

SCHEMATIC DESIGN REPORT

RLJA Project Number 15-030

September 8, 2016

Additions and Renovations to Southwest Elementary School

for

GENESEO CUSD #228

Geneseo, Illinois



Richard L. Johnson Associates, Inc.
architects • interior designers

4703 Charles Street; Rockford, IL 61108

815/398-1231 815/398-1280 Fax

www.rljarch.com

SCHEMATIC DESIGN REPORT

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Richard L. Johnson Associates, Inc.
4703 Charles Street
Rockford, Illinois 61108
815/398-1231

Prepared: September 8, 2016

TABLE OF CONTENTS

	Pages
Foreword	1
Project Manual Outline	13
Project Schedule	1
Cost Estimate	1
Site Plan	1
Floor Plan	1
Building Elevations	1

FOREWORD

Beginning in May of 2016, discussion began with the Design Team composed of the Geneseo School District Administrators, Southwest Elementary School Staff Members, Board Members and Richard L. Johnson Associates, Inc. to define the design requirements for the Additions & Renovations to Southwest Elementary School.

This Schematic Design Report defines in written and graphic form the scope of work, project schedule, preliminary cost estimate, site plan, floor plans and elevations for the Additions & Renovations to Southwest Elementary School.

Richard L. Johnson Associates, Inc. thanks all participants that have been involved in defining the schematic design requirements for the existing school and new building additions. Your participation assures the children of the Geneseo CUSD #228 that their quality education is your first concern.

Respectfully,

RICHARD L. JOHNSON ASSOCIATES, INC.



Scott R. Johnson, AIA, LEED AP
Principal



Richard L. Johnson, AIA
Principal

PROJECT MANUAL OUTLINE

The Schematic Design Phase of the Additions & Renovations to Southwest Elementary School is based on utilizing the building materials and systems described in the following Project Manual Outline. These documents are general and do not cover every room but are meant to provide an overview of the quality of materials and systems to be utilized.

BIDDING REQUIREMENTS

SCOPE:

Bids shall be submitted for a single contract to a General Contractor.

DESIGN MILESTONES:

Design Development Board Approval: October 13, 2016

Approval to Bid: December 8, 2016

BIDDING PERIOD:

Issue Date: December 21, 2016

Pre-Bid Meeting: 10:00am, January 4, 2017

Bids Due: 2:00pm, January 25, 2017

BID FORMS:

Contractors will be supplied with Bid Forms defining Base Bid and Alternate Bids to be submitted.

BID GUARANTEE:

Each bid will be accompanied by a Bid Guarantee for 5% of the total amount of the Base Bid and Alternate Bids.

CONTRACT AWARD:

The low qualified bidder will be awarded a contract at the Board of Education Meeting to be held February 9, 2017.

OWNER/CONTRACTOR CONTRACT:

The successful contractors will receive from the Owner for signature three AIA Document Owner/Contractor Agreements. One each for Owner, Architect and Contractor.

PERFORMANCE, LABOR AND MATERIAL PAYMENT BOND:

The Contractor will provide a Bond covering 100% of his bid to the Owner for the duration of the project.

CONSTRUCTION PERMITS AND FEES

A Building Permit will be obtained by the School District from the Regional Office of Education. The Contractors will obtain all required permits required by local utility companies and authorities. The cost of any utility hook up fees will be paid for by the School District.

START CONSTRUCTION:

Phase 1 Renovations	May 30, 2017
Phase 1 Main Office Addition	May 30, 2017
Phase 2 Renovations	May 29, 2018
Phase 2 Collaboration Lab Addition	May 30, 2017

SUBSTANTIAL COMPLETION:

Phase 1 Renovations	August 4, 2017
Phase 1 Main Office Addition	September 7, 2017
Phase 2 Renovations	August 3, 2018
Phase 2 Addition	November 25, 2017

CONDITIONS OF THE CONTRACT

PROGRESS SCHEDULE:

The Contractor will prepare progress schedules which will be updated during construction.

PARTIAL OCCUPANCY:

The Owner shall have the right to occupy certain portions of the building when they are substantially complete.

PAYMENTS AND COMPLETION:

The Contractors will submit monthly Payment Requests accompanied by waivers of lien to the School District. The Architect will review all pay requests and approve the pay requests. The Board of Education will approve the pay request. 10% of each payment will be retained until the project is substantially complete.

CONTRACTOR'S LIABILITY INSURANCE:

The Contractors will provide specified coverage of insurance for Workmen's Compensation, Comprehensive General Liability, Comprehensive Automobile Liability and the Owner will provide " Builder's Risk" Property Insurance. The Contractors shall additionally insure the Owner and Architect.

DIVISION 1 - GENERAL REQUIREMENTS

PROJECT COORDINATION AND PROJECT MEETINGS:

The Contractor shall supervise and coordinate all contractor's and subcontractor's work and shall arrange coordinating meetings with the Owner and the Architect. Contractor shall run the construction meetings and be responsible for taking meeting minutes.

SITE LIMITS AND MATERIAL STORAGE:

All equipment, materials, parking and operations of workmen shall be confined to limits defined by Owner and Architect on a layout to be provided as part of the bidding documents.

TEMPORARY HEAT & VENTILATION:

The HVAC Contractor shall provide temporary heat and ventilation. The contractor can tie into the existing gas service at the site. The Owner will pay for the gas usage.

TEMPORARY ELECTRICITY:

The Electrical Contractor will be responsible for providing temporary electrical power required for the project. The contractor can tie into the existing electrical service at the site. The Owner will pay for the electrical usage.

TEMPORARY WATER:

The Plumbing Contractor may use existing water service. The Owner will pay for the water usage.

TEMPORARY TOILETS:

Contractor shall provide and maintain temporary toilets.

FIRE PROTECTION:

The Contractor shall provide fire protection during construction.

DEMOLITION

Removal and disposal of debris will conform to all applicable laws, regulations and ordinances.

CONTRACTOR'S JOB TRAILER

Contractor to provide a job trailer large enough to hold construction meetings.

CONSTRUCTION TESTING:

The Owner will hire a testing company to perform all testing required for the project.

ASBESTOS ABATEMENT:

The Owner will hire an asbestos consultant to design and bid out any asbestos abatement required for the project.

ALTERNATE BIDS:

Alternate Bid #1 - Provide additional parking.

Alternate Bid #2 - Renovation of existing corridors.

Alternate Bid #3 - Provide sinks in the Grades K-1 classrooms.

Alternate Bid #4 - Provide sinks in the Grades 2-5 classrooms.

Alternate Bid #5 - Provide added conference room to addition.

DIVISION 2 - EXISTING CONDITIONS

Existing connections to existing buildings will be demoed and modified for proper connection between the two.

Existing roof structure will be evaluated to determine if structural reinforcement will need to be added for snowloading.

There is a fiber line that may need to be relocated on the north side of the school where the Addition is going.

DIVISION 3 - CONCRETE

Cast-in-place reinforced concrete footings and foundation walls, interior slabs on grade and exterior entrance platforms will be provided.

Vapor barrier will be installed directly under the new concrete slabs and over the new granular base.

DIVISION 4 – MASONRY

Exterior walls shall be masonry cavity wall construction made up of 8" concrete block walls insulated with 3" insulation with an air space and faced with face brick providing a minimum "R" value of 13.

Non-loadbearing interior concrete block walls shall be lightweight block of 4", 6", 8" and 12" thickness with 8" x 16" nominal face size. All projecting corners will be rounded for added safety.

DIVISION 5 - STRUCTURAL STEEL

Structural steel columns, beams, bar joists and steel decking shall be used as required throughout.

Items fabricated from iron and steel shapes shall include pipe railings, metal pan stairs, steel ladders, pipe guards, metal nosings, expansion joint covers.

DIVISION 6 - WOOD, PLASTICS AND COMPOSITES

Treated wood blocking will be used as required.

Plastic laminate casework will be designed for the new Classrooms, Staff Lounge, Nurse, Staff Work Room and Main Office.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

Rigid insulation shall be installed at foundation walls down to the top of the footings.

Roofs shall utilize rigid insulation providing a minimum "R" value of 25.

New roofs shall be fully adhered single ply EPDM roof membrane adhered to 2 layers of rigid insulation over metal deck. The entire roof system, including metal

flashings, will bear the manufacturer's 20 year warranty. The roof will have a 72 mph wind warranty.

Existing roof membrane will be removed and then one layer of insulation will be mechanically fastened into the existing deck. A fully adhered single ply EPDM roof membrane will then be adhered to the new insulation. All existing metal flashings, copings, gutters and downspouts will be replaced.

Pre-finished metal gravel stops, gutters and fascias will be fabricated from aluminum sheet having been pre-coated with a 20-year Kynar paint system or anodized aluminum.

Sealants exposed to weather will be high grade urethane or silicone.

Formed metal wall panels to be installed in various locations per the elevations.

Overflow scupper openings will be used in lieu of a secondary storm piping system.

DIVISION 8 - OPENINGS

Exterior windows and main entrance door frames shall be extruded aluminum with a 20-year Kynar paint finish or anodized finish. Glass will be double paned, tinted, low "e", insulating units 1" thick.

Interior door frames shall be hollow metal and job finished.

Interior wood doors shall be 1-3/4" solid core plain sliced red oak with required fire ratings, factory finished with stain color to be selected.

Interior window frames shall be hollow metal and job finished.

Interior windows shall be clear tempered or fire rated as required by activity, location or code requirement.

Finish hardware for all exterior and interior doors shall be institutional quality. Keying will be integrated into the Owner's master key system. Recommended hardware manufacturers will be specified per the Owner's request.

DIVISION 9 - FINISHES

FLOORING:

Owner will remove VAT flooring as required in the existing building under a separate contract.

Contractor shall prep all new and existing floors with a skim coat prior to installing new flooring materials.

LVT flooring shall be installed in Classrooms, Corridors, Lobby, Nurse, Main Office, Storage, Staff Work room, Staff Lounge, Principal's Office, SE Classroom and Music.

Carpet tiles shall be installed in Conference Rooms, Small Offices, Library and Problem Solving Area.

Ceramic tile and base shall be used in Toilet Rooms.

Sealed concrete floors will be used in Mechanical and Custodial Rooms.

Vestibules shall have walk off carpet installed.

General Contractor will be responsible to test existing concrete slabs and new concrete slabs for moisture before installing finish floor materials. Any moisture remediation required for the existing floors shall be the responsibility of the Owner. Any moisture remediation required for the new slabs will be the responsibility of the General Contractor to complete.

Transition strip will be installed where required between different flooring materials.

6" rubber cove base shall be used throughout unless otherwise noted.

WALLS:

Interior concrete block walls shall be block filled and painted with 2 coats of a latex eggshell finish over a prime coat unless otherwise noted.

Interior gypsum board walls shall have a Level 4 finish and be painted with 2 coats of a latex eggshell finish over a prime coat unless otherwise noted.

Wood doors, trim and millwork items shall receive transparent stain and polyurethane finish prior to being installed.

Special accent walls shall utilize latex eggshell coatings.

Main Toilet room walls to have ceramic tile.

CEILINGS

2' x 2' lay-in acoustical tile shall be installed through out the existing school.

2' x 2' hard surface ceiling tile system shall be installed in the Toilet Rooms and the Kitchen and related rooms.

Some rooms will have a combination of lay-in ceiling tiles and exposed painted structure.

DIVISION 10 - SPECIALTIES

Whiteboards shall be porcelain surfaced steel with aluminum trim.

Smartboards will be provided and installed by the Owner. Contractor shall install wood blocking in wall as required for support.

4' high tackboards shall consist of vinyl fabric laminated to 1/2" thick pulpboard with aluminum trim.

Signage that include room names and numbers meeting ADA requirements will be installed.

Floor supported, overhead braced solid plastic toilet partitions shall be installed in Toilet Rooms.

Toilet and bath accessories including grab bars and framed mirrors will be provided. All accessories will be polished or satin finished stainless steel.

Owner will provide all toilet and bath accessories not specified herein.

Provide recessed fire extinguisher cabinets and fire extinguishers per code.

DIVISION 11 - EQUIPMENT

No equipment proposed to be installed.

DIVISION 12 - FURNISHINGS

Moveable furniture shall be provided by the Owner.

Window shades will be installed on all new windows.

DIVISION 13 - SPECIAL CONSTRUCTION - NONE

DIVISION 14 - CONVEYING SYSTEMS - NONE

DIVISION 21 - FIRE SUPPRESSION

REGULATORY REQUIREMENTS AND STANDARDS

- State of Illinois Plumbing Code – latest version
- International Building Code – 2009
- International Plumbing Code – 2009
- NFPA13

DESCRIPTION OF SYSTEMS

- The plumbing contractor shall bring a new domestic line into the building sized to provide fire protection for the entire facility.
- A fire protection system for the entire building shall be designed by a licensed fire protection engineer in accordance with IBC and NFPA 13 requirements. Spaces will be ordinary or light hazard as determined by the NFPA13 requirements.
- Flow and tamper switches will be provided for the service entrance and shall be connected to the building fire alarm system by the electrical contractor.

DIVISION 22 - PLUMBING

REGULATORY REQUIREMENTS AND STANDARDS

- State of Illinois Plumbing Code – latest version
- International Building Code – 2009
- International Plumbing Code – 2009

DESCRIPTION OF SYSTEMS

- New gas fired instantaneous water heaters shall be provided for each of the pods A, B, C, and D. The new addition shall be served with hot water from the pod it is connected to.
- All sanitary, vent, and storm piping shall be schedule 40 DWV PVC with solvent weld joints.
- All domestic hot and cold water piping shall be type "L" copper with solder joints. Domestic water piping shall be insulated with 1" fiberglass insulation.
- Gas piping shall be schedule 40 steel pipe with threaded joints.
- A new fire water service entrance shall be brought into the building. The new service entrance would include a double check backflow preventer for the fire protection.
- Waste piping for the new addition shall be connected to the nearest available underground sewer piping.
- Vent piping for the new addition shall be extended through the new roof.
- New toilets shall be wall mount vitreous china toilets with 1.6 GPF flush valves.
- New lavatories shall be wall mount vitreous china lavatories with sensor operated 0.5 GPM faucets.

- New urinals shall be wall mounted vitreous china urinals with 1.0 GPF flush valves.
- New water heater(s) shall be added for the addition as required.

DIVISION 23 - HEATING, VENTILATING AND AIR CONDITIONING

REGULATORY REQUIREMENTS AND STANDARDS

- International Building Code – 2009
- International Mechanical Code – 2009
- International Energy Conservation Code – 2009
- ASHRAE Standard 90.1 – 2007
- ASHRAE Standard 62 – 2007

DESCRIPTION OF SYSTEMS

- The existing HVAC system consists of commercial gas fired furnaces located in mechanical rooms on the roof with roof-mounted condensing units serving each of the four pod areas. The existing HVAC equipment is nearing the end of it's life expectancy and due to the close quarters in the installation access to service or replace the equipment is limited. A geothermal heating and cooling system shall be utilized to replace the existing HVAC system throughout the facility. The geothermal system shall incorporate water to air heat pump units coupled with a borefield to provide condenser water to the heat pumps through a one-pipe condenser water distribution system. The geothermal borefield shall consist of forty-two, 400' deep boreholes which serve as the heating and cooling source for the building. This borefield sizing takes into account the additional area being added as part of this project.
- The kitchen space shall be served by a horizontal water to air heat pump located in the adjacent janitor's closet. The heat pump shall be supplied with an individual circulator pump to pump water out of the one-pipe loop through the heatpump and then back into the one-pipe loop when the compressor is activated.
- The cafeteria shall be served by water to air heat pump(s) located in the mechanical rooms above the perimeter of the cafeteria. The new heat pump shall be connected to the geothermal system and supplied with an individual circulator pump to pump water out of the one-pipe loop through the heatpump and then back into the one-pipe loop when the compressor is activated.
- The new collaboration lab shall be served by a new vertical water to air heat pump located in the adjacent mechanical room. The new heat pump shall be connected to the existing geothermal system and supplied with an individual circulator pump to pump water out of the one-pipe loop through the heatpump and then back into the one-pipe loop when the compressor is activated.

- The restrooms and lockerooms shall be provided with exhaust air from roof mounted energy recovery units and ceiling mounted electric heating units.
- The vestibules and corridors shall be provided with ceiling mounted electrical heating units.
- The classrooms shall be served with vertical classroom heat pumps located in the space served. The heat pumps shall be connected to the geothermal system and supplied with individual circulator pumps to pump water out of the one-pipe loop through the heatpumps and then back into the one-pipe loop when the compressor is activated.
- Roof mounted energy recovery units shall provide the ventilation air and required exhaust air from all spaces.
- The office spaces shall be supplied with variable refrigerant volume (VRV) cassettes in each space with individual controls. Refrigerant for heating and cooling of the cassettes shall be supplied from a water cooled condenser connected to the geothermal one-pipe loop supplied with and individual circulator pump to pump water out of the one-pipe loop through the condenser and then back into the one-pipe loop when the compressor is activated. Location of the water-cooled condenser is still to be determined.

DIVISION 26 - ELECTRICAL

REGULATORY REQUIREMENTS AND STANDARDS

- International Building Code – 2009
- International Energy Conservation Code – 2009
- ASHRAE Standard 90.1 – 2007
- NFPA 70 – National Electric Code – 2008
- NFPA 101 – Life Safety Code – latest version

DESCRIPTION OF SYSTEMS

- In the areas of major renovations the existing lighting and switches shall be removed and replaced. The existing circuits shall remain for reuse.
- In the areas of major renovations the existing electrical outlets and data outlets shall be removed and replaced. The existing circuits shall be removed back the existing panel they are served from.
- New 54 circuit, 100 amp electrical distribution panels shall be installed in each of the pods B, C, and D to serve the power needs of the pod. Power for the new panels shall be derived from a 100 amp, 3 pole breaker in a new 600 amp, 120/208 volt, 3 phase panel located in the existing mechanical room.
- A new 54 circuit, 150 amp electrical distribution panel shall be installed in pods B, C, and D to serve the power needs of the pod. Power for the new panel shall be derived from a 150 amp, 3 pole breaker in a

new 600 amp, 120/208 volt, 3 phase panel located in the existing mechanical room.

- The new 600 amp, 120/208 volt, 3 phase panel located in the existing mechanical room shall be fed from an existing 200 amp switch in the existing 1200 amp, 277/480 volt panel in the mechanical room. A 160 KVA transformer will be required to feed the new 600 amp panel.
- Electrical receptacles shall be located throughout the building in accordance with the owner's requirements and shall be circuited back to the new panel in the associated pod.
- Receptacles for the areas to be renovated shall be located per the owner's requirements and circuited back to the nearest available existing electrical panel.
- Lighting levels will be per ASHRAE standard 90.1. Controls for interior lighting systems shall utilize occupancy sensors and/or day lighting controls as required to comply with energy code requirements.
- The existing interior lights shall be removed and replaced with new LED lighting throughout the building. The existing 277 volt lighting circuits shall be retained for reuse with the new lighting.
- Exterior lights at the entries shall be recessed weatherproof LED fixtures in the canopies and surface mount LED wallpacks where additional security lights are required. Exterior lights shall be controlled by photocell.
- Exterior parking lot lights shall be pole mounted LED fixtures. Parking lot lights shall be controlled by photocell.

DIVISION 27 - TELECOMMUNICATIONS

REGULATORY REQUIREMENTS AND STANDARDS

- International Building Code - 2009
- NFPA 70 – National Electric Code – 2008
- NFPA 101 – Life Safety Code – latest version

DESCRIPTION OF SYSTEMS

- New rough-in boxes with pull strings to above accessible ceilings shall be provided at locations in the wall and/or ceilings as required to meet the owner's needs for phone, data, cable TV, and other telecommunications systems in the new additions and renovated spaces.
- An existing overhead paging system shall be reworked and added onto to support the new layout and the addition.

DIVISION 28 - ELECTRONIC SAFETY AND SECURITY

REGULATORY REQUIREMENTS AND STANDARDS

- International Building Code – 2009
- NFPA 70 – National Electric Code – 2008

- NFPA 101 – Life Safety Code – latest version

DESCRIPTION OF SYSTEMS

- A new addressable fire alarm system shall be installed throughout the building in accordance with the requirements of IBC and NEC.
- New access controls shall be provided for the new entries and shall be connected to the existing access control system.
- New flow and tamper switches on the fire protection system will be connected to the fire alarm system.

DIVISION 31 - EARTHWORK

Structural excavation, filling and compaction for footings and pads, filling and compaction for concrete and bituminous slabs and site grading will be by General Contractor's subcontractor.

Qualified testing laboratory, hired by Owner shall perform quality control testing services. He will inspect and approve subgrade, fill, paved areas and building slabs.

DIVISION 32 - EXTERIOR IMPROVEMENTS

Preparation of ground surface for seeding, furnishing and placing seed and maintenance of lawn will be by General Contractor's subcontractor.

New sidewalks to be 5" thick with wwf over a granular base. Control joints will be cut into the sidewalks with tooled joints. Provide expansion joints every 50'-0" o.c. or less.

DIVISION 33 - UTILITIES

New water service will be required for the sprinkler system.

New sanitary sewer connection to existing.

Geothermal well fields will be installed on site.

All utility hook up fees charged by the utility companies will be paid for by the Owner.

END OF SPECIFICATIONS

Southwest Elementary School Design and Construction Schedule

	2016						2017													
	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	
SOUTHWEST ELEMENTARY SCHOOL																				
Schematic Design																				
Design Development																				
Construction Documents																				
Bidding and Award																				
Phase 1 Renovation																				
Phase 1 Addition																				
Phase 2 Renovation																				
Phase 2 Addition																				

2018											
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC

Design Phase

Bidding and Award Phase

Construction Phase

GENESEO CUSD #228

Schematic Design Cost Estimate

PROJECT NAME:

Southwest Additions and Renovations

DATE PREPARED:

9/8/2016

BASE BID WORK	UNITS	COST/UNIT	UNIT	TOTALS
NEW ADDITIONS AND SITEWORK				\$1,090,000.00
RENOVATE 4/5 GRADE WING				\$390,000.00
RENOVATE 2/3 GRADE WING				\$399,000.00
RENOVATE K/1 GRADE WING				\$517,000.00
RENOVATE THE LIBRARY AND SPECIAL ED ROOM				\$61,000.00
RENOVATE MUSIC AREA				\$34,000.00
RENOVATE STAFF LOUNGE				\$27,000.00
RENOVATE REMAINDER OF ART ROOM POD				\$48,000.00
RENOVATE THE SMALL GROUP AREA				\$113,000.00
RENOVATE MAIN CORE OF BUILDING				\$73,000.00
MAIN OFFICE ADDITION AND RENOVATIONS				\$577,000.00
SPRINKLER THE BUILDING				\$150,000.00
LIFE SAFETY IMPROVEMENTS				\$1,770,000.00
SUBTOTAL				\$5,249,000.00
Architectural/Engineering Fees				\$393,675.00
Alternate Bids Architectural/Engineering				\$11,100.00
Soil Borings				\$6,000.00
Topography				\$4,000.00
Storm Water Design				\$2,000.00
Construction Testing				\$4,000.00
Reimburables				\$10,000.00
Contingency				\$100,000.00
TOTAL ESTIMATED PROJECT COST				\$5,779,775.00

ORIGINAL PREREFERENDUM BUDGET				
Original budget				\$5,785,287.00
Movable Furniture				\$188,000.00
Life Safety Items by District				\$143,500.00
ORIGINAL ESTIMATED BUDGET				\$5,453,787.00

ALTERNATE BID #1 - ADD ADDITIONAL PARKING	\$75,000.00
ALTERNATE BID #2 - CORRIDOR RENOVATIONS	\$40,000.00
ALTERNATE BID #3 - SINKS IN THE K-1 CLASSROOMS	\$33,000.00
ALTERNATE BID #4 - SINKS IN THE 2-5 CLASSROOMS	\$66,000.00
ALTERNATE BID #5 - ADDED CONFERENCE ROOM	\$150,000.00