

RFP# 20 - 003

STAFFORD MUNICIPAL SCHOOL DISTRICT

REQUEST FOR COMPETITIVE SEALED PROPOSALS FOR HIGH SCHOOL & STEM MAGNET SCHOOL RENOVATION

ADDENDUM 2

3/31/2020

Please note that there are Modifications to the Bidding Procedures

A. Use of Electronic Bidding Procedures

While Stafford Municipal School District will be receiving bids using those methods stated in the RFP, Stafford Municipal School District will also allow, and encourage, electronic bid submissions for this project in lieu of in-person/mailed submissions. You must choose one method or the other, not both, to submit your bid. Bidders must ensure that all required content for each Part of the submission is fully uploaded to the Bid/Plan Room (Proposal forms, Microsoft Excel file). While a complete, comprehensive, all-inclusive single file is preferred, Bidders will be allowed to pre-load completed portions of their proposal into the Bids/Plan Room, save and return later to submit the proposal form to eliminate issues with last-minute file uploads. The system shall not allow for any late bids or proposals after the closing date and time. The District will not be responsible for any delay of delivery or submission, including delays related to system programs, servers, or acts of nature. Bids or proposals sent in response to all formal solicitations shall be electronically sealed in an electronic lockbox and not accessible to any internal and external user other than the vendor initiating the bid or proposal

Please log into the Bids/Plan Room using the following link: https://lan.projectmates.com/projectmates/bid/BidLogin.aspx

If you are new to Projectmates you will be asked to create a username and password plus other basic registration information. Once you have logged in, please select "Add to My Bids" to view information about the project, obtain solicitation documents and submit your bid.

Once you are a registered user, you may access a User Guide for Electronic Submissions at the following link:

 $\frac{https://university.projectmates.com//PMHelp/Bids/default.htm?qs=96640139036C52B}{95806FAA673FDD398A9ED7BE2EFE25C2137C12679CA9678FDDA2FDA0BB1FDDF54053}{04A4436D42F3A}$



B. Opening and Reading of Proposals

Owner or designee will utilize a virtual meeting to reveal the names of the respondents and the monetary offer stated in Part 1 and the Alternates and unit prices Part 2. To attend the virtual meeting please use the link below to join by video conference or the telephone number and meeting number to join via audio only. To allow meeting organizers the necessary time to receive, organize, and prepare for the virtual meeting, the virtual meeting will begin at **4:30 P.M.** CST.

Meeting video conference link:

Join Zoom Meeting https://zoom.us/j/673954936

Meeting ID: 673 954 936

Meeting audio only:

Dial: +1 346 248 7799 Meeting ID: 673 954 936

Revisions included in this Addendum:

Please refer to drawings and specifications for more information. These specifications and drawings supersede any previously issued versions of the same spec or drawings. Please replace and refer to the most current drawings in your set. Please refer to specifications for more information.

Drawings Sheets Issued:

- A0.00 Project Information REPLACE (Sheet Index has been updated)
- M0.01 Symbols, Notes and Legends ADD (New Sheet)
- M0.02 Schedules ADD (New Sheet)
- M2.01 Details ADD (New Sheet)

Included in this Addendum is the Sign-In Sheet for the Pre-Proposal Conference held on March 26, 2020.

END OF ADDENDUM #2



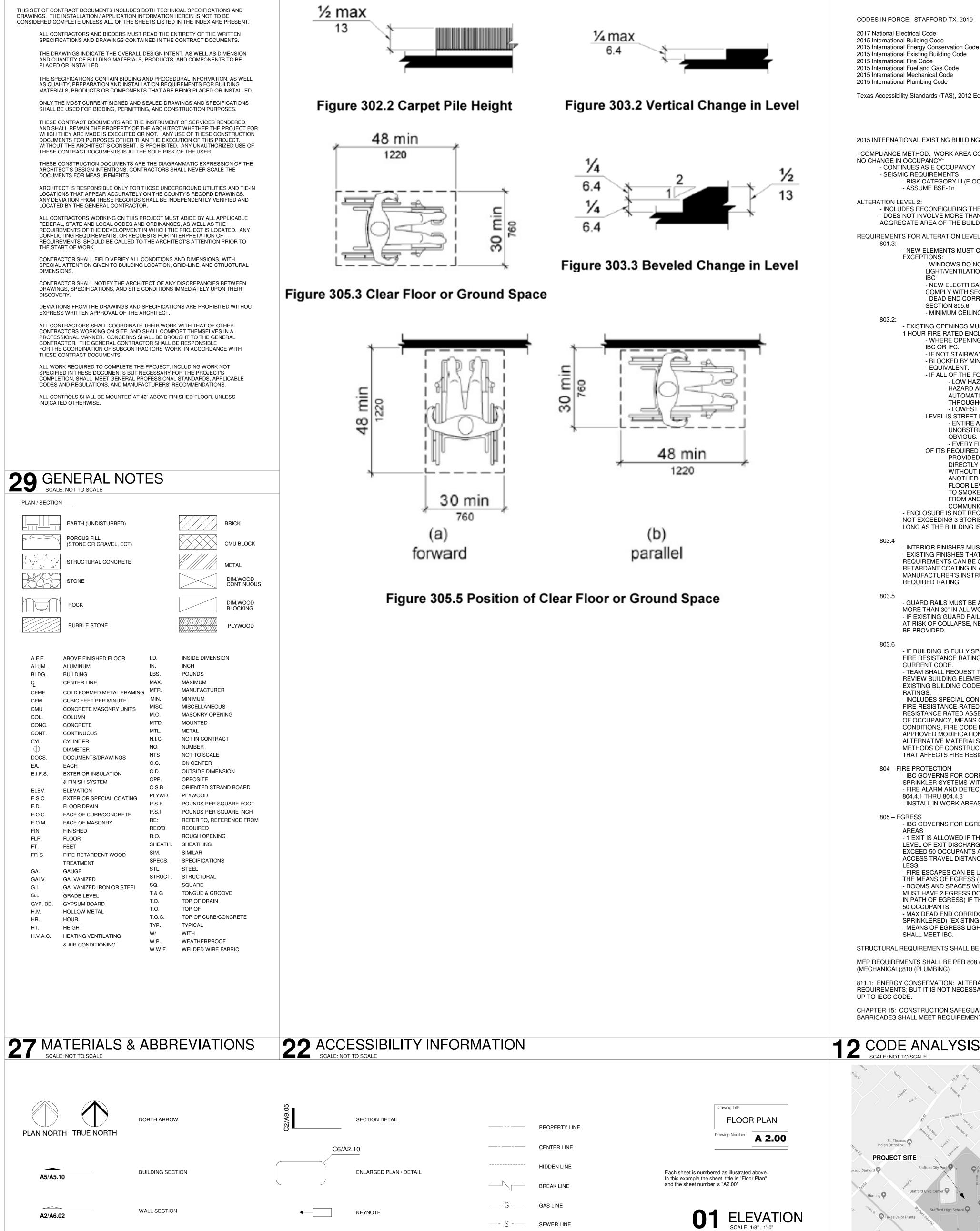
Date: 26 March 2020 Stafford Municipal School District RFP#20 - 003: Request for Competitive Sealed Proposals for The Renovation of High School & STEM Magnet School Topic: Pre - Proposal Conference

PLANNING ENGINEERING

PROGRAM MANAGEMENT

Sign-in Sheet

| Name — printed (legibly) | Company/Organization | Phone | Email |
|--------------------------|------------------------------------|----------------|----------------------------------|
| Jay Durrett | Bass Construction | (281) 762-6403 | jay.durrett@bassconstruction.com |
| Brad Hooper | Jamil & Smith Construction | (281) 901-5896 | bhooper@jamailsmith.com |
| Josh Moran | The Gonzalez Group | (832) 242-2300 | jm@the-gonzalezgroup.com |
| Kourtnie Simpson | TEAL Construction Company | (713) 465-8306 | kourtniesimpson@tealcon.com |
| James Hogan | Bartlett Cocke General Contractors | (713) 996-9510 | jhogan@bartlettcocke.com |
| Victor Fleming | LAN | (713) 853-6627 | vcfleming@lan-inc.com |
| Michael Scott | LAN | (773) 617-7639 | mjscott@lan-inc.com |
| Farrah Sabouni | AUTOARCH Architects, LLC | (713) 952-3366 | farrah@autoarch.net |
| Lina Sabouni | AUTOARCH Architects, LLC | (713) 952-3366 | lina@autoarch.net |
| Michael Sabouni | AUTOARCH Architects, LLC | (713) 952-3366 | michael@autoarch.net |
| | | | |



PARTITION TYPE

COLUMN GRID LINE

POWER LINE

SET BACK LINE

———— WATER LINE

In this example, drawing "1" represents the first

drawing on a sheet of the architectural discipline,

an "ELEVATION". Followed by a description, "AT NEW OFFICE 100", and drawing scale " 1/8" = 1'-0"

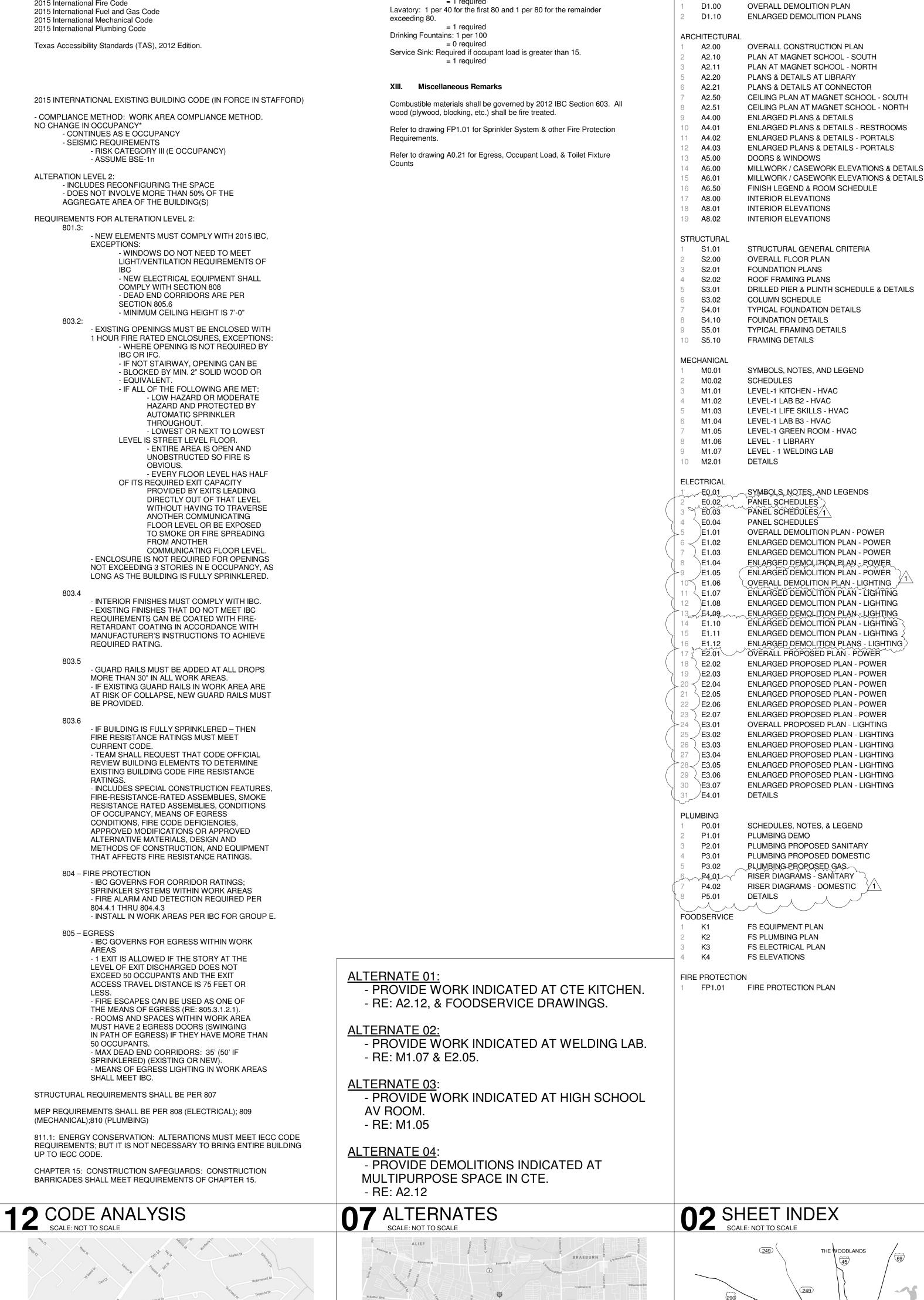
11 PROJECT SITE

B5/A8.03

B5/A8.03

BUILDING ELEVATION

INTERIOR ELEVATION



PROJECT SITE

06 PROJECT VICINITY
SCALE: NOT TO SCALE

XII. Minimum Required Plumbing fixtures: Per table 2902.1

Water closets: 1 per 25 for the first 50 and 1 per 50 for the remainder

Use Group B: Business: 24 occupants total:

exceeding 50.

GENERAL

A0.00

A0.20

A0.30

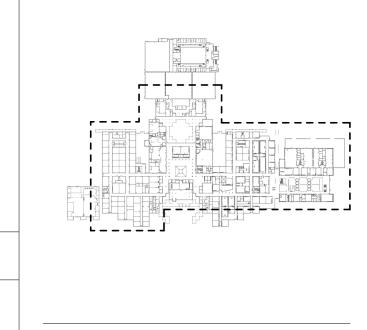
DEMOLITION

COVERSHEET

PROJECT INFORMATION

CODE ANALYSIS INFORMATION

PARTITION TYPES & ACCESSIBILITY REQUIREMENTS



AUTOARCH Architects, LLC.

6200 Savoy, Suite 100

Houston, TX 77036

t (713) 952-3366

f (713) 952-5002

www.autoarch.net

CONSULTANTS:

INFRASTRUCTURE ASSOCIATES

MEP ENGINEERS

713-622-0120

713-337-8881

STRUCTURAL ENGINEERS

DALLY ASSOCIATES

PROFESSIONAL SEAL:

A PROJECT FOR:

STAFFORD

HIGH SCHOOL

& MAGNET

SCHOOL

RENOVATIONS

1625 STAFFORDSHIRE

ROAD,

STAFFORD, TX 77477

03/13/2020 ISSUE FOR BID,

3/31/2020 | ADDENDUM 2

PERMIT, &

CONSTRUCTION

ISSUED FOR

Project Number 19006-A Drawn By Checked By Approved By Drawing Title

PROJECT INFORMATION

Drawing Number

A0.00

HOUSTON

PROJECT

LOCATION

PROJECT LOCATION
SCALE- NOT TO SCALE

ABBREVIATIONS LEGEND

| ACRONYM | DESCRIPTION | ACRONYM | DESCRIPTION |
|---------|---------------------------------|---------|--|
| ℉ | FAHRENHEIT | FAS | FIRE ALARM SYSTEM |
| AC | AIR CONDITIONING | FCU | FAN COIL UNIT |
| AHU | AIR HANDLING UNIT | FPM | FEET PER MINUTE |
| Al | ANALOG INPUT | FPT | FAN POWER TERMINAL |
| ALT | ALTITUDE | GPM | GALLON PER MINUTE |
| AO | ANALOG OUTPUT | HP | HORSE POWER |
| APPROX | APPROXIMATE | HVAC | HEATING VENTILATION AND AIR CONDITIONING |
| ATM | ATMOSPHERE | HWR | HOT WATER RETURN |
| AVG | AVERAGE | HWS | HOT WATER SUPPLY |
| В | BOILER | ISP | INTERNAL STATIC PRESSURE |
| BARO | BAROMETER (-TRIC) | Kw | KILOWATT |
| BAS | BUILDING AUTOMATION SYSTEM | LAT | LEAVING AIR TEMPERATURE |
| ВНР | BRAKE HORSE POWER | LHG | LATENT HEAT GIANT |
| BI | BINARY INPUT | LWT | LEAVING WATER TEMPERATURE |
| ВО | BINARY OUTPUT | MUA | MAKEUP AIR UNIT |
| BTU | BRITISH THERMAL UNIT | MX | MIXING AIR |
| BTUH | BRITISH THERMAL UNIT/HOURS | NA | NOT APPLICABLE |
| CFM | CUBIC FEET PER MINUTE | NO. | NUMBER |
| CHWP | CHILL WATER PUMP | O/A | OUTSIDE AIR |
| CHWR | CHILL WATER RETURN | OAHU | OUTSIDE AIR HANDLING UNIT |
| CHWS | CHILL WATER SUPPLY | PSI | POUNDS PER SQUARE INCH |
| COEFF | COEFFICIENT | RA | RETURN AIR |
| CRAC | COMPUTER AIR CONDITIONER | REV | REVOLUTIONS |
| СТ | COOLING TOWER | RTU | ROOF TOP UNIT |
| CU | CONDENSING UNIT | S/A | SUPPLY AIR |
| CV | CONSTANT VOLUME | SG | SPECIFIC GRAVITY |
| CWP | CONDENSER WATER PUMP | SHG | SENSIBLE HEAT GAIN |
| CWR | CONDENSER WATER RETURN | SP | STATIC PRESSURE |
| CWS | CONDENSER WATER SUPPLY | SPEC | SPECIFICATION |
| DB | DRY BULB | TCH | THERMOSTAT/ CO2 SENSOR/ HUMIDISTAT |
| DI | DIGITAL INPUT | T-STAT | THERMOSTAT |
| DO | DIGITAL OUTPUT | TYP. | TYPICAL |
| EAT | ENTERING AIR TEMPERATURE | UH | UNIT HEATER |
| EMC | ELECTRONICALLY COMMUTATED MOTOR | VAV | VARIABLE AIR VOLUME |
| ESP | EXTERNAL STATIC PRESSURE | VFD | VARIABLE FREQUENCY DRIVE |
| EWT | ENTERING WATER TEMPERATURE | WB | WET BULB |
| EX | EXHAUST AIR | | |

NOTE:

NOT ALL ITEMS NECESSARILY USED.

NOT ALL ITEMS NECESSARILY USED.

MECHANICAL SYMBOLS LEGEND

| | SUPPLY AIR DUCT UP (PLAN) | X CFM | DIFFUSER TYPE AND CFM | ├ | CHECK VALVE, SWING GATE |
|------------|---|---|--|--|--|
| | SUPPLY AIR DUCT DOWN (PLAN) | 0 | THERMOSTAT - MOUNT 48" AFF UNO | ⊢ } | ANGLE PRESSURE RELIEF VALVE |
| | RETURN OR OUTSIDE AIR DUCT UP (PLAN) | H | HUMIDISTAT | ⊱ | PRESSURE REDUCING VALVE |
| | RETURN OR OUTSIDE AIR DUCT DOWN (PLAN) | 0 | FIRESTAT | ₩ | LOCK SHIELD |
| | EXHAUST AIR DUCT UP (PLAN) | TCH | THERMOSTAT/ CO2 SENSOR/ HUMIDISTAT MOUNT 48" AFF UNO | ↓ | QUICK OPENING/CLOSING VALVE |
| | EXHAUST AIR DUCT DOWN (PLAN) | 0 | SMOKE DETECTOR | X | PRESSURE REGULATOR |
| | RETURN AIR/TRANSFER AIR BOOT | | PIPE UP | ş- | STRAINER W/BLOW DOWN VALVE |
| | CEILING SUPPLY AIR DEVICE | (—· ()]3 | PIPE DOWN | | THREE-WAY VALVE (ELECTRIC) |
| | SIDEWALL SUPPLY/EXHAUST REGISTER | | CAP | ¥————————————————————————————————————— | TWO-WAY VALVE (ELECTRIC) |
| | CEILING RETURN AIR / EXHAUST REGISTER | | 90° ELBOW | ₩₩₩ | FLEXIBLE CONNECTION |
| | RETURN AIR GRILLE WITH BOOT | ~~ ~ | 45° ELBOW | EJ | EXPANSION JOINT |
| | BRANCH DUCT TAP | ←-C- ←→ &ICCI3 | 45° ELBOW DOWN (OGEE) | <u> </u> | THERMOMETER |
| | DUCT SPLIT WITHOUT VANES | | TEE | ™ | THERMOMETER WELL |
| AD 🖂 | ACCESS DOOR | ←○→ 81013 | TEE UP | ÷ + \$\frac{1}{4}\$ | TEST PLUG |
| | TRANSITION IN DUCT | ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ | TEE DOWN | <u> </u> | PRESSURE GAUGE W/GAUGE COCK |
| + + | DUCT WITH SPIN-IN CONNECTOR | | TOP CONNECTION | ₹ -1-1- 5 | MANUAL AIR VENT |
| AP | FLEXIBLE DUCT CONN. TO RECTANGULAR ACCESS PANEL | | CROSS | <u> </u> | AUTOMATIC AIR VENT |
| | DUCT ELBOW WITH TURNING VANES | | UNION (SCREWED) | S | SOLENOID VALVE |
| | DUCT ELBOW WITHOUT VANES | | UNION (FLANGED) | FS | FLOW SWITCH |
| | FLEXIBLE CONNECTION, FLEXIBLE DUCT | т | DUCT MOUNTED TEMPERATURE SENSOR | 2 | TEMPERATURE AND PRESSURE RELIEF VALVE |
| VD | VOLUME DAMPER | P — | DUCT MOUNTED PRESSURE SENSOR | | STEAM TRAP |
| M-L- | MOTORIZED VOLUME DAMPER | SD — | DUCT MOUNTED SMOKE DETECTOR | | STEAM MOISTURE SEPARATOR |
| F | FIRE DAMPER | ~~ 3€ | PIPE BREAK | □ EP | CONTROL, ELECTRIC-PNEUMATIC |
| SD | SMOKE DAMPER | ← → → → → | CONCENTRIC REDUCER | Ç PE, | CONTROL, PNEUMATIC-ELECTRIC |
| FS | COMBINATION FIRE/SMOKE DAMPER | | ECCENTRIC REDUCER | 2 | RED. PRESS PRINCIPAL BACKFLOW PREVENTER |
| AFMS | AIR FLOW MONITORING STATION | | END SUCTION PUMP | ← PCHWR → | PRIMARY CHILLED WATER RETURN |
| APD | AIR PRESSURE DIFFERENTIAL SWITCH | → OR → | BALL VALVE | ← PCHWS → | PRIMARY CHILLED WATER SUPPLY |
| | RISE IN DUCT ELEVATION | ← | BUTTERFLY VALVE | ← CWR | CONDENSER WATER RETURN |
| | DROP IN DUCT ELEVATION | $\longleftarrow \bigvee \!$ | ISOLATION VALVE | cws | CONDENSER WATER SUPPLY |
| SD DIM. | SPLITTER DAMPER - DIMENSION AS NOTED ON DRAWING | ├ | GATE VALVE WITH QUICK DISCONNECT | ← HHWR | HOT WATER RETURN |
| (BDD)——— | BACK DRAFT DAMPER | ₩ | TWO-WAY VALVE | → HHWS | HOT WATER SUPPLY |
| UCD I" | UNDERCUT DOOR I" | ₩ | THREE-WAY VALVE | ← CD — | CONDENSATE DRAIN |
| RE: I/M-7 | REFER TO DETAIL #I ON DRAWING M-7 | ├ | BALANCING VALVE | ← SCHWR → | SECONDARY CHILLED WATER RETURN |
| FM | FLOW METER | ← MPS | MEDIUM PRESSURE STEAM SUPPLY | → SCHWS | SECONDARY CHILLED WATER SUPPLY |
| COZ | CO2 SENSOR | ← REF → | REFRIGERANT PIPE | ← CD — → | CONDENSATING PIPE |
| 1 | | | | | |

MECHANICAL GENERAL NOTES

- SEE ARCHITECTURAL PLANS FOR TYPE OF CEILING. FOR LOCATIONS OF WALL MOUNTED DEVICES AND LOCATION HEIGHTS COORDINATE WITH ARCH,
- DO NOT OPERATE AIR HANDLERS, FAN COIL UNITS, OR EXHAUST FANS UNTIL ALL INTERIOR CLEANING AND PAINTING IS COMPLETE. THE CLEANING OF FOULED COILS OR FAN ASSEMBLIES DUE TO PAINT OR CONSTRUCTION DEBRIS WILL BE THE RESPONSIBILITY OF THE HVAC
- CONTRACTOR. RECTANGULAR, OR ROUND DUCT SIZES INDICATED ARE ACTUAL SHEET METAL DIMENSIONS IN INCHES ALL ROUND DUCT SIZES INDICATE NET FREE INSIDE DIAMETER AND DO NOT ACCOUNT FOR ANY INSULATION. ROUND DUCTS ARE EXTERNALLY INSULATED PER SPECIFICATIONS.
- SCHEDULED MANUFACTURERS ARE BASIS OF DESIGN. SEE SPECIFICATIONS FOR OTHER ACCEPTABLE MANUFACTURERS.
- MAJOR EQUIPMENT SHOWN ON THE PLANS AND ELEVATIONS ILLUSTRATE THE GENERAL ARRANGEMENT AND SPACE ALLOCATION. VERIFY THE SPACE REQUIREMENTS FOR EACH SYSTEM COMPONENT USING MANUFACTURER CERTIFIED SHOP DRAWINGS AND MAKE THE NECESSARY ADJUSTMENTS IN EQUIPMENT PLACEMENT AND CONNECTIONS IN ORDER TO ACCOMMODATE THE EXACT EQUIPMENT TO BE INSTALLED.
- REFER TO SPECIFICATIONS FOR SUPPORTS, ANCHOR BOLTS AND HANGERS FOR ALL EQUIPMENT. OTHER MISCELLANEOUS STEEL BRACING, SUPPORTS, AND REINFORCING STEEL REQUIRED TO SUPPORT EQUIPMENT SHALL BE FURNISHED AS PART OF THE SCOPE OF WORK OF DIVISION 15.
- 7. INSTALL SMOKE DETECTORS IN CONFORMANCE WITH 2015 IMC WITH CITY OF STAFFORD, TX
- 8. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE CODES, STANDARDS AND AUTHORITIES HAVING JURISDICTION.
- 9. ALL SUPPLY AND RETURN AIR DUCTS LOCATED IN UNCONDITIONED ATTICS OR OUTSIDE SHALL BE INSULATED (R-5 UNCONDITIONED AND R-8 OUTSIDE BUILDINGS).
- 10. FLEX DUCTS SHALL BE SAME SIZE AS DIFFUSER NECKS.
- II. SEAL ALL PENETRATIONS OF FLOORS, SMOKE WALLS, FIRE WALLS, LAB WALLS, AND EXTERIOR
- ARCHITECT SHALL APPROVE ALL THERMOSTAT OR TEMPERATURE SENSOR LOCATIONS. 13. DO NOT RUN DUCT OR PIPE OVER ELECTRICAL PANELS.
- 14. COORDINATE EXACT LOCATION OF EQUIPMENT, DUCTWORK, AIR DEVICES, AND THERMOSTATS
- WITH ARCHITECTURAL, STRUCTURAL AND REFLECTED CEILING PLANS. 15. ALL PENETRATIONS IN RATED WALLS SHALL BE SEALED WITH AN APPROVED FIRE RETARDENT
- 16. ALL DUCT RUN-OUTS TO SUPPLY AND EXHAUST, DIFFUSERS AND REGISTERS, SHALL HAVE MANUAL BALANCING DAMPERS. PROVIDE YOUNG REGULATORS WHERE CEILING IS INACCESSIBLE.
- ALL DUCTWORK SHALL BE IN ACCORDANCE WITH LATEST SMACNA STANDARDS. 18. SECURE ALL PERMITS AND PROVIDE ANY REQUIRED TEMPORARY UTILITIES.
- 19. GUARANTEE LABOR AND MATERIAL FOR I YEAR AND PER DIV.I.
- 20. PROVIDE AUTOMATIC AIR VENTS ON ALL HIGH POINTS OF PIPING SYSTEMS AND DRAIN VALVED CONNECTIONS AT ALL LOW POINTS OF PIPING SYSTEMS.
- 21. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION ON SCOPE OF WORK AND REQUIRED INSTALLATION.
- 22. VERIFY FINAL LOCATION OF THERMOSTATS WITH ARCHITECT AND BUILDING ENGINEER PRIOR TO INSTALLATION.
- 23. ALL FLEXIBLE DUCT SHALL BE UL 181, CLASS I AIR DUCT BLACK LINER. MAXIMUM LENGTH OF FLEXIBLE DUCT SHALL NOT EXCEED 6'-0". PROVIDE RIGID ROUND INSULATED AIR DUCT RUNOUT AS REQUIRED. FLEXIBLE DUCT SHALL HAVE THE EQUIVALENT OF ONLY TWO 90 DEG. ELBOWS MAXIMUM. FLEXIBLE DUCT SIZE SHALL MATCH THE DIFFUSER NECK SIZE.
- 24. THE AIR QUANTITIES SHOWN ON THE DRAWINGS FOR INDIVIDUAL OUTLETS MAY BE CHANGED TO OBTAIN UNIFORM TEMPERATURE WITHIN EACH SPACE OR ZONE, BUT THE TOTAL AIR QUANTITY SHOWN FOR EACH ZONE MUST BE OBTAINED.
- 25. PROVIDE SMOKE DETECTOR FOR ALL UNITS WITH CAPACITY OF 2000 CFM AND HIGHER AS REQUIRED BY CODE. COORDINATE WITH 2015 IMC SECTION 606.
- 26. WITHIN 90 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE RECORD DRAWINGS OF THE ACTUAL INSTALLATION SHALL BE PROVIDED TO THE BUILDING OWNER OR THE DESIGNATED REPRESENTATIVE OF THE BUILDING OWNER. RECORD DRAWINGS SHALL INCLUDE AS A MINIMUM THE LOCATION AND PERFORMANCE DATA ON EACH PIECE OF EQUIPMENT, GENERAL CONFIGURATION OF DUCT AND PIPE DISTRIBUTION SYSTEM INCLUDING SIZES, AND THE TERMINAL AIR OR WATER DESIGN FLOW RATES.
- 27. OPERATING AND MAINTENANCE MANUALS SHALL BE PROVIDED TO THE BUILDING OWNER OR THE DESIGNATED REPRESENTATIVE OF THE BUILDING OWNER WITHIN 90 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE. THESE MANUALS SHALL BE IN ACCORDANCE WITH INDUSTRY-ACCEPTED STANDARDS (SEE APPENDIX E), AND SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING: (A) SUBMITTAL DATA STATING EQUIPMENT SIZE AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. (B) OPERATION MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE, EXCEPT EQUIPMENT NOT FURNISHED AS PART OF THE PROJECT. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED. (C) NAMES AND ADDRESSES OF AT LEAST ONE SERVICE AGENCY. (D) HVAC CONTROLS SYSTEM MAINTENANCE AND CALIBRATION INFORMATION, INCLUDING WIRING DIAGRAMS, SCHEMATICS, AND CONTROL SEQUENCE DESCRIPTIONS. DESIRED OR FIELD-
- DETERMINED SET-POINTS SHALL BE PERMANENTLY RECORDED ON CONTROL DRAWINGS AT CONTROL DEVICES OR, FOR DIGITAL CONTROL SYSTEMS, IN PROGRAMMING COMMENTS. (E) A COMPLETE NARRATIVE OF HOW EACH SYSTEM IS INTENDED TO OPERATE, INCLUDING SUGGESTED SET-POINTS. 28. THE CONTRACTOR TO ENSURE THAT ALL DUCTWORK EITHER STORED ON SITE OR INSTALLED IN THE
- THE BUILDING IS DEEMED BY THE OWNER TO BE ADEQUATELY CLEAN TO ALLOW FOR START-UP OF THE ASSOCIATED AIR HANDLING EQUIPMENT. IF DUCTWORK IS NOT BE SEALED AS SPECIFIED, THEN THE CONTRACTOR TO HAVE SUCH DUCTWORK PROFESSIONALLY CLEANED TO AN AS-NEW CONDITION AT NO COST TO THE OWNER.

29. LOCATE VALVES WITHIN I8 INCHES OF CEILING SO THAT THEY ARE WITHIN REACH.

INDUSTRIAL COATING.

BUILDING IS THOROUGHLY, SEALED TO PROTECT AGAINST DIRT AND MOISTURE UNTIL SUCH TIME THAT

30. ALL EXPOSED PIPING INTERIOR AND EXTERIOR SHALL BE PAINTED. INTERIOR COLOR SHALL BE ACCORDING TO THE ADOPTED COLOR CODES AND SHALL BE APPROPRIATELY LABELED AT INTERVIEWS IN SPECIFIED HEIGHT LETTERS. PIPING EXPOSED TO VIEW SHALL BE PAINTED TO COMPLY TO COLOR SCHEME PER SPECIFICATIONS. PIPING ON ROOF/EXTERIOR SHALL BE PAINTED WITH EPOXY POLYURETHANE



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CONSULTANTS:

MEP ENGINEERS INFRASTRUCTURE ASSOCIATES 713-622-0120

STRUCTURAL ENGINEERS DALLY ASSOCIATES 713-337-8881



PROFESSIONAL SEAL: ISA TAN 121936

CENSED WE

03/13/2020

A PROJECT FOR:

& MAGNET **RENOVATIONS**

1625 STAFFORDSHIRE ROAD, STAFFORD, TX 77477

ISSUED FOR # Date 1 2020/01/31 90% CD 2 | 2020/03/02 | 98% CD Review 3 | 2020/03/13 | Issue for Bid, Permit, and Construction

+----<u>_____</u>

L _ _ _ _ J

Project Number 19006-A Drawn By Checked By Approved By Drawing Title

SYMBOLS, NOTES AND LEGEND

Drawing Number

M0.01

| | SUPPLY AIR DUCT UP (PLAN) | X CFM | DIFFUSER TYPE AND CFM | ₩ | CHECK VALVE, SWING GATE |
|------------|---|---------------------|---|---|--|
| | SUPPLY AIR DUCT DOWN (PLAN) | 0 | THERMOSTAT - MOUNT 48" AFF UNO | | ANGLE PRESSURE RELIEF VALVE |
| | RETURN OR OUTSIDE AIR DUCT UP (PLAN) | H | HUMIDISTAT | ₩ PRV | PRESSURE REDUCING VALVE |
| | RETURN OR OUTSIDE AIR DUCT DOWN (PLAN) | 0 | FIRESTAT | ₩ | LOCK SHIELD |
| | EXHAUST AIR DUCT UP (PLAN) | TCH | THERMOSTAT/ CO2 SENSOR/ HUMIDISTAT MOUNT 48" AFF UNO | | QUICK OPENING/CLOSING VALVE |
| | EXHAUST AIR DUCT DOWN (PLAN) | 0 | SMOKE DETECTOR | × | PRESSURE REGULATOR |
| | RETURN AIR/TRANSFER AIR BOOT | O—→ Ø∏₃ | PIPE UP | \$ - 1 - 3 - 1 - 3 - 1 - 3 - 1 - 3 - 1 - 3 - 3 | STRAINER W/BLOW DOWN VALVE |
| | CEILING SUPPLY AIR DEVICE | (—→ ()] | PIPE DOWN | ₩ | THREE-WAY VALVE (ELECTRIC) |
| | SIDEWALL SUPPLY/EXHAUST REGISTER | [— (<u> </u> | CAP | ÷ | TWO-WAY VALVE (ELECTRIC) |
| | CEILING RETURN AIR / EXHAUST REGISTER | | 90° ELBOW | ⊱I E | FLEXIBLE CONNECTION |
| | RETURN AIR GRILLE WITH BOOT | ~ | 45° ELBOW | EJ | EXPANSION JOINT |
| | BRANCH DUCT TAP | ← ←← \$10013 | 45° ELBOW DOWN (OGEE) | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | THERMOMETER |
| | DUCT SPLIT WITHOUT VANES | | TEE | TW | THERMOMETER WELL |
| AD 🖂 | ACCESS DOOR | ₩ | TEE UP | ÷ + \(\frac{1}{4}\) | TEST PLUG |
| | TRANSITION IN DUCT | ₩₩₩ | TEE DOWN | ○ → → → | PRESSURE GAUGE W/GAUGE COCK |
| £ | DUCT WITH SPIN-IN CONNECTOR | | TOP CONNECTION | ÷+++-; | MANUAL AIR VENT |
| AP | FLEXIBLE DUCT CONN. TO RECTANGULAR ACCESS PANEL | | CROSS | <u> </u> | AUTOMATIC AIR VENT |
| | DUCT ELBOW WITH TURNING VANES | | UNION (SCREWED) | S | SOLENOID VALVE |
| | DUCT ELBOW WITHOUT VANES | | UNION (FLANGED) | FS | FLOW SWITCH |
| | FLEXIBLE CONNECTION, FLEXIBLE DUCT | Т | DUCT MOUNTED TEMPERATURE SENSOR | 7 | TEMPERATURE AND PRESSURE RELIEF VALVE |
| VD | VOLUME DAMPER | P — | DUCT MOUNTED PRESSURE SENSOR | ⊱ ≀ | STEAM TRAP |
| M | MOTORIZED VOLUME DAMPER | SD — | DUCT MOUNTED SMOKE DETECTOR | , , , , , , , , , , , , , , , , , , , | STEAM MOISTURE SEPARATOR |
| F- | FIRE DAMPER | | PIPE BREAK | □ EP | CONTROL, ELECTRIC-PNEUMATIC |
| SD | SMOKE DAMPER | ₩ | CONCENTRIC REDUCER | Ç PE, | CONTROL, PNEUMATIC-ELECTRIC |
| FS | COMBINATION FIRE/SMOKE DAMPER | | ECCENTRIC REDUCER | 2 No. 10 | RED. PRESS PRINCIPAL BACKFLOW PREVENTER |
| AFMS | AIR FLOW MONITORING STATION | | END SUCTION PUMP | è——PCHWR——→ | PRIMARY CHILLED WATER RETURN |
| APD | AIR PRESSURE DIFFERENTIAL SWITCH | ← OR ← ← | BALL VALVE | ├── PCHWS | PRIMARY CHILLED WATER SUPPLY |
| ~ ~ | RISE IN DUCT ELEVATION | ← | BUTTERFLY VALVE | €——— CWR ——— | CONDENSER WATER RETURN |
| | DROP IN DUCT ELEVATION | ├ | ISOLATION VALVE | è—— cws ——⊸ | CONDENSER WATER SUPPLY |
| SD DIM. | SPLITTER DAMPER - DIMENSION AS NOTED ON DRAWING | ├ | GATE VALVE WITH QUICK DISCONNECT | ⊱——HHWR—— | HOT WATER RETURN |
| (BDD)——— | BACK DRAFT DAMPER | ₩ | TWO-WAY VALVE | ← HHWS → | HOT WATER SUPPLY |
| UCD I" | UNDERCUT DOOR I" | ~ \ | THREE-WAY VALVE | ← CD — → | CONDENSATE DRAIN |
| RE: I/M-7 | REFER TO DETAIL #I ON DRAWING M-7 | ₩ | BALANCING VALVE | ≥ SCHWR → | SECONDARY CHILLED WATER RETURN |
| FM - | FLOW METER | ← MPS | MEDIUM PRESSURE STEAM SUPPLY | ₹ SCHWS | SECONDARY CHILLED WATER SUPPLY |
| CO2 | CO2 SENSOR | ├─── REF | REFRIGERANT PIPE | ├── CD ──── | CONDENSATING PIPE |

| | FAN POWERE | D VARI | ABLE VOL | UME TE | RMINAL | UNITS | S (FPT) (UNITS | SERVED | BY AHU-3) |
|--|------------|----------------|-----------------------|----------------------|-------------|-------|----------------|------------|-----------------|
| | | | | _ | | | | | |
| | | MIN INLET CIZE | MINI BRIMARY AIR ELOW | MINI INII ET BREGGII | UDE HEATING | | EAN EXTERNAL | FLEGTRICAL | ELECTRIC REHEAT |

| TAG SERVING | | SUPPLY AIR FLOW | FLOW UNIT SIZE | MIN INLET SIZE | MIN PRIMARY AIR FLOW | | HEATING | 111233113111711 | FAN EXTERNAL FAN | FAN MUTUR (HP) | ELECTRICAL | ELECTRIC REHEAT | | HEAT | MAKE AND MODEL | NOTES |
|-------------|-------------|----------------------|----------------|-----------------------|------------------------|------------------------------|-----------------|------------------|----------------------|---------------------|-----------------|-----------------|---------------|----------------------------------|-------------------------|---------|
| | | (CFM) | ONIT SIZE | (INCH) | (CFM) (IN WG) | | (CFM) | (CFM) | PRESSURE (IN WG) | TAN HOTOR (III) | (V/PH/HZ) | EAT (F) | LAT (F) | CAPACITY (KW) | MAKE AND MODEL | NOTES |
| MARK | SERVING SU | UPPLY AIR FLOW (CFM) | UNIT SIZE | MIN INLET SIZE (MIN)H |)UM PRIMARY AIR VOLUME | TIKOMUN INLET PRESSURE (IN V | WG)EATING CFMIN | NDUCTION FANTAIN | EM)TERNAL PRESSURE (| IN WAN MOTOR (HP) V | DLTAGE (V/PH/Hz | EAT(°F) | ELECTRIC REHE | AT ⊣ CAPACITY (KW) | MAKE AND MODEL | NOTES |
| FPB-HS-I | STUDY ROOMS | 900 | 30 | 10 | 360 | 0.5 | | 900 | 0.5 | 3/4 | 277/1/60 | 58 | 85 | 7 7 | PRICE - FDCA-2 OR EQUAL | 1, 2, 3 |
| FPB-HS-2 | STUDY ROOMS | 800 | 30 | 8 | 320 | 0.5 | | 800 | 0.5 | 3/4 | 277/1/60 | 58 | 85 | 7 | PRICE - FDCA-2 OR EQUAL | 1, 2, 3 |
| FPB-I-I-3 | TECH LAB | 1,400 | 40 | 12 | 420 | 0.5 | | 1400 | 0.5 | 3/4 | 277/I/60 | 61 | 85 | 9 | PRICE - FDCA-2 OR EQUAL | 1, 2, 3 |
| FPB-I-4-I | KITCHEN | 1,250 | 40 | 12 | 500 | 0.5 | | 1250 | 0.5 | 3/4 | 480/3/60 | 58 | 85 | П | PRICE - FDCA-2 OR EQUAL | 1, 2, 3 |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | , | , | | | | | |

I. PROVIDE ECM FAN MOTORS CONFIGURED FOR ANALOG SPEED CONTROL FROM BAS SYSTEM.

2. PROVIDE FACTORY-MOUNTED DISCONNECT SWITCHES ON FAN-POWERED VAV UNITS WITH SINGLE-POINT ELECTRICAL CONNECTION & CONTROL VOLTAGE POWER SUPPLY.

3. PROVIDE FACTORY SUPPLIED 3FT INLET AND DISCHARGE ATTENUATOR.

DIFFUSER NECK-DUCT SIZE SCHEDULE

| | DIFFUSER |
|------------------|-------------------------|
| SUPPLY AIR (CFM) | NECK AND BRANCH DUCT |
| 0 - 100 | SIZE 6"L |
| 101 - 200 | 8"[] |
| 201 - 300 | 10"□ |
| 301 - 400 | I2"□ |
| 401 - 500 | 14"□ |
| 501 - 600 | 16"□ |

AIR OUTLET SCHEDULE

| | MARK | MAKE | TYPE | MODEL | FACE SIZE (INCH) | NECK SIZE | NUMBER OF SLOTS | SLOT WIDTH (INCH) | MATERIAL | MOUNTING | REMARKS |
|---|---------------------|-------|---------|----------|---------------------|-------------------|--------------------|-------------------------|----------|----------|---------|
| | $\langle A \rangle$ | TITUS | SUPPLY | OMINI-AA | 24"X24" | SEE NECK SCHEDULE | N/A | N/A | ALUMINUM | CEILING | 1,2,3,4 |
| - | B | TITUS | RETURN | 45F | 24"x24" | 22X22 | N/A | N/A | ALUMINUM | CEILING | 1,3,4 |
| | C | TITUS | EXHAUST | 50F | 24"x24" | SEE NECK SCHEDULE | N/A | N/A | ALUMINUM | CEILING | 1,2,3,4 |
| 1 | D | TITUS | SUPPLY | 272FS | REFER PLANS | N/A | N/A | N/A | ALUMINUM | CEILING | 1,2,3,4 |
| ┙ | E | TITUS | RETURN | 272FL | REFER PLANS | N/A | N/A | N/A | ALUMINUM | WALL | 2 |
| | | | | | | | | | | | |

- PROVIDE ROUND NECK ADAPTER FOR ALL SUPPLY, RETURN, AND EXHAUST AIR DIFFUSERS WHERE NECESSARY. 2. REFER TO PLANS FOR AIR FLOW RATE.
- 3. PROVIDE DIFFUSERS WITH OPPOSED BLADE DAMPERS 4. COORDINATE LAY-IN/GYPSUM BOARD CEILING TYPE WITH FINAL ARCHITECTURAL PLANS.
- 5. PROVIDE DIFFUSERS WITH INSULATED PLENUM.

FAN SCHEDULE

| PLAN MARK SERVING AIR VOLUME (CFM) FAN TYPE FAN TYPE FAN TYPE E.S.P. IN WG NOTOR HP V/P/Hz RPM MANUFACTURER & MODEL LOCATION | | | | | | | | | | | | | |
|--|--------------|-----------------|--------|-------------|------------|--------|------|-------|----------|------|----------------------|----------|------------------|
| CFM HP V/P/Hz RPM RPM | DI ANI MADI/ | SEDVING | | EAN TYPE | DDIVE TYPE | E.S.P. | | | MOTOR | | MANUEACTURED & MODEL | LOCATION | DEMARKS |
| KSF-NHS-3 KITCHEN MAKE-UP 3000 CENTRIFUGAL DIRECT 0.75 I750 I-I/2 II5/I/60 I750 GREENHECK AS ROOF EF-C-I LIBRARY RR I50 CENTRIFUGAL DIRECT 0.75 I725 I/4 II5/I/60 I725 GREENHECK G-VG ROOF | PLAN MARN | SERVING | | FAN IYPE | DRIVE TYPE | IN WG | | HP | V/P/Hz | RPM | MANUFACTURER & MODEL | LOCATION | REMARKS |
| EF-C-I LIBRARY RR I50 CENTRIFUGAL DIRECT 0.75 I725 I/4 II5/I/60 I725 GREENHECK G-VG ROOF | KEF-NHS-3 | KITCHEN EXHAUST | 3200 | UP-BLAST | DIRECT | 0.75 | 1325 | 2 | 208/1/60 | 1325 | GREENHECK CUE-VG | ROOF | 1, 2, 3, 4, 6, 7 |
| | KSF-NHS-3 | KITCHEN MAKE-UP | 3000 | CENTRIFUGAL | DIRECT | 0.75 | 1750 | 1-1/2 | 115/1/60 | 1750 | GREENHECK AS | ROOF | 1, 2, 3, 4, 6, 7 |
| WEF-I WELDING LAB II,200 UP-BLAST DIRECT 0.5 860 5 460/3/60 860 GREENHECK CUE-C-VGD ROOF | EF-C-I | LIBRARY RR | 150 | CENTRIFUGAL | DIRECT | 0.75 | 1725 | 1/4 | 115/1/60 | 1725 | GREENHECK G-VG | ROOF | 1, 2, 3, 4, 5, 6 |
| | WEF-I | WELDING LAB | 11,200 | UP-BLAST | DIRECT | 0.5 | 860 | 5 | 460/3/60 | 860 | GREENHECK CUE-C-VGD | R00F | 1, 2, 3, 4, 6, 8 |

- NOTES:

 I. FAN SHALL BE SUITABLE FOR OUTDOOR INSTALLATION AND OPERATION.

 2. PROVIDE MANUFACTURER'S SUPPLIED 14" HIGH ROOF CURB AND BIRD SCREEN. REFER SPECIFICATIONS FOR WIND SPEED REQUIREMENTS.

 3. PROVIDE MOTORIZED DAMPER FOR UNIT WITH 300+ CFM. PROVIDE BACK-DRAFT DAMPER ON UNITS WITH LESS THAN 300 CFM. MOTORIZED DAMPER SHALL CLOSE WHEN ASSOCIATED FAN IS DE-ENERGIZED. 4. PROVIDE ECM MOTOR WITH DIAL MOUNTED ON UNIT MOTOR ENCLOSURE.
- 5. INTERLOCK FAN OPERATION WITH RTU SERVING THE CORRESPONDING AREA.
- 6. PROVIDE UNIT WITH SINGLE POINT ELECTRICAL CONNECTION AND DISCONNECT SWITCH.

INTERLOCK FAN OPERATION WITH KITCHEN HOOD.
 PROVIDE FAN WITH WALL MOUNTED SWITCH.



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CONSULTANTS: MEP ENGINEERS

www.autoarch.net

INFRASTRUCTURE ASSOCIATES 713-622-0120 STRUCTURAL ENGINEERS DALLY ASSOCIATES 713-337-8881





A PROJECT FOR:

STAFFORD HIGH SCHOOL & MAGNET SCHOOL RENOVATIONS

1625 STAFFORDSHIRE ROAD, STAFFORD, TX 77477

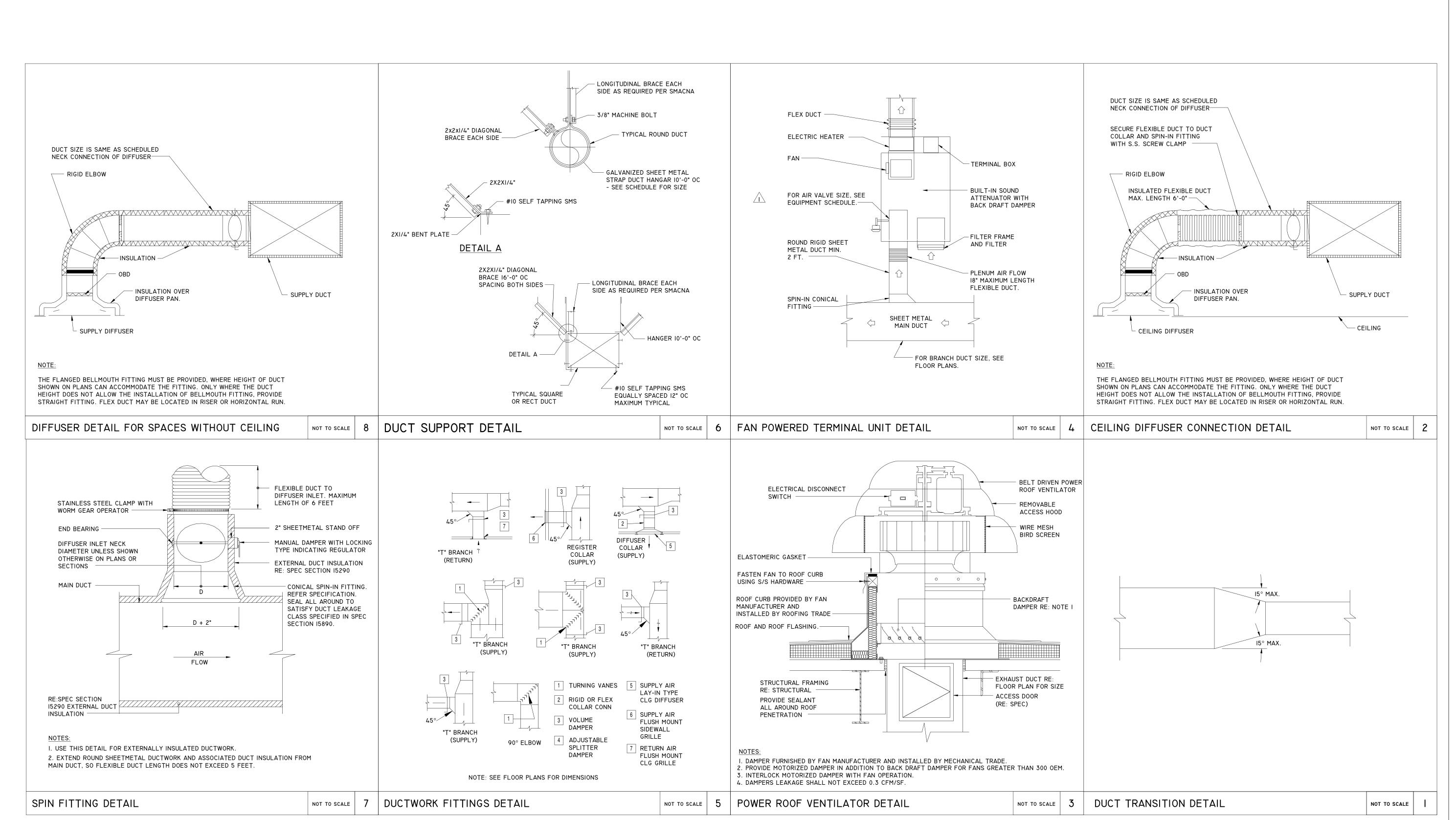
Date ISSUED FOR 1 2020/01/31 90% CD 2 2020/03/02 98% CD Review 3 2020/03/13 Issue for Bid, Permit, and Construction

Project Number 19006-A Drawn By Checked By Approved By Drawing Title

SCHEDULES

Drawing Number

M0.02





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03/13/2020

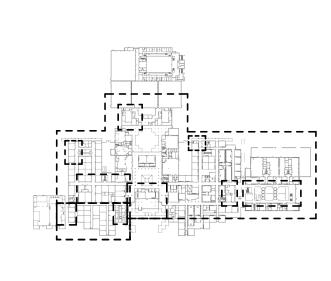
A PROJECT FOR: STAFFORD & MAGNET SCHOOL RENOVATIONS

1625 STAFFORDSHIRE ROAD,

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1 2020/01/31 90% CD

| 1 | 2020/01/31 | 90% CD |
|---|------------|---|
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| 3 | 2020/03/13 | Issue for Bid, Permit, and Construction |
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| KEY PLAN | | |
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| | TRUE NORTH | PLAN NORT |

| Project Number | 19006-A | | | | | | |
|----------------|---------|--|--|--|--|--|--|
| Drawn By | LT | | | | | | |
| Checked By | AW | | | | | | |
| Approved By | MS | | | | | | |
| Drawing Title | | | | | | | |
| DETAILS | | | | | | | |

M2.01

Drawing Number