COUNT
	CURB RAMP NOT IN PUBLIC ROW REF. DETAIL 8 ON SHEET C10.0A
	ACCESSIBILITY SPACE
PAVING MATERIAL LEGEND	
	SIDEWALK CONCRETE REF. DETAIL 2 ON SHEET C10.0A
	MEDIUM DUTY CONCRETE REF. DETAIL 5 ON SHEET C10.0A
	HEAVY DUTY CONCRETE REF. DETAIL 6 ON SHEET C10.0A
	PROP. PAVING REF. LANDSCAPE FOR DETAILS

KEYED NOTES	
1	PARKING LOT STRIPING, 4" SOLID WHITE STRIPE
2	PROPOSED 6" CURB.
3	ACCESSIBLE RAMP REF. DETAIL 8 ON SHEET C10.0A
4	4" SOLID YELLOW STRIPING, 2'-0" O.C. @ 45°
5	PROPOSED ACCESSIBLE HC PARKING STALL WITH ACCESSIBLE PARKING SYMBOL AND SIGN
6	END OF 6" CURB. INSTALL CURB TERMINATION.
7	PROPOSED 6" CURB. TIE INTO EXISTING CURB.
8	PROPOSED CHAIN LINK FENCE. REF. ARCH FOR DETAILS
9	PROPOSED WALL. REF. ARCH FOR DETAILS
10	PROPOSED SAWCUT/MATCH EXISTING PAVEMENT LINE
11	PROP. WHITE THERMOPLASTIC MARKINGS - REF. DETAIL 17 ON SHEET C8.1B
12	PROPOSED MOUNDED SPEED BUMP REF. DETAIL 16 ON SHEET C8.1B
13	PROPOSED MOUNTABLE CURB REF. DETAIL 7 ON SHEET C8.0B

GENERAL NOTES

1. DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.

2. ALL RADII 2' UNLESS OTHERWISE NOTED.

3. REFER TO ARCHITECTURAL PLANS FOR SITE LIGHTING POLES AND FIXTURES AND ELECTRICAL PLAN PRIOR TO PLACING PAVEMENT.

4. REFER TO ARCHITECTURAL PLANS FOR EXACT BUILDING DIMENSIONS.

5. SIDEWALKS TO HAVE A 5% MAXIMUM RUNNING SLOPE AND A 2% MAXIMUM CROSS SLOPE IN ACCORDANCE WITH ADA REQUIREMENTS.

6. FIELD VERIFY ADA GRADES PRIOR TO PLACING PAVEMENT. CONTRACTOR SHALL CONSTRUCT ALL ACCESSIBLE ROUTES IN ACCORDANCE WITH ADA STANDARDS AND TAS.

7. REF. IRRIGATION PLANS PRIOR TO PLACING PAVEMENT.

8. CONTRACTOR SHALL BUDGET FOR ACCESSIBLE STALL STRIPING, FIRE LANE STRIPING, DIRECTIONAL ARROWS, ETC.

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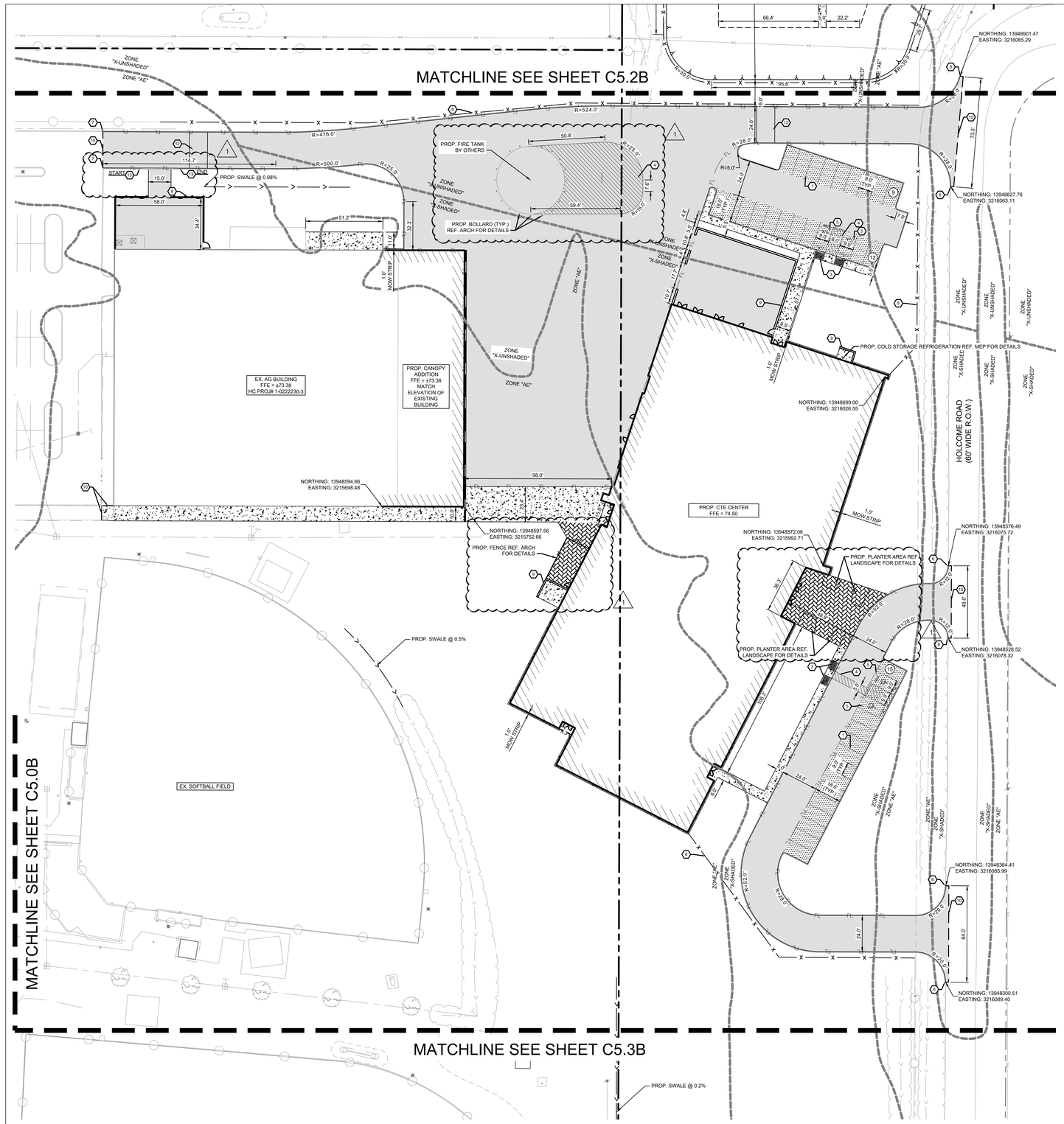
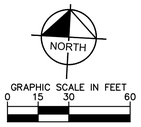
CHECKED BY: KLM
DRAWN BY: KEM

DIMENSION CONTROL AND PAVING PLAN (1 OF 4)

C5.0B





LEGEND	
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T.713-782-5664
TUBE/FOS
CONSULTANT NAME
T.000-000-0000
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FOODSERVICE DESIGN PROFESSIONALS
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EXCITEMENT/SEATING TANT
SEAM PROFESSIONALS
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NEW CTE CENTER & HARGRAVE HIGH SCHOOL ADDITIONS & RENOVATIONS

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

Civil

STATE OF TEXAS
KYLE MOLITOR
126028
LICENSED
PROFESSIONAL ENGINEER
06/03/2025

CLIENT	
HUFFMAN ISD	
DATE 06/03/2025	PROJECT NUMBER 240157

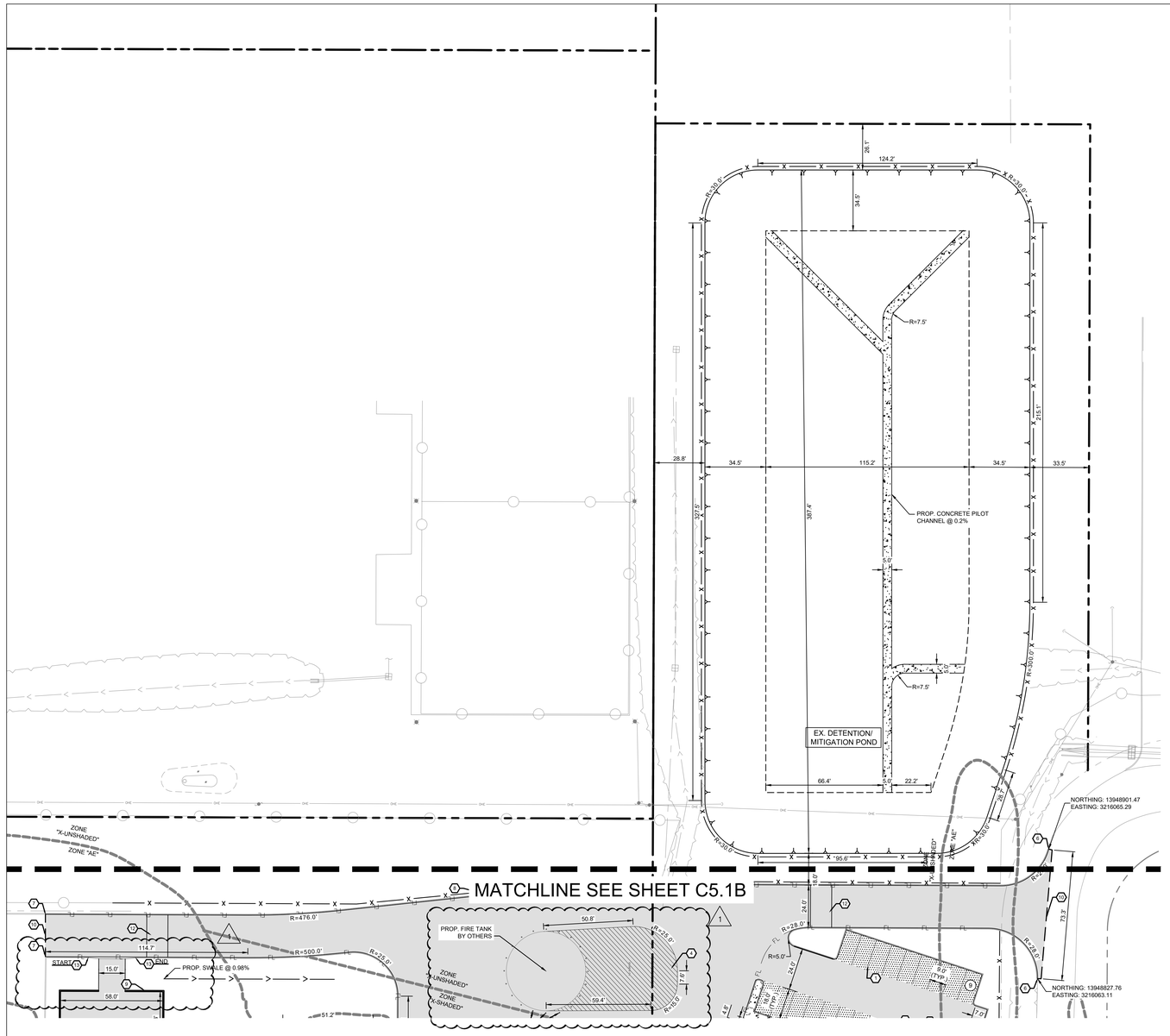
DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: KLM
DRAWN BY: KEM

DIMENSION CONTROL AND PAVING PLAN (2 OF 4)

C5.1B



NORTH

GRAPHIC SCALE IN FEET
0 15 30 60

LEGEND	
	PROPERTY LINE
FL	FIRE LANE STRIPING
4	PARKING COUNT
	CURB RAMP NOT IN PUBLIC ROW REF. DETAIL 8 ON SHEET C10.0A
	ACCESSIBILITY SPACE
PAVING MATERIAL LEGEND	
	SIDEWALK CONCRETE REF. DETAIL 2 ON SHEET C10.0A
	MEDIUM DUTY CONCRETE REF. DETAIL 5 ON SHEET C10.0A
	HEAVY DUTY CONCRETE REF. DETAIL 6 ON SHEET C10.0A
	PROP. PAVING REF. LANDSCAPE FOR DETAILS

KEYED NOTES	
1	PARKING LOT STRIPING; 4" SOLID WHITE STRIPE
2	PROPOSED 6" CURB.
3	ACCESSIBLE RAMP REF. DETAIL 8 ON SHEET C10.0A
4	4" SOLID YELLOW STRIPING, 2'-0" O.C. @ 45°
5	PROPOSED ACCESSIBLE HC PARKING STALL WITH ACCESSIBLE PARKING SYMBOL AND SIGN
6	END OF 6" CURB. INSTALL CURB TERMINATION.
7	PROPOSED 6" CURB. TIE INTO EXISTING CURB.
8	PROPOSED CHAIN LINK FENCE. REF. ARCH FOR DETAILS
9	PROPOSED WALL. REF. ARCH FOR DETAILS
10	PROPOSED SAWCUT/MATCH EXISTING PAVEMENT LINE
11	PROP. WHITE THERMOPLASTIC MARKINGS - REF. DETAIL 17 ON SHEET C8.1B
12	PROPOSED MOUNDED SPEED BUMP REF. DETAIL 16 ON SHEET C8.1B
13	PROPOSED MOUNTABLE CURB REF. DETAIL 7 ON SHEET C8.0B

GENERAL NOTES

1. DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.

2. ALL RADII 2' UNLESS OTHERWISE NOTED.

3. REFER TO ARCHITECTURAL PLANS FOR SITE LIGHTING POLES AND FIXTURES AND ELECTRICAL PLAN PRIOR TO PLACING PAVEMENT.

4. REFER TO ARCHITECTURAL PLANS FOR EXACT BUILDING DIMENSIONS.

5. SIDEWALKS TO HAVE A 5% MAXIMUM RUNNING SLOPE AND A 2% MAXIMUM CROSS SLOPE IN ACCORDANCE WITH ADA REQUIREMENTS.

6. FIELD VERIFY ADA GRADES PRIOR TO PLACING PAVEMENT. CONTRACTOR SHALL CONSTRUCT ALL ACCESSIBLE ROUTES IN ACCORDANCE WITH ADA STANDARDS AND TAS.

7. REF. IRRIGATION PLANS PRIOR TO PLACING PAVEMENT.

8. CONTRACTOR SHALL BUDGET FOR ACCESSIBLE STALL STRIPING, FIRE LANE STRIPING, DIRECTIONAL ARROWS, ETC.

9. SITE LIGHTING IS BY OTHERS. REF. SITE LIGHTING PLANS FOR LOCATIONS AND DETAILS PRIOR TO PLACING PAVEMENT.

10. REF. BUILDING PLANS FOR ALL EXTERIOR STAIR DETAILS.

11. CONTRACTOR TO ADJUST EXISTING SANITARY SEWER MANHOLES, STORM SEWER MANHOLES, ELECTRICAL MANHOLES, FIRE HYDRANTS, VALVE BOXES, WATER METERS, ETC. TO MATCH PROPOSED FINISHED GRADES IF NECESSARY.

FLOODPLAIN INFORMATION	
	LIMITS OF FLOODPLAIN

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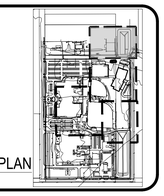

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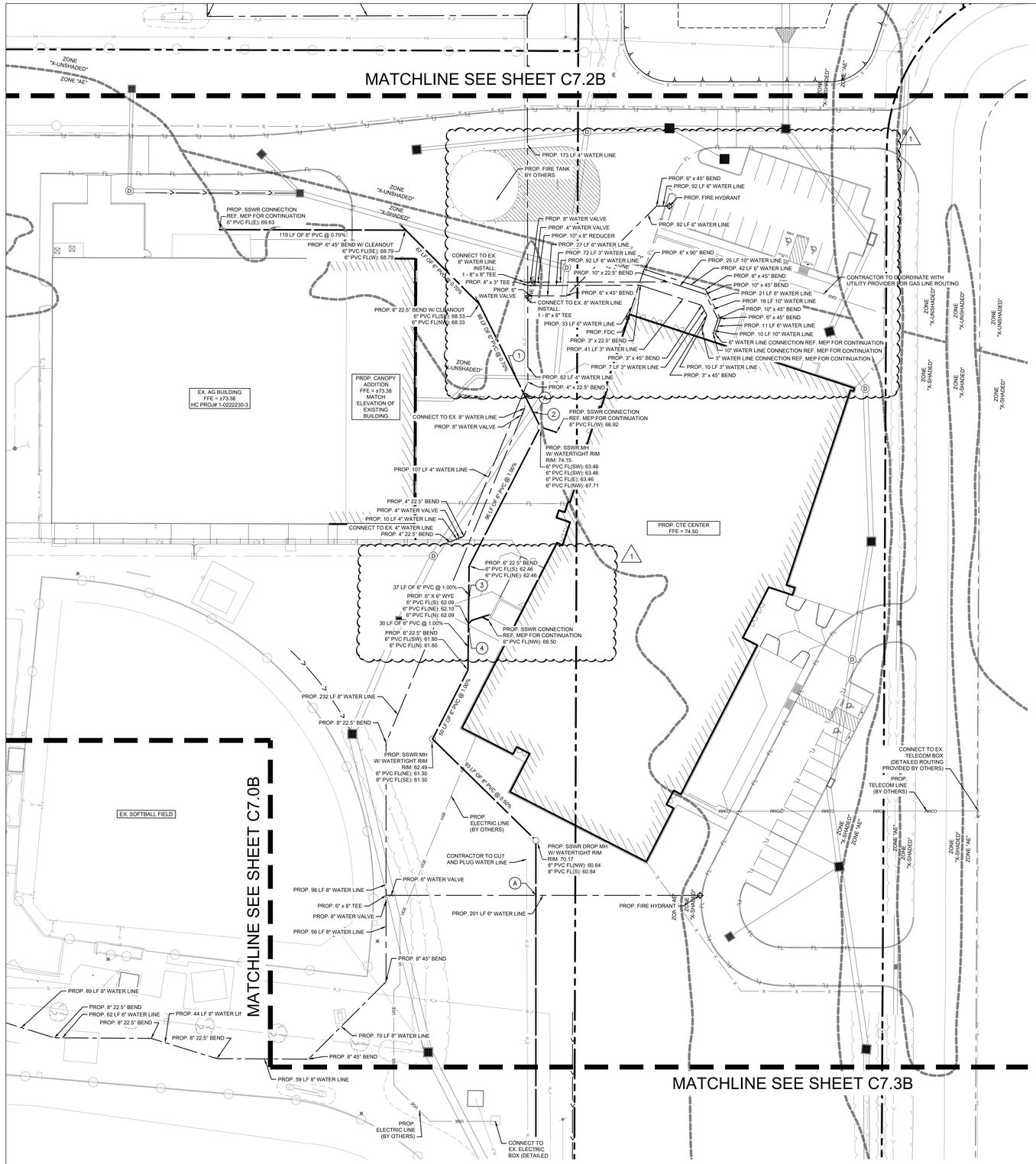
DIMENSION CONTROL AND PAVING PLAN (3 OF 4)

C5.2B



NORTH

GRAPHIC SCALE IN FEET
0 15 30 60

LEGEND	
	PROPERTY LINE
	PROPOSED UTILITY EASEMENT
	EXISTING UTILITY EASEMENT
	PROPOSED STORM LINE
	PROPOSED STORM MANHOLE
	PROPOSED GRATE INLET
	PROPOSED CURB INLET
	PROPOSED WATER LINE
	PROPOSED SSWR LINE
	PROPOSED SSWR CLEANOUT REF. DETAIL 1 ON SHEET C10.0A
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	PROPOSED WATER VALVE
UGE	PROPOSED UNDERGROUND ELECTRIC
GAS	PROPOSED GAS LINE
COMM	PROPOSED COMMUNICATIONS LINE
OHE	PROPOSED OVERHEAD ELECTRIC
TEL	PROPOSED TELEPHONE LINE
FIB	PROPOSED FIBER OPTIC LINE
	EXISTING SSWR LINE
	EXISTING WATERLINE
	EXISTING STORM SEWER LINE

FLOODPLAIN INFORMATION	
	LIMITS OF FLOODPLAIN

UTILITY NOTES

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS ARE BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES.

2. CONTRACTOR SHALL FIELD VERIFY THE EXACT HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING UTILITIES IN FIELD PRIOR TO COMMENCING CONSTRUCTION. NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

3. ALL WATER AND SEWER LINES AS WELL AS TAPS/CONNECTIONS TO EXISTING PUBLIC WATER LINES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LOCAL MUNICIPALITIES STANDARD SPECIFICATIONS AND DETAILS WITH ALL ADDENDA AND AMENDMENTS THERETO.

4. CONTRACTOR SHALL NOTIFY THE UTILITY AUTHORITY 72 HOURS BEFORE CONNECTING TO ANY EXISTING LINE.

5. WATER LINES SHALL BE AS FOLLOWS:

A) 3" AND SMALLER = SCHEDULE 40 PVC

B) 4" - 12" = PVC CLASS 150 DR 18, WITH BEDDING AND BACKFILL PER MANUFACTURER RECOMMENDATIONS.

6. SANITARY SEWER PIPES SHALL BE AS FOLLOWS:

A) 4" - 12" = PVC SDR-26, WITH BEDDING AND BACKFILL PER MANUFACTURER RECOMMENDATIONS.

7. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 4'-0" COVER ON ALL WATERLINES.

8. WATER LINES CROSSING AND RUNNING PARALLEL TO GRAVITY SEWER LINES AND FORCE MAINS SHALL CONFORM TO THE SEPARATION AND CROSSING REQUIREMENTS OF TEXAS ADMINISTRATIVE CODE § 290.44 PARAGRAPH (E).

9. LINES UNDERGROUND SHALL BE INSTALLED, INSPECTED AND APPROVED BEFORE BACKFILLING.

10. TOPS OF EXISTING MANHOLES SHALL BE RAISED AS NECESSARY TO BE FLUSH WITH PROPOSED PAVEMENT ELEVATIONS, OR TO BE 2-4" ABOVE THE PROPOSED GRADE ELEVATIONS IN LANDSCAPE AREAS.

11. CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY INSPECTIONS, TESTING AND/OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY SERVICE COMPANIES.

12. CONTRACTOR SHALL COORDINATE WITH ALL PRIVATE UTILITY COMPANIES FOR INSTALLATION REQUIREMENTS AND SPECIFICATIONS.

13. REFER TO ARCHITECTURAL PLANS FOR SITE LIGHTING ELECTRICAL PLAN.

14. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRENCH SAFETY MEASURES IN ACCORDANCE WITH OSHA AND LOCAL AGENCY STANDARDS FOR ALL EXCAVATIONS.

15. THE SITE CONTRACTOR MUST COORDINATE THE TIMING AND INSTALLATION OF ALL NATURAL GAS LINES WITH THE GENERAL CONTRACTOR FOR THE BUILDING AND MAKE ALL NECESSARY SCHEDULE ARRANGEMENTS FOR TEMPORARY OR PERMANENT GAS LINES PER THE PROJECT SCHEDULE.

16. THE SCOPE OF UTILITIES STUBBED TO THE PROPOSED BUILDING(S) IN THIS PLAN SET SHALL TERMINATE 5' OUTSIDE OF THE BUILDING.

UTILITY CROSSING TABLE

CROSSING NUMBER	SANITARY SEWER FLOW LINE ELEVATION	STORM SEWER FLOW LINE ELEVATION	SPACING BETWEEN PIPES (ft)
1	67.98	70.97	2.49
2	67.77	63.03	0.75
3	62.27	66.74	3.97
4	62.10	67.26	4.66

KEYED NOTES	
A	WATER/WASTEWATER CROSSING (SEE NOTE 8 ON THIS SHEET)

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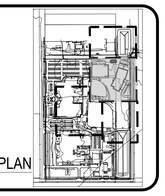

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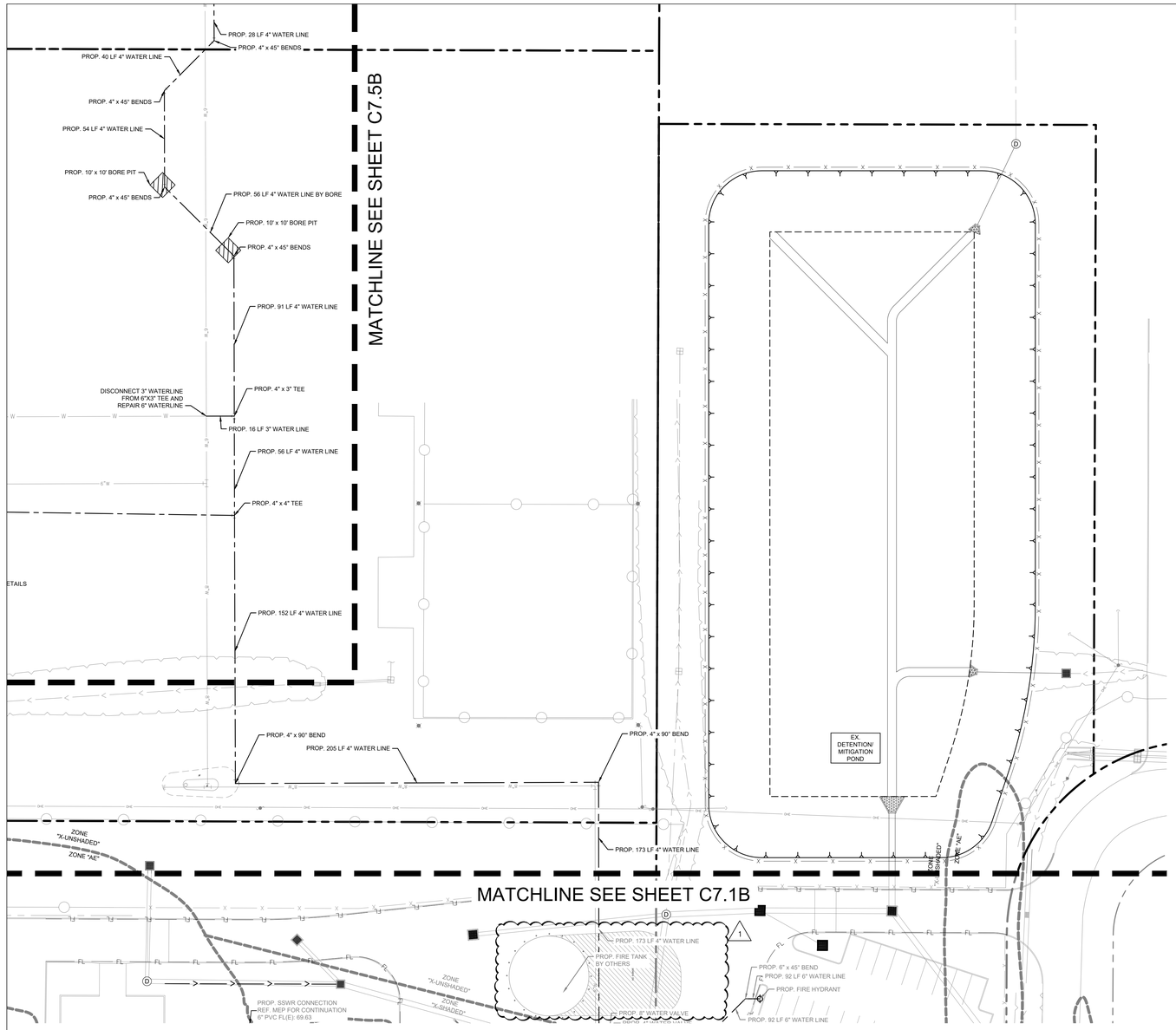
UTILITY PLAN (2 OF 4)

C7.1B



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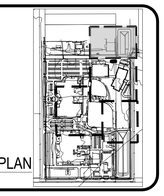

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UTILITY PLAN (3 OF 4)

C7.2B

GENERAL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH THE JOBSITE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFEGUARDING AND PROTECTING ALL MATERIAL AND EQUIPMENT STORED ON THE JOBSITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STORAGE OF MATERIALS IN A SAFE AND WORKMANLIKE MANNER TO PREVENT INJURIES AND AFTER WORKING HOURS, UNTIL PROJECT COMPLETION.
4. WRITTEN DIMENSIONS ON THESE DRAWINGS SHALL HAVE PRECEDENCE OVER SCALE DIMENSIONS. CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THIS OFFICE MUST BE NOTIFIED OF ANY VARIATION FROM THE DIMENSIONS AND CONDITIONS SHOWN BY THESE DRAWINGS. DIMENSIONS SHOWN ARE TO FACE OF CURB UNLESS NOTED OTHERWISE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS AND CONSTRUCTION INSPECTIONS WITH THE PROPER REGULATORY AGENCIES, PRIOR TO BEGINNING CONSTRUCTION. COPIES OF ALL PERMITS SHALL BE SENT TO THE ENGINEER.
6. CONTRACTOR TO OBTAIN ALL PERMITS REQUIRED PRIOR TO STARTING CONSTRUCTION OF UTILITIES AND/OR CULVERTS WITHIN RIGHT-OF-WAYS.
7. TOPOGRAPHIC SURVEY BY: CIVIL-SURV LAND SURVERYING LLC
   10590 WESTOFFICE DRIVE, STE 110
   HOUSTON, TEXAS 77042
   TBPELS NO. 10143800
8. BENCHMARK: SEE SURVEY
9. CONTRACTOR IS SOLELY RESPONSIBLE FOR CONTACTING THE SURVEYOR AND VERIFYING THE BENCHMARK AND ON SITE TBM'S IN THE FIELD.
10. THE DRAWINGS SHOW AS MUCH INFORMATION AS CAN BE REASONABLY OBTAINED FROM ON THE GROUND OBSERVATION AND EXISTING CONSTRUCTION DRAWINGS REGARDING THE ENTIRE TOPOGRAPHY, CONTOURS, SUB-SURFACE SOILS, AS WELL AS THE LOCATION AND NATURE OF PIPELINES, STORM SEWERS, WATERLINES, NATURAL GAS LINES, UNDERGROUND CABLES, ECT, HOWEVER, THE ACCURACY OF OR COMPLETENESS OF SUCH INFORMATION IS NOT GUARANTEED.
11. THE EXISTING UTILITIES SHOWN WERE PROVIDED BY THE SURVEYOR. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, SIZES, AND DEPTHS OF ALL UTILITIES. THE CONTRACTOR SHALL CONTACT THE CIVIL ENGINEER IF UTILITIES SHOWN ARE NOT AS SPECIFIED.
12. CONTRACTOR SHALL COMPLY WITH ALL OCCUPATIONAL SAFETY AND HEALTH ACT (O.S.H.A.) REGULATIONS.
13. ALL WORK IS TO BE DONE IN ACCORDANCE WITH APPLICABLE NATIONAL, STATE, MUNICIPAL, AND LOCAL CODES.
14. IT IS THE CONTRACTORS RESPONSIBILITY TO SUPERVISE AND COORDINATE ALL WORK TO ENSURE THE PROPER EXECUTION. ALL WORK IS TO BE ACCOMPLISHED IN A NEAT, WORKMAN LIKE MANNER, AND ALL EXCESS MATERIALS, TRASH, DEBRIS, ECT., SHALL BE REMOVED FROM THE JOB BY THE CONTRACTOR, AT HIS EXPENSE.
15. THE CONTRACTOR SHALL INCLUDE IN HIS BID AS AN INCIDENTAL ITEM FOR THE REMOVAL OF ANY EXISTING SIGNAGE THAT IS IN THE WAY OF THE PROPOSED NEW CONSTRUCTION. IF REMOVAL OF SIGNAGE IS NECESSARY, THE CONTRACTOR SHALL REPLACE SAID SIGNAGE.
16. THE CONTRACTOR SHALL KEEP ALL STREETS FREE OF DIRT, MUD,ETC, DURING THE COURSE OF CONSTRUCTION.
17. THE CONTRACTOR SHALL NOT LEAVE ANY TRENCHES OR PITS OPEN OVER NIGHT. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR KEEPING THE SCHOOL CHILDREN OUT OF WORK AREA.
18. CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES IN THE AREA PRIOR TO COMMENCING WORK IN ANY RIGHT-OF-WAY OR EXISTING EASEMENT. A VERIFICATION NUMBER FROM THE ONE-CALL UTILITY COORDINATING COMMITTEE WILL BE REQUIRED. (800) 344-8377.
19. CONTRACTOR SHALL COORDINATE WITH APPROPRIATE UTILITY COMPANIES TO RELOCATE EXISTING POWER POLE(S) AND/OR UTILITY BOX(ES) OR ANY OTHER UTILITIES DEEMED NECESSARY BY THE ENGINEER. CONTRACTOR SHALL COORDINATE THE RELOCATION AND PAY ANY FEES.
20. STRIPING AND CROSS-HATCHING SHALL BE "TRAFFIC YELLOW" PAINTED LINES, FOUR (4) INCHES WIDE UNLESS OTHERWISE NOTED.
21. ALL PAVEMENT MARKINGS (OTHER THAN STRIPING & CROSS-HATCHING) SHALL BE THERMOPLASTIC.
22. REFER TO ARCHITECTURAL SHEETS FOR HANDICAP SIGNAGE.
23. EXISTING PAVEMENTS, CURBS, SIDEWALKS, AND DRIVEWAYS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED TO CITY STANDARDS.
24. CONDITION OF THE ROAD AND/OR RIGHT-OF-WAY, UPON COMPLETION OF JOB, SHALL BE AS GOOD AS OR BETTER THAN THE CONDITION PRIOR TO STARTING WORK.
25. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND SHALL BE RESTORED TO THE SATISFACTION OF THE OWNING AUTHORITY.
26. WHEEL CHAIR RAMPS SHALL BE INSTALLED IN ACCORDANCE WITH CITY STANDARDS AT ALL INTERSECTIONS WHERE SIDEWALKS EXIST AND THE EXISTING CURB OR SIDEWALK IS DAMAGED OR REMOVED DURING CONSTRUCTION.
27. THIS PROPERTY IS LOCATED IN ZONE "X" UNSHADED, AREAS DETERMINED TO BE OUTSIDE OF THE 500-YEAR FLOODPLAIN AS SHOWN ON THE FLOOD INSURANCE RATE MAP BY (FEMA), 48201C0345L PANEL 345 OF 1150, DATED JUNE 18, 2007, THIS STATEMENT IS BASED ON SCALING THE LOCATION OF THIS SURVEY ON THE ABOVE REFERENCED MAP.

UTILITY NOTES

28. THE CONTRACTOR SHALL FURNISH ALL MATERIALS, EQUIPMENT, AND LABOR FOR EXCAVATION, INSTALLATION, BACKFILLING OF WATER AND/OR SEWER MAINS AND RELATED APPURTENANCES AS SHOWN ON THE PLANS AND/OR DESCRIBED IN THE SPECIFICATIONS.
29. THE CONTRACTOR SHALL COMPLY WITH O.S.H.A. REGULATIONS AND STATE OF TEXAS LAW CONCERNING EXCAVATION. CONTRACTOR SHALL PROVIDE SHEETING, SHORING AND BRACING AS NECESSARY TO PROTECT WORKMEN AND EXISTING UTILITIES DURING ALL PHASES OF CONSTRUCTION.
30. CONTRACTOR SHALL INCLUDE IN BASE PROPOSAL ALL COSTS ASSOCIATED WITH DE-WATERING WELL POINTING, STABILIZING, ETC. THAT MAY BE REQUIRED TO INSTALL ANY AND ALL UNDERGROUND UTILITIES.
31. BEDDING AND BACKFILL SHALL BE SUBSIDIARY TO THE PAY ITEMS FOR PIPE AND SHALL NOT BE PAID FOR DIRECTLY. REFER TO DETAILS. IF WET SAND CONDITIONS ARE ENCOUNTERED, THE CONTRACTOR SHALL CONTACT THE OWNER AND ENGINEER IMMEDIATELY.
32. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SHIPPING AND STORING OF ALL WATER AND SEWER MATERIALS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE SUCH MATERIALS AT THE POINT OF DELIVERY AND TO REJECT ALL DEFECTIVE MATERIAL. THE CONTRACTOR SHALL REPLACE THE DEFECTIVE MATERIAL WITH SOUND MATERIAL AT HIS OWN EXPENSE.
33. THE LOADING AND UNLOADING OF ALL PIPE, VALVES, HYDRANTS, MANHOLES AND OTHER ACCESSORIES SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED PRACTICES AND SHALL AT ALL TIMES BE PERFORMED WITH CARE TO AVOID ANY DAMAGE TO THE MATERIAL. THE CONTRACTOR SHALL LOCATE AND PROVIDE THE NECESSARY STORAGE AREAS FOR MATERIALS AND EQUIPMENT.
34. ALL STORM SEWER TO BE HIGH DENSITY POLYETHYLENE CORRUGATED EXTERIOR / SMOOTH INTERIOR PIPE WITH WATER TIGHT JOINTS PER ASTM D 3212 UNLESS OTHERWISE OR SPECIFICALLY NOTED.
35. HIGH DENSITY POLYETHYLENE PIPE SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION OR THE PLANS / SPECIFICATIONS; WHICHEVER IS MORE RESTRICTIVE.
36. ALL WATER MAINS TO HAVE A MINIMUM OF 4' (FOUR FEET) OF COVER FROM PROPOSED TOP OF CURB WHEN CONSTRUCTED IN STREET RIGHT-OF-WAY AND 4' (FOUR FEET) OF COVER FROM FINISHED GRADE WHEN CONSTRUCTED WITHIN EASEMENTS. WATER LINES 4" AND LARGER SHALL CONFORM TO ALL REQUIREMENTS OF AWWA C900 - DR 18, CLASS 150. 2", 2-1/2" AND 3" WATER LINES SHALL CONFORM TO ALL REQUIREMENTS OF ASTM D2241 FOR PVC PIPE AND SHALL BE PRESSURE RATED AT 200 P.S.I. WITH A STANDARD DIMENSION RATION (SDR) OF 21 FOR CLASS 200 FOR BOTH BARREL AND BELL DIMENSIONS. WATER LINES SMALLER THAN 2" SHALL CONFORM TO ALL REQUIREMENTS OF SCHEDULE 40.
37. PIPE SLEEVES ARE TO BE 6" PVC, SCHEDULE 40 PIPE CAPPED AT EACH END. THE TOP OF THE PIPE SLEEVE SHALL BE 12" TO 18" BELOW THE BOTTOM OF CONCRETE PAVEMENT OR WALK. EACH END SHALL EXTEND A MINIMUM OF TWO (2) FEET BEYOND THE EDGE OF CONCRETE PAVEMENT OR WALK. LOCATION OF EACH END TO BE MARKED IN CURB OR PAVEMENT WITH BRASS BOLTS.
38. ROOF DRAIN AND DOWNSPOUT COLLECTOR LINES SHALL BE PVC, SDR-26 PIPE (ASTM D2241) OR SCHEDULE 40 PIPE. LAID AT A MINIMUM GRADE OF 0.50% UNLESS NOTED OTHERWISE. COLLECTOR LINES SHALL BE SIZE ON SIZE AND 6" MINIMUM FOR DOWNSPOUTS. ONCE TWO OR MORE ROOF DRAINS / DOWNSPOUTS ARE CONNECTED THE COLLECTOR LINE (RD AND/OR DS) SHALL BE 12" UNLESS NOTED OTHERWISE. NO 90° BENDS SHALL BE USED. ALL BENDS IN LINES SHALL BE MADE WITH EITHER "WYES" OR DOUBLE 45° BENDS. REFER TO THE ARCHITECTURAL SHEETS FOR EXACT LOCATIONS OF GUTTER DOWNSPOUTS AND/OR MEP SHEETS FOR EXACT LOCATION SIZES OF ROOF DRAINS. WHERE DOWNSPOUT COLLECTORS ARE LOCATED IN PAVED AREAS, PROVIDE A 24"X24" BLOCK OUT AROUND PIPE. REFER TO DETAILS.
39. CONTRACTOR SHALL PROVIDE A MINIMUM OF 12" (TWELVE INCHES) VERTICAL CLEARANCE AT STORM SEWER AND WATER LINE CROSSINGS AND AT STORM SEWER AND SANITARY SEWER CROSSINGS, AND A MINIMUM OF 24" (TWENTY FOUR INCHES) VERTICAL CLEARANCE AT WATER LINE AND SANITARY SEWER CROSSINGS.
40. MARK LOCATIONS OF ALL CABLE AND TELEPHONE LINES EXTENDING BENEATH PAVING BY SETTING A 60D GALVANIZED NAIL FLUSH WITH TOP OF CURB (OR TOP OF PAVEMENT WHERE THERE IS NO CURB).
41. CONNECTION TO EXISTING MANHOLES / INLETS SHALL BE MADE IN A NEAT AND WORKMANLIKE MANNER. NON-SHRINK GROUT SHALL BE USED TO SEAL THE CONNECTION ON BOTH THE INSIDE AND OUTSIDE OF EXISTING MANHOLES / INLETS. ANY DAMAGE TO EXISTING STRUCTURES SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
42. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE TO EXISTING PUBLIC OR PRIVATE UTILITY LINES, INCLUDING BUT NOT LIMITED TO WATER LINES, WASTEWATER COLLECTION SYSTEMS AND STORM SEWERS, DURING CONSTRUCTION. ALL DAMAGES SHALL BE REPAIRED AT HIS EXPENSE AND IN ACCORDANCE WITH THE AUTHORITY HAVING JURISDICTION AND/OR AS DIRECTED BY THE ENGINEER.

UTILITY NOTES

43. EXISTING UTILITIES SHALL REMAIN IN SERVICE DURING THE CONSTRUCTION PERIOD UNTIL SUCH TIME THAT NEW UTILITIES CAN BE MADE OPERATIONAL.
44. REFER TO THE M.E.P. SHEETS FOR EXACT LOCATIONS OF WATER, FIRE, GAS AND SANITARY SEWER CONNECTIONS AT THE BUILDING.
45. REFERENCE M.E.P. SHEETS FOR REMOVAL AND/OR REROUTING OF ANY ELECTRICAL SERVICES OR ANY UTILITY LINE (ROOF DRAIN, SANITARY SEWER, ETC.) THAT LIES UNDER A PROPOSED STRUCTURE.
46. UTILITY CONTRACTOR SHALL PROVIDE TEMPORARY SILT BARRIER FENCE ON ALL NON-CURB INLETS WHICH WILL REMAIN IN PLACE AFTER UNDERGROUND CONTRACT IS COMPLETE.
47. CONTRACTOR SHALL PROVIDE SILT BARRIER FENCE ON ALL STAGE 1 CURB INLETS.
48. THE CONTRACTOR SHALL INCLUDE IN THE PROPOSAL AN INCIDENTAL AMOUNT FOR THE SAW CUTTING, REMOVAL AND REPLACEMENT OF PAVEMENT AT ALL LOCATIONS WHERE PROPOSED UTILITIES CROSS EXISTING PAVEMENT, WHETHER SHOWN ON THE DRAWINGS OR NOT. THE CONTRACTOR SHALL MATCH THE EXISTING PAVEMENT TYPE, THICKNESS AND GRADES.
49. WHEN CONNECTING TO EXISTING SANITARY SEWERS OR STORM DRAINAGE SYSTEMS, THE CONTRACTOR SHALL START AT THE DOWNSTREAM END AND WORK UPSTREAM, THE CONTRACTOR SHALL ALSO VERIFY THE ELEVATIONS OF THE UPSTREAM AND DOWNSTREAM CONNECTIONS PRIOR TO STARTING WORK. IF ELEVATIONS ARE NOT AS SHOWN ON THE DRAWINGS, CONTACT THE ENGINEER. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR START UPSTREAM AND WORK DOWNSTREAM. PIPE SHALL BE INSTALLED WITH THE BELLS AT THE UPSTREAM END.
50. TELEPHONE COMPANY FACILITIES MAY EXIST ON THE PROPERTY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ALL DAMAGES WHICH MIGHT BE OCCASIONED BY A FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES. THE CONTRACTOR SHALL CALL (800) 344-8377 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE UNDERGROUND LINES FIELD LOCATED. WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF TELEPHONE FACILITIES, ALL EXCAVATIONS MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES. WHEN BORING THE CONTRACTOR SHALL EXPOSE THE TELEPHONE FACILITIES. WHEN TELEPHONE FACILITIES ARE EXPOSED, THE CONTRACTOR SHOULD PROVIDE SUPPORT TO PREVENT DAMAGE TO THE CONDUIT DUCTS OR CABLES. WHEN EXCAVATING NEAR TELEPHONE POLES THE CONTRACTOR SHALL BRACE THE POLE FOR SUPPORT
51. CAUTION: UNDERGROUND GAS FACILITIES
    GAS LINES (TO INCLUDE UNIT GAS TRANSMISSION AND/OR INDUSTRIAL GAS SUPPLY CORPORATION WHERE APPLICABLE) MAY EXIST ON THE PROPERTY. SERVICE LINES ARE USUALLY NOT SHOWN. THE CONTRACTOR SHALL CONTACT THE UTILITY COORDINATING COMMITTEE AT 811 OR (800) 669-8344 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE MAIN AND SERVICES LINES FIELD LOCATED

    * WHEN GAS LINE MARKINGS ARE NOT VISIBLE CALL (713) 967-8037 (7:00 AM-4:30 PM) FOR STATUS OF LINE LOCATION REQUEST BEFORE EXCAVATION BEGINS.
    * WHEN EXCAVATING WITHIN 18" OF THE INDICATED LOCATION OF GAS FACILITIES, ALL EXCAVATION MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES.
    * WHEN GAS FACILITIES ARE EXPOSED, SUFFICIENT SUPPORT MUST BE PROVIDED TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE PIPING

    THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND FACILITIES.
52. WARNING: OVERHEAD ELECTRICAL FACILITIES
    OVERHEAD LINES MAY EXIST ON THE PROPERTY. THESE LINES ARE CLEARLY VISIBLE, AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAW, SECTION 752, HEALTH & SAFETY CODE, FORBIDS ALL ACTIVITIES IN WHICH PERSONS OR THINGS MAY COME WITHIN 6' OF LIVE OVERHEAD HIGH VOLTAGE LINES, PARTIES RESPONSIBLE FOR THE WORK, INCLUDING CONTRACTORS, ARE LEGALLY RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS LAW CARRIES BOTH CRIMINAL AND CIVIL LIABILITY, TO ARRANGE FOR LINES TO BE TURNED OFF OR REMOVED CALL POWER COMPANY AT (713) 207-2222 (CENTERPOINT).

    WARNING: UNDERGROUND ELECTRICAL FACILITIES
    UNDERGROUND ELECTRICAL FACILITIES MAY EXIST ON THE PROPERTY. AT LEAST 48 HOURS PRIOR TO CONSTRUCTION, CALL THE UCC AT 811, OR TOLL FREE AT (800) 669-8344, TO VERIFY THAT NO UNDERGROUND FACILITIES EXIST.
53. ALL UNDERGROUND PIPE SHALL HAVE A 12 GAUGE METALLIC TRACER WIRE RUNNING THE FULL LENGTH OF THE PIPE. TRACER WIRE SHALL BE TAPED TO THE PIPE AT INTERVALS NOT TO EXCEED 15 FEET USING DUCT TAPE.

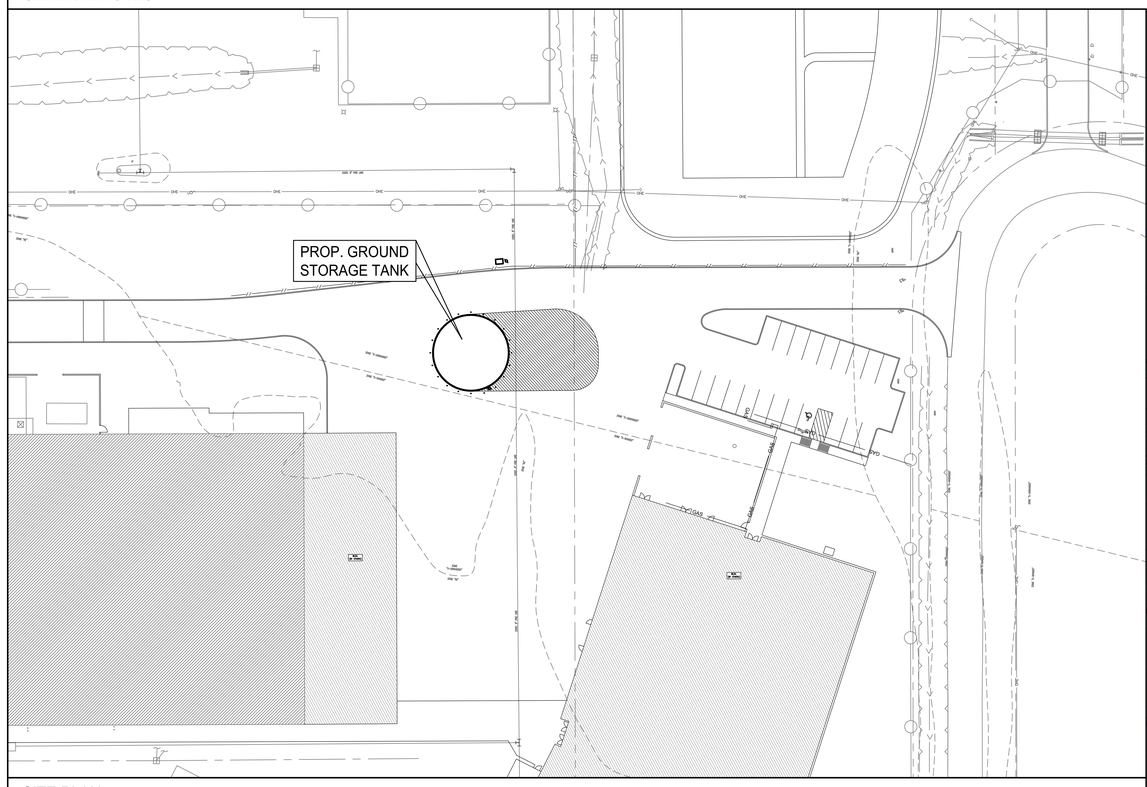
PAVING AND GRADING NOTES

54. REFERENCE THE ARCHITECTURAL SITE PLAN FOR SIDEWALK JOINT PATTERN. SIDEWALK JOINTS SHALL ALIGN WITH PAVING JOINTS WHEN SIDEWALK IS ADJACENT TO PAVING.
55. THE INLETS/MANHOLES SHALL BE COORDINATED WITH THE LOCATION OF PAVEMENT JOINT PATTERN WITHIN PAVEMENT AREAS.
56. EXPANSION JOINT MATERIAL SHALL BE PLACED BETWEEN THE BUILDING AND PERIMETER CONCRETE PAVING. SEAL JOINT AS REQUIRED FOR PAVING JOINTS.
57. UNLESS OTHERWISE SPECIFIED, ALL PAVEMENT JOINT SEALANT SHALL BE SELF-LEVELING SILICONE JOINT SEALANT, (DOWSIL890-SL SILICONE JOINT SEALANT, DAP® SILICONE PLUS™ PREMIUM SILICONE RUBBER CONCRETE SEALANT, GE SILICONE II MASONRY & CONCRETE SEALANT - 5020, 5IKASIL - 728 SL, OR PRE-APPROVED EQUIVALENT.)
58. REFER TO STRUCTURAL FOR ANY DOWELS REQUIRED TYING THE BUILDING FOUNDATION AND ADJACENT CONCRETE PAVING TOGETHER.
59. SAWED JOINTS & TRANSVERSE JOINTS ARE TO BE EQUALLY SPACED BETWEEN EXPANSION JOINTS.
60. SAWING OF JOINTS MUST BEGIN AS SOON AS THE CONCRETE HAS HARDENED SUFFICIENTLY TO AVOID EXCESSIVE RAVELING. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
61. THE CONTRACTOR SHALL REPLACE ANY DAMAGED AND/OR REMOVED CONCRETE PAVEMENT, CURB AND/OR WALK TO EQUAL OR BETTER THAN EXISTING CONDITION. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO INCLUDE ANY CONCRETE PAVEMENT, CURB OR WALK REMOVAL AND REPLACEMENT IN HIS BID AS AN INCIDENTAL TO THE COST OF CONSTRUCTION.
62. THE CONTRACTOR SHALL GRADE THE SITE AS INDICATED BY THE CONTOUR LINES. DIRECTIONAL ARROWS AND ELEVATIONS SHOWN ON DRAWINGS. ALL GRADING SHALL VARY UNIFORMLY BETWEEN ELEVATIONS SHOWN.
63. AT ALL DOORWAYS, THE LANDING SHALL SLOPE AT A MAXIMUM OF 2% AWAY FROM DOORWAY FOR A MINIMUM OF 5 FEET. MATCH FINISH FLOOR ELEVATION AT FACE OF DOORWAYS.
64. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTING SILT FENCE OR PLACING SQUARE HAY BALES AT ALL POINTS WHERE STORMWATER RUNOFF EXITS THE SCHOOL PROPERTY, AND AT ALL STORM SEWER INLETS AND MANHOLES, TO PREVENT SEDIMENT CONTAMINATION OF THE EXISTING DRAINAGE ARTERIES AND NEW STORM SEWERS DURING CONSTRUCTION OF OF THIS PROJECT. REFERENCE "STORM WATER POLLUTION PREVENTION PLAN".
65. SITE TO BE CLEARED OF VEGETATION AND DEBRIS AS NECESSARY TO COMPLETE PROJECT OR AS DIRECTED BY ENGINEER. STRIPPINGS, IF CLEAN, ARE TO BE STOCKPILED AND USED AS DRESSING FOR GRADING, OTHERWISE THE STRIPPINGS SHALL BE DISPOSED OF BY THE CONTRACTOR.
66. ALL EXCESS DEBRIS, TREES, AND/OR WASTE MATERIALS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY, ALL ASSOCIATED COST SHALL BE AT THE EXPENSE OF THE CONTRACTOR.
67. BACKFILL TO TOP OF NEW PAVEMENT OR CURBS WITH CLEAN SOIL FREE OF CLODS, ALL DISTURBED AREAS AND AREAS REQUIRING GRADING SHALL BE FINE GRADED. REMOVE ALL TRASH/DEBRIS AND PROVIDE A SMOOTH SURFACE FOR PROPER TURF MANAGEMENT. HYDROMULCH DISTURBED AREAS NOT NOTED TO BE SOLID SOD OR AS DIRECTED BY THE ENGINEER.
68. WHERE NEW CONCRETE PAVING MEETS EXISTING CONCRETE PAVING, INSTALL 3/4" SMOOTH DOWELS, (18" LONG AND 18" C-C), BY DRILLING 8" INTO THE CENTER OF THE EXISTING SLAB AND EMBEDDING WITH EPOXY. WHEN PAVING UP TO BUILDING FOUNDATIONS, ALSO INSTALL IMPREGNATED FIBER BOARD EXPANSION MATERIAL WITH TOP PULL STRIP FOR CAULKING.
69. PAVEMENT GRADES SHALL VARY UNIFORMLY BETWEEN ELEVATIONS SHOWN.
70. SECURE PRECAST CONCRETE WHEEL STOPS BY DRILLING AND SETTING #4 DOWELS INTO PAVEMENT.
71. FILL AREAS NOTED ON PLANS SHALL BE FILLED IN LAYERS NOT EXCEEDING 8" IN DEPTH AND EACH LAYER COMPACTED TO NOT LESS THAN 95% STANDARD PROCTOR DENSITY. FILL AREA SHALL BE SEEDED AND FERTILIZED WITHIN 10 WORKING DAYS.
72. CONTRACTOR SHALL INSTALL A GRASS SOLID SOD ADJACENT TO ALL PROPOSED CURBS, DRIVES AND /OR WALKS.
73. MATCH ALL ELEVATIONS WHERE PROPOSED PAVEMENT ADJOINS EXISTING PAVEMENT.
74. PRIOR TO ANY CHEMICAL STABILIZATION OF SOIL WITH LIME, FLY ASH OR ANY OTHER MATERIAL AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER, CONTRACTOR SHALL HAVE A THIRD PARTY TESTING LAB PERFORM A SOIL ANALYSIS, INCLUDING BUT NOT LIMITED TO A LIME SERIES TEST, TO CONFIRM THE REQUIRED APPLICATION RATE OF THE CHEMICAL USED FOR STABILIZATION.
75. TOPSOIL SHALL BE FERTILE, FRIABLE, NATURAL SANDY LOAM SURFACE SOIL WITH A MINIMUM OF 4 PERCENT ORGANIC MATERIAL CONTENT FREE OF STONES 1 INCH OR LARGER IN ANY DIMENSION AND OTHER EXTRANEOUS MATERIALS HARMFUL TO PLANT GROWTH. COMPLY WITH ASTM D 5268.
76. HYDROMULCH ALL DISTURBED AREAS, UNLESS OTHERWISE NOTED. HYDROMULCH TO BE INSTALLED 90 DAYS PRIOR TO SUBSTANTIAL COMPLETION OR AS SOON AS POSSIBLE IN ORDER TO ESTABLISH GROW-IN PER SPEC, ALTERNATIVELY, GENERAL CONTRACTOR TO PROVIDE SOLID SOD IN LIEU OF HYDROMULCH.

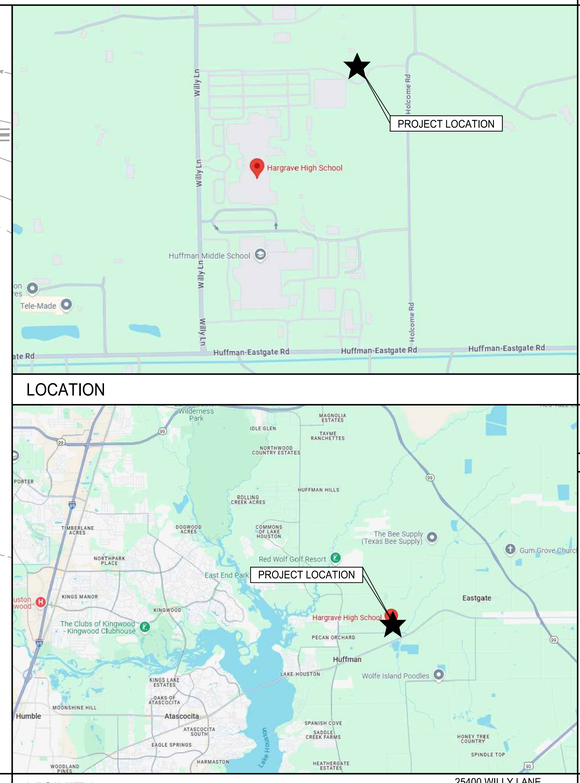
CIVIL LEGEND

201	PROPOSED CONTOUR
	PROPOSED CATCH BASIN (C-1)
	PROPOSED "A" INLET (A-1)
	PROPOSED "E" INLET (E-1)
	PROPOSED STORM MANHOLE W/ GRATE TOP
	PROPOSED MANHOLE
	PROPOSED CURB INLET OR JUNCTION BOX INLET
	GATE VALVE & BOX
	PIPE SLEEVES
	PROP. 45° EL
	TAPPING SLEEVE & VALVE
TC	TOP OF CURB ELEVATION
TP	TOP OF PAVEMENT ELEVATION
TG	TOP OF GRATE ELEVATION
TR	TOP OF RIM (MANHOLE)
FG	FINISH GRADE ELEVATION
MEG	MATCH EXISTING GRADE
FL	FLOWLINE ELEVATION
	SWALE
TFL	THROAT FLOWLINE ELEVATION ("E" INLET)
FH	FIRE HYDRANT
MH	MANHOLE
CO	CLEAN OUT
DCO	DOUBLE CLEAN OUT
DS	DOWNSPOUT COLLECTOR
NIC	NOT IN CONTRACT
RD	ROOF DRAIN COLLECTOR
GV	GATE VALVE
STM	STORM SEWER
SAN	SANITARY SEWER
RCP	REINFORCED CONCRETE PIPE
HDPE	HIGH DENSITY POLYETHYLENE
FFF	FILTER FABRIC FENCE
RFB	REINFORCED FABRIC BARRIER
IPB	INLET PROTECTION BARRIER
X	EXPANSION JOINT
L	LONGITUDINAL CONSTRUCTION JOINT
LT	LONGITUDINAL-TIED CONSTRUCTION JOINT
T	TRANSVERSE CONTRACTION JOINT
S	SAWED PAVEMENT JOINT
UE	UTILITY EASEMENT
SSE	SANITARY SEWER EASEMENT
EP	EDGE OF PAVEMENT
HB	HIGH BANK OF DITCH
CL	CENTERLINE OF DITCH
PP	POWER POLE
GW	GUY WIRE
GM	GAS METER
PB	PHONE BOX
FC	FENCE CORNER
CB	CABLE BOX
NG	NATURAL GROUND
45.67	EXISTING ELEVATION
TP XX.XX	PROPOSED ELEVATION
	ATHLETIC LIGHTPOLE
	ELECTRICAL PEDISTAL
	HOSE BIB

SITE PLAN



VICINITY



25400 WILLY LANE
HUFFMAN, TX 77336

LOCATION

PROJECT NAME:
NEW CTE CENTER & HARGRAVE HIGH SCHOOL
ADDITIONS & RENOVATIONS

LEGAL DESCRIPTION:
X
X

PHYSICAL ADDRESS:
25400 WILLY LANE
HUFFMAN, TX 77336

ACREAGE OF PROPOSED SITE:
X.XX ACRES

TOTAL ACREAGE OF EXISTING LOT:
XX.XX ACRES

PERMITTING INFORMATION

INDEX OF DRAWINGS

SHEET	DESCRIPTION
C 000	COVER
C 001	INDEX, NOTES, AND LEGEND
C 002A	SURVEY (FOR INFORMATION ONLY)
C 002B	SURVEY (FOR INFORMATION ONLY)
C 002C	SURVEY (FOR INFORMATION ONLY)
C 101	SITE AND DIMENSIONAL PLAN
C 201	UTILITY AND GRADING PLAN
C 301	EROSION CONTROL PLAN AND DETAILS
C 401	DETAILS
C 402	DETAILS
C 403	DETAILS

1

PBK

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NEW CTE CENTER & HARGRAVE HIGH SCHOOL ADDITIONS & RENOVATIONS

25400 WILLY LANE
HUFFMAN, TX 77336
ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT

Andrea Juarez
STATE OF TEXAS
ANDRES M. JUAREZ
118530
LICENSED
PROFESSIONAL ENGINEER
05/20/2025
PBK ENGINEERS
F-18326

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

ISSUE FOR PROPOSAL

INDEX, NOTES, AND LEGEND

C 001

CHECKED BY: Checker
DRAWN BY: Author

B:\240\240157 - New CTE Center & Hargrave HS Adds & Remos\FOO\DIG\Dwgs\C 001 INDEX, NOTES, AND LEGEND.dwg Last Saved: KTRAN
Tuesday, June 3, 2025 5:10:39 PM

NOTES

1. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A COMMITMENT FOR TITLE INSURANCE, WITH REGARD TO ANY RECORDED EASEMENTS, RIGHTS-OF-WAY OR SETBACKS AFFECTING THE SUBJECT PROPERTY. THERE MAY BE ADDITIONAL EASEMENTS, RESTRICTIONS, OR OTHER MATTERS OF RECORD AFFECTING THE SURVEYED PROPERTY NOT SHOWN HEREON.
2. THE NORTH ARROW SHOWN HEREON IS BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE.
3. ONLY THOSE IMPROVEMENTS THAT WERE EVIDENT FROM A VISUAL INSPECTION OF THE PROPERTY ARE SHOWN ON THIS SURVEY.
4. ANY UTILITY LINES SHOWN HEREON ARE BASED UPON ABOVE GROUND OBSERVED EVIDENCE. THE SURVEYOR CAN NOT ATTEST TO THE EXACT LOCATION OF UNDERGROUND LINES SHOWN HEREON. THE EXACT LOCATION OF UNDERGROUND UTILITIES SHOULD BE INDEPENDENTLY VERIFIED PRIOR TO COMMENCING ANY UNDERGROUND CONSTRUCTION.
5. THE TREE SPECIES AND SIZES SHOWN HEREON HAVE BEEN IDENTIFIED TO THE BEST OF THE SURVEYOR'S KNOWLEDGE. THE SURVEYOR CAN NOT CERTIFY, NOR ATTEST, TO THE ACCURACY OF THESE NOTATIONS. IF CERTIFICATION OF THIS INFORMATION IS REQUIRED, PLEASE CONTACT A LICENSED URBAN FORESTER OR ARBORIST FOR CONFIRMATION.

FLOOD STATEMENT: THE SURVEYOR HAS EXAMINED THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP FOR THE CITY OF HUFFMAN, HARRIS COUNTY, TEXAS, COMMUNITY No. 480287, DATED JUNE 18, 2007, MAP AND PANEL No. 48201C0345L, AND THAT MAP INDICATES THAT THIS TRACT IS WITHIN THE FOLLOWING ZONES:

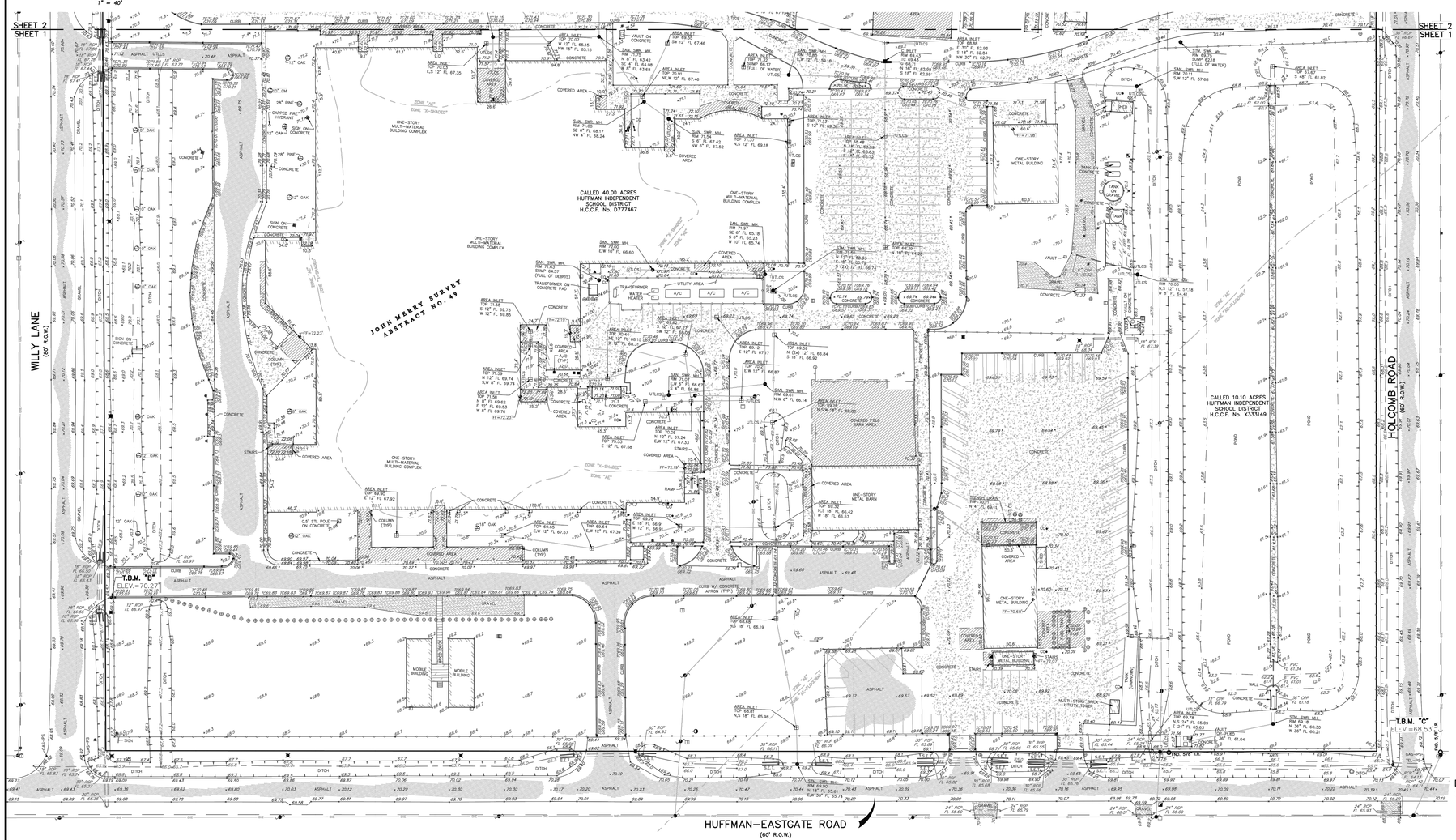
ZONE "X" — AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN

ZONE "X" SHADED — AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD.

ZONE "AE" — SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD. EVERY ZONE "AE" IS A 1% ANNUAL CHANCE FLOOD. THE 100-YEAR FLOOD, ALSO KNOWN AS THE BASE FLOOD, IS THE FLOOD THAT HAS A 1% CHANCE OF BEING EQUALED OR EXCEED IN ANY GIVEN YEAR. THE SPECIAL FLOOD HAZARD AREA IS THE AREA SUBJECT TO FLOODING BY THE 1% ANNUAL CHANCE FLOOD. THE BASE FLOOD ELEVATION IS THE WATER SURFACE ELEVATION OF THE 1% ANNUAL CHANCE FLOOD.

THIS DETERMINATION HAS BEEN MADE BY SCALING THE PROPERTY ON THE ABOVE REFERENCED MAP AND IS NOT THE RESULT OF AN ELEVATION SURVEY. WARNING: IF THIS SITE IS NOT WITHIN AN IDENTIFIED SPECIAL FLOOD HAZARD AREA, THIS STATEMENT DOES NOT IMPLY THAT THE PROPERTY AND/OR THE STRUCTURES THEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE. ON RARE OCCASIONS, GREATER FLOODS CAN AND WILL OCCUR AND FLOOD HEIGHTS MAY BE INCREASED BY MANMADE OR NATURAL CAUSES. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

SCALE IN FEET
1" = 40'



VICINITY MAP
SCALE: 1" = 1/2 MI.

ABBREVIATIONS

H.C.C.F. = HARRIS COUNTY CLERK'S FILE
No. = NUMBER
R.O.W. = RIGHT OF WAY
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STM. SWR. = STORM SEWER
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S.E.T. = SAFETY END TREATMENT
F.D.C. = FIRE DEPARTMENT CONNECTION
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LEGEND

x68.00	ELEVATION
x:G 68.10	TOP OF CURB
x:G 67.75	GUTTER
RIM 68.80	RIM
FL 65.30	FLOWLINE
	AREA INLET
	C INLET
	MANHOLE
	SAMPLE WELL
	GREASE TRAP
CO	CLEAN OUT
	BOLLARD
	POWER POLE
	DOWN GUY
	FIRE HYDRANT
	WATER VALVE
	WATER METER
	STREET SIGN
	AREA LIGHT
	MAILBOX
	TELEPHONE ENCLOSURE
	TELEPHONE CABLE MARKER
	GAS METER
	GAS VALVE
	ELECTRIC BOX
	TRAFFIC SIGNAL POLE
	CABLE TV BOX
	WATER SPIGOT
	TOP OF BANK
	TOE OF DITCH/GRADE BREAK
	CENTERLINE OF DITCH
	BERM TOP
	CHAIN LINK FENCE
	WROUGHT IRON FENCE
	PIPE FENCE
	WOOD FENCE
OHE	OVERHEAD ELECTRIC LINE
	SANITARY SEWER
STM	STORM SEWER
	OVERHANG/COVERED AREA
	CONCRETE
	GRAVEL
	ASPHALT

TOPOGRAPHIC SURVEY

BEING
ALL OF A CALLED 40.00 ACRE TRACT OF LAND RECORDED IN THE NAME OF HUFFMAN INDEPENDENT SCHOOL DISTRICT, H.C.C.F. No. D777467 AND ALL OF A CALLED 40.00 ACRE TRACT OF LAND RECORDED IN THE NAME OF HUFFMAN INDEPENDENT SCHOOL DISTRICT, H.C.C.F. No. X350918, AND PART OF A CALLED 10.00 ACRE TRACT OF LAND RECORDED IN THE NAME OF HUFFMAN INDEPENDENT SCHOOL DISTRICT, H.C.C.F. No. Z440044, AND PART OF A CALLED 10.100 ACRE TRACT OF LAND RECORDED IN THE NAME OF HUFFMAN INDEPENDENT SCHOOL DISTRICT, H.C.C.F. No. X333149
IN THE
GILBERT BROOKS SURVEY
ABSTRACT No. 6
AND
JOHN MERRY SURVEY
ABSTRACT No. 49
HARRIS COUNTY, TEXAS

REVISION: (08/13/24) ADDITION OF FINISHED FLOOR ELEVATION ON HIGH SCHOOL BUILDING.
REVISION: (02/10/25) ADDITIONAL TOPOGRAPHIC INFORMATION INCLUDED.

BENCHMARK — ELEV. 74.44'

FEMA Rlm# 160170 BEING A BRASS DISC STAMPED "RM 160170" LOCATED FROM FM 2100 AT FM 1960, TRAVEL +/- 2.3 MILES ON FM 1960 TO BRIDGE AT CEDAR BAYOU, MONUMENT IS IN CONCRETE RAIL AT NW CORNER OF BRIDGE 3.5 EAST OF WEST END.
(NAVD 88, 2001 ADJUSTMENT.)

TEMPORARY BENCHMARK (T.B.M.) "A" ELEV. 72.98'

BEING A BOX-CUT ON A CONCRETE SAFETY END TREATMENT OF A 24" RCP LOCATED ALONG THE EASTERLY RIGHT-OF-WAY OF WILLY LANE, APPROXIMATELY 1,985 FEET NORTH OF THE INTERSECTION OF WILLY LANE AND HUFFMAN-EASTGATE ROAD, AS SHOWN ON SHEET 3.
(NAVD 88, 2001 ADJUSTMENT.)

TEMPORARY BENCHMARK (T.B.M.) "B" ELEV. 70.27'

BEING A BOX-CUT ON THE BACK OF CURB ALONG THE EASTERLY RIGHT-OF-WAY OF WILLY LANE, APPROXIMATELY 149 FEET NORTH OF THE INTERSECTION OF WILLY LANE AND HUFFMAN-EASTGATE ROAD, AS SHOWN ON SHEET 1.
(NAVD 88, 2001 ADJUSTMENT.)

TEMPORARY BENCHMARK (T.B.M.) "C" ELEV. 68.53'

BEING A BOX-CUT LOCATED ON A 42" RCP AT THE NORTHWEST CORNER OF THE INTERSECTION OF HUFFMAN-EASTGATE ROAD AND HOLCOMB ROAD, AS SHOWN ON SHEET 1.
(NAVD 88, 2001 ADJUSTMENT.)

TEMPORARY BENCHMARK (T.B.M.) "D" ELEV. 72.98'

BEING A BOX-CUT IN CONCRETE OF AN AREA INLET LOCATED APPROXIMATELY 1,781 FEET NORTH OF THE INTERSECTION OF HUFFMAN-EASTGATE ROAD AND HOLCOMB ROAD, AS SHOWN ON SHEET 3.
(NAVD 88, 2001 ADJUSTMENT.)

I HEREBY CERTIFY THAT THIS SURVEY WAS MADE ON THE GROUND AND THAT THIS PLAT CORRECTLY REPRESENTS THE FACTS FOUND AT THE TIME OF SURVEY.

MICHAEL HALL
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION No.: 5765

STATE OF TEXAS
MICHAEL HALL
5765
REGISTERED PROFESSIONAL LAND SURVEYOR

DATE:	07/12/24
SCALE:	1" = 40'
BOOK No.:	
DRAWN BY:	N.P.
CHECKED BY:	M.H.
PROJECT No.:	CS 24105
DRAWING No.:	1 OF 3

Civil-Surv Land Surveying,LLC
10590 WESTOFFICE DRIVE, SUITE #100
HOUSTON, TEXAS 77042
OFFICE: (713) 839-9181
TBPELS No. 10143800
Email: michael@civil-survnet

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HOUSTON PBK.com
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Houston, TX 77046
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713-961-4571 F
TX Firm: F-3709

KIM DYNAM
T 281-397-9304
LANDSCAPE
EDGELAND
T 713-965-0608
STRUCTURAL
KUBALA ENGINEERS
T 713-665-0608
CIVIL
LEAF ENGINEERS
T 713-965-0608
ACOUSTIC
BAL LLC
T 512-476-1644
AV/VIDEO
BEAM PROFESSIONALS
T 713-965-0608
FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS,LLC
T 281-350-2323

NEW CTE CENTER & HARGRAVE HIGH SCHOOL ADDITIONS & RENOVATIONS

25400 WILLY LANE
HUFFMAN, TX 77336
ISSUE FOR PROPOSAL

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

ISSUE FOR PROPOSAL

SURVEY (FOR INFORMATION ONLY)

C 002A

DRAWN BY: Author CHECKED BY: Checker

B:\24\240157 - New CTE Center & Hargrave HS Adds & Renos\FOC\DIG\Dwgs\C 002A SURVEY (FOR INFORMATION ONLY).dwg Last Saved: KTRAN
Tuesday, June 3, 2025 5:13:18 PM

NOTES

1. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A COMMITMENT FOR TITLE INSURANCE, WITH REGARD TO ANY RECORDED EASEMENTS, RIGHTS-OF-WAY OR SETBACKS AFFECTING THE SUBJECT PROPERTY. THERE MAY BE ADDITIONAL EASEMENTS, RESTRICTIONS, OR OTHER MATTERS OF RECORD AFFECTING THE SURVEYED PROPERTY NOT SHOWN HEREON.
2. THE NORTH ARROW SHOWN HEREON IS BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE.
3. ONLY THOSE IMPROVEMENTS THAT WERE EVIDENT FROM A VISUAL INSPECTION OF THE PROPERTY ARE SHOWN ON THIS SURVEY.
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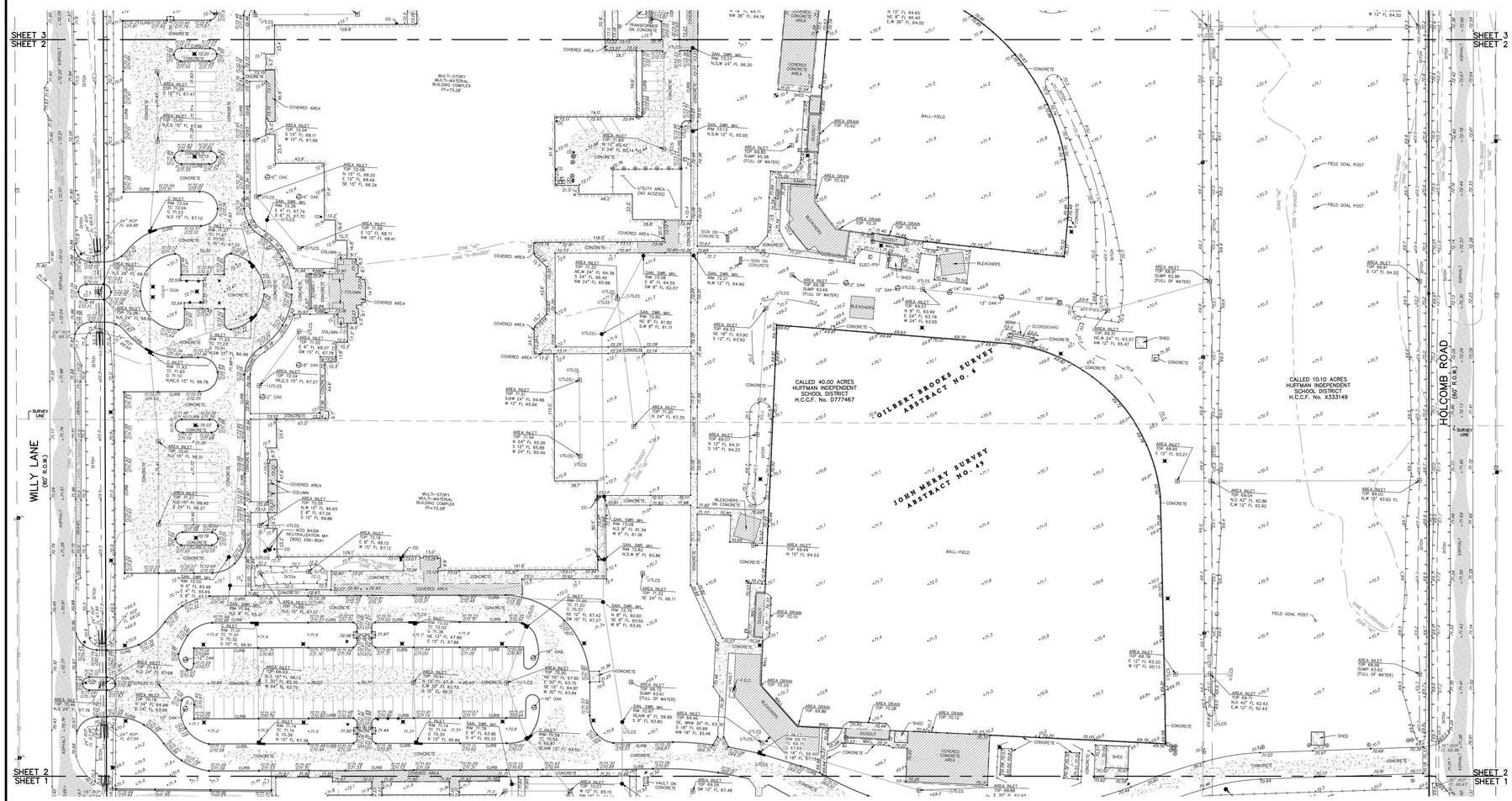

VICINITY MAP

SCALE: 1" = 1/2 MI.

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S.E.T. = SAFETY END TREATMENT
F.D.C. = FIRE DEPARTMENT CONNECTION
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LEGEND

X:65.00	ELEVATION
X:TC 68.10	TOP OF CURB
X:G 67.75	GUTTER
RIM 66.85	RIM
FL 65.30	FLOWLINE
	AREA INLET
	C INLET
	MANHOLE
	SAMPLE WELL
	GREASE TRAP
	CLEAN OUT
	BOLLARD
	POWER POLE
	DOWN GUY
	FIRE HYDRANT
	WATER VALVE
	WATER METER
	STREET SIGN
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	MAILBOX
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	TOP OF BANK
	TOE OF DITCH/GRADE BREAK
	CENTERLINE OF DITCH
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	WROUGHT IRON FENCE
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	WOOD FENCE
OHE	OVERHEAD ELECTRIC LINE
S	SANITARY SEWER
STM	STORM SEWER
	OVERHANG/COVERED AREA
	CONCRETE
	GRAVEL
	ASPHALT

TOPOGRAPHIC SURVEY

BEING
ALL OF A CALLED 40.00 ACRE TRACT OF LAND RECORDED IN THE NAME OF HUFFMAN INDEPENDENT SCHOOL DISTRICT, H.C.C.F. No. D777467 AND ALL OF A CALLED 40.00 ACRE TRACT OF LAND RECORDED IN THE NAME OF HUFFMAN INDEPENDENT SCHOOL DISTRICT, H.C.C.F. No. X350918, AND PART OF A CALLED 10.00 ACRE TRACT OF LAND RECORDED IN THE NAME OF HUFFMAN INDEPENDENT SCHOOL DISTRICT, H.C.C.F. No. Z440044, AND PART OF A CALLED 10.100 ACRE TRACT OF LAND RECORDED IN THE NAME OF HUFFMAN INDEPENDENT SCHOOL DISTRICT, H.C.C.F. No. X333149
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ABSTRACT No. 6
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ABSTRACT No. 49
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REVISION: (08/13/24) ADDITION OF FINISHED FLOOR ELEVATION ON HIGH SCHOOL BUILDING.
REVISION: (02/10/25) ADDITIONAL TOPOGRAPHIC INFORMATION INCLUDED.

BENCHMARK ELEV. 74.44'

FEMA RM# 160170 BEING A BRASS DISC STAMPED "RM 160170" LOCATED FROM FM 2100 AT FM 1960, TRAVEL +/- 2.3 MILES ON FM 1960 TO BRIDGE AT CEDAR BAYOU. MONUMENT IS IN CONCRETE RAIL AT NW CORNER OF BRIDGE 3.5' EAST OF WEST END.
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BEING A BOX-CUT ON A CONCRETE SAFETY END TREATMENT OF A 24" RCP LOCATED ALONG THE EASTERLY RIGHT-OF-WAY OF WILLY LANE, APPROXIMATELY 1,985 FEET NORTH OF THE INTERSECTION OF WILLY LANE AND HUFFMAN-EASTGATE ROAD, AS SHOWN ON SHEET 3.
(NAVD 88, 2001 ADJUSTMENT.)

TEMPORARY BENCHMARK (T.B.M.) "B" ELEV. 70.27'

BEING A BOX-CUT ON THE BACK OF CURB ALONG THE EASTERLY RIGHT-OF-WAY OF WILLY LANE, APPROXIMATELY 149 FEET NORTH OF THE INTERSECTION OF WILLY LANE AND HUFFMAN-EASTGATE ROAD, AS SHOWN ON SHEET 1.
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(NAVD 88, 2001 ADJUSTMENT.)

TEMPORARY BENCHMARK (T.B.M.) "D" ELEV. 72.98'

BEING A BOX-CUT IN CONCRETE OF AN AREA INLET LOCATED APPROXIMATELY 1,791 FEET NORTH OF THE INTERSECTION OF HUFFMAN-EASTGATE ROAD AND HOLCOMB ROAD, AS SHOWN ON SHEET 3.
(NAVD 88, 2001 ADJUSTMENT.)

FLOOD STATEMENT: THE SURVEYOR HAS EXAMINED THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP FOR THE CITY OF HUFFMAN, HARRIS COUNTY, TEXAS, COMMUNITY No. 480287, DATED JUNE 18, 2007, MAP AND PANEL No. 48201C0345L, AND THAT MAP INDICATES THAT THIS TRACT IS WITHIN THE FOLLOWING ZONES:

ZONE "X" — AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN

ZONE "X" SHADED — AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD.

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DATE:	07/12/24
SCALE:	1" = 40'
BOOK No.:	
DRAWN BY:	N.P.
CHECKED BY:	M.H.
PROJECT No.:	CS 24105
DRAWING No.:	2 OF 3

Civil-Surv Land Surveying,LLC
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OFFICE: (713) 839-9181
TBPELS No. 10143800
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713-961-4571 F
TX Firm: F-3709
KIM DYNAMIC T 281.597.9304
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STRUCTURAL KUBALA ENGINEERS T 713-965-0608
LEAF ENGINEERS T 713-965-0608
ACOUSTIC BAL LLC T 512.476.1364
AV/VIDEO BEAM PROFESSIONALS T 713-965-0608
FOOD SERVICE FOODSERVICE DESIGN PROFESSIONALS,LLC T 281-350-2323

NEW CTE CENTER & HARGRAVE HIGH SCHOOL ADDITIONS & RENOVATIONS

25400 WILLY LANE
HUFFMAN, TX 77336
ISSUE FOR PROPOSAL

CLIENT HUFFMAN ISD	
DATE 05/20/2025	PROJECT NUMBER 240157

DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

ISSUE FOR PROPOSAL

SURVEY (FOR INFORMATION ONLY)

C 002B

DRAWN BY: Author
CHECKED BY: Checker

B:\24240157 - New CTE Center & Hargrave HS Adds & Renos\FOC\DIG\Dwgs\C 002B SURVEY (FOR INFORMATION ONLY).dwg Last Saved: KTRAN
Tuesday, June 3, 2025 5:13:24 PM

NOTES

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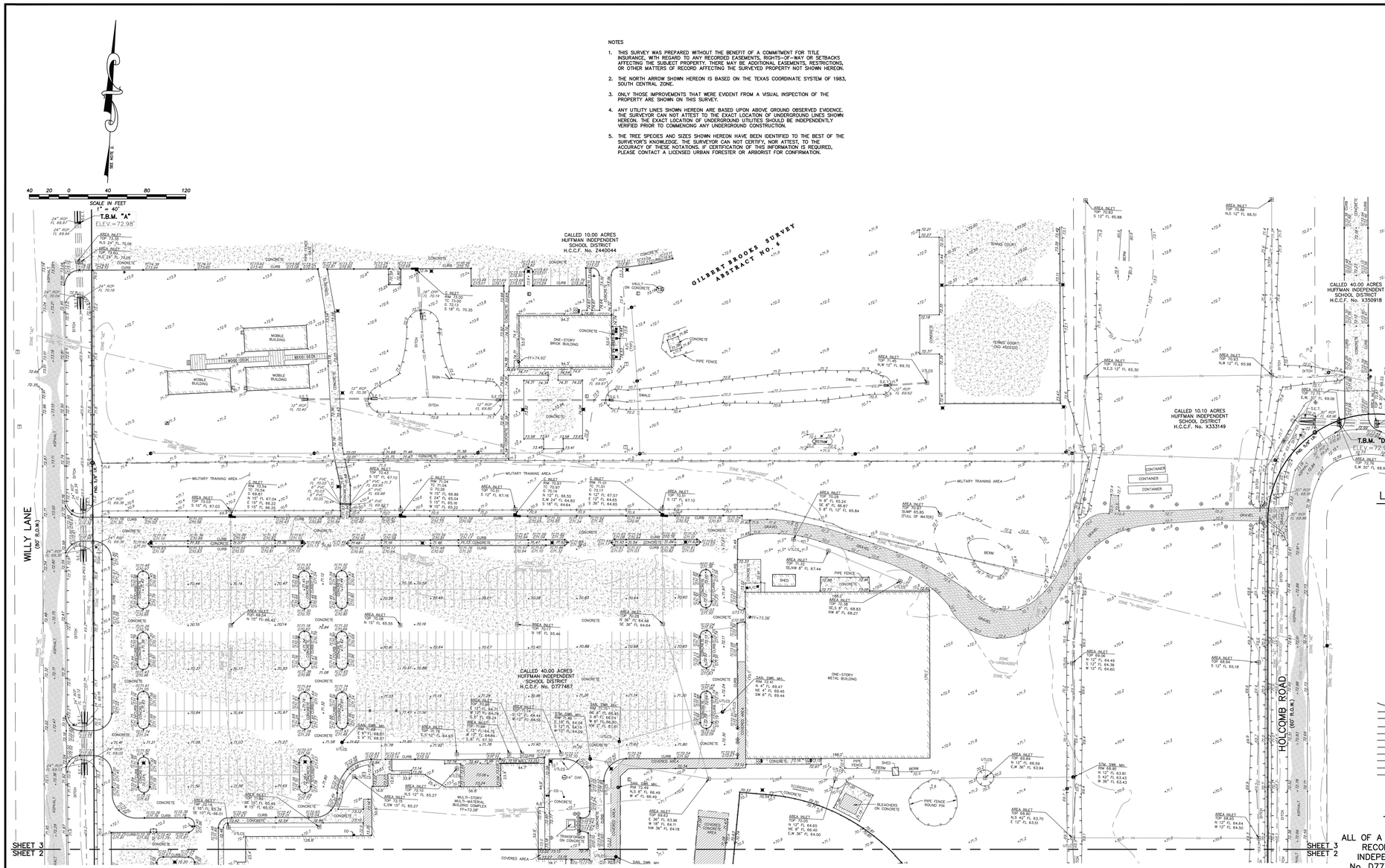

VICINITY MAP

SCALE: 1" = 1/2 MI.

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x68.00	ELEVATION
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TOPOGRAPHIC SURVEY

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IN THE

GILBERT BROOKS SURVEY
ABSTRACT No. 6
AND
JOHN MERRY SURVEY
ABSTRACT No. 49

HARRIS COUNTY, TEXAS

REVISION: (08/13/24) ADDITION OF FINISHED FLOOR ELEVATION ON HIGH SCHOOL BUILDING.
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(NAVD 88, 2001 ADJUSTMENT.)

TEMPORARY BENCHMARK (T.B.M.) "B" ELEV. 70.27'

BEING A BOX-CUT ON THE BACK OF CURB ALONG THE EASTERLY RIGHT-OF-WAY OF WILLY LANE, APPROXIMATELY 148 FEET NORTH OF THE INTERSECTION OF WILLY LANE AND HUFFMAN-EASTGATE ROAD, AS SHOWN ON SHEET 1.
(NAVD 88, 2001 ADJUSTMENT.)

TEMPORARY BENCHMARK (T.B.M.) "C" ELEV. 68.53'

BEING A BOX-CUT LOCATED ON A 42" RCP ON THE NORTHWEST CORNER OF THE INTERSECTION OF HUFFMAN-EASTGATE ROAD AND HOLCOMB ROAD, AS SHOWN ON SHEET 1.
(NAVD 88, 2001 ADJUSTMENT.)

TEMPORARY BENCHMARK (T.B.M.) "D" ELEV. 72.98'

BEING A BOX-CUT IN CONCRETE OF AN AREA INLET LOCATED APPROXIMATELY 1,781 FEET NORTH OF THE INTERSECTION OF HUFFMAN-EASTGATE ROAD AND HOLCOMB ROAD, AS SHOWN ON SHEET 3.
(NAVD 88, 2001 ADJUSTMENT.)

FLOOD STATEMENT: THE SURVEYOR HAS EXAMINED THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAP FOR THE CITY OF HUFFMAN, HARRIS COUNTY, TEXAS, COMMUNITY No. 480287, DATED JUNE 18, 2007, MAP AND PANEL No. 48201C0345L, AND THAT MAP INDICATES THAT THIS TRACT IS WITHIN THE FOLLOWING ZONES:

ZONE "X"	AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN
ZONE "X" SHADED	AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD.
ZONE "AE"	SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT. THE 1% ANNUAL CHANCE FLOOD (100-YEAR FLOOD) ALSO KNOWN AS THE BASE FLOOD, IS THE FLOOD THAT HAS A 1% CHANCE OF BEING EQUALED OR EXCEED IN ANY GIVEN YEAR. THE SPECIAL FLOOD HAZARD AREA IS THE AREA SUBJECT TO FLOODING BY THE 1% ANNUAL CHANCE FLOOD. THE BASE FLOOD ELEVATION IS THE WATER SURFACE ELEVATION OF THE 1% ANNUAL CHANCE FLOOD.

THIS DETERMINATION HAS BEEN MADE BY SCALING THE PROPERTY ON THE ABOVE REFERENCED MAP AND IS NOT THE RESULT OF AN ELEVATION SURVEY; WARNING: IF THIS SITE IS NOT WITHIN AN IDENTIFIED SPECIAL FLOOD HAZARD AREA, THIS STATEMENT DOES NOT IMPLY THAT THE PROPERTY AND/OR THE STRUCTURES THEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE. ON RARE OCCASIONS, GREATER FLOODS CAN AND WILL OCCUR AND FLOOD HEIGHTS MAY BE INCREASED BY MANMADE OR NATURAL CAUSES. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

DATE:	07/12/24
SCALE:	1" = 40'
BOOK No.:	
DRAWN BY:	N.P.
CHECKED BY:	M.H.
PROJECT No.:	CS 24105
DRAWING No.:	3 OF 3

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DRAWN BY: Author

B:\24\240157 - New CTE Center & Hargrave HS Adds & Reno\FOC\DIG\Dwgs\C 002C SURVEY (FOR INFORMATION ONLY).dwg Last Saved: KTRAN
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NEW CTE CENTER & HARGRAVE HIGH SCHOOL ADDITIONS & RENOVATIONS

25400 WILLY LANE
HUFFMAN, TX 77336
ISSUE FOR PROPOSAL

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

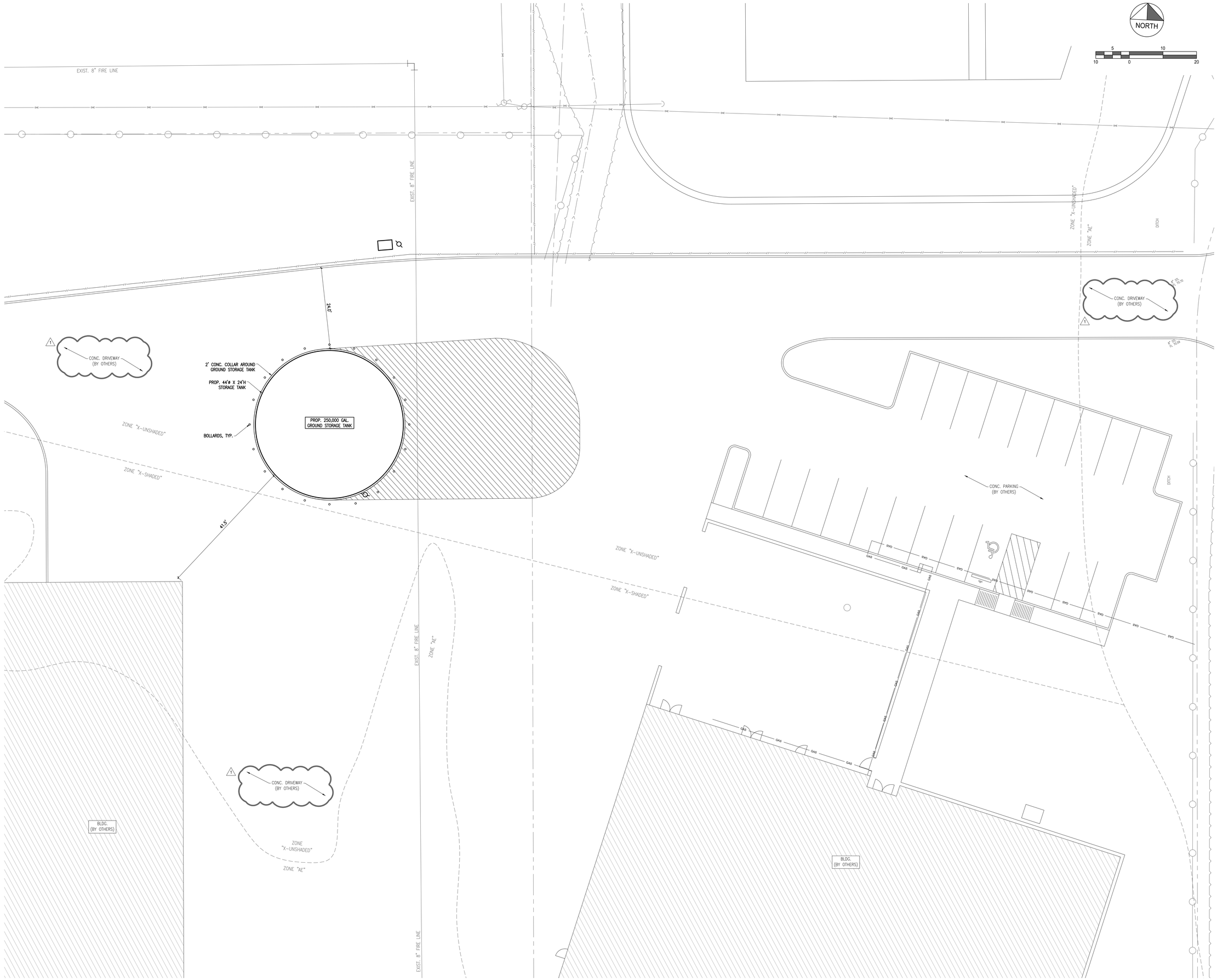
DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

ISSUE FOR PROPOSAL

SURVEY (FOR INFORMATION ONLY)

C 002C



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LEAF ENGINEERS
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NEW CTE CENTER & HARGRAVE HIGH SCHOOL ADDITIONS & RENOVATIONS

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HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS

STATE OF TEXAS
ANDRES M. JUAREZ
118530
LICENSED
PROFESSIONAL ENGINEER
05/20/2025
DIG ENGINEERS
F-18326

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HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

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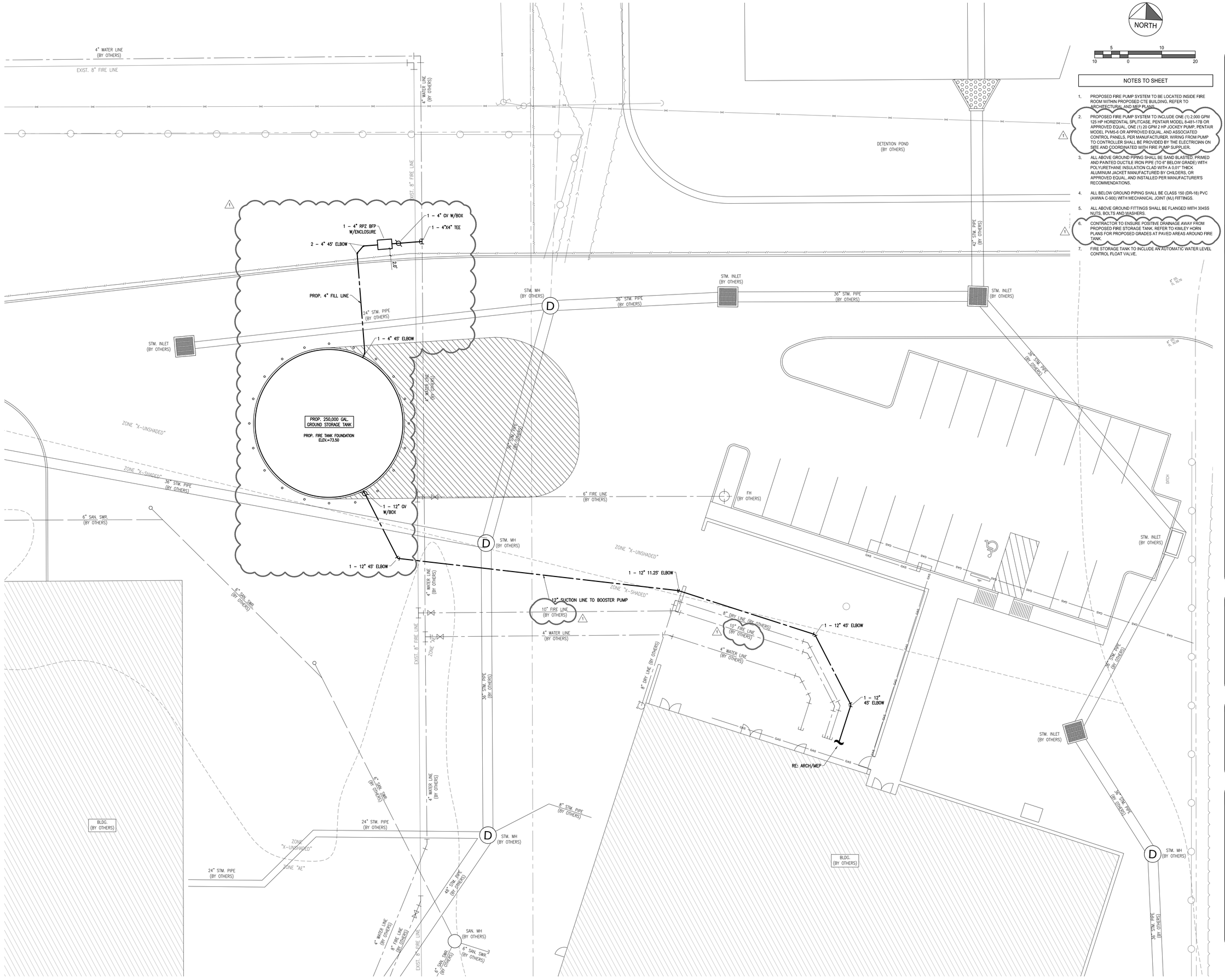
ISSUE FOR PROPOSAL

SITE AND DIMENSIONAL CONTROL PLAN

C 101



NOTES TO SHEET

1. PROPOSED FIRE PUMP SYSTEM TO BE LOCATED INSIDE FIRE ROOM WITHIN PROPOSED CTE BUILDING, REFER TO ARCHITECTURAL AND MEP PLANS.
2. PROPOSED FIRE PUMP SYSTEM TO INCLUDE ONE (1) 2,000 GPM 125 HP HORIZONTAL SPLITCASE, PENTAIR MODEL 8-481-17B OR APPROVED EQUAL, ONE (1) 20 GPM 2 HP JOCKEY PUMP, PENTAIR MODEL PVM5-6 OR APPROVED EQUAL, AND ASSOCIATED CONTROL PANELS, PER MANUFACTURER. WIRING FROM PUMP TO CONTROLLER SHALL BE PROVIDED BY THE ELECTRICIAN ON SITE AND COORDINATED WITH FIRE PUMP SUPPLIER.
3. ALL ABOVE GROUND PIPING SHALL BE SAND BLASTED, PRIMED AND PAINTED DUCTILE IRON PIPE (TO 6" BELOW GRADE) WITH POLYURETHANE INSULATION CLAD WITH A 0.01" THICK ALUMINUM JACKET MANUFACTURED BY CHILDERS, OR APPROVED EQUAL, AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
4. ALL BELOW GROUND PIPING SHALL BE CLASS 150 (DR-18) PVC (AWWA C-900) WITH MECHANICAL JOINT (MJ) FITTINGS.
5. ALL ABOVE GROUND FITTINGS SHALL BE FLANGED WITH 304SS NUTS, BOLTS AND WASHERS.
6. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AWAY FROM PROPOSED FIRE STORAGE TANK. REFER TO KIMLEY HORN PLANS FOR PROPOSED GRADES AT PAVED AREAS AROUND FIRE TANK.
7. FIRE STORAGE TANK TO INCLUDE AN AUTOMATIC WATER LEVEL CONTROL FLOAT VALVE.

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LEAF ENGINEERING
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NEW CTE CENTER & HARGRAVE HIGH SCHOOL ADDITIONS & RENOVATIONS

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UTILITY AND GRADING PLAN

C 201

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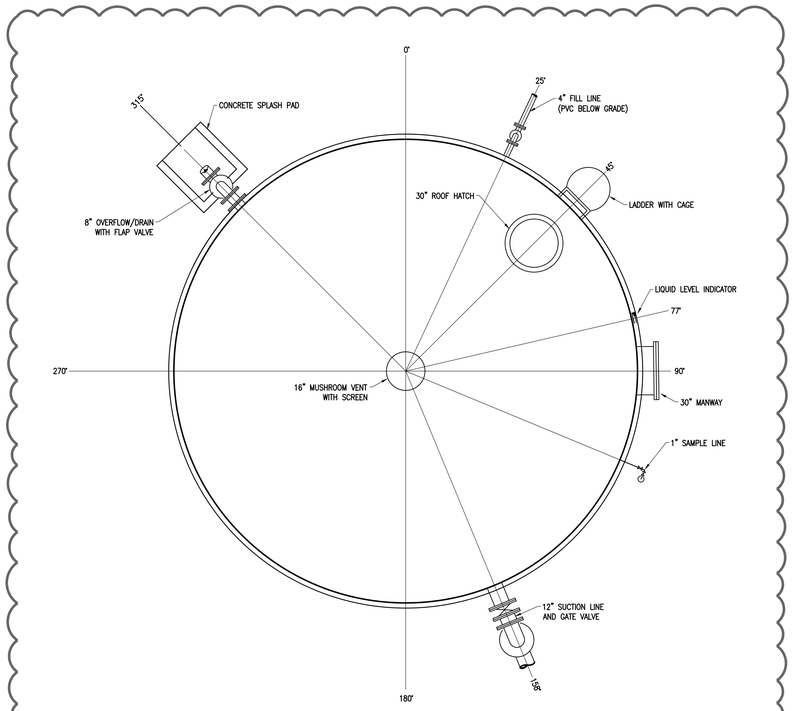
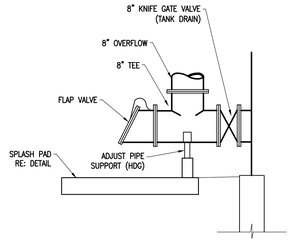
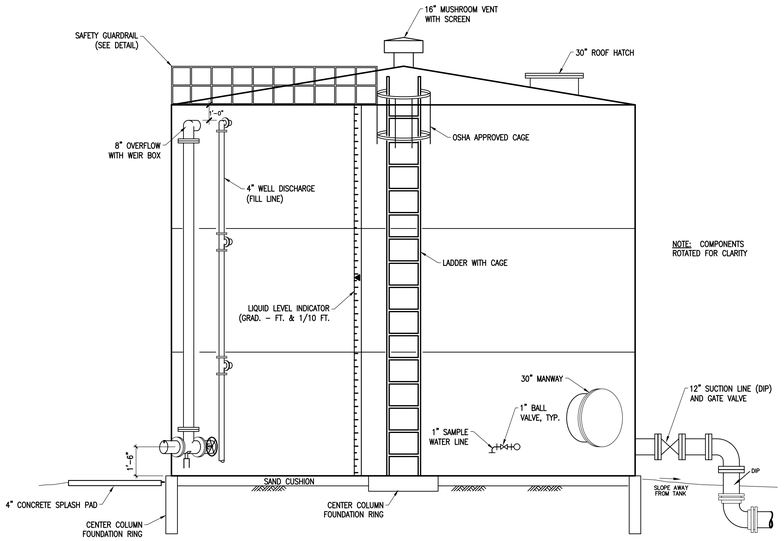


PLAN



OVERFLOW DRAIN DETAIL
N.T.S



ELEVATION

FIRE STORAGE TANK
(250,000 GALLON–NOMINAL 44' X 24')

NOTES TO SHEET

1. PROPOSED FIRE TANK SHALL MEET NFPA 22, 2018 VERSION.
2. TANK FOUNDATION DESIGN TO BE PROVIDED BY TANK MANUFACTURER (GEOTECH REPORT WILL BE PROVIDED).

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STRUCTURAL	
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MEP	
LEAF ENGINEERS	T 713-965-0608
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BAL LLC	T 512-476-3464
ENVELOPE	
BEAM PROFESSIONALS	T 713-965-0608
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FOODSERVICE DESIGN PROFESSIONALS, LLC	T 281-350-2323

NEW CTE CENTER & HARGRAVE HIGH SCHOOL ADDITIONS & RENOVATIONS

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DETAILS

C 401

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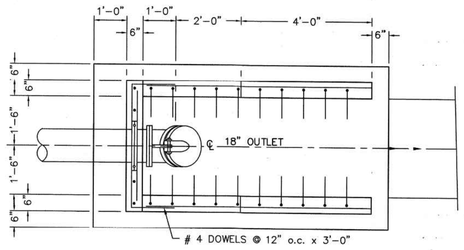
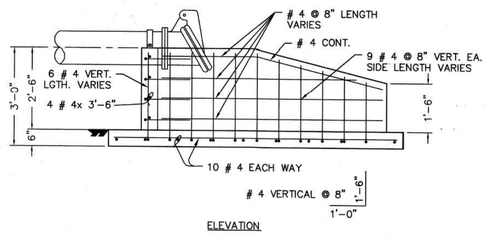
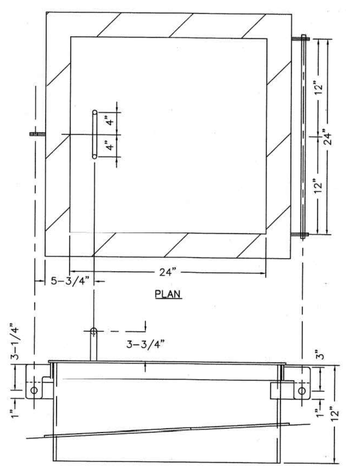


PLAN



ELEVATION

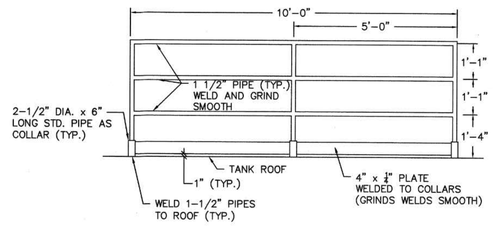
CONCRETE SPLASH PAD
SCALE: 1/2" = 1'-0"

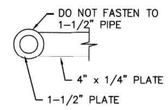


PLAN

ELEVATION

ROOF ACCESS HATCH
SCALE: 1-1/2" = 1'-0"

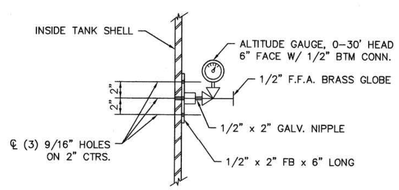




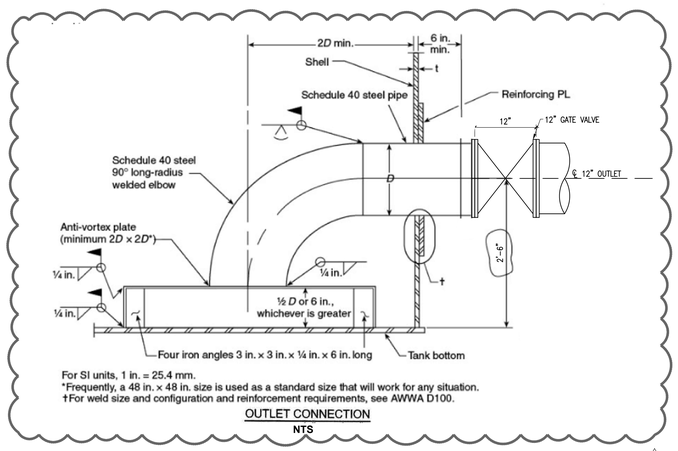
NOTES:

1. PROVIDE 6"x6"x1/4" GUSSET PLATE INSIDE TANK TO STIFFEN ROOF PLATES WHERE POSTS ARE WELDED TO ROOF.
2. HANDRAIL TO BE ROLLED TO CURVATURE OF TANK AND SET 1-3/4" BACK FROM EDGE.

SAFETY GUARDRAIL DETAIL
SCALE: 1/2" = 1'-0"

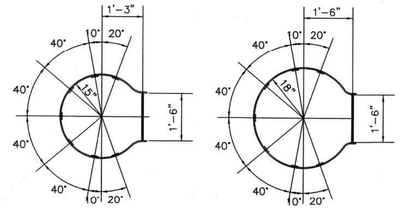


ALTITUDE GAUGE ASSEMBLY
SCALE: 1 1/2" = 1'-0"



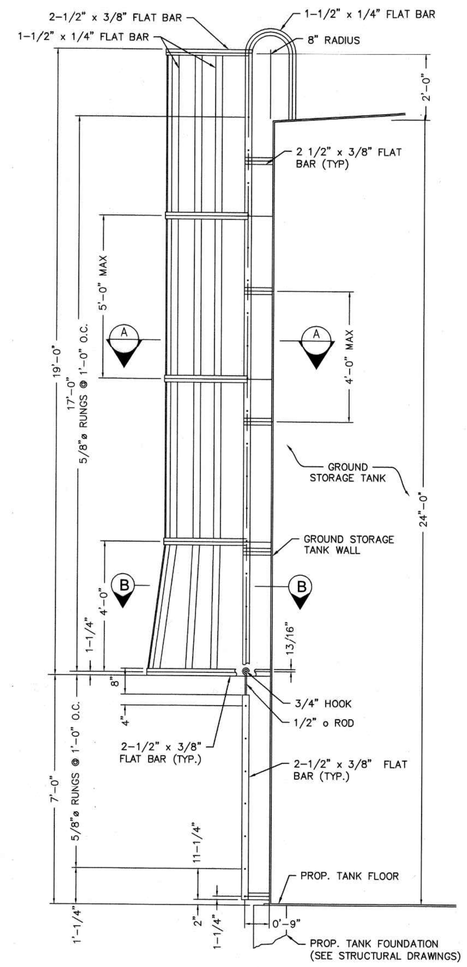
For SI units, 1 in. = 25.4 mm.
*Frequently, a 48 in. x 48 in. size is used as a standard size that will work for any situation.
†For weld size and configuration and reinforcement requirements, see AWWA D100.

OUTLET CONNECTION
NTS



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

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



GROUND STORAGE TANK LADDER
SCALE: 1/2" = 1'-0"

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NEW CTE CENTER & HARGRAVE HIGH SCHOOL ADDITIONS & RENOVATIONS

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DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

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DETAILS

C 402

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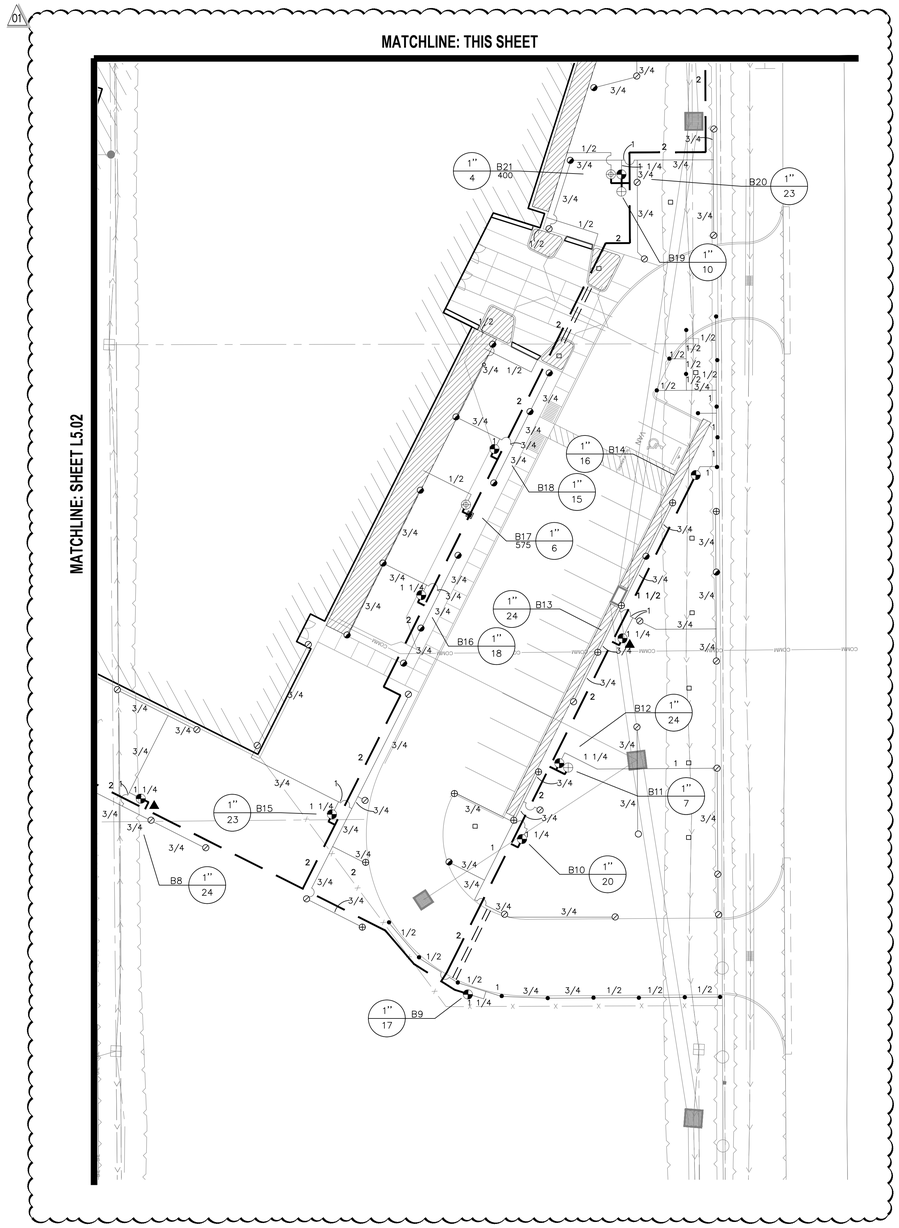

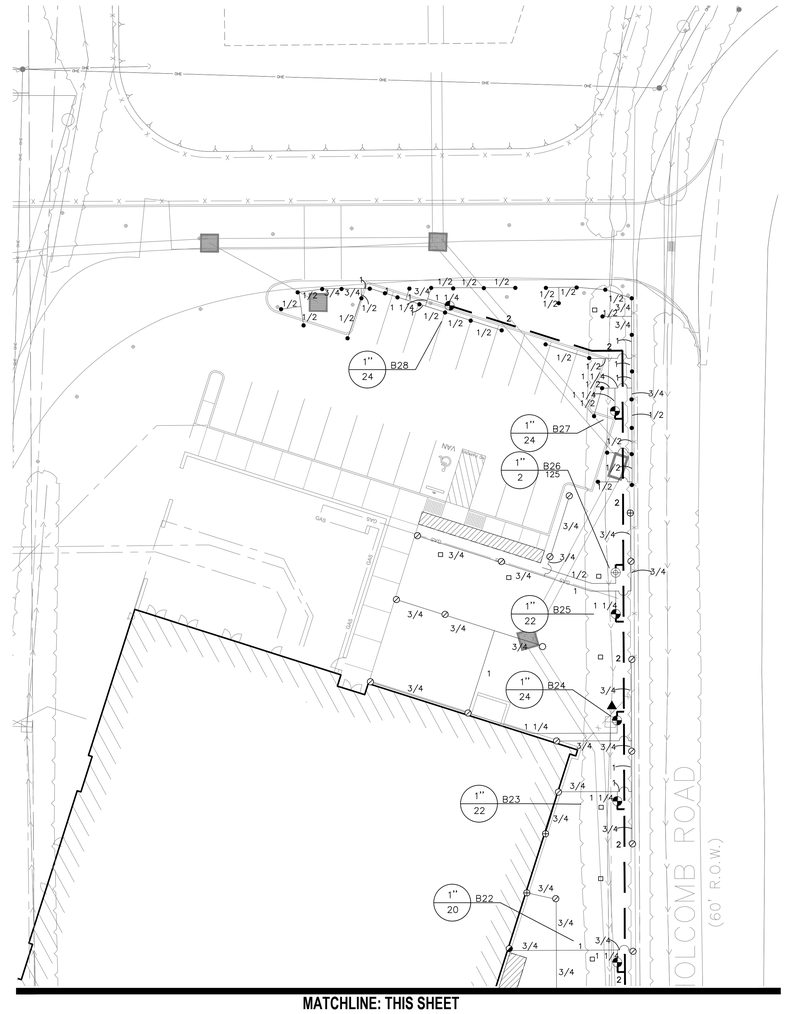

MATCHLINE: THIS SHEET

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TEXAS L.I.C. #658
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EPA WaterSense PARTNER

IRRIGATION IN TEXAS IS REGULATED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) (MC-178) P.O. BOX 13087 T.C.E.Q.'S WEB SITE IS: WWW.TCEQ.STATE.TX.US

LEGEND

- RAIN BIRD 1806-PRS POP UP SPRAY HEAD WITH 5Q-B SERIES STREAM BUBBLER NOZZLE (TWO PER TREE) SEE INSTALLATION NOTE #13 REGARDING TREE BUBBLER LATERAL PIPE
- RAIN BIRD 1804-PRS POP UP SPRAY HEAD WITH MPR SERIES NOZZLE AS NOTED BELOW
- RAIN BIRD 1804-PRS POP UP SPRAY HEAD WITH 4'-SST/4'-CST MPR NOZZLE UNLESS NOTED OTHERWISE.
- NETAFIM TECHLINE TLHCVXR5-12 SERIES DRIP TUBE IN SHRUB BED INSTALLED AT 2" DEPTH SEE INSTALLATION NOTE #16 REGARDING DRIP TUBE LAYOUT IN SHRUB BEDS.
- RAIN BIRD 5000 SERIES, 4" POP UP ROTARY HEAD, PART CIRCLE 1.5 NOZZLE
- RAIN BIRD 5000 SERIES, 4" POP UP ROTARY HEAD, PART CIRCLE 2.5 NOZZLE
- RAIN BIRD 5000 SERIES, 4" POP UP ROTARY HEAD, PART CIRCLE 4.0 NOZZLE
- RAIN BIRD 5000 SERIES, 4" POP UP ROTARY HEAD, FULL CIRCLE 8.0 NOZZLE
- RAIN BIRD PEB SERIES ELECTRIC REMOTE CONTROL VALVE
- RAIN BIRD PEB SERIES ELECTRIC REMOTE CONTROL "TREE BUBBLER" VALVE SEE INSTALLATION NOTE #13 REGARDING TREE BUBBLER LATERAL PIPE
- NETAFIM NCZ-1S CONTROL ZONE KIT WITH 50 PSI PRESSURE REGULATOR AND 155 SCREEN FILTER
- RAIN BIRD #33DNP QUICK COUPLING VALVE WITH LOCKING PURPLE COVER AND 3/4" PVC BALL VALVE
- WILKINS 375-B SERIES REDUCED PRESSURE TYPE BACKFLOW PREVENTOR INSTALLED PER CITY CODE INSTALLED IN HEATED, INSULATED, STRONG BOX ENCLOSURE RP DEVICE AND ABOVE GRADE PIPING SHALL BE WRAPPED IN THERMOSTATICALLY CONTROLLED HEAT TAPE 110V POWER SHALL BE PROVIDED BY GC
- APPROXIMATE POINT OF CONNECTION TO DOMESTIC WATER LINE BY GC
- RAIN BIRD ESPLXME2P AUTOMATIC CONTROLLER WITH WR2-RFC WIRELESS RAIN / FREEZE SENSOR AND (2) ESPLXMSM12 EXPANSION MODULES LOCATE SENSOR AS FIELD DIRECTED BY THE LANDSCAPE ARCHITECT
- CLASS 200 PVC MAINLINE PIPE
- CLASS 200 (EXCEPT 1/2 INCH #315) PVC LATERAL PIPE
- ONE 4" CLASS 200 SLEEVE PIPE UNLESS NOTED OTHERWISE
- TWO 4" CLASS 200 SLEEVE PIPES UNLESS NOTED OTHERWISE

L.I.C. SHALL SELECT MPR SPRAY NOZZLES FOR "HEAD-TO-HEAD" COVERAGE, ADJUSTED FOR NO OVERSPRAY ONTO WALLS AND WALKS. NO OVERSPRAY INTO STREETS IS PERMITTED.

0 10' 20'
1" = 20'

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STRUCTURAL
LEAF
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MEP
LEAF
T 713-243-3335
THEATER + ACOUSTICS + AV
WJHW
T 713-526-0903
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TFSC
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SPORTS ARCHITECTURE
PBK SPORTS
T 713-961-0608
BUILDING ENVELOPE
LEAF
T 713-943-3201

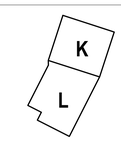
New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE and HARGRAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS



KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
ADAM VERCA
20811
LICENSED IRRIGATOR
04 / 15 / 2025 05/20/2025

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
01	ADDENDUM 01	06/03/2025

IRRIGATION PLAN

L5.03

File Path: Z:\Edgeland\P_Project Drive\TEXAS\24_TX-Huffman-240157\1 Incoming\From Irrigation\250602_updated irrigation
Plot Stamp:
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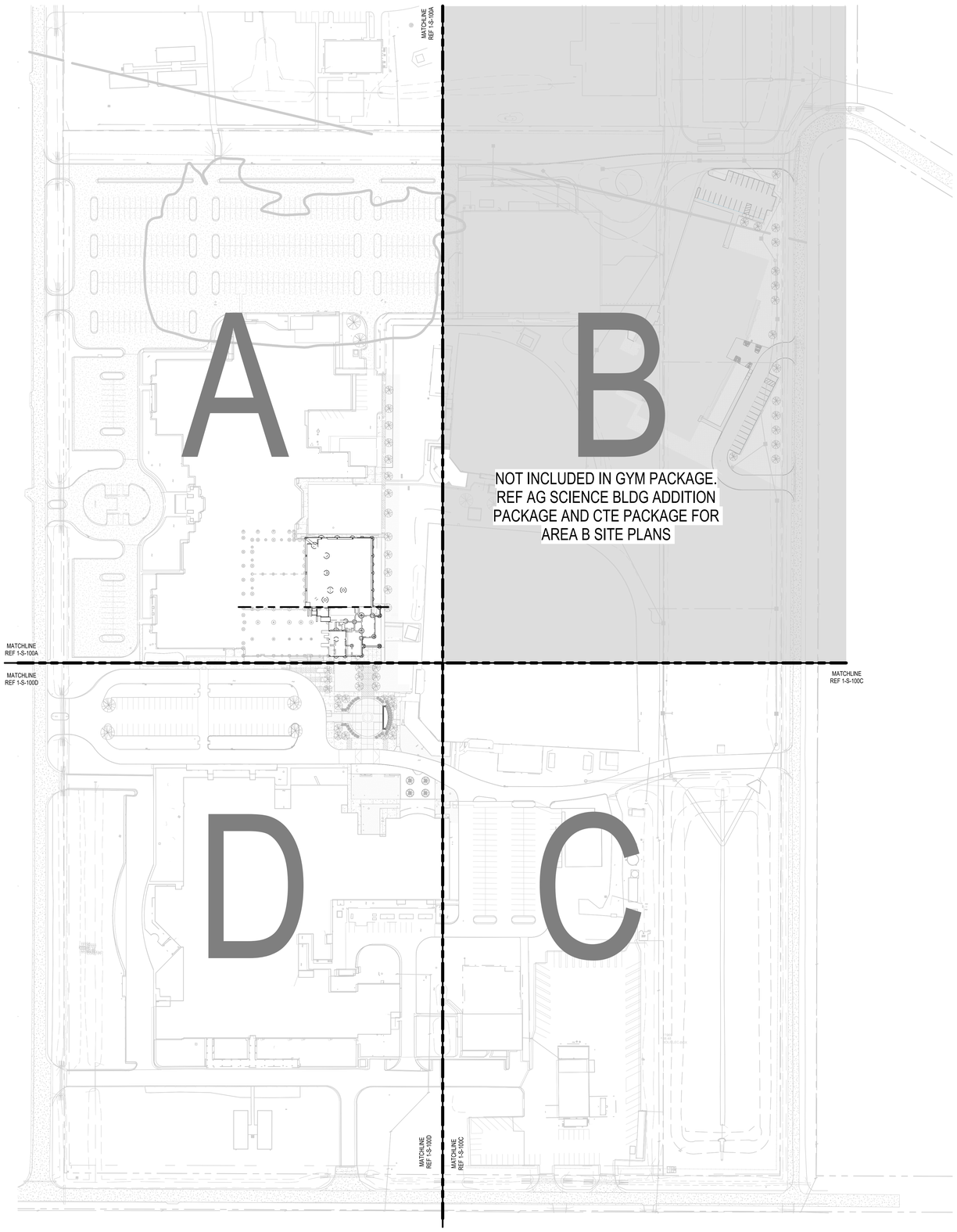
COMPOSITE STRUCTURAL SITE PLAN
S-100
FOR BLUEBEAM LABELING/OCR:

0"
1"



1 COMPOSITE STRUCTURAL SITE PLAN
1" = 80'-0"

STRUCTURAL SCOPE ITEMS (HARGRAVES HIGH SCHOOL)

1. GYMNASIUM / ATHLETIC ADDITION
   A. A GYMNASIUM / ATHLETIC ADDITION IS PLANNED IN AREAS D & E. THE FIRST FLOOR WILL CONSIST OF 5" SLAB-ON-GRADE. PERIMETER WALLS AND BRACES WILL BE SUPPORTED BY GRADE BEAMS AND BELLED PIERS. THE ROOF WILL BE SUPPORTED BY LWF OVER A NON-COMPOSITE ROOF DECK SUPPORTED BY STEEL JOISTS AND WIDE FLANGE STEEL FRAMING. EXTERIOR GLAZING AND ARCHITECTURAL ELEMENTS WILL BE SUPPORTED BY TUBE FRAMING. WIND BRACES AND MOMENT FRAMES WILL BE USED AS THE MAIN WIND FRAME RESISTING SYSTEM FOR THE NEW ADDITION. REFER TO S-101D, S-101E, S-102D, S-102E, S-103D, S-104D, AND S-104E.

2. LANDSCAPING ITEMS
   A. PLAZA ENTRY GATE. REF 1/S-321 FOR MORE INFO. REF LANDSCAPING FOR LOCATION.
   B. CONCRETE STEPS WITH RETAINING WALL. REF 4/S-321 FOR DETAIL. REF LANDSCAPING FOR LOCATION.
   C. FREE STANDING SEAT WALL. REF 7/S-320 FOR DETAIL. REF LANDSPACING FOR LOCATIONS.
   D. CONCRETE SEAT WALL WITH BENCH. REF 8/S-320 FOR DETAIL. REF LANDSCAPING FOR LOCATIONS.

3. MECHANICAL RENOVATION IN AREA F & SERVICE YARD
   A. EQUIPMENT PADS IN SERVICE YARD FOR REPLACED CHILLERS AND NEW CHILLER. REF S-101F
   B. NEW PIPE STANCHIONS IN SERVICE YARD FOR REVISED PIPING. REF MECHANICAL FOR CHANGES TO PIPING IN SERVICE YARD, REQUIRED PIPE STANCHION SPACING BASED ON PIPING ARRANGEMENT, ETC. REF TYPICAL PIPE STANCHION DETAILS ON 3/S-320 & 4/S-320.
   C. NEW HOUSEKEEPING PADS IN EXISTING CENTRAL PLAN. REF 1/S-304 FOR DETAIL. REF MECH FOR SIZE AND LOCATIONS.

4. CHAIN LINK FENCE
   A. REFER TO 9/S-304 FOR CHAIN LINK FENCE FOUNDATION DETAIL. LOCATIONS SHOWN ON STRUCTURAL SITE PLAN ARE APPROXIMATE. REFER TO ARCH AND LANDSCAPING FOR LOCATIONS.

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6. RENOVATIONS
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   B. NEW OPENINGS IN EXISTING CMU WALLS.
   C. INFILLED OPENINGS IN EXISTING CMU WALLS.
   D. NEW CMU WALLS IN EXISTING
   E. INFILLED FLOOR AT EXISTING STAIRWELL

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Houston, TX 77046
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713-961-4571 F
TX Firm: BR 1808

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STRUCTURAL
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MEP
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New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

KEY PLAN
E
D
NORTH: PLAN TRUE

STATE OF TEXAS
JOHN R. KUBALA
106120
05/20/2025
Kubala Engineers
F-23612

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

CHECKED BY: Checker
DRAWN BY: Author

COMPOSITE STRUCTURAL SITE PLAN

S-100

Plot Stamp:
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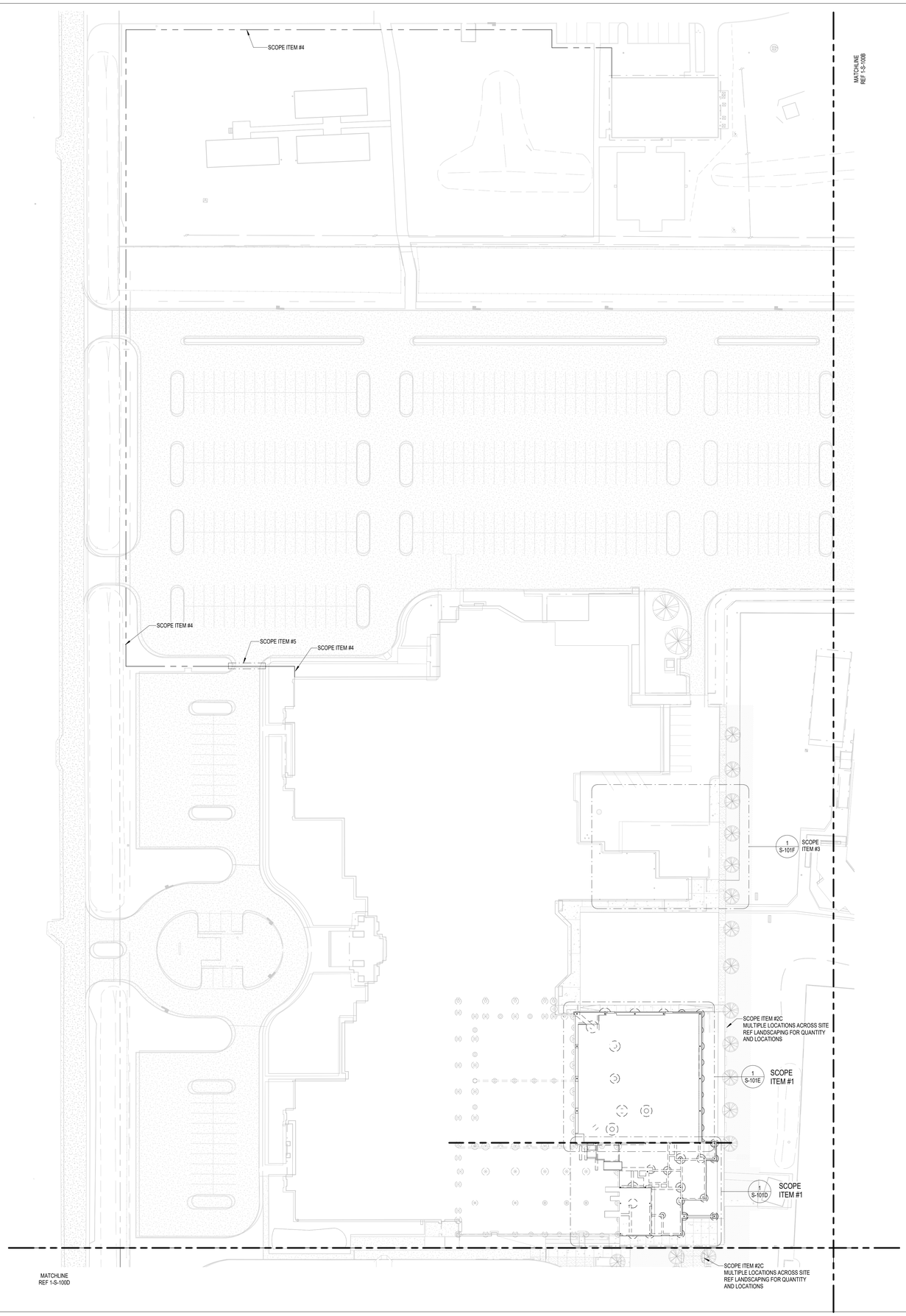
STRUCTURAL SITE PLAN - AREA A

S-100A

FOR BLUEBEAM LABELING/OCR:

0"

1"



1 STRUCTURAL SITE PLAN - AREA A

1" = 40'-0"

STRUCTURAL SCOPE ITEMS (HARGRAVES HIGH SCHOOL)

1. GYMNASIUM / ATHLETIC ADDITION
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   B. CONCRETE STEPS WITH RETAINING WALL. REF 4/S-321 FOR DETAIL. REF LANDSCAPING FOR LOCATION.
   C. FREE STANDING SEAT WALL. REF 7/S-320 FOR DETAIL. REF LANDSPACING FOR LOCATIONS.
   D. CONCRETE SEAT WALL WITH BENCH. REF 8/S-320 FOR DETAIL. REF LANDSCAPING FOR LOCATIONS.

3. MECHANICAL RENOVATION IN AREA F & SERVICE YARD
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   B. NEW PIPE STANCHIONS IN SERVICE YARD FOR REVISED PIPING. REF MECHANICAL FOR CHANGES TO PIPING IN SERVICE YARD, REQUIRED PIPE STANCHION SPACING BASED ON PIPING ARRANGEMENT, ETC. REF TYPICAL PIPE STANCHION DETAILS ON 3/S-320 & 4/S-320.
   C. NEW HOUSEKEEPING PADS IN EXISTING CENTRAL PLAN. REF 1/S-304 FOR DETAIL. REF MECH FOR SIZE AND LOCATIONS.

4. CHAIN LINK FENCE
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   E. INFILLED FLOOR AT EXISTING STAIRWELL.

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ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS

E
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KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
JOHN R. KUBALA
106120
LICENSED PROFESSIONAL ENGINEER
05/20/2025
Kubala Engineers
F-23612

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

CHECKED BY: Checker

DRAWN BY: Author

STRUCTURAL SITE PLAN - AREA A

S-100A

Plot Stamp:
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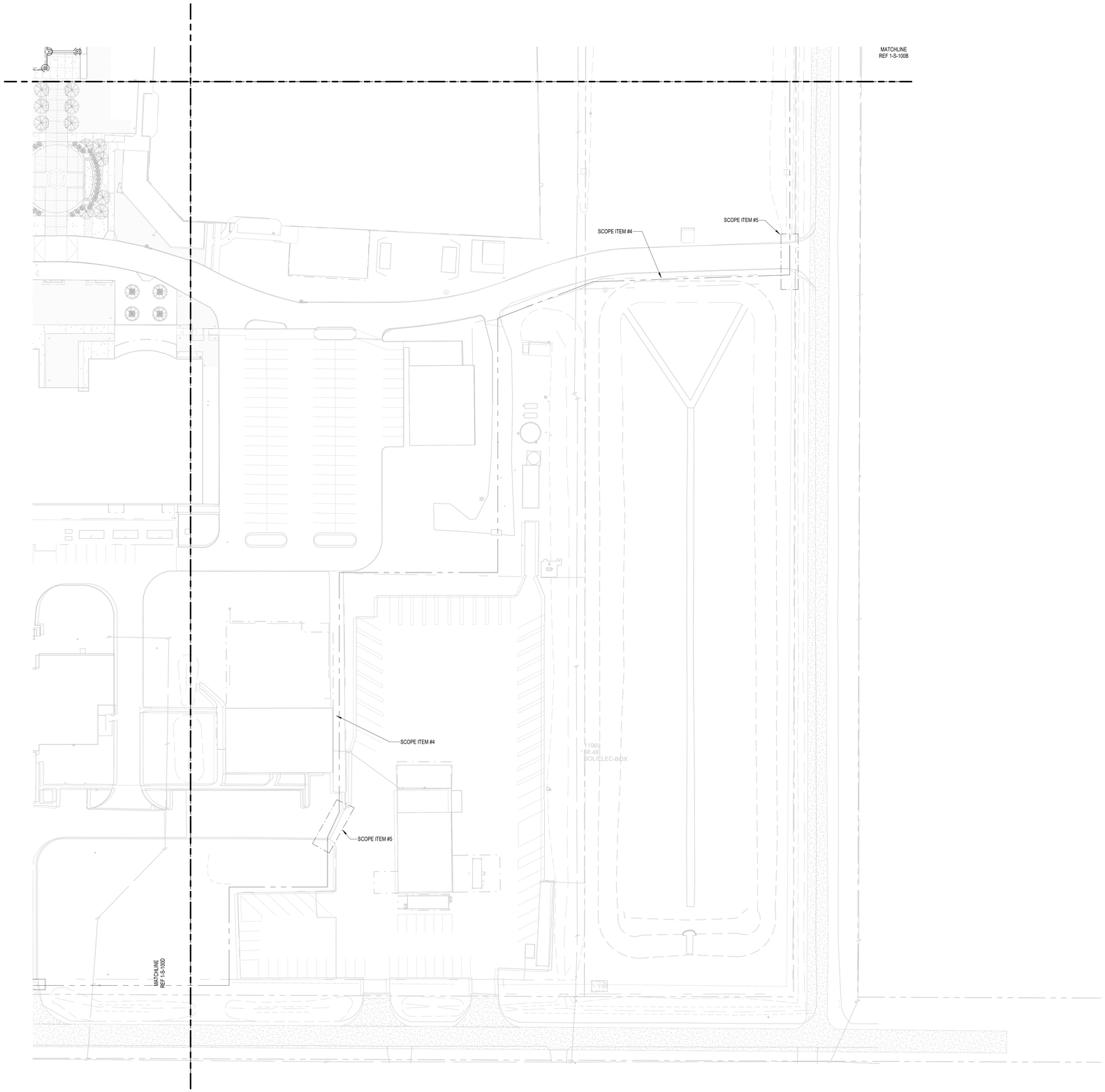
STRUCTURAL SITE PLAN - AREA C
S-100C
FOR BLUEBEAM LABELING/OCR:

0"
1"



1 STRUCTURAL SITE PLAN - AREA C
1" = 40'-0"

STRUCTURAL SCOPE ITEMS (HARGRAVES HIGH SCHOOL)

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   D. CONCRETE SEAT WALL WITH BENCH. REF 8/S-320 FOR DETAIL. REF LANDSCAPING FOR LOCATIONS.

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New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT

E
D

KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
JOHN R. KUBALA
106120
05/20/2025
Kubala Engineers
F-23812

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

CHECKED BY: Checker
DRAWN BY: Author

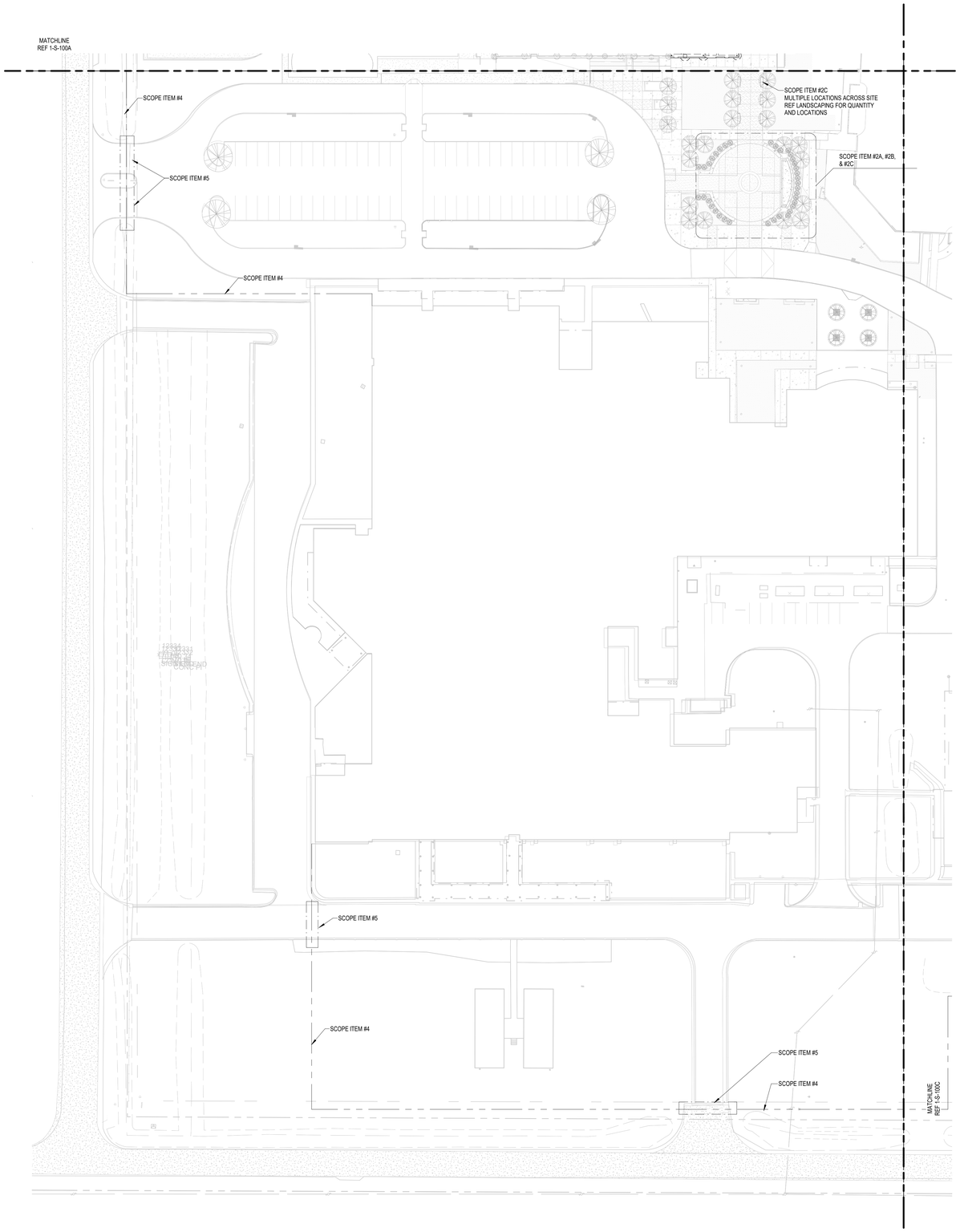
STRUCTURAL SITE PLAN - AREA C

S-100C

Plot Stamp:
6/3/2025 6:11:24 PM

STRUCTURAL SITE PLAN - AREA D
S-100D
FOR BLUEBEAM LABELING/OCR:

0"
1"



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ELEC
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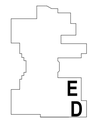

KEY PLAN
NORTH: PLAN TRUE

05/20/2025
Kubala Engineers
F-23612

CLIENT
HUFFMAN ISD

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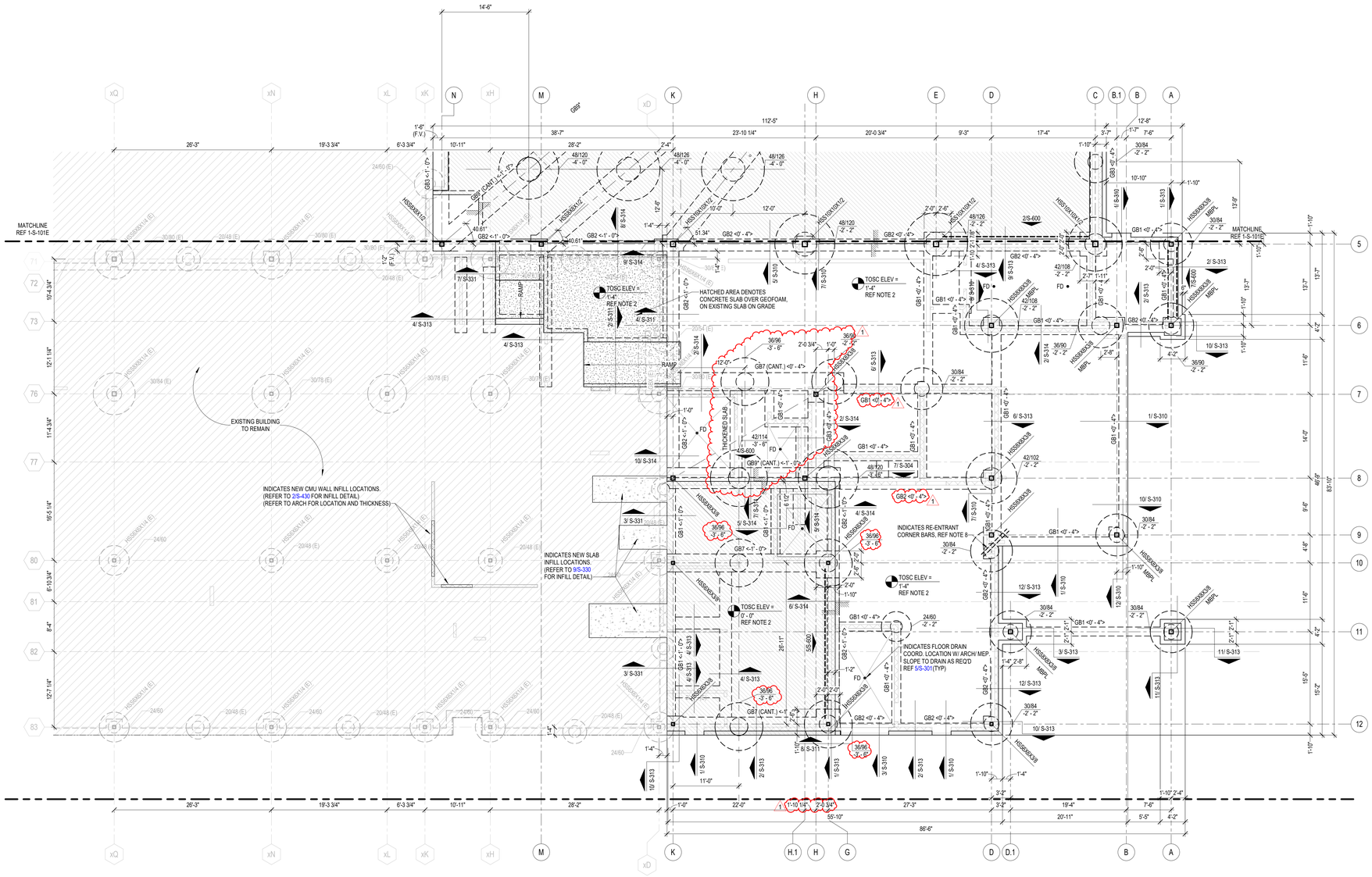
CHECKED BY: Checker
DRAWN BY: Author

STRUCTURAL SITE PLAN - AREA D

S-100D

Plot Stamp:
6/3/2025 6:11:24 PM

FOUNDATION PLAN - AREA D
S-101D
FOR BLUEBEAM LABELING/OCR:



1 FOUNDATION PLAN AREA D
1/8" = 1'-0"

FOUNDATION PLAN NOTES

1. REFER TO PLAN FOR TOP OF STRUCTURAL CONCRETE ELEVATIONS (TOSC EL). ALL ELEVATIONS SHOWN ON THE PLAN ARE BASED ON A LEVEL ONE REFERENCE ELEVATION = 0'-0". THIS REFERENCE ELEVATION IS EQUIVALENT TO THE LEVEL ONE MEAN SEA LEVEL ELEVATION = REF CIVIL SHOWN IN THE CIVIL AND ARCHITECTURAL DRAWINGS AND IS NOT INTENDED TO ESTABLISH THE ACTUAL SEA LEVEL ELEVATION OF ANY PORTION OF THE STRUCTURE.

2. 5" THICK CONCRETE SLAB ON GRADE REINFORCED WITH #3@10" OC EACH WAY OR #4@16" OC EACH WAY, ON 2 3/4" CHAIRS FOR #3 BARS, 2 1/2" CHAIRS FOR #4 BARS SPACED AT 30" OC EACH WAY.
PLACE THE SLAB ON 15 MIL WATER VAPOR BARRIER OVER COMPACTED SELECT FILL (SOIL REPORT) FOR SLAB JOINT DETAILS REFER TO 1/S-301 AND 2/S-301.

3.1 TOP OF INTERIOR GRADE BEAM ELEVATION SHALL BE = -1'-0" UON.
TOP OF PERIMETER GRADE BEAM ELEVATION SHALL BE = -1'-0" UON.

3.2 TOP OF INTERIOR/ EXTERIOR PLINTH ELEVATION SHALL BE = -1'-0" UON.
TOP OF INTERIOR PIER ELEVATION WITHOUT PLINTH SHALL BE = -1'-0" UON.
TOP OF INTERIOR PIER ELEVATION WITH PLINTH SHALL BE = -3'-6" UON.
TOP OF INTERIOR PIER ELEVATION WITH GRADE BEAM SHALL BE = -3'-6" UON.
TOP OF EXTERIOR PIER ELEVATION SHALL BE = -3'-6" UON.

4. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENTS AND DIMENSIONS OF RAISED OR DEPRESSED SLAB AREAS, SLOPES, CURBS, AND DRAINS. REFER TO TYPICAL DETAILS FOR REINFORCEMENT REQUIREMENTS.

5. GC COORDINATE ALL PENETRATIONS AND UNDERGROUND UTILITIES WITH MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS. REFER TO TYPICAL DETAILS FOR ADDITIONAL REINFORCEMENT REQUIREMENTS.

6. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY ARCHITECT AND STRUCTURAL ENGINEER OF ANY DISCREPANCIES.

7. GC COORDINATE ALL SLAB EDGE DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION.

8. PROVIDE (2) - #5 x 5'-0" LONG BAR IN SLAB AT RE-ENTRANT CORNERS, TYPICAL. INCLUDING RE-ENTRANT CORNERS AROUND THE PERIMETER OF THE BUILDINGS, FLOOR RECESSES AND OPENINGS.

9. GC COORDINATE ALL THE SIZE AND EXTENT OF ALL BRICK LEDGES SHOWN ON PLAN OR DETAILS WITH ARCHITECTURAL DRAWINGS.

10. REF S0.xx SERIES DRAWINGS FOR GENERAL NOTES AND TYP DETAILS

11. REF S3.xx SERIES DRAWINGS FOR FOUNDATION AND SLAB-ON-GRADE DETAILS.

12. REF S4.xx SERIES DRAWINGS FOR CMU DETAILS.

13. REF S5.xx SERIES DRAWINGS FOR STEEL DETAILS.

14. REF S6.xx SERIES DRAWINGS FOR STEEL BRACE ELEVATIONS AND DETAILS.

15. REFER TO ARCH AND PLUMBING DWGS FOR THE SIZE, NUMBER AND LOCATION OF ALL THE TRENCHES, AND FLOOR DRAINS. REF 10/S-301 FOR TRENCH DETAIL AND REF 4/S-301 FOR FLOOR DRAIN DETAIL.

16. AT INTERIOR CMU WALL LOCATIONS, WHERE THE GRADE BEAM IS NOT SHOWN, PROVIDE SLAB TURNDOWN PER DETAIL 4/S-313 TYPICAL. AT INTERIOR GLAZING LOCATIONS, WHERE THE GRADE BEAM IS NOT SHOWN, PROVIDE TURNDOWN SIMILAR TO DETAIL 4/S-313; TYPICAL.

17. PIERS/FOOTINGS WITHOUT CENTERLINES SHOWN ON PLANS, SECTIONS AND/OR DETAILS SHALL BE LOCATED AS FOLLOWS:

A. COLUMNS AND PILASTERS: CENTERLINE OF THE COLUMN.
B. GRADE BEAMS AND WALLS: CENTERLINE OF THE GRADE BEAM OR WALL.
C. ALONG THE LENGTH OF GRADE BEAMS AND WALLS: INTERMEDIATE PIERS/FOOTINGS SHALL BE SPACED EQUALLY BETWEEN PIERS/FOOTINGS THAT ARE DIMENSIONALLY SET ON PLAN OR AS NOTED ABOVE.
D. PIERS SUPPORTING SLABS ON CARTON FORMS: UNLESS NOTED OTHERWISE, PIERS NOT DIMENSIONED SHALL BE SPACED EQUALLY BETWEEN PIERS THAT ARE DIMENSIONALLY SET ON PLAN.

18. GC TO COORDINATE THE LOCATION OF ALL CONC CURBS WITH ARCH DWGS. REF 7/S-301 FOR DETAIL TYP

19. GC COORDINATE THE LOCATION OF ALL CANOPY COLUMNS WITH ARCH DRAWINGS.

20. XXXXX INDICATES STRUCTURAL CMU THAT ARE PART OF THE STRUCTURAL LATERAL FORCE RESISTING SYSTEM AND SUPPORTS GRAVITY LOADS. REFER TO ARCH DWGS FOR THE LOCATION OF ALL NON-STRUCTURAL CMU. A 3/8" VERT CONTROL JOINT SHALL BE PROVIDED WHEREVER STRUCTURAL AND NON-STRUCTURAL CMU ABUT.

21. XXXXX INDICATES NON-STRUCTURAL CMU THAT ARE NOT PART OF THE STRUCTURAL LATERAL FORCE RESISTING SYSTEM AND ARE NOT DESIGNED TO SUPPORTS GRAVITY LOADS. REFER TO ARCH DWGS FOR THE LOCATION OF ALL NON-STRUCTURAL CMU. A 3/8" VERT CONTROL JOINT SHALL BE PROVIDED WHEREVER STRUCTURAL AND NON-STRUCTURAL CMU ABUT.

22. IT CAN BE COMMON PRACTICE FOR STEEL STUB-UPS WITH STRUCTURAL STEEL SILL SUPPORT MEMBERS TO BE PROVIDED AT LONG FIRST FLOOR WINDOW SILLS (REF DETAIL); HOWEVER, FOR FIRST FLOOR WINDOWS, 8'-0" AND NARROWER, THE GC SHALL PROVIDE PRE-ENGINEERED COLD-FORM SILL SUPPORTS UTILIZING COLD-FORM FRAMING ONLY. THESE COLD-FORM SILL SHALL BE DESIGNED BY THE DRYWALL SUBCONTRACTOR'S ENGINEER AND SUBMITTED IN THE SHOP DRAWINGS FOR REVIEW. WHERE FIRST FLOOR WINDOW SILLS EXCEED 8'-0" THE CONTRACTOR SHALL PROVIDE MISC. STRUCTURAL STEEL PER (TYP.)

23. PROVIDE STRUCTURAL GEO-FOAM WITH 4" CONCRETE TOPPING SLAB WITH WWF OVER SLAB ON GRADE FOR HATCHED AREAS. GEO-FOAM AND TOPPING SLAB BY MANUFACTURER - REF ARCH AND GENERAL NOTES.
GC NOTE: ORIGINAL BASE/ FLAT SLAB EXTENDS CONTINUOUS BELOW PLATFORM AND STAIRS. PROVIDE GEO-FOAM FILL BELOW PLATFORM WITH 4" CONCRETE TOPPING SLAB WITH 6x6x2.9x2.9 W.W.M. AT MID-HEIGHT OF SLAB.
ADDITIONALLY PROVIDE 4" CONCRETE WALLS WITH #4 BARS AT 12" OC EACH WAY - DRILL AND EPOXY 4" INTO BASE/ FLAT SLAB WITH HILTI HY-200 V3 ADHESIVE.

24. REFER TO S-300 FOR CONCRETE FINISHES NOTES.

DOWEL NEW SLAB-ON-GRADE INTO EXISTING SLAB-ON-GRADE ALONG FULL PERIMETER:

GC TO PROVIDE A 12" DEEP STIFFENER BEAM AT THE FACE OF EXISTING PER 1/S-331.
DRILL AND EPOXY #4 BARS AT 24" OC WITH HILTI HY-200 V3 ADHESIVE.
EMBED 6" MIN INTO EXISTING.
FACE OF EXISTING SLAB AND GRADE BEAMS SHALL BE ROUGHENED PRIOR TO NEW SLAB / STIFFENER BEAM INSTALLATION.
(REFER TO 1/S-331)

DOWEL NEW GRADE BEAMS INTO EXISTING GRADE BEAMS:

DRILL AND EPOXY BARS OF THE SAME SIZE, QUANTITY AND ORIENTATION OF THE NEW GRADE BEAM WITH HILTI HY-200 V3 ADHESIVE.
FACES OF EXISTING GRADE BEAMS SHALL BE ROUGHENED PRIOR TO NEW GRADE BEAM INSTALLATIONS.
(REFER TO 3/S-330 FOR EMBED AND CHIPPING REQUIREMENTS)

GC NOTE FOR NEW GRADE BEAMS:
NEW GRADE BEAMS AT RESTROOM ADDITION / RENOVATION SHALL BE 2'-0" DEEP AND MATCH THE EXISTING FOUNDATION ELEVATIONS / DEPTHS AT THIS AREA.
TOP OF EXISTING PILASTER AT "xA5" AND "xA4" ASSUMED AT -0'-8" BELOW FINISHED FLOOR. SIMILAR TO INTERIOR BUILDING CONDITIONS.
NEW GRADE BEAMS SHALL MATCH TOP AND BOTTOM OF PILASTER AND GRADE BEAM ELEVATION. GC SHALL FIELD VERIFY TOP OF PILASTER ELEVATION AT THIS LOCATION AND INFORM EOR OF DISCREPANCIES.

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New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGRAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT

KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
JOHN R. KUBALA
106120
05/20/2025
Kubala Engineers
F-23612

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

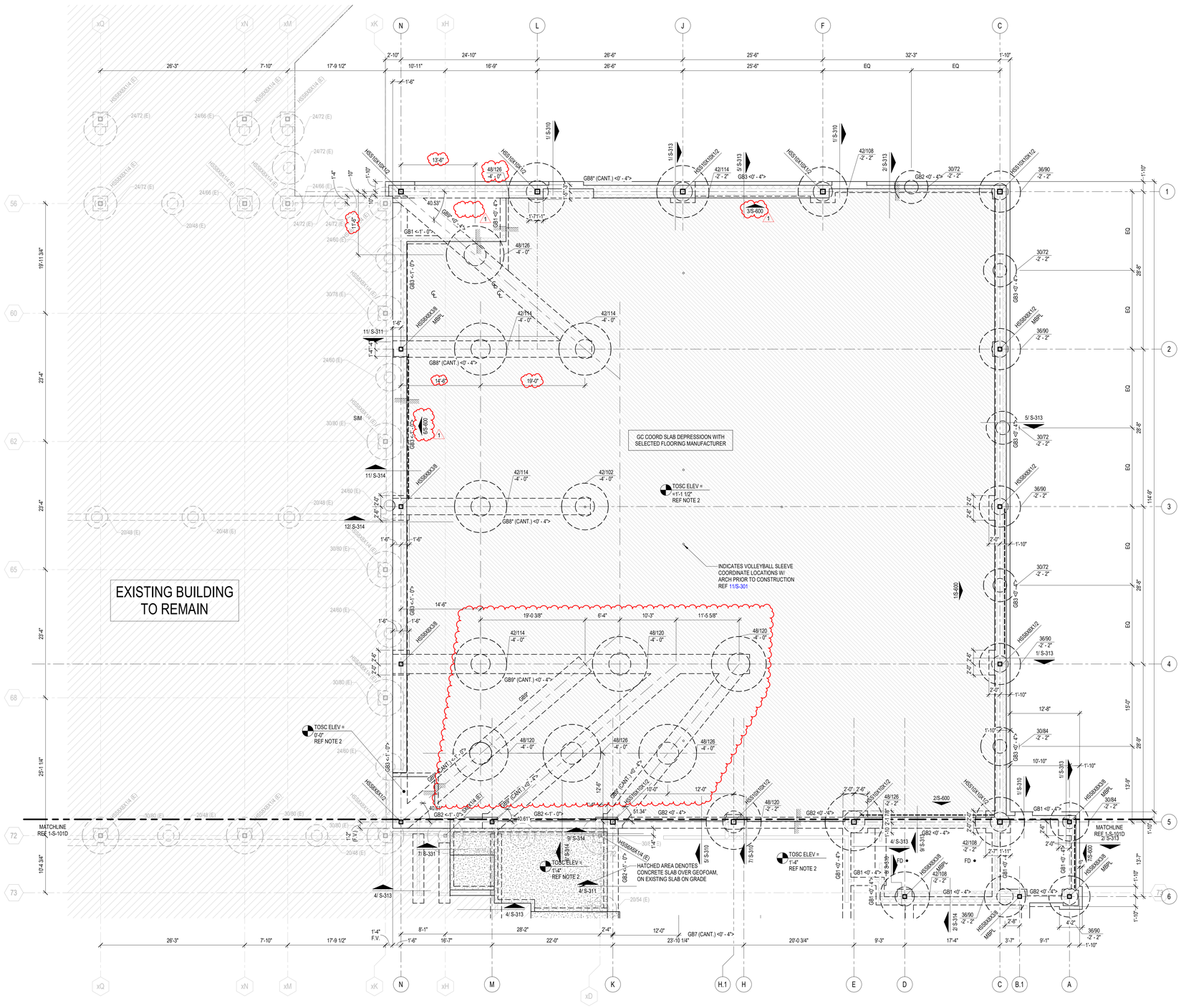
CHECKED BY: Checker
DRAWN BY: Author

FOUNDATION PLAN - AREA D

S-101D

Plot Stamp:
6/3/2025 6:11:25 PM

FOUNDATION PLAN - AREA E
S-101E
FOR BLUEBEAM LABELING/OCR:



1 FOUNDATION PLAN AREA E
1/8" = 1'-0"

FOUNDATION PLAN NOTES

1. REFER TO PLAN FOR TOP OF STRUCTURAL CONCRETE ELEVATIONS (TOSC EL). ALL ELEVATIONS SHOWN ON THE PLAN ARE BASED ON A LEVEL ONE REFERENCE ELEVATION = 0'-0". THIS REFERENCE ELEVATION IS EQUIVALENT TO THE LEVEL ONE MEAN SEA LEVEL ELEVATION = REF CIVIL SHOWN IN THE CIVIL AND ARCHITECTURAL DRAWINGS AND IS NOT INTENDED TO ESTABLISH THE ACTUAL SEA LEVEL ELEVATION OF ANY PORTION OF THE STRUCTURE.

2. 5" THICK CONCRETE SLAB ON GRADE REINFORCED WITH #3@10" OC EACH WAY OR #4@16" OC EACH WAY, ON 2 3/4" CHAIRS FOR #3 BARS, 2 1/2" CHAIRS FOR #4 BARS SPACED AT 36" OC EACH WAY.
PLACE THE SLAB ON 15 MIL WATER VAPOR BARRIER OVER COMPACTED SELECT FILL (SOIL REPORT) FOR SLAB JOINT DETAILS REFER TO 1/S-301 AND 2/S-301.

3.1 TOP OF INTERIOR GRADE BEAM ELEVATION SHALL BE = -1'-0" UON.
TOP OF PERIMETER GRADE BEAM ELEVATION SHALL BE = -1'-0" UON.

3.2 TOP OF INTERIOR/ EXTERIOR PLINTH ELEVATION SHALL BE = -1'-0" UON.
TOP OF INTERIOR PIER ELEVATION WITHOUT PLINTH SHALL BE = -1'-0" UON.
TOP OF INTERIOR PIER ELEVATION WITH PLINTH SHALL BE = -3'-6" UON.
TOP OF INTERIOR PIER ELEVATION WITH GRADE BEAM SHALL BE = -3'-6" UON.
TOP OF EXTERIOR PIER ELEVATION SHALL BE = -3'-6" UON.

4. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENTS AND DIMENSIONS OF RAISED OR DEPRESSED SLAB AREAS, SLOPES, CURBS, AND DRAINS. REFER TO TYPICAL DETAILS FOR REINFORCEMENT REQUIREMENTS.

5. GC COORDINATE ALL PENETRATIONS AND UNDERGROUND UTILITIES WITH MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS. REFER TO TYPICAL DETAILS FOR ADDITIONAL REINFORCEMENT REQUIREMENTS.

6. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY ARCHITECT AND STRUCTURAL ENGINEER OF ANY DISCREPANCIES.

7. GC COORDINATE ALL SLAB EDGE DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION.

8. PROVIDE (2) - #5 x 5'-0" LONG BAR IN SLAB AT RE-ENTRANT CORNERS, TYPICAL. INCLUDING RE-ENTRANT CORNERS AROUND THE PERIMETER OF THE BUILDINGS, FLOOR RECESSES AND OPENINGS.

9. GC COORDINATE ALL THE SIZE AND EXTENT OF ALL BRICK LEDGES SHOWN ON PLAN OR DETAILS WITH ARCHITECTURAL DRAWINGS.

10. REF S0.xx SERIES DRAWINGS FOR GENERAL NOTES AND TYP DETAILS

11. REF S3.xx SERIES DRAWINGS FOR FOUNDATION AND SLAB-ON-GRADE DETAILS.

12. REF S4.xx SERIES DRAWINGS FOR CMU DETAILS.

13. REF S5.xx SERIES DRAWINGS FOR STEEL DETAILS.

14. REF S6.xx SERIES DRAWINGS FOR STEEL BRACE ELEVATIONS AND DETAILS.

15. REFER TO ARCH AND PLUMBING DWGS FOR THE SIZE, NUMBER AND LOCATION OF ALL THE TRENCHES, AND FLOOR DRAINS. REF 10/S-301 FOR TRENCH DETAIL AND REF 4/S-301 FOR FLOOR DRAIN DETAIL.

16. AT INTERIOR CMU WALL LOCATIONS, WHERE THE GRADE BEAM IS NOT SHOWN, PROVIDE SLAB TURNDOWN PER DETAIL 4/S-313 TYPICAL. AT INTERIOR GLAZING LOCATIONS, WHERE THE GRADE BEAM IS NOT SHOWN, PROVIDE TURNDOWN SIMILAR TO DETAIL 4/S-313; TYPICAL.

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   D. PIERS SUPPORTING SLABS ON CARTON FORMS: UNLESS NOTED OTHERWISE, PIERS NOT DIMENSIONED SHALL BE SPACED EQUALLY BETWEEN PIERS THAT ARE DIMENSIONALLY SET ON PLAN.

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24. REFER TO S-300 FOR CONCRETE FINISHES NOTES.

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(REFER TO 1/S-331)

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DRILL AND EPOXY BARS OF THE SAME SIZE, QUANTITY AND ORIENTATION OF THE NEW GRADE BEAM WITH HILTI HY-200 V3 ADHESIVE. FACES OF EXISTING GRADE BEAMS SHALL BE ROUGHENED PRIOR TO NEW GRADE BEAM INSTALLATIONS.
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TOP OF EXISTING PILASTER AT "xA5" AND "xA4" ASSUMED AT -0'-8" BELOW FINISHED FLOOR, SIMILAR TO INTERIOR BUILDING CONDITIONS. NEW GRADE BEAMS SHALL MATCH TOP AND BOTTOM OF PILASTER AND GRADE BEAM ELEVATION. GC SHALL FIELD VERIFY TOP OF PILASTER ELEVATION AT THIS LOCATION AND INFORM EOR OF DISCREPANCIES.

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New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT

KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
JOHN R. KUBALA
106120
05/20/2025
Kubala Engineers
F-23612

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

CHECKED BY: Checker
DRAWN BY: Author

FOUNDATION PLAN - AREA E

S-101E

Plot Stamp:
6/3/2025 6:11:25 PM

SECOND FLOOR/LOW ROOF FRAMING PLAN - AREA D
S-102D
FOR BLUEBEAM LABELING/OCR:

GC PLEASE NOTE:

WHERE HORIZONTAL H WIND FORCES ARE INDICATED ON THE STRUCTURAL PLANS AS "H=XX.K (ASD)." IN CONJUNCTION WITH BRACE FRAMES, THE GENERAL CONTRACTOR IS REQUIRED TO ASSUME AN H LOAD OF 80 KIPS (ASD) ALONG THE ENTIRE GRID LINE OF BRACE FRAMES AT THE SECOND FLOORS, THIRD FLOORS, AND MEZZANINES. ADDITIONALLY, FOR HORIZONTAL H WIND FORCES INDICATED AS "H=X/X K (ASD)" IN CONJUNCTION WITH BRACE FRAMES AT THE ROOFS, THE GENERAL CONTRACTOR SHOULD ASSUME AN H LOAD OF 65 KIPS (ASD) ALONG THE ENTIRE GRID LINE. THE GC HOLDS THE RESPONSIBILITY FOR DESIGNING CONNECTIONS THAT CAN ACCOMMODATE THESE SPECIFIED LOAD ASSUMPTIONS. FOR FURTHER GUIDANCE ON CONNECTION DESIGN, PLEASE REFER TO CONNECTION GENERAL NOTE SHEET S-500. TYP ALL AREAS

GC PLEASE NOTE:

1. FOR THE BASE BID OF THIS PROJECT, THE GC SHALL ACCOUNT FOR 100% OF THE BEAMS, GIRDERS, AND PURLINS, CROSSING A HIP, VALLEY, AND RIDGE ROOF LINES TO BE BENT AND HAVE FULL CAPACITY MOMENT CONNECTIONS AT EACH LOCATION. CHANGES IN ROOF DECK SLOPE LOCATIONS ARE DEFINED AS WHEN A GIRDER BEAM OR PURLIN BEAM PASSES THROUGH A RIDGE LINE. HIP LINE, OR VALLEY LINE. THE BEND LOCATIONS VARY BASED ON WHERE THE ROOF DECK SLOPE CHANGE INTERSECTS WITH A PURLIN OR MAIN GIRDER BEAM. THE GC MUST COORDINATE WITH ROOF FRAMING PLANS AND ACCOUNT FOR THE FULL NUMBER OF ADDED MOMENT CONNECTIONS REQUIRED TO CREATE THE ROOF DECK SLOPES NEEDED FOR PROPER DRAINAGE.
2. FOR THE BASE BID OF THIS PROJECT, THE GC SHALL ACCOUNT FOR 100% OF THE JOISTS, CROSSING A HIP, VALLEY, AND RIDGE ROOF LINES TO BE DOUBLE OR TRIPLE PITCHED AS NEEDED AT EACH LOCATION. CHANGES IN ROOF DECK SLOPE LOCATIONS ARE DEFINED AS WHEN A JOIST PASSES THROUGH A RIDGE LINE, HIP LINE, OR VALLEY LINE. THE BEND LOCATIONS VARY BASED ON WHERE THE ROOF DECK SLOPE CHANGE INTERSECTS WITH JOIST. THE GC MUST COORDINATE WITH ROOF FRAMING PLANS AND ARCHITECTURAL DRAWINGS.
3. GC TO PROVIDE CONT 4X4X1/4 THICK BENT PLATE ALONG THE RIDGE, HIP, AND VALLEY LINES TO SUPPORT DECKING AT WRAP (TYP).
4. THE GENERAL CONTRACTOR IS REQUIRED TO PROVIDE A BRICK RELIEF ANGLE AT ANY POINT WHERE THE BRICK EXTENDS BEYOND THE ELEVATION OF 30'-0" AND IS SUPPORTED BY A CONCRETE MASONRY UNIT (CMU) BACKUP. PLEASE REFER TO DETAIL 7/S-402. THE BRICK RELIEF ANGLE SHOULD BE INSTALLED AT THE SECOND AND THIRD FLOORS WITHIN THE CLASSROOM AREAS AND ROTUNDA AS INDICATED IN COMPOSITE DETAILS AND SECTION CUTS ON PLANS.

COMPOSITE FLOOR DECK AND METAL ROOF DECK LEGEND

COMPOSITE FLOOR DECK TYPES

FLOOR DECK TYPE 1:
4 1/2" NWC ON 3.0 VLI 20 GA (GALV) (G90) COMPOSITE STEEL DECK (7 1/2" TOTAL SLAB THICKNESS). COMPOSITE SLAB SHALL BE REINFORCED WITH WWR 6x6-W2.9xW2.9, U.N.O.

METAL ROOF DECK TYPES

ROOF DECK TYPE 1:
1.0 CSV 22 GA (GALV.) (G90) VENTED MTL DECK.

NOTES:

1. STEEL DECK SHALL BE PLACED WITH TWO-SPAN CONDITION MINIMUM. NO SINGLE SPANS ARE ALLOWED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER-OF-RECORD.
2. REF SLABS FORM DECK (AT FLOORS) GENERAL NOTES AND METAL DECK SCHEDULE ON SHEET S-504 FOR MORE INFORMATION REGARDING FLOOR DECK REQUIREMENTS.
2. REF METAL ROOF DECKING GENERAL NOTES AND METAL DECK SCHEDULE ON SHEET S-506 FOR MORE INFORMATION REGARDING ROOF DECK REQUIREMENTS.

COMPOSITE FLOOR PLAN NOTES

1. REF PLAN FOR TOP OF SLAB ELEVATION.
2. ALL ELEVATIONS ARE BASED ON TOSC EL = 0'-0"
3. STEEL DECK SHALL BE PLACED WITH A TWO-SPAN CONDITION MINIMUM. NO SINGLE SPANS ARE ALLOWED WITHOUT WRITTEN APPROVAL OF ENGINEER-OF-RECORD.
4. COMPOSITE BEAM CONSTRUCTION IS UNSHORED.
5. DETAILING OF ALL MEMBER CONNECTIONS TO THE SUPPORTS SHALL BE PERFORMED TO SATISFY LATEST OSHA ERECTION REQUIREMENTS.
6. TOS EL = BOTTOM OF DECK.
7. UNLESS SHOWN OTHERWISE, STEEL BEAMS OR JOISTS ARE CENTERED ON AND EQUALLY SPACED BETWEEN COLUMN CENTERLINES.
8. ALL STRUCTURAL STEEL THAT IS PERMANENTLY EXPOSED TO THE EXTERIOR OR IS PERMANENTLY IN UNCONDITIONED SPACE SHALL BE HOT-DIPPED GALVANIZED.
9. REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR PENETRATIONS NOT SHOWN. REFER TO TYPICAL DETAILS FOR ADDITIONAL REINFORCEMENT REQUIREMENTS AT OPENINGS.
10. PROVIDE ADDITIONAL (5) - #5 CONT. BARS IN COMPOSITE SLAB ALONG FULL PERIMETER OF SLAB AND AROUND OPENINGS. EXTEND BARS 10'-0" PAST CORNERS OF OPENINGS. PROVIDE STD HOOK AT TERMINATION ENDS. ALL LAPS IN REINFORCING SHALL BE WITH MECHANICAL COUPLERS OR 20'-0" LAP SPLICE (TYP). REFER TO DETAIL 1/S-504 .
11. PROVIDE 6'-0" WIDE EXTRA LAYER OF WWF AT 3/4" CLR. FROM TOSC OVER EVERY SINGLE BEAM THAT RUNS BETWEEN COLUMNS IN ADDITION TO EVERY GIRDER BEAM (TYP).
12. CONTRACTOR TO VERIFY ALL SLAB EDGE DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION.
13. INDICATES WIND BRACE BEAM BOTTOM FLANGE BRACING PER 2/S-505 TYP ALONG ENTIRE GRIDIAT ALL BRACE FRAMES. AT LOCATIONS WHERE BEAM SPACING EXCEEDS 4'-0" OC REF 1/S-505 .
14. REF S0.XX SERIES DRAWINGS FOR GENERAL NOTES AND TYP DETAILS.
15. REF S4.XX SERIES DRAWINGS FOR CMU DETAILS.
16. REF S5.XX SERIES DRAWINGS FOR STEEL FRAMING DETAILS.
17. REF S6.XX SERIES DRAWINGS FOR STEEL BRACE ELEVATIONS AND DETAILS.
18. - ALL CMU SHOWN ON PLAN ARE PART OF THE STRUCTURAL LATERAL FORCE RESISTING SYSTEM AND SUPPORTS GRAVITY LOADS. NON-STRUCTURAL CMU EXISTS IN OTHER LOCATION (REF ARCH DWGS). A 3/8" VERT CONTROL JOINT SHALL BE PROVIDED WHEREVER STRUCTURAL AND NON-STRUCTURAL CMU ABUT.
19. INDICATES PLAN DIAGONAL STRUT WT5X15. COPE WEB AT BEAMS AND OVERLAP FLANGE 4", WELD TO TOP FLANGE AND COLUMNS WITH 5/16" FILLET WELD 3-SIDES (TYP.)
20. GC SHALL COORDINATE LOCATION OF FOLDING PARTITIONS WITH ARCH DRAWINGS. REF DETAIL 1/S-509 .
21. REF DETAIL 5/S-513 FOR ADDITIONAL REINF UNDER INTERIOR CMU WALLS PARALLEL TO DECK SPAN. GC TO COORDINATE THE LOCATION OF ALL CMU WALLS WITH ARCH DRAWINGS.
22. PROVIDE MISC. STEEL PER 12/S-501ABOVE AND BELOW ANY WINDOW THAT DOES NOT ALIGN WITH THE BACK-UP, UNO, TYP. LOOSE LINTELS REQUIRED BELOW WINDOW SHALL BE INVERTED (DOG LEG DOWN), TYP.

ROOF PLAN NOTES

1. REF PLAN FOR TOP OF SLAB ELEVATION.
2. ALL ELEVATIONS ARE BASED ON TOSC EL = 0'-0".
3. TOP OF ROOF STRUCTURE IS SLOPED FOR DRAINAGE. REF ELEVATIONS NOTED ON PLAN. SLOPES SHALL BE UNIFORM BETWEEN COLUMN CENTERLINES UNLESS SHOWN OTHERWISE.
4. JOIST MFR NOTE:
BRIDGING NOT SHOWN ON PLAN. MANUFACTURER SHALL PROVIDE STANDARD BRIDGING COMPLYING WITH SJI SPECIFICATIONS OF LATEST ADOPTION, TYPICAL FOR GRAVITY AND UPLIFT LOADS SUPERIMPOSED ON ALL JOISTS. DIAGONAL BRIDGING SHALL BE PROVIDED BETWEEN ADJACENT JOISTS WHENEVER BOTTOM CHORD HORIZONTAL BRIDGING IS CONTINUOUS.
5. REFER TO THE ROOF DIAPHRAGM CONNECTION SCHEDULE FOR DECK ATTACHMENT TO ROOF FRAMING MEMBERS AND DECK FASTENER TYPE, SIZE AND SPACING.
6. REF ARCH FOR TOP OF WALL ELEVATIONS.
7. DETAILING OF ALL MEMBER CONNECTIONS TO THE SUPPORTS SHALL BE PERFORMED TO SATISFY LATEST OSHA ERECTION REQUIREMENTS.
8. TOS EL = BOTTOM OF DECK.
9. UNLESS SHOWN OTHERWISE, STEEL BEAMS OR JOISTS ARE CENTERED ON AND EQUALLY SPACED BETWEEN COLUMN CENTERLINES.
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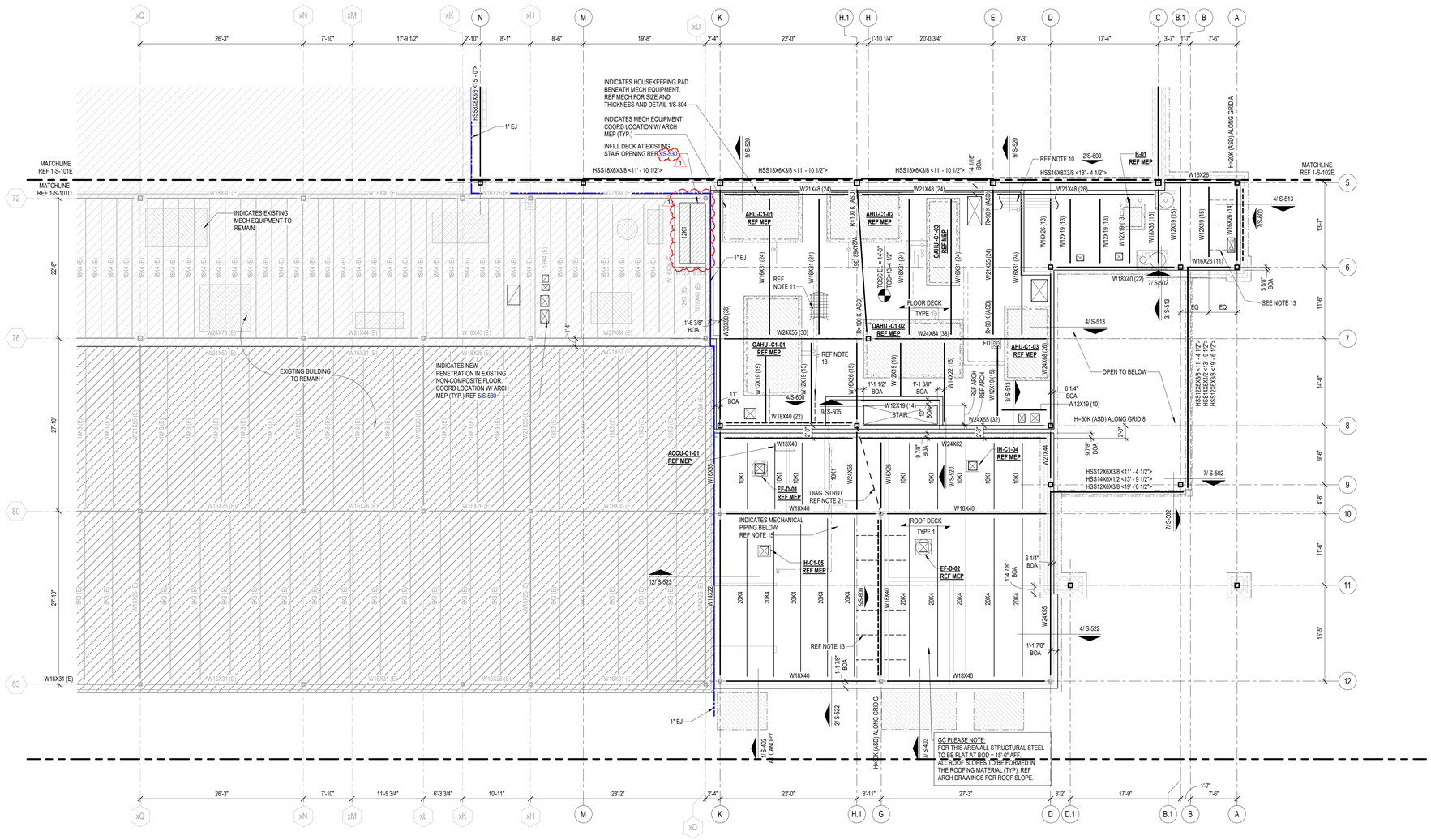
12. CONTRACTOR TO VERIFY ALL SLAB EDGE DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION.
13. INDICATES WIND BRACE BEAM BOTTOM FLANGE BRACING PER 4/S-508 . PROVIDE BFB ALONG THE ENTIRE GRID LINE WHERE A BRACE IS PRESENT IN AT LEAST ONE BAY. THIS INCLUDES THE BRACED FRAME BAY AS WELL AS ALL OTHER BAYS ALONG THAT GRID LINE WHERE A BRACE IS LOCATED. NOT ALL DASHED LINES ARE SHOWN ON THE PLAN FOR CLARITY.
14. REF DETAIL 5/S-507 WHERE ROOF TOP EQUIPMENT REQUIRES A STRUCTURAL CURB. JOISTS THAT ARE SUPPORTING ROOF TOP EQUIPMENT SHALL BE DESIGNED FOR AN ADDITIONAL CONCENTRATED DEAD LOAD (AS SHOWN ON PLAN AT ANY POINT ALONG JOIST SPAN). GC SHALL COORDINATE WITH MEP, ARCHITECTURE AND EQUIPMENT CUTSHEETS FOR FINAL WEIGHT, DIMENSIONS, LOCATION, ETC.
15. — — - — INDICATES PIPING RUN, REF MEP DRAWINGS; GC SHALL COORDINATE GIVEN LOAD WITH JOIST MANUFACTURER. REF SHEET S-011.
16. REF S0.xx SERIES DRAWINGS FOR GENERAL NOTES AND TYP DETAILS
17. REF S4.xx SERIES DRAWINGS FOR CMU DETAILS.
18. REF S5.xx SERIES DRAWINGS FOR STEEL FRAMING DETAILS.
19. REF S6.xx SERIES DRAWINGS FOR STEEL BRACE ELEVATIONS AND DETAILS.
20. - INDICATES COLUMN BRACING PER 5/S-502. TYPICAL AT COLUMNS UNBRACED BY FRAMING MEMBER ABOUT THIER LOCAL AXIS. NOT ALL SHOWN ON PLAN FOR MORE CLARITY.
21. INDICATES PLAN DIAGONAL STRUT WT5x15. COPE WEB AT BEAMS AND OVERLAP FLANGE 4". WELD TO TOP FLANGE AND COLUMNS WITH 5/16" FILLET WELD 3-SIDES (TYP.)
22. UPLIFT X-BRIDGING NOT SHOWN ON PLANS FOR CLARITY. GC SHALL PROVIDE X-BRIDGING BETWEEN ADJACENT WF BEAMS AT ROOF PER DETAIL 3/S-507 .
23. PROVIDE MISC. STEEL PER 12/S-501 ABOVE AND BELOW ANY WINDOW THAT DOES NOT ALIGN WITH THE BACK-UP, UNO, TYP. LOOSE LINTELS REQUIRED BELOW WINDOW SHALL BE INVERTED (DOG LEG DOWN), TYP.
24. ALL JOISTS LOCATED BENEATH ROOFTOP UNITS AND THE ADJACENT JOISTS ON EACH SIDE THAT ARE NOT ENTIRELY POSITIONED UNDER THE ROOFTOP UNIT MUST BE DESIGNED TO SUPPORT A DEAD LOAD OF 2.0 KIPS,UNO ON PLANS. GC MUST COORD LOCATION OF RTUS WITH MEP DRAWINGS.



1 SECOND FLOOR/LOW ROOF FRAMING PLAN AREA D
1/8" = 1'-0"

JOIST DESIGNATIONS, SHOWN ON THE FRAMING PLANS, FOLLOWED BY THE DESIGNATION "CL" SUPPORT A CONCENTRATED DEAD LOAD. THE JOIST SIZES DESIGNATED ON THE FRAMING PLANS DO NOT TAKE INTO ACCOUNT THIS CONCENTRATED DEAD LOAD. THE JOIST MANUFACTURER SHALL DESIGN SPECIAL JOISTS TO SUPPORT THIS CONCENTRATED DEAD LOAD IN ADDITION TO THE TOTAL LOAD CAPACITY PROVIDED IN THE SJI LOAD TABLES FOR THE JOISTS SPECIFIED ON THE FRAMING PLANS. JOISTS SUPPORTING THESE CONCENTRATED DEAD LOADS SHALL BE FABRICATED SYMMETRICALLY ABOUT THEIR CENTERLINE. DESIGN JOISTS FOR THE FOLLOWING "CL" DESIGNATIONS WHERE SHOWN ON THE FRAMING PLANS:

1. CL1 - XXXX POUNDS LOCATED X'-X" FROM THE FACE OF THE SUPPORTING PANEL ADJACENT TO HIGH ROOF.
2. CL2 - XXXX POUNDS LOCATED X'-X" FROM THE CENTERLINE OF THE SUPPORTING STEEL BEAM.

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CIVIL
CONSULTANT NAME
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LANDSCAPE
CONSULTANT NAME
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STRUCTURAL
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THEATER
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FOOD SERVICE
CONSULTANT NAME
T.000-000-0000
CONSULTANT NAME
CONSULTANT NAME
T.000-000-0000

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
JOHN R. KUBALA
106120
05/20/2025
Kubala Engineers
F-23612

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

CHECKED BY: Checker
DRAWN BY: Author

SECOND FLOOR/LOW ROOF FRAMING PLAN - AREA D

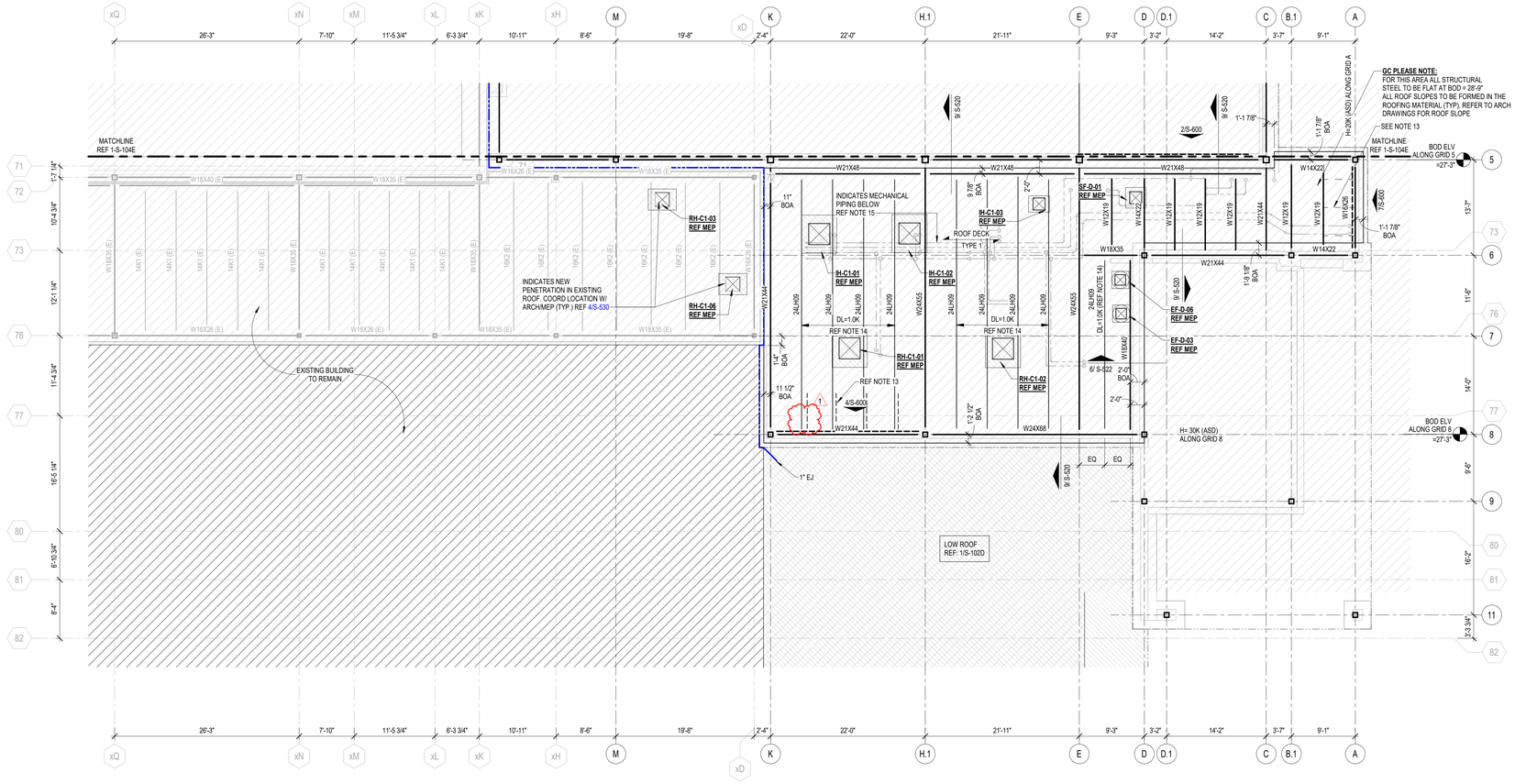
S-102D

Plot Stamp:
6/3/2025 6:11:26 PM

MID ROOF FRAMING PLAN - AREA D

S-103D

FOR BLUEBEAM LABELING/OCR:



1 MID ROOF PLAN -AREA D

1/8" = 1'-0"

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WHERE HORIZONTAL H WIND FORCES ARE INDICATED ON THE STRUCTURAL PLANS AS "H=XX K (ASD)," IN CONJUNCTION WITH BRACE FRAMES, THE GENERAL CONTRACTOR IS REQUIRED TO ASSUME AN H LOAD OF 80 KIPS (ASD) ALONG THE ENTIRE GRID LINE OF BRACE FRAMES AT THE SECOND FLOORS, THIRD FLOORS, AND MEZZANINES. ADDITIONALLY, FOR HORIZONTAL H WIND FORCES INDICATED AS "H=XX K (ASD)" IN CONJUNCTION WITH BRACE FRAMES AT THE ROOFS, THE GENERAL CONTRACTOR SHOULD ASSUME AN H LOAD OF 65 KIPS (ASD) ALONG THE ENTIRE GRID LINE. THE GC HOLDS THE RESPONSIBILITY FOR DESIGNING CONNECTIONS THAT CAN ACCOMMODATE THESE SPECIFIED LOAD ASSUMPTIONS. FOR FURTHER GUIDANCE ON CONNECTION DESIGN, PLEASE REFER TO CONNECTION GENERAL NOTE SHEET S-500. TYP ALL AREAS

ROOF PLAN NOTES

1. REF PLAN FOR TOP OF SLAB ELEVATION.
2. ALL ELEVATIONS ARE BASED ON TOSC EL = 0'-0".
3. TOP OF ROOF STRUCTURE IS SLOPED FOR DRAINAGE. REF ELEVATIONS NOTED ON PLAN. SLOPES SHALL BE UNIFORM BETWEEN COLUMN CENTERLINES UNLESS SHOWN OTHERWISE.
4. JOIST MFR NOTE:
   BRIDGING NOT SHOWN ON PLAN. MANUFACTURER SHALL PROVIDE STANDARD BRIDGING COMPLYING WITH SJI SPECIFICATIONS OF LATEST ADOPTION, TYPICAL FOR GRAVITY AND UPLIFT LOADS SUPERIMPOSED ON ALL JOISTS. DIAGONAL BRIDGING SHALL BE PROVIDED BETWEEN ADJACENT JOISTS WHENEVER BOTTOM CHORD HORIZONTAL BRIDGING IS CONTINUOUS.
5. REFER TO THE ROOF DIAPHRAGM CONNECTION SCHEDULE FOR DECK ATTACHMENT TO ROOF FRAMING MEMBERS AND DECK FASTENER TYPE, SIZE AND SPACING.
6. REF ARCH FOR TOP OF WALL ELEVATIONS.
7. DETAILING OF ALL MEMBER CONNECTIONS TO THE SUPPORTS SHALL BE PERFORMED TO SATISFY LATEST OSHA ERECTION REQUIREMENTS.
8. TOS EL = BOTTOM OF DECK.
9. UNLESS SHOWN OTHERWISE, STEEL BEAMS OR JOISTS ARE CENTERED ON AND EQUALLY SPACED BETWEEN COLUMN CENTERLINES.
10. ALL STRUCTURAL STEEL THAT IS PERMANENTLY EXPOSED TO THE EXTERIOR OR IS PERMANENTLY IN UNCONDITIONED SPACE SHALL BE HOT-DIPPED GALVANIZED.
11. GC COORDINATE ALL PENETRATIONS AND UNDERGROUND UTILITIES WITH MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS. REFER TO TYPICAL DETAILS FOR ADDITIONAL REINFORCEMENT REQUIREMENTS.
12. CONTRACTOR TO VERIFY ALL SLAB EDGE DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION.
13. INDICATES WIND BRACE BEAM BOTTOM FLANGE BRACING PER 4/S-508 . PROVIDE BFB ALONG THE ENTIRE GRID LINE WHERE A BRACE IS PRESENT IN AT LEAST ONE BAY. THIS INCLUDES THE BRACED FRAME BAY AS WELL AS ALL OTHER BAYS ALONG THAT GRID LINE WHERE A BRACE IS LOCATED. NOT ALL DASHED LINES ARE SHOWN ON THE PLAN FOR CLARITY.
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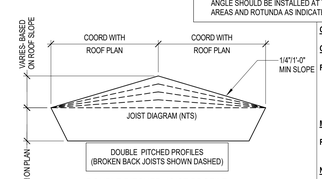
GC PLEASE NOTE:

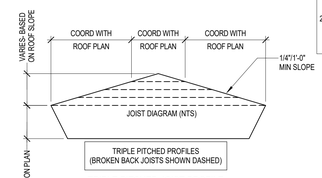
1. FOR THE BASE BID OF THIS PROJECT, THE GC SHALL ACCOUNT FOR 100% OF THE BEAMS, GIRDERS, AND PURLINS, CROSSING A HIP, VALLEY, AND RIDGE ROOF LINES TO BE BENT AND HAVE FULL CAPACITY MOMENT CONNECTIONS AT EACH LOCATION. CHANGES IN ROOF DECK SLOPE LOCATIONS ARE DEFINED AS WHEN A GIRDER BEAM OR PURLIN BEAM PASSES THROUGH A RIDGE LINE, HIP LINE, OR VALLEY LINE. THE BEND LOCATIONS VARY BASED ON WHERE THE ROOF DECK SLOPE CHANGE INTERSECTS WITH A PURLIN OR MAIN GIRDER BEAM. THE GC MUST COORDINATE WITH ROOF FRAMING PLANS AND ACCOUNT FOR THE FULL NUMBER OF ADDED MOMENT CONNECTIONS REQUIRED TO CREATE THE ROOF DECK SLOPES NEEDED FOR PROPER DRAINAGE.
2. FOR THE BASE BID OF THIS PROJECT, THE GC SHALL ACCOUNT FOR 100% OF THE JOISTS, CROSSING A HIP, VALLEY, AND RIDGE ROOF LINES TO BE DOUBLE OR TRIPLE PITCHED AS NEEDED AT EACH LOCATION. CHANGES IN ROOF DECK SLOPE LOCATIONS ARE DEFINED AS WHEN A JOIST PASSES THROUGH A RIDGE LINE, HIP LINE, OR VALLEY LINE. THE BEND LOCATIONS VARY BASED ON WHERE THE ROOF DECK SLOPE CHANGE INTERSECTS WITH JOIST. THE GC MUST COORDINATE WITH ROOF FRAMING PLANS AND ARCHITECTURAL DRAWINGS.
3. GC TO PROVIDE CONT 4X4X1/4 THICK BENT PLATE ALONG THE RIDGE, HIP, AND VALLEY LINES TO SUPPORT DECKING AT WRAP (TYP).
4. THE GENERAL CONTRACTOR IS REQUIRED TO PROVIDE A BRICK RELIEF ANGLE AT ANY POINT WHERE THE BRICK EXTENDS BEYOND THE ELEVATION OF 30'-0" AND IS SUPPORTED BY A CONCRETE MASONRY UNIT (CMU) BACKUP. PLEASE REFER TO DETAIL 7/S-402. THE BRICK RELIEF ANGLE SHOULD BE INSTALLED AT THE SECOND AND THIRD FLOORS WITHIN THE CLASSROOM AREAS AND ROTUNDA AS INDICATED IN COMPOSITE DETAILS AND SECTION CUTS ON PLANS.



DOUBLE PITCHED PROFILES (BROKEN BACK JOISTS SHOWN DASHED)

DOUBLE PITCHED JOIST PROFILE

MINIMUM JOIST LOADING SHALL MEET THE SJI LOAD TABLE CAPACITY OF THE JOIST SIZE PROVIDED IN THE STRUCTURAL DRAWINGS BASED ON JOIST SPAN, TYPICAL UNO. JOIST DESIGNER DESIGN FOR ANY AND ALL ADDITIONAL LOADS NOTED IN STRUCTURAL DRAWINGS.



TRIPLE PITCHED PROFILES (BROKEN BACK JOISTS SHOWN DASHED)

TRIPLE PITCHED JOIST PROFILE

MINIMUM JOIST LOADING SHALL MEET THE SJI LOAD TABLE CAPACITY OF THE JOIST SIZE PROVIDED IN THE STRUCTURAL DRAWINGS BASED ON JOIST SPAN, TYPICAL UNO. JOIST DESIGNER DESIGN FOR ANY AND ALL ADDITIONAL LOADS NOTED IN STRUCTURAL DRAWINGS.

COMPOSITE FLOOR DECK AND METAL ROOF DECK LEGEND

COMPOSITE FLOOR DECK TYPES

FLOOR DECK TYPE 1:
4 1/2" NWC ON 3.0 VLI 20 GA (GALV) (G90) COMPOSITE STEEL DECK (7 1/2" TOTAL SLAB THICKNESS). COMPOSITE SLAB SHALL BE REINFORCED WITH WWR 6x6-W2.9xW2.9, U.N.O.

METAL ROOF DECK TYPES

ROOF DECK TYPE 1:
1.0 CSV 22 GA (GALV.) (G90) VENTED MTL DECK.

NOTES:

1. STEEL DECK SHALL BE PLACED WITH TWO-SPAN CONDITION MINIMUM. NO SINGLE SPANS ARE ALLOWED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER-OF-RECORD.
2. REF SLABS FORM DECK (AT FLOORS) GENERAL NOTES AND METAL DECK SCHEDULE ON SHEET S-504 FOR MORE INFORMATION REGARDING FLOOR DECK REQUIREMENTS.
2 REF METAL ROOF DECKING GENERAL NOTES AND METAL DECK SCHEDULE ON SHEET S-506 FOR MORE INFORMATION REGARDING ROOF DECK REQUIREMENTS.

JOIST DESIGNATIONS, SHOWN ON THE FRAMING PLANS, FOLLOWED BY THE DESIGNATION "CL" SUPPORT A CONCENTRATED DEAD LOAD. THE JOIST SIZES DESIGNATED ON THE FRAMING PLANS DO NOT TAKE INTO ACCOUNT THIS CONCENTRATED DEAD LOAD. THE JOIST MANUFACTURER SHALL DESIGN SPECIAL JOISTS TO SUPPORT THIS CONCENTRATED DEAD LOAD IN ADDITION TO THE TOTAL LOAD CAPACITY PROVIDED IN THE SJI LOAD TABLES FOR THE JOISTS SPECIFIED ON THE FRAMING PLANS. JOISTS SUPPORTING THESE CONCENTRATED DEAD LOADS SHALL BE FABRICATED SYMMETRICALLY ABOUT THEIR CENTERLINE. DESIGN JOISTS FOR THE FOLLOWING "CL" DESIGNATIONS WHERE SHOWN ON THE FRAMING PLANS:

1. CL1 - XXXX POUNDS LOCATED X-X" FROM THE FACE OF THE SUPPORTING PANEL ADJACENT TO HIGH ROOF.
2. CL2 - XXXX POUNDS LOCATED X-X" FROM THE CENTERLINE OF THE SUPPORTING STEEL BEAM.

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THEATER
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FOOD SERVICE
CONSULTANT NAME
T.000-000-0000
AV
CONSULTANT NAME
T.000-000-0000

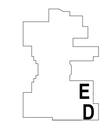
New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT



KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
JOHN R. KUBALA
106120
05/20/2025
Kubala Engineers
F-23612

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

CHECKED BY: Checker

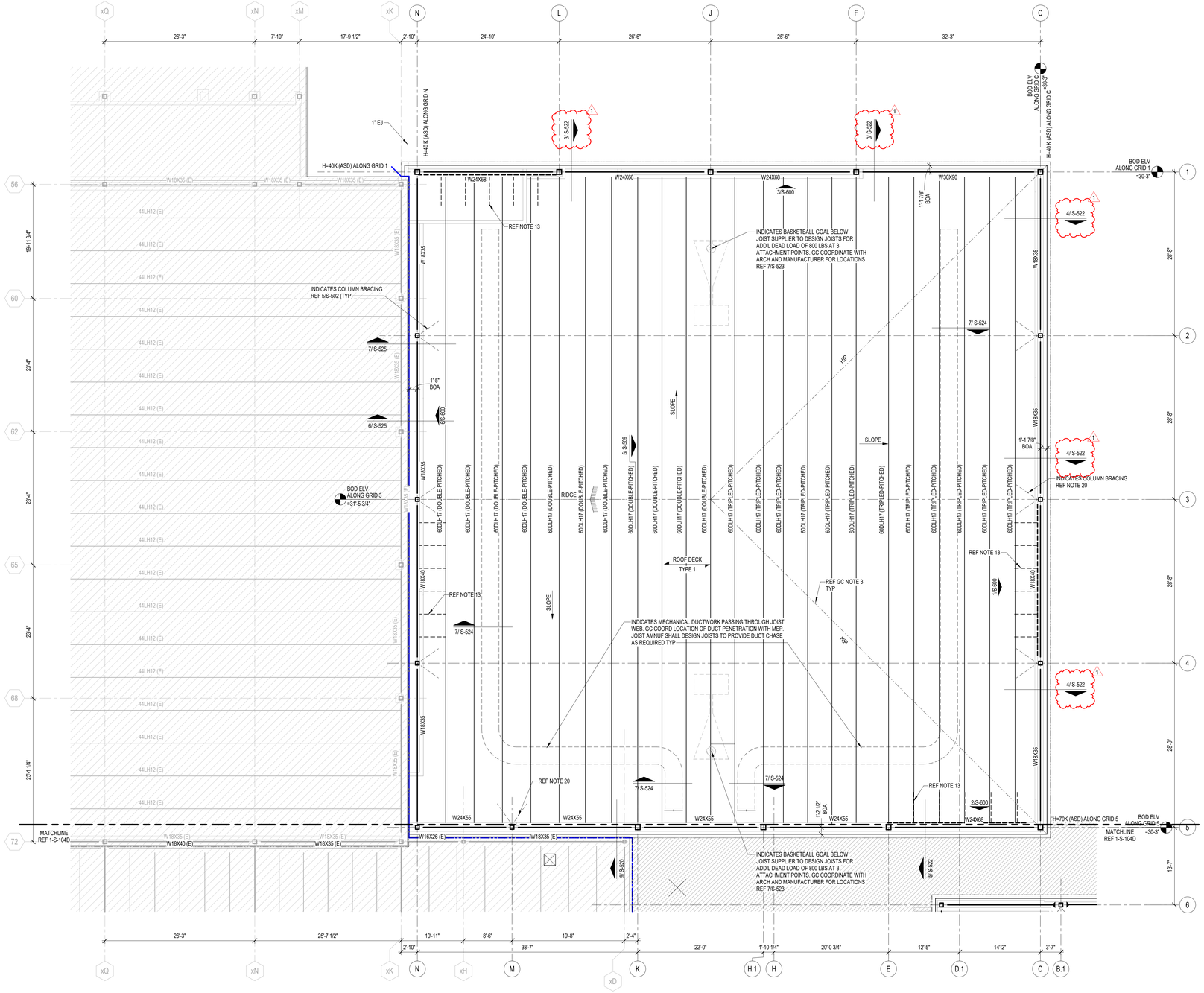
DRAWN BY: Author

MID ROOF FRAMING PLAN - AREA D

S-103D

Plot Stamp:
6/3/2025 6:11:26 PM

HIGH ROOF FRAMING PLAN - AREA E
S-104E
FOR BLUEBEAM LABELING/OCR:



1 HIGH ROOF FRAMING PLAN AREA E
1/8" = 1'-0"

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ROOF PLAN NOTES

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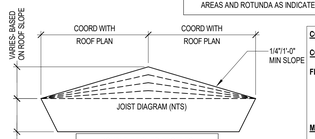
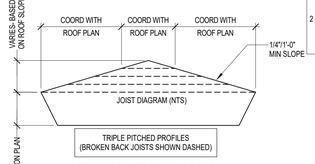
3. GC TO PROVIDE CONT 4X4X1/4 THICK BENT PLATE ALONG THE RIDGE, HIP, AND VALLEY LINES TO SUPPORT DECKING AT WRAP (TYP).
4. THE GENERAL CONTRACTOR IS REQUIRED TO PROVIDE A BRICK RELIEF ANGLE AT ANY POINT WHERE THE BRICK EXTENDS BEYOND THE ELEVATION OF 30'-0" AND IS SUPPORTED BY A CONCRETE MASONRY UNIT (CMU) BACKUP. PLEASE REFER TO DETAIL 7/S-402. THE BRICK RELIEF ANGLE SHOULD BE INSTALLED AT THE SECOND AND THIRD FLOORS WITHIN THE CLASSROOM AREAS AND ROTUNDA AS INDICATED IN COMPOSITE DETAILS AND SECTION CUTS ON PLANS.



DOUBLE PITCHED JOIST PROFILE

MINIMUM JOIST LOADING SHALL MEET THE SJI LOAD TABLE CAPACITY OF THE JOIST SIZE PROVIDED IN THE STRUCTURAL DRAWINGS BASED ON JOIST SPAN, TYPICAL UNO. JOIST DESIGNER DESIGN FOR ANY AND ALL ADDITIONAL LOADS NOTED IN STRUCTURAL DRAWINGS.



TRIPLE PITCHED JOIST PROFILE

MINIMUM JOIST LOADING SHALL MEET THE SJI LOAD TABLE CAPACITY OF THE JOIST SIZE PROVIDED IN THE STRUCTURAL DRAWINGS BASED ON JOIST SPAN, TYPICAL UNO. JOIST DESIGNER DESIGN FOR ANY AND ALL ADDITIONAL LOADS NOTED IN STRUCTURAL DRAWINGS.

COMPOSITE FLOOR DECK AND METAL ROOF DECK LEGEND

COMPOSITE FLOOR DECK TYPES

FLOOR DECK TYPE 1:
4 1/2" NWC ON 3.0 VLI 20 GA (GALV) (G90) COMPOSITE STEEL DECK (7 1/2" TOTAL SLAB THICKNESS). COMPOSITE SLAB SHALL BE REINFORCED WITH WWR 6x6-W2.9xW2.9, U.N.O.

METAL ROOF DECK TYPES

ROOF DECK TYPE 1:
1.0 CSV 22 GA (GALV.) (G90) VENTED MTL DECK.

NOTES:

1. STEEL DECK SHALL BE PLACED WITH TWO-SPAN CONDITION MINIMUM. NO SINGLE SPANS ARE ALLOWED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER-OF-RECORD.
2. REF SLABS FORM DECK (AT FLOORS) GENERAL NOTES AND METAL DECK SCHEDULE ON SHEET S-504 FOR MORE INFORMATION REGARDING FLOOR DECK REQUIREMENTS.
2 REF METAL ROOF DECKING GENERAL NOTES AND METAL DECK SCHEDULE ON SHEET S-506 FOR MORE INFORMATION REGARDING ROOF DECK REQUIREMENTS.

JOIST DESIGNATIONS, SHOWN ON THE FRAMING PLANS, FOLLOWED BY THE DESIGNATION "CL" SUPPORT A CONCENTRATED DEAD LOAD. THE JOIST SIZES DESIGNATED ON THE FRAMING PLANS DO NOT TAKE INTO ACCOUNT THIS CONCENTRATED DEAD LOAD. THE JOIST MANUFACTURER SHALL DESIGN SPECIAL JOISTS TO SUPPORT THIS CONCENTRATED DEAD LOAD IN ADDITION TO THE TOTAL LOAD CAPACITY PROVIDED IN THE SJI LOAD TABLES FOR THE JOISTS SPECIFIED ON THE FRAMING PLANS. JOISTS SUPPORTING THESE CONCENTRATED DEAD LOADS SHALL BE FABRICATED SYMMETRICALLY ABOUT THEIR CENTERLINE. DESIGN JOISTS FOR THE FOLLOWING "CL" DESIGNATIONS WHERE SHOWN ON THE FRAMING PLANS:

1. CL1 - XXXX POUNDS LOCATED X'-X" FROM THE FACE OF THE SUPPORTING PANEL ADJACENT TO HIGH ROOF.
2. CL2 - XXXX POUNDS LOCATED X'-X" FROM THE CENTERLINE OF THE SUPPORTING STEEL BEAM.

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THEATER
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FOOD SERVICE
CONSULTANT NAME
T.000-000-0000
SECURITY
CONSULTANT NAME
T.000-000-0000

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
JOHN R. KUBALA
106120
LICENSED PROFESSIONAL ENGINEER
05/20/2025
Kubala Engineers
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CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

CHECKED BY: Checker
DRAWN BY: Author

HIGH ROOF FRAMING PLAN - AREA E

S-104E

Plot Stamp:
6/3/2025 6:11:26 PM

GENERAL GRADE BEAM NOTES AND TYP DETAILS
S-302
FOR BLUEBEAM LABELING/OCR:

0"
1"

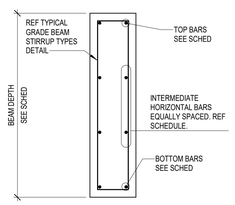
GRADE BEAM:

1. GRADE BEAM DIMENSIONS AND/OR LOCATIONS SHALL NOT BE ALTERED WITHOUT APPROVAL OF THE ENGINEER OF RECORD. SIDES OF GRADE BEAMS SHALL BE FORMED. EARTH FORMING OF GRADE BEAMS IS NOT ALLOWED UNLESS GRADE BEAMS MAY BE EARTH FORMED SO LONG AS THE SIDES ARE PLUMB AND SOUND AND ANY PORTION OF THE BEAMS/SLAB THAT EXTENDS ABOVE GRADE/ EXPOSED IS BOARD FORMED. THE WALLS MUST NOT SLOUGH OFF MORE THAN 3/4" OUT OF PLANE OF THE PLUMB LINE. WHERE THIS OCCURS A BOARD FORM MAY BE LAID IN THE EARTH TO SMOOTH THE SIDE LOCALLY AT THE IMPERFECTION TO MAINTAIN WALL FLATNESS TOLLERANCE.
2. GRADE BEAMS SHALL BE POURED MONOLITHICALLY AROUND CORNERS AND AT INTERSECTIONS. SEE TYPICAL GRADE BEAM CONSTRUCTION JOINT DETAIL FOR ACCEPTABLE CONSTRUCTION JOINT LOCATIONS.
3. GENERAL CONTRACTOR SHALL COORDINATE LOCATION, SIZE, AND ELEVATION AND INCLUDE IN HIS CONTRACT PRICE ALL REQUIRED HORIZONTAL PENETRATIONS THROUGH CONCRETE BEAMS WHETHER SHOWN ON STRUCTURAL DRAWINGS OR NOT. WHERE BEAM PENETRATIONS ARE REQUIRED BUT ARE NOT SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS, CONTRACTOR SHALL SUBMIT DRAWINGS SHOWING DIMENSIONS AND LOCATIONS OF ALL REQUIRED PENETRATIONS FOR REVIEW AND APPROVAL.

GRADE BEAM SCHEDULE

MARK	SIZE		REINFORCING			TIES		REMARKS
	WIDTH	DEPTH	TOP	BOTTOM	MIDDLE	SIZE	SPACING*	
GB1	1'-6"	2'-6"	3#9	3#9	REF	#4 S1	1@2", R@10"; 1@2", R @ 6" @ CANTI	-
GB2	2'-0"	2'-6"	4#9	4#9	-	#4 S1	1@2", R@10"; 1@2", R @ 6" @ CANTI	-
GB3	2'-6"	2'-6"	5#9	5#9	-	#4 S1	1@2", R@10"; 1@2", R @ 6" @ CANTI	-
GB4	2'-10"	2'-6"	6#9	6#9	-	#4 D1	1@2", R@10"; 1@2", R @ 6" @ CANTI	-
GB5	3'-0"	2'-6"	6#9	6#9		#4 D1	1@2", R@10"; 1@2", R @ 6" @ CANTI	
GB6	1'-2"	2'-6"	3#7	3#7	-	#4 S1	1@2", R@10"; 1@2", R @ 6" @ CANTI	-
GB7*	3'-0"	3'-10"	6#9 6#9	6#9	REF T-MID	#4 D1A	1@2", R@10"; 1@2", R @ 6" @ CANTI	*TWO LAYERS OF REBARS FOR TOP
GB8*	3'-0"	4'-4"	7#11 7#11	7#11 1	REF T-MID	#4 D1A	1@2", R@10"; 1@2", R @ 6" @ CANTI	*TWO LAYERS OF REBARS FOR TOP
GB9*	3'-6"	4'-4"	9#11 9#11	9#11	REF T-MID	#4 D1A	1@2", R@10"; 1@2", R @ 6" @ CANTI	*TWO LAYERS OF REBARS FOR TOP

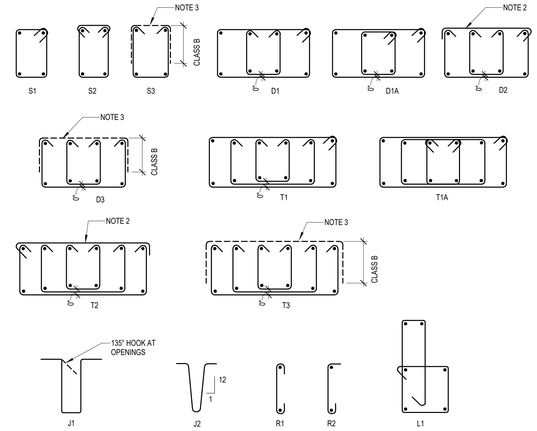
* - REF DETAIL 4/S-302A FOR TIE SPACING AT GRADE BEAM TO GRADE BEAM CONNECTION WHERE PIER/ FOOTING IS NOT PRESENT AT INTERSECTION. REF DETAIL 10/S-304 FOR TIES SPACING BELOW COLUMN WHERE PIER/ FOOTING IS NOT PRESENT BELOW COLUMN.



INTERMEDIATE BAR SCHEDULE (T-MID)

BEAM DEPTH	NUMBER OF BARS EA FACE	SIZE OF BAR
> 36" - 48"	5	#3
49" - 54"	5	#4
55" - 60"	5	#5
61" - 66"	6	#5
67" - 78"	7	#5
79" AND ABOVE	AT 9" OC	#5

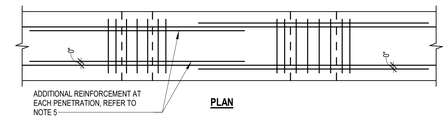
1 GRADE BEAM SCHEDULE
NO SCALE



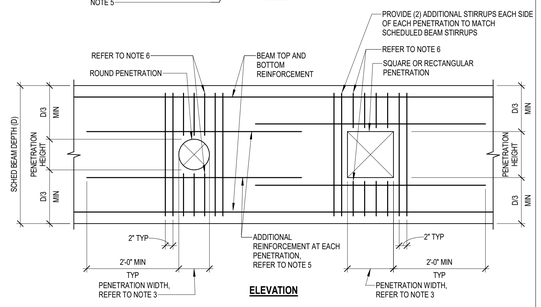
NOTES:
1. ALL HOOKS SHALL BE FABRICATED AS REQUIRED BY ACI. REFER TO "TYPICAL STIRRUP AND TIE HOOK TYPES."
2. THE TOP CAP FOR CLOSED STIRRUPS S15, S19, S24, AND S27 SHALL BE PLACED SUCH THAT THE 135° HOOK END IS NOT ON THE SIDE CONFINED BY THE SLAB.
3. PROVIDE TOP CAP FOR OPEN STIRRUPS S3, S21, S22, AND S29 TO MATCH SCHEDULED STIRRUP SIZE AT 48".

2 TYPICAL GRADE BEAM STIRRUP TYPES
3/4" = 1'-0"

NOTES:
1. CLEAR SPACING BETWEEN PENETRATIONS SHALL BE 24" MINIMUM UNLESS NOTED OTHERWISE BY THE STRUCTURAL ENGINEER.
2. PENETRATIONS SHALL BE LOCATED ACCORDING TO THE FOLLOWING CRITERIA:
   a. FOR BEAMS NOT SUPPORTING INTERSECTING BEAMS LOCATE PENETRATIONS WITHIN TWO FEET EITHER SIDE OF BEAM MIDSPAN.
   b. FOR BEAMS SUPPORTING INTERSECTING BEAMS CHECK WITH STRUCTURAL ENGINEER.
3. PENETRATION WIDTH MUST NOT EXCEED PENETRATION HEIGHT, UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS.
4. FOR LOCATIONS AND/OR SIZES OF PENETRATIONS NOT CONFORMING TO THE ABOVE CRITERIA AND NOT OTHERWISE DETAILED ON THE STRUCTURAL DRAWINGS, CONTRACTOR SHALL COORDINATE REQUIRED ADDITIONAL REINFORCEMENT WITH THE STRUCTURAL ENGINEER.
5. PROVIDE THE FOLLOWING REINFORCEMENT AT EACH SLEEVE, UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS:
   1-#5 TOP AND BOTTOM AT BEAMS WITH WIDTHS LESS THAN 9".
   2-#5 TOP AND BOTTOM AT BEAMS WITH 2-LEG STIRRUPS.
   4-#5 TOP AND BOTTOM AT BEAMS WITH 4-LEG STIRRUPS.
   "N"-#5 TOP AND BOTTOM AT BEAMS WITH "N"-LEG STIRRUPS.
6. PROVIDE ADDITIONAL STIRRUPS ABOVE AND BELOW PENETRATIONS AT SPACING NOT TO EXCEED ONE THIRD OF THE SCHEDULED STIRRUP SPACING, UNLESS DETAILED OTHERWISE ON THE STRUCTURAL DRAWINGS.
7. SCHEDULED BEAM STIRRUPS NOT SHOWN FOR CLARITY.

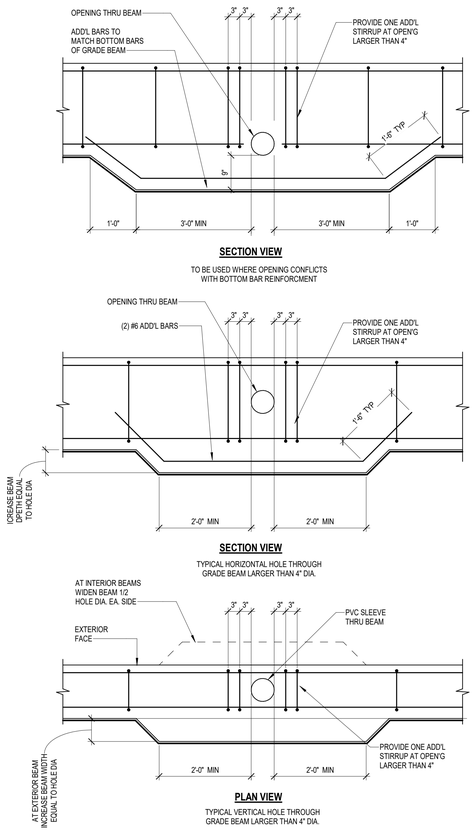


PLAN

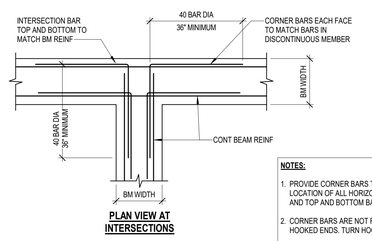


ELEVATION

3 TYPICAL HORIZONTAL PENETRATION IN CONCRETE BEAM
NO SCALE

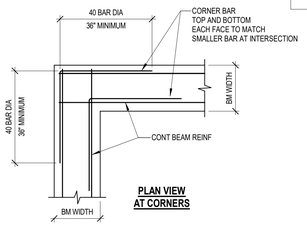


4 TYPICAL GRADE BEAM PENETRATION DETAILS
NO SCALE



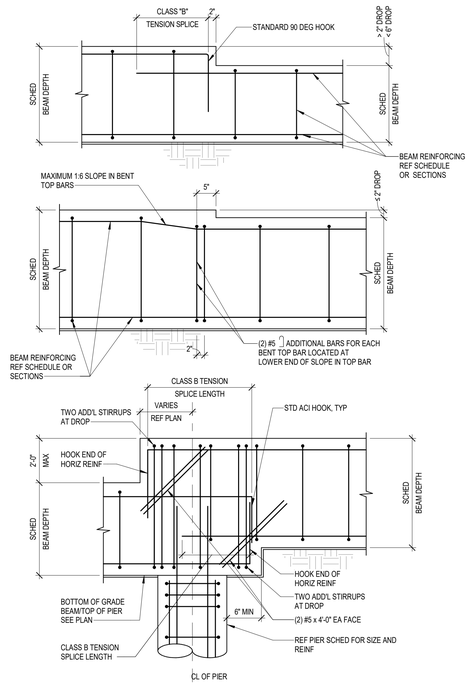
PLAN VIEW AT INTERSECTIONS

NOTES:
1. PROVIDE CORNER BARS TO MATCH SIZE AND LOCATION OF ALL HORIZONTAL GRADE BEAM AND TOP AND BOTTOM BARS.
2. CORNER BARS ARE NOT REQUIRED AT HOOKED ENDS. TURN HOOKS SIDEWAYS.
3. REF DETAIL 7/S-303 FOR TYPICAL GRADE BEAM TO GRADE BEAM CONNECTION WHERE PIER/ FOOTING IS NOT PRESENT AT INTERSECTION.



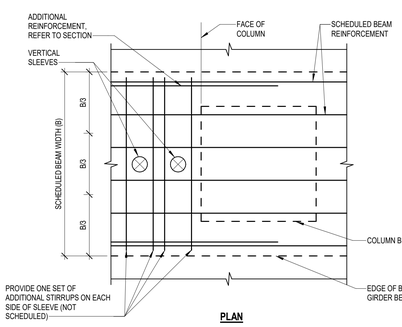
PLAN VIEW AT CORNERS

5 TYPICAL CORNER BAR DETAILS
NO SCALE

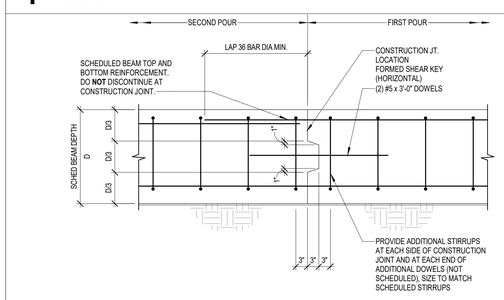


6 TYPICAL GRADE BEAM STEPDOWN DETAIL
NO SCALE

NOTES:
1. GENERAL CONTRACTOR SHALL COORDINATE REQUIRED BEAM SLEEVES WITH MECHANICAL, ELECTRICAL, AND PLUMBING CONTRACTORS. REQUIRED SLEEVES MAY OR MAY NOT BE SHOWN ON THE STRUCTURAL DRAWINGS. GENERAL CONTRACTOR SHALL SUBMIT PLAN SHOWING LAYOUT OF ALL SLEEVES WITH FORMWORK SHOP DRAWING SUBMITTAL.
2. SLEEVES SHALL BE LOCATED WITHIN THE MIDDLE THIRD OF THE SCHEDULED BEAM WIDTH.
3. CONTINUOUS BEAM REINFORCEMENT MAY BE SLIGHTLY DISPLACED (3" MAXIMUM) OR ADJACENT BARS BUNDLED (2 BAR BUNDLES MAXIMUM) TO FACILITATE SLEEVE INSTALLATION. DO NOT CUT, OFFSET, OR BEND REINFORCEMENT.
4. SLEEVES OCCURRING ON OPPOSITE SIDES OF A COLUMN MUST BE IN LINE.
5. THE OUTSIDE DIAMETER OF A SLEEVE MAY NOT EXCEED 15% OF THE SCHEDULED WIDTH OF THE BEAM THROUGH WHICH IT MUST PASS.
6. THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD WHEN A SLEEVE SIZE OR LOCATION DOES NOT MEET THE ABOVE CONDITIONS.
7. SCHEDULED BEAM STIRRUPS NOT SHOWN FOR CLARITY.



PLAN

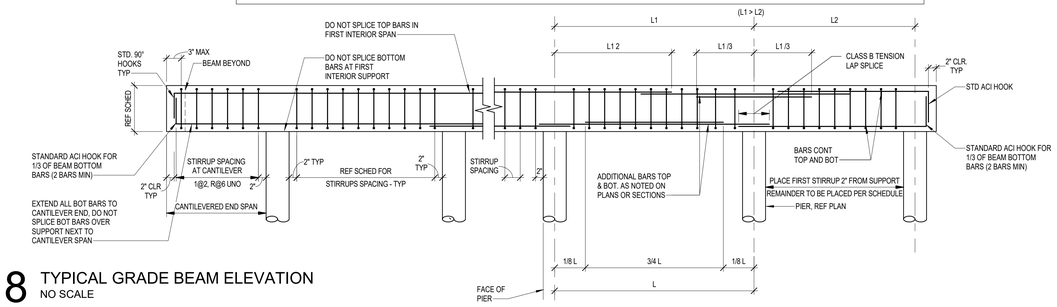


ELEVATION VIEW

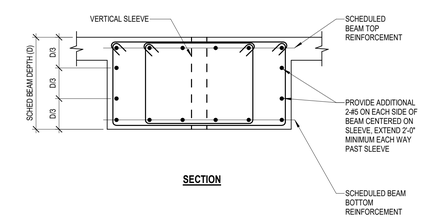
NOTES:
1. LOCATE JOINTS IN MIDDLE THIRD OF BEAM SPAN BETWEEN SUPPORTS.
2. ACCEPTABLE JOINT LOCATIONS ARE AS FOLLOWS:
   a. FOR BEAMS NOT SUPPORTING INTERSECTING BEAMS, PLACE JOINT WITHIN MIDDLE THIRD OF SPAN.
   b. FOR BEAMS SUPPORTING INTERSECTING BEAMS, CHECK WITH STRUCTURAL ENGINEER FOR JOINT LOCATIONS AND DOWEL REQUIREMENTS.
3. FOR JOINT LOCATIONS OTHER THAN WITHIN MIDDLE THIRD OF SPAN, CONTRACTOR SHALL COORDINATE REQUIRED ADDITIONAL REINFORCEMENT WITH THE ENGINEER ON THE SHOP DRAWINGS.
4. JOINTS MAY NOT OCCUR IN THE FIRST SPAN OF A BEAM LINE OR IN ANY SPAN WHICH IS LESS THAN 8 FEET.
5. GENERAL CONTRACTOR SHALL SUBMIT DESIRED CONSTRUCTION JOINT LAYOUT AS A SHOP DRAWING FOR APPROVAL A MINIMUM OF TWO WEEKS PRIOR TO POUR.

7 TYPICAL GRADE BEAM CONSTRUCTION JOINT
NO SCALE

NOTES:
1. TOP CONT BARS MAY BE SPLICED AT MID-SPAN OF BEAM ONLY. EXCEPT AT CANTILEVER SPANS, SPANS ADJACENT TO CANTILEVER SPANS AND SPANS WITH LENGTH NOT GREATER THAN ONE HALF OF THE ADJACENT SPAN LENGTH.
2. ALL HOOKS SHOWN ARE STANDARD HOOKS (90° OR 180°).
3. SPLICES IN SCHEDULED BARS LESS THAN 60'-0" LENGTH ARE ONLY PERMITTED AT THE SPECIFIED LOCATIONS SHOWN. SPLICES IN SCHEDULED BARS MORE THAN 60'-0" LENGTH SHALL BE REFERRED TO ENGINEER FOR APPROVAL.
4. BEAMS WITH DEPTH OF 36" OR LESS, DO NOT NEED INTERMEDIATE BARS UNLESS REQUIRED BY BEAM SCHEDULE. REF 1/S-302
5. REF TO DETAIL 6/S-302 FOR DROP IN TOP OR BOTTOM OF GRADE BEAM.
6. REF DETAIL 4/S-302A OR TYPICAL GRADE BEAM TO GRADE BEAM CONNECTION WHERE PIER/ FOOTING IS NOT PRESENT AT INTERSECTION.
7. REF DETAIL 10/S-304 FOR TYPICAL GRADE BEAM REINFORCEMENT AT COLUMN WHERE PIER/ FOOTING OR WIDENED PILASTER IS NOT PRESENT BELOW COLUMN.



8 TYPICAL GRADE BEAM ELEVATION
NO SCALE



SECTION

9 TYPICAL VERTICAL PENETRATION IN CONCRETE BEAM
NO SCALE

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THEATER
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FOOD SERVICE
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AV
CONSULTANT NAME
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New CTE Center & Hargrave High School Additions & Renovations
BUILDING: HARGAVE HIGH SCHOOL
25400 Willy Lane
Huffman, TX 77336
ISSUE FOR PROPOSAL

KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
JOHN R. KUBALA
106120
LICENSED PROFESSIONAL ENGINEER
05/20/2025
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CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

CHECKED BY: Checker
DRAWN BY: Author

GENERAL GRADE BEAM NOTES AND TYP DETAILS

S-302

Plot Stamp:
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GENERAL FOUNDATION NOTES AND TYP DETAILS

S-303

FOR BLUEBEAM LABELING/OCR:

DRILLED & UNDERREAMED PIERS:

1. UNDERREAMED/BELLED SHAFT DRILLED PIER DESIGN IS BASED UPON THE FOLLOWING CRITERIA. REFER TO TYPICAL PIER DETAIL FOR PIER SCHEDULE AND REINFORCING.

A. ALLOWABLE END BEARING PRESSURE	3,600 PSF (NET DEAD PLUS SUSTAINED LIVE LOAD)
	5,400 PSF (NET TOTAL LOAD)
B. UPLIFT PRESSURE (FROM SOIL)	1,000 PSF
C. UPLIFT RESISTANCE	FOUNDATION WEIGHT (150 PCF) & SOIL WEIGHT (120 PCF)
D. ALLOWABLE PASSIVE PRESSURE	1,000 PSF (NEGLECT UPPER 4.0 FT)
E. MINIMUM PENETRATION INTO BEARING STRATUM	10.0 FT
F. BEARING STRATUM	NATIVE UNDISTURBED CLAY SOILS

2. UNLESS NOTED OTHERWISE BY THE OWNER OR ARCHITECT, THE GENERAL CONTRACTOR SHALL NOTIFY THE GEOTECHNICAL ENGINEER OR OTHER AUTHORIZED INSPECTOR DURING EARTHWORK OPERATIONS, AND KEEP A COMPETENT TRAINED TECHNICIAN ASSIGNED TO THE PROJECT ON SITE DURING OPERATIONS. SERVICES PROVIDED SHALL INCLUDE:

   A. OBSERVING THE BOTTOM OF SHAFT FOR CLEANLINESS.

   B. PROPER BEARING MATERIAL SHALL BE VERIFIED BEFORE CONCRETE POURING OCCURS. THE TOP ELEVATION OF PIERS IS SHOWN ON THE DRAWINGS. THE ACTUAL BEARING ELEVATION MAY VARY AS REQUIRED TO PROVIDE PROPER CAPACITY AS DETERMINED BY THE GEOTECHNICAL ENGINEER OF RECORD.

   C. CHECKING SHAFT FOR CONFORMANCE TO REQUIRED TOLERANCES. FOOTINGS SHALL BE WITHIN 3" OF THEIR REQUIRED LOCATIONS AND SHAFTS SHALL NOT BE OUT OF PLUMB BY MORE THAN 2 PERCENT OF THE SHAFT LENGTH. CHECK THAT THE BELL IS CONCENTRIC WITH THE SHAFT.

3. ENSURE THAT ALL SPOILS FROM THE DRILLED PIER EXCAVATIONS ARE REMOVED FROM THE BUILDING PAD AND THAT THE PAD IS MOISTURE CONDITIONED AND RECOMPACTED AS SPECIFIED.

4. ESTABLISH TOP OF FOOTINGS/PIERS AT ELEVATIONS SHOWN ON PLANS. IF FIELD CONDITIONS REQUIRE CHANGES TO REACH THE DESIRED STRATUM, ADJUSTMENTS TO CONTRACT ARE TO BE MADE ON A UNIT PRICE BASIS. CONTRACTOR SHALL PROVIDE UNIT PRICE ADD AND DEDUCT FOR EACH PIER SIZE ON THE PROJECT.

5. PIER CONSTRUCTION AND CONCRETING SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT AND AS PER THE LATEST VERSION OF ACI 336. DRILLED HOLES ARE TO BE EXCAVATED, CLEANED, REINFORCED, AND FILLED WITH CONCRETE DURING THE SAME DAY. NO HOLE IS TO BE LEFT OPEN OVERNIGHT. PUMP ANY ACCUMULATED WATER FROM THE PIER HOLES PRIOR TO CONCRETE PLACEMENT. REFER TO THE GEOTECHNICAL REPORT FOR CASING REQUIREMENTS.

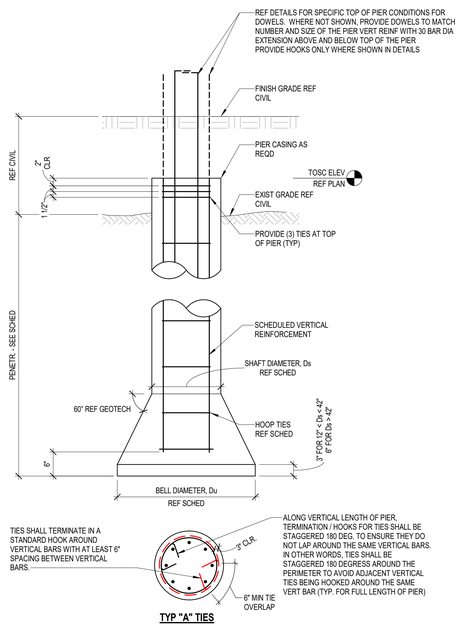
6. REINFORCING CAGE SHALL BE HELD SECURELY AWAY FROM EARTH AT SIDES AND BOTTOM BY SETS OF 3 OR MORE SPACERS AT A MAXIMUM SPACING OF 5 FEET ALONG THE LENGTH OF THE CAGE AND 1 FOOT FROM THE BOTTOM.

7. THE CONTRACTOR SHALL VERIFY DEPTHS OF PIERS BEFORE PIER STEEL IS CUT. PIER STEEL MAY BE DELIVERED TO THE JOBSITE IN STANDARD LENGTHS OF 40 OR 60 FEET AND CUT AS REQUIRED. PROVIDE 64 BAR DIAMETER LAPS IN ALL VERTICAL PIER REINFORCING.

8. WHERE THE CLEAR DISTANCE BETWEEN TWO PIERS IS LESS THAN THE PIER DIAMETER OF THE LARGER PIER, WAIT AT LEAST 48 HOURS AFTER CASTING THE FIRST PIER BEFORE DRILLING THE SECOND PIER.

9. CONTRACTOR SHALL PROVIDE IN HIS BID A UNIT PRICE ADD AND UNIT PRICE DEDUCT FOR EACH PIER SIZE UTILIZED ON THE PROJECT.

10. THE EXCAVATIONS SHOULD BE PERFORMED WITH EQUIPMENT CAPABLE OF PROVIDING A RELATIVELY CLEAN BEARING AREA. THE PRESENCE OF SECONDARY STRUCTURES SUCH AS SAND POCKETS, FERROUS AND CALCAREOUS NODULES, AND SLICKENSIDES, ETC., ARE PRESENT AT THIS SITE PER THE GEOTECH REPORT AND CAN CAUSE SLOUGHING DURING FOOTING EXCAVATION. THUS, THE DRILLING CONTRACTOR SHOULD HAVE CASING AVAILABLE IN THE EVENT THAT SLOUGHING CAUSES IMPROPERLY FORMED SHAFTS.
CONTRACTOR SHALL ALSO PROVIDE UNIT PRICE FOR EACH SIZE OF CASING UTILIZED ON THE PROJECT. PAYMENT FOR CASING SHALL BE BASED UPON NET LENGTH OF CASING UTILIZED MULTIPLIED BY THE UNIT PRICE.



TYP "A" TIES

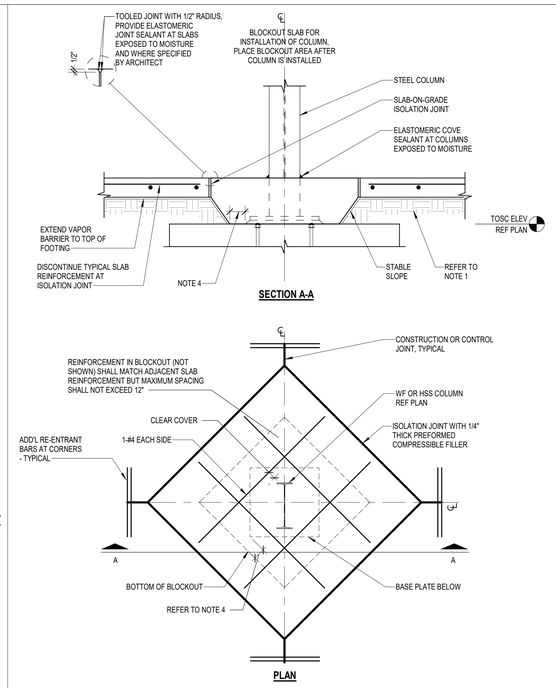
BELLED PIER SCHEDULE

TYPE	SHAFT DIAMETER	BELL DIAMETER	PENTR	VERT REINF	TIES
24/60	2' - 0"	5' - 0"	10' - 0"	(6)-#8	#3 @ 12" OC
30/72	2' - 6"	6' - 0"	10' - 0"	(8)-#7	#3 @ 12" OC
30/84	2' - 6"	7' - 0"	10' - 0"	(8)-#7	#3 @ 12" OC
36/90	3' - 0"	7' - 6"	10' - 0"	(8)-#8	#3 @ 12" OC
36/96	3' - 0"	8' - 0"	10' - 0"	(8)-#8	#3 @ 12" OC
42/102	3' - 6"	8' - 6"	10' - 0"	(10)-#8	#3 @ 12" OC
42/108	3' - 6"	9' - 0"	10' - 0"	(10)-#8	#3 @ 12" OC
42/114	3' - 6"	9' - 6"	10' - 0"	(10)-#8	#3 @ 12" OC
48/120	4' - 0"	10' - 0"	10' - 0"	(10)-#9	#3 @ 12" OC
48/126	4' - 0"	10' - 6"	10' - 0"	(10)-#9	#3 @ 12" OC

NOTES:

1. SPLICE VERTICAL REINFORCING IN PIERS WITH CLASS B TENSION LAP SPLICE. NO MORE THAN 50% OF THE BARS SHALL BE LAP SPLICED AT ONE LOCATION.
2. FOR PIERS LOCATED WITHIN TWO BELL DIAMETERS CLEAR SPACING, THE SECOND PIER SHALL BE DRILLED A MIN OF 48 HOURS AFTER THE FIRST.
3. IF CASING IS REQUIRED, CASING SHALL BE SIZED TO MAINTAIN THE PIER BELL DIAMETER INDICATED IN THE SCHEDULE. REF NOTE 10 ON GENERAL NOTES SHEET S-303.
4. AT LOCATIONS WHERE OVERALL PIER LENGTH IS INSUFFICIENT TO PROVIDE THE SHAFT AND BELL DIAMETERS AT THE SLOPES IDENTIFIED IN THE GEOTECHNICAL REPORT, A STRAIGHT SHAFT PIER OF DIAMETER EQUAL TO THE BELL DIAMETER SHALL BE PROVIDED. CONTACT EOR FOR PIER REINFORCING.
5. PIERS AT BRACED BAYS AND BACK-END OF CANTILEVERED GRADE BEAMS SHALL HAVE CLASS B MECHANICAL COUPLERS FOR ANY SPLICE IN THE VERTICAL (LONGITUDINAL) REINFORCING. (TYP.)

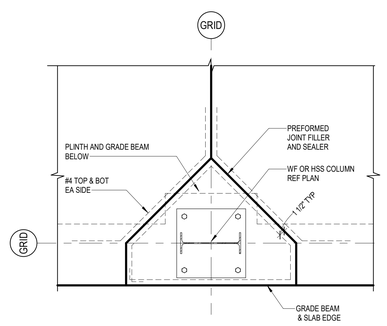
1 TYPICAL PIER REINFORCING DIAGRAM AND SCHEDULE
3/4" = 1'-0"



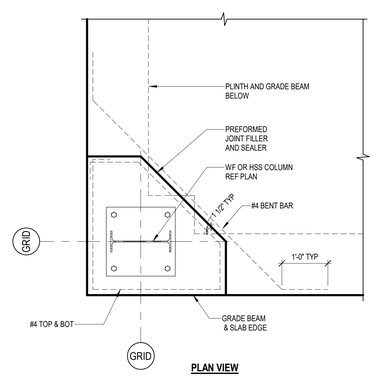
NOTES:

1. REFER TO "TYPICAL SLAB-ON-GRADE SUBGRADE PREPARATION" FOR SUBGRADE PREPARATION REQUIREMENTS INCLUDING LOCATION OF VAPOR BARRIER RELATIVE TO SLAB AND GRANULAR BASE AND WHETHER FINE-GRADE GRANULAR MATERIAL IS REQUIRED.
2. REFER TO "TYPICAL CONSTRUCTION AND CONTROL JOINTS - SLAB-ON-GRADE" FOR CONSTRUCTION AND CONTROL JOINT REQUIREMENTS.
3. CONTRACTOR TO COORDINATE REQUIRED SIZE OF BLOCKOUT FOR STRUCTURAL STEEL COLUMNS WITH STEEL ERECTOR. SUBMIT THE DESIRED BLOCKOUT SIZE TO ARCHITECT FOR APPROVAL.
4. BLOCKOUT SHALL BE SIZED TO PROVIDE 3" MINIMUM CONCRETE COVER ALL AROUND COLUMN AND BASE PLATE.
5. THE BLOCKOUT SHALL BE KEYWAYED WITH RE-ENTRANT BARS.

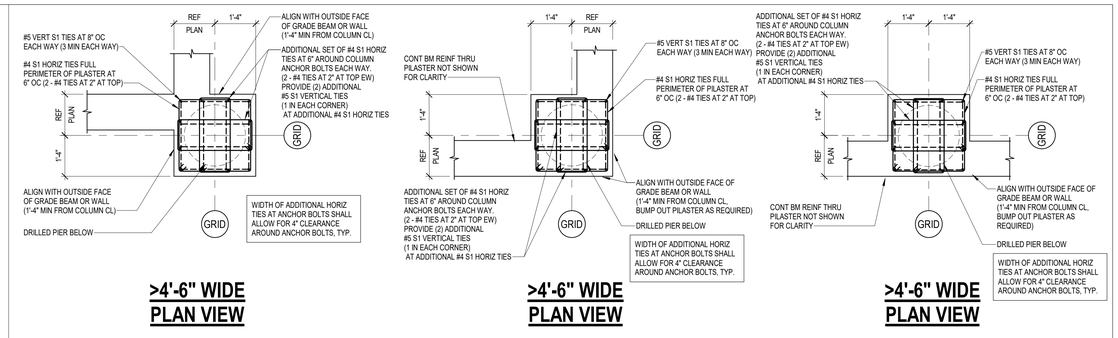
2 TYPICAL SLAB-ON-GRADE INTERIOR BLOCKOUT DETAIL
NO SCALE



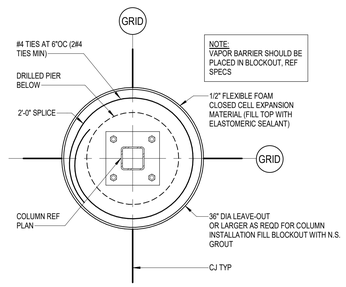
4 TYPICAL SLAB-ON-GRADE PERIMETER BLOCKOUT DETAIL
NO SCALE



6 TYPICAL SLAB-ON-GRADE CORNER BLOCKOUT DETAIL
NO SCALE



3 TYPICAL PILASTER DETAILS AT PIERS
NO SCALE



5 TYPICAL COLUMN BLOCKOUT (ROUND)
NO SCALE

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LANDSCAPE
CONSULTANT NAME
T.000-000-0000
STRUCTURAL
CONSULTANT NAME
T.000-000-0000
MEP
CONSULTANT NAME
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ACOUSTIC
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THEATER
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FOOD SERVICE
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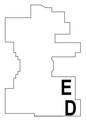
New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS



KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
JOHN R. KUBALA
106120
05/20/2025
Kubala Engineers
F-23612

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

CHECKED BY: Checker
DRAWN BY: Author

GENERAL FOUNDATION NOTES AND TYP DETAILS

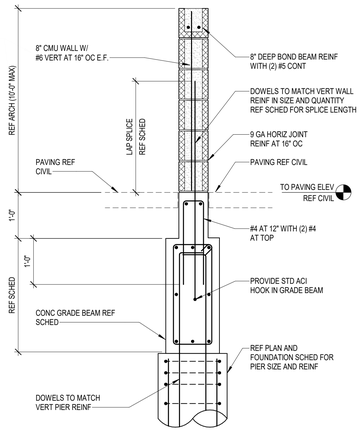
S-303

Plot Stamp:
6/3/2025 6:11:33 PM

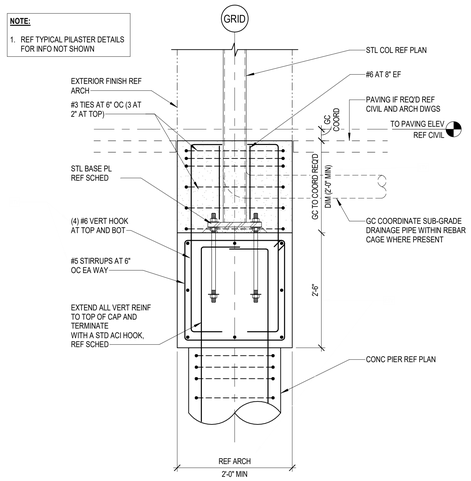
SITE ITEMS FOUNDATION SECTIONS AND DETAILS

S-320

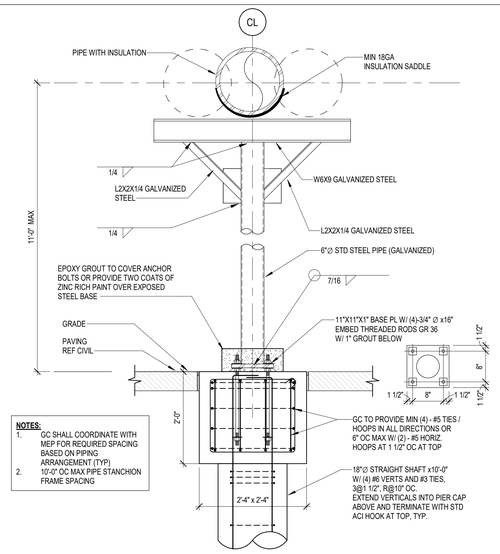
FOR BLUEBEAM LABELING/OCR:



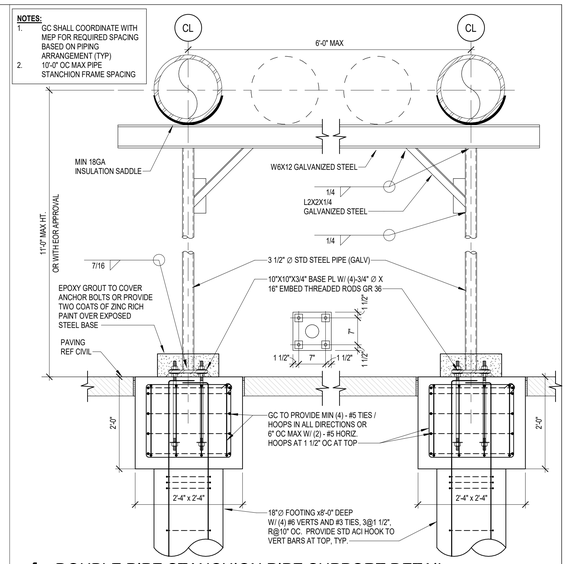
1 SCREEN WALL AT MECH YARD
3/4" = 1'-0"



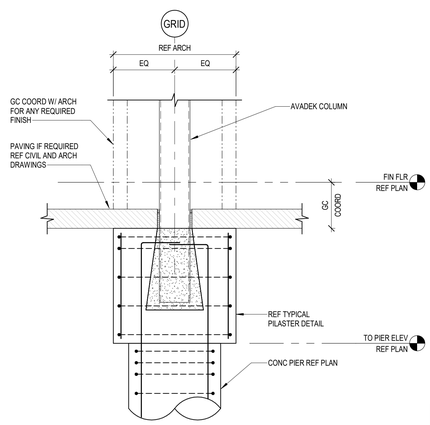
2 EXTERIOR COLUMN DETAIL
3/4" = 1'-0"

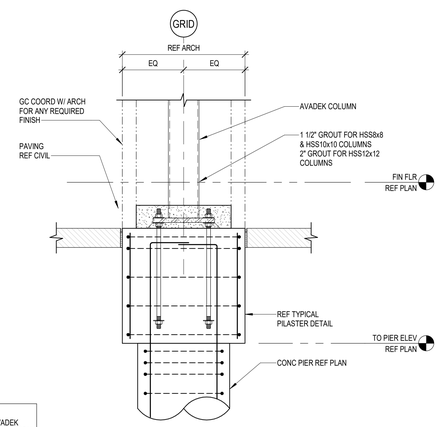


3 SINGLE COLUMN PIPE STANCHION DETAIL
NO SCALE



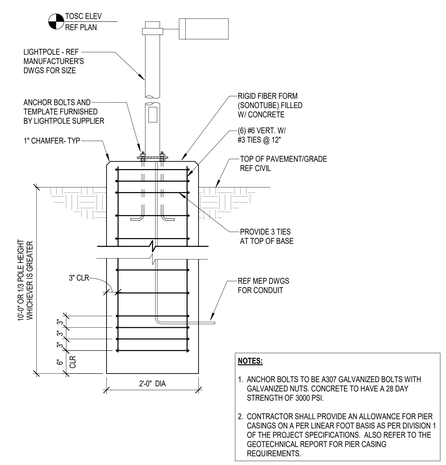
4 DOUBLE PIPE STANCHION PIPE SUPPORT DETAIL
NO SCALE



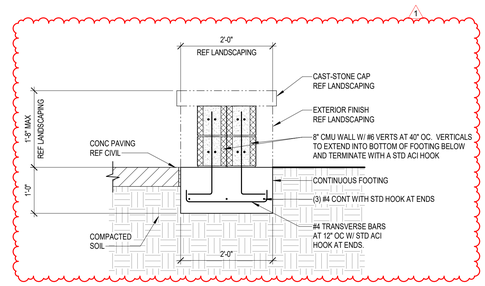


NOTE:
GC SHALL COORDINATE WITH AVADEK FOR REQUIRED COLUMN BASE CONDITION (TYP)

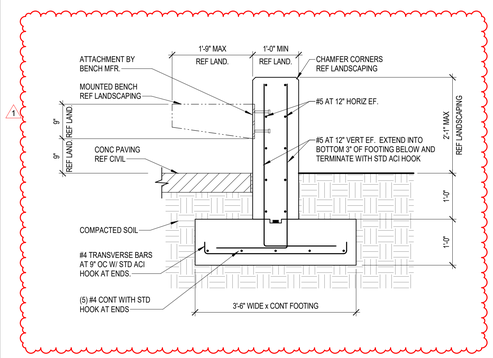
5 TYP AVADEK CANOPY COLUMN DETAIL
3/4" = 1'-0"



6 LIGHTPOLE FOOTING DETAIL
NO SCALE



7 FREE STANDING SEAT WALL
3/4" = 1'-0"



8 CONCRETE SEAT WALL WITH BENCH
3/4" = 1'-0"

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CONSULTANT NAME
T 000-000-0000
ACOUSTIC
CONSULTANT NAME
T 000-000-0000
THEATER
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FOOD SERVICE
CONSULTANT NAME
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New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT

KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
JOHN R. KUBALA
106120
05/20/2025
Kubala Engineers
F-23612

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

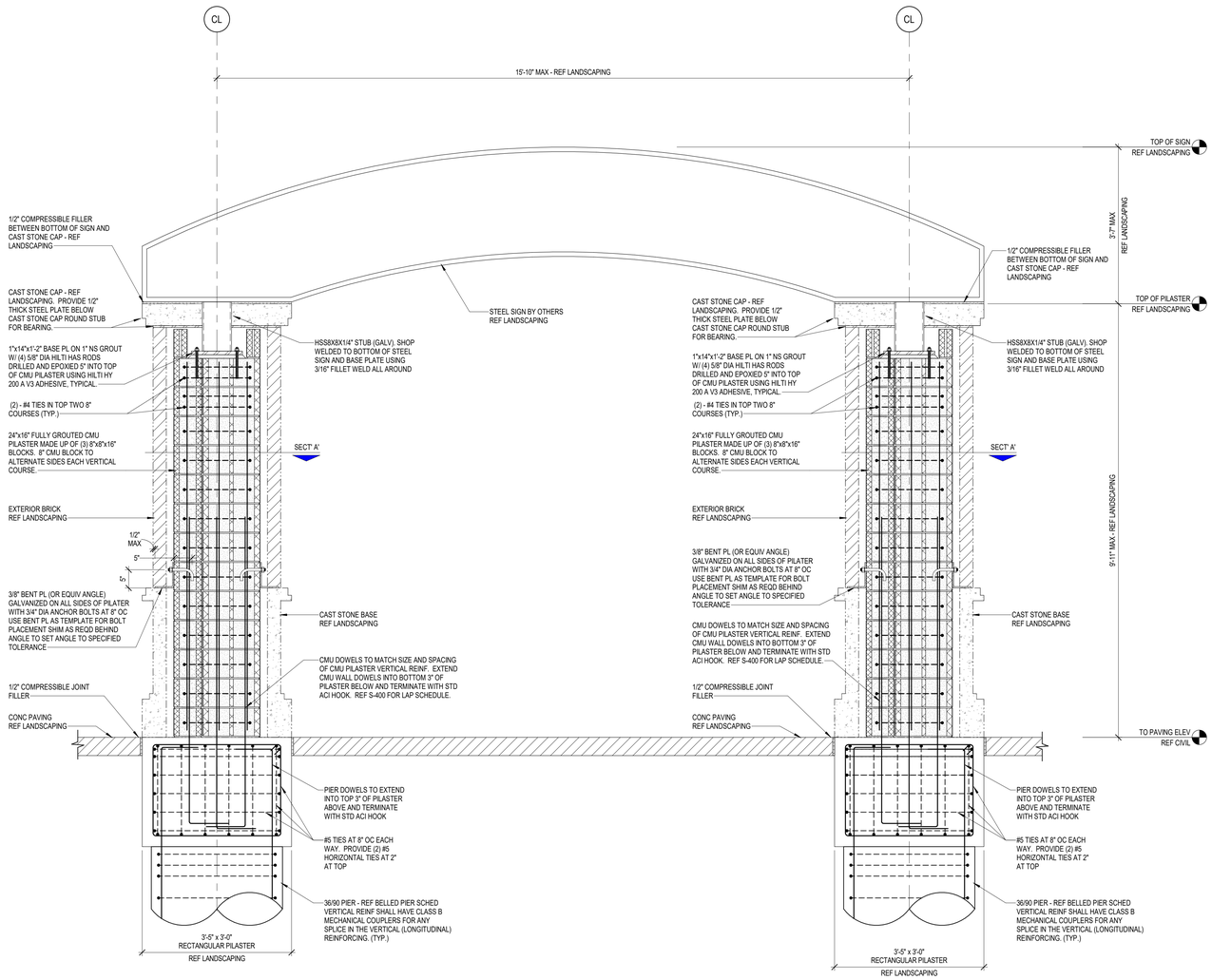
CHECKED BY: Checker
DRAWN BY: Author

SITE ITEMS FOUNDATION SECTIONS AND DETAILS

S-320

Plot Stamp:
6/3/2025 6:11:35 PM

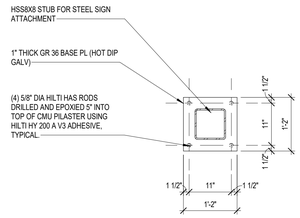
SITE ITEMS FOUNDATION SECTIONS AND DETAILS
S-321
FOR BLUEBEAM LABELING/OCR:



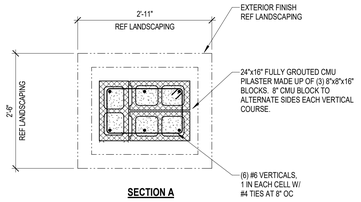
1 PLAZA ENTRY GATE - ELEVATION
3/4" = 1'-0"

NOTES:

1. REFER TO LANDSCAPING DRAWINGS FOR STEEL SIGN RADIUS AND DIMENSIONS NOT SHOWN HEREIN.
2. REFER TO LANDSCAPING / ARCH FOR BRICK TIES AND CAST STONE TIES TO CMU PILASTER. ALL TIES SHALL BE HOT DIP GALVANIZED.
3. ALL STEEL SHALL BE HOT DIP GALVANIZED.



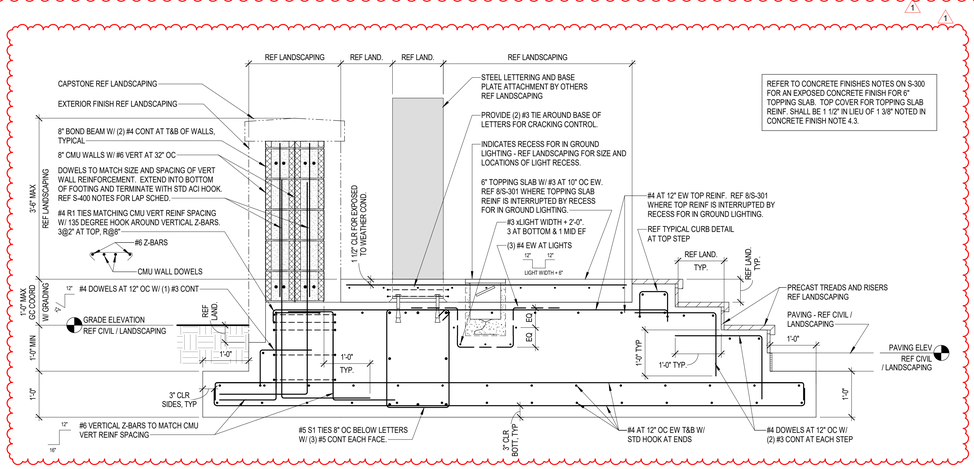
BASE PLATE PLAN VIEW



SECTION A

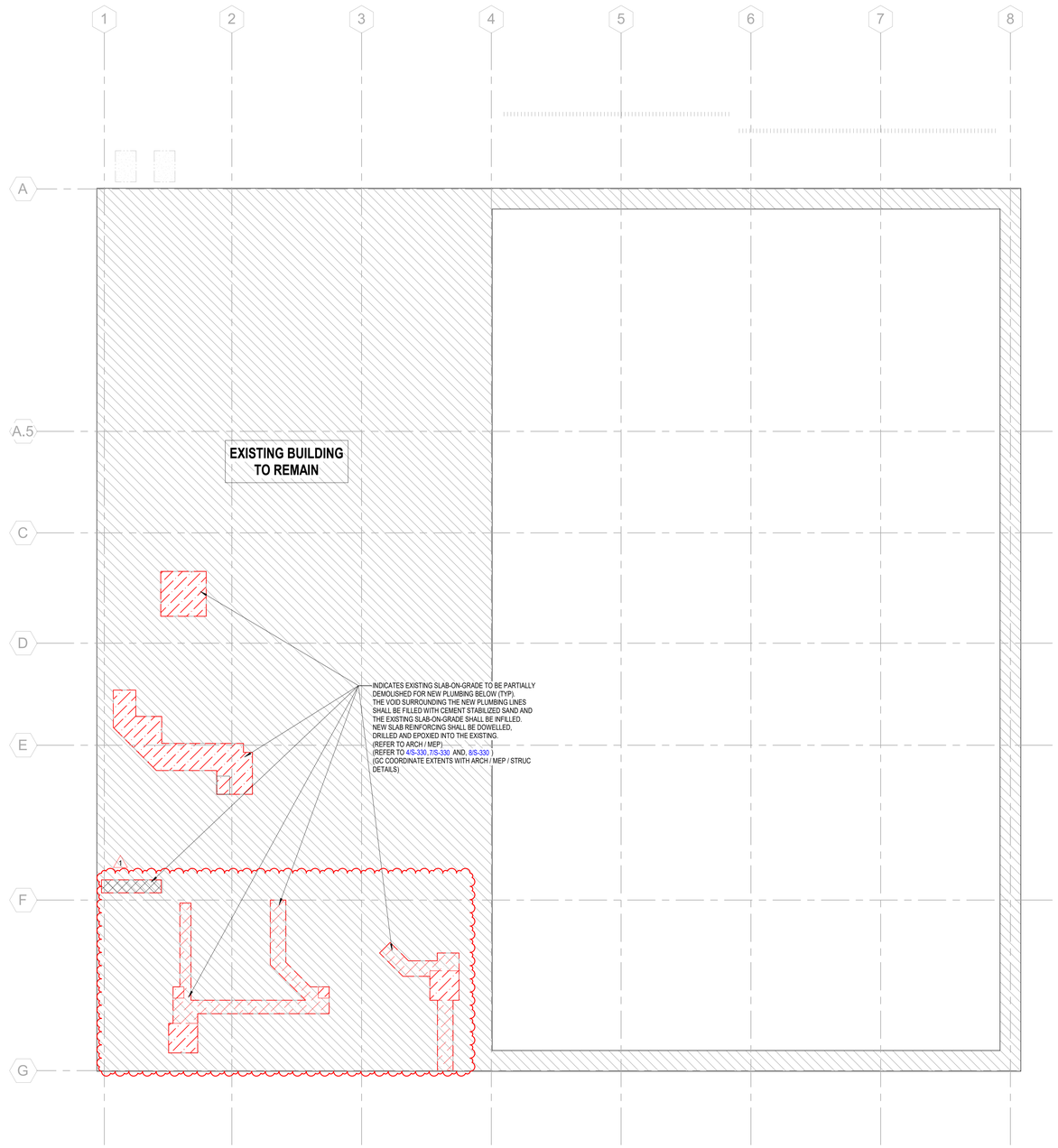
2 NOT USED
1/2" = 1'-0"

3 NOT USED
1/2" = 1'-0"


REF LANDSCAPING
REF LAND.
REF LAND.
REF LANDSCAPING
CAPSTONE REF LANDSCAPING
EXTERIOR FINISH REF LANDSCAPING
8" BOND BEAM W/ (2) #4 CONT AT T&B OF WALLS, TYPICAL
8" CMU WALLS W/ #6 VERT AT 32" OC
DOWELS TO MATCH SIZE AND SPACING OF VERT WALL REINFORCEMENT. EXTEND INTO BOTTOM OF FOOTING AND TERMINATE WITH STD ACI HOOK. REINF S-400 NOTES FOR LAP SCHED.
#4 R1 TIES MATCHING CMU VERT REINF SPACING W/ 135 DEGREE HOOK AROUND VERTICAL Z-BARS. 3@2" AT TOP, R@8"
#6 Z-BARS
CMU WALL DOWELS
#4 DOWELS AT 12" OC W/ (1) #3 CONT
GRADE ELEVATION
REF CIVIL / LANDSCAPING
3" CLR. SIDES, TYP
#6 VERTICAL Z-BARS TO MATCH CMU VERT REINF SPACING
#5 S1 TIES 8" OC BELOW LETTERS W/ (3) #5 CONT EACH FACE
3" CLR. BOTT. TYP
#4 AT 12" OC EW T&B W/ STD HOOK AT ENDS
#4 DOWELS AT 12" OC W/ (2) #3 CONT AT EACH STEP
STEEL LETTERING AND BASE PLATE ATTACHMENT BY OTHERS REF LANDSCAPING
PROVIDE (2) #3 TIE AROUND BASE OF LETTERS FOR CRACKING CONTROL.
INDICATES RECESS FOR IN GROUND LIGHTING - REF LANDSCAPING FOR SIZE AND LOCATIONS OF LIGHT RECESS.
6" TOPPING SLAB W/ #3 AT 10" OC EW. REF 8/S-301 WHERE TOPPING SLAB REINF IS INTERRUPTED BY RECESS FOR IN GROUND LIGHTING.
#3 xLIGHT WIDTH + 2'-0", 3 AT BOTTOM & 1 MID EF
(3) #4 EW AT LIGHTS
LIGHT WIDTH + 8"
#4 AT 12" EW TOP REINF. REF 8/S-301 WHERE TOP REINF IS INTERRUPTED BY RECESS FOR IN GROUND LIGHTING.
REF TYPICAL CURB DETAIL AT TOP STEP
REF LAND. TYP.
PRECAST TREADS AND RISERS REF LANDSCAPING
PAVING - REF CIVIL / LANDSCAPING
PAVING ELEV
REF CIVIL / LANDSCAPING
1'-0" TYP.
1'-0" TYP.
1'-0" TYP.
1'-0"
1'-0"
1'-0"
1'-0"
1'-0" MIN.
5'-6" MAX
REF LANDSCAPING
5'-0" MAX
REF LANDSCAPING
W/ GRADING
1'-0" TYP.
1'-0" TYP.
1'-0" TYP.
1'-0"
1'-0"
1'-0"
1'-0"

DEMO PLAN
SD-101
FOR BLUEBEAM LABELING/OCR:

0"
1"



1 FOUNDATION DEMO PLAN
3/32" = 1'-0"

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STRUCTURAL
KUBALA ENGINEERS
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MEP
LEAF ENGINEERS
T 713-965-0505
ACOUSTIC
BLA TECH
T 713-942-0364
EXTERIOR
BEAM PROFESSIONALS
T 713-965-0005
FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS, LLc
T 281-350-2323

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: AGRICULTURAL PAVILION

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS

H	J

KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
JOHN R. KUBALA
106120
LICENSED PROFESSIONAL ENGINEER
05/20/2025
Kubala Engineers
F-23612

CLIENT
Huffman Independent School District

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum #1	06/03/2025

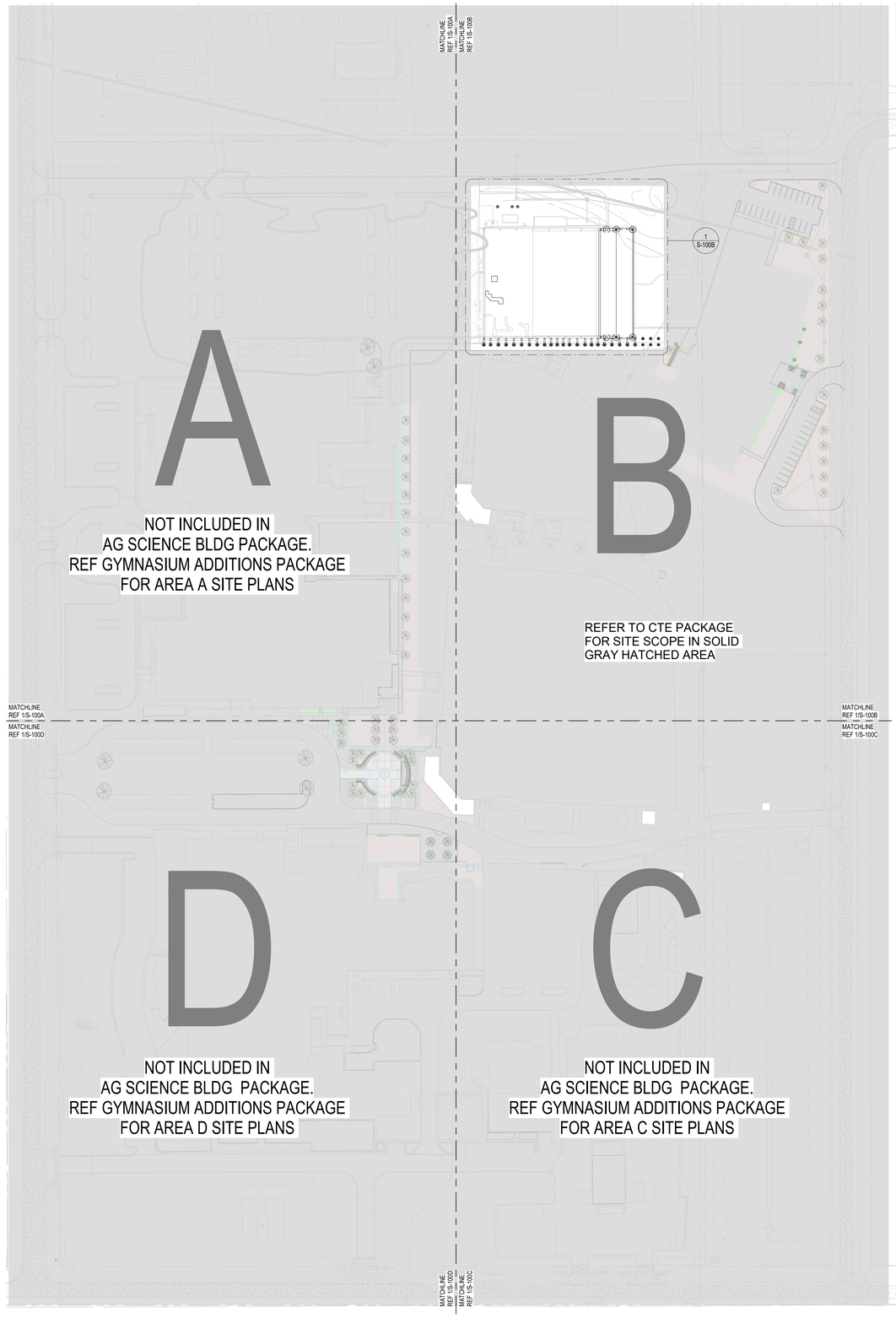
CHECKED BY: Checker
DRAWN BY: Author

DEMO PLAN

SD-101

Plot Stamp:
6/3/2025 6:13:11 PM

COMPOSITE STRUCTURAL SITE PLAN
S-100
FOR BLUEBEAM LABELING/OCR:



1 COMPOSITE STRUCTURAL SITE PLAN
1" = 80'-0"

STRUCTURAL SCOPE ITEMS (AG SCIENCE BLDG)

1. AG BUILDING ADDITION
   A. AN OPEN BUILDING AG BUILDING ADDITION IS PLANNED IN AREA J. THE FRAMING WILL BE PRE-ENGINEERED METAL BUILDING. PEMB COLUMNS WILL BE SUPPORTED BY GRADE BEAMS AND BELLED PIERS. REFER TO S-101J & S-102J.

2. SITE CANOPY
   A. ALUMINUM CANOPY BY OTHERS PLANNED ON PLAN SOUTH SIDE OF AG BLDG. REF S-101J & S-102J FOR MORE INFO.

3. MECHANICAL SERVICE YARD
   A. A NEW SERVICE YARD IS PLANNED IN AREA J. REFER TO S-101J.

4. RENOVATION SCOPE
   A. NEW UNDERFLOOR PIPING: SLAB TO BE DEMOED AND REPLACED AT DEMOED EXISTING UNDERFLOOR PIPING AND NEW UNDERFLOOR PIPING. GC COORDINATE ALL LOCATIONS W/ PLUMBING. REF 1/S-330 AT NEW TRENCH DRAINS IN EXISTING SOG, 9/S-330 FOR NEW PLUMBING TRENCHES IN EXISTING SOG, AND 8/S-330 FOR NEW FLOOR DRAWINGS IN EXISTING SOG.
   B. NEW ROOF PENETRATIONS / OPENINGS IN EXISTING FOR MECH EQUIPMENT: GC COORDINATE ALL SIZES AND LOCATIONS W/ MECHANICAL DRAWINGS. REF S-102J AND 7/S-330.
   C. INFILL EXISTING MECH PENETRATIONS: GC COORDINATE ALL SIZES AND LOCATIONS OF EXISTING OPENINGS TO BE INFILLED WITH MECHANICAL DRAWINGS. REF S-102J AND 6/S-330.

5. CHAIN LINK FENCE
   A. REFER TO 9/S-304 FOR CHAIN LINK FENCE FOUNDATION DETAIL. LOCATIONS SHOWN ON STRUCTURAL SITE PLAN ARE APPROXIMATE. REFER TO ARCH AND LANDSCAPING FOR LOCATIONS.

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New CTE Center & Hargrave High School Additions & Renovations

BUILDING: AGRICULTURAL PAVILION

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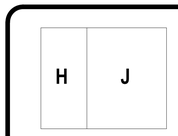
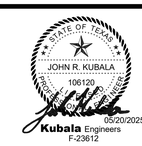


KEY PLAN
NORTH: PLAN TRUE



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Huffman Independent School District

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum #1	06/03/2025

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COMPOSITE STRUCTURAL SITE PLAN

S-100

Plot Stamp:
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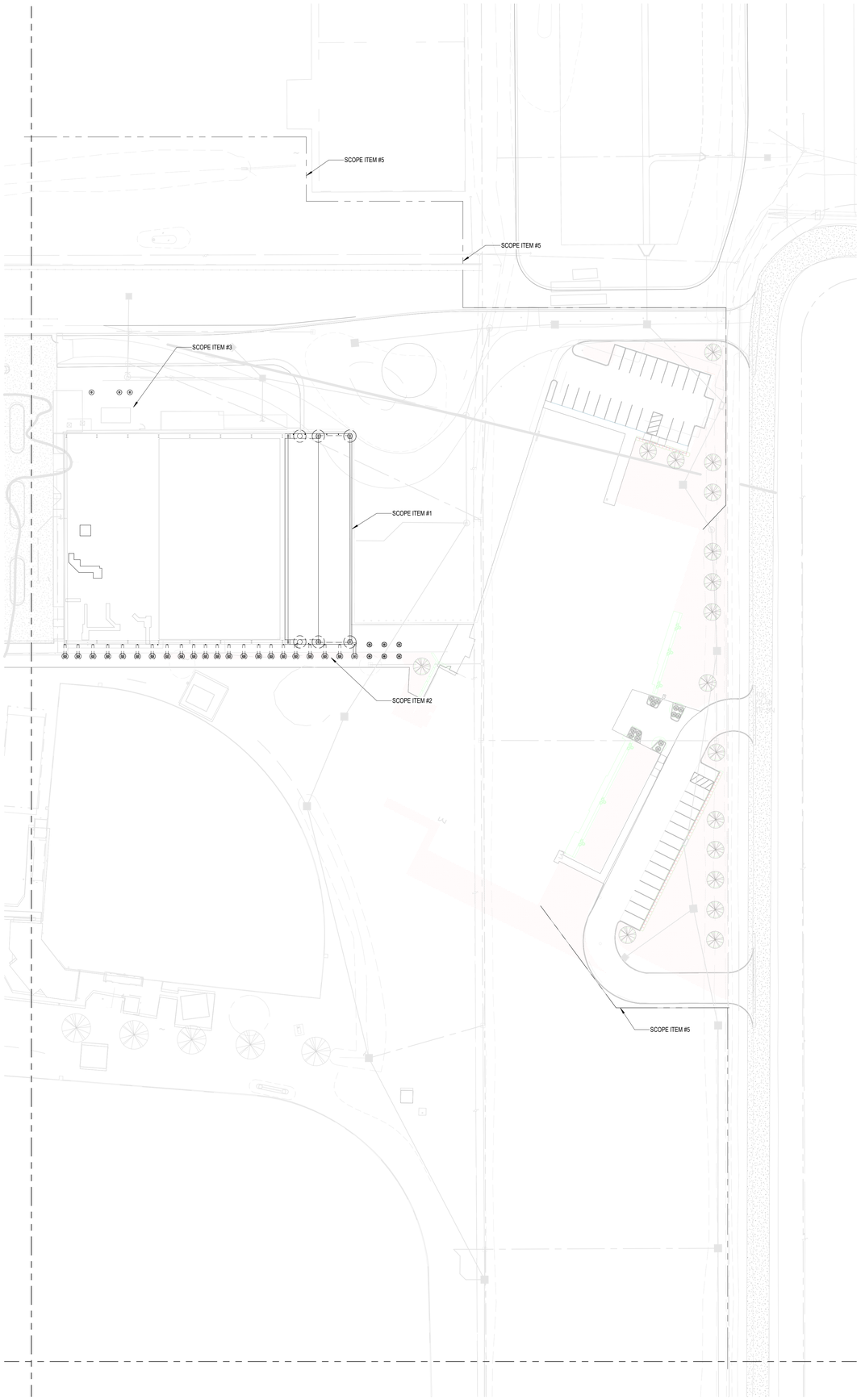
STRUCTURAL SITE PLAN - AREA B (AG BLDG)
S-100B
FOR BLUEBEAM LABELING/OCR:

0"
1"



STRUCTURAL SCOPE ITEMS (AG SCIENCE BLDG)

1. AG BUILDING ADDITION
   A. AN OPEN BUILDING AG BUILDING ADDITION IS PLANNED IN AREA J. THE FRAMING WILL BE PRE-ENGINEERED METAL BUILDING. PEMB COLUMNS WILL BE SUPPORTED BY GRADE BEAMS AND BELLED PIERS. REFER TO S-101J & S-102J.

2. SITE CANOPY
   A. ALUMINUM CANOPY BY OTHERS PLANNED ON PLAN SOUTH SIDE OF AG BLDG. REF S-101J & S-102J FOR MORE INFO.

3. MECHANICAL SERVICE YARD
   A. A NEW SERVICE YARD IS PLANNED IN AREA J. REFER TO S-101J.

4. RENOVATION SCOPE
   A. NEW UNDERFLOOR PIPING: SLAB TO BE DEMOED AND REPLACED AT DEMOED EXISTING UNDERFLOOR PIPING AND NEW UNDERFLOOR PIPING. GC COORDINATE ALL LOCATIONS W/ PLUMBING. REF 1/S-330 AT NEW TRENCH DRAINS IN EXISTING SOG, 5/S-330 FOR NEW PLUMBING TRENCHES IN EXISTING SOG, AND 8/S-330 FOR NEW FLOOR DRAWINGS IN EXISTING SOG.
   B. NEW ROOF PENETRATIONS / OPENINGS IN EXISTING FOR MECH EQUIPMENT: GC COORDINATE ALL SIZES AND LOCATIONS W/ MECHANICAL DRAWINGS. REF S-102J AND 7/S-330.
   C. INFILL EXISTING MECH PENETRATIONS: GC COORDINATE ALL SIZES AND LOCATIONS OF EXISTING OPENINGS TO BE INFILLED WITH MECHANICAL DRAWINGS. REF S-102J AND 6/S-330.

5. CHAIN LINK FENCE
   A. REFER TO 9/S-304 FOR CHAIN LINK FENCE FOUNDATION DETAIL. LOCATIONS SHOWN ON STRUCTURAL SITE PLAN ARE APPROXIMATE. REFER TO ARCH AND LANDSCAPING FOR LOCATIONS.

1 STRUCTURAL SITE PLAN - AREA B
1" = 40'-0"

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H	J

KEY PLAN
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STATE OF TEXAS
JOHN R. KUBALA
106120
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STRUCTURAL SITE PLAN - AREA B (AG BLDG)

S-100B

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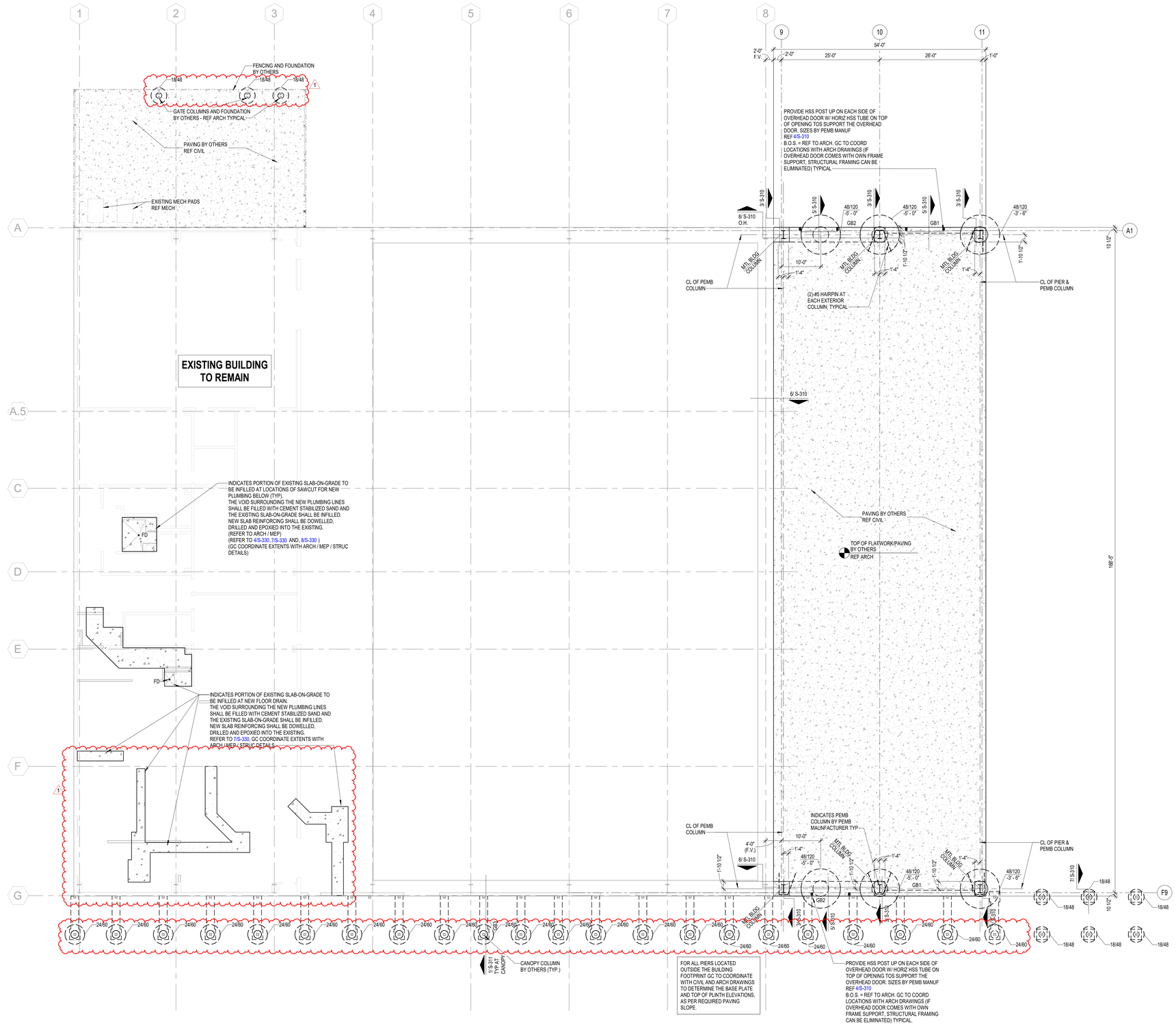
FOUNDATION PLAN AREA J
S-101J
FOR BLUEBEAM LABELING/OCR:



1 FOUNDATION PLAN AREA J
3/32" = 1'-0"

FOUNDATION PLAN NOTES

1. REFER TO PLAN FOR TOP OF STRUCTURAL CONCRETE ELEVATIONS (TOSC EL). ALL ELEVATIONS SHOWN ON THE PLAN ARE BASED ON A LEVEL ONE REFERENCE ELEVATION = 0'-0". THIS REFERENCE ELEVATION IS EQUIVALENT TO THE LEVEL ONE MEAN SEA LEVEL ELEVATION = REF CIVIL SHOWN IN THE CIVIL AND ARCHITECTURAL DRAWINGS AND IS NOT INTENDED TO ESTABLISH THE ACTUAL SEA LEVEL ELEVATION OF ANY PORTION OF THE STRUCTURE.
2. TOP OF INTERIOR/ EXTERIOR PLINTH ELEVATION SHALL BE = -1'-0" UON.
   TOP OF INTERIOR PIER ELEVATION WITHOUT PLINTH SHALL BE = -1'-0" UON.
   TOP OF INTERIOR PIER ELEVATION WITH PLINTH SHALL BE = -3'-6" UON.
   TOP OF INTERIOR PIER ELEVATION WITH GRADE BEAM SHALL BE = -3'-6" UON.
   TOP OF EXTERIOR PIER ELEVATION SHALL BE = -3'-6" UON.
3. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENTS AND DIMENSIONS OF RAISED OR DEPRESSED SLAB AREAS, SLOPES, CURBS, AND DRAINS. REFER TO TYPICAL DETAILS FOR REINFORCEMENT REQUIREMENTS.
4. GC COORDINATE ALL PENETRATIONS AND UNDERGROUND UTILITIES WITH MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS. REFER TO TYPICAL DETAILS FOR ADDITIONAL REINFORCEMENT REQUIREMENTS.
5. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY ARCHITECT AND STRUCTURAL ENGINEER OF ANY DISCREPANCIES.
6. GC COORDINATE ALL SLAB EDGE DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION.
7. GC COORDINATE ALLTHE SIZE AND EXTENT OF ALL BRICK LEDGES SHOWN ON PLAN OR DETAILS WITH ARCHITECTURAL DRAWINGS.
8. REF S0.xx SERIES DRAWINGS FOR GENERAL NOTES AND TYP DETAILS
9. REF S3.xx SERIES DRAWINGS FOR FOUNDATION AND SLAB-ON-GRADE DETAILS.
10. REFER TO ARCH AND PLUMBING DWGS FOR THE SIZE, NUMBER AND LOCATION OF ALL THE TRENCHES, AND FLOOR DRAINS. REF 1/S-330 FOR TRENCH DETAIL AND REF 8/S-330 FOR FLOOR DRAIN DETAIL.
11. PIERS/FOOTINGS WITHOUT CENTERLINES SHOWN ON PLANS, SECTIONS AND/OR DETAILS SHALL BE LOCATED AS FOLLOWS: 1/S-330 7/S-330
    A. COLUMNS AND PILASTERS: CENTERLINE OF THE COLUMN.
    B. GRADE BEAMS AND WALLS: CENTERLINE OF THE GRADE BEAM OR WALL.
    C. ALONG THE LENGTH OF GRADE BEAMS AND WALLS: INTERMEDIATE PIERS/FOOTINGS SHALL BE SPACED EQUALLY BETWEEN PIERS/FOOTINGS THAT ARE DIMENSIONALLY SET ON PLAN OR AS NOTED ABOVE.
12. GC COORDINATE THE LOCATION OF ALL CANOPY COLUMNS WITH ARCH DRAWINGS.

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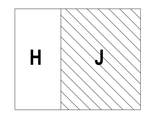

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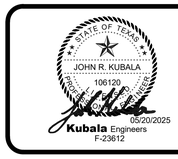

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FOUNDATION PLAN AREA J

S-101J

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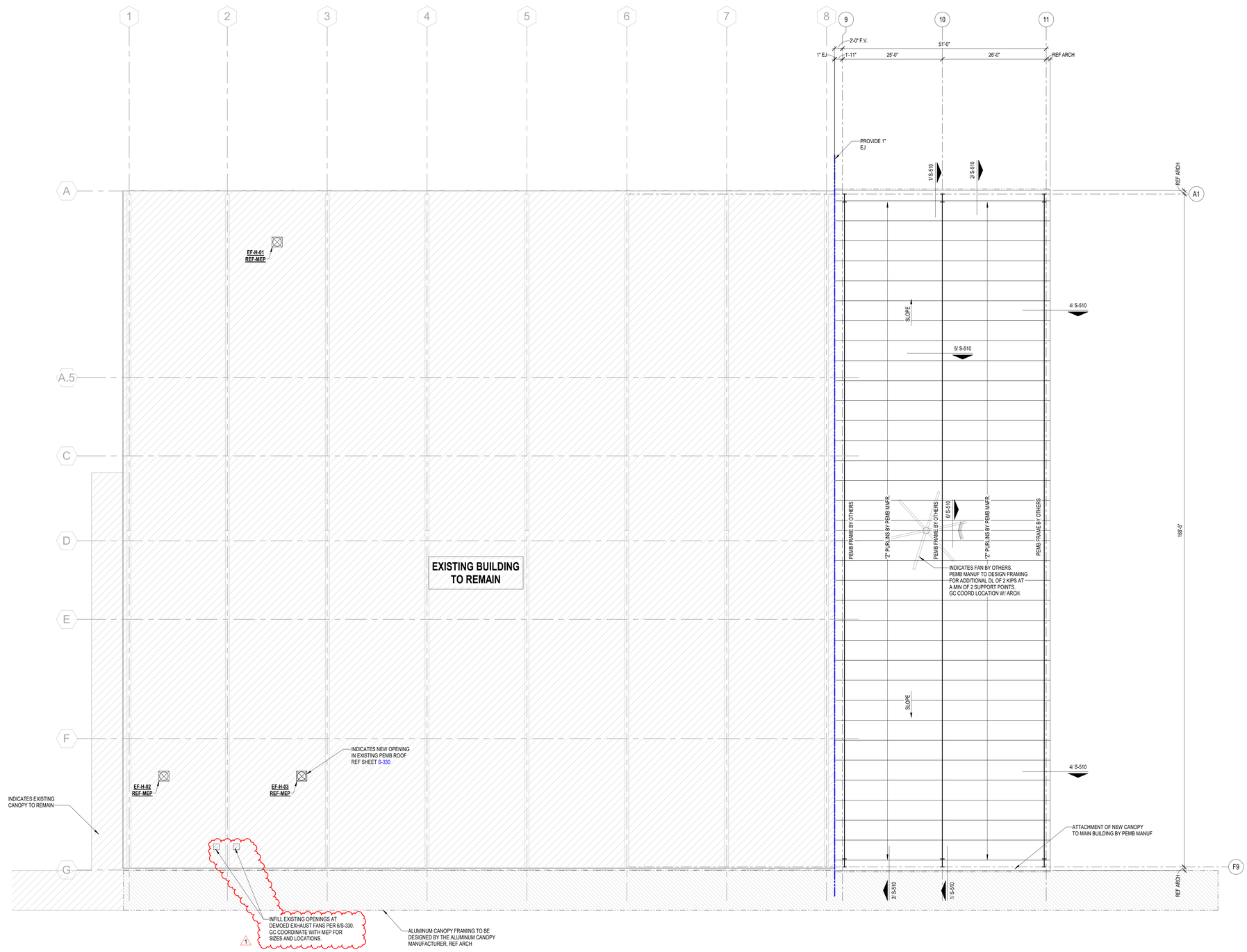
SCHEMATIC ROOF FRAMING PLAN AREA J
S-102J
FOR BLUEBEAM LABELING/OCR:



1 SCHEMATIC ROOF FRAMING PLAN AREA J
3/32" = 1'-0"

ROOF PLAN NOTES

1. REF ARCH FOR TOP OF WALL ELEVATIONS.
2. DETAILING OF ALL MEMBER CONNECTIONS TO THE SUPPORTS SHALL BE PERFORMED TO SATISFY LATEST OSHA ERECTION REQUIREMENTS.
3. TOS EL = BOTTOM OF DECK = REF ARCH.
4. ALL STRUCTURAL STEEL THAT IS PERMANENTLY EXPOSED TO THE EXTERIOR OR IS PERMANENTLY IN UNCONDITIONED SPACE SHALL BE HOT-DIPPED GALVANIZED.
5. GC COORDINATE ALL PENETRATIONS AND UNDERGROUND UTILITIES WITH MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS. REFER TO TYPICAL DETAILS FOR ADDITIONAL REINFORCEMENT REQUIREMENTS.
6. CONTRACTOR TO VERIFY ALL SLAB EDGE DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION.
7. ——— - - ——— INDICATES PIPING RUN, REF MEP DRAWINGS; GC SHALL COORDINATE GIVEN LOAD WITH JOIST MANUFACTURER. REF SHEET S-011.
8. REF S0.xx SERIES DRAWINGS FOR GENERAL NOTES AND TYP DETAILS

*****GC AND PEMB MANUF NOTE*****

KUBALA ENGINEERS HAS MADE SIGNIFICANT EFFORTS TO SHOW AS MUCH OF THE REQUIRED MISCELLANEOUS STEEL AS POSSIBLE TO AID THE PEMB MANUFACTURER IN DETERMINING THEIR SCOPE OF WORK; HOWEVER, NOT ALL MISCELLANEOUS ITEMS ARE SHOWN, AND THE GENERAL CONTRACTOR AND THEIR SELECTED PRE-ENGINEERED METAL BUILDING MANUFACTURER ARE HEREBY INFORMED THAT THEY ARE SOLELY RESPONSIBLE FOR COMPLETELY REVIEWING ALL DRAWINGS AND SPECIFICATIONS FROM ALL DISCIPLINES AND ENSURING THAT PROPER SUPPORT FOR ALL ITEMS HAVE ADEQUATE SUPPORT, THIS INCLUDES BUT IS NOT LIMITED TO: CEILINGS AND CEILING ASSEMBLIES, WALLS AND WALL ASSEMBLIES, STOREFRONTS AND STOREFRONT ASSEMBLIES, WINDOWS, DOORS, FOLDING PARTITIONS, MEP EQUIPMENT, AND VARIOUS STORM PIPING AND HYDRONIC PIPING RUNS, SUSPENDED ELECTRICAL COMPONENTS, SUSPENDED KITCHEN EQUIPMENT AND VENT HOODS, ARCHITECTURAL FINISHES/CLADDINGS, FURR-DOWNS, ROOF TOP EQUIPMENT, ROOF TOP SCREEN-WALLS, ROOF HATCHES.

*****GC AND PEMB MAUF. NOTE*****

1. GC AND PEMB MANUF SHALL COORDINATE THE LOCATION OF MECH PENETRATIONS AND FRAMING AROUND THEM W/MEP AND ARCH DRAWINGS.
2. PEMB MNUF PROVIDE THE ROOF FRAMING AND SIZES.
3. PEMB MANUFACTURER SHALL COORDINATE WITH ARCH AND OTHER CONSULTANT DRAWINGS FOR THE REQUIRED MISCELLANEOUS STEELS AND DESIGN THEM ACCORDINGLY.
4. GC AND PEMB MANUF SHALL COORDINATE THE BEAM SIZES AND MIN REQUIRED CLEAR SPACE BETWEEN SECOND FLOOR AND ROOF FRAMING ABOVE THE SECOND FLOOR WITH MEP AND ARCH DWGS TO AVOID ANY CONFLICTS.
5. ALL PEMB FRAMINGS AND PURLINS ALONG HYDRONIC PIPES RUN SHALL BE DESIGNED FOR SUSPENDED PIPE WEIGHT. IT'S THE GENERAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE LOCATION, SIZES AND HOW OFTEN PIPES WILL BE HUNG (5'-0" OC OR 10'-0" OC) SO THAT PROPER LOADING MAY BE ACCOUNTED FOR. IT IS RECOMMENDED TO HANG FROM EACH JOIST (GC MUST COORDINATE WITH MEP CONTRACTOR TO ENSURE SAME HANGING PATTERN IS FOLLOWED).

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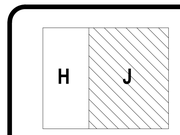

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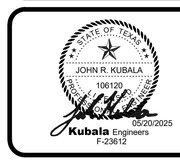

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SCHEMATIC ROOF FRAMING PLAN AREA J

S-102J

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GENERAL GRADE BEAM NOTES AND TYP DETAILS
S-302
FOR BLUEBEAM LABELING/OCR:

0"
1"

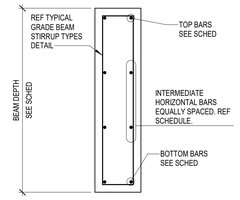
GRADE BEAM:

1. GRADE BEAM DIMENSIONS AND/OR LOCATIONS SHALL NOT BE ALTERED WITHOUT APPROVAL OF THE ENGINEER OF RECORD. SIDES OF GRADE BEAMS SHALL BE FORMED. EARTH FORMING OF GRADE BEAMS IS NOT ALLOWED UNLESS GRADE BEAMS MAY BE EARTH FORMED SO LONG AS THE SIDES ARE PLUMB AND SOUND AND ANY PORTION OF THE BEAMS/SLAB THAT EXTENDS ABOVE GRADE/ EXPOSED IS BOARD FORMED. THE WALLS MUST NOT SLOUGH OFF MORE THAN 3/4" OUT OF PLANE OF THE PLUMB LINE. WHERE THIS OCCURS A BOARD FORM MAY BE LAID IN THE EARTH TO SMOOTH THE SIDE LOCALLY AT THE IMPERFECTION TO MAINTAIN WALL FLATNESS TOLLERANCE.
2. GRADE BEAMS SHALL BE POURED MONOLITHICALLY AROUND CORNERS AND AT INTERSECTIONS. SEE TYPICAL GRADE BEAM CONSTRUCTION JOINT DETAIL FOR ACCEPTABLE CONSTRUCTION JOINT LOCATIONS.
3. GENERAL CONTRACTOR SHALL COORDINATE LOCATION, SIZE, AND ELEVATION AND INCLUDE IN HIS CONTRACT PRICE ALL REQUIRED HORIZONTAL PENETRATIONS THROUGH CONCRETE BEAMS WHETHER SHOWN ON STRUCTURAL DRAWINGS OR NOT. WHERE BEAM PENETRATIONS ARE REQUIRED BUT ARE NOT SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS, CONTRACTOR SHALL SUBMIT DRAWINGS SHOWING DIMENSIONS AND LOCATIONS OF ALL REQUIRED PENETRATIONS FOR REVIEW AND APPROVAL.

GRADE BEAM SCHEDULE

MARK	SIZE		REINFORCING			TIES		REMARKS
	WIDTH	DEPTH	TOP	BOTTOM	MIDDLE	SIZE	SPACING	
GB1	1'-6"	2'-6"	3#9	3#9	-	#4 S1	1@2", R@10"; 1@2", R @ 6" @ CANTI	-
GB2	3'-9"	4'-0"	9#10 9#10	9#10	REF T-MID	#4 D1A	1@2", R@10"; 1@2", R @ 6" @ CANTI	TWO LAYERS OF REBARS FOR TOP
GB3	2'-0"	2'-6"	4#9	4#9	-	#4 S1	1@2", R@10"; 1@2", R @ 6" @ CANTI	

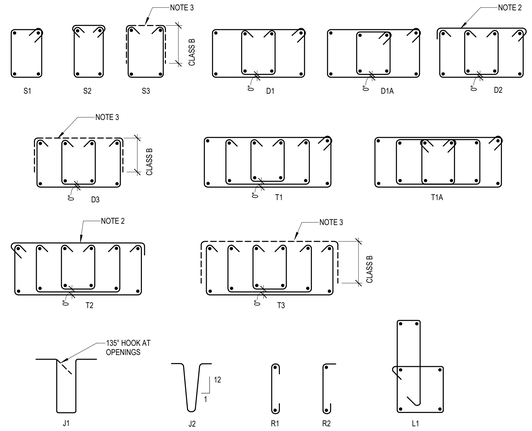
* - REF DETAIL 7/S-303 FOR TIE SPACING AT GRADE BEAM TO GRADE BEAM CONNECTION WHERE PIER/ FOOTING IS NOT PRESENT AT INTERSECTION. REF DETAIL 10/S-304 FOR TIES SPACING BELOW COLUMN WHERE PIER/ FOOTING IS NOT PRESENT BELOW COLUMN.



INTERMEDIATE BAR SCHEDULE (T-MID)

BEAM DEPTH	NUMBER OF BARS EA FACE	SIZE OF BAR
> 36" - 48"	5	#3
49" - 54"	5	#4
55" - 60"	5	#5
61" - 66"	6	#5
67" - 78"	7	#5
79" AND ABOVE	AT 9" OC	#5

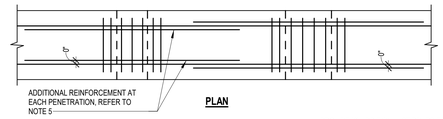
1 GRADE BEAM SCHEDULE
NO SCALE



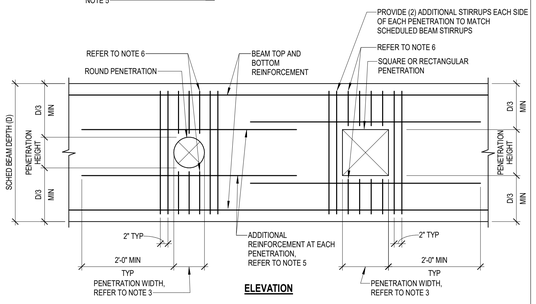
NOTES:
1. ALL HOOKS SHALL BE FABRICATED AS REQUIRED BY ACI. REFER TO "TYPICAL STIRRUP AND TIE HOOK TYPES."
2. THE TOP CAP FOR CLOSED STIRRUPS S15, S19, S24, AND S27 SHALL BE PLACED SUCH THAT THE 135° HOOK END IS NOT ON THE SIDE CONFINED BY THE SLAB.
3. PROVIDE TOP CAP FOR OPEN STIRRUPS S3, S21, S22, AND S29 TO MATCH SCHEDULED STIRRUP SIZE AT 48".

2 TYPICAL GRADE BEAM STIRRUP TYPES
3/4" = 1'-0"

NOTES:
1. CLEAR SPACING BETWEEN PENETRATIONS SHALL BE 24" MINIMUM UNLESS NOTED OTHERWISE BY THE STRUCTURAL ENGINEER.
2. PENETRATIONS SHALL BE LOCATED ACCORDING TO THE FOLLOWING CRITERIA:
   a. FOR BEAMS NOT SUPPORTING INTERSECTING BEAMS LOCATE PENETRATIONS WITHIN TWO FEET EITHER SIDE OF BEAM MIDSPAN.
   b. FOR BEAMS SUPPORTING INTERSECTING BEAMS CHECK WITH STRUCTURAL ENGINEER.
3. PENETRATION WIDTH MUST NOT EXCEED PENETRATION HEIGHT, UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS.
4. FOR LOCATIONS AND/OR SIZES OF PENETRATIONS NOT CONFORMING TO THE ABOVE CRITERIA AND NOT OTHERWISE DETAILED ON THE STRUCTURAL DRAWINGS, CONTRACTOR SHALL COORDINATE REQUIRED ADDITIONAL REINFORCEMENT WITH THE STRUCTURAL ENGINEER.
5. PROVIDE THE FOLLOWING REINFORCEMENT AT EACH SLEEVE, UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS:
   1-#5 TOP AND BOTTOM AT BEAMS WITH WIDTHS LESS THAN 9".
   2-#5 TOP AND BOTTOM AT BEAMS WITH 2-LEG STIRRUPS.
   4-#5 TOP AND BOTTOM AT BEAMS WITH 4-LEG STIRRUPS.
   "N"-#5 TOP AND BOTTOM AT BEAMS WITH "N"-LEG STIRRUPS.
6. PROVIDE ADDITIONAL STIRRUPS ABOVE AND BELOW PENETRATIONS AT SPACING NOT TO EXCEED ONE THIRD OF THE SCHEDULED STIRRUP SPACING, UNLESS DETAILED OTHERWISE ON THE STRUCTURAL DRAWINGS.
7. SCHEDULED BEAM STIRRUPS NOT SHOWN FOR CLARITY.

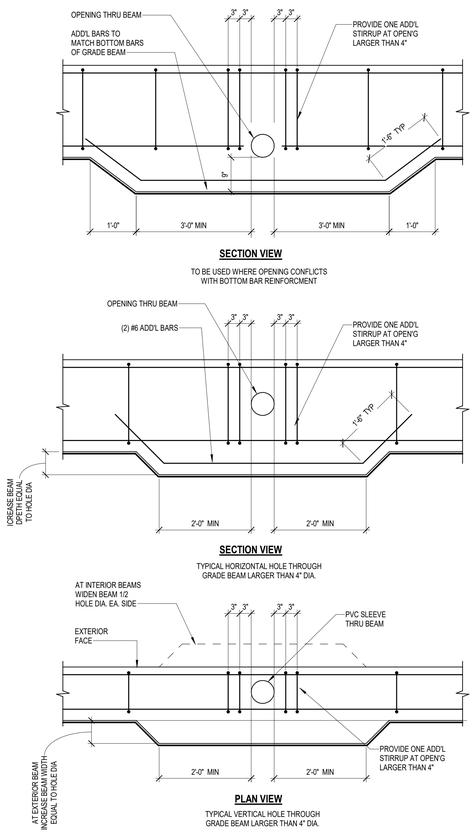


PLAN

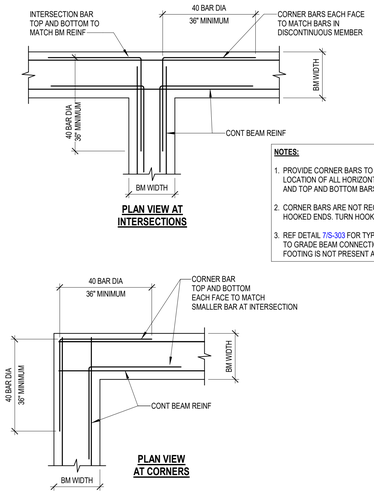


ELEVATION

3 TYPICAL HORIZONTAL PENETRATION IN CONCRETE BEAM
NO SCALE

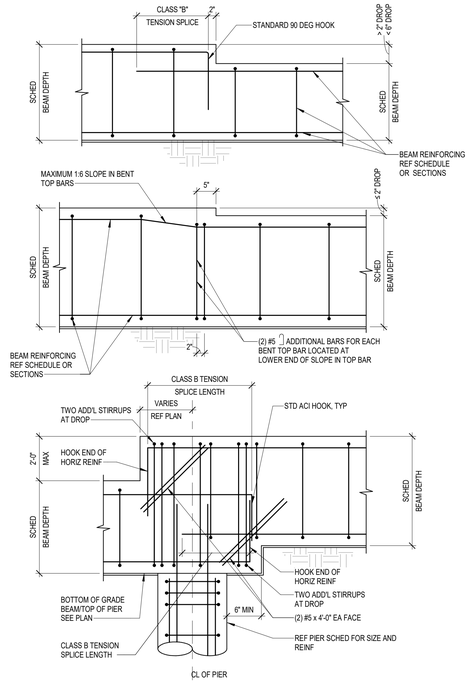


4 TYPICAL GRADE BEAM PENETRATION DETAILS
NO SCALE



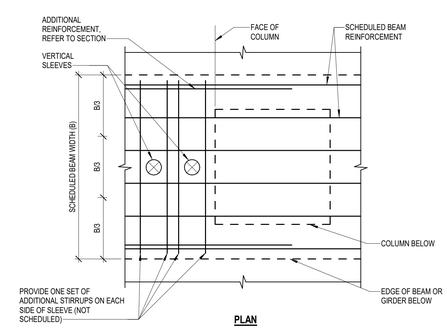
NOTES:
1. PROVIDE CORNER BARS TO MATCH SIZE AND LOCATION OF ALL HORIZONTAL GRADE BEAM AND TOP AND BOTTOM BARS.
2. CORNER BARS ARE NOT REQUIRED AT HOOKED ENDS. TURN HOOKS SIDEWAYS.
3. REF DETAIL 7/S-303 FOR TYPICAL GRADE BEAM TO GRADE BEAM CONNECTION WHERE PIER/ FOOTING IS NOT PRESENT AT INTERSECTION.

5 TYPICAL CORNER BAR DETAILS
NO SCALE



6 TYPICAL GRADE BEAM STEPDOWN DETAIL
NO SCALE

NOTES:
1. GENERAL CONTRACTOR SHALL COORDINATE REQUIRED BEAM SLEEVES WITH MECHANICAL, ELECTRICAL, AND PLUMBING CONTRACTORS. REQUIRED SLEEVES MAY OR MAY NOT BE SHOWN ON THE STRUCTURAL DRAWINGS. GENERAL CONTRACTOR SHALL SUBMIT PLAN SHOWING LAYOUT OF ALL SLEEVES WITH FORMWORK SHOP DRAWING SUBMITTAL.
2. SLEEVES SHALL BE LOCATED WITHIN THE MIDDLE THIRD OF THE SCHEDULED BEAM WIDTH.
3. CONTINUOUS BEAM REINFORCEMENT MAY BE SLIGHTLY DISPLACED (3" MAXIMUM) OR ADJACENT BARS BUNDLED (2 BAR BUNDLES MAXIMUM) TO FACILITATE SLEEVE INSTALLATION. DO NOT CUT, OFFSET, OR BEND REINFORCEMENT.
4. SLEEVES OCCURRING ON OPPOSITE SIDES OF A COLUMN MUST BE IN LINE.
5. THE OUTSIDE DIAMETER OF A SLEEVE MAY NOT EXCEED 15% OF THE SCHEDULED WIDTH OF THE BEAM THROUGH WHICH IT MUST PASS.
6. THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD WHEN A SLEEVE SIZE OR LOCATION DOES NOT MEET THE ABOVE CONDITIONS.
7. SCHEDULED BEAM STIRRUPS NOT SHOWN FOR CLARITY.



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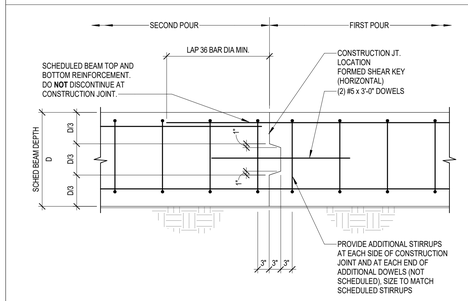
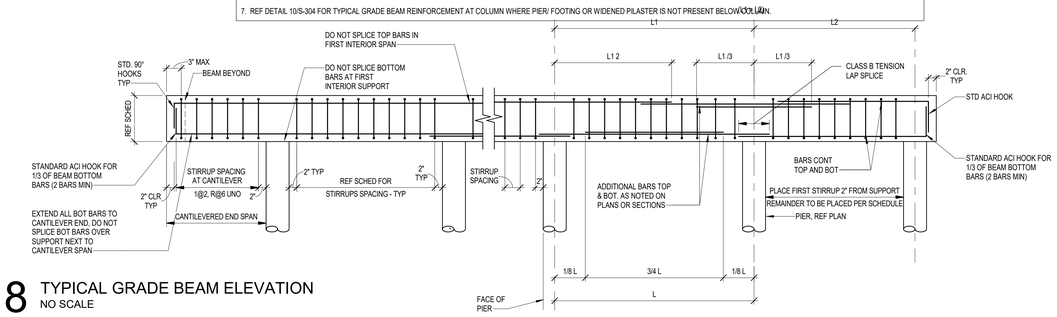


ELEVATION VIEW

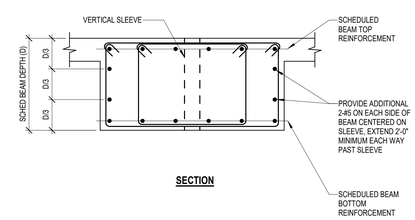
NOTES:
1. LOCATE JOINTS IN MIDDLE THIRD OF BEAM SPAN BETWEEN SUPPORTS.
2. ACCEPTABLE JOINT LOCATIONS ARE AS FOLLOWS:
   a. FOR BEAMS NOT SUPPORTING INTERSECTING BEAMS, PLACE JOINT WITHIN MIDDLE THIRD OF SPAN.
   b. FOR BEAMS SUPPORTING INTERSECTING BEAMS, CHECK WITH STRUCTURAL ENGINEER FOR JOINT LOCATIONS AND DOWEL REQUIREMENTS.
3. FOR JOINT LOCATIONS OTHER THAN WITHIN MIDDLE THIRD OF SPAN, CONTRACTOR SHALL COORDINATE REQUIRED ADDITIONAL REINFORCEMENT WITH THE ENGINEER ON THE SHOP DRAWINGS.
4. JOINTS MAY NOT OCCUR IN THE FIRST SPAN OF A BEAM LINE OR IN ANY SPAN WHICH IS LESS THAN 8 FEET.
5. GENERAL CONTRACTOR SHALL SUBMIT DESIRED CONSTRUCTION JOINT LAYOUT AS A SHOP DRAWING FOR APPROVAL A MINIMUM OF TWO WEEKS PRIOR TO POUR.

7 TYPICAL GRADE BEAM CONSTRUCTION JOINT
NO SCALE

NOTES:
1. TOP CONT BARS MAY BE SPLICED AT MID-SPAN OF BEAM ONLY. EXCEPT AT CANTILEVER SPANS, SPANS ADJACENT TO CANTILEVER SPANS AND SPANS WITH LENGTH NOT GREATER THAN ONE HALF OF THE ADJACENT SPAN LENGTH.
2. ALL HOOKS SHOWN ARE STANDARD HOOKS (90° OR 180°).
3. SPLICES IN SCHEDULED BARS LESS THAN 60'-0" LENGTH ARE ONLY PERMITTED AT THE SPECIFIED LOCATIONS SHOWN. SPLICES IN SCHEDULED BARS MORE THAN 60'-0" LENGTH SHALL BE REFERRED TO ENGINEER FOR APPROVAL.
4. BEAMS WITH DEPTH OF 36" OR LESS, DO NOT NEED INTERMEDIATE BARS UNLESS REQUIRED BY BEAM SCHEDULE. REF 1/S-302
5. REF TO DETAIL 6/S-302 FOR DROP IN TOP OR BOTTOM OF GRADE BEAM.
6. REF DETAIL 7/S-303 FOR TYPICAL GRADE BEAM TO GRADE BEAM CONNECTION WHERE PIER/ FOOTING IS NOT PRESENT AT INTERSECTION.
7. REF DETAIL 10/S-304 FOR TYPICAL GRADE BEAM REINFORCEMENT AT COLUMN WHERE PIER/ FOOTING OR WIDENED PILASTER IS NOT PRESENT BELOW COLUMN.



8 TYPICAL GRADE BEAM ELEVATION
NO SCALE



SECTION

9 TYPICAL VERTICAL PENETRATION IN CONCRETE BEAM
NO SCALE

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New CTE Center & Hargrave High School Additions & Renovations
BUILDING: AGRICULTURAL PAVILION
25400 Willy Lane
Huffman, TX 77336
ISSUE FOR PROPOSAL

H J
KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
JOHN R. KUBALA
106120
05/20/2025
Kubala Engineers
F-23612

CLIENT
Huffman Independent School District

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum #1	06/03/2025

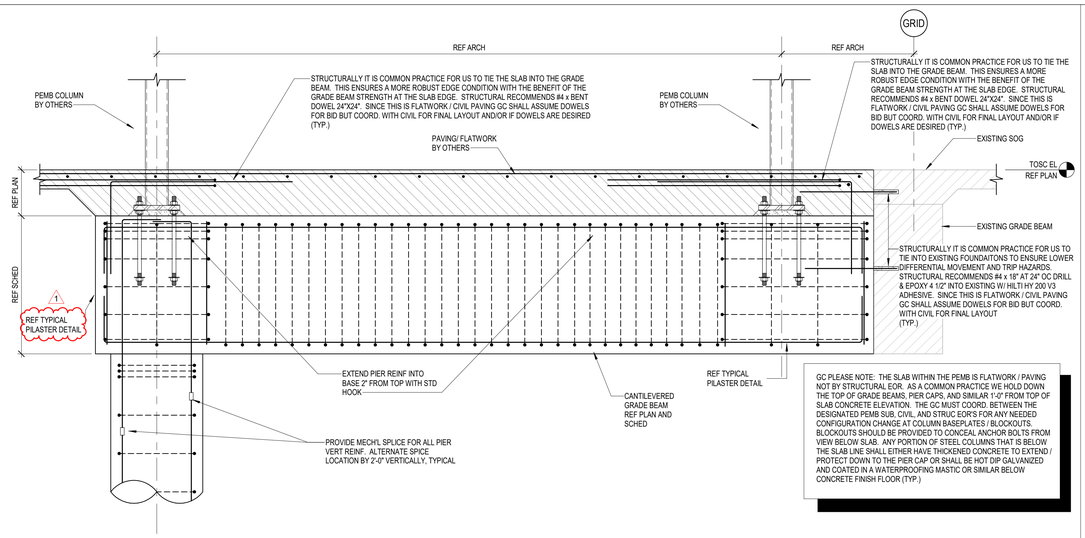
CHECKED BY: Checker
DRAWN BY: Author

GENERAL GRADE BEAM NOTES AND TYP DETAILS

S-302

Plot Stamp:
6/3/2025 6:13:20 PM

PEMB NOTES & DETAILS
S-311
FOR BLUEBEAM LABELING/OCR:



1 DETAIL AT CANTILEVERED GRADE BEAM
3/4" = 1'-0"

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New CTE Center & Hargrave High School Additions & Renovations

BUILDING: AGRICULTURAL PAVILION

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ISSUE FOR PROPOSAL

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KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
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1	Addendum #1	06/03/2025

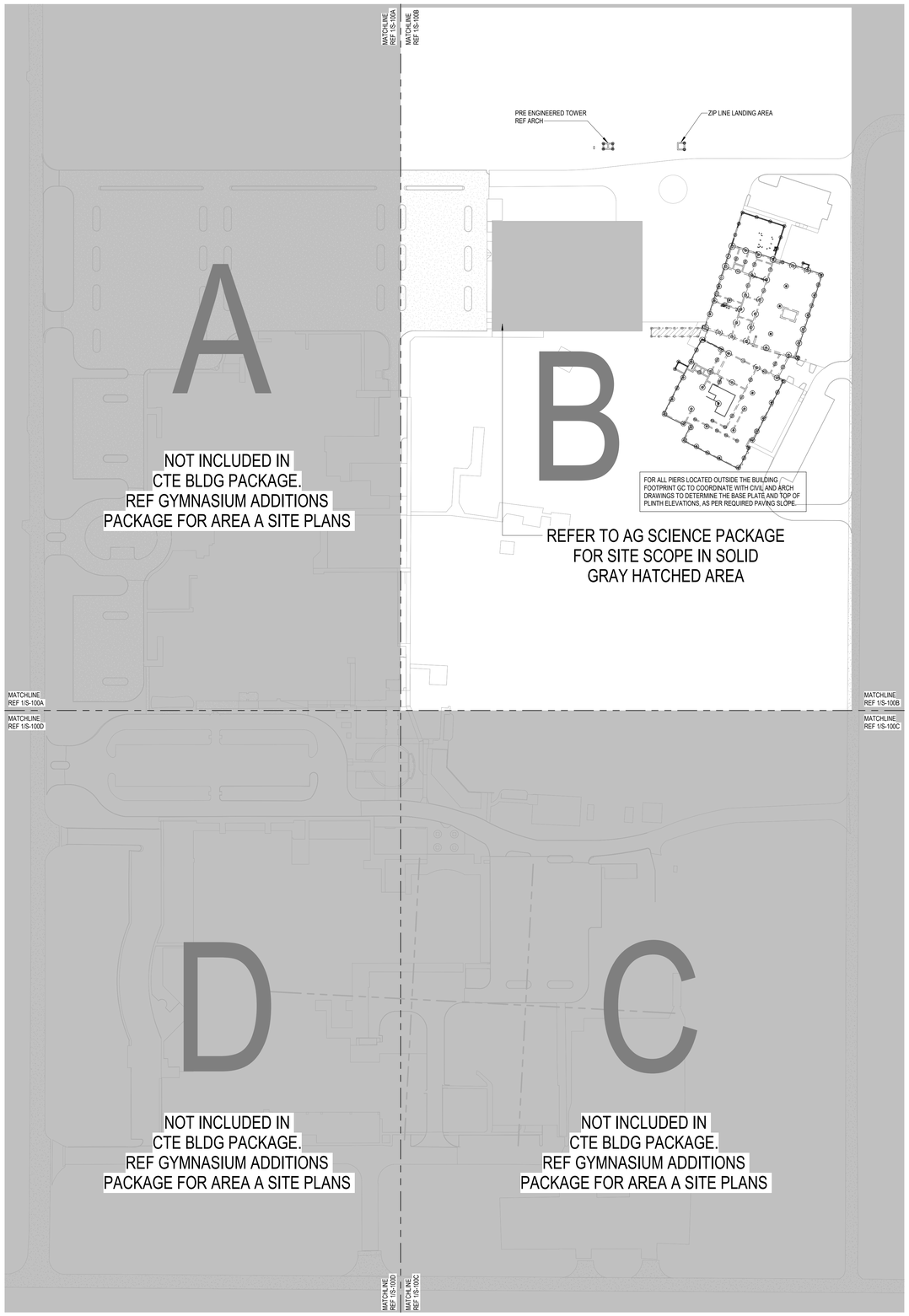
CHECKED BY: Checker
DRAWN BY: Author

PEMB NOTES & DETAILS

S-311

COMPOSITE STRUCTURAL SITE PLAN
S-100
FOR BLUEBEAM LABELING/OCR:

0"
1"



1 COMPOSITE STRUCTURAL SITE PLAN
1" = 80'-0"

STRUCTURAL SCOPE ITEMS (CTE)

1. NEW CTE BUILDING
   A. A NEW 2-STORY CTE BUILDING IS PLANNED IN AREAS K & L. THE FIRST FLOOR WILL CONSIST OF 5" SLAB-ON-GRADE. PERIMETER WALLS AND BRACES WILL BE SUPPORTED BY GRADE BEAMS AND BELLED PIERS. THE SECOND FLOOR MEZZANINE WILL BE A CONCRETE SLAB ON COMPOSITE METAL DECK SUPPORTED BY COMPOSITE WIDE FLANGE STEEL BEAMS AND STEEL COLUMNS. THE ROOF WILL BE SUPPORTED BY LWIF OVER A NON-COMPOSITE ROOF DECK SUPPORTED BY STEEL JOISTS AND WIDE FLANGE STEEL FRAMING. EXTERIOR GLAZING AND ARCHITECTURAL ELEMENTS WILL BE SUPPORTED BY TUBE FRAMING. WIND BRACES AND MOMENT FRAMES WILL BE USED AS THE MAIN WIND FRAME RESISTING SYSTEM FOR THE NEW ADDITION. REFER TO S-101K, S-101L, S-102K, S-103K, AND S-103L.

2. LANDSCAPING ITEMS
   A. FREE STANDING SEAT WALL. REF 7/S-320 FOR DETAIL. REF LANDSPACING FOR LOCATIONS.
   B. CONCRETE SEAT WALL WITH BENCH. REF 8/S-320 FOR DETAIL. REF LANDSCAPING FOR LOCATIONS.

3. SCREEN WALL AT DOG WALK AREA
   A. 7'-6" TALL SCREEN WALL AROUND DOG WALK AREA. REF S-101L FOR MORE INFO.

4. CHAIN LINK FENCE
   A. REFER TO 9/S-304 FOR CHAIN LINK FENCE FOUNDATION DETAIL. LOCATIONS SHOWN ON STRUCTURAL SITE PLAN ARE APPROXIMATE. REFER TO ARCH AND LANDSCAPING FOR LOCATIONS.

5. ENTRY GATES
   A. FOUNDATIONS FOR ENTRY GATES BY MANUFACTURER. LOCATIONS SHOWN ON STRUCTURAL SITE PLAN ARE APPROXIMATE. REFER TO ARCH AND LANDSCAPING FOR QUANTITY AND LOCATION.

6. SITE CANOPY
   A. ALUMINUM CANOPY BY OTHERS. REF S-106 FOR MORE INFO.

7. PRE-ENGINEERED ZIP LINE TOWER AND LANDING AREA. REF S-106 FOR FOUNDATION. ZIP LINE STRUCTURE AND THEIR BASE ATTACHMENT TO FOUNDATIONS TO BE DESIGNED BY OTHERS. REF ARCH.

8. FIRE TANK SUPPORT - TO BE ADDED BY DEFERRED SUBMITTAL.

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New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

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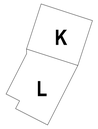
HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS



KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
JOHN R. KUBALA
106120
05/20/2025
Kubala Engineers
F-23612

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum #1	06/03/2025

CHECKED BY: MS
DRAWN BY: JD

COMPOSITE STRUCTURAL SITE PLAN

S-100 1

Plot Stamp:
6/3/2025 6:15:32 PM

STRUCTURAL SITE PLAN - AREA B (CTE)
S-100B
FOR BLUEBEAM LABELING/OCR:

0"
1"

STRUCTURAL SCOPE ITEMS (CTE)

1. NEW CTE BUILDING
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   B. CONCRETE SEAT WALL WITH BENCH. REF 8/S-320 FOR DETAIL. REF LANDSCAPING FOR LOCATIONS.

3. SCREEN WALL AT DOG WALK AREA
   A. 7'-6" TALL SCREEN WALL AROUND DOG WALK AREA. REF S-101L FOR MORE INFO.

4. CHAIN LINK FENCE
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5. ENTRY GATES
   A. FOUNDATIONS FOR ENTRY GATES BY MANUFACTURER. LOCATIONS SHOWN ON STRUCTURAL SITE PLAN ARE APPROXIMATE. REFER TO ARCH AND LANDSCAPING FOR QUANTITY AND LOCATION.

6. SITE CANOPY
   A. ALUMINUM CANOPY BY OTHERS. REF S-106 FOR MORE INFO.

7. PRE-ENGINEERED ZIP LINE TOWER AND LANDING AREA. REF S-106 FOR FOUNDATION. ZIP LINE STRUCTURE AND THEIR BASE ATTACHMENT TO FOUNDATIONS TO BE DESIGNED BY OTHERS. REF ARCH.

8. FIRE TANK SUPPORT - TO BE ADDED BY DEFERRED SUBMITTAL.

1 STRUCTURAL SITE PLAN - AREA B
1" = 40'-0"

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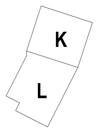
TEXAS



KEY PLAN
NORTH: PLAN TRUE

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05/20/2025
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05/20/2025	240157

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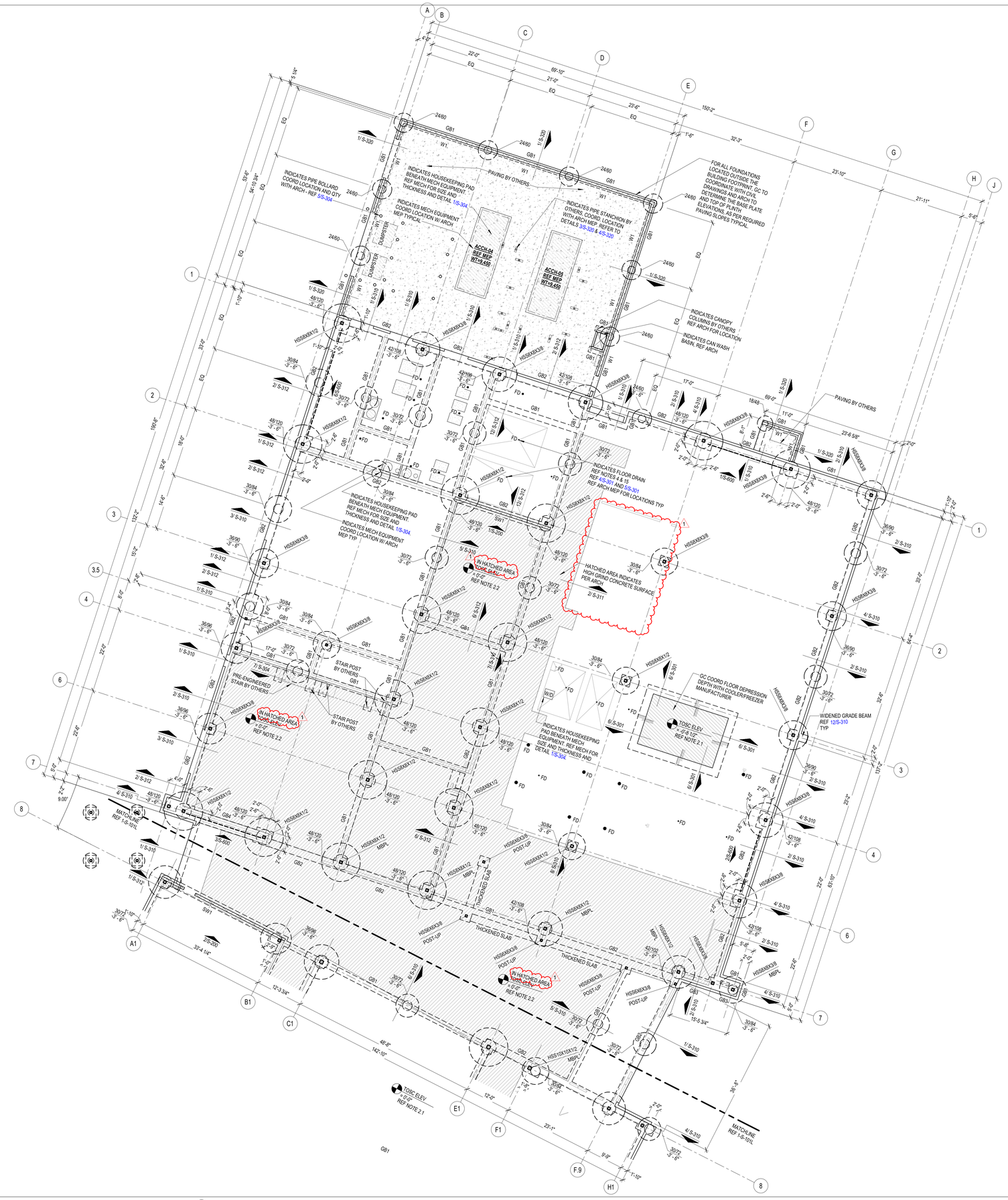
CHECKED BY: MS
DRAWN BY: JD

STRUCTURAL SITE PLAN - AREA B (CTE)

S-100B

Plot Stamp:
6/3/2025 6:15:34 PM

FOUNDATION PLAN - AREA K
S-101K
FOR BLUEBEAM LABELING/OCR:



FOUNDATION PLAN NOTES

1. REFER TO PLAN FOR TOP OF STRUCTURAL CONCRETE ELEVATIONS (TOSC EL). ALL ELEVATIONS SHOWN ON THE PLAN ARE BASED ON A LEVEL ONE REFERENCE ELEVATION = 0'-0". THIS REFERENCE ELEVATION IS EQUIVALENT TO THE LEVEL ONE MEAN SEA LEVEL ELEVATION = REF CIVIL SHOWN IN THE CIVIL AND ARCHITECTURAL DRAWINGS AND IS NOT INTENDED TO ESTABLISH THE ACTUAL SEA LEVEL ELEVATION OF ANY PORTION OF THE STRUCTURE.

2.1 5" THICK CONCRETE SLAB ON GRADE REINFORCED WITH #3@10" OC EACH WAY ON 2 3/4" CHAIRS FOR #3 BARS SPACED AT 36" OC EACH WAY. PLACE THE SLAB ON 15 MIL WATER VAPOR BARRIER OVER COMPACTED SELECT FILL (SOIL REPORT) FOR SLAB JOINT DETAILS REFER TO 1/S-301 AND 2/S-301.

2.2 AT POLISHED CONC AREAS: 5 1/2 " THICK CONCRETE SLAB ON GRADE REINFORCED WITH #3@10" OC EACH WAY ON 3 1/4" CHAIRS FOR #3 BARS SPACED AT 36" OC EACH WAY. PLACE THE SLAB ON 15 MIL WATER VAPOR BARRIER OVER COMPACTED SELECT FILL (SOIL REPORT) FOR SLAB JOINT DETAILS REFER TO 1/S-301 AND 2/S-301.

3.1 TOP OF INTERIOR GRADE BEAM ELEVATION SHALL BE = -1'-0" UON.
TOP OF PERIMETER GRADE BEAM ELEVATION SHALL BE = -1'-0" UON.

3.2 TOP OF INTERIOR/ EXTERIOR PLINTH ELEVATION SHALL BE = -1'-0" UON.
TOP OF INTERIOR PIER ELEVATION WITHOUT PLINTH SHALL BE = -1'-0" UON.
TOP OF INTERIOR PIER ELEVATION WITH PLINTH SHALL BE = -3'-6" UON.
TOP OF INTERIOR PIER ELEVATION WITH GRADE BEAM SHALL BE = -3'-6" UON.
TOP OF EXTERIOR PIER ELEVATION SHALL BE = -3'-6" UON.

4. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENTS AND DIMENSIONS OF RAISED OR DEPRESSED SLAB AREAS, SLOPES, CURBS, AND DRAINS. REFER TO TYPICAL DETAILS FOR REINFORCEMENT REQUIREMENTS.

5. GC COORDINATE ALL PENETRATIONS AND UNDERGROUND UTILITIES WITH MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS. REFER TO TYPICAL DETAILS FOR ADDITIONAL REINFORCEMENT REQUIREMENTS.

6. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY ARCHITECT AND STRUCTURAL ENGINEER OF ANY DISCREPANCIES.

7. GC COORDINATE ALL SLAB EDGE DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION.

8. PROVIDE (2) - #5 x 5'-0" LONG BAR IN SLAB AT RE-ENTRANT CORNERS. TYPICAL. INCLUDING RE-ENTRANT CORNERS AROUND THE PERIMETER OF THE BUILDINGS, FLOOR RECESSES AND OPENINGS.

9. GC COORDINATE ALLTHE SIZE AND EXTENT OF ALL BRICK LEDGES SHOWN ON PLAN OR DETAILS WITH ARCHITECTURAL DRAWINGS.

10. REF S0.xx SERIES DRAWINGS FOR GENERAL NOTES AND TYP DETAILS

11. REF S3.xx SERIES DRAWINGS FOR FOUNDATION AND SLAB-ON-GRADE DETAILS.

12. REF S4.xx SERIES DRAWINGS FOR CMU DETAILS.

13. REF S5.xx SERIES DRAWINGS FOR STEEL DETAILS.

14. REF S6.xx SERIES DRAWINGS FOR STEEL BRACE ELEVATIONS AND DETAILS.

15. REFER TO ARCH AND PLUMBING DWGS FOR THE SIZE, NUMBER AND LOCATION OF ALL THE TRENCHES, AND FLOOR DRAINS. REF 10/S-301 FOR TRENCH DETAIL AND REF 4/S-301 FOR FLOOR DRAIN DETAIL.

16. AT INTERIOR CMU WALL LOCATIONS, WHERE THE GRADE BEAM IS NOT SHOWN, PROVIDE SLAB TURNDOWN PER DETAIL 4/S-312 TYPICAL. AT INTERIOR GLAZING LOCATIONS, WHERE THE GRADE BEAM IS NOT SHOWN, PROVIDE TURNDOWN SIMILAR TO DETAIL 4/S-312 , TYPICAL.

17. PIERS/FOOTINGS WITHOUT CENTERLINES SHOWN ON PLANS, SECTIONS AND/OR DETAILS SHALL BE LOCATED AS FOLLOWS:
   A. COLUMNS AND PILASTERS: CENTERLINE OF THE COLUMN.
   B. GRADE BEAMS AND WALLS: CENTERLINE OF THE GRADE BEAM OR WALL.
   C. ALONG THE LENGTH OF GRADE BEAMS AND WALLS: INTERMEDIATE PIERS/FOOTINGS SHALL BE SPACED EQUALLY BETWEEN PIERS/FOOTINGS THAT ARE DIMENSIONALLY SET ON PLAN OR AS NOTED ABOVE.
   D. PIERS SUPPORTING SLABS ON CARTON FORMS: UNLESS NOTED OTHERWISE, PIERS NOT DIMENSIONED SHALL BE SPACED EQUALLY BETWEEN PIERS THAT ARE DIMENSIONALLY SET ON PLAN.

18. GC TO COORDINATE THE LOCATION OF ALL CONC CURBS WITH ARCH DWGS. REF 7/S-301 FOR DETAIL TYP

19. GC COORDINATE THE LOCATION OF ALL CANOPY COLUMNS WITH ARCH DRAWINGS.

20. INDICATES STRUCTURAL CMU THAT ARE PART OF THE STRUCTURAL LATERAL FORCE RESISTING SYSTEM AND SUPPORTS GRAVITY LOADS.REFER TO ARCH DWGS FOR THE LOCATION OF ALL NON-STRUCTURAL CMU. A 3/8" VERT CONTROL JOINT SHALL BE PROVIDED WHEREVER STRUCTURAL AND NON-STRUCTURAL CMU ABUT.

21. INDICATES NON-STRUCTURAL CMU THAT ARE NOT PART OF THE STRUCTURAL LATERAL FORCE RESISTING SYSTEM AND ARE NOT DESIGNED TO SUPPORTS GRAVITY LOADS. REFER TO ARCH DWGS FOR THE LOCATION OF ALL NON-STRUCTURAL CMU. A 3/8" VERT CONTROL JOINT SHALL BE PROVIDED WHEREVER STRUCTURAL AND NON-STRUCTURAL CMU ABUT.

22. IT CAN BE COMMON PRACTICE FOR STEEL STUB-UPS WITH STRUCTURAL STEEL SILL SUPPORT MEMBERS TO BE PROVIDED AT LONG FIRST FLOOR WINDOW SILLS (REF DETAIL 1/S-311). HOWEVER, FOR FIRST FLOOR WINDOWS, 8'-0" AND NARROWER, THE GC SHALL PROVIDE PRE-ENGINEERED COLD-FORM SILL SUPPORTS UTILIZING COLD-FORM FRAMING ONLY. THESE COLD-FORM SILL SHALL BE DESIGNED BY THE DRYWALL SUBCONTRACTOR'S ENGINEER AND SUBMITTED IN THE SHOP DRAWINGS FOR REVIEW. WHERE FIRST FLOOR WINDOW SILLS EXCEED 8'-0" THE CONTRACTOR SHALL PROVIDE MISC. STRUCTURAL STEEL PER 1/S-311 (TYP.)

23. PROVIDE STRUCTURAL GEO-FOAM WITH 4" CONCRETE TOPPING SLAB WITH W/WF OVER SLAB ON GRADE FOR HATCHED AREAS. GEO-FOAM AND TOPPING SLAB BY MANUFACTURER - REF ARCH AND GENERAL NOTES.
GC NOTE: ORIGINAL BASE/ FLAT SLAB EXTENDS CONTINUOUS BELOW PLATFORM AND STAIRS. PROVIDE GEO-FOAM FILL BELOW PLATFORM WITH 4" CONCRETE TOPPING SLAB WITH 6x6x2 9x2.9 W.W.M. AT MID-HEIGHT OF SLAB. ADDITIONALLY PROVIDE 4" CONCRETE WALLS WITH #4 BARS AT 12" OC EACH WAY - DRILL AND EPOXY 4" INTO BASE/ FLAT SLAB WITH HILTI HY-200 V3 ADHESIVE.

24. REFER TO S-300 FOR CONCRETE FINISHES NOTES.

1 FOUNDATION PLAN - AREA K
3/32" = 1'-0"

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New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

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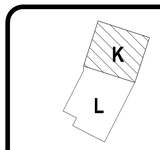
ISSUE FOR PROPOSAL

HUMBLE INDEPENDENT SCHOOL DISTRICT



KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
JOHN R. KUBALA
106120
05/20/2025
Kubala Engineers
F-23612

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum #1	06/03/2025

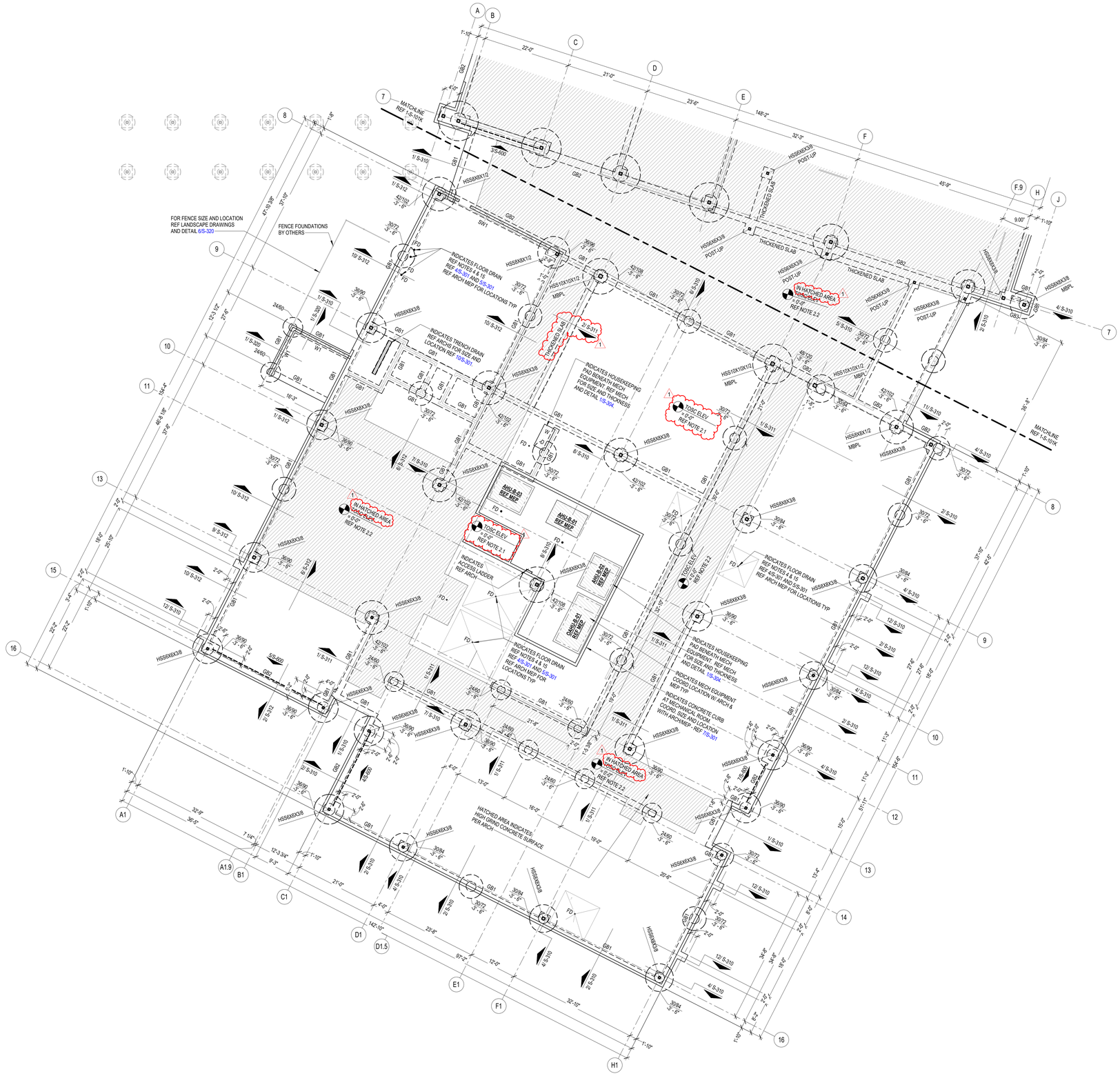
CHECKED BY: MS
DRAWN BY: JD

FOUNDATION PLAN - AREA K

S-101K

Plot Stamp:
6/3/2025 6:15:37 PM

FOUNDATION PLAN - AREA L
S-101L
FOR BLUEBEAM LABELING/OCR:



1 FOUNDATION PLAN - AREA L
3/32" = 1'-0"

FOUNDATION PLAN NOTES

1. REFER TO PLAN FOR TOP OF STRUCTURAL CONCRETE ELEVATIONS (TOSC EL). ALL ELEVATIONS SHOWN ON THE PLAN ARE BASED ON A LEVEL ONE REFERENCE ELEVATION = 0'-0". THIS REFERENCE ELEVATION IS EQUIVALENT TO THE LEVEL ONE MEAN SEA LEVEL ELEVATION = REF CIVIL SHOWN IN THE CIVIL AND ARCHITECTURAL DRAWINGS AND IS NOT INTENDED TO ESTABLISH THE ACTUAL SEA LEVEL ELEVATION OF ANY PORTION OF THE STRUCTURE.

2.1 5" THICK CONCRETE SLAB ON GRADE REINFORCED WITH #3@10" OC EACH WAY ON 2 3/4" CHAIRS FOR #3 BARS SPACED AT 36" OC EACH WAY. PLACE THE SLAB ON 15 MIL WATER VAPOR BARRIER OVER COMPACTED SELECT FILL (SOIL REPORT) FOR SLAB JOINT DETAILS REFER TO 1/S-301 AND 2/S-301.

2.2 AT POLISHED CONC AREAS: 5 1/2 " THICK CONCRETE SLAB ON GRADE REINFORCED WITH #3@10" OC EACH WAY ON 3 1/4" CHAIRS FOR #3 BARS SPACED AT 36" OC EACH WAY. PLACE THE SLAB ON 15 MIL WATER VAPOR BARRIER OVER COMPACTED SELECT FILL (SOIL REPORT) FOR SLAB JOINT DETAILS REFER TO 1/S-301 AND 2/S-301.

3.1 TOP OF INTERIOR GRADE BEAM ELEVATION SHALL BE = -1'-0" UON.
TOP OF PERIMETER GRADE BEAM ELEVATION SHALL BE = -1'-0" UON.

3.2 TOP OF INTERIOR/ EXTERIOR PLINTH ELEVATION SHALL BE = -1'-0" UON.
TOP OF INTERIOR PIER ELEVATION WITHOUT PLINTH SHALL BE = -1'-0" UON.
TOP OF INTERIOR PIER ELEVATION WITH PLINTH SHALL BE = -3'-6" UON.
TOP OF INTERIOR PIER ELEVATION WITH GRADE BEAM SHALL BE = -3'-6" UON.
TOP OF EXTERIOR PIER ELEVATION SHALL BE = -3'-6" UON.

4. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENTS AND DIMENSIONS OF RAISED OR DEPRESSED SLAB AREAS, SLOPES, CURBS, AND DRAINS. REFER TO TYPICAL DETAILS FOR REINFORCEMENT REQUIREMENTS.

5. GC COORDINATE ALL PENETRATIONS AND UNDERGROUND UTILITIES WITH MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS. REFER TO TYPICAL DETAILS FOR ADDITIONAL REINFORCEMENT REQUIREMENTS.

6. CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY ARCHITECT AND STRUCTURAL ENGINEER OF ANY DISCREPANCIES.

7. GC COORDINATE ALL SLAB EDGE DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION.

8. PROVIDE (2) - #5 x 0'-0" LONG BAR IN SLAB AT RE-ENTRANT CORNERS. TYPICAL. INCLUDING RE-ENTRANT CORNERS AROUND THE PERIMETER OF THE BUILDINGS, FLOOR RECESSES AND OPENINGS.

9. GC COORDINATE ALLTHE SIZE AND EXTENT OF ALL BRICK LEDGES SHOWN ON PLAN OR DETAILS WITH ARCHITECTURAL DRAWINGS.

10. REF S0.xx SERIES DRAWINGS FOR GENERAL NOTES AND TYP DETAILS

11. REF S3.xx SERIES DRAWINGS FOR FOUNDATION AND SLAB-ON-GRADE DETAILS.

12. REF S4.xx SERIES DRAWINGS FOR CMU DETAILS.

13. REF S5.xx SERIES DRAWINGS FOR STEEL DETAILS.

14. REF S6.xx SERIES DRAWINGS FOR STEEL BRACE ELEVATIONS AND DETAILS.

15. REFER TO ARCH AND PLUMBING DWGS FOR THE SIZE, NUMBER AND LOCATION OF ALL THE TRENCHES, AND FLOOR DRAINS. REF 10/S-301 FOR TRENCH DETAIL AND REF 4/S-301 FOR FLOOR DRAIN DETAIL.

16. AT INTERIOR CMU WALL LOCATIONS, WHERE THE GRADE BEAM IS NOT SHOWN, PROVIDE SLAB TURNDOWN PER DETAIL 4/S-312 TYPICAL. AT INTERIOR GLAZING LOCATIONS, WHERE THE GRADE BEAM IS NOT SHOWN, PROVIDE TURNDOWN SIMILAR TO DETAIL 4/S-312 , TYPICAL.

17. PIERS/FOOTINGS WITHOUT CENTERLINES SHOWN ON PLANS, SECTIONS AND/OR DETAILS SHALL BE LOCATED AS FOLLOWS:
   A. COLUMNS AND PILASTERS: CENTERLINE OF THE COLUMN.
   B. GRADE BEAMS AND WALLS: CENTERLINE OF THE GRADE BEAM OR WALL.
   C. ALONG THE LENGTH OF GRADE BEAMS AND WALLS: INTERMEDIATE PIERS/FOOTINGS SHALL BE SPACED EQUALLY BETWEEN PIERS/FOOTINGS THAT ARE DIMENSIONALLY SET ON PLAN OR AS NOTED ABOVE.
   D. PIERS SUPPORTING SLABS ON CARTON FORMS: UNLESS NOTED OTHERWISE, PIERS NOT DIMENSIONED SHALL BE SPACED EQUALLY BETWEEN PIERS THAT ARE DIMENSIONALLY SET ON PLAN.

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23. PROVIDE STRUCTURAL GEO-FOAM WITH 4" CONCRETE TOPPING SLAB WITH WWF OVER SLAB ON GRADE FOR HATCHED AREAS. GEO-FOAM AND TOPPING SLAB BY MANUFACTURER - REF ARCH AND GENERAL NOTES.
GC NOTE: ORIGINAL BASE/ FLAT SLAB EXTENDS CONTINUOUS BELOW PLATFORM AND STAIRS. PROVIDE GEO-FOAM FILL BELOW PLATFORM WITH 4" CONCRETE TOPPING SLAB WITH 6x6x2.9x2.9 W.W.M. AT MID-HEIGHT OF SLAB.
ADDITIONALLY PROVIDE 4" CONCRETE WALLS WITH #4 BARS AT 12" OC EACH WAY - DRILL AND EPOXY 4" INTO BASE/ FLAT SLAB WITH HILTI HY-200 V3 ADHESIVE.

24. REFER TO S-300 FOR CONCRETE FINISHES NOTES.

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ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT

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KEY PLAN
NORTH: PLAN TRUE

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JOHN R. KUBALA
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HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum #1	06/03/2025

CHECKED BY: MS
DRAWN BY: JD

FOUNDATION PLAN - AREA L

S-101L

Plot Stamp:
6/3/2025 6:15:42 PM

LOW ROOF FRAMING PLAN - AREA L

S-103L

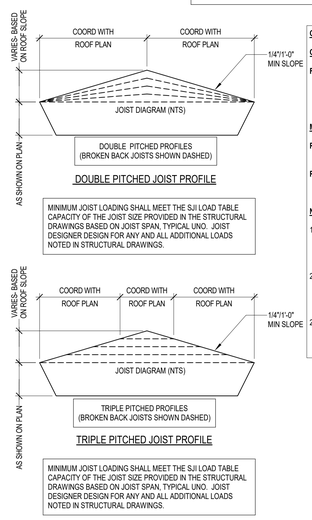
FOR BLUEBEAM LABELING/OCR:

1 LOW ROOF FRAMING PLAN - AREA L

3/32" = 1'-0"

ROOF PLAN NOTES

1. REF PLAN FOR TOP OF SLAB ELEVATION.
2. ALL ELEVATIONS ARE BASED ON TOSC EL = 0'-0". ALL MISC STEEL FRAMING MEMBERS SHOWN WITH ELEVATIONS NOTED <X'-X"> INDICATE TOP OF TUBE ELEVATION. TYP.
3. TOP OF ROOF STRUCTURE IS SLOPED FOR DRAINAGE. REF ELEVATIONS NOTED ON PLAN. SLOPES SHALL BE UNIFORM BETWEEN COLUMN CENTERLINES UNLESS SHOWN OTHERWISE.
4. JOIST MFR NOTE: BRIDGING NOT SHOWN ON PLAN. MANUFACTURER SHALL PROVIDE STANDARD BRIDGING COMPLYING WITH SJI SPECIFICATIONS OF LATEST ADOPTION, TYPICAL FOR GRAVITY AND UPLIFT LOADS SUPERIMPOSED ON ALL JOISTS. DIAGONAL BRIDGING SHALL BE PROVIDED BETWEEN ADJACENT JOISTS WHENEVER BOTTOM CHORD HORIZONTAL BRIDGING IS CONTINUOUS.
5. REFER TO THE ROOF DIAPHRAGM CONNECTION SCHEDULE FOR DECK ATTACHMENT TO ROOF FRAMING MEMBERS AND DECK FASTENER TYPE, SIZE AND SPACING.
6. REF ARCH FOR TOP OF WALL ELEVATIONS.
7. DETAILING OF ALL MEMBER CONNECTIONS TO THE SUPPORTS SHALL BE PERFORMED TO SATISFY LATEST OSHA ERECTION REQUIREMENTS.
8. TOS EL = BOTTOM OF DECK.
9. UNLESS SHOWN OTHERWISE, STEEL BEAMS OR JOISTS ARE CENTERED ON AND EQUALLY SPACED BETWEEN COLUMN CENTERLINES.
10. ALL STRUCTURAL STEEL THAT IS PERMANENTLY EXPOSED TO THE EXTERIOR OR IS PERMANENTLY IN UNCONDITIONED SPACE SHALL BE HOT-DIPPED GALVANIZED.
11. GC COORDINATE ALL PENETRATIONS AND UNDERGROUND UTILITIES WITH MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS. REFER TO TYPICAL DETAILS FOR ADDITIONAL REINFORCEMENT REQUIREMENTS.
12. CONTRACTOR TO VERIFY ALL SLAB EDGE DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION.
13. INDICATES WIND BRACE BEAM BOTTOM FLANGE BRACING PER 4/S-508 . PROVIDE BFB ALONG THE ENTIRE GRID LINE WHERE A BRACE IS PRESENT IN AT LEAST ONE BAY. THIS INCLUDES THE BRACED FRAME BAY AS WELL AS ALL OTHER BAYS ALONG THAT GRID LINE WHERE A BRACE IS LOCATED. NOT ALL DASHED LINES ARE SHOWN ON THE PLAN FOR CLARITY.
14. REF DETAIL 5/S-507 WHERE ROOF TOP EQUIPMENT REQUIRES A STRUCTURAL CURB, JOISTS THAT ARE SUPPORTING ROOF TOP EQUIPMENT SHALL BE DESIGNED FOR AN ADDITIONAL CONCENTRATED DEAD LOAD (AS SHOWN ON PLAN AT ANY POINT ALONG JOIST SPAN). GC SHALL COORDINATE WITH MEP, ARCHITECTURE AND EQUIPMENT CUTSHEETS FOR FINAL WEIGHT, DIMENSIONS, LOCATION, ETC.
15. ——— — ——— INDICATES PIPING RUN, REF MEP DRAWINGS; GC SHALL COORDINATE GIVEN LOAD WITH JOIST MANUFACTURER, REF SHEET S-011.
16. REF S0.xx SERIES DRAWINGS FOR GENERAL NOTES AND TYP DETAILS
17. REF S4.xx SERIES DRAWINGS FOR CMU DETAILS.
18. REF S5.xx SERIES DRAWINGS FOR STEEL FRAMING DETAILS.
19. REF S6.xx SERIES DRAWINGS FOR STEEL BRACE ELEVATIONS AND DETAILS.
20. - INDICATES COLUMN BRACING PER 5/S-502 . TYPICAL AT COLUMNS UNBRACED BY FRAMING MEMBER ABOUT THIER LOCAL AXIS. NOT ALL SHOWN ON PLAN FOR MORE CLARITY.
21. INDICATES PLAN DIAGONAL STRUT WT5x15. COPE WEB AT BEAMS AND OVERLAP FLANGE 4". WELD TO TOP FLANGE AND COLUMNS WITH 5/16" FILLET WELD 3-SIDES (TYP.)
22. UPLIFT X-BRIDGING NOT SHOWN ON PLANS FOR CLARITY. GC SHALL PROVIDE X-BRIDGING BETWEEN ADJACENT WF BEAMS AT ROOF PER DETAIL
23. PROVIDE MISC. STEEL PER 12/S-501 ABOVE AND BELOW ANY WINDOW THAT DOES NOT ALIGN WITH THE BACK-UP, UNO, TYP. LOOSE LINTELS REQUIRED BELOW WINDOW SHALL BE INVERTED (DOG LEG DOWN), TYP.
24. ALL JOISTS LOCATED BENEATH ROOFTOP UNITS AND THE ADJACENT JOISTS ON EACH SIDE THAT ARE NOT ENTIRELY POSITIONED UNDER THE ROOFTOP UNIT MUST BE DESIGNED TO SUPPORT A DEAD LOAD OF 2.0 KIPS,UNO ON PLANS. GC MUST COORD LOCATION OF RTUS WITH MEP DRAWINGS.



DOUBLE PITCHED JOIST PROFILE

MINIMUM JOIST LOADING SHALL MEET THE SJI LOAD TABLE CAPACITY OF THE JOIST SIZE PROVIDED IN THE STRUCTURAL DRAWINGS BASED ON JOIST SPAN, TYPICAL UNO. JOIST DESIGNER DESIGN FOR ANY AND ALL ADDITIONAL LOADS NOTED IN STRUCTURAL DRAWINGS.

TRIPLE PITCHED JOIST PROFILE

MINIMUM JOIST LOADING SHALL MEET THE SJI LOAD TABLE CAPACITY OF THE JOIST SIZE PROVIDED IN THE STRUCTURAL DRAWINGS BASED ON JOIST SPAN, TYPICAL UNO. JOIST DESIGNER DESIGN FOR ANY AND ALL ADDITIONAL LOADS NOTED IN STRUCTURAL DRAWINGS.

COMPOSITE FLOOR DECK AND METAL ROOF DECK LEGEND

COMPOSITE FLOOR DECK TYPES

FLOOR DECK TYPE 1:
4 1/2" NWC ON 3.0 VLI 20 GA (GALV) (G90) COMPOSITE STEEL DECK (7 1/2" TOTAL SLAB THICKNESS). COMPOSITE SLAB SHALL BE REINFORCED WITH WWR 6x6-W2.9xW2.9, U.N.O.

METAL ROOF DECK TYPES

ROOF DECK TYPE 1:
1.0 CSV 22 GA (GALV.) (G90) VENTED MTL DECK.

ROOF DECK TYPE 2:
1.58 22 GA (GALV.) (G90) MTL DECK.

NOTES:

1. STEEL DECK SHALL BE PLACED WITH TWO-SPAN CONDITION MINIMUM. NO SINGLE SPANS ARE ALLOWED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER-OF-RECORD.
2. REF SLABS FORM DECK (AT FLOORS) GENERAL NOTES AND METAL DECK SCHEDULE ON SHEET S-504 FOR MORE INFORMATION REGARDING FLOOR DECK REQUIREMENTS.
2. REF METAL ROOF DECKING GENERAL NOTES AND METAL DECK SCHEDULE ON SHEET S-506 FOR MORE INFORMATION REGARDING ROOF DECK REQUIREMENTS.

GC PLEASE NOTE:

1. FOR THE BASE BID OF THIS PROJECT, THE GC SHALL ACCOUNT FOR 100% OF THE BEAMS, GIRDERS, AND PURLINS, CROSSING A HIP, VALLEY, AND RIDGE ROOF LINES TO BE BENT AND HAVE FULL CAPACITY MOMENT CONNECTIONS AT EACH LOCATION. CHANGES IN ROOF DECK SLOPE LOCATIONS ARE DEFINED AS WHEN A GIRDER BEAM OR PURLIN BEAM PASSES THROUGH A RIDGE LINE, HIP LINE, OR VALLEY LINE. THE BEND LOCATIONS VARY BASED ON WHERE THE ROOF DECK SLOPE CHANGE INTERSECTS WITH A PURLIN OR MAIN GIRDER BEAM. THE GC MUST COORDINATE WITH ROOF FRAMING PLANS AND ACCOUNT FOR THE FULL NUMBER OF ADDED MOMENT CONNECTIONS REQUIRED TO CREATE THE ROOF DECK SLOPES NEEDED FOR PROPER DRAINAGE.
2. FOR THE BASE BID OF THIS PROJECT, THE GC SHALL ACCOUNT FOR 100% OF THE JOISTS, CROSSING A HIP, VALLEY, AND RIDGE ROOF LINES TO BE DOUBLE OR TRIPLE PITCHED AS NEEDED AT EACH LOCATION. CHANGES IN ROOF DECK SLOPE LOCATIONS ARE DEFINED AS WHEN A JOIST PASSES THROUGH A RIDGE LINE, HIP LINE, OR VALLEY LINE. THE BEND LOCATIONS VARY BASED ON WHERE THE ROOF DECK SLOPE CHANGE INTERSECTS WITH JOIST. THE GC MUST COORDINATE WITH ROOF FRAMING PLANS AND ARCHITECTURAL DRAWINGS.
3. GC TO PROVIDE CONT 4X4X1/4 THICK BENT PLATE ALONG THE RIDGE, HIP, AND VALLEY LINES TO SUPPORT DECKING AT WRAP (TYP).
4. THE GENERAL CONTRACTOR IS REQUIRED TO PROVIDE A BRICK RELIEF ANGLE AT ANY POINT WHERE THE BRICK EXTENDS BEYOND THE ELEVATION OF 30'-0" AND IS SUPPORTED BY A CONCRETE MASONRY UNIT (CMU) BACKUP. PLEASE REFER TO DETAIL 7/S-402. THE BRICK RELIEF ANGLE SHOULD BE INSTALLED AT THE SECOND AND THIRD FLOORS WITHIN THE CLASSROOM AREAS AND ROTUNDA AS INDICATED IN COMPOSITE DETAILS AND SECTION CUTS ON PLANS.

JOIST DESIGNATIONS, SHOWN ON THE FRAMING PLANS, FOLLOWED BY THE DESIGNATION "CL" SUPPORT A CONCENTRATED DEAD LOAD. THE JOIST SIZES DESIGNATED ON THE FRAMING PLANS DO NOT TAKE INTO ACCOUNT THIS CONCENTRATED DEAD LOAD. THE JOIST MANUFACTURER SHALL DESIGN SPECIAL JOISTS TO SUPPORT THIS CONCENTRATED DEAD LOAD IN ADDITION TO THE TOTAL LOAD CAPACITY PROVIDED IN THE SJI LOAD TABLES FOR THE JOISTS SPECIFIED ON THE FRAMING PLANS. JOISTS SUPPORTING THESE CONCENTRATED DEAD LOADS SHALL BE FABRICATED SYMMETRICALLY ABOUT THEIR CENTERLINE. DESIGN JOISTS FOR THE FOLLOWING "CL" DESIGNATIONS WHERE SHOWN ON THE FRAMING PLANS:

1. CL1 - XXXX POUNDS LOCATED X'-X" FROM THE FACE OF THE SUPPORTING PANEL ADJACENT TO HIGH ROOF.
2. CL2 - XXXX POUNDS LOCATED X'-X" FROM THE CENTERLINE OF THE SUPPORTING STEEL BEAM.

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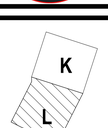
New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL



KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
JOHN R. KUBALA
106120
LICENSED PROFESSIONAL ENGINEER
05/20/2025
Kubala Engineers
F-23612

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum #1	06/03/2025

CHECKED BY: MS

DRAWN BY: JD

LOW ROOF FRAMING PLAN - AREA L

S-103L

Plot Stamp:
6/3/2025 6:15:48 PM

GENERAL FOUNDATION NOTES AND TYP DETAILS
S-303
FOR BLUEBEAM LABELING/OCR:

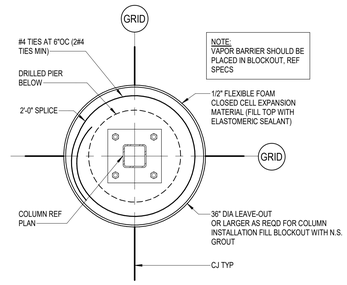
DRILLED & UNDERREAMED PIERS:

1. UNDERREAMED/BELLED SHAFT DRILLED PIER DESIGN IS BASED UPON THE FOLLOWING CRITERIA. REFER TO TYPICAL PIER DETAIL FOR PIER SCHEDULE AND REINFORCING.

A. ALLOWABLE END BEARING PRESSURE	3,600 PSF (NET DEAD PLUS SUSTAINED LIVE LOAD) 5,400 PSF (NET TOTAL LOAD)
B. UPLIFT PRESSURE (FROM SOIL)	1,000 PSF
C. UPLIFT RESISTANCE	FOUNDATION WEIGHT (150 PCF) & SOIL WEIGHT (120 PCF)
D. ALLOWABLE PASSIVE PRESSURE	1,000 PSF (NEGLECT UPPER 4.0 FT)
E. MINIMUM PENETRATION INTO BEARING STRATUM	10.0 FT
F. BEARING STRATUM	NATIVE UNDISTURBED CLAY SOILS

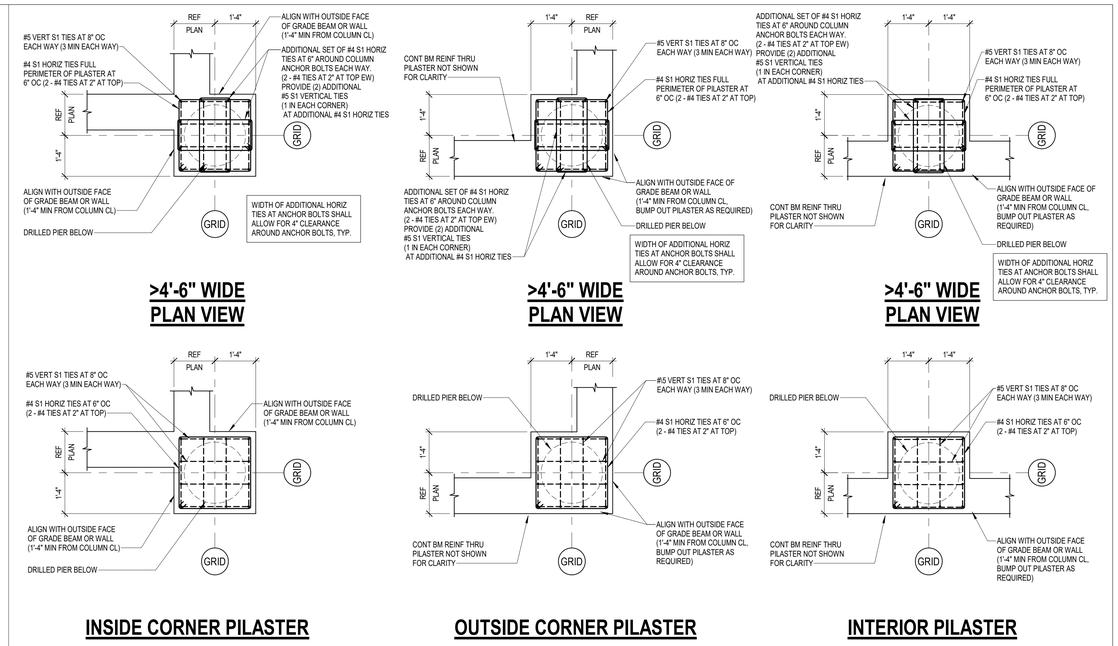
2. UNLESS NOTED OTHERWISE BY THE OWNER OR ARCHITECT, THE GENERAL CONTRACTOR SHALL NOTIFY THE GEOTECHNICAL ENGINEER OR OTHER AUTHORIZED INSPECTOR DURING EARTHWORK OPERATIONS, AND KEEP A COMPETENT TRAINED TECHNICIAN ASSIGNED TO THE PROJECT ON SITE DURING OPERATIONS. SERVICES PROVIDED SHALL INCLUDE:
   - A. OBSERVING THE BOTTOM OF SHAFT FOR CLEANLINESS.
   - B. PROPER BEARING MATERIAL SHALL BE VERIFIED BEFORE CONCRETE POURING OCCURS. THE TOP ELEVATION OF PIERS IS SHOWN ON THE DRAWINGS. THE ACTUAL BEARING ELEVATION MAY VARY AS REQUIRED TO PROVIDE PROPER CAPACITY AS DETERMINED BY THE GEOTECHNICAL ENGINEER OF RECORD.
   - C. CHECKING SHAFT FOR CONFORMANCE TO REQUIRED TOLERANCES. FOOTINGS SHALL BE WITHIN 3" OF THEIR REQUIRED LOCATIONS AND SHAFTS SHALL NOT BE OUT OF PLUMB BY MORE THAN 2 PERCENT OF THE SHAFT LENGTH. CHECK THAT THE BELL IS CONCENTRIC WITH THE SHAFT.
3. ENSURE THAT ALL SPOILS FROM THE DRILLED PIER EXCAVATIONS ARE REMOVED FROM THE BUILDING PAD AND THAT THE PAD IS MOISTURE CONDITIONED AND RECOMPACTED AS SPECIFIED.
4. ESTABLISH TOP OF FOOTINGS/PIERS AT ELEVATIONS SHOWN ON PLANS. IF FIELD CONDITIONS REQUIRE CHANGES TO REACH THE DESIRED STRATUM, ADJUSTMENTS TO CONTRACT ARE TO BE MADE ON A UNIT PRICE BASIS. CONTRACTOR SHALL PROVIDE UNIT PRICE ADD AND DEDUCT FOR EACH PIER SIZE ON THE PROJECT.
5. PIER CONSTRUCTION AND CONCRETING SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT AND AS PER THE LATEST VERSION OF ACI 336. DRILLED HOLES ARE TO BE EXCAVATED, CLEANED, REINFORCED, AND FILLED WITH CONCRETE DURING THE SAME DAY. NO HOLE IS TO BE LEFT OPEN OVERNIGHT. PUMP ANY ACCUMULATED WATER FROM THE PIER HOLES PRIOR TO CONCRETE PLACEMENT. REFER TO THE GEOTECHNICAL REPORT FOR CASING REQUIREMENTS.
6. REINFORCING CAGE SHALL BE HELD SECURELY AWAY FROM EARTH AT SIDES AND BOTTOM BY SETS OF 3 OR MORE SPACERS AT A MAXIMUM SPACING OF 5 FEET ALONG THE LENGTH OF THE CAGE AND 1 FOOT FROM THE BOTTOM.
7. THE CONTRACTOR SHALL VERIFY DEPTHS OF PIERS BEFORE PIER STEEL IS CUT. PIER STEEL MAY BE DELIVERED TO THE JOBSITE IN STANDARD LENGTHS OF 40 OR 60 FEET AND CUT AS REQUIRED. PROVIDE 64 BAR DIAMETER LAPS IN ALL VERTICAL PIER REINFORCING.
8. WHERE THE CLEAR DISTANCE BETWEEN TWO PIERS IS LESS THAN THE PIER DIAMETER OF THE LARGER PIER, WAIT AT LEAST 48 HOURS AFTER CASTING THE FIRST PIER BEFORE DRILLING THE SECOND PIER. 1

10. THE EXCAVATIONS SHOULD BE PERFORMED WITH EQUIPMENT CAPABLE OF PROVIDING A RELATIVELY CLEAN BEARING AREA. THE PRESENCE OF SECONDARY STRUCTURES SUCH AS SAND POCKETS, FERROUS AND CALCAREOUS NODULES, AND SLICKENSIDES, ETC., ARE PRESENT AT THIS SITE PER THE GEOTECH REPORT AND CAN CAUSE SLOUGHING DURING FOOTING EXCAVATION. THUS, THE DRILLING CONTRACTOR SHOULD HAVE CASING AVAILABLE IN THE EVENT THAT SLOUGHING CAUSES IMPROPERLY FORMED SHAFTS. 1

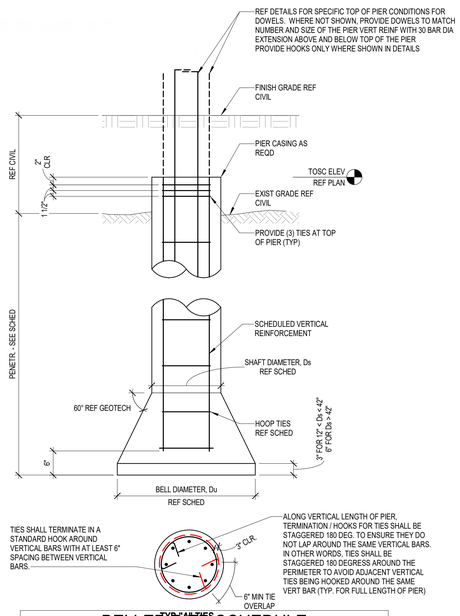


NOTE:
VAPOR BARRIER SHOULD BE PLACED IN BLOCKOUT, REF SPECS

2 TYPICAL COLUMN BLOCKOUT (ROUND)
3/4" = 1'-0"



3 TYPICAL PILASTER DETAILS AT PIERS
NO SCALE



BELLED PIER SCHEDULE

TYPE	SHAFT DIAMETER	BELL DIAMETER	PENTR	VERT REINF	TIES
18/48	1' - 6"	4' - 0"	10' - 0"	(5) #6	#3 @ 12" OC
24/60	2' - 0"	5' - 0"	10' - 0"	(7) #6	#3 @ 12" OC
30/72	2' - 6"	6' - 0"	10' - 0"	(8) #7	#3 @ 12" OC
30/84	2' - 6"	7' - 0"	10' - 0"	(8) #7	#3 @ 12" OC
36/90	3' - 0"	7' - 6"	10' - 0"	(8) #8	#3 @ 12" OC
36/96	3' - 0"	8' - 0"	10' - 0"	(8) #8	#3 @ 12" OC
42/102	3' - 6"	8' - 6"	10' - 0"	(10) #8	#3 @ 12" OC
42/108	3' - 6"	9' - 0"	10' - 0"	(10)#8	#3 @ 12" OC
48/120	4' - 0"	10' - 0"	10' - 0"	(10)#9	#3 @ 12" OC

NOTES:

1. SPLICE VERTICAL REINFORCING IN PIERS WITH CLASS B TENSION LAP SPLICE. NO MORE THAN 50% OF THE BARS SHALL BE LAP SPLICED AT ONE LOCATION.
2. FOR PIERS LOCATED WITHIN TWO BELL DIAMETERS CLEAR SPACING, THE SECOND PIER SHALL BE DRILLED A MIN OF 48 HOURS AFTER THE FIRST.
3. IF CASING IS REQUIRED, CASING SHALL BE SIZED TO MAINTAIN THE PIER BELL DIAMETER INDICATED IN THE SCHEDULE. REF NOTE 10 ON GENERAL NOTES SHEET S-303
4. AT LOCATIONS WHERE OVERALL PIER LENGTH IS INSUFFICIENT TO PROVIDE THE SHAFT AND BELL DIAMETERS AT THE SLOPES IDENTIFIED IN THE GEOTECHNICAL REPORT, A STRAIGHT SHAFT PIER OF DIAMETER EQUAL TO THE BELL DIAMETER SHALL BE PROVIDED. CONTACT EOR FOR PIER REINFORCING.
5. PIERS AT BRACED BAYS AND BACK-END OF CANTILEVERED GRADE BEAMS SHALL HAVE CLASS B MECHANICAL COUPLERS FOR ANY SPLICE IN THE VERTICAL (LONGITUDINAL) REINFORCING. (TYP.)

1 TYPICAL PIER REINFORCING DIAGRAM AND SCHEDULE
3/4" = 1'-0"

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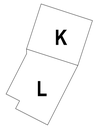
New CTE Center & Hargrave High School Additions & Renovations
BUILDING: CTE
25400 Willy Lane
Huffman, TX 77336
ISSUE FOR PROPOSAL



KEY PLAN
NORTH: PLAN TRUE

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum #1	06/03/2025

CHECKED BY: Checker
DRAWN BY: Author

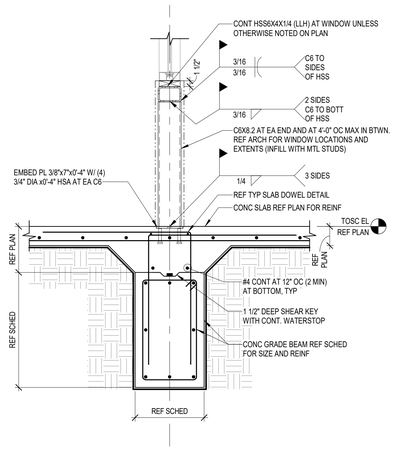
GENERAL FOUNDATION NOTES AND TYP DETAILS

S-303

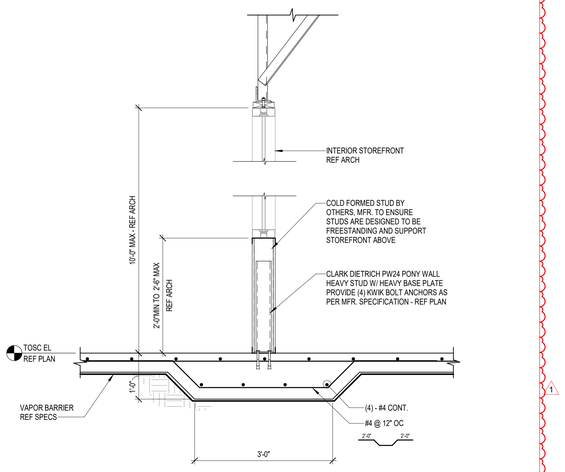
Plot Stamp:
6/3/2025 6:15:50 PM

FOUNDATION DETAILS
S-311
FOR BLUEBEAM LABELING/OCR:

0"
1"



1 INTERIOR STOREFRONT SUPPORT
3/4" = 1'-0"



2 INTERIOR WINDOW GREATER THAN OR EQUAL TO 12'-0" LONG AT SLAB-ON-GRADE
3/4" = 1'-0"

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New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

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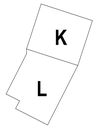


KEY PLAN
NORTH: PLAN TRUE

05/20/2025
Kubala Engineers
F-23612

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum #1	06/03/2025

CHECKED BY: MS
DRAWN BY: JD

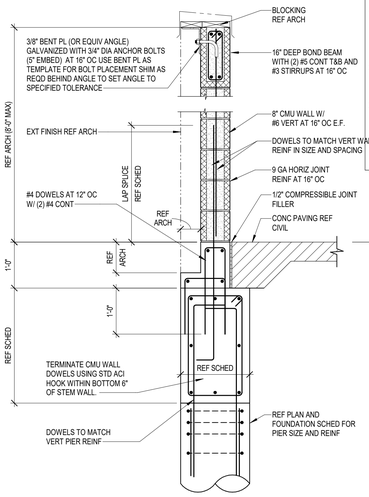
FOUNDATION DETAILS

S-311

SITE ITEMS FOUNDATION SECTIONS AND DETAILS

S-320

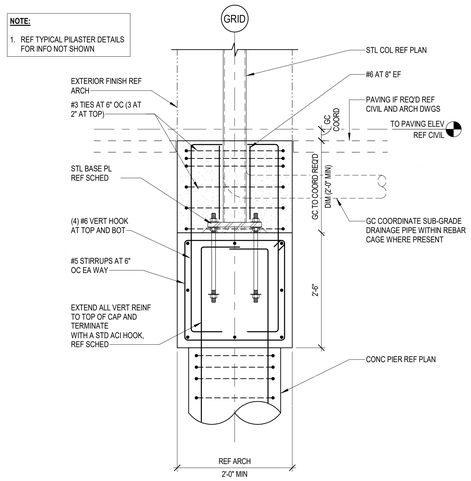
FOR BLUEBEAM LABELING/OCR:



NOTE:

1. HORIZONTAL LEG OF ANGLE OR BENT PL TO EQUAL DISTANCE FROM FACE OF BRICK TO FACE OF CMU LESS MINUS 1/2".
2. REFER TO S-400 SERIES FOR INFO NOT SHOWN OR ANNOTATED HERE. 7/S-402
3. PROVIDE LOOSE LINTELS FOR LOUVER OPENINGS LESS THAN 8FT WIDE. PROVIDE TYPICAL LINTEL WITH SHELF ANGLE PER FOR LOUVER OPENINGS 8FT WIDE OR LARGER.

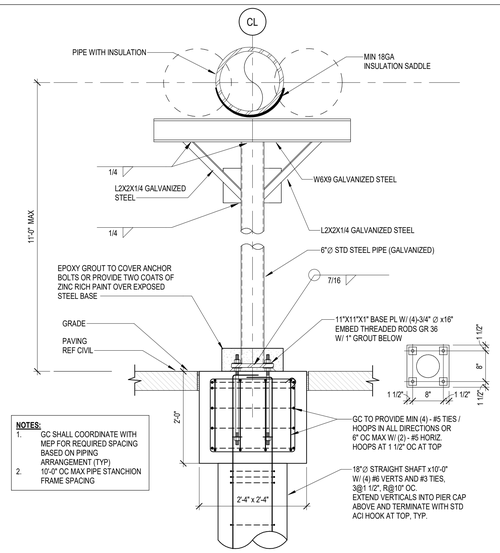
1 SCREEN WALL AT MECH YARD
3/4" = 1'-0"



NOTE:

1. REF TYPICAL PILASTER DETAILS FOR INFO NOT SHOWN

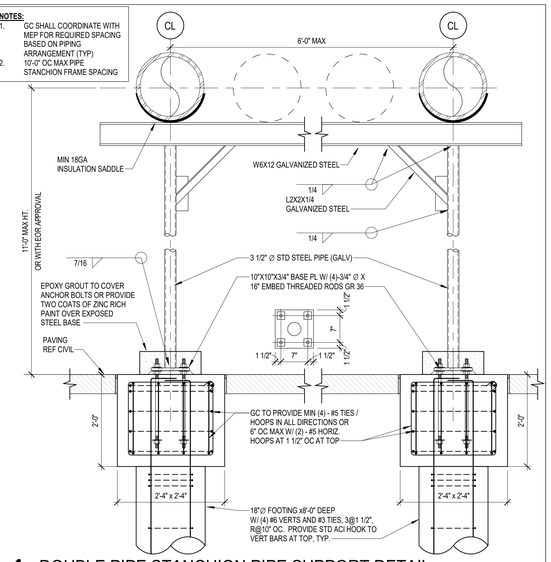
2 EXTERIOR COLUMN DETAIL
3/4" = 1'-0"



NOTES:

1. GC SHALL COORDINATE WITH MEP FOR REQUIRED SPACING BASED ON PIPING ARRANGEMENT (TYP)
2. 10'-0" OC MAX PIPE STANCHION FRAME SPACING

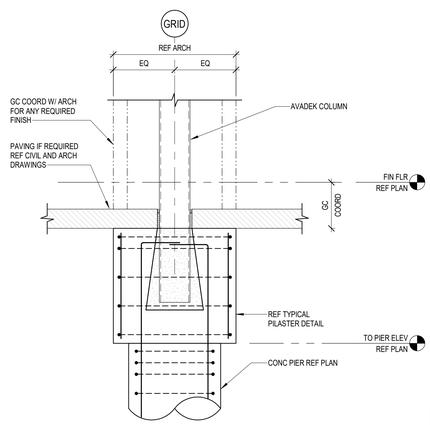
3 SINGLE COLUMN PIPE STANCHION DETAIL
NO SCALE

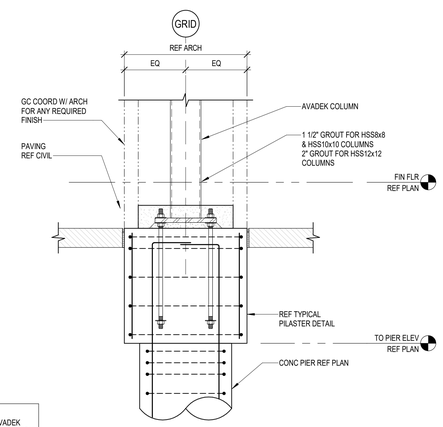


NOTES:

1. GC SHALL COORDINATE WITH MEP FOR REQUIRED SPACING BASED ON PIPING ARRANGEMENT (TYP)
2. 10'-0" OC MAX PIPE STANCHION FRAME SPACING

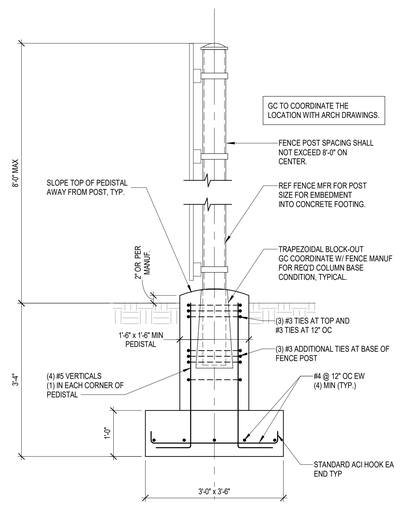
4 DOUBLE PIPE STANCHION PIPE SUPPORT DETAIL
NO SCALE



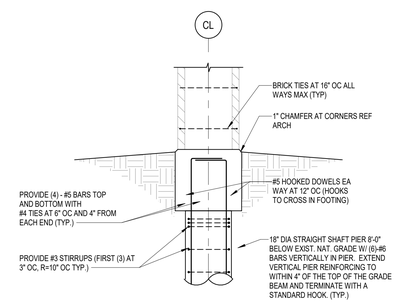


NOTE:
GC SHALL COORDINATE WITH AVADEK FOR REQUIRED COLUMN BASE CONDITION (TYP)

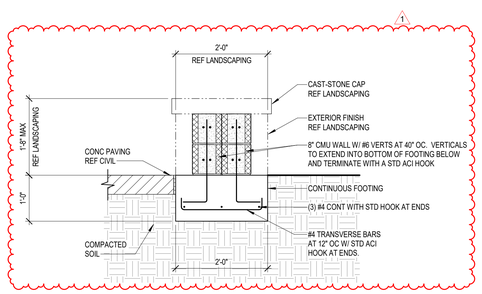
5 TYP AVADEK CANOPY COLUMN DETAIL
3/4" = 1'-0"



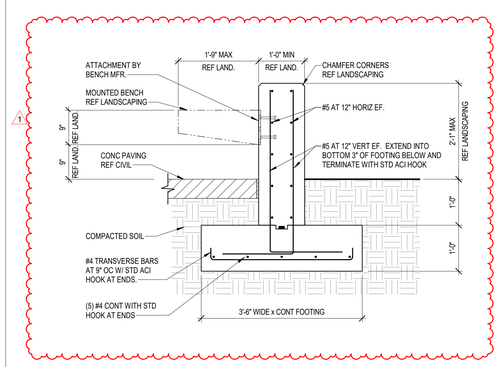
6 FENCE POST DETAIL
NO SCALE



7 PLAZA ENTRY GATE SECTION
1/2" = 1'-0"



8 FREE STANDING SEAT WALL
3/4" = 1'-0"



9 CONCRETE SEAT WALL WITH BENCH
3/4" = 1'-0"

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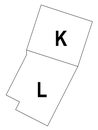

KEY PLAN

NORTH: PLAN TRUE

05/20/2025
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F-23612

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HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum #1	06/03/2025

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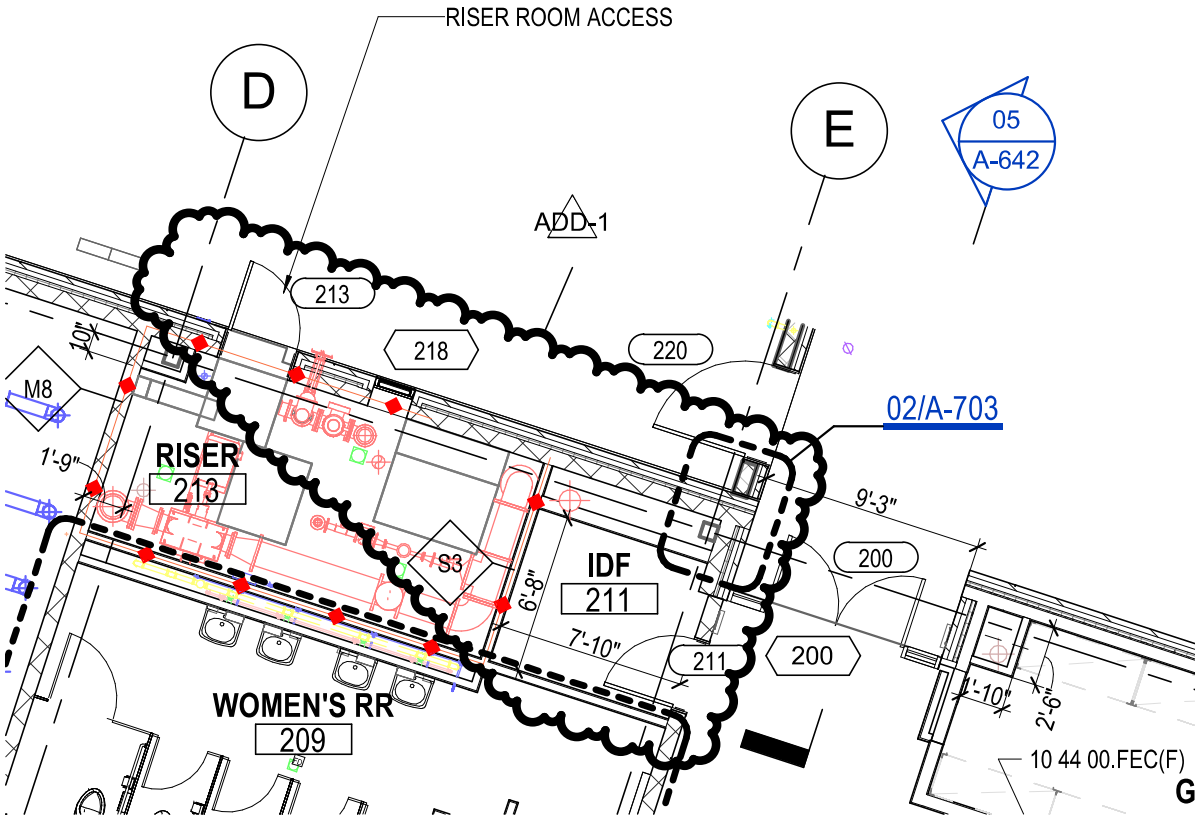
DRAWN BY: JD

SITE ITEMS FOUNDATION SECTIONS AND DETAILS

S-320

Plot Stamp:
6/3/2025 6:15:51 PM

06/A-101K



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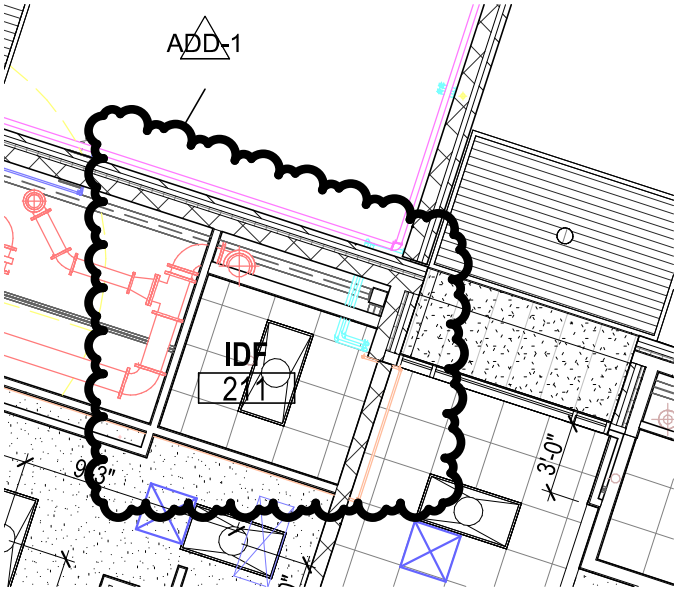

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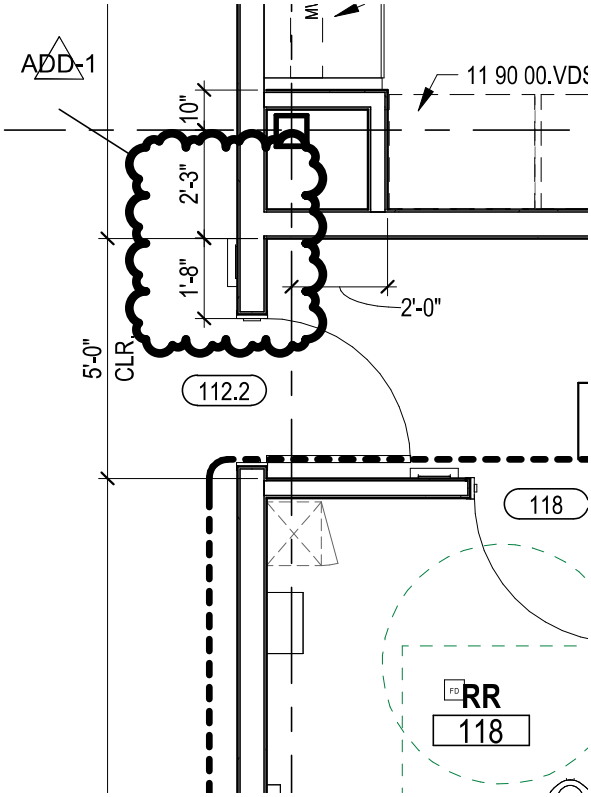
Project:	New CTE Center & Hargrave High School Additions & Renovations
Project No.	240157
Description:	IDF REVISIONS
Date:	06/04/2025

Sketch No. SK-001

Scale: 1/8=1'-0"

Drawing Reference :

6/A-101K, 6/A-201K



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Project: New CTE Center & Hargrave High School Additions & Renovations

Project No. 240157

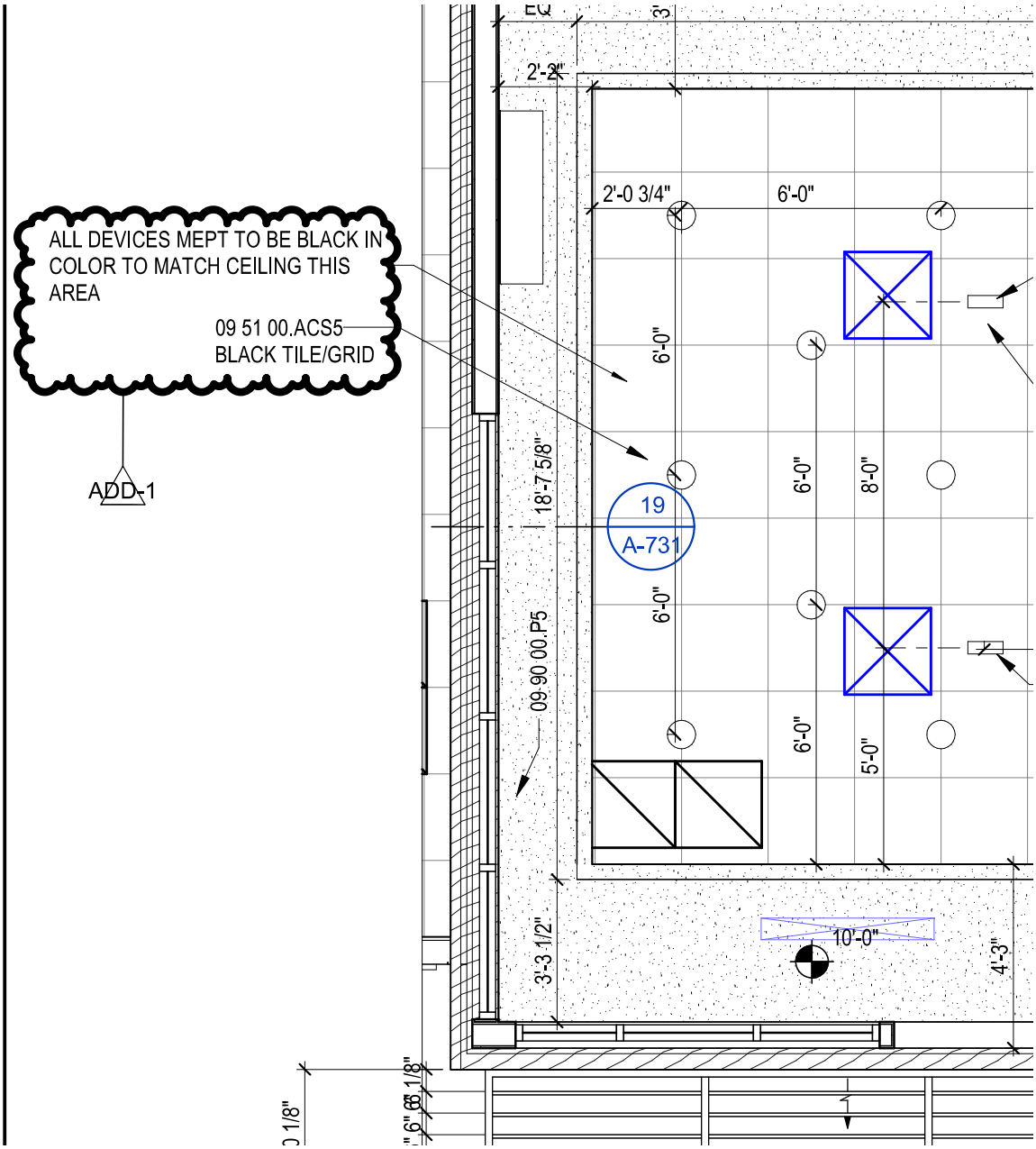
Description: ADMIN CORRIDOR, WALL REVISION

Date: 06/04/2025

Sketch No. SK-002

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

Drawing Reference : 3/A-420



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Project: New CTE Center & Hargrave High School Additions & Renovations

Project No. 240157

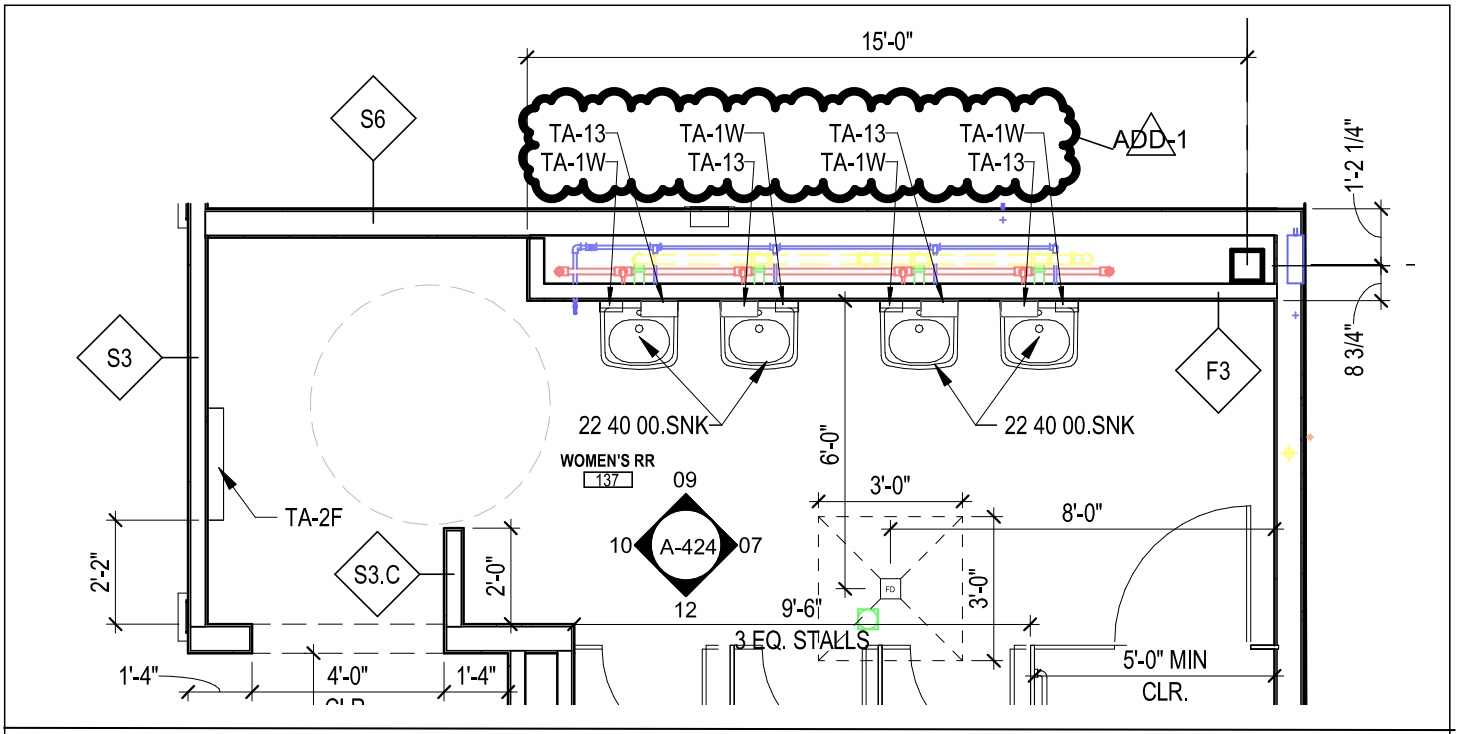
Description: BISTRO CEILING

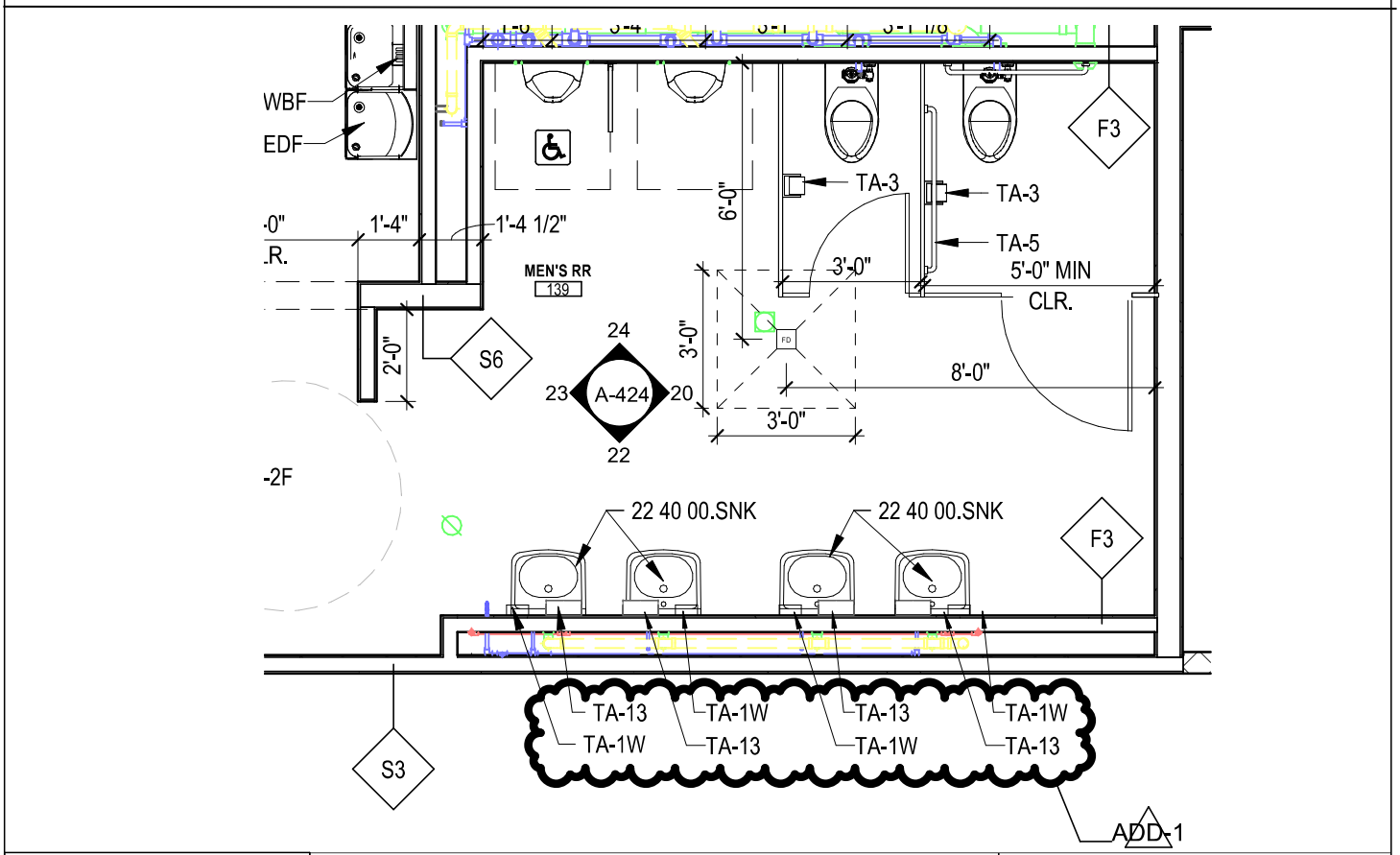
Date: 06/04/2025

Sketch No. SK-003

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

Drawing Reference : 18/A-421





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Project: New CTE Center & Hargrave High School Additions & Renovations

Project No. 240157

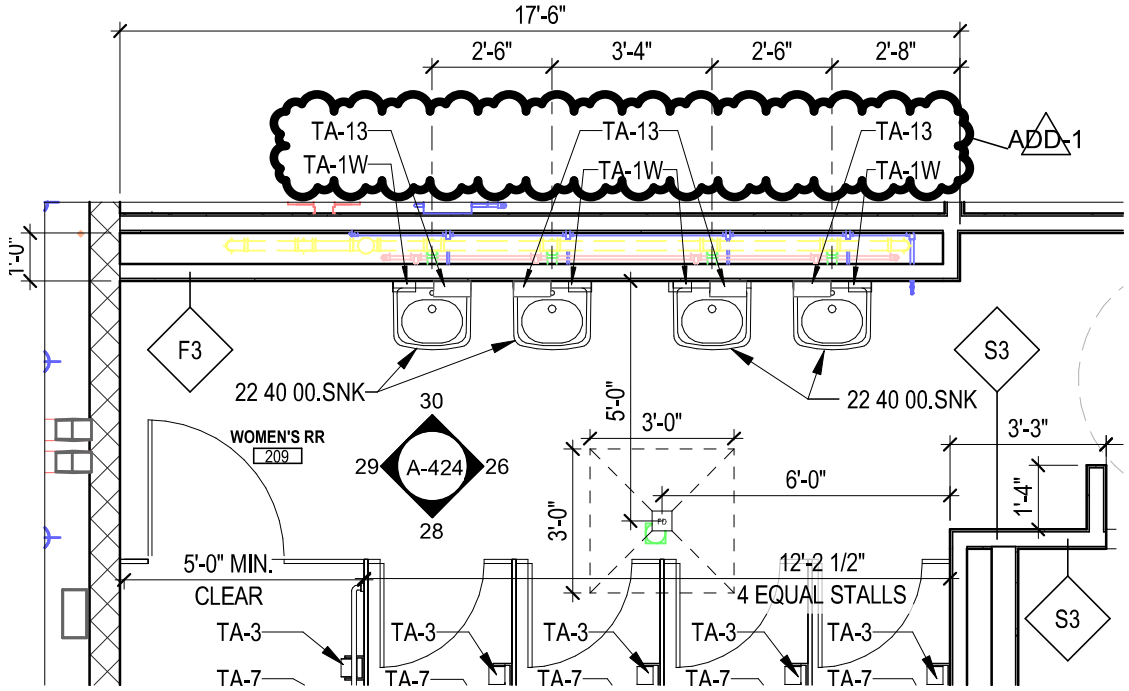
Description: RR REVISIONS

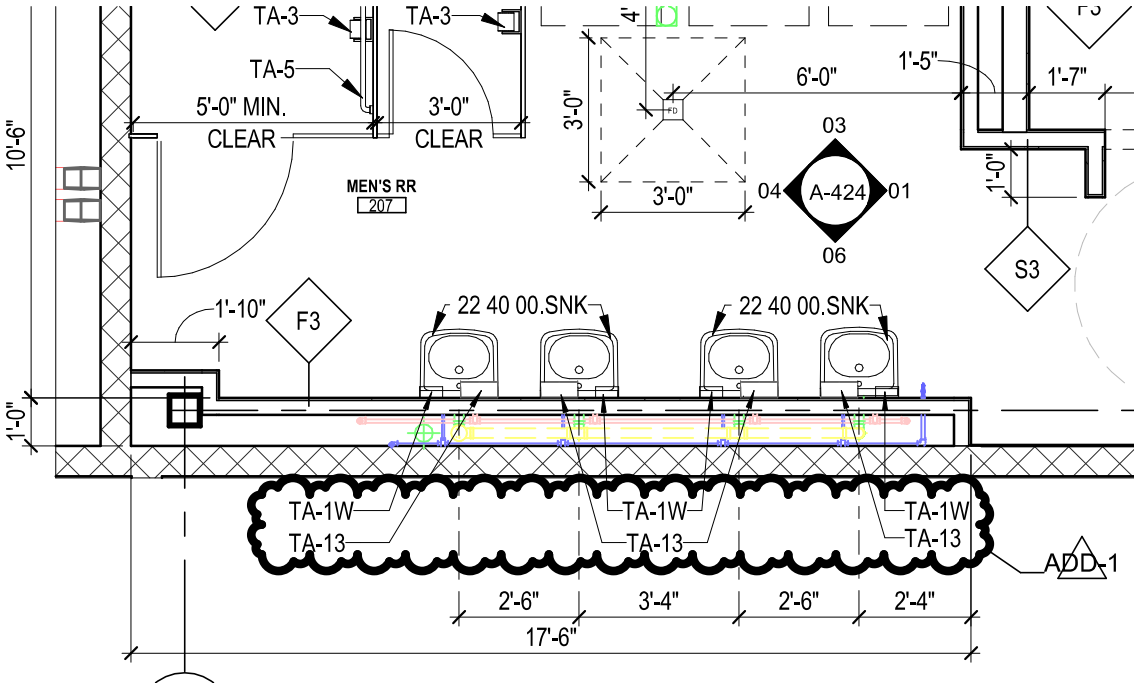
Date: 06/04/2025

Sketch No. SK-004

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

Drawing Reference : 06/A-423





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Project: New CTE Center & Hargrave High School Additions & Renovations

Project No. 240157

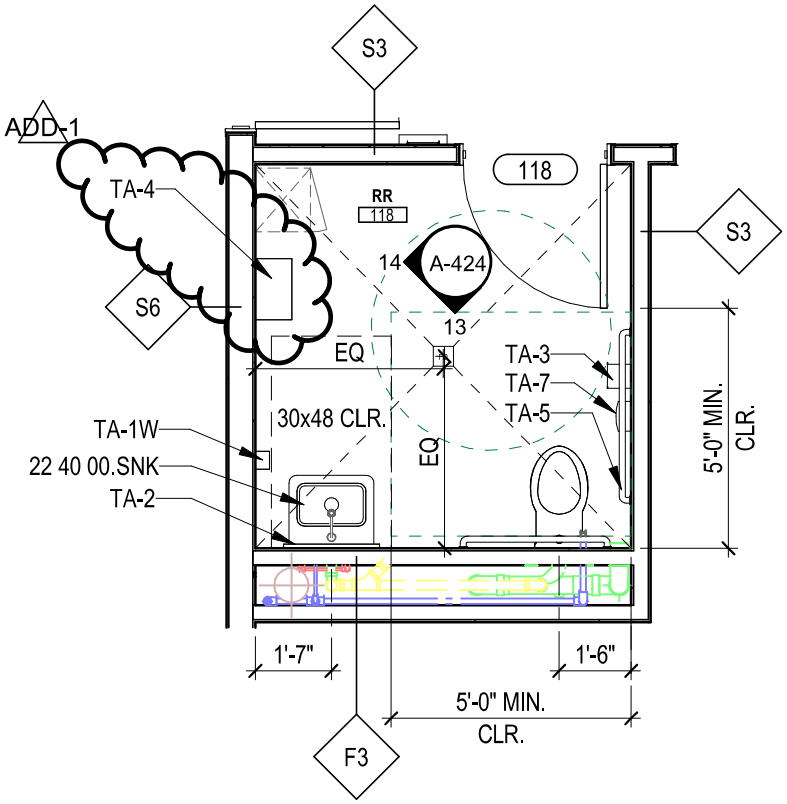
Description: RR REVISIONS

Date: 06/04/2025

Sketch No. SK-005

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

Drawing Reference : 03/A-423



15 ADMIN RESTROOM

1/4" = 1'-0"

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Telephone: 713/965-1104
Fax: 713/961-4571

Project: New CTE Center & Hargrave High School Additions & Renovations

Project No. ADMIN RR REVISION

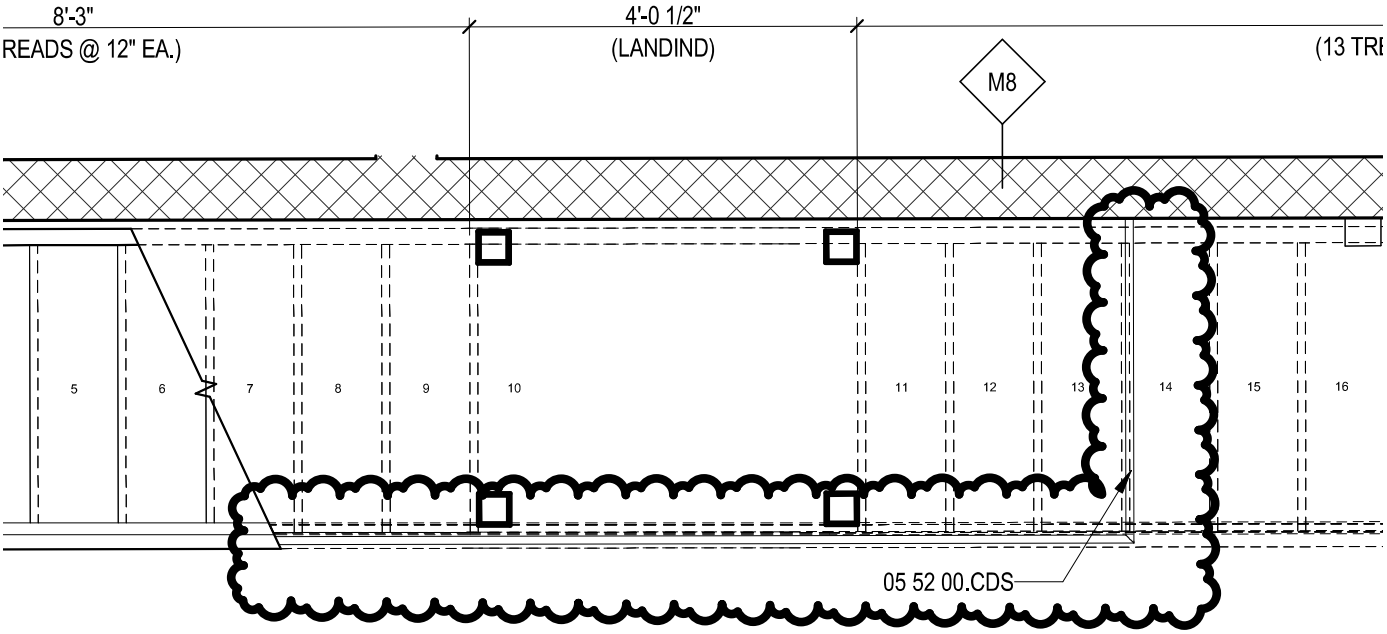
Description: Sketch Description

Date: 06/03/2025

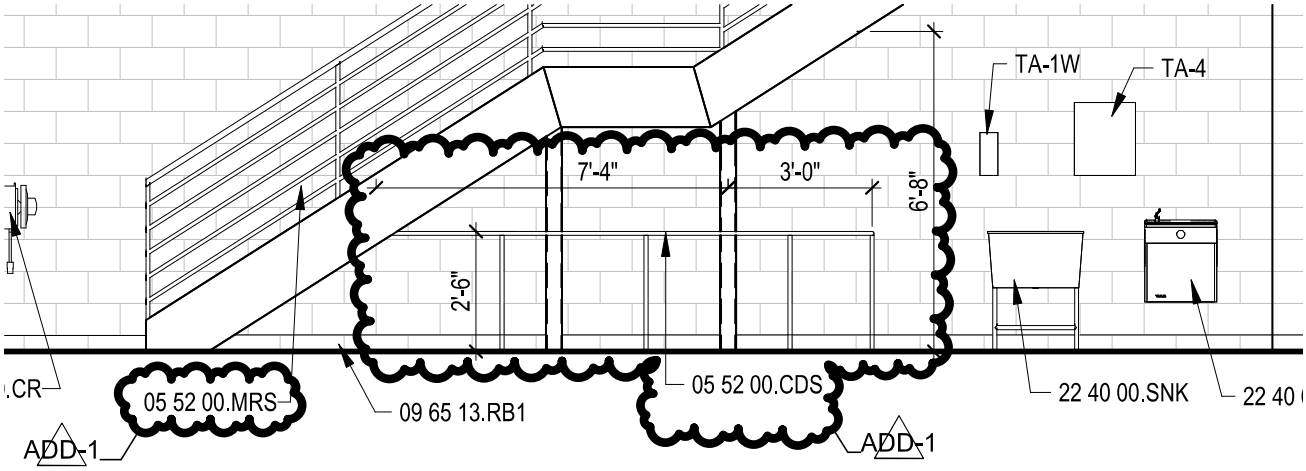
Sketch No. SK-006

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

Drawing Reference : 15/A-423



04/A-425



02/A-547

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Telephone: 713/965-1104
Fax: 713/961-4571

Project: New CTE Center & Hargrave High School Additions & Renovations

Project No. 240157

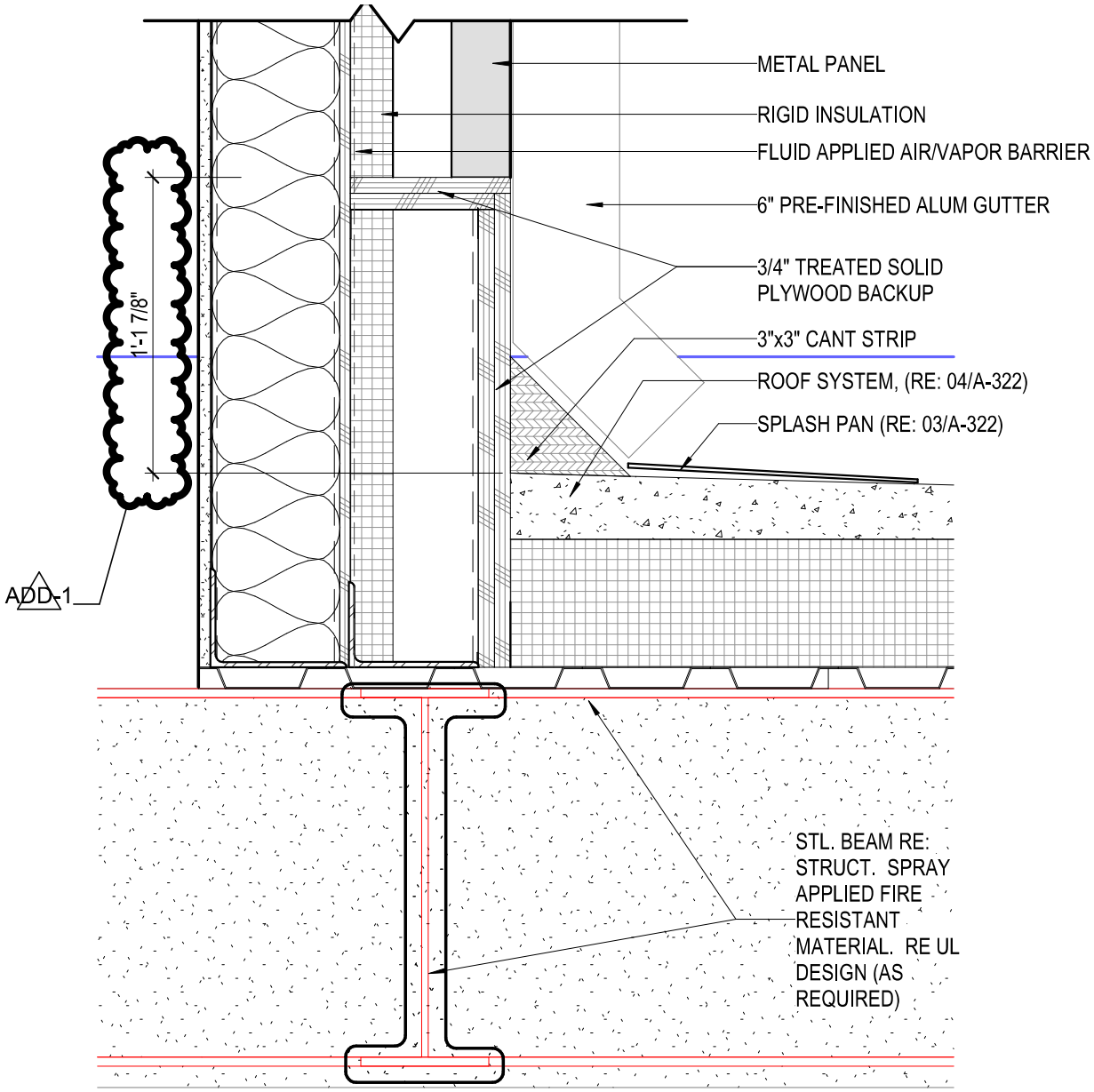
Description: CANE RAIL AT ENG. STAIR

Date: 06/04/2025

Sketch No. SK-007

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

Drawing Reference : 04/A-425,02/A-547



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Fax: 713/961-4571

Project: New CTE Center & Hargrave High School Additions & Renovations

Project No. 240157

Description: SECTION DETAIL REVISION

Date: 06/04/2025

Sketch No. SK-008

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

Drawing Reference : 13/A-720

GLAZING MATERIALS LEGEND

GT1 - INTERIORS ONLY
1/4" TEMPERED GLASS, CLEAR

GI1 - ALL EXTERIOR GLASS - (SECOND LEVEL) - RE: SCHEDULE
LAMINATED EXTERIOR TEMPERED GLASS, TINTED

GI2 - EXTERIOR (FIRST LEVEL) - RE: SCHEDULE
LAMINATED EXTERIOR TEMPERED GLASS, TINTED, WITH SAFETY & SECURITY FILM APPLIED OR INTEGRAL

GL1 - INTERIOR GLASS WITH SAFETY & SECURITY FILM
LAMINATED GLAZING.

ADD-1

PBK

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Project: New CTE Center & Hargrave High School Additions & Renovations

Project No. 240157

Description: TYPICAL GLASS LEGEND REVISION

Date: 06/04/2025

Sketch No. SK-009

Scale: NTS

Drawing Reference : A-821,A-823

DOOR SCHEDULE - 1ST FLOOR - AREA E

DOOR			PANEL						FRAME						GENERAL			
												DETAIL						
NUMBER	WIDTH	HEIGHT	WIDTH: A / B	TYPE: A / B	THK	MATL	FINISH	GLASS TYPE	TYPE	MATL	FINISH	JAMB	HEAD	SILL	FIRE RATING	STC	AAOS PROJECT HW SET	REMARKS
C152A	6'-0"	6'-10"	3'-0"/3'-0"	F/F	1 3/4"	HM	PT-7	NONE	001	HM	PT-7	07/A-812	13/A-812	01/A-812			7.0	10
C152B	6'-0"	6'-10"	3'-0"/3'-0"	F/F	1 3/4"	HM	PT-7	NONE	001	HM	PT-7	07/A-812	13/A-812	01/A-812			7.0	10
C152C	6'-0"	6'-10"	3'-0"/3'-0"	HGIR/HGIR	1 3/4"	ALUM	GT1 / ALUM		HGIR	AL	Anodized-Clear	10/A-813	16/A-813	04/A-813			3.0	
C152D	6'-0"	6'-10"	3'-0"/3'-0"	HGIR/HGIR	1 3/4"	ALUM	GT1 / ALUM		HGIR	AL	Anodized-Clear	10/A-813	16/A-813	04/A-813				
C152E	6'-0"	6'-10"	3'-0"/3'-0"	F/F	1 3/4"	HM	-	NONE	001	HM	PT-1	10/A-812	16/A-812	03/A-812	1.5 HR		4.0	
C152F	6'-0"	6'-10"	3'-0"/3'-0"	F/F	1 3/4"	HM	-	NONE	001	HM	Anodized-Clear	07/A-812	13/A-812	01/A-812	1.5 HR		4.0	
C153	6'-0"	6'-10"	3'-0"/3'-0"	F/F	1 3/4"	HM	-	NONE	001	HM	Anodized-Clear	10/A-812	16/A-812	03/A-812			11.0	
Grand total: 7																		

ADD-1

ADD-1

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Project: New CTE Center & Hargrave High School Additions & Renovations

Project No. 240157

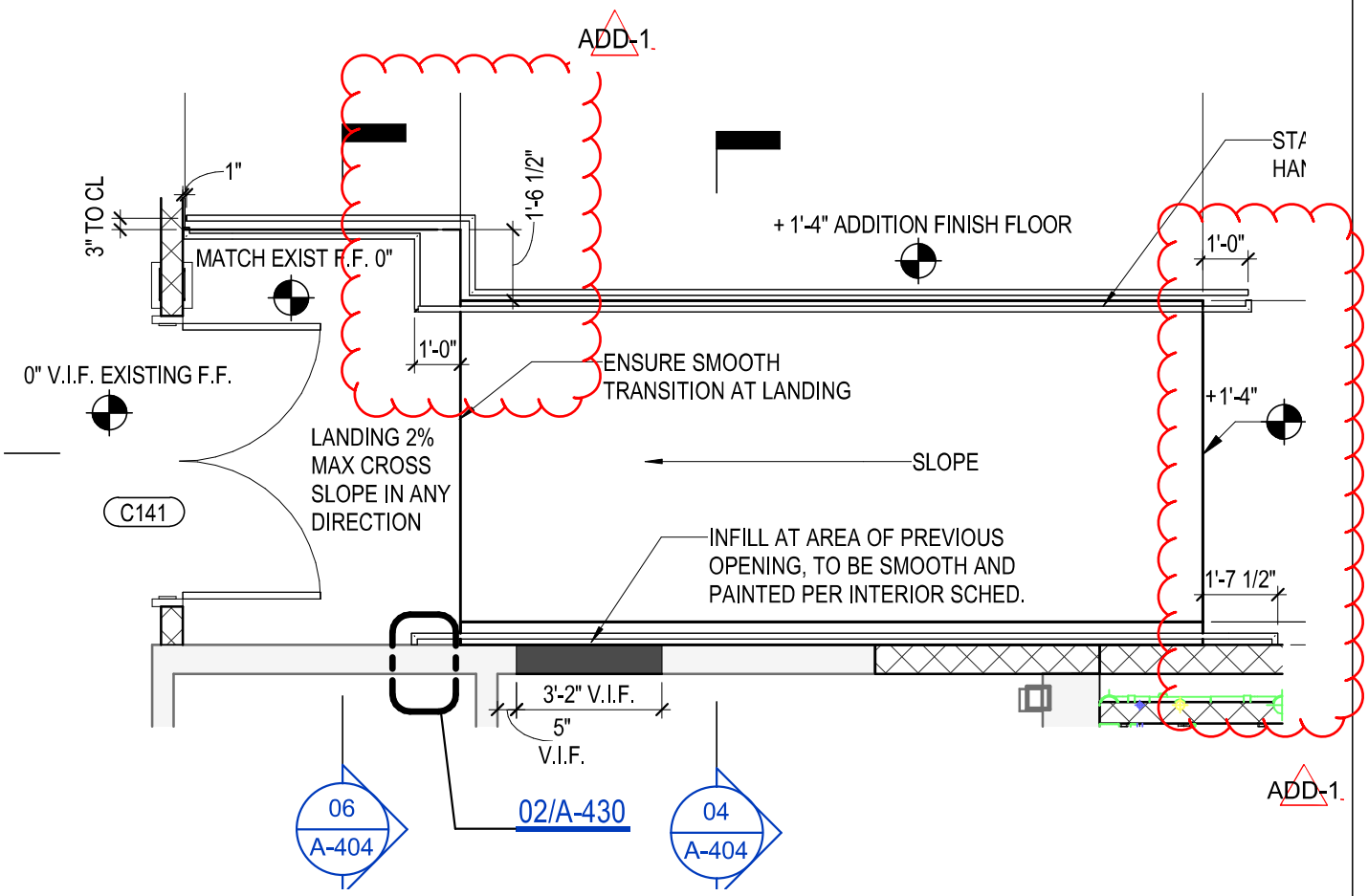
Description: DOOR SCHEDULE REVISION

Date: 06/04/2025

Sketch No. SK-010

Scale: NTS

Drawing Reference : A-101E



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Project: New CTE Center & Hargrave High School Additions & Renovations

Project No. 240157

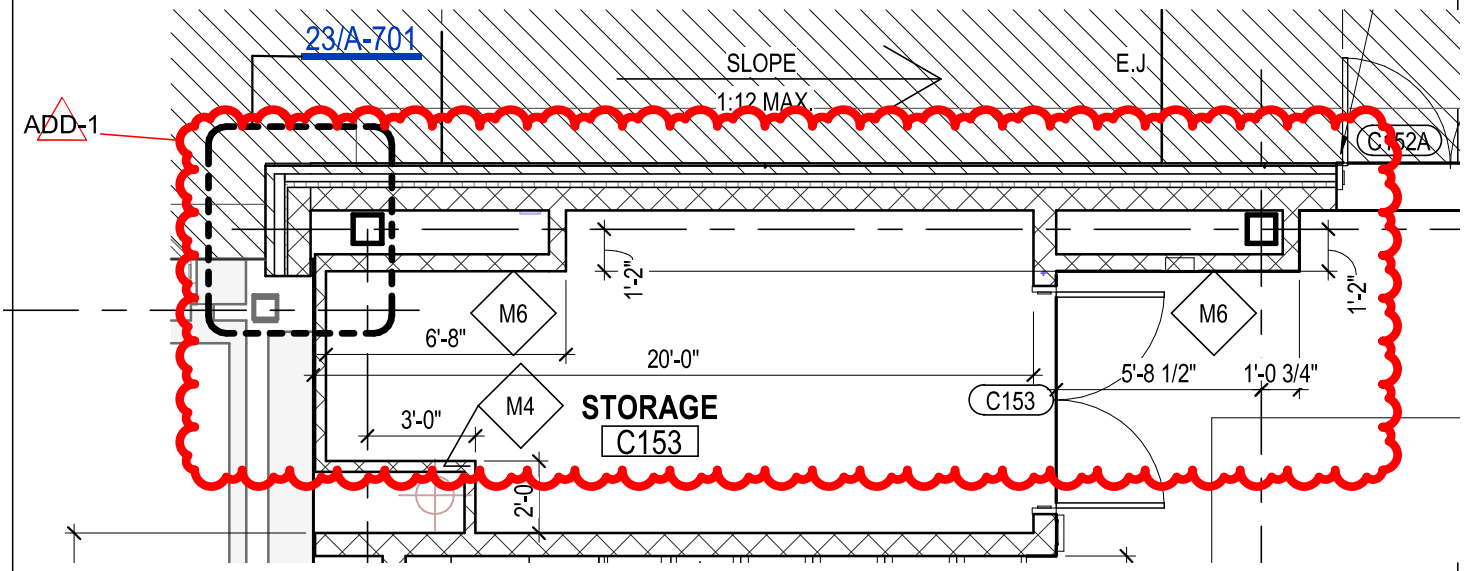
Description: RAMP AT CONCOURSE HANDRAILS

Date: 06/04/2025

Sketch No. SK-011

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

Drawing Reference : 02/A-404



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Project: New CTE Center & Hargrave High School Additions & Renovations

Project No. 240157

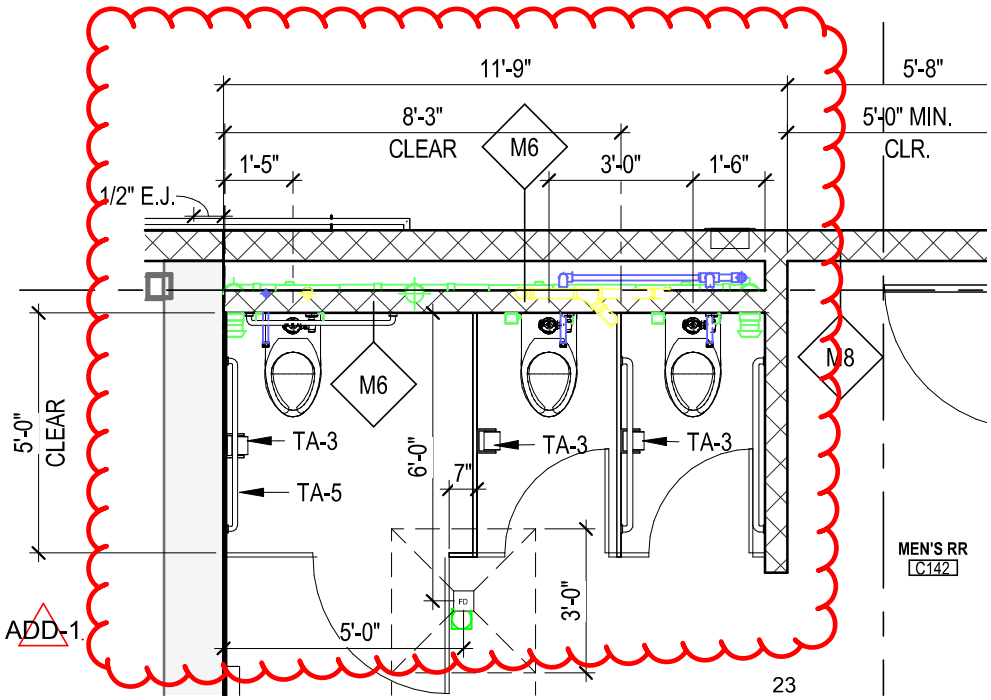
Description: FURRING REVISIONS STOR. C153

Date: 06/04/2025

Sketch No. SK-012

Scale: 3/16" = 1'-0"

Drawing Reference : 06/A-405



PBK Architects, Inc.
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Fax: 713/961-4571

Project: New CTE Center & Hargrave High School Additions & Renovations

Project No. 240157

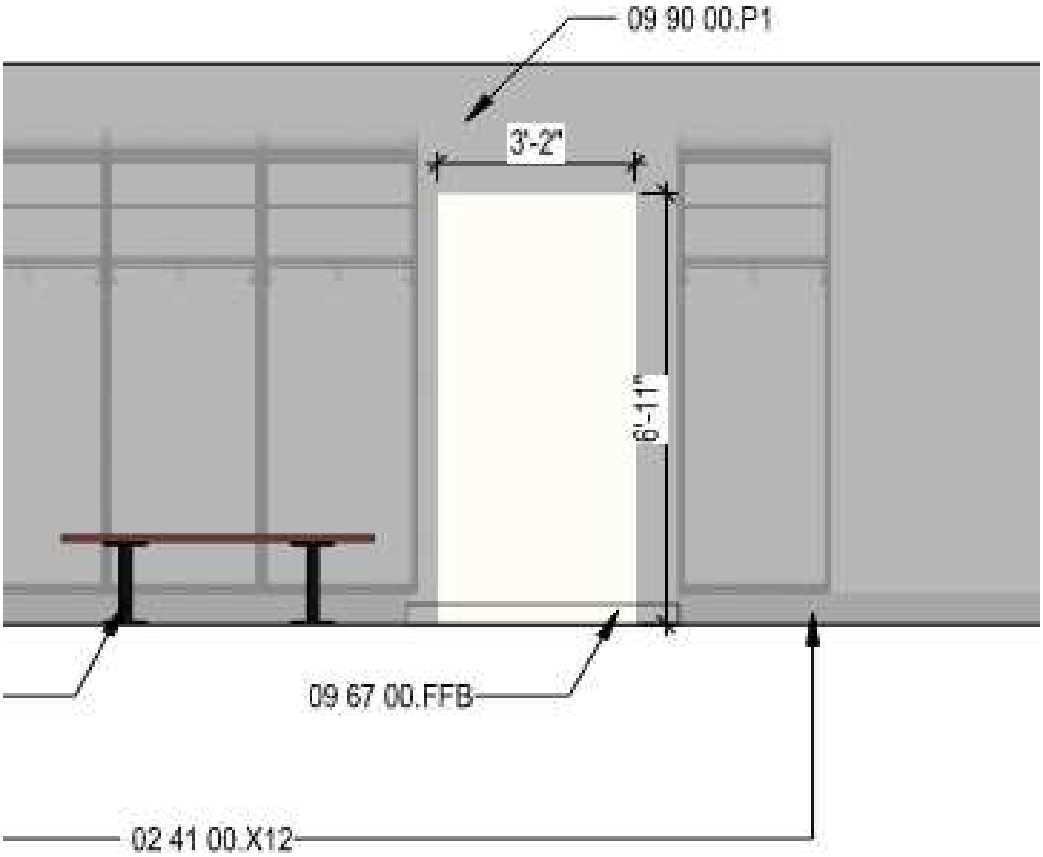
Description: MEN'S C142 , ADA STALL REVISION

Date: 06/03/2025

Sketch No. SK-013

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

Drawing Reference : 21/A-408



PBK Architects, Inc.
11 Greenway Plaza
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Houston, Texas 77046-1104
Telephone: 713/965-1104
Fax: 713/961-4571

Project: New CTE Center & Hargrave High School Additions & Renovations

Project No. 240157

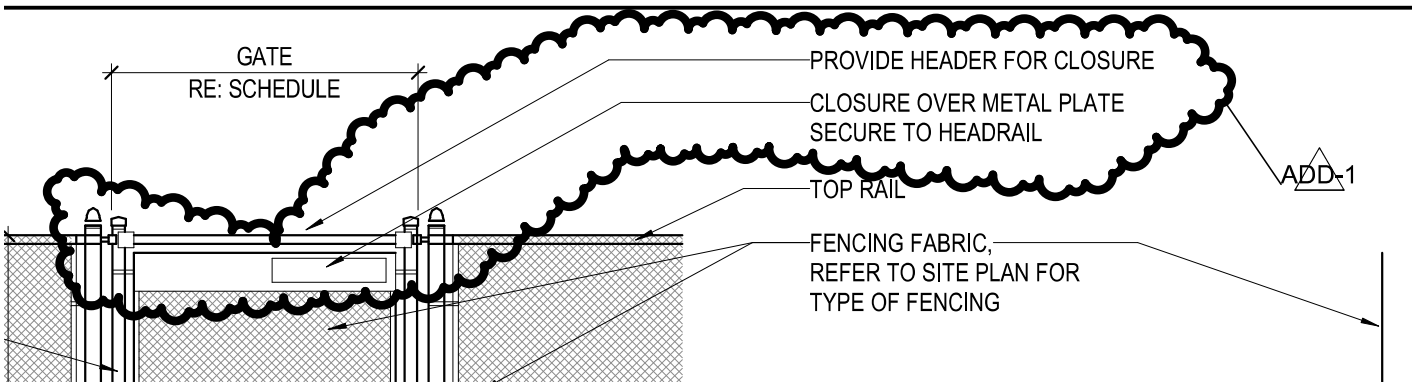
Description: OPENING FILL DIMS AT GIRLS LR

Date: 06/04/2025

Sketch No. SK-014

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

Drawing Reference : 16/A-524



PBK Architects, Inc.
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Telephone: 713/965-1104
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Project: New CTE Center & Hargrave High School Additions & Renovations

Project No. 240157

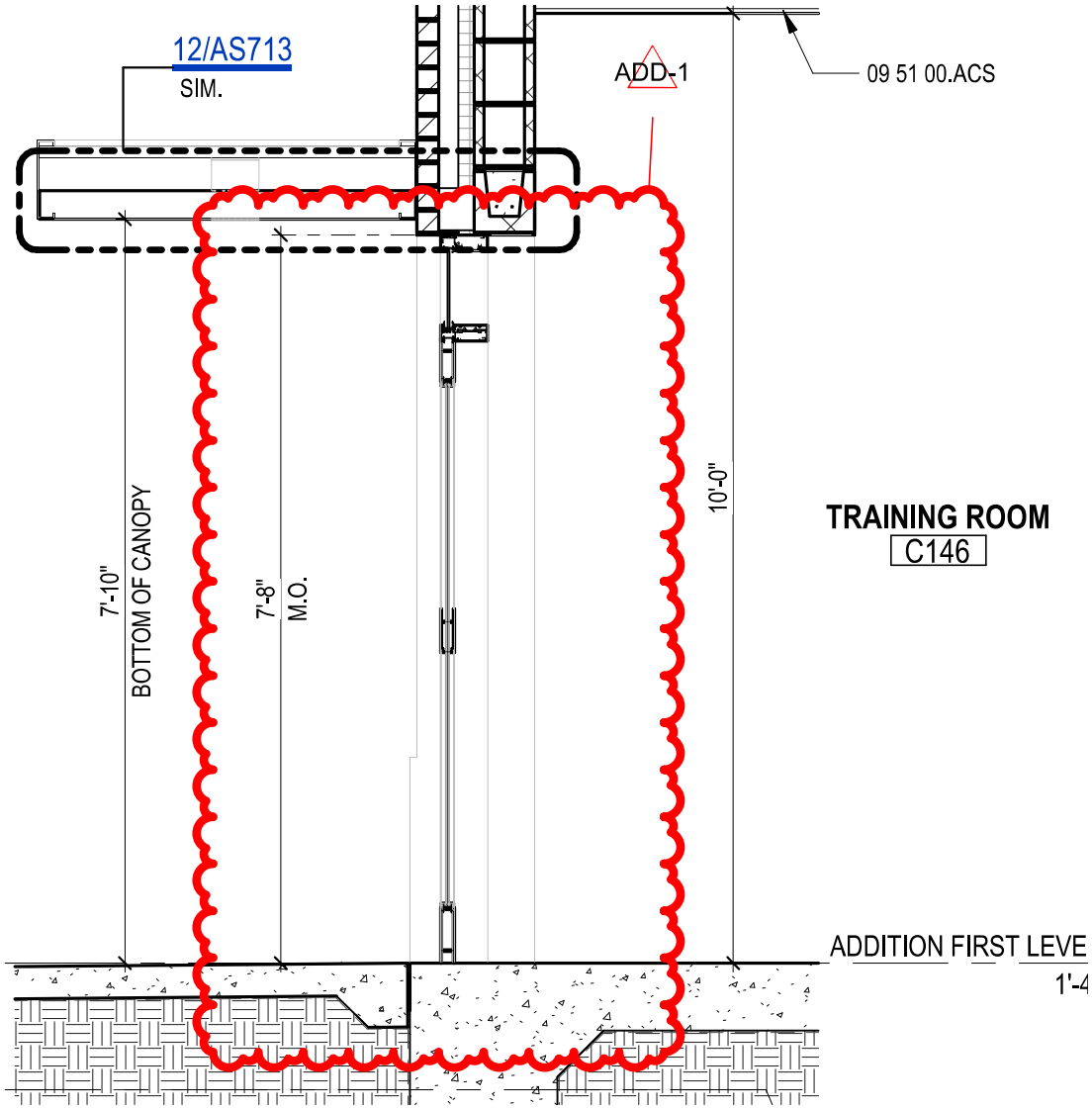
Description: CLF GATE REVISION

Date: 06/05/2025

Sketch No. SK-015

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

Drawing Reference : 28/AS101HJ



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Project: New CTE Center & Hargrave High School Additions & Renovations

Project No. 240157

Description: WALL SECTION REVISION

Date: 06/04/2025

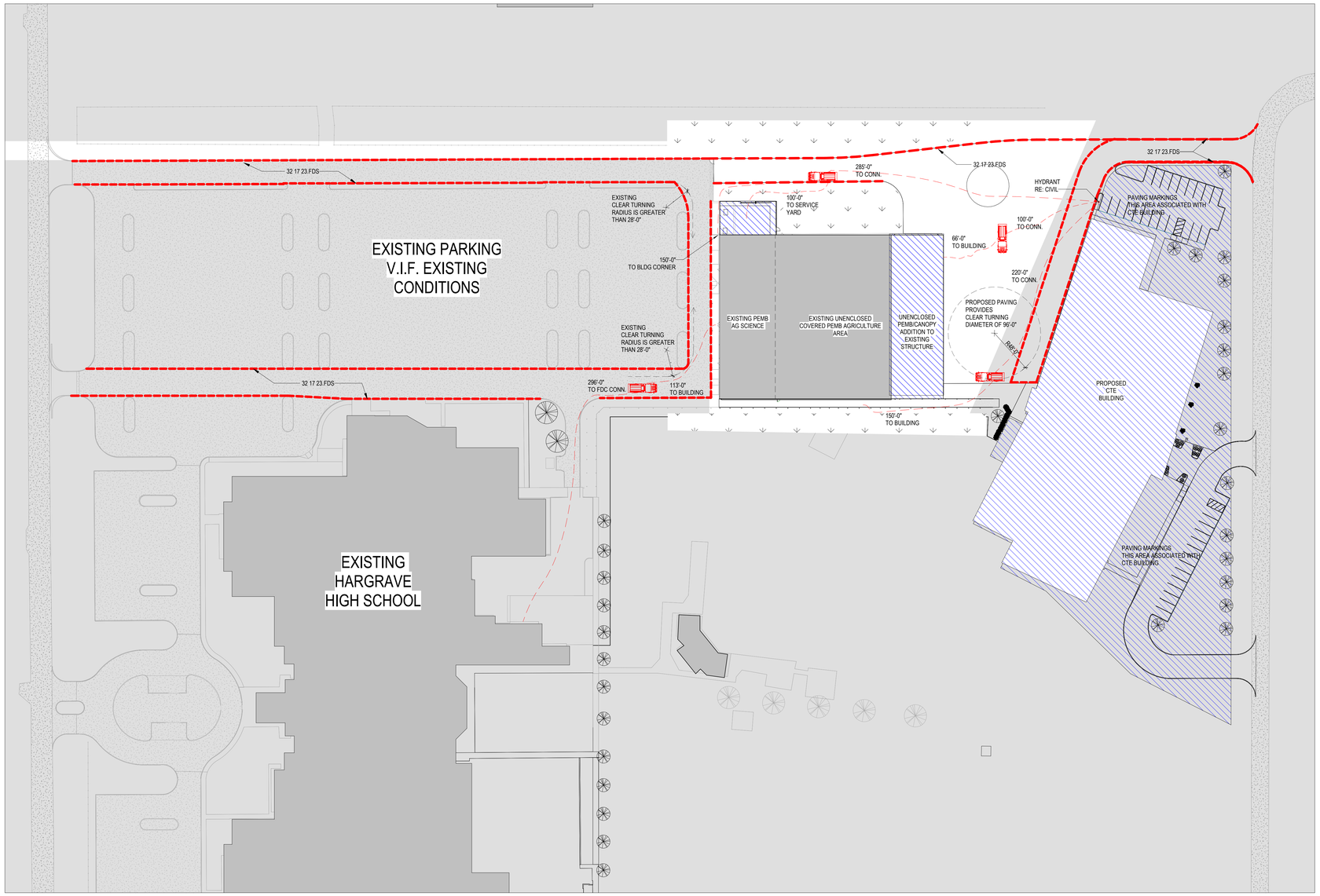
Sketch No. SK-016

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

Drawing Reference : 02/A-622

FIRE LANE PLAN - AG
G-202HJ
FOR BLUEBEAM LABELING/OCR:

0"
1"



06 ARCHITECTURAL COMPOSITE SITE PLAN - AGRICULTURAL CENTER
1" = 50'-0"

GENERAL ARCH SITE PLAN NOTES

1. REFER TO CIVIL DOCUMENTS.
2. COORDINATE ALL SPOT ELEVATIONS AND DIMENSIONS WITH CIVIL, LANDSCAPE, AND OR STRUCTURAL DOCUMENTS.
3. PROVIDE POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS OF 1% MINIMUM, 2% MAXIMUM AT ALL EXTERIOR PAVED PEDESTRIAN AREAS, INCLUDING BUT NOT LIMITED TO SIDEWALKS, PATIOS, STAIRS, PAVING, U.N.O.
4. PROVIDE AND INSTALL POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS OF 5% FOR A HORIZONTAL DISTANCE OF 10 FEET AT ALL EXTERIOR NON-PAVED AREAS U.N.O.
5. REFER TO CIVIL DOCUMENTS FOR CONCRETE SIDEWALK EXPANSION JOINTS AND CONCRETE SIDEWALK CONTROL JOINTS.
6. VERIFY AND CONFIRM ALL JOINT LAYOUTS AT ALL CONCRETE SIDEWALKS WITH ARCHITECT PRIOR TO POURING OF CONCRETE.
7. PROVIDE AND INSTALL CONCRETE SIDEWALK EXPANSION JOINTS AT AREAS NOT SPECIFICALLY INDICATED AT 50 FEET ON-CENTER MAX. U.N.O.
8. PROVIDE AND INSTALL CONCRETE SIDEWALK CONTROL JOINTS AT AREAS NOT SPECIFICALLY INDICATED AT DISTANCES EQUIVALENT TO SIDEWALK WIDTH, BUT NOT TO EXCEED 10 FEET ON-CENTER MAX.
9. VERIFY ALL SITE SIGNAGE LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION OF SITE SIGNAGE.
10. PROVIDE AND INSTALL SELF-LEVELING UNDERLAYMENT WHERE UNEVEN FLOOR SLAB EXISTS PRIOR TO INSTALLATION OF FLOOR FINISHES.

KEYNOTE LEGEND

NUMBER	DESCRIPTION
32 17 23.FDS	PAVING STRIPING, FIRE LANE RED, WITH WHITE LETTERING TO INDICATE "FIRE ROOM ACCESS PATH NO STACKING OR STORING"

GATE SCHEDULE

MARK	SIZE W	SIZE H	MTL	HARDWARE SET	REMARKS
H126	4'-0"	8'-0"	Steel,Galvanized		GATE WITH PANIC DEVICE RE: SITE DTLS

FIRE LANE NOTES:

503.3 MARKING.

-FIRE APPARATUS ACCESS ROADS SHALL BE MARKED BY PAINTED LINES OF RED TRAFFIC PAINT 6 IN. WIDTH TO SHOW THE BOUNDARIES OF THE LANE. THE WORDS "NO PARKING FIRE LANE" OR "FIRE LANE NO PARKING" SHALL APPEAR IN 4 IN. WHITE LETTERS AT 25 FT. INTERVALS ON THE RED BORDER MARKINGS ALONG BOTH SIDES OF THE FIRE LANES. WHERE A CURB IS AVAILABLE, THE STRIPING SHALL BE ON BOTH THE VERTICAL AND HORIZONTAL FACES OF THE CURB.

-WHEN USING SIGNS TO IDENTIFY FIRE LANES, SIGNS SHALL READ "NO PARKING FIRE LANE" OR "FIRE LANE NO PARKING" AND SHALL BE 12 IN. WIDE AND 18 IN. SIGNS SHALL BE PAINTED ON A WHITE BACKGROUND WITH LETTERS AND BORDERS IN RED, USING NOT LESS THAN 2 IN. LETTERING. SIGNS SHALL BE PERMANENTLY AFFIXED TO A STATIONARY POST AND THE BOTTOM OF THE SIGN SHALL BE 6'- 6" IN. ABOVE FINISHED GRADE. SIGNS SHALL BE SPACED NOT MORE THAN 50 FT. APART. SIGNS MAY BE INSTALLED ON PERMANENT BUILDINGS OR WALLS OR AS APPROVED BY THE FIRE MARSHAL.

THE MEANS BY WHICH FIRE LANES ARE DESIGNATED SHALL BE MAINTAINED IN A CLEAN AND LEGIBLE CONDITION AT ALL TIMES AND BE REPLACED OR REPAIRED WHEN NECESSARY TO PROVIDE ADEQUATE VISIBILITY.

918.4 REMOTE FIRE HOSE CONNECTION LOCATION(S).
WHERE APPROVED BY THE FIRE CODE OFFICIAL OR FIRE MARSHAL,
REMOTE FIRE HOSE CONNECTIONS SHALL BE INSTALLED SO THAT ALL PORTIONS OF THE BUILDING ARE COVERED WITHIN 150 FT. OF FIRE HOSE LAY. FIRE DEPARTMENT CONNECTION SHALL BE LOCATED WITHIN 10 FT OF THE FIRE LANE.

EXCEPTION: FIRE HOSE LAY SHALL BE INCREASED UP TO 200 FT. WHEN THE BUILDING IS PROTECTED WITH AUTOMATIC FIRE SPRINKLER SYSTEM.

ARCH SITE PLAN LEGEND

- EXISTING BUILDING
- NOT IN SCOPE
- NEW BUILDING / ADDITION
- GRASS
- HYDRO MULCH
- PROPOSED TREE RE: LANDSCAPE
- LIGHT POLE
- PROPERTY LINE
- CHAIN LINK FENCE
- ORNAMENTAL FENCE
- FIRE LANE

ADD-1

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LANDSCAPE
EDGELAND
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KUBALA ENGINEERS
CONSULTING ENGINEERS
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MEP
LEAF ENGINEERS
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ACOUSTIC
BAI TLC
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FOODSERVICE DESIGN PROFESSIONALS
T 281-392-0222
ENVELOPE
BEAM PROFESSIONALS
T 713-965-0608

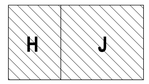
New CTE Center & Hargrave High School Additions & Renovations

BUILDING: AGRICULTURAL PAVILION

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS



KEY PLAN
NORTH: PLAN TRUE

REGISTERED ARCHITECT MELISSA A. KAPPLE 30374 STATE OF TEXAS
melissa kapple
5/22/2025

CLIENT
Huffman Independent School District

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
P	HC PERMIT RESPONSE	05/28/2025
ADD-1	ADD-1	06/04/2025

CHECKED BY: Checker
DRAWN BY: Pl

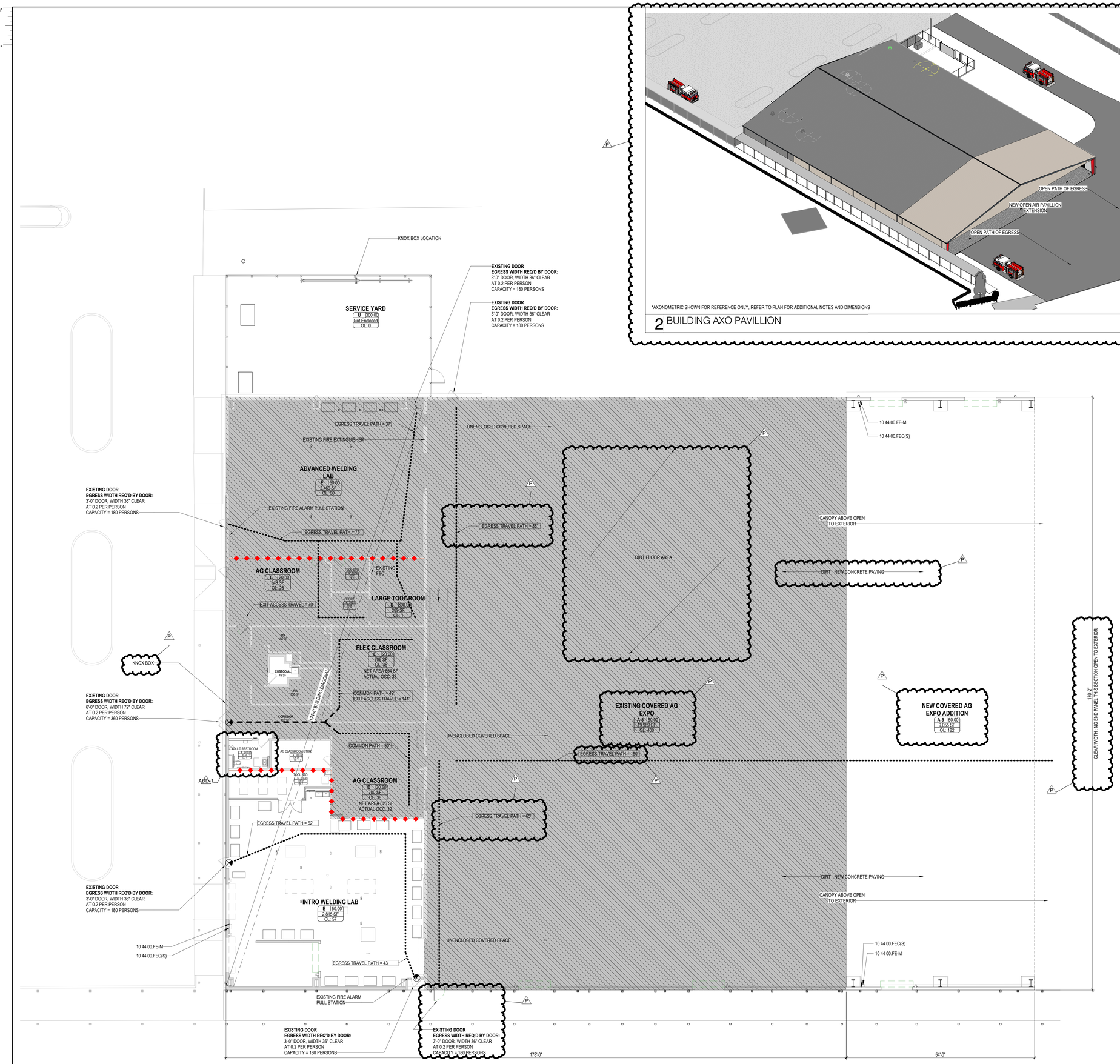
P

FIRE LANE PLAN - AG

G-202HJ

Plot Stamp:
6/3/2025 6:48:21 PM

LIFE SAFETY EGRESS PLAN - FIRST FLOOR-AG
G-203HJ
FOR BLUEBEAM LABELING/OCR:



06 FIRST LEVEL - CODE ANALYSIS PLAN
3/32" = 1'-0"

2 BUILDING AXO PAVILLION

CODE ANALYSIS SYMBOLS

- 1-HOUR FIRE RATING
- 2-HOUR FIRE RATING
- 3-HOUR FIRE RATING
- 0-HOUR SMOKE RATING
- 1-HOUR SMOKE RATING
- EGRESS TRAVEL PATH
- EGRESS COMMON PATH OF TRAVEL
- LS-1 — TRAVEL DISTANCE NAME
- 150' - 0" — TRAVEL DISTANCE LENGTH
- EXIT SIGN
- Area Name — A-3 100.0 — 150 SF — OL 00000 — OCCUPANCY TYPE — ROOM AREA — LOAD FACTOR — OCCUPANT LOAD FOR ROOM (NET FUNCTIONS ONLY)
- 35" — POINT OF ***EXIT ACCESS*** WITH CLEAR EXIT WIDTH (EXCLUDING DOOR LEAF AND FRAME STOPS)
- 35" — POINT OF ***EXIT DISCHARGE*** WITH CLEAR EXIT WIDTH (EXCLUDING DOOR LEAF AND FRAME STOPS)
- A.E.D. — AUTOMATED EXTERNAL DEFIBRILLATOR
- F.E.C. — FIRE EXTINGUISHER CABINET
- ACCESSIBLE PUSH PLATE ACTUATOR
- F.E. — FIRE EXTINGUISHER
- FH — PROPOSED FIRE HYDRANT
- FIRE HOSE COVERAGE
- AREA NOT IN SCOPE

KEYNOTE LEGEND

NUMBER	DESCRIPTION
10 44 00.FE-M	FIRE EXTINGUISHER, MULTI-PURPOSE
10 44 00.FEC(S)	FIRE EXTINGUISHER CABINET, SURFACE-MOUNTED

FIRE-RATED ASSEMBLIES

ROOF ASSEMBLY	UL P921
FLOOR ASSEMBLY	UL D780
WIDE FLANGE STEEL COLUMNS	UL X772
TUBE STEEL COLUMNS	UL X771
STUD FRAMED WALL	UL U465
STUD FRAMED SHAFTWALL	UL U415
CMU WALL	UL U905

1. UL ASSEMBLIES INDICATED ESTABLISH A BASIS OF PERFORMANCE. OTHER ASSEMBLIES MAY BE CONSIDERED AT THE DISCRETION OF THE ARCH. IF EQUIVALENT PERFORMANCE IS PROVIDED. SUBSTITUTION PROPOSALS SHALL INCLUDE CHANGES REQUIRED TO ALL COMPONENTS OF THE ASSEMBLY.

2. PROTECT ALL CONDUIT, PIPES, DUCTS, AND MISC. PENETRATIONS THROUGH FIRE-RATED WALLS, FLOOR, AND OR ROOF ASSEMBLIES WITH FIRE SAFING INSULATION AND FIRE STOP SEALANT. REFER TO GUIDELINES FOR APPROPRIATE ASSEMBLIES.

3. PROVIDE DAMPERS AND OR LIGHT FIXTURE PROTECTION AS REQUIRED BY UL ASSEMBLIES.

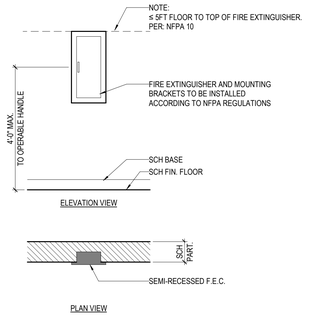
4. PROVIDE SPRAY-ON FIREPROOFING PROTECTION FOR STRUCTURAL MEMBERS CROSSING FROM A FIRE-RATED ROOF ASSEMBLY AND OR A FIRE-RATED FLOOR ASSEMBLY INTO OTHER AREAS WITH ANY OTHER FIRE-RATED ASSEMBLY OR NO FIRE-RATED ASSEMBLY, FOR THEIR FULL LENGTH.

5. PERMANENTLY MARK ALL WALLS ABOVE CEILINGS AS FOLLOWS:
"FIRE-RATED WALL - PROTECT ALL OPENINGS"
LETTERS SHALL BE RED IN COLOR AND A MINIMUM OF 2 1/2 INCHES IN HEIGHT. PROVIDE A MINIMUM OF ONE MARKING PER STRUCTURAL BAY.

6. PERMANENTLY MARK SMOKE PARTITIONS ABOVE CEILINGS AS FOLLOWS:
"SMOKE PARTITION - PROTECT ALL OPENINGS"
LETTERS SHALL BE RED IN COLOR AND A MINIMUM OF 2 1/2 INCHES IN HEIGHT. PROVIDE A MINIMUM OF ONE MARKING PER STRUCTURAL BAY.

FIRE-RATED FLOOR AND CEILING LEGEND

- 2 HOUR RATED UL FLOOR/ CEILING ASSEMBLY
- 1 HOUR RATED UL FLOOR/ CEILING ASSEMBLY
- NOT RATED STRUCTURE HIGHER THAN 20' A.F.F.



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KUBALA ENGINEERS
CONSULTING ENGINEERS
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MEP
LEAF ENGINEERS
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FOODSERVICE DESIGN PROFESSIONALS
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ENVELOPE
BEAM PROFESSIONALS
T 713-965-0608

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: AGRICULTURAL PAVILION

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

H J

KEY PLAN
NORTH: PLAN TRUE

REGISTERED ARCHITECT MELISSA A. KAPPLE 30374 STATE OF TEXAS
melissa kapple
5/22/2025

CLIENT
Huffman Independent School District

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
P	HC PERMIT RESPONSE	05/28/2025
ADD-1	ADD-1	06/04/2025

CHECKED BY: Checker
DRAWN BY: PL

LIFE SAFETY EGRESS PLAN - FIRST FLOOR-AG

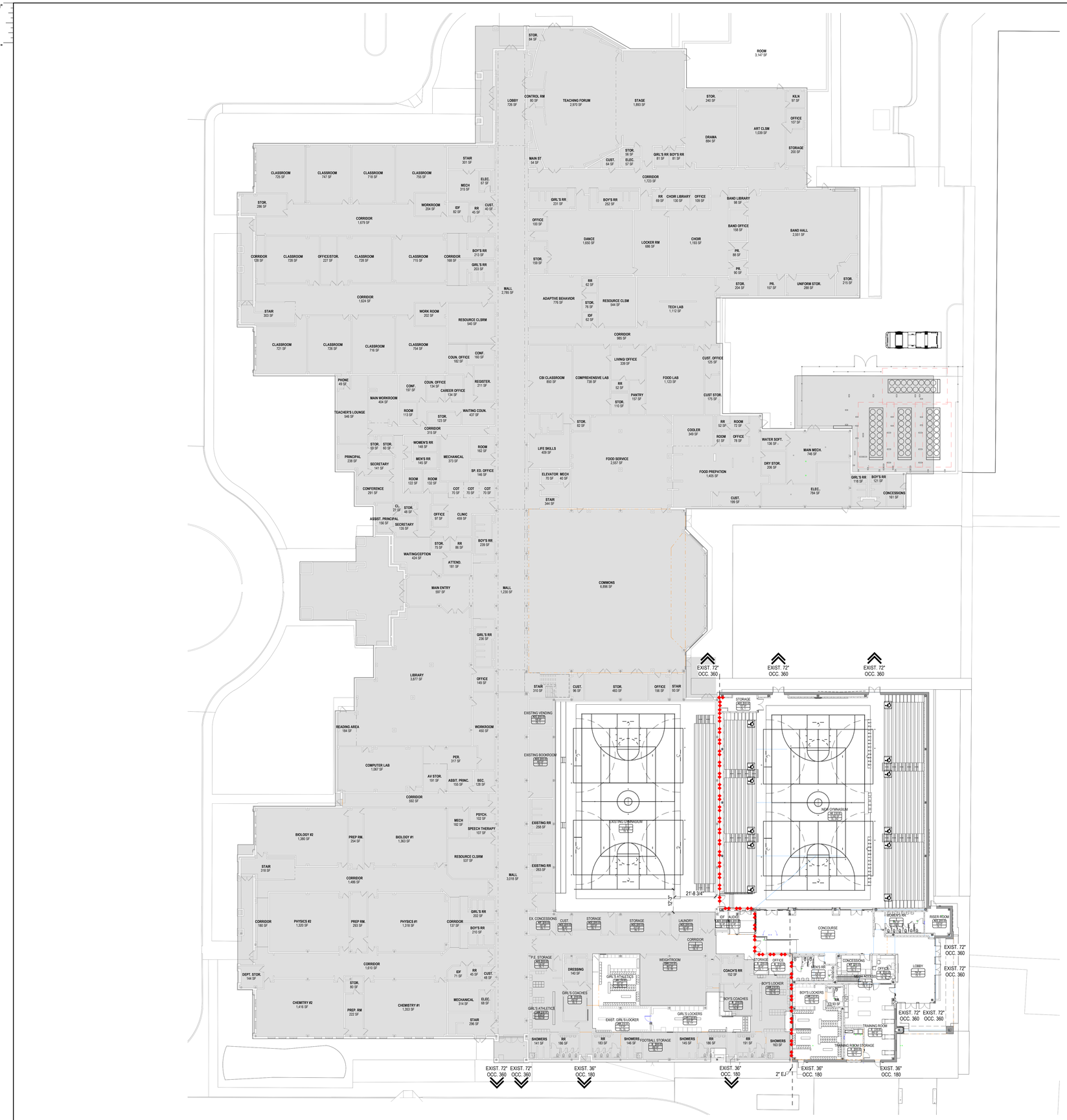
G-203HJ

Plot Stamp:
6/3/2025 6:49:55 PM

LIFE SAFETY EGRESS PLAN COMPOSITE - HS

G-302DE

FOR BLUEBEAM LABELING/OCR:



06 FIRST LEVEL - CODE COMPLIANCE PLAN
3/64" = 1'-0"

CODE ANALYSIS SYMBOLS

1-HOUR FIRE RATING
2-HOUR FIRE RATING
3-HOUR FIRE RATING
0-HOUR SMOKE RATING
1-HOUR SMOKE RATING
EGRESS TRAVEL PATH
EGRESS COMMON PATH OF TRAVEL
LS-1 — TRAVEL DISTANCE NAME
150' - 0" — TRAVEL DISTANCE LENGTH
EXIT SIGN
Area Name
OCCUPANCY TYPE — A-3
ROOM AREA — 150 SF
FUNCTION OF SPACE — 100.0
LOAD FACTOR
OCCUPANT LOAD FOR ROOM (NET FUNCTIONS ONLY) — OL 00000
POINT OF *EXIT ACCESS* WITH CLEAR EXIT WIDTH (EXCLUDING DOOR LEAF AND FRAME STOPS)
POINT OF *EXIT DISCHARGE* WITH CLEAR EXIT WIDTH (EXCLUDING DOOR LEAF AND FRAME STOPS)
A.E.D. — AUTOMATED EXTERNAL DEFIBRILLATOR
F.E.C. — FIRE EXTINGUISHER CABINET
ACCESSIBLE PUSH PLATE ACTUATOR
F.E. — FIRE EXTINGUISHER
FH — PROPOSED FIRE HYDRANT
FIRE HOSE COVERAGE

FIRE-RATED ASSEMBLIES

ROOF ASSEMBLY	UL P921
FLOOR ASSEMBLY	UL D780
WIDE FLANGE STEEL COLUMNS	UL X772
TUBE STEEL COLUMNS	UL X771
STUD FRAMED WALL	UL U465
STUD FRAMED SHAFTWALL	UL U415
CMU WALL	UL U905

1. UL ASSEMBLIES INDICATED ESTABLISH A BASIS OF PERFORMANCE. OTHER ASSEMBLIES MAY BE CONSIDERED AT THE DISCRETION OF THE ARCHI. IF EQUIVALENT PERFORMANCE IS PROVIDED. SUBSTITUTION PROPOSALS SHALL INCLUDE CHANGES REQUIRED TO ALL COMPONENTS OF THE ASSEMBLY.

2. PROTECT ALL CONDUIT, PIPES, DUCTS, AND MISC. PENETRATIONS THROUGH FIRE-RATED WALLS, FLOOR, AND OR ROOF ASSEMBLIES WITH FIRE SAFING INSULATION AND FIRE STOP SEALANT. REFER TO GUIDELINES FOR APPROPRIATE ASSEMBLIES.

3. PROVIDE DAMPERS AND OR LIGHT FIXTURE PROTECTION AS REQUIRED BY UL ASSEMBLIES.

4. PROVIDE SPRAY-ON FIREPROOFING PROTECTION FOR STRUCTURAL MEMBERS CROSSING FROM A FIRE-RATED ROOF ASSEMBLY AND OR A FIRE-RATED FLOOR ASSEMBLY INTO OTHER AREAS WITH ANY OTHER FIRE-RATED ASSEMBLY OR NO FIRE-RATED ASSEMBLY, FOR THEIR FULL LENGTH.

5. PERMANENTLY MARK ALL WALLS ABOVE CEILINGS AS FOLLOWS:
"FIRE-RATED WALL - PROTECT ALL OPENINGS"
LETTERS SHALL BE RED IN COLOR AND A MINIMUM OF 2 1/2 INCHES IN HEIGHT. PROVIDE A MINIMUM OF ONE MARKING PER STRUCTURAL BAY.

6. PERMANENTLY MARK SMOKE PARTITIONS ABOVE CEILINGS AS FOLLOWS:
"SMOKE PARTITION - PROTECT ALL OPENINGS"
LETTERS SHALL BE RED IN COLOR AND A MINIMUM OF 2 1/2 INCHES IN HEIGHT. PROVIDE A MINIMUM OF ONE MARKING PER STRUCTURAL BAY.

FIRE-RATED FLOOR AND CEILING LEGEND

- 2 HOUR RATED UL FLOOR/ CEILING ASSEMBLY
- 1 HOUR RATED UL FLOOR/ CEILING ASSEMBLY
- NOT RATED STRUCTURE HIGHER THAN 20' A.F.F.
- NOT IN SCOPE AREAS

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LEAF ENGINEERS
T 713-965-0005
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EXTERIOR
BEAM PROFESSIONALS
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FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS, LLc
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New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

KEY PLAN
NORTH: PLAN TRUE

REGISTERED ARCHITECT MELISSA A. KAPPLE 10374 STATE OF TEXAS
melissa kapple
5/22/2025

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
P	VC PERMIT RESPONSE	05/28/2025
ADD-1	ADD-1	06/20/2025

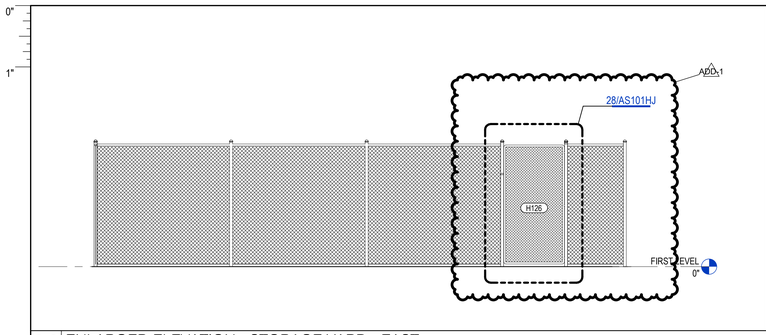
LIFE SAFETY EGRESS PLAN COMPOSITE - HS

G-302DE

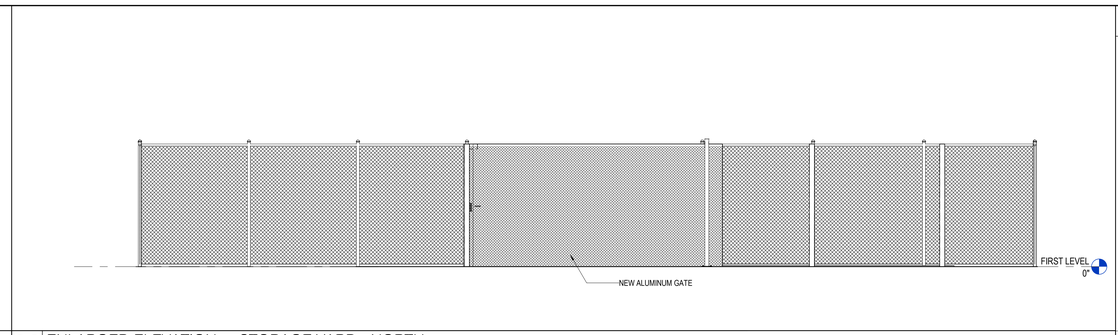
ADD-1

Plot Stamp:
6/3/2025 5:57:45 PM

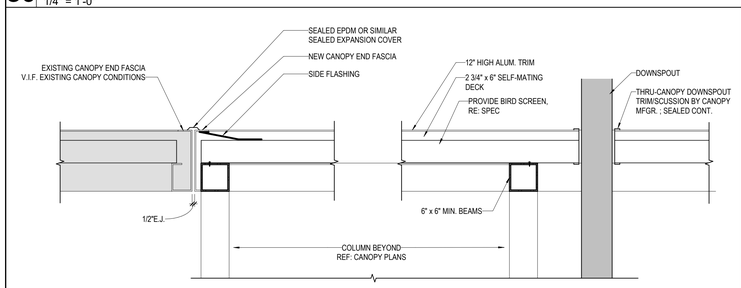
ARCHITECTURAL ENLARGED SITE PLANS
AS403
FOR BLUEBEAM LABELING/OCR:



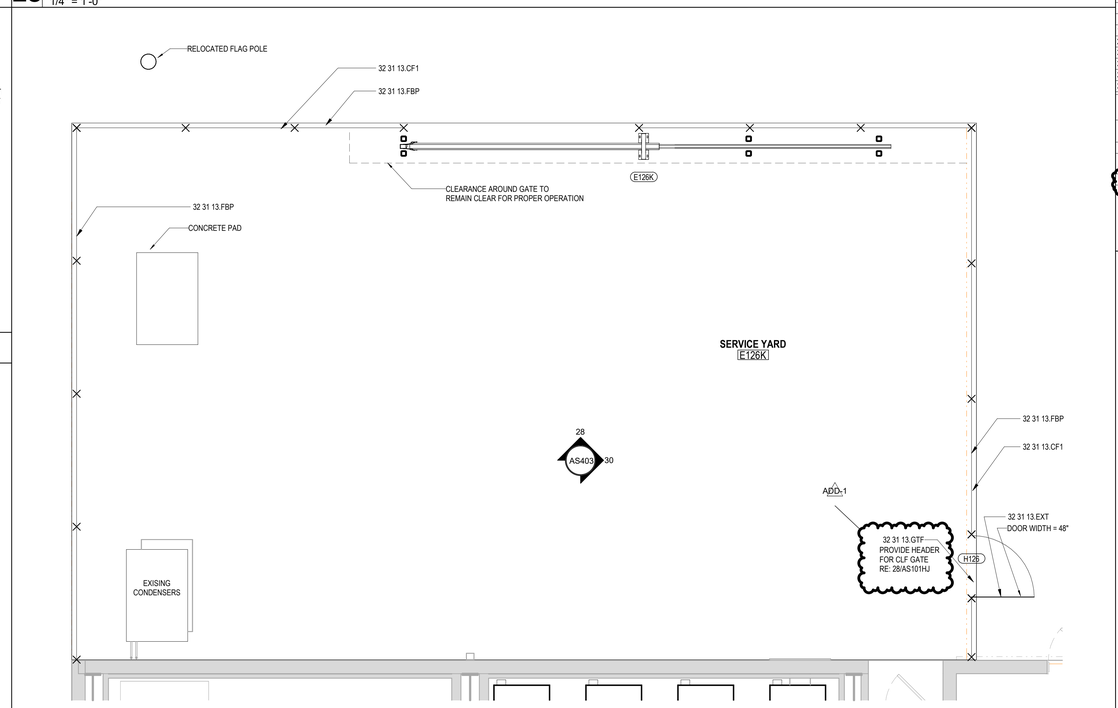
30 ENLARGED ELEVATION - STORAGE YARD - EAST
1/4" = 1'-0"



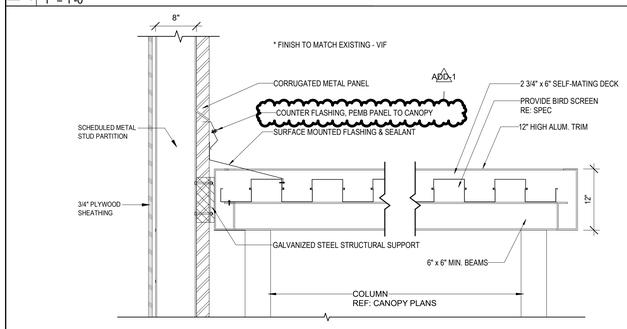
28 ENLARGED ELEVATION - STORAGE YARD - NORTH
1/4" = 1'-0"



24 CANOPY DETAIL AT EXISTING AND NEW CANOPY
1" = 1'-0"



16 ENLARGED PLAN - STORAGE YARD
1/4" = 1'-0"



18 CANOPY DETAIL.
1" = 1'-0"

GENERAL ARCH SITE PLAN NOTES

1. REFER TO CIVIL DOCUMENTS.
2. COORDINATE ALL SPOT ELEVATIONS AND DIMENSIONS WITH CIVIL, LANDSCAPE, AND OR STRUCTURAL DOCUMENTS.
3. PROVIDE POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS OF 1% MINIMUM, 2% MAXIMUM AT ALL EXTERIOR PAVED PEDESTRIAN AREAS, INCLUDING BUT NOT LIMITED TO SIDEWALKS, PATIOS, STAIRS, PAVING. U.N.O.
4. PROVIDE AND INSTALL POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS OF 5% FOR A HORIZONTAL DISTANCE OF 10 FEET AT ALL EXTERIOR NON-PAVED AREAS U.N.O.
5. REFER TO CIVIL DOCUMENTS FOR CONCRETE SIDEWALK EXPANSION JOINTS AND CONCRETE SIDEWALK CONTROL JOINTS.
6. VERIFY AND CONFIRM ALL JOINT LAYOUTS AT ALL CONCRETE SIDEWALKS WITH ARCHITECT PRIOR TO POURING OF CONCRETE.
7. PROVIDE AND INSTALL CONCRETE SIDEWALK EXPANSION JOINTS AT AREAS NOT SPECIFICALLY INDICATED AT 50 FEET ON-CENTER MAX. U.N.O.
8. PROVIDE AND INSTALL CONCRETE SIDEWALK CONTROL JOINTS AT AREAS NOT SPECIFICALLY INDICATED AT DISTANCES EQUIVALENT TO SIDEWALK WIDTH, BUT NOT TO EXCEED 10 FEET ON-CENTER MAX.
9. VERIFY ALL SITE SIGNAGE LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION OF SITE SIGNAGE.
10. PROVIDE AND INSTALL SELF-LEVELING UNDERLAYMENT WHERE UNEVEN FLOOR SLAB EXISTS PRIOR TO INSTALLATION OF FLOOR FINISHES.

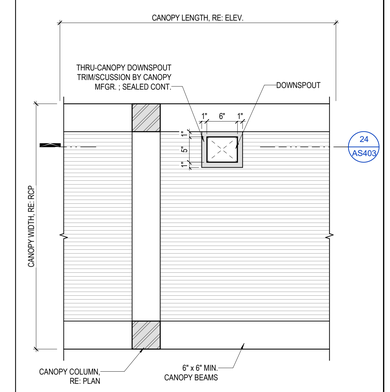
KEYNOTE LEGEND

NUMBER	DESCRIPTION
13 34 19.DSP	DOWNSPOUT
26 00 00.LGT	LIGHTING FIXTURE. REFER TO ELECTRICAL
32 31 13.CF1	CHAIN-LINK FENCE SYSTEM
32 31 13.EXT	GATE-MOUNTED EXIT DEVICE
32 31 13.FBP	CHAIN LINK FABRIC W/ PRIVACY SLATS
32 31 13.GTF	GATE FRAME RAIL

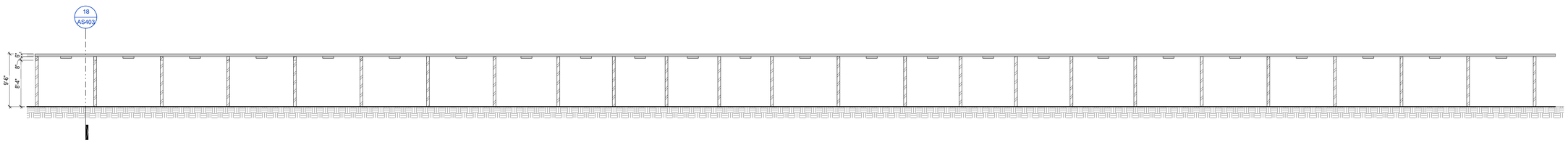
AREA H - GATE SCHEDULE.

MARK	SIZE W	SIZE H	MTL	AAOS Project HW Set	REMARKS
E126K	16'-0"	8'-0"	Polycoated Aluminum		POLYCOATED ALUMINUM CHAIN LINK FENCE
H126	4'-0"	8'-0"	Steel Galvanized	8.0	GATE WITH PANIC DEVICE RE: SITE DTLS

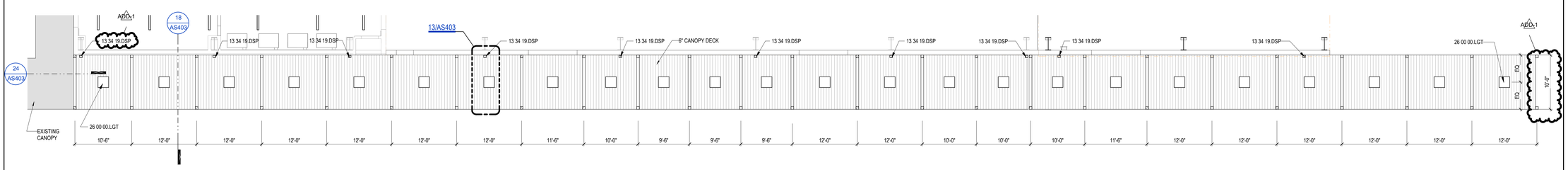
ADD-1



13 CANOPY DETAIL AT DOWNSPOUT CAVITY
1" = 1'-0"



12 EXTERIOR ELEVATNION - NORTH - CANOPY
1/8" = 1'-0"



06 ENLARGED CEILING PLAN - NEW CANOPY
1/8" = 1'-0"

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CONTROL SYSTEMS
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New CTE Center & Hargrave High School Additions & Renovations

BUILDING: AGRICULTURAL PAVILION

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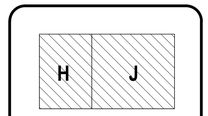


KEY PLAN
NORTH: PLAN TRUE

CLIENT
Huffman Independent School District

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
ADD-1	ADD-1	06/04/2025

CHECKED BY: Checker
DRAWN BY: PL

ARCHITECTURAL ENLARGED SITE PLANS

AS403

Plot Stamp:
6/4/2025 8:14:17 AM

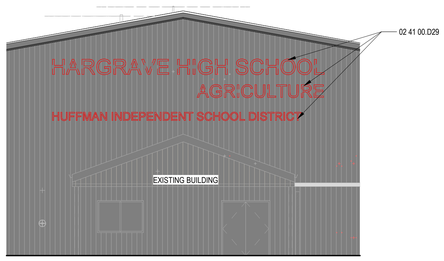
1ST FLOOR DEMOLITION PLAN - AREA H

AD101H

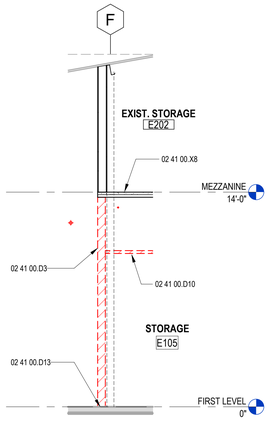
FOR BLUEBEAM LABELING/OCR:

24 EXISTING BUILDING VIEW- REFERENCE ONLY VIF ALL EXISTING CONDITIONS
1" = 1'-0"

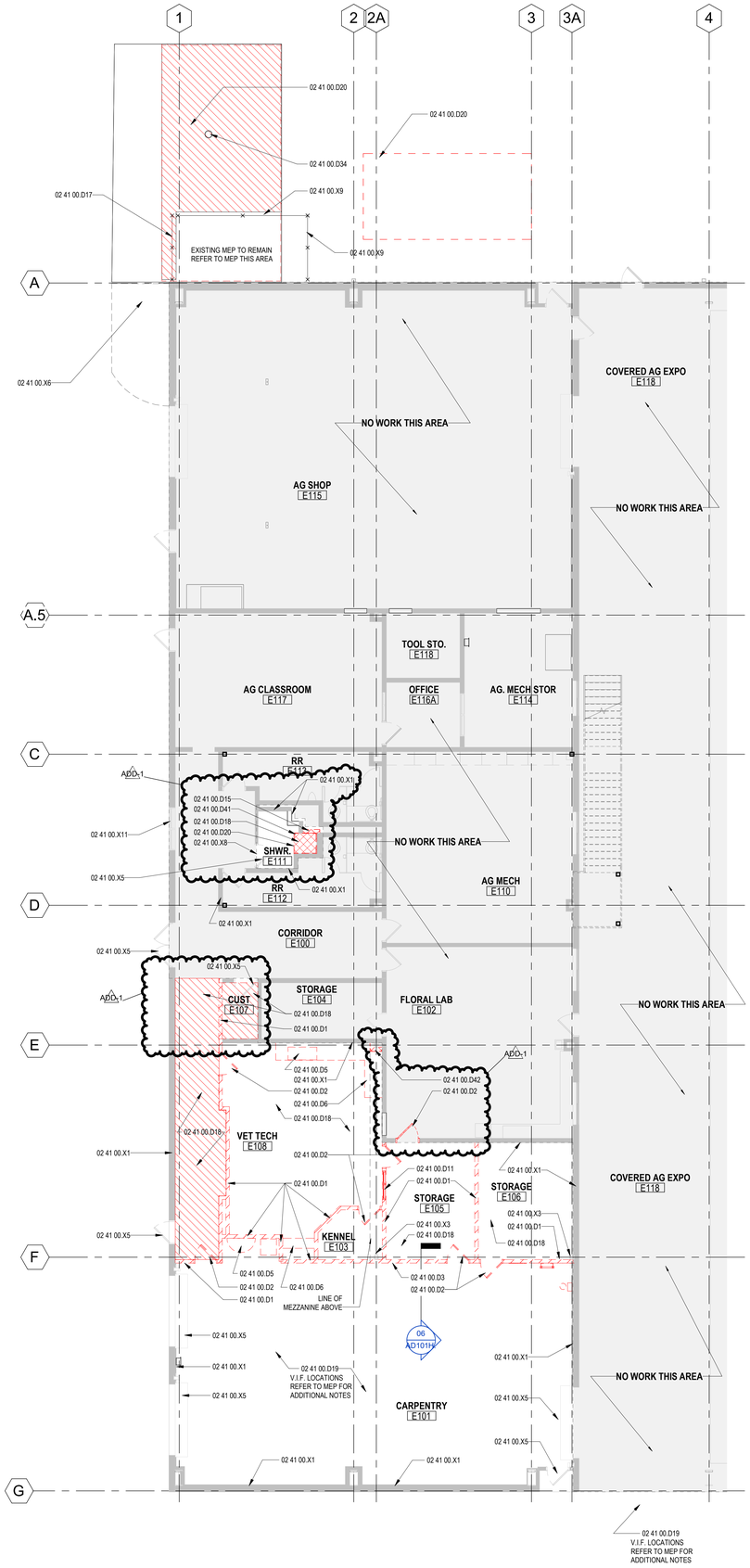
18 EXISTING BUILDING VIEW- REFERENCE ONLY VIF ALL EXISTING SIGNAGE CONDITIONS
1" = 1'-0"



12 DEMOLITION OF EXISTING EXTERIOR BUILDING LETTERING
1/8" = 1'-0"



06 DEMOLITION SECTION AT MEZZANINE
1/4" = 1'-0"



04 DEMOLITION EXISTING FLOOR PLAN - AREA H
1/8" = 1'-0"

GENERAL ARCH DEMOLITION NOTES

1. DEMOLITION PLANS INDICATE SOME OF THE SCOPE-OF-WORK INVOLVED FOR THE DEMOLITION PHASE OF THIS PROJECT. CONTRACTOR SHALL REVIEW ALL SHEETS FOR ADDITIONAL DEMOLITION SCOPE.
2. CONTRACTOR SHALL VERIFY EXISTING SITE AND BUILDING CONDITIONS AND DIMENSIONS IN THE FIELD PRIOR TO DEMOLITION ACTIVITIES AND WORK.
3. CONTRACTOR SHALL NOTIFY ARCHITECT OF ANY DISCREPANCIES IN WRITING.
4. CONTRACTOR SHALL NOTIFY ARCHITECT AND OWNER OF ANY POSSIBLE ASBESTOS CONTAINING MATERIALS DISCOVERED BEFORE PROCEEDING WITH WORK, PROTECT INTERIOR CONSTRUCTION TO REMAIN DURING DEMOLITION AND CONSTRUCTION.
5. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS BEFORE COMMENCING WORK.
6. AFTER AWARD OF THE CONTRACT, CHANGE ORDER REQUESTS FOR ADDITIONAL MONEY WILL NOT BE APPROVED IF THE WORK COULD HAVE BEEN ANTICIPATED DURING A SITE VISIT BY THE CONTRACTOR.
7. CONTRACTOR SHALL NOT SCALE DRAWINGS.
8. CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY SHORING, TEMPORARY BRACING, AND OR TEMPORARY SUPPORTS AS REQUIRED TO MAINTAIN STRUCTURAL INTEGRITY OF EXISTING STRUCTURE TO REMAIN AND OR EXISTING BUILDING ELEMENTS TO REMAIN.
9. CONTRACTOR IS TO VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES PRIOR TO DEMOLITION ACTIVITIES AND WORK.
10. CONTRACTOR SHALL REMOVE TRASH AND DEBRIS REGULARLY AS NECESSARY TO ELIMINATED INTERFERENCE WITH ROADS, STREET, WALKS, AND ALL OTHER ADJACENT FACILITIES.
11. CONTRACTOR SHALL REMOVE TRASH AND DEBRIS FROM THE SITE ON A DAILY BASIS.
12. CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION OF TEMPORARY DUST AND OR SOUND PARTITION BETWEEN CONSTRUCTION AREA AND AREAS NOT IN SCOPE AS NECESSARY. DEMOLITION ACTIVITIES SHALL BE PERFORMED SO AS TO PRODUCE MINIMAL DISTURBANCE TO EXISTING FACILITY AND OCCUPANTS (I.E. MINIMIZE EXCESSIVE AND PROLONGED NOISE LEVELS AND DUST).
13. ALL EXISTING EQUIPMENT THAT REMAINS SHALL BE PROTECTED DURING DEMOLITION AND OR CONSTRUCTION TO PREVENT DAMAGE. ANY DAMAGE TO REMAINING EXISTING EQUIPMENT SUSTAINED DURING DEMOLITION AND OR CONSTRUCTION SHALL BE EQUIVALENTLY REPLACED OR EQUIVALENTLY REPAIRED AT NO COST TO THE OWNER.
14. OWNER HAS RIGHT OF FIRST REFUSAL OF ALL ITEMS REMOVED AS PART OF THE SCOPE OF WORK, WHETHER IDENTIFIED AS SALVAGE OR NOT.
15. NOTIFY THE BUILDING OWNER OF ANY MATERIALS, FIXTURES, ETC. TO BE REMOVED THAT ARE DEEMED SALVAGEABLE. TURN OVER ANY REQUESTED ITEMS TO THE BUILDING OWNER IN GOOD AND CLEAN CONDITION.
16. ALL FURNITURE WILL BE REMOVED OR RELOCATED BY THE OWNER AS NECESSARY PRIOR TO THE COMMENCEMENT OF DEMOLITION WORK OF THIS PROJECT. CONTRACTOR SHALL COORDINATE WITH OWNER AS REQUIRED.
17. REMOVE EXISTING CONSTRUCTION TO THE EXTENT INDICATED ON THE DRAWINGS. SHOULD ANY DAMAGE OCCUR TO ANY EXISTING CONSTRUCTION TO REMAIN, THE CONTRACTOR SHALL REPAIR THE DAMAGE TO MATCH EXISTING AND OR ADJACENT CONSTRUCTION AT NO COST TO THE OWNER.
18. MAINTAIN ANY AND ALL EXISTING FIRE-RATED ASSEMBLIES THAT ARE TO REMAIN, AND THEIR ASSOCIATED FIRE-RATINGS, INCLUDING BUT NOT LIMITED TO ALL ASSOCIATED EXISTING FIRE-RATED OPENINGS, ALL ASSOCIATED EXISTING FIRE-RATED PENETRATIONS, AND ALL ASSOCIATED EXISTING FIRE-RATED FIRE STOPPING CONDITIONS.
19. WHEN UNANTICIPATED MECHANICAL, ELECTRICAL, OR STRUCTURAL ELEMENTS THAT CONFLICT WITH THE INTENDED FUNCTION OR DESIGN ARE ENCOUNTERED, DETERMINE THE NATURE AND EXTENT OF THE CONFLICT AND NOTIFY THE ARCHITECT IMMEDIATELY FOR RESOLUTION.
20. REMOVE, PATCH, AND REPAIR ALL ABANDONED ROOF PENETRATIONS RESULTING FROM WORK.
21. SAW-CUT AND REMOVE EXISTING FLOOR FINISHES AND FLOOR SLAB AS REQUIRED TO INSTALL NEW FIXTURES, ITEMS, AND OR DEVISES FOR ALL SCOPE-OF-WORK PERTAINING TO NEW MECHANICAL WORK, NEW PLUMBING UTILITIES, NEW PLUMBING WORK, NEW ELECTRICAL WORK, AND NEW TECHNOLOGY WORK. SPLICE NEW REINFORCING BARS DOWELED INTO EXISTING CONCRETE AND PROVIDE NEW VAPOR RETARDER AND NEW CONTINUOUS WATERSTOPS AT JOINT BETWEEN NEW CONCRETE FLOOR SLAB AND EXISTING CONCRETE FLOOR SLAB. PATCH WITH NEW 3,500 PSI MINIMUM CONCRETE AND PREPARE FLOOR, INCLUDING NEW CONCRETE, TO RECEIVE NEW FLOOR FINISHES. COORDINATE WITH STRUCTURAL.
22. EXISTING WALLS (OR PORTIONS OF WALLS) TO BE REMOVED SHALL BE CUT FLUSH WHERE INTERSECTING WITH WALLS TO REMAIN. REMAINING WALLS TO BE PATCHED AND FINISHED SMOOTH.
23. NEW OPENINGS TO BE CUT IN EXISTING WALLS SHALL BE SAW-CUT AT LOCATIONS INDICATED TO THE HEIGHT AND WIDTH INDICATED. NEW LINTELS SHALL BE INSTALLED TO SUPPORT EXISTING WALL CONSTRUCTION ABOVE AS INDICATED ON THE DRAWINGS, OR IF NOT INDICATED, AS REQUIRED FOR NEW WALL CONSTRUCTION PER STRUCTURAL DRAWINGS. COORDINATE LOCATIONS OF ALL NEW OPENINGS IN EXISTING WALLS AND PARTITIONS WITH ARCHITECTURAL PLANS.
24. WHERE EXISTING WALL OPENINGS ARE TO BE NEWLY CLOSED-OFF, REMOVE ANY EXISTING OPENING FRAME AND PATCH AND REPAIR EXISTING WALL TO MATCH EXISTING ADJACENT MATERIALS AND FINISHES, U.N.O.
25. WHERE EXISTING INTERIOR WALLS ARE REPLACED OR REMOVED, REMOVE MEPT SYSTEMS BACK TO PANEL, OR MECHANICAL ROOM, OR FARTHEST POSSIBLE POINT WITHOUT DISTURBING EXISTING CONSTRUCTION. REMOVE EXISTING MECHANICAL EQUIPMENT, RELOCATE POWER PER MEPT DRAWINGS.
26. REFER TO MEPT DRAWINGS FOR DEMOLITION OF MEPT SYSTEMS. IDENTIFY WORK REQUIRED BY THIS CONTRACTOR WHICH MAY AFFECT DEMOLITION AND OR REPAIRS OF ARCHITECTURAL ELEMENTS. COORDINATE WITH RELATED SUBCONTRACTORS THE EXTENT OF ALL DEMOLITION WORK.
27. PATCH FLOORS, WALLS CEILINGS WHICH REMAIN AT LOCATIONS WHERE PIPES, CONDUITS, ETC. ARE REMOVED AS REQUIRED TO MATCH EXISTING CONDITIONS OR TO RECEIVE NEW FINISHES.
28. WHERE EXISTING FINISH FLOOR IS REMOVED, PREPARE FLOOR SURFACE TO RECEIVE NEW FLOORING.
29. ALL DASHED LINES ARE DEMOLITION LINES U.N.O.

KEYNOTE LEGEND

NUMBER	DESCRIPTION
02 41 00.D1	DEMOLISH EXISTING WALL SYSTEM COMPLETE
02 41 00.D2	DEMOLISH EXISTING DOOR AND FRAME
02 41 00.D3	DEMOLISH EXISTING AREA OF NEW WALL AS INDICATED
02 41 00.D5	DEMO/REMOVE EXISTING PLUMBING FIXTURE, CAP PLUMBING IN WALL AS REQUIRED, REFER TO MEP
02 41 00.D6	REMOVE EXISTING CASEWORK COMPLETE
02 41 00.D10	REMOVE EXISTING CEILING COMPLETE
02 41 00.D11	REMOVE EXISTING WINDOW AND FRAME COMPLETE
02 41 00.D13	REMOVE EXISTING FLOORING IN AREA OF NEW WORK AS REQUIRED, FOR TILE REMOVE TO NEAREST WHOLE TILE
02 41 00.D15	REMOVE EXISTING PLUMBING FIXTURE COMPLETE, PREP FOR NEW PLUMBING FIXTURES
02 41 00.D17	REMOVE EXISTING CHAIN LINK FENCING COMPLETE
02 41 00.D18	REMOVE EXISTING FLOORING COMPLETE
02 41 00.D19	REMOVE EXISTING FLOOR DRAINS, CAP PLUMBING TO REMAIN, REFER TO MEP
02 41 00.D20	REMOVE EXISTING FOUNDATION/SLAB AS REQUIRED FOR NEW WORK, PROVIDE CLEAN SAW CUTS, NO BREAKOUTS, PREP. FOR NEW
02 41 00.D29	REMOVE EXISTING BUILDING LETTERING COMPLETE, REMOVE ANY POSTS OR SUPPORTS RELATED TO LETTING COMPLETE, GRIND TO FACE ANY SUPPORTS THAT CANNOT BE REMOVED WITHOUT REMOVING METAL WALL PANELS
~~02 41 00.D40~~	~~REMOVE EXISTING WINDOW AND FRAME PROVIDE FOR NEW WINDOW COMPLETE~~
02 41 00.D41	REMOVE EXISING SHOWER PAN AND SUBLOOR COMPLETE, PREPARE AREA FOR NEW MOP SINK ASSEMBLY
02 41 00.D42	REMOVE EXISING FURRING COMPLETE, TO ALLOW TO PREPARE ADJACENT NEW LOCKER PLACEMENT WALL ASSEMBLY
02 41 00.X1	EXISTING WALLS TO REMAIN
02 41 00.X3	EXISTING COLUMN TO REMAIN, PREPARE FOR NEW CONSTRUCTION AFTER DEMOLISHING ADJACENT WALL
02 41 00.X5	EXISTING DOOR TO REMAIN
02 41 00.X6	EXISTING SLAB/FOUNDATION TO REMAIN PROTECT AS REQUIRED
02 41 00.X8	EXISTING FLOORING TO REMAIN PROTECT AS REQUIRED
02 41 00.X9	EXISTING CLF TO REMAIN, ADJUST IF REQUIRED TO ACCOMMODATE NEW WORK
02 41 00.X11	EXISTING WINDOW TO REMAIN, PROTECT AS REQUIRED

DEMOLITION PLAN LEGEND

- EXISTING BUILDING
- DEMO FOUNDATION
- DEMO FLOORING
- DEMO WALL
- DEMO FLOORING, CEILING & LIGHTING SYSTEMS
- DEMO CEILING & LIGHTING
- DEMO DOOR
- DEMO WINDOW

PBK

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KUBALA ENGINEERS
CONSULTING ENGINEERS
T 713-965-0608

MEPT
LEAF ENGINEERS
T 713-965-0608

ACOUSTIC
BAI, LLC
T 713-965-0608

FOOD SERVICE
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New CTE Center & Hargrave High School Additions & Renovations

BUILDING: AGRICULTURAL PAVILION

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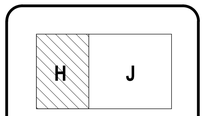
Huffman, TX 77336

ISSUE FOR PROPOSAL



KEY PLAN
NORTH: PLAN TRUE

CLIENT
Huffman Independent School District

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
ADD-1	ADD-1	06/04/2025

CHECKED BY: Checker

DRAWN BY: Author

1ST FLOOR DEMOLITION PLAN - AREA H

AD101H

Plot Stamp:
6/4/2025 8:27:18 AM

1ST FLOOR PLAN - AREA D

A-101D

FOR BLUEBEAM LABELING/OCR:

DOOR SCHEDULE - 1ST FLOOR AREA D

DOOR NUMBER	DOOR WIDTH	DOOR HEIGHT	PANEL WIDTH	PANEL TYPE	PANEL THK	PANEL MATL	PANEL FINISH	GLASS TYPE	FRAME TYPE	FRAME MATL	FRAME FINISH	DETAIL JAMB	DETAIL HEAD	DETAIL SILL	FIRE RATING	STC	AAOS PROJECT HW SET	REMARKS
C138	3'-0"	6'-10"	3'-0"	F	1 3/4"	PLAM-1	PL-1	NONE	001	HM	PT-1	10/A-812	16/A-812	03/A-812	-		12.0	
C139	3'-0"	6'-10"	3'-0"	F	1 3/4"	HM	-	NONE	001	HM	PT-1	10/A-812	16/A-812	03/A-812			10.0	2, 10
C140	3'-0"	6'-10"	3'-0"	F	1 3/4"	PLAM-1	PL-1	NONE	001	HM	PT-1	10/A-812	16/A-812	03/A-812			10.0	2, 10
C141	6'-0"	6'-10"	3'-0"/3'-0"	F/F	1 3/4"	PLAM-1	PL-1	NONE	001	HM	PT-1	10/A-812	16/A-812	03/A-812	1.5 HR		6.0	2, 10
C142	3'-0"	6'-10"	3'-0"	F	1 3/4"	PLAM-1	PL-1	NONE	001	HM	PT-1	10/A-812	16/A-812	03/A-812			13.0	
C144	3'-0"	6'-10"	3'-0"	F	1 3/4"	HM	PT-7	NONE	001	HM	PT-1	07/A-812	13/A-812	01/A-812				
C144A	6'-6"	8'-0"				Metal - Steel	Metal - Paint Finish - Dark Gray, Matte			Steel	Metal_Powder Coat_ASI_Black	21/A-813	27/A-813		1.5 HR			1.5 HR FIRE RATED DOOR WITH SMOKE SEALS
C145A	3'-0"	6'-10"	3'-0"	F	1 3/4"	HM	-	NONE	001	HM	PT-1	10/A-812	16/A-812	03/A-812			10.0	
C145B	8'-0"	10'-0"	8'-0"	OHCS	1 3/4"	Metal - Steel	-	NONE	00CF	HM	Steel - Overhead Door - VIF	20/A-813	26/A-813	05/A-812				OHCS - WITH WEATHER GUARD
C145C	3'-0"	6'-10"	3'-0"	F	1 3/4"	PLAM-1	PL-1	NONE	001	HM	PT-1	10/A-812	16/A-812	03/A-812			13.0	
C146A	3'-0"	6'-10"	3'-0"	HGIR	1 3/4"	ALUM	GT1 / ALUM		001	ALUM	PT-1	10/A-813	16/A-813	04/A-813				
C146B	3'-0"	6'-10"	3'-0"	HGIR	1 3/4"	ALUM	GT1 / ALUM		001	AL	PT-1	10/A-812	16/A-812	03/A-812				2, 10
C147	3'-0"	6'-10"	3'-0"	F	1 3/4"	PLAM-1	PL-1	NONE	001	HM	PT-1	10/A-812	16/A-812	03/A-812	1.5 HR		10.0	
C148A	3'-0"	6'-10"	3'-0"	F	1 3/4"	PLAM-1	PL-1	NONE	001	HM	PT-1	10/A-812	16/A-812	03/A-812			12.0	
C148B	6'-0"	4'-6"		OHCS							-	21/A-813	27/A-813	18/A-715			9.0	
C149	3'-0"	6'-10"	3'-0"	F	1 3/4"	PLAM-1	PL-1	NONE	001	HM	PT-1	10/A-812	16/A-812	03/A-812			12.0	
C151	3'-0"	6'-10"	3'-0"	F	1 3/4"	PLAM-1	PL-1	NONE	001	HM	PT-1	10/A-812	16/A-812	03/A-812			13.0	
C155A	6'-0"	6'-10"	3'-0"/3'-0"	HGIR/HGIR	1 3/4"	ALUM	GT1 / ALUM		HGIR	ALUM	PT-1	10/A-813	16/A-813	04/A-813			5.0	
C155B	6'-0"	6'-10"	3'-0"/3'-0"	HGIR/HGIR	1 3/4"	ALUM	GT1 / ALUM		HGIR	ALUM	PT-1	10/A-813	16/A-813	04/A-813			5.0	
C155C	6'-0"	6'-10"	3'-0"/3'-0"	HGIR/HGIR	1 3/4"	ALUM	GT1 / ALUM		HGIR	ALUM	PT-1	10/A-813	16/A-813	04/A-813			5.0	2, 10
C155D	6'-0"	6'-10"	3'-0"/3'-0"	HGIR/HGIR	1 3/4"	ALUM	GT1 / ALUM		HGIR	ALUM	PT-1	10/A-813	16/A-813	04/A-813			5.0	10
C156	3'-0"	6'-10"	3'-0"	F	1 3/4"	HM	PT-7	NONE	001	HM	PT-1	07/A-812	13/A-812	01/A-812			1.0	

Grand total: 22

ADD-1

ROOM FINISH SCHEDULE - 1ST FLOOR - AREA D

ROOM DATA NUMBER	NAME	FLOOR FINISHES BASE	FLOOR FINISHES FLOOR	WALL FINISHES NORTH	EAST	SOUTH	WEST	REMARKS
C111	CORRIDOR	EXISTING TO REMAIN	EXISTING TO REMAIN	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
C125	EXIST. GIRL'S LOCKER	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	MATCH EXISTING EPOXY PAINT WHERE APPLICABLE
C128	GIRL'S ATHLETICS	EPOXY	EPOXY	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
C130	GIRL'S LOCKERS	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	MATCH EXISTING EPOXY PAINT WHERE APPLICABLE
C133	RR	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	MATCH EXISTING TILE WHERE APPLICABLE
C137	STORAGE	NONE	EXISTING TO REMAIN	PAINT	PAINT	PAINT	PAINT	
C138	OFFICE	RUBBER BASE	EXISTING TO REMAIN	PAINT	PAINT	PAINT	PAINT	EX. FLOORING TO REMAIN, NEW BASE
C139	IDF	EXISTING TO REMAIN	EXISTING TO REMAIN	PAINT	PAINT	PAINT	PAINT	
C140	AUDIO	EXISTING TO REMAIN	EXISTING TO REMAIN	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
C141	CONCOURSE	RUBBER BASE	TILE	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
C142	MEN'S RR	EPOXY	EPOXY	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
C143	RR	EPOXY	EPOXY	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
C144	BOY'S LOCKERS	EPOXY	EPOXY	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
C145	TRAINING ROOM STORAGE	RUBBER BASE	SEALED CONCRETE	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
C146	TRAINING ROOM	EPOXY	EPOXY	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	SIGN F @ DOOR C146
C147	MECH ACCESS	NONE	SEALED CONCRETE	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
C148	CONCESSIONS	RUBBER BASE	SEALED CONCRETE	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
C149	OFFICE	RUBBER BASE	MCT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
C151	WOMEN'S RR	EPOXY	EPOXY	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
C155	LOBBY	RUBBER BASE	TILE	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
C205B	MECHANICAL ADDITION	NONE	SEALED CONCRETE	PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
C206	BOILER	NONE	SEALED CONCRETE	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	

FINISH SCHEDULE NOTES AND REMARKS

GENERAL NOTES:

ALL SCHEDULED DIRECTIONS (NORTH, EAST, SOUTH, WEST) ARE PER PLAN DIRECTIONS, NOT TRUE COMPASS DIRECTIONS.

ALL FINISH MATERIALS SHALL MEET FLAME SPREAD RATINGS PER THE BUILDING CODE.

PROTECT ALL FINISHED FLOORING SURFACES FROM DAMAGE DURING ALL CONSTRUCTION PHASES.

CARPET PATTERNS SHALL RUN PARALLEL TO CORRIDOR U.N.O.

PROVIDE AND INSTALL BULLNOSE TRIM AT ALL TRANSITIONS FROM CERAMIC WALL TILE TO OTHER MATERIALS U.N.O.

PAINT ALL H.M. DOORS PT-1 U.N.O.

GENERAL ARCH PLAN NOTES

1. DO NOT SCALE DRAWINGS, WRITTEN DIMENSIONS TAKE PRECEDENCE, CONTACT ARCH IF CLARIFICATION IS NECESSARY IN ORDER TO DETERMINE THE INTENT OF THE CONTRACT DOCUMENTS.
2. DRAWINGS NOTED AS "N.T.S" OR "NTS" ARE NOT TO SCALE.
3. ALL DIMENSIONS ARE TO STRUCTURAL COLUMN LINES OR THE SURFACE OF PARTITION ASSEMBLY U.N.O.
4. FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS BEFORE COMMENCING WORK. NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH AFFECTED WORK.
5. NOTES OR DIMENSIONS NOTED AS "TYPICAL" OR "TYP." OR "TYP" SHALL APPLY TO CONDITIONS THAT ARE THE SAME OR SIMILAR.
6. DIMENSIONS NOTED AS "FIELD VERIFY" OR "V.I.F." OR "VIF" SHALL BE MEASURED AND CONFIRMED AT THE PROJECT SITE BY THE CONTRACTOR AND REVIEWED WITH THE ARCH. BEFORE INCORPORATING INTO THE WORK.
7. DIMENSIONS NOTED AS "CLEAR" OR "CLEAR INSIDE" OR "CLR" REQUIRE SPECIFIC COORDINATION AMONG DISCIPLINES AND OR MANUFACTURERS.
8. REFER TO PARTITION TYPES ON A-800 SERIES SHEETS.
9. ALL INTERIOR PARTITIONS THIS SHEET, EXCEPT FOR FURR-OUT PARTITIONS, SHALL BE PARTITION TYPE M6 U.N.O.
10. ALL INTERIOR FURR-OUT PARTITIONS THIS SHEET SHALL BE PARTITION TYPE M6C U.N.O.
11. ALIGN FINISHED FACE OF WALLS WHERE WALL PARTITIONS OF DIFFERING THICKNESS ABUT AND OR ADJOIN IN THE SAME PLANE.
12. PROVIDE AND INSTALL CONTINUOUS REVEAL TRIM AT JOINT WHERE GYPSUM BOARD WALL PARTITIONS ABUT AND OR ADJOIN MASONRY WALL PARTITIONS IN THE SAME PLANE.
13. ALL INTERIOR CMU OUTSIDE CORNERS SHALL HAVE BULLNOSE U.N.O.
14. ALL DOORS SHALL BE SET 4 INCHES OFF THE ADJACENT PERPENDICULAR WALL ON THE HINGE SIDE OF THE DOOR U.N.O., NOTIFY ARCH. OF ANY DOOR-RELATED CONFLICTS, INCLUDING BUT NOT LIMITED TO CONFLICTS CONCERNING ACCESSIBILITY STANDARDS.
15. ALL DOOR THRESHOLDS AT ALL EXTERIOR DOORS SHALL BE SET IN FULL BED OF SEALANT.
16. COORDINATE ALL ROOF DRAIN LEADER LOCATIONS WITH FLOOR PLAN PRIOR TO FLOOR SLAB CONSTRUCTION.
17. ALL FLOOR SLOPES TO FLOOR DRAINS SHALL NOT EXCEED 1:48.
18. PROVIDE AND INSTALL SELF-LEVELING UNDERLAYMENT WHERE UNEVEN FLOOR SLAB EXISTS PRIOR TO INSTALLATION OF FLOOR FINISHES.
19. COORDINATE HOUSEKEEPING PAD LOCATIONS AND DIMENSIONS WITH EQUIPMENT TO BE INSTALLED.
20. ALL REQUIRED ACCESSIBLE CLEARANCES FOR ALL ITEMS, INCLUDING BUT NOT LIMITED TO ALL COUNTER TOPS, ALL PLUMBING FIXTURES, ALL DRINKING FOUNTAINS, ALL ELECTRIC WATER COOLERS, ALL LAVATORIES, ALL URINALS, ALL TOILETS SHALL BE STRICTLY ENFORCED.
21. APPLY BITUMINOUS COATING TO ALL CONCEALED STRUCTURAL STEEL MEMBERS AT ALL EXTERIOR CANOPY LOCATIONS.
22. REFER TO OTHER DISCIPLINE DOCUMENTS FOR ADDITIONAL SCOPE OF WORK.

KEYNOTE LEGEND

NUMBER	DESCRIPTION
02 41 00.S12	REMOVE AND SALVAGE EXISTING TV/MONITOR AND BRACKET, TO BE STORED IN PROTECTED LOCATION FOR REINSTALL AT SAME LOCATION AFTER WINDOW IS FILLED IN AND WALL IS PAINTED
02 41 00.S13	REMOVE AND SALVAGE EXISTING COUNTER, TO BE STORED IN PROTECTED LOCATION FOR REINSTALL IN SAME LOCATION AFTER WINDOW IS FILLED IN AND WALL IS PAINTED
02 41 00.S14	REMOVE AND SALVAGE EXISTING CASEWORK AS REQUIRED FOR NEW WORK, TO BE STORED IN PROTECTED LOCATION FOR REINSTALL IN SAME LOCATION AFTER WINDOW IS FILLED IN AND WALL IS PAINTED
02 41 00.S15	REMOVE AND SALVAGE EXISTING COUNTER BRACKET AS REQUIRED FOR NEW WORK, TO BE STORED IN PROTECTED LOCATION FOR REINSTALL IN SAME LOCATION AFTER WINDOW IS FILLED IN AND WALL IS PAINTED
02 41 00.X1	EXISTING WALLS TO REMAIN
02 41 00.X12	EXISTING LOCKER TO REMAIN IN PLACE, PROTECT AS REQUIRED
10 51 13.AL2	METAL ATHLETIC LOCKERS CLOSED FRONT
10 51 13.REL1	RELOCATED EXISTING ATHLETIC LOCKER, SECURE USING APPROVED MFGR. METHODS
10 51 13.REL2	RELOCATED EXISTING 2 TIER LOCKER, SECURE USING APPROVED MFGR. METHODS
10 51 26.LBA	LOCKER BENCH, ACCESSIBLE
10 51 26.LBT	LOCKER BENCH, TYPICAL
11 66 23.WP1	WALL PADDING, TYPE 1

WINDOW SCHEDULE - 1ST FLOOR - AREA D

NUMBER	SIZE WIDTH	SIZE HEIGHT	SIZE SILL HEIGHT	ELEVATION	MATERIAL	FINISH	FIRE RATING	STC	WN Glazing Type	DETAILS JAMB	DETAILS HEAD	DETAILS SILL	REMARKS
C146B	6'-0"	6'-0"	2'-11"	W43	ALUM	ALUM			GI1	07/A-831	13/A-831	01/A-831	
C146C	6'-0"	6'-0"	2'-11"	W43	ALUM	ALUM			GI1	07/A-831	13/A-831	01/A-831	1
C149	6'-0"	4'-0"	4'-4"	W44	ALUM	ALUM			GT1	11/A-831	17/A-831	05/A-831	1

ADD-1

STOREFRONT & CURTAIN WALL SCHEDULE - 1ST FLOOR AREA D

NUMBER	FRAME SIZE W x H WIDTH	FRAME SIZE W x H HEIGHT	ELEVATION	FRAME MATERIAL	FRAME DEPTH	GLAZING MATERIAL	DETAILS JAMB	DETAILS HEAD	DETAILS SILL	REMARKS
C146A	7'-5 229/256"	9'-0"	06/A-821	ALUM		GT1	11/A-831	17/A-831	06/A-831	
C155A	33'-7"	9'-0"	04/A-821	ALUM		GI2	18/A-831	24/A-831	06/A-831	
C155B	19'-6 143/256"	9'-0"	02/A-821	ALUM		GI2	18/A-831	24/A-831	06/A-831	

ADD-1

FLOORPLAN LEGEND

NOT IN CONTRACT

DOOR IN SCOPE

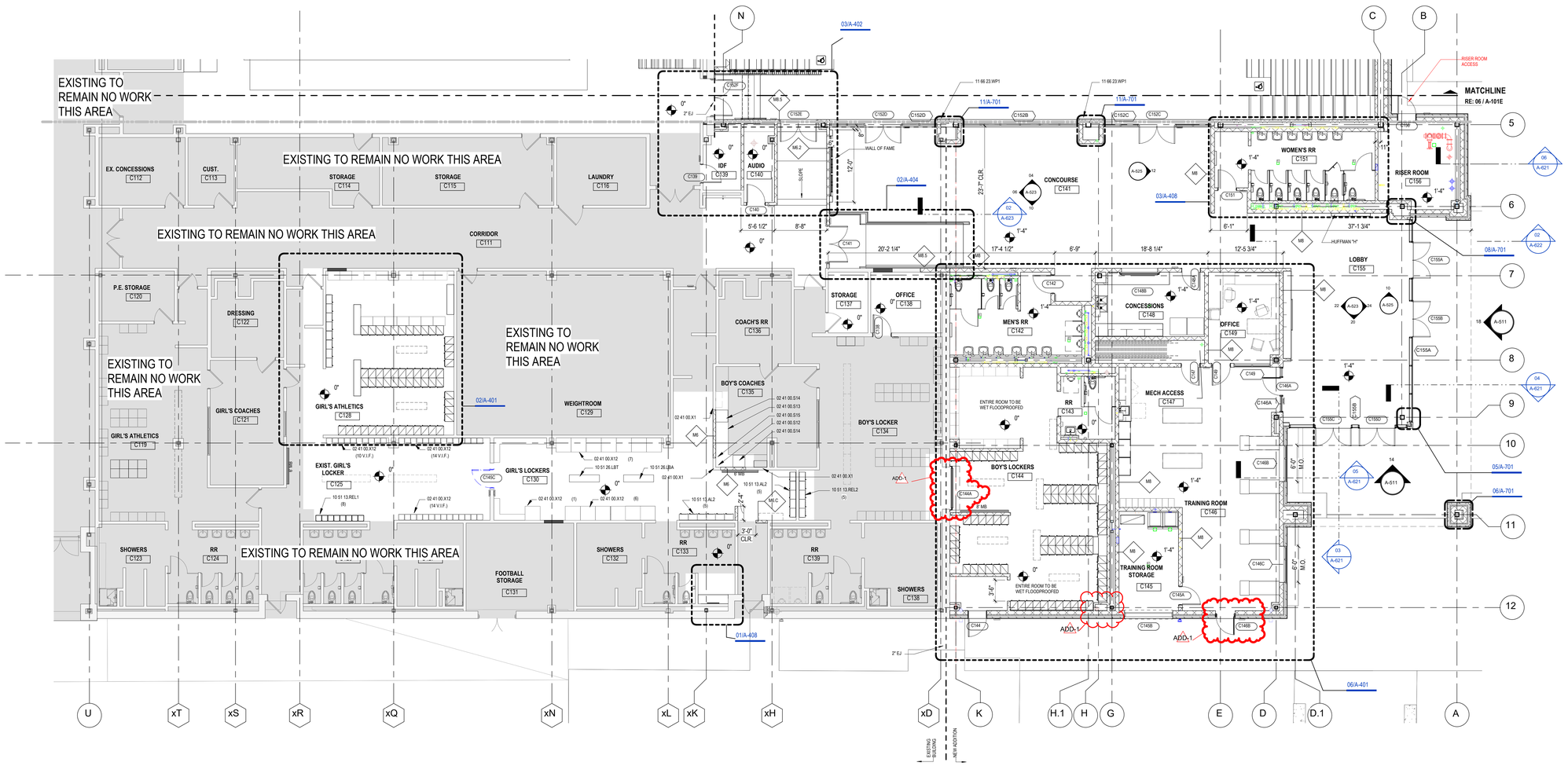
WINDOW

WINDOW SCHEDULE REMARKS

1. PROVIDE HORIZONTAL BLINDS
2. PROVIDE MANUAL SUNSHADE
3. PROVIDE MOTORIZED SUNSHADE
4. PROVIDE MOTORIZED SUNSHADE AND BLACKOUT SHADE
5. PROVIDE BLACKOUT SHADE

DOOR SCHEDULE REMARKS

1. ELEC. DOOR OPENER W/ HC BUTTON ON INSIDE AND OUTSIDE OF DOOR
2. ELEC. CONTROLLED ACCESS HARDWARE WITH CARD READER
3. ELEC. CONTROLLED ACCESS HARDWARE WITH PUSH-BUTTON
4. ELEC. CONTROLLED ACCESS HARDWARE, ROUGH-IN ONLY
5. DOOR BUZZER
6. DOOR CHIME ON OPEN
7. MAGNETIC HOLD-OPEN, CONNECT TO FIRE ALARM
8. MAGNETIC HOLD-OPEN, CONNECT TO SECURITY SYSTEM
9. SOUND DOOR
10. DOOR CONTACT



06 1ST LEVEL - FLOOR PLAN - AREA D

1/8" = 1'-0"

Plot Stamp:
6/4/2025 1:52:19 PM

PBK

ARCHITECT PBK Architects, Inc.
PBK.com
HOUSTON
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-961-0608 P
713-961-4571 F
TX Firm: BR 1608

CIVIL
KIMLEY-HORN
T 281-497-9300

LANDSCAPE
EDGELAND
T 713-965-9005

STRUCTURAL
KUBRA ENGINEERS
T 713-960-0808

MEP
LEAF ENGINEERS
T 713-965-0505

ACOUSTIC
BAL INC.
T 713-782-5364

EXTERIOR
BEAM PROFESSIONALS
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FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS, LLC
T 281-350-2323

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

KEY PLAN

NORTH: PLAN TRUE

REGISTERED ARCHITECT MELISSA A. KAPPLE 30374 STATE OF TEXAS

Melissa Kapple
5/22/2025

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
P	HC PERMIT RESPONSE	05/28/2025
ADD-1	ADD-1	06/04/2025

1ST FLOOR PLAN - AREA D

A-101D

PBK

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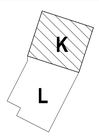
T.713-965-0608
STRUCTURAL
KUBRE & ASSOCIATES
T.713-966-0608
MEP/FP
LEAF ENGINEERS
T.713-965-0908
ACOUSTIC
BAI, LLC
T. 713-961-4264
ENVELOPE
BEAM PROFESSIONALS
T.713-965-0608
FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS, LLC
T.281-350-2323

New CTE Center & Hargrave High School Additions & Renovations

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL



KEY PLAN

NORTH: PLAN TRUE

CLIENT
HUFFMAN ISD

PROJECT NUMBER	DATE
240157	05/20/2025

DRAWING HISTORY

No.	Description	Date
ADD-1	ADD-1	06/04/2025

CHECKED BY: Checker
DRAWN BY: LB

1ST FLOOR SCHEDULES - AREA K

A-101K1

DOOR SCHEDULE REMARKS

1. ELEC. DOOR OPENER W/ HC BUTTON ON INSIDE AND OUTSIDE OF DOOR
2. ELEC. CONTROLLED ACCESS HARDWARE WITH CARD READER
3. ELEC. CONTROLLED ACCESS HARDWARE WITH PUSH-BUTTON
4. ELEC. CONTROLLED ACCESS HARDWARE, ROUGH-IN ONLY
5. DOOR BUZZER
6. DOOR CHIME ON OPEN
7. MAGNETIC HOLD-OPEN, CONNECT TO FIRE ALARM
8. MAGNETIC HOLD-OPEN, CONNECT TO SECURITY SYSTEM
9. SOUND DOOR
10. DOOR CONTACT
11. INTRUSION DETECTION SYSTEM ARM/DISARM KEYPAD WITH LOCKING VANDAL RESISTANT COVER
12. VIDEO INTERCOM
13. DOOR CLOSER
14. "FISH EYE" PEEPHOLE

OPERABLE WALLS, OVERHEAD DOORS AND GRILLES

15. SOUND RATED DOOR ASSEMBLY, STC AS SPECIFIED
16. WINDSTORM DOOR HARDWARE SHALL BE TESTED AS PART OF A COMPLETE DOOR OPENING ASSEMBLY. THE TESTED DOOR OPENING ASSEMBLY SHALL INCLUDE DOOR HARDWARE. THE ENTIRE DOOR OPENING, INCLUDING DOOR HARDWARE. SHALL BE BY DOOR MANUF.
17. ACOUSTICAL GLASS TO MEET FIRE DOOR ASSEMBLY REQUIREMENTS FOR FIRE RATING INDICATED
18. MANUAL OPERATION
19. ELEC MOTOR OPERATION WITH KEY SWITCH CONTROL, KEY SWITCH ON ONE SIDE OF DOOR ONLY
20. ELEC MOTOR OPERATION WITH KEY SWITCH CONTROL, KEY SWITCH ON BOTH SIDES OF DOOR
21. ELEC MOTOR OPERATION WITH PUSH-BUTTON CONTROL ON ONE SIDE OF DOOR ONLY
22. AUTOMATIC OPEN ON FIRE ALARM ACTIVATION U.N.O.
23. AUTOMATIC CLOSE ON FIRE ALARM ACTIVATION
24. KNOX BOX, COORDINATE FINAL LOCATION WITH HCFM

FINISH SCHEDULE NOTES AND REMARKS

GENERAL NOTES:

ALL SCHEDULED DIRECTIONS (NORTH, EAST, SOUTH, WEST) ARE PER PLAN DIRECTIONS, NOT TRUE COMPASS DIRECTIONS.

ALL FINISH MATERIALS SHALL MEET FLAME SPREAD RATINGS PER THE BUILDING CODE.

PROTECT ALL FINISHED FLOORING SURFACES FROM DAMAGE DURING ALL CONSTRUCTION PHASES.

CARPET PATTERNS SHALL RUN PARALLEL TO CORRIDOR U.N.O.

PROVIDE AND INSTALL BULLNOSE TRIM AT ALL TRANSITIONS FROM CERAMIC WALL TILE TO OTHER MATERIALS U.N.O.

PAINT ALL H.M. DOORS P1 U.N.O.

WINDOW SCHEDULE REMARKS

1. PROVIDE HORIZONTAL BLINDS
2. PROVIDE MANUAL SUNSHADE
3. PROVIDE MOTORIZED SUNSHADE
4. PROVIDE MOTORIZED SUNSHADE AND BLACKOUT SHADE
5. PROVIDE BLACKOUT SHADE
6. SOUND CONTROL WINDOW SYSTEM

LOCKER REMARKS

DOOR SCHEDULE - 1ST FLOOR - AREA K

DOOR			PANEL						FRAME								GENERAL	
													DETAIL					
NUMBER	WIDTH	HEIGHT	WIDTH	TYPE	THK	MATL	FINISH	GLASS TYPE	TYPE	MATL	FINISH	JAMB	HEAD	SILL	FIRE RATING	STC	AAOS PROJECT HW SET	REMARKS
100.1	6'-0"	6'-10"	3'-0"/3'-0"	HGIR/HGIR	1 3/4"	ALUM	GI2 / ALUM		001	AL	Clear Anodized	10/A-813	16/A-813	04/A-812			5.0	2, 10, 12, 13, 24
100.2	6'-0"	6'-10"	3'-0"/3'-0"	HGIR/HGIR	1 3/4"	ALUM	GI2 / ALUM		001	AL	Clear Anodized	10/A-813	16/A-813	04/A-812			5.0	10, 13
101.1	6'-0"	6'-10"	3'-0"/3'-0"	HGIR/HGIR	1 3/4"	ALUM	GI2 / ALUM		001	AL	Clear Anodized	09/A-812	16/A-813	04/A-812			5.0	2, 10, 13
101.2	6'-0"	6'-10"	3'-0"/3'-0"	HGIR/HGIR	1 3/4"	ALUM	GI2 / ALUM		001	AL	Clear Anodized	09/A-812	16/A-813	04/A-812			5.0	10, 13
101.3	6'-0"	6'-10"	3'-0"/3'-0"	HGIR/HGIR	1 3/4"	ALUM	GL1 / ALUM		001	AL	Clear Anodized	10/A-813	16/A-813	04/A-813			6.0	2, 10, 13
101.4	6'-0"	6'-10"	3'-0"/3'-0"	HGIR/HGIR	1 3/4"	ALUM	GL1 / ALUM		001	AL	Clear Anodized	10/A-813	16/A-813	04/A-813			4.0	10, 13
200	6'-0"	6'-10"	3'-0"/3'-0"	HGIR/HGIR	1 3/4"	ALUM	GI2 / ALUM		001	AL	Clear Anodized	10/A-813	16/A-813	04/A-812			5.0	2, 10, 13
201	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	HM	PT-7	10/A-812	16/A-812	03/A-812			17.0	
201A.1	3'-0"	6'-10"	3'-0"	F	1 3/4"	HM	PT-7	NONE	001	HM	PT-7	07/A-812	13/A-812	01/A-812			9.0	2, 10, 13, 14
201A.2	12'-0"	10'-0"		OHCS		Metal - Aluminum	Metal - Aluminum			AL	Clear Anodized	20/A-813	26/A-813	05/A-812			10.0	10
201A.3	0"	0"		OHSP	0"	08_Glass-GT1-Tempered Glass, Type 1-Clear (G-3)	Metal - Aluminum			AL	Clear Anodized	21/A-813	14/A-813	02/A-813			10.0	
201A.4	0"	0"		OHSP	0"	08_Glass-GT1-Tempered Glass, Type 1-Clear (G-3)	Metal - Aluminum			AL	Clear Anodized	21/A-813	14/A-813	02/A-813			10.0	
201A.5	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	HM	PT-7	10/A-812	16/A-812	03/A-812			17.0	
201B.1	3'-0"	6'-10"	3'-0"	F	1 3/4"	HM	PT-7	NONE	001	HM	PT-7	10/A-812	16/A-812	03/A-812			11.0	
202.1	4'-0"	6'-10"	4'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	HM	PT-7	22/A-812	28/A-812	03/A-812			17.0	
202.2	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	HM	PT-7	22/A-812	28/A-812	03/A-812			17.0	
202.3	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	HM	PT-7	22/A-812	28/A-812	03/A-812			17.0	
202.4	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	HM	PT-7	22/A-812	28/A-812	03/A-812			17.0	
202A	3'-0"	6'-10"	3'-0"	HGIR/HGIR	1 3/4"	ALUM	GT1 / ALUM		001	AL	Clear Anodized	10/A-813	16/A-813	04/A-813			17.0	
202A.2	0"	0"		OHSP	0"	08_Glass-GT1-Tempered Glass, Type 1-Clear (G-3)	Clear Anodized			AL	Clear Anodized	12/A-812	08/A-813	02/A-813			10.0	
202A.3	0"	0"		OHSP	0"	08_Glass-GT1-Tempered Glass, Type 1-Clear (G-3)	Clear Anodized			AL	Clear Anodized	12/A-812	08/A-813	02/A-813			10.0	
202A.4	10'-0"	9'-0"	5'-0"/5'-0"	SDT/SDT	1 3/4"	ALUM	GT1 / ALUM	GT1	NONE	AL	Clear Anodized	09/A-813	15/A-813				17.0	
202B	3'-0"	6'-10"	3'-0"	HGIR	1 3/4"	ALUM	GT1 / ALUM		001	AL	Clear Anodized	10/A-813	16/A-813	04/A-813			17.0	
202C	3'-0"	6'-10"	3'-0"	F	1 3/4"	SCPL	PL-1	NONE	001	HM	PT-7	22/A-812	28/A-812	03/A-812			13.0	
202D	3'-0"	6'-10"	3'-0"	F	1 3/4"	SCPL	PL-1	NONE	001	HM	PT-7	22/A-812	28/A-812	03/A-812			16.0	
202H	3'-0"	6'-10"	3'-0"	F	1 3/4"	SCPL	PL-1	NONE	001	HM	PT-7	22/A-812	28/A-812	03/A-812			11.0	
203.1	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	HM	PT-7	10/A-812	16/A-812	03/A-812			17.0	
203.2	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	HM	PT-7	10/A-812	16/A-812	03/A-812			17.0	
204	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	HM	PT-7	22/A-812	28/A-812	03/A-812			17.0	
204A	3'-0"	6'-10"	3'-0"	F	1 3/4"	SCPL	PL-1	NONE	001	HM	PT-7	22/A-812	28/A-812	03/A-812			11.0	
204C.1	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	HM	PT-7	22/A-812	28/A-812	03/A-812			14.0	ACOUSTICAL RATED DOOR, ASTM E413, STC 45
204C.2	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	HM	PT-7	22/A-812	28/A-812	03/A-812			14.0	ACOUSTICAL RATED DOOR,ASTM E413, STC 45
205	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	HM	PT-7	10/A-812	16/A-812	03/A-812			17.0	
205A.1	3'-0"	6'-10"	3'-0"	F	1 3/4"	HM	PT-7	NONE	001	HM	PT-7	07/A-812	13/A-812	01/A-812			9.0	2, 10, 13, 14
205A.2	3'-0"	6'-10"	3'-0"	F	1 3/4"	SCPL	PL-1	NONE	001	HM	PT-7	10/A-812	16/A-812	03/A-812			17.0	
205A.3	3'-0"	6'-10"	3'-0"	F	1 3/4"	SCPL	PL-1	NONE	001	HM	PT-7	10/A-812	16/A-812	03/A-812			17.0	
205A.4	12'-0"	10'-0"		OHCS		Metal - Aluminum	Metal - Aluminum			AL	Clear Anodized	20/A-813	26/A-813	05/A-812			10.0	10
205B	6'-0"	6'-10"	3'-0"/3'-0"	F/F	1 3/4"	HM	PT-7	NONE	001	HM	PT-7	10/A-812	16/A-812	04/A-812			11.0	
206	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	HM	PT-7	22/A-812	28/A-812	03/A-812			17.0	
206A	3'-0"	6'-10"	3'-0"	F	1 3/4"	SCPL	PL-1	NONE	001	HM	PT-7	22/A-812	28/A-812	03/A-812			13.0	ACOUSTICAL RATED DOOR, ASTM E413,STC 40
206C	3'-0"	6'-10"	3'-0"	F	1 3/4"	SCPL	PL-1	NONE	001	HM	PT-7	22/A-812	28/A-812	03/A-812			11.0	
211	3'-0"	6'-10"	3'-0"	F	1 3/4"	SCPL	PL-1	NONE	001	HM	PT-7	10/A-812	16/A-812	03/A-812			3.0	2, 10
213	3'-0"	6'-10"	3'-0"	HL	1 3/4"	HM	PT-7	NONE	001	HM	PT-7	07/A-812	13/A-812	01/A-812			1.0	DOOR TO HAVE LETTERS ON EXTERIOR INDICATING RISER ROOM. RE: EGRESS PLAN. 2, 10, 13, 14
215	6'-0"	6'-10"	3'-0"/3'-0"	F/F	1 3/4"	HM	PT-7	NONE	001	HM	PT-7	07/A-812	13/A-812	01/A-812			7.0	2, 10, 13, 14
217	6'-0"	6'-10"	3'-0"/3'-0"	F/F	1 3/4"	HM	PT-7	NONE	001	HM	PT-7	07/A-812	13/A-812	01/A-812			8.0	13, 14
217.1	3'-0"	6'-10"	3'-0"	F	1 3/4"	SCPL	PL-1	NONE	001	HM	PT-7	10/A-812	16/A-812	03/A-812	45 MINS		11.0	
219	6'-0"	6'-10"	3'-0"/3'-0"	F/F	1 3/4"	HM	PT-7	NONE	001	HM	PT-7	07/A-812	13/A-812	01/A-812			7.0	2, 10, 13, 14
220	4'-0"	6'-10"	4'-0"	F	1 3/4"	HM	PT-7	NONE	001	HM	PT-7	07/A-812	13/A-812	01/A-812			1.0	SPECIAL LOCATION. DOOR TO BE EXTERIOR GRADE FOR BOTH SIDES. ALL HARDWARE AND DEVICES TO BE EXTERIOR GRADE. 2, 10, 13, 14, 24. REFER TO 13/A-812 AND 7/A-812 FOR HEAD/JAMB DETAILS

Grand total: 48

ADD-1

ROOM FINISH SCHEDULE - 1ST FLOOR AREA K

ROOM DATA				WALL FINISHES				
NUMBER	NAME	BASE FINISH	FLOOR FINISH	NORTH	EAST	SOUTH	WEST	REMARKS
100	VESTIBULE	RUBBER BASE	WALK OFF CARPET	PAINT	PAINT	PAINT	PAINT	
101	MAIN STREET	RUBBER BASE	POLISHED CONCRETE-HVY GRIND	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
201	ENGINEERING CLASSROOM	RUBBER BASE	POLISHED CONCRETE	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
201A	ENGINEERING	RUBBER BASE	POLISHED CONCRETE	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
201B	ENGINEERING STOR.	NONE	SEALED CONCRETE	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
202	KITCHEN LAB	EPOXY	EPOXY	TILE OVER GYP	TILE OVER GYP	TILE OVER GYP	TILE OVER GYP	
202A	BISTRO	TILE	POLISHED CONCRETE-HVY GRIND	TILE OVER GYP	TILE OVER GYP	TILE OVER GYP	TILE OVER GYP	
202B	CULINARY CLASSROOM	TILE	POLISHED CONCRETE-HVY GRIND	TILE OVER GYP	TILE OVER GYP	TILE OVER GYP	TILE OVER GYP	
202C	W/D	EPOXY	EPOXY	TILE OVER GYP	TILE OVER GYP	TILE OVER GYP	TILE OVER GYP	
202D	RR	EPOXY	EPOXY	TILE OVER GYP	TILE OVER GYP	TILE OVER GYP	TILE OVER GYP	
202E	LOCKER	EPOXY	EPOXY	TILE OVER GYP	TILE OVER GYP	TILE OVER GYP	TILE OVER GYP	
202F	COOLER	NONE	EPOXY	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
202G	FREEZER	EPOXY	EPOXY	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
202H	DRY STORAGE	EPOXY	EPOXY	TILE OVER GYP	TILE OVER GYP	TILE OVER GYP	TILE OVER GYP	
203	FLEX CLASSROOM	RUBBER BASE	POLISHED CONCRETE	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
204	A/V STUDIO	RUBBER BASE	CARPET	PAINT	PAINT	PAINT	PAINT	
204A	A/V STOR.	RUBBER BASE	CARPET	PAINT	PAINT	PAINT	PAINT	
204C	GREEN ROOM	RUBBER BASE	MCT	PAINT	PAINT	PAINT	PAINT	
205	CARPENTRY CLASSROOM	RUBBER BASE	POLISHED CONCRETE	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
205A	CARPENTRY LAB	NONE	SEALED CONCRETE	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
205B	CARPENTRY STOR.	NONE	SEALED CONCRETE	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
206	GRAPHICS	RUBBER BASE	CARPET	PAINT	PAINT	PAINT	PAINT	
206A	CONTROL BOOTH	RUBBER BASE	MCT	PAINT	PAINT	PAINT	PAINT	
206C	GRAPHICS STORAGE	RUBBER BASE	CARPET	PAINT	PAINT	PAINT	PAINT	
207	MEN'S RR	EPOXY	EPOXY	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
209	WOMEN'S RR	EPOXY	EPOXY	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
211	IDF	RUBBER BASE	SEALED CONCRETE	PAINT	PAINT	PAINT	PAINT	
213	RISER	NONE	SEALED CONCRETE	PAINT	PAINT	PAINT	PAINT	
215	MAIN MECH.	NONE	SEALED CONCRETE	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
217	BOILER	NONE	SEALED CONCRETE	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
219	MAIN ELEC.	NONE	SEALED CONCRETE	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	

LOUVER SCHEDULE - 1ST FLOOR - AREA K

MARK	WIDTH	HEIGHT	DESCRIPTION
217	1'-8"	5'-0"	4 High Performance Drainable Fixed Mullion Louver
218	1'-8"	5'-0"	4 High Performance Drainable Fixed Mullion Louver
219	1'-8"	5'-0"	4 High Performance Drainable Fixed Mullion Louver

WINDOW & STOREFRONT - 1ST FLOOR AREA K

	FRAME SIZE W x H			FRAME			DETAILS			
NUMBER	WIDTH	HEIGHT	ELEVATION	FRAME MATERIAL	FRAME DEPTH	GLAZING TYPE	JAMB	HEAD	SILL	REMARKS
100	33'-3 3/4"	10'-0"	1.00	ALUM		GI2	18/A-831	24/A-831	06/A-831	
100C	33'-3 3/4"	7'-6"	1.01	ALUM		GI1	18/A-831	24/A-831	12/A-831	
101.1	14'-5"	10'-0"	1.05	ALUM		GI2	18/A-831	24/A-831	06/A-831	
101.2	32'-3 27/32"	10'-0"	1.02	ALUM		GL1	10/A-831	16/A-831	06/A-831	
200	9'-3"	10'-0"	1.07	ALUM		GI2	07/A-831	13/A-831	06/A-831	
200A	16'-0"	7'-6"	1.18	ALUM		GI1	18/A-831	24/A-831	12/A-831	
200B	8'-0"	7'-6"	1.17	ALUM		GI1	18/A-831	24/A-831	12/A-831	
200C	16'-0"	7'-6"	1.16	ALUM		GI1	18/A-831	24/A-831	12/A-831	
200D	16'-0"	7'-6"	1.15	ALUM		GI1	18/A-831	24/A-831	12/A-831	
200E	8'-0"	7'-6"	1.14	ALUM		GI1	18/A-831	24/A-831	12/A-831	
200F	16'-0"	7'-6"	1.13	ALUM		GI1	18/A-831	24/A-831	12/A-831	
201	14'-5"	8'-6"	1.06	ALUM		GI1	18/A-831	24/A-831	12/A-831	
201.1	15'-0"	5'-8"	1.33	ALUM		GT1	18/A-831	24/A-831	12/A-831	
202.1	12'-0"	4'-0"	1.23	ALUM		GT1	10/A-831	16/A-831	04/A-831	
202.2	15'-0"	3'-8"	1.25	ALUM		GT1	10/A-831	16/A-831	04/A-831	
202.3	20'-0"	3'-8"	1.24	ALUM		GT1	10/A-831	16/A-831	04/A-831	
202A.1	14'-0"	9'-0"	1.21	ALUM		GT1	10/A-831	16/A-831	06/A-831	
202A.2	8'-5"	9'-0"	1.20	ALUM		GT1	12/A-812	08/A-813	02/A-813	
202B.1	9'-2"	9'-0"	1.22	ALUM		GT1	10/A-831	16/A-831	06/A-831	1
202B.3	3'-0"	7'-0"	1.12	ALUM		GI2	08/A-831	24/A-831	02/A-831	1
202B.4	3'-0"	7'-0"	1.12	ALUM		GI2	08/A-831	24/A-831	02/A-831	1
203.1	12'-10"	4'-0"	1.34	ALUM		GT1	11/A-831	17/A-831	05/A-831	
204.1	5'-0"	7'-0"	1.11	ALUM		GI2	18/A-831	24/A-831	02/A-831	1
204.2	5'-0"	7'-0"	1.11	ALUM		GI2	18/A-831	24/A-831	02/A-831	1
204.3	5'-0"	7'-0"	1.11	ALUM		GI2	18/A-831	24/A-831	02/A-831	1
204C.1	16'-0"	4'-0"	1.29	ALUM		GT1	10/A-831	16/A-831	04/A-831	5
204C.2	6'-0"	3'-8"	1.28	ALUM		GT1	10/A-831	16/A-831	04/A-831	5, 6
205.1	15'-0"	4'-0"	1.30	ALUM		GT1	11/A-831	17/A-831	05/A-831	
205.2	8'-0"	4'-0"	1.32	ALUM		GT1	11/A-831	17/A-831	06/A-831	
205.3	8'-0"	4'-0"	1.31	ALUM		GT1	11/A-831	17/A-831	06/A-831	
206.1	5'-0"	7'-0"	1.11	ALUM		GI2	18/A-831	24/A-831	02/A-831	1
206.2	5'-0"	7'-0"	1.11	ALUM		GI2	18/A-831	24/A-831	02/A-831	1
206.3	5'-0"	7'-0"	1.11	ALUM		GI2	18/A-831	24/A-831	02/A-831	1
206A.1	8'-0"	4'-0"	1.26	ALUM		GT1	10/A-831	16/A-831	04/A-831	5, 6
206A.2	10'-0"	6'-8"	1.27	ALUM		GT1	10/A-831	16/A-831	04/A-831	5, 6

Grand total: 35

ADD-1 ADD-1

LOCKER SCHEDULE - 1ST FLOOR - AREA K

TYPE MARK	DESCRIPTION	COUNT
	3 TIER LOCKER	1
	3 TIER LOCKER	1
	3 TIER LOCKER	1
	3 TIER LOCKER	1
	3 TIER LOCKER	1
	3 TIER LOCKER	1
	3 TIER LOCKER	1
	3 TIER LOCKER	1
	3 TIER LOCKER	1
	3 TIER LOCKER	1
	3 TIER LOCKER	1
	3 TIER LOCKER	1
	3 TIER LOCKER	1
	3 TIER LOCKER	1
	3 TIER LOCKER	1

0" 1"

1ST FLOOR SCHEDULES - AREA K
A-101K1
FOR BLUEBEAM LABELING/OCR:

Plot Stamp:
6/3/2025 5:47:20 PM

PBK

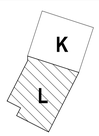
ARCHITECT PBK Architects, Inc.
HOUSTON PBK.com
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-965-0608 P
713-961-4571 F
TX Firm: BR 1608

CIVIL
KIMLEY-HORN
T. 281-597-9300
LANDSCAPE
EDGELAND
T.713-965-0608
STRUCTURAL
KUBRE & ASSOCIATES
T.713-965-0608
MEP/FP
LEAF ENGINEERS
T.713-965-0608
ACOUSTIC
BAI, LLC
T. 713-961-4264
ENVELOPE
BEAM PROFESSIONALS
T.713-965-0608
FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS, LLC
T.281-350-2323

New CTE Center & Hargrave High School Additions & Renovations

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL



KEY PLAN

NORTH: PLAN TRUE

REGISTERED ARCHITECT MELISSA A. KAPPLE 30374 STATE OF TEXAS

Melissa Kapple
5/22/2025

CLIENT
HUFFMAN ISD

PROJECT NUMBER	DATE
240157	05/20/2025

DRAWING HISTORY

No.	Description	Date
ADD-1	ADD-1	06/04/2025

CHECKED BY: Checker

DRAWN BY: LB

1ST FLOOR SCHEDULES - AREA L

A-101L1

DOOR SCHEDULE REMARKS

1. ELEC. DOOR OPENER W/ HC BUTTON ON INSIDE AND OUTSIDE OF DOOR
2. ELEC. CONTROLLED ACCESS HARDWARE WITH CARD READER
3. ELEC. CONTROLLED ACCESS HARDWARE WITH PUSH-BUTTON
4. ELEC. CONTROLLED ACCESS HARDWARE, ROUGH-IN ONLY
5. DOOR BUZZER
6. DOOR CHIME ON OPEN
7. MAGNETIC HOLD-OPEN, CONNECT TO FIRE ALARM
8. MAGNETIC HOLD-OPEN, CONNECT TO SECURITY SYSTEM
9. SOUND DOOR
10. DOOR CONTACT
11. INTRUSION DETECTION SYSTEM ARM/DISARM KEYPAD WITH LOCKING VANDAL RESISTANT COVER
12. VIDEO INTERCOM
13. DOOR CLOSER
14. "FISH EYE" PEEPHOLE

OPERABLE WALLS, OVERHEAD DOORS AND GRILLES

15. SOUND RATED DOOR ASSEMBLY, STC AS SPECIFIED
16. WINDSTORM DOOR HARDWARE SHALL BE TESTED AS PART OF A COMPLETE DOOR OPENING ASSEMBLY. THE TESTED DOOR OPENING ASSEMBLY SHALL INCLUDE DOOR HARDWARE. THE ENTIRE DOOR OPENING, INCLUDING DOOR HARDWARE, SHALL BE BY DOOR MANUF.
17. ACOUSTICAL GLASS TO MEET FIRE DOOR ASSEMBLY REQUIREMENTS FOR FIRE RATING INDICATED
18. MANUAL OPERATION
19. ELEC MOTOR OPERATION WITH KEY SWITCH CONTROL, KEY SWITCH ON ONE SIDE OF DOOR ONLY
20. ELEC MOTOR OPERATION WITH KEY SWITCH CONTROL, KEY SWITCH ON BOTH SIDES OF DOOR
21. ELEC MOTOR OPERATION WITH PUSH-BUTTON CONTROL ON ONE SIDE OF DOOR ONLY
22. AUTOMATIC OPEN ON FIRE ALARM ACTIVATION U.N.O.
23. AUTOMATIC CLOSE ON FIRE ALARM ACTIVATION
24. KNOX BOX, COORDINATE FINAL LOCATION WITH HCFM

FINISH SCHEDULE NOTES AND REMARKS

GENERAL NOTES:

ALL SCHEDULED DIRECTIONS (NORTH, EAST, SOUTH, WEST) ARE PER PLAN DIRECTIONS, NOT TRUE COMPASS DIRECTIONS.

ALL FINISH MATERIALS SHALL MEET FLAME SPREAD RATINGS PER THE BUILDING CODE.

PROTECT ALL FINISHED FLOORING SURFACES FROM DAMAGE DURING ALL CONSTRUCTION PHASES.

CARPET PATTERNS SHALL RUN PARALLEL TO CORRIDOR U.N.O.

PROVIDE AND INSTALL BULLNOSE TRIM AT ALL TRANSITIONS FROM CERAMIC WALL TILE TO OTHER MATERIALS U.N.O.

PAINT ALL H.M. DOORS P1 U.N.O.

WINDOW SCHEDULE REMARKS

1. PROVIDE HORIZONTAL BLINDS
2. PROVIDE MANUAL SUNSHADE
3. PROVIDE MOTORIZED SUNSHADE
4. PROVIDE MOTORIZED SUNSHADE AND BLACKOUT SHADE
5. PROVIDE BLACKOUT SHADE
6. SOUND CONTROL WINDOW SYSTEM

DOOR SCHEDULE - 1ST FLOOR AREA L

DOOR			PANEL						FRAME			DETAIL			GENERAL			
NUMBER	WIDTH	HEIGHT	WIDTH	TYPE	THK	MATL	FINISH	GLASS TYPE	TYPE	MATL	FINISH	JAMB	HEAD	SILL	FIRE RATING	STC	AAOS PROJECT HW SET	REMARKS
102	6'-0"	6'-10"	3'-0"/3'-0"	HGIR/HGIR	1 3/4"	ALUM	GI2 / ALUM		001	AL	Clear Anodized	10/A-813	16/A-813	04/A-812			5.0	10, 13
104	6'-0"	6'-10"	3'-0"/3'-0"	HGIR/HGIR	1 3/4"	ALUM	GI2 / ALUM		001	AL	Clear Anodized	10/A-813	16/A-813	04/A-812			5.0	2
110.1	3'-0"	6'-10"	3'-0"	HGIR/HGIR	1 3/4"	ALUM	GL1 / ALUM		001	AL	Clear Anodized	10/A-813	16/A-813	04/A-813			2.0	2, 10
110.2	3'-0"	6'-10"	3'-0"	HGIR/HGIR	1 3/4"	ALUM	GL1 / ALUM		001	AL	Clear Anodized	10/A-813	16/A-813	04/A-813			9.0	2, 10, 11
111	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	AL	Clear Anodized	22/A-812	28/A-812	03/A-812			13.0	
112.1	3'-0"	6'-10"	3'-0"	F	1 3/4"	SCPL	PL-1	NONE	001	AL	Clear Anodized	22/A-812	28/A-812	03/A-812			3.0	2, 10
112.2	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	HM	Clear Anodized	22/A-812	28/A-812	03/A-812			11.0	
113	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	AL	Clear Anodized	22/A-812	28/A-812	03/A-812			13.0	
114	3'-0"	6'-10"	3'-0"	F	1 3/4"	SCPL	PL-1	NONE	001	HM	PT-7	22/A-812	28/A-812	03/A-812			11.0	
115	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	011	AL	Clear Anodized	22/A-812	28/A-812	03/A-812			13.0	
116	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	AL	Clear Anodized	22/A-812	28/A-812	03/A-812			13.0	
117	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	AL	Clear Anodized	22/A-812	28/A-812	03/A-812			13.0	
118	3'-0"	6'-10"	3'-0"	F	1 3/4"	SCPL	PL-1	NONE	001	HM	PT-7	22/A-812	28/A-812	03/A-812			15.0	
119	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	AL	Clear Anodized	22/A-812	28/A-812	03/A-812			13.0	
120	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	HM	Clear Anodized	10/A-813	16/A-813	04/A-812			17.0	
120A	3'-0"	6'-10"	3'-0"	F	1 3/4"	SCPL	PL-1	NONE	001	HM	PT-7	22/A-812	28/A-812	03/A-812			11.0	
121	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	HM	PT-7	22/A-812	28/A-812	03/A-812			17.0	
121A	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	HM	PT-7	22/A-812	28/A-812	03/A-812			13.0	
121B	3'-0"	6'-10"	3'-0"	F	1 3/4"	SCPL	PL-1	NONE	001	HM	PT-7	22/A-812	28/A-812	03/A-812			11.0	
122	3'-0"	6'-10"	3'-0"	F	1 3/4"	SCPL	PL-1	NONE	001	HM	PT-7	10/A-812	16/A-812	03/A-812			16.0	
123.1	3'-0"	6'-10"	3'-0"	F	1 3/4"	SCPL	PL-1	NONE	001	HM	Clear Anodized	22/A-812	28/A-812	03/A-812			17.0	
123.2	12'-0"	9'-0"	6'-0"/6'-0"	SDT/SDT	1 3/4"	ALUM	GT1 / ALUM	GT1	NONE	AL	Clear Anodized	09/A-813	15/A-813				10.0	
124	4'-0"	6'-10"	4'-0"	F	1 3/4"	SCPL	PL-1	NONE	001	HM	PT-7	10/A-812	16/A-812	03/A-812			11.0	
125.1	3'-0"	6'-10"	3'-0"	F	1 3/4"	SCPL	PL-1	NONE	001	HM	PT-7	22/A-812	28/A-812	03/A-812			17.0	
125.2	3'-0"	6'-10"	3'-0"	F	1 3/4"	SCPL	PL-1	NONE	001	HM	PT-7	22/A-812	28/A-812	03/A-812			17.0	
125A.2	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	HM	PT-7	22/A-812	28/A-812	03/A-812			11.0	
125B	3'-0"	6'-10"	3'-0"	F	1 3/4"	SCPL	PL-1	NONE	001	HM	Clear Anodized	22/A-812	28/A-812	03/A-812			16.0	
126	3'-0"	6'-10"	3'-0"	F	1 3/4"	SCPL	PL-1	NONE	001	HM	PT-7	10/A-812	16/A-812	03/A-812	20 MINS		3.0	2, 10
127.1	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	HM	PT-7	22/A-812	28/A-812	03/A-812			17.0	
127.3	12'-0"	9'-0"	6'-0"/6'-0"	SDT/SDT	1 3/4"	ALUM	GT1 / ALUM	GT1	NONE	AL	Clear Anodized	09/A-813	15/A-813				10.0	
130	3'-0"	6'-10"	3'-0"	HGIR/HGIR	1 3/4"	ALUM	GT1 / ALUM		001	AL	Clear Anodized	11/A-812	17/A-812	10/A-813			17.0	
130.2	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GL	001	HM	PT-7	10/A-812	16/A-812	03/A-812			17.0	
130A.1	3'-0"	7'-0"	3'-0"	HGIR	1 3/4"	ALUM	GT1 / ALUM		001	AL	Clear Anodized	04/A-813	25/A-813	10/A-813			11.0	
130A.2	3'-0"	6'-9 3/4"	3'-0"	HGIR	1 3/4"	ALUM	GI2 / ALUM		001	AL	Clear Anodized	20/A-812	26/A-812	02/A-812			1.0	2, 10, 13
130A.3	3'-0"	7'-0"	3'-0"	OR	1 1/2"	ALUM	ALUM	NONE	RE ELEV	AL	Clear Anodized						10.0	
130B	3'-0"	6'-10"	3'-0"	HG-1	1 3/4"	SCPL	PL-1	GT1	001	HM	PT-7	10/A-812	16/A-812	03/A-812			13.0	
130C	3'-0"	6'-10"	3'-0"	F	1 3/4"	HM	PT-7	NONE	001	HM	PT-7	10/A-812	16/A-812	03/A-812			11.0	
130D	3'-0"	6'-10"	3'-0"	HG-1	1 3/4"	SCPL	PL-1	GT1	001	HM	Clear Anodized	10/A-812	16/A-812	03/A-812			13.0	
131	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	HM	PT-7	22/A-812	28/A-812	03/A-812			17.0	
131A	3'-0"	6'-10"	3'-0"	HGIR	1 3/4"	SCPL	PL-1	GT1	001	HM	PT-7	22/A-812	28/A-812	03/A-812			13.0	
131B	3'-0"	6'-10"	3'-0"	F	1 3/4"	SCPL	PL-1	NONE	001	HM	PT-7	22/A-812	28/A-812	03/A-812			11.0	
132.1	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	HM	PT-7	10/A-812	16/A-812	03/A-812			17.0	
132.2	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	HM	PT-7	10/A-812	16/A-812	03/A-812			17.0	
132B	3'-0"	6'-10"	3'-0"	F	1 3/4"	SCPL	PL-1	NONE	001	HM	PT-7	10/A-812	16/A-812	03/A-812			11.0	
132C	3'-0"	6'-10"	3'-0"	F	1 3/4"	SCPL	PL-1	NONE	001	HM	PT-7	10/A-812	16/A-812	03/A-812			11.0	
133	3'-0"	6'-10"	3'-0"	F	1 3/4"	SCPL	PL-1	NONE	001	HM	PT-7	22/A-812	28/A-812	03/A-812			13.0	
134	3'-0"	6'-10"	3'-0"	NV-1	1 3/4"	SCPL	PL-1	GT1	001	HM	PT-7	10/A-812	16/A-812	03/A-812			17.0	
135	6'-0"	6'-10"	3'-0"/3'-0"	F/F	1 3/4"	SCPL	PL-1	NONE	001	HM	PT-7	22/A-812	28/A-812	03/A-812			12.0	
138	3'-0"	6'-10"	3'-0"	F	1 3/4"	SCPL	PL-1	NONE	001	HM	PT-7	10/A-812	16/A-812	03/A-812	45 MINS		11.0	
Grand total: 49																		

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ROOM FINISH SCHEDULE - 1ST FLOOR - AREA L

ROOM DATA				WALL FINISHES				
NUMBER	NAME	BASE FINISH	FLOOR FINISH	NORTH	EAST	SOUTH	WEST	REMARKS
110	RECEPTION	RUBBER BASE	MCT	PAINT	PAINT	PAINT	PAINT	
111	SECRETARY	RUBBER BASE	MCT	EPOXY PAINT	EPOXY PAINT	PAINT	PAINT	
112	ADMIN	RUBBER BASE	MCT	PAINT	PAINT	PAINT	PAINT	
113	DIRECTOR	RUBBER BASE	MCT	PAINT	EPOXY PAINT	PAINT	PAINT	
114	STOR.	RUBBER BASE	MCT	PAINT	PAINT	PAINT	PAINT	
115	AP OFFICE	RUBBER BASE	MCT	PAINT	EPOXY PAINT	PAINT	PAINT	
116	BREAKROOM	RUBBER BASE	MCT	PAINT	PAINT	PAINT	PAINT	
117	CONFERENCE	RUBBER BASE	MCT	PAINT	EPOXY PAINT	PAINT	PAINT	
118	RR	TILE	TILE	TILE OVER GYP	TILE OVER GYP	TILE OVER GYP	TILE OVER GYP	
119	WORKROOM	RUBBER BASE	MCT	PAINT	PAINT	PAINT	PAINT	
120	BUSINESS	RUBBER BASE	MCT	PAINT	EPOXY PAINT	PAINT	PAINT	
120A	STORAGE	RUBBER BASE	MCT	PAINT	PAINT	PAINT	PAINT	
121	EDUCATION	RUBBER BASE	MCT	PAINT	EPOXY PAINT	PAINT	PAINT	
121A	WORKROOM	RUBBER BASE	MCT	PAINT	PAINT	PAINT	PAINT	
121B	STORAGE	RUBBER BASE	MCT	PAINT	PAINT	PAINT	PAINT	
122	RR	TILE	TILE	TILE OVER GYP	TILE OVER BLOCK	TILE OVER GYP	TILE OVER GYP	
123	HEALTH CLASSROOM	HOMOGENEOUS	HOMOGENEOUS VINYL	GYP W/ACROVYN & WALL BUMPERS	GYP W/ACROVYN & WALL BUMPERS	GYP W/ACROVYN & WALL BUMPERS	GYP W/ACROVYN & WALL BUMPERS	
124	MAIN CUST.	NONE	SEALED CONCRETE	PAINT	EPOXY PAINT	PAINT	PAINT	
125	HEALTH LAB	HOMOGENEOUS	HOMOGENEOUS VINYL	GYP W/ACROVYN & WALL BUMPERS	GYP W/ACROVYN & WALL BUMPERS	GYP W/ACROVYN & WALL BUMPERS	GYP W/ACROVYN & WALL BUMPERS	
125A	PREP RM	HOMOGENEOUS	HOMOGENEOUS VINYL	GYP W/ACROVYN & WALL BUMPERS	GYP W/ACROVYN & WALL BUMPERS	GYP W/ACROVYN & WALL BUMPERS	GYP W/ACROVYN & WALL BUMPERS	
125B	RR	EPOXY	EPOXY	TILE OVER GYP	TILE OVER GYP	TILE OVER GYP	TILE OVER GYP	
126	MDF	RUBBER BASE	SEALED CONCRETE	PAINT	EPOXY PAINT	PAINT	PAINT	
127	HEALTH CLASSROOM	HOMOGENEOUS	HOMOGENEOUS VINYL	GYP W/ACROVYN & WALL BUMPERS	GYP W/ACROVYN & WALL BUMPERS	GYP W/ACROVYN & WALL BUMPERS	GYP W/ACROVYN & WALL BUMPERS	
130	VET TECH LAB	EPOXY	EPOXY	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
130A	KENNELS	EPOXY	EPOXY	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
130B	EXAM RM. 1	EPOXY	EPOXY	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
130C	STORAGE	RUBBER BASE	SEALED CONCRETE	EPOXY PAINT	PAINT	PAINT	EPOXY PAINT	
130D	EXAM RM. 2	EPOXY	EPOXY	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
131	LAW ENFORCEMENT	RUBBER BASE	MCT	PAINT	PAINT	PAINT	PAINT	
131A	TRAINING	RUBBER BASE	MCT	PAINT	PAINT	PAINT	PAINT	
131B	STORAGE	RUBBER BASE	MCT	PAINT	PAINT	PAINT	PAINT	
132	FLORAL LAB	RUBBER BASE	POLISHED CONCRETE	PAINT	PAINT	PAINT	PAINT	
132A	FLORAL COOLER	NONE	EPOXY	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
132B	STORAGE	RUBBER BASE	SEALED CONCRETE	PAINT	PAINT	PAINT	PAINT	
132C	STORAGE	RUBBER BASE	POLISHED CONCRETE	PAINT	PAINT	PAINT	PAINT	
133	WID	NONE	SEALED CONCRETE	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
134	AG SCIENCE CLASS	RUBBER BASE	MCT	PAINT	PAINT	EPOXY PAINT	EPOXY PAINT	
135	MECH.	NONE	SEALED CONCRETE	PAINT	PAINT	PAINT	PAINT	
137	WOMEN'S RR	EPOXY	EPOXY	TILE OVER GYP	TILE OVER BLOCK	TILE OVER GYP	TILE OVER GYP	
138	ELEC.	NONE	SEALED CONCRETE	PAINT	EPOXY PAINT	EPOXY PAINT	EPOXY PAINT	
139	MEN'S RR	EPOXY	EPOXY	TILE OVER GYP	TILE OVER GYP	TILE OVER GYP	TILE OVER GYP	

STOREFRONT SCHEDULE - 1ST FLOOR AREA L

	FRAME SIZE W x H			FRAME			DETAILS			
NUMBER	WIDTH	HEIGHT	ELEVATION	FRAME MATERIAL	FRAME DEPTH	GLAZING TYPE	JAMB	HEAD	SILL	REMARKS
102	9'-10 9/16"	10'-0"	1.04	ALUM		GI2	07/A-831	13/A-831	06/A-831	
104	10'-0"	10'-0"	1.03	ALUM		GI2	08/A-831	14/A-831	06/A-831	
110.1	5'-0"	10'-0"	1.36	ALUM		GL1	10/A-831	16/A-831	06/A-831	
110.2	10'-11 5/8"	10'-0"	1.37	ALUM		GL1	10/A-831	16/A-831	06/A-831	
110.3	9'-10"	10'-0"	1.38	ALUM		GL1	10/A-831	16/A-831	06/A-831	
111.1	5'-0"	7'-0"	1.11	ALUM		GI2	08/A-831	24/A-831	02/A-831	1
111.2	7'-1 7/8"	7'-0"	1.35	ALUM		GL1	10/A-831	16/A-831	06/A-831	1
111.3	5'-0"	7'-0"	1.11	ALUM		GI2	08/A-831	24/A-831	02/A-831	1
113	5'-0"	7'-0"	1.11	ALUM		GI2	08/A-831	24/A-831	02/A-831	1
115	5'-0"	7'-0"	1.11	ALUM		GI2	08/A-831	24/A-831	02/A-831	1
117.1	8'-0"	7'-0"	1.08	ALUM		GI2	18/A-831	24/A-831	02/A-831	1
117.2	8'-0"	7'-0"	1.08	ALUM		GI2	18/A-831	24/A-831	02/A-831	1
120	14'-0"	3'-8"	1.51	ALUM		GT1	11/A-831	17/A-831	05/A-831	
121.1	16'-0"	4'-0"	1.40	ALUM		GT1	10/A-831	16/A-831	04/A-831	1
121.2	5'-0"	7'-0"	1.11	ALUM		GI2	08/A-831	24/A-831	02/A-831	1
121.3	5'-0"	7'-0"	1.11	ALUM		GI2	08/A-831	24/A-831	02/A-831	1
121A.1	12'-0"	4'-0"	1.39	ALUM		GT1	10/A-831	16/A-831	04/A-831	
121A.2	8'-0"	4'-0"	1.41	ALUM		GT1	10/A-831	16/A-831	04/A-831	
123.1	8'-0"	7'-0"	1.08	ALUM		GI2	18/A-831	24/A-831	02/A-831	1
123.2	8'-0"	7'-0"	1.08	ALUM		GI2	18/A-831	24/A-831	02/A-831	1
123.3	5'-0"	7'-0"	1.11	ALUM		GI2	08/A-831	24/A-831	02/A-831	1
123.4	5'-0"	7'-0"	1.11	ALUM		GI2	08/A-831	24/A-831	02/A-831	1
125	37'-3"	4'-0"	1.43	ALUM		GT1	10/A-831	16/A-831	04/A-831	
127.1	12'-0"	4'-0"	1.44	ALUM		GT1	10/A-831	16/A-831	04/A-831	1
127.2	5'-0"	7'-0"	1.11	ALUM		GI2	08/A-831	24/A-831	02/A-831	1
127.3	5'-0"	7'-0"	1.11	ALUM		GI2	08/A-831	24/A-831	02/A-831	1
130.1	25'-0"	3'-8"	1.09	ALUM		GI2	07/A-831	24/A-831	01/A-831	1
130.2	14'-0"	4'-0"	1.48	ALUM		GT1	11/A-831	17/A-831	05/A-831	
130.3	12'-0"	4'-0"	1.47	ALUM		GT1	11/A-831	17/A-831	05/A-831	
130A	5'-6 13/16"	10'-0"	1.49	ALUM		GT1	11/A-831	17/A-831	06/A-831	
130A.2	6'-0"	9'-0"	1.19	ALUM		GI2	07/A-831	13/A-831	06/A-831	
130B	5'-0"	4'-0"	1.46	ALUM		GT1	11/A-831	17/A-831	05/A-831	5
130D	5'-0"	4'-0"	1.46	ALUM		GT1	11/A-831	17/A-831	05/A-831	5
131	14'-0"	4'-0"	1.50	ALUM		GT1	10/A-831	16/A-831	04/A-831	
132.1	30'-2"	3'-8"	1.10	ALUM		GI2	07/A-831	24/A-831	01/A-831	1
132.2	5'-4"	4'-0"	1.45	ALUM		GT1	11/A-831	17/A-831	05/A-831	
132.3	5'-7 3/8"	4'-0"	1.45	ALUM		GT1	11/A-831	17/A-831	05/A-831	
134.2	8'-0"	7'-0"	1.08	ALUM		GI2	18/A-831	24/A-831	01/A-831	1
134.3	8'-0"	4'-0"	1.42	ALUM		GT1	11/A-831	17/A-831	05/A-831	
134.4	8'-0"	7'-0"	1.08	ALUM		GI2	18/A-831	24/A-831	01/A-831	1
Grand total: 40										

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WINDOW SCHEDULE - 1ST FLOOR - AREA L

	SIZE									DETAILS			
NUMBER	WIDTH	HEIGHT	SILL HEIGHT	ELEVATION	MATERIAL	FINISH	GLAZING TYPE	FIRE RATING	STC	JAMB	HEAD	SILL	REMARKS
131A	2'-6"	7'-0"	0"	W34	ALUM	<By Category>	GT1			10/A-831	16/A-831	06/A-831	
Grand total: 1													

0"
1"

1ST FLOOR SCHEDULES - AREA L
A-101L1
FOR BLUEBEAM LABELING/OCR:

Plot Stamp:
6/3/2025 5:47:23 PM

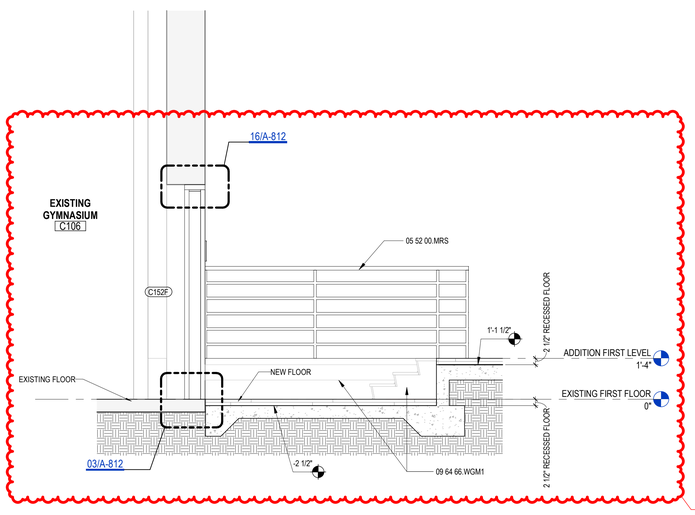
ENLARGED PLANS & INTERIOR ELEVATIONS - GYM

A-402

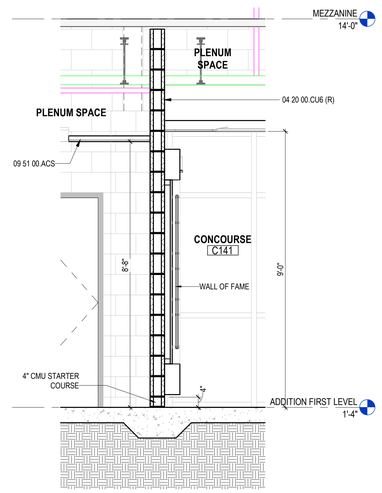
FOR BLUEBEAM LABELING/OCR:

0"

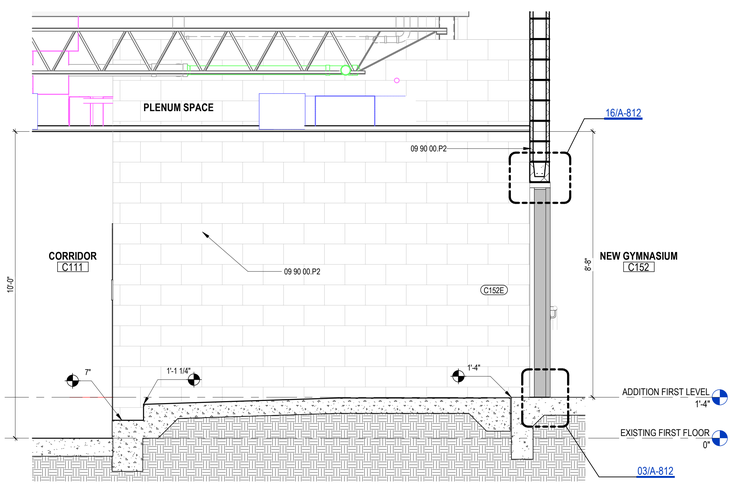
1"



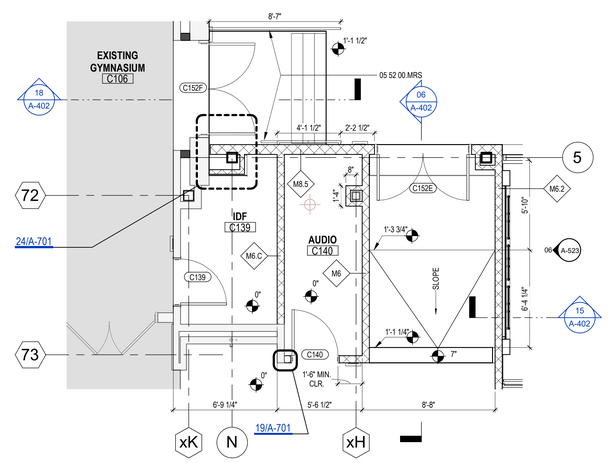
18 SECTION @ STAIR FROM NEW TO EXISTING GYM
1/2" = 1'-0"



15 SECTION @ NEW GYM ENTRANCE
1/2" = 1'-0"



06 SECTION @ NEW GYM TO EXISTING CORRIDOR
1/2" = 1'-0"



03 ENLARGED PLAN OF NEW ENTRANCE TO NEW GYM
1/4" = 1'-0"

GENERAL ARCH PLAN NOTES

1. DO NOT SCALE DRAWINGS, WRITTEN DIMENSIONS TAKE PRECEDENCE, CONTACT ARCH IF CLARIFICATION IS NECESSARY IN ORDER TO DETERMINE THE INTENT OF THE CONTRACT DOCUMENTS.
2. DRAWINGS NOTED AS "N.T.S" OR "NTS" ARE NOT TO SCALE.
3. ALL DIMENSIONS ARE TO STRUCTURAL COLUMN LINES OR THE SURFACE OF PARTITION ASSEMBLY U.N.O.
4. FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS BEFORE COMMENCING WORK. NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH AFFECTED WORK.
5. NOTES OR DIMENSIONS NOTED AS "TYPICAL" OR "TYP." OR "TYP" SHALL APPLY TO CONDITIONS THAT ARE THE SAME OR SIMILAR.
6. DIMENSIONS NOTED AS "FIELD VERIFY" OR "V.I.F." OR "VIF" SHALL BE MEASURED AND CONFIRMED AT THE PROJECT SITE BY THE CONTRACTOR AND REVIEWED WITH THE ARCH. BEFORE INCORPORATING INTO THE WORK.
7. DIMENSIONS NOTED AS "CLEAR" OR "CLEAR INSIDE" OR "CLR" REQUIRE SPECIFIC COORDINATION AMONG DISCIPLINES AND OR MANUFACTURERS.
8. REFER TO PARTITION TYPES ON A-800 SERIES SHEETS.
9. ALL INTERIOR PARTITIONS THIS SHEET, EXCEPT FOR FURR-OUT PARTITIONS, SHALL BE PARTITION TYPE M6 U.N.O.
10. ALL INTERIOR FURR-OUT PARTITIONS THIS SHEET SHALL BE PARTITION TYPE M6C U.N.O..
11. ALIGN FINISHED FACE OF WALLS WHERE WALL PARTITIONS OF DIFFERING THICKNESS ABUT AND OR ADJOIN IN THE SAME PLANE.
12. PROVIDE AND INSTALL CONTINUOUS REVEAL TRIM AT JOINT WHERE GYPSUM BOARD WALL PARTITIONS ABUT AND OR ADJOIN MASONRY WALL PARTITIONS IN THE SAME PLANE.
13. ALL INTERIOR CMU OUTSIDE CORNERS SHALL HAVE BULLNOSE U.N.O.
14. ALL DOORS SHALL BE SET 4 INCHES OFF THE ADJACENT PERPENDICULAR WALL ON THE HINGE SIDE OF THE DOOR U.N.O., NOTIFY ARCH. OF ANY DOOR-RELATED CONFLICTS, INCLUDING BUT NOT LIMITED TO CONFLICTS CONCERNING ACCESSIBILITY STANDARDS.
15. ALL DOOR THRESHOLDS AT ALL EXTERIOR DOORS SHALL BE SET IN FULL BED OF SEALANT.
16. COORDINATE ALL ROOF DRAIN LEADER LOCATIONS WITH FLOOR PLAN PRIOR TO FLOOR SLAB CONSTRUCTION.
17. ALL FLOOR SLOPES TO FLOOR DRAINS SHALL NOT EXCEED 1:48.
18. PROVIDE AND INSTALL SELF-LEVELING UNDERLAYMENT WHERE UNEVEN FLOOR SLAB EXISTS PRIOR TO INSTALLATION OF FLOOR FINISHES.
19. COORDINATE HOUSEKEEPING PAD LOCATIONS AND DIMENSIONS WITH EQUIPMENT TO BE INSTALLED.
20. ALL REQUIRED ACCESSIBLE CLEARANCES FOR ALL ITEMS, INCLUDING BUT NOT LIMITED TO ALL COUNTER TOPS, ALL PLUMBING FIXTURES, ALL DRINKING FOUNTAINS, ALL ELECTRIC WATER COOLERS, ALL LAVATORIES, ALL URINALS, ALL TOILETS SHALL BE STRICTLY ENFORCED.
21. APPLY BITUMINOUS COATING TO ALL CONCEALED STRUCTURAL STEEL MEMBERS AT ALL EXTERIOR CANOPY LOCATIONS.
22. REFER TO OTHER DISCIPLINE DOCUMENTS FOR ADDITIONAL SCOPE OF WORK.

KEYNOTE LEGEND

NUMBER	DESCRIPTION
04 20 00.CU6 (R)	6" CMU - RUNNING BOND
05 52 00.MRS	STAINLESS STEEL RAILING SYSTEM
09 51 00.ACS	ACOUSTICAL CEILING PANEL SYSTEM, REFER TO RCP FOR ASSEMBLY
09 64 66.WGM1	WOOD GYMNASIUM FLOORING (NEW GYM)
09 90 00.P2	PAINT TYPE 2 - ACCENT, RED (GYM)

PBK

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STRUCTURAL
KUBRA ENGINEERS
T 713-960-0808
MEP
LEAF ENGINEERS
T 713-905-0505
ACOUSTIC
BAI, LLC
T 713-961-1004
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BEAM PROFESSIONALS
T 713-965-0505
FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS, LLc
T 281-350-2323

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

KEY PLAN

NORTH: PLAN TRUE

REGISTERED ARCHITECT MELISSA A. KAPPLE 70374 STATE OF TEXAS

Melissa Kapple
5/22/2025

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
P	HC PERMIT RESPONSE	05/28/2025
ADD-1	ADD-1	08/20/2025

ENLARGED PLANS & INTERIOR ELEVATIONS - GYM

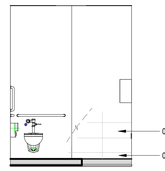
A-402

Plot Stamp:
6/3/2025 6:27:44 PM

ENLARGED FLOOR PLANS - AG

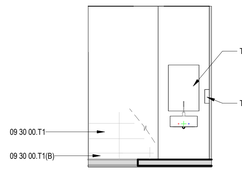
A-411

FOR BLUEBEAM LABELING/OCR:



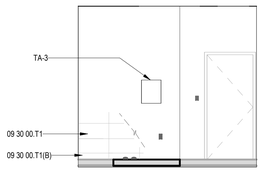
RE: 07/A-411 FOR TYPICAL TILE PATTERN

10 ADULT RR E107 WEST INT. ELEV
1/4" = 1'-0"



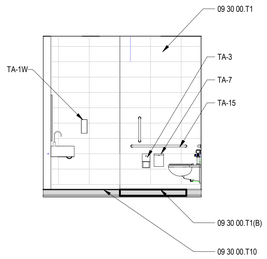
RE: 07/A-411 FOR TYPICAL TILE PATTERN

09 ADULT RR E107 EAST INT. ELEV
1/4" = 1'-0"



RE: 07/A-411 FOR TYPICAL TILE PATTERN

08 ADULT RR E107 NORTH INT. ELEV
1/4" = 1'-0"



07 ADULT RR E107 SOUTH INT. ELEV
1/4" = 1'-0"

TOILET ACCESSORIES

LABEL	DESCRIPTION	NOTES
TA1C	SOAP DISPENSER, COUNTER-MOUNTED, TYPICAL	
TA1W	SOAP DISPENSER, WALL-MOUNTED, TYPICAL	
TA2	LAVATORY MIRROR, TYPICAL	NOTE 5
TA2F	FULL-LENGTH MIRROR	
TA3	TOILET PAPER DISPENSER, TYPICAL	
TA4	PAPER TOWEL DISPENSER, TYPICAL	
TA5	GRAB BARS, AT TYPICAL WHEELCHAIR ACCESSIBLE WATERCLOSET, TYPICAL	
TA6	SANITARY NAPKIN/TAMPON VENDOR, TYPICAL	
TA7	SANITARY NAPKIN DISPOSAL, TYPICAL	
TA8	SHELF WITH MOP AND BROOM HOLDERS AND HOOKS, TYPICAL	
TA9	GRAB BARS, ACCESSIBLE SHOWER, TYPICAL	
TA10A	FOLDING BENCH, ADULT HEIGHT	
TA10C	FOLDING BENCH, CHILD HEIGHT	
TA11	CLOTHING HOOK, TYPICAL	NOTE 6
TA12	SHOWER CURTAINS, RODS AND HOOKS, TYPICAL	
TA13	ELECTRIC HAND DRYER, TYPICAL	
TA14	PAPER TOWEL DISPENSER/WASTE RECEPTACLE, TYPICAL	
TA15	GRAB BARS, AT AMBULATORY ACCESSIBLE WATERCLOSET	
TA16C	BABY CHANGING STATION	
TA16A	ADULT CHANGING STATION	
TA17R	TRASH RECEPTACLE, RECESSED	
TA17U	TRASH RECEPTACLE, UNDERCOUNTER	
TA18	VERTICAL GRAB BAR (AT ACCESSIBLE ICC A117.1 TOILETS)	
TA19	WATERCLOSET COVER DISPENSER	
TA20	FOLDING UTILITY SHELF	

NOTES:
1. ALL TOILET ACCESSORIES SHALL BE CONTRACTOR FURNISHED AND CONTRACTOR INSTALLED U.N.O.
2. COORDINATE FINAL LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.
3. VERIFY ALL HEIGHTS OF ACCESSORIES TO COMPLY WITH ALL APPLICABLE ACCESSIBILITY REQUIREMENTS.
4. REFER TO ALL FINISHES AND COLORS IN FINISH SCHEDULE, VERIFY ALL PATTERNS WITH ARCHITECT.
5. ALIGN MIRROR ON CENTER OF LAVATORY.
6. ONE (1) HOOK SHALL BE INSTALLED INSIDE DOOR AT EACH TOILET PARTITION. ONE HOOK INSIDE DOOR AT SINGLE TOILET ROOMS AND ONE HOOK AT EACH SHOWER.

GENERAL ARCH PLAN NOTES

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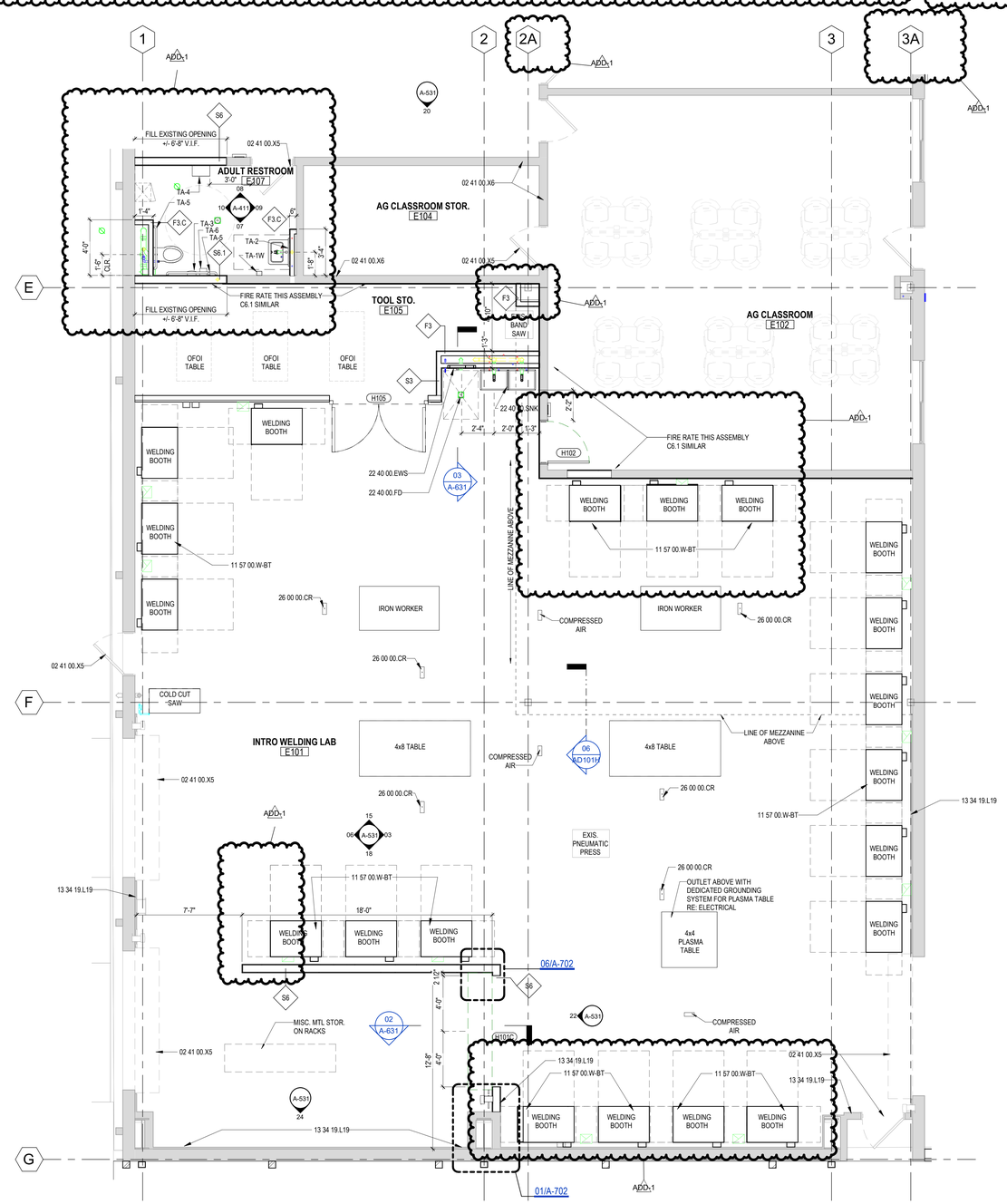

06 ENLARGED PLAN - INTRO WELDING LAB / AG CLASSROOM
1/4" = 1'-0"

KEYNOTE LEGEND

NUMBER	DESCRIPTION
02 41 00.X5	EXISTING DOOR TO REMAIN
02 41 00.X6	EXISTING SLAB/FOUNDATION TO REMAIN PROTECT AS REQUIRED
09 30 00.T1	TILE TYPE 1 - WALL TILE
09 30 00.T1(B)	INSTALL T1 AS WALL BASE
09 30 00.T10	TILE TYPE 10 - FLOOR TILE - SINGLE RESTROOMS
11 57 00.W-BT	2X3 PORTABLE DOWNDRAFT TABLES
13 34 19.L19	METAL BUILDING LINER SYSTEM, R-19
22 40 00.EWS	EMERGENCY EYEWASH AND SHOWER, REFER TO PLUMBING
22 40 00.FD	FLOOR DRAIN, REFER TO PLUMBING
22 40 00.SNK	SINK, REFER TO PLUMBING
26 00 00.CR	CORD REEL, REFER TO ELECTRICAL
TA-1W	SOAP DISPENSER, WALL-MOUNTED, OFCI
TA-2	LAVATORY MIRROR, TYPICAL
TA-3	TOILET PAPER DISPENSER, OFCI
TA-4	PAPER TOWEL DISPENSER, OFCI
TA-5	GRAB BAR, AT WHEELCHAIR-ACCESSIBLE WATER CLOSET, TYPICAL
TA-6	SANITARY NAPKIN/TAMPON VENDOR, OFCI
TA-7	SANITARY NAPKIN DISPOSAL, TYPICAL
TA-15	GRAB BARS, AT AMBULATORY-ACCESSIBLE WATER CLOSET

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FOODSERVICE DESIGN PROFESSIONALS
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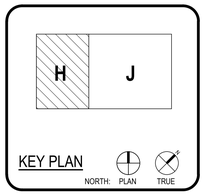
ENVELOPE
BEAM PROFESSIONALS
T 713-965-0608

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: AGRICULTURAL PAVILION

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL



CLIENT
Huffman Independent School District

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
ADD-1	ADD-1	06/04/2025

CHECKED BY: Checker

DRAWN BY: PL

ENLARGED FLOOR PLANS - AG

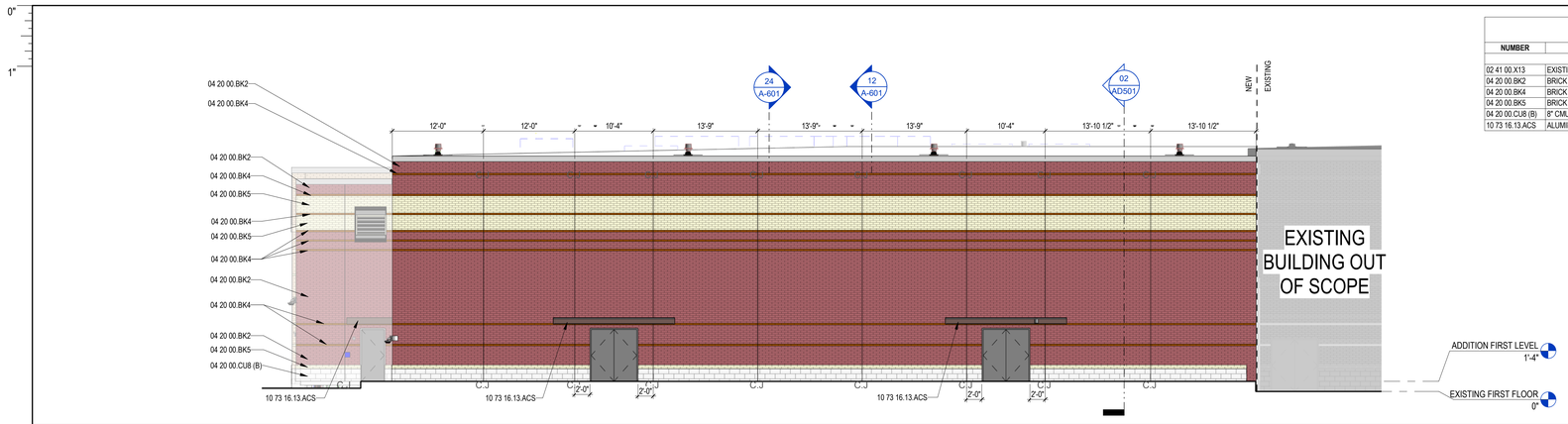
A-411

Plot Stamp:
6/3/2025 6:50:08 PM

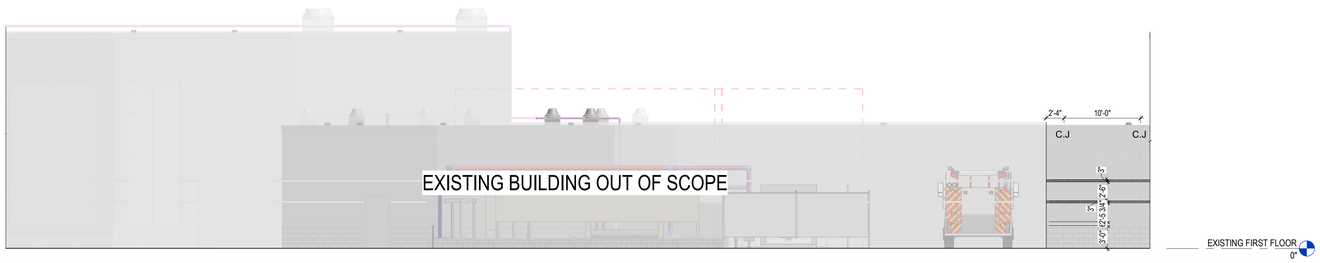
EXTERIOR ELEVATIONS - COMPOSITE - GYMNASIUM

A-501

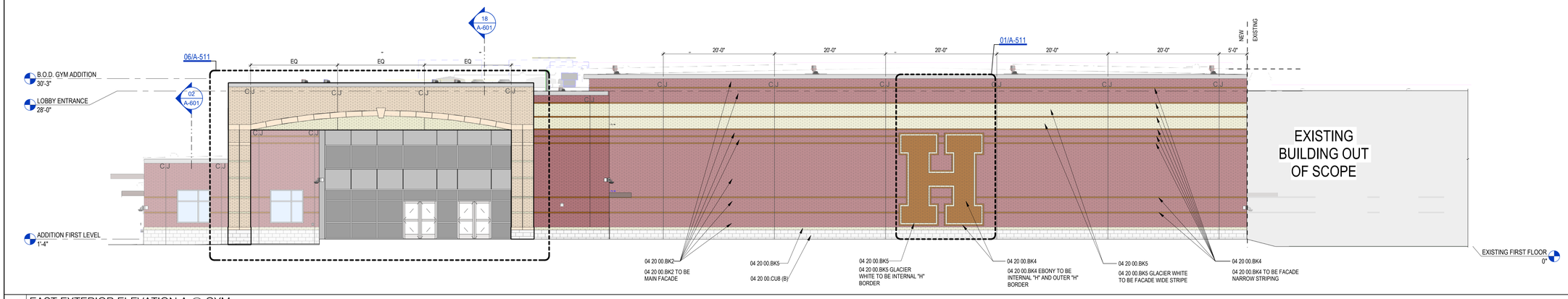
FOR BLUEBEAM LABELING/OCR:



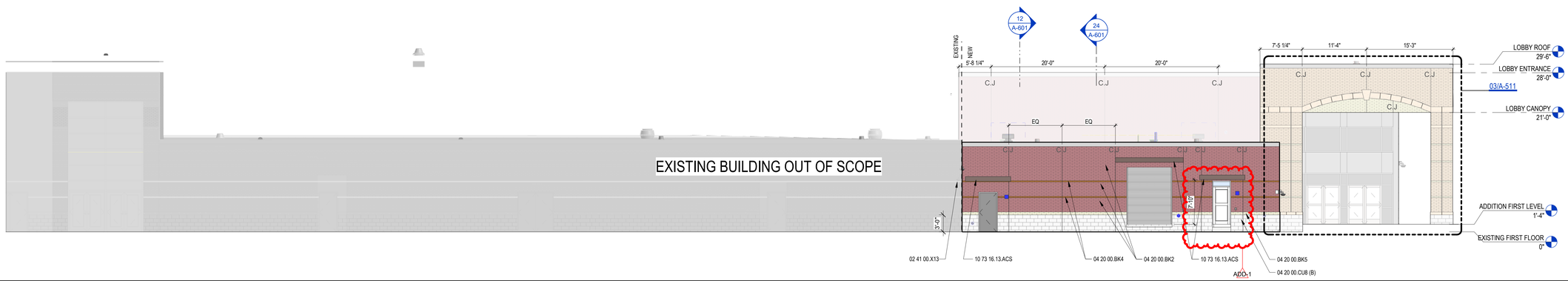
30 NORTH EXTERIOR ELEVATION @ GYM
1/8" = 1'-0"



18 EAST EXTERIOR ELEVATIONS B @ GYM
1/8" = 1'-0"



12 EAST EXTERIOR ELEVATION A @ GYM
1/8" = 1'-0"



06 SOUTH EXTERIOR ELEVATION @ LOCKER ROOM/GYM
1/8" = 1'-0"

KEYNOTE LEGEND

NUMBER	DESCRIPTION
02 41 00.X13	EXISTING SECURITY FIXTURE TO REMAIN, PROTECT AS REQUIRED
04 20 00.BK2	BRICK TYPE 2 - FIELD BURGUNDY
04 20 00.BK4	BRICK TYPE 4 - ACCENT EBONY
04 20 00.BK5	BRICK TYPE 5 - ACCENT GLACIER WHITE
04 20 00.CU8 (B)	8" CMU - BURNISHED
10 73 16.13.ACS	ALUMINUM CANOPY SYSTEM

GENERAL ELEVATION NOTES

1. ALL BUILDING EXPANSION JOINT TO BE 1" UNLESS OTHERWISE NOTED.
2. CONTROL JOINT IN MASONRY VENEER TO BE 3/8" TYPICAL UNLESS OTHERWISE NOTED. EXTEND FULL HEIGHT OF WALL.
3. 1/2" EXPANSION JOINT FILLER ON BOTH ENDS OF ALL STEEL LINTEL ANGLES.
4. EXPOSED EXTERIOR STRUCTURAL STEEL TUBE MEMBERS SHALL BE PAINTED P-9.
5. STEEL MASONRY LINTELS SHALL BE GALVANIZED.
6. EXPOSED CONCRETE WALLS, COLUMNS, AND BEAMS SHALL BE RUBBED GROUT FINISH.
7. MASONRY WEEP AT 16" O.C. MAXIMUM.
8. EXTERIOR ALUMINUM STOREFRONT SYSTEM SHALL HAVE ALUMINUM SUB-SILLS WITH END DAMS.
9. EXTERIOR ALUMINUM STOREFRONT SYSTEM SHALL HAVE CONTINUOUS ALUMINUM BACKFILLERS WITH CONTINUOUS PERIMETER ALUMINUM ANGLE.
10. FLEXIBLE MEMBRANE FLASHING AT WINDOWS SILLS AND LINTELS SHALL HAVE PRE-FORMED END DAMS.
11. MASONRY VENEER CONTROL JOINTS SHALL BE 3/8" AT INSIDE CORNERS. AT DISTANCES NOT TO EXCEED 3'-4" FROM OUTSIDE CORNERS, AND AT 30'-0" O.C. MAXIMUM. UNLESS NOTED OTHERWISE. REFERENCE EXTERIOR ELEVATIONS.
12. GUTTERS, CONDUCTOR HEADS, AND DOWNSPOUTS SHALL BE PRE-FINISHED SHEET METAL. COLOR SELECTED BY ARCHITECT.
13. DOWNSPOUTS SHALL HAVE 16 GAUGE PRE-FINISHED DOWNSPOUT BOOTS TO 6'-0" ABOVE FINISH GRADE. COLOR SELECTED BY ARCHITECT.
14. DOWNSPOUTS AND/OR ROOF DRAINS SHALL BE CONNECTED TO STORM DRAIN SYSTEM UNLESS OTHERWISE NOTED. REFERENCE CIVIL FOR STORM DRAIN CONNECTION DETAILS AND LOCATIONS.
15. CONTRACTOR SHALL PROVIDE MOCK-UP FOR EACH EXTERIOR CONDITION AND CONSTRUCTION ASSEMBLY TYPE. INCLUDE A 2X2 WINDOW MOCK-UP. MOCK-UP SHALL INCLUDE METAL FLASHINGS, VERTICAL AND HORIZONTAL FLEXIBLE MEMBRANE FLASHINGS, AND WINDOW INSTALLATIONS AS DETAILED IN CONSTRUCTION DOCUMENTS. MOCK-UP SHALL BE A MINIMUM OF 8'-0" TALL X 16'-0" LONG WITH AN EXTERIOR CORNER, INTERIOR CORNER, AND VERTICAL CONTROL JOINTS. COORDINATE LOCATION OF MOCK-UP PANEL WITH ARCHITECT PRIOR TO CONSTRUCTION.

EXTERIOR MATERIALS LEGEND

- **04 20 00.BK2 (R)** BRICK TYPE 2 BURGUNDY, RUNNING BOND
- **04 20 00.CU8** CONCRETE MASONRY, BLANCA BURNISHED
- **04 20 00.BK3 (R)** BRICK TYPE 3 DOVE GRAY, RUNNING BOND
- **04 72 00** CAST STONE MASONRY
- **04 20 00.BK4 (R)** BRICK TYPE 4 EBONY, RUNNING BOND
- **07 42 13.MPU4** AMERICLAD - BRAKE METAL - KYNAR 500 PARCHMENT SRI-58
- **04 20 00.BK5 (R)** BRICK TYPE 5 GLACIER WHITE, RUNNING BOND

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T 281-350-2323

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS

KEY PLAN

NORTH: PLAN TRUE

REGISTERED ARCHITECT MELISSA A. KAPPLE 30374 STATE OF TEXAS
Melissa Kapple
5/22/2025

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
ADD-1	ADD-1	08/20/2025
ADD-2	ADD-2	08/29/2025

EXTERIOR ELEVATIONS - COMPOSITE - GYMNASIUM

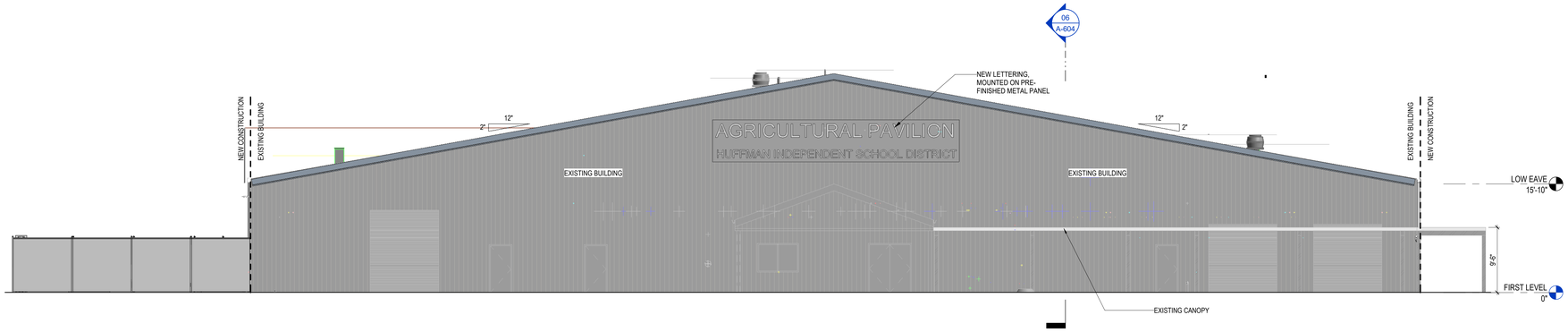
A-501

Plot Stamp:
6/3/2025 5:58:47 PM

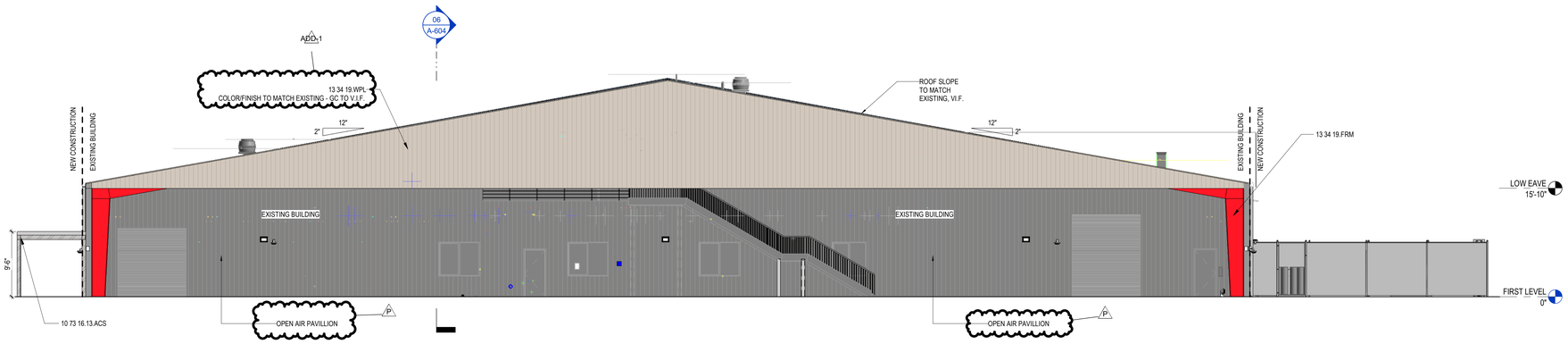
EXTERIOR ELEVATIONS -AG

A-503

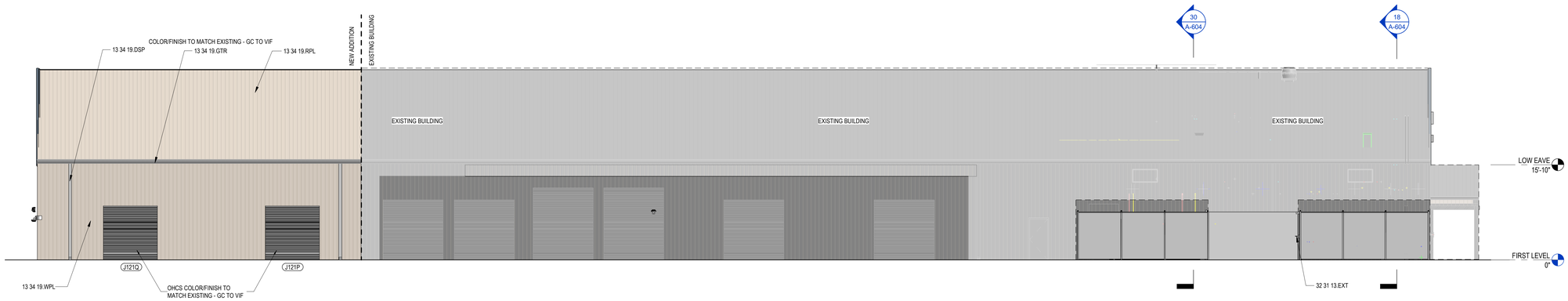
FOR BLUEBEAM LABELING/OCR:



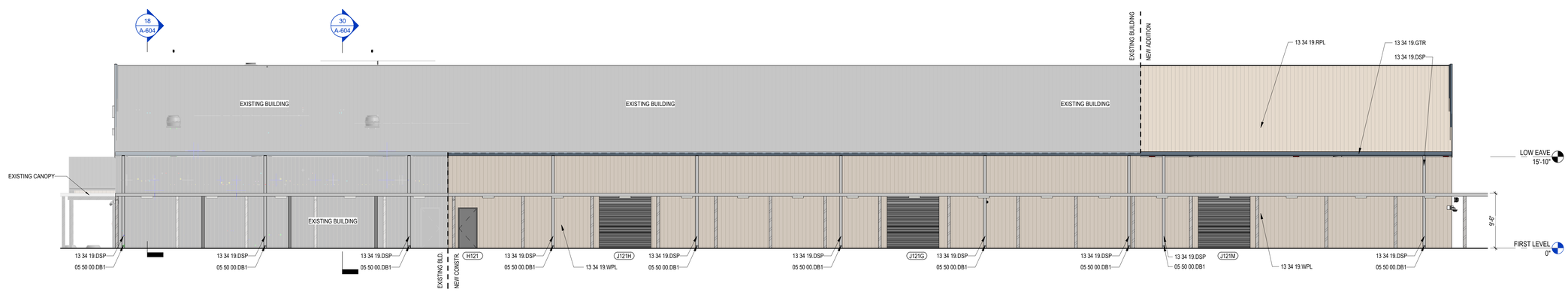
30 EXTERIOR ELEVATION - WEST
1/8" = 1'-0"



24 EXTERIOR ELEVATION - EAST
1/8" = 1'-0"



12 EXTERIOR ELEVATION - NORTH
1/8" = 1'-0"



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GENERAL ELEVATION NOTES

1. ALL BUILDING EXPANSION JOINT TO BE 1" UNLESS OTHERWISE NOTED.
2. CONTROL JOINT IN MASONRY VENEER TO BE 3/8" TYPICAL UNLESS OTHERWISE NOTED. EXTEND FULL HEIGHT OF WALL.
3. 1/2" EXPANSION JOINT FILLER ON BOTH ENDS OF ALL STEEL LINTEL ANGLES.
4. EXPOSED EXTERIOR STRUCTURAL STEEL TUBE MEMBERS SHALL BE PAINTED P-9.
5. STEEL MASONRY LINTELS SHALL BE GALVANIZED.
6. EXPOSED CONCRETE WALLS, COLUMNS, AND BEAMS SHALL BE RUBBED GROUT FINISH.
7. MASONRY WEEP AT 16" O.C. MAXIMUM.
8. EXTERIOR ALUMINUM STOREFRONT SYSTEM SHALL HAVE ALUMINUM SUB-SILLS WITH END DAMS.
9. EXTERIOR ALUMINUM STOREFRONT SYSTEM SHALL HAVE CONTINUOUS ALUMINUM BACKFILLERS WITH CONTINUOUS PERIMETER ALUMINUM ANGLE.
10. FLEXIBLE MEMBRANE FLASHING AT WINDOWS SILLS AND LINTELS SHALL HAVE PRE-FORMED END DAMS.
11. MASONRY VENEER CONTROL JOINTS SHALL BE 3/8" AT INSIDE CORNERS. AT DISTANCES NOT TO EXCEED 3'-4" FROM OUTSIDE CORNERS, AND AT 30'-0" O.C. MAXIMUM. UNLESS NOTED OTHERWISE. REFERENCE EXTERIOR ELEVATIONS.
12. GUTTERS, CONDUCTOR HEADS, AND DOWNSPOUTS SHALL BE PRE-FINISHED SHEET METAL. COLOR SELECTED BY ARCHITECT.
13. DOWNSPOUTS SHALL HAVE 16 GAUGE PRE-FINISHED DOWNSPOUT BOOTS TO 6'-0" ABOVE FINISH GRADE. COLOR SELECTED BY ARCHITECT.
14. DOWNSPOUTS AND/OR ROOF DRAINS SHALL BE CONNECTED TO STORM DRAIN SYSTEM UNLESS OTHERWISE NOTED. REFERENCE CIVIL FOR STORM DRAIN CONNECTION DETAILS AND LOCATIONS.
15. CONTRACTOR SHALL PROVIDE MOCK-UP FOR EACH EXTERIOR CONDITION AND CONSTRUCTION ASSEMBLY TYPE. INCLUDE A 2X2 WINDOW MOCK-UP. MOCK-UP SHALL INCLUDE METAL FLASHINGS, VERTICAL AND HORIZONTAL FLEXIBLE MEMBRANE FLASHINGS, AND WINDOW INSTALLATIONS AS DETAILED IN CONSTRUCTION DOCUMENTS. MOCK-UP SHALL BE A MINIMUM OF 8'-0" TALL X 16'-0" LONG WITH AN EXTERIOR CORNER, INTERIOR CORNER, AND VERTICAL CONTROL JOINTS. COORDINATE LOCATION OF MOCK-UP PANEL WITH ARCHITECT PRIOR TO CONSTRUCTION.
16. PROVIDE ALUMINUM TRANSITION STRIPS AT ALL OUTSIDE TILE CORNERS AND BETWEEN TILE TRANSITIONS WITH OTHER MATERIALS
17. ALL INTERIOR OUTSIDE CORNERS SHALL HAVE BULLNOSE U.N.O.
18. PROVIDE AND INSTALL CONT. REVEAL TRIM AT JOINT WHERE GYPSUM WALL PARTITIONS INTERSECT AND OR ADJOIN MASONRY WALL PARTITIONS IN THE SAME PLANE
19. PAINT ALL NON-FACTORY FINISHED EXPOSED METAL, INTERIOR AND EXTERIOR

KEYNOTE LEGEND

NUMBER	DESCRIPTION
05 50 00.DB1	DOWNSPOUT BOOT
10 73 16.13.ACS	ALUMINUM CANOPY SYSTEM
13 34 19.DSP	DOWNSPOUT
13 34 19.FRM	PRE-ENGINEERED BUILDING FRAME
13 34 19.GTR	GUTTER
13 34 19.RPL	PRE-ENGINEERED BUILDING ROOF PANEL, TO MATCH EXISTING ROOF PANEL PROFILE AND COLOR
13 34 19.WPL	PRE-ENGINEERED BUILDING WALL PANEL, TO MATCH EXISTING WALL PANEL PROFILE AND COLOR
32 31 13.EXT	GATE-MOUNTED EXIT DEVICE

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CIVIL
KIMLEY-HORN
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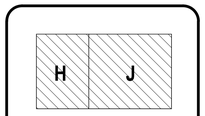
LANDSCAPE
EDGELAND
T 713-965-0505
KUBALA ENGINEERS
CONSULTING ME
T 713-965-0868
MEP
LEAF ENGINEERS
T 713-965-0505
ACOUSTIC
BAI LLC
T 713-961-7904
FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS
T 281-392-0222
ENVELOPE
BEAM PROFESSIONALS
T 713-965-0608

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: AGRICULTURAL PAVILION

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL



KEY PLAN
NORTH: PLAN TRUE

CLIENT
Huffman Independent School District

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
P	HC PERMIT RESPONSE	05/08/2025
ADD-1	ADD-1	06/04/2025

CHECKED BY: Checker

DRAWN BY: PL

EXTERIOR ELEVATIONS -AG

A-503

Plot Stamp:
6/3/2025 6:50:13 PM

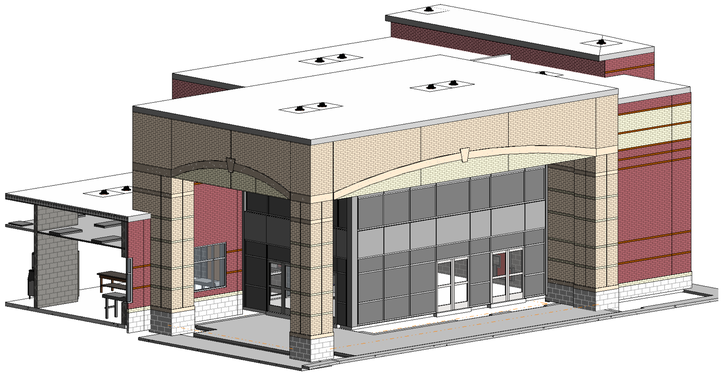
ENLARGED EXTERIOR ELEVATIONS - GYMNASIUM

A-511

FOR BLUEBEAM LABELING/OCR:

0"

1"

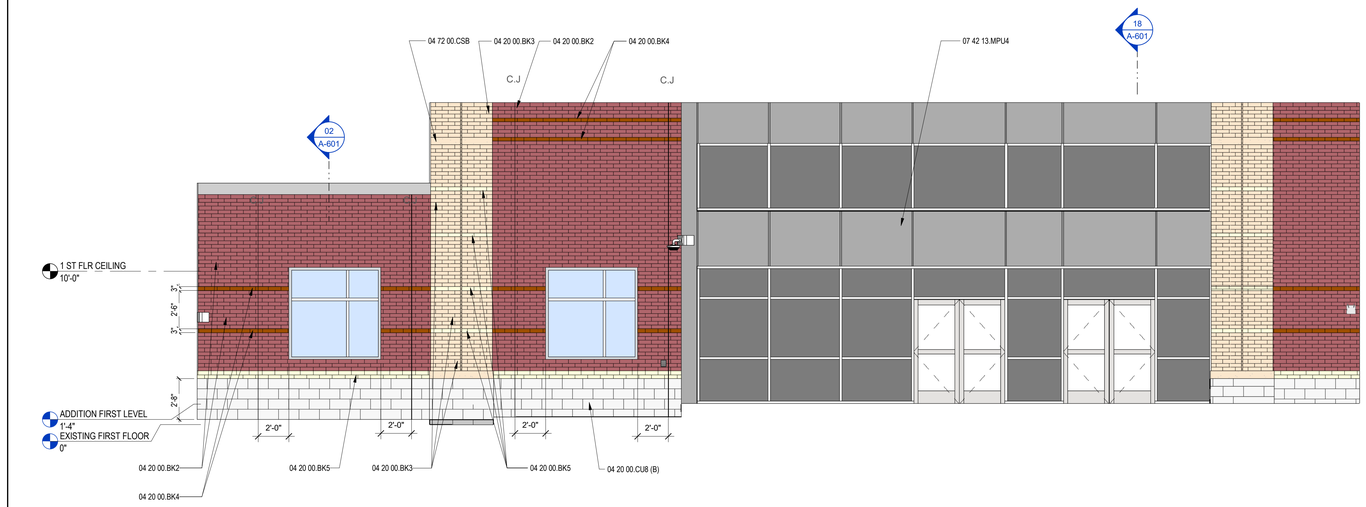


EXTERIOR MATERIALS LEGEND

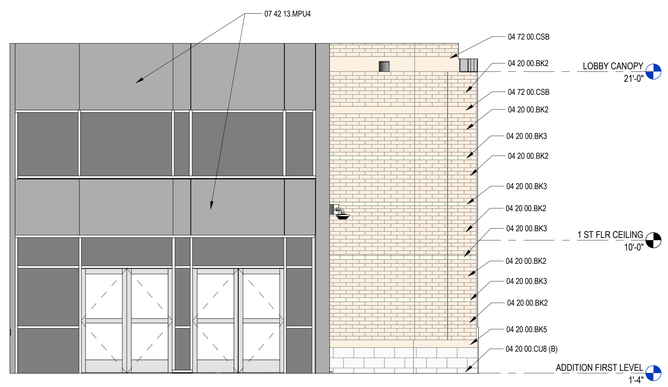
- **04 20 00.BK2 (R)** BRICK TYPE 2 BURGUNDY, RUNNING BOND
- **04 20 00.BK3 (R)** BRICK TYPE 3 DOVE GRAY, RUNNING BOND
- **04 20 00.BK4 (R)** BRICK TYPE 4 EBONY, RUNNING BOND
- **04 20 00.BK5 (R)** BRICK TYPE 5 GLACIER WHITE, RUNNING BOND
- **04 20 00.CU8** CONCRETE MASONRY, BLANCA BURNISHED
- **04 72 00** CAST STONE MASONRY
- **07 42 13.MPU4** AMERICLAD - BRAKE METAL - KYNAR 500 PARCHMENT SRI-58

KEYNOTE LEGEND

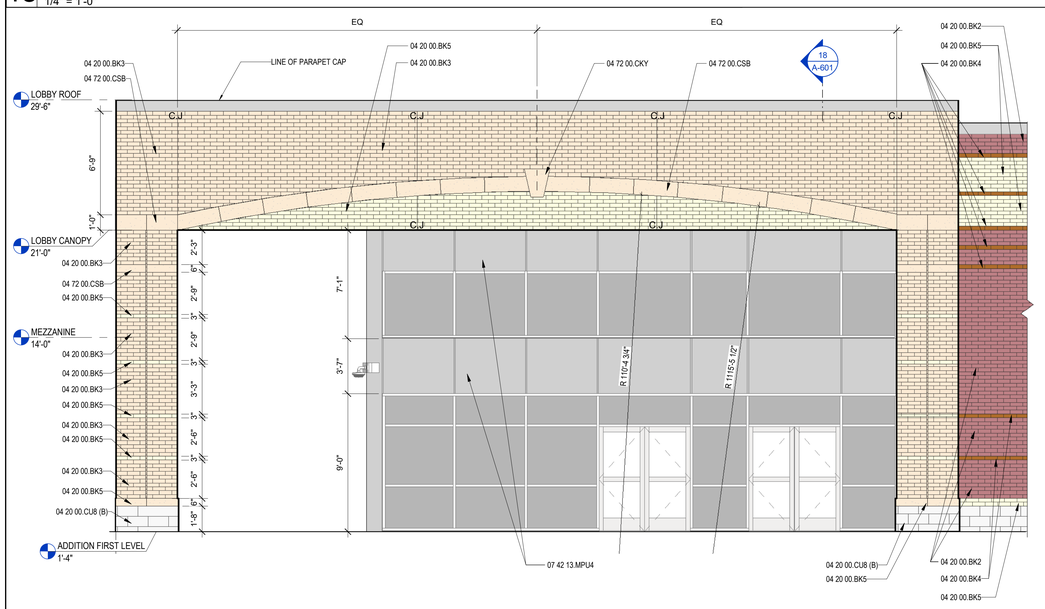
NUMBER	DESCRIPTION
04 20 00.BK2	BRICK TYPE 2 - FIELD BURGUNDY
04 20 00.BK3	BRICK TYPE 3 - ACCENT DOVE GRAY
04 20 00.BK4	BRICK TYPE 4 - ACCENT EBONY
04 20 00.BK5	BRICK TYPE 5 - ACCENT GLACIER WHITE
04 20 00.CU8 (B)	8" CMU - BURNISHED
04 72 00.CKY	CAST KEYSTONE
04 72 00.CSB	CAST STONE BANDING
07 42 13.MPU4	UNINSULATED METAL WALL PANEL, TYPE 4 - CONCEALED FASTENER



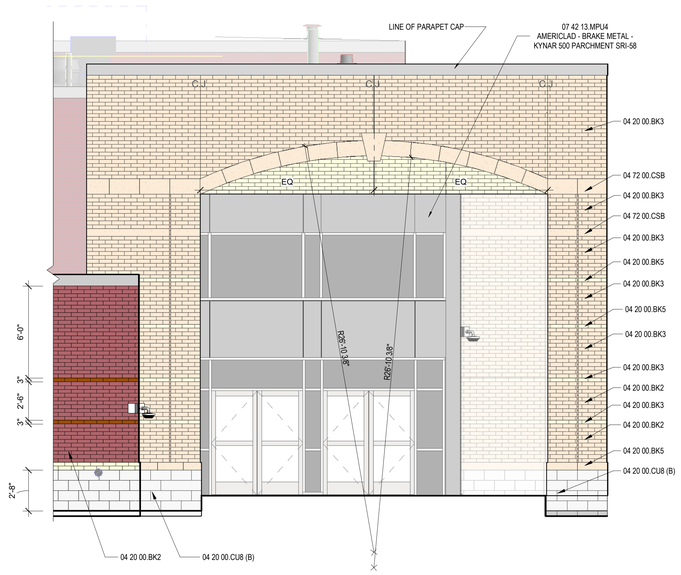
18 ENLARGED EXTERIOR ELEVATION- EAST OF LOBBY ENTRY
1/4" = 1'-0"



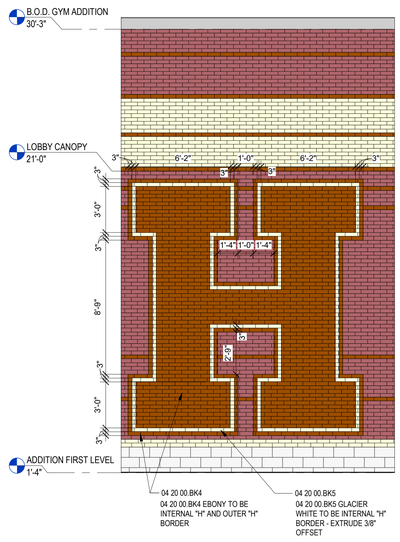
14 ENLARGED EXTERIOR ELEVATION SOUTH OF LOBBY ENTRY
1/4" = 1'-0"



06 ENLARGED EXTERIOR ELEVATION- EAST OF LOBBY
1/4" = 1'-0"



03 ENLARGED EXTERIOR ELEVATION SOUTH OF LOBBY
1/4" = 1'-0"



01 EAST EXTERIOR ELEVATION A @ GYM BRICK LAYOUT
1/4" = 1'-0"

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CIVIL
KIMLEY-HORN
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LANDSCAPE
EDGELAND
T 713-965-0005
STRUCTURAL
KUBRE & KUBRE ENGINEERS
T 713-960-0008
MEP
LEAF ENGINEERS
T 713-905-0505
ACOUSTIC
BAI, LLC
T 713-961-1984
EXTERIOR
BEAM PROFESSIONALS
T 713-965-0008
FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS, LLc
T 281-350-2323

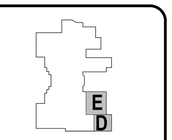
New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS



KEY PLAN

NORTH: PLAN TRUE

REGISTERED ARCHITECT MELISSA A. KAPPLE 30374 STATE OF TEXAS

melissa kapple
5/22/2025

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date

ENLARGED EXTERIOR ELEVATIONS - GYMNASIUM

A-511

Plot Stamp:
6/3/2025 5:58:53 PM

INTERIOR ELEVATIONS - GYM

A-521

FOR BLUEBEAM LABELING/OCR:

0"

1"

KEYNOTE LEGEND

NUMBER	DESCRIPTION
07 81 23.IIC	INTERIOR INTUMESCENT COATING
09 65 13.RB1	RESILIENT BASE, TYPE 1 - STANDARD RUBBER BASE
09 84 00.ARC13	ACOUSTIC ROOM COMPONENT TYPE 13 - CEMENTITIOUS WOOD FIBER
09 90 00.P1	PAINT TYPE 1 - FIELD
09 90 00.P2	PAINT TYPE 2 - ACCENT, RED (GYM)
09 90 00.P5	PAINT TYPE 5 - ACCENT, BLACK (BISTRO & GYM)
10 44 00.FEC(F)	FIRE EXTINGUISHER CABINET, FULLY-RECESSED
11 66 23.BBF	BASKETBALL BACKSTOP, OVERHEAD SUPPORTED, FOLDING
11 66 23.WP1	WALL PADDING, TYPE 1
11 66 43.SCB	INTERIOR SCOREBOARD
12 11 13.VG2	VINYL GRAPHIC - [DESCRIPTOR]
12 66 13	TELESCOPING BLEACHERS (ARCHITECTURAL OR SPORTS - PBK ARCHITECTS)

GENERAL INT. ELEV. NOTES

1. REFER TO MEPT DRAWINGS FOR ALL DATA/POWER OUTLET LOCATIONS, COORDINATE WITH ARCHITECT IN FIELD.
2. PAINT ALL EXPOSED GYP BD AND CMU WALLS. ALL WALLS ARE TO BE PAINTED PT-1 UNLESS OTHERWISE STATED.
3. PAINT ALL DUCTWORK, DISFUSER COVERS, CONDUITS, PIPING, GYP. BOARD CEILING FURRDOWNS, STRUCTURAL BEAMS, STRUCTURAL JOISTS, STRUCTURAL COLUMNS, METAL ROOF DECK, AND OTHER STRUCTURAL MEMBERS - BOTH INTERIOR AND EXTERIOR - WHERE EXPOSED TO VIEW. COORDINATE PAINT COLOR(S) WITH ARCHITECT.
4. FOR FINISH SCHEDULES SEE SHEETS.
5. SEE SHEETS A-842, A-843 AND A-851 FOR CASEWORK ELEVATIONS AND DETAILS.
6. ALL MARKER BOARDS AND TACK BOARDS TO BE MOUNTED 2'-10" A.F.F. MAX FROM WRITABLE OR TACKABLE SURFACE.
7. FOR SIGNAGE PLANS AND SCHEDULES REFER TO AG SHEET SERIES.
8. REFER TO G-400 FOR TYPICAL MOUNTING HEIGHTS.
9. ALIGN ALL SIGNS VERTICALLY AND HORIZONTALLY, TYP.
10. FOR RESTROOM ENLARGED PLANS AND INTERIOR ELEVATIONS SEE SHEET A-408
11. PROVIDE CONTROL JOINTS AT ALL DOOR, WINDOW, AND CASE OPENINGS AND MINIMUM 15" O.C. CONTRACTOR TO COORDINATE LOCATION OF WALL JOINTS WITH SLAB JOINTS AND CEILING LAYOUT. OWNER AND ARCHITECT TO APPROVE IN FIELD PRIOR TO INSTALLATION.
12. PROVIDE BACKING AT ALL MARKER BOARDS, T.V.s, AND OTHER HEAVY WALL MOUNTED ITEMS.
13. COORDINATE SIZE OF APPLIANCES WITH CASEWORK DIMENSIONS IN FIELD PRIOR TO FABRICATION. PROVIDE FILLER PANELS FOR BUILT-IN LOOK.
14. PROVIDE CORNER GUARDS AT ALL EXTERIOR CORNERS IN CORRIDORS, COLORS TO MATCH ADJACENT PAINT. PROVIDE CLEAR CORNER GUARDS AT VINYL WALL GRAPHIC LOCATIONS.
15. PROVIDE ALUMINUM TRANSITION STRIPS AT ALL OUTSIDE TILE CORNERS AND BETWEEN TILE TRANSITIONS WITH OTHER MATERIALS
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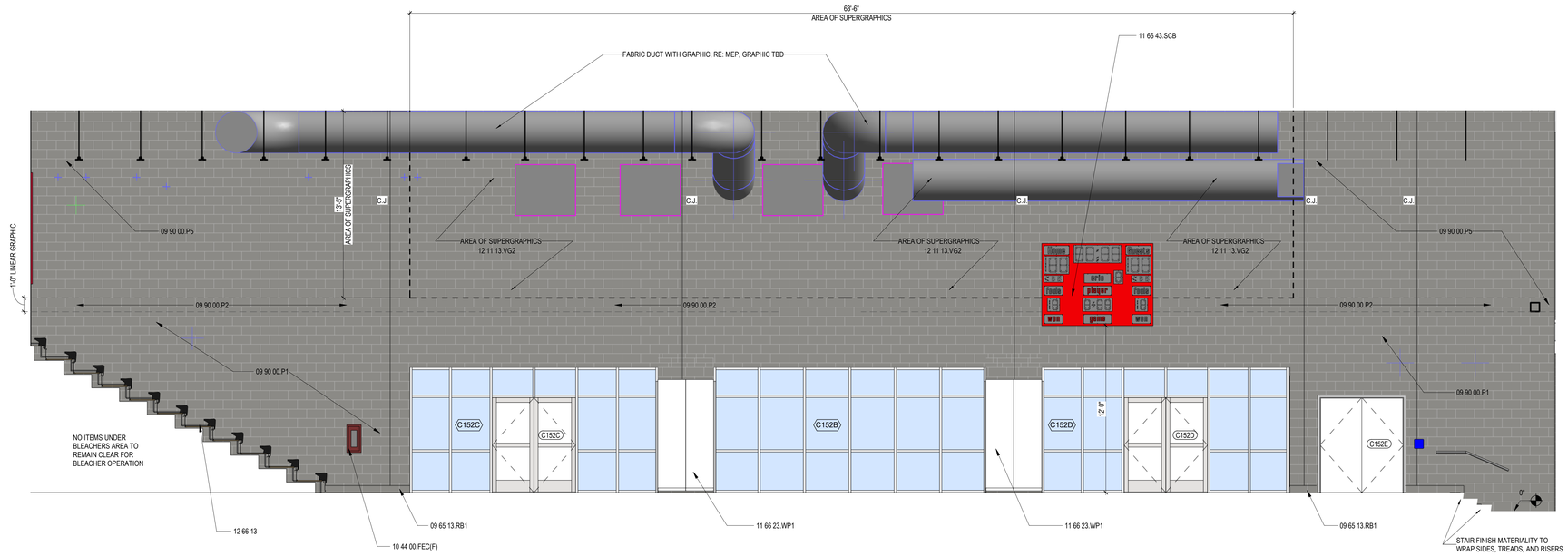
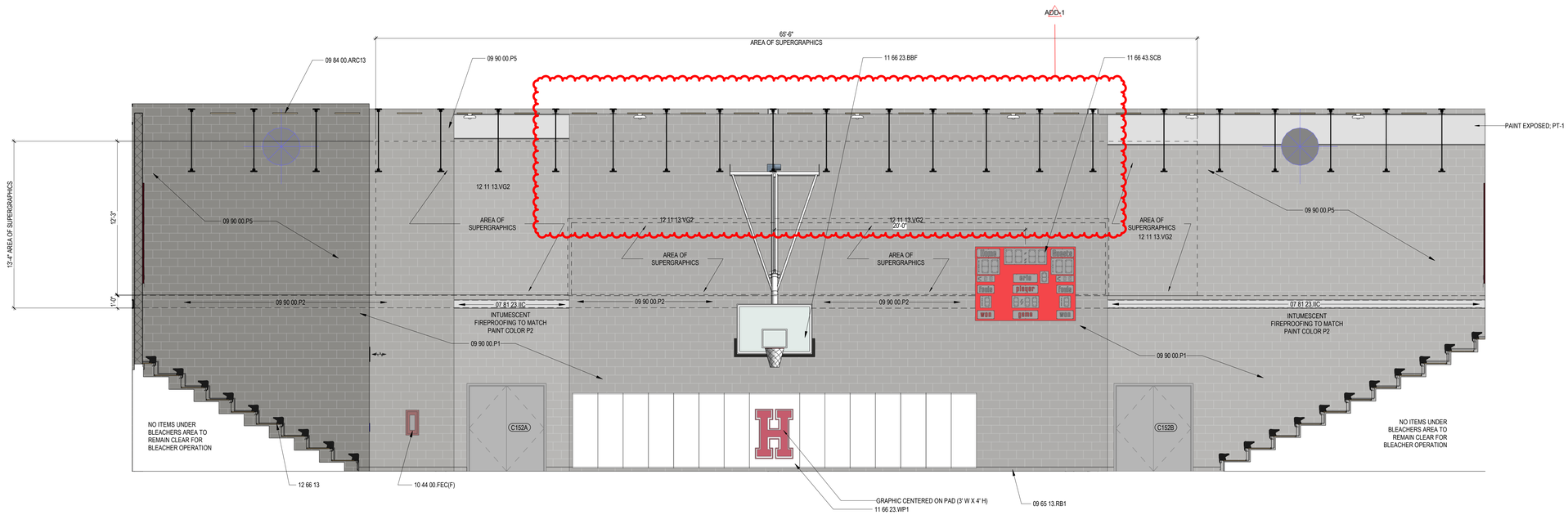
18. PAINT ALL NON-FACTORY FINISHED EXPOSED METAL, INTERIOR AND EXTERIOR



18 NEW GYM C152 SOUTH ELEVATION
1/4" = 1'-0"



06 NEW GYM C152 NORTH ELEVATION
1/4" = 1'-0"

PBK

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CIVIL
KIMLEY-HORN
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LANDSCAPE
EDGELAND
T 713-965-0505
STRUCTURAL
KUBRA ENGINEERS
T 713-965-0505
MEP/FP
LEAF ENGINEERS
T 713-965-0505
ACOUSTIC
BAI, LLC
T 713-961-1004
EXTERIOR
BEAM PROFESSIONALS
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FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS, LLc
T 281-350-2323

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

KEY PLAN

NORTH: PLAN TRUE

REGISTERED ARCHITECT MELISSA A. KAPPLE 30374 STATE OF TEXAS

Melissa Kapple
5/22/2025

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

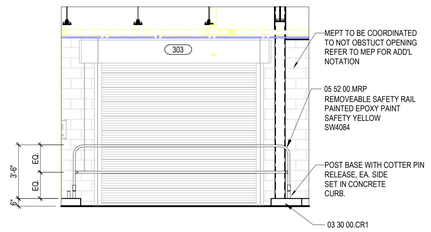
No.	Description	Date
ADD-1	ADD-1	08/20/2025

INTERIOR ELEVATIONS - GYM

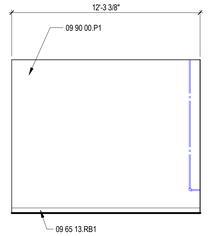
A-521

Plot Stamp:
6/3/2025 5:58:58 PM

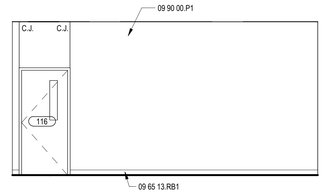
INTERIOR ELEVATIONS - CTE
A-548
FOR BLUEBEAM LABELING/OCR:



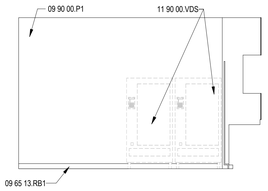
29 INT. ELEVATION WEST WALL MECH MEZZ. 300
1/4" = 1'-0"



28 AREA L - CONFERENCE RM 117 - NORTH
1/4" = 1'-0"



27 AREA L - ADMIN BREAKROOM 116 - EAST
1/4" = 1'-0"



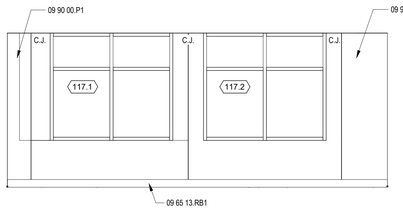
26 AREA L - ADMIN BREAKRM 116 - SOUTH
1/4" = 1'-0"

GENERAL INT. ELEV. NOTES

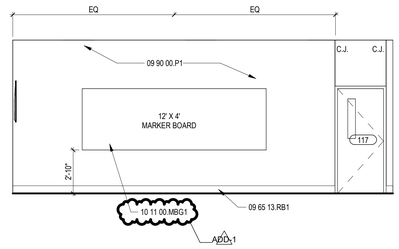
1. REFER TO MEPT DRAWINGS FOR ALL DATA/POWER OUTLET LOCATIONS, COORDINATE WITH ARCHITECT IN FIELD.
2. PAINT ALL EXPOSED GYP BD AND CMU WALLS. ALL WALLS ARE TO BE PAINTED PT-1 UNLESS OTHERWISE STATED.
3. PAINT ALL DUCTWORK, CONDUITS, SUPPLY AIR, RETURN GRILLS, PIPING, GYP. BOARD CEILING FURRDOWNS, STRUCTURAL BEAMS, STRUCTURAL JOISTS, STRUCTURAL COLUMNS, METAL ROOF DECK, AND OTHER STRUCTURAL MEMBERS - BOTH INTERIOR AND EXTERIOR - WHERE EXPOSED TO VIEW. COORDINATE PAINT COLOR(S) WITH ARCHITECT.
4. FOR FINISH SCHEDULES SEE SHEETS AF100.
5. SEE SHEETS A-842, A-843 AND A-851 FOR CASEWORK ELEVATIONS AND DETAILS.
6. ALL MARKER BOARDS AND TACK BOARDS TO BE MOUNTED 2'-10" A.F.F. MAX FROM WRITABLE OR TACKABLE SURFACE.
7. FOR SIGNAGE PLANS AND SCHEDULES REFER TO AG SHEET SERIES.
8. REFER TO G-400 FOR TYPICAL MOUNTING HEIGHTS.
9. ALIGN ALL SIGNS VERTICALLY AND HORIZONTALLY, TYP.
10. FOR RESTROOM ENLARGED PLANS AND INTERIOR ELEVATIONS SEE SHEETS A-411, A-412 AND A-540 THROUGH A-548.
11. PROVIDE CONTROL JOINTS AT ALL DOOR, WINDOW, AND CASE OPENINGS AND MINIMUM 15" O.C. CONTRACTOR TO COORDINATE LOCATION OF WALL JOINTS WITH SLAB JOINTS AND CEILING LAYOUT. OWNER AND ARCHITECT TO APPROVE IN FIELD PRIOR TO INSTALLATION.
12. PROVIDE BACKING AT ALL MARKER BOARDS, T.V.s, AND OTHER HEAVY WALL MOUNTED ITEMS.
13. COORDINATE SIZE OF APPLIANCES WITH CASEWORK DIMENSIONS IN FIELD PRIOR TO FABRICATION. PROVIDE FILLER PANELS FOR BUILT-IN LOOK.
14. PROVIDE CORNER GUARDS AT ALL EXTERIOR CORNERS IN CORRIDORS, COLORS TO MATCH ADJACENT PAINT. PROVIDE CLEAR CORNER GUARDS AT VINYL WALL GRAPHIC LOCATIONS.
15. PROVIDE ALUMINUM TRANSITION STRIPS AT ALL OUTSIDE TILE CORNERS AND BETWEEN TILE TRANSITIONS WITH OTHER MATERIALS
16. ALL INTERIOR OUTSIDE CORNERS SHALL HAVE BULLNOSE U.N.O.
17. PROVIDE AND INSTALL CONT. REVEAL TRIM AT JOINT WHERE GYPSUM WALL PARTIITIONS INTERSECT AND OR ADJOIN MASONRY WALL PARTITIONS IN THE SAME PLANE
18. PAINT ALL NON-FACTORY FINISHED EXPOSED METAL, INTERIOR AND EXTERIOR

KEYNOTE LEGEND

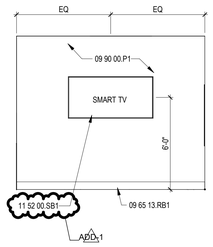
NUMBER	DESCRIPTION
03 30 00.CR1	6" CAST-IN PLACE CONCRETE CURB AT MECHANICAL
05 52 00.MRP	STEEL RAILING SYSTEM, PAINT [COLOR]
07 81 23.IIC	INTERIOR INTUMESCENT COATING
09 65 13.RB1	RESILIENT BASE, TYPE 1 - STANDARD RUBBER BASE
09 90 00.P1	PAINT TYPE 1 - FIELD
10 11 00.MBG1	MAGNETIC GLASS MARKERBOARD 1
10 14 00.RID	ROOM/DOOR SIGN
11 52 00.SB1	SMARTBOARD (OFOI)
11 90 00.VDS	SNACK VENDING MACHINE (OFOI)



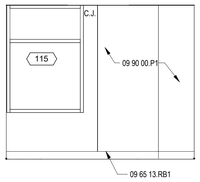
24 AREA L - CONFERENCE ROOM 117 - EAST
1/4" = 1'-0"



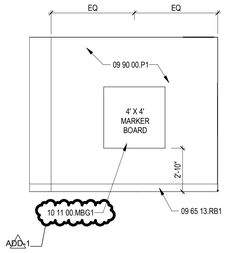
22 AREA L - CONFERENCE RM 117 - WEST
1/4" = 1'-0"



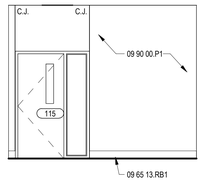
20 AREA L - CONFERENCE RM 117 - SOUTH
1/4" = 1'-0"



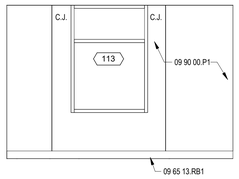
18 AREA L - AP OFFICE 115 - EAST ELEVATION
1/4" = 1'-0"



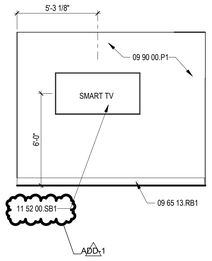
17 AREA L - AP OFFICE 115 - SOUTH ELEVATION
1/4" = 1'-0"



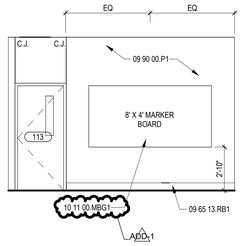
16 AREA L - AP OFFICE 115 - WEST ELEVATION
1/4" = 1'-0"



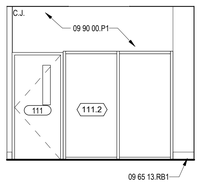
15 AREA L - DIRECTOR 113 - EAST ELEVATION
1/4" = 1'-0"



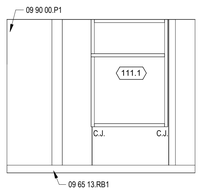
14 AREA L - DIRECTOR 113 - SOUTH ELEVATION
1/4" = 1'-0"



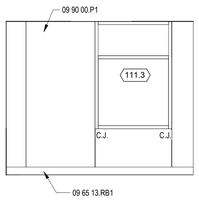
13 AREA L - DIRECTIOR 113 - WEST ELEVATION
1/4" = 1'-0"



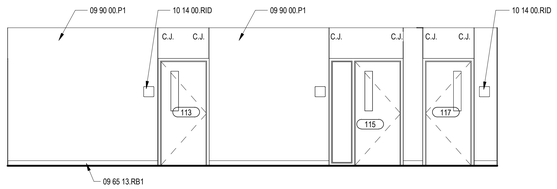
12 AREA L - SECRETARY 111 - WEST ELEVATION
1/4" = 1'-0"



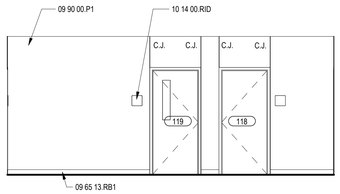
11 AREA L - SECRETARY 111 - NORTH ELV
1/4" = 1'-0"



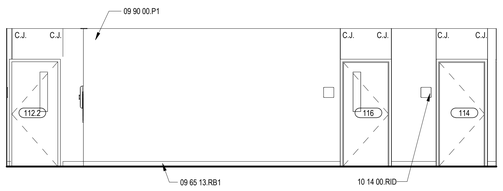
10 AREA L - SECTETARY 111 - EAST ELEVATION
1/4" = 1'-0"



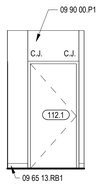
09 AREA L - ADMIN CORRIDOR 112 - EAST
1/4" = 1'-0"



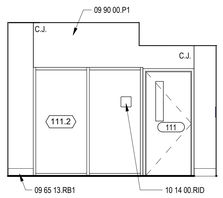
07 AREA L - ADMIN CORRIDOR 112 - SOUTH
1/4" = 1'-0"



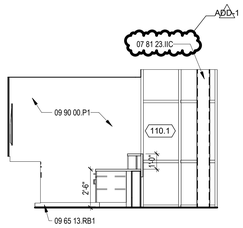
06 AREA L - ADMIN CORRIDOR 112 - WEST
1/4" = 1'-0"



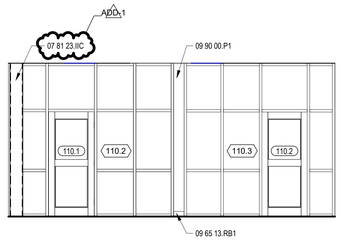
04 AREA L - ADMIN CORRIDOR 112 - NORTH
1/4" = 1'-0"



03 AREA L - RECEPTION 110 - EAST ELEVATION
1/4" = 1'-0"



02 AREA L - RECEPTION 110 - WEST ELEVATION
1/4" = 1'-0"



01 AREA L - RECEPTION 110 - NORTH ELV
1/4" = 1'-0"

PBK

ARCHITECT PBK Architects, Inc.
PBK.com
HOUSTON
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-961-0608 P
713-961-4571 F
TX Firm: BR 1608

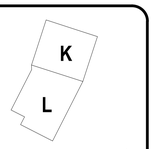
CIVIL
KIMLEY-HORN
T 281-497-9300
LANDSCAPE
EDGELAND
T 713-965-0505
STRUCTURAL
KUBRE & KUBRE ENGINEERS
T 713-960-0808
MEPT
LEAF ENGINEERS
T 713-905-0505
ACOUSTIC
BAI, INC.
T 713-961-1964
EXHIBITORS
BEAM PROFESSIONALS
T 713-965-0505
FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS, LLc
T 281-350-2323

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL



KEY PLAN
NORTH: PLAN TRUE

REGISTERED ARCHITECT
MELISSA A. KAPPLE
J0374
STATE OF TEXAS
melissa kapple
5/22/2025

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
ADD-1	ADD-1	06/04/2025

CHECKED BY: Checker
DRAWN BY: Author

INTERIOR ELEVATIONS - CTE

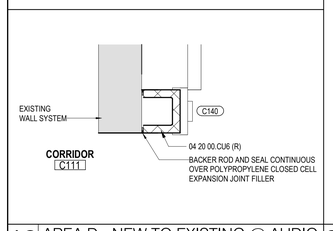
A-548

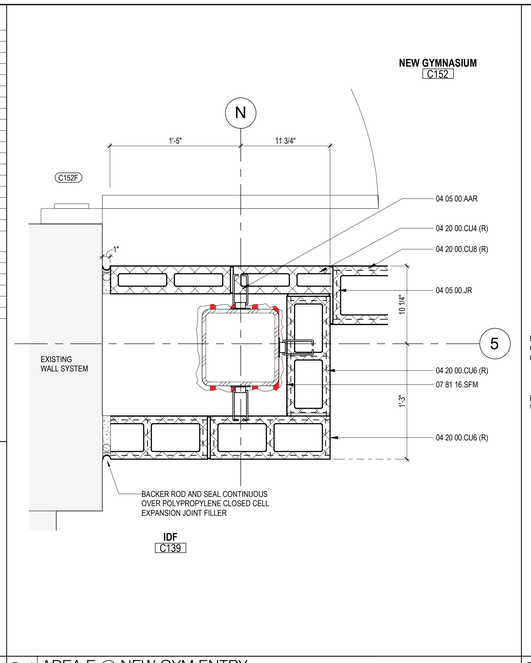
Plot Stamp:
6/3/2025 5:47:28 PM

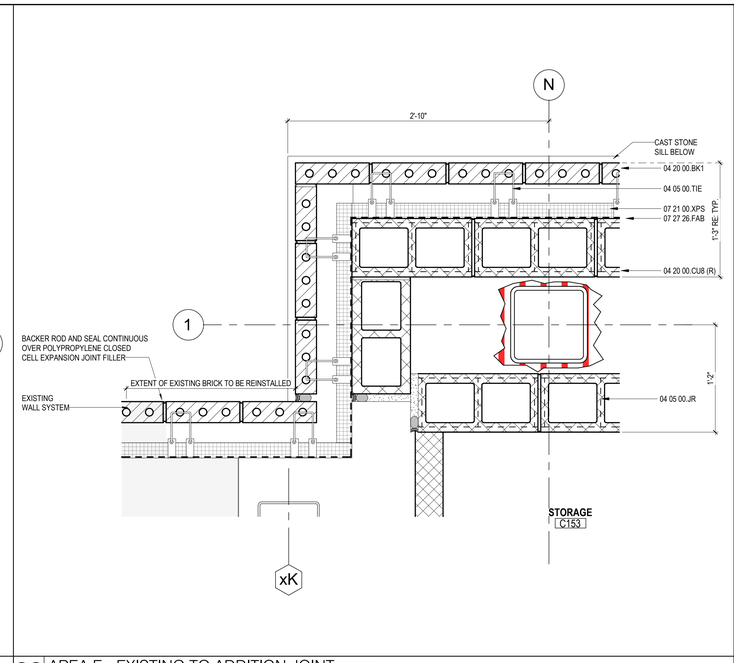
PLAN DETAILS - GYMNASIUM ADDITION
A-701
FOR BLUEBEAM LABELING/OCR:

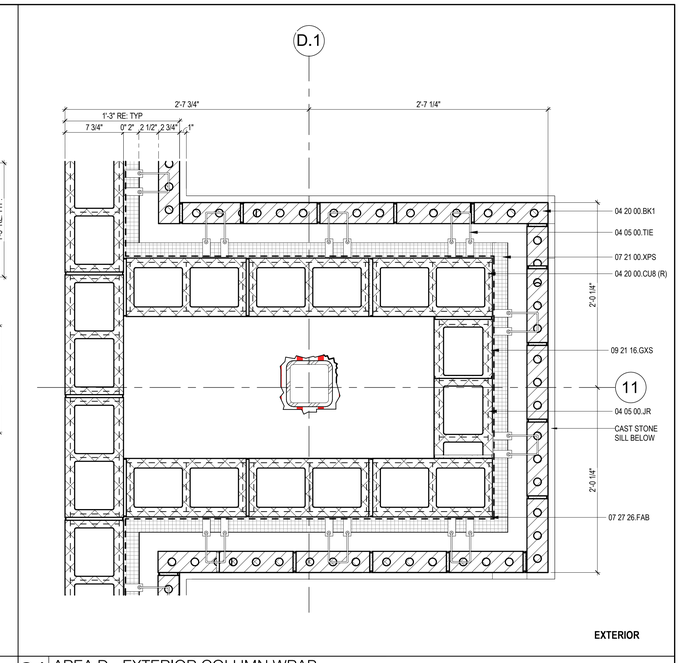
KEYNOTE LEGEND

NUMBER	DESCRIPTION
04 05 00.AAR	ANCHOR AS REQUIRED
04 05 00.JR	JOINT REINFORCEMENT
04 05 00.MBN	MASONRY BULL NOSE, TYP.
04 05 00.TIE	TIE SYSTEM
04 20 00.BK1	BRICK TYPE 1 - FIELD WESTERN KING
04 20 00.BK2	BRICK TYPE 2 - FIELD BURGUNDY
04 20 00.CU4 (R)	4" CMU - RUNNING BOND
04 20 00.CU6 (R)	6" CMU - RUNNING BOND
04 20 00.CU8 (R)	8" CMU - RUNNING BOND
05 12 00.CLM	STEEL COLUMN, REFER TO STRUCTURAL
07 21 00.XPS	2" EXTRUDED POLYSTYRENE BOARD INSULATION
07 27 26.FAB	FLUID-APPLIED AIR BARRIER SYSTEM, REFER TO ENVELOPE DRAWINGS
07 81 16.SFM	SPRAYED FIRE-RESISTIVE MATERIAL
07 92 00.BRS	CONTINUOUS BACKER ROD AND SEALANT AS REQUIRED
07 92 00.SES	CONTINUOUS SEALANT, EACH SIDE
08 43 13.SFX	EXTERIOR ALUMINUM-FRAMED STOREFRONT SYSTEM
09 21 16.FC2	FRAMING, LIGHT-GAUGE METAL CHANNEL, FURRING - 1-1/2 INCH HAT-SHAPED
09 21 16.FCZ	FRAMING, LIGHT-GAUGE METAL CHANNEL, Z-SHAPED
09 21 16.FS1	FRAMING, LIGHT-GAUGE METAL STUD, 1-5/8 INCH
09 21 16.FS2	FRAMING, LIGHT-GAUGE METAL STUD, 2-1/2 INCH
09 21 16.FS3	FRAMING, LIGHT-GAUGE METAL STUD, 3-5/8 INCH
09 21 16.GXS	GYPSUM BOARD, EXTERIOR SHEATHING - GLASS-MAT FACED
11 66 23.WP1	WALL PADDING, TYPE 1







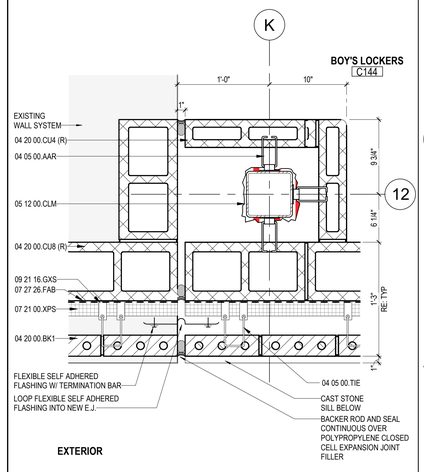


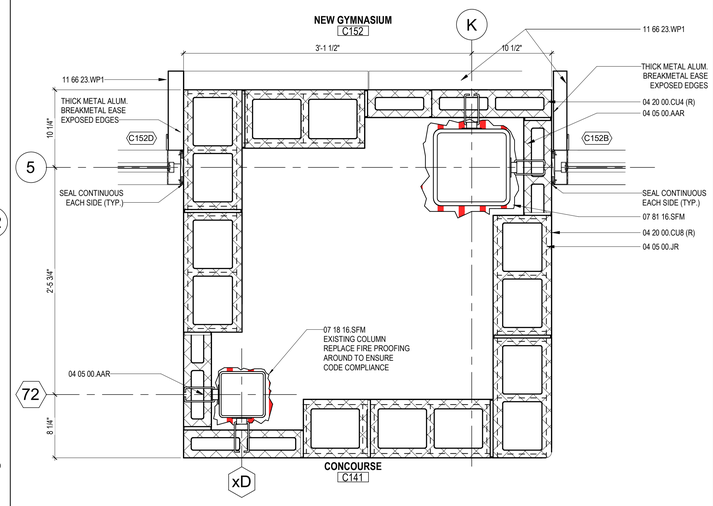
19 AREA D - NEW TO EXISTING @ AUDIO
1 1/2" = 1'-0"

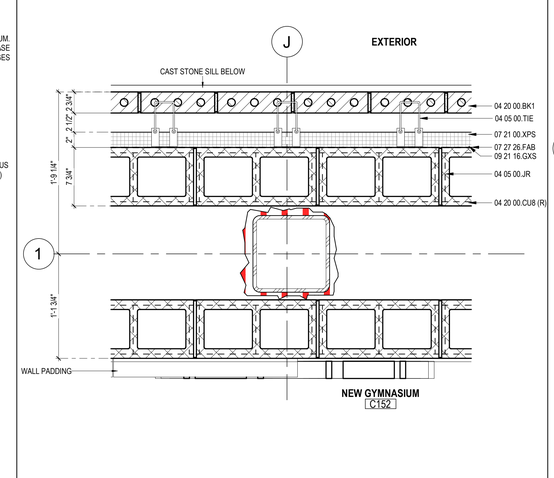
24 AREA E @ NEW GYM ENTRY
1 1/2" = 1'-0"

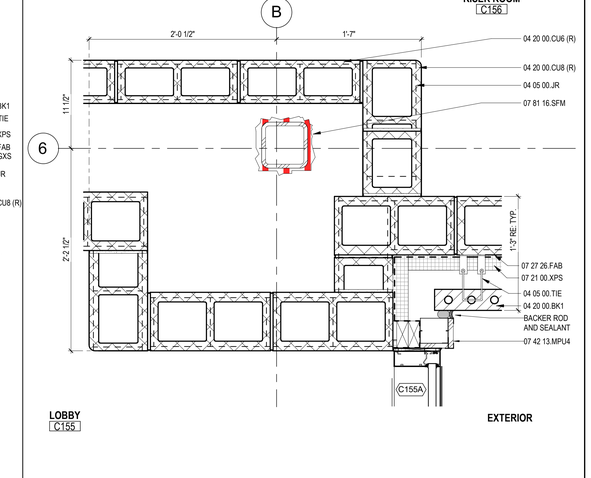
23 AREA E - EXISTING TO ADDITION JOINT
1 1/2" = 1'-0"

21 AREA D - EXTERIOR COLUMN WRAP
1 1/2" = 1'-0"







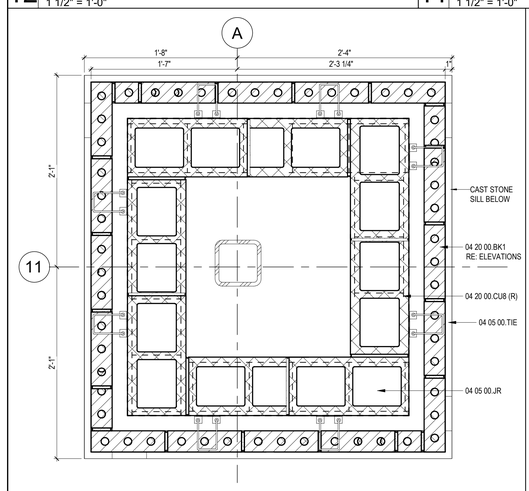


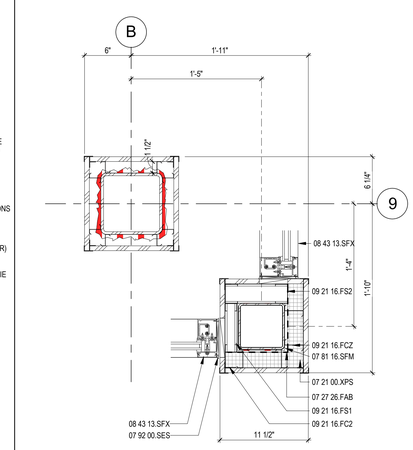
12 AREA D - JOINT CONN. FOR EXIST. TO ADD.
1 1/2" = 1'-0"

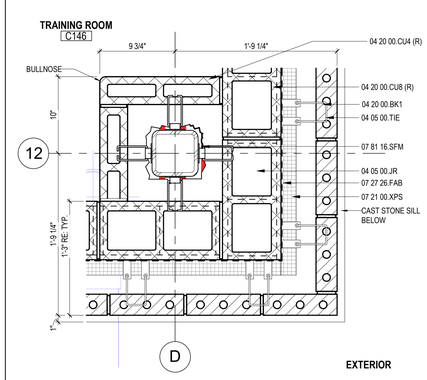
11 AREA E - NEW GYMNASIUM
1 1/2" = 1'-0"

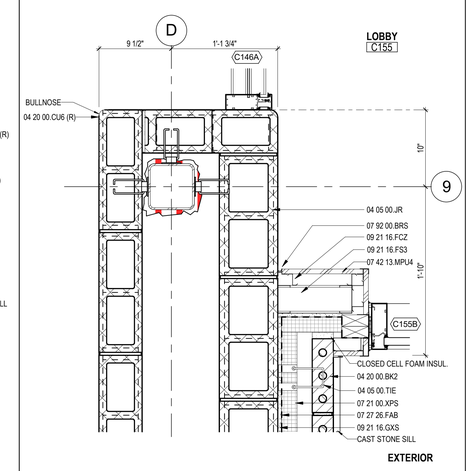
10 AREA D - NORTH EXTERIOR WALL @ GYM
1 1/2" = 1'-0"

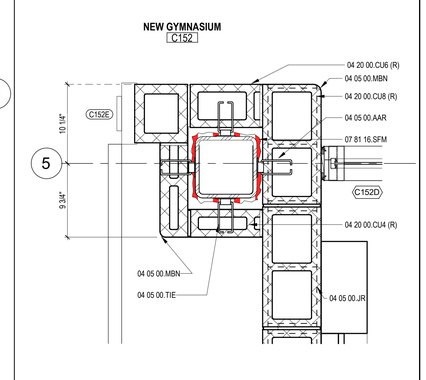
08 AREA D - @ COLUMN FURROUT
1 1/2" = 1'-0"











06 AREA D - EXTERIOR COLUMN @ ENTRY
1 1/2" = 1'-0"

05 AREA D @ LOBBY ENTRY
1 1/2" = 1'-0"

04 AREA D - TYP. EXTERIOR COLUMN WRAP DETAIL
1 1/2" = 1'-0"

02 AREA D @ LOBBY
1 1/2" = 1'-0"

01 ENLARGED PLAN @ GYM STOREFRONT
1 1/2" = 1'-0"

PBK

ARCHITECT PBK Architects, Inc.
PBK.com
HOUSTON
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-961-0608 P
713-961-4571 F
TX Firm: BR 1608

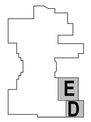
CIVIL
KIMLEY-HORN
T 281-597-9300
LANDSCAPE
EDGELAND
T 713-965-0005
STRUCTURAL
KUBRE & KUBRE ENGINEERS
T 713-965-0600
MEP
LEAF ENGINEERS
T 713-905-0505
ACOUSTIC
BAI, LLC
T 713-961-0304
ENVELOPE
BEAM PROFESSIONALS
T 713-965-0505
FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS, LLc
T 281-350-2323

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL



KEY PLAN
NORTH: PLAN TRUE

5/22/2025

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date

PLAN DETAILS - GYMNASIUM ADDITION

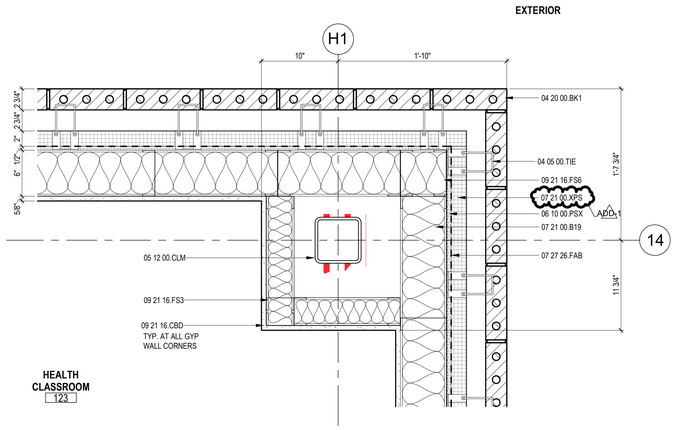
A-701

Plot Stamp:
6/3/2025 5:59:25 PM

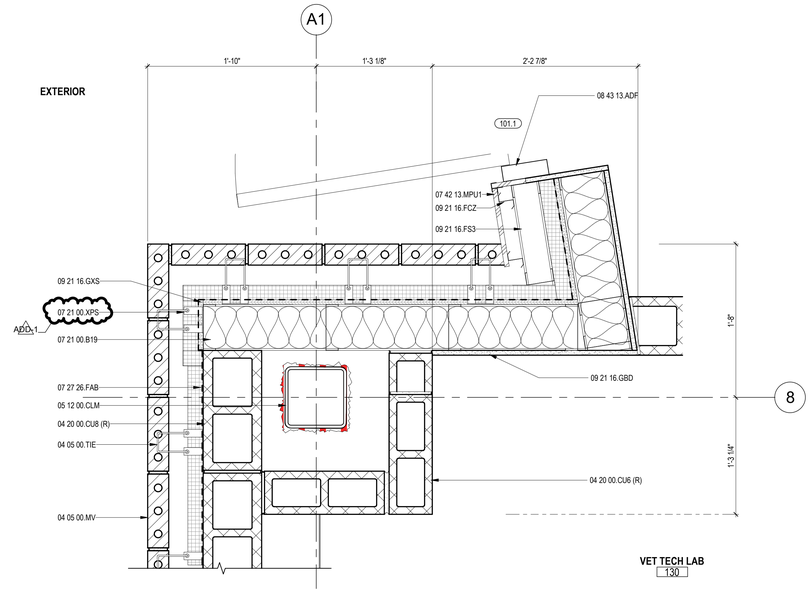
PLAN DETAILS - CTE
A-703
FOR BLUEBEAM LABELING/OCR:

KEYNOTE LEGEND

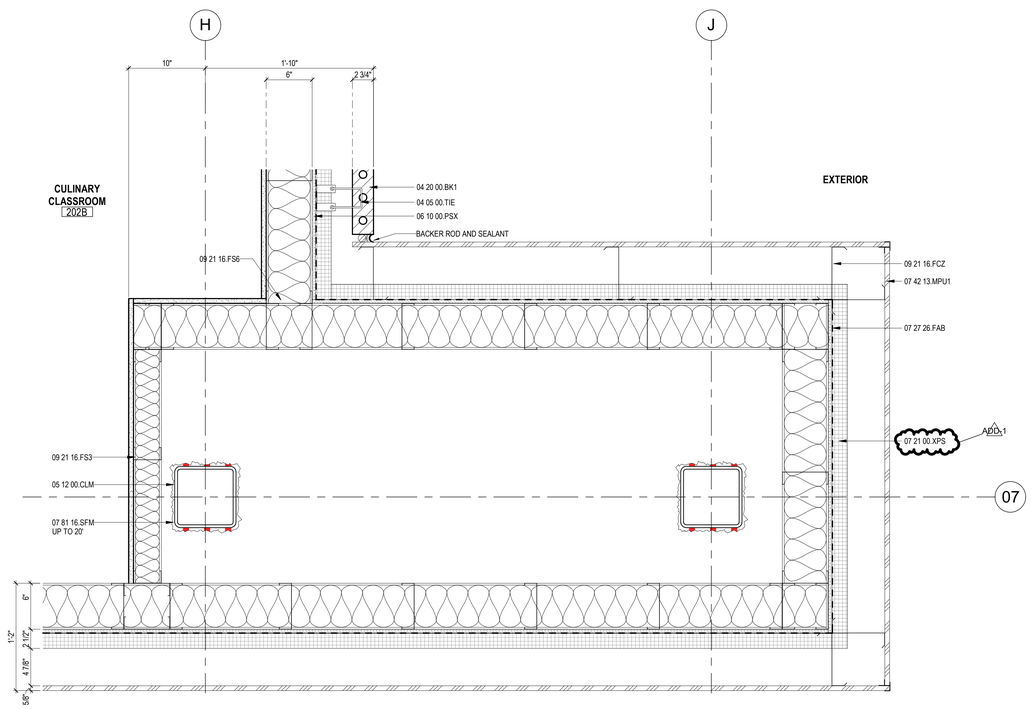
NUMBER	DESCRIPTION
04 05 00.JR	JOINT REINFORCEMENT
04 05 00.MV	MASONRY VENEER, REFER TO ELEVATIONS FOR TYPES AND PATTERNS
04 05 00.TIE	TIE SYSTEM
04 20 00.BK1	BRICK TYPE 1 - FIELD WESTERN KING
04 20 00.CU6 (R)	6" CMU - RUNNING BOND
04 20 00.CU8 (R)	8" CMU - RUNNING BOND
05 12 00.CLM	STEEL COLUMN, REFER TO STRUCTURAL
06 10 00.PSX	PLYWOOD SHEATHING, EXTERIOR
07 21 00.B19	UNFACED GLASS FIBER BATT, R-19
07 21 00.XPS	2" EXTRUDED POLYSTYRENE BOARD INSULATION
07 27 26.FAB	FLUID-APPLIED AIR BARRIER SYSTEM, REFER TO ENVELOPE DRAWINGS
07 42 13.MPU1	UNINSULATED METAL WALL PANEL, TYPE 1 - CONCEALED FASTENER
07 81 16.SFM	SPRAYED FIRE-RESISTIVE MATERIAL
08 43 13.ADF	ALUMINUM DOOR FRAME
09 21 16.CBD	CONTINUOUS CORNER BEAD
09 21 16.FCZ	FRAMING, LIGHT-GAUGE METAL CHANNEL, Z-SHAPED
09 21 16.FS3	FRAMING, LIGHT-GAUGE METAL STUD, 3-5/8 INCH
09 21 16.FS6	FRAMING, LIGHT-GAUGE METAL STUD, 6 INCH
09 21 16.GBD	GYPSUM BOARD, STANDARD 5/8" TYPE X
09 21 16.GXS	GYPSUM BOARD, EXTERIOR SHEATHING - GLASS-MAT FACED



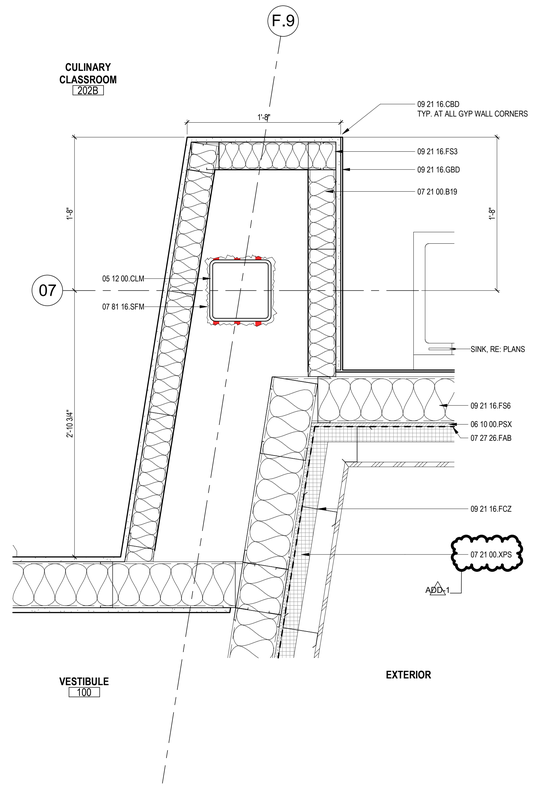
18 PLAN DETAIL - AREA L - HEALTH CLRM 123
1 1/2" = 1'-0"



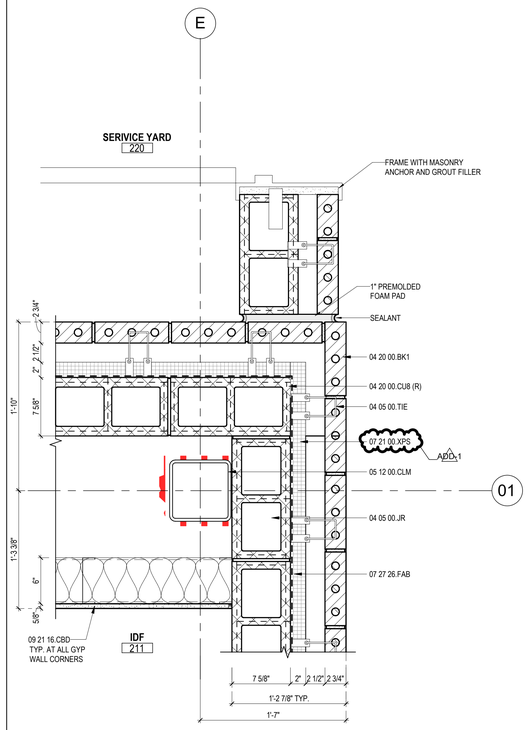
15 PLAN DETAIL - AREA L - VET TECH LAB 130
1 1/2" = 1'-0"



06 PLAN DETAIL - AREA K - CULINARY CLSRM 202B - SE CORNER
1 1/2" = 1'-0"



03 PLAN DETAIL - AREA K - CULINARY CLASSROOM 202B
1 1/2" = 1'-0"



02 PLAN DETAIL - AREA K - IDF 211
1 1/2" = 1'-0"

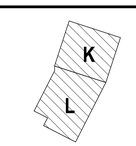
ARCHITECT PBK Architects, Inc.
HOUSTON
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-961-0608 P
713-961-4571 F
TX Firm: BR 1608
PBK.com
CIVIL
KIMLEY-HORN
T 281-497-9300
LANDSCAPE
EDGELAND
T 713-965-0505
STRUCTURAL
KUBRE & KUBRE
T 713-965-0600
MEP
LEAF ENGINEERS
T 713-905-0505
ACOUSTIC
BAI, LLC
T 713-965-0564
ENVELOPE
BEAM PROFESSIONALS
T 713-965-0505
FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS, LLc
T 281-350-2323

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL



KEY PLAN
NORTH: PLAN TRUE

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
ADD-1	ADD-1	06/04/2025

CHECKED BY: Checker
DRAWN BY: PL

PLAN DETAILS - CTE

A-703

Plot Stamp:
6/3/2025 5:47:30 PM

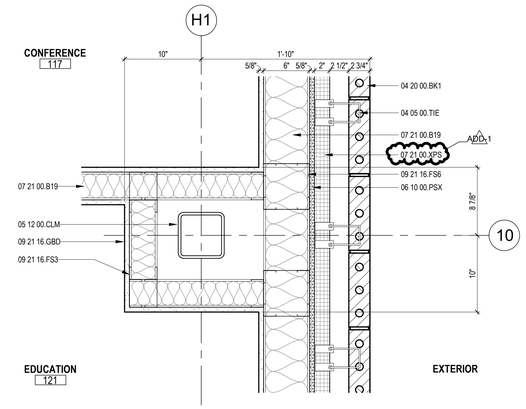
PLAN DETAILS - CTE

A-704

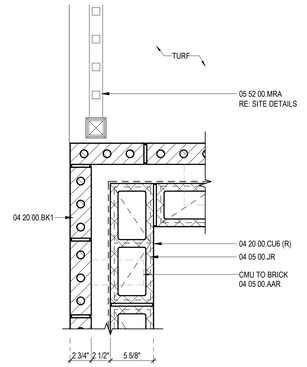
FOR BLUEBEAM LABELING/OCR:

KEYNOTE LEGEND

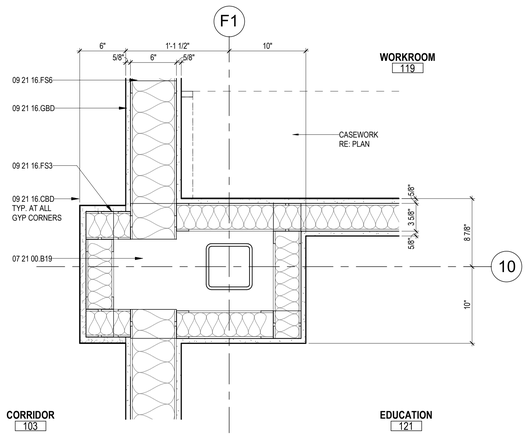
NUMBER	DESCRIPTION
04 05 00.AAR	ANCHOR AS REQUIRED
04 05 00.JR	JOINT REINFORCEMENT
04 05 00.MBN	MASONRY BULL NOSE, TYP.
04 05 00.TIE	TIE SYSTEM
04 20 00.BK1	BRICK TYPE 1 - FIELD WESTERN KING
04 20 00.CU4 (R)	4" CMU - RUNNING BOND
04 20 00.CU6 (R)	6" CMU - RUNNING BOND
04 20 00.CU8 (R)	8" CMU - RUNNING BOND
05 12 00.CLM	STEEL COLUMN, REFER TO STRUCTURAL
05 52 00.MRA	ALUMINUM RAILING SYSTEM
06 10 00.BLK	BLOCKING
06 10 00.PSX	PLYWOOD SHEATHING, EXTERIOR
07 21 00.B19	UNFACED GLASS FIBER BATT, R-19
07 21 00.K19	KRAFT FACED GLASS FIBER BATT, R-19
07 21 00.XPS	2" EXTRUDED POLYSTYRENE BOARD INSULATION
07 42 13.MPU1	
08 11 16	ALUMINUM DOORS AND FRAMES (ARCHITECTURAL - PBK ARCHITECTS)
09 21 16.CBD	CONTINUOUS CORNER BEAD
09 21 16.FS3	FRAMING, LIGHT-GAUGE METAL STUD, 3-5/8 INCH
09 21 16.FS6	FRAMING, LIGHT-GAUGE METAL STUD, 6 INCH
09 21 16.GBD	GYPSUM BOARD, STANDARD 5/8" TYPE X
09 30 00.T4	TILE TYPE 4 - WAINSCOTT TILE



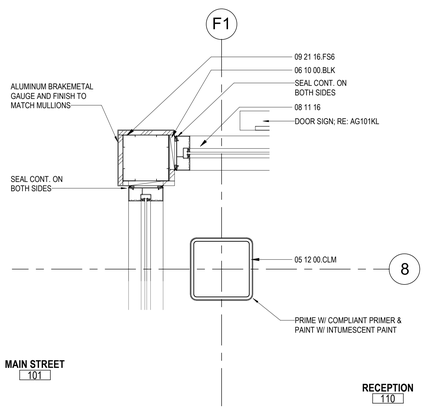
22 AREA L - EDUCATION 121 @ EXT WALL
1 1/2" = 1'-0"



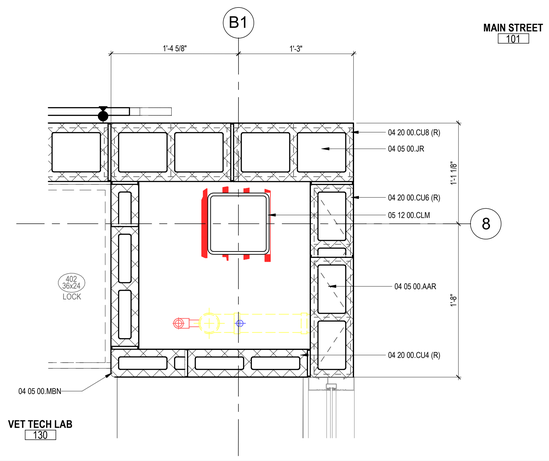
20 AREA L - DOG RUN FENCE @ BRICK CONNECTION
1 1/2" = 1'-0"



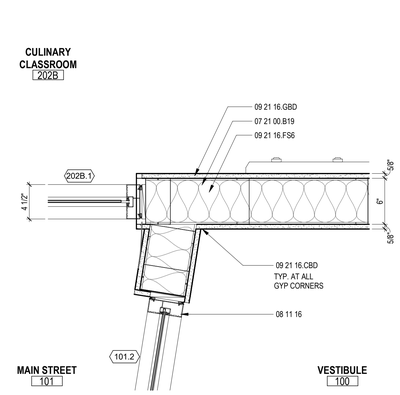
18 AREA L - EDUCATION 121 COLUMN SRD
1 1/2" = 1'-0"



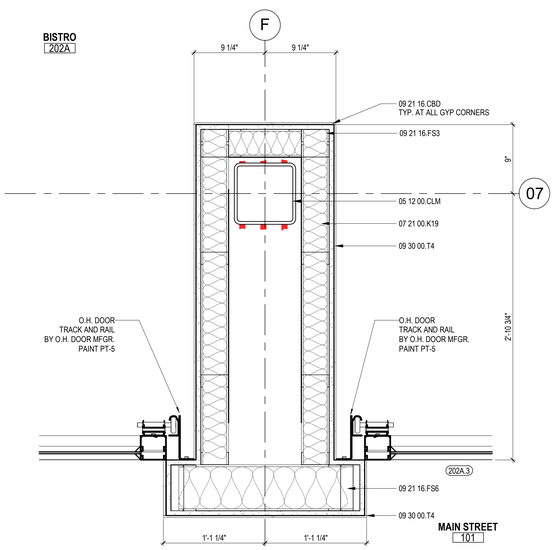
16 AREA K - RECEPTION 110 COLUMN
1 1/2" = 1'-0"



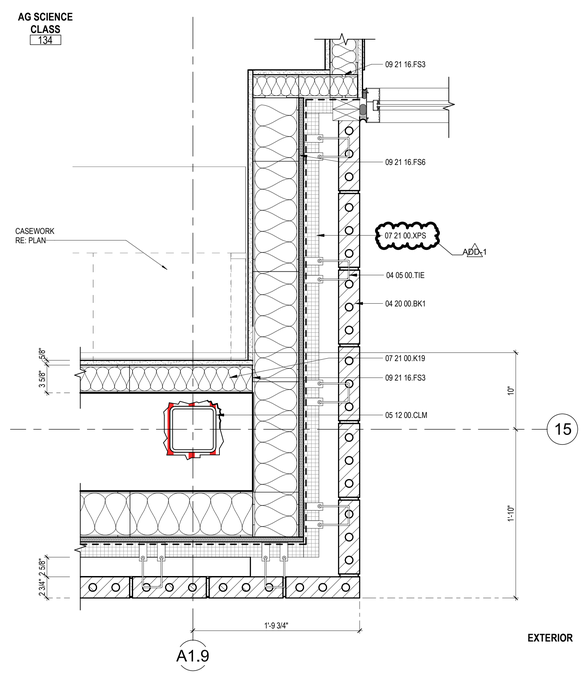
14 AREA L - VET TECH LAB 130 COLUMN SRD
1 1/2" = 1'-0"



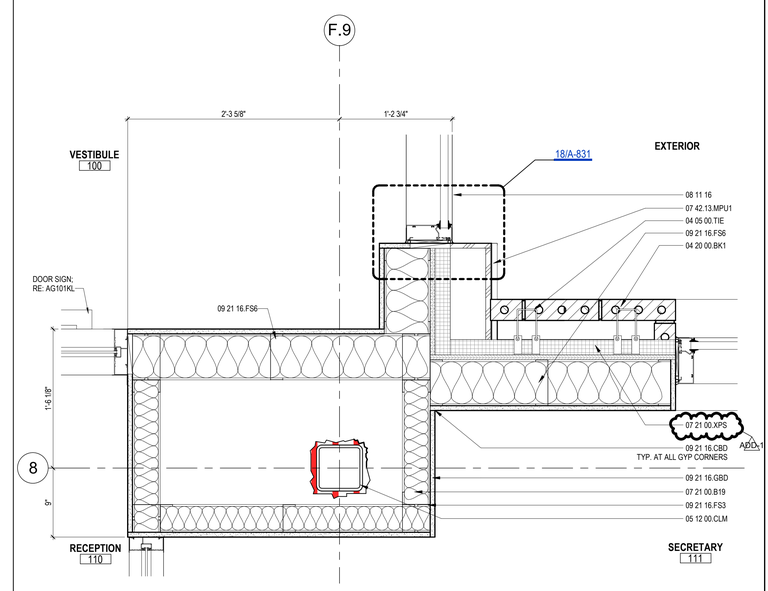
13 AREA K - CULINARY CLSRM @ WNDW 202B.1
1 1/2" = 1'-0"



06 AREA K - BISTRO 202A COLUMN SRD
1 1/2" = 1'-0"



04 PLAN DETAIL - AREA L - AG SCI CLRM 134
1 1/2" = 1'-0"



02 PLAN DETAIL - AREA L - SECRETARY 111
1 1/2" = 1'-0"

PBK

ARCHITECT PBK Architects, Inc.
PBK.com
HOUSTON
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-961-0608 P
713-961-4571 F
TX Firm: BR 1608

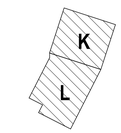
CIVIL
KIMLEY-HORN
T 281-597-9300
LANDSCAPE
EDGELAND
T 713-965-0005
STRUCTURAL
KUBRE & KUBRE ENGINEERS
T 713-965-0600
MEP
LEAF ENGINEERS
T 713-965-0505
ACOUSTIC
BAI, LLC
T 713-965-0564
EXTERIOR
BEAM PROFESSIONALS
T 713-965-0505
FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS, LLc
T 281-350-2323

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL



KEY PLAN

NORTH: PLAN TRUE

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
ADD-1	ADD-1	06/04/2025

CHECKED BY: Checker

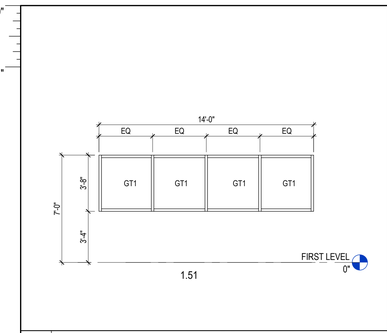
DRAWN BY: PL

PLAN DETAILS - CTE

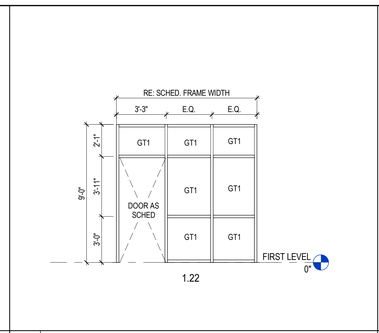
A-704

Plot Stamp:
6/3/2025 5:47:34 PM

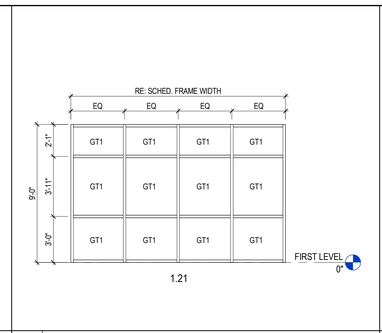
WINDOW, CURTAINWALL & STOREFRONT ELEVATIONS - CTE
A-822
FOR BLUEBEAM LABELING/OCR:



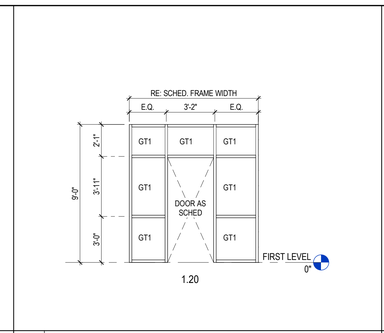
30 AREA L - 120 - BUSINESS
1/4" = 1'-0"



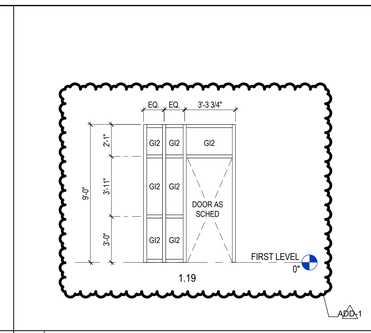
29 AREA K - 202B.1 - CULINRARY CLASSROOM
1/4" = 1'-0"



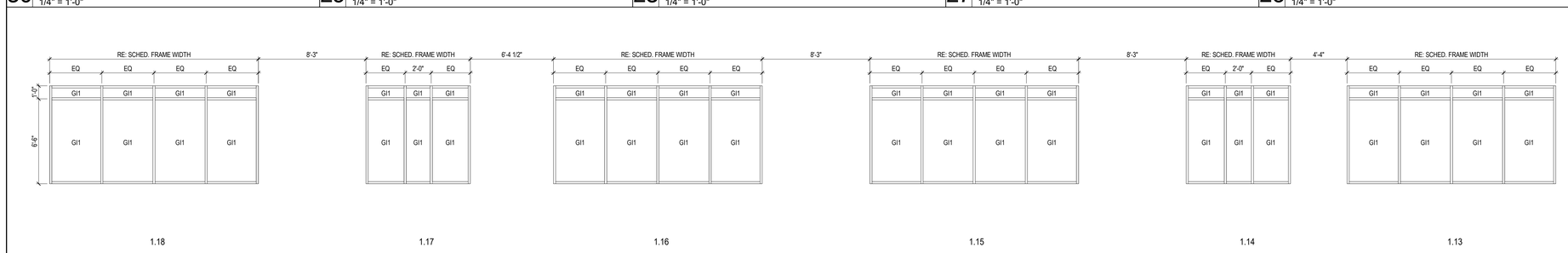
28 AREA K - 202A.1 - BISTRO - 2
1/4" = 1'-0"



27 AREA K - 202A.2 - BISTRO - 1
1/4" = 1'-0"



26 AREA L - 103A.2 - KENNELS EXIT
1/4" = 1'-0"



24 MAIN STREET - CLERESTORY
1/4" = 1'-0"

GENERAL GLAZING NOTES

1. PROVIDE BACK PAINTED SPANDREL GLAZING AT ALL EXTERIOR AND INTERIOR GLAZING PANELS ABOVE INTERIOR CEILINGS. COLOR AND PATTERN AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.

GLAZING MATERIALS LEGEND

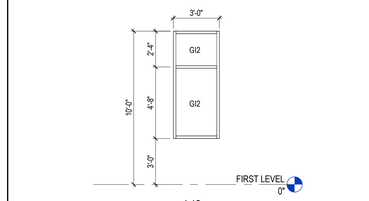
GT1 - INTERIORS ONLY
1/4" TEMPERED GLASS, CLEAR

GI1 - ALL EXTERIOR GLASS - (SECOND LEVEL) - RE: SCHEDULE
LAMINATED EXTERIOR TEMPERED GLASS, TINTED

GI2 - EXTERIOR (FIRST LEVEL) - RE: SCHEDULE
LAMINATED EXTERIOR TEMPERED GLASS, TINTED, WITH SAFETY & SECURITY FILM APPLIED OR INTEGRAL

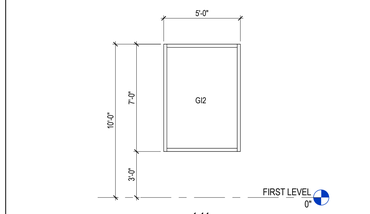
GL1 - INTERIOR GLASS WITH SAFETY & SECURITY FILM LAMINATED GLAZING.

ADD-1



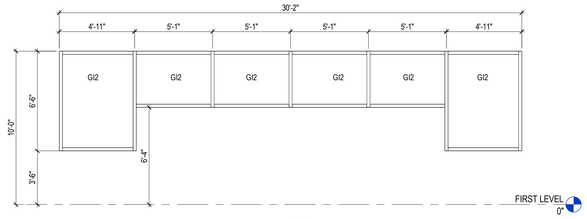
NOTE:
ALL EXTERIOR GLASS WINDOWS ARE **GI2**
(RE: WINDOW & STOREFRONT SCHEDULE)
ADD-1

18 TYP. WINDOW TYPE A
1/4" = 1'-0"



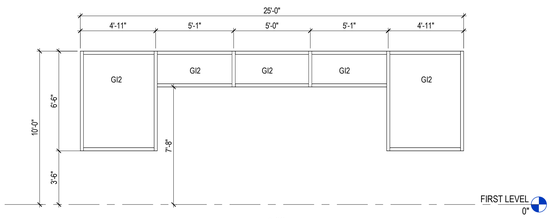
NOTE:
ALL EXTERIOR GLASS WINDOWS ARE **GI2**
(RE: WINDOW & STOREFRONT SCHEDULE)
ADD-1

17 TYP. WINDOW TYPE B
1/4" = 1'-0"

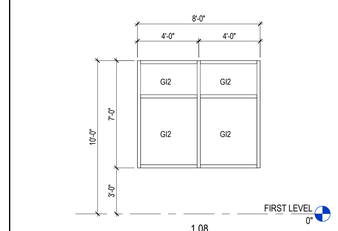


NOTE:
ALL EXTERIOR GLASS WINDOWS ARE **GI2**
(RE: WINDOW & STOREFRONT SCHEDULE)

16 TYP. WINDOW TYPE C
1/4" = 1'-0"

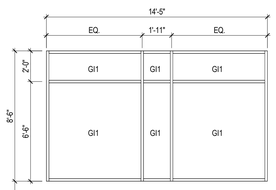


14 TYP. WINDOW TYPE D
1/4" = 1'-0"

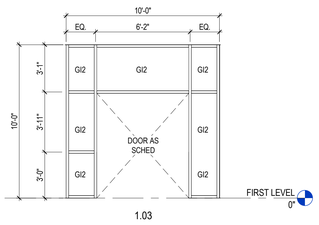


NOTE:
ALL EXTERIOR GLASS WINDOWS ARE **GI2**
(RE: WINDOW & STOREFRONT SCHEDULE)
ADD-1

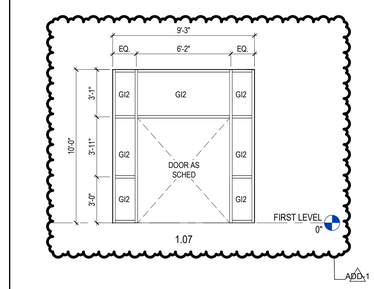
12 TYP. WINDOW TYPE E
1/4" = 1'-0"



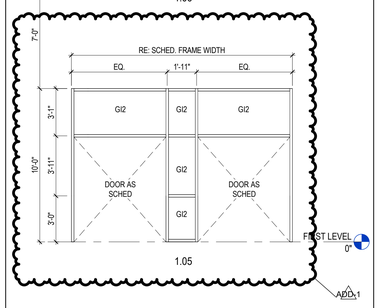
10 AREA L - 103 - SOUTH EXIT
1/4" = 1'-0"



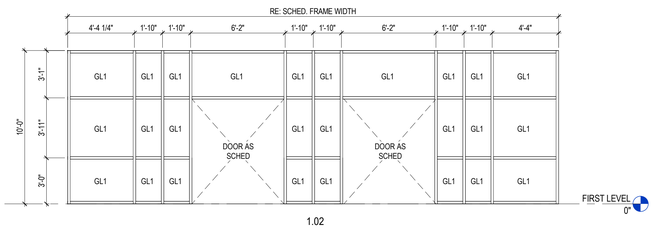
09 AREA L - 104 - EAST EXIT
1/4" = 1'-0"



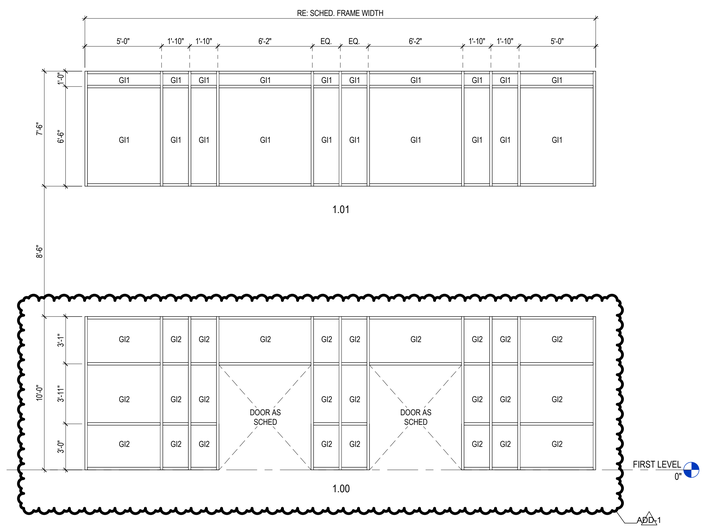
06 AREA K - 200 - NORTH EXIT
1/4" = 1'-0"



05 MAIN STREET - 101.1 & 201 WEST ENTRY
1/4" = 1'-0"



04 MAIN STREET - 101.2 - VESTIBULE
1/4" = 1'-0"



02 MAIN STREET - 100 & 100C EAST ENTRY
1/4" = 1'-0"

PBK

ARCHITECT PBK Architects, Inc.
PBK.com
HOUSTON
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-961-0608 P
713-961-4571 F
TX Firm: BR 1608

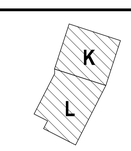
CIVIL
KIMLEY-HORN
T 281-497-9200
LANDSCAPE
EDGELAND
T 713-965-0005
STRUCTURAL
KUBRE & GARBERS
T 713-960-0808
MEP
LEAF ENGINEERS
T 713-905-0505
ACOUSTIC
BAI, LLC
T 713-961-1984
EXTERIOR
BEAM PROFESSIONALS
T 713-965-0505
FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS, LLC
T 281-350-2323

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL



KEY PLAN
NORTH: PLAN TRUE

REGISTERED ARCHITECT
MELISSA A. KAPPLE
30374
STATE OF TEXAS
melissa kapple
5/22/2025

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
ADD-1	ADD-1	06/04/2025

CHECKED BY: Checker
DRAWN BY: PL

WINDOW, CURTAINWALL & STOREFRONT ELEVATIONS - CTE

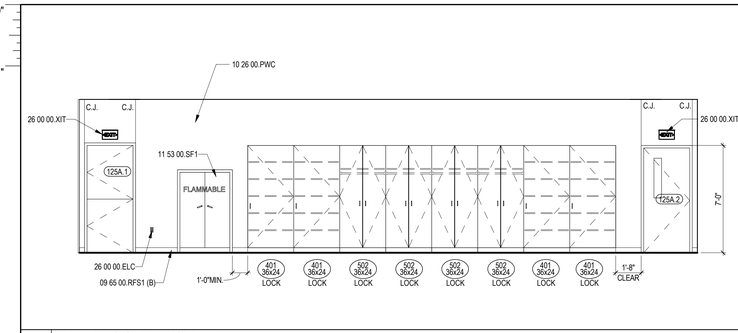
A-822

Plot Stamp:
6/3/2025 5:47:38 PM

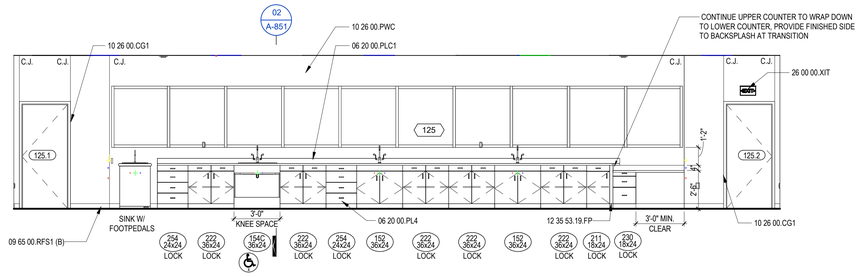
CASEWORK ELEVATION - CTE

A-842

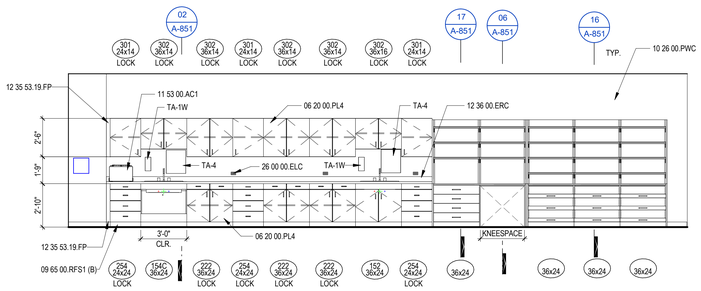
FOR BLUEBEAM LABELING/OCR:



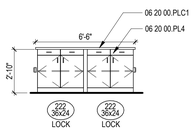
30 PREP ROOM - NORTH
1/4" = 1'-0"



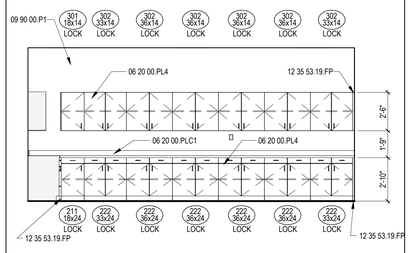
28 HEALTH LAB - NORTH
1/4" = 1'-0"



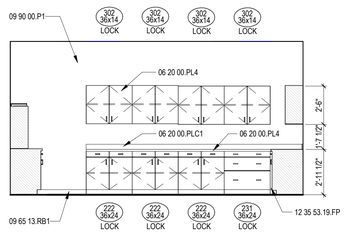
24 PREP ROOM - SOUTH
1/4" = 1'-0"



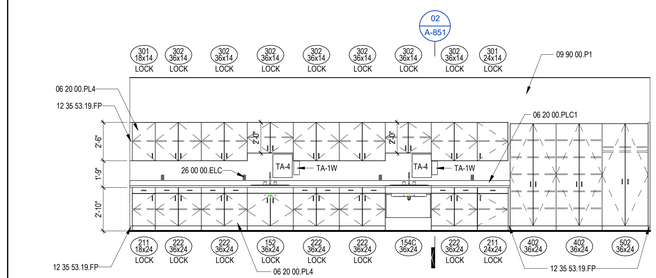
22 ADMIN WORKROOM ISLAND - EAST
1/4" = 1'-0"



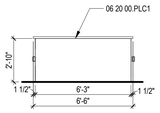
21 ADMIN WORKROOM - SOUTH
1/4" = 1'-0"



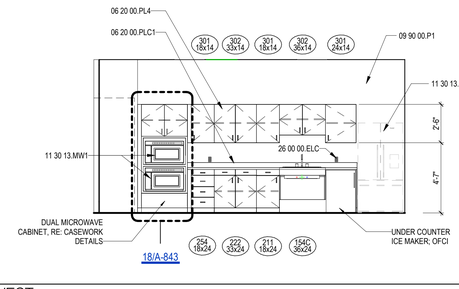
20 ADMIN WORKROOM - EAST
1/4" = 1'-0"



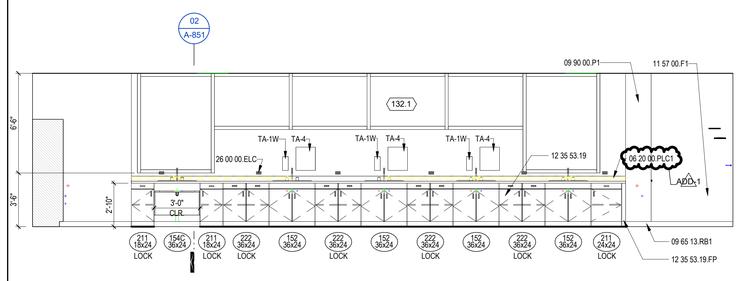
18 AG SCIENCE CLASS - SOUTH
1/4" = 1'-0"



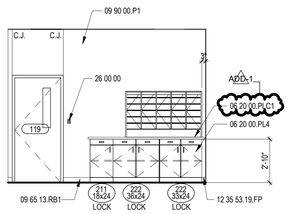
16 ADMIN WORKROOM ISLAND - WEST
1/4" = 1'-0"



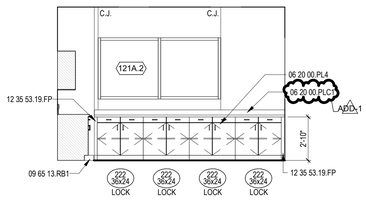
14 BREAKROOM - WEST
1/4" = 1'-0"



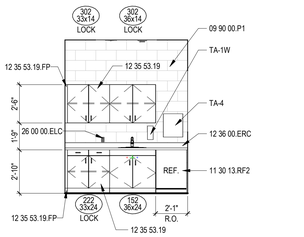
12 FLORAL LAB - WEST
1/4" = 1'-0"



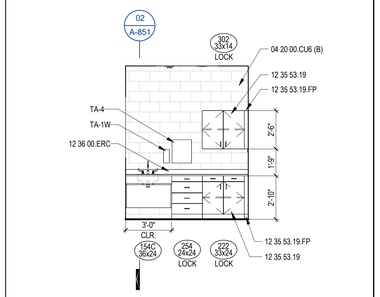
10 ADMIN WORKROOM - NORTH
1/4" = 1'-0"



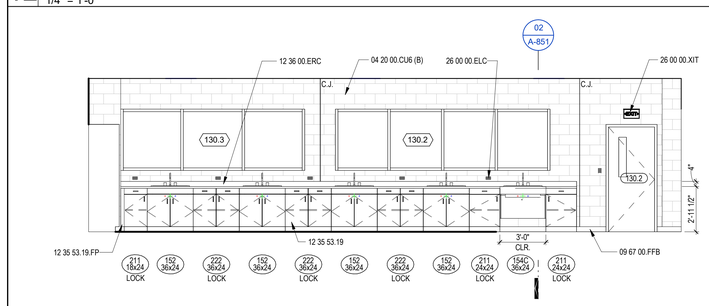
09 EDUCATION WORKROOM - WEST
1/4" = 1'-0"



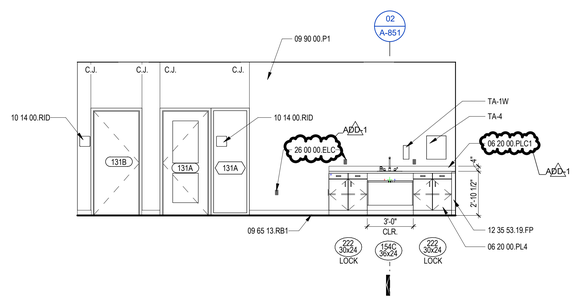
08 VET EXAM ROOM #1 - WEST
1/4" = 1'-0"



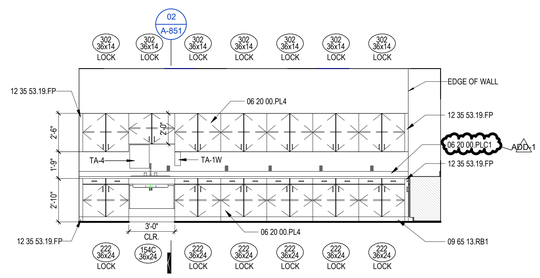
07 VET EXAM ROOM #2 - EAST
1/4" = 1'-0"



06 VET TECH LAB - EAST
1/4" = 1'-0"



04 LAW ENFORCEMENT - SOUTH
1/4" = 1'-0"



02 EDUCATION WORKROOM - SOUTH
1/4" = 1'-0"

GENERAL CASEWORK NOTES

1. BASIS-OF-DESIGN FOR ALL NON-SCIENCE CASEWORK SHALL BE _____, U.N.O.
2. BASIS-OF-DESIGN FOR ALL SCIENCE CASEWORK SHALL BE _____, U.N.O.
3. FIELD VERIFY ALL CASEWORK-RELATED DIMENSIONS PRIOR TO FABRICATION AND INSTALLATION
4. VERIFY ALL COLUMN LOCATIONS PRIOR TO FABRICATION AND INSTALLATION
5. REFER TO MEPT DOCUMENTS FOR ALL DATA OUTLETS AND DEVICES, ELECTRICAL OUTLETS AND DEVICES, AND PLUMBING FIXTURES, NOTIFY ARCHITECT OF ANY CONFLICTS PRIOR TO FABRICATION AND INSTALLATION
6. ALL CASEWORK BASE CABINETS SHALL BE 24 INCHES IN DEPTH, U.N.O.
7. ALL CASEWORK UPPER WALL CABINETS SHALL BE 14 INCHES IN DEPTH, U.N.O.
8. ALL COUNTER TOPS, VERTICAL SURFACES, NOSINGS, AND BACK SPLASHES SHALL BE PLASTIC LAMINATE FINISH, U.N.O.
9. PROVIDE AND INSTALL SIDE SPLASHES WHERE COUNTER TOP ENDS ABUT WALL SURFACES
10. PROVIDE AND INSTALL 4 INCH HIGH TOE SPACE WITH WALL BASE AT ALL CASEWORK, WALL BASE TO MATCH ROOM WALL BASE
11. PROVIDE AND INSTALL WALL ANCHORED VERTICAL SUPPORTS AT ALL KNEE SPACES GREATER THAN 48 INCHES WIDE
12. PROVIDE AND INSTALL GROMMETS WITH SLEEVES AT ALL KNEE SPACES
13. ALL CASEWORK UNITS 36 INCHES WIDE AND GREATER WITH SHELVING SHALL HAVE A CENTER FIXED SHELF
14. ALL SHELVING 36 INCHES WIDE AND GREATER SHALL BE SHALL BE 1 INCH THICK MINIMUM
15. ALL ADJUSTABLE SHELVING SHALL HAVE RECESSED STANDARDS HARDWARE
16. PROVIDE AND INSTALL FILLER PANELS WITH TOP RETURNS AT ALL SIDES, CORNERS, AND COLUMNS TO PREVENT THE CONTACT OF DOORS WITH ADJACENT SURFACES
17. PROVIDE AND INSTALL LOCKS AT ALL BASE CABINETS AND ALL UPPER WALL CABINETS, EXCEPT AT SINK BASES.
18. PROVIDE TOP AND BOTTOM RETURNS (CLOSURES) AT ALL UPPER CABINET FILLER PANELS, AND TOP RETURNS (COSURES) AT ALL TALL FILLER PANELS, FINISH TO MATCH CASEWORK

TOILET ACCESSORIES

LABEL	DESCRIPTION	NOTES
TA1C	SOAP DISPENSER, COUNTER-MOUNTED, TYPICAL	
TA1W	SOAP DISPENSER, WALL-MOUNTED, TYPICAL	
TA2	LAVATORY MIRROR, TYPICAL	NOTE 5
TA2F	FULL-LENGTH MIRROR	
TA3	TOILET PAPER DISPENSER, TYPICAL	
TA4	PAPER TOWEL DISPENSER, TYPICAL	
TA5	GRAB BARS, AT TYPICAL WHEELCHAIR ACCESSIBLE WATERCLOSET, TYPICAL	
TA6	SANITARY NAPKIN/TAMPON VENDOR, TYPICAL	
TA7	SANITARY NAPKIN DISPOSAL, TYPICAL	
TA8	SHELF WITH MOP AND BROOM HOLDERS AND HOOKS, TYPICAL	
TA9	GRAB BARS, ACCESSIBLE SHOWER, TYPICAL	
TA10A	FOLDING BENCH, ADULT HEIGHT	
TA10C	FOLDING BENCH, CHILD HEIGHT	
TA11	CLOTHING HOOK, TYPICAL	NOTE 6
TA12	SHOWER CURTAINS, RODS AND HOOKS, TYPICAL	
TA13	ELECTRIC HAND DRYER, TYPICAL	
TA14	PAPER TOWEL DISPENSER/WASTE RECEPTACLE, TYPICAL	
TA15	GRAB BARS, AT AMBULATORY ACCESSIBLE WATERCLOSET	
TA16C	BABY CHANGING STATION	
TA16A	ADULT CHANGING STATION	
TA17R	TRASH RECEPTACLE, RECESSED	
TA17U	TRASH RECEPTACLE, UNDERCOUNTER	
TA18	VERTICAL GRAB BAR (AT ACCESSIBLE ICC A117.1 TOILETS)	
TA19	WATERCLOSET COVER DISPENSER	
TA20	FOLDING UTILITY SHELF	

NOTES:
1. ALL TOILET ACCESSORIES SHALL BE CONTRACTOR FURNISHED AND CONTRACTOR INSTALLED U.N.O.
2. COORDINATE FINAL LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.
3. VERIFY ALL HEIGHTS OF ACCESSORIES TO COMPLY WITH ALL APPLICABLE ACCESSIBILITY REQUIREMENTS.
4. REFER TO ALL FINISHES AND COLORS IN FINISH SCHEDULE, VERIFY ALL PATTERNS WITH ARCHITECT.
5. ALIGN MIRROR ON CENTER OF LAVATORY.
6. ONE (1) HOOK SHALL BE INSTALLED INSIDE DOOR AT EACH TOILET PARTITION. ONE HOOK INSIDE DOOR AT SINGLE TOILET ROOMS AND ONE HOOK AT EACH SHOWER.

KEYNOTE LEGEND

NUMBER	DESCRIPTION
04 20 00.CU6 (B)	6" CMU - BURNISHED
06 20 00.PL4	PLASTIC LAMINATE, TYPE 4
06 20 00.PLC1	PLASTIC LAMINATE COUNTER, TYPE 1
09 65 00.RS-1 (B)	INSTALL RFS1 AS INTEGRAL WALL BASE
09 65 13.RB1	RESILIENT BASE, TYPE 1 - STANDARD RUBBER BASE
09 67 00.FFB	FLUID-APPLIED FLOORING BASE, RETURN __" UP WALL
09 90 00.P1	PAINT TYPE 1 - FIELD
10 14 00.RID	ROOM/DOOR SIGN
10 26 00.CG1	SURFACE-MOUNTED STAINLESS STEEL CORNER GUARD
10 26 00.PWC	PROTECTIVE WALL COVERING
11 30 13.MW1	BUILT IN MICROWAVE
11 30 13.RF1	FREE-STANDING REFRIGERATOR, OFCI
11 30 13.RF2	UNDER COUNTER REFRIGERATOR
11 53 00.AC1	AUTOCLAVE (OFOI)
11 53 00.SF1	STORAGE, FLAMMABLES
11 57 00.F1	FLORAL - POT FILLER
12 35 53.19	WOOD LABORATORY CASEWORK (ARCHITECTURE - PBK ARCHITECTS)
12 35 53.19.FP	FILLER PANEL AS REQUIRED
12 36 00.ERC	EPOXY RESIN COUNTERTOP
26 00 00	ELECTRICAL (ELECTRICAL -)
26 00 00.ELC	ELECTRICAL OUTLET, RE: ELECTRICAL
26 00 00.XIT	EXIT LIGHT, REFER TO ELECTRICAL
TA-1W	SOAP DISPENSER, WALL-MOUNTED, OFCI
TA-4	PAPER TOWEL DISPENSER, OFCI

ADD-1

PBK

ARCHITECT PBK Architects, Inc.
PBK.com
HOUSTON
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-961-0608 P
713-961-4571 F
TX Firm: BR 1608

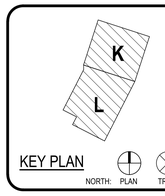
CIVIL
KIMLEY-HORN
T 281-497-9300
LANDSCAPE
EDGELAND
T 713-960-9505
STRUCTURAL
KUBRA ENGINEERS
T 713-960-9505
MEPT
LEAF ENGINEERS
T 713-965-0505
ACOUSTIC
BAI, LLC
T 713-961-1984
EXTERIOR
BEAM PROFESSIONALS
T 713-965-0505
FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS, LLc
T 281-350-2323

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL



CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
ADD-1	ADD-1	06/04/2025

CHECKED BY: Checker

DRAWN BY: LB

CASEWORK ELEVATION - CTE

A-842

Plot Stamp:
6/3/2025 5:47:44 PM

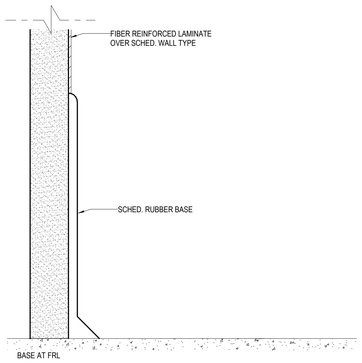
FINISH SCHEDULE

AF100

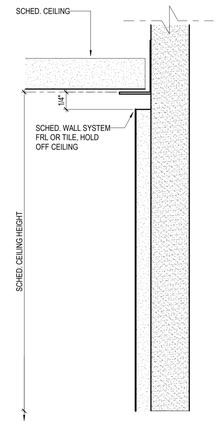
FOR BLUEBEAM LABELING/OCR:

0"

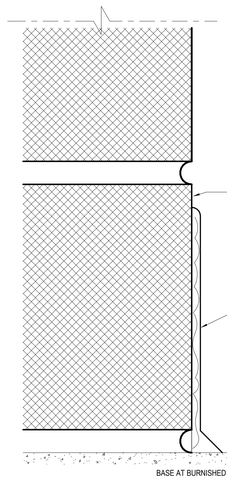
1"



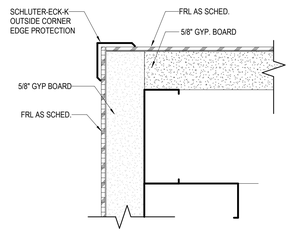
BASE AT FRL



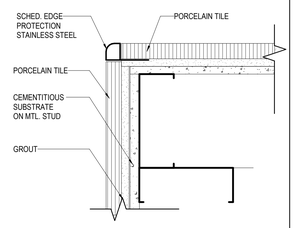
FRL OR TILE AT CEILING



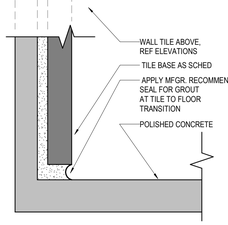
BASE AT BURNISHED CMU



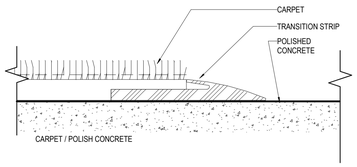
FRL AT CORNER



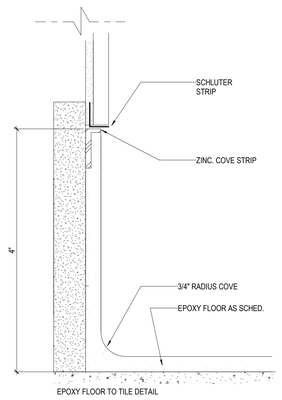
PORCELAIN WALL TILE AT CORNER



TILE WALL / POLISHED CONCRETE



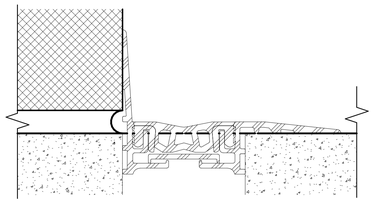
CARPET / POLISH CONCRETE



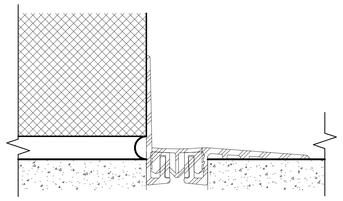
EPOXY FLOOR TO TILE DETAIL

03 TYP. INT. FLOOR AND WALL TRANSITION DETAILS

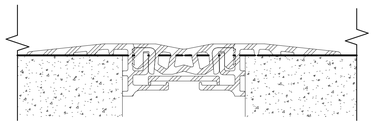
12" = 1'-0"



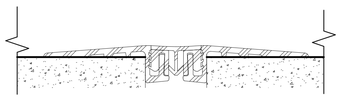
L FLOOR TO WALL EXPANSION JOINT



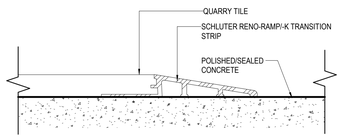
M FLOOR TO WALL EXPANSION JOINT



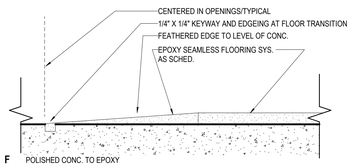
L FLOOR TO FLOOR EXPANSION JOINT



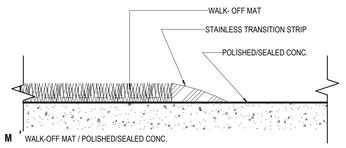
K FLOOR TO FLOOR EXPANSION JOINT



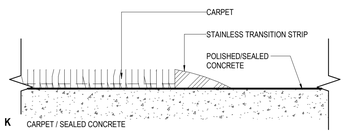
J QUARRY TILE / SEALED CONCRETE



F POLISHED CONC. TO EPOXY



M WALK-OFF MAT / POLISHED/SEALED CONC.



K CARPET / SEALED CONCRETE

02 TYP. INT. FLOOR TRANSITIONS

12" = 1'-0"

240157 - HUFFMAN ISD NEW CTE AND NEW GYM - SCHEDULE OF EXTERIOR FINISHES

ITEM	MANUFACTURER	DESCRIPTION	COLOR	SIZE	LOCATION	NOTES	
BRICK							
04 20 00.BK1	Upchurch Kimbrough	530 Western King	Red and Brown	King Size	Field - CTE	Flashed	
04 20 00.BK2	ACME Brick	Burgundy	Burgundy	King Size	Field- New Gym	No Texture	TO MATCH HS
04 20 00.BK3	ACME Brick	Dove Gray	Dove Gray	King Size	New Gym	No Texture	TO MATCH HS
04 20 00.BK4	ACME Brick	Ebony	Ebony	King Size	New Gym	No Texture	TO MATCH HS
04 20 00. BK5	ACME Brick	Glacier White	White	King Size	New Gym	No Texture	TO MATCH HS
CMU							
04 20 00.CMU1	Upchurch Kimbrough	Blanca Burnished	Blanca		Exterior Base for CTE and New Gym	Burnished	
CALCIUM SILICATE MASONRY UNIT							
SOFFITT PANEL							
07 42 00.MS1	Berridge	FW-1025	Honey Walnut		underneath main entry cantilever		
07 42 00.MS2	Berridge	FW-1025	Honey Walnut		underneath student entry canopy		
METAL PANEL							
07 42 13.MPU1	Berridge	HR-16	Zinc Grey		above exterior brick-CTE	without vents	
07 42 13.MPU2	Berridge	FW-1015	Honey Walnut		accent metal-CTE		
07 42 13.MPU3	Berridge	FW-1025	Dark Bronze		main cantilever roof-CTE		
07 42 13.MPU4	AmeriClad	Brake Metal	Kynar 500 Parchment SRI-58		Metal Panels in Store Front - Gym		
ROOF EDGE METAL							
GUTTERS AND DOWNSPOUTS							
MULLIONS							
08 43 13.ASM	Kawneer	Mullion	Clear Anodized Aluminum				
GLASS							
08 80 00	Gaurdian Glass	Exterior Glazing	SNX 51/23 On Clear				
AVADEK CANOPY							

240157- HUFFMAN CTE AND HARGRAVE HS NEW GYM- SCHEDULE OF INTERIOR FINISHES

ITEM	MANUFACTURER	PRODUCT	COLOR	SIZE	LOCATION	NOTES
CARPET						
09 68 00. CP-1	TARKETT	S1647 SYLLABUS II	76508 NEW AGE	POWERBOND	FLEX AREA, COMPUTER LAB, CONTROL BOOTH, AV & GREEN ROOM STORAGE	
09 68 00. CP-2	TARKETT	ASSERTIVE ACTION	STEELWORK	POWERBOND	ENTRIES	
TILE						
PROVIDE STAINLESS TRIMS AT ALL OUTSIDE CORNERS AND EXPOSED EDGES FOR ALL WALL TILES						
09 30 00. T-1	DALTILE	PORTFOLIO	IRON GREY PF06	6"X24", 12"X24", 24"X24"	WALL TILE- REFER TO INTERIOR ELEVATIONS FOR PATTERN	
09 30 00. T-2	DALTILE	PORTFOLIO	WHITE PF02	6"X24", 12"X24", 24"X24"	WALL TILE- REFER TO INTERIOR ELEVATIONS FOR PATTERN	
09 30 00. T-3	DALTILE	PORTFOLIO VIVID	CRIMSON RED MATTE PF28	6"X24"	WALL TILE- REFER TO INTERIOR ELEVATIONS FOR PATTERN	
09 30 00. T-4	DALTILE	RIGID CLAY	DUNE- STREAM	12"X24"	BISTRO WAINSCOT TILE - STACKED PATTERN	
09 30 00. T-5	CROSSVILLE	SNIPPET	LIPSTICK LEFT & RIGHT SNP23	3"X12"	BISTRO ACCENT & WATER FOUNTAINS WALL TILE- REFER TO INTERIOR ELEVATIONS	
09 30 00. T-6	CROSSVILLE	SWATCHES	LIPSTICK RED GLOSS BR23	3"X12"	BISTRO ACCENT & WATER FOUNTAINS WALL TILE- REFER TO INTERIOR ELEVATIONS	
09 30 00. T-7	DALTILE	VOLUME 1.0	ELECTRIC MOSS VL79	12"X24"	GYM LOBBY FLOOR TILE	
09 30 00. T-8	DALTILE	VOLUME 1.0	INTENSITY PEBBLE VL72	12"X24"	GYM LOBBY FLOOR TILE	
09 30 00. T-9	DALTILE	PORTFOLIO	WHITE PF02	12"X24", STACKED PATTERN	KITCHEN- WALL TILE	
09 30 00. T-10	DALTILE	PORTFOLIO	IRON GREY PF06	2"X2" MOSAIC	SINGLE RESTROOMS FLOOR TILE	
RESILIENT FLOORING						
09 65 00. RF5-1	PATCRAFT	1690V HOLISTIC SHADES	00111 RADIANT	ROLL	HEALTH LAB, HEALTH CLASSROOM, HEALTH STORAGE	
09 65 00. RF5-2	FORBO	MARMOLEUM STRIATO	75212 WITHERED PRAIRIE		LAW & EDUCATION CLASSROOM, LAW & EDUCATION STORAGE, EDUCATION WORKROOM	REFER TO FLOOR FINISH PLAN FOR PATTERN
09 65 00. RF5-3	FORBO	MARMOLEUM STRIATO	75231 CLIFFS OF MOHER		ADMIN FIELD & EDUCATION ACCENT	REFER TO FLOOR FINISH PLAN FOR PATTERN
PAINT						
09 90 00. PT-1	SHERWIN WILLIAMS	FIELD	SW 7042 SHOJI WHITE		FIELD	
09 90 00. PT-2	SHERWIN WILLIAMS	ACCENT, RED	CUSTOM MIX, MATCH Pantone: PMS 187 C		GYM LOBBY	
09 90 00. PT-3	SHERWIN WILLIAMS	ACCENT, DARK GRAY	SW 7075 WEB GRAY		ROBOTICS AND ENGINEERING STOREFRONT	
09 90 00. PT-4	SHERWIN WILLIAMS	ACCENT, LIGHT GRAY	SW 7030 ANEW GRAY		ADMIN ACCENT OFFICES	
09 90 00. PT-5	SHERWIN WILLIAMS	ACCENT, BLACK	SW 6990 CAVIAR		BISTRO, GYM LOBBY	
09 90 00. PT-6	SHERWIN WILLIAMS	ACCENT, MEDIUM GRAY	TBD		MISC. STEEL	
09 90 00. PT-7	SHERWIN WILLIAMS	HM DOORS AND FRAMES	TBD			
SOLID SURFACE						
12 36 00. SS-1	WILSONART	COUNTERTOPS	YUKON RIVERSTONE		ADMIN	ALL OUTSIDE CORNERS TO BE MITERED
BASE						
09 65 13. RB-1	FLEXCO	TYPICAL RUBBER BASE	078 UMBER	4" HEIGHT	REFER TO INTERIOR ELEVATIONS	
09 30 00. TB-1	DALTILE	PORTFOLIO	IRON GREY PF06	4"X12"	REFER TO INTERIOR ELEVATIONS	
09 30 00. TB-2	DALTILE	PORTFOLIO	WHITE PF02	4"X12"	REFER TO INTERIOR ELEVATIONS	
09 65 00. RFS1(B)	PATCRAFT	MATCH RFS-1	MATCH RFS-1	4" INTEGRAL COVE BASE		
09 67 00. FF1 (B)	SIKAFLOOR	MATCH FF-1	MATCH FF-1	4" INTEGRAL COVE BASE		
TILE SETTING MATERIAL & ACCESSORIES						
05 75 00.DET-A	SCHLUTER	ECK-K, V2A	STAINLESS STEEL BODY, BRUSHED S/S FINISH	4/19/24/250		TYPICAL AT ALL FRL OUTSIDE CORNERS
05 75 00.DT1	SCHLUTER	JOLLY	STAINLESS STEEL BODY, BRUSHED S/S FINISH	GC TO VERIFY PER TILE THICKNESS		TYPICAL AT ALL WALL TILE OUTSIDE CORNERS AND EXPOSED EDGES
05 75 00.MT2	SCHLUTER	RENO U	STAINLESS STEEL BODY, BRUSHED S/S FINISH	GC TO VERIFY PER FLOORING THICKNESS		TYPICAL FLOOR REDUCER
05 75 00.MB1	FRY REGLET	MWRL/X	CLEAR ANODIZED	TBD PER MILLWORK DETAIL	BISTRO MENU BOARD AT ALL EDGES	
CEILING						
09 51 00. ACS1	ARMSTRONG	SCHOOL ZONE FINE FISSURED	WHITE	2x2 X 5/8", 15/16" WHITE GRID	TYPICAL	
09 51 00. ACS2	ARMSTRONG	KITCHEN ZONE	WHITE	2x2 X 5/8", 15/16" WHITE GRID	KITCHEN	
09 51 00. ACS4	ARMSTRONG	BACKSTAGE NOIR	TECH BLACK	2x2 X 5/8", 15/16" MATTE BLACK GRID	BISTRO & GYM LOBBY	
09 84 00. ARC13	ARMSTRONG	TECTUM	FIELD PAINT TO MATCH PT-5	47-3/4" X 96"	GYM	
09 84 00. ARC8	KMDI	COMPOSITE BAFFLES	WOOD FINISH TO MATCH CONTROL SAMPLE	2"X6"X VARYING LENGTHS	FLEX SPACE	
09 84 00. ARC9	KMDI	COMPOSITE BAFFLES	PT-6	2"X6"X VARYING LENGTHS	BISTRO AWNING	
09 51 00. ACS3	TBD	PERFORATED METAL CEILING PANEL	MATCH PT-2		GYM LOBBY	
PLASTIC LAMINATE						
06 20 00. PL-1	PIONITE BY PANOLAM	WOOD PRINT- FRL	CINNAMON NOCE FW258-SD		REFER TO INTERIOR ELEVATIONS	TO INCLUDE SS CORNER GUARD (CT-1) AT ALL OUTSIDE CORNERS. PROVIDE COLOR MATCHING CAULK AT BUTT JOINTS & INSIDE CORNERS
06 20 00. PL-2 (3A)	PANOLAM	FRL WITH CUSTOM PRINTS	GRAPHICS BY BLUERING		ROBOTICS & ENGINEERING, REFER TO INTERIOR ELEVATIONS	TO INCLUDE SS CORNER GUARD (CT-1) AT ALL OUTSIDE CORNERS. PROVIDE COLOR MATCHING CAULK AT BUTT JOINTS & INSIDE CORNERS
06 20 00. PL-3 (3B)	PANOLAM	FRL WITH CUSTOM PRINTS	GRAPHICS BY BLUERING		GRAPHIC DESIGN, REFER TO INTERIOR ELEVATIONS	TO INCLUDE SS CORNER GUARD (CT-1) AT ALL OUTSIDE CORNERS. PROVIDE COLOR MATCHING CAULK AT BUTT JOINTS & INSIDE CORNERS
06 20 00. PL-4	PIONITE BY PANOLAM	HPL	SABLE AG021		DOORS & MILLWORK- VERTICAL FACES	
06 20 00. PL-5	WILSONART	METALLIC PLAM	SATIN BRUSHED PALLADIUM		REFER TO INTERIOR ELEVATIONS, GYM LOBBY TROPHY CASE	USE WITH PSI SYSTEM 310 WITH BLACK TRIMS
06 20 00. PL-6	WILSONART	RED PLAM	REGIMENTAL RED D12K-18		FLEX AREA	USE WITH PSI SYSTEM 310 WITH BLACK TRIMS
06 20 00. PL-7	FORMICA	MAGNETIC MARKERBOARD	M2215-58 CHALKBOARD-BLACK	REFER TO INTERIOR ELEVATIONS	BISTRO MENU BOARD	
12 36 00. PLC-1	PIONITE BY PANOLAM	HPL	WHITE FIESTA		MILLWORK- HORIZONTAL FACES	
ACOUSTIC WALL PANELS						
09 84 00. ARC-1	GUILFORD OF MAINE	WALL PANEL	BLUE PAPER 539		MAIN STREET & GYM, SEE INTERIOR ELEVATION	Z CLIP MOUNT
09 84 00. ARC-2	GUILFORD OF MAINE	WALL PANEL	MEDIUM GREY 298		MAIN STREET & GYM, SEE INTERIOR ELEVATION	Z CLIP MOUNT
09 84 00. ARC-3	GUILFORD OF MAINE	WALL PANEL	CARDINAL 738		MAIN STREET & GYM, SEE INTERIOR ELEVATION	Z CLIP MOUNT
CEILING BAFFLES						
09 84 00. ARC-5	TURF	CEILING BAFFLE	04 LIGHT GRAY	2.25"W x 24"D	MAIN STREET, SEE RCP FOR LENGTH	CABLE TO DECK, VERIFY CABLE LENGTH
09 84 00. ARC-6	TURF	CEILING BAFFLE	09 DAMASCUS	2.25"W x 24"D	MAIN STREET, SEE RCP FOR LENGTH	CABLE TO DECK, VERIFY CABLE LENGTH
09 84 00. ARC-7	TURF	CEILING BAFFLE	23 RED	2.25"W x 24"D	MAIN STREET, SEE RCP FOR LENGTH	CABLE TO DECK, VERIFY CABLE LENGTH
VISUAL DISPLAY UNITS						
10 11 00. MBG-1	OEKO	MAGNETIC GLASS MARKERBOARD	PEARL	4'X4'	GRAPHIC DESIGN STOREFRONT	FLUSH MOUNTED
10 11 00. MBG-2	OEKO	MAGNETIC GLASS MARKERBOARD	ONYX	4'X4'	FLEX AREA	FLUSH MOUNTED
CUBICLE CURTAINS AND TRACKS						
10 21 23. CC1	INPRO	INPRO CUBICLE CURTAINS AND TRACK SYSTEM	TRACK: WHITE MESH: EZE-MESH, SNOW FABRIC: SPUNK GRAPHITE		REFER TO INT. ELEVATION	
CONCRETE UNITY MASONRY						
04 20 00. CU6	UPCHURCH KIMBROUGH	BLANCA	BRILLOSO (BURNISHED)	8"X16"	VET TECH & MECHANICAL BLOCK	
CONCRETE SEALING						
10 21 13.19. PTC	SCRANTON	HDPE	CHARCOAL GREY ORANGE PEEL		RESTROOMS	
EPOXY FLOORING						
09 67 00. FF-1 & FF-2	SIKAFLOOR	DECOFLAKE	SMOKE		KITCHEN, VET TECH, GANG RESTROOMS, LOCKER ROOMS	
WOOD ATHLETIC FLOORING						
09 64 66. WGM	ROBBINS	BIO CUSHION CLASSIC	WOOD MAPLE FLOORS		GYM	
GYMNASIUM EQUIPMENT						
11 66 23. WP-1	ADP LEMCO	MODEL 200 SAFETY WALL PADS	BLACK		GYM	CENTER PANEL TO HAVE SCHOOL LOGO
WINDOW SHADES						
12 24 00. WS1	MECHO	CLASSIC BLACKOUT 700 SERIES	GRAPHITE 0717		REFER TO DRAWINGS	
12 24 00. WS3	MECHO	SOHO 1600 SERIES	SILVER BIRCH 1619		REFER TO DRAWINGS	
WALL PROTECTION						
10 26 00. PWC-1	ACROVYN	0.40" THICK SHEET MATERIAL, DIRECT GLUED TO WALL. W/ COLOR MATCHING CAULK SEAM & COLOR MATCHING OUTSIDE CORNER TRIMS	OZARK		HEALTHCARE	
10 26 00. C01	INPRO	130 HIGH IMPACT CORNER GUARD	TO MATCH WALL FINISH (INPRO 0104 ANTIQUE WHITE FOR PT-1 SHOJI WHITE)		GYP. OUTSIDE CORNERS (E.G. IN ADMIN SUITE)	

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New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS

REGISTERED ARCHITECT MELISSA A. KAPPLE 30374 STATE OF TEXAS

Melissa Kapple
5/22/2025

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date

CHECKED BY: Checker

DRAWN BY: Author

FINISH SCHEDULE

AF100

Plot Stamp:
6/3/2025 5:47:46 PM

ROOF PLAN - REROOF- GYM

A-301DE

FOR BLUEBEAM LABELING/OCR:

0" PRIOR TO COMMENCING ANY WORK, THE CONTRACTOR IS TO FIELD SURVEY AND RECORD ALL SITE, EXTERIOR, AND INTERIOR BUILDING CONDITIONS AND SUBMIT PHOTOS TO THE ARCHITECT FOR THEIR RECORDS.

LOCATE AND TAG EXISTING LAWN SPRINKLER SYSTEM. VERIFY WORKING CONDITION OF SPRINKLER SYSTEM PRIOR TO COMMENCING ANY WORK AND AFTER CONSTRUCTION IS COMPLETE.

1" ALL EXISTING STRUCTURES, FINISHES, OR OTHER BUILDING COMPONENTS NOT DESIGNATED FOR DEMOLITION OR REMOVAL, AND ALL COMPONENTS DEFINED WITHIN THE DOCUMENTS TO BE SALVAGED, RELOCATED, OR REUSED SHALL BE PROTECTED DURING CONSTRUCTION TO PREVENT DAMAGE. ANY DAMAGE SUSTAINED DURING DEMOLITION OR CONSTRUCTION SHALL BE REPAIRED OR REPLACED TO MATCH ORIGINAL CONDITION BY CONTRACTOR AT NO EXPENSE TO OWNER. SEE GENERAL CONDITIONS AND SUPPLEMENTAL CONDITIONS FOR ADDITIONAL REQUIREMENTS.

CONTRACTOR TO VERIFY MEP DRAWINGS FOR LOCATION, SIZE AND NOTES, FOR ALL NEW MEP ROOFTOP EQUIPMENT, PIPELINES AND DUCTWORK.

ALL ROOFING WORK SHALL OCCUR IN SUCH A MANNER AS NOT TO VOID ANY EXISTING ROOF WARRANTIES. CONTRACTOR TO CONTACT ROOFING MANUFACTURER PRIOR TO COMMENCING THE WORK. NO EXCEPTIONS.

AT ALL AREA IN CONTRACT, PROVIDE NEW RETROFIT KIT AND PROVIDE 4'X4' 1" SUMPED DRAIN AT ALL DRAINS UNLESS OTHERWISE NOTED ON THE ROOF PLAN. PROVIDE EXTENSION AT OVERFLOW RETROFIT KITS.

CLEAR ALL ROOF DRAINS TO REMAIN TO ALLOW PROPER DRAINAGE OF STANDING/PONDING WATER.

PROVIDE ADDITIONAL PLYS AS REQUIRED TO ELIMINATE STANDING / PONDING WATER.

RAISE ANY LOW CURBS TO NEW HEIGHT (AS REQUIRED) TO MEET MANUFACTURER'S MINIMUM BASE FLASHING HEIGHT, TYPICAL.

ADD-1

30 ROOFING - NOTE TO CONTRACTOR
N.T.S.

ROOF SCHEDULE - REROOF

MARK	NOMENCLATURE	AREA	EXISTING ASSEMBLY	Comments
A1	A	4,497 SF	MTLD/4" EPS/1 1/2" LWIC/MB/BUR	
A2	A	5,950 SF	MTLD/4" EPS/1 1/2" LWIC/MB/BUR	
A3	A	2,358 SF	MTLD/4" EPS/1 1/2" LWIC/MB/BUR	
A4	A	2,392 SF	MTLD/4" EPS/1 1/2" LWIC/MB/BUR	
B1	A	18,675 SF	MTLD/4" EPS/1 1/2" LWIC/MB/BUR	
B2	A	61,614 SF	MTLD/4" EPS/1 1/2" LWIC/MB/BUR	
C1	A	7,698 SF	MTLD/4" EPS/1 1/2" LWIC/MB/BUR	
C2	A	2,348 SF	MTLD/4" EPS/1 1/2" LWIC/MB/BUR	
C3	A	2,348 SF	MTLD/4" EPS/1 1/2" LWIC/MB/BUR	
C4	A	11,993 SF	MTLD/4" EPS/1 1/2" LWIC/MB/BUR	
C5	A	3,041 SF	MTLD/4" EPS/1 1/2" LWIC/MB/BUR	
C6	B	3,147 SF	MTLD/4" EPS/1 1/2" LWIC/MB/BUR	
F1	A	1,145 SF		
F2	A	368 SF		
F3	A	368 SF		
Grand total		127,942 SF		

REROOF SCOPE OF WORK:

AT ROOF AREAS A1, A2, A3, A4, A5, B1, B2, C1, C2, C3, C4, C5, SPUD GRAVEL TO EXISTING SMOOTH PLIES. INSTALL NEW MECHANICALLY ATTACHED 1/2" COVER BOARD (RE: SPECS). NEW FULLY ADHERED TWO-PLY MODIFIED BITUMEN "COOL ROOF" MEMBRANE (RE: SPECS). ADD NEW PERIMETER EDGE BLOCKING AS TO MATCH ADJACENT ROOF HEIGHT (RE: SPECS).

REROOF AT AREA C6; DEMO EXISTING ROOF TO EXISTING METAL DECK. INSTALL NEW (2) MECHANICALLY ATTACHED LAYERS OF 2.2" ISO, INSTALL NEW FULLY ADHERED 1/2" COVER BOARD (RE: SPECS), NEW FULLY ADHERED TWO-PLY MODIFIED BITUMEN "COOL ROOF" MEMBRANE (RE: SPECS). ADD NEW PERIMETER EDGE BLOCKING AS TO MATCH ADJACENT ROOF HEIGHT (RE: SPECS).

ROOF AREAS D1-D3, E1 ARE NEW CONSTRUCTION.

AT ROOF AREAS F1-F3, INSTALL NEW ROOF HUGGERS AT EXISTING METAL PANEL. INSTALL NEW STANDING SEAM METAL ROOF PANEL (RE: SPEC). ADD PERIMETER BLOCKING AS NEEDED. REPLACE ALL EXISTING GUTTERS & DOWNSPOUTS WITH NEW; MATCH EXISTING SIZE & LOCATION.

AT ALL ROOF AREAS, AT ALL EXISTING DRAINS, REWORK EXISTING DRAIN AND NEW HARDWARE AND PROVIDE NEW SUMP. CONTRACTOR TO CLEAN DRAIN BOWL AT COMPLETION.

INSTALL NEW ROOF ACCESS LADDERS AS NOTED ON PLANS

AT ALL ROOF AREAS, EXISTING THRU-WALL RECEIVER TO REMAIN UNLESS NOTED TO REPLACE ON PLANS. INSTALL ALL NEW COUNTERFLASHING.

AT ALL ROOF AREAS, ALL EXISTING ABANDONED/CAPPED ROOF TOP EQUIPMENT, CURBS, ETC. TO BE DEMO'D COMPLETE TO EXISTING DECK. INFILL WITH NEW ISO AND NEW COVER BOARD TO MATCH ADJACENT ROOF HEIGHT.

AT ALL ROOF AREAS, REPLACE ALL ASSOCIATED SHEET METAL, TRIM, COPING, ETC. REPLACE OLD PIPE SUPPORTS WITH NEW. LIQUID FLASH ALL PENETRATIONS (VENTS, PIPES, STACKS, ETC.) SALVAGE AND REUSE GUTTERS AND DOWNSPOUTS.

LIGHT PRESSURE WASH AND CLEAN EXISTING SKYLIGHTS. REPLACE ALL GASKET AND SEALANTS, CONTRACTOR TO SALVAGE AND REUSE FRAMING. APPLY NEW CLEAR SKYLIGHT COATING (RE: SPECS) TO SKYLIGHTS.

ALTERNATE X) EXTERIOR WATERPROOFING SCOPE OF WORK:

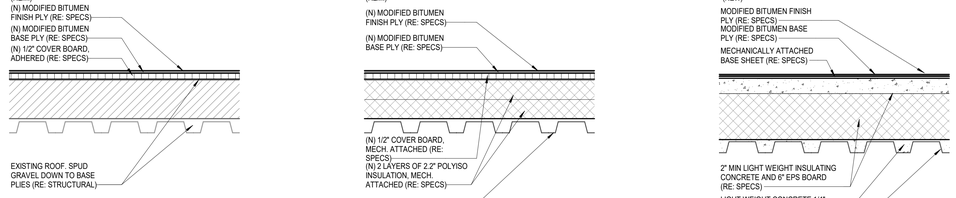
REMOVE AND GRIND CLEAN AND REPLACE EXTERIOR SEALANT AT ALL CONTROL AND EXPANSION JOINTS, AROUND ALL WINDOW AND DOOR FRAMES, AT ALL PENETRATIONS (PIPES, SPEAKERS, LIGHTS, ETC.). WET GLAZE (GLASS TO FRAME) EXISTING WINDOWS.

ROOFING - RR SCOPE OF WORK
N.T.S.

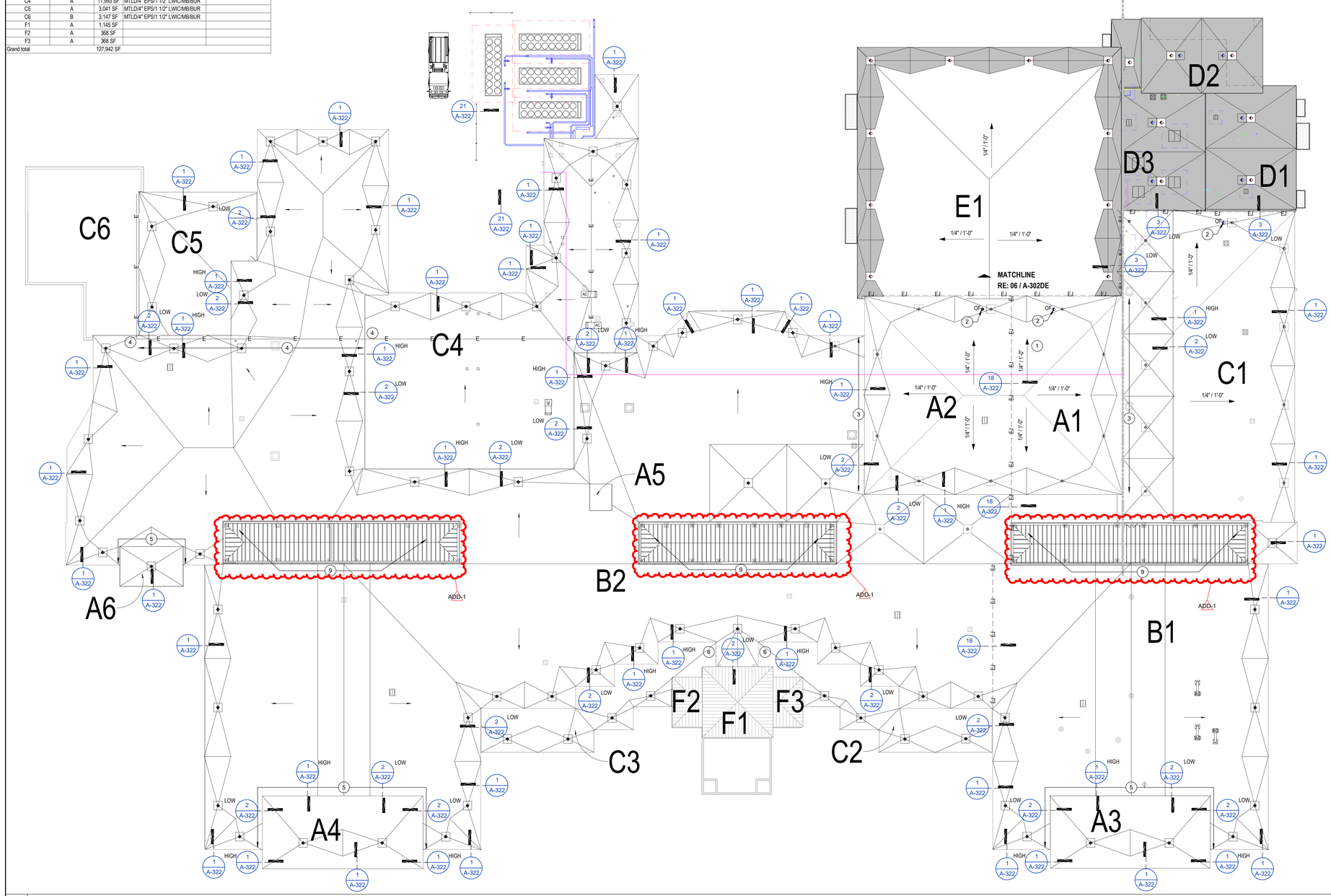
1. GAS/ELECTRICAL LINE RAISE. RE: MEP
2. NEW OVERFLOW DRAINS @ NEW ADDITIONS
3. CONTRACTOR TO REMOVE & SALVAGE BRICK. APPLY NEW LAYER OF FLUID APPLIED VAPOR BARRIER. REPLACE DAMAGED/MISSING BRICK TIES. REPLACE EXISTING THRU-WALL FLASHING W/ NEW (RE: XX/A-3XX). REINSTALL BRICK. CONTRACTOR TO PHASE W/ A1/A2 ROOF REPLACEMENT & EDGE METAL REPLACEMENTS
4. CONTRACTOR TO RAISE SECTION OF GAS/ELECTRICAL LINE. ENSURE LINE IS NOT RESTING ON NEW ROOF EDGE METAL. MIN. 6" OFF NEW ROOF ELEVATION/HEIGHT. RE: MEP ROOF PLAN FOR ADDITIONAL NOTES, ETC.
5. REPLACE EXISTING THRU-WALL W/ NEW (RE: XX/A-322). MINIMIZE NUMBER OF STAIR-STEPS.
6. INSTALL NEW ROOF ACCESS LADDER (RE: XX/A-322)
7. CONTRACTOR TO PROVIDE ALL ASPECTS OF EXPANSION JOINT DETAILING AS PER DETAIL XX/A-322. CONTRACTOR TO WATER TEST TO ENSURE NO LEAKS INTO GYM AREA.
8. CONTRACTOR TO REWORK ALL DRAIN BOWLS & ASSEMBLY HARDWARE. ENSURE NO OPEN VOIDS FROM DRAIN ASSEMBLY TO ROOFING SYSTEM. STRIP NEW ROOFING ASSEMBLY TOO DRAIN. PROVIDE 4'-0" SUMPS AT ALL DRAIN LOCATIONS. CONTRACTOR TO WATER TEST 10% OF DRAINS TO ENSURE NO LEAKS INTO GYM AREA.
9. LIGHT POWER-WASH CLEAN EXISTING SKYLIGHT. REPLACE GASKETS, SEALANTS, APPLY CLEAR SKYLIGHT SEALANT

ADD-1

28 ROOFING - KEYNOTES
N.T.S.



ROOFING - NOMENCLATURE
N.T.S.



06 ROOF PLAN - HARGRAVE HIGH SCHOOL REROOF
1" = 20'-0"

1. CONTRACTOR SHALL VISIT SITE TO ASCERTAIN EXACT EXISTING CONDITIONS AND COMPONENTS RELATED TO THE WORK DESCRIBED BY THESE DOCUMENTS. AFTER AWARD OF THE CONTRACT, CHANGE ORDER REQUEST FOR ADDITIONAL MONEY SHALL NOT BE APPROVED IF THE WORK COULD HAVE BEEN ANTICIPATED DURING THE SITE VISIT BY THE CONTRACTOR, ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH ACCEPTED MANUFACTURER'S PRINTED INSTRUCTIONS AND WARRANTY REQUIREMENTS.
2. DIMENSIONS, DETAILS, EQUIPMENT SIZE AND LOCATION SHOWN IN THESE CONSTRUCTION DOCUMENTS ARE FOR CONVEYANCE OF DESIGN INTENT ONLY. EXACT SIZE, LOCATION, TYPE OF MATERIAL AND TYPE OF CONSTRUCTION OF EXISTING CONDITIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR TO ASCERTAIN AND CONFIRM.
3. INDICATED ROOF HEIGHTS ARE GENERAL IN NATURE.
4. REFER TO NOMENCLATURE FOR TYPE OF ROOF SYSTEM. AREAS ARE MARKED WITH DESIGNATED LETTER ON ROOF PLAN.
5. NOTE THAT THE DETAILS DRAWN ARE GENERIC IN NATURE AND ARE NOT NECESSARILY LOCATED AND KEYED TO THE ROOF PLANS.
6. REMOVE ALL ABANDONED EQUIPMENT IDENTIFIED ON SITE AND AS SHOWN OTHERWISE ON THESE DOCUMENTS.
7. ALL NEW CRICKETS AND TAPERED INSULATION SHALL BE INSTALLED WITH A FINISHED 1/4" PER FOOT MIN. SLOPE. CRICKET THE UP SLOPE SIDE OF ALL SQUARE CURBS AND PROJECTIONS OVER 20' IN WIDTH.
8. REPLACE ROTTED AND / OR OTHERWISE DETERIORATED ROOF DECK MATERIALS (AS APPLICABLE) WITH LIKE MATERIAL AND THICKNESS.
9. REPLACE ROTTEN AND / OR OTHERWISE DETERIORATED WOOD NAILER MATERIAL WITH NEW LIKE MATERIAL AND THICKNESS.
10. PATCH EXISTING METAL ROOF DECK (AS APPLICABLE) FOR HOLES LESS THAN 10" WIDE BY ANCHORING 22 GA. STAINLESS STEEL SHEET METAL TO BOTTOM OF EXISTING METAL ROOF DECK AND ADDING NEW INSULATION TO MATCH THICKNESS. PATCH EXISTING METAL ROOF DECK FOR HOLES GREATER THAN 10" WIDE BY ANCHORING 22 GA. STAINLESS STEEL SHEET METAL TO BOTTOM OF EXISTING METAL ROOF DECK SPANNING FROM JOIST TO JOIST.
11. AS APPLICABLE, ALL HVAC AND / OR DX UNITS, ELECTRICAL TRANSFORMERS, ROOF TOP EQUIPMENT, ETC. THAT ARE ON SLEEPERS SHALL BE DISCONNECTED / REMOVED, RAISED, AND PLACED ON NEW CURBED PLATFORMS AS DETAILED AND REINSTALLED / RECONNECTED. ALL CURB MOUNTED HVAC UNITS, EQUIPMENT, ETC. SHALL HAVE A MINIMUM 10" CURB HEIGHT AND ARE TO BE RAISED AS REQUIRED.
12. WORK TO ANY UTILITY CONDUIT OR PIPE SHALL BE PERFORMED BY SPECIFIC LICENSED SUBCONTRACTORS SPECIALIZING IN HVAC, PLUMBING AND ELECTRICAL WORK. PERMITS AND INSPECTIONS ARE REQUIRED. REROUTE AND / OR MODIFY UTILITY CONDUIT OR PIPE AS REQUIRED TO BE INSTALLED AS DETAILED.
13. PROVIDE A "MERCURY" GAS LINE TEST (COORDINATE WITH OWNER AND ARCHITECT FOR WITNESS OF TEST), REPAIR ANY FOUND LEAKS AND RETEST AS REQUIRED.
14. UNLESS INDICATED OTHERWISE ON THE CONSTRUCTION DOCUMENTS, REPLACE AND RAISE ALL EXISTING EXPANSION JOINTS / AREA DIVIDERS / CURB MOUNTED EQUIPMENT / SKYLIGHTS (AS APPLICABLE) A MIN. 10" ABOVE ROOF DECK.
15. ALL SOIL STACK FLASHING SHALL BE A MIN. 10" ABOVE FINISHED ROOF SURFACE. COUPLE PVC PIPE ABOVE DECK AND COUPLE CAST IRON PIPE BELOW DECK.
16. ALL PIPING/ CONDUITS/ ETC. SHALL BE A MIN. 10" ABOVE ROOF SURFACE, NEW AND EXISTING. PROVIDE PORTABLE PIPE HANGERS WITH PROTECTION PADS AS SPECIFIED. RAISE EXISTING PIPING/ CONDUIT/ ETC. AS REQUIRED. MEP CONTRACTORS SHALL PROVIDE SUPPORTS FOR UTILITY LINES.
17. PROVIDE SHEET METAL HOODED (WITH METAL FACE CLOSURE) CAPS, WOOD CURB, BOX COVER AT ALL GAS AND WATER PIPE ROOF PENETRATIONS AS DETAILED. PROVIDE POSITIVE SLOPE AWAY FROM FACE COVER.
18. PROVIDE WALKWAY PROTECTION PADS AS SPECIFIED AROUND ALL ROOF HATCHES, HVAC ROOFTOP UNITS, DOORS THAT OPEN ONTO ROOF AND AT TOP AND BOTTOM OF ALL ROOF TOP ACCESS LOCATIONS.
19. INSTALL NEW SPLASH PAN AT ALL LOCATIONS WHERE ROOF DRAINAGE DISCHARGES ONTO ROOF AREA. INSTALL NEW SPLASH BLOCKS WHERE ROOF DRAINAGE DISCHARGES ON GROUND.
20. ISOLATE ALL HEAT PIPES / FLUES AS DETAILED AND RECOMMENDED AND OUTLINED IN THE NRCA MANUAL FOR HOT STACK FLASHING AND AS DETAILED.
21. ALL OUTSIDE AIR INTAKES SHALL BE COVERED TO ELIMINATE ODORS AND FUMES FROM ENTERING INTO THE BUILDING DURING CONSTRUCTION WORK.
22. AFTER SUBSTANTIAL COMPLETION, THE GENERAL CONTRACTOR SHALL EXAMINE AND CLEAN NEW DRAIN LINES AND NEW AND EXISTING (AS APPLICABLE) GUTTERS OF DEBRIS AND BLOCKAGE. FLUSH WITH WATER TO ENSURE THAT DRAINS AND GUTTERS FLOW FREELY.
23. OWNER WILL VERIFY PROPER OPERATION OF ALL ROOF TOP EQUIPMENT BEFORE AND AFTER THE PROJECT. CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING ALL INOPERABLE EQUIPMENT PRIOR TO RELEASE OF RETAINAGE.
24. PRIOR TO COMMENCEMENT OF WORK, COORDINATE WALK OF ENTIRE ROOF WITH ROOFING MANUFACTURER'S TECHNICAL REPRESENTATIVE TO IDENTIFY AND LOCATE ALL AREAS OF HIGH SLOPE OR OTHER CONDITIONS WHICH MIGHT REQUIRE SPECIAL PROCEDURES FOR SYSTEM ATTACHMENT.
25. REFER TO MEP DRAWINGS FOR SIZE AND LOCATION OF DECK PENETRATIONS AND ROOF TOP EQUIPMENT.
26. REFER TO GENERAL DETAILS FOR TYPICAL SPLASH PAN, ROOF DRAIN AND OVERFLOW DRAIN DETAILS.
27. REPLACE ALL RUSTED AND / OR DETERIORATED EXISTING METAL VENT FLASHING AND FLUES.
28. GENERAL CONTRACTOR TO ENSURE ALL ROOFTOP PENETRATIONS (SOIL STACKS, VENTS, ETC.) ARE INSTALLED MIN. 4'-0" FROM OTHER DECK PENETRATIONS, RISE WALLS, AND ROOF EDGE. MECHANICAL EQUIPMENT TO BE LOCATED MIN. 10'-0" FROM PERIMETER EDGE AND NO CLOSER THAN 4'-0" FROM RISE WALLS, OR ANY OTHER ROOF PENETRATION.
29. LOCATE PERIMETER DRAINS MAX. 6'-0" FROM EDGE TYPICAL UNLESS SHOWN OTHERWISE. (GENERAL CONTRACTOR TO COORDINATE WITH ROOFING AND PLUMBING CONTRACTOR.)
30. THROUGH WALL BASE FLASHING MIN. HEIGHT 10" AND MAX. HEIGHT 20" FROM FINISH DECK. DO NOT STEP THROUGH WALL FLASHING CLOSER THAN 5'-0" FROM CORNERS.
31. GENERAL CONTRACTOR SHALL COORDINATE LOCATION AND ORIENTATION OF ROOF HATCH AND ACCESS LADDER.
32. GENERAL CONTRACTOR SHALL COORDINATE ALL TOP OF STEEL TO TOP OF BLOCKING AND SUBSTRATE BOARD DIMENSIONS IN FIELD PRIOR TO ORDERING MATERIALS. NO ADDITIONAL COMPENSATION WILL BE GRANTED FOR FAILURE TO COORDINATE THESE DIMENSIONS.
33. GENERAL CONTRACTOR SHALL VERIFY ROOF SLOPES WILL PROPERLY DRAIN AS SHOWN. TAPERED INSULATION HATCHING SHOWN IS NOT INTENDED TO ILLUSTRATE THE ENTIRE LIMITS OF TAPERED INSULATION. ROOF AREAS NOT SLOPED BY STRUCTURE SHALL BE SLOPED WITH TAPERED INSULATION TO ACHIEVE PROPER DRAINAGE.
34. PROVIDE ONE WAY MOISTURE VENTS AT ALL LIGHTWEIGHT CONCRETE OR GYPSUM OVER POUR AREAS AS RECOMMENDED BY THE ROOFING SYSTEM MANUFACTURER.
35. PAINT ALL EXISTING GAS PIPE TO REMAIN.
36. PROVIDE RETROFIT DRAIN KIT FOR EACH EXISTING ROOF DRAIN. RE: SPECS.
37. ALL ROOFING WORK SHALL OCCUR IN SUCH A MANNER AS NOT TO VOID ANY EXISTING ROOF WARRANTIES. CONTRACTOR TO CONTACT ROOFING MANUFACTURER PRIOR TO COMMENCING THE WORK. NO EXCEPTIONS.

ROOFING - GENERAL NOTES
N.T.S.

NEW ROOF DRAIN
EXIST. ROOF DRAIN
OF OVERFLOW DRAINS
FLANGE VENT
PITCH PAN
VENT THROUGH ROOF
WALL DRAIN
CURB MOUNTED VENT
CURB MOUNTED INTAKE
ABANDONED CURB TO BE REMOVED / PATCHED
A ABANDON EQUIP.
GUY WIRE
POWER VENT
HEATER VENT
BOILER VENT
TURBINE VENT
PB PIPE BOX
GOOSE NECK VENT
AC CURB MOUNTED AC
SPLASH BLOCK
SPLASH PAN
A/C ON POSTS
ROOF HATCH
SL SKYLIGHTS
ANTENNA
SATELLITE DISH
S SCUPPER
G GUTTER
DS DOWNSPOUT
WALL LADDER
SWING LADDER
EXHAUST AND SUPPLY FAN ON SINGLE CURB
RIDGE LINE
EXISTING AREA TO REMAIN -N/C
NEW TAPERED INSULATION / CRICKET
NEW LT. WT. CONCRETE INSULATION/ CRICKET
A1 ROOF AREA DESIGNATION
TAPERED LIGHT WEIGHT CONCRETE
DESIGNATES EXTENTS OF WORK IDENTIFIED BY KEYED NOTES
AD AREA DIVIDER
EJ EXPANSION JOINT
C CONDENSATE LINE
W WATER LINE
E ELEC. LINE
G GAS LINE

ROOF LEGEND
N.T.S.

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New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

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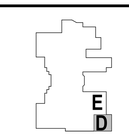


KEY PLAN

NORTH: PLAN TRUE

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

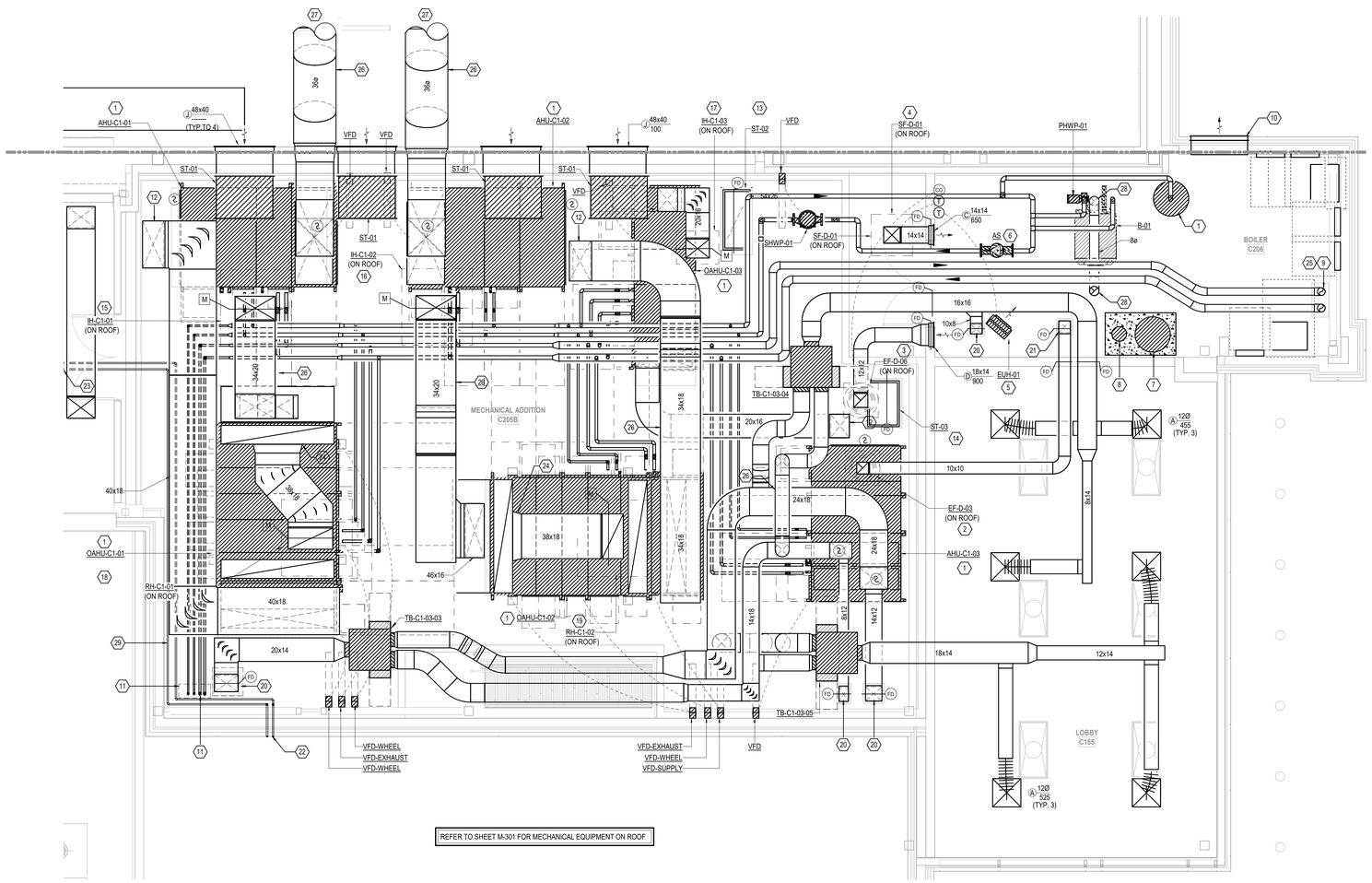
No.	Description	Date
ADD-1	ADD-1	2024/08/20

ROOF PLAN - REROOF- GYM

A-301DE

Plot Stamp:
6/3/2025 8:40:28 AM

MECHANICAL ENLARGED PLAN
M-202.G
FOR BLUEBEAM LABELINGOCR:



1 **MECHANICAL ENLARGED PLAN - MECH.ADDITION C205**
SCALE: 1/4" = 1'-0"

KEYED NOTE:

1. PROVIDE 4" THICK CONCRETE PAD WITH MINIMUM 6" WIDER IN ALL DIRECTIONS AND 1-1/4"Ø CONDENSATE PIPE TO NEAREST FLOOR DRAIN. REFER TO PLUMBING DRAWING FOR LOCATION. PROVIDE DUCT MOUNTED IONIZATION (SMOKE) DETECTOR SPECIFIED AND INSTALLED IN DIVISION 28.
2. 10"x10" EXHAUST AIR DUCT TO EF-D-03 ON ROOF; TRANSITION TO UNIT INLET.
3. 12"x12" EXHAUST AIR DUCT TO EF-D-06 ON ROOF; TRANSITION TO UNIT INLET.
4. 12"x12" ROOF SUPPLY FAN UP TO SF-D-01 ON ROOF; TRANSITION TO UNIT INLET. END DUCT AT 6" BELOW STRUCTURE WITH ALUMINUM WIRE MESH CLOTH.
5. ELECTRIC UNIT HEATER SUSPENDED FROM STRUCTURE.
6. NEW HEATING WATER AIR SEPARATOR SUSPENDED FROM STRUCTURE.
7. NEW HEATING WATER EXPANSION TANK WITH 4" THICK CONCRETE PAD.
8. NEW HEATING WATER CHEMICAL FEEDER TANK. PROVIDE COUPON RACK NEAR SIDESTREAM CARTRIDGE BYPASS FILTER.
9. ROUTE CHILLED WATER DOWN TO FRIST FLOOR. REFER TO M-101D FOR CONTINUATION. COORDINATE WITH STRUCTURAL FOR FLOOR SLAB OPENING.
10. 48"x32" COMBUSTION AIR LOUVER. REFER TO ARCHITECTURAL DRAWING AND SPECIFICATION FOR FINAL FINISH AND LOCATION.
11. ROUTE CHILLED WATER AND HEATING PIPE DOWN TO FRIST FLOOR. REFER TO M-101D FOR CONTINUATION. COORDINATE WITH STRUCTURAL FOR FLOOR SLAB OPENING.
12. OUTSIDE AIR TAP SHALL BE ROUTED DROP DOWN AND CLOSE TO RETURN AIR OPENING OF ASSOCIATED AIR HANDLING UNIT.
13. 48"x20" LINED RETURN AIR DUCT WITH SOUND TRAP DOWN TO FIRST FLOOR. PROVIDE FIRE DAMPER AT FLOOR PENETRATION. COORDINATE WITH STRUCTURAL FOR FLOOR SLAB OPENING.
14. 36"x24" LINED RETURN AIR DUCT WITH SOUND TRAP DOWN TO FIRST FLOOR. PROVIDE FIRE DAMPER AT FLOOR PENETRATION. COORDINATE WITH STRUCTURAL FOR FLOOR SLAB OPENING.
15. 34"x20" OUTSIDE AIR DUCT UP TO INTAKE HOOD IH-C1-01 ON ROOF. PROVIDE TRANSITION TO UNIT INLET.
16. 34"x20" OUTSIDE AIR DUCT UP TO INTAKE HOOD IH-C1-02 ON ROOF. PROVIDE TRANSITION TO UNIT INLET.
17. 20"x16" OUTSIDE AIR DUCT UP TO INTAKE HOOD IH-C1-03 ON ROOF. PROVIDE TRANSITION TO UNIT INLET.
18. 38"x18" OUTSIDE AIR DUCT UP TO INTAKE HOOD RH-C1-01 ON ROOF. PROVIDE TRANSITION TO UNIT INLET.
19. 38"x18" OUTSIDE AIR DUCT UP TO INTAKE HOOD RH-C1-02 ON ROOF. PROVIDE TRANSITION TO UNIT INLET.
20. SUPPLY AIR DUCT; REFER TO M-101D FOR CONTINUATION. COORDINATE WITH STRUCTURAL FOR FLOOR SLAB OPENING.
21. EXHAUST AIR DUCT; REFER TO M-101D FOR CONTINUATION. COORDINATE WITH STRUCTURAL FOR FLOOR SLAB OPENING.
22. LIQUID AND SUCTION REFRIGERANT PIPES TO CONDENSING UNIT ON ROOF. SIZE PER MANUFACTURERS RECOMMENDATION. REFER TO M-301 FOR CONTINUATION.
23. LIQUID AND SUCTION REFRIGERANT PIPES ROUTE TO EXISTING MECHANICAL MEZZANINE. REFER TO M-102D FOR CONTINUATION.
24. PROVIDE RECTANGULAR TRANSITION 45° ANGLE .
25. PIPE PENETRATION TO FIRE RATED FLOOR AND WALL HAVE FIRE STOPPING AND FIRE-RESISTANT JOINT SEALER AS SPECIFIED IN SPECIFICATIONS. PLEASE REFER TO HVAC PIPING INSULATION-ITEM 3.3/INSTALLATION/W/8.a
26. ROUTE SUPPLY AIR DUCT IN BETWEEN THE ROOF JOIST; COORDINATE WITH STRUCTURAL.
27. SUPPLY AIR DUCT ROUTE IN BETWEEN THE ROOF JOIST; COORDINATE WITH STRUCTURAL. REFER TO M-102E FOR CONTINUATION.
28. 8"Ø BOILER FLUE PIPE TO THE ROOF. REFER TO BOILER FLUE DETAIL DRAWING.
29. REFRIGERANT LINES; SIZE PER MANUFACTURER'S RECOMMENDATION. PROVIDE SNAP-N' SHIELD RERIGERANT PIPING SUPPORT. REFER TO DETAIL DRAWING.

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LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS

KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
MITAL J. PATEL
111622
LICENSED
PROFESSIONAL ENGINEER
05/20/2025
LEAF ENGINEERS
F-10672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

CHECKED BY: MP
DRAWN BY: OG

MECHANICAL ENLARGED PLAN

M-202.G

Plot Stamp:
6/3/2025 1:11:24 PM

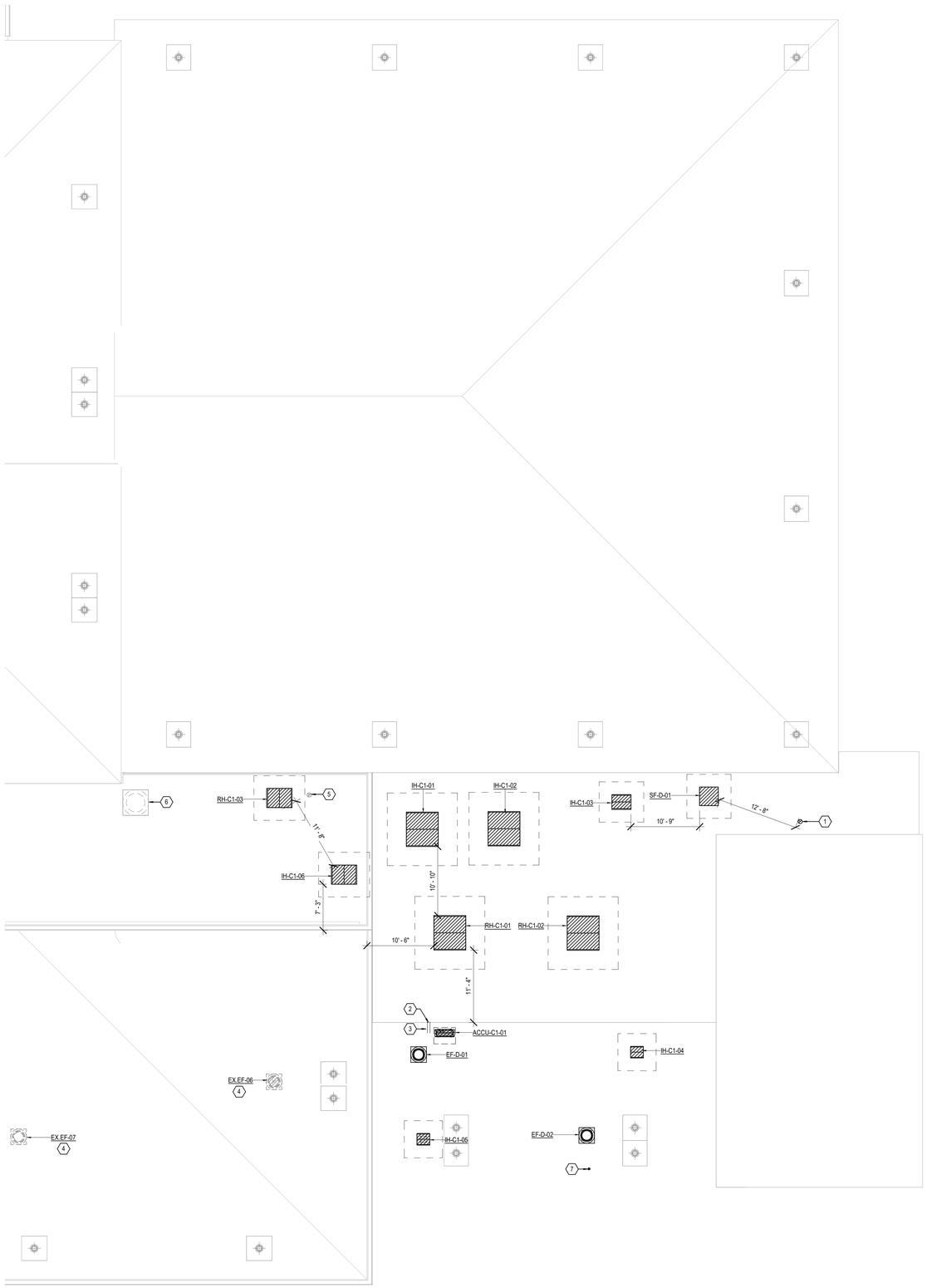
MECHANICAL ROOF PLAN - AREA D AND AREA E-GYM

M-301.G

FOR BLUEBEAM LABELING/OCR:

0"

1"



KEYED NOTES:

1. 8"Ø BOILER FLUE PIPE. REFER TO WATER HEATER FLUE DETA
2. LIQUID AND SUCTION REFRIGERANT LINES ROUTE TO SIDE WALL.
3. ALUMINUM JACKET ON ALL EXPOSED LIQUID AND SUCTION REFRIGERANT LINES.
4. EXISTING ROOF EXHAUST FAN TO REMAIN.
5. EXISTING GAS WATER HEATER FLUE PIPE TO REMAIN.
6. EXISTING DRYER VENT TO REMAIN.
7. DRYER VENT WITH GOOSENECK; REFER TO DETAIL DRAWING.

1 MECHANICAL ROOF PLAN - AREA D AND AREA E

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

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New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

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TEXAS INDEPENDENT SCHOOL DISTRICT HUFFMAN

KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
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F-18672

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05/20/2025	240157

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1	Addendum 1	06/03/2025

CHECKED BY: MP

DRAWN BY: OG

MECHANICAL ROOF PLAN - AREA D AND AREA E-GYM

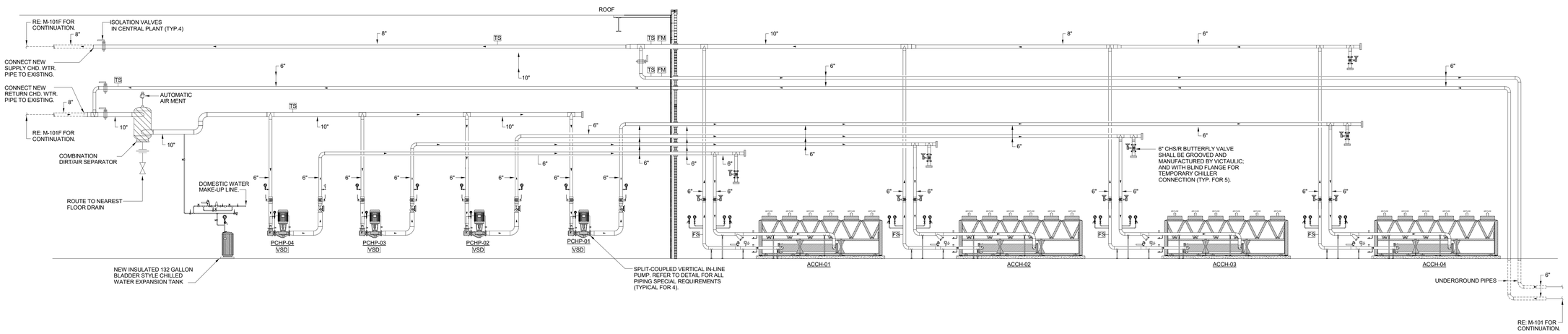
M-301.G

Plot Stamp:
6/3/2025 1:11:26 PM

CHILLED WATER PLANT PIPING DIAGRAM-GYM
M-401.G
FOR BLUEBEAM LABELING/OCR:

NOTES:

1. CONTRACTOR TO VERIFY STACKED COIL CONNECTIONS AND PROVIDE ADDITIONAL VALVES AS REQUIRED. DRAWING IS DIAGRAMATIC AND DOES NOT INDICATE ALL REQUIRED VALVES.
2. ALL PIPING SHALL BE PAINTED 18 INCHES MINIMUM AT ALL TERMINATIONS AT CHILLERS, PUMPS AND AIR HANDLERS BEFORE INSULATION IS INSTALLED. PAINT SHALL BE RUST INHIBITING OR GALVANIZING TYPE.



01 CHILLED WATER PLANT PIPING DIAGRAM
SCALE:NONE

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NORTH: PLAN TRUE

STATE OF TEXAS
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DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

CHECKED BY: MP
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CHILLED WATER PLANT PIPING DIAGRAM-GYM

M-401.G

Plot Stamp:
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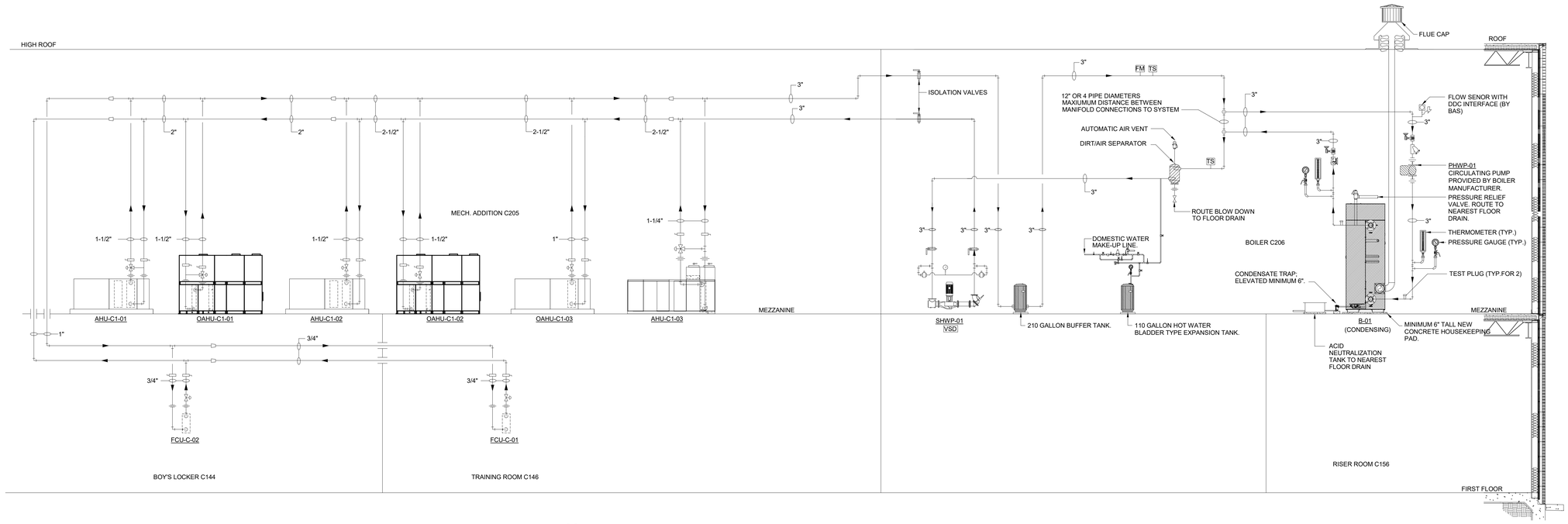
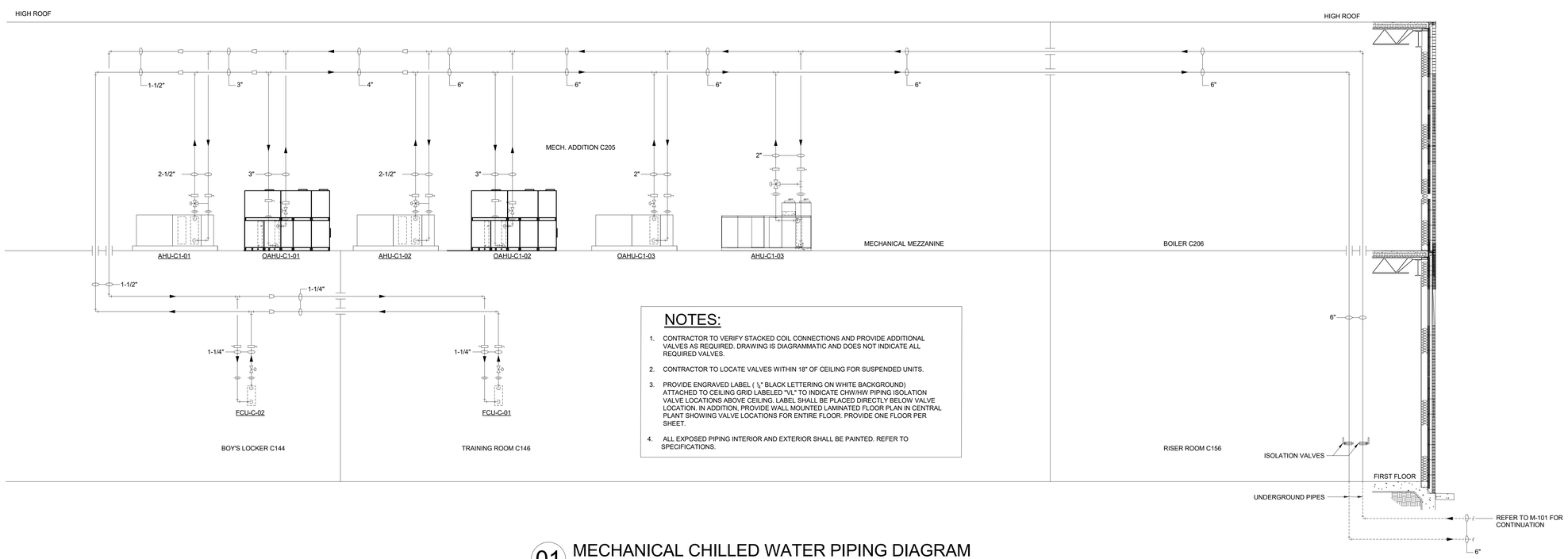
MECHANICAL CHILLED & HEATING WATER PIPING DIAGRAM-GYM
M-402.G
FOR BLUEBEAM LABELING/OCR:



02 MECHANICAL HEATING WATER PIPING DIAGRAM

SCALE: NONE



NOTES:

1. CONTRACTOR TO VERIFY STACKED COIL CONNECTIONS AND PROVIDE ADDITIONAL VALVES AS REQUIRED. DRAWING IS DIAGRAMMATIC AND DOES NOT INDICATE ALL REQUIRED VALVES.
2. CONTRACTOR TO LOCATE VALVES WITHIN 18" OF CEILING FOR SUSPENDED UNITS.
3. PROVIDE ENGRAVED LABEL (¼" BLACK LETTERING ON WHITE BACKGROUND) ATTACHED TO CEILING GRID LABELED "VL" TO INDICATE CHW/HW PIPING ISOLATION VALVE LOCATIONS ABOVE CEILING. LABEL SHALL BE PLACED DIRECTLY BELOW VALVE LOCATION. IN ADDITION, PROVIDE WALL MOUNTED LAMINATED FLOOR PLAN IN CENTRAL PLANT SHOWING VALVE LOCATIONS FOR ENTIRE FLOOR. PROVIDE ONE FLOOR PER SHEET.
4. ALL EXPOSED PIPING INTERIOR AND EXTERIOR SHALL BE PAINTED. REFER TO SPECIFICATIONS.

01 MECHANICAL CHILLED WATER PIPING DIAGRAM

SCALE: NONE

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New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

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HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS

KEY PLAN

NORTH: PLAN TRUE

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DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

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MECHANICAL CHILLED & HEATING WATER PIPING DIAGRAM-GYM

M-402.G

Plot Stamp:
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MECHANICAL SCHEDULES-GYM
M-501.G
FOR BLUEBEAM LABELING/OCR:

ROTARY-SCREW WATER CHILLER AIR-COOLED SCHEDULE

DESIGNATION	REFRIGERANT	COMPRESSOR TYPE	EVAPORATOR DATA								AMBIENT TEMP. (°F)	MAX. UNIT KW / TON (@ DESIGN CONDITIONS)	EER AT AHRI CONDITIONS		MANUFACTURER	MODEL NUMBER	DIMENSIONS (L x W x H) INCHES	WEIGHT (LBS)	ELECTRICAL DATA		
			CAPACITY (TONS)	E.W.T. (°F)	L.W.T. (°F)	GPM	MIN. FLOW RATE (GPM)	FOULING FACTOR	NO. OF PASS	MAX. P.D. (FEET)			FULL LOAD (EER)	IPLV (EER)					MCA	MOCP	VOLTS / Ø / HZ
ACCH-01	R-513a	SCREW	235	56°F	44°F	469	219	0.0001	1.0	9.2	105°F	1.438	8.58	17.34	DAIKIN	AWV	334" x 88" x 100"	16,892	551	800	460 / 3 / 60
ACCH-02	R-513a	SCREW	235	56°F	44°F	469	219	0.0001	1.0	9.2	105°F	1.438	8.58	17.34	DAIKIN	AWV	334" x 88" x 100"	16,892	551	800	460 / 3 / 60
ACCH-03	R-513a	SCREW	235	56°F	44°F	469	219	0.0001	1.0	9.2	105°F	1.438	8.58	17.34	DAIKIN	AWV	334" x 88" x 100"	16,892	551	800	460 / 3 / 60
ACCH-04	R-513a	SCREW	235	56°F	44°F	469	219	0.0001	1.0	9.2	105°F	1.438	8.58	17.34	DAIKIN	AWV	334" x 88" x 100"	16,892	551	800	460 / 3 / 60

1. REFERENCE ELECTRICAL DRAWINGS FOR ELECTRICAL DATA.
2. PROVIDE CHILLER WITH SINGLE POINT POWER CONNECTION AND FACTORY MOUNTED NON-FUSED MOLDED CASE DISCONNECT SWITCH.
3. CHILLER SHALL BE PROVIDED WITH BACNET INTERFACE CARD.
4. CONDENSER COILS SHALL BE MICROCHANNEL, FULLY DIPPED AND BAKED (E-COAT) WITH UV TOP COAT.
5. PROVIDE LOW AMBIENT HEAD PRESSURE CONTROL AS SPECIFIED.
6. CONTROL PANEL SHALL BE NEC409 AND UL508A COMPLIANT (HIGH SCCR 65kA CURRENT RATING.)
7. PROVIDE A MINIMUM OF TWO INDEPENDENT REFRIGERANT CIRCUITS.

MODULAR INDOOR CENTRAL STATION - AIR HANDLING UNIT SCHEDULE

DESIGNATION	SERVICE	TYPE	ARRANGEMENT	MANUFACTURER	MODEL NUMBER	DIMENSIONS (L x W x H) INCHES	WEIGHT (lbs)	SEE NOTE	BLOWER DATA								
									TOTAL CFM	OUTSIDE AIR CFM	MIN. OUTSIDE AIR CFM	EST. EXT. SP. (IN. WG.)	MOTOR QTY / MAX. MOTOR HP (EACH)	TOTAL BRAKE HP	VARIABLE FREQUENCY H.P.	TYPE
AHU-C1-01	NEW GYM - AREA C	SINGLE ZONE VAV	HORIZONTAL	DAIKIN	CAH	132" x 84" x 52"	3,670	1-11	10,000	6,840	2,052	1.2"	2 - 7.5 HP	2 - 4.20	15	DIRECT DRIVE - PF
AHU-C1-02	NEW GYM - AREA C	SINGLE ZONE VAV	HORIZONTAL	DAIKIN	CAH	132" x 84" x 52"	3,670	1-11	10,000	6,840	2,052	1.2"	2 - 7.5 HP	2 - 4.20	15	DIRECT DRIVE - PF
AHU-C1-03	LOBBY, CONCOURSE, CONCESSION	DUAL DUCT VAV	HORIZONTAL - TOP DISCHARGE	DAIKIN	CAH	138" x 76" x 42"	3,500	1-11	5,850	2,200	2,200	1.0"	2 - 3HP	2 - 2.10	7 1/2	DIRECT DRIVE - PF
OAHU-C1-03	AHU-C1-03	SINGLE ZONE VAV	HORIZONTAL	DAIKIN	CAH	156" x 52" x 30"	3,400	1-10, 12-14	2,200	2,200	2,200	0.8"	1 - 2HP	1.55	2	DIRECT DRIVE - PF

DESIGNATION	MAIN COOLING COIL DATA												HEATING COIL DATA							
	CFM OVER COIL	MAX. FACE VELOCITY (FPM)	GRAND SENSIBLE BTUH	GRAND TOTAL BTUH	EAT (°F DB)	EAT (°F WB)	LAT (°F DB)	GPM	EWT (°F DB)	LWT (°F DB)	CFM OVER COIL	MAX. FACE VELOCITY (FPM)	GRAND TOTAL BTUH	EAT (°F DB)	LAT (°F DB)	GPM	EWT (°F DB)	LWT (°F DB)
AHU-C1-01	10,000	500	248,400	323,880	78.0º	65.0º	55.0º	54	44.0ºF	56.0ºF	10,000	750	270,000	60.0ºF	85.0ºF	14	140.0ºF	100.0ºF
AHU-C1-02	10,000	500	248,400	323,880	78.0º	65.0º	55.0º	54	44.0ºF	56.0ºF	10,000	750	270,000	60.0ºF	85.0ºF	14	140.0ºF	100.0ºF
AHU-C1-03	5,850	500	145,314	189,470	78.0º	65.0º	55.0º	32	44.0ºF	56.0ºF	5,850	750	157,950	60.0ºF	85.0ºF	8	140.0ºF	100.0ºF
OAHU-C1-03	2,200	500	97,416	200,790	96.0º	80.0º	55.0º	33	44.0ºF	56.0ºF	2,200	750	83,160	20.0ºF	55.0ºF	4	140.0ºF	100.0ºF

1. REFERENCE ELECTRICAL DRAWINGS FOR ELECTRICAL DATA.
2. ESTIMATED EXTERNAL STATIC PRESSURE INCLUDES LOSSES THROUGH DUCTWORK, AIR DEVICES, SOUND ATTENUATORS, ETC.
3. AIR HANDLING UNIT INTERNAL STATIC PRESSURE SHALL INCLUDE LOSSES THROUGH COILS, CASING, INTERNAL DAMPERS, AND 0.75" W.G. FOR DIRTY FILTERS.
4. COOLING COILS SHALL HAVE A MINIMUM OF 6 ROWS AND A MAXIMUM OF 10 FINS PER INCH. PRESSURE DROP THROUGH COIL SHALL NOT EXCEED 15 FT. AT SCHEDULED GPM.
5. FAN CONSTRUCTION SHALL BE MINIMUM AMCA CLASS 2.
6. FOR UNITS WITH MULTIPLE FANS / MOTORS, PROVIDE FACTORY INSTALLED AND WIRED MOTOR OVERLLOAD PANEL FOR CONNECTION TO SINGLE VFD.
7. PROVIDE WITH VARIABLE FREQUENCY DRIVE.
8. PROVIDE FACTORY MOUNTED AND WIRED EXTERNAL JUNCTION BOXES ON FAN SECTION. J-BOX SHALL ALLOW ELECTRICAL CONTRACTOR TO LAND POWER TO DEVICE WITHOUT PENETRATING THROUGH CABINET. FIELD INSTALLED JUNCTION BOXES ARE NOT ACCEPTABLE.
9. PROVIDE FACTORY MOUNTED SHAFT GROUNDING KIT FOR AIR HANDLING UNIT MOTOR, NO EXCEPTIONS.
10. PROVIDE WITH ANGLED MERV 13 FILTERS.
11. PROVIDE HOT WATER COIL IN RE-HEAT POSITION.
12. ALL COILS SHALL BE FULLY EPOXY DIPPED AND BAKED (E-COAT) WITH UV TOP COAT.
13. PROVIDE FACTORY MIXING BOX / OUTSIDE AIR PLENUM BOX WITH OUTSIDE AIR DAMPER. REFER TO DRAWINGS FOR OUTSIDE AIR DUCT SIZES & CONNECTION LOCATIONS. SCHEDULED DIMENSION INCLUDES FACTORY MIXING BOX.
14. HOT WATER COIL SHALL BE IN THE PRE-HEAT POSITION

MODULAR INDOOR CENTRAL-STATION OUTSIDE AIR-HANDLING UNIT WITH ENERGY RECOVERY WHEEL SCHEDULE

DESIGNATION	SERVICE	ARRANGEMENT	MANUFACTURER	MODEL NUMBER	DIMENSIONS (L" x W" x H")	OPERATING WEIGHT (LBS.)	SEE NOTE	SUPPLY AIR BLOWER DATA								
								TOTAL...	OUTSIDE...	MIN OUTSIDE...	EST. EXT. SP...	MAX. ALLOWABLE...	MOTOR QTY / MAX...	VARIABLE...	DRIVE / TYPE	VOL...
OAHU-...	AHU-...	HORIZO...	DAIKIN	VISION	180" x 100" x 96"	8,400	1-14	6,840	6,840	2,052	0.8	2 - 2.51	2 - 5 HP	10.00	DIRECT DRIVE -...	460 / ...
OAHU-...	AHU-...	HORIZO...	DAIKIN	VISION	180" x 100" x 96"	8,400	1-14	6,840	6,840	2,052	0.8	2 - 2.51	2 - 5 HP	10.00	DIRECT DRIVE -...	460 / ...

DESIGNATION	EXHAUST / RELIEF AIR BLOWER DATA							TOTAL ENERGY RECOVERY WHEEL DATA														
								OUTSIDE AIR DATA						EXHAUST / RELIEF AIR DATA						ELECTRICAL INFO		
	CFM	EST. EXT. SP...	MAX. ALLOWABLE...	MOTOR QTY / MAX...	VARIABLE...	DRIVE / TYPE	VOL...	OUTDOOR A...	MAX. FACE...	WINTER...	SUMMER EAT...	WINTER LAT...	SUMMER LAT...	EXHAUST A...	MAX. FACE...	WINTER EAT...	SUMMER EAT...	MOTO...	VARIABLE...	VOL...
OAHU-...	5...	0.8	2 - 2 - 1.93	2 - 3 HP	7.50	DIRECT DRIVE -...	460 / ...	6,840	500	25ºF	96 / 80	53.6 / 50.5	83 / 71.2	5,814	500	70ºF	76 / 65	0.75	1.00	460 / ...
OAHU-...	5...	0.8	2 - 2 - 1.93	2 - 3 HP	7.50	DIRECT DRIVE -...	460 / ...	6,840	500	25ºF	96 / 80	53.6 / 50.5	83 / 71.2	5,814	500	70ºF	76 / 65	0.75	1.00	460 / ...

DESIGNATION	COOLING COIL DATA											PRE-HEATING COIL DATA									
	CFM OVE...	MAX. FACE...	GRAND...	GRAND...	EAT (°...	EAT (°...	LAT (°...	G...	EWT (°...	LWT (°...	CFM OVE...	MAX. FACE...	GRAND...	EAT (°...	LAT (°...	G...	EWT (°...	LWT (°...
OAHU-...	6,840	500	304,277	625,210	96.0º	80.0º	55.0º	1...	44.0º	56.0º	6,840	500	259,749	20.0º	55.0º	13	140.0º	100.0º
OAHU-...	6,840	500	304,277	625,210	96.0º	80.0º	55.0º	1...	44.0º	56.0º	6,840	500	259,749	20.0º	55.0º	13	140.0º	100.0º

1. REFERENCE ELECTRICAL DRAWINGS FOR ELECTRICAL CHARACTERISTICS.
2. ESTIMATED EXTERNAL STATIC PRESSURE INCLUDES LOSSES THROUGH DUCTWORK, AIR DEVICES, SOUND ATTENUATORS, ETC.
3. AIR HANDLING UNIT INTERNAL STATIC PRESSURE SHALL INCLUDE LOSSES THROUGH COILS, CASING, INTERNAL DAMPERS, AND 0.75" W.G. FOR DIRTY FILTERS.
4. COOLING COILS SHALL HAVE A MINIMUM OF 6 ROWS AND A MAXIMUM OF 10 FINS PER INCH. PRESSURE DROP THROUGH COIL SHALL NOT EXCEED 15 FT. AT SCHEDULED GPM.
5. PROVIDE WALL MOUNTED VARIABLE FREQUENCY DRIVE FOR SUPPLY FAN, EXHAUST FAN & ENERGY RECOVERY WHEEL MOTOR.
6. FAN CONSTRUCTION SHALL BE MINIMUM AMCA CLASS 2.
7. PROVIDE FACTORY MOUNTED AND WIRED EXTERNAL JUNCTION BOXES ON FAN SECTION. J-BOX SHALL ALLOW ELECTRICAL CONTRACTOR TO LAND POWER TO DEVICE WITHOUT PENETRATING THROUGH CABINET. FIELD INSTALLED JUNCTION BOXES ARE NOT ACCEPTABLE.
8. PROVIDE FACTORY MOUNTED SHAFT GROUNDING KIT FOR AIR HANDLING UNIT MOTOR, NO EXCEPTIONS.
9. PROVIDE WITH ANGLED MERV 13 FILTERS.
10. UNITS WITH MULTIPLE FANS AND MOTORS, PROVIDE FACTORY INSTALLED AND WIRED MOTOR OVERLOAD PANEL FOR CONNECTION TO A SINGLE VFD.
11. ALL COILS SHALL BE FULLY DIPPED AND BAKED (E-COAT) WITH UV TOP COAT.
12. PROVIDE TWO-POSITION, LOW-LEAK ALUMINUM DAMPERS FOR THE OSA & EA OPENINGS.
13. PROVIDE HOT WATER COIL IN PRE-HEAT POSITION.
14. TOTAL ENERGY RECOVERY WHEEL SHALL BE DESSICANT MOLECULAR SIEVE 3A. REFER TO SPECIFICATIONS FOR FURTHER REQUIREMENTS.

CONDENSING BOILER SCHEDULE

DESIGNATION	TYPE	LOCATION	BURNER FUEL	MIN. OUTPUT (BTUH)	MIN. EFFICIENCY	FUEL CONSUMPTION (BTUH)	MANUFACTURER	MODEL NUMBER	GPM	E.W.T. (°F)	L.W.T. (°F)	FLUE SIZE (DIA.)	DIMENSIONS (L x W x H)	WEIGHT (LBS)	BOILER ELECTRICAL INFORMATION		CIRCULATING PUMP ELECTRICAL INFORMATION			
															MAX AMP	VOLT / Ø / HZ	DESIGNATION	MAX H.P.	FLA	VOLT / Ø / HZ
B-01	CONDENSING	BOILER ROOM	NAT. GAS	1,886,000	95.0%	2,000,000	CAMUS	AVENGER	63	100ºF	180ºF	8	44" x 35" x 90"	2,085	8	120 / 1 / 60	PHWP-01	3/4	6.4	120 / 1 / 60

1. REFERENCE ELECTRICAL DRAWINGS FOR ELECTRICAL DATA.
2. PROVIDE AUXILIARY PUMP AS REQUIRED BY MANUFACTURER TO CIRCULATE WATER AT BYPASS CONDITIONS. REFER TO ELECTRICAL DRAWINGS.
3. PROVIDE CATEGORY IV FLUE PIPE, INNER PIPE OF AL29-4C AND OUTER PIPE OF 430 STAINLESS STEEL.
4. PROVIDE WITH A CONDENSATE NEUTRALIZATION KIT WITH SCHEDULE 8-CPVC CONDENSATE PIPING.
5. CONDENSING BOILER HEAT EXCHANGER SHALL BE OF STAINLESS STEEL. COPPER HEAT EXCHANGERS ARE NOT ACCEPTABLE; REFER TO SPECIFICATION.
6. BOILER MANUFACTURER SHALL PROVIDE CONTROLS FOR BOILER SEQUENCING AND CONTROL. BAS SHALL INTERFACE TO BOILER CONTROL PANEL.
7. MANUFACTURER SHALL PROVIDE BACNET INTERFACE CARD ANY ACCESSORIES REQUIRED TO FACILITATE 2-WAY COMMUNICATION WITH THE BAS CONTRACTOR'S SYSTEM. THIS INCLUDES, BUT IS NOT LIMITED TO, FURNISHING, INSTALLING AND PROGRAMMING OF COMMUNICATION CARD (i.e. BACnet)
8. PROVIDE SEPARATE POINT CONNECTION TO BOILER AND CIRCULATING PUMP. ELECTRICAL CONTRACTOR TO PROVIDE STARTER AND DISCONNECT AS REQUIRED; COORDINATE WITH BOILER MANUFACTURER.
9. FLUE PIPING SHALL BE PROVIDED AND SUBMITTED BY BOILER DISTRIBUTOR AFTER BOILER SUBMITTAL HAS BEEN APPROVED BY ENGINEER. FLUE PIPE SHALL NOT BE SUBMITTED BY ANY OTHER PARTY OTHER THAN THE BOILER SALES REPRESENTATIVE AWARDED THE PROJECT. FLUE PIPE SHALL BE INSTALLED BY MECHANICAL CONTRACTOR.
10. PROVIDE FIRE-TUBE BOILER.

HYDRONIC PUMP SCHEDULE

DESIGNATION	SERVICE	TYPE	NOTES	GPM	HEAD (FT. H20)	EFFICIENCY	RPM (MAX.)	MOTOR H.P.	BRAKE H.P.	VOLT / PH /HZ	MANUFACTURER	MODEL NUMBER	MINIMUM NPSHA (FT.)
PCHWP-01	CHILLED WATER - BUILDING LOOP - HS	SPLIT COUPLED VERTICAL IN-LINE	1,2	469	120'	73.55%	1,800	30.0	19.32	460 / 3 / 60	PENTAIRE-AURORA	382B	10.06
PCHWP-02	CHILLED WATER - BUILDING LOOP - HS	SPLIT COUPLED VERTICAL IN-LINE	1,2	469	120'	73.55%	1,800	30.0	19.32	460 / 3 / 60	PENTAIRE-AURORA	382B	10.06
PCHWP-03	CHILLED WATER - BUILDING LOOP - HS	SPLIT COUPLED VERTICAL IN-LINE	1,2	469	120'	73.55%	1,800	30.0	19.32	460 / 3 / 60	PENTAIRE-AURORA	382B	10.06
PCHWP-04	CHILLED WATER - BUILDING LOOP - HS	SPLIT COUPLED VERTICAL IN-LINE	1,2	469	120'	73.55%	1,800	30.0	19.32	460 / 3 / 60	PENTAIRE-AURORA	382B	10.06
SHWP-01	HEATING WATER - NEW GYM	SPLIT COUPLED VERTICAL IN-LINE	1,3	70	45'	60%	1,800	2.0	1.32	460 / 3 / 60	PENTAIRE-AURORA	382B	4.70

1. REFERENCE ELECTRICAL DRAWINGS FOR ELECTRICAL DATA.
2. PROVIDE VARIABLE FREQUENCY DRIVE FOR VARIABLE FLOW OPERATION.
3. PROVIDE VARIABLE FREQUENCY DRIVE FOR SOFT START AND BALANCING PURPOSES.

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THEATER
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FOOD SERVICE
CONSULTANT NAME
T-000-000-0000
CONSULTANT
CONSULTANT NAME
T-000-000-0000
LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
MITAL J. PATEL
111622
LICENSED
05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

CHECKED BY: MP
DRAWN BY: OG

MECHANICAL SCHEDULES-GYM

M-501.G

Plot Stamp:
6/3/2025 1:11:25 PM

MECHANICAL SCHEDULES-GYM
M-502.G
FOR BLUEBEAM LABELING/OCR:

0"
1"

FAN COIL UNIT SCHEDULE

DESIGNATION	SERVICE	TYPE	ARRANGEMENT	MANUFACTURER	MODEL NUMBER	DIMENSIONS (LxWxH) INCHES	WEIGHT (lbs)	SEE NOTE	BLOWER DATA					COOLING COIL DATA										HEATING COIL DATA									ELECTRICAL DATA			
									TOTAL CFM	OUTSIDE AIR CFM	EST. EXT. SP. (IN. WG.)	DRIVE	FAN TYPE	CFM OVER COIL	MAX. FACE VELOCITY (FPM)	GRAND SENSIBLE BTUH	GRAND TOTAL BTUH	EAT (°F DB)	EAT (°F WB)	LAT (°F DB)	GPM	EWT (°F DB)	LWT (°F DB)	CFM OVER COIL	MAX. FACE VELOCITY (FPM)	GRAND TOTAL BTUH	EAT (°F DB)	LAT (°F DB)	GPM	EWT (°F DB)	LWT (°F DB)	MCA	MOCP	FLA	VOLTAGE
FCU-C-01	TRAINING ROOM C146	SZ CV	HORIZONTAL	DAIKIN	BCHD0181	46x54x18	573	1-11	1,600	450	0.75	DIRECT	FC	1,600	500	50,436	69,041	84.2º	68.1º	55.0º	9.9	42.0º	56.0º	1,600	500	50,220	55.9º	85.0º	2.5	140.0º	100.0º	7.8	15	7.0	277/1/60
FCU-C-02	BOYS LOCKERS	SZ CV	HORIZONTAL	DAIKIN	BCHD0181	46x54x18	573	1-11	1,600	670	0.75	DIRECT	FC	1,600	500	55,663	77,750	87.2º	69.6º	55.0º	11	42.0º	56.0º	1,600	500	62,100	49.1º	85.0º	3.1	140.0º	100.0º	7.8	15	7.0	277/1/60
																					21								5.6						

1. REFERENCE ELECTRICAL DRAWINGS FOR ELECTRICAL DATA.
2. ESTIMATED EXTERNAL STATIC PRESSURE INCLUDES LOSSES THROUGH DUCTWORK, AIR DEVICES, SOUND ATTENUATORS, ETC.
3. FAN COIL UNIT INTERNAL STATIC PRESSURE SHALL INCLUDE LOSSES THROUGH COILS, CASING, INTERNAL DAMPERS, AND 0.5" W.G. FOR DIRTY FILTER.
4. COOLING COILS PRESSURE DROP SHALL NOT EXCEED 15 FT. AT SCHEDULED GPM.
5. FAN - FORWARD CURVED BLADES; 1,000 RPM MAXIMUM.
6. FAN COIL SUSPENDED FROM STRUCTURE.
7. PROVIDE FLOAT SWITCH IN AUXILIARY DRAIN PAN.
8. PROVIDE UNITS WITH DIRECT DRIVE - FACTORY PROVIDED ECM MOTORS.
9. ALL COILS SHALL BE FULLY EPOXY DIPPED AND BAKED (E-COAT) WITH UV TOP COAT.
10. PROVIDE HEATING COIL IN RE-HEAT POSITION.
11. PROVIDE WITH MERV 13 FILTERS.

MINI-SPLIT SYSTEM AIR-CONDITIONERS SCHEDULE

EVAPORATOR SECTION	
INDOOR EVAPORATOR DESIGNATION	**FCU-C1-01**
SERVICE	IDF C139 AND AUDIO C140
MANUFACTURER	DAIKIN
MODEL NUMBER	FXSA36
TYPE	DUCTED FCU
WEIGHT (LBS.)	120
NOTES	1-9
FAN DATA	
SUPPLY CFM (HIGH / MEDIUM / LOW) SPEED	1130 / 953 / 795
EXTERNAL STATIC PRESSURE, "WG	1.0
COOLING / HEATING COIL	DX
NOMINAL TONNAGE	**3.0 TONS**
ENTERING AIR EVAP (DB/WB) °F - COOLING MODE	80°F / 67°F
ENTERING AIR EVAP (DB/WB) °F - HEATING MODE	70°F / 60°F
TOTAL BTUH COOLING	36,000
TOTAL BTUH HEATING	38,000
AIR-COOLED CONDENSER	
DESIGNATION	**ACCU-C1-01**
SERVES	**FCU-C1-01**
LOCATION	ROOF
MANUFACTURER	DAIKIN
MODEL NUMBER	RXTA36
EFFICIENCY (SEER)	16.0
VOLTS/PH/HZ	**208 / 1 / 60**
MCA	19.8
MOCP	20
REFRIGERANT	R32
AMBIENT TEMPERATURE °F	95°F
WEIGHT (LBS.)	250

1. REFERENCE ELECTRICAL DRAWINGS FOR ELECTRICAL DATA.
2. ESTIMATED EXTERNAL STATIC PRESSURE INCLUDES LOSSES THROUGH PLENUM, AIR DEVICES, ETC.
3. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
4. PROVIDE REMOTE WALL MOUNTED PROGRAMMABLE THERMOSTAT WITH BACnet INTERFACE.
5. PROVIDE INVERTER DRIVEN COMPRESSOR.
6. INDOOR UNIT IS POWERED BY THE OUTDOOR UNIT.
7. PROVIDE MATCHING CONDENSING UNIT FROM SAME MANUFACTURER.
8. MANUFACTURER SHALL PROVIDE A CONDENSATE PUMP. PUMP SHALL BE POWERED BY THE UNIT AND SHALL NOT START / STOP UNLESS THE UNIT IS ENERGIZED / DE-ENERGIZED.
9. CONDENSING UNIT SHALL BE RATED FOR 155 MPH WIND SPEED.

HVAC FANS SCHEDULE

DESIGNATION	LOCATION	SERVICE	MANUFACTURER	MODEL NUMBER	NOTES	FAN DATA							
						TYPE	DRIVE	CFM	STATIC PRESSURE (" W.G.)	MOTOR HP. (MIN)	BRAKE HP	RPM (MAX.)	VOLT / Ø / HZ
EF-D-01	ROOF	BOYS LOCKERS - GYM & MENS RR	LOREN COOK	ACRU	1-6	CENTRIFUGAL	DIRECT	1,310	0.75	1/2	0.42	1,584	120/1/60
EF-D-02	ROOF	TRAINING ROOM	LOREN COOK	ACRU	1-6	CENTRIFUGAL	DIRECT	450	0.75	1/2	0.15	991	120/1/60
EF-D-03	ROOF	WOMENS RR	LOREN COOK	ACRU	1-6	CENTRIFUGAL	DIRECT	600	0.75	1/4	0.17	1,699	120/1/60
EF-D-05	ROOF	STORAGE C153	LOREN COOK	SQN-D	1-7	CENTRIFUGAL	DIRECT	200	1.00	1/6	0.13	1,521	120/1/60
EF-D-06	ROOF	BOILER C206 - PURGE FAN	LOREN COOK	ACRU	1-6	CENTRIFUGAL	DIRECT	900	1.00	1/2	0.32	1,572	120/1/60
SF-D-01	ROOF	BOILER C206	LOREN COOK	ASP	1-7	CENTRIFUGAL	BELT	650	1.00	1	0.40	1,013	460/3/60

1. REFERENCE ELECTRICAL DRAWINGS FOR ELECTRICAL DATA.
2. REFERENCE SPECIFICATIONS FOR SEQUENCE OF OPERATIONS.
3. DIRECT DRIVE FANS SHALL BE PROVIDED WITH SPEED CONTROLLERS FOR SYSTEM BALANCING.
4. FAN SHALL BE PROVIDED WITH ECM MOTOR AND SPEED CONTROLLER. STARTER SHALL BE PROVIDED BY FAN MANUFACTURER, JUNCTION BOX AND VARI-GREEN TRANSFORMER SHALL BE FACTORY MOUNTED AND WIRED.
5. REFERENCE ARCHITECTURAL DRAWINGS FOR ROOF CURB DETAIL.
6. PROVIDE UPBLAST FAN & DESIGNED TO WITHSTAND HIGH WIND SPEEDS UP TO 155 MPH.
7. INTERLOCK FAN WITH THERMOSTAT SET TO 80° (ADJUSTABLE).

DIFFUSERS, REGISTERS & GRILLES SCHEDULE

DESIGNATION	MODEL NUMBER	NOISE CRITERIA (NC)	DESCRIPTION
A	TITUS TDCA	25	24x24 MODULE SIZE, LAY-IN BORDER TYPE, 18"x18" NECK SIZE WITH ROUND DUCT CONNECTION SIZED AS INDICATED ON PLANS. NO OPPOSED BLADE DAMPER, ALL STEEL CONSTRUCTION.
B	TITUS PAR	25	24x24 MODULE SIZE, LAY-IN BORDER TYPE, 22"x22" NECK SIZE UNLESS NOTED OTHERWISE. NO OPPOSED BLADE DAMPER, ALL STEEL CONSTRUCTION.
C	TITUS 300RS	25	DOUBLE DEFLECTION, 3/4" BLADE SPACING, FRONT BLADES PARALLEL TO SHORT DIMENSION, NO OPPOSED BLADE DAMPER, SURFACE MOUNTING BORDER TYPE WITH COUNTERSUNK HOLES, ALL STEEL CONTSTRUCTION.
D	TITUS 350RL	25	3/4" BLADE SPACING, FRONT BLADES PARALLEL TO LONG DIMENSION, 35° FIXED DEFLECTION, NO OPPOSED BLADE DAMPER, SURFACE MOUNTING BORDER TYPE WITH COUNTERSUNK HOLES, ALL STEEL CONSTRUCTION.
E	TITUS TDC-AA	25	24x24 MODULE SIZE, LAY-IN BORDER TYPE, 18"x18" NECK SIZE WITH ROUND DUCT CONNECTION SIZED AS INDICATED ON PLANS. NO OPPOSED BLADE DAMPER, ALL ALUMINUM CONSTRUCTION.
F	TITUS PAR-AA	25	24x24 MODULE SIZE, LAY-IN BORDER TYPE, 22"x22" NECK SIZE UNLESS NOTED OTHERWISE. NO OPPOSED BLADE DAMPER, ALL ALUMINUM CONSTRUCTION.
G	TITUS TDC	25	12x12 MODULE SIZE, LAY-IN BORDER TYPE, 9"x9" NECK SIZE WITH ROUND DUCT CONNECTION SIZED AS INDICATED ON PLANS. NO OPPOSED BLADE DAMPER, ALL STEEL CONSTRUCTION.
H	TITUS PAR	25	12x12 MODULE SIZE, LAY-IN BORDER TYPE, 10"x10" NECK SIZE UNLESS NOTED OTHERWISE. NO OPPOSED BLADE DAMPER, ALL STEEL CONSTRUCTION.
J	TITUS 33RL	25	1/2" BLADE SPACING, 38° FIXED DEFLECTION, 16 GAUGE BORDER, 14 GAUGE BLADES, SUPPORT BARS 6 INCH ON CENTER, BLADES PARALLEL TO LONG DIMENSION, ALL STEEL CONTSTRUCTION.
K	TITUS CT-480	25	48" LONG, 6" WIDE SIDEWALL GRILLE, 0° DEFLECTION, 1/4" BAR SPACING.
L	TITUS CT-480	25	60" LONG, 6" WIDE SIDEWALL GRILLE, 0° DEFLECTION, 1/4" BAR SPACING.

1. ALL DIFFUSER DESIGNATIONS MAY NOT BE USED ON PROJECT.
2. DIFFUSERS IN NATATORIUMS, SHOWER ROOMS, ADJACENT DRESSING ROOMS, DISHWASH ROOMS, AND THERAPY POOL ROOMS SHALL BE ALL ALUMINUM CONSTRUCTION.
3. PROVIDE ROTO-TWIST CABLE OPERATED DAMPERS AT IN GYP BOARD CEILINGS.

AIR TERMINAL UNIT SCHEDULE

DESIGNATION	SERVICE	NOTES	UNIT TYPE	BOX SIZE	MANUFACTURER	MODEL	COLD DECK CFM	HOT DECK CFM
TB-C1-03-01	OFFICE	1-5	DUAL DUCT	6	TITUS	DEDV	300	150
TB-C1-03-02	CONCESSIONS	1-5	DUAL DUCT	8	TITUS	DEDV	500	250
TB-C1-03-03	CONCOURSE AND MENS RR	1-5	DUAL DUCT	14	TITUS	DEDV	1,900	950
TB-C1-03-04	LOBBY	1-5	DUAL DUCT	12	TITUS	DEDV	1575	787.5
TB-C1-03-05	LOBBY	1-5	DUAL DUCT	12	TITUS	DEDV	1575	787.5
							5850	2925
TB-DDMB-C1	EXISTING BOYS LOCKERS	1-5	DUAL DUCT	12	TITUS	DEDV	1490	745
TB-DDMB-C2	EXISTING CORRIDOR, LAUNDRY, STORAGE	1-5	DUAL DUCT	12	TITUS	DEDV	1315	657.5
TB-DDMB-C3	EXISTING WEIGHT ROOM	1-5	DUAL DUCT	14	TITUS	DEDV	1685	842.5
							4490	2245

NOTES:

1. **MAXIMUM NC LEVEL SHALL NOT EXCEED 35 AT 1 IN. STATIC PRESSURE.**
2. **PROVIDE VOLUME CONTROL DAMPERS, MULTI-POINT FLOW SENSOR AND CONTROLLER ENCLOSURE. REFER TO AIR TERMINAL UNITS SPECIFICATION.**
3. COOLING MINIMUM DAMPER SETPOINT SHALL BE 50% OF COLD DECK AIRFLOW.
4. HEATING MINIMUM DAMPER SETPOINT SHALL BE 60% OF HOT DECK AIRFLOW.
5. REFER TO AIR TERMINAL UNIT DETAILS FOR INLET DUCT SIZING REQUIREMENTS.

HVAC GRAVITY VENTILATORS SCHEDULE

DESIGNATION	SERVICE	MANUFACTURER	MODEL	CFM	WEIGHT (lbs)	MAX. THROAT AREA (FT.²)/ THROAT SIZE (DIA.)	P.D. (INCHES WG)	NOTES
IH-C1-01	OAHU-A1-01	GREENHECK	FGI	6,840	200	9.00 / 36"x36"	0..08	1-4
IH-C1-02	OAHU-C1-02	GREENHECK	FGI	6,840	200	9.00 / 36"x36"	0..08	1-4
IH-C1-03	OAHU-C1-03	GREENHECK	FGI	6,840	200	4.00 / 24"x24"	0..08	1-4
IH-C1-04	FCU-C-01	GREENHECK	FGI	450	100	1.00 / 12"x12"	0..08	1-3,5
IH-C1-05	FCU-C-02	GREENHECK	FGI	670	100	1.00 / 12"x12"	0..08	1-3,5
IH-C1-06	COMBUSTION AIR - EX.GAS HEATER	GREENHECK	FGI	-	100	4.00 / 24"x24"	0..08	1-3
RH-C1-01	OAHU-C1-01	GREENHECK	FGR	5,814	100	9.00 / 36"x36"	0..08	1-4
RH-C1-02	OAHU-C1-02	GREENHECK	FGR	5,814	100	9.00 / 36"x36"	0..08	1-4
RH-C1-03	COMBUSTION AIR - EX.GAS HEATER	GREENHECK	FGR	-	100	4.00 / 24"x24"	0..08	1-3

1. MAXIMUM INTAKE VELOCITY SHALL NOT EXCEED 600 FPM
2. PROVIDE STAINLESS STEEL BIRD SCREEN AND 12" PREFABRICATED ROOF CURB.
3. PROVIDE ROOF HOOD DESIGNED TO WITHSTAND HIGH WIND SPEEDS UP TO 150 MPH.
4. MOTORIZED DAMPER IS PROVIDED BY THE AIR HANDLING UNIT MANUFACTURER.
5. MOTORIZED DAMPER SHALL BE PROVIDED BY CONTROLS CONTRACTOR AND NOT BY HOOD MANUFACTURER. REFER TO DRAWINGS FOR DAMPER LOCATION.

ELECTRIC UNIT HEATER SCHEDULE

DESIGNATION	SERVICE	MANUFACTURER	MODEL	NOTES	BTUs	TEMP RISE	WEIGHT (LBS)	KW	AMPS	VOLT / Ø / HZ
EUH-01	BOILER RM C206	MARKEL	P3P51	1-5	25,650	40.0º	50	7.5	9.1	460 / 3 / 60
EUH-02	RISER RM. C156	MARKEL	F1F5103N	1-5	400	26.0º	36	3.3	15.9	208 / 1 / 60

1. REFERENCE ELCTRICAL DRAWINGS FOR ELECTRICAL CHARACTERISTICS.
2. PROVIDE DIRECTIONAL LOUVER OUTLET.
3. PROVIDE ADJUSTABLE WALL MOUNTED THERMOSTAT AS INDICATED ON DRAWINGS.
4. UNIT HEATER SHALL BE FAN FORCED; RECOMMENDED MOUNTING HEIGHT: 9'-0".
5. PROVIDE FACTORY POWDER COATED EPOXY FINISH FOR CORROSIVE ATMOSPHERES.

DUCT SILENCERS SCHEDULE

MARK	SERVICE	MANUFACTURER	MODEL	SIZE (INCHES)	LENGTH (FEET)	MAX. ΔP (" W.G.)	VELOCITY (FPM)
ST-01	RETURN	VIBRO-ACOUSTICS	RD	48x40	3	0.10	700
ST-02	RETURN	VIBRO-ACOUSTICS	RD	48x20	5	0.10	700
ST-03	RETURN	VIBRO-ACOUSTICS	RD	36x24	5	0.10	700

1. MAXIMUM FLAME SPREAD OF 25 AND MAXIMUM FUEL CONTRIBUTED AND SMOKE DEVELOPED RATING OF 50 PER NFPA 90A FOR SOUND TRAP MEDIA.
2. MEDIA SHALL MEET EROSION TEST METHOD DESCRIBED IN U.L. PUBLICATION 181.
3. CONTRACTOR SHALL PROVIDE TRANSITIONS TO DUCTWORK AS REQUIRED.

MODULAR INDOOR CENTRAL STATION - AIR HANDLING UNIT SCHEDULE (EXISTING TO REMAIN - FOR REFERENCE ONLY)

DESIGNATION	SERVICE	TYPE	ARRANGEMENT	MANUFACTURER	MODEL NUMBER	BLOWER DATA						MAIN COOLING COIL DATA										HEATING COIL DATA							
						TOTAL CFM	OUTSIDE AIR CFM	MIN. OUTSIDE AIR CFM	EST. EXT. SP. (IN. WG.)	VARIABLE FREQUENCY H.P.	TYPE	CFM OVER COIL	MAX. FACE VELOCITY (FPM)	GRAND SENSIBLE BTUH	GRAND TOTAL BTUH	EAT (°F DB)	EAT (°F WB)	LAT (°F DB)	GPM	EWT (°F DB)	LWT (°F DB)	CFM OVER COIL	MAX. FACE VELOCITY (FPM)	GRAND TOTAL BTUH	EAT (°F DB)	LAT (°F DB)	GPM	EWT (°F DB)	LWT (°F DB)
EX.AHU-16	EXISTING BOYS LOCKER AREA	DUAL DUCT VAV	HORIZONTAL	TRANE	MCC-10	4,490	345	104	1.5"	3	BELT DRIVE	4,490	500	79,000	89,000	74.5º	62.3º	55.0º	15	44.0ºF	56.0ºF	4,490	750	51,000	73.0ºF	85.0ºF	5	180.0ºF	160.0ºF

1. REFERENCE ELECTRICAL DRAWINGS FOR ELECTRICAL DATA.

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T.000-000-0000
MEP
CONSULTANT NAME
T.000-000-0000
ACOUSTIC
CONSULTANT NAME
T.000-000-0000
THEATER
CONSULTANT NAME
T.000-000-0000
FOOD SERVICE
CONSULTANT NAME
T.000-000-0000
AV
CONSULTANT NAME
T.000-000-0000

LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS

KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
MITAL J. PATEL
111622
LICENSED
05/20/2025
LEAF ENGINEERS
F-10672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

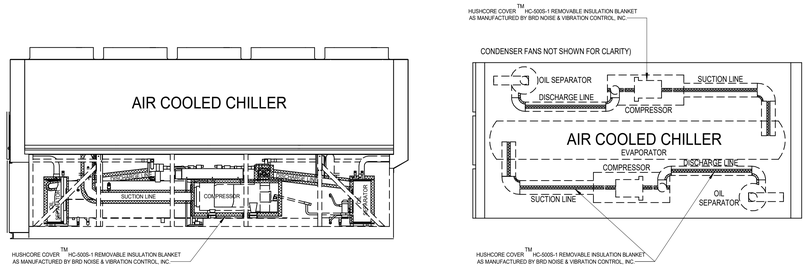
CHECKED BY: MP
DRAWN BY: OG

MECHANICAL SCHEDULES-GYM

M-502.G

Plot Stamp:
6/3/2025 1:11:25 PM

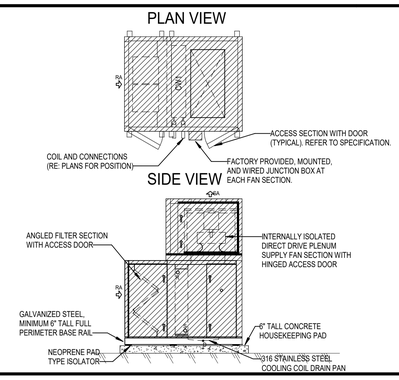
MECHANICAL DETAILS-GYM
M-601.G
FOR BLUEBEAM LABELING/OCR:



BRD - NOISE AND VIBRATION CONTROL HUSHCORE AIR - COOLED SCREW CHILLER NOISE REDUCTION SYSTEM DETAIL

NOT TO SCALE

10

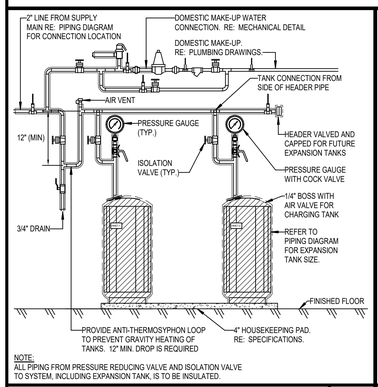


NOTES:
1. REFER TO SPECIFICATION SECTION 23 73 13 MODULAR INDOOR CENTRAL - STATION AIR - HANDLING UNITS FOR FURTHER REQUIREMENTS.
2. REFER TO MODULAR INDOOR CENTRAL - STATION AIR HANDLING UNIT EQUIPMENT SCHEDULE FOR PERFORMANCE, COOLING/HEATING COIL ARRANGEMENT, AND DIMENSIONAL DATA.
3. PROVIDE INTERNAL FLEXIBLE CONNECTION BETWEEN FAN AND AIR UNIT CASING. FLEXIBLE CONNECTION BETWEEN AIR UNIT CASING AND CONNECTING DUCT SHALL NOT BE PROVIDED WHEN FAN IS INTERNALLY ISOLATED WITH FLEXIBLE CONNECTION TO CASING.
4. PROVIDE MOTOR SHAFT GROUNDING KIT FOR ALL AIR HANDLING UNIT MOTORS; KITS SHALL BE FACTORY PROVIDED AND INSTALLED PRIOR TO SHIPMENT.
5. FOR AIR HANDLING UNITS WITH MORE THAN ONE FAN AND TO ALLOW FOR A SINGLE CONNECTION TO A SINGLE VARIABLE FREQUENCY DRIVE, PROVIDE A FACTORY MOUNTED AND WIRED OVERLOAD PANEL.
6. CONTRACTOR SHALL PROVIDE TRAPPED CONDENSATE DRAIN LINE ROUTED TO NEAREST APPROVED FLOOR DRAIN AND MUST NOT POSE A TRIP HAZARD.
7. CONTRACTOR SHALL INSTALL PIPING WITH PIPING SPECIALTIES TO AIR HANDLING UNIT COILS IN A MANNER SUCH THAT ALL ACCESS DOORS SHALL BE ABLE TO FULLY SWING OPEN AND TO ALLOW SERVICE AND MAINTENANCE.
8. PROVIDE ACCESS SECTIONS BETWEEN PARALLEL COIL SECTIONS, UPSTREAM OF COIL SECTIONS, UPSTREAM AND DOWNSTREAM OF ENERGY RECOVERY WHEELS, IN FAN SECTIONS, FILTER SECTIONS AND MIXING BOXES. SECTIONS SHALL BE OF SAME CONSTRUCTION AS THE REST OF THE UNIT; DOUBLE WALL GALVANIZED STEEL CONSTRUCTION.

TYPICAL MODULAR INDOOR VERTICAL CENTRAL - STATION AIR - HANDLING UNIT DETAIL

NOT TO SCALE

09

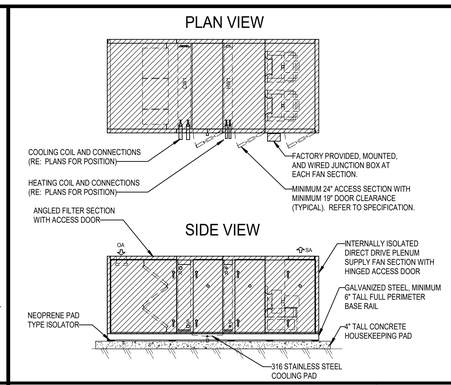


NOTE:
ALL PIPING FROM PRESSURE REDUCING VALVE AND ISOLATION VALVE TO SYSTEM, INCLUDING EXPANSION TANK, IS TO BE INSULATED.

HOT WATER BLADDER TYPE EXPANSION TANK PIPING DETAIL

NOT TO SCALE

08



NOTES:
1. REFER TO SPECIFICATION SECTION 23 73 13 MODULAR INDOOR CENTRAL - STATION AIR - HANDLING UNITS FOR FURTHER REQUIREMENTS.
2. REFER TO MODULAR INDOOR CENTRAL - STATION AIR HANDLING UNIT EQUIPMENT SCHEDULE FOR PERFORMANCE, COOLING/HEATING COIL ARRANGEMENT, AND DIMENSIONAL DATA.
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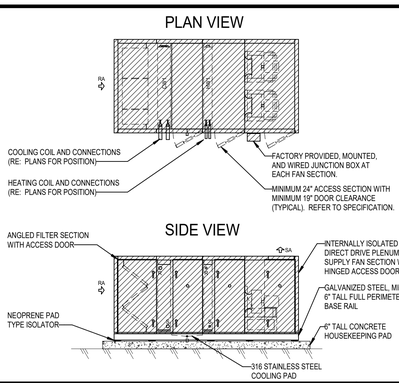
4. PROVIDE MOTOR SHAFT GROUNDING KIT FOR ALL AIR HANDLING UNIT MOTORS; KITS SHALL BE FACTORY PROVIDED AND INSTALLED PRIOR TO SHIPMENT.
5. FOR AIR HANDLING UNITS WITH MORE THAN ONE FAN AND TO ALLOW FOR A SINGLE CONNECTION TO A SINGLE VARIABLE FREQUENCY DRIVE, PROVIDE A FACTORY MOUNTED AND WIRED OVERLOAD PANEL.
6. CONTRACTOR SHALL PROVIDE TRAPPED CONDENSATE DRAIN LINE ROUTED TO NEAREST APPROVED FLOOR DRAIN AND MUST NOT POSE A TRIP HAZARD.
7. CONTRACTOR SHALL INSTALL PIPING WITH PIPING SPECIALTIES TO AIR HANDLING UNIT COILS IN A MANNER SUCH THAT ALL ACCESS DOORS SHALL BE ABLE TO FULLY SWING OPEN AND TO ALLOW SERVICE AND MAINTENANCE.
8. PROVIDE MINIMUM 24" ACCESS SECTION WITH MINIMUM 19" DOOR CLEARANCE: PROVIDE ACCESS SECTIONS BETWEEN PARALLEL COIL SECTIONS, UPSTREAM OF COIL SECTIONS, UPSTREAM AND DOWNSTREAM OF ENERGY RECOVERY WHEELS, IN FAN SECTIONS, FILTER SECTIONS AND MIXING BOXES. SECTIONS SHALL BE OF SAME CONSTRUCTION AS THE REST OF THE UNIT; DOUBLE WALL GALVANIZED STEEL CONSTRUCTION.

TYPICAL MODULAR INDOOR CENTRAL - STATION OUTSIDE AIR - HANDLING UNIT DETAIL

NOT TO SCALE

07



NOTES:
1. REFER TO SPECIFICATION SECTION 23 73 13 MODULAR INDOOR CENTRAL - STATION AIR - HANDLING UNITS FOR FURTHER REQUIREMENTS.
2. REFER TO MODULAR INDOOR CENTRAL - STATION AIR HANDLING UNIT EQUIPMENT SCHEDULE FOR PERFORMANCE, COOLING/HEATING COIL ARRANGEMENT, AND DIMENSIONAL DATA.
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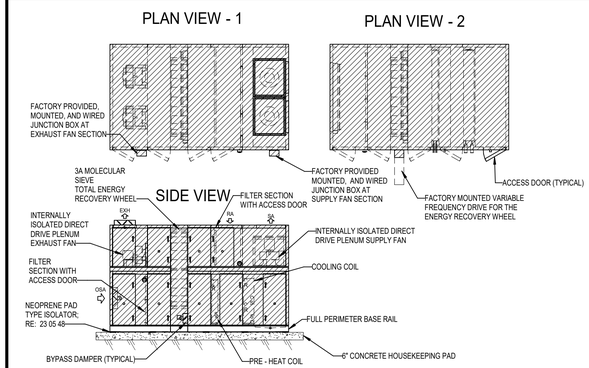
TYPICAL MODULAR INDOOR CENTRAL - STATION AIR - HANDLING UNIT DETAIL

NOT TO SCALE

06



NOTES:
1. REFER TO SPECIFICATION SECTION 23 73 13 MODULAR INDOOR CENTRAL-STATION AIR-HANDLING UNITS FOR FURTHER REQUIREMENTS.
2. REFER TO MODULAR INDOOR CENTRAL-STATION AIR-HANDLING UNIT EQUIPMENT SCHEDULE FOR PERFORMANCE, COOLING/HEATING COIL ARRANGEMENT, AND DIMENSIONAL DATA.
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6. CONTRACTOR SHALL PROVIDE TRAPPED CONDENSATE DRAIN LINE ROUTED TO NEAREST APPROVED FLOOR DRAIN AND MUST NOT POSE A TRIP HAZARD
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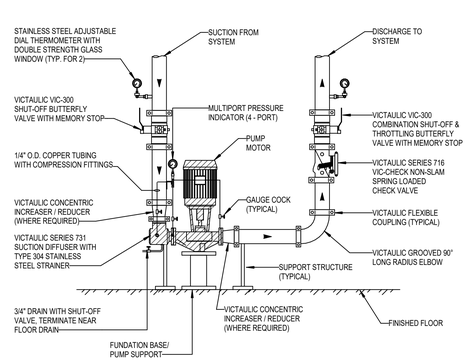
9. PROVIDE FACTORY MANUFACTURED MIXING SECTION WITH LIKE CONSTRUCTION WITH OTHER SECTIONS.
10. PROVIDE A FACTORY INSTALLED AND WIRED VFD CONTROLLER THAT SHALL SUPPORT FULL ECONOMIZER AND FROST PROTECTION MODES. CONTROL SYSTEM SHALL INCLUDE FACTORY MOUNTED AND WIRED TEMPERATURE SENSORS IN ALL FOUR AIRSTREAMS. THE VFD SHALL BE MOUNTED IN A NEMA 1 ENCLOSURE. INCLUDED LCP DISPLAY SCREEN, ALLOW FOR AN 80:1 TURNDOWN RATIO, AND COMMUNICATE TO THE BAS VIA BACNET MS/TP; NO EXCEPTIONS.

TYPICAL OUTSIDE AIR HANDLING UNIT WITH ENERGY RECOVERY WHEEL DETAIL

NOT TO SCALE

05

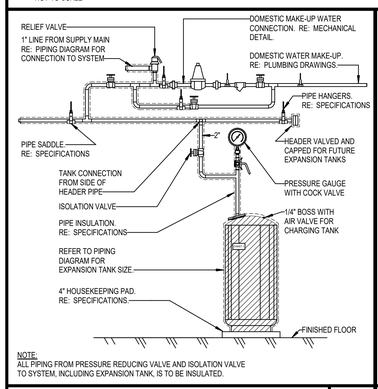


NOTES:
1. CHILLED WATER PUMPS SHALL BE INSULATED WITH RIGID INSULATION BOARD, TWO INCH THICK, CUT AND FORMED INTO A BOX AND SECURED IN PLACE WITH 3/4" WIDE x 0.20 GALVANIZED BANDS. REFER TO SPECIFICATION 23 07 16 FOR FURTHER PUMP INSULATION REQUIREMENTS.
2. BUTTERFLY AND CHECK VALVES SHALL BE LINE SIZE.
3. CONTRACTOR SHALL PROVIDE AND INSTALL MULTI-PORT (4 PORT) PRESSURE INDICATOR WITH 1/4" O.D. COPPER TUBING WITH COMPRESSION FITTINGS AND GAUGE COCKS.
4. PUMP SUCTION: PROVIDE THERMOMETER, VICTAULIC VIC-300 SHUT-OFF BUTTERFLY VALVE WITH MEMORY STOP AND VICTAULIC SERIES 731-D SUCTION DIFFUSER WITH TYPE 304 STAINLESS STEEL STRAINER.
5. PUMP DISCHARGE: PROVIDED THERMOMETER, VICTAULIC VIC- 300 COMBINATION SHUT-OFF / THROTTLING / BALANCING BUTTERFLY VALVE WITH MEMORY STOP, VICTAULIC SERIES 716 VIC-CHECK NON-SLAM SPRING LOADED CHECK VALVE AND VICTAULIC 90° LONG RADIUS ELBOW.
6. PROVIDE RIGID VICTAULIC COUPLING STYLE 107 FOR PIPE SIZES LESS THAN 12" AND VICTAULIC STYLE W07 AGS FOR PIPING 14" AND GREATER.
7. BUTTERFLY VALVES SHALL BE PROVIDED WITH MEMORY STOP REGARDLESS OF SIZE. FOR BUTTERFLY VALVES LARGER THAN 6" PROVIDE HAND-WHEEL AND GEAR DRIVE WITH MEMORY STOP.
8. VALVES SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS TO PERMIT REMOVAL OF BONNET
9. PIPE HANGERS SHALL BE SIZED TO SUPPORT THE WEIGHT OF PUMP, PIPING AND FITTINGS.

SPLIT - COUPLED VERTICAL IN - LINE (VICTAULIC PUMP STACK) PIPING DETAIL

NOT TO SCALE

04

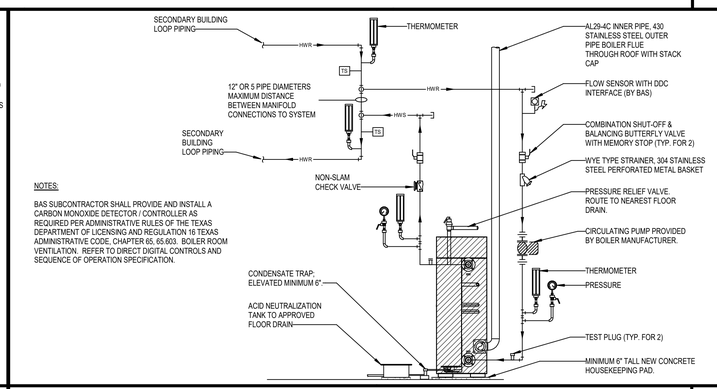


NOTE:
ALL PIPING FROM PRESSURE REDUCING VALVE AND ISOLATION VALVE TO SYSTEM, INCLUDING EXPANSION TANK, IS TO BE INSULATED.

CHILLED WATER BLADDER TYPE EXPANSION TANK PIPING DETAIL

NOT TO SCALE

03

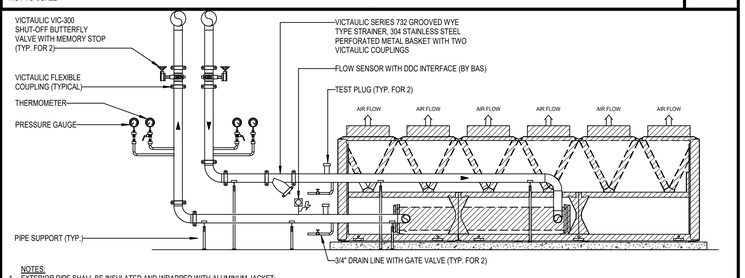


NOTES:
BAS SUBCONTRACTOR SHALL PROVIDE AND INSTALL A CARBON MONOXIDE DETECTOR / CONTROLLER AS REQUIRED PER ADMINISTRATIVE RULES OF THE TEXAS DEPARTMENT OF LICENSING AND REGULATION 16 TEXAS ADMINISTRATIVE CODE, CHAPTER 65, 65.603. BOILER ROOM VENTILATION. REFER TO DIRECT DIGITAL CONTROLS AND SEQUENCE OF OPERATION SPECIFICATION.

CONDENSING BOILER PIPING DETAIL

NOT TO SCALE

02



NOTES:
1. EXTERIOR PIPE SHALL BE INSULATED AND WRAPPED WITH ALUMINUM JACKET; REFER TO SPECIFICATIONS SECTION 23 07 19.
2. VICTAULIC SHUT-OFF VALVE SHALL BE LINE SIZE.
3. FLOW SWITCH SHALL BE INSTALLED IN UPRIGHT POSITION LOCATED IN HORIZONTAL SECTION OF PIPE RUN OF AT LEAST (5) FIVE PIPE DIAMETERS ON EACH SIDE OF THE FLOW SWITCH: FLOW SWITCH MAY BE INSTALLED IN VERTICAL PIPE IF THE FLOW IS IN THE UPRIGHT DIRECTION.
4. VICTAULIC BUTTERFLY VALVES SHALL BE PROVIDED WITH MEMORY STOP REGARDLESS OF SIZE. FOR BUTTERFLY VALVES LARGER THAN 6" PROVIDE HAND-WHEEL AND GEAR DRIVE WITH MEMORY STOP.
5. PROVIDE TYPE WSW - TWO LAYERS OF 3/8" THICK NEOPRENE PAD CONSISTING OF SQUARE WAFFLE MODULES SEPARATED BY A 16 GAUGE GALVANIZED SHIM. REFER TO SPECIFICATION SECTION 23 05 48.
6. PROVIDE A MINIMUM OF (3) THREE VICTAULIC FLEXIBLE COUPLINGS ON CHILLER INLET AND OUTLET FOR REDUCTION OF THE TRANSMISSION OF VIBRATION. FLEXIBLE PIPE CONNECTORS NOT REQUIRED WHEN UTILIZING 3 VICTAULIC FLEX COUPLINGS
7. PROVIDE FLEXIBLE VICTAULIC GROOVED COUPLING STYLE 177 FOR PIPE SIZES LESS THAN 12" AND VICTAULIC STYLE W77 AGS FOR PIPING 14" AND GREATER.

AIR - COOLED CHILLER PIPING (VICTAULIC CONNECTION) DETAIL

NOT TO SCALE

01

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CIVIL
CONSULTANT NAME
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LANDSCAPE
CONSULTANT NAME
T.000-000-0000
STRUCTURAL
CONSULTANT NAME
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MEP
CONSULTANT NAME
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ACOUSTIC
CONSULTANT NAME
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THEATER
CONSULTANT NAME
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FOOD SERVICE
CONSULTANT NAME
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CONSULTANT NAME
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LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL
25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
MITAL J. PATEL
111622
05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

CHECKED BY: MP
DRAWN BY: OG

MECHANICAL DETAILS-GYM

M-601.G

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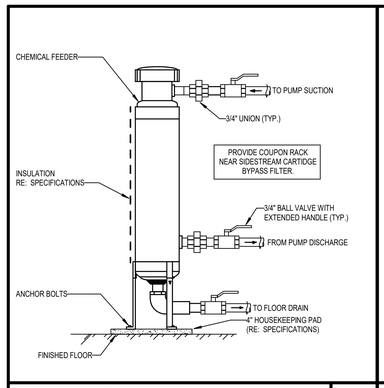
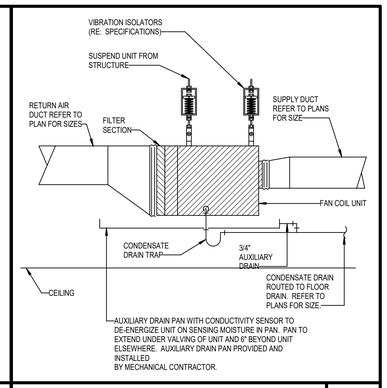
6/3/2025 1:11:25 PM

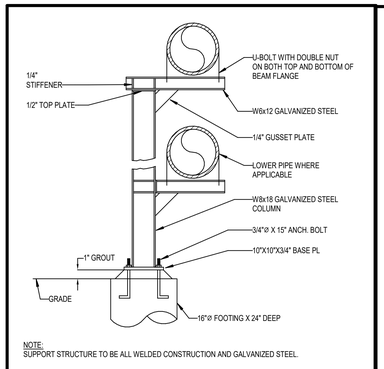
MECHANICAL DETAILS-GYM
M-602-G
FOR BLUEBEAM LABELING/OCR:



BYPASS TYPE CHEMICAL FEEDER PIPING DETAIL — 13
NOT TO SCALE

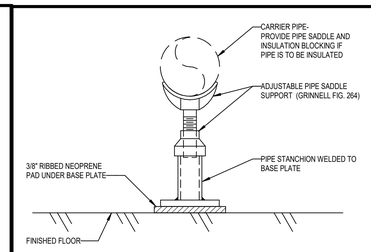


FAN COIL UNIT DETAIL — 12
NOT TO SCALE



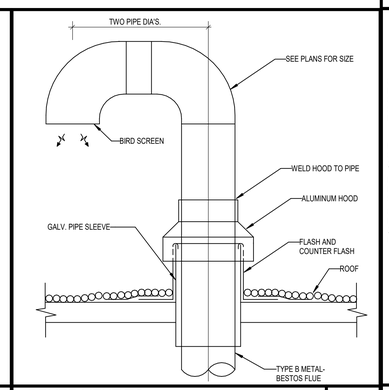
NOTE:
SUPPORT STRUCTURE TO BE ALL WELDED CONSTRUCTION AND GALVANIZED STEEL.

STACKED PIPE SUPPORT STANCHION DETAIL — 11
NOT TO SCALE

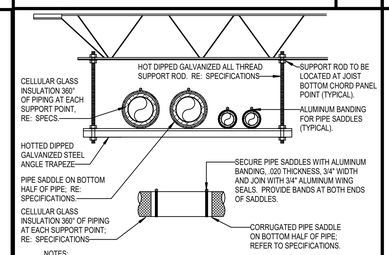


BASE PLATE DIMENSIONS		
PIPE SIZE	PIPE STANCHION SIZE	BASE PLATE SIZE
2 1/2" - 3"	2 1/2"	3/8"x6"x6"
4" - 12"	3"	3/8"x8"x8"
14" - 16"	4"	3/8"x6"x6"
18" - 36"	6"	3/8"x10"x10"

FLOOR MOUNTED PIPE STAND DETAIL — 10
NOT TO SCALE

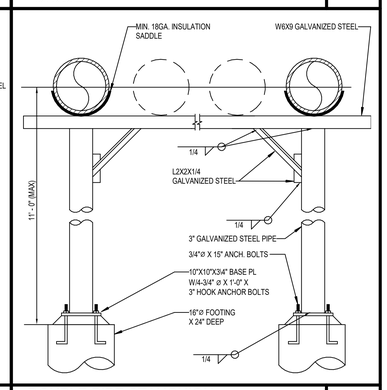


DRYER VENT TO GOOSENECK DETAIL — 09
NOT TO SCALE

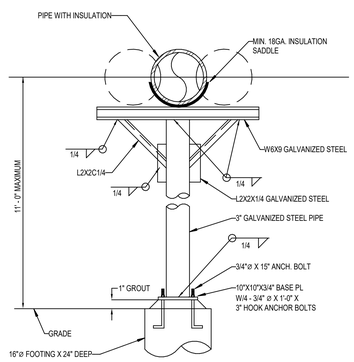


NOTES:
1. REFER TO SPECIFICATIONS FOR SPACING AND VIBRATION ISOLATION REQUIREMENTS.
2. CONTRACTOR SHALL OBTAIN STRUCTURAL ENGINEER APPROVAL FOR ANY AND ALL PIPE MOUNTING DETAILS AT CONCRETE OR STEEL STRUCTURE.
3. IF PIPE RUNS PARALLEL WITH STRUCTURE, PROVIDE SECURED UNISTRUT HEADER LAID ACROSS MULTIPLE JOISTS MOUNTED TO JOIST BOTTOM CHORD.
4. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL JOIST REINFORCEMENTS REQUIRED IF PIPE HANGER LOADS DO NOT OCCUR AT JOIST BOTTOM CHORD PANEL POINTS.
5. CONTRACTOR SHALL FIELD GALVANIZE ALL SURFACES THAT ARE EXPOSED DUE TO FIELD CUTS/MODIFICATIONS.

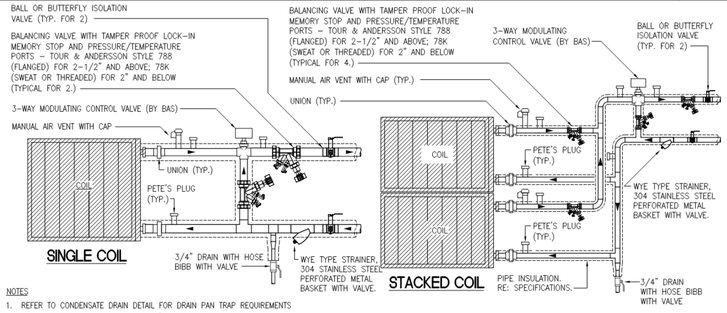
PIPE HANGER TRAPEZE DETAIL — 08
NOT TO SCALE



DOUBLE PIPE STANCHION PIPE SUPPORT DETAIL — 07
NOT TO SCALE

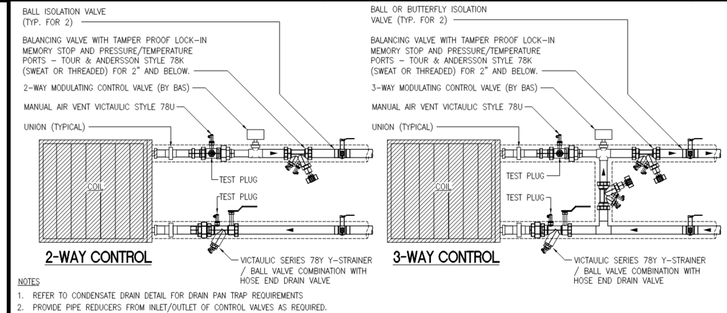


SINGLE COLUMN PIPE STANCHION DETAIL — 06
NOT TO SCALE



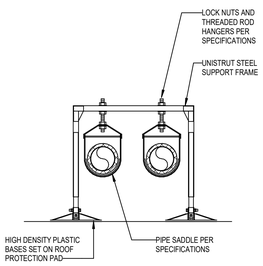
NOTES
1. REFER TO CONDENSATE DRAIN DETAIL FOR DRAIN PAN TRAP REQUIREMENTS
2. PROVIDE PIPE REDUCERS FROM INLET/OUTLET OF CONTROL VALVES AS REQUIRED.
3. ISOLATION AND FLOW CONTROL/BALANCING VALVES SHALL MATCH BRANCH PIPING SIZE. REFER TO MECHANICAL PIPING DIAGRAMS FOR BRANCH PIPE SIZES.
4. FOR ALL FLOW CONTROL BALANCING VALVES, ALL HANDLES AND PRESSURE/SENSOR PORTS SHALL HAVE EXTENDED STEMS TO ACCOMMODATE INSULATION.
5. MECHANICAL CONTRACTOR SHALL COORDINATE PIPE INSULATION THICKNESS WITH BALANCING VALVE PROVIDER.
6. ADDITIONAL ISOLATION VALVES SHALL BE PROVIDED ON SUPPLY AND RETURN LINES AS SHOWN TO COMPLETELY ISOLATE COIL AND AVOID DRAINING ENTIRE HYDRONIC LOOP.

COIL PIPING ACCESSORIES WITH 3 WAY COIL KIT CONTROL VALVE CONNECTION DETAIL (FOR 2-1/2" OR LARGER) — 05
NOT TO SCALE



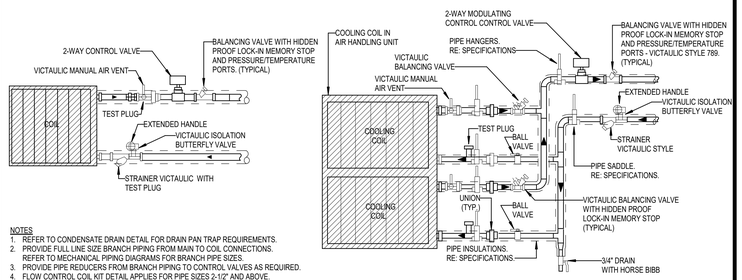
NOTES
1. REFER TO CONDENSATE DRAIN DETAIL FOR DRAIN PAN TRAP REQUIREMENTS
2. PROVIDE PIPE REDUCERS FROM INLET/OUTLET OF CONTROL VALVES AS REQUIRED.
3. ISOLATION AND FLOW CONTROL/BALANCING VALVES SHALL MATCH BRANCH PIPING SIZE. REFER TO MECHANICAL PIPING DIAGRAMS FOR BRANCH PIPE SIZES.
4. FOR ALL FLOW CONTROL BALANCING VALVES, ALL HANDLES AND PRESSURE/SENSOR PORTS SHALL HAVE EXTENDED STEMS TO ACCOMMODATE INSULATION.
5. MECHANICAL CONTRACTOR SHALL COORDINATE PIPE INSULATION THICKNESS WITH BALANCING VALVE PROVIDER.
6. ADDITIONAL ISOLATION VALVES SHALL BE PROVIDED ON SUPPLY AND RETURN LINES AS SHOWN TO COMPLETELY ISOLATE COIL AND AVOID DRAINING ENTIRE HYDRONIC LOOP.
7. REFER TO VICTAULIC INSTALLATION MANUAL FOR INSTALLATION INSTRUCTIONS.

VICTAULIC COIL-KIT PIPING ACCESSORIES WITH 2-WAY OR 3 WAY CONTROL VALVE CONNECTION DETAIL (FOR PIPING 2" AND BELOW) — 04
NOT TO SCALE



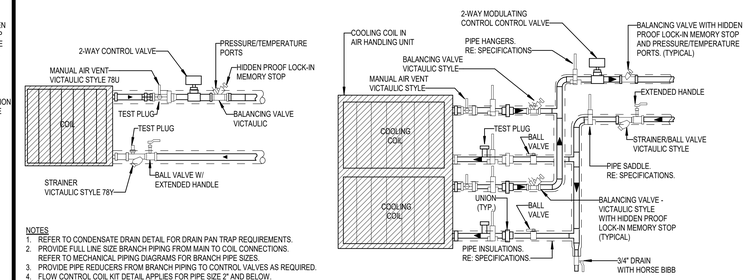
NOTE:
1. SPACE PIPE SUPPORTS AT MAXIMUM INTERVALS OF 10'-0" ON CENTER.
2. CONTRACTOR SHALL FIELD GALVANIZE ALL SURFACES THAT ARE EXPOSED DUE TO FIELD CUTS/ MODIFICATIONS.

ROOF MOUNTED PORTABLE PIPE SUPPORT (2-PIPE CLEVIS HANGER) — 03
NOT TO SCALE



NOTES
1. REFER TO CONDENSATE DRAIN DETAIL FOR DRAIN PAN TRAP REQUIREMENTS.
2. PROVIDE FULL LINE SIZE BRANCH PIPING FROM MAIN TO COIL CONNECTIONS. REFER TO MECHANICAL PIPING DIAGRAMS FOR BRANCH PIPE SIZES.
3. PROVIDE PIPE REDUCERS FROM BRANCH PIPING TO CONTROL VALVES AS REQUIRED.
4. FLOW CONTROL COIL KIT DETAIL APPLIES FOR PIPE SIZES 2-1/2" AND ABOVE.
5. ALL HANDLES AND PRESSURE/SENSOR PORTS SHALL HAVE EXTENDED STEMS TO ACCOMMODATE INSULATION.
6. MECHANICAL CONTRACTOR SHALL COORDINATE PIPE INSULATION THICKNESS WITH COIL KIT PROVIDER.
7. ADDITIONAL ISOLATION VALVES SHALL BE PROVIDED ON SUPPLY AND RETURN LINES AS SHOWN TO COMPLETELY ISOLATE COIL AND AVOID DRAINING ENTIRE HYDRONIC LOOP.

AIR HANDLER SINGLE AND STACKED COIL WITH 2-WAY COIL KIT VALVE PIPING DETAIL (2-1/2" OR LARGER) — 02
NOT TO SCALE



NOTES
1. REFER TO CONDENSATE DRAIN DETAIL FOR DRAIN PAN TRAP REQUIREMENTS.
2. PROVIDE FULL LINE SIZE BRANCH PIPING FROM MAIN TO COIL CONNECTIONS. REFER TO MECHANICAL PIPING DIAGRAMS FOR BRANCH PIPE SIZES.
3. PROVIDE PIPE REDUCERS FROM BRANCH PIPING TO CONTROL VALVES AS REQUIRED.
4. FLOW CONTROL COIL KIT DETAIL APPLIES FOR PIPE SIZE 2" AND BELOW.
5. ALL HANDLES AND PRESSURE/SENSOR PORTS SHALL HAVE EXTENDED STEMS TO ACCOMMODATE INSULATION.
6. MECHANICAL CONTRACTOR SHALL COORDINATE PIPE INSULATION THICKNESS WITH COIL KIT PROVIDER.
7. ADDITIONAL ISOLATION VALVES SHALL BE PROVIDED ON SUPPLY AND RETURN LINES AS SHOWN TO COMPLETELY ISOLATE COIL AND AVOID DRAINING ENTIRE HYDRONIC LOOP.

AIR HANDLER SINGLE AND STACKED COIL WITH 2-WAY COIL KIT VALVE PIPING DETAIL (1/2" - 2" PIPE) — 01
NOT TO SCALE

PBK

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No.	CONSULTANT
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3	STRUCTURAL CONSULTANT NAME T.000-000-0000
4	MEP CONSULTANT NAME T.000-000-0000
5	ACOUSTIC CONSULTANT NAME T.000-000-0000
6	THEATER CONSULTANT NAME T.000-000-0000
7	FOOD SERVICE CONSULTANT NAME T.000-000-0000
8	CONSULTANT NAME T.000-000-0000

LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations
BUILDING: HARGRAVE HIGH SCHOOL
25400 Willy Lane
Huffman, TX 77336
ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS

KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
MITAL J. PATEL
111622
LICENSED
05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

CHECKED BY: MP
DRAWN BY: OG

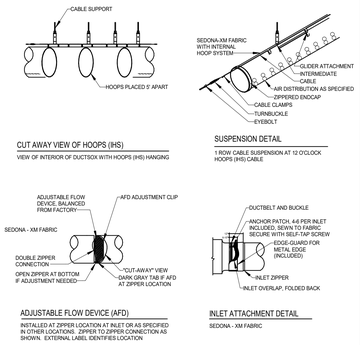
MECHANICAL DETAILS-GYM

M-602-G

Plot Stamp:
6/3/2025 1:11:25 PM

MECHANICAL DETAILS-GYM
M-603-G
FOR BLUEBEAM LABELING/OCR:

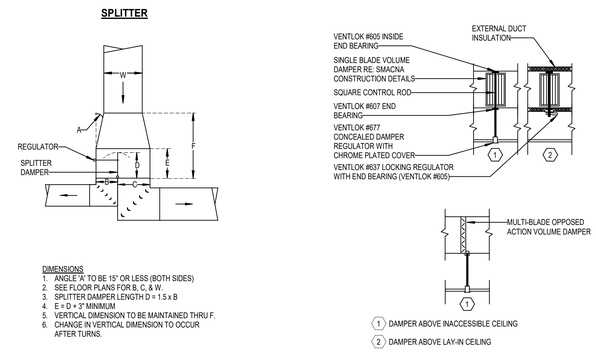
0"
1"



INTERNAL HOOP SYSTEM FABRIC DUCT DETAIL

NOT TO SCALE

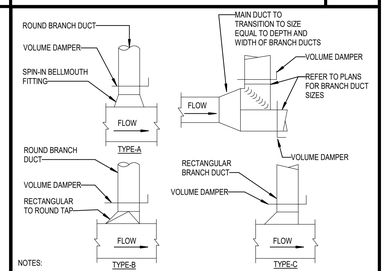
13



DUCT CONSTRUCTION DETAIL

NOT TO SCALE

10



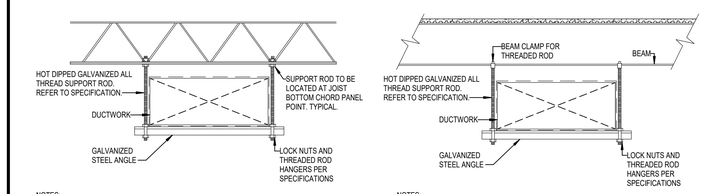
NOTES:

1. USE TYPE "A" CONNECTION ONLY FOR BRANCHES TO SINGLE DIFFUSERS, TERMINAL BOXES OR GRILLES FROM THE MAIN.
2. USE TYPE "B" OR "C" BRANCH WHERE BRANCH FLOW IS 20% OR LESS OF MAIN.
3. NO DAMPERS ARE REQ'D ON VAV SYSTEMS BETWEEN AIR HANDLING UNIT AND VAV TERMINAL BOXES.
4. USE TEE SPLIT WHERE BRANCH FLOW IS MORE THAN 20% OF MAIN.
5. FOR TYPE "A" CONNECTION TO DIFFUSERS, THE ROUND DUCT RUN-OUT SIZE SHALL BE THE SAME SIZE AS THE NECK OF DIFFUSER, UNLESS OTHERWISE INDICATED.
4. PROVIDE VOLUME DAMPERS ON SUPPLY, OUTSIDE AIR, RETURN AND EXHAUST DUCT SYSTEMS AS SHOWN.

BRANCH DUCT DETAILS

NOT TO SCALE

11



NOTES:

1. FOLLOW SMACNA GUIDELINES FOR SPACING REQUIREMENTS.
2. CONTRACTOR SHALL OBTAIN STRUCTURAL ENGINEER APPROVAL FOR ANY AND ALL DUCTWORK MOUNTING DETAILS AT CONCRETE.
3. CONTRACTOR SHALL INSTALL DUCT HANGER ROD WITHIN 3" AT JOIST BOTTOM CHORD PANEL POINT. IF HANGER ROD DOES NOT OCCUR WITHIN 3" AT BOTTOM CHORD PANEL POINT THAN LOAD SHALL NOT EXCEED 100# CONCENTRATED LOAD AT EACH THREADED ROD HANGER LOCATION.
4. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL JOIST REINFORCEMENTS REQUIREMENTS IF DUCT HANGER RODS ARE MORE THAN 2" FROM JOIST BOTTOM CHORD PANEL POINT AND EXCEED 100# CONCENTRATED LOAD.
5. IF DUCT RUNS PARALLEL WITH STRUCTURE, PROVIDE SECURED UNISTRUT HEADER LAID ACROSS MULTIPLE JOISTS MOUNTED TO JOIST BOTTOM CHORD.
6. BEAM CLAMPS AND FLANGE CLIPS ARE NOT ACCEPTABLE FOR JOISTS.

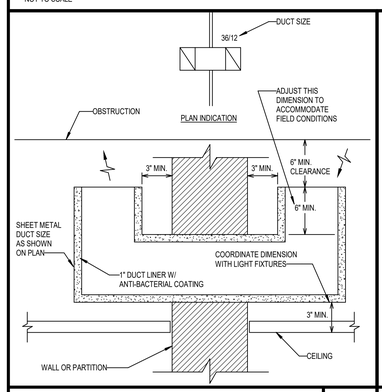
NOTES:

1. FOLLOW SMACNA GUIDELINES FOR SPACING REQUIREMENTS.
2. CONTRACTOR SHALL OBTAIN STRUCTURAL ENGINEER APPROVAL FOR ANY AND ALL DUCTWORK MOUNTING DETAILS AT CONCRETE.

DUCT HANGER TRAPEZE DETAIL

NOT TO SCALE

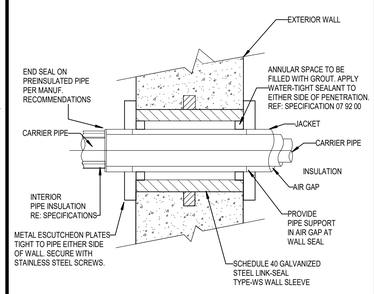
12



TRANSFER DUCT DETAIL

NOT TO SCALE

09

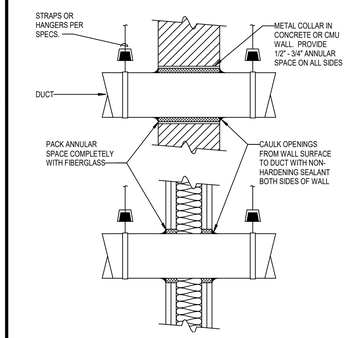


NOTE:
PROVIDE PIPE ANCHOR WITHIN 5' - 0" OF BUILDING WALL

ABOVE GRADE EXTERIOR WALL PIPE PENETRATION DETAIL

NOT TO SCALE

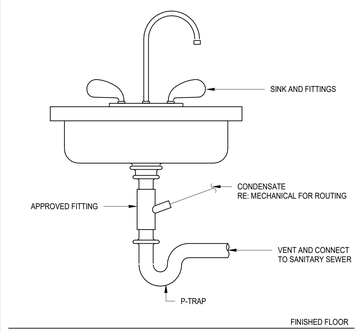
08



RESILIENTLY SEALED DUCT PENETRATION DETAIL

NOT TO SCALE

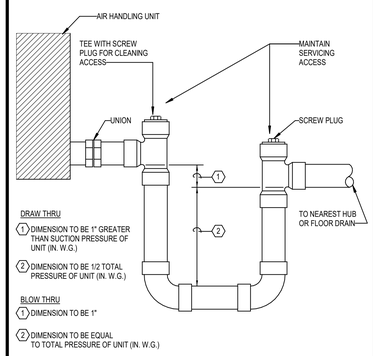
07



CONDENSATE TO SINK TAILPIECE DETAIL

NOT TO SCALE

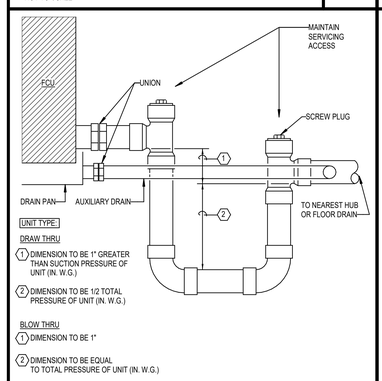
06



CONDENSATE TRAP PIPING DETAIL

NOT TO SCALE

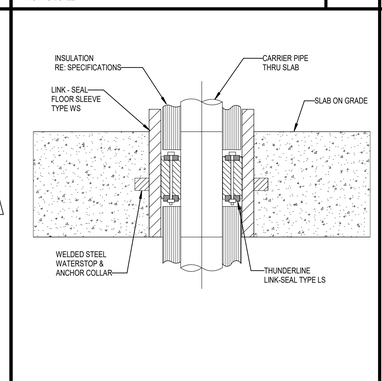
05



FAN COIL CONDENSATE DRAIN DETAIL

NOT TO SCALE

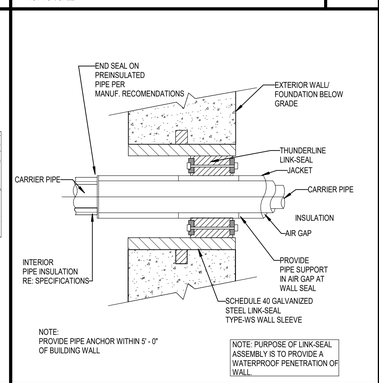
04



WATERPROOF PIPE PENETRATION THROUGH SLAB DETAIL

NOT TO SCALE

03



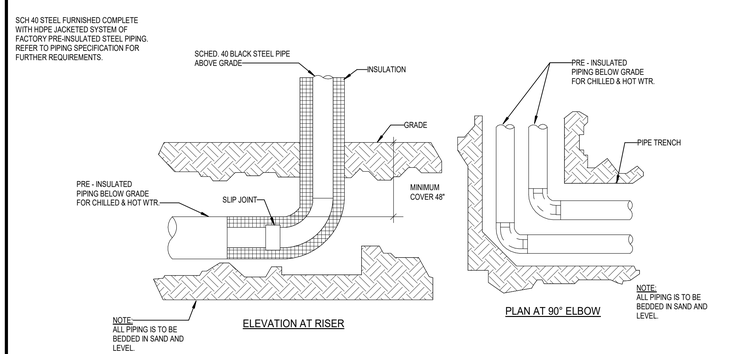
NOTE:
PROVIDE PIPE ANCHOR WITHIN 5' - 0" OF BUILDING WALL

NOTE: PURPOSE OF LINK-SEAL ASSEMBLY IS TO PROVIDE A WATERPROOF PENETRATION OF WALL.

BELOW GRADE PIPE PENETRATION DETAIL

NOT TO SCALE

02



BELOW GRADE PIPING DETAIL

NOT TO SCALE

01

Plot Stamp:
6/3/2025 1:11:26 PM

PBK

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CIVIL CONSULTANT NAME	T.000-000-0000
LANDSCAPE CONSULTANT NAME	T.000-000-0000
STRUCTURAL CONSULTANT NAME	T.000-000-0000
MEP CONSULTANT NAME	T.000-000-0000
ACOUSTIC CONSULTANT NAME	T.000-000-0000
THEATER CONSULTANT NAME	T.000-000-0000
FOOD SERVICE CONSULTANT NAME	T.000-000-0000
CONSULTANT NAME	T.000-000-0000

LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS

KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
MITAL J. PATEL
111622
LICENSED PROFESSIONAL ENGINEER

05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

CHECKED BY: MP
DRAWN BY: OG

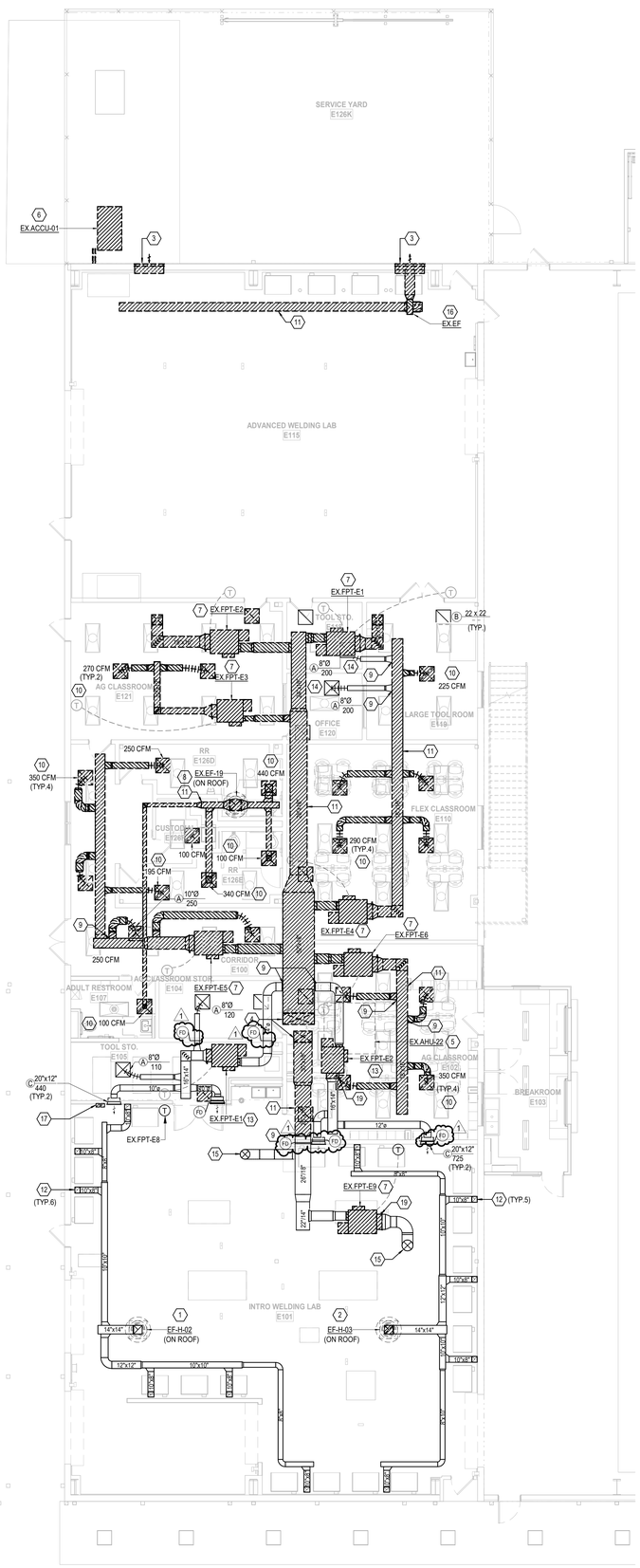
MECHANICAL DETAILS-GYM

M-603-G

1ST FLOOR MECHANICAL PLAN - AREA H

M-101H.A

FOR BLUEBEAM LABELING/OCR:



1 1ST FLOOR MECHANICAL PLAN - AREA H

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

KEYED NOTES

1. 14"x14" EXHAUST AIR DUCT TO EF-H-02 ON ROOF; TRANSITION TO UNIT INLET.
2. 14"x14" EXHAUST AIR DUCT TO EF-H-03 ON ROOF; TRANSITION TO UNIT INLET.
3. EXISTING WALL LOUVER TO REMAIN.
4. EXISTING SUPPLY DUCT UP TO MECHANICAL MEZZANINE. REFER TO M-102H FOR CONTINUATION.
5. EXISTING DX AIR HANDLING UNIT TO REMAIN. RE-COMMISSION THE UNIT; REFER TO EXISTING SCHEDULE.
6. EXISTING ACCU TO REMAIN. RE-COMMISION THE UNIT; REFER EXISTING SCHEDULE.
7. EXISTING FAN POWERED TERMINAL BOX AND ASSOCIATED DUCTWORK, THERMOSTAT TO REMAIN.
8. EXISTING ROOF MOUNTED EXHAUST FAN AND ASSOCIATED DUCTWORK TO REMAIN.
9. TAP NEW DUCT TO EXISTING.
10. EXISTING AIR DEVICE TO REMAIN; RE-BALANCE AIR FLOW CFM AS SHOWN.
11. EXISTING DUCTWORK TO REMAIN.
12. ROUTE EXHAUST DUCT 2FT. A.F.F. WITH WIRE MESH AT END OF DUCT.
13. RELOCATE EXISTING FAN TERMINAL UNIT AT THIS APPROXIMATE LOCATION.
14. NEW AIR DEVICE TO MATCH REFLECTED CEILING PLAN. EXTEND SUPPLY AIR BRANCH WITH NEW FLEX DUCT IF NEEDED.
15. NEW ROUND SUPPLY DUCT UP TO HIGH LEVEL. REFER TO M-102H FOR CONTINUATION.
16. EXISTING WELDING EXHAUST FAN TO REMAIN.
17. EF-H-02 & EF-H-03 FAN ON/OFF SWITCHES FOR LOCAL CONTROL.

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LANDSCAPE
EDGELAND
T 713-965-0005

STRUCTURAL
KUBENA ENGINEERS
T 713-965-0608

MEP
LEAF ENGINEERS
T 713-965-0505

ACOUSTIC
BAI, LLC
T 713-965-0504

EXTERIOR
BEAM PROFESSIONALS
T 713-965-0505

FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS, LLc
T 281-350-2323

LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: AGRICULTURAL PAVILION

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT

H	J

KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
MITAL J. PATEL
111622
PROFESSIONAL ENGINEER
05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
Huffman Independent School District

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

CHECKED BY: MP

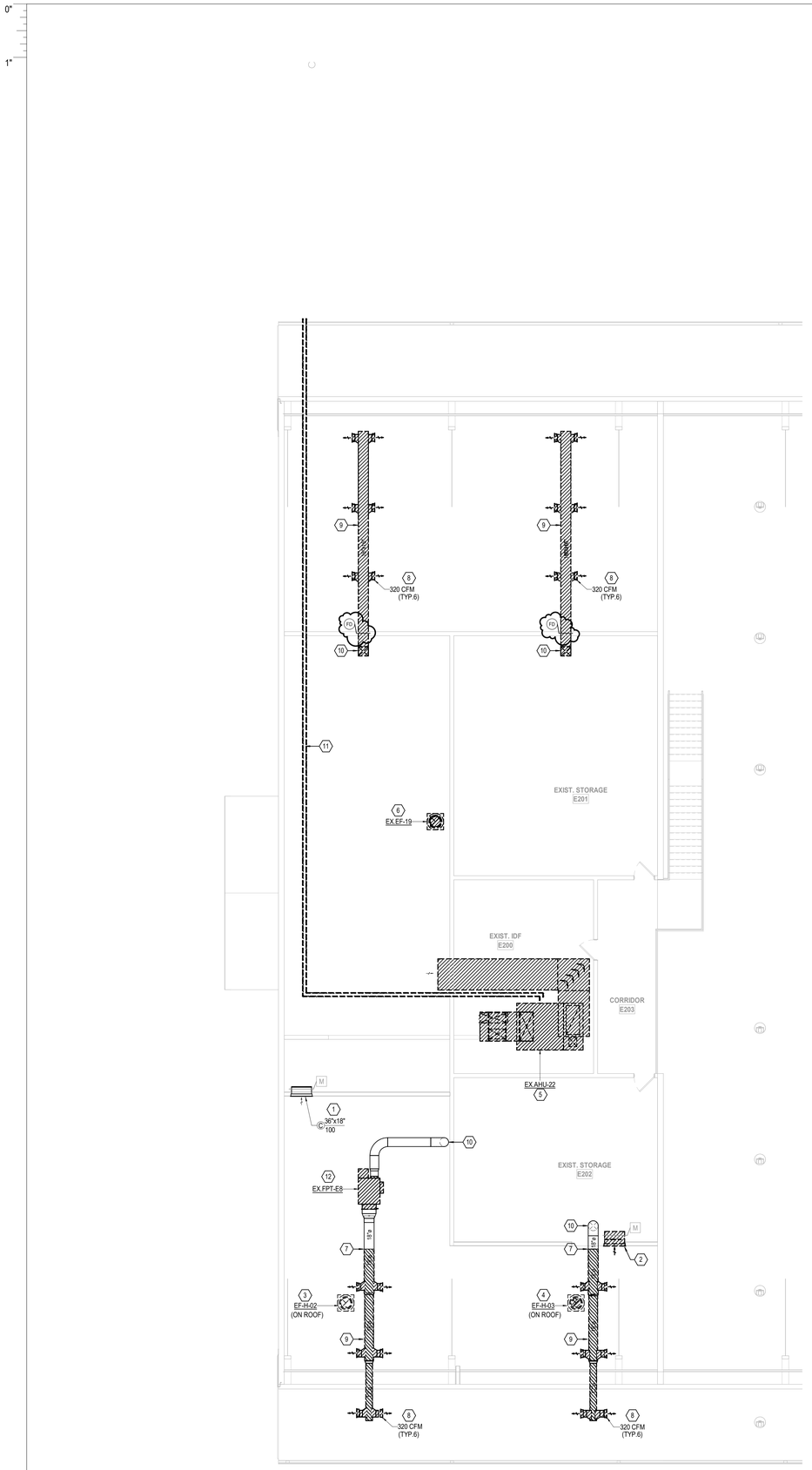
DRAWN BY: OG

1ST FLOOR MECHANICAL PLAN - AREA H

M-101H.A

Plot Stamp:
6/3/2025 12:34:24 PM

2ND FLOOR MECHANICAL PLAN - AREA H-AG
M-102H.A
FOR BLUEBEAM LABELING/OCR:



1 2ND FLOOR MECHANICAL PLAN - AREA J
SCALE: 1/8" = 1'-0"

KEYED NOTES

1. NEW RETURN AIR GRILLE AT THE HEIGHT OF RETURN AIR PLENUM. PROVIDE NEW MOTORIZED DAMPER.
2. EXISTING RETURN AIR GRILLE TO REMAIN.
3. 14"x14" EXHAUST AIR DUCT TO EF-H-02 ON ROOF; TRANSITION TO UNIT INLET.
4. 14"x14" EXHAUST AIR DUCT TO EF-H-03 ON ROOF; TRANSITION TO UNIT INLET.
5. EXISTING DX AIR HANDLING UNIT TO REMAIN. RE-COMMISSION AHU ON TOP MOST OPERATION; REFER TO EXISTING SCHEDULE.
6. EXISTING ROOF MOUNTED EXHAUST FAN AND ASSOCIATED DUCTWORK TO REMAIN.
7. TAP NEW DUCT TO EXISTING.
8. EXISTING AIR DEVICE TO REMAIN; RE-BALANCE AIR FLOW CFM AS SHOWN.
9. EXISTING DUCTWORK TO REMAIN.
10. NEW ROUND SUPPLY DUCT DOWN TO FIRST FLOOR. REFER TO M-101H FOR CONTINUATION.
11. EXISTING LIQUID AND SUCTION REFRIGERANT LINES TO REMAIN.
12. NEW LOCATION OF EX.FPT-E8 AT HIGH LEVEL. COORDINATE WITH ELECTRICAL.

PBK

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STRUCTURAL
KUBALA ENGINEERS
T.713-965-0608
MEPT
LEAF ENGINEERS
T.713-965-0608
ACOUSTIC
BAL LLC
T.512-476-3464
ENVELOPE
BEAM PROFESSIONALS
T.713-965-0608
FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS, LLC
T.281-350-2323

LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: AGRICULTURAL PAVILLION

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS

H	J

KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
MITAL J. PATEL
111622
LICENSED PROFESSIONAL ENGINEER
05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
Huffman Independent School District

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

CHECKED BY: MP
DRAWN BY: OG

2ND FLOOR MECHANICAL PLAN - AREA H-AG

M-102H.A

Plot Stamp:
6/3/2025 12:34:24 PM

MECHANICAL SCHEDULES-AG
M-501.A
FOR BLUEBEAM LABELING/OCR:

HVAC FANS SCHEDULE

DESIGNATION	LOCATION	SERVICE	MANUFACTURER	MODEL NUMBER	NOTES	FAN DATA							
						TYPE	DRIVE	CFM	STATIC PRESSURE (" W.G.)	MOTOR HP. (MIN)	BRAKE HP	RPM (MAX.)	VOLT / Ø / HZ
EF-H-02	ROOF	INTRO WELDING LAB E101	LOREN COOK	ACRU	1-7	CENTRIFUGAL	DIRECT	1,300	1.25	1	0.54	1,335	120/1/60
EF-H-03	ROOF	INTRO WELDING LAB E101	LOREN COOK	ACRU	1-7	CENTRIFUGAL	DIRECT	1,300	1.25	1	0.54	1,335	120/1/60

1. REFERENCE ELECTRICAL DRAWINGS FOR ELECTRICAL DATA.
2. REFERENCE SPECIFICATIONS FOR SEQUENCE OF OPERATIONS.
3. DIRECT DRIVE FANS SHALL BE PROVIDED WITH SPEED CONTROLLERS FOR SYSTEM BALANCING.
4. FAN SHALL BE PROVIDED WITH ECM MOTOR AND SPEED CONTROLLER. STARTER SHALL BE PROVIDED BY FAN MANUFACTURER. JUNCTION BOX AND VARI-GREEN TRANSFORMER SHALL BE FACTORY MOUNTED AND WIRED.
5. REFERENCE ARCHITECTURAL DRAWINGS FOR ROOF CURB DETAIL. ROOF CURB TO MATCH EXISTING METAL ROOF TYPE AND SLOPE.
6. PROVIDE UPBLAST FAN & DESIGNED TO WITHSTAND HIGH WIND SPEEDS UP TO 155 MPH.
7. PROVIDE WITH ON/OFF SWITCH FOR LOCAL CONTROL.

DIFFUSERS, REGISTERS & GRILLES SCHEDULE

DESIGNATION	MODEL NUMBER	NOISE CRITERIA (NC)	DESCRIPTION
A	TITUS TDCA	25	24x24 MODULE SIZE, LAY-IN BORDER TYPE, 18"x18" NECK SIZE WITH ROUND DUCT CONNECTION SIZED AS INDICATED ON PLANS. NO OPPOSED BLADE DAMPER, ALL STEEL CONSTRUCTION.
B	TITUS PAR	25	24x24 MODULE SIZE, LAY-IN BORDER TYPE, 22"x22" NECK SIZE UNLESS NOTED OTHERWISE. NO OPPOSED BLADE DAMPER, ALL STEEL CONSTRUCTION.
C	TITUS 300RS	25	DOUBLE DEFLECTION, 3/4" BLADE SPACING, FRONT BLADES PARALLEL TO SHORT DIMENSION, NO OPPOSED BLADE DAMPER, SURFACE MOUNTING BORDER TYPE WITH COUNTERSUNK HOLES, ALL STEEL CONTSTRUCTION.
D	TITUS 350RL	25	3/4" BLADE SPACING, FRONT BLADES PARALLEL TO LONG DIMENSION, 35° FIXED DEFLECTION, NO OPPOSED BLADE DAMPER, SURFACE MOUNTING BORDER TYPE WITH COUNTERSUNK HOLES, ALL STEEL CONSTRUCTION.
E	TITUS TDC-AA	25	24x24 MODULE SIZE, LAY-IN BORDER TYPE, 18"x18" NECK SIZE WITH ROUND DUCT CONNECTION SIZED AS INDICATED ON PLANS. NO OPPOSED BLADE DAMPER, ALL ALUMINUM CONSTRUCTION.
F	TITUS PAR-AA	25	24x24 MODULE SIZE, LAY-IN BORDER TYPE, 22"x22" NECK SIZE UNLESS NOTED OTHERWISE. NO OPPOSED BLADE DAMPER, ALL ALUMINUM CONSTRUCTION.
G	TITUS TDC	25	12x12 MODULE SIZE, LAY-IN BORDER TYPE, 8"x8" NECK SIZE WITH ROUND DUCT CONNECTION SIZED AS INDICATED ON PLANS. NO OPPOSED BLADE DAMPER, ALL STEEL CONSTRUCTION.
H	TITUS PAR	25	12x12 MODULE SIZE, LAY-IN BORDER TYPE, 10"x10" NECK SIZE UNLESS NOTED OTHERWISE. NO OPPOSED BLADE DAMPER, ALL STEEL CONSTRUCTION.

1. ALL DIFFUSER DESIGNATIONS MAY NOT BE USED ON PROJECT.
2. ALL GRILLES IN ADVANCE WELDING LAB E115 AND INTRO WELDING LAB E101 SHALLE BE #01 ALUMINUM FINISH COLOR AND ALL ALUMINUM CONSTRUCTION.
3. PROVIDE ROTO-TWIST CABLE OPERATED DAMPERS AT IN GYP BOARD CEILINGS.

AIR COOLED REFRIGERANT CONDENSER SCHEDULE - TO REMAIN (FOR FERENCE ONLY)

DESIGNATION	SERVICE	MANUFACTURER	MODEL NUMBER	NOTES	CAPACITY (TONS)	STEP CAPACITY	SEER	COMPRESSOR DATA		CONDENSER DATA		ELECTRICAL INFORMATION
								REFRIGERANT	NUMBER OF COMPRESORS	AMBIENT TEMP. (°F)	NUMBER OF FANS	VOLTAGE / PH / HZ
EX.ACCU-01	EX.AHU-22	TRANE	TTA-150	1-5	12	2	10.3	R-410a	1	100	1	460 / 3 / 60

1. REFERENCE ELECTRICAL DRAWINGS FOR FURTHER ELECTRICAL INFORMATION

AIR HANDLING UNIT SCHEDULE - TO REMAIN (FOR REFERENCE ONLY)

DESIGNATION	SERVICE	TYPE	ARRANGEMENT	MANUFACTURER	MODEL	SEE NOTE	INDOOR BLOWER DATA						COOLING COIL DATA							ELECTRICAL
							TOTAL CFM	OUTSIDE AIR CFM	EST. EXT. SP. (IN. WG.)	MOTOR H.P.	DRIVE	TYPE	CFM OVER COIL	MAX. FACE VELOCITY (FPM)	GRAND SENSIBLE BTUH	GRAND TOTAL BTUH	EAT (°F DB)	EAT (°F WB)	LAT (°F DB)	VOLTAGE
EX.AHU-22	AG.SCIENCE BLDG	SZ VAV	HORIZONTAL	TRANE	MCC-30	1-11	13,660	2,055	1.50	10.00	BELT	FC	13,660	500	119,000	124,000	66.8	59.6	55.0	460 / 3 / 60

1. REFERENCE ELECTRICAL DRAWINGS FOR ELECTRICAL DATA.

EXISTING VAV TERMINAL UNITS - ELECTRIC HEAT SCHEDULE - TO REMAIN (FOR REFERENCE ONLY)

TAG	INLET SIZE	COOLING CFM		ELECTRIC HEATING COIL			VOLTAGE (V/PH/HZ)	MANUFACTURER	MODEL
		MAX	MIN	CFM	KW	MOTOR HP			
FP1-E1	14	1,920	450	1,920	16.0	3/4	460 / 3 / 60	TITUS	DTQS
FP1-E2	14	1,920	450	1,920	16.0	3/4	460 / 3 / 60	TITUS	DTQS
FP1-E3	8	540	230	540	5.0	1/6	460 / 3 / 60	TITUS	DTQS
FP1-E4	12	1,400	450	1,400	14.0	3./4	460 / 3 / 60	TITUS	DTQS
FP1-E5	14	1,790	450	1,790	16.0	3/4	460 / 3 / 60	TITUS	DTQS
FP1-E6	12	1,400	325	1,400	10.0	1/3	460 / 3 / 60	TITUS	DTQS
FP1-E7	10	850	230	850	9.0	1/4	460 / 3 / 60	TITUS	DTQS
FP1-E8	16	1,920	450	1,920	16.0	3/4	460 / 3 / 60	TITUS	DTQS
FP1-E9	16	1,920	450	1,920	16.0	3/4	460 / 3 / 60	TITUS	DTQS
		13,660							

1. REFERENCE ELECTRICAL DRAWINGS FOR ELECTRICAL DATA.

Plot Stamp:
6/3/2025 12:34:24 PM

PBK

ARCHITECT PBK Architects, Inc.
PBK.com
HOUSTON
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
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TX Firm: BR 1608

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LANDSCAPE
EDGELAND
T 713-965-0005
STRUCTURAL
KUBENA & ASSOCIATES
T 713-960-0808
MEP
LEAF ENGINEERS
T 713-905-0505
ACOUSTIC
BAI, LLC
T 713-961-2264
EXTERIOR
BEAM PROFESSIONALS
T 713-965-0505
FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS, LLc
T 281-350-2323

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DRAWN BY: Author

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M-501.A

MECHANICAL DETAILS-AG
M-601.A
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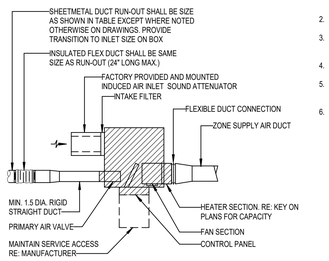
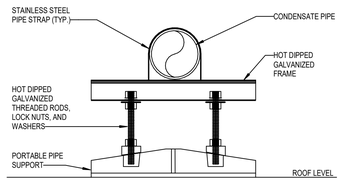


NOTE:
1. HEATING COIL SHALL BE PART OF THE BOX AIR PRESSURE DROP AND SHALL NOT EXCEED .10" W.G. AT COOLING CFM. ELECTRIC HEATER SHALL CONFORM TO THE ELECTRIC DUCT HEATER SECTION OF THE SPECIFICATIONS.
2. MAXIMUM VELOCITY AT BOX INLET SHALL NOT EXCEED 2,000 FPM.
3. SIZE ALL FAN MOTORS TO OVERCOME 0.35" EXTERNAL STATIC PRESSURE. MINIMUM MOTOR SIZES SHALL BE AS NOTED IN THE TABLE.
4. TERMINAL BOX DESIGNATION TO BE DETERMINED BY THE MAXIMUM COOLING CFM.
5. FAN ASSEMBLY: ECM VARIABLE SPEED MOTOR; 277V/1PH/60HZ. COORDINATE WITH ELECTRICAL PLANS. REFER TO AIR TERMINAL SPECS FOR FURTHER REQUIREMENTS.
6. ANY DEVIATIONS OF ELECTRICAL CHARACTERISTICS LISTED ON CHART BELOW RESULTING IN POWER DESIGN CHANGES SHALL BE RESPONSIBILITY OF CONTRACTOR.

TERMINAL BOX SCHEDULE - BASED ON TITUS DTFS-F

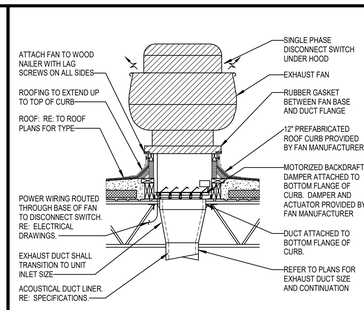
DESIGNATION	A	B	C	D	E	G
CFM RANGE	1-350	351-650	651-1,000	1,000-1,400	1,401-2,000	2,001-2,600
INLET SIZE	6"	8"	10"	12"	14"	16"
DUCT SIZE	8"	10"	12"	14"	16"	18"
HP (MAX)	1/3	1/3	1/3	1/2	3/4	(2) @ 3/4
MOTOR AMPS (MAX)	0.76	1.4	1.9	3.3	4.9	11.8

SERIES FAN - POWERED AIR TERMINAL UNIT WITH ELECTRIC HEAT DETAIL
NOT TO SCALE
10



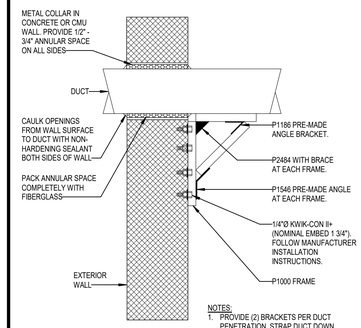
NOTES:
1. PORTABLE PIPE SUPPORTS SHALL BE MANUFACTURED BY ADVANCED SUPPORT PRODUCT, INC., MODEL SS1000A/SS2000-CB-ADJ (AS APPLICABLE) OR PRIOR APPROVED EQUAL.
2. ALL METALS MATERIALS SHALL BE HOT-DIPPED GALVANIZED.
3. CONTRACTOR SHALL FIELD GALVANIZE ALL SURFACES THAT ARE EXPOSED DUE TO FIELD CUTS/ MODIFICATIONS.

CONDENSATE PIPE SUPPORT DETAIL
NOT TO SCALE
09



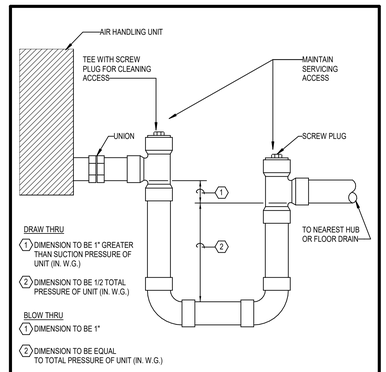
NOTES:
1. FOR THREE PHASE FANS, REFER TO THREE PHASE DISCONNECT SWITCH DETAIL
2. PROVIDE DUCT LINER IN THE FIRST 10 FEET OF DUCT FROM FAN.
3. ATTACH ROOF MOUNTED EQUIPMENT TO ROOF CURB AS REQUIRED TO RESIST UPLIFT DUE TO WINDS UP TO 120 M.P.H. SPEED.

UPBLAST ROOF MOUNTED EXHAUST FAN DETAIL
NOT TO SCALE
08

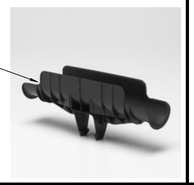


NOTES:
1. PROVIDE (2) BRACKETS PER DUCT PENETRATION. STRAP DUCT DOWN TO BRACKETS.

EXTERIOR WALL DUCT SUPPORT DETAIL
NOT TO SCALE
07



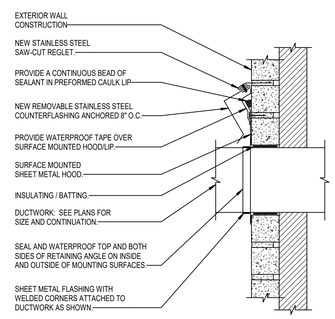
CONDENSATE TRAP PIPING DETAIL
NOT TO SCALE
11



NOTES:
TYPICAL FOR ALL REFRIGERANT PIPING PROVIDE PIPE SUPPORTS MANUFACTURED BY "COOPER B-LINE". SNAP 'N SHIELD SERIES. COORDINATE COPPER TUBING SIZE AND INSULATION THICKNESS WITH COOPER B-LINE PRIOR TO EQUIPMENT ORDER.

SUPPORT ALL-THREAD ROD SHALL BE LOCATED AT JOIST BOTTOM CHORD PANEL.

SNAP 'N SHIELD REFRIGERANT PIPING SUPPORT DETAIL
NOT TO SCALE
06

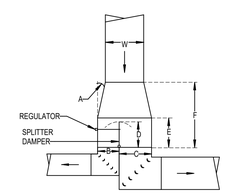


DUCT THROUGH EXTERIOR WALL PENETRATION DETAIL
NOT TO SCALE
05

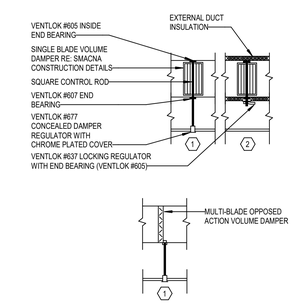
NOTE: FLASHING SHALL BE COMPATIBLE WITH EXISTING ROOFING. ALL MATERIALS USED SHALL BE AS RECOMMENDED BY EXISTING ROOFING SYSTEM MANUFACTURER.

DUCT PENETRATION THROUGH ROOF DETAIL
NOT TO SCALE
04

SPLITTER

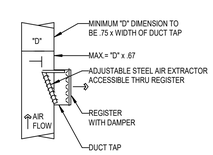


DIMENSIONS:
1. ANGLE 'A' TO BE 15° OR LESS (BOTH SIDES)
2. SEE FLOOR PLANS FOR B, C, & W.
3. SPLITTER DAMPER LENGTH D = 1.5 x B
4. E = D + 3" MINIMUM
5. VERTICAL DIMENSION TO BE MAINTAINED THRU F.
6. CHANGE IN VERTICAL DIMENSION TO OCCUR AFTER TURNS.



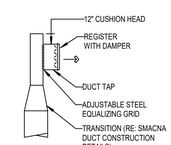
1 DAMPER ABOVE INACCESSIBLE CEILING
2 DAMPER ABOVE LAY-IN CEILING

AIR EXTRACTOR AT SIDEWALL REGISTER

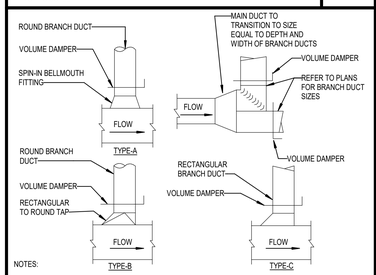


1. MAX. WIDTH OF DUCT TAP SHALL BE 48". PROVIDE BOTTOM BRACKET FOR SUPPORT WHERE EXTRACTOR EXCEEDS 16".
2. MAX. HEIGHT OF DUCT TAP SHALL BE 12" (MIN. = 4")

SIDEWALL REGISTER AT END OF DUCT

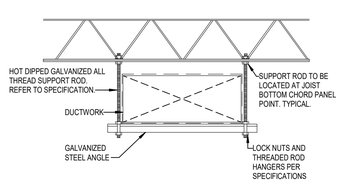


DUCT CONSTRUCTION DETAIL
NOT TO SCALE
01

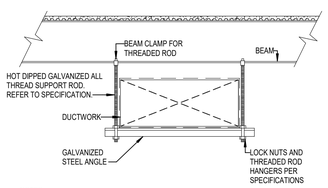


NOTES:
1. USE TYPE "A" CONNECTION ONLY FOR BRANCHES TO SINGLE DIFFUSERS, TERMINAL BOXES OR GRILLES FROM THE MAIN.
2. USE TYPE "B" OR "C" BRANCH WHERE BRANCH FLOW IS 20% OR LESS OF MAIN.
3. NO DAMPERS ARE REQ'D ON VAV SYSTEMS BETWEEN AIR HANDLING UNIT AND VAV TERMINAL BOXES.
4. USE TEE SPLIT WHERE BRANCH FLOW IS MORE THAN 20% OF MAIN.
5. FOR TYPE "A" CONNECTION TO DIFFUSERS, THE ROUND DUCT RUN-OUT SIZE SHALL BE THE SAME SIZE AS THE NECK OF DIFFUSER, UNLESS OTHERWISE INDICATED.
4. PROVIDE VOLUME DAMPERS ON SUPPLY, OUTSIDE AIR, RETURN AND EXHAUST DUCT SYSTEMS AS SHOWN.

BRANCH DUCT DETAILS
NOT TO SCALE
03



NOTES:
1. FOLLOW SMACNA GUIDELINES FOR SPACING REQUIREMENTS.
2. CONTRACTOR SHALL OBTAIN STRUCTURAL ENGINEER APPROVAL FOR ANY AND ALL DUCTWORK MOUNTING DETAILS AT CONCRETE.
3. CONTRACTOR SHALL INSTALL DUCT HANGER ROD WITHIN 3" AT JOIST BOTTOM CHORD PANEL POINT. IF HANGER ROD DOES NOT OCCUR WITHIN 3" AT BOTTOM CHORD PANEL POINT THAN LOAD SHALL NOT EXCEED 100# CONCENTRATED LOAD AT EACH THREADED ROD HANGER LOCATION.
4. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL JOIST REINFORCEMENTS REQUIREMENTS IF DUCT HANGER RODS ARE MORE THAN 3" FROM JOIST BOTTOM CHORD PANEL POINT AND EXCEED 100# CONCENTRATED LOAD.
5. IF DUCT RUNS PARALLEL WITH STRUCTURE, PROVIDE SECURED UNISTRUT HEADER LAID ACROSS MULTIPLE JOISTS MOUNTED TO JOIST BOTTOM CHORD.
6. BEAM CLAMPS AND FLANGE CLIPS ARE NOT ACCEPTABLE FOR JOISTS.



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DUCT HANGER TRAPEZE DETAIL
NOT TO SCALE
02

Plot Stamp:
6/3/2025 12:34:24 PM

PBK

ARCHITECT PBK Architects, Inc.
PBK.com
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713-965-0608 P
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TX Firm: BR 1608

CIVIL
KIMLEY-HORN
T: 281-497-9300
LANDSCAPE
EDGELAND
T:713-965-0005
STRUCTURAL
KUBENA ENGINEERS
T:713-965-0608
MEP
LEAF ENGINEERS
T:713-965-0505
ACOUSTIC
BAL N.C.
T:713-965-0504
EXHIBLOPE
BEAM PROFESSIONALS
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FOOD SERVICE
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M-601.A

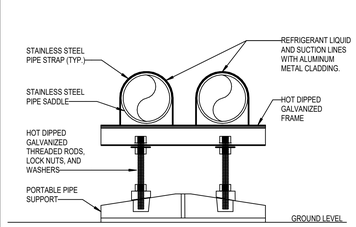
MECHANICAL DETAILS-AG

M-602.A

FOR BLUEBEAM LABELING/OCR:

0"

1"



NOTE:

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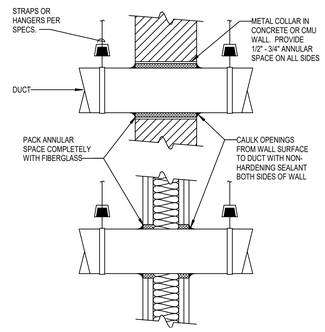
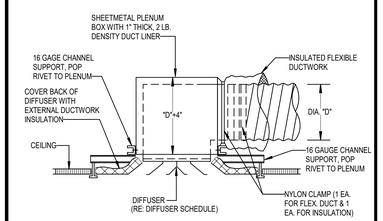
2. ALL METAL MATERIALS SHALL BE HOT-DIPPED GALVANIZED.
3. CONTRACTOR SHALL FIELD GALVANIZE ALL SURFACES THAT ARE EXPOSED DUE TO FIELD CUTS/ MODIFICATIONS.

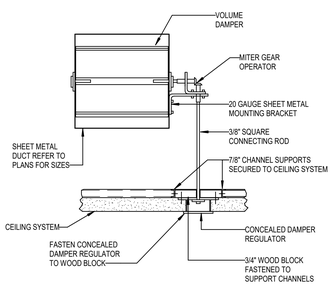
MOUNTED PORTABLE REFRIGERANT PIPE SUPPORT DETAIL — 05
NOT TO SCALE



RESILIENTLY SEALED DUCT PENETRATION DETAIL — 04
NOT TO SCALE

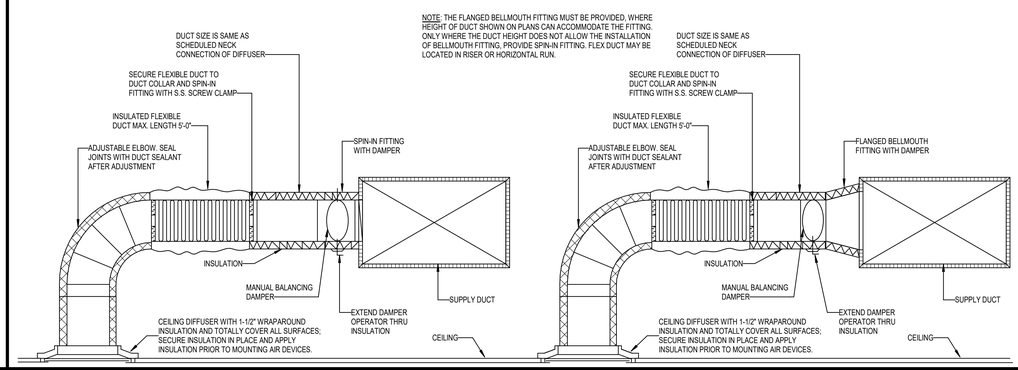


FLEXIBLE DUCT CONNECTION AT SUPPLY AIR DIFFUSER PLUNUM DETAIL — 04
NOT TO SCALE

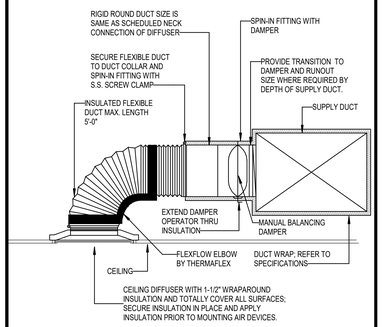


DAMPER OPERATOR IN NON - ACCESSIBLE CEILINGS DETAIL — 03
NOT TO SCALE

NOTE: THE FLANGED BELLMOUTH FITTING MUST BE PROVIDED, WHERE HEIGHT OF DUCT SHOWN ON PLANS CAN ACCOMMODATE THE FITTING. ONLY WHERE THE DUCT HEIGHT DOES NOT ALLOW THE INSTALLATION OF BELLMOUTH FITTING, PROVIDE SPIN-IN FITTING. FLEX DUCT MAY BE LOCATED IN RISER OR HORIZONTAL RUN.



CEILING DIFFUSER CONNECTION WITH SPIN-IN / BELLMOUTH FITTINGS DETAIL — 02
NOT TO SCALE



CEILING DIFFUSER CONNECTION DETAIL — 01
NOT TO SCALE

Plot Stamp:
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STRUCTURAL
KUBRA ENGINEERS
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MEP
LEAF ENGINEERS
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ACOUSTIC
BAI, LLC
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EXHIBITORS
BEAM PROFESSIONALS
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FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS, LLC
T 281-350-2323

LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: AGRICULTURAL PAVILLION

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS

H	J

KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
MITAL J. PATEL
111622
LICENSED
PROFESSIONAL ENGINEER
05/20/2025
LEAF ENGINEERS
F-10672

CLIENT
Huffman Independent School District

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

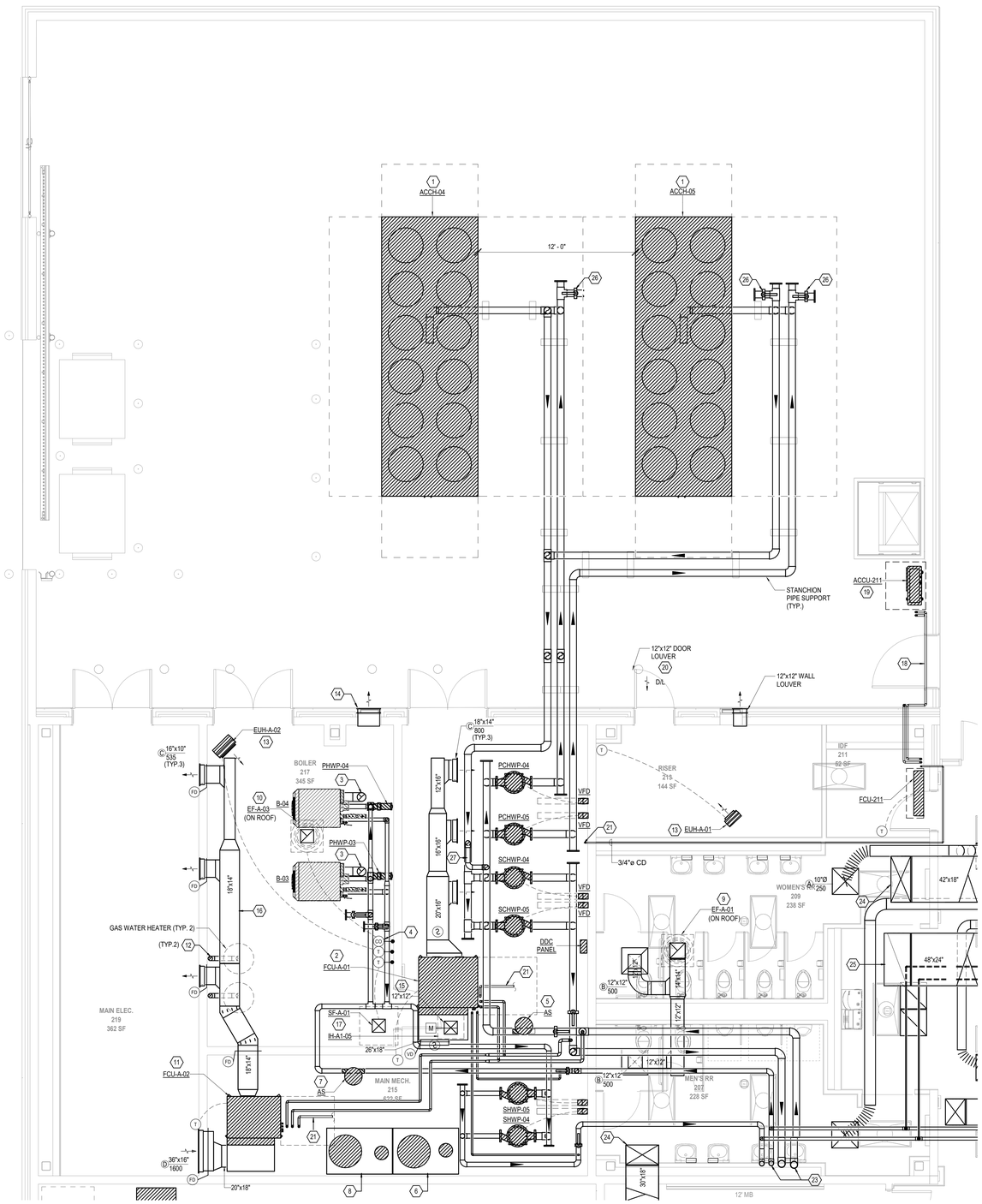
CHECKED BY: MP

DRAWN BY: OG

MECHANICAL DETAILS-AG

M-602.A

ENLARGED MECHANICAL PLAN-CTE
M-201.C
FOR BLUEBEAM LABELING/OCR:



1 ENLARGED MECHANICAL PLAN - MAIN MECH. 14
SCALE: 1/4" = 1'-0"

KEYED NOTES

1. AIR COOLED CHILLER SET ON CONCRETE PAD WITH 6" WIDER IN ALL DIRECTIONS. REFER TO DETAIL DRAWING.
2. FAN COIL UNIT SUSPENDED FROM STRUCTURE. PROVIDE 18" DEEP SHEET METAL MIXING AIR PLENUM BOX WITH 26"x18" RETURN AIR OPENING AND 12"x12" OUTSIDE AIR DUCT CONNECTION AS SHOWN. ROUTE SEPARATELY 3/4"Ø CONDENSATE PRIMARY DRAIN LINE AND AUXILIARY DRAIN PAN TO NEAREST FLOOR DRAIN AS SHOWN. REFER TO PLUMBING DRAWINGS FOR EXACT DRAIN LOCATIONS. CONTRACTOR SHALL PROVIDE GALVANIZED STEEL INSULATED AUXILIARY DRAIN PAN WITH CONDUCTIVITY SENSOR BELOW FAN COIL UNIT. CONDUCTIVITY SENSOR SHALL DE-ENERGIZE UNIT ON SENSING MOISTURE IN PAN. PAN TO EXTEND UNDER VALVING OF UNIT AND 6" BEYOND UNIT ELSEWHERE. REFER TO SPECIFICATIONS AND DETAILS. PROVIDE FILTER RACK ACCESS ON THE BOTTOM SIDE.
3. 6"Ø BOILER FLUE THRU ROOF. PROVIDE VENT CAP.
4. CARBON MONOXIDE SENSOR (CO); VERIFY FINAL LOCATION WITH OWNER. REFER TO SEQUENCE OF OPERATIONS. THE SENSOR SHALL BE CALIBRATED EVERY EIGHTEEN MONTHS & A RECORD OF CALIBRATION SHALL BE POSTED IN A CONSPICUOUS PLACE.
5. CHILLED WATER COMBINATION AIR/DIRT SEPARATOR SUSPENDED FROM STRUCTURE.
6. CHILLED WATER EXPANSION AND CHEMICAL TREATMENT TANK. TANKS SHALL BE SET OF CONCRETE PAD AS SPECIFIED. PROVIDE COUPON RACK NEAR SIDESTREAM CARTRIDGE BYPASS FILTER.
7. HEATING WATER COMBINATION AIR/DIRT SEPARATOR SUSPENDED FROM STRUCTURE.
8. HOT WATER EXPANSION AND CHEMICAL TREATMENT TANK. TANKS SHALL BE SET OF CONCRETE PAD AS SPECIFIED. PROVIDE COUPON RACK NEAR SIDESTREAM CARTRIDGE BYLASS FILTER.
9. 14"x14" EXHAUST AIR DUCT UP TO EXHAUST FAN EF-A-01 ON ROOF. TRANSITION TO UNIT INLET.
10. 12"x12" EXHAUST AIR DUCT UP TO EXHAUST FAN EF-A-03 ON ROOF. TRANSITION TO UNIT INLET. END DUCT AT 6" BELOW STRUCTURE WITH ALUMINUM WIRE SCREEN. PAINT EXPOSED DUCTWORK.
11. FAN COIL UNIT SUSPENDED FROM STRUCTURE. PROVIDE 18" DEEP SHEET METAL MIXING AIR PLENUM BOX WITH 20"x18" RETURN AIR OPENING CONNECTION AS SHOWN. ROUTE SEPARATELY 3/4"Ø CONDENSATE PRIMARY DRAIN LINE AND AUXILIARY DRAIN PAN TO NEAREST FLOOR DRAIN AS SHOWN. REFER TO PLUMBING DRAWINGS FOR EXACT DRAIN LOCATIONS. CONTRACTOR SHALL PROVIDE GALVANIZED STEEL INSULATED AUXILIARY DRAIN PAN WITH CONDUCTIVITY SENSOR BELOW FAN COIL UNIT. CONDUCTIVITY SENSOR SHALL DE-ENERGIZE UNIT ON SENSING MOISTURE IN PAN. PAN TO EXTEND UNDER VALVING OF UNIT AND 6" BEYOND UNIT ELSEWHERE. REFER TO SPECIFICATIONS AND DETAILS. PROVIDE FILTER RACK ACCESS ON THE BOTTOM SIDE.
12. 4"Ø GAS UNIT HEATER FLUE PIPE UP TO THE ROOF, VERIFY FLUE PIPE SIZE WITH PLUMBING CONTRACTOR. REFER TO FLUE PIPE DETAIL DRAWING.
13. ELECTRIC UNIT HEATER SUSPENDED FROM STRUCTURE.
14. PROVIDE LOW AND HIGH COMBUSTION AIR LOUVER 20"(W) x 60"(H) EACH. LOW LEVEL LOUVER SHALL BE 12 IN. FROM FINISH FLOOR AND HIGH LEVEL LOUVER SHALL BE 4 FT. FROM ROOF LEVEL. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR FINAL FINISH AND LOCATION.
15. 12"x12" OUTSIDE AIR DUCT UP TO INTAKE HOOD IH-A1-05 ON ROOF. TRANSITION TO UNIT INLET.
16. INSULATED AIR DUCT INSIDE THE BOILER RM .
17. 12"x12" DUCT UP TO SUPPLY FAN SF-F1-01 ON ROOF. TRANSITION TO UNIT INLET. END DUCT AT 6" BELOW STRUCTURE WITH ALUMINUM WIRE MESH. PAINT EXPOSED DUCTWORK.
18. PROVIDE ALUMINUM JACKET ON ALL EXPOSED LIQUID AND SUCTION REFRIGERANT LINES. ROUTE REFRIGERANT LINES AGAINST THE WALL AND HIGH LEVEL ABOVE DOOR.
19. AIR COOLED CONDENSING UNIT SET ON CONCRETE PAD WITH 6" WIDER IN ALL DIRECTIONS. REFER TO DETAIL DRAWING.
20. COORDINATE 12"x12" DOOR LOUVER WITH ARCHITECT.
21. 3/4"Ø CONDENSATE DRAIN DOWN TO NEAREST FLOOR DRAIN. REFER TO PLUMBING DRAWING FOR EXACT DRAIN LOCATIONS AND DETAILS.
22. PIPE PENETRATION TO FIRE RATED WALL HAVE FIRE STOPPING AND FIRE-RESISTANT JOINT SEALER AS SPECIFIED IN SPECIFICATIONS.
23. CHILLED WATER AND HEATING WATER PIPES UP TO SECOND FLOOR; REFER TO M-102K FOR CONTINUATION.
24. ROUTE SUPPLY AIR DUCT UP TO SECOND FLOOR. REFER TO M-102K FOR CONTINUATION.
25. ROUTE RETURN AIR DUCT UP TO SECOND FLOOR. REFER TO M-102K FOR CONTINUATION.
26. 6" CHS/R TAP WITH BUTTERFLY VALVE AND BLIND FLANGE FOR TEMPORARY CONNECTION.
27. 4" DECOUPLED LINE

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OTHER
CONSULTANT NAME
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LEAF ENGINEERS

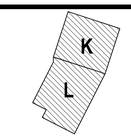
New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS



KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
MITAL J. PATEL
111622
LICENSED
PROFESSIONAL ENGINEER
05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

CHECKED BY: MP
DRAWN BY: OG

ENLARGED MECHANICAL PLAN-CTE

M-201.C

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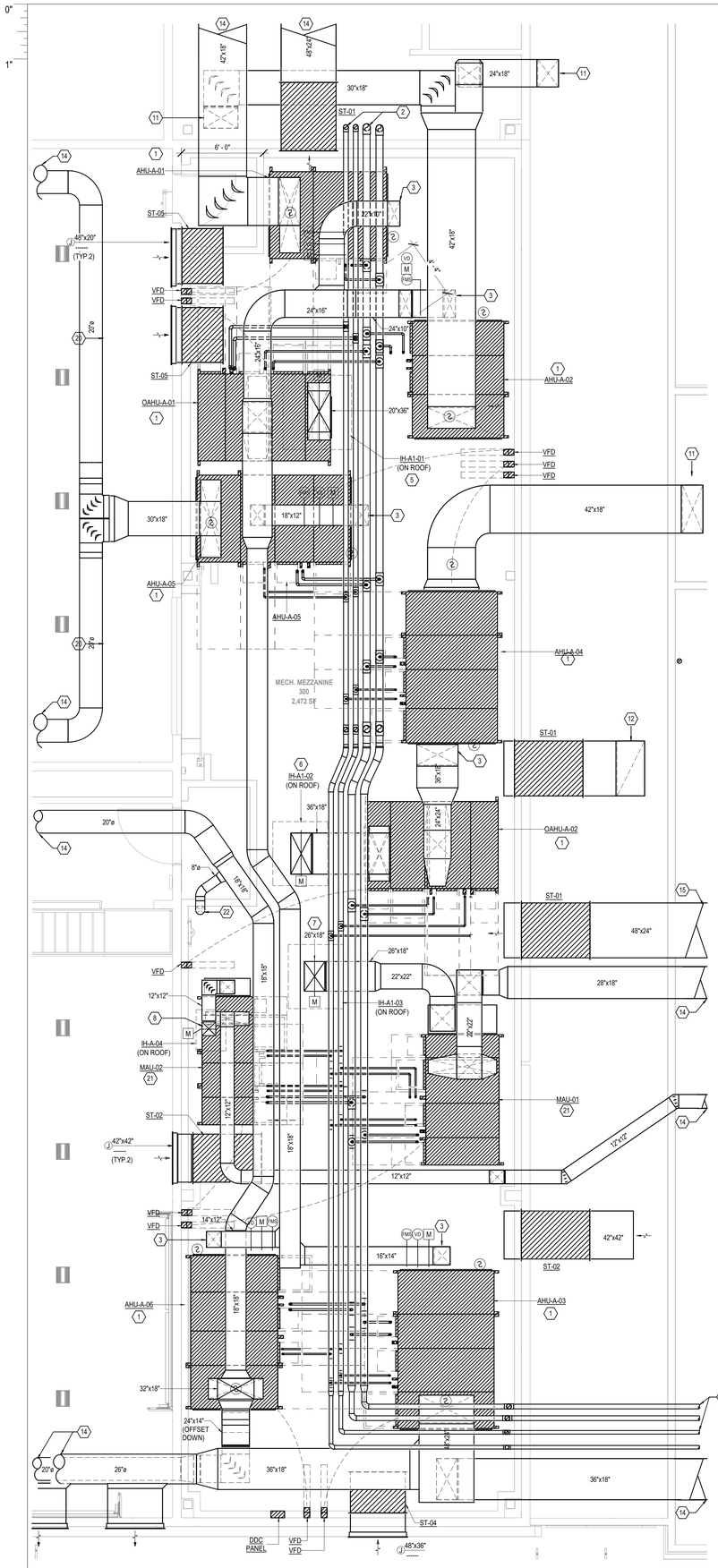
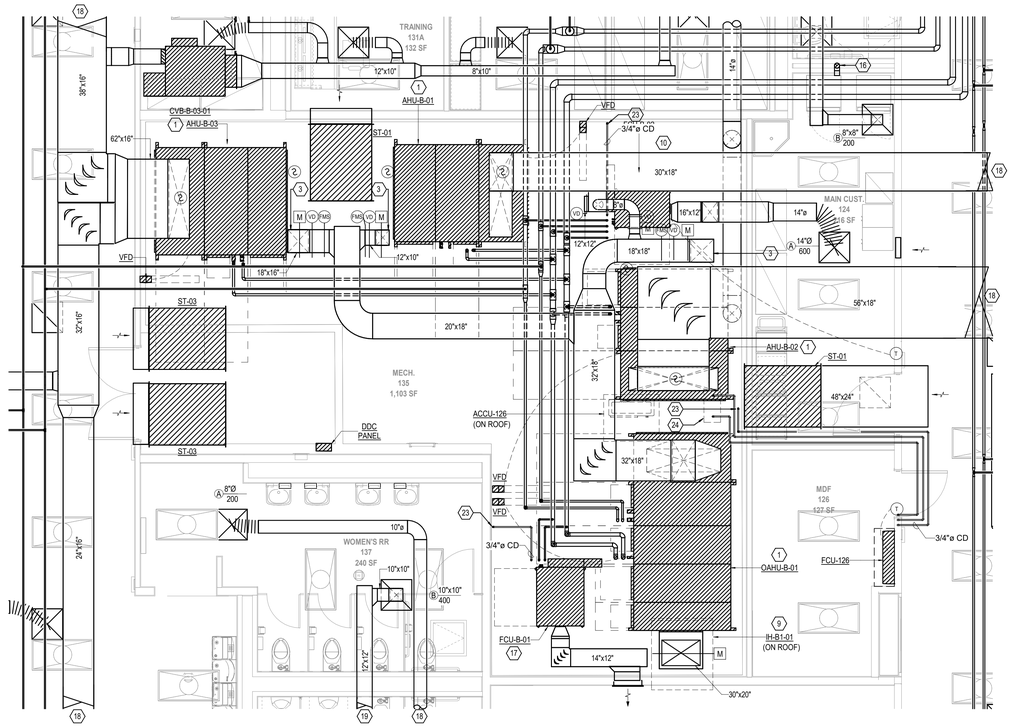
ENLARGED MECHANICAL PLAN:CTE
M-202.C
FOR BLUEBEAM LABELING/OCR:



1 ENLARGED MECHANICAL PLAN - MRZZ. 383
SCALE: 1/4" = 1'-0"



2 ENLARGED MECHANICAL PLAN - MECH. 265
SCALE: 1/4" = 1'-0"

KEYED NOTES

1. PROVIDE 4" THICK CONCRETE PAD WITH MINIMUM 6" WIDER IN ALL DIRECTIONS AND 1-1/4"Ø CONDENSATE PIPE TO NEAREST FLOOR DRAIN. REFER TO PLUMBING DRAWING FOR LOCATION. PROVIDE DUCT MOUNTED IONIZATION (SMOKE) DETECTOR SPECIFIED AND INSTALLED IN DIVISION 28.
2. ROUTE CHILLED WATER AND HEATING PIPE DOWN TO FRIST FLOOR. REFER TO M-101K FOR CONTINUATION.
3. OUTSIDE AIR TAP SHALL BE ROUTED DROP DOWN AND CLOSE TO RETURN AIR OPENING OF ASSOCIATED AIR HANDLING UNIT. END DUCT WITH ALUMINUM WIRE SCREEN.
4. CHILLED WATER AND HEATING WATER PIPES ROUTE TO SECOND FLOOR; REFER TO M-102K FOR CONTINUATION.
5. 36"x20" OUTSIDE AIR DUCT UP TO INTAKE HOOD IH-A1-01 ON ROOF. PROVIDE TRANSITION TO UNIT INLET.
6. 36"x18" OUTSIDE AIR DUCT UP TO INTAKE HOOD IH-A1-02 ON ROOF. PROVIDE TRANSITION TO UNIT INLET.
7. 26"x18" OUTSIDE AIR DUCT UP TO INTAKE HOOD IH-A1-03 ON ROOF. PROVIDE TRANSITION TO UNIT INLET.
8. 12"x12" OUTSIDE AIR DUCT UP TO INTAKE HOOD IH-A1-04 ON ROOF. PROVIDE TRANSITION TO UNIT INLET.
9. 30"x20" OUTSIDE AIR DUCT UP TO INTAKE HOOD IH-B1-01 ON ROOF. PROVIDE TRANSITION TO UNIT INLET.
10. FAN COIL UNIT SUSPENDED FROM STRUCTURE. PROVIDE 18" DEEP SHEET METAL MIXING AIR PLENUM BOX WITH 12"x12" RETURN AIR OPENING AND 8" OUTSIDE AIR DUCT CONNECTION AS SHOWN. ROUTE SEPARATELY 3/4"Ø CONDENSATE PRIMARY DRAIN LINE AND AUXILIARY DRAIN PAN TO NEAREST FLOOR DRAIN AS SHOWN. REFER TO PLUMBING DRAWINGS FOR EXACT DRAIN LOCATIONS. CONTRACTOR SHALL PROVIDE GALVANIZED STEEL INSULATED AUXILIARY DRAIN PAN WITH CONDUCTIVITY SENSOR BELOW FAN COIL UNIT. CONDUCTIVITY SENSOR SHALL DE-ENERGIZE UNIT ON SENSING MOISTURE IN PAN. PAN TO EXTEND UNDER VALVING OF UNIT AND 6" BEYOND UNIT ELSEWHERE. REFER TO SPECIFICATIONS AND DETAILS. PROVIDE FILTER RACK ACCESS ON THE BOTTOM SIDE.
11. SUPPLY AIR DUCT DOWN TO FIRST FLOOR; REFER TO M-101K FOR CONTINUATION.
12. RETURN AIR DUCT DOWN TO FIRST FLOOR; REFER TO M-101K FOR CONTINUATION.
13. LIQUID AND SUCTION REFRIGERANT PIPES TO CONDENSING UNIT ON ROOF. SIZE PER MANUFACTURERS RECOMMENDATION.
14. SUPPLY AIR DUCT; REFER TO M-102K FOR CONTINUATION.
15. RETURN AIR DUCT; REFER TO M-10KG FOR CONTINUATION.
16. 4"Ø DRYER EHAUST DUCT UP TO ROOF AND TERMINATE WITH GOOSENECK. REFER TO DRYER VENT DETAIL
17. FAN COIL UNIT SUSPENDED FROM STRUCTURE. ROUTE SEPARATELY 3/4"Ø CONDENSATE PRIMARY DRAIN LINE AND AUXILIARY DRAIN PAN TO NEAREST FLOOR DRAIN AS SHOWN. REFER TO PLUMBING DRAWINGS FOR EXACT DRAIN LOCATIONS. CONTRACTOR SHALL PROVIDE GALVANIZED STEEL INSULATED AUXILIARY DRAIN PAN WITH CONDUCTIVITY SENSOR BELOW FAN COIL UNIT. CONDUCTIVITY SENSOR SHALL DE-ENERGIZE UNIT ON SENSING MOISTURE IN PAN. PAN TO EXTEND UNDER VALVING OF UNIT AND 6" BEYOND UNIT ELSEWHERE. REFER TO SPECIFICATIONS AND DETAILS. PROVIDE FILTER RACK ACCESS ON THE BOTTOM SIDE.
18. SUPPLY AIR DUCT; REFER TO M-101L FOR CONTINUATION.
19. EXHAUST AIR DUCT; REFER TO M-101L FOR CONTINUATION.
20. EXPOSED DUCTWORK SHALL BE DOUBLE WALL (K-27) DUCTWORK. REFER TO DUCT INSULATION SPECIFICATION. ALL DIMENSIONS SHOWN ARE CLEAR INSIDE DIMENSIONS.(TYPICAL). COORDINATE WITH ARCHITECT ON FINISHED PAINT COLOR AND DUCT ELEVATION.
21. PROVIDE 4" THICK CONCRETE PAD WITH MINIMUM 6" WIDER IN ALL DIRECTIONS AND 1-1/4"Ø CONDENSATE PIPE TO NEAREST FLOOR DRAIN. REFER TO PLUMBING DRAWING FOR LOCATION.
22. ROUTE SUPPLY AIR DUCT DOWN TO FIRST FLOOR. REFER TO M-101K FOR CONTINUATION.
23. 3/4"Ø CONDENSATE DRAIN DOWN TO NEAREST FLOOR DRAIN. REFER TO PLUMBING DRAWING FOR EXACT DRAIN LOCATIONS AND DETAILS.
24. LIQUID AND SUCTION REFRIGERANT PIPES TO CONDENSING UNIT ON ROOF. SIZE PER MANUFACTURERS RECOMMENDATION.

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LEAF ENGINEERS

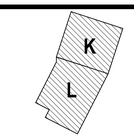
New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS



KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
MITAL J. PATEL
111622
05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

CHECKED BY: MP
DRAWN BY: OG

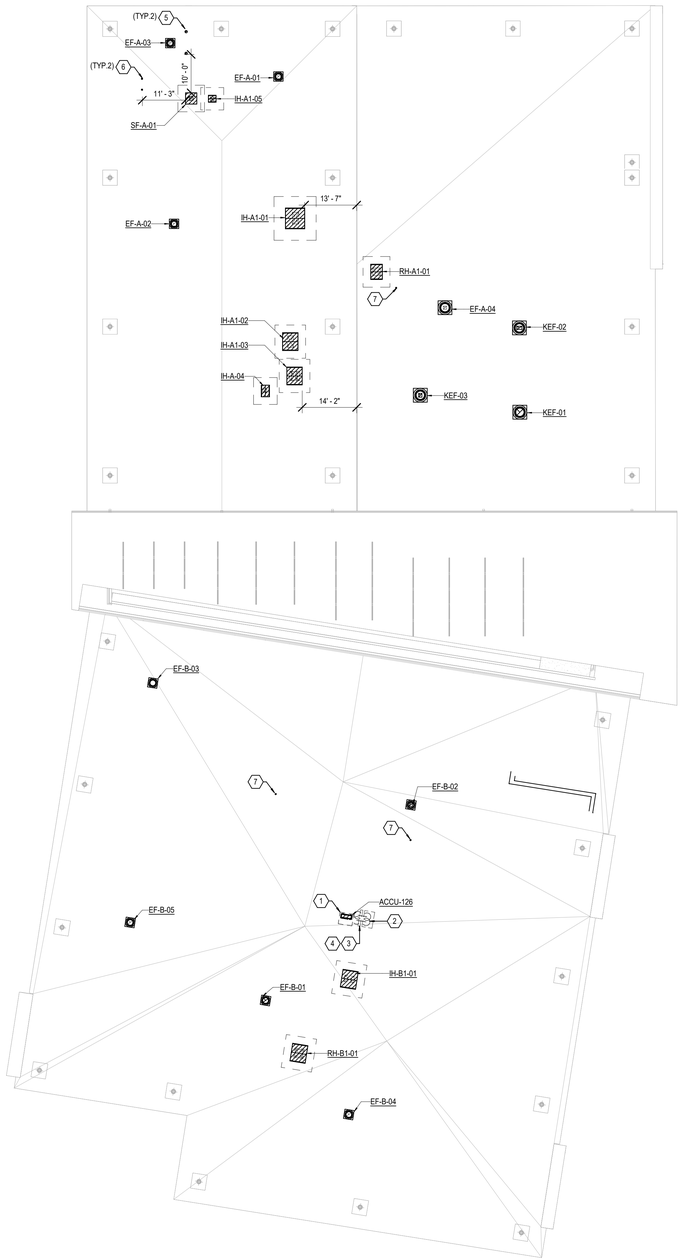
ENLARGED MECHANICAL PLAN-CTE

M-202.C

Plot Stamp:
6/3/2025 12:39:57 PM

MECHANICAL ROOF PLAN-CTE
M-301.C
FOR BLUEBEAM LABELING/OCR:

0"
1"



1 **MECHANICAL ROOF PLAN**
SCALE: 1/16" = 1'-0"

KEYED NOTES

1. NEW AIR COOLED CONDENSING UNIT IN EQUIPMENT SUPPORT; REFER TO DETAIL DRAWING.
2. PROVIDE STAINLESS STEEL HOOD CURB AT ROOF PENETRATION. REFER TO ARCHITECTURAL DETAIL DRAWING.
3. PROVIDE PORTABLE PIPE SUPPORTS FOR REFRIGERANT PIPING IN MAX. HORIZONTAL SPACING OF 4'-0". REFER TO MECHANICAL DETAIL DRAWING.
4. PROVIDE ALUMINUM JACKETING ON ALL EXPOSED AND OUTDOOR REFRIGERANT PIPING.
5. 8"Ø NEW BOILER FLUE PIPE. REFER TO BOILER FLUE DETAIL DRAWING.
6. GAS WATER HEATER FLUE PIPE. REFER TO FLUE PIPE DETAIL DRAWING.
7. 4"Ø DRYER EHAUST DUCT WITH GOOSENECK. REFER TO DRYER VENT DETAIL

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OTHER
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LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

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Huffman, TX 77336

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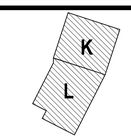

KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
MITAL J. PATEL
111622
LICENSED
PROFESSIONAL ENGINEER
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HUFFMAN ISD

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05/20/2025	240157

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No.	Description	Date
1	Addendum 1	06/03/2025

CHECKED BY: MP
DRAWN BY: OG

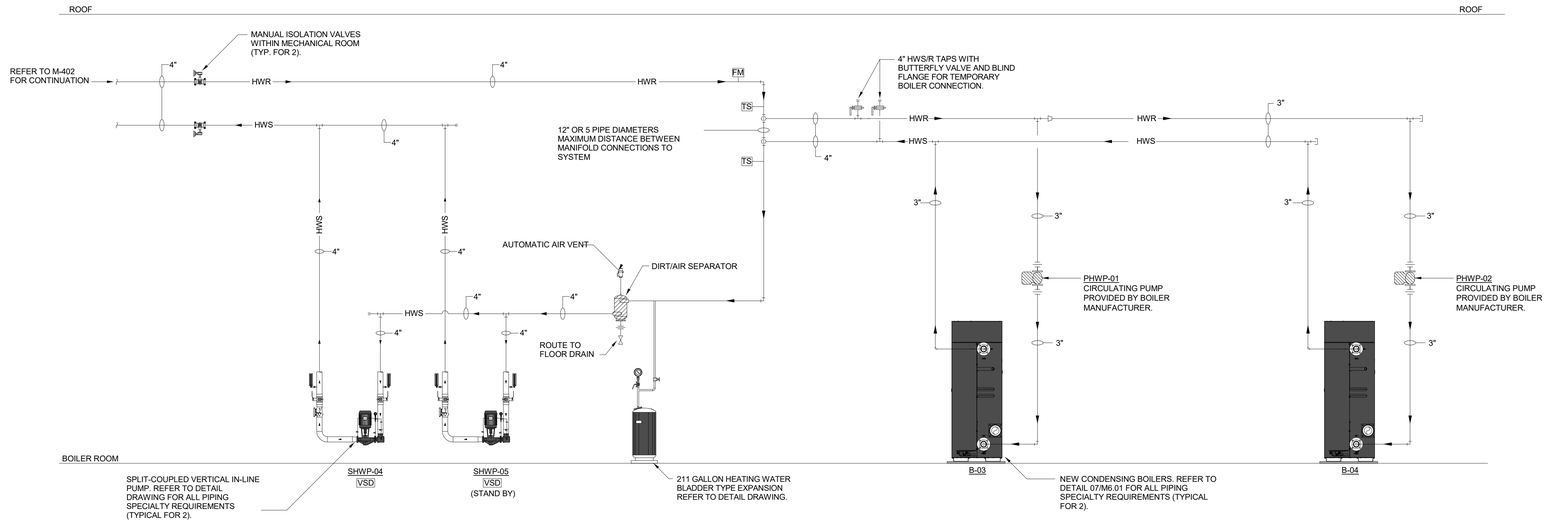
MECHANICAL ROOF PLAN-CTE

△1

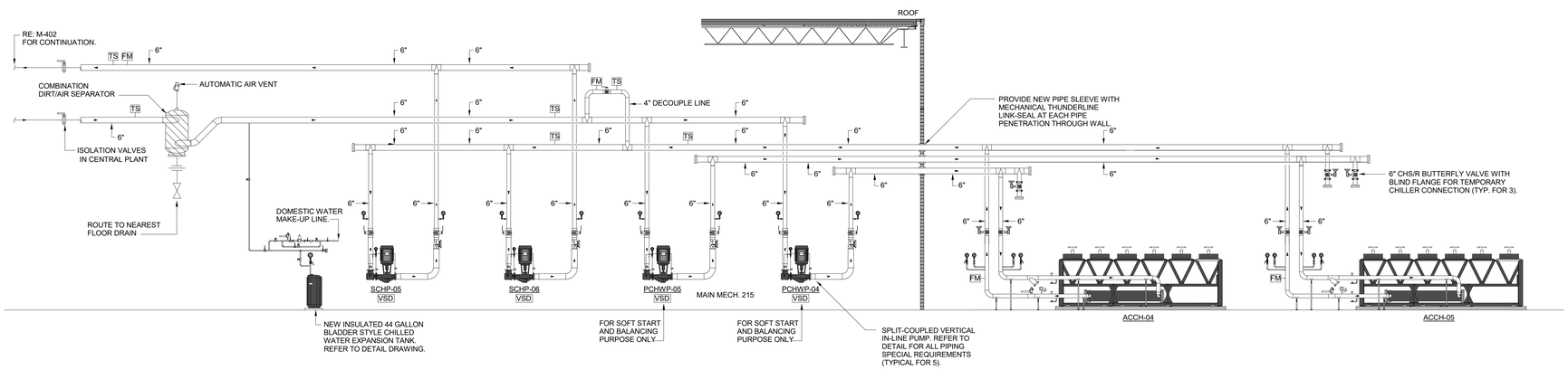
M-301.C

Plot Stamp:
6/3/2025 12:39:58 PM

MECHANICAL PIPING DIAGRAM-CTE
M-401.C
FOR BLUEBEAM LABELING/OCR:



2 MECHANICAL HEATING WATER PIPING DIAGRAM
SCALE:NONE



1 CHILLED WATER PLANT PIPING DIAGRAM
SCALE:NONE

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LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

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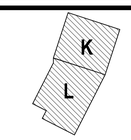

KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
MITAL J. PATEL
111622
LICENSED
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05/20/2025	240157

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No.	Description	Date
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CHECKED BY: Checker
DRAWN BY: Author

MECHANICAL PIPING DIAGRAM-CTE

M-401.C

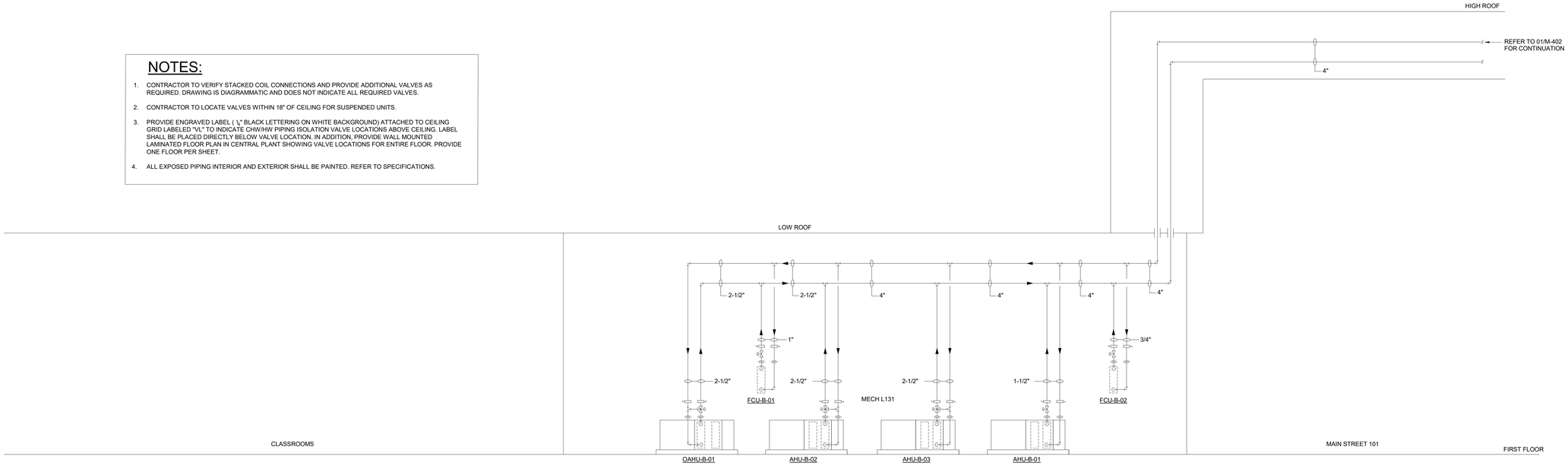
Plot Stamp:
6/3/2025 12:39:58 PM

MECHANICAL CHILLED WATER PIPING DIAGRAM-CTE
M-402.C
FOR BLUEBEAM LABELING/OCR:

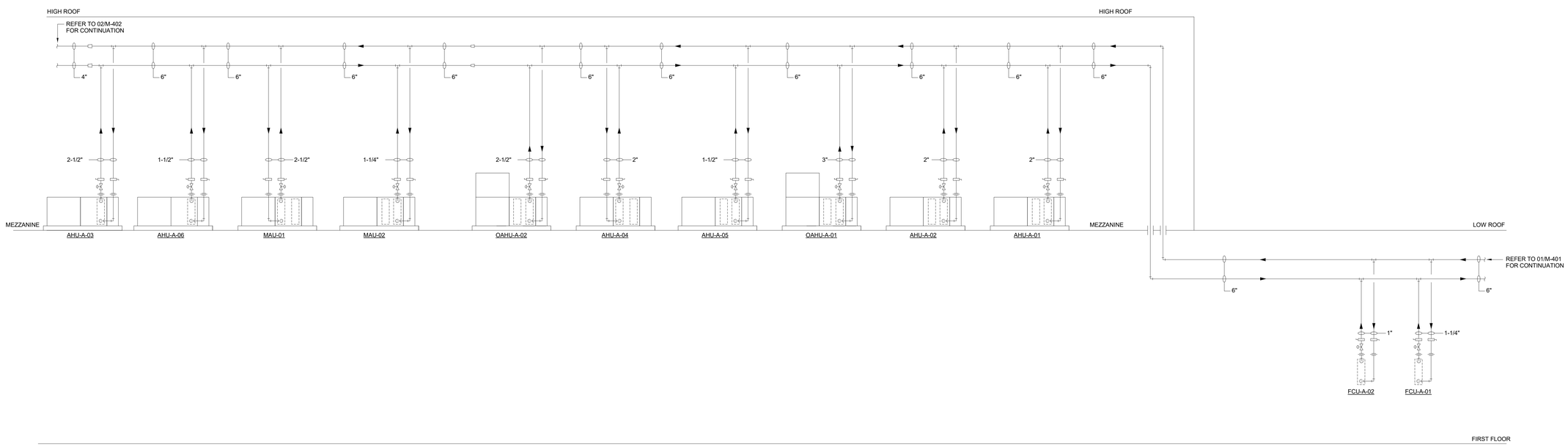
0"
1"

NOTES:

1. CONTRACTOR TO VERIFY STACKED COIL CONNECTIONS AND PROVIDE ADDITIONAL VALVES AS REQUIRED. DRAWING IS DIAGRAMMATIC AND DOES NOT INDICATE ALL REQUIRED VALVES.
2. CONTRACTOR TO LOCATE VALVES WITHIN 18" OF CEILING FOR SUSPENDED UNITS.
3. PROVIDE ENGRAVED LABEL (¼" BLACK LETTERING ON WHITE BACKGROUND) ATTACHED TO CEILING GRID LABELED "VL" TO INDICATE CHW/HW PIPING ISOLATION VALVE LOCATIONS ABOVE CEILING. LABEL SHALL BE PLACED DIRECTLY BELOW VALVE LOCATION. IN ADDITION, PROVIDE WALL MOUNTED LAMINATED FLOOR PLAN IN CENTRAL PLANT SHOWING VALVE LOCATIONS FOR ENTIRE FLOOR. PROVIDE ONE FLOOR PER SHEET.
4. ALL EXPOSED PIPING INTERIOR AND EXTERIOR SHALL BE PAINTED. REFER TO SPECIFICATIONS.



2 MECHANICAL CHILLED WATER PIPING DIAGRAM
SCALE: NONE



1 MECHANICAL CHILLED WATER PIPING DIAGRAM
SCALE: NONE

PBK

ARCHITECT PBK Architects, Inc.
PBK.com
HOUSTON
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-965-0608 P
713-961-4571 F
TX Firm: BR 1608
CIVIL
CONSULTANT NAME
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LANDSCAPE
CONSULTANT NAME
T-000-000-0000
STRUCTURAL
CONSULTANT NAME
T-000-000-0000
MEP
CONSULTANT NAME
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ACOUSTIC
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THEATER
CONSULTANT NAME
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FOOD SERVICE
CONSULTANT NAME
T-000-000-0000
CONSULTANT
CONSULTANT NAME
T-000-000-0000
LEAF ENGINEERS

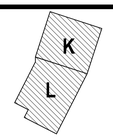
New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS



KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
MITAL J. PATEL
111622
LICENSED
PROFESSIONAL ENGINEER
05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

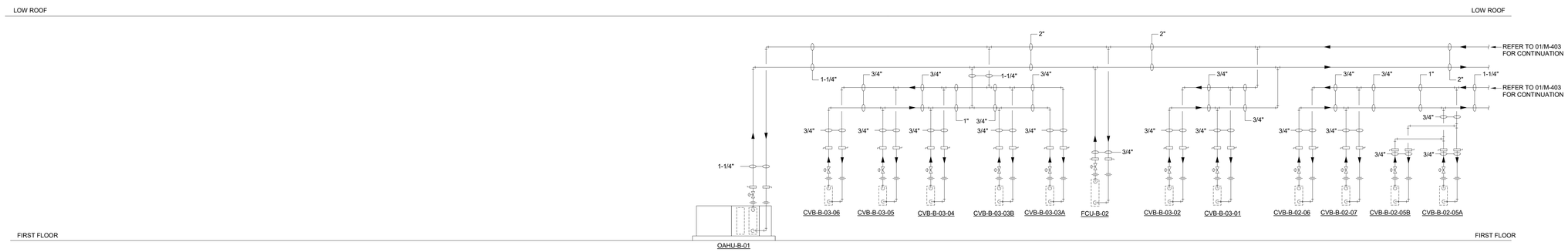
CHECKED BY: Checker
DRAWN BY: Author

MECHANICAL CHILLED WATER PIPING DIAGRAM-CTE

M-402.C

Plot Stamp:
6/3/2025 12:39:58 PM

MECHANICAL HEATING WATER PIPING DIAGRAM-CTE
M-403.C
FOR BLUEBEAM LABELING/OCR:



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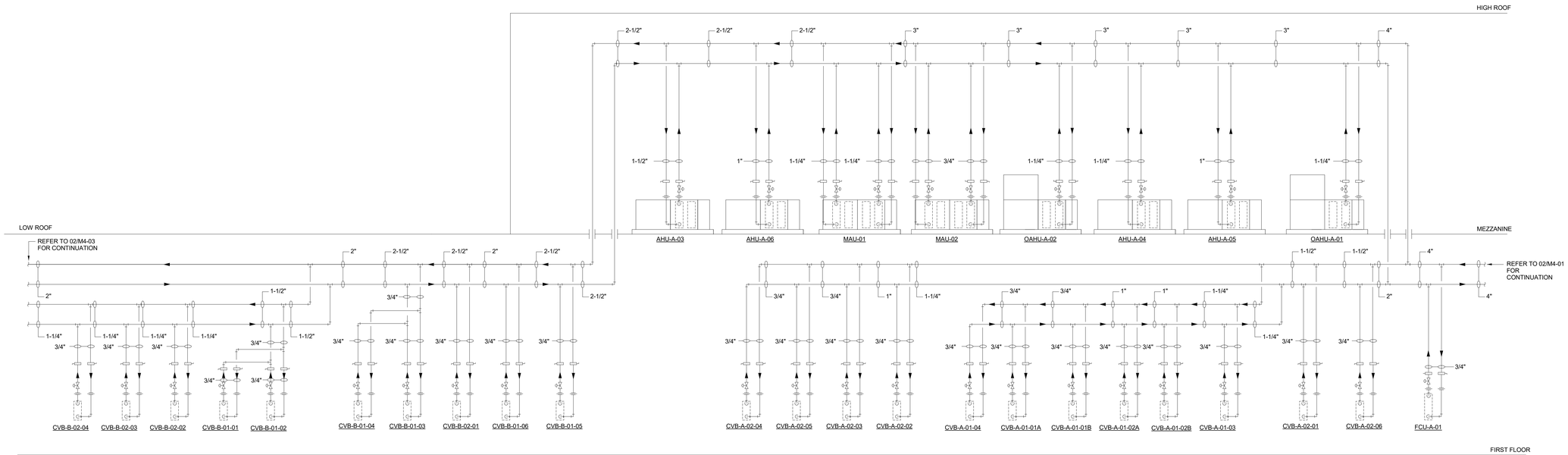
2 MECHANICAL HEATING WATER PIPING DIAGRAM
SCALE:NONE



1 MECHANICAL HEATING WATER PIPING DIAGRAM
SCALE:NONE

PBK

ARCHITECT PBK Architects, Inc.
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ACOUSTIC
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THEATER
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FOOD SERVICE
CONSULTANT NAME
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SECURITY
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LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE
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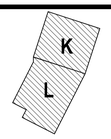
ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS



KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
MITAL J. PATEL
111622
LICENSED
PROFESSIONAL ENGINEER
05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

CHECKED BY: Checker
DRAWN BY: Author

MECHANICAL HEATING WATER PIPING DIAGRAM-CTE

M-403.C

Plot Stamp:
6/3/2025 12:39:58 PM

MECHANICAL SCHEDULES-CTE
M-501.C
FOR BLUEBEAM LABELING/OCR:

SCROLL WATER CHILLERS AIR-COOLED SCHEDULE

DESIGNATION	REFRIGERANT	COMPRESSOR TYPE	EVAPORATOR DATA								AMBIENT TEMP. (°F)	MAX. UNIT KW / TON (@ DESIGN CONDITIONS)	EER AT AHRI CONDITIONS		MANUFACTURER	MODEL NUMBER	DIMENSIONS (L x W x H) INCHES	WEIGHT (lbs)	ELECTRICAL DATA		
			CAPACITY (TONS)	E.W.T. (°F)	L.W.T. (°F)	GPM	MINIMUM EVAPORATOR FLOW RATE (GPM)	FOULING FACTOR	NO. OF PASS	MAX. P.D. (FEET)			FULL LOAD (EER)	IPLV (EER)					MCA	MOCP	VOLTS / Ø / HZ
ACCH-05	R-32	SCROLL	180	56°F	42°F	321	264	0.0001	1.0	7.00	105°F	1.34	8.365	17.57	DAIKIN	AGZ	255" x 88" x 99"	9,450	490	500	460 / 3 / 60
ACCH-06	R-32	SCROLL	180	56°F	42°F	321	264	0.0001	1.0	7.00	105°F	1.34	8.365	17.57	DAIKIN	AGZ	255" x 88" x 99"	9,450	490	500	460 / 3 / 60

1. REFERENCE ELECTRICAL DRAWINGS FOR ELECTRICAL DATA.
2. PROVIDE CHILLER WITH SINGLE POINT POWER CONNECTION AND FACTORY MOUNTED NON-FUSED MOLDED CASE DISCONNECT SWITCH.
3. CHILLER SHALL BE PROVIDED WITH BACNET INTERFACE CARD.
4. CONDENSER COILS SHALL BE MICROCHANNEL & FULLY DIPPED AND BAKED (E-COAT) WITH UV TOP COAT.
5. PROVIDE LOW AMBIENT HEAD PRESSURE CONTROL AS SPECIFIED.
6. CONTROL PANEL SHALL BE NEC409 AND UL508A COMPLIANT (HIGH SCCR 65kA CURRENT RATING.)
7. PROVIDE A MINIMUM OF TWO INDEPENDENT REFRIGERANT CIRCUITS.

HYDRONIC PUMP SCHEDULE

DESIGNATION	SERVICE	TYPE	NOTES	GPM	HEAD (FT. H20)	EFFICIENCY	RPM (MAX.)	MOTOR H.P.	BRAKE H.P.	VOLT / PH /HZ	MANUFACTURER	MODEL NUMBER	MINIMUM NPSHA (FT.)
PCHWP-04	ACCH-04	SPLIT COUPLED VERTICAL IN-LINE	1,2	321	50'	76%	1,800	7.5	5.30	460 / 3 / 60	PENTAIRE-AURORA	382B-SC	8.08
PCHWP-05	ACCH-05	SPLIT COUPLED VERTICAL IN-LINE	1,2	321	50'	76%	1,800	7.5	5.30	460 / 3 / 60	PENTAIRE-AURORA	382B-SC	8.08
SCHWP-04	CHILLED WATER - BUILDING LOOP - NEW CTE	SPLIT COUPLED VERTICAL IN-LINE	1,3,4	335	85'	75%	1,800	15.0	9.60	460 / 3 / 60	PENTAIRE-AURORA	382B-SC	9.60
SCHWP-05	CHILLED WATER - BUILDING LOOP - NEW CTE	SPLIT COUPLED VERTICAL IN-LINE	1,3,4	335	85'	75%	1,800	15.0	9.60	460 / 3 / 60	PENTAIRE-AURORA	382B-SC	9.60
SHWP-04	HEATING WATER - BUILDING LOOP - NEW CTE	SPLIT COUPLED VERTICAL IN-LINE	1,3	160	90'	68%	1,800	10.0	8.01	460 / 3 / 60	PENTAIRE-AURORA	382B-SC	9.38
SHWP-05	HEATING WATER - BUILDING LOOP - NEW CTE	SPLIT COUPLED VERTICAL IN-LINE	1,3,5	160	90'	68%	1,800	10.0	8.01	460 / 3 / 60	PENTAIRE-AURORA	382B-SC	9.38

1. REFERENCE ELECTRICAL DRAWINGS FOR ELECTRICAL DATA.
2. PROVIDE VARIABLE FREQUENCY DRIVE FOR SOFT START AND BALANCING PURPOSES.
3. PROVIDE VARIABLE FREQUENCY DRIVE FOR VARIABLE FLOW OPERATION.
4. PUMPS SHALL BE SELECTED FOR PARALLEL OPERATION.
5. PROVIDE STANBY PUMP.

MODULAR INDOOR CENTRAL STATION - AIR HANDLING UNIT SCHEDULE

DESIGNATION	SERVICE	TYPE	ARRANGEMENT	MANUFACTURER	MODEL NUMBER	DIMENSIONS (L x W x H) INCHES	WEIGHT (lbs)	SEE NOTE	BLOWER DATA							
									TOTAL CFM	OUTSIDE AIR CFM	MIN. OUTSIDE AIR CFM	EST. EXT. SP. (IN. WG.)	MOTOR QTY / MAX. MOTOR HP (EACH)	TOTAL BRAKE HP	VARIABLE FREQUENCY H.P.	TYPE
AHU-A-01	CTE - GRAPHICS, A/V STUDIO	SINGLE DUCT VAV	HORIZONTAL	DAIKIN	CAH	102" x 76" x 42"	2,500	1-10	6,500	1,300	390	1.2"	2 - 3HP	2.48	7 1/2	DIRECT DRIVE - PF
AHU-A-02	CTE - CLASSROOMS	SINGLE DUCT VAV	HORIZONTAL	DAIKIN	CAH	102" x 80" x 46"	2,800	1-10	7,800	1,500	450	1.2"	2 - 5HP	3.43	10	DIRECT DRIVE - PF
AHU-A-03	CTE - MAIN STREET (MAIN CORR.)	SINGLE ZONE VAV	HORIZONTAL	DAIKIN	CAH	138" x 84" x 60"	4,400	1-11	11,500	1,380	414	1.0"	2 - 7.5HP	4.98	15	DIRECT DRIVE - PF
AHU-A-04	CTE - KITCHEN LAB	SINGLE ZONE VAV	HORIZONTAL-SIDE DISCHARGE	DAIKIN	CAH	132" x 80" X 46"	3,500	1-11	8,000	5,770	800	1.2"	2 - 3HP	2.48	7 1/2	DIRECT DRIVE - PF
AHU-A-05	CTE - CARPENTRY	SINGLE ZONE VAV	HORIZONTAL	DAIKIN	CAH	134" x 76" x 44"	3,100	1-11	4,120	1,200	360	1.0"	2 - 1.5 HP	1.25	3	DIRECT DRIVE - PF
AHU-A-06	CTE - ENGINEERING	SINGLE ZONE VAV	HORIZONTAL	DAIKIN	CAH	134" x 76" x 44"	3,300	1-11	4,600	950	285	1.0"	2 - 2HP	1.51	5	DIRECT DRIVE - PF
AHU-B-01	CTE - ADMIN	SINGLE DUCT VAV	HORIZONTAL	DAIKIN	CAH	104" x 76" x 44"	2,500	1-10	4,550	550	165	1.2"	2 - 2HP	1.54	5	DIRECT DRIVE - PF
AHU-B-02	CTE -CLASSROOMS	SINGLE DUCT VAV	HORIZONTAL	DAIKIN	CAH	102" x 84" x 52"	3,100	1-10	9,960	2,230	669	1.2"	2 - 5HP	3.79	10	DIRECT DRIVE - PF
AHU-B-03	CTE - CLASSROOMS	SINGLE DUCT VAV	HORIZONTAL	DAIKIN	CAH	102" x 84" x 46"	3,000	1-10	8,690	1,960	588	1.2"	2 - 5HP	3.10	10	DIRECT DRIVE - PF
OAHU-A-01	AHU-A-01, AHU-A-02, AHU-A-03, AHU-A-5 & AHU-A-06	SINGLE DUCT VAV	VERTICAL	DAIKIN	CAH	116" x 76" x 94"	3,900	1-10, 12-14	6,330	6,330	1,899	0.8"	2 - 3HP	2.32	7 1/2	DIRECT DRIVE - PF
OAHU-A-02	AHU-A-04	SINGLE DUCT VAV	VERTICAL	DAIKIN	CAH	116" x 76" x 94"	3,500	1-10, 12-14	5,770	5,770	800	0.8"	2 - 3HP	2.32	7 1/2	DIRECT DRIVE - PF
OAHU-B-01	AHU-B-01, AHU-B-02 & AHU-B-03	SINGLE DUCT VAV	HORIZONTAL	DAIKIN	CAH	116" x 76" x 90"	3,700	1-10, 12-14	4,740	4,740	1,422	0.8"	2 - 2HP	1.57	5	DIRECT DRIVE - PF

DESIGNATION	MAIN COOLING COIL DATA										HEATING COIL DATA							
	CFM OVER COIL	MAX. FACE VELOCITY (FPM)	GRAND SENSIBLE BTUH	GRAND TOTAL BTUH	EAT (°F DB)	EAT (°F WB)	LAT (°F DB)	GPM	EWT (°F DB)	LWT (°F DB)	CFM OVER COIL	MAX. FACE VELOCITY (FPM)	GRAND TOTAL BTUH	EAT (°F DB)	LAT (°F DB)	GPM	EWT (°F DB)	LWT (°F DB)
AHU-A-01	6,500	500	161,460	210,522	78.0°	65.0°	55.0°	30	42.0°F	56.0°F	-	-	-	-	-	-	-	-
AHU-A-02	7,800	500	193,752	252,626	78.0°	65.0°	55.0°	36	42.0°F	56.0°F	-	-	-	-	-	-	-	-
AHU-A-03	11,500	500	285,660	372,462	78.0°	65.0°	55.0°	53	42.0°F	56.0°F	11,500	750	310,500	60.0°F	85.0°F	16	140.0°F	100.0°F
AHU-A-04	8,000	500	198,720	259,104	78.0°	65.0°	55.0°	37	42.0°F	56.0°F	8,000	750	216,000	60.0°F	85.0°F	11	140.0°F	100.0°F
AHU-A-05	4,120	500	102,341	133,439	78.0°	65.0°	55.0°	19	42.0°F	56.0°F	4,120	750	111,240	60.0°F	85.0°F	6	140.0°F	100.0°F
AHU-A-06	4,600	500	114,264	148,985	78.0°	65.0°	55.0°	21	42.0°F	56.0°F	4,600	750	124,200	60.0°F	85.0°F	6	140.0°F	100.0°F
AHU-B-01	4,550	500	113,022	147,365	78.0°	65.0°	55.0°	21	42.0°F	56.0°F	-	-	-	-	-	-	-	-
AHU-B-02	9,960	500	247,406	322,584	78.0°	65.0°	55.0°	46	42.0°F	56.0°F	-	-	-	-	-	-	-	-
AHU-B-03	8,690	500	215,860	281,452	78.0°	65.0°	55.0°	40	42.0°F	56.0°F	-	-	-	-	-	-	-	-
OAHU-A-01	6,330	500	280,292	577,726	96.0°	80.0°	55°F	83	42.0°F	56°F	6,330	750	239,274	20.0°F	55.0°F	12	140.0°F	100.0°F
OAHU-A-02	5,770	500	255,496	526,616	96.0°	80.0°	55°F	75	42.0°F	56°F	5,770	750	218,106	20.0°F	55.0°F	11	140.0°F	100.0°F
OAHU-B-01	4,740	500	209,887	432,610	96.0°	80.0°	55°F	62	42.0°F	56°F	4,740	750	179,172	20.0°F	55.0°F	9	140.0°F	100.0°F
																70		

1. REFERENCE ELECTRICAL DRAWINGS FOR ELECTRICAL DATA.
2. ESTIMATED EXTERNAL STATIC PRESSURE INCLUDES LOSSES THROUGH DUCTWORK, AIR DEVICES, SOUND ATTENUATORS, ETC.
3. AIR HANDLING UNIT INTERNAL STATIC PRESSURE SHALL INCLUDE LOSSES THROUGH COILS, CASING, INTERNAL DAMPERS, AND 0.75" W.G. FOR DIRTY FILTERS.
4. COOLING COILS SHALL HAVE A MINIMUM OF 6 ROWS AND A MAXIMUM OF 10 FINS PER INCH. PRESSURE DROP THROUGH COIL SHALL NOT EXCEED 15 FT. AT SCHEDULED GPM.
5. FAN CONSTRUCTION SHALL BE MINIMUM AMCA CLASS 2.
6. FOR UNITS WITH MULTIPLE FANS / MOTORS, PROVIDE FACTORY INSTALLED AND WIRED MOTOR OVERLLOAD PANEL FOR CONNECTION TO SINGLE VFD.
7. PROVIDE WITH VARIABLE FREQUENCY DRIVE.
8. PROVIDE FACTORY MOUNTED AND WIRED EXTERNAL JUNCTION BOXES ON FAN SECTION. J-BOX SHALL ALLOW ELECTRICAL CONTRACTOR TO LAND POWER TO DEVICE WITHOUT PENETRATING THROUGH CABINET. FIELD INSTALLED JUNCTION BOXES ARE NOT ACCEPTABLE.
9. PROVIDE FACTORY MOUNTED SHAFT GROUNDING KIT FOR AIR HANDLING UNIT MOTOR, NO EXCEPTIONS.
10. PROVIDE WITH ANGLED MERV 13 FILTERS.
11. PROVIDE HOT WATER COIL IN RE-HEAT POSITION.
12. ALL COILS SHALL BE FULLY EPOXY DIPPED AND BAKED (E-COAT) WITH UV TOP COAT.
13. PROVIDE FACTORY MIXING BOX / OUTSIDE AIR PLENUM BOX WITH OUTSIDE AIR DAMPER. REFER TO DRAWINGS FOR OUTSIDE AIR DUCT SIZES & CONNECTION LOCATIONS. SCHEDULED DIMENSION INCLUDES FACTORY MIXING BOX.
14. HOT WATER COIL SHALL BE IN THE PRE-HEAT POSITION

MODULAR INDOOR STATION, 100% OUTDOOR, HEATING AND COOLING KITCHEN HOOD MAKE-UP AIR UNITS

DESIGNATION	SERVICE	TYPE	ARRANGEMENT	MANUFACTURER	MODEL NUMBER	DIMENSIONS (L x W x H) INCHES	WEIGHT (lbs)	SEE NOTE	BLOWER DATA							
									TOTAL CFM	OUTSIDE AIR CFM	MIN. OUTSIDE AIR CFM	EST. EXT. SP. (IN. WG.)	MOTOR QTY / MAX. MOTOR HP (EACH)	TOTAL BRAKE HP	VARIABLE FREQUENCY...	TYPE
MAU-01	KITCHEN HOOD - 152	CONSTANT VOLUME	VERTICAL	DAIKIN	CAH	114" x 64" x 36"	3,200	1-14	3,752	3,752	3,752	1.5"	1 / 5.0	3.18	5	DIRECT DRIVE - PF
MAU-02	KITCHEN HOOD - 153	CONSTANT VOLUME	VERTICAL	DAIKIN	CAH	112" x 44" x 30"	3,200	1-14	800	800	800	1.25"	1 / 1.0	0.52	1	DIRECT DRIVE - PF

DESIGNATION	MAIN COOLING COIL DATA										PRE-HEATING COIL DATA							
	CFM OVER COIL	MAX. FACE VELOCITY (FPM)	GRAND SENSIBLE BTUH	GRAND TOTAL BTUH	EAT (°F DB)	EAT (°F WB)	LAT (°F DB)	GPM	EWT (°F DB)	LWT (°F DB)	CFM OVER COIL	MAX. FACE VELOCITY (FPM)	GRAND TOTAL BTUH	EAT (°F DB)	LAT (°F DB)	GPM	EWT (°F DB)	LWT (°F DB)
MAU-01	3,752	500	166,139	342,438	96.0°	80.0°	55°F	49	42.0°F	56°F	3,752	750	141,826	20.0°F	55.0°F	7	140.0°F	100.0°F
MAU-02	800	500	35,424	73,014	96.0°	80.0°	55°F	10	42.0°F	56°F	800	750	30,240	20.0°F	55.0°F	2	140.0°F	100.0°F

DESIGNATION	RE-HEATING COIL DATA							
	CFM OVER COIL	MAX. FACE VELOCITY (FPM)	GRAND TOTAL BTUH	EAT (°F DB)	LAT (°F DB)	GPM	EWT (°F DB)	LWT (°F DB)
MAU-01	3,752	750	121,565	55.0°F	85.0°F	6.08	140.0°F	100.0°F
MAU-02	800	750	25,920	55.0°F	85.0°F	1.30	140.0°F	100.0°F

1. REFERENCE ELECTRICAL DRAWINGS FOR ELECTRICAL DATA.
2. ESTIMATED EXTERNAL STATIC PRESSURE INCLUDES LOSSES THROUGH DUCTWORK, AIR DEVICES, SOUND ATTENUATORS, ETC.
3. AIR HANDLING UNIT INTERNAL STATIC PRESSURE SHALL INCLUDE LOSSES THROUGH COILS, CASING, INTERNAL DAMPERS, AND 0.75" W.G. FOR DIRTY FILTERS.
4. COOLING COILS SHALL HAVE A MINIMUM OF 6 ROWS AND A MAXIMUM OF 10 FINS PER INCH. PRESSURE DROP THROUGH COIL SHALL NOT EXCEED 15 FT. AT SCHEDULED GPM.
5. FAN CONSTRUCTION SHALL BE MINIMUM AMCA CLASS 2.
6. FOR UNITS WITH MULTIPLE FANS / MOTORS, PROVIDE FACTORY INSTALLED AND WIRED MOTOR OVERLLOAD PANEL FOR CONNECTION TO SINGLE VFD.
7. PROVIDE WITH VARIABLE FREQUENCY DRIVE.
8. PROVIDE FACTORY MOUNTED AND WIRED EXTERNAL JUNCTION BOXES ON FAN SECTION. J-BOX SHALL ALLOW ELECTRICAL CONTRACTOR TO LAND POWER TO DEVICE WITHOUT PENETRATING THROUGH CABINET. FIELD INSTALLED JUNCTION BOXES ARE NOT ACCEPTABLE.
9. PROVIDE FACTORY MOUNTED SHAFT GROUNDING KIT FOR AIR HANDLING UNIT MOTOR, NO EXCEPTIONS.
10. PROVIDE WITH ANGLED MERV 13 FILTERS.
11. PROVIDE HOT WATER COIL IN PRE-HEAT AND RE-HEAT POSITION.
12. ALL COILS SHALL BE FULLY EPOXY DIPPED AND BAKED (E-COAT) WITH UV TOP COAT.
13. PROVIDE FACTORY MIXING BOX / OUTSIDE AIR PLENUM BOX WITH OUTSIDE AIR DAMPER. REFER TO DRAWINGS FOR OUTSIDE AIR DUCT SIZES & CONNECTION LOCATIONS. SCHEDULED DIMENSION INCLUDES FACTORY MIXING BOX.
14. UNIT SHALL COMPLY WITH SPECIFICATION SECTION 23 73 13 - MODULAR INDOOR CENTRAL-STATION AIR HANDLING UNITS.

FAN COIL UNIT SCHEDULE

DESIGNATION	SERVICE	TYPE	ARRANGEMENT	MANUFACTURER	MODEL NUMBER	DIMENSIONS (LxWxH) INCHES	WEIGHT (lbs)	SEE NOTE	BLOWER DATA				
									TOTAL CFM	OUTSIDE AIR CFM	EST. EXT. SP. (IN. WG.)	DRIVE	FAN TYPE
FCU-A-01	MAIN MECH	SZ CV	HORIZONTAL	DAIKIN	BCHD0301	38x49x26	580	1-12	2,400	355	0.75	DIRECT	FC
FCU-A-02	MAIN ELEC	SZ CV	HORIZONTAL	DAIKIN	BCHD0181	46x54x18	573	1-8,11,12	1,600	-	0.75	DIRECT	FC
FCU-B-01	ELEC	SZ CV	HORIZONTAL	DAIKIN	BCHD0101	46x37x18	353	1-8,11,12	1,000	-	0.75	DIRECT	FC
FCU-B-02	MAIN CUST	SZ CV	HORIZONTAL	DAIKIN	BCHD0081	43x29x18	293	1-12	600	150	0.75	DIRECT	FC

DESIGNATION	COOLING COIL DATA										HEATING COIL DATA							
	CFM OVER COIL	MAX. FACE VELOCITY (FPM)	GRAND SENSIBLE BTUH	GRAND TOTAL BTUH	EAT (°F DB)	EAT (°F WB)	LAT (°F DB)	GPM	EWT (°F DB)	LWT (°F DB)	CFM OVER COIL	MAX. FACE VELOCITY (FPM)	GRAND TOTAL BTUH	EAT (°F DB)	LAT (°F DB)	GPM	EWT (°F DB)	LWT (°F DB)
FCU-A-01	2,800	500	66,517	89,528	80.7°	67.2°	55.0°	13	42.0°	56.0°	2,400	500	69,093	58.3°	85.0°	3	140.0°	100.0°
FCU-A-02	1,600	500	39,744	51,821	78.0°	65.0°	55.0°	7	42.0°	56.0°	-	-	-	-	-	-	-	-
FCU-B-01	1,000	500	24,840	32,388	78.0°	65.0°	55.0°	5	42.0°	56.0°	-	-	-	-	-	-	-	-
FCU-B-02	600	500	17,820	24,715	82.5°	68.8°	55.0°	4	42.0°	56.0°	600	500	20,250	53.8°	85.0°	1	140.0°	100.0°
				198,452				28					89,343					

DESIGNATION	ELECTRICAL DATA			
	MCA	MOCP	FLA	VOLTAGE
FCU-A-01	3.5	15	2.8	480/3/60
FCU-A-02	7.8	15	7.0	277/1/60
FCU-B-01	6.5	15	5.2	277/1/60
FCU-B-02	4.3	15	3.5	277/1/60

1. REFERENCE ELECTRICAL DRAWINGS FOR ELECTRICAL DATA.
2. ESTIMATED EXTERNAL STATIC PRESSURE INCLUDES LOSSES THROUGH DUCTWORK, AIR DEVICES, SOUND ATTENUATORS, ETC.
3. FAN COIL UNIT INTERNAL STATIC PRESSURE SHALL INCLUDE LOSSES THROUGH COILS, CASING, INTERNAL DAMPERS, AND 0.5" W.G. FOR DIRTY FILTER.
4. COOLING COILS PRESSURE DROP SHALL NOT EXCEED 15 FT. AT SCHEDULED GPM.
5. FAN - FORWARD CURVED BLADES; 1,000 RPM MAXIMUM.
6. FAN COIL SUSPENDED FROM STRUCTURE.
7. PROVIDE FLOAT SWITCH IN AUXILIARY DRAIN PAN.
8. PROVIDE UNITS WITH DIRECT DRIVE - FACTORY PROVIDED VFD MOTORS (FCU-A-01) and ECM MOTORS (FCU-A-02,B-01,02).
9. ALL COILS SHALL BE FULLY EPOXY DIPPED AND BAKED (E-COAT) WITH UV TOP COAT.
10. PROVIDE HEATING COIL IN RE-HEAT POSITION.
11. PROVIDE WITH MERV 13 FILTERS.
12. PROVIDE FILTER RACK ACCESS ON THE BOTTOM SIDE.

Plot Stamp:
6/3/2025 12:39:58 PM

PBK

ARCHITECT PBK Architects, Inc.
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STRUCTURAL
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MEP
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ACOUSTIC
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THEATER
CONSULTANT NAME
T.000-000-0000
FOOD SERVICE
CONSULTANT NAME
T.000-000-0000
AV
CONSULTANT NAME
T.000-000-0000

LEAF ENGINEERS

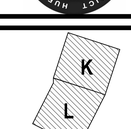
New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS



KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
MITAL J. PATEL
111622
LICENSED
PROFESSIONAL ENGINEER
05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE 05/20/2025
PROJECT NUMBER 240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

CHECKED BY: MP
DRAWN BY: OG

MECHANICAL SCHEDULES-CTE

M-501.C

MECHANICAL SCHEDULES-CTE
M-502.C
FOR BLUEBEAM LABELING/OCR:

SERIES FAN-POWERED AIR TERMINAL UNITS WITH HOT WATER HEAT SCHEDULE

TAG	INLET SIZE	COOLING CFM		STATIC PRESSURE		HOT WATER HEATING COIL							VOLTAGE (V/PH/HZ)	MANUFACTURER	MODEL
		MAX	MIN	INLET	UNIT P.D.	CFM	MAX. FACE VELOCITY (FPM)	TOTAL BTUH	EAT	LAT	GPM	EWT/LWT (°F)			
CVB-A-01-01A	12	1,400	420	1	0.3	1,400	750	37,800	60	85	1.9	140 / 100	277 / 1 / 60	TITUS	DTFS-F
CVB-A-01-01B	12	1,200	360	1	0.3	1,200	750	32,400	60	85	1.6	140 / 100	277 / 1 / 60	TITUS	DTFS-F
CVB-A-01-02A	12	1,300	390	1	0.3	1,300	750	35,100	60	85	1.8	140 / 100	277 / 1 / 60	TITUS	DTFS-F
CVB-A-01-02B	12	1,300	390	1	0.3	1,300	750	35,100	60	85	1.8	140 / 100	277 / 1 / 60	TITUS	DTFS-F
CVB-A-01-03	10	800	240	1	0.3	800	750	21,600	60	85	1.1	140 / 100	277 / 1 / 60	TITUS	DTFS-F
CVB-A-01-04	8	500	150	1	0.3	500	750	13,500	60	85	0.7	140 / 100	277 / 1 / 60	TITUS	DTFS-F
	6500	6,500													
CVB-A-02-01	12	1,350	405	1	0.3	1,350	750	36,450	60	85	1.8	140 / 100	277 / 1 / 60	TITUS	DTFS-F
CVB-A-02-02	12	1,350	405	1	0.3	1,350	750	36,450	60	85	1.8	140 / 100	277 / 1 / 60	TITUS	DTFS-F
CVB-A-02-03	12	1,350	405	1	0.3	1,350	750	36,450	60	85	1.8	140 / 100	277 / 1 / 60	TITUS	DTFS-F
CVB-A-02-04	12	1,400	420	1	0.3	1,400	750	37,800	60	85	1.9	140 / 100	277 / 1 / 60	TITUS	DTFS-F
CVB-A-02-05	14	1,450	435	1	0.3	1,175	750	39,150	60	85	2.0	140 / 100	277 / 1 / 60	TITUS	DTFS-F
CVB-A-02-06	10	900	270	1	0.3	900	750	24,300	60	85	1.2	140 / 100	277 / 1 / 60	TITUS	DTFS-F
	7800	7,800													
CVB-B-01-01	10	700	210	1	0.3	700	750	18,900	60	85	0.9	140 / 100	277 / 1 / 60	TITUS	DTFS-F
1 CVB-B-01-02	10	850	255	1	0.3	850	750	22,950	60	85	1.1	140 / 100	277 / 1 / 60	TITUS	DTFS-F
CVB-B-01-03	6	295	89	1	0.3	295	750	7,965	60	85	0.4	140 / 100	277 / 1 / 60	TITUS	DTFS-F
1 CVB-B-01-04	12	1,075	323	1	0.3	1,075	750	29,025	60	85	1.5	140 / 100	277 / 1 / 60	TITUS	DTFS-F
CVB-B-01-05	10	780	234	1	0.3	780	750	21,060	60	85	1.1	140 / 100	277 / 1 / 60	TITUS	DTFS-F
1 CVB-B-01-06	10	850	255	1	0.3	850	750	22,950	60	85	1.1	140 / 100	277 / 1 / 60	TITUS	DTFS-F
	4550	4,550													
CVB-B-02-01	14	1,695	509	1	0.3	1,695	750	45,765	60	85	2.3	140 / 100	277 / 1 / 60	TITUS	DTFS-F
CVB-B-02-02	12	1,350	405	1	0.3	1,350	750	36,450	60	85	1.8	140 / 100	277 / 1 / 60	TITUS	DTFS-F
CVB-B-02-03	10	910	273	1	0.3	910	750	24,570	60	85	1.2	140 / 100	277 / 1 / 60	TITUS	DTFS-F
CVB-B-02-04	12	1,200	360	1	0.3	1,200	750	32,400	60	85	1.6	140 / 100	277 / 1 / 60	TITUS	DTFS-F
CVB-B-02-05A	12	1,285	386	1	0.3	1,285	750	34,695	60	85	1.7	140 / 100	277 / 1 / 60	TITUS	DTFS-F
CVB-B-02-05B	12	1,230	369	1	0.3	1,230	750	33,210	60	85	1.7	140 / 100	277 / 1 / 60	TITUS	DTFS-F
CVB-B-02-06	12	1,200	360	1	0.3	1,200	750	32,400	60	85	1.6	140 / 100	277 / 1 / 60	TITUS	DTFS-F
CVB-B-02-07	12	1,090	327	1	0.3	1,090	750	29,430	60	85	1.5	140 / 100	277 / 1 / 60	TITUS	DTFS-F
	9960	9,960													
CVB-B-03-01	8	500	150	1	0.3	500	750	13,500	60	85	0.7	140 / 100	277 / 1 / 60	TITUS	DTFS-F
CVB-B-03-02	12	1,185	356	1	0.3	1,185	750	31,995	60	85	1.6	140 / 100	277 / 1 / 60	TITUS	DTFS-F
CVB-B-03-03A	12	1,310	393	1	0.3	1,310	750	35,370	60	85	1.8	140 / 100	277 / 1 / 60	TITUS	DTFS-F
CVB-B-03-03B	14	1,830	549	1	0.3	1,830	750	49,410	60	85	2.5	140 / 100	277 / 1 / 60	TITUS	DTFS-F
CVB-B-03-04	12	1,225	368	1	0.3	1,225	750	33,075	60	85	1.7	140 / 100	277 / 1 / 60	TITUS	DTFS-F
CVB-B-03-05	12	1,400	420	1	0.3	1,400	750	37,800	60	85	1.9	140 / 100	277 / 1 / 60	TITUS	DTFS-F
CVB-B-03-06	12	1,240	372	1	0.3	1,240	750	33,480	60	85	1.7	140 / 100	277 / 1 / 60	TITUS	DTFS-F
	8690	8,690						1,012,500			50.6				

1. MAXIMUM NC LEVEL SHALL NOT EXCEED 35 AT 1 IN. STATIC PRESSURE.
2. PROVIDE FACTORY MOUNTED INDUCED AIR INLET SOUND SOUND ATTENUATOR. REFER TO SERIES FLOW FAN POWERED VARIABLE VOLUME UNITS WITH HOT WATER HEAT DETAIL.
3. PROVIDE FACTORY MOUNTED FUSED DISCONNECT SWITCH IN CONTROL PANEL.
4. HOT WATER COILS SHALL BE 1 OR 2 ROWS AND A MAXIMUM OF 10 FINS PER INCH. WATER PRESSURE DROP SHALL NOT EXCEED 5 FT AT SCHEDULED GPM AND AIR PRESSURE DROP THROUGH THE COIL SHALL NOT EXCEED 0.24" W.G.
5. COORDINATE WITH DRAWINGS FOR RIGHT OR LEFT-HAND CASING CONFIGURATION PRIOR TO ORDERING.

HVAC FANS SCHEDULE

DESIGNATION	LOCATION	SERVICE	MANUFACTURER	MODEL NUMBER	NOTES	FAN DATA							
						TYPE	DRIVE	CFM	STATIC PRESSURE (" W.G.)	MOTOR HP. (MIN)	BRAKE HP	RPM (MAX.)	VOLT / Ø / HZ
EF-A-01	ROOF	RR 347 & RR 346	LOREN COOK	ACRU	1-6	CENTRIFUGAL	DIRECT	1,000	0.75	1/2	0.25	1,144	120/1/60
EF-A-02	ROOF	CARPENTRY 212	LOREN COOK	ACRU	1-6	CENTRIFUGAL	DIRECT	960	0.75	1/2	0.24	1,135	120/1/60
EF-A-03	ROOF	BOILER 217 - PURGE FAN	LOREN COOK	ACRU	1-6, 9	CENTRIFUGAL	DIRECT	855	0.75	1/2	0.27	1,321	120/1/60
EF-A-04	ROOF	W/D 202C, RR 202D, & LOCKER 202E	LOREN COOK	ACRU	1-6	CENTRIFUGAL	DIRECT	500	0.75	1/2	0.16	1,020	120/1/60
EF-B-01	ROOF	RR 381 & RR 282	LOREN COOK	ACRU	1-6	CENTRIFUGAL	DIRECT	800	0.75	1/2	0.25	1,284	120/1/60
EF-B-02	ROOF	BREAKROOM 116, RR118,RR12, & MAIN CUST.	LOREN COOK	ACRU	1-6	CENTRIFUGAL	DIRECT	550	0.75	1/4	0.14	1,467	120/1/60
EF-B-03	ROOF	VET TECH LAB, EXAM RM.1, 2 AND KENNELS	LOREN COOK	ACRU	1-6	CENTRIFUGAL	DIRECT	1,360	1.00	1	0.45	1,250	120/1/60
EF-B-04	ROOF	HEALTH LAB 301	LOREN COOK	ACRU	1-6	CENTRIFUGAL	DIRECT	1,650	1.00	1	0.57	1,349	120/1/60
EF-B-05	ROOF	FLORAL LAB	LOREN COOK	ACRU	1-6	CENTRIFUGAL	DIRECT	1,450	0.75	1	0.38	1,176	120/1/60
SF-A-01	ROOF	BOILER 217	LOREN COOK	ASP	1-5 ,7	CENTRIFUGAL	BELT	650	1.00	1	0.78	1,228	460/3/60
KEF-01	ROOF	KITCHEN HOOD - 152	LOREN COOK	ACRU	1-6, 8	CENTRIFUGAL	DIRECT	7,840	1.50	5	3.20	781	460/3/60
KEF-02	ROOF	KITCHEN HOOD - 153	LOREN COOK	ACRU	1-6, 8	CENTRIFUGAL	DIRECT	1,680	1.50	1	0.77	1,621	460/3/60
KEF-03	ROOF	CONDENSATE HOOD	LOREN COOK	ACRU	1-6, 8	CENTRIFUGAL	DIRECT	800	0.85	1/2	0.28	1,332	120/1/60

1. REFERENCE ELECTRICAL DRAWINGS FOR ELECTRICAL DATA.
2. REFERENCE SPECIFICATIONS FOR SEQUENCE OF OPERATIONS.
3. DIRECT DRIVE FANS SHALL BE PROVIDED WITH SPEED CONTROLLERS FOR SYSTEM BALANCING.
4. FAN SHALL BE PROVIDED WITH ECM MOTOR AND SPEED CONTROLLER. STARTER SHALL BE PROVIDED BY FAN MANUFACTURER. JUNCTION BOX AND VARI-FLOW MOTOR, TRANSFORMER SHALL BE FACTORY MOUNTED AND WIRED.
5. REFERENCE ARCHITECTURAL DRAWINGS FOR ROOF CURB DETAIL.
6. PROVIDE UPBLAST FAN & DESIGNED TO WITHSTAND HIGH WIND SPEEDS UP TO 155 MPH.
7. INTERLOCK FAN WITH THERMOSTAT SET TO 80° (ADJUSTABLE).
8. KITCHEN EXHAUST FAN TO BE INTERLOCKED WITH ASSOCIATED KITCHEN HOOD. WHEN ANSUL SYSTEM IS ACTIVATED, KITCHEN EXHAUST FAN SHALL TURN OFF AND ASSOCIATED MAKE-UP AIR UNIT SHALL BE DE-ENERGIZED.
9. GENERAL EXHAUST CFM AND EMERGENCY PURGE CFM.

CONDENSING BOILER SCHEDULE

DESIGNATION	TYPE	LOCATION	BURNER FUEL	MIN. OUTPUT (BTUH)	MIN. EFFICIENCY	FUEL CONSUMPTION (BTUH)	MANUFACTURER	MODEL NUMBER	GPM	E.W.T. (°F)	L.W.T. (°F)	FLUE SIZE (DIA.)	DIMENSIONS (L x W x H)	WEIGHT (LBS)	BOILER ELECTRICAL INFORMATION		CIRCULATING PUMP ELECTRICAL INFORMATION			
															MAX AMP	VOLT / Ø / HZ	DESIGNATION	MAX H.P.	FLA	VOLT / Ø / HZ
B-03	CONDENSING	BOILER ROOM	NAT. GAS	1,886,000	95.0%	2,000,000	CAMUS	AVENGER	76	100°F	140°F	8	44" x 35" x 90"	2,085	8	120 / 1 / 60	PHWP-03	3/4	6.4	120 / 1 / 60
B-04	CONDENSING	BOILER ROOM	NAT. GAS	1,886,000	95.0%	2,000,000	CAMUS	AVENGER	76	100°F	140°F	8	44" x 35" x 90"	2,085	8	120 / 1 / 60	PHWP-04	3/4	6.4	120 / 1 / 60

1.
2. PROVIDE AUXILIARY PUMP AS REQUIRED BY MANUFACTURER TO CIRCULATE WATER AT BYPASS CONDITIONS. REFER TO ELECTRICAL DRAWINGS.
3. PROVIDE CATEGORY IV FLUE PIPE, INNER PIPE OF AL29-4C AND OUTER PIPE OF 430 STAINLESS STEEL.
4. PROVIDE WITH A CONDENSATE NEUTRALIZATION KIT WITH SCHEDULE 8-CPVC CONDENSATE PIPING.
5. CONDENSING BOILER HEAT EXCHANGER SHALL BE OF STAINLESS STEEL. COPPER HEAT EXCHANGERS ARE NOT ACCEPTABLE. REFER TO SPECIFICATION.
6. BOILER MANUFACTURER SHALL PROVIDE CONTROLS FOR BOILER SEQUENCING AND CONTROL. BAS SHALL INTERFACE TO BOILER CONTROL PANEL.
7. MANUFACTURER SHALL PROVIDE BACNET INTERFACE CARD ANY ACCESSORIES REQUIRED TO FACILITATE 2-WAY COMMUNICATION WITH THE BAS CONTRACTOR'S SYSTEM. THIS INCLUDES, BUT IS NOT LIMITED TO, FURNISHING, INSTALLING AND PROGRAMMING OF COMMUNICATION CARD (i.e. BACnet)
8. PROVIDE SEPARATE POINT CONNECTION TO BOILER AND CIRCULATING PUMP. ELECTRICAL CONTRACTOR TO PROVIDE STARTER AND DISCONNECT AS REQUIRED; COORDINATE WITH BOILER MANUFACTURER.
9. FLUE PIPING SHALL BE PROVIDED AND SUBMITTED BY BOILER DISTRIBUTOR AFTER BOILER SUBMITTAL HAS BEEN APPROVED BY ENGINEER. FLUE PIPE SHALL NOT BE SUBMITTED BY ANY OTHER PARTY OTHER THAN THE BOILER SALES REPRESENTATIVE AWARDED THE PROJECT. FLUE PIPE SHALL BE INSTALLED BY MECHANICAL CONTRACTOR.
10. PROVIDE FIRE-TUBE BOILER.

DIFFUSERS, REGISTERS & GRILLES SCHEDULE

DESIGNATION	MODEL NUMBER	NOISE CRITERIA (NC)	DESCRIPTION
A	TITUS TDCA	25	24x24 MODULE SIZE, LAY-IN BORDER TYPE, 18"x18" NECK SIZE WITH ROUND DUCT CONNECTION SIZED AS INDICATED ON PLANS. NO OPPOSED BLADE DAMPER, ALL STEEL CONSTRUCTION.
B	TITUS PAR	25	24x24 MODULE SIZE, LAY-IN BORDER TYPE, 22"x22" NECK SIZE UNLESS NOTED OTHERWISE. NO OPPOSED BLADE DAMPER, ALL STEEL CONSTRUCTION.
C	TITUS 300RS	25	DOUBLE DEFLECTION, 3/4" BLADE SPACING, FRONT BLADES PARALLEL TO SHORT DIMENSION, NO OPPOSED BLADE DAMPER, SURFACE MOUNTING BORDER TYPE WITH COUNTERSUNK HOLES, ALL STEEL CONTSTRUCTION.
D	TITUS 350RL	25	3/4" BLADE SPACING, FRONT BLADES PARALLEL TO LONG DIMENSION, 35° FIXED DEFLECTION, NO OPPOSED BLADE DAMPER, SURFACE MOUNTING BORDER TYPE WITH COUNTERSUNK HOLES, ALL STEEL CONSTRUCTION.
E	TITUS TDC-AA	25	24x24 MODULE SIZE, LAY-IN BORDER TYPE, 18"x18" NECK SIZE WITH ROUND DUCT CONNECTION SIZED AS INDICATED ON PLANS. NO OPPOSED BLADE DAMPER, ALL ALUMINUM CONSTRUCTION.
F	TITUS PAR-AA	25	24x24 MODULE SIZE, LAY-IN BORDER TYPE, 22"x22" NECK SIZE UNLESS NOTED OTHERWISE. NO OPPOSED BLADE DAMPER, ALL ALUMINUM CONSTRUCTION.
G	TITUS TDC	25	12x12 MODULE SIZE, LAY-IN BORDER TYPE, 9"x9" NECK SIZE WITH ROUND DUCT CONNECTION SIZED AS INDICATED ON PLANS. NO OPPOSED BLADE DAMPER, ALL STEEL CONSTRUCTION.
H	TITUS PAR	25	12x12 MODULE SIZE, LAY-IN BORDER TYPE, 10"x10" NECK SIZE UNLESS NOTED OTHERWISE. NO OPPOSED BLADE DAMPER, ALL STEEL CONSTRUCTION.
J	TITUS 33RL	25	1/2" BLADE SPACING, 38° FIXED DEFLECTION, 16 GAUGE BORDER, 14 GAUGE BLADES, SUPPORT BARS 6 INCH ON CENTER, BLADES PARALLEL TO LONG DIMENSION, ALL STEEL CONTSTRUCTION.
K	TITUS CT-481	25	48" LONG, 6" WIDE SIDEWALL GRILLE, 15° DEFLECTION, 1/4" BAR SPACING.
L	TITUS CT-480	25	60" LONG, 6" WIDE SIDEWALL GRILLE, 0° DEFLECTION, 1/4" BAR SPACING.

1. ALL DIFFUSER DESIGNATIONS MAY NOT BE USED ON PROJECT.
2. DIFFUSERS IN NATATORIUMS, SHOWER ROOMS, ADJACENT DRESSING ROOMS, DISHWASH ROOMS, AND THERAPY POOL ROOMS SHALL BE ALL ALUMINUM CONSTRUCTION.
3. PROVIDE ROTO-TWIST CABLE OPERATED DAMPERS AT IN GYP BOARD CEILINGS.
4. PROVIDE RING FRAME ON DIFFUSERS LOCATED ON HARD CEILING. REFER TO MECHANICAL FLOOR PLAN.

MINI-SPLIT SYSTEM AIR-CONDITIONERS SCHEDULE

EVAPORATOR SECTION		
INDOOR EVAPORATOR DESIGNATION	FCU-126	FCU-211
SERVICE	MDF 126	IDF 211
MANUFACTURER	DAIKIN	DAIKIN
MODEL NUMBER	FTXF36	FTXF18
TYPE	WALL MOUNTED	WALL MOUNTED
WEIGHT (LBS.)	75	75
NOTES	1-9	1-9
FAN DATA		
SUPPLY CFM (HIGH / MEDIUM / LOW) SPEED	920 / 810 / 705	455 / 375 / 265
EXTERNAL STATIC PRESSURE, "WG	-	-
COOLING / HEATING COIL	DX	DX
NOMINAL TONNAGE	3.0 TONS	1.5 TONS
ENTERING AIR EVAP (DB/WB) °F - COOLING MODE	80°F / 67°F	80°F / 67°F
ENTERING AIR EVAP (DB/WB) °F - HEATING MODE	70°F / 60°F	70°F / 60°F
TOTAL BTUH COOLING	36,000	18,000
TOTAL BTUH HEATING	38,000	21,000
AIR-COOLED CONDENSER		
DESIGNATION	ACCU-126	ACCU-211
SERVES	FCU-126	FCU-211
LOCATION	ROOF	OUTDOORS
MANUFACTURER	DAIKIN	DAIKIN
MODEL NUMBER	RX36	RXF18
EFFICIENCY (SEER)	15.9	21.0
VOLTS/PH/HZ	208 / 1 / 60	208 / 1 / 60
MCA	18.3	16.3
MOCP	20	20
REFRIGERANT	R32	R32
AMBIENT TEMPERATURE °F	95°F	95°F
WEIGHT (LBS.)	150	150

1. REFERENCE ELECTRICAL DRAWINGS FOR ELECTRICAL DATA.
2. ESTIMATED EXTERNAL STATIC PRESSURE INCLUDES LOSSES THROUGH PLENUM, AIR DEVICES, ETC.
3. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
4. PROVIDE REMOTE WALL MOUNTED PROGRAMMABLE THERMOSTAT WITH BACnet INTERFACE.
5. PROVIDE INVERTER DRIVEN COMPRESSOR.
6. INDOOR UNIT IS POWERED BY THE OUTDOOR UNIT.
7. PROVIDE MATCHING CONDENSING UNIT FROM SAME MANUFACTURER.
8. MANUFACTURER SHALL PROVIDE A CONDENSATE PUMP. PUMP SHALL BE POWERED BY THE UNIT AND SHALL NOT START / STOP UNLESS THE UNIT IS ENERGIZED / DE-ENERGIZED.
9. CONDENSING UNIT SHALL BE RATED FOR 155 MPH WIND SPEED.

BUILDING METER SCHEDULE

SERVICE	MODEL	PROVIDED BY	INSTALLED BY	BAS COMMUNICATION
CTE - MAIN WATER	BADGER M2000	BAS	PLUMBING CONTRACTOR	PULSE / DRY CONTACT / BACnet
CTE - MAIN GAS	AMERICAN METER AL-425	BAS	PLUMBING CONTRACTOR	PULSE / DRY CONTACT / BACnet

1. ALL METERS SHALL BE MSTP.
2. PROVIDE APPROVED OR EQUAL TO LISTED METERS.
3. CONTROLS CONTRACTOR TO COORDINATE WITH OTHER TRADES FOR LOCATION OF EACH METER AND PROVIDE WIRING AND CONDUIT TO METER.
4. 1 PRIOR TO ORDER, COORDINATE WITH PLUMBING CONTRACTOR FOR THE LINE SIZE, CAPACITY, AND LOCATION OF THE METERS.

SAWDUST COLLECTION SYSTEM SCHEDULE

DESIGNATION	QUANTITY	LOCATION	SERVICE	MANUFACTURER	MODEL NUMBER	NOTES	CFM @ 4"	S.P.(in.w.g.)	WEIGHT (LBS)	MOTOR H.P.	VOLTAGE
DC-01	3	CARPENTRY 212	CARPENTRY 212	JET	DC1100M	ALL	1,100	11.5	124	1 1/2	115/230 / 1 / 60

1. REFERENCE ELECTRICAL DRAWINGS FOR ELECTRICAL DATA.
2. VORTEX CONE TECHNOLOGY.

DUCT SILENCERS SCHEDULE

MARK	SERVICE	MANUFACTURER	MODEL	SIZE (INCHES)	LENGTH (FEET)	MAX. ΔP (" W.G.)	VELOCITY (FPM)
ST-01	RETURN	VIBRO-ACOUSTICS	RD	48x24	5	0.10	700
ST-02	RETURN	VIBRO-ACOUSTICS	RD	42x42	5	0.10	700
ST-03	RETURN	VIBRO-ACOUSTICS	RD	48x20	5	0.10	700
ST-04	RETURN	VIBRO-ACOUSTICS	RD	48x36	3	0.10	700
ST-05	RETURN	VIBRO-ACOUSTICS	RD	48x20	3	0.10	700

1. MAXIMUM FLAME SPREAD OF 25 AND MAXIMUM FUEL CONTRIBUTED AND SMOKE DEVELOPED RATING OF 50 PER NFPA 90A FOR SOUND TRAP MEDIA.
2. MEDIA SHALL MEET EROSION TEST METHOD DESCRIBED IN U.L. PUBLICATION 181.
3. CONTRACTOR SHALL PROVIDE TRANSITIONS TO DUCTWORK AS REQUIRED.

ELECTRIC UNIT HEATER SCHEDULE

DESIGNATION	SERVICE	MANUFACTURER	MODEL	NOTES	CFM	TEMP RISE	WEIGHT (LBS)	KW	AMPS	VOLT / Ø / HZ
EUH-A-01	RISER A114B	MARKEL	F1F5103N	1-5	400	26.0º	36	3.3	15.9	208 / 1 / 60
EUH-A-02	BOILER 217	MARKEL	P3P51	1-5	700	40.0º	50	7.5	9.1	460 / 3 / 60

1. REFERENCE ELCTRICAL DRAWINGS FOR ELECTRICAL CHARACTERISTICS.
2. PROVIDE DIRECTIONAL LOUVER VELOCITY SHALL BE 1000 FPM.
3. PROVIDE HORIZONTAL DISCHARGE WALL MOUNT BRACKET AND ADJUSTABLE WALL MOUNTED THERMOSTAT AS INDICATED ON DRAWINGS.
4. UNIT HEATER SHALL BE FAN FORCED; RECOMMENDED MOUNTING HEIGHT: 9'-0".
5. PROVIDE FACTORY POWDER COATED EPOXY FINISH FOR CORROSIVE ATMOSPHERES.

HVAC GRAVITY VENTILATORS SCHEDULE

DESIGNATION	SERVICE	MANUFACTURER	MODEL	CFM	WEIGHT (lbs)	MAX. THROAT AREA (FT.²)/ THROAT SIZE (DIA.)	P.D. (INCHES WG)	NOTES
IH-A1-01	OAHU-A1-01	GREENHECK	FGI	6,330	200	9.00 / 36"x36"	0.08	1-5
IH-A1-02	OAHU-A1-02	GREENHECK	FGI	4,970	200	6.25 / 30"x30"	0.08	1-5
IH-A1-03	MAU-01	GREENHECK	FGI	3,752	200	6.25 / 30"x30"	0.08	1-5
IH-A1-04	MAU-02	GREENHECK	FGI	800	200	1.78 / 16"x16"	0.08	1-5
IH-A1-06	FCU-A-01	GREENHECK	FGI	335	100	1.00 / 12"x12"	0.08	1-4,7
IH-B1-01	OAHU-B1-01	GREENHECK	FGI	4,740	200	6.25 / 30"x30"	0.08	1-5
IH-B1-02	FCU-B1-02	GREENHECK	FGI	150	100	1.00 / 12"x12"	0.08	1-4,7
RH-A1-01	BUILDING RELIEF	GREENHECK	FGR	3,500	100	4.00 / 24"x24"	0.08	1-4,6,7
RH-B1-01	BUILDING RELIEF	GREENHECK	FGR	3,500	100	4.00 / 24"x24"	0.08	1-4,6,7

1. MAXIMUM INTAKE VELOCITY SHALL NOT EXCEED 600 FPM
2. PROVIDE STAINLESS STEEL BIRD SCREEN AND 12" PREFABRICATED ROOF CURB.
3. PROVIDE ROOF HOOD DESIGNED TO WITHSTAND HIGH WIND SPEEDS UP TO 150 MPH.
4. PROVIDE ROOF HOOD OF ALUMINUM CONSTRUCTION WITH HI-PRO POLYESTER COATING FOR ALL COMPONENTS AND ROOF CURB.
5. MOTORIZED DAMPER IS PROVIDED BY THE AIR HANDLING UNIT MANUFACTURER.
6. PROVIDE WITH BAROMETRIC DAMPER. GRAVITY WEIGHTED DAMPER SET TO OPEN AT 0.10" W.G.
7. MOTORIZED DAMPER SHALL BE PROVIDED BY CONTROLS CONTRACTOR AND NOT BY HOOD MANUFACTURER. REFER TO DRAWINGS FOR DAMPER LOCATION.

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LANDSCAPE
CONSULTANT NAME
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STRUCTURAL
CONSULTANT NAME
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MEP
CONSULTANT NAME
T:000-000-0000
ACOUSTIC
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THEATER
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FOOD SERVICE
CONSULTANT NAME
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AV
CONSULTANT NAME
T:000-000-0000
LEAF ENGINEERS

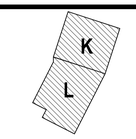
New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT



KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
MITAL J. PATEL
111622
05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

CHECKED BY: MP
DRAWN BY: OG

MECHANICAL SCHEDULES-CTE

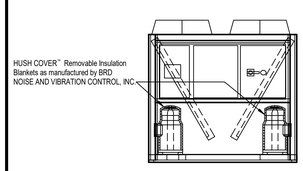
M-502.C

Plot Stamp:
6/3/2025 12:39:58 PM

MECHANICAL DETAILS-CTE
M-601.C
FOR BLUEBEAM LABELING/OCR:

0"
1"

HUSHCORE ECONOMY NOISE REDUCTION SYSTEM WITH INTEGRATED SCROLL CHILLER SCHEMATIC DETAIL

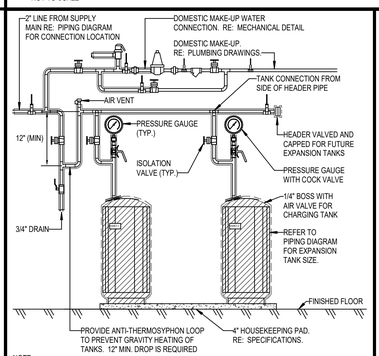


SCROLL CHILLER SECTION DETAIL

CHILLER NOISE REDUCTION SYSTEM
HUSHCORE™ *ECONOMY™* Chiller Noise Reduction System shall consist of HUSH COVER™ Removable Blanket Insulation, a composite of acoustical barriers and absorbers with a finished surface mass of 3lb. per sq. ft., Velcro flaps , to cover compressors ONLY for the specified chiller. The covers shall be connected together by means of clothe straps with "D" rings and Velcro fasteners. Stainless steel wire tie fastening assemblies are not acceptable. The complete system shall meet chiller manufacturers published data pertaining to heat loss of compressors, condenser fan airflow, and ensure no "de-rating" of chiller performance. The complete system shall meet all environmental conditions such as temperature, wind, shrinkage, UV-rays, and moisture. OEM Factory Acoustical Packages by the Chiller Manufacturer are not acceptable.

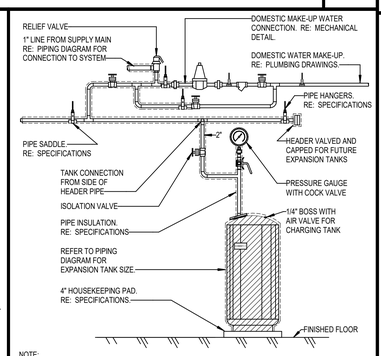
ACOUSTICAL PERFORMANCE
All Noise Control Materials Manufacturer's shall deliver a complete submittal including a copy of an acoustical report in compliance with the acoustical performance as listed in this section. The complete HUSHCORE™ system typical noise reductions are **3 to 5 dBA** at a receiver location no more than 6' above the base of the chiller and within the acoustic shadow zone. The HUSH COVER™ system shall meet the following acoustical performance:

BRD-NOISE AND VIBRATION CONTROL HUSHCORE AIR-COOLED SCROLL CHILLER NOISE REDUCTION SYSTEM DETAIL — 07
NOT TO SCALE



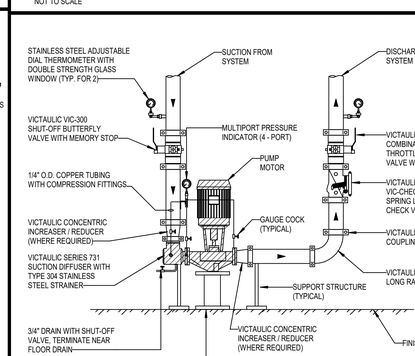
NOTE:
ALL PIPING FROM PRESSURE REDUCING VALVE AND ISOLATION VALVE TO SYSTEM, INCLUDING EXPANSION TANK, IS TO BE INSULATED.

HOT WATER BLADDER TYPE EXPANSION TANK PIPING DETAIL — 06
NOT TO SCALE



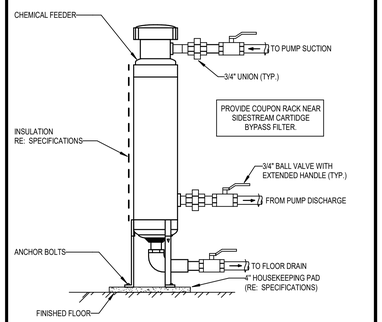
NOTE:
ALL PIPING FROM PRESSURE REDUCING VALVE AND ISOLATION VALVE TO SYSTEM, INCLUDING EXPANSION TANK, IS TO BE INSULATED.

CHILLED WATER BLADDER TYPE EXPANSION TANK PIPING DETAIL — 05
NOT TO SCALE

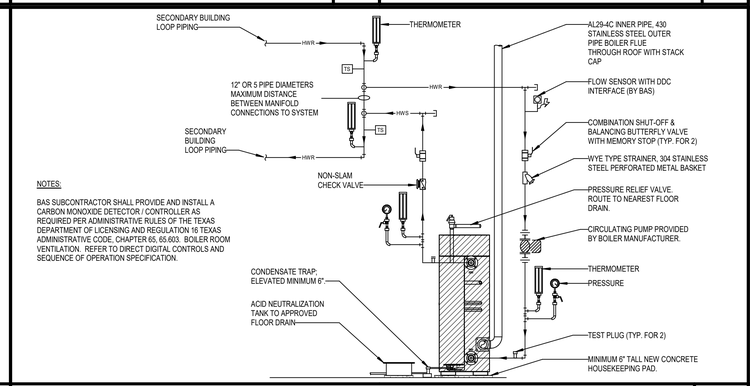


NOTES:
1. CHILLED WATER PUMPS SHALL BE INSULATED WITH RIGID INSULATION BOARD, TWO INCH THICK, CUT AND FORMED INTO A BOX AND SECURED IN PLACE WITH 3/4" WIDE x 0.20 GALVANIZED BANDS. REFER TO SPECIFICATION 23 07 16 FOR FURTHER PUMP INSULATION REQUIREMENTS.
2. BUTTERFLY AND CHECK VALVES SHALL BE LINE SIZE.
3. CONTRACTOR SHALL PROVIDE AND INSTALL MULTI-PORT (4 PORT) PRESSURE INDICATOR WITH 1/4" O.D. COPPER TUBING WITH COMPRESSION FITTINGS AND GAUGE COCKS.
4. PUMP SUCTION: PROVIDE THERMOMETER, VICTAULIC VIC-300 SHUT-OFF BUTTERFLY VALVE WITH MEMORY STOP AND VICTAULIC SERIES 731-D SUCTION DIFFUSER WITH TYPE 304 STAINLESS STEEL STRAINER.
5. PUMP DISCHARGE: PROVIDED THERMOMETER, VICTAULIC VIC- 300 COMBINATION SHUT-OFF / THROTTLING / BALANCING BUTTERFLY VALVE WITH MEMORY STOP, VICTAULIC SERIES 716 VIC-CHECK NON-SLAM SPRING LOADED CHECK VALVE AND VICTAULIC 90° LONG RADIUS ELBOW.
6. PROVIDE RIGID VICTAULIC COUPLING STYLE 107 FOR PIPE SIZES LESS THAN 12" AND VICTAULIC STYLE W07 AGS FOR PIPING 14" AND GREATER.
7. BUTTERFLY VALVES SHALL BE PROVIDED WITH MEMORY STOP REGARDLESS OF SIZE. FOR BUTTERFLY VALVES LARGER THAN 6" PROVIDE HAND-WHEEL AND GEAR DRIVE WITH MEMORY STOP.
8. VALVES SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS TO PERMIT REMOVAL OF BONNET
9. PIPE HANGERS SHALL BE SIZED TO SUPPORT THE WEIGHT OF PUMP, PIPING AND FITTINGS.

SPLIT - COUPLED VERTICAL IN - LINE (VICTAULIC PUMP STACK) PIPING DETAIL — 04
NOT TO SCALE

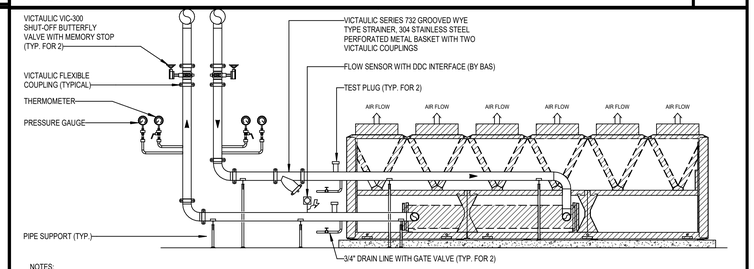


BYPASS TYPE CHEMICAL FEEDER PIPING DETAIL — 03
NOT TO SCALE



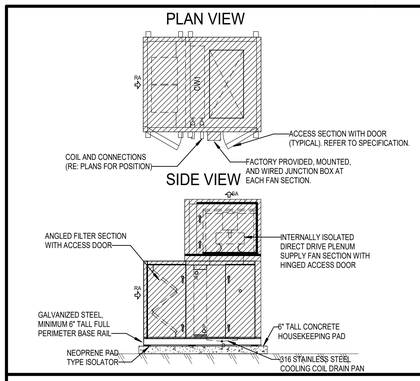
NOTES:
BAS SUBCONTRACTOR SHALL PROVIDE AND INSTALL A CARBON MONOXIDE DETECTOR / CONTROLLER AS REQUIRED PER ADMINISTRATIVE RULES OF THE TEXAS DEPARTMENT OF LICENSING AND REGULATION 16 TEXAS ADMINISTRATIVE CODE, CHAPTER 65, 65.603. BOILER ROOM VENTILATION. REFER TO DIRECT DIGITAL CONTROLS AND SEQUENCE OF OPERATION SPECIFICATION.

CONDENSING BOILER PIPING DETAIL — 02
NOT TO SCALE



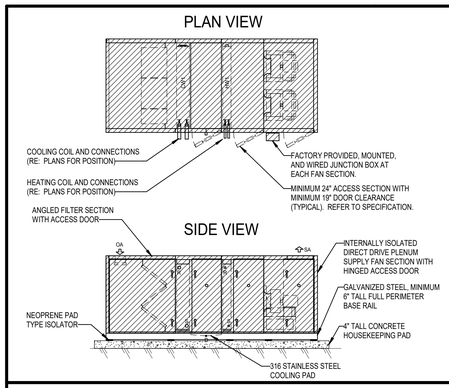
NOTES:
1. EXTERIOR PIPE SHALL BE INSULATED AND WRAPPED WITH ALUMINUM JACKET; REFER TO SPECIFICATIONS SECTION 23 07 19.
2. VICTAULIC SHUT-OFF VALVE SHALL BE LINE SIZE.
3. FLOW SWITCH SHALL BE INSTALLED IN UPRIGHT POSITION LOCATED IN HORIZONTAL SECTION OF PIPE RUN OF AT LEAST (5) FIVE PIPE DIAMETERS ON EACH SIDE OF THE FLOW SWITCH; FLOW SWITCH MAY BE INSTALLED IN VERTICAL PIPE IF THE FLOW IS IN THE UPRIGHT DIRECTION.
4. VICTAULIC BUTTERFLY VALVES SHALL BE PROVIDED WITH MEMORY STOP REGARDLESS OF SIZE. FOR BUTTERFLY VALVES LARGER THAN 6" PROVIDE HAND-WHEEL AND GEAR DRIVE WITH MEMORY STOP.
5. PROVIDE TYPE WSW - TWO LAYERS OF 3/8" THICK NEOPRENE PAD CONSISTING OF SQUARE WAFFLE MODULES SEPARATED BY A 16 GAUGE GALVANIZED SHIM. REFER TO SPECIFICATION SECTION 23 05 48.
6. PROVIDE A MINIMUM OF (3) THREE VICTAULIC FLEXIBLE COUPLINGS ON CHILLER INLET AND OUTLET FOR REDUCTION OF THE TRANSMISSION OF VIBRATION; FLEXIBLE PIPE CONNECTORS NOT REQUIRED WHEN UTILIZING 3 VICTAULIC FLEX COUPLINGS
7. PROVIDE FLEXIBLE VICTAULIC GROOVED COUPLING STYLE 177 FOR PIPE SIZES LESS THAN 12" AND VICTAULIC STYLE W77 AGS FOR PIPING 14" AND GREATER.

AIR - COOLED CHILLER PIPING (VICTAULIC CONNECTION) DETAIL — 01
NOT TO SCALE



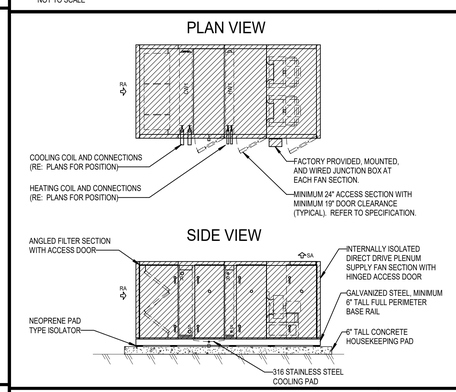
NOTES:
1. REFER TO SPECIFICATION SECTION 23 73 13 MODULAR INDOOR CENTRAL - STATION AIR - HANDLING UNITS FOR FURTHER REQUIREMENTS.
2. REFER TO MODULAR INDOOR CENTRAL - STATION AIR HANDLING UNIT EQUIPMENT SCHEDULE FOR PERFORMANCE, COOLING/HEATING COIL ARRANGEMENT, AND DIMENSIONAL DATA.
3. PROVIDE INTERNAL FLEXIBLE CONNECTION BETWEEN FAN AND AIR UNIT CASING. FLEXIBLE CONNECTION BETWEEN AIR UNIT CASING AND CONNECTING DUCT SHALL NOT BE PROVIDED WHEN FAN IS INTERNALLY ISOLATED WITH FLEXIBLE CONNECTION TO CASING.
4. PROVIDE MOTOR SHAFT GROUNDING KIT FOR ALL AIR HANDLING UNIT MOTORS; KITS SHALL BE FACTORY PROVIDED AND INSTALLED PRIOR TO SHIPMENT.
5. FOR AIR HANDLING UNITS WITH MORE THAN ONE FAN AND TO ALLOW FOR A SINGLE CONNECTION TO A SINGLE VARIABLE FREQUENCY DRIVE, PROVIDE A FACTORY MOUNTED AND WIRED OVERLOAD PANEL.
6. CONTRACTOR SHALL PROVIDE TRAPPED CONDENSATE DRAIN LINE ROUTED TO NEAREST APPROVED FLOOR DRAIN AND MUST NOT POSE A TRIP HAZARD.
7. CONTRACTOR SHALL INSTALL PIPING WITH PIPING SPECIALTIES TO AIR HANDLING UNIT COILS IN A MANNER SUCH THAT ALL ACCESS DOORS SHALL BE ABLE TO FULLY SWING OPEN AND TO ALLOW SERVICE AND MAINTENANCE.
8. PROVIDE ACCESS SECTIONS BETWEEN PARALLEL COIL SECTIONS, UPSTREAM OF COIL SECTIONS, UPSTREAM AND DOWNSTREAM OF ENERGY RECOVERY WHEELS, IN FAN SECTIONS, FILTER SECTIONS AND MIXING BOXES. SECTIONS SHALL BE OF SAME CONSTRUCTION AS THE REST OF THE UNIT; DOUBLE WALL GALVANIZED STEEL CONSTRUCTION.

TYPICAL MODULAR INDOOR VERTICAL CENTRAL - STATION AIR - HANDLING UNIT DETAIL — 10
NOT TO SCALE



NOTES:
1. REFER TO SPECIFICATION SECTION 23 73 13 MODULAR INDOOR CENTRAL - STATION AIR - HANDLING UNITS FOR FURTHER REQUIREMENTS.
2. REFER TO MODULAR INDOOR CENTRAL - STATION AIR HANDLING UNIT EQUIPMENT SCHEDULE FOR PERFORMANCE, COOLING/HEATING COIL ARRANGEMENT, AND DIMENSIONAL DATA.
3. PROVIDE INTERNAL FLEXIBLE CONNECTION BETWEEN FAN AND AIR UNIT CASING. FLEXIBLE CONNECTION BETWEEN AIR UNIT CASING AND CONNECTING DUCT SHALL NOT BE PROVIDED WHEN FAN IS INTERNALLY ISOLATED WITH FLEXIBLE CONNECTION TO CASING.
4. PROVIDE MOTOR SHAFT GROUNDING KIT FOR ALL AIR HANDLING UNIT MOTORS; KITS SHALL BE FACTORY PROVIDED AND INSTALLED PRIOR TO SHIPMENT.
5. FOR AIR HANDLING UNITS WITH MORE THAN ONE FAN AND TO ALLOW FOR A SINGLE CONNECTION TO A SINGLE VARIABLE FREQUENCY DRIVE, PROVIDE A FACTORY MOUNTED AND WIRED OVERLOAD PANEL.
6. CONTRACTOR SHALL PROVIDE TRAPPED CONDENSATE DRAIN LINE ROUTED TO NEAREST APPROVED FLOOR DRAIN AND MUST NOT POSE A TRIP HAZARD.
7. CONTRACTOR SHALL INSTALL PIPING WITH PIPING SPECIALTIES TO AIR HANDLING UNIT COILS IN A MANNER SUCH THAT ALL ACCESS DOORS SHALL BE ABLE TO FULLY SWING OPEN AND TO ALLOW SERVICE AND MAINTENANCE.
8. PROVIDE MINIMUM 24" ACCESS SECTION WITH MINIMUM 19" DOOR CLEARANCE; PROVIDE ACCESS SECTIONS BETWEEN PARALLEL COIL SECTIONS, UPSTREAM OF COIL SECTIONS, UPSTREAM AND DOWNSTREAM OF ENERGY RECOVERY WHEELS, IN FAN SECTIONS, FILTER SECTIONS AND MIXING BOXES. SECTIONS SHALL BE OF SAME CONSTRUCTION AS THE REST OF THE UNIT; DOUBLE WALL GALVANIZED STEEL CONSTRUCTION.

TYPICAL MODULAR INDOOR CENTRAL - STATION OUTSIDE AIR - HANDLING UNIT DETAIL — 09
NOT TO SCALE



NOTES:
1. REFER TO SPECIFICATION SECTION 23 73 13 MODULAR INDOOR CENTRAL - STATION AIR - HANDLING UNITS FOR FURTHER REQUIREMENTS.
2. REFER TO MODULAR INDOOR CENTRAL - STATION AIR HANDLING UNIT EQUIPMENT SCHEDULE FOR PERFORMANCE, COOLING/HEATING COIL ARRANGEMENT, AND DIMENSIONAL DATA.
3. PROVIDE INTERNAL FLEXIBLE CONNECTION BETWEEN FAN AND AIR UNIT CASING. FLEXIBLE CONNECTION BETWEEN AIR UNIT CASING AND CONNECTING DUCT SHALL NOT BE PROVIDED WHEN FAN IS INTERNALLY ISOLATED WITH FLEXIBLE CONNECTION TO CASING.
4. PROVIDE MOTOR SHAFT GROUNDING KIT FOR ALL AIR HANDLING UNIT MOTORS; KITS SHALL BE FACTORY PROVIDED AND INSTALLED PRIOR TO SHIPMENT.
5. FOR AIR HANDLING UNITS WITH MORE THAN ONE FAN AND TO ALLOW FOR A SINGLE CONNECTION TO A SINGLE VARIABLE FREQUENCY DRIVE, PROVIDE A FACTORY MOUNTED AND WIRED OVERLOAD PANEL.
6. CONTRACTOR SHALL PROVIDE TRAPPED CONDENSATE DRAIN LINE ROUTED TO NEAREST APPROVED FLOOR DRAIN AND MUST NOT POSE A TRIP HAZARD.
7. CONTRACTOR SHALL INSTALL PIPING WITH PIPING SPECIALTIES TO AIR HANDLING UNIT COILS IN A MANNER SUCH THAT ALL ACCESS DOORS SHALL BE ABLE TO FULLY SWING OPEN AND TO ALLOW SERVICE AND MAINTENANCE.
8. PROVIDE MINIMUM 24" ACCESS SECTION WITH MINIMUM 19" DOOR CLEARANCE; PROVIDE ACCESS SECTIONS BETWEEN PARALLEL COIL SECTIONS, UPSTREAM OF COIL SECTIONS, UPSTREAM AND DOWNSTREAM OF ENERGY RECOVERY WHEELS, IN FAN SECTIONS, FILTER SECTIONS AND MIXING BOXES. SECTIONS SHALL BE OF SAME CONSTRUCTION AS THE REST OF THE UNIT; DOUBLE WALL GALVANIZED STEEL CONSTRUCTION.

TYPICAL MODULAR INDOOR CENTRAL - STATION AIR - HANDLING UNIT DETAIL — 08
NOT TO SCALE

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CONSULTANT NAME
T 000-000-0000
LANDSCAPE
CONSULTANT NAME
T 000-000-0000
STRUCTURAL
CONSULTANT NAME
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MEP
CONSULTANT NAME
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ACOUSTIC
CONSULTANT NAME
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THEATER
CONSULTANT NAME
T 000-000-0000
FOOD SERVICE
CONSULTANT NAME
T 000-000-0000
OTHER
CONSULTANT NAME
T 000-000-0000
LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT

K
L
KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
MITAL J. PATEL
111622
LICENSED PROFESSIONAL ENGINEER
05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

CHECKED BY: MP
DRAWN BY: OG

MECHANICAL DETAILS-CTE

M-601.C

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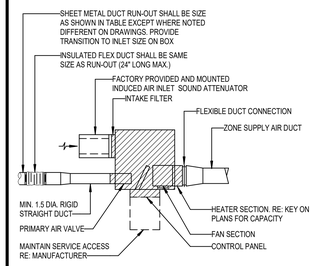
6/3/2025 12:39:59 PM

MECHANICAL DETAILS-CTE
M-602.C
FOR BLUEBEAM LABELING/OCR:

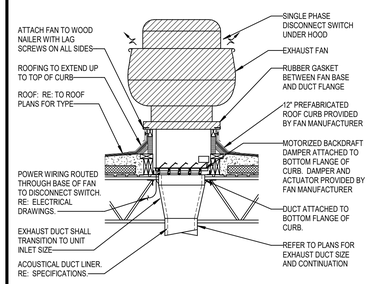


NOTE:
1. HOT WATER COILS SHALL BE 1 OR 2 ROWS AND A MAXIMUM OF 10 FNS PER INCH. ENTERING WATER TEMPERATURE SHALL BE 180° AND WATER PRESSURE DROP SHALL NOT EXCEED 5 FT. W.G. AT SCHEDULED GPM. THE AIR PRESSURE DROP THROUGH THE COIL SHALL NOT EXCEED 0.24" WG. THE MAXIMUM FACE VELOCITY SHALL BE 750 FPM.
2. MAXIMUM VELOCITY AT BOX INLET SHALL NOT EXCEED 2000 FPM.
3. SIZE ALL FAN MOTORS TO OVERCOME 0.35" EXTERNAL STATIC PRESSURE. MINIMUM MOTOR SIZES SHALL BE AS NOTED IN THE TABLE.
4. HEATING COIL NOT REQUIRED IF CAPACITY IS NOT LISTED IN KEY.
5. FAN ASSEMBLY: ECM VARIABLE SPEED MOTOR; 277V/1PH/60HZ. COORDINATE WITH ELECTRICAL PLANS. REFER TO AIR TERMINAL SPECS FOR FURTHER REQUIREMENTS.
6. ANY DEVIATIONS OF ELECTRICAL CHARACTERISTICS LISTED ON CHART BELOW RESULTING IN POWER DESIGN CHANGES SHALL BE RESPONSIBILITY OF CONTRACTOR.

TERMINAL BOX SCHEDULE - BASED ON TITUS DTFS-F

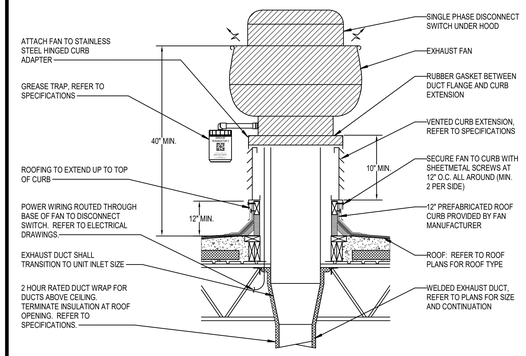
DESIGNATION	A	B	C	D	E	G
CFM RANGE	1-350	351-650	651-1,000	1,000-1,400	1,401-2,000	2,001-2,600
INLET SIZE	6"	8"	10"	12"	14"	16"
DUCT SIZE	8"	10"	12"	14"	16"	18"
HP (MAX)	1/3	1/3	1/3	1/2	3/4	(2) @ 3/4
MOTOR AMPS (MAX)	0.76	1.4	1.9	3.3	4.9	11.8

SERIES FAN - POWERED AIR TERMINAL UNIT WITH HOT WATER HEAT DETAIL
NOT TO SCALE
09



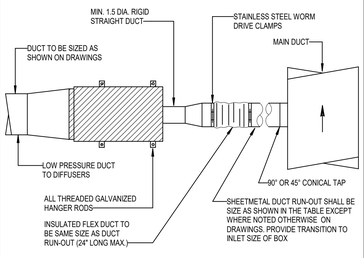
NOTES:
1. FOR THREE PHASE FANS, REFER TO THREE PHASE DISCONNECT SWITCH DETAIL
2. PROVIDE DUCT LINER IN THE FIRST 10 FEET OF DUCT FROM FAN.
3. ATTACH ROOF MOUNTED EQUIPMENT TO ROOF CURB AS REQUIRED TO RESIST UPLIFT DUE TO WINDS UP TO 120 M.P.H. SPEED.

UPBLAST ROOF MOUNTED EXHAUST FAN DETAIL
NOT TO SCALE
08



NOTES:
1. FOR THREE PHASE FANS, REFER TO THREE PHASE DISCONNECT SWITCH DETAIL.
2. REFER TO DIVISION 7 FOR ADDITIONAL ROOFING REQUIREMENTS.
3. ROOF CURB MUST BE COORDINATED WITH DIVISION 7 AND STRUCTURAL.

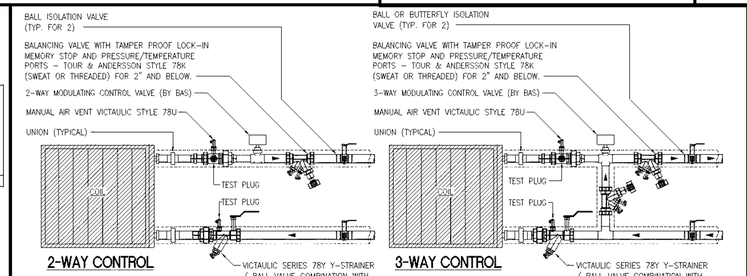
UPBLAST ROOF MOUNTED KITCHEN HOOD EXHAUST FAN DETAIL
NOT TO SCALE
07



TERMINAL BOX BRANCH DUCT SCHEDULE

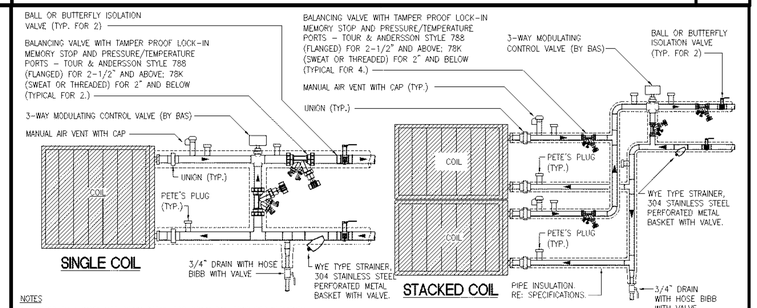
DESIGNATION	A	B	C	D	E
CFM RANGE	1-350	351-650	651-1,000	1,001-1,400	1,401-1,900
INLET SIZE	6"	8"	10"	12"	14"
DUCT SIZE	8"	10"	12"	14"	16"

SINGLE DUCT AIR TERMINAL UNIT DETAIL
NOT TO SCALE
06



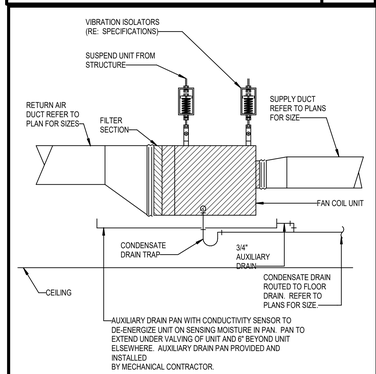
NOTES
1. REFER TO CONDENSATE DRAIN DETAIL FOR DRAIN PAN TRAP REQUIREMENTS
2. PROVIDE PIPE REDUCERS FROM INLET/OUTLET OF CONTROL VALVES AS REQUIRED.
3. ISOLATION AND FLOW CONTROL/BALANCING VALVES SHALL MATCH BRANCH PIPING SIZE. REFER TO MECHANICAL PIPING DIAGRAMS FOR BRANCH PIPE SIZES.
4. FOR ALL FLOW CONTROL BALANCING VALVES, ALL HANDLES AND PRESSURE/SENSOR PORTS SHALL HAVE EXTENDED STEMS TO ACCOMMODATE INSULATION.
5. MECHANICAL CONTRACTOR SHALL COORDINATE PIPE INSULATION THICKNESS WITH BALANCING VALVE PROVIDER.
6. ADDITIONAL ISOLATION VALVES SHALL BE PROVIDED ON SUPPLY AND RETURN LINES AS SHOWN TO COMPLETELY ISOLATE COIL AND AVOID DRAINING ENTIRE HYDRONIC LOOP.
7. REFER TO VICTAULIC INSTALLATION MANUAL FOR INSTALLATION INSTRUCTIONS.

VICTAULIC COIL-KIT PIPING ACCESSORIES WITH 2-WAY OR 3 WAY CONTROL VALVE CONNECTION DETAIL (FOR PIPING 2" AND BELOW)
NOT TO SCALE
05

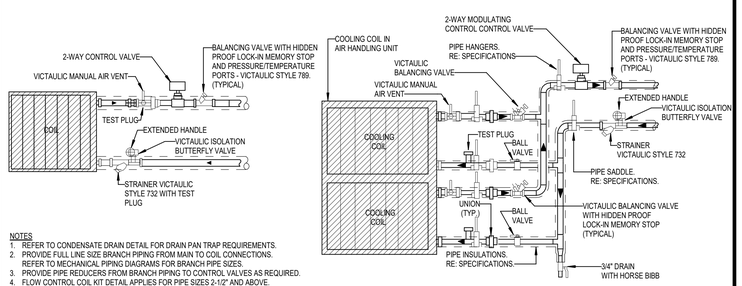


NOTES
1. REFER TO CONDENSATE DRAIN DETAIL FOR DRAIN PAN TRAP REQUIREMENTS
2. PROVIDE PIPE REDUCERS FROM INLET/OUTLET OF CONTROL VALVES AS REQUIRED.
3. ISOLATION AND FLOW CONTROL/BALANCING VALVES SHALL MATCH BRANCH PIPING SIZE. REFER TO MECHANICAL PIPING DIAGRAMS FOR BRANCH PIPE SIZES.
4. FOR ALL FLOW CONTROL BALANCING VALVES, ALL HANDLES AND PRESSURE/SENSOR PORTS SHALL HAVE EXTENDED STEMS TO ACCOMMODATE INSULATION.
5. MECHANICAL CONTRACTOR SHALL COORDINATE PIPE INSULATION THICKNESS WITH BALANCING VALVE PROVIDER.
6. ADDITIONAL ISOLATION VALVES SHALL BE PROVIDED ON SUPPLY AND RETURN LINES AS SHOWN TO COMPLETELY ISOLATE COIL AND AVOID DRAINING ENTIRE HYDRONIC LOOP.

COIL PIPING ACCESSORIES WITH 3 WAY COIL KIT CONTROL VALVE CONNECTION DETAIL (FOR 2-1/2" OR LARGER)
NOT TO SCALE
04

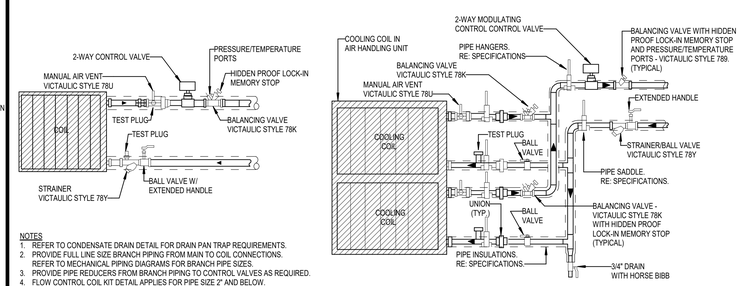


FAN COIL UNIT DETAIL
NOT TO SCALE
03



NOTES
1. REFER TO CONDENSATE DRAIN DETAIL FOR DRAIN PAN TRAP REQUIREMENTS.
2. PROVIDE FULL LINE SIZE BRANCH PIPING FROM MAIN TO COIL CONNECTIONS. REFER TO MECHANICAL PIPING DIAGRAMS FOR BRANCH PIPE SIZES.
3. PROVIDE PIPE REDUCERS FROM BRANCH PIPING TO CONTROL VALVES AS REQUIRED.
4. FLOW CONTROL COIL KIT DETAIL APPLIES FOR PIPE SIZES 2-1/2" AND ABOVE.
5. ALL HANDLES AND PRESSURE/SENSOR PORTS SHALL HAVE EXTENDED STEMS TO ACCOMMODATE INSULATION.
6. MECHANICAL CONTRACTOR SHALL COORDINATE PIPE INSULATION THICKNESS WITH COIL KIT PROVIDER.
7. ADDITIONAL ISOLATION VALVES SHALL BE PROVIDED ON SUPPLY AND RETURN LINES AS SHOWN TO COMPLETELY ISOLATE COIL AND AVOID DRAINING ENTIRE HYDRONIC LOOP.

AIR HANDLER SINGLE AND STACKED COIL WITH 2-WAY COIL KIT VALVE PIPING DETAIL (2-1/2" OR LARGER)
NOT TO SCALE
02



NOTES
1. REFER TO CONDENSATE DRAIN DETAIL FOR DRAIN PAN TRAP REQUIREMENTS.
2. PROVIDE FULL LINE SIZE BRANCH PIPING FROM MAIN TO COIL CONNECTIONS. REFER TO MECHANICAL PIPING DIAGRAMS FOR BRANCH PIPE SIZES.
3. PROVIDE PIPE REDUCERS FROM BRANCH PIPING TO CONTROL VALVES AS REQUIRED.
4. FLOW CONTROL COIL KIT DETAIL APPLIES FOR PIPE SIZE 2" AND BELOW.
5. ALL HANDLES AND PRESSURE/SENSOR PORTS SHALL HAVE EXTENDED STEMS TO ACCOMMODATE INSULATION.
6. MECHANICAL CONTRACTOR SHALL COORDINATE PIPE INSULATION THICKNESS WITH COIL KIT PROVIDER.
7. ADDITIONAL ISOLATION VALVES SHALL BE PROVIDED ON SUPPLY AND RETURN LINES AS SHOWN TO COMPLETELY ISOLATE COIL AND AVOID DRAINING ENTIRE HYDRONIC LOOP.

AIR HANDLER SINGLE AND STACKED COIL WITH 2-WAY COIL KIT VALVE PIPING DETAIL (1/2" - 2" PIPE)
NOT TO SCALE
01

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TX Firm: BR 1608
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CONSULTANT NAME
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LANDSCAPE
CONSULTANT NAME
T-000-000-0000
STRUCTURAL
CONSULTANT NAME
T-000-000-0000
MEP
CONSULTANT NAME
T-000-000-0000
ACOUSTIC
CONSULTANT NAME
T-000-000-0000
THEATER
CONSULTANT NAME
T-000-000-0000
FOOD SERVICE
CONSULTANT NAME
T-000-000-0000
SIGN
CONSULTANT NAME
T-000-000-0000
LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations
BUILDING: CTE
25400 Willy Lane
Huffman, TX 77336
ISSUE FOR PROPOSAL

KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
MITAL J. PATEL
111622
05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

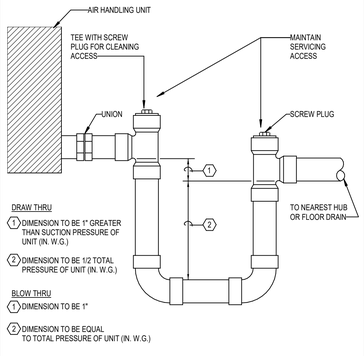
CHECKED BY: MP
DRAWN BY: OG

MECHANICAL DETAILS-CTE

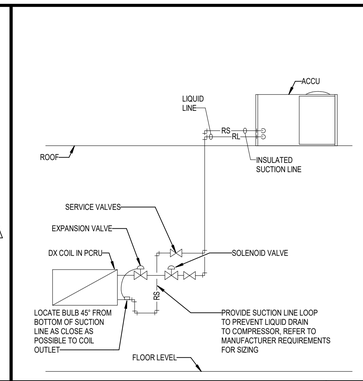
M-602.C

Plot Stamp:
6/3/2025 12:39:59 PM

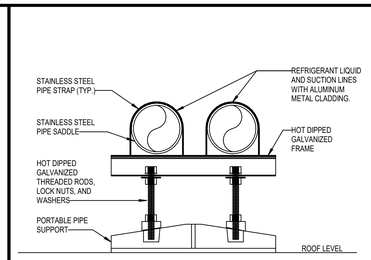
MECHANICAL DETAILS-CTE
M-603.C
FOR BLUEBEAM LABELING/OCR:



CONDENSATE TRAP PIPING DETAIL — 15
NOT TO SCALE



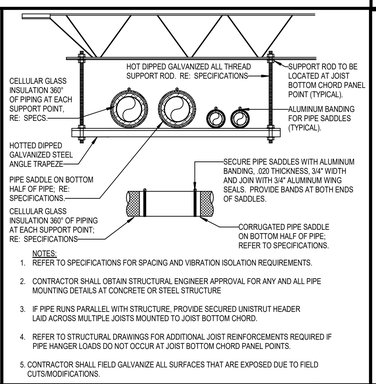
REFRIGERANT PIPING - ROOF ACCU DETAIL — 14
NOT TO SCALE



NOTE:

1. PORTABLE PIPE SUPPORTS SHALL BE MANUFACTURED BY ADVANCED SUPPORT PRODUCT, INC., MODEL SS1000A/SS2000-CB-ADJ (AS APPLICABLE) OR PRIOR APPROVAL EQUAL.
2. ALL METAL MATERIALS SHALL BE HOT-DIPPED GALVANIZED.
3. CONTRACTOR SHALL FIELD GALVANIZE ALL SURFACES THAT ARE EXPOSED DUE TO FIELD CUTS/ MODIFICATIONS.

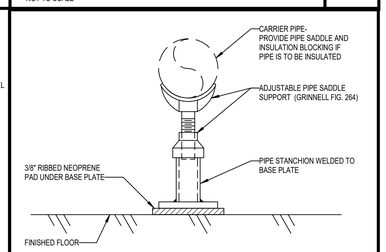
ROOF MOUNTED PORTABLE REFRIGERANT PIPE SUPPORT DETAIL — 13
NOT TO SCALE



NOTES:

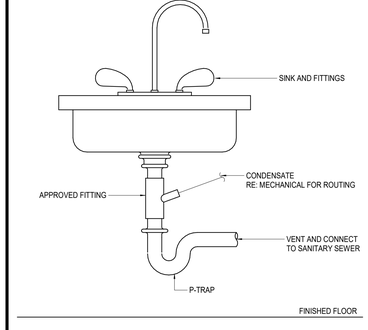
1. REFER TO SPECIFICATIONS FOR SPACING AND VIBRATION ISOLATION REQUIREMENTS.
2. CONTRACTOR SHALL OBTAIN STRUCTURAL ENGINEER APPROVAL FOR ANY AND ALL PIPE MOUNTING DETAILS AT CONCRETE OR STEEL STRUCTURE
3. IF PIPE RUNS PARALLEL WITH STRUCTURE, PROVIDE SECURED UNISTRUT HEADER LAID ACROSS MULTIPLE JOISTS MOUNTED TO JOIST BOTTOM CHORD.
4. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL JOIST REINFORCEMENTS REQUIRED IF PIPE HANGER LOADS DO NOT OCCUR AT JOIST BOTTOM CHORD PANEL POINTS.
5. CONTRACTOR SHALL FIELD GALVANIZE ALL SURFACES THAT ARE EXPOSED DUE TO FIELD CUTS/MODIFICATIONS.

PIPE HANGER TRAPEZE DETAIL — 12
NOT TO SCALE

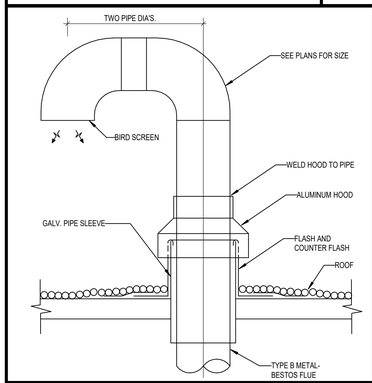


BASE PLATE DIMENSIONS		
PIPE SIZE	PIPE STANCHION SIZE	BASE PLATE SIZE
2 1/2" - 3"	2 1/2"	3/8"x6"x6"
4" - 12"	3"	3/8"x8"x8"
14" - 16"	4"	3/8"x6"x6"
18" - 36"	6"	3/8"x10"x10"

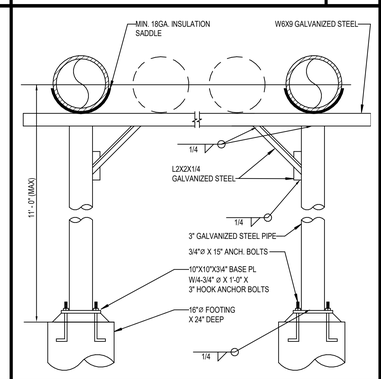
FLOOR MOUNTED PIPE STAND DETAIL — 11
NOT TO SCALE



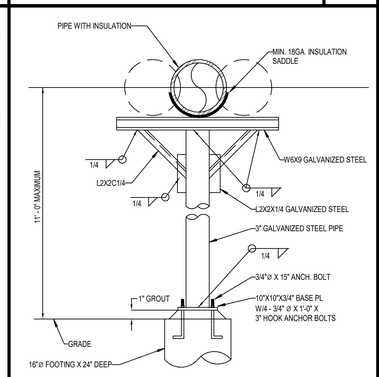
CONDENSATE TO SINK TAILPIECE DETAIL — 16
NOT TO SCALE



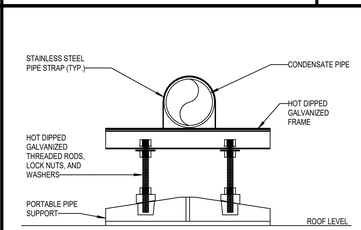
DRYER VENT TO GOOSENECK DETAIL — 10
NOT TO SCALE



DOUBLE PIPE STANCHION PIPE SUPPORT DETAIL — 09
NOT TO SCALE



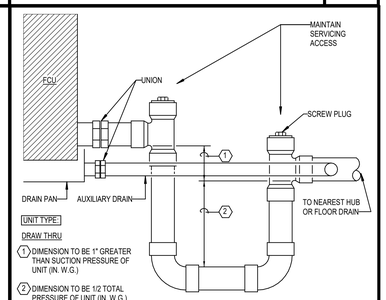
SINGLE COLUMN PIPE STANCHION DETAIL — 08
NOT TO SCALE



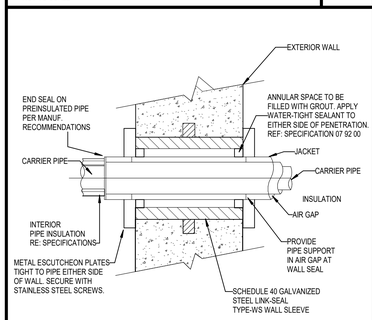
NOTES:

1. PORTABLE PIPE SUPPORTS SHALL BE MANUFACTURED BY ADVANCED SUPPORT PRODUCT, INC., MODEL SS1000A/SS2000-CB-ADJ (AS APPLICABLE) OR PRIOR APPROVED EQUAL.
2. ALL METALS MATERIALS SHALL BE HOT-DIPPED GALVANIZED.
3. CONTRACTOR SHALL FIELD GALVANIZE ALL SURFACES THAT ARE EXPOSED DUE TO FIELD CUTS/ MODIFICATIONS.

CONDENSATE PIPE SUPPORT DETAIL — 07
NOT TO SCALE

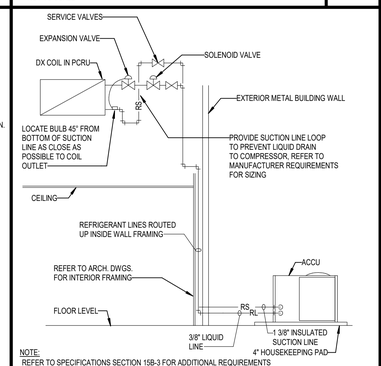


FAN COIL CONDENSATE DRAIN DETAIL — 06
NOT TO SCALE



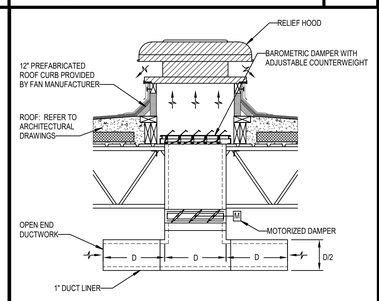
NOTE:
PROVIDE PIPE ANCHOR WITHIN 5' - 0" OF BUILDING WALL

ABOVE GRADE EXTERIOR WALL PIPE PENETRATION DETAIL — 05
NOT TO SCALE



NOTE:
REFER TO SPECIFICATIONS SECTION 15B-3 FOR ADDITIONAL REQUIREMENTS ON REFRIGERANT PIPING.

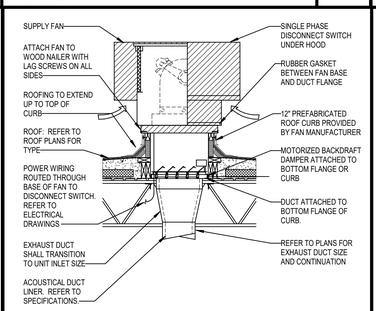
REFRIGERANT PIPING - FLOOR ACCU DETAIL — 04
NOT TO SCALE



NOTES:

1. UNDER NO CIRCUMSTANCES SHOULD EQUIPMENT OF ANY KIND BE MOUNTED TO THE SIDE OF THE ROOF CURB.
2. FAN MANUFACTURER TO PROVIDE BAROMETRIC DAMPER AND ROOF CURB.
3. CONTROLS CONTRACTOR TO PROVIDE AND INSTALL CONTROL DAMPER WITH MOTORIZED DAMPER OPERATOR MOUNTED TO THE EXTERIOR OF DUCT.
4. MINIMUM DIMENSION OF CURB TO BE 12"

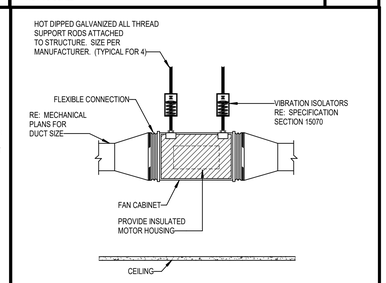
ROOF MOUNTED RELIEF HOOD DETAIL — 03
NOT TO SCALE



NOTES:

1. FOR THREE PHASE FANS, REFER TO THREE PHASE DISCONNECT SWITCH DETAIL
2. PROVIDE DUCT LINER IN THE FIRST 10 FEET OF DUCT FROM FAN.

HOODED SUPPLY ROOF MOUNTED FAN DETAIL — 02
NOT TO SCALE



NOTES:

1. INSULATE FAN INTERIOR WITH 1" THICK 3.0 P.F.C. DENSITY ACOUSTICAL LINER WITH 100% ADHESIVE AND STICKPINS PER SMACNA. COAT AIR SIDE WITH FOSTER 40-20 ANTI-MICROBIAL COATING.
2. FAN SHALL INCLUDE (2) REMOVABLE ACCESS PANELS LOCATED PERPENDICULAR TO THE MOTOR MOUNTING PANEL. ACCESS PANELS MUST BE OF SUFFICIENT SIZE TO PERMIT EASY ACCESS TO ALL INTERIOR COMPONENTS.

IN-LINE EXHAUST FAN DETAIL — 01
NOT TO SCALE

PBK

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CIVIL
CONSULTANT NAME
T 000-000-0000
LANDSCAPE
CONSULTANT NAME
T 000-000-0000
STRUCTURAL
CONSULTANT NAME
T 000-000-0000
MEP
CONSULTANT NAME
T 000-000-0000
ACOUSTIC
CONSULTANT NAME
T 000-000-0000
THEATER
CONSULTANT NAME
T 000-000-0000
FOOD SERVICE
CONSULTANT NAME
T 000-000-0000
OTHER
CONSULTANT NAME
T 000-000-0000
LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE
25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
MITAL J. PATEL
111622
05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

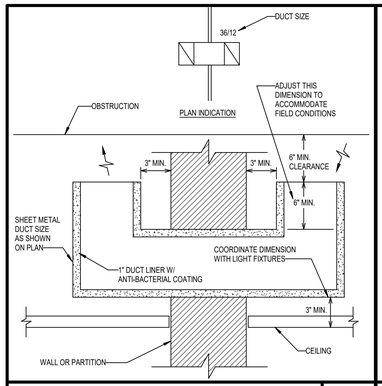
CHECKED BY: MP
DRAWN BY: OG

MECHANICAL DETAILS-CTE

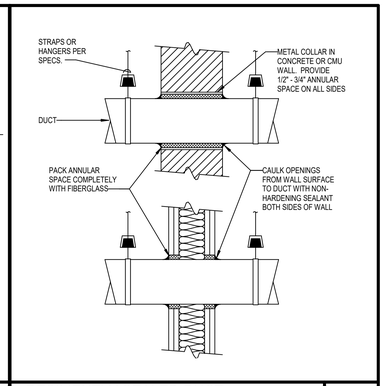
M-603.C

Plot Stamp:
6/3/2025 12:39:59 PM

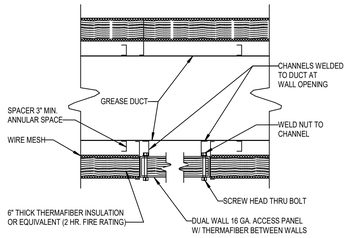
MECHANICAL DETAILS-CTE
M-604.C
FOR BLUEBEAM LABELING/OCR:



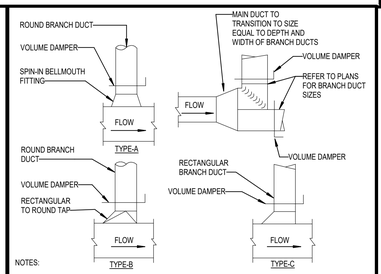
TRANSFER DUCT DETAIL
NOT TO SCALE
07



RESILIENTLY SEALED DUCT PENETRATION DETAIL
NOT TO SCALE
06



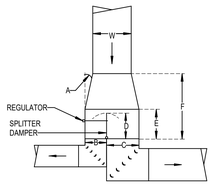
GREASE DUCT ACCESS PANEL DETAIL
NOT TO SCALE
05



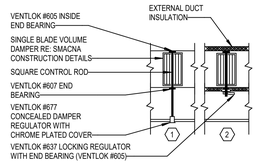
NOTES:
1. USE TYPE "A" CONNECTION ONLY FOR BRANCHES TO SINGLE DIFFUSERS, TERMINAL BOXES OR GRILLES FROM THE MAIN.
2. USE TYPE "B" OR "C" BRANCH WHERE BRANCH FLOW IS 20% OR LESS OF MAIN.
3. NO DAMPERS ARE REQ'D ON VAV SYSTEMS BETWEEN AIR HANDLING UNIT AND VAV TERMINAL BOXES.
4. USE TEE SPLIT WHERE BRANCH FLOW IS MORE THAN 20% OF MAIN.
5. FOR TYPE "A" CONNECTION TO DIFFUSERS, THE ROUND DUCT RUN-OUT SIZE SHALL BE THE SAME SIZE AS THE NECK OF DIFFUSER, UNLESS OTHERWISE INDICATED.
4. PROVIDE VOLUME DAMPERS ON SUPPLY, OUTSIDE AIR, RETURN AND EXHAUST DUCT SYSTEMS AS SHOWN.

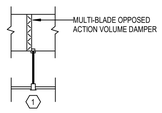
BRANCH DUCT DETAILS
NOT TO SCALE
04

SPLITTER



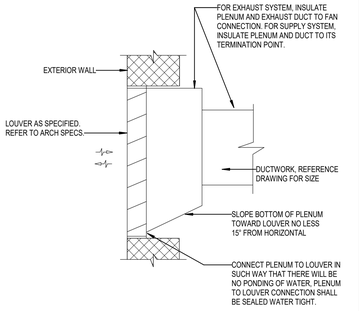
DIMENSIONS
1. ANGLE 'A' TO BE 15° OR LESS (BOTH SIDES)
2. SEE FLOOR PLANS FOR B, C, & W.
3. SPLITTER DAMPER LENGTH D = 1.5 x B
4. E = D + 3" MINIMUM
5. VERTICAL DIMENSION TO BE MAINTAINED THRU F.
6. CHANGE IN VERTICAL DIMENSION TO OCCUR AFTER TURNS.



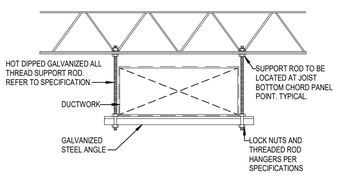


1 DAMPER ABOVE INACCESSIBLE CEILING
2 DAMPER ABOVE LAY-IN CEILING

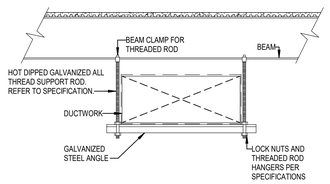
DUCT CONSTRUCTION DETAIL
NOT TO SCALE
01



DUCTWORK AT LOUVER CONNECTION DETAIL
NOT TO SCALE
03



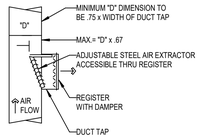
NOTES:
1. FOLLOW SMACNA GUIDELINES FOR SPACING REQUIREMENTS.
2. CONTRACTOR SHALL OBTAIN STRUCTURAL ENGINEER APPROVAL FOR ANY AND ALL DUCTWORK MOUNTING DETAILS AT CONCRETE.
3. CONTRACTOR SHALL INSTALL DUCT HANGER ROD WITHIN 3" AT JOIST BOTTOM CHORD PANEL POINT. IF HANGER ROD DOES NOT OCCUR WITHIN 3" AT BOTTOM CHORD PANEL POINT THAN LOAD SHALL NOT EXCEED 100# CONCENTRATED LOAD AT EACH THREADED ROD HANGER LOCATION.
4. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL JOIST REINFORCEMENTS REQUIREMENTS IF DUCT HANGER RODS ARE MORE THAN 3" FROM JOIST BOTTOM CHORD PANEL POINT AND EXCEED 100# CONCENTRATED LOAD.
5. IF DUCT RUNS PARALLEL WITH STRUCTURE, PROVIDE SECURED UNISTRUT HEADER LAID ACROSS MULTIPLE JOISTS MOUNTED TO JOIST BOTTOM CHORD.
6. BEAM CLAMPS AND FLANGE CLIPS ARE NOT ACCEPTABLE FOR JOISTS.



NOTES:
1. FOLLOW SMACNA GUIDELINES FOR SPACING REQUIREMENTS.
2. CONTRACTOR SHALL OBTAIN STRUCTURAL ENGINEER APPROVAL FOR ANY AND ALL DUCTWORK MOUNTING DETAILS AT CONCRETE.

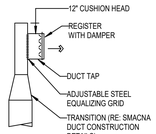
DUCT HANGER TRAPEZE DETAIL
NOT TO SCALE
02

AIR EXTRACTOR AT SIDEWALL REGISTER



1. MAX. WIDTH OF DUCT TAP SHALL BE 48". PROVIDE BOTTOM BRACKET FOR SUPPORT WHERE EXTRACTOR EXCEEDS 16".
2. MAX. HEIGHT OF DUCT TAP SHALL BE 12" (MIN. = 4")

SIDEWALL REGISTER AT END OF DUCT



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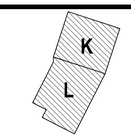
LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations
BUILDING: CTE
25400 Willy Lane
Huffman, TX 77336
ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT



KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
MITAL J. PATEL
111622
05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD
DATE 05/20/2025
PROJECT NUMBER 240157
DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

CHECKED BY: MP
DRAWN BY: OG

MECHANICAL DETAILS-CTE

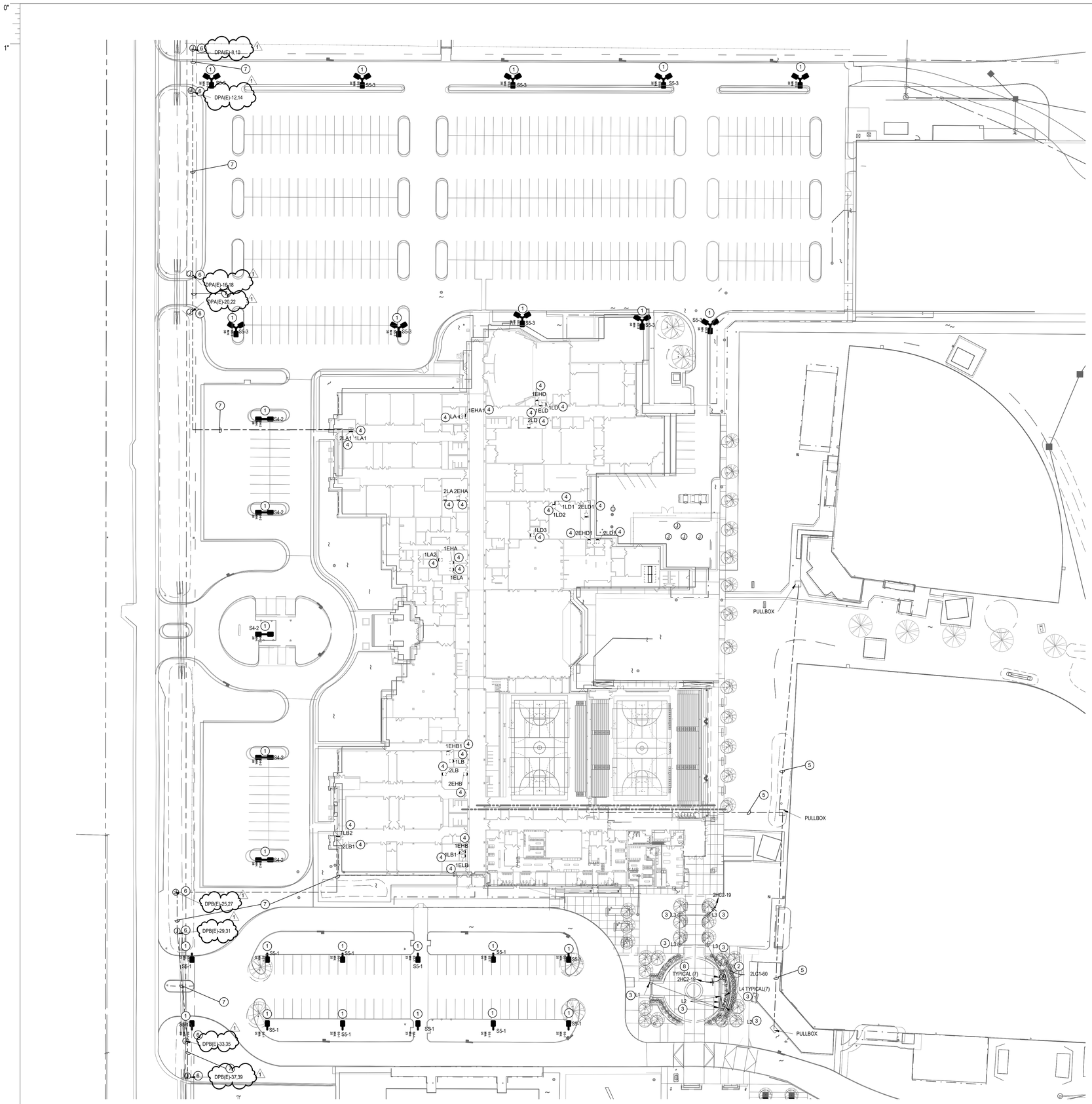
M-604.C

Plot Stamp:
6/3/2025 12:40:00 PM

ELECTRICAL SITE PLAN-GYM

ES-101.G

FOR BLUEBEAM LABELING/OCR:



1 ELECTRICAL SITE PLAN - COMPOSITE

SCALE: 1" = 40'-0"

SITE PLAN GENERAL NOTES:

1. COORDINATE ROUTING FOR ALL UNDERGROUND ELECTRICAL BRANCH CIRCUITS AND FEEDERS WITH OTHER DISCIPLINES PRIOR TO TRENCHING.
2. UNLESS NOTED OTHERWISE ALL UNDERGROUND CONDUIT SHOWN ON THIS PLAN TO BE MINIMUM 1" IN SIZE.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES CAUSED BY INSTALLATION OF NEW WORK.

SITE PLAN KEYNOTES:

1. CONTRACTOR SHALL REPLACE EXISTING POLE FIXTURES WITH NEW. ALL EXISTING CIRCUITRY AND CONTROLS SHALL BE REUSED.
2. PROVIDE JUNCTION BOX FOR POWER TO IRRIGATION CONTROLLER. REFER TO LANDSCAPE ARCHITECT DRAWINGS FOR EXACT LOCATION OF CONTROLLER PRIOR TO ROUGH-IN.
3. POWER TO LANDSCAPE FIXTURES, REFER TO LANDSCAPE FOR EXACT LOCATION AND VERIFY SPECIFICATION.
4. REPLACE SURGE PROTECTIVE DEVICE.
5. PROVIDE (2) 2" CONDUITS TO PULLBOX. COORDINATE EXACT LOCATION WITH TECHNOLOGY.
6. PROVIDE POWER TO MOTORIZED GATE OPERATOR. FIELD VERIFY CONNECTION LOCATION WITH EQUIPMENT REQUIREMENTS.
7. PROVIDE (2)1"CONDUITS FOR TECHNOLOGY AND POWER.
8. PROVIDE POWER TO SIGNAGE REFER TO LANDSCAPE FOR EXACT LOCATION AND VERIFY SPECIFICATION.

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LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS

KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61572
PROFESSIONAL ENGINEER

LEAF ENGINEERS
F-10672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 01	06/03/2025

CHECKED BY: PP

DRAWN BY: LT

ELECTRICAL SITE PLAN-GYM

ES-101.G

Plot Stamp:
6/3/2025 2:52:48 PM

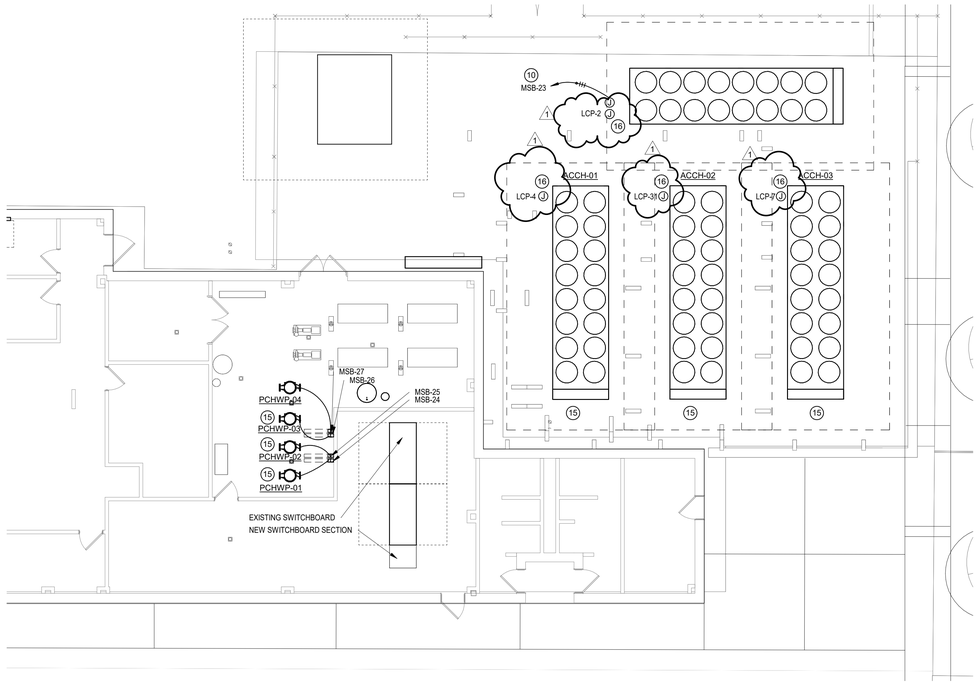
1ST FLOOR POWER PLAN - AREA F-GYM

E-101F.G

FOR BLUEBEAM LABELING/OCR:

0"

1"



HARGRAVE HIGH SCHOOL MECHANICAL EQUIPMENT CIRCUIT SCHEDULE

EQUIPMENT TAG	WIRE/CONDUIT SIZE	BREAKER SIZE	SOURCE PANEL
ACCH-01	4#500, 1#1/0G, 3- 1/2"	700A/3P	MSB
ACCH-02	4#500, 1#1/0G, 3- 1/2"	700A/3P	MSB
ACCH-03	4#500, 1#1/0G, 3- 1/2"	700A/3P	MSB
PCHP-01	4#3, 1#8G, 1-1/4"	80A/3P	MCC
PCHP-02	4#3, 1#8G, 1-1/4"	80A/3P	MCC
PCHP-03	4#3, 1#8G, 1-1/4"	80A/3P	MCC

* FOR ALL NEW CIRCUITS FED FROM THE EXISTING PANEL, REMOVE EXISTING STARTER AND CONTROL APPARATUS. PROVIDE NEW CIRCUIT BREAKER.

POWER PLAN GENERAL NOTES:

1. FOR EQUIPMENT OR DEVICES SHOWN ON ARCHITECTURAL DRAWINGS THAT REQUIRE POWER AND NOT IDENTIFIED ON ELECTRICAL PLANS, ASSUME AT A MINIMUM A DUPELX OUTLET, A DEDICATED CIRCUIT WITH 2#12,1#12G,3/4"C. WITH HOMERUN TO NEAREST 120/208V PANEL. ITEMS SUCH AS BUT NOT LIMITED TO ROLL DOWN DOORS, COUNTER DOORS, OVERHEAD GRILLES, DISPLAY CASES, HAND DRYERS, WATER COOLERS, ICE MAKERS, GARBAGE DISPOSALS, OSCILLATING FANS, LCD's, PROJECTORS, DISHWASHERS, MOTORIZED PROJECTION SCREENS, ETC.

2. DATA/COMMUNICATION OUTLETS ARE SHOWN ON THIS DRAWING FOR COORDINATION PURPOSES ONLY. PROVIDE AND INSTALL ALL CONDUITS AND BACK BOXES REQUIRED BY LOW VOLTAGE SYSTEMS. COORDINATE WITH 'TS' DRAWINGS, DETAILS, ETC. AND ARCHITECTURAL DRAWINGS FOR EXACT QUANTITIES, LOCATIONS, AND REQUIREMENTS PRIOR TO ROUGH-IN.

3. CONTRACTOR TO PROVIDE CONNECTION FROM EXHAUST FANS TO ALL MOTORIZED BACKDRAFT DAMPERS AS REQUIRED, COORDINATE WITH MECHANICAL.

4. ALL 15 AMP AND 20 AMP NON-LOCKING TYPE RECEPTACLES THAT ARE NOT LOCATED WITHIN DEDICATED APPLIANCE SPACE AND ARE BELOW 66" ABOVE FINISHED FLOOR SHALL BE TAMPER RESISTANT TYPE RECEPTACLES, PER NEC 406.12.

POWER KEYED NOTES:

1. POWER TO ACCESS CONTROL POWER SUPPLY COORDINATE MOUNTING HEIGHT AND LOCATION WITH SPECIAL SYSTEM CONTRACTOR.
2. POWER TO FIRE ALARM POWER SUPPLY; COORDINATE MOUNTING HEIGHT AND LOCATION WITH FIRE ALARM CONTRACTOR.
3. COORDINATE EXACT LOCATION, MOUNTING AND ALL POWER REQUIREMENTS WITH TECHNOLOGY CONTRACTOR PRIOR TO ROUGH-IN.
4. PROVIDE 5-20R QUAD RECEPACLE TO IDF EQUIPMENT IN THIS ROOM.
5. PROVIDE L5-30R RECEPACLE TO IDF EQUIPMENT IN THIS ROOM.
6. PROVIDE POWER FOR SCOREBOARD CLOCK. MOUNT THE CLOCK AT 74" AFF.
7. PROVIDE (1) 1" CONDUIT FROM PRIMARY SCOREBOARD LOCKER ROOM TO AUX SCOREBOARD LOCKER ROOM CLOCK.
8. PROVIDE JUNCTION BOX FOR POWER TO ELECTRIC HAND DRYER. VERIFY MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN.
9. PROVIDE POWER TO OH DOOR WITH A LOWER RAISE SWITCH. COORDINATE LOCATION WITH MANUFACTURER.
10. ROUTE NEW FEEDER WITH MECHANICAL PIPING INSIDE THE BUILDING. PROVIDE SUPPORTS AS REQUIRED.
11. PROVIDE POWER TO FAUCET. COORDINATE WITH PLUMBING FOR LOCATION AND REFER TO PLUMBING 08/P-603.
12. PROVIDE POWER TO DISPLAY CASE LIGHTING. WIRE THRU LIGHTING CONTACTOR AND CONTROL VIA BUILDING BAS. VERIFY EXACT LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
13. POWER TO TV. COORDINATE EXACT MOUNTING HEIGHT WITH TECHNOLOGY CONTRACTOR PRIOR TO ROUGH-IN.
14. PROVIDE POWER TO GRAPHIC DISPLAY. VERIFY LOCATION WITH ARCHITECT BEFORE ROUGH-IN.
15. CONTRACTOR SHALL REPLACE DISCONNECT, CONDUIT, BREAKER AND WIRE ASSOCIATED WITH THE REPLACEMENT OF THE EXISTING MECHANICAL EQUIPMENT. REFER TO CIRCUIT SCHEDULE ON THIS SHEET FOR BREAKER AND WIRE SIZE.
16. POWER FOR HEAT TRACE PIPING. COORDINATE WITH PLUMBING FOR EXACT MOUNTING HEIGHT & LOCATION PRIOR TO ROUGH-INS.

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LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS

KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
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PROFESSIONAL ENGINEER

LEAF ENGINEERS
F-18672

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HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 01	06/03/2025

CHECKED BY: PP

DRAWN BY: LT

1ST FLOOR POWER PLAN - AREA F-GYM

E-101F.G

Plot Stamp:
6/3/2025 2:53:07 PM

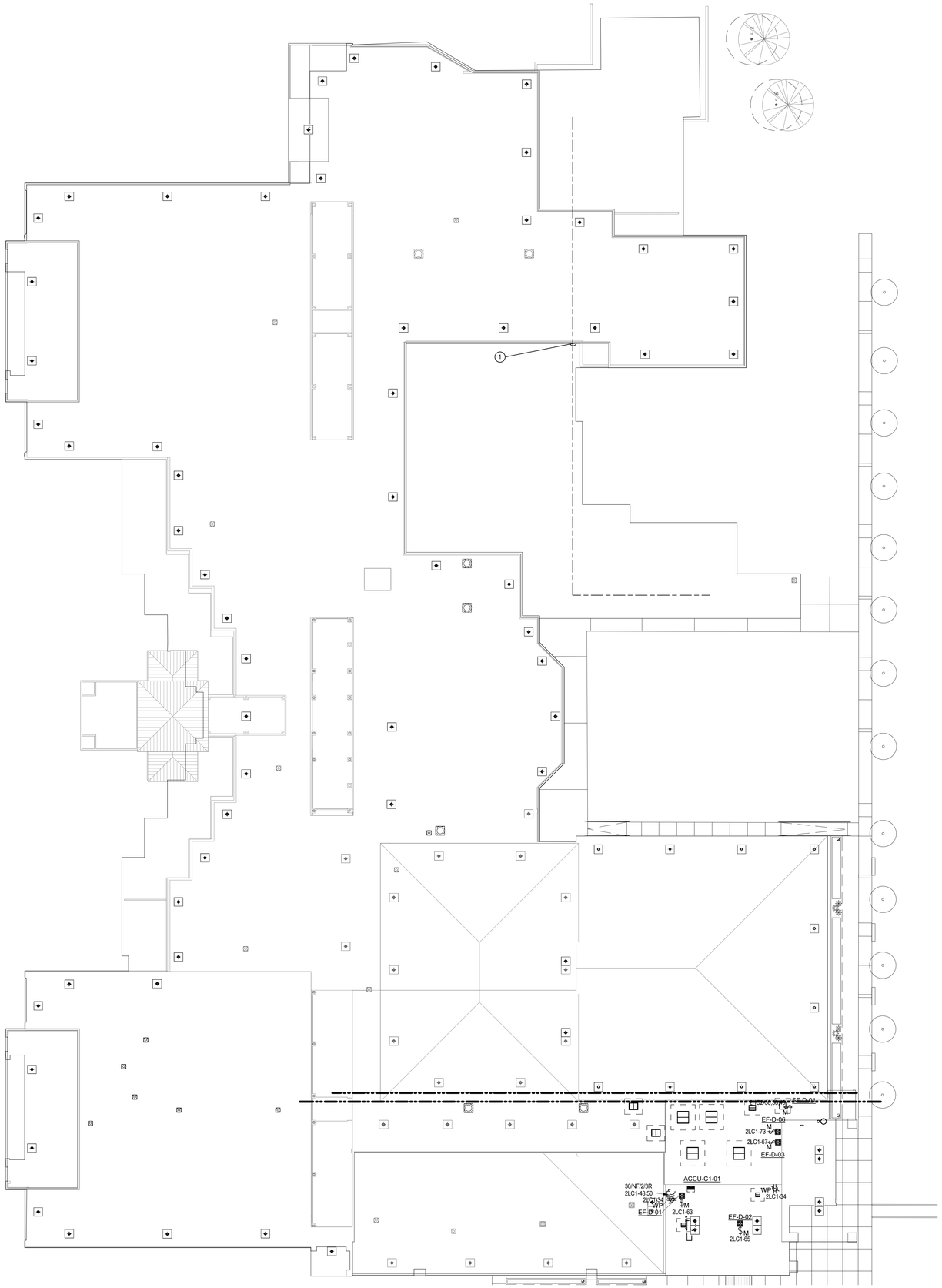
ELECTRICAL ROOF PLAN-GYM

E-301.G

FOR BLUEBEAM LABELING/OCR:

0"

1"



ELECTRICAL ROOF PLAN

SCALE: 3/64" = 1'-0"

ELECTRICAL ROOF NOTES:

1. 1. FOR EQUIPMENT OR DEVICES SHOWN ON ARCHITECTURAL DRAWINGS THAT REQUIRE POWER AND NOT IDENTIFIED ON ELECTRICAL PLANS, ASSUME AT A MINIMUM A DUPELX OUTLET, A DEDICATED CIRCUIT WITH 2#12,1#12G,3/4"C. WITH HOMERUN TO NEAREST 120/208V PANEL. ITEMS
   SUCH AS BUT NOT LIMITED TO ROLL DOWN DOORS, COUNTER DOORS, OVERHEAD GRILLES, DISPLAY CASES, HAND DRYERS, WATER COOLERS, ICE MAKERS, GARBAGE DISPOSALS, OSCILLATING FANS, LCD's, PROJECTORS, DISHWASHERS, MOTORIZED PROJECTION SCREENS, ETC.
2. ALL MOTOR SWITCHES ARE TO BE WEATHER PROOF.
3. CONTRACTOR TO PROVIDE CONNECTION FROM EXHAUST FANS TO ALL MOTORIZED BACKDRAFT DAMPERS AS REQUIRED, COORDINATE WITH MECHANICAL.

ELECTRICAL ROOF KEYNOTES:

1. CONTRACTOR TO USE INDUSTRY STANDARD MEANS AND METHODS TO RAISE ELECTRICAL CONDUIT TO NOT CONTLICT WITH ROOFING PROJECT. ALL CONDUITS ARE TO REMAIN, AND NO DOWNTIME WILL BE NEEDED DURING REWORK.

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LEAF ENGINEERS

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BUILDING: HARGAVE HIGH SCHOOL

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HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS

KEY PLAN

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LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date

CHECKED BY: PP

DRAWN BY: LT

ELECTRICAL ROOF PLAN-GYM

E-301.G

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ELECTRICAL ONE-LINE DIAGRAM-GYM

E-501.G

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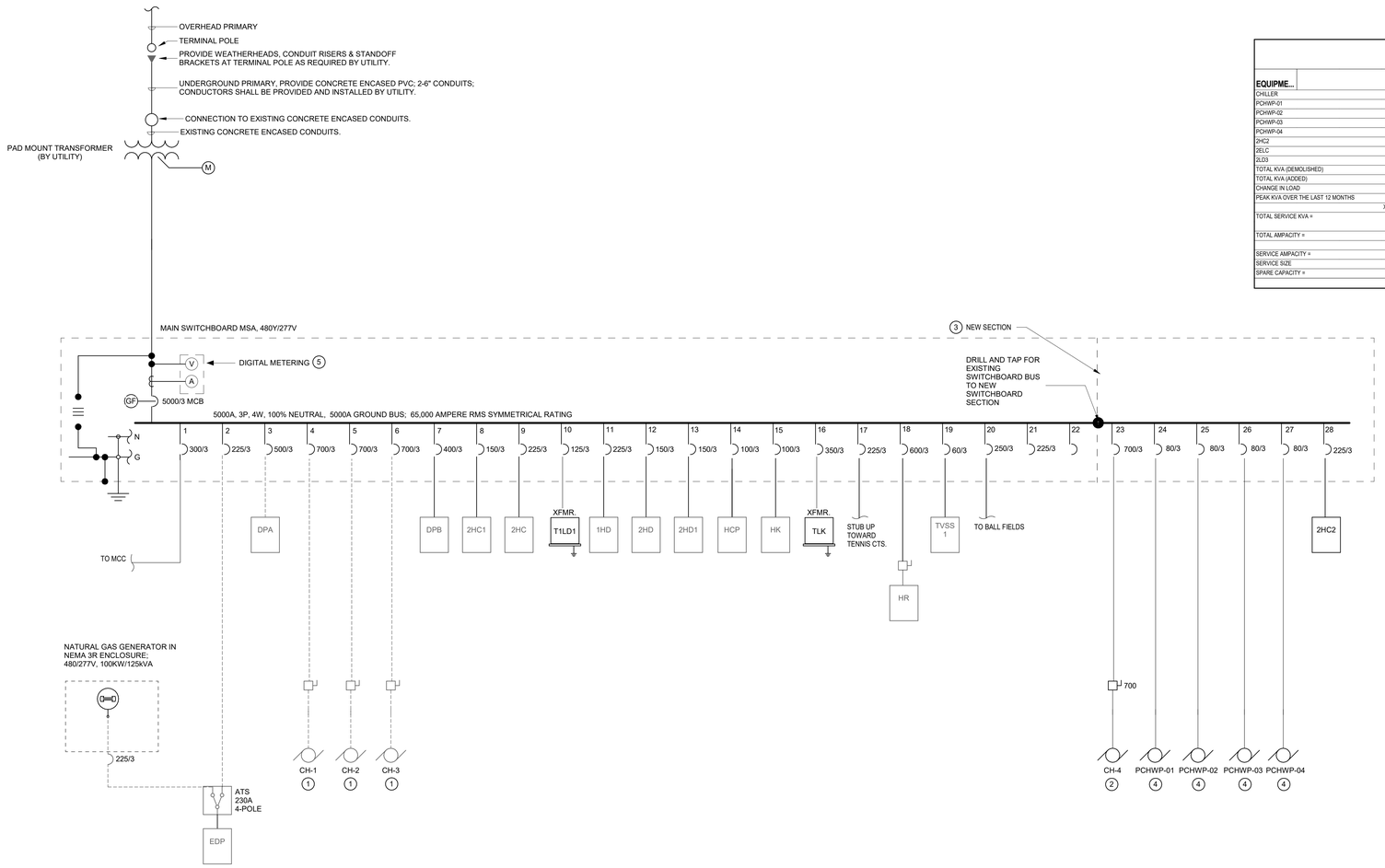

LOAD ANALYSIS MSB

EQUIPME...	DEMOLISHED LOAD	NEW LOAD	
CHILLER	0.0	581.70	KVA
PCHWP-01	0.0	66.48	KVA
PCHWP-02	0.0	66.48	KVA
PCHWP-03	0.0	66.48	KVA
PCHWP-04	0.0	66.48	KVA
2HC2	0.0	114.37	KVA
2ELC	0.0	67.67	KVA
2LD3	0.0	189.91	KVA
TOTAL KVA (DEMOLISHED)	0.0	0.00	KVA
TOTAL KVA (ADDED)		1.22	KVA
CHANGE IN LOAD		1.22	KVA
PEAK KVA OVER THE LAST 12 MONTHS		1196.00	KVA
X 125%		1495.00	
TOTAL SERVICE KVA =		1496.22	KVA @480, 3-PHASE
TOTAL AMPACITY =		1799.67	AMPS
SERVICE AMPACITY =		5000.00	AMPS
SERVICE SIZE			
SPARE CAPACITY =		3200.33	AMPS

ELECTRICAL ONE-LINE DIAGRAM NOTES:

#. INDICATES GENERAL NOTE.
Ⓔ INDICATES KEYED NOTE.

1. CONTRACTOR SHALL REPLACE DISCONNECT, CONDUIT, BREAKER AND WIRE ASSOCIATED WITH THE REPLACEMENT OF THE EXISTING CHILLER. CONTRACTOR SHALL PROVIDE NEW 700A, 3-POLE BREAKER IN THE EXISTING SWITCHBOARD CURRENTLY SERVING THIS EQUIPMENT. WIRING SHALL BE 2 SETS OF 3#500, 1#1/0G, 3"C. REFER TO MECHANICAL PLANS FOR ADDITIONAL INFORMATION PRIOR TO INSTALLATION.
2. NEW CHILLER
3. FURNISH AND INSTALL NEW SWITCHBOARD SECTION TO MATCH AND LINE UP WITH THE EXISTING GE SWITCHBOARD. THE NEW SECTION SHALL MATCH THE EXISTING FOR AMPERAGE AND FAULT CURRENT RATING. NEW SECTION SHALL BE FRONT AND REAR ALIGNED AND BUSSING SHALL MATCH WITHOUT THE NEED FOR A TRANSITION SECTION OR CABLE CONNECTIONS. NEW SECTION SHALL HAVE FULLY RATED COPPER BUS TO MATCH THE EXISTING LINEUP AND SHALL BE 40" WIDE. THE NEW SECTION SHALL BE ABB RELIAGEAR CONSTRUCTION AND SHALL BE PROVIDED WITH FULL HEIGHT VERTICAL BUS AVAILABLE FOR THE ADDITION OF FUTURE BREAKERS IN THE FUTURE. THE SECTION SHALL BE PROVIDED WITH A NEW ABB XT7 CIRCUIT BREAKER RATED AT 800A AS INDICATED AND SHALL BE PROVIDED WITH AN ADJUSTABLE TRIP UNIT WITH LSI ADJUSTABLE PROTECTION. NEW CIRCUIT BREAKER SHALL BE PROVIDED WITH A PADLOCK PROVISION FOR FUTURE LO/TO PROCEDURES. A COORDINATION STUDY SHALL BE PROVIDED TO DETERMINE THE SETTINGS REQUIRED FOR THE NEW BREAKER AND THE BREAKER SHALL BE ADJUSTED TO THESE SETTINGS BY THE CONTRACTOR OR THEIR REPRESENTATIVE.
4. VFD SHALL BE RATED FOR 100K AIC AND EQUIPPED WITH A CURRENT LIMITING FUSE.
5. REPLACE EXISTING ELECTRICAL METER WITH NEW.

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CONSULTANT NAME
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THEATER
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FOOD SERVICE
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AV
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LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS

KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED PROFESSIONAL ENGINEER

LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date

CHECKED BY: PP

DRAWN BY: LT

ELECTRICAL ONE-LINE DIAGRAM-GYM

E-501.G

Plot Stamp:
6/3/2025 2:53:34 PM

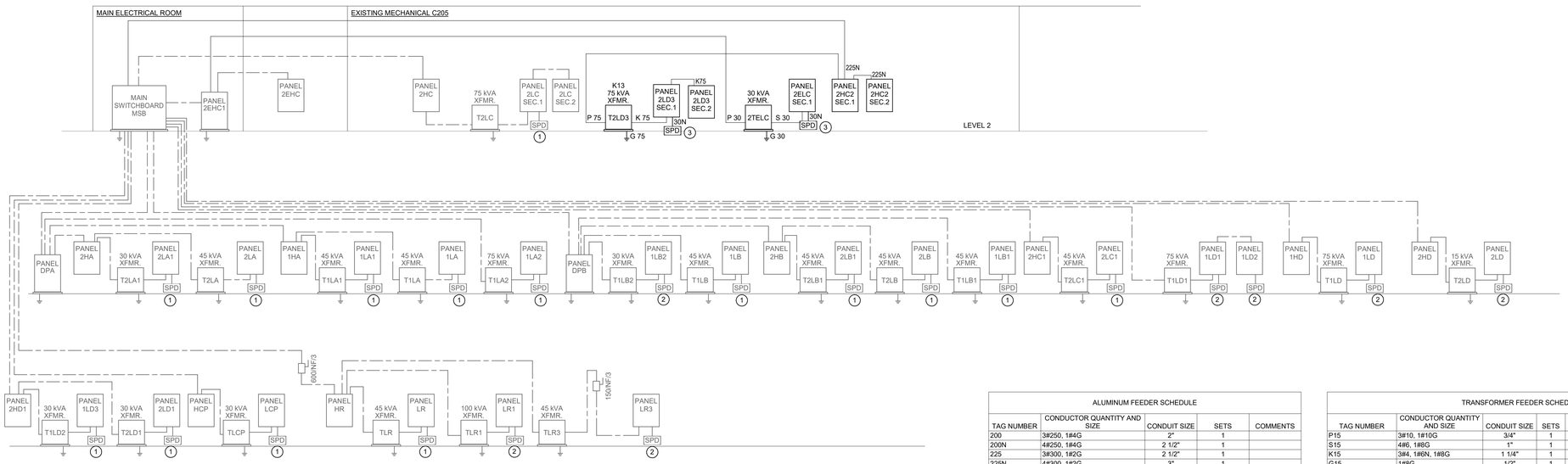
ELECTRICAL RISER DIAGRAM-GYM

E-502.G

FOR BLUEBEAM LABELING/OCR:

0"

1"



ELECTRICAL RISER DIAGRAM NOTES:

1. REPLACE SURGE PROTECTIVE DEVICE.
2. ADD SURGE PROTECTIVE DEVICE TO EXISTING PANEL, RE: DIVISION 26 SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3. SURGE PROTECTIVE DEVICE, RE:DIVISION 26 SPECIFICATIONS FOR ADDITIONAL INFORMATION.

ALUMINUM FEEDER SCHEDULE

TAG NUMBER	CONDUCTOR QUANTITY AND SIZE	CONDUIT SIZE	SETS	COMMENTS
200	3#250, 1#4G	2"	1	
200N	4#250, 1#4G	2 1/2"	1	
225	3#300, 1#2G	2 1/2"	1	
225N	4#300, 1#2G	3"	1	
250	3#350, 1#2G	2 1/2"	1	
250N	4#350, 1#2G	3"	1	
300	3#500, 1#2G	3"	1	
300N	4#500, 1#2G	3"	1	
400	3#250, 1#1G	2 1/2"	2	
400N	4#250, 1#1G	2 1/2"	2	
600	3#500, 1#2/0G	3"	2	
600N	4#500, 1#2/0G	3 1/2"	2	
800	3#400, 1#3/0G	3"	3	
800N	4#400, 1#3/0G	3"	3	
1200	3#500, 1#3/0G	3"	4	
1200N	4#500, 1#3/0G	3 1/2"	4	

FEEDER SCHEDULE

TAG NUMBER	CONDUCTOR QUANTITY AND SIZE	CONDUIT SIZE	SETS	COMMENTS
30N	4#10, 1#10G	1"	1	
50N	4#6, 1#10G	1"	1	
60N	4#6, 1#10G	1"	1	
100	3#1, 1#8G	1 1/2"	1	
100N	4#1, 1#8G	1 1/2"	1	
125	3#1, 1#6G	1 1/2"	1	
125N	4#1, 1#6G	2"	1	
150	3#1/0, 1#6G	1 1/2"	1	
150N	4#1/0, 1#6G	2"	1	
175	3#2/0, 1#6G	2"	1	
175N	4#2/0, 1#6G	2"	1	
200	3#3/0, 1#6G	2"	1	
200N	4#3/0, 1#6G	2"	1	
225	3#4/0, 1#4G	2"	1	
225N	4#4/0, 1#4G	2 1/2"	1	
250	3#250, 1#4G	2 1/2"	1	
250N	4#250, 1#4G	3"	1	
300	3#350, 1#4G	3"	1	
300N	4#350, 1#4G	3"	1	
400	3#3/0, 1#3G	2"	2	
400N	4#3/0, 1#3G	2"	2	
400S	4#500	3 1/2"	1	
600	3#350, 1#1G	3"	2	
600N	4#350, 1#1G	3"	2	
600S	4#350	3"	2	
800	3#500, 1#1/0G	3"	2	
800N	4#500, 1#1/0G	3 1/2"	2	
800S	4#500	3 1/2"	2	
1000	3#400, 1#2/0G	3"	3	
1000N	4#400, 1#2/0G	3"	3	
1000S	4#400	3"	3	
1200	3#350, 1#3/0G	3"	4	
1200N	4#350, 1#3/0G	3"	4	
1200S	4#350	3"	4	
1600S	4#400	3"	5	
2000S	4#400	3"	6	
2500S	4#500	3 1/2"	7	
3000S	4#500	3 1/2"	8	
4000S	4#500	3 1/2"	11	

TRANSFORMER FEEDER SCHEDULE

TAG NUMBER	CONDUCTOR QUANTITY AND SIZE	CONDUIT SIZE	SETS	COMMENTS
P15	3#10, 1#10G	3/4"	1	
S15	4#6, 1#8G	1"	1	
K15	3#4, 1#6N, 1#8G	1 1/4"	1	
G15	1#8G	1/2"	1	
P15	2#8, 1#10G	3/4"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
S15	3#4, 1#6G	1 1/2"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
G15	1#6G	3/4"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
P25	2#6, 1#10G	1"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
D25	3#1, 1#6G	1 1/2"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
G25	1#6G	3/4"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
P30	3#6, 1#10G	3/4"	1	
S30	4#1, 1#6G	1 1/2"	1	
K30	3 #1/0, 1#2/0N, 1#6G	2"	1	
G30	1#6G	1/2"	1	
P37	2#1, 1#6G	1 1/4"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
D37	3#3/0, 1#4G	3"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
G37	1#4G	3/4"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
P45	3#4, 1#8G	1"	1	
S45	4#1/0, 1#6G	1 1/2"	1	
K45	3#2/0, 1#250, 1#4G	2"	1	
G45	1#6G	1/2"	1	
P50	2#1, 1#6G	1 1/4"	1	
S50	3#3/0, 1#3G	2"	1	
G50	1#3G	3/4"	1	
P75	3#1, 1#8G	1 1/2"	1	
S75	4#4/0, 1#2G	2 1/2"	1	
K75	3#4/0, 2#3/0N, 1#2G	2 1/2"	1	
G75	1#1/0G	1/2"	1	
P75	2#3/0, 1#6G	2"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
S75	3#3/0, 1#4G	2"	2	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
G75	1#4G	3/4"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
P75A	3#1, 1#8G	1 1/2"	1	FOR 480 3Ø: 120/240 3Ø TRANSFORMERS
S75A	4#4/0, 1#2G	2 1/2"	1	FOR 480 3Ø: 120/240 3Ø TRANSFORMERS
G75A	1#2G	1/2"	1	FOR 480 3Ø: 120/240 3Ø TRANSFORMERS
P112	3#2/0, #6G	2"	1	
S112	4#3/0, 1#1/0G	2"	2	
K112	3#4/0, 1#350N, 1#1/0G	2 1/2"	2	
G112	1#1/0G	3/4"	1	
P150	3#250, 1#4G	2 1/2"	1	
S150	4#350, 1#2/0G	3"	2	
K150	3#350, 2#3/0N, 1#2/0G	3"	2	
G150	1#2/0G	3/4"	1	
P167	2#4/0, 1#2/0G	2"	2	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
S167	3#350, 1#3/0G	3"	3	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
G167	1#3/0G	3/4"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
P225	3#500, 3#3G	3"	1	
S225	4#300, 1#2/0G	3"	1	
K225	3#350, 2#3/0, 1#1G	3 1/2"	3	
G225	1#2/0G	3/4"	1	

PBK

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PBK.com
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11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-965-0608 P
713-961-4571 F
TX Firm: BR 1608

CIVIL
CONSULTANT NAME
T 000-000-0000

LANDSCAPE
CONSULTANT NAME
T 000-000-0000

STRUCTURAL
CONSULTANT NAME
T 000-000-0000

MEP
CONSULTANT NAME
T 000-000-0000

ACOUSTIC
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THEATER
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FOOD SERVICE
CONSULTANT NAME
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CONSULTANT
CONSULTANT NAME
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New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

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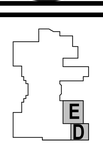
HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS



KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED
PROFESSIONAL ENGINEER

LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date

CHECKED BY: PP

DRAWN BY: LT

ELECTRICAL RISER DIAGRAM-GYM

E-502.G

Plot Stamp:
6/3/2025 3:33:32 PM

ELECTRICAL SYMBOL LEGEND AND CONTACTOR SCHEDULE-GYM
E-601.G
FOR BLUEBEAM LABELING/OCR:

0"
1"

Huf...							
Light...							
Fixture Type	Manufacturer	Catalog Number	Lamp Type	Mounting	Voltage	Dimming Type	Description
A	DAYBRITE	2FP24L840-4-DS-UNV-DIM	37W 4000K 4800 LM	RECESSED	UNV	0-10V	RECESSED LED 2X4 FLAT PANEL
AH	DAYBRITE	2FP24L840-4-DS-UNV-DIM / FMA24	37W 4000K 4800 LM	RECESSED	UNV	0-10V	RECESSED LED 2X4 FLAT PANEL W/ HARD CEILING KIT
A1	DAYBRITE	2FP24Z8840-4-DS-UNV-DIM	40W 4000K 4200 LM	RECESSED	UNV	0-10V	RECESSED LED 2X4 FLAT PANEL (LOW OUTPUT)
A2	DAYBRITE	2FP26L840-4-DS-UNV-DIM	47W 4000K 6000 LM	RECESSED	UNV	0-10V	RECESSED LED 2X4 FLAT PANEL (HIGH OUTPUT)
A3	DAYBRITE	1FP24S L840-4-DS-UNV-DIM	38W 4000K 4500 LM	RECESSED	UNV	0-10V	RECESSED LED 1X4 FLAT PANEL
A3H	DAYBRITE	1FP24S L840-4-DS-UNV-DIM / FMA14FP	38W 4000K 4500 LM	RECESSED	UNV	0-10V	RECESSED LED 1X4 FLAT PANEL W/ HARD CEILING KIT
D	LIGHTOLIER	4RN / P4RDL15940WCCZ10U	12W 4000K 1500 LM	RECESSED	UNV	0-10V	4" ROUND APERTURE LED DOWNLIGHT, LISTED FOR WET LOCATIONS
D1	LIGHTOLIER	6RN / C6L49840MZ10U / C6RDLCC	42W 4000K 4800 LM	RECESSED	UNV	0-10V	6" ROUND APERTURE LED DOWNLIGHT, LISTED FOR WET LOCATIONS (HIGH OUTPUT)
D2	LIGHTOLIER	4RN / P4RDL05940WCCZ10U	5W 4000K 500 LM	RECESSED	UNV	0-10V	4" ROUND APERTURE LED DOWNLIGHT, LISTED FOR WET LOCATIONS (LOW OUTPUT)
DS	LIGHTOLIER	4RN / P4RSL05940WCCZ10U	5W 4000K 500 LM	RECESSED	UNV	0-10V	4" ROUND APERTURE LED DOWNLIGHT, LISTED FOR WET LOCATIONS (LOW OUTPUT)
DW	LIGHTOLIER	4RN / P4RLW15940WCCZ10U	12W 4000K 1500 LM	RECESSED	UNV	0-10V	4" ROUND APERTURE LED LENSED WALLWASHER
G	DAYBRITE	FHG-24L840-UNV-W / FHG-WG2	159W 4000K 24,339 LM	SURFACE / CHAIN	UNV	0-10V	1X2 HIGHBAY
GR1	DAYBRITE	RBX-15L-840-UNV-WT-ARR22-22FL	132W 4000K 17,066LM	SUSPENDED	UNV	0-10V	22" ROUND HIGHBAY WITH CLEAR ACRYLIC REFRACTOR, WITH FLAT LENS
J	DAYBRITE	FSS4-55L-840-UNV-DIM / FSSWG4	45W 4000K 5500 LM	SURFACE / CHAIN	UNV	0-10V	4' LED STRIP FIXTURE, CHAIN HUNG IN ROOMS WITHOUT CEILINGS, PROVIDE WIREGUARD
J1	DAYBRITE	5FL470L840-PPS-UNV-DIM	47W 4000K 7074 LM	SURFACE / CHAIN	UNV	0-10V	4' INDUSTRIAL STRIP TO MATCH EXISTING (HIGH OUTPUT)
J2	DAYBRITE	V3W-4-51L-840-UNV-DIM-LPA	35W 4000K 5025 LM	SURFACE / CHAIN	UNV	0-10V	4' WET LOCATION VAPOR TIGHT
J3	DAYBRITE	5FL450L840-PPS-UNV-DIM	37W 4000K 5538 LM	SURFACE / CHAIN	UNV	0-10V	4' INDUSTRIAL STRIP TO MATCH EXISTING
LP	LUMATO	3S-LENGTH-LD-40-UNV-X-RAL#-C90-X	4W/FT 4000K 500LM/FT	SUSPENDED	UNV	0-10V	SUSPENDED 3" DIRECT LINEAR LIGHTING (RED FINISH)
LP1	LUMATO	3S-LENGTH-LD-40-UNV-X-BLK-C90-X	4W/FT 4000K 500LM/FT	SUSPENDED	UNV	0-10V	SUSPENDED 3" DIRECT LINEAR LIGHTING (BLACK FINISH)
LP2	LUMATO	3S-LENGTH-MD-40-UNV-X-BLK-C90-X	6W/FT 4000K 750LM/FT	SUSPENDED	UNV	0-10V	SUSPENDED 3" DIRECT LINEAR LIGHTING (BLACK FINISH)
LP3	LUMATO	3S-LENGTH-MD-40-UNV-X-ALM-C90-X	6W/FT 4000K 750LM/FT	SUSPENDED	UNV	0-10V	SUSPENDED 3" DIRECT LINEAR LIGHTING (ALUMINUM PAINT FINISH)
LR	LUMATO	3R-LENGTH-LD-40-UNV-X-BLK-C90	4W/FT 4000K 500LM/FT	RECESSED	UNV	0-10V	RECESSED 3" LINEAR LIGHTING W/ BLACK FLANGE
LS	KLUS	A00758-B-LC-40-0960/2-24-20-TBD-X-IP20	6W/FT 4000K 519LM/FT	SURFACE	UNV	0-10V	.75" SURFACE LINEAR WITH LIGER-22 LENS. BLACK FINISH
LS1	KLUS	A00758-X-HS22-40-0960/2-24-20-TBD-X-IP20	6W/FT 4000K 519LM/FT	SURFACE	UNV	0-10V	.75" SURFACE LINEAR WITH STANDARD HS22 LENS. LOBBY HALO IN WALL SIGNAGE
LW	SPI	SIW12139-4FT-L28W-UNV-4000K-DF_80-DF_DIM1-DF_MCS-DF_FT-FINISH	28W 4000K 2848 LM	WALL	UNV	0-10V	4' LINEAR MENU BOARD WALLWASHER
LW1	ALKCO	HZN4L451-11-277-FINISH	22W 4000K 3000 LM	WALL	277V	0-10V	4' WALL MOUNTED DIRECT / INDIRECT BED LIGHT
M	DAYBRITE	FLP450L840-LUNV-DIM	45W 4000K 5000 LM	SURFACE / CHAIN	UNV	0-10V	4' LED STRIP FIXTURE WITH NO LENS, CHAIN HUNG IN MECHANICAL ROOMS
P	IMPACT	P3308-40-LO-RD-BKPC-BL	10W 4000K 995 LM	SUSPENDED	UNV	0-10V	8" DECORATIVE PENDANT (NOTE 1)
S2-1	GARDCO	OPF-M-A12-740-T2M-X-UNV-FINISH	150W 4000K 26,482 LM	POLE	UNV	0-10V	SINGLE PARKING FIXTURE WITH A TYPE 2 DISTIRBUTION ON 25' POLE, LISTED FOR WET LOCATIONS
S3-1	GARDCO	OPF-M-A12-740-T3M-X-UNV-FINISH	150W 4000K 26,271 LM	POLE	UNV	0-10V	SINGLE PARKING FIXTURE WITH A TYPE 3 DISTRIBUTION ON 25' POLE, LISTED FOR WET LOCATIONS
S4-2	GARDCO	(2) OPF-S-P09-740-T4M-AR1 / OPF-RMB-UNV-FINISH	(2) 133W 4000K 22,673 LM	EXISTING POLE	UNV	0-10V	DOUBLE PARKING FIXTURE MOUNTED AT 180 DEGREES WITH TYPE 4 DISTIRBUTION ON 35' POLE, LISTED FOR WET LOCATIONS
S5-1	GARDCO	OPF-S-A07-740-T5W-AR1 / OPF-RMB-UNV-FINISH	136W 4000K 19,848 LM	EXISTING POLE	UNV	0-10V	SINGLE PARKING FIXTURE WITH TYPE 5W DISTIRBUTION ON 22' POLE, LISTED FOR WET LOCATIONS
S5-3	GARDCO	(3) OPF-S-A07--740-T5W-AR1 / OPF-RMB-UNV-FINISH	(3) 136W 4000K 19,848 LM	EXISTING POLE	UNV	0-10V	TRIPLE PARKING FIXTURE MOUNTED AT 120 DEGREES WITH TYPE 5W DISTIRBUTION ON 35' POLE, LISTED FOR WET LOCATIONS
SW	KENALL	H1212FD-PP-FINISH-25L40K-DV	25W 4000K 3026 LM	SURFACE	UNV	0-10V	12"X12" VANDAL RESISTANT SURFACE MOUNTED CANOPY LIGHT
FL	GARDCO	FLDL-A19-740-WFL-YOK-UNV-FINISH	281W 4000K 38,103 LM	ROOF	UNV	0-10V	HIGH OUTPUT FLOOD LIGHT TO BE MOUNTED ON ROOF
WP	GARDCO	GBM-A09-840-T3M-UNV-X-FINISH	39W 4000K 5990 LUMEN	WALL	UNV	0-10V	FULL-CUTOFF WALL PACK WITH TYPE 3 OPTIC SYSTEM, LISTED FOR WET LOCATIONS
X	EMERGI-LITE	AAP SERIES	2.5W INTEGRAL LED	SURFACE	UNV	N/A	PRECEPTOR SERIES. DIE-CAST ALUMINUM LED EXIT SIGN
	LANDSCAPE						
L1	WE-EF	131-0206	16W 3000K 1245 LM	WALL	UNV	0-10V	WALL SCONCE W/ NARROW BEAM DOWN. WET LOCATION RATED.
L2	INTER-LUX	RUB-WH-2DM-LENGTH-1.8CV-30	2W/FT 3000K 41W/FT	SURFACE	UNV	0-10V	CURVED WALL STEP LIGHT. WET LOCATION RATED
L3	WE-EF	116-0207	42W 3000K 2547 LM	POLE	UNV	0-10V	13' 3 SIDED ILLUMINATED PEDESTRIAN POLE FIXTURE. WET LOCATION RATED
L4	WE-EF	185-3077	21W 3000K 1755 LM	INGROUND	UNV	0-10V	10" DIAMETER SEMI-RECESSED SIGN LIGHT. WET LOCATION RATED
Note:....							**NOTE 1: ALL POWER CORDS TO BE ZIP TIED TO AIRCRAFT CABLE TO CREATE A CLEAN, SRAIGHT LOOK. ZIP TIES TO MATCH POWE...**

REMARKS: PROVIDE MOUTING ARMS/BRACKET FOR ALL POLE LIGHTS

GENERAL ELECTRICAL REMODEL NOTES

1. UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS OR OTHERWISE INSTRUCTED BY THE ARCHITECT, ELECTRICAL OUTLETS SHALL HAVE THE FOLLOWING MOUNTING HEIGHTS. DIMENSIONS ARE TO CENTER OF BOX UNLESS OTHERWISE NOTED:

WALL SWITCHES	*
WALL CONVENIENCE RECEPTACLES	15" AFF TO BOTTOM OF BOX
WALL DATA/VOICE OUTLETS	15" AFF TO BOTTOM OF BOX
WALL OUTLETS FOR WALL MTD. TELEPHONE	*
WALL CLOCK OUTLETS	7'-0" AFF (OR ABOVE CHALKBOARDS WHERE REQUIRED)*
MANUAL FIRE ALARM PULL STATIONS	*
FIRE ALARM SPEAKER/HORN	1'-0" BELOW CEILING, OR IN CEILING, AS REQUIRED*
INTERIOR BELLS,BUZZERS, HORNS	1'-0" BELOW CEILING, OR IN CEILING, AS REQUIRED*
SPECIAL PURPOSE WALL OUTLETS	15" AFF TO BOTTOM OF BOX (OR HIGHER AS REQUIRED TO SERVE EQUIPMENT)
PUSH BUTTONS	
ADA VISUAL ALARM	80" AFF TO BOTTOM OF LENS OR 6" BELOW CEILING, WHICHEVER IS LOWER. ENTIRE LENS TO BE WITHIN 80" TO 96" AFF*
	* TOP OF BOX SHALL BE 42" AFF MAX. FOR WHEELCHAIR FRONTAL APPROACH AND 48" AFF MAX. FOR SIDE APPROACH. VERIFY EXACT HEIGHT WITH ARCHITECT
	* 7'-0" AFF TO BOTTOM OF DEVICE IF DEVICE PROTRUDES MORE THAN 4" FROM WALL (PER ADA)

AFF = ABOVE FINISHED FLOOR
AFG = ABOVE FINISHED GRADE

2. UNLESS SPECIFICALLY INDICATED ON THE ELECTRICAL DRAWINGS, OUTLETS LOCATED AT COUNTERS AND CABINETS SHALL BE MOUNTED AS SHOWN ON ARCHITECTURAL DETAILS AND ELEVATIONS, OR AS DIRECTED BY ARCHITECT.
3. COORDINATE MOUNTING HEIGHTS AND DETAILS OF ALL OUTLETS (POWER, SIGNAL, ETC.) WITH ARCHITECTURAL CASEWORK DRAWINGS PRIOR TO DIVISION 26 ROUGH-IN. PROVIDE COORDINATION DRAWINGS IN ACCORDANCE WITH DIVISION 26 SPECIFICATIONS WHERE CONFLICTS EXIST. OBTAIN APPROVAL FROM ARCHITECT BEFORE ELECTRICAL ROUGH-IN WHEN CONFLICTS ARISE.
4. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF ALL HVAC AND PLUMBING EQUIPMENT.
5. CIRCUITING
   A. BRANCH CIRCUITING IS SCHEMATIC IN NATURE AND IS INTENDED TO INDICATE CIRCUIT LOADING AND CONTROL, NOT METHODS OF INSTALLATION. REFER TO SPECIFICATIONS FOR METHODS OF INSTALLATION AND MATERIALS, INCLUDING WHETHER OR NOT BX IS ALLOWED AND WHETHER "THROUGH-FIXTURE" OR "OCTOPUS (EMT WITH FLEXIBLE WHIPS)" TYPE LIGHTING BRANCH CIRCUITING IS REQUIRED.
   B. WHERE WIRE SIZE AND CONDUIT SIZE IS NOT INDICATED ON THE DRAWINGS AND/OR PANEL SCHEDULES, REFER TO SPECIFICATIONS FOR MINIMUM SIZE REQUIRED.
   C. BRANCH CIRCUITS ON THE DRAWINGS ARE GENERALLY NOT SHOWN GROUPED IN SINGLE RACEWAYS. HOWEVER, GROUPING IS ALLOWED UNDER CERTAIN CONDITIONS. REFER TO DIVISION 26 SPECIFICATIONS UNDER SECTION ENTITLED "ELECTRICAL WIRING" FOR REQUIREMENTS.
   D. THE DRAWINGS GENERALLY INDICATE QUANTITY OF CONDUCTORS ON BRANCH CIRCUIT HOME RUNS ONLY. ELSEWHERE WITHIN CIRCUITS, PROVIDE QUANTITY OF CONDUCTORS AS NEEDED TO ACCOMPLISH CIRCUITING AND SWITCHING REQUIREMENTS SHOWN.
6. WHEN REMOVING EXISTING ELECTRICAL WORK WHERE OTHER ITEMS REMAIN ON THE SAME CIRCUIT, THE CONTRACTOR SHALL TAKE WHATEVER STEPS ARE NECESSARY TO MAINTAIN CIRCUIT CONTINUITY.
7. ALL ITEMS NOTED TO BE REMOVED ARE TO REMAIN THE PROPERTY OF THE OWNER; HOWEVER, CONTRACTOR SHALL REMOVE FROM JOB SITE ALL MATERIAL NOT RETAINED BY OWNER.
8. FIELD VERIFY CONDITION OF, AND MODIFICATIONS AND ADDITIONS TO, ALL EXISTING ELECTRICAL FIXTURES, PANELS, WIRING, ETC.
9. WHERE DOORS ARE ADDED, OR PORTIONS OF WALLS REMOVED, CONTRACTOR SHALL REMOVE OR RELOCATE ALL ELECTRICAL WORK NECESSARY FOR THE REMODELING MODIFICATION, WHETHER OR NOT THIS WORK IS NOTED ON PLANS.
10. WHERE EXISTING JUNCTION BOXES ARE COVERED OR REMOVED, CONTRACTOR SHALL TAKE WHATEVER STEPS ARE NECESSARY TO COMPLY WITH NEC 314-19.
11. EXISTING ELECTRICAL BOXES TO REMAIN IN AREAS WHERE NEW WALL FINISHES ARE TO BE APPLIED SHALL BE RESET AS NECESSARY TO PROVIDE FLUSH MOUNTING FOR BOXES.
12. CONTRACTOR SHALL FIELD VERIFY EXISTING BRANCH CIRCUIT LOADING WHEN MAKING MODIFICATIONS AND/OR ADDITIONS TO THAT CIRCUIT. IF NEW WORK WOULD OVERLOAD EXISTING CIRCUIT, CONTRACTOR SHALL LOCATE ANOTHER EXISTING CIRCUIT (THE CLOSEST), WHICH WOULD NOT BE OVERLOADED UPON ADDING NEW LOAD, AND SHALL TIE NEW LOAD INTO THAT CIRCUIT.
13. WHEN EXISTING ELECTRICAL WORK IS REMOVED, ALL EXPOSED CONDUIT, WIRING, CONTROL AND JUNCTION BOXES ALONG WALLS, FLOOR, AND CEILING SHALL BE REMOVED. BRANCH CIRCUIT WIRES SHALL BE REMOVED BACK TO CIRCUIT BREAKER(S). BLANK COVER PLATES SHALL BE PROVIDED FOR RECESSED BOXES. WHERE THIS WORK IS DONE, THE WALLS, FLOOR, AND CEILING SHALL BE PATCHES AS NECESSARY UNDER WORK COVERED IN OTHER SECTIONS.
14. EXISTING RECESSED INCANDESCENT AND HID LUMINAIRES DESIGNATED FOR TEMPORARY REMOVAL AND RE-USE SHALL BE STORED. ALL SUCH LUMINAIRES NOT THERMALLY PROTECTED PER NEC 410-118 AND 410-130(F) ARE NOT SUITABLE FOR RE-USE AND SHALL BE GIVEN TO THE OWNER. PROVIDE NEW REPLACEMENT LUMINAIRES WITH UL THERMAL PROTECTION, IDENTICAL APERTURE, EQUIVALENT PHOTOMETRICS AND NEW LAMPS.
15. CONTRACTOR TO REFER TO ARCHITECTURAL DEMOLITION PLANS AND PHASING PLANS AND HAVE A GOOD UNDERSTANDING OF SCOPE OF PROJECT PRIOR TO COMMENCEMENT OF WORK.
16. LUMINAIRE SUPPORT IN SUSPENDED CEILINGS:
   A. PROVIDE MEANS OF SUPPORT FOR LUMINAIRES PER NEC 410-16. T BAR CLIPS SHALL BE INSTALLED ON THE LUMINAIRE AND SHALL BE FIELD SECURED TO THE INVERTED CEILINGS TEES SO THAT THE LUMINAIRE IS SECURELY FASTENED TO THE CEILING SYSTEM FRAMING MEMBERS
   B. CEILING TILES SHALL NOT BEAR THE WEIGHT OF LUMINAIRES. SURFACE MOUNT LUMINAIRES, RECESSED DOWNLIGHTS, LIGHT TRACK, EXIT SIGNS, ETC. SHALL BE SUPPORTED BY PROPER FRAMES OR OTHER ATTACHMENT TO MAIN CEILING SYSTEM GRID OR BUILDING STRUCTURE ABOVE CEILING.
   C. LUMINAIRES SHALL BE CENTERED IN CEILING TILE.
   D. LUMINAIRE SHALL HAVE FLANGE OR TRIM RING FOR CLOSURE OF CEILING CUTOUT OR OPENING.
   E. FIRE-RATED CEILING ASSEMBLY: FOR LUMINAIRES TO BE FLUSH-MOUNTED INTO A FIRE-RATED CEILING OR SURFACE MOUNTED TO A FIRE-RATED CEILING, INSTALL WITH INDEPENDENT, SECURE SUPPORT, RACEWAY, CABLE ASSEMBLIES BOXES AND FITTINGS LOCATED ABOVE A FIRE-RATED FLOOR/CEILING OR ROOF CEILING ASSEMBLY SHALL NOT BE SECURED TO, OR SUPPORTED BY, THE CEILING ASSEMBLY INCLUDING CEILING SUPPORT WIRES. PROVIDE AN INDEPENDENT MEANS OF SECURE SUPPORT. INDEPENDENT SUPPORT WIRES SHALL BE DISTINGUISHABLE BY COLOR, TAGGING, OR OTHER EFFECTIVE MEANS FROM THOSE THAT ARE PART OF THE FIRE-RATED DESIGN.
17. CONTRACTOR SHALL FIELD VERIFY ANY EXISTING UNDERGROUND PIPING, WIRING, OR OTHER FACILITIES PRIOR TO TRENCHING, AND SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED BY INSTALLATION OF NEW WORK.
18. THE ELECTRICAL CONTRACTOR SHALL COMPLY WITH ALL AUTHORITIES HAVING JURISDICTION, NEC, ALL STATE AND LOCAL CODES AND AMENDMENTS.

LIGHTING FIXTURE NOTES

KEY TO NOTE PREFIXES: "G" NOTES ARE "GENERAL" LIGHTING NOTES THAT APPLY TO THE ENTIRE PROJECT. "S" NOTES ARE "SCHEDULE" NOTES THAT APPLY TO SPECIFIC LUMINAIRES.

G.1 REFER TO ARCHITECTURAL REFLECTED CEILING PLANS, ELEVATIONS, SECTIONS, AND DETAILS FOR THE EXACT LOCATION OF ALL LUMINAIRES. ARCHITECTURAL PLANS SHALL GOVERN FOR LOCATION AND LAYOUT. IF ARCHITECTURAL AND ELECTRICAL DRAWINGS CONFLICT IN EXACT COUNT OR FIXTURE TYPE, PROVIDE THE GREATER QUANTITY OR COST TYPE UNLESS OTHERWISE INSTRUCTED.

G2. REFER TO DIVISION 26 ELECTRICAL SPECIFICATIONS FOR ADDITIONAL LUMINAIRE AND ELECTRICAL REQUIREMENTS (LENS, AIR HANDLING CHARACTERISTICS, T-BAR CLIPS, BALLAST, LAMPS, TIME FRAME FOR SUBMITTAL OF SUBSTITUTE LIGHT FIXTURES FOR PRIOR APPROVAL, ETC.).

G3. FOR EACH SCHEDULED LUMINAIRE. PROVIDE ALL REQUIRED APPURTENANCES FOR INSTALLATION IN APPLICABLE STRUCTURE OR SPECIFIED ARCHITECTURAL EILING. ALL LUMINAIRES SHALL HAVE THE APPROPRIATE NEMA TYPE FRAME THAT IS COMPATIBLE WITH THE CEILING SYSTEM SPECIFIED BY THE ARCHITECT. ELECTRICAL DRAWINGS DO NOT INDICATE CEILING TYPES, CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS TO DETERMINE CEILING TYPE (GRID, FLANGE, SPLINE, SCREW SLOT, ETC.) AND PROVIDE APPROPRIATE FRAME.

G4. EXIT SIGNS AND OTHER LUMINAIRES SHALL NOT BE SUPPORTED BY CEILING TILE. PROVIDE MOUNTING FRAME OR HANGERS TO SECURELY FASTEN IN PLACE ALL LUMINAIRES MOUNTED IN CEILING TILE. FRAMING MEMBERS OF A SUSPENDED CEILING SYSTEM MAY BE USED WHERE DESIGNED FOR THE PURPOSE AND INSTALLED PER NEC 410-16(c).

G5. WHERE A SURFACE-MOUNTED LUMINAIRE CONTAINING A BALLAST IS TO BE INSTALLED ON COMBUSTIBLE LOW-DENSITY CELLULOSE FIBERBOARD, IT SHALL BE LISTED FOR THIS CONDITION OR SHALL BE SPACED NOT LESS THAN 1 1/2 INCHES FROM THE SURFACE OF THE FIBERBOARD (NEC 410-76(b)).

G6. REQUEST FOR SUBSTITUTION SHALL FOLLOW SPECIFIED PROCEDURES AND SHALL INCLUDE A WORKING SAMPLE SUITABLE FOR TABLE TOP EXAMINATION.

S1. UNLESS OTHERWISE NOTED, MOUNT EXIT SIGN DIRECTLY ABOVE EGRESS DOOR (MAXIMUM 24" ABOVE DOOR). PROVIDE WALL MOUNT EXIT SIGNS IN HIGH CEILING AREAS. PROVIDE WINDOW MULLION MOUNTING WITH CONCEALED WIRING WHERE REQUIRED. COORDINATE EXACT ELEVATION WITH ARCHITECT PRIOR TO ROUGH-IN.

CHANGE POLE HEIGHT TO MATCH YOUR REQUIREMENTS

S2. PROVIDE KW #RTSP30-DBZ-DM-BC POLE. POLE SHAFT SHALL CONFORM TO ASTM-A-500 GRADE B, ANCHOR BASE OF HOT ROLLED CARBON STEEL, PROVIDE ANCHOR BOLTS. PROVIDE 30' POLE WITH MINIMUM 3 MIL. BAKED POLYESTER POWDER COAT FINISH. COLOR TO MATCH LUMINAIRE.

S3. PROVIDE KW #RTSP30-DBZ-DM2180-BC POLE. POLE SHAFT SHALL CONFORM TO ASTM-A-500 GRADE B, ANCHOR BASE OF HOT ROLLED CARBON STEEL, PROVIDE ANCHOR BOLTS. PROVIDE 30' POLE WITH MINIMUM 3 MIL. BAKED POLYESTER POWDER COAT FINISH. COLOR TO MATCH LUMINAIRE.

GENERAL ELECTRICAL NOTES

1. UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS OR OTHERWISE INSTRUCTED BY THE ARCHITECT, ELECTRICAL OUTLETS SHALL HAVE THE FOLLOWING MOUNTING HEIGHTS. DIMENSIONS ARE TO CENTER OF BOX UNLESS OTHERWISE NOTED:

WALL SWITCHES	*
WALL CONVENIENCE RECEPTACLES	15" AFF TO BOTTOM OF BOX
WALL DATA/VOICE OUTLETS	15" AFF TO BOTTOM OF BOX
WALL OUTLETS FOR WALL MTD. TELEPHONE	*
WALL CLOCK OUTLETS	7'-0" AFF (OR ABOVE CHALKBOARDS WHERE REQUIRED)*
MANUAL FIRE ALARM PULL STATIONS	*
FIRE ALARM SPEAKER/HORN	1'-0" BELOW CEILING, OR IN CEILING, AS REQUIRED*
INTERIOR BELLS,BUZZERS, HORNS	1'-0" BELOW CEILING, OR IN CEILING, AS REQUIRED*
SPECIAL PURPOSE WALL OUTLETS	15" AFF TO BOTTOM OF BOX (OR HIGHER AS REQUIRED TO SERVE EQUIPMENT)
PUSH BUTTONS	
ADA VISUAL ALARM	80" AFF TO BOTTOM OF LENS OR 6" BELOW CEILING, WHICHEVER IS LOWER. ENTIRE LENS TO BE WITHIN 80" TO 96" AFF*
	* TOP OF BOX SHALL BE 42" AFF MAX. FOR WHEELCHAIR FRONTAL APPROACH AND 48" AFF MAX. FOR SIDE APPROACH. VERIFY EXACT HEIGHT WITH ARCHITECT
	* 7'-0" AFF TO BOTTOM OF DEVICE IF DEVICE PROTRUDES MORE THAN 4" FROM WALL (PER ADA)

AFF = ABOVE FINISHED FLOOR
AFG = ABOVE FINISHED GRADE

2. UNLESS SPECIFICALLY INDICATED ON THE ELECTRICAL DRAWINGS, OUTLETS LOCATED AT COUNTERS AND CABINETS SHALL BE MOUNTED AS SHOWN ON ARCHITECTURAL DETAILS AND ELEVATIONS, OR AS DIRECTED BY ARCHITECT.
3. COORDINATE MOUNTING HEIGHTS AND DETAILS OF ALL OUTLETS (POWER, SIGNAL, ETC.) WITH ARCHITECTURAL CASEWORK DRAWINGS PRIOR TO DIVISION 26 ROUGH-IN. PROVIDE COORDINATION DRAWINGS IN ACCORDANCE WITH DIVISION 26 SPECIFICATIONS WHERE CONFLICTS EXIST. OBTAIN APPROVAL FROM ARCHITECT BEFORE ELECTRICAL ROUGH-IN WHEN CONFLICTS ARISE.
4. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF ALL HVAC AND PLUMBING EQUIPMENT.
5. CIRCUITING
   A. BRANCH CIRCUITING IS SCHEMATIC IN NATURE AND IS INTENDED TO INDICATE CIRCUIT LOADING AND CONTROL, NOT METHODS OF INSTALLATION. REFER TO SPECIFICATIONS FOR METHODS OF INSTALLATION AND MATERIALS, INCLUDING WHETHER OR NOT BX IS ALLOWED AND WHETHER "THROUGH-FIXTURE" OR "OCTOPUS (EMT WITH FLEXIBLE WHIPS)" TYPE LIGHTING BRANCH CIRCUITING IS REQUIRED.
   B. WHERE WIRE SIZE AND CONDUIT SIZE IS NOT INDICATED ON THE DRAWINGS AND/OR PANEL SCHEDULES, REFER TO SPECIFICATIONS FOR MINIMUM SIZE REQUIRED.
   C. BRANCH CIRCUITS ON THE DRAWINGS ARE GENERALLY NOT SHOWN GROUPED IN SINGLE RACEWAYS. HOWEVER, GROUPING IS ALLOWED UNDER CERTAIN CONDITIONS. REFER TO DIVISION 26 SPECIFICATIONS UNDER SECTION ENTITLED "ELECTRICAL WIRING" FOR REQUIREMENTS.
   D. THE DRAWINGS GENERALLY INDICATE QUANTITY OF CONDUCTORS ON BRANCH CIRCUIT HOME RUNS ONLY. ELSEWHERE WITHIN CIRCUITS, PROVIDE QUANTITY OF CONDUCTORS AS NEEDED TO ACCOMPLISH CIRCUITING AND SWITCHING REQUIREMENTS SHOWN.
6. THE ELECTRICAL CONTRACTOR SHALL COMPLY WITH ALL AUTHORITIES HAVING JURISDICTION, NEC, ALL STATE AND LOCAL CODES AND AMENDMENTS.

ELECTRICAL SYMBOL LEGEND

1. EVERY SYMBOL SHOWN ON LEGEND MAY NOT APPEAR ON DRAWINGS.
2. DASHED ELEECTRICAL EQUIPMENT GENERALLY INDICATES EXISTING EQUIPMENT.
3. LONG-SHORT-SHORT-LONG DASHING GENERALLY INDICATES MATCH LINE OR DEFINES AREA FOR SPECIAL NOTE.

CIRCUIT RELATED:

LIGHTING OR POWER CIRCUIT(S). ARROW INDICATES HOME RUN, LONGER TICK(S) INDICATE NEUTRAL WIRE(S), SHORTER STRAIGHT TICK(S) INDICATE PHASE WIRE(S), SLANTED SHORTER TICK(S) INDICATE SWITCH LEG(S), DOT(S) INDICATE GROUNDING CONDUCTOR(S). DASHED WIRING (LONG-SHORT-LONG DASHES) INDICATES WIRING BELOW SLAB OR GRADE. DASHED WIRING (SERIES OF SHORT DASHES) INDICATES EXISTING WIRING. SLASH THROUGH ARROW INDICATES PARTIAL CIRCUIT. "D" ON HOMERUN ARROW INDICATES DEDICATED CIRCUIT: PROVIDE A SEPARATE NEUTRAL FOR EACH PHASE CONDUCTOR FOR ENTIRE LENGTH OF CIRCUIT FROM PANEL TO OUTLET. COUNT EACH NEUTRAL AS CURRENT-CARRYING AND GROUP A MAXIMUM OF SIX THHN/THWN CONDUCTORS IN A SINGLE RACEWAY; GROUNDING CONDUCTOR IS NOT COUNTED

J JUNCTION BOX

GROUNDING FIXTURE

LIGHTING:

LED LIGHTING FIXTURE. LETTER INDICATES TYPE, SMALL LETTER INDICATES SWITCH CONTROL, NUMBER INDICATES FIXTURE ON EMERGENCY SYSTEM. FOR SOLID CIRCLE WITHIN FIXTURE REFERENCE APPROPRIATE CATEGORY "A" CIRCUIT RELATED SYMBOL

STRIP TYPE LED LIGHTING FIXTURE. LETTER INDICATES TYPE, SMALL LETTER INDICATES SWITCH CONTROL, NUMBER INDICATES CIRCUIT, FOR SOLID CIRCLE ATTACHED TO FIXTURE REFERENCE APPROPRIATE CATEGORY "A" CIRCUIT RELATED SYMBOL

LED LIGHTING FIXTURE. LETTER INDICATES TYPE, SMALL LETTER INDICATES SWITCH CONTROL. NUMBER INDICATES CIRCUIT, FOR SOLID CIRCLE REFERENCE APPROPRIATE CATEGORY "A" CIRCUIT RELATED SYMBOL

DESIGNATES FIXTURE ON EMERGENCY POWER. RE: LIGHTING PLAN NOTES AND FIXTURE SCHEDULE NOTES FOR ADDITIONAL INFORMATION

WALL OR BRACKET MOUNTED FIXTURE OR DEVICE

EXIT LIGHT FIXTURE. LETTER INDICATES TYPE, NUMBER INDICATES CIRCUIT, NUMBER AND LOCATION OF SHADED TRIANGLE SECTIONS INDICATE NUMBER OF EXIT SIGN FACES AND DIRECTION OF EACH FACE. PROVIDE CHEVRON DIRECTIONAL INDICATORS AS SHOWN ON DRAWINGS

CONTROL:

$ SWITCH. SMALL LETTER INDICATES FIXTURES CONTROLLED, "P" INDICATES PILOT LIGHT, "WP" INDICATES WEATHERPROOF, "K" INDICATES KEY POERATED, "MO" INDICATES SPDT MOMENTARY CONTACT, "2" INDICATES DPDT, "3" INDICATES 3-WAY, "4" INDICATES 4-WAY, "M" INDICATES MANUAL MOTOR STARTER, CIRCUIT DESIGNATION NEXT TO SWITCH INDICATES BRANCH CIRCUIT NUMBER

$D WALL BOX DIMMER SWITCH. "MARK" INDICATES WATTAGE IF OTHER THAN 600, "3D" INDICATES 3-WAY DIMMER

$$ MULTI-LEVEL SWITCH. CIRCUIT DESIGNATION NEXT TO SWITCH INDICATES BRANCH CIRCUIT NUMBER

$T DIGITAL TIME SWITCH

PC PHOTOELECTRIC CONTROL

EMERGENCY POWER OFF (EPO) PUSHBUTTON

PUSH BUTTON

$OC WALL MOUNT OCCUPANCY SENSOR

DUAL TECHNOLOGY CEILING MOUNTED OCCUPANCY SENSOR

CEILING MOUNTED RESTROOM OCCUPANCY SENSOR

CEILING MOUNTED CORRIDOR OCCUPANCY SENSOR

HB CEILING MOUNTED HIGH CEILING OCCUPANCY SENSOR

POWER OUTLETS:

20A-125V DUPLEX RECEPTACLE

20A-125V GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE. "WP" INDICATES WEATHER PROOF DEVICE

20A-125V DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER TOP. REFER TO ARCHITECT FOR EXACT HEIGHT ABOVE COUNTER

20A-125V CONTROLLED DUPLEX RECEPTACLE

20A-125V ISOLATED GROUND TYPE DUPLEX RECEPTACLE

20A-125V DUPLEX TAMPER RESISTANT RECEPTACLE WITH (2) USB CHARGING PORTS

20A-125V FOURPLEX RECEPTACLE. SAME SYMBOLOGY AS DUPLEX RECEPTACLE

SPECIAL PURPOSE SINGLE POWER RECEPTACLE, RATED AS INDICATED (IF NO RATING INDICATED, RECEPTACLE RATING SHALL MATCH BRANCH CIRCUIT OVERCURRENT PROTECTIVE DEVICE AND SHALL MEET REQUIREMENTS OF EQUIPMENT BEING CONNECTED), "C" INDICATES CLOCK OUTLET

20A-125V FLUSH FLOOR DUPLEX RECEPTACLE. 20A WHEN INDICATED OR IF BRANCH CIRCUIT SERVES ONLY SINGLE DUPLEX. PROVIDE CARPED FLAN

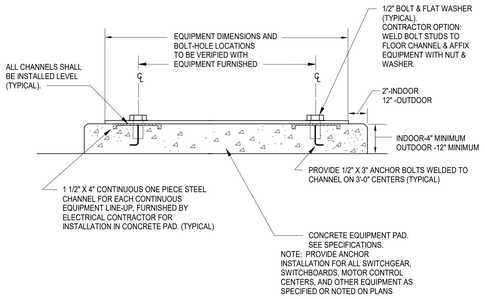
ELECTRICAL DETAILS-GYM
E-602.G
FOR BLUEBEAM LABELING/OCR:

0"
1"

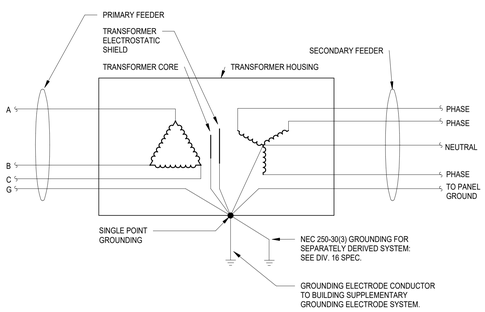
GENERAL LIGHTING SCHDULES NOTES

1. REFER TO ARCHITECT'S REFLECTED CEILING PLAN AND RELATED DETAILS TO DETERMINE PROPER CEILING TYPE COMPATIBILITY FOR EACH LUMINAIRE. PROVIDE ANY EXTRA FITTINGS OR OPTIONS AS REQUIRED TO ENSURE CORRECT MOUNTING IN THE GIVEN CEILING.

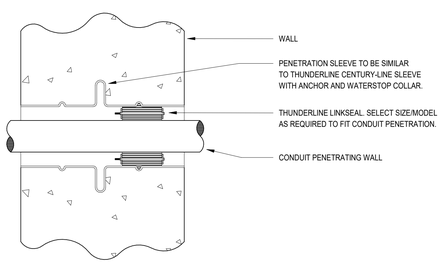
2. PROVIDE FIRE RATED CANOPY OR ENCLOSURE FOR ALL FIXTURES RECESSED IN A FIRE RATED CEILING. THE FIRE RATED CANOPY OR ENCLOSURE SHALL BE REQUIRED BY THE UL DESIGN NUMBER LISTED IN THE UL FIRE RESISTANCE DIRECTORY. REFER TO ARCHITECTURAL DRAWING FOR THE UL DESIGN NUMBER. COORDINATE WITH CEILING INSTALLER AND MANUFACTURER.



3 EQUIPMENT ANCHOR DETAIL
NOT TO SCALE



2 DELTA-WYE TRANSFORMER SCHEMATIC
NOT TO SCALE



1 CONDUIT PENETRATION DETAIL - EXTERIOR WALL
NOT TO SCALE

Plot Stamp:
6/3/2025 2:53:40 PM

PBK

ARCHITECT PBK Architects, Inc.
PBK.com
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TX Firm: BR 1608

CIVIL
CONSULTANT NAME
T-000-000-0000
LANDSCAPE
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STRUCTURAL
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FOOD SERVICE
CONSULTANT NAME
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CONSULTANT
CONSULTANT NAME
T-000-000-0000

LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS

KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61522
LICENSED
PROFESSIONAL ENGINEER

LEAF ENGINEERS
F-10672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date

CHECKED BY: PP
DRAWN BY: LT

ELECTRICAL DETAILS-GYM

E-602.G

ELECTRICAL PANEL SCHEDULES-GYM

E-701.G

FOR BLUEBEAM LABELING/OCR:

0"

1"

Job: Huffman Gym Addition | Job No. 240157

Mounting: **SURFACE** | Main... **MCB (225A)** | Neutral **100%** | Voltage: **480Y/277V-3PH 4W** | Main... **225 AMPS** | AIC... **42000** | Ground **Equipment Ground** | Lugs **SINGLE**

PANEL: **2HC(EXISTING)**

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
							0.00	LIGHTING-CORRIDOR	20/1		1	A	2		15/3	AHU-16 (3 HP)								0.00
							0.00	LIGHTING-WEIGHT	20/1		3	B	4	-	-	AHU-16 (3 HP)								0.00
							0.00	LIGHTING-STORAGE	20/1		5	C	6	-	-	AHU-16 (3 HP)								0.00
							0.00	LIGHTING-LOCKER	20/1		7	A	8		15/3	AHU-18 (1.5 HP)								0.00
							0.00	LIGHTING-LOCKER	20/1		9	B	10	-	-	AHU-18 (1.5 HP)								0.00
							0.00	LIGHTING-RESTROOM	20/1		11	C	12	-	-	AHU-18 (1.5 HP)								0.00
							0.00	LIGHTING-MECH.	20/1		13	A	14		40/3	AHU-19 (15 HP)								0.00
1000							0.00	SIGNAGE	20/1	12	15	B	16	-	-	AHU-19 (15 HP)								0.00
4000							0.00	LIGHTING	20/1	12	17	C	18	-	-	AHU-19 (15 HP)								0.00
3600							0.00	LIGHTING	20/1	12	19	A	20		15/3	AHU-17 (5 HP)								0.00
3600							0.00	WALL PACKS	20/1	10	21	B	22	-	-	AHU-17 (5 HP)								0.00
							0.00				23	C	24	-	-	AHU-17 (5 HP)								0.00
							0.00				25	A	26		15/3	AHU-20 (5 HP)								0.00
							0.00				27	B	28	-	-	AHU-20 (5 HP)								0.00
							0.00				29	C	30	-	-	AHU-20 (5 HP)								0.00
							0.00	OHAU-6 (3 HP)	15/3		31	A	32		20/1	SPARE								1.00
							0.00	OHAU-6 (3 HP)	-		33	B	34		20/1	SPARE								1.00
							0.00	OHAU-6 (3 HP)	-		35	C	36		20/1	SPARE								1.00
							0.00	OHAU-7 (3 HP)	15/3		37	A	38		100/3	XFMR T2LC (75 KVA)								0.00
							0.00	OHAU-7 (3 HP)	-		39	B	40			XFMR T2LC (75 KVA)								0.00
							0.00	OHAU	-		41	C	42			XFMR T2LC (75 KVA)								0.00
12200	0	0	0	0	0	0	0.00	**TOTALS**								**TOTALS**	0	0	0	0	0	0	0	3.00

LOAD SUMMARY								
Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	3.0	Connected KVA
1.25	**	1.00	1.00	1.00	0.65	0.50	*Design Factors	
#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	1.5	Design KVA

Phase Load	
Ph	KVA
A	3.6
B	4.6
C	4.0

*Input di...
**100% ...

Panel Remarks:

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	#REF!	#REF!		#REF!	#REF!

PANEL: **2HC(EXISTING)**

Date: 6/3/2025 | By: Designer

Job: Huffman Gym Addition | Job No. 240157

Mounting: **SURFACE** | Main... **MCB (225A)** | Neutral **100%** | Voltage: **480Y/277V-3PH 4W** | Main... **225 AMPS** | AIC... **42000** | Ground **Equipment Ground** | Lugs **FEED THRU**

PANEL: **2HC2**

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
		5817					0.00	AHU-C1-01	45/3	6	1	A	2	8	40/3	OAHU-C1-01			3878					0.00
		5817					0.00	(15 HP)	-	-	3	B	4	-	-	(10 HP)			3878					0.00
		5817					0.00	-	-	-	5	C	6	-	-	-			3878					0.00
		5817					0.00	AHU-C1-02	45/3	6	7	A	8	8	40/3	OAHU-C1-02			3878					0.00
		5817					0.00	(15 HP)	-	-	9	B	10	-	-	(10 HP)			3878					0.00
		5817					0.00	-	-	-	11	C	12	-	-	-			3878					0.00
		3047					0.00	AHU-C1-03	30/3	10	13	A	14	12	20/3	OAHU-C1-03			942					0.00
		3047					0.00	(7.5 HP)	-	-	15	B	16	-	-	(2 HP)			942					0.00
		3047					0.00	-	-	-	17	C	18	-	-	-			942					0.00
1500							0.00	LANDSCAPE LIGHTS	20/1	10	19	A	20	12	20/3	EUH-01				2500				0.00
3969							0.00	GYM LIGHTS	20/1	10	21	B	22	-	-	-				2500				0.00
		3047					0.00	OAHU-C1-01	30/3	10	23	C	24	-	-	-				2500				0.00
		3047					0.00	(7.5 HP)	-	-	25	A	26	12	20/3	SHWP-01						942		0.00
		3047					0.00	-	-	-	27	B	28	-	-	-						942		0.00
		443					0.00	OAHU-C1-01	20/3	12	29	C	30	-	-	-						942		0.00
		443					0.00	(.75 HP)	-	-	31	A	32	12	20/1	FCU-C-01						2161		0.00
		443					0.00	-	-	-	33	B	34	12	20/1	FCU-C-02						2161		0.00
		3047					0.00	OAHU-C1-02	30/3	10	35	C	36	12	20/3	SF-D-01						582		0.00
		3047					0.00	(7.5 HP)	-	-	37	A	38	-	-	-						582		0.00
		3047					0.00	-	-	-	39	B	40	-	-	-						582		0.00
							0.00				41	C	42											0.00
5469	0	63655	0	0	0	0	0.00	**TOTALS**								**TOTALS**	0	0	26093	7500	0	8892	0	0.00

PANEL: **2HC2** **2** (Sectio...

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
		443					0.00	OAHU-C1-02	20/3	12	43	A	44	SEE	125/3	XFMR T2LD2 (75 KVA)	0	2	3	1	0	15	0	0.00
		443					0.00	(.75 HP)	-	-	45	B	46	RISER	-	XFMR T2LD2 (75 KVA)	0	2	3	1	0	15	0	0.00
		443					0.00	-	-	-	47	C	48	-	-	XFMR T2LD2 (75 KVA)	0	2	3	1	0	15	0	0.00
							0.00				49	A	50											0.00
							0.00				51	B	52											0.00
							0.00				53	C	54											0.00
							0.00				55	A	56											0.00
							0.00				57	B	58											0.00
							0.00				59	C	60											0.00
							0.00				61	A	62											0.00
							0.00				63	B	64											0.00
							0.00				65	C	66											0.00
							0.00				67	A	68											0.00
							0.00				69	B	70											0.00
							0.00				71	C	72											0.00
							0.00				73	A	74											0.00
							0.00				75	B	76											0.00
							0.00				77	C	78											0.00
							0.00				79	A	80											0.00
							0.00				81	B	82											0.00
							0.00				83	C	84											0.00
0	0	1330	0	0	0	0	0.00	**TOTALS**								**TOTALS**	0	6	9	3	0	46	0	0.00

LOAD SUMMARY								
Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
5.5	0.0	91.1	7.5	0.0	8.9	0.0	0.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
6.8	0.0	91.1	7.5	0.0	8.9	0.0	0.0	Design KVA

Phase Load	
Ph	KVA
A	38.1
B	40.5
C	34.4

*Input di...
**100% ...

Panel Remarks:

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	113.0	135.9		114.4	137.6

PANEL: **2HC2**

Date: 6/3/2025 | By: Designer

Job: Huffman Gym Addition | Job No. 240157

Mounting: **SURFACE** | Main... **MCB (100A)** | Neutral **200%** | Voltage: **208Y/120V-3PH 4W** | Main... **100 AMPS** | AIC... **10000** | Ground **Equipment Ground** | Lugs **FEED THRU**

PANEL: **2ELC**

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
					2880		0.00	IDF RACK	30/1	10	1	A	2		20/1	SPARE								1.00
					1000		0.00	IDF REC	20/1	12	3	B	4		20/1	SPARE								1.00
					1000		0.00	IDF REC	20/1	12	5	C	6		20/1	SPARE								1.00
					1000		0.00	IDF REC	20/1	12	7	A	8		20/1	SPARE								1.00
					1000		0.00	IDF REC	20/1	12	9	B	10		20/1	SPARE								1.00
					1000		0.00	IDF REC	20/1	12	11	C	12		20/1	SPARE								1.00
					500		0.00	ACCESS PANEL	20/1	12	13	A	14		20/1	SPARE								1.00
					500		0.00	FIRE ALARM	20/1	12	15	B	16		20/1	SPARE								1.00
							1.00	SPARE	20/1		17	C	18		20/1	SPARE								1.00
							1.00	SPARE	20/1		19	A	20		20/1	SPARE								1.00
							1.00	SPARE	20/1		21	B	22		20/1	SPARE								1.00
							1.00	SPARE	20/1		23	C	24		20/1	SPARE								1.00
							1.00	SPARE	20/1		25	A	26		20/1	SPARE								1.00
							1.00	SPARE	20/1		27	B	28		20/1	SPARE								1.00
							1.00	SPARE	20/1		29	C	30		20/1	SPARE								1.00
							1.00	SPARE	20/1		31	A	32		20/1	SPARE								1.00
							1.00	SPARE	20/1		33	B	34		20/1	SPARE								1.00
							1.00	SPARE	20/1		35	C	36		20/1	SPARE								1.00
							1.00	SPARE	20/1		37	A	38	10	30/3	SPD								0.00
							1.00	SPARE	20/1		39	B	40	-	-	-								0.00
							1.00	SPARE	20/1		41	C	42	-	-	-								0.00
0	0	0	0	0	8880	0	13.00	**TOTALS**								**TOTALS**	0	0	0	0	0	0	0	18.00

LOAD SUMMARY								
Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
0.0	0.0	0.0	0.0	0.0	8.9	0.0	31.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
0.0	0.0	0.0	0.0	0.0	8.9	0.0	15.5	Design KVA

Phase Load	
Ph	KVA
A	4.4
B	2.5
C	2.0

*Input di...
**100% ...

Panel Remarks:

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	39.9	110.7		24.4	67.7

PANEL: **2ELC**

Date: 6/3/2025 | By: Designer

Job: Huffman Gym Addition | Job No. 240157

Mounting: **SURFACE** | Main... **MCB (225A)** | Neutral **200%** | Voltage: **208Y/120V-3PH 4W** | Main... **225 AMPS** | AIC... **10000** | Ground **Equipment Ground** | Lugs **FEED THRU**

PANEL: **2LC (EXISTING)**

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
							0.00	RCPT-GEN. PURP.	20/1		1	A	2		20/1	RCPT-GEN. PURP.								0.00
							0.00	RCPT-GEN. PURP.	20/1		3	B	4		20/1	RCPT-GEN. PURP.								0.00
							0.00	RCPT-GEN. PURP.	20/1		5	C	6		20/1	RCPT-GEN. PURP.								0.00
							0.00	RCPT-GEN. PURP.	20/1		7	A	8		20/1	RCPT-GEN. PURP.								0.00
							0.00	HAIR DRYER	20/1		9	B	10		20/1	HAIR DRYER								0.00
							0.00	HAIR DRYER	20/1		11	C	12		20/1	HAIR DRYER								0.00
							0.00	RCPT-GEN. PURP.	20/1		13	A	14		20/1	HAIR DRYER								0.00
							0.00	EDF	20/1		15	B	16		20/1	HAIR DRYER								0.00
							0.00	DRYER	20/1		17	C	18		20/1	RCPT-GEN. PURP.								0.00
							0.00	WASHER 5 HP	20/1		19	A	20		20/1	RCPT-GEN. PURP.								0.00
							0.00	WASHER 5 HP	20/1		21	B	22		20/1	RCPT-GEN. PURP.								0.00
							0.00	WASHER 5 HP	20/1		23	C	24		20/1	RCPT-GEN. PURP.								0.00
							0.00	GYM AMP	20/1		25	A	26		20/1	COOLER								0.00
							0.00	VENDING MACHINE	20/1		27	B	28		20/1	REFRIGERATOR								0.00
							0.00	VENDING MACHINE	20/1		29	C	30		20/1	C112 WALL PLUGS								0.00
							0.00	VENDING MACHINE	20/1		31	A	32		20/1	RCPT-GEN. PURP.								0.00
							0.00	VENDING MACHINE	35/1		33	B	34		20/1	EDF								0.00
							0.00	VENDING MACHINE	35/1		35	C	36		20/1	EF-12								0.00
	720						0.00	REC	20/1	8	37	A	38		20/1	TAC								0.00
							0.00				39	B	40		20/1	MOTOR DAMPERS								0.00
							0.00				41	C	42		20/1	EF-6								0.00
0	720	0	0	0	0	0	0.00	**TOTALS**								**TOTALS**	0	0	0	0	0	0	0	0.00

PANEL: **2LC (EXISTING)** **2** (Sectio...

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
		1920					0.00	BLEACHERS	20/3	8	43	A	44		20/1	EF-7								0.00
		1920					0.00	-	-	-	45	B	46		20/1	EF-8								0.00
		1920					0.00	-	-	-	47	C	48		20/1	EF-9								0.00
		1920					0.00	BLEACHERS	20/3	8	49	A	50		20/1	SPARE								1.00
		1920					0.00	-	-	-	51	B	52		15/1	CONTACTORS								0.00
		1920					0.00	-	-	-	53	C	54		20/1	L.P. FOR BOILER								0.00
		1920					0.00	BLEACHERS	20/3	8	55	A	56		30/1	TVSS								0.00
		1920					0.00	-	-	-	57	B	58		30/1	TVSS								0.00
		1920					0.00	-	-	-	59	C	60		30/1	TVSS								0.00
							0.00				61	A	62	12	20/1	OFF REC		540						0.00
							0.00				63	B	64	12	20/1	OFF REC		720						0.00
					500		0.00	SCOREBOARD	20/1	8	65	C	66											0.00
					500		0.00	SCOREBOARD	20/1	8	67	A	68											0.00
	720						0.00	REC	20/1	8	69	B	70											0.00
					1000		0.00	FLOORBOX	20/1	8	71	C	72											0.00
					1000		0.00	FLOORBOX	20/1	8	73	A	74											0.00
					1920		0.00	AV RACK	20/1	12	75	B	76											0.00
					1920		0.00	AV RACK	20/1	12	77	C	78											0.00
					100		0.00	AV REC	20/1	12	79	A	80											0.00
					1000		0.00	AV REC	20/1	12	81	B	82											0.00
							0.00				83	C	84											0.00
0	720	17280	0	0	7940	0	0.00	**TOTALS**								**TOTALS**	0	1260	0	0	0	0	0	1.00

LOAD SUMMARY								
Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
0.0	2.7	17.3	0.0	0.0	7.9	0.0	1.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
0.0	2.7	17.3	0.0	0.0	7.9	0.0	0.5	Design KVA

Phase Load	
Ph	KVA
A	8.6
B	10.1
C	9.2

*Input di...
**100% ...

Panel Remarks:

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	28.9	80.3		28.4	78.9

PANEL: **2LC (EXISTING)**

Date: 6/3/2025 | By: Designer

Job: Huffman Gym Addition | Job No. 240157

Mounting: **SURFACE** | Main... **MCB (225A)** | Neutral **200%** | Voltage: **208Y/120V-3PH 4W** | Main... **225 AMPS** | AIC... **10000** | Ground **Equipment Ground** | Lugs **FEED THRU**

PANEL: **2LD3**

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
					1000		0.00	HAND DRYER	20/1	12	1	A	2	12	20/1	REC						1000		0.00
					1000		0.00	HAND DRYER	20/1	12	3	B	4	12	20/1	REC						1000		0.00
					1000		0.00	HAND DRYER	20/1	12	5	C	6	12	20/1	REC						1000		0.00
					1000		0.00	HAND DRYER	20/1	12	7	A	8	12	20/1	REC						1000		0.00
					1000		0.00	HAND DRYER	20/1	12	9	B	10	12	20/1	REC						1000		0.00
							0.00				11	C	12	12	20/1	REC						1000		0.00
	720						0.00	RR REC	20/1	12	13	A	14	12	20/1	REC						1000		0.00
							0.00				15	B	16	12	20/1	REC						1000		0.00
	1080						0.00	REC	20/1	12	17	C	18	12	20/1	REC						1000		0.00
	900						0.00	REC	20/1	12	19	A	20	12	20/1	REC						1000		0.00
					1000		0.00	GOLF CART	20/1	12	21	B	22	12	20/1**	REFRIGERATOR						1000		0.00
					1200		0.00	CH DOOR	20/1	12	23	C	24	12	20/1**	REFRIGERATOR						1000		0.00
					1000		0.00	ICE MACHINE	20/1	12	25	A	26	12	20/1	BED						1000		0.00
					1000		0.00	ICE MACHINE	20/1	12	27	B	28	12	20/1	BED						1000		0.00
					1000		0.00	REC	20/1	12	29	C	30	12	20/1	BED						1000		0.00
					1000		0.00	REC	20/1	12	31	A	32	12	20/1	BED						1000		0.00
					1000		0.00	REC	20/1	12	33	B	34	12	20/1	REC		360						0.00
	360						0.00	REC	20/1	12	35	C	36	12	20/1	RR REC		500						0.00
					500		0.00	CLOCK	20/1	12	37	A	38	10	30/3	SPD								0.00
					500		0.00	CLOCK	20/1	12	39	B	40	-	-	-								0.00
	500						0.00	RR REC	20/1	12	41	C	42	-	-	-								0.00
0	3560	0	0	0	13200	0	0.00	**TOTALS**								**TOTALS**	0	860	0	0	0	16000	0	0.00

PANEL: **2LD3** **2** (Sectio...

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
							0.00				43	A	44	10	30/1	PHWMP-01			1656					0.00
					500		0.00	SINK	20/1	12	45	B	46	12	20/1	B-01						960		0.00
					1000		0.00	HUDL CAMERA	20/1	12	47	C	48	12	20/2	ACCU-C-01/FCU-C1-01						2059		0.00
							0.00				49	A	50	-	-	-						2059		0.00
							0.00				51	B	52	12	20/1	BOILER REC		500						0.00
							0.00				53	C	54	12	20/1	REC		900						0.00
					500		0.00	LCD	20/1	12	55	A	56	12	20/1	BAS						500		0.00
					1000		0.00	DISPLAY CASE	**20/1	12	57	B	58	12	20/1	BAS						500		0.00
					1000		0.00	DISPLAY CASE	**20/1	12	59	C	60	10	20/1	IRRIGATION CONTRO						500		0.00
					1000		0.00	GRAPHIC DISPLAY	20/1	12	61	A	62	10	20/1	TRAP PRIMER						800		0.00
					1176		0.00	EF-D-01 (1/2 HP)	20/1	12	63	B	64	10	20/1	BASKETBALL GOAL			1200					0.00
					696		0.00	EF-D-02 (1/4 HP)	20/1	12	65	C	66	10	20/1	BASKETBALL GOAL			1200					0.00
					696		0.00	EF-D-03 (1/4 HP)	20/1	12	67	A	68	10	20/1	BASKETBALL GOAL			1200					0.00
							0.00				69	B	70	10	20/1	BASKETBALL GOAL			1200					0.00
					1176		0.00	EF-D-05 (1/2 HP)	20/1	10	71	C	72	10	20/1	BASKETBALL GOAL			1200					0.00
					1176		0.00	EF-D-06 (1/2 HP)	20/1	12	73	A	74	10	20/1	BASKETBALL GOAL			1200					0.00
			1622				0.00	EUH-01	20/1	12	75	B	76		20/1	SPARE								1.00
			1622				0.00	-	-	-	77	C	78		20/1	SPARE								1.00
							1.00	SPARE	20/1		79	A	80		20/1	SPARE								1.00
							1.00	SPARE	20/1		81	B	82		20/1	SPARE								1.00
							1.00	SPARE	20/1		83	C	84		20/1	SPARE								1.00
0	0	0	3245	0	9920	0	3.00	**TOTALS**								**TOTALS**	0	1400	8856	0	0	7378	0

ELECTRICAL PANEL SCHEDULES-GYM

E-702.G

FOR BLUEBEAM LABELING/OCR:

0"

1"

Job: Huffman Gym Addition | Job No. 240157

Mounting: **SURFACE** | Main...: **MCB (225A)** | Neutral: **100%**

Voltage: **480Y/277V-3PH 4W** | Main...: **225 AMPS**

AIC...: **65000** | Ground: **Equipment Ground** | Lugs: **SINGLE**

PANEL: **1HD(EXISTING)**

ALL LOADS IN VA

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
							0.00	LTG-CORRIDOR			1	A	2			XFMR-TILD								0.00
							0.00	LTG-RR			3	B	4			75KVA								0.00
							0.00	LTG-D135			5	C	6			-								0.00
							0.00	LTG-D136			7	A	8			LTGS FORUM								0.00
							0.00	LTG-D135			9	B	10			LTGS FORUM								0.00
							0.00	LTG-128			11	C	12			LTGS FORUM								0.00
							0.00	LTG- 125			13	A	14			LTGS FORUM								0.00
							0.00	LTG- 116			15	B	16			LTGS FORUM								0.00
							0.00	LTG- 112			17	C	18			LTGS FORUM								0.00
							1.00	SPARE			19	A	20			LTGS FORUM								0.00
							0.00	AC-1			21	B	22			LTGS FORUM								0.00
							0.00	SHP			23	C	24											0.00
							0.00	-			25	A	26											0.00
							0.00	AD-A			27	B	28											0.00
							0.00	-			29	C	30											0.00
							0.00	-			31	A	32											0.00
							0.00	SPACE			33	B	34											0.00
							0.00	SPACE			35	C	36			SPACE								0.00
							0.00	SPACE			37	A	38			SPACE								0.00
							0.00	SPACE			39	B	40			SPACE								0.00
							0.00	SPACE			41	C	42			SPACE								0.00
0	0	0	0	0	0	0	1.00	TOTALS								TOTALS	0	0	0	0	0	0	0	0.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	Design KVA

*Input di...
**100% ...

Phase Load	
Ph	KVA
A	0.0
B	0.0
C	0.0

Panel Remarks:

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	1.0	1.2		0.5	0.6

PANEL: **1HD(EXISTING)**

Date: 6/3/2025 | By: Designer | REVISED

Job: Huffman Gym Addition | Job No. 240157

Mounting: **SURFACE** | Main...: | Neutral: **200%**

Voltage: **208Y/120V-3PH 4W** | Main...:

AIC...: **10000** | Ground: **Equipment Ground** | Lugs: **FEED THRU**

PANEL: **2LA1(E)**

ALL LOADS IN VA

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
	900						0.00	RCPTS-CLASS A232	20/1	12	1	A	2	12	20/1	RCPTS-CLASS A226		1080						0.00
	1080						0.00	RCPTS-CLASS A232	20/1	12	3	B	4	12	20/1	RCPTS-CLASS A226		1080						0.00
	900						0.00	RCPTS-CLASS A232	20/1	12	5	C	6	12	20/1	RCPTS-CLASS A226		1440						0.00
	1320						0.00	RCPTS-CLASS A233	20/1	12	7	A	8	12	20/1	RCPTS-CLASS A228		1080						0.00
	1320						0.00	RCPTS-CLASS A233	20/1	12	9	B	10	12	20/1	RCPTS-CLASS A228		1080						0.00
	1080						0.00	RCPTS-CLASS A233	20/1	12	11	C	12	12	20/1	RCPTS-CLASS A228		1440						0.00
	1320						0.00	RCPTS-CLASS A234	20/1	12	13	A	14	12	20/1	RCPTS-CLASS A220		900						0.00
	1320						0.00	RCPTS-CLASS A234	20/1	12	15	B	16	12	20/1	RCPTS-CLASS A220		1080						0.00
	1080						0.00	RCPTS-CLASS A234	20/1	12	17	C	18	12	20/1	RCPTS-CLASS A220		900						0.00
	900						0.00	RCPTS-CLASS A235	20/1	12	19	A	20	12	20/1	RCPTS-OFFICE		900						0.00
	1080						0.00	RCPTS-CLASS A235	20/1	12	21	B	22	12	20/1	RCPTS-CORRIDOR		540						0.00
	900						0.00	RCPTS-CLASS A235	20/1	12	23	C	24		20/1	SPARE								1.00
							0.00				25	A	26			SPARE								1.00
							0.00				27	B	28			SPARE								1.00
							0.00				29	C	30			SPARE								1.00
							0.00				31	A	32			SPARE								1.00
							0.00				33	B	34			SPARE								1.00
							0.00				35	C	36			SPARE								1.00
							0.00				37	A	38	10	30/3	TVSS								0.00
							0.00				39	B	40	-	-	-								0.00
							0.00				41	C	42	-	-	-								0.00
0	13200	0	0	0	0	0	0.00	TOTALS								TOTALS	0	11520	0	0	0	0	0	7.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
0.0	24.7	0.0	0.0	0.0	0.0	0.0	7.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
0.0	17.4	0.0	0.0	0.0	0.0	0.0	3.5	Design KVA

*Input di...
**100% ...

Phase Load	
Ph	KVA
A	8.4
B	8.6
C	7.7

Panel Remarks:

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	31.7	88.0		20.9	57.9

PANEL: **2LA1(E)**

Date: 6/3/2025 | By: Designer | REVISED

Job: Huffman Gym Addition | Job No. 240157

Mounting: **SURFACE** | Main...: **MCB (100A)** | Neutral: **200%**

Voltage: **208Y/120V-3PH 4W** | Main...: **100 AMPS**

AIC...: **10000** | Ground: **Equipment Ground** | Lugs: **FEED THRU**

PANEL: **LCP(E)**

ALL LOADS IN VA

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
	720						0.00	REC	20/1	12	1	A	2	12	20/1**	CHILLER HEAT TRACE						500		0.00
	500						0.00	REC	20/1	12	3	B	4	12	20/1**	CHILLER HEAT TRACE						500		0.00
	900						0.00	REC	20/1	12	5	C	6	12	15/1	EF-30			528					0.00
					500		0.00	CHILLER HEAT TRACE	20/1**	12	7	A	8	12	30/1	ACCH-1			1800					0.00
				1144			0.00	ACCU-2	15/2	12	9	B	10	10	30/1	ACCH-2			1800					0.00
				1144			0.00	-	-	12	11	C	12	10	30/1	ACCH-3			1800					0.00
				528			0.00	EF-29	15/1	12	13	A	14	12	20/1	REC		1000						0.00
				460			0.00	FCU-1	25/2	10	15	B	16	12	20/1	REC		1000						0.00
				3600			0.00	-	-	10	17	C	18	12	20/1	REC		1000						0.00
		500					0.00	BATTERY CHARGER	20/1	12	19	A	20	12	20/1	REC		1000						0.00
		100					0.00	COND HEATER	20/1	12	21	B	22	12	15/1	BOILER		1200						0.00
		1500					0.00	WATER HEATER	20/1	12	23	C	24	12	20/1	CIR PUMP		1200						0.00
		600					0.00	GWH-2	15/1	12	25	A	26	12	15/1	BOILER		1200						0.00
		600					0.00	GWH-2	15/1	12	27	B	28	12	20/1	CIR PUMP		1200						0.00
		200					0.00	CP-1	20/1	12	29	C	30	12	15/1	BOILER		1200						0.00
					500		0.00	CHILLER HEAT TRACE	20/1**	12	31	A	32	12	20/1	CIR PUMP		1200						0.00
							0.00				33	B	34	12	15/1	BOILER		1200						0.00
							0.00				35	C	36	12	20/1	CIR PUMP		1200						0.00
							0.00				37	A	38											0.00
							0.00				39	B	40											0.00
							0.00				41	C	42											0.00
0	2120	3500	0	6876	1000	0	0.00	TOTALS								TOTALS	0	13600	5928	0	0	1000	0	0.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
0.0	15.7	9.4	0.0	6.9	2.0	0.0	0.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
0.0	12.9	9.4	0.0	6.9	2.0	0.0	0.0	Design KVA

*Input di...
**100% ...

Phase Load	
Ph	KVA
A	10.0
B	9.7
C	14.3

Panel Remarks:
**PROVIDE GFPE TYPE BREAKER LOCKABLE IN THE OPEN POSITION

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	34.0	94.4		31.2	86.5

PANEL: **LCP(E)**

Date: 6/3/2025 | By: Designer | REVISED

1

Job: Huffman Gym Addition | Job No. 240157

Mounting: **SURFACE** | Main...: **MCB (125A)** | Neutral: **200%**

Voltage: **480Y/277V-3PH 4W** | Main...: **125 AMPS**

AIC...: **10000** | Ground: **Equipment Ground** | Lugs: **FEED THRU**

PANEL: **2EHC (EXISTING)**

ALL LOADS IN VA

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
							0.00	EXISTING			1	A	2	SEE	100/3	XFMR 2TELC	0	0	0	0	0	3	0	0.00
							0.00	EXISTING			3	B	4	RISER	-	-	0	0	0	0	0	3	0	0.00
							0.00	EXISTING			5	C	6	-	-	-	0	0	0	0	0	3	0	0.00
							0.00				7	A	8											0.00
							0.00				9	B	10											0.00
							0.00				11	C	12											0.00
							0.00				13	A	14											0.00
							0.00				15	B	16											0.00
							0.00				17	C	18											0.00
0	0	0	0	0	0	0	0.00	TOTALS								TOTALS	0	0	0	0	0	9	0	0.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Design KVA

*Input di...
**100% ...

Phase Load	
Ph	KVA
A	0.0
B	0.0
C	0.0

Panel Remarks:

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	0.0	0.0		0.0	0.0

PANEL: **2EHC (EXISTING)**

Date: 6/3/2025 | By: Designer | REVISED

Job: Huffman Gym Addition | Job No. 240157

Mounting: **SURFACE** | Main...: | Neutral: **200%**

Voltage: **208Y/120V-3PH 4W** | Main...:

AIC...: **10000** | Ground: **Equipment Ground** | Lugs: **FEED THRU**

PANEL: **1LB2(E)**

ALL LOADS IN VA

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
	720						0.00	RCPTS-PHY.B125	20/1	12	1	A	2	12	20/1	RCPTS-CHEM B135		720						0.00
	720						0.00	RCPTS-PHY.B125	20/1	12	3	B	4	12	20/1	RCPTS-CHEM B135		720						0.00
	720						0.00	RCPTS-PHY.B125	20/1	12	5	C	6	12	20/1	RCPTS-CHEM B135		720						0.00
	720						0.00	RCPTS-PHY.B125	20/1	12	7	A	8	12	20/1	RCPTS-CHEM B135		720						0.00
	720						0.00	RCPTS-PHY.B125	20/1	12	9	B	10	12	20/1	RCPTS-CHEM B135		720						0.00
	720						0.00	RCPTS-PHY.B125	20/1	12	11	C	12	12	20/1	RCPTS-CHEM B135		720						0.00
	720						0.00	RCPTS-PHY.B125	20/1	12	13	A	14	12	20/1	RCPTS-CHEM B135		720						0.00
	720						0.00	RCPTS-PHY.B125	20/1	12	15	B	16	12	20/1	RCPTS-CHEM B135		720						0.00
	360						0.00	RCPTS-PHY.B125	20/1	12	17	C	18	12	20/1	RCPTS-CHEM B135		560						0.00
	900						0.00	RCPTS-B109/CORR.	20/1	12	19	A	20	12	20/1	RCPTS		360						0.00
	100						0.00	UTILTY	20/1	12	21	B	22	12	20/1**	REFRIG		780						0.00
							1.00	SPARE			23	C	24	12	20/1	RCPTS		360						0.00
							1.00	SPARE			25	A	26	12	20/1	DISHWASHER		1560						0.00
							1.00	SPARE			27	B	28	12	20/1	RCPTS		1080						0.00
							1.00	SPARE			29	C	30	12	20/1	FUME HOOD		1020						0.00
							1.00	SPARE			31	A	32			SPARE								1.00
							1.00	SPARE			33	B	34			SPARE								1.00
							1.00	SPARE			35	C	36			SPARE								1.00
							1.00	SPARE			37	A	38	10	30/3	TVSS								0.00
							1.00	SPARE			39	B	40	-	-	-								0.00
							1.00	SPARE			41	C	42	-	-	-								0.00
0	7120	0	0	0	0	0	10.00	TOTALS								TOTALS	0	11480	0	0	0	0	0	3.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
0.0	18.6	0.0	0.0	0.0	0.0	0.0	13.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
0.0	14.3	0.0	0.0	0.0	0.0	0.0	6.5	Design KVA

*Input di...
**100% ...

Phase Load	
Ph	KVA
A	7.1
B	6.3
C	5.2

Panel Remarks:
**PROVIDE GFCI TYPE BREAKER

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	31.6	87.7		20.8	57.7

PANEL: **1LB2(E)**

Date: 6/3/2025 | By: Designer | REVISED

PBK

ARCHITECT PBK Architects, Inc.
PBK.com
HOUSTON
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-961-0608 P
713-961-4571 F
TX Firm: BR 1608

CIVIL
CONSULTANT NAME
T-000-000-0000

LANDSCAPE
CONSULTANT NAME
T-000-000-0000

STRUCTURAL
CONSULTANT NAME
T-000-000-0000

MEP
CONSULTANT NAME
T-000-000-0000

ACOUSTIC
CONSULTANT NAME
T-000-000-0000

THEATER
CONSULTANT NAME
T-000-000-0000

FOOD SERVICE
CONSULTANT NAME
T-000-000-0000

TECH
CONSULTANT NAME
T-000-000-0000

LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT

KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61522
LICENSED PROFESSIONAL ENGINEER

LEAF ENGINEERS
F-10672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 01	06/03/2025

CHECKED BY: PP

DRAWN BY: LT

ELECTRICAL PANEL SCHEDULES-GYM

E-702.G

Plot Stamp:
6/3/2025 3:20:16 PM

ELECTRICAL PANEL SCHEDULES-GYM

E-703.G

FOR BLUEBEAM LABELING/OCR:

0"

1"

Job: Huffman Gym Addition

Job No. 240157

Mounting **SURFACE**
Main... **MCB (600A)**
Neutral **100%**

Voltage: **480Y/277V-3PH 4W**
Main... **600 AMPS**

AIC... **42000**
Ground **Equipment Ground**
Lugs **SINGLE**

PANEL: **DPA(E)**

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
								ALL LOADS IN VA																
					107199		0.00	PANEL 1HA	225/3	4/0	**1**	**A**	**2**	10	30/3	AHU-2					3333			0.00
							0.00	-	-	4/0	**3**	**B**	**4**	10	-	7.5HP								0.00
							0.00	-	-	4/0	**5**	**C**	**6**	10	-									0.00
					43212		0.00	PANEL 1HA2	100/3	3	**7**	**A**	**8**	**8**	**30/2**	**MORTORIZED GATE**			**5760**					0.00
							0.00	-	-	3	**9**	**B**	**10**	-	-				**5760**					0.00
							0.00	-	-	3	**11**	**C**	**12**	**8**	**30/2**	**MORTORIZED GATE**			**5760**					0.00
					86424		0.00	PANEL 2HA2	150/3	1/0	**13**	**A**	**14**	-	-				**5760**					0.00
							0.00	-	-	1/0	**15**	**B**	**16**	**8**	**30/2**	**MORTORIZED GATE**			**5760**					0.00
							0.00	-	-	1/0	**17**	**C**	**18**	-	-				**5760**					0.00
					51480		0.00	XFMR T1LA2	125/3	1	**19**	**A**	**20**	**8**	**30/2**	**MORTORIZED GATE**			**5760**					0.00
							0.00	(75KVA)	-	1	**21**	**B**	**22**	-	-				**5760**					0.00
							0.00	-	-	1	**23**	**C**	**24**											0.00
							0.00				**25**	**A**	**26**											0.00
							0.00				**27**	**B**	**28**											0.00
							0.00				**29**	**C**	**30**											0.00
							0.00				**31**	**A**	**32**											0.00
							0.00				**33**	**B**	**34**											0.00
							0.00				**35**	**C**	**36**											0.00
							0.00				**37**	**A**	**38**											0.00
							0.00				**39**	**B**	**40**											0.00
							0.00				**41**	**C**	**42**											0.00
0	0	0	0	0	298315	0	0.00	**TOTALS**								**TOTALS**	0	0	46080	0	3333	0	0	0.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
0.0	0.0	46.1	0.0	3.3	288.3	0.0	0.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
0.0	0.0	46.1	0.0	3.3	288.3	0.0	0.0	Design KVA

*Input...
**100%...

Phase Load

Ph	KVA
A	308.9
B	17.3
C	11.5

Panel Remarks:

PANEL: **DPA(E)**

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	337.7	406.2		337.7	406.2

Date: 6/3/2025 By: Designer

Job: Huffman Gym Addition

Job No. 240157

Mounting **SURFACE**
Main... **MCB (400A)**
Neutral **100%**

Voltage: **480Y/277V-3PH 4W**
Main... **400 AMPS**

AIC... **42000**
Ground **Equipment Ground**
Lugs **SINGLE**

PANEL: **DPB(E)**

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
								ALL LOADS IN VA																
					53184		0.00	PANEL 1HB	150/3	1/0	**1**	**A**	**2**	12	15/3	AHU-4			1467					0.00
							0.00	-	-	1/0	**3**	**B**	**4**	12	-	3HP			1467					0.00
							0.00	-	-	1/0	**5**	**C**	**6**	12	-	-			1467					0.00
					9972		0.00	PANEL 1HB1	100/3	3	**7**	**A**	**8**	8	50/3	XFMR-T1LB1					14550			0.00
							0.00	-	-	3	**9**	**B**	**10**	8	-	-								0.00
							0.00	-	-	3	**11**	**C**	**12**	8	-	-								0.00
					98889		0.00	PANEL 2HB	225/3	4/0	**13**	**A**	**14**	4	70/3	XFMR-T1LB2					18000			0.00
							0.00	-	-	4/0	**15**	**B**	**16**	4	-	-								0.00
							0.00	-	-	4/0	**17**	**C**	**18**	4	-	-								0.00
					15840		0.00	XFMR T1LB1	70/3	4	**19**	**A**	**20**											0.00
							0.00	(45KVA)	-	4	**21**	**B**	**22**											0.00
							0.00	-	-	4	**23**	**C**	**24**											0.00
		5760					0.00	**MOTORIZED GATE**	**30/2**	**10**	**25**	**A**	**26**											0.00
		5760					0.00	-	-	-	**27**	**B**	**28**											0.00
		5760					0.00	**MOTORIZED GATE**	**30/2**	**10**	**29**	**C**	**30**											0.00
		5760					0.00	-	-	-	**31**	**A**	**32**											0.00
		5760					0.00	**MOTORIZED GATE**	**30/2**	**10**	**33**	**B**	**34**											0.00
		5760					0.00	-	-	-	**35**	**C**	**36**											0.00
		5760					0.00	**MOTORIZED GATE**	**30/2**	**10**	**37**	**A**	**38**											0.00
		5760					0.00	-	-	-	**39**	**B**	**40**											0.00
							0.00				**41**	**C**	**42**											0.00
0	0	46080	0	0	177885	0	0.00	**TOTALS**								**TOTALS**	0	0	4401	0	0	32550	0	0.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
0.0	0.0	50.5	0.0	0.0	210.4	0.0	0.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
0.0	0.0	50.5	0.0	0.0	210.4	0.0	0.0	Design KVA

*Input...
**100%...

Phase Load

Ph	KVA
A	229.2
B	18.7
C	13.0

Panel Remarks:

PANEL: **DPB(E)**

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	260.9	313.8		260.9	313.8

Date: 6/3/2025 By: Designer

PBK

ARCHITECT PBK Architects, Inc.
PBK.com
HOUSTON
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-961-0608 P
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TX Firm: BR 1608

CIVIL
CONSULTANT NAME
T-000-000-0000

LANDSCAPE
CONSULTANT NAME
T-000-000-0000

STRUCTURAL
CONSULTANT NAME
T-000-000-0000

MEP
CONSULTANT NAME
T-000-000-0000

ACOUSTIC
CONSULTANT NAME
T-000-000-0000

THEATER
CONSULTANT NAME
T-000-000-0000

FOOD SERVICE
CONSULTANT NAME
T-000-000-0000

AV
CONSULTANT NAME
T-000-000-0000

LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS

KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED
PROFESSIONAL ENGINEER

LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 01	06/03/2025

CHECKED BY: PP

DRAWN BY: LT

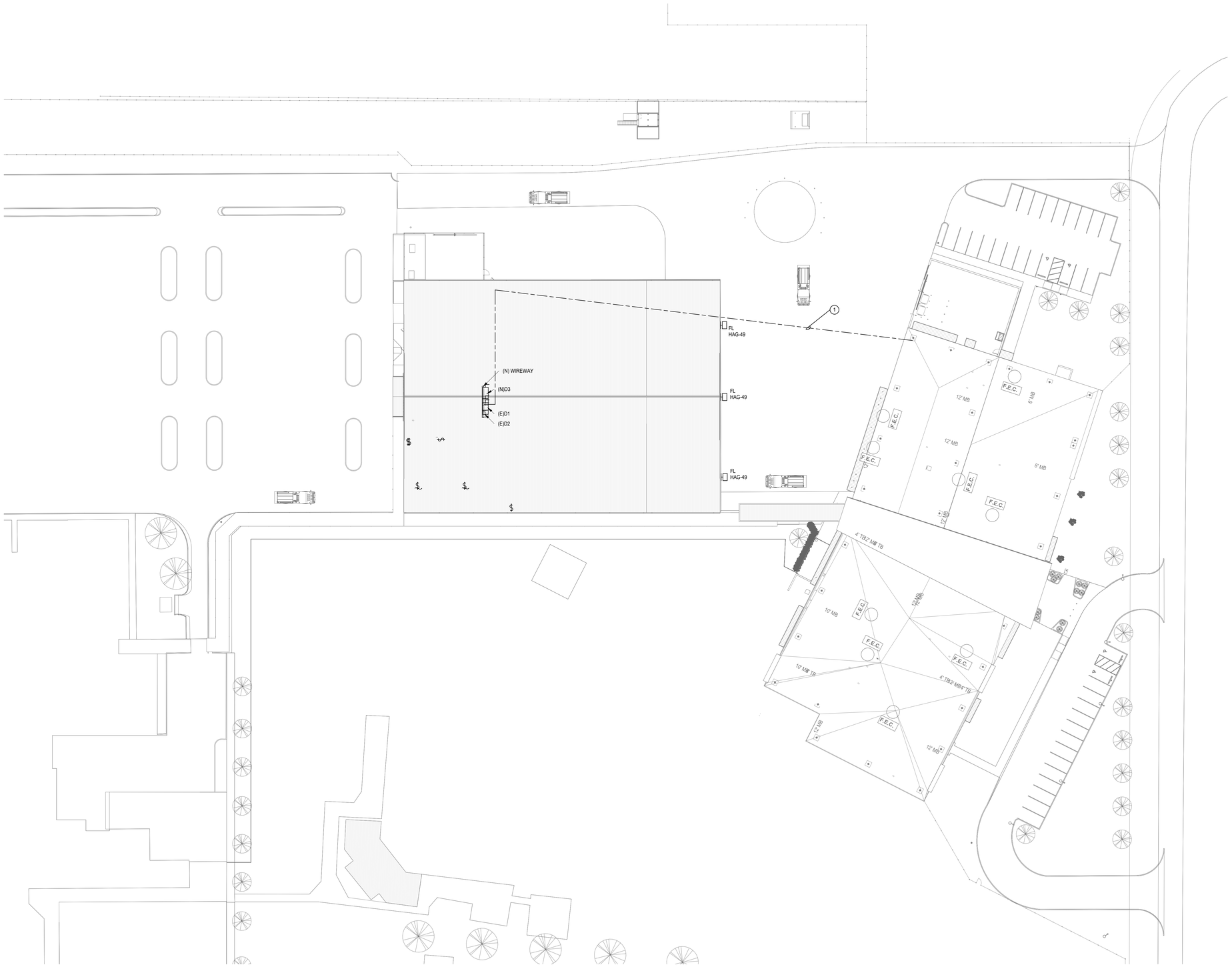
ELECTRICAL PANEL SCHEDULES-GYM

E-703.G

1

Plot Stamp:
6/3/2025 3:20:16 PM

ELECTRICAL SITE PLAN-AG
ES-101.A
FOR BLUEBEAM LABELING/OCR:



1 ELECTRICAL SITE PLAN
SCALE: 1" = 30'-0"

SITE PLAN GENERAL NOTES:

1. COORDINATE ROUTING FOR ALL UNDERGROUND ELECTRICAL BRANCH CIRCUITS AND FEEDERS WITH OTHER DISCIPLINES PRIOR TO TRENCHING.
2. UNLESS NOTED OTHERWISE ALL UNDERGROUND CONDUIT SHOWN ON THIS PLAN TO BE MINIMUM 1" IN SIZE.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES CAUSED BY INSTALLATION OF NEW WORK.

SITE PLAN KEYED NOTES:

1. UNDERGROUND POWER FOR AG SCIENCE BUILDING SEE ELECTRICAL RISER E-502.

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STRUCTURAL
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BAL LLC
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BEAM PROFESSIONALS
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FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS, LLC
T 281-350-2323

LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: AGRICULTURAL PAVILLION

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS

H	J

KEY PLAN
NORTH: PLAN TRUE

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CLIENT
Huffman Independent School District

DATE	PROJECT NUMBER
05/21/2025	240157

DRAWING HISTORY

No.	Description	Date

CHECKED BY: PP
DRAWN BY: LT

ELECTRICAL SITE PLAN-AG

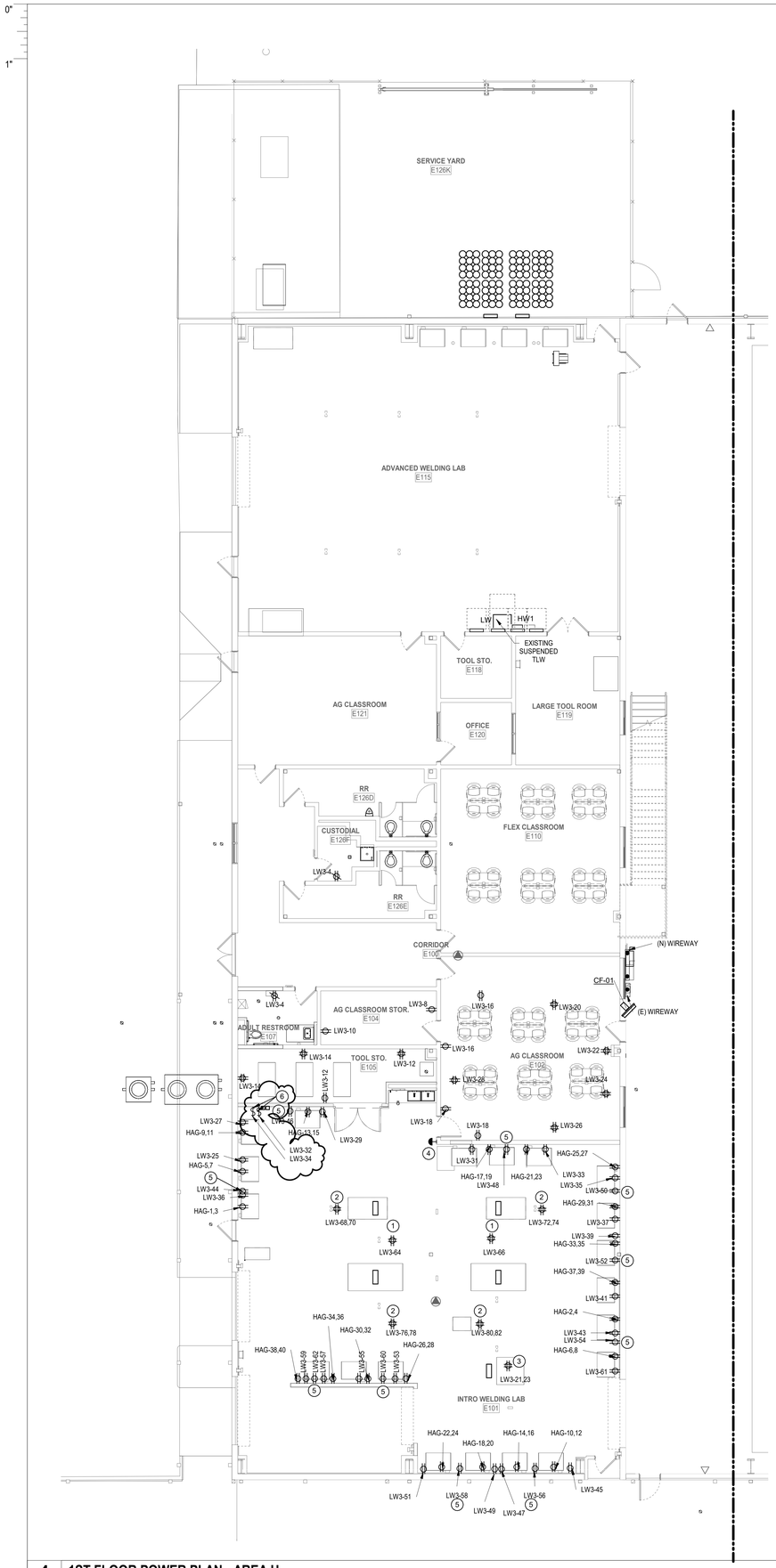
ES-101.A

Plot Stamp:
6/3/2025 2:53:21 PM

1ST FLOOR POWER PLAN - AREA H-AG

E-101H.A

FOR BLUEBEAM LABELING/OCR:



1 1ST FLOOR POWER PLAN - AREA H

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

POWER PLAN GENERAL NOTES:

1. FOR EQUIPMENT OR DEVICES SHOWN ON ARCHITECTURAL DRAWINGS THAT REQUIRE POWER AND NOT IDENTIFIED ON ELECTRICAL PLANS, ASSUME AT A MINIMUM A DUPELX OUTLET, A DEDICATED CIRCUIT WITH 2#12,1#12G,3/4"C. WITH HOMERUN TO NEAREST 120/208V PANEL. ITEMS SUCH AS BUT NOT LIMITED TO ROLL DOWN DOORS, COUNTER DOORS, OVERHEAD GRILLES, DISPLAY CASES, HAND DRYERS, WATER COOLERS, ICE MAKERS, GARBAGE DISPOSALS, OSCILLATING FANS, LCD's, PROJECTORS, DISHWASHERS, MOTORIZED PROJECTION SCREENS, ETC.
2. DATA/COMMUNICATION OUTLETS ARE SHOWN ON THIS DRAWING FOR COORDINATION PURPOSES ONLY. PROVIDE AND INSTALL ALL CONDUITS AND BACK BOXES REQUIRED BY LOW VOLTAGE SYSTEMS. COORDINATE WITH "TS" DRAWINGS, DETAILS, ETC. AND ARCHITECTURAL DRAWINGS FOR EXACT QUANTITIES, LOCATIONS, AND REQUIREMENTS PRIOR TO ROUGH-IN.
3. CONTRACTOR TO PROVIDE CONNECTION FROM EXHAUST FANS TO ALL MOTORIZED BACKDRAFT DAMPERS AS REQUIRED, COORDINATE WITH MECHANICAL.
4. ALL 15 AMP AND 20 AMP NON-LOCKING TYPE RECEPTACLES THAT ARE NOT LOCATED WITHIN DEDICATED APPLIANCE SPACE AND ARE BELOW 66" ABOVE FINISHED FLOOR SHALL BE TAMPER RESISTANT TYPE RECEPTACLES, PER NEC 406.12.

POWER KEY NOTES

1. VERTICAL MOUNTING BRACKET CORD REEL. WOODHEAD #9383 (25', 12 AWG, 3-CONDUTOR SOW CABLE) WITH BALL STOP AND 20A PENDANT QUAD RECEPTABLE END WITH TWO 5-20R DUPLEX RECEPTABLES WOODHEAD #9383-3080.
2. VERTICAL MOUNTING BRACKET HUBBELL CORD REEL. HBLW4563W WITH STRAIGHT BLADE DEVICE 9650NC WITH 6-50R.
3. VERTICAL MOUNTING BRACKET HUBBELL CORD REEL WCA12345-BC WITH STRAIGHT BLADE DEVICE BRY5468NP.
4. PROVIDE CONNECTION TO EPO(EMERGENCY POWER OFF) BUTTON FOR REMOTE SHUTDOWN OF THIS PANELBOARD.
5. PROVIDE POWER TO VERTICAL MOUNTING BRACKET CORD REEL WOODHEAD #9383 (25', 12 AWG, 3-CONDUTOR SOW CABLE) WITH BALL STOP AND 20A PENDANT DUPLEX RECEPTACLE END WITH TWO 5-20R DUPLEX RECEPTACLES WOODHEAD #9383-3080. VERIFY MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN.
6. PROVIDE POWER TO EXHAUST FAN TO ROOF.

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LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: AGRICULTURAL PAVILLION

25400 Willy Lane
Huffman, TX 77336

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KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
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LEAF ENGINEERS
F-18672

CLIENT
Huffman Independent School District

DATE	PROJECT NUMBER
05/21/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 1	06/03/2025

CHECKED BY: PP

DRAWN BY: LT

1ST FLOOR POWER PLAN - AREA H-AG

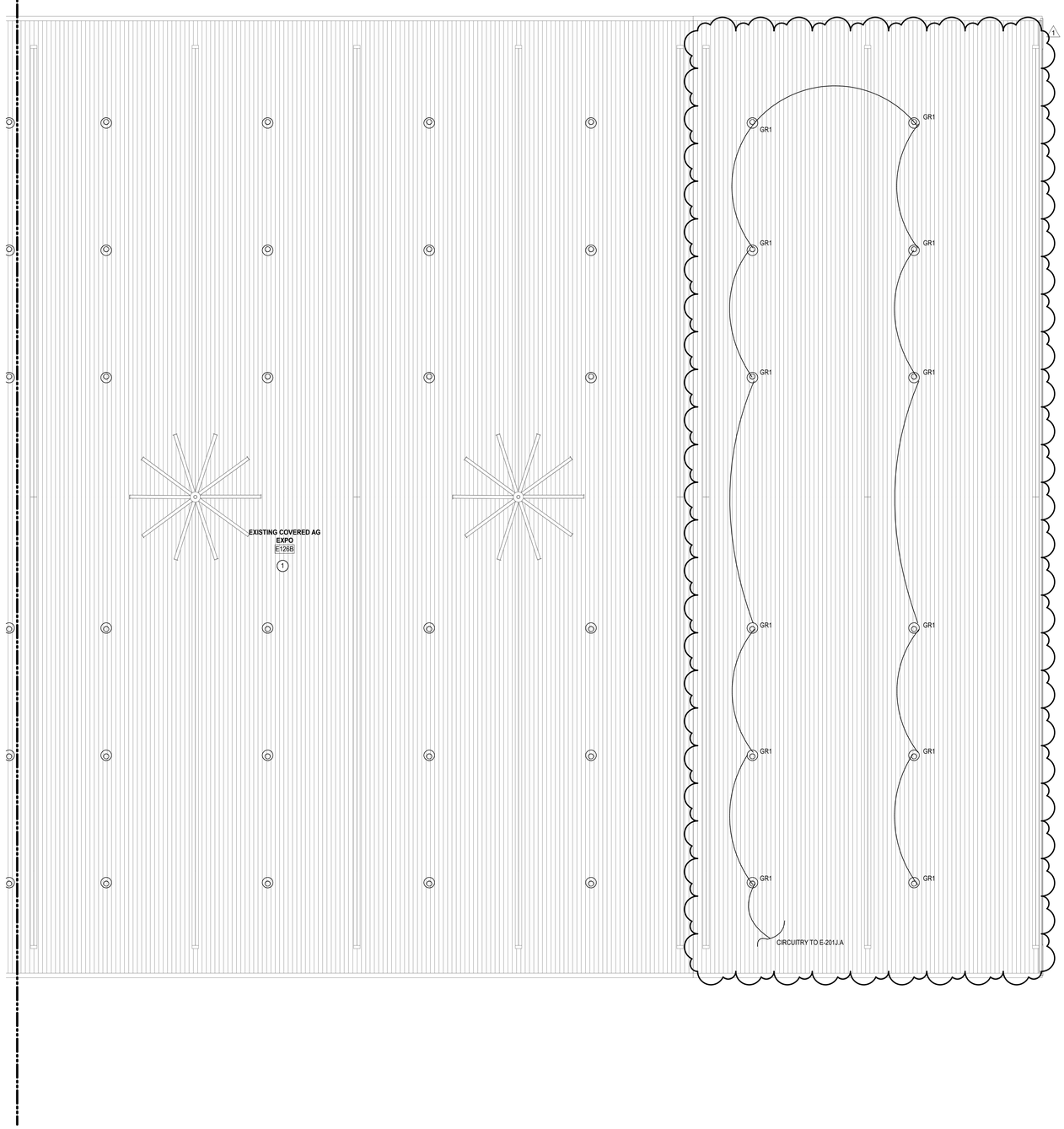
E-101H.A

Plot Stamp:
6/3/2025 2:53:27 PM

2ND FLOOR LIGHTING PLAN - AREA J-AG

E-202J.A

FOR BLUEBEAM LABELING/OCR:



1 2ND FLOOR LIGHTING PLAN - AREA J

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

LIGHTING PLAN GENERAL NOTES

1. REFER TO ARCHITECT'S REFLECTED CEILING PLAN FOR EXACT LOCATIONS OF ALL LIGHTING FIXTURES.
2. UNLESS OTHERWISE NOTED, ALL 2X4'S ARE TYPE "A", ALL EXIT SIGNS ARE TYPE "X".
3. PROVIDE 20A EMERGENCY LIGHTING BRANCH CIRCUIT(S), 2#10, 1#10G, 3/4"C FROM EMERGENCY PANEL. PROVIDE CONNECTION TO ALL 277V FIXTURES DESIGNATED FOR USE AS EMERGENCY IN THIS AREA. PROVIDE EMERGENCY AUTOMATIC TRANSFER DEVICES FOR ALL LIGHT FIXTURES SHOWN TO BE ON EMERGENCY. PROVIDE 20A UNSWITCHED BRANCH CIRCUIT (2#12, 1#12G, 3/4"C) FROM EMERGENCY PANEL TO ALL EXIT SIGNS IN THIS AREA, SEE PANEL SCHEDULE FOR CIRCUIT NUMBER(S).
4. UNLESS OTHERWISE NOTED, TWO SWITCHES SIDE-BY-SIDE INDICATES MULTI-LEVEL SWITCHING. PROVIDE ONE-PIECE COVER PLATE FOR LIGHT SWITCHES. DESIGNATION NEXT TO SWITCHES INDICATES BRANCH CIRCUIT NUMBER. PROVIDE CONNECTION TO ALL FIXTURES IN THE ROOM.
5. PROVIDE A COMPLETE AND OPERATIONAL SYSTEM OF OCCUPANCY SENSORS FOR ON/OFF CONTROL OF ALL LIGHT FIXTURES INCLUDING BUT NOT LIMITED TO POWER PACKS, WIRING, ETC. RE: DIVISION 26 SPECIFICATIONS FOR ADDITIONAL INFORMATION.
6. PROVIDE EMERGENCY BATTERY PACKS FOR ALL LIGHTING FIXTURES DESIGNATED TO BE ON EMERGENCY POWER AND EXIT SIGNS. PROVIDE UNSWITCHED HOT TO BATTERY SO THAT LIGHT FIXTURES CAN BE SWITCHED OFF AND ON WITHOUT DRAINING BATTERY. RE: DIVISION 26 SPECIFICATIONS FOR ADDITIONAL INFORMATION. PROVIDE 20A UNSWITCHED BRANCH CIRCUIT (2#12, 1#12G, 3/4"C) FROM LIGHTING PANEL TO ALL EXIT SIGNS IN THIS AREA.

ELECTRICAL LIGHTING PLAN KEYED NOTES:

1. EXISTING TO REMAIN.

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CHECKED BY: PP

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2ND FLOOR LIGHTING PLAN - AREA J-AG

E-202J.A

Plot Stamp:
6/3/2025 2:53:30 PM

ELECTRICAL ROOF PLAN-AG

E-301.A

FOR BLUEBEAM LABELING/OCR:

0"

1"

1 ELECTRICAL ROOF PLAN

SCALE: 3/32" = 1'-0"

ELECTRICAL ROOF NOTES:

1. 1. FOR EQUIPMENT OR DEVICES SHOWN ON ARCHITECTURAL DRAWINGS THAT REQUIRE POWER AND NOT IDENTIFIED ON ELECTRICAL PLANS, ASSUME AT A MINIMUM A DUPELX OUTLET, A DEDICATED CIRCUIT WITH 2#12,1#12G,3/4"C. WITH HOMERUN TO NEAREST 120/208V PANEL. ITEMS SUCH AS BUT NOT LIMITED TO ROLL DOWN DOORS, COUNTER DOORS, OVERHEAD GRILLES, DISPLAY CASES, HAND DRYERS, WATER COOLERS, ICE MAKERS, GARBAGE DISPOSALS, OSCILLATING FANS, LCD's, PROJECTORS, DISHWASHERS, MOTORIZED PROJECTION SCREENS, ETC.
2. ALL MOTOR SWITCHES ARE TO BE WEATHER PROOF.
3. CONTRACTOR TO PROVIDE CONNECTION FROM EXHAUST FANS TO ALL MOTORIZED BACKDRAFT DAMPERS AS REQUIRED, COORDINATE WITH MECHANICAL.

ELECTRICAL PLAN KEYED NOTES:

1. EXISTING TO REMAIN.
2. PROVIDE MAPA PEDESTAL DISCONNECT AND RECEPTACLE. REFER TO DETAIL ON SHEET 2/E6.05 FOR ADDITIONAL INFORMATION.

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LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: AGRICULTURAL PAVILLION

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No.	Description	Date
1	Addendum 1	06/03/2025

CHECKED BY: PP

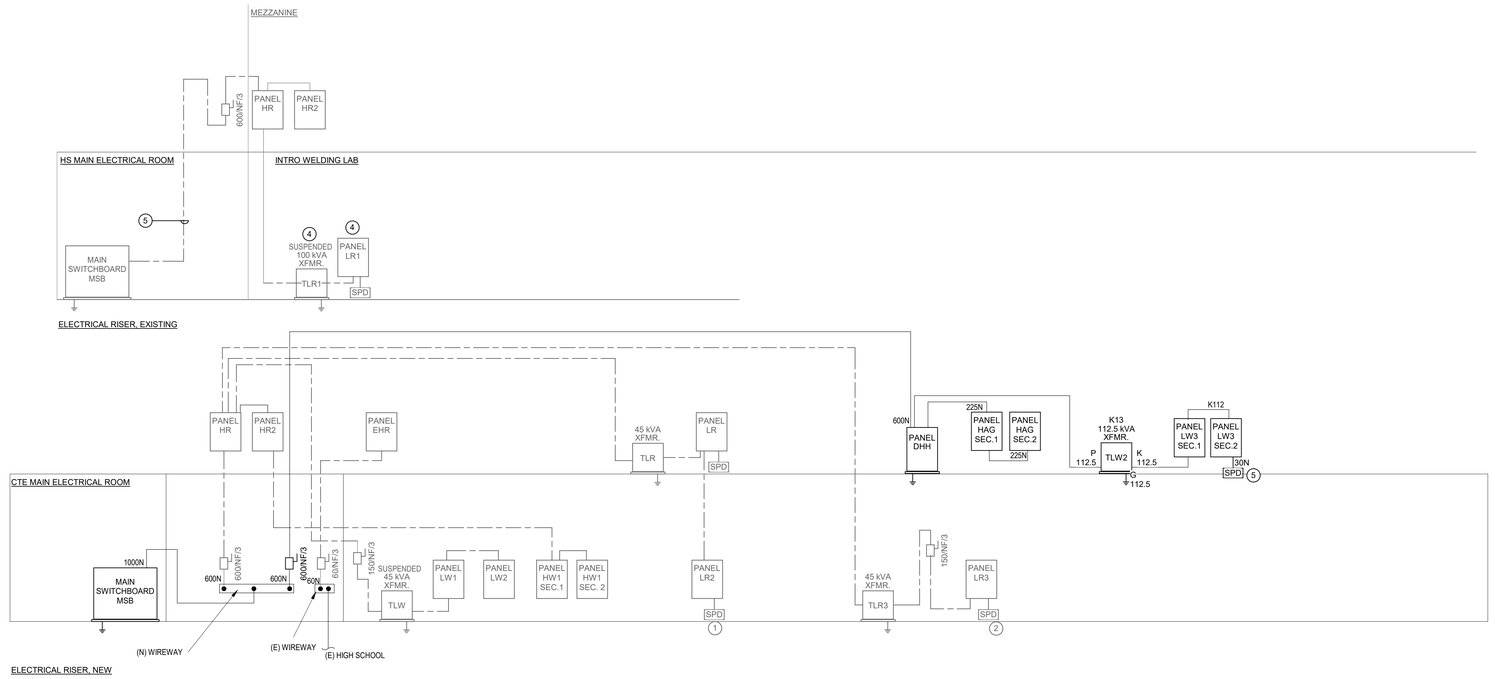
DRAWN BY: LT

ELECTRICAL ROOF PLAN-AG

E-301.A

Plot Stamp:
6/3/2025 2:53:30 PM

ELECTRICAL RISER DIAGRAM-AG
E-502.A
FOR BLUEBEAM LABELING/OCR:

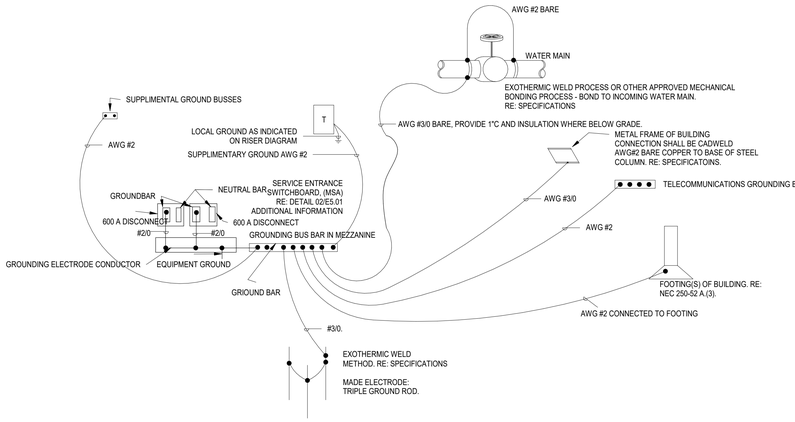


LOAD ANALYSIS MSB

EQUIPME...	DEMOLISHED LOAD	NEW LOAD	
EXISTING...		459.18	KVA
NEW DHH	0.0	280.31	KVA
TOTAL KVA (ADDED)		739.49	KVA
TOTAL AMP (ADDED)		889.88	AMPS
EXISTING LOAD MSB(CTE) PER NEC		1580.31	KVA
TOTAL SERVICE KVA =		2319.80	KVA @480, 3-PHASE
TOTAL AMPACITY =		2790.29	AMPS
SERVICE AMPACITY =		3000.00	AMPS
SERVICE SIZE			
SPARE CAPACITY =		209.71	AMPS

ELECTRICAL RISER DIAGRAM NOTES:

1. REPLACE SURGE PROTECTIVE DEVICE.
2. ADD SURGE PROTECTIVE DEVICE TO EXISTING PANEL, RE: DIVISION 26 SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3. SURGE PROTECTIVE DEVICE, RE:DIVISION 26 SPECIFICATIONS FOR ADDITIONAL INFORMATION.
4. REMOVE EXISTING ELECTRICAL PANEL, INCLUDING ALL CIRCUIT BREAKERS, WIRING, AND RELATED COMPONENTS. ENSURE SAFE DISCONNECTION OF ELECTRICAL SERVICE FROM THE PANEL BEFORE DEMOLITION BEGINS.
5. REMOVE EXISTING BREAKER FROM THE PANEL AND INSTALL IT AS A SPARE BREAKER IN THE DESIGNATED SPACE ON THE SWITCHBOARD. ENSURE THAT THE BREAKER IS CORRECTLY LABELED AND FUNCTIONAL AS A SPARE.
6. CONDUCTOR LENGTH SHALL NOT EXCEED 10'.



ALUMINUM FEEDER SCHEDULE

TAG NUMBER	CONDUCTOR QUANTITY AND SIZE	CONDUIT SIZE	SETS	COMMENTS
200	3#250, 1#4G	2"	1	
200N	4#250, 1#4G	2 1/2"	1	
225	3#300, 1#2G	2 1/2"	1	
225N	4#300, 1#2G	3"	1	
250	3#350, 1#2G	2 1/2"	1	
250N	4#350, 1#2G	3"	1	
300	3#500, 1#2G	3"	1	
300N	4#500, 1#2G	3"	1	
400	3#250, 1#1G	2 1/2"	2	
400N	4#250, 1#1G	2 1/2"	2	
600	3#500, 1#2/0G	3"	2	
600N	4#500, 1#2/0G	3 1/2"	2	
800	3#400, 1#3/0G	3"	3	
800N	4#400, 1#3/0G	3"	3	
1200	3#500, 1#3/0G	3"	4	
1200N	4#500, 1#3/0G	3 1/2"	4	

FEEDER SCHEDULE

TAG NUMBER	CONDUCTOR QUANTITY AND SIZE	CONDUIT SIZE	SETS	COMMENTS
30N	4#10, 1#10G	1"	1	
50N	4#6, 1#10G	1"	1	
60N	4#6, 1#10G	1"	1	
100	3#1, 1#8G	1 1/2"	1	
100N	4#1, 1#8G	1 1/2"	1	
125	3#1, 1#6G	1 1/2"	1	
125N	4#1, 1#6G	2"	1	
150	3#1/0, 1#6G	1 1/2"	1	
150N	4#1/0, 1#6G	2"	1	
175	3#2/0, 1#6G	2"	1	
175N	4#2/0, 1#6G	2"	1	
200	3#3/0, 1#6G	2"	1	
200N	4#3/0, 1#6G	2"	1	
225	3#4/0, 1#4G	2"	1	
225N	4#4/0, 1#4G	2 1/2"	1	
250	3#250, 1#4G	2 1/2"	1	
250N	4#250, 1#4G	3"	1	
300	3#350, 1#4G	3"	1	
300N	4#350, 1#4G	3"	1	
400	3#3/0, 1#3G	2"	2	
400N	4#3/0, 1#3G	2"	2	
400S	4#500	3 1/2"	1	
600	3#350, 1#1G	3"	2	
600N	4#350, 1#1G	3"	2	
600S	4#350	3"	2	
800	3#500, 1#1/0G	3"	2	
800N	4#500, 1#1/0G	3 1/2"	2	
800S	4#500	3 1/2"	2	
1000	3#400, 1#2/0G	3"	3	
1000N	4#400, 1#2/0G	3"	3	
1000S	4#400	3"	3	
1200	3#350, 1#3/0G	3"	4	
1200N	4#350, 1#3/0G	3"	4	
1200S	4#350	3"	4	
1600S	4#400	3"	5	
2000S	4#400	3"	6	
2500S	4#500	3 1/2"	7	
3000S	4#500	3 1/2"	8	
4000S	4#500	3 1/2"	11	

TRANSFORMER FEEDER SCHEDULE

TAG NUMBER	CONDUCTOR QUANTITY AND SIZE	CONDUIT SIZE	SETS	COMMENTS
P15	3#10, 1#10G	3/4"	1	
S15	4#6, 1#8G	1"	1	
K15	3#4, 1#6N, 1#8G	1 1/4"	1	
G15	1#8G	1/2"	1	
P15	2#8, 1#10G	3/4"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
S15	3#4, 1#6G	1 1/2"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
G15	1#6G	3/4"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
P25	2#6, 1#10G	1"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
D25	3#1, 1#6G	1 1/2"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
G25	1#6G	3/4"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
P30	3#6, 1#10G	3/4"	1	
S30	4#1, 1#6G	1 1/2"	1	
K30	3 #1/0, 1#2/0N, 1#6G	2"	1	
G30	1#6G	1/2"	1	
P37	2#1, 1#6G	1 1/4"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
D37	3#3/0, 1#4G	3"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
G37	1#4G	3/4"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
P45	3#4, 1#8G	1"	1	
S45	4#1/0, 1#6G	1 1/2"	1	
K45	3#2/0, 1#250, 1#4G	2"	1	
G45	1#6G	1/2"	1	
P50	2#1, 1#6G	1 1/4"	1	
S50	3#3/0, 1#3G	2"	1	
G50	1#3G	3/4"	1	
P75	3#1, 1#8G	1 1/2"	1	
S75	4#4/0, 1#2G	2 1/2"	1	
K75	3#4/0, 2#3/0N, 1#2G	2 1/2"	1	
G75	1#1/0G	1/2"	1	
P75	2#3/0, 1#6G	2"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
S75	3#3/0, 1#4G	2"	2	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
G75	1#4G	3/4"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
P75A	3#1, 1#8G	1 1/2"	1	FOR 480 3Ø: 120/240 3Ø TRANSFORMERS
S75A	4#4/0, 1#2G	2 1/2"	1	FOR 480 3Ø: 120/240 3Ø TRANSFORMERS
G75A	1#2G	1/2"	1	FOR 480 3Ø: 120/240 3Ø TRANSFORMERS
P112	3#2/0, #6G	2"	1	
S112	4#3/0, 1#1/0G	2"	2	
K112	3#4/0, 1#350N, 1#1/0G	2 1/2"	2	
G112	1#1/0G	3/4"	1	
P150	3#250, 1#4G	2 1/2"	1	
S150	4#350, 1#2/0G	3"	2	
K150	3#350, 2#3/0N, 1#2/0G	3"	2	
G150	1#2/0G	3/4"	1	
P167	2#4/0, 1#2/0G	2"	2	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
S167	3#350, 1#3/0G	3"	3	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
G167	1#3/0G	3/4"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
P225	3#500, 3#3G	3"	1	
S225	4#300, 1#2/0G	3"	1	
K225	3#350, 2#3/0, 1#1G	3 1/2"	3	
G225	1#2/0G	3/4"	1	

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713-961-0608 P
713-961-4571 F
TX Firm: BR 1608

CIVIL
KIMLEY-HORN
T 281-497-9300

LANDSCAPE
EDGELAND
T 713-965-0005

STRUCTURAL
KUBRA ENGINEERS
T 713-985-0908

MEP
LEAF ENGINEERS
T 713-905-0505

ACOUSTIC
BAI, LLC
T 713-961-0304

EXTERIOR
BEAM PROFESSIONALS
T 713-985-0908

FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS, LLc
T 281-350-2323

LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: AGRICULTURAL PAVILLION

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

H | J

KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED
PROFESSIONAL ENGINEER
LEAF ENGINEERS
F-18672

CLIENT
Huffman Independent School District

DATE	PROJECT NUMBER
05/21/2025	240157

DRAWING HISTORY

No.	Description	Date

CHECKED BY: PP
DRAWN BY: LT

ELECTRICAL RISER DIAGRAM-AG

E-502.A

Plot Stamp:
6/3/2025 3:38:04 PM

ELECTRICAL SYMBOL LEGEND AND CONTACTOR SCHEDULE

E-601.A

FOR BLUEBEAM LABELING/OCR:

0"

1"

Huf...

Light...

Fixture Type	Manufacturer	Catalog Number	Lamp Type	Mounting	Voltage	Dimming Type	Description
A	DAYBRITE	2FPZ48L840-4-DS-UNV-DIM	37W 4000K 4800 LM	RECESSED	UNV	0-10V	RECESSED LED 2X4 FLAT PANEL
AH	DAYBRITE	2FPZ48L840-4-DS-UNV-DIM / FMA24	37W 4000K 4800 LM	RECESSED	UNV	0-10V	RECESSED LED 2X4 FLAT PANEL W/ HARD CEILING KIT
A1	DAYBRITE	2FPZ42B840-4-DS-UNV-DIM	40W 4000K 4200 LM	RECESSED	UNV	0-10V	RECESSED LED 2X4 FLAT PANEL (LOW OUTPUT)
A2	DAYBRITE	2FPZ60L840-4-DS-UNV-DIM	47W 4000K 6000 LM	RECESSED	UNV	0-10V	RECESSED LED 2X4 FLAT PANEL (HIGH OUTPUT)
A3	DAYBRITE	1FPZ45L840-4-DS-UNV-DIM	38W 4000K 4500 LM	RECESSED	UNV	0-10V	RECESSED LED 1X4 FLAT PANEL
A3H	DAYBRITE	1FPZ45L840-4-DS-UNV-DIM / FMA14FP	38W 4000K 4500 LM	RECESSED	UNV	0-10V	RECESSED LED 1X4 FLAT PANEL W/ HARD CEILING KIT
D	LIGHTOLIER	4RN / P4RDL15940WCCZ10U	12W 4000K 1500 LM	RECESSED	UNV	0-10V	4" ROUND APERTURE LED DOWNLIGHT, LISTED FOR WET LOCATIONS
D1	LIGHTOLIER	6RN / C6L48940MZ10U / C5RDLCC	42W 4000K 4800 LM	RECESSED	UNV	0-10V	6" ROUND APERTURE LED DOWNLIGHT, LISTED FOR WET LOCATIONS (HIGH OUTPUT)
D2	LIGHTOLIER	4RN / P4RDL05940WCCZ10U	5W 4000K 500 LM	RECESSED	UNV	0-10V	4" ROUND APERTURE LED DOWNLIGHT, LISTED FOR WET LOCATIONS (LOW OUTPUT)
D5	LIGHTOLIER	4RN / P4RSL05940WCCZ10U	5W 4000K 500 LM	RECESSED	UNV	0-10V	4" ROUND APERTURE LED DOWNLIGHT, LISTED FOR WET LOCATIONS (LOW OUTPUT)
DW	LIGHTOLIER	4RN / P4RLW15940WCCZ10U	12W 4000K 1500 LM	RECESSED	UNV	0-10V	4" ROUND APERTURE LED LENSED WALLWASHER
G	DAYBRITE	1FPZ24L840-UNV-WH-FHG-WGR	20W 4000K 24 SQ FT	SURFACE / CHAIN	UNV	0-10V	2X2 HIGHBAY
GR1	DAYBRITE	RSX-15L-840-UNV-WT-ARR22-22FL	152W 4000K 17,061LM	SUSPENDED	UNV	0-10V	22" ROUND HIGHBAY WITH CLEAR ACRYLIC REFRACTOR, WITH FLAT LENS
J	DAYBRITE	2LF24-55L-840-UNV-DIM / PSS-MFA	48W 4000K 5600 LM	SURFACE / CHAIN	UNV	0-10V	4' LED LAMP FIXTURE, CHAIN HUNG IN LOCKER ROOMS, WITH OUT CELLULAR PROVIDER WIRE GUARD
J1	DAYBRITE	5FLX24L840-PPS-UNV-DIM	47W 4000K 7074 LM	SURFACE / CHAIN	UNV	0-10V	4' INDUSTRIAL STRIP TO MATCH EXISTING (HIGH OUTPUT)
J2	DAYBRITE	V3W-4-51L-840-UNV-DIM-LPA	35W 4000K 5025 LM	SURFACE / CHAIN	UNV	0-10V	4' WET LOCATION VAPOR TIGHT
J3	DAYBRITE	5FL450L840-PPS-UNV-DIM	37W 4000K 5538 LM	SURFACE / CHAIN	UNV	0-10V	4' INDUSTRIAL STRIP TO MATCH EXISTING
LP	LUMATO	3S-LENGTH-LD-40-UNV-X-RAL#-C90-X	4W/FT 4000K 500LM/FT	SUSPENDED	UNV	0-10V	SUSPENDED 3" DIRECT LINEAR LIGHTING (RED FINISH)
LP1	LUMATO	3S-LENGTH-LD-40-UNV-X-BLK-C90-X	4W/FT 4000K 500LM/FT	SUSPENDED	UNV	0-10V	SUSPENDED 3" DIRECT LINEAR LIGHTING (BLACK FINISH)
LP2	LUMATO	3S-LENGTH-MD-40-UNV-X-BLK-C90-X	6W/FT 4000K 750LM/FT	SUSPENDED	UNV	0-10V	SUSPENDED 3" DIRECT LINEAR LIGHTING (BLACK FINISH)
LP3	LUMATO	3S-LENGTH-MD-40-UNV-X-ALM-C90-X	6W/FT 4000K 750LM/FT	SUSPENDED	UNV	0-10V	SUSPENDED 3" DIRECT LINEAR LIGHTING (ALUMINUM PAINT FINISH)
LR	LUMATO	3R-LENGTH-LD-40-UNV-X-BLK-C90	4W/FT 4000K 500LM/FT	RECESSED	UNV	0-10V	RECESSED 3" LINEAR LIGHTING W/ BLACK FLANGE
LS	KLUS	A007S8-B-LC-40-0960/2-24-20-TBD-X-IP20	6W/FT 4000K 519LM/FT	SURFACE	UNV	0-10V	.75" SURFACE LINEAR WITH LIGER.22 LENS. BLACK FINISH
LS1	KLUS	A007S8-X-HS22-40-0960/2-24-20-TBD-X-IP20	6W/FT 4000K 519LM/FT	SURFACE	UNV	0-10V	.75" SURFACE LINEAR WITH STANDARD HS22 LENS. LOBBY HALO IN WALL SIGNAGE
LW	SPI	SIW12139-4FT-L28W-UNV-4000K-DF_80-DF_DIM1-DF_MCS-DF_FT-FINISH	28W 4000K 2848 LM	WALL	UNV	0-10V	4' LINEAR MENU BOARD WALLWASHER
LW1	ALKCO	HZ4ML451-11-277-FINISH	22W 4000K 3000 LM	WALL	277V	0-10V	4' WALL MOUNTED DIRECT / INDIRECT BED LIGHT
M	DAYBRITE	FLP450L840-UNV-DIM	45W 4000K 5000 LM	SURFACE / CHAIN	UNV	0-10V	4' LED STRIP FIXTURE WITH NO LENS, CHAIN HUNG IN MECHANICAL ROOMS
P	IMPACT	P3308-40-LO-RD-BKPC-BL	10W 4000K 995 LM	SUSPENDED	UNV	0-10V	8" DECORATIVE PENDANT (NOTE 1)
S2-1	GARDCO	OPF-M-A12-740-T2M-X-UNV-FINISH	150W 4000K 26,482 LM	POLE	UNV	0-10V	SINGLE PARKING FIXTURE WITH A TYPE 2 DISTIRBUTION ON 25' POLE, LISTED FOR WET LOCATIONS
S3-1	GARDCO	OPF-M-A12-740-T3M-X-UNV-FINISH	150W 4000K 26,271 LM	POLE	UNV	0-10V	SINGLE PARKING FIXTURE WITH A TYPE 3 DISTIRBUTION ON 25' POLE, LISTED FOR WET LOCATIONS
S4-2	GARDCO	(2) OPF-S-P09-740-T4M-AR1 / OPF-RMB-UNV-FINISH	(2) 133W 4000K 22,673 LM	EXISTING POLE	UNV	0-10V	DOUBLE PARKING FIXTURE MOUNTED AT 180 DEGREES WITH TYPE 4 DISTIRBUTION ON 35' POLE, LISTED FOR WET LOCATIONS
S5-1	GARDCO	OPF-S-A07-740-T5W-AR1 / OPF-RMB-UNV-FINISH	136W 4000K 19,848 LM	EXISTING POLE	UNV	0-10V	SINGLE PARKING FIXTURE WITH TYPE 5W DISTIRBUTION ON 22' POLE, LISTED FOR WET LOCATIONS
S5-3	GARDCO	(3) OPF-S-A07--740-T5W-AR1 / OPF-RMB-UNV-FINISH	(3) 136W 4000K 19,848 LM	EXISTING POLE	UNV	0-10V	TRIPLE PARKING FIXTURE MOUNTED AT 120 DEGREES WITH TYPE 5W DISTIRBUTION ON 35' POLE, LISTED FOR WET LOCATIONS
SW	KENALL	H1212FD-PP-FINISH-25L40K-DV	29W 4000K 3026 LM	SURFACE	UNV	0-10V	12"X12" VANDAL RESISTANT SURFACE MOUNTED CANOPY LIGHT
FL	GARDCO	FLDL-A19-740-WFL-YOK-UNV-FINISH	281W 4000K 38,103 LM	ROOF	UNV	0-10V	HIGH OUTPUT FLOOD LIGHT TO BE MOUNTED ON ROOF
WP	GARDCO	GBM-A09-840-T3M-UNV-X-FINISH	39W 4000K 5990 LUMEN	WALL	UNV	0-10V	FULL-CUTOFF WALL PACK WITH TYPE 3 OPTIC SYSTEM, LISTED FOR WET LOCATIONS
X	EMERGLITE	AAP SERIES	2.5W INTEGRAL LED	SURFACE	UNV	N/A	PRECEPTOR SERIES, DIE-CAST ALUMINUM LED EXIT SIGN
	LANDSCAPE						
L1	WE-EF	131-0206	16W 3000K 1245 LM	WALL	UNV	0-10V	WALL SCONCE W/ NARROW BEAM DOWN. WET LOCATION RATED.
L2	INTER-LUX	RUB-WH-ZDM-LENGTH-1.8CV-30	2W/FT 3000K 41W/FT	SURFACE	UNV	0-10V	CURVED WALL STEP LIGHT. WET LOCATION RATED
L3	WE-EF	116-0207	42W 3000K 2547 LM	POLE	UNV	0-10V	13' 3 SIDED ILLUMINATED PEDESTRIAN POLE FIXTURE. WET LOCATION RATED
L4	WE-EF	185-3077	21W 3000K 1755 LM	INGROUND	UNV	0-10V	10" DIAMETER SEMI-RECESSED SIGN LIGHT. WET LOCATION RATED
Note:...							**NOTE 1: ALL POWER CORDS TO BE ZIP TIED TO AIRCRAFT CABLE TO CREATE A CLEAN, SRAIGHT LOOK. ZIP TIES TO MATCH POWE...**

REMARKS: PROVIDE MOUTING ARMS/BRACKET FOR ALL POLE LIGHTS

GENERAL ELECTRICAL REMODEL NOTES

1. UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS OR OTHERWISE INSTRUCTED BY THE ARCHITECT, ELECTRICAL OUTLETS SHALL HAVE THE FOLLOWING MOUNTING HEIGHTS. DIMENSIONS ARE TO CENTER OF BOX UNLESS OTHERWISE NOTED:

WALL SWITCHES	•
WALL CONVENIENCE RECEPTACLES	15" AFF TO BOTTOM OF BOX
WALL DATA/VOICE OUTLETS	15" AFF TO BOTTOM OF BOX
WALL OUTLETS FOR WALL MTD. TELEPHONE	•
WALL CLOCK OUTLETS	7'-0" AFF (OR ABOVE CHALKBOARDS WHERE REQUIRED)*
MANUAL FIRE ALARM PULL STATIONS	•
FIRE ALARM SPEAKER/HORN	1'-0" BELOW CEILING, OR IN CEILING, AS REQUIRED*
INTERIOR BELLS,BUZZERS, HORNS	1'-0" BELOW CEILING, OR IN CEILING, AS REQUIRED*
SPECIAL PURPOSE WALL OUTLETS	15" AFF TO BOTTOM OF BOX (OR HIGHER AS REQUIRED TO SERVE EQUIPMENT)
PUSH BUTTONS	
ADA VISUAL ALARM	80" AFF TO BOTTOM OF LENS OR 6" BELOW CEILING, WHICHEVER IS LOWER. ENTIRE LENS TO BE WITHIN 80" TO 96" AFF*
	• TOP OF BOX SHALL BE 42" AFF MAX. FOR WHEELCHAIR FRONTAL APPROACH AND 48" AFF MAX. FOR SIDE APPROACH. VERIFY EXACT HEIGHT WITH ARCHITECT
	* 7'-0" AFF TO BOTTOM OF DEVICE IF DEVICE PROTRUDES MORE THAN 4" FROM WALL (PER ADA)

AFF = ABOVE FINISHED FLOOR
AFG = ABOVE FINISHED GRADE

2. UNLESS SPECIFICALLY INDICATED ON THE ELECTRICAL DRAWINGS, OUTLETS LOCATED AT COUNTERS AND CABINETS SHALL BE MOUNTED AS SHOWN ON ARCHITECTURAL DETAILS AND ELEVATIONS, OR AS DIRECTED BY ARCHITECT.
3. COORDINATE MOUNTING HEIGHTS AND DETAILS OF ALL OUTLETS (POWER, SIGNAL, ETC.) WITH ARCHITECTURAL CASEWORK DRAWINGS PRIOR TO DIVISION 26 ROUGH-IN. PROVIDE COORDINATION DRAWINGS IN ACCORDANCE WITH DIVISION 26 SPECIFICATIONS WHERE CONFLICTS EXIST. OBTAIN APPROVAL FROM ARCHITECT BEFORE ELECTRICAL ROUGH-IN WHEN CONFLICTS ARISE.
4. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF ALL HVAC AND PLUMBING EQUIPMENT.
5. CIRCUITING
   A. BRANCH CIRCUITING IS SCHEMATIC IN NATURE AND IS INTENDED TO INDICATE CIRCUIT LOADING AND CONTROL, NOT METHODS OF INSTALLATION. REFER TO SPECIFICATIONS FOR METHODS OF INSTALLATION AND MATERIALS, INCLUDING WHETHER OR NOT BX IS ALLOWED AND WHETHER "THROUGH-FIXTURE" OR "OCTOPUS (EMT WITH FLEXIBLE WHIPS)" TYPE LIGHTING BRANCH CIRCUITING IS REQUIRED.
   B. WHERE WIRE SIZE AND CONDUIT SIZE IS NOT INDICATED ON THE DRAWINGS AND/OR PANEL SCHEDULES, REFER TO SPECIFICATIONS FOR MINIMUM SIZE REQUIRED.
   C. BRANCH CIRCUITS ON THE DRAWINGS ARE GENERALLY NOT SHOWN GROUPED IN SINGLE RACEWAYS. HOWEVER, GROUPING IS ALLOWED UNDER CERTAIN CONDITIONS. REFER TO DIVISION 26 SPECIFICATIONS UNDER SECTION ENTITLED "ELECTRICAL WIRING" FOR REQUIREMENTS.
   D. THE DRAWINGS GENERALLY INDICATE QUANTITY OF CONDUCTORS ON BRANCH CIRCUIT HOME RUNS ONLY. ELSEWHERE WITHIN CIRCUITS, PROVIDE QUANTITY OF CONDUCTORS AS NEEDED TO ACCOMPLISH CIRCUITING AND SWITCHING REQUIREMENTS SHOWN.
6. WHEN REMOVING EXISTING ELECTRICAL WORK WHERE OTHER ITEMS REMAIN ON THE SAME CIRCUIT, THE CONTRACTOR SHALL TAKE WHATEVER STEPS ARE NECESSARY TO MAINTAIN CIRCUIT CONTINUITY.
7. ALL ITEMS NOTED TO BE REMOVED ARE TO REMAIN THE PROPERTY OF THE OWNER; HOWEVER, CONTRACTOR SHALL REMOVE FROM JOB SITE ALL MATERIAL NOT RETAINED BY OWNER.
8. FIELD VERIFY CONDITION OF, AND MODIFICATIONS AND ADDITIONS TO, ALL EXISTING ELECTRICAL FIXTURES, PANELS, WIRING, ETC.
9. WHERE DOORS ARE ADDED, OR PORTIONS OF WALLS REMOVED, CONTRACTOR SHALL REMOVE OR RELOCATE ALL ELECTRICAL WORK NECESSARY FOR THE REMODELING MODIFICATION, WHETHER OR NOT THIS WORK IS NOTED ON PLANS.
10. WHERE EXISTING JUNCTION BOXES ARE COVERED OR REMOVED, CONTRACTOR SHALL TAKE WHATEVER STEPS ARE NECESSARY TO COMPLY WITH NEC 314-19.
11. EXISTING ELECTRICAL BOXES TO REMAIN IN AREAS WHERE NEW WALL FINISHES ARE TO BE APPLIED SHALL BE RESET AS NECESSARY TO PROVIDE FLUSH MOUNTING FOR BOXES.
12. CONTRACTOR SHALL FIELD VERIFY EXISTING BRANCH CIRCUIT LOADING WHEN MAKING MODIFICATIONS AND/OR ADDITIONS TO THAT CIRCUIT. IF NEW WORK WOULD OVERLOAD EXISTING CIRCUIT, CONTRACTOR SHALL LOCATE ANOTHER EXISTING CIRCUIT (THE CLOSEST), WHICH WOULD NOT BE OVERLOADED UPON ADDING NEW LOAD, AND SHALL TIE NEW LOAD INTO THAT CIRCUIT.
13. WHEN EXISTING ELECTRICAL WORK IS REMOVED, ALL EXPOSED CONDUIT, WIRING, CONTROL AND JUNCTION BOXES ALONG WALLS, FLOOR, AND CEILING SHALL BE REMOVED. BRANCH CIRCUIT WIRES SHALL BE REMOVED BACK TO CIRCUIT BREAKER(S). BLANK COVER PLATES SHALL BE PROVIDED FOR RECESSED BOXES. WHERE THIS WORK IS DONE, THE WALLS, FLOOR, AND CEILING SHALL BE PATCHES AS NECESSARY UNDER WORK COVERED IN OTHER SECTIONS.
14. EXISTING RECESSED INCANDESCENT AND HID LUMINAIRES DESIGNATED FOR TEMPORARY REMOVAL AND RE-USE SHALL BE STORED. ALL SUCH LUMINAIRES NOT THERMALLY PROTECTED PER NEC 410-118 AND 410-130(F) ARE NOT SUITABLE FOR RE-USE AND SHALL BE GIVEN TO THE OWNER. PROVIDE NEW REPLACEMENT LUMINAIRES WITH UL THERMAL PROTECTION, IDENTICAL APERTURE, EQUIVALENT PHOTOMETRICS AND NEW LAMPS.
15. CONTRACTOR TO REFER TO ARCHITECTURAL DEMOLITION PLANS AND PHASING PLANS AND HAVE A GOOD UNDERSTANDING OF SCOPE OF PROJECT PRIOR TO COMMENCEMENT OF WORK.
16. LUMINAIRE SUPPORT IN SUSPENDED CEILINGS:
   A. PROVIDE MEANS OF SUPPORT FOR LUMINAIRES PER NEC 410-16. T BAR CLIPS SHALL BE INSTALLED ON THE LUMINAIRE AND SHALL BE FIELD SECURED TO THE INVERTED CEILINGS TEES SO THAT THE LUMINAIRE IS SECURELY FASTENED TO THE CEILING SYSTEM FRAMING MEMBERS
   B. CEILING TILES SHALL NOT BEAR THE WEIGHT OF LUMINAIRES. SURFACE MOUNT LUMINAIRES, RECESSED DOWNLIGHTS, LIGHT TRACK, EXIT SIGNS, ETC. SHALL BE SUPPORTED BY PROPER FRAMES OR OTHER ATTACHMENT TO MAIN CEILING SYSTEM GRID OR BUILDING STRUCTURE ABOVE CEILING.
   C. LUMINAIRES SHALL BE CENTERED IN CEILING TILE.
   D. LUMINAIRE SHALL HAVE FLANGE OR TRIM RING FOR CLOSURE OF CEILING CUTOUT OR OPENING.
   E. FIRE-RATED CEILING ASSEMBLY: FOR LUMINAIRES TO BE FLUSH-MOUNTED INTO A FIRE-RATED CEILING OR SURFACE MOUNTED TO A FIRE-RATED CEILING, INSTALL WITH INDEPENDENT, SECURE SUPPORT, RACEWAY, CABLE ASSEMBLIES BOXES AND FITTINGS LOCATED ABOVE A FIRE-RATED FLOOR/CEILING OR ROOF CEILING ASSEMBLY SHALL NOT BE SECURED TO, OR SUPPORTED BY, THE CEILING ASSEMBLY INCLUDING CEILING SUPPORT WIRES. PROVIDE AN INDEPENDENT MEANS OF SECURE SUPPORT. INDEPENDENT SUPPORT WIRES SHALL BE DISTINGUISHABLE BY COLOR, TAGGING, OR OTHER EFFECTIVE MEANS FROM THOSE THAT ARE PART OF THE FIRE-RATED DESIGN.
17. CONTRACTOR SHALL FIELD VERIFY ANY EXISTING UNDERGROUND PIPING, WIRING, OR OTHER FACILITIES PRIOR TO TRENCHING, AND SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED BY INSTALLATION OF NEW WORK.
18. THE ELECTRICAL CONTRACTOR SHALL COMPLY WITH ALL AUTHORITIES HAVING JURISDICTION, NEC, ALL STATE AND LOCAL CODES AND AMENDMENTS.

LIGHTING FIXTURE NOTES

KEY TO NOTE PREFIXES: "G" NOTES ARE "GENERAL" LIGHTING NOTES THAT APPLY TO THE ENTIRE PROJECT. "S" NOTES ARE "SCHEDULE" NOTES THAT APPLY TO SPECIFIC LUMINAIRES.

G.1 REFER TO ARCHITECTURAL REFLECTED CEILING PLANS, ELEVATIONS, SECTIONS, AND DETAILS FOR THE EXACT LOCATION OF ALL LUMINAIRES. ARCHITECTURAL PLANS SHALL GOVERN FOR LOCATION AND LAYOUT. IF ARCHITECTURAL AND ELECTRICAL DRAWINGS CONFLICT IN EXACT COUNT OR FIXTURE TYPE, PROVIDE THE GREATER QUANTITY OR COST TYPE UNLESS OTHERWISE INSTRUCTED.

G2. REFER TO DIVISION 26 ELECTRICAL SPECIFICATIONS FOR ADDITIONAL LUMINAIRE AND ELECTRICAL REQUIREMENTS (LENS, AIR HANDLING CHARACTERISTICS, T-BAR CLIPS, BALLAST, LAMPS, TIME FRAME FOR SUBMITTAL OF SUBSTITUTE LIGHT FIXTURES FOR PRIOR APPROVAL, ETC.).

G3. FOR EACH SCHEDULED LUMINAIRE, PROVIDE ALL REQUIRED APPURTENANCES FOR INSTALLATION IN APPLICABLE STRUCTURE OR SPECIFIED ARCHITECTURAL EILING. ALL LUMINAIRES SHALL HAVE THE APPROPRIATE NEMA TYPE FRAME THAT IS COMPATIBLE WITH THE CEILING SYSTEM SPECIFIED BY THE ARCHITECT. ELECTRICAL DRAWINGS DO NOT INDICATE CEILING TYPES, CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS TO DETERMINE CEILING TYPE (GRID, FLANGE, SPLINE, SCREW SLOT, ETC.) AND PROVIDE APPROPRIATE FRAME.

G4. EXIT SIGNS AND OTHER LUMINAIRES SHALL NOT BE SUPPORTED BY CEILING TILE. PROVIDE MOUNTING FRAME OR HANGERS TO SECURELY FASTEN IN PLACE ALL LUMINAIRES MOUNTED IN CEILING TILE. FRAMING MEMBERS OF A SUSPENDED CEILING SYSTEM MAY BE USED WHERE DESIGNED FOR THE PURPOSE AND INSTALLED PER NEC 410-16(c).

G5. WHERE A SURFACE-MOUNTED LUMINAIRE CONTAINING A BALLAST IS TO BE INSTALLED ON COMBUSTIBLE LOW-DENSITY CELLULOSE FIBERBOARD, IT SHALL BE LISTED FOR THIS CONDITION OR SHALL BE SPACED NOT LESS THAN 1 1/2 INCHES FROM THE SURFACE OF THE FIBERBOARD (NEC 410-76(b)).

G6. REQUEST FOR SUBSTITUTION SHALL FOLLOW SPECIFIED PROCEDURES AND SHALL INCLUDE A WORKING SAMPLE SUITABLE FOR TABLE TOP EXAMINATION.

S1. UNLESS OTHERWISE NOTED, MOUNT EXIT SIGN DIRECTLY ABOVE EGRESS DOOR (MAXIMUM 24" ABOVE DOOR). PROVIDE WALL MOUNT EXIT SIGNS IN HIGH CEILING AREAS. PROVIDE WINDOW MULLION MOUNTING WITH CONCEALED WIRING WHERE REQUIRED. COORDINATE EXACT ELEVATION WITH ARCHITECT PRIOR TO ROUGH-IN.

CHANGE POLE HEIGHT TO MATCH YOUR REQUIREMENTS

S2. PROVIDE KW #RTSP30-DBZ-DM-BC POLE. POLE SHAFT SHALL CONFORM TO ASTM-A-500 GRADE B, ANCHOR BASE OF HOT ROLLED CARBON STEEL, PROVIDE ANCHOR BOLTS. PROVIDE 30' POLE WITH MINIMUM 3 MIL. BAKED POLYESTER POWDER COAT FINISH. COLOR TO MATCH LUMINAIRE.

S3. PROVIDE KW #RTSP30-DBZ-DM2180-BC POLE. POLE SHAFT SHALL CONFORM TO ASTM-A-500 GRADE B, ANCHOR BASE OF HOT ROLLED CARBON STEEL, PROVIDE ANCHOR BOLTS. PROVIDE 30' POLE WITH MINIMUM 3 MIL. BAKED POLYESTER POWDER COAT FINISH. COLOR TO MATCH LUMINAIRE.

GENERAL ELECTRICAL NOTES

1. UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS OR OTHERWISE INSTRUCTED BY THE ARCHITECT, ELECTRICAL OUTLETS SHALL HAVE THE FOLLOWING MOUNTING HEIGHTS. DIMENSIONS ARE TO CENTER OF BOX UNLESS OTHERWISE NOTED:

WALL SWITCHES	•
WALL CONVENIENCE RECEPTACLES	15" AFF TO BOTTOM OF BOX
WALL DATA/VOICE OUTLETS	15" AFF TO BOTTOM OF BOX
WALL OUTLETS FOR WALL MTD. TELEPHONE	•
WALL CLOCK OUTLETS	7'-0" AFF (OR ABOVE CHALKBOARDS WHERE REQUIRED)*
MANUAL FIRE ALARM PULL STATIONS	•
FIRE ALARM SPEAKER/HORN	1'-0" BELOW CEILING, OR IN CEILING, AS REQUIRED*
INTERIOR BELLS,BUZZERS, HORNS	1'-0" BELOW CEILING, OR IN CEILING, AS REQUIRED*
SPECIAL PURPOSE WALL OUTLETS	15" AFF TO BOTTOM OF BOX (OR HIGHER AS REQUIRED TO SERVE EQUIPMENT)
PUSH BUTTONS	
ADA VISUAL ALARM	80" AFF TO BOTTOM OF LENS OR 6" BELOW CEILING, WHICHEVER IS LOWER. ENTIRE LENS TO BE WITHIN 80" TO 96" AFF*
	• TOP OF BOX SHALL BE 42" AFF MAX. FOR WHEELCHAIR FRONTAL APPROACH AND 48" AFF MAX. FOR SIDE APPROACH. VERIFY EXACT HEIGHT WITH ARCHITECT
	* 7'-0" AFF TO BOTTOM OF DEVICE IF DEVICE PROTRUDES MORE THAN 4" FROM WALL (PER ADA)

AFF = ABOVE FINISHED FLOOR
AFG = ABOVE FINISHED GRADE

2. UNLESS SPECIFICALLY INDICATED ON THE ELECTRICAL DRAWINGS, OUTLETS LOCATED AT COUNTERS AND CABINETS SHALL BE MOUNTED AS SHOWN ON ARCHITECTURAL DETAILS AND ELEVATIONS, OR AS DIRECTED BY ARCHITECT.
3. COORDINATE MOUNTING HEIGHTS AND DETAILS OF ALL OUTLETS (POWER, SIGNAL, ETC.) WITH ARCHITECTURAL CASEWORK DRAWINGS PRIOR TO DIVISION 26 ROUGH-IN. PROVIDE COORDINATION DRAWINGS IN ACCORDANCE WITH DIVISION 26 SPECIFICATIONS WHERE CONFLICTS EXIST. OBTAIN APPROVAL FROM ARCHITECT BEFORE ELECTRICAL ROUGH-IN WHEN CONFLICTS ARISE.
4. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF ALL HVAC AND PLUMBING EQUIPMENT.
5. CIRCUITING
   A. BRANCH CIRCUITING IS SCHEMATIC IN NATURE AND IS INTENDED TO INDICATE CIRCUIT LOADING AND CONTROL, NOT METHODS OF INSTALLATION. REFER TO SPECIFICATIONS FOR METHODS OF INSTALLATION AND MATERIALS, INCLUDING WHETHER OR NOT BX IS ALLOWED AND WHETHER "THROUGH-FIXTURE" OR "OCTOPUS (EMT WITH FLEXIBLE WHIPS)" TYPE LIGHTING BRANCH CIRCUITING IS REQUIRED.
   B. WHERE WIRE SIZE AND CONDUIT SIZE IS NOT INDICATED ON THE DRAWINGS AND/OR PANEL SCHEDULES, REFER TO SPECIFICATIONS FOR MINIMUM SIZE REQUIRED.
   C. BRANCH CIRCUITS ON THE DRAWINGS ARE GENERALLY NOT SHOWN GROUPED IN SINGLE RACEWAYS. HOWEVER, GROUPING IS ALLOWED UNDER CERTAIN CONDITIONS. REFER TO DIVISION 26 SPECIFICATIONS UNDER SECTION ENTITLED "ELECTRICAL WIRING" FOR REQUIREMENTS.
   D. THE DRAWINGS GENERALLY INDICATE QUANTITY OF CONDUCTORS ON BRANCH CIRCUIT HOME RUNS ONLY. ELSEWHERE WITHIN CIRCUITS, PROVIDE QUANTITY OF CONDUCTORS AS NEEDED TO ACCOMPLISH CIRCUITING AND SWITCHING REQUIREMENTS SHOWN.
6. THE ELECTRICAL CONTRACTOR SHALL COMPLY WITH ALL AUTHORITIES HAVING JURISDICTION, NEC, ALL STATE AND LOCAL CODES AND AMENDMENTS.

ELECTRICAL SYMBOL LEGEND

1. EVERY SYMBOL SHOWN ON LEGEND MAY NOT APPEAR ON DRAWINGS.
2. DASHED ELEECTRICAL EQUIPMENT GENERALLY INDICATES EXISTING EQUIPMENT.
3. LONG-SHORT-SHORT-LONG DASHING GENERALLY INDICATES MATCH LINE OR DEFINES AREA FOR SPECIAL NOTE.

CIRCUIT RELATED:

LIGHTING OR POWER CIRCUIT(S). ARROW INDICATES HOME RUN, LONGER TICK(S) INDICATE NEUTRAL WIRE(S), SHORTER STRAIGHT TICK(S) INDICATE PHASE WIRE(S), SLANTED SHORTER TICK(S) INDICATE SWITCH LEG(S), DOT(S) INDICATE GROUNDING CONDUCTOR(S). DASHED WIRING (LONG-SHORT-LONG DASHES) INDICATES WIRING BELOW SLAB OR GRADE. DASHED WIRING (SERIES OF SHORT DASHES) INDICATES EXISTING WIRING. SLASH THROUGH ARROW INDICATES PARTIAL CIRCUIT. "D" ON HOMERUN ARROW INDICATES DEDICATED CIRCUIT: PROVIDE A SEPARATE NEUTRAL FOR EACH PHASE CONDUCTOR FOR ENTIRE LENGTH OF CIRCUIT FROM PANEL TO OUTLET; COUNT EACH NEUTRAL AS CURRENT-CARRYING AND GROUP A MAXIMUM OF SIX THHN/THWN CONDUCTORS IN A SINGLE RACEWAY; GROUNDING CONDUCTOR IS NOT COUNTED

J JUNCTION BOX

GROUNDING FIXTURE

LIGHTING:

LED LIGHTING FIXTURE. LETTER INDICATES TYPE, SMALL LETTER INDICATES SWITCH CONTROL, NUMBER INDICATES CIRCUIT. CROSS HATCHING INDICATES FIXTURE ON EMERGENCY SYSTEM. FOR SOLID CIRCLE WITHIN FIXTURE REFERENCE APPROPRIATE CATEGORY "A" CIRCUIT RELATED SYMBOL

STRIP TYPE LED LIGHTING FIXTURE. LETTER INDICATES TYPE, SMALL LETTER INDICATES SWITCH CONTROL, NUMBER INDICATES CIRCUIT, FOR SOLID CIRCLE ATTACHED TO FIXTURE REFERENCE APPROPRIATE CATEGORY "A" CIRCUIT RELATED SYMBOL

LED LIGHTING FIXTURE. LETTER INDICATES TYPE, SMALL LETTER INDICATES SWITCH CONTROL. NUMBER INDICATES CIRCUIT, FOR SOLID CIRCLE REFERENCE APPROPRIATE CATEGORY "A" CIRCUIT RELATED SYMBOL

DESIGNATES FIXTURE ON EMERGENCY POWER. RE: LIGHTING PLAN NOTES AND FIXTURE SCHEDULE NOTES FOR ADDITIONAL INFORMATION

WALL OR BRACKET MOUNTED FIXTURE OR DEVICE

EXIT LIGHT FIXTURE. LETTER INDICATES TYPE, NUMBER INDICATES CIRCUIT, NUMBER AND LOCATION OF SHADED TRIANGLE SECTIONS INDICATE NUMBER OF EXIT SIGN FACES AND DIRECTION OF EACH FACE. PROVIDE CHEVRON DIRECTIONAL INDICATORS AS SHOWN ON DRAWINGS

CONTROL:

$ SWITCH. SMALL LETTER INDICATES FIXTURES CONTROLLED, "P" INDICATES PILOT LIGHT, "WP" INDICATES WEATHERPROOF, "K" INDICATES KEY POERATED, "MO" INDICATES SPDT MOMENTARY CONTACT, "2" INDICATES DPDT, "3" INDICATES 3-WAY, "4" INDICATES 4-WAY, "M" INDICATES MANUAL MOTOR STARTER, CIRCUIT DESIGNATION NEXT TO SWITCH INDICATES BRANCH CIRCUIT NUMBER

^{D} WALL BOX DIMMER SWITCH. "MARK" INDICATES WATTAGE IF OTHER THAN 600, "3D" INDICATES 3-WAY DIMMER

$$ MULTI-LEVEL SWITCH. CIRCUIT DESIGNATION NEXT TO SWITCH INDICATES BRANCH CIRCUIT NUMBER

^{T} DIGITAL TIME SWITCH

PC PHOTOELECTRIC CONTROL

EMERGENCY POWER OFF (EPO) PUSHBUTTON

PUSH BUTTON

^{OC} WALL MOUNT OCCUPANCY SENSOR

DUAL TECHNOLOGY CEILING MOUNTED OCCUPANCY SENSOR

CEILING MOUNTED RESTROOM OCCUPANCY SENSOR

CEILING MOUNTED CORRIDOR OCCUPANCY SENSOR

HB CEILING MOUNTED HIGH CEILING OCCUPANCY SENSOR

POWER OUTLETS:

20A-125V DUPLEX RECEPTACLE

20A-125V GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE. "WP" INDICATES WEATHER PROOF DEVICE

20A-125V DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER TOP. REFER TO ARCHITECT FOR EXACT HEIGHT ABOVE COUNTER

$_{CS}$ 20A-125V CONTROLLED DUPLEX RECEPTACLE

20A-125V ISOLATED GROUND TYPE DUPLEX RECEPTACLE

$_{GH}$ 20A-125V DUPLEX TAMPER RESISTANT RECEPTACLE WITH (2) USB CHARGING PORTS

20A-125V FOURPLEX RECEPTACLE. SAME SYMBOLOGY AS DUPLEX RECEPTACLE

SPECIAL PURPOSE SINGLE POWER RECEPTACLE. RATED AS INDICATED (IF NO RATING INDICATED, RECEPTACLE RATING SHALL MATCH BRANCH CIRCUIT OVERCURRENT PROTECTIVE DEVICE AND SHALL MEET REQUIREMENTS OF EQUIPMENT BEING CONNECTED), "C" INDICATES CLOCK OUTLET

20A-125V FLUSH FLOOR DUPLEX RECEPTACLE. 20A WHEN INDICATED OR IF BR

ELECTRICAL DETAILS-AG

E-602.A

FOR BLUEBEAM LABELING/OCR:

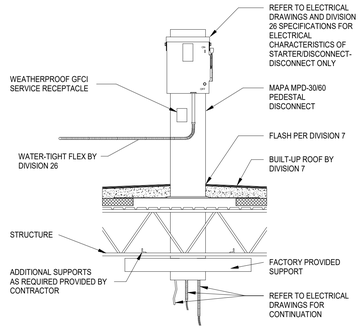
0"

1"

GENERAL LIGHTING SCHDULES NOTES

1. REFER TO ARCHITECT'S REFLECTED CEILING PLAN AND RELATED DETAILS TO DETERMINE PROPER CEILING TYPE COMPATIBILITY FOR EACH LUMINAIRE. PROVIDE ANY EXTRA FITTINGS OR OPTIONS AS REQUIRED TO ENSURE CORRECT MOUNTING IN THE GIVEN CEILING.

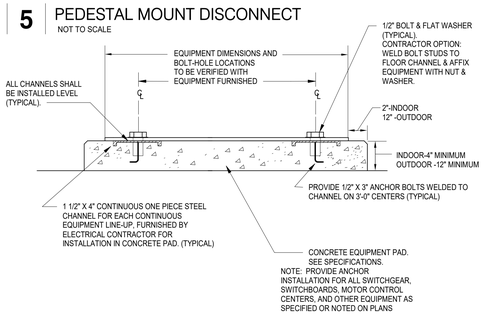
2. PROVIDE FIRE RATED CANOPY OR ENCLOSURE FOR ALL FIXTURES RECESSED IN A FIRE RATED CEILING. THE FIRE RATED CANOPY OR ENCLOSURE SHALL BE REQUIRED BY THE UL DESIGN NUMBER LISTED IN THE UL FIRE RESISTANCE DIRECTORY. REFER TO ARCHITECTURAL DRAWING FOR THE UL DESIGN NUMBER. COORDINATE WITH CEILING INSTALLER AND MANUFACTURER.



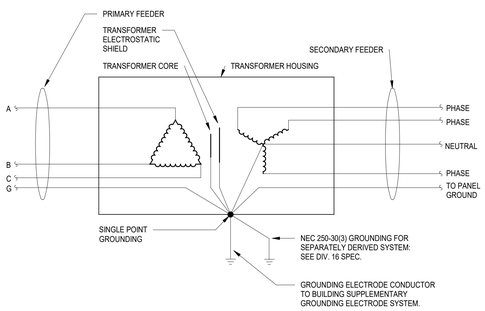
NOTES:

1. WATER-TIGHT FLEX CONDUIT SHALL NOT RESTRICT FAN FROM ROTATING ON HINGED SUB-BASE FOR SERVICE TO DAMPERS AND DUCT CONNECTION. REFER TO DIVISION 26.

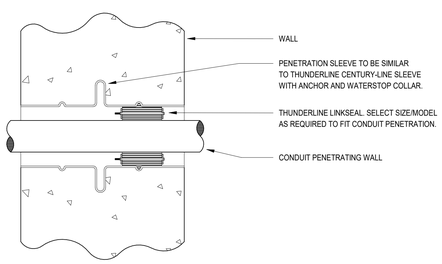
5 PEDESTAL MOUNT DISCONNECT
NOT TO SCALE



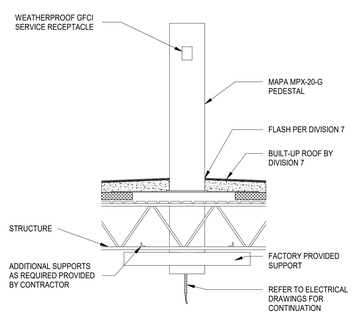
3 EQUIPMENT ANCHOR DETAIL
NOT TO SCALE



2 DELTA-WYE TRANSFORMER SCHEMATIC
NOT TO SCALE



1 CONDUIT PENETRATION DETAIL - EXTERIOR WALL
NOT TO SCALE



6 PEDESTAL MOUNT ROOF RECEPTACLE
NOT TO SCALE

PBK

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PBK.com
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Houston, TX 77046
713-961-0608 P
713-961-4571 F
TX Firm: BR 1608

CIVIL
KIMLEY-HORN
T 281-497-9300

LANDSCAPE
EDGELAND
T 713-965-0005

STRUCTURAL
KUBRE & GARBIEREBS
T 713-965-0005

MEP
LEAF ENGINEERS
T 713-965-0005

ACOUSTIC
BAI, LLC
T 713-965-0005

EXTERIOR
BEAM PROFESSIONALS
T 713-965-0005

FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS, LLc
T 281-350-2323

LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: AGRICULTURAL PAVILION

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS

H	J

KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61522
LICENSED
PROFESSIONAL ENGINEER

LEAF ENGINEERS
F-10672

CLIENT
Huffman Independent School District

DATE	PROJECT NUMBER
05/21/2025	240157

DRAWING HISTORY

No.	Description	Date

CHECKED BY: PP

DRAWN BY: LT

ELECTRICAL DETAILS-AG

E-602.A

Plot Stamp:
6/3/2025 2:53:32 PM

ELECTRICAL PANEL SCHEDULES-AG
E-701.A
FOR BLUEBEAM LABELING/OCR:

Job: Job Name
Job No. Job Number

Mounting: **SURFACE**
Main... **MCB (400A)**
Neutral: **200%**
Voltage: **208Y/120V-3PH 4W**
Main... **400 AMPS**
AIC... **10000**
Ground: **Equipment Ground**
Lugs: **FEED THRU**

PANEL: **LW3**

Ltg.	Receptacle	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Receptacle	Motor	Heat	Cool	Other	Kitchen	S/S
							1.00	SPARE	20/1		1	A	2											0.00
							1.00	SPARE	20/1		3	A	4	12	20/1	GF REC		360						0.00
							1.00	SPARE	20/1		5	C	6											0.00
							1.00	SPARE	20/1		7	A	8	12	20/1	AG STOR		500						0.00
							1.00	SPARE	20/1		9	B	10	12	20/1	AG STOR		500						0.00
							1.00	SPARE	20/1		11	C	12	12	20/1	TOOL STOR		540						0.00
							1.00	SPARE	20/1		13	A	14	12	20/1	TOOL STOR		720						0.00
							1.00	SPARE	20/1		15	B	16	12	20/1	AG CL REC		360						0.00
							1.00	SPARE	20/1		17	C	18	12	20/1	AG CL REC		360						0.00
							1.00	SPARE	20/1		19	A	20	12	20/1	AG CL REC		500						0.00
					1664		0.00	CORD REEL PLSMA	20/2	12	21	B	22	12	20/1	AG CL REC		500						0.00
					1664		0.00	-	-	-	23	C	24	12	20/1	AG CL REC		500						0.00
		2004					0.00	DOWNDRAFT TABLES	30/1	10	25	A	26	12	20/1	AG CL REC		500						0.00
		2004					0.00	DOWNDRAFT TABLES	30/1	10	27	B	28	12	20/1	AG CL REC		500						0.00
		2004					0.00	DOWNDRAFT TABLES	30/1	10	29	C	30	10	20/1	GF REC		540						0.00
		2004					0.00	DOWNDRAFT TABLES	30/1	10	31	A	32	12	20/1	EF-H-02			1176					0.00
		2004					0.00	DOWNDRAFT TABLES	30/1	10	33	B	34	12	20/1	EF-H-03			1176					0.00
		2004					0.00	DOWNDRAFT TABLES	30/1	10	35	C	36	10	30/1	DOWNDRAFT TABLES			2004					0.00
		2004					0.00	DOWNDRAFT TABLES	30/1	10	37	A	38	10	30/3	SPD								0.00
		2004					0.00	DOWNDRAFT TABLES	30/1	10	39	B	40	-	-	-								0.00
		2004					0.00	DOWNDRAFT TABLES	30/1	10	41	C	42	-	-	-								0.00
0	0	18036	0	0	3328	0	10.00	**TOTALS**								**TOTALS**	0	6380	4356	0	0	0	0	0.00

PANEL: **LW3** 2 (Sectio...

Ltg.	Receptacle	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Receptacle	Motor	Heat	Cool	Other	Kitchen	S/S
		2004					0.00	DOWNDRAFT TABLES	30/1	10	43	A	44	12	20/1	CORD REEL						1920		0.00
		2004					0.00	DOWNDRAFT TABLES	30/1	10	45	B	46	12	20/1	CORD REEL						1920		0.00
		2004					0.00	DOWNDRAFT TABLES	30/1	10	47	C	48	12	20/1	CORD REEL						1920		0.00
		2004					0.00	DOWNDRAFT TABLES	30/1	10	49	A	50	12	20/1	CORD REEL						1920		0.00
		2004					0.00	DOWNDRAFT TABLES	30/1	10	51	B	52	12	20/1	CORD REEL						1920		0.00
		2004					0.00	DOWNDRAFT TABLES	30/1	10	53	C	54	12	20/1	CORD REEL						1920		0.00
		2004					0.00	DOWNDRAFT TABLES	30/1	10	55	A	56	12	20/1	CORD REEL						1920		0.00
		2004					0.00	DOWNDRAFT TABLES	30/1	10	57	B	58	12	20/1	CORD REEL						1920		0.00
		2004					0.00	DOWNDRAFT TABLES	30/1	10	59	C	60	12	20/1	CORD REEL						1920		0.00
		2004					0.00	DOWNDRAFT TABLES	30/1	10	61	A	62	12	20/1	CORD REEL						1920		0.00
		500					0.00	CP-1	20/1	12	63	B	64	12	20/1	CORD REEL						1000		0.00
											65	C	66	12	20/1	CORD REEL						1000		0.00
											67	A	68	6	50/2	WELDING CORD REEL						5200		0.00
											69	B	70	-	-	-						5200		0.00
											71	C	72	6	50/2	WELDING CORD REEL						5200		0.00
											73	A	74	-	-	-						5200		0.00
											75	B	76	6	50/2	WELDING CORD REEL						4420		0.00
											77	C	78	-	-	-						4420		0.00
											79	A	80	6	50/2	WELDING CORD REEL						3640		0.00
											81	B	82	-	-	-						3640		0.00
											83	C	84	10	20/1									0.00
0	0	20540	0	0	0	0	0.00	**TOTALS**								**TOTALS**	0	0	0	0	0	58120	0	0.00

LOAD SUMMARY

Ltg.	Receptacle	Motor	Heat	Cool	Other	Kitchen	S/S	Description
0.0	6.4	42.9	0.0	0.0	61.4	0.0	10.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
0.0	6.4	42.9	0.0	0.0	61.4	0.0	5.0	Design KVA

*Input di...
**100% ...

Phase Load	
Ph:	KVA:
A	39.1
B	37.6
C	34.0

Panel Remarks:
LINKED LW4

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	120.8	339.2		115.8	321.3

PANEL: **LW3**

Date: 6/3/2025 By: Designer

Job: Job Name
Job No. Job Number

Mounting: **SURFACE**
Main... **MCB (225A)**
Neutral: **100%**
Voltage: **480Y/277V-3PH 4W**
Main... **225 AMPS**
AIC... **42000**
Ground: **Equipment Ground**
Lugs: **FEED THRU**

PANEL: **HAG**

Ltg.	Receptacle	Motor	Heat	Cool	Weld	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Receptacle	Motor	Heat	Cool	Weld	Kitchen	S/S
					4104		0.00	WELDER	20/2	12	1	A	2	12	20/2	WELDER						4104		0.00
					4104		0.00	-	-	-	3	B	4	-	-	-						4104		0.00
					4104		0.00	WELDER	20/2	12	5	C	6	12	20/2	WELDER						4104		0.00
					4104		0.00	-	-	-	7	A	8	-	-	-						4104		0.00
					4104		0.00	WELDER	20/2	12	9	B	10	12	20/2	WELDER						4104		0.00
					4104		0.00	-	-	-	11	C	12	-	-	-						4104		0.00
					4104		0.00	WELDER	20/2	12	13	A	14	12	20/2	WELDER						4104		0.00
					4104		0.00	-	-	-	15	B	16	-	-	-						4104		0.00
					4104		0.00	WELDER	20/2	12	17	C	18	12	20/2	WELDER						4104		0.00
					4104		0.00	-	-	-	19	A	20	-	-	-						4104		0.00
					4104		0.00	WELDER	20/2	12	21	B	22	12	20/2	WELDER						4104		0.00
					4104		0.00	-	-	-	23	C	24	-	-	-						4104		0.00
					4104		0.00	WELDER	20/2	12	25	A	26	12	20/2	WELDER						4104		0.00
					4104		0.00	-	-	-	27	B	28	-	-	-						4104		0.00
					4104		0.00	WELDER	20/2	12	29	C	30	12	20/2	WELDER						4104		0.00
					4104		0.00	-	-	-	31	A	32	-	-	-						4104		0.00
					4104		0.00	WELDER	20/2	12	33	B	34	12	20/2	WELDER						4104		0.00
					4104		0.00	-	-	-	35	C	36	-	-	-						4104		0.00
					4104		0.00	WELDER	20/2	12	37	A	38	12	20/2	WELDER						4104		0.00
					4104		0.00	-	-	-	39	B	40	-	-	-						4104		0.00
2350							0.00	WELDING LIGHTS	20/1	12	41	C	42											0.00
2350	0	0	0	0	82080	0	0.00	**TOTALS**								**TOTALS**	0	0	0	0	0	82080	0	0.00

PANEL: **HAG** 2 (Sectio...

Ltg.	Receptacle	Motor	Heat	Cool	Weld	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Receptacle	Motor	Heat	Cool	Weld	Kitchen	S/S
							0.00				43	A	44											0.00
							0.00				45	B	46											0.00
							0.00				47	C	48											0.00
900							0.00	FLOOD LIGHTS	20/1	12	49	A	50	12	20/1	AG LIGHT	2144							0.00
							0.00				51	B	52											0.00
							0.00				53	C	54											0.00
							0.00				55	A	56											0.00
							0.00				57	B	58											0.00
							0.00				59	C	60											0.00
							0.00				61	A	62											0.00
							0.00				63	B	64											0.00
							0.00				65	C	66											0.00
							0.00				67	A	68											0.00
							0.00				69	B	70											0.00
							0.00				71	C	72											0.00
							0.00				73	A	74											0.00
							0.00				75	B	76											0.00
							0.00				77	C	78											0.00
							0.00				79	A	80											0.00
							0.00				81	B	82											0.00
							0.00				83	C	84											0.00
900	0	0	0	0	0	0	0.00	**TOTALS**								**TOTALS**	2144	0	0	0	0	0	0	0.00

LOAD SUMMARY

Ltg.	Receptacle	Motor	Heat	Cool	Weld	Kitchen	S/S	Description
5.4	0.0	0.0	0.0	0.0	164.2	0.0	0.0	Connected KVA
1.25	**	1.00	1.00	1.00	***	0.65	0.50	*Design Factors
6.7	0.0	0.0	0.0	0.0	107.9	0.0	0.0	Design KVA

*Input di...
**100% ...
***Weld...

Phase Load	
Ph:	KVA:
A	60.5
B	57.5
C	51.6

Panel Remarks:
PROVIDE SHUNT TRIP MAIN BREAKER

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	169.6	203.9		114.7	137.9

PANEL: **HAG**

Date: 6/3/2025 By: Designer

Electrical...
Job: Job Name
Job No.: Job Number
AIC Rating: **65000**
Volts - Phase: **480Y/277V-3PH 4W**
DISTRIBUTI... **DHH**
Served From: UTILITY CO TRANSFORMER

Connected Load (KVA)

Cir. No.	Load Served	Amp/Poles	Wire and Conduit Size	Lighting	Conv. Outlets	Motors	Heating	Cooling	Others	Elect. Cooking	Spare/ Spaces	Elevators	Residential	Total KVA	Total Amps
1	PANEL HAG	225/3	SEE RISER	5.4	0.0	0.0	0.0	0.0	164.2	0.0				169.6	203.9
2	XFMR TLW2	175/3	SEE RISER	0.0	6.4	42.9	0.0	0.0	61.4	0.0				110.8	133.2
3														0.0	0.0
4														0.0	0.0
5														0.0	0.0
6														0.0	0.0
7														0.0	0.0
8														0.0	0.0
9														0.0	0.0
10														0.0	0.0
11														0.0	0.0
12														0.0	0.0
Total...				5.4	6.4	42.9	0.0	0.0	225.6	0.0	0.0	0.0	0.0	280.3	337.2
Demand...				1.25	*	**	1.0	1.0	1.00	0.65	0.5	***	****	--	--
Total...				6.7	6.4	42.9	0.0	0.0	225.6	0.0	0.0	0.0	0.0	281.7	338.8

* 100% of...
** 125% of...
*** Elevator...
****

Largest... KVA

Date: 6/3/2025 By: Designer

DISTRIBUTION PANEL:		DHH
MAINS	TYPE:	MAIN BREAKER
	SIZE:	600 AMP
BUS SIZE	PHASE:	600 AMP
	NEUTRAL:	600 AMP
	GROUND:	PER NEC

PBK

ARCHITECT PBK Architects, Inc.
PBK.com
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Houston, TX 77046
713-961-0608 P
713-961-4571 F
TX Firm: BR 1608

CIVIL
KIMLEY-HORN
T:281-497-9300
LANDSCAPE
EDGELAND
T:713-965-0505
STRUCTURAL
KUBRA ENGINEERS
T:713-980-0928
MEP
LEAF ENGINEERS
T:713-965-0505
ACOUSTIC
BAL LLC
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FOODSERVICE DESIGN PROFESSIONALS, LLc
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LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: AGRICULTURAL PAVILION

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT

H	J

KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED
PROFESSIONAL ENGINEER

LEAF ENGINEERS
F-18672

CLIENT
Huffman Independent School District

DATE	PROJECT NUMBER
05/21/2025	240157

DRAWING HISTORY

No.	Description	Date

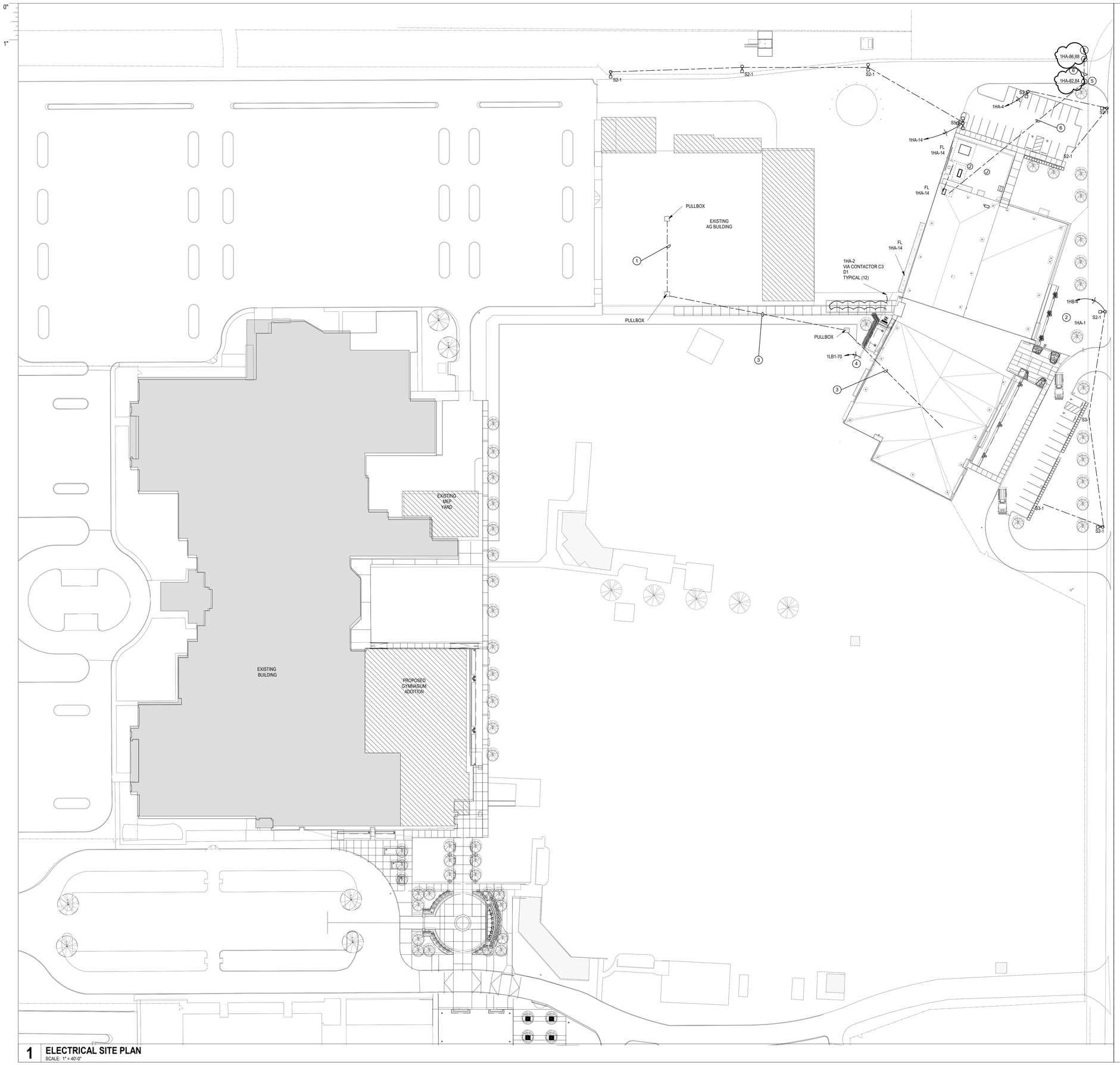
CHECKED BY: PP
DRAWN BY: LT

ELECTRICAL PANEL SCHEDULES-AG

E-701.A

Plot Stamp:
6/3/2025 3:29:34 PM

ELECTRICAL SITE PLAN-CTE
ES-101.C
FOR BLUEBEAM LABELING/OCR:



1 ELECTRICAL SITE PLAN
SCALE: 1" = 40'-0"

SITE PLAN GENERAL NOTES:

1. COORDINATE ROUTING FOR ALL UNDERGROUND ELECTRICAL BRANCH CIRCUITS AND FEEDERS WITH OTHER DISCIPLINES PRIOR TO TRENCHING.
2. UNLESS NOTED OTHERWISE ALL UNDERGROUND CONDUIT SHOWN ON THIS PLAN TO BE MINIMUM 1" IN SIZE.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES CAUSED BY INSTALLATION OF NEW WORK.

SITE PLAN KEYED NOTES:

1. PROVIDE (2) 4" CONDUIT FOR TECHNOLOGY FROM PULL BOX.
2. PROVIDE POWER TO FLAG POLE LIGHT. CONTRACTOR SHALL COORDINATION EXACT LOCATION AND INSTALLATION WITH LANDSCAPE ARCHITECT.
3. PROVIDE (2) 4" CONDUIT FOR TECHNOLOGY FROM EXISTING AG BUILDING IDF TO NEW CTE MDF.
4. PROVIDE JUNCTION BOX FOR POWER TO IRRIGATION CONTROLLER. REFER TO LANDSCAPE ARCHITECT DRAWINGS FOR EXACT LOCATION OF CONTROLLER PRIOR TO ROUGH-IN.
5. PROVIDE POWER TO MOTORIZED GATE OPERATOR. FIELD VERIFY CONNECTION LOCATION WITH EQUIPMENT REQUIREMENTS.
6. PROVIDE (2)1"CONDUITS FOR TECHNOLOGY AND POWER.

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BUILDING: CTE

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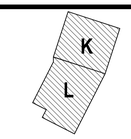
HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS



KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED
PROFESSIONAL ENGINEER
06/03/2025

LEAF ENGINEERS
F-18672

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HUFFMAN ISD

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05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 01	06/03/2025

CHECKED BY: PP
DRAWN BY: LT

ELECTRICAL SITE PLAN-CTE

ES-101.C

Plot Stamp:
6/3/2025 2:51:39 PM

1ST FLOOR POWER PLAN - AREA K-CTE

E-101K.C

FOR BLUEBEAM LABELING/OCR:

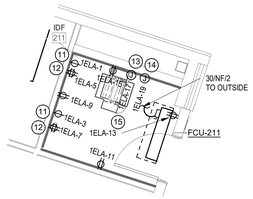
1 1ST FLOOR POWER PLAN - AREA K
SCALE: 1/8" = 1'-0"

POWER PLAN GENERAL NOTES:

1. FOR EQUIPMENT OR DEVICES SHOWN ON ARCHITECTURAL DRAWINGS THAT REQUIRE POWER AND NOT IDENTIFIED ON ELECTRICAL PLANS, ASSUME AT A MINIMUM A DUPELX OUTLET, A DEDICATED CIRCUIT WITH 2#12,1#12G,3/4"C, WITH HOMERUN TO NEAREST 120/208V PANEL. ITEMS SUCH AS BUT NOT LIMITED TO ROLL DOWN DOORS, COUNTER DOORS, OVERHEAD GRILLES, DISPLAY CASES, HAND DRYERS, WATER COOLERS, ICE MAKERS, GARBAGE DISPOSALS, OSCILLATING FANS, LCD's, PROJECTORS, DISHWASHERS, MOTORIZED PROJECTION SCREENS, ETC.
2. DATA/COMMUNICATION OUTLETS ARE SHOWN ON THIS DRAWING FOR COORDINATION PURPOSES ONLY. PROVIDE AND INSTALL ALL CONDUITS AND BACK BOXES REQUIRED BY LOW VOLTAGE SYSTEMS. COORDINATE WITH 'TS' DRAWINGS, DETAILS, ETC. AND ARCHITECTURAL DRAWINGS FOR EXACT QUANTITIES, LOCATIONS, AND REQUIREMENTS PRIOR TO ROUGH-IN.
3. CONTRACTOR TO PROVIDE CONNECTION FROM EXHAUST FANS TO ALL MOTORIZED BACKDRAFT DAMPERS AS REQUIRED, COORDINATE WITH MECHANICAL.
4. ALL 15 AMP AND 20 AMP NON-LOCKING TYPE RECEPTACLES THAT ARE NOT LOCATED WITHIN DEDICATED APPLIANCE SPACE AND ARE BELOW 66" ABOVE FINISHED FLOOR SHALL BE TAMPER RESISTANT TYPE RECEPTACLES, PER NEC 406.12.

POWER KEYED NOTES:

1. PROVIDE JUNCTION BOX FOR POWER TO ELECTRIC HAND DRYER. VERIFY MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN.
2. VERTICAL MOUNTING BRACKET CORD REEL. WOODHEAD #9383 (25', 12 AWG, 3-CONDUTOR SOW CABLE) WITH BALL STOP AND 20A PENDANT DUPLEX RECEPTACLE END WITH TWO 5-20R DUPLEX RECEPTACLES WOODHEAD #9383-3080.
3. PROVIDE POWER TO OH DOOR WITH A LOWER RAISE SWITCH. COORDINATE LOCATION WITH MANUFACTURER.
4. PROVIDE ELECTRICAL DRINKING FOUNTAIN WITH GFCI TYPE BREAKER. TYPICAL FOR ALL ELECTRICAL DRINKING FOUNTAINS.
5. EMERGENCY POWER OFF PUSHBUTTON. SHUNT TRIP SHUT OFF PANEL IN ROOM.
6. PROVIDE POWER TO CORD REEL. WOODHEAD #9383 (25', 12 AWG, 3-CONDUTOR SOW CABLE) WITH BALL STOP AND 20A PENDANT DUPLEX RECEPTACLE END WITH TWO 5-20R DUPLEX RECEPTACLES WOODHEAD #9383-3080. VERIFY MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN.
7. POWER TO TV, COORDINATE EXACT MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN.
8. POWER FOR CLOTHES WASHER AND DRYER. COORDINATE EXACT NEMA CONFIGURATION WITH EQUIPMENT MANUFACTURER PRIOR TO ROUGH-IN.
9. VERTICAL MOUNTING BRACKET CORD REEL. WOODHEAD #9383 (25', 12 AWG, 3-CONDUTOR SOW CABLE) WITH BALL STOP AND 20A PENDANT QUAD 5-20R RECEPTACLE END.
10. JUNCTION BOX FOR ELECTRONIC TRAP PRIMER. REFER TO PLUMBING CONTRACTOR FOR EXACT LOCATION, MOUNTING AND ADDITIONAL INFORMATION.
11. PROVIDE L5-30R TWISTLOCK RECEPTACLE TO IDF EQUITMENT IN THIS ROOM.
12. PROVIDE 5-20R QUAD RECEPTACLE TO IDF EQUITMENT IN THIS ROOM.
13. POWER TO ACCESS CONTROL POWER SUPPLY COORDINATE MOUNTING HEIGHT AND LOCATION WITH SPECIAL SYSTEM CONTRACTOR.
14. POWER TO FIRE ALARM POWER SUPPLY. COORDINATE MOUNTING HEIGHT AND LOCATION WITH FIRE ALARM CONTRACTOR.
15. COORDINATE EXACT LOCATION, MOUNTING AND ALL POWER REQUIREMENTS WITH TECHNOLOGY CONTRACTOR PRIOR TO ROUGH-IN.
16. PROVIDE 2-GANG FLOOR BOX WIREMOLD EVOLUTION #RFB4-OG WITH ALL NECESSARY. PROVIDE (1) DUPLEX RECPTACLES AND A (1) BLANK GANG AND 3/4" CONDUIT FOR POWER. ROUTE UNDERSLAB TO NEAREST FULL HEIGHT WALL AND UP TO ACCESSIBLE CEILING PLENIUM. DO NOT DAISY CONDUIT TO FLOOR BOXES.
17. POWER FOR BUILDING AUTOMATION SYSTEM. COORDINATE EXACT LOCATION WITH MECHANICAL/CONTROLS PRIOR TO ROUGH-IN.
18. PROVIDE POWER TO FAUCET. COORDINATE WITH PLUMBING FOR LOCATION AND REFER TO PLUMBING 08/P-603.
19. ALL DIV 26 CONDUIT IN THIS ROOM SHALL BE HIGH AND TIGHT TO CEILING TO ALLOW MAXIMUM VERTICAL FLIGHT CLEARANCE FOR STUDENT DRONES.
20. POWER TO AV SPEAKER. VERIFY EXACT HEIGHT AND LOCATION WTIH AV.
21. POWER TO TV. VERIFY EXACT HEIGHT AND LOCATION WITH AV.
22. POWER TO RECEPTACLE. VERIFY EXACT HEIGHT AND LOCATION WITH AV.
23. PROVIDE POWER TO VERTICAL MOUNTING BRACKET CORD REEL HBLM4512SBLKR220M1 (20', 12 AWG, 3-CONDUTOR SOW CABLE) WITH BALL STOP AND 20A PENDANT QUAD NEMA 5-20R RECEPTACLE END . VERIFY MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN.
24. PROVIDE POWER TO EQUIPMENT. COORDINATE EXACT EQUIPMENT AND LOCATION WITH ARCHITECT BEFORE ROUGH-IN.
25. CONTRACTOR SHALL ROUTE CONDUIT FROM NEAREST FULL HEIGHT WALL TO STUB UP INTO PONY WALL.
26. PROVIDE POWER TO RECEPTACLE FOR CHARGING STATION.
27. LOCATION OF GREASE TRAP. CONTRACTOR SHALL COORDINATION EXACT LOCATION AND INSTALLATION WITH LANDSCAPE ARCHITECT AND PLUMBING.
28. VERTICAL MOUNTING BRACKET HUBBELL CORD REEL. HBLW4563W WITH STRAIGHT BLADE DEVICE 9650NC WITH 6-50R
29. VERTICAL MOUNTING BRACKET HUBBELL CORD REEL 45FT (12 AWG, 3-CONDUTOR SOW CABLE) WITH BALL STOP AND NEMA 6-15R ON PAYOUT END.



2 1ST FLOOR POWER PLAN - WORKING - IDF 345
SCALE: 1/4" = 1'-0"

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LEAF ENGINEERS

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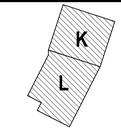


KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61625
LICENSED
PROFESSIONAL ENGINEER
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 01	06/03/2025
2	Revision 2	06/12/2025

CHECKED BY: PP

DRAWN BY: LT

1ST FLOOR POWER PLAN - AREA K-CTE

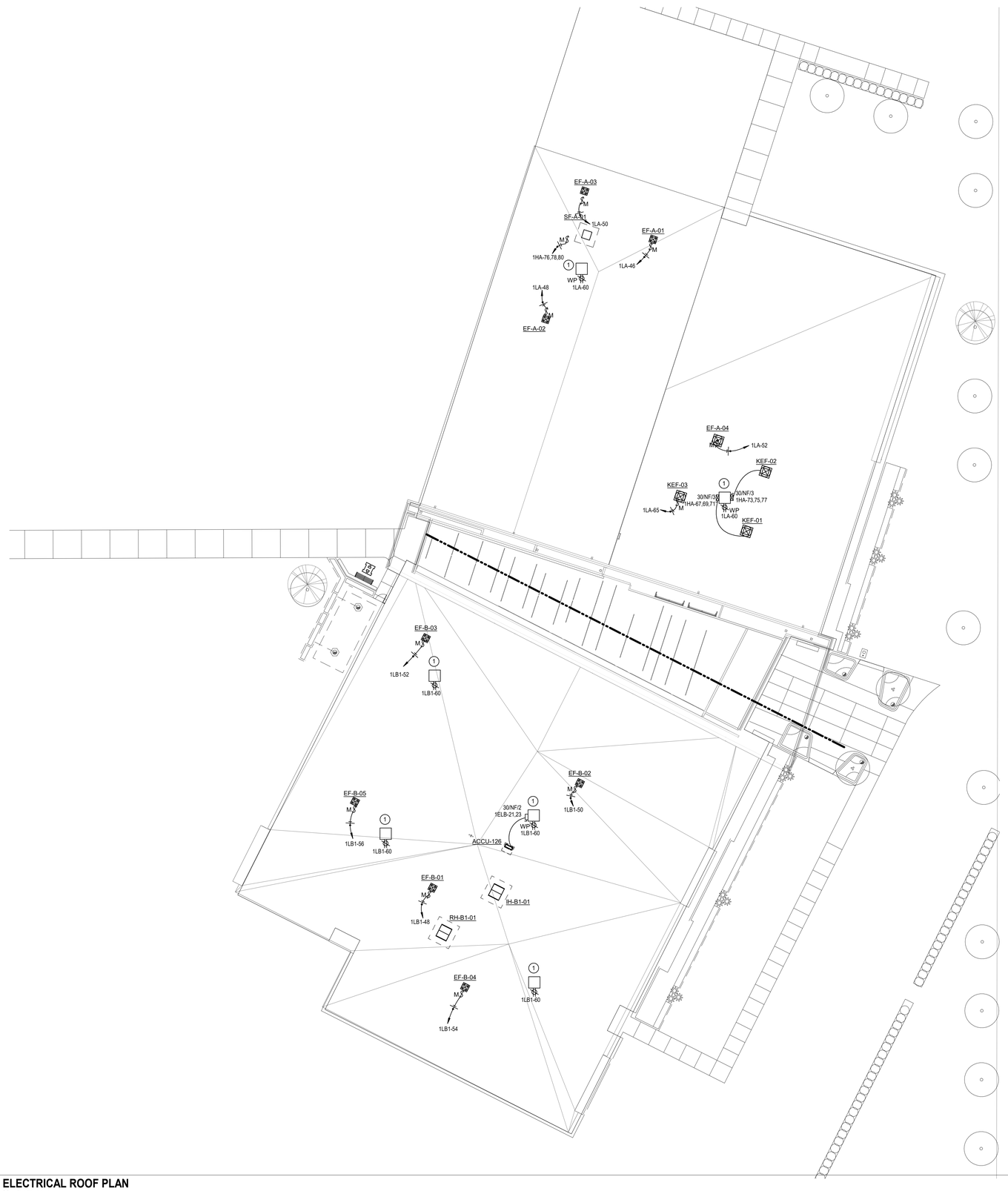
E-101K.C

Plot Stamp:
6/3/2025 2:52:04 PM

ELECTRICAL ROOF PLAN - COMPOSITE-CTE

E-301.C

FOR BLUEBEAM LABELING/OCR:



1 **ELECTRICAL ROOF PLAN**
SCALE: 1/16" = 1'-0"

ELECTRICAL ROOF NOTES:

1. 1. FOR EQUIPMENT OR DEVICES SHOWN ON ARCHITECTURAL DRAWINGS THAT REQUIRE POWER AND NOT IDENTIFIED ON ELECTRICAL PLANS, ASSUME AT A MINIMUM A DUPELX OUTLET, A DEDICATED CIRCUIT WITH 2#12,1#12G,3/4"C. WITH HOMERUN TO NEAREST 120/208V PANEL. ITEMS SUCH AS BUT NOT LIMITED TO ROLL DOWN DOORS, COUNTER DOORS, OVERHEAD GRILLES, DISPLAY CASES, HAND DRYERS, WATER COOLERS, ICE MAKERS, GARBAGE DISPOSALS, OSCILLATING FANS, LCD's, PROJECTORS, DISHWASHERS, MOTORIZED PROJECTION SCREENS, ETC.
2. ALL MOTOR SWITCHES ARE TO BE WEATHER PROOF.
3. CONTRACTOR TO PROVIDE CONNECTION FROM EXHAUST FANS TO ALL MOTORIZED BACKDRAFT DAMPERS AS REQUIRED, COORDINATE WITH MECHANICAL.

POWER KEYED NOTES:

1. PROVIDE MAPA PEDESTAL DISCONNECT AND RECEPTACLE. REFER TO DETAIL ON SHEET 4/E-602 FOR ADDITIONAL INFORMATION.

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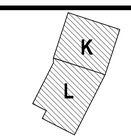

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CHECKED BY: PP
DRAWN BY: LT

ELECTRICAL ROOF PLAN - COMPOSITE-CTE

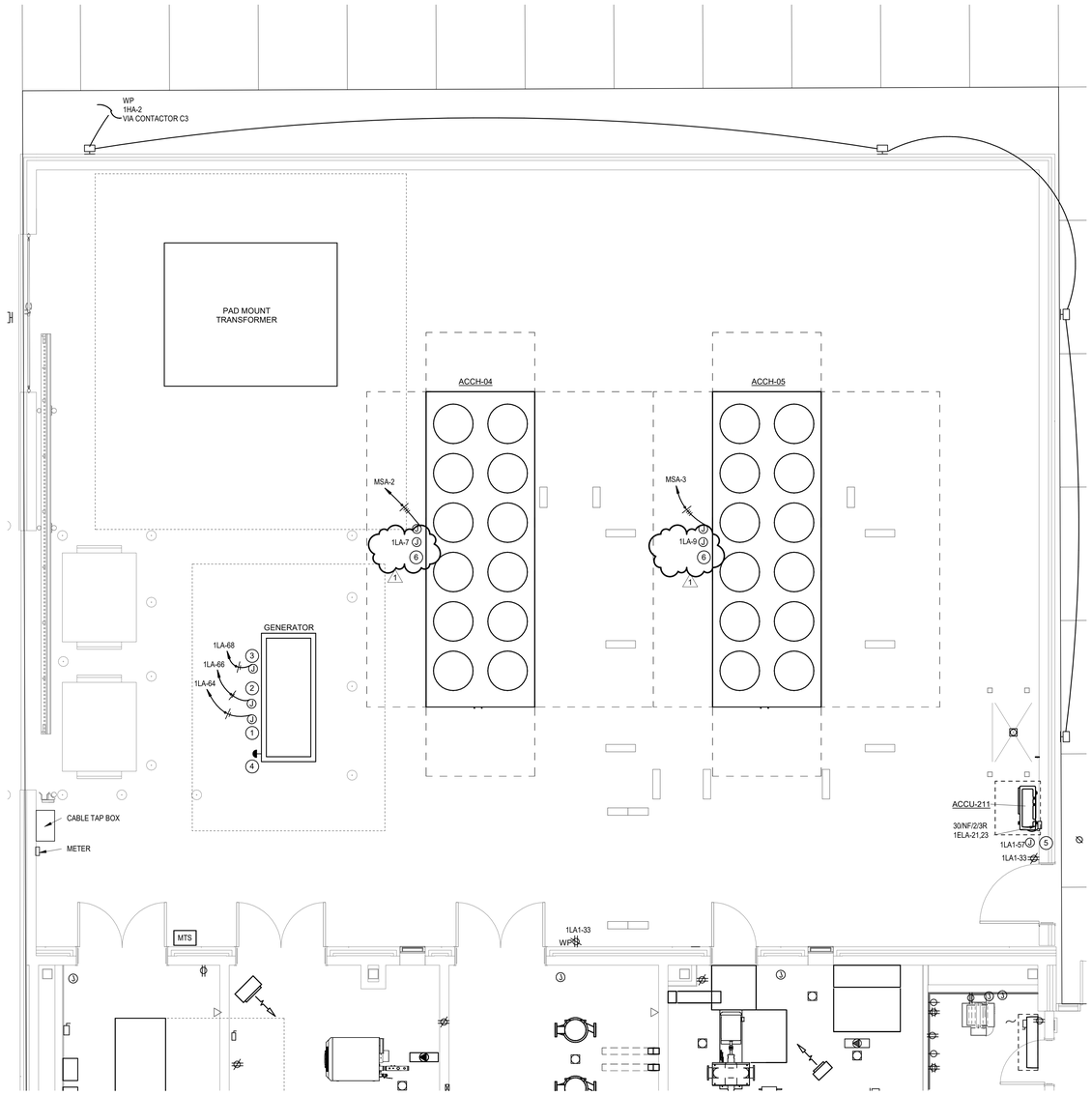
E-301.C

Plot Stamp:
6/3/2025 2:53:17 PM

ENLARGED POWER PLAN - CENTRAL PLANT-CTE

E-402.C

FOR BLUEBEAM LABELING/OCR:



1 ENLARGED POWER PLAN - CENTRAL PLANT

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

POWER PLAN GENERAL NOTES:

1. FOR EQUIPMENT OR DEVICES SHOWN ON ARCHITECTURAL DRAWINGS THAT REQUIRE POWER AND NOT IDENTIFIED ON ELECTRICAL PLANS, ASSUME AT A MINIMUM A DUPELX OUTLET, A DEDICATED CIRCUIT WITH 2#12,1#12G,3/4"C. WITH HOMERUN TO NEAREST 120/208V PANEL. ITEMS SUCH AS BUT NOT LIMITED TO ROLL DOWN DOORS, COUNTER DOORS, OVERHEAD GRILLES, DISPLAY CASES, HAND DRYERS, WATER COOLERS, ICE MAKERS, GARBAGE DISPOSALS, OSCILLATING FANS, LCD's, PROJECTORS, DISHWASHERS, MOTORIZED PROJECTION SCREENS, ETC.
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3. CONTRACTOR TO PROVIDE CONNECTION FROM EXHAUST FANS TO ALL MOTORIZED BACKDRAFT DAMPERS AS REQUIRED, COORDINATE WITH MECHANICAL.
4. ALL 15 AMP AND 20 AMP NON-LOCKING TYPE RECEPTACLES THAT ARE NOT LOCATED WITHIN DEDICATED APPLIANCE SPACE AND ARE BELOW 66" ABOVE FINISHED FLOOR SHALL BE TAMPER RESISTANT TYPE RECEPTACLES, PER NEC 406.12.

POWER KEYED NOTES:

1. JUNCTION BOX FOR POWER CONNECTION TO JACKET HEATER. REFER TO GENERATOR MANUFACTURER FOR EXACT LOCATION AND TERMINATION REQUIREMENTS.
2. JUNCTION BOX FOR POWER CONNECTION TO BATTERY RECHARGE. REFER TO GENERATOR MANUFACTURER FOR EXACT LOCATION AND TERMINATION REQUIREMENTS.
3. JUNCTION BOX FOR POWER CONNECTION TO CONTROLS. REFER TO GENERATOR MANUFACTURER FOR EXACT LOCATION AND TERMINATION REQUIREMENTS.
4. THE REMOTE EMERGENCY STOP SWITCH SHALL BE LABELED GENERATOR EMERGENCY SHUTDOWN, AND THE LABEL SHALL MEET THE REQUIREMENTS OF NEC 110.21(B).
5. POWER FOR HEAT TRACE PIPING. COORDINATE WITH ARCHITECT FOR EXACT MOUNTING HEIGHT & LOCATION PRIOR TO ROUGH-INS.
6. POWER FOR HEAT TRACE PIPING. COORDINATE WITH PLUMBING FOR EXACT MOUNTING HEIGHT & LOCATION PRIOR TO ROUGH-INS.

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LEAF ENGINEERS

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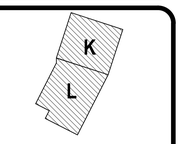

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1	Addendum 01	06/03/2025
2	Revision 2	06/12/2025

CHECKED BY: PP

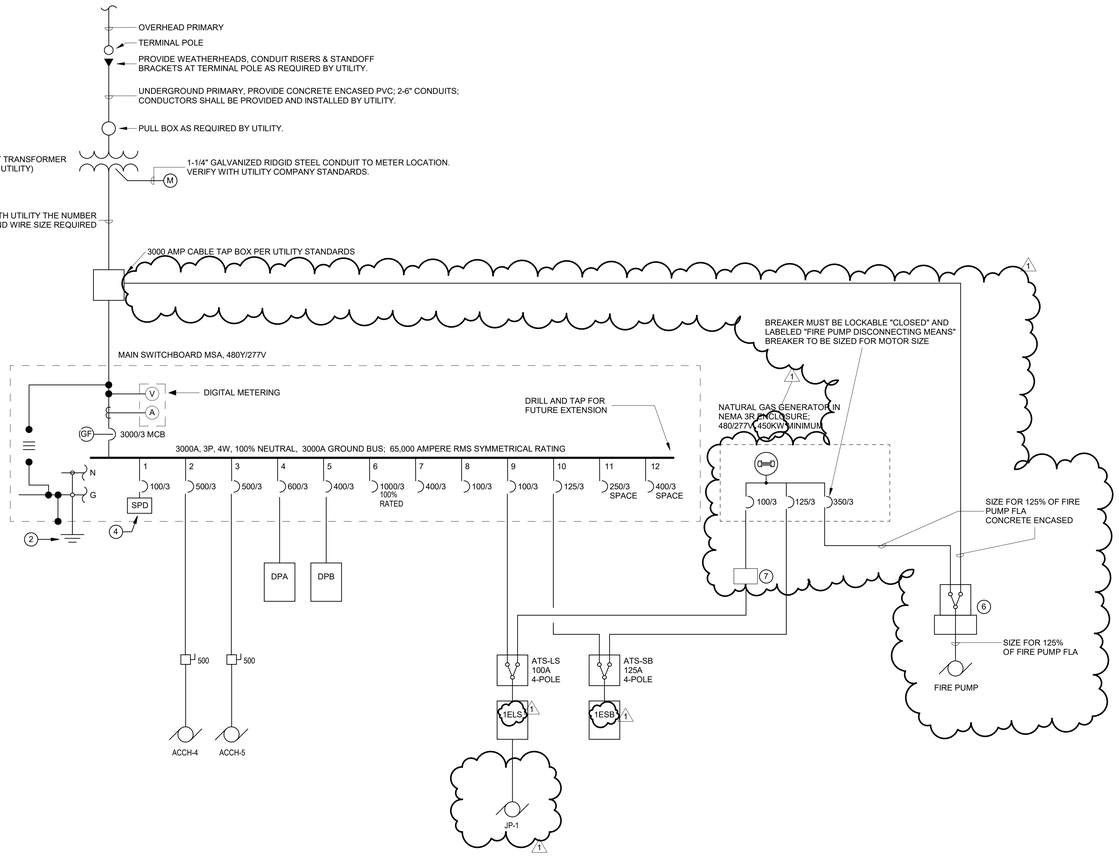
DRAWN BY: LT

ENLARGED POWER PLAN - CENTRAL PLANT-CTE

E-402.C

Plot Stamp:
6/3/2025 2:53:29 PM

ELECTRICAL ONE-LINE DIAGRAM-CTE
E-501.C
FOR BLUEBEAM LABELING/OCR:

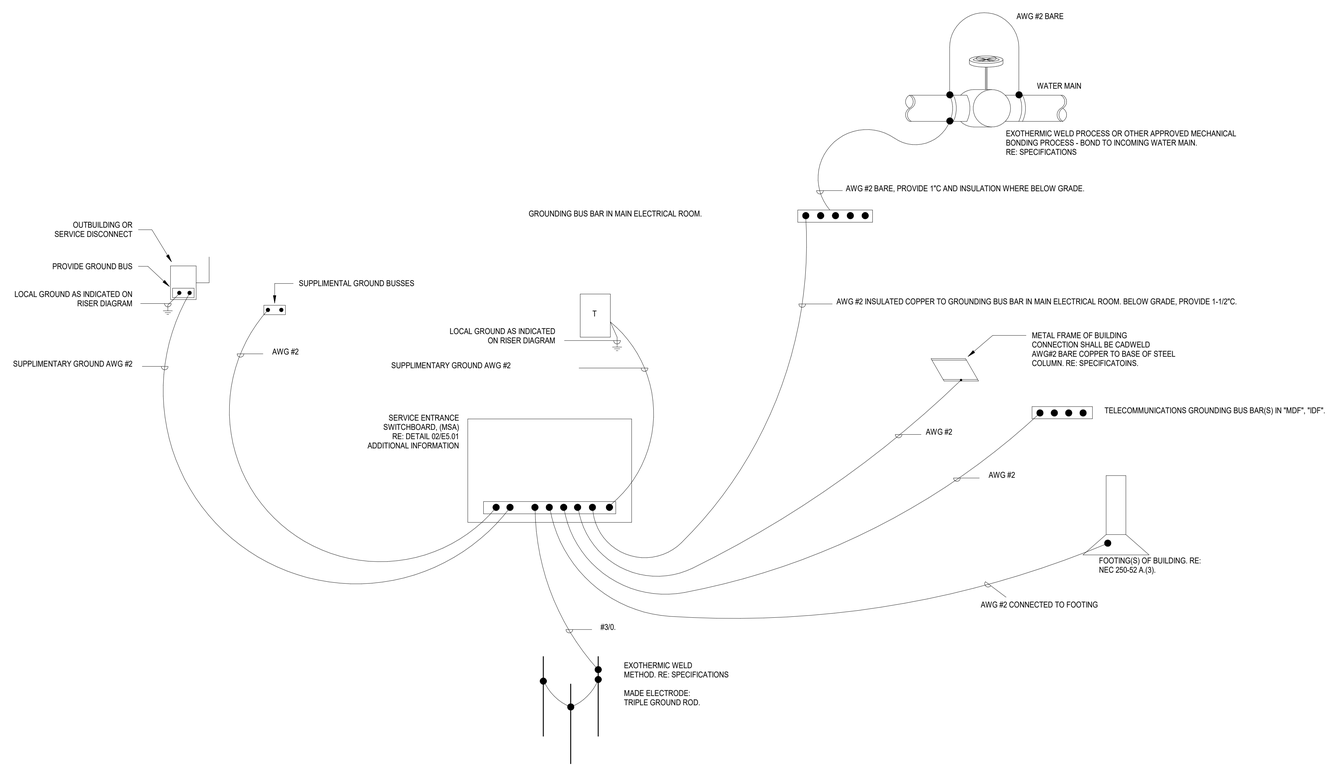


LOAD ANALYSIS MSA	
LIGHTING	32.8 KVA
RECEPTACLE...	158.5 KVA
COOKING LOAD	137.0 KVA
HEATING LOAD	3.2 KVA
WATER HEATING LOAD	0.0 KVA
AIR CONDITIONING LOAD	821.1 KVA
MOTORS	168.3 KVA
MISCELLANEOUS LOADS	283.2 KVA
EXISTING LOA...	739.5 KVA
TOTAL SERVICE KVA =	2323.6 KVA @480, 3-PHASE
TOTAL AMPACITY =	2795.3 AMPS
SERVICE AMPACITY =	3000.0 AMPS
SPARE CAPACITY =	204.7 AMPS

ELECTRICAL ONE-LINE DIAGRAM NOTES:

#. INDICATES GENERAL NOTE.
Ⓝ INDICATES KEYED NOTE.

1. REFER TO RISER DIAGRAM FOR FEEDER WIRE / CONDUIT SIZES AND FOR ALL FEEDER SIZES NOT SHOWN ON THIS SHEET.
2. 1 #3/0 COPPER GROUND CONDUCTOR IN 1" CONDUIT TO MAIN INCOMING METAL WATER PIPE, TO MADE GROUNDING ELECTRODE AND TO BUILDING GROUND.
3. PROVIDE ALL CONNECTIONS TO CHILLER PER INSTRUCTIONS OF CHILLER MANUFACTURER.
4. NEC 285 SURGE PROTECTIVE DEVICE. RE: DIVISION 26 SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. REPLACE POWER QUANTY METER.
6. FIRE PUMP CONTROLLER WITH ATS BY DIVISION 22. COORDINATE EXACT LOCATION WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.
7. 100A THREE WAY MANUAL TRANSFER SWITCH WITH TWO BREAKER INTERLOCK SHALL COMPLY WITH NEC 700.3F.



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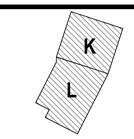

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DRAWING HISTORY

No.	Description	Date
1	Addendum 01	06/03/2025

CHECKED BY: PP
DRAWN BY: LT

ELECTRICAL ONE-LINE DIAGRAM-CTE

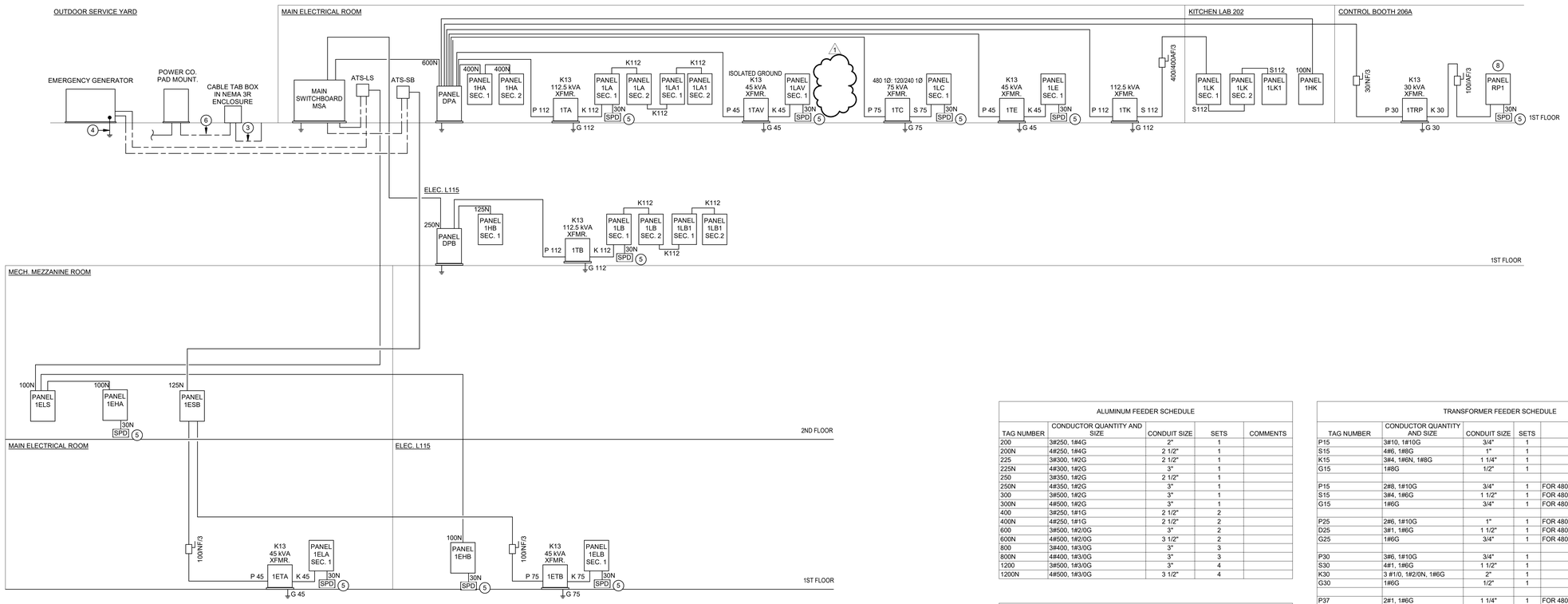
E-501.C

Plot Stamp:
6/3/2025 2:53:29 PM

ELECTRICAL RISER DIAGRAM-CTE

E-502.C

FOR BLUEBEAM LABELING/OCR:



ELECTRICAL ONE-LINE DIAGRAM NOTES:

#. INDICATES GENERAL NOTE.
Ⓟ INDICATES KEYED NOTE.

1. UNLESS NOTED OTHERWISE, ALL TRANSFORMERS TO BE 480: 208/120 VOLT 3P, 4W.
2. PROVIDE THRU-FEED LUGS FOR ALL MULTI-SECTION PANELBOARDS.

(3) REFERENCE ONE-LINE DIAGRAM.

(4) 1#6 G, 3/4"C.

(5) SURGE PROTECTIVE DEVICE, RE: DIVISION 26 SPECIFICATIONS FOR ADDITIONAL INFORMATION.

(6) PER LOCAL UTILITY COMPANY STANDARDS.

(7) PROVIDE (2) 3-1/2" CONDUITS WITH PULL STRING(S) STUBBED 5' OUTSIDE OF THE MAIN BUILDING FOR FUTURE USE.

(8) PANEL BOARD PROVIDED BY AV CONSULTANT.

ALUMINUM FEEDER SCHEDULE

TAG NUMBER	CONDUCTOR QUANTITY AND SIZE	CONDUIT SIZE	SETS	COMMENTS
200	3#250, 1#4G	2"	1	
200N	4#250, 1#4G	2 1/2"	1	
225	3#300, 1#2G	2 1/2"	1	
225N	4#300, 1#2G	3"	1	
250	3#350, 1#2G	2 1/2"	1	
250N	4#350, 1#2G	3"	1	
300	3#500, 1#2G	3"	1	
300N	4#500, 1#2G	3"	1	
400	3#250, 1#1G	2 1/2"	2	
400N	4#250, 1#1G	2 1/2"	2	
600	3#500, 1#2/0G	3"	2	
600N	4#500, 1#2/0G	3 1/2"	2	
800	3#400, 1#3/0G	3"	3	
800N	4#400, 1#3/0G	3"	3	
1200	3#500, 1#3/0G	3"	4	
1200N	4#500, 1#3/0G	3 1/2"	4	

FEEDER SCHEDULE

TAG NUMBER	CONDUCTOR QUANTITY AND SIZE	CONDUIT SIZE	SETS	COMMENTS
30N	4#10, 1#10G	1"	1	
50N	4#6, 1#10G	1"	1	
60N	4#6, 1#10G	1"	1	
100	3#1, 1#8G	1 1/2"	1	
100N	4#1, 1#8G	1 1/2"	1	
125	3#1, 1#6G	1 1/2"	1	
125N	4#1, 1#6G	2"	1	
150	3#1/0, 1#6G	1 1/2"	1	
150N	4#1/0, 1#6G	2"	1	
175	3#2/0, 1#6G	2"	1	
175N	4#2/0, 1#6G	2"	1	
200	3#3/0, 1#6G	2"	1	
200N	4#3/0, 1#6G	2"	1	
225	3#4/0, 1#4G	2"	1	
225N	4#4/0, 1#4G	2 1/2"	1	
250	3#250, 1#4G	2 1/2"	1	
250N	4#250, 1#4G	3"	1	
300	3#350, 1#4G	3"	1	
300N	4#350, 1#4G	3"	1	
400	3#3/0, 1#3G	2"	2	
400N	4#3/0, 1#3G	2"	2	
400S	4#500	3 1/2"	1	
600	3#350, 1#1G	3"	2	
600N	4#350, 1#1G	3"	2	
600S	4#350	3"	2	
800	3#500, 1#1/0G	3"	2	
800N	4#500, 1#1/0G	3 1/2"	2	
800S	4#500	3 1/2"	2	
1000	3#400, 1#2/0G	3"	3	
1000N	4#400, 1#2/0G	3"	3	
1000S	4#400	3"	3	
1200	3#350, 1#3/0G	3"	4	
1200N	4#350, 1#3/0G	3"	4	
1200S	4#350	3"	4	
1600S	4#400	3"	5	
2000S	4#400	3"	6	
2500S	4#500	3 1/2"	7	
3000S	4#500	3 1/2"	8	
4000S	4#500	3 1/2"	11	

TRANSFORMER FEEDER SCHEDULE

TAG NUMBER	CONDUCTOR QUANTITY AND SIZE	CONDUIT SIZE	SETS	COMMENTS
P15	3#10, 1#10G	3/4"	1	
S15	4#6, 1#8G	1"	1	
K15	3#4, 1#6N, 1#8G	1 1/4"	1	
G15	1#8G	1/2"	1	
P15	2#8, 1#10G	3/4"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
S15	3#4, 1#6G	1 1/2"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
G15	1#6G	3/4"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
P25	2#6, 1#10G	1"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
D25	3#1, 1#6G	1 1/2"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
G25	1#6G	3/4"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
P30	3#6, 1#10G	3/4"	1	
S30	4#1, 1#6G	1 1/2"	1	
K30	3 #1/0, 1#2/0N, 1#6G	2"	1	
G30	1#6G	1/2"	1	
P37	2#1, 1#6G	1 1/4"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
D37	3#3/0, 1#4G	3"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
G37	1#4G	3/4"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
P45	3#4, 1#8G	1"	1	
S45	4#1/0, 1#6G	1 1/2"	1	
K45	3#2/0, 1#250, 1#4G	2"	1	
G45	1#6G	1/2"	1	
P50	2#1, 1#6G	1 1/4"	1	
S50	3#3/0, 1#3G	2"	1	
G50	1#3G	3/4"	1	
P75	3#1, 1#8G	1 1/2"	1	
S75	4#4/0, 1#2G	2 1/2"	1	
K75	3#4/0, 2#3/0N, 1#2G	2 1/2"	1	
G75	1#1/0G	1/2"	1	
P75B	2#3/0, 1#6G	2"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
S75B	3#3/0, 1#4G	2"	2	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
G75B	1#4G	3/4"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
P75A	3#1, 1#8G	1 1/2"	1	FOR 480 3Ø: 120/240 3Ø TRANSFORMERS
S75A	4#4/0, 1#2G	2 1/2"	1	FOR 480 3Ø: 120/240 3Ø TRANSFORMERS
G75A	1#2G	1/2"	1	FOR 480 3Ø: 120/240 3Ø TRANSFORMERS
P112	3#2/0, #6G	2"	1	
S112	4#3/0, 1#1/0G	2"	2	
K112	3#4/0, 1#350N, 1#1/0G	2 1/2"	2	
G112	1#1/0G	3/4"	1	
P150	3#250, 1#4G	2 1/2"	1	
S150	4#350, 1#2/0G	3"	2	
K150	3#350, 2#3/0N, 1#2/0G	3"	2	
G150	1#2/0G	3/4"	1	
P167	2#4/0, 1#2/0G	2"	2	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
S167	3#350, 1#3/0G	3"	3	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
G167	1#3/0G	3/4"	1	FOR 480 1Ø: 120/240 1Ø TRANSFORMERS
P225	3#500, 3#3G	3"	1	
S225	4#300, 1#2/0G	3"	1	
K225	3#350, 2#3/0, 1#1G	3 1/2"	3	
G225	1#2/0G	3/4"	1	

PBK

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CIVIL
CONSULTANT NAME
T-000-000-0000
LANDSCAPE
CONSULTANT NAME
T-000-000-0000
STRUCTURAL
CONSULTANT NAME
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MEP
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ACOUSTIC
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THEATER
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FOOD SERVICE
CONSULTANT NAME
T-000-000-0000
OTHER
CONSULTANT NAME
T-000-000-0000

LEAF ENGINEERS

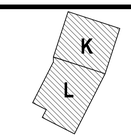
New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS



KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED
PROFESSIONAL ENGINEER

LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	Addendum 01	06/03/2025
2	Revision 2	06/12/2025

CHECKED BY: PP

DRAWN BY: LT

ELECTRICAL RISER DIAGRAM-CTE

E-502.C

Plot Stamp:
6/3/2025 2:53:30 PM

ELECTRICAL SYMBOL LEGEND AND CONTACTOR SCHEDULE-CTE
E-601.C
FOR BLUEBEAM LABELING/OCR:

0"
1"

Huf...							
Light...							
Fixture Type	Manufacturer	Catalog Number	Lamp Type	Mounting	Voltage	Dimming Type	Description
A	DAYBRITE	2FP24L840-4-DS-UNV-DIM	37W 4000K 4800 LM	RECESSED	UNV	0-10V	RECESSED LED 2X4 FLAT PANEL
AH	DAYBRITE	2FP24L840-4-DS-UNV-DIM / FMA24	37W 4000K 4800 LM	RECESSED	UNV	0-10V	RECESSED LED 2X4 FLAT PANEL W/ HARD CEILING KIT
A1	DAYBRITE	2FP24ZB840-4-DS-UNV-DIM	40W 4000K 4200 LM	RECESSED	UNV	0-10V	RECESSED LED 2X4 FLAT PANEL (LOW OUTPUT)
A2	DAYBRITE	2FPZ60L840-4-DS-UNV-DIM	47W 4000K 6000 LM	RECESSED	UNV	0-10V	RECESSED LED 2X4 FLAT PANEL (HIGH OUTPUT)
A3	DAYBRITE	1FPZ45L840-4-DS-UNV-DIM	38W 4000K 4500 LM	RECESSED	UNV	0-10V	RECESSED LED 1X4 FLAT PANEL
A3H	DAYBRITE	1FPZ45L840-4-DS-UNV-DIM / FMA14FP	38W 4000K 4500 LM	RECESSED	UNV	0-10V	RECESSED LED 1X4 FLAT PANEL W/ HARD CEILING KIT
D	LIGHTOLIER	4RN / P4RDL15940WCCZ10U	12W 4000K 1500 LM	RECESSED	UNV	0-10V	4" ROUND APERTURE LED DOWNLIGHT, LISTED FOR WET LOCATIONS
D1	LIGHTOLIER	6RN / C6L48940MZ10U / C6RDLCC	42W 4000K 4800 LM	RECESSED	UNV	0-10V	6" ROUND APERTURE LED DOWNLIGHT, LISTED FOR WET LOCATIONS (HIGH OUTPUT)
D2	LIGHTOLIER	4RN / P4RDL05940WCCZ10U	5W 4000K 500 LM	RECESSED	UNV	0-10V	4" ROUND APERTURE LED DOWNLIGHT, LISTED FOR WET LOCATIONS (LOW OUTPUT)
DS	LIGHTOLIER	4RN / P4RSL05940WCCZ10U	5W 4000K 500 LM	RECESSED	UNV	0-10V	4" ROUND APERTURE LED DOWNLIGHT, LISTED FOR WET LOCATIONS (LOW OUTPUT)
DW	LIGHTOLIER	4RN / P4RLW15940WCCZ10U	12W 4000K 1500 LM	RECESSED	UNV	0-10V	4" ROUND APERTURE LED LENSED WALLWASHER
G	DAYBRITE	FHG-24L840-UNV-W / FHG-WG2	159W 4000K 24,339 LM	SURFACE / CHAIN	UNV	0-10V	1X2 HIGHBAY
GR1	DAYBRITE	RBX-15L-840-UNV-WT-ARR22-22FL	132W 4000K 17,066LM	SUSPENDED	UNV	0-10V	22" ROUND HIGHBAY WITH CLEAR ACRYLIC REFRACTOR, WITH FLAT LENS
J	DAYBRITE	FSS4-55L-840-UNV-DIM / FSSWG4	45W 4000K 5500 LM	SURFACE / CHAIN	UNV	0-10V	4' LED STRIP FIXTURE, CHAIN HUNG IN ROOMS WITHOUT CEILINGS, PROVIDE WIREGUARD
J1	DAYBRITE	5FL470L840-PPS-UNV-DIM	47W 4000K 7074 LM	SURFACE / CHAIN	UNV	0-10V	4' INDUSTRIAL STRIP TO MATCH EXISTING (HIGH OUTPUT)
J2	DAYBRITE	VSW-4-51L-840-UNV-DIM-LPA	35W 4000K 5025 LM	SURFACE / CHAIN	UNV	0-10V	4' WET LOCATION VAPOR TIGHT
J3	DAYBRITE	5FL450L840-PPS-UNV-DIM	37W 4000K 5538 LM	SURFACE / CHAIN	UNV	0-10V	4' INDUSTRIAL STRIP TO MATCH EXISTING
LP	LUMATO	3S-LENGTH-LD-40-UNV-X-RAL#-C90-X	4W/FT 4000K 500LM/FT	SUSPENDED	UNV	0-10V	SUSPENDED 3" DIRECT LINEAR LIGHTING (RED FINISH)
LP1	LUMATO	3S-LENGTH-LD-40-UNV-X-BLK-C90-X	4W/FT 4000K 500LM/FT	SUSPENDED	UNV	0-10V	SUSPENDED 3" DIRECT LINEAR LIGHTING (BLACK FINISH)
LP2	LUMATO	3S-LENGTH-MD-40-UNV-X-BLK-C90-X	6W/FT 4000K 750LM/FT	SUSPENDED	UNV	0-10V	SUSPENDED 3" DIRECT LINEAR LIGHTING (BLACK FINISH)
LP3	LUMATO	3S-LENGTH-MD-40-UNV-X-ALM-C90-X	6W/FT 4000K 750LM/FT	SUSPENDED	UNV	0-10V	SUSPENDED 3" DIRECT LINEAR LIGHTING (ALUMINUM PAINT FINISH)
LR	LUMATO	3R-LENGTH-LD-40-UNV-X-BLK-C90	4W/FT 4000K 500LM/FT	RECESSED	UNV	0-10V	RECESSED 3" LINEAR LIGHTING W/ BLACK FLANGE
LS	KLUS	A00758-B-LC-40-0960/2-24-20-TBD-X-IP20	6W/FT 4000K 519LM/FT	SURFACE	UNV	0-10V	.75" SURFACE LINEAR WITH LIGER-22 LENS. BLACK FINISH
LS1	KLUS	A00758-X-HS22-40-0960/2-24-20-TBD-X-IP20	6W/FT 4000K 519LM/FT	SURFACE	UNV	0-10V	.75" SURFACE LINEAR WITH STANDARD HS22 LENS. LOBBY HALO IN WALL SIGNAGE
LW	SPI	SWI12139-4FT-L28W-UNV-4000K-DF_80-DF_DIM1-DF_MCS-DF_FT-FINISH	28W 4000K 2848 LM	WALL	UNV	0-10V	4' LINEAR MENU BOARD WALLWASHER
LW1	ALKCO	HZN4L451-11-277-FINISH	22W 4000K 3000 LM	WALL	277V	0-10V	4' WALL MOUNTED DIRECT / INDIRECT BED LIGHT
M	DAYBRITE	FLP450L840-LUNV-DIM	45W 4000K 5000 LM	SURFACE / CHAIN	UNV	0-10V	4' LED STRIP FIXTURE WITH NO LENS, CHAIN HUNG IN MECHANICAL ROOMS
P	IMPACT	P3308-40-LO-RD-BKPC-BL	10W 4000K 995 LM	SUSPENDED	UNV	0-10V	8" DECORATIVE PENDANT (NOTE 1)
S2-1	GARDCO	OPF-M-A12-740-T2M-X-UNV-FINISH	150W 4000K 26,482 LM	POLE	UNV	0-10V	SINGLE PARKING FIXTURE WITH A TYPE 2 DISTIRBUTION ON 25' POLE, LISTED FOR WET LOCATIONS
S3-1	GARDCO	OPF-M-A12-740-T3M-X-UNV-FINISH	150W 4000K 26,271 LM	POLE	UNV	0-10V	SINGLE PARKING FIXTURE WITH A TYPE 3 DISTIRBUTION ON 25' POLE, LISTED FOR WET LOCATIONS
S4-2	GARDCO	(2) OPF-S-P09-740-T4M-AR1 / OPF-RMB-UNV-FINISH	(2) 133W 4000K 22,673 LM	EXISTING POLE	UNV	0-10V	DOUBLE PARKING FIXTURE MOUNTED AT 180 DEGREES WITH TYPE 4 DISTIRBUTION ON 35' POLE, LISTED FOR WET LOCATIONS
S5-1	GARDCO	OPF-S-A07-740-T5W-AR1 / OPF-RMB-UNV-FINISH	136W 4000K 19,848 LM	EXISTING POLE	UNV	0-10V	SINGLE PARKING FIXTURE WITH TYPE 5W DISTIRBUTION ON 22' POLE, LISTED FOR WET LOCATIONS
S5-3	GARDCO	(3) OPF-S-A07--740-T5W-AR1 / OPF-RMB-UNV-FINISH	(3) 136W 4000K 19,848 LM	EXISTING POLE	UNV	0-10V	TRIPLE PARKING FIXTURE MOUNTED AT 120 DEGREES WITH TYPE 5W DISTIRBUTION ON 35' POLE, LISTED FOR WET LOCATIONS
SW	KENALL	H1212FD-PP-FINISH-25L40K-DV	25W 4000K 3026 LM	SURFACE	UNV	0-10V	12"X12" VANDAL RESISTANT SURFACE MOUNTED CANOPY LIGHT
FL	GARDCO	FLDL-A19-740-WFL-YOK-UNV-FINISH	281W 4000K 38,103 LM	ROOF	UNV	0-10V	HIGH OUTPUT FLOOD LIGHT TO BE MOUNTED ON ROOF
WP	GARDCO	GBM-A09-840-T3M-UNV-X-FINISH	39W 4000K 5990 LUMEN	WALL	UNV	0-10V	FULL-CUTOFF WALL PACK WITH TYPE 3 OPTIC SYSTEM, LISTED FOR WET LOCATIONS
X	EMERGI-LITE	AAP SERIES	2.5W INTEGRAL LED	SURFACE	UNV	N/A	PRECEPTOR SERIES, DIE-CAST ALUMINUM LED EXIT SIGN
	LANDSCAPE						
L1	WE-EF	131-0206	16W 3000K 1245 LM	WALL	UNV	0-10V	WALL SCONCE W/ NARROW BEAM DOWN. WET LOCATION RATED.
L2	INTER-LUX	RUB-WH-2DM-LENGTH-1.8CV-30	2W/FT 3000K 41W/FT	SURFACE	UNV	0-10V	CURVED WALL STEP LIGHT. WET LOCATION RATED
L3	WE-EF	116-0207	42W 3000K 2547 LM	POLE	UNV	0-10V	13' 3 SIDED ILLUMINATED PEDESTRIAN POLE FIXTURE. WET LOCATION RATED
L4	WE-EF	185-3077	21W 3000K 1755 LM	INGROUND	UNV	0-10V	10" DIAMETER SEMI-RECESSED SIGN LIGHT. WET LOCATION RATED
Note:...							**NOTE 1: ALL POWER CORDS TO BE ZIP TIED TO AIRCRAFT CABLE TO CREATE A CLEAN, SRAIGHT LOOK. ZIP TIES TO MATCH POWE...**

REMARKS: PROVIDE MOUTING ARMS/BRACKET FOR ALL POLE LIGHTS

GENERAL LIGHTING SCHDULES NOTES

1. REFER TO ARCHITECT'S REFLECTED CEILING PLAN AND RELATED DETAILS TO DETERMINE PROPER CEILING TYPE COMPATIBILITY FOR EACH LUMINAIRE. PROVIDE ANY EXTRA FITTINGS OR OPTIONS AS REQUIRED TO ENSURE CORRECT MOUNTING IN THE GIVEN CEILING.

2. PROVIDE FIRE RATED CANOPY OR ENCLOSURE FOR ALL FIXTURES RECESSED IN A FIRE RATED CEILING. THE FIRE RATED CANOPY OR ENCLOSURE SHALL BE REQUIRED BY THE UL DESIGN NUMBER LISTED IN THE UL FIRE RESISTANCE DIRECTORY. REFER TO ARCHITECTURAL DRAWING FOR THE UL DESIGN NUMBER. COORDINATE WITH CEILING INSTALLER AND MANUFACTURER.

GENERAL ELECTRICAL REMODEL NOTES

1. UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS OR OTHERWISE INSTRUCTED BY THE ARCHITECT, ELECTRICAL OUTLETS SHALL HAVE THE FOLLOWING MOUNTING HEIGHTS. DIMENSIONS ARE TO CENTER OF BOX UNLESS OTHERWISE NOTED:

WALL SWITCHES	•
WALL CONVENIENCE RECEPTACLES	15" AFF TO BOTTOM OF BOX
WALL DATA/VOICE OUTLETS	15" AFF TO BOTTOM OF BOX
WALL OUTLETS FOR WALL MTD. TELEPHONE	•
WALL CLOCK OUTLETS	7'-0" AFF (OR ABOVE CHALKBOARDS WHERE REQUIRED)*
MANUAL FIRE ALARM PULL STATIONS	•
FIRE ALARM SPEAKER/HORN	1'-0" BELOW CEILING, OR IN CEILING, AS REQUIRED*
INTERIOR BELLS,BUZZERS, HORNS	1'-0" BELOW CEILING, OR IN CEILING, AS REQUIRED*
SPECIAL PURPOSE WALL OUTLETS	15" AFF TO BOTTOM OF BOX (OR HIGHER AS REQUIRED TO SERVE EQUIPMENT)
PUSH BUTTONS	
ADA VISUAL ALARM	80" AFF TO BOTTOM OF LENS OR 6" BELOW CEILING, WHICHEVER IS LOWER. ENTIRE LENS TO BE WITHIN 80" TO 96" AFF*
	• TOP OF BOX SHALL BE 42" AFF MAX. FOR WHEELCHAIR FRONTAL APPROACH AND 48" AFF MAX. FOR SIDE APPROACH. VERIFY EXACT HEIGHT WITH ARCHITECT
	* 7'-0" AFF TO BOTTOM OF DEVICE IF DEVICE PROTRUDES MORE THAN 4" FROM WALL (PER ADA)

AFF = ABOVE FINISHED FLOOR
AFG = ABOVE FINISHED GRADE

2. UNLESS SPECIFICALLY INDICATED ON THE ELECTRICAL DRAWINGS, OUTLETS LOCATED AT COUNTERS AND CABINETS SHALL BE MOUNTED AS SHOWN ON ARCHITECTURAL DETAILS AND ELEVATIONS, OR AS DIRECTED BY ARCHITECT.
3. COORDINATE MOUNTING HEIGHTS AND DETAILS OF ALL OUTLETS (POWER, SIGNAL, ETC.) WITH ARCHITECTURAL CASEWORK DRAWINGS PRIOR TO DIVISION 26 ROUGH-IN. PROVIDE COORDINATION DRAWINGS IN ACCORDANCE WITH DIVISION 26 SPECIFICATIONS WHERE CONFLICTS EXIST. OBTAIN APPROVAL FROM ARCHITECT BEFORE ELECTRICAL ROUGH-IN WHEN CONFLICTS ARISE.
4. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF ALL HVAC AND PLUMBING EQUIPMENT.
5. CIRCUITING
   A. BRANCH CIRCUITING IS SCHEMATIC IN NATURE AND IS INTENDED TO INDICATE CIRCUIT LOADING AND CONTROL, NOT METHODS OF INSTALLATION. REFER TO SPECIFICATIONS FOR METHODS OF INSTALLATION AND MATERIALS, INCLUDING WHETHER OR NOT BX IS ALLOWED AND WHETHER "THROUGH-FIXTURE" OR "OCTOPUS (EMT WITH FLEXIBLE WHIPS)" TYPE LIGHTING BRANCH CIRCUITING IS REQUIRED.
   B. WHERE WIRE SIZE AND CONDUIT SIZE IS NOT INDICATED ON THE DRAWINGS AND/OR PANEL SCHEDULES, REFER TO SPECIFICATIONS FOR MINIMUM SIZE REQUIRED.
   C. BRANCH CIRCUITS ON THE DRAWINGS ARE GENERALLY NOT SHOWN GROUPED IN SINGLE RACEWAYS. HOWEVER, GROUPING IS ALLOWED UNDER CERTAIN CONDITIONS. REFER TO DIVISION 26 SPECIFICATIONS UNDER SECTION ENTITLED "ELECTRICAL WIRING" FOR REQUIREMENTS.
   D. THE DRAWINGS GENERALLY INDICATE QUANTITY OF CONDUCTORS ON BRANCH CIRCUIT HOME RUNS ONLY. ELSEWHERE WITHIN CIRCUITS, PROVIDE QUANTITY OF CONDUCTORS AS NEEDED TO ACCOMPLISH CIRCUITING AND SWITCHING REQUIREMENTS SHOWN.
6. WHEN REMOVING EXISTING ELECTRICAL WORK WHERE OTHER ITEMS REMAIN ON THE SAME CIRCUIT, THE CONTRACTOR SHALL TAKE WHATEVER STEPS ARE NECESSARY TO MAINTAIN CIRCUIT CONTINUITY.
7. ALL ITEMS NOTED TO BE REMOVED ARE TO REMAIN THE PROPERTY OF THE OWNER; HOWEVER, CONTRACTOR SHALL REMOVE FROM JOB SITE ALL MATERIAL NOT RETAINED BY OWNER.
8. FIELD VERIFY CONDITION OF, AND MODIFICATIONS AND ADDITIONS TO, ALL EXISTING ELECTRICAL FIXTURES, PANELS, WIRING, ETC.
9. WHERE DOORS ARE ADDED, OR PORTIONS OF WALLS REMOVED, CONTRACTOR SHALL REMOVE OR RELOCATE ALL ELECTRICAL WORK NECESSARY FOR THE REMODELING MODIFICATION, WHETHER OR NOT THIS WORK IS NOTED ON PLANS.
10. WHERE EXISTING JUNCTION BOXES ARE COVERED OR REMOVED, CONTRACTOR SHALL TAKE WHATEVER STEPS ARE NECESSARY TO COMPLY WITH NEC 314-19.
11. EXISTING ELECTRICAL BOXES TO REMAIN IN AREAS WHERE NEW WALL FINISHES ARE TO BE APPLIED SHALL BE RESET AS NECESSARY TO PROVIDE FLUSH MOUNTING FOR BOXES.
12. CONTRACTOR SHALL FIELD VERIFY EXISTING BRANCH CIRCUIT LOADING WHEN MAKING MODIFICATIONS AND/OR ADDITIONS TO THAT CIRCUIT. IF NEW WORK WOULD OVERLOAD EXISTING CIRCUIT, CONTRACTOR SHALL LOCATE ANOTHER EXISTING CIRCUIT (THE CLOSEST), WHICH WOULD NOT BE OVERLOADED UPON ADDING NEW LOAD, AND SHALL TIE NEW LOAD INTO THAT CIRCUIT.
13. WHEN EXISTING ELECTRICAL WORK IS REMOVED, ALL EXPOSED CONDUIT, WIRING, CONTROL AND JUNCTION BOXES ALONG WALLS, FLOOR, AND CEILING SHALL BE REMOVED. BRANCH CIRCUIT WIRES SHALL BE REMOVED BACK TO CIRCUIT BREAKER(S). BLANK COVER PLATES SHALL BE PROVIDED FOR RECESSED BOXES. WHERE THIS WORK IS DONE, THE WALLS, FLOOR, AND CEILING SHALL BE PATCHES AS NECESSARY UNDER WORK COVERED IN OTHER SECTIONS.
14. EXISTING RECESSED INCANDESCENT AND HID LUMINAIRES DESIGNATED FOR TEMPORARY REMOVAL AND RE-USE SHALL BE STORED. ALL SUCH LUMINAIRES NOT THERMALLY PROTECTED PER NEC 410-118 AND 410-130(F) ARE NOT SUITABLE FOR RE-USE AND SHALL BE GIVEN TO THE OWNER. PROVIDE NEW REPLACEMENT LUMINAIRES WITH UL THERMAL PROTECTION, IDENTICAL APERTURE, EQUIVALENT PHOTOMETRICS AND NEW LAMPS.
15. CONTRACTOR TO REFER TO ARCHITECTURAL DEMOLITION PLANS AND PHASING PLANS AND HAVE A GOOD UNDERSTANDING OF SCOPE OF PROJECT PRIOR TO COMMENCEMENT OF WORK.
16. LUMINAIRE SUPPORT IN SUSPENDED CEILINGS:
   A. PROVIDE MEANS OF SUPPORT FOR LUMINAIRES PER NEC 410-16. T BAR CLIPS SHALL BE INSTALLED ON THE LUMINAIRE AND SHALL BE FIELD SECURED TO THE INVERTED CEILINGS TEES SO THAT THE LUMINAIRE IS SECURELY FASTENED TO THE CEILING SYSTEM FRAMING MEMBERS
   B. CEILING TILES SHALL NOT BEAR THE WEIGHT OF LUMINAIRES. SURFACE MOUNT LUMINAIRES, RECESSED DOWNLIGHTS, LIGHT TRACK, EXIT SIGNS, ETC. SHALL BE SUPPORTED BY PROPER FRAMES OR OTHER ATTACHMENT TO MAIN CEILING SYSTEM GRID OR BUILDING STRUCTURE ABOVE CEILING.
   C. LUMINAIRES SHALL BE CENTERED IN CEILING TILE.
   D. LUMINAIRE SHALL HAVE FLANGE OR TRIM RING FOR CLOSURE OF CEILING CUTOUT OR OPENING.
   E. FIRE-RATED CEILING ASSEMBLY: FOR LUMINAIRES TO BE FLUSH-MOUNTED INTO A FIRE-RATED CEILING OR SURFACE MOUNTED TO A FIRE-RATED CEILING, INSTALL WITH INDEPENDENT, SECURE SUPPORT, RACEWAY, CABLE ASSEMBLIES BOXES AND FITTINGS LOCATED ABOVE A FIRE-RATED FLOOR/CEILING OR ROOF CEILING ASSEMBLY SHALL NOT BE SECURED TO, OR SUPPORTED BY, THE CEILING ASSEMBLY INCLUDING CEILING SUPPORT WIRES. PROVIDE AN INDEPENDENT MEANS OF SECURE SUPPORT. INDEPENDENT SUPPORT WIRES SHALL BE DISTINGUISHABLE BY COLOR, TAGGING, OR OTHER EFFECTIVE MEANS FROM THOSE THAT ARE PART OF THE FIRE-RATED DESIGN.
17. CONTRACTOR SHALL FIELD VERIFY ANY EXISTING UNDERGROUND PIPING, WIRING, OR OTHER FACILITIES PRIOR TO TRENCHING, AND SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED BY INSTALLATION OF NEW WORK.
18. THE ELECTRICAL CONTRACTOR SHALL COMPLY WITH ALL AUTHORITIES HAVING JURISDICTION, NEC, AND STATE AND LOCAL CODES AND AMENDMENTS.

GENERAL ELECTRICAL NOTES

1. UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS OR OTHERWISE INSTRUCTED BY THE ARCHITECT, ELECTRICAL OUTLETS SHALL HAVE THE FOLLOWING MOUNTING HEIGHTS. DIMENSIONS ARE TO CENTER OF BOX UNLESS OTHERWISE NOTED:

WALL SWITCHES	•
WALL CONVENIENCE RECEPTACLES	15" AFF TO BOTTOM OF BOX
WALL DATA/VOICE OUTLETS	15" AFF TO BOTTOM OF BOX
WALL OUTLETS FOR WALL MTD. TELEPHONE	•
WALL CLOCK OUTLETS	7'-0" AFF (OR ABOVE CHALKBOARDS WHERE REQUIRED)*
MANUAL FIRE ALARM PULL STATIONS	•
FIRE ALARM SPEAKER/HORN	1'-0" BELOW CEILING, OR IN CEILING, AS REQUIRED*
INTERIOR BELLS,BUZZERS, HORNS	1'-0" BELOW CEILING, OR IN CEILING, AS REQUIRED*
SPECIAL PURPOSE WALL OUTLETS	15" AFF TO BOTTOM OF BOX (OR HIGHER AS REQUIRED TO SERVE EQUIPMENT)
PUSH BUTTONS	
ADA VISUAL ALARM	80" AFF TO BOTTOM OF LENS OR 6" BELOW CEILING, WHICHEVER IS LOWER. ENTIRE LENS TO BE WITHIN 80" TO 96" AFF*
	• TOP OF BOX SHALL BE 42" AFF MAX. FOR WHEELCHAIR FRONTAL APPROACH AND 48" AFF MAX. FOR SIDE APPROACH. VERIFY EXACT HEIGHT WITH ARCHITECT
	* 7'-0" AFF TO BOTTOM OF DEVICE IF DEVICE PROTRUDES MORE THAN 4" FROM WALL (PER ADA)

AFF = ABOVE FINISHED FLOOR
AFG = ABOVE FINISHED GRADE

2. UNLESS SPECIFICALLY INDICATED ON THE ELECTRICAL DRAWINGS, OUTLETS LOCATED AT COUNTERS AND CABINETS SHALL BE MOUNTED AS SHOWN ON ARCHITECTURAL DETAILS AND ELEVATIONS, OR AS DIRECTED BY ARCHITECT.
3. COORDINATE MOUNTING HEIGHTS AND DETAILS OF ALL OUTLETS (POWER, SIGNAL, ETC.) WITH ARCHITECTURAL CASEWORK DRAWINGS PRIOR TO DIVISION 26 ROUGH-IN. PROVIDE COORDINATION DRAWINGS IN ACCORDANCE WITH DIVISION 26 SPECIFICATIONS WHERE CONFLICTS EXIST. OBTAIN APPROVAL FROM ARCHITECT BEFORE ELECTRICAL ROUGH-IN WHEN CONFLICTS ARISE.
4. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF ALL HVAC AND PLUMBING EQUIPMENT.
5. CIRCUITING
   A. BRANCH CIRCUITING IS SCHEMATIC IN NATURE AND IS INTENDED TO INDICATE CIRCUIT LOADING AND CONTROL, NOT METHODS OF INSTALLATION. REFER TO SPECIFICATIONS FOR METHODS OF INSTALLATION AND MATERIALS, INCLUDING WHETHER OR NOT BX IS ALLOWED AND WHETHER "THROUGH-FIXTURE" OR "OCTOPUS (EMT WITH FLEXIBLE WHIPS)" TYPE LIGHTING BRANCH CIRCUITING IS REQUIRED.
   B. WHERE WIRE SIZE AND CONDUIT SIZE IS NOT INDICATED ON THE DRAWINGS AND/OR PANEL SCHEDULES, REFER TO SPECIFICATIONS FOR MINIMUM SIZE REQUIRED.
   C. BRANCH CIRCUITS ON THE DRAWINGS ARE GENERALLY NOT SHOWN GROUPED IN SINGLE RACEWAYS. HOWEVER, GROUPING IS ALLOWED UNDER CERTAIN CONDITIONS. REFER TO DIVISION 26 SPECIFICATIONS UNDER SECTION ENTITLED "ELECTRICAL WIRING" FOR REQUIREMENTS.
   D. THE DRAWINGS GENERALLY INDICATE QUANTITY OF CONDUCTORS ON BRANCH CIRCUIT HOME RUNS ONLY. ELSEWHERE WITHIN CIRCUITS, PROVIDE QUANTITY OF CONDUCTORS AS NEEDED TO ACCOMPLISH CIRCUITING AND SWITCHING REQUIREMENTS SHOWN.
6. THE ELECTRICAL CONTRACTOR SHALL COMPLY WITH ALL AUTHORITIES HAVING JURISDICTION, NEC, ALL STATE AND LOCAL CODES AND AMENDMENTS.

LIGHTING FIXTURE NOTES

KEY TO NOTE PREFIXES: "G" NOTES ARE "GENERAL" LIGHTING NOTES THAT APPLY TO THE ENTIRE PROJECT. "S" NOTES ARE "SCHEDULE" NOTES THAT APPLY TO SPECIFIC LUMINAIRES.

G.1 REFER TO ARCHITECTURAL REFLECTED CEILING PLANS, ELEVATIONS, SECTIONS, AND DETAILS FOR THE EXACT LOCATION OF ALL LUMINAIRES. ARCHITECTURAL PLANS SHALL GOVERN FOR LOCATION AND LAYOUT. IF ARCHITECTURAL AND ELECTRICAL DRAWINGS CONFLICT IN EXACT COUNT OR FIXTURE TYPE, PROVIDE THE GREATER QUANTITY OR COST TYPE UNLESS OTHERWISE INSTRUCTED.

G2. REFER TO DIVISION 26 ELECTRICAL SPECIFICATIONS FOR ADDITIONAL LUMINAIRE AND ELECTRICAL REQUIREMENTS (LENS, AIR HANDLING CHARACTERISTICS, T-BAR CLIPS, BALLAST, LAMPS, TIME FRAME FOR SUBMITTAL OF SUBSTITUTE LIGHT FIXTURES FOR PRIOR APPROVAL, ETC.).

G3. FOR EACH SCHEDULED LUMINAIRE, PROVIDE ALL REQUIRED APPURTENANCES FOR INSTALLATION IN APPLICABLE STRUCTURE OR SPECIFIED ARCHITECTURAL EILING. ALL LUMINAIRES SHALL HAVE THE APPROPRIATE NEMA TYPE FRAME THAT IS COMPATIBLE WITH THE CEILING SYSTEM SPECIFIED BY THE ARCHITECT. ELECTRICAL DRAWINGS DO NOT INDICATE CEILING TYPES, CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS TO DETERMINE CEILING TYPE (GRID, FLANGE, SPLINE, SCREW SLOT, ETC.) AND PROVIDE APPROPRIATE FRAME.

G4. EXIT SIGNS AND OTHER LUMINAIRES SHALL NOT BE SUPPORTED BY CEILING TILE. PROVIDE MOUNTING FRAME OR HANGERS TO SECURELY FASTEN IN PLACE ALL LUMINAIRES MOUNTED IN CEILING TILE. FRAMING MEMBERS OF A SUSPENDED CEILING SYSTEM MAY BE USED WHERE DESIGNED FOR THE PURPOSE AND INSTALLED PER NEC 410-16(c).

G5. WHERE A SURFACE-MOUNTED LUMINAIRE CONTAINING A BALLAST IS TO BE INSTALLED ON COMBUSTIBLE LOW-DENSITY CELLULOSE FIBERBOARD, IT SHALL BE LISTED FOR THIS CONDITION OR SHALL BE SPACED NOT LESS THAN 1 1/2 INCHES FROM THE SURFACE OF THE FIBERBOARD (NEC 410-76(b)).

G6. REQUEST FOR SUBSTITUTION SHALL FOLLOW SPECIFIED PROCEDURES AND SHALL INCLUDE A WORKING SAMPLE SUITABLE FOR TABLE TOP EXAMINATION.

S1. UNLESS OTHERWISE NOTED, MOUNT EXIT SIGN DIRECTLY ABOVE EGRESS DOOR (MAXIMUM 24" ABOVE DOOR). PROVIDE WALL MOUNT EXIT SIGNS IN HIGH CEILING AREAS, PROVIDE WINDOW MULLION MOUNTING WITH CONCEALED WIRING WHERE REQUIRED. COORDINATE EXACT ELEVATION WITH ARCHITECT PRIOR TO ROUGH-IN.

CHANGE POLE HEIGHT TO MATCH YOUR REQUIREMENTS

S2. PROVIDE KW #RTSP30-DBZ-DM-BC POLE. POLE SHAFT SHALL CONFORM TO ASTM-A-500 GRADE B, ANCHOR BASE OF HOT ROLLED CARBON STEEL. PROVIDE ANCHOR BOLTS. PROVIDE 30' POLE WITH MINIMUM 3 MIL. BAKED POLYESTER POWDER COAT FINISH. COLOR TO MATCH LUMINAIRE.

S3. PROVIDE KW #RTSP30-DBZ-DM2180-BC POLE. POLE SHAFT SHALL CONFORM TO ASTM-A-500 GRADE B, ANCHOR BASE OF HOT ROLLED CARBON STEEL. PROVIDE ANCHOR BOLTS. PROVIDE 30' POLE WITH MINIMUM 3 MIL. BAKED POLYESTER POWDER COAT FINISH. COLOR TO MATCH LUMINAIRE.

ELECTRICAL SYMBOL LEGEND

1. EVERY SYMBOL SHOWN ON LEGEND MAY NOT APPEAR ON DRAWINGS.
2. DASHED ELECTRICAL EQUIPMENT GENERALLY INDICATES EXISTING EQUIPMENT.
3. LONG-SHORT-SHORT-LONG DASHING GENERALLY INDICATES MATCH LINE OR DEFINES AREA FOR SPECIAL NOTE.

CIRCUIT RELATED:

LIGHTING OR POWER CIRCUIT(S). ARROW INDICATES HOME RUN, LONGER TICK(S) INDICATE NEUTRAL WIRE(S), SHORTER STRAIGHT TICK(S) INDICATE PHASE WIRE(S), SLANTED SHORTER TICK(S) INDICATE SWITCH LEG(S), DOT(S) INDICATE GROUNDING CONDUCTOR(S), DASHED WIRING (LONG-SHORT-LONG DASHES) INDICATES WIRING BELOW SLAB OR GRADE, DASHED WIRING (SERIES OF SHORT DASHES) INDICATES EXISTING WIRING, SLASH THROUGH ARROW INDICATES PARTIAL CIRCUIT, "D" ON HOMERUN ARROW INDICATES DEDICATED CIRCUIT: PROVIDE A SEPARATE NEUTRAL FOR EACH PHASE CONDUCTOR FOR ENTIRE LENGTH OF CIRCUIT FROM PANEL TO OUTLET; COUNT EACH NEUTRAL AS CURRENT-CARRYING AND GROUP A MAXIMUM OF SIX THHN/THWN CONDUCTORS IN A SINGLE RACEWAY; GROUNDING CONDUCTOR IS NOT COUNTED

J JUNCTION BOX

GROUNDING FIXTURE

LIGHTING:

LED LIGHTING FIXTURE. LETTER INDICATES TYPE. SMALL LETTER INDICATES SWITCH CONTROL. NUMBER INDICATES CIRCUIT. CROSS HATCHING INDICATES FIXTURE ON EMERGENCY SYSTEM. FOR SOLID CIRCLE WITHIN FIXTURE REFERENCE APPROPRIATE CATEGORY "A" CIRCUIT RELATED SYMBOL

STRIP TYPE LED LIGHTING FIXTURE. LETTER INDICATES TYPE, SMALL LETTER INDICATES SWITCH CONTROL. NUMBER INDICATES CIRCUIT. FOR SOLID CIRCLE ATTACHED TO FIXTURE REFERENCE APPROPRIATE CATEGORY "A" CIRCUIT RELATED SYMBOL

LED LIGHTING FIXTURE. LETTER INDICATES TYPE, SMALL LETTER INDICATES SWITCH CONTROL. NUMBER INDICATES CIRCUIT, FOR SOLID CIRCLE REFERENCE APPROPRIATE CATEGORY "A" CIRCUIT RELATED SYMBOL

DESIGNATES FIXTURE ON EMERGENCY POWER. RE: LIGHTING PLAN NOTES AND FIXTURE SCHEDULE NOTES FOR ADDITIONAL INFORMATION

WALL OR BRACKET MOUNTED FIXTURE OR DEVICE

EXIT LIGHT FIXTURE. LETTER INDICATES TYPE, NUMBER INDICATES CIRCUIT, NUMBER AND LOCATION OF SHADED TRIANGLE SECTIONS INDICATE NUMBER OF EXIT SIGN FACES AND DIRECTION OF EACH FACE. PROVIDE CHEVRON DIRECTIONAL INDICATORS AS SHOWN ON DRAWINGS

CONTROL:

$ SWITCH. SMALL LETTER INDICATES FIXTURES CONTROLLED, "P" INDICATES PILOT LIGHT, "WP" INDICATES WEATHERPROOF, "K" INDICATES KEY POERATED, "MO" INDICATES SPDT MOMENTARY CONTACT, "2" INDICATES DPDT, "3" INDICATES 3-WAY, "4" INDICATES 4-WAY, "M" INDICATES MANUAL MOTOR STARTER, CIRCUIT DESIGNATION NEXT TO SWITCH INDICATES BRANCH CIRCUIT NUMBER

WALL BOX DIMMER SWITCH. "MARK" INDICATES WATTAGE IF OTHER THAN 600, "3D" INDICATES 3-WAY DIMMER

$$ MULTI-LEVEL SWITCH. CIRCUIT DESIGNATION NEXT TO SWITCH INDICATES BRANCH CIRCUIT NUMBER

DIGITAL TIME SWITCH

PC PHOTOELECTRIC CONTROL

EMERGENCY POWER OFF (EPO) PUSHBUTTON

PUSH BUTTON

OC WALL MOUNT OCCUPANCY SENSOR

DUAL TECHNOLOGY CEILING MOUNTED OCCUPANCY SENSOR

CEILING MOUNTED RESTROOM OCCUPANCY SENSOR

CEILING MOUNTED CORRIDOR OCCUPANCY SENSOR

HB CEILING MOUNTED HIGH CEILING OCCUPANCY SENSOR

POWER OUTLETS:

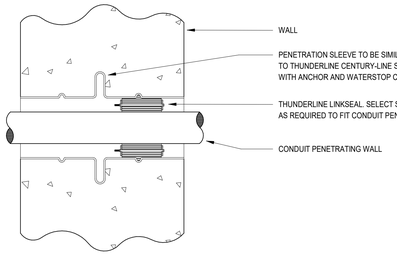
20A-125V DUPLEX RECEPTACLE

20A-125V GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE. "WP" INDICATES WEATHER PROOF DEVICE

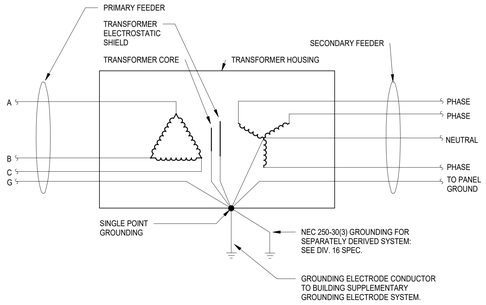
20A-125V DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER TOP. REFER TO ARCHITECT FOR EXACT HEIGHT ABOVE COUNTER

C 20A-

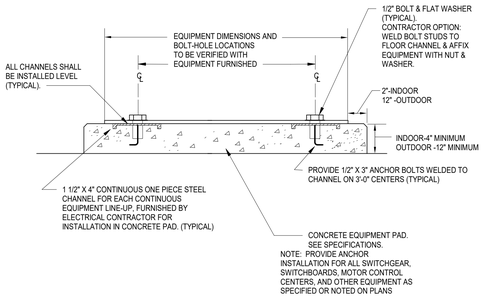
ELECTRICAL DETAILS-CTE
E-602.C
FOR BLUEBEAM LABELING/OCR:



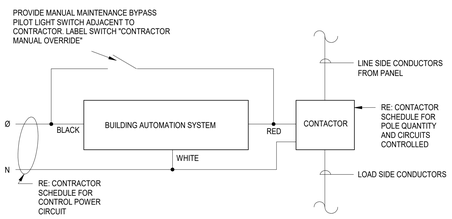
1 CONDUIT PENETRATION DETAIL - EXTERIOR WALL
NOT TO SCALE



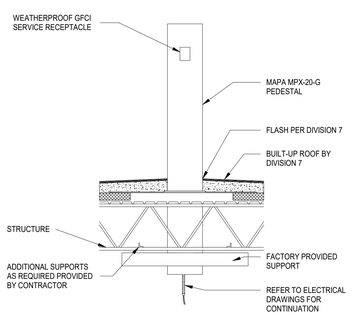
2 DELTA-WYE TRANSFORMER SCHEMATIC
NOT TO SCALE



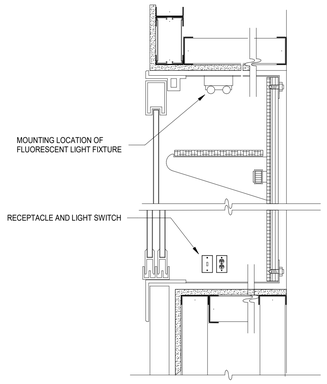
3 EQUIPMENT ANCHOR DETAIL
NOT TO SCALE



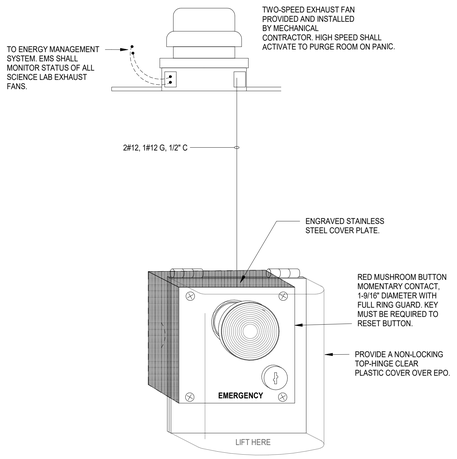
4 CONTACTOR CONTROL DIAGRAM
NOT TO SCALE



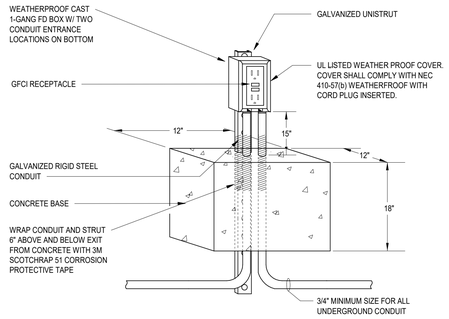
5 PEDESTAL MOUNT ROOF RECEPTACLE
NOT TO SCALE



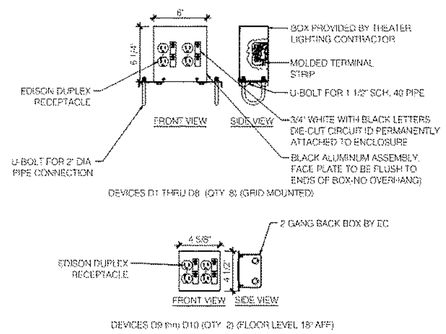
6 TYPICAL DISPLAY CASE
NOT TO SCALE



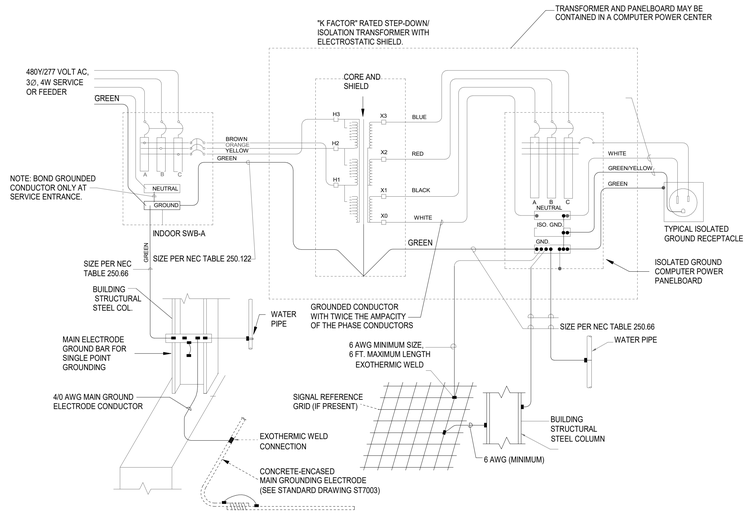
7 EPO BUTTON DETAIL
NOT TO SCALE



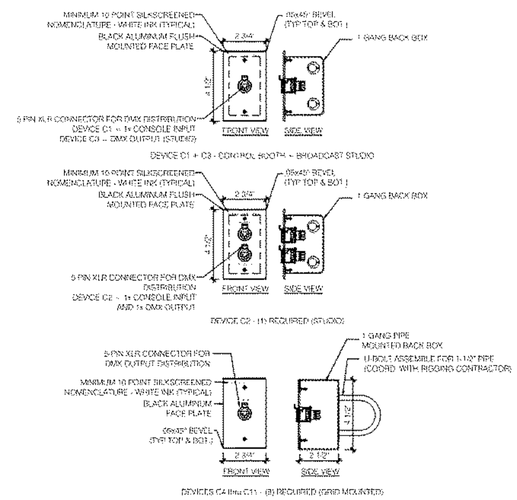
8 OUTDOOR RECEPTACLE
NOT TO SCALE



9 BROADCAST LIGHTING SYSTEMS - DEVICE DETAILS D9 THRU D10



10 ISOLATED GROUND DETAIL
NOT TO SCALE



11 BROADCAST LIGHTING SYSTEMS - DEVICE DETAILS C4 THRU C11

Plot Stamp:
6/3/2025 2:53:32 PM

PBK

ARCHITECT PBK Architects, Inc.
PBK.com
HOUSTON
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-961-0608 P
713-961-4571 F
TX Firm: BR 1608

CIVIL
CONSULTANT NAME
T.000-000-0000
LANDSCAPE
CONSULTANT NAME
T.000-000-0000
STRUCTURAL
CONSULTANT NAME
T.000-000-0000
MEP
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FOOD SERVICE
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CONSULTANT
CONSULTANT NAME
T.000-000-0000

LEAF ENGINEERS

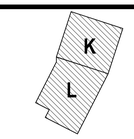
New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT



KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED
PROFESSIONAL ENGINEER
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date

CHECKED BY: PP
DRAWN BY: LT

ELECTRICAL DETAILS-CTE

E-602.C

ELECTRICAL PANEL SCHEDULES-CTE

E-701.C

FOR BLUEBEAM LABELING/OCR:

0"

1"

Electrical...

AIC Rating: **65000**

Job: Huffman New CTE

Volts - Phase: **480Y/277V-3PH 4W**

Job No.: 240157

DISTRIBUTI... **DPA**

Served From: MSA

Connected Load (KVA)

Cir. No.	Load Served	Amp/Poles	Wire and Conduit Size	Lighting	Conv. Outlets	Motors	Heating	Cooling	Others	Elect. Cooking	Spare/ Spaces	Elevators	Residential	Total KVA	Total Amps
1	PANEL 1HA	400/3	SEE RISER	21.8	0.0	116.0	0.0	4.3	92.1	0.0				234.2	281.7
2	XFMR 1TA	175/3	SEE RISER	0.0	30.2	7.8	3.2	0.0	42.4	0.0				83.7	100.7
3	XFMR 1TAV	70/3	SEE RISER	0.0	20.5	0.0	0.0	0.0	0.0	0.0				20.5	24.7
4	SPARE													0.0	0.0
5	XFMR 1TC	125/3	SEE RISER	0.0	1.9	1.2	0.0	0.0	34.9	0.0				38.1	45.8
6	XFMR 1TE	70/3	SEE RISER	0.0	5.5	3.6	0.0	0.0	26.9	0.0				36.0	43.3
7	XFMR 1TK	175/3	SEE RISER	0.0	0.0	0.0	0.0	0.0	0.0	117.6				117.6	141.4
8	PANEL 1HK	100/3	SEE RISER	0.0	0.0	0.0	0.0	0.0	0.0	19.4				19.4	23.4
9	XFMR 1TRP	50/3	SEE RISER	0.0	38.4	0.0	0.0	0.0	0.0	0.0				38.4	46.2
10														0.0	0.0
11														0.0	0.0
12														0.0	0.0
Total...				21.8	96.6	128.6	3.2	4.3	196.3	137.0	0.0	0.0	0.0	587.9	707.1
				--	**	--	--	--	--	--	--	--	--	--	--
Demand...				1.25	*	**	1.0	1.0	1.00	0.65	0.5	***	****	--	--
Total...				27.3	53.3	128.6	0.0	4.3	196.3	89.0	0.0	0.0	0.0	498.8	600.0

* 100% of...
** 125% of...
*** Elevator...
****...

Largest... _____ KVA

DISTRIBUTION PANEL:		DPA
MAINS	TYPE:	MAIN BREAKER
	SIZE:	600 AMP
BUS SIZE	PHASE:	600 AMP
	NEUTRAL:	600 AMP
	GROUND:	PER NEC

Date: 6/3/2025 By: Linda

Job: Huffman New CTE Job No. 240157

Mounting **SURFACE** Voltage: **480Y/277V-3PH 4W** AIC... **42000**

Main... **MCB (400A)** Main... **400 AMPS** Ground **Equipment Ground**

Neutral **100%** Lugs **FEED THRU**

PANEL: **1HA**

ALL LOADS IN VA

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
1000							0.00	FLAG POLE	20/1	10	**1**	**A**	**2**	10	20/1	WALL PACK	2000							0.00
3420							0.00	LIGHTING	20/1	12	**3**	**B**	**4**	10	20/1	SITE LIGHTING	450							0.00
3930							0.00	LIGHTING	20/1	12	**5**	**C**	**6**	12	20/1	LIGHTING	3600							0.00
3690							0.00	LIGHTING	20/1	12	**7**	**A**	**8**	6	60/3	AC-1						1332		0.00
720							0.00	LIGHTING	20/1	10	**9**	**B**	**10**	-	-	-						1332		0.00
		3047					0.00	AHU-A-01	30/3	10	**11**	**C**	**12**	-	-	-						1332		0.00
		3047					0.00 (7.5 HP)		-	-	**13**	**A**	**14**	10	20/1	SITE LIGHTING	3000							0.00
		3047					0.00	-	-	-	**15**	**B**	**16**	12	20/3	EUH-A-02						2500		0.00
		3878					0.00	AHU-A-02	35/3	8	**17**	**C**	**18**	-	-	-						2500		0.00
		3878					0.00 (10 HP)		-	-	**19**	**A**	**20**	-	-	-						2500		0.00
		3878					0.00	-	-	-	**21**	**B**	**22**	10	30/3	PCHWP-04						3047		0.00
		5817					0.00	AHU-A-03	45/3	6	**23**	**C**	**24**	-	-	-						3047		0.00
		5817					0.00 (15 HP)		-	-	**25**	**A**	**26**	-	-	-						3047		0.00
		5817					0.00	-	-	-	**27**	**B**	**28**	10	30/3	PCHWP-05						3047		0.00
		3047					0.00	AHU-A-04	30/3	10	**29**	**C**	**30**	-	-	-						3047		0.00
		3047					0.00 (7.5 HP)		-	-	**31**	**A**	**32**	-	-	-						3047		0.00
		3047					0.00	-	-	-	**33**	**B**	**34**	6	45/3	SCHWP-04						5817		0.00
		1330					0.00	AHU-A-05	20/3	12	**35**	**C**	**36**	-	-	-						5817		0.00
		1330					0.00 (3 HP)		-	-	**37**	**A**	**38**	-	-	-						5817		0.00
		1330					0.00	-	-	-	**39**	**B**	**40**			SPACE								0.00
		2105					0.00	AHU-A-06	20/3	12	**41**	**C**	**42**			SPACE								0.00
		2105					0.00 (5 HP)		-	-	**43**	**A**	**44**	6	45/3	SCHWP-05						5817		0.00
		2105					0.00	-	-	-	**45**	**B**	**46**	-	-	-						5817		0.00
		2105					0.00	MAU-01	20/3	12	**47**	**C**	**48**	-	-	-						5817		0.00
		2105					0.00 (3 HP)		-	-	**49**	**A**	**50**	8	40/3	SHWP-04						3878		0.00
		2105					0.00	-	-	-	**51**	**B**	**52**	-	-	-						3878		0.00
							0.00	SPACE			**53**	**C**	**54**	-	-	-						3878		0.00
12760	0	63987	0	0	0	0	0.00	**TOTALS**								**TOTALS**	9050	0	0	0	0	76314	0	0.00

PANEL: **1HA** **2** **(Sectio...**

ALL LOADS IN VA

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
		3047					0.00	OAHU-A-01	30/3	10	**55**	**A**	**56**	8	40/3	SHWP-05						3878		0.00
		3047					0.00 (7.5 HP)		-	-	**57**	**B**	**58**	-	-	-						3878		0.00
		3047					0.00	-	-	-	**59**	**C**	**60**	-	-	-						3878		0.00
		3047					0.00	OAHU-A-02	30/3	10	**61**	**A**	**62**	12	20/3	FCU-A-01			776					0.00
		3047					0.00 (7.5 HP)		-	-	**63**	**B**	**64**	-	-	-			776					0.00
		3047					0.00	-	-	-	**65**	**C**	**66**	-	-	-			776					0.00
				2105			0.00	KEF-01	20/3	12	**67**	**A**	**68**	12	20/1	FCU-A-02			1939					0.00
				2105			0.00	-	-	-	**69**	**B**	**70**	12	20/3	MAU-02		582						0.00
				2105			0.00	-	-	-	**71**	**C**	**72**	-	-	(1 HP)		582						0.00
				582			0.00	KEF-02	20/3	12	**73**	**A**	**74**	-	-	-		582						0.00
				582			0.00	-	-	-	**75**	**B**	**76**	12	20/1	SF-A-01		582						0.00
				582			0.00	-	-	-	**77**	**C**	**78**	-	-	-		582						0.00
		1080					0.00	CVB-A-01-01A(1/2HP)	20/1	12	**79**	**A**	**80**	-	-	-		582						0.00
		1080					0.00	CVB-A-01-01B(1/2HP)	20/1	12	**81**	**B**	**82**	10	30/2	MOTORIZED GATE		5760						0.00
		1080					0.00	CVB-A-01-02A(1/2HP)	20/1	12	**83**	**C**	**84**	-	-	-		5760						0.00
		1080					0.00	CVB-A-01-02B(1/2HP)	20/1	12	**85**	**A**	**86**	10	30/2	MOTORIZED GATE		5760						0.00
		803					0.00	CVB-A-01-03(13HP)	20/1	12	**87**	**B**	**88**	-	-	-		5760						0.00
		803					0.00	CVB-A-01-04(13HP)	20/1	12	**89**	**C**	**90**			SPACE								0.00
		1080					0.00	CVB-A-02-01(12HP)	20/1	12	**91**	**A**	**92**			SPACE								0.00
		1080					0.00	CVB-A-02-02(12HP)	20/1	12	**93**	**B**	**94**			SPACE								0.00
		1080					0.00	CVB-A-02-03(12HP)	20/1	12	**95**	**C**	**96**			SPACE								0.00
		1080					0.00	CVB-A-02-04(12HP)	20/1	12	**97**	**A**	**98**			SPACE								0.00
		1080					0.00	CVB-A-02-05(12HP)	20/1	12	**99**	**B**	**100**			SPACE								0.00
		803					0.00	CVB-A-02-06(13HP)	20/1	12	**101**	**C**	**102**			SPACE								0.00
							0.00	SPACE			**103**	**A**	**104**			SPACE								0.00
							0.00	SPACE			**105**	**B**	**106**			SPACE								0.00
							0.00	SPACE			**107**	**C**	**108**			SPACE								0.00
0	0	25484	0	0	8061	0	0.00	**TOTALS**								**TOTALS**	0	0	26530	0	4266	7756	0	0.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
21.8	0.0	116.0	0.0	4.3	92.1	0.0	0.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
27.3	0.0	116.0	0.0	4.3	92.1	0.0	0.0	Design KVA

Phase Load	
Ph	KVA
A	71.6
B	60.8
C	#REF!

Panel Remarks:

*Input di...
**100% ...

PANEL: **1HA**

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	234.2	281.7		239.7	288.3

Date: 6/3/2025 By: Linda

Job: Huffman New CTE Job No. 240157

Mounting **SURFACE** Voltage: **208Y/120V-3PH 4W** AIC... **10000**

Main... **MCB (400A)** Main... **400 AMPS** Ground **Equipment Ground**

Neutral **200%** Lugs **FEED THRU**

PANEL: **1LA**

ALL LOADS IN VA

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
	540						0.00	REC	20/1	12	**1**	**A**	**2**	10	20/1	SIGN						1000		0.00
					600		0.00	GWH-1	20/1	12	**3**	**B**	**4**	10	20/2	SIGN EXTRA						1664		0.00
					600		0.00	GWH-2	20/1	12	**5**	**C**	**6**	-	-	-						1664		0.00
					500		0.00	CHILLER HEAT TRACE	20/1***	12	**7**	**A**	**8**											0.00
					500		0.00	CHILLER HEAT TRACE	20/1***	12	**9**	**B**	**10**	12	20/1	REC						720		0.00
							1.00	SPARE			**11**	**C**	**12**	12	20/1	REC						540		0.00
					500		0.00	BAS	20/1	12	**13**	**A**	**14**	12	20/1	REC						720		0.00
	360						0.00	RR REC	20/1	12	**15**	**B**	**16**											0.00
					600		0.00	WATER FOUNTAIN	20/1**	12	**17**	**C**	**18**											0.00
					600		0.00	WATER FOUNTAIN	20/1**	12	**19**	**A**	**20**	12	20/1	GREASE TRAP						1920		0.00
	540						0.00	REC	20/1	12	**21**	**B**	**22**	12	20/1	EUH-01				1622				0.00
					1000		0.00	HAND DRYER	20/1	12	**23**	**C**	**24**	-	-	-				1622				0.00
					1000		0.00	HAND DRYER	20/1	12	**25**	**A**	**26**		20/1	SPARE								1.00
					1000		0.00	HAND DRYER	20/1	12	**27**	**B**	**28**		20/1	SPARE								1.00
					1000		0.00	HAND DRYER	20/1	12	**29**	**C**	**30**		20/1	SPARE								1.00
							1.00	SPARE			**31**	**A**	**32**	12	20/1	HAND DRYER						1000		0.00
							1.00	SPARE			**33**	**B**	**34**	12	20/1	AIR DRYER						500		0.00
							1.00	SPARE			**35**	**C**	**36**		20/1	SPARE								1.00
	720						0.00	REC	20/1	12	**37**	**A**	**38**	10	30/3	SPO								0.00
	720						0.00	REC	20/1	12	**39**	**B**	**40**	-	-	-								0.00
	540						0.00	REC	20/1	12	**41**	**C**	**42**	-	-	-								0.00
0	3420	0	0	0	7900	0	4.00	**TOTALS**								**TOTALS**	0	0	0	3245	0	9728	0	4.00

PANEL: **1LA** **2** **(Sectio...**

ALL LOADS IN VA

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
							0.00				**43**	**A**	**44**	12	20/1	WS-1						500		0.00
	1000						0.00	CHARGING STAT	20/1	12	**45**	**B**	**46**	12	20/1	EF-A-01			1180					0.00
	1000						0.00	CHARGING STAT	20/1	12	**47**	**C**	**48**	12	20/1	EF-A-02			1180					0.00
	1000						0.00	CHARGING STAT	20/1	12	**49**	**A**	**50**	12	20/1	EF-A-03			1180					0.00
	1000						0.00	CHARGING STAT	20/1	12	**51**	**B**	**52**	12	20/1	EF-A-04			1180					0.00
	1000						0.00	CHARGING STAT	20/1	12	**53**	**C**	**54**	12	20/1	SPARE								1.00
							1.00	SPARE	20/1		**55**	**A**	**56**	12	20/1	SPARE								1.00
	720						0.00	REC	20/1	12	**57**	**B**	**58**	12	20/1	SPARE								1.00
	720						0.00	REC	20/1	12	**59**	**C**	**60**	12	20/1	WP REC		360						0.00
	720						0.00	REC	20/1	12	**61**	**A**	**62**	12	20/1	REMOTE ANNUN PAN						500		0.00
	1080						0.00	REC	20/1	12	**63**	**B**	**64**	12	20/1	GEN JACKET HEATER						500		0.00
		696					0.00	KEF-03	20/1	12	**65**	**C**	**66**	12	20/1	GEN BATTERY RECHA						500		0.00
							1.00	SPARE	20/1		**67**	**A**	**68**	12	20/1	GEN CONTROLS						500		0.00
	540						0.00	REC	20/1	12	**69**	**B**	**70**	12	20/1	B-03						960		0.00
	720						0.00	REC	20/1	12	**71**	**C**	**72**	12	20/1	PHWP-03						768		0.00
							1.00	SPARE	20/1		**73**	**A**	**74**	12	20/1	B-04						960		0.00
							1.00	SPARE	20/1		**75**	**B**	**76**	12	20/1	PHWP-04						768		0.00
							1.00	SPARE	20/1		**77**	**C**	**78**	12	20/1	CP-1						500		0.00
							1.00	SPARE	20/1		**79**	**A**	**80**											0.00
							1.00	SPARE	20/1		**81**	**B**	**82**											0.00
							1.00	SPARE	20/1		**83**	**C**	**84**											0.00
0	9500	696	0	0	0	0	8.00	**TOTALS**								**TOTALS**	0	360	4720	0	0	6456	0	3.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
0.0	30.2	7.8	3.2	0.0	42.4	0.0	19.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
0.0	20.1	7.8	3.2	0.0	42.4	0.0	9.5	Design KVA

Phase Load	
Ph	KVA
A	13.9
B	17.2
C	15.0

Panel Remarks:

** PROVIDE GFCI TYPE BREAKER
LINKED PANEL 1LA1
***PROVIDE GFPE TYPE BREAKER LOCKABLE IN THE OPEN POSITION

*Input di...
**100% ...

PANEL: **1LA**

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	102.7	285.0		83.1	230.6

Date: 6/3/2025 By: Linda

Job: Huffman New CTE Job No. 240157

Mounting **SURFACE** Voltage: **208Y/120V-3PH 4W** AIC... **10000**

Main... **MCB (400A)** Main... **400 AMPS** Ground **Equipment Ground**

Neutral **200%** Lugs **FEED THRU**

PANEL: **1LA1**

ALL LOADS IN VA

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
	720						0.00	REC	20/1	12	**1**	**A**	**2**	10	20/1	CORD REEL						1000		0.00
	720						0.00	REC	20/1	12	**3**	**B**	**4**	10	20/1	CORD REEL						1000		0.00
	720						0.00	REC	20/1	12	**5**	**C**	**6**	10	20/1	CORD REEL						1000		0.00
	720						0.00	REC	20/1	12	**7**	**A**	**8**	10	20/1	REC								0.00
	720						0.00	REC	20/1	12	**9**	**B**	**10**	10	20/1	REC								0.00
	720						0.00	REC	20/1	12	**11**	**C**	**12**	10	20/1	OH DOOR			1200					0.00
	540						0.00	REC	20/1	12	**13**	**A**	**14**	10	20/1	OH DOOR			1200					0.00
	720						0.00	REC	20/1	12	**15**	**B**	**16**	10	20/1	CORD REEL						1000		0.00
					300		0.00	TRAP PRIMER	20/1	12	**17**	**C**	**18**	10	20/1	CORD REEL						1000		0.00
					300		0.00	TRAP PRIMER	20/1	12	**19**	**A**	**20**	10	20/1	CORD REEL						1000		0.00
					300		0.00	TRAP PRIMER	20/1	12	**21**	**B**	**22**	10	20/1	REC		900						0.00
					300		0.00	TRAP PRIMER	20/1	12	**23**	**C**	**24**	10	20/1	REC		900						0.00
	1080						0.00	REC	20/1	12	**25**	**A**	**26**	12	20/1	REC		540						0.00
	1080						0.00	REC	20/1	12	**27**	**B**	**28**	10	20/1	REC		900						0.00
	1080						0.00	REC	20/1	12	**29**	**C**	**30**	12	20/1	REC		360						0.00
	540						0.00	REC	20/1	12	**31**	**A**	**32**	12	20/1	SINK						500		0.00
	360						0.00	WP REC	20/1	12	**33**	**B**	**34**	10	20/1	CORD REEL						1000		0.00
	360						0.00	REC	20/1	12	**35**	**C**	**36**	12	20/1	FLOORBOX						1000		0.00
	200						0.00	LAV REC	20/1	12	**37**	**A**	**38**	12	20/1	FLOORBOX						1000		0.00
					300		0.00	TRAP PRIMER	20/1	12	**39**	**B**	**40**	12	20/1	ISLAND REC		1000						0.00
					300		0.00	TRAP PRIMER	20/1	12	**41**	**C**	**42**	10	20/1	CORD REEL						1000		0.00
0	10280	0	0	0	1800	0	0.00	**TOTALS**								**TOTALS**	0	4600	2400	0	0	10500	0	0.00

PANEL: **1LA1** **2** **(Sectio...**

ALL LOADS IN VA

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
					300		0.00	TRAP PRIMER	20/1	12	**43**	**A**	**44**	12	20/1	CORD REEL						1000		0.00
					500		0.00	BAS	20/1	12	**45**	**B**	**46**	12	20/1	ISLAND REC		1000						0.00
	540						0.00	REC	20/1	12	**47**	**C**	**48**	10	20/1	CORD REEL						1000		0.00
	540						0.00	REC	20/1	12	**49**	**A**	**50**	10	20/1	CORD REEL						1000		0.00
					300		0.00	TRAP PRIMER	20/1	12	**51**	**B**	**52**	10	20/1	CORD REEL						1000		0.00
					300		0.00	TRAP PRIMER	20/1	12	**53**	**C**	**54**		20/1	SPARE								1.00
					300		0.00	TRAP PRIMER	20/1	12	**55**	**A**	**56**		20/1	SPARE								1.00
					300		0.00	HEAT TRACE	20/1	12	**57**	**B**	**58**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**59**	**C**	**60**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**61**	**A**	**62**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**63**	**B**	**64**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**65**	**C**	**66**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**67**	**A**	**68**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**69**	**B**	**70**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**71**	**C**	**72**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**73**	**A**	**74**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**75**	**B**	**76**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**77**	**C**	**78**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**79**	**A**	**80**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**81**	**B**	**82**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**83**	**C**	**84**		20/1	SPARE								1.00
0	1080	0	0	0	2000	0	13.00	**TOTALS**								**TOTALS**	0	1000	0	0	0	4000	0	16.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
0.0	17.0	2.4	0.0	0.0	18.3	0.0	29.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
0.0	13.5	2.4	0.0	0.0	18.3	0.0	14.5	Design KVA

Phase Load	
Ph	KVA
A	12.5
B	13.1
C	12.1

Panel Remarks:

*Input di...
**100% ...

PANEL: **1LA1**

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	66.7	185.0		48.7	135.1

Date: 6/3/2025 By: Linda

PBK

ARCHITECT PBK Architects, Inc.
PBK.com
HOUSTON
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-961-0608 P
713-961-4571 F
TX Firm: BR 1608

CIVIL
CONSULTANT NAME
T 000-000-0000
LANDSCAPE
CONSULTANT NAME
T 000-000-0000
STRUCTURAL
CONSULTANT NAME
T 000-000-0000
MEP
CONSULTANT NAME
T 000-000-0000
ACOUSTIC
CONSULTANT NAME
T 000-000-0000
THEATER
CONSULTANT NAME
T 000-000-0000
FOOD SERVICE
CONSULTANT NAME
T 000-000-0000
AV/IT
CONSULTANT NAME
T 000-000-0000

LEAF ENGINEERS

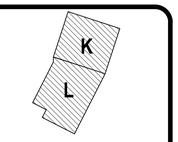
New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS



KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED
PROFESSIONAL ENGINEER

LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date

CHECKED BY: PP

DRAWN BY: LT

ELECTRICAL PANEL SCHEDULES-CTE

E-701.C

Plot Stamp:
6/3/2025 3:14:43 PM

ELECTRICAL PANEL SCHEDULES-CTE
E-702.C
FOR BLUEBEAM LABELING/OCR:

0"
1"

Job: Huffman New CTE
Job No. 240157

Mounting: **SURFACE**
Main... **MCB (125A)**
Neutral: **200%**
Voltage: **208Y/120V-3PH 4W**
Main... **125 AMPS**
AIC... **10000**
Ground: **Equipment Ground**
Lugs: **FEED THRU**

PANEL: **1LAV**

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
								ALL LOADS IN VA																
	1000						0.00	TV	20/1	12	1	A	2	12	20/1	REC		1000						0.00
	1000						0.00	TV	20/1	12	3	B	4	12	20/1	REC		1000						0.00
	1000						0.00	TV	20/1	12	5	C	6	12	20/1	REC		1000						0.00
	1200						0.00	BROADCAST LGT CONT	20/1	12	7	A	8	12	20/1	REC		1000						0.00
	2400						0.00	ETC SPLITTER ENCL	30/1	10	9	B	10	12	20/1	REC		1000						0.00
	1920						0.00	DMX INPUT/OUT	20/1	12	11	C	12	12	20/1	REC		1000						0.00
							1.00	SPARE	20/1		13	A	14	12	20/1	REC		1000						0.00
							1.00	SPARE	20/1		15	B	16	12	20/1	REC		1000						0.00
							1.00	SPARE	20/1		17	C	18	12	20/1	REC		1000						0.00
							1.00	SPARE	20/1		19	A	20	12	20/1	REC		1000						0.00
							1.00	SPARE	20/1		21	B	22	12	20/1	REC		1000						0.00
							1.00	SPARE	20/1		23	C	24	12	20/1	REC		1000						0.00
							1.00	SPARE	20/1		25	A	26		20/1	SPARE								1.00
							1.00	SPARE	20/1		27	B	28		20/1	SPARE								1.00
							1.00	SPARE	20/1		29	C	30		20/1	SPARE								1.00
							1.00	SPARE	20/1		31	A	32		20/1	SPARE								1.00
							1.00	SPARE	20/1		33	B	34		20/1	SPARE								1.00
							1.00	SPARE	20/1		35	C	36		20/1	SPARE								1.00
							1.00	SPARE	20/1		37	A	38	10	30/3	SPD								0.00
							1.00	SPARE	20/1		39	B	40	-	-	-								0.00
							1.00	SPARE	20/1		41	C	42	-	-	-								0.00
0	8520	0	0	0	0	0	15.00	TOTALS								TOTALS	0	12000	0	0	0	0	0	6.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
0.0	20.5	0.0	0.0	0.0	0.0	0.0	21.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
0.0	15.3	0.0	0.0	0.0	0.0	0.0	10.5	Design KVA

Phase Load	
Ph	KVA
A	6.2
B	7.4
C	6.9

Panel Remarks:

*Input di...
**100% ...

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	41.5	115.2		25.8	71.5

PANEL: **1LAV**

Date: 6/3/2025 By: Linda

Job: Huffman New CTE
Job No. 240157

Mounting: **SURFACE**
Main... **MCB (175A)**
Neutral: **200%**
Voltage: **208Y/120V-3PH 4W**
Main... **225 AMPS**
AIC... **10000**
Ground: **Equipment Ground**
Lugs: **FEED THRU**

PANEL: **1LE**

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
								ALL LOADS IN VA																
	540						0.00	REC	20/1	12	1	A	2	12	20/1	CORD REEL						1920		0.00
	1000						0.00	CHARGING STAT	20/1	12	3	B	4	12	20/1	CORD REEL						1920		0.00
	1000						0.00	CHARGING STAT	20/1	12	5	C	6	12	20/1	CORD REEL						1920		0.00
	1000						0.00	CHARGING STAT	20/1	12	7	A	8	12	20/1	OH DOOR			1200					0.00
	1000						0.00	CHARGING STAT	20/1	12	9	B	10	12	20/1	OH DOOR			1200					0.00
	1000						0.00	CHARGING STAT	20/1	12	11	C	12	12	20/1	OH DOOR			1200					0.00
							1.00	SPARE	20/1		13	A	14	12	20/1	CORD REEL						1920		0.00
							1.00	SPARE	20/1		15	B	16	12	20/1	CORD REEL						1920		0.00
							1.00	SPARE	20/1		17	C	18	12	20/1	CORD REEL						1920		0.00
							1.00	SPARE	20/1		19	A	20	12	20/1	CORD REEL						1920		0.00
							1.00	SPARE	20/1		21	B	22	12	20/1	CORD REEL						1920		0.00
							1.00	SPARE	20/1		23	C	24	12	20/1	CORD REEL						1920		0.00
							1.00	SPARE	20/1		25	A	26	12	20/1	EQUIPMENT						1920		0.00
							1.00	SPARE	20/1		27	B	28	12	20/1	EQUIPMENT						1920		0.00
							1.00	SPARE	20/1		29	C	30	12	20/1	EQUIPMENT						1920		0.00
							1.00	SPARE	20/1		31	A	32	12	20/1	CORD REEL						1920		0.00
							1.00	SPARE	20/1		33	B	34	12	20/1	CORD REEL						1920		0.00
							1.00	SPARE	20/1		35	C	36		20/1	SPARE								1.00
							1.00	SPARE	20/1		37	A	38		30/3	SPD								0.00
							1.00	SPARE	20/1		39	B	40	-	-	-								0.00
							1.00	SPARE	20/1		41	C	42	-	-	-								0.00
0	5540	0	0	0	0	0	15.00	TOTALS								TOTALS	0	0	3600	0	0	26880	0	1.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
0.0	5.5	3.6	0.0	0.0	26.9	0.0	16.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
0.0	5.5	3.6	0.0	0.0	26.9	0.0	8.0	Design KVA

Phase Load	
Ph	KVA
A	12.3
B	12.8
C	10.9

Panel Remarks:
PROVIDE SHUNT TRIP MAIN BREAKER

*Input di...
**100% ...

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	52.0	144.4		44.0	122.2

PANEL: **1LE**

Date: 6/3/2025 By: Linda

Job: Huffman New CTE
Job No. 240157

Mounting: **SURFACE**
Main... **MCB (225A)**
Neutral: **100%**
Voltage: **480Y/277V-3PH 4W**
Main... **225 AMPS**
AIC... **42000**
Ground: **Equipment Ground**
Lugs: **FEED THRU**

PANEL: **1HAC**

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
								ALL LOADS IN VA																
							0.00	SPACE			1	A	2			SPACE								0.00
							0.00	SPACE			3	B	4			SPACE								0.00
							0.00	SPACE			5	C	6			SPACE								0.00
							0.00	SPACE			7	A	8			SPACE								0.00
							0.00	SPACE			9	B	10			SPACE								0.00
							0.00	SPACE			11	C	12			SPACE								0.00
							0.00	SPACE			13	A	14			SPACE								0.00
							0.00	SPACE			15	B	16			SPACE								0.00
							0.00	SPACE			17	C	18			SPACE								0.00
							0.00	SPACE			19	A	20			SPACE								0.00
							0.00	SPACE			21	B	22			SPACE								0.00
							0.00	SPACE			23	C	24			SPACE								0.00
							0.00	SPACE			25	A	26			SPACE								0.00
							0.00	SPACE			27	B	28			SPACE								0.00
							0.00	SPACE			29	C	30			SPACE								0.00
							0.00	SPACE			31	A	32			SPACE								0.00
							0.00	SPACE			33	B	34			SPACE								0.00
							0.00	SPACE			35	C	36			SPACE								0.00
							0.00	SPACE			37	A	38			SPACE								0.00
							0.00	SPACE			39	B	40			SPACE								0.00
							0.00	SPACE			41	C	42			SPACE								0.00
0	0	0	0	0	0	0	0.00	TOTALS								TOTALS	0	0	0	0	0	0	0	0.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Design KVA

Phase Load	
Ph	KVA
A	0.0
B	0.0
C	0.0

Panel Remarks:

*Input di...
**100% ...

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	0.0	0.0		0.0	0.0

PANEL: **1HAC**

Date: 6/2/2025 By: Linda

Job: Huffman New CTE
Job No. 240157

Mounting: **SURFACE**
Main... **MCB (225A)**
Neutral: **200%**
Voltage: **208Y/120V-3PH 4W**
Main... **225 AMPS**
AIC... **10000**
Ground: **Equipment Ground**
Lugs: **FEED THRU**

PANEL: **1LC**

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
								ALL LOADS IN VA																
		1200					0.00	OH DOOR	20/1	12	1	A	2	12	20/1	WATER COOLER						1000		0.00
	500						0.00	GOGGLE CAB	20/1	12	3	B	4	12	20/1	CORD REEL						1000		0.00
	720						0.00	REC	20/1	12	5	C	6	12	20/1	PLANER						1920		0.00
	720						0.00	REC	20/1	12	7	A	8	12	20/1	SANDER						1440		0.00
					1320		0.00	BAND SAW	20/1	12	9	B	10	10	30/1	ROUTER						2400		0.00
					1560		0.00	DRILL PRESS	20/1	12	11	C	12	12	20/2	CABINET SAW						1664		0.00
					2400		0.00	DUST COLLECTOR	30/1	10	13	A	14	-	-	-						1664		0.00
					2400		0.00	DUST COLLECTOR	30/1	10	15	B	16	12	20/1	MITER SAW						1800		0.00
					2400		0.00	DUST COLLECTOR	30/1	10	17	C	18	12	20/1	PANEL SAW						1800		0.00
					3120		0.00	CNC MACHINE	30/2	10	19	A	20	12	20/1	CORD REEL						1000		0.00
					3120		0.00	-	-	-	21	B	22	12	20/1	CORD REEL						1000		0.00
					1920		0.00	CNC REC	20/1		23	C	24		20/1	SPARE								1.00
							1.00	SPARE	20/1		25	A	26		20/1	SPARE								1.00
							1.00	SPARE	20/1		27	B	28		20/1	SPARE								1.00
							1.00	SPARE	20/1		29	C	30		20/1	SPARE								1.00
							1.00	SPARE	20/1		31	A	32		20/1	SPARE								1.00
							1.00	SPARE	20/1		33	B	34		20/1	SPARE								1.00
							1.00	SPARE	20/1		35	C	36											0.00
							1.00	SPARE	20/1		37	A	38	10	30/3	SPD								0.00
							1.00	SPARE	20/1		39	B	40	-	-	-								0.00
							1.00	SPARE	20/1		41	C	42	-	-	-								0.00
0	1940	1200	0	0	18240	0	9.00	TOTALS								TOTALS	0	0	0	0	0	16688	0	6.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
0.0	1.9	1.2	0.0	0.0	34.9	0.0	15.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
0.0	1.9	1.2	0.0	0.0	34.9	0.0	7.5	Design KVA

Phase Load	
Ph	KVA
A	12.5
B	13.5
C	12.0

Panel Remarks:
PROVIDE SHUNT TRIP MAIN BREAKER

*Input di...
**100% ...

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	53.1	147.3		45.6	126.5

PANEL: **1LC**

Date: 6/3/2025 By: Linda

Plot Stamp:
6/3/2025 3:14:45 PM

PBK

ARCHITECT PBK Architects, Inc.
PBK.com
HOUSTON
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-961-0608 P
713-961-4571 F
TX Firm: BR 1608

CIVIL
CONSULTANT NAME
T.000-000-0000
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FOOD SERVICE
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T.000-000-0000

LEAF ENGINEERS

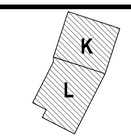
STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED
PROFESSIONAL ENGINEER
LEAF ENGINEERS
F-16672

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE
25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT



KEY PLAN
NORTH: PLAN TRUE

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date

CHECKED BY: PP
DRAWN BY: LT

ELECTRICAL PANEL SCHEDULES-CTE

E-702.C

ELECTRICAL PANEL SCHEDULES-CTE

E-703.C

FOR BLUEBEAM LABELING/OCR:

0"

1"

Job: Huffman New CTE Job No. 240157

Mounting **RECESSED**
Main... **MCB (400A)**
Neutral **100%**

Voltage: **208Y/120V-3PH 4W**
Main... **400 AMPS**

AIC... **10000**
Ground **Equipment Ground**
Lugs **FEED THRU**

PANEL: **1LK**

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
						1920	0.00	E10 OUTLET	20/1	12	**1**	**A**	**2**	12	20/1	E109 ICE MACHINE							1440	0.00
						1920	0.00	E10 OUTLET	20/1	12	**3**	**B**	**4**	12	20/1	E110 CLOTHES WASH							1920	0.00
						1920	0.00	E10 OUTLET	20/1	12	**5**	**C**	**6**	10	30/2	E110A CLOTHES DRY							3120	0.00
						1920	0.00	E10 OUTLET	20/1	12	**7**	**A**	**8**	-									3120	0.00
						1920	0.00	E10 OUTLET	20/1	12	**9**	**B**	**10**	12	20/3	E123 DISPOSER							1272	0.00
						1920	0.00	E10 OUTLET	20/1	12	**11**	**C**	**12**	-	-	-							1272	0.00
						1920	0.00	E10 OUTLET	20/1	12	**13**	**A**	**14**	-	-	-							1272	0.00
						1920	0.00	E10 OUTLET	20/1	12	**15**	**B**	**16**	12	20/3	E134 40QT MIXER							672	0.00
						1920	0.00	E10 OUTLET	20/1	12	**17**	**C**	**18**	-	-	-							672	0.00
						1920	0.00	E10 OUTLET	20/1	12	**19**	**A**	**20**	-	-	-							672	0.00
						1920	0.00	E10 OUTLET	20/1	12	**21**	**B**	**22**	12	20/1	E139 INSUL MOBILE							1800	0.00
						1920	0.00	E10 OUTLET	20/1	12	**23**	**C**	**24**	12	20/1	E139 INSUL MOBILE							1800	0.00
						1920	0.00	E10 OUTLET	20/1	12	**25**	**A**	**26**	12	20/1	E151 FIRE PORT SYS							120	0.00
						1920	0.00	E10 OUTLET	20/1	12	**27**	**B**	**28**	12	20/1	E151 FIRE PORT SYS							120	0.00
						1920	0.00	E11 OUTLET	20/1	12	**29**	**C**	**30**	12	20/1	E153 HOOD LIGHTS							1200	0.00
						1920	0.00	E11 OUTLET	20/1	12	**31**	**A**	**32**	12	20/1	E153H HEAT SENSOR							1200	0.00
						1920	0.00	E11 OUTLET	20/1	12	**33**	**B**	**34**	12	20/1	E622 GAS GRIDDLE							120	0.00
						1920	0.00	E11 OUTLET	20/1	12	**35**	**C**	**36**			SHUNT TRIP								0.00
						1920	0.00	E11 OUTLET	20/1	12	**37**	**A**	**38**	12	20/1	E632 6 BURNER RANGE							480	0.00
						1920	0.00	E11 OUTLET	20/1	12	**39**	**B**	**40**			SHUNT TRIP								0.00
						1920	0.00	E11 OUTLET	20/1	12	**41**	**C**	**42**		20/1	SPARE								1.00
0	0	0	0	0	0	40320	0.00	**TOTALS**								**TOTALS**	0	0	0	0	0	0	22272	1.00

PANEL: **1LK 2 (Sectio...**

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
						1920	0.00	E11 OUTLET	20/1	12	**43**	**A**	**44**	12	20/1	E632 6 BURNER RANGE							480	0.00
						1920	0.00	E11 OUTLET	20/1	12	**45**	**B**	**46**			SHUNT TRIP								0.00
						1920	0.00	E11 OUTLET	20/1	12	**47**	**C**	**48**	12	20/1	E644 CORD REEL							1920	0.00
						1920	0.00	E11 OUTLET	20/1	12	**49**	**A**	**50**	12	20/1	E644 CORD REEL							1920	0.00
						1920	0.00	E11 OUTLET	20/1	12	**51**	**B**	**52**	12	20/1	E644 CORD REEL							1920	0.00
						1920	0.00	E11 OUTLET	20/1	12	**53**	**C**	**54**	12	20/1	E644 CORD REEL							1920	0.00
						1920	0.00	E11 OUTLET	20/1	12	**55**	**A**	**56**	12	20/1	E644 CORD REEL							1920	0.00
						1920	0.00	E11 OUTLET	20/1	12	**57**	**B**	**58**	12	20/1	E644 CORD REEL							1920	0.00
						1920	0.00	E11 OUTLET	20/1	12	**59**	**C**	**60**		20/1	SPARE								1.00
						1920	0.00	E11 OUTLET	20/1	12	**61**	**A**	**62**		20/1	SPARE								1.00
						1920	0.00	E11 OUTLET	20/1	12	**63**	**B**	**64**		20/1	SPARE								1.00
						1920	0.00	E13 OUTLET	20/1	12	**65**	**C**	**66**		20/1	SPARE								1.00
						720	0.00	E161 CONVECT OVEN	20/1	12	**67**	**A**	**68**		20/1	SPARE								1.00
							0.00	SHUNT TRIP			**69**	**B**	**70**		20/1	SPARE								1.00
						720	0.00	E161 CONVECT OVEN	20/1	12	**71**	**C**	**72**		20/1	SPARE								1.00
							0.00	SHUNT TRIP			**73**	**A**	**74**		20/1	SPARE								1.00
						1560	0.00	E172 COMBI OVEN	20/2	12	**75**	**B**	**76**		20/1	SPARE								1.00
						1560	0.00	-	-	-	**77**	**C**	**78**		20/1	SPARE								1.00
							0.00	SHUNT TRIP			**79**	**A**	**80**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**81**	**B**	**82**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**83**	**C**	**84**		20/1	SPARE								1.00
0	0	0	0	0	0	27600	2.00	**TOTALS**								**TOTALS**	0	0	0	0	0	0	12000	13.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
0.0	0.0	0.0	0.0	0.0	0.0	117.6	16.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
0.0	0.0	0.0	0.0	0.0	0.0	76.4	8.0	Design KVA

Phase Load

Ph	KVA
A	34.5
B	32.4
C	35.3

Panel Remarks:
PANEL SHALL BE PROVIDED WITH NEMA4X COVER
LINKED PANEL 1LK1

*Input di...
**100% ...

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	133.6	370.7		84.4	234.3

PANEL: **1LK**

Date: 6/3/2025 By: Linda

Job: Huffman New CTE Job No. 240157

Mounting **RECESSED**
Main... **MCB (400A)**
Neutral **100%**

Voltage: **208Y/120V-3PH 4W**
Main... **400 AMPS**

AIC... **10000**
Ground **Equipment Ground**
Lugs **FEED THRU**

PANEL: **1LK1**

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
						1920	0.00	E700A FRYER FILTER	20/1	12	**1**	**A**	**2**	12	20/1	E700B HEAT LAMP							1920	0.00
							0.00	SHUNT TRIP			**3**	**B**	**4**			SHUNT TRIP								0.00
						1920	0.00	E700A FRYER FILTER	20/1	12	**5**	**C**	**6**	12	20/1	E700B HEAT LAMP							1920	0.00
							0.00	SHUNT TRIP			**7**	**A**	**8**			SHUNT TRIP								0.00
						1920	0.00	E700A FRYER FILTER	20/1	12	**9**	**B**	**10**	12	20/1	E700B HEAT LAMP							1920	0.00
							0.00	SHUNT TRIP			**11**	**C**	**12**			SHUNT TRIP								0.00
						1920	0.00	E700A FRYER FILTER	20/1	12	**13**	**A**	**14**	12	20/1	E700B HEAT LAMP							1920	0.00
							0.00	SHUNT TRIP			**15**	**B**	**16**			SHUNT TRIP								0.00
							1.00	SPARE	20/1		**17**	**C**	**18**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**19**	**A**	**20**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**21**	**B**	**22**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**23**	**C**	**24**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**25**	**A**	**26**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**27**	**B**	**28**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**29**	**C**	**30**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**31**	**A**	**32**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**33**	**B**	**34**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**35**	**C**	**36**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**37**	**A**	**38**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**39**	**B**	**40**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**41**	**C**	**42**		20/1	SPARE								1.00
0	0	0	0	0	0	7680	13.00	**TOTALS**								**TOTALS**	0	0	0	0	0	0	7680	13.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
0.0	0.0	0.0	0.0	0.0	0.0	15.4	26.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
0.0	0.0	0.0	0.0	0.0	0.0	10.0	13.0	Design KVA

Phase Load

Ph	KVA
A	7.7
B	3.8
C	3.8

Panel Remarks:
PANEL SHALL BE PROVIDED WITH NEMA4X COVER

*Input di...
**100% ...

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	41.4	114.8		23.0	63.8

PANEL: **1LK1**

Date: 6/3/2025 By: Linda

Job: Huffman New CTE Job No. 240157

Mounting **RECESSED**
Main... **MCB (100A)**
Neutral **100%**

Voltage: **480Y/277V-3PH 4W**
Main... **100 AMPS**

AIC... **42000**
Ground **Equipment Ground**
Lugs **SINGLE**

PANEL: **1HK**

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
						2909	0.00	E251A DISHMACHINE	20/3	12	**1**	**A**	**2**			SPACE								0.00
						2909	0.00	-	-	-	**3**	**B**	**4**			SPACE								0.00
						2909	0.00	-	-	-	**5**	**C**	**6**			SPACE								0.00
						3573	0.00	E251C BOOSTER	20/3	12	**7**	**A**	**8**			SPACE								0.00
						3573	0.00	-	-	-	**9**	**B**	**10**			SPACE								0.00
						3573	0.00	-	-	-	**11**	**C**	**12**			SPACE								0.00
							0.00	SPACE			**13**	**A**	**14**			SPACE								0.00
							0.00	SPACE			**15**	**B**	**16**			SPACE								0.00
							0.00	SPACE			**17**	**C**	**18**			SPACE								0.00
							0.00	SPACE			**19**	**A**	**20**			SPACE								0.00
							0.00	SPACE			**21**	**B**	**22**			SPACE								0.00
							0.00	SPACE			**23**	**C**	**24**			SPACE								0.00
							0.00	SPACE			**25**	**A**	**26**			SPACE								0.00
							0.00	SPACE			**27**	**B**	**28**			SPACE								0.00
							0.00	SPACE			**29**	**C**	**30**			SPACE								0.00
							0.00	SPACE			**31**	**A**	**32**			SPACE								0.00
							0.00	SPACE			**33**	**B**	**34**			SPACE								0.00
							0.00	SPACE			**35**	**C**	**36**			SPACE								0.00
							0.00	SPACE			**37**	**A**	**38**			SPACE								0.00
							0.00	SPACE			**39**	**B**	**40**			SPACE								0.00
							0.00	SPACE			**41**	**C**	**42**			SPACE								0.00
0	0	0	0	0	0	19445	0.00	**TOTALS**								**TOTALS**	0	0	0	0	0	0	0	0.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
0.0	0.0	0.0	0.0	0.0	0.0	19.4	0.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
0.0	0.0	0.0	0.0	0.0	0.0	12.6	0.0	Design KVA

Phase Load

Ph	KVA
A	6.5
B	6.5
C	6.5

Panel Remarks:
PANEL SHALL BE PROVIDED WITH NEMA4X COVER

*Input di...
**100% ...

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	19.4	23.4		12.6	15.2

PANEL: **1HK**

Date: 6/3/2025 By: Linda

Electrical... AIC Rating: **65000**

Job: Huffman New CTE Volts - Phase: **480Y/277V-3PH 4W**

Job No.: 240157 DISTRIBUTI... **DPB** Served From: MSA

Connected Load (KVA)

Cir. No.	Load Served	Amp/Poles	Wire and Conduit Size	Lighting	Conv. Outlets	Motors	Heating	Cooling	Others	Elect. Cooking	Spare/ Spaces	Elevators	Residential	Total KVA	Total Amps
1	PANEL 1HB	125/3	SEE RISER	11.0	0.0	56.4	0.0	2.4	2.4	0.0				72.2	86.8
2	XFMR 1TB	175/3	SEE RISER	0.0	61.8	6.4	0.0	0.0	63.9	0.0				132.1	158.9
3														0.0	0.0
4														0.0	0.0
5														0.0	0.0
6														0.0	0.0
7														0.0	0.0
8														0.0	0.0
9														0.0	0.0
10														0.0	0.0
11														0.0	0.0
12														0.0	0.0
Total...				11.0	61.8	62.7	0.0	2.4	66.3	0.0	0.0	0.0	0.0	204.3	245.7
Demand...				-- 1.25	-- *	-- **	-- 1.0	-- 1.0	-- 1.00	-- 0.65	-- 0.5	-- ***	-- ****	--	--
Total...				13.7	35.9	62.7	0.0	2.4	66.3	0.0	0.0	0.0	0.0	181.1	217.9

* 100% of...
** 125% of...
*** Elevator...
****...

Largest... _____ KVA

DISTRIBUTION PANEL:		DPB
MAINS	TYPE:	MAIN BREAKER
	SIZE:	250 AMP
	PHASE:	250 AMP
BUS SIZE	NEUTRAL:	250 AMP
	GROUND:	PER NEC

Date: 6/3/2025 By: Linda

Job: Huffman New CTE Job No. 240157

Mounting **SURFACE**
Main... **MCB (125A)**
Neutral **100%**

Voltage: **480Y/277V-3PH 4W**
Main... **125 AMPS**

AIC... **42000**
Ground **Equipment Ground**
Lugs **FEED THRU**

PANEL: **1HB**

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
2925							0.00	LIGHTING	20/1	12	**1**	**A**	**2**	10	20/1	WALL PACK	1000							0.00
2800							0.00	LIGHTING	20/1	12	**3**	**B**	**4**	10	20/1	SITE LIGHTING	600							0.00
1920							0.00	LIGHTING	20/1	12	**5**	**C**	**6**	12	20/3	EWH-1							800	0.00
1746							0.00	LIGHTING	20/1	12	**7**	**A**	**8**	-	-	-							800	0.00
			2105				0.00	OAHU-B-01	20/3	12	**9**	**B**	**10**	-	-	-							800	0.00
			2105				0.00	(5 HP)	-	-	**11**	**C**	**12**	12	20/3	FCU-B-01						1440		0.00
			2105				0.00	-	-	-	**13**	**A**	**14**	12	20/3	FCU-B-02						970		0.00
			2105				0.00	AHU-B-01	12	20/3	**15**	**B**	**16**	12	20/1	CVB-B-02-04(1/2HP)			1080					0.00
			2105				0.00	(5 HP)	-	-	**17**	**C**	**18**	12	20/1	CVB-B-02-05A(1/2HP)			1080					0.00
			2105				0.00	-	-	-	**19**	**A**	**20**	12	20/1	CVB-B-02-05B(1/2HP)			1080					0.00
			3878				0.00	AHU-B-02	8	35/3	**21**	**B**	**22**	12	20/1	CVB-B-02-06(1/2HP)			1080					0.00
			3878				0.00	(10 HP)	-	-	**23**	**C**	**24**	12	20/1	CVB-B-02-07(1/2HP)			1080					0.00
			3878				0.00	-	-	-	**25**	**A**	**26**	12	20/1	CVB-B-03-01(1/3HP)			803					0.00
			3878				0.00	AHU-B-03	8	35/3	**27**	**B**	**28**	12	20/1	CVB-B-03-02(1/2HP)			1080					0.00
			3878				0.00	(10 HP)	-	-	**29**	**C**	**30**	12	20/1	CVB-B-03A(1/2HP)			1080					0.00
			3878				0.00	-	-	-	**31**	**A**	**32**	12	20/1	CVB-B-03B(1/2HP)			1080					0.00
			803				0.00	CVB-B-01-01(1/3HP)	20/1	12	**33**	**B**	**34**	12	20/1	CVB-B-03-04(1/2HP)			1080					0.00
			803				0.00	CVB-B-01-02(1/3HP)	20/1	12	**35**	**C**	**36**	12	20/1	CVB-B-03-05(1/2HP)			1080					0.00
			803				0.00	CVB-B-01-03(1/3HP)	20/1	12	**37**	**A**	**38**	12	20/1	CVB-B-03-06(1/2HP)			1080					0.00
			803				0.00	CVB-B-01-04(1/3HP)	20/1	12	**39**	**B**	**40**											0.00
			803				0.00	CVB-B-01-05(1/3HP)	20/1	12	**41**	**C**	**42**			SPACE								0.00
9391	0	39916	0	0	0	0	0.00	**TOTALS**								**TOTALS**	1600	0	12687	0	2410	2400	0	0.00

PANEL: **1HB 2 (Sectio...**

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
			803				0.00	CVB-B-01-06(1/3HP)	20/1	12	**43**	**A**	**44**			SPACE								0.00
			1080				0.00	CVB-B-02-01(1/2HP)	20/1	12	**45**	**B**	**46**			SPACE								0.00
			1080				0.00	CVB-B-02-02(1/2HP)	20/1	12	**47**	**C**	**48**			SPACE								0.00
			803				0.00	CVB-B-02-03(1/3HP)	20/1	12	**49**	**A**	**50**			SPACE								0.00
							0.00	SPACE			**51**	**B**	**52**			SPACE								0.00
							0.00	SPACE			**53**	**C**	**54**			SPACE								0.00
							0.00	SPACE			**55**	**A**	**56**			SPACE								0.00
							0.00	SPACE			**57**	**B**	**58**			SPACE								0.00
							0.00	SPACE			**59**	**C**	**60**			SPACE								0.00
							0.00	SPACE			**61**	**A**	**62**			SPACE								0.00
							0.00	SPACE			**63**	**B**	**64**			SPACE								0.00
							0.00	SPACE			**65**	**C**	**66**			SPACE								0.00
							0.00	SPACE			**67**	**A**	**68**			SPACE								0.00
							0.00	SPACE			**69**	**B**	**70**			SPACE								0.00
							0.00	SPACE			**71**	**C**	**72**			SPACE								0.00
							0.00	SPACE			**73**	**A**	**74**			SPACE								0.00
							0.00	SPACE			**75**	**B**	**76**			SPACE								0.00
							0.00	SPACE			**77**	**C**	**78**			SPACE								0.00
							0.00	SPACE			**79**	**A**	**80**			SPACE								0.00
							0.00	SPACE			**81**	**B**	**82**			SPACE								0.00
							0.00	SPACE			**83**	**C**	**84**			SPACE								0.00
0	0	3767	0	0	0	0	0.00	**TOTALS**								**TOTALS**	0	0	0	0	0	0	0	0.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
11.0	0.0	56.4	0.0	2.4	2.4	0.0	0.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
13.7	0.0	56.4	0.0	2.4	2.4	0.0	0.0	Design KVA

Phase Load

Ph	KVA
A	25.9
B	23.2
C	23.1

Panel Remarks:

*Input di...
**100% ...

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	72.2	86.8		74.9	90.1

PANEL: **1HB**

Date: 6/3/2025 By: Linda

PBK

ARCHITECT PBK Architects, Inc.
PBK.com
HOUSTON
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-961-0608 P
713-961-4571 F
TX Firm: BR 1608

CIVIL
CONSULTANT NAME
T.000-000-0000
LANDSCAPE
CONSULTANT NAME
T.000-000-0000
STRUCTURAL
CONSULTANT NAME
T.000-000-0000
MEP
CONSULTANT NAME
T.000-000-0000
ACOUSTIC
CONSULTANT NAME
T.000-000-0000
THEATER
CONSULTANT NAME
T.000-000-0000
FOOD SERVICE
CONSULTANT NAME
T.000-000-0000
AV/IT
CONSULTANT NAME
T.000-000-0000

LEAF ENGINEERS

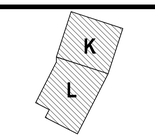
New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS



KEY PLAN NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED
PROFESSIONAL ENGINEER

LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date

CHECKED BY: PP
DRAWN BY: LT

ELECTRICAL PANEL SCHEDULES-CTE

E-703.C

Plot Stamp:
6/3/2025 3:14:46 PM

ELECTRICAL PANEL SCHEDULES-CTE

E-704.C

FOR BLUEBEAM LABELING/OCR:

Job: Huffman New CTE Job No. 240157

Mounting: SURFACE Main... MCB (400A) Neutral: 200%

Voltage: 208Y/120V-3PH 4W Main... 400 AMPS

AIC... 10000 Ground: Equipment Ground Lugs: FEED THRU

PANEL: 1LB ALL LOADS IN VA

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
					1000		0.00	CORD REEL	20/1	12	1	A	2	12	20/1**	WATER FOUNTAIN						600		0.00
					1000		0.00	CORD REEL	20/1	12	3	B	4	12	20/1**	WATER FOUNTAIN						600		0.00
					1000		0.00	CORD REEL	20/1	12	5	C	6	12	20/1	HAND DRYER						1000		0.00
	500						0.00	REC	20/1	12	7	A	8	12	20/1	HAND DRYER						1000		0.00
	900						0.00	REC	20/1	12	9	B	10	12	20/1	HAND DRYER						1000		0.00
	900						0.00	REC	20/1	12	11	C	12	12	20/1	HAND DRYER						1000		0.00
	540						0.00	REC	20/1	12	13	A	14	12	20/1	DISPLAY CASE						1000		0.00
	1080						0.00	REC	20/1	12	15	B	16	12	20/1	DISPLAY CASE						1000		0.00
	360						0.00	REC	20/1	12	17	C	18	12	20/1	RR REC		360						0.00
	360						0.00	REC	20/1	12	19	A	20											0.00
					500		0.00	CORD REEL	20/1	12	21	B	22	12	20/1	HAND DRYER						1000		0.00
					1000		0.00	CORD REEL	20/1	12	23	C	24	12	20/1	HAND DRYER						1000		0.00
					1000		0.00	CORD REEL	20/1	12	25	A	26	12	20/1	RR REC		360						0.00
					1000		0.00	CORD REEL	20/1	12	27	B	28	12	20/1	REC		540						0.00
					1000		0.00	CORD REEL	20/1	12	29	C	30	12	20/1	REC		540						0.00
	1080						0.00	REC	20/1	12	31	A	32	12	20/1	REC		720						0.00
	720						0.00	REC	20/1	12	33	B	34	12	20/1	REC		900						0.00
	900						0.00	REC	20/1	12	35	C	36	12	20/1	REC		540						0.00
					1000		0.00	CORD REEL	20/1	12	37	A	38	10	30/3	SPD								0.00
					1000		0.00	CORD REEL	20/1	12	39	B	40	-	-	-								0.00
					1000		0.00	CORD REEL	20/1	12	41	C	42	-	-	-								0.00
0	7340	0	0	0	10500	0	0.00	TOTALS								TOTALS	0	3960	0	0	0	9200	0	0.00

PANEL: 1LB 2 (Sectio... ALL LOADS IN VA

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
	720						0.00	REC	20/1	12	43	A	44	12	20/1	CORD REEL						1000		0.00
	900						0.00	REC	20/1	12	45	B	46	12	20/1	REC		1000						0.00
	900						0.00	REC	20/1	12	47	C	48	12	20/1	REC		1000						0.00
	720						0.00	REC	20/1	12	49	A	50	12	20/1	REC		1000						0.00
	720						0.00	REC	20/1	12	51	B	52	12	20/1	REC		720						0.00
	720						0.00	REC	20/1	12	53	C	54	12	20/1	CORD REEL						1000		0.00
	540						0.00	REC	20/1	12	55	A	56	12	20/1	CORD REEL						1000		0.00
	540						0.00	REC	20/1	12	57	B	58	12	20/1	CORD REEL						1000		0.00
	720						0.00	REC	20/1	12	59	C	60	12	20/1	REC		500						0.00
	540						0.00	REC	20/1	12	61	A	62	12	20/1	REC		500						0.00
	1080						0.00	REC	20/1	12	63	B	64	12	20/1	BED						1000		0.00
							0.00				65	C	66	12	20/1	BED						1000		0.00
					1000		0.00	HAND DRYER	20/1	12	67	A	68											0.00
	900						0.00	REC	20/1	12	69	B	70											0.00
	540						0.00	REC	20/1	12	71	C	72											0.00
					1000		0.00	PRINTER	20/1	12	73	A	74	12	20/1	BAS						500		0.00
	1920						0.00	BED REC	20/1	12	75	B	76		20/1	SPARE								1.00
	1920						0.00	BED REC	20/1	12	77	C	78		20/1	SPARE								1.00
	1920						0.00	BED REC	20/1	12	79	A	80		20/1	SPARE								1.00
	1920						0.00	BED REC	20/1	12	81	B	82		20/1	SPARE								1.00
	720						0.00	REC	20/1	12	83	C	84		20/1	SPARE								1.00
0	17940	0	0	0	2000	0	0.00	TOTALS								TOTALS	0	4720	0	0	0	6500	0	5.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
0.0	61.8	6.4	0.0	0.0	63.9	0.0	5.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
0.0	35.9	6.4	0.0	0.0	63.9	0.0	2.5	Design KVA

Phase Load	
Ph	KVA
A	19.6
B	22.9
C	19.6

Panel Remarks:
** PROVIDE GFCI TYPE BREAKER
LINKED PANEL 1LB1

*Input di...
**100% ...

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	137.1	380.6		108.7	301.7

PANEL: 1LB

Date: 6/3/2025 By: Linda

Job: Huffman New CTE Job No. 240157

Mounting: SURFACE Main... MCB (100A) Neutral: 100%

Voltage: 480Y/277V-3PH 4W Main... 100 AMPS

AIC... 42000 Ground: Equipment Ground Lugs: SINGLE

PANEL: 1ELS ALL LOADS IN VA

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
1667	0	0	0	0	0	0	0.00	PANEL 1EHA	100/3	SEE	1	A	2	SEE	100/3	PANEL 1EHB	1667	0	0	0	0	0	0	0.00
1667	0	0	0	0	0	0	0.00	-	-	RISER	3	B	4	RISER	-		1667	0	0	0	0	0	0	0.00
1667	0	0	0	0	0	0	0.00	-	-	-	5	C	6	-	-		1667	0	0	0	0	0	0	0.00
		942					0.00	JP-1	20/3	12	7	A	8											0.00
		942					0.00	(2HP)	-	-	9	B	10											0.00
		942					0.00	-	-	-	11	C	12											0.00
							0.00				13	A	14											0.00
							0.00				15	B	16											0.00
							0.00				17	C	18											0.00
							0.00				19	A	20											0.00
							0.00				21	B	22											0.00
							0.00				23	C	24											0.00
5000	0	2825	0	0	0	0	0.00	TOTALS								TOTALS	5000	0	0	0	0	0	0	0.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
10.0	0.0	2.8	0.0	0.0	0.0	0.0	0.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
12.5	0.0	2.8	0.0	0.0	0.0	0.0	0.0	Design KVA

Phase Load	
Ph	KVA
A	4.3
B	4.3
C	4.3

Panel Remarks:

*Input di...
**100% ...

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	12.8	15.4		15.3	18.4

PANEL: 1ELS

Date: 6/3/2025 By: Linda

Job: Huffman New CTE Job No. 240157

Mounting: SURFACE Main... MCB (125A) Neutral: 100%

Voltage: 480Y/277V-3PH 4W Main... 125 AMPS

AIC... 42000 Ground: Equipment Ground Lugs: SINGLE

PANEL: 1ESB ALL LOADS IN VA

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
0	0	0	0	1269	4867	9429	0.00	XFMR 1ETA	125/3	SEE	1	A	2	SEE	125/3	XFMR 1ETB	0	0	0	0	1269	5200	7280	0.00
0	0	0	0	1269	4867	9429	0.00	-	-	RISER	3	B	4	RISER	-	-	0	0	0	0	1269	5200	7280	0.00
0	0	0	0	1269	4867	9429	0.00	-	-	-	5	C	6	-	-	-	0	0	0	0	1269	5200	7280	0.00
							0.00				7	A	8											0.00
							0.00				9	B	10											0.00
							0.00				11	C	12											0.00
							0.00				13	A	14											0.00
							0.00				15	B	16											0.00
							0.00				17	C	18											0.00
							0.00				19	A	20											0.00
							0.00				21	B	22											0.00
							0.00				23	C	24											0.00
0	0	0	0	3806	14600	28288	0.00	TOTALS								TOTALS	0	0	0	0	3806	15600	21840	0.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
0.0	0.0	0.0	0.0	7.6	30.2	50.1	0.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
0.0	0.0	0.0	0.0	7.6	30.2	32.6	0.0	Design KVA

Phase Load	
Ph	KVA
A	29.3
B	29.3
C	29.3

Panel Remarks:

*Input di...
**100% ...

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	87.9	105.8		70.4	84.7

PANEL: 1ESB

Date: 6/3/2025 By: Linda

Job: Huffman New CTE Job No. 240157

Mounting: SURFACE Main... MCB (400A) Neutral: 200%

Voltage: 208Y/120V-3PH 4W Main... 400 AMPS

AIC... 10000 Ground: Equipment Ground Lugs: FEED THRU

PANEL: 1LB1 ALL LOADS IN VA

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
	900						0.00	REC	20/1	12	1	A	2	12	20/1	REC		720						0.00
	540						0.00	REC	20/1	12	3	B	4	12	20/1	REC		720						0.00
	720						0.00	REC	20/1	12	5	C	6	12	20/1	REC		540						0.00
					1000		0.00	COPIER	20/1	12	7	A	8	12	20/1									0.00
	360						0.00	REC	20/1	12	9	B	10	12	20/1	TV		1500						0.00
	720						0.00	REC	20/1	12	11	C	12	12	20/1	WP REC		500						0.00
	1000						0.00	REC	20/1	12	13	A	14	12	20/1	UC REFRIGERATOR						1000		0.00
	1000						0.00	REC	20/1	12	15	B	16	12	20/1	REC		1000						0.00
	1000						0.00	REC	20/1	12	17	C	18	12	20/1	REC		1000						0.00
	1000						0.00	FLOORBOX	20/1	12	19	A	20	12	20/1	CORD REEL						1000		0.00
	360				300		0.00	REC/TV	20/1	12	21	B	22	12	20/1	CORD REEL						1000		0.00
	900						0.00	REC	20/1	12	23	C	24	12	20/1	CORD REEL						1000		0.00
	900						0.00	OFF REC	20/1	12	25	A	26	12	20/1	CORD REEL						1000		0.00
	900						0.00	OFF REC	20/1	12	27	B	28	12	20/1	CORD REEL						1000		0.00
	720						0.00	REC	20/1	12	29	C	30	12	20/1	CORD REEL						1000		0.00
	720						0.00	REC	20/1	12	31	A	32											0.00
	1000						0.00	REC	20/1	12	33	B	34											0.00
					1000		0.00	MICROWAVE	20/1	12	35	C	36	12	20/1	CORD REEL						1000		0.00
					1000		0.00	REFRIGERATOR	20/1	12	37	A	38	12	20/1**	UC ICE						1000		0.00
					800		0.00	VENDING MACHINE	20/1**	12	39	B	40	12	20/1	PRINTER						1000		0.00
					800		0.00	VENDING MACHINE	20/1**	12	41	C	42	12	20/1	PRINTER						1000		0.00
0	12740	0	0	0	4900	0	0.00	TOTALS								TOTALS	0	5980	0	0	0	11000	0	0.00

PANEL: 1LB1 2 (Sectio... ALL LOADS IN VA

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
	1080						0.00	OFF REC	20/1	12	43	A	44	12	20/1	AUTOCLAVE						1000		0.00
	540				300		0.00	REC/TV	20/1	12	45	B	46	12	20/1	LAMINATOR						1000		0.00
	1080						0.00	REC	20/1	12	47	C	48	12	20/1	EF-B-01			696					0.00
	540						0.00	REC	20/1	12	49	A	50	12	20/1	EF-B-02			696					0.00
					1920		0.00	WASHER	20/1	12	51	B	52	10	30/1	EF-B-03			1656					0.00
					2496		0.00	DRYER	30/2	10	53	C	54	10	30/1	EF-B-04			1656					0.00
					2496		0.00	-	-	-	55	A	56	10	30/1	EF-B-05			1656					0.00
	1080						0.00	REC	20/1	12	57	B	58	12	20/1	TRAP PRIMER						300		0.00
					1920		0.00	WASHER	20/1	12	59	C	60	12	20/1	WP REC		720						0.00
					2496		0.00	DRYER	30/2	10	61	A	62	12	20/1	RED REC		500						0.00
					2496		0.00	-	-	-	63	B	64	12	20/1	RED REC		500						0.00
					1500		0.00	LASER PRINTER	20/1	12	65	C	66	12	20/1	RED REC		500						0.00
	500						0.00	REC	20/1	12	67	A	68	12	20/1	RED REC		500						0.00
	720						0.00	REC	20/1	12	69	B	70	12	20/1	IRRIGATION CONT						500		0.00
	900						0.00	REC	20/1	12	71	C	72		20/1	SPARE								1.00
					500		0.00	TV	20/1	12	73	A	74		20/1	SPARE								1.00
					300		0.00	TRAP PRIMER	20/1	12	75	B	76		20/1	SPARE								1.00
					300		0.00	TRAP PRIMER	20/1	12	77	C	78		20/1	SPARE								1.00
					300		0.00	TRAP PRIMER	20/1	12	79	A	80		20/1	SPARE								1.00
							1.00	SPARE	20/1	12	81	B	82		20/1	SPARE								1.00
							1.00	SPARE	20/1	12	83	C	84		20/1	SPARE								1.00
0	6440	0	0	0	17024	0	2.00	TOTALS								TOTALS	0	2720	6360	0	0	2800	0	7.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
0.0	27.9	6.4	0.0	0.0	35.7	0.0	9.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
0.0	18.9	6.4	0.0	0.0	35.7	0.0	4.5	Design KVA

Phase Load	
Ph	KVA
A	23.5
B	22.8
C	23.7

Panel Remarks:
** PROVIDE GFCI TYPE BREAKER
**PROVIDE IDE CONTACTOR TO BE
CONTROLLED BY THE BAS.

*Input di...
**100% ...

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	79.0	219.2		65.5	181.9

PANEL: 1LB1

Date: 6/3/2025 By: Linda

Job: Huffman New CTE Job No. 240157

Mounting: SURFACE Main... MCB (100A) Neutral: 100%

Voltage: 480Y/277V-3PH 4W Main... 100 AMPS

AIC... 42000 Ground: Equipment Ground Lugs: SINGLE

PANEL: 1EHA ALL LOADS IN VA

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
2000							0.00	EMERGENCY LIGHTS	20/1	12	1	A	2											0.00
2000							0.00	EMERGENCY LIGHTS	20/1	12	3	B	4											0.00
1000							0.00	EXIT SIGNS	20/1	12	5	C	6											0.00
							0.00				7	A	8											0.00
							0.00				9	B	10											0.00
							0.00				11	C	12											0.00
							0.00				13	A	14											0.00
							0.00				15	B	16											0.00
							0.00				17	C	18											0.00
							0.00				19	A	20											0.00
							0.00				21	B	22											0.00
							0.00				23	C	24											0.00
							0.00				25	A	26											0.00
							0.00				27	B	28											0.00
							0.00				29	C	30											0.00
							0.00				31	A	32											0.00
							0.00				33	B	34											0.00
							0.00				35	C	36											0.00
							0.00				37	A	38											0.00
							0.00				39	B	40											0.00
							0.00				41	C	42											0.00
5000	0	0	0	0	0	0	0.00	TOTALS								TOTALS	0	0	0	0	0	0	0	0.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Design KVA

Phase Load	
Ph	KVA
A	2.0
B	2.0
C	1.0

Panel Remarks:

*Input di...
**100% ...

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	5.0	6.0		6.3	7.5

PANEL: 1EHA

Date: 6/3/2025 By: Linda

Plot Stamp:
6/3/2025 3:14:47 PM

PBK

ARCHITECT PBK Architects, Inc.
PBK.com
HOUSTON
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-961-0608 P
713-961-4571 F
TX Firm: BR 1608

CIVIL
CONSULTANT NAME
T-000-000-0000
LANDSCAPE
CONSULTANT NAME
T-000-000-0000
STRUCTURAL
CONSULTANT NAME
T-000-000-0000
MEP
CONSULTANT NAME
T-000-000-0000
ACOUSTIC
CONSULTANT NAME
T-000-000-0000
THEATER
CONSULTANT NAME
T-000-000-0000
FOOD SERVICE
CONSULTANT NAME
T-000-000-0000
AV
CONSULTANT NAME
T-000-000-0000

LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT

KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED
PROFESSIONAL ENGINEER

LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date

CHECKED BY: PP
DRAWN BY: LT

ELECTRICAL PANEL SCHEDULES-CTE

E-704.C

ELECTRICAL PANEL SCHEDULES-CTE

E-705.C

FOR BLUEBEAM LABELING/OCR:

0"

1"

Job: Huffman New CTE Job No. 240157

Mounting **SURFACE** AIC... **42000**
Main... **MCB (100A)** Voltage: **480Y/277H-3PH 4W** Ground **Equipment Ground**
Neutral **100%** Main... **100 AMPS** Lugs **SINGLE**

PANEL: **1EHB** ALL LOADS IN VA

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
2000							0.00	EMERGENCY LIGHTS	20/1	12	**1**	**A**	**2**											0.00
2000							0.00	EMERGENCY LIGHTS	20/1	12	**3**	**B**	**4**											0.00
1000							0.00	EXIT SIGNS	20/1	12	**5**	**C**	**6**											0.00
							0.00				**7**	**A**	**8**											0.00
							0.00				**9**	**B**	**10**											0.00
							0.00				**11**	**C**	**12**											0.00
							0.00				**13**	**A**	**14**											0.00
							0.00				**15**	**B**	**16**											0.00
							0.00				**17**	**C**	**18**											0.00
							0.00				**19**	**A**	**20**											0.00
							0.00				**21**	**B**	**22**											0.00
							0.00				**23**	**C**	**24**											0.00
							0.00				**25**	**A**	**26**											0.00
							0.00				**27**	**B**	**28**											0.00
							0.00				**29**	**C**	**30**											0.00
							0.00				**31**	**A**	**32**											0.00
							0.00				**33**	**B**	**34**											0.00
							0.00				**35**	**C**	**36**											0.00
							0.00				**37**	**A**	**38**	10	30/3	SPD								0.00
							0.00				**39**	**B**	**40**	-	-	-								0.00
							0.00				**41**	**C**	**42**	-	-	-								0.00
5000	0	0	0	0	0	0	0.00	**TOTALS**								**TOTALS**	0	0	0	0	0	0	0	0.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Design KVA

*Input di...
**100% ...

Phase Load	
Ph	KVA
A	2.0
B	2.0
C	1.0

Panel Remarks:

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	5.0	6.0		6.3	7.5

PANEL: **1EHB**

Date: 6/3/2025 By: Linda

Job: Huffman New CTE Job No. 240157

Mounting **SURFACE** AIC... **10000**
Main... **MCB (125A)** Voltage: **208Y/120V-3PH 4W** Ground **Equipment Ground**
Neutral **200%** Main... **125 AMPS** Lugs **FEED THRU**

PANEL: **1ELA** ALL LOADS IN VA

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
					2880		0.00	IDF RACK	30/1	10	**1**	**A**	**2**	12	20/1	E102A DOOR HEAT							1920	0.00
					2880		0.00	IDF RACK	30/1	10	**3**	**B**	**4**	12	20/1	E102B TEMP ALARM							600	0.00
					1920		0.00	IDF RACK	20/1	12	**5**	**C**	**6**	12	20/1	E102C PRESS							600	0.00
					1920		0.00	IDF RACK	20/1	12	**7**	**A**	**8**	12	20/1	E102A DOOR HEAT							1920	0.00
					1000		0.00	IDF REC	20/1	12	**9**	**B**	**10**	12	20/1	E102B TEMP ALARM							600	0.00
					1000		0.00	IDF REC	20/1	12	**11**	**C**	**12**	12	20/1	E102C PRESS							600	0.00
					1000		0.00	IDF REC	20/1	12	**13**	**A**	**14**	12	20/1	E102E PANIC ALARM							1200	0.00
					1000		0.00	IDF REC	20/1	12	**15**	**B**	**16**	12	20/2	E103C FREEZER							1664	0.00
					500		0.00	ACCESS CONTROL	20/1	12	**17**	**C**	**18**	-	-	-							1664	0.00
					500		0.00	FIRE ALARM	20/1	12	**19**	**A**	**20**	12	20/1	E103D COOLER							1200	0.00
				1903			0.00	ACCU/FCU-211	20/2	12	**21**	**B**	**22**	12	20/1	E103F DRAIN LINE							1920	0.00
				1903			0.00	-	-	-	**23**	**C**	**24**			SPACE								0.00
						4800	0.00	E103 REF SYS	40/3	8	**25**	**A**	**26**			SPACE								0.00
						4800	0.00	-	-	-	**27**	**B**	**28**			SPACE								0.00
						4800	0.00	-	-	-	**29**	**C**	**30**			SPACE								0.00
							0.00	SPACE			**31**	**A**	**32**			SPACE								0.00
							0.00	SPACE			**33**	**B**	**34**			SPACE								0.00
							0.00	SPACE			**35**	**C**	**36**			SPACE								0.00
							0.00	SPACE			**37**	**A**	**38**	10	30/3	SPD								0.00
							0.00	SPACE			**39**	**B**	**40**	-	-	-								0.00
							0.00	SPACE			**41**	**C**	**42**	-	-	-								0.00
0	0	0	0	0	3806	14600	14400	0.00	**TOTALS**							**TOTALS**	0	0	0	0	0	0	13888	0.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
0.0	0.0	0.0	0.0	3.8	14.6	28.3	0.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
0.0	0.0	0.0	0.0	3.8	14.6	18.4	0.0	Design KVA

*Input di...
**100% ...

Phase Load	
Ph	KVA
A	17.3
B	16.4
C	13.0

Panel Remarks:

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	46.7	129.6		36.8	102.1

PANEL: **1ELA**

Date: 6/3/2025 By: Linda

Job: Huffman New CTE Job No. 240157

Mounting **SURFACE** AIC... **10000**
Main... **MCB (125A)** Voltage: **208Y/120V-3PH 4W** Ground **Equipment Ground**
Neutral **200%** Main... **125 AMPS** Lugs **FEED THRU**

PANEL: **1ELB** ALL LOADS IN VA

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
					2880		0.00	IDF RACK	30/1	10	**1**	**A**	**2**											0.00
					2880		0.00	IDF RACK	30/1	10	**3**	**B**	**4**	12	20/1	E102A DOOR LIGHTS							1920	0.00
					1920		0.00	IDF RACK	20/1	12	**5**	**C**	**6**	12	20/1	E102B TEMP ALARM							600	0.00
					1920		0.00	IDF RACK	20/1	12	**7**	**A**	**8**	12	20/1	E102A DOOR LIGHTS							1920	0.00
					1000		0.00	IDF REC	20/1	12	**9**	**B**	**10**	12	20/1	E102B TEMP ALARM							600	0.00
					1000		0.00	IDF REC	20/1	12	**11**	**C**	**12**	12	20/1	103D COOLER COIL							1200	0.00
					1000		0.00	IDF REC	20/1	12	**13**	**A**	**14**	12	20/1	103G FLORAL BOX COIL							600	0.00
					1000		0.00	IDF REC	20/1	12	**15**	**B**	**16**	12	20/1	103G FLORAL BOX COIL							600	0.00
					500		0.00	ACCESS CONTROL	20/1	12	**17**	**C**	**18**	8	40/3	E103 REF SYS							4800	0.00
					500		0.00	FIRE ALARM	20/1	12	**19**	**A**	**20**	-	-	-							4800	0.00
				1903			0.00	ACCU/FCU-126	20/2	12	**21**	**B**	**22**	-	-	-							4800	0.00
				1903			0.00	-	-	-	**23**	**C**	**24**											0.00
					500		0.00	INTRUSION DETECT	20/1	12	**25**	**A**	**26**											0.00
					500		0.00	BDA	20/1	12	**27**	**B**	**28**											0.00
							0.00				**29**	**C**	**30**											0.00
							0.00				**31**	**A**	**32**											0.00
							0.00				**33**	**B**	**34**											0.00
							0.00				**35**	**C**	**36**											0.00
							0.00				**37**	**A**	**38**	10	30/3	SPD								0.00
							0.00				**39**	**B**	**40**	-	-	-								0.00
							0.00				**41**	**C**	**42**	-	-	-								0.00
0	0	0	0	0	3806	15600	0	0.00	**TOTALS**							**TOTALS**	0	0	0	0	0	0	21840	0.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
0.0	0.0	0.0	0.0	3.8	15.6	21.8	0.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
0.0	0.0	0.0	0.0	3.8	15.6	14.2	0.0	Design KVA

*Input di...
**100% ...

Phase Load	
Ph	KVA
A	14.1
B	15.2
C	11.9

Panel Remarks:

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	41.2	114.5		33.8	93.3

PANEL: **1ELB**

Date: 6/3/2025 By: Linda

Job: Huffman New CTE Job No. 240157

Mounting **SURFACE** AIC... **10000**
Main... **MCB (100A)** Voltage: **208Y/120V-3PH 4W** Ground **Equipment Ground**
Neutral **200%** Main... **100 AMPS** Lugs **FEED THRU**

PANEL: **RP1** ALL LOADS IN VA

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description	Amp/P	Wire	Cir. No.	Ph	Cir. No.	Wire	Amp/P	Description	Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S
	1920						0.00	D1 REC	20/1	12	**1**	**A**	**2**		20/1	D1 REC		1920						0.00
	1920						0.00	D2 REC	20/1	12	**3**	**B**	**4**		20/1	D2 REC		1920						0.00
	1920						0.00	D3 REC	20/1	12	**5**	**C**	**6**		20/1	D3 REC		1920						0.00
	1920						0.00	D4 REC	20/1	12	**7**	**A**	**8**		20/1	D4 REC		1920						0.00
	1920						0.00	D5 REC	20/1	12	**9**	**B**	**10**		20/1	D5 REC		1920						0.00
	1920						0.00	D6 REC	20/1	12	**11**	**C**	**12**		20/1	D6 REC		1920						0.00
	1920						0.00	D7 REC	20/1	12	**13**	**A**	**14**		20/1	D7 REC		1920						0.00
	1920						0.00	D8 REC	20/1	12	**15**	**B**	**16**		20/1	D8 REC		1920						0.00
	1920						0.00	D9 REC	20/1	12	**17**	**C**	**18**		20/1	D9 REC		1920						0.00
	1920						0.00	D10 REC	20/1	12	**19**	**A**	**20**		20/1	D10 REC		1920						0.00
							1.00	SPARE	20/1		**21**	**B**	**22**		20/1	SPARE								1.00
							1.00	SPARE	20/1		**23**	**C**	**24**		20/1	SPARE								1.00
0	19200	0	0	0	0	0	11.00	**TOTALS**								**TOTALS**	0	19200	0	0	0	0	0	8.00

LOAD SUMMARY

Ltg.	Recept	Motor	Heat	Cool	Other	Kitchen	S/S	Description
0.0	38.4	0.0	0.0	0.0	0.0	0.0	19.0	Connected KVA
1.25	**	1.00	1.00	1.00	1.00	0.65	0.50	*Design Factors
0.0	24.2	0.0	0.0	0.0	0.0	0.0	9.5	Design KVA

*Input di...
**100% ...

Phase Load	
Ph	KVA
A	15.4
B	11.5
C	11.5

Panel Remarks:

	Con. KVA	Con. Amps		Des. KVA	Des. Amps
TOTAL	57.4	159.3		33.7	93.5

PANEL: **RP1**

Date: 6/3/2025 By: Linda

PBK

ARCHITECT PBK Architects, Inc.
PBK.com
HOUSTON
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-961-0608 P
713-961-4571 F
TX Firm: BR 1608

CIVIL
CONSULTANT NAME
T 000-000-0000

LANDSCAPE
CONSULTANT NAME
T 000-000-0000

STRUCTURAL
CONSULTANT NAME
T 000-000-0000

MEP
CONSULTANT NAME
T 000-000-0000

ACOUSTIC
CONSULTANT NAME
T 000-000-0000

THEATER
CONSULTANT NAME
T 000-000-0000

FOOD SERVICE
CONSULTANT NAME
T 000-000-0000

CODE
CONSULTANT NAME
T 000-000-0000

LEAF ENGINEERS

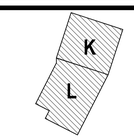
New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS



KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED
PROFESSIONAL ENGINEER

LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date

CHECKED BY: PP

DRAWN BY: LT

ELECTRICAL PANEL SCHEDULES-CTE

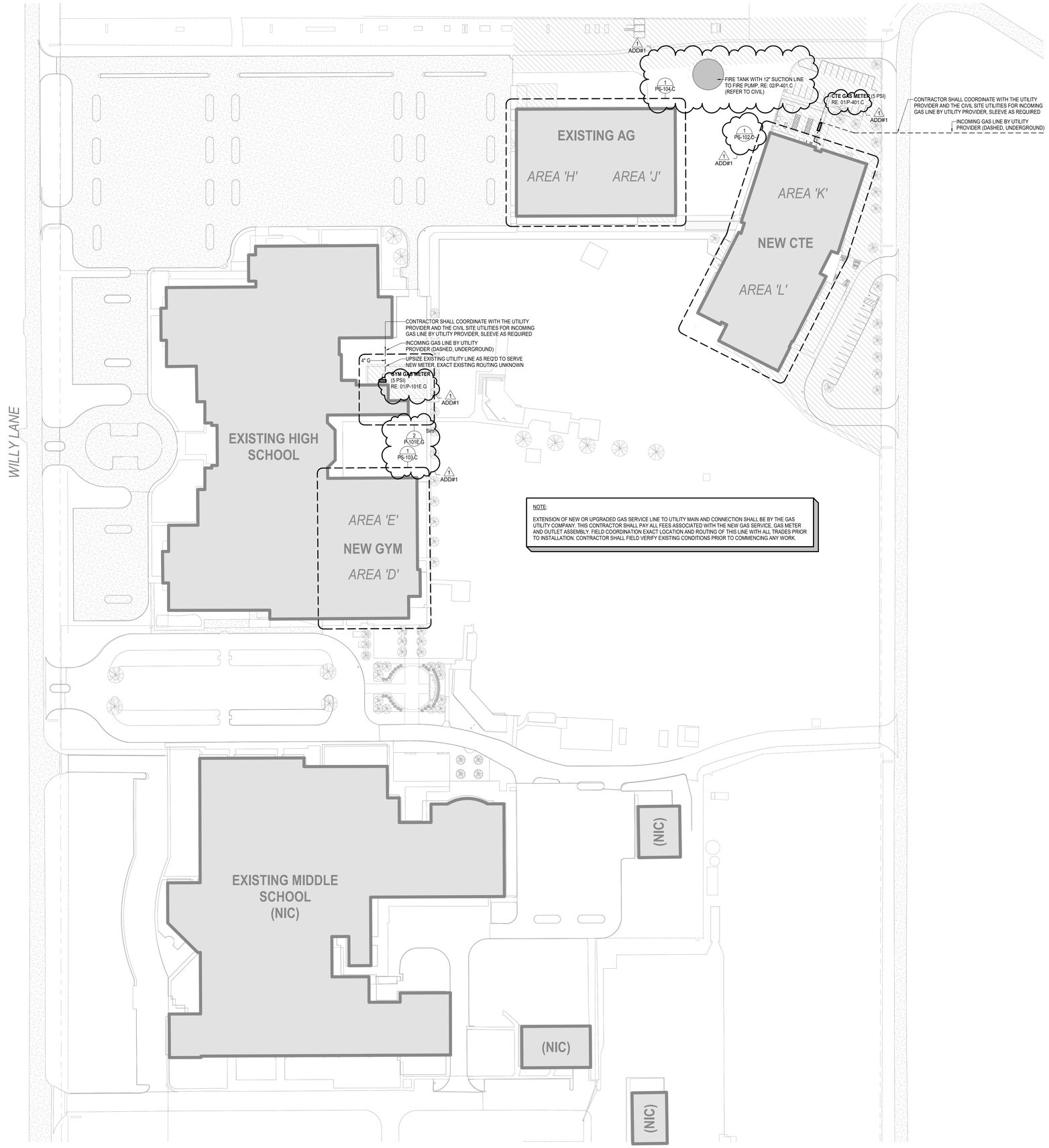
E-705.C

Plot Stamp:
6/4/2025 3:54:19 PM

PLUMBING SITE PLAN - OVERALL

PS-101

FOR BLUEBEAM LABELING/OCR:



NOTE:

EXTENSION OF NEW OR UPGRADED GAS SERVICE LINE TO UTILITY MAIN AND CONNECTION SHALL BE BY THE GAS UTILITY COMPANY. THIS CONTRACTOR SHALL PAY ALL FEES ASSOCIATED WITH THE NEW GAS SERVICE, GAS METER AND OUTLET ASSEMBLY. FIELD COORDINATION EXACT LOCATION AND ROUTING OF THIS LINE WITH ALL TRADES PRIOR TO INSTALLATION. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO COMMENCING ANY WORK.

1 PLUMBING SITE PLAN - OVERALL

1" = 60'-0"

GENERAL NOTES - PLUMBING PLAN

A. THE CONTRACTOR SHALL COMPLY WITH ALL AUTHORITIES HAVING JURISDICTION.

B. ALL FINAL CONNECTIONS TO FIXTURES AND EQUIPMENT SHALL BE MADE BY THE PLUMBING CONTRACTOR.

C. ALL PLUMBING PIPING SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO ANY INSTALLATION OF ALL PLUMBING FIXTURES AND EQUIPMENT BY THE PLUMBING CONTRACTOR.

D. ALL FLOOR DRAINS AND FLOOR SINKS SHOWN ON THIS DRAWING SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO INSTALLATION.

E. REFER TO ARCHITECTURAL DRAWING FOR EXACT LOCATIONS OF FIXTURES, EQUIPMENT, ETC. DO NOT SCALE FROM PLUMBING DRAWINGS.

F. ALL WALL CLEAN-OUTS SHALL BE ACCESSIBLE BY AN ACCESS PANEL.

G. PROVIDE AND INSTALL A DOUBLE EXTERIOR CLEAN-OUT (DFCO) ON ALL SANITARY LINES EXITING THE BUILDING.

H. ALL FLOOR DRAINS AND FLOOR SINKS SHALL BE PROVIDED WITH A TRAP PRIMER AND INSTALLED BY THE PLUMBING CONTRACTOR.

I. FIXTURES DESIGNATED AS ADA ACCESSIBLE BY ARCHITECT SHALL BE INSTALLED AT ADA ACCESSIBLE HEIGHT PER ARCHITECTURAL DETAILS.

J. ALL DOMESTIC COLD AND HOT WATER TAKE-OFFS SHALL HAVE AN ISOLATION SHUT-OFF VALVE.

K. FLOOR DRAINS AND FLOOR SINKS IN MECHANICAL ROOMS SHALL BE SET NOT LESS THAN 6" FROM HOUSEKEEPING PADS. RE: MECHANICAL DRAWINGS. DO NOT PLACE ON, OR IN, HOUSEKEEPING PAD, OR UNDERNEATH EQUIPMENT.

L. CONTRACTOR SHALL DEWATER ANY AREA AT OR BELOW GRADE PRIOR TO SETTING EQUIPMENT.

M. CONTRACTOR SHALL PROVIDE AND INSTALL A TRAP PRIMER, TP-1, AND A HOSE BIBB, HB-3, IN ALL MECHANICAL ROOMS.

N. CONTRACTOR SHALL PROVIDE AND INSTALL A HOSE BIBB WITH WHEEL HANDLE IN ALL MECHANICAL ROOMS, HB-3.

O. ANY AND ALL WATER PIPING EXPOSED TO OUTSIDE ELEMENTS SHALL BE INSULATED AND HEAT TRACED TO PREVENT FREEZING.

P. ALL SANITARY 3" OR ABOVE SHALL BE INSPECTED BY A CAMERA PRIOR TO SUBSTANTIAL COMPLETION.

PBK

ARCHITECT PBK Architects, Inc.
PBK.com
HOUSTON
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-961-0608 P
713-961-4571 F
TX Firm: BR 1608

CIVIL
CONSULTANT NAME
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LANDSCAPE
CONSULTANT NAME
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STRUCTURAL
CONSULTANT NAME
T.000-000-0000
MEP
CONSULTANT NAME
T.000-000-0000
ACOUSTIC
CONSULTANT NAME
T.000-000-0000
THEATER
CONSULTANT NAME
T.000-000-0000
FOOD SERVICE
CONSULTANT NAME
T.000-000-0000
AV/IT
CONSULTANT NAME
T.000-000-0000

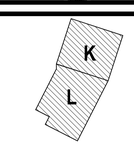
LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT



KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED
PROFESSIONAL ENGINEER

05/20/2025
LEAF ENGINEERS
F-10672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: SC

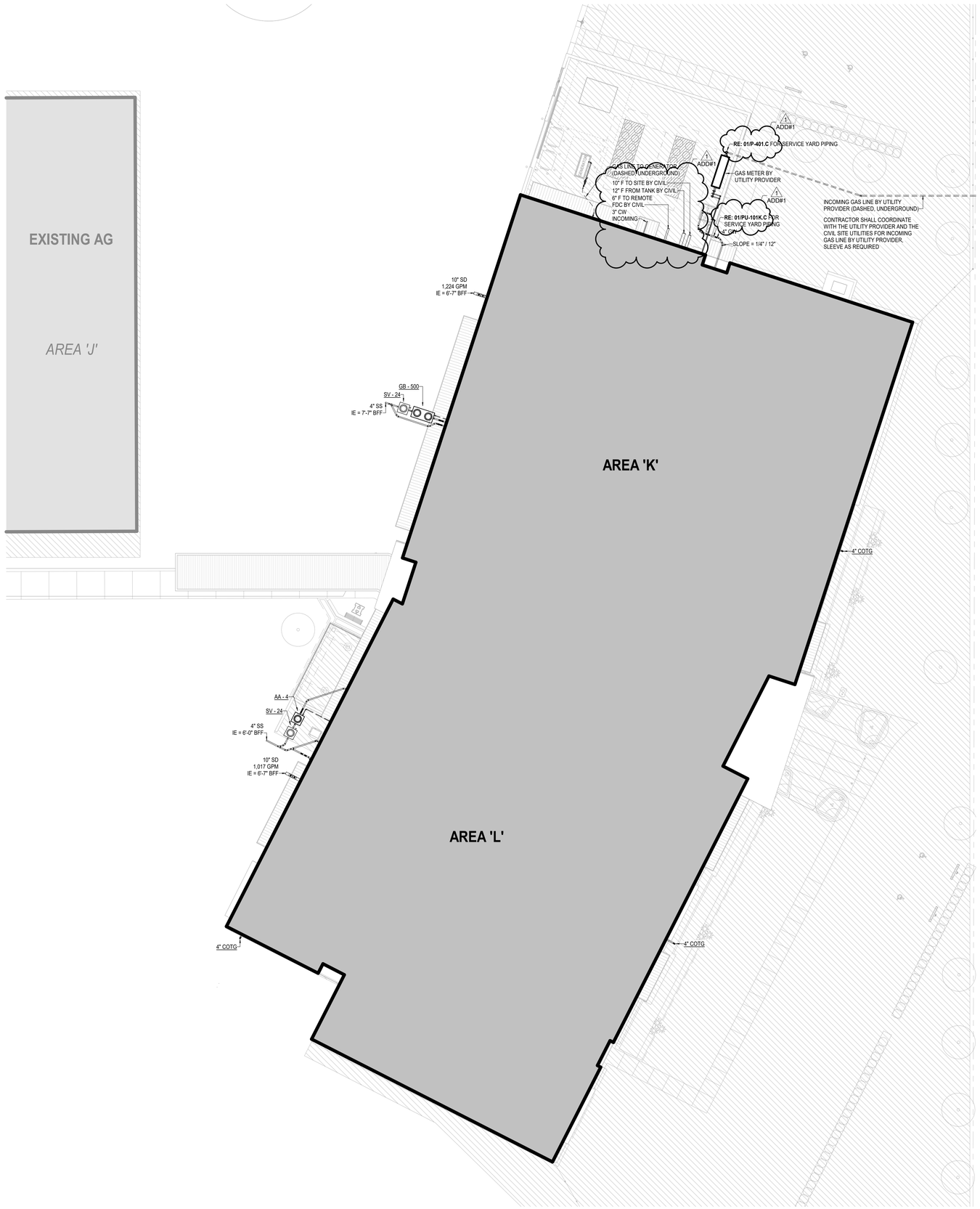
DRAWN BY: SC

PLUMBING SITE PLAN - OVERALL

PS-101

Plot Stamp:
6/3/2025 9:47:51 AM

PLUMBING SITE PLAN - CTE
PS-102.C
FOR BLUEBEAM LABELING/OCR:



1 PLUMBING SITE PLAN - NEW CTE
1/16" = 1'-0"

GENERAL NOTES - PLUMBING PLAN

A. THE CONTRACTOR SHALL COMPLY WITH ALL AUTHORITIES HAVING JURISDICTION.

B. ALL FINAL CONNECTIONS TO FIXTURES AND EQUIPMENT SHALL BE MADE BY THE PLUMBING CONTRACTOR.

C. ALL PLUMBING PIPING SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO ANY INSTALLATION OF ALL PLUMBING FIXTURES AND EQUIPMENT BY THE PLUMBING CONTRACTOR.

D. ALL FLOOR DRAINS AND FLOOR SINKS SHOWN ON THIS DRAWING SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO INSTALLATION.

E. REFER TO ARCHITECTURAL DRAWING FOR EXACT LOCATIONS OF FIXTURES, EQUIPMENT, ETC. DO NOT SCALE FROM PLUMBING DRAWINGS.

F. ALL WALL CLEAN-OUTS SHALL BE ACCESSIBLE BY AN ACCESS PANEL.

G. PROVIDE AND INSTALL A DOUBLE EXTERIOR CLEAN-OUT (DFCO) ON ALL SANITARY LINES EXITING THE BUILDING.

H. ALL FLOOR DRAINS AND FLOOR SINKS SHALL BE PROVIDED WITH A TRAP PRIMER AND INSTALLED BY THE PLUMBING CONTRACTOR.

I. FIXTURES DESIGNATED AS ADA ACCESSIBLE BY ARCHITECT SHALL BE INSTALLED AT ADA ACCESSIBLE HEIGHT PER ARCHITECTURAL DETAILS.

J. ALL DOMESTIC COLD AND HOT WATER TAKE-OFFS SHALL HAVE AN ISOLATION SHUT-OFF VALVE.

K. FLOOR DRAINS AND FLOOR SINKS IN MECHANICAL ROOMS SHALL BE SET NOT LESS THAN 6" FROM HOUSEKEEPING PADS. RE: MECHANICAL DRAWINGS. DO NOT PLACE ON, OR IN, HOUSEKEEPING PAD, OR UNDERNEATH EQUIPMENT.

L. CONTRACTOR SHALL DEWATER ANY AREA AT OR BELOW GRADE PRIOR TO SETTING EQUIPMENT.

M. CONTRACTOR SHALL PROVIDE AND INSTALL A TRAP PRIMER, TP-1, AND A HOSE BIBB, HB-3, IN ALL MECHANICAL ROOMS.

N. CONTRACTOR SHALL PROVIDE AND INSTALL A HOSE BIBB WITH WHEEL HANDLE IN ALL MECHANICAL ROOMS, HB-3.

O. ANY AND ALL WATER PIPING EXPOSED TO OUTSIDE ELEMENTS SHALL BE INSULATED AND HEAT TRACED TO PREVENT FREEZING.

P. ALL SANITARY 3" OR ABOVE SHALL BE INSPECTED BY A CAMERA PRIOR TO SUBSTANTIAL COMPLETION.

PBK

ARCHITECT PBK Architects, Inc.
PBK.com
HOUSTON
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-961-0608 P
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TX Firm: BR 1608
CIVIL
CONSULTANT NAME
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LANDSCAPE
CONSULTANT NAME
T-000-000-0000
STRUCTURAL
CONSULTANT NAME
T-000-000-0000
MEP
CONSULTANT NAME
T-000-000-0000
ACOUSTIC
CONSULTANT NAME
T-000-000-0000
THEATER
CONSULTANT NAME
T-000-000-0000
FOOD SERVICE
CONSULTANT NAME
T-000-000-0000
SECURITY
CONSULTANT NAME
T-000-000-0000
LEAF ENGINEERS

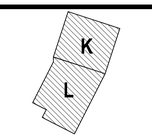
New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS



KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED
05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: SC
DRAWN BY: SC

PLUMBING SITE PLAN - CTE

ADD#1

PS-102.C

Plot Stamp:
6/3/2025 9:48:41 AM

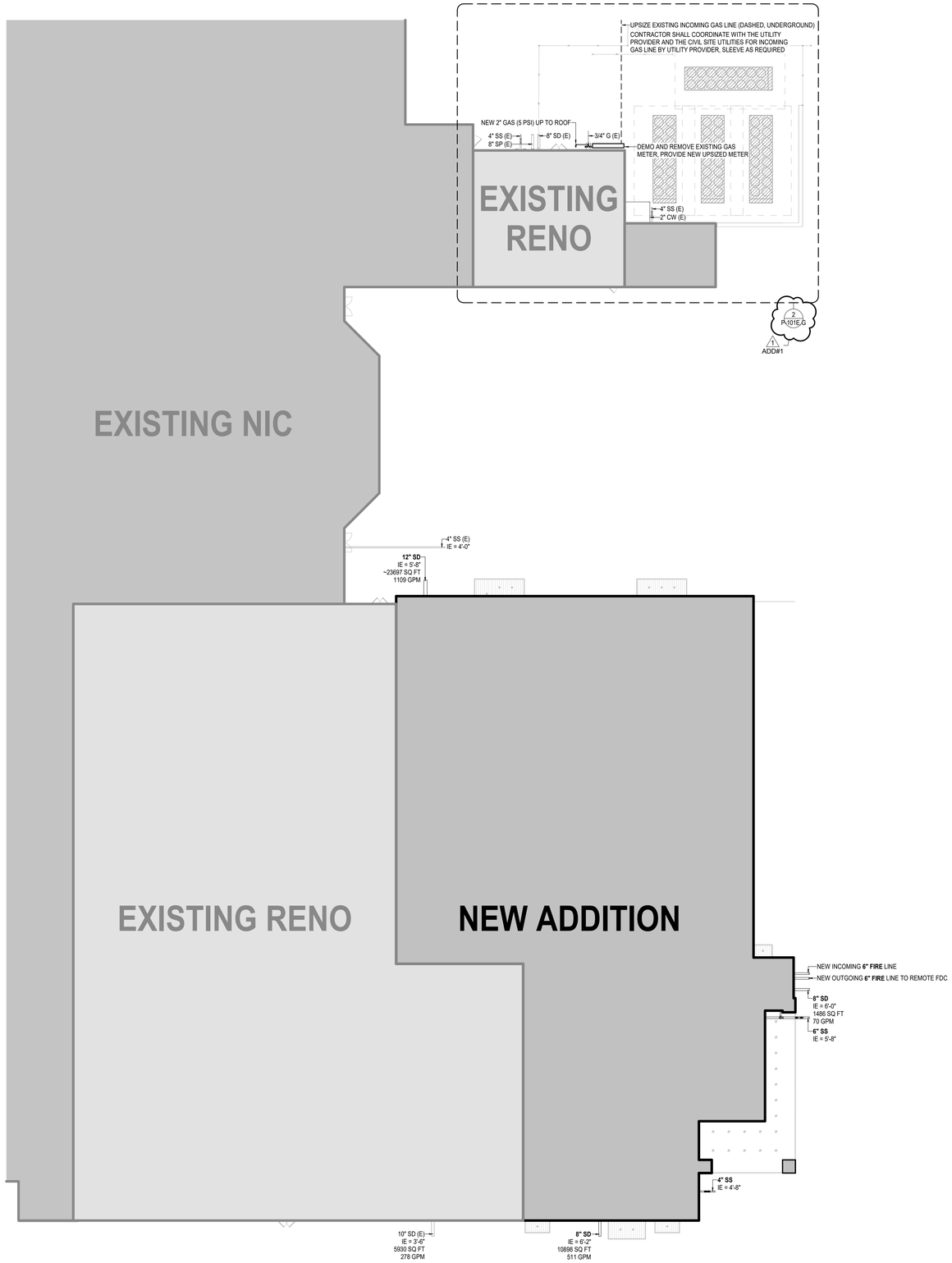
PLUMBING SITE PLAN - GYM

PS-103.G

FOR BLUEBEAM LABELING/OCR:

0"

1"



1 PLUMBING SITE PLAN - NEW ADDITION

1/16" = 1'-0"

GENERAL NOTES - PLUMBING PLAN

A. THE CONTRACTOR SHALL COMPLY WITH ALL AUTHORITIES HAVING JURISDICTION.

B. ALL FINAL CONNECTIONS TO FIXTURES AND EQUIPMENT SHALL BE MADE BY THE PLUMBING CONTRACTOR.

C. ALL PLUMBING PIPING SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO ANY INSTALLATION OF ALL PLUMBING FIXTURES AND EQUIPMENT BY THE PLUMBING CONTRACTOR.

D. ALL FLOOR DRAINS AND FLOOR SINKS SHOWN ON THIS DRAWING SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO INSTALLATION.

E. REFER TO ARCHITECTURAL DRAWING FOR EXACT LOCATIONS OF FIXTURES, EQUIPMENT, ETC. DO NOT SCALE FROM PLUMBING DRAWINGS.

F. ALL WALL CLEAN-OUTS SHALL BE ACCESSIBLE BY AN ACCESS PANEL.

G. PROVIDE AND INSTALL A DOUBLE EXTERIOR CLEAN-OUT (DFCO) ON ALL SANITARY LINES EXITING THE BUILDING.

H. ALL FLOOR DRAINS AND FLOOR SINKS SHALL BE PROVIDED WITH A TRAP PRIMER AND INSTALLED BY THE PLUMBING CONTRACTOR.

I. FIXTURES DESIGNATED AS ADA ACCESSIBLE BY ARCHITECT SHALL BE INSTALLED AT ADA ACCESSIBLE HEIGHT PER ARCHITECTURAL DETAILS.

J. ALL DOMESTIC COLD AND HOT WATER TAKE-OFFS SHALL HAVE AN ISOLATION SHUT-OFF VALVE.

K. FLOOR DRAINS AND FLOOR SINKS IN MECHANICAL ROOMS SHALL BE SET NOT LESS THAN 6" FROM HOUSEKEEPING PADS. RE: MECHANICAL DRAWINGS. DO NOT PLACE ON, OR IN, HOUSEKEEPING PAD, OR UNDERNEATH EQUIPMENT.

L. CONTRACTOR SHALL DEWATER ANY AREA AT OR BELOW GRADE PRIOR TO SETTING EQUIPMENT.

M. CONTRACTOR SHALL PROVIDE AND INSTALL A TRAP PRIMER, TP-1, AND A HOSE BIBB, HB-3, IN ALL MECHANICAL ROOMS.

N. CONTRACTOR SHALL PROVIDE AND INSTALL A HOSE BIBB WITH WHEEL HANDLE IN ALL MECHANICAL ROOMS, HB-3.

O. ANY AND ALL WATER PIPING EXPOSED TO OUTSIDE ELEMENTS SHALL BE INSULATED AND HEAT TRACED TO PREVENT FREEZING.

P. ALL SANITARY 3" OR ABOVE SHALL BE INSPECTED BY A CAMERA PRIOR TO SUBSTANTIAL COMPLETION.

PBK

ARCHITECT PBK Architects, Inc.
PBK.com
HOUSTON
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-961-0608 P
713-961-4571 F
TX Firm: BR 1608

CIVIL
CONSULTANT NAME
T-000-000-0000

LANDSCAPE
CONSULTANT NAME
T-000-000-0000

STRUCTURAL
CONSULTANT NAME
T-000-000-0000

MEP
CONSULTANT NAME
T-000-000-0000

ACOUSTIC
CONSULTANT NAME
T-000-000-0000

THEATER
CONSULTANT NAME
T-000-000-0000

FOOD SERVICE
CONSULTANT NAME
T-000-000-0000

CONSULTANT
CONSULTANT NAME
T-000-000-0000

LEAF ENGINEERS

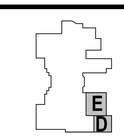
New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS



KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61522
PROFESSIONAL ENGINEER

05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: SC

DRAWN BY: SC

PLUMBING SITE PLAN - GYM

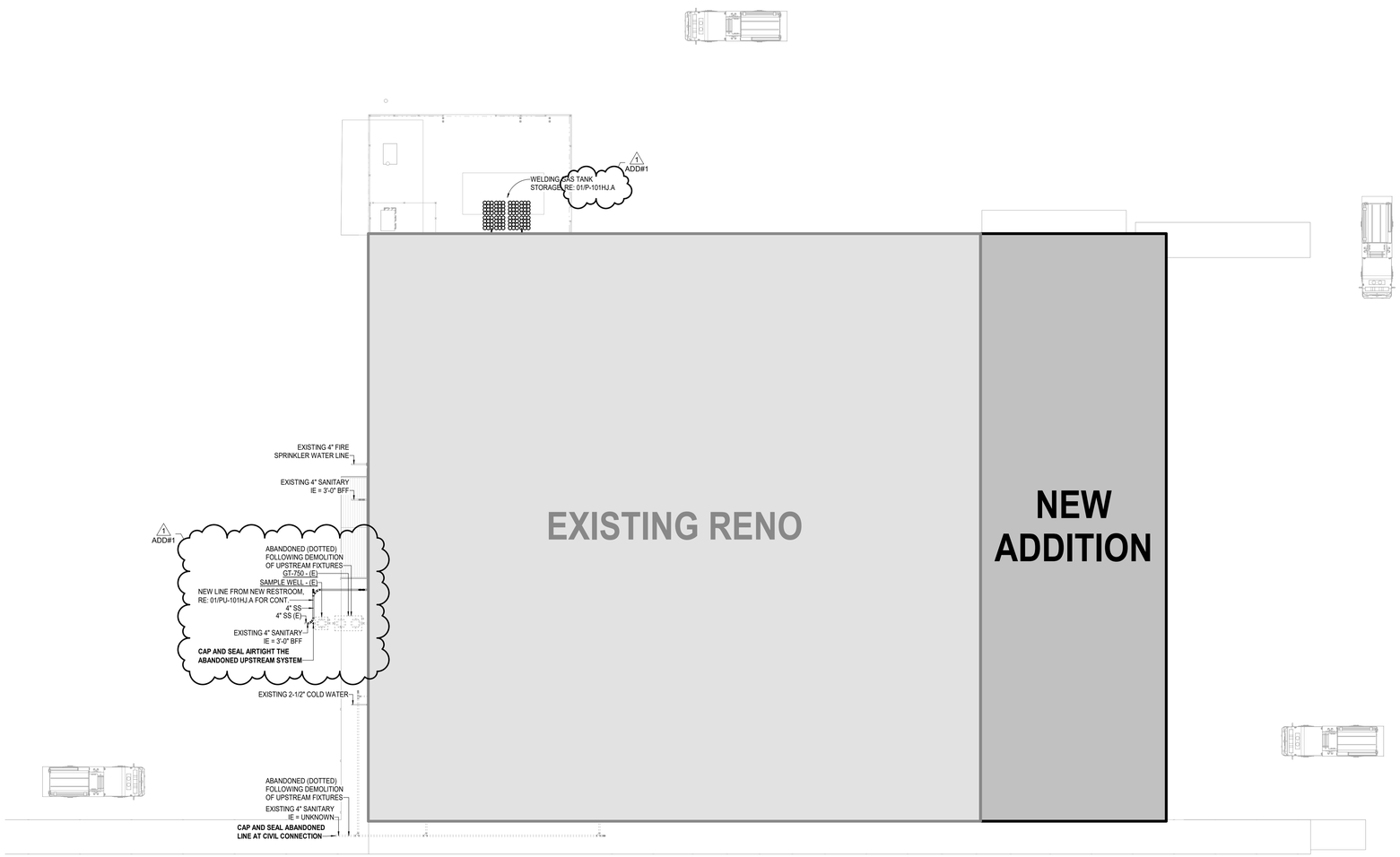
ADD#1

PS-103.G

Plot Stamp:
6/3/2025 10:48:19 AM

PLUMBING SITE PLAN - AG
PS-104.A
FOR BLUEBEAM LABELING/OCR:

0"
1"



1 PLUMBING SITE PLAN - NEW AG BUILDING
1/16" = 1'-0"

GENERAL NOTES - PLUMBING PLAN

A. THE CONTRACTOR SHALL COMPLY WITH ALL AUTHORITIES HAVING JURISDICTION.

B. ALL FINAL CONNECTIONS TO FIXTURES AND EQUIPMENT SHALL BE MADE BY THE PLUMBING CONTRACTOR.

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D. ALL FLOOR DRAINS AND FLOOR SINKS SHOWN ON THIS DRAWING SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO INSTALLATION.

E. REFER TO ARCHITECTURAL DRAWING FOR EXACT LOCATIONS OF FIXTURES, EQUIPMENT, ETC. DO NOT SCALE FROM PLUMBING DRAWINGS.

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M. CONTRACTOR SHALL PROVIDE AND INSTALL A TRAP PRIMER, TP-1, AND A HOSE BIBB, HB-3, IN ALL MECHANICAL ROOMS.

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P. ALL SANITARY 3" OR ABOVE SHALL BE INSPECTED BY A CAMERA PRIOR TO SUBSTANTIAL COMPLETION.

PBK

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TX Firm: BR 1608

CIVIL
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LANDSCAPE
EDGELAND
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STRUCTURAL
BOND ENGINEERS
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MEP/FP
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ACOUSTIC
BAI, LLC
T 713-965-0608
ENVELOPE
BEAM PROFESSIONALS
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FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS, LLc
T 281-350-2323

LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: AGRICULTURAL PAVILION

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS

H	J

KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED
PROFESSIONAL ENGINEER
05/21/2025
LEAF ENGINEERS
F-18672

CLIENT
Huffman Independent School District

DATE	PROJECT NUMBER
05/21/2025	240157

DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: SC
DRAWN BY: SC

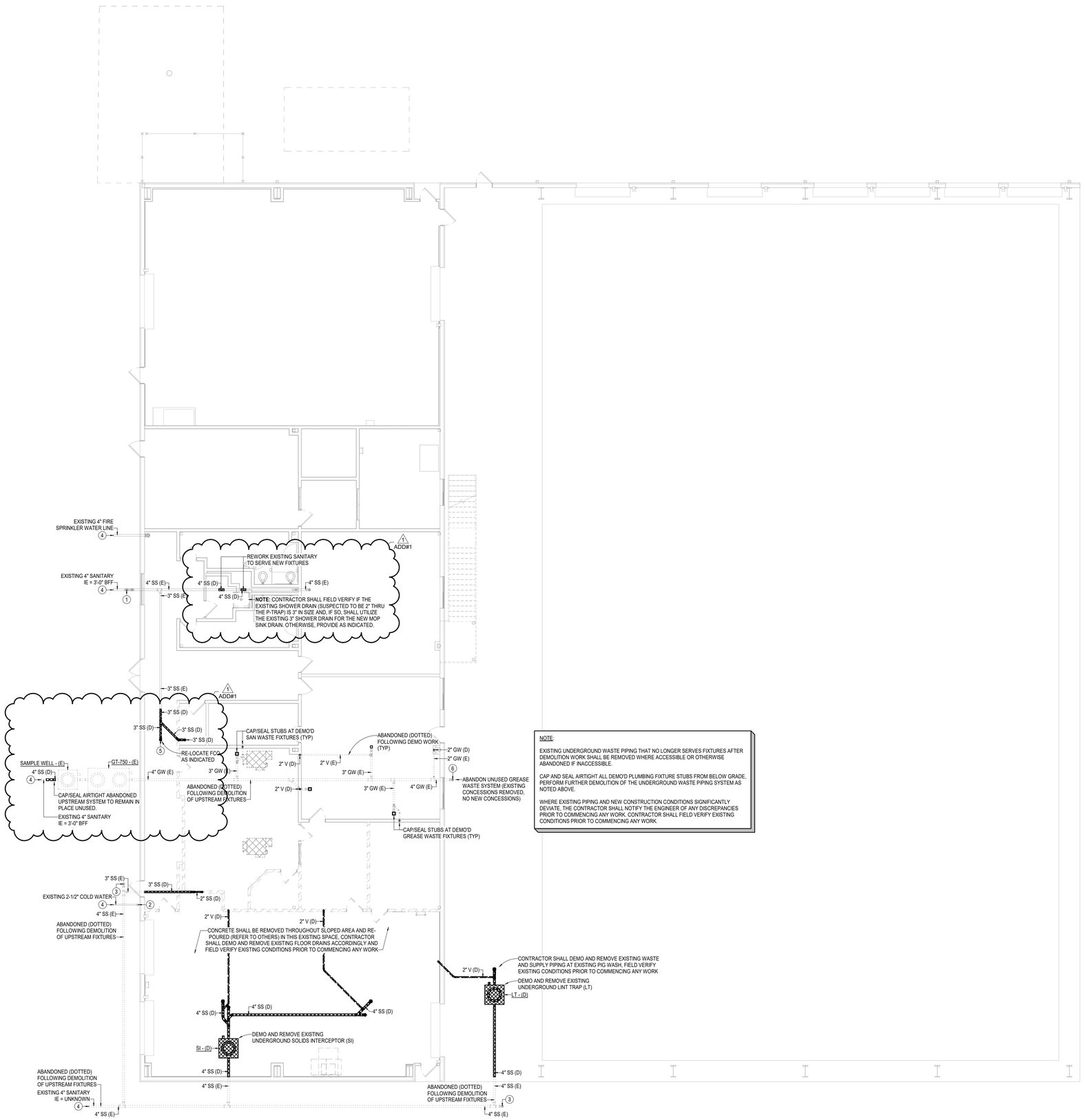
PLUMBING SITE PLAN - AG

ADD#1

PS-104.A

Plot Stamp:
6/3/2025 2:37:13 PM

1ST FLOOR PLUMBING UNDERFLOOR DEMO PLAN - AREAS H, J - AG
PUD-101HJ.A
FOR BLUEBEAM LABELING/OCR:



NOTE:

EXISTING UNDERGROUND WASTE PIPING THAT NO LONGER SERVES FIXTURES AFTER DEMOLITION WORK SHALL BE REMOVED WHERE ACCESSIBLE OR OTHERWISE ABANDONED IF INACCESSIBLE.

CAP AND SEAL AIRTIGHT ALL DEMO'D PLUMBING FIXTURE STUBS FROM BELOW GRADE. PERFORM FURTHER DEMOLITION OF THE UNDERGROUND WASTE PIPING SYSTEM AS NOTED ABOVE.

WHERE EXISTING PIPING AND NEW CONSTRUCTION CONDITIONS SIGNIFICANTLY DEVIATE, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCING ANY WORK. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO COMMENCING ANY WORK.

1 1ST FLOOR PLUMBING UNDERFLOOR DEMO PLAN - AREAS H & J
1/8" = 1'-0"

GENERAL NOTES - PLUMBING PLAN

A. THE CONTRACTOR SHALL COMPLY WITH ALL AUTHORITIES HAVING JURISDICTION.

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F. ALL WALL CLEAN-OUTS SHALL BE ACCESSIBLE BY AN ACCESS PANEL.

G. PROVIDE AND INSTALL A DOUBLE EXTERIOR CLEAN-OUT (DFCO) ON ALL SANITARY LINES EXITING THE BUILDING.

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KEYNOTES - PLUMBING PLAN

1 4" WASTE DOWN FROM DOUBLE EXTERIOR CLEANOUT TO GRADE.

2 INCOMING 2-1/2" COLD WATER ENTRY.

3 4" WASTE DOWN FROM CLEANOUT TO GRADE.

4 REFER TO CIVIL DRAWING FOR CONTINUATION.

5 3" WASTE DOWN FROM FLOOR CLEANOUT.

6 4" WASTE DOWN FROM FLOOR CLEANOUT.

PBK

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STRUCTURAL
KUTTAS ENGINEERING
T 713-965-0608
MEP
LEAF ENGINEERS
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ACOUSTIC
BAI, LLC
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ENVELOPE
BEAM PROFESSIONALS
T 713-965-0608
FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS, LLc
T 281-360-2323

LEAF ENGINEERS

New CTE Center & Hargrave High School
Additions & Renovations

BUILDING: AGRICULTURAL PAVILLION

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS

H	J

KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED PROFESSIONAL ENGINEER
05/21/2025
LEAF ENGINEERS
F-18672

CLIENT
Huffman Independent School District

DATE	PROJECT NUMBER
05/21/2025	240157

DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: SC
DRAWN BY: SC

1ST FLOOR PLUMBING UNDERFLOOR DEMO PLAN - AREAS H, J - AG

ADD#1

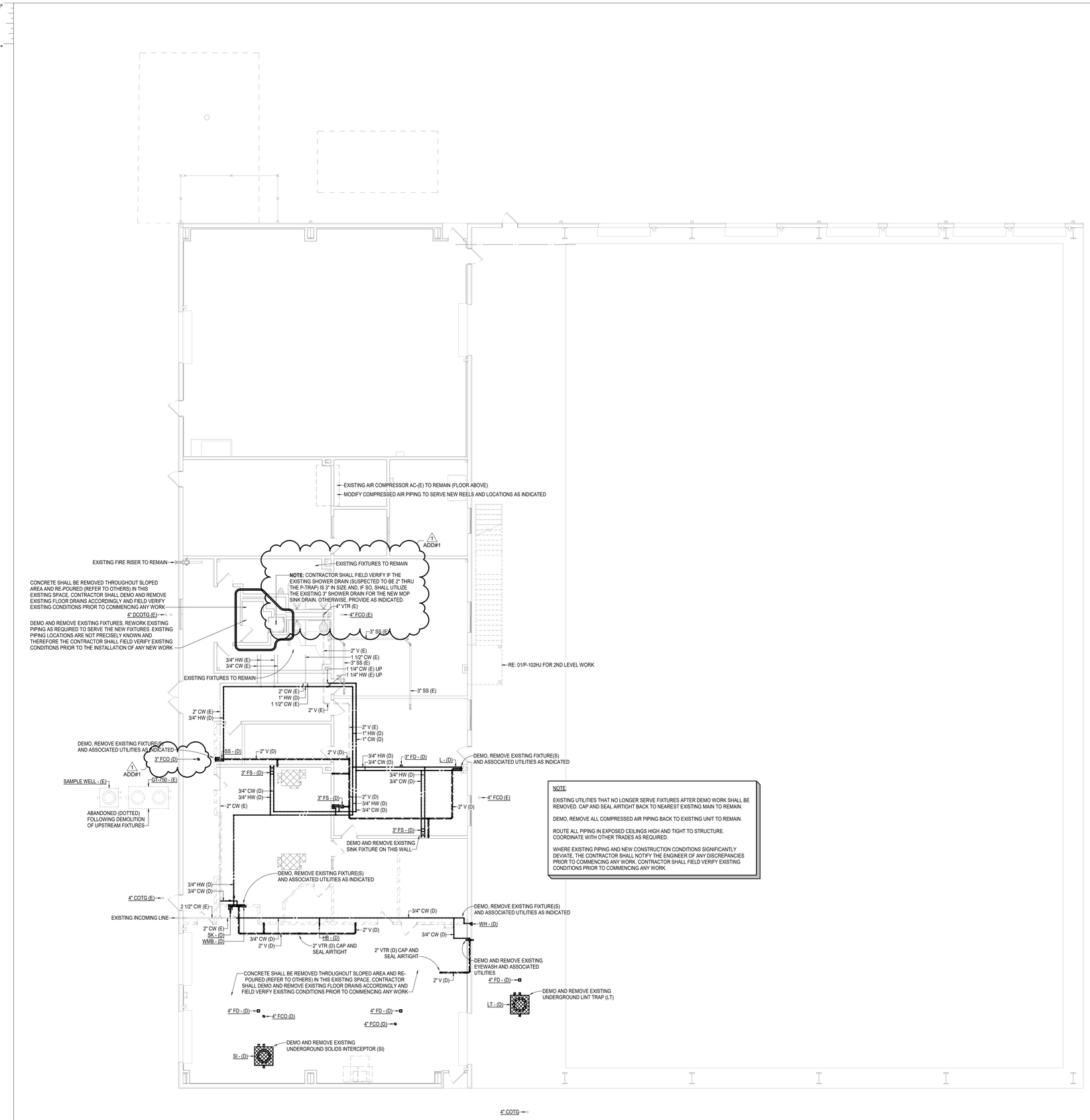
PUD-101HJ.A

Plot Stamp:
6/3/2025 2:37:16 PM

1ST FLOOR PLUMBING DEMO PLAN - AREAS H, J - AG

PD-101HJ.A

FOR BLUEBEAM LABELING/OCR:



NOTE:

EXISTING UTILITIES THAT NO LONGER SERVE FIXTURES AFTER DEMO WORK SHALL BE REMOVED. CAP AND SEAL AIRTIGHT BACK TO NEAREST EXISTING MAIN TO REMAIN.

DEMO, REMOVE ALL COMPRESSED AIR PIPING BACK TO EXISTING UNIT TO REMAIN.

ROUTE ALL PIPING IN EXPOSED CEILINGS HIGH AND TIGHT TO STRUCTURE. COORDINATE WITH OTHER TRADES AS REQUIRED.

WHERE EXISTING PIPING AND NEW CONSTRUCTION CONDITIONS SIGNIFICANTLY DEVIATE, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCING ANY WORK. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO COMMENCING ANY WORK.

1 1ST FLOOR PLUMBING FLOOR DEMO PLAN - AREAS H & J

1/8" = 1'-0"

GENERAL NOTES - PLUMBING PLAN

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KEYNOTES - PLUMBING PLAN

PBK

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TX Firm: BR 1608

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STRUCTURAL
BEAM PROFESSIONALS
T 713-965-0608
MEP/FP
LEAF ENGINEERS
T 713-965-5608
ACOUSTIC
BAI, LLC
T 713-965-0608
ENVELOPE
BEAM PROFESSIONALS
T 713-965-0608
FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS, LLc
T 281-350-2323

LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: AGRICULTURAL PAVILION

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT

H	J

KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED
PROFESSIONAL ENGINEER
05/21/2025
LEAF ENGINEERS
F-19672

CLIENT
Huffman Independent School District

DATE	PROJECT NUMBER
05/21/2025	240157

DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: SC

DRAWN BY: SC

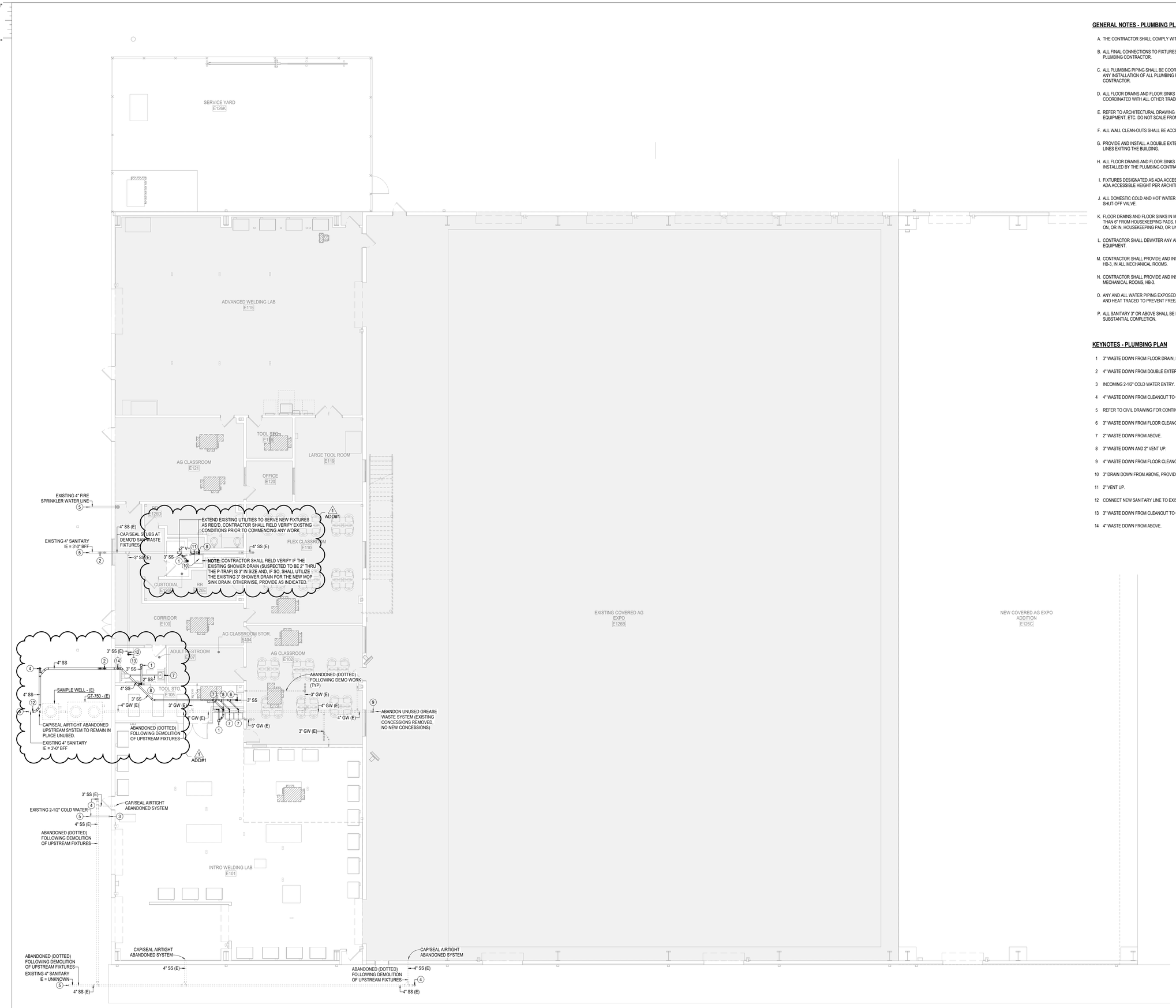
1ST FLOOR PLUMBING DEMO PLAN - AREAS H, J - AG

ADD#1

PD-101HJ.A

Plot Stamp:
6/3/2025 2:37:12 PM

1ST FLOOR PLUMBING UNDERFLOOR PLAN - AREAS H, J - AG
PU-101HJ.A
FOR BLUEBEAM LABELING/OCR:



1 1ST FLOOR PLUMBING UNDERFLOOR PLAN - COMPOSITE
1/8" = 1'-0"

GENERAL NOTES - PLUMBING PLAN

A. THE CONTRACTOR SHALL COMPLY WITH ALL AUTHORITIES HAVING JURISDICTION.

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KEYNOTES - PLUMBING PLAN

1 3" WASTE DOWN FROM FLOOR DRAIN, PROVIDE TRAP PRIMER.

2 4" WASTE DOWN FROM DOUBLE EXTERIOR CLEANOUT TO GRADE.

3 INCOMING 2-1/2" COLD WATER ENTRY.

4 4" WASTE DOWN FROM CLEANOUT TO GRADE.

5 REFER TO CIVIL DRAWING FOR CONTINUATION.

6 3" WASTE DOWN FROM FLOOR CLEANOUT.

7 2" WASTE DOWN FROM ABOVE.

8 3" WASTE DOWN AND 2" VENT UP.

9 4" WASTE DOWN FROM FLOOR CLEANOUT.

10 3" DRAIN DOWN FROM ABOVE, PROVIDE TRAP PRIMER.

11 2" VENT UP.

12 CONNECT NEW SANITARY LINE TO EXISTING.

13 3" WASTE DOWN FROM CLEANOUT TO GRADE.

14 4" WASTE DOWN FROM ABOVE.

ADD#1

PBK

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713-961-4571 F
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LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: AGRICULTURAL PAVILION

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Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS

H	J

KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
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05/21/2025
LEAF ENGINEERS
F-18672

CLIENT
Huffman Independent School District

DATE	PROJECT NUMBER
05/21/2025	240157

DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

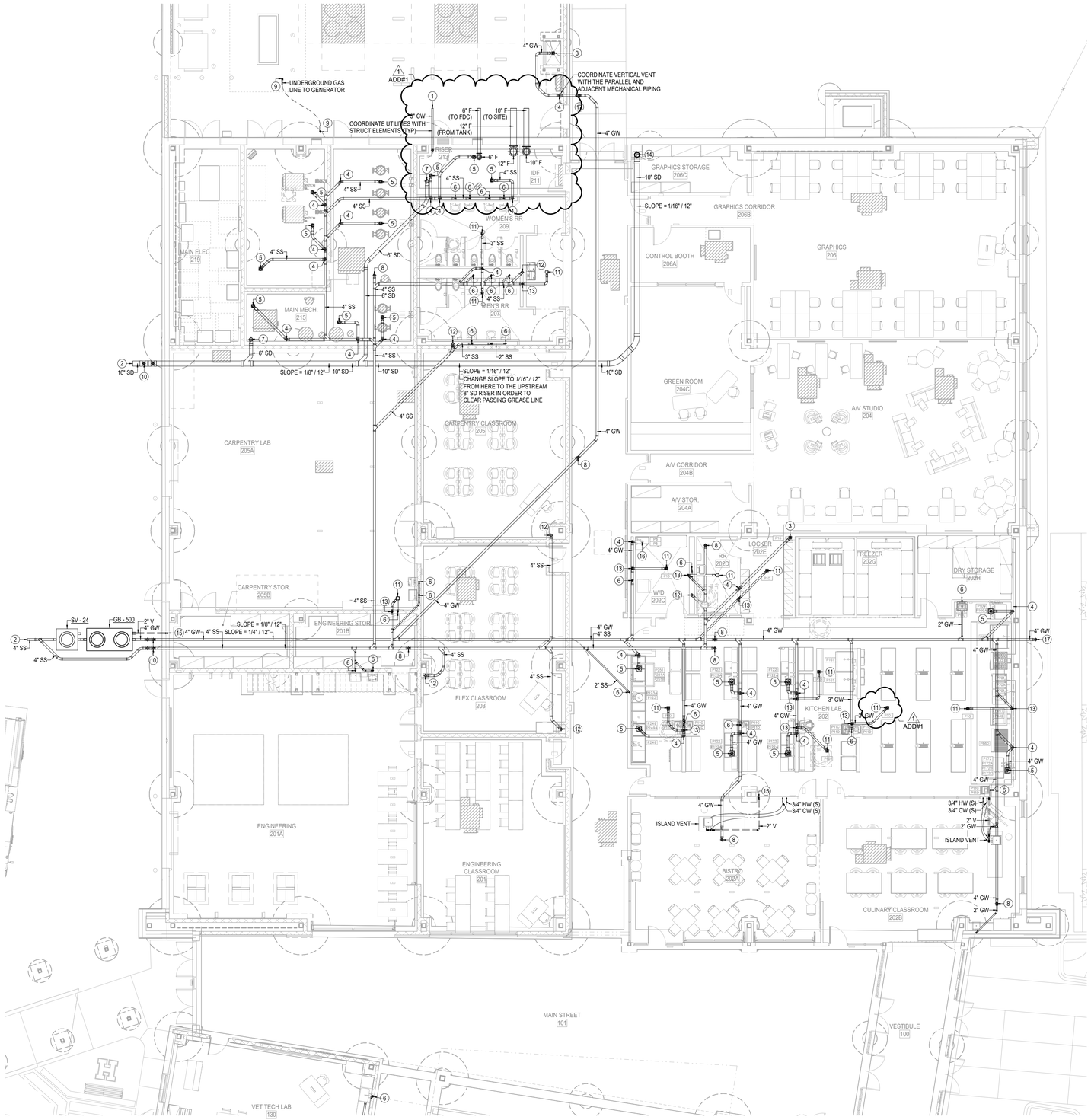
CHECKED BY: SC
DRAWN BY: SC

1ST FLOOR PLUMBING UNDERFLOOR PLAN - AREAS H, J - AG

PU-101HJ.A

Plot Stamp:
6/3/2025 2:37:15 PM

1ST FLOOR PLUMBING UNDERFLOOR PLAN - AREA K - CTE
PU-101K.C
FOR BLUEBEAM LABELING/OCR:



1 1ST FLOOR PLUMBING UNDERFLOOR PLAN - AREA K
1/8" = 1'-0"

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D. ALL FLOOR DRAINS AND FLOOR SINKS SHOWN ON THIS DRAWING SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO INSTALLATION.

E. REFER TO ARCHITECTURAL DRAWING FOR EXACT LOCATIONS OF FIXTURES, EQUIPMENT, ETC. DO NOT SCALE FROM PLUMBING DRAWINGS.

F. ALL WALL CLEAN-OUTS SHALL BE ACCESSIBLE BY AN ACCESS PANEL.

G. PROVIDE AND INSTALL A DOUBLE EXTERIOR CLEAN-OUT (DFCO) ON ALL SANITARY LINES EXITING THE BUILDING.

H. ALL FLOOR DRAINS AND FLOOR SINKS SHALL BE PROVIDED WITH A TRAP PRIMER AND INSTALLED BY THE PLUMBING CONTRACTOR.

I. FIXTURES DESIGNATED AS ADA ACCESSIBLE BY ARCHITECT SHALL BE INSTALLED AT ADA ACCESSIBLE HEIGHT PER ARCHITECTURAL DETAILS.

J. ALL DOMESTIC COLD AND HOT WATER TAKE-OFFS SHALL HAVE AN ISOLATION SHUT-OFF VALVE.

K. FLOOR DRAINS AND FLOOR SINKS IN MECHANICAL ROOMS SHALL BE SET NOT LESS THAN 6" FROM HOUSEKEEPING PADS. RE: MECHANICAL DRAWINGS. DO NOT PLACE ON, OR IN, HOUSEKEEPING PAD, OR UNDERNEATH EQUIPMENT.

L. CONTRACTOR SHALL DEWATER ANY AREA AT OR BELOW GRADE PRIOR TO SETTING EQUIPMENT.

M. CONTRACTOR SHALL PROVIDE AND INSTALL A TRAP PRIMER, TP-1, AND A HOSE BIBB, HB-3, IN ALL MECHANICAL ROOMS.

N. CONTRACTOR SHALL PROVIDE AND INSTALL A HOSE BIBB WITH WHEEL HANDLE IN ALL MECHANICAL ROOMS, HB-3.

O. ANY AND ALL WATER PIPING EXPOSED TO OUTSIDE ELEMENTS SHALL BE INSULATED AND HEAT TRACED TO PREVENT FREEZING.

P. ALL SANITARY 3" OR ABOVE SHALL BE INSPECTED BY A CAMERA PRIOR TO SUBSTANTIAL COMPLETION.

KEYNOTES - PLUMBING PLAN

1 INCOMING 3" COLD WATER ENTRY.

2 REFER TO CIVIL DRAWING FOR CONTINUATION.

3 4" WASTE DOWN FROM FLOOR DRAIN, PROVIDE TRAP PRIMER.

4 4" WASTE DOWN AND 2" VENT UP.

5 4" WASTE DOWN FROM FLOOR SINK, PROVIDE TRAP PRIMER.

6 2" WASTE DOWN FROM ABOVE.

7 6" STORM PIPE DOWN FROM ABOVE.

8 4" WASTE DOWN FROM FLOOR CLEANOUT.

9 2" GAS UP.

10 4" WASTE DOWN FROM DOUBLE EXTERIOR CLEANOUT TO GRADE.

11 3" WASTE DOWN FROM FLOOR DRAIN, PROVIDE TRAP PRIMER.

12 4" WASTE DOWN FROM ABOVE.

13 3" WASTE DOWN AND 2" VENT UP.

14 8" STORM PIPE DOWN FROM ABOVE.

15 2" VENT UP.

16 4" DRAIN DOWN FROM ABOVE, PROVIDE TRAP PRIMER.

17 4" WASTE DOWN FROM CLEANOUT TO GRADE.

PBK

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HOUSTON
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-965-0608 P
713-961-4571 F
TX Firm: BR 1608

DISCIPLINE	CONSULTANT NAME
CIVIL	T.000-000-0000
LANDSCAPE	T.000-000-0000
STRUCTURAL	T.000-000-0000
MECHANICAL	T.000-000-0000
ELECTRICAL	T.000-000-0000
ACOUSTIC	T.000-000-0000
THEATER	T.000-000-0000
FOOD SERVICE	T.000-000-0000
CONSULTANT NAME	T.000-000-0000

LEAF ENGINEERS

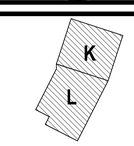
New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS



KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED
PROFESSIONAL ENGINEER
05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: SC
DRAWN BY: SC

1ST FLOOR PLUMBING UNDERFLOOR PLAN - AREA K - CTE

ADD#1

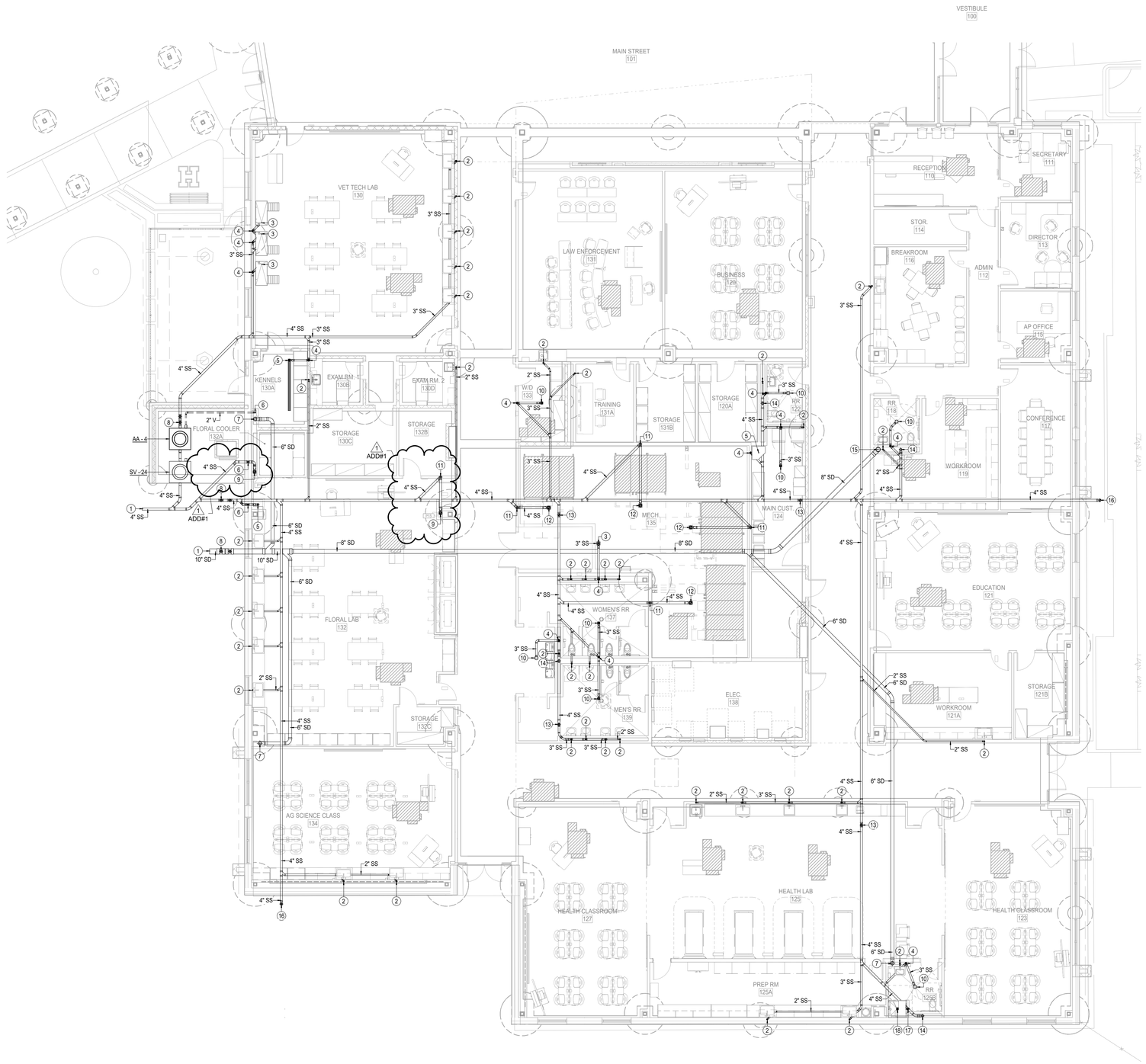
PU-101K.C

Plot Stamp:
6/3/2025 2:52:03 PM

1ST FLOOR PLUMBING UNDERFLOOR PLAN - AREA L - CTE

PU-101L.C

FOR BLUEBEAM LABELING/OCR:



1 1ST FLOOR PLUMBING UNDERFLOOR PLAN - AREA L

1/8" = 1'-0"

GENERAL NOTES - PLUMBING PLAN

A. THE CONTRACTOR SHALL COMPLY WITH ALL AUTHORITIES HAVING JURISDICTION.

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F. ALL WALL CLEAN-OUTS SHALL BE ACCESSIBLE BY AN ACCESS PANEL.

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KEYNOTES - PLUMBING PLAN

1 REFER TO CIVIL DRAWING FOR CONTINUATION.

2 2" WASTE DOWN FROM ABOVE.

3 3" WASTE DOWN FROM FLOOR SINK, PROVIDE TRAP PRIMER.

4 3" WASTE DOWN AND 2" VENT UP.

5 3" DRAIN DOWN FROM ABOVE, PROVIDE TRAP PRIMER.

6 2" VENT UP.

7 6" STORM PIPE DOWN FROM ABOVE.

8 4" WASTE DOWN FROM DOUBLE EXTERIOR CLEANOUT TO GRADE.

9 4" WASTE DOWN FROM FLOOR DRAIN, PROVIDE TRAP PRIMER.

10 3" WASTE DOWN FROM FLOOR DRAIN, PROVIDE TRAP PRIMER.

11 4" WASTE DOWN AND 2" VENT UP.

12 4" WASTE DOWN FROM FLOOR SINK, PROVIDE TRAP PRIMER.

13 4" WASTE DOWN FROM FLOOR CLEANOUT.

14 4" WASTE DOWN FROM ABOVE.

15 8" STORM PIPE DOWN FROM ABOVE.

16 4" WASTE DOWN FROM CLEANOUT TO GRADE.

17 2" WASTE DOWN AND 2" VENT UP.

18 2" DRAIN DOWN FROM ABOVE, PROVIDE TRAP PRIMER.

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TX Firm: BR 1608
CIVIL
CONSULTANT NAME
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LANDSCAPE
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STRUCTURAL
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MEP
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ACOUSTIC
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THEATER
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FOOD SERVICE
CONSULTANT NAME
T:000-000-0000
OTHER
CONSULTANT NAME
T:000-000-0000
LEAF ENGINEERS

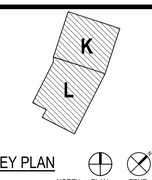
New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS



KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED
PROFESSIONAL ENGINEER
05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: SC

DRAWN BY: SC

1ST FLOOR PLUMBING UNDERFLOOR PLAN - AREA L - CTE

ADD#1

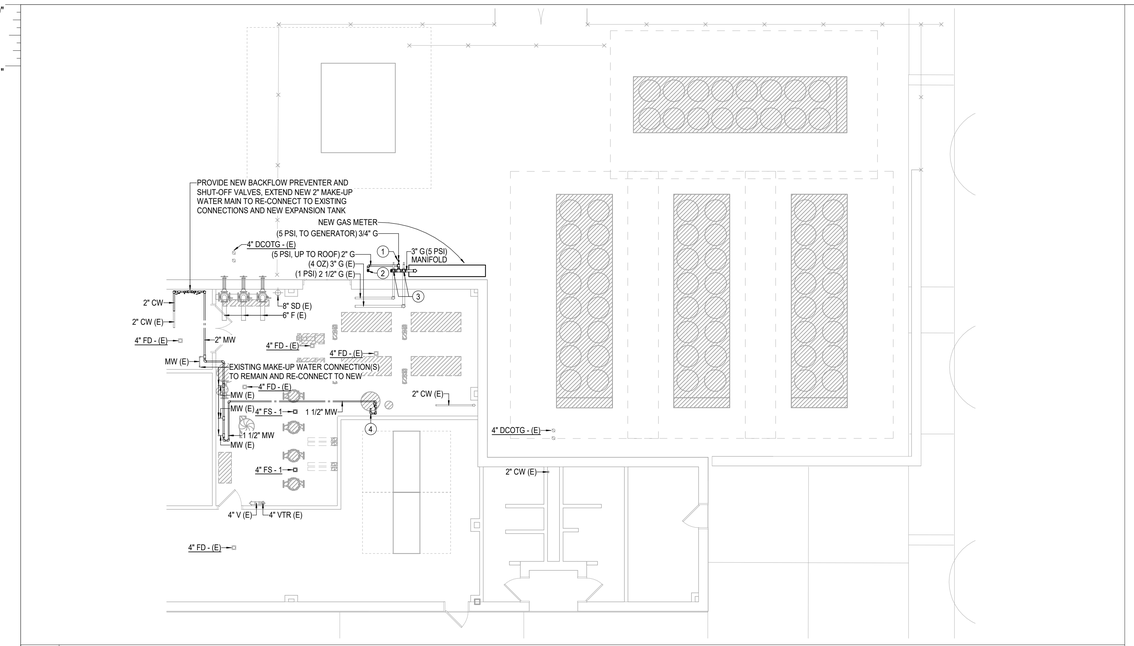
PU-101L.C

Plot Stamp:
6/3/2025 2:52:05 PM

1ST FLOOR PLUMBING PLAN - AREA E - GYM

P-101E.G

FOR BLUEBEAM LABELING/OCR:



2 1ST FLOOR PLUMBING PLAN - SERVICE YARD

1/8" = 1'-0"

KEYNOTES - PLUMBING PLAN

1 3/4" GAS DOWN.

2 2" GAS UP.

3 CONNECT NEW GAS LINE TO EXISTING.

4 MAKE-UP WATER CONNECTION TO MECHANICAL EQUIPMENT, REFER TO MECHANICAL DRAWINGS FOR CONTINUATION AND EXACT INLET SIZE/PRESSURE REQUIREMENTS.

5 4" STORM PIPE DOWN FROM ROOF DRAIN.

6 6" STORM PIPE DOWN FROM ROOF DRAIN.

7 CONNECT NEW WATER LINE TO EXISTING.

8 OVERFLOW PIPE DISCHARGE TO DAYLIGHT AT 18" ABOVE GRADE, PROVIDE SPLASH BLOCK. PROVIDE DOWNSPOUT NOZZLE (HINGED PERFORATED FLAPPER STYLE).

9 6" STORM PIPE DOWN.

10 3/4" COLD WATER DOWN TO WALL HYDRANT.

11 CONNECT NEW STORM LINE TO EXISTING.

12 6" STORM PIPE DOWN FROM OVERFLOW DRAIN.

13 4" STORM PIPE DOWN FROM OVERFLOW DRAIN.

14 INCOMING 6" FIRE LINE ENTRY.

15 6" FIRE LINE FROM FIRE DEPARTMENT CONNECTION, RE: CIVIL PLAN FOR CONTINUATION.

16 1-1/2" GAS UP.

17 BYPASS VALVE (NORMALLY CLOSED).

18 2" WASTE DOWN, 2" VENT UP FROM PLUMBING FIXTURE, 3/4" HOT AND COLD WATER DOWN TO SERVE PLUMBING FIXTURE.

19 4" WASTE DOWN FROM FLOOR DRAIN, PROVIDE TRAP PRIMER.

20 2" VENT UP.

21 8" STORM PIPE DOWN FROM ABOVE.

22 8" STORM PIPE DOWN.

23 4" WASTE DOWN FROM FLOOR SINK, PROVIDE TRAP PRIMER.

24 4" WASTE DOWN AND 2" VENT UP.

25 4" WASTE DOWN.

26 3/4" COLD WATER DOWN TO SERVE PLUMBING FIXTURE(S).

KEYNOTES - PLUMBING PLAN

27 2" VENT UP FROM BELOW.

28 3" VENT UP.

29 12" STORM PIPE DOWN.

GENERAL NOTES - PLUMBING PLAN

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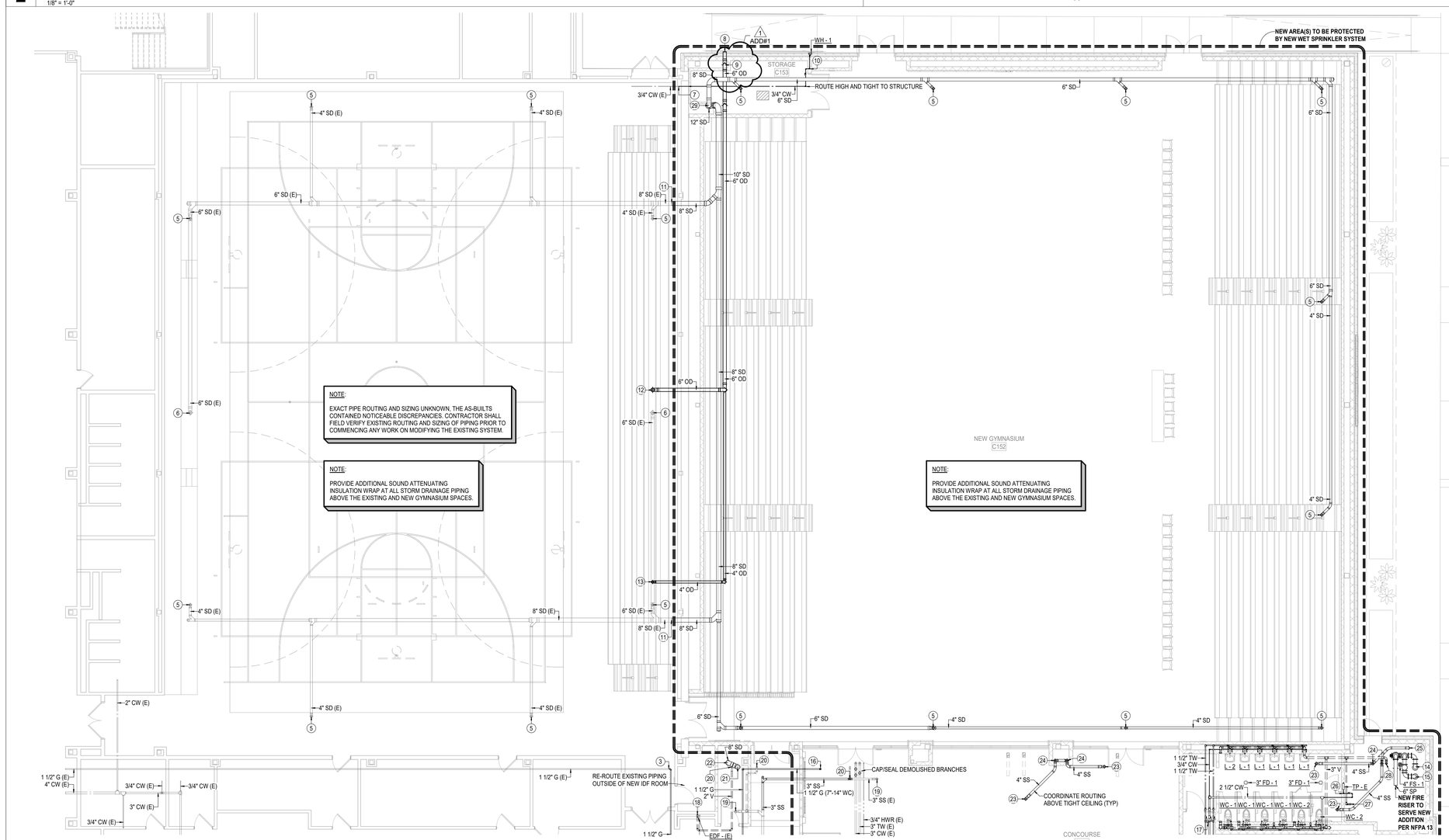

1 1ST FLOOR PLUMBING PLAN - AREA E

1/8" = 1'-0"

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PBK.com
HOUSTON
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-965-0608 P
713-961-4571 F
TX Firm: BR 1608

CIVIL
CONSULTANT NAME
T-000-000-0000
LANDSCAPE
CONSULTANT NAME
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STRUCTURAL
CONSULTANT NAME
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MEP
CONSULTANT NAME
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ACOUSTIC
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THEATER
CONSULTANT NAME
T-000-000-0000
FOOD SERVICE
CONSULTANT NAME
T-000-000-0000
CONSULTANT
CONSULTANT NAME
T-000-000-0000

LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT

KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61522
LICENSED PROFESSIONAL ENGINEER
05/20/2025
LEAF ENGINEERS
F-10672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: SC

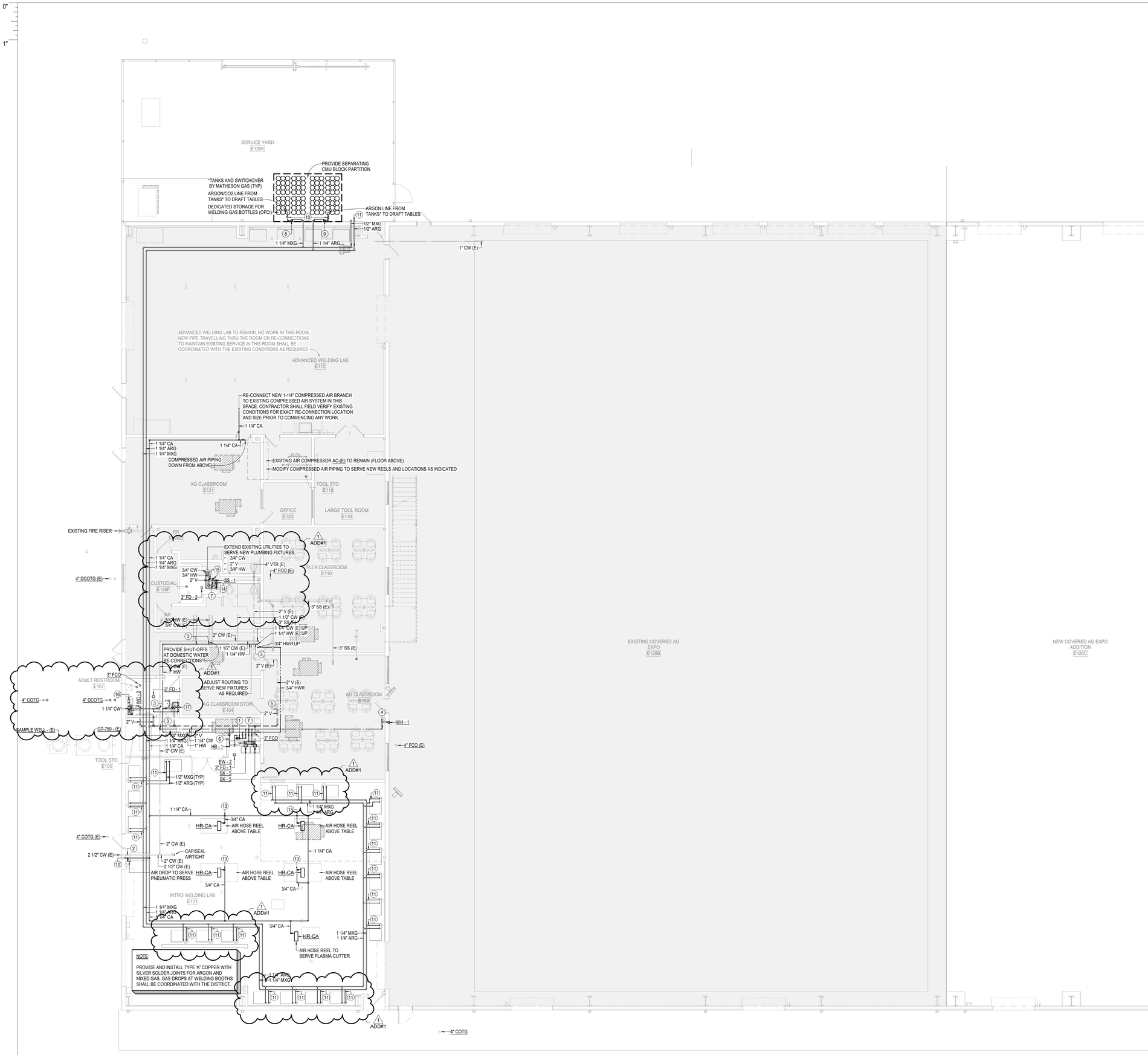
DRAWN BY: SC

1ST FLOOR PLUMBING PLAN - AREA E - GYM

P-101E.G

Plot Stamp:
6/3/2025 10:48:15 AM

1ST FLOOR PLUMBING PLAN - AREAS H, J - AG
P-101HJ.A
FOR BLUEBEAM LABELING/OCR:



1 1ST FLOOR PLUMBING PLAN - COMPOSITE
1/8" = 1'-0"

GENERAL NOTES - PLUMBING PLAN

A. THE CONTRACTOR SHALL COMPLY WITH ALL AUTHORITIES HAVING JURISDICTION.

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KEYNOTES - PLUMBING PLAN

1 1" HOT AND COLD WATER DOWN TO SERVE THERMOSTATIC MIXING VALVE (CONCEALED ABOVE CEILING). ROUTE TEMPERED WATER CONNECTION TO SERVE EMERGENCY FIXTURE. LOCATE FLOOR DRAIN (3"FD-1) DIRECTLY UNDER SHOWER HEAD. ROUTE EYEWASH WASTE AS INDICATED (TO TIE-IN TO FLOOR DRAIN WASTE UPSTREAM OF P-TRAP). AND INSTALL PER MANUFACTURER REQUIREMENTS.

2 INCOMING 2-1/2" COLD WATER ENTRY.

3 CONNECT NEW WATER LINE TO EXISTING.

4 3/4" COLD WATER DOWN TO WALL HYDRANT.

5 CONNECT NEW VENT LINE TO EXISTING.

6 3/4" COLD WATER DOWN TO HOSE BIBB.

7 3/4" HOT AND COLD WATER DOWN TO SERVE PLUMBING FIXTURE(S).

8 MIXED GAS (75% ARGON, 25% CO2) - PROVIDE PRESSURE REGULATOR WITH INLET AND OUTLET PRESSURE GAUGES.

9 ARGON - PROVIDE PRESSURE REGULATOR WITH INLET AND OUTLET PRESSURE GAUGES.

10 UPSIZE THE MANIFOLD SWITCHOVER UNIT AS REQUIRED FOR EACH GAS LINE (ARGON AND MIXED GAS) TO SERVE THE ENTIRE WELDING LABORATORY.

11 1/2" MXG, AND 1/2" AR DOWN TO SERVE WELDING BOOTH CONNECTIONS. CONTRACTOR SHALL COORDINATE EXACT LOCATION AND SIZE OF CONNECTIONS WITH WELDING BOOTH REQUIREMENTS PRIOR TO ROUGH-IN. PROVIDE SHUT-OFF VALVE AT EACH CONNECTION IN AN ACCESSIBLE MANNER.

12 3/4" COMPRESSED AIR DROP. REFER TO DETAILS.

13 COMPRESSED AIR SERVING HOSE REEL. CONTRACTOR SHALL COORDINATE HOSE REEL INSTALLATION WITH STRUCTURAL REQUIREMENTS PRIOR TO ROUGH-IN.

14 3/4" COLD WATER DOWN TO SERVE CHEMICAL DISPENSING UNIT (FURNISHED BY OTHERS). CONTRACTOR SHALL PROVIDE LOCAL AHJ-APPROVED METHOD OF BACKFLOW PROTECTION AS REQUIRED FOR THE UNIT, REFER TO UNIT INSTALLATION REQUIREMENTS FOR ADDITIONAL INFORMATION.

15 2" VENT UP FROM BELOW.

16 4" WASTE DOWN.

17 2" WASTE DOWN, 2" VENT UP FROM PLUMBING FIXTURE, 3/4" HOT AND COLD WATER DOWN TO SERVE PLUMBING FIXTURE.

PBK

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LANDSCAPE
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STRUCTURAL
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MEP/FP
LEAF ENGINEERS
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ACOUSTIC
BAI LLC
T 713-965-0608
ENVELOPE
BEAM PROFESSIONALS
T 713-965-0608
FOOD SERVICE
FOODSERVICE DESIGN PROFESSIONALS, LLc
T 281-350-2323

LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: AGRICULTURAL PAVILION

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT

H	J

KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED
PROFESSIONAL ENGINEER
05/21/2025
LEAF ENGINEERS
F-10672

CLIENT
Huffman Independent School District

DATE	PROJECT NUMBER
05/21/2025	240157

DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: SC
DRAWN BY: SC

1ST FLOOR PLUMBING PLAN - AREAS H, J - AG

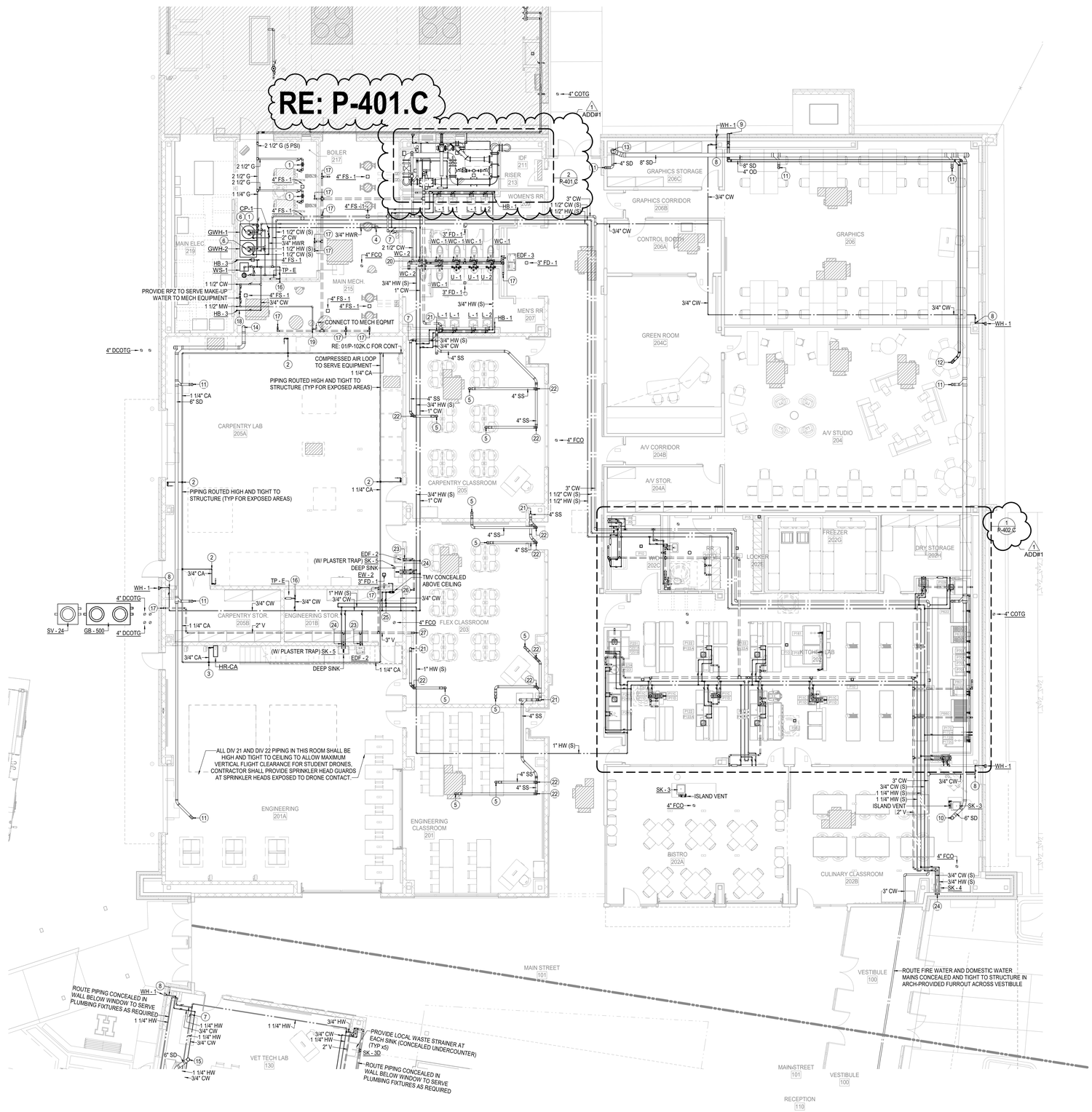
P-101HJ.A

Plot Stamp:
6/3/2025 2:37:11 PM

1ST FLOOR PLUMBING PLAN - AREA K - CTE

P-101K.C

FOR BLUEBEAM LABELING/OCR:



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H. ALL FLOOR DRAINS AND FLOOR SINKS SHALL BE PROVIDED WITH A TRAP PRIMER AND INSTALLED BY THE PLUMBING CONTRACTOR.

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J. ALL DOMESTIC COLD AND HOT WATER TAKE-OFFS SHALL HAVE AN ISOLATION SHUT-OFF VALVE.

K. FLOOR DRAINS AND FLOOR SINKS IN MECHANICAL ROOMS SHALL BE SET NOT LESS THAN 6" FROM HOUSEKEEPING PADS. RE: MECHANICAL DRAWINGS. DO NOT PLACE ON, OR IN, HOUSEKEEPING PAD, OR UNDERNEATH EQUIPMENT.

L. CONTRACTOR SHALL DEWATER ANY AREA AT OR BELOW GRADE PRIOR TO SETTING EQUIPMENT.

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N. CONTRACTOR SHALL PROVIDE AND INSTALL A HOSE BIBB WITH WHEEL HANDLE IN ALL MECHANICAL ROOMS, HB-3.

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P. ALL SANITARY 3" OR ABOVE SHALL BE INSPECTED BY A CAMERA PRIOR TO SUBSTANTIAL COMPLETION.

KEYNOTES - PLUMBING PLAN

1 PROVIDE REGULATOR (STEP DOWN FROM 5 PSI TO 7"-14" W.C.) W/ SHUT-OFF VALVE ON EACH SIDE. CONTRACTOR SHALL COORDINATE EXACT EQUIPMENT INLET SIZE AND PRESSURE REQUIREMENTS PRIOR TO INSTALL. VENT TO EXTERIOR AS REQUIRED.

2 3/4" COMPRESSED AIR DROP. REFER TO DETAILS.

3 COMPRESSED AIR SERVING HOSE REEL. CONTRACTOR SHALL COORDINATE HOSE REEL INSTALLATION WITH STRUCTURAL REQUIREMENTS PRIOR TO ROUGH-IN.

4 3/4" HOT WATER RETURN BALANCING VALVE (CONFIRM/ADJUST SETPOINT OF EACH INDIVIDUAL BALANCING VALVE TO FLOW MINIMUM OF 0.5 GPM AND ADJUST AS REQUIRED TO PROVIDE PROPER/NECESSARY BALANCING). PROVIDE STRAINER, CHECK VALVE AND ISOLATION VALVES AT BALANCING VALVE ASSEMBLY.

5 4" WASTE DOWN FROM FLOOR SINK, PROVIDE TRAP PRIMER.

6 DOMESTIC GAS WATER HEATER AND CONCENTRIC VENT KIT SHALL BE PROVIDED BY PLUMBING CONTRACTOR. REFER TO PLUMBING DRAWINGS AND SPECIFICATIONS. PROVIDE 2" THICK, INSTALLED R-8, FIBERGLASS INSULATION FOR METAL INTAKE PIPING FOR CONDENSATION PREVENTION. REFER TO PLUMBING DETAILS FOR SEALED COMBUSTION CONCENTRIC VENT DETAIL. PROVIDE 4" WATER HEATER CONCENTRIC FLUE CAP (x2) AT EXTERIOR PENETRATION. CONTRACTOR SHALL REFER TO MANUFACTURER'S REQUIREMENTS FOR EXACT INSTALLATION NEEDS PRIOR TO COMMENCING ANY INSTALL WORK.

7 BYPASS VALVE (NORMALLY CLOSED).

8 3/4" COLD WATER DOWN TO WALL HYDRANT.

9 OVERFLOW PIPE DISCHARGE TO DAYLIGHT AT 18" ABOVE GRADE. PROVIDE SPLASH BLOCK. PROVIDE DOWNSPOUT NOZZLE (HINGED PERFORATED FLAPPER STYLE).

10 6" STORM PIPE DOWN FROM ABOVE.

11 4" STORM PIPE DOWN FROM ROOF DRAIN.

12 4" STORM PIPE DOWN FROM ABOVE.

13 8" STORM PIPE DOWN.

14 6" STORM PIPE DOWN.

15 6" STORM PIPE DOWN FROM ROOF DRAIN.

16 3/4" COLD WATER DOWN TO SERVE PLUMBING FIXTURE(S).

17 2" VENT UP FROM BELOW.

18 3/4" COLD WATER DOWN TO HOSE BIBB.

19 MAKE-UP WATER CONNECTION TO MECHANICAL EQUIPMENT, REFER TO MECHANICAL DRAWINGS FOR CONTINUATION AND EXACT INLET SIZE REQUIREMENTS.

20 2-1/2" COLD WATER DOWN TO SERVE PLUMBING FIXTURE(S).

21 4" WASTE DOWN.

22 4" WASTE DOWN AND 2" VENT UP.

23 2" WASTE DOWN AND 2" VENT UP FROM PLUMBING FIXTURE, 3/4" COLD WATER DOWN TO SERVE PLUMBING FIXTURE.

24 2" WASTE DOWN, 2" VENT UP FROM PLUMBING FIXTURE, 3/4" HOT AND COLD WATER DOWN TO SERVE PLUMBING FIXTURE.

25 1" HOT AND COLD WATER DOWN TO SERVE THERMOSTATIC MIXING VALVE (CONCEALED ABOVE CEILING), ROUTE TEMPERED WATER CONNECTION TO SERVE EMERGENCY FIXTURE. LOCATE FLOOR DRAIN (3"FD-1) DIRECTLY UNDER SHOWER HEAD. ROUTE EYEWASH WASTE AS INDICATED (TO TIE-IN TO FLOOR DRAIN WASTE UPSTREAM OF P-TRAP), AND INSTALL PER MANUFACTURER REQUIREMENTS.

26 2" VENT UP.

27 3" VENT UP.

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LEAF ENGINEERS

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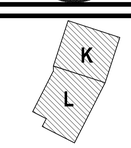
HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS



KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61526
LICENSED
PROFESSIONAL ENGINEER

05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: SC

DRAWN BY: SC

1ST FLOOR PLUMBING PLAN - AREA K - CTE

ADD#1

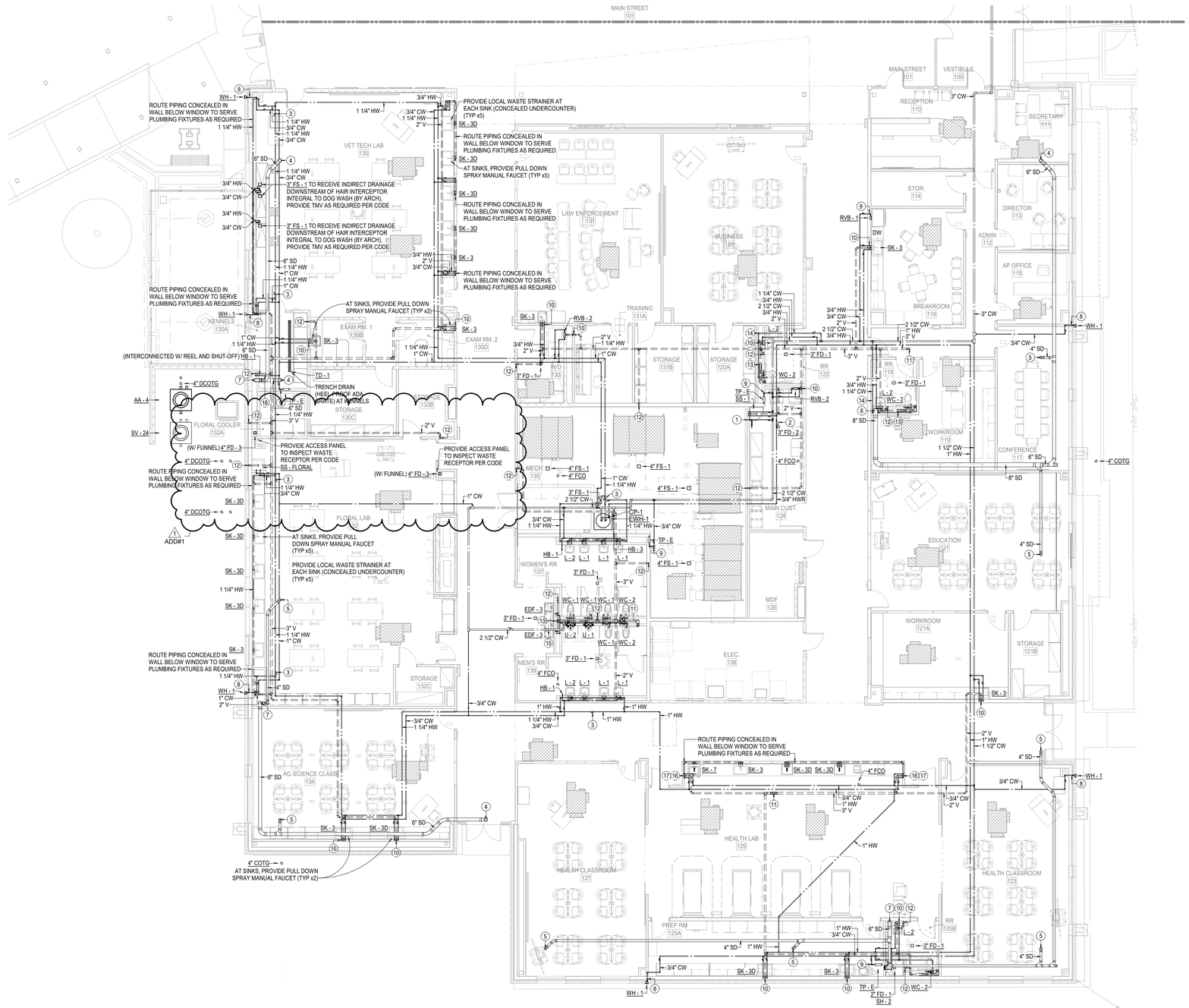
P-101K.C

Plot Stamp:
6/3/2025 9:47:22 AM

1ST FLOOR PLUMBING PLAN - AREA L - CTE

P-101L.C

FOR BLUEBEAM LABELING/OCR:



1 1ST FLOOR PLUMBING PLAN - AREA L

1/8" = 1'-0"

GENERAL NOTES - PLUMBING PLAN

A. THE CONTRACTOR SHALL COMPLY WITH ALL AUTHORITIES HAVING JURISDICTION.

B. ALL FINAL CONNECTIONS TO FIXTURES AND EQUIPMENT SHALL BE MADE BY THE PLUMBING CONTRACTOR.

C. ALL PLUMBING PIPING SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO ANY INSTALLATION OF ALL PLUMBING FIXTURES AND EQUIPMENT BY THE PLUMBING CONTRACTOR.

D. ALL FLOOR DRAINS AND FLOOR SINKS SHOWN ON THIS DRAWING SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO INSTALLATION.

E. REFER TO ARCHITECTURAL DRAWING FOR EXACT LOCATIONS OF FIXTURES, EQUIPMENT, ETC. DO NOT SCALE FROM PLUMBING DRAWINGS.

F. ALL WALL CLEAN-OUTS SHALL BE ACCESSIBLE BY AN ACCESS PANEL.

G. PROVIDE AND INSTALL A DOUBLE EXTERIOR CLEAN-OUT (DFCO) ON ALL SANITARY LINES EXITING THE BUILDING.

H. ALL FLOOR DRAINS AND FLOOR SINKS SHALL BE PROVIDED WITH A TRAP PRIMER AND INSTALLED BY THE PLUMBING CONTRACTOR.

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P. ALL SANITARY 3" OR ABOVE SHALL BE INSPECTED BY A CAMERA PRIOR TO SUBSTANTIAL COMPLETION.

KEYNOTES - PLUMBING PLAN

1 3/4" COLD WATER DOWN TO SERVE CHEMICAL DISPENSING UNIT (FURNISHED BY OTHERS). CONTRACTOR SHALL PROVIDE LOCAL AHJ-APPROVED METHOD OF BACKFLOW PROTECTION AS REQUIRED FOR THE UNIT. REFER TO UNIT INSTALLATION REQUIREMENTS FOR ADDITIONAL INFORMATION.

2 PROVIDE HOT WATER BALANCING VALVE, SET MINIMUM FLOW OF 1.5 GPM.

3 BYPASS VALVE (NORMALLY CLOSED).

4 6" STORM PIPE DOWN FROM ROOF DRAIN.

5 4" STORM PIPE DOWN FROM ROOF DRAIN.

6 8" STORM PIPE DOWN.

7 6" STORM PIPE DOWN.

8 3/4" COLD WATER DOWN TO WALL HYDRANT.

9 3/4" COLD WATER DOWN TO SERVE PLUMBING FIXTURE(S).

10 2" WASTE DOWN, 2" VENT UP FROM PLUMBING FIXTURE, 3/4" HOT AND COLD WATER DOWN TO SERVE PLUMBING FIXTURE.

11 4" VENT THRU ROOF.

12 2" VENT UP FROM BELOW.

13 4" WASTE DOWN.

14 1-1/4" COLD WATER AND 3/4" HOT WATER DOWN TO SERVE PLUMBING FIXTURE(S).

15 2-1/2" COLD WATER DOWN TO SERVE PLUMBING FIXTURE(S).

16 2" VENT UP.

17 3/4" HOT AND COLD WATER DOWN TO SERVE PLUMBING FIXTURE(S).

18 3/4" COLD WATER DOWN TO HOSE BIBB.

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LEAF ENGINEERS

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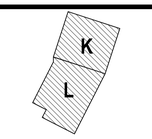

KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
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LICENSED
PROFESSIONAL ENGINEER
05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: SC

DRAWN BY: SC

1ST FLOOR PLUMBING PLAN - AREA L - CTE

ADD#1

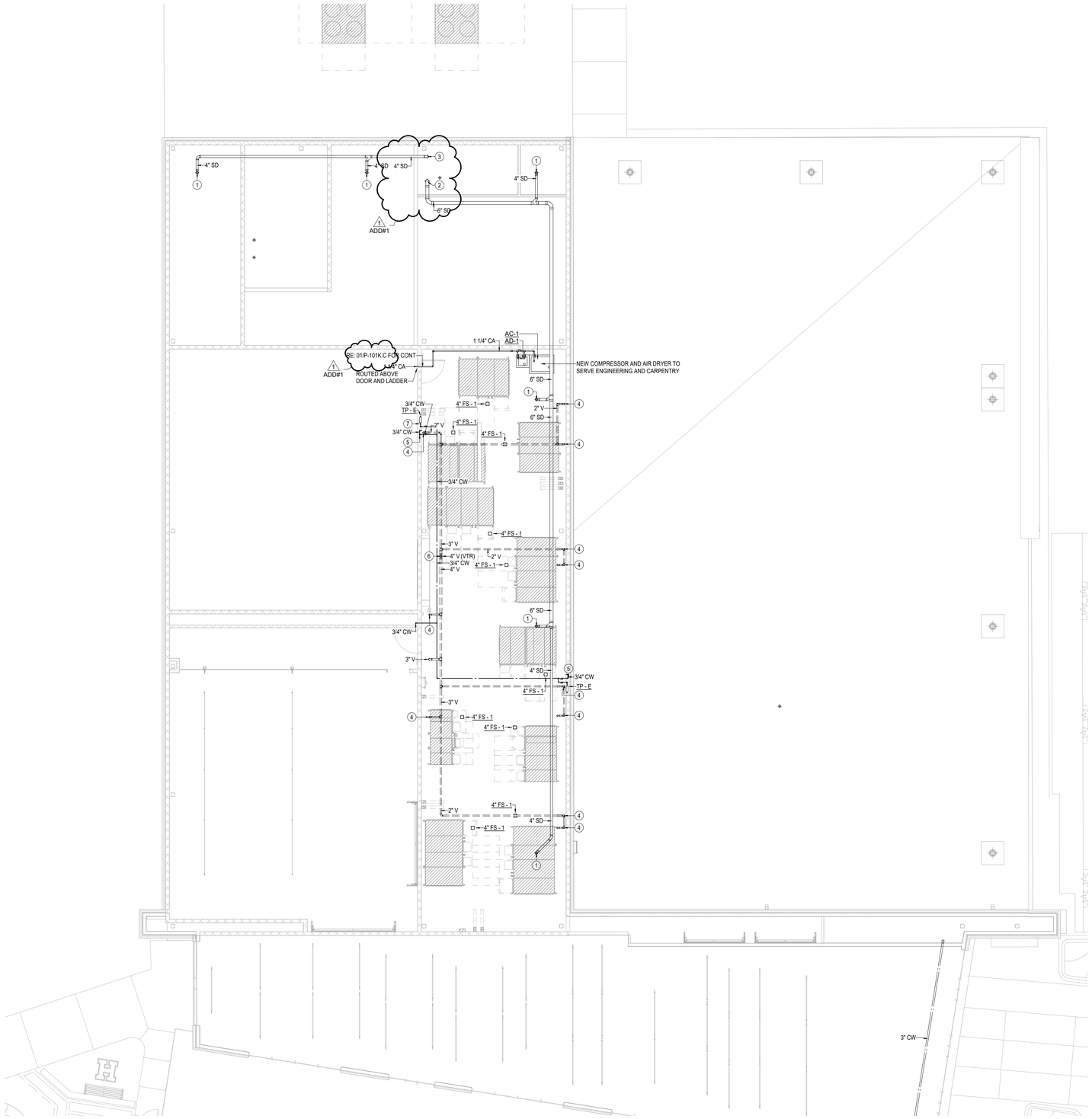
P-101L.C

Plot Stamp:
6/3/2025 9:47:27 AM

2ND FLOOR PLUMBING PLAN - AREA K - CTE

P-102K.C

FOR BLUEBEAM LABELING/OCR:



1 2ND FLOOR PLUMBING PLAN - AREA L

1/8" = 1'-0"

GENERAL NOTES - PLUMBING PLAN

A. THE CONTRACTOR SHALL COMPLY WITH ALL AUTHORITIES HAVING JURISDICTION.

B. ALL FINAL CONNECTIONS TO FIXTURES AND EQUIPMENT SHALL BE MADE BY THE PLUMBING CONTRACTOR.

C. ALL PLUMBING PIPING SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO ANY INSTALLATION OF ALL PLUMBING FIXTURES AND EQUIPMENT BY THE PLUMBING CONTRACTOR.

D. ALL FLOOR DRAINS AND FLOOR SINKS SHOWN ON THIS DRAWING SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO INSTALLATION.

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F. ALL WALL CLEAN-OUTS SHALL BE ACCESSIBLE BY AN ACCESS PANEL.

G. PROVIDE AND INSTALL A DOUBLE EXTERIOR CLEAN-OUT (DFCO) ON ALL SANITARY LINES EXITING THE BUILDING.

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KEYNOTES - PLUMBING PLAN

1 4" STORM PIPE DOWN FROM ROOF DRAIN.

2 6" STORM PIPE DOWN.

3 4" STORM PIPE DOWN.

4 2" VENT UP FROM BELOW.

5 3/4" COLD WATER DOWN TO HOSE BIBB.

6 4" VENT THRU ROOF.

7 3/4" COLD WATER DOWN TO SERVE PLUMBING FIXTURE(S).

ADD#1

P-102K.C

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LEAF ENGINEERS

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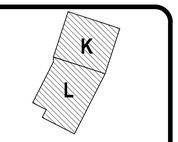


KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED
PROFESSIONAL ENGINEER

05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: SC

DRAWN BY: SC

2ND FLOOR PLUMBING PLAN - AREA K - CTE

Plot Stamp:
6/3/2025 9:47:29 AM

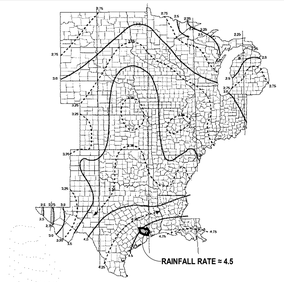
PLUMBING ROOF PLAN - CTE

P-302.C

FOR BLUEBEAM LABELING/OCR:

0"

1"



For SI: 1 inch = 25.4 mm.

Source: National Weather Service, National Oceanic and Atmospheric Administration, Washington D.C.

FIGURE 1106.1—continued 100-YEAR, 1-HOUR RAINFALL (INCHES) CENTRAL UNITED STATES

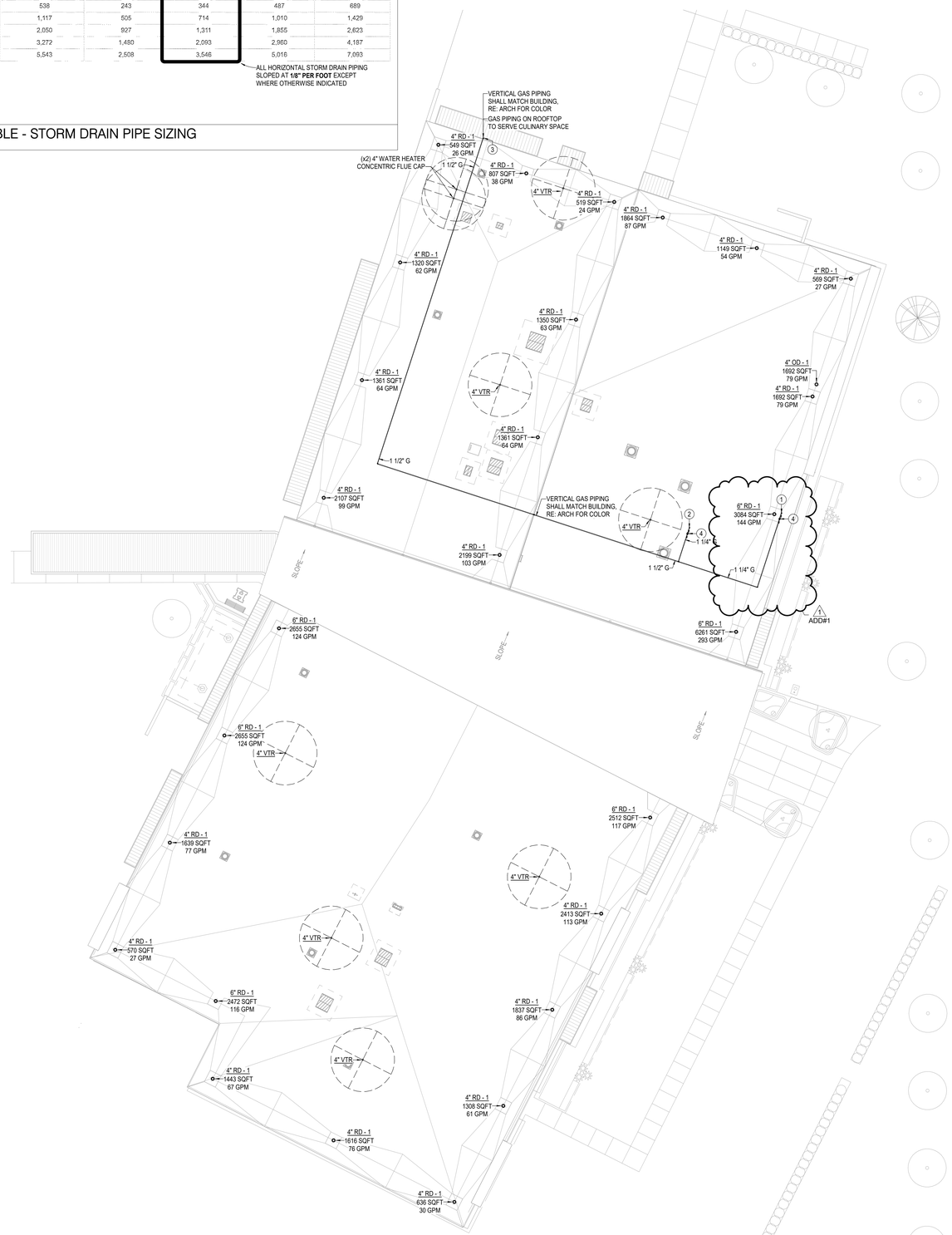
3 FIGURE - RAINFALL RATE
N.T.S

TABLE 1106.2STORM DRAIN PIPE SIZING

PIPE SIZE (inches)	VERTICAL DRAIN	CAPACITY (gpm)				
		SLOPE OF HORIZONTAL DRAIN				
		1/16 inch per foot	1/8 inch per foot	1/4 inch per foot	1/2 inch per foot
2	34	15	22	31	44
3	87	39	55	79	111
4	180	81	115	163	231
5	311	117	165	234	331
6	538	243	344	487	689
8	1,117	505	714	1,010	1,429
10	2,050	927	1,311	1,855	2,623
12	3,272	1,480	2,093	2,960	4,187
15	5,543	2,508	3,546	5,016	7,093

ALL HORIZONTAL STORM DRAIN PIPING SLOPED AT **1/8" PER FOOT** EXCEPT WHERE OTHERWISE INDICATED

2 TABLE - STORM DRAIN PIPE SIZING
N.T.S



1 PLUMBING ROOF PLAN
1/16" = 1'-0"

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KEYNOTES - PLUMBING PLAN

1 2" GAS DOWN.

2 1-1/4" GAS DOWN.

3 1-1/2" GAS DOWN.

4 PROVIDE REGULATOR (STEP DOWN FROM 5 PSI TO 7"-14" W.C.) W/ SHUT-OFF VALVE ON EACH SIDE. CONTRACTOR SHALL COORDINATE EXACT EQUIPMENT INLET SIZE AND PRESSURE REQUIREMENTS PRIOR TO INSTALL. VENT TO EXTERIOR AS REQUIRED.

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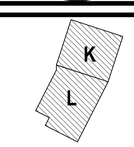

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DRAWN BY: SC

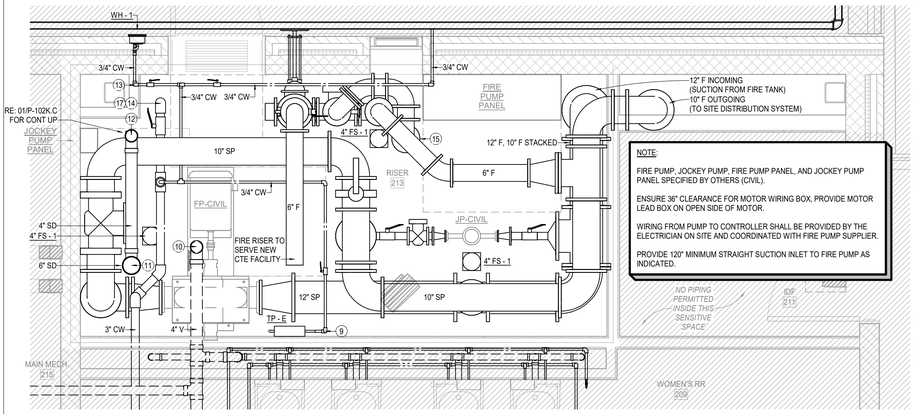
PLUMBING ROOF PLAN - CTE

ADD#1

P-302.C

Plot Stamp:
6/3/2025 9:47:30 AM

PLUMBING ENLARGED PLAN - CTE
P-401.C
FOR BLUEBEAM LABELING/OCR:



NOTE:

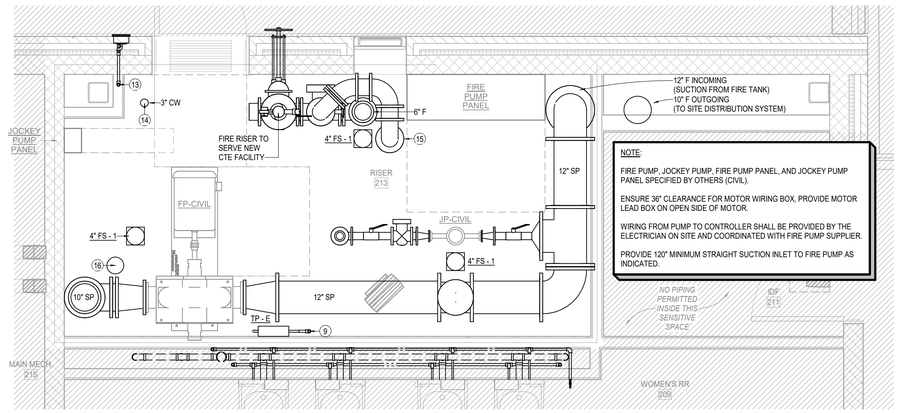
FIRE PUMP, JOCKEY PUMP, FIRE PUMP PANEL, AND JOCKEY PUMP PANEL SPECIFIED BY OTHERS (CIVIL).

ENSURE 36" CLEARANCE FOR MOTOR WIRING BOX, PROVIDE MOTOR LEAD BOX ON OPEN SIDE OF MOTOR.

WIRING FROM PUMP TO CONTROLLER SHALL BE PROVIDED BY THE ELECTRICIAN ON SITE AND COORDINATED WITH FIRE PUMP SUPPLIER.

PROVIDE 120" MINIMUM STRAIGHT SUCTION INLET TO FIRE PUMP AS INDICATED.

2 1ST FLOOR PLUMBING PLAN - FIRE PUMP ROOM (OVERALL)
1/2" = 1'-0"



NOTE:

FIRE PUMP, JOCKEY PUMP, FIRE PUMP PANEL, AND JOCKEY PUMP PANEL SPECIFIED BY OTHERS (CIVIL).

ENSURE 36" CLEARANCE FOR MOTOR WIRING BOX, PROVIDE MOTOR LEAD BOX ON OPEN SIDE OF MOTOR.

WIRING FROM PUMP TO CONTROLLER SHALL BE PROVIDED BY THE ELECTRICIAN ON SITE AND COORDINATED WITH FIRE PUMP SUPPLIER.

PROVIDE 120" MINIMUM STRAIGHT SUCTION INLET TO FIRE PUMP AS INDICATED.

3 1ST FLOOR PLUMBING PLAN - FIRE PUMP ROOM (MAXIMUM 6'-0" AFF VIEW RANGE)
1/2" = 1'-0"
ADD#1

GENERAL NOTES - PLUMBING PLAN

A. THE CONTRACTOR SHALL COMPLY WITH ALL AUTHORITIES HAVING JURISDICTION.

B. ALL FINAL CONNECTIONS TO FIXTURES AND EQUIPMENT SHALL BE MADE BY THE PLUMBING CONTRACTOR.

C. ALL PLUMBING PIPING SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO ANY INSTALLATION OF ALL PLUMBING FIXTURES AND EQUIPMENT BY THE PLUMBING CONTRACTOR.

D. ALL FLOOR DRAINS AND FLOOR SINKS SHOWN ON THIS DRAWING SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO INSTALLATION.

E. REFER TO ARCHITECTURAL DRAWING FOR EXACT LOCATIONS OF FIXTURES, EQUIPMENT, ETC. DO NOT SCALE FROM PLUMBING DRAWINGS.

F. ALL WALL CLEAN-OUTS SHALL BE ACCESSIBLE BY AN ACCESS PANEL.

G. PROVIDE AND INSTALL A DOUBLE EXTERIOR CLEAN-OUT (DFCO) ON ALL SANITARY LINES EXITING THE BUILDING.

H. ALL FLOOR DRAINS AND FLOOR SINKS SHALL BE PROVIDED WITH A TRAP PRIMER AND INSTALLED BY THE PLUMBING CONTRACTOR.

I. FIXTURES DESIGNATED AS ADA ACCESSIBLE BY ARCHITECT SHALL BE INSTALLED AT ADA ACCESSIBLE HEIGHT PER ARCHITECTURAL DETAILS.

J. ALL DOMESTIC COLD AND HOT WATER TAKE-OFFS SHALL HAVE AN ISOLATION SHUT-OFF VALVE.

K. FLOOR DRAINS AND FLOOR SINKS IN MECHANICAL ROOMS SHALL BE SET NOT LESS THAN 6" FROM HOUSEKEEPING PADS. RE: MECHANICAL DRAWINGS. DO NOT PLACE ON, OR IN, HOUSEKEEPING PAD, OR UNDERNEATH EQUIPMENT.

L. CONTRACTOR SHALL DEWATER ANY AREA AT OR BELOW GRADE PRIOR TO SETTING EQUIPMENT.

M. CONTRACTOR SHALL PROVIDE AND INSTALL A TRAP PRIMER, TP-1, AND A HOSE BIBB, HB-3, IN ALL MECHANICAL ROOMS.

N. CONTRACTOR SHALL PROVIDE AND INSTALL A HOSE BIBB WITH WHEEL HANDLE IN ALL MECHANICAL ROOMS, HB-3.

O. ANY AND ALL WATER PIPING EXPOSED TO OUTSIDE ELEMENTS SHALL BE INSULATED AND HEAT TRACED TO PREVENT FREEZING.

P. ALL SANITARY 3" OR ABOVE SHALL BE INSPECTED BY A CAMERA PRIOR TO SUBSTANTIAL COMPLETION.

KEYNOTES - PLUMBING PLAN

1 PROVIDE REGULATOR (STEP DOWN FROM 5 PSI TO 7"-14" W.C.) W/ SHUT-OFF VALVE ON EACH SIDE. CONTRACTOR SHALL COORDINATE EXACT EQUIPMENT INLET SIZE AND PRESSURE REQUIREMENTS PRIOR TO INSTALL. VENT TO EXTERIOR AS REQUIRED.

2 1-1/2" GAS UP.

3 3/4" COLD WATER DOWN TO HOSE BIBB.

4 2" VENT UP FROM BELOW.

5 3" VENT THRU ROOF.

6 2" GAS UP.

ADD#1 7 2" GAS DOWN.

8 BAS CONTRACTOR SHALL PROVIDE AND PLUMBING CONTRACTOR SHALL INSTALL GAS FLOW METER AT INCOMING GAS MAIN ENTRY (CUSTOMER-SIDE) AND INSTALL AS PER SPECIFICATIONS. COORDINATE BAS CONNECTION(S) WITH DIV 23 AND DIV 26 AS REQUIRED.

9 3/4" COLD WATER DOWN TO SERVE PLUMBING FIXTURE(S).

10 4" VENT THRU ROOF.

11 6" STORM PIPE DOWN.

12 4" STORM PIPE DOWN FROM ABOVE.

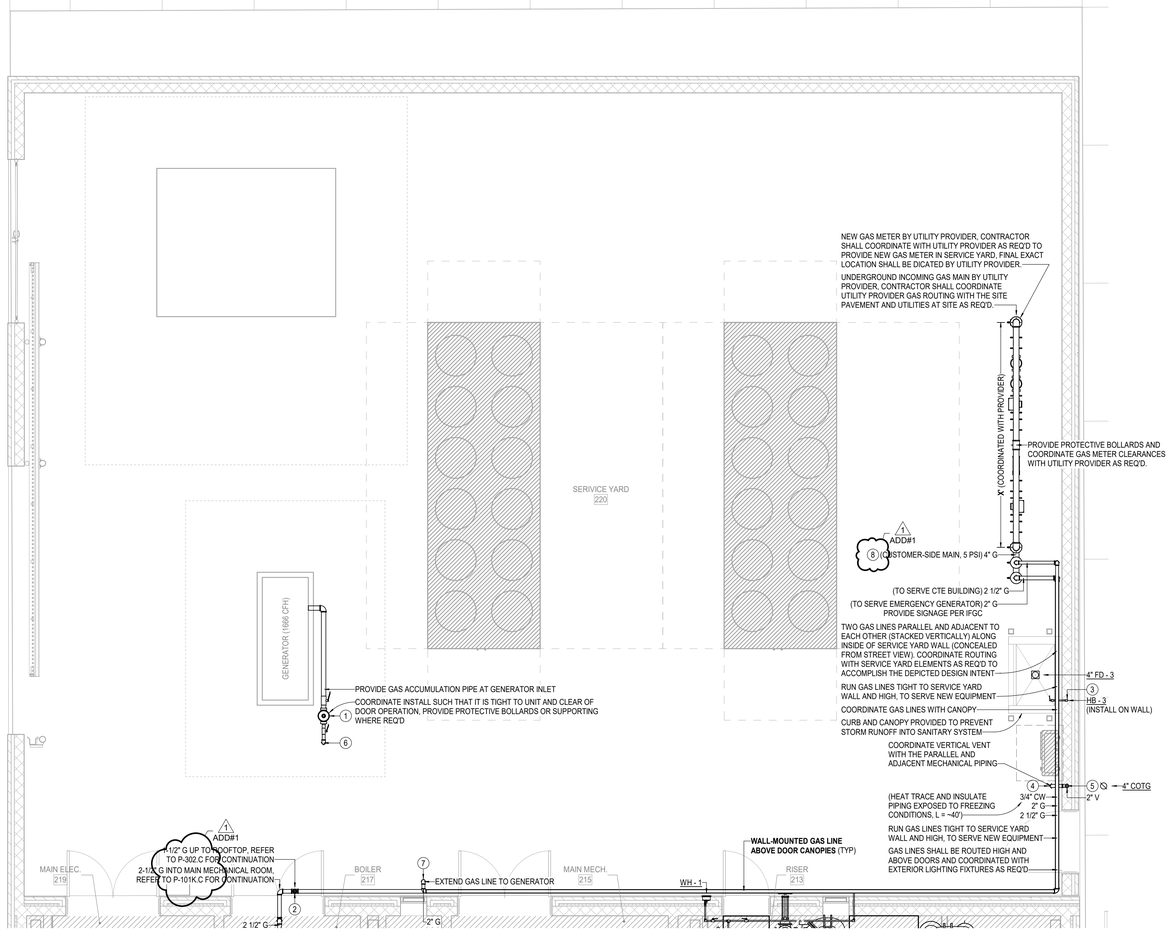
13 3/4" COLD WATER DOWN TO WALL HYDRANT.

14 INCOMING 3" COLD WATER ENTRY.

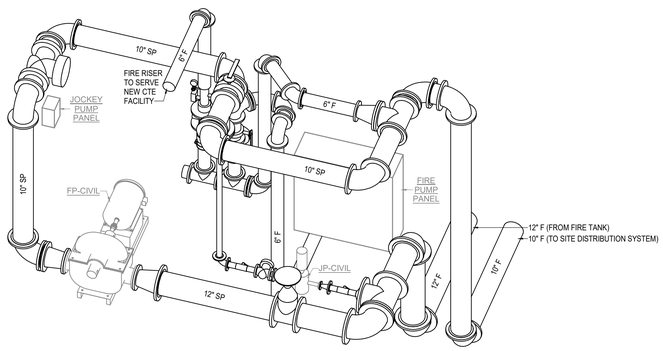
15 6" FIRE LINE FROM FIRE DEPARTMENT CONNECTION, RE: CIVIL PLAN FOR EXACT LOCATION.

ADD#1 16 6" STORM PIPE DOWN FROM ABOVE.

17 BAS CONTRACTOR SHALL PROVIDE AND PLUMBING CONTRACTOR SHALL INSTALL WATER FLOW METER AT INCOMING COLD WATER MAIN ENTRY AND INSTALL AS PER SPECIFICATIONS. COORDINATE BAS CONNECTION(S) WITH DIV 23 AND DIV 26 AS REQUIRED.



1 1ST FLOOR PLUMBING PLAN - SERVICE YARD
1/4" = 1'-0"



4 PLUMBING RISER DIAGRAM - FIRE PUMP - CTE

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LANDSCAPE
CONSULTANT NAME
T 000-000-0000
STRUCTURAL
CONSULTANT NAME
T 000-000-0000
MEP
CONSULTANT NAME
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THEATER
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FOOD SERVICE
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SECURITY
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LEAF ENGINEERS

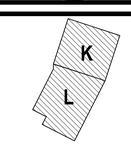
New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS



KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED
PROFESSIONAL ENGINEER
05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: SC
DRAWN BY: SC

PLUMBING ENLARGED PLAN - CTE

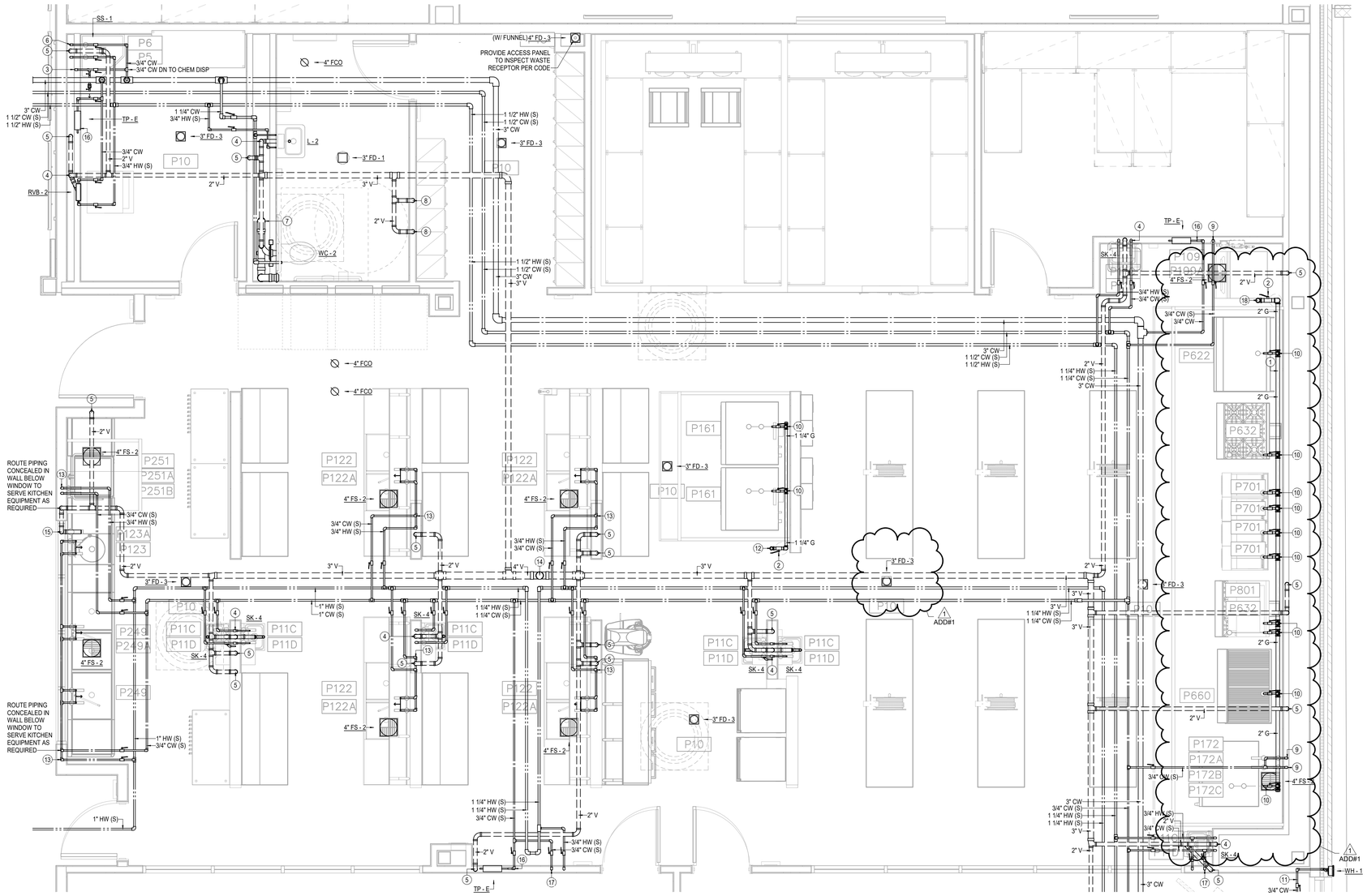
P-401.C

Plot Stamp:
6/3/2025 9:47:35 AM

PLUMBING ENLARGED PLAN - CTE
P-402.C
FOR BLUEBEAM LABELING/OCR:

0"
1"

FOOD SERVICE PLUMBING SCHEDULE						
REFER TO SHEET QF1 FOR PLUMBING COORDINATION NOTES						
FDP PNO	FDP PSIZE	FDP PCONN	FDP PSERVICE TO	FDP PLOC	FDP PAFF	FDP PREMARKS
						<varies>
P5	3/4"	H & C WATER	JANITOR SINK	WALL	48"	BTC
P6	4"	FLOOR DRAIN	JANITOR SINK	FLOOR	VERIFY	BTC
P10	VERIFY	FLOOR DRAIN	GENERAL AREA DRAIN	FLOOR	VERIFY	LOCATE PER ENGINEER'S DRAWING
P11C	1/2"	H & C WATER	FAUCET	WALL	18"	FURNISHED & INSTALLED BY DIV. 22
P11D	1 1/2"	DIRECT DRAIN	HAND SINK	WALL	15"	FURNISHED & INSTALLED BY DIV. 22
P15	4"	FLOOR DRAIN	FUNNEL FLOOR DRAIN	FLOOR	0"	---
P109	3/4"	COLD WATER	WATER/ ICE	WALL	60"	BTC
P109A	12" SQ.	FLOOR SINK	ICE MACHINE	FLOOR	0"	3/4 GRATE
P122	3/4"	H & C WATER	FAUCET	WALL	13"	BTC
P122A	12" SQ.	FLOOR SINK	SINK	FLOOR	0"	3/4 GRATE
P123	3/4"	H & C WATER	FAUCET / DISPOSER	WALL	13"	BTC
P123A	2"	DIRECT DRAIN	DISPOSER	WALL	10"	BTC
P161	(2)3/4"	NATURAL GAS	CONVECTION OVEN	WALL	18"/36"	BTC - 60 MBTU/HR EACH
P172	(2)3/4"	COLD WATER	COMBI OVEN	WALL	24"/48"	BTC: - INTERCONNECT THRU FILTERS
P172A	3/4"	COLD WATER	COMBI OVEN	WALL	48"	BTC
P172B	12"SQ.	FLOOR SINK	EQUIPMENT	FLOOR	0"	3/4 GRATE
P172C	(2)3/4"	NATURAL GAS	COMBI OVEN	WALL	18"/36"	BTC: - 105 MBTU/HR EACH
P249	3/4"	H & C WATER	FAUCET	WALL	13"	BTC: RE:
P249A	12" SQ.	FLOOR SINK	SINK	WALL	0"	BTC: RE:
P251	12"SQ.	FLOOR SINK	DISHMACHINE	FLOOR	0"	3/4 GRATE
P251A	3/4"	HOT WATER	BOOSTER HEATER	WALL	18"	BTC -140 DEG. MIN.
P251B	3/4"	COLD WATER	DRAIN TEMPERING	WALL	18"	BTC
P622	3/4"	NATURAL GAS	GAS GRIDDLE	WALL	18"	BTC - 108MBTU/HR
P632	3/4"	NATURAL GAS	RANGE	WALL	18"	BTC - 215 MBTU/HR
P660	3/4"	NATURAL GAS	CHARBROILER	WALL	18"	BTC - 116 MBTU/HR
P701	1"	NATURAL GAS	FRYER	WALL	24"	BTC: 40 MBTU/HR
P801	3/4"	NATURAL GAS	SLAMANDER	WALL	18"	BTC - 30 MBTU/HR



1 1ST FLOOR PLUMBING PLAN - CULINARY
3/8" = 1'-0"

GENERAL NOTES - PLUMBING PLAN

A. THE CONTRACTOR SHALL COMPLY WITH ALL AUTHORITIES HAVING JURISDICTION.

B. ALL FINAL CONNECTIONS TO FIXTURES AND EQUIPMENT SHALL BE MADE BY THE PLUMBING CONTRACTOR.

C. ALL PLUMBING PIPING SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO ANY INSTALLATION OF ALL PLUMBING FIXTURES AND EQUIPMENT BY THE PLUMBING CONTRACTOR.

D. ALL FLOOR DRAINS AND FLOOR SINKS SHOWN ON THIS DRAWING SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO INSTALLATION.

E. REFER TO ARCHITECTURAL DRAWING FOR EXACT LOCATIONS OF FIXTURES, EQUIPMENT, ETC. DO NOT SCALE FROM PLUMBING DRAWINGS.

F. ALL WALL CLEAN-OUTS SHALL BE ACCESSIBLE BY AN ACCESS PANEL.

G. PROVIDE AND INSTALL A DOUBLE EXTERIOR CLEAN-OUT (DFCO) ON ALL SANITARY LINES EXITING THE BUILDING.

H. ALL FLOOR DRAINS AND FLOOR SINKS SHALL BE PROVIDED WITH A TRAP PRIMER AND INSTALLED BY THE PLUMBING CONTRACTOR.

I. FIXTURES DESIGNATED AS ADA ACCESSIBLE BY ARCHITECT SHALL BE INSTALLED AT ADA ACCESSIBLE HEIGHT PER ARCHITECTURAL DETAILS.

J. ALL DOMESTIC COLD AND HOT WATER TAKE-OFFS SHALL HAVE AN ISOLATION SHUT-OFF VALVE.

K. FLOOR DRAINS AND FLOOR SINKS IN MECHANICAL ROOMS SHALL BE SET NOT LESS THAN 6" FROM HOUSEKEEPING PADS. RE: MECHANICAL DRAWINGS. DO NOT PLACE ON, OR IN, HOUSEKEEPING PAD, OR UNDERNEATH EQUIPMENT.

L. CONTRACTOR SHALL DEWATER ANY AREA AT OR BELOW GRADE PRIOR TO SETTING EQUIPMENT.

M. CONTRACTOR SHALL PROVIDE AND INSTALL A TRAP PRIMER, TP-1, AND A HOSE BIBB, HB-3, IN ALL MECHANICAL ROOMS.

N. CONTRACTOR SHALL PROVIDE AND INSTALL A HOSE BIBB WITH WHEEL HANDLE IN ALL MECHANICAL ROOMS, HB-3.

O. ANY AND ALL WATER PIPING EXPOSED TO OUTSIDE ELEMENTS SHALL BE INSULATED AND HEAT TRACED TO PREVENT FREEZING.

P. ALL SANITARY 3" OR ABOVE SHALL BE INSPECTED BY A CAMERA PRIOR TO SUBSTANTIAL COMPLETION.

KEYNOTES - PLUMBING PLAN

1 ROUTE GAS LINE 18" AFF BEHIND FOODSERVICE EQUIPMENT TIGHT ALONG WALL WITH SHUT-OFF VALVE AT EACH TAP FROM GAS LINE. REFER TO FOODSERVICE DRAWINGS FOR ADDITIONAL ROUTING INFORMATION.

2 PROVIDE SHUT-OFF VALVE FOR GAS MAIN PRIOR TO SERVING EQUIPMENT AND COORDINATE ANSUL SYSTEM AND CONNECTION(S) WITH ANSUL CONTRACTOR.

3 3/4" COLD WATER DOWN TO SERVE CHEMICAL DISPENSING UNIT (FURNISHED BY OTHERS). CONTRACTOR SHALL PROVIDE LOCAL AHJ-APPROVED METHOD OF BACKFLOW PROTECTION AS REQUIRED FOR THE UNIT, REFER TO UNIT INSTALLATION REQUIREMENTS FOR ADDITIONAL INFORMATION.

4 2" WASTE DOWN, 2" VENT UP FROM PLUMBING FIXTURE, 3/4" HOT AND COLD WATER DOWN TO SERVE PLUMBING FIXTURE.

5 2" VENT UP FROM BELOW.

6 3/4" HOT AND COLD WATER DOWN TO SERVE PLUMBING FIXTURE(S).

7 4" WASTE DOWN.

8 2" WASTE DOWN FROM ABOVE.

9 3/4" COLD WATER DOWN TO FOODSERVICE EQUIPMENT.

10 GAS TO SERVE FOODSERVICE EQUIPMENT. REFER TO FOODSERVICE EQUIPMENT CONNECTION SCHEDULE FOR EXACT INLET SIZE AND PRESSURE REQUIREMENTS.

11 3/4" COLD WATER DOWN TO WALL HYDRANT.

12 1-1/4" GAS UP.

13 3/4" HOT AND COLD WATER DOWN TO FOODSERVICE EQUIPMENT.

14 4" VENT THRU ROOF.

15 2" WASTE DOWN AND 2" VENT UP.

16 3/4" COLD WATER DOWN TO SERVE PLUMBING FIXTURE(S).

17 3/4" HOT AND COLD WATER DOWN TO BELOW GRADE TO SERVE FOODSERVICE EQUIPMENT.

18 2" GAS UP.

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MEP
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ACOUSTIC
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THEATER
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FOOD SERVICE
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LEAF ENGINEERS

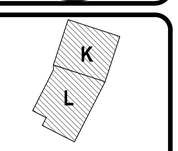
New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS



KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61625
LICENSED PROFESSIONAL ENGINEER
05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: SC
DRAWN BY: SC

PLUMBING ENLARGED PLAN - CTE

ADD#1

P-402.C

Plot Stamp:
6/3/2025 9:47:38 AM

PLUMBING SCHEDULES - CTE

P-501.C

FOR BLUEBEAM LABELING/OCR:

0"

1"

ELECTRIC WATER HEATER SCHEDULE

UNIT	MANUFACTURER AND MODEL NUMBER	LOCATION	CAPACITY (GAL)	RECOVERY (GPH)	TEMP RISE (°F)	ELECTRICAL kW	ELECTRICAL V	ELECTRICAL Φ	ELECTRICAL Hz	REMARKS
EWH-1	A.O. SMITH DEL-80	MECH. L131	80	100	100	24	480	3	60	• PROVIDE WITH THERM-X-TROL ST-5-C EXPANSION TANK
EWH-(E)	A.O. SMITH DEL-40	EXISTING AG MEZZANINE	40	32	100	8	?	?	60	• EXISTING TO REMAIN. PROVIDE WITH NEW w/ CP-1 • PROVIDE WITH THERM-X-TROL ST-5-C EXPANSION TANK

NOTES:

1. COORDINATE WITH WATER HEATER MANUFACTURER'S INSTALLATION DRAWINGS FOR PROPER AND CORRECT INSTALLATION OF ALL EQUIPMENT AND APPURTENANCES.

GAS WATER HEATER SCHEDULE

UNIT	MANUFACTURER AND MODEL NUMBER	LOCATION	CAPACITY (GAL)	RECOVERY (GPH)	TEMP RISE (°F)	INPUT (BTU)	REMARKS
GWH-1,2	A.O. SMITH BTH-199	MAIN MECH. K107	100	235	100	199,000	• PROVIDE WITH THERM-X-TROL ST-30V-C EXPANSION TANK • PROVIDE WITH CONDENSATE NEUTRALIZER KIT • PROVIDE WITH CONCENTRIC VENT KIT
GWH-(E)	A.O. SMITH GENESIS GW 750	EXISTING MECHANICAL C205	750 (STORAGE TANK)	955	80	750,000	• EXISTING MAKE/MODEL INFO PROVIDED FOR REFERENCE ONLY • TAP EXISTING HW SUPPLY TO SERVE NEW GYM ADDITION FIXTURES

NOTES:

1. COORDINATE WITH WATER HEATER MANUFACTURER'S INSTALLATION DRAWINGS FOR PROPER AND CORRECT INSTALLATION OF ALL EQUIPMENT AND APPURTENANCES.

PUMP SCHEDULE

UNIT	MANUFACTURER AND MODEL NUMBER	LOCATION	TYPE	INLET PRESSURE (PSI)	OUTLET PRESSURE (PSI)	RPM	CAPACITY GPM	CAPACITY Ψ (FT)	ELECTRICAL HP	ELECTRICAL V	ELECTRICAL Φ	ELECTRICAL Hz	REMARKS
CP-1	BELL & GOSSETT NBF-8S/LW	MECH. L131 MAIN MECH. K107 EXISTING AG MEZZANINE	INLINE CIRCULATOR	-	2.2	2800	1.5	5	1/20	120	1	60	-
CP-(E)	BELL & GOSSETT SERIES 60	EXISTING MECHANICAL C205	INLINE CIRCULATOR	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	• EXISTING MAKE/MODEL INFO PROVIDED FOR REF
FP-CIVIL	PENTAIR 8-481-17B	RISER 213	HORIZONAL SPLITCASE	GRAVITY	RE: CIVIL	-	2000	-	125	RE: CIVIL	RE: CIVIL	RE: CIVIL	• SPECIFIED BY CIVIL • INTERCONNECTED THRU DIV 21 SYSTEM PER NFPA
JP-CIVIL	PENTAIR PVM5-6	RISER 213	VERTICAL INLINE	RE: CIVIL	RE: CIVIL	-	20	-	2	RE: CIVIL	RE: CIVIL	RE: CIVIL	• SPECIFIED BY CIVIL • INTERCONNECTED THRU DIV 21 SYSTEM PER NFPA

ADD#1

NOTES:

1. COORDINATE WITH PUMP MANUFACTURER'S INSTALLATION DRAWINGS FOR PROPER AND CORRECT INSTALLATION OF ALL EQUIPMENT AND APPURTENANCES.

WATER CONDITIONING SCHEDULE

UNIT	MANUFACTURER AND MODEL NUMBER	LOCATION	DESCRIPTION	SERVICE	CAPACITY (EACH UNIT) MIN SALT	CAPACITY (EACH UNIT) MAX SALT	FLOW RATES (GPM) CONTINUOUS	FLOW RATES (GPM) PEAK	FLOW RATES (GPM) BACKWASH
WS-1	WATERTECH SERVICES WTS-F150 1.5	MAIN MECH. K107	SIMPLEX	DOMESTIC	100,000	150,000	25	50	10

NOTES:

1. COORDINATE WITH MANUFACTURER'S INSTALLATION DRAWINGS FOR PROPER AND CORRECT INSTALLATION OF ALL EQUIPMENT AND APPURTENANCES.

AIR COMPRESSOR SCHEDULE

UNIT	MANUFACTURER AND MODEL NUMBER	LOCATION	TYPE	TANK (GAL)	L x W x H	WT (LBS)	CAPACITY CFM	CAPACITY PRESSURE (PSI)	ELECTRICAL HP	ELECTRICAL V	ELECTRICAL Φ	ELECTRICAL Hz
AC-1	CHAMPION VR10-12	MECH. MEZZANINE 398	VERTICAL SIMPLEX RECIPROCANT	120	43" x 30" x 81"	895	33.8	125	10	208	3	60
AC-(E)	INGERSOLL RAND CBV563834	EXIST. STORAGE E201	RECIPROCATING MOTOR	120	-	-	40	125	10	460	3	60

NOTES:

1. COORDINATE WITH AIR COMPRESSOR MANUFACTURER'S INSTALLATION DRAWINGS FOR PROPER AND CORRECT INSTALLATION OF ALL EQUIPMENT AND APPURTENANCES.
2. TANK MOUNTED AND PIPED TO RECEIVER.
3. PROVIDE REFRIGERANT AIR DRYER (AD-1, SEE SPECIFICATIONS).
4. PROVIDE DPR CONTROL PANEL.
5. AC-(E) IS EXISTING TO REMAIN, INFO PROVIDED FOR REFERENCE ONLY, PROVIDE REFRIGERANT AIR DRYER AT THE EXISTING COMPRESSOR, SIZED TO ACCOMMODATE THE EXISTING COMPRESSOR CAPACITY.

PLUMBING FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	CONNECTION SIZE WASTE	CONNECTION SIZE VENT	CONNECTION SIZE CW	CONNECTION SIZE HW	REMARKS
WC-1	WATER CLOSET, WALL-MOUNTED BOWL W/ 1-1/2" TOP SPUD, 1.28 GPF, ELONGATED RIM, PROVIDE OPEN FRONT SEATLESS COVER AND ADJUSTABLE CARRIER	4"	2"	1-1/2"	-	• MANUAL FLUSH VALVE
WC-2	WATER CLOSET, SAME AS WC-1 EXCEPT FLUSH VALVE SHALL BE ROUGHED-IN NO MORE THAN 44" AFF W/ CENTER LINE OF FIXTURE 18" FROM FINISHED WALL OR PARTITION, ADA	4"	2"	1-1/2"	-	• MANUAL FLUSH VALVE
U-1	URINAL, WALL-MOUNTED W/ 3/4" TOP SPUD, HIGH EFFICIENCY 0.125 GPF, MOUNT URINAL RIM AT 24" ABOVE FINISHED FLOOR, PROVIDE FLOOR SUPPORTED URINAL CARRIER	2"	2"	3/4"	-	• MANUAL FLUSH VALVE
U-2	URINAL, SAME AS U-1 EXCEPT RIM SHALL BE MOUNTED NO HIGHER THAN 17" AFF	2"	2"	3/4"	-	• MANUAL FLUSH VALVE
L-1	LAVATORY, WALL-MOUNTED, 0.35 GPM W/ AERATOR FAUCET, ZURN Z-8746-CP OFFSET GRID DRAIN, ZURN Z-8802LR-CP ANGLE STOPS W/ Ø3/8" (OD) TUBING, DEARBORN 701-1 17 GA. P-TRAP, TRUEBRO 105W OFFSET INSULATION KIT (NOT REQUIRED IF CABINET APRON IS INSTALLED), ADA, LEAD-FREE	2"	2"	3/4"	3/4"	• MANUAL FAUCET
L-2	LAVATORY, SAME AS L-1 EXCEPT RIM SHALL BE MOUNTED NO HIGHER THAN 34" AFF	2"	2"	3/4"	3/4"	• MANUAL FAUCET
SK-1	SINK, DROP-IN SINGLE BOWL, TYPE 304 STAINLESS STEEL, WRISTBLADE LEVER HANDLES, 1.5 GPM W/ AERATOR FAUCET, ZURN Z-8746-CP OFFSET GRID DRAIN, ZURN Z-8802LR-CP ANGLE STOPS W/ Ø3/8" (OD) TUBING, DEARBORN 701-1 17 GA. P-TRAP, TRUEBRO 105W OFFSET INSULATION KIT (NOT REQUIRED IF CABINET APRON IS INSTALLED), ADA, LEAD-FREE	2"	2"	3/4"	3/4"	• MANUAL FAUCET
SK-2	SINK, DROP-IN DOUBLE BOWL, TYPE 304 STAINLESS STEEL, WRISTBLADE LEVER HANDLES, 1.5 GPM W/ AERATOR FAUCET, ZURN Z-8746-CP OFFSET GRID DRAIN, ZURN Z-8802LR-CP ANGLE STOPS W/ Ø3/8" (OD) TUBING, DEARBORN 701-1 17 GA. P-TRAP, TRUEBRO 105W OFFSET INSULATION KIT (NOT REQUIRED IF CABINET APRON IS INSTALLED), ADA, LEAD-FREE	2"	2"	3/4"	3/4"	• MANUAL FAUCET AT CONCESSIONS SINK
SK-3	SINK, DROP-IN SINGLE (LARGE) BOWL, TYPE 304 STAINLESS STEEL, WRISTBLADE LEVER HANDLES, 1.5 GPM W/ AERATOR FAUCET, ZURN Z-8746-CP OFFSET GRID DRAIN, ZURN Z-8802LR-CP ANGLE STOPS W/ Ø3/8" (OD) TUBING, DEARBORN 701-1 17 GA. P-TRAP, TRUEBRO 105W OFFSET INSULATION KIT (NOT REQUIRED IF CABINET APRON IS INSTALLED), ADA, LEAD-FREE	2"	2"	3/4"	3/4"	• MANUAL FAUCET • PROVIDE STREM SIDEKICK AT VET TECH SINKS FOR HAIR/LINT INTERCEPTION AND AT SINKS CALLED OUT FOR PLASTER TRAP PROTECTION
SK-3D	SINK, DROP-IN SINGLE (LARGE, DEEP) BOWL, TYPE 304 STAINLESS STEEL, WRISTBLADE LEVER HANDLES, 1.5 GPM W/ AERATOR FAUCET, ZURN Z-8746-CP OFFSET GRID DRAIN, ZURN Z-8802LR-CP ANGLE STOPS W/ Ø3/8" (OD) TUBING, DEARBORN 701-1 17 GA. P-TRAP, TRUEBRO 105W OFFSET INSULATION KIT (NOT REQUIRED IF CABINET APRON IS INSTALLED), ADA, LEAD-FREE	2"	2"	3/4"	3/4"	• MANUAL FAUCET • PROVIDE STREM SIDEKICK AT VET TECH SINKS FOR HAIR/LINT INTERCEPTION AND AT SINKS CALLED OUT FOR PLASTER TRAP PROTECTION
SK-4	SINK, WALL-MOUNTED SINGLE BOWL, TYPE 304 STAINLESS STEEL, WRISTBLADE LEVER HANDLES, 1.5 GPM W/ AERATOR FAUCET, ZURN Z-8746-CP OFFSET GRID DRAIN, ZURN Z-8802LR-CP ANGLE STOPS W/ Ø3/8" (OD) TUBING, DEARBORN 701-1 17 GA. P-TRAP, TRUEBRO 105W OFFSET INSULATION KIT (NOT REQUIRED IF CABINET APRON IS INSTALLED), ADA, LEAD-FREE	2"	2"	3/4"	3/4"	• MANUAL FAUCET
SK-5	SINK, FLOOR-STANDING SCULLERY SINGLE BOWL, TYPE 304 STAINLESS STEEL, WRISTBLADE LEVER HANDLES, 1.5 GPM W/ AERATOR FAUCET, ZURN Z-8746-CP OFFSET GRID DRAIN, ZURN Z-8802LR-CP ANGLE STOPS W/ Ø3/8" (OD) TUBING, DEARBORN 701-1 17 GA. P-TRAP, TRUEBRO 105W OFFSET INSULATION KIT (NOT REQUIRED IF CABINET APRON IS INSTALLED), ADA, LEAD-FREE	2"	2"	3/4"	3/4"	• MANUAL FAUCET
SK-6	SINK, FLOOR-STANDING SCULLERY DOUBLE BOWL, TYPE 304 STAINLESS STEEL, WRISTBLADE LEVER HANDLES, 1.5 GPM W/ AERATOR FAUCET, ZURN Z-8746-CP OFFSET GRID DRAIN, ZURN Z-8802LR-CP ANGLE STOPS W/ Ø3/8" (OD) TUBING, DEARBORN 701-1 17 GA. P-TRAP, TRUEBRO 105W OFFSET INSULATION KIT (NOT REQUIRED IF CABINET APRON IS INSTALLED), ADA, LEAD-FREE	2"	2"	3/4"	3/4"	• MANUAL FAUCET
SK-7	SINK, WALL-MOUNTED PEDESTAL STYLE SINGLE BOWL, TYPE 304 STAINLESS STEEL, FOOT OPERATED HAND SINK WITH FAUCET AND SOAP DISPENSER, ZURN Z-8746-CP OFFSET GRID DRAIN, ZURN Z-8802LR-CP ANGLE STOPS W/ Ø3/8" (OD) TUBING, DEARBORN 701-1 17 GA. P-TRAP, TRUEBRO 105W OFFSET INSULATION KIT (NOT REQUIRED IF CABINET APRON IS INSTALLED), ADA, LEAD-FREE	2"	2"	3/4"	3/4"	• FOOT OPERATED FAUCET
EDF-2	ELECTRIC DRINKING FOUNTAIN, INDOOR SINGLE LEVEL WALL-MOUNTED W/ BOTTLE FILLER, STAINLESS STEEL FINISH, DEARBORN 704-1 1-1/2" 17 GA. P-TRAP, BRASS CRAFT G2CR19C ANGLE STOP, AQUAFLO SFC-120-PP STAINLESS STEEL FLEX CONNECTORS, CHROME PLATED BUBBLER, SELF-CLOSING MECHANICAL PUSHBUTTON, STREAM REGULATOR, NON-FILTERED, REFRIGERATED, ELECTRICAL, ADA, LEAD-FREE	2"	2"	3/4"	-	-
EDF-3	ELECTRIC DRINKING FOUNTAIN, INDOOR BI-LEVEL WALL-MOUNTED W/ BOTTLE FILLER, STAINLESS STEEL FINISH, DEARBORN 704-1 1-1/2" 17 GA. P-TRAP, BRASS CRAFT G2CR19C ANGLE STOP, AQUAFLO SFC-120/PP STAINLESS STEEL FLEX CONNECTORS, CHROME PLATED BUBBLER, SELF-CLOSING MECHANICAL PUSHBUTTON, STREAM REGULATOR, NON-FILTERED, REFRIGERATED, ELECTRICAL, ADA, LEAD-FREE	2"	2"	3/4"	-	-
EW-2	EMERGENCY SHOWER W/ EYE AND FACE WASH, BARRIER FREE PULL ROD, (4) POLYPROPYLENE SPRAY HEADS W/ INTEGRAL DUST COVERS AT EYE AND FACE WASH, FILTERED, ADA, LEAD-FREE	-	-	3/4"	-	-
SS-1	SERVICE SINK, FLOOR-MOUNTED CORNER TYPE W/ DROP FRONT SINGLE BASIN, SOLID SURFACE MATERIAL (NON-POROUS STONE), INCLUDE HOSE W/ BRACKET AND MOP HANGER, LEAD-FREE	3"	2"	3/4"	3/4"	• PROVIDE SERVICE SINK FAUCET W/ WALL BRACE, PAIL HOOK AND 3/4" HOSE THREAD ON SPOUT • PROVIDE WITH STAINLESS STEEL WALL GUARDS
SS-FLORAL	FLORAL ROOM SERVICE STATION. SITE BUILT FLOOR BASIN (BY OTHERS) WITH DRAIN AT CENTER (PROVIDE 3" FD - 2 AT CENTER OF BASIN), PROVIDE POT FILLER FAUCET AS SPECIFIED, LEAD-FREE	3"	2"	3/4"	3/4"	• PROVIDE POT FILLER FAUCET
FD-1	FLOOR DRAIN, ROUND, ADJUSTABLE NICKEL-BRONZE STRAINER, LACQUERED CAST IRON BODY W/ DOUBLE DRAINAGE FLANGE, WEEP HOLES, REVERSIBLE CLAMPING COLLAR, PUSH ON GASKET OUTLET OR NO HUB OUTLET	SEE PLANS		-	-	• PROVIDE TRAP PRIMER TYPE TP-2
FD-2	FLOOR DRAIN, SQUARE, ADJUSTABLE NICKEL-BRONZE STRAINER, LACQUERED CAST IRON BODY W/ DOUBLE DRAINAGE FLANGE, WEEP HOLES, REVERSIBLE CLAMPING COLLAR, SEDIMENT BUCKET, PUSH ON GASKET OUTLET OR NO HUB OUTLET	SEE PLANS		-	-	• PROVIDE TRAP PRIMER TYPE TP-1 OR TP-E
FD-3	FLOOR DRAIN, ROUND, MEDIUM-DUTY ACID RESISTANT COATED INTERIOR AND NICKEL-BRONZE RIM, LACQUERED CAST IRON BODY, SEEPAGE PAN, COMBINATION MEMBRANE FLASHING CLAMP AND FRAME, SEDIMENT BUCKET, PUSH ON GASKET OUTLET OR NO HUB OUTLET	SEE PLANS		-	-	• PROVIDE TRAP PRIMER TYPE TP-1 OR TP-E • PROVIDE 4" FUNNEL DRAIN FOR FREEZER DRAIN ONLY
FS-1	FLOOR SINK, 8" SQUARE, MEDIUM-DUTY ACID RESISTANT COATED INTERIOR AND NICKEL-BRONZE RIM W/ SECURED 1/2 GRATE, CAST IRON BODY, INTEGRAL SEEPAGE PAN, POLISHED ALUMINUM BOTTOM DOME STRAINER, PUSH ON GASKET OUTLET OR NO HUB OUTLET	SEE PLANS		-	-	• PROVIDE TRAP PRIMER TYPE TP-1 OR TP-E
FS-2	FLOOR SINK, 12" SQUARE, LIGHT-DUTY ACID RESISTANT COATED INTERIOR AND NICKEL-BRONZE RIM W/ SECURED 3/4 GRATE, CAST IRON BODY, INTEGRAL SEEPAGE PAN, POLISHED ALUMINUM BOTTOM DOME STRAINER, PUSH ON GASKET OUTLET OR NO HUB OUTLET	SEE PLANS		-	-	• PROVIDE TRAP PRIMER TYPE TP-1 OR TP-E
FS-3	FLOOR SINK, 12" SQUARE, LIGHT-DUTY ACID RESISTANT COATED INTERIOR AND NICKEL-BRONZE RIM W/ SECURED 1/2 GRATE, CAST IRON BODY, INTEGRAL SEEPAGE PAN, POLISHED ALUMINUM BOTTOM DOME STRAINER, PUSH ON GASKET OUTLET OR NO HUB OUTLET	SEE PLANS		-	-	• PROVIDE TRAP PRIMER TYPE TP-1 OR TP-E
TP-1	TRAP PRIMER, PRESSURE DROP TYPE, VACUUM BREAKER TRAP PRIMER CONNECTED TO COLD WATER SUPPLY ONLY W/ ISOLATION VALVE, LEAD-FREE	-	-	-	-	-
TP-2	TRAP PRIMER, FLUSH VALVE TYPE, VACUUM BREAKER TRAP PRIMER ATTACHED TO WATER CLOSET FLUSH VALVE, LEAD-FREE	-	-	-	-	-
TP-3	TRAP PRIMER, AUTOMATIC TYPE, INTEGRAL ANTI-SIPHON AIR PORT, CONNECT TRAP PRIMER TO COLD WATER SUPPLY ONLY, LEAD-FREE	-	-	-	-	-
TP-E	TRAP PRIMER, ELECTRIC TYPE, VACUUM BREAKER TRAP PRIMER CONNECTED TO COLD WATER SUPPLY MANIFOLD, SLOW CLOSING 24 VAC SOLENOID VALVE W/ INTEGRAL STRAINER, 120 - 24 VAC TRANSFORMER, LEAD-FREE	-	-	-	-	-
RD-1	ROOF DRAIN, LOW PROFILE REMOVABLE ALUMINUM DOME AND LACQUERED CAST IRON SUMP RECIEVER, UNDERDECK CLAMP, NO-HUB CONNECTION	-	-	-	-	-
OD-1	OVERFLOW ROOF DRAIN, WATERDAM EXTENDED TO 2" ABOVE FLOOD ELEVATION, LOW PROFILE REMOVABLE ALUMINUM DOME AND LACQUERED CAST IRON SUMP RECIEVER, UNDERDECK CLAMP, NO-HUB CONNECTION	-	-	-	-	-
HB-1	HOSE BIBB, WALL-MOUNTED, ENCLOSED IN BOX FLUSH W/ WALL, ANTI-SIPHON WALL FAUCET W/ INTEGRAL BACKFLOW PREVENTER, LEAD-FREE	-	-	3/4"	-	-
HB-2	HOSE BIBB, WALL-MOUNTED, ENCLOSED IN BOX FLUSH W/ WALL, ANTI-SIPHON WALL FAUCET W/ INTEGRAL BACKFLOW PREVENTER, FREEZE-RESISTANT, LEAD-FREE	-	-	3/4"	-	• PROVIDE IN EXTERIOR MECHANICAL SPACES
HB-3	HOSE BIBB, WALL-MOUNTED, EXPOSED, ANTI-SIPHON WALL FAUCET W/ INTEGRAL BACKFLOW PREVENTER, LEAD-FREE	-	-	3/4"	-	• PROVIDE IN INTERIOR MECHANICAL SPACES
WH-1	WALL HYDRANT, WALL-MOUNTED, ENCLOSED IN BOX FLUSH W/ WALL, ANTI-SIPHON WALL HYDRANT W/ INTEGRAL BACKFLOW PREVENTER, FREEZE-RESISTANT, LOCKABLE BOX AND LOOSE TEE KEY TO BE FURNISHED W/ WALL HYDRANT, LEAD-FREE	-	-	3/4"	-	-
RVB-1	REFRIGERATOR VALVE BOX, WALL-MOUNTED, STAINLESS STEEL PREFORMED ROUGH-IN BOX FLUSH W/ WALL, INTEGRAL WATER HAMMER ARRESTER, LEAD-FREE	-	-	3/4"	-	-
RVB-2	REFRIGERATOR VALVE BOX, WALL-MOUNTED, STAINLESS STEEL PREFORMED ROUGH-IN BOX FLUSH W/ WALL, INTEGRAL WATER HAMMER ARRESTER, LEAD-FREE	2"	2"	3/4"	3/4"	-
TMV-1	THERMOSTATIC MIXING VALVE, POINT-OF-USE, FLOW CAPACITY BETWEEN 0.35 GPM MINIMUM AND 4 GPM MAXIMUM AT 5 PSI PRESSURE DROP, VOLUME CONTROL SHUT-OFF VALVE ON OUTLET, CHECK VALVE ON INLETS, LEAD-FREE	-	-	3/4"	3/4"	-
TMV-2	THERMOSTATIC MIXING VALVE, HIGH / LOW USE, FLOW CAPACITY BETWEEN 3 GPM MINIMUM AND 14 GPM MAXIMUM AT 5 PSI PRESSURE DROP, VOLUME CONTROL SHUT-OFF VALVE ON OUTLET, CHECK VALVE ON INLETS, LEAD-FREE	-	-	1-1/4"	1-1/4"	-
TMV-3	THERMOSTATIC MIXING VALVE, MASTER FIXTURE BANK USE, FLOW CAPACITY BETWEEN 3 GPM MINIMUM AND 30 GPM MAXIMUM AT 5 PSI PRESSURE DROP, VOLUME CONTROL SHUT-OFF VALVE ON OUTLET, CHECK VALVE ON INLETS, LEAD-FREE	-	-	1-1/4"	1-1/4"	-

NOTES:

1. ROUGH-IN SUPPLY WASTE AND VENT PIPE SIZES INDICATED ARE MINIMUM SIZES SHOWN FOR ROUGH-IN PURPOSES ONLY.
2. COORDINATE WITH FIXTURE MANUFACTURER'S INSTALLATION DRAWINGS FOR PROPER AND CORRECT INSTALLATION OF ALL FIXTURES AND APPURTENANCES.
3. ALL PLUMBING FIXTURES SHALL BE COMPLETELY ROUGH-IN BY THE PLUMBING CONTRACTOR AND SHALL MEET ALL CODES HAVING JURISDICTION.
4. ALL FIXTURES TO BE COMMERCIAL GRADE UNLESS OTHERWISE NOTED.
5. PROVIDE A WATER HAMMER ARRESTER IN PIPING TO ALL FIXTURES AND / OR FIXTURE BANKS.
6. PROVIDE A SHUT-OFF VALVE AT ALL FIXTURES AND / OR FIXTURE BANKS AND AT EACH FLOOR IF FIXTURES AND / OR FIXTURE BANKS ARE STACKED (MULTI-LEVEL).

ADD#1

PBK

ARCHITECT PBK Architects, Inc.
PBK.com
HOUSTON
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-961-0608 P
713-961-4571 F
TX Firm: BR 1608

CIVIL
CONSULTANT NAME
T.000-000-0000
LANDSCAPE
CONSULTANT NAME
T.000-000-0000
STRUCTURAL
CONSULTANT NAME
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MEP
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ACOUSTIC
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THEATER
CONSULTANT NAME
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FOOD SERVICE
CONSULTANT NAME
T.000-000-0000
SECURITY
CONSULTANT NAME
T.000-000-0000

LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT

K

L

KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED
PROFESSIONAL ENGINEER
05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: SC

DRAWN BY: SC

PLUMBING SCHEDULES - CTE

P-501.C

Plot Stamp:
6/3/2025 9:47:38 AM

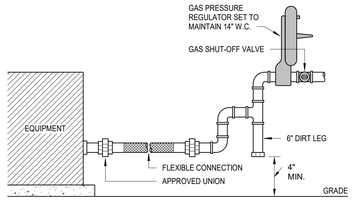
PLUMBING DETAILS - CTE

P-601.C

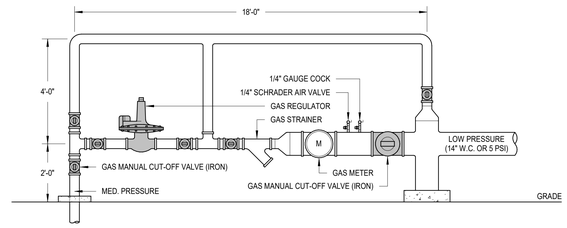
FOR BLUEBEAM LABELING/OCR:

0"

1"



27 EQUIPMENT GAS CONNECTION
N.T.S



26 TYPICAL LARGE SERVICE GAS METER
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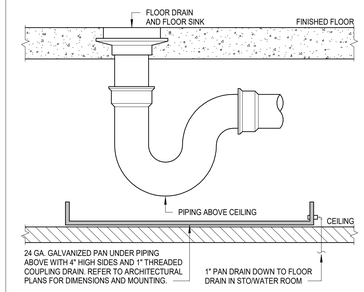
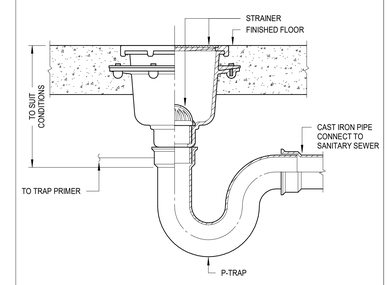


25 DRAIN PAN
N.T.S



24 FLOOR SINK
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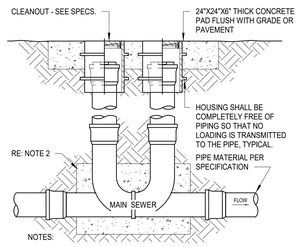

23 P6N DOUBLE EXTERIOR CLEANOUT
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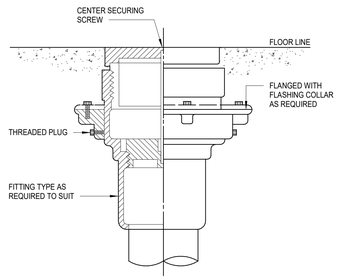

22 FLOOR CLEANOUT
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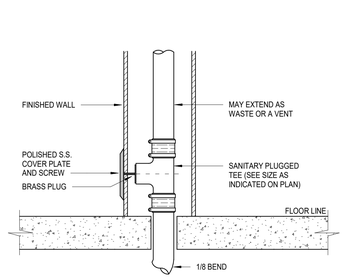
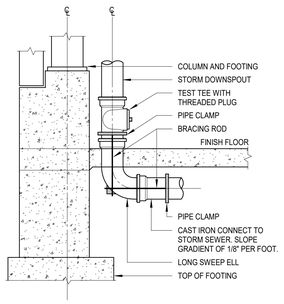
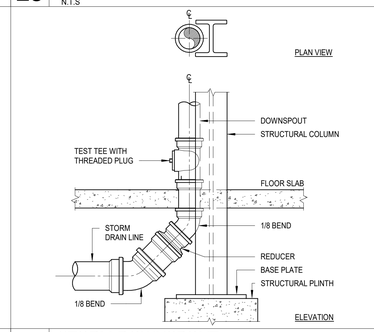


21 WALL CLEANOUT DETAIL
N.T.S



20 STORM DOWNSPOUT
N.T.S



19 STORM DOWNSPOUT
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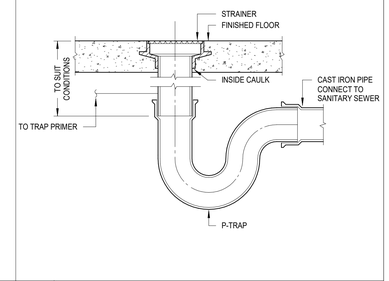
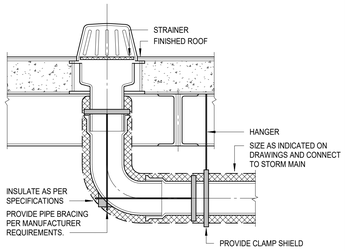


18 FLOOR DRAIN DETAIL
N.T.S



17 TYPICAL DRAIN INSTALLATION
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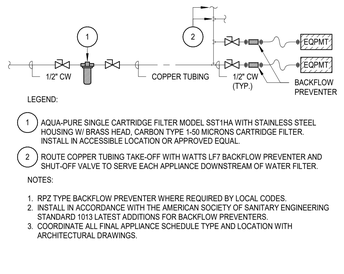

16 WATER FILTER/APPLIANCE
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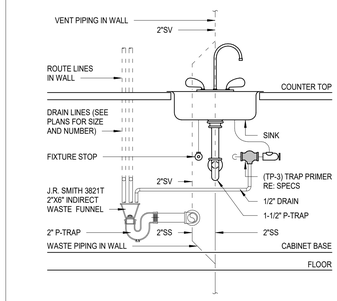

15 INDIRECT WASTE RECEPTOR
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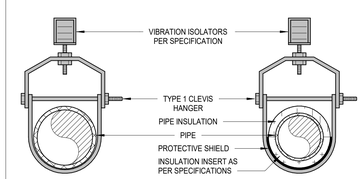

14 SINGLE PIPE TYPE 1 CLEVIS HANGER
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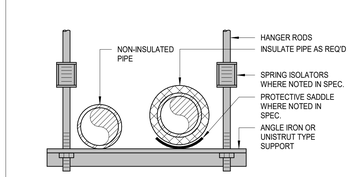
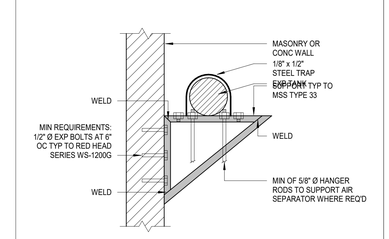
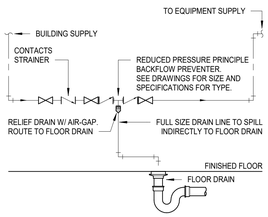


13 PIPE SUPPORT - TRAPEZE TYPE
N.T.S



12 PIPE WALL SUPPORT
N.T.S



11 REDUCED PRESSURE BACKFLOW ASSEMBLY
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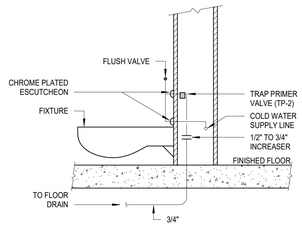
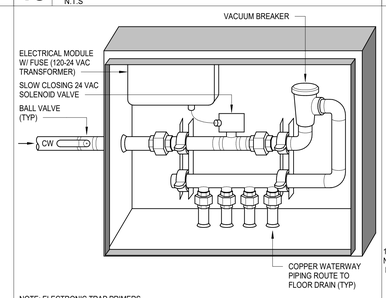


10 TRAP PRIMER (TP-2)
N.T.S



9 ELECTRONIC TRAP PRIMER (TP-E)
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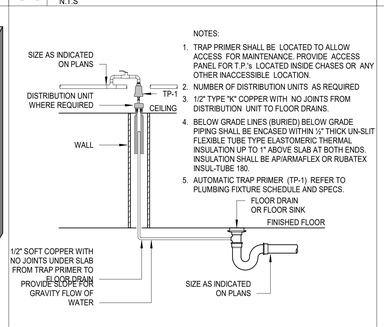
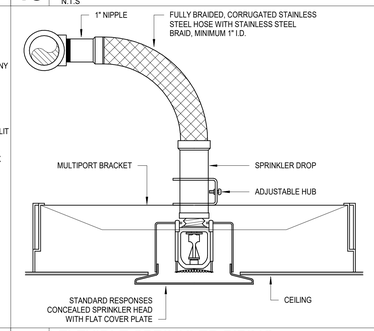
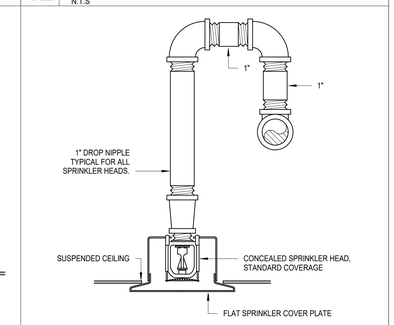


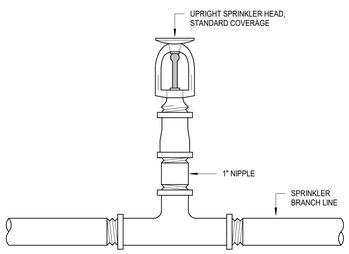
8 TRAP PRIMER (TP-1) W/ DISTRIBUTION
N.T.S



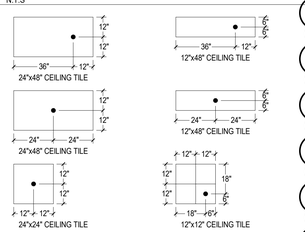
7 FLEXIBLE SPRINKLER PIPING
N.T.S



6 CONCEALED SPRINKLER HEAD
N.T.S



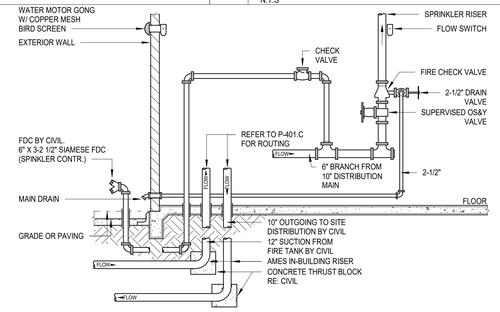
5 UPRIGHT SPRINKLER HEAD
N.T.S



4 SPRINKLER HEAD LOCATIONS
N.T.S

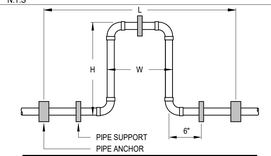
NOTE:

PROVIDE AMES IN-BUILDING RISER AT ALL INCOMING/OUTGOING PRESSURIZED FIRE WATER MAINS INCLUDING:
- 12" INCOMING SUCTION LINE
- 10" OUTGOING SITE DISTRIBUTION LINE
- 6" OUTGOING REMOTE FDC LINE



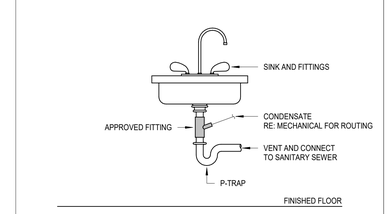
3 FIRE SPRINKLER RISER DIAGRAM - CTE
N.T.S

ADD#1



PIPE SIZE	40 DEGREE RISE L < 300 L.F.		60 DEGREE RISE L < 300 L.F.		80 DEGREE RISE L < 300 L.F.	
	W	H	W	H	W	H
3/4"	24"	48"	24"	48"	24"	48"
1"	24"	48"	36"	72"	36"	72"
1-1/4"	24"	48"	36"	72"	36"	72"
1-1/2"	24"	48"	36"	72"	36"	72"
2"	24"	48"	36"	72"	36"	72"
2-1/2"	24"	48"	36"	72"	36"	72"
3"	24"	48"	36"	72"	48"	96"
4"	24"	48"	36"	72"	48"	96"

2 EXPANSION LOOP TABLE
N.T.S



ADD#1

1 CONDENSATE TO SINK TAILPIECE
N.T.S

PBK

ARCHITECT PBK Architects, Inc.
PBK.com
HOUSTON
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-965-0608 P
713-961-4571 F
TX Firm: BR 1608

No.	Date
	CONSULTANT NAME T.000-000-0000
	LANDSCAPE CONSULTANT NAME T.000-000-0000
	STRUCTURAL CONSULTANT NAME T.000-000-0000
	MEP CONSULTANT NAME T.000-000-0000
	ACOUSTIC CONSULTANT NAME T.000-000-0000
	THEATER CONSULTANT NAME T.000-000-0000
	FOOD SERVICE CONSULTANT NAME T.000-000-0000
	CONSULTANT NAME T.000-000-0000

LEAF ENGINEERS

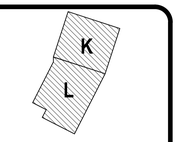
New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS



KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED
PROFESSIONAL ENGINEER
05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: SC

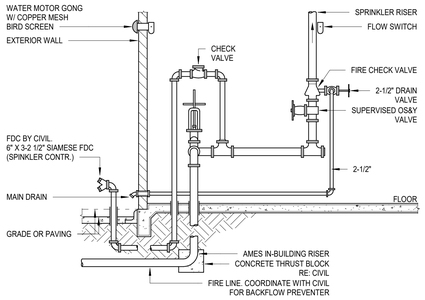
DRAWN BY: SC

PLUMBING DETAILS - CTE

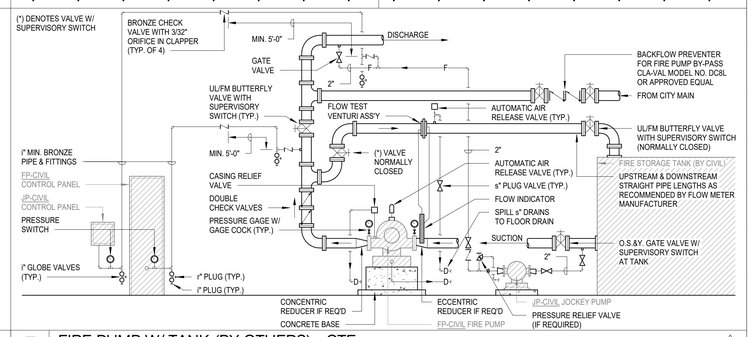
P-601.C

Plot Stamp:
6/3/2025 9:47:39 AM

PLUMBING DETAILS - CTE
P-603.C
FOR BLUEBEAM LABELING/OCR:

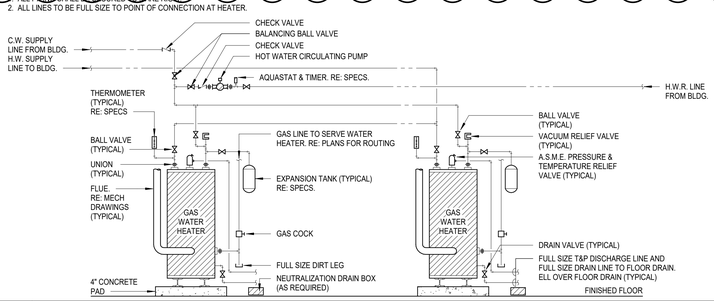


8 FIRE SPRINKLER RISER DIAGRAM - GYM
N.T.S



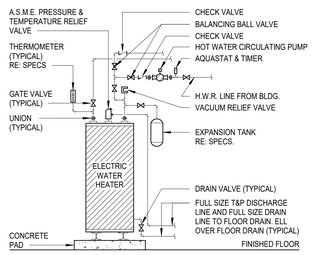
5 FIRE PUMP W/ TANK (BY OTHERS) - CTE
N.T.S
ADD#1

NOTES:
1. ALL PIPING AND TUBE SHALL BE SLOPED TO MAKE RIGID.
2. ALL LINES TO BE FULL SIZE TO POINT OF CONNECTION AT HEATER.

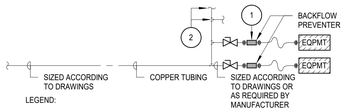


9 GAS WATER HEATER
N.T.S

NOTES:
1. ALL PIPING AND TUBE SHALL BE SLOPED TO MAKE RIGID.
2. ALL LINES TO BE FULL SIZE TO POINT OF CONNECTION AT HEATER.



7 ELECTRIC WATER HEATER PIPING
N.T.S



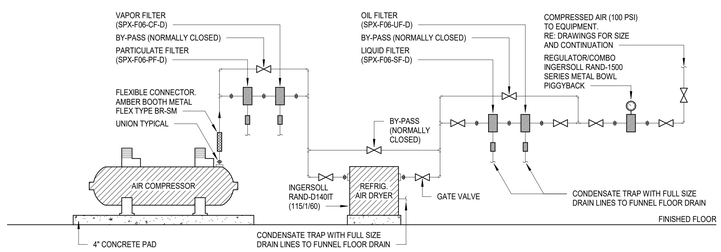
LEGEND:

1. PROVIDE BACKFLOW PROTECTION AS NEEDED AND REFER TO PLUMBING EQUIPMENT SPECIFICATION 22 30 00 FOR ADDITIONAL BACKFLOW PREVENTER INFORMATION.
2. ROUTE COPPER TUBING TAKE-OFF WITH BACKFLOW PREVENTER AS NEEDED AND SHUT-OFF VALVE TO SERVE EACH APPLIANCE PRIOR TO BACKFLOW PREVENTER.

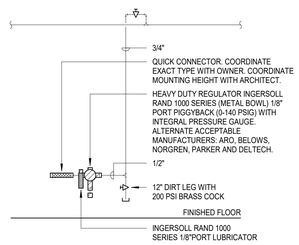
NOTES:

1. PROVIDE AND INSTALL, AT MINIMUM, A TESTABLE DOUBLE BACKFLOW DEVICE AT ALL KITCHEN EQUIPMENT CONNECTED TO THE DOMESTIC WATER SYSTEM.
2. RPZ TYPE BACKFLOW PREVENTER WHERE REQUIRED BY LOCAL CODES.
3. INSTALL IN ACCORDANCE WITH THE AMERICAN SOCIETY OF SANITARY ENGINEERING STANDARD 1013 LATEST ADDITIONS FOR BACKFLOW PREVENTERS.
4. COORDINATE ALL FINAL APPLIANCE SCHEDULE TYPE, LOCATION AND CONNECTION SIZE WITH FOODSERVICE DRAWINGS.

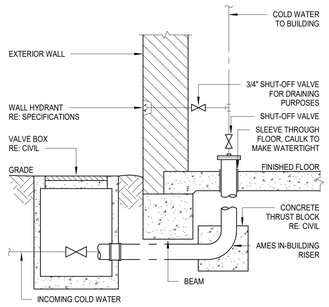
6 WATER KITCHEN APPLIANCE
N.T.S



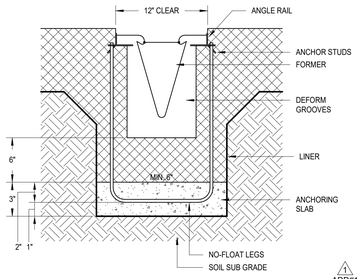
4 AIR COMPRESSOR PIPING DIAGRAM
N.T.S



3 AIR DROP W/LUBE
N.T.S



2 DOMESTIC COLD WATER LINE ENTRY
N.T.S



1 TRENCH DRAIN
N.T.S
ADD#1

Plot Stamp:
6/3/2025 9:47:39 AM

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PBK.com
HOUSTON
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-961-0608 P
713-961-4571 F
TX Firm: BR 1608

CIVIL
CONSULTANT NAME
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MEP
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ACOUSTIC
CONSULTANT NAME
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THEATER
CONSULTANT NAME
T-000-000-0000
FOOD SERVICE
CONSULTANT NAME
T-000-000-0000
CONSULTANT
CONSULTANT NAME
T-000-000-0000

LEAF ENGINEERS

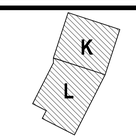
New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT



KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61625
LICENSED PROFESSIONAL ENGINEER
05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

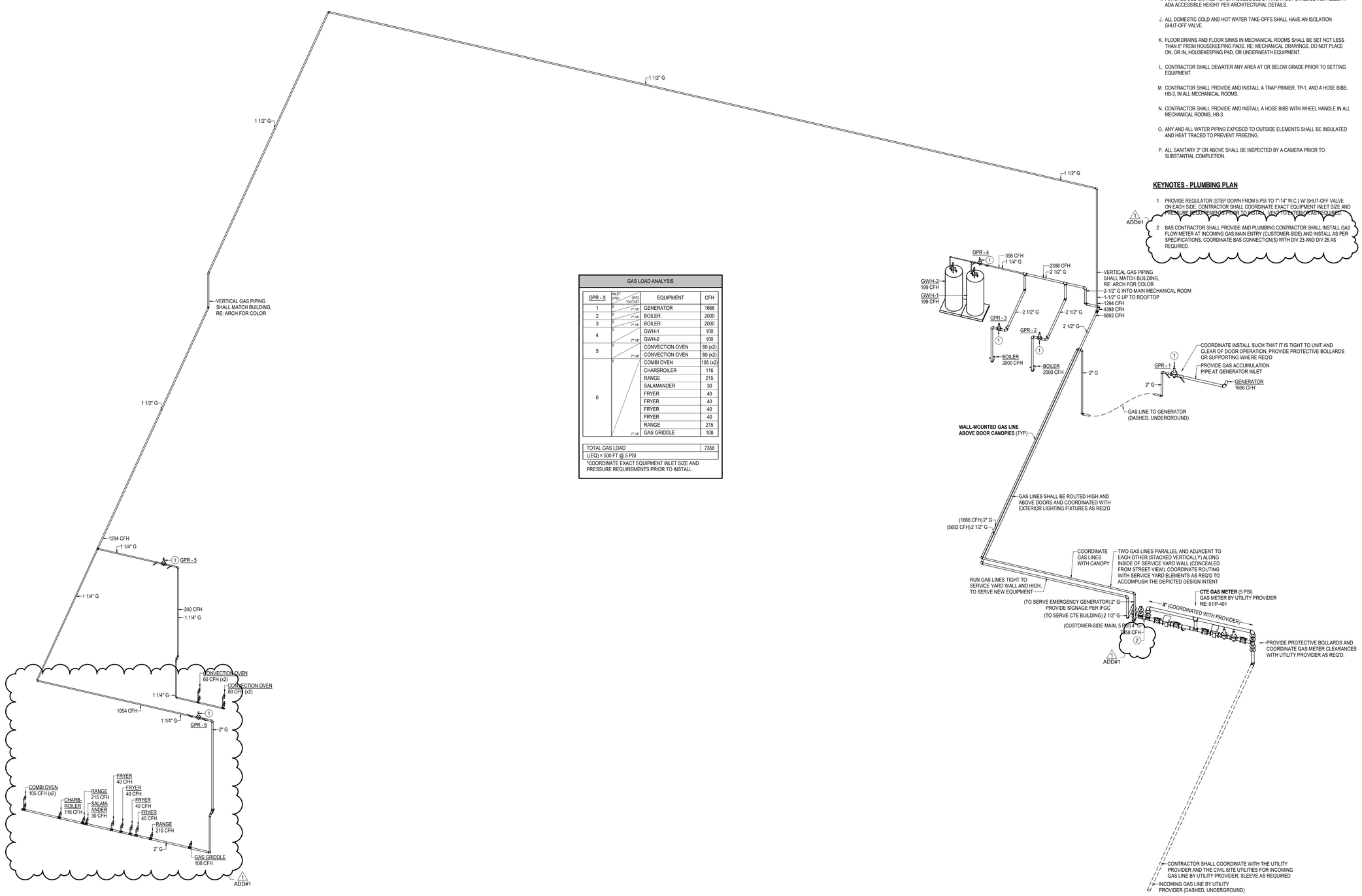
CHECKED BY: SC
DRAWN BY: SC

PLUMBING DETAILS - CTE

P-603.C

PLUMBING RISER DIAGRAMS - CTE
P-701.C
FOR BLUEBEAM LABELING/OCR:

0"
1"



GAS LOAD ANALYSIS				
GPR - X	INLET (PSI)	(WC) *OUTLET	EQUIPMENT	CFH
1	5	7"-14"	GENERATOR	1666
2	5	7"-14"	BOILER	2000
3	5	7"-14"	BOILER	2000
4	5		GWH-1	100
		7"-14"	GWH-2	100
5	5		CONVECTION OVEN	60 (x2)
		7"-14"	CONVECTION OVEN	60 (x2)
6	5		COMBI OVEN	105 (x2)
			CHARBOILER	116
			RANGE	215
			SALAMANDER	30
			FRYER	40
			FRYER	40
			FRYER	40
			FRYER	40
			RANGE	215
		7"-14"	GAS GRIDDLE	108

TOTAL GAS LOAD	7358
L(EQ) = 500 FT @ 5 PSI	

*COORDINATE EXACT EQUIPMENT INLET SIZE AND PRESSURE REQUIREMENTS PRIOR TO INSTALL.

GENERAL NOTES - PLUMBING PLAN

A. THE CONTRACTOR SHALL COMPLY WITH ALL AUTHORITIES HAVING JURISDICTION.

B. ALL FINAL CONNECTIONS TO FIXTURES AND EQUIPMENT SHALL BE MADE BY THE PLUMBING CONTRACTOR.

C. ALL PLUMBING PIPING SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO ANY INSTALLATION OF ALL PLUMBING FIXTURES AND EQUIPMENT BY THE PLUMBING CONTRACTOR.

D. ALL FLOOR DRAINS AND FLOOR SINKS SHOWN ON THIS DRAWING SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO INSTALLATION.

E. REFER TO ARCHITECTURAL DRAWING FOR EXACT LOCATIONS OF FIXTURES, EQUIPMENT, ETC. DO NOT SCALE FROM PLUMBING DRAWINGS.

F. ALL WALL CLEAN-OUTS SHALL BE ACCESSIBLE BY AN ACCESS PANEL.

G. PROVIDE AND INSTALL A DOUBLE EXTERIOR CLEAN-OUT (DFCO) ON ALL SANITARY LINES EXITING THE BUILDING.

H. ALL FLOOR DRAINS AND FLOOR SINKS SHALL BE PROVIDED WITH A TRAP PRIMER AND INSTALLED BY THE PLUMBING CONTRACTOR.

I. FIXTURES DESIGNATED AS ADA ACCESSIBLE BY ARCHITECT SHALL BE INSTALLED AT ADA ACCESSIBLE HEIGHT PER ARCHITECTURAL DETAILS.

J. ALL DOMESTIC COLD AND HOT WATER TAKE-OFFS SHALL HAVE AN ISOLATION SHUT-OFF VALVE.

K. FLOOR DRAINS AND FLOOR SINKS IN MECHANICAL ROOMS SHALL BE SET NOT LESS THAN 6" FROM HOUSEKEEPING PADS. RE: MECHANICAL DRAWINGS. DO NOT PLACE ON, OR IN, HOUSEKEEPING PAD, OR UNDERNEATH EQUIPMENT.

L. CONTRACTOR SHALL DEWATER ANY AREA AT OR BELOW GRADE PRIOR TO SETTING EQUIPMENT.

M. CONTRACTOR SHALL PROVIDE AND INSTALL A TRAP PRIMER, TP-1, AND A HOSE BIBB, HB-3, IN ALL MECHANICAL ROOMS.

N. CONTRACTOR SHALL PROVIDE AND INSTALL A HOSE BIBB WITH WHEEL HANDLE IN ALL MECHANICAL ROOMS, HB-3.

O. ANY AND ALL WATER PIPING EXPOSED TO OUTSIDE ELEMENTS SHALL BE INSULATED AND HEAT TRACED TO PREVENT FREEZING.

P. ALL SANITARY 3" OR ABOVE SHALL BE INSPECTED BY A CAMERA PRIOR TO SUBSTANTIAL COMPLETION.

KEYNOTES - PLUMBING PLAN

1 PROVIDE REGULATOR (STEP DOWN FROM 5 PSI TO 7"-14" W.C.) W/ SHUT-OFF VALVE ON EACH SIDE. CONTRACTOR SHALL COORDINATE EXACT EQUIPMENT INLET SIZE AND PRESSURE REQUIREMENTS PRIOR TO INSTALL. VENT TO EXTERIOR AS REQUIRED.

ADD#1

2 BAS CONTRACTOR SHALL PROVIDE AND PLUMBING CONTRACTOR SHALL INSTALL GAS FLOW METER AT INCOMING GAS MAIN ENTRY (CUSTOMER-SIDE) AND INSTALL AS PER SPECIFICATIONS. COORDINATE BAS CONNECTION(S) WITH DIV 23 AND DIV 26 AS REQUIRED.

1 PLUMBING RISER DIAGRAM - NATURAL GAS - CTE

Plot Stamp:
6/3/2025 9:47:40 AM

PBK

ARCHITECT PBK Architects, Inc.
PBK.com
HOUSTON
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-965-0608 P
713-961-4571 F
TX Firm: BR 1608

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CONSULTANT NAME
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STRUCTURAL
CONSULTANT NAME
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MEP
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ACOUSTIC
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THEATER
CONSULTANT NAME
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FOOD SERVICE
CONSULTANT NAME
T.000-000-0000
AV
CONSULTANT NAME
T.000-000-0000

LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT

KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61625
LICENSED
PROFESSIONAL ENGINEER
05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: SC
DRAWN BY: SC

PLUMBING RISER DIAGRAMS - CTE

P-701.C

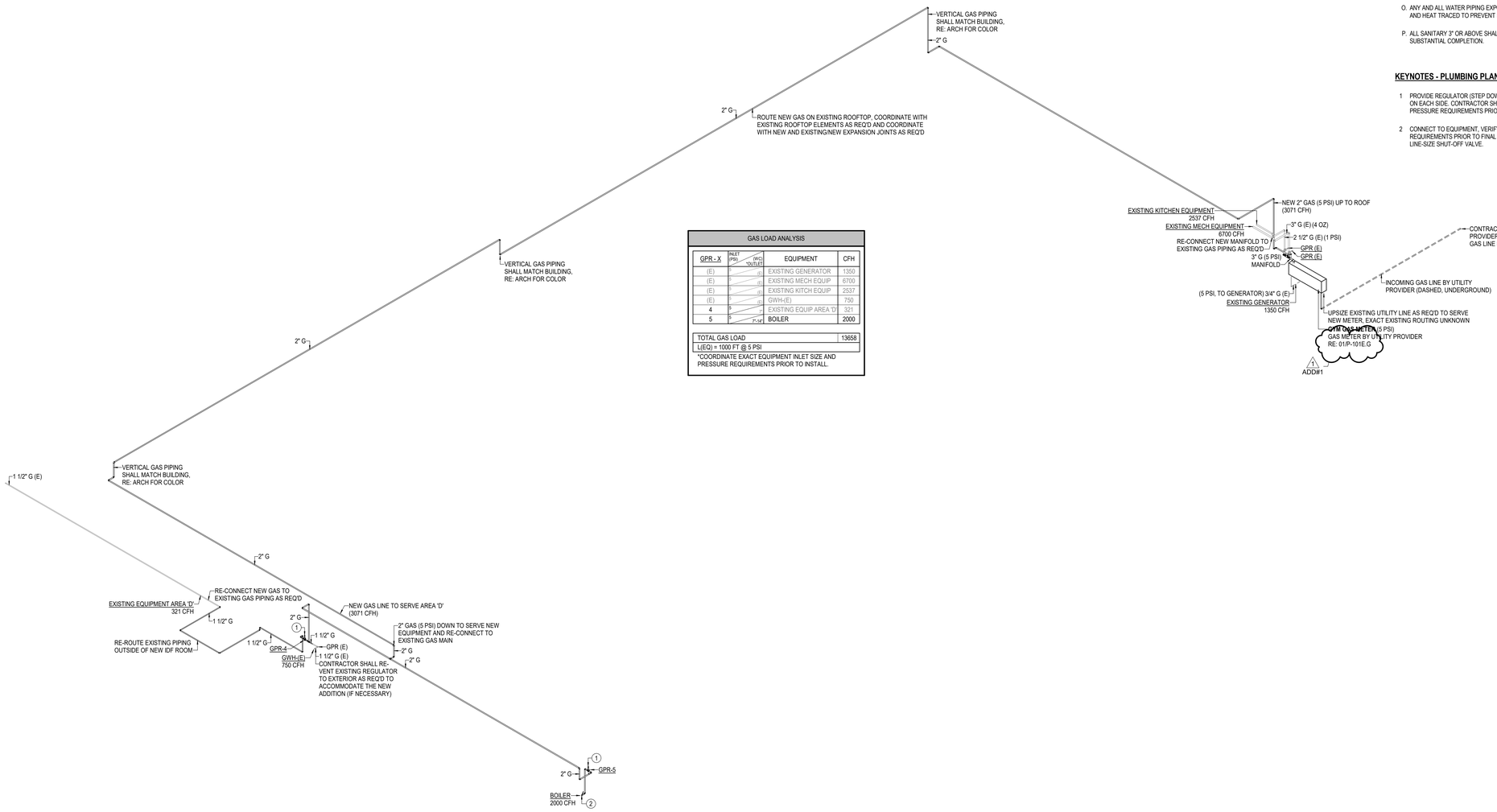
PLUMBING RISER DIAGRAMS - GYM

P-702.G

FOR BLUEBEAM LABELING/OCR:

0"

1"



GAS LOAD ANALYSIS				
GPR - X	INLET (PSI)	(WC) *OUTLET	EQUIPMENT	CFH
(E)	5	5	EXISTING GENERATOR	1350
(E)	5	5	EXISTING MECH EQUIP	6700
(E)	5	5	EXISTING KITCH EQUIP	2537
(E)	5	5	GWH-(E)	750
4	5	5	EXISTING EQUIP AREA 'D'	321
5	5	7"-14"	BOILER	2000

TOTAL GAS LOAD	13658
L(EQ) = 1000 FT @ 5 PSI	

*COORDINATE EXACT EQUIPMENT INLET SIZE AND PRESSURE REQUIREMENTS PRIOR TO INSTALL.

GENERAL NOTES - PLUMBING PLAN

A. THE CONTRACTOR SHALL COMPLY WITH ALL AUTHORITIES HAVING JURISDICTION.

B. ALL FINAL CONNECTIONS TO FIXTURES AND EQUIPMENT SHALL BE MADE BY THE PLUMBING CONTRACTOR.

C. ALL PLUMBING PIPING SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO ANY INSTALLATION OF ALL PLUMBING FIXTURES AND EQUIPMENT BY THE PLUMBING CONTRACTOR.

D. ALL FLOOR DRAINS AND FLOOR SINKS SHOWN ON THIS DRAWING SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO INSTALLATION.

E. REFER TO ARCHITECTURAL DRAWING FOR EXACT LOCATIONS OF FIXTURES, EQUIPMENT, ETC. DO NOT SCALE FROM PLUMBING DRAWINGS.

F. ALL WALL CLEAN-OUTS SHALL BE ACCESSIBLE BY AN ACCESS PANEL.

G. PROVIDE AND INSTALL A DOUBLE EXTERIOR CLEAN-OUT (DFCO) ON ALL SANITARY LINES EXITING THE BUILDING.

H. ALL FLOOR DRAINS AND FLOOR SINKS SHALL BE PROVIDED WITH A TRAP PRIMER AND INSTALLED BY THE PLUMBING CONTRACTOR.

I. FIXTURES DESIGNATED AS ADA ACCESSIBLE BY ARCHITECT SHALL BE INSTALLED AT ADA ACCESSIBLE HEIGHT PER ARCHITECTURAL DETAILS.

J. ALL DOMESTIC COLD AND HOT WATER TAKE-OFFS SHALL HAVE AN ISOLATION SHUT-OFF VALVE.

K. FLOOR DRAINS AND FLOOR SINKS IN MECHANICAL ROOMS SHALL BE SET NOT LESS THAN 6" FROM HOUSEKEEPING PADS. RE: MECHANICAL DRAWINGS. DO NOT PLACE ON, OR IN, HOUSEKEEPING PAD, OR UNDERNEATH EQUIPMENT.

L. CONTRACTOR SHALL DEWATER ANY AREA AT OR BELOW GRADE PRIOR TO SETTING EQUIPMENT.

M. CONTRACTOR SHALL PROVIDE AND INSTALL A TRAP PRIMER, TP-1, AND A HOSE BIBB, HB-3, IN ALL MECHANICAL ROOMS.

N. CONTRACTOR SHALL PROVIDE AND INSTALL A HOSE BIBB WITH WHEEL HANDLE IN ALL MECHANICAL ROOMS, HB-3.

O. ANY AND ALL WATER PIPING EXPOSED TO OUTSIDE ELEMENTS SHALL BE INSULATED AND HEAT TRACED TO PREVENT FREEZING.

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KEYNOTES - PLUMBING PLAN

1. PROVIDE REGULATOR (STEP DOWN FROM 5 PSI TO 7"-14" W.C.) W/ SHUT-OFF VALVE ON EACH SIDE. CONTRACTOR SHALL COORDINATE EXACT EQUIPMENT INLET SIZE AND PRESSURE REQUIREMENTS PRIOR TO INSTALL. VENT TO EXTERIOR AS REQUIRED.

2. CONNECT TO EQUIPMENT, VERIFY LINE SIZE WITH MANUFACTURER INSTALL REQUIREMENTS PRIOR TO FINAL CONNECTION(S). PROVIDE ACCESSIBLE FULL LINE-SIZE SHUT-OFF VALVE.

1 PLUMBNIG RISER DIAGRAM - NATURAL GAS - GYM

ADD#1

Plot Stamp:
6/3/2025 10:48:16 AM

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ARCHITECT PBK Architects, Inc.
PBK.com
HOUSTON
11 Greenway Plaza, 22nd Floor
Houston, TX 77046
713-965-0608 P
713-961-4571 F
TX Firm: BR 1608
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MEP
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FOOD SERVICE
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CONSULTANT
CONSULTANT NAME
T-000-000-0000
LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT

KEY PLAN

NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61522
PROFESSIONAL ENGINEER

05/20/2025
LEAF ENGINEERS
F-18672

CLIENT
HUFFMAN ISD

DATE	PROJECT NUMBER
05/20/2025	240157

DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 01	06/03/2025

CHECKED BY: SC

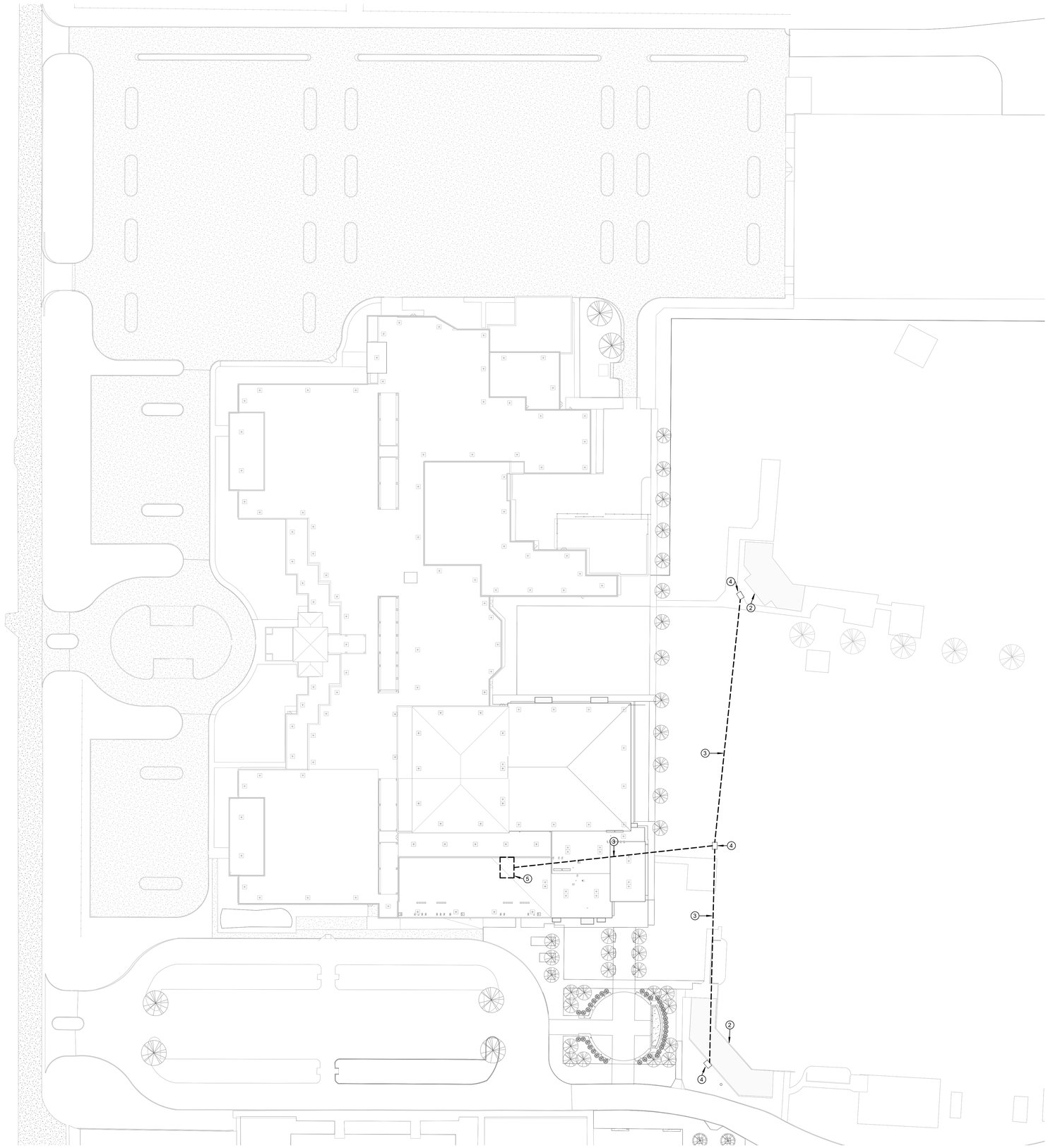
DRAWN BY: SC

PLUMBING RISER DIAGRAMS - GYM

P-702.G

TECHNOLOGY SITE PLAN-GYM
TS-101.G
FOR BLUEBEAM LABELING/OCR:

0"
1"



GENERAL NOTES:

1. ALL CONDUIT AND PULL BOXES SHALL BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR
2. CONTRACTOR SHALL VERIFY PROPER CONDUIT PATHWAY AND PULLBOX LOCATIN PRIOR TO INSTALLATION.
3. CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO EXISTING UTILITIES INCURRED DURING CONSTRUCTION.
4. PROVIDE PLENUM RATED INNDER DUCT WHEN CABLE IS NOT INSTALLED IN CONDUIT.
5. CAP OFF CONDUITS AT ALL OPEN POINTS IN THE PATHWAY AND MARK CAPS "FOR TECHNOLOGY USE ONLY"

(#) TECHNOLOGY KEYED NOTES:

1. CONTRACTOR SHALL PENETRATE BUILDING AT ACCESSIBLE CEILING. CONTRACTOR SHALL PROVIDE AND INSTALL WEATHERPROOF BACK BOX AND WEATHERPROOF SEAL.
2. INDICATES LOCATION OF PRESSBOX.
3. INDICATES APPROXIMATE LOCATION OF (2) 2" CONDUITS WITH 1" INNERDUCT FROM MDF TO PULLBOX FOR CONNECTRIVITY TO PRESSBOX.
4. INDICATES APPROXIMATE LOCATION OF A 36"x36"x36" CONCRETE PULLBOX INSTALLED FLUSH WITH GRADE FOR TELECOM SYSTEMS. PROVIDE EVERY 250' OR CHANGE OF DIRECTION MORE THAN 180 DEGREES. PULLBOX SHALL BE RATED FOR THE TERRIAN IN WHICH IT SHALL BE INSTALLED.
5. INDICATES LOCATION OF IDF ROOM.

1 **TECHNOLOGY SITE PLAN**
SCALE: 1" = 40'-0"

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LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: HARGAVE HIGH SCHOOL

25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT TEXAS

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KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED PROFESSIONAL ENGINEER
05/20/2025
LEAF ENGINEERS

1

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HUFFMAN ISD

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1	ADDENDUM #1	06.03.25

CHECKED BY: CL
DRAWN BY: NSN

TECHNOLOGY SITE PLAN-GYM

TS-101.G

Plot Stamp:
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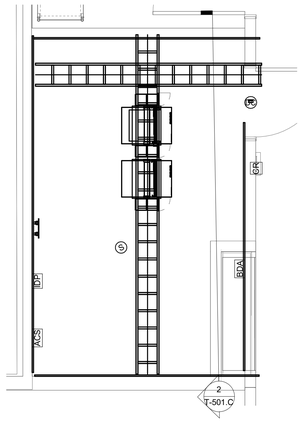
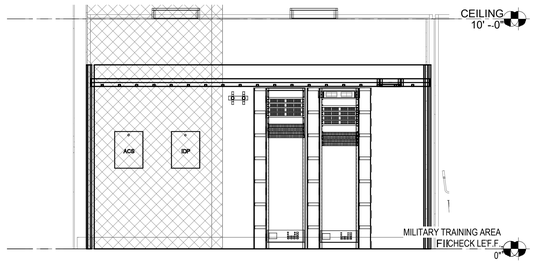
TECHNOLOGY MDF/IDF DETAILS
T-501.C
FOR BLUEBEAM LABELING/OCR:

0"
1"



1 ENLARGED MDF RM L114
SCALE: 3/8" = 1'-0"



2 MDF L114 ELEVATION
SCALE: 3/8" = 1'-0"

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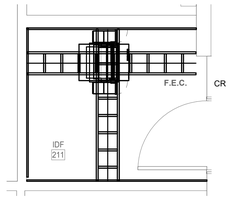
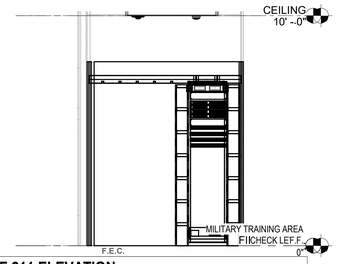


3 ENLARGED IDF RM 2113
SCALE: 3/8" = 1'-0"



4 IDF 211 ELEVATION
SCALE: 3/8" = 1'-0"

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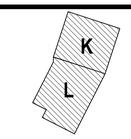
LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE
25400 Willy Lane
Huffman, TX 77336

ISSUE FOR PROPOSAL

HUFFMAN INDEPENDENT SCHOOL DISTRICT



KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED
PROFESSIONAL ENGINEER
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CHECKED BY: Checker
DRAWN BY: Author

TECHNOLOGY
MDF/IDF DETAILS

T-501.C

1ST FLOOR FIRE ALARM PLAN - AREA K-CTE

TF-101K.C

FOR BLUEBEAM LABELING/OCR:

1 1ST FLOOR FIRE ALARM PLAN - AREA K

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

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New CTE Center & Hargrave High School Additions & Renovations

BUILDING: CTE

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1ST FLOOR FIRE ALARM PLAN - AREA K-CTE

TF-101K.C

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1ST FLOOR TECHNOLOGY PLAN - AREA K-CTE
TN-101K.C
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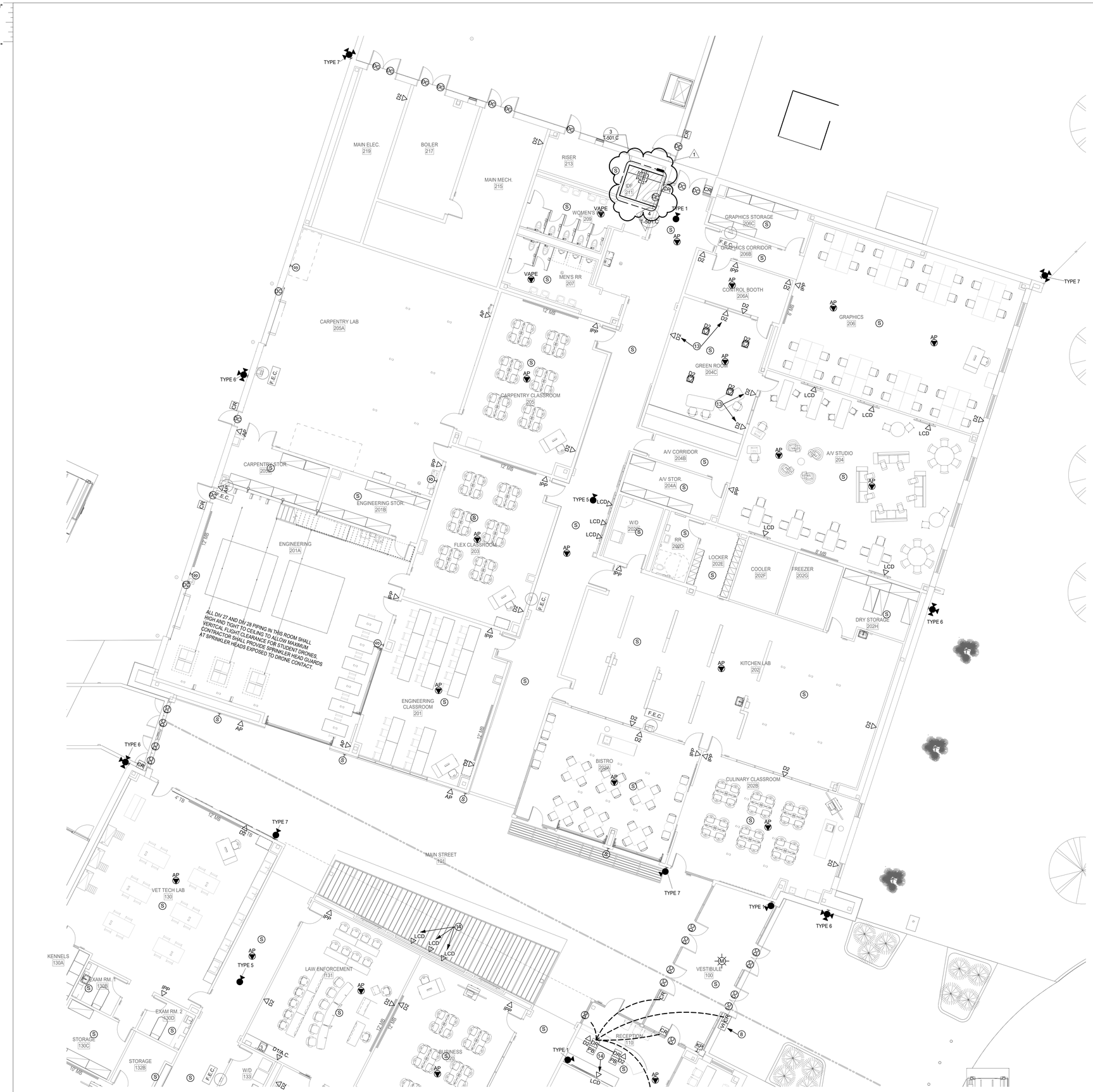

1 1ST FLOOR TECHNOLOGY PLAN - AREA K
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

A. ALL EXTERIOR CAMERAS AND WIRELESS ACCESS POINTS SHALL BE INSTALLED AT 12 FT. A.F.F. UNLESS OTHERWISE NOTED.

B. ALL EXTERIOR CAMERAS AT CANOPY LOCATIONS SHALL BE INSTALLED AT 8 IN. BELOW THE CANOPY. ELECTRICAL CONTRACTOR SHALL VERIFY LOCATIONS PRIOR TO ROUGH-IN OF CONDUIT INFRASTRUCTURE.

C. EXTERIOR PUBLIC ADDRESS SPEAKERS SHALL BE ZONED SEPARATELY FROM INTERIOR PUBLIC ADDRESS SPEAKERS.

D. SECURITY CONTRACTOR SHALL INSTALL ALL POP-ITS IN ACCESSIBLE LOW CEIING SPACE FOR ALL HIGH-VOLUME CEILINGS, CAFETORIUMS, COMMONS AND GYMNASIUMS.

E. ACCESS CONTROL CONTRACTOR SHALL CONNECT DOOR HARDWARE CABLE TO ACCESS CONTROL SYSTEM.

F. PROVIDE DOOR CONTACTS ON ALL ROOF HATCHES. REFERENCE ARCHITECTURAL DRAWINGS FOR LOCATIONS.

G. FOR ALL EXTERIOR MOUNTED IP DEVICES, PROVIDE A BISCUIT TERMINATED ON THE INTERIOR OF THE BUILDING AND A PRETERMINATED CABLE CONNECTED FROM THE BISCUIT TO THE DEVICE.

H. CAMERA ORIENTATION SHOWN DOES NOT INDICATE ACTUAL FIELD OF VIEW. COORDIATE WITH OWNER AND ADJUST CAMERAS FOR PROPER FIELD OF VIEW.

I. PROVIDE WIREGUARDS OR CLEAR POLYCARBONATE COVERS ON DEVICES INSTALLED IN GYMNASIUMS.

J. EVERY VIDEO DISPLAY (LCD, VIDEO PROJECTOR, ETC.) SHALL RECEIVE 1 QTY. DATA CABLE ROUTED TO NEAREST IDF.

K. PROVIDE CLEAR POLYCARBONATE COVER FOR ALL CAMERAS NSTALLED IN GYMNASIUMS.

L. PROVIDE WIREGUARDS FOR ALL WALL MOUNTED TECHNOLOGY DEVICES INSTALLED IN GYMNASIUMS EXCEPT CAMERAS.

M. ALL CAMERA BACK BOXES MOUNTED UNDER CANOPIES SHALL BE INSTALLED AT 8" BELOW CANOPY BUT NO HIGHER THAN 12 FT. A.F.F.

N. FOR CORNER MOUNTED EXTERIOR CAMERAS, ELECTRICAL CONTRACTOR SHALL ROUTE CONDUIT THROUGH THE CORNER OF THE BUILDING. NO EXPOSED CONDUIT OR SEALTIGHT SHALL BE VISIBLE ON THE EXTERIOR OF THE BUILDING.

O. D1 THROUGH D6 FLOOR POCKETS SHOWN SHALL BE THE SAME FLOOR POCKET SHOWN ON THE ELECTRICAL PLANS. DO NOT PROVIDE A SEPARATE FLOOR POCKET FOR DATA CABLES.

(#) TECHNOLOGY KEYED NOTES:

1. INDICATES LOCATION OF ACCESS CONTROL PANEL
2. INDICATES LOCATION OF INTRUSION DETECTION PANEL
3. INDICATES WALL MOUNTED ACCESS POINT CONTRACTOR SHALL MOUNT AT 12' A.F.F.
4. CONTRACTOR SHALL PROVIDE (1) HDMI PASS THRU PLATE. PROVIDE DATA AND DATA CONNECTOR ON A SINGLE GANG DATA CONNECTION PLATE. PROVIDE (2) 1-1/4" CONDUIT TERMINATION TO FLOOR POCKET AND ROUTE TO WALL AND UP TO ACCESSIBLE CEILING IN SAME ROOM. ROUTE ALL CABLES AND CONNECTIONS TO PROVIDE FULLY FUCTIONAL A/V SYSTEM.
5. LOCATION OF STI CAMPUS LOCKDOWN BUTTON. REFER TO DIV 28 13 00 SPEC FOR MAKE AND MODEL. COORDINATE ROUGH-IN PRIOR TO INSTALLATION.
6. INDICATES APPROXIMATE LOCATION OF LOCAL SOUND RACK. CONTRACTOR SHALL PROVIDE (2) DATA DROPS ROUTED TO THE NEAREST MDF/IDF. ELECTRICAL CONTRACTOR SHALL PROVIDE (2) DEDICATED 120V/20A CICRUITS ON A SINGLE QUAD WITH 5-20R RECEPTACLES.
7. ELECTRICAL CONTRACTOR SHALL PROVIDE (1) 1-1/2" CONDUIT STUBBED OUT ABOVE ACCESSIBLE CEILING.
8. INDICATES VIDEO INTERCOM SYSTEM. REFER TO SPECIFICATIONS FOR MAKE AND MODEL.
9. INDICATES (1) 1-1/4" CONDUIT UNDERGROUND FOR COMMUNICATIONS CABLING PATHWAY STUB OUT ABOVE CEILING. PROVIDE NYLON PULL STRING IN EACH CONDUIT.
10. PROVIDE (2) DATA CABLES ROUTED TO THE ASSOCIATED LOCAL SOUND RACK.
11. INDICATES LOCATION OF SMART BOARD INTERACTIVE DISPLAY (IAD). CONTRACTOR SHALL PROIVDE IAD MOUNT MODEL # WM-SBID-200. REFER TO CONTRACTOR FOR ADDITIONAL WALL BACKING/BRACING
12. INDICATES APROXIMATE LOCATION OF DOOR CONTACT TIED TO ROOF HATCH. REFER TO MECHANICAL DWGS FOR EXACT LOCATION.
13. CONTRACTOR SHALL COORDINATE WITH A/V CONSULTANT FOR EXACT HEIGHT OF DATA PRIOR TO ROUGH-IN.
14. INDICATES LOCATION OF CONTRACTOR FURNISHED CONTRACTOR INSTALLED CHIEF FUSION WALL DISPLAY MOUNT (MODEL: LTM1U)

AVIGILON CAMERA TYPES

SYMBOL	TYPE	MODEL	DESCRIPTION
	1	5.0C-H6SL-D1-IR	5 MP DOME
	2	360-W-30	12 MP 360 DEGREE
	3	5.0C-H6SL-B01-IR	BULLET CAMREA 3.4MM - 10.5 MM LENS
	4	5.0C-H6SL-B02-IR	BULLET CAMERA 10.9MM - 29MM LENS
	5	10.0C-H5DH-D01-IR	DUAL HEAD CAMERA
	6	15C-H5A-3MH-30	MULTI-SENSOR CAMERA (3 SENSOR)
	7	20C-H5A-4MH-30	MULTI-SENSOR CAMERA (4 SENSOR)
	8	4.0C-H6A-PTZ-DC30-30	PAN TILT ZOOM CAMERA

NOTE:
1. EVERY SYMBOL SHOWN ON LEGEND MAY NOT APPEAR ON THE DRAWINGS. REFER TO THE SPECIFICATIONS AND THE TECHNOLOGY SYSTEMS GENERAL NOTES FOR INSTALLATION REQUIREMENTS.
2. CONTRACTOR SHALL ENSURE ADEQUATE STORAGE/SERVER CAPACITY & QUANTITY ARE PROVIDED TO ACCOMODATE CAMERA VIEWS FOR EACH CAMPUS IN ORDER TO RETAIN 30 DAYS OF STORAGE. 72 HOURS OF CENTRALIZED STORAGE AT DISTRICT NOC AND THE REAMINING STORAGE SHALL BE CLOUD BASED TO ACHIEVE 30 DAYS OF MINIMUM STORAGE.
3. ALL CAMERAS SHALL BE PROVIDED WITH CEILING AND/OR WALL MOUNTS TO PROVIDE THE OPTIMUM VIEWING ANGLE FOR EACH GIVEN CAMERA.
4. UPDATE CABLE COLOR NOTE.
5. POE SWITCHES ARE OFOI.

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LEAF ENGINEERS

New CTE Center & Hargrave High School Additions & Renovations

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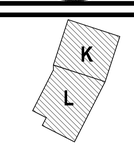

KEY PLAN
NORTH: PLAN TRUE

STATE OF TEXAS
DONALD C. RICHARDS
61525
LICENSED
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1	ADDENDUM #1	06.03.25

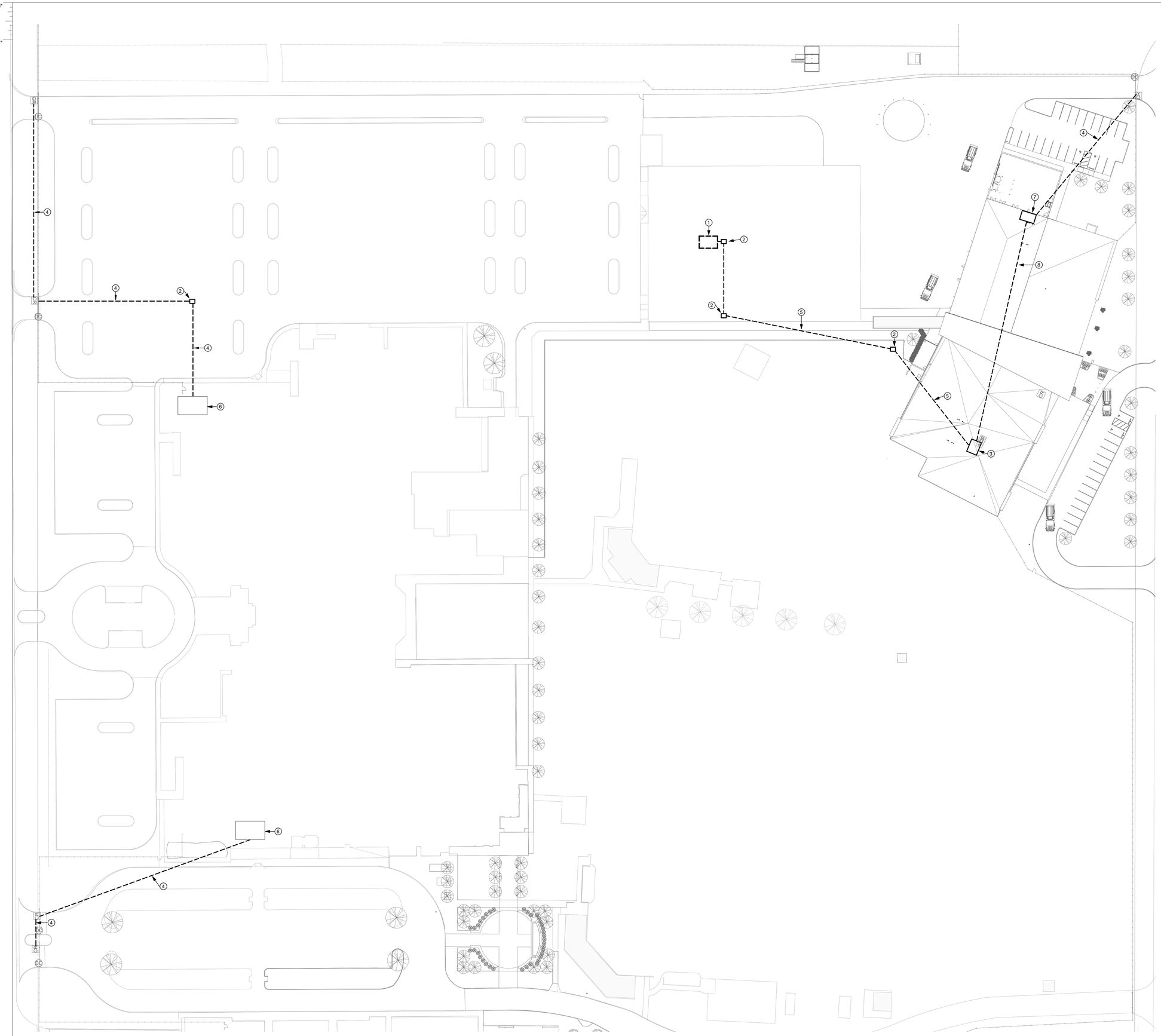
CHECKED BY: Checker
DRAWN BY: Author

1ST FLOOR TECHNOLOGY PLAN - AREA K-CTE

TN-101K.C

Plot Stamp:
6/3/2025 3:03:03 PM

TECHNOLOGY SITE PLAN-CTE
TS-101.C
FOR BLUEBEAM LABELING/OCR:



1 **TECHNOLOGY SITE PLAN**
SCALE: 1" = 40'-0"

SITE PLAN KEYED NOTES

1. INDICATES APPROXIMATE LOCATION OF EXISTING IDF LOCATED WITHIN SECOND FLOOR MEZZANINE OF THE AG BUILDING.
2. APPROXIMATE LOCATION OF 36"x36"x36" CONCRETE PULL BOX INSTALLED FLUSH WITH GRADE FOR COMMUNICATIONS SYSTEMS. PROVIDE EVERY 250' OR CHANGES OF DIRECTIONS MORE THAN 180 DEGREES. PROVIDE WIDE SWEEPING TURNS ON ALL CONDUIT ENTERING AND EXITING BOX AS WELL AS ALL TURNS ALONG ROUTE. TYPICAL FOR ALL LOCATIONS SHOWN. VERIFY PROPER LOCATIONS PRIOR TO INSTALLATION.
3. INDICATES APPROXIMATE LOCATION OF NEW MDF IN NEW CTE BUILDING.
4. INDICATES APPROXIMATE LOCATION OF (1) 2" UNDERGROUND CONDUIT. CONTRACTOR SHALL PROVIDE A (2) 3-CELL MAXCELL INNERDUCT IN EACH CONDUIT.
5. INDICATES APPROXIMATE LOCATION OF (2) 4" UNDERGROUND CONDUIT FROM EXISTING IDF TO NEW CTE MDF. CONTRACTOR SHALL PROVIDE WITH (2) 3-CELL MAXCELL INNERDUCT IN EACH CONDUIT. CTE MDF SHALL CONNECT TO THE EXISTING HIGH SCHOOL MDF WITH A 12 STRAND SINGLE MODE OSP FIBER OPTIC CABLE. CABLES SHALL BE RATED FOR THE ENVIRONMENT IN WHICH THEY ARE INSTALLED.
6. INDICATES APPROXIMATE LOCATION OF EXISTING IDF ROOM
7. INDICATES APPROXIMATE LOCATION OF NEW IDF IN CTE BUILDING.
8. INDICATES APPROXIMATE LOCATION OF (4) 4" UNDERGROUND CONDUITS FROM MDF TO IDF . CONTRACTOR SHALL PROVIDE (2) 3-CELL MAXCELL INNERDUCT IN EACH CONDUIT. EACH IDF SHALL BE CONNECTED TO THE MDF WITH A 12 STRAND MULTI MODE OSP FIBER OPTIC. CABLES SHALL BE RATED FOR THE ENVIROMENT IN WHICH THEY ARE INSTALLED.

SITE PLAN GENERAL NOTES

1. ALL CONDUIT AND PULL BOXES SHALL BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
2. ALL IN GROUND PULL BOXES SHALL BE EQUIPPED WITH 48" DEEP GRAVEL DRY WELL TO ALLOW FOR DRAINAGE. SEE CIVIL PLAN FOR DETAILS.
3. TECHNOLOGY CABLING CONTRACTOR SHALL SEAL ALL OPEN CONDUIT ENDS WITH PERMAGUM SEALING COMPOUND / GUM AFTER CABLING IS INSTALLED.
4. CONTRACTOR SHALL VERIFY PROPER CONDUIT PATHWAY AND PULLBOX LOCATION PRIOR TO INSTALLATION.
5. CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO EXISTING UTILITIES INCURRED DURING CONSTRUCTION.
6. REFERENCE SPECIFICATIONS FOR MATERIAL AND METHODS ON ALL ITEMS BELOW.
7. PROVIDE PULL BOXES EVERY 250' AND / OR 180 DEGREES OF RADIUS.
8. PROVIDE PLENUM RATED INNER DUCT WHEN CABLE IS NOT INSTALLED IN CONDUIT.
9. ALL CONDUITS, INNERDUCT AND PULL BOXES SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR. MAINTAIN 18" SEPARATION FROM ELECTRICAL CONDUITS AND BOXES. INSTALL (2) MAXCELL MXC3450X INNERDUCT IN EACH 4" CONDUIT , (1) INTERDUCT DEDICATED FOR FIBER COMMUNICATIONS CABLE AND (1) INTERDUCT DEDICATED FOR FIRE ALARM CABLING.
10. CAP OFF CONDUITS AT ALL OPEN POINTS IN THE PATHWAY AND MARK CAPS, "FOR TECHNOLOGY USE ONLY".
11. ALL IN-GROUND PULL BOXES SHALL BE EQUIPPED WITH A 48" DEEP GRAVEL DRY WELL TO ALLOW FOR DRAINAGE. SEE CIVIL PLANS FOR DETAILS.
12. TECHNOLOGY CABLING CONTRACTOR SHALL SEAL ALL OPEN CONDUIT ENDS WITH A PERMAGUM SEALING COMPOUND / GUM AFTER CABLING IS INSTALLED.
13. CONDUIT PATHWAY AND PULL BOX LOCATIONS SHOWN ON DRAWINGS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY PROPER CONDUIT PATHWAY AND PULL BOX LOCATIONS PRIOR TO ROUGH-IN.
14. CONTRACTOR SHALL BE LIABLE FOR ANY DAMAGE SUSTAINED TO EXISTING UTILITIES CAUSED BY INSTALLATION OF NEW WORK.
15. FIELD VERIFY EXISTING CONDITIONS PRIOR TO ROUGH-IN.
16. PROPERLY SEAL ALL BUILDING PENETRATIONS ACCORDING TO NEC, IBC, IFC AND AHJ.
17. ALL NON-ARMORED FIBER CABLING NOT INSTALLED IN CONDUIT SHALL BE INSTALLED IN PLENUM RATED CORRUGATED INNERDUCT.

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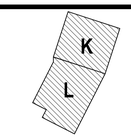

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NORTH: PLAN TRUE

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TECHNOLOGY SITE PLAN-CTE

TS-101.C

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