Minutes of the State Appeals Board
Appeal #15-03
Tuesday, May 19, 2015
Hearing @ 9:15 a.m.

Preliminaries:

- **Appeals Board Members:**
  - Scott McKown, Chair – State Appeals Board, Assistant Director – Construction Codes & Licensing Division (CCLD)
  - Mike Bunnell, Construction Code Representative, CCLD
  - Dan Kelsey, Administrative Structural Engineer, CCLD
  - Doug Nord, Supervisor/Regional Services, CCLD
  - Michael Godfrey, Manager of Education, Rules and Code Development, CCLD
- **Other Appearances:**
  - Eric Beecher, Assistant Attorney General representing the Board – Office of the Attorney General
  - Craig Richardt/Midwest Walls, Applicant
  - Shaun Palmer, Midwest Walls, representing the Applicant
  - Randy Johnson, Building Official, City of Rochester
  - Lyndy Lutz, Administrative support, CCLD
  - John McGuire, BAM Board
  - John Eischen, Rochester Area Builders

- Scott McKown welcomed everyone and introduced himself as the Chair of the State Appeals Board, introduced board members and Attorney Eric Beecher. The State Appeals Board convened to hear an appeal from Craig Richardt/Midwest Walls concerning a determination made by Randy Johnson, the Building Official for the City of Rochester.

- Chair McKown referred to Attachment A and stated that the appeal was based on:
  - *"ICC-ES Evaluation Report submitted on Feb 3, "ESR-1662", under conditions of use, Section 5.5 states that "Design calculations and drawings must be submitted to the code official for approval. The documents must be prepared by a registered design professional where by the statutes of the jurisdiction in which the project is to be constructed. The design calculations and details must address, at a minimum the following:*
    - *Details of waterproofing if applicable.*
    - *Depth of footing and footing specifications consistent with this report.*
    - *Investigation of resistance to overturning and uplift forces.*
    - *Details for lateral support of the top and bottom of superior Walls Xi Walls.*
    - *Verifications that the loading requirements at the jobsite do not exceed the allowable loads and details (including the foundation details) noted in section 4.1 of this report. The calculations must include verification that*

the combined loading conditions, such as out of plane and vertical loads do not exceed the allowable vertical loads noted in this report".

- Chair McKown noted that the meeting would be recorded in order to produce minutes of the hearing and he asked that speakers clearly state their name and who they are representing. He then asked Mr. Beecher to address the Board.

- Eric Beecher introduced himself as an Assistant Attorney General with the State representing the Board. He is not a member or the Board and would not participate in making decisions. His roll is procedural to help make a record, and assuming someone so moves, he would work with Chair McKown to prepare written Findings of Fact and an Order based on the Board's decision. The Board's authority is set forth under:

  MN Rule 1300.0230 BOARD OF APPEALS, Subp. 3. Limitations on authority. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply, or an equally good or better form of construction is proposed. The board shall have no authority to waive requirements of this code.

  Today the Board would make a decision under Subpart 3 that sets the limitations on their authority. He reminded everyone to speak their name when addressing the Board.

Call to Order

- Chair McKown called the meeting to order and reviewed hearing procedures:
  - The building official and Mr. Richardt will both get an opportunity to address the Board. Please limit testimony to 20 minutes per person, focus on the facts and appeal content only, and do not discuss outside information that isn't relevant. After both parties have given their testimony he would close that portion of the appeal and Board members would talk among themselves or ask questions for clarification. Following this the Board would move on a motion, a decision would be made with a Facts of Findings and an Order would be issued. The meeting would then be adjourned. Mr. Richardt would be the first to address the Board with Mr. Johnson following.

- Craig Richardt/Midwest Walls introduced Shaun Palmer, his project manager and representative of Midwest Walls.

- Shaun Palmer addressed the Board stating he works for Midwest Walls and is present to appeal item #2 on the correction letter (**see Attachment A**) that says they need to have a structural engineer stamp and provide calculations and drawings. They believe the interpretation of (section) 5.5 is wrong. The City of Rochester doesn't have a statute that says all residential foundations need to have a

structural engineer. He referred to a copy of the building code he submitted regarding the 7 items, at a minimum, that must be included on their building plans, under **R404.5 Precast concrete foundation walls** as follows (**see Attachment B**):

1. Design loading as applicable;
2. Footing design and material;
3. Concentrated loads and their points of application;
4. Soil bearing capacity;
5. Maximum allowable total uniform load;
6. Seismic design capacity; and
7. Basic wind speed.

All 7 items noted above are listed on CAD drawings submitted and he referred to page 1 and 3 on Superior Walls drawing sheets (**see Attachment B**). Palmer referred to MN Statute 326B.03 LICENSE OR CERTIFICATE REQUIRED, Subd. 2 Exceptions (for single family homes), item (1) noting the only item that would need this would be for special conditions. This is not a special condition; this is the foundation that meets the building code.

- Randy Johnson, Building Official, City of Rochester, said it has been their interpretation that precast foundation walls require engineering. He noted that the application for this individual home came in prior to the code change so technically they are under the 2007 Minnesota State Building Code; therefore, they are re-applying the ICC Evaluation Report. They look at condition 5.5 which indicates that design calculations in drawings need to be submitted to the building official for review. This is what the correction letter (**see Attachment A**) indicated. Since that time they have had numerous run-ins with the applicant wanting to use the 2015 Minnesota State Building Code which has provisions for dealing with precast concrete foundation walls. His final determination is based on the fact that the applicant references the 2015 Minnesota State Code and he believes that IRC section 404.5 indicates that precast concrete foundation walls shall be designed in accordance with accepted engineering practices and that the drawings shall be submitted to the building official for approval prior to the installation. They are trying to get the drawings for this precast concrete foundation system. He referred to Superior Walls isometric drawings (**see Attachment D**) and said these drawings show minimal information regarding the construction of the walls and because it is a precast wall system they are asking for the drawings that show construction of the wall, not for details of the gravel footings or the attachment of the joist; however, this is what they keep providing. How are the walls designed? This is the question they keep asking. They have an Evaluation Report that says there are certain size studs at 24 inches on center and they believe the face shell thickness is 1-3/4 inches but this should be indicated on the drawings as to how it is going to be constructed. If there is some type of design program behind the CAD program that could verify design loads to the foundation system it has not yet been provided. The resubmitted drawings indicate the same isometric drawings but also included a number of tables that appears to be a copy from their builder's guideline book. They are general in nature and do not provide specific information regarding the

construction of the foundation wall system. There appears to be an absence of a designer with regard to the design of the system. With regard to the contention of the statute, they do not have a statute requiring certification by a structural engineer. His argument with this is if the City of Rochester doesn't have statutes that require registered design professionals for residential projects then every building official in the state of Minnesota is in violation because every jurisdiction requires certified engineered trust drawings. This is an engineered component. They require those to be signed and certified by an engineer every time because it is an engineered design system. The applicant and Mr. Palmer state this is a pre-engineered system and if it's a pre-engineered system then where is the engineering. He has requested calculations but has not received any.

- Palmer said they asked to have the foundations moved to the new code for their last two projects and this was okay with building and safety. Their system is a precast wall system that is pre-engineered. They've gotten an ES Report. If they could provide some type of drawing that would satisfy Mr. Johnson they would have done so. There are no drawings available. He reiterated that all 7 requirements noted earlier are on their plans.

- Mike Godfrey referred to the ICC-ES Evaluation Report (**see Attachment E**) item 6.3 and stated *"Data is accordance with the ICC-ES Acceptance Criteria for Concrete Floor, Roof and Wall Systems and Concrete Masonry Wall Systems (AC15), dated February 2010; including reports of beam pocket tests"* and said that if this data was submitted to the ICC to produce this report there should be data or Superior Walls should have had to submit data under 6.3. Is this data available?

- Palmer responded that Superior Walls said ICC has the data and that they themselves did not have the information for them. His understanding was the testing was done by ICC.

- Godfrey asked if Superior Walls was involved in any way with development of the code sections on the precast drawings. Palmer stated that the president of Superior Walls was very involved in putting the standards together.

- Johnson said that their previous plan reviewers were under the impression that the Evaluation Report was a blanket approval of their system. They tried to get clarification from ICC via email with a response from the Vice President of ICC that said the ICC Evaluation Report is not a blanket approval. It provides a building official with the ability to accept the product based on those findings and those conditions of use.

- Chair McKown explained the proceedings process and asked for questions or clarification and when there were none he closed that portion of the appeal process. The goal is to try and make a decision based on specific items on the appeal.

A motion was made by Kelsey, seconded by Nord, that the building official has the authority to require additional information and/or certification by the licensed design professional. The vote was unanimous; the motion carried.

A motion was made by Godfrey, seconded by Kelsey, that Chairman McKown work with Attorney Eric Beecher to produce the Findings of Fact and an Order. The vote was unanimous; the motion carried.

A motion was made by Bunnell, seconded by Kelsey, to adjourn the hearing at 9:45 a.m.

ROCHESTER

Minnesota

BUILDING SAFETY DEPARTMENT
2122 Campus Drive S.E., Suite 300
Rochester, MN 55904-4744
(507) 328-2600
FAX (507) 328-2601
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April 16, 2015

OWNER/ DeWitz Home Builders
DESIGNER/ Finke Drafting and Design
GENERAL CONTRACTOR/ DeWitz Home Builders

RE: Single Family Dwelling
3401 Lakeridge Place NW
Plan #15-227
PERMIT #: R15-0159RB

This Plan Review is based on the Minnesota State Building Code. Please respond to the following by using the same numbering system and provide two sets of drawings and/or specifications for a final review.

The plans submitted indicate a poured wall foundation. On February 3rd we received a plan which included the Superior Walls information booklet for the above address. The plan is identical to the ones originally submitted on January 21st, 2015. Please verify which foundation system will be constructed, and submit the required plans, including the information listed below:

GENERAL BUILDING ITEMS

1. Foundation — Drawings from Finke, Drafting & Design, LLC, dated 1/21/15 indicate a poured concrete foundation wall. However, ICC-ES evaluation reports for superior precast walls were submitted. It is unclear as to what system is being used for the foundation walls. Please clarify.

2. Dwgs/Calcs — ICC-ES Evaluation Report submitted on Feb 3, "ESR- 1662", under conditions of use, Section 5.5 states that *"Design calculations and drawings must be submitted to the code official for approval. The documents must be prepared by a registered design professional where by the statutes of the jurisdiction in which the project is to be constructed. The design calculations and details must address, at a minimum the following:*
- Details of waterproofing if applicable.
- Depth of footing and footing specifications consistent with this report.
-Investigation of resistance to overturning and uplift forces.

GENERAL BUILDING ITEMS(cont)

- Details for lateral support of the top and bottom of superior Walls Xi Walls.
- Verifications that the loading requirements at the jobsite do not exceed the allowable loads and details (including the foundation details) noted in section 4.1 of this report. The calculations must include verification that the combined loading conditions, such as out of plane and vertical loads do not exceed the allowable vertical loads noted in this report."

Please provide design calculations and drawings per ESR-1662 as stated above.

Jo Chandramohan
Structural Plans Examiner

3. Drainage	The plans indicate exterior and interior drain tile next to the concrete footings and under the slab next to the foundation wall. Provide the drainage details for the foundation system to be used.
4. Foundation	Please provide the insulation type including location, R-value, vapor retarder mil thickness and lap distance. Waterproofing/damp-proofing type, if damp-proofing group 1 soils are required for backfilling. Provide the backfill information including type of fill and height. Also include underfloor details.
5. Radon	Provide the radon system with details to be used.
6. Safety Glazing	The plans do not appear to indicate safety glazing for the window in the master bathroom and the window in bedroom #3 closet. Please verify whether these windows will need to be safety glazing.

If you have any questions please contact me.

Thank you,

Jayne Frahm
City of Rochester
Building Safety
Plans Examiner
507-328-2625
jfrahm@rochestermn.gov

TABLE R404.2.3
PLYWOOD GRADE AND THICKNESS FOR WOOD FOUNDATION CONSTRUCTION (30 pcf equivalent-fluid weight soil pressure)

HEIGHT OF FILL (inches)	STUD SPACING (inches)	FACE GRAIN ACROSS STUDS			FACE GRAIN PARALLEL TO STUDS		
		Grade[a]	Minimum thickness (inches)	Span rating	Grade[a]	Minimum thickness (inches)[b, c]	Span rating
24	12	B	$^{15}/_{32}$	32/16	A	$^{15}/_{32}$	32/16
					B	$^{15}/_{32}$[c]	32/16
	16	B	$^{15}/_{32}$	32/16	A	$^{15}/_{32}$[c]	32/16
					B	$^{19}/_{32}$[c] (4, 5 ply)	40/20
36	12	B	$^{15}/_{32}$	32/16	A	$^{15}/_{32}$	32/16
					B	$^{15}/_{32}$[c] (4, 5 ply)	32/16
					B	$^{19}/_{32}$ (4, 5 ply)	40/20
	16	B	$^{15}/_{32}$[c]	32/16	A	$^{19}/_{32}$	40/20
					B	$^{23}/_{32}$	48/24
48	12	B	$^{15}/_{32}$	32/16	A	$^{15}/_{32}$[c]	32/16
					B	$^{19}/_{32}$[c] (4, 5 ply)	40/20
	16	B	$^{19}/_{32}$	40/20	A	$^{19}/_{32}$[c]	40/20
					A	$^{23}/_{32}$	48/24

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per cubic foot = 0.1572 kN/m^3.

a. Plywood shall be of the following minimum grades in accordance with DOC PS 1 or DOC PS 2:
   1. DOC PS 1 Plywood grades marked:
      1.1. Structural I C-D (Exposure 1).
      1.2. C-D (Exposure 1).
   2. DOC PS 2 Plywood grades marked:
      2.1. Structural I Sheathing (Exposure 1).
      2.2. Sheathing (Exposure 1).
   3. Where a major portion of the wall is exposed above ground and a better appearance is desired, the following plywood grades marked exterior are suitable:
      3.1. Structural I A-C, Structural I B-C or Structural I C-C (Plugged) in accordance with DOC PS 1.
      3.2. A-C Group 1, B-C Group 1, C-C (Plugged) Group 1 or MDO Group 1 in accordance with DOC PS 1.
      3.3. Single Floor in accordance with DOC PS 1 or DOC PS 2.

b. Minimum thickness $^{15}/_{32}$ inch, except crawl space sheathing may be $^{3}/_{8}$ inch for face grain across studs 16 inches on center and maximum 2-foot depth of unequal fill.

c. For this fill height, thickness and grade combination, panels that are continuous over less than three spans (across less than three stud spacings) require blocking 16 inches above the bottom plate. Offset adjacent blocks and fasten through studs with two 16d corrosion-resistant nails at each end.

R404.2.6 Fastening. Wood structural panel foundation wall sheathing shall be attached to framing in accordance with Table R602.3(1) and Section R402.1.1.

R404.3 Wood sill plates. Wood sill plates shall be a minimum of 2-inch by 4-inch (51 mm by 102 mm) nominal lumber. Sill plate anchorage shall be in accordance with Sections R403.1.6 and R602.11.

R404.4 Retaining walls. Retaining walls that are not laterally supported at the top and that retain in excess of 24 inches (610 mm) of unbalanced fill shall be designed to ensure stability against overturning, sliding, excessive foundation pressure and water uplift. Retaining walls shall be designed for a safety factor of 1.5 against lateral sliding and overturning.

R404.5 Precast concrete foundation walls.

R404.5.1 Design. Precast concrete foundation walls shall be designed in accordance with accepted engineering practice. The design and manufacture of precast concrete foundation wall panels shall comply with the materials requirements of Section R402.3 or ACI 318. The panel design drawings shall be prepared by a registered design professional where required by the statutes of the *jurisdiction* in which the project is to be constructed in accordance with Section R106.1.

R404.5.2 Precast concrete foundation design drawings. Precast concrete foundation wall design drawings shall be submitted to the *building official* and *approved* prior to installation. Drawings shall include, at a minimum, the information specified below:

1. Design loading as applicable;
2. Footing design and material;
3. Concentrated loads and their points of application;
4. Soil bearing capacity;
5. Maximum allowable total uniform load;
6. Seismic design category; and
7. Basic wind speed.

R404.5.3 Identification. Precast concrete foundation wall panels shall be identified by a certificate of inspection *label* issued by an *approved* third party inspection agency.

CODES & STANDARDS

Building Code:	2006
3rd Party Inspection Agency:	PFS Corporation, Cottage Grove WI
Quality Assurance Manual:	Superior Walls of America QA Manual
Site Preparation Guide:	Superior Walls Builder Guideline Booklet. (MAN 42-9000)
Fire Test Standards:	ASTM E84, ANSI / UL 1715, UBC 26-3

WALL MATERIALS

Concrete Compressive Strength:	5,000 PSI
Water/Cement Ratio:	≤ 0.40
Reinforcing Steel:	No.4 and larger - 60,000 PSI No.3 and smaller - 40,000 PSI
Secondary Reinforcement:	Polypropylene Fiber
Embedded Wood Blocking:	Pressure-Preservative-Treated
EPS Foam Insulation:	Flame Spread Index: 20 Smoke Developed Rating: 300
XPS Foam Insulation:	Flame Spread Index: 5 Smoke Developed Rating: 165

SITE CONDITIONS

Seismic Design Category:	A
Basic Wind Speed:	90 mph
Frost Depth:	42 inches
Assumed Soil Bearing Capacity:	1500 PSF
Assumed Wall Loading:	1200 Pounds/LF (uniform)
Crushed Stone Footing Depth:	8 inches
Crushed Stone Size:	1/2 inch or smaller
Backfill Material:	Backfill with clean crushed stone or any of the following soil types: GW, GP, GM, GC, SW, SP, SM, or ML.
Beam Pocket(s):	N/A
Column Pad(s):	5750 Pound Maximum (see plan for locations, sizes, and loads)

GENERAL NOTES

1. Jobsite shall be prepared by the builder in accordance with the Superior Walls of America Builder Guideline Booklet (MAN 42-9000).
2. Auxiliary drain pipe must be four (4) inch diameter perforated and directed to a sump pit or daylight.
3. Builder shall establish the required elevation benchmark.
4. Builder shall ensure site access for trucks and crane.

INSTALLATION NOTES

1. Installation shall be supervised by a Superior Walls certified installer. Certification is obtained through Superior Walls of America, Ltd.
2. Installation shall comply with Superior Walls of America's Installation Manual (MAN 42-9008).

SHEET INDEX

DAMPPROOFING

Superior Walls panels are recognized by the ICC-ES as an alternate method of providing foundation wall dampproofing. No additional dampproofing is required.
(See ICC-ES ESR-1553 & ESR-1662)

PLEASE NOTE

To comply with building code requirements, the framing/decking connections at the top of the Superior Walls panels and floor slab at the bottom of the Superior Walls panels MUST be completed prior to backfilling.

CUSTOMER RELEASE

As the authorized representative of the customer/builder I have reviewed this document and the drawings contained in it. I understand that it was created from information and dimensions provided by the customer/ builder and that Superior Walls will rely on that information in the manufacture of this project.

I acknowledge that I have compared this document to the sales order/contract and that this document supersedes the sales order/contract with respect to the objects and dimensions contained herein. I approve the project depicted in this document for production, and accept full responsibility for any and all measurements, dimensions and information provided by the customer/builder. I hereby release and discharge Superior Walls from any and all past, present or future claims and damages arising from or relating to the attached drawing and deviations in the drawing from information customer/builder provided.

Signature of Customer/Builder _____ Date _____

PROJECT:
15004-dewitz-rambler
Rambler Spec.
Lakeridge Lane NW
Rochester, MN 55901

[Project No. 15004]

BUILDER:
DeWitz Builders
604 11th Ave NW
Rochester, MN 55901

Contact: Jean DeWitz

Phone: 507-269-9377
Fax:
Mobile:
E-Mail: jean@dewitz

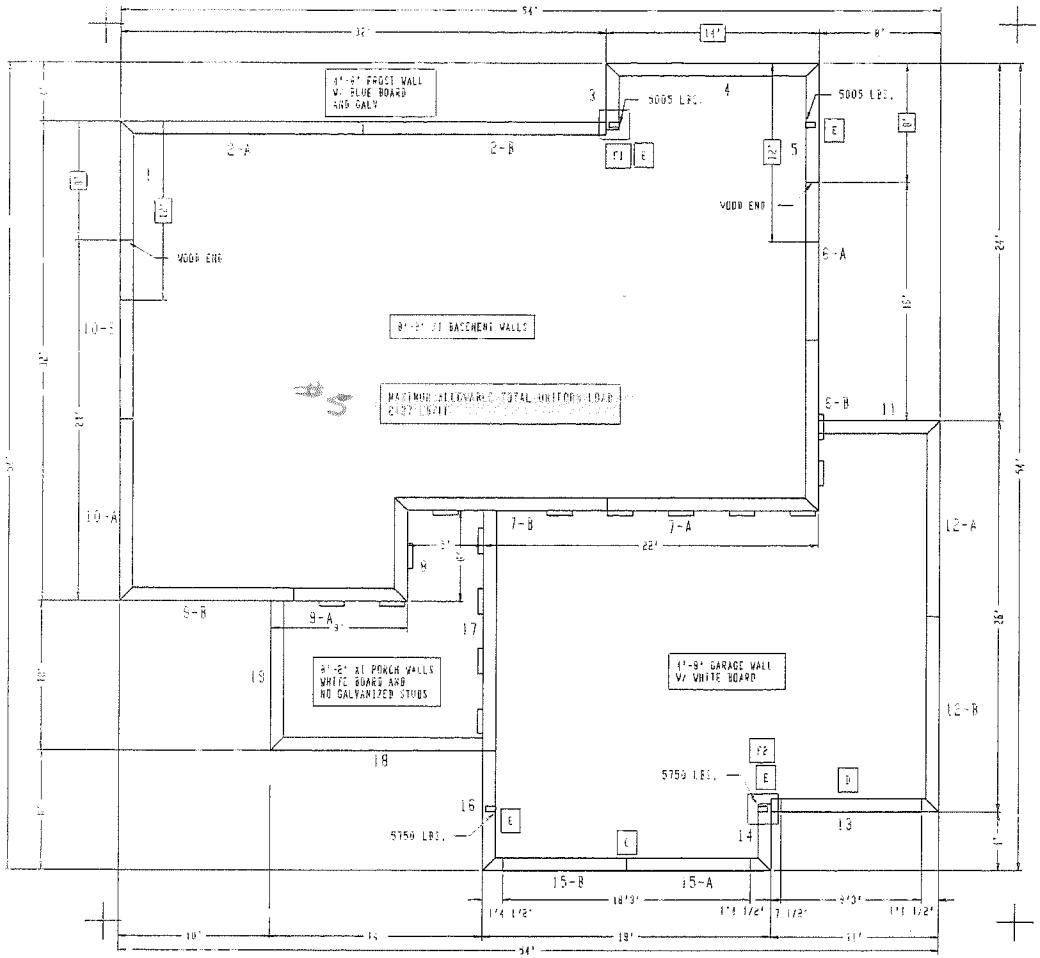
MUNICIPALITY:
Rochester
Contact: Randy Johnson
Phone: 507-328-2600
Fax:
E-Mail:

Superior Walls®

Great Lakes Superior Walls
4555 134th Ave
Hamilton, MI 49419
Phone: 269-751-4101
Fax: 269-751-6409
E-Mail: CAD@glswalls.com

DRAWING DATA:
Sold by: Craig Richardt
Drawn by: Cody Pogodzinski
Date Created: 1/26/2015
Last Revision: 5/6/2015
Revision #: 6
File Name: 15004-dewitz-rambler

PROJECT NO.
15004



PLAN VIEW

Scale:1/8"=1'0"

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Last Revision: 5/6/2015
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File Name: 15004-dewitz-rambler

PROJECT NO.
15004

326.03 LICENSE OR CERTIFICATE REQUIRED.

Subdivision 1. **Plans; documents.** No person, except an architect, engineer, land surveyor, landscape architect, geoscientist, or certified interior designer, licensed or certified as provided for in sections 326.02 to 326.15 shall practice architecture, professional engineering, land surveying, landscape architecture, or professional geoscience, or use the title certified interior designer, respectively, in the preparation of plans, specifications, reports, plats or other architectural, engineering, land surveying, landscape architectural, geoscientific, or interior design documents, or in the observation of architectural, engineering, land surveying, landscape architectural, geoscientific, or interior design projects. In preparation of such documents, reasonable care shall be given to compliance with applicable laws, ordinances, and building codes relating to design.

Subd. 2. **Exceptions.** Nothing contained in sections 326.02 to 326.15 shall prevent persons from advertising and performing services such as consultation, investigation, or evaluation in connection with, or from making plans and specifications for, or from supervising, the erection, enlargement, or alteration of any of the following buildings:

(1) dwellings for single families, and outbuildings in connection therewith, such as barns and private garages;

(2) two family dwellings;

(3) any farm building or accessory thereto; or

(4) temporary buildings or sheds used exclusively for construction purposes, not exceeding two stories in height, and not used for living quarters.

See Attachment D

CODES & STANDARDS

Building Code:	2006
3rd Party Inspection Agency:	PFS Corporation, Cottage Grove WI
Quality Assurance Manual:	Superior Walls of America QA Manual
Site Preparation Guide:	Superior Walls Builder Guideline Booklet. (MAN 42-9000)
Fire Test Standards:	ASTM E84, ANSI / UL 1715, UBC 26-3

WALL MATERIALS

Concrete Compressive Strength:	5,000 PSI
Water/Cement Ratio:	≤ 0.40
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SITE CONDITIONS

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Crushed Stone Footing Depth:	6 inches
Crushed Stone Size:	1/2 inch or smaller
Backfill Material:	Backfill with clean crushed stone or any of the following soil types: GW, GP, GM, GC, SW, SP, SM, or ML.
Beam Pocket(s):	0 Pound Maximum (see plan for locations, sizes, and loads)
Column Pad(s):	N/A

GENERAL NOTES

1. Jobsite shall be prepared by the builder in accordance with the Superior Walls of America Builder Guideline Booklet (MAN 42-9000).
2. Auxiliary drain pipe must be four (4) inch diameter perforated and directed to a sump pit or daylight.
3. Builder shall establish the required elevation benchmark.
4. Builder shall ensure site access for trucks and crane.

INSTALLATION NOTES

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2. Installation shall comply with Superior Walls of America's Installation Manual (MAN 42-9008).

SHEET INDEX

DAMPPROOFING

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(See ICC-ES ESR-1553 & ESR-1662)

PLEASE NOTE

To comply with building code requirements, the framing/decking connections at the top of the Superior Walls panels and floor slab at the bottom of the Superior Walls panels MUST be completed prior to backfilling.

CUSTOMER RELEASE

As the authorized representative of the customer/builder I have reviewed this document and the drawings contained in it. I understand that it was created from information and dimensions provided by the customer/ builder and that Superior Walls will rely on that information in the manufacture of this project.

I acknowledge that I have compared this document to the sales order/contract and that this document supersedes the sales order/contract with respect to the objects and dimensions contained herein. I approve the project depicted in this document for production, and accept full responsibility for any and all measurements, dimensions and information provided by the customer/builder. I hereby release and discharge Superior Walls from any and all past, present or future claims and damages arising from or relating to the attached drawing and deviations in the drawing from information customer/builder provided.

Signature of Customer/Builder _____ Date _____

PROJECT:
15004-dewitz-rambler
Rambler Spec.
Lakeridge Lane NW
Rochester, MN 55901

[Project No. 15004]

BUILDER:
DeWitz Builders
604 11th Ave NW
Rochester, MN 55901

Contact: Jean DeWitz

Phone: 507-269-9377
Fax:
Mobile:
E-Mail: jean@dewitz

MUNICIPALITY:
Rochester
Contact: Randy Johnson
Phone: 507-328-2600
Fax:
E-Mail:

Superior Walls®

Great Lakes Superior Walls
4555 134th Ave
Hamilton, MI 49419
Phone: 269-751-4101
Fax: 269-751-6409
E-Mail: cad@glswalls.com

DRAWING DATA:
Sold by: Craig Richardt
Drawn by: Cody Pogodzinski
Date Created: 1/26/2015
Last Revision: 1/26/2015
Revision #: 0
File Name: 15004-dewitz-rambler.drw

PROJECT NO.
15004

See Attachment D

Drawing Summary Block - All-Layers

19/19 XI Walls/Panels
2 Beam Pockets
2 Support Ledges Totaling 3'-4"

5/5 XI Walls/Panels Type: 4'-8"W/Ledge Linear Feet: 74'-6"
8/8 XI Walls/Panels Type: 8'-2" Linear Feet: 138'-8"
6/6 Walls/Panels Type: 4' UI Linear Feet: 76'-4"

Drawing Notes

- Object Details in inches -

ID	# Obj	Desc	Width	Height	Header	Door (B.O.W)	Max.Hdr. Capacity
A	2 BP		8	12	0		
B	2 CUT	CUT OUT	48	4	0		
C	1 CUT		195	12	0		
D	1 CUT		111	12	0		

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15004-dewitz-rambler
Rambler Spec.
Lakeridge Lane NW
Rochester, MN 55901

[Project No. 15004]

BUILDER:
DeWitz Builders
604 11th Ave NW
Rochester, MN 55901

Contact: Jean DeWitz

Phone: 507-269-9377
Fax:
Mobile:
E-Mail: jean@dewitz

MUNICIPALITY:
Rochester
Contact: Randy Johnson
Phone: 507-328-2600
Fax:
E-Mail:

Superior Walls®

Great Lakes Superior Walls
4555 134th Ave
Hamilton, MI 49419
Phone: 269-751-4101
Fax: 269-751-6409
E-Mail: cad@glswalls.com

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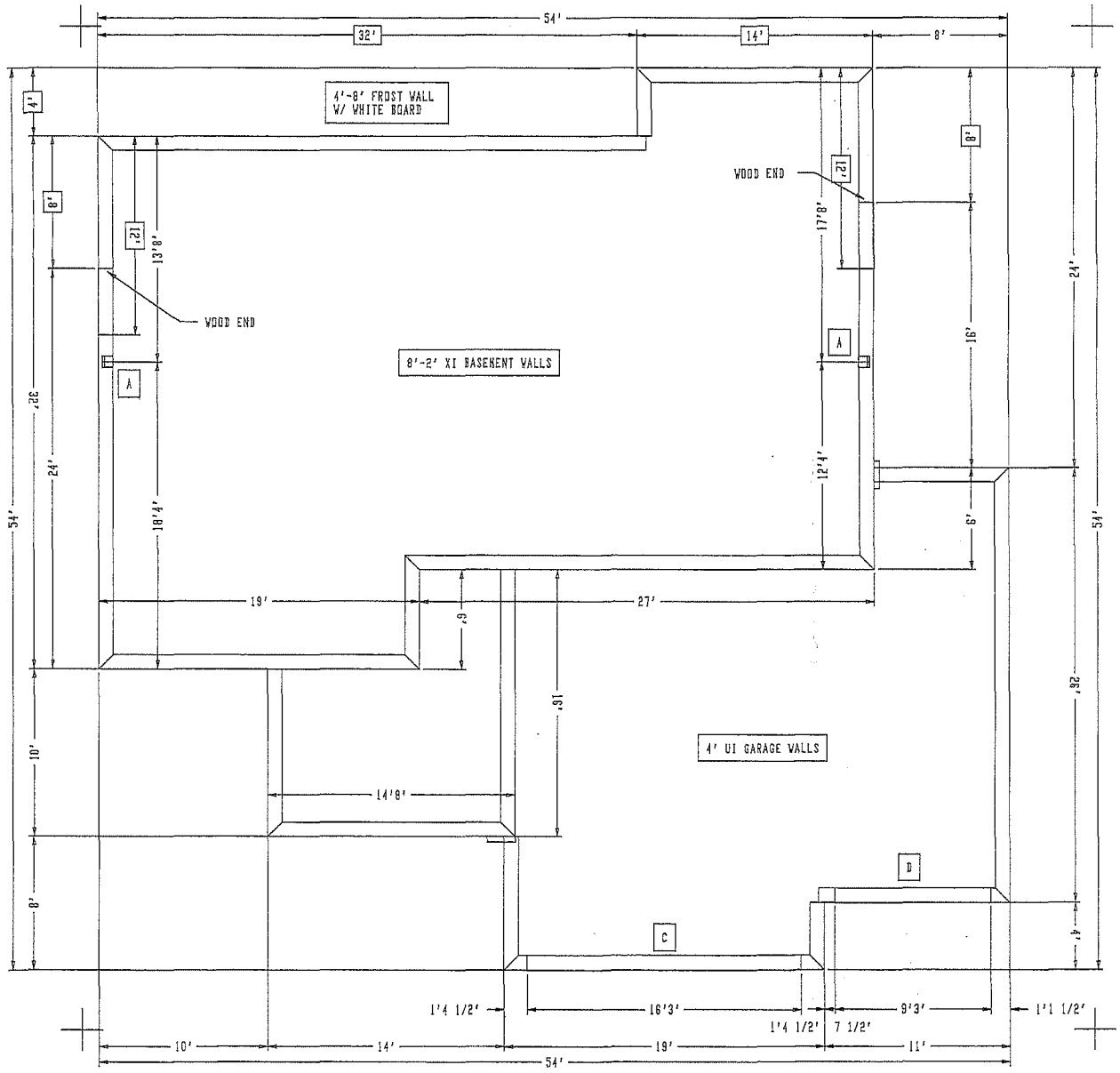
Drawn by: Cody Pogodzinski
Date Created: 1/26/2015
Last Revision: 1/26/2015
Revision #: 0
File Name: 15004-dewitz-rambler.drw

PROJECT NO.
15004

See Attachment D



PLAN VIEW

Scale:1/8"=1'0"

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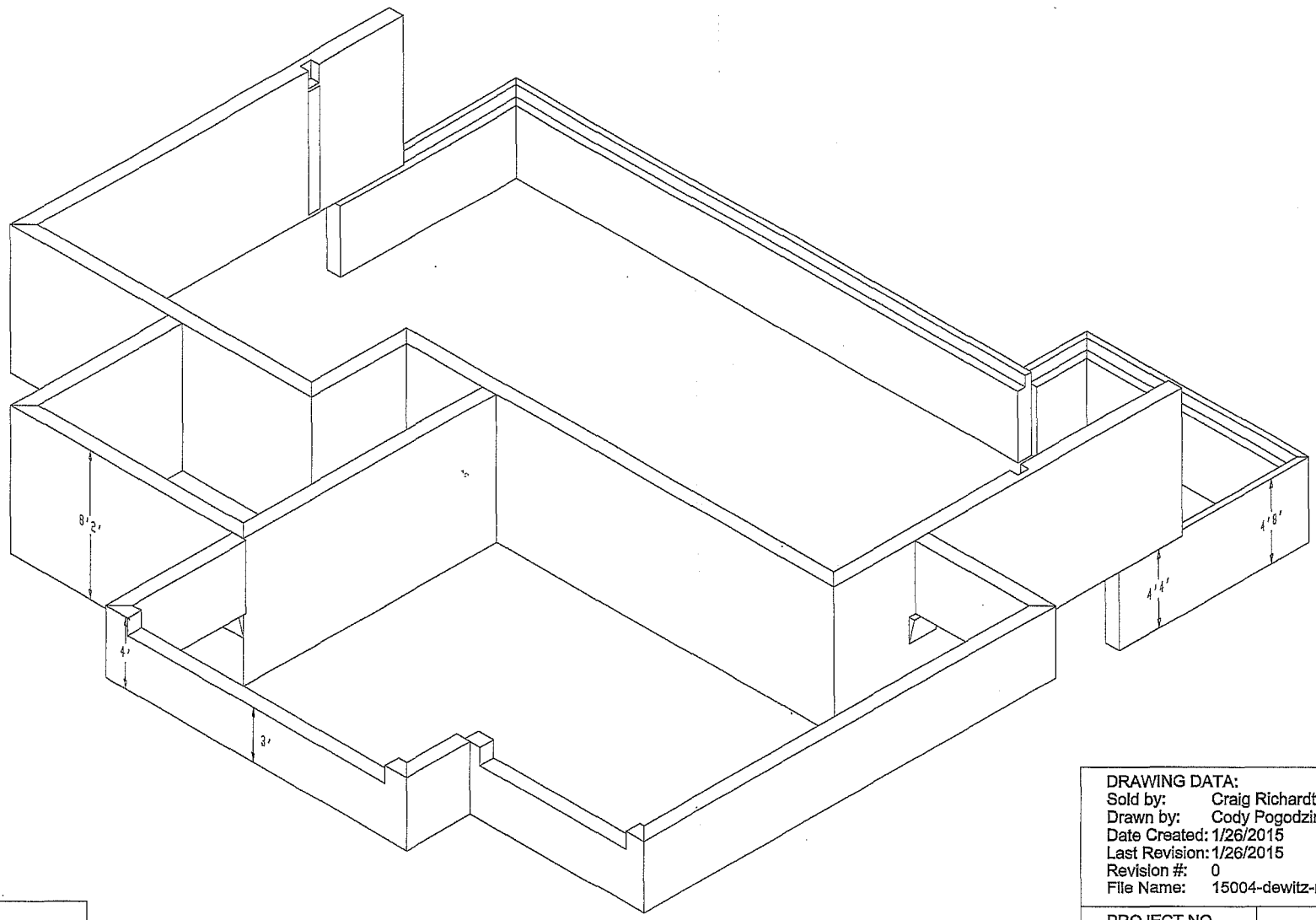
Sold by: Craig Richardt
Drawn by: Cody Pogodzinski
Date Created: 1/26/2015
Last Revision: 1/26/2015
Revision #: 0
File Name: 15004-dewitz-rambler.drw

PROJECT NO.
15004



Front Right View

DRAWING DATA:
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Date Created: 1/26/2015
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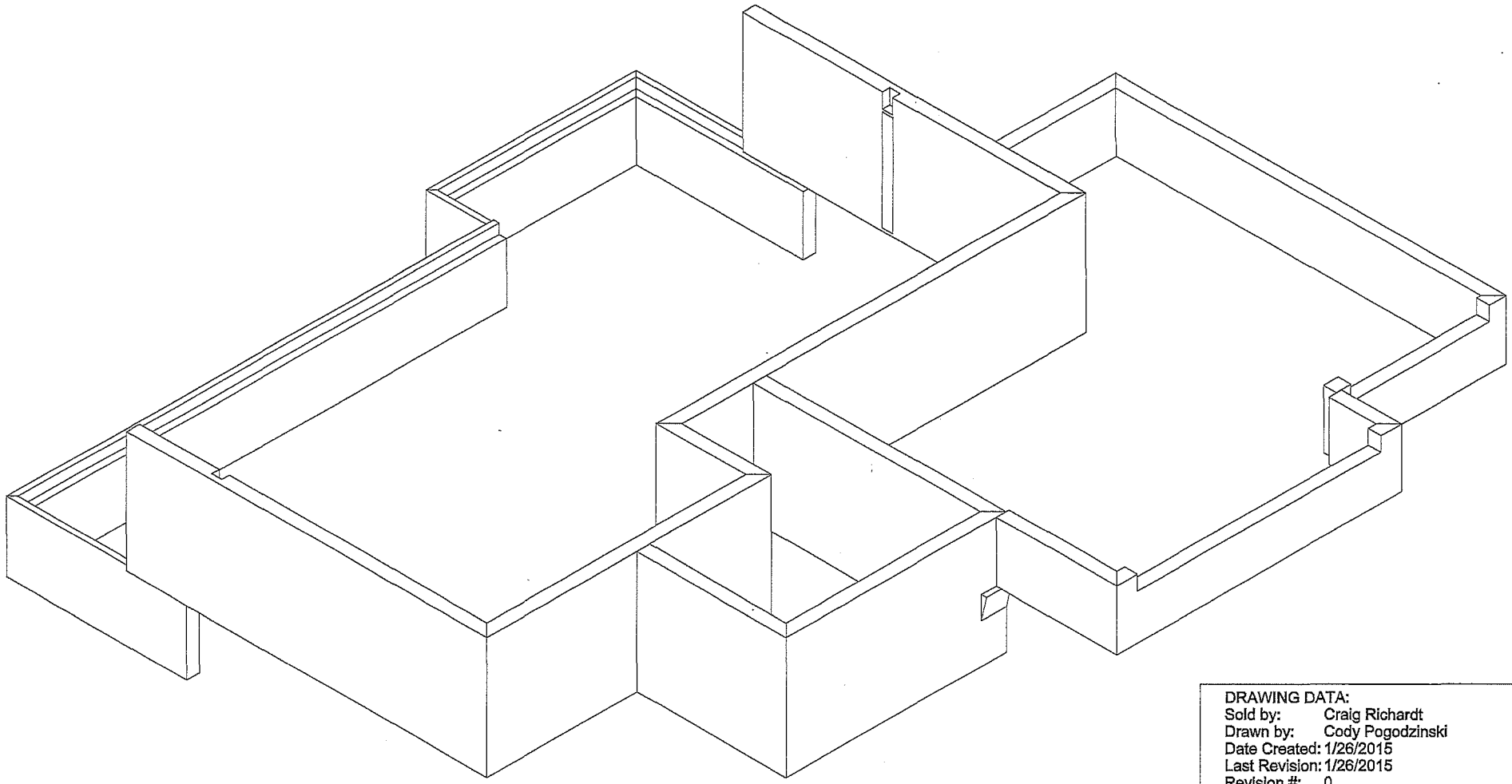
Revision #: 0
File Name: 15004-dewitz-rambler.drw

PROJECT NO.
15004



Front Left View

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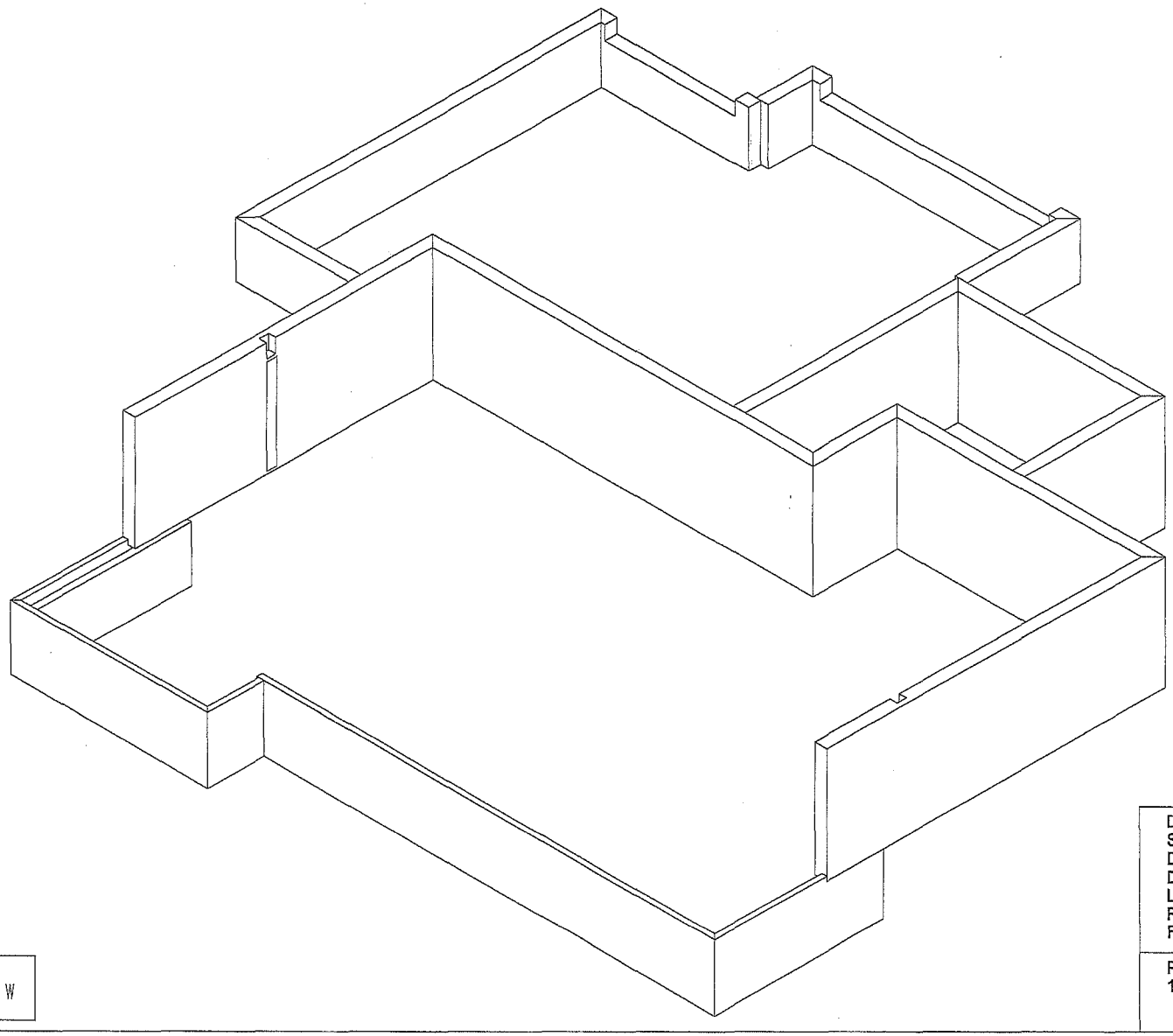
File Name: 15004-dewitz-rambler.drw

PROJECT NO.
15004

See Attachment D



Rear Left View

DRAWING DATA:
Sold by: Craig Richardt
Drawn by: Cody Pogodzinski
Date Created: 1/26/2015
Last Revision: 1/26/2015
Revision #: 0
File Name: 15004-dewitz-rambler.drw

PROJECT NO.
15004

ICC EVALUATION SERVICE
Most Widely Accepted and Trusted

ICC-ES Evaluation Report

ESR-1662

Reissued July 2014

This report is subject to renewal August 1, 2016.

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DIVISION: 03 00 00—CONCRETE
Section: 03 41 00—Precast Structural Concrete

REPORT HOLDER:

SUPERIOR WALLS OF AMERICA, LTD.
937 EAST EARL ROAD
NEW HOLLAND, PENNSYLVANIA 17557
(800) 452-9255
www.superiorwalls.com

EVALUATION SUBJECT:

SUPERIOR WALLS Xi PRECAST CONCRETE FOUNDATION WALLS

ADDITIONAL LISTEES:

SUPERIOR WALLS BY ADVANCED CONCRETE SYSTEMS, INC.
55 ADVANCED LANE
MIDDLEBURG, PENNSYLVANIA 17842

SUPERIOR WALLS OF CENTRAL VIRGINIA
10101 SUPERIOR WAY
AMELIA, VIRGINIA 23002

SUPERIOR WALLS BY COLLIER FOUNDATION SYSTEMS INC.
1500 ELLSWORTH AVENUE, SUITE 210
HEIDELBERG, PENNSYLVANIA 15106

SUPERIOR WALLS OF EAST TENNESSEE
10144 SPARTA HIGHWAY
ROCK ISLAND, TENNESSEE 38581

SUPERIOR WALLS SYSTEMS, LLC
DBA: SUPERIOR WALLS OF NORTH CAROLINA
3570 SOUTH MAIN STREET
SALISBURY, NORTH CAROLINA 28147

SUPERIOR WALLS OF NEW JERSEY
92 REESE ROAD
MILLVILLE, NEW JERSEY 08332

SUPERIOR WALLS OF UPSTATE NEW YORK
7574 EAST MAIN ROAD
LIMA, NEW YORK 14485

SUPERIOR WALLS BY WEAVER PRECAST
824 EAST MAIN STREET
EPHRATA, PENNSYLVANIA 17522

GREAT LAKES SUPERIOR WALLS
4555 134TH AVENUE
HAMILTON, MICHIGAN 49419

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2012, 2009 and 2006 *International Building Code®* (IBC)
- 2012, 2009 and 2006 *International Residential Code®* (IRC)

Properties evaluated:

- Structural
- Fire-resistance rating
- Surface burning characteristics
- Dampproofing
- Thermal Barrier

2.0 USES

The Superior Walls Xi Precast Concrete Foundation Walls (including basement walls) are used to support wood frame construction.

3.0 DESCRIPTION

The Superior Walls Xi Precast Concrete Foundation walls are formed from 5,000 psi (34.4 MPa) compressive strength normal-weight concrete that contains synthetic fibers. Superior Walls Xi Precast Concrete Foundation Walls consist of a $1^3/_4$-inch-thick (44 mm) exterior face shell, monolithically cast with $10^1/_4$-inch-wide (260 mm) top and bottom bond beams, and $2^1/_4$-inch-by-$7^1/_2$-inch (57 mm by 190.5 mm) concrete studs at 24 inches (610 mm) on center. The shell is bonded to either $2^1/_2$-inch-thick (63.5 mm) Rigid Cellular Polystyrene or to a 5-inch insulation assembly consisting of $4^1/_2$-inch (114.3 mm) Rigid Cellular Polystyrene and a $^1/_2$-inch (12.7 mm) layer of DOW Thermax recognized under ESR-1659 on the inside face. Each stud is wrapped with 1-inch-thick (25.4 mm) expanded polystyrene insulation on three exposed sides and faced with a galvanized steel channel for interior finish fastening. Chase openings with knockouts are provided in each stud for plumbing and electrical wiring.

Panels are available in heights of 4 feet (1219 mm), 8 feet 2 inches (2489 mm), 9 feet (2743 mm) and 10 feet (3048 mm), with corresponding weights of 170, 303, 329 and 361 lb/ft (253, 451, 490 and 537 kg/m), respectively. The panels are available in various lengths. See Figures 1 and 2.

4.0 DESIGN AND INSTALLATION

4.1 Design Details:

Backfill material must not exceed 100 lbf/ft^2/ft (1602 kg/m^2/m) equivalent fluid pressure for the 4-foot (1219 mm), 8-foot-2-inch (2489 mm), 9-foot (2743 mm) and 10-foot tall (3048 mm) Superior Walls. The walls have a combined (ledger plus wall loads above the foundation wall) maximum allowable axial compressive load of 5,500 lbf/ft (80 265 N/m).

Use of Superior Walls Xi walls with a brick ledge is limited to an allowable load of 2,900 lbf/ft (42 320 N/m) on the brick ledge, which is to be considered as part of the allowable load of the wall noted in this section.

Above-grade foundation stem wall applications in which negative transverse loads (such as leeward side wind pressure) in accordance with the applicable code are developed, must be limited to applications where the negative design wind pressure does not exceed 80 psf (3.83 kN/m^2). Above-grade foundation stem wall applications in which positive transverse wind loads, in accordance with the applicable code, are developed must be limited to applications where the allowable wind pressure does not exceed 155 psf (7.42 kN/m^2).

The allowable racking shear load on the Superior Xi foundation walls is limited to a maximum of 500 plf (7300 N/m). Construction using the Superior Walls Xi system is limited to those Seismic Design Categories specified in Section 5.7.

Use of Superior Walls Xi walls with beam pockets utilizing two support studs is limited to applications where the maximum allowable load applied to the beam pocket does not exceed 16,000 lbf (71 200 N) for a 10-foot-high (3048 mm) panel and 13,000 lbf (57 800 N) for shorter heights. Other beam pocket configurations are outside the scope of this report.

Beam pockets must be designed and constructed in accordance with the details, dimensions and specific loading limitations given in the engineered design drawings. See Figure 3 for typical beam pocket details.

Design of the footing supporting Superior Walls Xi walls must be in accordance with the applicable code. The footing must extend below the frost line of the locality, as required by the applicable code.

For jurisdictions adopting the IRC, installation of Superior Walls Xi walls on gravel footings is permitted as noted in IRC Section R401.2, provided the construction details comply with Section R403.4 and the details noted in Table 1 of this report.

The capacity of the bolted connection at the top and bottom of the panels, using $^1/_2$-inch-diameter by-2$^1/_2$-inch-long (12.7 mm by 63.5 mm) hex head bolts through the bond beams and a $^1/_2$-inch-diameter by-5$^1/_2$-inch-long (12.7 mm by 140 mm) hex head bolt through the footing beams, to transfer loads induced by lateral loads in the plane of the wall, is limited to 1,500 lbf (6675 N). See Figure 4 for typical details.

Details involving openings in the foundation walls have not been evaluated and are beyond the scope of this report.

The Superior Xi walls must be laterally supported at the top and bottom of the panels.

4.2 Fire-resistance-rated Wall Construction:

With the addition of two layers of $^5/_8$-inch (15.9 mm) Type X gypsum wallboard complying with ASTM C36 or C1396, attached to the stud facing in accordance with the applicable code, Superior Walls Xi walls with a maximum allowable axial compressive load of 3,000 lbf/ft (43 779 N/m) (including ledger loads) have a two-hour fire-resistance rating.

4.3 Dampproofing:

Superior Walls Xi walls have been evaluated as an alternative method of providing foundation wall dampproofing; therefore, no additional dampproofing is required.

4.4 Thermal Barrier:

An independent thermal barrier, separating the foam plastic from the interior of the building, is not required based on testing conducted in accordance with Section 2603.9 of the IBC.

4.5 Installation Details:

Superior Walls Xi walls must be installed in accordance with this report and the design details and calculations, as noted in Section 5.5 of this report.

Construction details noted in Superior Walls documents such as the *Builder Guideline Booklet*, dated January 2006, have not been evaluated and are beyond the scope of this report.

5.0 CONDITIONS OF USE

The Superior Walls Xi Precast Concrete Foundation Walls described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 Superior Walls Xi walls must be manufactured, identified and installed in accordance with this report and the information required by Section 5.5 of this report.

5.2 Where underground water investigation, required by the applicable code, indicates that a hydrostatic pressure condition exists, the foundation wall must be waterproofed in accordance with the applicable code. Evaluation of the waterproofing material is outside the scope of this report.

5.3 Connection of adjacent Superior Walls Xi walls must be inspected to verify application of the sealant and bolts in accordance with the submitted design drawings.

5.4 Soil capacity of the site must be consistent with the requirements of the applicable code. For jurisdictions adopting the IRC, the soil capacity of the site, in lieu of a complete geotechnical evaluation, must be assumed to have the load-bearing values specified in IRC Table R401.4.1.

5.5 Design calculations and drawings must be submitted to the code official for approval. The documents must be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed. The design calculations and details must address, at a minimum, the following:

- Details of waterproofing, if applicable.
- Depth of footing and footing specifications consistent with this report.
- Investigation of resistance to overturning and uplift forces.
- Details for lateral support of the top and bottom of Superior Walls Xi walls.

- Verification that the loading requirements at the jobsite do not exceed the allowable loads and details (including the foundation details) noted in Section 4.1 of this report. The calculations must include verification that the combined loading conditions, such as out-of-plane and vertical loads, do not exceed the allowable loads noted in this report.

5.6 Installation must be done by Superior Walls–certified installers.

5.7 Superior Walls Xi walls used as lateral force–resisting systems are limited to Seismic Design Category A or B under the IBC and to Seismic Design Category A, B or C under the IRC.

5.8 Superior Walls must be manufactured at the locations noted under "Additional Listees" in this report, in accordance with the Superior Walls of America, Ltd., Quality Assurance Manual, dated November 2006, and with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

6.1 Data in accordance with the ICC-ES Acceptance Criteria for Foam Plastic Insulation (AC12), dated June 2012, including a report of a fire test in accordance with Section 2603.9 of the IBC.

6.2 Results of water permeability tests conducted in accordance with ASTM E96.

6.3 Data in accordance with the ICC-ES Acceptance Criteria for Concrete Floor, Roof and Wall Systems and Concrete Masonry Wall Systems (AC15), dated February 2010; including reports of beam pocket tests.

6.4 Report of fire-resistance tests conducted in accordance with ASTM E119.

6.5 Manufacturer's published installation instructions (*Builder Guideline Booklet*), dated January 2006.

6.6 A quality control manual.

7.0 IDENTIFICATION

Each Superior Walls Xi precast panel must bear a label with the evaluation report number (ESR-1662). The label must be attached at mid-height, near the center of each wall panel. Additionally, each project must have at least one label on the foam insulation of one panel noting the name of the manufacturer, the name of the installer, and the manufactured and installation dates.

TABLE 1—MINIMUM DEPTH OF CRUSHED STONE FOOTING (inches)

CONSTRUCTION TYPE (Assumed Wall Loading)		SOIL TYPE AND LOAD BEARING CAPACITY (psf)			
		1,500	2,000	3,000	4,000
		MH, CH, CL, ML	SC, GC, SM, GM SP, SW	GP, GW	
Conventional Light-frame Construction					
1-story	(1,100 pounds per linear foot)	4	4	4	4
2-story	(1,800 pounds per linear foot)	4	4	4	4
3-story	(2,900 pounds per linear foot)	12[1]	8	4	4
Masonry Veneer over Light-frame Construction					
1-story	(1,500 pounds per linear foot)	4	4	4	4
2-story	(2,700 pounds per linear foot)	10[1]	6	4	4
3-story	(4,000 pounds per linear foot)	20[1]	12[1]	6	4

For **SI:** 1 inch = 25.4 mm, 1 psf = 0.0479 kN/m^2, 1 plf = 14.6 N/m.

[1]Stone must be vibrated in a maximum 8-inch lifts.

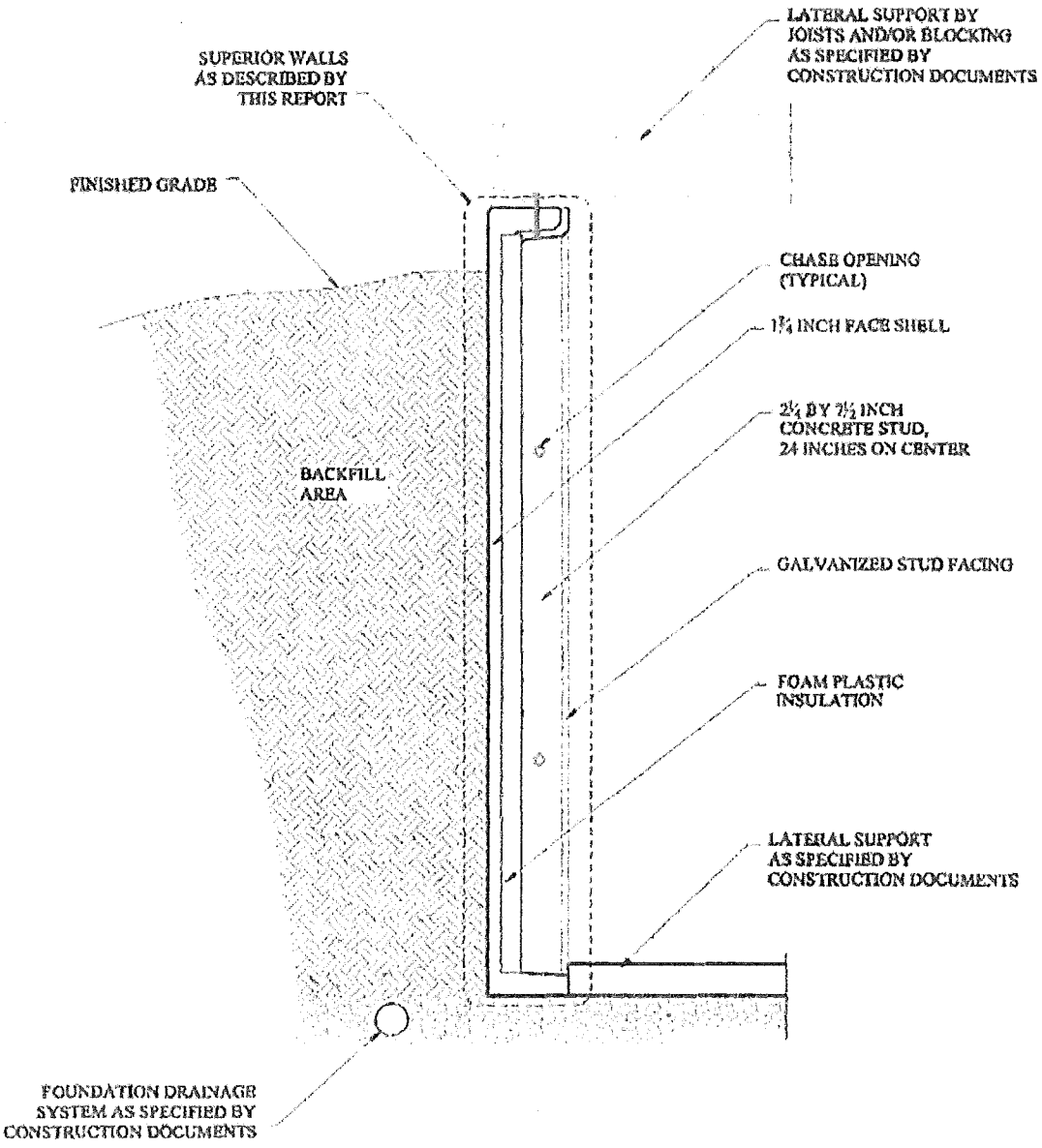


FIGURE 1—TYPICAL SUPERIOR WALL VERTICAL SECTION DETAIL

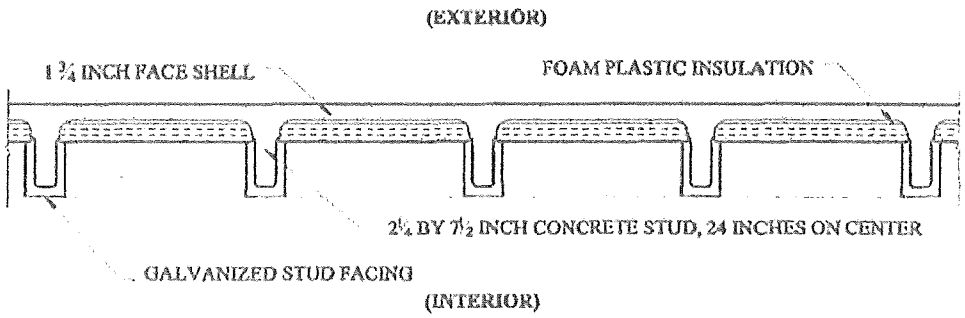


FIGURE 2—TYPICAL SUPERIOR WALL HORIZONTAL SECTION DETAIL

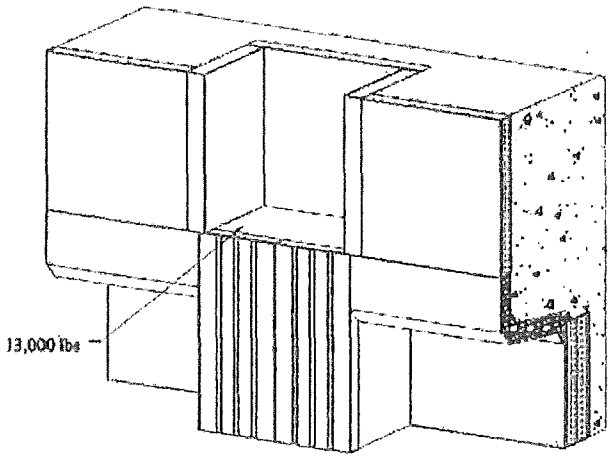
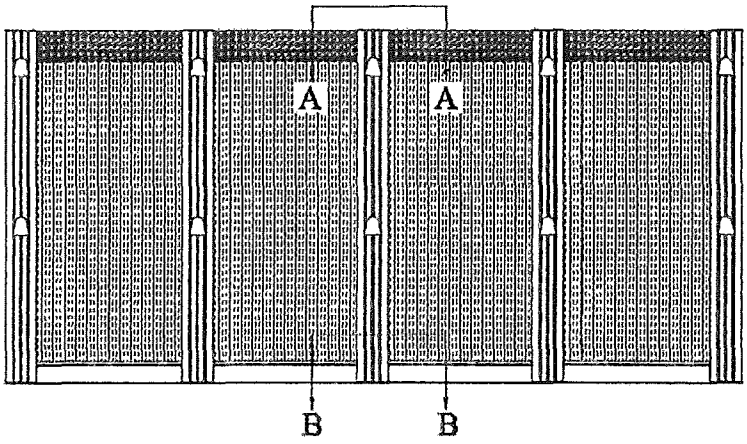
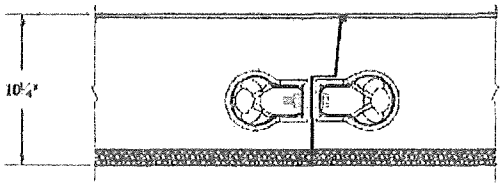


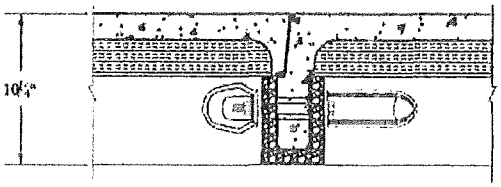
FIGURE 3—TYPICAL BEAM POCKET DETAIL



ELEVATION



DETAIL A



DETAIL B

FIGURE 4—TYPICAL WALL CONNECTION DETAIL