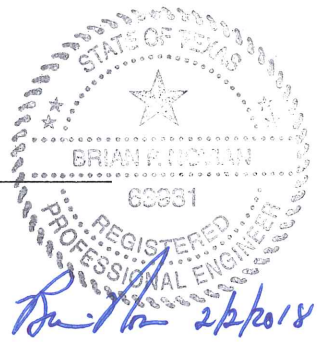


CONSTRUCTION SCOPE OF WORK

Project Title: Tidehaven ISD Old High School Demolition - Electrical Modifications Portion
Project Location: TISD Old High School, El Maton, TX
Document No.: CSOW-1438.025-EM
Date / Revision: February 2, 2018 / 0

Summary Scope of Work

This construction scope of work is for the electrical modifications to be performed in association with the proposed demolition of several existing buildings at the existing TISD Old High School campus. Electrical modifications to be performed under this Scope of Work consist of the following:

1. Re-route HVAC electrical power supply to Boy's Gym HVAC units
2. Remove all electrical power feeds to existing old High School
3. Relocate / repower existing sanitary sewer pump controllers, install new power equipment/conduit/conductors and reconnect associated pumps
4. Remove all electrical power feeds to existing Maintenance Shop
5. Remove electrical power feed to Classroom (ISS) Trailer
6. Replace electrical power feed to the existing Concession Building
7. Replace electrical lighting panel in Boy's Gym
8. Remove electrical power feed to existing Parking Garage Building
9. Remove / replace electrical power supply to water tank air compressor
10. Remove / replace electrical power supply to Stadium Restroom Building
11. Remove all electrical power feeds to existing old Administration Building

Detailed Scope of Work

1. Re-route HVAC electrical power supply to Boy's Gym HVAC units

1a. The electrical power feed for the Boy's Gym hvac units are sourced from the electrical equipment rack at the old high school. The conduits for this supply are routed on top of the old high school roof, which will be demolished. These HVAC conduits and associated conductors are to be removed and replaced with new conduit/conductors which will be re-routed underground in order to refeed the HVAC units and allow for demolition of the old high school. The existing supply breakers will be re-used. Reference Exhibit #1A-EM

2. Remove all electrical power feeds to existing old High School

2a. Remove all of the electrical power feed conductors feeding the old High School Building. This work will consist of completely disconnecting and removing all power conductors feeding the building from the point of supply (feeder breaker load side), such that the building is completely disconnected from any electrical power sources. Confirm building to be completely disconnected from all electrical sources.

NOTE: After removing electrical power and prior to removing conductors from any building that is to be demolished, confirm that no electrical power was inadvertently

discontinued from any buildings that are not being demolished. Perform this confirmation for each building to be demolished.

3. Relocate / repower the existing sanitary sewer pump controllers, install new power equipment/conduit/conductors and reconnect associated pumps
3a. Currently the sanitary sewer pump controllers are mounted on the existing old Administration Building. The old Administration Building is to be demolished, so the sanitary sewer pump controllers are to be relocated to the east exterior wall of the existing Girl's Gym.
Reference Exhibit #1SP
3b. The relocated sanitary sewer pump controllers will be re-powered from an existing 3-ph, 240vac, main service disconnect enclosed breaker (pole mounted) by tapping the load side conductors at the existing main service disconnect and feeding a new enclosed breaker. The new enclosed breaker will feed a new breaker panel to be installed on the Girl's Gym exterior east wall (next to relocated controllers). The new breaker panel will feed the relocated sewer pump controllers (3 total). Reconnect the relocated controllers (install new conduit/conductors) to its respective sewer pump.
Reference Exhibit #2SP

4. Remove all electrical power feeds to existing Maintenance Shop
4a. The Maintenance Shop will be demolished so the power feed to the Maintenance Shop will be removed. This will consist of removing the conductors that feed the building starting at the supply breaker, and ending at the Maintenance Building.
Reference Exhibit #4A
4b. The power conductors that feed the existing Concession Building are currently routed with the Maintenance Shop conductors and will be removed as well. This will consist of removing the conductors starting at the supply breaker, and ending at the Concession Building. The Concession Building will remain in use, so a new power feeder will be installed.
Reference Exhibit #4A

5. Remove electrical power to Classroom Trailer
5a. The Classroom Trailer will be removed so the power feed to the Classroom Trailer will be removed. This will consist of removing the conductors that feed the trailer starting at the supply breaker, and ending at the trailer.
Reference Exhibit #4A, #5A

6. Replace electrical power feed to the existing Concession Building
6a. The existing electrical power feed to the Concession Building is being removed since it passes through the Maintenance Shop that is being demolished. The Concession Building will stay in service, so a new electric power feeder (underground conduit) will be installed from the existing Concession Building feeder breaker (at old high school electrical rack LVDP) to the Concession Building.
Reference Exhibit#LVDP, #6A, #6A2

7. Replace electrical lighting panel in Boy's Gym

7a. Located within the electrical room in the Boy's Gym is an existing obsolete glass-fused lighting panel that is to be removed and replaced with a current technology molded case circuit breaker lighting panel (loadcenter). Loadcenter to be type QO (or equal), 20 circuit min., 125a mains.
Reference Exhibit #7A

8. Remove all electrical power feeds to existing Parking Garage Building
8a. Remove the electrical power feed conductors feeding the existing Parking Garage Building. This work will consist of completely disconnecting and removing all power conductors feeding the Parking Garage Building from the point of supply, such that the building is completely disconnected from any electrical power sources. Confirm building to be completely disconnected from all electrical sources.
Exhibit #8A

9. Remove / replace electrical power supply to water tank air compressor
9a. Remove the existing overhead electrical power supply conductors (originate in old High School) to the water tank air compressor (located on top of water tank). Install new u/g supply (conduit/conductors) to the air compressor from the low voltage distribution panel (LVDP), utilizing an existing spare breaker.
Reference Exhibit #LVDP, #9A-EM

10. Removal / replacement of electrical power supply to Stadium Restroom Building
10a. The Stadium Restroom Building (to remain in service) is currently feed from a power panel located inside the Maintenance Building (to be demolished). Remove the existing supply conductors and refeed (conduit/conductors) the Restroom Building from the low voltage distribution panel (LVDP). Install a new 2-pole, 30a breaker in the LVDP.
Reference Exhibit #LVDP, #5A

11. Remove all electrical power feeds to existing old Administration Building
11a. Remove all of the electrical power feed conductors feeding the existing Administration Building. This work will consist of completely disconnecting and removing all power conductors feeding the Administration Building from the point of supply, such that the building is completely disconnected from any electrical power sources. Power sources originate within the Girl's Gym. Confirm building to be completely disconnected from all electrical sources.

NOTE: Work items listed above are not arranged in particular order or sequence. Work on some tasks can start immediately, however some work items will require coordination with other demolition work, such as abatement work. All work activities are to be coordinated with TISD.

<u>Reference Design Documentation</u>
Drawing 025-E1.0 – Electrical General Notes
Drawing 025-E1.1 – Electrical Power Modifications Site Plan
Drawing 025-E1.2 – Electrical One Line Old High School

Specification: Division 2 – Site Work, Section 02050 – Demolition
Exhibits: #LVDP, #1A-EM, #1SP, #2SP, #4A, #5A, #6A, #6A2, #7A, #8A, #9A-EM

Equipment/Material to Be Furnished by Contractor
1. All required equipment / material required

Submittal Requirements
Provide manufacturer's product catalog information, specification, and data sheets for the following:
New power equipment

Work by Others (Not Included Within This Scope of Work)
None

Insurance Requirements
Per contract requirements

Bonding Requirements
Per contract requirements

End of Document


OLD HIGH SCHOOL
LOW VOLTAGE DISTRIBUTION PANEL
LVDP
EXHIBIT #LVDP

EXHIBIT #1A-EM

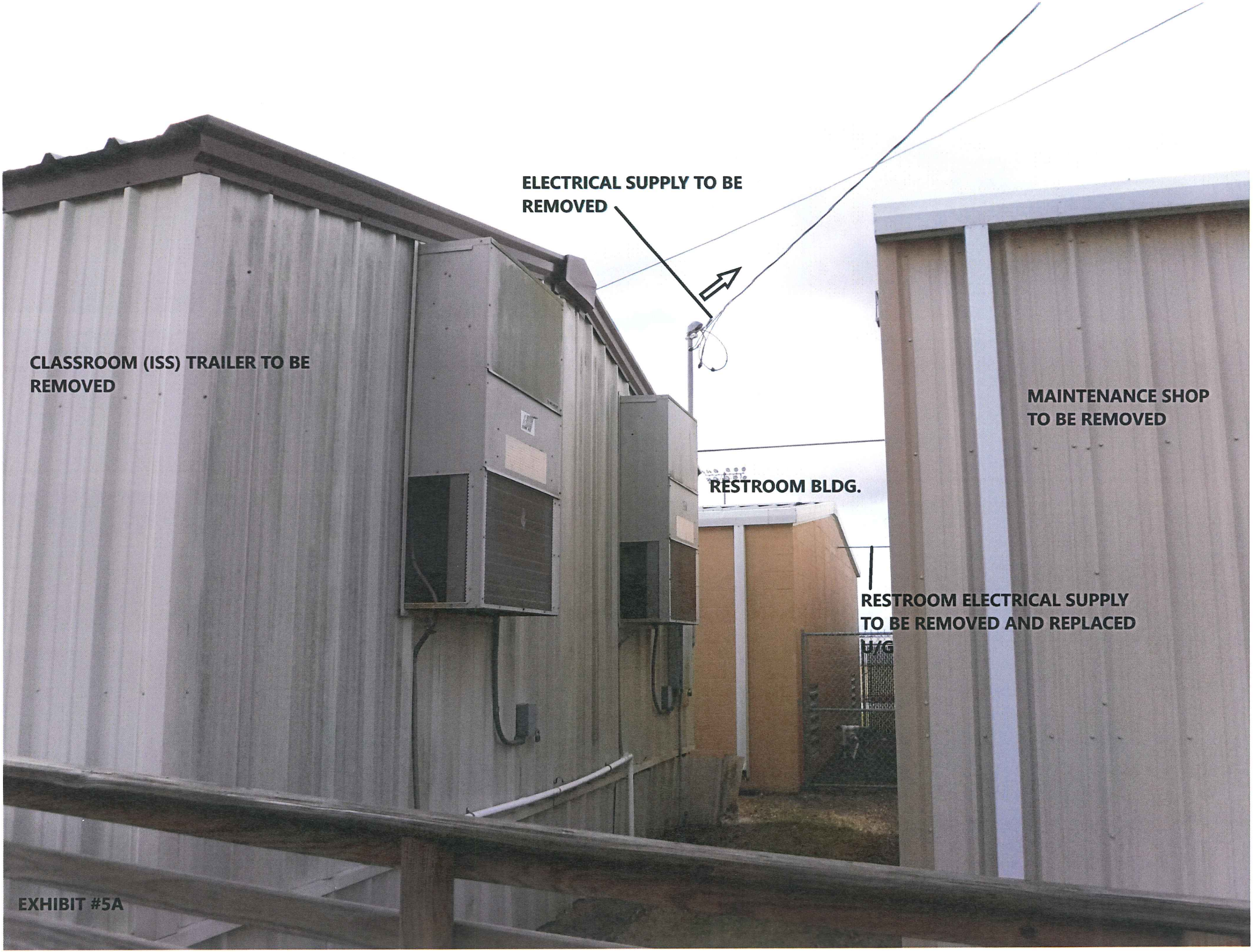

EXIST. ADMINISTRATION BUILDING
TO BE DEMOLISHED
EXIST. SEWER PUMP CONTROLLERS
TO BE RELOCATED
EXIST. SEWER PUMP
JUNCTION BOXES

EXHIBIT #1SP


EXIST. GIRL'S GYM
EXIST. 240VAC SERVICE MAIN BRKR.
LOCATION OF NEW ENCL. BREAKER
EB-SP
LOCATE SEWER PUMP
CONTROLLERS AND NEW POWER
PANEL PP-SP ON THIS WALL
EXIST. SEWER PUMP
JUNCTION BOXES

EXHIBIT #2SP


WOOD POLE TO BE REMOVED
ELECTRICAL SUPPLY TO CONCESSION BLD
BE REMOVED
(PASSES THRU MAINT. SHOP)
ELECT. SUPPLY TO ISS TRAILER TO
BE REMOVED
ELECTRICAL SUPPLY TO MAINT. SHOP
TO BE REMOVED
MAINTENANCE SHOP TO BE
DEMOLISHED
EXHIBIT #4A


ELECTRICAL SUPPLY TO BE REMOVED
CLASSROOM (ISS) TRAILER TO BE REMOVED
MAINTENANCE SHOP TO BE REMOVED
RESTROOM BLDG.
RESTROOM ELECTRICAL SUPPLY TO BE REMOVED AND REPLACED U/G
EXHIBIT #5A


CONCESSION BLDG. (TO REMAIN) -
REMOVE/REPLACE ELECTRICAL
FEEDER
TIDEHAVEN
TIGERS
ELEC. FEEDER FROM LVDP
PASSING THRU MAINT. SHOP -
SEE EXHIBIT #4A, #6A2

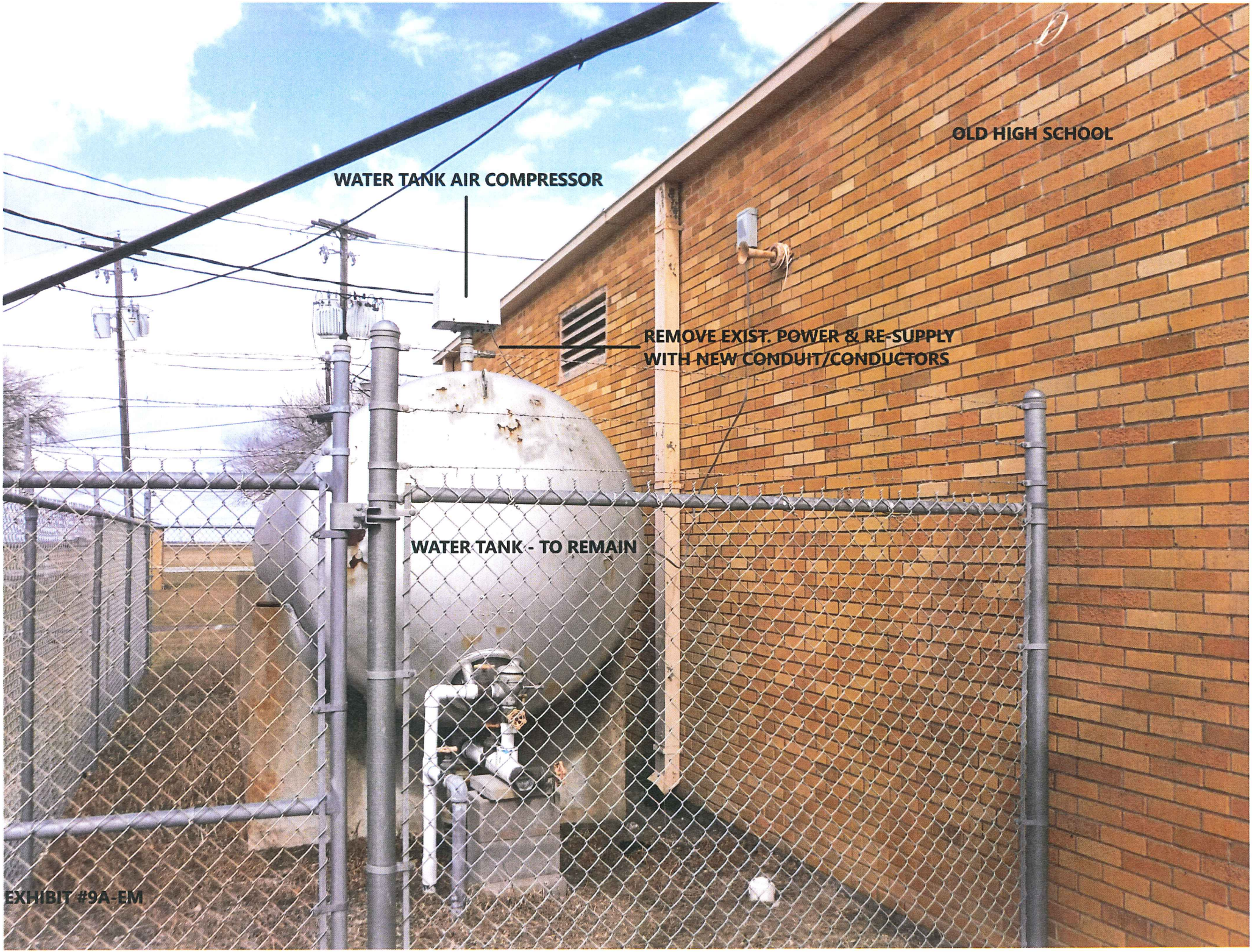
EXHIBIT #6A


MAINTENANCE BUILDING
TO BE DEMOLISHED
ELEC. FEEDER TO
CONCESSION BLDG.
PASSING THRU MAINT.
SHOP
CONTINUES U/G TO
CONCESSION BLDG. - SEE
EXHIBIT #6A
EXHIBIT #6A2

EXHIBIT #7A


EXIST. PARKING GARAGE - TO BE DEMOLISHED
EXIST. AG BLDG. - TO REMAIN
EXIST. ELEC. SUPPLY - CONDUCTORS TO BE REMOVED FROM SUPPLY END TO LOAD END

EXHIBIT #8A


OLD HIGH SCHOOL
WATER TANK AIR COMPRESSOR
REMOVE EXIST. POWER & RE-SUPPLY
WITH NEW CONDUIT/CONDUCTORS
WATER TANK - TO REMAIN
EXHIBIT #9A-EM

DIVISION 2 - SITE WORK

SECTION 02050 - DEMOLITION

.01 GENERAL:

The Work covered under this Section shall be as indicated on the Project Drawings and as specified herein. Demolition required for this Work includes, but is not limited to:

a. Constructing temporary barriers around objects designated to remain.

b. Demolition and removal of structures.

c. Disconnecting and removing existing utility lines on the site except those designated to remain.

d. Removal of debris.

.02 JOB CONDITIONS:

a. Burning:

On-site burning will not be permitted.

b. Protection:

Use all means necessary to protect existing objects designed to remain and, in the event of damage, immediately make all repairs and replacements necessary to the approval of OWNER'S REPRESENTATIVE at no additional cost to OWNER.

c. Restrictions:

1. Do not sell or burn removed materials on-site.

2. Do not use explosives.

d. Summary:

1. The demolition drawings do not necessary indicate all the conditions, details, or work required. CONTRACTOR shall examine the building to determine the actual conditions and extent of the work. Any details not clear to CONTRACTOR shall be referred for clarification prior to bidding.

2 CONTRACTOR shall provide a list with the bid/proposal documentation listing any and all exceptions, clarifications, and/or work scope limitations.

.03 MATERIALS:

All materials, required for proper completion of the Work of this Section, shall be selected by CONTRACTOR subject to the approval of OWNER'S REPRESENTATIVE.

.04 PREPARATION:

a. Notification:

Notify OWNER'S REPRESENTATIVE at least one week prior to commencing the Work of this Section.

b. Site Inspection:

1. Prior to all Work of this Section, carefully inspect the entire site and all objects designated to be removed and to be preserved.

2. Locate all existing utility lines and determine requirements for disconnecting and capping.

3. Locate existing active utility lines traversing the site and determine the requirements for their protection.

c. Clarification:

1. The Drawings do not purport to show the various objects existing on the site, CONTRACTOR shall take caution and verify conditions prior to removing any objects.

2. Before commencing the Work of this Section, verify with OWNER'S REPRESENTATIVE all objects to be removed and all objects to be preserved.

d. Scheduling:

1. Schedule all Work in a careful manner with all necessary consideration for neighbors and the public.

2. Avoid interference with the use of, and passage to and from, adjacent buildings and facilities.

e. Disconnection of Utilities:

Before starting site operations, disconnect and/or confirm the disconnection of all utility services designated to be removed; performing all such Work in accordance with the requirements of the utility company or agency involved.

f. Protection of Utilities:

Preserve in operating condition all active utilities traversing the site and designated to remain.

g. Submittals:

Submit demolition plan for approval. Indicate methods to be employed, sequence, equipment, procedures, disposal sites and proposed haul routes. Indicate safety measures in accordance with applicable codes, including signs, barriers and temporary walkways.

f. Preparation:

1. Where an abutting structure or a part of a structure is to be left in place, make clean, smooth, vertical cuts with a saw or other approved cutting device to lines indicated. If not indicated or otherwise required, demolish structure to a minimum of 18 inches below subgrade.

2. Verify that structures to be removed are cleared of utilities.

g. Hazardous Materials: It is unknown whether hazardous materials will be encountered in in the Work.

If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify OWNER. OWNER will remove hazardous materials under a separate contract.

h. Quality Assurance:

CONTRACTOR shall verify the extent of the demolition work. Any questions as to which systems are to be removed versus which systems are to remain shall be referred to the OWNER'S REPRESENTATIVE for clarification prior to commencing demolition work.

i. Coordination:

CONTRACTOR shall be responsible for coordinating demolition of all affected systems (electrical, mechanical, utilities, etc.) to prevent disruption to OWNER and minimize downtime.

.05 DEMOLITION OF STRUCTURES:

a. Demolish all buildings designated for demolition, pulling out all foundations and concrete slabs; remove all existing pavement designated to be removed.

b. No structure or accessory building shall be removed from the premises as a whole, or in a substantially whole condition, but all such structures and accessory buildings shall be demolished on the premises. Exceptions would be modular, mobile or skid-based buildings or containers.

c. Demolition and disposal of rubbish and debris shall proceed simultaneously.

d. Once the demolition is started, it shall be continued until completed.

e. CONTRACTOR shall be responsible for all damage to private or public property as a result of his fault or negligence in connection with the prosecution of the work and shall be responsible for the proper care and protection of all work performed until completion and final acceptance.

f. CONTRACTOR shall comply with applicable laws and ordinances governing the disposal of materials, debris, rubbish and trash off or on the project area; and shall commit no trespass on any private property in the disposal of the materials without permission of the property owners involved.

g. Saw cut concrete or asphalt pavement to 3 inches depth, with saw designed for cutting pavements, prior to pavement removal. Cuts shall be straight and free of ragged edges.

h. Clean adjacent structures and improvements of dust, dirt and debris caused by deconstruction operations. Return adjacent areas to condition existing before deconstruction operations began.

.06 OTHER DEMOLITION:

a. Pull out all existing utility lines designated for abandonment, and all other objects designated to be removed.

b. Electrical power conductors (cabling) that continue outside the boundary of the structure to be demolished are to be removed in their entirety up to the respective circuit breaker/disconnecting means.

c. Communication conductors (cabling) that continue outside the boundary of the structure to be demolished are to be removed in their entirety up the point of utility demarcation or nearest support structure.

d. Embedded and/or underground electric conduits/ductbanks that are uncovered with unknown origination or destination shall not be removed until confirmed by TISD staff.

e. Prior to touching, cutting or removing any electrical conductor(s), the subject conductor(s) shall be confirmed to be de-energized using a voltage detector probe (first) and multimeter (confirmation).

.07 REMOVAL OF DEBRIS:

a. CONTRACTOR shall be responsible for removal and disposal of all debris from the site, and leave the site in a neat and orderly condition to the approval of OWNER'S REPRESENTATIVE.

b. Unless otherwise indicated, deconstruction waste becomes property of CONTRACTOR.

c. Demolition areas shall be finished free of all debris, obstruction, and level without any mounds or ruts. Areas shall be left in suitable condition to allow the use of riding lawn mowing equipment.

END OF SECTION
END OF DIVISION

DIVISION 16 - ELECTRICAL

SECTION 16050 - ELECTRICAL GENERAL REQUIREMENTS

.01 GENERAL:

a. This section includes furnishing all plant, labor, equipment and materials and performing all operations required to complete the electrical power and control systems as shown on drawings and herein specified.

b. Make all electrical connections required for equipment indicated to be provided by equipment manufacturers or others, and/or equipment provided under other sections of these specifications.

c. Make arrangements with Electrical Power Company for providing new electrical service and metering facilities, and coordinate work so as to insure that work includes and meets all requirements.

d. Carefully coordinate this work with work of other trades indicated on drawings. Wherever work covered under other sections of these specifications is contiguous to work covered by this section, order of work shall be carefully scheduled and coordinated to secure completion of various portions of the work in best possible manner. Rights of various interests and order of the work, when in dispute, shall be established by ENGINEER and his instructions as to priority of work and correction of interferences shall be final and binding.

.02 SCOPE:

Furnish and install all necessary equipment for functions indicated, unless noted otherwise. Work shall/may include, but not limited to, the following:

a. Incoming service entrance equipment as shown on drawings and all necessary provisions for connection of same to utility company service.

b. Lighting fixtures, switches, branch circuits and receptacles.

c. Raceway, cable tray, and associated supports.

d. Control devices, power and control wiring.

e. Switchgear, disconnects, and power panels.

f. Grounding hardware and associated conductors.

g. Building/equipment penetrations and associated penetration sealing.

h. All other electrical work and materials required to construct a complete and functioning installation.

.03 VISITING SITE:

Each bidder shall visit the site in order to fully understand the facilities, difficulties and restrictions which will affect execution of this work. CONTRACTOR will not be allowed additional compensation for work omitted from his proposal due to his failure to thoroughly acquaint himself with these matters, in accordance with General Conditions.

.04 CODE REQUIREMENTS AND ORDINANCES:

a. Perform work in accordance with applicable statutes, ordinances, codes, and regulations of governmental authorities having jurisdiction.

b. Resolve any code violation discovered in contract documents with ENGINEER prior to award of contract. After award of contract, make any correction or addition necessary for compliance with applicable codes at no additional cost to OWNER.

c. Obtain and pay for all permits and inspections required.

.05 SHOP DRAWINGS:

Submit shop drawings for all new electrical equipment, including switches, starters, relays, lighting fixtures, wiring devices, panel board and motors, all in accordance with either Section 01300 or Section 01340 of these Specifications, whichever is applicable, except submit three sets of prints to ENGINEER for his review; two to be returned to CONTRACTOR.

.06 OPERATING AND MAINTENANCE INSTRUCTIONS:

Furnish four copies of all operating and maintenance instructions, service manuals, parts lists and connection diagrams pertinent to each equipment item furnished under this section. Each set shall be fastened in a substantial binder with each item properly indexed. Binders shall be delivered to ENGINEER at least one week prior to final acceptance work.

.07 DRAWINGS:

a. Review all pertinent drawings and adjust this work to the conditions shown thereon. Discrepancies between drawings, specifications, and actual field conditions shall be brought to the prompt attention of ENGINEER for interpretation.

b. Drawings indicate approximate locations of power outlets, feeders, branch circuits, panelboards, etc. Exact location of these items must be determined by measurement in the field from building lines. Such locations will, at all times, be subject to approval of ENGINEER. ENGINEER reserves the right to make any reasonable changes in outlet locations indicated, without any additional cost to OWNER.

c. Maintain at job site a separate set of white background prints of drawings for sole purpose of recording on them with colored pencil "As-Built" changes, and diagrams of those portions of work in which actual construction is significantly at variance with drawings. At conclusion of project, an additional set of such record prints shall be prepared and both sets delivered to ENGINEER before final acceptance tests.

.08 GROUNDING:

a. Provide grounding of main service and each item of equipment in accordance with requirements of National Electrical Code, and as shown.

b. In addition to specific grounds on drawings, the system provided shall have adequate electrical continuity throughout.

.09 TESTS:

a. All circuits and equipment shall be put into service under normal conditions, collectively and separately, as may be necessary to determine satisfactory operation. Tests shall be performed in presence of ENGINEER. Furnish all instruments and personnel required for tests. Demonstrate equipment to operate in accordance with requirements of this specification.

b. Date for final acceptance test shall be sufficiently in advance of completion date of contract to permit any adjustment or alterations indicated by final acceptance tests to be necessary for proper functioning of equipment to be completed within number of days allotted for completion of contract. Retests shall be conducted, if so directed by ENGINEER, of such time duration as may be necessary to assure proper functioning of adjusted or altered parts or items of equipment. No resultant delay or consumption of time as a result of such necessary retests beyond completion date of contract shall relieve CONTRACTOR of his responsibility under contract.

.10 CONNECTIONS TO OTHER EQUIPMENT FURNISHED:

Rough-in and final connections of all items of equipment furnished under other sections of the specifications and as may be required for complete and operating systems are included under this section.

.11 GUARANTEE:

For a period of one year from date of final acceptance of work covered by this section, CONTRACTOR shall guarantee this work against all defects in materials and workmanship. During guarantee period, CONTRACTOR shall maintain this work in good functioning order and shall provide at no expense to OWNER all materials and labor required to make all repairs, replacements and changes required to correct such defects.

END OF SECTION

DIVISION 16 - ELECTRICAL

SECTION 16100 - MATERIALS AND INSTALLATION

.01 GENERAL:

This work includes furnishing all plant, labor, equipment and materials and performing all operations required for installation of electrical equipment as specified herein and as shown on the drawings.

.02 DESCRIPTION:

a. All materials shall be new and the standard products of manufacturers regularly engaged in production of such equipment. All materials shall conform to National Electrical Code and shall be approved and listed by the Underwriters' Laboratories if similar materials and equipment are so listed.

b. Whenever a definite material is specified, it is not the intention to discriminate against any equal product made by another manufacturer which, in the opinion of ENGINEER, will perform same function equally as well as material specified. Under no circumstances, however, shall any substitution be made for specified material without written consent of ENGINEER.

c. As soon as possible after award of contract, and before any materials are placed on order, submit to ENGINEER for review a complete list including catalog numbers and descriptive matter of all materials and equipment he proposes to provide.

d. All work shall be done in accordance with latest rules and regulations of National Board of Fire Underwriters, National Electrical Safety Code, OSHA and all local ordinances.

e. In those instances where capacities, size, etc. (of electrical equipment, devices or materials as designated in these specifications or indicated on drawings) are in excess of minimum requirements of the NEC and other standards, such designated capacities shall prevail.

f. All electrical distribution equipment enclosures shall have machine printed exterior labels to name each enclosure according to its purpose.

.03 CONDUIT:

a. Install all wiring in conduit (or wireway where indicated on drawings) of proper size to contain number of conductors required in accordance with latest edition of National Electrical Code (NEC). Except where otherwise shown or specified, all conduit to be installed underground shall be Schedule 40 rigid PVC conduit with joints solvent-welded. Above ground conduit shall be rigid, metallic and as indicated on the project drawings

b. Run exposed conduits parallel with, or perpendicular to, building lines. Underground conduit, if required, shall be installed twenty-four (24) inch minimum below grade, unless otherwise noted, and routed as shown on drawings.

c. Securely fasten conduits to structure as required with hot-dipped galvanized malleable iron one hole pipe straps or other approved clamps (using stainless steel bolts, screws, expansion bolts and toggle bolts as required) spaced on not greater than five (5) foot centers, unless otherwise noted.

d. Conduit shall form an electrically continuous system throughout.

.04 WIRE AND CABLE:

a. All wire and cable used in this work shall be in strict accordance with Underwriters' Laboratories Standards and shall bear its stamp of approval, size, type and voltage rating.

b. Unless otherwise noted or specified, all wire shall be standard copper conductor with 600 volt, 90°C, THHN insulation.

c. Minimum wire size to be field installed shall be #12, unless otherwise noted.

.05 120/240V AC DISTRIBUTION PANELS:

To be sized and supplied with breakers and wired to equipment and devices as shown on Drawings. Enclosures to meet or exceed NEMA ratings for their locations.

.06 LIGHTING FIXTURES, LAMPS, DEVICE SWITCHES AND RECEPTACLES:

Shall be as indicated or listed on drawings and as specified herein. Fixtures shall be completely wired, mounted and made ready for operation, with lamps installed.

a. Toggle Switches:

1. Toggle switches for building lights to be 120 volt, 20 amp, specification grade, and to be installed and wired in accordance with the National Electrical Code. Color of switches and cover plates to be as approved by OWNER.

b. Receptacles:

1. All 120 volt receptacles to be specification grade 3-wire, duplex receptacles. All 240 volt receptacles to be single outlet specification grade receptacles. All receptacles to be installed and wired in accordance with the National Electrical Code. Color of receptacles and cover plates to be as approved by OWNER.

END OF SECTION
END OF DIVISION

GENERAL ELECTRICAL NOTES:

1. ENTIRE INSTALLATION TO COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE (NEC).

2. EACH CONDUIT, EXCEPT FOR INSTRUMENTATION CONDUITS, OR CLASS 2/3 CONDUITS WILL HAVE A DEDICATED GROUNDING CONDUCTOR.

3. SPLICING OF CONDUCTORS IS PROHIBITED UNLESS SPECIFICALLY NOTED OTHERWISE. WHERE SPLICING OF CONDUCTORS IS ALLOWED SUCH AS FOR LIGHTING CIRCUITS, THE SPLICE SHALL BE MADE WITHIN THE FIXTURE ENCLOSURE OR NEAREST CONDUIT FITTING. SPLICING SHALL BE PERFORMED UTILIZING COMPRESSION TYPE CONNECTORS WITH THE ASSOCIATED INSTALLATION TOOL. EACH COMPLETED SPLICE TO BE FULLY PROTECTED, AND COVERED UTILIZING SEALANT TYPE HEAT SHRINK TUBING TO PROVIDE A WATER-PROOF, AND FULLY INSULATED CONNECTION.

4. CONTRACTOR WILL PROVIDE SUBMITTALS UNLESS NOTED OTHERWISE FOR ALL MATERIAL AND EQUIPMENT FURNISHED BY CONTRACTOR FOR ENGINEERS APPROVAL PRIOR TO PROCUREMENT.

5. ALL WIRING/CONDUCTORS EXCEPT FOR GROUNDS, AND MOTOR T-LEADS SHALL BE LABELLED USING SELF-LAMINATING BRADY TYPE LABELS, OR SLIP-ON HEAT SHRINK WIRE SLEEVES. LABEL TEXT SHALL PROVIDE FROM/TO INDICATION ON EACH CONDUCTOR END.

CONDUIT:

1. ALL ABOVE GRADE OUTDOOR CONDUIT, AND COUPLINGS SHALL BE RIGID, HOT DIPPED, GALV. STEEL (RGS), UNLESS SPECIFICALLY NOTED OTHERWISE. MINIMUM CONDUIT SIZE SHALL BE 3/4". CONDUIT FITTINGS SHALL BE METALLIC ALLOY, ELECTRO GALVANIZED, FINISHED COATED, SIZE FORM 8 OR EQUAL. ALL INDOOR (INSIDE AIR CONDITIONED BUILDINGS) EXPOSED (NOT EMBEDDED) CONDUIT MAY BE ELECTRICAL METALLIC TUBING TYPE (EMT). MIN. TRADE SIZE 3/4"

2. ALL BELOW GRADE CONDUIT SWEEPS AND STUB-UPS SHALL BE RIGID, NON-METALLIC, SCH. 40 PVC. MINIMUM UNDERGROUND SWEEP RADIUS SHALL BE 18".

3. UNDERGROUND CONDUIT EXCLUDING STUB-UPS SHALL HAVE A MINIMUM OF 18" COVER, UNLESS OTHERWISE NOTED. THE ENTIRE UNDERGROUND PORTION OF EACH CONDUIT RUN SHALL BE ENCASED IN 2" OF LEAN (2000 PSI) CONCRETE ON ALL SIDES. A WARNING TAPE SHALL BE PLACED DIRECTLY ABOVE UNDERGROUND CONDUITS APPROX 6" BELOW FINAL GRADE. THE WARNING TAPE SHALL BE 2" WIDE, BLACK ON RED COLOR, DETECTABLE WITH TEXT AS FOLLOWS: CAUTION - BURIED ELECTRICAL LINE BELOW TAPE SHALL BE BRADY IDENTOLINE #91601 OR EQ.

4. ALL FLEXIBLE CONDUIT IS TO BE WEATHER-TIGHT, LIQUIDTIGHT, VINYL-COATED GALVANIZED STEEL. FLEXIBLE CONDUIT SHALL BE USED FOR CONNECTIONS TO ALL INSTRUMENTS, MOTORS, AND TO ALL OTHER EQUIPMENT WHERE VIBRATION OR EXPANSION IS PRESENT.

5. ALL OUTDOOR CONDUIT FITTINGS ARE TO BE EQUIPPED WITH GASKETED COVERS. CONDUIT FITTING COVERS ARE TO BE POSITIONED FACE DOWN WHERE FEASIBILE TO PREVENT WATER ENTRANCE AND ACCUMULATION. CONDUIT COVER SCREWS SHALL BE STAINLESS STEEL.

6. ALL CONDUIT PENETRATIONS / HUB OPENINGS IN OUTDOOR ENCLOSURES, CABINETS, EQUIPMENT, AND BOXES ARE TO BE ARRANGED TO ENTER EITHER FROM THE ENCLOSURE BOTTOM OR THE SIDE BOTTOM.

7. CONDUIT DRAINS SHALL BE INSTALLED IN THE LOW POINTS OF EACH CONDUIT RUN.

8. ALL CONDUIT CONNECTIONS TO ENCLOSURES, CABINETS, EQUIPMENT AND BOXES LOCATED OUTDOORS SHALL UTILIZED NEMA 4X, WEATHER-PROOF, THREADED, GASKETED, GROUNDING, MYERS TYPE HUBS.

9. UNDERGROUND CONDUIT BACKFILL MATERIAL SHALL BE CLEAN, DRY, GRANULAR SAND, WITHOUT ANY LUMPS, BINDERS, OR CLAY MATERIAL. SAND BACKFILL SHALL BE USED FOR BACKFILLING BELOW, AROUND, AND 6" ABOVE THE CONDUIT. NATIVE GROUND MAY BE USED FOR BACKFILLING THE AREA MORE THAN 6" ABOVE THE CONDUIT.

10. IN CASES WHERE CONCRETE ENCASEMENT OR CONDUIT PROTECTION COLLARS ARE CALLED FOR THE CONCRETE SHALL CONSIST OF A LEAN, 2000 PSI AT 28 DAY MIX WITH PEAT GRAVEL AGGREGATE. EXPOSED CONCRETE SURFACES SHALL BE SMOOTH TROWELED FINISHED.

11. UNDERGROUND CONDUITS INSTALLED IN UNSURFACED (GRAVEL) ROADWAYS SHALL HAVE A MINIMUM OF 24" COVER AND SHALL BE ENCASED IN LEAN (2000 PSI) CONCRETE (FLO-FILL) FOR THE ENTIRE EXCAVATION WIDTH AND A MIN. 8" ON TOP. THE REMAINING DEPTH IS TO BE BACKFILLED WITH COMPACTED LIMESTONE BASE UP TO AN ELEVATION 1" ABOVE EXIST. ROAD GRADE. UNDERGROUND CONDUITS INSTALLED IN EXISTING FINISHED (ASPHALT OR CONCRETE) ROADWAYS SHALL HAVE A MINIMUM OF 24" COVER AND SHALL BE ENCASED IN LEAN (2000 PSI) CONCRETE (FLO-FILL) FOR THE ENTIRE EXCAVATION WIDTH AND THE ENTIRE EXCAVATION DEPTH UP TO THE BOTTOM OF ROADWAY FINISHED SURFACE. THE REMAINING PORTION SHALL BE COMPLETED TO MATCH THE EXISTING ROADWAY SURFACE FINISH, AND GRADE.

12. EXCAVATIONS INTO PAVED (CONCRETE OR ASPHALT) SURFACES SHALL BE PERFORMED BY CLEAN CUTTING (SAW CUTTING) THE PAVED SURFACE FOR THE ENTIRE EXCAVATION WIDTH (NO UNDERCUTTING). DEPTH OF SAW CUT SHALL BE A MIN. OF 2" FOR CONCRETE AND DEPTH OF PAVING FOR ASPHALT.

13. ALL CIRCUITS INSTALLED OUTDOORS REGARDLESS OF CLASS SHALL NOT BE EXPOSED TO SUNLIGHT (UNLESS INSTALLED IN TRAY), OPEN TO TOUCH, OR ACCESSIBLE. ALL CIRCUITS INSTALLED OUTDOORS SHALL BE PLACED IN TRAY, CONDUIT, INTERNAL TO A SUPPORT, OR IN AN ENCLOSURE.

WIRE AND CABLE:

1. SINGLE CONDUCTOR WIRE AND CABLE (<600V) SHALL BE AS FOLLOWS: 600V, 90 DEG. C., STRANDED COPPER, TYPE THHN/THWN INSULATION.

2. MULTICONDUCTOR CONTROL AND POWER CABLE (<600V) SHALL BE AS FOLLOWS: 600V, 90 DEG. C., CLASS B STRANDED COPPER, TYPE TC, WITH XHHW-2 INSULATION, PVC JACKET. MULTICONDUCTOR MOTOR FEEDER CABLES (3/C, WG) SHALL HAVE A COPPER EQUIPMENT GROUNDING CONDUCTOR INCLUDED AS PART OF THE CABLE ASSEMBLY.

3. SINGLE PAIR INSTRUMENTATION CABLE SHALL BE AS FOLLOWS: 600V, 90 DEG. C., #16 AWG CLASS B STRANDED COPPER, TYPE TC, TWISTED AND SHIELDED WITH DRAIN WIRE, PVC INSULATION/JACKET, BLACK WIRE FOR POSITIVE, WHITE FOR NEGATIVE/RETURN.

4. INTERIOR CONTROL PANEL SINGLE CONDUCTOR WIRING SHALL BE AS FOLLOWS: 600V, 90 DEG. C., STRANDED COPPER, TYPE MTW.

PANEL DIRECTORIES:

1. UPDATE ALL BREAKER PANEL DIRECTORIES TO INDICATE RESPECTIVE CIRCUIT BREAKER SERVICE

ENCLOSURES / PULL BOXES:

1. ENCLOSURES, CABINETS, AND BOXES LOCATED OUTDOORS SHALL BE NEMA 4X UNLESS SPECIFICALLY NOTED OTHERWISE ON THE PROJECT DRAWINGS.

2. ENCLOSURES, CABINETS, AND BOXES LOCATED IN WET INDOOR LOCATIONS SHALL BE NEMA 4X UNLESS SPECIFICALLY NOTED OTHERWISE ON THE PROJECT DRAWINGS.

3. UNDERGROUND ENCLOSURES/HAND HOLES SHALL BE QUAZITE TYPE FRP STRAIGHT WALL STACKABLE, TIER 15 RATED, OPEN BOTTOM, WITH PENTA HEAD BOLTED COVERS. COVERS TO HAVE "ELECTRIC" LOGO.

4. ENCLOSURES, CABINETS, AND BOXES SHALL NOT HAVE KNOCK-OUTS UNLESS OTHERWISE NOTED.

SUPPORT HARDWARE:

1. SUPPORT HARDWARE SUCH AS STRUT, ANGLE, CHANNEL AND STRUCTURAL SHAPES USED FOR SUPPORTING ENCLOSURES, DEVICES, AND EQUIPMENT SHALL BE HOT-DIPPED GALVANIZED STEEL. FIELD WELDING TO SUPPORT HARDWARE IS PROHIBITED. CUTTING OF SUPPORT MATERIAL SHALL BE PERFORMED UTILIZING SAWS, FLAME CUTTING IS PROHIBITED. ALL CUT AND DAMAGED GALVANIZED AREAS ARE TO BE REPAIRED WITH TWO COATS OF BRUSH-ON COLD GALVANIZING COMPOUND PER THE COMPOUND MANUFACTURER'S INSTRUCTIONS.

2. ATTACHMENT HARDWARE SUCH AS BOLTS, NUTS, WASHERS, STRAPS, U-BOLTS, CLAMPS, AND EXPANSION ANCHORS SHALL BE STAINLESS STEEL, UNLESS SPECIFICALLY NOTED OTHERWISE.

REV.	DATE	DESCRIPTION	BY	CHK.
1	02/02/18	APPROVED FOR CONSTRUCTION	SAN	BPN

Texas Registered Engineering Firm F-04188
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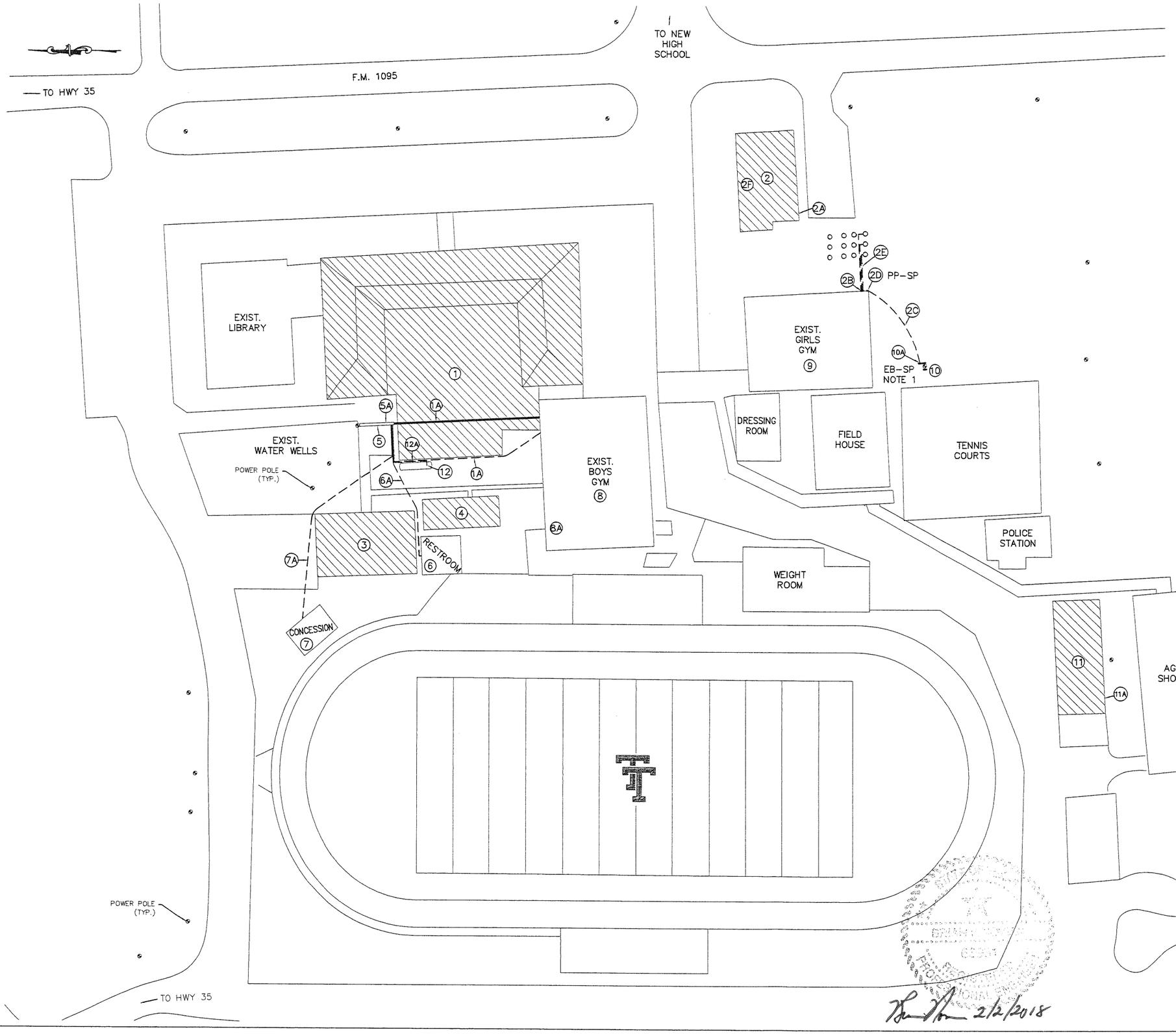
TIDEHAVEN ISD
OLD HIGH SCHOOL DEMOLITION
ELECTRICAL POWER MODIFICATIONS
GENERAL NOTES

TIDEHAVEN ISD
PO Box 129
El Maton, Texas 77440
979-843-4300

PROJECT NO. 1438.025
SCALE: NONE
DWN. BY: SAN
CHK. BY: BPN
DATE: 02/02/2018
SHT. NO. 025-E1.0



LEGEND:

(1) EXIST. HIGH SCHOOL (TO BE DEMOLISHED) REMOVE EXIST. ELEC. POWER SUPPLY FEEDS TO OLD HIGH SCHOOL.

(1A) EXIST. BOY'S GYM HVAC FEEDERS, (2 CONDUITS) REMOVE & RELOCATE U/G

(2) EXIST. ADMINISTRATION BUILDING (TO BE DEMOLISHED)

(2A) EXIST. SEWER PUMP CONTROLLERS (TO BE RELOCATED)

(2B) LOCATION OF RELOCATED SEWER PUMP CONTROLLERS

(2C) NEW ELEC. U/G POWER FEED TO SEWER PUMP CONTROLLERS VIA PP-SP.

(2D) NEW POWER PANEL (PP-SP) FOR SEWER PUMP CONTROLLERS

(2E) NEW U/G CONDUITS/CONDUCTORS TO SEWER PUMPS FROM CONTROLLERS

(2F) REMOVE EXIST. ELEC. POWER SUPPLY CONDUCTORS TO ADMIN. BLDG. (ELEC. POWER SOURCED FROM GIRL'S GYM)

(3) EXIST. MAINTENANCE SHOP (TO BE DEMOLISHED) REMOVE EXIST. ELEC. POWER FEEDERS (MAINT. BLDG., CLASSROOM TRAILER, CONCESSION)

(4) EXIST. CLASSROOM TRAILER (TO BE REMOVED) REMOVE EXIST. ELEC. POWER SUPPLY FEEDER

(5) EXIST. ELECTRICAL SERVICE AND DISTRIBUTION EQUIP.

(5A) EXIST. LV DIST. PANEL (LVDP)

(6) EXIST. RESTROOM BLDG.

(6A) INSTALL NEW ELECTRIC POWER FEEDER CONDUIT/ CONDUCTORS (FROM LVDP, INSTALL NEW 2P, 50A BREAKER)

(7) EXIST. CONCESSION BLDG.

(7A) INSTALL NEW ELEC. POWER FEEDER CONDUIT/ CONDUCTORS (FROM LVDP, RE-USE EXIST. BREAKER)

(8) EXIST. BOYS GYM

(8A) INSTALL NEW LIGHTING PANELBOARD

(9) EXIST. GIRLS GYM

(10) EXIST. ELEC. UTILITY SERVICES (240V AND 480V)

(10A) NEW ENCLOSED BREAKER (EB-SP) FOR SEWER PUMPS

(11) EXIST. PARKING GARAGE (TO BE DEMOLISHED)

(11A) REMOVE EXIST. ELEC. POWER SUPPLY FEED

(12) EXIST. POTABLE WATER TANK AIR COMPRESSOR

(12A) REMOVE EXIST. ELEC. POWER SUPPLY AND INSTALL NEW SUPPLY CONDUIT/CONDUCTORS (FROM LVDP, USE SPARE 1-P, 20A BREAKER)

EB-SP ENCLOSED BREAKER, 3P, 60A, 25KAIC AT 240VAC, NEMA 3R ENCL. 100AF

PP-SP POWER PANEL, 3-PH, 240V, 125A, MLO, 18 SPACE MIN., NEMA 3R, W/ 3-2P, 20A BRANCH BREAKERS

NOTES:

1. TAP EXIST. SERVICE DISCONNECT LOADSIDE, FOR 3-PH, 240VAC SUPPLY TO NEW ENCL. BREAKER EB-SP. FROM EB-SP RUN NEW U/G FEEDER (4-#2, #8G) TO POWER PANEL PP-SP. FROM PP-SP PROVIDE BRANCH CKT. TO EA. SEWER PUMP CONTROLLER. CONNECT EA. PUMP CONTROLLER TO EXIST. PUMP.

2/2/2018

REV.	DATE	DESCRIPTION	BY	CHK.
1	02/02/18	APPROVED FOR CONSTRUCTION	SAN	BPN

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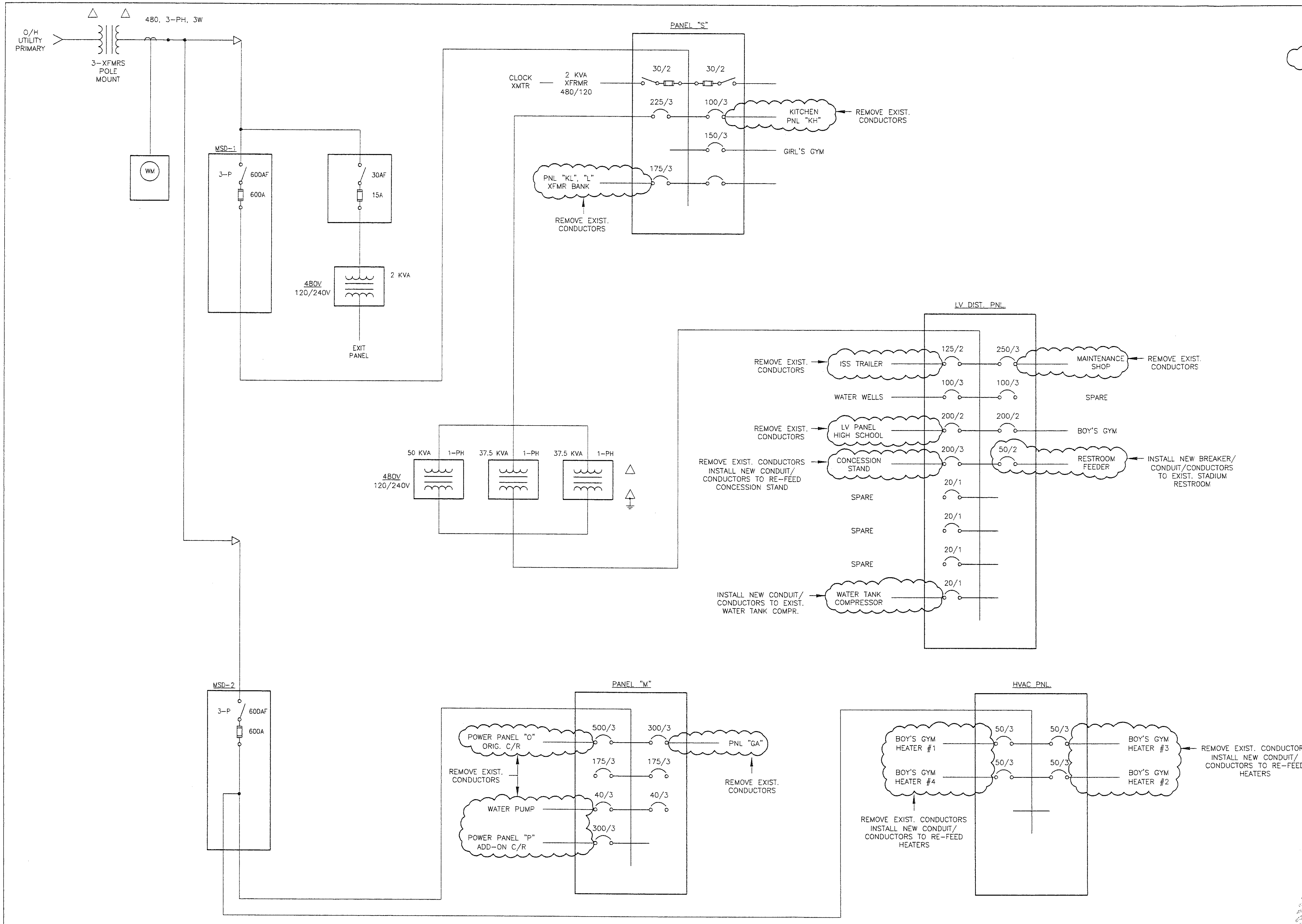
TIDEHAVEN ISD
OLD HIGH SCHOOL DEMOLITION
ELECTRICAL POWER MODIFICATIONS
SITE PLAN

TIDEHAVEN ISD
PO Box 129
El Maton, Texas 77440
979-843-4300

CAD	PROJECT NO. 1438.025
SCALE:	1"=40'
DWN. BY:	SAN
CHK. BY:	BPN
DATE:	02/02/2018
SHT. NO.	025-E1.1



CLOUD INDICATES WORK TO BE PERFORMED AS PART OF OLD HIGH SCHOOL DEMOLITION

1 ELECTRICAL POWER ONE LINE – OLD HIGH SCHOOL

SCALE : NONE

REV.	DATE	DESCRIPTION	BY	CHK.
1	02/02/18	APPROVED FOR CONSTRUCTION	SAN	BPN

Texas Registered Engineering Firm F-04186

G & W ENGINEERS, INC.

ENGINEERING SURVEYING PLANNING

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TIDEHAVEN ISD
OLD HIGH SCHOOL DEMOLITION
ELECTRICAL POWER MODIFICATIONS
ELECTRICAL ONE LINE
OLD HIGH SCHOOL

TIDEHAVEN ISD
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PROJECT NO. 1438.025
SCALE: NONE
DWN. BY: SAN
CHK. BY: BPN
DATE: 02/02/2018
SHT. NO. 025-E1.2

2/2/2018