CITY AND BOROUGH OF WRANGELL, ALASKA

INVITATION TO BID

HIGH SCHOOL AND MIDDLE SCHOOL FIRE ALARM REPLACEMENT REBID

ADDENDUM TO THE PROJECT DOCUMENTS

Addendum No: **1**

Current Bid Date:
December 6, 2022 at 2:00 pm
AK Standard Time

Addendum Date: November 30, 2022

Pages This Addendum: Fifty-One (51), including reissued sections and drawing sheets
Previous Addenda: None

To: All Proposers.

The following corrections, changes, additions, deletions, revisions and/or clarifications are hereby made a part of the Documents for the Invitation to Bid for the High School and Middle School Fire Alarm Replacement Rebid project. In case of conflicts between this Addendum and previously issued documents, this Addendum shall take precedence. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

This addendum _____ does, __X__ does not change the bid opening date.

Item 1: **SECTION 00801 CDBG SUPPLEMENTARY CONDITIONS, DAVIS-BACON ACT WD # AK20220001**

Remove the federally issued General (Wage) Decision Number: AK20220001 07/08/2022 in its entirety.

Replace with Davis-Bacon Act WD # AK20220001 10/14/2022
Wage Determination Modification # 9
Construction, Building, Heavy
Last Revised Date: Oct 14, 2022
(17 pages)

Item 2: **SECTION 284621 – ADDRESSABLE FIRE ALARM SYSTEMS**

Remove and replace this section in its entirety with Addendum No 1, Section 284621, Addressable Fire Alarm Systems (28 pages)

Item 3: **SHEET E14, High School – Level 2 West – Fire Alarm**

Replace sheet in its entirety with new sheet attached.

Item 4: **SHEET E16, High School – Level 3 West – Fire Alarm**

Replace sheet in its entirety with new sheet attached.

Item 5: **SHEET E21, Middle School – Level 1 – Fire Alarm**

Replace sheet in its entirety with new sheet attached.

Item 6: **SHEET E22, Middle School – Level 2 – Fire Alarm**

Replace sheet in its entirety with new sheet attached.

END OF ADDENDUM NO. 1

"General Decision Number: AK20220001 10/14/2022”

Davis-Bacon Act WD # AK20220001

Wage Determination Modification # 9
Construction, Building, Heavy
Last Revised Date: Oct 14, 2022

States and Counties

State: Alaska
Counties: Anchorage, Bethel, Bristol Bay, Denali, Dillingham, Fairbanks North Star, Haines, Juneau, Kenai Peninsula, Ketchikan Gateway, Kodiak Island, Nome, North Slope, Northwest Artic, Peninsula & Lake, Sitka, Valdez-Cordova, Wade Hampton, Yukon-Koyukuk

Document

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          "General Decision Number: AK20220001 10/14/2022

Superseded General Decision Number: AK20210001

State: Alaska

Construction Types: Building and Heavy

Counties: Alaska Statewide.

BUILDING AND HEAVY CONSTRUCTION PROJECTS (does not include
residential construction consisting of single family homes and
apartments up to and including 4 stories)

Note: Contracts subject to the Davis-Bacon Act are generally
required to pay at least the applicable minimum wage rate
required under Executive Order 14026 or Executive Order 13658.
Please note that these Executive Orders apply to covered
contracts entered into by the federal government that are
subject to the Davis-Bacon Act itself, but do not apply to
contracts subject only to the Davis-Bacon Related Acts,
including those set forth at 29 CFR 5.1(a)(2)-(60).
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If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $15.00 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours

	spent performing on the contract in 2022.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $11.25 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at https://www.dol.gov/agencies/whd/government-contracts.

Modification Number	Publication Date
0	01/07/2022
1	02/18/2022
2	02/25/2022
3	03/11/2022
4	03/18/2022
5	04/15/2022
6	07/08/2022
7	09/09/2022
8	09/23/2022
9	10/14/2022

ASBE0097-001 06/01/2021

	Rates	Fringes
Asbestos Workers/Insulator (includes application of all insulating materials protective coverings, coatings and finishings to all types of mechanical systems)	$ 38.68	21.57
HAZARDOUS MATERIAL HANDLER (includes preparation, wetting, stripping, removal scrapping, vacuming, bagging, and disposing of all insulation materials, whether		

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they contain asbestos or not,
from mechanical systems).....$ 37.38           19.55
----------------------------------------------------------------
 BOIL0502-002 01/01/2021

                                  Rates         Fringes

BOILERMAKER.....................$ 47.03           30.59
----------------------------------------------------------------
 BRAK0001-002 07/01/2020

                                  Rates         Fringes

Bricklayer, Blocklayer,
Stonemason, Marble Mason,
Tile Setter, Terrazzo Worker.....$ 42.16           19.67
Tile & Terrazzo Finisher.........$ 35.99           19.67
----------------------------------------------------------------
 CARP1281-001 09/01/2019

                                  Rates         Fringes

CARPENTER
     Including Lather and
     Drywall Hanging.............$ 38.34           26.51
----------------------------------------------------------------
 CARP1501-001 09/01/2019

                                  Rates         Fringes

MILLWRIGHT......................$ 37.64           23.46
----------------------------------------------------------------
 CARP2520-003 09/01/2019

                                  Rates         Fringes

Diver
     Stand-by....................$ 42.65           26.51
     Tender......................$ 41.65           26.51
     Working.....................$ 82.45           26.51
Piledriver
     Piledriver; Skiff Operator
     and Rigger..................$ 38.34           26.51
     Sheet Stabber...............$ 38.34           26.51
     Welder......................$ 43.90           26.51

DEPTH PAY PREMIUM FOR DIVERS BELOW WATER SURFACE:
50-100 feet                 $1.00 per foot
101 feet and deeper         $2.00 per foot

ENCLOSURE PAY PREMIUM WITH NO VERTICAL ASCENT:
5-50 FEET                   $1.00 PER FOOT/DAY
51-100 FEET                 $2.00 PER FOOT/DAY
101 FEET AND ABOVE          $3.00 PER FOOT/DAY

SATURATION DIVING:
  The standby rate applies until saturation starts. The
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saturation diving rate applies when divers are under pressure continuously until work task and decompression are complete. the diver rate shall be paid for all saturation hours.

WORK IN COMBINATION OF CLASSIFICATIONS:
Employees working in any combination of classifications within the diving crew (except dive supervisor) in a shift are paid in the classification with the highest rate for that shift.

ELEC1547-004 04/01/2022

	Rates	Fringes
CABLE SPLICER	$ 42.77	3% + 27.97
ELECTRICIAN	$ 42.44	3% + 28.22

ELEC1547-005 04/01/2022

Line Construction

	Rates	Fringes
CABLE SPLICER	$ 62.29	3%+32.37
Linemen (Including Equipment Operators, Technician)	$ 61.29	3%+30.98
Powderman	$ 59.29	3%+32.37
TREE TRIMMER	$ 38.05	3%+27.01

ELEV0019-002 01/01/2022

	Rates	Fringes
ELEVATOR MECHANIC	$ 63.16	36.885+a+b

FOOTNOTE: a. Employer contributes 8% of the basic hourly rate for over 5 year's service and 6% of the basic hourly rate for 6 months to 5 years' of service as vacation paid credit. b. Eight paid holidays: New Year's Day; Memorial Day; Independence Day; Labor Day; Veteran's Day; Thanksgiving Day; Friday after Thanksgiving, and Christmas Day

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ENGI0302-002 01/01/2022

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1	$ 43.53	25.95
GROUP 1A	$ 45.29	25.95
GROUP 2	$ 42.76	25.95
GROUP 3	$ 42.76	25.95
GROUP 4	$ 35.83	25.95
TUNNEL WORK		

GROUP 1	$ 47.88	25.95
GROUP 1A	$ 49.82	25.95
GROUP 2	$ 47.04	25.95
GROUP 3	$ 46.24	25.95
GROUP 4	$ 39.41	25.95

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Asphalt Roller: Breakdown, Intermediate, and Finish; Back Filler; Barrier Machine (Zipper); Beltcrete with power pack and similar conveyors; Bending Machine; Boat Coxwains; Bulldozers; Cableways, Highlines and Cablecars; Cleaning Machine; Coating Machine; Concrete Hydro Blaster; Cranes-45 tons and under or 150 foot boom and under (including jib and attachments): (a) Hydralifts or Transporters, all track or truck type,(b) Derricks; Crushers; Deck Winches-Double Drum; Ditching or Trenching Machine (16 inch or over); Drilling Machines, core, cable, rotary and exploration; Finishing Machine Operator, Concrete Paving, Laser Screed, Sidewalk, Curb and Gutter Machine; Helicopters; Hover Craft, Flex Craft, Loadmaster, Air Cushion, All Terrain Vehicle, Rollagon, Bargecable, Nodwell, and Snow Cat; Hydro Ax: Feller Buncher and similar; Loaders (2 1/2 yards through 5 yards, including all attachments): Forklifts with telescopic boom and swing attachment, Overhead and front end, 2 1/2 yards through 5 yards, Loaders with forks or pipe clamps; Loaders, elevating belt type, Euclid and similar types; Mechanics, Bodyman; Micro Tunneling Machine; Mixers: Mobile type w/hoist combination; Motor Patrol Grader; Mucking Machines: Mole, Tunnel Drill, Horizontal/Directional Drill Operator, and/or Shield; Operator on Dredges; Piledriver Engineers, L. B. Foster, Puller or similar Paving Breaker; Power Plant, Turbine Operator, 200 k.w. and over (power plants or combination of power units over 300 k.w.); Scrapers-through 40 yards; Service Oiler/Service Engineer; Sidebooms-under 45 tons; Shot Blast Machine; Shovels, Backhoes, Excavators with all attachments, and Gradealls (3 yards and under), Spreaders, Blaw Knox, Cedarapids, Barber Greene, Slurry Machine; Sub-grader (Gurries, Reclaimer, and similar types); Tack tractor; Truck mounted Concrete Pumps, Conveyor, Creter; Water Kote Machine; Unlicensed off road hauler

GROUP 1A: Camera/Tool/Video Operator (Slipline), Cranes-over 45 tons or 150 foot (including jib and attachments): (a) Clamshells and Draglines (over 3 yards), (b) Tower cranes; Licensed Water/Waste Water Treatment Operator; Loaders over 5 yds.; Certified Welder, Electrical Mechanic, Camp Maintenance Engineer, Mechanic (over 10,000 hours); Motor Patrol Grader, Dozer, Grade Tractor, Roto-mill/Profiler (finish: when finishing to final grade and/or to hubs, or for asphalt); Power Plants: 1000 k.w. and over; Quad; Screed; Shovels, Backhoes, Excavators with all attachments (over 3 yards), Sidebooms over 45 tons; Slip Form Paver, C.M.I. and similar types; Scrapers over 40 yards;

GROUP 2: Boiler-fireman; Cement Hog and Concrete Pump Operator; Conveyors (except as listed in group 1); Hoist on steel erection; Towermobiles and Air Tuggers; Horizontal/Directional Drill Locator;Licensed Grade Technician; Loaders, (i.e., Elevating Grader and Material Transfer Vehicle); Locomotives: rod and geared engines; Mixers; Screening, Washing Plant; Sideboom (cradling rock drill regardless of size); Skidder; Trencing Machine under 16 inches; Waste/ Waste Water Treatment Operator.

GROUP 3: ""A"" Frame Trucks, Deck Winches: single power drum; Bombardier (tack or tow rig); Boring Machine; Brooms-power; Bump Cutter; Compressor; Farm tractor; Forklift, industrial type; Gin Truck or Winch Truck with poles when used for hoisting; Grade Checker and Stake Hopper; Hoist, Air Tuggers, Elevators; Loaders: (a) Elevating-Athey, Barber Green and similar types (b) Forklifts or Lumber Carrier (on construction job site) (c) Forklifts with Tower (d) Overhead and Front-end, under 2 1/2 yds. Locomotives:Dinkey (air, steam, gas and electric) Speeders; Mechanics (light duty); Oil, Blower Distribution; Post Hole Diggers, mechanical; Pot Fireman (power agitated); Power Plant, Turbine Operator, under 200 k.w.; Pumps-water; Roller-other than Plantmix; Saws, concrete; Skid Steer with all attachments; Straightening Machine; Tow Tractor

GROUP 4: Rig Oiler/Crane Assistant Engineer;Parts and Equipment Coordinator; Swamper (on trenching machines or shovel type equipment); Spotter; Steam Cleaner; Drill Helper.

FOOTNOTE: Groups 1-4 receive 10% premium while performing tunnel or underground work. Rig Oiler/Crane Assistant Engineer shall be required on cranes over 85 tons or over 100 feet of boom.

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* IRON0751-003 07/01/2022

	Rates	Fringes
IRONWORKER		
BENDER OPERATOR	$ 41.49	34.86
BRIDGE, STRUCTURAL, ORNAMENTAL, REINFORCING, MACHINERY MOVER, RIGGER, SHEETER, STAGE RIGGER,		
BENDER OPERATOR	$ 41.49	34.86
BRIDGE, STRUCTURAL,		

ORNAMENTAL, REINFORCING
MACHINERY MOVER, RIGGER,
SHEETER, STAGE RIGGER,
BENDER OPERATOR.....$ 38.75 32.63
FENCE, BARRIER INSTALLER....$ 37.99 34.86
GUARDRAIL INSTALLERS.....$ 38.99 34.86
GUARDRAIL LAYOUT MAN.....$ 38.72 34.86
HELICOPTER, TOWER.....$ 42.49 34.86

LABO0341-001 04/01/2021

	Rates	Fringes
LABORER (South of the 63rd Parallel & West of Longitude 138 Degrees)		
GROUP 1	$ 32.00	31.11
GROUP 2	$ 33.00	31.11
GROUP 3	$ 33.90	31.11
GROUP 3A	$ 37.18	31.11
GROUP 3B	$ 40.97	28.40
GROUP 4	$ 21.57	31.11
TUNNELS, SHAFTS, AND RAISES		
GROUP 1	$ 35.20	31.11
GROUP 2	$ 36.30	31.11
GROUP 3	$ 37.29	31.11
GROUP 3A	$ 40.90	31.11
GROUP 3B	$ 45.07	28.40

LABORERS CLASSIFICATIONS

GROUP 1: Asphalt Workers (shovelman, plant crew); Brush Cutters; Camp Maintenance Laborer; Carpenter Tenders; Choke Setters, Hook Tender, Rigger, Signalman; Concrete Laborer(curb and gutter, chute handler, grouting, curing, screeding); Crusher Plant Laborer; Demolition Laborer; Ditch Diggers; Dump Man; Environmental Laborer (asbestos (limited to nonmechanical systems), hazardous and toxic waste, oil spill); Fence Installer; Fire Watch Laborer; Flagman; Form Strippers; General Laborer; Guardrail Laborer, Bridge Rail Installers; Hydro-Seeder Nozzleman; Laborers (building); Landscape or Planter; Laying of Decorative Block (retaining walls, flowered decorative block 4 feet and below); Material Handlers; Pneumatic or Power Tools; Portable or Chemical Toilet Serviceman; Pump Man or Mixer Man; Railroad Track Laborer; Sandblast, Pot Tender; Saw Tenders; Scaffold Building and Erecting; Slurry Work; Stake Hopper; Steam Point or Water Jet Operator; Steam Cleaner Operator; Tank Cleaning; Utiliwalk, Utilidor Laborer and Conduit Installer; Watchman (construction projects); Window Cleaner

GROUP 2: Burning and Cutting Torch; Cement or Lime Dumper or Handler (sack or bulk); Choker Splicer; Chucktender (wagon, airtrack and hydraulic drills); Concrete Laborers (power buggy, concrete saws, pumpcrete nozzleman, vibratorman); Culvert Pipe Laborer; Cured in place Pipelayer;

Environmental Laborer (marine work, oil spill skimmer operator, small boat operator); Foam Gun or Foam Machine Operator; Green Cutter (dam work); Gunnite Operator; Hod Carriers; Jackhammer or Pavement Breakers (more than 45 pounds);Laying of Decorative Block (retaining walls, flowered decorative block above 4 feet); Mason Tender and Mud Mixer (sewer work); Pilot Car; Plasterer, Bricklayer and Cement Finisher Tenders; Power Saw Operator; Railroad Switch Layout Laborer; Sandblaster; Sewer Caulkers; Sewer Plant Maintenance Man; Thermal Plastic Applicator; Timber Faller, chain saw operator, filer; Timberman

GROUP 3: Alarm Installer; Bit Grinder; Guardrail Machine Operator; High Rigger and tree topper; High Scaler; Multiplate; Slurry Seal Squeegee Man

GROUP 3A: Asphalt Raker, Asphalt Belly dump lay down; Drill Doctor (in the field); Drillers (including, but not limited to, wagon drills, air track drills; hydraulic drills); Powderman; Pioneer Drilling and Drilling Off Tugger (all type drills); Pipelayers

GROUP 3B: Grade checker (setting or transfering of grade marks, line and grade)

GROUP 4: Final Building Cleanup

TUNNELS, SHAFTS, AND RAISES CLASSIFICATIONS

GROUP 1: Brakeman; Muckers; Nippers; Topman and Bull Gang; Tunnel Track Laborer

GROUP 2: Burning and Cutting Torch; Concrete Laborers; Jackhammers; Nozzleman, Pumpcrete or Shotcrete.

GROUP 3: Miner; Retimberman

GROUP 3A: Asphalt Raker, Asphalt Belly dump lay down; Drill Doctor (in the field); Drillers (including, but not limited to, wagon drills, air track drills; hydraulic drills); Powderman; Pioneer Drilling and Drilling Off Tugger (all type drills); Pipelayers.

GROUP 3B: Grade checker (setting or transfering of grade marks, line and grade)

Tunnel shaft and raise rates only apply to workers regularly employed inside a tunnel portal or shaft collar.

LABO0942-001 04/01/2022

	Rates	Fringes
Laborers: North of the 63rd Parallel & East of Longitude 138 Degrees		

GROUP 1	$ 33.00	31.37
GROUP 2	$ 34.00	31.37
GROUP 3	$ 34.90	31.37
GROUP 3A	$ 38.18	31.37
GROUP 3B	$ 41.97	29.00
GROUP 4	$ 22.57	31.37
TUNNELS, SHAFTS, AND RAISES		
GROUP 1	$ 36.20	31.37
GROUP 2	$ 37.40	31.37
GROUP 3	$ 38.39	31.37
GROUP 3A	$ 42.00	31.37
GROUP 3B	$ 46.17	29.00

LABORERS CLASSIFICATIONS

GROUP 1: Asphalt Workers (shovelman, plant crew); Brush Cutters; Camp Maintenance Laborer; Carpenter Tenders; Choke Setters, Hook Tender, Rigger, Signalman; Concrete Laborer(curb and gutter, chute handler, grouting, curing, screeding); Crusher Plant Laborer; Demolition Laborer; Ditch Diggers; Dump Man; Environmental Laborer (asbestos (limited to nonmechanical systems), hazardous and toxic waste, oil spill); Fence Installer; Fire Watch Laborer; Flagman; Form Strippers; General Laborer; Guardrail Laborer, Bridge Rail Installers; Hydro-Seeder Nozzleman; Laborers (building); Landscape or Planter; Laying of Decorative Block (retaining walls, flowered decorative block 4 feet and below); Material Handlers; Pneumatic or Power Tools; Portable or Chemical Toilet Serviceman; Pump Man or Mixer Man; Railroad Track Laborer; Sandblast, Pot Tender; Saw Tenders; Scaffold Building and Erecting; Slurry Work; Stake Hopper; Steam Point or Water Jet Operator; Steam Cleaner Operator; Tank Cleaning; Utiliwalk, Utilidor Laborer and Conduit Installer; Watchman (construction projects); Window Cleaner

GROUP 2: Burning and Cutting Torch; Cement or Lime Dumper or Handler (sack or bulk); Choker Splicer; Chucktender (wagon, airtrack and hydraulic drills); Concrete Laborers (power buggy, concrete saws, pumpcrete nozzleman, vibratorman); Culvert Pipe Laborer; Cured in place Pipelayer; Environmental Laborer (marine work, oil spill skimmer operator, small boat operator); Foam Gun or Foam Machine Operator; Green Cutter (dam work); Gunnite Operator; Hod Carriers; Jackhammer or Pavement Breakers (more than 45 pounds);Laying of Decorative Block (retaining walls, flowered decorative block above 4 feet); Mason Tender and Mud Mixer (sewer work); Pilot Car; Plasterer, Bricklayer and Cement Finisher Tenders; Power Saw Operator; Railroad Switch Layout Laborer; Sandblaster; Sewer Caulkers; Sewer Plant Maintenance Man; Thermal Plastic Applicator; Timber Faller, chain saw operator, filer; Timberman

GROUP 3: Alarm Installer; Bit Grinder; Guardrail Machine Operator; High Rigger and tree topper; High Scaler; Multiplate; Slurry Seal Squeegee Man

GROUP 3A: Asphalt Raker, Asphalt Belly dump lay down; Drill Doctor (in the field); Drillers (including, but not limited to, wagon drills, air track drills; hydraulic drills); Powderman; Pioneer Drilling and Drilling Off Tugger (all type drills); Pipelayers

GROUP 3B: Grade checker (setting or transfering of grade marks, line and grade)

GROUP 4: Final Building Cleanup

TUNNELS, SHAFTS, AND RAISES CLASSIFICATIONS

GROUP 1: Brakeman; Muckers; Nippers; Topman and Bull Gang; Tunnel Track Laborer

GROUP 2: Burning and Cutting Torch; Concrete Laborers; Jackhammers; Nozzleman, Pumpcrete or Shotcrete.

GROUP 3: Miner; Retimberman

GROUP 3A: Asphalt Raker, Asphalt Belly dump lay down; Drill Doctor (in the field); Drillers (including, but not limited to, wagon drills, air track drills; hydraulic drills); Powderman; Pioneer Drilling and Drilling Off Tugger (all type drills); Pipelayers.

GROUP 3B: Grade checker (setting or transfering of grade marks, line and grade)

Tunnel shaft and raise rates only apply to workers regularly employed inside a tunnel portal or shaft collar.

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* PAIN1959-001 07/01/2022

NORTH OF THE 63RD PARALLEL

	Rates	Fringes
PAINTER		
BRUSH/ROLLER PAINT OR WALL COVERER	$ 36.08	25.45
TAPING, TEXTURING, STRUCTURAL PAINTING, SANDBLASTING, POT TENDER, FINISH METAL, SPRAY, BUFFER OPERATOR, RADON MITIGATION, LEAD BASED PAINT ABATEMENT, HAZARDOUS MATERIAL HANDLER	$ 36.60	25.45

PAIN1959-002 12/01/2021

SOUTH OF THE 63RD PARALLEL

	Rates	Fringes

PAINTER

General Painter	$ 32.64	25.95
Industrial Painter	$ 32.74	25.95
Taper / Paper & Vinyl Hanger	$ 32.64	25.95

PAIN1959-003 12/01/2021

NORTH OF THE 63RD PARALLEL

	Rates	Fringes
GLAZIER	$ 41.16	28.16

PAIN1959-004 07/01/2019

	Rates	Fringes
FLOOR LAYER: Carpet	$ 28.75	14.44

PAIN1959-006 12/01/2021

SOUTH OF THE 63RD PARALLEL

	Rates	Fringes
GLAZIER	$ 41.37	27.25

PLUM0262-002 07/01/2022

East of the 141st Meridian

	Rates	Fringes
Plumber; Steamfitter	$ 41.32	27.62

PLUM0367-002 07/01/2021

South of the 63rd Parallel

	Rates	Fringes
Plumber; Steamfitter	$ 41.00	27.95

PLUM0375-002 07/01/2021

North of the 63rd Parallel

	Rates	Fringes
Plumber; Steamfitter	$ 42.91	31.25

PLUM0669-002 04/01/2019

	Rates	Fringes

SPRINKLER FITTER.....$ 47.25 26.49

ROOF0189-006 04/01/2021

	Rates	Fringes
ROOFER	$ 44.62	17.63

SHEE0023-003 08/01/2022

South of the 63rd Parallel

	Rates	Fringes
SHEET METAL WORKER	$ 45.35	29.19

SHEE0023-004 07/01/2022

North of the 63rd Parallel

	Rates	Fringes
SHEET METAL WORKER	$ 50.83	29.03

TEAM0959-003 04/01/2021

	Rates	Fringes
TRUCK DRIVER		
GROUP 1	$ 41.94	26.12
GROUP 1A	$ 43.21	26.12
GROUP 2	$ 40.68	26.12
GROUP 3	$ 39.86	26.12
GROUP 4	$ 39.28	26.12
GROUP 5	$ 38.52	26.12

GROUP 1: Semi with Double Box Mixer; Dump Trucks (including rockbuggy and trucks with pups) over 40 yards up to and including 60 yards; Deltas, Commanders, Rollogans and similar equipment when pulling sleds, trailers or similar equipment; Boat Coxswain; Lowboys including attached trailers and jeeps, up to and including 12 axles; Ready-mix over 12 yards up to and including 15 yards); Water Wagon (250 Bbls and above); Tireman, Heavy Duty/Fueler

GROUP 1A: Dump Trucks (including Rockbuggy and Trucks with pups) over 60 yards up to and including 100 yards; Jeeps (driver under load)

GROUP 2: Turn-O-Wagon or DW-10 not self-loading; All Deltas, Commanders, Rollogans, and similar equipment; Mechanics; Dump Trucks (including Rockbuggy and Trucks with pups) over 20 yards up to and including 40 yards; Lowboys including attached trailers and jeeps up to and including 8 axles; Super vac truck/cacasco truck/heat stress truck; Ready-mix over 7 yards up to and including 12 yards; Partsman; Stringing Truck

GROUP 3: Dump Trucks (including Rockbuggy and Trucks with pups) over 10 yards up to and including 20 yards; batch trucks 8 yards and up; Oil distributor drivers; Oil Distributor Drivers; Trucks/Jeeps (push or pull); Traffic Control Technician

GROUP 4: Buggymobile; Semi or Truck and trailer; Dumpster; Tireman (light duty); Dump Trucks (including Rockbuggy and Truck with pups) up to and including 10 yards; Track Truck Equipment; Grease Truck; Flat Beds, dual rear axle; Hyster Operators (handling bulk aggregate); Lumber Carrier; Water Wagon, semi; Water Truck, dual axle; Gin Pole Truck, Winch Truck, Wrecker, Truck Mounted ""A"" Frame manufactured rating over 5 tons; Bull Lifts and Fork Lifts with Power Boom and Swing attachments, over 5 tons; Front End Loader with Forks; Bus Operator over 30 passengers; All Terrain Vehicles; Boom Truck/Knuckle Truck over 5 tons; Foam Distributor Truck/dual axle; Hydro-seeders, dual axle; Vacuum Trucks, Truck Vacuum Sweepers; Loadmaster (air and water); Air Cushion or similar type vehicle; Fire Truck/Ambulance Driver; Combination Truck-fuel and grease; Compactor (when pulled by rubber tired equipment); Rigger (air/water/oilfield); Ready Mix, up to and including 7 yards;

GROUP 5: Gravel Spreader Box Operator on Truck; Flat Beds, single rear axle; Boom Truck/Knuckle Truck up to and including 5 tons; Pickups (Pilot Cars and all light duty vehicles); Water Wagon (Below 250 Bbls); Gin Pole Truck, Winch Truck, Wrecker, Truck Mounted ""A"" Frame, manufactured rating 5 tons and under; Bull Lifts and Fork Lifts (fork lifts with power broom and swing attachments up to and including 5 tons); Buffer Truck; Tack Truck; Farm type Rubber Tired Tractor (when material handling or pulling wagons on a construction project); Foam Distributor, single axle; Hydro-Seeders, single axle; Team Drivers (horses, mules and similar equipment); Fuel Handler (station/bulk attendant); Batch Truck, up to and including 7 yards; Gear/Supply Truck; Bus Operator, Up to 30 Passengers; Rigger/Swamper

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their

own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and

non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division

U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"

END OF SECTION

SECTION 284621 – ADDRESSABLE FIRE ALARM SYSTEMS

PART 1 - GENERAL

1.0 PROJECT DESCRIPTION, EXPECTATIONS, COORDINATION & DEVIATIONS

A. This project consists of the replacement of the fire alarm system at the High School and Middle School in Wrangell, Alaska. The Swimming Pool is also included as it is housed in a portion of the High School building. Contractor shall provide all new fire alarm devices, wiring, annunciators, and fire alarm panel. Provide all new conduit and boxes. Existing conduits and boxes may be reused if correct size, in correct location, and in good working condition. However, do not assume existing conduit and boxes are to be reused until verified to meet requirements noted in this paragraph. See Sheet E1, Note 11 for more information. One overall system shall be provided which serves both buildings via main fire alarm panel. The buildings are fully sprinkled, and the existing sprinkler systems shall be monitored from the new fire alarm panel.

Protect and maintain the existing fire alarm system as needed during construction to ensure full coverage throughout the project. See Sheet E1 of the plans for more information.

Project shall adhere to all local, state, and industry codes that apply, Fire Chief requirements, and Owner/Engineer requirements outlined in the plans and specifications. NFPA 70 (NEC) 2020 edition and NFPA 72 2010 edition apply to this project.

The two schools are classified per IBC/NFPA 101 as educational occupancies. However, school athletic teams, and other student groups sometimes utilize portions of the buildings for overnight stays, and they sleep in classrooms and use locker rooms for showering. Due to this arrangement the project design team has specified increased smoke and carbon dioxide detection to meet IBC/NFPA 101 requirements for lodging/residential construction. As most interior spaces in the schools remain unlocked, the design assumes that students may freely roam during overnight stays and so the design has a higher density of initiation and notification devices than one may anticipate for a typical educational facility.

While one fire alarm system is being provided for the two buildings, the system shall be programmed to delineate alarms and notifications between the buildings and between areas and levels in each building. Contractor shall participate in a pre-programming meeting with Fire Chief, Engineer, and Owner to outline expectations of system programming. See Article 3.10, Paragraph J for more on fire alarm system programming expectations.

The two schools are in close proximity and connected via outdoor covered breezeways. The new fire alarm system is to be programmed so that the two building's alarm and notification functions are distinct. That is, upon a single alarm in either building the other building's notification devices are expected to not go into alarm. Also, magnetic door holds are to be controlled in groups based upon the area or level in alarm, on a building basis. See Article 3.10, Paragraph J for more on programming expectations. In all programming, the Contractor is to meet Fire Chief and Code requirements.

A new elevator is to be provided as part of a separate project in the Summer of 2023. As noted in this project, the fire alarm Contractor is to provide associated elevator shaft, cab, and machine room devices, electrical, etc. to allow for connection of the elevator system into the fire alarm system once the elevator is installed. Contractor will be required to co-ordinate work during the elevator construction project.

The plans show a full fire alarm device layout but do not indicate notification device ex-tender panels. The Contractor is responsible to provide a set of layout drawings for Fire Chief review and approval. Contractor is responsible for all battery calculations, voltage drop calculations, and other requirements per Code and the specifications. Determine the number and locations of extender panels needed, if any, and provide as required. Provide all auxiliary, accessories, and other supporting devices, connections and wiring required for a fully functional and interconnected set of extender panels, devices, and main fire alarm panel. Show precise device locations and spacing within the layout plans provided. While minor device location changes can be expected, any significant device layout, device quantity, or device alternate technology proposed by the Contractor must be submitted for re-view prior to commencement of work. Do not assume any significant alterations in device layout, device quantity, or device technology will be allowed until Contractor receives writ-ten approval by the Owner.

1.2 SUMMARY

A. Section Includes:
1. Addressable fire-alarm system.
2. Fire-alarm control panel (FACP).
3. Manual fire-alarm boxes.
4. System smoke detectors.
5. Duct smoke detectors.
6. Heat detectors.
7. Projected Beam Smoke Detectors.
8. Fire-alarm notification appliances.
9. Magnetic Door Holders.
10. Fire-alarm Remote Annunciators.
11. Fire-alarm addressable interface devices.
12. Digital alarm communicator transmitter.
13. Voice Evacuation System.

B. Related Requirements:

1. Section 260000 "Basic Electrical Requirements”.
2. Section 260526 “Grounding and Bonding for Electrical Systems” for system grounding expectations.
3. Section 260519 "Low-Voltage Electrical Power Conductors and Cables" for cables and conductors for fire-alarm systems.
4. Codes and Standards: Except as modified by governing codes and where more stringent standards are specified by the contract documents, comply with the latest applicable provisions and latest recommendations of the following:
    a. National Fire Protection Association (NFPA): NFPA 70, “2017 National Electrical Code”: NFPA 72, “National Fire Alarm and Signaling Code”:, NFPA 241,

"Standard for Safeguarding Construction, Alteration and Demolition Operations": NFPA 101, "Life Safety Code".

b. Factory Mutual (FM): FM 37825, "1952 Approved Guide".
c. Underwriters Laboratories (UL): UL FPED, "Fire Protection Equipment Directory; UL 268, "Smoke Detectors for Fire Protective Signaling Systems", UL 197/ANSI, "Codes applicable to Americans with Disabilities Act Compliance", "Testing for Fire Resistive Cables" UL 2196, "Cables for Power-Limited Fire-Alarm Circuits" UL 1424.
d. Americans with Disabilities Act.
e. Local and City Code and Amendments.
f. International Building Code, IBC-2012.
g. International Fire Code, IFC-2012.

1.3 DEFINITIONS

A. DACT: Digital alarm communicator transmitter.

B. FACP: Fire-alarm control unit.

C. Voltage Class: For specified circuits and equipment, voltage classes are defined as follows:

1. Control Voltage: Listed and labeled for use in remote-control, signaling, and power-limited circuits supplied by a Class 2 or Class 3 power supply having rated output not greater than 150 V and 5 A, allowing use of alternate wiring methods complying with NFPA 70, Article 725.
2. Low Voltage: Listed and labeled for use in circuits supplied by a Class 1 or other power supply having rated output not greater than 1000 V, requiring use of wiring methods complying with NFPA 70, Article 300, Part I.

D. Definition in NFPA 72 apply to fire alarm terms used in the Section.

1.4 SEQUENCING AND SCHEDULING

A. Intelligibility Study:

1. Contractor shall perform an intelligibility audit/study of the fire alarm system after all devices are installed, operational, and tested. Provide all testing and performance results to Engineer/Owner for review. Testing shall be done per NFPA 72 requirements. Contractor shall conduct two distinct intelligibility studies. First, self-perform an intelligibility study upon substantial completion of project and provide a signed letter stating system meetings intelligibility requirements. Second, at request for final inspection, a second intelligibility test shall be conducted by a three-party walk throughout the building. Parties will include the Contractor, Owner's Representative (i.e. Fire Chief), and the Engineer. All three parties shall walk the entire project and confirm via majority vote that each space is has intelligible voice messages. For any spaces not found to be intelligible, the Contractor shall provide additional notification device(s) and a retest shall be conducted via the three-party approach. The project will not be

considered complete until the three-party walk through is completed and a signed letter from the Contractor is received confirming acceptance.

2. Intelligibility testing as described above does not require STI/CIS testing procedures & results. However, at Contractor option, alternate intelligibility testing may be conducted based upon STI/CIS testing procedures and per NFPA 72, including Annex D. Test results/reports verifying STI/CIS acceptance shall be provided to the Owner, along with a signed letter stating that the system meets intelligibility requirements. If the alternate path is chosen, a three-party walkthrough as described above is not required.

B. Equipment Removal: After acceptance of new fire-alarm system, remove existing disconnected fire-alarm equipment and wiring.

1.5 ACTION SUBMITTALS

A. Intelligibility Study: Contractor shall perform an intelligibility audit of the fire alarm system when all devices are installed, operational, and tested. Provide all testing and performance results to Engineering/Owner for review. Testing shall be done per NFPA 72. See Section 1.4 for more.

B. Approved Permit Submittal: Submittals must be approved by authorities having jurisdiction prior to submitting them to Engineer.

C. Product Data: For each type of product, including furnished options and accessories.

1. Include construction details, material descriptions, dimensions, profiles, and finishes.
2. Include rated capacities, operating characteristics, and electrical characteristics.

D. Shop Drawings: For fire-alarm system.

1. Comply with recommendations and requirements in "Documentation" section of "Fundamentals" chapter in NFPA 72.
2. Wiring Diagrams: Detail wiring and differentiate between manufacturer-installed and field-installed wiring. Include diagrams for equipment and for system with all terminals and interconnections identified.
3. Annunciator panel details as required by authorities having jurisdiction.
4. Detail assembly and support requirements.
5. Include voltage drop calculations for notification-appliance circuits.
6. Include battery-size calculations.
7. Include input/output matrix.
8. Include written statement from manufacturer that equipment and components have been tested as a system and comply with requirements in this Section and in NFPA 72.
9. Include performance parameters and installation details for each detector.
10. Verify that each duct detector is listed for complete range of air velocity, temperature, and humidity possible when air-handling system is operating.
11. Provide control wiring diagrams for fire-alarm interface to HVAC; coordinate location of duct smoke detectors and access to them.

a. Show critical dimensions that relate to placement and support of sampling tubes, detector housing, and remote status and alarm indicators.
b. Show field wiring and equipment required for HVAC unit shutdown on alarm.
c. Locate detectors in accordance with manufacturer's written instructions.

12. Include voice/alarm signaling-service equipment rack or console layout, grounding schematic, amplifier power calculation, and single-line connection diagram.
13. Include floor plans to indicate final outlet locations showing address of each addressable device. Show size and route of cable and conduits and point-to-point wiring diagrams.

E. Delegated Design Submittal: For notification appliances and smoke and heat detectors, in addition to submittals listed above, indicate compliance with performance requirements and design criteria, including analysis data signed and sealed by qualified professional engineer responsible for their preparation.
1. Drawings showing location of each notification appliance and smoke and heat detector, rating of each, and installation details as needed to comply with listing conditions of device.
2. Design Calculations: Calculate requirements for selecting spacing and sensitivity of detection, complying with NFPA 72. Calculate spacing and intensities for strobe signals and sound-pressure levels for audible appliances.
3. Indicate audible appliances required to produce square wave signal per NFPA 72.

1.6 INFORMATIONAL SUBMITTALS

A. Field quality-control reports.

B. Qualification Statements: For Installer.

C. Sample Warranty: Submittal must include line-item pricing for replacement parts and labor.

1.7 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For fire-alarm systems and components to include in emergency, operation, and maintenance manuals.

1. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following and deliver copies to authorities having jurisdiction:

a. Comply with "Records" section of "Inspection, Testing and Maintenance" chapter in NFPA 72.
b. Provide "Fire-Alarm and Emergency Communications System Record of Completion Documents" in accordance with "Completion Documents" Article in "Documentation" section of "Fundamentals" chapter in NFPA 72.
c. Complete wiring diagrams showing connections between devices and equipment. Each conductor must be numbered at every junction point with indication of origination and termination points.
d. Riser diagram.

e. Device addresses.
f. Air-sampling system sample port locations and modeling program report showing layout meets performance criteria.
g. Record copy of site-specific software.
h. Provide "Inspection and Testing Form" in accordance with "Inspection, Testing and Maintenance" chapter in NFPA 72, and include the following:

1) Equipment tested.
2) Frequency of testing of installed components.
3) Frequency of inspection of installed components.
4) Requirements and recommendations related to results of maintenance.
5) Manufacturer's user training manuals.

i. Manufacturer's required maintenance related to system warranty requirements.
j. Abbreviated operating instructions for mounting at FACP and each annunciator unit.

2. Certification of Completion: Comply with NFPA 72.

1.8 MAINTENANCE MATERIAL SUBMITTALS

A. Extra Stock Material: Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Lamps for Remote Indicating Lamp Units: Quantity equal to 10 percent of amount installed, but no fewer than one unit.
2. Lamps for Strobe Units: Quantity equal to 10 percent of amount installed, but no fewer than one unit.
3. Smoke Detectors, Fire Detectors: Quantity equal to 10 percent of amount of each type installed, but no fewer than one unit of each type.
4. Detector Bases: Quantity equal to two percent of amount of each type installed, but no fewer than one unit of each type.
5. Keys and Tools: One extra set for access to locked or tamper-proof components.
6. Audible and Visual Notification Appliances: One of each type installed.
7. Fuses: Two of each type installed in system. Provide in box or cabinet with compartments marked with fuse types and sizes.

1.9 QUALITY ASSURANCE

A. Installer Qualifications:

1. Personnel must be trained and certified by manufacturer for installation of units required for this Project.
2. Installation must be by personnel certified by NICET as fire-alarm Level III technician.
3. Obtain certification by NRTL in accordance with NFPA 72.
4. Licensed or certified by authorities having jurisdiction.

B. Manufacturer Qualifications: A firm experienced in manufacturing systems similar to those indicated for this Project and with a record of successful in-service performance.

C. Source Limitations: Obtain fire alarm system components through one source from a single manufacturer.

D. Compliance with Local Requirements: Comply with applicable building code, local ordinances and regulations, and requirements of authorities have jurisdiction.

1.10 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace fire-alarm system equipment and components that fail because of defects in materials or workmanship within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.0 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufactures offering fire alarm systems that may be incorporated into the Work include, but are not limited to, the following:
1. Notifier
2. Siemens
3. Or approved equal

B. Manufacturer Service Center: Manufactures are required to have a service center with factory authorized service representatives located within the State of Alaska to perform required system maintenance, test, etc. per the contract.

2.1 ADDRESSABLE FIRE-ALARM SYSTEM

A. Description:

1. Noncoded, UL-certified addressable system, with multiplexed signal transmission and voice-and-strobe notification for evacuation.

B. Performance Criteria:

1. Regulatory Requirements:

a. Fire-Alarm Components, Devices, and Accessories: Listed and labeled by a NRTL in accordance with NFPA 70 for use with selected fire-alarm system and marked for intended location and application.

b. Comply with NFPA 72.

2. General Characteristics:

a. Automatic sensitivity control of certain smoke detectors.
b. Fire-alarm signal initiation must be by one or more of the following devices:

1) Manual stations.
2) Heat detectors.
3) Smoke detectors.
4) Duct smoke detectors.
5) Automatic sprinkler system water flow.
6) Fire standpipe system.

c. Fire-alarm signal must initiate the following actions:

1) Continuously operate alarm notification appliances**,** including voice evacuation notices.
2) Identify alarm and specific initiating device at FACP, and remote annunciators.
3) Transmit alarm signal to remote alarm receiving station.
4) Release fire and smoke doors held open by magnetic door holders.
5) Activate voice/alarm communication system.
6) Switch HVAC equipment controls to fire-alarm mode.
7) Shutdown of fans and other air-handling equipment serving zone where alarm was initiated.
8) Recall elevators to primary or alternate recall floors.
9) Activate elevator power shunt trip.
10) Record events in system memory.

d. Supervisory signal initiation must be by one or more of the following devices and actions:

1) Valve supervisory switch.
2) Elevator shunt-trip supervision.
3) Zones or individual devices have been disabled.
4) FACP has lost communication with network.

e. System trouble signal initiation must be by one or more of the following devices and actions:

1) Open circuits, shorts, and grounds in designated circuits.
2) Opening, tampering with, or removing alarm-initiating and supervisory signal-initiating devices.
3) Loss of communication with addressable sensor, input module, relay, control module, remote annunciator, or Ethernet module.
4) Loss of primary power at FACP.
5) Ground or single break in internal circuits of FACP.
6) Abnormal ac voltage at FACP.

7) Break in standby battery circuitry.
8) Failure of battery charging.
9) Abnormal position of switch at FACP or annunciator.
10) Voice signal amplifier failure.

f. System Supervisory Signal Actions:

1) Initiate notification appliances.
2) Identify specific device initiating event at FACP and remote annunciators.
3) Record event in system memory.
4) After time delay of 200 seconds, transmit trouble or supervisory signal to remote alarm receiving station.
5) Transmit system status to building management system.

g. Device Guards:

1) Description: Welded wire mesh of size and shape for manual station, smoke detector, gong, or other device requiring protection.

a) Factory fabricated and furnished by device manufacturer.
b) Finish: Paint of color to match protected device.

2.2 FIRE-ALARM CONTROL PANEL (FACP)

A. Description: Field-programmable, microprocessor-based, modular, power-limited design with electronic modules.

B. Performance Criteria:

1. Regulatory Requirements: Comply with NFPA 72 and UL 864.
2. General Characteristics:

a. System software and programs must be held in nonvolatile flash, electrically erasable, programmable, read-only memory, retaining information through failure of primary and secondary power supplies.
b. Include real-time clock for time annotation of events on event recorder.
c. Provide communication between FACP and remote circuit interface panels, annunciators, and displays.
d. FACP must be listed for connection to central-station signaling system service.
e. Provide nonvolatile memory for system database, logic, and operating system and event history. System must require no manual input to initialize in the event of complete power down condition. FACP must provide minimum 500-event history log.
f. Addressable Initiation Device Circuits: FACP must indicate which communication zones have been silenced and must provide selective silencing of alarm notification appliance by building communication zone.

1) Addressable Control Circuits for Operation of Mechanical Equipment: FACP must be listed for releasing service.
2) Smoke sensors shall additionally communicate sensitivity setting.
3) Temperature sensors shall additionally test for and communicate the sensitivity range of the device.

g. Fire-Alarm Annunciator: Arranged for interface between human operator at FACP and addressable system components including annunciation and supervision. Display alarm, supervisory, and component status messages and programming and control menu.

1) Annunciator and Display: LCD, 80 characters, minimum.
2) Keypad: Arranged to permit entry and execution of programming, display, and control commands.

h. Alphanumeric Display and System Controls: Arranged for interface between human operator at FACP and addressable system components including annunciation and supervision. Display alarm, supervisory, and component status messages and programming and control menu.

1) Annunciator and Display: LCD, two line(s) of 40 characters, minimum.
2) Keypad: Arranged to permit entry and execution of programming, display, and control commands.

i. Initiating-Device, Notification-Appliance, and Signaling-Line Circuits:

1) Pathway Class Designations: NFPA 72, Class B.
2) Pathway Survivability: Level 0.
3) Install no more than 100 addressable devices on each signaling-line circuit.
4) Install fault circuit isolators to comply with circuit performance requirements of NFPA 72 or with manufacturer's written instructions, whichever is more conservative.

j. Serial Interfaces:

1) One dedicated RS 485 port for central-station operation using point ID DACT.
2) One RS 485 port for remote annunciators, Ethernet module, or multi-interface module.
3) One USB port for PC configuration.
4) One RS 232 port for air-aspirating smoke detector connection.
5) One RS 232 port for voice evacuation interface.

k. Smoke-Alarm Verification:

1) Initiate audible and visible indication of "alarm-verification" signal at FACP.
2) Activate approved "alarm-verification" sequence at FACP and detector.
3) Record events in system memory.

4) Sound general alarm if alarm is verified.
5) Cancel FACP indication and system reset if alarm is not verified.

l. Notification-Appliance Circuit:

1) Audible appliances must sound in three-pulse temporal pattern, as defined in NFPA 72.
2) Visual alarm appliances must flash in synchronization where multiple appliances are in same field of view, as defined in NFPA 72.

m. Elevator Recall: Initiate by one of the following alarm-initiating devices:

1) Elevator lobby detectors except lobby detector on designated floor.
2) Smoke detectors in elevator machine room.
3) Smoke detectors in elevator hoistway.

n. Elevator controller must be programmed to move cars to alternate recall floor if lobby detectors located on designated recall floors are activated.

o. Water-flow alarm connected to sprinkler in elevator shaft and elevator machine room must shut down elevators associated with location without time delay.

1) Water-flow switch associated with sprinkler in elevator pit may have delay to allow elevators to move to designated floor.

p. Door Controls: Door hold-open devices that are controlled by smoke detectors at doors in smoke-barrier walls must be connected to fire-alarm system.

q. Remote Smoke-Detector Sensitivity Adjustment: Controls must select specific addressable smoke detectors for adjustment, display their current status and sensitivity settings, and change those settings. Allow controls to be used to program repetitive, time-scheduled, and automated changes in sensitivity of specific detector groups. Record sensitivity adjustments and sensitivity-adjustment schedule changes in system memory.

r. Transmission to Remote Alarm Receiving Station: Automatically transmit alarm, supervisory, and trouble signals to remote alarm station.

s. Voice/Alarm Signaling Service: Central emergency communication system with redundant microphones, preamplifiers, amplifiers, and tone generators provided as special module that is part of FACP.

1) Indicate number of alarm channels for automatic, simultaneous transmission of different announcements to different zones or for manual transmission of announcements by use of central-control microphone. Amplifiers must comply with UL 1711.
   a) Allow application of, and evacuation signal to, indicated number of zones and simultaneously allow voice paging to other zones selectively or in combination.
   b) Programmable tone and message sequence selection.
   c) Standard digitally recorded messages for "Evacuation" and "All Clear."

d) Generate tones to be sequenced with audio messages of type recommended by NFPA 72 and that are compatible with tone patterns of notification-appliance circuits of FACP.

2) Status Annunciator: Indicate status of various voice/alarm speaker zones.

3) Preamplifiers, amplifiers, and tone generators must automatically transfer to backup units, on primary equipment failure.

t. Primary Power: 24 V(dc) obtained from 120 V(ac) service and power-supply module. Initiating devices, notification appliances, signaling lines, trouble signals, supervisory and DACT must be powered by 24 V(dc) source.

u. Alarm current draw of entire fire-alarm system must not exceed 80 percent of power-supply module rating.

v. Secondary Power: 24 V(dc) supply system with batteries, automatic battery charger, and automatic transfer switch.

w. Batteries: Sealed lead calcium.

C. Accessories:

1. Instructions: Computer printout or typewritten instruction card mounted behind plastic or glass cover in stainless steel or aluminum frame. Include interpretation and describe appropriate response for displays and signals. Briefly describe functional operation of system under normal, alarm, and trouble conditions.

2. Preaction System Functionality:

a. Initiate Presignal Alarm: This function must cause audible and visual alarm and indication to be provided at FACP. Activation of initiation device connected as part of preaction system must be annunciated at FACP only, without activation of general evacuation alarm.

D. REMOTE EMERGENCY POWER SUPPLY (WHERE APPLICABLE)

1. General: Components include recombinant lead calcium battery; charge, and an automatic transfer switch.
   a. Batteries: Sealed lead calcium.
   b. Battery and Charger Capacity: Comply with NFPA 72.
2. Integral Automatic Transfer Switch: Transfers the load to the battery without loss of signal or status indications when normal power fails.

2.3 MANUAL FIRE-ALARM BOXES

A. General Requirements for Manual Fire-Alarm Boxes: Comply with UL 38. Boxes must be finished in red with molded, raised-letter operating instructions in contrasting color; must show visible indication of operation; and must be mounted on recessed outlet box. If indicated as surface mounted, provide manufacturer's surface back box.

1. Single-action mechanism, pull-lever type; with integral addressable module arranged to communicate manual-station status (normal, alarm, or trouble) to FACP.
2. Station Reset: Key- or wrench-operated switch.

3. Indoor Protective Shield: Factory-fabricated, clear plastic enclosure hinged at top to permit lifting for access to initiate alarm. Lifting cover actuates integral battery-powered audible horn intended to discourage false-alarm operation.
4. Weatherproof Protective Shield (where applicable): Factory-fabricated, clear plastic enclosure hinged at top to permit lifting for access to initiate alarm.
5. Able to perform at up to 90 percent relative humidity at **90 deg F (32 deg C**.)
6. Material: Manual stations made of Lexan polycarbonate.
7. Able to be used in indoor or outdoor areas.

2.4 SYSTEM SMOKE DETECTORS

A. Photoelectric Smoke Detectors:
1. Performance Criteria:

a. Regulatory Requirements:

1) NFPA 72.
2) UL 268.

b. General Characteristics:

1) Detectors must be two-wire type.
2) Base Mounting: Detector and associated electronic components must be mounted in twist-lock module that connects to fixed base. Provide terminals in fixed base for connection to building wiring.
3) Self-Restoring: Detectors do not require resetting or readjustment after actuation to restore them to normal operation.
4) Integral Visual-Indicating Light: LED type, indicating detector has operated and power-on status.
5) Detector address must be accessible from FACP and must be able to identify detector's location within system and its sensitivity setting.
6) Operator at FACP, having designated access level, must be able to manually access the following for each detector:

a) Primary status.
b) Device type.
c) Present average value.
d) Present sensitivity selected.
e) Sensor range (normal, dirty, etc.).

7) Detector must have functional humidity range within 10 to 90 percent relative humidity.
8) Color: White.
9) Remote Control: Unless otherwise indicated, detectors must be digital-addressable type, individually monitored at FACP for calibration, sensitivity, and alarm condition and individually adjustable for sensitivity by FACP.

10) Rate-of-rise temperature characteristic of combination smoke- and heat-detection units must be selectable at FACP for 15 or 20 deg F (8 or 11 deg C) per minute.
11) Fixed-temperature sensing characteristic of combination smoke- and heat-detection units must be independent of rate-of-rise sensing and must be settable at FACP to operate at 135 or 155 deg F (57 or 68 deg C).
12) Multiple levels of detection sensitivity for each sensor.

2.5 DUCT SMOKE DETECTORS

A. Description: Photoelectric-type, duct-mounted smoke detector.

B. Performance Criteria:

1. Regulatory Requirements:

a. NFPA 72.
b. UL 268A.

2. General Characteristics:

a. Detectors must be four-wire type.
b. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to FACP.
c. Self-Restoring: Detectors do not require resetting or readjustment after actuation to restore them to normal operation.
d. Integral Visual-Indicating Light: LED type, indicating detector has operated and power-on status.
e. Detector address must be accessible from FACP and must be able to identify detector's location within system and its sensitivity setting.
f. Operator at FACP, having designated access level, must be able to manually access the following for each detector:

1) Primary status.
2) Device type.
3) Present average value.
4) Present sensitivity selected.
5) Sensor range (normal, dirty, etc.).

g. Provide remote status and alarm indicator and test station where duct detectors are located in non-accessible locations.

h. Weatherproof Duct Housing Enclosure: NEMA 250, Type 4X; NRTL listed for use with supplied detector for smoke detection in HVAC system ducts.
i. Each sensor must have multiple levels of detection sensitivity.
j. Sampling Tubes: Design and dimensions as recommended by manufacturer for specific duct size, air velocity, and installation conditions where applied.

k. Relay Fan Shutdown: Fully programmable relay rated to interrupt fan motor-control circuit.

2.6 HEAT DETECTORS

A. Combination-Type Heat Detectors:
1. Performance Criteria:

a. Regulatory Requirements:

1) NFPA 72.
2) UL 521.

b. General Characteristics:

1) Temperature sensors must test for and communicate sensitivity range of device.

c. Actuated by fixed temperature of [**135 deg F (57 deg C)** or rate of rise that exceeds [**15 deg F (8 deg C)**] per minute unless otherwise indicated.
d. Mounting: Twist-lock base interchangeable with smoke-detector bases.
e. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to FACP.
f. Detector must have functional humidity range of 10 to 90 percent relative humidity.
g. Color: White.

B. Fixed-Temperature-Type Heat Detectors:
1. Performance Criteria:

a. Regulatory Requirements:

1) NFPA 72.
2) UL 521.

b. General Characteristics:

1) Actuated by temperature that exceeds fixed temperature of [**190 deg F (88 deg C)**.
2) Mounting: Twist-lock base interchangeable with smoke-detector bases].
3) Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to FACP.
4) Detector must have functional humidity range of 10 to 90 percent.
5) Color: White.

2.7 PROJECTED BEAM SMOKE DETECTORS

A. Projected Beam Light Source and Receiver: Designed to accommodate small angular movements and continue to operate and not cause nuisance alarms.

B. Detector Address: Accessible from fire-alarm control unit and able to identify the detector's location within the system and its sensitivity setting.

C. An operator at fire-alarm control unit, having the designated access level, shall be able to manually access the following for each detector:
1. Primary status.
2. Device type.
3. Present average value.
4. Present sensitivity selected.
5. Sensor range (normal, dirty, etc.).

2.8 FIRE-ALARM NOTIFICATION APPLIANCES

A. Fire-Alarm Audible Notification Appliances:

B. Fire-Alarm Voice/Tone Notification Appliances:

1. Description: Notification appliances capable of outputting voice evacuation messages.
2. Performance Criteria:

a. Regulatory Requirements:

1) NFPA 72.
2) UL 1480.

b. General Characteristics:

1) Speakers for Voice Notification: Locate speakers for voice notification to provide intelligibility requirements of "Notification Appliances" and "Emergency Communications Systems" chapters in NFPA 72.
2) High-Range Units: Rated 2 to 15 W.
3) Low-Range Units: Rated 1 to 2 W.
4) Matching Transformers: Tap range matched to acoustical environment of speaker location.
5) Combination Devices: Factory-integrated audible and visible devices in single-mounting assembly, equipped for mounting as indicated, and with screw terminals for system connections.

C. Fire-Alarm Visible Notification Appliances:

1. Performance Criteria:

a. Regulatory Requirements:

1) NFPA 72.
2) UL 1971.

b. General Characteristics:

1) Rated Light Output Per NFPA, contractor calculated.
2) Synchronized Xenon strobe lights listed under UL 1971.
3) Clear or nominal white polycarbonate lens mounted on aluminum faceplate.
4) Mounting: Wall mounted unless otherwise indicated.
5) For units with guards to prevent physical damage, light output ratings must be determined with guards in place.
6) Flashing must be in temporal pattern, synchronized with other units.
7) Strobe Leads: Factory connected to screw terminals.
8) Mounting Faceplate: Factory finished, red. The word 'FIRE' engraved in minimum 1-inch high letters on the lens.

2.9 CARBON MONOXIDE DETECTORS

A. General: Carbon monoxide detector listed for connection to fire alarm system.
1. Mounting: Adapter plate for outlet box mounting.
2. Testable by introducing test carbon monoxide into the sensing cell.
3. Detector shall provide alarm contacts and trouble contacts.
4. Detector shall send trouble alarm when nearing end-of-life, power supply problems, or internal faults.
5. Comply with UL 2075.
6. Locate, mount, and wire according to manufacturer's written instructions.
7. Provide means for addressable connection to fire alarm system.
8. Test button simulates an alarm condition.

2.10 FIRE-ALARM REMOTE ANNUNCIATORS

A. Performance Criteria:

1. Regulatory Requirements:

a. NFPA 72.

2. General Characteristics:

a. Annunciator functions must match those of FACP for alarm, supervisory, and trouble indications. Manual switching functions must match those of FACP, including acknowledging, silencing, resetting, and testing.

1) Mounting: Flush cabinet, NEMA 250, Type 1 – Interior cabinets.

b. Display Type and Functional Performance: Alphanumeric display and LED indicating lights must match those of FACP. Provide controls to acknowledge, silence, reset, and test functions for alarm, supervisory, and trouble signals.
c. Provide with integral firefighter's microphone, inside cabinet.

2.11 FIRE-ALARM ADDRESSABLE INTERFACE DEVICES

A. Performance Criteria:

1. Regulatory Requirements:

a. NFPA 72.

2. General Characteristics:

a. Include address-setting means on module.
b. Store internal identifying code for control panel use to identify module type.
c. Listed for controlling HVAC fan motor controllers.
d. Monitor Module: Microelectronic module providing system address for alarm-initiating devices for wired applications with normally open contacts.
e. Integral Relay: Capable of providing direct signal to elevator controller to initiate elevator recall to circuit-breaker shunt trip for power shutdown. Open magnetic door holders, etc.

1) Allow control panel to switch relay contacts on command.
2) Have minimum of two normally open and two normally closed contacts available for field wiring.

2.12 DIGITAL ALARM COMMUNICATOR TRANSMITTERS (DACTs)

A. Performance Criteria:

1. Regulatory Requirements:

a. NFPA 72.
b. UL 864.

2. General Characteristics:

a. DACT must be acceptable to remote central station and must be listed for fire-alarm use.
b. Functional Performance: Unit must receive alarm, supervisory, or trouble signal from FACP and automatically capture two telephone line(s) and dial preset number for remote central station. When contact is made with central station(s), signals must be transmitted. If service on either line is interrupted for longer than 45 seconds, transmitter must initiate local trouble signal and transmit signal indicating loss of telephone line to remote alarm receiving station over remaining line.

Transmitter must automatically report telephone service restoration to central station. If service is lost on both telephone lines, transmitter must initiate local trouble signal.

c. Local functions and display at DACT must include the following:

1) Verification that both telephone lines are available.
2) Programming device.
3) LED display.
4) Manual test report function and manual transmission clear indication.
5) Communications failure with central station or FACP.

d. Digital data transmission must include the following:

1) Address of alarm-initiating device.
2) Address of supervisory signal.
3) Address of trouble-initiating device.
4) Loss of ac supply.
5) Loss of power.
6) Low battery.
7) Abnormal test signal.
8) Communication bus failure.

e. Secondary Power: Integral rechargeable battery and automatic charger.

f. Self-Test: Conducted automatically every 24 hours with report transmitted to central station.

2.13 VOICE EVACUATION SYSTEM

A. Provide a fire alarm voice evacuation system compatible with fire alarm panel.

B. The Digital Voice Command Center located with the FACP, shall contain all equipment required for all audio control, emergency telephone system control, signaling and supervisory functions. This shall include speaker zone indication and control, telephone circuit indication and control, digital voice units, microphone and main telephone handset. The DVC shall support up to 8 channels of voice when configured with Digital Audio Amplifiers and 4 channels of voice when employing the optional analog output card. Each DVC shall support up to 32 digital audio amplifiers.

C. The Voice Command Center equipment shall perform the following functions:

1. Operate as a supervised multi-channel emergency voice communication system.
2. Audibly and visually annunciate the active or trouble condition of every speaker circuit and emergency telephone circuit.
3. Audibly and visually annunciate any trouble condition for digital tone and voice units required for normal operation of the system.
4. Provide all-call Emergency Paging activities through activation of a single control switch.
5. As required, provide vectored paging control to specific audio zones via dedicated control switches.

6. Provide a factory recorded "library" of voice messages and tones in standard WAV. File format, which may be edited and saved on a PC running a current Windows® operating system.
7. Provide a software utility capable of off-line programming for the VCC operation and the audio message files. This utility shall support the creation of new programs as well as editing and saving existing program files. Uploading or downloading the VCC shall not inhibit the emergency operation of other nodes on the fire alarm network.
8. Support an optional mode of operation with four analog audio outputs capable of being used with UL 864 fire-listed analog audio amplifiers and SCL controlled switching.
9. The Digital Voice Command shall be modular in construction and shall be capable of being field programmable without requiring the return of any components to the manufacturer and without requiring use of any external computers or other programming equipment.
10. The Digital Voice Command and associated equipment shall be protected against unusually high voltage surges or line transients.

D. Audio Message Generator (Prerecorded Voice)/Speaker Control:

1. Each initiating zone or intelligent device shall interface with an emergency voice communication system capable of transmitting a prerecorded voice message to all speakers in the building.
2. Actuation of any alarm initiating device shall cause a prerecorded message to sound over the speakers. The message shall be repeated four (4) times. Pre- and post-message tones shall be supported.
3. A built-in microphone shall be provided to allow paging through speaker circuits.
4. System paging from emergency telephone circuits shall be supported.
5. The audio message generator shall have the following indicators and controls to allow for proper operator understanding and control:

    a. LED Indicators:
    b. Lamp Test
    c. Trouble
    d. Off-Line Trouble
    e. Microphone Trouble
    f. Phone Trouble
    g. Busy/Wait
    h. Page Inhibited
    i. Pre/Post Announcement Tone

2.14 WIRE

A. NFPA 70, Types FPL, FPLR, or FPLP, as recommended by manufacturer. All wiring shall be plenum rated.

B. Non-Power-Limited Circuits: Solid-cooper conductors with 600-V rated, 75 deg C, color-coded insulation.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions for compliance with requirements for ventilation, temperature, humidity, and other conditions affecting performance of the Work.

1. Verify that manufacturer's written instructions for environmental conditions have been permanently established in spaces where equipment and wiring are installed, before installation begins.

B. Examine roughing-in for electrical connections to verify actual locations of connections before installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Preinstallation Testing: Perform verification of functionality of installed components of existing system prior to starting work. Document equipment or components not functioning as designed.

B. Interruption of Existing Fire-Alarm Service: Do not interrupt fire-alarm service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary guard service in accordance with requirements indicated:

1. Notify Engineer no fewer than seven days in advance of proposed interruption of fire-alarm service.
2. Do not proceed with interruption of fire-alarm service without Engineer’s written permission.

C. Protection of In-Place Conditions: Protect devices during construction unless devices are placed in service to protect facility during construction.

3.3 INSTALLATION OF EQUIPMENT

A. Comply with NECA 305, NFPA 72, NFPA 101, and requirements of authorities having jurisdiction for installation and testing of fire-alarm equipment. Install electrical wiring to comply with requirements in NFPA 70 including, but not limited to, Article 760, "Fire Alarm Systems."

1. Devices placed in service before other trades have completed cleanup must be replaced.
2. Devices installed, but not yet placed, in service must be protected from construction dust, debris, dirt, moisture, and damage in accordance with manufacturer's written storage instructions.

B. Connecting to Existing Equipment: Verify that existing fire-alarm system is operational before making changes or connections.

C. Install wall-mounted equipment, with tops of cabinets not more than 72 inch (1829 mm) above finished floor.

D. Connect FACP with a disconnect switch or circuit breaker with breaker lock.

E. Manual Fire-Alarm Boxes:

1. Install manual fire-alarm box in normal path of egress within 60 inch (1520 mm) of exit doorway.
2. Mount manual fire-alarm semi-flush in recessed back box.
3. Operable part of manual fire-alarm box must be between 42 and 48 inch (1060 and 1220 mm) above floor level. Devices must be mounted at same height unless otherwise indicated.

F. Smoke- and Heat-Detector Spacing:

1. Comply with "Smoke-Sensing Fire Detectors" section in "Initiating Devices" chapter in NFPA 72, for smoke-detector spacing.
2. Comply with "Heat-Sensing Fire Detectors" section in "Initiating Devices" chapter in NFPA 72, for heat-detector spacing.
3. Smooth ceiling spacing must not exceed **30 ft. (9 m)**.
4. Spacing of detectors for irregular areas, for irregular ceiling construction, and for high ceiling areas must be determined in accordance with Annex A or Annex B in NFPA 72.
5. HVAC: Locate detectors not closer than **36 inch (910 mm)** from air-supply diffuser or return-air opening.
6. Lighting Fixtures: Locate detectors not closer than 12 inch (300 mm) from lighting fixture and not directly above pendant mounted or indirect lighting.

G. Install cover on each smoke detector that is not placed in service during construction. Cover must remain in place except during system testing. Remove cover prior to system turnover.

H. Duct Smoke Detectors: Comply with NFPA 72 and NFPA 90A. Install sampling tubes so they extend full width of duct. Tubes more than 36 inch (9100 mm) long must be supported at both ends.

1. Do not install smoke detector in duct smoke-detector housing during construction. Install detector only during system testing and prior to system turnover.

I. Elevator Shafts: Coordinate temperature rating and location with sprinkler rating and location. Do not install smoke detectors in sprinklered elevator shafts.

J. Remote Status and Alarm Indicators: Install in visible location near each smoke detector, sprinkler water-flow switch, and valve-tamper switch that is not readily visible from normal viewing position.

K. Audible Alarm-Indicating Devices: Install not less than 6 inch (150 mm) below ceiling. Install speaker/strobe devices on flush-mounted back boxes with device-operating mechanism concealed behind grille. Install devices at same height unless otherwise indicated.

L. Visible Alarm-Indicating Devices: Install adjacent to each alarm bell or alarm horn and at least 6 inch (150 mm) below ceiling. Install devices at same height unless otherwise indicated.

M. Device Location-Indicating Lights: Locate in public space near device they monitor.

3.4 ELECTRICAL CONNECTIONS

A. Connect wiring in accordance with Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

B. Ground equipment in accordance with Section 260526 "Grounding and Bonding for Electrical Systems."

C. Install electrical devices furnished by manufacturer, but not factory mounted, in accordance with NFPA 70 and NECA 1.

D. Install nameplate for each electrical connection, indicating electrical equipment designation and circuit number feeding connection.

1. Nameplate must be laminated acrylic or melamine plastic signs with black background and engraved white letters at least **1/2 inch (13 mm)** high.

E. Manual Pull Stations: Mount semi-flush in recessed back boxes.

F. Water-Flow Detectors and Valve Supervisory Switches: Connect for each sprinkler valve station required to be supervised.

G. Ceiling-Mounted Smoke Detectors: Not less than 4 inches (100 mm) from a sidewall to the near edge.

H. Wall-Mounted Smoke Detectors: At least 4 inches (100 mm), but not more than 12 inches (300 mm), below the ceiling.

I. Audible Alarm-Indicating Devices: Install not less than 6 inches (150 mm) below the ceiling. Install on flush-mounted back boxes with the device-operating mechanism concealed behind a grille. Combine audible and visible alarms at the same location into a single unit.

3.5 CONTROL CONNECTIONS

A. Install control and electrical power wiring to field-mounted control devices.

B. Connect control wiring in accordance with Section 260523 "Control-Voltage Electrical Power Cables."

C. Install nameplate for each control connection, indicating field control panel designation and I/O control designation feeding connection.

D. Alarm Transmitting: Provide CAT 3 telephone cables in ¾" conduit as required from Digital Alarm Transmitter in fire alarm control panel to telephone board.

3.6 PATHWAYS

A. Pathways above recessed ceilings and in inaccessible locations may be routed exposed.

1. Exposed pathways located less than 96 inch (2440 mm) above floor must be installed in EMT.

B. Exposed Pathways must be installed in EMT.

C. Exposed EMT must be painted red enamel.

D. Concealed pathways may be loose FA cable fished above ceilings along j-hooks or structural members.

3.7 CONNECTIONS

A. For fire-protection systems related to doors in fire-rated walls and partitions and to doors in smoke partitions, comply with requirements in this section. Connect hardware and devices to fire-alarm system.

1. Verify that hardware and devices are listed for use with installed fire-alarm system before making connections.

B. Make addressable connections with supervised interface device to the following devices and systems. Install interface device less than 36 inch (910 mm) from device controlled. Make addressable confirmation connection when such feedback is available at device or system being controlled.

1. Alarm-initiating connection to smoke-control system (smoke management) at firefighters' smoke-control system panel.
2. Magnetically held-open doors.
3. Alarm-initiating connection to elevator recall system and components.
4. Supervisory connections at valve supervisory switches.
5. Supervisory connections at elevator shunt-trip breaker.

3.8 IDENTIFICATION

A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Section 26 00 00 "Basic Electrical Requirements."

B. Install framed instructions in location visible from FACP.

C. FACP power-supply circuit breaker shall be painted red and lockable. Label “Fire Alarm.”

3.9 GROUNDING

A. Ground FACP and associated circuits in accordance with Section 260526 "Grounding and Bonding for Electrical Systems."

B. Ground shielded cables at control panel location only. Insulate shield at device location.

3.10 FIELD QUALITY CONTROL

A. Field tests must be witnessed by Engineer authorities having jurisdiction.

B. Administrant for Tests and Inspections:

1. Engage factory-authorized service representative to administer and perform tests and inspections on components, assemblies, and equipment installations, including connections. Report results in wiring.

C. Tests and Inspections:

1. Visual Inspection: Conduct visual inspection prior to testing.

    a. Inspection must be based on completed record Drawings and system documentation that is required by "Completion Documents, Preparation" table in "Documentation" section of "Fundamentals" chapter in NFPA 72.
    b. Comply with "Visual Inspection Frequencies" table in "Inspection" section of "Inspection, Testing and Maintenance" chapter in NFPA 72; retain "Initial/Reacceptance" column and list only installed components.

2. System Testing: Comply with "Test Methods" table in "Testing" section of "Inspection, Testing and Maintenance" chapter in NFPA 72.
3. Test audible appliances for public operating mode in accordance with manufacturer's written instructions. Perform test using portable sound-level meter complying with Type 2 requirements in ASA S1.4 Part 1/IEC 61672-1.
4. Test audible appliances for private operating mode in accordance with manufacturer's written instructions.
5. Test visible appliances for public operating mode in accordance with manufacturer's written instructions.
6. Factory-authorized service representative must prepare "Fire Alarm System Record of Completion" in "Documentation" section of "Fundamentals" chapter in NFPA 72 and "Inspection and Testing Form" in "Records" section of "Inspection, Testing and Maintenance" chapter in NFPA 72.

D. Reacceptance Testing: Perform reacceptance testing to verify proper operation of added or replaced devices and appliances.

E. Final Test Notice: Provide a minimum of 7 days' notice in writing when the system is ready for final acceptance testing.

F. Fire-alarm system will be considered defective if it does not pass tests and inspections.

G. Prepare test and inspection reports.

H. Maintenance Test and Inspection: Perform tests and inspections listed for weekly, monthly, quarterly, and semiannual periods. Use forms developed for initial tests and inspections.

I. Annual Test and Inspection: One year after date of Substantial Completion, test fire-alarm system complying with visual and testing inspection requirements in NFPA 72. Use forms developed for initial tests and inspections.

J. System Programming: The fire alarm system shall be fully programmed in accordance with manufacturer's instructions, Fire Chief requirements, all adopted codes, Owner expectations, and the plans and specifications. Programming shall achieve all Code requirements, system performance, and system sequencing that is expected of a modern fire alarm system where one panel is utilized for a multi-building (i.e. campus) environment. In addition, programming shall be done that is tailored to Owner expectations of overall system functioning that, at a minimum, provides the same functionality and system sequence of events as the as the existing system being demolished.

The system shall be programmed to minimize actions that are not code required which increase the staff's burden in responding to the system and may confuse or unnecessarily worry the occupants. System programming shall be done in consideration of the list of factors below. The list below is not exhaustive of all the programming considerations that will need to be made by the contractor after consulting the Owner, Engineer, and Fire Chief. A full list of programming considerations shall be developed by the contractor via a pre-programming meeting with the Owner, Engineer, and Fire Chief prior to commencement of work.

List of programming considerations (not exhaustive):

1. Consider releasing magnetic door hold opens in groups to limit the number of doors that close simultaneously given a single alarm event. Groupings shall be considered based on an area or level basis, in conjunction with basic code requirements. For example, it is expected that an alarm generated on the 3rd level of the east wing of the High School should not open door holds in the 1st level pool area of the High School. Provide the necessary devices, programming, relays, etc. necessary to provide grouped door hold open controls. As a basis for bidding assuming door hold opens are to be grouped by level in each building (i.e. 4-groups in High School and 2-groups in Middle School). High School alarms should not open door holds within the Middle School, and vice versa.
2. An alarm in the High School shall be reported as an alarm at the Middle School annunciators but shall not activate the Middle School devices. Likewise, an alarm in the

Middle School shall be reported as an alarm at the High School annunciators and the main FACP but shall not activate the Middle School devices. See Note 11 below.

3. A supervisor trouble signal in the High School shall be reported as a trouble signal at the Middle School annunciators. Likewise, a supervisor trouble signal in the Middle School shall be reported as a trouble signal at the High School annunciators and the main FACP.
4. All annunciators in both schools and the main FACP shall be programmed to display text that distinguishes high school alarms, troubles, etc. from middle school alarms, troubles, etc.
5. Both the High School and Middle School offices will have annunciator panels. It is expected that the offices in both schools will be alerted in a distinct way via the annunciators or area devices immediately upon either school system reporting an alarm or trouble. In doing so it is expected that staff will be given the opportunity to take action discretely to silence troubles and perform further actions to avoid undue worry or confusion from building occupants.
6. Programming shall ensure both building's sprinkler system statuses are reported distinctly at all annunciators and the fire alarm panel. Reporting shall distinguish flow and tamper signals from the high school sprinkler system from the flow and tamper signals from the middle school sprinkler system.
7. The overall system has one dialer that shall be utilized to report for both buildings.
8. Voice evacuation messaging shall be kept separate between the High School and Middle School. High School devices that go into alarm and trigger a voice evacuation message in the High School shall not automatically trigger voice evacuation messaging in the Middle School, and vice versa.
9. Programming shall include all necessary work to get the new elevator system tied into the fire alarm system. The elevator is part of a separate project to be construction in Summer 2023.
10. Simultaneous activation of more than one initiating device in either school shall trigger all door holds to be released in that school, and both school voice evacuation systems to begin messaging."

3.11 CLEANING AND ADJUSTING

A. Cleaning: Remove paint splatters and other spots, dirt, and debris. Though up scratches and marred finish to match original finish. Clean unit internally using methods and materials recommended by manufacturer.

3.12 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain fire-alarm system. Allow Owner to record training. Provide 4-hours minimum of training.

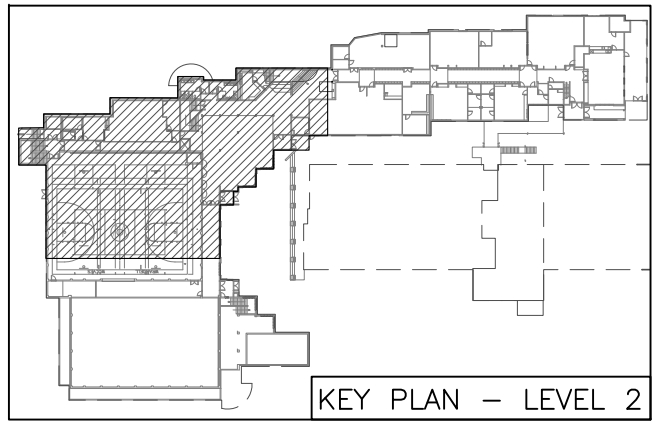
B. Schedule training a minimum of 7-days prior. Adjust schedule to meet Owner scheduling needs.

3.13 MAINTENANCE

A. Maintenance Service: Beginning at Substantial Completion, maintenance service must include 12 months' full maintenance by factory authorized service representative. Include preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper operation. Parts and supplies must be manufacturer's authorized replacement parts and supplies.

1. Include visual inspections in accordance with "Visual Inspection Frequencies" table in "Testing" paragraph of "Inspection, Testing and Maintenance" chapter in NFPA 72.
2. Perform tests in "Test Methods" table in "Testing" paragraph of "Inspection, Testing and Maintenance" chapter in NFPA 72.
3. Perform tests per "Testing Frequencies" table in "Testing" paragraph of "Inspection, Testing and Maintenance" chapter in NFPA 72.
4. Include one (1) annual test of the new system as required by NFPA 72 with bid. Test to be scheduled shortly after a full 12-months after substantial completion in conjunction with Owner availability.
5. Include two (2) site trips will be required within the first two months after installation and the annual test at 12-months from substantial completion.

END OF SECTION

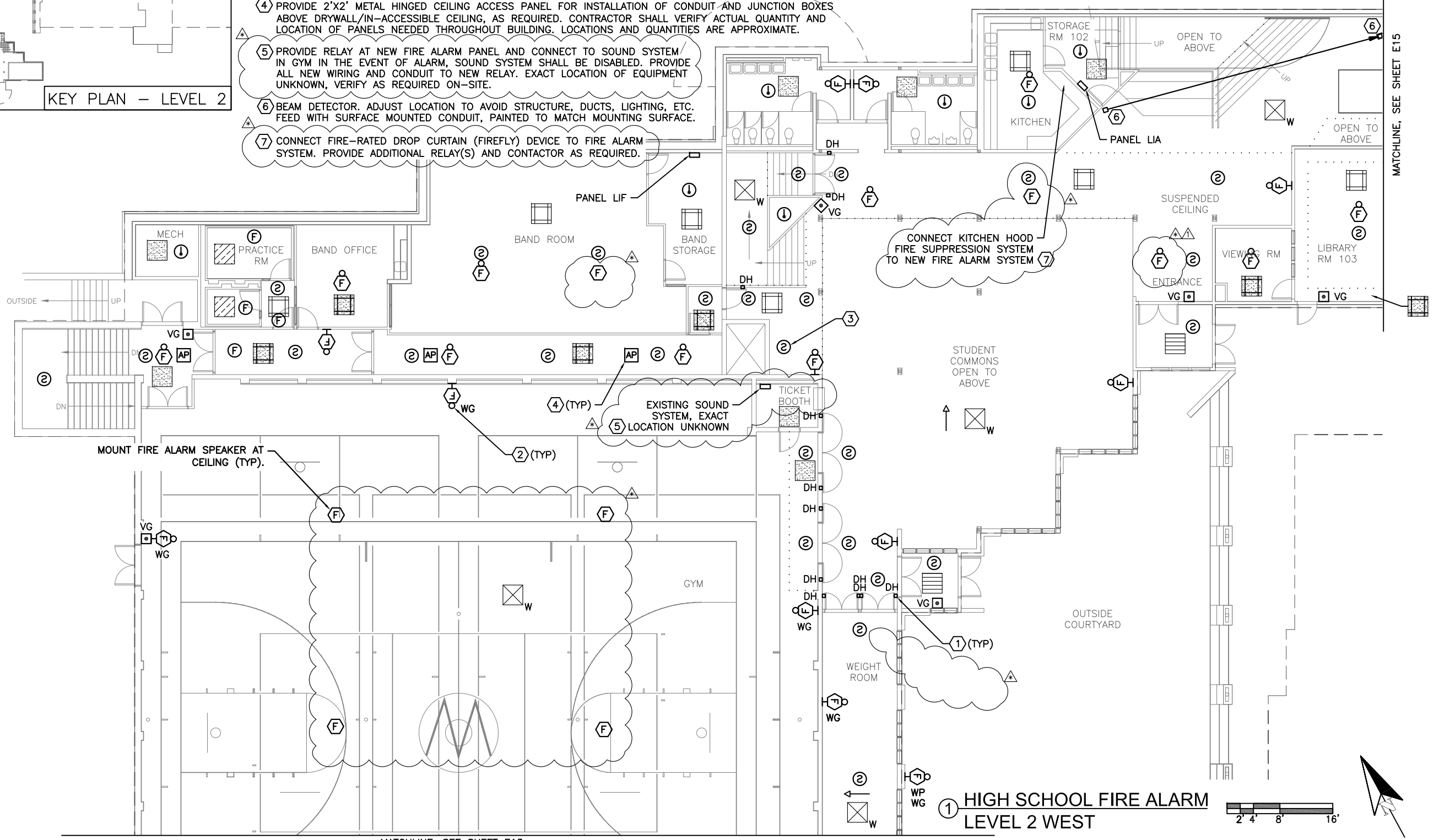


KEYNOTES:

1. EXISTING WIRING TO DOOR HOLDERS TO REMAIN. DOORS SHALL BE RELEASED FROM FIRE ALARM PANEL. PROVIDE NEW WIRING AS NECESSARY. PROVIDE ADDITIONAL RELAY(S) AND ASSOCIATED HARDWARE FOR CONNECTION TO FIRE ALARM SYSTEM.
2. LOCATE DEVICE 6 FEET ABOVE TOP OF HIGHEST BLEACHER ROW SEAT.
3. CONNECT DEVICE FOR ELEVATOR RECALL. WORK WILL BE IN CONJUNCTION WITH SEPARATE ELEVATOR REPLACEMENT PROJECT.
4. PROVIDE 2'X2' METAL HINGED CEILING ACCESS PANEL FOR INSTALLATION OF CONDUIT AND JUNCTION BOXES ABOVE DRYWALL/IN-ACCESSIBLE CEILING, AS REQUIRED. CONTRACTOR SHALL VERIFY ACTUAL QUANTITY AND LOCATION OF PANELS NEEDED THROUGHOUT BUILDING. LOCATIONS AND QUANTITIES ARE APPROXIMATE.
5. PROVIDE RELAY AT NEW FIRE ALARM PANEL AND CONNECT TO SOUND SYSTEM IN GYM IN THE EVENT OF ALARM, SOUND SYSTEM SHALL BE DISABLED. PROVIDE ALL NEW WIRING AND CONDUIT TO NEW RELAY. EXACT LOCATION OF EQUIPMENT UNKNOWN, VERIFY AS REQUIRED ON-SITE.
6. BEAM DETECTOR. ADJUST LOCATION TO AVOID STRUCTURE, DUCTS, LIGHTING, ETC. FEED WITH SURFACE MOUNTED CONDUIT, PAINTED TO MATCH MOUNTING SURFACE.
7. CONNECT FIRE-RATED DROP CURTAIN (FIREFLY) DEVICE TO FIRE ALARM SYSTEM. PROVIDE ADDITIONAL RELAY(S) AND CONTACTOR AS REQUIRED.

SHEET NOTES:

1. IN FINISHED SPACES, NEW BOXES SHALL BE CUT IN AND RECESSED WHERE POSSIBLE. MAKE EVERY EFFORT TO CONCEAL NEW RACEWAYS. IF NOT PHYSICALLY POSSIBLE/PRACTICAL TO CONCEAL NEW RACEWAYS OR RECESS NEW BOXES, PROVIDE SURFACE MOUNT BOXES AND CONDUIT. SEE SHEET E1 FOR ADDITIONAL INFORMATION.
2. IN UNFINISHED SPACES (MECHANICAL ROOMS, UTILITY ROOMS, SIMILAR AREAS) – PROVIDE SURFACE MOUNT, RED, 3/4" EMT CONDUIT AND BOXES WITH RED COLORED LIDS UNLESS NOTED OTHERWISE FOR A SPECIFIC AREA.



(1) HIGH SCHOOL FIRE ALARM LEVEL 2 WEST

2' 4' 8' 16'

RE-BID
11/22/22

(*) NOTE: REVISIONS MARKED ON THIS SHEET WITH AN ASTERISK (*) WERE PART OF PREVIOUS ADDENDUM PROCESS FOR PROJECT'S FIRST BID IN OCTOBER 2022. PREVIOUS REVISION CLOUDS REMAIN FOR CURRENT BIDDER'S CONVENIENCE.
NEW ADDENDUM ITEMS AND REVISION CLOUDS WILL BE LABELED AND DATED IN ACCORDANCE WITH THE RE-BID PROCESS.

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.
*	N/A	FIRST BID ADD., SEE (*) NOTE			
1	11/30/22	ADDENDUM 1			

MORRIS ENGINEERING GROUP INC
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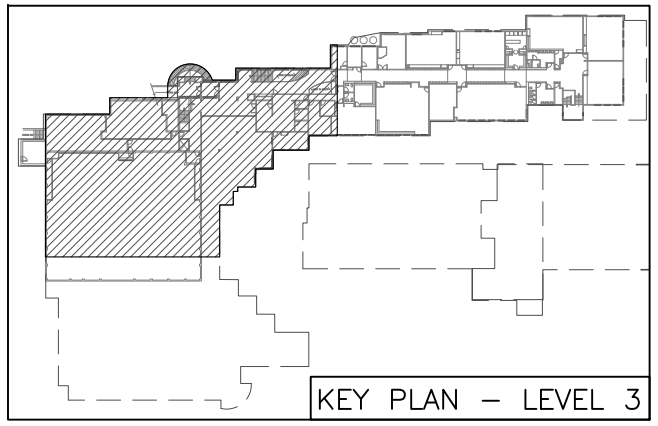
DESIGN: MGM CHECKED: MGM
DRAWN: JRW APPROVED: MGM
SCALE:
DATE: 11/22/22

CITY AND BOROUGH OF WRANGELL, ALASKA
WRANGELL HIGH SCHOOL & MIDDLE SCHOOL FIRE ALARM REPLACEMENT

SHEET TITLE: HIGH SCHOOL - LEVEL 2 WEST - FIRE ALARM
MEG PROJECT NO.: 140-05 DWG. FILE:

E14 SHEET 14 OF 23



SHEET NOTES:

1. IN FINISHED SPACES, NEW BOXES SHALL BE CUT IN AND RECESSED WHERE POSSIBLE. MAKE EVERY EFFORT TO CONCEAL NEW RACEWAYS. IF NOT PHYSICALLY POSSIBLE/PRACTICAL TO CONCEAL NEW RACEWAYS OR RECESS NEW BOXES, PROVIDE SURFACE MOUNT BOXES AND CONDUIT. SEE SHEET E1 FOR ADDITIONAL INFORMATION.

2. IN UNFINISHED SPACES (MECHANICAL ROOMS, UTILITY ROOMS, SIMILAR AREAS) – PROVIDE SURFACE MOUNT, RED, 3/4" EMT CONDUIT AND BOXES WITH RED COLORED LIDS UNLESS NOTED OTHERWISE FOR A SPECIFIC AREA.

KEYNOTES:

1. EXISTING WIRING TO DOOR HOLDERS TO REMAIN. DOORS SHALL BE RELEASED FROM FIRE ALARM PANEL. PROVIDE NEW WIRING AS NECESSARY. PROVIDE ADDITIONAL RELAY(S) AND ASSOCIATED HARDWARE FOR CONNECTION TO FIRE ALARM SYSTEM.
2. PROVIDE NEW DUCT DETECTOR AND RELAY. CONNECT TO FIRE ALARM SYSTEM WITH NEW WIRING. PROVIDE NEW CIRCUIT INTERFACE MODULE(S) AND CONNECT TO DUCT DETECTOR ASSEMBLY. VERIFY EXACT QUANTITY.
3. NEW FIRE ALARM ANNUNCIATOR PANEL WITH FIREFIGHTER'S ONE-WAY MICROPHONE. CONNECT TO FIRE ALARM SYSTEM REUSING EXISTING CONDUITS AND PROVIDING NEW COMMUNICATIONS/POWER CABLING AS REQUIRED. MATCH MOUNTING HEIGHT TO EXISTING ANNUNCIATOR.
4. CONNECT DEVICE FOR ELEVATOR RECALL.
5. PROVIDE RELAY AT NEW FIRE ALARM PANEL AND CONNECT TO INTERCOM SYSTEM. IN THE EVENT OF ALARM, INTERCOM SYSTEM SHALL BE DISABLED.
6. NEW ANNUNCIATOR PROVIDED ABOVE PULL STATION. EXTEND THE EXTERIOR ANNUNCIATOR POWER CIRCUIT AND CONTROL CONDUIT SYSTEM AS REQUIRED TO CONNECT NEW ANNUNCIATOR.
7. PROVIDE 2'X2' METAL HINGED CEILING ACCESS PANEL FOR INSTALLATION OF CONDUIT AND JUNCTION BOXES ABOVE DRYWALL/IN-ACCESSIBLE CEILING, AS REQUIRED. CONTRACTOR SHALL VERIFY ACTUAL QUANTITY AND LOCATION OF PANELS NEEDED THROUGHOUT BUILDING. LOCATIONS AND QUANTITIES ARE APPROXIMATE.
8. PROVIDE RELAY AT NEW FIRE ALARM PANEL AND CONNECT TO SOUND SYSTEM IN GYM IN THE EVENT OF ALARM, SOUND SYSTEM SHALL BE DISABLED. PROVIDE ALL NEW WIRING AND CONDUIT TO NEW RELAY. EXACT LOCATION OF EQUIPMENT UNKNOWN, VERIFY AS REQUIRED ON-SITE.
9. WORK TO BE PROVIDED IN COORDINATION WITH SEPARATE ELEVATOR REPLACEMENT PROJECT.
10. BEAM DETECTOR. ADJUST LOCATION TO AVOID STRUCTURE, DUCTS, LIGHTING, ETC. FEED WITH SURFACE MOUNTED CONDUIT, PAINTED TO MATCH MOUNTING SURFACE.

1 HIGH SCHOOL FIRE ALARM LEVEL 3 WEST

2' 4' 8' 16'

RE-BID
11/22/22

(*) NOTE: REVISIONS MARKED ON THIS SHEET WITH AN ASTERISK (*) WERE PART OF PREVIOUS ADDENDUM PROCESS FOR PROJECT'S FIRST BID IN OCTOBER 2022. PREVIOUS REVISION CLOUDS REMAIN FOR CURRENT BIDDER'S CONVENIENCE.
NEW ADDENDUM ITEMS AND REVISION CLOUDS WILL BE LABELED AND DATED IN ACCORDANCE WITH THE RE-BID PROCESS.

REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.
2	N/A	FIRST BID ADD., SEE (*) NOTE			
1	11/30/22	ADDENDUM 1			

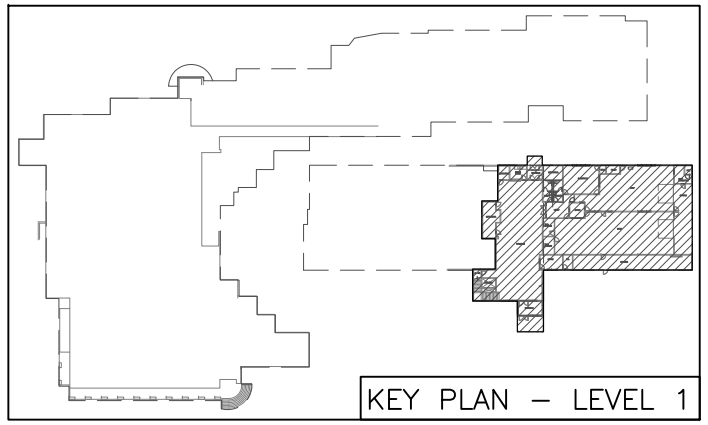
MORRIS ENGINEERING GROUP INC
2375 Jordan Avenue #7, Juneau, AK 99801
Phone: 907-789-3350, License: AECL1010

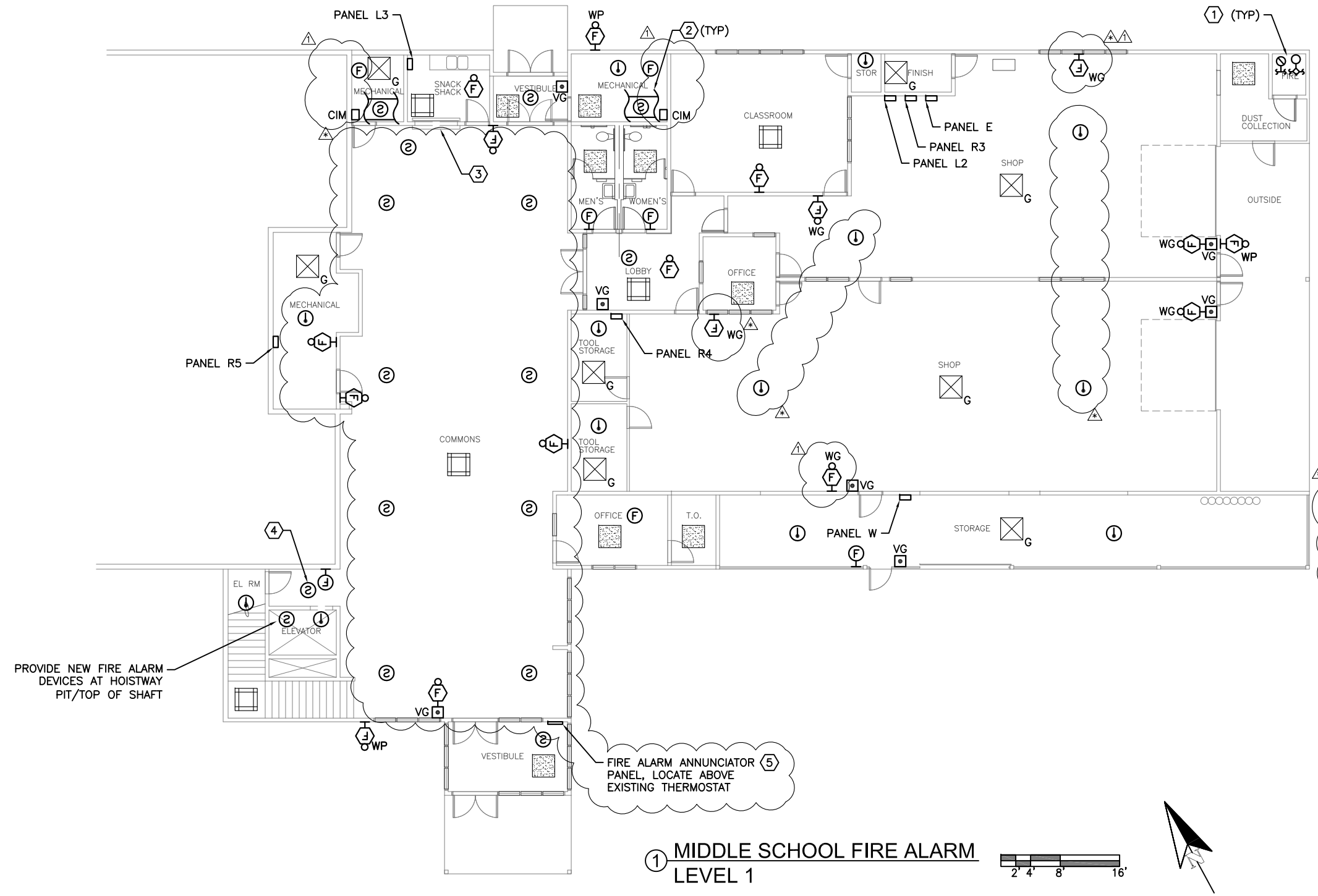
DESIGN: MGM CHECKED: MGM
DRAWN: JRW APPROVED: MGM
SCALE:
DATE: 11/22/22

CITY AND BOROUGH OF WRANGELL, ALASKA
WRANGELL HIGH SCHOOL & MIDDLE SCHOOL FIRE ALARM REPLACEMENT

SHEET TITLE: HIGH SCHOOL - LEVEL 3 WEST - FIRE ALARM
MEG PROJECT NO.: 140-05 DWG. FILE:

E16
SHEET 16 OF 23





1 MIDDLE SCHOOL FIRE ALARM
LEVEL 1

2' 4' 8' 16'

SHEET NOTES:

1. IN FINISHED SPACES, NEW BOXES SHALL BE CUT IN AND RECESSED WHERE POSSIBLE. MAKE EVERY EFFORT TO CONCEAL NEW RACEWAYS. IF NOT PHYSICALLY POSSIBLE/PRACTICAL TO CONCEAL NEW RACEWAYS OR RECESS NEW BOXES, PROVIDE SURFACE MOUNT BOXES AND CONDUIT. SEE SHEET E1 FOR ADDITIONAL INFORMATION.
2. IN UNFINISHED SPACES (MECHANICAL ROOMS, UTILITY ROOMS, SIMILAR AREAS) – PROVIDE SURFACE MOUNT, RED, 3/4" EMT CONDUIT AND BOXES WITH RED COLORED LIDS UNLESS NOTED OTHERWISE FOR A SPECIFIC AREA.

KEYNOTES:

1. PROVIDE NEW WIRING/CONNECTIONS TO EXISTING SPRINKLER FLOW/TAMPER SWITCHES. CONNECT TO FIRE ALARM SYSTEM.
2. PROVIDE NEW DUCT DETECTOR AND RELAY. CONNECT TO FIRE ALARM SYSTEM WITH NEW WIRING. PROVIDE NEW CIRCUIT INTERFACE MODULE(S) AND CONNECT TO DUCT DETECTOR ASSEMBLY. VERIFY EXACT QUANTITY.
3. PROVIDE NEW FIRE ALARM CONNECTION AND RELAY TO EXISTING ROLL DOOR. UPON FIRE ALARM ACTIVATION, DOOR SHALL CLOSE.
4. CONNECT DEVICE FOR ELEVATOR RECALL.
5. FIRE ALARM ANNUNCIATOR PANEL WITH FIREFIGHTER'S ONE WAY MICROPHONE. CONNECT TO FIRE ALARM SYSTEM.
6. NOT USED.
7. NOT USED.
8. NOT USED.

RE-BID
11/22/22

(*) NOTE: REVISIONS MARKED ON THIS SHEET WITH AN ASTERISK (*) WERE PART OF PREVIOUS ADDENDUM PROCESS FOR PROJECT'S FIRST BID IN OCTOBER 2022. PREVIOUS REVISION CLOUDS REMAIN FOR CURRENT BIDDER'S CONVENIENCE.
NEW ADDENDUM ITEMS AND REVISION CLOUDS WILL BE LABELED AND DATED IN ACCORDANCE WITH THE RE-BID PROCESS.

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A	N/A	FIRST BID ADD., SEE (*) NOTE			
1	11/30/22	ADDENDUM 1			

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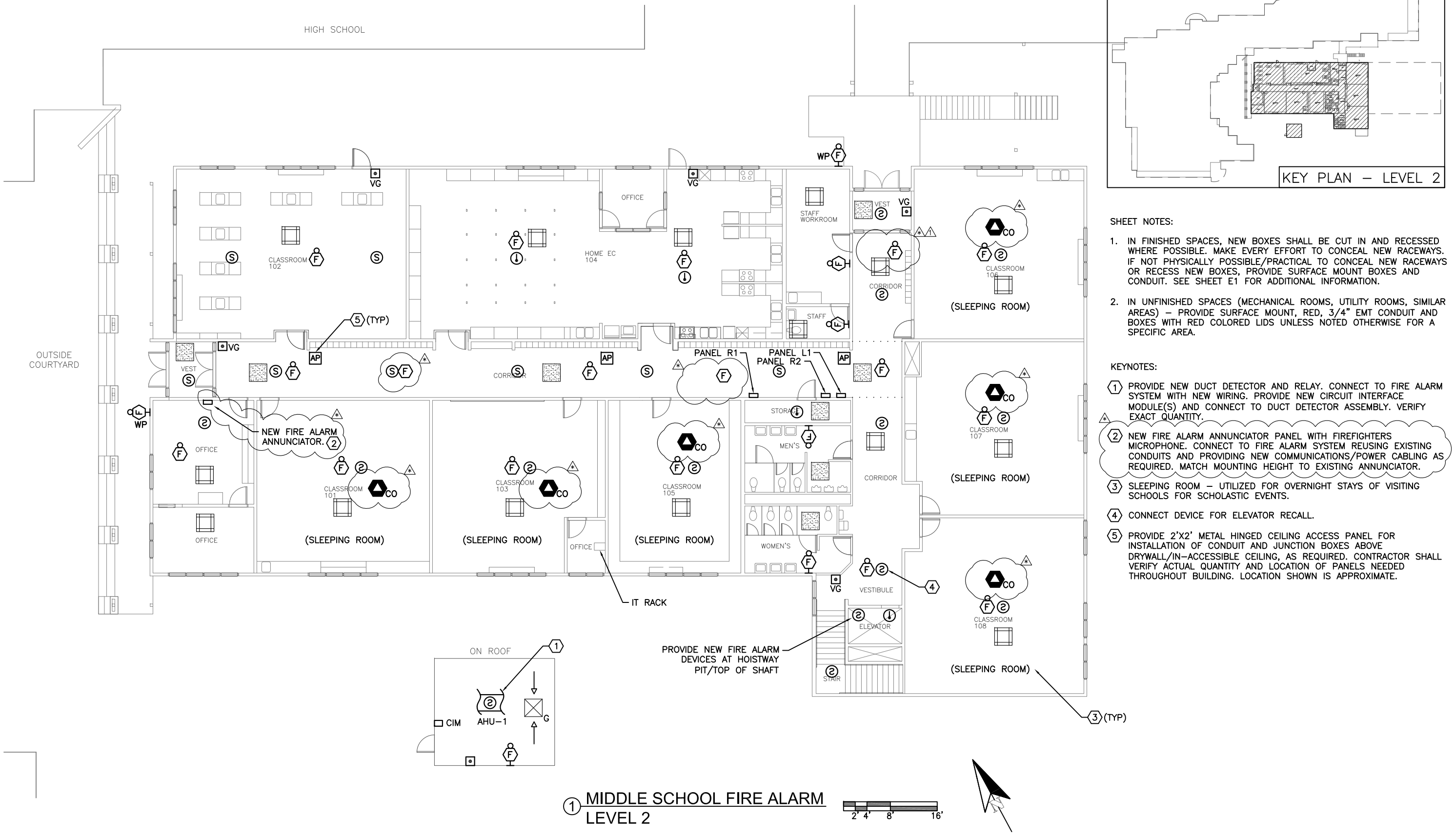
SCALE:
DATE: 11/22/22

CITY AND BOROUGH OF WRANGELL, ALASKA
WRANGELL HIGH SCHOOL & MIDDLE SCHOOL FIRE ALARM REPLACEMENT

SHEET TITLE: MIDDLE SCHOOL - LEVEL 1 - FIRE ALARM
MEG PROJECT NO.: 140-05 DWG. FILE:

E21
SHEET 21 OF 23


HIGH SCHOOL
OUTSIDE COURTYARD
CLASSROOM 102
OFFICE
HOME EC 104
STAFF WORKROOM
VEST
CORRIDOR
STAFF
CLASSROOM 106
(SLEEPING ROOM)
5 (TYP)
PANEL R1
PANEL L1
PANEL R2
NEW FIRE ALARM ANNUNCIATOR. 2
OFFICE
CLASSROOM 101
(SLEEPING ROOM)
CLASSROOM 103
(SLEEPING ROOM)
CLASSROOM 105
(SLEEPING ROOM)
STORAGE
MEN'S
WOMEN'S
CORRIDOR
CLASSROOM 107
(SLEEPING ROOM)
OFFICE
IT RACK
VESTIBULE
ELEVATOR
STAIR
CLASSROOM 108
(SLEEPING ROOM)
4
3 (TYP)
PROVIDE NEW FIRE ALARM DEVICES AT HOISTWAY PIT/TOP OF SHAFT
ON ROOF
CIM
AHU-1
G
WP
VG
AP
CO

SHEET NOTES:

1. IN FINISHED SPACES, NEW BOXES SHALL BE CUT IN AND RECESSED WHERE POSSIBLE. MAKE EVERY EFFORT TO CONCEAL NEW RACEWAYS. IF NOT PHYSICALLY POSSIBLE/PRACTICAL TO CONCEAL NEW RACEWAYS OR RECESS NEW BOXES, PROVIDE SURFACE MOUNT BOXES AND CONDUIT. SEE SHEET E1 FOR ADDITIONAL INFORMATION.
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KEYNOTES:

(1) PROVIDE NEW DUCT DETECTOR AND RELAY. CONNECT TO FIRE ALARM SYSTEM WITH NEW WIRING. PROVIDE NEW CIRCUIT INTERFACE MODULE(S) AND CONNECT TO DUCT DETECTOR ASSEMBLY. VERIFY EXACT QUANTITY.

(2) NEW FIRE ALARM ANNUNCIATOR PANEL WITH FIREFIGHTERS MICROPHONE. CONNECT TO FIRE ALARM SYSTEM REUSING EXISTING CONDUITS AND PROVIDING NEW COMMUNICATIONS/POWER CABLING AS REQUIRED. MATCH MOUNTING HEIGHT TO EXISTING ANNUNCIATOR.

(3) SLEEPING ROOM – UTILIZED FOR OVERNIGHT STAYS OF VISITING SCHOOLS FOR SCHOLASTIC EVENTS.

(4) CONNECT DEVICE FOR ELEVATOR RECALL.

(5) PROVIDE 2'X2' METAL HINGED CEILING ACCESS PANEL FOR INSTALLATION OF CONDUIT AND JUNCTION BOXES ABOVE DRYWALL/IN-ACCESSIBLE CEILING, AS REQUIRED. CONTRACTOR SHALL VERIFY ACTUAL QUANTITY AND LOCATION OF PANELS NEEDED THROUGHOUT BUILDING. LOCATION SHOWN IS APPROXIMATE.

1 MIDDLE SCHOOL FIRE ALARM LEVEL 2

2' 4' 8' 16'

RE-BID
11/22/22

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CITY AND BOROUGH OF WRANGELL, ALASKA
WRANGELL HIGH SCHOOL & MIDDLE SCHOOL FIRE ALARM REPLACEMENT

SHEET TITLE: MIDDLE SCHOOL - LEVEL 2 - FIRE ALARM
MEG PROJECT NO.: 140-05 DWG. FILE:

E22
SHEET 22 OF 23