

TOWN OF GREENWICH, CT – Representative Town Meeting

ITEM NO.: *Entered by Town Clerk*

DEPARTMENT: Board of Education

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REFERRED TO: *Entered by Town Clerk*

VOTES: Board of Education 4/24/08 (8-0-0)

Board of Estimate and Taxation (pending)

RESOLVED, that the sum of \$972,000 be and the same is hereby appropriated from “RESERVED FOR CAPITAL & NON-RECURRING FUND” to account Z68059560, Project 28138 for costs associated with the remediation of the modular facility.

EXPLANATORY COMMENTS

As a result of design and construction issues which caused extensive mold in the exterior portion of the modular facility, the Board of Education is requesting funding to repair and remediate the facility for use by the Hamilton Avenue School if their new building is not complete by the beginning of the 2008-09 school year or Glenville School if their renovation project has started. The current Glenville School will not be demolished until there is certainty about the timing of the completion of both the new Hamilton Avenue School and the remediated modular facility. With assistance and support from other Town departments and outside experts, the Board has engaged in a comprehensive feasibility study of multiple options including but not limited to the remediation of the existing modular facility, new modulars (varying configurations and locations), the use of the Western Greenwich Civic Center, the lease of outside facilities and split sessions. The criteria for evaluating the options included: the health and safety of the students and staff; the ability to deliver the approved academic and related programs and services; the impact on the school and broader community; the timing for the facility to be available for the start of the school year; and the cost. Experts in the field of building envelope design and environmental issues provided convincing testimony that the repair of the building will result in a clean, healthy and safe environment. This option also allows the Glenville School to stay together in one building, has a high probability of being completed by mid-August 2008 and was the lowest cost option considered. District and school administrators have concluded that the approved academic curriculum and related programs and services can be delivered effectively in the modular facility. The Board of Education is also committed to continued environmental testing and frequent structural inspections to insure the ongoing safe use of the building. The Board of Education is also investigating, in coordination with the Town Attorney, whether and to what extent the Town might pursue legal action, with any settlement to go to the general fund.

Request for Funding to Repair and Remediate Modular Facility

Background

The Board of Education is obligated to provide a safe and secure environment for its students and staff while delivering the approved programs and services in a fiscally responsible manner. The physical condition of two of our schools (Hamilton Avenue and Glenville Schools) required significant renovation projects, which the Town has funded in previously approved capital budgets. The Hamilton Avenue School project is nearing completion with expectations that the school will be ready for the 2008-09 school year, one year later than expected. The Board of Education developed swing space for the temporary relocation of that school in the form of the modular facility. The Glenville School project has been delayed one year, waiting for the availability of the swing space. It is ready to begin on July 1 assuming there is assurance that the Hamilton Avenue School will move into its new school and there is swing space available for the Glenville School. The Glenville School project is scheduled to be completed in 12 months, assuming a July 1 start; however, the Board of Education considers it prudent to plan for a relocation period for Glenville students of up to two years.

On March 1, 2008, a mold condition was discovered in the exterior portion of the modular facility while investigating a water spot on the ceiling tile near an exterior wall. Significant analysis and testing was done that weekend which determined the following:

- The interior air quality was not contaminated.
- Extensive moisture and mold was found in the majority of the soffits (the roof overhang that sits on the exterior walls of the building).
- Initially it was thought that there was moisture and mold inside the wall assembly; however, later analysis proved that there was some moisture but no mold, with the exception of some mold in the exterior wall in one classroom.
- It was determined that although there was no contamination of the internal air quality, it would not be appropriate to return students and staff to the building given the extent of the mold in the exterior portions of the building.
- In the following weeks, additional environmental testing was done on surfaces and materials in the building. The final assessment was that there was no contamination of these items or the air quality resulting from the mold condition. [Detailed information on this environmental testing can be found on the Greenwich public schools website, www.greenwichschools.org, under the Hamilton Avenue School Facility and Relocation Plan Updates. You will find the 3-25-08 comprehensive report from Environmental Assessments and Solutions and a 3-25-08 letter from Hygenix.]

School Relocation Efforts

This was the start of an eight week effort to relocate the Hamilton Avenue School community to other buildings (6 other schools in the district, which has been very disruptive to the families and staff) and to determine school relocation plans for a school community for the start of the 2008-09 school year (either Glenville or Hamilton Avenue). The Board took the following steps:

- Authorized an ad hoc Advisory Committee on Facilities to work closely with the Administration on three initiatives – 1) develop school relocation options; 2) determine the causes and contributing factors for the problems in the modular facility to be able to assess accountability on the part of outside contractors, internal procedures and/or staff;

3) review and develop recommendations for improvements to the BOE approach to maintenance and capital planning procedures.

- Membership on the Advisory Committee has three BOE members, one parent representative from each of the Hamilton Avenue and Glenville School communities and three ex officio members including one representative from the BET, the Superintendent and the BOE Chair.
- The Advisory Committee prioritized its initial efforts on the school relocation options and the causes and contributing factors for the problems, as follows:
 - Developed a list of all possible options for the relocation of the school communities. The initial list includes 19 options which were grouped into several categories: use of Western Greenwich Civic Center in some form; use of a modular facility, both new and existing; lease of independent school or commercial buildings; split sessions; and dispersal of grades among other schools in town. The list also identified the different variations if the new Hamilton Avenue School is completed versus if it is not yet ready for use at the beginning of the school year. [This Option List is attached for your reference.]
 - Responsibilities for further analysis into each of the options were assigned.

The Advisory Committee and/or the full BOE held 12 meetings over the past 8 weeks to evaluate these alternatives and discuss information with parents. The results of the investigative work were:

- Dispersing the grade levels among the other schools in town had the least appeal due to the impact on space availability in all schools for the two year need, lack of administrative control over a school's students and staff, transportation time and loss of community spirit for Hamilton Avenue or Glenville Schools.
- Split sessions would adversely affect program delivery, hours of operation (requiring contract re-openers), transportation time, space utilization at another school community, and operating costs.
- No appropriate independent school or commercial facility was able to provide the correct educational environment at the right time and cost.
- The cost and lead time to acquire or lease a new modular facility were high. It could take at least 6 months to secure land use approvals and the trailers. Costs would exceed \$3.5 million.
- The BOE concluded there were two remaining options to pursue in more detail: the use of Western Greenwich Civic Center in some way and the repair and remediation of the modular facility. A significant amount of work was done to explore these two options. Attached is a summary document indicated the pros and cons of these two options.

Western Greenwich Civic Center

This building has the history of being the prior Glenville School and is located geographically close to the impacted schools. The BOE engaged the services of the Geddis Partners, Turner Construction and Pecora Bros to identify the opportunities and issues with this site. They were provided full cooperation by the First Selectman and the Town departments in their exploration efforts, which was extremely valuable for the BOE to be able to make its decision. The experts discussed with the Board that while this building is newly renovated and has many of the facilities of a school (with a gym and cafeteria), it is no longer laid out for use as a school – in

the number and location of classrooms, having room for all the special needs of our programs, like our pullout programs and a nurse's space. In addition, it would need changes to meet more stringent code requirements to function as a school. It would also require significant site work, paving half the field for parking and a bus loop, which has an impact on the whole Greenwich community. This building could house 3 grades, which means that half of Glenville School would be located in two other school buildings and more than half of Hamilton Avenue School would be located in 5 other school buildings making administrative oversight difficult. This option also has a high price tag, approaching \$2 million, with significant hurdles in terms of time and land use approvals. The BOE determined that this would not be the appropriate solution for the community.

Repair and Remediation of Modular Facility

The Advisory Committee, with the assistance of Town departments, engaged the services of three firms to assist with the analysis of this option:

- In collaboration with the Town's building department, engaged Hoffman Architects, a firm expert in building envelope design, to identify the causes, propose solutions which will result in a clean, dry and safe school and provide their level of confidence that the solutions will be effective going forward. [The Executive Summary from the Hoffman Architect report is attached.]
- Engaged Hygenix, Inc, an environmental testing firm, to evaluate the building to determine its condition, propose solutions which will result in a clean, dry and safe school, and provide their level of confidence that the solutions will be effective going forward.
- Engaged Navigant Consulting, a large firm with experience in identifying causality for use in claims, to identify the causes and contributing factors to the problems with the building and to identify evidence and strategies for claims against the responsible parties. Their expertise was also utilized to provide a second assessment of the solutions to obtain a clean, dry and safe school and their level of confidence that the solutions will be effective going forward. [The presentation slides from Navigant Consulting's analysis are attached.]

The experts presented the causes and possible repair and remediation plan. They indicated that the problems are primarily resulting from design and construction flaws in the soffits, roof and skirt of the building. They also definitively stated that the building could be repaired to eliminate these flaws and have a safe, water-tight building. The report indicated that 95% of the mold is in the exterior soffits which should be taken off of the building during the repairs. Gutters would be added to the building, allowing water to easily drain away. The experts also propose improving the roof by having wider and more flexible flashing, again reducing the chance of water infiltrating the building. Other repairs and improvements include the elimination of the existing skirt, site improvements and better protection on the exterior surface of the building. The environmental expert confirmed that these changes would eliminate the existing opportunities for moisture conditions inside the building. Further, he recommended a repair and monitoring protocol which would protect the interior of the building from being contaminated during the construction and a cleaning protocol for after the completion of the repair work. The building would also be thoroughly tested prior to occupation. On an ongoing

basis, the building would have a regular environmental testing and structural review protocol. This option has a reasonable probability of being completed prior to the beginning of school in August and would cost \$972,000.

The authorization request includes estimates for construction management oversight, complete repairs as outlined by Hoffman Associates (elimination of soffits, addition of gutters, roof repairs, replacement of skirt with PVC lattice, exterior vinyl siding, vapor barrier on ground) and Hygenix (minor mold remediation in a limited portion of the interior of the building, environmental safeguards and monitoring during construction, post construction testing and cleaning). The estimates include a contingency and were developed to be able to meet a shortened construction window for completion by mid-August. Attached you will find the cost estimate developed with the assistance of Turner Construction.

Navigant Consulting is continuing its work and will be working with the Town Attorney and the BOE to determine its ability to make a claim for damages. Any recovered funds would be returned to the Town's general fund.

The BOE held several parent meetings during this process, including a presentation by the experts, so that the community heard the same information the Board used to make its decision. The Board is committed to working with the parent community to provide information about the progress of the remediation and repair project and to commit to a regular environmental testing and structural review schedule. The Board is also developing a plan to offer an option for those families that do not want to send their children to the modular facility, subject to capacity constraints in other school buildings.

The Board of Education feels confident that the repair and remediation of the modular facility provides the best solution for the relocation of our school community. As such, the BOE is requesting the authorization of \$972,000 for this project.

List of Attachments

Cost estimate for repair and remediation of modular facility (Turner Construction)
Hoffman Architects report – Building Envelope Investigation - Executive Summary
(Full report is posted to the Greenwich public schools website.)

Navigant Consulting – Presentation to BOE entitled Temporary Classroom at WMS

List of Options

Relocation Options - Pros/Cons of WGCC and Remediated Modulares

Conceptual Estimate Remediate/Repair of Existing Modulars

EXECUTIVE SUMMARY

<u>Construction Costs:</u>				<u>Total Cost</u>
Western Middle School	27,000	gsf	\$19.30	\$521,000
Subtotal Building Costs:	27,000	gsf	\$19.30	\$521,000
Sitework				\$120,000

Subtotal Construction Costs:	\$641,000
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Remediation	27,000	gsf	\$3.33	\$90,000	Per Hygenix 4.24.08
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Total Construction Costs:	\$731,000
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Other "Soft" Costs

\$128,200 Assume 20% + Contin.

Abatement/Remediation Fees	<<w/remediation costs>>
Architectural/Engineering Fees	<<w/above>>
Third Party Review	<<w/above>>
Tech/Security Consultant	<<w/above>>
Attorney Fees	<<w/above>>
Reimbursable Expense Budget	<<w/above>>
CM PreConstruction Fee	\$25,000
Special Inspections	<<w/above>>
Surveys / Geotechnical Allowance	<<w/above>>
Land Survey	<<w/above>>
Geotechnical Consultant	<<w/above>>
Traffic Study	<<w/above>>
Test Borings Contractor	<<w/above>>
Material Testing (Independent Lab)	<<w/above>>
Equipment: Computer / Software	<<w/above>>
Security Equipment & Wiring	<<w/above>>
Data Equipment & Wiring	<<w/above>>
Telephone Equipment & Wiring	<<w/above>>
Furniture	<<w/above>>
Builder's Risk Insurance	<<w/above>>
Utility Company Charges	<<w/above>>
Owner Administrative Costs	<<w/above>>
Moving Cost	<<w/above>>
Project Contingency 10%	\$88,000

Subtotal Other "Soft" Costs:	\$241,000
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Total Project Costs:	\$972,000
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Western Middle School

Greenwich CT

Conceptual Estimate Remediate/Repair of Existing Modulars

Turner

4/23/08

		Western Middle School		Sitework	
		\$/GSF	TOTAL	\$/GSF	TOTAL
				Total	
		\$/GSF	TOTAL	\$/GSF	TOTAL
Demolition		0.59	16,000		
Excavation & Foundation		0.00	0		
Structural Frame		0.00	0		
Roofing & Waterproofing		3.33	90,000		
Exterior Wall		5.78	156,000		
Interior Finishes		1.63	44,000		
Special Requirements		0.00	0		
Vertical Transportation		0.00	0		
Plumbing		0.00	0		
Fire Protection		0.00	0		
HVAC & Controls		1.30	35,000		
Electrical		0.44	12,000		
Site Work				111,000	
Subtotal			353,000	111,000	464,000
Escalation	0.34%		1,000	0	1,000
Design Contingency	7.50%		27,000	8,000	35,000
Building Permit	1.20%		5,000	1,000	6,000
CM Reimbursables	<<w/below>>		0	0	0
CM Basic Compensation	Lumpsum		135,000	0	135,000
CONSTRUCTION COST TOTAL		19.30	521,000	4.44	120,000
GSF>>>			27,000		27,000

Western Middle School
Greenwich CT
Conceptual Estimate Remediate/Repair of Existing Modulars

Item	Quantity	Unit	Cost	Subtotal	Total	Remarks
Demolition						
Western Middle School						
Select Demolition						
Remove skirting	2,333	sfw	3.00		6,998	
Remove framing at existing soffit	1,458	sfw	6.00		8,748	
Total Demolition	27,000	gsf	0.59	16,000		
Excavation and Foundations						
Western Middle School						
Concrete/Excavation work	<<assume none required>>				0	
Total Excavation and Foundations	27,000	gsf	0.00	0		
Structural Frame						
Western Middle School						
Structural steel framing	<<assume none required>>				0	
Total Structural Frame	27,000	gsf	0.00	0		
Roofing & Waterproofing						
Western Middle School						
EPDM membrane roof	<<assume none required>>					
Exp.joints at seams betw.units	1,020	lf	30.00		30,600	
New perimeter drip edge/gravel stop	729	lf	35.00		25,515	
Wood blocking for fastening	<<w/above>>				0	
Misc.flashing repairs	1	allow	10,000		10,000	
New aluminum gutters	729	lf	30.00		21,870	
Downspouts connections	25	ea	100.00		2,500	
Total Roofing & Waterproofing	27,000	gsf	3.33	90,000		
Exterior Wall						
Western Middle School						
Replace 24-4x8 sheets of T-111	768	sf	4.00		3,072	Allowance due to damage
Extend T-111 up to roof line						
Double 2x12 header board	729	lf	14.00		10,206	Per Hoffman sketch report 4/20/08
Air barrier	9,797	sf	1.50		14,695	
Misc.trim at seams	729	lf	25.00		18,225	
Joint sealants	729	lf	2.00		1,458	
Vinyl siding over all of the T-111 siding	9,797	sf	7.00		68,576	
Vinyl fascia at 2x10 header board	729	lf	4.00		2,916	
Skirting						
PVC Lattace w/bird screen netting	2,333	sf	5.00		11,663	
Allowance for premium time	1	allow	25,000		25,000	
Total Exterior Wall	27,000	gsf	5.78	156,000		
Interior Finishes						
Western Middle School						
Finishes						
Partitions						
3-5/8" wd std.insl,5/8gyp/osb ea.side	160	sfw	10.00		1,599	Classroom #6
Drywall partition patching allowance	1,000	sfw	5.00		5,000	Assumed 30 sheets
Subtotal Partitions	1,160	sfw	5.69	6,599		
Ceilings						
Patch of exist.ceiling Drywall- allow	500	sf	4.00		2,000	
Patch of exist.ceil.acoust. tile-allow	500	sf	3.00		1,500	
Gypsum board soffits	<<Assumed none>>				0	
Subtotal Ceilings	500	sf	7.00	3,500		
Wall finishes						
Paint at partition work in rm.6	320	sfw	1.00		320	
Paint patched walls	1,000	sfw	1.00		1,000	
Joint sealants	200	lf	3.00		600	

Western Middle School

Greenwich CT

Conceptual Estimate Remediate/Repair of Existing Modulares

Item	Quantity	Unit	Cost	Subtotal	Total	Remarks
Subtotal Wall finishes	1,320	sfw	1.45	1,920		
Floor finishes					0	
VCT patch at select demo.	400	sfw	2.50		1,000	
Strip and wax exist.vct	27,000	gsf	0.15		4,050	
Subtotal Floor finishes	13,242	sf	0.31	4,050		
Doors, frames and hardware	<<Assumed no work>>				0	
Subtotal Doors, frames and hardware	0	ea	#DIV/0!	0		
Subtotal Interior Finishes	27,000	gsf	0.63	17,069		
Indirects						
Daily Cleaning	27,000	gsf	0.25		6,750	
Safety & Protection	27,000	gsf	0.10		2,700	
Rubbish Removal	27,000	gsf	0.30		8,100	
Final Cleaning	27,000	gsf	0.35		9,450	
Total Interior Finishes	27,000	gsf	1.63	44,000		
Special Requirements						
Western Middle School	<<Assumed no work>>				0	
Total Special Requirements	27,000	gsf	0.00	0		
Vert. Transportation						
Western Middle School	<<Assume no work>>				0	
Total Vert. Transportation	27,000	gsf	0.00	0		
Plumbing						
Western Middle School	<<Assume no work>>				0	
Total Plumbing	27,000	gsf	0.00	0		
Fire Protection						
Western Middle School	<<Assume no work>>				0	
Total Fire Protection	27,000	gsf	0.00	0		
HVAC & Controls						
Western Middle School						
Add of exh./circulator fans in each portable	15,000	cfm	2.00		30,000	Assume 500cfm fan by 30ea
Add of grills	<<w/above>>					
Penetra. above ceiling between portables	1	allow	5,000		5,000	
Total HVAC & Controls	27,000	gsf	1.30	35,000		
Electrical						
Western Middle School						
Add of exh./circulator fans in each portable	30	ea	400		12,000	
Total Electrical	27,000	gsf	0.44	12,000		
Sitework						
Site grading & utilities						
Addition of drainage swales	1	allow	50,000		50,000	
Construction Fence	1,000	lf	15.00		15,000	
Fence Gates	2	ea	1,500		3,000	
Erosion and Sedimentation Controls					0	
Silt Fence	350	lf	5.00		1,750	
Silt Sacks at Catchbasins	10	ea	100.00		1,000	
Install a v barrier under portable over soil	27,000	gsf	1.50		40,500	
Subtotal Site grading & utilities:	27,000	gsf	4.12	111,250		
Total Sitework	27,000	gsf	4.11	111,000		
Subtotal Direct Work	27,000	gsf	17.19	464,000		

Executive Summary

General

In February of this year, a roof leak was reported in Room 7 of the Hamilton Avenue School Modular Classrooms. Observations of the water damage in this room caused by the leak revealed considerable mold issues in the soffit and moisture in the exterior wall assembly. This prompted a series of investigations throughout the building.

Hoffmann Architects' activities included destructive investigations into the walls, soffits and ceilings as well as visual observations of the exterior walls, crawl space under the building and the roofing system.

Soffits

The majority of the moisture infiltration issues that are occurring in this building are confined to the soffits. The severity of the moisture infiltration varies greatly throughout the building. The most severe infiltration was noted in the soffits at the northwest portion of the building.

The moisture can be attributed to the poor insulation/vapor retarder issues in the soffits resulting in condensation along the uninsulated face of the soffits, infiltration through the roof membrane and, to a lesser degree, absorption through the T1-11 siding. Without any ventilation in the soffits, the moisture cannot escape, thereby creating conditions where mold can grow.

Walls

The walls of the units are constructed of wood studs with kraft backed fiberglass batt insulation. A weather barrier is secured to the outside face of the studs. Texture 1-11 plywood acts as both the sheathing and the exterior building siding. Probes into the wall spaces revealed that the vast majority of the walls are dry with no evidence of moisture infiltration beyond the weather barrier.

Roof

The roof of the buildings is in good overall condition. However splicing and termination details of the roofing membrane provide many places where water can enter below the membrane and travel down the slope of the roof deck into the soffit.

Crawl Space

The ground on which the buildings were constructed is damp, thereby creating an extremely humid space which will allow mold to grow. Considerable condensation was observed on the foil faced insulation under the building floor. Additionally, the skirt that surrounds the building, to visually conceal this space, is inadequately vented. This plywood skirt is also embedded into the ground, which allows moisture to wick upward.

Overall, the condition of the building is good. The units were constructed and assembled on site in accordance with the stamped drawings. With the exception of the soffit detail, we believe that the units were designed and constructed in general conformance with accepted standards and practice for use as a temporary facility housing classrooms and office space. It is our opinion that the structure can be renovated to remove the issues that promoted the mold growth and to prevent future similar mold issues.

In order to eliminate the issues related to moisture infiltration that are being experienced at the Hamilton Avenue School Modular Classrooms and create a dry and safe classroom environment, a comprehensive rehabilitation program should be initiated. This program is outlined in the Recommendations section of this report. Our opinion of probable cost of construction for this work is \$375,000. We estimate that the renovations/repairs should take 3-4 months to complete. We estimate that under an accelerated schedule, the recommended program of repairs can be completed in 2-1/2 months. This would increase the cost of construction by approximately 25 percent. Additional costs associated with the rehabilitation of the modular units, including site work, remediation and mitigation of existing mold and other environmental issues are outlined in Appendix B.

Overview of Relocation Options

	<u>GLENVILLE: WGCC</u> WGCC: Housing three grade levels (3-5) Two Host Schools: Parkway (K-1) and Cos Cob (2) <u>HAMILTON AVENUE: WGCC</u> WGCC: Housing three grade levels (2-4) Three Host Schools: Parkway (K), Cos Cob (1) and WMS (5) PreK would remain at current relocation sites (North Street and Old Greenwich)	<u>GLENVILLE</u> <u>*Remediated Modulares:</u> Housing 6 grade levels <i>*Keeps entire school community together</i> <u>HAMILTON AVENUE</u> <u>Remediated Modulares:</u> Housing 6 grade levels PreK would remain at current relocation sites (North Street and Old Greenwich)
Ability to deliver core GPS instructional programs	Yes	Yes
Level of confidence of facility's health and safety	<i>High; WGCC recently renovated</i>	<i>High with remediation provided by reputable companies; quarterly testing after completion of remediation</i>
Delivery of Support Services (ESL, Sped, Speech, OT/PT, Health, Nurse, etc.) and ALP	<i>Compromised: Will not have adequate space for support service delivery</i>	Yes
Delivery of Specials (PE, Art, Music, Media)	<i>Compromised: Art, Music and Media will be "push-in" unless additional space can be found by dividing up the cafeteria at WGCC for one special (art). Music will be on a cart, a challenge given the multiple floors. There is a PE space on site.</i>	<i>Yes: For Glenville, a full computer lab will be located in the modulares which will cause the Media Center to be located at WMS. Music will be on a cart. Hamilton Avenue will have Music and Media at WMS. Both schools will have Art in the modulares. Both schools will have PE at the Boys and Girls Club and/or Hamill Rink.</i>
Administrative leadership and supervision	<i>Compromised: With two administrators, three to four (or more) sites will prove challenging. The Host sites' administration will need to assist with supervision.</i>	<i>Yes: With all students at one site, leadership and supervision will not be an issue.</i>
Size of classrooms	<i>Estimated: 600-750 sq. ft.</i>	<i>Estimated: 600-750 sq. ft.</i>
Time	<i>Estimated Availability: Tight to make start of school; later than modulares since P&Z approval is required</i>	<i>Estimated Availability: start of school (if allowed an accelerated schedule); no P&Z approval required</i>
Cost	<i>Approximately \$2,000,000</i>	<i>Approximately \$1,000,000</i>

Pros and Cons: Relocation Options for 2008-2009

Western Greenwich Civic Center with Two/Three Host Sites

	Pros	Cons
Delivery of Core GPS Instructional Programs	GPS core instructional programs can be delivered in this space.	Unable to schedule Common Planning Time due to current specials' scheduling and staffing in Host schools.
Safety, Health and Security	High level of confidence in building's structure and condition.	Safety concerns with open community access to this facility.
Delivery of Support Services (ESL, SpEd, Speech, OT/PT, Health, Nurse, etc.) and ALP		No existing space for support services such as ESL, Nurse, Speech & Language, SpEd, Psychologist and ALP.
Delivery of Specials (PE, Art, Music, Media)	- PE space is available and could have two PE classes running simultaneously. - Playing fields will enhance PE programming.	- Art, music and media will be "push in" and on a cart (difficulties will arise in the classrooms that are "walk-up" spaces. Carts will not be able to be "pushed" into these areas). - Assemblies would only occur if a host school could adequately house all students. Transportation would be needed to bring all students together.
Administrative leadership and supervision		Regular informal observations would prove challenging due to multiple sites.
Size of classrooms	Provides educationally appropriate instructional space for classrooms to deliver all GPS programs.	
Number of Grades	Keeps three grade levels together in the Glenville section of town.	- Separates the school population. - Loss of school culture. - GLENVILLE: Based on "space available" it is most conducive for upper grades such as grades 3-5, thus K-2 will need to be located in Host Sites (grades K-1 Parkway and grade 2 Cos Cob). - HAMILTON AVENUE: Based on "space available" it is most conducive for upper grades such as grades 2-4, thus K-1 and 5 will need to be located in Host Sites (grade K Parkway, grade 1 Cos Cob and grade 5 WMS). PreK classrooms would need to remain at current relocation sites.
Other	Recently renovated facility.	- No existing space for a faculty lounge/copy room/mailroom. - Assemblies would only occur if a host school could adequately house all students. Transportation would be needed to bring all students together.

Pros and Cons: Relocation Options for 2008-2009

Remediated Modulares

	Pros	Cons
Delivery of Core GPS Instructional Programs	- GPS core instructional programs can be delivered in this space. - Common Planning Time for staff (collaborative instructional planning).	
Safety, Health and Security	- Can be remediated with appropriate techniques. - High level of confidence in secure access to the building.	There is a perception of health issues at the modulares, although environmental expert testing does not support perceptions.
Delivery of Support Services (ESL, SpEd, Speech, OT/PT, Health, Nurse, etc.) and ALP	Space is available for support services such as ESL, Nurse, Speech & Language, SpEd, Psychologist and ALP.	Limited “work space” for SpEd team.
Delivery of Specials (PE, Art, Music, Media)	- Educationally appropriate space is designated in the modulares for art. - GLENVILLE: A computer lab will be located in the modulares for all grades. - GLENVILLE/HAMILTON AVENUE: Media space has been designated at WMS. - GLENVILLE: Music instruction to be delivered as an “in-class” service. General Music teacher has taught in this format in the past. - HAMILTON AVENUE: Music instruction to be delivered at WMS.	Physical Education would take place off site at the Boys and Girls Club (until March) and the Hamill Rink (March-June).
Administrative leadership and supervision	Informal and formal observations of staff can take place with ease because the school is in one location.	
Size of classrooms	Provides educationally appropriate instructional space for classrooms K-5 to deliver all GPS programs.	
Number of Grades	- Keeps the entire school population together. - Provides a unified school culture. - Assemblies can take place at the WMS auditorium (brings the whole school community together).	Occupancy for the multipurpose room needs further analysis to ensure the space can accommodate the number of students per lunch wave.
Other	Existing space for staff lounge/copy room/mailroom.	Limited space for childcare and PTA sponsored “afters” programs.

School Relocation Options

3/27/2008

SPACE NEEDS: Hamilton Avenue School -- 20 K-5 sections, 4 pre-K sections, plus specials, pullouts, gym, café
Glenville School -- 18 K-5 sections plus specials, pullouts, gym, cafeteria

	Hamilton Ave School Not Completed Hamilton Ave Students Relocated Glenville School Renovation Delayed	Hamilton Ave School Completed Glenville School Students Relocated
WGCC Available by start of school	1) WGCC + 14 modular classrooms on site 2) WGCC + 10 modular classrooms on site, pre-K in other school 3) WGCC + 8 modular classrooms on site, pre-K and one grade in other school 4) WGCC + 2 modular classrooms on site, pre-K and 8 sections in other schools 5) WGCC, pre-K and 10 sections in other schools 6) Glenville moves to WGCC (plus others as needed), Ham Ave moves into Glenville School building	11) WGCC + 8 modular classrooms on site 12) WGCC + 2 modular classrooms, 2 grades to be located in 1 or 2 other schools (Parkway, Ham Ave/St. Rochs, WMS) 13) WGCC, 3 grades located in 2 or 3 other schools
Modular Classrooms Available by start of school	7) Existing modular building -- planned sections do not fit, pre-K and/or one grade in other building 8) New modular building - size to be determined	14) Existing modular building 15) New modular building

School Relocation Options

3/27/2008

SPACE NEEDS: Hamilton Avenue School -- 20 K-5 sections, 4 pre-K sections, plus specials, pullouts, gym, café
Glenville School -- 18 K-5 sections plus specials, pullouts, gym, cafeteria

	Hamilton Ave School Not Completed Hamilton Ave Students Relocated Glenville School Renovation Delayed	Hamilton Ave School Completed Glenville School Students Relocated
WGCC & Modulars Not Available: Split Sessions	9) Ham Ave paired with another school and two and specials buildings are available	16) WGCC and a center are available; Glenville run in split sessions 17) Glenville paired with another school and two centers for specials
WGCC & Modulars Not Available: Use Existing Schools	10) Grade levels placed in other schools	18) Students return to Glenville until WGCC or modulars available 19) Grade levels placed in other schools

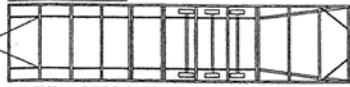
NAVIGANT
CONSULTING

Temporary Classroom Building at Western Middle School

Greenwich, CT

Contract Scope of Work

CBSI



CARP BUILDING STRUCTURES, INC.

Modular Building Manufacturer

OFFICE: 210 Depot Road PLANT: 252 Depot Road
Milford, Connecticut 06460-3807
(203) 877-3334 / Fax (203) 877-4589
www.cbsimodular.com

SCOPE OF WORK

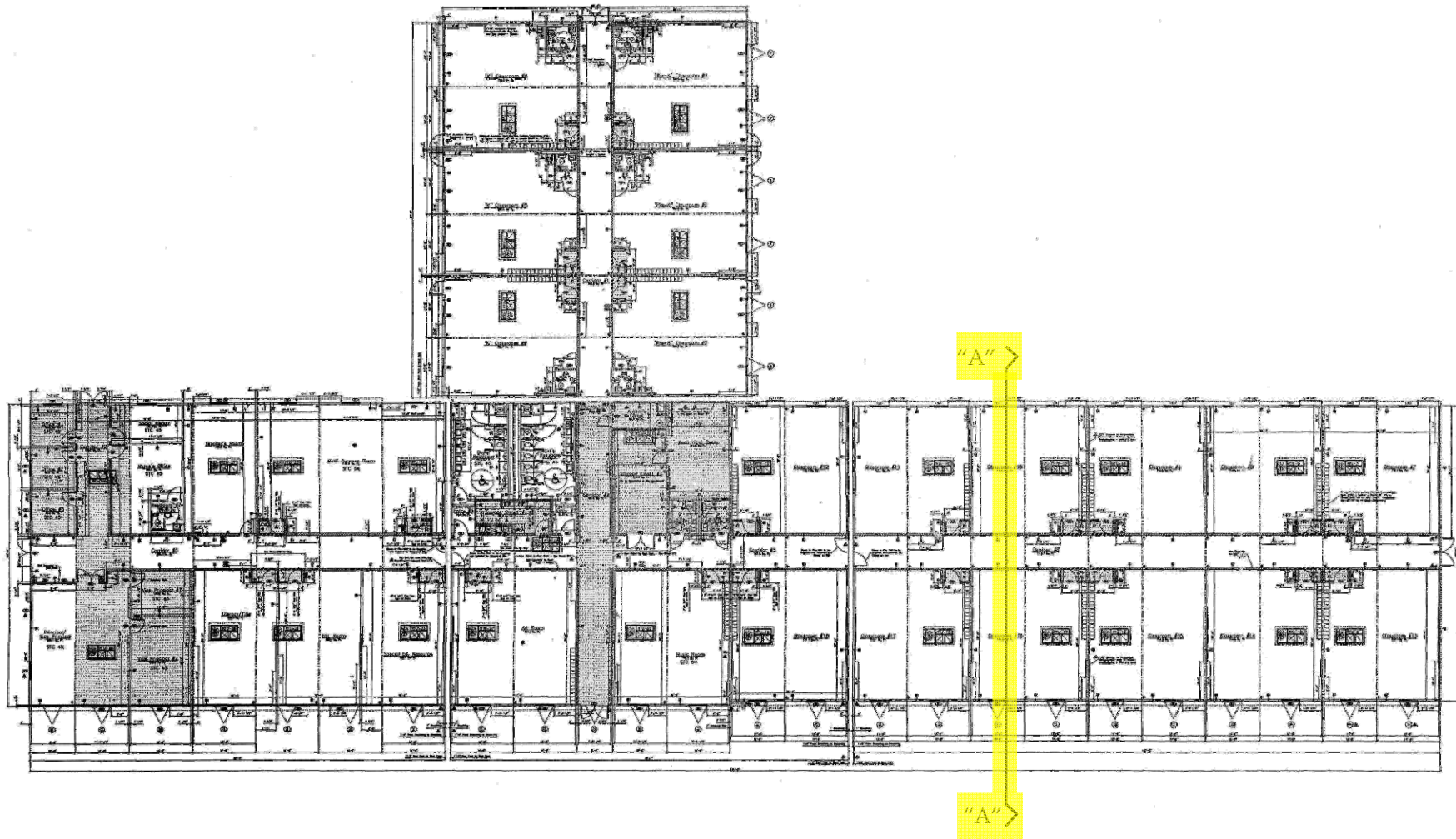
- ☒ All required design and engineered drawings (building, foundation, etc.) for permit approval except site plan, if required. To be reviewed and approved by owner, Fire Marshall, and Building Inspector.
- ☒ Acquiring of all building permits with payment of fees to be waived by the town.
- ☒ No exceptions taken to your specifications. (See CBSI Specifications)
- ☒ Delivery of building to site.
- ☒ Provide site excavation, backfill, removal of excess fill or provision of required fill, rough and final grading.
- ☒ Installation and design of concrete footer/pier foundation per Connecticut code.
- ☒ Tie downs per Connecticut code.
- ☒ Setting of building on foundation
- ☒ Install fully handicapped accessible construction of project.
- ☒ Seam and make weather tight all exterior seams and matelines.
- ☒ Connect all interior mateline electrical and HVAC crossovers between modules.
- ☒ Provide all exterior exits with stairs, landing, and handrails per Connecticut code.
- ☒ Install chalkboards and tackboards per owner location as required by RFP/Bid.
- ☒ Remove all construction debris from site and restore site including seeding of disturbed grass areas.
- ☒ All of the above to meet BOCA, Connecticut and local building codes.
- ☒ Roof, wind, and floor loads to meet with Connecticut code and BOCA requirements.
- ☒ Meet all ADA requirements and Life Safety requirements.
- ☒ Provide construction warranty to owner for one (1) year from date of occupancy and manufacturer's warranty of mechanical assemblies as guaranteed by manufacturer.
- ☒ Provide main distribution panel for electrical service.
- ☒ Provide, install, fire alarm, clock, paging, and phone system.
- ☒ Pricing includes prevailing wage requirements for the State of Connecticut, if applicable.
- ☒ Performance and Payment Bonds for project.
- ☒ Does not include unforeseen underground obstructions.
- ☒ Complete wet sprinkler system.
- ☒ Plumb lines brought to points as directed by customer.

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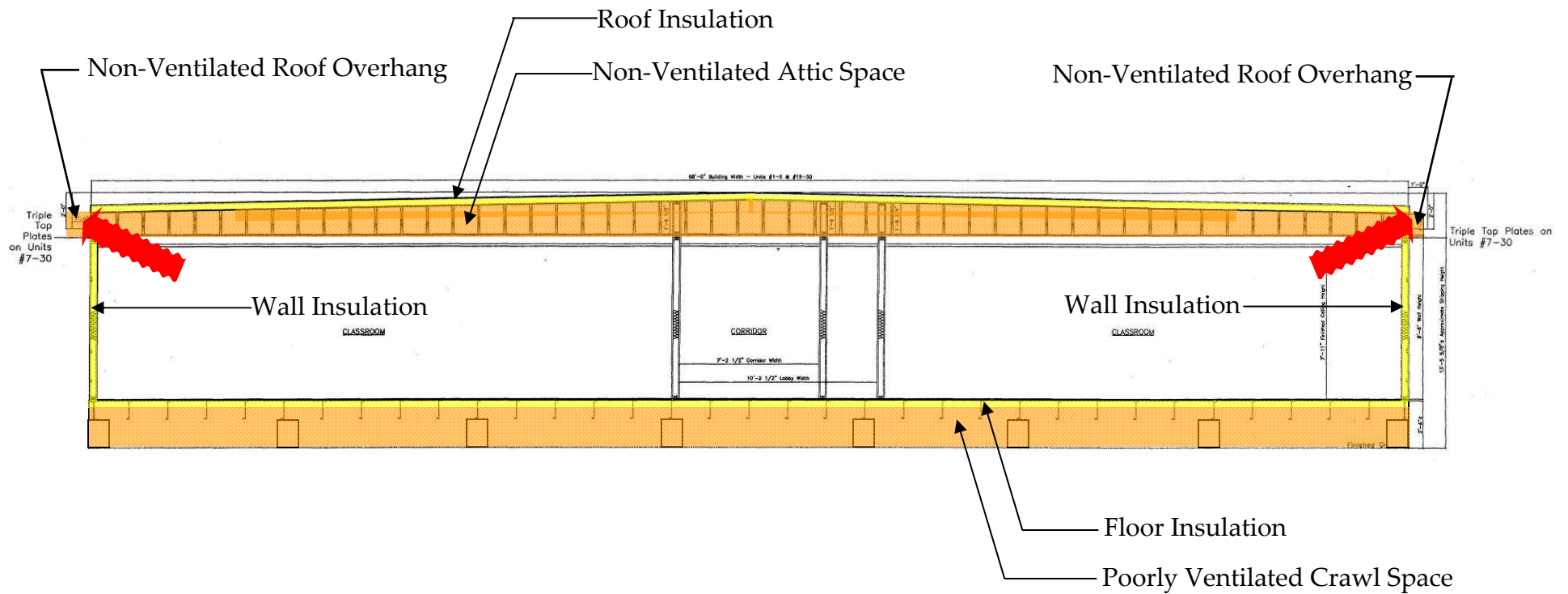
All of the above to meet BOCA, Connecticut and local building codes.

Floor Plan



Tentative and Preliminary

Typical Building Section "A-A"



Tentative and Preliminary

Code Requirements

SECTION 1210.0 VENTILATION OF SPECIAL SPACES

1210.1 Roof spaces: Enclosed attics and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters shall have cross *ventilation* for each separate space by *ventilation* openings. The *ventilation* openings shall be tested for rain and snow infiltration in a manner representative of the intended installation and shall not permit the entrance of rain and snow when so tested. *Ventilation* openings shall not be provided in roof areas, or portions thereof, which are subject to snow drift as determined by Section 1608.0.

The minimum required net free ventilating area shall be $\frac{1}{150}$ of the area of the space ventilated. Where ridge or gable vents are utilized, one-half of the *ventilation* openings shall be provided by ridge or gable vents, with the balance of the *ventilation* openings provided by eave or cornice vents. The openings shall be covered with corrosion-resistant mesh or other approved materials with openings not more than $\frac{1}{2}$ inch (13 mm) in any direction.

1210.2 Crawl spaces: Crawl space areas, other than those used as an underfloor plenum, shall be *ventilated* by an approved mechanical means or by openings in exterior foundation walls. Openings shall be located as close to corners as practicable and shall provide cross *ventilation* on at least two approximately opposite sides. The openings shall be covered with corrosion-resistant mesh not less than $\frac{1}{4}$ inch (6 mm) nor more than $\frac{1}{2}$ inch (13 mm) in any direction.

1210.2.1 Opening size: Openings shall have a net area of not less than 1 square foot (0.093 m²) for each 150 square feet (13.95 m²) of foundation space. Where an approved *vapor retarder* is installed over the ground surface, the required net area of openings shall be reduced to 0.1 square foot (0.093 m²) for each 150 square feet (13.95 m²) and vents shall have manually operable louvers.

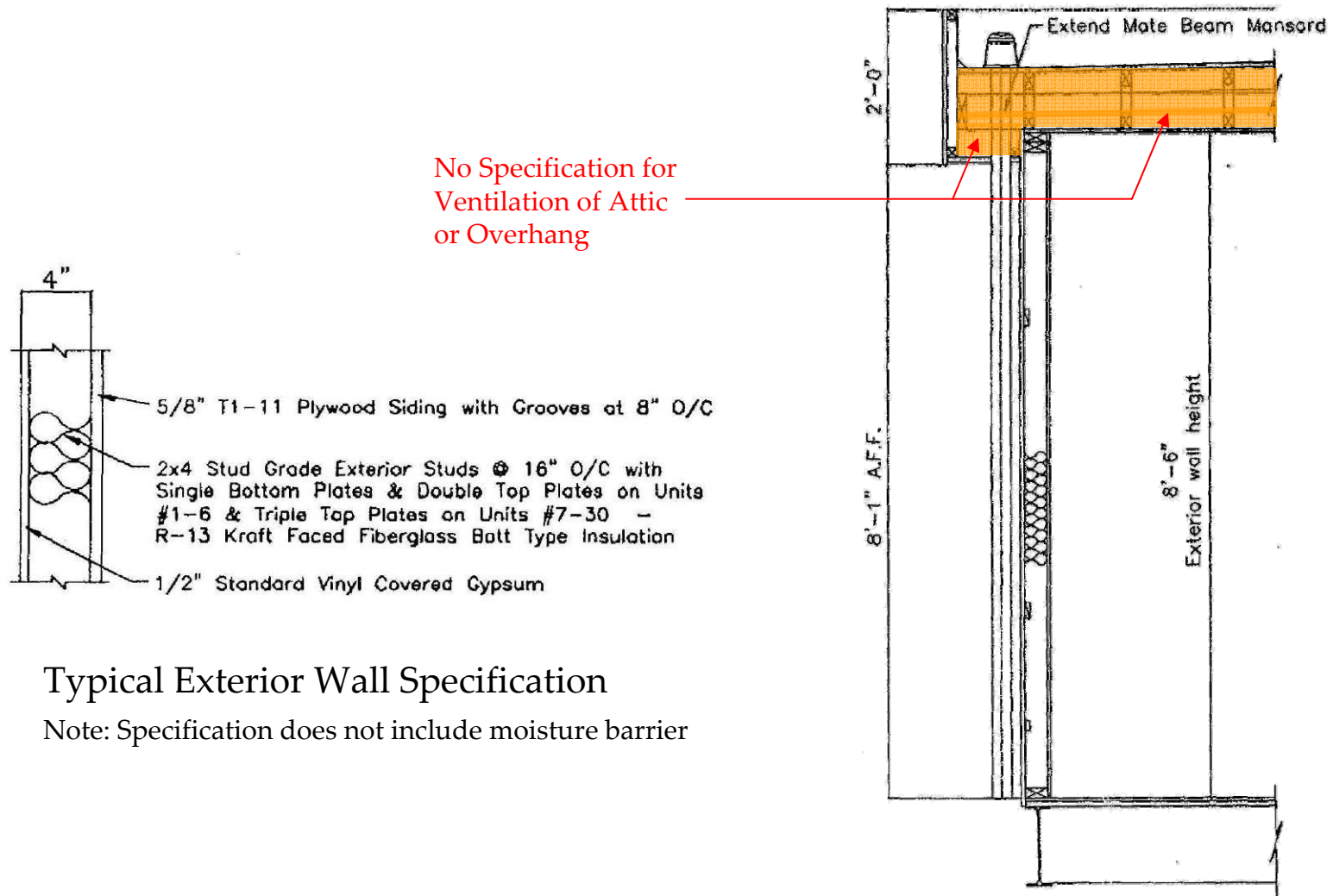
1210.3 Alternative mechanical ventilation: Enclosed *attic*, rafter and crawl spaces which are not *ventilated* as herein required shall be equipped with a mechanical *ventilation* system conforming to the requirements of the mechanical code listed in Chapter 35.

SECTION 1211.0 ACCESS TO CRAWL SPACES AND ATTICS

1211.1 Access to crawl spaces: Access shall be provided to crawl spaces by an opening not less than 18 inches by 24 inches (457 mm by 610 mm).

Based on a building footprint of 26,836 S.F., 179 S.F. Net Free Ventilation Area is required for attic and crawl space.

Typical Wall Section and Specifications

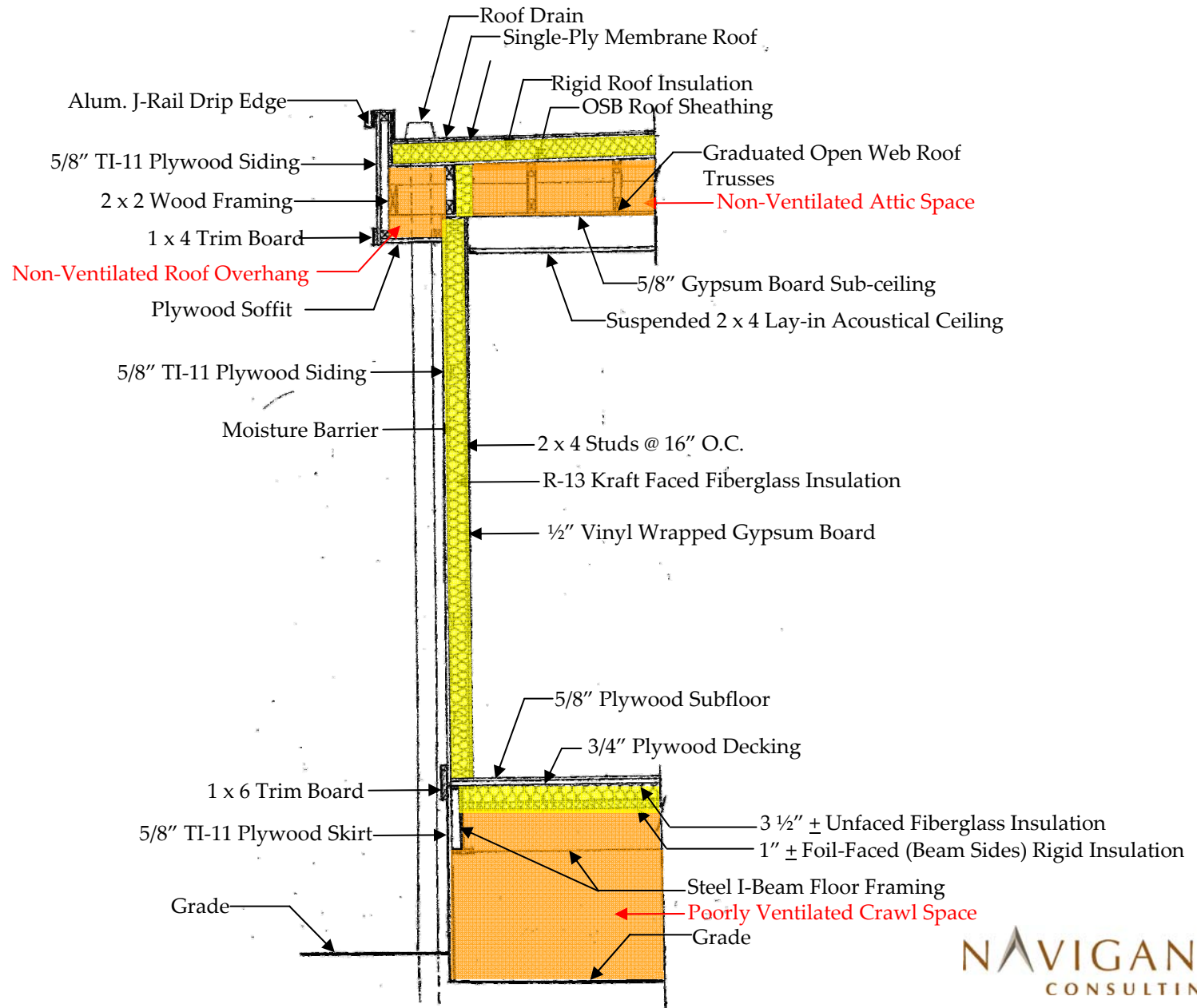


Typical Exterior Wall Specification

Note: Specification does not include moisture barrier

Typical Exterior Wall Section

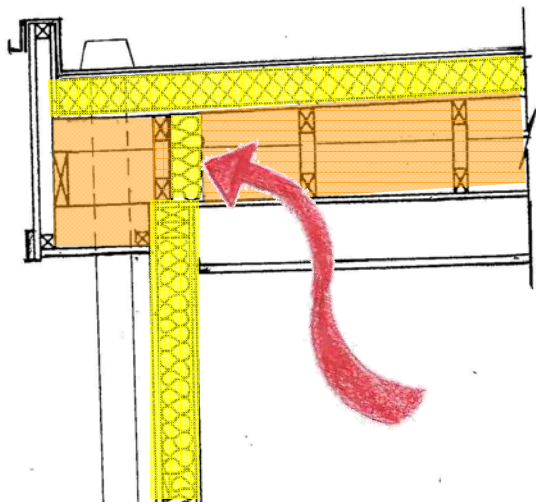
As-Built Wall Section



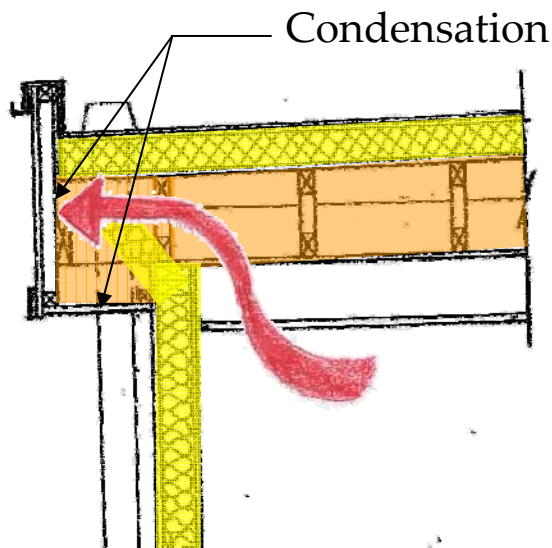
Tentative and Preliminary

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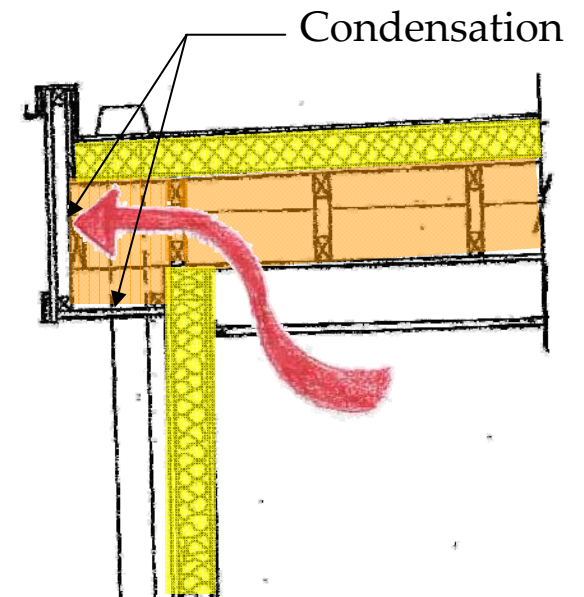
Three Insulation Conditions



Proper Insulation

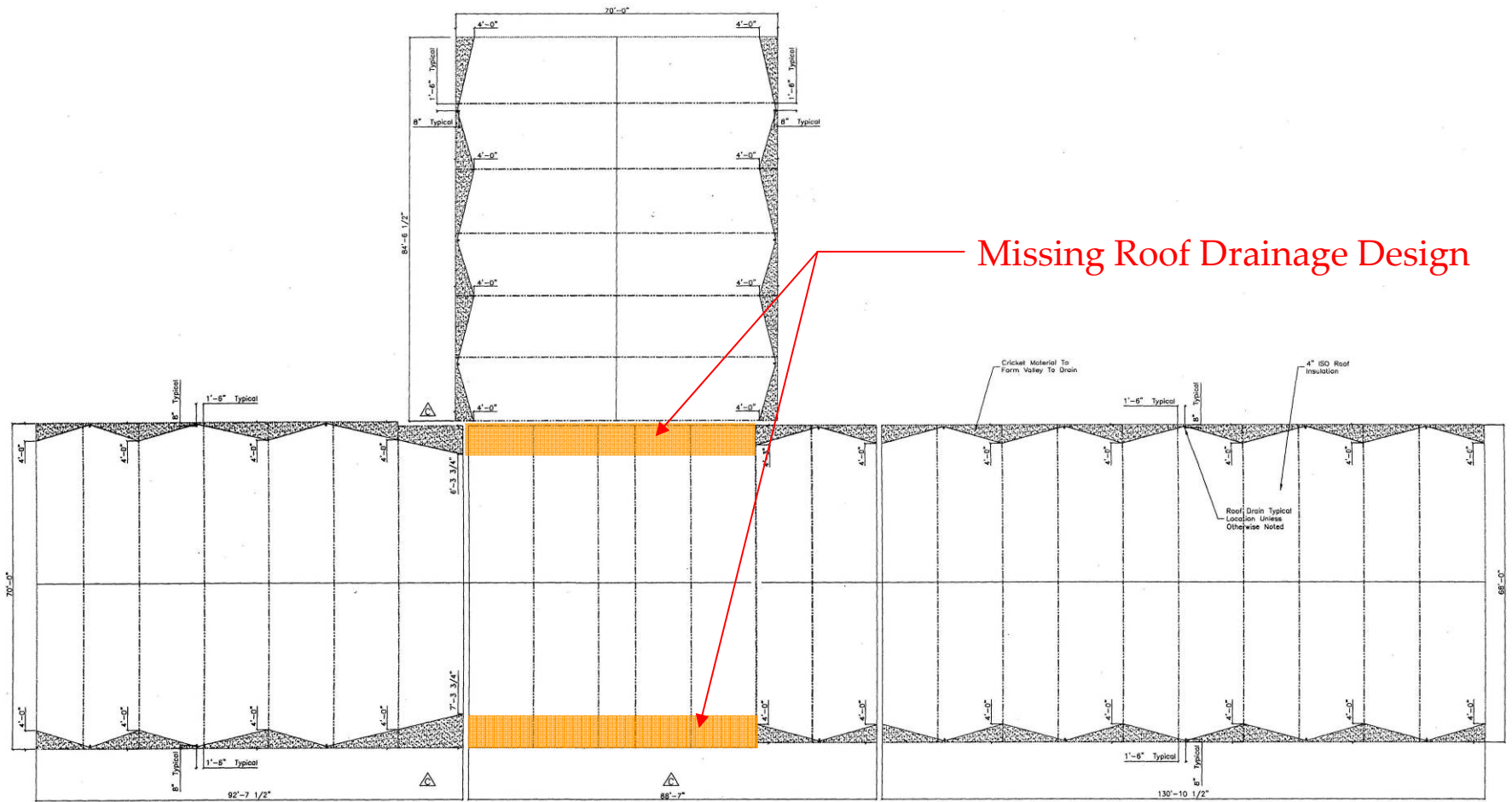


Improperly Installed Insulation

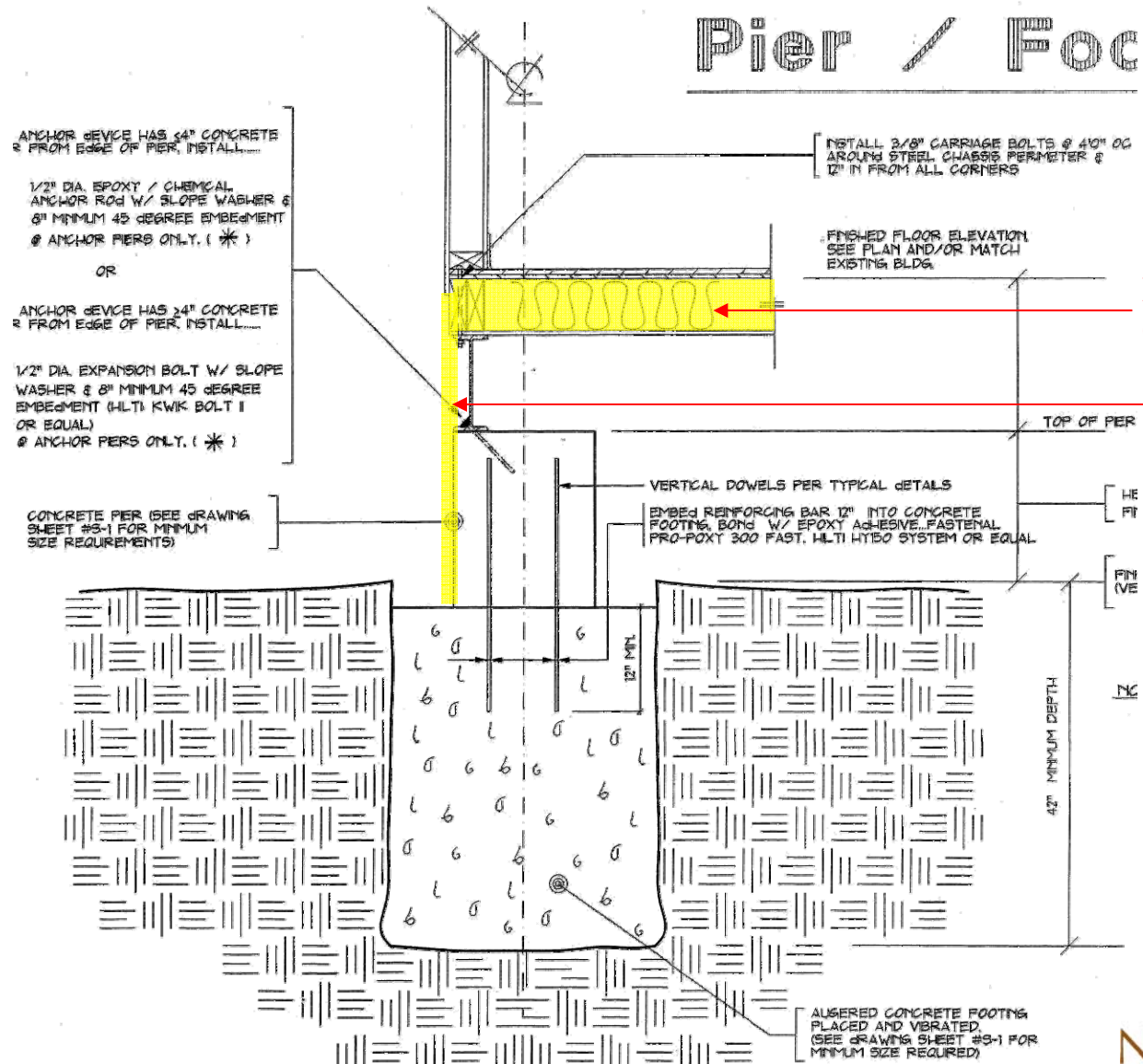


No Insulation

Roof Plan



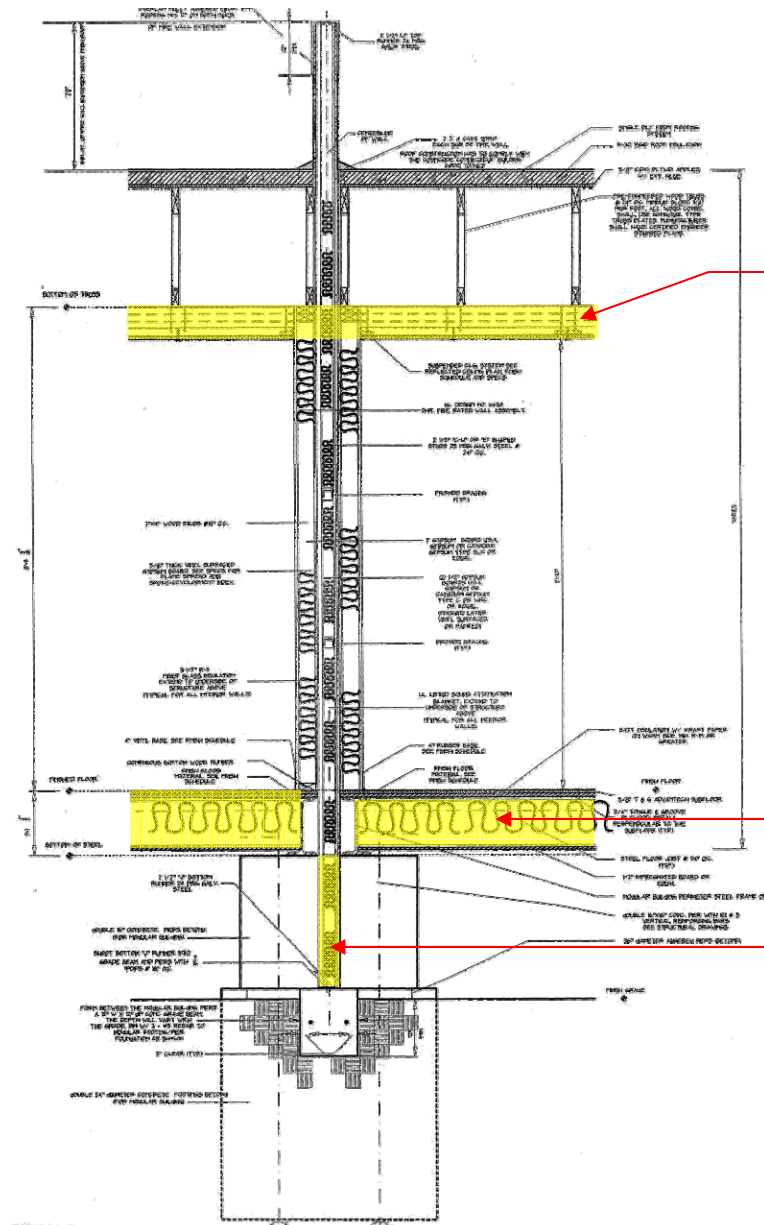
Footing Detail



Incorrect Floor Construction

Skirt Not Designed

Firewall Detail



No Drywall Ceiling Shown

Incorrect Floor Construction

Incorrect Wall Construction

Summary

- Building was not designed to meet BOCA, Connecticut and local building codes.
- Drawings are incomplete and uncoordinated.
- Design errors and omissions were a contributing factor in the development of mold in building overhangs.