

CITY OF ALPENA

PLANS FOR PROPOSED

WATER RECYCLING PLANT

PHASE II
BUILDING IMPROVEMENTS

UTILITIES

NAME OF OWNER TYPE OF UTILITY

EARTH TECH OPERATIONS
210 HARBOR DRIVE
ALPENA, MI 49707
ATTN: MIKE GLOWINSKI
(517) 354-4891

CITY WATER & SEWER

MICHIGAN CONSOLIDATED GAS CO
13561 S. WEST BAY SHORE DR
SUITE 2100
TRAVERSE CITY, MI 49684
ATTN: KEN LAKE
(231) 929-2292

NATURAL GAS

VERIZON COMMUNICATIONS
223 LOCKWOOD ST
ALPENA, MI 49707
ATTN: KURT KRAJNIAK
(517) 356-8281

TELEPHONE

ALPENA POWER COMPANY
310 N. SECOND AVE
ALPENA, MI 49707
ATTN: GARY GRAHAM
(517) 356-2293 EXT:151

ELECTRICITY

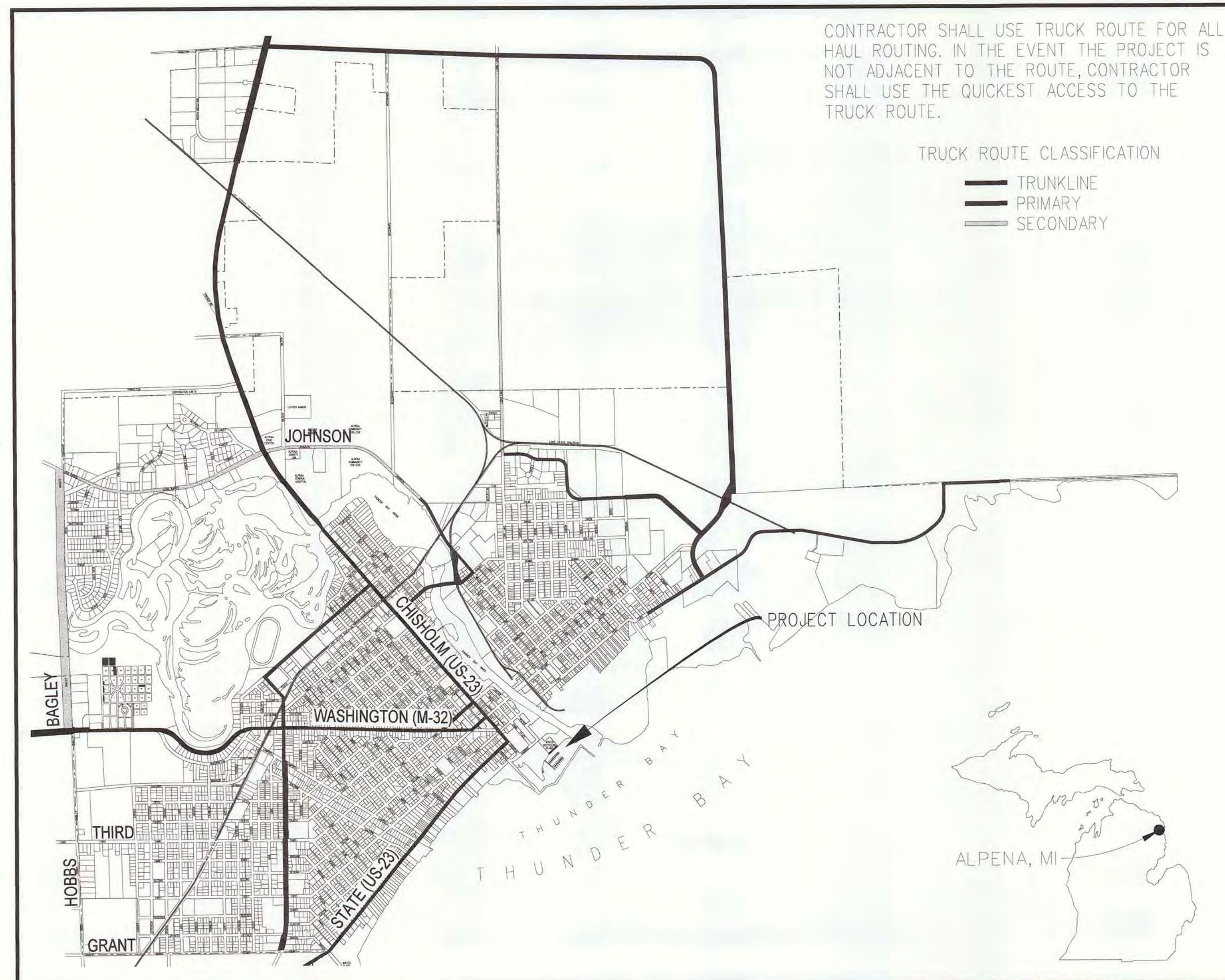
CHARTER COMMUNICATIONS
2066 M-32 WEST
ALPENA, MI 49707
ATTN: ED KAVANAUGH
(517) 356-4502

CABLE

ALPENA TOWNSHIP
4385 US-23 NORTH
ALPENA, MI 49707
ATTN: GARY RONDEAU
(517) 356-0297

TOWNSHIP UTILITIES

TITLE	SHEET NUMBERS
ODOR CONTROL ENCLOSURE - FLOOR PLAN	A-110
ODOR CONTROL ENCLOSURE - ROOF PLAN	A-111
ODOR CONTROL ENCLOSURE - ELEVATIONS	A-112
ODOR CONTROL ENCLOSURE - ELEVATIONS	A-113
ODOR CONTROL ENCLOSURE - BUILDING & WALL SECTION	A-114
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TANK DEMOLITION PLAN	S-102
FOUNDATION PLAN & SECTIONS	S-110
FOUNDATION PLAN & SECTIONS	S-111
ROOF FRAMING PLAN	S-112
SECTIONS & DETAILS	S-113
MECHANICAL PLAN	M-110
MECHANICAL DETAILS & NOTES	M-111
ELECTRICAL PLAN	E-110
ELECTRICAL DETAILS & NOTES	E-111



DESIGNED IN ACCORDANCE WITH 1994 AASHTO "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS"

ALL SIGNAGE SHALL BE IN ACCORDANCE WITH THE 1994 MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES

THE IMPROVEMENTS COVERED BY THESE PLANS SHALL BE DONE IN ACCORDANCE WITH THE 1996 MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND THE SUPPLEMENTAL SPECIFICATIONS PROVIDED.

THE CONTRACTOR SHALL TAKE EVERY PRECAUTION TO AVOID ANY DAMAGE TO THE EXISTING BITUMINOUS ROADWAY WHICH IS NOT TO BE REMOVED. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, REPAIR OR REPLACE ANY SUCH DAMAGE IN ACCORDANCE WITH THE 1996 MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION, AND TO THE SATISFACTION OF THE ENGINEER.

THE CITY OF ALPENA SHALL ISSUE PERMITS REQUIRED UNDER THE SOIL EROSION AND SEDIMENTATION CONTROL ACT (PUBLIC ACT 347) FOR WORK CONDUCTED WITHIN THE CITY LIMITS. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING OTHER LEGALLY MANDATED PERMITS FOR OFF-SITE DISPOSAL OF SPOILS GENERATED BY HIS WORK.



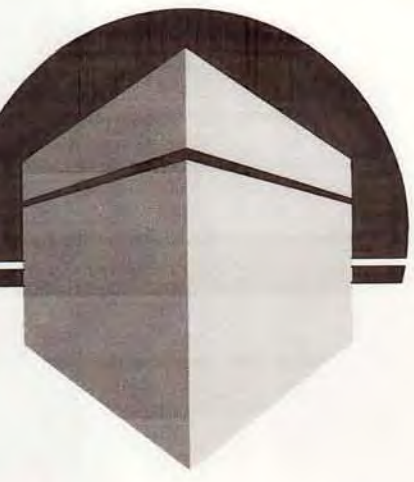
THE UTILITY LOCATIONS AS HEREON SHOWN ARE BASED ON FIELD OBSERVATIONS AND A CAREFUL REVIEW OF MUNICIPAL AND UTILITY COMPANY RECORDS. HOWEVER, IT IS NOT POSSIBLE TO DETERMINE THE PRECISE LOCATION AND DEPTH OF UNDERGROUND UTILITIES WITHOUT EXCAVATION. THEREFORE, WE CANNOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE BURIED UTILITY INFORMATION HEREON SHOWN. THE CONTRACTOR SHALL CALL "MISS DIG" (1-800-482-7171) 3 WORKING DAYS PRIOR TO ANY EXCAVATION. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THESE UTILITY LOCATIONS PRIOR TO CONSTRUCTION AND SHALL MAKE EVERY EFFORT TO PROTECT AND OR RELOCATE THEM AS REQUIRED. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AS SOON AS POSSIBLE IN THE EVENT A DISCREPANCY IS FOUND.

CONTRACT FOR: BUILDING IMPROVEMENT FOR AESTHETIC IMPROVEMENTS	
PREPARED BY:	
 MICHIGAN'S ADVENSHORE ENGINEERING DEPARTMENT 208 NORTH FIRST AVENUE ALPENA, MI 49707	
PREPARED UNDER THE SUPERVISION OF:	(SEAL)
 RICHARD O. SULLENGER, P.E. CITY ENGINEER REGISTRATION NO. 34953	
CITY OF ALPENA APPROVAL:	
 ALAN L. BAKALARSKI CITY MANAGER	7/19/01 DATE

E:\Water_Recycling_Plan\Screen_Wall\City Title Sheet.dwg

PHASE II IMPROVEMENT WATER RECYCLING PLANT

PHASE II 2001 - 02 OF 16
 SACD PRODUCTS • NEW HOPE, MINNESOTA
 REORDER BY PART NUMBER RSR



ALEXANDER V. BOGAERTS + ASSOCIATES, P.C.
ARCHITECTURE PLANNING

147 W. MAIN ST. SUITE 303
 GAYLORD, MICHIGAN 49735
 517.731.4343 PHONE
 517.731.5037 FAX



CAPITAL CONSULTANTS

725 PRUDEN STREET
 LANSING, MICHIGAN 48906
 517-371-1200
 123 WEST MAIN STREET
 GAYLORD, MICHIGAN 49735
 517-732-8131
 4328 THREE MILE ROAD
 GRAND RAPIDS, MICHIGAN 49544
 616-791-1016

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CLIENT AND PROJECT

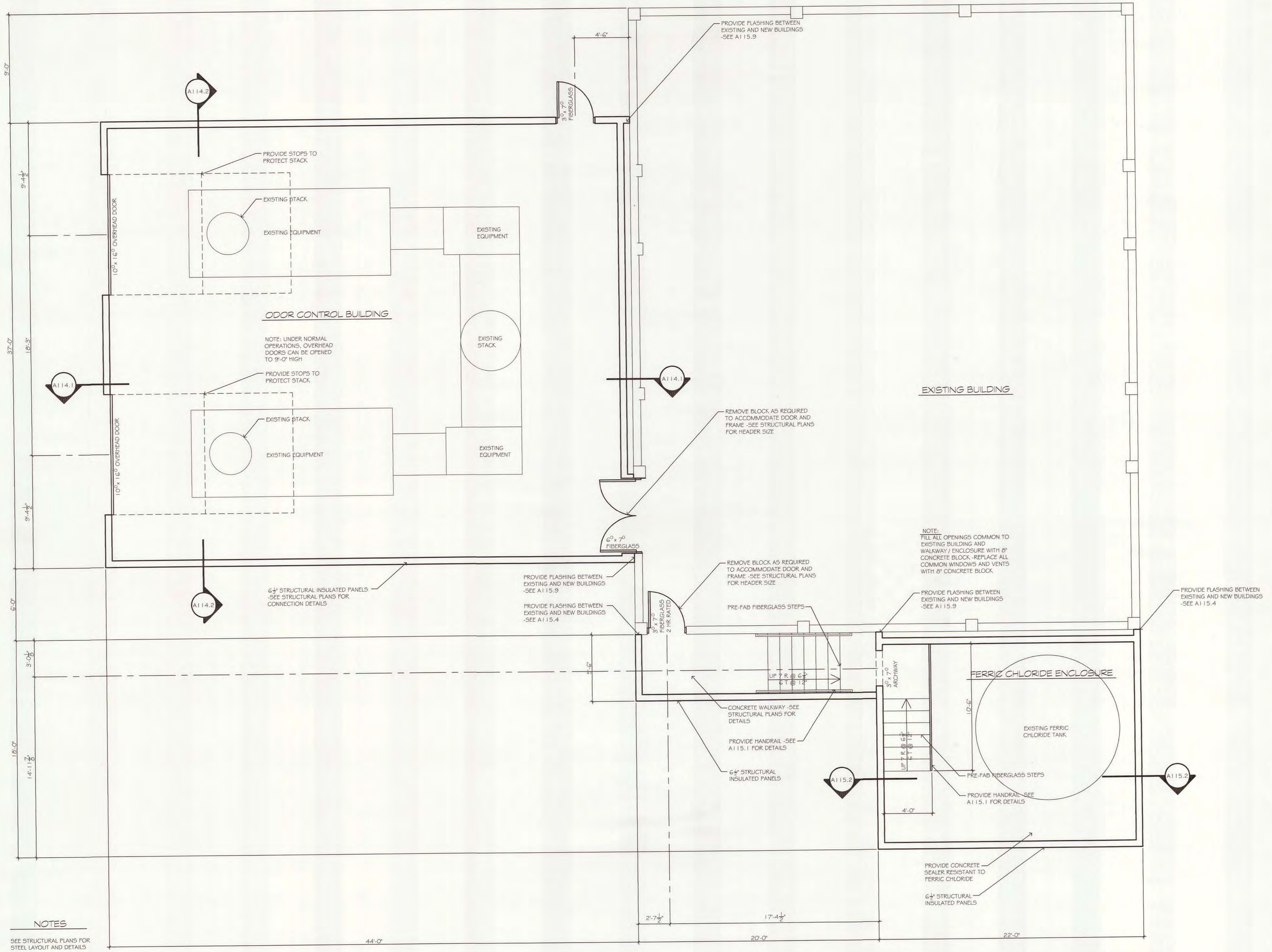
PHASE 2
AESTHETIC IMPROVEMENTS
ALPENA WATER RECYCLE PLANT
CITY OF ALPENA
ALPENA, MICHIGAN

SHEET TITLE
ODOR CONTROL / FeCl ENCLOSURE
FLOOR PLAN

<input type="checkbox"/>	PRELIMINARY
<input checked="" type="checkbox"/>	BIDS
<input type="checkbox"/>	PERMITS
<input type="checkbox"/>	CONSTRUCTION
ISSUED FOR	
1-16-01	PRELIMINARY DWG
2-23-01	OWNER REVIEW
3-9-01	OWNER REVIEW
4-3-01	OWNER REVIEW
5-18-01	BID DRAWING

DRAWN BY	T.A.
CHECKED BY	B.B.
JOB NUMBER	00 - 305
DATE	5 - 18 - 2001
SHEET NUMBER	

A-110



NOTES
 SEE STRUCTURAL PLANS FOR STEEL LAYOUT AND DETAILS

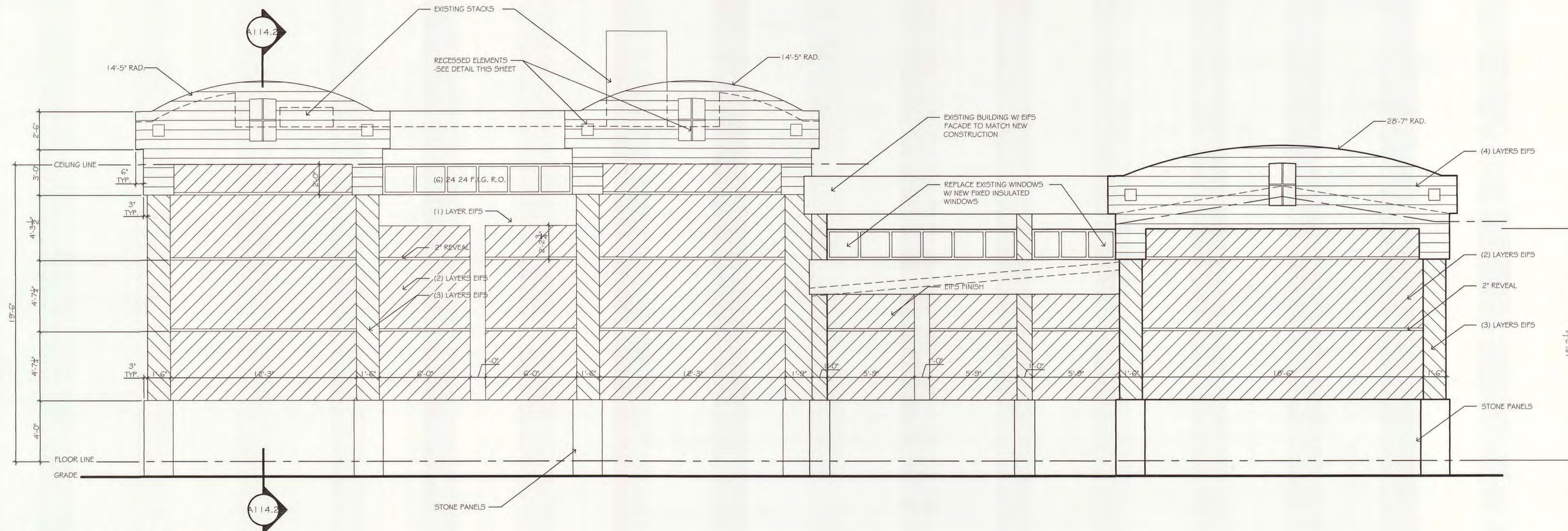
FLOOR PLAN
 SCALE: 1/4" = 1'-0"

DRAWING NUMBER
 SAFCO PRODUCTS • NEW HOPE, MINNESOTA
 REORDER BY PART NUMBER 6952

DRAWING NUMBER
 SAFCO PRODUCTS • NEW HOPE, MINNESOTA
 REORDER BY PART NUMBER 6952

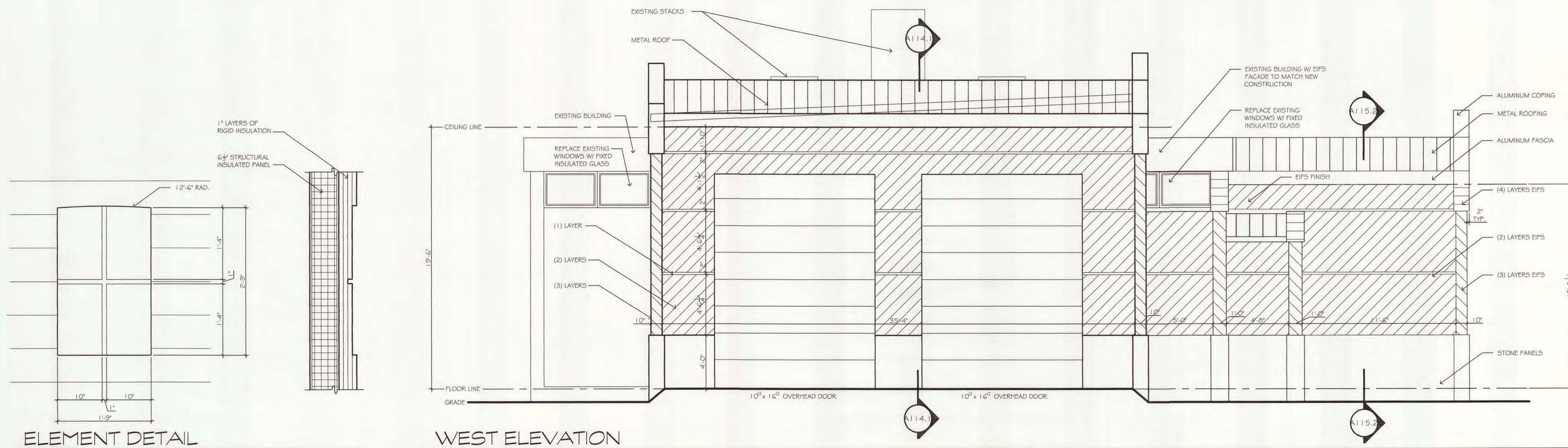
WATER RECYCLING PLANT
PHASE II
 2001-02
 25 OCT 16
 SAFCO PRODUCTS • NEW HOPE, MINNESOTA
 REORDER BY PART NUMBER 6952

DRAWING NUMBER
 SAFCO PRODUCTS • NEW HOPE, MINNESOTA
 REORDER BY PART NUMBER 6952



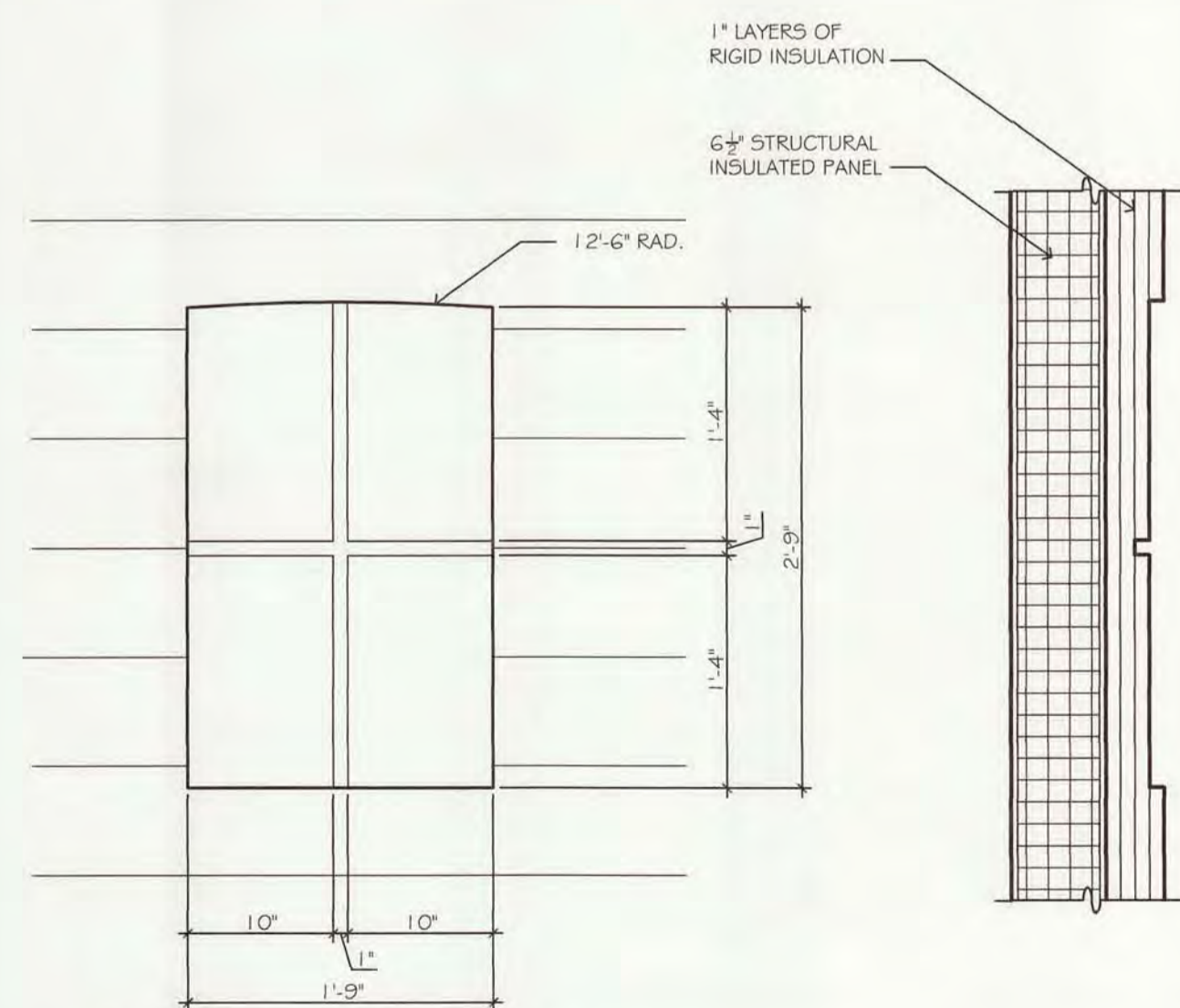
SOUTH ELEVATION

SCALE: 1/4" = 1'-0"



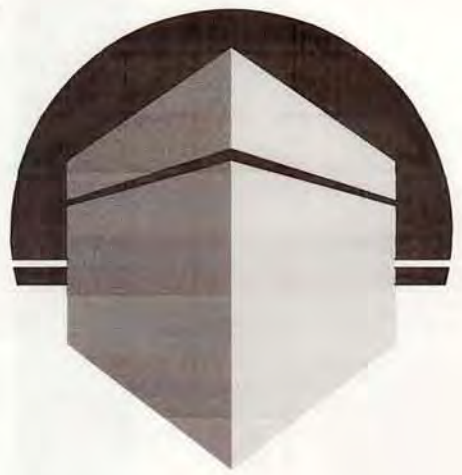
WEST ELEVATION

SCALE: 1/4" = 1'-0"



ELEMENT DETAIL

SCALE: 1" = 1'-0"



ALEXANDER V. BOGAERTS + ASSOCIATES - GAYLORD, P.C.
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PLANNING

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517-371-1200

123 WEST MAIN STREET
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517-732-8131

4328 THREE MILE ROAD
GRAND RAPIDS, MICHIGAN 49544
616-791-1016

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CLIENT AND PROJECT

PHASE 2
AESTHETIC IMPROVEMENTS
ALPENA WATER
RECYCLE PLANT
CITY OF ALPENA
ALPENA, MICHIGAN

SHEET TITLE

ODOR CONTROL / FeCl
ENCLOSURE

SOUTH ELEVATION
WEST ELEVATION

- PRELIMINARY
- BIDS
- PERMITS
- CONSTRUCTION

ISSUED FOR

1-16-01	PRELIMINARY DWG
2-23-01	OWNER REVIEW
3-9-01	OWNER REVIEW
4-3-01	OWNER REVIEW
5-18-01	BID DRAWING

DRAWN BY

T.A.

CHECKED BY

B.B.

JOB NUMBER

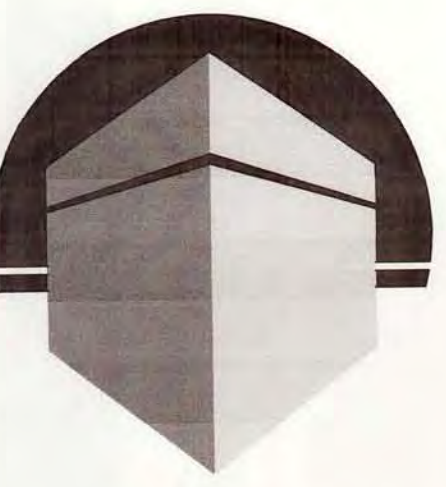
00 - 305

DATE

5 - 18 - 2001

SHEET NUMBER

A-112



ALEXANDER V.
BOGAERTS +
ASSOCIATES -
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CLIENT AND PROJECT

PHASE 2
AESTHETIC IMPROVEMENTS
ALPENA WATER
RECYCLE PLANT
CITY OF ALPENA
ALPENA, MICHIGAN

SHEET TITLE

ODOR CONTROL / FeCl
ENCLOSURE
SOUTH ELEVATION
WEST ELEVATION

- PRELIMINARY
- BIDS
- PERMITS
- CONSTRUCTION

ISSUED FOR

1-16-01	PRELIMINARY DWG
2-23-01	OWNER REVIEW
3-9-01	OWNER REVIEW
4-3-01	OWNER REVIEW
5-18-01	BID DRAWING

DRAWN BY

T.A.

CHECKED BY

B.B.

JOB NUMBER

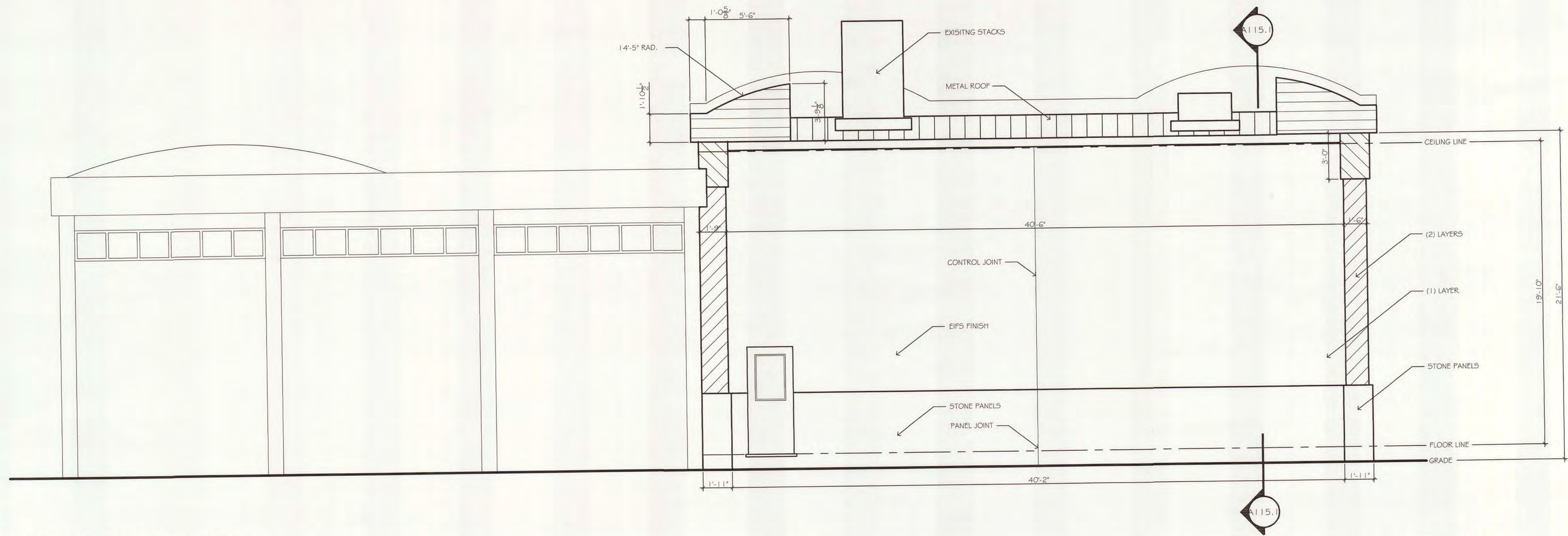
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DATE

5 - 18 - 2001

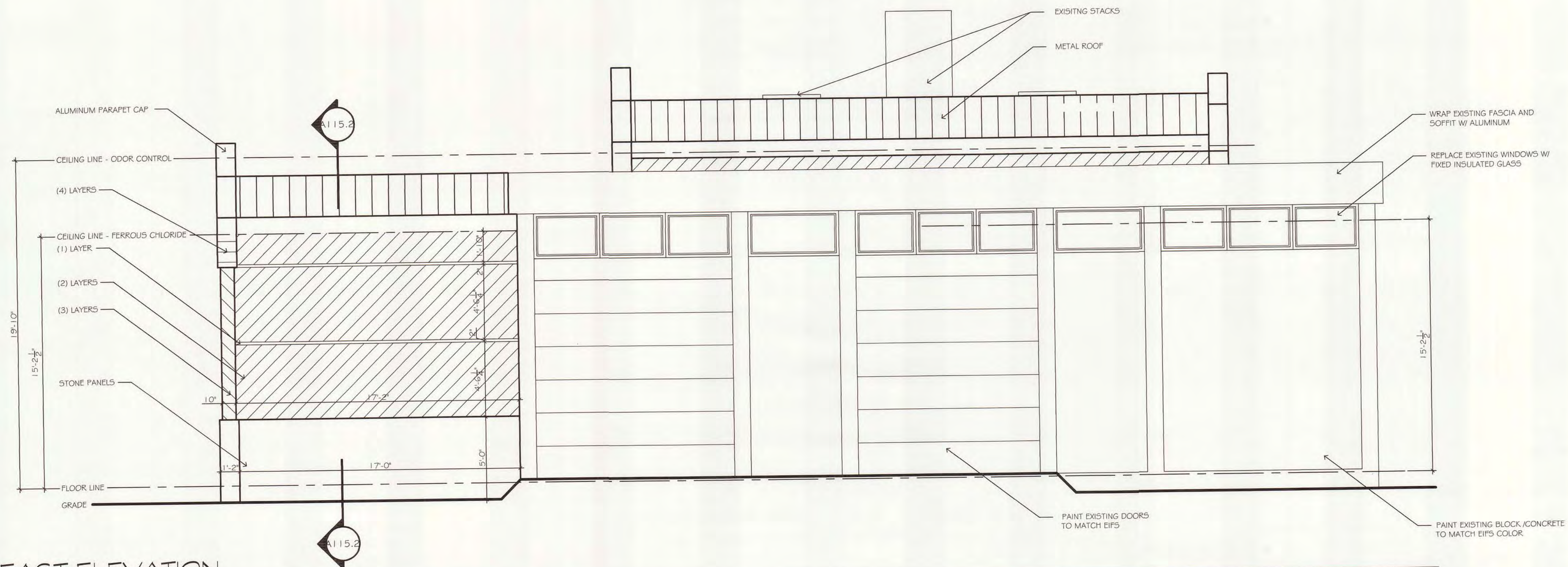
SHEET NUMBER

A-113



NORTH ELEVATION

SCALE: 1/4" = 1'-0"



EAST ELEVATION

SCALE: 1/4" = 1'-0"

SACO PRODUCTS • NEW HOPE, MINNESOTA
 REFER BY PART NUMBER 8552
 PHASE II
 2001 - 02
 5/18/01
 WATER RECYCLING PLANT
 DRAWING NUMBER
 SACO PRODUCTS • NEW HOPE, MINNESOTA
 REFER BY PART NUMBER 8552



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 ALPENA WATER RECYCLE PLANT
 CITY OF ALPENA
 ALPENA, MICHIGAN

SHEET TITLE
 ODOR CONTROL / FeCl ENCLOSURE
BUILDING SECTION
 WALL SECTION

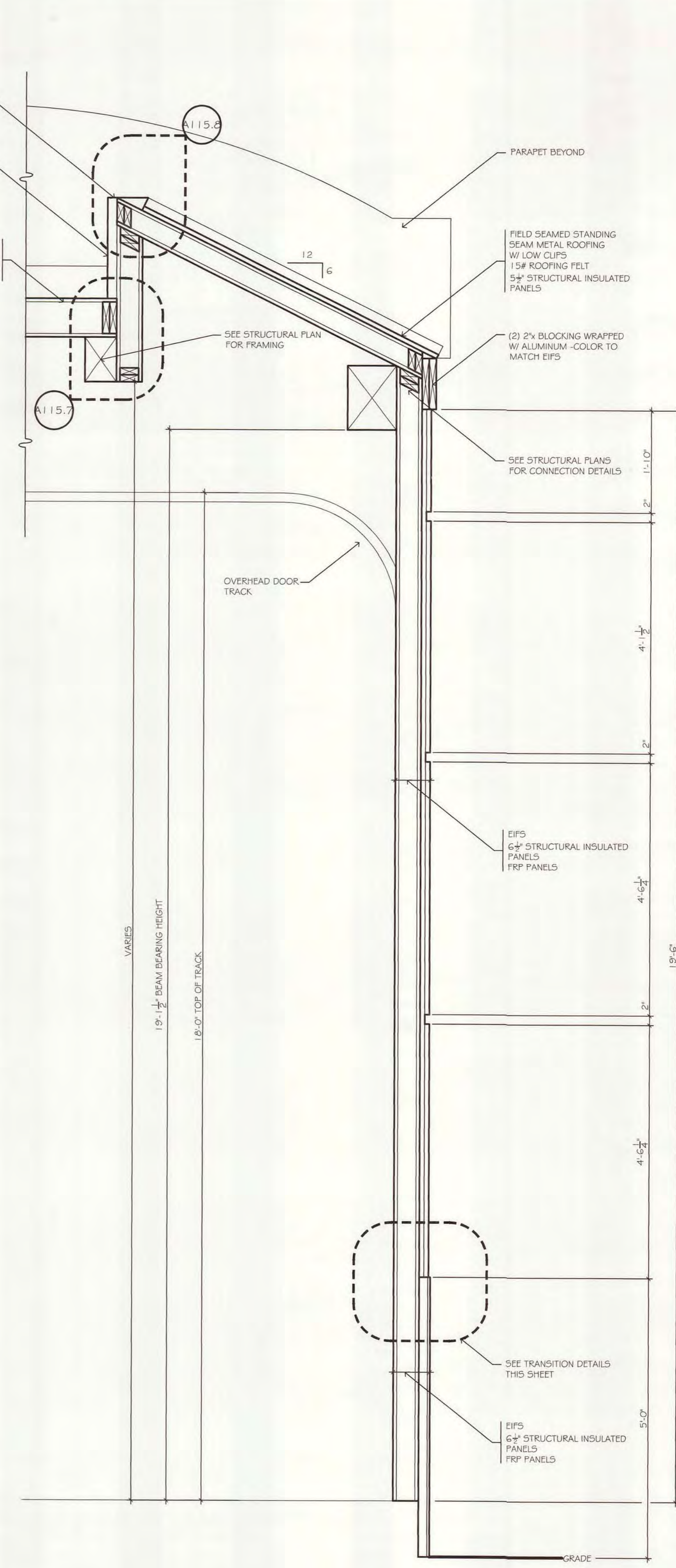
- PRELIMINARY
- BIDS
- PERMITS
- CONSTRUCTION

ISSUED FOR

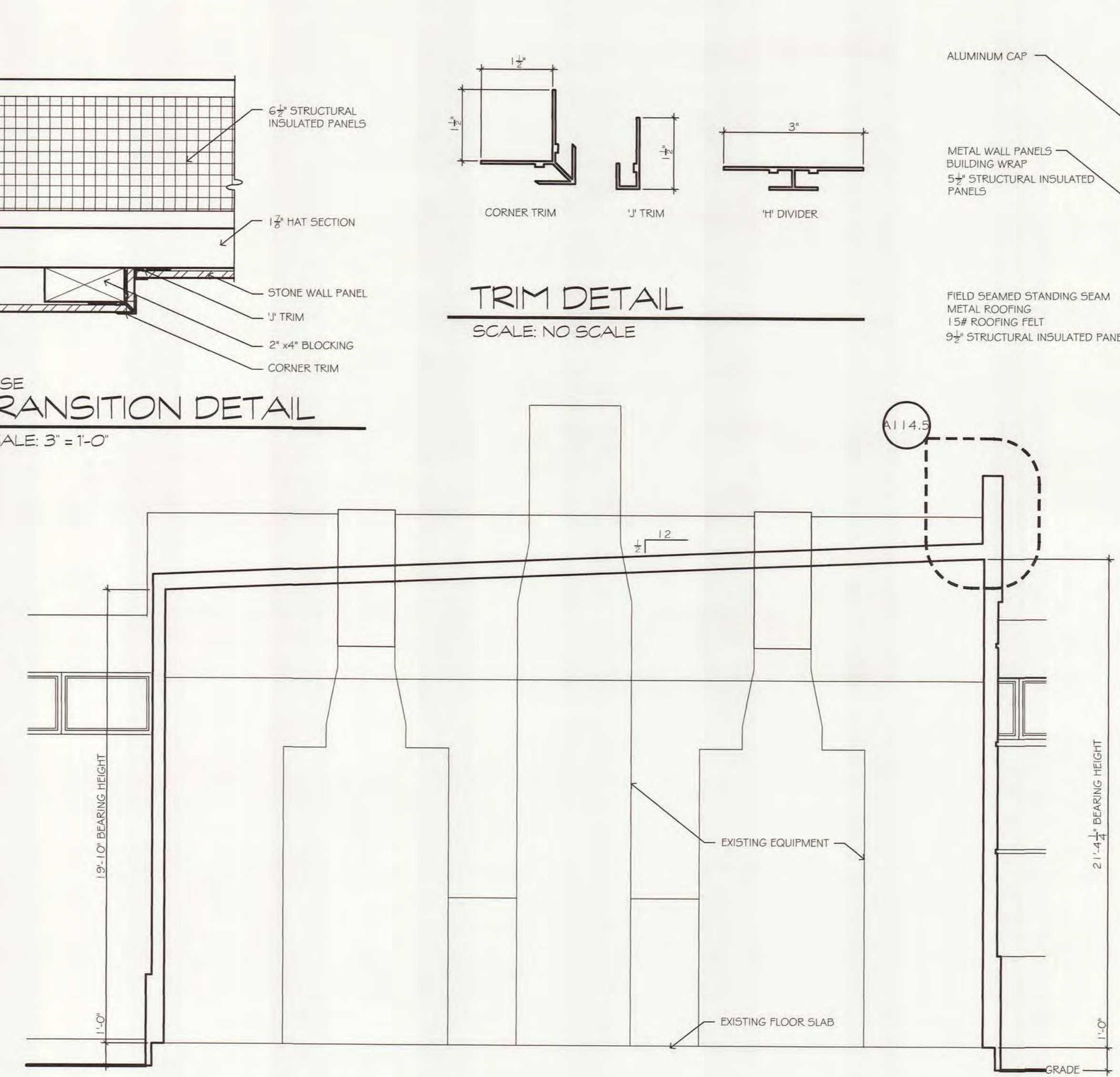
1-16-01	PRELIMINARY DWG
2-23-01	OWNER REVIEW
3-9-01	OWNER REVIEW
4-3-01	OWNER REVIEW
5-18-01	BID DRAWING

DRAWN BY
T.A.
CHECKED BY
B.B.
JOB NUMBER
00 - 305
DATE
5 - 18 - 2001
SHEET NUMBER

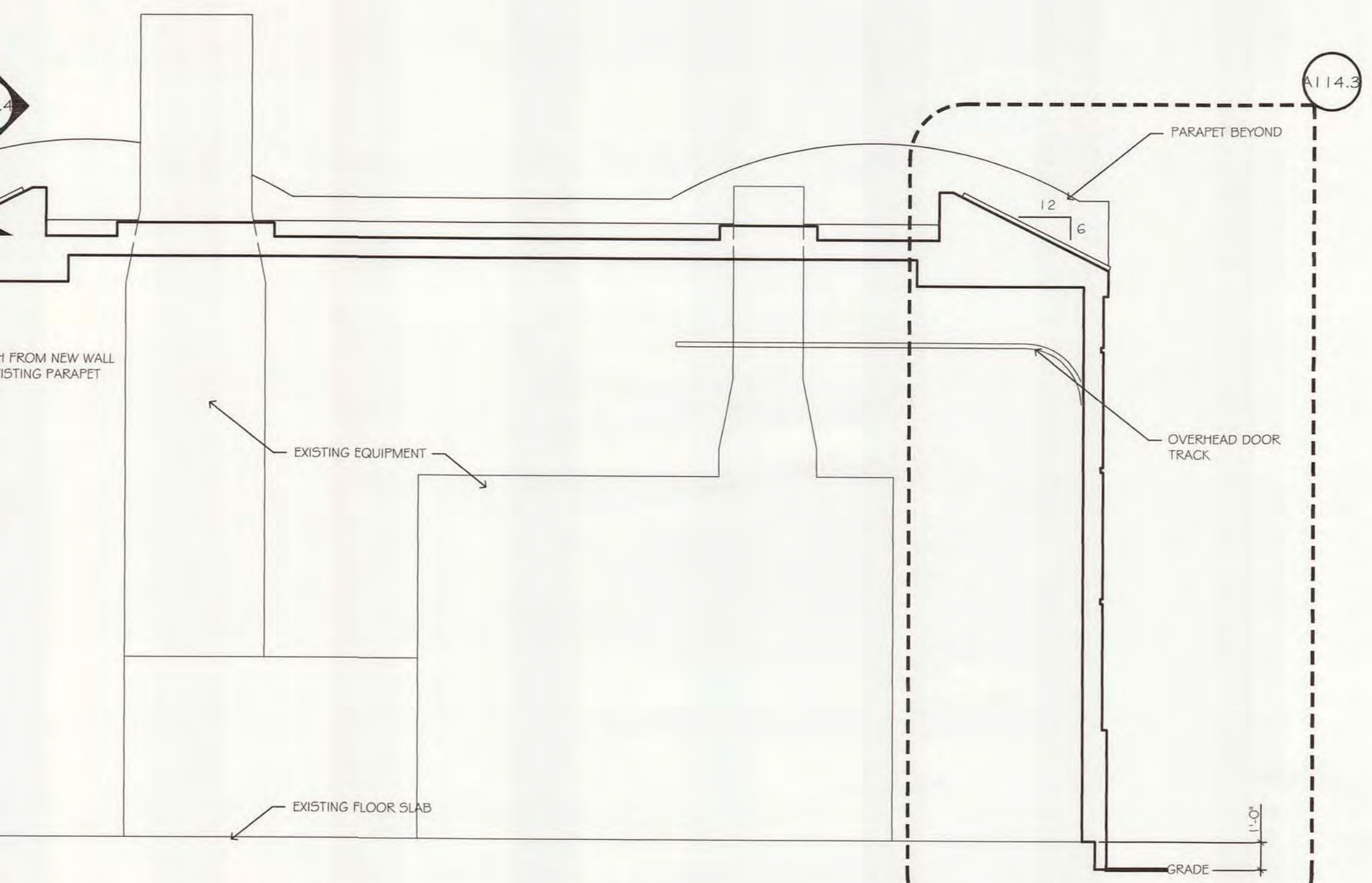
A-114



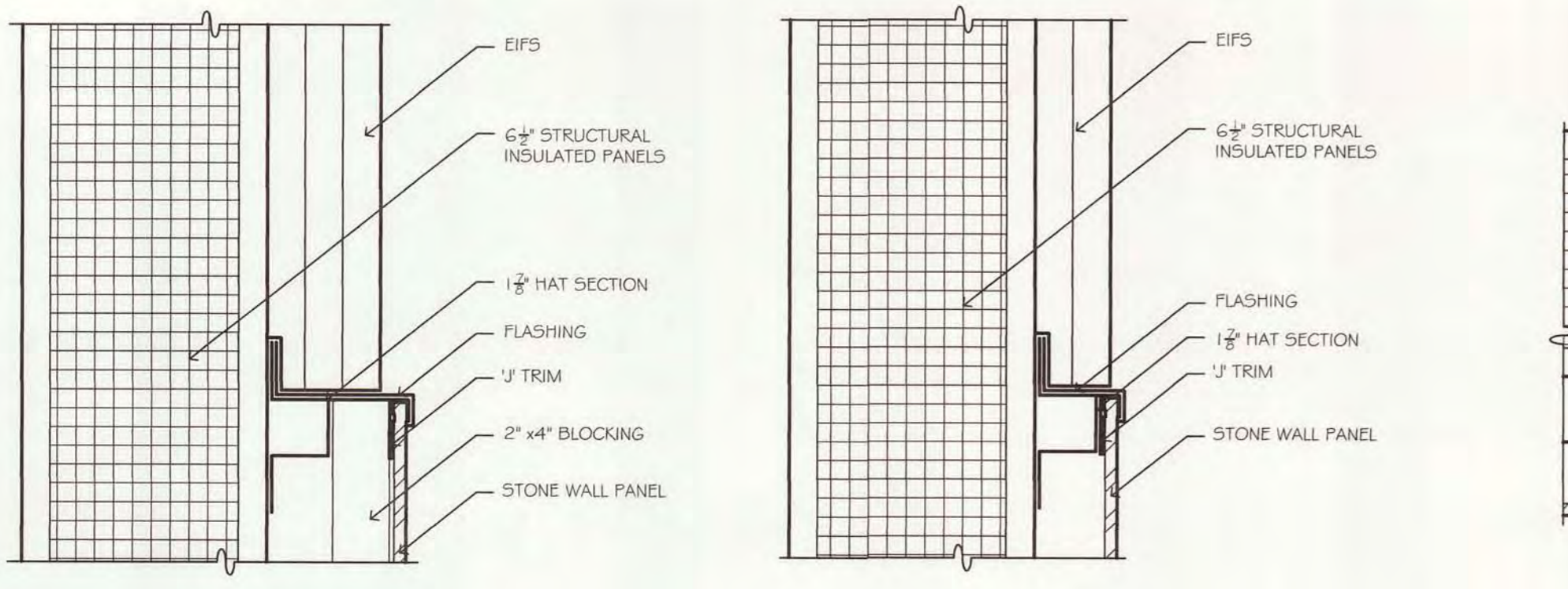
A114.3 WALL SECTION
 SCALE: 1/4" = 1'-0"



A114.2 BUILDING SECTION
 SCALE: 1/4" = 1'-0"

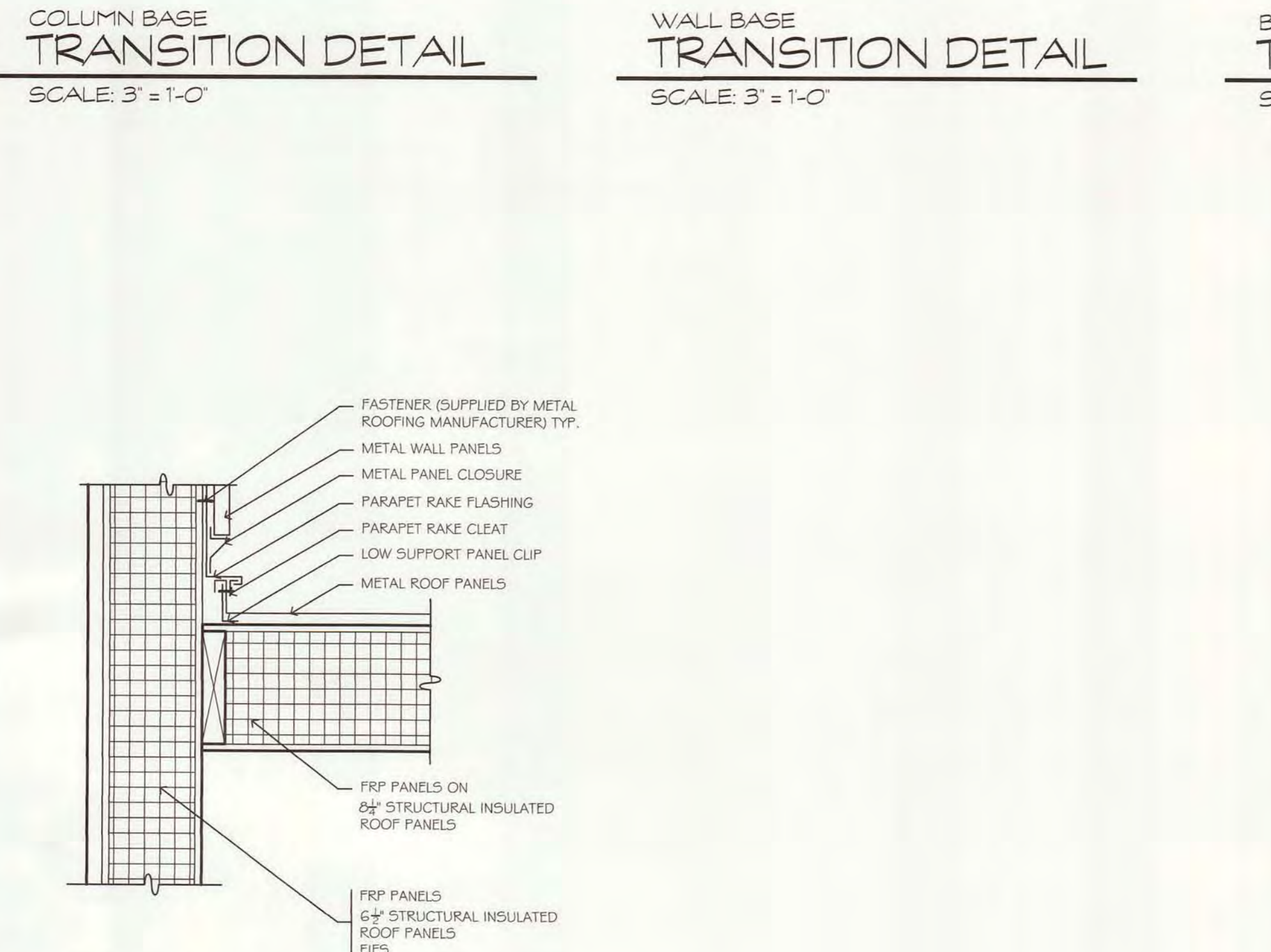


A114.1 BUILDING SECTION
 SCALE: 1/4" = 1'-0"

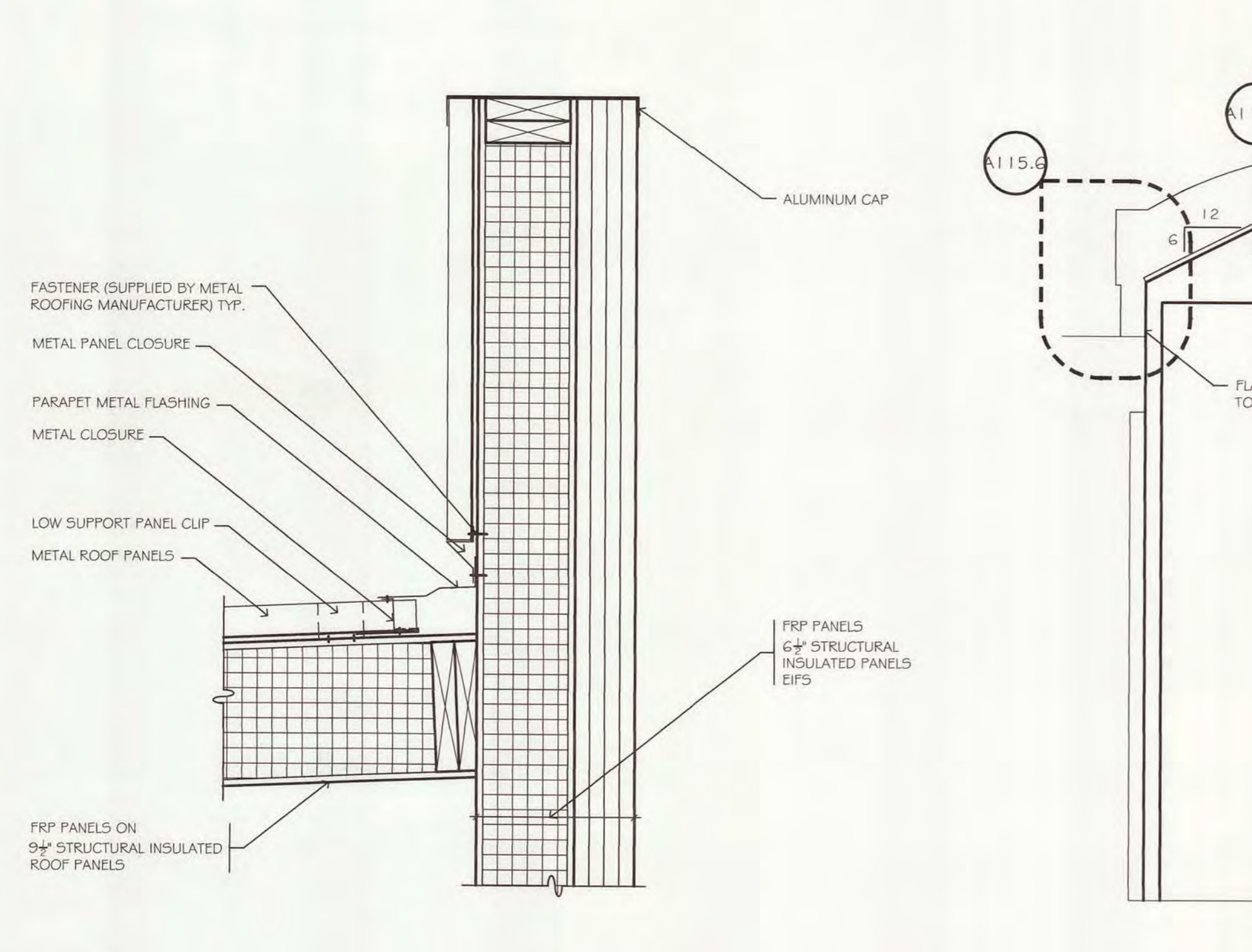


COLUMN BASE TRANSITION DETAIL
 SCALE: 3" = 1'-0"

WALL BASE TRANSITION DETAIL
 SCALE: 3" = 1'-0"



A114.4 FLASHING DETAIL
 SCALE: 1/2" = 1'-0"



A114.5 FLASHING DETAIL
 SCALE: 1/2" = 1'-0"

DRAWING NUMBER

DRAWING NUMBER

WATER RECYCLING PLANT
 PHASE II
 2001 OF 16

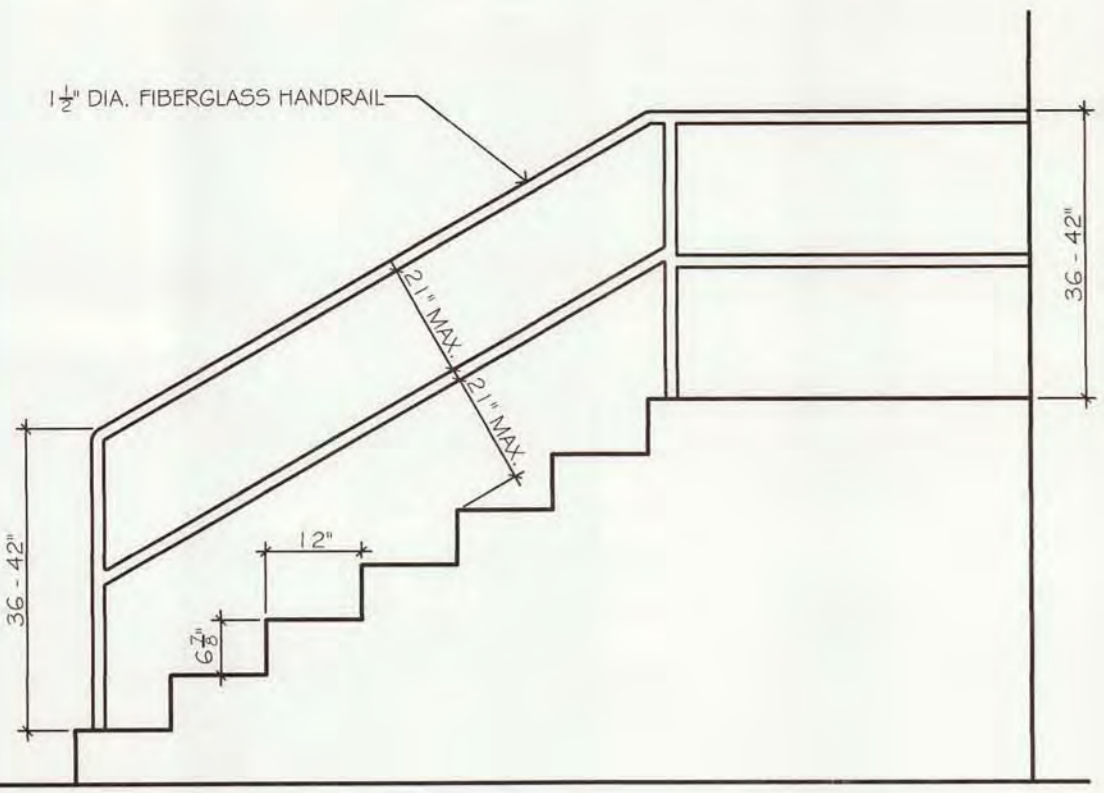
DRAWING NUMBER

SARCO PRODUCTS • NEW HOPE, MINNESOTA
REORDER BY PART NUMBER 6582

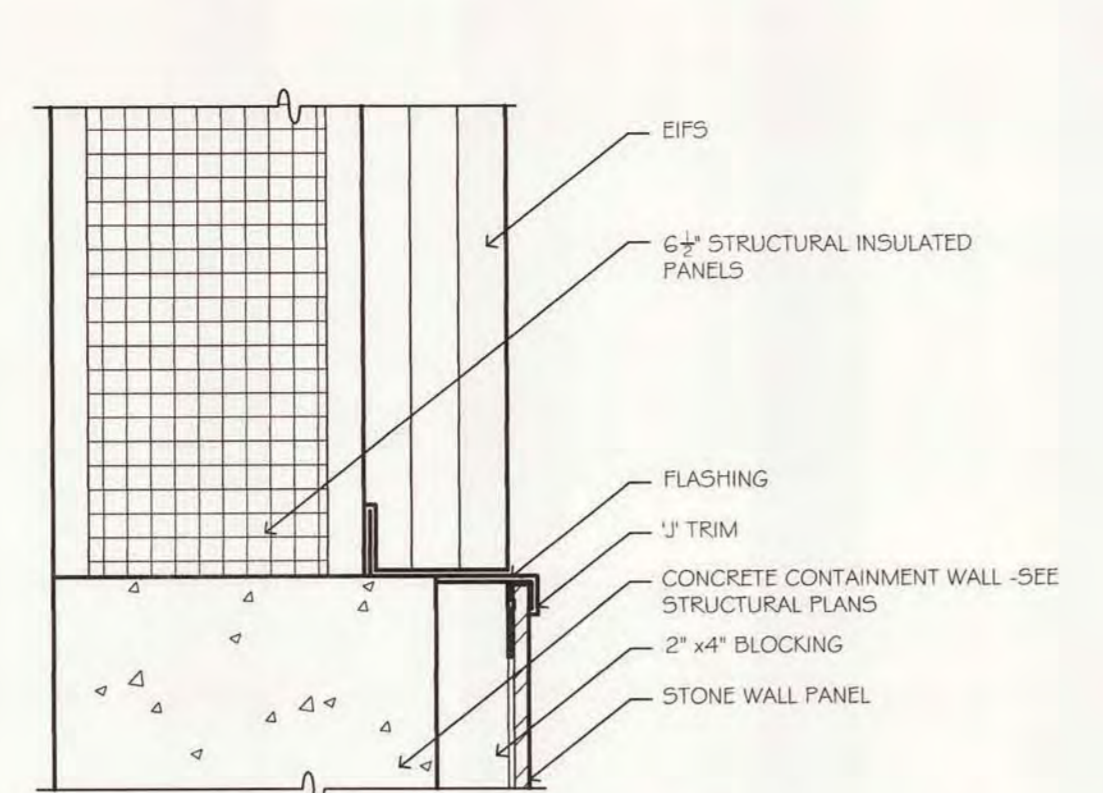
SARCO PRODUCTS • NEW HOPE, MINNESOTA
REORDER BY PART NUMBER 6582

SARCO PRODUCTS • NEW HOPE, MINNESOTA
REORDER BY PART NUMBER 6582

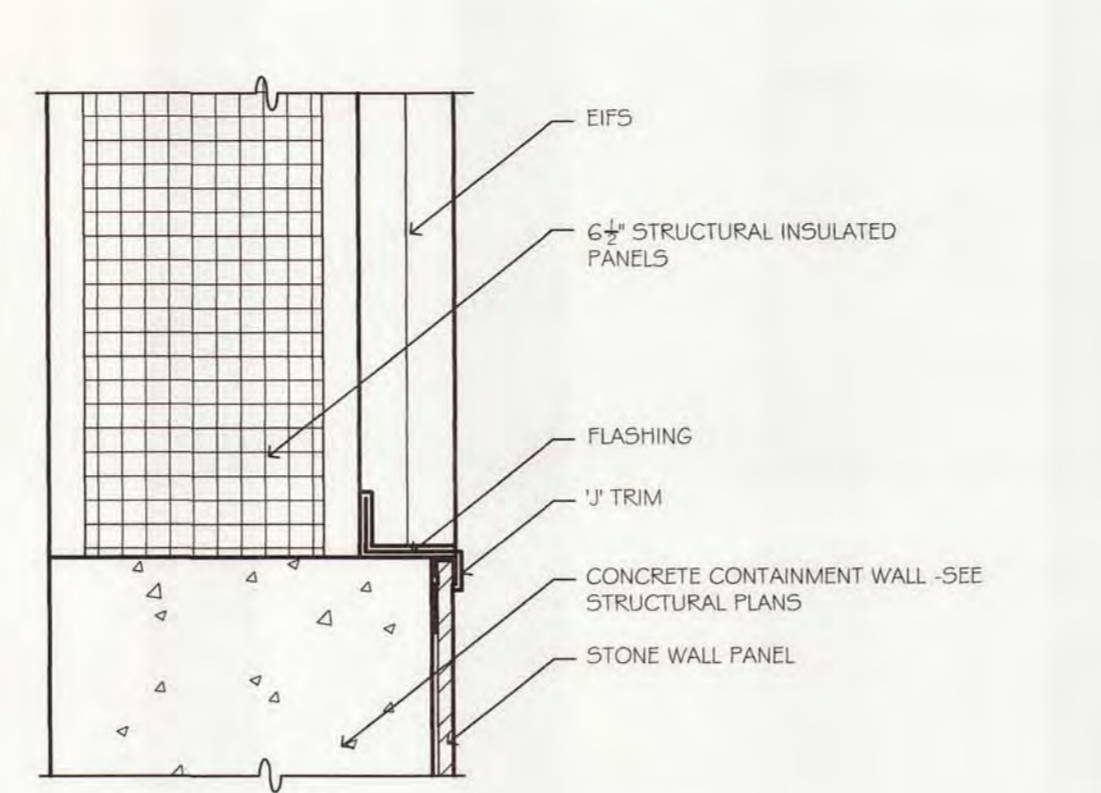
SARCO PRODUCTS • NEW HOPE, MINNESOTA
REORDER BY PART NUMBER 6582



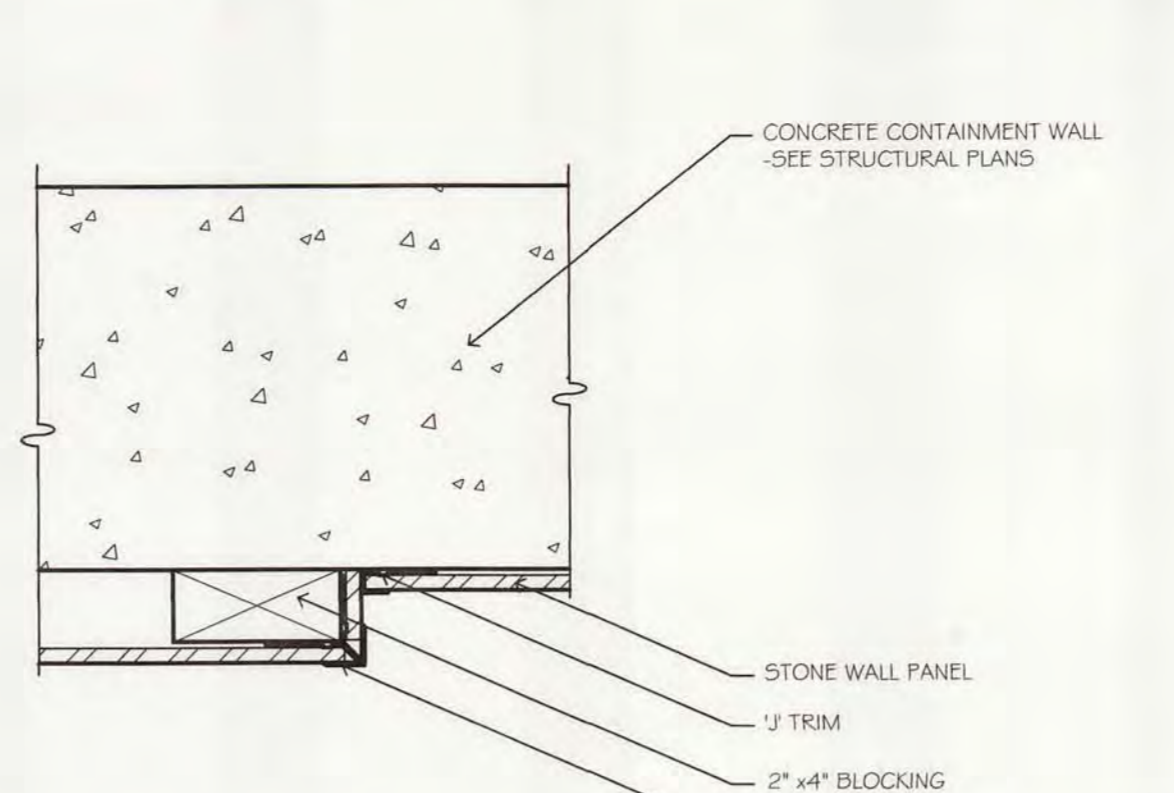
A115.1 STAIR DETAIL
SCALE: 1/2" = 1'-0"



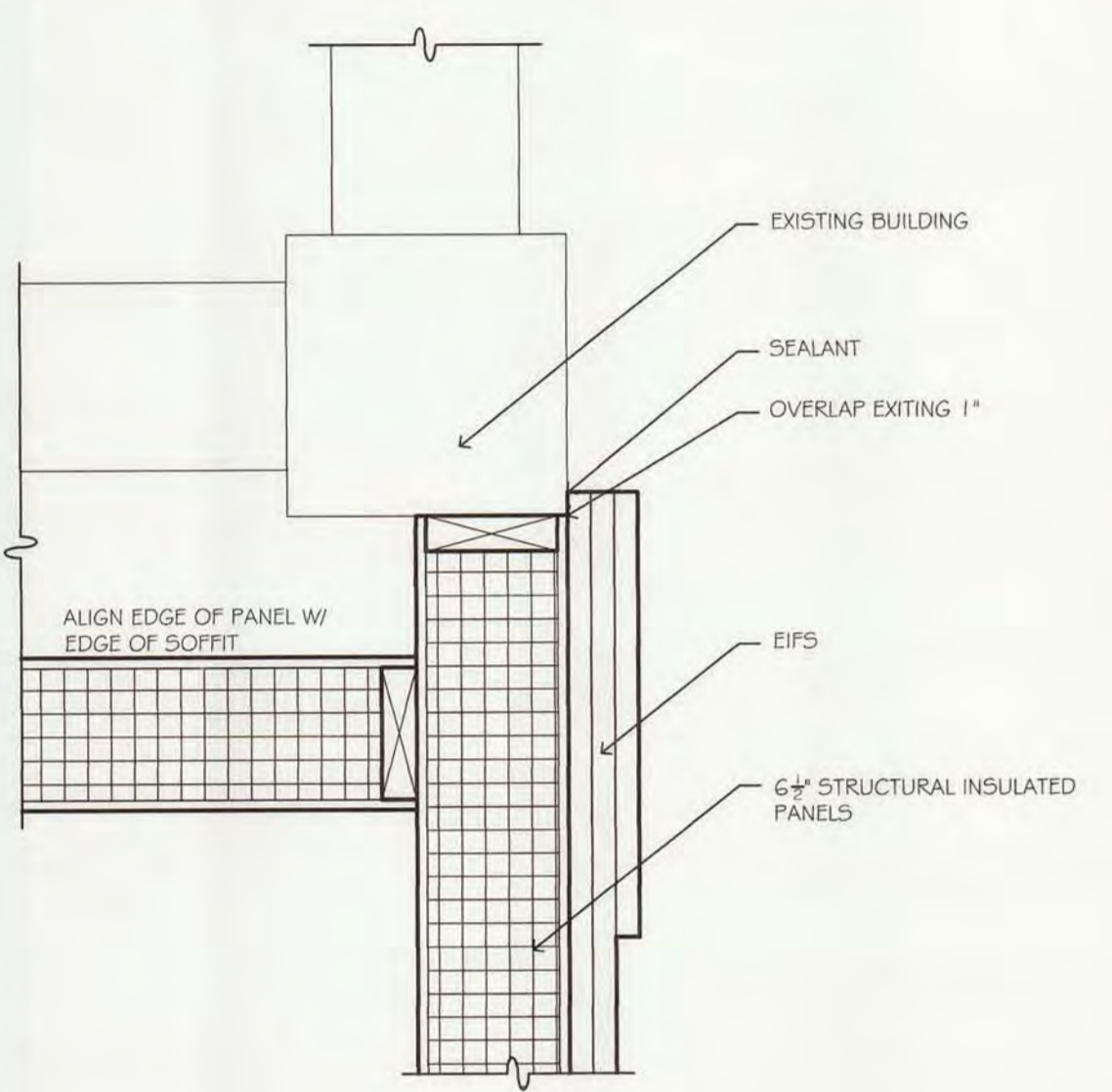
COLUMN BASE TRANSITION DETAIL
SCALE: 3" = 1'-0"



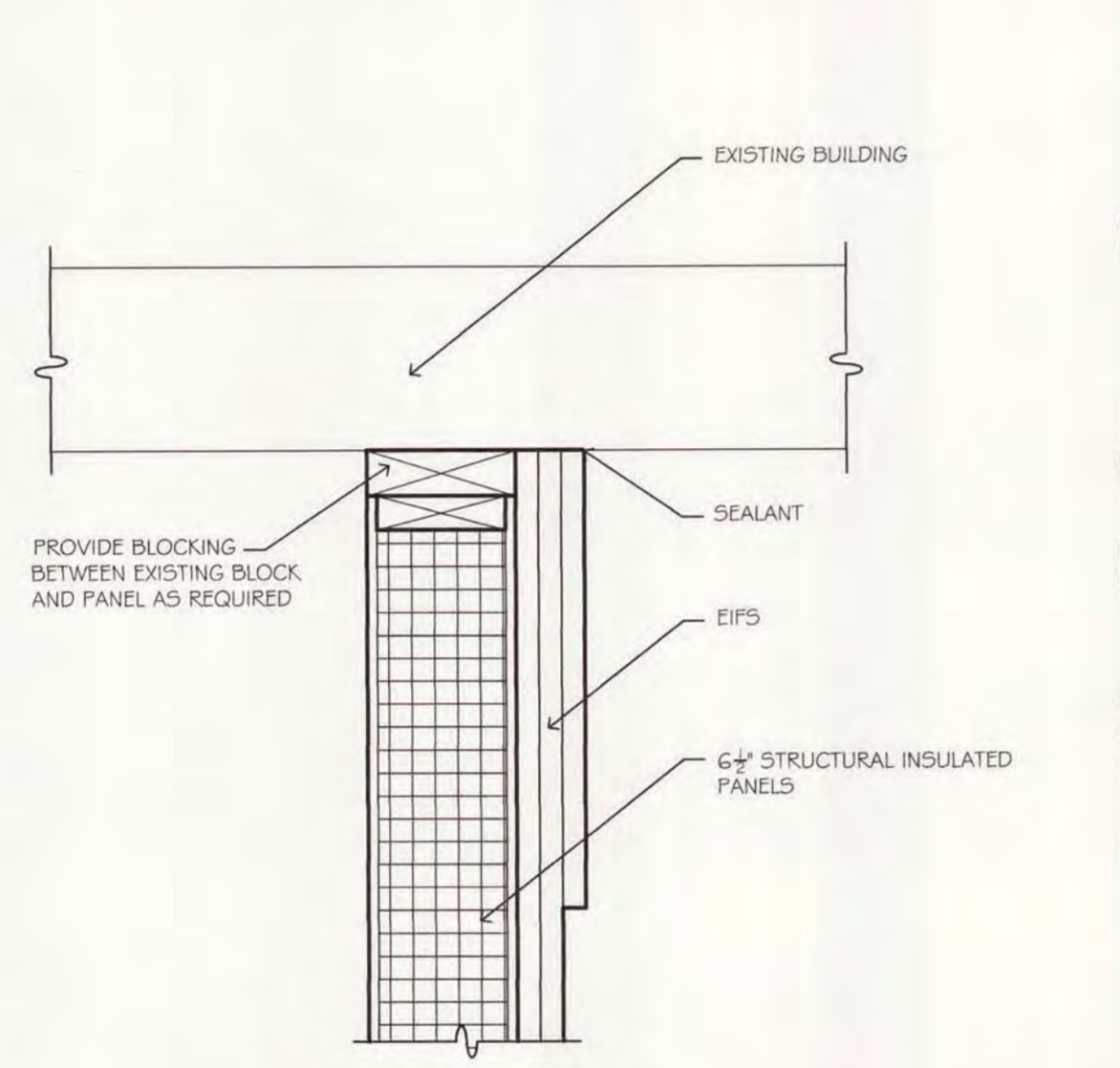
WALL BASE TRANSITION DETAIL
SCALE: 3" = 1'-0"



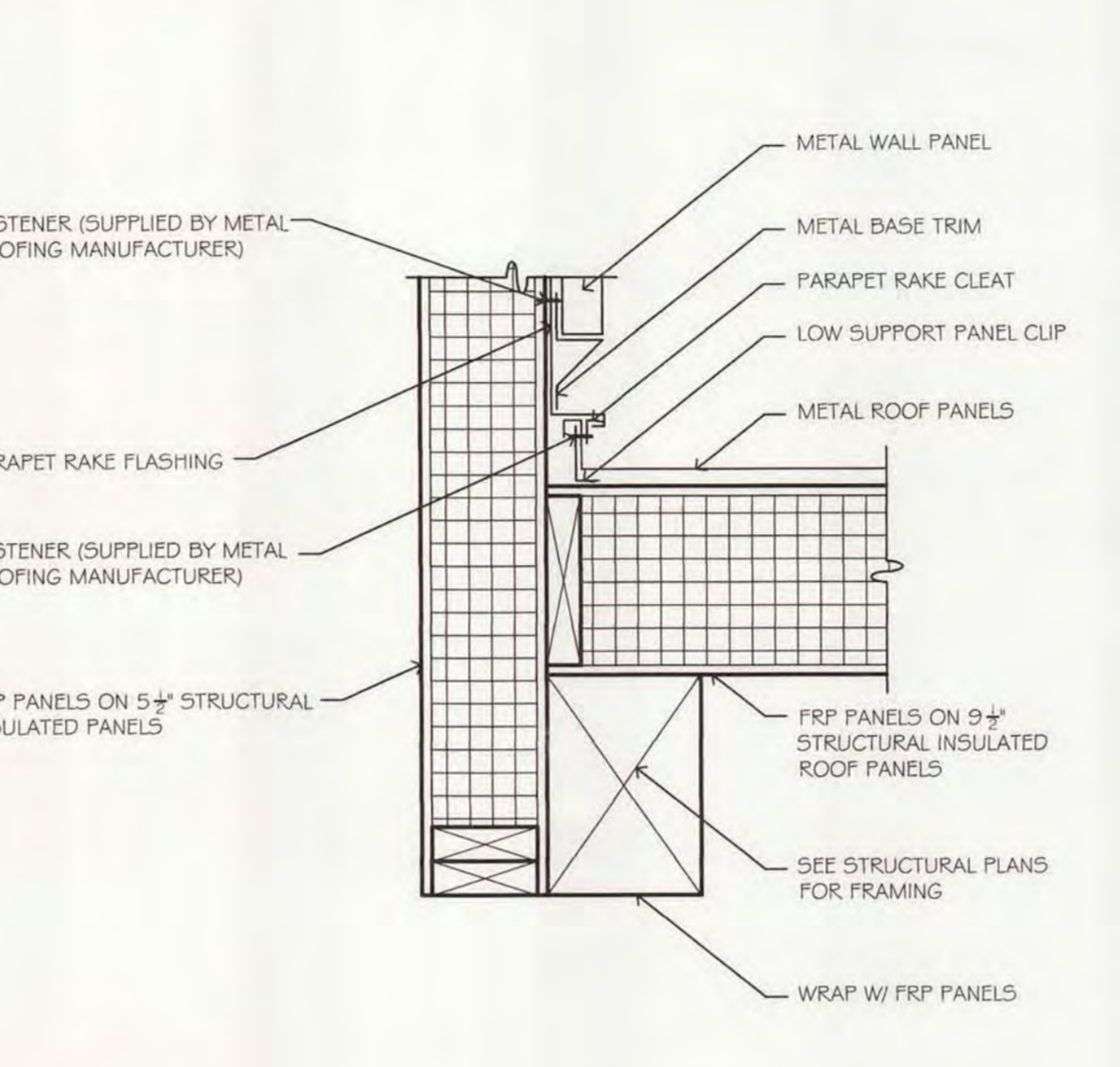
BASE TRANSITION DETAIL
SCALE: 3" = 1'-0"



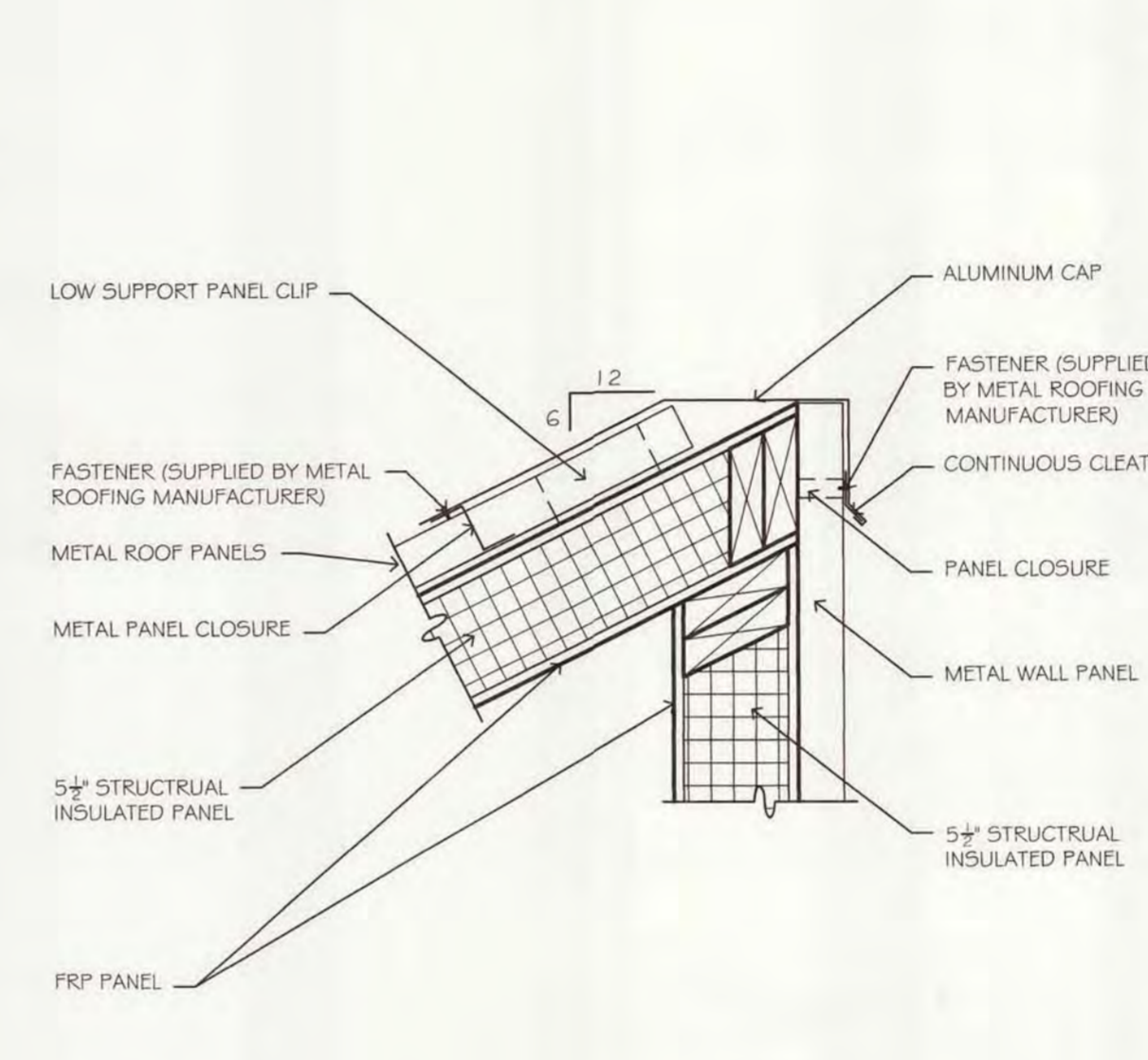
A115.4 CONNECTION DETAIL
SCALE: 1/2" = 1'-0"



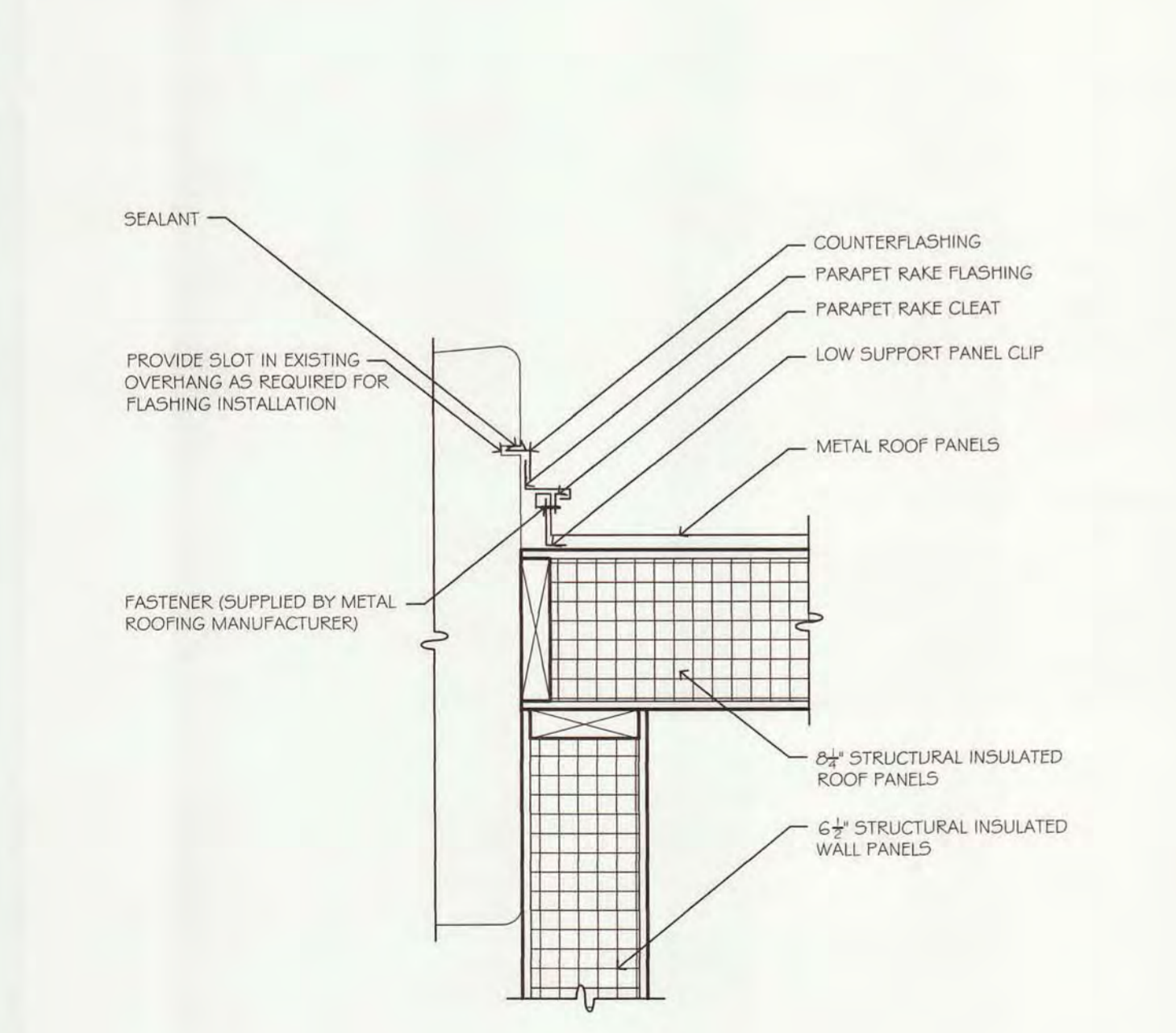
A115.9 CONNECTION DETAIL
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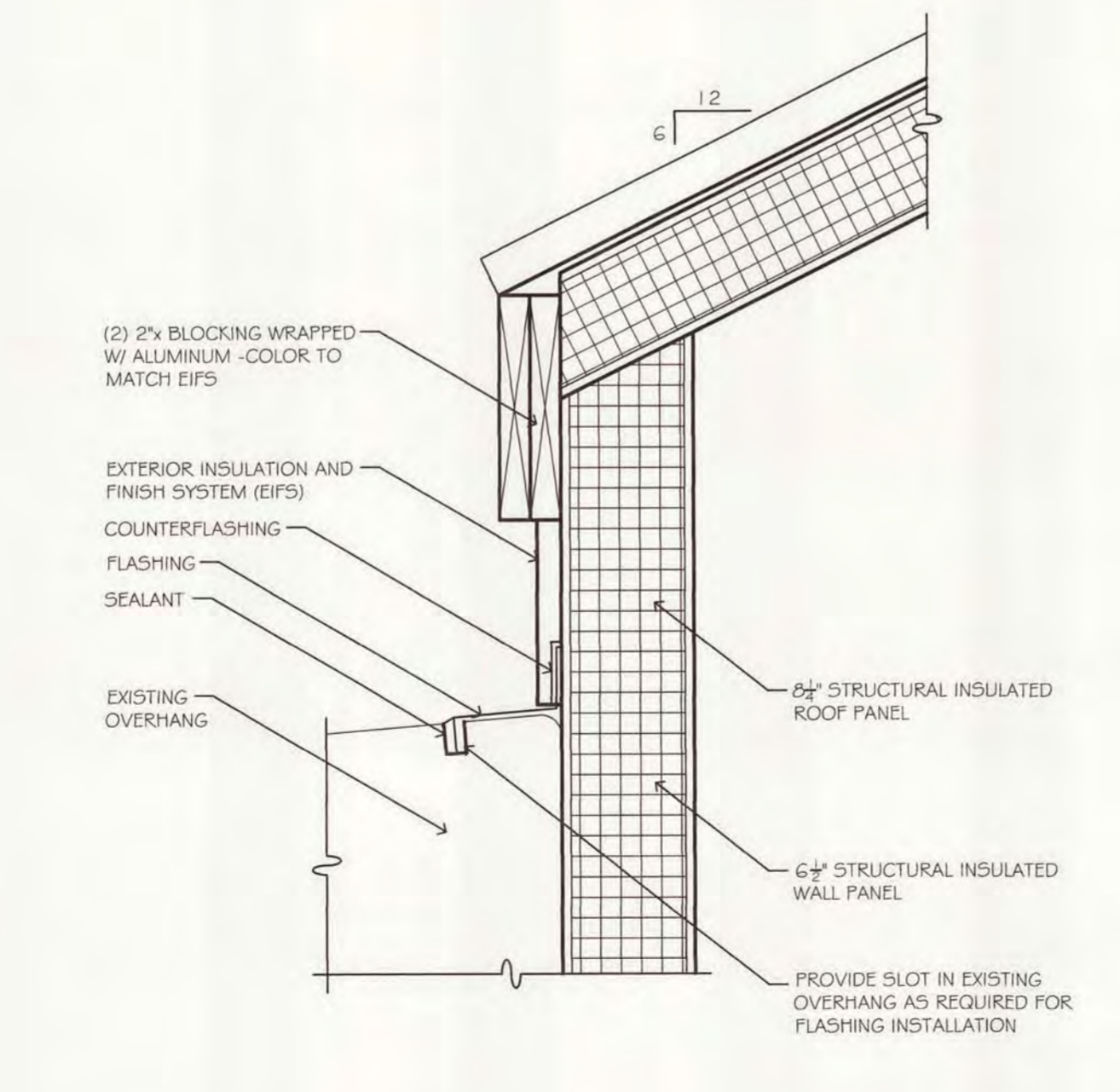
A115.7 FLASHING DETAIL
SCALE: 1/2" = 1'-0"



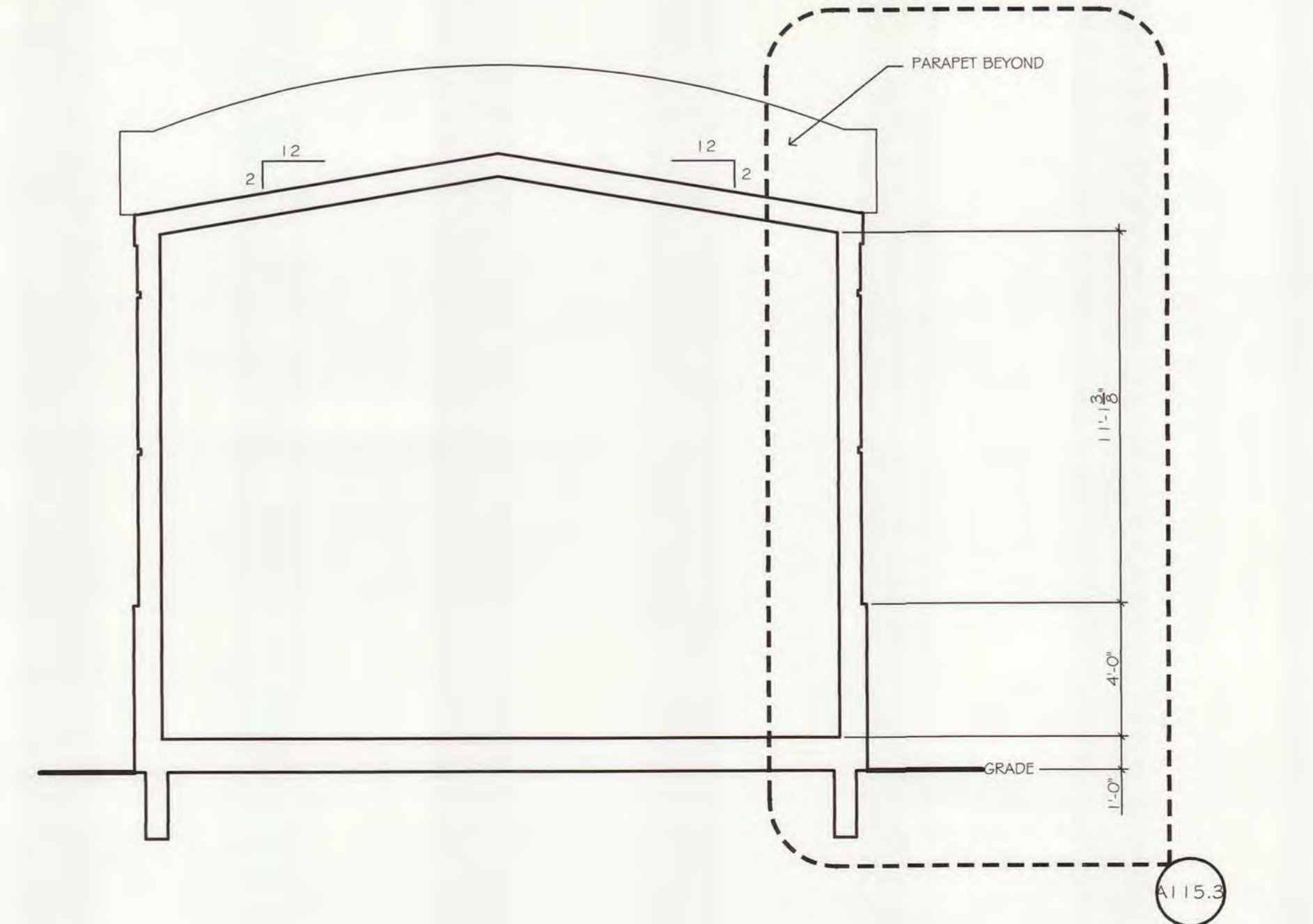
A115.8 COPING DETAIL
SCALE: 1/2" = 1'-0"



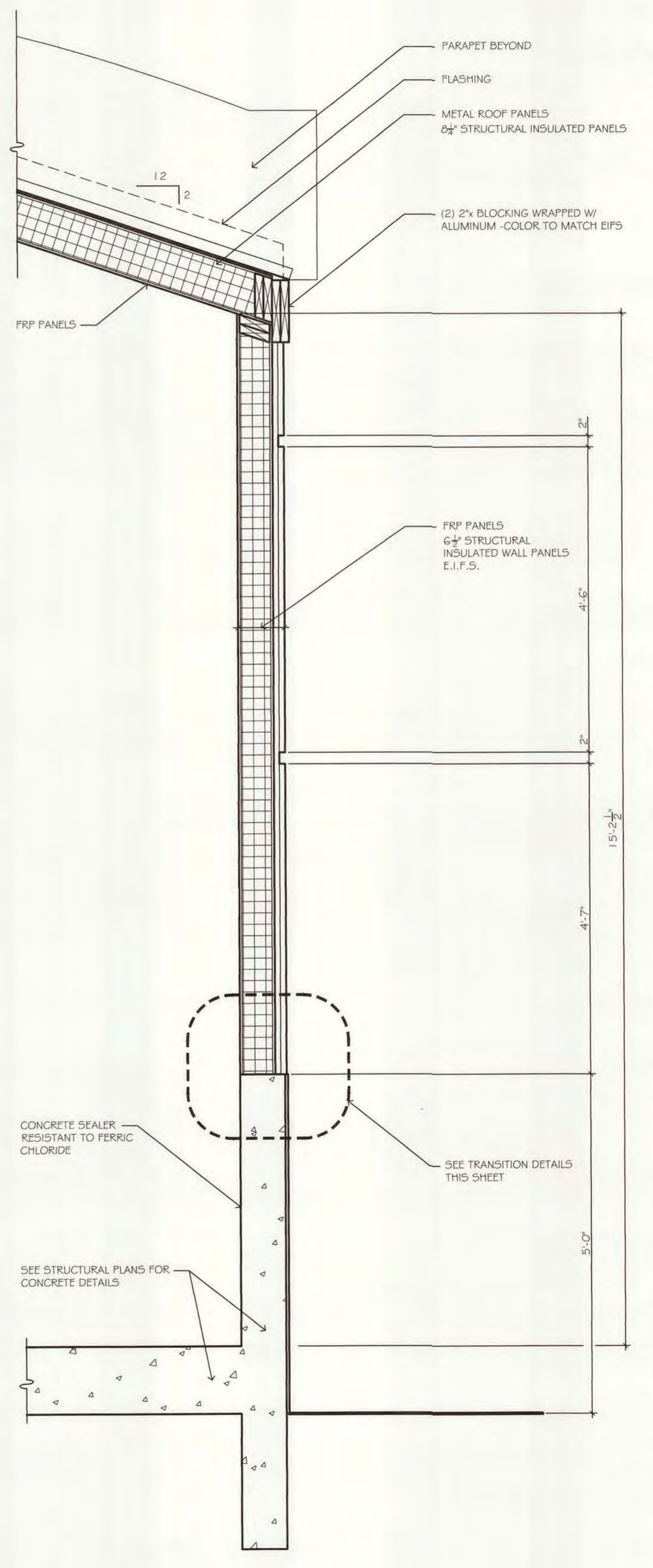
A115.5 FLASHING DETAIL
SCALE: 1/2" = 1'-0"



A115.6 FLASHING DETAIL
SCALE: 1/2" = 1'-0"



A115.2 BUILDING SECTION
SCALE: 1/2" = 1'-0"



A115.3 WALL SECTION
SCALE: 1/2" = 1'-0"



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147 W. MAIN ST. SUITE 303
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CLIENT AND PROJECT
PHASE 2
AESTHETIC IMPROVEMENTS
ALPENA WATER RECYCLE PLANT
CITY OF ALPENA
ALPENA, MICHIGAN

SHEET TITLE
ODOR CONTROL / FeCl ENCLOSEURE
BUILDING SECTION
WALL SECTION

PRELIMINARY
 BIDS
 PERMITS
 CONSTRUCTION

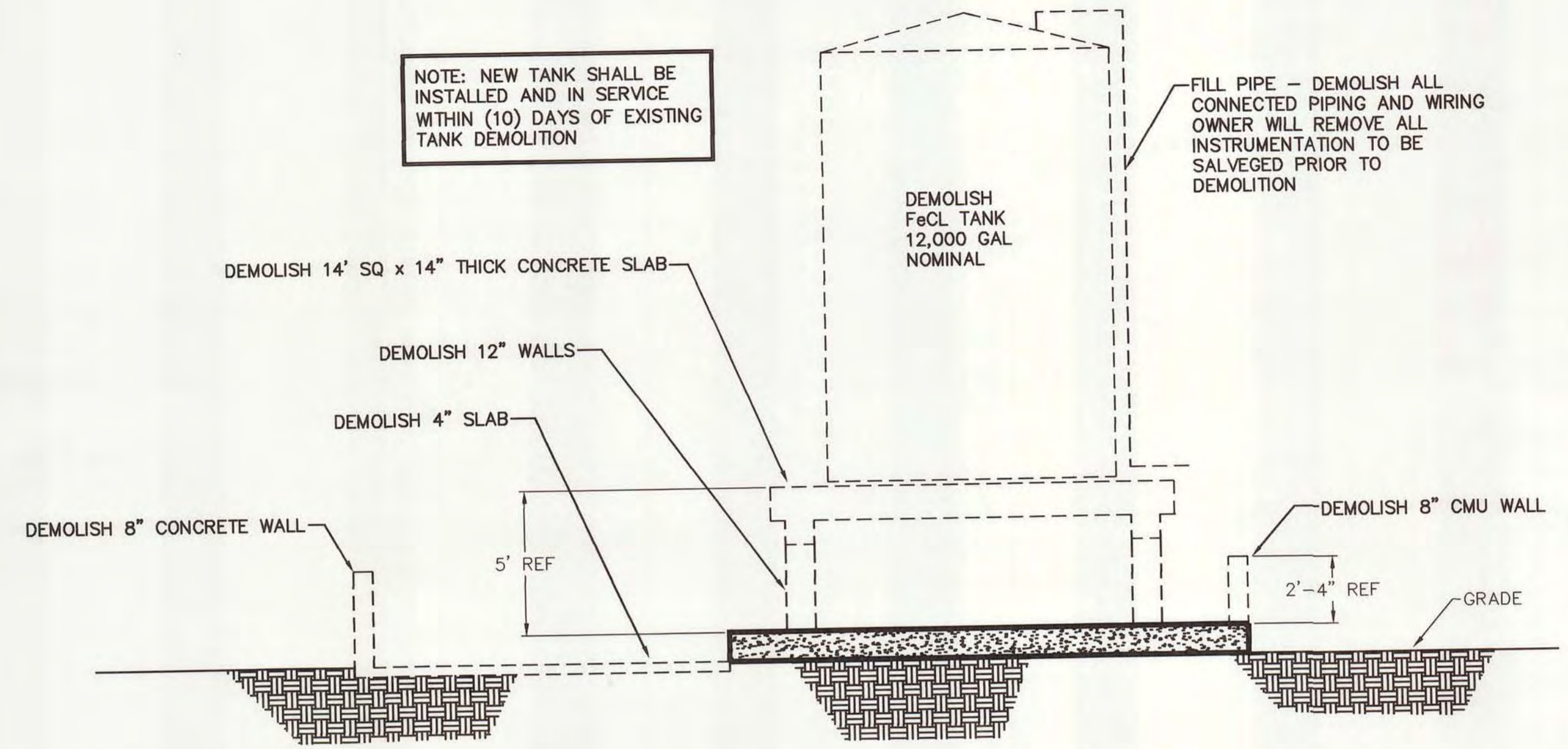
ISSUED FOR
1-16-01 PRELIMINARY DWG
2-23-01 OWNER REVIEW
3-9-01 OWNER REVIEW
4-3-01 OWNER REVIEW
5-18-01 BID DRAWING

DRAWN BY
T.A.
CHECKED BY
B.B.
JOB NUMBER
00-305
DATE
5-18-2001
SHEET NUMBER

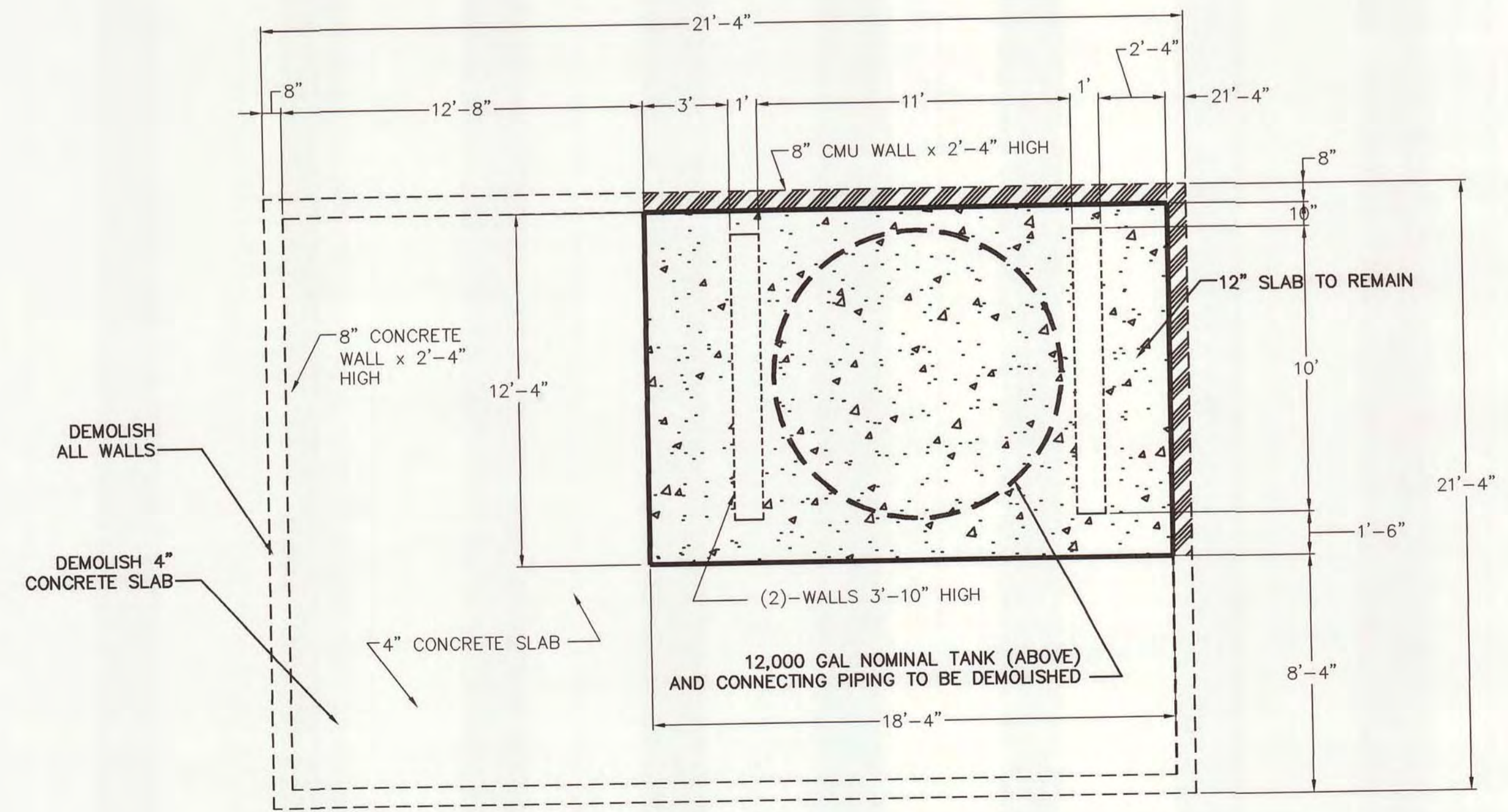
A-115



DESIGNED BY: ---
CHECKED BY: ---
APPROVED BY: ---
DWG'S MOD BY: ---



ELEVATION -- NORTHEAST SIDE
SCALE: 1/4" = 1'-0"



FeCL CONTAINMENT DEMOLITION PLAN
NO SCALE

FOR BIDDING

REVISIONS	DATE	SCALE	AS NOTED
ISSUED FOR TANK DEMO BID	6/14/01		

725 Pavilion Street
Lansing, Michigan 48206
(313) 291-1000
www.cceeng.com

723 Riverchase Way
Lansing, Michigan 48226
(313) 752-8731

4538 Three Mile Road, Suite 100
Grand Rapids, Michigan 49544
(616) 725-0076

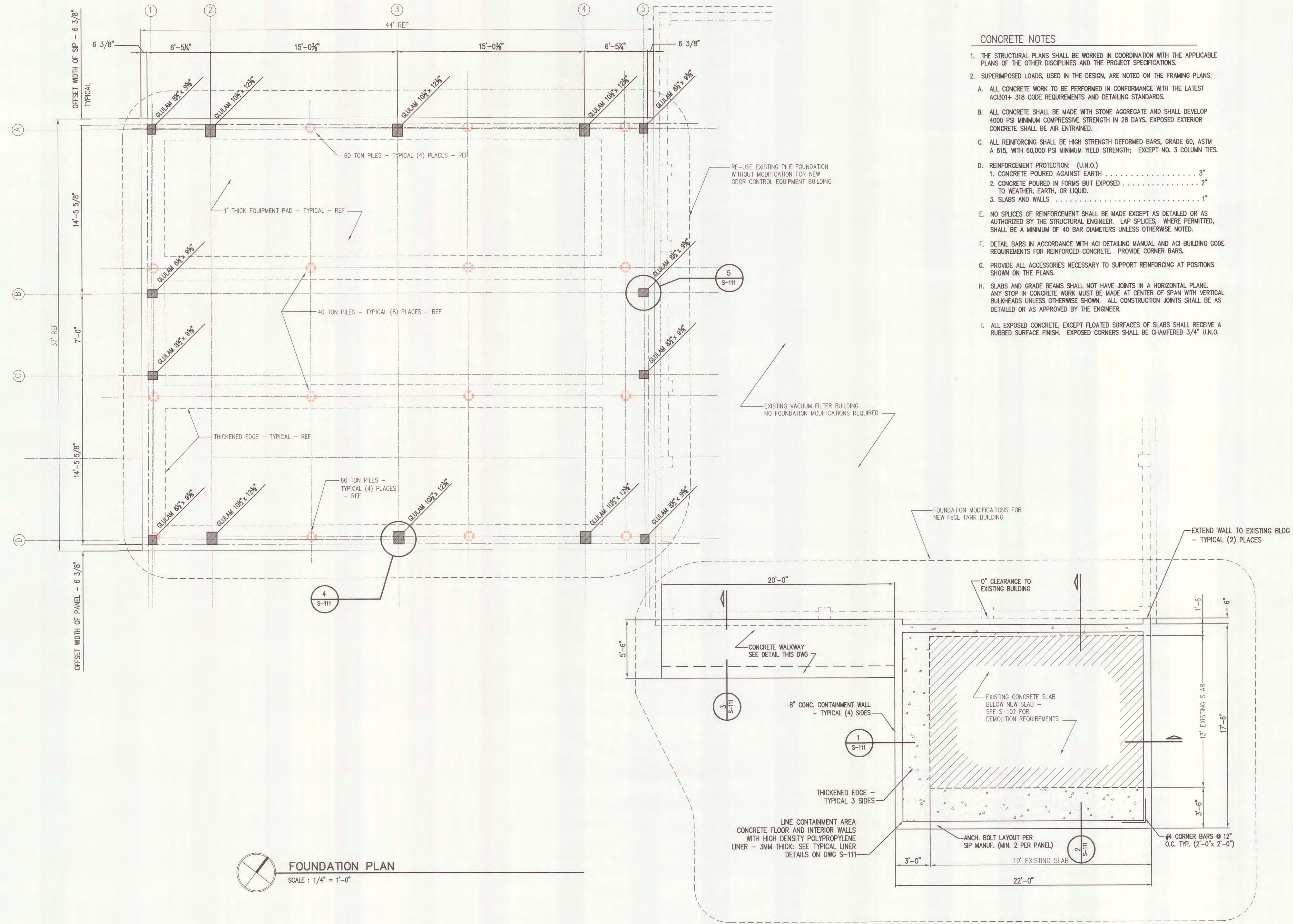
CAPITAL CONSULTANTS'
www.cceeng.com

PHASE 2 IMPROVEMENTS
CITY OF ALPENA
ALPENA COUNTY, MICHIGAN

TANK DEMOLITION PLAN



DESIGNED BY: SL
APPROVED BY: ---
CHECKED BY: ---
DWG'S MOD BY: ---



FOUNDATION PLAN
SCALE: 1/4" = 1'-0"

- CONCRETE NOTES**
- THE STRUCTURAL PLANS SHALL BE WORKED IN COORDINATION WITH THE APPLICABLE PLANS OF THE OTHER DISCIPLINES AND THE PROJECT SPECIFICATIONS.
 - SUPERIMPOSED LOADS, USED IN THE DESIGN, ARE NOTED ON THE FRAMING PLANS.
 - ALL CONCRETE WORK TO BE PERFORMED IN CONFORMANCE WITH THE LATEST ACI 301+ 318 CODE REQUIREMENTS AND DETAILING STANDARDS.
 - ALL CONCRETE SHALL BE MADE WITH STONE AGGREGATE AND SHALL DEVELOP 4000 PSI MINIMUM COMPRESSIVE STRENGTH IN 28 DAYS. EXPOSED EXTERIOR CONCRETE SHALL BE AIR ENTRAINED.
 - ALL REINFORCING SHALL BE HIGH STRENGTH DEFORMED BARS, GRADE 60, ASTM A 615, WITH 60,000 PSI MINIMUM YIELD STRENGTH; EXCEPT NO. 3 COLUMN TIES.
 - REINFORCEMENT PROTECTION: (U.N.O.)
 - CONCRETE POURED AGAINST EARTH 3"
 - CONCRETE POURED IN FORMS BUT EXPOSED 2" TO WEATHER, EARTH, OR LIQUID.
 - SLABS AND WALLS 1"
 - NO SPLICES OF REINFORCEMENT SHALL BE MADE EXCEPT AS DETAILED OR AS AUTHORIZED BY THE STRUCTURAL ENGINEER. LAP SPLICES, WHERE PERMITTED, SHALL BE A MINIMUM OF 40 BAR DIAMETERS UNLESS OTHERWISE NOTED.
 - DETAIL BARS IN ACCORDANCE WITH ACI DETAILING MANUAL AND ACI BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE. PROVIDE CORNER BARS.
 - PROVIDE ALL ACCESSORIES NECESSARY TO SUPPORT REINFORCING AT POSITIONS SHOWN ON THE PLANS.
 - SLABS AND GRADE BEAMS SHALL NOT HAVE JOINTS IN A HORIZONTAL PLANE. ANY STOP IN CONCRETE WORK MUST BE MADE AT CENTER OF SPAN WITH VERTICAL BULKHEADS UNLESS OTHERWISE SHOWN. ALL CONSTRUCTION JOINTS SHALL BE AS DETAILED OR AS APPROVED BY THE ENGINEER.
 - ALL EXPOSED CONCRETE, EXCEPT FLOATED SURFACES OF SLABS SHALL RECEIVE A RUBBED SURFACE FINISH. EXPOSED CORNERS SHALL BE CHAMFERED 3/4" U.N.O.

FOR BIDDING

DATE	5/19/01	SCALE	AS NOTED
REVISIONS FOR BIDDING		PROJ. NO.	00-301
		DATE	05/01

725 Pavilion Street
Lumberton, MS 39103
(601) 731-1000

117 West Main Street, Suite 200
Oxford, Michigan 48734
(517) 752-8131

4328 Pine Lake Road, Suite 100
Grand Rapids, MI 49544
(616) 791-0090

CAPITAL CONSULTANTS'
WWW.CCENG.COM

**PHASE 2 IMPROVEMENTS
ALPENA WATER RECYCLE PLANT
CITY OF ALPENA, MI**

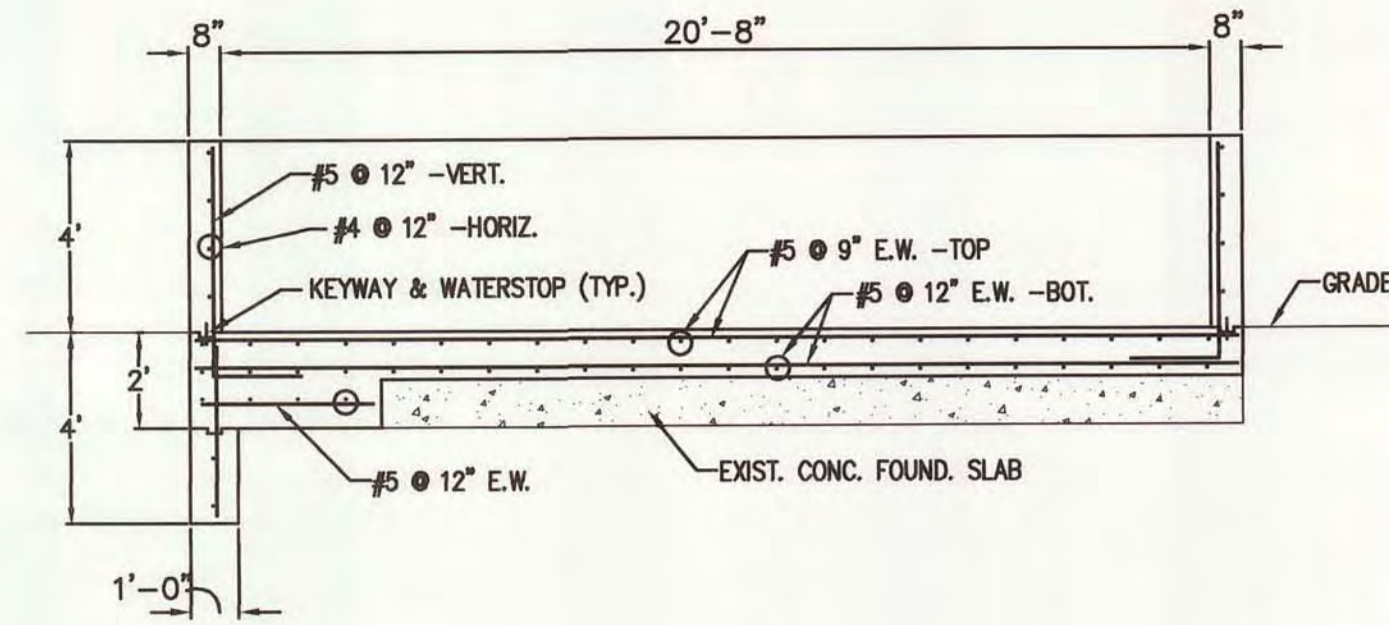
**ODOR CONTROL AND TANK BLDGS
FOUNDATION PLAN AND SECTIONS**

SHEET
S-110

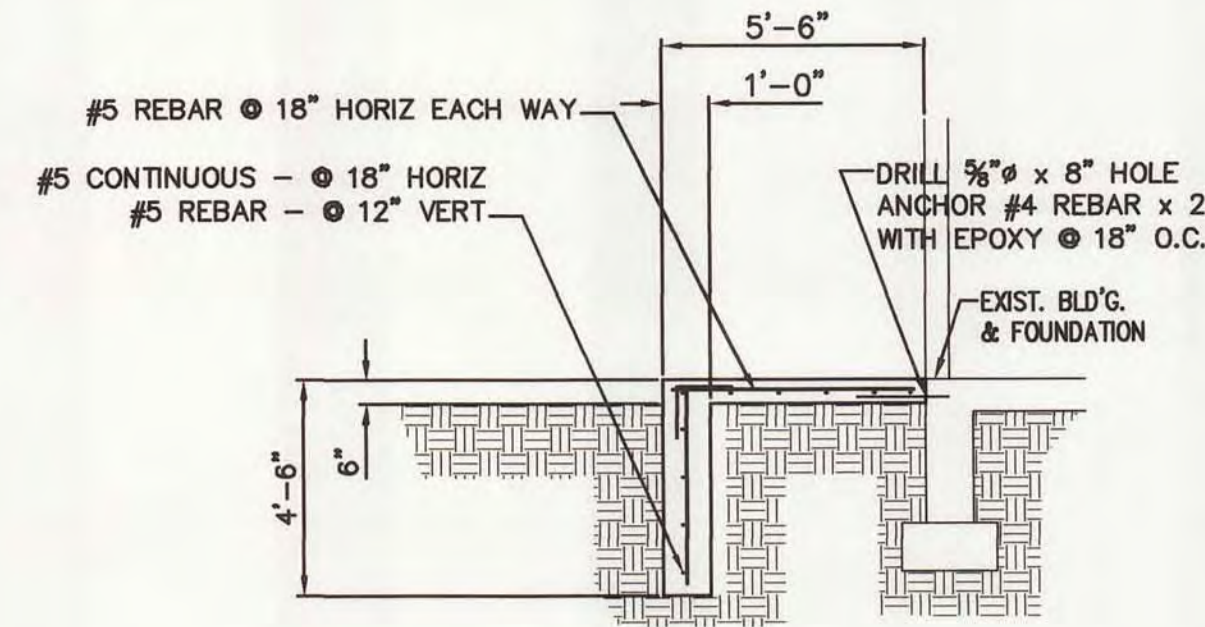


DESIGNED BY: SL
CHECKED BY: DWG'S MOD BY:
APPROVED BY: JH/RS/2001 - 2:40pm, sbrongath
© 000012-20 Aspen Water Recycling, S-M, dmpg US-111 FOUNDATION DETAILS.dwg - Model

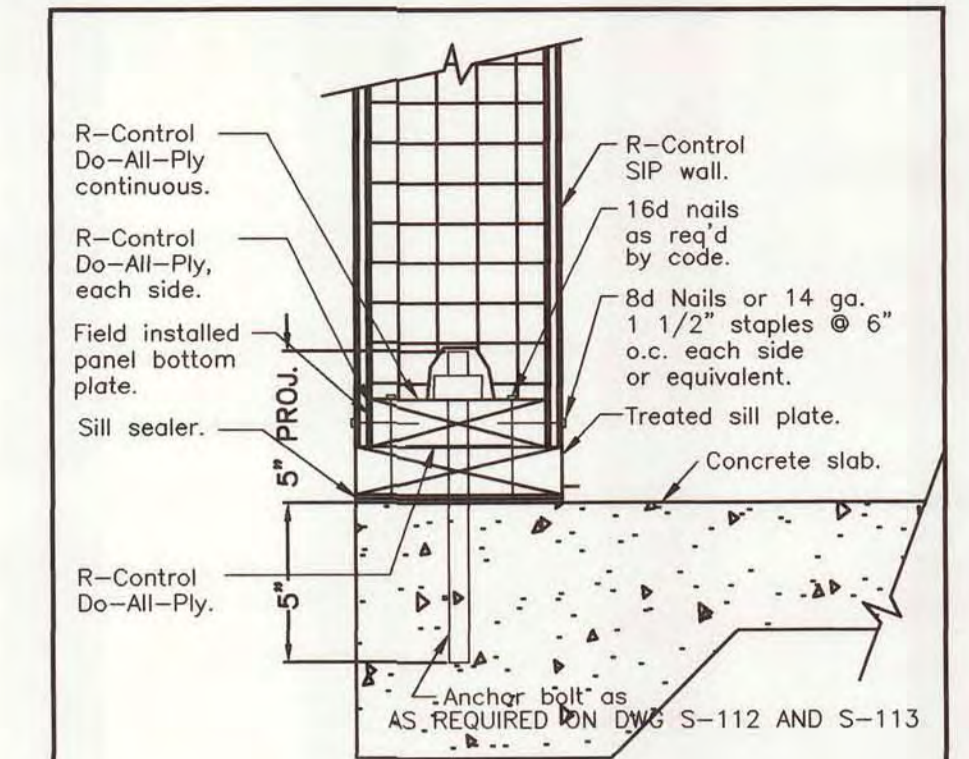
NOTE: LINER NOT SHOWN SEE DETAIL THIS DWG



1 SECTION - CONTAINMENT
S110 SCALE: 1/4" = 1'-0"



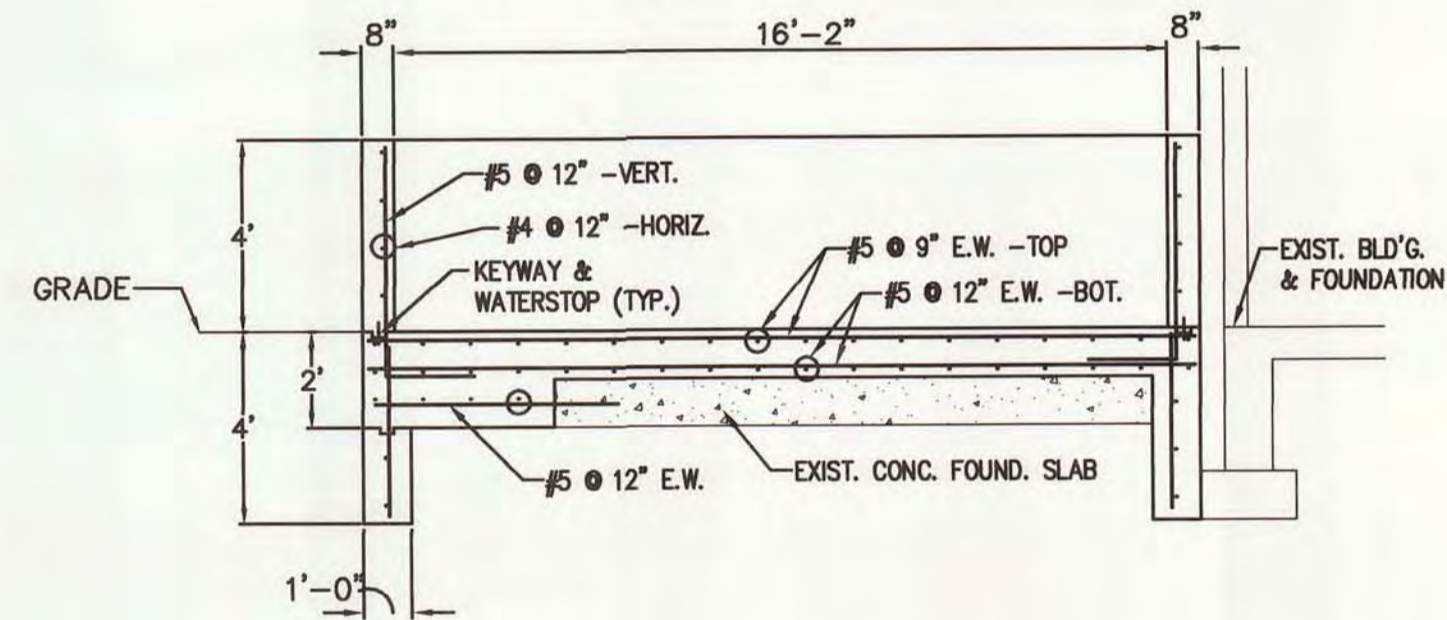
3 WALKWAY CROSS SECTION
S110 SCALE: 1/4" = 1'-0"



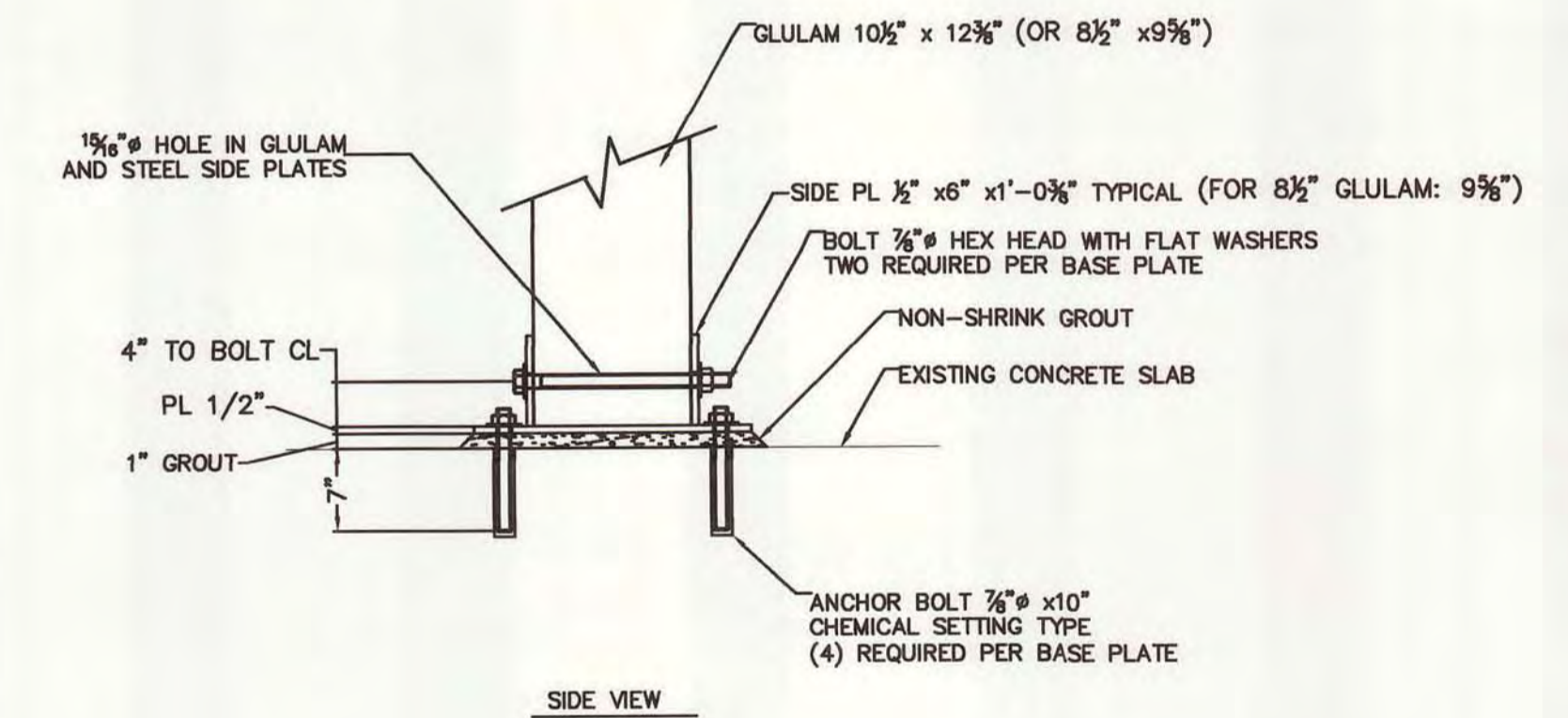
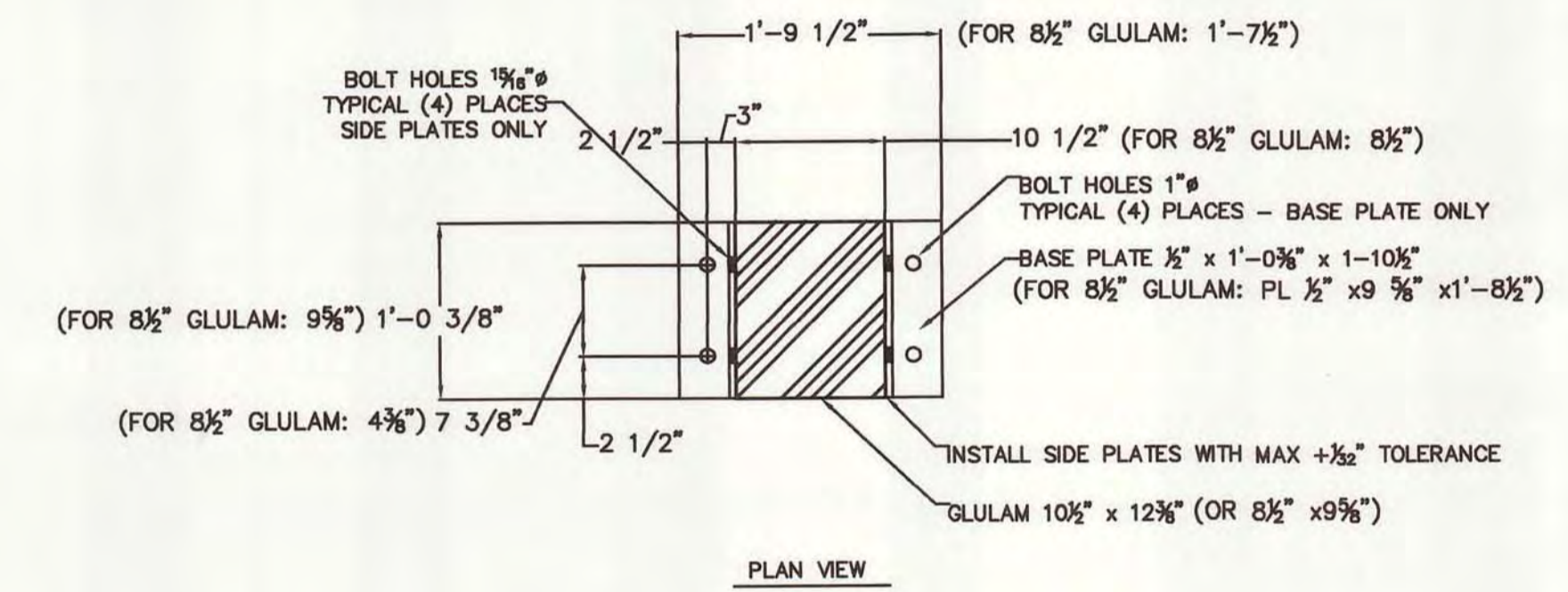
NOTE: THIS DETAIL HAS BEEN MODIFIED TO SHOW TYPICAL CONNECTION TO EXISTING AND NEW CONCRETE FOUNDATION

SECTION
Scale: NTS
Updated 5-1-99
R-Control SIP
TITLE: Slab Foundation Framing NO: SIP-104

NOTE: LINER NOT SHOWN SEE DETAIL THIS DWG



2 SECTION - CONTAINMENT
S110 SCALE: 1/4" = 1'-0"



4 BASE PLATE DETAIL - 10 1/2" GLU-LAM
S110 NOT TO SCALE

5 BASE PLATE DETAIL - 8 1/2" GLULAM
S110 NOT TO SCALE

SET 3MM HDPE PANEL WITH T-RIBBED BACKING INTO INSIDE FACE OF CONCRETE FORM WORK (CORR-TITE CONCRETE LINER BY RESICON USA, INC OR EQUAL)

REMOVE TEE RIBS TO CREATE FLAP FROM FACE MATERIAL PER MFG RECOMMENDATIONS

THERMAL WELD FLAP TO FLOOR CONTAINMENT PER MFG RECOMMENDATIONS

FLOOR MATERIAL TO BE FLUORO-SEALED SURFACE MODIFIED HDPE GEOMEMBRANE ATTACH TO LIGHT BROOM FINISH CONCRETE SURFACE WITH EPOXY ADHESIVE (NOVOCOAT SP-2000, SUPERIOR ENVIRONMENTAL PRODUCTS, INC)

3 DETAIL - CONTAINMENT LINER
S110 NO SCALE

FOR BIDDING



PHASE 2 IMPROVEMENTS
ALPENA WATER RECYCLE PLANT
CITY OF ALPENA, MI

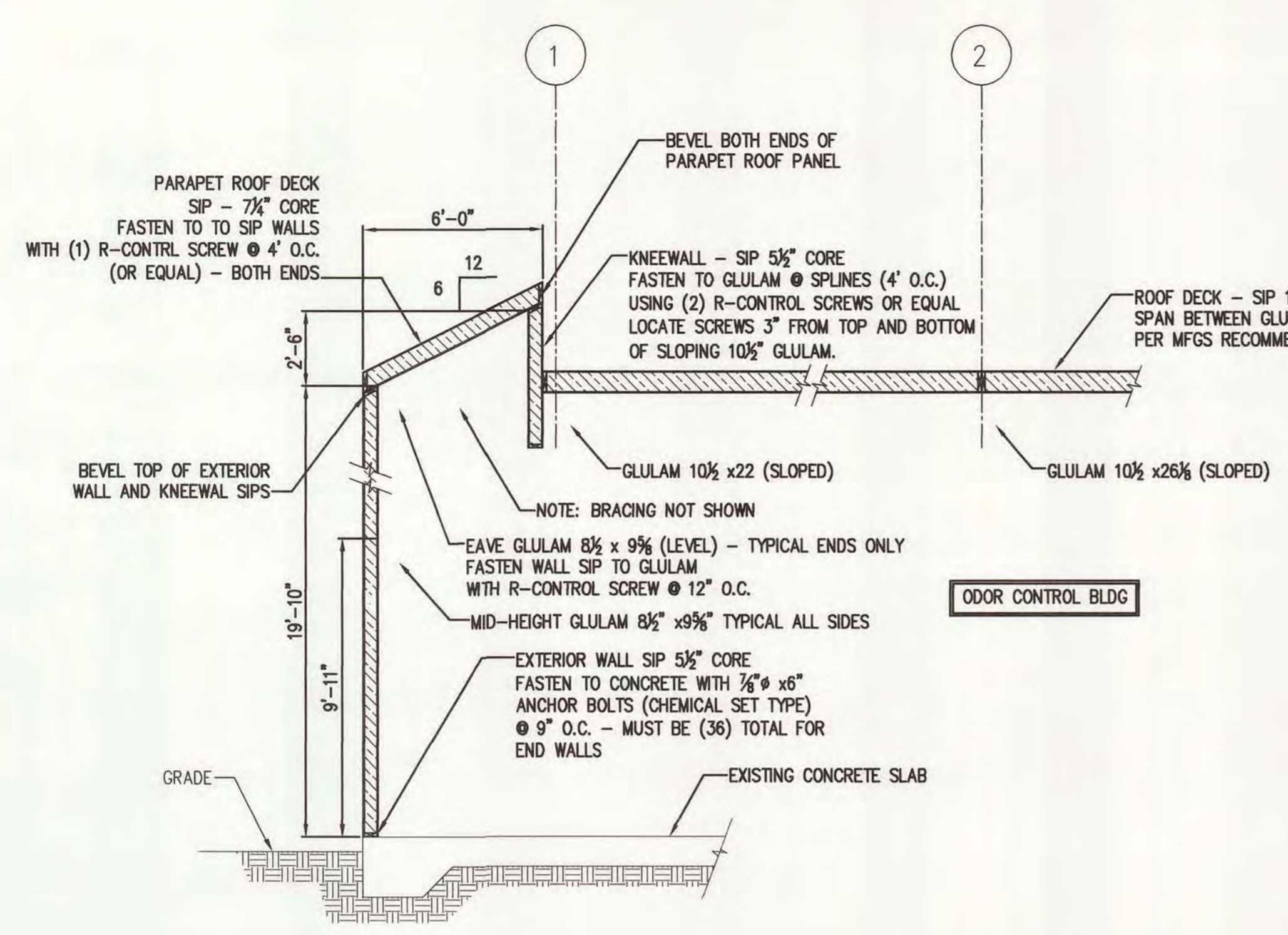
ODOR CONTROL AND TANK BLDG
FOUNDATION SECTIONS AND DETAILS

SHEET

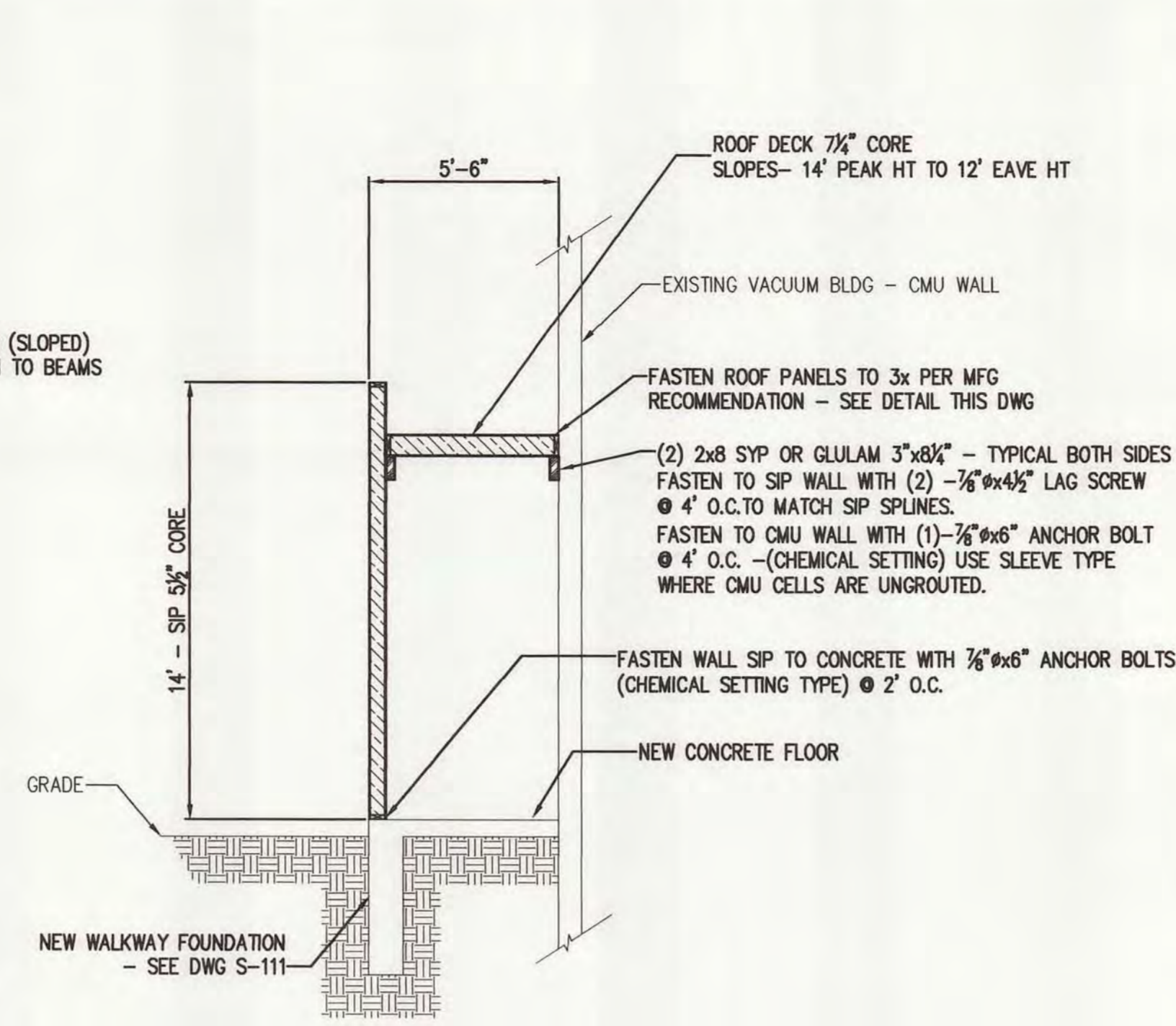
S-111

DATE	SCALE	AS NOTED
5/18/01		
REVISIONS	FOR BIDDING	
1		
2		
3		
4		
5		
PROJ. NO.	00-301	
DATE	06/01	

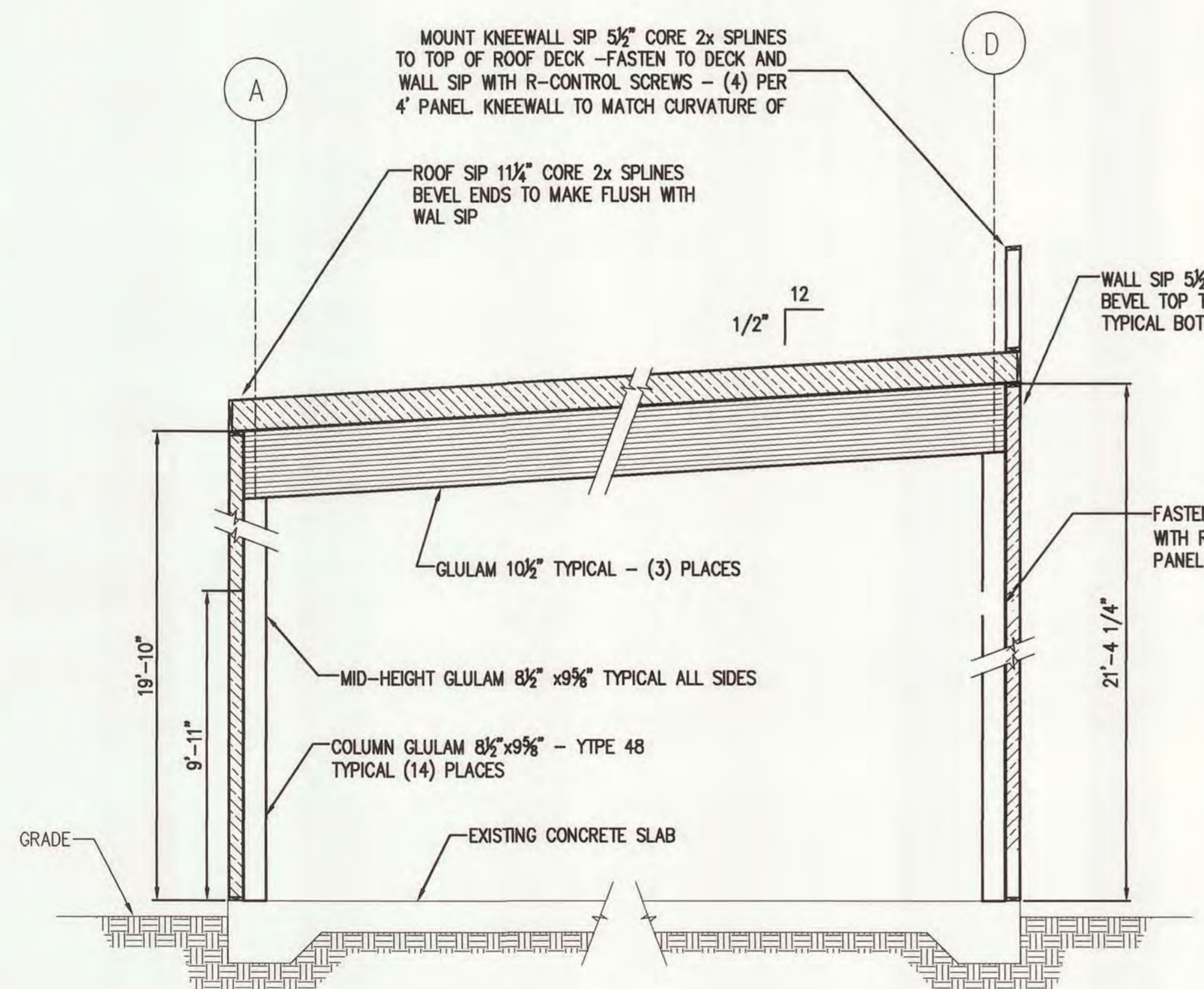
SAIKO PRODUCTS • NEW HOPE, MINNESOTA
 REORDER BY PART NUMBER 8582
 2001 - 02
 12 OF 16
 SAIKO PRODUCTS • NEW HOPE, MINNESOTA
 REORDER BY PART NUMBER 8582
 SAIKO PRODUCTS • NEW HOPE, MINNESOTA
 REORDER BY PART NUMBER 8582



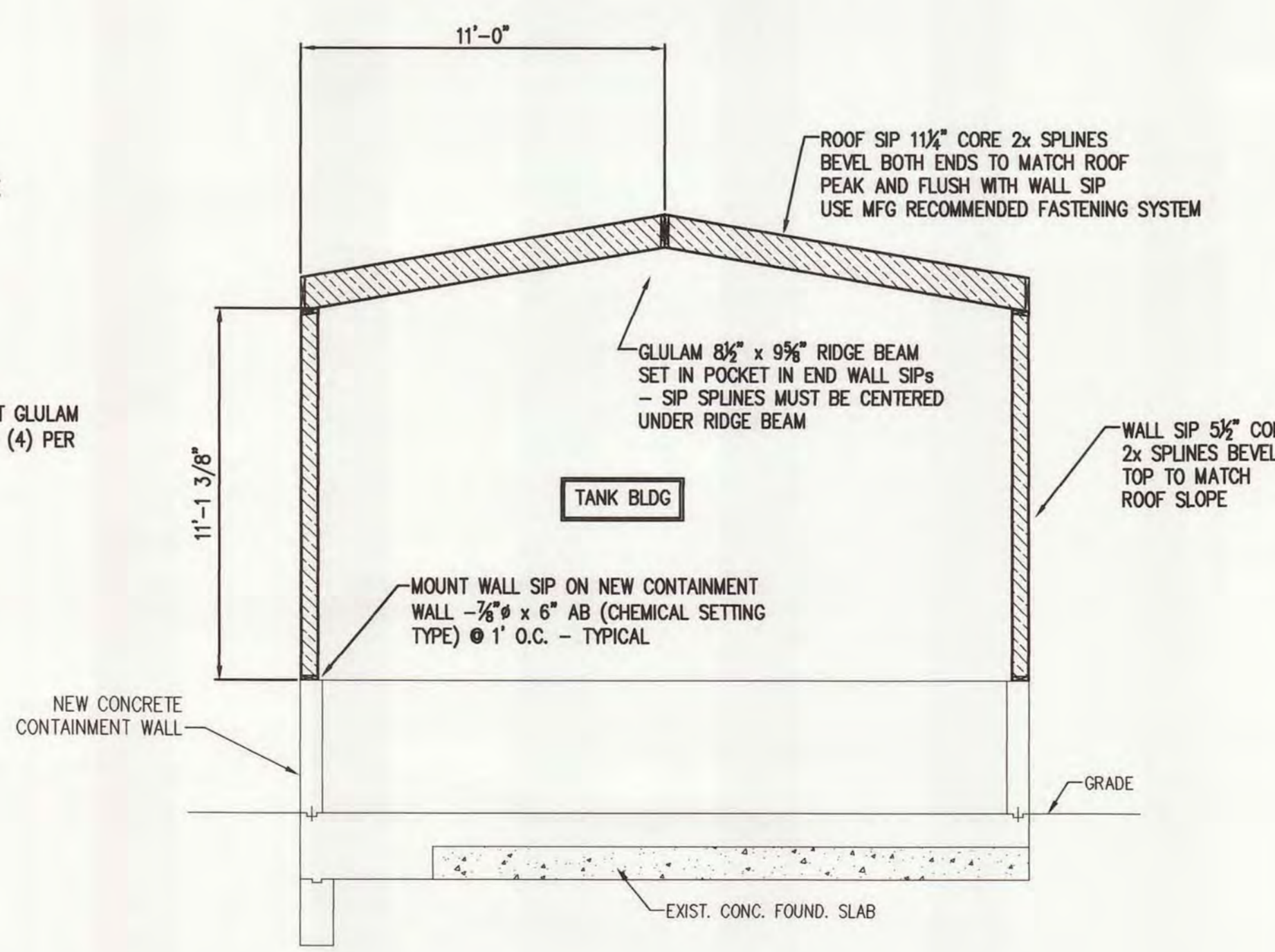
1 SECTION - TYPICAL BOTH ENDS
 S112 SCALE: 1/4" = 1'-0"



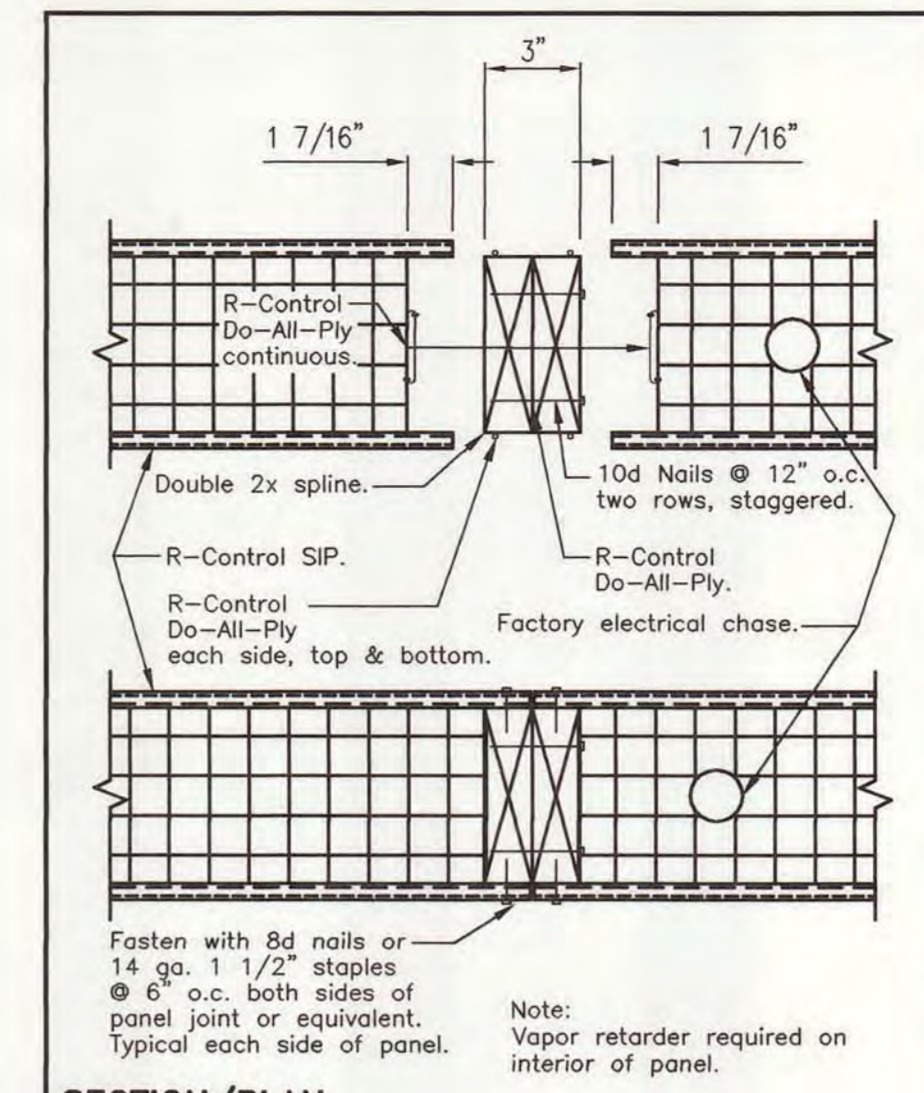
4 SECTION - WALKWAY
 S112 SCALE: 1/4" = 1'-0"



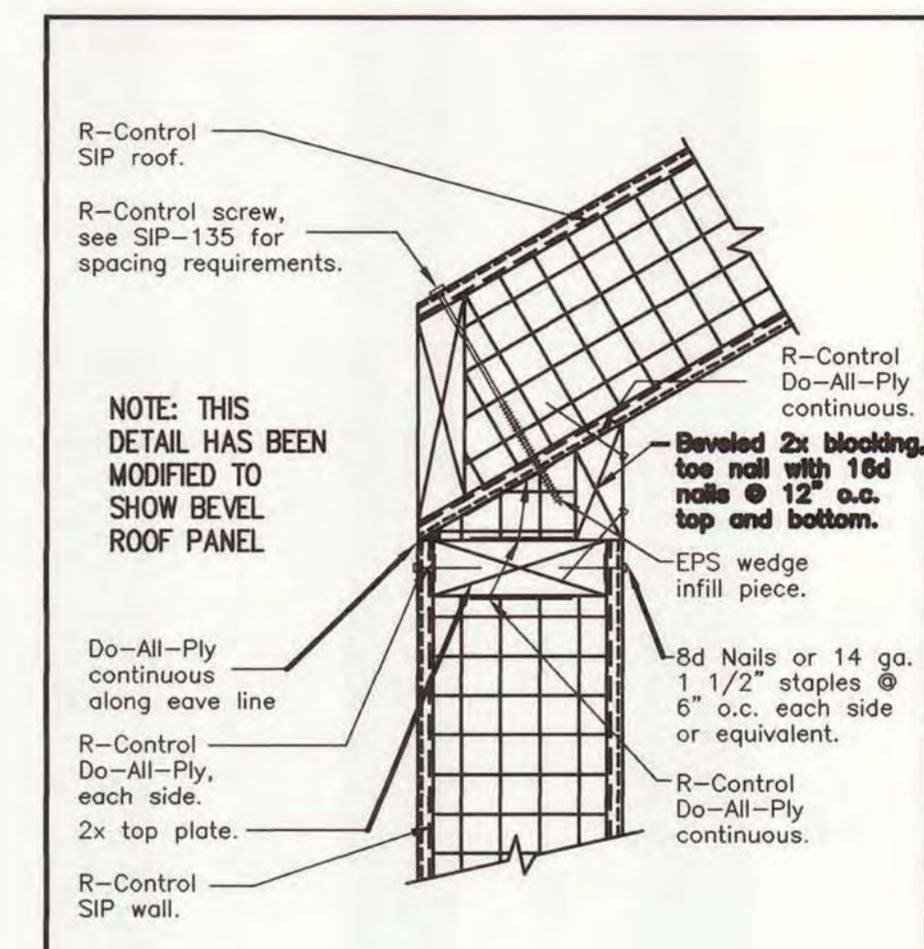
2 SECTION - TYPICAL CLEAR SPAN
 S112 SCALE: 1/4" = 1'-0"



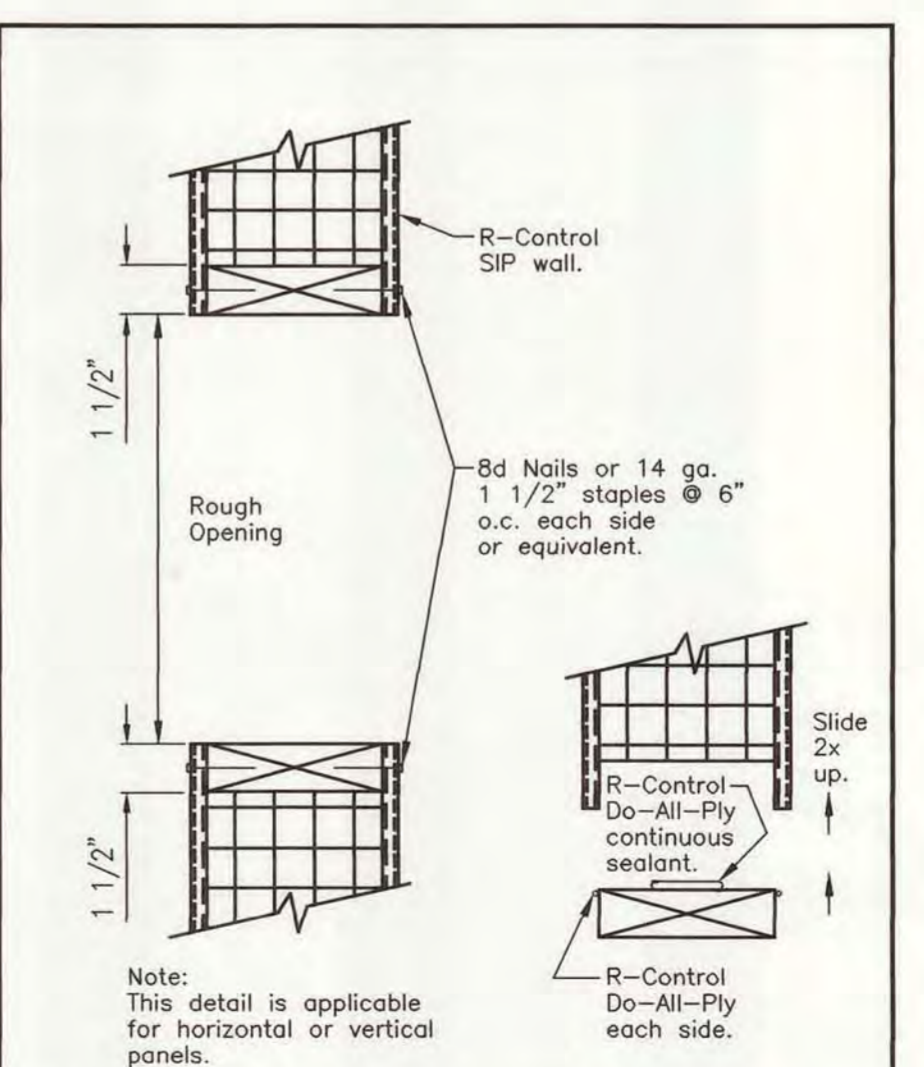
3 SECTION - TANK BLDG
 S112 SCALE: 1/4" = 1'-0"



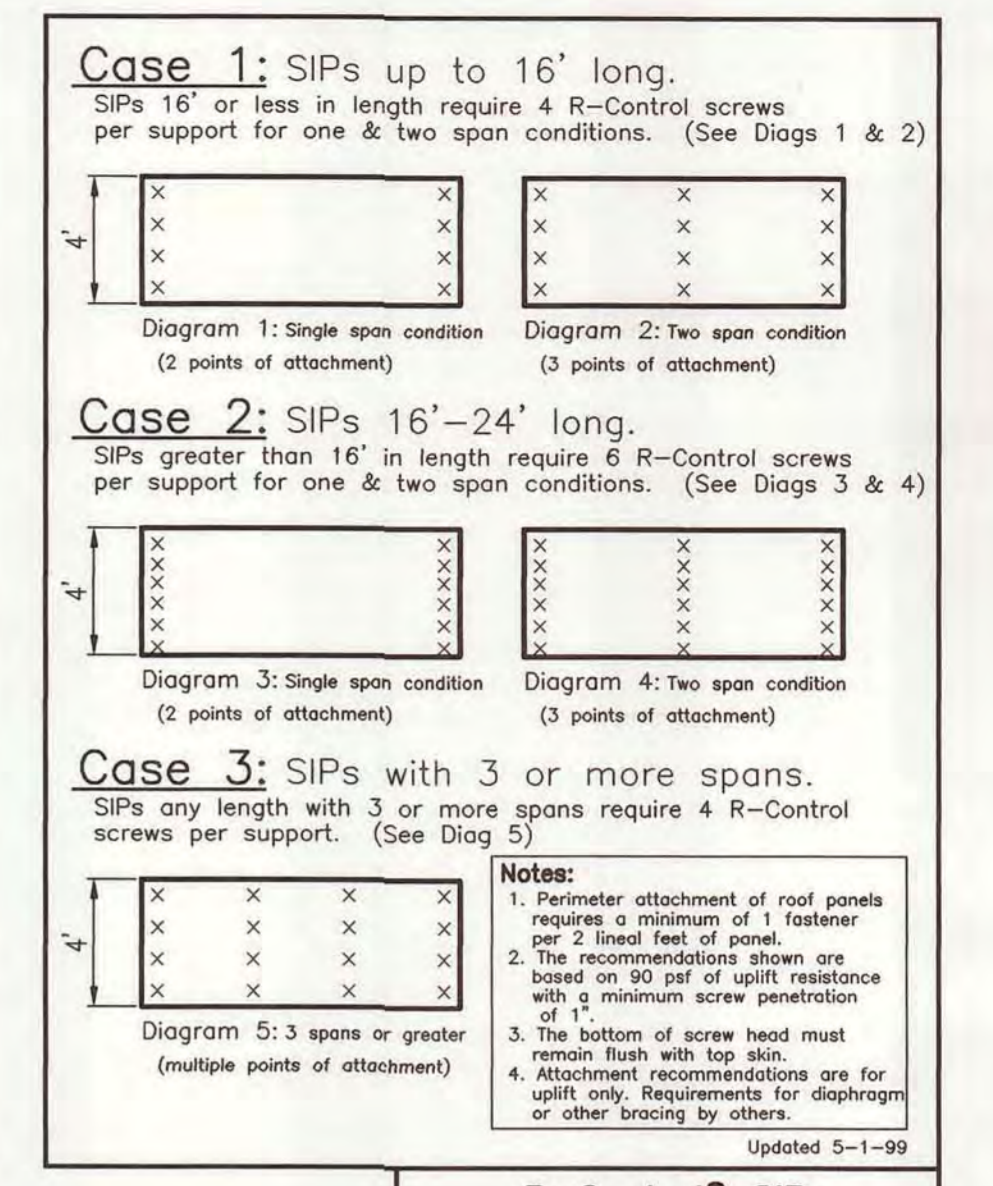
R-Control® SIP
 TITLE: Spline Connection Double 2x NO. SIP-102d



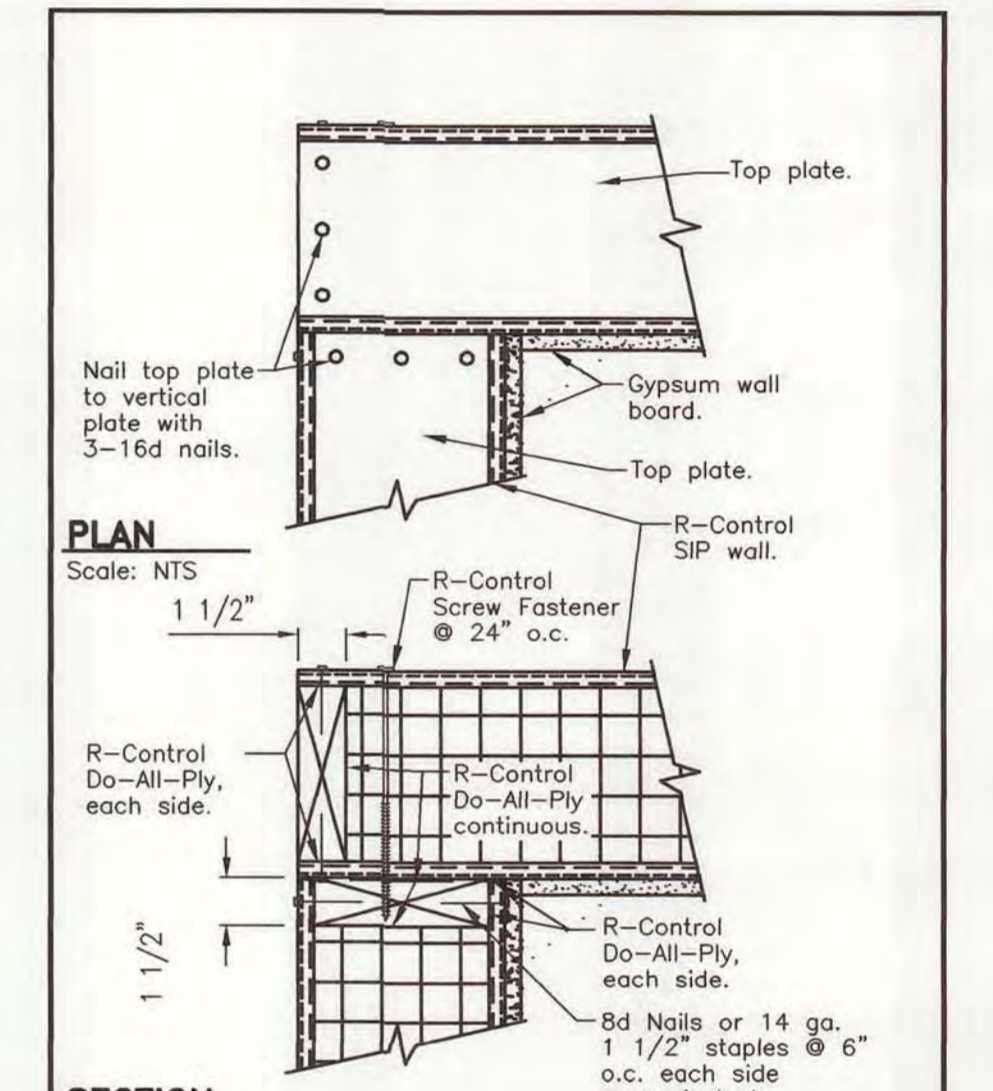
R-Control® SIP
 TITLE: Beveled 2x Blocking NO. SIP-122a



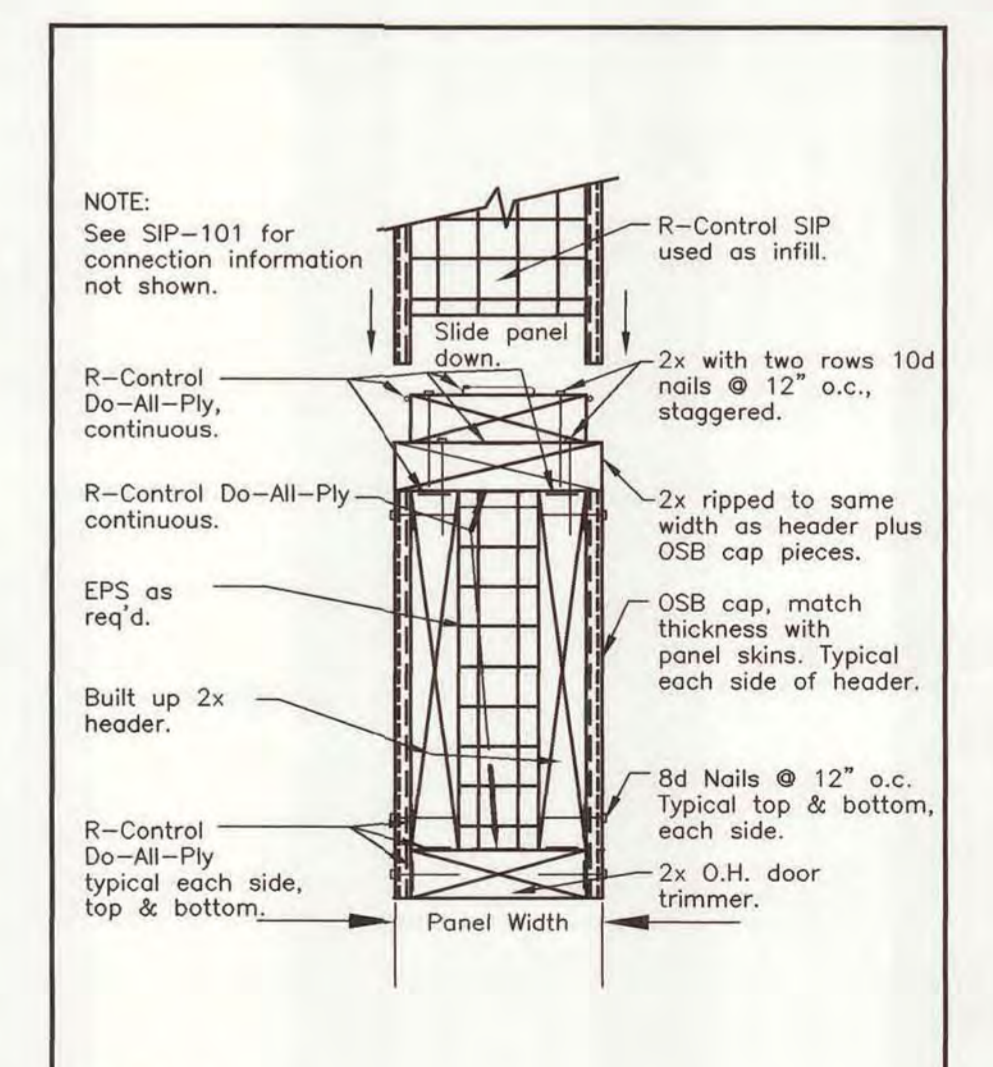
R-Control® SIP
 TITLE: Openings in Panels NO. SIP-115



R-Control® SIP
 TITLE: Panel Fastening Patterns NO. SIP-135



R-Control® SIP
 TITLE: Corner Connection NO. SIP-103



R-Control® SIP
 TITLE: Header sections (Built Up 2x's) NO. SIP-113b

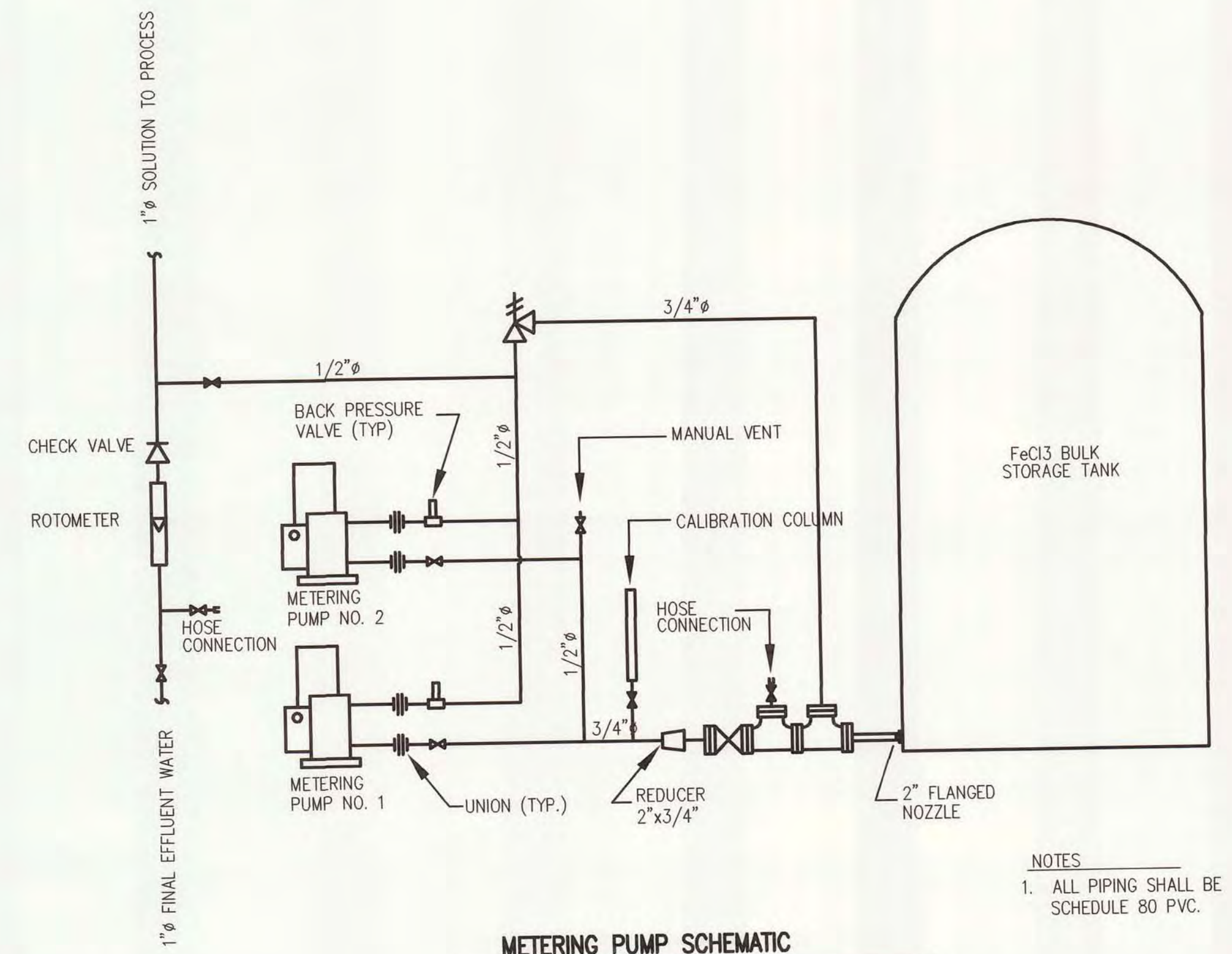
NOTES:
 1. DETAILS TAKEN FROM "R-CONTROL" SIP CONSTRUCTION MANUAL. DETAILS MAY HAVE TO BE ALTERED TO MEET ACTUAL FIELD CONDITIONS.
 2. "R-CONTROL" SIP TO SUBMIT CERTIFIED SHOP DRAWINGS SHOWING PLANS AND DETAILS AS SHOWN ON THE ARCHITECTS DRAWINGS.

FOR BIDDING

DESIGNED BY:	APPROVED BY:	DATE:	SCALE:	AS NOTED
CHECKED BY:	DWG'S MADE BY:	PROJECT NO.:	00.301	03/23/01
PHASE 2 IMPROVEMENTS ALPENA WATER RECYCLE PLANT CITY OF ALPENA, MICHIGAN				
ODOR CONTROL AND TANK BLDG SECTIONA AND DETAILS				
SHEET				
S-113				

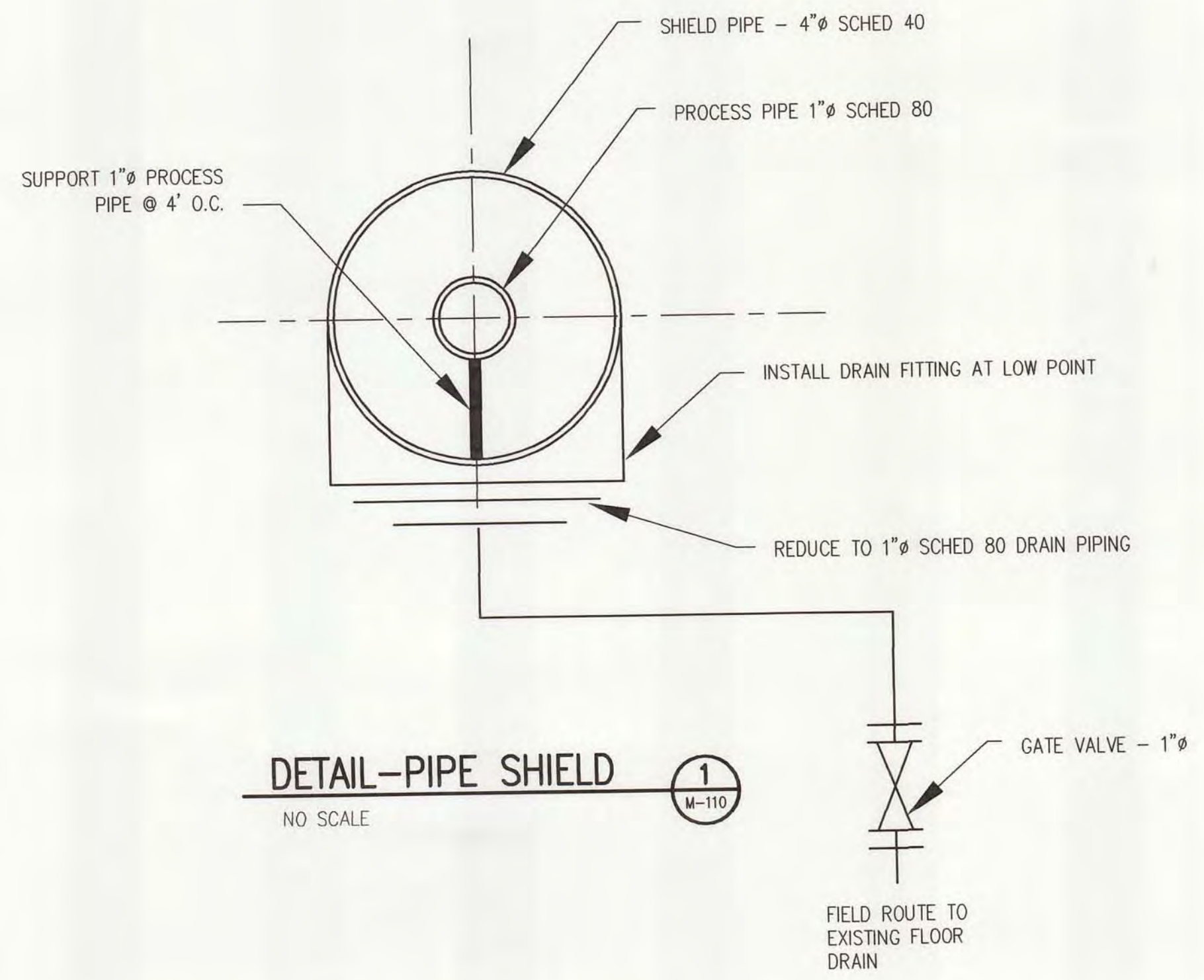
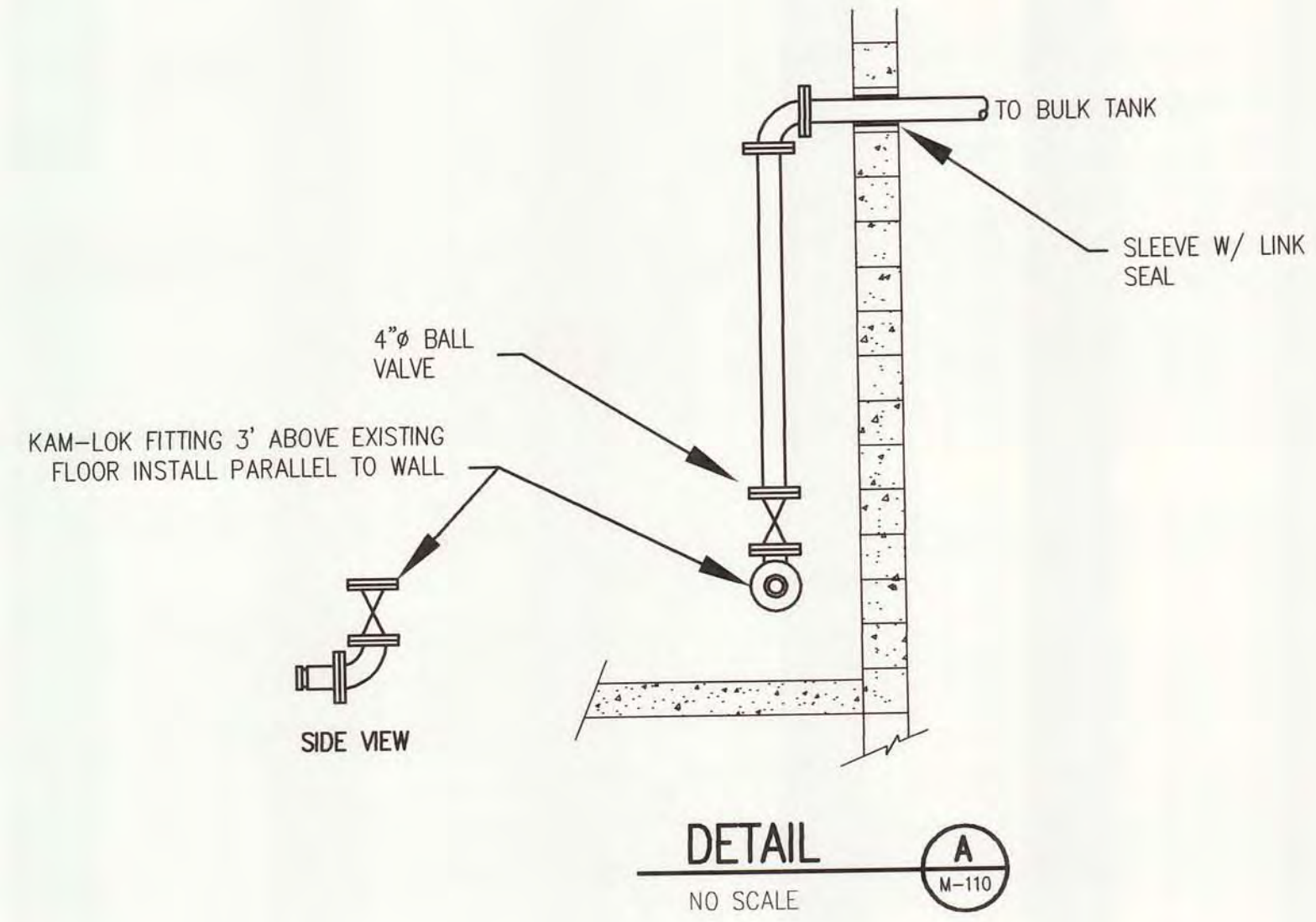


DESIGNED BY: -
APPROVED BY: -
CHECKED BY: -
DATE: 11/16/2001 - 2:00pm, slg/mth
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METERING PUMP SCHEMATIC
NO SCALE

NOTES
1. ALL PIPING SHALL BE SCHEDULE 80 PVC.



FOR APPROVAL

Mechanical Equipment Schedule

Tag	Description
EF-1	Wall mounted belt driven centrifugal exhaust ventilator. Fan shall be rated 1075 CFM at 1/4" static pressure. Fan housing shall be spun aluminum. Wheel shall be backward inclined, aluminum. Motor shall be permanently lubricated, heavy duty, 120 VAC single phase. Fan shall be as manufactured by Loren-Cook series ACW-B model 135W2B.
EF-2	Wall mounted belt driven medium pressure "Wall-Pak" exhaust fan. Fan shall be rated 1837 CFM at 1/8" static pressure. Housing and propeller shall be steel with baked polyester coating. Exhaust shutter shall be galvanized steel. Motor shall be 1/3 horsepower, explosion proof, permanently lubricated, heavy duty, 120 VAC single phase. Wheels and belts shall be anti-static and non-sparking. Fan shall be as manufactured by Loren-Cook series XLP model 20XLP.
UH1	Electric ceiling mounted vertical unit heater. 7.5 KW, 208 VAC, 3 phase, complete with built in fusing, control transformer, and 3 pole contactor. Air delivery shall be 880 CFM with 1/25 HP fan. Housing shall be steel with baked on enamel finish. Unit heater shall be as manufactured by Chromalox type VUH model VUH-07-83. Mount unit heater at 10 feet above finished floor. Provide Chromalox model WCR T NEMA 4 wall mounted thermostat.
UH2-A and B	Electric explosion proof ceiling mounted unit heaters. 10 KW, 208 VAC, 3 phase rated for Class I, Division 1, Group D hazardous locations. Cast aluminum heater elements, non-sparking fan and case. Heavy duty explosion proof motor. Adjustable lower grille. Unit heater shall be as manufactured by Chromalox model CUH-EP model CUH-100EP. Provide NEMA 7 control panel including starter, fan relay, control transformer, disconnect switch, fusing, and terminal connections. Provide Chromalox model WR-80EP wall mounted, explosion proof thermostat.
LD-1	Combination louver-damper assembly 18"x18" size. Flanged frame milled aluminum with stormproof blades. Aluminum damper with nylon bearings. complete with Honeywell 120 vac spring return to close operator. As manufactured by Ruskin.

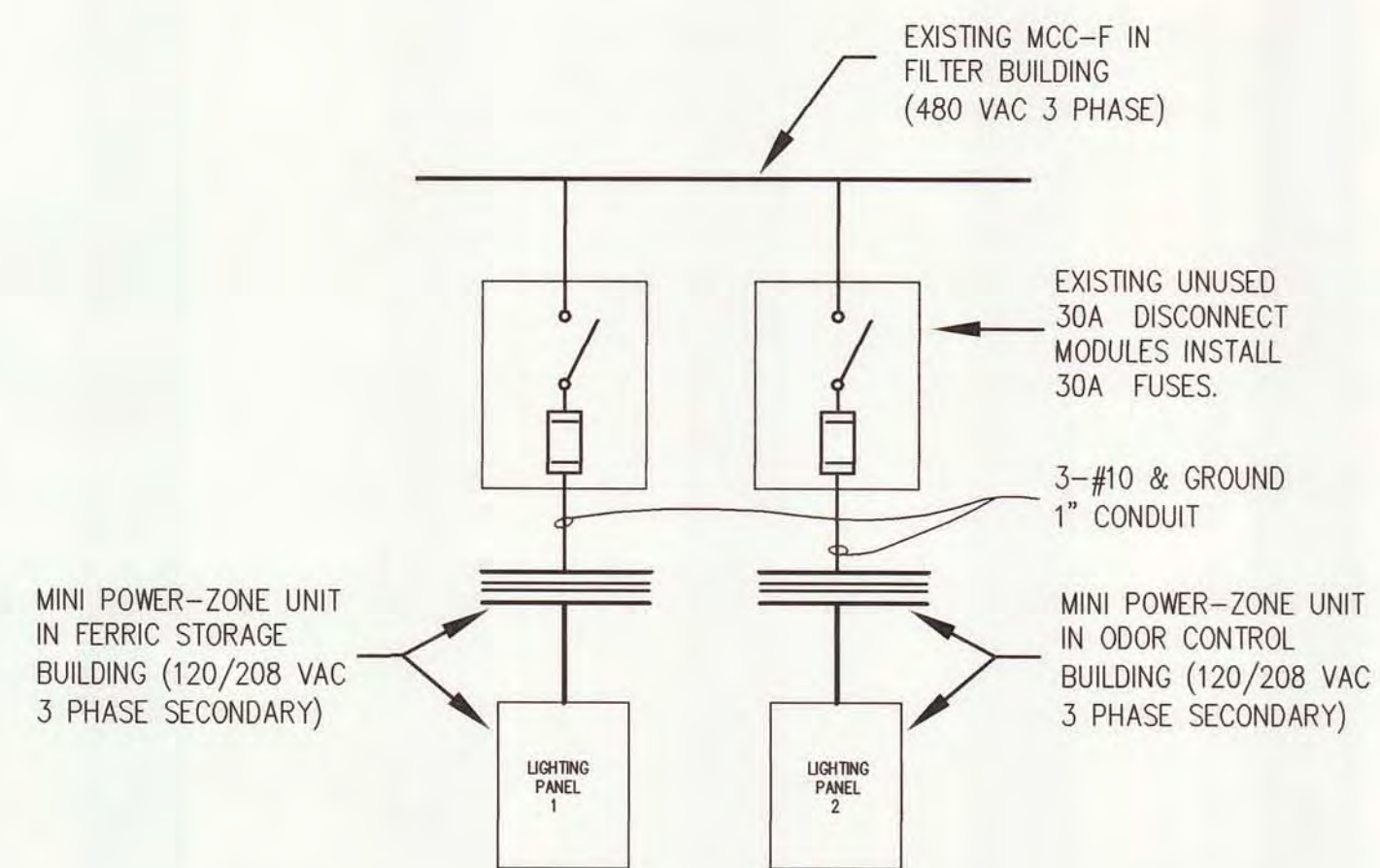
Miscellaneous Equipment Schedule

Tag	Description
Ferric Tank Level Monitor	Ultrasonic non-contact level monitor. Maximum range 50 feet. Optically isolated 4-20 mADC output. 2 form C SPDT output relays. Microprocessor controller with volume calculation, measured variable readout, alarm status indication via LCD display. NEMA 4 enclosure. Monitor shall be as manufactured by Milltronics model "MiniRanger Plus". Sensor shall be ANSI flange mounted with Kynar housing and sealed rubber face. Sensor shall have maximum range of 16.5 feet. Sensor shall be as manufactured by Milltronics model "Echomax XRS-5".
Metering Pumps	Worm and pinion mechanical drive, hydraulically actuated diaphragm, internal bypass relief, oil bath lubrication, micrometer stroke adjustment, cartridge type ball check valve assemblies, PTFE diaphragm, PVC liquid end, and oil site glass. Pump shall be rated maximum 12.3 GPH at 100 psi discharge pressure. Motor shall be 1/2 horsepower, TEFC, 120 VAC single phase. Pump shall be as manufactured by Milton Roy model RA-2-17-24. Provide PVC backpressure valves each pump. Provide PVC pressure relief valve with relief capacity of 15 GPH and set point of 100 psi. Provide calibration column.
Ferric Chloride Storage Tank	Centrifugally spun glass fiber reinforced plastic tank. Tank shall be manufactured with resin rich polyester inner surface, a spray applied chopped strand and resin layer, a filament wound saturated glass fiber layer, and gel coat outer layer. Tank shall be vertical, flat bottom, 12 feet diameter, domed head, with nominal vertical sidewall height of 9 feet. Nominal tank capacity shall be 7,800 gallons. Tank shall be provided with nozzles and fittings as shown on the drawings. Tank shall be as manufactured by Belding Tank Technologies, model C-CFV.

DATE	SCALE	NONE
REVISIONS	PRGJ. NO.: 00301.3-20	DATE: 01/08/01
755 Pavilion Street Lincoln, NE 68506 (402) 371-1200	433 West Main Street, Suite 205 Council Bluffs, MO 64604 (515) 732-5231	4328 Three Mile Road, Suite 100 Omaha, NE 68131 (402) 791-1005
CAPITAL CONSULTANTS' www.ccapeng.com		
PHASE 2 IMPROVEMENTS ALPENA WATER RECYCLE PLANT CITY OF ALPENA, MICHIGAN		
ODOR CONTROL-FECL TANK BLDG MECHANICAL DETAILS AND NOTES		
SHEET		
M-111		



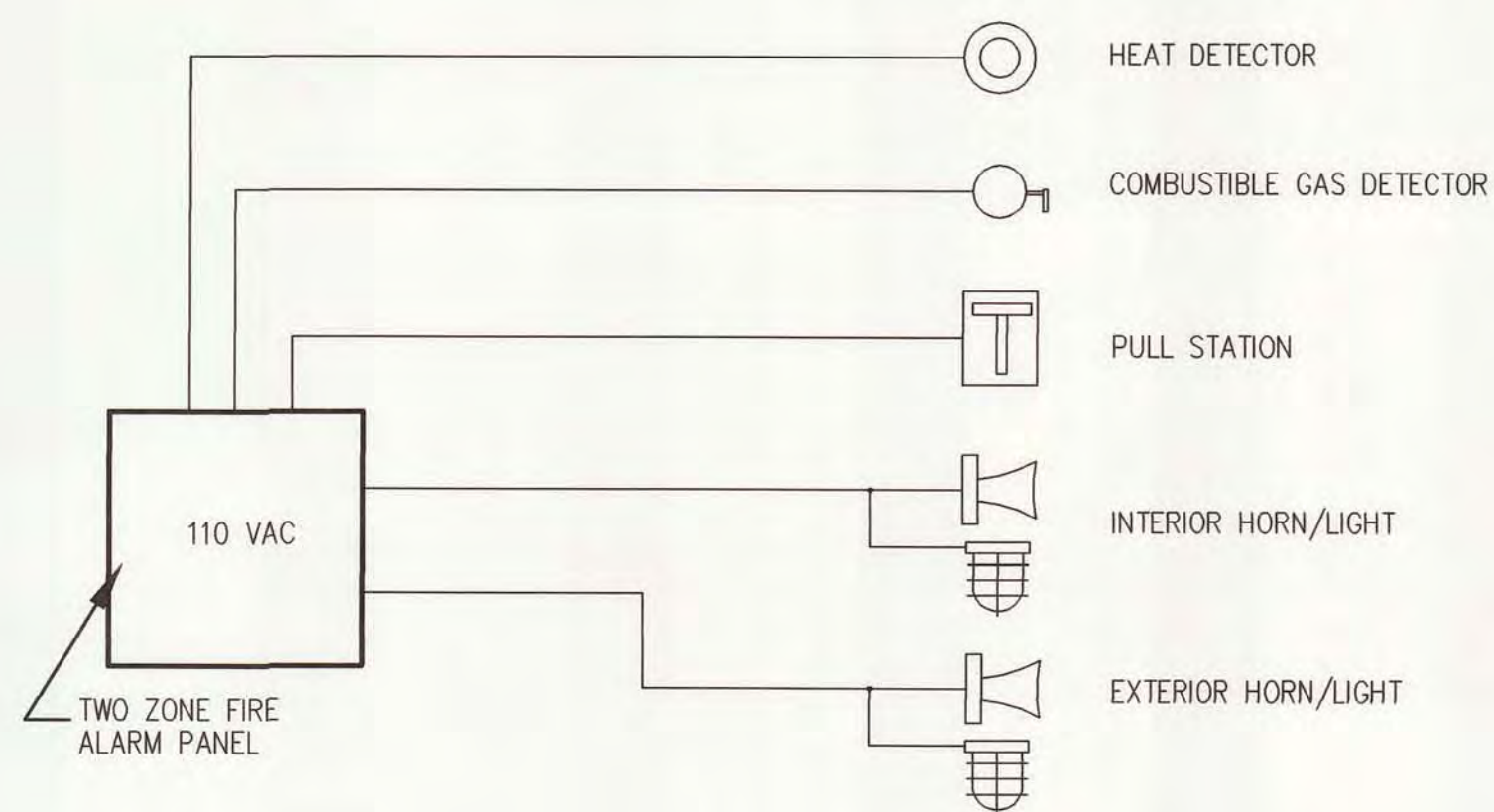
DESIGNED BY: -
CHECKED BY: -
APPROVED BY: -
DATE: 7/18/2001
PROJECT: 010501-02-00
SHEET: 16 OF 16
TITLE: ELECTRICAL DETAILS



ONE LINE DIAGRAM

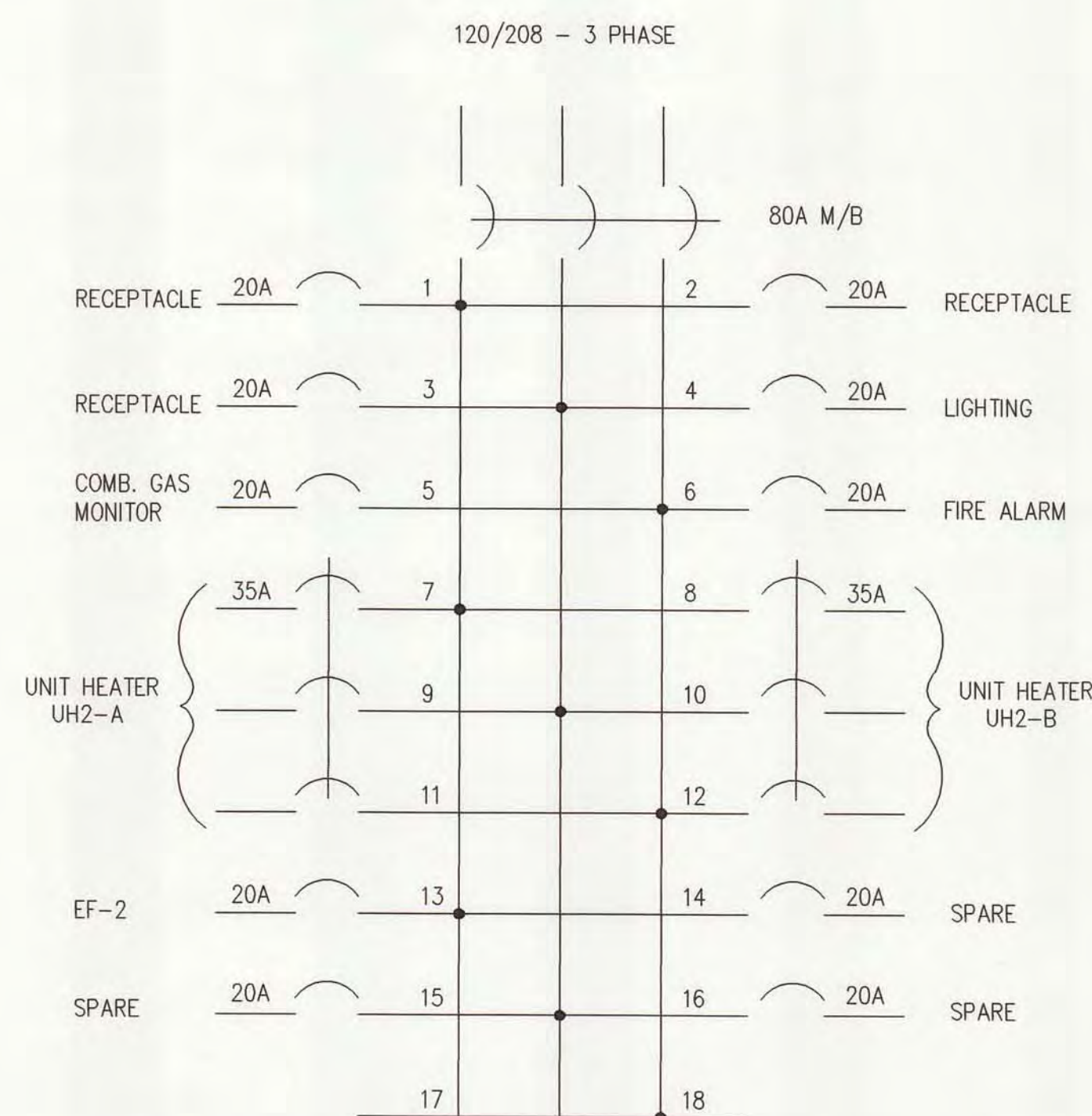
SCALE: NO SCALE

- NOTES
- 1. GROUND AND BOND SERVICES AT THE TWO BUILDINGS IN ACCORDANCE WITH NEC.

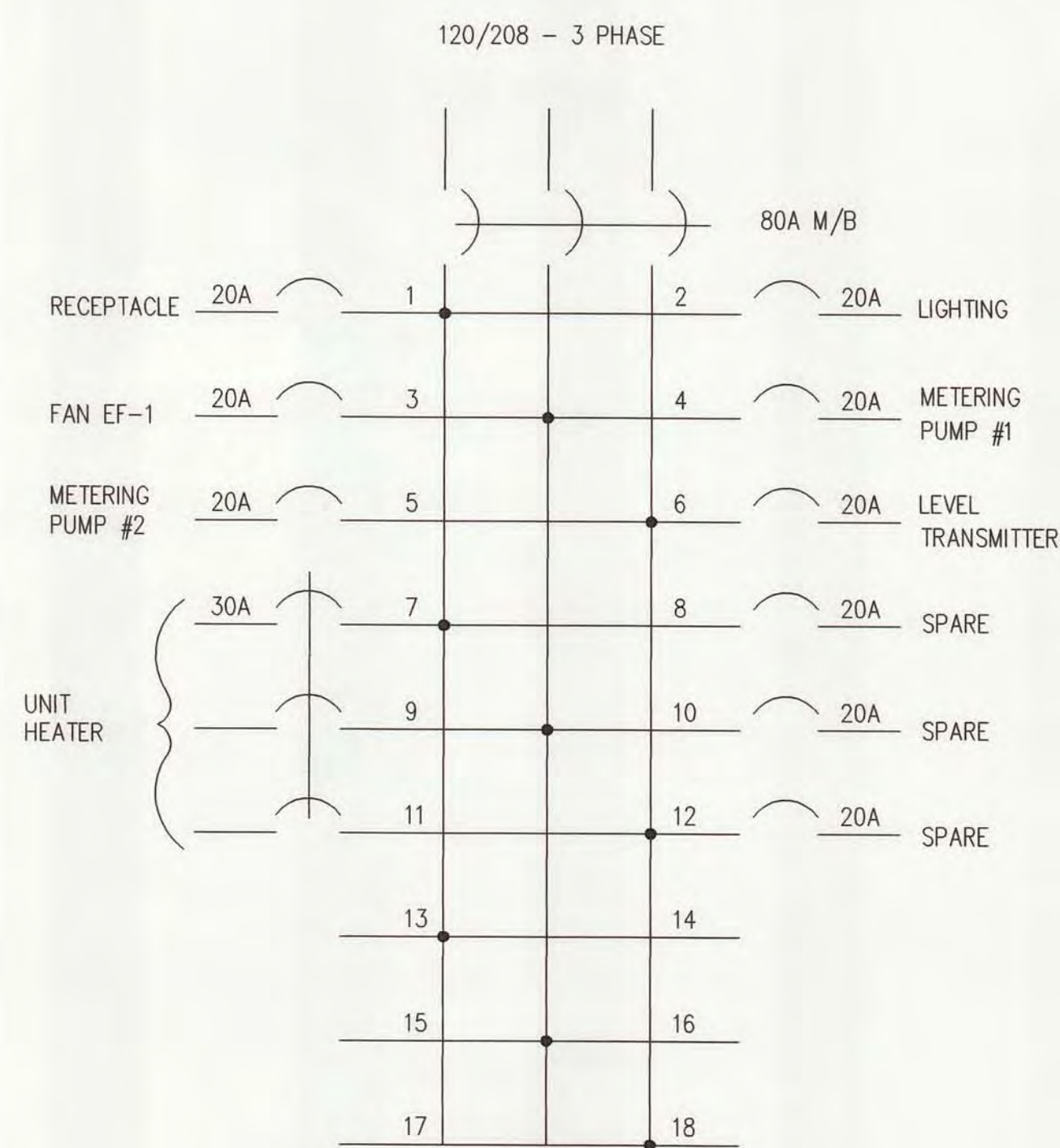


FIRE ALARM RISER

SCALE: NO SCALE



LIGHTING PANEL LP-2



LIGHTING PANEL LP-1

LIGHTING PANEL SCHEDULES

Electrical Equipment Schedule

Tag	Description
Mini Power Zone LPI and LP2	Packaged power supply complete with dry type transformer, primary transformer circuit breaker, secondary transformer circuit breaker, and 18 space load center. Transformer primary shall be 480 VAC 3 phase; transformer secondary shall be 208 VAC 3 phase. Transformer shall be rated 22.5 KVA. Power Zone shall be as manufactured by Square-D, class 7400, catalog number MP222T2F.

Light Fixture Schedule

Tag	Description
A	100 Watt Metal Halide enclosed and gasketed for NEC Class I, Division 2 hazardous atmospheres. Ceiling mount feed-through. Cast aluminum body with powder coat finish. Crouse-Hinds LMW series, model LMW2C100GP, 120VAC.
B	2 lamp 40W T12 enclosed and gasketed fluorescent for damp locations. Housing shall be fiberglass reinforced polyester. Gasketed high impact acrylic diffuser. Surface mount. Lithonia series DMW, model DMW240AR120

Fire Alarm Equipment Schedule

Tag	Description
Fire Alarm Panel	Two zone fire alarm panel complete with two device initiating circuits, two notification appliance circuits, two, seven segment LED status and diagnostic displays. Alarm/silence reset inhibit. Auxiliary outputs for trouble and alarm. Panel shall be as manufactured by Simplex series 4004. Zone 1 shall be ceiling mounted heat detector. Zone 2 shall be ceiling mounted combustible gas detector.
Heat Detector	Combination fixed temperature and rate of rise explosion proof heat detector. Fixed temperature rating 136 deg F. Detector shall be rated for Class 1, Division 2, Group D hazardous locations. Detector shall be as manufactured by Simplex series 2098, model 2098-9430.
Pull Station	Non-coded, hazardous location manual pull station. Station shall be rated for Class 1, Division 2, Group D hazardous locations. Pull Station shall be as manufactured by Simplex model 2099-9136.
Combustible Gas Detector/Monitor	Catalytic type detector complete with relay outputs for alarm and warning levels of combustible gas and LCD display for detector values. Detector shall be rated for Class 1, Division 2, Group D hazardous locations. Warning relay shall energize at 5% of LEL, alarm relay shall energize at 10% LEL. Provide with 120 VAC power supply and relay module. Detector shall be as manufactured by Mine Safety Appliance (MSA) model "Ultima" Combustible Gas Monitor.
Horn/Lamp	Interior and exterior horns shall be weather-proof/explosion proof, 100 dba at 10 feet. Horns shall be rated for Class 1, Division 2, Group D hazardous locations. Horns shall be as manufactured by Simplex series 4901 model 4901-9502. Interior and exterior alarm lamps shall be weather-proof/explosion proof incandescent lamps with red globe and guard, 100 W 120 VAC lamp. Provide suitable power supplies and relays as required to interface with fire alarm panel alarm outputs.

FOR APPROVAL

REVISIONS

DATE	SCALE	AS NOTED

725 Prairie Street
Lansing, Michigan 48906
(517) 371-1000

137 West Main Street, Suite 200
Grand Rapids, Michigan 49504
(616) 722-8183

1350 Three Mile Road, Suite 100
Grand Rapids, Michigan 49544
(616) 791-0100

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PHASE 2 IMPROVEMENTS
ALPENA WATER RECYCLE PLANT
CITY OF ALPENA, MICHIGAN

ODOR CONTROL-FECL TANK BLDG
ELECTRICAL DETAILS AND NOTES

SHEET
E-111