



TO: BOARD OF DIRECTORS  
FROM: GARY PLATT, EXECUTIVE DIRECTOR – CAPITAL PROJECTS  
SUBJECT: NEW STANWOOD HIGH SCHOOL CONSTRUCTABILITY REPORT  
DATE: NOVEMBER 20, 2018  
TYPE: ACTION REQUIRED

One of the steps required to obtain state school construction matching funds is the completion and board approval of a constructability report. On September 19, 2017, the board authorized a contract with Meng Analysis to prepare this report and a value engineering report. The constructability report (attached) was completed on October 5, 2018. The value engineering report was completed and approved by the board several months ago.

We are now in the process of preparing the Office of Superintendent of Public Instruction's (OSPI) D-9 form. The purpose of the D-9 form is to request state authorization to award the contract for the construction of the school. There are approximately 13 documents that must be submitted at this time. Once all the D-9 form requirements are met, a D-10 form will be issued to the district by OSPI, authorizing the board to award the bid and approve contracts. We will need to have the D-10 form prior to the special board meeting to award the bid scheduled for December 10, 2018.

Recommendation:

We recommend the board **move to approve the constructability report dated October 5, 2018, prepared by Meng Analysis, for the new Stanwood High School, as attached.**

2111 Pacific, Suite 100 Tacoma, Washington 98402



November 13, 2018

Liz Jamieson  
Construction Manager  
Stanwood Camano SD  
26920 Pioneer Hwy  
Stanwood, WA 98292

**Re: Stanwood High School – Constructability Review**

Dear Liz,

This letter is to certify that on October 5, 2018, in accordance with WAC 392-343-080, a Constructability Review of the contract documents was completed by Meng Analysis of the Stanwood High School project. We have reviewed the report and found it to be very thorough and beneficial. Along with our engineering team we have completed a review of each comment and, where appropriate, made the necessary modifications to our contract documents prior to issuing the bidding documents.

Respectfully,  
McGranahan Architects

Stephen M. Black, AIA  
Project Manager

**STANWOOD-CAMANO SCHOOL DISTRICT  
STANWOOD HIGH SCHOOL  
CONSTRUCTABILITY REVIEW  
OCTOBER 5, 2018**

**Constructability Review Team**

Timothy Buckley, Co-Team Lead/Architectural  
Matt Lersch, Co-Team Lead/Construction Management  
Nina Cousins, Civil / Landscape  
Joel Niemi, Architectural Interiors  
Brian Rich, Architectural Exteriors  
Dick Hemmen, Structural  
Wade Botting, Mechanical  
Thad Olson, Electrical  
Sarah Partap, Project Manager  
Andrea Vielma, Project Coordinator



MENG ANALYSIS

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## I. EXECUTIVE SUMMARY

### Introduction

This report summarizes the constructability review (CR) of the Stanwood High School, Stanwood-Camano School District designed by McGranahan Architects.

The constructability review was conducted in a workshop format held the week of October 1, 2017 using an independent, multi-disciplinary team to review the plans and specifications. Documents were received for the commencement of the workshop ("Constructability" Set dated 10/10/18).

The body of this report includes a key issues list of selected constructability concerns for each discipline/trade, followed by a section of more detailed comments.

Microsoft Excel files of the detailed comments are available upon request for use in tracking comment resolution. Separately packaged annotated plans & specifications provide the constructability review team "red-line" comments. See the Methodology section for detail on annotations.

### Document Review Criteria

The building systems were reviewed for the following general constructability criteria:

- Document Navigation and communication.
- Coordination between disciplines.
- Potential difficulty/ease of construction.
- Coordination of sections and details.
- Envelope detailing completion and coordination.

### Document Review

A constructability review of the construction documents was completed using a review checklist and a drawing overlay approach in a workshop setting, supplemented by team brainstorming of key issues and risks. Inconsequential items and important items do not appear differently in the annotations. Annotated plans and specifications from review team members have been compiled into one hard-copy set that forms the only complete record of the review.

MENG Analysis subscribes to the constructability review definition as described in WAC 392-343-080 as a cost control technique based on review of project documents by mechanical, electrical, structural, civil, construction, and design (architectural) professionals prior to a request for bids. The purpose of a constructability review is to identify potential claims or problem areas and deficiencies that may occur as a result of errors, ambiguities, omissions, discrepancies, and conflicts in design documents.

## Summary

The review team noted that the work is on average 86% complete overall, with architectural envelope document development somewhat behind.

General constructability review concerns include:

- Document Navigation and clarity of communication of information to bidders.
- The Project Manual needs to undergo final editing.
- Define & coordinate Alternates, and show base bid vs alternates on drawings.
- Utility crossing coordination and information.
- Detail development status of envelope systems (roof plans, details, other envelope detail development and completion.
- Additional Mechanical coordination Sections in complex areas and details needed.
- Discipline coordination.
- Further development of Site Logistics and Phasing Plans.

## Construction Schedule and Phasing

Construction schedule and phasing plan are compressed as indicated in construction documents. There is a risk of additional cost from added contractor acceleration costs during the bid process, required acceleration caused by unforeseen weather delays, and costs associated with material expediting.

Additionally, it is noted on Volume 1 G1.01 Phasing Plan 2 and 3 that the Alternative Learning Center, Maintenance Building, and Storage Building work will occur concurrently with new High School Building under separate contract. This also poses a risk if a separate contractor is used for this portion of the work.

## Cost Estimate Analysis

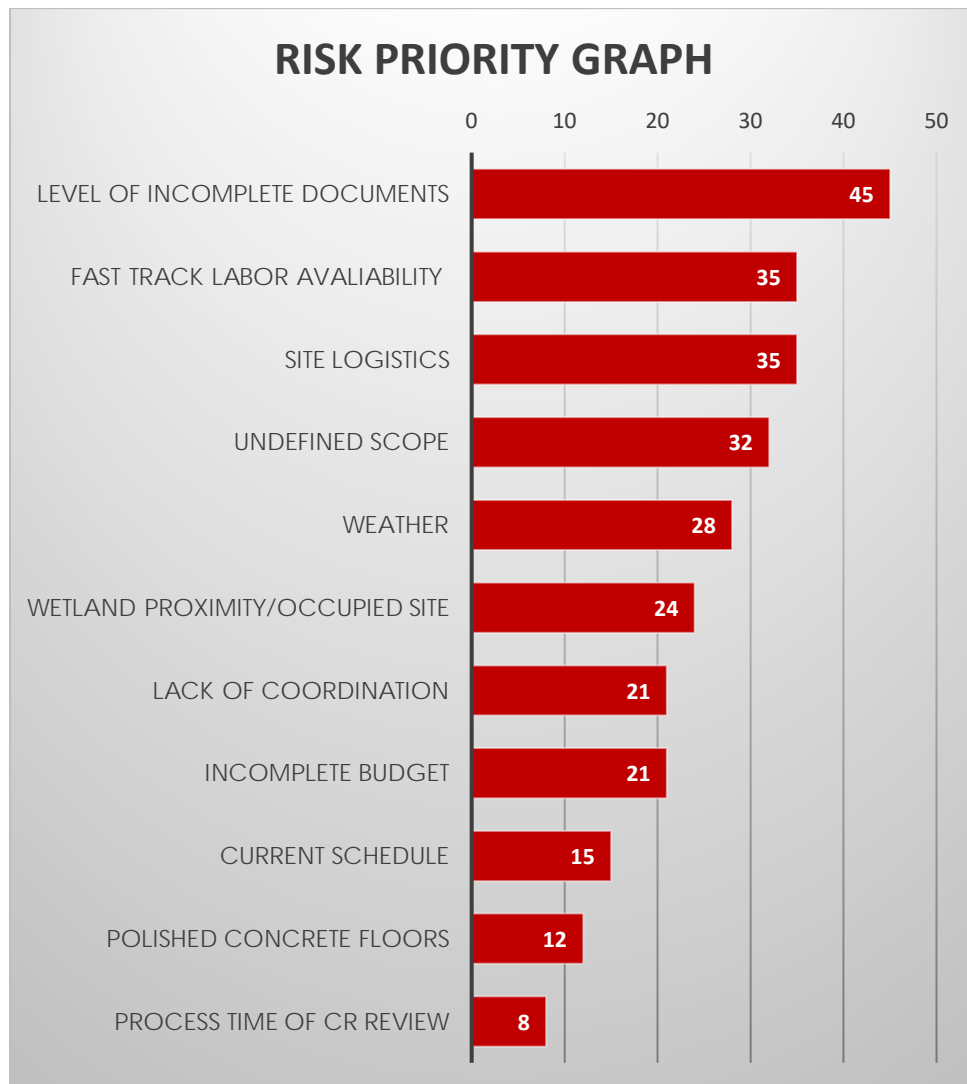
The Robinson Company estimate dated 9/28/2018 was reviewed as part of the construction document review. Estimate review comments as follows:

- Define the \$150,000 Phasing cost on cover page.
  - Is this acceleration cost?
  - Is this different than the Compressed Main Building cost?
- Escalation on Page 3 calculated to October 29, 2018. Normal escalation is calculated to the mid-point of construction.
- Line items throughout contain "Allowance", "Lump Sum", or both. Items in budget can be treated as Lump Sum but Allowances should be listed separately.
- A number of line items seem light in cost i.e. 12" CMU Wall. Recommend a more detailed review.
- Page 15 and page 21 have General Conditions, Insurance, and Risk Insurance costs. It appears from the Phasing Plan that the Main Building, CTE, and Fieldhouse work all occur within the same time frame. If so, then there should be no additional General Requirements cost for this work.

### Risk Analysis

While Risk Management should be conducted throughout the life-cycle of a project, Risk Analysis integrated into the review study utilizes the skills and experience of the independent subject matter experts. The process is used in identifying, evaluating, and prioritizing potential project risks to assist the District and design team with Risk Management Plan activities.

The team brainstormed potential risks for the project based on the current status of documents provided for the study. The team then conducted Qualitative Risk Analysis with the nominal group technique collectively assessing risk probability, and resultant potential cost, and project schedule impacts for each risk item. To prioritize the Risk Register, these impact scores are multiplied, sorted by the resultant weighted scores, then graphed. The risk priority graph appears below.



## II. PROJECT DESCRIPTION

### Project Information:

<i>New/Mod</i>	<i>Building</i>	<i>Area</i>	<i>Cost Est.</i>	<i>\$/SF</i>
New	High School	241,268 SF	\$70,090,852	309 \$/SF
New	CTE Building	13,958 SF	\$ 4,442,045	318 \$/SF
Mod+Add	Fieldhouse	6,358 SF	\$ 1,361,897	267 \$/SF
Mod	Batting Cages	4,320 SF	\$ 346,424	79 \$/SF
Mod	Grandstand	± 2,500? SF	\$ 107,192	± 43 \$/SF
	Site and Street front		\$17,044,889	
	Phasing and schedule		\$ 900,000	

**Total Cost Estimate: \$ 94,293,200**

*Costs Extracted from Robinson Cost Estimate*

Location: 7400 272nd St NW, Stanwood, WA 98292

Schedule: Construction December 2018 – May 2021

Delivery Method: Design – Bid - Build

Building Construction Type: Type II-B (High School and CTE buildings)

Occupancy: Educational Students: 1,200

### Project Description:

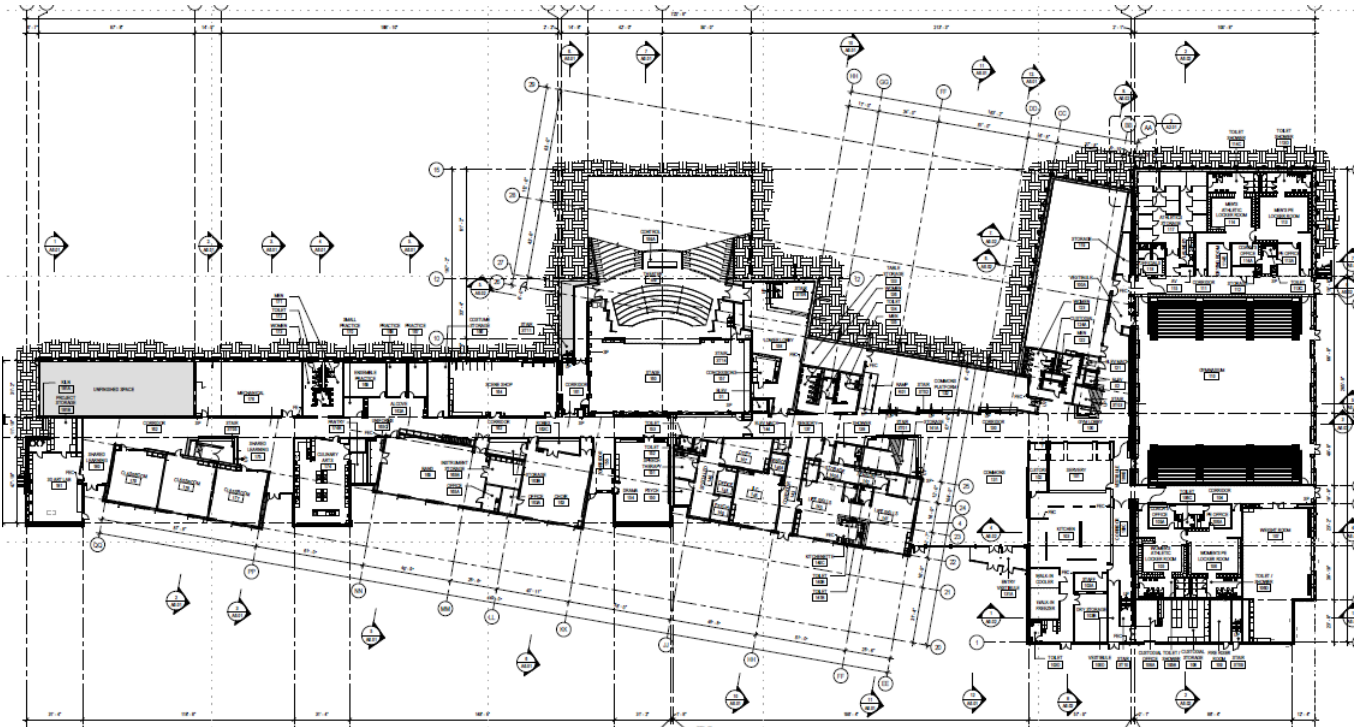
This is a replacement high school project, to be constructed on the same campus as the existing high school. The existing school is to remain occupied during construction and demolished in the final phases after moving into the new structure.

The new high school design is a 241,268 square foot, 3 floor, steel structure (Type 1-B). In addition to the new main campus high school building, other campus development includes: construction of a new 13,958 square foot CTE / Shop building adjacent to the high school with relocated and renovated greenhouses, renovations and an addition to an existing fieldhouse structure, renovations to the existing batting cage building, and grandstand improvements. Site amenities include new tennis courts and refinish of the existing, new soccer, baseball, and softball fields. Site development also includes new on-site parking areas for students, staff, and a separated bus area and circulation.

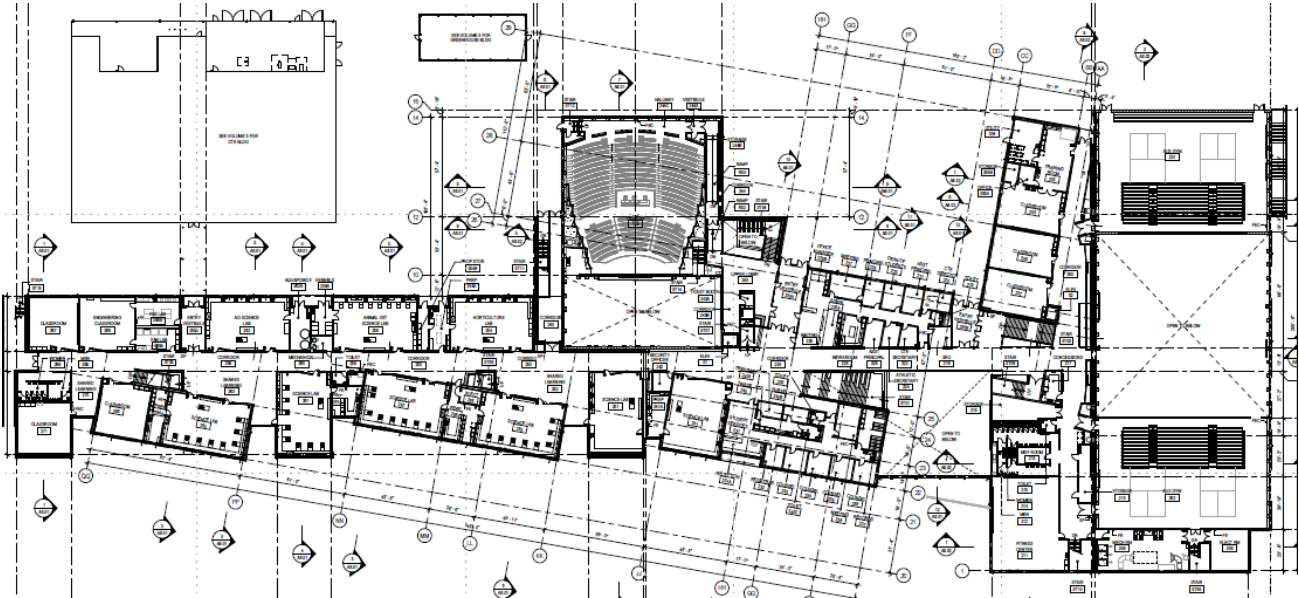




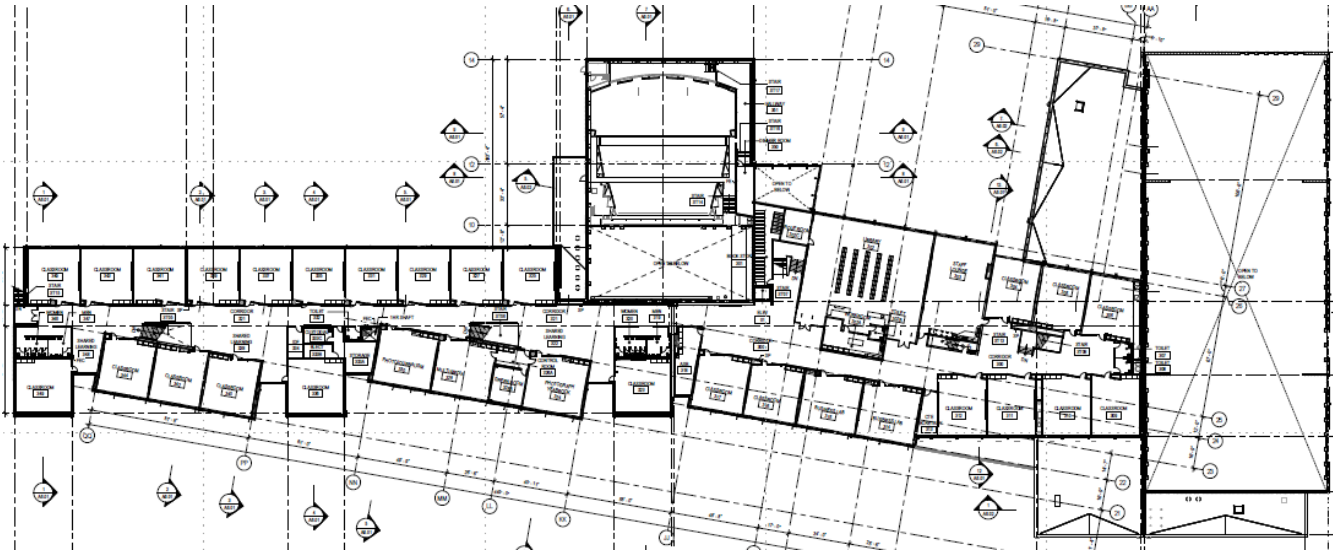
Overall First Floor Plan



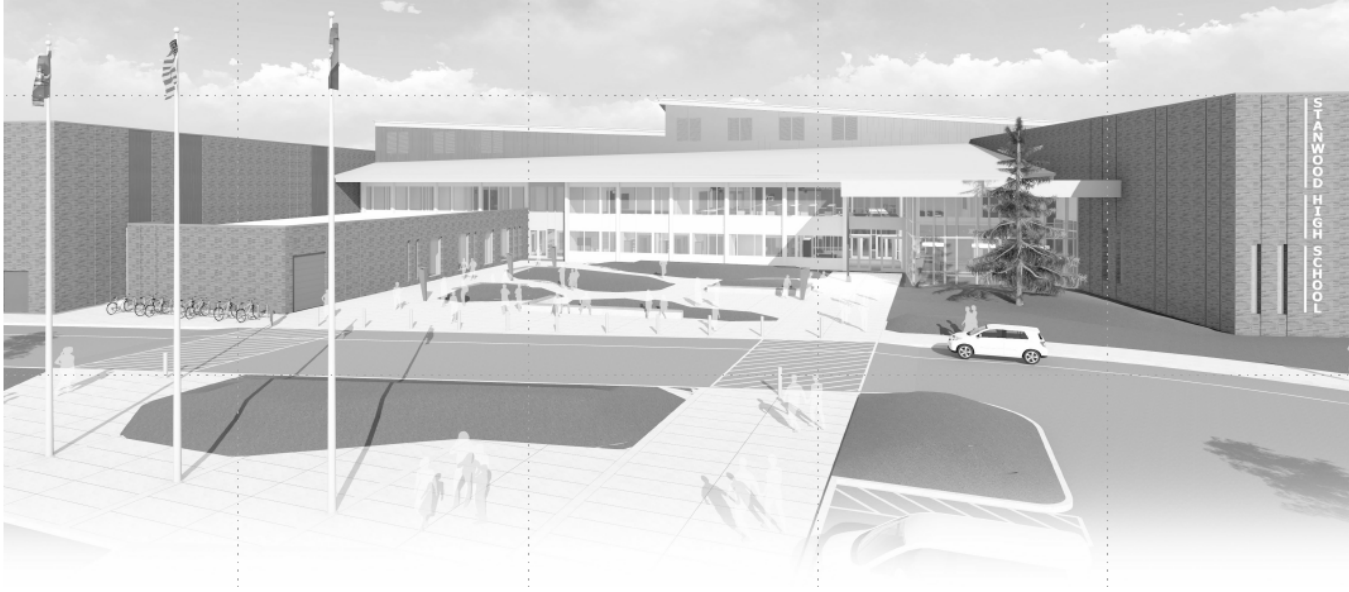
Overall Second Floor Plan



Overall Third Floor Plan



Rendering



### **III. KEY ISSUES**

The following pages summarize key issues found on the annotated drawings and specifications.

Annotated documents may include the following constructability review abbreviations:

AVW = At variance with  
CN = Coordination needed  
DIM = Dimension (inconsistent, missing, or unclear)  
DUPE = Duplicate  
NF = Not found  
UB = Un-biddable

**Construction Management Key Issues**

KEY ISSUE	REFERENCE	DESCRIPTION
CM-1	PROJECT MANUAL/PLAN SET	<p><b>Coordination:</b> Proposed summary of work and specifications are incomplete and/or unclear. Specifications and scope of work are not fully coordinated with construction drawings. Bid form does not coordinate with plans and specifications. Current plans lack coordination between all disciplines including mechanical, electrical, civil, exteriors and interiors. Contract documents require an extensive coordination effort to create a biddable and buildable set.</p>
CM-2	A3.00 THROUGH A9.00	<p><b>Construction Details:</b> Connection, envelope, finishes, and schedules are incomplete, unclear, or non-existent. A number of sheets refer to details that do not exist.</p>
CM-3	PHASING PLAN	<p><b>Phasing Plan:</b> Project spec/drawings do not contain a phasing plan or language describing contractor requirements. Detailed information should be provided for the bidding contractors about site and school requirements with emphasis on staff/student safety, fire access and protection, and operational logistics. Additionally, a comprehensive utility phasing plan should be developed to minimize the risks associated with the existing school operating during the construction of the new school.</p>

**Civil Key Issues**

KEY ISSUE	REFERENCE	DESCRIPTION
C-1	C24.09, C24.10	<b>Utility Coordination: Plumbing.</b> The Sewer, Water, and Gas locations and inverts should be coordinated with Mechanical. Currently the Civil plans show sanitary inverts at higher elevations than Mechanical. Mechanical is not showing all water, sewer, and gas connections that Civil is showing.
C-2	C23.02, C23.03	<b>Catch Basins.</b> The plans currently show (8) Type 1 catch basins that should be shown as Type 2 based on depths greater than 5-feet.
C-3	C33.06, C33.07	<b>Utility Coordination: Drainage.</b> Coordination is needed between Civil and Landscape where the proposed field drains connect to the new storm system. The locations and inverts currently shown for connection of the underdrains for the soccer, softball, and baseball fields do not match.

**Landscaping Key Issues**

KEY ISSUE	REFERENCE	DESCRIPTION
L-1	L2.01	<b>Tree-Utility Coordination.</b> Coordination is needed with Civil where new trees are proposed over new storm drain utilities. Coordination is also needed with Electrical to avoid utility trenching through root systems of existing trees to be protected.

**Architectural Exteriors Key Issues**

KEY ISSUE	REFERENCE	DESCRIPTION
AE-1	A4.11 (MULTIPLE SHEETS)	<p><b>Exterior Details.</b> Level of completeness of exterior envelope drawings and details is inconsistent and incomplete. Exterior details for roofing, exterior walls, windows, doors, and other building enclosure systems are incomplete or completely missing from the drawing set. Continuity of exterior air/vapor barrier is not clearly documented and where it is documented, it is inconsistent from diagrams to details. Assessment of constructability of exterior envelope cannot be fully evaluated. Primary and secondary weather barrier documentation is incomplete. Additional information is required for complete bid documents.</p>
AE-2	A5.13 (MULTIPLE SHEETS)	<p><b>Vapor Barrier Continuity.</b> Vapor barrier continuity is not fully detailed due to incomplete or missing details. Wall and roof penetrations are not shown on overall drawings and are often not detailed. Vapor barrier continuity is not described and cannot be fully evaluated.</p>
AE-3	A10.41	<p><b>Interdisciplinary Coordination.</b> Coordination with specifications and other design disciplines cannot be fully evaluated. For example, structural support for relieving angles and control joints is not shown on elevations or details. Exterior drawings such as roof plans, exterior elevations, etc. are not coordinated with mechanical, electrical, plumbing, and fire protection disciplines. mechanical, electrical, plumbing, and fire protection items are not shown and penetrations are not detailed.</p>



**Architectural Interiors Key Issues**

KEY ISSUE	REFERENCE	DESCRIPTION
AI-1	A9.1#, A9.2#, A9.3# (FLOOR FINISH PLANS)	<p><b>Polished Concrete Floors.</b> Achieving visually-acceptable polished concrete floors can be difficult and adds complexity to the design documents as well as to the construction process. The specified "salt &amp; pepper" finish is a subjective standard and may or may not be achieved with the specific grits listed. The present design attempts to mitigate some of the issues: cambered steel beams, slightly deeper steel deck, shoring of the composite floor beams for several weeks, and somewhat closer sawcut joints. Shoring the 2<sup>nd</sup> and 3<sup>rd</sup> floors will add complexity, cost, and time to the construction work. Timing of the polishing has cost and appearance issues. If done early, appearance along partitions will be better, but protection through the rest of the project will be needed. If done later, variation in the finish along partitions can be expected. However, cracking of the concrete fill is very likely over time. Whatever level of polishing is achieved during construction will be compromised. Other corridor floor finishes, such as rubber tile or rubber sheet, would not require shoring and would not tend to telegraph later cracks.</p>
AI-2	DRAWING NOTES / SPECIFICATIONS	<p><b>Reference Discrepancies.</b> Various drawing-to-specification references and specification-to-drawing references are inaccurate or in error. Results could include "per detail" use of unsuitable sealants or other problems, or selection of interior paints from the "wrong" list. Recommend "third party" cross-checking of every drawing note and line-by-line reading of specification sections.</p>
AI-3	GENERAL NOTE REFERENCES	<p><b>Remote General Notes.</b> There are many sheets for some parts of the drawings – Floor Plans, Reflected Ceiling Plans, Interior Elevations, Floor Finish Plans – and often</p>

CONSTRUCTABILITY REVIEW

KEY ISSUE	REFERENCE	DESCRIPTION
		General Notes are presented only at the start of the group of drawings. This may result in important notes being missed during construction. Recommend, as space allows, periodically repeating Legends and General Notes, or at the very least including references to where the notes and legends may be found.

**Structural Key Issues**

KEY ISSUE	REFERENCE	DESCRIPTION
S-1	STRUCTURAL PLANS AND DETAILS	<p><b>Architectural Coordination.</b> Although the primary structure appears to be coordinated with the building architecture, secondary building details and features such as foundation stem walls, foundation insulation, veneers and metal panel siding support, veneer jointing, stair details, on grade and raised floor depressions, slab steps, edge of slab, seismic joints, catwalk and back of house framing, storefront support, and mechanical room requirements lack coordination with other disciplines. Although many details are included, they are often at variance with architectural and other details or are not referenced making it hard to determine how to use and find the detail locations. The lack of secondary coordination may lead to delay of shop drawing production, RFI's and development of new details, change orders, and rework where coordination problems are not caught earlier.</p>
S-2	STRUCTURAL PLANS AND DETAILS	<p><b>Slab Depressions.</b> Structural notes reference Arch drawings for locations of depressions and show some depressions on structural plans. However architectural drawings do not include slab plans, and information on depressions is lacking. For example, the restrooms require depression, but are not shown on the structural drawings. The depth of depression required may exceed the maximum 1/2" allowed for concrete on metal deck in restrooms on the framed floors. The auxiliary gyms need to be depressed for a floor system, but this is not indicated on the structural drawings. There are also depressions and other slab requirements on the Food Service drawings that are not referenced in the structural drawings. The lack of coordination may lead to RFI's, delays in</p>

CONSTRUCTABILITY REVIEW

KEY ISSUE	REFERENCE	DESCRIPTION
		<p>approvals, change orders, and rework where slab depressions are not installed.</p>
<p>S-3</p>	<p>STRUCTURAL PLANS AND DETAILS</p>	<p><b>Miscellaneous Details.</b> Although the primary structure appears to be well detailed for most typical framing situations, the building architecture requires many complicated geometries and interfaces with different types of construction that vary from typical framing and foundation details. Many of these situations are addressed in specific details, however there are some obvious situations where specific details provided now could eliminate problems during detailing and possible change orders for work that is not specified on the plans. For example, three wide flange beams being supported on the end of a concrete wall at the second-floor framing. In addition, detailing of secondary structures, while addressed on the structural drawing to some extent, are often not referenced, have few section cuts, and appear to be incomplete. A good example is non-bidder designed stairs, which have varying configurations but are not clearly laid out and detailed. Mechanical mezzanine framing requirements such as equipment pads and secondary framing to support units are also not shown or referenced. A review of secondary framing and better referencing will clarify framing for bidders and may show where additional detailing is warranted.</p>

**Mechanical Key Issues**

KEY ISSUE	REFERENCE	DESCRIPTION
M-1	MECHANICAL PLANS AND DETAILS	<b>Coordination.</b> Details, equipment schedules, and mechanical sections have not been fully coordinated with plan sheets, specifications, and other disciplines. Additional coordination of work scopes and trades responsible needed (welding hoods supports, green house existing equipment, etc.).
M-2	M2.36, M2.61	<b>Incomplete Systems.</b> Piping, duct, control diagrams and control sequences of operation incomplete on multiple systems and plan sheets.
M-3	M2.22	<b>Sections and Details.</b> Multiple plumbing, mechanical, electrical and fire protection systems pass through congested areas with structural and architectural space limitations. Consider adding MEP sections that include structural and architectural elements for all congested areas. Consider additional plumbing and mechanical details.

**Electrical Key Issues**

KEY ISSUE	REFERENCE	DESCRIPTION
E-1	E5.01	<b>Detail 4.</b> Ensure a Sequence of Operations is provided at bid time that includes the integration and coordination of Lockdown, Access Control, Intrusion, Public Address, Intercom, CCTV and Fire Alarm Systems.
E-2	E7.05	<b>General Note 3.</b> This comment is used throughout the Systems Drawings and is difficult to quantify and bid accurately. Please quantify or make as an allowance.
E-3	SPECIFICATION 265600 SPECIFICATION 011150 ALT. #9	<b>Emergency Lighting Inverter.</b> There is an Emergency Lighting Inverter listed in Spec. 265600, yet there is not one referenced anywhere in the drawings. Alternate 9 references Photovoltaic Support in Base Bid, this is not shown in the Electrical Drawings.

#### **IV. DETAILED COMMENTS**

The following detailed comments are grouped by discipline. Each comment includes an associated drawing number, spec number, or other document reference. The right side of each comment sheet provides space for the design teams to respond to each comment to facilitate owner and/or prime A/E (architect) to track comment resolution and back check incorporation into final CD's.

The detailed comments are often representative of numerous instances in the documents. Annotations in the documents are in turn often representative of numerous instances throughout.

**DISCIPLINE:** *Construction Management* **Stanwood High School**

CONSTRUCTABILITY REVIEW TEAM			DESIGN TEAM			
VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 1	G0.00A	Provide site address.				
Volume 1	G0.00A	Volume numbers should match G0.01 index.				
Volume 1	G0.00A	Add narrative about view of building.				
Volume 1	G0.01A	Volume numbers should match G0.01 index.				
Volume 1	G0.01A	Provide site plan and Index reference.				
Volume 1	G1.01	Add CTE to Project Sequence Plan.				
Volume 1	G1.01	Change "Under separate contract to "NIC" (Not In Contract).				
Volume 1	G1.01	Graphically show New vs. Existing.				
Volume 1	G1.02	Detail 7 - Show layout at parking.				
Volume 1	G1.02	Detail 6 - Verify demolition timing of bus drop off area.				
Volume 1	Topo 2	Proivde full Topo/Boundary map with sections.				
Volume 1	C23.07	Access risk between occupied bldg, wetland, and new bldg.				
Volume 1	C31.03	Differentiate hatch pattern between bldg and concrete.				
Volume 3	G0.01C	Volume numbers should match G0.01 index.				
Volume 3	S2.11	Coordinate recessed slab areas with FS1.03.				
Volume 2	G0.00B	Volume numbers should match G0.01 index.				
Volume 2	G0.01B	Volume numbers should match G0.01 index.				
Volume 2	A0.02	Delineate Exterior wall types with E##.				
Volume 2	A4.12	Details incomplete/unclear.				
Volume 2	A5.11	Details incomplete/unclear. Risk of failure.				
Volume 2	A5.12	Details incomplete/unclear.				
Volume 2	A5.13	Details incomplete/unclear.				
Volume 2	A5.14	Details incomplete/unclear.				
Volume 2	A5.15	Details incomplete/unclear.				
Volume 2	A5.16	Details incomplete/unclear.				
Volume 2	A6.12	Section 2 - Provide starting elevation for roof.				
Volume 2	A6.16	Section 3 calls out detail N & S on A5.12. Does not exist.				
Volume 2	A6.17	Wall sections - Show actual elevation for top of slab.				
Volume 2	A7.11	Section 5 - Detail stringer connection at wall.				
Volume 2	A7.14	Detail ladder connections.				
Volume 2	A7.21	Detail 14 - Missing sheet callout.				
Volume 2	A8.24	Elevation 1 - Hoop connection appears to be in window.				
Volume 2	A9.11	Provide finish plan on all Floor Finish sheets.				
Volume 2	A9.16	Hatch out unfinished area. Currently shows carpet.				
Volume 2	A9.53	Detail 12 - Provide connection details for roll-up door.				
Volume 2	A10.00	Add Hardware Group column for door schedule.				
Volume 2	A10.41	Details should be reviewed by envelope consultant.				



DISCIPLINE: <u>Civil</u>			Stanwood High School			
CONSTRUCTABILITY REVIEW TEAM			DESIGN TEAM			
VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 1	Topo Survey 1	Include an overall topographic survey sheet of the entire site.				
Volume 1	A1.11, C23.10	Service yard drainage needs coordination with civil.				
Volume 1	C20.00	Add building or phase indicators to sheet titles.				
Volume 1	C21.03, C22.02, C22.11, C23.02, C24.11, C25.11, C31.02	Edit matchline callouts.				
Volume 1	C21.07, C21.08	Clarify if the quarry spalls are to be protected or removed.				
Volume 1	C21.15	Verify it is reasonable to protect existing trench drains and ticket booth during concrete pavement demo.				
Volume 1	C22.02, C22.20, C23.09, C23.21, C35.05	Detail callouts and titles lack consistency.				
Volume 1	C23.02, C23.03, C23.08, C23.10, C26.01, C26.02	Revise Type 1 catch basins to Type 2 when depth is greater than 5 feet per standards.				
Volume 1	C23.07, C23.08, C23.09	Roof drain connections need coordination with Architectural and Plumbing.				
Volume 1	C23.09, C23.10, C24.09, C24.09	Coordinate with Landscape for potential tree/utility conflicts.				
Volume 1	C23.10	Provide spot elevations in service yard area.				
Volume 1	C24.02, C24.03, C24.08, C24.09, C24.10, C24.14, C26.01, C26.02, C34.02, C34.07	Provide utility crossing information.				
Volume 1	C24.07, M1.01C	Coordinate fire service and gas connection with Mechanical.				
Volume 1	C24.08, C24.09, C34.02	Provide Finish Floor Elevation information, typical.				
Volume 1	C24.08, C24.09, C24.10, C24.14, C24.15, C34.02, C34.07	Coordinate sanitary inverts with Mechanical.				
Volume 1	C24.09	Coordinate location of grease waste line with Mechanical.				
Volume 1	C24.09	Coordinate extent of electrical conduit with Electrical.				
Volume 1	C24.09, C25.02, C25.10, C26.03, C26.04, C32.03, C32.04, C32.05, C32.06, C32.07, C33.03, C33.06, C35.02, C35.08	Revise detail callout.				
Volume 1	C24.14	Coordinate location of gas line with Mechanical.				
Volume 1	C25.10	Provide extent of possible restriping of parking lot.				
Volume 1	C26.05	Clarify overlapping notes.				

DISCIPLINE: <u>Civil</u>		Stanwood High School				
CONSTRUCTABILITY REVIEW TEAM			DESIGN TEAM			
VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 1	C31.02	Clarify extent of asphalt protection and removal.				
Volume 1	C33.02	Rain Garden and Detention Storage Under Field hatches shown in legend do not appear to be in plans.				
Volume 1	C33.03, C33.06, C33.07	Coordinate field drainage connections with Field plans.				
Volume 1	C33.06	Verify with Geotechnical Engineer that dispersion trenches as shown are acceptable on slope greater than 20%.				
Volume 1	C34.00	Label all buildings on overall plans, typical.				
Volume 1	C34.02	Provide note to route new water line around existing tree.				

DISCIPLINE: <u>Landscape</u>			Stanwood High School			
CONSTRUCTABILITY REVIEW TEAM			DESIGN TEAM			
VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 1	L1.03, L5.01	Revise Leaning Rail detail callout to match detail sheet.				
Volume 1	L2.01, L2.02, L3.01, L3.02	Verify new trees do not conflict with utilities, coordinate with Civil.				
Volume 1	L2.07, L3.07	Coordinate with Electrical to avoid trenching through existing trees to be protected.				
Volume 1	F1.42, F1.52	Coordinate with Civil for field drainage connections to storm system.				

**DISCIPLINE:** *Architectural Exteriors* **Stanwood High School**

CONSTRUCTABILITY REVIEW TEAM			DESIGN TEAM			
VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 2	G0.10	Use of building "1A" for both the CTE and west main building section confusing. Refer to Volume 5 for CTE building code info.				
Volume 2	G0.13	Verify that 2-hour fire rated wall along seismic joint at grid K.2 (second floor) is continuous to the roof. G0.13 indicates 1-hour fire rating, but first floor plan (G0.12) and other building separation walls are called out as 2-hour fire rated walls.				
Volume 2	G0.14	Verify that 2-hour fire rated wall along seismic joint at grid K.2 (second floor) is continuous to the roof. G0.14 indicates 1-hour fire rating, but first floor plan (G0.12) and other building separation walls are called out as 2-hour fire rated walls.				
Volume 2	1/G0.21	Vapor barrier shown at second floor level. Shouldn't this be at the level 1 floor level? If yes, coordinate with adjacent spaces and slab on grade to run along slab on grade. Vapor Barrier and slab on grade required at Unfinished space on Level 1. Additional details are required to show continuity at the exterior wall at Level 2.				
Volume 2	A0.01	Recommend this sheet be moved to the beginning of the G section. In addition, dimensioning rules are not established in general notes. For example: Are dimensions to centerline of walls and columns and face of concrete and CMU walls? Or face of studs? Or face of wall finish?				
Volume 2	A0.02	Multiple partitions call for "glass mat gypsum sheathing" on interior face of wall. Verify whether this should be regular gypsum board.				
Volume 2	A0.02	Recommend adding slab on grade floor assemblies, slab on metal deck assemblies, and roof assemblies for clarity.				
Volume 2	A0.02	Partition type 21 - Add vapor barrier to list of components.				
Volume 2	A0.02	Partition Type 22-26 - Waterproofing would normally be at the face of the concrete wall and be protected by insulation. Verify layering and construction sequencing.				
Volume 2	A0.02	Wall Notes: Acoustical type B - Extend assembly full height of wall (not all walls go to a "deck").				
Volume 2	A0.02	Wall Notes: Acoustical Note 1 - At variance with specifications, coordinate.				
Volume 2	A0.02	Wall Notes: Acoustical Note 4 - At variance with specifications, coordinate. Recommend referring to specified sealant types.				
Volume 2	A0.02	Wall Notes: Acoustical Note 5 - Vibration isolation not required by mechanical, electrical, or plumbing drawings. Verify requirement and coordinate.				
Volume 2	A0.02	Wall Notes: Acoustical Note 7 - How is insulation to be secured in walls? Clarify and coordinate with specifications.				
Volume 2	A0.02	General Note 11: Verify that "solid polymer wall cladding" is used on the project and coordinate with specifications and revise as necessary.				
Volume 2	A0.02	General Note 12: Verify that "coated roof board" is used on the project and coordinate with specifications and revise as necessary.				
Volume 2	A0.02	General Note 13: Coordinate note with General Note 11. These notes appear to conflict.				

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VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 2	A0.11	Show enlarged plans for 2-hour fire rated partition locations to clarify intersections with adjacent partitions and structure.				
Volume 2	A0.11	Firestopping details for fire rated separations are not shown in project drawings.				
Volume 2	A0.21	Hatch patterns in details are not consistent with graphic symbols and conventional material representations. For instance, grouted CMU is shown as filled with concrete (4/A0.21) and some CMU is hatched with the same pattern used for rigid insulation (15/A0.21) and some details use hatch patterns where none is typically shown or intended such as rigid insulation hatch pattern at the door and frame (4/A0.21). Coordinate with graphic symbols on A0.01 and add new graphic symbols as appropriate for all materials.				
Volume 2	A0.21 (Multiple Sheets)	Typical for all detail sheets: Detail titles do not describe the nature of the view shown (plan, section, elevation, etc.). A0.21 is one example. Revise detail titles to clarify views.				
Volume 2	A0.21 (Multiple Sheets)	Typical for all detail drawings: Detail numbering is not sequential and illogical. Revise detail numbering to provide easier drawing navigation.				
Volume 2	A0.21	Construction sequencing for seismic joint details is unclear. For instance, in 16/A0.21, it is not clear how the insulation between the seismic joint and sheet metal exterior is installed and held in place.				
Volume 2	A0.21	Seismic joint details show sheet metal in inside corners and elsewhere that appear to be sacrificial. However, major repair work will be required to disassemble walls and install new sheet metal after a seismic event. Seismic joints allowing movement without damage are recommended.				
Volume 2	8/A0.21	Horizontal seismic joint location is unclear - it's not shown on the elevations. In addition, it's not clear how the wall above the seismic joint is supported or hung. Verify location and call out on elevations and clarify upper wall support.				
Volume 2	A0.23	Seismic joint covers sloping back to vertical walls will retain rain water and snow leading to potential water infiltration. Show seismic joint covers sloping away from the building.				
Volume 2	A2.01	At northeast and southeast corners of Gymnasium 110, exterior doors will likely require a vestibule to allow athletes and PE students to enter and exit to locker rooms due to energy code requirements. Verify and revise floor plans to include vestibule.				
Volume 2	A2.01	General Note: Show graphic scale on all floor plans, elevations, sections.				
Volume 2	A2.01	General Note: Drawing scales are non-conventional. Recommend use of standard scales to support clear communication.				
Volume 2	A2.01	Grids 4 through 9 at the left side of the sheet are not tied to grids on right side of sheet except in detailed plans. Show dimensional tie on overall plans.				
Volume 2	A2.01	At Unfinished space, vapor barrier required with floor slab to protect it. In addition, minimal access, mechanical, electrical, plumbing, and fire protection services are required even if the space is unoccupied.				

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VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 2	A2.02	Exterior elevation callouts are missing on overall plan sheets, typical. Add callouts.				
Volume 2	A2.11	Verify that exposed CMU pilasters at the west side of Weight Room 107 are desired. Verify if there are different requirements for visually exposed CMU.				
Volume 2	A2.11 (Multiple Locations)	General Note: In multiple locations, structural column sizes are the same as the stud depth for interior furring walls. Due to structural steel erection tolerances and baseplate sizes, columns will conflict with walls. Increase size of studs or provide additional space for construction tolerances, typical.				
Volume 2	A2.11	Verify requirement for fire rated wall between doors 100E and 108B. Coordinate with code plan.				
Volume 2	A2.11	At Grid 3/D, provide additional plan detail. Floor plan is unclear.				
Volume 2	A2.13 (Multiple Locations)	General Note: Multiple detail callouts are blank and details are not provided in drawing set. Complete details and callouts.				
Volume 2	A2.13	Piers along Grid 3 (south wall of Commons 131) are at variance with details. Coordinate and revise.				
Volume 2	A2.13	At Grid F.2 between 4 and 4.5, verify the requirement for a fire rated exterior wall and fire rated windows. Detail 7/A0.21 does not indicate a 2-hour fire rated wall. Revise partition types and details.				
Volume 2	A2.22	Grid 29 - Exterior wall partition type not called out.				
Volume 2	A2.24	Hatching at CMU piers at west wall of theater is inconsistent. Revise hatching.				
Volume 2	1/A2.43	Partition type 31BNA at south side of showers can't be installed as called out. One side of the drywall can't be fastened because the CMU wall (which will be installed first) will blocks access.				
Volume 2	A2.45	Coordinate structural floor elevation at stage for recessed wood sprung floor system.				
Volume 2	A4.01	Mechanical (some), electrical, and plumbing penetrations through the roof are not shown on the roof plan and not coordinated with those disciplines. Indicate on roof plan and provide details for penetrations.				
Volume 2	A4.01	Include building elevation callouts for easier navigation between drawings.				
Volume 2	A4.01	Walk mats/roof pathway are not shown on the roof.				
Volume 2	A4.01	At the north gutter between Grids E and C.2, (3) downspouts are shown, but calculations require (4). Revise.				
Volume 2	A4.01 & A5.07	Roof drains at the stair roof between E and GG appear to come straight down through the roof in front of the curtainwall. This may make access to the curtainwall for maintenance more difficult and present opportunities for climbing. Details for downspout support not included in drawings.				
Volume 2	A4.01	No access stairs are provided over 30'+ tall seismic joints, permitting damage to the seismic joint cover. Recommend providing access stairs.				

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VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 2	A4.01	No roof access is provided to the roof of the theater or immediately adjacent roof areas. Recommend providing roof ladders and/or roof hatch for access.				
Volume 2	A4.01	Details for fall arrest anchors at walls and roofs not provided.				
Volume 2	A4.01	Work point elevations are excessively precise (1/16" increments). Round to 1/4" increments.				
Volume 2	A4.01	No roof provided over the west stair at gridline S. Recommend providing roof structure to prevent snow/ice accumulation at required exit stair.				
Volume 2	A4.01	Roof drains at lower roof areas on south side of building not shown on plans (1 & 2/A4.01)				
Volume 2	A4.01	Drawing titles and numbering unclear. What is the drawing number for the overall roof plan? Revise.				
Volume 2	A4.01	Coordinate and detail intersection of seismic joints and gutter along south edge of building. Weather tightness and impact of 30" high seismic joints on gutter is unclear.				
Volume 2	A4.11 (All Exterior Details)	Key Issue (A4.11 is one example): Exterior envelope detailing is incomplete and not coordinated with other disciplines. Missing details include roof anchors, wall and roof penetrations by mechanical, electrical, and plumbing, parapet transitions at different height roof and at wall intersections, roof drain sumps, unit skylights, fire vent hatches, and through wall penetrations for scupper drains.				
Volume 2	A4.11	Gutter sloping is unclear at areas where the edge of the roof is flat. Provide detailing to show how water drains from flat gutters.				
Volume 2	A4.11	Soffit framing is shown anchoring into rigid insulation (no framing support for the soffit). Provide framing support for soffit.				
Volume 2	A4.11 (All Exterior Wall Details)	Brick ledger and relieving angle support not clearly indicated. Coordinate locations with structural, indicate on exterior elevations, and provide details.				
Volume 2	A4.11 (All Exterior Details)	Air barrier installation sequence around windows, doors, and other penetrations are not detailed. Vapor barrier continuity is not clearly indicated. Provide additional details showing installation sequence and continuity of air and vapor barriers in all exterior details.				
Volume 2	A4.11 (All Exterior Details)	Notes and dimensions are incomplete. Provide complete notes and dimensioning for all details or indicate where information is to be found. Generally it's recommended to provide typical notes on at least one detail on each sheet.				
Volume 2	A4.11	In some details, the continuity of the insulation at transitions from windows and walls to soffit areas is not clearly shown.				
Volume 2	A4.11 (All Exterior Details)	Detail numbering and arrangement is inconsistent and illogical on detail sheets. Revise detail numbering.				
Volume 2	A4.12	Details incomplete or missing.				
Volume 2	A 4.14	Details incomplete or missing.				
Volume 2	9, 10, 14/A4.14	Roofing upturns at penetrations not indicated. Add dimensions for minimum roofing upturns.				

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VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 2	5/A4.14	Downspout anchoring to exterior brick veneer is inadequate support. Anchor to added structure within wall system. Recommend coordinating knife plate support with joint in brick pattern.				
Volume 2	5/A4.14	Downspout is held away from wall with gaps behind the drain pipe allowing it to be climbed. Recommend consideration of alternate attachment to prevent climbing.				
Volume 2	5/A4.14	Recommend slotted or oversized holes where downspout attached to support to allow for construction tolerances.				
Volume 2	5/A4.14	Anchoring for plywood backing at metal panel system is unclear. Indicate blocking and attachment requirements.				
Volume 2	A5.01 (All Exterior Elevations)	Per specification 048160, brick module is 12" long (nominal). Brick module used on elevations is 8". Saw cut bricks are more vulnerable to deterioration. Coordinate brick module and window/wall layouts.				
Volume 2	A5.01 (All Exterior Elevations)	Relieving angle supports and control joints for masonry veneer not shown on exterior elevations.				
Volume 2	A5.01 (All Exterior Elevations)	Mechanical, electrical, plumbing items are not shown on exterior elevations, not coordinated, and not detailed. Show items and provide details for installation.				
Volume 2	A5.01	Exterior wall material west of grid D not indicated. Show wall material.				
Volume 2	A5.02	Material legend not shown. Add material legend to each elevation sheet.				
Volume 2	A5.02	Notes and detail callouts not shown on details 2 through 7 and/or are incomplete. Additional details recommended to be shown and called out at all material transitions.				
Volume 2	1/A5.02	Details at bottom of elevation not called out correctly. P & Q/A5.12. Revise detail callouts.				
Volume 2	1/A5.07	Roof drain scuppers and parapet penetration details are partially complete. Complete details and call out on elevations.				
Volume 2	1/A5.08	Downspouts at storefront system not shown. Show/indicate on elevations and call out details.				
Volume 2	3/A5.08	Detail at brick veneer transition to roof not completed. Provide detail and callout on elevations.				
Volume 2	A5.11	Support system for exterior metal panel system not indicated on details. Show how specified system works with weather barrier, insulation, and metal panel system.				
Volume 2	A5.11 (And Other Details)	Sealant and backer rod indicated in several places is not deep enough for both sealant and backer rod or does not provide support for backer rod. Sealant is often not able to be accessed for maintenance and/or replacement in the future and will be long term leak points. Sealant often does not show redundant weatherproofing to ensure long term weather tightness of building.				
Volume 2	2/A5.11	Top track at partition appears to have a custom shape. Verify if custom shapes are required. Recommend revising to a bent sheet metal angle. Also, verify if deflection track/connection is required.				
Volume 2	1/A5.11	Verify compatibility of self-adhered membrane and damp-proofing. Provide/show separation if required.				



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VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 2	A5.12	Move footing drain pipe to bottom of gravel to prevent water from collecting at the bottom of the gravel area. Typical in all details.				
Volume 2	1-8/A5.12	Foundation steps to allow edge of slab insulation. Recommend narrowing foundation wall to simplify forming of concrete. See markup on 5 & 6/A5.12.				
Volume 2	1-8/A5.12	On exterior side of foundation, concrete steps in and out depending on exterior wall material above. Recommend making foundation wall a constant thickness to simplify forming.				
Volume 2	4/A5.12	Confirm extent of insulation at slab edge meets code requirement.				
Volume 2	5-10/A5.12	Sealant joint at edge of slab under drywall cannot be maintained. Verify maintenance requirements for this sealant joint.				
Volume 2	7/A5.12	Recommend extending flashing down the face of the concrete footing for continuous vapor barrier.				
Volume 2	8/A5.12	Recommend aligning face of CMU with face of concrete foundation for full structural support of CMU.				
Volume 2	14/A5.12	Verify waterproofing system is bentonite not "EPRO". Revise note.				
Volume 2	15 7 16/A5.12	No continuity of insulation or waterproofing at beam. Revise details.				
Volume 2	16/A5.12 (and all other details)	Verify spelling at all details (including titles and notes).				
Volume 2	A5.13	Incomplete and/or missing details. Notes, dimensions, gridlines, and references incomplete on all details. Coordinate thickness of insulation in details. Show support system for masonry veneer anchors. Recommend showing reinforcement for coordination with structural.				
Volume 2	3 & 4/A5.13	Floor plan callouts for details say "sim" and refer to these details, but details do not indicate configuration of similar condition. Show similar condition dashed in on details, including notes and dimensions.				
Volume 2	5/A5.13	Show material callouts in details at least once on each sheet.				
Volume 2	6/A5.13	Verify exposed CMU at door jamb is acceptable. Coordinate correct wall assembly as shown on the A2.24 floor plan.				
Volume 2	11/A5.13	Is brick thinner at this detail or is it stepped back similar to detail 3/A5.14? Verify.				
Volume 2	4/A5.14	Provide more space behind recessed brick for airspace and installation tolerances.				
Volume 2	A5.14	General Note: Clarify what type of detail is shown on all detail titles (plan, section, elevation, etc.).				
Volume 2	A5.14	Incomplete and/or missing details. Notes, dimensions, gridlines, and references incomplete on all details. Coordinate thickness of insulation in details. Show support system for masonry veneer anchors. Recommend showing reinforcement for coordination.				
Volume 2	1/A5.15	How is the sunshade attached to the building? How is it integrated with the building enclosure?				
Volume 2	3/A5.15	Show flashing below plan cut for clarity. Call out section detail.				
Volume 2	6/A5.15	Incomplete details. Notes, dimensions, gridlines, and references incomplete. Show support system for masonry veneer anchors. Show slope and dimensions of flashing.				

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VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 2	A5.15	Define dimension from gridline to face of wall or centerline of stud framing for all conditions.				
Volume 2	11/A5.15	Roof vapor barrier is a different product and installer than the wall vapor barrier. Products may not be compatible; verify. Show transition between materials in details.				
Volume 2	14/A5.15	Same detail as 6/A5.15? Show backing for metal panel support system. See 6/A5.15 for additional notes.				
Volume 2	16/A5.15	Recommend sloping top of concrete slab for drainage. Call out minimum R-value for insulation and minimum thickness. Detail is at variance with the wall section; coordinate details.				
Volume 2	A5.16	Incomplete and/or missing details. Notes, dimensions, gridlines, and references incomplete on all details. Coordinate thickness of insulation in details. Show support system for masonry veneer anchors. Recommend showing reinforcement for coordination.				
Volume 2	A6.01 & A6.02	Drawing scale for all sections is atypical. Use typical scales to facilitate coordination and communication.				
Volume 2	A6.11 thru A6.31	Wall section drawings incomplete. Notes, dimensions, gridlines, and references incomplete on all details. Coordinate thickness of insulation in details. Show support system and relieving angles for masonry veneer. Show all detail callouts.				
Volume 2	1/A6.11	How is the sunshade attached to the building? How is it integrated with the building enclosure?				
Volume 2	1/A6.12	Update all detail references on wall sections and other drawings. Many are incorrect.				
Volume 2	2/A6.12	Work points are called out in wall sections, but not where to find the dimensional information. Refer to roof plan or other source for required work point elevations.				
Volume 2	1/A6.13	Relieving angle supports and control joints for masonry veneer not shown on wall sections.				
Volume 2	1/A6.14	Relieving angle supports and control joints for masonry veneer not shown on wall sections. Add detail callouts.				
Volume 2	2/A6.14	Show bracing for soffits and details at material transitions and directions. Some components conflict with structure, revise. Mechanical, electrical, and plumbing scope not shown; show on drawings and coordinate with other disciplines.				
Volume 2	3/A6.16	Is concrete wall keyed into footing? Is a water stop required at this joint as well? Verify and show in wall section and details. Confirm requirement to extend furring wall above ceilings and revise section. Flat slab at recessed entry will not drain - revise to sloped slab and coordinate with details. Verify vertical wall section under door at recessed entry and coordinate with details for weatherproof enclosure. Verify enclosure at bottom of soffit wall above recessed entry and show detail.				

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VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 2	A6.24	Wall section drawings incomplete. Notes, dimensions, gridlines, and references incomplete on all details. Coordinate insulation at slab edges and foundations in details. Show support system and relieving angles for masonry veneer. Show all detail callouts. Show structural connections to walls.				
Volume 2	A7.14	Ladder details incomplete. Show attachments, roof and wall penetrations, rungs, spacing, platforms, cross bracing, structural supports, etc. Show elevations and plans at each ladder - or typical details.				
Volume 2	A7.31 & A7.32	Elevator detail plans incomplete. Notes, dimensions, gridlines, and references incomplete on all details. Show all detail callouts. Elevator pit plans not shown. Waterproofing and damp proofing not shown on details.				
Volume 2	7/A7.32	Elevator panel at elevator 01 should show three (3) floors in control buttons.				
Volume 2	8/A7.32	Additional detail for backing is recommended to show location of backing and attachment of backing to support system.				
Volume 2	A9.00	Finish #92: Board Formed Concrete - Coordinate product and terminology for form liner with specifications.				
Volume 2	A10.21	Verify specification section for fire rated windows is correct. It seems to be Section 084123, but if not, additional specification section may be required. Coordinate product selection to match other similar windows elsewhere in the building.				
Volume 2	A10.41 - A10.43	Incomplete details. Notes, dimensions, gridlines, and references incomplete on all details. Show support system for masonry veneer anchors and exterior metal panel cladding.				
Volume 2	A10.41	Flange on vinyl windows does not provide significant length to fasten window into framing. Installation will be difficult.				
Volume 2	6 & 7/A10.41	Show support for ledger angle. Extend mortar stop up above through wall flashing to prevent blockage from spilled mortar.				
Volume 2	12/A10.41	Shims and insulation behind sun shade flange will be difficult to install. Insulation can't be cut thins as shown in the detail and will compress. Shims aren't shown at left edge of sun shade flange. No support/backing or attachment is shown for the sun shade.				
Volume 2	1/A10.42	Widen detail to show siding materials dashed in. Include dimension point callouts to allow coordination with other details and disciplines.				
Volume 2	2/A10.42	Widen detail to show siding materials dashed in. Include dimension point callouts to allow coordination with other details and disciplines. Sealant not accessible for maintenance. Termination/continuity of air barrier around window is unclear at shim at head of window.				
Volume 2	3 through 20/A10.42	Reference details 1 and 2 for information around storefront head and sill details. Some details appear to be similar conditions and may require additional 6" scale details.				

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VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 2	4/A10.42	Verify anchorage of storefront system. Powder actuated fasteners and drilled in anchor bolts may spall edge of concrete when they are too close to the edge of the slab.				
Volume 2	5/A10.42	Show backing for the support system for brick veneer and metal wall panel cladding.				
Volume 2	A10.42	Review and verify spelling for text notes and detail titles is correct.				
Volume 2	7/A10.42	Indicate dimension from header to storefront mullion. Indicate sealant type per specifications.				
Volume 2	7 & 12/A10.42	Locate head mullion of storefront system (vertically) in assembly. Header appears to be combustible wood; verify this is allowed in Type II construction (revise to metal framing?). If allowed, indicate how wood is supported and the attachment.				
Volume 2	10 & 11/A10.42	No secondary weather seal is provided at storefront windows. Provide secondary weather seal. It is unclear where water weeps out of storefront system. Ledger angle may prevent evacuation of water from storefront system, verify and revise as necessary.				
Volume 2	A10.42	Verify insulation requirements at metal panels. As opaque wall sections, it may need to meet wall insulation requirements.				
Volume 2	14/A10.42	Extend mortar stop above through wall flashing. Same hatching is used for two different types of insulation (confusing and inconsistent graphics). Show structural support for lintel angles.				
Volume 2	16/A10.42	Verify intent to run gypsum wallboard behind storefront to exterior face of wall. Is this required/desirable? Coordinate with 1 & 2/A10.42 or provide additional 6" scale detail. Coordinate downspout mounting and support details, this is AVW other details. Break metal around downspout is subject to damage and denting. Provide support for light gauge sheet metal to minimize damage. Rough opening doesn't typically include gypsum wallboard; develop consistent dimensioning system for rough openings and coordinate with other opening details.				
Volume 2	17/A10.42	Check spelling. Provide support for light gauge sheet metal to minimize damage.				
Volume 2	1/A10.43	Verify if metal framing and gypsum wallboard is required above ceiling.				
Volume 2	2/A10.43	Verify if unfinished underside of window sill is acceptable. MDO can expand and swell with atmospheric moisture. Also, consider a "beauty" bead of sealant at the top edge of the drywall.				
Volume 2	6/A10.43	If exterior soffit on left of detail is cold, indicate how thermal barrier and vapor barrier is continued up to structural floor slab above.				
Volume 2	7/A10.43	Gypsum wallboard cannot be cut in small pieces such as this detail shows. Recommend consideration of an alternate material or detail revision.				
Volume 2	A10.43	Check spelling of all notes and detail titles.				
Volume 2	9/A10.43	Incomplete details. Notes, dimensions, gridlines, and references incomplete on all details. Show continuation of header wall above ceiling to show continuity of insulation and vapor barrier.				

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VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 2	10/A10.43	Horizontal storefront is incorrectly oriented; longer mullion side is typically on interior of building. Flip storefront. Vertical storefront sealant does not have support where it meets the horizontal storefront. Provide metal plate. Interior elevations show metal plate also at interior side of horizontal storefront. Coordinate.				
Volume 2	12/A10.43	Secondary weather seal at storefront not provided. Provide secondary weather seal.				
Volume 2	13/A10.43	Provide gap at bottom end of CMU wall to allow for construction tolerances.				
Volume 2	14/A10.43	Secondary weather seal at storefront not provided. Provide secondary weather seal.				
Volume 5	A0.01C	See Volume 2 for comments on abbreviations, symbols, general project notes, partition types, and wall notes.				
Volume 5	2 & 6/A0.02C	Firestopping sealant required where shaft liner is cut around z-girts.				
Volume 5	A2.01C	At Gas Storage 410 and 411, why is the wall separating the rooms fire rated if the west wall is non-rated insulated metal foam panel wall to +/- 8'-0" and mesh above?				
Volume 5	A2.01C	Partition type callouts are incomplete on the floor plan.				
Volume 5	A2.11C	Verify if relocated structure is required to comply with current building code requirements for a substantial alteration or whether IEBC requirements can be applied. Show code analysis for relocated buildings.				
Volume 5	3/A2.11C	Detail does not clearly indicate that building is relocated and what the structural attachments are. Dimensions and notes are not indicated.				
Volume 5	A2.11C	Scope of work for relocating greenhouses is poorly defined. Mechanical, electrical, plumbing systems have no definition of what is to be salvaged, demolished, or kept in place. New floor plans do not indicate required scope of reinstallation and structural connections from building to new slab on grade. Condition of some mechanical, electrical, plumbing components is unclear and may present difficulties in relocating the equipment and questionable service life. Review and revise.				
Volume 5	A3.01C	Show framing around skylight penetrations. Provide details for mechanical penetrations at walls.				
Volume 5	A4.01C	Indicate what roof penetrations are and call out details. Indicate that dimensions are to the center of skylights and/or are from structural gridlines. Coordinate numbering of roof systems with those called out for the main building in Volume 2.				
Volume 5	A4.11C	Where work points are shown in details, indicate where to find the actual height/dimensional information. Verify correct spelling of notes.				
Volume 5	A5.01C	Indicate building and wall section locations on overall exterior elevations. Refer to wall sections for vertical control information.				
Volume 5	A5.11C	Details for mechanical penetrations a side walls are missing.				
Volume 5	1/A5.11C	1/2" chamfer is not a typical chamfer size; use 3/4". R-15 batt insulation appears low for interior insulated concrete wall, verify.				

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VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 5	4/A5.11C	Attachment for the interior sheet metal cover at the insulated foam panel is not indicated. Support for edges of cut drywall are not indicated. Verify and revise detail.				
Volume 5	5 & 6/A5.11C	It is unclear how sheet metal closure pieces are fastened to structure. Verify and indicate fasteners. In addition, sheet metal should be sloped to prevent standing water. Revise details.				
Volume 5	7/A5.11C	Attachment of sheet metal corner cover is not indicated. Revise.				
Volume 5	A6.11C	Several potential issues with the concrete curb at the base of the exterior wall are present: There is no thermal break between the curb and the slab on grade floor, compromising the thermal envelope of the building. The continuity of the vapor barrier is unclear. Due to the cold curb, there is potential for condensation in the batt insulation at the interior side of the curb. Provide wall section at overhead sectional door and coordinate mechanical, electrical, plumbing, fire protection building systems. Revise.				
Volume 5	A6.11C	Several details are incomplete or missing. See sheet for locations.				
Volume 5	3/A6.12C	At the transition from the insulated metal foam panel to the wire mesh wall system, there is a hinge point. How is the wall system cross braced and how is it supported from the building structure?				
Volume 5	2/A6.12C	There appears to be a fire hazard placing plywood paneling behind a welding booth (through the gap at the floor of the welding booth). Review further.				
Volume 5	A6.11C & A6.12C	Move the footing drain down to the bottom of the gravel zone to prevent standing water at the bottom of the footing.				
Volume 5	A10.11C	Coordinate hatch patterns with standard graphic symbols.				
Volume 5	5 & 6/A10.11C	Coordinate scale of details and align for clarity.				
Volume 5	6, 9, 10, 11/A10.11C	Metal plate at perimeter of opening not defined. Indicate material and attachment.				

**DISCIPLINE:** *Architectural General* **Stanwood High School**

CONSTRUCTABILITY REVIEW TEAM			DESIGN TEAM			
VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Typical	G0.00 Series	Cover sheets reference Volume Number (i.e."Volume 2 of 6"), but Volume Index defines Volumes by Roman Numerals, recommend sticking with numbers as shown on cover sheets.				
Typical	G0.00 Series	Consider renaming Volumes to reflect the scope: Volume 2: "Architectural (High School Building)" and Volume 5: "CTE Building (Shop) - All Disciplines"				
Typical	G0.00 Series	Provide description of the model "perspective concept view" with each Volume cover sheet (describing what is being shown and the direction the view is looking).				
Typical	G0.01 Series	Cover sheets reference Volume Number (i.e."Volume 2 of 6"), but Volume Index defines Volumes by Roman Numerals, recommend revision to match cover sheet method.				
Typical	G0.01 Series	Consider renaming Volumes to reflect the scope: Volume 2: "Architectural (High School Building)" and Volume 5: "CTE Building (Shop) - All Disciplines"				
Typical	G0.01 Series	With each Volume, provide a Site Campus Site Plan Key showing where the scope of work in this Volume occurs on campus. Highlight other scope and which volume relates.				
Typical	G0.01 Series	Add reference to Volume 1 for Phasing work related to the scope illustrated in this Volume.				
Typical	G0.01 Series	Consider also listing (perhaps light tone) all other volume sheet index drawings.				
Typical	Door and Frame Schedules	Add Door Hardware types to schedule.				
Volume 2	G0.10	See code questions pertaining to inclusion of CTE building in building 1A, and provide dimensions.				
Volume 2	A2.01	Verify Civil clearly articulates deep footing drainage requirements where building backs into hill, and provides the appropriate drainage away.				
Volume 2	A2.01	See thought on added dimensions for grids and angles.				
Volume 2	A2.02	show dimensions to grids for CTE and green houses for coordination.				
Volume 2	A2.12	Note Misc. empty detail tags, other recommended details.				
Volume 2	A2.44	Provide dimensions for toilet and bath partitions, details				
Volume 2	A2.46	Where are all the reference points listed/provided?				
Volume 2	A3.11	Review to move light fixture away from wall.				
Volume 2	A4.11	Details seem mostly Revit model snips without much final detail completion, call outs enlarged flashing details, etc.				
Volume 2	A4.11	See detail 1 (used as common reference by all other details, for other clarifications).				
Volume 2	A4.11	Provide details for all conditions to thwart thermal and air/barrier bypass at the intersection of the wall and underside of roofing).				
Volume 2	A4.12	Review and complete envelope details.				
Volume 2	A4.14	Review and complete envelope details.				
Volume 2	A5.14	Review and complete envelope details.				
Volume 2	A5.15	Review and complete envelope details.				
Volume 2	A5.16	Review and complete envelope details.				

CONSTRUCTABILITY REVIEW TEAM			DESIGN TEAM			
VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 5	G0.04C	Provide code plans, area calculations (note CTE building info on Volume 2 appears to possibly be incorrect?).				
Volume 5	G0.04C	Show green houses on code plan.				
Volume 5	A2.10C	Provide Key Plan.				
Volume 5	A2.10C	Complete wall type tags.				
Volume 5	A2.10C	Complete wall location dimensioning.				
Volume 5	A2.11C	Provide explanation with photos ("for reference").				
Volume 5	A2.11C	Provide Key plans: current location of existing on campus, and new location.				
Volume 5	A2.11C	Provide dimensions to adjacent buildings.				
Volume 5	A2.12C	Provide explanation with photos ("for reference").				
Volume 5	A2.12C	Provide Key plans: current location of existing on campus, and new location.				
Volume 5	A2.12C	Provide dimensions to adjacent buildings.				
Volume 5	A3.01C	Coordinate skylights with Structural framing, or define purlin location requirements.				
Volume 5	A4.01C	Coordinate skylights with Structural framing, or define purlin location requirements.				
Volume 5	A8.05C	Verify if rated walls (i.e. gas storage) need to go to roof .				
Volume 5	A10.01C	Add Hardware types to door schedule.				
Volume 5	A10.01C	Define window frame type.				
Volume 6	G0.01F	Show a campus plan key and delineate where on campus the scope of this work occurs.				
Volume 6	G0.01F	Clarify scope of Misc, Renovation Projects. Provide a Navigation Index. See 2 Series for Field House, 3 Series for Batting Cage, 4 Series for Grandstand.				
Volume 6	A2.01R	The only indication of which building this code study is for is in the title block. Recommend providing building names/numbers on drawings.				
Volume 6	A2.02R	The only indication of which building this demo plan is for is in the title block. Recommend Providing building names/numbers on drawings.				
Volume 6	A2.02R	See notes and questions.				
Volume 6	A2.03R	Provide explanation of what these photos are for ("for reference").				
Volume 6	A2.04R	Verify scope of slab patch and repair, especially at demolished CMU walls, fixtures, etc.				
Volume 6	A2.05R	Add elevations for top of parapet, top of tapered insulation.				
Volume 6	A2.05R	See other questions (clarify if the 1/4:12 tapered to be the final slope minimum, or the slope of the insulation (on top of a the current sloped deck?)).				
Volume 6	A2.07R	Complete elevation drawing notation, materials, etc.				
Volume 6	A2.09R	Provide reference to standard mounting heights.				
Volume 6	A2.14R	See questions, detail suggestions for overflow and roof drain sump and related details.				
Volume 6	A2.15R	Add hardware types to door schedule.				
Volume 6	A3.01R	Show map of building location on Campus.				
Volume 6	A3.03R	Provide explanation of what these photos are for ("for reference").				



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CONSTRUCTABILITY REVIEW TEAM			DESIGN TEAM			
VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 6	A3.05R	R-38 insulation on roof type 2? Code sheet says R-49?				
Volume 6	A3.05R	Notes on elevations.				
Volume 6	A3.05R	Roof and wall insulation?				
Volume 6	A3.06R	Provide reference to standard mounting heights.				
Volume 6	A3.07R	See question on how contractor is to install flashing behind existing siding to remain.				
Volume 6	A3.09R	Add hardware types to door schedule.				
Volume 6	A4.00R	Confirm the limited scope shown at Grandstand plan. Provide hatching or poche to illustrate scope of wood refinishing. Detail tags, dimensions.				
Volume 6	A4.01R	Show scope of the work on elevations, provide notes, detail tags, etc.				

DISCIPLINE: <i>Architectural Interiors</i>			Stanwood High School			
CONSTRUCTABILITY REVIEW TEAM			DESIGN TEAM			
VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 1	Many	Several groups of Civil drawings are repeated due to phased work. Suggest that both in the index, and on each applicable drawing (TESC, for example) the respective phase be noted.				
Volume 1	A1.01, A1.11, L1.##	A10.00 In Volume 2 lists 7 gates on site by G-#, which seem to match A1.01 & A1.11. L1.## drawings refer to them by Letter and refer to "Gate Schedule" (L1.00). Use the same notation and coordinate between disciplines and with 08 71 00 Finish Hardware.				
Volume 1	A1.11	Verify necessary capacities for refuse, recycling, and compost dumpsters				
Volume 1	L5.00	Detail C - Refer to 08 71 00 instead of "hardware consultant schedule" or "hardware spec". Detail F - "Architectural" does not show flagpoles – verify 30' height per 10 75 00 is correct.				
Volume 2	G0.10	"Types of Construction": refer to 1/G0.10 not "Egress Diagram Plan". Show compliance with WAC 51-50-009 "space...for the storage of recycled materials, compost, and solid waste". Tell them about flame spread & smoke developed rating (& explain extensive plywood facing exposed in CTE).				
Volume 2	G0.12	Verify fire wall at Custodial to Hall: 2-hour wall, door 108C is 45 minute. Be sure there is a swinging door for egress from Custodial to exterior.				
Volume 2	G0.20, G0.21	Overall First Floor Diagram shows entire first floor within Air Barrier, but 1/G0.21 shows Air Barrier located just below 2 <sup>nd</sup> floor.				
Volume 2	A0.02	Ext. Wall 21: Air Barrier shown but not listed.				
Volume 2	A0.02	Ext. Walls 22-26 - Waterproofing should be directly on concrete.				
Volume 2	A0.02	Acoustics Note 1 - 079200 2.03 says is C920. Also need acoustic sealant where sound walls abut concrete or Concrete Masonry Unit [CMU] construction.				
Volume 2	A0.03	Suggest using some of the empty space on this sheet for Floor Types and moving the Roof Types from A4.01 here, so that all "types" are together. Need to clearly describe slab on grade construction for capillary break, vapor retarder, slab.				
Volume 2	A0.04	Acoustic Assemblies 6: 079200 says Type-D sealant is the acoustical kind. Need details where acoustic abuts concrete or CMU. If there are any walls with deflection track at head, need details for them.				
Volume 2	A0.21	Details 1 & 2 - Spell check. Detail 16 -Wall, not Floor Joint? Detail 8 - Where?				
Volume 2	A2.01	Wrestling Room not identified. Workpoint diagram: verify start point is coordinated with Civil horizontal control plan. Provide dimension from Grid Line 1 to 4 (at far left) for overall layout control – the only other north-south tie-in found for the west end is the relationship between 8.1 and 8.2 found at A2.15.				
Volume 2	A2.01-2.03	Section 011150 mentions Lockers as an Alternate. None seen. Coordinate.				
Volume 2	A2.04	Consider provision for lifting replacement parts to equipment platform level				
Volume 2	A2.11	Door 108C area: is another fire door needed? Verify exiting from Custodial.				

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**CONSTRUCTABILITY REVIEW TEAM** **DESIGN TEAM**

VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 2	A2.##	Suggest following "Area" designations used on Structural (numbers), (Electrical uses them too, but with letters) which enhances clarity. Pick an standard and make it uniform Add CTE building to Key Plan.				
Volume 2	A2.##	Verify that room numbering system has been reviewed with and accepted by Owner.				
Volume 2	A2.12, etc	Geometry of angled grid lines not clearly dimensioned.				
Volume 2	A2.12, etc	Complete detail references (empty bubbles noted on this & other sheets).				
Volume 2	A2.12, A2.13	Elevator Machine Rooms - Suggest adding notes about location of disconnect, avoiding condensate above electrical, etc.				
Volume 2	A2.14	Section 011150 Alt A1 says there are bleachers here.				
Volume 2	A2.15	Suggest adding sink in Band 165 for instrument maintenance.				
Volume 2	A2.16	How many MDFs this building (see room 213 – A2.21)? Any provisions for future use, or even incidental access to the void of the unfinished space? Are the Kilns FOIO? Verify voltages, etc.				
Volume 2	A2.16	The "Unfinished Space" needs more: Vapor Barrier below a concrete slab (to protect VB), access (2 <sup>nd</sup> floor plumbing drains and vents above), sprinklers (to protect underside of 2 <sup>nd</sup> floor at least), minimal air exchange, lighting (including egress), access door or panel.				
Volume 2	A2.22	Near grids D/7 - Verify " 4" expansion joint".				
Volume 2	A2.23	Records 237 - Need details for high density storage floor track, recess, coordinate with structural for loads & recessing into structural slab.				
Volume 2	A2.23	Prep 241A - Suggest mirroring plan to get all plumbing out of area separation wall & to avoid beam below; move plumbing to east wall.				
Volume 2	A2.31	Door 300A - Consider 3'-6" or 4'-0" width for easier service access.				
Volume 2	A2.33	Book Storage 301 - Need details for high density storage floor track, recess, coordinate with structural for loads & recessing in slab.				
Volume 2	A2.33	ASB 318 - Suggest avoiding fire wall(s) and framing conflict with piping to sink and drain from it.				
Volume 2	A2.34	Upper Theater Plan - Suggest locating smoke vent winches at south end of Upper Gallery.				
Volume 2	A2.36	Verify drainage at exit landing near door 321.				
Volume 2	A2.41	Complete detail references (empty bubbles noted on this & other sheets).				
Volume 2	A2.42	Plan 3 - Coordinate equipment callouts with 113013 (is the "ice" maker -1, -2, -3? etc.).				
Volume 2	A2.43	Locker types - Verify that all metal lockers are shown?				
Volume 2	A2.44	Suggest bullnose at exterior corners of exposed CMU.				
Volume 2	A2.45	Suggest rotating plan 90 degrees clockwise (it will fit, and match the other plans). Detail 3/A9.53 not found.				
Volume 2	A3.11	General Notes - State which drawings these apply to. Note 7 - Could dimension now to avoid later Request for Information/Architect's Supplemental Instructions [RFIs/ASIs]. Note 11 - Clarify "exposed" in relation to see-through underside of deck to be sure all deck is painted. Locker rooms: consider a moisture-resistant ceiling panel. Weight Room 107: no lights?				
Volume 2	A3.12	Locker rooms - Consider a moisture-resistant ceiling panel.				

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VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 2	A3.16	Stair ST06 - Suggest referring to actual drawing A7.05 instead of general "stair dwg" reference.				
Volume 2	A3.21	Dimension the east-west location of tubular skylights. When the forward-fold backstops fold up, will they block the tubular skylights?				
Volume 2	A3.22	Dimension the east-west location of tubular skylights. When the forward-fold backstops fold up, will they block the tubular skylights? Locate & provide detail references for retractable batting cage & its supports.				
Volume 2	A3.23	Prep 241A: Ceiling height not indicated. Coordinate with height of coiling fire door. Many other ceiling heights are not indicated.				
Volume 2	A3.24	Is soffit at NE 91D? This sheet is a ways from A3.11; could the legend be repeated on each Reflected Ceiling Plan [RCP] drawing?				
Volume 2	A3.26	Vicinity Grids S-R/ 7-8.1 - Is there a soffit here?				
Volume 2	A3.26, 3.31, 3.33, 3.34	Many light fixtures appear to overlap t-bar grids.				
Volume 2	A3.41	Details 2, 3, 9 - Does Gypsum Wallboard [GWB] need to run full height both sides to avoid flange from collapsing?				
Volume 2	A4.01	Dimensioning roof heights to 1/16" or 1/8" precision is excessively precise. At gyms, two tubular skylights are very near tips of crickets and will create drainage and flashing installation conflicts.				
Volume 2	A4.11	Detail 2 - Gutter width may not be enough to catch water flowing down slope.				
Volume 2	A4.14	Detail 10 - Verify curb heights with roof manufacturer requirements, and suggest dimensioning from top of insulation not top of framing. Detail 4 - Consider adding strainers / mesh at inlet side of scupper.				
Volume 2	A5.01	Elevation 1 - Add fire department key box at fire riser door and other locations where fire department access is required.				
Volume 2	A5.02	Elevation 4 - Verify WISHA requirements for distance from walking surface to ladder rungs are met, top & bottom. Typical all ladders				
Volume 2	A5.04	Elevation 4 - Verify WISHA requirements for distance from walking surface to ladder rungs are met, top & bottom.				
Volume 3	A5.07	Elevation 3 (and likely others) detail the sloping roof / brick veneer stepped brick, support angles, flashings, etc. situation				
Volume 2	A5.12	Detail 15 - Thermal break and waterproofing missing between "conc beam" and wall.				
Volume 2	A6.01	Scale choice of 3/64" is unusual - 1" = 20' would be more normal. Section 6 - Verify 3rd-floor studs can go as high as shown. Section 7 - Show where the winches are mounted.				
Volume 2	A6.02	Section 2 - Any batting cage/backstop (or volleyball play/cage) conflicts?				
Volume 2	A6.11	Section 3 - Waterstops could be indicated.				
Volume 2	A6.12	Section 1 - Any gutter at Level 2 roof? R-value of insulation?				
Volume 2	A6.21	Section 2 - Where are "fire shutters" specified? This is door 200B.				
Volume 2	A6.22	Section 1 - Roof insulation appears to be very thick. Has the roof assembly been UL-tested and listed for this insulation thickness?				
Volume 2	A6.25	Section 2 shows a braced frame at Grid 3, not shown elevation 15/A8.52.				
Volume 2	A6.30	Section 1 - Open web joists slope but roof is levitated flat above?				

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VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 2	A7.03	Section 5 - Verify space under landing for recessed lights.				
Volume 2	A7.11	Stair ST15 section - What does the heavy shading indicate?				
Volume 2	A7.13	Ladder Section 8 - Verify rung heights comply with WISHA.				
Volume 2	A7.14	Exterior Ladder Sections - Suggest providing elevation of each ladder adjacent to section to verify odd conditions with roof slopes.				
Volume 2	A7.23	Detail 7 - Need moisture barrier between wood and concrete.				
Volume 2	A7.24	Cable Railings - No related specification section found.				
Volume 2	A7.31	No elevator equipment room plan for elevator 01. Elevator General Notes: 1 & 3 - Suggest researching sizes for all specified elevators (including pit depth and accommodating for seismic sizes) and showing the biggest of each dimension here. Also include notes about location of disconnect switch from door, avoiding water-containing pipes/drains above electrical and elevator equipment, etc.				
Volume 2	A8.00	Mounting Heights: MR-1 - Reference to A2.31 not correct. Elev 5/A8.02 has an item labeled "SP": what is it and how high? "Contractor shall" and "all" text is extraneous-these documents are all directed to the contractor. Wood blocking is more likely to be fire-retardant treated instead of preservative treated.				
Volume 2	A8.00	Detail 2 - Any partial height 3-5/8" stud walls? Detail 3 - Note at top right is incomplete.				
Volume 2	A8.00	Interior Elevation General Notes: Note 7 should refer to A2.41. Note 8 - Suggest reviewing other disciplines' drawings and showing everything which affects the architectural interior design on the architectural drawings. Note 9 - Text is incomplete, doesn't clearly refer to which sheets to refer to for needed information.				
Volume 2	A8.01	Elevation 3 - Should note at top be 83A (salvaged gym floor), not 82A (flat black painted plywood)?				
Volume 2	A8.##	Many finishes not called out; do the General Notes on A9.00 cover?				
Volume 2	A8.05	Elevation 3 -Way-finding letters seem to indicate a level 400: are we missing a floor's worth of drawings?				
Volume 2	A8.13	Elevation 3 - Where is reference made to this showing music instrument cabinets? And at other elevations where they occur?				
Volume 2	A8.18	Elevation 5 - Are these the only student lockers? Coordinate with 011150 alternate bids A-2a and A-2b.				
Volume 2	A8.20	Elevation 2 - Upper left: do you want "blocking" or "opening" or "blockout"?				
Volume 2	A8.25	Elevation 2 - Where is "wall mount bar" specified, how high is it, does it need backing in wall?				
Volume 2	A8.35	Elevation 3 - On A8.00, WB-4 does not have staff lines, but WB-5 does and is sliding; coordinate.				
Volume 2	A8.48	Detail 17 Science Peninsulas, 19 & 20 Demo Table - Verify "turret" count for gas outlets.				
Volume 2	A8.48	Elevations 6 & 8 - Suggest switching layout to avoid pipes at rated wall and issue with drains passing through supporting beams.				
Volume 2	A8.54	Elevation 11 - Coordinate with mechanical to connect range hood to a duct system that vents to the exterior. Wall base not shown.				

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VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 2	A8.##	Rooms with ceramic tile (toilets, showers, etc.): how high is the tile?				
Volume 2	A9.00	Reclaimed gym floor 83A warrants specification coverage: what part(s) of existing floor, when made available to contractor? Finishes 90-100 - Few noted on exterior elevations. 93 Lockers, this is an odd place to note this. General Notes Ceiling#3 also in Band and Choir if you want to look through the grid openings and see paint on metal deck above.				
Volume 2	A9.11	Legend - Several items not described, lower right. Any walk-off mat at likely PE/Athletic traffic routes? Walk-in cooler and freezer - Usually just concrete, verify that resilient flooring will stay attached to concrete slab in freezer.				
Volume 2	A9.12	Any walk-off mat at likely PE/Athletic traffic routes?				
Volume 2	A9.16	Shading pattern in "Unfinished Space" matches that shown for "carpet tile" on "Finish Plan Legend" A9.11; however, no selection from the list for "Floors" on A9.00 is indicated. Suggest selecting one compatible with the crushed gravel substrate.				
Volume 2	A9.1#, A9.2#, A9.3#	Give consideration to the protection which will be needed for the polished concrete floors and the timing of polishing: before or after partitions? [Polishing before may yield more uniform appearance adjacent to partitions].				
Volume 2	A9.23	Records 237 - Coordinate floor finish at tracks, recessed blockouts needed to set and level tracks, infill at blockouts, floor finishes, etc.				
Volume 2	A9.24	Entry Vestibule 230A - Does flooring run N-S (as shown) or parallel to walls?				
Volume 2	A9.33	Book Storage 301 - Coordinate floor finish at tracks, recessed blockouts needed to set and level tracks, infill at blockouts, floor finishes, etc.				
Volume 2	A9.36	Exit landing at west - Label the (galvanized bar grating?) landing material.				
Volume 2	A9.37	Suggest adding Equipment Platform Floor Finish Plan to show sealing of concrete slab (possibility of leaks with hydronic system) & existence of housekeeping pads.				
Volume 2	A9.41	Plan 2 - Need detail for volleyball post sleeves in second floor (slab on grade detail does not apply up here).				
Volume 2	A9.51	Details 1D-1G - Verify allowed recess depth with Structural. Detail 1F - Verify this recessed frame type works with floor polishing. Detail 12 - Need sleeve detail for 2nd floor (structural deck with concrete fill) condition. Details 5-7 - Coordinate with which stage flooring system you specify.				
Volume 2	A9.53	Detail 3 is missing; 8" square opening referenced at A2.45.				
Volume 2	A9.63	Sections 11 & 12 - Complete the reference tags.				
Volume 2	A9.64	Plans 1 & 2 - Are the coiling doors scheduled for width? Why repeat? Equipment Schedule 3 - Verify all equipment listed, even if just as a suggestion for others to procure, is National Sanitation Foundation [NSF] labeled, not residential grade.				
Volume 2	A10.00	Discuss merits of numbered hardware groups versus the tabular matrix presented in the hardware section.				
Volume 2	A10.01	Standardize on how door frame widths are indicated.				

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VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	
			YES	NO		
Volume 2	A10.11	The 10 degree angle inset appears to be uniform but actual numbers could be more helpful (typical).				
Volume 2	A10.13	Details 1, 2, etc - Door frame face widths?				
Volume 2	A10.21	Legend - There are some east and west-facing windows, which insulated glass is used in them?				
Volume 2	A10.41	Any fiberglass windows for a building intended to last 50 years? Detail 13 - Be very sure that a 4x4 – 3-1/2" x 3-1/2" net is the size you want, or would "4x" give more leeway?				
Volume 2	A10.42	Details 5, 13 - Reference detail 1.				
Volume 2	A10.43	Reference Detail 1, A10.42 as relevant. Detail 13 "CW Types" not found in drawings.				
Volume 3	S0.02	Vertical Bar Positioners note - Verify the product specified will do the job.				
Volume 3	S2.11	Refer to FS1.03 for additional recesses in Kitchen area. At Grid D, detail cut 5/S3.03 does not show recess for Cooler/Freezer; verify footings are low enough to clear bottom of recess. Near Grid B.5/3, slab note calls for rebar, referenced detail 1/S3.01 speaks of fiber-reinforced concrete.				
Volume 3	S2.13	Coordinate "shallow" slab recesses for entry mats, tiles, unit showers, etc. See 1/A9.51.				
Volume 3	S2.16	Strongly suggest placing slab in area between Grids P-R/8.1-9.				
Volume 3	S2.##	Note 22 - Recessed Slabs do occur; coordinate.				
Volume 3	S2.23, S2.33	Coordinate loads & details for high-density storage systems, including provision for earthquake bracing.				
Volume 3	S5.10	Detail 10 - Mechanical reviewer was surprised to learn that Structural drawings expects mechanical to show housekeeping pads. Coordinate. Suggest that structural at least graphically show extent of such pads.				
Volume 3	FS1.01	01 10 00 1.04G says you have Health District Permit; is that correct?				
Volume 3	FS1.03	Coordinate Freezer, Cooler, and trough depressions w/Structural S2.11.				
Volume 3	FS3.01	Details for Cooler/Freezer recess and installation of insulated wall panels do not facilitate replacement of damaged wall panels (later), nor does thin concrete surfacing appear to have long-term durability. See suggested detail markup for a "grocery store" quality of installation. Detail C - if any compressors, etc. are installed above Cooler/Freezer, how will air get to them? Structural calcs may be required by AHJ for any items supported on the cooler/freezer roof or hung from it.				
Volume 3	TL1.3	Plan 2 - Show smoke vents for reference.				
Volume 3	TL3.1	Show routing for smoke hatch cables to winches.				
Volume 3	TR2.1	Elevation 4 - Show routing for winches.				
Volume 4	M0.02	Plumbing Fixture Schedule P-4 - Entry for sink says "Refer to A-Series drawings for details". Verify sink selection with architect.				
Volume 4	M2.41	Note 1 AVW 10/M5.01.				
Volume 4	M4.04	Coordinate Science Peninsula pipe routing with 17/A8/48.				
Volume 4	M4.05	Show housekeeping pads in sections.				
Volume 4	M5.01	Detail 10 - Flue size AVW Note 1 M2.41. Detail 14 - Confirm location of architectural detail.				
Volume 4	M5.02	Detail 6 - Lag Screws not appropriate for metal deck fastening.				

DISCIPLINE: <b>Architectural Interiors</b>			Stanwood High School			
CONSTRUCTABILITY REVIEW TEAM			DESIGN TEAM			CAD CHK
VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	
			YES	NO		
Volume 4	M5.03	Detail 2 - Housekeeping pad if mounted on concrete slab.				
Volume 4	E0.01	Electrical Legend - Add USB outlet symbol as seen in Commons, E3.13.				
Volume 4	E1.02	Consider camera(s) to view receiving area.				
Volume 4	E3.33	Consider USB outlets for staff convenience in Staff Lounge.				
Volume 4	E2.##, 3.##, 4.##	Building "Areas" are referred to by Letters, not Numbers as seen on Structural. Architect: Determine what the standard will be and advise your consultants appropriately.				
Volume 4	E2.37	Provide emergency-circuited light fixture and exit sign above stair. Provide wall-mounted light fixture on exterior at door P001.				
Volume 4	E3.37	Provide duplex or quad outlet adjacent to door P001. Discuss additional Locations for roof-top or side-wall outlets with Owner & Owner's Maintenance Department.				
Volume 4	E3.42	"Roof Power Plan" shows many outlets, see note of E3.37 above.				
Volume 4	E4.13	Table Storage 133: Commons A/V Rack location shown conflicts with east of use of double doors.				
Volume 4	E4.34	Book Storage 301 - Would a data connection be useful for inventory?				
Volume 4	E5.02	Notes for Performing Arts Center Elevation are garbled.				
Volume 5	G0.04C	Discuss flame spread / smoke developed for plywood on interior. Verify number of toilets for CTE as a stand-alone building.				
Volume 5	A8.01C	Need to have standard mounting heights, cabinet nomenclature, etc. information here.				
Volume 5	A10.01C	Door type D-C -Louvers not found in specifications.				
Volume 6	A2.00R	Are there any acoustical walls in the field house?				
Volume 6	A2.05R	Why not show floor plan at 1/4" scale and avoid the enlarged plans?				
Volume 6	A2.07R	No exterior finishes are indicated; unbiddable.				
Volume 6	A2.08R	Wall Sections 5-8 - Verify roof assembly is 'listed' with insulation depths shown.				
Volume 6	A2.08R	Need to show standard mounting heights here; don't make them go to the Volume 2 drawings.				
Volume 6	A2.12R	What does the heavy rectangular line in Concessions indicate?				
Volume 6	A2.13R	Detail 7 - What wood species (birch is specified)? Need to machine relief channels in bottom side to lessen cupping.				
Volume 6	A2.14R	Section 1 - How is air barrier at mansard terminated?				
Volume 6	A2.15R	Hollow metal frame details: indicate face width.				
Volume 6	A3.01R	Plan 2 - Can the toilet rooms be isolated to be the only air barrier area?				
Volume 6	A3.04R	Enlarged Plans 4 & 5 - Can the F-G/1-3 area be in one plan?				
Volume 6	A3.05	Wall Section 7 - Verify Civil shows what you say they do.				
Volume 6	A3.06R	Need mounting height details or coord with A2.08R.				
Volume 6	A4.00R	Consider using some of the empty space on this drawing for clarifying dwgs.				



CONSTRUCTABILITY REVIEW TEAM			DESIGN TEAM			
VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 3	S0.01/Wind	Verify Exposure Category B and Kzt with building department.				
Volume 3	S2.01	Clarity/show step in footing at D4.				
Volume 3	S2.01	Detail 5/S3.03 cut on B and D is for veneer, elevations show metal panel, coordinate with Arch.				
Volume 3	S2.02	Reference 8&9/S3.01 at elevator pit.				
Volume 3	S2.03 to S2.06	Typical foundation detail is 5/S3.03 which shows veneer on a 1'5" wide stem wall. Arch elevations show a combination of veneer and metal panels with a stem wall similar to 4/S3.03 (with a stem wall the width of the CFS wall see A5.12). Changing from different stem walls will require extensive forming and coordination and complicate detailing. Coordinate with ARCH and revise details as required).				
Volume 3	S2.04	Section 4/S3.05 cut on K.2 appears to be incorrect.				
Volume 3	S2.05, S2.06	Add note specifying backfill against 18" wall prior to second floor framing completion if not designed as cantilever or to span between buttress walls.				
Volume 3	S2.11	Coordinate additional floor recesses with FS1.03.				
Volume 3	S2.11/Note 16	Add reference to Arch drawings for pilaster dimensions and locations.				
Volume 3	S2.21, S2.22	Coordinate depressed floor elevation for Auxiliary Gym floor system with Arch.				
Volume 3	S2.11-S2.16	Verify no slab depressions in bathrooms.				
Volume 3	S2.13-S2.14	Clarify top of concrete in theater and entry lobby, reference A2.45 for additional elevations.				
Volume 3	S2.13	Clarify extent of over framing per 11/S3.01 at stair.				
Volume 3	S2.13, S2.16, S2.23, S2.26	Provide references for stair details and additional details as necessary. Specify AES if required. Verify if acceptable to support stringer on 4" slab on Styrofoam fill.				
Volume 3	S2.13	Coordinate location of steps and benches on 8.2 with A7.02.				
Volume 3	S2.14	Detail 5/S3.01 is cut at seating steps but limits step to 8", revise as required.				
Volume 3	S2.21-S2.25	Provide minimum dimensions of seismic joint, coordinate with Arch details.				
Volume 3	S2.21	Section cut 7/5.03 on W24 beam on 2 appears to be incorrect, provide detail showing CMU support on beam.				
Volume 3	S2.21/Note 15	Verify no depressions greater than 1/2" and provide detail is necessary.				
Volume 3	S2.22	Provide references for stair details and additional details as necessary.				
Volume 3	S2.22	Need continuous beam or moment connection on C.2 at 6 for cantilevered corner.				
Volume 3	S2.22	Consider added reinforcement at notch at 7/D.				
Volume 3	S2.22	Provide details of stair support at C.8/6.5.				
Volume 3	S2.23	Verify design of framing EE/23-25 for movable filing system and coordinate slab attachments and possible depressions.				
Volume 3	S2.23	Review W10's on 3, provide collector/chord connections if required.				
Volume 3	S2.23	Provide detail for two deep wide flanges framing into corner of CMU at E/8.2.				

DISCIPLINE: <i>Structural</i>			Stanwood High School			
CONSTRUCTABILITY REVIEW TEAM			DESIGN TEAM			
VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 3	S2.23	Extend section cut 4/S5.11 on Grid 8.2 to include extent of cantilevered W18's.				
Volume 3	S2.23	Provide detail for three wide flanges framing into corner of concrete wall at K.6/8.2. Review if W12x19 should be collector beam to transfer forces into concrete wall acting as shear wall.				
Volume 3	S2.23	AT K.2/8.1 review if W18x35 should be shifted to frame into concrete wall on grid K.2 to act as collector beam to transfer forces into concrete shear wall.				
Volume 3	S2.23	Review and coordinate sections 2/S3.04 and 9/S3.05 cut on 9/K.2 to M.				
Volume 3	S2.23	Review deck capacity for supporting two 3000# vessels at L.6/8.3, add members below if required.				
Volume 3	S2.26	Review distribution of lateral forces between stiff shear walls on P and BRB frames on QQ and PP. Consider drag on P south of 8.1 to provide continuity and path for diaphragm forces distributing to stiffer elements.				
Volume 3	S2.26	Provide footings and base plate connections for pipe columns at P and N north of 9.				
Volume 3	S2.31	Clarify top of steel (TOS) for low roof south of 3.				
Volume 3	S2.31	Section cut 10/S6.10 is incorrect, provide detail or roof attachment and veneer support above.				
Volume 3	S2.31-S2.35	Provide minimum dimensions of seismic joint, coordinate with Arch details.				
Volume 3	S2.31, S2.32	Provide detail of HSS columns at ends of wing walls in gym on 6 .				
Volume 3	S2.32	Provide details of stair support at D/6.5 including hangers, cantilevered deck, etc.				
Volume 3	S2.32	Provide section on Grid 26 at interface of third floor and low roof.				
Volume 3	S2.32	Review and provide special reinforcement for W21 girders framing into ends of 8" CMU wall on 29.				
Volume 3	S2.33	Provide section at roof/floor interface EE-D/22-23 including steel deck, storefront, and roofing.				
Volume 3	S2.33, S2.35, S2.36	Section on 22 and other exterior walls lines needed showing veneer support and accommodating inter-story drift into veneer system.				
Volume 3	S2.33	Consider collector connection at E/25 for lateral forces from CMU wall.				
Volume 3	S2.33	Verify high density storage system loading HH-E/27-8.3, see A2.33.				
Volume 3	S2.33	Provide details and sections for hangers, deck, etc. at stair at HH/25.8.				
Volume 3	S2.33	Verify W12x19 and other framing at library adequate for stack loading.				
Volume 3	S2.34	Clarify details and cut sections at walkway on E and 14 and catwalks including steps kinked beams, steps, edge angles, etc.				
Volume 3	S2.34	Provide column or hanger for W10 at east end of walkway.				
Volume 3	S2.34	Provide corner framing at K.1/12.				
Volume 3	S2.34	Clarify TOS W16 at K.1/12 is at top of joist or provide detail.				
Volume 3	S2.35	Clarify what happens at detail 6/S5.04 on Grid 21 at metal panel siding.				
Volume 3	S2.35	Coordinate 6/S5.04 on Grid K1 with seismic.				
Volume 3	S2.43	Reference mechanical requirements including pads, openings, additional framing, typical all units.				

CONSTRUCTABILITY REVIEW TEAM			DESIGN TEAM			
VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 3	S2.51/note 5	Verify and clarify if joist loading is ASD or LRFD. Detail 7/S6.01 should be 7/S6.01.				
Volume 3	S2.51/note 14	Note references structural drawing for fall protection locations, but these are shown on Arch A4.01 and should be referenced.				
Volume 3	S2.51/note 18	Roof overbuilding not indicated on plans. Clarify if required on this project.				
Volume 3	S2.51 - S2.55	Provide minimum dimensions of seismic joint, coordinate with Arch details.				
Volume 3	S2.53	Clarify if edge member or angle is required at edge of roof south of 3.				
Volume 3	S2.53	Section 4/S3.11 on Grid 22 should be cut at edge of roof.				
Volume 3	S2.53	Clarify W16 "low" at H/4 is at same elevation as adjacent W16.				
Volume 3	S2.53	Cut appropriate detail on 22 at cantilevered W21's.				
Volume 3	S2.53	Clarify extent of 7/S6.10 and 11/S6.11 on Grid 8.2.				
Volume 3	S2.53	Clarify if W10 skylight member and W8x15 are both where very close together J - E/9.				
Volume 3	S2.53	Clarify Section 4/S6.11 on 27+ and if edge channel is required at this edge of roof.				
Volume 3	S2.54	Move 19K Axial load callout to below 56DLH callout.				
Volume 3	S2.54	Clarify if additional loads from catwalk hangers are to be added to joists specified and redesigned. Provide cross members and attachments for support of hangers where required.				
Volume 3	S2.55	Specify if W10's cantilevered off KK should be moment connection to supporting beams.				
Volume 3	S2.55	Specify if W10's cantilevered off R should be moment connection to supporting beams.				
Volume 3	S2.55	C12 at S/ 4+ should be continuous at corner for support.				
Volume 3	1/S3.01	12-hour window for saw cut may be too late to avoid cracks, consider specifying ASAP without raveling of edges of cut. Plans call for #4 @ 16" mild reinforcement, clarify if fiber reinforcement is required as stated in detail.				
Volume 3	2/S3.01	Coordinate insulation requirements at stem wall with Arch.				
Volume 3	8/S3.01	Dimension depth of elevator pit or specify as "coordinate with elevator supplier".				
Volume 3	15/S3.01	Coordinate with 5/S3.03.				
Volume 3	2,3,4,5/S3.03	Coordinate insulation requirements at stem wall with Arch.				
Volume 3	4/S3.03	Coordinate finish support with a/A5.12 and coordinate interface with 5/S3.03				
Volume 3	7,8,9/S3.03	Coordinate with typical top of footing of -1'-2" specified on plans.				
Volume 3	1/S3.04	Clarify if acceptable to backfill wall prior to completion of floor above for support.				
Volume 3	4/S3.04	Coordinate with 4/S3.06, suggest #4 bent slab dowel to be bent down into slab in lieu of straight #5.				
Volume 3	5/S3.05	Show soil, wall beyond next to vert wall, and special end reinforcement on both sides of "SOG" for clarify.				
Volume 3	6/S3.06	Same as 4/S3.04?				

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CONSTRUCTABILITY REVIEW TEAM			DESIGN TEAM			
VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 3	7/S3.06	Clarify if insulation is required on interior walls, and coordinate configuration with Arch.				
Volume 3	2/S4.01	Provide vert. reinforcement for Special Reinforcement A.				
Volume 3	9/S4.03	Clarify lintel schedule is for Veneer in table or title.				
Volume 3	1/S4.04	Show HSS storefront supports in gym window and cut section.				
Volume 3	5/S5.02	Clarify if detail is for embed connection in Concrete in title or note. Not clear if detail calls for block out of typical wall and infill once embed is in place. Will 8" minimum from top of wall work for top of wall conditions?				
Volume 3	1,2,3/S5.04	Reference required width of seismic joint or where to find on plans.				
Volume 3	4,5,6/S5.04	Coordinate with Arch A5.11 to A5.16 for edge of slab dimensions. Coordinate with Arch details and elevations for locations of relieving angles. Review 5/S5.04 for locations where this is required, location of compensating channel at top of wall, and ability of detail to allow for inter-story drift while minimizing damage to veneer with HSS rigidly attached to floor above.				
Volume 3	6/S5.10	Consider #4 bent slab dowel to be bent down into slab in lieu of straight #5.				
Volume 3	4/S5.11	Is slope of bottom flange controlled by Arch or beam geometry shown?				
Volume 3	3/S5.21	Consider moving brace to deck level instead of middle of hanger.				
Volume 3	5.23 - 5.24	Need better referencing and detailing of non-bidder designed stairs. Details are missing, and additional plans with typical section cuts would be helpful for detailing and to assure all conditions are addressed in the structural design. Plans should have details cut and referenced, and be coordinated with Arch details.				
Volume 3	3/S6.01	Review requirements for edge angle or member top protect edge of deck.				
Volume 3	10/S6.10	Add note listing WT per plan notes to detail.				
Volume 3	2,3/S6.11	Review stability of plate support and connection. Consider adding stiffener to connection seat and/or beam that is being supported, especially for larger beams that cantilever over girders.				
Volume 3	3/S6.12	Verify WT4 protruding above 2" or 1 1/2" deck will be acceptable for roofing and insulation.				
Volume 3	5/S6.12	Provide or reference dimension to edge of bent plate.				
Volume 3	5/S6.12	Where are Cold Formed Steel shear walls referenced or used?				
Volume 5	Design Criteria/S1.00C	Clarify if snow drift is required in addition to 25 psf snow load. Loads used (gravity, lateral, and uplift) should be listed or shown for comparison with loads developed by Metal Building Engineer.				
Volume 5	S2,01C	Provide section on Grid C-2 at slab and building interface.				
Volume 5	S2,01C	Clarify if ties are required in 18x18 grade beam.				
Volume 5	S2,01C	Review if 12" wide footing is adequate for post and beam on C-G.				
Volume 5	S2,01C	Provide section at interface between interior space and exterior slab between C-7 and C-5.				
Volume 5	4/S3.01C	Coordinate with 1,3,4/A6.11. Notes on detail appear to be to design engineer and not contractor, remove if not appropriate.				

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CONSTRUCTABILITY REVIEW TEAM			DESIGN TEAM			
VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 5	4,5/S3.01C	Show connection of 18x18 grade beams with metal building foundations.				
Volume 5	1/S3.02C	Reference Arch detail or location.				
Volume 6	1/S2.03R	Provide detail at entry mat depression, and attachment of new CMU walls to existing construction.				
Volume 6	1/S2.03R	Provide detail at top of CMU wall under perpendicular interior walls.				
Volume 6	1/S2.03R	Provide connection detail at back span of 2x10's at overhang, and for HTT4 anchors to existing roof framing.				
Volume 6	1/S2.03R	Detail cut on 1 in existing are incorrect.				
Volume 6	1/S2.03R	Verify exist 2x10 @16" are not discontinuous over CMU wall to be removed. Provide detail or strengthening of joists if necessary.				
Volume 6	2/S2.07R	Coordinate with 2/A2.04R.				
Volume 6	3,4/S2.07R	Clarify which detail should be used.				
Volume 6	5,6/S2.07R	Where are these details used?				
Volume 6	1/S2.08R	12 hours may be too late to control cracking. Consider specifying ASAP without raveling of concrete edge.				
Volume 6	10/S2.09R	Verify length of footing, and should anchor bolts be drilled into existing footing?				
Volume 6	12/S2.09R	Clarify detail.				
Volume 6	4/S3.06R	Clarify if thickened slab required for all interior walls.				
Volume 6	4/S3.08R	Where are these details used?				
Volume 6	5/S3.09R	Where is this detail used?				
Volume 6	6/S3.09R	Provide detail for sloped bearing of joist.				
Volume 6	8/S3.09R	Clarify if there is existing plywood to tie into or add.				

CONSTRUCTABILITY REVIEW TEAM			DESIGN TEAM			
VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 4	Mx.xx	Confirm project phasing and construction staging areas.				
Volume 4	Mx.xx	Confirm formatting, typical multiple plan pages.				
Volume 4	Mx.xx	Notes missing, typical multiple plan pages.				
Volume 4	Mx.xx	Confirm mechanical symbols, typical multiple plan pages.				
Volume 4	Mx.xx	Confirm trade responsible for furnishing, installing and painting access panels, typical multiple plan pages.				
Volume 4	Mx.xx	Confirm air transfer from rooms with supply and no return or transfer grill, typical multiple plan pages.				
Volume 4	Mx.xx	Control drawings, details, points lists and sequences of operation information missing, typical multiple plan pages.				
Volume 4	Mx.xx	Confirm piping and duct are coordinated with other trades and structure, typical multiple locations.				
Volume 4	Mx.xx	Area references; A, B, C, D, E, F missing from plan sheets (typical).				
Volume 4	Mx.xx	Piping sizes missing (typical).				
Volume 4	Mx.xx	Confirm airflows (typical).				
Volume 4	Mx.xx	Confirm FCU locations, possible conflicts with ceiling grid as currently shown.				
Volume 4	M0.01	Confirm symbols.				
Volume 4	M0.02	Air Compressor detail not found on M5.03.				
Volume 4	M0.03	Grilles-Registers-Diffusers Schedule Unit numbers not shown on plan sheets (typical).				
Volume 4	M0.03	Confirm airflow alarm for Dryer Booster fans.				
Volume 4	M0.04	No comments this plan sheet.				
Volume 4	M0.05	No comments this plan sheet.				
Volume 4	M0.06	No comments this plan sheet.				
Volume 4	M0.07	Schedule heading information missing.				
Volume 4	M0.08	No comments this plan sheet.				
Volume 4	M0.09	Confirm Exhaust VAV Terminal Unit Duct Sizes have been coordinated with plan sheets.				
Volume 4	M1.00	Consider additional information.				
Volume 4	M1.01	Confirm grease interceptor location and responsible trades(s).				
Volume 4	M1.01	Invert elevations of sanitary waste and domestic water need coordination with Civil. Civil is currently designed higher than plumbing (typical multiple plan sheets).				
Volume 4	M1.01	Confirm sanitary venting from floor drains.				
Volume 4	M1.01	Reference to trap primers and piping not found (typical multiple plan sheets).				
Volume 4	M1.02	Confirm missing piping (typical multiple plan sheets).				
Volume 4	M1.02	Confirm requirements for piping pass through/under footings (typical multiple plan sheets).				
Volume 4	M1.03	Confirm missing piping.				
Volume 4	M1.03	Confirm formatting (typical multiple plan sheets).				
Volume 4	M1.03	Pipe sizes missing (typical multiple plan sheets).				
Volume 4	M1.04	Typical comments apply to this plan sheet.				
Volume 4	M1.05	Typical comments apply to this plan sheet.				

CONSTRUCTABILITY REVIEW TEAM			DESIGN TEAM			
VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 4	M1.06	Typical comments apply to this plan sheet.				
Volume 4	M1.11	Typical comments apply to this plan sheet.				
Volume 4	M1.12	Typical comments apply to this plan sheet.				
Volume 4	M1.13	Typical comments apply to this plan sheet.				
Volume 4	M1.14	Typical comments apply to this plan sheet.				
Volume 4	M1.15	Typical comments apply to this plan sheet.				
Volume 4	M1.16	Typical comments apply to this plan sheet.				
Volume 4	M1.21	No comments this plan sheet.				
Volume 4	M1.22	Confirm Construction Note 2.				
Volume 4	M1.23	Confirm formatting (typical).				
Volume 4	M1.24	Typical comments apply to this plan sheet.				
Volume 4	M1.25	Confirm Gas Turret Detail 2 on M5.01. Gas turret not specified or scheduled.				
Volume 4	M1.25	Confirm plumbing systems and connections required for Fume Hoods.				
Volume 4	M1.25	Confirm detail 2 on M-4.04.				
Volume 4	M1.25	Confirm detail reference numbering format (typical).				
Volume 4	M1.26	Detail reference does not match detail 3 on M4.03.				
Volume 4	M1.26	Confirm piping symbol (typical).				
Volume 4	M1.31	Missing VTR from Grease Interceptor reference note 1 on M1.21.				
Volume 4	M1.31	Confirm pipe sizes (typical).				
Volume 4	M1.32	No comments this plan sheet.				
Volume 4	M1.33	Typical comments apply to this plan sheet.				
Volume 4	M1.34	No comments this plan sheet.				
Volume 4	M1.35	Confirm Construction Note 1.				
Volume 4	M1.36	No comments this plan sheet.				
Volume 4	M1.37	No comments this plan sheet.				
Volume 4	M1.41	Confirm roof drains and internal/external rain leaders.				
Volume 4	M1.42	No comments this plan sheet.				
Volume 4	M2.11	Notes Missing (typical).				
Volume 4	M2.11	Confirm Fire/Smoke dampers and detail.				
Volume 4	M2.11	Confirm duct sizes (typical).				
Volume 4	M2.12	Typical comments apply to this plan sheet.				
Volume 4	M2.13	Confirm formatting (typical).				
Volume 4	M2.13	Confirm Destratification Fan locations.				
Volume 4	M2.14	Confirm duct continuation and termination (typical).				
Volume 4	M2.15	Typical comments apply to this plan sheet.				
Volume 4	M2.16	No comments this plan sheet.				
Volume 4	M2.21	Confirm Fire/Smoke dampers and detail.				
Volume 4	M2.21	Confirm duct continuation and termination (typical).				
Volume 4	M2.22	Consider adding sections.				
Volume 4	M2.23	Confirm VAV-213 scheduled as AFD-213.				
Volume 4	M2.24	Consider adding sections.				
Volume 4	M2.25	Confirm Fume Hood connection requirements, detail reference missing (typical).				

CONSTRUCTABILITY REVIEW TEAM			DESIGN TEAM			
VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 4	M2.26	Confirm Fume Hood connection requirements, detail reference missing (typical).				
Volume 4	M2.31	Confirm note for 4" flue and combustion air.				
Volume 4	M2.31	Confirm Fume Hood connection and duct requirements, reference not found.				
Volume 4	M2.33	Confirm duct continuation and termination (typical).				
Volume 4	M2.34	Consider adding section.				
Volume 4	M2.35	Confirm duct continuation and termination and airflow direction (typical).				
Volume 4	M2.36	Confirm duct continuation and termination and airflow direction (typical).				
Volume 4	M2.37	Confirm reference to WH-02.				
Volume 4	M2.41	Typical comments apply to this plan sheet.				
Volume 4	M2.51	Detail reference for below grade chilled water piping not found.				
Volume 4	M2.52	Confirm symbol (typical).				
Volume 4	M2.53	Locate condensate drain at jamb side of door.				
Volume 4	M2.54	No comments this plan sheet.				
Volume 4	M2.55	No comments this plan sheet.				
Volume 4	M2.56	No comments this plan sheet.				
Volume 4	M2.61	Consider additional sections.				
Volume 4	M2.61	Confirm water containment requirements for mechanical room floor and penetrations.				
Volume 4	M2.61	Confirm piping.				
Volume 4	M2.62	No comments this plan sheet.				
Volume 4	M2.63	No comments this plan sheet.				
Volume 4	M2.64	No comments this plan sheet.				
Volume 4	M2.65	No comments this plan sheet.				
Volume 4	M2.66	No comments this plan sheet.				
Volume 4	M2.71	No comments this plan sheet.				
Volume 4	M2.73	No comments this plan sheet.				
Volume 4	M2.74	Typical comments apply to this plan sheet.				
Volume 4	M2.75	No comments this plan sheet.				
Volume 4	M2.76	No comments this plan sheet.				
Volume 4	M2.77	Confirm water containment requirements for mechanical room floor and penetrations.				
Volume 4	M3.11	Typical comments apply to this plan sheet.				
Volume 4	M3.12	Typical comments apply to this plan sheet.				
Volume 4	M3.13	Typical comments apply to this plan sheet.				
Volume 4	M3.14	No comments this plan sheet.				
Volume 4	M3.15	Typical comments apply to this plan sheet.				
Volume 4	M3.16	Typical comments apply to this plan sheet.				
Volume 4	M3.21	Section detail 1 on M4.01 not found.				
Volume 4	M3.22	No comments this plan sheet.				
Volume 4	M3.23	Mechanical section 1 on M4.01 not found.				
Volume 4	M3.24	Confirm formatting (typical).				
Volume 4	M3.25	Typical comments apply to this plan sheet.				
Volume 4	M3.26	Typical comments apply to this plan sheet.				



CONSTRUCTABILITY REVIEW TEAM			DESIGN TEAM			
VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 4	M3.31	Typical comments apply to this plan sheet.				
Volume 4	M3.33	Typical comments apply to this plan sheet.				
Volume 4	M3.34	Typical comments apply to this plan sheet.				
Volume 4	M3.35	Typical comments apply to this plan sheet.				
Volume 4	M3.36	No comments this plan sheet.				
Volume 4	M4.01	Confirm control and electrical interlock requirements for gas solenoid valves.				
Volume 4	M4.02	Confirm vent piping.				
Volume 4	M4.03	Detail 3 does not match reference on M1.26.				
Volume 4	M4.03	Confirm detail 3 number.				
Volume 4	M4.04	Detail 2 does not match reference on M1.25.				
Volume 4	M4.05	Consider additional sections for congested and typical areas.				
Volume 4	M4.05	Confirm pipe sizes (typical).				
Volume 4	M5.01	No comments this plan sheet.				
Volume 4	M5.02	Confirm details 6 - cant curb, and 7 - insulation below deck. Consider deleting if not required for single ply membrane roof.				
Volume 4	M5.02	Coordinate detail 3 water intrusion requirements with architectural.				
Volume 4	M5.03	Consider additional details including: Dimensioned air Handling Equipment, Piping and Duct acoustic wall penetrations, trap primers, DP sensors by location, Chiller, below grade chiller piping, below grade piping penetrating footings.				
Volume 4	M5.04	Consider adding sanitary waste and domestic water riser diagrams.				
Volume 4	M6.01	Confirm GPM.				
Volume 4	M6.01	Confirm Sequence of Operation information.				
Volume 4	M6.01	Consider adding riser diagrams.				
Volume 4	M6.02	Confirm acid neutralization kits.				
Volume 4	M6.02	Consider adding riser diagrams.				
Volume 4	M6.03	Confirm AHU morning warm up sequence for all relevant HVAC equipment.				
Volume 4	M6.04	No comments this plan sheet.				
Volume 4	M6.05	Add morning warm up to DOAU sequences.				
Volume 4	M7.01	Needs coordination with Civil.				
Volume 4	M7.01	Confirm fire department connection location.				
Volume 5	M0.01C	No comment this plan sheet.				
Volume 5	M0.02C	Confirm formatting; schedule notes.				
Volume 5	M0.03C	Consider vent less gas regulators.				
Volume 5	M1.00C	Detail references not found.				
Volume 5	M1.00C	Confirm trap priming requirements for floor drains in greenhouses.				
Volume 5	M1.00C	Confirm scope of work and trade responsible for; determining baseline functionality, demo, storage, and re-installation of existing HVAC equipment and systems including; side wall prop. fans with hoods, supply fan with duct, louver, dampers, gas fired unit heaters, EMCS, Etc.				
Volume 5	M1.00C	Confirm trench drain requirements in green houses (shown on A2.11C).				
Volume 5	M1.01C	Detail references missing.				

DISCIPLINE: <u>Mechanical</u>			Stanwood High School			
CONSTRUCTABILITY REVIEW TEAM			DESIGN TEAM			
VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 5	M1.01C	Invert elevations of sanitary waste and natural gas need coordination with Civil. Civil is currently designed higher than plumbing (typical).				
Volume 5	M1.01C	Reference to trap primers and piping not found.				
Volume 5	M1.11C	Detail references not found.				
Volume 5	M1.11C	Confirm condensate piping from ICU-1.				
Volume 5	M2.11C	Detail references not found.				
Volume 5	M2.11C	Confirm fire protection requirements at SDC-1.				
Volume 5	M2.11C	Confirm fire protection requirements at paint booth and exhaust.				
Volume 5	M2.11C	Confirm exhaust hood supports are coordinated and detailed on the architectural and structural plans.				
Volume 5	M2.21C	Confirm trade responsible for framing required to support rooftop equipment on pre-engineered building.				
Volume 5	M3.11C	No comment this plan sheet.				
Volume 5	M4.01C	Confirm plumbing unit number P-5, currently scheduled as emergency eye wash and shower station.				
Volume 5	M4.01C	Confirm access to Mechanical Mezzanine meets maintenance requirements.				
Volume 5	M4.02C	Information missing.				
Volume 5	M5.01C	Confirm welding station connection requirements.				
Volume 5	M5.01C	Confirm requirement for hydronic water makeup at domestic water heater detail 8.				
Volume 5	M5.01C	Confirm EMCS requirements for natural gas meter pulse output.				
Volume 5	M5.01C	Confirm method and locations for attaching to pre-engineered building structure for Pipe Support Detail 1.				
Volume 5	M5.02C	Consider detail for hose reel air drop.				
Volume 5	M5.02C	Consider detail for SDC-1 and duct connections.				
Volume 5	M5.02C	Consider detail for Oxy/Acetylene exhaust hood and supports.				
Volume 5	M5.02C	Consider detail for paint booth, paint booth vent, and fire protection requirements.				
Volume 5	M5.02C	Consider detail for paint booth roof termination.				
Volume 5	M5.02C	Coordinate detail 3 water intrusion requirements with architectural.				
Volume 5	M603C	No comment this plan sheet.				
Volume 5	M604C	Confirm sequence of operations for Paint booth and Sawdust Collection.				
Volume 5	M7.01C	Confirm fire department connection location.				
Volume 6	M2.00R	Confirm P-7; slab depression, threshold, curtain and other accessories are coordinated with architectural and structural disciplines.				
Volume 6	M2.01R	No comment this plan sheet.				
Volume 6	M2.02R	Confirm trade responsible for sawcutting and concrete patch.				
Volume 6	M2.03R	Confirm trade responsible for roof patch.				
Volume 6	M2.04R	Detail references missing.				
Volume 6	M2.04R	Consider identifying existing fixtures to remain.				
Volume 6	M2.04R	Confirm trade responsible for housekeeping pads.				
Volume 6	M2.04R	Invert elevations of sanitary waste and domestic water need coordination with Civil. Civil is currently designed higher than plumbing (typical).				
Volume 6	M2.05R	Detail references not found.				

DISCIPLINE: <u>Mechanical</u>			Stanwood High School			
CONSTRUCTABILITY REVIEW TEAM			DESIGN TEAM			
VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 6	M2.06R	Detail references not found.				
Volume 6	M2.07R	No comment this plan sheet.				
Volume 6	M2.08R	Confirm details 13 - cant by MFR, and 14 - insulation below deck. Consider deleting if not required for single ply membrane roof.				
Volume 6	M2.08R	HVAC sequences of operation not found for Field House.				
Volume 6	M2.08R	Controls diagrams not found for Field House.				
Volume 6	M2.09R	Consider providing a water riser diagram for Field House.				
Volume 6	M2.09R	Confirm coordination of EMCS and electrical scopes of work.				
Volume 6	M3.00R	Consider EMCS contractor to provide motor rated relay for controls.				
Volume 6	M3.01R	Detail references not found.				
Volume 6	M3.01R	Invert elevations of sanitary waste and domestic water need coordination with Civil. Civil is currently designed higher than plumbing (typical).				
Volume 6	M3.02R	Detail references not found.				
Volume 6	M3.03R	Detail not found for exterior wall exhaust fan termination.				
Volume 6	M3.03R	HVAC sequences of operation not found for Batting Cage.				
Volume 6	M3.03R	Controls diagrams not found for Batting Cage.				
Volume 6	M3.03R	Confirm coordination of EMCS and electrical scopes of work.				

CONSTRUCTABILITY REVIEW TEAM			DESIGN TEAM			
VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 4	General Note	Vol. 4 appears to be 93% complete.				
Volume 3	General Note	Vol. 3, 5 & 6 appear to be 99% complete.				
Volume 4	General Note	Details shown on E7 Series are precise and done very well.				
Volume 4	General Note	Ensure GFI Breakers needed are noted in Panels Schedules.				
Volume 4	General Note	Show all required devices for ADA and each ADA location.				
Volume 4	General Note	Alt. #9 References Photovoltaic Support as Base Bid, Nothing is shown in the Electrical Drawings.				
Volume 4	General Note	Show clock locations on drawings.				
Volume 4	E1.21	Note 8 not found on E1.21.				
Volume 4	E1.31	Notes 5 & 6 are in conflict with Brace Frame.				
Volume 4	E2.12	Confirm lighting required in Elevator Pit.				
Volume 4	E2.16	Consider using an "In-Use" light integrated with Kiln Controls.				
Volume 4	E3.11	Change Note 2 "On Sheet E3.41".				
Volume 4	E3.11	Note 5, confirm required electrical for power supply.				
Volume 4	E3.11	Note 6, consider coordinating Mag Door Holders into Lockdown.				
Volume 4	E3.12	Note 15, consider coordinating Mag Door Holders into Lockdown.				
Volume 4	E3.13	Coordinate Range Hood Fan and Controls if required.				
Volume 4	E3.13	Notes 1, 2, 12 not found on E3.13.				
Volume 4	E3.13	Confirm Note 3 is correctly associated with E3.13.				
Volume 4	E3.15	Coordinate Range Hood Fan and Controls if required.				
Volume 4	E3.16	Consider using an "In-Use" light integrated with Kiln Controls.				
Volume 4	E3.22	Note 1 not found on E3.22.				
Volume 4	E3.23	Notes 6 and 7 used twice.				
Volume 4	E3.23	Provide installation and mounting detail for Note 17 cord reels.				
Volume 4	E3.25	Note 5 not found on E3.25.				
Volume 4	E3.26	Provide installation and mounting detail for Note 14 cord reels.				
Volume 4	E3.33	Note 7 not found on E3.33.				
Volume 4	E3.35	Notes 4, 5, 6, 7 are not found on E3.35.				
Volume 4	E3.41	Coordinate with Systems requirements for Point Of Sale, Store and Kitchen Office.				
Volume 4	E3.42	Limit E3.42 to necessary symbols.				
Volume 4	E4.11	Confirm telecom needs for Point Of Sale.				
Volume 4	E4.14	Note 4 not found on E4.14.				
Volume 4	E5.01 Detail 4	Ensure a Sequence of Operations is provided at bid time that includes the integration and coordination of Lockdown, Access Control, Intrusion, Public Address, Intercom, CCTV and Fire Alarm Systems.				
Volume 4	E5.02 Detail 2	Fix Construction Notes.				
Volume 4	E6.01	Complete General Note 2.				
Volume 4	E6.01	Notes 1 and 15 not found on E6.01.				
Volume 4	E6.01	Per Specification 265600 there is an Emergency Lighting Inverter but none is shown in the One-Line.				
Volume 4	E6.02	Per Specification 265600 there is an Emergency Lighting Inverter but none is shown in the One-Line.				
Volume 4	E6.13	Confirm all 120/208 volt loads in the elevator machine rooms, elevator pits and elevator cabs are fed from Panels EL1 and EL2 per NEC.				

DISCIPLINE: <i>Electrical</i>			Stanwood High School			
CONSTRUCTABILITY REVIEW TEAM			DESIGN TEAM			
VOLUME	SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
			YES	NO		
Volume 4	E6.31	Complete Mechanical Equipment ELEC Connection Schedule.				
Volume 4	E6.32	Complete Mechanical Equipment ELEC Connection Schedules.				
Volume 4	E7.05	General Note 3. This comment is used throughout the Systems Drawings and is difficult to quantify and bid accurately. Please quantify or make as an allowance.				
Volume 4	E7.07	Notes 11 and 12 are not found on E7.07.				
Volume 4	E7.08	Fix Notes 9 and 10.				
Volume 4	E7.10	Notes 3 and 4 are not found on E7.10.				
Volume 4	E7.11	Notes 23, 24, 25, 26 and 28 are not found on E7.11.				
Volume 4	E7.11	Consider adding Door #'s to Access Control Construction Note Schedule.				
Volume 4	FA Series	Verify and confirm all Notes shown on Fire Alarm Drawings are accurate and appropriate.				
Volume 4	FA1.11	Coordinate required PIV with E1.01 and E1.02.				
Volume 4	FA1.11	Confirm Kitchen Ansul System is coordinated with Fire Alarm.				
Volume 4	FA1.11	Clarify location and definition of Notes 21 and 24.				

DISCIPLINE: <b>Specs</b>		Stanwood High School			
CONSTRUCTABILITY REVIEW TEAM		DESIGN TEAM			
SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
		YES	NO		
334001/2.06	Stormwater Filter System and Cartridges not shown on plans.				
334001/2.07	Trench Drain not called out on plans. Plans do show Slot Drain.				
334001/3.07	Flow Control Structure not shown on plans.				
011150	Coordinate Alternates with drawings and cost estimate. Alternates are not delineated on drawings or specification sections.				
033000 2.01C	Concrete form liner is called out on A9.00. Coordinate.				
033560 1.01A	No Finish Schedule provided in drawings. Clarify how/where scope is defined.				
055810 1.02	There are several other closely related spec sections for expansion joint cover assemblies, including 092000, 092100, 092116, 042731, 074114, 074213, 076200, etc. Review related sections for all specs and update for this project.				
071900 1.01	Clarify how scope is defined for graffiti and water repellant coatings. Are coatings applied to both vertical and horizontal (sidewalk and other features) surfaces? Is exposed CMU to be coated (it's masonry)?				
071900 1.01	Non-sacrificial coatings may lead to more aggressive anti-graffiti coatings. Typically a high pressure wash is used to remove graffiti - and that will damage the brick.				
072100 2.02H	Recommend clarifying that expanded polystyrene insulation is "used in concealed locations in formed concrete".				
072100 2.07A	Sheet vapor retarder is not called out in partition types and seems not to be needed if all insulation is outside of the Air Barrier. One location the vapor retarder may be desirable is at moisture generating rooms such as showers. Review and revise.				
072100 3.02A	Requirement for polyethylene strips over construction joints is unclear. It seems that this would defeat the bentonite waterproofing. If retained, coordinate with installation requirements for bentonite waterproofing.				
072100 3.03	Recommend including requirement to stagger joints in board insulation to prevent gaps.				
072100 3.04	No batt insulation is shown within exterior wall stud cavity. Delete and/or coordinate this section of the specifications.				
072700 2.03	Is a "rain screen" system used on the project? Terminology is confusing and many of the accessories listed are not included in the "incomplete" details. Recommend revising to "Air Barrier Accessories."				
074044 3.03H	Fasteners and sealants should also be compatible with air barrier systems.				
074113	The specification for A4.01, Roof Type 4 includes system components not listed in the roof assembly. Roof assembly is not detailed.				
075310 1.04	Verify compatibility of induction fastening with roof system products.				
075310 1.09D	Verify warranty is still valid with induction fastening.				
075310 2.04B	Clarify what happens when crickets are less than 2' thick. Is tapered isocyanurate required? Does isocyanurate taper to a 0" thickness?				

DISCIPLINE: <b>Specs</b>		Stanwood High School			
CONSTRUCTABILITY REVIEW TEAM		DESIGN TEAM			
SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
		YES	NO		
075310 2.05	If crickets taper down to 0" thickness, this conflicts with the minimum R-38 requirement (which would require +/- 6" of insulation thickness). Coordinate.				
075310 2.07.A.5	"Shiplap" is the incorrect substrate description. Coordinate with roofing systems for correct roofing substrate(s).				
075310.2.12.B	Revise reference to match specification section title: "Induction System Fastening".				
075410 3.03.A	Update Section reference to "075310 Single Ply Roofing System".				
075410 3.04	Define scope of weld testing. Are all induction welds tested? Define "optimal" bond; "optimal" is subjective.				
099113 1.01.E	Coordinate reference to "all other sections". Scope is difficult to define and unlikely to include all scope in the bid.				
133419 1.06.B.2	Scope gap exists between design of pre-fabricated structure to support beams and mechanical, electrical, plumbing, fire protection requirements to "attach to structure" (1/M5.01C). Who designs and installs the supports?				
Genl Conditions 1.1.1	Last Paragraph: unbidable without being able to read Architect's mind.				
many sections	Extensive listing of ASTM and other standards in Part-1 is relevant only if those standards are referenced later in the specification section. Merely mentioning a standard in Part-1 does not translate to project-enforceable requirements.				
01 11 50	Alternates are not indicated on drawings.				
03 30 00	3.12 A & 3.12 C AVW 03 35 60 1.07. Note: Ff & FI only apply to slab on grade, by definition of standards don't apply to elevated slabs.				
03 36 00	Suggest researching the "American Society of Concrete Contractors" Concrete Polishing Council's October, 2017 guide specification for aggregate exposure classes A, B & C and using such text in lieu of this proprietary Retro-Plate text; at least to define the level of aggregate exposure that you want. 1.07A: see notes for 03 30 00 above. 3.02.B.2: This is not a retail store, so this text is redundant; Unsure what an "uninhibited" slab would be. Suggest considering requiring polishing to precede stud wall framing in order to not have uneven finishes near corridor walls.				
055213	No text found for Cable Railing.				
07 17 16	Text is very proprietary. Reduce.				
072119	Pages 2&3: many blanks to fill in.				
07 92 00	2.02.B – Spell-check "silicone". 2.02F - At variance with A0.02 Acoustical Notes. 2.02G: compare to A0.04 Acoustic Details and see if you want Type E there.				
Div 08	No "Louvers" section found; louvers are noted on drawings.				
08 11 13	2.04 C.4 – 2" frame width not indicated very often.				
08 71 00	2.05 - Include cylinders for 10 22 13 2.07D. Page 21 - Add hardware for "Equipment Platform" including door RF02.				
09 64 74	2.01 I - Finish specified AVW 09 91 23 2.05 K.				
09 64 74 & 09 65 51	Duplication of Stage-related flooring sections?				

DISCIPLINE: <b>Specs</b>		Stanwood High School			
CONSTRUCTABILITY REVIEW TEAM		DESIGN TEAM			
SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
		YES	NO		
09 91 23	2.04 C - Review description of spaces, including "is this an institutional facility?" 2.04 I.1 - Visually contrasting color paint for stairs etc. seems to be topic for another item, not subset of painting inside of ductwork black.				
09 91 23	2.05 and 3.08 - Two different groups of "Interior Finish Systems" are listed; just have one.				
10 51 00	2.02 - Are any "storage lockers" to be included? They're listed up in 1.01 C.				
11 30 00	2.01 C verify selection with staff.				
11 30 13	1.05 - Anything that needs NSF listing for food prep? Part 2 - Verify model numbers are current.				
11 53 13	2.02 A - Both 1-sided and 2-sided are noted on drawings. Do you need to add text here about that?				
33 00 00 2.04	Add Shrinkage Reducing Admixture per Structural.				
04 81 60 3.06	Coordinate jointing with architectural elevations and structural details. Consider adding corner joint requirements.				
05 21 00 3.06A	Clarify "joist Engineer of Record". EOR typically referents to the overall structural engineer for the building who will review, but not stamp, the design done by the joist engineer.				
13 34 19 1.05C 1	Add Stamped Structural Calculations including foundation reactions for review of foundation design by Engineer of Record.				
General	Confirm missing specification sections.				
General	Confirm shop drawing requirements.				
General	Confirm Oxygen and Acetylene piping, specification not found.				
General	Confirm detailed points lists.				
23 05 29	Confirm requirements for welding hood supports.				
23 05 29	Confirm requirements for piping and equipment supports from structure in CTE building.				
23 08 00	Consider enhanced commissioning.				
23 09 00	Para. 2.04 C. 3 - Consider DVD ROM.				
23 11 00	Para. 2.06 A - Science room outlets not specified or scheduled.				
23 72 00	Para. 2.02 J. 1 - Confirm energy recovery wheel requirement and coordination with mechanical equipment schedules.				
General Note	Specs appears to be 98% complete.				
General Note	No Clocks appear in the specs.				
260800	Consider adding Lockdown, Access Control and Fire Alarm to Commissioning.				
260800	Consider adding Megger Testing and Terminations to Commissioning if aluminum conductors are utilized.				
260800	Consider adding any system considered to be "Life Safety" to Commissioning.				
263213	Remove Emergency Generator from Spec Book.				
265600	Is an Emergency Lighting Inverter being utilized for this project? None was shown in E Series drawings. If it is being utilized, add it to Commissioning.				



DISCIPLINE: <u>Specs</u>		Stanwood High School			
CONSTRUCTABILITY REVIEW TEAM		DESIGN TEAM			
SHEET/ SECTION	REVIEWER'S COMMENTS	A/E ACTION		NOTES	CAD CHK
		YES	NO		
011150 1.04 A 9	Nothing in the Electrical Drawings references Photovoltaic in Base or Alt.				
00 00 10	Recommend Add Air Barrier testing Spec (include WSEC requirements, define contractors responsibility, and specifics for coordination of testing that is to be performed by Owner's Agent).				
00 00 10	Add section on reference documents available (Geotech, Haz Mat reports, OPR, etc.).				
00 10 00	Invitation to bid not edited (has April 2018 Dates as an example).				
01 35 00	Convert all design phase WSSP checklist targets shown as "Maybe" credits into Yes or No, provide bid set update.				
02 82 00	Clarify up front that "The Scope of the Work includes removal of all Hazardous materials" as part of the Contractors responsibility."				
02 83 00	Clarify up front that "The Scope of the Work includes removal of all Hazardous materials" as part of the Contractors responsibility."				
02 85 00	Edit Section. Clarify up front that "The Scope of the Work includes removal of all Hazardous materials" as part of the Contractors responsibility."				
04 05 11	Edit boilerplate where selections needed.				
07 21 19	Edit boilerplate where selections needed.				
08 17 00	Edit boilerplate where selections needed.				

## **V. METHODOLOGY**

### **Contract Document Check, Process, and Methodology Introduction**

MENG Analysis has developed the Design Document Check (DDC) to improve the overall quality of construction documents. Experience has shown that more than half of all change orders result from inadequate coordination of documents between disciplines. These conflicts often have their roots in the design process and can be avoided by coordination. In addition to professional opinions, our review utilizes a checklist system, which provides a logical and orderly approach to checking drawings and specifications.

It should be emphasized that this is not a total technical review, nor is it intended for total document review within any one discipline. Individual discipline project managers must still perform their own discipline drawing and coordination checks.

### **Implementation**

The study utilizes half-size plans sets for each team member, and one set of full-size drawings and specifications. Our independent team of design and construction professionals reviewed the plans and specifications. The team operated in a collaborative workshop setting to improve synergy and coordination.

In general, we used yellow high-lighter to mark items reviewed and red to make comments. This report is only a briefing of the annotated documents and the design group needs to review each annotated drawing sheets and specification sections to capture overall issues for coordination.

### **Caution**

This system is primarily intended to identify omissions and conflicts between disciplines, and not necessarily to indicate the correct way to do things (although if time permits, the reviewer may indicate a preferred solution). It is up to the design team to make the most appropriate corrections.

### **Request**

Please report back to MENG Analysis if you have comments regarding our constructability review process. Also, we are interested in tracking the projects to ascertain the dollar amount of change orders and how much the process may have saved the design team and the owner in time and money. Please forward feedback to MENG Analysis as available.

**VI. APPENDIX**

## Constructability Review Team

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## **Progress Discussion Sheet**

The following page contains the constructability review progress discussion sheet, which records the constructability review team's initial impressions regarding the completion level of the construction documents and the key issues observed by discipline. Midway through the study, the constructability review team revisited and updated the list with additional issues and the percent complete.

# PROJECT: STANWOOD HIGH SCHOOL

Date: 10.1.18

Construction Management: 88%  
• DIV 0 & 1 INCONSISTENT w/ DOCS  
• OCCUPIED SITE LOGISTICS CONCERNS  
• TECHNICAL SPEC'S. COORD.

Civil: 95%  
• Utility Crossing info MISSING  
• TYPES of catch BASINS  
• Detail COORDINATION

Landscape: 95%  
• Site Plans w/ civil dont match.

Architectural Exteriors: 65%  
• FEW EXTERIOR Details not completed/  
PROVIDED  
• VAPOR BARRIER continuity

Architectural Interiors: 90%  
• Building Plan Geometry dimensions  
Angles, etc...  
• TYPICAL Comment references not  
on same sheet  
• Lower floors MORE complete than  
UPPER

Structural: 96%  
• Field house behind  
• COORDINATION of envelope details  
w/ ARCH.

Mechanical: 85%  
• NO CFM'S shown on Ducts  
• DETAILS MISSING (MORE NEEDED)  
• SECTIONS ... NEED MORE!

Electrical: 90%  
• Elec/Mech Schedules incomplete  
• BETTER COORD. between line voltage  
& low voltage

Other :  
• ~~Location of~~ MTC & Storage Buildings  
Not included (FOUND) IN SET  
- if future bid... provide clarity  
• NO INTERIOR FINISH SCHEDULES  
• NO BASE BID vs ALT. shown in DWGS, COORD. w/ SPEC!

Date: 10.3.18

Construction Management: 80%  
Spec/Scope Coordinate w/ Plans  
Details unclear - All disciplines  
Bid Form Update - Alternates?

Civil: 95%  
Discipline Coordination Sanitary/Mech  
Catch Basin Types Roof drains  
Horizontal Control Development

Landscape: 95%  
Civil to Coordinate

Architectural Exteriors: 40%  
Exterior details under developed  
Envelop details  
Inter-discipline Coordination

Architectural Interiors: 92%  
Polished Concrete Floors  
Reference Discrepancy  
Remote General Notes.

Structural: 92%  
Arch Coordination/Wall Sections  
Floor Depressions  
Misc. Details / Stairs / Overhangs  
Mech

Mechanical: 87%  
Need more Details/Sections  
Civil Coordination  
Incomplete Duct Drawings

Electrical: 93%  
Elec/Mech Schedules Incomplete  
Lighting inverter not shown  
Emergency Back-up

Other :