



MODULAR RELOCATION

BETHKE ELEMENTARY SCHOOL

5100 SCHOOL HOUSE DRIVE

TIMNATH, COLORADO 80547

OWNER:

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Fire Protection Engineer

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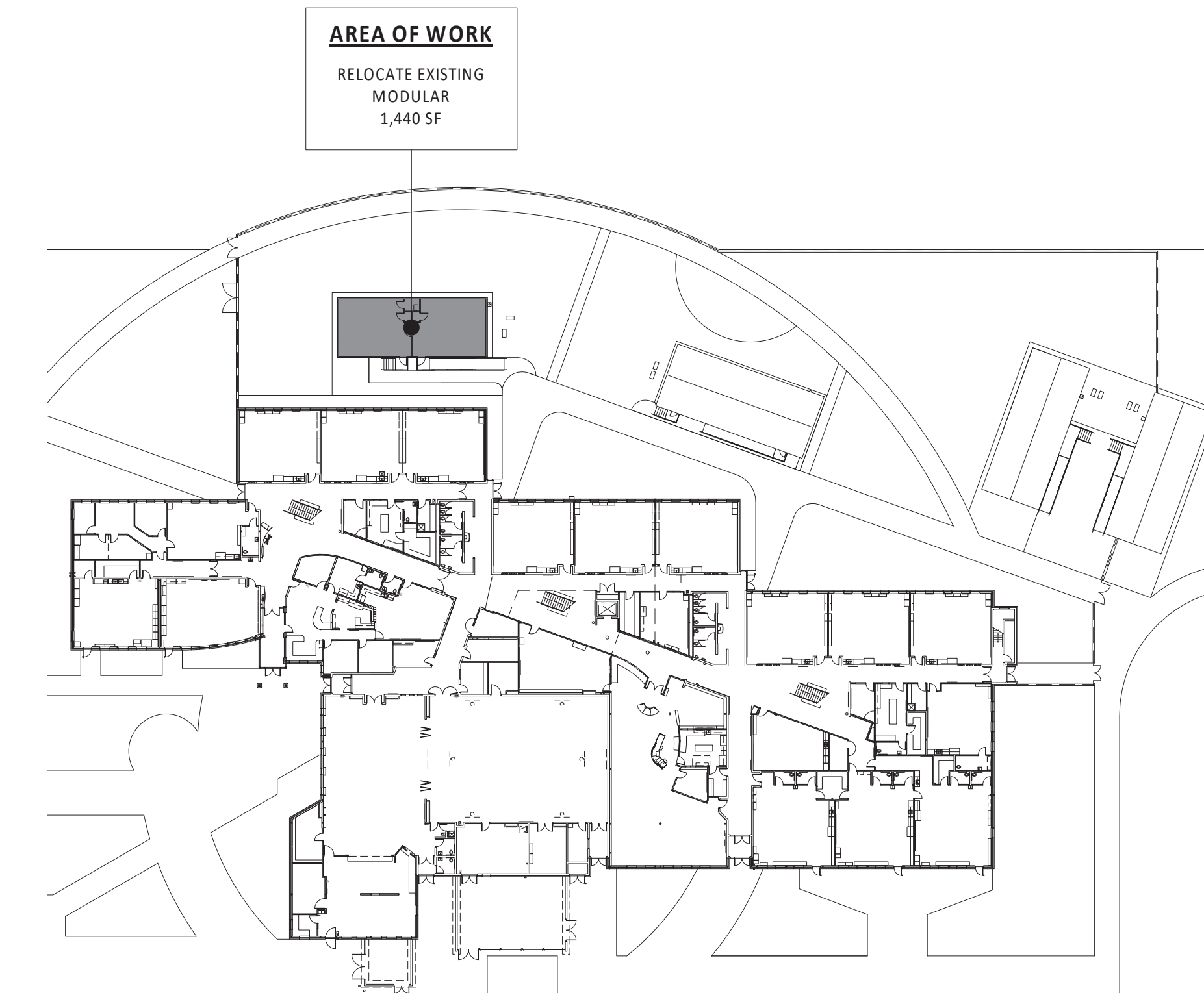
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ABBREVIATIONS:

ACOUS.	ACOUSTICAL	MATL.	MATERIAL
A.F.F.	ABOVE FINISH FLOOR ARCHITECTURAL	MECH.	MECHANICAL
BD.	BOARD	MEP.	MECHANICAL, ELECTRICAL, PLUMBING
BLDG.	BUILDING	MFR.	MANUFACTURER
BLKG.	BLOCKING	MIN.	MINIMUM
BOT.	BOTTOM	MISC.	MISCELLANEOUS
BSMT.	BASEMENT	MTD.	MOUNTED
		(N)	NEW
C.J.	CONTROL JOINT	N.	NORTH
CLG.	CEILING	N.E.	NORTHEAST
CLD.	CLOSET	N.I.C.	NOT IN CONTRACT
CLR.	CLEAR	N.T.S.	NOT TO SCALE
COL.	COLUMN		
CONC.	CONCRETE	O.C.	ON CENTER
CONST.	CONSTRUCTION	O.D.	OUTSIDE DIAMETER
CONT.	CONTINUOUS	OPNG.	OPENING
CPT.	CARPET	OPP.	OPPOSITE
		OPP.HD.	OPPOSITE HAND
DBL.	DOUBLE	P.L.	PROPERTY LINE
DEPT.	DEPARTMENT	P.LAM.	PLASTIC LAMINATE
DIA.	DIAMETER	P.T.D.	PAPER TOWEL DISPENSER
DIM.	DIMENSION		
DIV'D.	DIVIDED	R.C.P.	REFLECTED CEILING PLAN
DN.	DOWN	R.D.	ROOF DRAIN
DR.	DOOR	REQ'D.	REQUIRED
DWG.	DRAWING	R.H.	RIGHT HAND
		R.O.W.	RIGHT OF WAY
(E)	EXISTING	S	SOUTH
EA.	EACH	S.E.	SOUTH EAST
E.	EAST	SECT.	SECTION
E.J.	EXPANSION JOINT	S.E.D.	SEE ELECTRICAL DRAWINGS
ELEC.	ELECTRICAL	S.F.	SQUARE FOOT
EP.	ELECTRICAL PANEL	SHT.	SHEET
EQ.	EQUAL	S.L.D.	SEE LANDSCAPE DRAWINGS
EQUIP.	EQUIPMENT	S.M.D.	SEE MECHANICAL DRAWINGS
F.A.	FIRE ALARM	S.P.D.	SEE PLUMBING DRAWINGS
F.C.P.	FIRE CONTROL PANEL	SPECS.	SPECIFICATIONS
F.D.	FLOOR DRAIN	S.S.D.	SEE STRUCTURAL DRAWINGS
FDN.	FOUNDATION	STOR.	STORAGE
F.F.	FINISH FLOOR	STRUCT.	STRUCTURAL
F.F.E.	FINISH FLOOR ELEVATION		
F.E.C.	FIRE EXTINGUISHER CAB.	TEMP.	TEMPERED
FIN.	FINISH	T & G	TONGUE AND GROOVE
FIXT.	FIXTURE	T.O.P.	TOP OF PLATE
FL.	FLOOR	T.O.W.	TOP OF WALL
F.O.F.	FACE OF FINISH	T.P.	TOILET PARTITION
F.O.S.	FACE OF STUD	T.O.	TOP OF
FR.	FRAME	TYP.	TYPICAL
FTG.	FOOTING		
		U.B.C.	UNIFORM BUILDING CODE
GA.	GAUGE	U.L.	UNDERWRITER'S LABORATORY
GALV.	GALVANIZED	U.O.N.	UNLESS OTHERWISE NOTED
GYP.	GYPSUM		
		V.C.T.	VINYL COMPOSITION TILE
HDR.	HEADER	VERT.	VERTICAL
HDWE.	HARDWARE	VEST.	VESTIBULE
HORIZ.	HORIZONTAL	V.I.F.	VERIFY IN FIELD
		W.	WEST
I.D.	INSIDE DIAMETER	W/	WITH
INSUL.	INSULATION	W.C.	WATER CLOSET
INT.	INTERIOR	WD.	WOOD
		WDW.	WINDOW
JAN.	JANITOR	W/O	WITHOUT
JT.	JOINT	WT.	WEIGHT
		YD.	YARD
LAV.	LAVATORY		
LOUV.	LOUVER		
LT.	LIGHT		



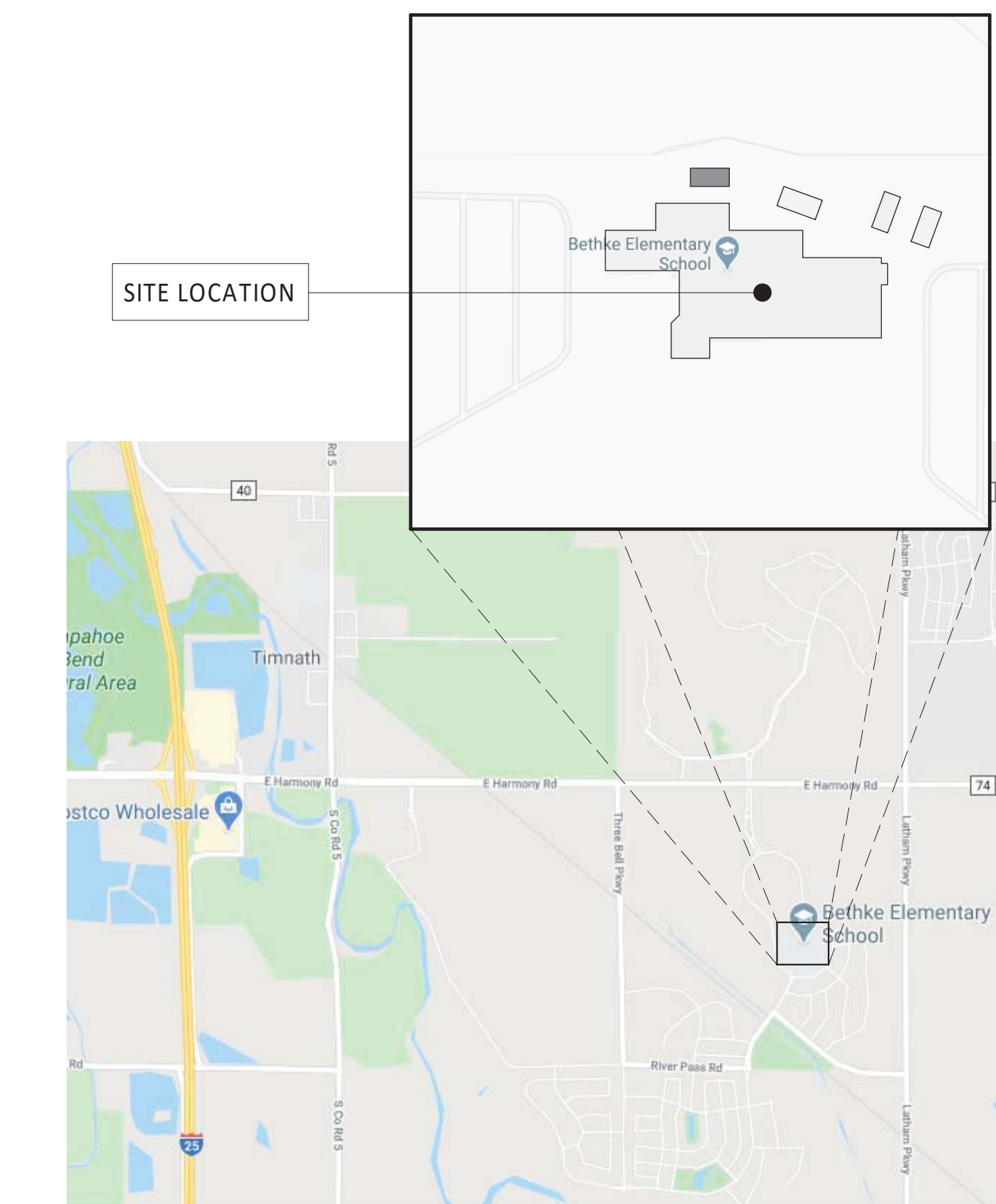
CODE USED: 2015 IBC, IFC, IMC, IEBC, IECC, IRC
ICC/ANSI, A117.1 - 2009 ACC. STANDARDS
POUDRE SCHOOL DISTRICT

BUILDING OWNER: POUDRE SCHOOL DISTRICT
BUILDING OCCUPANCY: E
BUILDING AREA: 1,440 SF
NUMBER OF STORIES: 1-STORY
BUILDING HEIGHT: 14' - 0" +/-
FIRE RATED ASSEMBLIES: EXISTING TO REMAIN
FIRE PROTECTION: EXISTING FIRE ALARM - NON-SPRINKLERED

AREA OF WORK: RELOCATE EXISTING CLASSROOM MODULAR

KEY PLAN AND CODE INFORMATION:

NOT TO SCALE



VICINITY MAP:

NOT TO SCALE



SHEET CONTENTS
TITLE SHEET, VICINITY MAP AND CODE INFORMATION

BETHKE ELEMENTARY SCHOOL
5100 SCHOOL HOUSE DRIVE
TIMNATH, COLORADO 80547



NO.	BY	DESCRIPTION	DATE
1	DAM	ISSUE FOR PERMIT	
2	KCG		
3			

ISSUE FOR PERMIT

REVISIONS

DATE: 03.20.20

SHEET NO: A0.0

KCG | LLC
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2429 Stonecrest Drive
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MISCELLANEOUS CAST-IN-PLACE CONCRETE

- PART 1 - GENERAL
1.1 SUMMARY
A. SECTION INCLUDES CAST-IN-PLACE CONCRETE, INCLUDING REINFORCEMENT, CONCRETE MATERIALS, MIXTURE DESIGN, PLACEMENT PROCEDURES, AND FINISHES.
B. NEW SIDEWALKS - SEE THE DRAWINGS FOR LOCATION.
1.2 ACTION SUBMITTALS
A. OTHER ACTION SUBMITTALS:
1. DESIGN MIXTURES: FOR EACH CONCRETE MIXTURE.
1.3 QUALITY ASSURANCE
A. READY-MIX-CONCRETE MANUFACTURER QUALIFICATIONS: A FIRM EXPERIENCED IN MANUFACTURING READY-MIXED CONCRETE PRODUCTS AND THAT COMPLIES WITH ASTM C 94/C 94M REQUIREMENTS FOR PRODUCTION FACILITIES AND EQUIPMENT.
PART 2 - PRODUCTS
2.1 FORMWORK
A. FURNISH FORMWORK AND FORMWORK ACCESSORIES ACCORDING TO ACI 301.
2.2 CONCRETE MATERIALS
A. CEMENTITIOUS MATERIAL: USE THE FOLLOWING CEMENTITIOUS MATERIALS, OF THE SAME TYPE, BRAND, AND SOURCE THROUGHOUT PROJECT:
1. PORTLAND CEMENT: ASTM C 150, TYPE I/II. SUPPLEMENT WITH THE FOLLOWING:
a. FLY ASH: ASTM C 618, CLASS C OR F.
B. NORMAL-WEIGHT AGGREGATE: ASTM C 33, GRADED, 1-1/2-INCH, NOMINAL MAXIMUM AGGREGATE SIZE.
C. WATER: ASTM C 94/C 94M.
D. SYNTHETIC FIBER: MONOFILAMENT OR FIBRILLATED POLYPROPYLENE FIBERS ENGINEERED AND DESIGNED FOR USE IN CONCRETE, COMPLYING WITH ASTM C 1116/C 1116M, TYPE III, [1/2 TO 1-1/2 INCHES LONG.
2.3 ADMIXTURES
A. AIR-ENTRAINING ADMIXTURE: ASTM C 260.
B. CHEMICAL ADMIXTURES: PROVIDE ADMIXTURES CERTIFIED BY MANUFACTURER TO BE COMPATIBLE WITH OTHER ADMIXTURES AND THAT WILL NOT CONTRIBUTE WATER-SOLUBLE CHLORIDE IONS EXCEEDING THOSE PERMITTED IN HARDENED CONCRETE. DO NOT USE CALCIUM CHLORIDE OR ADMIXTURES CONTAINING CALCIUM CHLORIDE.
1. WATER-REDUCING ADMIXTURE: ASTM C 494/C 494M, TYPE A.
2. RETARDING ADMIXTURE: ASTM C 494/C 494M, TYPE B.
3. WATER-REDUCING AND RETARDING ADMIXTURE: ASTM C 494/C 494M, TYPE D.
4. HIGH-RANGE, WATER-REDUCING ADMIXTURE: ASTM C 494/C 494M, TYPE F.
5. HIGH-RANGE, WATER-REDUCING AND RETARDING ADMIXTURE: ASTM C 494/C 494M, TYPE G.
6. PLASTICIZING AND RETARDING ADMIXTURE: ASTM 1017/C 1017M, TYPE II.
2.4 RELATED MATERIALS
A. VAPOR RETARDER: PLASTIC SHEET, ASTM E 1745, CLASS A OR B.
B. VAPOR RETARDER: POLYETHYLENE SHEET, ASTM D 4397, NOT LESS THAN 10 MILS THICK; OR PLASTIC SHEET, ASTM E 1745, CLASS C.
C. JOINT-FILLER STRIPS: ASTM D 1751, ASPHALT-SATURATED CELLULOSIC FIBER, OR ASTM D 1752, CORK OR SELF-EXPANDING CORK.
2.5 CURING MATERIALS
A. EVAPORATION RETARDER: WATERBORNE, MONOMOLECULAR FILM FORMING; MANUFACTURED FOR APPLICATION TO FRESH CONCRETE.
B. ABSORPTIVE COVER: AASHTO M 182, CLASS 3, BURLAP CLOTH OR COTTON MATS.
C. MOISTURE-RETAINING COVER: ASTM C 171, POLYETHYLENE FILM OR WHITE BURLAP-POLYETHYLENE SHEET.
D. WATER: POTABLE.
E. CLEAR, WATERBORNE, MEMBRANE-FORMING CURING COMPOUND: ASTM C 309, TYPE 1, CLASS B.
2.6 CONCRETE MIXTURES
A. NORMAL-WEIGHT CONCRETE: PREPARE DESIGN MIXES, PROPORTIONED ACCORDING TO ACI 301, AS FOLLOWS:
1. MINIMUM COMPRESSIVE STRENGTH: 3500 PSI AT 28 DAYS.
2. MAXIMUM WATER-CEMENTITIOUS MATERIALS RATIO: 0.45.
3. SLUMP LIMIT: 4 INCHES, PLUS OR MINUS 1 INCH.
4. AIR CONTENT: MAINTAIN WITHIN RANGE PERMITTED BY ACI 301.
B. SYNTHETIC FIBER: UNIFORMLY DISPERSE IN CONCRETE MIX AT MANUFACTURER'S RECOMMENDED RATE BUT NOT LESS THAN A RATE OF 1.5 LB/CU. YD.
2.7 CONCRETE MIXING
A. ASTM C 94/C 94M, AND FURNISH BATCH TICKET INFORMATION.
1. WHEN AIR TEMPERATURE IS ABOVE 90 DEG F (32 DEG C), REDUCE MIXING AND DELIVERY TIME TO 60 MINUTES.
PART 3 - EXECUTION
3.1 FORMWORK
A. DESIGN, CONSTRUCT, ERECT, BRACE, AND MAINTAIN FORMWORK ACCORDING TO ACI 301.
B. EMBEDDED ITEMS
A. PLACE AND SECURE ANCHORAGE DEVICES AND OTHER EMBEDDED ITEMS REQUIRED FOR ADJOINING WORK ATTACHED TO OR SUPPORTED BY CAST-IN-PLACE CONCRETE. USE SETTING DRAWINGS, TEMPLATES, DIAGRAMS, INSTRUCTIONS, AND DIRECTIONS FURNISHED WITH ITEMS TO BE EMBEDDED.
3.2 VAPOR RETARDERS
A. INSTALL, PROTECT, AND REPAIR VAPOR RETARDERS ACCORDING TO ASTM E 1643; PLACE SHEETS IN POSITION WITH LONGEST DIMENSION PARALLEL WITH DIRECTION OF POUR.
1. LAP JOINTS 6 INCHES AND SEAL WITH MANUFACTURER'S RECOMMENDED ADHESIVE OR JOINT TAPE.
3.4 JOINTS
A. GENERAL: CONSTRUCT JOINTS TRUE TO LINE WITH FACES PERPENDICULAR TO SURFACE PLANE OF CONCRETE.
B. CONTRACTION JOINTS IN SLABS-ON-GRADE: FORM WEAKENED-PLANE SAWED CONTRACTION JOINTS AT 10'-0" MAXIMUM SPACING. CONSTRUCT CONTRACTION JOINTS FOR A DEPTH EQUAL TO AT LEAST ONE-FOURTH OF CONCRETE THICKNESS.
C. ISOLATION JOINTS: INSTALL JOINT-FILLER STRIPS AT JUNCTIONS WITH SLABS-ON-GRADE AND VERTICAL SURFACES, SUCH AS COLUMN PEDESTALS, FOUNDATION WALLS, GRADE BEAMS, AND OTHER LOCATIONS, AS INDICATED.
1. EXTEND JOINT FILLERS FULL WIDTH AND DEPTH OF JOINT, TERMINATING FLUSH WITH FINISHED CONCRETE SURFACE, UNLESS OTHERWISE INDICATED.
3.5 CONCRETE PLACEMENT
A. COMPLY WITH ACI 301 FOR PLACING CONCRETE.
B. BEFORE TEST SAMPLING AND PLACING CONCRETE, WATER MAY BE ADDED AT PROJECT SITE, SUBJECT TO LIMITATIONS OF ACI 301.
C. CONSOLIDATE CONCRETE WITH MECHANICAL VIBRATING OPERATIONS.
3.6 FINISHING UNFORMED SURFACES
A. GENERAL: COMPLY WITH ACI 302.1R FOR SCREEDING, RESTRAIGHTENING, AND FINISHING OPERATIONS FOR CONCRETE SURFACES. DO NOT WET CONCRETE SURFACES.
B. SCREED SURFACES WITH A STRAIGHTEDGE AND STRIKE OFF. BEGIN INITIAL FLOATING USING BULL FLOATS OR DARBIES TO FORM A UNIFORM AND OPEN-TEXTURED SURFACE PLANE BEFORE EXCESS MOISTURE OR BLEEDWATER APPEARS ON SURFACE.
1. DO NOT FURTHER DISTURB SURFACES BEFORE STARTING FINISHING OPERATIONS.
C. NONSLIP BROOM FINISH: APPLY A NONSLIP BROOM FINISH TO SURFACES INDICATED AND TO EXTERIOR CONCRETE PLATFORMS, STEPS, AND RAMPS. IMMEDIATELY AFTER FLOAT FINISHING, SLIGHTLY ROUGHEN TRAFFICKED SURFACE BY BROOMING WITH FIBER-BRISTLE BROOM PERPENDICULAR TO MAIN TRAFFIC ROUTE.
3.7 CONCRETE PROTECTING AND CURING
A. GENERAL: PROTECT FRESHLY PLACED CONCRETE FROM PREMATURE DRYING AND EXCESSIVE COLD OR HOT TEMPERATURES. COMPLY WITH ACI 306.1 FOR COLD-WEATHER PROTECTION AND WITH ACI 301 FOR HOT-WEATHER PROTECTION DURING CURING.
B. EVAPORATION RETARDER: APPLY EVAPORATION RETARDER TO CONCRETE SURFACES IF HOT, DRY, OR WINDY CONDITIONS CAUSE MOISTURE LOSS APPROACHING 0.2 LB/SQ. FT./H BEFORE AND DURING FINISHING OPERATIONS. APPLY ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS AFTER PLACING, SCREEDING, AND BULL FLOATING OR DARBIEING CONCRETE, BUT BEFORE FLOAT FINISHING.
C. BEGIN CURING AFTER FINISHING CONCRETE BUT NOT BEFORE FREE WATER HAS DISAPPEARED FROM CONCRETE SURFACE.
D. CURING METHODS: CURE FORMED AND UNFORMED CONCRETE FOR AT LEAST SEVEN DAYS BY ONE OR A COMBINATION OF THE FOLLOWING METHODS:
1. CURING COMPOUND: APPLY UNIFORMLY IN CONTINUOUS OPERATION BY POWER SPRAY OR ROLLER ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. RECOAT AREAS SUBJECTED TO HEAVY RAINFALL WITHIN THREE HOURS AFTER INITIAL APPLICATION. MAINTAIN CONTINUITY OF COATING AND REPAIR DAMAGE DURING CURING PERIOD.
3.8 FIELD QUALITY CONTROL
A. TESTING AGENCY: OWNER WILL ENGAGE A QUALIFIED TESTING AGENCY TO PERFORM TESTS AND INSPECTIONS.
B. TESTS: PERFORM ACCORDING TO ACI 301.

- 1. TESTING FREQUENCY: ONE COMPOSITE SAMPLE SHALL BE OBTAINED FOR EACH DAY'S POUR OF EACH CONCRETE MIX EXCEEDING 5 CU. YD. BUT LESS THAN 25 CU. YD., PLUS ONE SET FOR EACH ADDITIONAL 50 CU. YD. OR FRACTION THEREOF.
3.9 REPAIRS
A. REMOVE AND REPLACE CONCRETE THAT DOES NOT COMPLY WITH REQUIREMENTS IN THIS SECTION.

MISCELLANEOUS ROUGH CARPENTRY

- PART 1 - GENERAL
1.1 SUMMARY
A. SECTION INCLUDES:
1. SKIRTING FRAMING
PART 2 - PRODUCTS
2.1 WOOD-PRESERVATIVE-TREATED MATERIALS
A. PRESERVATIVE TREATMENT BY PRESSURE PROCESS: AWPAC TREATMENT C1 WATERBORNE PRESERVATIVE WITH A MINIMUM RETENTION OF 0.25 PCF.
1. PRESERVATIVE CHEMICALS: ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION AND CONTAINING NO ARSENIC OR CHROMIUM. DO NOT USE INORGANIC BORON (SBX) FOR SILL PLATES.
2. PENTACHLOROPHENOL OF CREOSOTE IS NOT ACCEPTABLE.
3. PRODUCTS CONTAINING CHROMIUM OR ARSENIC SHOULD BE AVOIDED.
B. KILN-DRY LUMBER AFTER TREATMENT TO A MAXIMUM MOISTURE CONTENT OF 19 PERCENT. DO NOT USE MATERIAL THAT IS WARPED OR DOES NOT COMPLY WITH REQUIREMENTS FOR UNTREATED MATERIAL.
2.2 FASTENERS
A. GENERAL: PROVIDE FASTENERS OF SIZE AND TYPE INDICATED THAT COMPLY WITH REQUIREMENTS FOR MATERIAL AND MANUFACTURE.
1. WHERE CARPENTRY IS EXPOSED TO WEATHER, IN GROUND CONTACT, PRESSURE-PRESERVATIVE TREATED, OR IN AREA OF HIGH RELATIVE HUMIDITY, PROVIDE FASTENERS WITH HOT-DIP ZINC COATING COMPLYING WITH ASTM A 153/A 153M.
PART 3 - EXECUTION
3.1 INSTALLATION, GENERAL
A. SET CARPENTRY TO REQUIRED LEVELS AND LINES, WITH MEMBERS PLUMB, TRUE TO LINE, CUT, AND FITTED. FIT CARPENTRY TO OTHER CONSTRUCTION; SCRIBE AND COPE AS NEEDED FOR ACCURATE FIT.

SHEET METAL FLASHING AND TRIM

- PART 1 - GENERAL
1.1 SUMMARY
A. SECTION INCLUDES:
1. FORMED LOW-SLOPE ROOF SHEET METAL FABRICATIONS.
2. FORMED EQUIPMENT SUPPORT FLASHING.
3. MISCELLANEOUS FLASHING.
PART 2 - PRODUCTS
2.1 SHEET METALS
A. METALLIC-COATED STEEL SHEET: PROVIDE ZINC-COATED (GALVANIZED) STEEL SHEET ACCORDING TO ASTM A 653/A 653M, G90 (Z275) COATING DESIGNATION.
1. CONCEALED FINISH: PRETREAT WITH MANUFACTURER'S STANDARD WHITE OR LIGHT-COLORED ACRYLIC OR POLYESTER BACKER FINISH, CONSISTING OF PRIME COAT AND WASH COAT WITH MINIMUM TOTAL DRY FILM THICKNESS OF 0.5 MIL (0.013 MM).
2.2 FABRICATION
A. GENERAL: CUSTOM FABRICATE SHEET METAL FLASHING AND TRIM TO COMPLY WITH RECOMMENDATIONS IN CITED SHEET METAL STANDARD THAT APPLY TO DESIGN, DIMENSIONS, GEOMETRY, METAL THICKNESS, AND OTHER CHARACTERISTICS OF ITEM REQUIRED. FABRICATE SHEET METAL FLASHING AND TRIM IN SHOP TO GREATEST EXTENT POSSIBLE.
PART 3 - EXECUTION
3.1 EXAMINATION
A. EXAMINE SUBSTRATES, AREAS, AND CONDITIONS, WITH INSTALLER PRESENT, FOR COMPLIANCE WITH REQUIREMENTS FOR INSTALLATION TOLERANCES, SUBSTRATE, AND OTHER CONDITIONS AFFECTING PERFORMANCE OF THE WORK.
3.2 INSTALLATION
A. GENERAL: ANCHOR SHEET METAL FLASHING AND TRIM AND OTHER COMPONENTS OF THE WORK SECURELY IN PLACE, WITH PROVISIONS FOR THERMAL AND STRUCTURAL MOVEMENT. USE FASTENERS, PROTECTIVE COATINGS, SEPARATORS, SEALANTS, AND OTHER MISCELLANEOUS ITEMS AS REQUIRED TO COMPLETE SHEET METAL FLASHING AND TRIM SYSTEM. FASTENERS: USE FASTENER SIZES THAT PENETRATE WOOD BLOCKING OR SHEATHING NOT LESS THAN 3/4 INCH FOR WOOD SCREWS.

RESILIENT BASE AND ACCESSORIES

- PART 1 - GENERAL
1.1 SUMMARY
A. SECTION INCLUDES:
1. RESILIENT BASE.
B. RELATED REQUIREMENTS:
1. SECTION 096816 SHEET CARPETING.
PART 2 - PRODUCTS
2.1 RUBBER BASE
A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
1. BURKE INDUSTRIES INC.
2. JOHNSONITE
3. ROPPE CORPORATION USA.
B. TOP-SET COVERED RUBBER BASE:
1. THICKNESS: 0.125 INCH (3.2 MM).
2. HEIGHT: 4 INCHES (102 MM) OR 6 INCHES (152 MM), AS INDICATED.
C. LENGTHS: CUT LENGTHS 48 INCHES (1219 MM) LONG.
D. OUTSIDE CORNERS: JOB FORMED.
E. INSIDE CORNERS: JOB FORMED.
F. COLORS: MATTE FINISH BLACK, OR AS OTHERWISE INDICATED.
2.2 INSTALLATION MATERIALS
A. ADHESIVES: WATER-RESISTANT TYPE RECOMMENDED BY RESILIENT-PRODUCT MANUFACTURER FOR RESILIENT PRODUCTS AND SUBSTRATE CONDITIONS INDICATED.
PART 3 - EXECUTION
3.1 RESILIENT BASE INSTALLATION
A. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS FOR INSTALLING RESILIENT BASE.

SHEET CARPETING

- PART 1 - GENERAL
1.1 SUMMARY
A. SECTION INCLUDES:
1. INSTALLATION OF OWNER PROVIDED DIRECT GLUED BROADLOOM CARPET
2. FLOOR LEVELING, ADHESIVE, TRANSITIONS AND EDGING AND ALL RELATED ACCESSORIES, PROVIDED AND INSTALLED BY THE GENERAL CONTRACTOR
1.2 INFORMATIONAL SUBMITTALS
A. QUALIFICATION DATA: FOR QUALIFIED INSTALLER.
1.3 QUALITY ASSURANCE
A. INSTALLER QUALIFICATIONS (NO EXCEPTIONS):
1. ALL CARPET INSTALLATION, CARPET ACCESSORIES, RESILIENT BASE, AND RELATED MATERIALS TO BE BY:
a. SKIPS CARPET SERVICE
5816 PRONTO WAY
LOVELAND, CO 80538
970-227-7476
PART 2 - PRODUCTS
2.1 BROADLOOM CARPET
A. PRODUCTS: CARPET WILL BE PROVIDED BY THE OWNER.
1. MANUFACTURER: COLLINS & AIKMAN

- 2.2 INSTALLATION ACCESSORIES
A. ADHESIVES: WATER-RESISTANT, MILDEW-RESISTANT, NONSTAINING TYPE TO SUIT PRODUCTS AND SUBFLOOR CONDITIONS INDICATED, THAT COMPLIES WITH FLAMMABILITY REQUIREMENTS FOR INSTALLED CARPET AND IS RECOMMENDED OR PROVIDED BY CARPET MANUFACTURER.
B. SEAM ADHESIVE: HOT-MELT ADHESIVE TAPE OR SIMILAR PRODUCT RECOMMENDED BY CARPET MANUFACTURER FOR SEALING AND TAPING SEAMS AND BUTTING CUT EDGES AT BACKING TO FORM SECURE SEAMS AND TO PREVENT PILE LOSS AT SEAMS.
E. TRANSITION MOLDINGS AND EDGE STRIPS: RUBBER ROPPE #159 TILE/CARPET JOINER, COLOR AS SELECTED FROM MANUFACTURER'S FULL COLOR RANGE.
2.3 INSTALLATION
A. UNLOADING: CARPET TO BE DELIVERED TO SITE BY OTHERS. ACCEPT AND UNLOAD CARPET.
2.4 CLEANING AND PROTECTING
A. PERFORM THE FOLLOWING OPERATIONS IMMEDIATELY AFTER INSTALLING CARPET:
1. REMOVE EXCESS ADHESIVE, SEAM SEALER, AND OTHER SURFACE BLEMISHES USING CLEANER RECOMMENDED BY CARPET MANUFACTURER.
2. REMOVE YARNS THAT PROTRUDE FROM CARPET SURFACE.
3. VACUUM CARPET USING COMMERCIAL MACHINE WITH FACE-BEATER ELEMENT.
B. PROTECT INSTALLED CARPET TO COMPLY WITH CR1 104, SECTION 16, "PROTECTING INDOOR INSTALLATIONS."
C. PROTECT CARPET AGAINST DAMAGE FROM CONSTRUCTION OPERATIONS AND PLACEMENT OF EQUIPMENT AND FIXTURES DURING THE REMAINDER OF CONSTRUCTION PERIOD. USE PROTECTION METHODS INDICATED OR RECOMMENDED IN WRITING BY CARPET MANUFACTURER.

PAINTING

- PART 1 - GENERAL
1.1 PAINT, GENERAL
A. MATERIAL COMPATIBILITY:
1. PROVIDE MATERIALS FOR USE WITHIN EACH PAINT SYSTEM THAT ARE COMPATIBLE WITH ONE ANOTHER AND SUBSTRATES INDICATED, UNDER CONDITIONS OF SERVICE AND APPLICATION AS DEMONSTRATED BY MANUFACTURER, BASED ON TESTING AND FIELD EXPERIENCE.
B. COLORS: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.
1.2 MANUFACTURERS
A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
1. BENJAMIN MOORE & CO.
2. DIAMOND VOGEL PAINTS.
3. ICI PAINTS.
4. KWAL PAINT.
5. PPG ARCHITECTURAL FINISHES, INC.
6. SHERWIN-WILLIAMS COMPANY (THE).
PART 2 - EXECUTION
A. WOOD SUBSTRATES:
1. SCRAPE AND CLEAN KNOTS. BEFORE APPLYING PRIMER, APPLY COAT OF KNOT SEALER RECOMMENDED IN WRITING BY TOPCOAT MANUFACTURER FOR EXTERIOR USE IN PAINT SYSTEM INDICATED.
2. SAND SURFACES THAT WILL BE EXPOSED TO VIEW, AND DUST OFF.
3. PRIME EDGES, ENDS, FACES, UNDERSIDES, AND BACKSIDES OF WOOD.
4. AFTER PRIMING, FILL HOLES AND IMPERFECTIONS IN THE FINISH SURFACES WITH PUTTY OR PLASTIC WOOD FILLER. SAND SMOOTH WHEN DRIED.
2.2 EXTERIOR PAINTING SCHEDULE
A. WOOD TRIM, TWO FINISH COATS OVER PRIMER.
1. PRIMER: D-V; PRIME-O-SEAL ALKYD PRIMER
2. FIRST AND SECOND COATS: WEATHER PLATE ACRYLIC LATEX, SATIN

ROLLER SHADES

- PART 1 - GENERAL
1.1 SUMMARY
A. THIS SECTION INCLUDES ROLLER SHADES.
1.2 SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
B. SHOP DRAWINGS: INCLUDE PLANS, ELEVATIONS, SECTIONS, DETAILS, DETAILS OF INSTALLATION, OPERATIONAL CLEARANCES, AND RELATIONSHIP TO ADJOINING WORK.
1. VERIFY DIMENSIONS BY FIELD MEASUREMENTS BEFORE FABRICATION AND INDICATE MEASUREMENTS ON SHOP DRAWINGS.
1.3 WARRANTY
A. ROLLER SHADE HARDWARE, CHAIN AND SHADECLOTH: 25 YEARS.
PART 2 - PRODUCTS
2.1 ROLLER SHADES
A. AVAILABLE PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
B. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
1. DRAPER INC.; SERIES PW 3500/4100/4400
2. MECHOSHADE SYSTEMS, INC.; THERMOVEIL GROUP, 2104 SERIES
C. FABRIC (SHADECLOTH):
1. FLAME SPREAD LESS THAN 25, PER ASTM E84.
D. SHADE BAND MATERIAL: PVC-COATED FIBERGLASS AND POLYESTER BLENDS
1. COLORS: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE
2. MATERIAL OPENNESS FACTOR: 13 PERCENT.
E. ROLLERS: ELECTROGALVANIZED OR EPOXY PRIMED STEEL OR EXTRUDED-ALUMINUM TUBE OF DIAMETER AND WALL THICKNESS REQUIRED TO SUPPORT AND FIT INTERNAL COMPONENTS OF OPERATING SYSTEM AND THE WEIGHT AND WIDTH OF SHADE BAND MATERIAL WITHOUT SAGGING; DESIGNED TO BE EASILY REMOVABLE FROM SUPPORT BRACKETS.
1. ROLLER TUBE MINIMUM DIAMETER: 1.55 INCH.
F. DIRECTION OF ROLL: REGULAR, FROM BACK OF ROLLER.
G. MOUNTING BRACKETS: FASCIA END CAPS, FABRICATED FROM STEEL FINISHED TO MATCH FASCIA OR HEADBOX.
H. FASCIA: L-SHAPED, FORMED-STEEL SHEET OR EXTRUDED ALUMINUM; LONG EDGES RETURNED OR ROLLED; CONTINUOUS PANEL CONCEALING FRONT AND BOTTOM OF SHADE ROLLER, BRACKETS, AND OPERATING HARDWARE AND OPERATORS; REMOVABLE DESIGN FOR ACCESS.
I. TOP/BACK COVER: L-SHAPED; MATERIAL AND FINISH TO MATCH FASCIA; COMBINING WITH FASCIA AND END CAPS TO FORM A SIX-SIDED HEADBOX ENCLOSURE SIZED TO FIT SHADE ROLLER AND OPERATING HARDWARE INSIDE.
J. MOUNTING: INSIDE.
K. SHADE OPERATION: MANUAL, WITH CONTINUOUS-LOOP STAINLESS STEEL BEAD-CHAIN, CLUTCH, AND CORD TENSIONER AND BRACKET LIFT OPERATOR.
PART 3 - EXECUTION
3.1 ROLLER SHADE INSTALLATION
A. INSTALL ROLLER SHADES LEVEL, PLUMB, AND ALIGNED WITH ADJACENT UNITS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS, AND LOCATED SO SHADE BAND IS NOT CLOSER THAN 2 INCHES TO INTERIOR FACE OF GLASS. ALLOW CLEARANCES FOR WINDOW OPERATION HARDWARE.
B. ADJUST AND BALANCE ROLLER SHADES TO OPERATE SMOOTHLY, EASILY, SAFELY, AND FREE FROM BINDING OR MALFUNCTION THROUGHOUT ENTIRE OPERATIONAL RANGE. CLEAN ROLLER SHADE SURFACES AFTER INSTALLATION, ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

FENCES AND GATES

- PART 1 - GENERAL
1.1 SUMMARY
A. INSTALLATION OF CHAIN LINK FENCE, INCLUDING CONCRETE FOOTINGS, HARDWARE, AND OTHER RELATED APPURTENANCES.
B. ALL FENCING TO HAVE CONCRETE MOW STRIP.
1.2 SUBMITTALS REQUIRED
A. SHOP DRAWINGS
PART 2: PRODUCTS
2.1 PRODUCTS
A. FENCE FABRIC: FABRIC SHALL BE HOT DIPPED GALVANIZED (ASTM A392).
B. CORNER, INTERMEDIATE, AND TERMINAL POSTS: CORNER, INTERMEDIATE, AND TERMINAL POSTS SHALL BE OF SUFFICIENT LENGTH TO ALLOW FOR A DEPTH OF 3 FEET BELOW GRADE LEVEL MINIMUM. FABRIC SHALL BE ATTACHED TO THE TERMINAL POSTS BY MEANS OF GALVANIZED TENSION BARS AND HELD BY GALVANIZED TENSION BANDS. CORNER POSTS SHALL BE PLACED AT EVERY CHANGE IN DIRECTION. FENCES SHALL HAVE TOP, CENTER AND BOTTOM RAIL.
1. TERMINAL CORNER, AND PULL POST SHALL BE 2-7/8 INCH O.D. GALVANIZED PIPE.
2. LINE POSTS: 2-3/8 INCH O.D. GALVANIZED PIPE.
3. TOP, CENTER AND BOTTOM RAIL: 1-5/8 INCH O.D. GALVANIZED PIPE.
C. ACCESSORIES AND HARDWARE:
1. FITTINGS: FITTINGS, CAPS, AND OTHER APPURTENANCES SHALL BE ALUMINUM ALLOY GALVANIZED PRESSED STEEL, MALLEABLE OR CAST STEEL AS SPECIFIED, PAINTED FITTINGS ARE NOT ACCEPTABLE.
2. CONNECTORS: THE CHAIN LINK FABRIC SHALL BE SECURELY FASTENED TO TERMINAL POSTS USING 1/4" X 3/4" TENSION BARS, WITH 14 GAUGE, 1-INCH WIDE PRESSED STEEL BANDS SPACED NO MORE THAN 1 FOOT APART IN THE HEIGHT OF THE FENCE. SUCH BANDS SHALL BE EQUIPPED WITH 3/8-INCH DIAMETER CARRIAGE BOLTS AND NUTS. BOLT HEADS SHALL BE ON THE FIELD/COURT SIDE OF THE FENCE. THE FABRIC SHALL BE FASTENED TO LINE POSTS WITH 12 GAUGE STEEL TIES SPACED APPROXIMATELY 14 INCHES APART, AND TO THE TOP RAIL WITH 12 GAUGE STEEL WIRE TIES ON APPROXIMATELY 24-INCH CENTERS
3. POST TOPS: ROUNDED/DOME STYLE, WEATHER-TIGHT CLOSURE; SAME MATERIAL AND DIAMETER AS POST.
4. TENSION WIRE: 9 GAUGE.
5. GATE FRAMES: 1-1/2" NOMINAL (1.9" O.D.).
6. HINGES: MALLEABLE IRON; "BULLDOG HINGES"; RESIDENTIAL TYPE FOR OPENINGS LESS THAN 4 FEET.
7. LATCHES: INTEGRAL PADLOCK EYE; OPERABLE FROM EITHER SIDE.
a. MALLEABLE FORK TYPE FOR SINGLE GATE.
b. FULCRUM/PIONEER LATCHES FOR DOUBLE GATES.
c. ADD WELDED CHAIN FOR LOCKS
D. CONNECTIONS: CENTER RAILS, BOTTOM RAILS AND TOP RAIL TERMINAL CONNECTIONS SHALL BE WELDED TO POSTS. WELDS ARE NOT REQUIRED ON TOP RAILS AT LINE POSTS. WELDS SHALL BE BRUSHED CLEAN AND PAINTED WITH A RUST INHIBITOR. PAINT COLOR TO MATCH THE GALVANIZED FINISH ON THE POST AND RAILS.
E. FOOTINGS: MINIMUM DEPTH OF FOOTINGS SHALL BE 3 FEET FOR FENCE POSTS. LINE, CORNER, AND INTERMEDIATE POSTS SHALL BE SET IN CYLINDRICAL CONCRETE FOUNDATIONS. HOLE SHALL BE EXCAVATED FOR THE FULL DEPTH OF POST AND FOOTING; NOT LESS THAN 10 INCHES IN DIAMETER FOR ALL LINE POSTS; 12 INCHES IN DIAMETER FOR CORNER, INTERMEDIATE, AND TERMINAL POSTS
F. FENCE MOW STRIPS REQUIRED AS DIRECTED BY PSD. SEE DETAILS IN DRAWINGS.



SHEET CONTENTS
PROJECT SPECIFICATIONS

BETHKE ELEMENTARY SCHOOL
5100 SCHOOL HOUSE DRIVE
TIMNATH, COLORADO 80547

Table with columns: NO., BY, DATE, DESCRIPTION, REVISIONS. Includes a revision entry for 'DAM' by 'KCG' on '03.20.20' with a value of 'A0.1'.

ISSUE FOR PERMIT

THE STATE HAS REVIEWED AND APPROVED THESE PLANS AS A NECESSARY PART OF THE PERMITTING PROCESS. THIS REVIEW IS LIMITED TO TECHNICAL ASPECTS AND DOES NOT CONSTITUTE A GUARANTEE OF THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED HEREON.

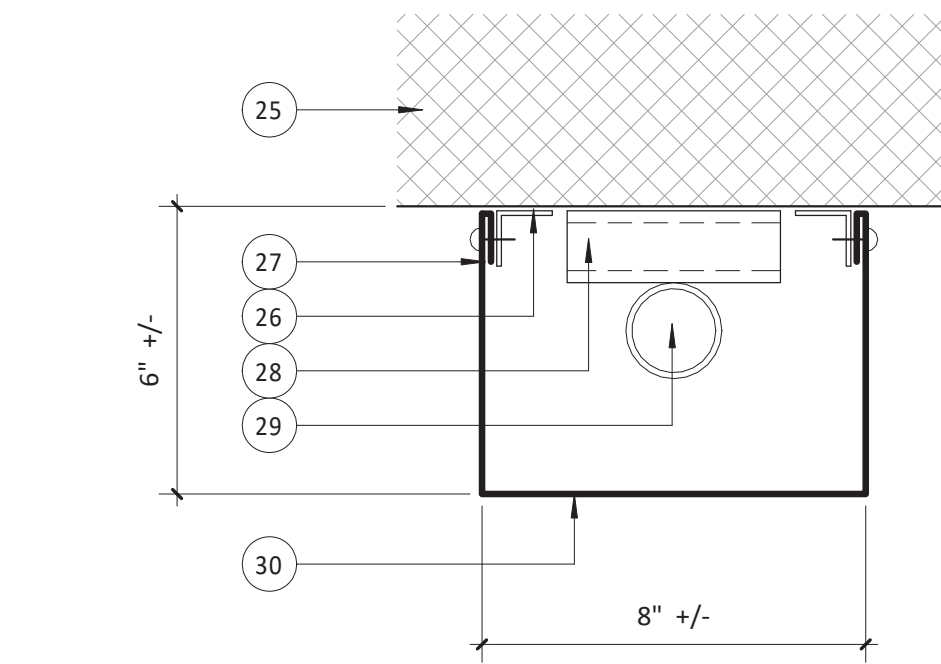
ITEM	FURNISHED BY	INSTALLED BY
SITework:		
Site Prep for Modular Classroom	Existing	GC
Remove existing chain link fence/fence posts as required for Modular deliver to site	GC	GC
Re-Install chain link fence/fence posts as per existing configuration.	GC	GC
Irrigation System Demolition/Design/Repair	GC	GC
Modular Classrooms	O	GC
Modular Delivery to Site	GC	GC
Modular Assembly	GC	GC
Modular Tie-Downs	GC	GC
Saw cutting Concrete/Asphalt and/or boring for in Ground Utilities/Gas Service	GC	GC
New concrete walks and paved areas as indicated in the drawings.	GC	GC
Trenching/Backfill for In-Ground Utilities, from existing Modular to new Modular and/or from existing building to new Modular as shown in drawings.	GC	GC
New Crusher Fines (Breeze) as indicated on Plan	GC	GC
Rabbit Screen Full Perimeter	GC	GC
Turf and Grasses	GC	GC
ARCHITECTURE:		
Aluminum Entry Platform	O	GC
Reconfigure Aluminum Entry Platform as required for new Modular location.	GC	GC
Aluminum Stairs / Ramps	O	GC
Reconfigure Aluminum Stairs / Ramps as required for new Modular location.	GC	GC
Gas Service Expanded Metal Screen	GC	GC
Skirt Framing- Full Perimeter of Modular	GC	GC
Skirting - Full Perimeter of Modular	GC	GC
Skirting Access Door and Hardware with Locking Hasp	GC	GC
Downspouts	Existing	Existing
Splashblocks	GC	GC
Exterior Painting: Full exterior painting of Relocated Modular, including Walls, Trim, Soffits, Bandboard, and Skirting.	GC	GC

ITEM	FURNISHED BY	INSTALLED BY
MECHANICAL:		
Gas Service		
Reference Mechanical Drawings: Provide and install connection on South side of School, provide and install new 1-1/2" gas piping up wall and over roof, and down to ground as indicated. Trench to new modular location and install per drawings.	GC	GC
Condensing Unit: Remove and Store Exist. Condensing unit for relocation. Re-Install (Existing) Condensing unit on existing rack on roof of relocated modular. Provide and install required refrigerant line sets for a complete fully functioning system.	GC	GC
ELECTRICAL:		
Conduit: Existing Vault to NEW Vault to Relocated Modular Electrical Panel	GC	GC
Wiring: Existing Vault to NEW Vault to Relocated Modular Electrical Panel	GC	GC
Power to Interior Telecom as required	GC	GC
TELE/COM:		
Tele/Com Conduit: Existing Modular Electrical Room to Relocated Modular Electrical Room	GC	GC
Connect Intercom Wiring to Existing Intercom	O	GC (Beacon)
IT:		
3" conduit from existing modular Comm. Room to new modular. Sweeps under each building.	GC	GC
Cat. 5: OSP wires (20) from existing modular Com/Data closet to new modular outlet locations. (8 data per room, 1 phone per room, 1 WAP, 1 thermostat)	GC	GC
Cat. 6: ADD 2 CAT6A cables from center of each classroom (above ceiling), back to the CAT6A panel in Com/Data closet of existing modular.	GC	Lynx, Interface, or Sturgeon Electric
FIRE ALARM:		
Conduit-From existing modular to relocated Modular	GC	GC
Fire Alarm Wiring to ALL required devices in relocated modular.	GC	GC
Fire Alarm Programming	GC	GC (Tech Electronics)

O - OWNER GC - GENERAL CONTRACTOR

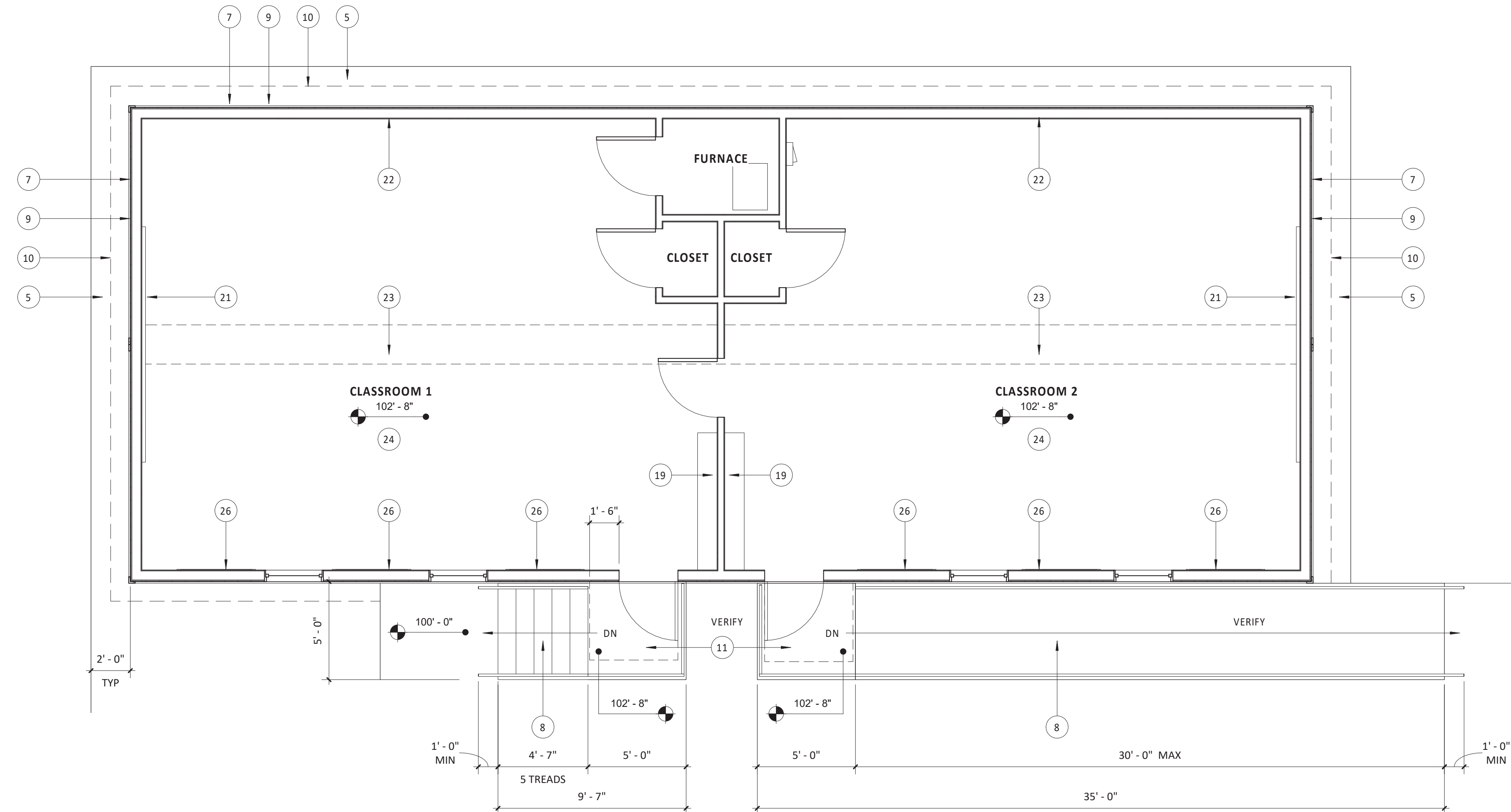
2 RESPONSIBILITY MATRIX

12" = 1'-0"



3 GAS COVER

3" = 1'-0"



1 RELOCATED MODULAR PLAN

14" = 1'-0"

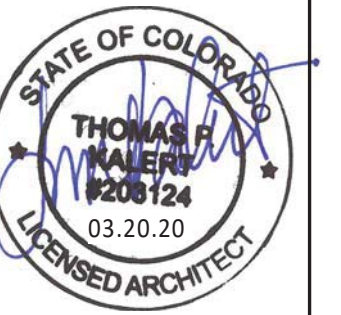
GENERAL NOTES:

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- CONTRACTOR TO FIELD VERIFY ALL EXISTING SITE CONDITIONS AND SHALL INFORM ARCHITECT AND OWNER OF ANY MAJOR DISCREPANCIES
- ALL MEP COMPONENTS ARE SHOWN FOR REFERENCE ONLY - SEE MEP DRAWINGS

KEY NOTES:

- APPROXIMATE LOCATION OF RELOCATED MODULAR, FIELD VERIFY FINAL LOCATION WITH MEP DRAWINGS AND EXISTING SITE CONDITIONS - SEE STANDARD MODULAR PLAN
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- EXISTING CONCRETE WALK TO REMAIN - SHOWN FOR REFERENCE ONLY
- NEW 6" CONCRETE WALK, TIE INTO EXISTING CONCRETE
- 2" - 0" NEW BREEZE FILL AT FULL PERIMETER OF MODULAR EXCEPT WHERE CONCRETE PAVEMENT ABUTS MODULAR
- LINE OF PEST SCREEN - SEE STANDARD MODULAR PLAN
- INSTALL AND PAINT SKIRTING, LP SMARTSIDE AND TRIM TO MATCH MODULAR, INSTALL ON 2x4 STUD WALL WITH STUDS AT 24" O.C., PROVIDE WEATHER-RESISTANT BOTTOM PLATE ATTACHED WITH 24" #4 REBAR AT 48" O.C.
- ALUMINUM ENTRY PLATFORM, STAIRS, RAMP AND RAILING, COORDINATE LAYOUT IN FIELD WITH EXISTING CONDITIONS - SEE ENLARGED PLANS
- PROVIDE (8) 12" X 16" VENTS (1.335 F. EACH - TOTAL AREA 10.64 S.F.). PER IBC/15 - 1203.4, 9.6 S.F. REQUIRED. PROVIDE AND INSTALL (2) ACCESS DOORS PER IBC/15 - 1209.1 FOR UNDERFLOOR ACCESS
- PEST SCREEN - 1/4" HAIL SCREEN MATERIAL FULL PERIMETER OF MODULAR EXCEPT WHERE CONCRETE PAVEMENT ABUTS SKIRTING, INSTALL PRIOR TO INSTALLATION OF SKIRTING, EXTEND HORIZONTALLY 12" FROM SKIRTING, 4" BELOW FINISHED GRADE
- ADA REQUIRED APPROACH DOOR CLEARANCE
- ALIGN NEW CONCRETE WALKWAY WITH EXISTING CONCRETE JOINT, VERIFY LOCATION IN FIELD
- APPROXIMATE LOCATION OF NEW UNDERGROUND GAS LINE - SEE MECHANICAL DRAWINGS
- NEW VAULT: (1) ELECTRICAL, SHOWN FOR REFERENCE FILED VERIFY EXACT LOCATIONS - SEE ELECTRICAL DRAWINGS
- APPROXIMATE LOCATION OF NEW GAS CONNECTION, PROVIDE STANDARD EXPANDED METAL CAGE - SEE MECHANICAL DRAWINGS
- APPROXIMATE LOCATION OF UNDERGROUND ELECTRICAL LINE FROM EXISTING VAULT TO NEW VAULT - SEE ELECTRICAL DRAWINGS
- EXISTING VAULTS: (1) ELECTRICAL AND (1) DATA, SHOWN FOR REFERENCE FILED VERIFY EXACT LOCATIONS
- APPROXIMATE LOCATION OF UNDERGROUND COM/DATA, INTERCOM, AND FIRE ALARM LINES - SEE ELECTRICAL DRAWINGS
- OWNER SUPPLIED/OWNER INSTALLED: 7' - 0" COAT RACK: (1) AT EACH CLASSROOM
- OWNER SUPPLIED/OWNER INSTALLED: 4' x 4' BULLETIN BOARD: (3) AT EACH CLASSROOM - INSTALL AT 24"-30" AT ELEMENTARY SCHOOLS AND 36" AT MIDDLE SCHOOLS
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 - 2-FT X 60-FT = +/- 120 OF FLOOR PATCH AND OWNER PROVIDED CARPET INSTALLATION
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- 1" x 1" 16 GAUGE CLIP ANGLES, FULL HEIGHT CONTINUOUS, PIN TO EXISTING MASONRY WALL AT 16" O.C. AND WITHIN 4" OF TOP AND BOTTOM
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- 18 GAUGE PREFINISHED METAL ENCLOSURE WITH SLOPPED TOP, ATTACH TO CONTINUOUS CLIP ANGLES AT 24" O.C. AND WITHIN 2" OF TOP AND BOTTOM

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SHEET CONTENTS
RELOCATED MODULAR PLAN
AND RESPONSIBILITY MATRIX

BETHE ELEMENTARY SCHOOL
5100 SCHOOL HOUSE DRIVE
TIMNATH, COLORADO 80547



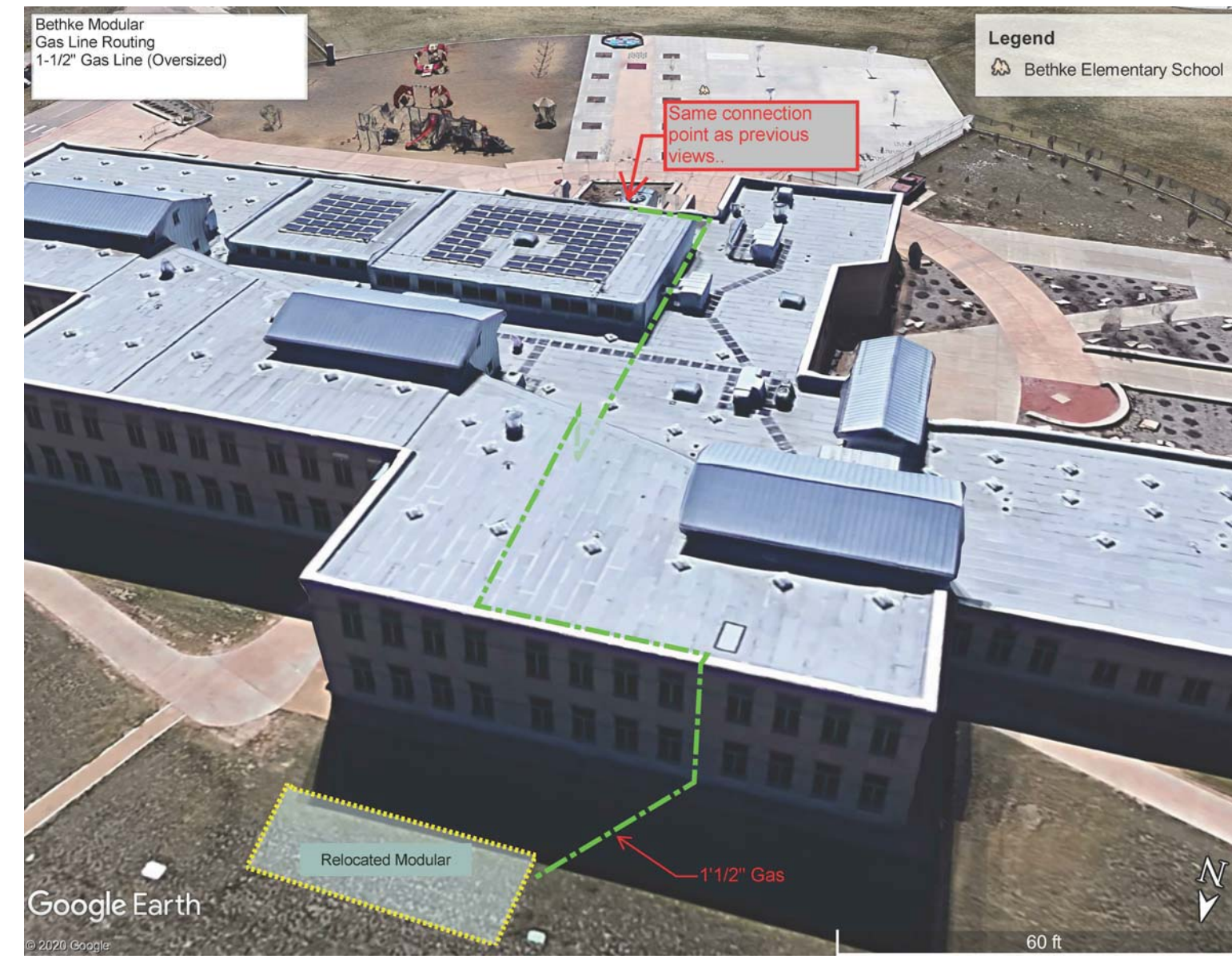
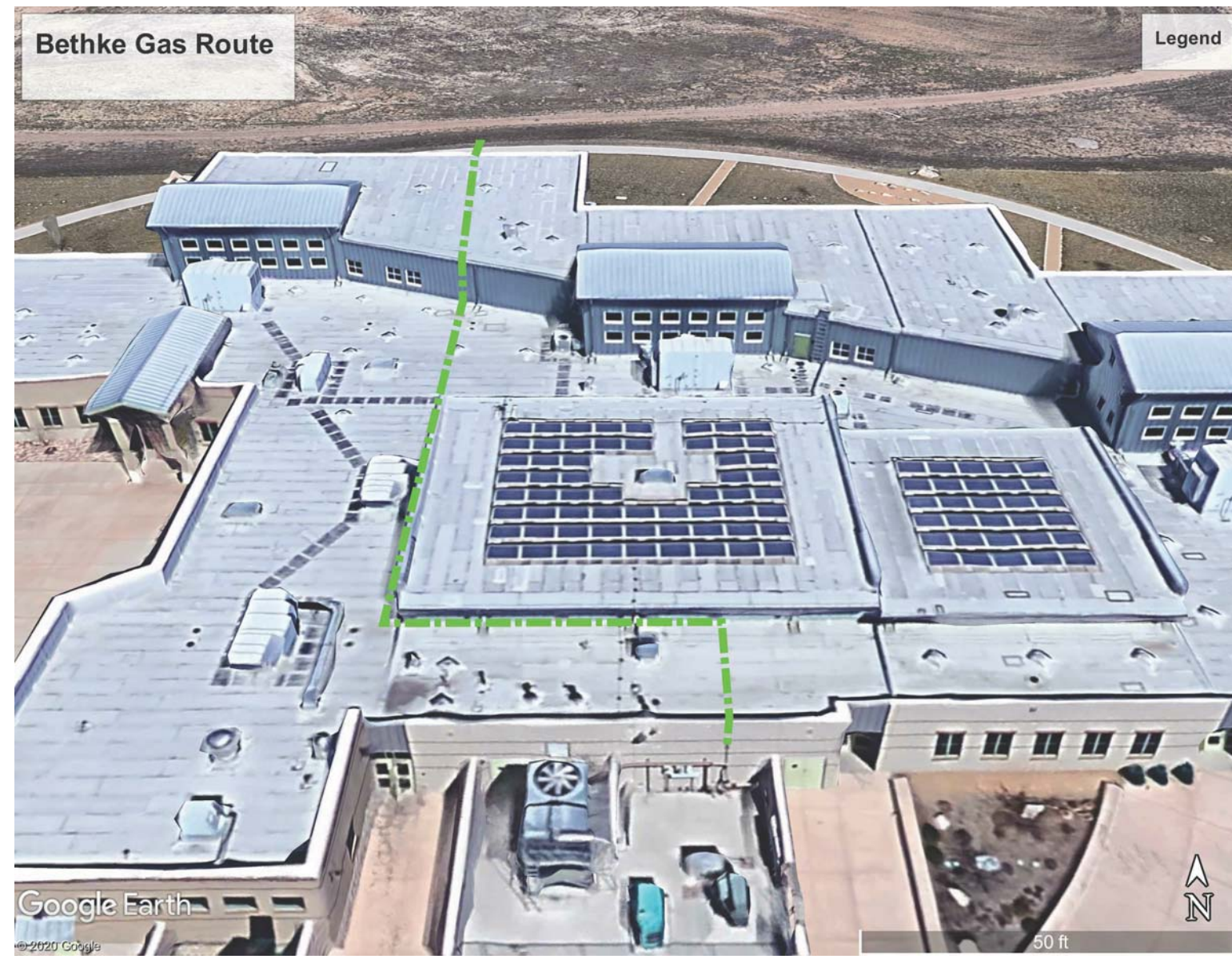
NO.	BY	DESCRIPTION	DATE

DESIGNED BY DAM	CHECKED BY KCG	DATE 03.20.20	SHEET NO. A1.0
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REVISIONS





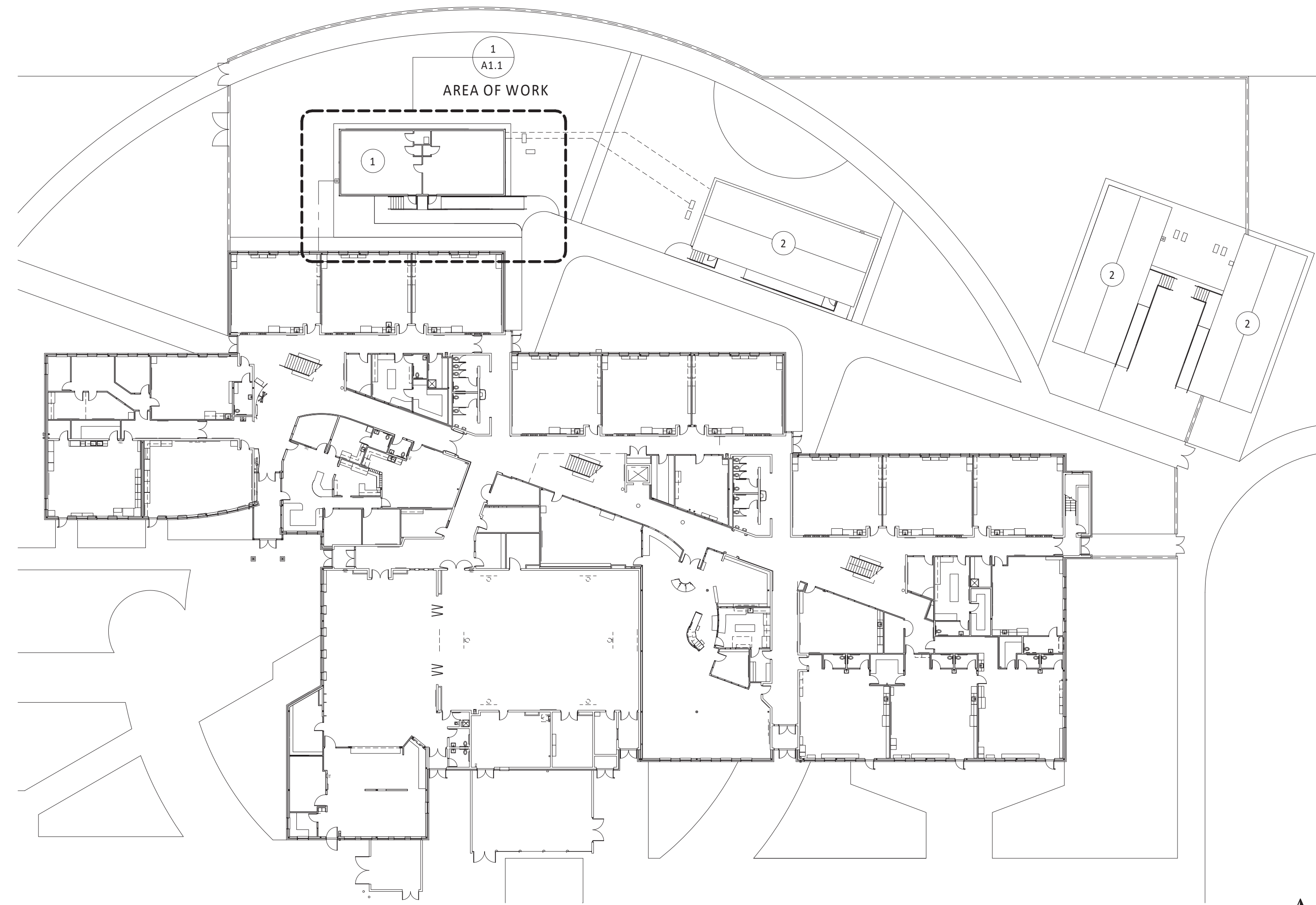
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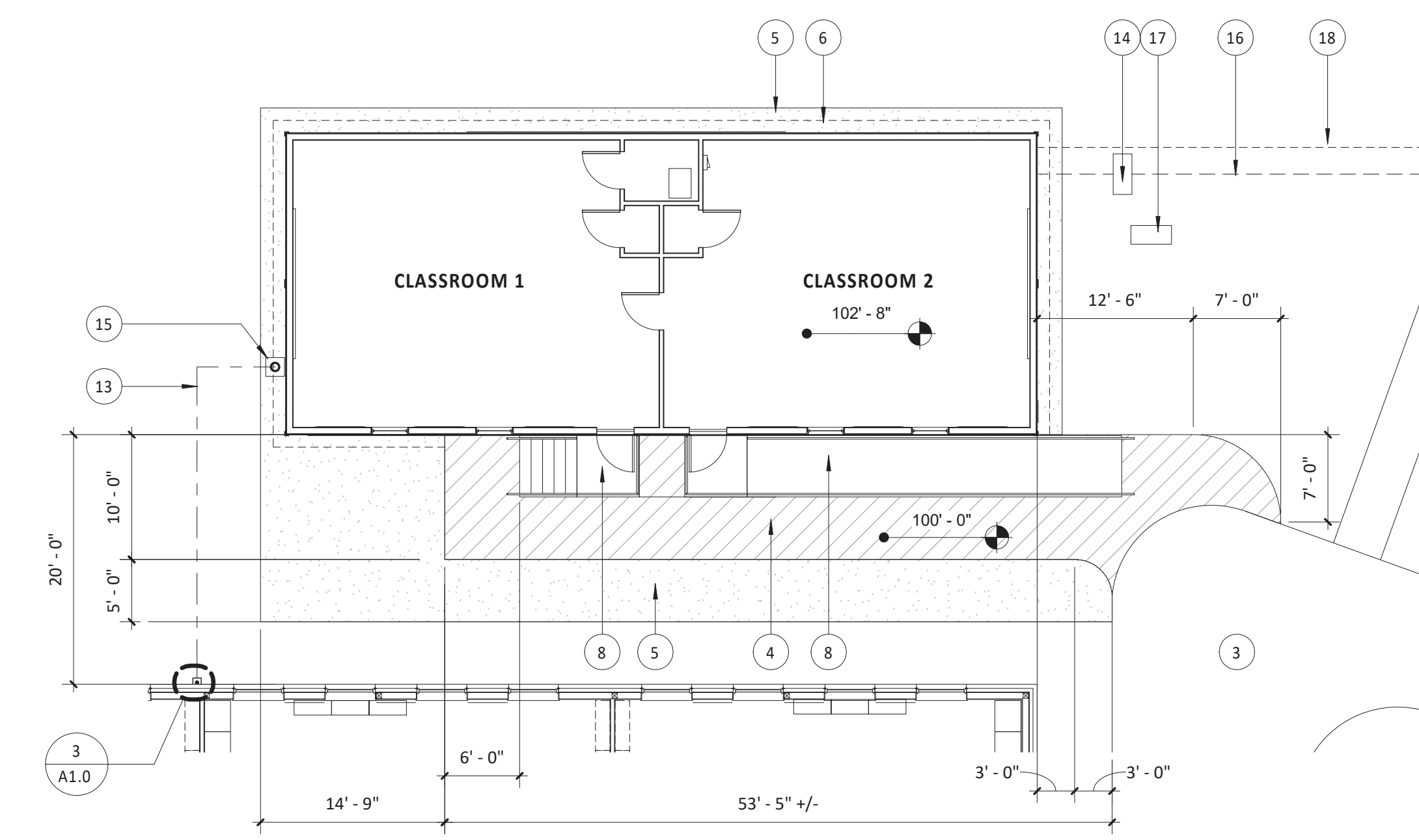
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- 6. LINE OF PEST SCREEN - SEE STANDARD MODULAR PLAN
- 7. INSTALL AND PAINT SKIRTING, LP SMARTSIDE AND TRIM TO MATCH MODULAR, INSTALL ON 2x4 STUB WALL WITH STUDS AT 24" O.C., PROVIDE WEATHER-RESISTANT BOTTOM PLATE ATTACHED WITH 24" #4 REBAR AT 48" O.C.
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- 19. OWNER SUPPLIED/OWNER INSTALLED: 7' - 0" COAT RACK: (1) AT EACH CLASSROOM
- 20. OWNER SUPPLIED/OWNER INSTALLED: 4' x 4' BULLETIN BOARD: (3) AT EACH CLASSROOM - INSTALL AT 24"-30" AT ELEMENTARY SCHOOLS AND 36" AT MIDDLE SCHOOLS
- 21. OWNER SUPPLIED/OWNER INSTALLED: 4' x 8' WHITE BOARD: (1) EACH CLASSROOM - INSTALL AT 24"-30" AT ELEMENTARY SCHOOLS AND 36" AT MIDDLE SCHOOLS
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- 28. UNI-STRUT GAS LINE SUPPORT
- 29. SCHEDULED GAS LINE - SEE GAS ROUTE AND MECHANICAL DRAWINGS
- 30. 18 GAUGE PREFINISHED METAL ENCLOSURE WITH SLOPPED TOP, ATTACH TO CONTINUOUS CLIP ANGLES AT 24" O.C. AND WITHIN 2" OF TOP AND BOTTOM

3 GAS ROUTE
12" = 1'-0"

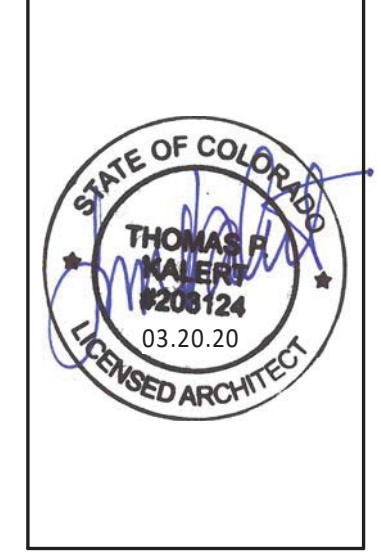


2 OVERALL PLAN
1" = 30'-0"



1 AREA OF WORK PLAN
1" = 10'-0"

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SHEET CONTENTS

OVERALL PLAN - AREA OF WORK
PLAN AND RESPONSIBILITY
MATRIX

BETHKE ELEMENTARY SCHOOL
5100 SCHOOL HOUSE DRIVE
TIMNATH, COLORADO 80547

THE DATA AND DESIGN INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF KCG | LLC AND NOT TO BE USED FOR ANY OTHER PROJECT WITHOUT PRIOR WRITTEN PERMISSION BY KCG | LLC.

NO.	BY	DESCRIPTION	DATE

ISSUE FOR PERMIT

DESIGNED BY: DAM
CHECKED BY: KCG
DATE: 03.20.20

REVISIONS

SHEET NO: A1.1

Footers:

Footings are designed for 1500 psf maximum soil capacity. The buildings are intended to be set on turf, soil or asphalt surfaces. Where possible, remove top soil and turf so footings bear on undisturbed soil or compacted fill. If set on turf, footings may compress turf and require additional re-leveling.

Footers may be ABS pads, other manufactured pads (concrete, plastic or treated wood), cast in place concrete with #4 rebar 6" c/c max each way 8" min thick or solid CMU blocking providing proper bearing areas. Minimum footing bearing area sized on drawing. Footings may be placed on soil or compacted structural fill. Footer bases do not need to meet frost depth because of building design, skirting, soil and site conditions.

Unit Supports:

Support units from CMU piers. Maintain an 18" minimum clearance between the ground and wood framing components plus insure adequate clearance for maintenance.

Install double opposing leveling wedges, between top of CMU block stack and steel frame. Wedges should support 4" (min) of frame length for the width of the frames.

Union line support points should support rim joists as close to directly below roof columns as possible. Block any roof column locations.

Tie-Downs: (14 Auger anchors required approximately as shown) 5 each 60' side for 126mph Exp B wind conditions. Units must be properly secured together per manufacturer's instructions. Tie-downs anchors must be appropriate for soil type! (3150 lb cap. each) Must use auger anchors in soils, cross-drive anchors in rock. Install stabilizer plates on anchor shafts and shafts driven to proper installation level per manufacturer instructions. Each anchor should be attached to the unit frame using tensioned straps secured to the frames meeting manufacturer's instructions. Lines indicate direction of straps to frame. HUD approved tie-downs and strapping shall be used. Anchors parallel to frames shall be attached by appropriate frame clamps - do not drill frame flanges.

Alternative anchor for installation of units over asphalt parking surfaces. Rock Drive anchors may be substituted for auger anchors if asphalt is 3" (min) thick, in good condition and placed over typical road base. Increase anchors on each 60' side to six.

Alternative anchor for installation of units over soils too compact or "hard" to properly drive auger anchors. "X-Plate" anchors may be substituted for auger anchors. Increase anchors on each 60' side to six.

Skirt Walls: To enclose and resist nominal wind pressures. 2x4 skirt wall, 24" c/c max, treated sheathing, galvanized or stainless connectors. Secure to units and ground. Provide ventilation openings as needed. Access through unit floor system is suggested for security. Securely attach to both unit frame and soil. If wood, treat material appropriately for contact with soils.

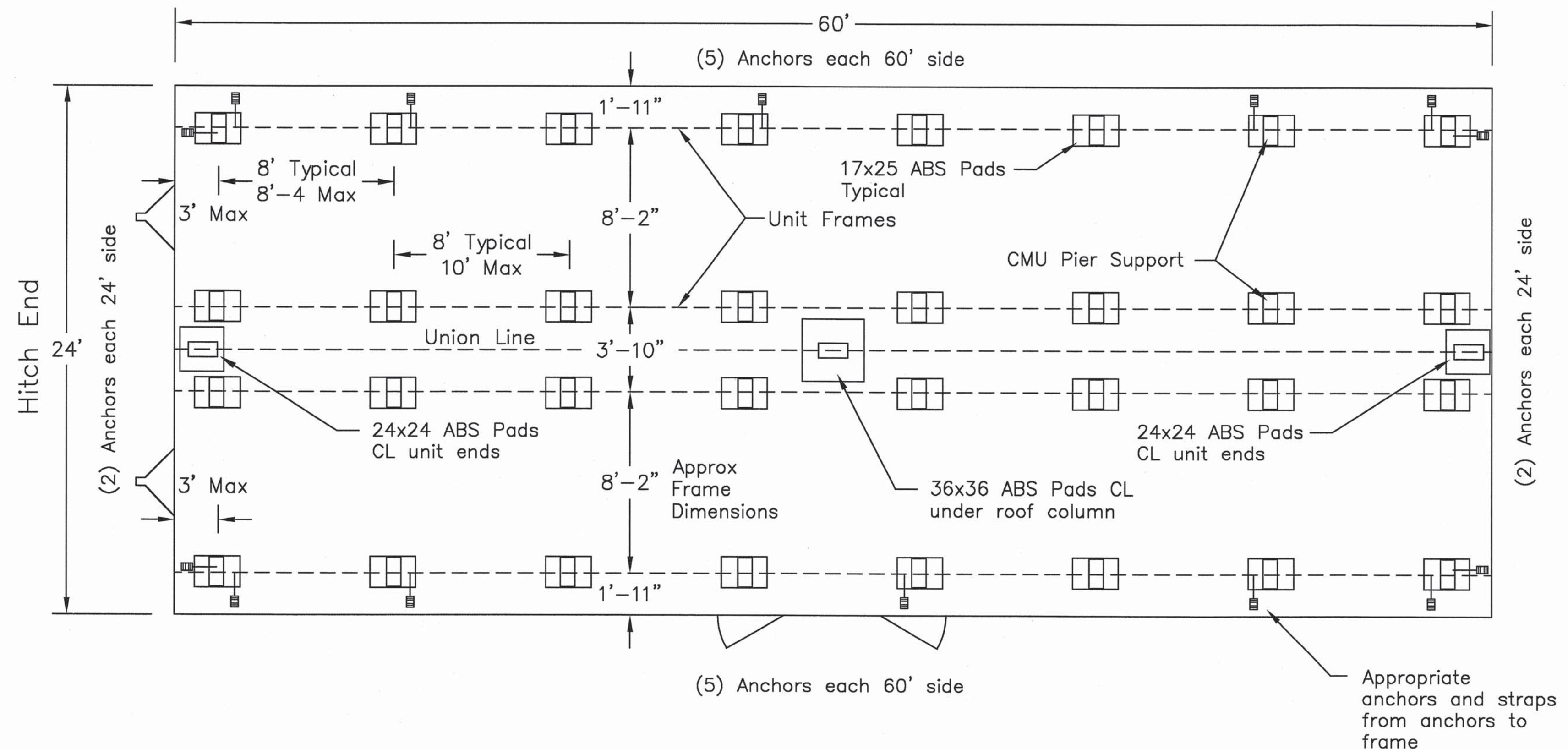
Provide access stairs and ramps to meet appropriate local and handicap access code.

Building width may vary slightly. Unit Width: 12'-0" nominal plus allow up to 2" between each unit for set-up variation.

Analysis of site loads based on 2015 IBC code and ASTM 7-10 procedures and methods. All workmanship shall meet a minimum of the intent and practice of that presented IBC code. Set-up shall observe manufacturer's instructions for use of tie-down and support equipment.

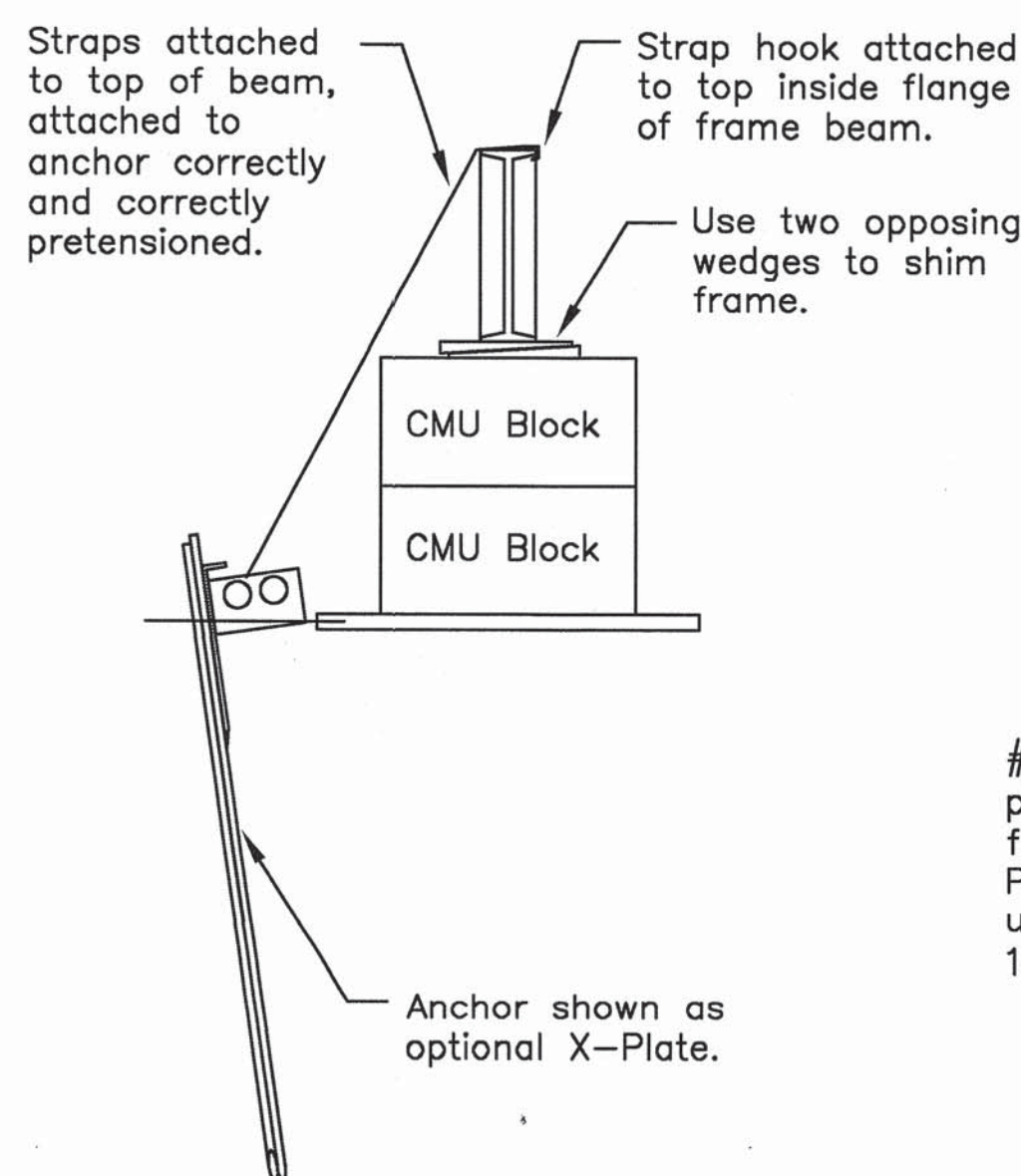
Modular Classroom Support Plan

Scale: 1/4" = 1'



Tie-down Attachment

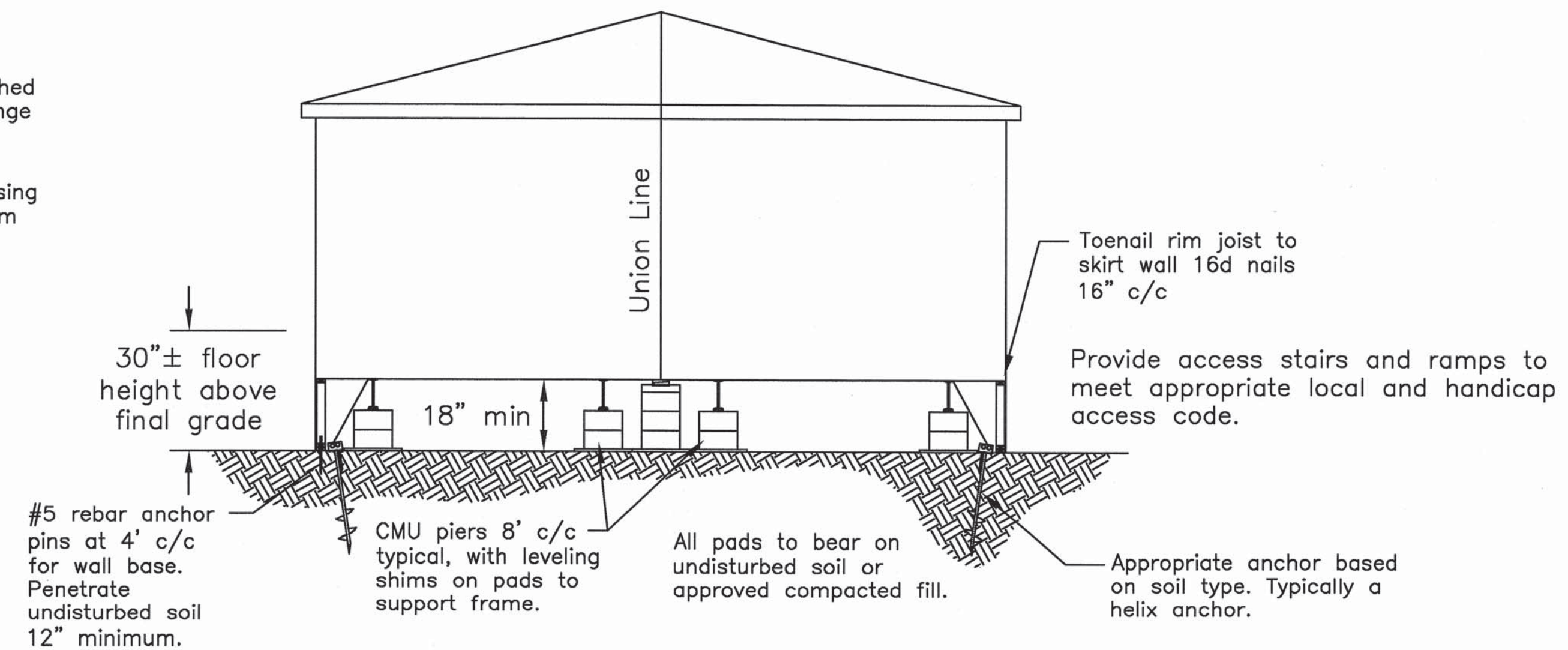
Scale: 1" = 1'



Typical Section End View - Ground Set

Scale: 1/4" = 1'

Roof Profile may vary



Design Based on:
 2015 IBC Building Code Methods
 126 mph (3sg) Exp C Wind Load
 Seismic Zone B
 30 psf Snow Load
 50 psf Occupancy Load
 Reasonable weight estimates
 Footing design based on 1500 psf max bearing.

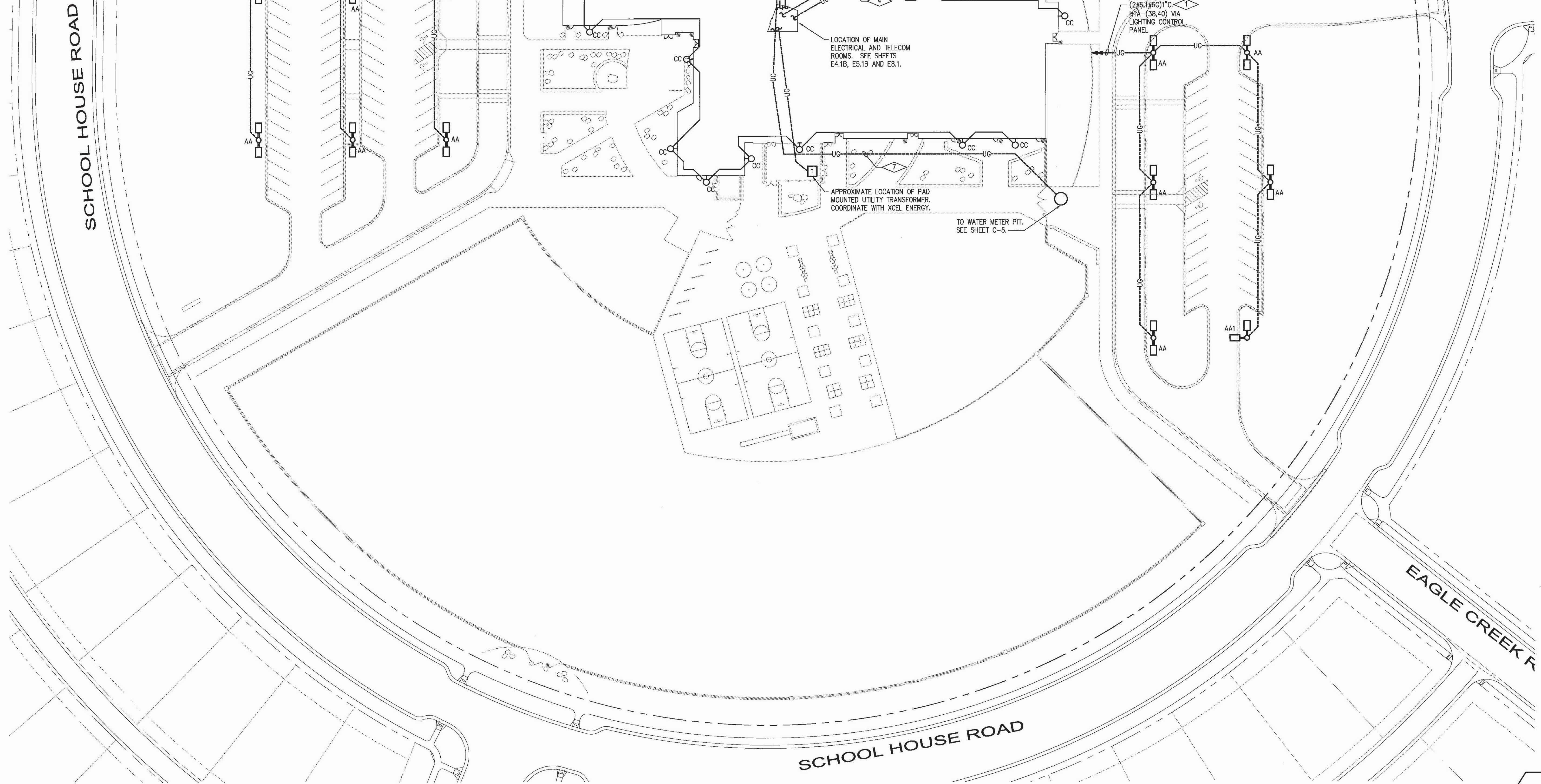
Robinson Engineering, Inc
 319 South Grant Avenue
 Fort Collins, Colorado 80521
 (970) 217-4960 Office
 (970) 979-2649 Fax
 RobEngInc@gmail.com

Customer: Poudre R1
 Project Number: 06-033
 Drawing Information:
 PR1 Master Classroom B&T AutoCAD
 May 6, 2015
 Drawn by: Geoff Robinson

Modular Class Room Blocking and Tie-Down Plan
 Typical Blocking and Tie-Down Plan
 Poudre R1 School District Sites
 Fort Collins and Larimer County Sites



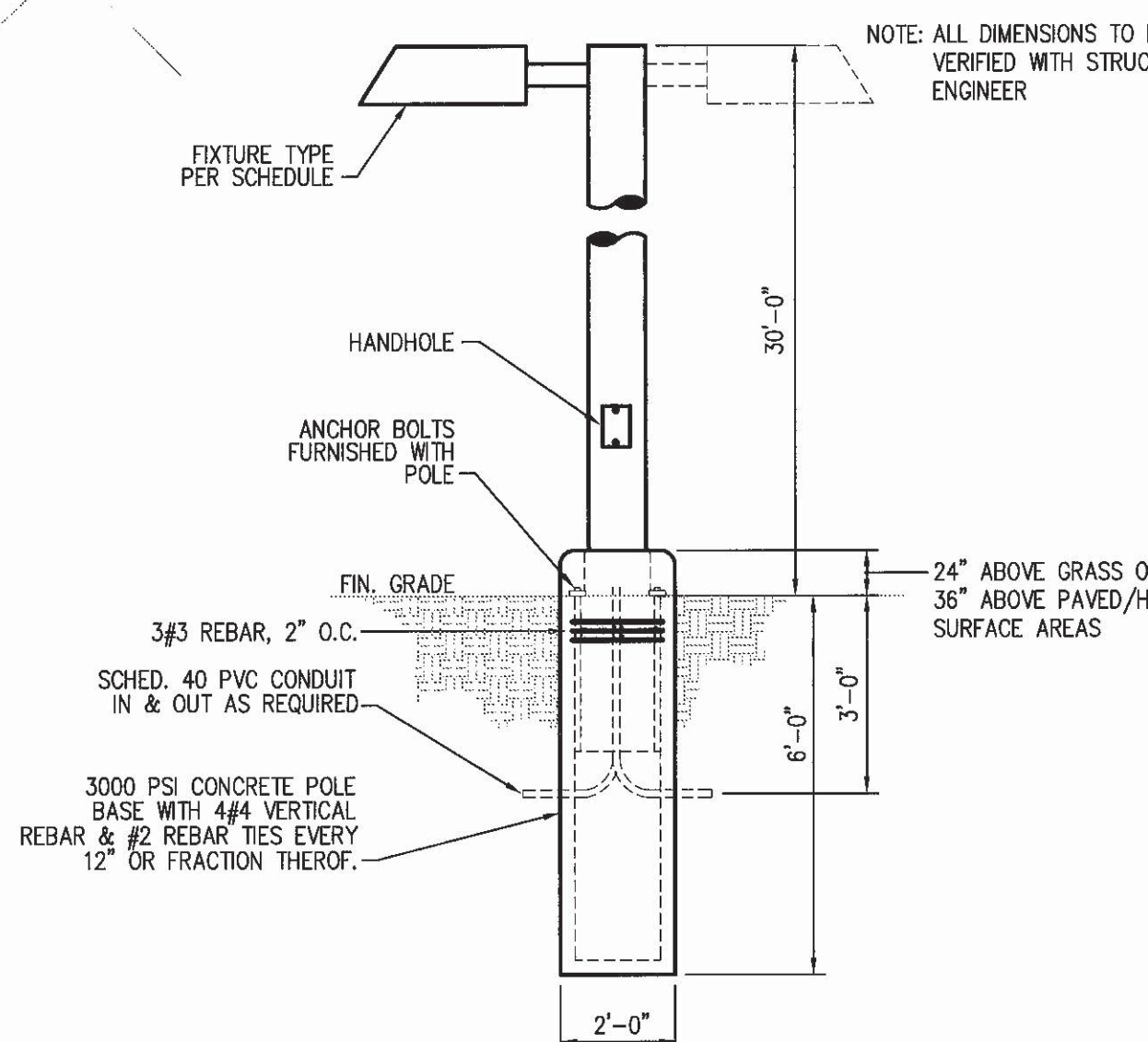
ROUTE CONDUITS TO SLEEVES AT ROAD COORDINATES OF SLEEVES PRIOR TO BE STUBBED UP TO QWEST AND CABLE PROVIDED BY THE SERVING UTILITY.



LIGHTING FIXTURE SCHEDULE - EXTERIOR

KEY	DESCRIPTION	LAMPS		BALLAST QTY	VOLTAGE	TOTAL VA	MANUFACTURER		FINISH	MOUNTING		NOTES
		NO.	TYPE				NAME	CATALOG NO.		TYPE	DEPTH	
AA	TWIN HEAD, FORWARD THROW HIGH PRESSURE SODIUM AREA LIGHT W/HOUSE SIDE SHIELD MTD. ON 30' SQUARE, STRAIGHT, STEEL POLE	2	250 HPS	1	480	600	SPAULDING MCGRAW	SE2-PM-S250-IV-480-CS-DBZ (2)CAL-250HPS-480-4F-BZ/HS	DARK BRONZE	POLE 30'-0" 180°	2	
AAI	TWIN HEAD, FORWARD THROW HIGH PRESSURE SODIUM AREA LIGHT W/HOUSE SIDE SHIELD MTD. ON 30' SQUARE, STRAIGHT, STEEL POLE	2	250 HPS	1	480	600	SPAULDING MCGRAW	SE2-PM-S250-IV-480-CS-DBZ (2)CAL-250HPS-480-4F-BZ/HS	DARK BRONZE	POLE 30'-0" 90°	3	
CC	WALL MOUNTED HIGH PRESSURE SODIUM AREA LIGHT WITH POLYCARBONATE SHIELD	1	70 HPS	1	277	83	HYDREL KIM INVUE	WD1403-70HPS277-DB-P-LS VWS-70HPS-277-3S-BZ	DARK BRONZE	WALL	1	
DD	SINGLE HEAD, FORWARD THROW HIGH PRESSURE SODIUM AREA LIGHT W/HOUSE SIDE SHIELD MTD. ON 30' SQUARE, STRAIGHT, STEEL POLE	1	250 HPS	1	480	300	HYDREL SPAULDING MCGRAW	SE2-PM-S250-IV-480-CS-DBZ CAL-250HPS-280-4F-BZ/HS	DARK BRONZE	POLE 30'-0"		
EE	9" DIA HIGH PRESSURE SODIUM DOWNLIGHT WITH FRESNEL GLASS LENS	1	70 HPS	1	277	83	PRESCOLITE PORTFOLIO	LFHL-V9-70HPS-70HPSFE-BSRFR-TLG-TRG M8043S-630-10002P				

NOTES:
 1. FOR MOUNTING ELEVATIONS REFER TO ARCHITECTURAL DRAWINGS.
 2. 2 LUMINAIRES MOUNTED AT 180°
 3. 2 LUMINAIRES MOUNTED AT 90°

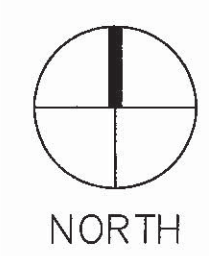


LIGHTING POLE BASE DETAIL

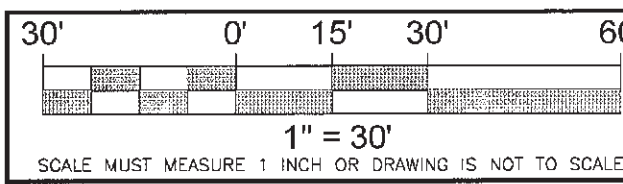
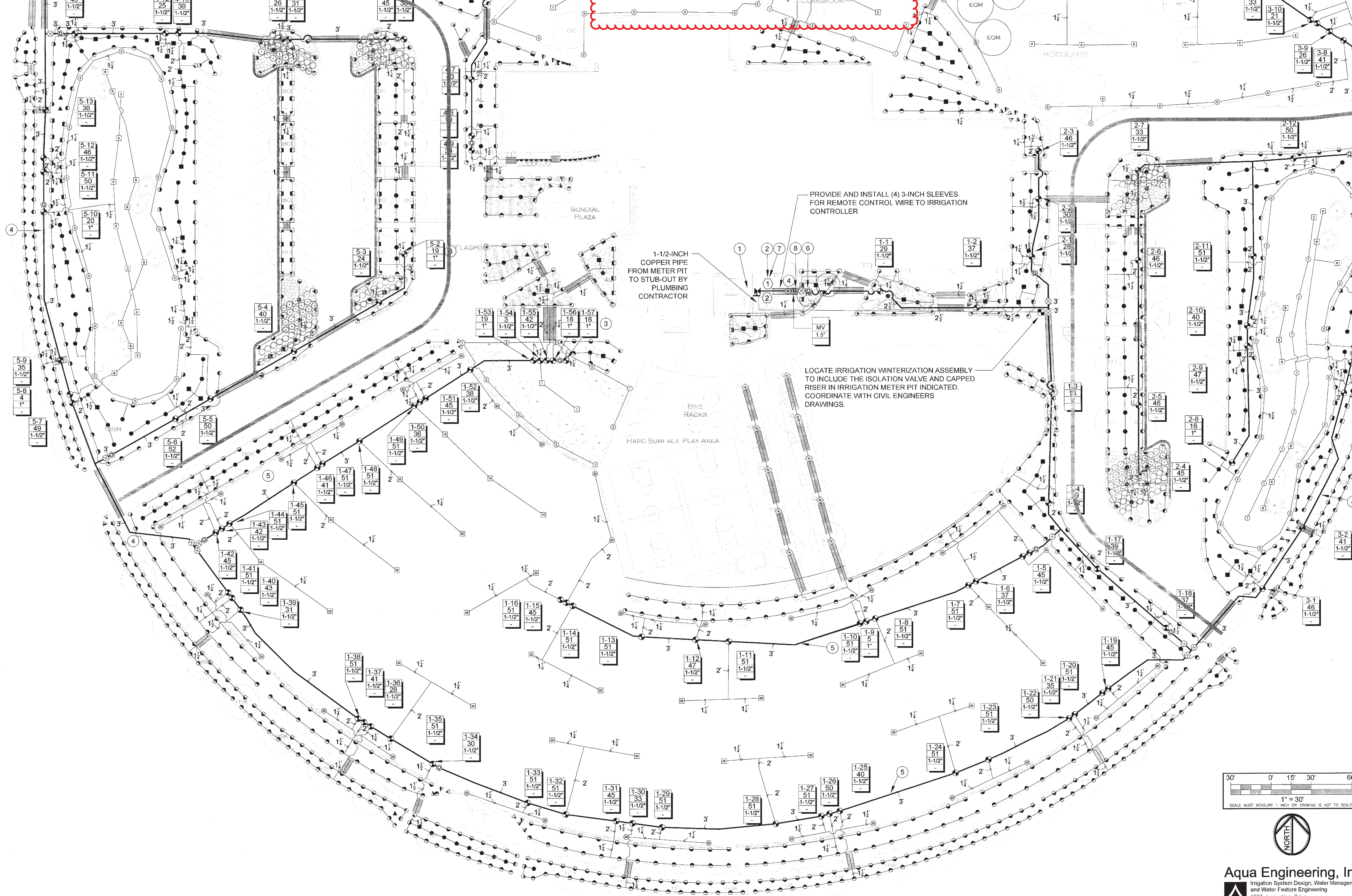
NOT TO SCALE

RECORD DOCUMENTS

These Record Documents have been prepared based on information provided by others. Shaffer • Baucum Engineering & Consulting has not verified the accuracy and/or completeness of this information and is not responsible for any errors or omissions which may be incorporated herein as a result.



R:\2006 Projects\06117 - PSD Timnash Elementary School\Electrical\06117-E3.1-Electrical Site Plan.dwg, 10/22/2008 10:27:36 AM, djgarcia



HVAC & PLUMBING SYMBOL SCHEDULE			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
M.C.	MECHANICAL CONTRACTOR	VTR	VENT THRU ROOF
P.C.	PLUMBING CONTRACTOR		VALVE IN DROP
E.C.	ELECTRICAL CONTRACTOR		VALVE IN RISER
G.C.	GENERAL CONTRACTOR		GATE VALVE / SHUT OFF VALVE
	REVISION NUMBER		GLOBE VALVE
	NEW TO EXISTING. VERIFY EXACT LOCATION.		3 PIECE BALL VALVE
	REFER TO PLAN NOTES		BALL VALVE
G	NATURAL GAS LINE		BUTTERFLY VALVE
G	EXISTING NATURAL GAS LINE		PRESSURE REDUCING VALVE (PRV)
G	UNDERGROUND NATURAL GAS LINE		CHECK VALVE
(E)	EXISTING EQUIPMENT OR MATERIAL DESIGNATION		PLUG VALVE
(N)	NEW EQUIPMENT OR MATERIAL DESIGNATION		CALIBRATED BALANCE VALVE

GENERAL NOTES	
1.	ALL WORK IS TO CONFORM WITH APPLICABLE CODES AND STANDARDS.
2.	VERIFY JOB SITE CONDITIONS AND DIMENSIONS BEFORE BEGINNING WORK. PLANS ARE SCHEMATIC IN NATURE. LAYOUT IS BASED ON BEST AVAILABLE INFORMATION. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND DIMENSIONS.
3.	NO PIPING SHALL PENETRATE STRUCTURAL MEMBERS.
4.	PROVIDE MISCELLANEOUS CUTTING, PATCHING AND REPAIRING OF FINISHES, ROOF, WALLS, ETC., AS REQUIRED TO ACCOMMODATE THE NEW WORK. ALL CUTTING AND PATCHING SHALL BE CLOSELY COORDINATED WITH THE G.C.
5.	COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO INSTALLATION.
6.	COORDINATE ROUTING OF HVAC PIPING WITH DUCTWORK, LIGHTS, ARCHITECTURAL CEILING AND STRUCTURAL ELEMENTS. PIPING SHALL RISE AND DROP, JOG OR OFFSET AS REQUIRED TO AVOID CONFLICTS. REWORK OF INSTALLED WORK TO RESOLVE CONFLICTS ARISING FROM LACK OF COORDINATION SHALL NOT JUSTIFY AN INCREASE IN THE CONTRACT AMOUNT.
7.	DO NOT ROUTE PIPING OVER ELECTRICAL PANELS OR EQUIPMENT. PIPING SHALL NOT BE ROUTED THROUGH ELECTRICAL ROOMS, TELECOM ROOMS OR ELEVATOR EQUIPMENT ROOMS UNLESS SPECIFICALLY SERVING THAT ROOM. COORDINATE WITH E.C. PROVIDE WATERTIGHT DRIP PAN WITH DRAIN TO NEAREST APPROVED RECEPTOR WHERE REQUIRED.

SHEET INDEX	
M1.0	- MECHANICAL COVER SHEET
M2.0	- BETHKE NATURAL GAS PLAN

SPECIFICATIONS	
DIVISION 15 - MECHANICAL SPECIFICATIONS	
<u>15010 GENERAL CONDITIONS</u>	
A.	RULES AND REGULATIONS <ul style="list-style-type: none"> 1. INSTALL WORK IN STRICT ACCORDANCE WITH APPLICABLE RULES, REGULATIONS OF LOCAL AND STATE GOVERNMENTS AND OTHER AUTHORITIES HAVING LAWFUL JURISDICTION. 2. CONFORM WITH, COOPERATE WITH, AND ASSIST OTHER CONTRACTORS IN CONFORMING WITH TRADE JURISDICTIONAL RULINGS. 3. DRAWINGS AND SPECIFICATIONS INDICATE THE MINIMUM STANDARDS OF CONSTRUCTION, BUT SHOULD ANY WORK INDICATED BE SUB-STANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, CONTRACTOR SHALL EXECUTE WORK IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS.
B.	PERMITS, FEES AND INSPECTIONS: MECHANICAL CONTRACTOR TO SECURE AND PAY FOR ALL NECESSARY PERMITS, FEES, TAXES, INSPECTIONS, AND CERTIFICATES THEREOF REQUIRED BY LOCAL, STATE AND FEDERAL ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS.
C.	SERVICES: CONSULT WITH LOCAL BUILDING OFFICIALS AND SERVICE COMPANIES TO VERIFY REQUIREMENTS AND COSTS FOR SERVICES AND THEIR INSTALLATIONS IN ACCORDANCE WITH SPECIFICATIONS, APPLICABLE CODES AND REQUIREMENTS.
D.	BUILDING CONDITIONS: <ul style="list-style-type: none"> 1. LOCATIONS OF MECHANICAL WORK IS INDICATED DIAGRAMMATICALLY BY DRAWINGS. DETERMINE EXACT LOCATIONS ON JOB, SUBJECT TO STRUCTURAL CONDITIONS AND WORK OF OTHER CONTRACTORS. 2. MAKE NO MAJOR CHANGE NOR DECREASE SIZE OF ANY PIPING WITHOUT WRITTEN PERMISSION. CUTTING OF STRUCTURAL MEMBERS IS NOT ALLOWED.
E.	MATERIALS AND EQUIPMENT: ALL EQUIPMENT SHALL BE NEW, OF THE BEST QUALITY NORMALLY USED FOR THE PURPOSE IN GOOD COMMERCIAL PRACTICE AND BE PRODUCTS OF REPUTABLE MANUFACTURERS, AS INDICATED ON THE PLANS.
F.	GUARANTEE: THE MECHANICAL CONTRACTOR SHALL GUARANTEE THAT ALL EQUIPMENT, MATERIAL AND WORKMANSHIP FURNISHED BY HIM IS FREE OF DEFECT. SHOULD DEFECTS APPEAR WITHIN ONE (1) YEAR FROM DATE OF INSTALLATION ACCEPTANCE, SAME SHALL BE REPAIRED OR REPLACED AT NO CHARGE TO THE OWNER FOR PARTS, EQUIPMENT OR LABOR. WARRANTY WORK ON ITEMS SUPPLIED BY THE OWNER WILL BE DONE ON A TIME AND MATERIAL BASIS, UNLESS DUE TO IMPROPER INSTALLATION, OR AS PER INSTRUCTIONS FROM OWNER.
G.	OPERATION AND MAINTENANCE DATA: CONTRACTOR SHALL SUBMIT OPERATION AND MAINTENANCE MANUALS TO OWNER OR OWNER'S REPRESENTATIVE UPON PROJECT COMPLETION. SUBMIT MAINTENANCE DATA AND PARTS LISTS FOR EACH NEW PIECE OF EQUIPMENT, INCLUDING CONTROLS AND ACCESSORIES; INCLUDE TROUBLE SHOOTING MAINTENANCE GUIDE; PLUS SERVICING, AND PREVENTATIVE MAINTENANCE PROCEDURES AND SCHEDULE. INCLUDE THIS DATA AND PRODUCT DATA IN MAINTENANCE MANUAL.
<u>15400 PLUMBING</u>	
A.	EXCAVATION AND BACKFILL: <ul style="list-style-type: none"> 1. EXCAVATE AS REQUIRED NO DEEPER THAN NECESSARY FOR GRADING OF PIPES. 2. AFTER WORK IS IN PLACE, BACKFILL AND THOROUGHLY TAMP FILL AROUND PIPES IN SIX INCH (6") LAYERS, BRING TO REQUIRED LEVEL. ALL BACKFILLING SHALL BE CAREFULLY DONE TO PREVENT FUTURE SETTLEMENT. BACKFILL EXCAVATION WITHIN BUILDING WITH COMPACTED SAND. 3. STREET, ALLEY PAVEMENT SHALL BE REPAIRED TO SATISFACTION OF LOCAL AUTHORITIES.
B.	SLEEVES: <ul style="list-style-type: none"> 1. PASS PIPES THROUGH EXTERIOR WALLS & FOUNDATIONS THROUGH PIPE SLEEVE TWO (2) SIZES LARGER THAN SERVICE LINE. CAULK OPENING WATERTIGHT WITH LEAD AND OAKUM OR SILICON PRESSURE SEALANT. 2. NOTIFY GENERAL CONTRACTOR IN AMPLE TIME OF THE LOCATION OF ALL CHASES, SLEEVES, OTHER OPENINGS REQUIRED BY WORK OF THIS CONTRACT. ANY CUTTING AND PATCHING NECESSARY BECAUSE OF FAILURE TO COMPLY WITH THE ABOVE, SHALL BE DONE BY AND AT THE EXPENSE OF THIS CONTRACTOR.
C.	PIPE ACCESSORIES: <ul style="list-style-type: none"> 1. FURNISH, INSTALL UNIONS WHERE INDICATED OR NECESSARY FOR REPAIR OR SERVICE. UNIONS 2" AND SMALLER STANDARD GROUND JOINT BRASS TO IRON SEAT, MALLEABLE IRON, SCREWED. UNIONS 2 1/2" AND LARGER STANDARD CAST IRON FLANGED UNIONS 125LB. 2. BACKFLOW PREVENTERS SHALL BE DOUBLE CHECK VALVE ASSEMBLY OR REDUCED PRESSURE ZONE (RPZ) TYPE AS INDICATED ON DRAWINGS WITH SHUTOFF VALVES ON INLET AND OUTLET. CONSTRUCTION TO BE IN ACCORDANCE WITH ASSE STANDARD 1013 AS APPLICABLE.
D.	GAS PIPING: <ul style="list-style-type: none"> 1. ABOVE GROUND PIPE SCHEDULE 40 BLACK STEEL WITH 150# MALLEABLE SCREWED FITTINGS. PIPE TO BE PAINTED. 2. BELOW GROUND PIPING: <ul style="list-style-type: none"> a. WELDED SCHEDULE 40 BLACK STEEL WITH FACTORY APPLIED WRAPPING EQUAL TO REPUBLIC "X-THRU-COAT". TAPE JOINTS AS RECOMMENDED BY MANUFACTURER. b. HDPE PIPING WITH HEAT FUSION OR MECHANICAL JOINTS. 3. PIPING INSTALLED WITHIN CONCEALED SPACES SHALL NOT HAVE UNIONS, VALVES, ETC. PIPING SHALL BE FULLY WELDED. 4. PROVIDE MAGNESIUM ANODE ON GAS SERVICE PIPING WHERE LOCAL CONDITIONS OR ARRANGEMENT OF GAS SERVICE REQUIRE CATHODIC PROTECTION. 5. GAS PRESSURE REGULATORS SHALL BE ANSI Z21.18 OR ANSI Z21.18A, SINGLE STAGE, STEEL JACKETED AND CORROSION RESISTANT. INCLUDE ATMOSPHERIC VENT, ELEVATION COMPENSATOR, THREADED ENDS.
E.	GENERAL PIPING REQUIREMENTS: <ul style="list-style-type: none"> 1. REAM ENDS OF PIPE, REMOVE BURRS, DIRT AND SCALE FROM PIPE BEFORE INSTALLATION. INSTALL EXPOSED PIPING PLUMB, STRAIGHT AND HORIZONTAL WITH LINES PARALLEL TO WALLS AND ACCURATELY, MAKE OFFSETS WITH FITTING. SPRUNG AND BENT PIPING NOT ACCEPTABLE. USE REDUCING FITTINGS WHERE PIPE CHANGES SIZES. INSTALL PIPING WITH AMPLE CLEARANCE FOR INSTALLATION OF INSULATION COVERING. 2. PROVIDE UNIONS AT EACH VALVE, EQUIPMENT, CONTROL OR WHEREVER NECESSARY FOR REPLACEMENT OR REPAIR OF EQUIPMENT AND EACH LOCATION SHOWN OR REQUIRED. 3. ANCHOR PIPING SECURELY TO PREVENT VIBRATION. 4. PIPING INSTALLED ON ROOF SHALL BE SUPPORTED WITH DURA-BLOK SUPPORTS, OR BIZON ADJUSTABLE PIPE JACKS OR EQUIVALENT AS CALLED OUT ON THE DRAWINGS. 5. INSTALL COVER PLATES: COVER OPENING AROUND PIPES THROUGH FINISHED FLOORS, WALLS AND PARTITIONS WITH CHROME PLATED BRASS PLATES.
F.	TESTS: <ul style="list-style-type: none"> 1. TEST ALL PIPING AS REQUIRED BY CODE, OR IN ABSENCE OF CODES, AS FOLLOWS: 2. GAS PIPING - 30 PSI AIR TEST, TWELVE (12) HOURS MINIMUM.



SHEET CONTENTS
MECHANICAL COVER SHEET

BETHKE ELEMENTARY SCHOOL
5100 SCHOOL HOUSE DRIVE
TIMNATH, COLORADO 80547



NO.	BY	DATE

NO.	DESCRIPTION	DATE

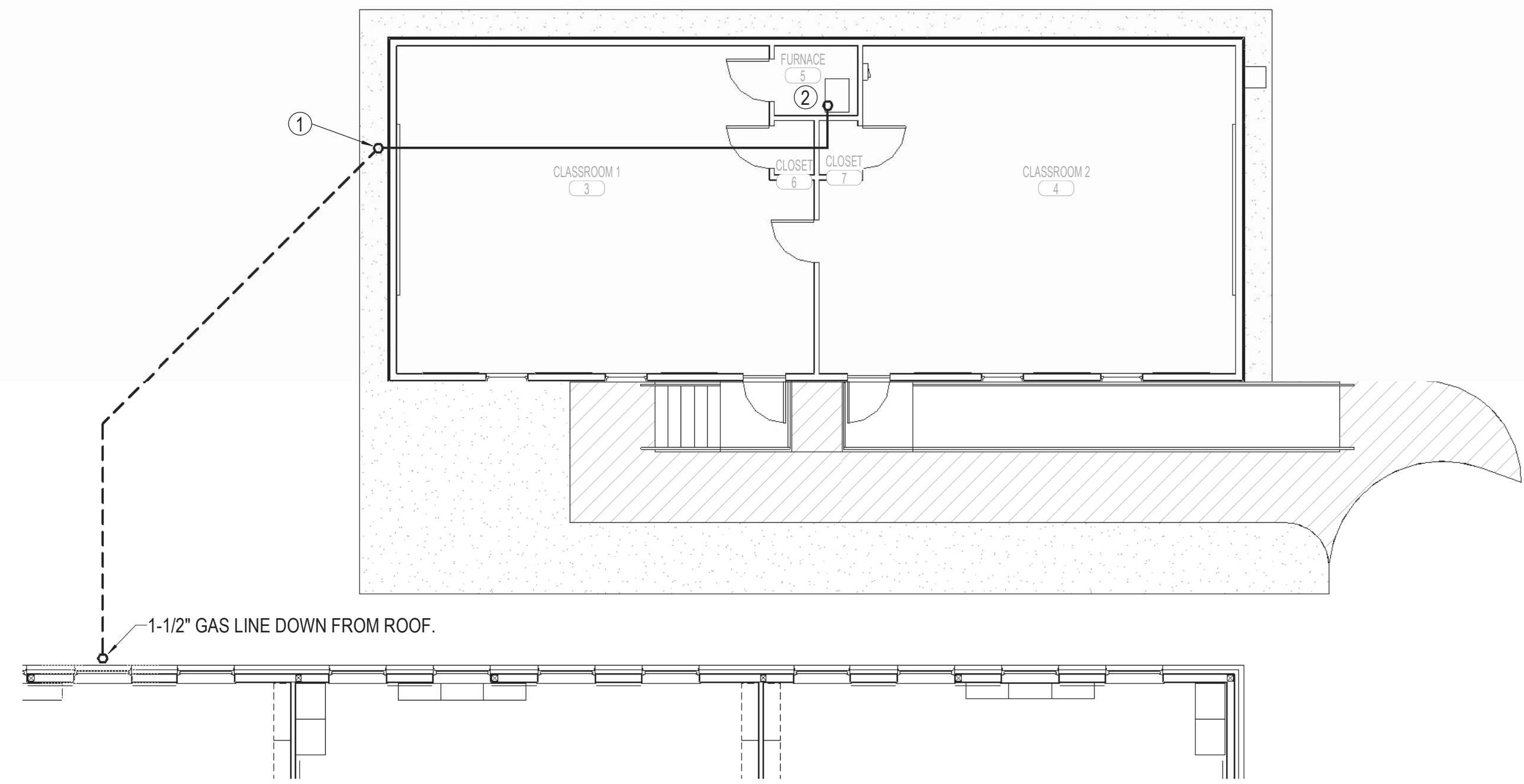
ISSUED FOR PERMIT

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
420 LINDEN ST., SUITE 110 FORT COLLINS, CO 80524
970-232-9558 www.pec1.com

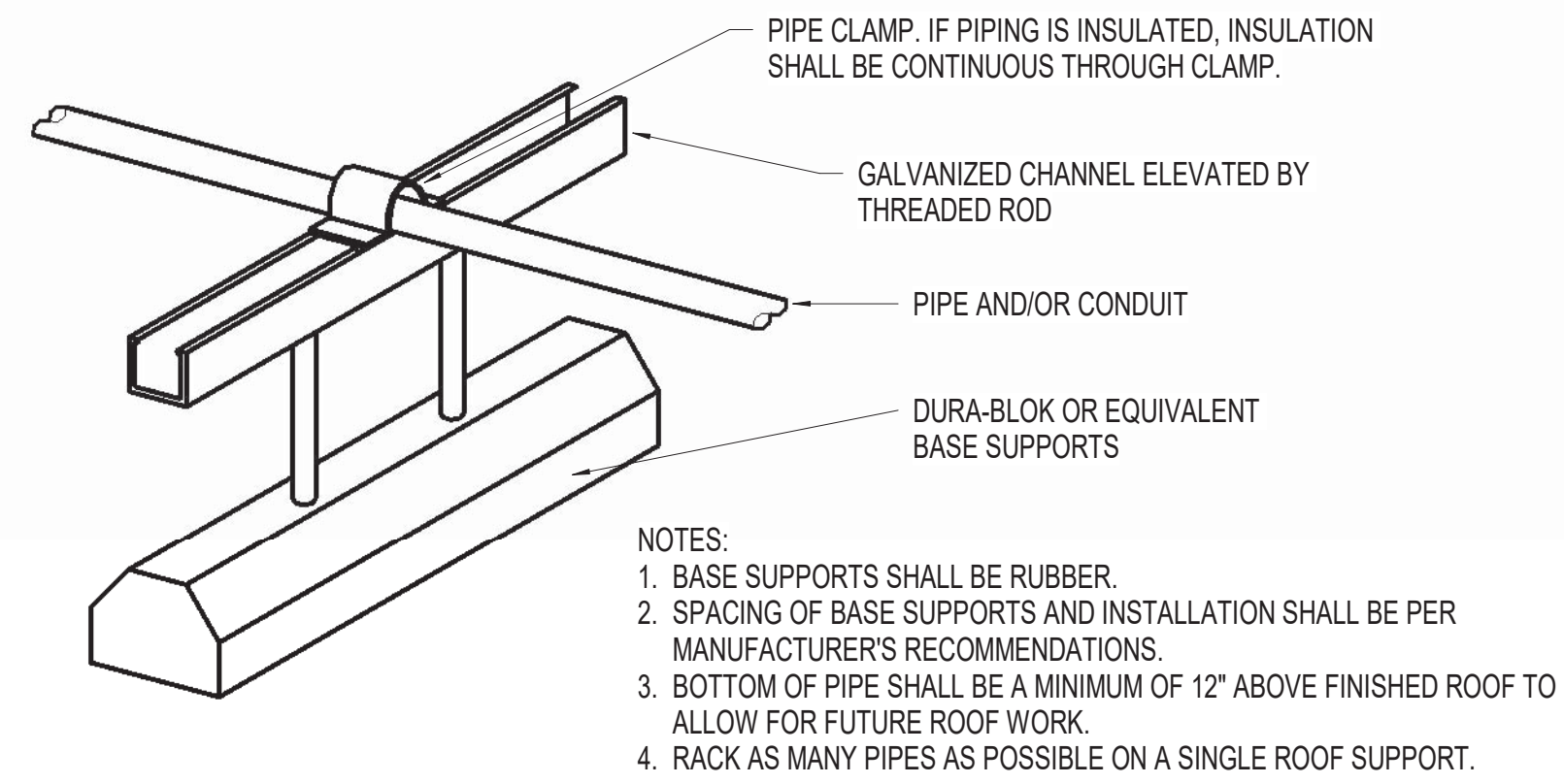
DESIGNED BY: JDB
CHECKED BY: CWH
DATE: 3/20/2020

SHEET NO. M1.0

REVISIONS



1 NATURAL GAS PLAN
 0' 4' 8' 12' 1/8" = 1'-0"



3 ROOF MOUNTED PIPING DETAIL
 0' 4' 8' 12' NO SCALE

PLAN NOTES

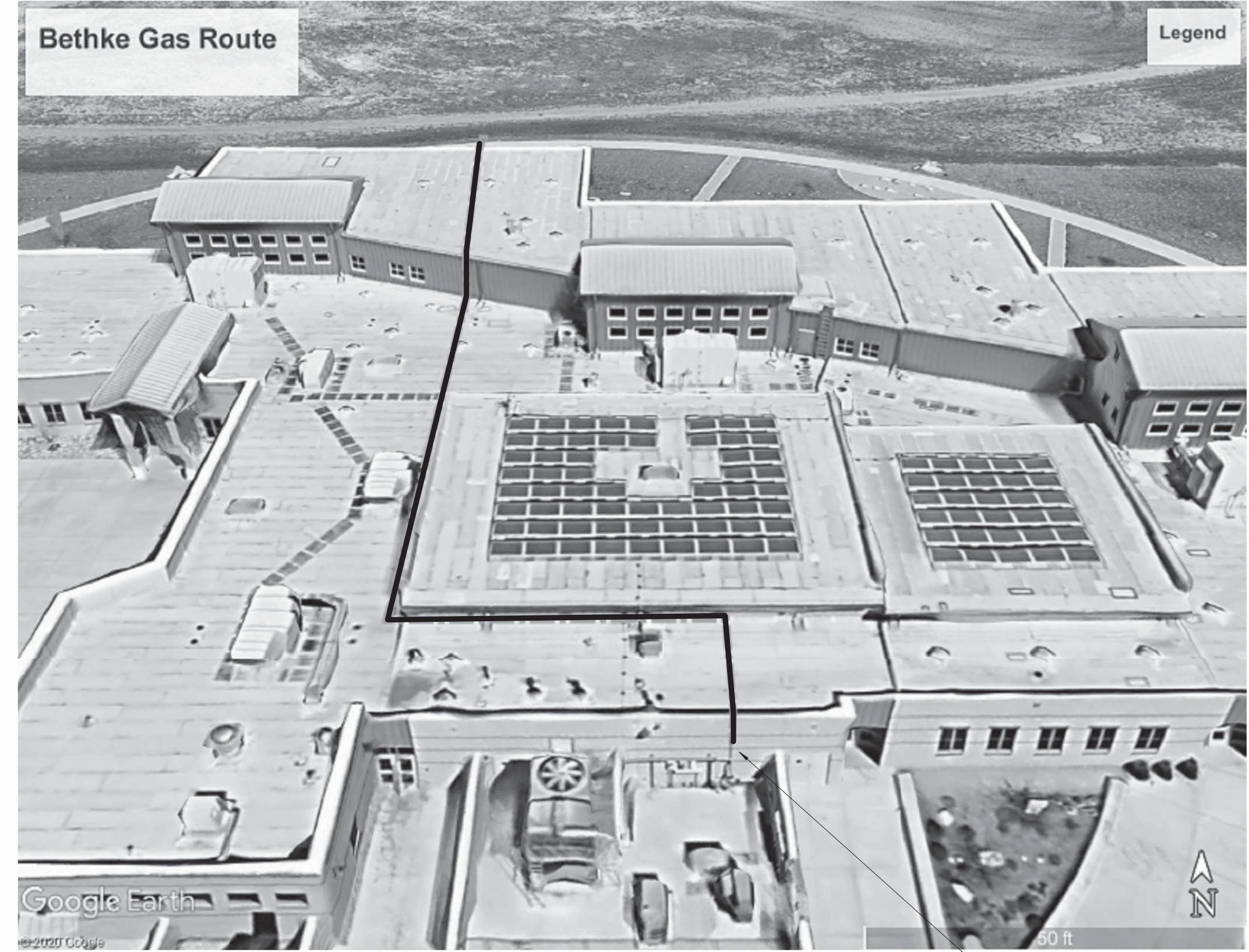
- NEW 1-1/2" GAS PIPE TO RISE ABOVE GRADE AND ENTER CRAWL SPACE OF MODULAR. ABOVE GRADE GAS PIPE(S) TO BE PROTECTED BY FIELD INSTALLED CAGE. CAGE SHALL BE OF SIMILAR MATERIAL AND SIZE OF EXISTING CAGE PROTECTING THE GAS PIPE AT THE EXISTING MODULAR. REFER TO PHOTO ON THIS SHEET AND EXISTING CONDITIONS ON SITE.
- NEW 1-1/2" GAS UP TO FURNACE FROM CRAWL SPACE.

GENERAL NOTES

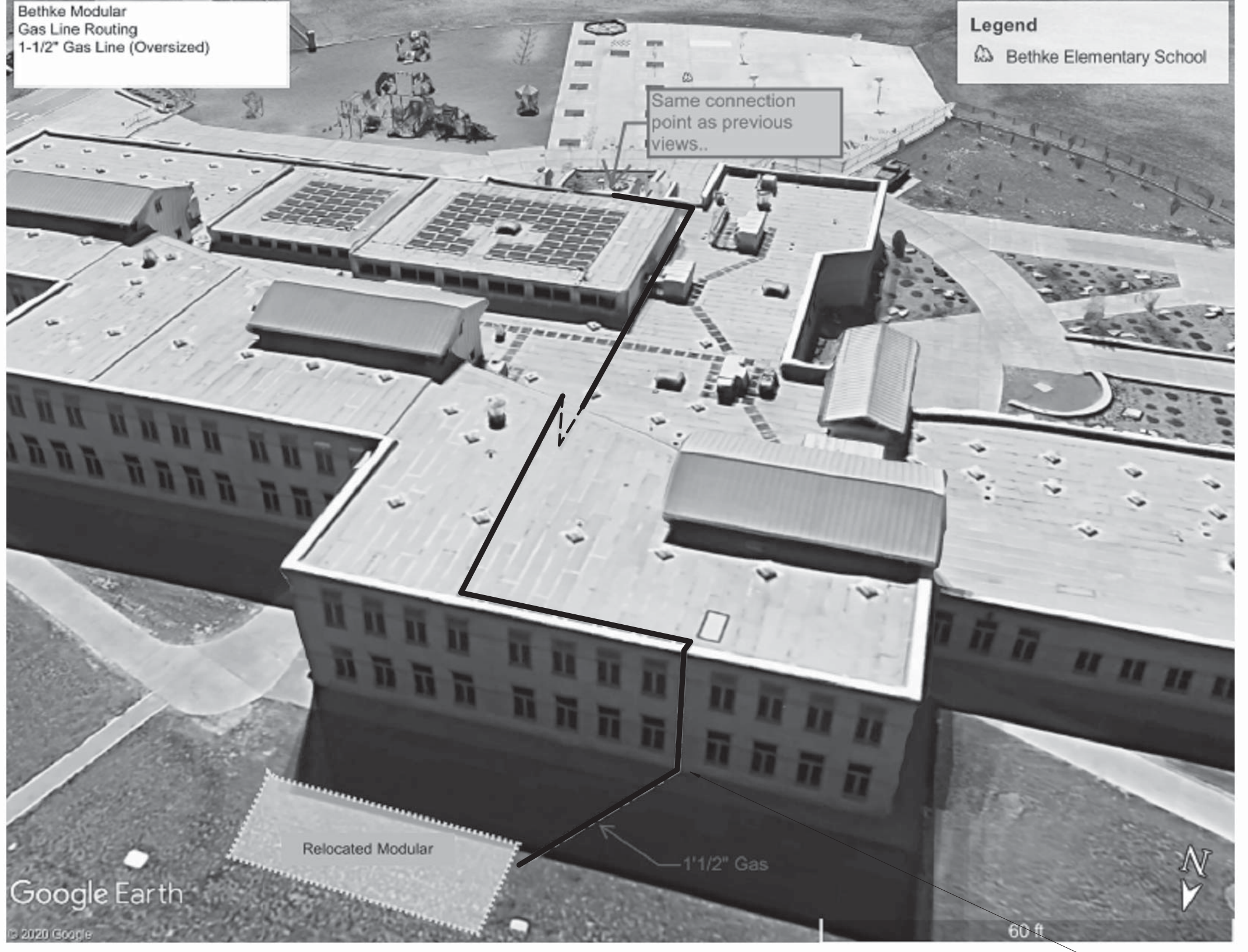
- CONTRACTOR SHALL REFERENCE ALL RELATED CONTRACT DOCUMENTS, SITE SURVEY AND OTHER RESOURCES FOR POSSIBLE CONFLICTS WITH OTHER UNDERGROUND UTILITIES. AT UTILITY CROSSINGS, CONTRACTOR SHALL VERIFY UTILITY DEPTHS AND COORDINATE PIPE ROUTING AS NECESSARY.
- CONTRACTOR SHALL VERIFY AND COORDINATE EXISTING CONDITIONS OF PROJECT SITE PRIOR TO BID.
- COORDINATE ALL ROUTING IN THE FIELD WITH EXISTING CONDITIONS.



GAS PIPE PROTECTIVE CAGE



2 NATURAL GAS PLAN - OVERALL
 0' 4' 8' 12' 1/8" = 1'-0"



CONNECT NEW 1-1/2" GAS LINE TO EXISTING GAS LINE.
 ROUTE NEW 1-1/2" GAS LINE UNDERGROUND TO NEW MODULAR.

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SHEET CONTENTS
 BETHKE NATURAL GAS PLAN

BETHKE ELEMENTARY SCHOOL
 5100 SCHOOL HOUSE DRIVE
 TIMINATH, COLORADO 80547



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NO.	BY	DESCRIPTION	DATE
1	JDB		
2	CWH		
3			

REVISIONS

DATE: 3/20/2020

SHEET NO.: M2.0

GENERAL NOTES

- ALL ELECTRICAL WORK SHALL COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC) & THE AMERICANS WITH DISABILITIES ACT (ADA).
- REFER TO RELATED ARCHITECTURAL AND MECHANICAL DRAWINGS FOR RELATED INFORMATION.
- REFER TO THE SPECIFICATIONS FOR DATA NOT ON THE DRAWINGS.
- ALL MOUNTING HEIGHTS TO CENTERLINE OF ITEM UNLESS OTHERWISE NOTED. VERIFY ALL OUTLET LOCATIONS ON THE JOB PRIOR TO ROUGH-IN.
- CONDUIT RUN W/CONDUCTORS AS INDICATED & GROUND WIRE SIZED PER N.E.C. 250.122. CONDUIT SIZE AS REQUIRED.
- WHEN INCREASED CONDUCTOR SIZES ARE SHOWN ON THE PLANS, THE LARGER CONDUCTOR SIZE SHALL BE USED THROUGHOUT THE LENGTH OF THE CIRCUIT, INCLUDING NEUTRAL AND GROUND.
- BRANCH CIRCUITS ARE INDICATED AS ONE CIRCUIT HOME RUNS WITH INDIVIDUAL NEUTRALS. A MAXIMUM OF THREE CIRCUITS (MAXIMUM OF THREE PHASE CONDUCTORS) MAY BE GROUPED IN A SINGLE CONDUIT. WHERE MULTIPLE CIRCUITS ARE LOCATED IN THE SAME RACEWAY, JUNCTION BOX OR ENCLOSURE, NEUTRALS SHALL BE MARKED OR LABELED TO INDICATE WHICH CIRCUIT THEY ARE ASSOCIATED WITH.
- NEW CIRCUIT BREAKERS PROVIDED IN EXISTING PANELS SHALL BE BY SAME MANUFACTURER AS PANELBOARD AND HAVE A MINIMUM AIC RATING AS INDICATED ON THE PANEL SCHEDULES.

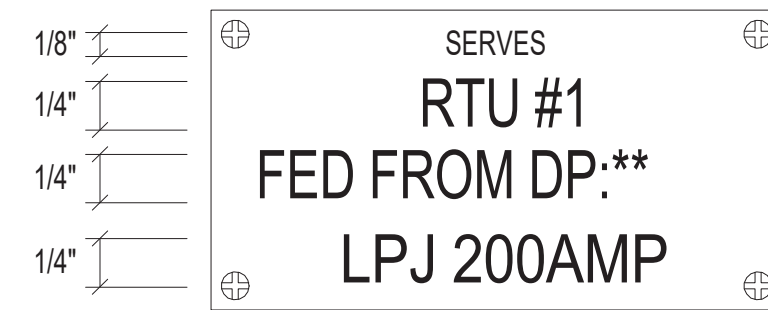
SYMBOL LIST

SYMBOL	DESCRIPTION	MOUNTING	SYMBOL	DESCRIPTION	MOUNTING
POWER					
	SINGLE GROUNDED RECEPTACLE	18" AFF	WP	WEATHERPROOF	
	DUPLEX GROUNDED RECEPTACLE	18" AFF			
	CLG-MTD DUPLEX GROUNDED RECEPTACLE	CEILING	AFF	ABOVE FINISHED FLOOR	
	DOUBLE DUPLEX GROUNDED RECEPTACLE	18" AFF	DF	DRINKING FOUNTAIN	
	GROUND FAULT DUPLEX RECEPTACLE	18" AFF		PUSH BUTTON	
	GROUND FAULT DOUBLE DUPLEX RECEPTACLE	18" AFF		JUNCTION BOX	
	DUPLEX GRD. RECEPT. BOTTOM SWITCHED	18" AFF		FUSTAT BUSS #SSY	
	SPECIAL OUTLET	FLOOR/WALL		BRANCH CIRCUIT PANEL & PANEL DESIG.	72" TO TOP
	DISCONNECT			ELECTRICAL DISTRIBUTION EQUIPMENT	
	EQUIPMENT - SEE EQUIPMENT CONNECTION SCHEDULE			FEEDER DESIGNATION	
	CONDUIT SLEEVE			CABLE TRAY	
	PLUGMOLD SURFACE RACEWAY	WALL			CEILING
	CONDUIT HOME RUN, 1 CIRCUIT, 2#10 & 1#10 GRD. 1/2"	CEIL./WALL		MASTER/SLAVE FIXTURE WHIP	
	CONDUIT HOME RUN, 1 CIRCUIT, 2#12 & 1#12 GRD. 1/2"	CEIL./WALL		CONDUIT RUN 2#12 & 1#12 GRD. 1/2"	CEIL./WALL
	CONDUIT HOME RUN, 2 CIRCUITS, 4#12 & 1#12 GRD. 1/2"	CEIL./WALL		CONDUIT RUN 2#12 & 1#12 GRD. 3/4"	EARTH FLOOR
	CONDUIT HOME RUN, 3 CIRCUITS, 6#12 & 1#12 GRD. 1/2"	CEIL./WALL		CONDUIT HOME RUN, 2 CIRCUITS PHASE CONDUCTORS (#12 UON) NEUTRAL CONDUCTOR (#12 UON) SWITCH LEGS (#12 UON) GROUND CONDUCTOR (#12 UON)	CEIL./WALL
	CONDUIT RUN PARTIAL CIRCUIT, 2#12 & 1#12 GRD. 1/2"	CEIL./WALL			

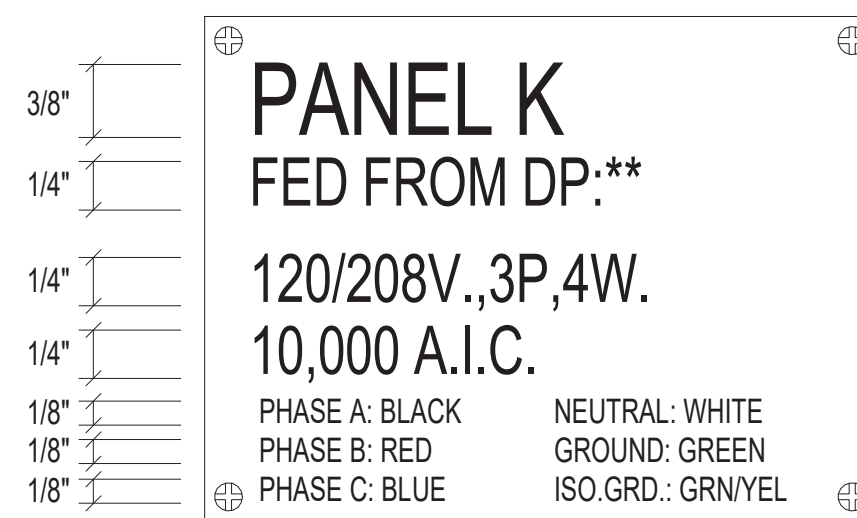
--SYMBOLS LIST IS FOR REFERENCE ONLY. ALL SYMBOLS MAY NOT BE USED ON THIS PROJECT--



SWITCHBOARD/DISTRIBUTION PANEL/MOTOR CONTROL CENTER BREAKER/SWITCH



DISCONNECT SWITCH



BRANCH CIRCUIT/DISTRIBUTION PANEL

1 TYPICAL NAME PLATES
NO SCALE

SPECIALTY SYSTEM GENERAL NOTES:

ALL SPECIAL SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH PSD'S SPECIFICATIONS BY PSD'S PREFERRED VENDORS AS NOTED BELOW:

INTERCOM SYSTEM

BEACON

STRUCTURED CABLING

STURGEON ELECTRIC

INTERFACE COMMUNICATIONS

LYNX

SPECIALTY SYSTEM GENERAL NOTES:

EACH CLASSROOM WILL NEED (2) LOCATIONS OF (4) DATA WIRES - VERIFY WITH OWNER FOR EXACT LOCATION PRIOR TO INSTALLATION.

EACH CLASSROOM NEEDS WIRING FOR WALL PHONE LOCATED INSIDE DOOR. PHONE/INSTALL BY OWNER.

EACH MODULAR UNIT NEEDS TWO (2) ETHERNET CABLES, ONE FOR T-STAT AND ONE FOR A WAP.

PSD TO PROVIDE EQUIPMENT RACK, PATCH PANELS, AND WIRE MANAGEMENT.

CONTRACTOR TO PROVIDE NETWORK WIRING, JACKS, AND INSTALLATION.

ALL WIRING, JACKS, TESTING AND CERTIFICATION TO BE COMPLETED PER DIVISION 27 OF THE PSD TECHNICAL SPECIFICATIONS.

CONTRACTOR TO INSTALL PSD-PROVIDED INTERCOM WIRING AT PSD DESIGNATED LOCATIONS. SPlicing AND TERMINATION WILL BE COMPLETED BY PSD STAFF.

PEN WEIGHT LEGEND

SYMBOL	DESCRIPTION
ALL DEVICES, LIGHT FIXTURES, ETC., DRAWN IN DARK SOLID LINES ARE NEW TO BE INSTALLED.	
	NEW DUPLEX GROUNDED RECEPTACLE
	NEW LIGHT FIXTURE
ALL DEVICES, LIGHT FIXTURES, ETC., DRAWN IN LIGHT SOLID LINES ARE EXISTING TO REMAIN.	
	EXISTING DUPLEX GROUNDED RECEPTACLE TO REMAIN
	EXISTING LIGHT FIXTURE TO REMAIN
ALL DEVICES, LIGHT FIXTURES, ETC., DRAWN IN DARK DASHED LINES ARE TO BE REMOVED.	
	DUPLEX GROUNDED RECEPTACLE TO BE REMOVED
	LIGHT FIXTURE TO BE REMOVED

ELECTRICAL SHEET LIST

SHEET NO.	DESCRIPTION
E0.0	ELECTRICAL COVER SHEET
E0.1	ELECTRICAL SPECIFICATIONS
E1.0	ELECTRICAL PLANS
E2.0	ELECTRICAL DIAGRAMS AND SCHEDULES

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SHEET CONTENTS
 ELECTRICAL COVER SHEET

BETHKE ELEMENTARY SCHOOL
 5100 SCHOOL HOUSE DRIVE
 TIMNATH, COLORADO 80547



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ELECTRICAL SPECIFICATIONS

SECTION 16050 - BASIC METHODS AND REQUIREMENTS (ELECTRICAL)

PART 1 - GENERAL

- 1.1 GENERAL CONDITIONS
 - A. THE GENERAL CONDITIONS, SUPPLEMENTARY GENERAL CONDITIONS, GENERAL REQUIREMENTS, AND SPECIAL CONDITIONS SHALL BE AND ARE HEREBY MADE A PART OF THIS SECTION OF THE SPECIFICATIONS.
- 1.2 EXAMINATION OF SITE
 - A. VISIT THE SITE, INSPECT THE EXISTING CONDITIONS AND CHECK THE DRAWINGS AND SPECIFICATIONS SO AS TO BE FULLY INFORMED OF THE REQUIREMENTS FOR COMPLETION OF THE WORK.
 - B. LACK OF SUCH INFORMATION SHALL NOT JUSTIFY AN EXTRA TO THE CONTRACT PRICE.
- 1.3 SCOPE
 - A. THE ELECTRICAL WORK SHALL INCLUDE ALL LABOR, MATERIALS, TOOLS, TRANSPORTATION, EQUIPMENT, SERVICES AND FACILITIES, REQUIRED FOR THE COMPLETE, PROPER AND SUBSTANTIAL INSTALLATION OF ALL ELECTRICAL WORK SHOWN ON THE PLANS, AND/OR OUTLINED IN THESE SPECIFICATIONS. THE INSTALLATION SHALL INCLUDE ALL MATERIALS, APPLIANCES, AND APPARATUS NOT SPECIFICALLY MENTIONED HEREIN OR NOTED ON THE DRAWINGS BUT WHICH ARE NECESSARY TO MAKE A COMPLETE WORKING INSTALLATION OF ALL ELECTRICAL SYSTEMS.
 - B. ALL OF THE ELECTRICAL RELATED WORK REQUIRED FOR THIS PROJECT (UNLESS SPECIFIED OTHERWISE) IS A PART OF THE ELECTRICAL CONTRACT PRICE AND IS NOT NECESSARILY SPECIFIED UNDER THIS DIVISION OF THE SPECIFICATIONS OR SHOWN ON THE ELECTRICAL DRAWINGS. THEREFORE, ALL DIVISIONS OF THE SPECIFICATIONS AND ALL DRAWINGS SHALL BE CONSULTED.
 - C. THE DRAWINGS SHOWING THE LAYOUT OF THE WORK INDICATE THE APPROXIMATE LOCATIONS OF OUTLETS, APPARATUS, AND EQUIPMENT. THE DRAWINGS ARE SCHEMATIC ONLY AND ARE NOT INTENDED TO SHOW THE EXACT ROUTING OF CONDUITS, ETC. THE FINAL DETERMINATION AS TO THE ROUTING SHALL BE GOVERNED BY STRUCTURAL CONDITIONS AND OTHER OBSTRUCTIONS. THIS SHALL NOT BE CONSTRUED TO MEAN THE DESIGN OF THE SYSTEM MAY BE CHANGED. IT MERELY REFERS TO THE EXACT RUN OF A RACEWAY BETWEEN GIVEN POINTS. THE CONTRACTOR SHALL CONSULT ALL CONTRACT DRAWINGS WHICH MAY AFFECT THE LOCATION OF ANY OUTLET, APPARATUS OR EQUIPMENT TO AVOID POSSIBLE INTERFERENCE AND PERMIT FULL COORDINATION OF ALL WORK. THE RIGHT TO MAKE ANY REASONABLE CHANGE (WITHIN 6"-0") IN THE LOCATION OF APPARATUS, OUTLETS, AND EQUIPMENT UP TO THE TIME OF ROUGHING-IN IS RESERVED BY THE ARCHITECT WITHOUT INVOLVING ANY ADDITIONAL EXPENSE TO THE OWNER.
 - D. SHOW ON BLUE LINE PRINTS IN RED INK ALL CHANGES FROM ORIGINAL PLANS MADE DURING THE INSTALLATION. RETURN TWO (2) SETS OF RED MARKED DRAWINGS, SPECIFICATIONS AND ADDENDA, AS SET FORTH IN THE GENERAL CONDITIONS, TO THE ARCHITECT UPON COMPLETION OF THE PROJECT.
 - E. PROVIDE SUBMITTALS IN ELECTRONIC FORM FOR LIGHT FIXTURES, PANELBOARDS, WIRING DEVICES, ETC.
- 1.4 CODES RULES AND REGULATIONS
 - A. EXECUTE ALL WORK UNDER THE LATEST RULES AND REGULATIONS OF THE NATIONAL ELECTRICAL CODE STANDARD OF THE NATIONAL BOARD OF FIRE UNDERWRITERS AND WITH ALL LAWS, REGULATIONS AND ORDINANCES OF THE COUNTY, STATE, AND CITY.
 - B. CODES SHALL GOVERN IN CASE OF ANY DIRECT CONFLICT BETWEEN CODES AND PLANS AND SPECIFICATIONS, EXCEPT WHEN PLANS AND SPECIFICATIONS REQUIRE HIGHER STANDARDS THAN THOSE REQUIRED BY CODE. VARIANCE FROM THE PLAN AND SPECIFICATIONS MADE TO COMPLY WITH CODE MUST BE APPROVED BY THE ARCHITECT. IF APPROVED THEY SHALL BE MADE WITH NO INCREASED COST TO THE OWNER.
- 1.5 PERMITS
 - A. OBTAIN AND PAY FOR ALL LICENSES AND PERMITS, FEES, INSPECTION AND CERTIFICATES REQUIRED FOR THE EXECUTION OF THIS WORK.
 - B. DELIVER PERMITS AND CERTIFICATES TO THE ARCHITECT TO BE TRANSMITTED TO THE OWNER.
- 1.6 RESPONSIBILITY
 - A. THIS CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY AND ALL DAMAGE TO ANY PART OF THE BUILDING OR TO THE WORK OF OTHER CONTRACTORS, AS MAY BE CAUSED THROUGH HIS OPERATION.
- 1.7 WORK TO BE DONE BY GENERAL CONTRACTOR
 - A. BUILD IN ALL OPENINGS SLEEVES, CHASES ETC., FOR CONDUIT AND EQUIPMENT AS ESTABLISHED, FURNISHED AND SET BY THIS CONTRACTOR. HE SHALL SEAL OR GROUT ALL OPENINGS AFTER THIS CONTRACTOR HAS INSTALLED HIS CONDUITS.
- 1.8 WORK DONE BY THE MECHANICAL CONTRACTOR
 - A. THE MECHANICAL CONTRACTOR SHALL FURNISH WIRING DIAGRAMS AND TEMPERATURE CONTROL DRAWINGS OF ALL EQUIPMENT FURNISHED TO THE ELECTRICAL CONTRACTOR. CATALOG INFORMATION IS UNACCEPTABLE, PROVIDE POINT TO POINT DRAWINGS.
 - B. THE MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL CONTROL EQUIPMENT REQUIRING CONNECTIONS TO AIR, WATER, STEAM, ETC., SUCH AS PNEUMATIC ELECTRIC RELAYS, REMOTE BULB TEMPERATURE CONTROLS, SOLENOID VALVES, AQUASTATS AND PRESSURE CONTROLS.
 - C. THE MECHANICAL CONTRACTOR SHALL REIMBURSE THE ELECTRICAL CONTRACTOR FOR ANY CHANGES IN SYSTEM DESIGN I.E. CONTROL OR EQUIPMENT WHICH EFFECTS THE ELECTRICAL CONTRACTOR.
- 1.9 WORKMANSHIP AND COORDINATION
 - A. MAKE INSTALLATION SUBSTANTIALLY AS SHOWN ON THE PLANS.
 - B. MAKE ALTERATIONS IN LOCATION OF APPARATUS OR CONDUIT AS MAY BE REQUIRED TO CONFORM TO BUILDING CONSTRUCTION WITHOUT EXTRA CHARGE.

- C. MECHANICAL EQUIPMENT SERVICE CLEARANCES AND ELECTRICAL APPARATUS SERVICE CLEARANCES AS SPECIFIED IN THEIR RESPECTIVE MANUFACTURER'S PRODUCT DATA SHALL BE MAINTAINED FREE FROM CONDUIT.
 - D. COOPERATE WITH OTHER CONTRACTORS IN THEIR INSTALLATION OF WORK.
 - E. COMPLETE THE INSTALLATION IN A WORKMANLIKE MANNER, COMPLETELY CONNECTED AND READY TO GIVE PROPER AND CONTINUOUS SERVICE.
 - F. USE ONLY EXPERIENCED LICENSED ELECTRICIANS.
- 1.10 EQUIPMENT CONNECTIONS, CONTROLS AND INSTRUMENTATION
- A. GENERAL: THE FOLLOWING APPLIES TO ALL ELECTRICAL POWER AND CONTROL CONNECTIONS FOR ALL EQUIPMENT REQUIRING ELECTRICAL INSTALLATION WORK PROVIDED BY OTHERS.
 - B. THE ELECTRICAL CONTRACTOR SHALL FURNISH, INSTALL AND CONNECT ALL WIRING, CONDUIT, BOXES, TOGGLE SWITCHES, THERMAL SWITCHES, DISCONNECT SWITCHES, REMOTE PUSHBUTTON STATIONS NOT INCLUDED IN MAGNETIC STARTERS, ETC., FOR ALL EQUIPMENT REQUIRING ELECTRICAL POWER THAT IS EITHER FURNISHED OR SPECIFIED BY OTHER CONTRACTORS AND/OR THE OWNER, SHOWN ON DRAWINGS OR LISTED BELOW. THE ELECTRICAL CONTRACTOR SHALL RECEIVE, INSTALL AND CONNECT ALL MAGNETIC STARTERS AND CONTROLLERS, CAPACITORS, POWER FACTOR CORRECTION DEVICES, TRANSFORMERS, ALARMS, BELLS, HORNS, RELAYS, REMOTE SWITCHES FOR EQUIPMENT SUPPLIED BY OTHERS (I.E. STARTERS OR CAPACITORS OR POWER FACTOR CORRECTION DEVICES FOR MECHANICAL EQUIP., ETC.). IN GENERAL, ALL MAJOR EQUIPMENT WILL BE SPECIFIED TO BE FACTORY PREWIRED WITH ONLY SERVICE AND INTERCONNECTING REQUIRED AT THE SITE BY THE ELECTRICAL CONTRACTOR; HOWEVER, ALL DIVISIONS OF THE SPECIFICATION SHALL BE REVIEWED TO VERIFY WHETHER THE EQUIPMENT IS SPECIFIED TO BE FACTORY PREWIRED AND IF NOT, THEN IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO PROVIDE THE COMPLETE WIRING OF THE EQUIPMENT IN ACCORDANCE WITH WIRING DIAGRAMS PROVIDED BY OTHER CONTRACTORS AND/OR OWNER TO THE ELECTRICAL CONTRACTOR. ALL INTERCONNECTING OF EQUIPMENT SHALL BE BY THE ELECTRICAL CONTRACTOR.
 - C. ALL LINE VOLTAGE WIRING AND CONNECTIONS REQUIRED TO CONTROL THE EQUIPMENT ARE A PART OF THIS SECTION. ALL WIRING SHALL BE IN CONDUIT. LOW VOLTAGE CONTROL WIRING SHALL BE IN CONDUIT. CONDUIT SYSTEM, WIRING AND TERMINATIONS OF LOW VOLTAGE CONTROL WIRING SHALL BE THE RESPONSIBILITY OF THE TEMPERATURE CONTROLS CONTRACTOR.
 - D. THE ELECTRICAL CONTRACTOR SHALL PROVIDE 120 VOLT CONTROL POWER SUPPLY: #12 GAUGE CU. THWN IN 3/4"-INCH C. MINIMUM AT ALL POINTS REQUIRED BY CONTROLS, AND INSTRUMENTATION AND SPRINKLER RISERS. CIRCUIT TO THE NEAREST 120 VOLT PANEL. USE SPARE 20 AMP. BREAKERS. EACH CONTROL PANEL SHALL BE ON A SEPARATE CIRCUIT UNLESS OTHERWISE INDICATED.
 - E. THE CONTRACTOR SHALL BE FAMILIAR WITH THE EQUIPMENT TO BE FURNISHED BY THE OTHER CONTRACTORS AND/OR THE OWNER IN CONNECTION WITH THIS WORK AND PROVISIONS FOR SUCH CONNECTIONS AND WORK SHALL BE INCLUDED IN THE CONTRACTOR'S PRICE. IN NO CASE WILL EXTRA REMUNERATION BE ALLOWED FOR SUCH WORK.
 - F. CONNECTIONS TO ALL EQUIPMENT HAVE BEEN DESIGNED FROM UNITS AS SPECIFIED ON THE DRAWINGS OR IN THE SPECIFICATIONS. IN THE EVENT EQUIPMENT DIFFERS ON APPROVED SHOP DRAWINGS IT SHALL BE THE RESPONSIBILITY OF THE SUPPLYING CONTRACTOR TO COORDINATE ELECTRICAL CONNECTIONS TO THE UNITS AND REIMBURSE ELECTRICAL CONTRACTOR FOR ANY CHANGES IN SYSTEM DESIGN. THESE CHANGES SHALL NOT INVOLVE ADDITIONAL COST TO THE OWNER.
 - G. REVIEW ALL PLANS AND SPECIFICATIONS TO VERIFY ALL EQUIPMENT CONNECTIONS THAT ARE REQUIRED BY MECHANICAL AND/OR OTHER CONTRACTORS. ALTHOUGH THE ELECTRICAL DRAWINGS WILL SHOW EQUIPMENT CONNECTION REQUIREMENTS, IT IS THE ELECTRICAL CONTRACTORS RESPONSIBILITY TO CONNECT ALL EQUIPMENT FURNISHED BY OTHER CONTRACTORS AT NO EXTRA COST TO THE OWNER EVEN IF THIS EQUIPMENT CONNECTION IS NOT SHOWN ON THE ELECTRICAL DRAWINGS. COORDINATE ALL REQUIRED CONNECTIONS NOT SHOWN ON THE ELECTRICAL DRAWINGS WITH THE ENGINEER.
- 1.11 NAMEPLATES
- A. PROVIDE PANELBOARD WITH ENGRAVED PLASTIC LABEL 1/4" WHITE LETTERS ON BLACK BACKGROUND WITH VOLTAGE AND PHASE. ATTACH WITH SCREWS OR RIVETS.
 - B. PROVIDE SEPARATELY MOUNTED DISCONNECTS AND STARTERS WITH 3/16" LABEL (SAME STYLE AS ABOVE). NAMEPLATE SHALL PROVIDE MOTOR DESIGNATION, VOLTAGE, AND PHASE; IN ADDITION TO PANEL AND CIRCUIT NUMBER. INSCRIPTION: NAMEPLATES SHALL ADEQUATELY DESCRIBE THE FUNCTION OR USE OF THE PARTICULAR EQUIPMENT INVOLVED.
 - C. ALL BRANCH CIRCUIT PANELBOARDS SHALL HAVE THEIR DIRECTORIES NEATLY TYPED.
 - D. ALL SWITCHES THAT CONTROL MECHANICAL EQUIPMENT, PUMPS, FANS, BOILERS, ETC., SHALL HAVE PLASTIC NAMEPLATES WITH A MINIMUM LETTER HEIGHT OF 1/8".
 - E. DEVICE COVERS (RECEPTACLES, SWITCHES) SHALL BE LABELED NEATLY WITH A PERMANENT MARKER OR LABEL MAKER WITH PANEL & CIRCUIT NUMBER. (EX. L1A-10)
 - F. ON THE COVER OF EACH JUNCTION BOX AND PULL BOX: THE CIRCUIT NUMBER(S) OF THE ENCLOSED CONDUCTORS ARE TO BE LEGIBLY WRITTEN WITH A BLACK PERMANENT INK BROAD TIP MARKING PEN AND THE SYSTEM IDENTIFICATION.
 - G. PANELBOARD DIRECTORIES SHALL BE LABELED WITH THE ACTUAL FINISHED BUILDING ROOM NUMBERS FOR CIRCUIT IDENTIFICATION AND NOT THE ROOM NUMBERS FROM THE CONSTRUCTION PLANS. (UNLESS THEY ARE THE SAME)
- 1.12 MATERIALS
- A. MATERIAL AND EQUIPMENT SHALL BE NEW, OF BEST QUALITY AND DESIGN AND FREE FROM DEFECTS. A MANUFACTURER'S NAMEPLATE AFFIXED IN A CONSPICUOUS PLACE WILL BE REQUIRED ON EACH MAJOR COMPONENT OF EQUIPMENT STATING MANUFACTURER'S NAME, ADDRESS AND CATALOG NUMBER. ALL ITEMS USED ON THIS PROJECT SHALL BE OF ASBESTOS FREE MATERIAL.
 - B. WHERE ITEMS OF EQUIPMENT AND/OR MATERIALS ARE SPECIFICALLY IDENTIFIED HEREIN BY A MANUFACTURER'S NAME, MODEL OR CATALOG NUMBER, ONLY SUCH SPECIFIC ITEMS MAY BE USED IN THE BASE BID.

- 1.14 MANUFACTURER'S INSTRUCTIONS
 - A. APPLY, INSTALL, CONNECT, ERECT, USE, CLEAN, AND CONDITION ARTICLES, MATERIALS AND EQUIPMENT AS DIRECTED BY THE MANUFACTURER.
 - 1.15 CUTTING AND PATCHING
 - A. NOTIFY THE GENERAL CONTRACTOR IN AMPLE TIME, OF THE LOCATION OF ALL CHASES, SLEEVES, AND ANY OTHER OPENINGS REQUIRED IN CONNECTION WITH THE WORK OF THIS CONTRACT.
 - B. CUTTING AND PATCHING MADE NECESSARY BECAUSE OF FAILURE TO COMPLY WITH THE ABOVE SHALL BE DONE BY THE GENERAL CONTRACTOR AT THE EXPENSE OF THE ELECTRICAL CONTRACTOR.
 - C. WHEN IT IS NECESSARY FOR THE ELECTRICAL CONTRACTOR TO CUT BUILDING MATERIALS TO INSTALL HIS WORK, IT SHALL BE DONE IN A NEAT AND WORKMANLIKE MANNER MEETING WITH THE APPROVAL OF THE ARCHITECT.
 - D. HOLES THROUGH CONCRETE SHALL BE CAREFULLY DONE WITH A "CONCRETE TERMITE" DRILL. A STAR DRILL OR AIR HAMMER WILL NOT BE PERMITTED. STRUCTURAL MEMBERS SHALL NOT BE CUT WITHOUT APPROVAL FROM THE ARCHITECT.
 - E. ANY PENETRATIONS THRU ROOF SHALL BE MADE WITH "STONEMAN" FLASHING CONNECTIONS AS MANUFACTURED BY STONEMAN ENGINEERING AND MANUFACTURING CO., INGLEWOOD, CALIFORNIA, AND ANY PENETRATIONS MADE IN EXTERIOR OR BASEMENT FOUNDATION WALLS SHALL BE SEALED WITH THUNDERLINE "LINK-SEAL" CONNECTIONS, AS MANUFACTURED BY THUNDERLINE CORPORATION, WAYNE, MICHIGAN.
 - 1.16 MUTILATION
 - A. ANY MUTILATION OF FINISHING INITIATED BY ELECTRICAL CONSTRUCTION SHALL BE PROPERLY CORRECTED BY THE RESPECTIVE FINISHING CONTRACTOR AND PAID FOR BY THE ELECTRICAL CONTRACTOR.
 - 1.17 TESTING AND ADJUSTMENT
 - A. WHEN INSTALLATION IS COMPLETE, TEST ALL ELECTRICAL CONDUCTORS TO INSURE CONTINUITY, FREEDOM FROM GROUNDS, AND INSULATION RESISTANCE VALUES.
 - B. ALL FEEDERS AND BRANCH CIRCUITS SHALL BE MEGGER TESTED BETWEEN PHASE CONDUCTORS AND GROUND, USING A 1,000V MEGGER. TESTS SHALL BE MADE UPON COMPLETION OF ALL CONNECTIONS AND SPLICES AND INSERTION OF ALL OVERCURRENT DEVICES. TESTS SHALL INDICATE FREEDOM FROM SHORT CIRCUITS AND GROUNDS.
 - 1.18 FINAL INSPECTION
 - A. FINAL INSPECTION WILL BE MADE UPON WRITTEN REQUEST FROM THE GENERAL CONTRACTOR AFTER THE PROJECT IS COMPLETED; IN ACCORDANCE WITH THE SUPPLEMENTARY GENERAL CONDITIONS.
 - 1.19 GUARANTEE
 - A. GUARANTEE ALL WORK, MATERIAL AND EQUIPMENT FOR A PERIOD OF TWO YEARS AFTER DATE OF SUBSTANTIAL COMPLETION. PROVIDE WRITTEN DOCUMENTATION OF WARRANTY TO OWNER WITH RELEVANT CONTACT INFO.
 - B. DURING THE YEAR GUARANTEE PERIOD THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DEFECTS WHICH DEVELOP IN THE ELECTRICAL SYSTEMS, UPON NOTIFICATION OF A DEFECT BY THE GENERAL CONTRACTOR, THE ELECTRICAL CONTRACTOR SHALL MAKE IMMEDIATE EFFORT TO CORRECT IT AND SHALL NOTIFY THE ARCHITECT WHEN THIS WORK IS COMPLETED.
 - C. REPAIRS AND/OR REPLACEMENTS SHALL BE MADE WITH NO COST TO OWNER.
- END OF SECTION

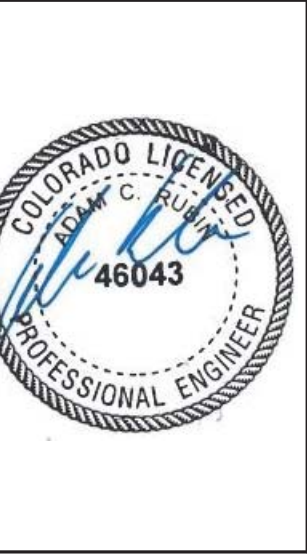
SECTION 16100 - BASIC MATERIALS

- 1.1 CONDUIT
 - A. MATERIALS:
 - 1. EMT TUBING SHALL BE ALLIED, REPUBLIC, LTV, OR EQUAL WITH U.L. APPROVED NATIONAL ELECTRICAL CODE TYPE FITTINGS. INDENTER TYPE FITTINGS SHALL NOT BE USED. A GROUND WIRE SIZED PER N.E.C. ART. 250-122 SHALL BE PULLED IN EACH CONDUIT CONTAINING PHASE CONDUCTOR(S).
 - 2. LIQUID-TIGHT FLEXIBLE METAL CONDUIT: FLEXIBLE GALVANIZED STEEL TUBING COVERED WITH EXTRUDED LIQUID-TIGHT JACKET OF POLYVINYL CHLORIDE (PVC) PROVIDE CONDUIT WITH A CONTINUOUS COPPER BONDING CONDUCTOR SPIRAL BETWEEN THE CONVOLUTIONS. PROVIDE STEEL OR MALLEABLE IRON FITTINGS. CONNECTORS SHALL HAVE INSULATED THROATS.
 - B. BUSHINGS AND LOCKNUTS:
 - 1. BUSHINGS FOR TERMINATING CONDUITS SMALLER THAN 1-1/4-INCHES ARE TO HAVE FLARED BOTTOM AND RIBBED SIDES, WITH SMOOTH UPPER EDGES TO PREVENT INJURY TO CABLE INSULATION.
 - 2. WHERE REQUIRED, BUSHINGS OF STANDARD OR INSULATED TYPE SHALL HAVE SCREW TYPE GROUNDING TERMINAL.
 - C. CONDUIT INSTALLATION:
 - 1. ALL EXPOSED CONDUITS SHALL BE ROUTED PARALLEL OR PERPENDICULAR TO BUILDING ELEMENTS.
 - 2. CONDUIT SHALL BE INSTALLED TO THE REQUIREMENTS OF THE STRUCTURE AND TO REQUIREMENTS OF ALL THE OTHER WORK ON THE PROJECT. CONDUIT SHALL BE INSTALLED TO CLEAR ALL OPENINGS, DEPRESSIONS, PIPES, DUCTS, REINFORCING STEEL, ETC.
 - 3. CONDUIT SHALL BE INSTALLED CONTINUOUS BETWEEN CONNECTIONS TO OUTLETS, BOXES AND CABINETS WITH A MINIMUM POSSIBLE NUMBER OF BENDS AND NOT MORE THAN THE EQUIVALENT OF 4-90 DEGREE BENDS BETWEEN CONNECTIONS. BENDS SHALL BE SMOOTH AND EVEN AND SHALL BE MADE WITHOUT FLATTENING CONDUIT OR FLAKING ENAMEL. RADIUS OF BENDS SHALL BE AS LONG AS POSSIBLE AND NEVER SHORTER THAN THE CORRESPONDING TRADE ELBOW. LONG RADIUS ELBOWS SHALL BE USED WHERE NECESSARY.
 - 4. CONDUITS SHALL BE SECURELY FASTENED IN PLACE WITH APPROVED STRAPS, HANGERS, AND SUPPORTS AS REQUIRED.

- 5. ALL WORK SHALL BE PROTECTED AGAINST DAMAGE DURING CONSTRUCTION AND ANY WORK DAMAGED OR MOVED OUT OF LINE AFTER ROUGHING-IN SHALL BE REPAIRED AND RESET TO THE APPROVAL OF THE ARCHITECT WITHOUT ADDITIONAL COST TO THE OWNER.
 - 6. CONDUIT TERMINATIONS AT PANELBOARDS, JUNCTION BOXES, ETC., SHALL BE ALIGNED AND INSTALLED TRUE AND PLUMB. WOOD OR STEEL BUCKS OR TEMPLATES SHALL BE USED WHERE REQUIRED.
- 1.2 WIRES AND CABLES
- A. HARBIRSHAW, CRESCENT, SOUTHWIRE, GENERAL CABLE, AMERICAN, U.S. RUBBER COMPANY OR EQUAL CODE GAUGE WIRE, FINISHED WITH FADELESS COLOR SOLUTION FOR NATIONAL ELECTRIC CODE SYSTEM OF COLOR CODING AND BEARING UNDERWRITER'S LABEL. WIRES SHALL BE SOFT ANNEALED STRANDED COPPER WITH PROPERTIES CONFORMING TO THE NATIONAL ELECTRIC CODE REQUIREMENTS. NO. 10 GAUGE AND LARGER SHALL BE STRANDED. NO. 12 GAUGE CAN BE SOLID OR STRANDED.
 - B. WIRE SMALLER THAN NO. 12 GAUGE SHALL NOT BE USED UNLESS SPECIFICALLY CALLED FOR.
 - C. WIRES FOR GENERAL USE WITHIN THE BUILDING SHALL BE TYPE THWN, XHHW, OR COMBINATION THHN/THWN EXCEPT WHERE CALLED FOR ON THE DRAWINGS. ALL CONDUCTOR SIZES MUST BE AS SPECIFIED ON DRAWINGS REGARDLESS OF INSULATION TYPE.
 - D. A GROUND WIRE SIZED PER N.E.C. ART. 250-122 SHALL BE INSTALLED IN EACH CONDUIT CONTAINING PHASE CONDUCTORS.
 - E. ALL CONTROL WIRING SHALL BE COPPER, SOLID OR STRANDED, #14 GA. OR LARGER DEPENDING UPON CURRENT REQUIREMENTS. INSULATION TYPE FOR 90 DEGREE C. WHERE STRANDED CONDUCTORS ARE USED PROVIDE WITH SPADE TYPE INSULATED COPPER TERMINALS.
 - F. ALL CONDUCTORS SHALL BE IDENTIFIED AT ALL TERMINATION POINTS AND IN ALL PULL AND JUNCTION BOXES BY THE FOLLOWING METHOD OF COLOR CODING. MEANS OF IDENTIFICATION SHALL BE PERMANENTLY POSTED AT EACH BRANCH CIRCUIT PANEL WITH A NAMEPLATE IDENTIFYING COLOR CODING WHERE MORE THAN ONE NOMINAL VOLTAGE SYSTEM IS IN THE SAME BUILDING.
 - 208Y/120 VOLT SYSTEM:
 - PHASE A - BLACK
 - PHASE B - RED
 - PHASE C - BLUE
 - NEUTRAL - WHITE
 - GROUND - GREEN
 - G. ALL CONDUCTORS SIZE #8 AWG AND SMALLER SHALL HAVE COLORED INSULATION WHERE CONDUCTORS WITH BLACK INSULATION ARE USED FOR THE LARGER WIRE SIZES (#6 AWG AND LARGER) COLOR CODING SHALL BE PROVIDED WITH TWO LAYERS-ONE HALF LAPPED OF NO. 35 COLORED SCOTCH VINYL ELECTRICAL TAPE.
- 1.3 FIRE BARRIER PENETRATION SEALS
- A. MANUFACTURER: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE FIRE BARRIER PENETRATION SEALS SHALL BE EQUAL TO ELECTRO PRODUCTS DIV.3/M.
 - B. PROVIDE SEALS FOR ANY OPENING THROUGH FIRE-RATED WALLS, FLOORS OR CEILINGS USED AS PASSAGE FOR COMPONENTS SUCH AS CONDUITS OR CABLES.
 - 1. CRACKS, VOIDS OR HOLES UP TO 4-INCHES DIAMETER: USE PUTTY OR CAULKING, ONE-PIECE INTUMESCENT ELASTOMER, NON-CORROSIVE TO METAL, COMPATIBLE WITH SYNTHETIC CABLE JACKETS, AND CAPABLE OF EXPANDING 10 TIMES WHEN EXPOSED TO FLAME OR HEAT, UL-LISTED.
 - 2. EXECUTION: FILL ENTIRE OPENING WITH SEALING COMPOUND. ADHERE TO MANUFACTURER'S INSTALLATION INSTRUCTIONS. ALL FIRE BARRIER SEALS SHALL MEET THE RATING OF THE WALL.
- 1.4 WIRE CONNECTIONS
- A. ALL WIRES SHALL BE RUN IN CONDUIT, SHALL BE CONTINUOUS BETWEEN OUTLETS AND BOXES (WITH NO SPLICES OR TAPS IN CONDUITS). SPLICES AND TAPS FOR #6 AND LARGER CONDUCTORS SHALL BE WITH BLOCK TYPE WITH INSULATING JACKET OR SPLIT BOLT CONNECTORS, COVERED AND COMPLETELY INSULATED WITH A MINIMUM OF THREE HALF-LAPPED LAYERS OF SCOTCH NO. 33+ (105°C) PLASTIC ELECTRICAL TAPE OR BY APPROVED INSULATED FASTENER. ALL SPLICES AND TAPS HAVING IRREGULAR SURFACES SHALL BE PROPERLY PADDED WITH SCOTCHFIL PUTTY BEFORE APPLICATION OF INSULATING PLASTIC TAPE. SCOTCHLOK ELECTRICAL PRE-INSULATED SPRING PRESSURE CONNECTORS OR EQUAL MAY BE USED FOR UP TO #8 CONDUCTORS. CONNECTORS SHALL BE INSTALLED SO THAT ALL WIRES ARE PROPERLY INSULATED.
- 1.5 PULL AND JUNCTION BOXES
- A. PULL AND JUNCTION BOXES SHALL BE CODE GAUGE STEEL BOXES WITH HINGED, BOLTED OR SCREWED COVERS. BOXES SHALL BE FLUSH OR SURFACE MOUNTED AS SHOWN OR REQUIRED.
 - B. PROVIDE JUNCTION AND PULL BOX AS REQUIRED FOR PULLING OF WIRE AS REQUIRED BY THE NEC. ALL BOXES SHALL BE CODE CONSTRUCTION WITH SCREW TYPE COVER AND SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS.
- 1.6 OUTLET BOXES
- A. J-BOXES IN BOILER ROOMS, MECH./ELECT. ROOMS, STORAGE ROOMS OR ABOVE CEILINGS SHALL BE A MINIMUM OF 2 1/8" DEEP 4" SQ. BOXES W/ COMBO 1/2" & 3/4" CONCENTRIC KO'S.
- 1.7 WIRING DEVICES
- A. RECEPTACLES SHALL BE 20A COMMERCIAL GRADE. DUPLEX RECEPTACLES SHALL BE EXTRA HEAVY-DUTY TYPE WITH NYLON FRONTS AND BACKS.
 - B. THE GROUND WIRE SHALL BE PIGTAILED TO THE BOX WITH A 10/32 GREEN SCREW AND WRAPPED ON THE GROUNDING SCREW / YOKE OF THE DEVICE.
 - C. METAL COVER PLATES SHALL BE USED ON ALL FLUSH DEVICES.
 - D. SWITCHES SHALL BE EXTRA HEAVY-DUTY TYPE WITH NYLON FRONTS AND BACKS.

- E. DEVICES SHALL BE PIGTAILED FROM BRANCH CIRCUIT FOR EASE OF DEVICE REMOVAL OR REPLACEMENT.
- SECTION 16400 - SERVICE AND DISTRIBUTION**
- 1.1 GROUNDING
 - A. ALL CONDUCTORS, MOTOR FRAMES, ETC., THAT REQUIRE GROUNDING SHALL BE GROUNDED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.
 - 1.2 PANELBOARDS
 - A. PROVIDE PANEL BY SQUARE D WITH THERMAL MAGNETIC BREAKERS AND GROUND BUS. LOAD CENTER CONSTRUCTION IS NOT PERMITTED. PROVIDE DOOR-IN-DOOR CONSTRUCTION WITH NAMEPLATE MOUNTED ON FRONT OF PANEL.
 - B. PROVIDE LOCKS WITH TWO KEYS FURNISHED PER LOCK.
 - 1.3 DISCONNECT SWITCHES
 - A. THE CONTRACTOR SHALL FURNISH AND INSTALL SQUARE 'D' EXTERNALLY OPERATED, HEAVY DUTY, HORSEPOWER RATED DISCONNECT SWITCHES AT ALL POINTS INDICATED ON THE DRAWINGS OR REQUIRED BY CODE. THE ENCLOSURE SHALL HAVE THE PROPER NEMA RATING FOR THE ENVIRONMENT.
- END OF SECTION

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SHEET CONTENTS
 ELECTRICAL SPECIFICATIONS

BETHE ELEMENTARY SCHOOL
 5100 SCHOOL HOUSE DRIVE
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THE GREAT AND DIVINE ARCHBISHOP JOHN BAPTIST NEVILL, A LAY MEMBER OF THE PROFESSIONAL ENGINEERING SOCIETY OF COLORADO, HAS GRANTED THE RIGHT OF PRACTICE TO THE ABOVE NAMED INDIVIDUALS FOR THE TERM OF YEARS SPECIFIED IN THE ATTACHED LICENSES.

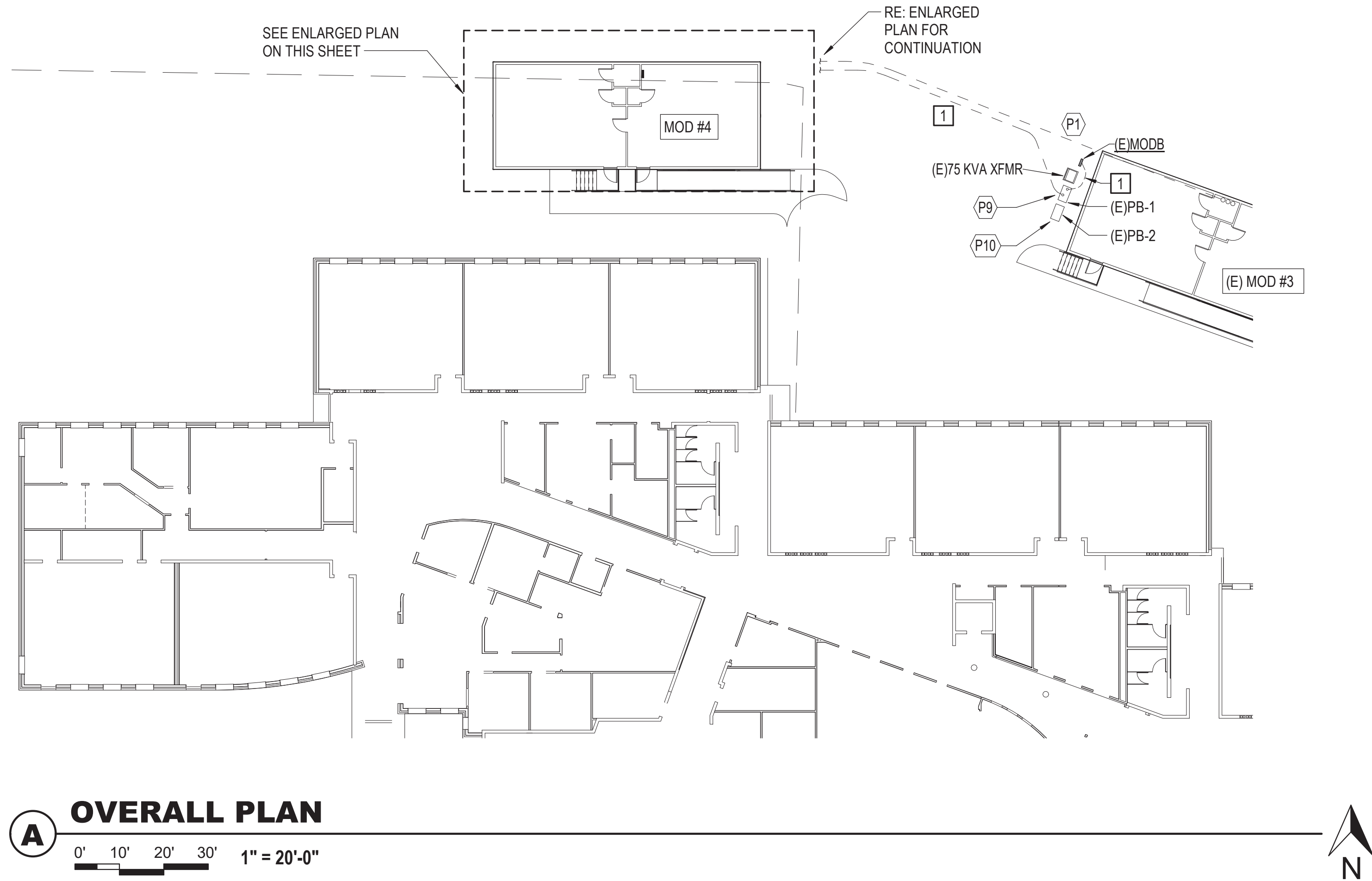
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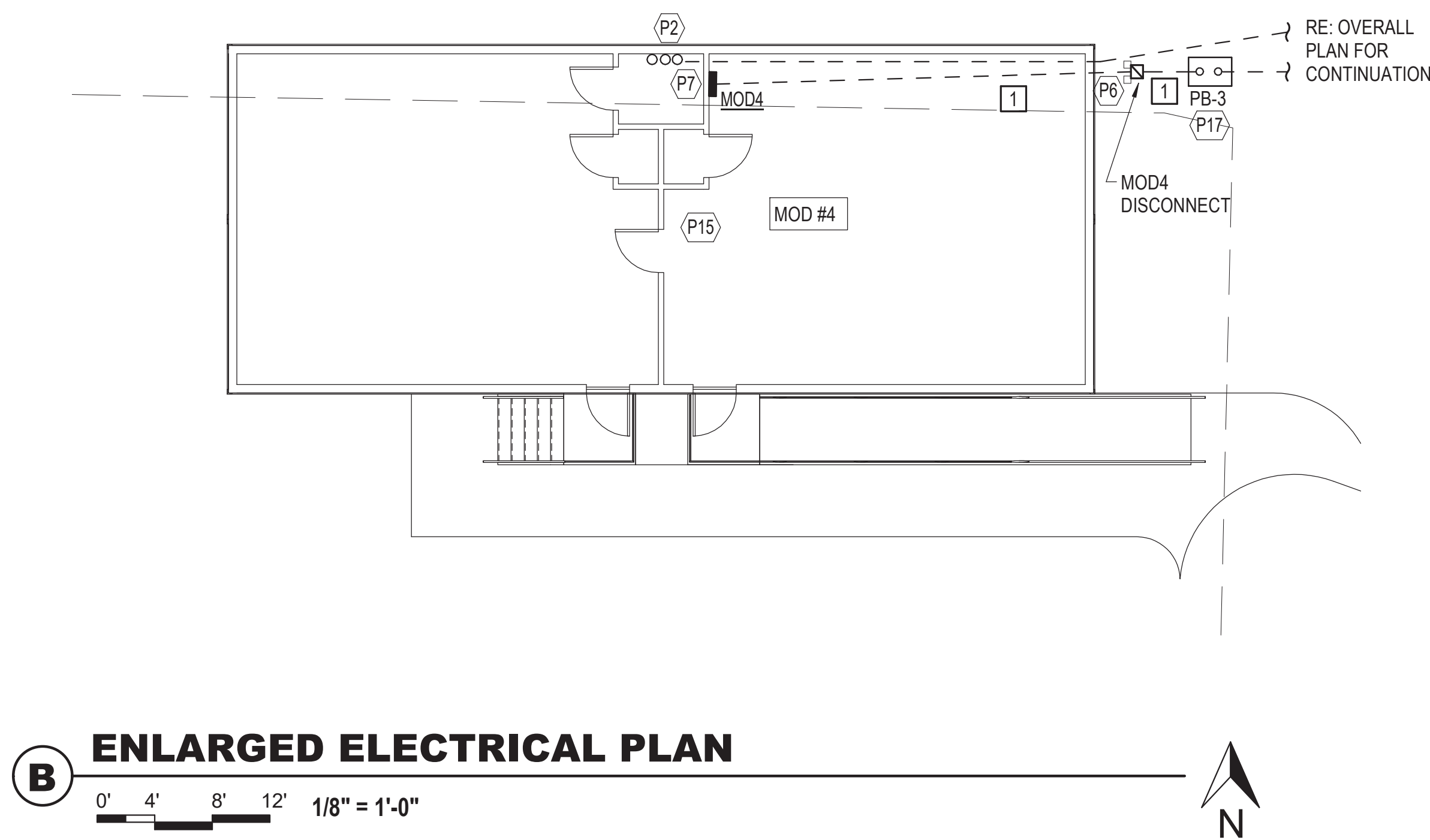
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REVISIONS

E0.1



A **OVERALL PLAN**
 0' 10' 20' 30' 1" = 20'-0"



B **ENLARGED ELECTRICAL PLAN**
 0' 4' 8' 12' 1/8" = 1'-0"

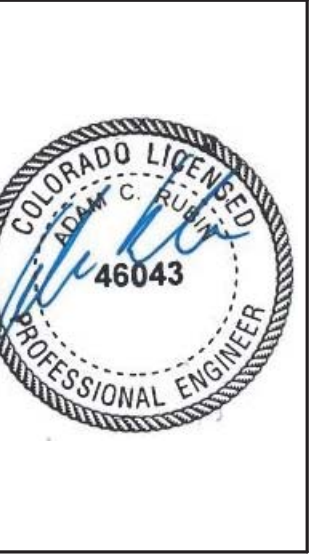
ELECTRICAL PLAN NOTES:

- CONTRACTOR SHALL REFERENCE ALL RELATED CONTRACT DOCUMENTS, SITE SURVEY, AND OTHER RESOURCES FOR POSSIBLE CONFLICTS WITH OTHER UNDERGROUND UTILITIES. AT UTILITY CROSSINGS, CONTRACTORS SHALL VERIFY UTILITY DEPTHS AND COORDINATE CONDUIT ROUTING AS NECESSARY.
- CONTRACTOR SHALL VERIFY AND COORDINATE EXISTING CONDITIONS OF PROJECT SITE PRIOR TO BID.
- COORDINATE ALL ROUTING IN THE FIELD WITH EXISTING CONDITIONS.
- ALL EMPTY CONDUITS SHALL BE PROVIDED WITH PULL ROPES.
- EXTERIOR PULLBOXES SHALL BE 12" DEEP, HAVE AN OPEN BOTTOM, AND BE SIZED AS INDICATED ON THE DRAWINGS. PULLBOXES SHALL BE CONSTRUCTED OF POLYMER CONCRETE, BE TRAFFIC RATED TO 22,000 POUNDS, AND HAVE HINGED LOCKABLE COVER SECURED WITH TAMPERPROOF SCREWS. PROVIDE COVER WITH MOLDED LETTERING WITH LABEL "ELECTRIC" OR "COMMUNICATIONS" DEPENDING ON USE. PROVIDE 12" OF PERVIOUS MATERIAL BELOW PULLBOX FOR DRAINAGE.
- ALL EXPOSED CONDUITS COMING FROM AN UNDERGROUND TRENCH SHALL BE RIGID METAL CONDUIT (SCHEDULE 80 PVC NOT ACCEPTABLE).
- ALL CONDUIT RUNS SHALL CONTAIN NO MORE THAN 270° OF BEND. PROVIDE A JUNCTION BOX SIZED IN ACCORDANCE WITH THE N.E.C. AS NEEDED TO MEET THIS REQUIREMENT.

**KEYED NOTES:**

- P1 ROUTE CONDUITS FOR LOW VOLTAGE SYSTEMS FROM (E) MODULAR DATA CLOSET TO MOD #4 DATA CLOSET. REFER TO SPECIAL SYSTEMS DIAGRAM ON SHEET E2.0 FOR MORE INFORMATION.
- P2 STUB LOW VOLTAGE CONDUITS INTO NEW MODULAR DATA CLOSET. REFER TO SPECIAL SYSTEMS DIAGRAM ON SHEET E2.0 FOR MORE INFORMATION.
- P6 PROVIDE FUSED DISCONNECT FOR MODULAR. MOUNT FROM UNISTRUT SUPPORTED BY 6X6 TREATED WOOD POSTS. REFER TO ONE-LINE DIAGRAM FOR MORE INFORMATION.
- P7 MAKE CONNECTION TO PANEL PROVIDED WITH MODULAR.
- P9 APPROXIMATE LOCATION OF EXISTING PULLBOX FOR POWER FEEDS SHOWN FOR REFERENCE ONLY. ROUTE NEW FEEDER THROUGH PULLBOX AS INDICATED.
- P10 APPROXIMATE LOCATION OF EXISTING PULLBOX FOR COMMUNICATIONS SHOWN FOR REFERENCE ONLY.
- P15 RECONNECT RELOCATED AC UNIT (ASSUMED 208/1, 30A) ON ROOF OF MODULAR TO PANEL PROVIDED WITH MODULAR. WIRING TO UNIT SHALL BE (2#10 & 1#10G) IN 3/4" C. CONFIRM EXACT REQUIREMENTS AND LOCATION OF UNIT WITH INSTALLER.
- P17 PROVIDE 24" X 30" PULLBOX FOR POWER FEEDS. COORDINATE EXACT LOCATION IN THE FIELD.

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 2429 Stonercrest Drive
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 tomkalert@gmail.com



SHEET CONTENTS
 ELECTRICAL PLANS

BETHKE ELEMENTARY SCHOOL
 5100 SCHOOL HOUSE DRIVE
 TIMNATH, COLORADO 80547

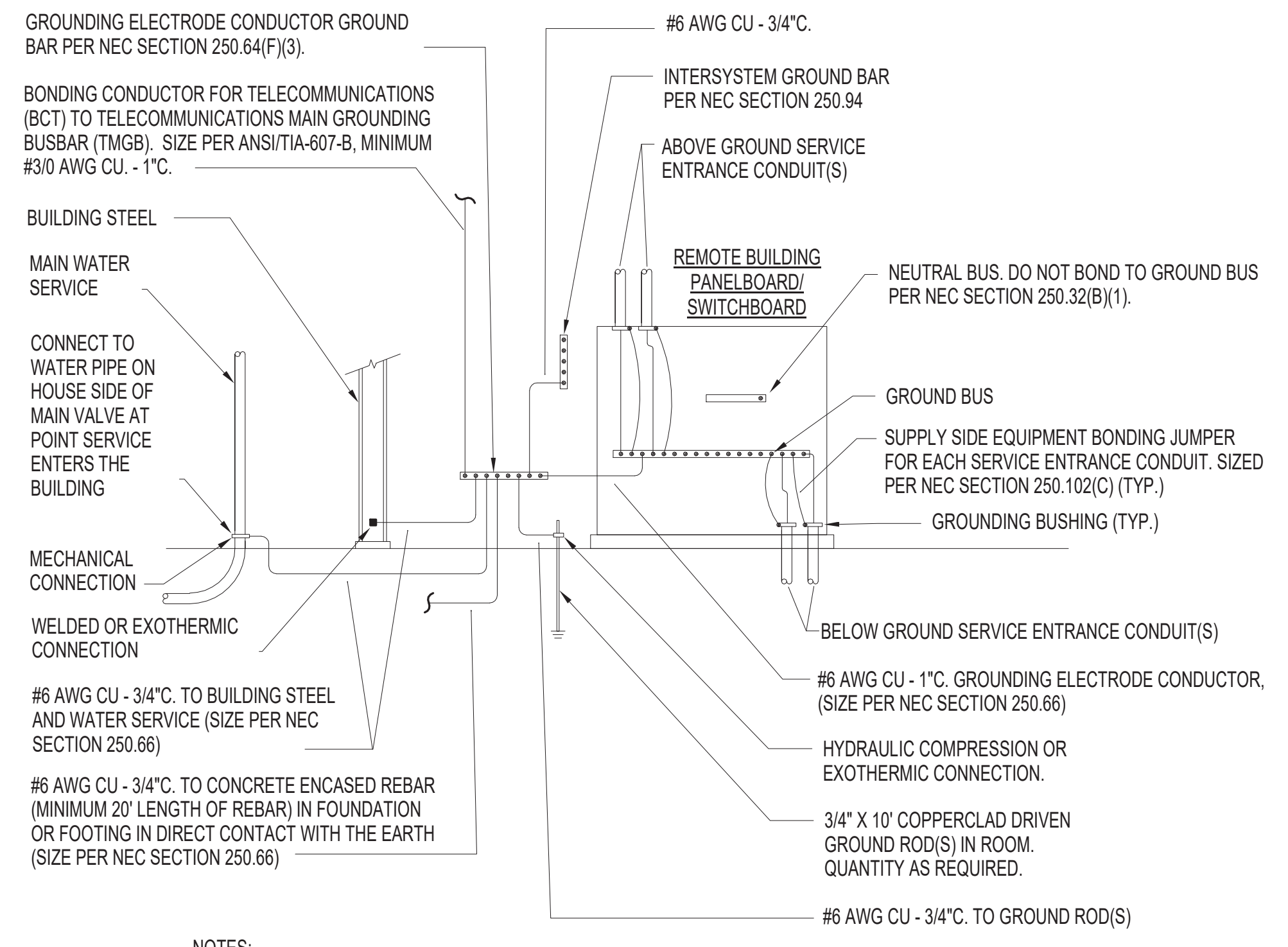
PEC PROFESSIONAL ENGINEERING CONSULTANTS P.A.
 420 LINDEN ST. SUITE 110 FORT COLLINS, CO 80524
 970-232-2658 www.pec1.com

ISSUED FOR PERMIT - 3/20/2020

NO.	BY	DESCRIPTION	DATE

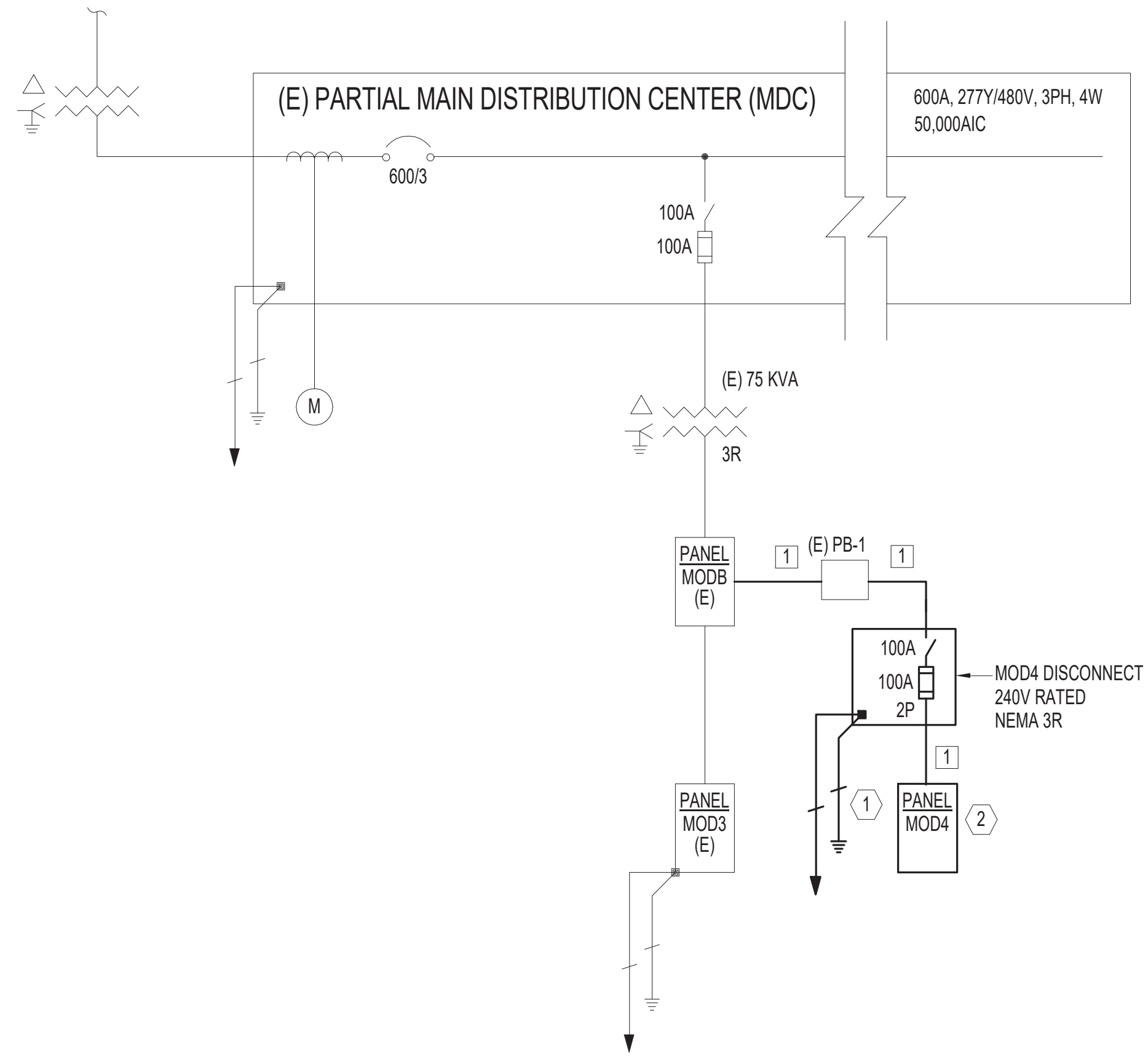
DESIGNER JG	CHECKED AR	DATE 3/20/2020	SHEET NO. E1.0
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- NOTES:**
1. PROVIDE OTHER GROUNDING CONNECTIONS AS SPECIFIED IN NEC SECTION 250.50.
 2. LABEL EACH GROUNDING ELECTRODE CONDUCTOR AND BONDING JUMPER.

3 REMOTE BUILDING SYSTEM GROUNDING DETAIL
NO SCALE



1 PARTIAL BETHKE ONE-LINE DIAGRAM
NO SCALE

GENERAL ONE-LINE DIAGRAM NOTES:

1. UNLESS OTHERWISE NOTED, ALL CIRCUIT BREAKERS AND/OR SWITCHES ARE THREE POLE.
2. ALL ELECTRICAL EQUIPMENT AND WIRING SHOWN IN A LIGHT LINE, IS EXISTING TO REMAIN.
3. ALL ELECTRICAL EQUIPMENT AND WIRING SHOWN IN A DARK LINE, IS NEW WORK UNDER THIS CONTRACT.

KEYED NOTES: (X)

1. REFER TO DETAIL #3 ON THIS SHEET FOR GROUNDING INFORMATION.
2. PROVIDE CONNECTION TO PANEL PROVIDED WITH MODULAR.

FEEDER SCHEDULE

DESIG.	EQUIPMENT SERVED	CONDUCTORS		GROUND SIZE PER SET	CONDUIT SIZE PER SET
		SETS	NO.		
1	PANEL "MOD4"	1	3	#1/0 AWG CU	#6 1-1/2" C

**FEEDER UPSIZED FOR VOLTAGE DROP.

EXIST. PANEL: MODB 208Y/120 VOLTS, 3 PHASE, 4 WIRE 200 AMP MAIN BKR, SURFACE MTD. 10000 AIC LABELED

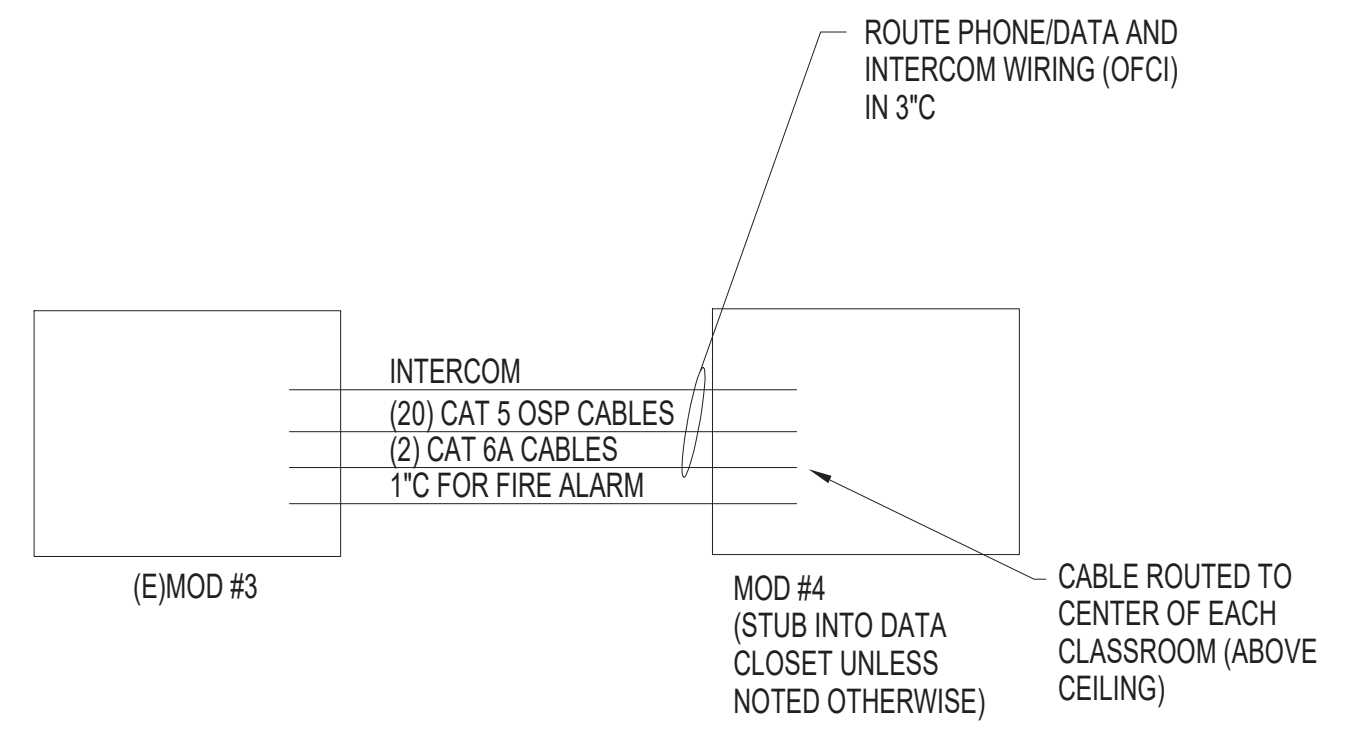
CIRC NO.	LOAD V. A.	LOAD TYPE	LOAD DESCRIPTION	AMP SIZE	PHASE	AMP SIZE	LOAD DESCRIPTION	LOAD TYPE	LOAD V. A.	CIRC NO.
1	10320	PWR	MOD #3	2	A	20	1 SPARE	SPAR		2
3					B	20	1 SPARE	SPAR		4
5	10320	PWR	MOD #4	2	C	20	1 SPARE	SPAR		6
7					A	20	1 SPARE	SPAR		8
9		SPACE			B	20	1 SPARE	SPAR		10
11		SPACE			C	20	1 SPARE	SPAR		12

1. EXISTING CIRCUIT BREAKERS AND LOADS TO REMAIN UNLESS NOTED OTHERWISE. UPDATE PANEL DIRECTORY.
2. CONNECT TO EXISTING SPARE CIRCUIT BREAKER.

EXIST. PANEL: MODB	CONNECTED KVA:			DEMAND FACTOR	TOTAL KVA	CONT. FACT	TOTAL	SIZING AMPS:			
	PH-A	PH-B	PH-C					PH-A	PH-B	PH-C	
Power	10.3	5.2	5.2	20.6	1.0	20.6	1.0	57.3	86.0	43.0	43.0
Spare				0.2	4.1	1.0	11.5	11.5	11.5	11.5	11.5
TOTAL KVA:	10.3	5.2	5.2	20.6		24.8		68.8	97.5	54.5	54.5
TOTAL AMPS:	86.0	43.0	43.0	57.3							

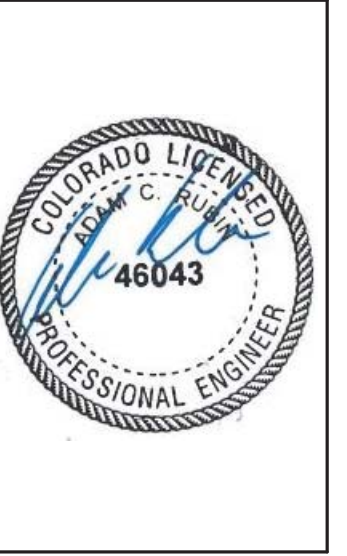
GENERAL SPECIAL SYSTEM NOTES:

1. COORDINATE ALL REQUIREMENTS WITH PSD PRIOR TO INSTALLATION.



2 BETHKE SPECIAL SYSTEMS DIAGRAM
NO SCALE

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Fort Collins, Colorado 80521
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SHEET CONTENTS
ELECTRICAL DIAGRAMS AND SCHEDULES

BETHKE ELEMENTARY SCHOOL
5100 SCHOOL HOUSE DRIVE
TIMNATH, COLORADO 80547

NO.	BY	DESCRIPTION	DATE

ISSUED FOR PERMIT - 3/20/2020

DESIGNER: JG
CHECKED: AR
DATE: 3/20/2020

SHEET NO.: E2.0

REVISIONS

PEC PROFESSIONAL ENGINEERING CONSULTANTS P.A.
420 LINDEN ST. SUITE 110 FORT COLLINS, CO 80524
970-232-5658 www.pec1.com

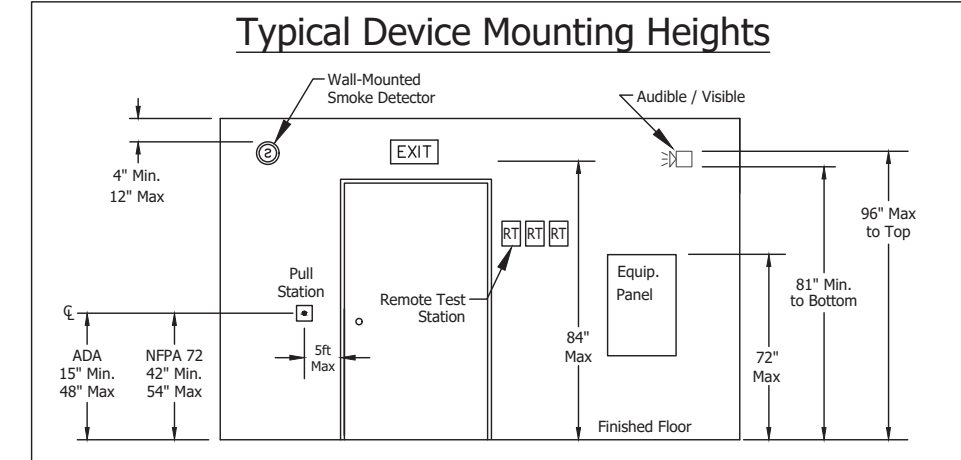
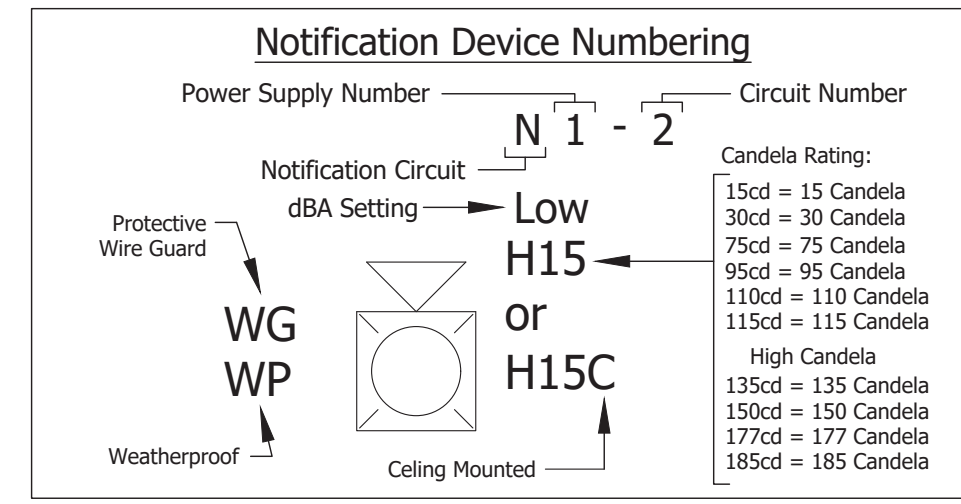
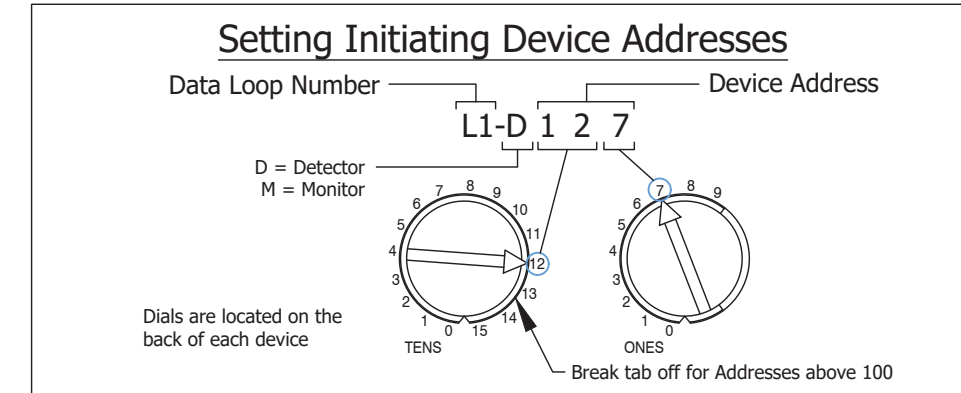
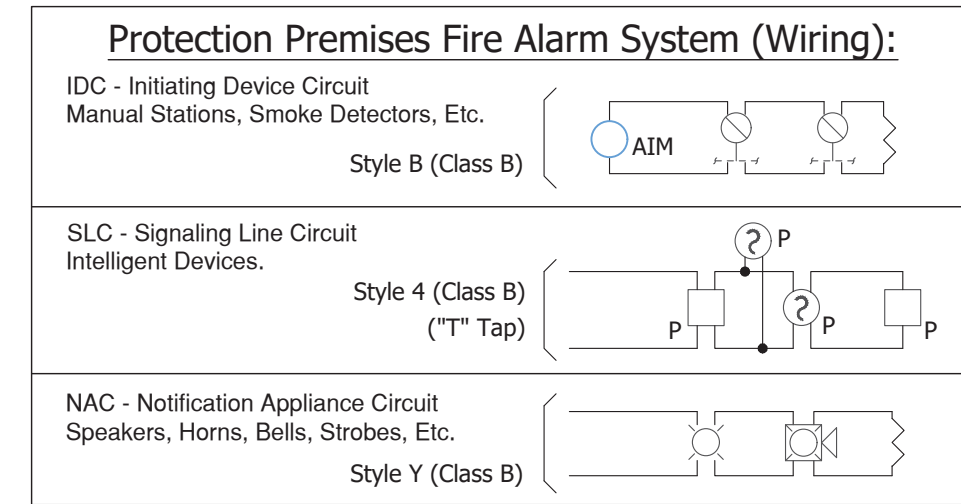
BETHKE ELEMENTARY SCHOOL

Modular Classroom Addition

5100 School House Dr.

Timnath, Colorado 80547

Fire Alarm System Drawings



Symbol	Description	Mounting	Manufacturer	Part #
FACP	Existing Intelligent Fire Alarm System Control Panel w/ DACT	N/A	Notifier	NFS-640
RPS	Existing Remote Power Supply, 8 Amp	Surface Mount	Notifier	FCPS-2458
AIM	Existing Addressable Interface Monitor Module	4 Square Deep	Notifier	FZM-1
AM	Existing Addressable Monitor Module	4 Square Deep	Notifier	FMM-1
ARM	Existing Addressable Relay Module	4 Square Deep	Notifier	FRM-1
AMC	Existing Addressable NAC Control Module	4 Square Deep	Notifier	FCM-1
R	New Multi-Voltage Relay	Self Encapsulated	Notifier	EOLR-1
H75C LW	New Ceiling Mounted Horn with Multi Candela Sync Strobe at 75cd, Red	4 Square Deep with 3" Round Ring	Notifier	PC2RL
C	New Conventional Photo Smoke Detector	4 Square Deep with 3" Round Ring	Notifier	2W-8
F	New Conventional Manual Pull Station	1 Gang at 48" to Center	Notifier	NBG-12L
CO	New Conventional Carbon Monoxide Detector	4 Square Deep with 3" Round Ring	Notifier	CO1224TR
SS	Existing Surge Protector	Surface	E-Clips	E120H
TS	Existing Transient Suppressor	Surface	TII	TII 326-2M

FIRE ALARM SYSTEM CONTROL PANEL MATRIX

	System Outputs														
	Control Unit			Annunciation				Notification			Control Functions				
	FACP Audible	GPU General Alarm Relay	GPU Trouble Relay	GPU Supervisory Relay	GPU Alarm Indication	GPU Trouble Indication	GPU Supervisory Indication	Public Mode - Audibles Activate (Temporal Pattern)	Local Detector - Audible Activate (Temporal 4 Pattern)	Public Mode - Strobes Activate (Synchronization)	Transmit Alarm Signal to Central Monitoring Station	Transmit Trouble Signal to Central Monitoring Station	Transmit Supervisory Signal to Central Monitoring Station	HVAC Fan Shutdown from Duct Detectors Associated with Specific RTU	Release Magnetically Held Smoke Doors
System Inputs															
Alarm (from each Device)															
Smoke Detectors	+	+			+				+	+	+				+
Portable Smoke Detector and Pull Station Zone	+	+			+				+	+	+				+
Heat Detectors	+	+			+				+	+	+				+
Manual Pull Stations	+	+			+				+	+	+				+
Supervisory (from each Device)															
Duct Smoke Detectors (Associated with HVAC Control)	+				+										+
Carbon Monoxide Detectors	+				+										+
Trouble (from each Device)															
Smoke Detectors	+	+			+										+
Portable Smoke Detector and Pull Station Zone	+	+			+										+
Heat Detectors	+	+			+										+
Manual Pull Stations	+	+			+										+
Duct Smoke Detectors	+	+			+										+
SLC Circuit Short	+	+			+										+
SLC Circuit Open	+	+			+										+
IDC Circuit Open	+	+			+										+
NAC Circuit Short	+	+			+										+
NAC Circuit Open	+	+			+										+
Ground Faults	+	+			+										+
Fire Alarm AC Power Failure	+	+			+										+
Fire Alarm AC Low Battery	+	+			+										+
System Functions															
ACK \ Step	-														
Signal Silence	-														
System Reset	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

+ Indication on the matrix indicates a Function starting or activating.
- Indication on the matrix indicates a Function returning to the non alarm state or de-activating.

Symbol	Description	MFG.	Part Number	Color Coded Cable	Type of Circuit Application
A	1 pair 16 AWG Twisted / Unshielded Fire Alarm Cable (FPLP)	West Penn	60991BT-BR	Red + Black - Red Jacket w/ Brown Tracer	Conventional (IDC) Circuit Plenum
AW	1 pair 16 AWG Twisted / Unshielded Fire Alarm Cable (Wet Location)	West Penn	AQ225	Red + Black - Black Jacket tag for Ckt type @ J box	Conventional (IDC) Circuit Wet Location
C	1 pair 14 AWG Twisted / Unshielded Fire Alarm Cable (FPLP)	West Penn	60993BT-BL	Red + Black - Red Jacket w/ Blue Tracer	Audible (NAC) Circuit Plenum
CW	1 pair 14 AWG Twisted / Unshielded Fire Alarm Cable (Wet Location)	West Penn	AQ226	Red + Black - Black Jacket tag for Ckt type @ J box	Audible (NAC) Wet Location
D	1 pair 16 AWG Twisted / Unshielded Fire Alarm Cable (FPLP)	West Penn	60991B-SLC	Red + Black - Red Jacket Pre-Printed "SLC"	Data (SLC) Circuit Plenum
J	1 pair 14 AWG Twisted / Unshielded Fire Alarm Cable (FPLP)	West Penn	60993B-GN	Red + Black - Red Jacket w/ Green Tracer	HVAC Interface
M	2 14 AWG THHN (in EMT)			White (N) / Black (H) tag for Ckt type @ J box	120 volt Door Holder Circuit
P	1 pair 14 AWG Twisted / Unshielded Fire Alarm Cable (FPLP)	West Penn	60993B	Red + Black - Red Jacket tag for Ckt type @ J box	Aux Power Circuit Plenum
R	1 pair 14 AWG Twisted / Unshielded Fire Alarm Cable (FPLP)	West Penn	60993B	Red + Black - Red Jacket tag for Ckt type @ J box	Resettable Aux Power Circuit Plenum
RW	1 pair 14 AWG Twisted / Unshielded Fire Alarm Cable (FPLP)	West Penn	AQ226	Red + Black - Red Jacket tag for Ckt type @ J box	Resettable Aux Power Wet Locations
T	CAT 5 Network Cable			Red + Black - Red Jacket tag for Ckt type @ J box	Telephone Circuit
U	1 pair 14 AWG Twisted / Unshielded Fire Alarm Cable (FPLP)	West Penn	60993BT-BL	Red + Black - Red Jacket w/ Blue Tracer	NAC Sync Circuit Plenum
W	4 Conductor 18 AWG Twisted / Unshielded Fire Alarm Cable (FPLP)	West Penn	60982B	Red + Black - Blue (switch) Brown (spare) Red Jacket tag for Ckt type @ J box	Remote Test Station Circuit Plenum

Wire Manufacturer is for Reference Purpose Only, Consult NEC and Specifications for Wiring Methods.
THHN MAY BE USED FOR WET LOCATIONS.



Vicinity Map



Modular Classroom Building Classifications and Codes

Occupancy Classification: E (Educational Use)

Stories: One Basement: No

Square Footage: 1,440 SF

Fire Sprinkler System: No

Codes: International Codes (IBC/IMC/IEC/IFC), 2015 Edition, NEC 2017

City of Fort Collins Local Amendments to all of the above Codes.

Poudre School District Design Criteria

NFPA-72 2013 Edition for Placement of Fire Alarm Devices

SCOPE OF WORK

Poudre School District - Bethke Elementary School is an existing one story educational facility that is adding a new modular classroom. New notification, conventional smoke detectors and conventional pull stations will be installed in each modular classroom and connected to the existing fire alarm system VIA the existing circuits in the existing modular classroom. The new carbon monoxide detector shall be programmed as supervisory with a local temporal 4 signal. Wet location wiring will be used between the main building and the new modular. Field verify new power supply location and device descriptors and approve with PSD and Engineer. Graphic maps will be updated, printed, and installed by Poudre School District.

Manufacturer Representative Product Application



Tech Electronics
1351 West 121st Avenue
Westminster, Colorado 80234
(303) 438-8088 / Fax (303) 457-2710
Contact: Rich Vance

Authority Having Jurisdiction

Colorado Division of Fire Safety
690 South Kipling Street, Suite 2000
Denver, Colorado 80215
(303) 239-4600

Owner

Poudre School District
2407 LaPorte Avenue
Fort Collins, Colorado 80521
(303) 655-2973
Contact: John Little

Fire Alarm Engineer

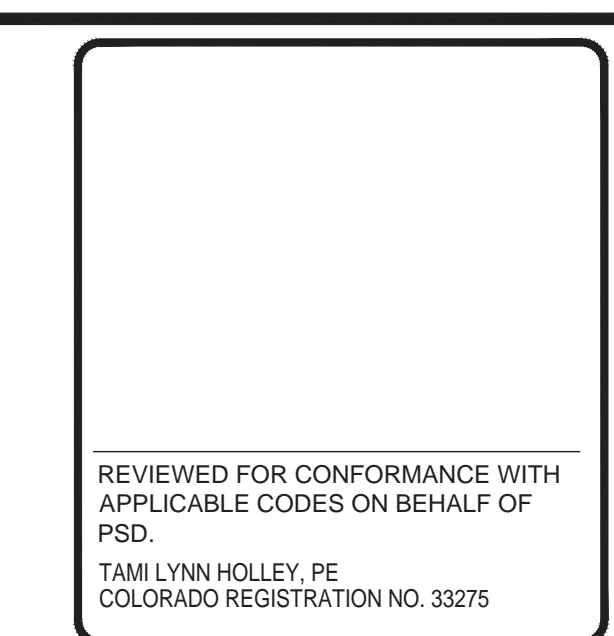
TLH Fire
6901 S Pierce ST, Suit 205
Littleton, Colorado 80128
Cell No. (303) 517-1775
Contact: Tami Lynn Holley, P.E.

Central Monitoring Station

Safe Systems
Primary No. 1-877-733-2422
Secondary No. 1-877-303-3531
Wellington Account No. 2567-0804

Sheet Index

Sheet Number	Description
FA.1	Bethke Fire Alarm System Information
FA.2	Bethke New Fire Alarm Plan and Calculations
FA.3	Bethke Fire Alarm One-Line Diagram



REVIEWED FOR CONFORMANCE WITH APPLICABLE CODES ON BEHALF OF PSD.
TAMI LYNN HOLLEY, PE
COLORADO REGISTRATION NO. 33275

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Specializing in Fire Alarm Systems E-mail: tami@TLHFire.com

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SHEET CONTENTS
FIRE ALARM
SYSTEM INFORMATION

2020 CLASSROOM MODULARS
POUDRE SCHOOL DISTRICT
FORT COLLINS, COLORADO

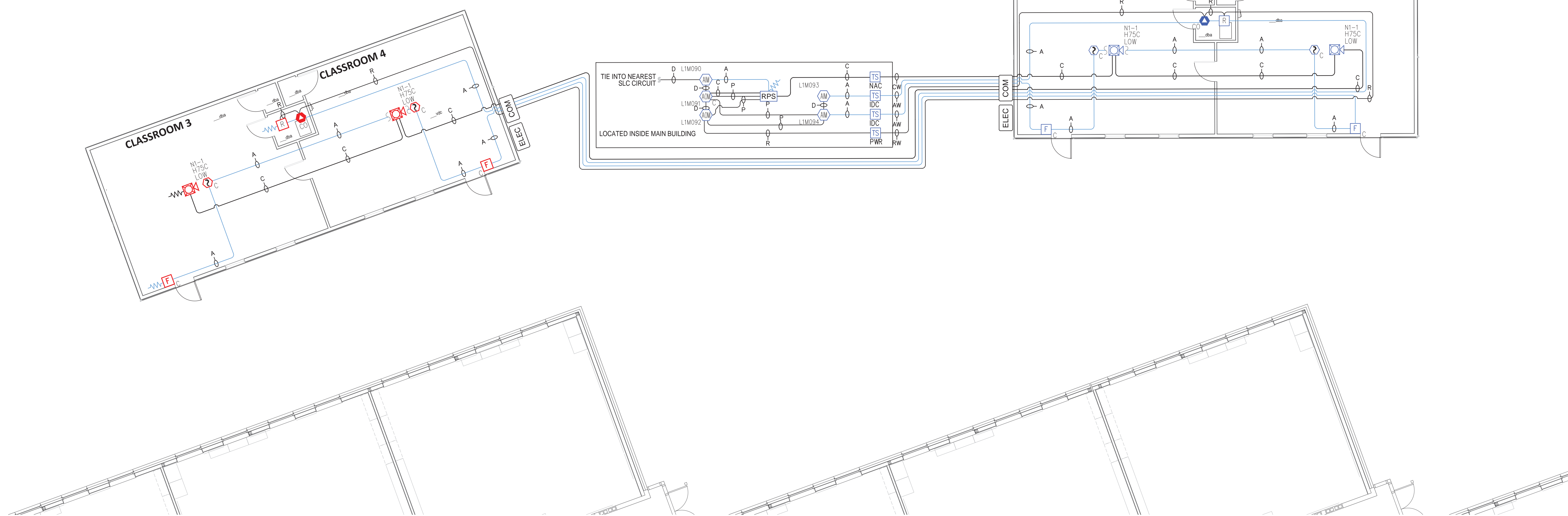
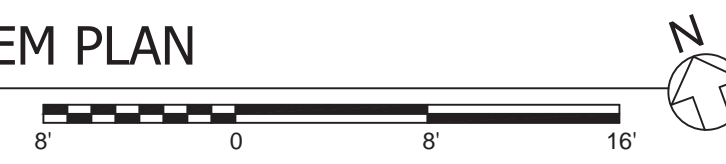
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NO.	BY	DATE	DESCRIPTION	REVISIONS
1	RFB			
2	JNH			
3	JNH			
4	JNH	02/27/2020		

FA.1

NEW MODULAR - FIRE ALARM SYSTEM PLAN

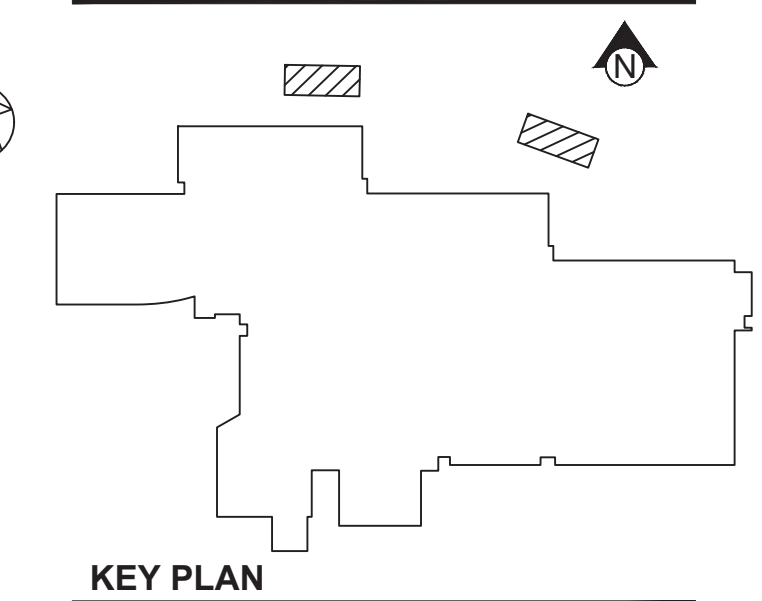
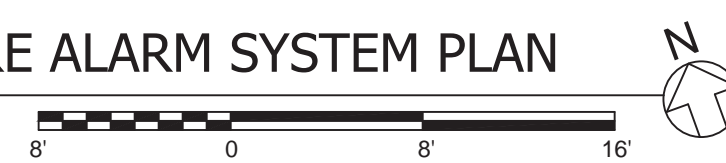
Scale: 1/8" = 1'-0"



BETHKE ELEMENTARY SCHOOL - FIRE ALARM SYSTEM PLAN

Scale: 1/8" = 1'-0"

Scale: 1/8" = 1'-0"



Bethke Elementary School		Battery Back up Calculation					
FCPS-2458 (RPS)		Located at Electrical Room					
Item	Qty	Part #	Description	Standby	Alarm	Total Standby	Total Alarm
1	1	FCPS-2458	Remote Power Supply	0.091000	0.145000	0.091000	0.145000
2	4	PC2RL	Ceiling Horn with Multi Candela Sync Strobe at 75cd	0.000000	0.147000	0.000000	0.588000
3	2	EOLR-1	Multi-Voltage Relay	0.020000	0.040000	0.040000	0.080000
4	2	CO1224TR	Conventional CO Detector	0.020000	0.040000	0.040000	0.080000
				0.171000		0.171000	0.893000
Standby Current Total Hours =				0.171000	X 24 (Hours)	=	4.104000
Alarm Current Total Minutes =				0.893000	X 0.250 (15 Mins)	=	0.223250
Total						=	4.327250
30% Battery Depletion						=	1.298175
Total AH Rated Batteries Needed						=	5.625425
Total AH Rated Batteries Supplied							7

NAC Circuit Load & Voltage Drop Calculation							
Remote Power Supply (RPS)		FWR Input Non-Temporal High		Circuit Number			
Notifier FCPS-2458		16-33 Volts		Ckt 1	Ckt 2	Ckt 3	Ckt 4
Located at Electrical Room		Candela	Amps	NI-1	Spare	Spare	Spare
Notifier Horn Strobes Ceiling		PC2RL 15	0.1030				
		PC2RL 30	0.1260				
		PC2RL 75	0.1810	4			
		PC2RL 95	0.2030				
		PC2RL 110	0.2210				
		PC2RL 115	0.2290				
High Candela		PC2RH 135	0.2330				
		PC2RH 150	0.2480				
		PC2RH 177	0.2750				
		PC2RH 185	0.2810				
Misc.		APS Activation	0.0300				
		# Devices	4	0	0	0	0
		Circuit Amps	0.724	0.000	0.000	0.000	
		Circuit Length (ft)(14awg)	500				
		Circuit Length (ft)(12awg)					
		EOL Voltage (14awg)	18.18	20.40	20.40	20.40	
		EOL Voltage (12awg)	20.40	20.40	20.40	20.40	
		Total NAC Amps Used		0.72			
		Total NAC Amps Used %		12%			

NAC Circuit Load & Voltage Drop Calculation							
Remote Power Supply (RPS)		FWR Input Non-Temporal High		Circuit Number			
Notifier FCPS-2458		16-33 Volts		Ckt 1	Ckt 2	Ckt 3	Ckt 4
Located at Electrical Room		Candela	Amps	Power	Spare	Spare	Spare
Misc.		APS Activation	0.0300				
		CO1224TR	0.0400	2			
		EOLR-1	0.0400	2			
		# Devices	4	0	0	0	
		Circuit Amps	0.160	0.362	0.000	0.000	
		Circuit Length (ft)(14awg)	500				
		Circuit Length (ft)(12awg)					
		EOL Voltage (14awg)	19.91	20.40	20.40	20.40	
		EOL Voltage (12awg)	20.40	20.40	20.40	20.40	
		Total NAC Amps Used		0.52			
		Total NAC Amps Used %		9%			

M Address	Device	Label
M001	Not Available	
THRU	Not Available	
M089	Spare	Not Available
M090	Monitor	RPS Elect. Rm.
M091	Control	RPS Elect. Rm.
M092	Relay	CO Mod Power
M093	Monitor	CO Modular bldg
M094	Mon Zone	Modular bldg
THRU	Not Available	
M159	Spare	Not Available

The following is an example of OHMS law voltage drop calculation that is utilized in the voltage drop calculation form.

OHMS Law Voltage Drop Calculation		
Circuit Load	1.1780	Total OHMS Calculation
Wire Footage	225	TO=2WFXOPF
OHMS per foot	0.00319	Volt Drop Calculation
Total OHMS	1.436	VD=CxTO
Voltage Drop	1.691019	C = Circuit Load
System Voltage on Battery	20.4	WF = Wire Footage
Voltage Drop %	8.289	OPF = OHMS per Foot
Voltage at EOL	18.709	TO = Total OHMS per Circuit
AWG	Ohms per 1,000 at 75C as listed in table 8 of NEC	
14	3.07	
EXAMPLE	12	1.93

Voltage Drop and Battery Calculations Note
 All Notification Appliances Have Been Calculated Using the Lowest Operating Voltage as Listed on the Manufacturers Engineering Cut Sheets. This is in Compliance with UL Changes in Current Draw Listing as of May 1, 2004. Power Supplies are Providing FWR Current to All Notification Appliances Available Voltage for Notification Appliances at the Power Supply is Listed at 20.4 Volts in Compliance with NFPA-72 Handbook - 2007 Edition, Chapter 7 Section 3.2.

REVIEWED FOR CONFORMANCE WITH APPLICABLE CODES ON BEHALF OF PSD.
 TAMI LYNN HOLLEY, PE
 COLORADO REGISTRATION NO. 33275

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SHEET CONTENTS
 NEW FIRE ALARM
 PLAN AND CALCULATIONS

2020 CLASSROOM MODULARS
 Poudre School District
 Fort Collins, Colorado

DATE: _____
 DESCRIPTION: _____
 NO. BY: _____
 REVISIONS: _____

Phone: 303-517-1775
 E-mail: tam@holleype.com

FA.2
 02/27/2020

POUDRE SCHOOL DISTRICT DESIGN STANDARDS

IN COMPLIANCE STATE CODE REQUIREMENTS (INTERNATIONAL FIRE CODE 2009 AND NFPA 72 2007) AND EXCEEDING REQUIREMENTS IN VERY LIMITED CIRCUMSTANCES, THE FIRE ALARM SYSTEM DESIGN INCORPORATES THE FOLLOWING DESIGN CRITERIA FOR SCHOOLS NOT PROTECTED WITH AUTOMATIC SPRINKLERS. FOR SCHOOLS PROTECTED WITH AUTOMATIC SPRINKLERS, ONLY THE SECTIONS RELATED TO SMOKE DETECTORS (AS ANNOTATED), MANUAL PULL STATIONS, DUCT DETECTORS AND NOTIFICATION SHALL APPLY. HEAT DETECTORS SHALL NOT BE ADDED TO SCHOOLS PROTECTED WITH AUTOMATIC SPRINKLERS. THE CONTRACTOR SHALL PROVIDE EXCESS FOR ALL BUILDING OCCUPANTS DURING ALL FIRE ALARM SYSTEM NOTIFICATION APPLIANCE TESTING.

- SMOKE DETECTION**
- SMOKE DETECTORS SHALL BE LOCATED THROUGHOUT ALL COMMON CORRIDORS. THESE SMOKE DETECTORS SHALL CONTROL MAGNETIC DOOR HOLD OPENERS. DOOR HOLDERS SHALL BE RELEASED UPON GENERAL ALARM. (FULLY SPRINKLERED SCHOOLS SHALL ONLY HAVE SMOKE DETECTORS WITHIN 5 FEET OF MAGNETIC DOOR HOLDERS).
 - A SMOKE DETECTOR SHALL BE LOCATED IN THE MAIN ELECTRICAL ROOM.
 - SMOKE DETECTORS SHALL BE LOCATED AT ALL FIRE ALARM REMOTE POWER SUPPLY PANELS AND FIRE ALARM CONTROL PANEL LOCATIONS UNLESS THE ENVIRONMENT IS UNSUITABLE FOR SMOKE DETECTORS IN WHICH CASE 135 DEGREE FIXED TEMPERATURE HEAT DETECTORS SHALL BE UTILIZED.
 - SMOKE DETECTORS SHALL BE LOCATED IN ALL COMPUTER CLASSROOMS.
 - SMOKE DETECTORS SHALL BE LOCATED IN THE LIBRARY/MEDIA CENTER.
 - A SMOKE DETECTOR SHALL BE LOCATED IN EACH MCF ROOM.
 - A SMOKE DETECTOR SHALL BE LOCATED IN EACH MODULAR CLASSROOM.
 - SMOKE DETECTORS SHALL BE LOCATED IN ELEVATOR LOBBIES, ELEVATOR MACHINE ROOM, AND THE TOP OF SHAFT FOR ELEVATOR CONTROL PURPOSES AS REQUIRED BY ANSI A 171.
 - SMOKE DETECTORS SHALL BE PROVIDED AS REQUIRED BY THE INTERNATIONAL MECHANICAL CODE FOR FIRE/SMOKE DAMPERS IF APPLICABLE TO THE SCHOOL.
 - PROVIDE WIRE GUARDS FOR ALL GYM AND CAFETERIA SMOKE DETECTORS. CONTRACTOR SHALL NOTCH WIRE GUARDS TO ALLOW FOR MAGNETIC TESTING. NOTE: MAGNET TESTING IS NOT A SUBSTITUTE FOR SMOKE CHAMBER ENTRY TESTING.

- HEAT DETECTION**
- HEAT DETECTORS SHALL BE LOCATED IN ALL CODE REQUIRED AREAS, NOT SUITABLE FOR SMOKE DETECTION.
 - INTELLIGENT 135 DEGREE RATE OF RISE HEAT DETECTORS SHALL BE LOCATED IN ALL CHEMICAL STORAGE AREAS, SCIENCE PREP ROOMS AND SCIENCE CLASSROOMS.
 - INTELLIGENT 135 DEGREE RATE OF RISE HEAT DETECTORS SHALL BE LOCATED CAFETERIAS AND GYMS.
 - INTELLIGENT 135 DEGREE FIXED TEMP HEAT DETECTORS SHALL BE LOCATED IN KITCHENS AND HOME ECONOMICS CLASSROOMS, AND PRIMARY STAFF ROOM.
 - HEAT DETECTORS SHALL BE PROVIDED IN DISHWASH ROOMS WHERE EXISTING HEAT DETECTION IS IN PLACE AND SHALL BE 135° WEATHERPROOF RATE ANTICIPATION THERMOTECH MODEL.
 - HEAT DETECTORS SHALL BE LOCATED IN ALL BOILER ROOMS, CHILLER ROOMS, AND OTHER SIMILAR ROOMS. THESE DETECTORS SHALL BE INTELLIGENT/ANALOG TYPE DEVICE SET TO THE HIGHEST FIXED TEMPERATURE.
 - HEAT DETECTORS SHALL BE LOCATED IN THE ELEVATOR MACHINE ROOMS AND TOP OF SHAFT FOR ELEVATOR SHUNT TRIP PURPOSES ONLY AS REQUIRED BY STATE CODE. THESE DETECTORS SHALL BE INTELLIGENT/ANALOG TYPE DEVICE.
 - A HEAT DETECTOR SHALL BE LOCATED IN THE MEN ROOM. THE DETECTOR SHALL BE INTELLIGENT/ANALOG TYPE DEVICE SET TO THE HIGHEST FIXED TEMPERATURE.
 - A HEAT DETECTOR SHALL BE LOCATED IN STORAGE ROOMS SHALL BE LOCATED STORAGE ROOMS GREATER THAN 400 SQ FT OR IN STORAGE ROOMS WITH EXISTING HEAT DETECTORS.
 - INTELLIGENT 135 DEGREE RATE OF RISE HEAT DETECTORS SHALL BE LOCATED STORAGE ROOMS GREATER THAN 400 SQ FT OR IN STORAGE ROOMS WITH EXISTING HEAT DETECTORS.
 - PROVIDE WIRE GUARDS FOR ALL GYM HEAT DETECTORS. CONTRACTOR SHALL NOTCH WIRE GUARDS TO ALLOW ENTRY FOR MAGNET TESTING. NOTE: MAGNET TESTING IS NOT A SUBSTITUTE FOR HEAT SOURCE TESTING.

- DUCT SMOKE DETECTION**
- DUCT SMOKE DETECTORS SHALL BE INTELLIGENT ANALOG/ADDRESSABLE TYPE, WHICH SHALL REPORT TO THE FIRE ALARM SYSTEM AS A "SUPERVISORY" TYPE DEVICE.
 - DUCT SMOKE DETECTORS SHALL BE LOCATED IN THE RETURN AIR DUCTWORK OF ALL HVAC UNITS GREATER THAN 2,000CFM.
 - DUCT SMOKE DETECTORS SHALL BE LOCATED IN THE SUPPLY AND RETURN DUCTWORK OF ALL HVAC UNITS GREATER THAN 15,000 CFM OR AS REQUIRED BY THE INTERNATIONAL MECHANICAL CODE.
 - WHERE SUPPLY SIDE DUCT DETECTORS ARE NO LONGER REQUIRED, CONTRACTOR SHALL REMOVE SUPPLY SIDE DUCT DETECTOR AND SAMPLING TUBE AND SEAL PENETRATIONS ON DUCTWORK WITH ALUMINUM DUCT TAPE.
 - REMOTE TEST STATIONS SHALL BE KEPT AND SHALL BE LOCATED NO HIGHER THAN 7 FEET ABOVE THE FINISHED FLOOR. IF THE CONTRACTOR OBTAINS PERMISSION TO MOUNT THE REMOTE TEST SWITCH HIGHER THAN 7 FEET ABOVE THE FINISHED FLOOR, THE TEST SWITCH SHALL BE MAGNET (NOT KEYS).

- MANUAL PULL STATIONS**
- MANUAL PULL STATIONS SHALL BE DUAL ACTION TYPE WITH A KEY (NOT ALLEN BRNCH).
 - MANUAL PULL STATIONS SHALL BE LOCATED AT EACH MAIN (DOUBLE DOORS) BUILDING EXIT, AND EXTERIOR EXITS OF THE GYM, CAFETERIA, AND LIBRARY/MEDIA CENTER.
 - MANUAL PULL STATIONS SHALL BE LOCATED AT EXTERIOR EXITS IN MIDDLE SCHOOL AND HIGH SCHOOL TECH CLASSROOMS.
 - MANUAL PULL STATIONS SHALL BE LOCATED AT EACH KITCHEN, BOILER AND MECHANICAL ROOMS WITH EXTERIOR BUILDING ACCESS.
 - MANUAL PULL STATIONS SHALL BE PROVIDED AT ALL PORTABLE MODULAR CLASSROOM EXITS AND SHALL BE NON-INTELLIGENT.
 - MANUAL STATIONS SHALL BE MOUNTED WITH THE OPERATING MECHANISM AT 48" ABOVE FINISHED FLOOR.
 - FOR EXISTING SCHOOLS PROTECTED WITH AUTOMATIC SPRINKLERS, THE NEW PULL STATIONS SHALL BE LOCATED TO MATCH EXISTING PULL STATION LOCATIONS.
 - PROTECT MANUAL PULL STATIONS IN GYM AND CAFETERIA WITH STI DAMAGE STOPPER.

- AUDIBLE, VISUAL, AND AUDIBLE/VISUAL NOTIFICATION APPLIANCES**
- HORNS AND HORN/STROBES SHALL BE GENERALLY LOCATED TO PROVIDE A MINIMUM OF 150DB ABOVE AMBIENT SOUND LEVELS THROUGHOUT BUILDING AREAS.
 - ALL HORNS SHALL BE SET TO LOWEST OR SETTING AND THEN ADJUSTED UP AS REQUIRED.
 - STROBES SHALL BE LOCATED IN ALL COMMON "PUBLIC AREA" SPACES, INCLUDING CORRIDORS, CLASSROOMS, RESTROOMS, OPEN OFFICE AREAS, CLINICS, CONFERENCE ROOMS, AND OTHER AREAS WHERE MORE THAN A TWO PERSON OCCUPANCY IS ANTICIPATED.
 - STROBES SHALL BE LOCATED IN COPY ROOMS, WORK ROOMS, STORAGE ROOMS GREATER THAN 400 SQUARE FEET, AND STORAGE ROOMS WHERE HIGH OCCUPANT NORMAL USAGE LEVELS ARE ANTICIPATED.
 - STROBES SHALL NOT BE INSTALLED IN SINGLE OCCUPANT OFFICES.
 - PROVIDE WIRE GUARDS FOR ALL GYM AND CAFETERIA HORNS AND STROBES.

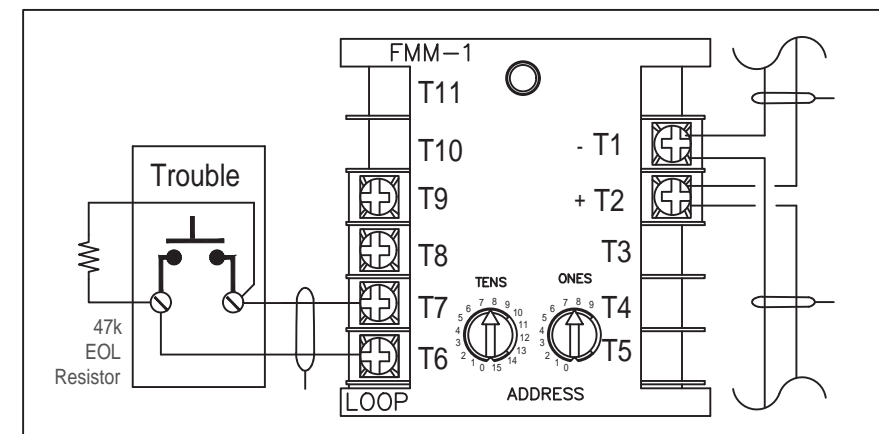
- REMOTE MONITORING, FIRE ALARM CONTROL PANEL, AND REMOTE POWER SUPPLY**
- TWO NEW PHONE LINES SHALL BE PROVIDED TO EACH FACP. THE FIRE ALARM SYSTEM SHALL REPORT POINT CONTACT ID TO THE MONITORING COMPANY. CROSS CONNECTIONS SHALL BE COMPLETED BY PSD.
 - AN ELECTRICAL OUTLET REQUIRED SHALL BE PROVIDED BY EACH FACP.
 - THE ELECTRICAL CONTRACTOR SHALL RUN EM POWER TO FACP AND RPS FROM THE FACILITY EM PANEL.

- MODULAR CLASSROOMS**
- THE ELECTRICAL CONTRACTOR SHALL RUN 24VDC POWER TO EACH MODULAR CLASSROOM.
 - ALL MODULAR CLASSROOM DEVICES SHALL BE CONVENTIONAL (NON-INTELLIGENT). SMOKE DETECTORS AND PULL STATIONS MAY BE ON THE SAME ZONE.

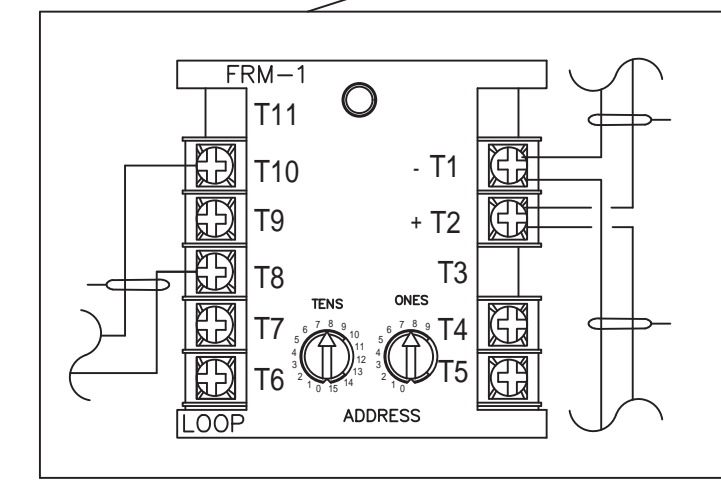
- MAGNETIC DOOR HOLDERS**
- MAGNETIC DOOR HOLDERS SHALL BE 120VAC. EXISTING DOOR MAISS MAY BE REUSED IF THEY ARE FIELD VERIFIED TO BE 120VAC, OTHERWISE, THEY MUST BE REPLACED WITH NEW 120VAC DEVICES.
- LABELS FOR DEVICES**
- ALL EQUIPMENT SHALL BE CLEARLY LABELED WITH THE DEVICE ADDRESS ON THE BASE OF THE DETECTOR OR MANUAL PULL STATION WITH TYPE LETTERED LABELS WITH A TEXT AT A FONT SIZE OF AT LEAST 18 POINT.
 - SMOKE DETECTORS AND MANUAL PULL STATIONS SHALL BE LABELED WITH THE DEVICE ADDRESS ON THE BASE OF THE DETECTOR OR MANUAL PULL STATION.
 - ALL NOTIFICATION APPLIANCES SHALL BE LABELED WITH THE NOTIFICATION APPLIANCE CIRCUIT DESIGNATION. THE "END OF LINE" SHALL BE CLEARLY LABELED.
 - MONITOR AND RELAY MODULES SHALL BE LABELED WITH THE DEVICE ADDRESS AND FUNCTION. (FOR EXAMPLE: L1M-23 WATERFLOW, L1M-50 MAG DOOR RELEASE, ETC.)
 - DUCT DETECTORS SHALL BE LABELED WITH THE DEVICE ADDRESS ON THE BASE OF THE DETECTOR AND THE CEILING GRID SHALL BE LABELED AS DUCT DETECTOR, HVAC UNIT AND DEVICE ADDRESS.
 - ALL MODULES SHALL HAVE THE STATUS LED'S VISIBLE WITHOUT REQUIRING THE REMOVAL OF A CEILING TILE OR COVER PLATE.

- GRAPHIC MAP**
- GRAPHIC MAPS SHALL BE SECURELY MOUNTED NEXT TO THE FIRE ALARM CONTROL PANEL. A GRAPHIC MAP IS ALSO REQUIRED NEXT TO THE REMOTE ANNUNCIATOR (IF PROVIDED). GRAPHIC MAPS AND COLORS SHALL BE APPROVED BY PSD AND TLH PRIOR TO MOUNTING AND INSTALLATION.

Remote Power Supply Monitored by a FMM-1 Module



FRM-1 Module



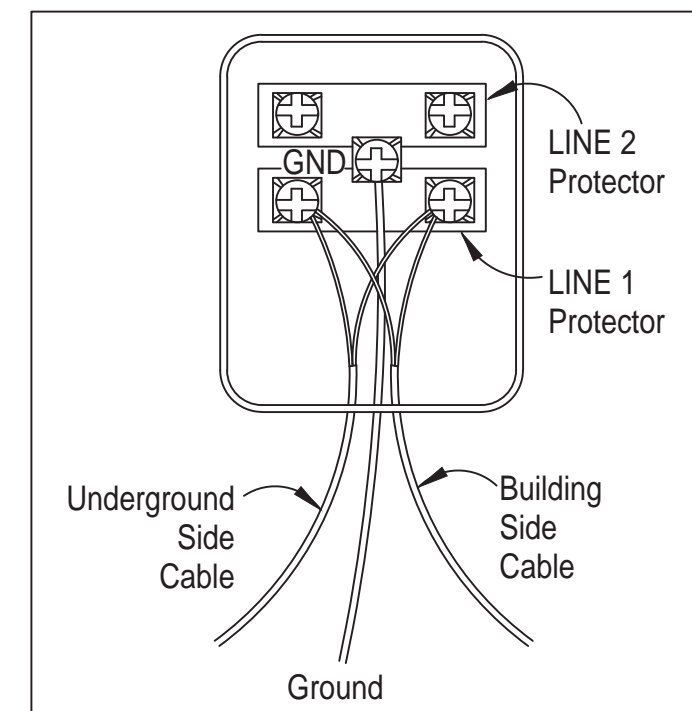
TIE INTO NEAREST SLC CIRCUIT

SLC CIRCUIT

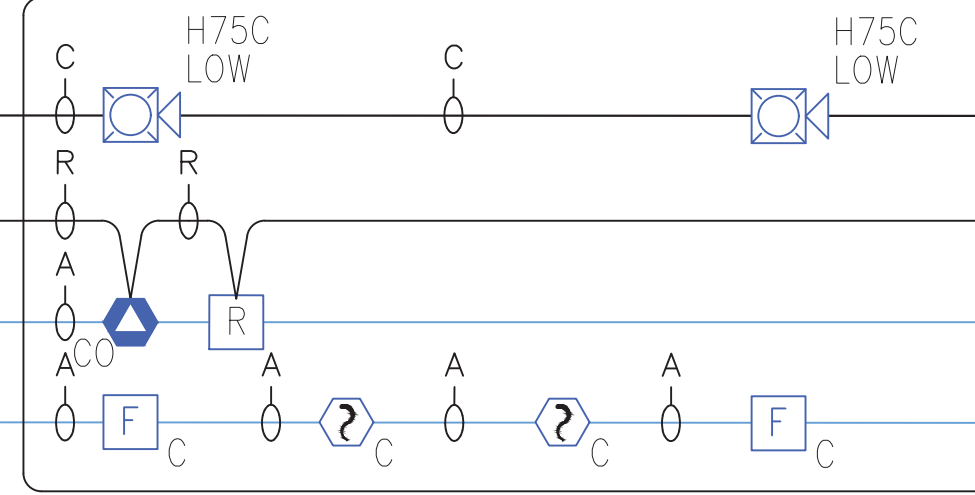
120VAC Dedicated

Riser Diagram - Fire Alarm

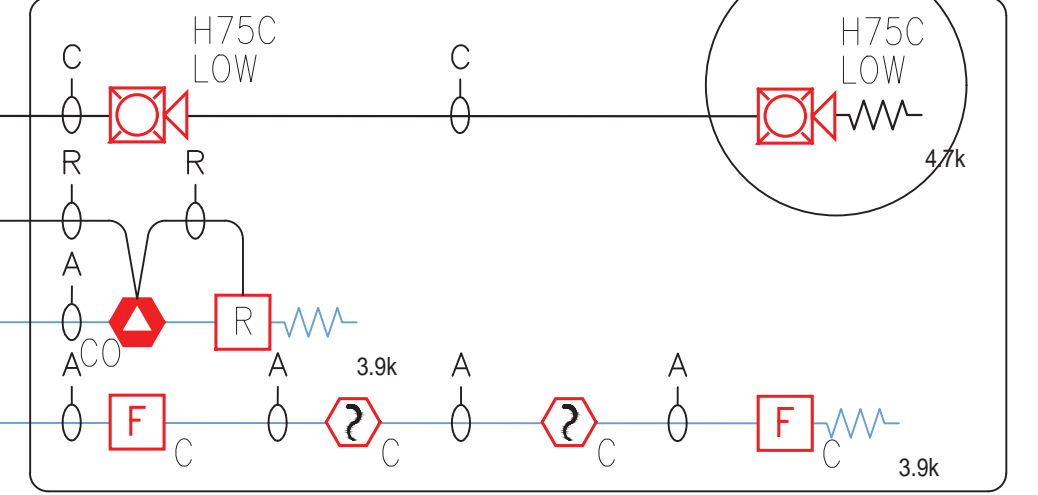
Failsafe Protector



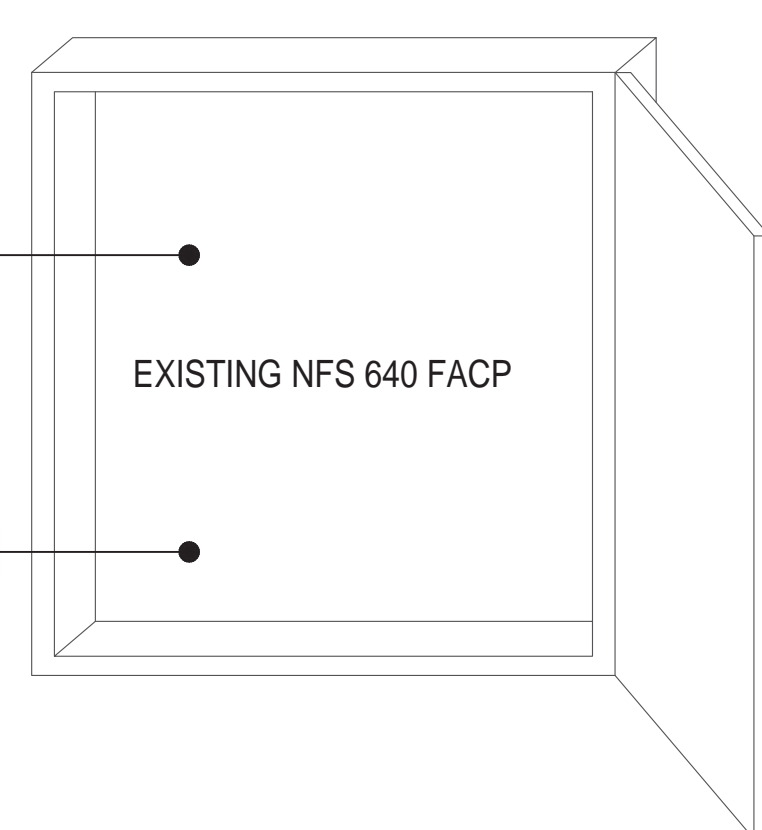
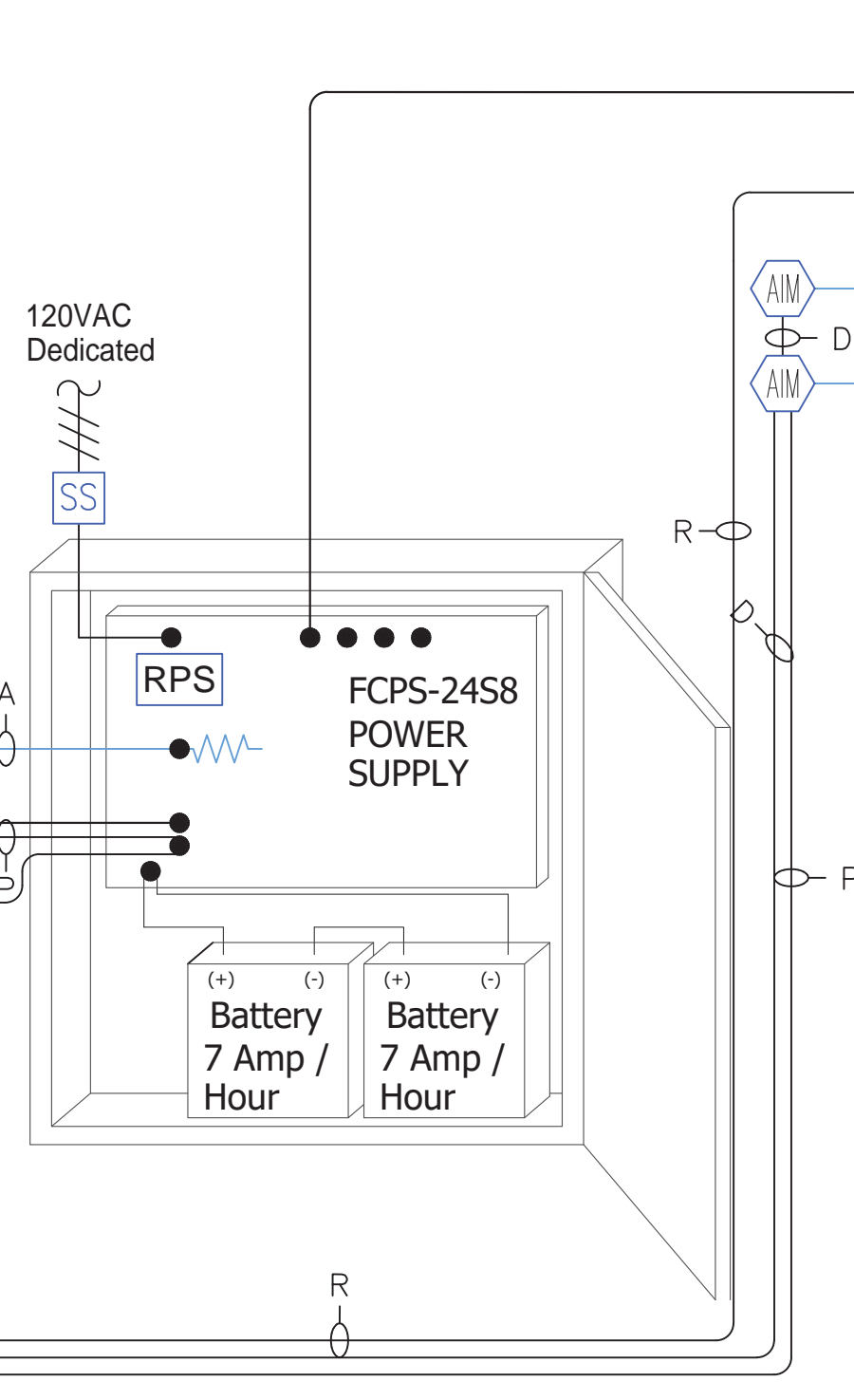
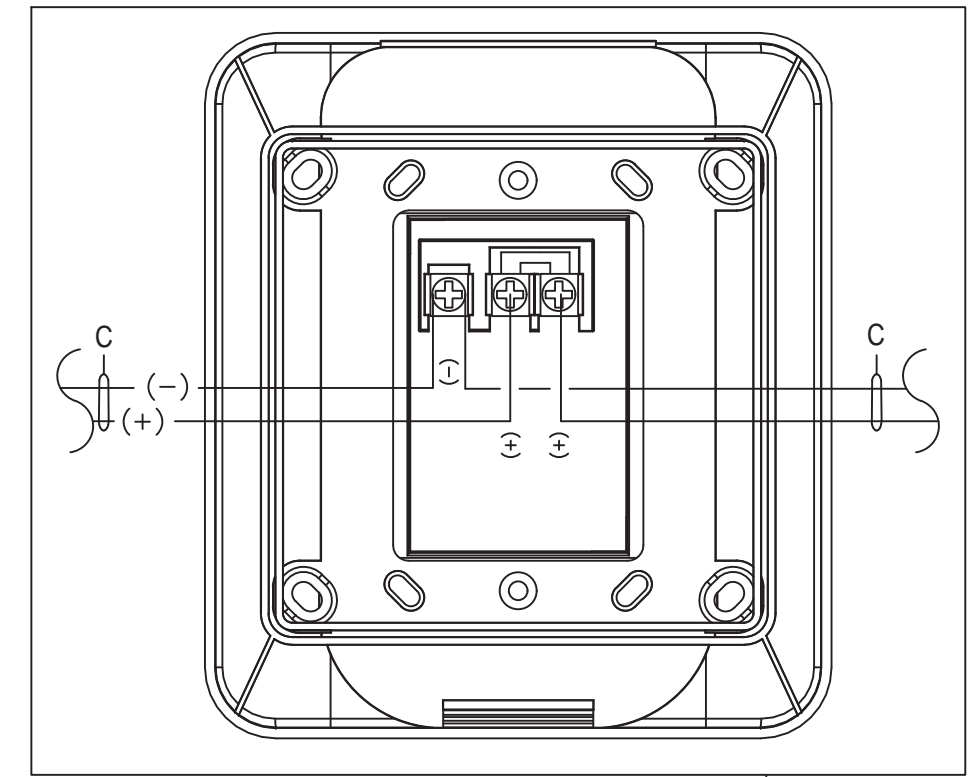
Existing Modular Classroom



New Modular Classroom



Horn/Strobe & Strobe Advance



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SHEET CONTENTS
 FIRE ALARM
 ONE-LINE DIAGRAM

2020 CLASSROOM MODULARS
 POUDRE SCHOOL DISTRICT
 FORT COLLINS, COLORADO

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TLH Fire

NO.	BY	DESCRIPTION	DATE	REVISIONS
1	RFB			
2	JNH			
3	JNH			

REVIEWED FOR CONFORMANCE WITH APPLICABLE CODES ON BEHALF OF PSD.
 TAMI LYNN HOLLEY, PE
 COLORADO REGISTRATION NO. 33275