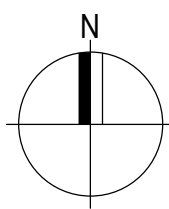
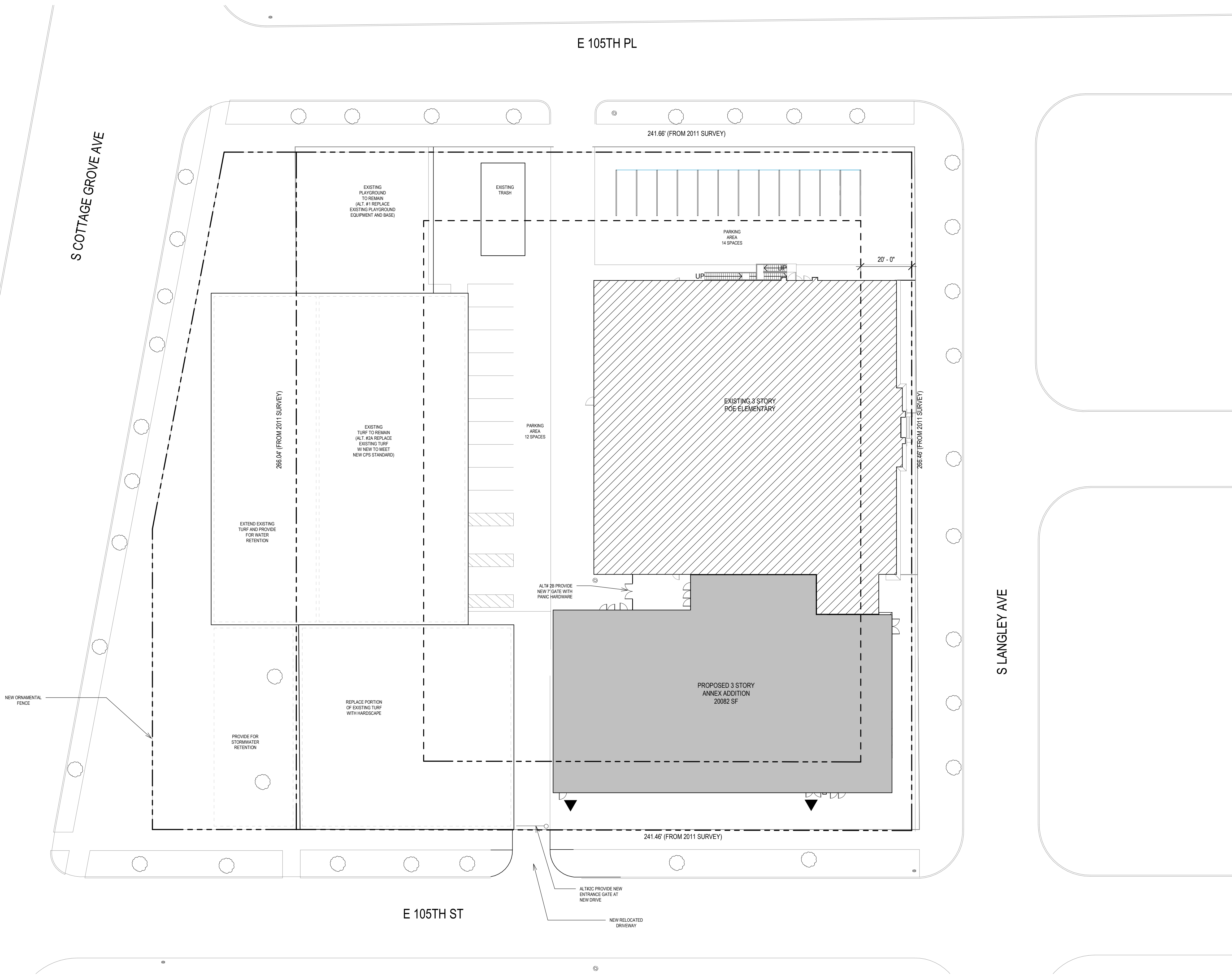
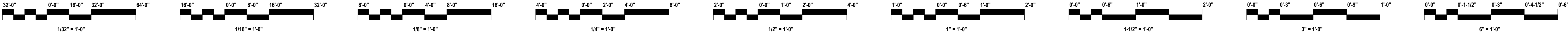


1 Poe Annex Stormwater Management Concept Plan

SCALE: 1" = 40'



POE ELEMENTARY ANNEX & RENOVATIONS
10538 S LANGLEY AVE
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CHICAGO PUBLIC SCHOOLS
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EDGE ASSOCIATES
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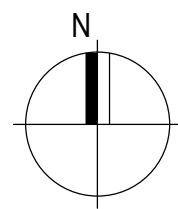
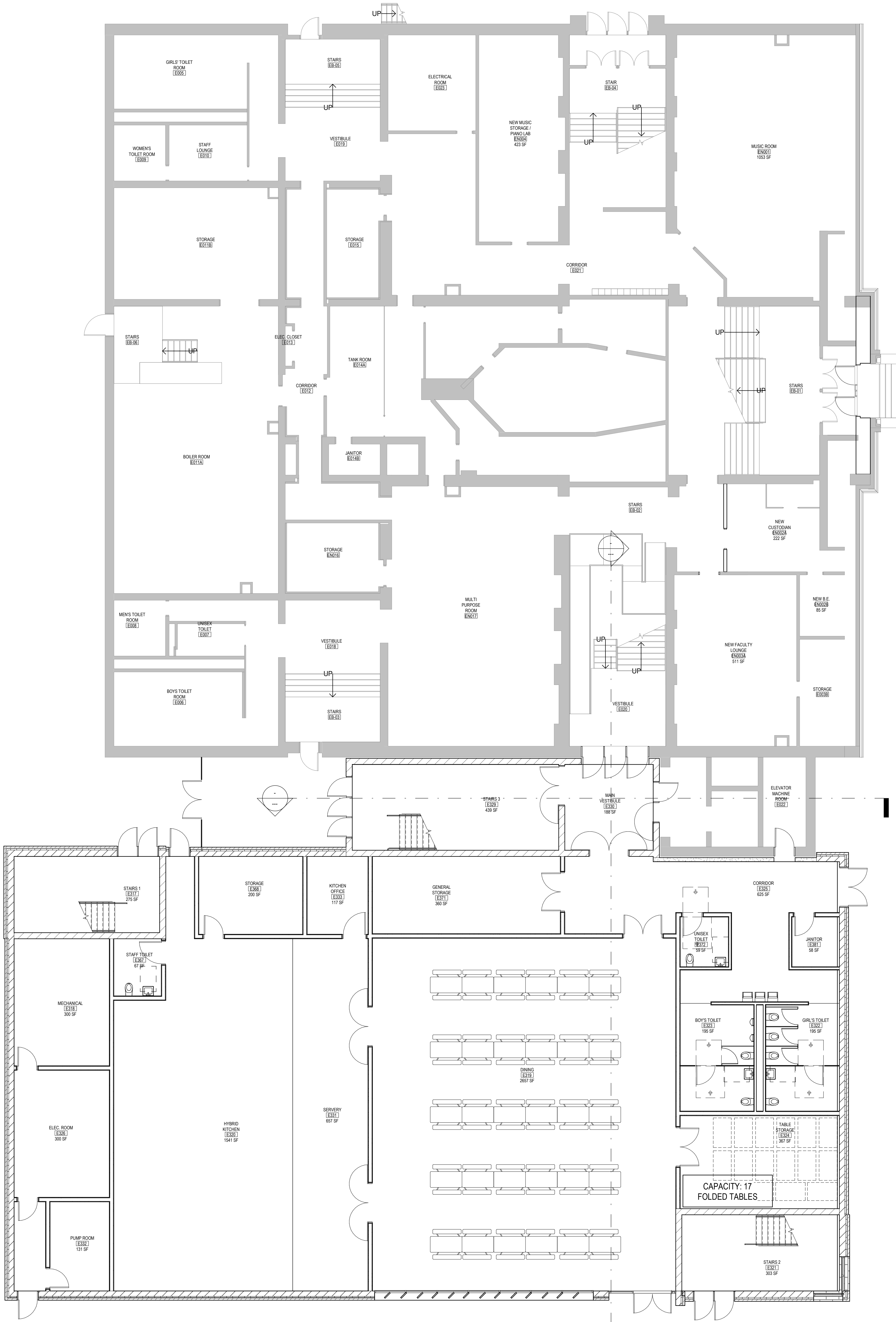
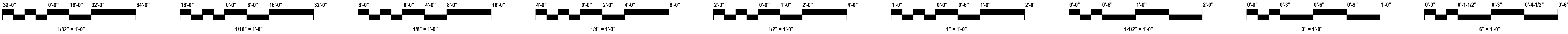
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PBC Project Name: POE ELEMENTARY
PBC Contract No.:
PBC Project No.:
FGM Project No.:

Title
SITE PLAN - LANDSCAPE



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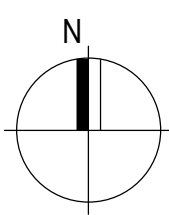
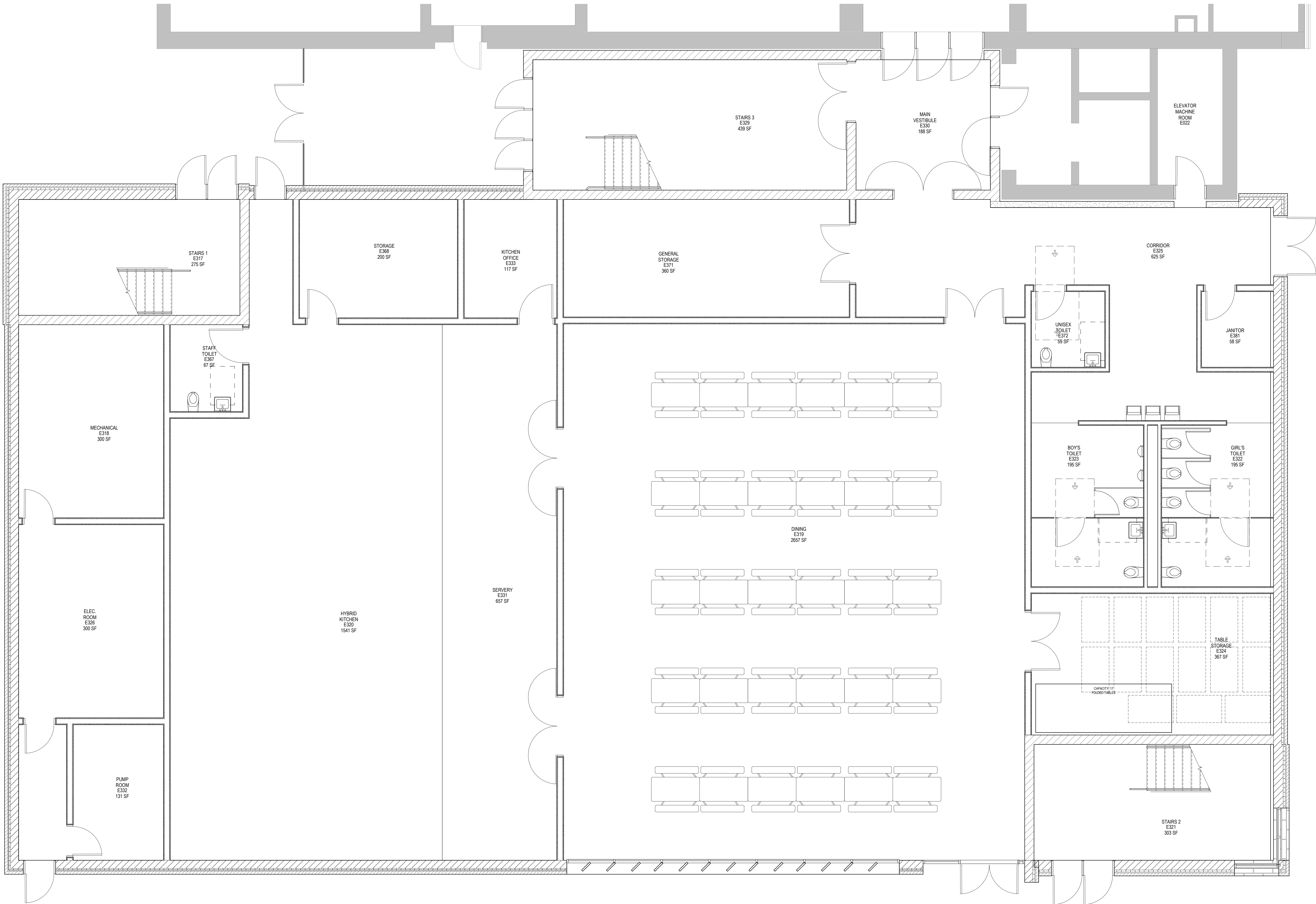
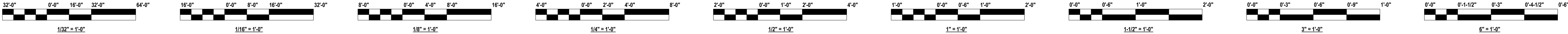
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PBC Project Name: POE ELEMENTARY
PBC Contract No.:
PBC Project No.:
FGM Project No.:

Title
GROUND FLOOR - OVERALL PLAN



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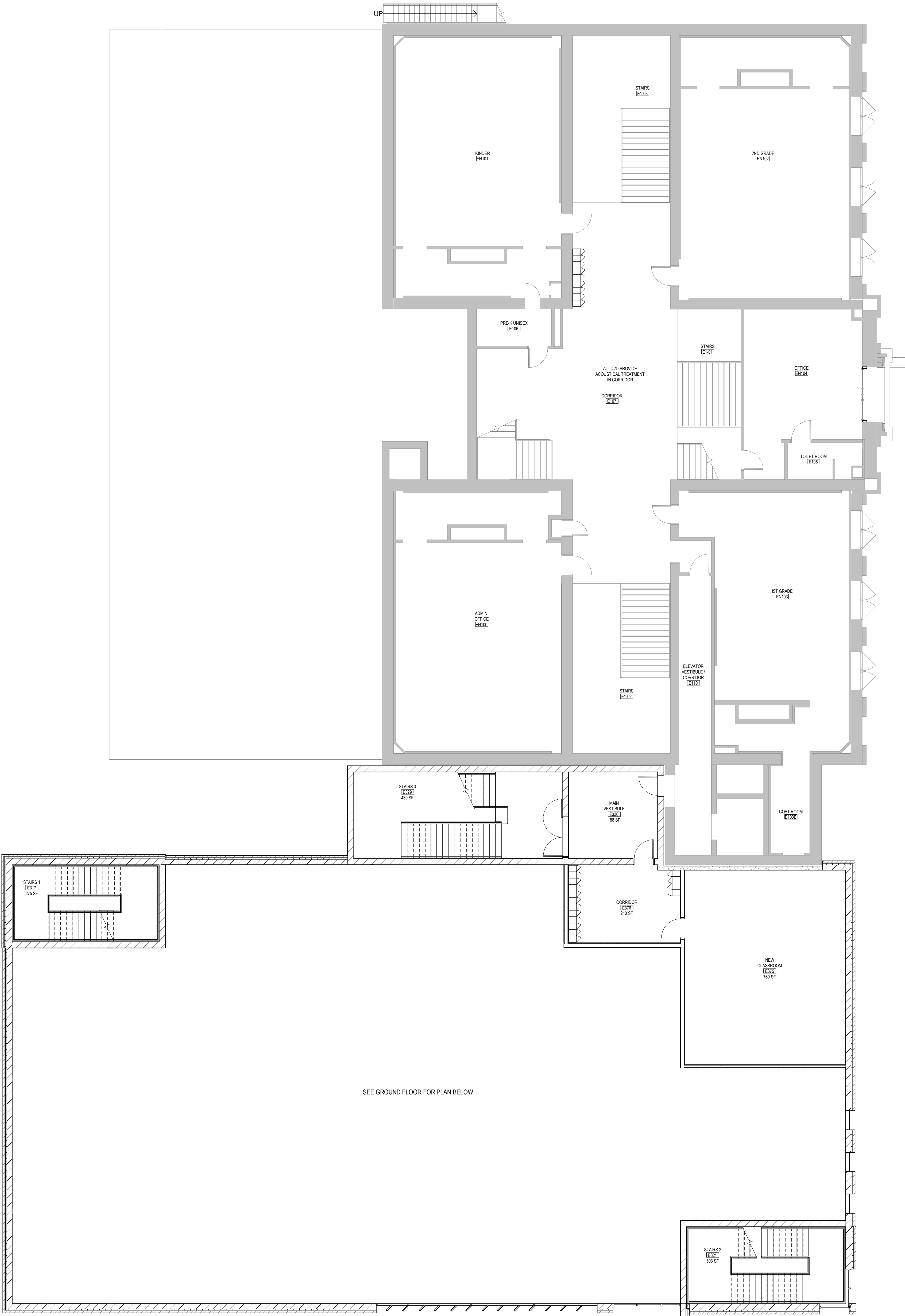
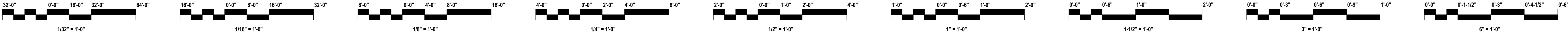
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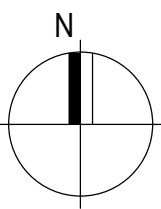
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PBC Project No.:
FGM Project No.:

Title
GROUND FLOOR - ANNEX PLAN



SEE GROUND FLOOR FOR PLAN BELOW



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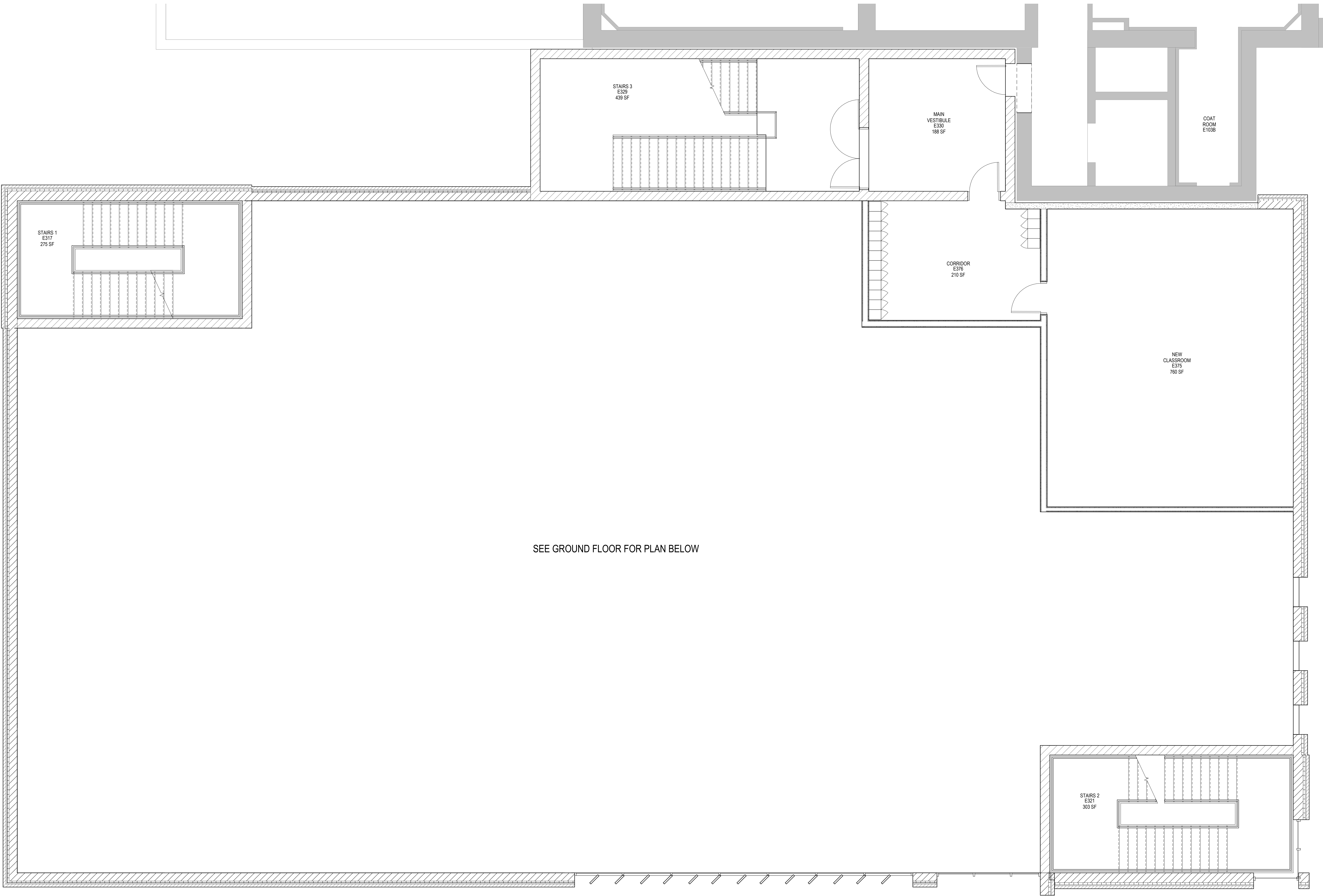
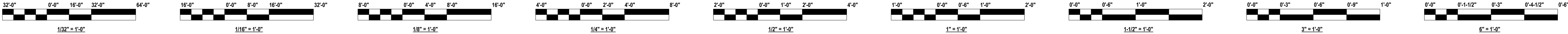
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PBC Project Name: POE ELEMENTARY

PBC Contract No.:

PBC Project No.:
FGM Project No.:

Title
**MEZZANINE -
OVERALL PLAN**



SEE GROUND FLOOR FOR PLAN BELOW



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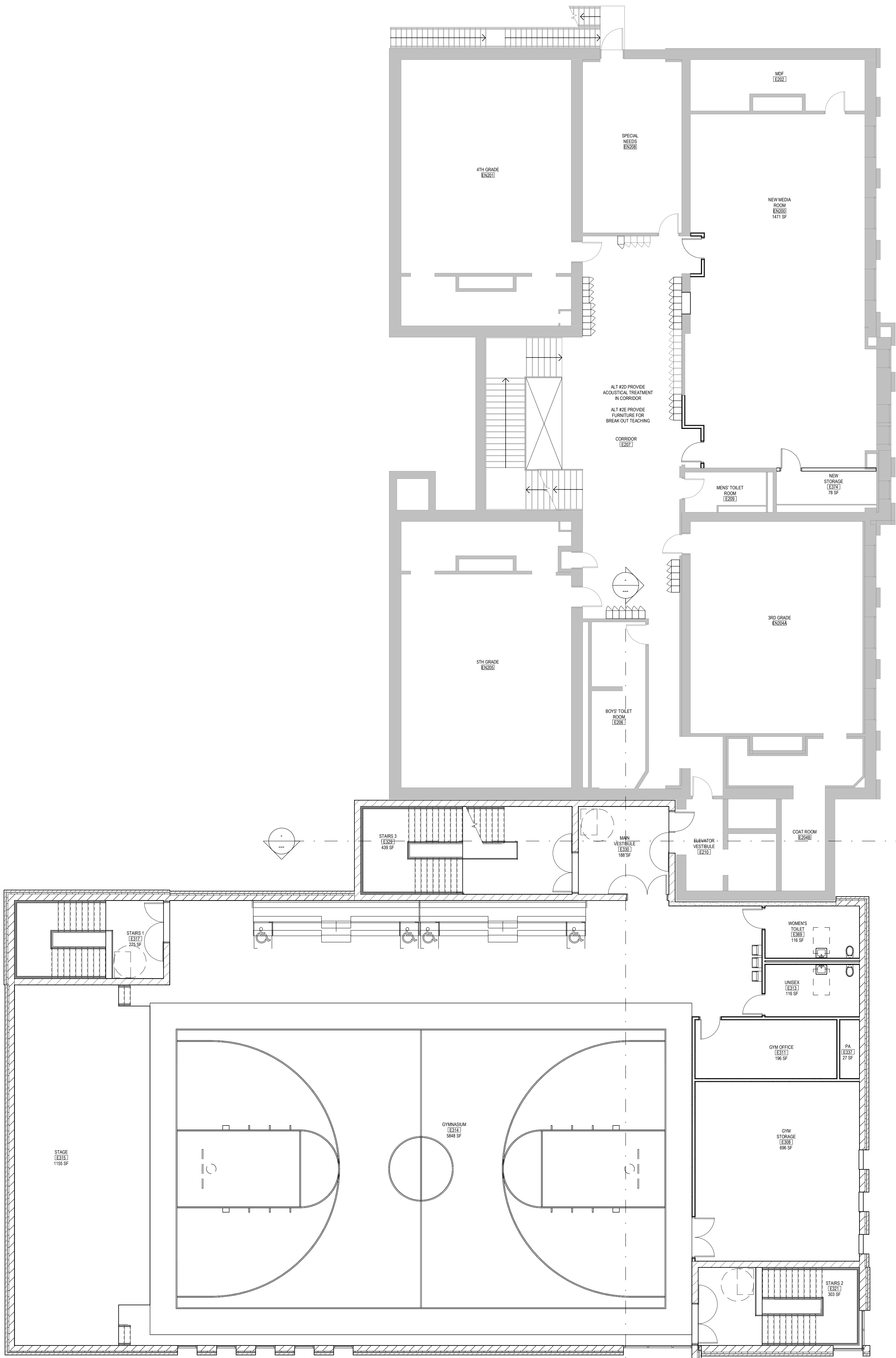
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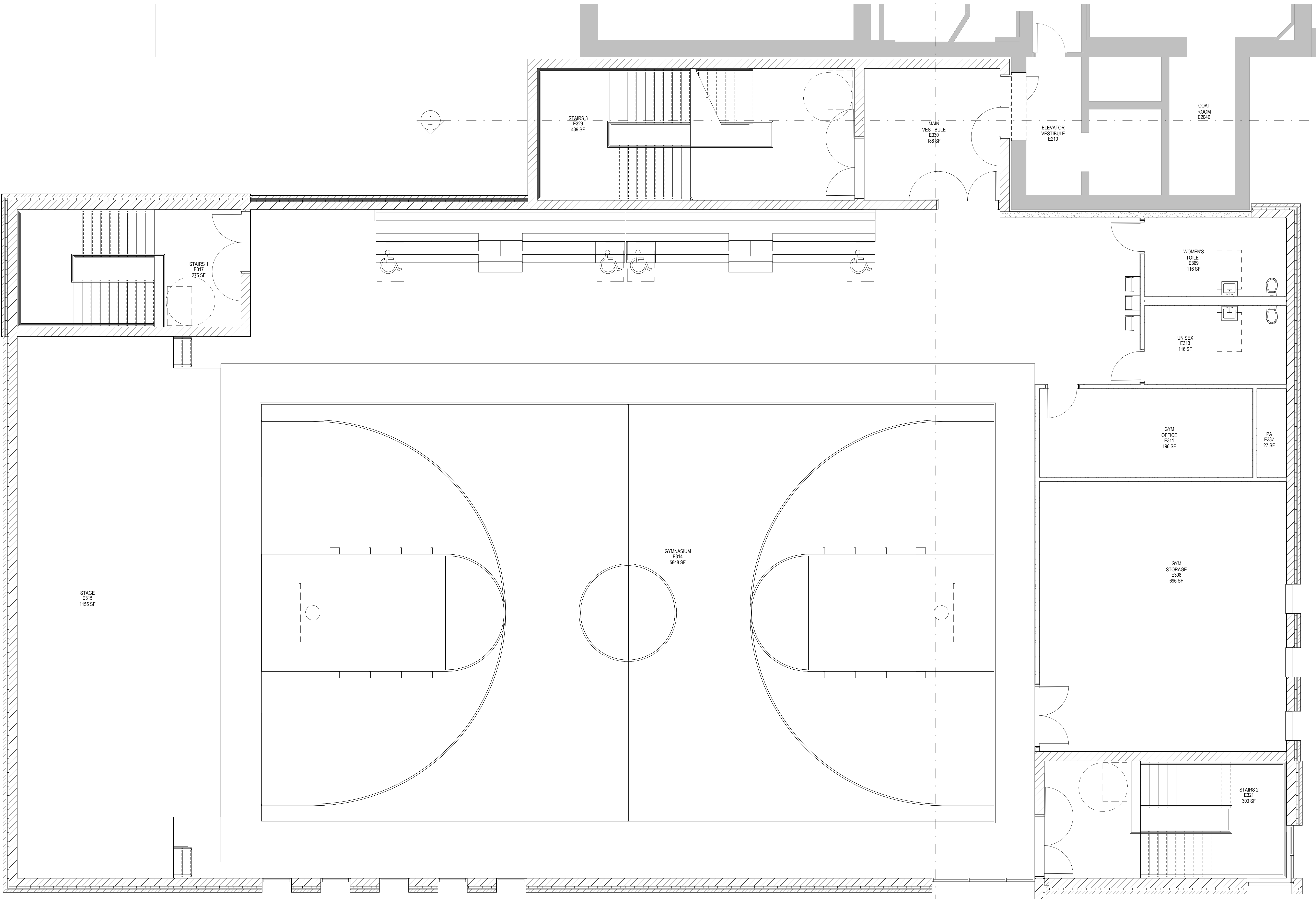
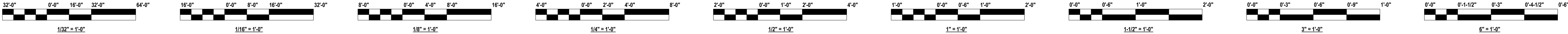
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PBC Project Name: POE ELEMENTARY
PBC Contract No.:
PBC Project No.:
FGM Project No.:

Title
MEZZANINE - ANNEX PLAN


$$1/8" = 1'-0"$$

Sheet **A1.30.00**



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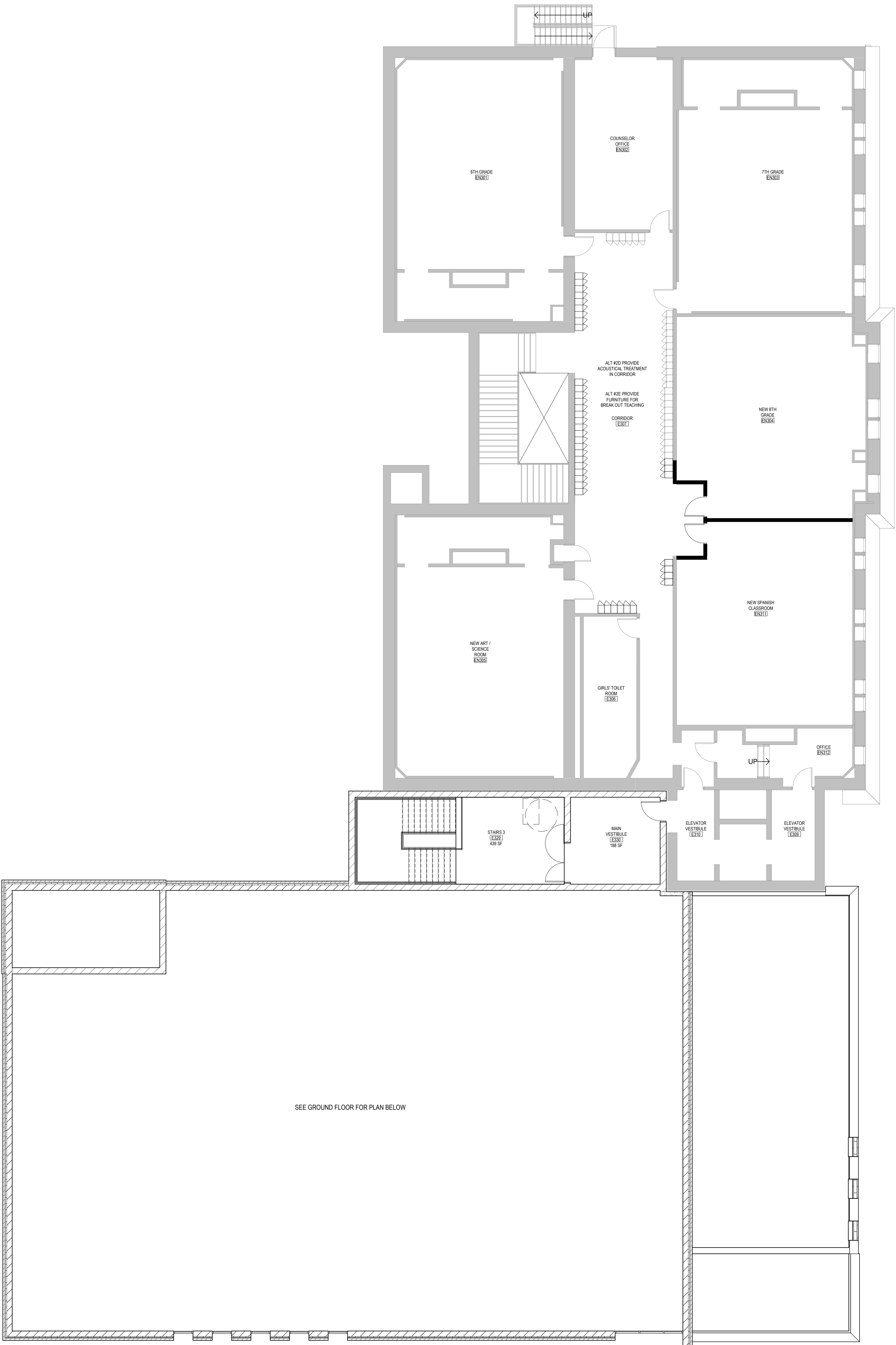
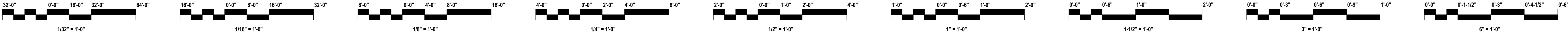
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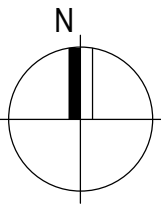
PBC Project Name: POE ELEMENTARY
PBC Contract No.:
PBC Project No.:
FGM Project No.:

Title
2ND FLOOR - ANNEX PLAN

Sheet
A1.30.10



SEE GROUND FLOOR FOR PLAN BELOW



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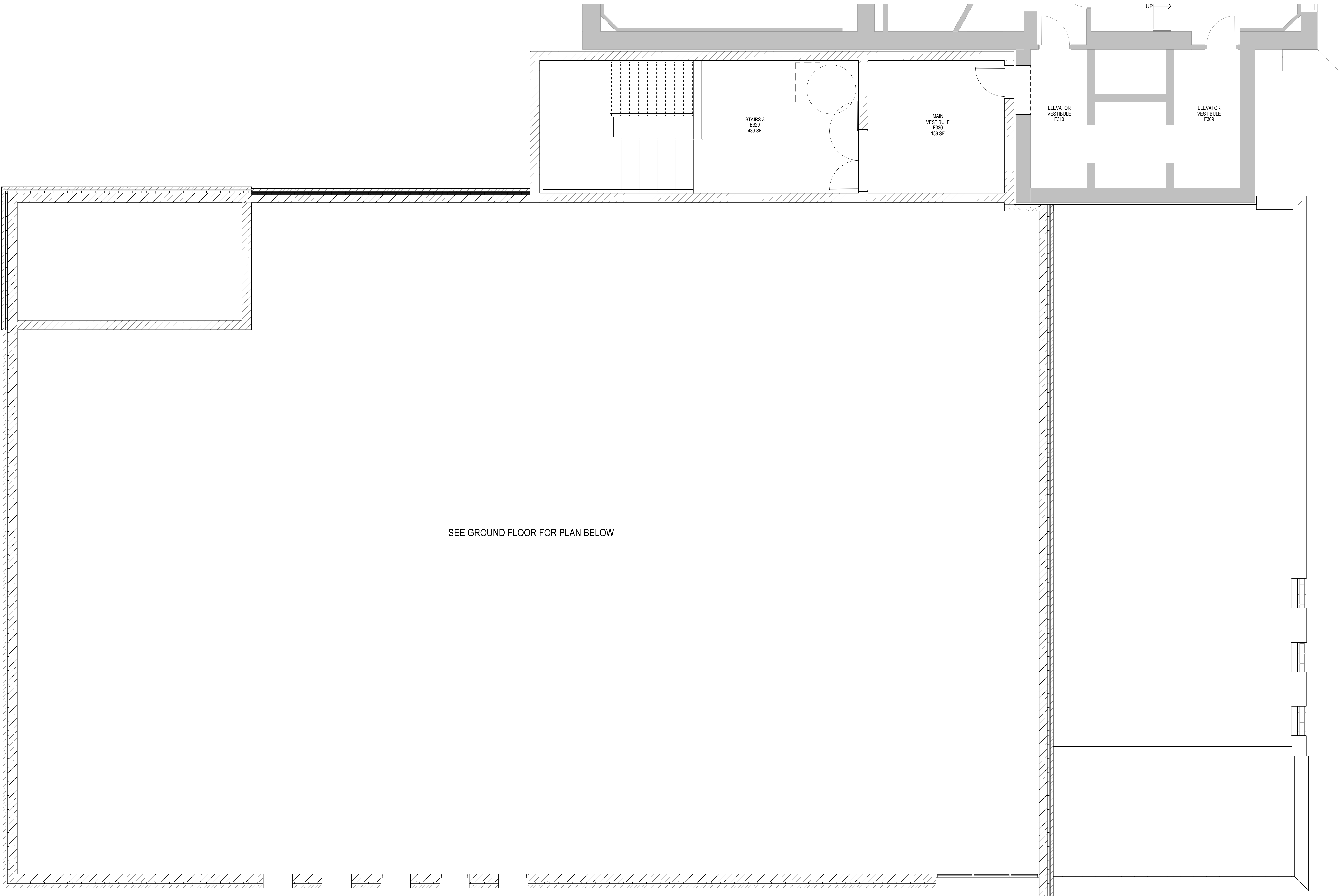
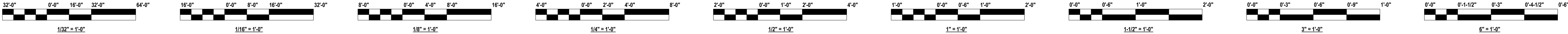
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PBC Project Name: POE ELEMENTARY
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Title
3RD FLOOR /
ROOF - OVERALL
PLAN



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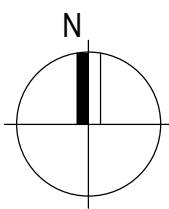
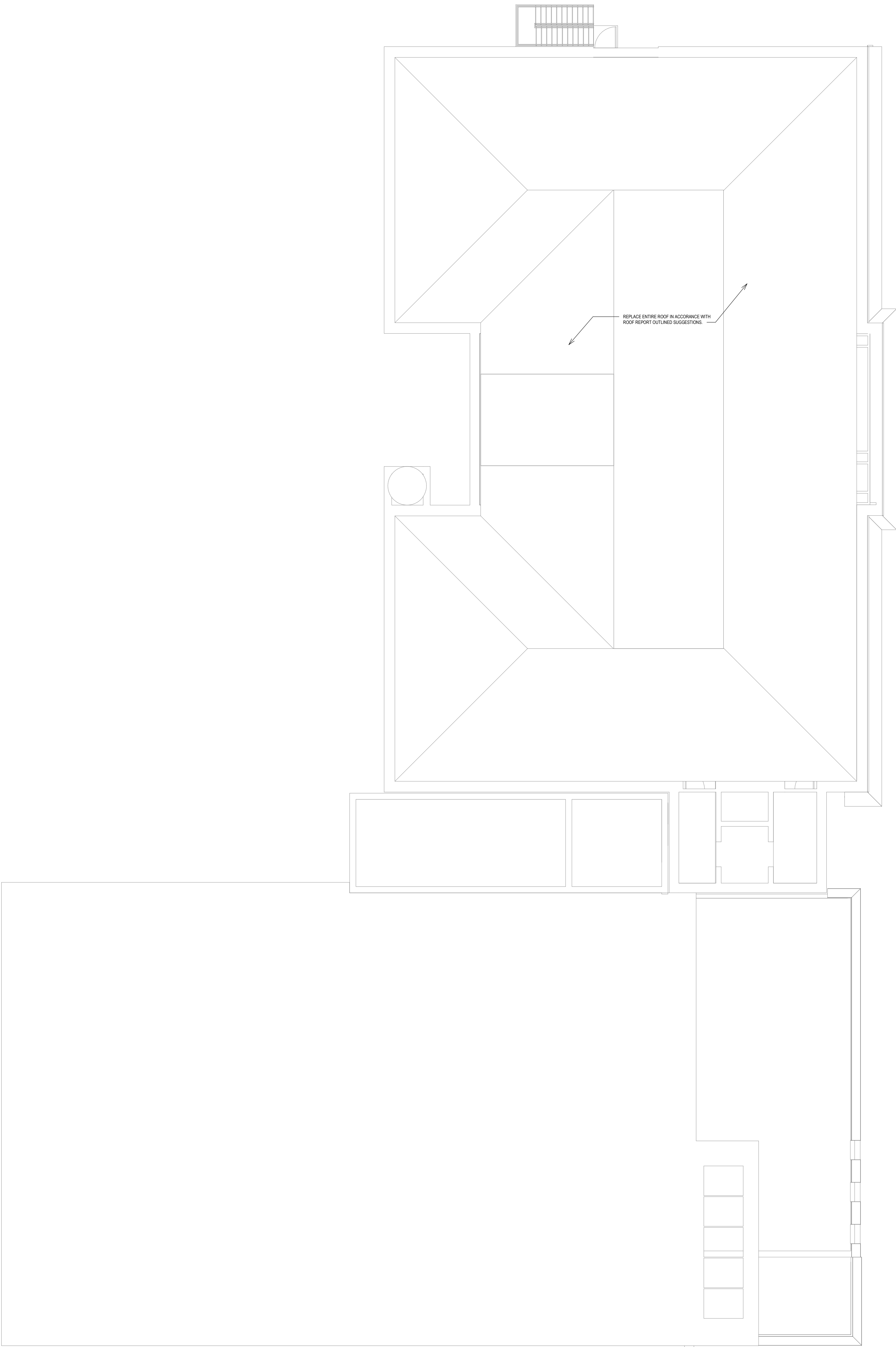
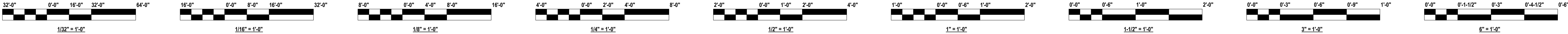
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PBC Project Name: POE ELEMENTARY
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FGM Project No.:

Title
**3RD FLOOR /
ROOF - ANNEX
PLAN**

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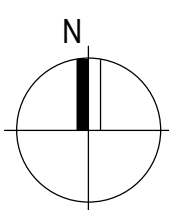
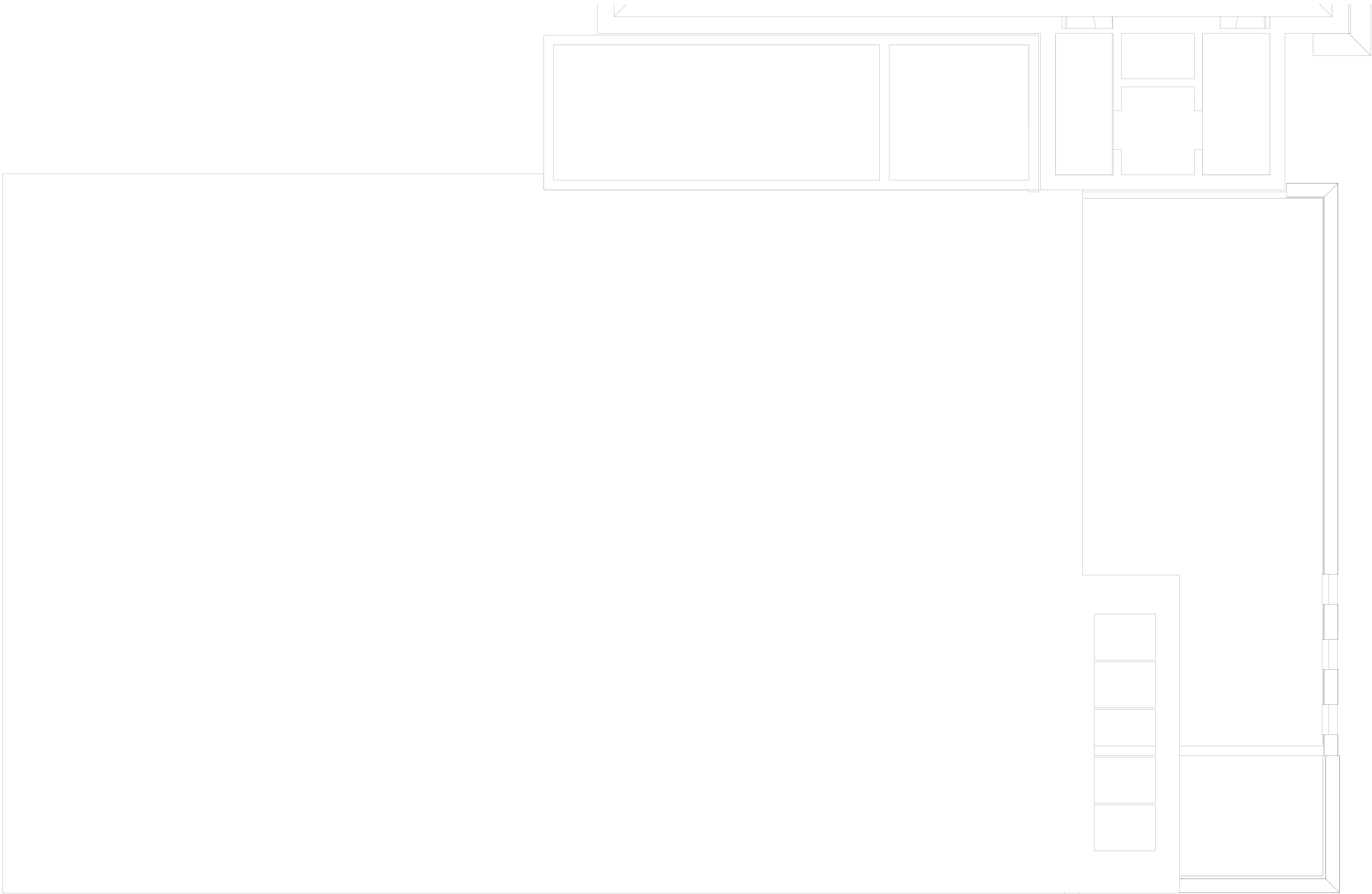
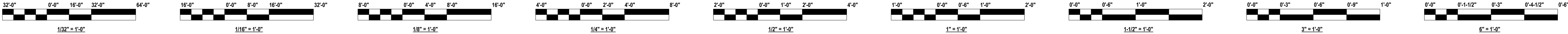
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Title
ROOF - OVERALL PLAN



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Food Consultant

Issuance		
Mark	Description	Date
SD	REVIEW	11.01.18

WARNING: ASBESTOS CONTAINING BUILDING MATERIALS ARE OR MAY BE PRESENT IN THIS BUILDING. AN ASBESTOS MANAGEMENT PLAN IS AVAILABLE IN THE SCHOOL. FOR REVIEW UPON REQUEST. NO PERSON MAY DISTURB ASBESTOS CONTAINING MATERIALS UNLESS THAT PERSON IS A LICENSED ASBESTOS ABATEMENT WORKER OR CONDUCTS SUCH WORK IN ACCORDANCE WITH PROJECT SPECIFICATIONS CONTAINING IN THE PROJECT DOCUMENTS AND IN COMPLIANCE WITH THE APPLICABLE REGULATIONS.

LEAD-BASED PAINT MAY BE PRESENT WITHIN THE BUILDING. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO TAKE APPROPRIATE SAFETY MEASURES IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL RULES AND REGULATIONS INCLUDING OSHA (1926.61) COMPLIANCE, WASTE CHARACTERIZATION AND WASTE DISPOSAL. ALL WORK WITH SURFACES CONTAINING LEAD-BASED PAINT SHALL BE DONE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

PBC Project Name: POE ELEMENTARY
PBC Contract No.:
PBC Project No.:
FGM Project No.:

Title
ROOF - ANNEX PLAN

Sheet
A1.50.10

Structural Design Schematic Design Narrative

New Annex at Poe Elementary School



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1. BUILDING SUMMARY

- A. New 2-Story annex at Poe Elementary School. The annex will be linked to the existing building on the South face.

2. FOUNDATIONS

- A. Shallow foundations per the recommendation from the Geotechnical report prepared by Terracon.
 - 1) Typical shallow foundations to be utilized as the building foundation system. Geotechnical engineer to provide recommendations for footings near the existing building foundation walls.
 - 2) 4,000 psi concrete will be used for frost walls, footings and grade beams if required.
 - 3) The net allowable bearing at this elevation is 4,000 psf provided by the Geotechnical Engineer. Additionally, the bottom of footing should be minimum 3'-6" from top of exterior grade.
 - 4) Footings adjacent to the existing building to be located based on the recommendations in the Geotechnical report.
- B. Special Foundation Requirements
 - 1) Geotechnical testing and inspection will be required during the construction to verify the actual on-site soil conditions prior to concrete placement.
 - 2) Temporary ERS required protecting Langley Ave and E 105th Street due to open cut excavation for undercuts under footings may be required (Geotechnical Engineer to confirm extent of undercuts). For any ERS work OUC permit will be required by the EOR/contractor.

3. First Floor

- A. Slab on Grade
 - 1) Typical slab on grade will be 5" thick reinforced with welded wire fabric
 - 2) 4,000 psi concrete will be used for the slab on grade.
 - 3) The slab on grade will be thickened at highly loaded areas, below CMU interior partitions and at locations with depressed slab locations.
 - 4) Membrane type vapor barriers will be provided below the slab as recommended by the soils consultant.
 - 5) Unsuitable fill can be assumed to extend under the proposed slab-on-grade to an average depth of 2 feet below existing grade; assume that first floor will be set, on average, 12" above average existing grade. The unsuitable material will be replaced with a compacted well-graded engineered fill. Geotechnical engineer to confirm. Final elevation of first floor to be determined by the Architect and Civil Engineer during the Schematic Design.

4. Elevated Floor Framing

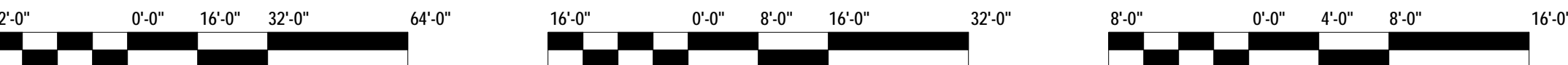
- A. Typical Floor Structure
 - 1) The typical floor structure is anticipated to be conventional composite steel framing consisting mainly of W-shaped steel beam/girders and 6 1/2" total thickness normal weight concrete on metal deck. The metal floor deck will be 2" deep, 18 gage galvanized composite metal deck.
 - 2) To ensure composite action of the steel beams and girders they will be connected to the deck via shear studs.
 - 3) The floor structure will be supported on W-shaped steel columns.
 - 4) All connections between the steel members are assumed to be welded or bolted.
 - 5) Floor deck above cafeteria may be thicker for acoustical purposes. Acoustical engineer to provide final design requirements.
 - 6) Shelf angle will be provided at 2nd floor level to support brick above if final height of building is greater than CPS standard for continuous wall.
- B. Roof Structure
 - 1) Typical roof deck will be 1 ½" Metal Roof Deck.
 - 2) Composite Metal Deck with 2" Deck + 4 ½"Normal-Weight Concrete Fill will be provided under Roof Top Units.
 - 3) The typical roof structure will consist of W-shaped steel beams and girders under composite slab and steel joists under the roof metal deck.
 - 4) The roof structure will be supported on W-shaped columns.

- 5) All connections between the steel members are assumed to be welded or bolted.
- C. Lateral Framing – Steel Braced Frames
- 1) Steel Braced Frames will be used for the lateral support of the structure. Locations of the Steel Bracing will be coordinated during the Schematic Design phase.
- D. Column
- 1) The columns are anticipated to be structural W10 hot rolled structural steel shapes with steel base plates.
5. LINK TO EXISTING BUILDING
- A. Expansion Joint
- 1) New annex building and existing building will be separated by a new CMU wall supported at the new annex. There will be an expansion joint between the existing and new building ranging in size of 1 to 2 inches pending final design.
- B. Existing Wall
- 1) New openings will have to be made at the existing wall building. During SD phase Design Architecture team will confirm if existing lintels are available for use or if new steel masonry lintels will need to be provided for the new openings in the existing building.
6. BUILDING/STRUCTURAL DESIGN CODES
- A. Building Code: 2018 Chicago Building Code
- B. Structural Design Codes:
- 1) American Concrete Institute, Building Code Requirements for Structural Concrete (ACI 318-11)
- 2) American Institute of Steel Construction 360-10
- 3) Structural Welding Code (AWS D1.1)
- C. Design Live Loads:
- 1) Corridors - 100 psf (1st Floor) 80 psf (Above 1st Floor)
- 2) Public Stairways - 100 psf
- 3) Classrooms - 40 psf
- 4) Dining Room - 100 psf
- 5) Multi-purpose Room - 100 psf
- 6) Kitchen - 100 psf
- 7) Music Room - 100 psf
- 8) Light Storage Area - 125 psf
- 9) Science Lab - 75 psf
- 10) Mechanical room - 150 psf or weight of equipment
- D. Roof Snow Load:
- 1) Flat roof - 25 psf + Drift
- E. Lateral Loads: Wind loads per CBC 2015
- 1) Main Wind Force Resisting System - 20 psf
- 2) Components and Cladding:
- a. Non-corner wall conditions - 25 psf
- b. Corner wall conditions - 30 psf
- 3) Roofing Materials (at edges) - -40 psf

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- 4) Projecting Elements - +/-40 psf
- F. Other Structural Design Criteria:
- 1) Deflections (Floors) – span/360 for superimposed live loads or span/240 for total load.
- 2) Deflections (Roof) – span/240 for superimposed live loads or span/180 for total load.
- 3) Deflection of members supporting masonry – smaller of span/600 or 0.3"

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GENERAL NOTES:

- CODES: CITY OF CHICAGO BUILDING CODE, 2018 (CBC)
- DIMENSIONS AND ELEVATIONS ON STRUCTURAL DRAWINGS ARE TO BE CHECKED AGAINST ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS AS WELL AS AGAINST FIELD CONDITIONS BY ALL CONTR
- UNLESS NOTED OTHERWISE, TYPICAL DETAILS AND SECTIONS AND NOTES ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSTRUED TO APPLY TO ANY SIMILAR CONDITIONS ELSEWHERE ON THE PROJECT EXCEPT WHERE DIFFERENT DETAIL IS INDICATED
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH ARCHITECTURAL, MECHANICAL ELECTRICAL, FIRE PROTECTION, PLUMBING, AND OTHER DISCIPLINES FOR LOCATION AND PLACEMENT OF OPENINGS, SLAB DEPRESSIONS, INSERTS, HANGERS, PIPE SLEEVES, CONCRETE PADS AND ANCHOR RODS, AND OTHER CONSTRUCTION REQUIREMENT.
- IF DISCREPANCIES APPEAR ON THE CONTRACT DOCUMENTS, OR BETWEEN THE CONTRACT DOCUMENTS AND EXISTING CONDITIONS, THE CONTRACTOR SHALL REQUEST AN INTERPRETATION FROM THE OWNER BEFORE BIDDING. IF THE CONTRACTOR FAILS TO MAKE SUCH REQUEST, IT IS PRESUMED THAT BOTH PROVISIONS WERE INCLUDED IN THE BID AND THE OWNER SHALL DETERMINE WHICH OF THE CONFLICTING REQUIREMENTS SHALL GOVERN. THE CONTRACTOR SHALL PERFORM THE WORK AT NO ADDITIONAL COST TO THE OWNER IN ACCORDANCE WITH THE OWNER'S DETERMINATION.
- IN CASES WHERE MECHANICAL OR ELECTRICAL EQUIPMENT LOADING LISTED ON THE MANUFACTURER'S PRODUCT DATA SHEET EXCEEDS DESIGN LOADS INDICATED ON THE PLANS, CONTRACTOR SHALL NOTIFY STRUCTURAL ENGINEER AND ARCHITECT PRIOR TO PROCEEDING WITH WORK.
- IN ADDITION TO PROVISIONS OUTLINED IN THE STANDARD TERMS AND GENERAL CONDITIONS FOR SUBMITTALS, ALL RE-SUBMITTALS SHALL INCORPORATE COMMENTS MADE BY A/E ON PREVIOUS REVIEW(S). ANY CHANGES MADE FROM PREVIOUS SUBMITTAL MUST BE BUBBLED AND/OR CLEARLY IDENTIFIED. NON-COMPLIANT SUBMITTALS MAY BE REJECTED AT DISCRETION OF A/E.
- THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR LOCATING, PROTECTING AND MAINTAINING IN SERVICE ALL EXISTING UTILITIES. ANY DAMAGE TO THE EXISTING UTILITIES CAUSED BY CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION AND AT NO COST TO THE OWNER.
- CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID TO ASCERTAIN CONDITIONS WHICH MAY ADVERSELY AFFECT THE WORK OR THE COST THEREOF.
- THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. BASED ON THE CONTRACTOR'S CONSTRUCTION METHODS AND SEQUENCING OF CONSTRUCTION, THE CONTRACTOR SHALL RETAIN A LICENSED PROFESSIONAL ENGINEER TO DESIGN THE LATERAL SUPPORT SYSTEM REQUIRED TO RESIST THE LATERAL LOADS AND FOR ALL STABILITY OF THE STRUCTURE UNTIL COMPLETION. THE CONTRACTOR SHALL FURNISH AND PROVIDE THE NECESSARY BRACING AND SUPPORTS DURING CONSTRUCTION AND IS RESPONSIBLE FOR THE OVERALL STABILITY OF THE STRUCTURE UNTIL COMPLETION.
- NEITHER THE ARCHITECT NOR THE STRUCTURAL ENGINEER SHALL BE RESPONSIBLE OR HAVE CONTROL OR CHARGE OF CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES FOR THE SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTIONS WITH THE PROJECT. NEITHER THE ARCHITECT NOR THE STRUCTURAL ENGINEER SHALL BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURES TO CARRY OUT HIS/HER WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. NEITHER THE ARCHITECT NOR THE STRUCTURAL ENGINEER SHALL BE RESPONSIBLE OR HAVE CONTROL OVER THE ACTS OF OMISSIONS OF THE CONTRACTOR, SUBCONTRACTOR, ANY OF THE AGENTS, EMPLOYEES, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR FOR FAILURE OF ANY OTHER PERSONS OUT OF THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

MINIMUM DESIGN LOADS:

FLOOR LIVE LOAD:

RESIDENTIAL FLOORS (REDUCIBLE BY CODE).....	40 PSF
LOBBIES, PUBLIC CORRIDORS, STAIRWAYS.....	100 PSF
CORRIDORS SERVING DWELLING UNITS.....	40 PSF
LIGHT STORAGE AREAS.....	125 PSF
MECHANICAL & PENTHOUSE (OR ACTUAL EQUIP. WT.).....	150 PSF

PARTITION LOADS

(EXCEPT FOR LIVE LOAD EXCEEDING 80 PSF).....20 PSF

SUPERIMPOSED LOADS

ALLOWANCE FOR EXTENSIVE GREEN ROOF (LIVE ROOF).....	29 PSF
ALLOWANCE FOR "TPO" SINGLE PLY ROOF.....	6 PSF
ALLOWANCE FOR M.E.P.....	5 PSF
ALLOWANCE FOR CEILING.....	5 PSF
ALLOWANCE FOR CURTAIN WALL SYSTEM.....	15 PSF

ROOF SNOW LOADS

MINIMUM FLAT SNOW LOAD (PER CBC).....	25 PSF
SNOW DRIFT AT ELEVATION CHANGES (PER ASCE-7).....	25 PSF
GROUND SNOW, Pg.....	1.0
IMPORTANCE FACTOR (BUILDING CATEGORY II), I.....	1.0
EXPOSURE FACTOR, Ce.....	1.1
THERMAL FACTOR, Ct.....	1.0

WATER PONDING

ROOF PONDING BETWEEN GRIDS 1 - 3 AND A - H.....50 PSF

WIND LOADS

MAIN WIND FORCE RESISTING SYSTEM (PER CBC).....	20 PSF
FLAT ROOF UPLIFT.....	15 PSF
OVERHANGING EAVES, BALCONIES, CANOPIES & PARAPETS.....	40 PSF
COMPONENTS & CLADDINGS.....	30 PSF
- AT CORNERS (INWARD/OUTWARD).....	30 PSF
- OTHER THAN CORNERS (INWARD/OUTWARD).....	25 PSF

THRUST ON HANDRAILS

SIMULTANEOUS VERTICAL & HORIZONTAL THRUST.....	50 PLF
ALTERNATE CONCENTRATED LOAD.....	200 LB

EARTHQUAKE LOADS

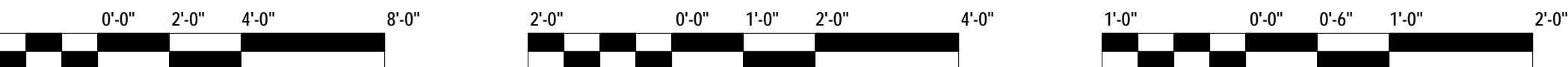
SPECIAL PROVISIONS FOR SEISMIC DESIGN SHALL NOT APPLY (PER CBC)

DEFLECTIONS

VERTICAL & LATERAL MOVEMENT (CURTAIN WALL SYSTEM)	
MAX. DEFLECTION AT FLOOR EDGES (LIVE & LONG TERM).....	3/4 IN
LATERAL INTER-STORY DRIFT DUE TO WIND LOAD(+/-).....	1/2 IN

FOUNDATION NOTES:

- FOUNDATION RECOMMENDATIONS ARE BASED ON THE GEOTECHNICAL EXPLORATION REPORT BY XXXX CONSULTANTS, PROJECT # 123456789, DATED XXX/XXX. REFERENCE SOIL REPORT AND SPECIFICATIONS FOR FURTHER INFORMATION ABOUT EXCAVATION, SITE PREPARATION, AND FOUNDATION CONSTRUCTION.
- FOR ANY DISCREPANCY BETWEEN STRUCTURAL DRAWINGS AND GEOTECHNICAL REPORT, THE GEOTECHNICAL REPORT SHALL TAKE PRECEDENCE. ANY SUCH DISCREPANCIES SHALL BE REPORTED TO ARCHITECT OF RECORD.
- ALL EXISTING FOUNDATIONS, ABANDONED UTILITIES, AND ALL ORGANIC AND/OR OTHER UNSUITABLE MATERIALS SHALL BE REMOVED FROM SUBGRADE AND BACKFILL AREAS AND REPLACED WITH GRANULAR ENGINEERED FILL SUCH AS IDOT CA-6. PLACE FILL IN LIFTS NOT EXCEEDING 9". MOISTURE CONDITION TO WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT, AND COMPACT TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY OBTAINED IN ACCORDANCE WITH SPECIFICATION D1557, MODIFIED PROCTOR METHOD. SEE GEOTECHNICAL REPORT FOR SPECIFIC RECOMMENDATIONS.
- THE SOIL SUBGRADE FOR ALL SLABS SHALL BE INSPECTED AND APPROVED BY THE OWNER'S TESTING LABORATORY IMMEDIATELY PRIOR TO PLACING CONCRETE.
- ALL SLAB SUBGRADES SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF THE MAXIMUM DRY DENSITY OBTAINED IN ACCORDANCE WITH ASTM SPECIFICATION D1557, MODIFIED PROCTOR METHOD, AND MOISTURE CONDITIONED TO WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT. SEE GEOTECHNICAL REPORT FOR ADDITIONAL RECOMMENDATIONS.
- PLACE BACKFILL SIMULTANEOUSLY ON BOTH SIDES OF FOUNDATION WALLS.
- NO MUD SLABS, BEAMS OR SLABS SHALL BE PLACED ONTO OR AGAINST SUBGRADE CONTAINING FREE WATER, FROST OR ICE. SHOULD WATER, FROST, OR ICE ENTER A FOOTING OR SLAB EXCAVATION AFTER SUBGRADE APPROVAL, THE SUBGRADE SHALL BE RE-INSPECTED BY THE OWNER'S TESTING LABORATORY.
- THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MEASURES TO PREVENT ANY FROST OR ICE FROM PENETRATING ANY FOOTING OR SLAB SUBGRADE BEFORE AND AFTER PLACING OF CONCRETE UNTIL SUCH SUBGRADE IS FULLY PROTECTED BY THE PERMANENT BUILDING STRUCTURE.
- ALL PERIMETER WALL AND COLUMN FOUNDATIONS SHALL BEAR A MINIMUM OF 3'-6" BELOW FINISHED GRADE.
- THE CONTRACTOR SHALL USE CARE IN EXCAVATION AND GRADING NEAR EXISTING ITEMS TO REMAIN. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MEASURES TO TEMPORARILY SUPPORT EXISTING FOUNDATIONS TO REMAIN DURING CONSTRUCTION.



CONCRETE NOTES:

- CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" (ACI 318-11) BY AMERICAN CONCRETE INSTITUTE.
- ALL CONCRETE PERMANENTLY EXPOSED TO WEATHER SHALL CONTAIN AN APPROVED AIR ENTRAINING ADMIXTURE.
- NO CALCIUM CHLORIDE SHALL BE USED IN ANY CONCRETE.
- CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGNS ACCOMPANIED WITH RECENT FIELD TEST REPORT DATA OR TRIAL BATCH LAB REPORTS FOR ALL PROPOSED CONCRETE MIXES FOR APPROVAL PRIOR TO FIRST POUR.
- VERTICAL WALL CONSTRUCTION JOINTS SHALL BE FORMED WITH VERTICAL BULKHEADS AND KEY-WAYS. WALL REINFORCING SHALL BE CONTINUOUS THROUGH THE JOINT OR SHALL BE DOWELED WITH AN EQUIVALENT AREA OF REINFORCEMENT
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE LOCATION AND PLACEMENT OF INSERTS, EMBEDDED PLATES, MASONRY ANCHORS, REGLETS, SLEEVES, DUCTWORK, PADS AND ANCHOR RODS, THE INSERTS, EMBEDDED PLATES, ETC. SHALL NOT INTERFERE WITH CONCRETE REINFORCEMENT LOCATION. THE GENERAL CONTRACTOR SHALL VERIFY ALL OPENINGS THROUGH WALLS WITH SHOP DRAWINGS, SHOWING OPENINGS IN THE SLABS INCLUDING, BUT NOT LIMITED TO SLEEVE SIZES AND LOCATIONS, DUCT SIZE AND LOCATION, ETC.
- NO OPENING SHALL BE MADE IN ANY STRUCTURAL MEMBER WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT
- SLABS ON GRADE SHALL BE PLACED IN ALTERNATE STRIPS WITH A MAXIMUM WIDTH OF 30'-0" OR AS SHOWN ON PLAN. CONTROL JOINTS SHALL BE CUT WITHIN 4 TO 12 HOURS AFTER FINISHING WITH CONVENTIONAL SAW. CONTROL JOINTS SHALL NOT EXCEED 15'-0" INTERVALS IN EACH DIRECTION, AND SHALL BE LOCATED TO CONFORM WITH BAY SPACING WHEREVER POSSIBLE (I.E. AT COLUMN CENTERLINES, HALF-BAYS, THIRD-BAYS).
- DEPRESSED SLABS SHALL MAINTAIN FULL THICKNESS UNLESS NOTED OTHERWISE. DEPRESSED SLABS SHALL MAINTAIN FULL THICKNESS UNLESS NOTED OTHERWISE.
- CHEMICAL ANCHORS SHALL BE "MIT-RE 500 SD" AND EXPANSION ANCHORS SHALL BE "KWIK BOLT 3" AS MANUFACTURED BY HILTI, OR EQUAL. ANY SUBSTITUTED PRODUCT MUST MEET ALL OF THE DESIGN VALUES OF HILTI, AND BE APPROVED BY THE ARCHITECT. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATION.
- PITCH CONCRETE SLABS TO FLOOR DRAINS WHILE MAINTAINING THE SLAB THICKNESS AS INDICATED ON THE MECHANICAL AND ARCHITECTURAL DRAWINGS. SEE ARCHITECTURAL DRAWINGS FOR TYPE AND LOCATION OF ALL FLOOR FINISHES, FLOOR DEPRESSIONS, AND CURBS.
- ALL STRUCTURAL CONCRETE AND CONCRETE FILL SHALL BE THOROUGHLY CONSOLIDATED WITH MECHANICAL VIBRATORS.
- THE OWNER'S TESTING LABORATORY SHALL INSPECT THE PLACEMENT OF ALL CONCRETE, REINFORCEMENT, AND FORMWORK.
- PROVIDE 3/4" CHAMFER ON ALL CORNERS OF EXPOSED CONCRETE. UNLESS NOTED OTHERWISE IN THE ARCHITECT'S DRAWINGS.
- SHEAR REINFORCEMENT AT THE SLAB COLUMN CONNECTION AS INDICATED ON DRAWINGS AND DETAILS SHALL BE AS MANUFACTURED BY DECON (ESR-2494) OR DAYTON SUPERIOR CORPORATION (ESR-2696).
- SHEAR REINFORCEMENT ASSEMBLY SHALL CONFORM TO THE LATEST UPDATE OF ASTM A 1044. HEADED STUDS: YIELD STRENGTH = 51,000 PSI MIN.; TENSILE STRENGTH = 65,000 PSI MIN.; ELONGATION = 20% IN 2 INCHES PLATES: CUT FROM STEEL PLATES CONFORMING TO ASTM A 36: YIELD STRENGTH = 44,000 PSI MIN.; TENSILE STRENGTH = 65,000 PSI MIN.; ELONGATION = 20% IN 8 INCHES, MIN.
- REFERENCE SPECIFICATION: SECTION 03 30 00 - CAST-IN-PLACE CONCRETE.
- ALL CAST-IN-PLACE CONCRETE SHALL BE OF THE TYPE I OR III AND HAVING MINIMUM COMPRESSIVE STRENGTH AS INDICATED IN THE TABLE BELOW:

STRUCTURAL ELEMENT	28 DAY COMPRESSIVE STRENGTH	AGGREGATE TYPE	REMARKS
SLABS ON GRADE	4,000 PSI	145 PCF STONE	F0S0P0C0
FOUNDATIONS (FOOTINGS, PIERS AND WALLS)	4,000 PSI	145 PCF STONE	F1S0P0C0

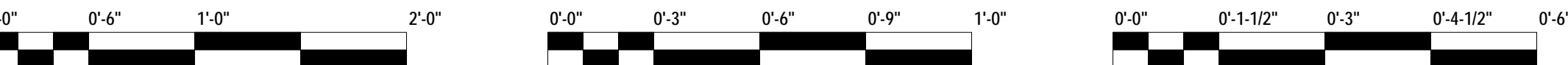
REINFORCEMENT NOTES:

- ALL CONCRETE REINFORCEMENT SHALL BE DETAILED, FABRICATED, LABELED, SUPPORTED, SPACED IN FORMS, AND SECURED IN PLACE IN ACCORDANCE WITH THE PROCEDURES AND REQUIREMENTS OUTLINED IN THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE STRUCTURES", ACI 318-2011, AND THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315.
- UNLESS NOTED OTHERWISE, DEFORMED BAR REINFORCEMENT SHALL CONFORM TO ASTM SPECIFICATION A615, GRADE 60 AND ASTM A706 FOR WELDED DEFORMED BAR REINFORCEMENT.
- HEADED SHEAR STUD ASSEMBLIES SHALL CONFORM TO ASTM 1044 WITH MINIMUM Fy = 51 KSI.
- ALL WELDED WIRE FABRIC SHALL CONFORM TO THE STANDARDS OF ASTM A185.
- THE CONTRACTOR SHALL SUBMIT CHECKED SHOP DRAWINGS SHOWING REINFORCING DETAILS INCLUDING STEEL SIZES, SPACING, PLACEMENT AND SUPPORT DETAILS TO THE ARCHITECT FOR REVIEW PRIOR TO FABRICATION.
- PROVIDE ALL ACCESSORIES NECESSARY TO SUPPORT REINFORCEMENT AT THE POSITIONS INDICATED. PLASTIC COATED OR STAINLESS STEEL ACCESSORIES SHALL BE USED IN ALL EXPOSED CONCRETE WORK.
- ALL EMBEDMENT LENGTHS AND LAPS SHALL BE AS REQUIRED BY ACI 318. UNLESS NOTED OTHERWISE, MINIMUM LAP SHALL BE 36 BAR DIAMETERS
- UNLESS NOTED OTHERWISE ON PLANS, ALL CONCRETE FORMED SLAB OR WALL OPENINGS SHALL BE REINFORCED AT EACH CORNER WITH MINIMUM 2 NO. 5 BARS, PLACED ONE IN EACH FACE AT 45 DEGREES AND PROJECTING MINIMUM 2'-0" BEYOND CORNER. WHEN REQUIRED, DOWELS SHALL MATCH THE SIZE AND QUANTITY OF MAIN REINFORCING, UNLESS NOTED OTHERWISE
- THE OWNER'S TESTING AGENCY SHALL INSPECT THE PLACEMENT OF ALL REINFORCEMENT.
- THE CONCRETE COVER PROVIDED FOR ALL REINFORCEMENT SHALL COMPLY WITH ACI, 318, LATEST EDITION. THE FOLLOWING CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT UNLESS NOTED OTHERWISE:

CONDITION OF CONCRETE PLACEMENT	REINFORCEMENT RANGE	CLEAR COVER
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	#3 THRU #18 BARS	3"
CONCRETE EXPOSED TO EARTH OR WEATHER	#6 THRU #18 BARS	2"
	WIRE, #5 BAR & SMALLER	1 1/2"
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND		
- SLABS, WALLS, JOISTS	#14 & #18 BARS	1 1/2"
	#11 BARS & SMALLER	3/4"
- BEAMS AND COLUMNS (PRIMARY REINF., TIES, STIRRUPS, SPIRALS)	#3 THRU #18 BARS	1 1/2"

STRUCTURAL STEEL NOTES:

- ALL DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL WORK SHALL CONFORM TO AISC STEEL CONSTRUCTION MANUAL, THIRTEENTH EDITION AND ANSIAISC 360-05 SPECIFICATIONS AND AISC 303-05 CODE OF STANDARD PRACTICE.
- STRUCTURAL STEEL WIDE FLANGE SHAPES SHALL CONFORM TO ASTM A992, UNLESS NOTED OTHERWISE. STRUCTURAL STEEL PLATES, ANGLES, CHANNELS AND MISCELLANEOUS MATERIAL SHALL CONFORM TO ASTM A36. HOLLOW STRUCTURAL SECTIONS SHALL CONFORM TO ASTM A500, GRADE B. STEEL PIPE SECTIONS SHALL CONFORM TO ASTM A53, GRADE B.
- ANCHOR RODS SHALL BE ASTM F1554, GRADE 55, .75 INCH DIA. WITH 12 INCH EMBEDMENT, UNLESS NOTED OTHERWISE.
- HIGH STRENGTH BOLTING SHALL BE DONE IN ACCORDANCE WITH AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR ASTM A490 BOLTS."
- BOLTS, NUTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A325. BOLTS SHALL BE 0.75 INCH DIA. MINIMUM UNLESS OTHERWISE INDICATED.
- WELDING SHALL BE DONE BY CERTIFIED WELDERS AND SHALL CONFORM TO AWS D1.1 STRUCTURAL WELDING CODE - STEEL', LATEST EDITION. ALL WELDING ELECTRODES SHALL BE E70XX.
- THE FABRICATOR/ERECTOR SHALL SUBMIT TO THE ARCHITECT FOR REVIEW, ENGINEERED AND CHECKED SHOP DRAWINGS SHOWING FABRICATION DETAILS, FIELD ASSEMBLY DETAILS AND ERECTION DIAGRAMMS FOR ALL STRUCTURAL STEEL.
- UNLESS NOTED OTHERWISE, ALL CONNECTIONS SHALL BE DESIGNED AND DETAILED BY THE FABRICATOR, USING RATIONAL ENGINEERING DESIGN AND STANDARD PRACTICE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE TYPICAL DETAILS SHOWN ON THE DRAWINGS ARE CONCEPTUAL ONLY, AND, UNLESS SPECIFICALLY NOTED, DO NOT INDICATE THE REQUIRED NUMBER OF BOLTS OR WELD SIZES.
- THE FABRICATOR SHALL SUBMIT CALCULATIONS FOR EACH CONNECTION TYPE AND MEMBER SIZE WITH DETAILS AND COORDINATED SHOP DRAWINGS. CALCULATIONS SHALL BE STAMPED AND SIGNED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF ILLINOIS.
- STEEL BEAM AND GIRDER CONNECTIONS SHALL BE DESIGNED USING THE LOAD AND RESISTANCE FACTOR DESIGN METHOD FOR FORCES INDICATED ON THE DRAWINGS. WHERE NO REACTION IS INDICATED, USE 75% OF THE UNIFORM DISTRIBUTED LOAD (UDL) FOR BEAMS OR MINIMUM CONNECTION SHEAR FORCE OF 10 KIPS. REFERENCE AISC STEEL CONSTRUCTION MANUAL, THIRTEENTH EDITION TABLE 3 - 6 FOR UNIFORM LOAD (LRFD).
- UNLESS NOTED OTHERWISE, CONNECTIONS SHALL BE EITHER AISC DOUBLE ANGLE OR SINGLE PLATE SIMPLE SHEAR CONNECTIONS PROVIDING ROTATIONAL DUCTILITY AS DEFINED BY AISC. ALL BOLTED COMPONENTS SHALL UTILIZE MINIMUM 2 BOLTS IN BEARING. CONNECTIONS SHALL EXTEND TO AT LEAST ONE HALF OF THE BEAM DEPTH.
- FIELD CONNECTIONS, EXCEPT WHERE SHOWN TO BE WELDED, SHALL BE BOLTED.
- BEAMS AND FIBERS SHALL BE FABRICATED WITH THE NATURAL CAMBER UP. PROVIDE CAMBERS AS INDICATED ON THE DRAWINGS.
- ALL STEEL SURFACES WHICH WILL BE PERMANENTLY EXPOSED TO ELEMENTS SHALL BE HOT-DIPPED GALVANIZED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF ALL ERECTION PROCEDURES AND SEQUENCES WITH RELATION TO TEMPERATURE DIFFERENTIALS, ESPECIALLY WITH RESPECT TO STRUCTURAL STEEL FRAMING INTO CONCRETE WALLS, BEAMS OR COLUMNS.
- THERE SHALL BE NO FIELD CUTTING OF STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ARCHITECT/ENGINEER.
- ERECT AND MAINTAIN TEMPORARY BRACING TO INSURE THE ALIGNMENT AND STABILITY OF THE STRUCTURE DURING ERECTION UNTIL PERMANENT CONNECTIONS HAVE BEEN COMPLETED. LATERAL SYSTEM ELEMENTS FOR THIS PROJECT CONSIST OF (BUT ARE NOT NECESSARILY LIMITED TO) THE FOLLOWING: CONCRETE SHEARWALLS, FLOOR & ROOF DIAPHRAGMS.
- PROVIDE 0.25 INCH END PLATES SEAL WELDED TO ENDS OF ALL HSS MEMBERS UN O.
- SHOP AND FIELD TESTING AND INSPECTION OF STRUCTURAL STEEL FABRICATION AND ERECTION SHALL BE PERFORMED BY THE OWNER'S TESTING AGENCY AS OUTLINED IN THE SPECIFICATIONS.
- REFERENCE SPECIFICATION: SECTION 051200 - STRUCTURAL STEEL FRAMING.



MASONRY NOTES:

- DESIGN AND CONSTRUCTION OF MASONRY SHALL BE IN ACCORDANCE WITH THE ACI/ASCE/TMS "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" (ACI 530-11/ASCE 5-11/TMS 402-11) AND "SPECIFICATIONS FOR MASONRY STRUCTURES" (ACI 530.1-11/ASCE 6-11/TMS 402-11).
- MASONRY UNIT MATERIALS SHALL BE CONCRETE MASONRY UNITS: MEDIUM WEIGHT, ASTM C-90 OR ASTM C-55 WITH AVERAGE NET AREA COMPRESSIVE STRENGTH OF MASONRY UNITS:
 - 2,800 PSI FOR 8", 10" & 12" WIDE CMU (TYPE "S" 1,800 PSI COMPRESSIVE STRENGTH MORTAR)
 - 1,900 PSI FOR 6" WIDE AND SMALLER CMU (TYPE "N" 750 PSI COMPRESSIVE STRENGTH MORTAR)
 - BRICK UNITS: ASTM C 216, AVERAGE NET AREA COMPRESSIVE STRENGTH 4,150 PSI
- MORTAR FOR ALL MASONRY SHALL CONFORM TO ASTM C270 TYPE "S" (1,800 PSI COMPRESSIVE STRENGTH) FOR EXTERIOR CMU AND TYPE "N" (750 PSI COMPRESSIVE STRENGTH) FOR BRICK & INTERIOR CMU:
 - NET AREA COMPRESSIVE STRENGTH OF MASONRY fm = 2,000 PSI FOR WALLS WITH 8", 10" & 12" CMU
 - NET AREA COMPRESSIVE STRENGTH OF MASONRY fm = 1,500 PSI FOR ALL OTHER WALLS
- GROUT FOR MASONRY SHALL CONFORM TO ASTM C476 AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.
- REINFORCEMENT BARS FOR MASONRY SHALL CONFORM TO ASTM SPECIFICATION A615, GRADE 60.
- PROVIDE REBAR POSITIONERS AT 4'-0" O.C. IN GROUTED CELLS TO ASSURE PROPER PLACEMENT OF REBARS.
- BRICK VENEER SHALL BE ANCHORED TO METAL STUD BACK-UP WALL WITH PINTLE ANCHORS.
- VERTICAL CELLS TO BE FILLED WITH GROUT, AND VERTICAL CELLS TO BE REINFORCED AND FILLED WITH GROUT, SHALL BE ALIGNED TO PROVIDE A CONTINUOUS, UNOBSTRUCTED OPENING OF THE DIMENSIONS SHOWN ON THE PLANS, AND NOT LESS THAN 2' x 3'.
- GROUT FOR FILING REINFORCED OR NON-REINFORCED CELLS SHALL BE PLACED IN MAXIMUM FIVE FEET FOUR INCHES (5'-4") LIFTS AND CONSOLIDATED IN PLACE BY VIBRATION OR OTHER METHODS WHICH INSURE COMPLETE FILLING OF THE CELLS. ALL CELLS CONTAINING REINFORCING BARS OR ANCHOR RODS SHALL BE FULLY GROUTED.
- HOLLOW UNITS SHALL BE LAID WITH FULL MORTAR COVERAGE ON HORIZONTAL AND VERTICAL FACE SHELLS. WEBS SHALL ALSO BE BEDDED, WHERE THEY ARE ADJACENT TO CELLS TO BE REINFORCED OR FILLED WITH GROUT, IN THE STARTING COURSE ON FOOTINGS AND SOLID FOUNDATION WALLS, AND IN NON-REINFORCED OR GROUTED PIERS, PILASTERS AND COLUMNS. SOLID MASONRY UNITS SHALL BE LAID WITH FULL HEAD AND BED JOINTS.
- BEARING ENDS OF LINTELS AND BEAMS SHALL BE ON TWO MINIMUM (2) COURSES OF SOLID MASONRY OR TWO (2) COURSES OF HOLLOW MASONRY GROUTED SOLID.
- THE MINIMUM CLEAR DISTANCE BETWEEN PARALLEL REINFORCING BARS, EXCEPT IN COLUMNS, SHALL BE EQUAL TO THE NOMINAL DIAMETER OF THE BAR, OR 1", WHICHEVER IS GREATER.
- WHERE REQUIRED VERTICAL REINFORCEMENT SHALL BE LAP SPLICED AS INDICATED ON DRAWING WITH A MINIMUM OF 48 BAR DIAMETERS.
- ALL REINFORCING BARS SHALL BE COMPLETELY EMBEDDED IN GROUT AND SHALL HAVE A COVERAGE OF MASONRY NOT LESS THAN:
 - BARS LARGER THAN #5 2"
 - #5 BARS AND SMALLER 2"
- PROVIDE ADEQUATE TEMPORARY BRACING AS REQUIRED DURING CONSTRUCTION TO WITHSTAND LATERAL LOADS AND THE PRESSURES OF FLUID GROUT.
- ALL WALLS SHALL HAVE HORIZONTAL JOINT REINFORCING AT 16" ON CENTER - SEE ARCHITECTURAL DRAWINGS.
- VERTICAL REINFORCING SHALL BE CONTINUOUS THROUGH ALL CMU LINTELS.
- ALL BOND BEAM REINFORCING SHALL BE DISCONTINUOUS AT ALL CONTROL JOINTS.
- ALL CMU WALLS SHALL HAVE VERTICAL CONTROL JOINTS. FOR SPACING AND LOCATION OF CONTROL JOINTS SEE ARCHITECTURAL DRAWINGS.
- NO CONTROL JOINTS IN CMU WALL SHALL BE LOCATED LESS THAN 24" FROM THE FACE OF A MASONRY OPENING.
- MASONRY INSPECTION TO CONFORM TO ACI/ASCE/TMS SPECIFICATIONS, "TABLE 4 - LEVEL B QUALITY ASSURANCE."
- REFERENCE SPECIFICATION: SECTION 04 20 00 - CONCRETE UNIT MASONRY.

METAL DECK NOTES:

- METAL DECK SHALL BE FABRICATED, DETAILED, AND ERECTED IN ACCORDANCE WITH THE "STEEL DECK INSTITUTE (SDI) SPECIFICATIONS."
- METAL DECK SECTION PROPERTIES SHALL BE COMPUTED IN ACCORDANCE WITH AISI "SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS". METAL DECKING SHALL BE FABRICATED FROM STEEL TYPE ASTM A653, STRUCTURAL QUALITY, HAVING A MINIMUM YIELD STRENGTH OF 33 KSI.
- GALVANIZING SHALL CONFORM TO ASTM A653 WITH MINIMUM COATING CLASS OF G60.
- PROVIDE ENGINEERED AND CHECKED SHOP DRAWINGS INDICATING LOCATION, GAGE AND SIZE OF EACH PIECE OF DECKING AND RELATED DECKING ACCESSORY. THE SHOP DRAWINGS SHALL CLEARLY SHOW WELDING DETAILS TO STRUCTURAL FRAMING, SIDE LAP CONNECTION DETAILS, DECK OPENINGS, EDGE CLOSURES, AND ANY REQUIRED SUPPLEMENTARY DECK REINFORCING.
- UNLESS NOTED OTHERWISE, DECK SHALL BE 3" DEEP COMPOSITE METAL DECK, MINIMUM 18 GAGE, SHAPED TO PROVIDE INTERLOCK BETWEEN CONCRETE AND DECK. DECK AND BEAM CONSTRUCTION SHALL BE UNSHORED WITH AN ALLOWANCE OF 5 PSF (1/2" FOR LW) FOR CONCRETE PONDING INCLUDED IN THE DESIGN OF COMPOSITE BEAMS AND GIRDERS.
- STEEL ROOF DECK SHALL BE 1 1/2" DEEP WITH MINIMUM 18 GAGE, TYPE AS INDICATED ON PLANS.
- THE METAL DECK SHALL BE DESIGNED TO BE CONTINUOUS OVER THREE (3) SPANS IN THE DIRECTION INDICATED. SINGLE AND DOUBLE SPANS, IF REQUIRED, SHALL SATISFY LOAD AND DEFLECTION REQUIREMENTS.
- ALL DECKING SHALL BE WELDED TO STRUCTURAL STEEL BY QUALIFIED WELDERS USING PRE-QUALIFIED PROCEDURES.
- METAL DECKING SHALL BE WELDED AT 12 INCHES MAXIMUM ON CENTER OR (AS REQUIRED BY SPECIFICATIONS) TO THE SUPPORTING STEEL, WITH 3/4 INCH DIAMETER PUDDLE WELDS. SIDE LAPS SHALL BE FASTENED BY WELDING OR WITH #10 TEK SCREWS AT 18 INCHES MAXIMUM ON CENTER.
- PROVIDE CONTINUOUS SHEET METAL CLOSURES AT SLAB OPENINGS AND SLAB EDGES AND CONTINUOUS DECK CLOSURE AT DECK ENDS. MINIMUM CLOSURE GAGE SHALL COMPLY WITH STEEL DECK INSTITUTE RECOMMENDATIONS FOR THE SLAB DEPTH AND OVERHANG DISTANCE.
- PROVIDE, AS REQUIRED, RIDGE AND VALLEY PLATES, COLUMN CLOSURES, CANT STRIPS, SUMP PLATES AT PIPING PENETRATIONS AND RECESSED SUMP PANS AT ROOF DRAINS. PROVIDE SUPPLEMENTAL FRAMING AT OPENINGS AS REQUIRED FOR SUPPORT OF THE METAL DECK. OPENINGS SHALL BE COORDINATED WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.
- ANY METAL DECK OPENING THAT IS 12 INCH DIAMETER OR LARGER OR ANY GROUP OF OPENINGS THAT PENETRATE MORE THAN ONE METAL DECK RIB SHALL BE FRAMED WITH SUPPLEMENTAL STEEL FRAMING AS INDICATED ON THE DRAWINGS.
- ALL HANGERS FOR HIGH PRESSURE DUCTWORK, CONDUIT RACKS, PIPES LARGER THAN 4" DIAMETER, ETC. SHALL BE HUNG DIRECTLY FROM STRUCTURAL STEEL FRAMING OR SUPPLEMENTAL MEMBERS ACCEPTABLE TO THE ARCHITECT.
- A 50 LB. MAXIMUM CONCENTRATED LOAD MAY BE HUNG DIRECTLY FROM THE COMPOSITE DECK PROVIDED NO OTHER DECK SUPPORTED HANGER IS WITHIN A 30" RADIUS. THIS NOTE SUPERSEDES ANY SIMILAR NOTES ON THE MEP/FP DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING AN APPROPRIATE ANCHORING SYSTEM.
- NO LOADS SHALL BE PERMITTED TO BE HUNG DIRECTLY FROM METAL ROOF DECK OR FIRM DECK.
- THE ASSUMED CONSTRUCTION LIVE LOAD IS 20 PSF. CONTRACTOR SHALL TAKE ALL MEASURES NECESSARY TO ENSURE TEMPORARY CONSTRUCTION LOADINGS DO NOT EXCEED ALLOWABLE LOADING FOR THE TYPE AND GAGE OF DECK.
- REFERENCE SPECIFICATION: SECTION 05 31 00 - STEEL DECKING.



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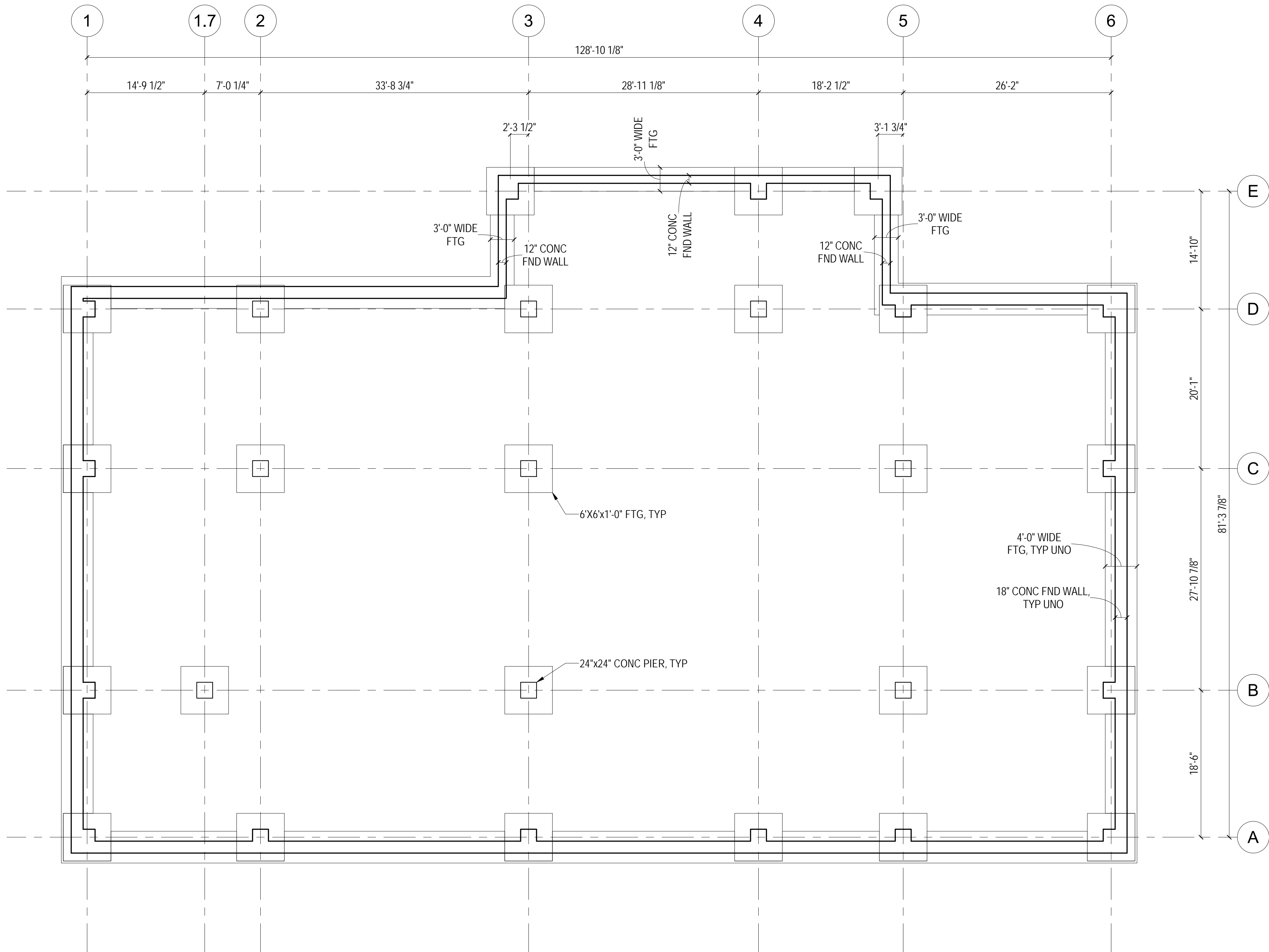
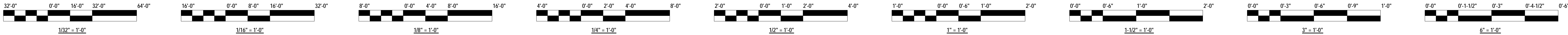
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1 FOUNDATION PLAN
SCALE: 1/8" = 1'-0"



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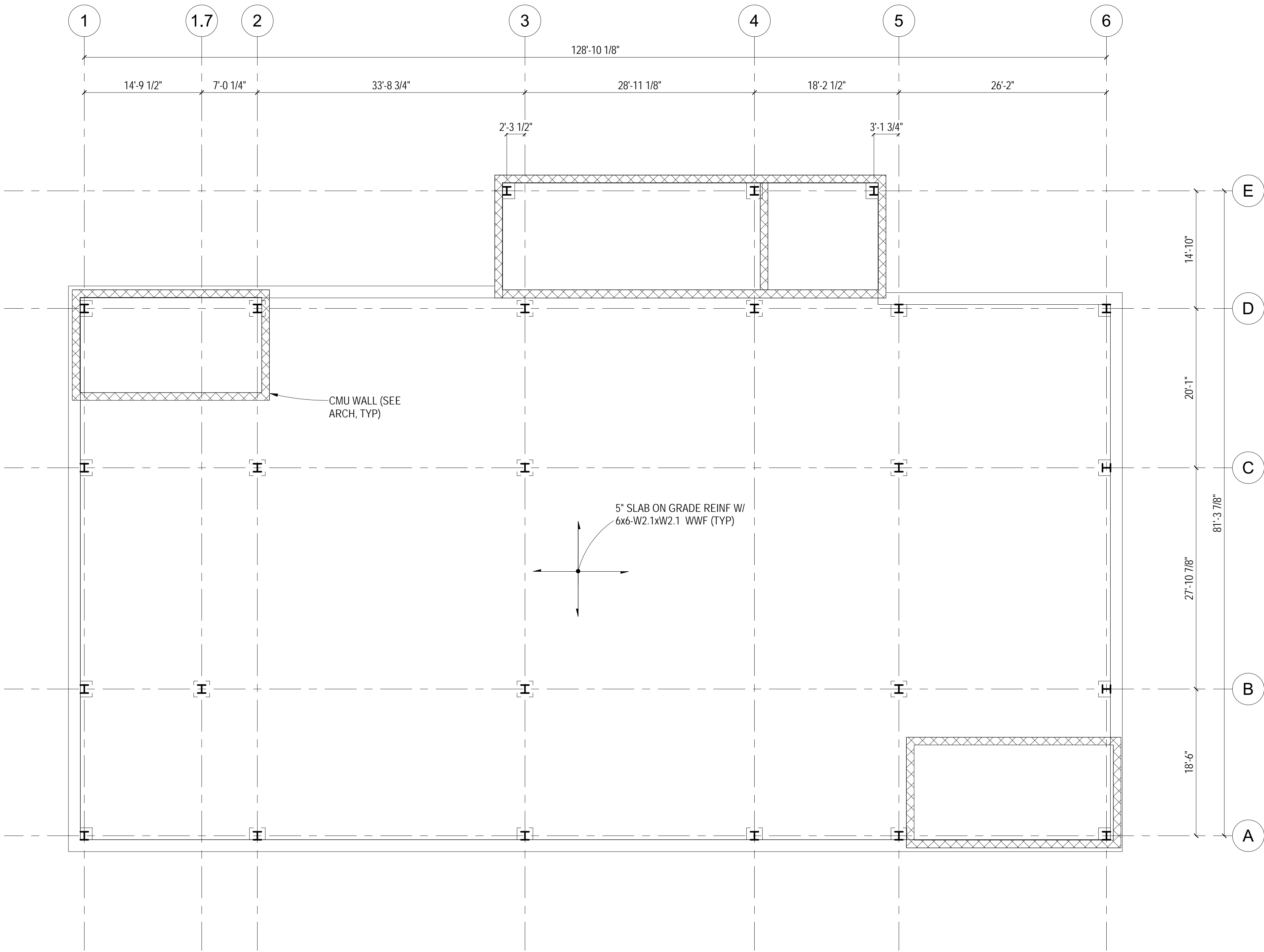
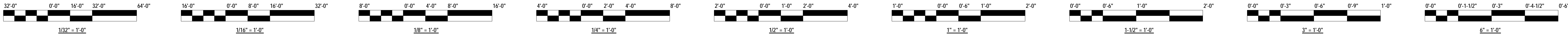
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PBC Project Name: POE ELEMENTARY
PBC Contract No:
PBC Project No.:
FGM Project No.:

Title
FOUNDATION PLAN



1 FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"



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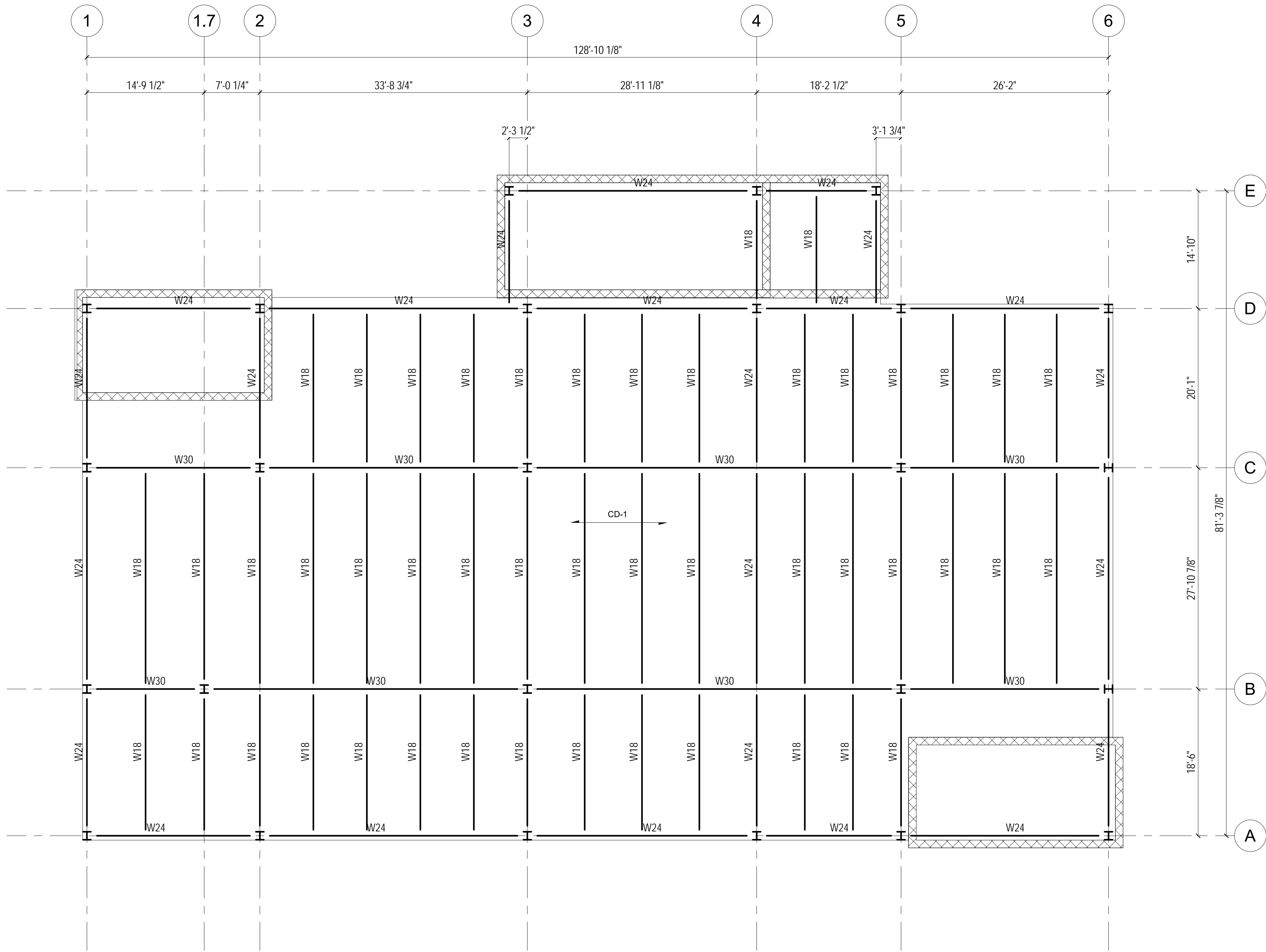
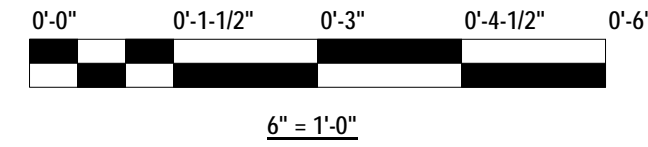
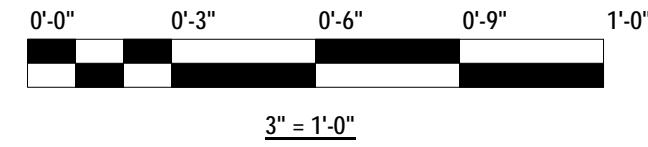
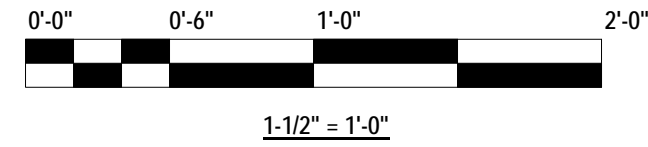
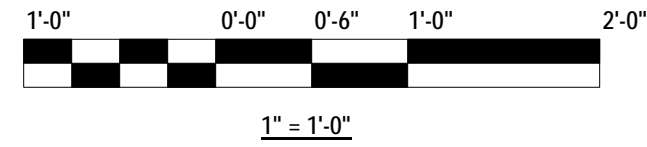
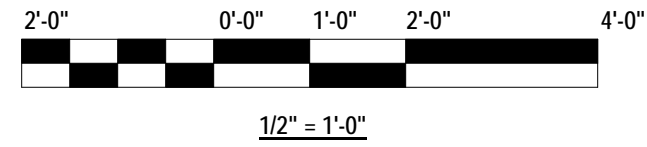
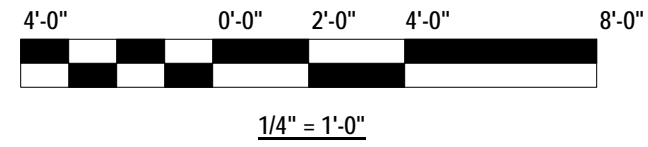
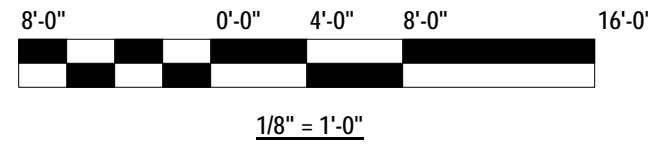
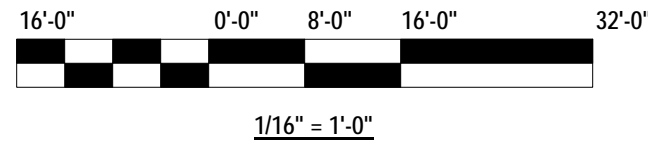
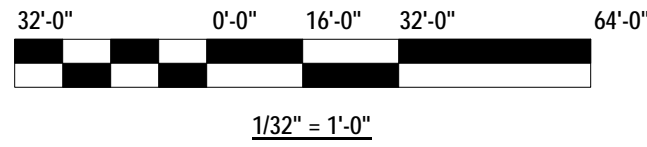
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PBC Project Name: POE ELEMENTARY
PBC Contract No:
PBC Project No.:
FGM Project No.:

Title
FIRST FLOOR PLAN



1 SECOND FLOOR FRAMING PLAN
SCALE: 1/8" = 1'-0"

NOTES:
1. CD-1: 2" 18 GAGE COMPOSITE DECK + 4 1/2" NORMAL WEIGHT CONCRETE (6 1/2" TOTAL THICKNESS) WITH WWF 6x6 - W21xW21 AND #4 x 6'-0" TOP BARS @ 12" OC OVER BEAMS AND GIRDERS. PROVIDE #4@18" OC BOTTOM DISTRIBUTION BARS PLACED PERPENDICULAR TO DECK FLUTES.



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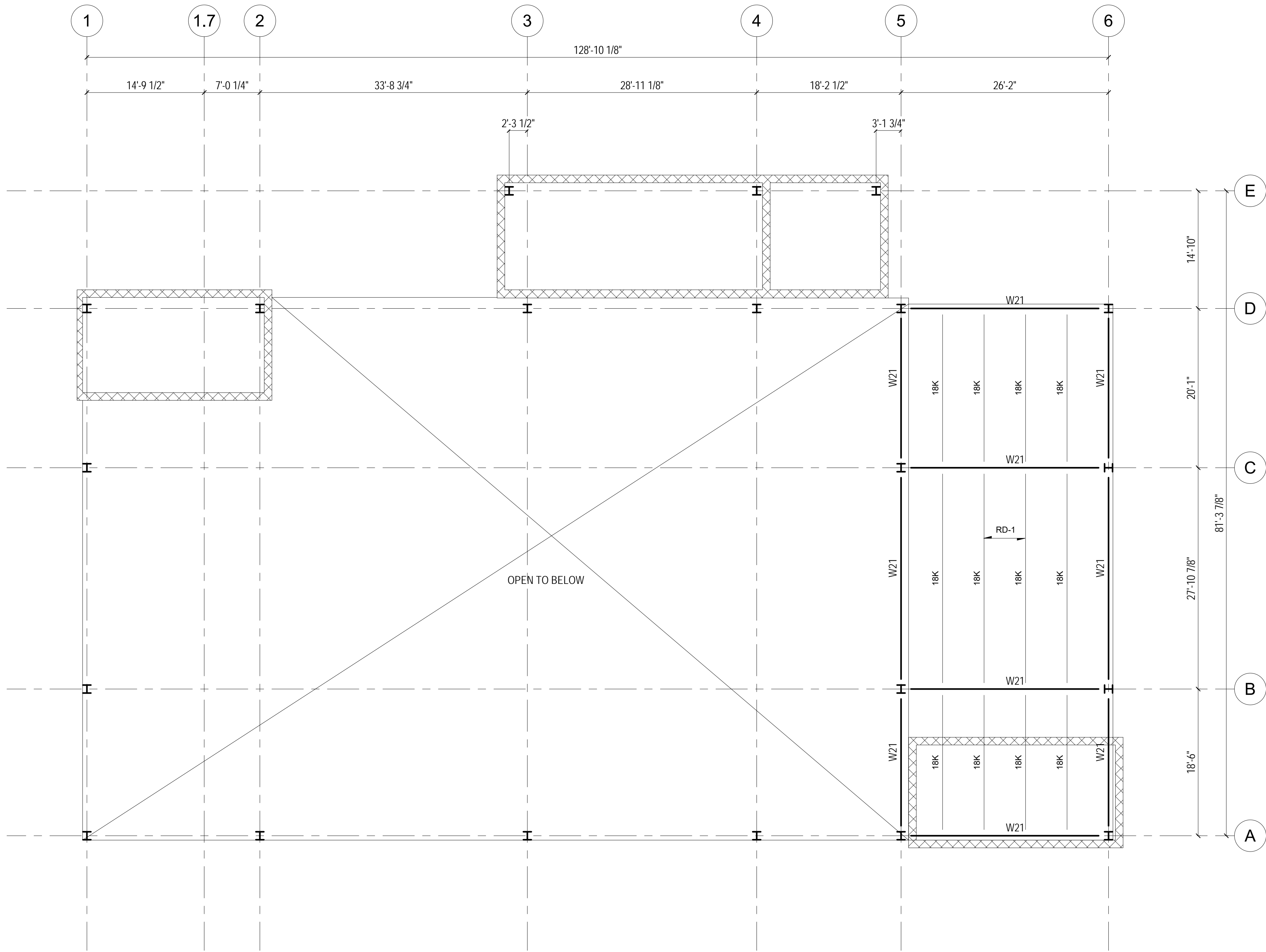
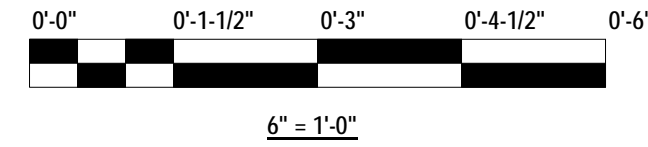
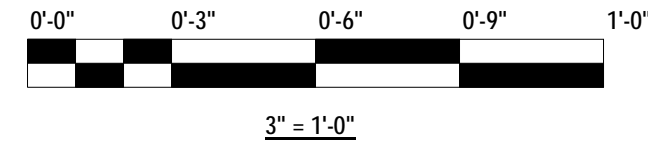
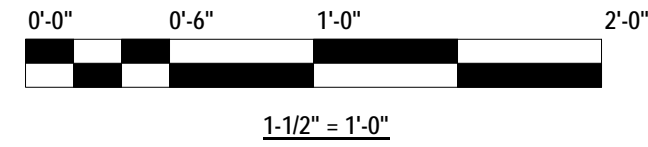
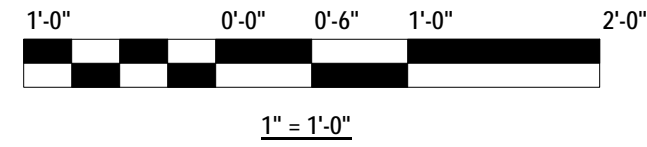
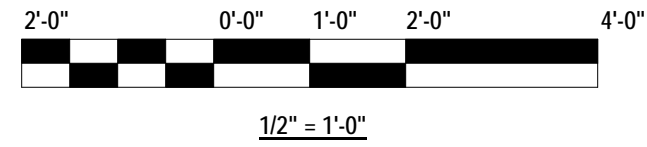
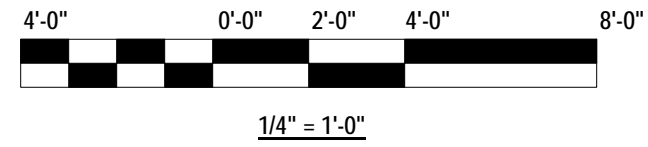
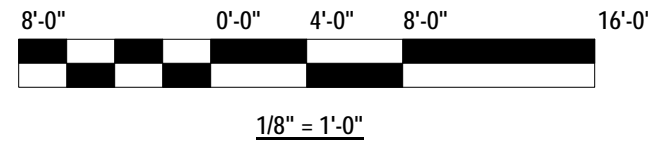
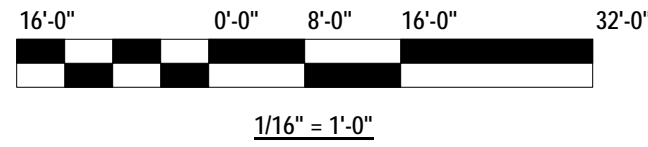
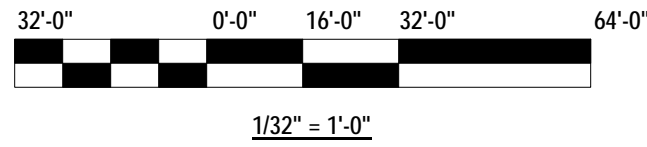
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Mark	Description	Date
60%	SD	11.02.18

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PBC Project Name: POE ELEMENTARY
PBC Contract No.:
PBC Project No.:
FGM Project No.:

Title
SECOND FLOOR FRAMING PLAN



1 LOWER ROOF FRAMING PLAN
SCALE: 1/8" = 1'-0"

- NOTES:
1. *RD-1*: 1 1/2" 18 GAGE METAL ROOF DECK.



POE ELEMENTARY ANNEX & RENOVATIONS
10538 S LANGLEY AVE
CHICAGO, IL 60628
CHICAGO PUBLIC SCHOOLS
CITY OF CHICAGO, MAYOR RAHM EMANUEL

Design Architect:
FGM Architects
ADDRESS: 200 WEST JACKSON ST., SUITE 1040
CHICAGO, IL 60606
PHONE: 312.948.8461
FAX: 312.948.8462
WEB: www.FGMarchitects.com

TERRA ENGINEERING LTD.
225 W. Ohio St., 4th Floor
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Civil
RUBINOS & MESIA ENGINEERS
200 S Michigan Ave., Suite 1500
Chicago, IL 60604
Structural

dbHMS
6303 W. Erie St., Suite 510
Chicago, IL 60654
MEP

EDGE ASSOCIATES
150 Houston St., Suite 304
Batavia, IL 60510
Food Consultant

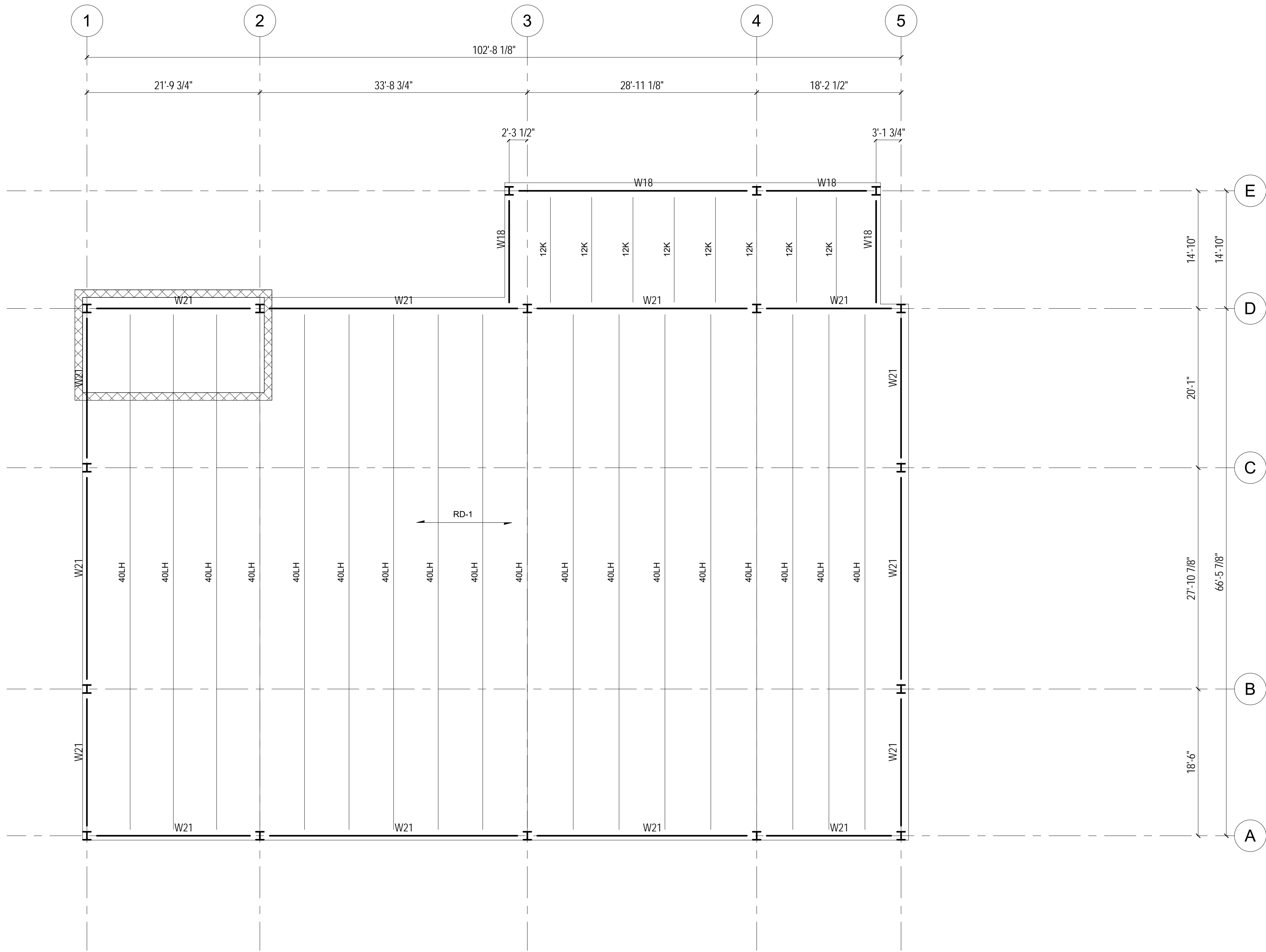
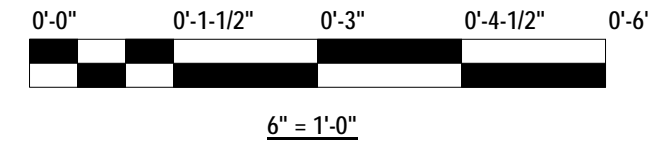
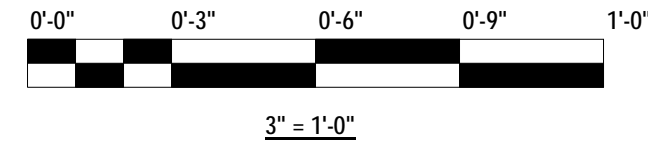
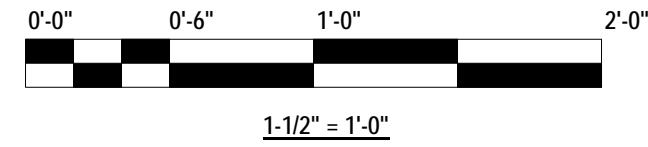
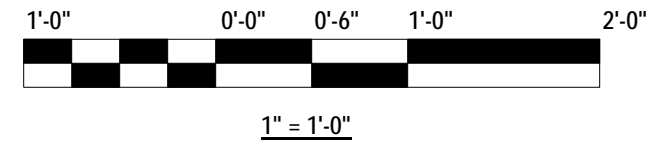
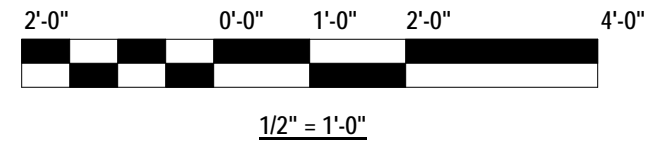
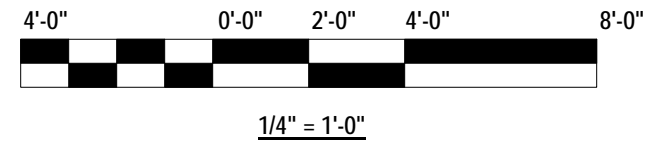
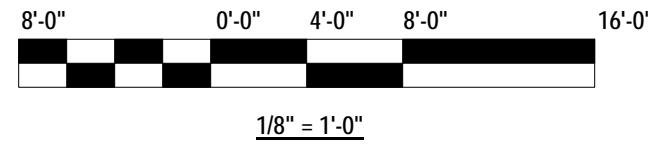
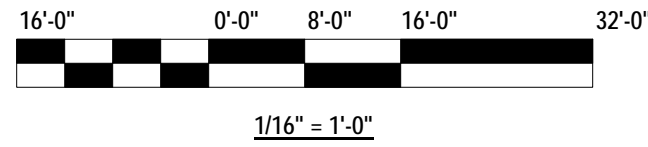
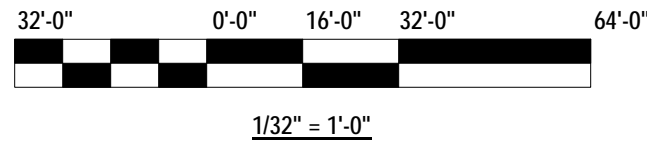
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Mark	Description	Date
60%	SD	11.02.18

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PBC Project Name: POE ELEMENTARY
PBC Contract No:
PBC Project No.:
FGM Project No.:

Title
LOWER ROOF FRAMING PLAN



1 GYM ROOF
SCALE: 1/8" = 1'-0"

- NOTES:
1. *RD-1*: 1 1/2" 18 GAGE METAL ROOF DECK.
 2. EXISTING BUILDING ROOF STRUCTURE TO BE ANALYZED FOR NEW SNOW DRIFT FROM NEW ANNEX. STRUCTURE TO BE REINFORCED AS REQUIRED.



POE ELEMENTARY ANNEX & RENOVATIONS
10538 S LANGLEY AVE
CHICAGO, IL 60628
CHICAGO PUBLIC SCHOOLS
CITY OF CHICAGO, MAYOR RAHM EMANUEL

Design Architect:
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ADDRESS: 200 WEST JACKSON ST., SUITE 1040
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MEP

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150 Houston St., Suite 304
Batavia, IL 60510
Food Consultant

Issuance		
Mark	Description	Date
	60% SD	11.02.18

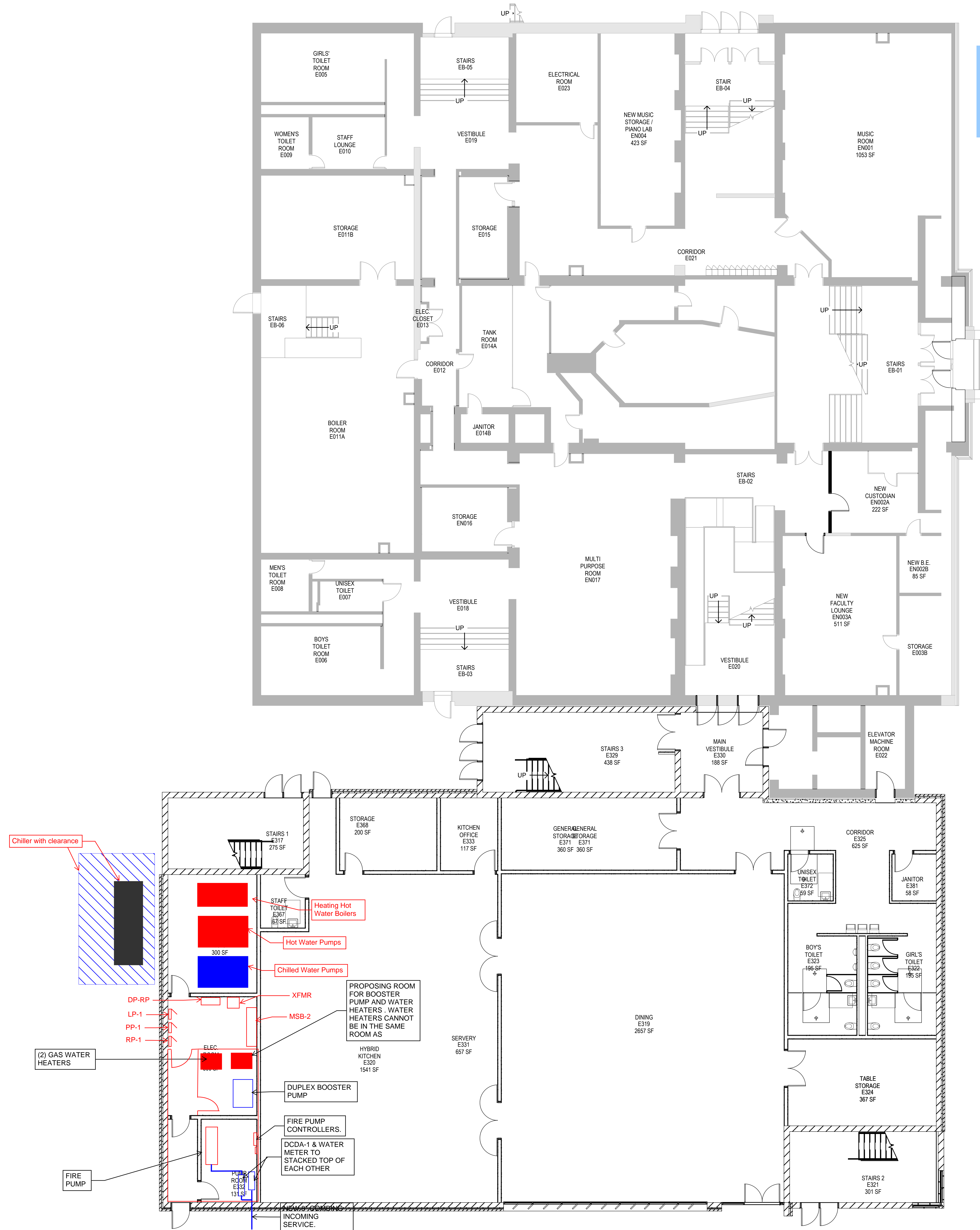
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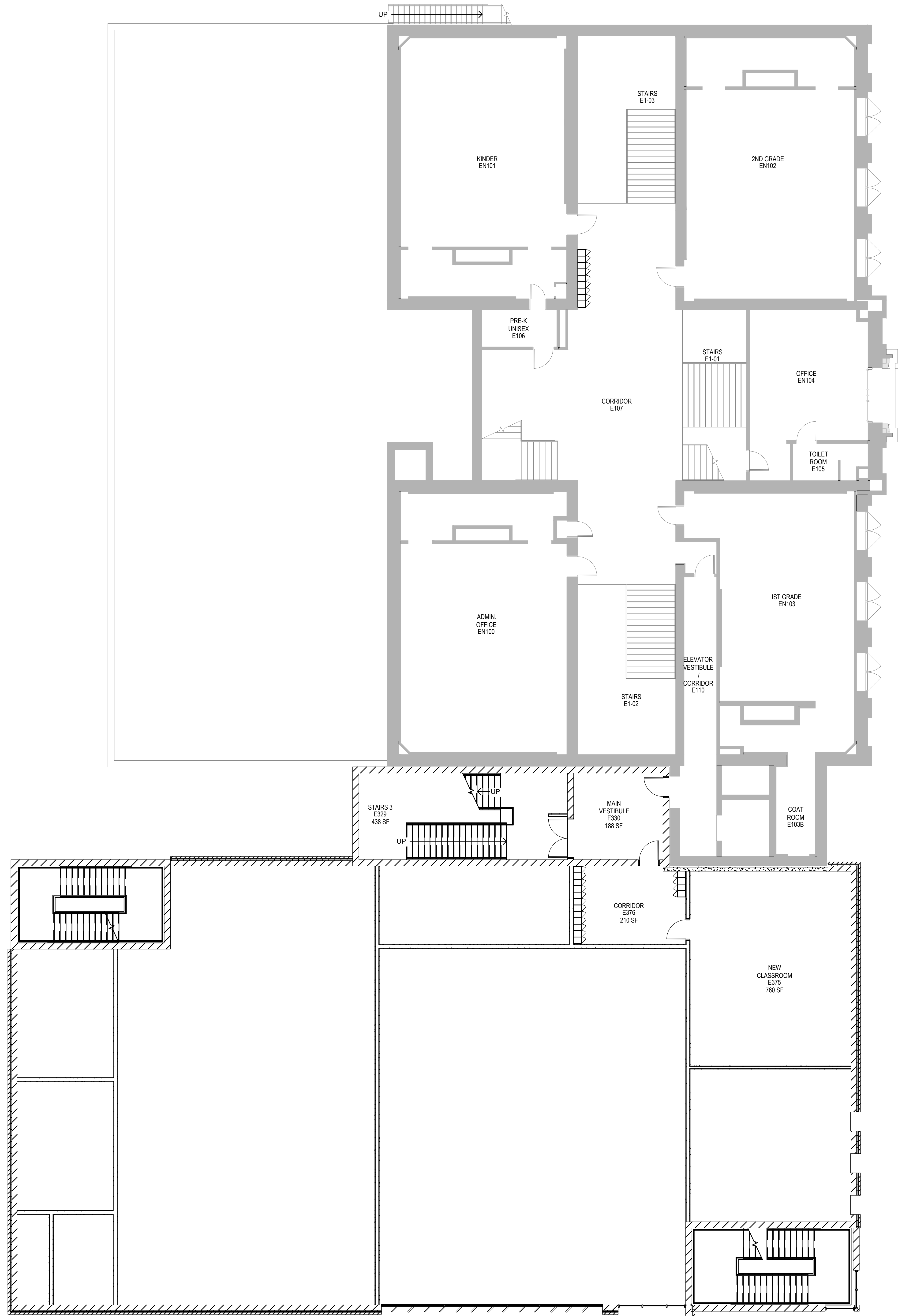
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PBC Contract No:
PBC Project No.:
FGM Project No.:

Title
GYM ROOF
FRAMING PLAN

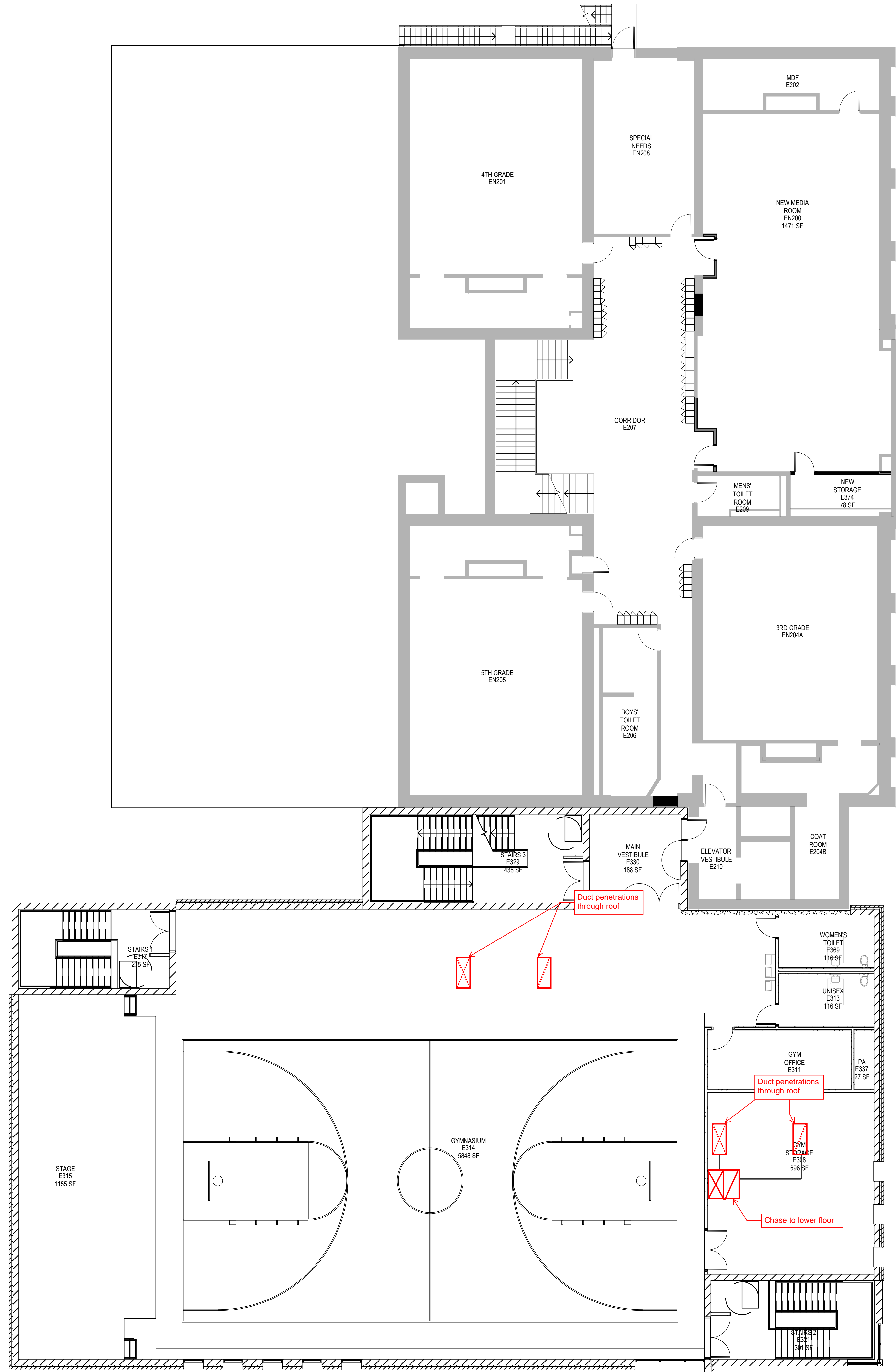
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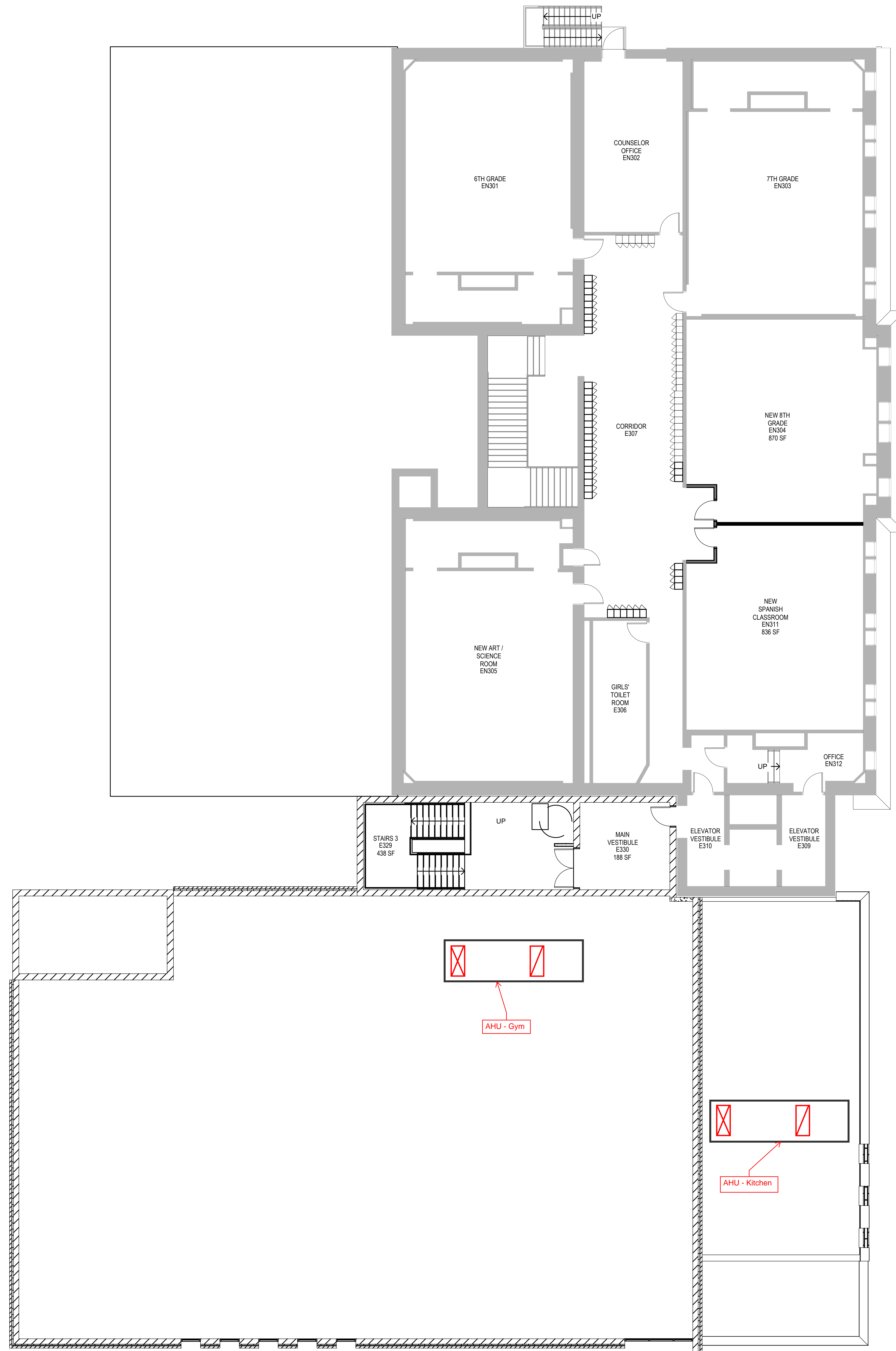
MEZZANIE



2ND Floor



ROOF



ROOFING SURVEY AND EVALUATION

AT

POE ELEMENTARY SCHOOL

10538 S. LANGLEY AVENUE

CHICAGO, IL

IRCA JOB NO. 18230

ILLINOIS ROOF CONSULTING ASSOCIATES, INC.

4302-G CRYSTAL LAKE ROAD

MCHENRY, IL 60050

(815) 385-6560

FAX 385-3581

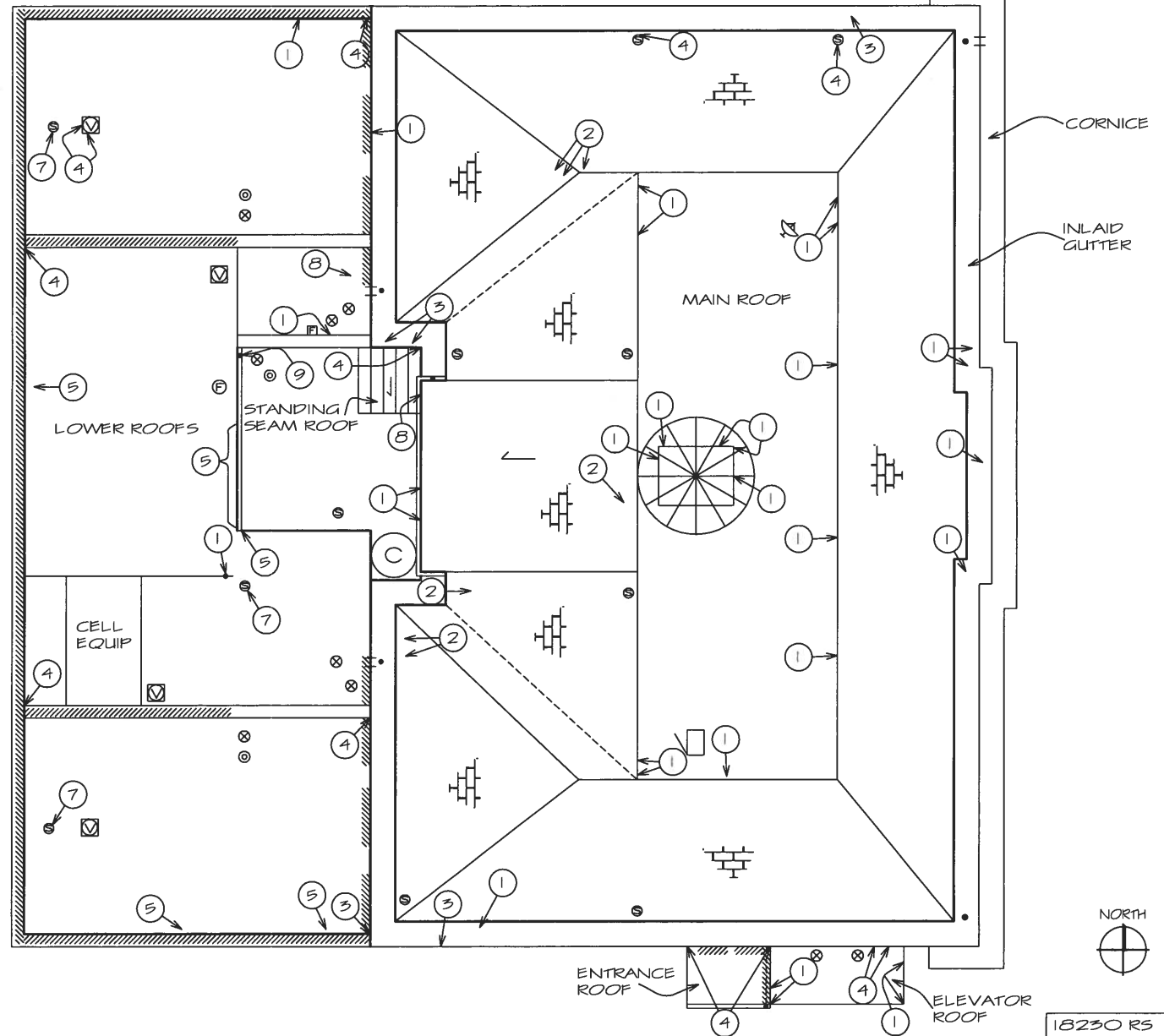
OCTOBER 31, 2018

(1) INDICATES SCOPE OF
WORK ITEM NUMBER

////// LOW FLASHING

LEGEND

- ++ SCUPPER
- ⊗ DRAIN
- ⊙ OVERFLOW DRAIN
- ⊗ VENT
- ⊞ FLUE STACK
- ⊙ SOIL STACK
- ⊗ SATELLITE DISH
- ⊙ CHIMNEY
- ⊞ HATCH
- EXPANSION JOINT
- == GUTTER
- == DOWNSPOUT



IRCA

PROJECT: POE ELEMENTARY SCHOOL
10538 S. LANGLEY AVENUE
CHICAGO, ILLINOIS

PROJECT #:
18230

DATE:
10/18

DRAWING TITLE:
ROOF SKETCH

SCALE: 1" = 20'-0"
0 5' 10' 20'

DETAIL #:
RS - 1

SCOPE OF WORK

Poe Elementary Chicago, IL

Roof Repairs to be performed only to stop leaks:

1. Install roof cement and fabric mesh repair. Install modified bitumen repairs on Elevator and Entrance roofs.
2. Install new shingle tab and seal down with roof cement.
3. Cut blister, allow to dry, install modified bitumen repair.
4. Install sealant.
5. Install roof cement.

Roof Repairs to be performed regardless of replacement date:

6. Remove all debris from all roof areas.
7. Rod out soil stack to catch basin (Allow for 3 locations).
8. Repair or replace screen (Allow for 2 locations)
9. Install splash block on roof pad (Allow for 1 location).

Roof Replacements:

Low-slope areas:

- Demolish roof system and sheet metal accessories in their entireties, down to the structural roof deck.
- Perform roof deck repairs on a Unit Price basis.
- Install one layer of red rosin paper (wood deck areas only).
- Mechanically fasten a 5/8" gypsum substrate board (wood and metal deck areas only).
- Install a temporary roof/vapor barrier, fully adhered.
- Perform masonry repairs throughout the school.
- Repair/replace cornice.
- Address low flashing height areas.
- Replace roof hatch.
- Install two layers of 2.6" polyisocyanurate, fully adhered.
- Install a 0.5" gypsum coverboard, fully adhered.
- Install a modified bitumen base sheet, fully adhered.
- Install a Fire-Rated, Energy Code compliant modified bitumen cap sheet, fully adhered.
- Install all-new flashings and sheet metal accessories.

Shingle Area Replacement:

- Demolish shingles, sheet metal accessories, inlaid gutters, and underlayment in their entirety down to the structural deck.
- Repair structural deck on a Unit Price basis, as required.
- Install new ice and water shield and underlayment.
- Install new copper inlaid gutter system.
- Install all new roof drains with positive attachment to the interior plumbing lines.
- Install new heavyweight architectural laminate shingle system.
- Install new sheet metal accessories.



Certified Consultants and Specifiers

Roof Condition Evaluations

Moisture Testing

Quality Compliance Inspection
during roof construction

October 31, 2018

Mr. Gabriel Alvarez
Chicago Public Schools
42 W. Madison Street
Chicago, IL 60602

RE: Poe Elementary

Dear Mr. Alvarez,

Illinois Roof Consulting Associates, Inc. (IRCA) was authorized to conduct a non-destructive moisture survey and visual inspection of roofing at the referenced location. Our survey and examination were conducted on October 24, 2018.

Having completed the laboratory testing and data analysis necessary to ensure accurate evaluation, we submit the enclosed report of our detailed findings and recommendations. To summarize our conclusions, we have found that the physical condition of the visible materials is unsatisfactory and that latent moisture is not a significant problem on the roofing we examined. Therefore, we advise that total roof replacement would be the most appropriate course of action at this time. The only exception to this is the Elevator and Entrance roofs which are in fair condition. A thorough explanation of our conclusions and relevant budget figures are contained in the report.



Should you have any questions regarding our findings or recommendations, please call me. We are looking forward to a continuing association with you and the Chicago Public Schools.

Sincerely,

ILLINOIS ROOF CONSULTING ASSOCIATES, INC.


James C. Gruebnaue, RRC
Project Manager

JCG/jr
18230.mst.sur


Robert Heideman
Project Coordinator 

Illinois Roof Consulting Assoc., Inc.
4302-G Crystal Lake Road
McHenry, Illinois 60050
(815) 385-6560
FAX (815) 385-3581
www.irca.com

cc: Ms. Jennie Miller

Attachments

TABLE OF CONTENTS

Section 1.	Introduction
Section 2.	Roof Sketch and Visual Inspection Report
Section 3.	Analysis of Roof Moisture Survey Data and Roof Moisture Plan
Section 4.	Discussions
Section 5.	Recommendations <ul style="list-style-type: none">• Summary• Conclusions• Budget Projections
Section 6.	Exhibits <ul style="list-style-type: none">A. Roof Contour MapB. Moisture Level Distribution ChartsC. Readings Recorded By Roof GaugeD. Core Data ReportE. GlossaryF. Photograph Key and Photographs

INTRODUCTION

Project Identification and Historical Data

The roofing subject to inspection and evaluation under this report is identified as "Poe Elementary". It is also labeled "Main Roof, Lower Roofs, and Shingles" on the enclosed Roof Sketch.

The field work was conducted on October 24, 2018. During moisture surveying, the average temperature was 48 degrees Fahrenheit and the approximate relative humidity was 15 percent.

Purpose of Survey

Our goal in conducting this work has essentially been threefold:

- To establish the location and degree of moisture within the subject roofing components.
- To determine the physical conditions of roofing components and evaluate their effect on roof life.
- To recommend the most cost effective manner to address the conditions revealed by the inspection and survey.

In order to best fulfill the project's needs, it was decided that a thorough visual inspection and a non-destructive radioisotopic moisture survey would be conducted. Observations noted about the physical conditions of roofing and roof related materials are contained in Section 2 of this report. Survey information is presented in Section 3.

Moisture Detection Method

The testing device which IRCA uses in radioisotopic surveys is the Troxler Model 3216 Roof Moisture Gauge. Gauge operators complete State and manufacturer approved training and must be certified. IRCA is permitted to use and maintain its gauges by the State of Illinois under license number IL-01713-01.

Essentially, each gauge houses a small, capsulated radioisotopic source and a frequency counter. As a source emits neutrons and they react with molecules containing hydrogen in the roofing materials, backscatter particles are recorded on the gauge's counter. The greater the number of molecules with hydrogen in the roofing, the higher the gauge's readings would be. Of the hydrogen containing molecules which may occur in roof assemblies, backscatter is strongest from assembly components which have absorbed water.

The steps used to conduct the fieldwork were straightforward. First, we established the building's orientation. For purposes of this survey, the side of the building which runs along E. 105th Place was designated as facing North. Second, because all survey measurements are relative to a starting spot, we selected a reference point. The building's shape and proportions led us to choose multiple reference points.

From the reference point, a grid with ten foot square sections was laid out on the roof surface. Grid intersections were marked on the roof with paint.

In this report, a specific location on the roof may be identified by "X/Y coordinates". This describes a position relating to the survey's reference point ($X=0/Y=0$). On the Roof Contour Map, the reference point is in the upper left hand corner. The X axis is the scale that runs from left to right across the top of the map. The Y axis is the scale down the left side of the map. Therefore, a position identified as $X=90/Y=120$ could be found by locating the point which is 90 feet to the right of the RP and 120 feet down from the top of the map.

Our next step was to take a moisture reading with the gauge at each of the marked grid intersections. We recorded 103 primary readings. In addition, secondary readings were taken where hydrogen in forms other than water may have been suspected and where operators attempted to trace reported roof leaks to their sources.

The final step in this portion of the survey was to collect two (2) roof system samples. Locations for samples or core cuts were selected on the basis of varying moisture levels and construction materials. Once removed, the cores were labeled, sealed in airtight containers and transported to our laboratory for analysis. Each core cut hole was immediately refilled and patched with compatible roofing materials.

Data Quantification

When the core cuts arrived at our laboratory, a technician logged them and recorded their weights. They were placed in a drying chamber for at least 5 hours at 220 degrees Fahrenheit. The dried samples were reweighed and their moisture contents by weight were calculated (see Exhibit D). An essential part of our analysis involves correlating the samples' moisture contents with the gauge readings collected in the field. This procedure is discussed in Section 3 of this report.

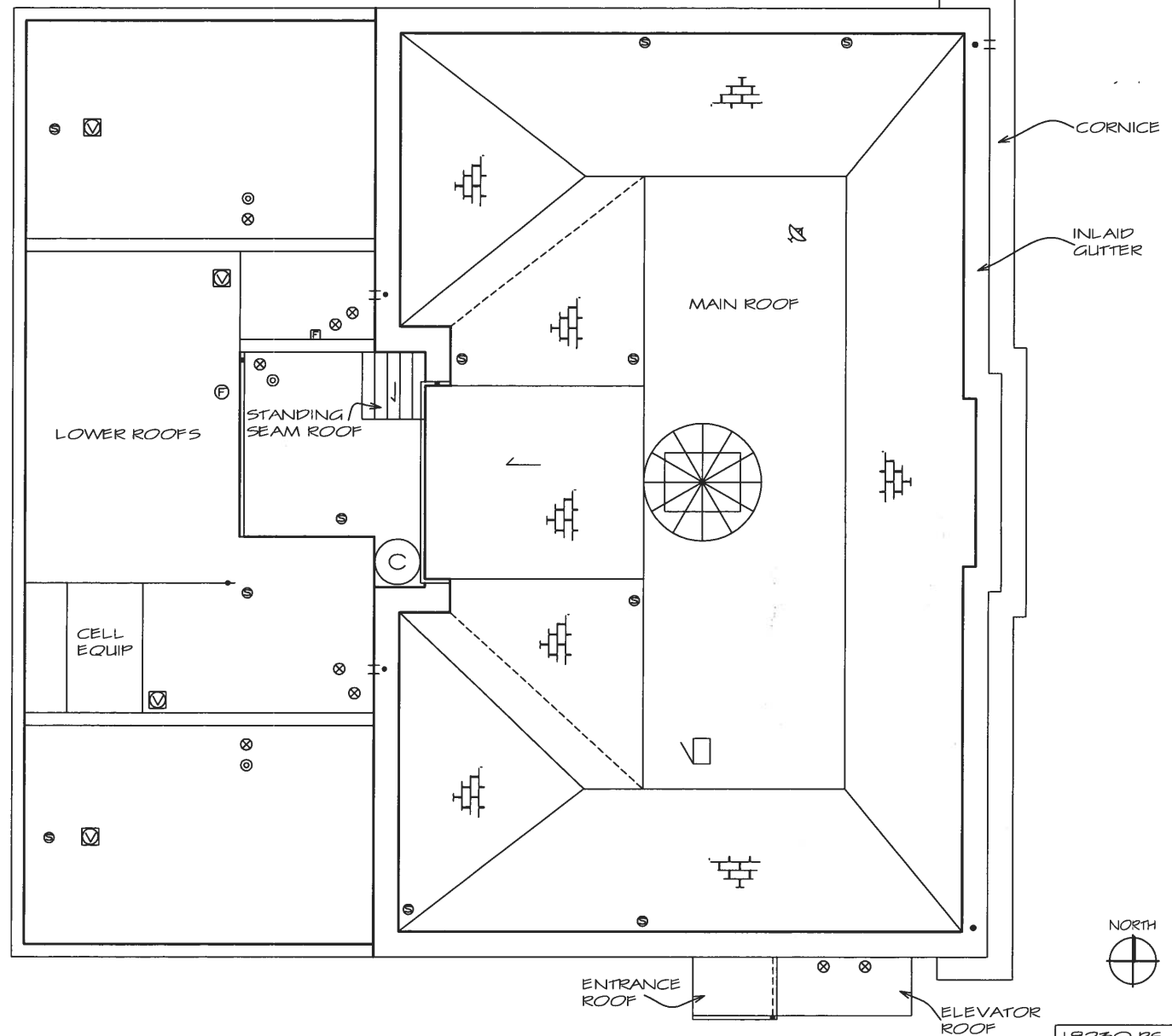
Reports and Files

This bound report with enclosures is the final product of our work on this project. It is our practice to retain a copy of this report, the survey's field data plan and digital photographs taken on site for a period of seven years. Core samples are not saved.

Non-destructive roof moisture testing (NDT) methods were developed in response to facility operators who needed to know the likely extent of latent moisture in their roofs. Previous to NDT, random core sampling was the only method available. Though not perfect, non-destructive radioisotopic and infrared testing are the most reliable ways to cost-effectively detect conditions associated with latent roof moisture.

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LEGEND	
	SCUPPER
	DRAIN
	OVERFLOW DRAIN
	VENT
	FLUE STACK
	SOIL STACK
	SATELLITE DISH
	CHIMNEY
	HATCH
	EXPANSION JOINT
	GUTTER
	DOWNSPOUT



IRCA

PROJECT: POE ELEMENTARY SCHOOL 10538 S. LANGLEY AVENUE CHICAGO, ILLINOIS	
PROJECT #: 18230	DATE: 10/18

DRAWING TITLE: ROOF SKETCH	
SCALE: 1" = 20'-0" 0 5' 10' 20'	DETAIL #: RS - 1

ROOF CONDITION EVALUATION

REPORT #1 OF 3

Roof ID: Main Roof **Area:** 1,752 sq. ft. **Stories:** 4 **Access:** Interior

HISTORICAL INFORMATION

BLDG. AGE: 1905	INSTALLER: Unknown	CURRENT ROOFER: Unknown
ROOF AGE: 1999 (Est)	GUARANTOR: Unknown	ROOFER'S PHONE NO.: Unknown
RECOVER AGE: N/A	GUAR. TERM: Unknown	LAST REPAIRS: Unknown

CONDITION SUMMARY

OVERALL PHYSICAL CONDITION OF SYSTEM: Unsatisfactory	OVERALL PERFORMANCE OF SYSTEM: Unsatisfactory
IMPACT OF ANOMALIES: Minimal	REPORTED LEAKAGE: None

EXISTING ROOF SYSTEM

OBSERVATIONS

EVALUATION

BITUMEN: Asphalt		CONDITION: Marginal
MEMBRANE: Modified bitumen	Granule loss	CONDITION: Marginal-Unsat.
INSULATION: Bottom Layer – ¾” perlite Top Layer – ¾” perlite		
INSULATION ATTACHMENT: Adhered		
VAPOR RETARDER: Yes		
FLASHINGS: Modified bitumen – granule surface	Open laps	CONDITION: Marginal
DRAINAGE: Direction, sloped to edge Saddles – No		CONDITION: Fair
EXISTING LEAKS: None reported		
EXISTING REPAIRS/PATCHES: Minor flashing and seam repairs		
ELEVATOR AND ENTRANCE ROOFS: Modified bitumen	Open seams	CONDITION: Fair

DETAILS – PERIMETER & TERMINATION

OBSERVATIONS

EVALUATION

EDGE DETAIL: Gravel stop Elevation – Flat Fascia height – 5 inches Fascia cleats – Yes		CONDITION: Fair-Marginal CONSTRUCTION: Acceptable
---	--	--

DETAILS – ROOF FIELD	OBSERVATIONS	EVALUATION
----------------------	--------------	------------

BOX CURBS:

Types – Vent, scuttle
Elevation – 4 inches

CONDITION: Fair

CONSTRUCTION: Acceptable

SCUTTLE: Non-standard

Damaged metal

CONDITION: Marginal

CONSTRUCTION: Acceptable

SURFACE MOUNTED SATELLITE DISH:

Base frame – Metal
Ballast – Concrete block
Cover – No

CONDITION: Fair-Marginal

CONSTRUCTION: Inadvisable

GENERAL INFORMATION	OBSERVATIONS	EVALUATION
---------------------	--------------	------------

EXTERIOR BUILDING FACES: Masonry

DECK SUPPORT CONSTRUCTION

Joist – material, Wood

Beams – material, Wood

DECK TYPE: Wood plank

Continued...

ROOF CONDITION EVALUATION REPORT #2 OF 3

Roof ID: Lower Roofs **Area:** 4,855 sq. ft. **Stories:** 1 **Access:** Exterior

HISTORICAL INFORMATION

BLDG. AGE: 1905	INSTALLER: Unknown	CURRENT ROOFER: Unknown
ROOF AGE: 1999 (Est)	GUARANTOR: Unknown	ROOFER'S PHONE NO.: Unknown
RECOVER AGE: N/A	GUAR. TERM: Unknown	LAST REPAIRS: Unknown

CONDITION SUMMARY

OVERALL PHYSICAL CONDITION OF SYSTEM: Unsatisfactory	OVERALL PERFORMANCE OF SYSTEM: Unsatisfactory
IMPACT OF ANOMALIES: Substantial	REPORTED LEAKAGE: None

EXISTING ROOF SYSTEM

OBSERVATIONS

EVALUATION

SURFACE: Gravel – size, 5/8"		ADHESION: Marginal CONDITION: Marginal
BITUMEN: Coal tar		CONDITION: Marginal
MEMBRANE: Organic	Base sheet plus 4 plies, exposed felts	CONDITION: Unsatisfactory
INSULATION: Bottom Layer – 1" polyisocyanurate Middle Layer – 1" polyisocyanurate Top Layer – ½" perlite		
INSULATION ATTACHMENT: Adhered		
VAPOR RETARDER: Yes		
FLASHINGS: Modified bitumen – smooth surface	Open laps	CONDITION: Marginal
DRAINAGE: Direction, sloped to drain		CONDITION: Fair
DRAINS: 10 internal drains		CONDITION: Fair
GUTTERS: Flanged Stripping: Felts	Deteriorated felts, missing splash block	CONDITION: Marginal
OVERFLOW DRAINS: Internal	Missing strainers	CONDITION: Fair CONSTRUCTION: Acceptable
EXISTING LEAKS: None reported		
EXISTING REPAIRS/PATCHES: Flashing repairs		

DETAILS – PERIMETER & TERMINATION	OBSERVATIONS	EVALUATION
-----------------------------------	--------------	------------

INTERIOR PARAPET WALLS:

Construction – Masonry

Deteriorated masonry

CONDITION: Marginal

Coping – Metal, tile

CONDITION: Fair

CONSTRUCTION: Acceptable

Flashing termination –

Counterflashing – type, raggle-mounted

CONDITION: Fair-Marginal

CONSTRUCTION: Acceptable

DETAILS – ROOF FIELD	OBSERVATIONS	EVALUATION
----------------------	--------------	------------

BOX CURBS:

Types – Vent, flue

Elevation – 6+ inches

Open sealant

CONDITION: Fair

CONSTRUCTION: Acceptable

SOIL STACKS:

Material – Iron

Flashings – Lead

Clogged stacks

CONDITION: Fair-Marginal

CONSTRUCTION: Acceptable

FLUE STACKS:

Material – Steel

Flashings – Metal

Storm collars – Yes

Sealant – Caulk

CONDITION: Fair

CONSTRUCTION: Acceptable

PIPE PENETRATIONS:

Direct pipes – I-beam support

Improper seal at roof

CONDITION: Fair-Marginal

CONSTRUCTION: Inadvisable

DETAILS – MECHANICAL	OBSERVATIONS	EVALUATION
----------------------	--------------	------------

POWERED VENTILATORS:

Type – Motor in-board

CONDITION: Fair-Marginal

CONSTRUCTION: Acceptable

GENERAL INFORMATION	OBSERVATIONS	EVALUATION
---------------------	--------------	------------

EXTERIOR BUILDING FACES: Masonry

DECK SUPPORT CONSTRUCTION

Joist – material, Wood

Beams – material, Wood

DECK TYPE: Wood plank

Continued...

Illinois Roof Consulting Associates, Inc. 4302-G Crystal Lake Road McHenry, IL 60050 (815) 385-6560 (Fax) 385-3581	PROJECT: Poe Elementary School			JOB NO.: 18230
	ROOF AREA: 5,939 square feet	ROOF AGE: ≈2000	BLDG TYPE: School	ROOF SLOPE: 6 / 12

CONDITION SUMMARY

OVERALL PHYSICAL CONDITION OF SYSTEM: Marginal
 REPLACEMENT YEAR: 2019

OVERALL APPEARANCE: Marginal

SYSTEM/DETAILS:

Shingles: Fiberglass 3-tab
 Color: Brown
 Attachment: Nailed
 Underlayment: Felt

Missing tabs

MATERIALS: Marginal
 WORKMANSHIP: Fair
 CONSTRUCTION: Acceptable
 GRANULE ADHESION: Fair

Ridges: Shingled, not vented

MATERIALS: Fair
 WORKMANSHIP: Fair
 CONSTRUCTION: Acceptable

Valleys: Closed cut

Sealant repairs

MATERIALS: Marginal
 WORKMANSHIP: Fair
 CONSTRUCTION: Acceptable

Flashings: Baby tins at walls

MATERIALS: Fair
 WORKMANSHIP: Fair
 CONSTRUCTION: Acceptable

Drip edge: Deck nailed metal edge

MATERIALS: Fair
 WORKMANSHIP: Fair
 CONSTRUCTION: Acceptable

Rake edge: Metal edge

MATERIALS: Fair
 WORKMANSHIP: Fair
 CONSTRUCTION: Acceptable

Venting: Upper field vent only

MATERIALS: Fair
 WORKMANSHIP: Fair
 CONSTRUCTION: Acceptable

Penetrations: 7 soil stacks

Open sealant

MATERIALS: Fair
 WORKMANSHIP:
 CONSTRUCTION: Acceptable

Gutters: Traditional design, inlaid gutter

MATERIALS: Fair-Marginal
 WORKMANSHIP: Fair
 CONSTRUCTION: Acceptable

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SECTION 3.

MOISTURE TESTING

ANALYSIS OF ROOF MOISTURE SURVEY DATA AND ROOF MOISTURE PLAN

Data Compilation

Once all the survey's field data was collected, we submitted the roof's parameters, structures, and roof gauge readings for data processing. Our proprietary moisture program then compiled the data and divided the gauge readings into five groups representing relative moisture levels. The end product of this process is a document titled the Roof Moisture Survey Data or "Data" for short. The Data for this project is enclosed in the Exhibits section of this report. For each surveyed roof of different construction, this document contains three major parts.

The first part is the Roof Contour Map (Exhibit A). This is the computer generated topographic map showing the five relative moisture levels detected under the roof's surface. The areas with the most dark appearing symbols represent the roof areas of highest latent moisture. Areas within the depicted structure which lack uniformly printed symbols represent areas of lowest moisture content.

The second part (Exhibit B) of the Data document consists of two charts plus supporting data. One chart lists the range of gauge readings, the map symbol, the area in square feet and the percent of the total roof area which belongs to each of the five relative moisture levels. The other chart is called a histogram. It depicts the distribution curve of roof gauge readings. The first function of this graph is to indicate the range and frequency of those readings. The second function is to illustrate the relative degree of moisture levels in the roof assembly. The heights of the columns form a curve on the graph. If a curve were to begin high on the left axis and fall dramatically, it would ordinarily indicate a relatively dry roof. The further to the right that the high point of the curve would occur, the wetter the materials would be. A broad scattering of readings and lack of dramatic curve height generally would indicate that a roof has been subject to widespread repairs. The histogram for the Main Roof indicates a dry roof system. The histogram for the Lower Roofs indicates a roof system with isolated wet areas. The final part (Exhibit C) is the record of readings registered by the roof gauge during this survey. These readings along with wall locations and other structural coordinates are the base data used to generate the entire computerized document.

Quantification of Moisture

We know from our laboratory testing that the cores taken at distinct gauge readings contain certain levels of moisture. Our next step was to integrate these specific values with the survey's relative data. The moisture level table in Exhibit B lists the areas of relative roof moisture intrusion. The quantified information generated from the cores establishes the percent of moisture content in each level.

As a result of testing by the National Bureau of Standards (now the National Institute of Standards and Testing), the normal moisture content of many building materials has been established. This standardized value or range of value is called the Equilibrium Moisture Content (EMC) and can be expressed as the percent of water content by weight of the subject material. We know the EMC values of the components of roofing involved in this survey. They are listed in Exhibit D.

As discussed in the next section of this report, moisture contents in excess of normal ranges alter the properties of the materials. The problems caused by excessively wet roofing are dependent upon the role of the component in the system. At this point, it is sufficient to say that a component which contains moisture above its EMC deteriorates at an accelerated rate and typically transmits deleterious moisture to adjacent components. It is important, therefore, that a roof material which contains moisture in excess of its EMC should be considered for timely removal. This can limit its effect on the rest of the roof system and structural deck. With this in mind, we present our survey's finished data.

Main Roof			
Moisture Level	Membrane Moisture*	Insulation Moisture*	Area in Square Feet
1 (low)	1.1 %	1.7 %	759
2	1.1 %	1.7 %	582
3	1.1 %	1.7 %	188
4	1.1 %	1.7 %	41
5 (high)	1.1 %	1.7 %	26
* Expressed in percent of moisture by weight. X Areas under which excess moisture detected.			

Lower, Elevator and Entrance Roofs			
Moisture Level	Membrane Moisture*	Insulation Moisture*	Area in Square Feet
1 (low)	<1.0 %	<5.3 %	449
2	<1.0 %	<5.3 %	2,865
3	<1.0 %	<5.3 %	1,382
4	1.0 %	5.3 %	462
5 (high)	6.6 %	33.0 %	81 X
* Expressed in percent of moisture by weight. X Areas under which excess moisture detected.			

Summary

From the moisture detection portion of our work on this project, we have determined that no significant quantities of the roofing materials surveyed contain moisture which is considered excessive and deleterious to the assembly. In order to draw balanced conclusions, the survey findings must be examined along with the results of our visual inspection. This process begins with a review of material and defect properties in the next Section.

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SECTION 4.

DISCUSSIONS

Deterioration of roof systems occurs on two planes, namely, on the exposed surface of the roof and within the components of the roof assembly. Visible or latent defects would include anomalies such as membrane blistering and open laps on wall flashings. The most common of the unseen or latent defects is excess moisture absorbed by roofing insulations and membranes.

Latent Moisture

Water is a necessary ingredient in man's manufacture of products. Building materials are no different. As noted in the previous section, there are naturally occurring quantities of moisture in all building products. The norms for many of these have been established by the National Bureau of Standards. Some materials, however, can readily absorb and retain additional amounts of moisture from water vapor in air or other gases and from liquid water and condensation. These products are described as being hygroscopic. Most common roofing materials and all thermal insulators fall into this category.

The component which provides waterproofing of roof assemblies depends upon the type of system. In built-up roofing (BUR), it is the bitumen. When the roofing is constructed, mopped layers of hot liquid asphalt or coal tar are separated by sheets called felts or mats. A three ply BUR consists of three separated layers of bitumen; a four ply, four layers. The top sheet on a BUR is generally protected with a heavy application of bitumen. Because bitumen is somewhat sensitive to solar degradation, exposed asphalt or coal tar should be covered with aggregate or coated with an emulsion or paint. In a modified bitumen system (MB), it is primarily the MB sheet. This thick ply is a laminate consisting of two or three layers of modified asphalt separated by synthetic mats. These systems are often applied over one to three ply asphalt built-up roofs. If a breach in the roof membrane system were to occur, leaking water would damage more than the building's contents. All materials contacted by the traveling water would be affected, too. If the puncture is small and in the line of roof drainage, a great deal of water could be absorbed within the roofing before dripping may be noticed by building occupants. A highly hygroscopic insulation on a concrete roof deck may become completely saturated before giving a visible clue that a major problem exists.

There is a direct correlation between excess latent moisture and building material deterioration. The longer a material is wet and the wetter a material becomes, the more rapid and widespread damage will be. Built-up modified bitumen roof membranes lose tensile strength and face increased thermal and moisture induced dynamic stresses. Fully adhered roof membranes lose their bond to underlying materials and blistering increases. Potential physical damage due to freeze/thaw cycling is increased. The thermal resistance of insulation decreases and compressive strength is sacrificed.

Once the components within a roof system absorb significant quantities of water, there is usually no appropriate solution other than their removal. Some very elaborate and costly roof "venting" schemes have been developed and are currently promoted. Their successful applications, however, are very limited. Testing by the U.S. Army Corps of Engineers at the Cold Climate Regions Laboratory has demonstrated that one-way, two-way and solar powered roofing "vents" do not effectively dry out wetted insulation during the lives of most typical roof systems.

The most frequent sources of excess moisture within roofs are not simply old and dried out materials. They are premature physical failures or malfunctions in the roof assembly. Chief among common defects are flashing failures and membrane blistering, ridging and splitting.

Flashings are the materials which waterproof the transitions between the plane of the roof and vertical walls or penetrations. On the subject area, the principal flashing product used is granule surfaced SBS modified bitumen sheets.

By far, the most common sources of roof leakage are at flashings. This occurs because of the variety of forces to which they must stand up during their service life. A typical section of flashing is adhered to three different materials, namely, a roof membrane, a wall or subject penetration, and an adjoining section of flashing. Each of these materials has its own characteristic movement and surface condition. To assist flashings to resist failure, the following steps should be taken: 1) mechanically attach top edges and protect with metal counterflashings; 2) seal side laps along exposed edges; 3) apply surface coatings or aggregate to reduce thermal stress and solar induced oxidation of exposed asphalts. For these reasons, flashings require frequent inspections and annual maintenance.

In addition to the impact of structural and construction variables, roofing should be designed to cope with local climatic and environmental conditions which affect roof life.

Both asphalt and coal tar as roofing bitumens are sensitive to ultraviolet exposure. For this reason and to offer external fire resistance, typical BUR systems are surfaced with a protective layer or treatment. In the subject roofing's case, this function is fulfilled by gravel ceramic granules. The most frequently occurring forces which work on roof surfaces are wind, ponding water and the sun.

As wind strikes vertical building surfaces and blows across roofing, it acts to erode the roofing's protective layer. This action is greatest near building corners. Once the surfacing wears away, the bitumen is exposed to sunlight and material oxidation accelerates. The bitumen shrinks, cracks and eventually diminishes to the point where it too erodes away. The action of the wind and sun then continues to speed the deterioration of the system by attacking the roofing felts and interply bitumen. If left untreated, roof failure will occur at spots where erosion is not corrected.

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SECTION 5.

RECOMMENDATIONS

Summary of Findings

Condition:	We would rate the overall physical condition of the roofing as unsatisfactory. As pointed out in Section 2 of this report, the most deteriorated elements are the membranes.
Construction:	By current standards, we would rate the overall roofing and accessory construction as acceptable.
Performance:	From the historical data presented to us and from our own on-site observations, we would rate the subject roofing's performance as unsatisfactory.
Latent Moisture:	The results reported in Section 3 of this report indicate that the roofing in question is essentially dry. Approximately 81 square feet or 1.2% of the roof system materials appear to contain levels of moisture which exceed accepted standards.

Conclusions

For the purposes of this report we are using an evaluation key that includes: Satisfactory, Fair, Marginal and Unsatisfactory. The roof system has an expected usable and serviceable life cycle and, depending on the type of roof, this cycle varies in length; it could be as short as 10 years and as long as 100 years.

- The term "satisfactory" refers to the roof's first third of its life cycle.*
- The term "fair" refers to the middle third of the roof's life cycle.*
- The term "marginal" refers to the last third of the roof's life cycle.*
- The term "unsatisfactory" means the roof is in the failure mode and requires replacement.*

These evaluations are also based on the physical condition of the roof system at the time of the inspection, which affects how the roof's condition is graded. For example, a roof system in the last third of its cycle may be downgraded to unsatisfactory based on its physical condition. Conversely, however, this does not mean a roof system in the last third of its life cycle can be upgraded from marginal to fair even if there are no current defects at the time of the inspection, because we know that roofs have a maximum useful service life that cannot be exceeded.

The roof systems in place at this school have failed and should be replaced as soon as possible. The drains in the inlaid gutter system should be reworked so that they are positively attached to the interior plumbing lines. Deteriorated masonry should also be addressed along with the Roof Replacements.

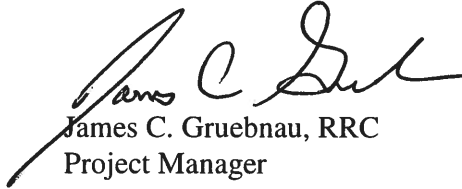
The exceptions to this are the Elevator and Entrance roofs on the south side of the building. These roofs appear to be approximately 8 years old and are in fair condition. If they are properly maintained these roofs could remain serviceable for another 10 years.

The roof should be scheduled for replacement in 2019 and at that time the replacement cost based on current U.S. dollars will be approximately 12,424 square feet times \$25.00 per square foot, or \$310,600.00. In the interim, \$3,500.00 should be budgeted for current repairs.

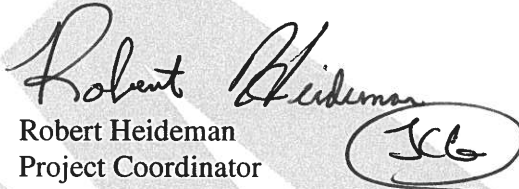
This concludes our report on this project. We appreciate the opportunity to assist you in the management of this property's roofing. Please call if we may be of further assistance.

Sincerely,

ILLINOIS ROOF CONSULTING ASSOCIATES, INC.



James C. Gruebnaue, RRC
Project Manager



Robert Heideman
Project Coordinator

JCG/jr

18230.mst.sur

EXHIBIT *A*

```
X SCALE= 15 FT/IN
Y SCALE= 15 FT/IN
```

[illegible]

RELATIVE MOISTURE RANGES

		LESS THAN 10
GREATER THAN OR EQUAL TO	10	BUT LESS THAN 11
GREATER THAN OR EQUAL TO	11	BUT LESS THAN 13
GREATER THAN OR EQUAL TO	13	BUT LESS THAN 14
GREATER THAN OR EQUAL TO	14	

SYMBOL

BLANK
.
/
#
Ø

PERCENT OF ROOF

47.5
36.5
11.8
2.6
1.6

SQUARE FEET OF ROOF

759
582
188
41
26

TOTAL ROOF AREA= 1596 SQUARE FEET

BUILDING- EDGAR ALLAN POE CLASSICAL SCHOOL - MAIN ROOF
10538 S. LANGLEY AVE., CHICAGO,IL

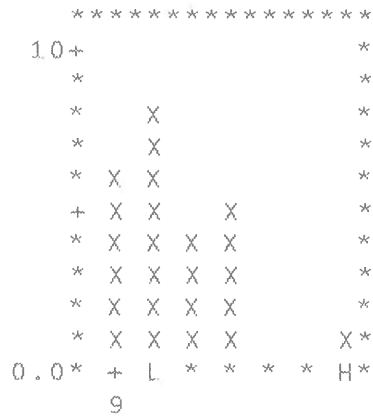
DATE- 10/24/2018

WEATHER- 48 DEG. F., 15% RH

TYPE OF CONSTRUCTION- STRUCTURAL WOOD DECK. A BASE SHEET MECHANICALLY ATTACHED TO THE DECK BELOW.
2 LAYERS OF 0.75 INCH THICK PERLITE INSULATION. A MEMBRANE CONSISTING
OF 2 PLIES OF MODIFIED BITUMEN BASE AND CAP SHEETS.
(IRCA JOB # M18230-2)

COMPUTER MAP PREPARED BY ILLINOIS ROOF CONSULTING ASSOC., INC., MCHENRY, IL 60050

EXHIBIT B



MAXIMUM MOISTURE READING= 15 MINIMUM MOISTURE READING= 9
AVERAGE MAXIMUM MOISTURE VALUE = 15 (SHOWN BY AN H ON THE HISTOGRAM)
AVERAGE MINIMUM MOISTURE VALUE = 10 (SHOWN BY AN L ON THE HISTOGRAM)
VERTICAL SCALE IS THE ACTUAL # OF METER READINGS
HORIZONTAL SCALE IS METER READING IN COUNTS/MINUTE

TABULAR DATA OF ROOF MOISTURE READINGS
PAGE 1 OF 1

EXHIBIT C

THE TOP ROW OF NUMBERS INDICATES THE HORIZONTAL DISTANCE (IN FT.) TO THE RIGHT ON THE PLOT
THE FIRST COLUMN ON THE LEFT INDICATES THE VERTICAL DISTANCE (IN FT.) ON THE PLOT
BLANK SPACES IN THE DATA ARRAY INDICATE THAT NO READING WAS TAKEN AT THIS LOCATION

0.0	2.0	12.0	22.0
2.0	10	11	10
12.0	10	9	10
22.0	9	10	12
32.0	12	11	15
42.0	10	9	9
52.0	12	10	9
62.0	11	12	9
68.0	11	10	12

EXHIBIT A

```
X SCALE= 15 FT/IN
Y SCALE= 15 FT/IN
```

[illegible]

RELATIVE MOISTURE RANGES			SYMBOL	PERCENT OF ROOF	SQUARE FEET OF ROOF
		LESS THAN 8	BLANK	0.0	0
GREATER THAN OR EQUAL TO	8	BUT LESS THAN 11	.	100.0	240
GREATER THAN OR EQUAL TO	11	BUT LESS THAN 13	/	0.0	0
GREATER THAN OR EQUAL TO	13	BUT LESS THAN 16	#	0.0	0
GREATER THAN OR EQUAL TO	16		⊠	0.0	0

TOTAL ROOF AREA= 240 SQUARE FEET

BUILDING- EDGAR ALLAN POE CLASSICAL SCHOOL - ENTRANCE ROOF
10538 S. LANGLEY AVE., CHICAGO, IL
DATE- 10/24/2018
WEATHER- 48 DEG. F., 15% RH
TYPE OF CONSTRUCTION- CONSTRUCTION NOT DETERMINED.
A MEMBRANE CONSISTING OF 2 PLIES OF MODIFIED BITUMEN BASE AND CAP SHEETS.

(IRCA JOB # M18230-4)
COMPUTER MAP PREPARED BY ILLINOIS ROOF CONSULTING ASSOC., INC., MCHENRY, IL 60050

EXHIBIT B



MAXIMUM MOISTURE READING= 10 MINIMUM MOISTURE READING= 8
AVERAGE MAXIMUM MOISTURE VALUE = 10 (SHOWN BY AN H ON THE HISTOGRAM)
AVERAGE MINIMUM MOISTURE VALUE = 9 (SHOWN BY AN L ON THE HISTOGRAM)
VERTICAL SCALE IS THE ACTUAL # OF METER READINGS
HORIZONTAL SCALE IS METER READING IN COUNTS/MINUTE

TABULAR DATA OF ROOF MOISTURE READINGS
PAGE 1 OF 1

EXHIBIT C

THE TOP ROW OF NUMBERS INDICATES THE HORIZONTAL DISTANCE (IN FT.) TO THE RIGHT ON THE PLOT
THE FIRST COLUMN ON THE LEFT INDICATES THE VERTICAL DISTANCE (IN FT.) ON THE PLOT
BLANK SPACES IN THE DATA ARRAY INDICATE THAT NO READING WAS TAKEN AT THIS LOCATION

0.0	2.0	12.0
2.0	10	10
12.0	9	8

* OUTLINES THE ROOF PERIMETER
J REPRESENTS AN EXPANSION JOINT OR CONSTRUCTION JOINT
P OUTLINES A PATCH
D SHOWS THE LOCATION OF A ROOF DRAIN

BUILDING : EDGAR ALLAN POE CLASSICAL SCHOOL - ELEVATOR PENTHOUSE

X SCALE= 15 FT/IN
Y SCALE= 15 FT/IN

LENGTH OF MAP (DOWN THE PAGE) IS 20 FT WIDTH OF MAP (ACROSS THE PAGE) IS 13 FT

0.0
+*****+*****
0.0+//////////
*//////////
*//////////D//
.....
.....
.....D.....
+.....*
.....
.....

EXHIBIT A

RELATIVE MOISTURE RANGES

		LESS THAN 8
GREATER THAN OR EQUAL TO	8	BUT LESS THAN 11
GREATER THAN OR EQUAL TO	11	BUT LESS THAN 13
GREATER THAN OR EQUAL TO	13	BUT LESS THAN 16
GREATER THAN OR EQUAL TO	16	

SYMBOL

BLANK
.
/
#
Ø

PERCENT OF ROOF

0.0
67.1
32.9
0.0
0.0

SQUARE FEET OF ROOF

0
174
86
0
0

EXHIBIT B

BUILDING- EDGAR ALLAN POE CLASSICAL SCHOOL - ELEVATOR PENTHOUSE
10538 S. LANGLEY AVE., CHICAGO, IL
DATE- 10/24/2018
WEATHER- 48 DEG. F., 15% RH
TYPE OF CONSTRUCTION- CONSTRUCTION NOT DETERMINED.
A MEMBRANE CONSISTING OF 2 PLIES OF MODIFIED BITUMEN BASE AND CAP SHEETS.

(IRCA JOB # M18230-3)
COMPUTER MAP PREPARED BY ILLINOIS ROOF CONSULTING ASSOC., INC., MCHENRY, IL 60050



MAXIMUM MOISTURE READING= 12 MINIMUM MOISTURE READING= 8
AVERAGE MAXIMUM MOISTURE VALUE = 12 (SHOWN BY AN H ON THE HISTOGRAM)
AVERAGE MINIMUM MOISTURE VALUE = 9 (SHOWN BY AN L ON THE HISTOGRAM)
VERTICAL SCALE IS THE ACTUAL # OF METER READINGS
HORIZONTAL SCALE IS METER READING IN COUNTS/MINUTE

TABULAR DATA OF ROOF MOISTURE READINGS
PAGE 1 OF 1

EXHIBIT C

THE TOP ROW OF NUMBERS INDICATES THE HORIZONTAL DISTANCE (IN FT.) TO THE RIGHT ON THE PLOT
THE FIRST COLUMN ON THE LEFT INDICATES THE VERTICAL DISTANCE (IN FT.) ON THE PLOT
BLANK SPACES IN THE DATA ARRAY INDICATE THAT NO READING WAS TAKEN AT THIS LOCATION

0.0	2.0	10.0
2.0	12	12
12.0	9	9
18.0	8	8

EXHIBIT A

```
X SCALE= 15 FT/IN
Y SCALE= 15 FT/IN
```

[illegible]

RELATIVE MOISTURE RANGES

SYMBOL

PERCENT OF ROOF

SQUARE FEET OF ROOF

					LESS THAN 8
GREATER THAN OR EQUAL TO	8	BUT LESS THAN	11		
GREATER THAN OR EQUAL TO	11	BUT LESS THAN	13		
GREATER THAN OR EQUAL TO	13	BUT LESS THAN	16		
GREATER THAN OR EQUAL TO	16				

BLANK

9.5

449

GREATER THAN OR EQUAL TO 8 BUT LESS THAN 11

51.7

2451

GREATER THAN OR EQUAL TO 11 BUT LESS THAN 13

1

27.3

1296

GREATER THAN OR EQUAL TO 13 BUT LESS THAN 16

#

9.7

462

GREATER THAN OR EQUAL TO 16

1.7

81

TOTAL ROOF AREA= 4739 SQUARE FEET

BUILDING- EDGAR ALLAN POE CLASSICAL SCHOOL - LOWER ROOFS
10538 S. LANGLEY AVE., CHICAGO, IL

DATE- 10/24/2018

WEATHER- 48 DEG. F., 15% RH

TYPE OF CONSTRUCTION- STRUCTURAL WOOD DECK. A BASE SHEET/VAPOR RETARDER MECHANICALLY ATTACHED TO THE DECK BELOW. 2 LAYERS OF 1.0 INCH POLYISOCYANURATE INSULATION. 0.5 INCH THICK PERLITE INSULATION. A MEMBRANE CONSISTING OF 5 PLIES OF COAL TAR PITCH BUILT-UP ROOF WITH GRAVEL. (IRCA JOB # M18230-1)
COMPUTER MAP PREPARED BY ILLINOIS ROOF CONSULTING ASSOC., INC., MCHENRY, IL 60050

```

** ** ** ** ** ** ** *
20+ *
*
*
*
*
+
*
*      X
*      X
*    X X
*    X X
10+ X X X
*   X X X
*   X X X
*   X X X
*   X X X X
+   X X X X X X X
*   X X X X X X X
*   X X X X X X X
*   X X X X X X X
*   X X X X X X X
X + L * * * * * * * * * * * * * * * * H *
0.0 *

```

MAXIMUM MOISTURE READING= 19 MINIMUM MOISTURE READING= 5
AVERAGE MAXIMUM MOISTURE VALUE = 19 (SHOWN BY AN H ON THE HISTOGRAM)
AVERAGE MINIMUM MOISTURE VALUE = 6 (SHOWN BY AN L ON THE HISTOGRAM)
VERTICAL SCALE IS THE ACTUAL # OF METER READINGS
HORIZONTAL SCALE IS METER READING IN COUNTS/MINUTE

EXHIBIT B

TABULAR DATA OF ROOF MOISTURE READINGS
PAGE 1 OF 1

EXHIBIT C

THE TOP ROW OF NUMBERS INDICATES THE HORIZONTAL DISTANCE (IN FT.) TO THE RIGHT ON THE PLOT
THE FIRST COLUMN ON THE LEFT INDICATES THE VERTICAL DISTANCE (IN FT.) ON THE PLOT
BLANK SPACES IN THE DATA ARRAY INDICATE THAT NO READING WAS TAKEN AT THIS LOCATION

0.0	2.0	12.0	22.0	27.0	32.0	40.0	42.0	52.0
2.0	9	10	13		15	17		
12.0	8		8		9	11		
21.0	12	14	15		13	11		
22.0								
23.0								
24.0	9	10	10		11	10		
32.0	8	5	10		12	14		
40.0					15	15		
42.0	9	8	10					
44.0					17		13	
52.0	8	8	9		8		9	11
62.0	12	8	7		13		13	10
64.0	12	8	7					
72.0	19		8		11	15		
82.0	9		7		10			
85.0	17		9		12	18		
87.0								
92.0	9	7	16		17	11		
102.0	9	9	8		7	10		
110.0	9	10	8		9	9		

EXHIBIT D

CORE DATA SHEET AND LABORATORY REPORT

A. CORE SAMPLE LOCATION

Core Sample	X-Axis	Y-Axis	Reading	Roof Area
C1	2	40	17	Lower
C2	2	52	12	Main

B. GRAVIMETRIC MOISTURE CONTENT LOG

	Membrane			Insulation		
Sample	Wet	Dry	Content %	Wet	Dry	Content %
C1	37.3 g.	35.0 g.	6.6 %	82.6 g.	62.1 g.	33.0 %
C2	55.8 g.	55.2 g.	1.1 %	67.5 g.	66.4 g.	1.7 %

("g" is weight in grams; "%" is moisture content by weight of tested sample)

C. EQUILIBRIUM MOISTURE CONTENT AND MAXIMUM MOISTURE ABSORPTION

Material	Content by weight	Saturation point
Perlite insulation	2.5 - 3.5%	464%
Polyisocyanurate insulation	2.0 - 4.0%	N/A
Organic felts	2.5 - 4.0%	75%
Fiberglass felts	0.1 - 1.0%	615%

[The remainder of this page has been left blank intentionally]

EXHIBIT E

GLOSSARY OF TERMS

Generally, technical terms used or abbreviated in this report are explained upon the occasion of their first use. A few additional words or phrases which may be ambiguous or may have very specific applications are listed below.

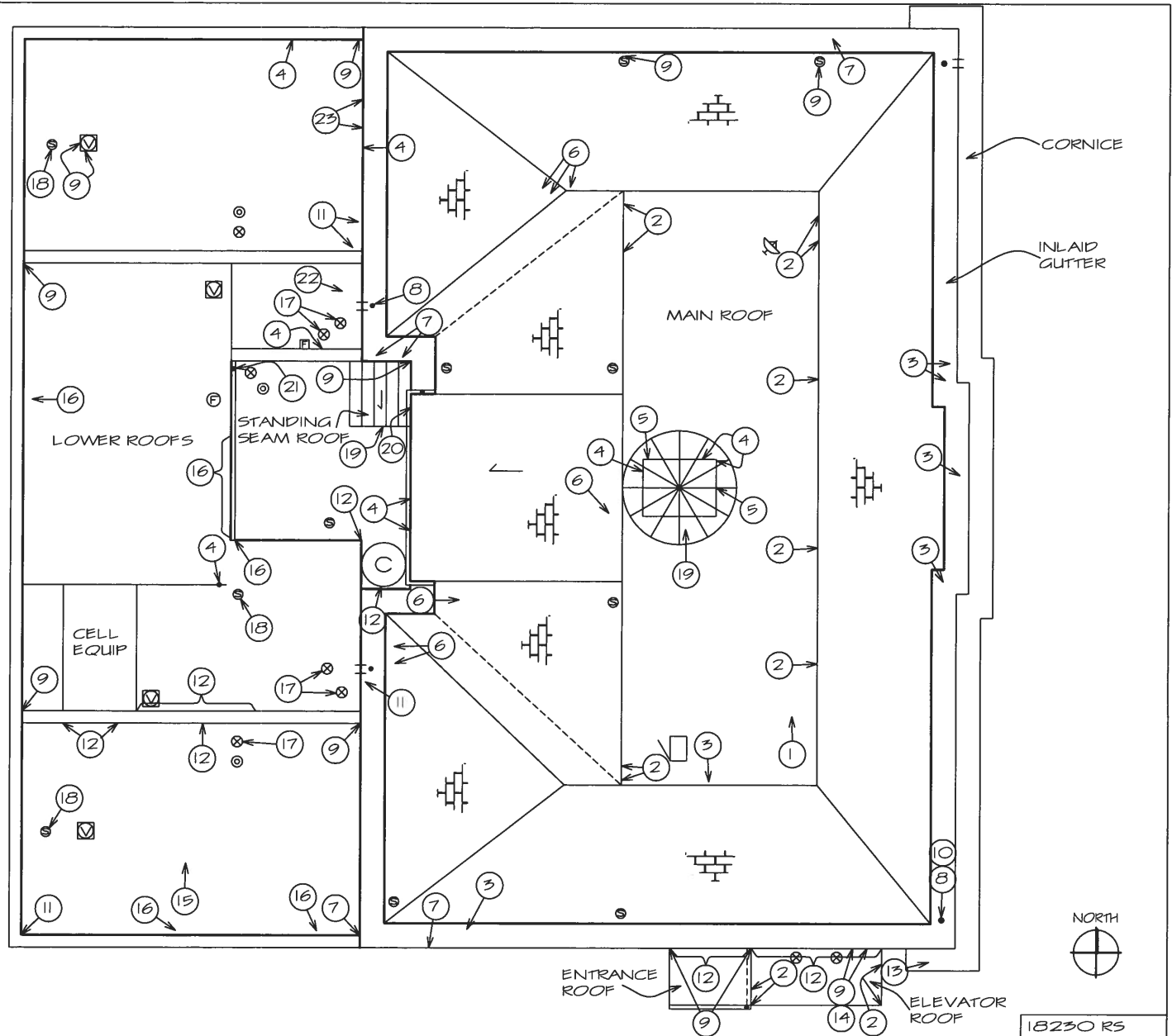
- aggregate: gravel, cinder, slag or ceramic granules adhered to roofing surfaces in order to provide protection of the roof membrane from solar degradation and from exterior fire threat.
- anomalies: defects.
- bitumen/bituminous: black to brown color, low melting point, plastic-like material used as the waterproofing component in built-up roofing and waterproofing. Available in a variety of grades or types, the two principle substances referred to as bitumen are coal tar and asphalt.
- BUR: Built-up roofing; roof system consisting of three or more layers of bitumen separated by three or more porous or semiporous felts or mats.
- deck or decking: the structural diaphragm or platform permanently installed over roof joists, beams or purlins. The building component that serves as a substrate for insulated and uninsulated roofing.
- defects, as in roof defects: flaws in the application or existing condition of a particular construction.
- details, as in roof details: elements that interrupt the continuation of roofing. Examples: roof edges, drains, pipes, walls, scuttles, skylights, mechanical units, flashings and metal accessories.
- elastomeric: property that describes a material's ability to stretch and return to near normal dimension.
- felts: rolled roofing goods made from asphalt saturated, coated or impregnated mats made from paper, fiberglass or polyester.
- pond or ponding: water of a depth of one-quarter of an inch or greater that remains on a roof surface 48 or more hours after a rainfall stops.
- preventive maintenance: providing regular and predictable renewal service on minor building components. Examples: filling sealant pans, cleaning and recaulking metal joints, cleaning roof surfaces, drains and gutters.
- roof assembly: the roof system plus the structural deck and horizontal supporting components.
- roof system or roofing system: insulated or uninsulated waterproofing components installed immediately over the structural deck.

STANDING
SEAM ROOF 60 SQ. FT.
SHINGLE ROOF 5,939 SQ. FT.
MAIN ROOF 1,752 SQ. FT.
LOWER ROOFS 4,673 SQ. FT.
ENRANCE ROOF 70 SQ. FT.
ELEVATOR ROOF 112 SQ. FT.
TOTAL 12,606 SQ. FT.

(n) DENOTES PHOTO NUMBER

LEGEND

- SCUPPER
- ⊗ DRAIN
- ⊙ OVERFLOW DRAIN
- ⊗ VENT
- ⊗ FLUE STACK
- ⊙ SOIL STACK
- ⊗ SATELLITE DISH
- ⊙ CHIMNEY
- HATCH
- EXPANSION JOINT
- GUTTER
- DOWNSPOUT



IRCA

PROJECT: POE ELEMENTARY SCHOOL
10538 S. LANGLEY AVENUE
CHICAGO, ILLINOIS

PROJECT #: 18230

DATE: 10/18

DRAWING TITLE: ROOF SKETCH

SCALE: 1" = 20'-0"
0 5' 10' 20'

DETAIL #: RS - 1

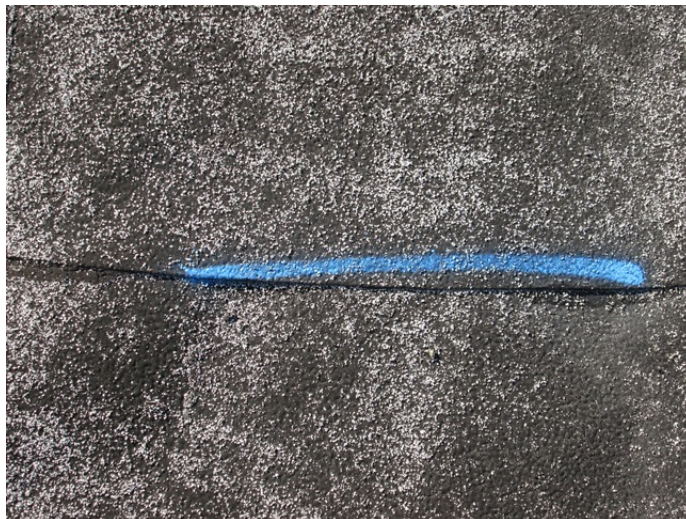
18230 RS



1. OVERVIEW OF MAIN ROOF



2. OPEN STRIP-IN PLY



3. OPEN SEAM



4. OPEN FLASHING



5. DAMAGED METAL FLASHING



6. MISSING SHINGLE



7. WATER BLISTER



8. INADVISABLE DETAIL (TYPICAL)



9. OPEN SEALANT



10. ORGANIC DEBRIS



11. ORGANIC GROWTH



12. DETERIORATED MASONRY



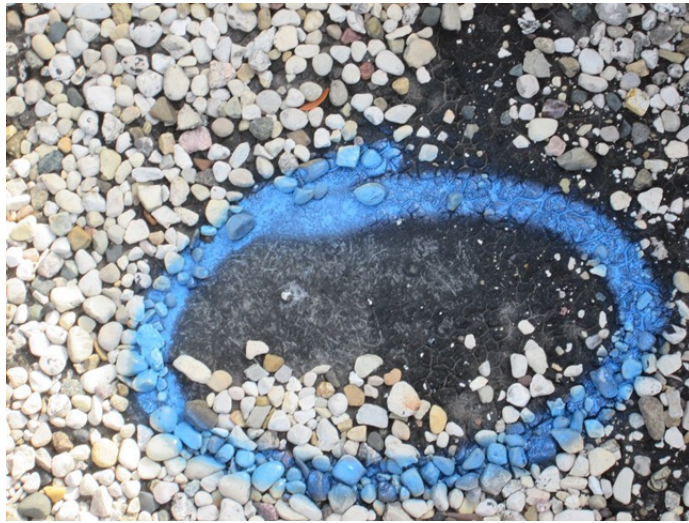
13. DETERIORATED CORNICE (TYPICAL)



14. DAMAGED COPING TILES



15. OVERVIEW OF LOWER ROOFS



16. EXPOSED / DETERIORATED FELTS



17. MISSING DRAIN STRAINER



18. CLOGGED SOIL STACK



19. CORROSION



20. DAMAGED SCREEN



21. MISSING SPLASH BLOCK



22. FALLEN SCREEN



23. CRACKED MASONRY