

# Request for Proposal

## New Steel Roof Baffle System and Lighting for Pistol Gun Range located on the West Side of Campus

### LUBBOCK REESE REDEVELOPMENT AUTHORITY (LRRRA) d/b/a/ Reese Technology Center (RTC)

The LRRRA will receive written and sealed proposals for (1) a new steel roof baffle system and (2) lighting for the pistol gun range located on the west side of campus (410 N PR 1140) per the following agreement: There will be a **MANDATORY PRE-BID CONFERENCE** on February 2, 2022 at 10am. We will meet at LRRRA office, 9801 Reese Blvd., Suite 200, prior to driving to the Pistol Firing Range. Sealed Proposals will be received until February 22, 2022, 10am, at LRRRA. Proposals received after that date and time will not be opened. Each proposal and supporting documentation must be in a sealed envelope or container plainly labeled: "*New Steel Roof Baffle and Lighting System*". Bid proposals are to include the Contractor's company name and address on the front of the envelope or container. Questions regarding the bid proposals and all bid submissions are to be addressed to:

Chris Evans, Manager of Operations  
9801 Reese Blvd., Suite 200  
Lubbock, Texas 79416  
(806) 885-6592  
Email: [cevans@reesecenter.com](mailto:cevans@reesecenter.com)

Bids will be opened and evaluated on February 22, 2022, 10am. However, bids must be firm for a 60-day period from bid opening date in case the Board of Directors desires additional evaluation time. Bid will be awarded on March 23, 2022.

With uncertainty of mail delivery, the RTC cannot be responsible for bids which are not received before bid opening hour.

In as much as comparison sheets are sent to all bidders and posted to the RTC website, bid quotations will not be communicated by telephone. Interested bidders are encouraged to attend the bid opening should they desire quotations.

RTC reserves the right to accept or reject any or all bids submitted and shall be the sole judge in this matter.

RTC is exempt from all city, state, and federal sales tax. Your signed and otherwise correctly completed sealed bid (one copy only) should meet the following specifications or RTC may, at its option, refuse to consider the bid.

It is to be understood that upon the award of this bid the successful bidder(s) is/are responsible for complying with the Prompt Payment Act, effective July 1, 1986 (Government Code CHS. 2251.001-2251.043)

Vendors are required to have and maintain, at no cost to RTC, insurance of the types and amounts as required by law and/or the bid specification.

**This project will require certified payroll reports to be submitted and wages paid per the current Davis Bacon prevailing wage scale.**

In those instances where manufacturer and/or model numbers of equipment/materials are referenced as “equal in quality”, it is not RTC’s intent to rule out other manufacturers, nor will the named manufacturer receive preferential treatment. RTC is the sole judge in determining the suitability of items bid.

Should vendors have deviations from bid specifications, all deviations must be listed on a self-scribed attachment. This attachment must also be signed by an authorized company representative and be attached to the vendor’s original bid.

RTC is subject to the Texas Public Information Act, Chapter 552, Texas Government Code. Proposals submitted to RTC in response to this RFP are subject to release by RTC as public information. If the Proposer believes that the proposal, or parts of it, are confidential, as proprietary information, (s)he must specify that either all or part is excepted and provide specific and detailed justification for its claim of confidentiality. Vague and general claims to confidentiality are not acceptable. All proposals or parts of the proposals which are not marked as confidential will be considered public information after contract has been awarded. The successful proposal may be considered public information even though parts are marked confidential.

RTC assumes no responsibility for asserting legal arguments on behalf of Proposers. Proposers are advised to consult with their legal counsel concerning disclosure issues resulting from this proposal process and to take precautions to safeguard trade secrets and other proprietary information.

## **REQUIREMENTS**

- Company to be established in business for a minimum of five years. Three business references are to be provided to LRRRA with the bid proposal (RFP).
- “Attachment A” Specifications and Scope of Work
- “Attachment B” Bid Form 1 for Baffle System and Bid Form 2 for Lighting System
- “Attachment C” Site Map
- “Attachment D” Approved Drawing and Specifications
- Access to Website: [www.ReeseCenter.com](http://www.ReeseCenter.com), where all applicable documents and drawings are located ([www.ReeseCenter.com/rfp-docs](http://www.ReeseCenter.com/rfp-docs))

- Contractor to provide Certificate of Insurance with the bid proposal to RTC. Contractor to carry Worker's Compensation Insurance and Contractor's Public Liability in the amount of one million (\$1,000,000) and Property Damage and Loss Insurance, if contractor has any employees working with him / her on the job, otherwise the Workers Compensation is not required. All employees of contractor working at the RTC under this contract must be covered by Contractors' Workers Compensation Insurance.
- The contractor will be responsible for all federal, state, and local requirements, if any, regarding environmental permitting.

**ATTACHMENT A**  
**Specifications and Scope of Work**  
**New Steel Roof Baffle System and Lighting**

**PART 1 GENERAL**

**1.01 DESCRIPTION**

- A. The Reese Pistol Firing Range is located on the west side of the Reese campus. The physical address is 411 N PR 1140. Chris Evans, Manager of Operations (MOO) is the Owner's Representative and may be contacted regarding any questions or for a pre-bid job site inspection at (806) 549-9699.
- B. The project consists of installation of a new steel roof baffle system per the attached drawings and specifications to include new lighting to the underside of the new baffle system.

**1.02 EXTENT OF WORK**

- A. Provide all labor, materials, tools, equipment, and supervision necessary to complete the installation of new steel roof baffle system as specified herein and as indicated on the drawings in accordance with the manufacturer's most current specifications and details.
- B. The contractors shall be fully knowledgeable of all requirements of the contract documents and shall make themselves aware of all job site conditions that will affect their work.
- C. The contractors shall confirm all given information and advise the MOO, prior to bid, of any conflicts that will affect their cost proposal.

**1.03 SUBMITTALS**

- A. Prior to starting work, the contractors must submit the following:
  - 1. A sample of the steel material to be used
  - 2. Copies of the cut sheets for all electrical components

**1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING**

- A. Deliver materials to the job site in the manufacturer's original, unopened containers or wrappings with the manufacturer's name, brand name and

installation instructions intact and legible. Deliver in sufficient quantity to permit work to continue without interruption.

- B. Comply with the manufacturer's written instructions for proper material storage.
- C. Any materials which are found to be damaged shall be removed and replaced at the applicator's expense.

#### **1.05 WORK SEQUENCE**

- A. Schedule and execute work to prevent minimal disruption to the facility. Care should be taken as to not damage the existing building or structures surrounding the building.

#### **1.06 USE OF THE PREMISES**

- A. Before beginning work, the contractors must secure approval from the building owner's representative for the following:
  - 1. Areas permitted for personnel parking
  - 2. Access to the site
  - 3. Areas permitted for storage of materials and debris
  - 4. Areas permitted for the location of cranes, hoists, and chutes for loading and unloading materials to and from the roof

#### **1.07 EXISTING CONDITIONS**

The contractors will verify all existing conditions prior to bid submission. If discrepancies are discovered between the existing conditions and those noted on the drawings, immediately notify the MOO by phone, and solicit the manufacturer's approval prior to commencing with the work.

#### **1.08 PRECONSTRUCTION CONFERENCE**

- A. A pre-bid meeting will be held at the job site on February 2, 2022, 10am. Contact the owner's representative, Chris Evans, Manager of Operations (MOO), at (806) 549-9699 if there are any questions.
- B. Prior to bid submittal, the contractor should schedule a job site inspection to

observe actual conditions and verify all dimensions. The job site inspection may occur on the day of the pre-bid meeting or prior to such a meeting. Should access to the building be necessary before or after the pre-bid meeting, the contractor must contact the owner's representative, to coordinate an appropriate time.

- C. Bids must be forwarded to the following address no later than February 22, 2022: Reese Technology Center, ATTN: Chris Evans, 9801 Reese Blvd, Ste. #200, Lubbock, TX 79416.
- D. Any conditions which are not shown on the shop drawings should be indicated on a copy of the shop drawing and included with bid submittal, if necessary, to clarify any conditions not shown.

#### **1.09 TEMPORARY FACILITIES AND CONTROLS**

- A. Temporary Utilities:
  - 1. Water, power for construction purposes, and lighting are not available at the site and will not be made available to the contractor.
  - 2. Provide all hoses, valves, and connections for water from a source designated by the MOO when made available.
  - 3. When available, electrical power should be extended as required from the source. Provide all trailers, connections, and fused disconnects.
- B. Temporary, Sanitary Facilities  
Sanitary facilities will not be available at the job site. The contractor shall be responsible for the provision and maintenance of portable toilets or their equal.
- C. Building Site:
  - 1. Since this project is more linear in nature, ground disturbance, including a laydown yard, is minimal with no more than ½ acre of total area disturbed. The contractor shall use reasonable care and responsibility to protect the building and site against damages. The contractor shall be responsible for the correction of any damage incurred as a result of the performance of the contract.
  - 2. This project would generate up to 20 cubic yards of construction and demolition waste which the contractor will review for recycling potential and processed through the state of Texas for recycling or disposal, as appropriate. The contractor will provide the needed dumpster and ensure the materials are recycled or disposed of properly.

- 3. The contractor shall remove all debris from the job site in a timely and legally acceptable manner so as to not detract from the aesthetics or the functions of the building.
- D. Security:  
Obey the owner's requirements for personnel identification, inspection, and other security measures.

#### **1.10 JOB SITE PROTECTION**

- A. The contractor shall adequately protect building, paved areas, service drives, lawn, shrubs, trees, etc. from damage while performing the required work. Provide canvas, boards, and sheet metal (properly secured) as necessary for protection and remove protection material at completion. The contractor shall repair or be responsible for costs to repair all property damaged during construction.
- B. Do not overload any portion of the building, by either use of or placement of equipment, storage of debris, or storage of materials.
- C. Protect against fire and flame spread. Maintain proper and adequate fire extinguishers.
- D. Store moisture susceptible materials above ground and protect with waterproof coverings.
- E. Remove all traces of piled bulk material and return the job site to its original condition upon completion of the work.

#### **1.11 SAFETY**

The contractor shall be responsible for all means and methods as they relate to safety and shall comply with all applicable local, state, and federal requirements that are safety related. **Safety shall be the responsibility of the contractor.** All related personnel shall be instructed daily to be mindful of the full-time requirement to maintain a safe environment for the facility's occupants including staff, visitors, customers, and the occurrence of the general public on or near the site.

#### **1.12 WORKMANSHIP**

- A. All work shall be of highest quality and in strict accordance with the manufacturer's published specifications and to the building owner's satisfaction.
- B. There shall always be a supervisor on the job site while work is in progress.

### **1.13 QUALITY ASSURANCE**

A. The canopy shall be constructed using 10 mm (0.375 in) AR500 or AR525 Ballistic Steel Plate with a Brinell Hardness Number (BHN) of:

- AR500: BHN between 470 and 544
- AR525: BHN between 500 and 544

The steel plating shall be tested in accordance with ASTM E10-08.

In addition, the Contractor shall be required to:

- Provide certifications for all ballistic steel plates
  - Ensure connections are made in such a manner as to maintain ballistic properties
  - Ensure that all cuts are made in a manner that does not alter or reduce hardness
  - Ensure that ballistic integrity is maintained across all joint
- B. Unless otherwise noted in this specification, the contractor must strictly comply with the manufacturer's current specifications and details.
- C. Provide adequate number of experienced workmen regularly engaged in this type of work who are skilled in the application techniques of the materials specified. Provide at least one thoroughly trained and an experienced superintendent on the job at all times roofing work is in progress.
- D. There shall be no deviations made from this specification or the approved shop drawings without the prior written approval of the MOO. Any deviation from the manufacturer's installation procedures must be supported by written certification on manufacturer's letterhead and presented for the MOO's consideration.

### **1.14 JOB CONDITIONS, CAUTIONS, AND WARNINGS**

Safety Data Sheets (SDS) must be on location at all times during the transportation, storage and application of materials.

Proceed with work only when weather conditions are in compliance with the manufacturer's recommended limitations, and when conditions will permit the work to proceed in accordance with the manufacturer's requirements and recommendations

### **1.15 WARRANTY**

- A. Provide one year warranty on all workmanship and installation



## **PART 2 PRODUCTS**

### **2.01 GENERAL**

The Contractor shall fabricate a horizontal baffle structure (ballistic canopy) of sufficient thickness so as to prevent a live fire bullet/projectile from penetrating the baffle and exiting the firing range.

The Contractor shall install the ballistic canopy over all locations where a weapon may be expected to be discharged (firing line by definition), to contain all shots from each intended firing location, at all respective targets, and suitable for the most powerful cartridge authorized for range use. The canopy shall extend a minimum of 13 ft. in front of the firing line and 3 ft. behind the firing line. The canopy baffle must block line-of-sight daylight from any possible firing position. This will work geometrically with the first overhead baffle to prevent a weapon from firing directly out of the range. The baffle shall be horizontal to minimize disturbance of the airflow across the firing line, and shall be equipped with splatter protection, consisting of a minimum 1.5 in. air space and fire-rated plywood sheeting on the face of the canopy. Acoustical tile shall be applied to the plywood sheeting for sound transmission deadening.

The canopy requires sealing of all openings to isolate the range from the surrounding areas for purposes of ventilation, ricochet protection and acoustic sound transmission.

The canopy shall be constructed using 10 mm (0.375 in) AR500 or AR525 Ballistic Steel Plate with a Brinell Hardness Number (BHN) of:

- AR500: BHN between 470 and 544
- AR525: BHN between 500 and 544

The steel plating shall be tested in accordance with ASTM E10-08.

In addition, the Contractor shall be required to:

- Provide certifications for all ballistic steel plates
- Ensure connections are made in such a manner as to maintain ballistic properties
- Ensure that all cuts are made in a manner that does not alter or reduce hardness
- Ensure that ballistic integrity is maintained across all joints

For side walls, connections include joints from the ground up to the highest point of the ceiling baffles. Ballistic integrity is to be accomplished using keyed construction joints or by placing 0.375 in. (9.53 mm) thick AR500 steel plate over the joint.

## **PART 3 EXECUTION**

### **3.01 GENERAL**

- A. Comply with the Engineer's provided instructions for the installation of the roofing system and the placement of the lighting

### **3.02 CLEAN UP**

- A. Perform daily clean up to collect all wrappings, empty containers, paper, and other debris from the project site. Upon completion, all debris must be disposed of in a legally acceptable manner.

**END OF SPECIFICATION**

**Attachment B**

**BID FORM 1**

**New Steel Roof Baffle System for  
Pistol Gun Range located on the West Side of Campus**

Date: \_\_\_\_\_ 2022

Reese Technology Center  
9801 Reese Blvd., Suite 200  
Lubbock, Texas 79416

Gentlemen:

The undersigned, having carefully examined the specifications, drawings, and related documents entitled:

Reese Technology Center  
New Steel Roof Baffle System – Pistol Gun Range  
9801 Reese Blvd, Ste. #200  
Lubbock, Texas 79416

All as prepared by Reese Technology Center 9801 Reese Blvd. Suite 200, Lubbock, Texas, 79416 as well as made an on-site inspection of the premises and all other conditions affecting the cost and/or execution of the work, proposes to furnish all materials, labor, and equipment necessary to complete the work in accordance with said documents, of which this bid is a part, for the following sum:

I. BASE BID: \_\_\_\_\_ Dollars (\$\_\_\_\_\_)

We have included, in the Bid sum all contingency allowances.

(Note: All amounts shall be shown in both written and figure form. In case of discrepancy between the written amount and the figure, the written amount will govern.)

The undersigned acknowledges receipt of addenda to the Drawings and Scope of Work as follows:

No.	Date	No.	Date	No.	Date
-----	------	-----	------	-----	------

No.	Date	No.	Date	No.	Date
-----	------	-----	------	-----	------

(The Bidder is to fill in I.D. Number and date of each thereby acknowledging receipt of Addenda). If awarded the contract, the undersigned agrees to commence work under this contract on or before a date to be specified in Written Notice to Proceed, within \_\_\_\_\_ (Bidder to fill in days) calendar days from said commencement date, unless modified by change order.

If notified of the acceptance of this bid within thirty (30) days of the time set for the opening of bids, bidder agrees within ten (10) days of notification, to execute a Contract Agreement between Owner and Contractor Where the Basis of Payment Is a Stipulated Sum

It is understood that the Owner reserves the right to accept or reject any and all Bids and to waive all formalities in accordance with State law.

Reese Technology Center  
New Steel Roof Baffle System

Respectfully Submitted,

By: \_\_\_\_\_

Title: \_\_\_\_\_

Business Address with Zip Code

(SEAL: If Bid is by Corporation)

\_\_\_\_\_

\_\_\_\_\_

Telephone Number with Area Code \_\_\_\_\_

FAX Number with Area Code \_\_\_\_\_

Fill in the applicable information:

A Corporation, chartered in the State of \_\_\_\_\_.

Authorized to do business in the State of Texas.

A Partnership, composed of \_\_\_\_\_, and

\_\_\_\_\_ and \_\_\_\_\_.

An individual operating under the name of \_\_\_\_\_.

Corporate Seal:

END BID FORM

BID FORM

**Attachment B**

**BID FORM 2**

**New Lighting System for  
Pistol Gun Range located on the West Side of Campus**

Date: \_\_\_\_\_ 2022

Reese Technology Center  
9801 Reese Blvd., Suite 200  
Lubbock, Texas 79416

Gentlemen:

The undersigned, having carefully examined the specifications, drawings, and related documents entitled:

Reese Technology Center  
New Lighting System – Pistol Gun Range  
9801 Reese Blvd, Ste. #200  
Lubbock, Texas 79416

All as prepared by Reese Technology Center 9801 Reese Blvd. Suite 200, Lubbock, Texas, 79416 as well as made an on-site inspection of the premises and all other conditions affecting the cost and/or execution of the work, proposes to furnish all materials, labor, and equipment necessary to complete the work in accordance with said documents, of which this bid is a part, for the following sum:

I. BASE BID: \_\_\_\_\_ Dollars (\$ \_\_\_\_\_)

We have included, in the Bid sum all contingency allowances.

(Note: All amounts shall be shown in both written and figure form. In case of discrepancy between the written amount and the figure, the written amount will govern.)

The undersigned acknowledges receipt of addenda to the Drawings and Scope of Work as follows:

No.	Date	No.	Date	No.	Date
_____	_____	_____	_____	_____	_____

No.	Date	No.	Date	No.	Date
_____	_____	_____	_____	_____	_____

(The Bidder is to fill in I.D. Number and date of each thereby acknowledging receipt of Addenda). If awarded the contract, the undersigned agrees to commence work under this contract on or before a date to be specified in Written Notice to Proceed, within \_\_\_\_\_ (Bidder to fill in days) calendar days from said commencement date, unless modified by change order.

If notified of the acceptance of this bid within thirty (30) days of the time set for the opening of bids, bidder agrees within ten (10) days of notification, to execute a Contract Agreement between Owner and Contractor Where the Basis of Payment Is a Stipulated Sum

It is understood that the Owner reserves the right to accept or reject any and all Bids and to waive all formalities in accordance with State law.

Reese Technology Center  
New Lighting System – Pistol Gun Range

Respectfully Submitted,

By: \_\_\_\_\_

Title: \_\_\_\_\_

Business Address with Zip Code

(SEAL: If Bid is by Corporation)

\_\_\_\_\_

\_\_\_\_\_

Telephone Number with Area Code \_\_\_\_\_

FAX Number with Area Code \_\_\_\_\_

Fill in the applicable information:

A Corporation, chartered in the State of \_\_\_\_\_.

Authorized to do business in the State of Texas.

A Partnership, composed of \_\_\_\_\_, and

\_\_\_\_\_ and \_\_\_\_\_.

An individual operating under the name of \_\_\_\_\_.

Corporate Seal:

END BID FORM

BID FORM



# ATTACHMENT C

Site Map

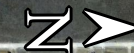
Firing Range - Project Site

Reese Center

Research Blvd

Google Earth

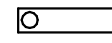



4000 ft





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ELECTRICAL ABBREVIATIONS			
ABOVE COUNTER	AC	GAUGE	GA
ABOVE FINISHED FLOOR	AFF	GENERATOR	GEN
ALARM	ALM	GROUND	GND
ALARM ANNUNCIATOR PANEL	AAP	GROUND FAULT CIRCUIT INTERRUPTER	GFCI
ALTERNATING CURRENT	AC		
AMERICAN NATIONAL STANDARDS INSTITUTE	ANSI	HEAVY DUTY	HD
AMERICAN SOCIETY FOR TESTING AND MATERIALS	ASTM	HIGH OUTPUT	HO
AMERICAN STEEL WIRE GAUGE	ASWG	HIGH VOLTAGE	HV
AMERICAN WIRE GAUGE	AWG	HORSEPOWER	HP
AMPERE	AMP		
AMPHOUR	AH	ILLUMINATION ENGINEERING SOCIETY OF NORTH AMERICAIESNA	
AMPERE INTERRUPTING CAPACITY	AIC	INTERMEDIATE METAL CONDUIT	IMC
AMPLIFIER	AMPL		
AMPS SHORT CIRCUIT	ASC	KILOVOLT	kV
ANNUNCIATOR	ANN	KILOVOLT AMP	kVA
ANTENNA	ANT	KILOWATT	kW
ARCHITECT	ARCH	KILOWATT HOUR	kWH
ARMORED CABLE	ARMC		
AUDIO FREQUENCY	AF	LIQUIDTIGHT FLEXIBLE METAL CONDUIT	LFMC
AUDIO VISUAL	AV	LIQUIDTIGHT FLEXIBLE NONMETALLIC CONDUIT	LFNC
AUTHORITY HAVING JURISDICTION	AHJ	LOW VOLTAGE	LV
AUTO TRANSFORMER	AUTO XFMR	LUMEN	LM
AUTOMATIC CONTROL PANEL	ACP	LUMENS PER WATT	LPW
AUTOMATIC DOOR CLOSER	ADC		
AUTOMATIC FREQUENCY CONTROL	AFC	MAIN CIRCUIT BREAKER	MCB
AUTOMATIC TRANSFER SWITCH	ATS	MAIN LUGS ONLY	MLO
AUXILIARY	AUX	MANUFACTURER	MFR
AUXILIARY POWER UNIT	APU	MINIMUM	MIN
		MINIMUM CIRCUIT AMPS	MCA
		MOTOR CONTROL CENTER	MCC
		MOTOR STARTER	MS
BACKBOARD	BKBD		
BALLAST	BLST		
BATTERY	BAT		
BRAKE HORSEPOWER	BHP	NATIONAL ELECTRICAL CODE	NEC
BUCK-BOOST TRANSFORMER	BB XFMR	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION	NEMA
BUILDING AUTOMATION SYSTEM	BAS	NATIONAL FIRE CODE	NFC
		NATIONAL FIRE PROTECTION ASSOCIATION	NFPA
CABLE TELEVISION	CTV	NIGHT LIGHT	NL
CANDLE POWER	CP	NORMALLY CLOSED	NC
CAPACITOR	CAP	NORMALLY OPEN	NO
CIRCUIT	CKT	NOTIFICATION APPLIANCE CIRCUIT	NAC
CIRCUIT BREAKER	CB		
CLOSED CIRCUIT TELEVISION	CCTV	PANELBOARD	PB
COAXIAL CABLE	COAX	PHASE	PH
COEFFICIENT OF UTILIZATION	CU	PHOTOELECTRIC	PE
COLOR RENDERING INDEX	CRI	PHOTOELECTRIC CELL	PEC
COMMON GROUND	CG	POLY VINYL CHLORIDE	PVC
COMMUNICATIONS	COMM	POWER	PWR
CONDUIT	C	POWER AMPLIFIER	PA
CONTROL	CTRL	POWER FACTOR	PF
CONTROL CONTRACTOR	CC		
CONTROL PANEL	CP	RECEPTACLE	RECEPT
CONTROL POWER TRANSFORMER	CPT	RIGID GALVANIZED STEEL	RGS
CONTROL RELAY	CR	RIGID NONMETALLIC CONDUIT	RNC
CONTROL SWITCH	CS		
COORDINATE	COORD	SCHEDULE	SCH
COPPER	CU	SERVICE ENTRANCE	SE
COVER PLATE	COV PL	SINGLE PHASE	1
CURRENT	CUR	SINGLE POLE, DOUBLE THROW	SPDT
CURRENT LIMITING FUSE	CLF	SINGLE POLE, SINGLE THROW	SPST
CURRENT TRANSFORMER.	CT	SWITCHBOARD	SWBD
DECIBEL	dB	THREE PHASE	3
DEMOLITION	DEMO	TWISTED SHIELDED PAIR	TSP
DETAIL	DET		
DIRECT CURRENT	DC	UNINTERRUPTIBLE POWER SUPPLY	UPS
DISCONNECT SWITCH	DS	UNLESS NOTED OTHERWISE	UNO
DOUBLE POLE, DOUBLE THROW	DPDT		
DOUBLE POLE, SINGLE THROW	DPST	VARIABLE FREQUENCY DRIVE	VFD
		VERY HIGH OUTPUT	VHO
EACH	EA	VOLT, VOLTS, VOLTAGE	V
EASEMENT	ESMT	VOLT AMPERE	VA
ELECTRIC	ELEC	VOLTAGE DROP	VD
ELECTRICAL METALLIC TUBING	EMT		
ELECTRICAL NONMETALLIC TUBING	ENT	WEATHERPROOF	WP
ENCLOSURE	ENCL	WIREWAY	WW
FIRE ALARM	FA		
FIRE ALARM ANNUNCIATOR PANEL	FAAP		
FIRE ALARM CONTROL PANEL	FACP		
FIXTURE	FIXT		
FLEXIBLE METALLIC CONDUIT	FMC		
FLUORESCENT	FLUOR		
FLUORESCENT FIXTURE	FLUOR FIXT		
FLUORESCENT LIGHTING	FLUOR LGHT		
FOOTCANDLE	FC		
FREQUENCY	FREQ		
FULL LOAD AMPS	FLA		

ELECTRICAL LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SURFACE/PENDANT/WALL MOUNTED FIXTURE. UPPER CASE INDICATES TYPE IN SCHEDULE. LOWER CASE INDICATES SWITCH.		SURFACE/PENDANT/WALL MOUNTED FIXTURE. DIAGONAL MARKING INDICATES EGRESS FIXTURE CONNECTED TO EMERGENCY POWER SUPPLY. UPPER CASE INDICATES TYPE IN SCHEDULE. LOWER CASE INDICATES SWITCH.
	WALL SWITCH, 20A, SPST. "3" DENOTES THREE-WAY SWITCH, "D" DENOTES DIMMER SWITCH, "K" DENOTES KEYED SWITCH, "M" DENOTES MOTOR RATED SWITCH WITH OVERLOADS, "OS" DENOTES OCCUPANCY SENSOR SWITCH, "CS" DENOTES GRAPHIC WALL STATION.		HOMERUN TO PANELBOARD. REFER TO SPECIFICATIONS FOR LIMITING NUMBER OF CONDUCTORS PER HOMERUN.
NOTE: ITEMS SHOWN AS DASHED INDICATE ITEMS WHICH ARE TO BE REMOVED.			

ELECTRICAL SPECIFICATIONS:

CODE COMPLIANCE/WORKMANSHIP

- CONTRACTOR SHALL COMPLY WITH ALL NATIONAL, STATE AND LOCAL CODES AND ACCEPTED GOOD PRACTICE.
- ALL WORK SHALL BE PERFORMED BY LICENSED AND QUALIFIED PERSONNEL.

EXISTING CONDITIONS

- CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO SUBMITTING BID. BY SUBMITTING BID, CONTRACTOR STATES THAT HE HAS EXAMINED ALL EXISTING CONDITIONS. IF CONTRACTOR ENCOUNTERS EXISTING CONDITIONS WHICH NEED CLARIFICATION, CONTACT ENGINEER FOR RESOLUTION OR CLARIFICATION.

PERMITS AND FEES

- CONTRACTOR SHALL OBTAIN ALL PERMITS AND PAY ALL FEES AND CHARGES REQUIRED (INCLUDING UTILITY COMPANY CHARGES).

GUARANTEE AND WARRANTIES

- ALL WORK PERFORMED UNDER THIS CONTRACT SHALL HAVE ONE (1) YEAR WRITTEN GUARANTEE FOR ALL MATERIALS AND WORKMANSHIP.

MATERIALS

- ALL MATERIALS SHALL BE NEW AND SPECIFICATION GRADE.

OWNERS MANUAL

- AT COMPLETION OF PROJECT, CONTRACTOR SHALL DELIVER TO OWNER ALL DOCUMENTS (INCLUDING BUILDING PERMITS, OPERATION AND MAINTENANCE MANUALS, WARRANTY, AS-BUILT ETC.).

CONDUIT

- ALL INTERIOR CONDUIT SHALL BE EMT. MINIMUM SIZE OF CONDUIT SHALL BE 3/4" FOR POWER AND 1" FOR COMMUNICATION. ALL CONDUIT SHALL BE ROUTED PERPENDICULAR TO BUILDING LINES WHERE EXPOSED TO VIEW.
- LABEL ALL JUNCTION BOXES ABOVE CEILING WITH CIRCUIT DESIGNATION WITH BLACK INDELIBLE MARKER.
- ALL EMPTY CONDUITS SHALL HAVE PULL WIRE FOR FUTURE USE.
- ALL COMMUNICATION CONDUITS SHALL BE STUBBED UP ABOVE CEILING AND TERMINATED WITH A PLASTIC BUSHING.

WIRE

- ALL WIRE SHALL BE THHN/THWN COPPER UNLESS OTHERWISE INDICATED ON THE DRAWINGS. MINIMUM SIZE OF WIRE SHALL BE #12. FOR 20A CIRCUITS LONGER THAN 100', MINIMUM WIRE SIZE SHALL BE #10 AWG.

DISCONNECT SWITCHES

- ALL DISCONNECT SWITCHES SHALL BE HEAVY DUTY WITH NEMA CONFIGURATION AS INDICATED ON DRAWINGS OR AS REQUIRED BY N.E.C. PROVIDE FUSES IN SWITCHES AS INDICATED ON THE DRAWINGS.

SWITCHES

- ALL SWITCHES SHALL BE SPECIFICATION GRADE (HUBBELL 1221 OR APPROVED EQUAL). COLOR OF ALL SWITCHES SHALL BE GRAY AND COVERPLATES SHALL BE STAINLESS STEEL. MOUNTING HEIGHT OF ALL SWITCHES SHALL COMPLY WITH A.D.A. REQUIREMENTS.

GROUNDING

- ENTIRE ELECTRICAL SYSTEM SHALL BE GROUNDED IN ACCORDANCE WITH N.E.C. ARTICLE 250.

ELECTRICAL EQUIPMENT

- ALL BUSING SHALL BE COPPER WITH FULL LENGTH GROUND BUS. OVERCURRENT DEVICES SHALL BE CIRCUIT BREAKER (CB) AS INDICATED. INTERRUPTING CURRENT OF EQUIPMENT AND DEVICES SHALL BE AS NOTED ON THE SCHEDULE.

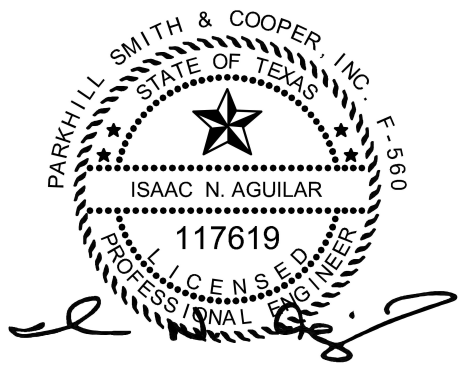
LIGHTING FIXTURES

- LIGHTING FIXTURES SHALL BE AS SCHEDULED ON THE DRAWINGS. FIXTURES SHALL BE COMPLETE WITH ALL LAMPS.
- REFER TO THE DRAWINGS FOR MOUNTING RESTRICTIONS.

SUBMITTALS AND SUBSTITUTIONS

- CONTRACTOR SHALL FURNISH SUBMITTAL DATA TO ENGINEER FOR APPROVAL ON ALL FIXTURES AND EQUIPMENT PRIOR TO ORDERING ANY ITEMS. CONTRACTOR MAY OFFER SUBSTITUTIONS ON ITEMS FOR APPROVAL BY ENGINEER. SUBSTITUTIONS MUST BE EQUAL IN ALL RESPECTS TO ITEMS SCHEDULED OR SPECIFIED.

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Electrical  
Abbreviations &  
Legend

E-001



LIGHTING FIXTURE SCHEDULE					
TYPE	ELECTRICAL DATA	MANUFACTURER	MODEL	LAMP	DESCRIPTION
A	277 V/1-100 VA	LUMINAIRE LED	VCM8-4FT-MIN1-100W-40K-MVOLT-OP-BLK	100W LED	4' LINEAR LED WITH 100W PACKAGE AND 0-10V DIMMING DRIVER

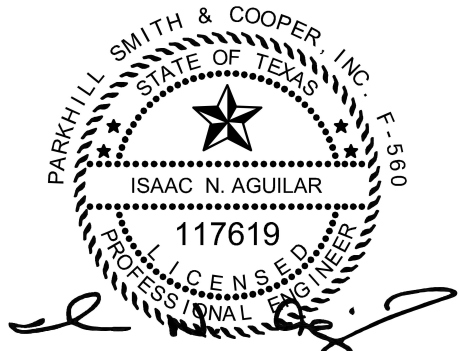
GENERAL NOTES

- A. COORDINATE LOCATION OF LIGHT FIXTURES WITH ARCHITECTURAL AND MECHANICAL.
- B. ALL EMERGENCY AND EGRESS LIGHTING SHALL BE CONNECTED TO THE SAME BRANCH CIRCUIT SERVING THE NORMAL LIGHTS AND SHALL BE ON THE LINE SIDE OF RELAYS OR SWITCHING DEVICES.
- C. REFER TO KEYED NOTES FOR CONTROL OF ADDITIONAL EMERGENCY LIGHTING. ALL EXIT SIGNS SHALL BE CONNECTED FOR CONTINUOUS OPERATION.
- D. AT LOCATIONS WHERE ROOM LIGHT FIXTURES ARE CONTROLLED THROUGH THE USE OF OCCUPANCY SENSORS, PROVIDE THE NUMBER OF SENSORS AND LOCATE THE UNITS AS REQUIRED FOR COMPLETE ROOM COVERAGE. WHERE MORE THAN ONE SENSOR IS LOCATED IN A COMMON SPACE, CONNECT THE UNITS SUCH THAT DETECTION OF OCCUPANCY FROM EITHER UNIT WILL ENERGIZE THE LIGHTING. WHERE SWITCHES ARE SHOWN IN CONJUNCTION WITH OCCUPANCY SENSORS, CONNECT THE SWITCHES TO DE-ENERGIZE THE LIGHTING INDICATED REGARDLESS OF OCCUPANCY. ADJUST ALL SENSOR TIME DELAYS AND MOTION SENSITIVITIES DURING PROJECT CLOSEOUT TO MEET THE OPERATIONAL FUNCTION OF THE OWNER.
- E. EXACT LOCATION AND PLACEMENT OF EXIT LIGHTING SHALL BE FIELD DETERMINED TO ENSURE PROPER LINES OF SIGHT.
- F. RECESSED DOWN LIGHT FIXTURES INSTALLED IN LAY-IN CEILINGS SHALL BE PROVIDED WITH ADJUSTABLE T-BAR ATTACHMENT ARMS MANUFACTURED BY THE LIGHT FIXTURE COMPANY.
- G. PROVIDE DEDICATED NEUTRAL WIRE FOR ALL 120V OR 277V BRANCH CIRCUITS. NO MULTI-WIRE BRANCH CIRCUITS SHALL BE ALLOWED.

KEY NOTES

- AS INDICATED BY: ( # ) -
- 1. EXTEND (2) #12 AWG + #12 GND IN 3/4" AND CONNECT TO PANEL IN EXISTING BUILDING. PROVIDE A NEW 20A/1P CIRCUIT BREAKER.
  - 2. MOUNT FIXTURE AT 10'-0" AFF. TYPICAL OF ALL TYPE "A" FIXTURES.
  - 3. LIGHT SWITCH FOR CONTROL OF LIGHT FIXTURES IN SHOOTING AREA. COORDINATE EXACT LOCATION WITH THE OWNER.

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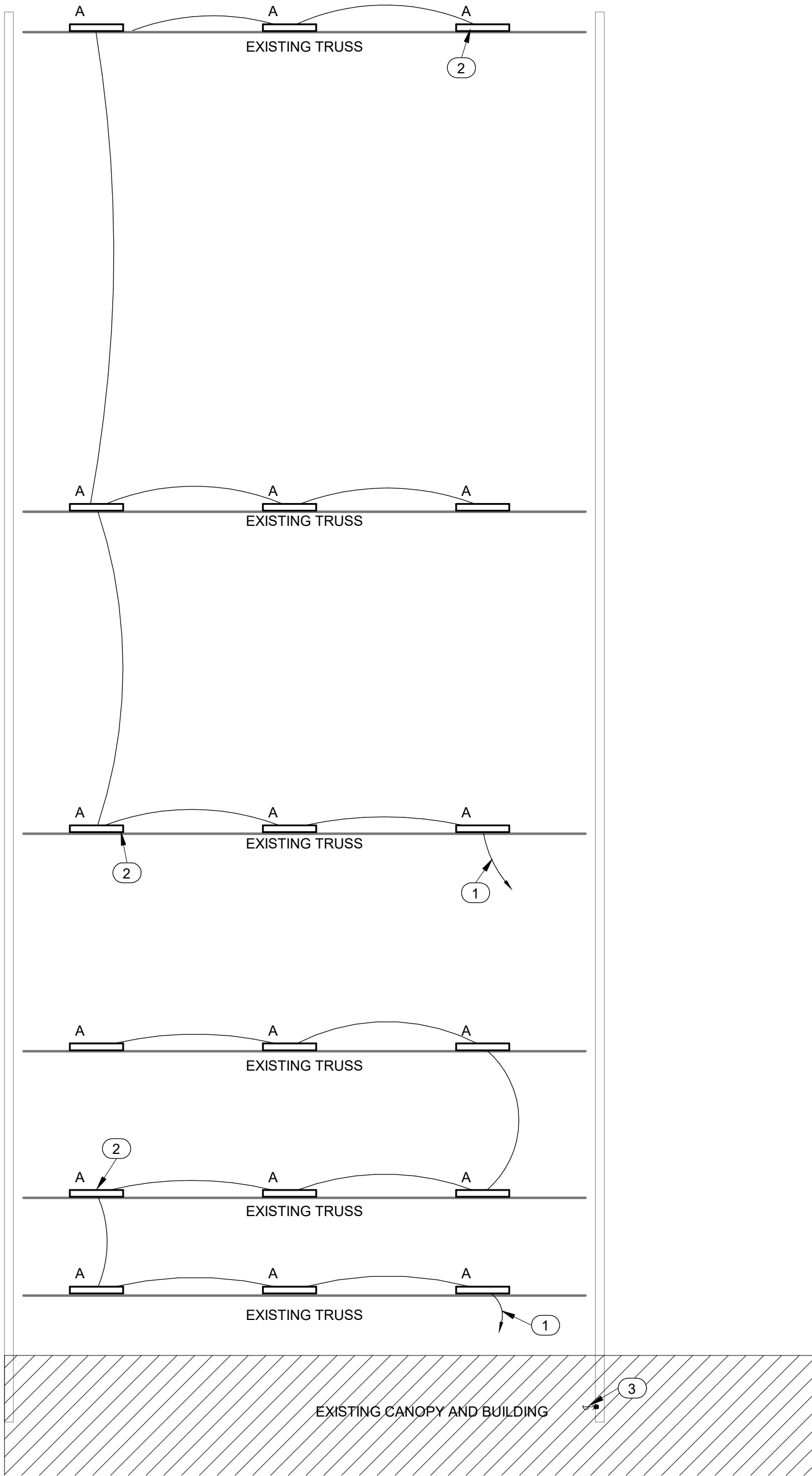
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# DATE DESCRIPTION

Lighting Plan

E-111



1 Lighting Plan  
1/8" = 1'-0"

0 4' 8' 16'

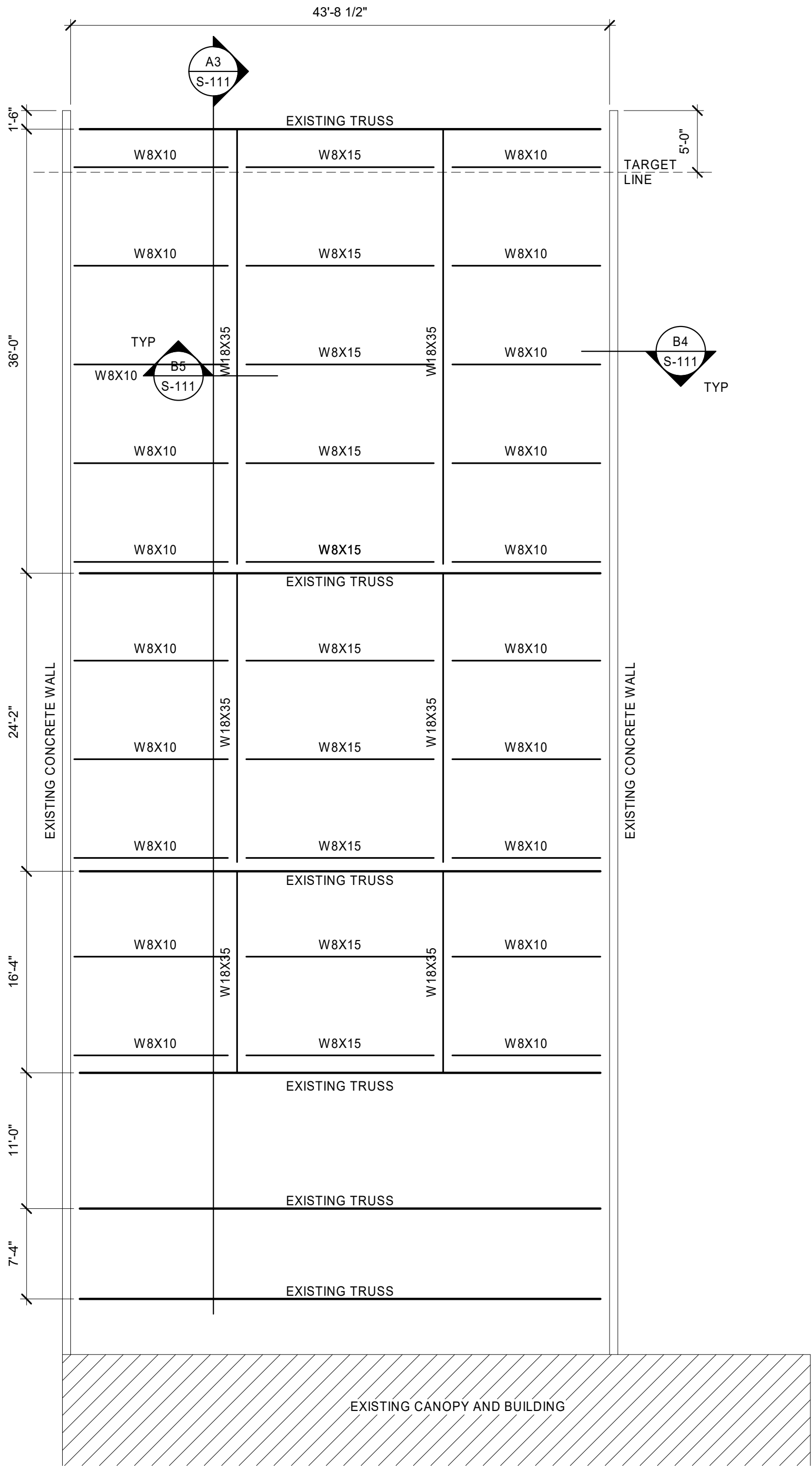


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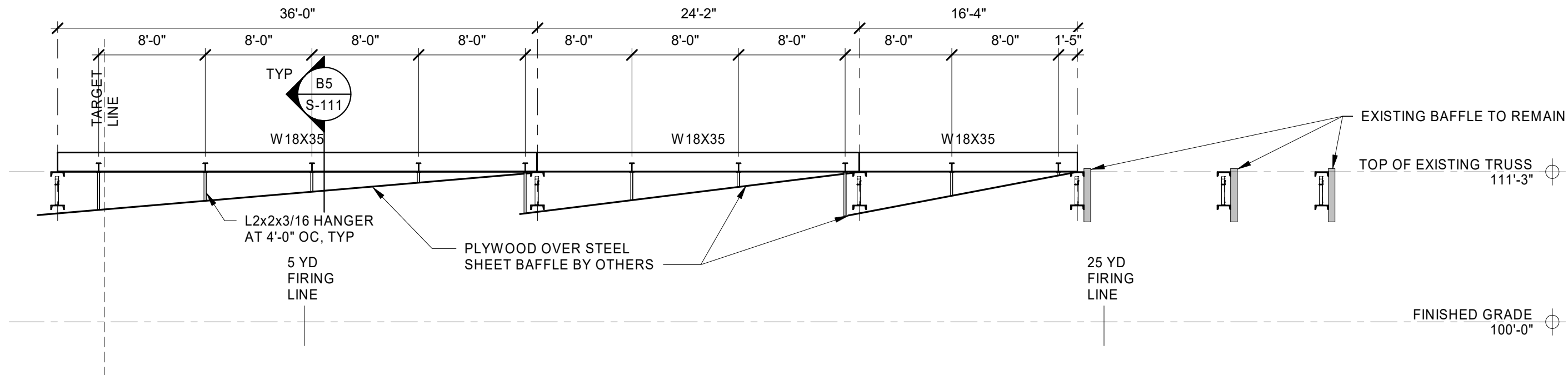
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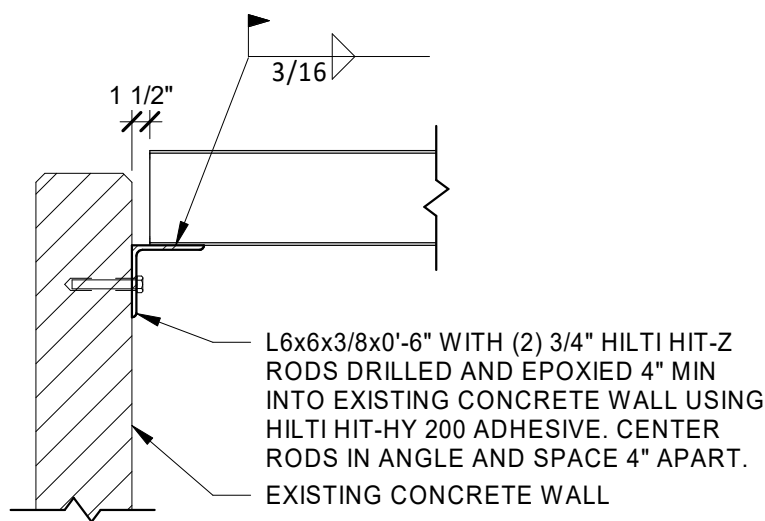
**A1** ROOF FRAMING PLAN  
1/8" = 1'-0"



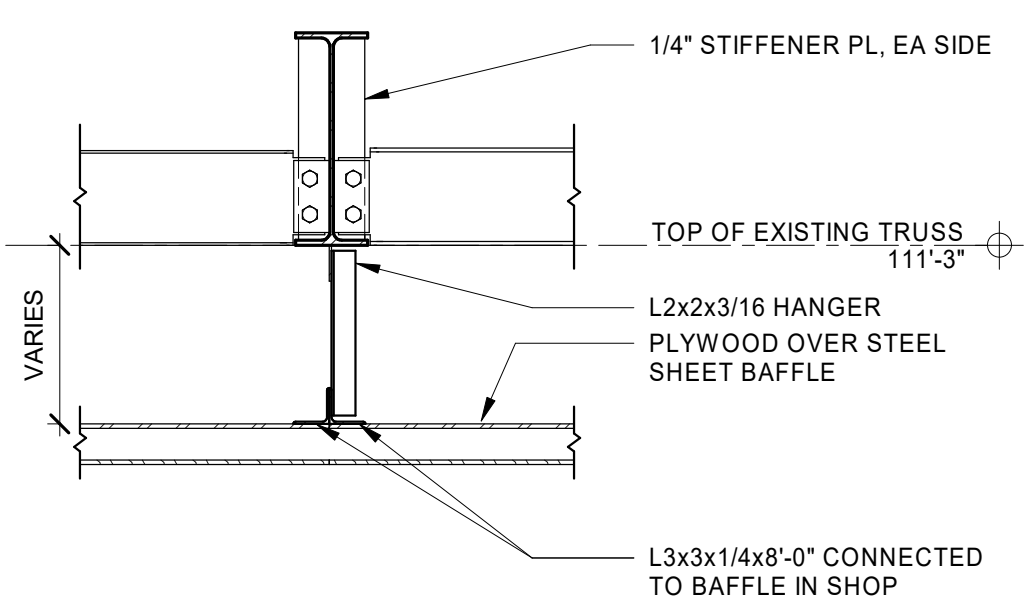
**A3** SECTION  
1/8" = 1'-0"



**B4** SECTION  
3/4" = 1'-0"



**B5** SECTION  
3/4" = 1'-0"



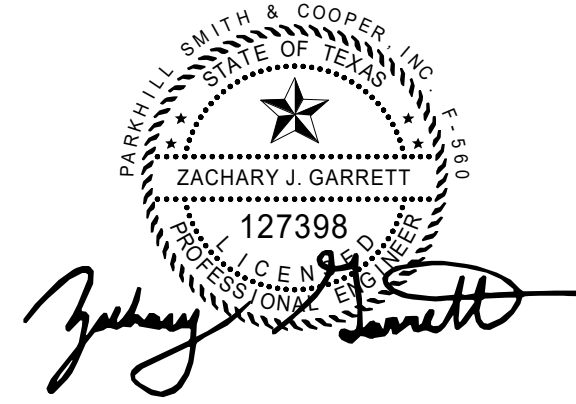
**GENERAL NOTES**

- THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE UNTIL THE CONSTRUCTION OF THE STRUCTURE REACHED ITS FINAL CONDITION.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS ARE COMPATIBLE WITH EXISTING CONDITIONS PRIOR TO FABRICATION OF STRUCTURAL STEEL.
- THE CONTRACTOR SHALL COORDINATE THE FABRICATION OF THE BAFFLE AND ITS CONNECTION TO THE ANGLE HANGERS PROVIDED ON THIS DRAWING.
- ALL FABRICATION, ERECTION, AND DESIGN OF STRUCTURAL MEMBERS SHALL MEET THE MINIMUM STANDARDS OF THE FOLLOWING CODES:
  - INTERNATIONAL BUILDING CODE (IBC) 2015
  - AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) - STEEL CONSTRUCTION MANUAL - FOURTEENTH EDITION
  - AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE) - STANDARD 7-10
  - AMERICAN WELDING SOCIETY (AWS)
  - ASTM SPECIFICATIONS
- STRUCTURAL STEEL REQUIREMENTS
  - MATERIAL PROPERTIES:
    - WIDE FLANGE MEMBERS ASTM A992 - GRADE 50
    - MISC STEEL ASTM A36 - 36 KSI
    - BOLTS ASTM A325 (3/4" Ø)
    - WELDS E70XX
  - MODIFYING OR SPlicing OF STRUCTURAL MEMBERS IS PROHIBITED WITHOUT PRIOR APPROVAL OF THE ENGINEER
  - ALL WELDING SHALL BE DONE BY CERTIFIED WELDERS IN CONFORMANCE TO THE AMERICAN WELDING SOCIETY CODE
  - SURFACE PREPARATION:
    - SSPC/ NACE 3 COMMERCIAL BLAST CLEANING. A 2.0 MIL ANGULAR ANCHOR PROFILE IS REQUIRED
    - SHOP PRIME COAT: TNE MEC SERIES 90-97 TNE MEC- ZINC AT 2.5-3.5 DRY MILS
    - INTERMEDIATE COAT: TNE MEC SERIES 66 HI-BUILD EPOXOLINE AT 4.0-6.0 DRY MILS
    - FINISH COAT: TNE MEC SERIES 73 ENDURA-SHIELD AT 2.0 TO 3.0 DRY MILS

**DISCLAIMER NOTICE**

THE FINAL DESIGN, LAYOUT, AND CONFIGURATION OF THE TACTICAL BAFFLES AND THE EFFECTIVENESS FOR PROJECTILE SAFETY IS NOT INCLUDED WITHIN THE SCOPE OF THE CONTRACT DRAWINGS. OWNER SHALL PROVIDE THE "STATEMENT OF WORK TOOL" PRODUCED BY SANDIA NATIONAL LABS FOR REQUIREMENTS NOT INDICATED WITHIN THESE DRAWINGS. CONTRACTOR SHALL SUBMIT FINAL LAYOUT TO STRUCTURAL ENGINEER FOR REFERENCE TO REVIEW STRUCTURAL DESIGN PARAMETERS PRIOR TO FABRICATION.

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# DATE DESCRIPTION

**Roof Framing  
Plan And Details**

**S-111**