Limited Asbestos Inspection
Colorado Springs Charter School
2577 North Chelton Road
Colorado Springs, Colorado

WALSH Project Number: 6491-010
September 1, 2009

Limited Asbestos Inspection
Colorado Springs Charter Academy
2577 North Chelton Road
Colorado Springs, Colorado

September 1, 2009

Prepared for:

Mr. Bob Dillie
Colorado Springs Charter Academy
2577 North Chelton Road
Colorado Springs, CO 80909

Prepared by: _____

Michael Perry
Certified Asbestos Inspector

Reviewed by: _____

Daniel M. Benecke
District Manager

Submitted by

WALSH ENVIRONMENTAL SCIENTISTS AND ENGINEERS, LLC.
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WALSH Project Number: 6491-010

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EXECUTIVE SUMMARY

This report presents the findings of a limited asbestos inspection conducted on June 8, 2009 for the Colorado Springs Charter Academy located at 2577 North Chelton Road in Colorado Springs, Colorado (subject property). Walsh Environmental Scientists and Engineers, LLC. (WALSH) conducted this inspection at the request of Mr. Bob Dillie, of the Colorado Springs Charter Academy in Colorado Springs, Colorado. The objective of this inspection was to identify the location and extent of suspect asbestos-containing materials (ACM) not identified in the building's asbestos management plan created by Alpine Consulting, Inc. dated July 9, 2003. Bulk samples of various suspect materials, previously un-sampled, were obtained from the building and submitted to an independent, NVLAP accredited laboratory for polarized light microscopic (PLM) analysis. A total of eleven (11) samples were collected. WALSH conducted this asbestos inspection in accordance with the Asbestos Hazard Emergency Response Act (AHERA) protocol, which is mandated by Colorado Regulation No. 8 and EPA regulations.

The inspection confirmed the following regulated asbestos-containing materials in the building:

Newly Identified Asbestos Containing Materials

Non-friable ACM was identified in vibration dampener expansion gaskets and window glazing.

Added Existing Asbestos Containing Materials

Thermal System Insulation (TSI) was identified in the original inspection management plan; however, 296 additional elbows and fittings were discovered in the basement, crawlspace and restroom chases during this inspection. Locations and quantities are illustrated on drawings attached to this inspection report.

No other regulated asbestos-containing materials were identified during this inspection.

Walsh recommends incorporating this information into the existing management plan as an appendix to the plan.

Limited Asbestos Inspection
Colorado Springs Charter Academy
2577 North Chelton Road
Colorado Springs, Colorado

1 INTRODUCTION

This report presents the findings of a limited asbestos inspection conducted on June 8, 2009 for Colorado Springs Charter Academy located at 2577 North Chelton Road in Colorado Springs, Colorado (subject property). Walsh Environmental Scientists and Engineers, LLC. (WALSH) conducted this limited inspection at the request of Mr. Bob Dillie, of Colorado Springs Charter Academy in Colorado Springs, Colorado. The objective of this inspection was to identify the location and extent of asbestos-containing materials (ACM) not noted in the current asbestos management plan created by Alpine Consulting, Inc. dated July 9, 2003.

2 RE-INSPECTION OF EXISTING ACM

On March 3, 2009, WALSH visited the site and reviewed the asbestos management plan prepared by Alpine Consulting, Inc. of Colorado Springs, Colorado, dated July 9, 2003. Daniel M. Benecke and Chris J. Thompson, inspectors certified by the State of Colorado and the EPA conducted a re-inspection of the asbestos-containing materials (ACMs) previously identified in the management plan. The inspectors visually inspected and reassessed the condition of all documented friable and nonfriable materials identified in the plan. The following table presents a summary and condition assessment for the materials that were re-inspected at the site.

TABLE 1 – Re-Inspection of Asbestos Containing Materials

Sample ID	Material Location	Homogeneous Area	Type of Material	Approximate Quantity	EPA Classification	Friable/ Nonfriable	Condition
BHM 0623-7, 27, 28	1st and 2nd Floors including Mech Rooms	1	Hard Packed Pipe Fittings	230 Fittings	TSI	Friable	**Damaged**
BHM 0623-8,13, 17, 20, 22, 55, 61	Various Locations Throughout Building	2	9-inch Floor Tile and Mastic	10,000 SF	Misc.	Nonfriable	**Damaged**
BHM 0623-29, 31	Auditorium Classrooms Behind Stage	3	Cove Base Adhesive	500 LF	Misc.	Nonfriable	Good
BHM 0623-30	Auditorium Restrooms Behind Stage	4	12-inch Floor Tile	250 SF	Misc.	Nonfriable	Good
BHM 0623-38-44, 52, 56, 57, 64-66	Various Locations Throughout the Building	5	Acoustical Ceiling Texture	10,000 SF	Surfacing Material	Friable	Good
BHM 0623-70	Basement Boiler Room	6	Tank Insulation	Not Quantified	TSI	Friable	**Damaged**
BMH 0623-71	Basement Boiler Room	7	Boiler Flue Insulation	Not Quantified	TSI	Friable	**Damaged**
BMH 0623-72-74	Basement Boiler Room	8	TSI	250 SF	TSI	Friable	**Significantly Damaged**

3 LIMITED INSPECTION OF NEWLY DISCOVERED ACM

On June 8, 2009, Mike Perry, WALSH asbestos inspector certified by the State of Colorado and the EPA, conducted a limited asbestos inspection for potential ACMs discovered during the re-inspection of items noted in the current asbestos management plan. Items sampled included grey caulk found in the expansion joint seams of the building foundation, vibration dampener expansion gaskets, grey plaster, grey window glazing, and white window putty. The following table presents a summary and condition assessment for the materials that were inspected at the site.

TABLE 2 - Materials Identified For Sampling Which Are Not In The Current Management Plan

Homo-geneous Area	Material Location	Type of Material	Approximate Quantity	EPA Classification	Friable/ Nonfriable	Condition
2577-CA01	Concrete Expansion Seams	Grey Caulk	350 LF	Misc.	Nonfriable	Good
2577-EG01	All Mechanical Rooms	Vibration Dampener Expansion Gasket	150 SF	Misc.	Nonfriable	Good
2577-PL01	Under beige & white paint	Grey Plaster	10,000 SF	Textured Surfacing	Friable	Good
2577-WG01	Exterior Windows	Window Glazing	40,000 LF	Misc.	Nonfriable	**Damaged**
2577-WP01	Exterior Windows	Window Putty	40,000 LF	Misc.	Nonfriable	Good

This survey was performed in accordance with Colorado State regulations governing asbestos inspections. An asbestos inspection is required by federal and state regulations prior to demolition or renovation of publicly accessible structures. Copies of the inspector's certifications are provided in Appendix D of this report.

Bulk samples were obtained of various suspect building materials and submitted to an independent laboratory for polarized-light microscopic analysis. A total eleven (11) samples were collected for asbestos analysis on June 8, 2009. Sample locations are described on sample data sheets included in Appendix A. Sampling is conducted by segregating the building into sampling units called homogeneous areas. A homogeneous area is defined as containing material that is uniform in texture and color and appears identical in every other respect.

Once materials to be sampled were identified, they were then classified as friable or non-friable. The EPA distinguishes between friable and non-friable forms of ACBM. Friable materials, when dry, can be crumbled or reduced to powder by hand pressure, whereas non-friable materials cannot. Friable materials are more likely to release particulate dust into the air, especially during renovation and demolition of the building. Therefore, the distinction between friable and non-friable homogeneous material is important. EPA and CDPHE have identified two categories of non-friable material. Category I non-friable materials that are in good condition may remain during building renovation provided these materials are not rendered friable during renovation. Category II non-friable materials must be removed prior to building renovation if there is <u>not</u> a low probability that these materials will remain non-friable during renovation.

3.1 Sampling Strategy

The following Bulk Sampling Strategy was used to determine the number of samples to be collected of each suspect material.

Table 3
Bulk Sampling Strategy

Material	Homogeneous Area	Units	Minimum Number of Samples
Friable Surfacing	Less than 1000 1000 to 5000 more than 5000	SF SF SF	3 5 7
Thermal System Insulation	- - -	LF / SF / EA	3
Miscellaneous Materials	- - -	LF / SF / EA	1

WALSH collected bulk samples of the homogeneous materials in a random and representative manner, as determined by the inspector. The sampler washed equipment following collection of each sample in order to minimize cross-contamination between samples. The sampler assumed that materials in inaccessible locations were similar to those in accessible locations, in order to limit the amount of destruction in the sampling process. All samples were placed in sealed, labeled containers, and the sample descriptions and locations were recorded. Photographs were also taken to provide a visual reference for each material.

The inspector visually inspected and sampled potential ACMs according to protocol in Colorado State Regulations. Material locations, sample locations, and other information were plotted on field drawings.

Accessible spaces were inspected for homogeneous areas of building materials that potentially contain asbestos. The nature, extent, and condition of each type of potential ACM were catalogued. Sampling forms for each homogeneous area were prepared describing the type of material and location of the sample. These forms are included in Appendix A of this report.

3.2 Laboratory Analyses

Collected samples were analyzed by Reservoirs Environmental Services, Inc. (NVLAP Accreditation No. 1896) of Denver, Colorado, using polarized-light microscopy (PLM), a bulk sample analysis method established by the National Voluntary Laboratory Accreditation Program (NVLAP). Bulk asbestos samples were analyzed using EPA Method 600/R-93/116. While the EPA does not “certify” laboratories, analytical methods follow EPA’s recommended protocols using a NVLAP accredited laboratory.

3.3 Chain of Custody

A chain-of-custody record for all samples was used to track the possession and transfer of each sample from the time of field collection through laboratory analysis. The record contained the following: sample tag number, signature of collector, date of collection, identification of sampled material, requested laboratory analysis, signatures of individuals in custody of the samples, and record of possession. A copy of the chain-of-custody form is included in Appendix B.

4 ASBESTOS RESULTS

Laboratory results from the asbestos inspection are summarized below. Samples of materials that contain greater than one percent (>1%) asbestos are considered ACM by the EPA and State of Colorado. Samples that contain any amount of asbestos greater than none detected (ND) are recognized and covered by OSHA 29 CFR 1926.1101. Copies of the analytical data are included in Appendix B. ACM material locations are shown in Tables 2-6 and are also presented in field drawings included as Appendix C.

4.1 Results – Asbestos-Containing Materials

Asbestos identified in the existing management plan and re-inspected on March 3, 2009 are listed in the following table:

TABLE 4
PREVIOUSLY IDENTIFIED ASBESTOS CONTAINING MATERIAL
LOCATION TABLE
COLORADO SPRINGS CHARTER ACADEMY
2577 NORTH CHELTON ROAD

Sample ID	Material Location	Homogeneous Area	Type of Material	Approximate Quantity	EPA Classification	Friable/ Nonfriable	Condition
BHM 0623-7, 27, 28 *	1st and 2nd Floors including Mech Rooms	1	Hard Packed Pipe Fittings	230 Fittings	TSI	Friable	**Damaged**
BHM 0623-8,13, 17, 20, 22, 55, 61 *	Various Locations Throughout Building	2	9-inch Floor Tile and Mastic	10,000 SF	Misc.	Nonfriable	**Damaged**
BHM 0623-29, 31 *	Auditorium Classrooms Behind Stage	3	Cove Base Adhesive	500 LF	Misc.	Nonfriable	Good
BHM 0623-30 *	Auditorium Restrooms Behind Stage	4	12-inch Floor Tile	250 SF	Misc.	Nonfriable	Good

BHM 0623-38-44, 52, 56, 57, 64-66 *	Various Locations Throughout the Building	5	Acoustical Ceiling Texture	10,000 SF	Surfacing Material	Friable	Good
BHM 0623-70 *	Basement Boiler Room	6	Tank Insulation	Not Quantified	TSI	Friable	**Damaged**
BMH 0623-71 *	Basement Boiler Room	7	Boiler Flue Insulation	Not Quantified	TSI	Friable	**Damaged**
BMH 0623-72-74 *	Basement Boiler Room	8	TSI	250 SF	TSI	Friable	**Significantly Damaged**

LF – Linear Feet
SF – Square Feet
* - Assessed by Alpine Consulting, Inc. and are in current management plan

TABLE 5
NEWLY IDENTIFIED ASBESTOS CONTAINING MATERIAL
LOCATION TABLE
COLORADO SPRINGS CHARTER ACADEMY
2577 NORTH CHELTON ROAD

Sample ID	Material Location	Homogeneous Area	Type of Material	Approximate Quantity	EPA Classification	Friable/ Nonfriable	Condition
2577-EG01-01	Mechanical Rooms Throughout	EG01	Vibration Dampener Expansion Gaskets	150 SF	Misc	Nonfriable	Good
2577-WG01-01	Exterior Windows	WG01	Window Glazing	40,000 LF	Misc.	Nonfriable	**Damaged**

LF – Linear Feet
SF – Square Feet

4.1.1 2577-EG01: Vibration Dampener Expansion Gasket

The vibration dampener expansion gaskets were found to contain 45% Chrysotile asbestos. This material is considered nonfriable and located in the mechanical rooms on HVAC ducting.

2577-EG01: Vibration Dampener Expansion Gasket.

4.1.2 2577-WG01-01: Grey, Brittle Window Glazing

The window glazing was found to contain 2% Chrysotile asbestos. This material is considered nonfriable around exterior windows.

2577-WG01: Grey Window Glazing

4.2 Results- Trace Asbestos Containing Materials

Laboratory analyses confirmed that trace amounts of asbestos (< 1% PLM or 1.0 or less by point count analysis) were not present in samples collected during the inspection.

4.3 Results – Non-Asbestos Containing Materials

Laboratory analyses indicate the following materials contain no visible asbestos using Calibrated Visual Area Estimation:

Homogeneous Area	Material Description
2577-CA01	Grey Caulk in Concrete Expansion Seams
2577-PL01	Grey Plaster found under Beige and White Paint
2577-WP01	Window Putty, White

5 CONCLUSIONS AND RECOMMENDATIONS

A limited asbestos inspection was conducted June 8, 2009 for the Colorado Springs Charter Academy located at 2577 North Chelton Road in Colorado Springs, Colorado (subject property). Walsh Environmental Scientists and Engineers, LLC. (WALSH) conducted this inspection at the request of Mr. Bob Dillie following a review of the current asbestos management plan and re-inspection of previously identified asbestos containing materials. The objective of this inspection was to identify the location and extent of suspect asbestos-containing materials (ACM) not identified in the existing asbestos management plan provided by Alpine Consulting dated July 9, 2003. Bulk samples of various suspect materials were obtained from the building and submitted to an independent, NVLAP accredited laboratory for polarized light microscopic (PLM) analysis. A total of eleven (11) samples were collected. WALSH conducted this asbestos inspection in accordance with the Asbestos Hazard Emergency Response Act (AHERA) protocol, which is mandated by Colorado Regulation No. 8 and EPA regulations.

The inspection confirmed the following newly identified asbestos-containing materials in the building:

Colorado Springs Charter Academy

Non-friable ACM was identified in vibration dampener expansion gaskets and grey window glazing. Additional quantities of thermal system insulation (TSI) were identified in the basement and crawlspace which were not previously identified in the original inspection management plan.

Field drawings were made to illustrate areas where suspect ACM was sampled and newly discovered ACM was identified.

No other regulated asbestos-containing materials were identified during this inspection.

Walsh recommends incorporating this information into the existing management plan as an appendix to the plan.

6 QUALIFICATIONS AND LIMITATIONS

WALSH conducted this investigation in a manner consistent with current professional practices. This assessment was limited to the sampling locations and analyses described in the report. No other sampling or analyses were conducted during this investigation. Only readily accessible spaces were inspected; therefore, it is possible that ACM may exist in areas that were inaccessible during this non-destructive inspection. It is possible that additional reports or investigations could alter the conclusions of this assessment. Materials and areas that were not accessed, sampled, and/or assessed include:

- Mechanical equipment interiors, including boilers, furnaces and ducting
- Interior of enclosed chases and soffits
- Behind walls that are inaccessible
- Electrical equipment and mechanical components other than those visible above the drop ceiling.

Destructive investigation techniques should take place before performing any renovation or demolition activity that involves inaccessible areas. Any addition to or alteration of the building should be documented and the inspection report should be amended.

This report is intended for use only by the client. Any future use of this report by anyone other than the above-referenced client will require authorization by WALSH and possible updating of the report.

APPENDIX A

ASBESTOS SAMPLING FORMS

WALSH Asbestos Inspection Form

Name C/S Charter Academy
Project 6491-010 Date _____

Building 2577 N Chelton Colorado Springs, CO
Homogeneous Area # 2577-CA01-X
Amount of material: ~350LF

Description of Material: Caulk, Gray

Type of Suspect Material: _____ Surfacing _____ TSI _____ Miscellaneous

Sample #	Location	Lab Result
01	Basement, Hallway SW of Boiler Rm, NE corner, ~5' ↑	ND

Condition

		Sig. Damaged	Damaged	Good
Friable	Deterioration			X
Non-Friable X	Water Damage			X
	Physical Damage			X

Note: Sig. Damaged = >10% scattered or >25% local damage. Damaged = <10% / <25%

Potential for Disturbance

	High	Moderate	Low
Contact			X
Vibration			X
Air erosion			X

Comments: _____

Physical Classification

- _____ Damaged or significantly damaged thermal system insulation (TSI)
- _____ Damaged friable surfacing ACBM
- _____ Significantly damaged friable surfacing ACBM
- _____ Damaged or significantly damaged friable miscellaneous ACBM
- X ACBM with potential for damage
- _____ ACBM with potential for significant damage
- _____ Any remaining friable ACBM or friable suspected ACBM

Comments: _____

Assistant Name: _____ Inspector Signature: [signature]

Walsh
Environmental Scientists and Engineers, LLC. 130 E. Kiowa, Suite 202 Colorado Springs, CO. 80903 719-227-0999 (fax)719-227-0491

WALSH Asbestos Inspection Form

Name C/S CHARTER ACADEMY
Project 6491-010 Date _____

Building 2577 N CHELTON COLORADO SPRINGS, CO
Homogeneous Area # 2577-EG01-X
Amount of material: ~150 LF

Description of Material: VIBRATION DAMPENER EXPANSION GASKET

Type of Suspect Material: _____ Surfacing _____ TSI X Miscellaneous

Sample #	Location	Lab Result
01	AHU #2, VIBRATION DAMPENER, SE CORNER ABOVE LIBRARY	HS% CHRYSOTILE

Condition

Friable _____
Non-Friable X

	Sig. Damaged	Damaged	Good
Deterioration			X
Water Damage			X
Physical Damage			X

Note: Sig. Damaged = >10% scattered or >25% local damage. Damaged = <10% / <25%

Potential for Disturbance

	High	Moderate	Low
Contact			X
Vibration			X
Air erosion			X

Comments: White cloth

Physical Classification

_____ Damaged or significantly damaged thermal system insulation (TSI)
_____ Damaged friable surfacing ACBM
_____ Significantly damaged friable surfacing ACBM
_____ Damaged or significantly damaged friable miscellaneous ACBM
X ACBM with potential for damage
_____ ACBM with potential for significant damage
_____ Any remaining friable ACBM or friable suspected ACBM

Comments: _____

Assistant Name: _____ Inspector Signature: [signature]

Walsh
Environmental Scientists and Engineers, LLC. 130 E. Kiowa, Suite 202 Colorado Springs, CO. 80903 719-227-0999 (fax)719-227-0491

WALSH Asbestos Inspection Form

Name C/S CHARTER ACADEMY
Project 6491-010 Date _____

Building 2577 N CHELTON COLORADO SPRINGS, CO
Homogeneous Area # 2577-PL01-X
Amount of material: ~10,000 SF

Description of Material: PLASTER, GRAY, UNDER BEIGE & WHITE PAINT

Type of Suspect Material: X Surfacing _____ TSI _____ Miscellaneous

Sample #	Location	Lab Result
01	1ST FLOOR, SW STAIRWELL, SW CORNER OF BEAM AT BOTTOM OF STAIRS	ND
02	1ST FLOOR, STAIRWELL AT CSMSA ENTRANCE ~10' ↑ FROM LANDING	
03	1ST FLOOR, SE STAIRWELL, NE CORNER OF BEAM AT BOTTOM OF STAIRS	
04	2ND FLOOR, STAIRWELL TO MECH ROOM W OF LIBRARY	
05	2ND FLOOR, STAIRCASE N OF MAIN ENT, ~6' FROM TOP, S WALL	
06	2ND FLOOR, RM 200, COLUMN JUST W OF DOOR, ~1' ↑	
07	2ND FLOOR, AUDITORIUM, W WALL @ N WALL, ~5' ↑	

Condition

	Sig. Damaged	Damaged	Good
Friable X			
Non-Friable			
Deterioration			X
Water Damage			X
Physical Damage			X

Note: Sig. Damaged = >10% scattered or >25% local damage. Damaged = <10% / <25%

Potential for Disturbance

	High	Moderate	Low
Contact			X
Vibration			X
Air erosion			X

Comments: _____

Physical Classification

- _____ Damaged or significantly damaged thermal system insulation (TSI)
- _____ Damaged friable surfacing ACBM
- _____ Significantly damaged friable surfacing ACBM
- _____ Damaged or significantly damaged friable miscellaneous ACBM
- X ACBM with potential for damage
- _____ ACBM with potential for significant damage
- _____ Any remaining friable ACBM or friable suspected ACBM

Comments: _____

Assistant Name: _____ Inspector Signature: _____

Walsh
Environmental Scientists and Engineers, LLC. 130 E. Kiowa, Suite 202 Colorado Springs, CO. 80903 719-227-0999 (fax)719-227-0491

WALSH Asbestos Inspection Form

Name C/S CHARTER ACADEMY
Project 6491-010 Date _____

Building 2577 N CHELTON COLORADO SPRINGS, CO
Homogeneous Area # 2577-WG01-X
Amount of material: ~40,000 LF

Description of Material: WINDOW GLAZING, GRAY, BRITTLE

Type of Suspect Material: _____ Surfacing _____ TSI X Miscellaneous

Sample #	Location	Lab Result
01	2ND FLOOR, EXTERIOR, W SIDE OF LIBRARY, S MOST WINDOW	2% CHRYSOTILE

Condition

	Sig. Damaged	Damaged	Good
Friable _____			
Non-Friable X			
Deterioration		X	
Water Damage		X	
Physical Damage		X	

Note: Sig. Damaged = >10% scattered or >25% local damage. Damaged = <10% / <25%

Potential for Disturbance

	High	Moderate	Low
Contact		X	
Vibration		X	
Air erosion		X	

Comments: GLAZING HAS WEATHER CRACKS

Physical Classification

- _____ Damaged or significantly damaged thermal system insulation (TSI)
- _____ Damaged friable surfacing ACBM
- _____ Significantly damaged friable surfacing ACBM
- _____ Damaged or significantly damaged friable miscellaneous ACBM
- X ACBM with potential for damage
- _____ ACBM with potential for significant damage
- _____ Any remaining friable ACBM or friable suspected ACBM

Comments: _____

Assistant Name: _____ Inspector Signature: [signature]

Walsh
Environmental Scientists and Engineers, LLC. 130 E. Kiowa, Suite 202 Colorado Springs, CO. 80903 719-227-0999 (fax)719-227-0491

WALSH Asbestos Inspection Form

Name C/S CHARTER ACADEMY
Project 6491-010 Date _____

Building 2577 N CHELTON COLORADO SPRINGS, CO
Homogeneous Area # 2577-WP01-X
Amount of material: ~40,000 LF

Description of Material: WINDOW PUTTY, WHITE, RUBBERY

Type of Suspect Material: _____ Surfacing _____ TSI _____ Miscellaneous

Sample #	Location	Lab Result
01	EXTERIOR, LVL 2, W SIDE OF LIBRARY, S MOST WINDOW	ND

Condition

	Sig. Damaged	Damaged	Good
Friable _____			
Non-Friable X			
Deterioration			X
Water Damage			X
Physical Damage			X

Note: Sig. Damaged = >10% scattered or >25% local damage. Damaged = <10% / <25%

Potential for Disturbance

	High	Moderate	Low
Contact			X
Vibration			X
Air erosion			X

Comments: _____

Physical Classification

- _____ Damaged or significantly damaged thermal system insulation (TSI)
- _____ Damaged friable surfacing ACBM
- _____ Significantly damaged friable surfacing ACBM
- _____ Damaged or significantly damaged friable miscellaneous ACBM
- X ACBM with potential for damage
- _____ ACBM with potential for significant damage
- _____ Any remaining friable ACBM or friable suspected ACBM

Comments: _____

Assistant Name: _____ Inspector Signature: [signature]

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APPENDIX B

ASBESTOS ANALYTICAL DATA
CHAIN OF CUSTODY FORMS

Reservoirs Environmental, Inc.

June 16, 2009

Laboratory Code: **RES**
Subcontract Number: **NA**
Laboratory Report: **RES 174099-1**
Project Description: **6491-010**
CS Charter School

Walsh Environmental - (Colo. Springs)
130 E. Kiowa Suite 202
Colorado Springs CO 80903

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 174099-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr
President

Analyst(s):

Paul D. LoScalzo	Wenlong Liu
Paul F. Knappe	Rich Wegrzyn
Michael Scales	Adam Humphreys

TABLE PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 174099-1**
Client: **Walsh Environmental - (Colo. Springs)**
Client Project Number / P.O.: **6491-010**
Client Project Description: **CS Charter School**
Date Samples Received: **June 9, 2009**
Analysis Type: **PLM, Short Report**
Turnaround: **3-5 Day**
Date Analyzed: **June 10, 2009**

Analyst: MS

Client Sample Number	Lab ID Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
2577-CA01-01	EM 429522	A	White resinous material	100		**ND**	0	100
2577-EG01-01	EM 429523	A	White woven material w/ red resinous material	100	**Chrysotile**	**45**	30	25
2577-PL01-01	EM 429524	A	Off-white granular plaster	8		**ND**	0	100
		B	White granular plaster w/ white paint	92		**ND**	0	100
2577-PL01-02	EM 429525	A	Off-white granular plaster	4		**ND**	0	100
		B	White granular plaster w/ white paint	96		**ND**	0	100
2577-PL01-03	EM 429526	A	Off-white granular plaster	5		**ND**	0	100
		B	White granular plaster w/ white paint	95		**ND**	0	100
2577-PL01-04	EM 429527	A	White granular plaster w/ tan paint	100		**ND**	0	100
2577-PL01-05	EM 429528	A	White granular plaster w/ tan paint	100		**ND**	0	100
2577-PL01-06	EM 429529	A	White granular plaster w/ white paint	100		**ND**	0	100
2577-PL01-07	EM 429530	A	Light tan granular plaster	30		**ND**	0	100
		B	White granular plaster w/ off-white/red paints	70		**ND**	0	100

ND=None Detected
TR=Trace, <1% Visual Estimate
Trem-Act=Tremolite-Actinolite
Note: Further analysis by TEM is recommended for organically bound material (i.e. floor tile) if PLM results are ≤1%.

Data QA

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0

TDH Licensed Laboratory # 30-0136

TABLE PLM BULK ANALYSIS, PERCENTAGE COMPOSITION BY VOLUME

RES Job Number: **RES 174099-1**
Client: **Walsh Environmental - (Colo. Springs)**
Client Project Number / P.O.: **6491-010**
Client Project Description: **CS Charter School**
Date Samples Received: **June 9, 2009**
Analysis Type: **PLM, Short Report**
Turnaround: **3-5 Day**
Date Analyzed: **June 10, 2009**

Analyst: MS

Client Sample Number	Lab ID Number	LAYER	Physical Description	Sub Part (%)	Asbestos Content: Mineral	Asbestos Content: Visual Estimate (%)	Non Asbestos Fibrous Components (%)	Non-Fibrous Components (%)
2577-WG01-01	EM 429531	A	Light gray glaze	100	**Chrysotile**	**2**	0	98
2577-WP01-01	EM 429532	A	White resinous material w/ red paint	100		**ND**	0	100

ND=None Detected
TR=Trace, <1% Visual Estimate
Trem-Act=Tremolite-Actinolite
Note: Further analysis by TEM is recommended for organically bound material (i.e. floor tile) if PLM results are≤1%.

Data QA

Due Date: 6/12. 6/16

Due Time: _____

Reservoirs Environmental, Inc.

5801 Logan Street, Suite 100 Denver, CO 80216
(303) 964-1986 Fax (303) 477-4275 Toll Free (866) RESI-ENV

RES 174099

	INVOICE TO: (IF DIFFERENT)	CONTACT INFORMATION:
Company:	Walsh Environmental Scientists & Engineers	Company:	Contact: Mike Perry	Contact:
Address:	130 East Kiowa, Suite 509	Address:	Phone: 719-227-0999	Phone:
	Colorado Springs CO 80903		Fax:	Fax:
			Cell/pager: 719/352-9955	Cell/pager:
Project Number and/or P.O. #:	6491-010		Final Data Deliverable Email Address: cs.results@walshenv.com mperry@walshenv.com	
Project Description/Location:	CS CHARTER SCHOOL			

ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm

PLM / PCM / TEM ___ RUSH (Same Day) ___ PRIORITY (Next Day) X STANDARD
(Rush PCM = 2hr, TEM = 6hr.)

CHEMISTRY LABORATORY HOURS: Weekdays: 8am - 5pm

Metal(s) / Dust ___ RUSH ___ 24 hr. ___3-5 Day

RCRA 8 / Metals & Welding Fume Scan / TCLP ___ RUSH ___ 5 day ___10 day

Organics ___ 24 hr. ___ 3 day ___5 Day

Prior notification is required for RUSH turnarounds.

Turnaround times establish a laboratory priority, subject to laboratory volume and are not guaranteed. Additional fees apply for afterhours, weekends and holidays.

Special Instructions: Please send to both email addresses.

REQUESTED ANALYSIS

VALID MATRIX CODES

Air = A | Bulk = B
Dust = D | Paint = P
Soil = S | Wipe = W
Drinking Water = DW
Waste Water = WW
Other = O
ASTM E1792 approved wipe media only

Client sample ID number (Sample ID's must be unique)	PLM (Short report)	TEM - AHERA, Level II, 7402, ISO, +/-, Quant, Semi-quant, Micro-vac, ISO-Indirect Preps (Long report, Point Count)	PCM - 7400A, 7400B, OSHA	DUST - Total, Respirable	METALS - Analyte(s) RCRA 8, TCLP, Welding Fume, Metals Scan	ORGANICS - BTEX, MTBE, 8260, GRO, DRO	OTHER -	Sample Volume (L) / Area	Matrix Code	# Containers	Date Collected mm/dd/yy	Time Collected hh/mm a/p	LAB NOTES: EM Number (Laboratory Use Only)
1 2577-CA01-01	X								B	1	6/8/09		22052
2 -EQ01-01													23
3 -PL01-01													24
4 -02													25
5 -03													26
6 -04													27
7 -05													28
8 -06													29
9 -07													30
10 -WQ01-01													31
11 -WP01-01													32
12													
13													

Number of samples received: 11 (Additiional samples shall be listed on attached long form.)

NOTE: REI will analyze incoming samples based upon information received and will not be responsible for errors or omissions in calculations resulting from the inaccuracy of original data. By signing client/company representative agrees that submission of the following samples for requested analysis as indicated on this Chain of Custody shall constitute an analytical services agreement with payment terms of NET 30 days, failure to comply with payment terms may result in a 1.5% monthly interest surcharge.

Relinquished By: Mike Perry 6/8/09 @ 1500 Date/Time:

Sample Condition: On Ice Y/N Sealed Y/N Intact Y/N

Temp. (F°) _____

Laboratory Use Only

Received By: [illegible] Date/Time: 6/9/09 9:12 Carrier: FedEx

Results:	Contact	Page	Phone	Email	Fax	Date	Time	Initials	Contact	Page	Phone	Email	Fax	Date	Time	Initials
	Contact	Page	Phone	Email	Fax	Date	Time	Initials	Contact	Page	Phone	Email	Fax	Date	Time	Initials

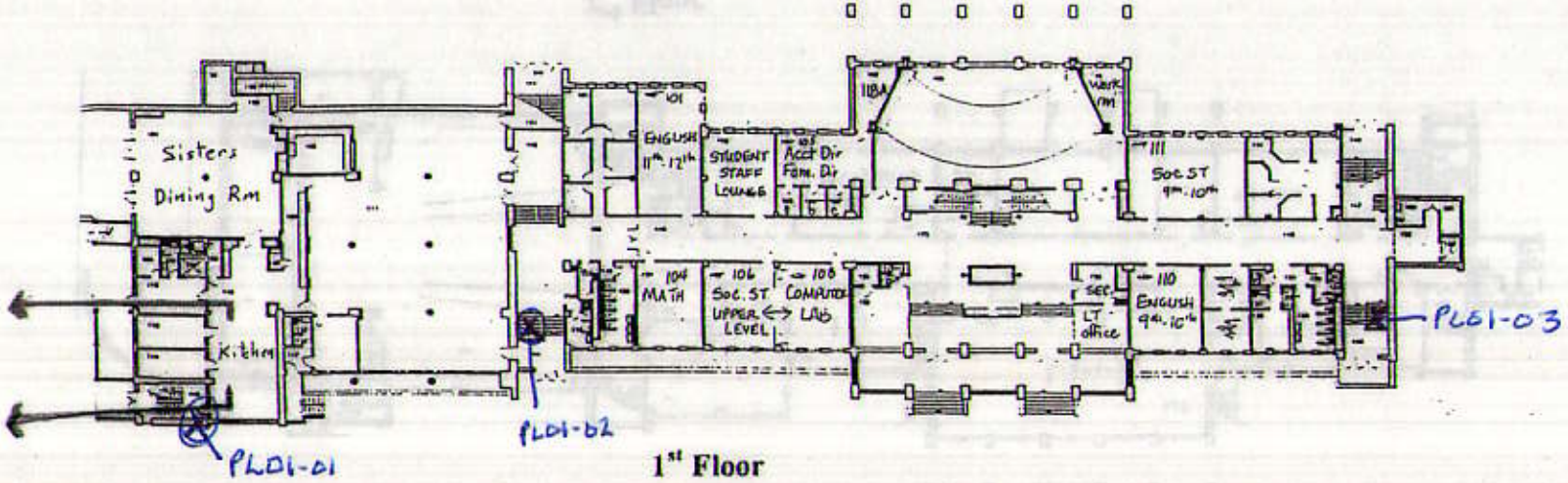
APPENDIX C

ACM LOCATION DRAWINGS

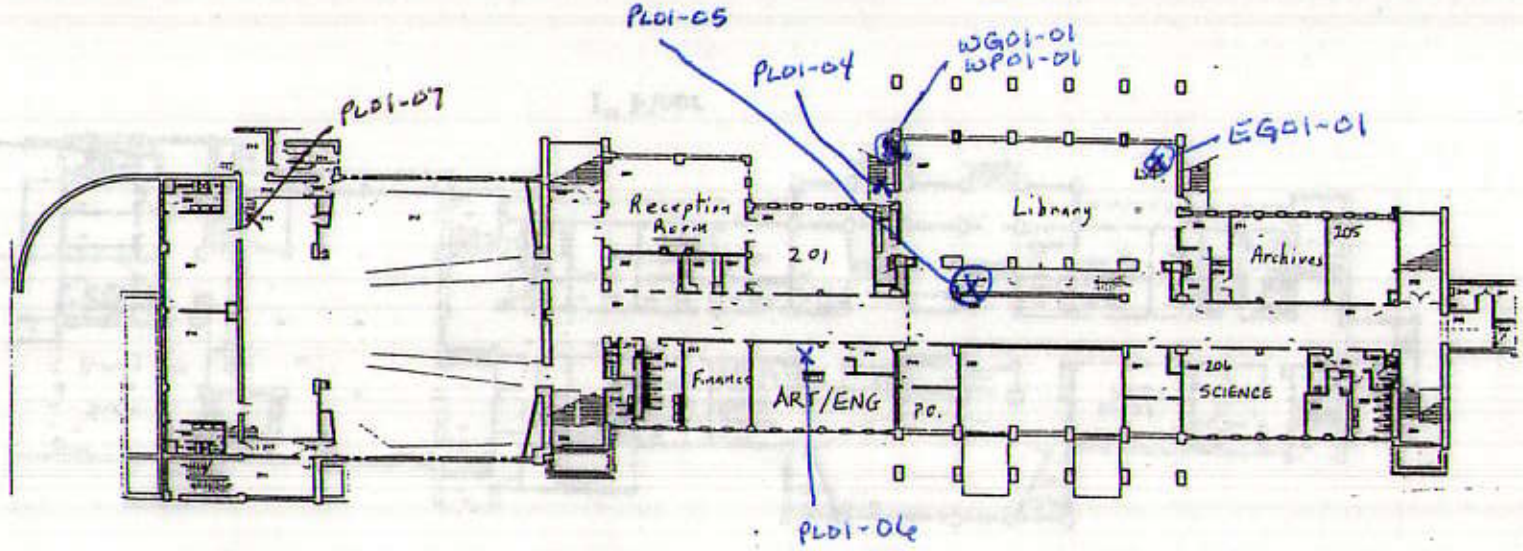
Kitchen

Red = Primary Exit,
Blue = Secondary Exit

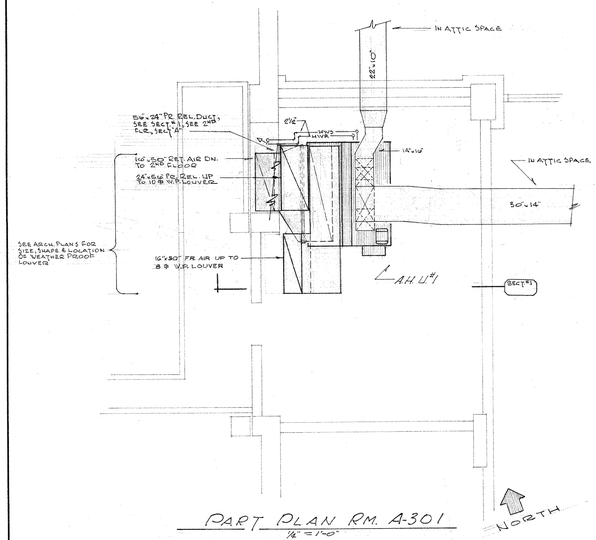
Fire Drill Evacuation Plan



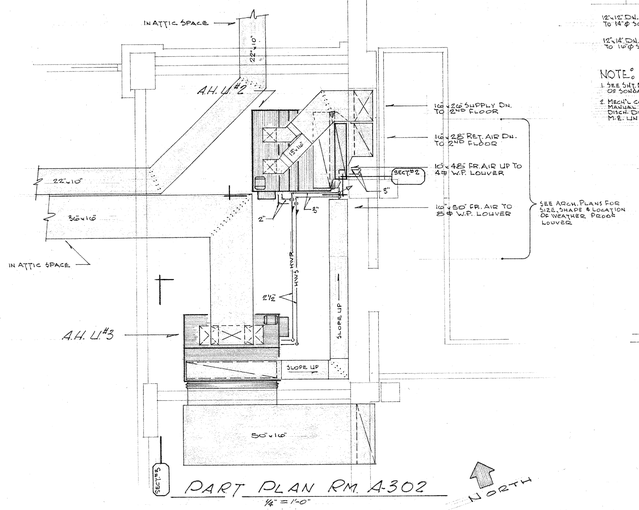
1st Floor



2nd Floor



PART PLAN RM. A-301
1/8" = 1'-0"



PART PLAN RM. A-302
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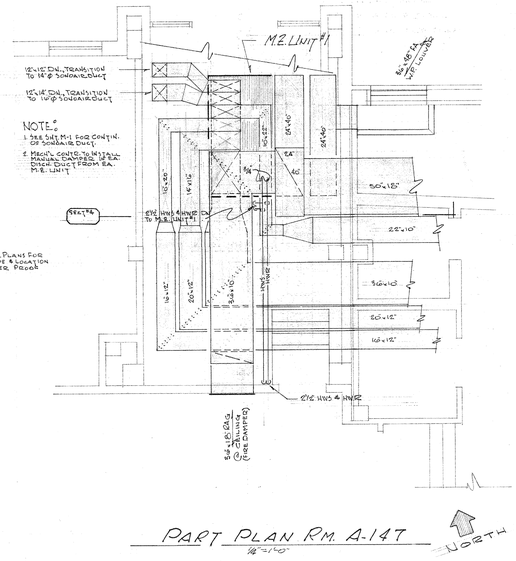
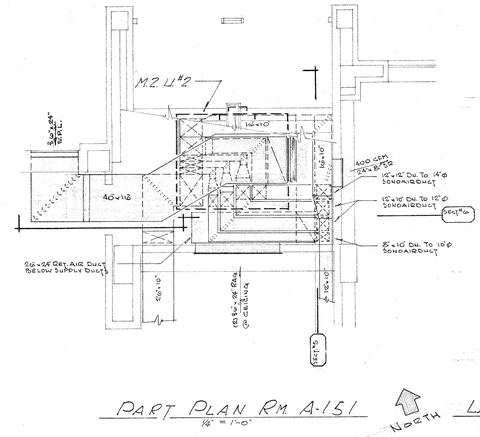


PART PLAN RM. A-147
1/8" = 1'-0"



PART PLAN RM. A-151
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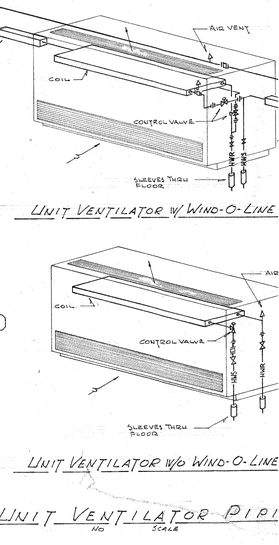
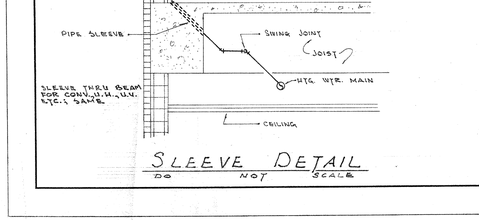


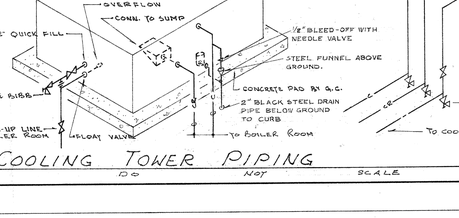
UNIT VENTILATOR W/ WIND-O-LINE

UNIT VENTILATOR W/O WIND-O-LINE

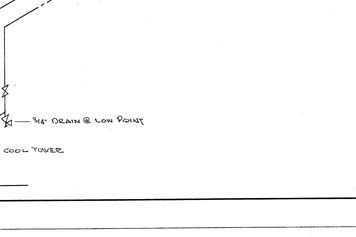
UNIT VENTILATOR PIPI
NO SCALE



SECTION NO. 1
1/8" = 1'-0"



SECTION NO. 2
1/8" = 1'-0"



SECTION NO. 3
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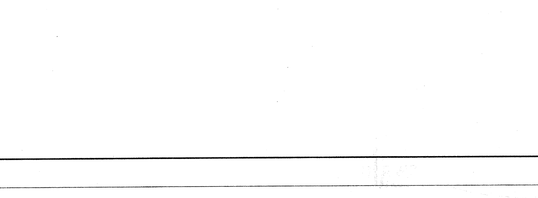

SECTION NO. 4
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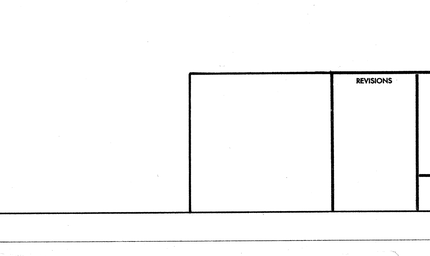

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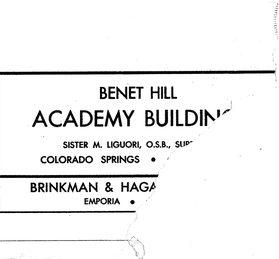
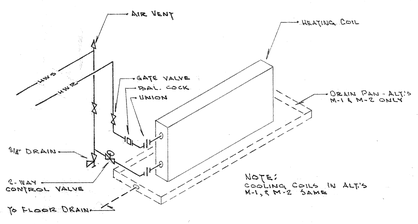
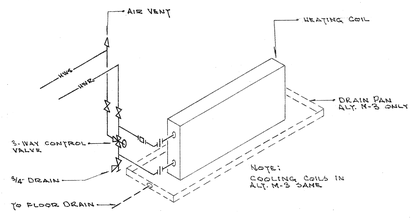


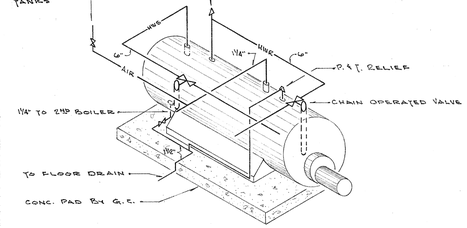
SECTION NO. 6
DO NOT SCALE



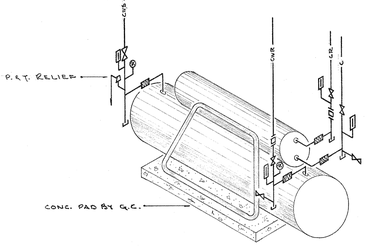
AIR HANDLING UNIT COIL PIPING
DO NOT SCALE



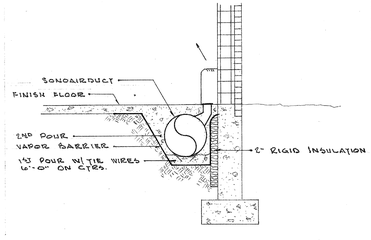
MULTI-ZONE UNIT COIL PIPING
DO NOT SCALE



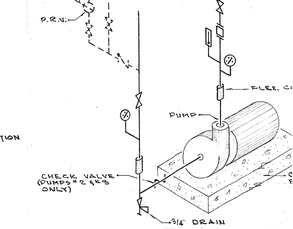
BOILER PIPING
DO NOT SCALE



CHILLER PIPING
DO NOT SCALE

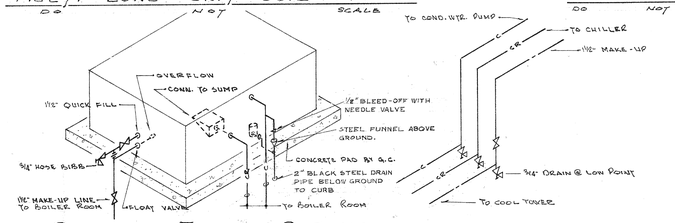


SONOAIRDUCT DETAIL
DO NOT SCALE



PUMP PIPING
DO NOT SCALE

SLEEVE DETAIL
DO NOT SCALE



COOLING TOWER PIPING
DO NOT SCALE

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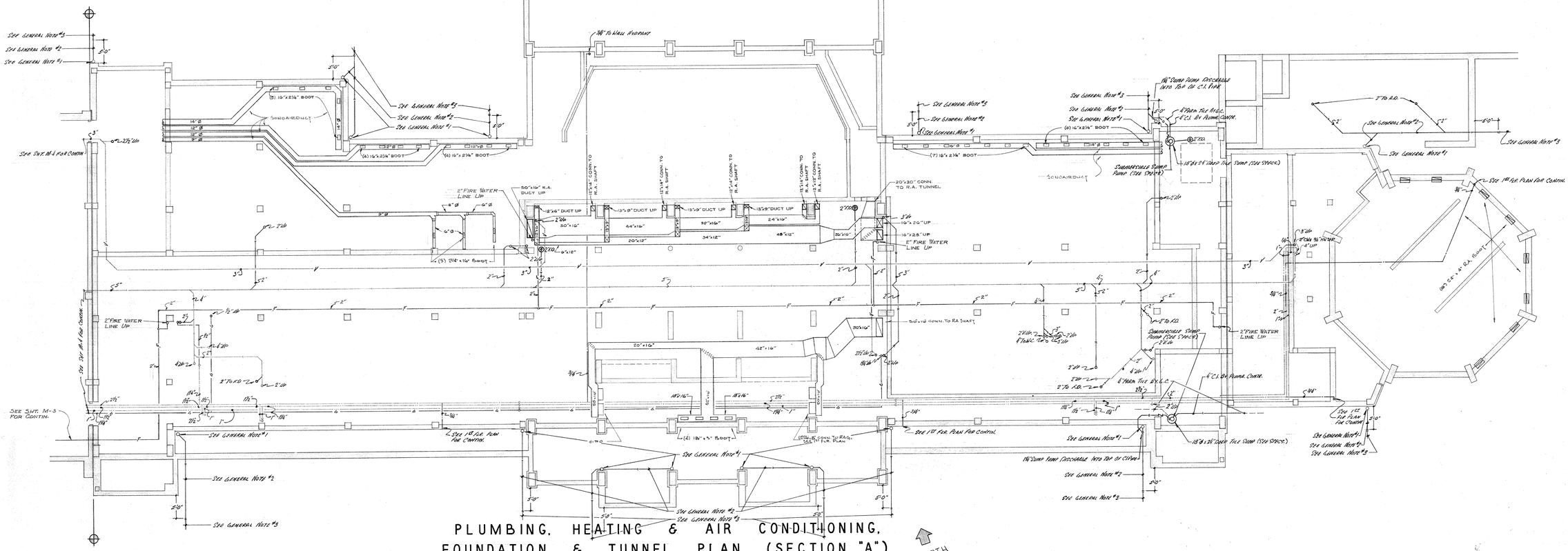
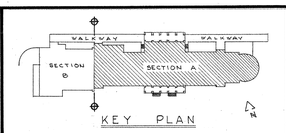
	BRINKMAN & HAGA EMPORIA •

PLUMBING, HEATING & AIR CONDITIONING, FOUNDATION & TUNNEL PLAN (SECTION "A")

SCALE 1/8" = 1'-0"

NORTH





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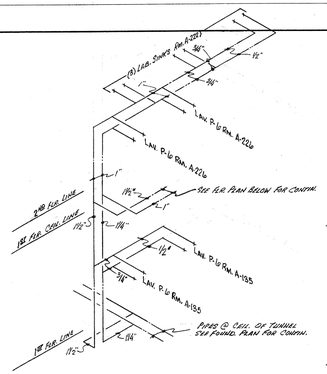
EMPORIA • • KANSAS

DATE
OCT. 12, 1965

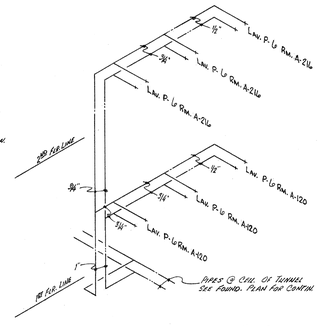
SHEET
M-1

MECHANICAL



PIPING RISER #1

DO NOT SCALE



PIPING RISER #2

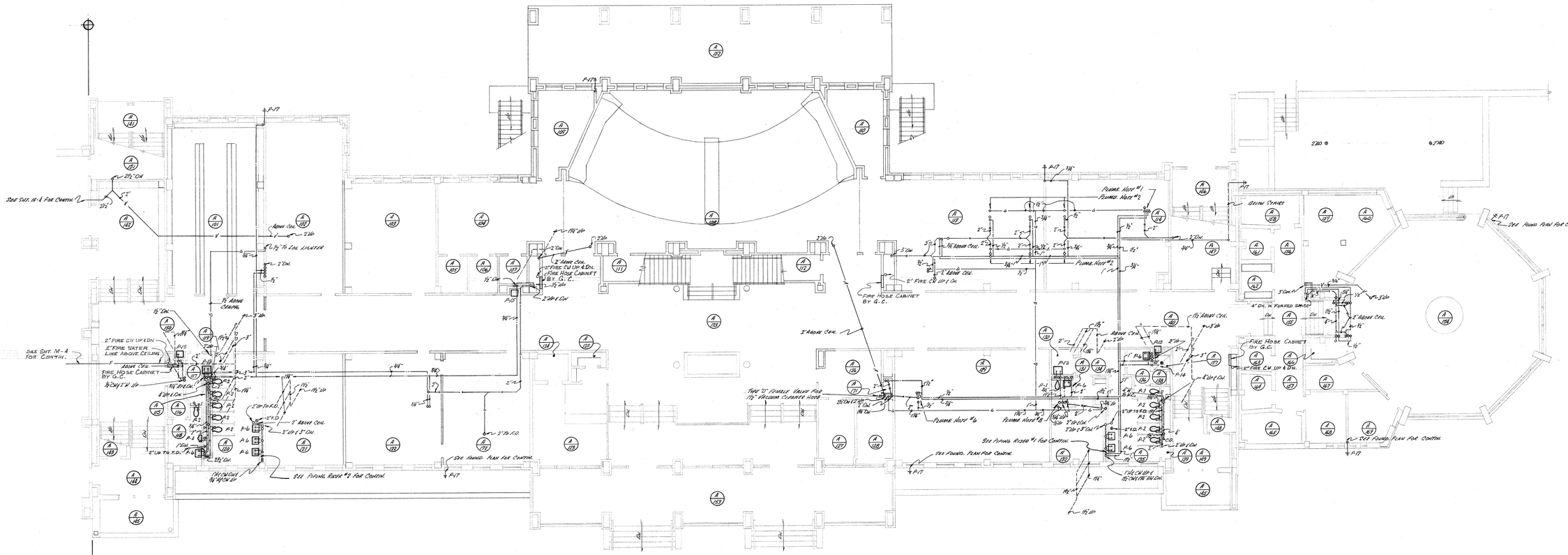
DO NOT SCALE

PLUMBING FIXTURE SCHEDULE

Fixture Number	Fixture	Domestic Water Cold	Domestic Water Hot	Vent	Waste
P-1, P-2	Water Closet	1"	•	2"	4"
P3	Water Closet	1½"	•	2"	4"
P4	Urinal	1"	•	2"	2"
P5, P6	Lavatory	½"	½"	1¼"	2"
P7, P8	Sink	½"	½"	1½"	2"
P9	Rec. Cleaning Equip.	•	•	1½"	2"
P10, P11	Sink	½"	½"	1½"	2"
P12	Service Sink	¾"	¾"	1½"	3"
P13	Shower	½"	½"	•	•
P15	Drink. Fount.	½"	•	1¼"	2"

SYMBOL SCHEDULE

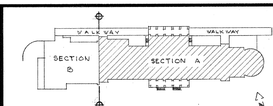
Symbol	Description
——	Sanitary Waste (W)
——	Acid Waste
- - - -	Plumbing Vent (V)
--ACID--	Acid Vent
——	Domestic Cold Water (CW)
——	Domestic Hot Water (HW)
——	Hot Water Recir. (R)
—180°—	180° Hot Water
—G—	Gas (G)
F.D.	Floor Drain
V.T.R.	Vent Thru Roof
——	Gate Valve
——	Gas Valve
——	Check Valve
——	Union
——	Balancing Valve
V.C.T.	Vitreous Clay Tile
C.I.	Cast Iron
—A.D.—	Area Drain
—F—	Fire Protection Main
—F—	Fire Protection Branch Pipe
—V—	Vacuum Cleaner Pipe



PLUMBING, FIRST FLOOR PLAN (SECTION "A")

SCALE 1/8" = 1'-0"

NORTH



KEY PLAN

REVISIONS

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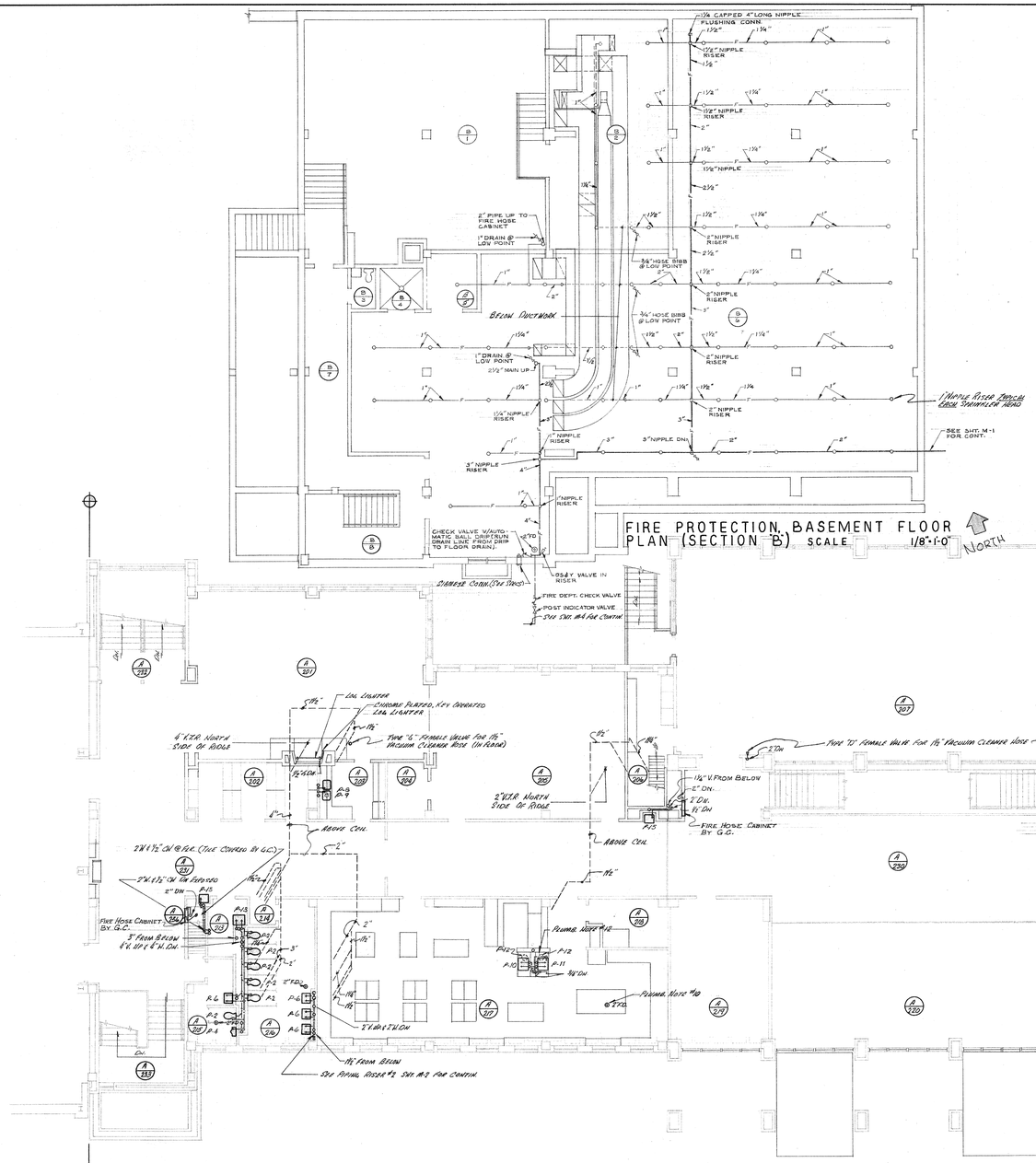
DATE
OCT. 12, 1965

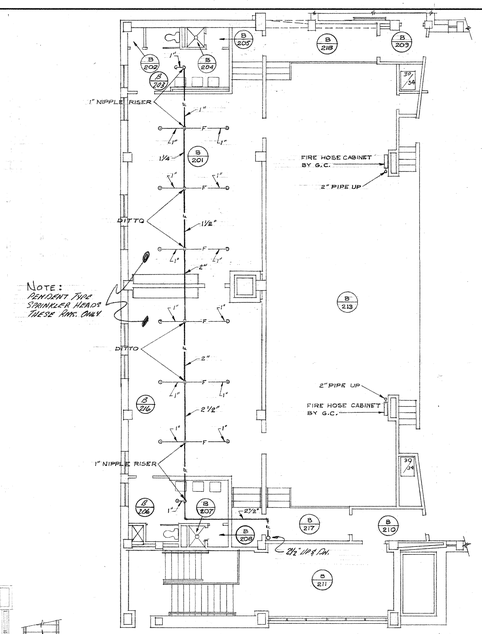
SHEET
M-2

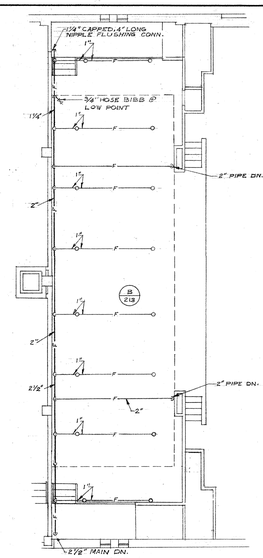
MECHANICAL



FIRE PROTECTION, BASEMENT FLOOR PLAN (SECTION "B") SCALE 1/8"-1'-0"

NORTH





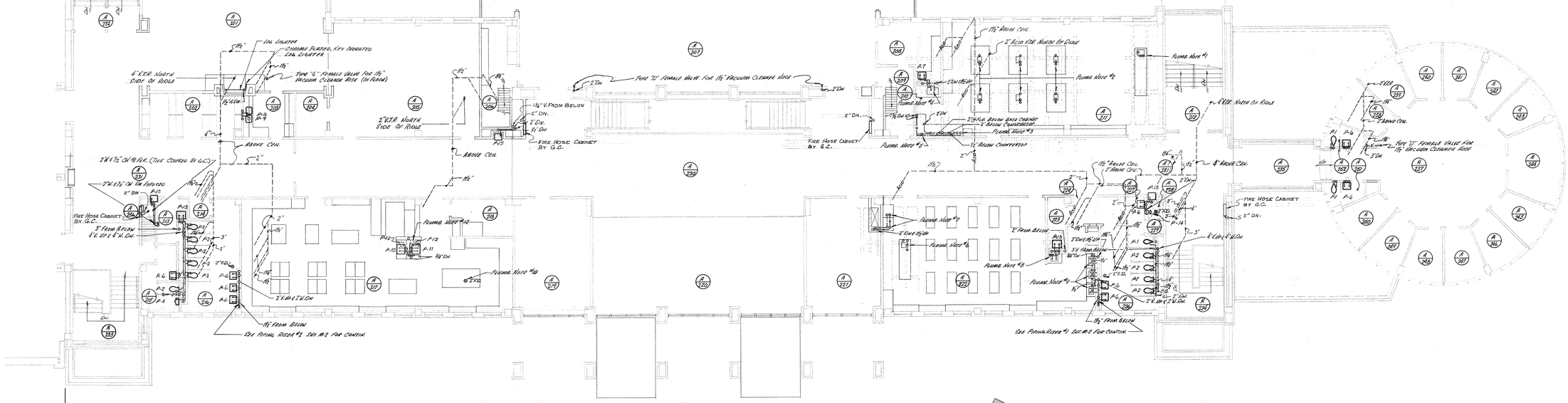
UPPER PLATFORM

FIRE PROTECTION, DRESS. RMS. & PLATF. SECOND FLOOR PLAN (SECTION "B") SCALE 1/8"-1'-0"

NORTH

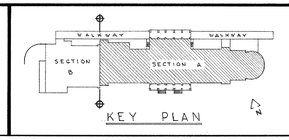
PLUMBING NOTES

1. ½"HW, CW, GG & 2"W To INSTRUCTOR'S TABLE (INSTRUCTOR'S TABLE BY SCI. EQUIP. CONTR.) R.C. To PROVIDE CITY APPROVED UTILITY FIXT.
2. ½"CW & G To STUDENT'S TABLE (STUDENT'S TABLE BY SCI. EQUIP. CONTR.) R.C. To PROVIDE CITY APPROVED UTILITY FIXT.
3. ½" CW, G & 2"W To FUME HOOD (FUME HOOD BY SCI. EQUIP. CONTR.).
4. ½"HW, CW & 2"W To DEMONSTR. TABLE (DEMONSTR. TABLE BY SCI. EQUIP. CONTR.).
5. ½" G. To "L" SHAPED ASS'M. ("L" SHAPED ASS'M. BY SCI. EQUIP. CONTR.).
6. ½"HW, CW, GG & 2"W To INSTRUCTOR'S TABLE (INSTRUCTOR'S TABLE BY SCI. EQUIP. CONTR.) R.C. To PROVIDE CITY APPROVED UTILITY FIXT.
7. ½" CW & 2"W To AQUARIUM (AQUARIUM BY SCI. EQUIP. CONTR.).
8. ½"HW, CW, G & 2"W COUNTER ASS'M. (COUNTER ASS'M. BY SCI. EQUIP. CONTR.).
9. ½"HW, CW, GG & 2"W To SINK (SINK & "L" SHAPED COUNTER ASS'M. BY SCI. EQUIP. CONTR.).
10. 2" F.D. BELOW CENTER TABLE ASS'M. (CENTER TABLE ASS'M. BY SCI. EQUIP. CONTR.).
11. SINKS, HOT & COLD WATER FAUCETS, LEAD FITTINGS CONSISTING OF SINK TRAP, STANDARD OPPOSITE OUTLET "S" TRAPS FOR ALL EQUIPMENT LISTED ABOVE AS (BY SCI. EQUIP. CONTR.) TO BE FURNISHED BY SCIENCE EQUIPMENT CONTRACTOR. PLUMBING CONTRACTOR TO MAKE ALL CONN. TO THESE EQUIPMENTS. R.C. TO VERIFY ROUGH-IN'S WITH SCI. EQUIP. CONTR.'S DRAWINGS.
12. SEE PLUMB. SPECS. FOR SINKS, FITTINGS, & PLASTER TRAPS FOR ART ROOM SINK ASS'M. (ART ROOM ASS'M. LESS SINKS, FITTINGS, & TRAPS BY SCI. EQUIP. CONTR.).



PLUMBING, SECOND FLOOR PLAN (SECTION "A")
SCALE 1/8" • 1'-0"

NORTH



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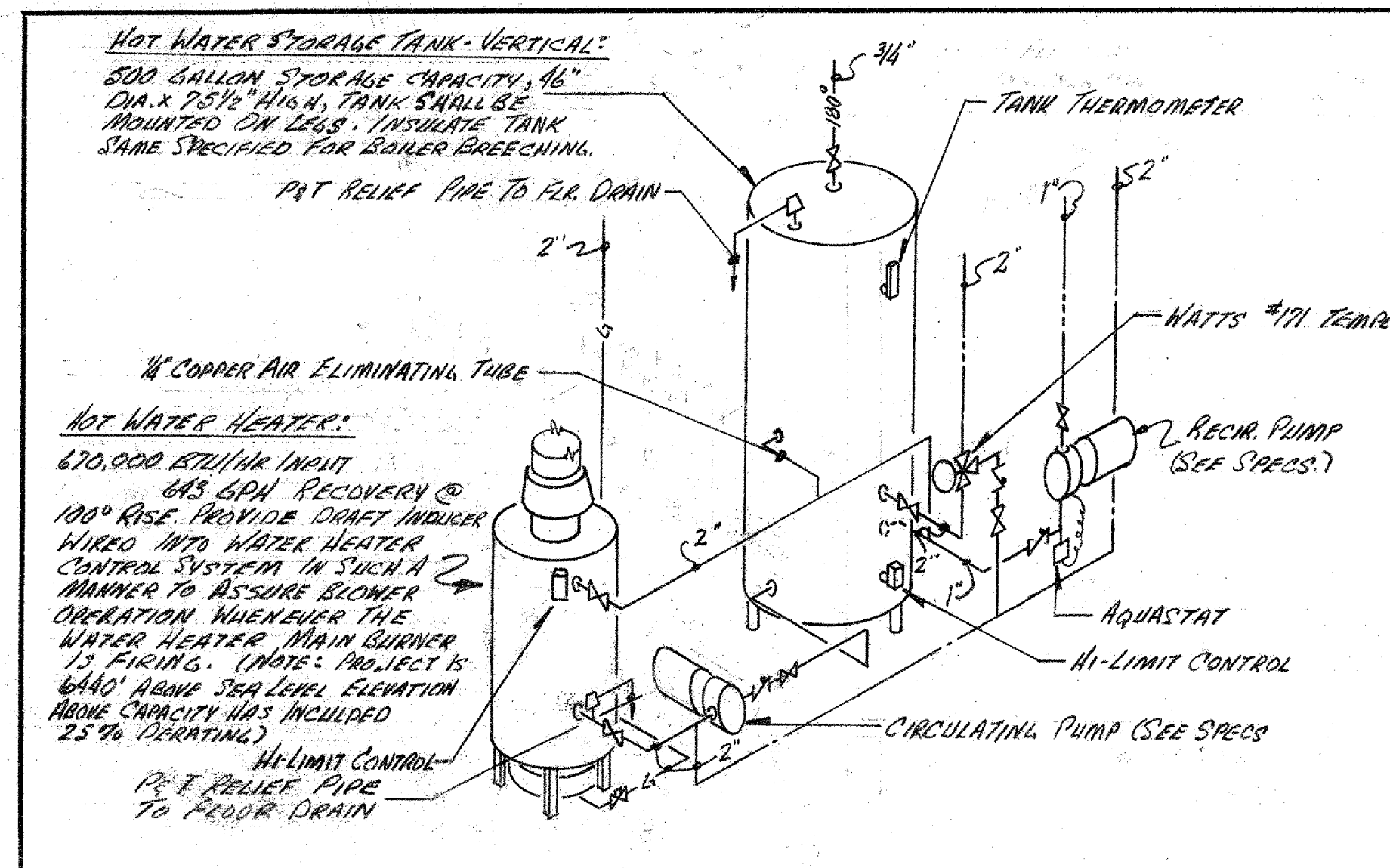
DATE
OCT. 12, 1965

SHEET
M-3

MECHANICAL

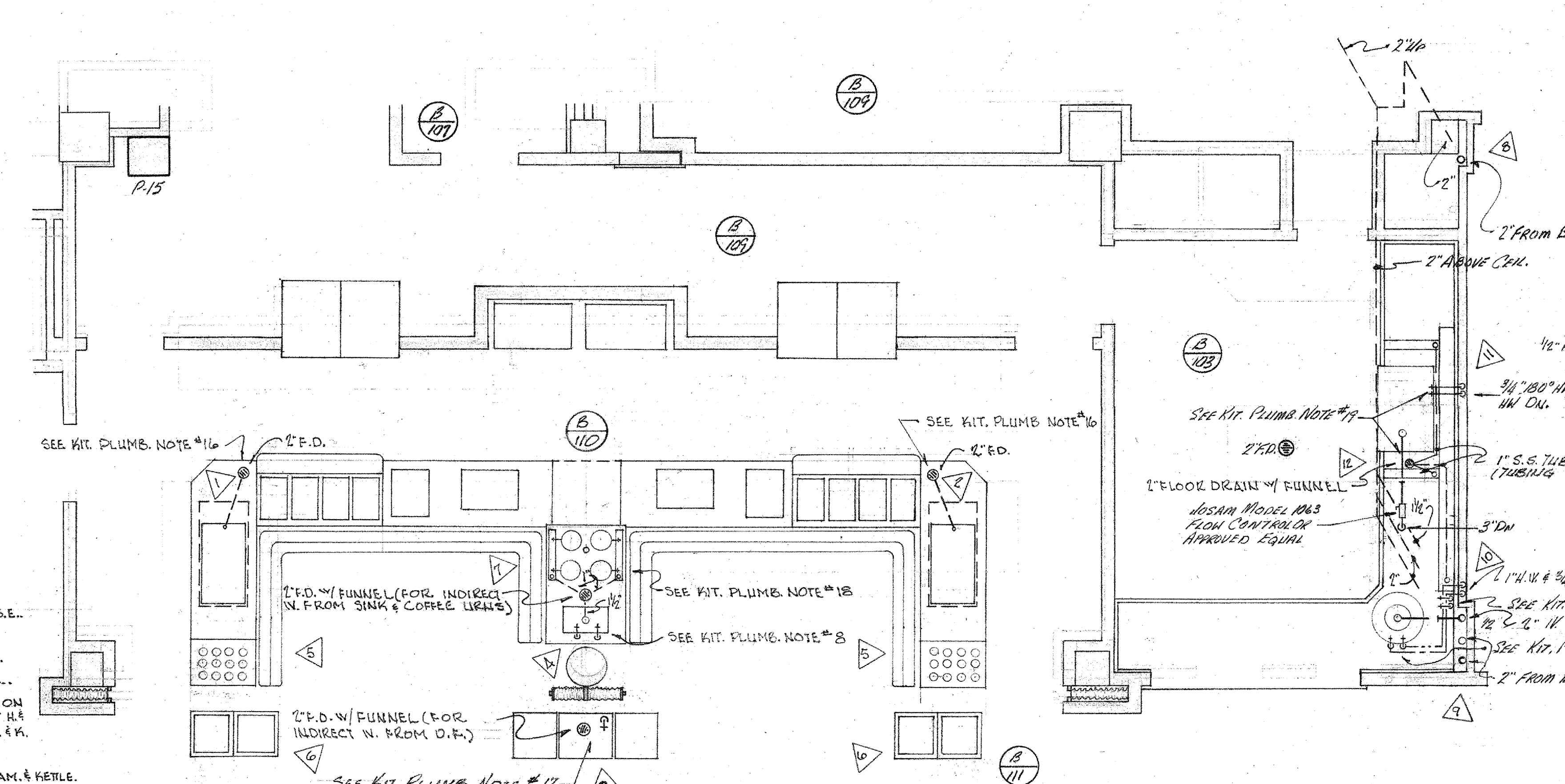


WATER HEATER PIPING DETAIL

No
SCALE

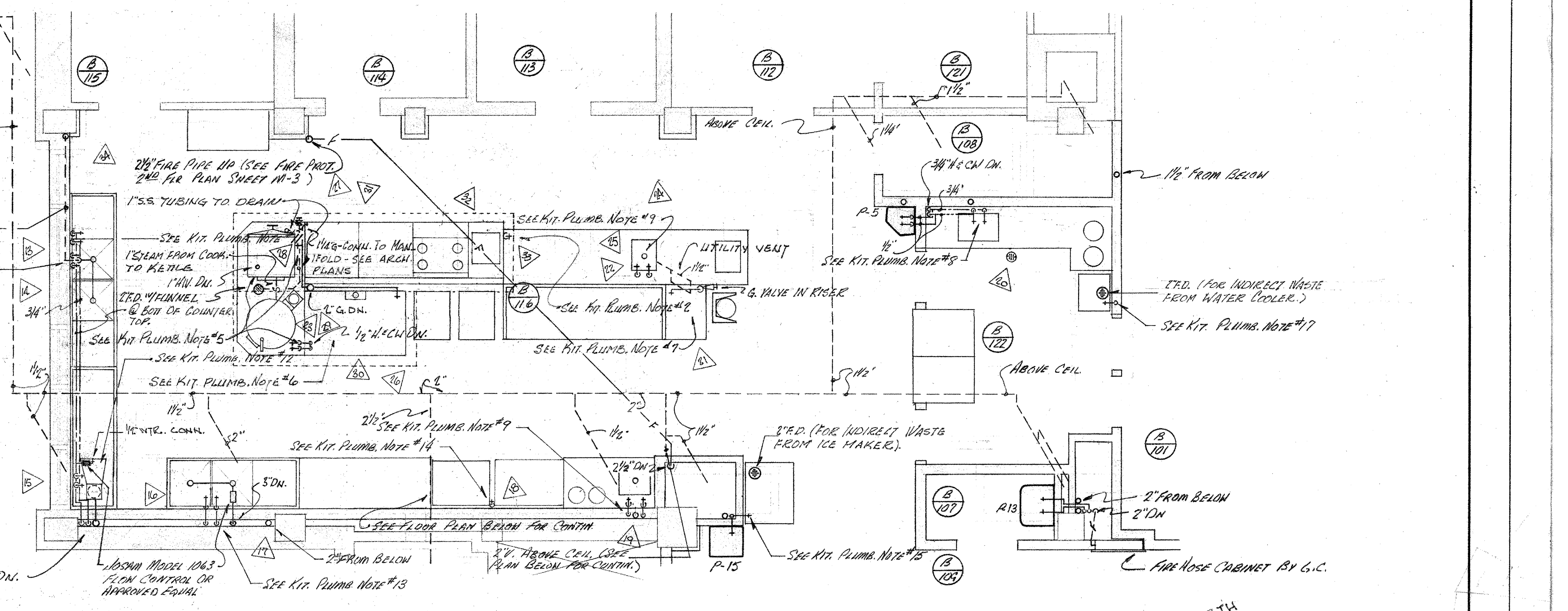
"REVISIONS" 4-11-66

1	RELOCATED 2" F.D. 1'-0" S.E. & 1'-3" S.W. OF ORIGINAL LOCATION.
2	RELOCATED 2" F.D. 1'-0" S.E. & 1'-6" N.E. OF ORIGINAL LOCATION.
3	ADDED DRINKING FOUNTAIN, 2" F.D., & ½" C.W.
4	ADDED SINK, ½" H.&C.W., & 1½" INDIRECT WASTE TO FLOOR DRAIN.
5	REMOVED (2) GAS COFFEE URNS, (2) 2" F.D., & (2) ½" C.W. & ¾" G. RISERS TO URN.
6	REMOVED (2) WTR. COOLER, (2) 2" F.D., & (2) ½" C.W. TO COOLER.
7	ADDED (4) ELEC. COFFEE URN, (2) 1" INDIRECT W. TO F.D., & (1) 2" F.D.
8	RELOCATED 2" V. FROM BELOW 2'-0" N.E. OF ORIGINAL LOCATION.
9	RELOCATED (2) 2" V. FROM BELOW & 2" W. & 1½" V. FROM DISP. IN N.E. WALL.
10	ADDED 1" H.W. & ¾" C.W. RISERS SUPPLYING SPRAY-UNIT & DISP. W/ PRE-RINSE.
11	REROUTED ¾" 140° & 180° H.W. TO CONFORM W/ NEW LOCATION OF DISHWASH. (1'-0" N.W. OF ORIG. LOC.) & DROPPED ¾" 140° & 180° H.W. IN N.E. WALL. REMOVED ¾" C.W. RISER & HOT & COLD WTR. (SUPPLYING DISP. W/ PRE-RINSE & SPRAY-UNIT) BELOW COUNTER-TOP.
12	RELOCATED 2" F.D. 3'-0" N.W. & 6" NE. OF ORIGINAL LOCATION.
13	RELOCATED VEG. SINK 2'-0" S.E. OF ORIG. LOC., DROPPED W. 6" N.W., & RAN VENT HORIZ. IN WALL TO COLUMN & ROSE ABOVE CEIL. 6'-6" N.W. OF ORIG. RISER. ADDED ½" H.& C.W. TO SPRAY-RINSE @ SINK.
14	REMOVED H.& C.W. RISERS & RELOCATED IN S.E. WALL RM. B-116 (11'-0" S.E.)
15	RELOCATED DISP. & PRE-RINSE 6'-0" S.E. OF ORIG. LOC. & DROPPED W. IN S.E. WALL OF RM. B-116 (9'-0" S.E. & 1'-6" N.E. OF ORIG. LOCATION). FLOW CONTROL ADDED
16	RELOCATED FLOW CONTROL 1'-0" S.E. & 3'-0" N.E., DROPPED W. IN WALL 3'-6" N.E. & 2'-0" S.E. OF ORIG. LOC., & DROPPED H.& C.W. IN WALL 9" S.E. OF ORIG. RISERS.
17	RELOCATED 2" V. FROM BELOW 1'-0" S.E. OF ORIG. LOCATION.
18	RELOCATED GAS RISER 1'-3" S.W. OF ORIG. LOCATION.
19	RELOCATED SINK 3'-0" N.E., DROPPED ½" H.& C.W. & 2" W. 3'-0" N.E. & 6" S.E..
20	RELOCATED 2" F.D. 9" S.E. OF ORIG. LOCATION.
21	RELOCATED TOASTER, STAND, & ½" GAS RISER 3'-0" S.E. & 4'-6" S.W.
22	RELOCATED SINK, ½" H.& C.W., 2" W., & 1½" V. 5'-6" S.W. OF ORIG. LOC..
23	RELOCATED STEAMER 11'-0" S.W. & 4'-3" S.E. OF ORIGINAL LOCATION & ADDED 1" STEAM LINE FROM STEAMER TO KETTLE. ADDED ½" H.& C.W. TO KETTLE FILLER (BELOW OVEN) & 2" F.D. FOR I.W. FROM S.& K.
24	REMOVED ½" H.W. TO HOOD.
25	REMOVED STEAMERS, (3) 2" F.D., & 1" H.W. & 1¼" G. SUPPLYING STEAM. & KETTLE.
26	REMOVED TILTING KETTLE, 2" F.D. BELOW, & ½" H.& C.W. RISERS TO KETTLES.
27	REMOVED 1¼" G. RISER SUPPLYING BAKE OVEN.
28	ADDED 1" H.W. RISER & 1¼" G. TO NEW STEAMER.
29	ADDED 2" GAS RISER SUPPLYING BAKE OVEN, STEAMER, & GAS MANIFOLD FOR RANGE, OVEN, & DEEP FAT FRYER.
30	RELOCATED BAKE OVEN 2'-0" S.W. & 4'-0" S.E. OF ORIGINAL LOCATION.
31	RELOCATED RANGE & OVEN 6" S.E. & 12'-9" S.W. OF ORIGINAL LOCATION.
32	RELOCATED DEEP FAT FRY. 6" S.E. & 15'-3" S.W. OF ORIGINAL LOCATION.
33	RELOCATED ¾" H.W. TO HOOD 1'-6" S.E. & 15'-0" S.W. OF ORIGINAL LOCATION.
34	REMOVED PEELER, 2" F.D., & ½" C.W. TO PEELER.



PLUMBING DISHWASHING & SERVING PART PLAN ¼" = 1'-0"

NORTH

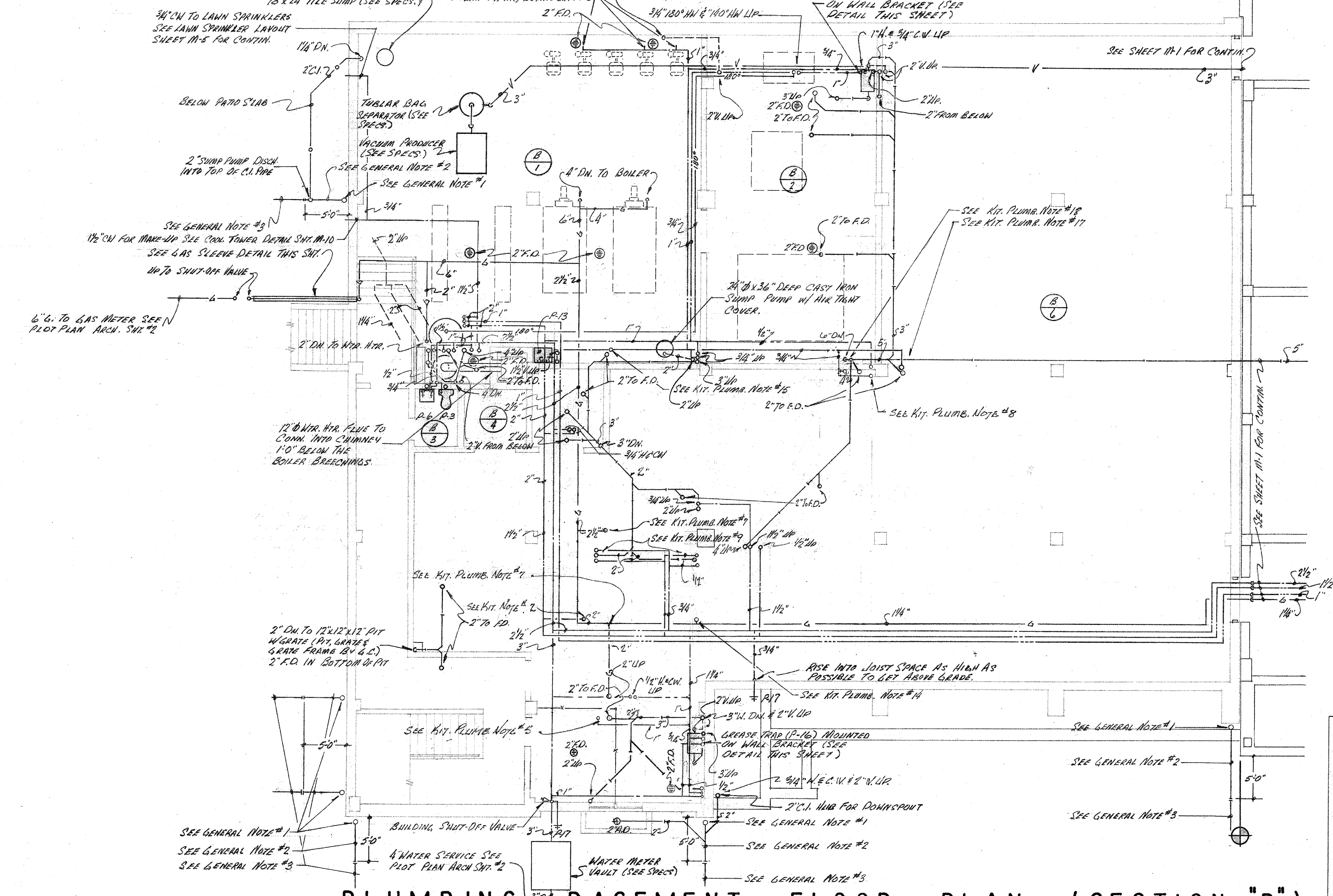


PLUMBING KITCHEN PART PLAN ¼" = 1'-0"

NORTH

KITCHEN PLUMBING NOTES:

~~1. 1½" G. TO DEEP FAT FRYER (DEEP FAT FRYER N.I.C.)~~
2. ¾" HW TO HOOD (HOOD N.I.C. SEE EQUIP. CONTR'S. SHOP DRAWINGS FOR EXACT LOCATION.)
~~3. ½" HW TO HOOD (HOOD N.I.C. SEE EQUIP. CONTR'S. SHOP DRAWINGS FOR EXACT LOCATION)~~
~~4. 2" G. TO RANGE & OVEN (RANGE & OVEN N.I.C.)~~
5. 1" HW & 1¼" G. TO STEAMER & ½" H&C.W. TO KETTLE FILLER (STEAM. & KETTLE FILL. N.I.C.)
6. 1¼" G. TO BAKE OVEN (BAKE OVEN N.I.C.)
7. ½" G. TO TOASTER ON STAND (STAND & TOASTER N.I.C.)
8. ½" H & CW TO SINK (SINK N.I.C.)
9. ½" H & C.W. & 2" W. TO SINK (SINK N.I.C.)
~~10. ½" CW TO PEELER (PEELER N.I.C.)~~
11. ½" H & CW & 2" W. VEG. SINK (SINK N.I.C.)
12. ¾" CW, ½" HW & 2" W TO DISPOSAL W/ PRE-RINSE (DISPOSAL & PRE-RINSE N.I.C.)
13. ½" H & CW & 3" W. TO POT SINK (POT SINK N.I.C.)
14. ¾" G. TO RANGE - CAP @ FLR. (RANGE N.I.C.)
15. ½" CW TO ICE MAKER (ICE MAKER N.I.C.)
16. 1" DRAIN FROM COLD PAN INDIRECT TO F.D. BELOW COUNTER (COLD PAN & COUNTER N.I.C.)
17. ½" CW TO DRINK. FOUNT. (DRINK. FOUNT. N.I.C.)
18. ½" CW. TO COFFEE URNS (COFFEE URN N.I.C.)
19. ¾" 140° HW & 180° HW & 3" W TO DISHWASHER (DISHWASHER N.I.C.)
20. ½" H & CW TO PRE-FLUSH SPRAY UNIT (PRE-FLUSH SPRAY UNIT N.I.C.)



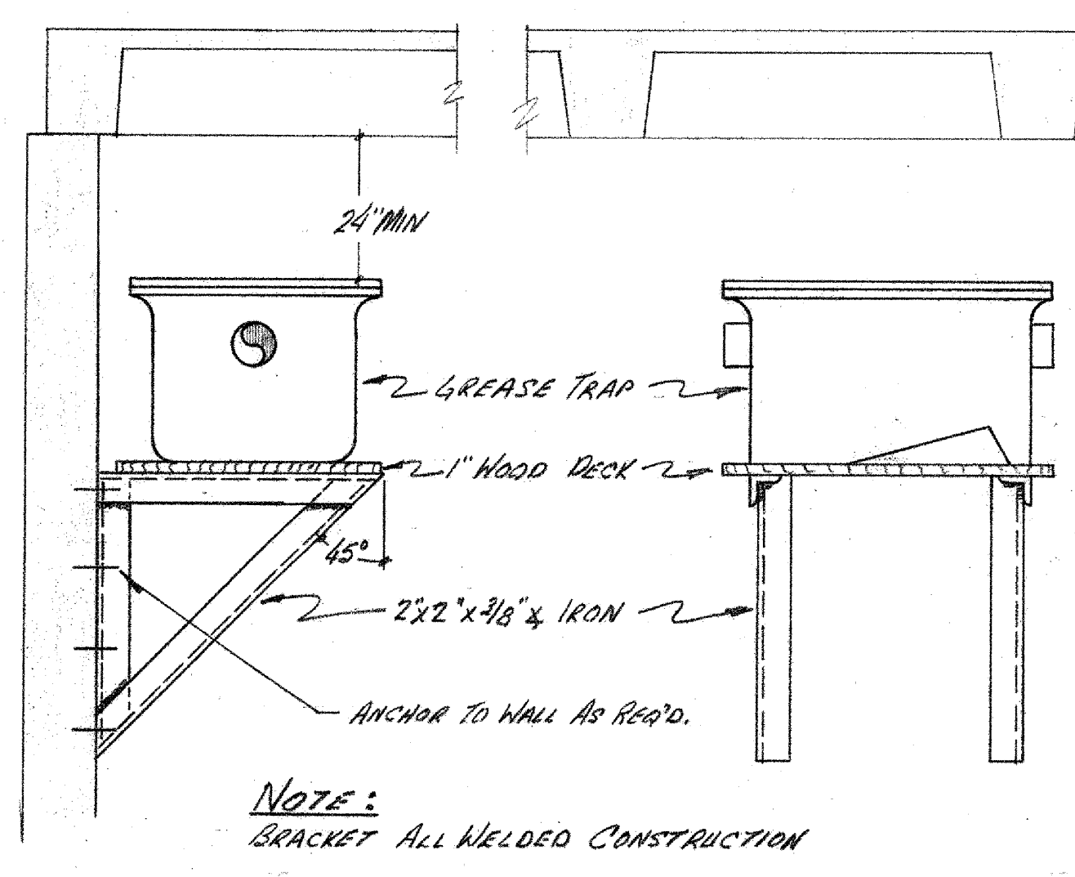
PLUMBING BASEMENT FLOOR PLAN (SECTION "B")

SCALE 1/8" = 1'-0"

NORTH

GENERAL NOTES:

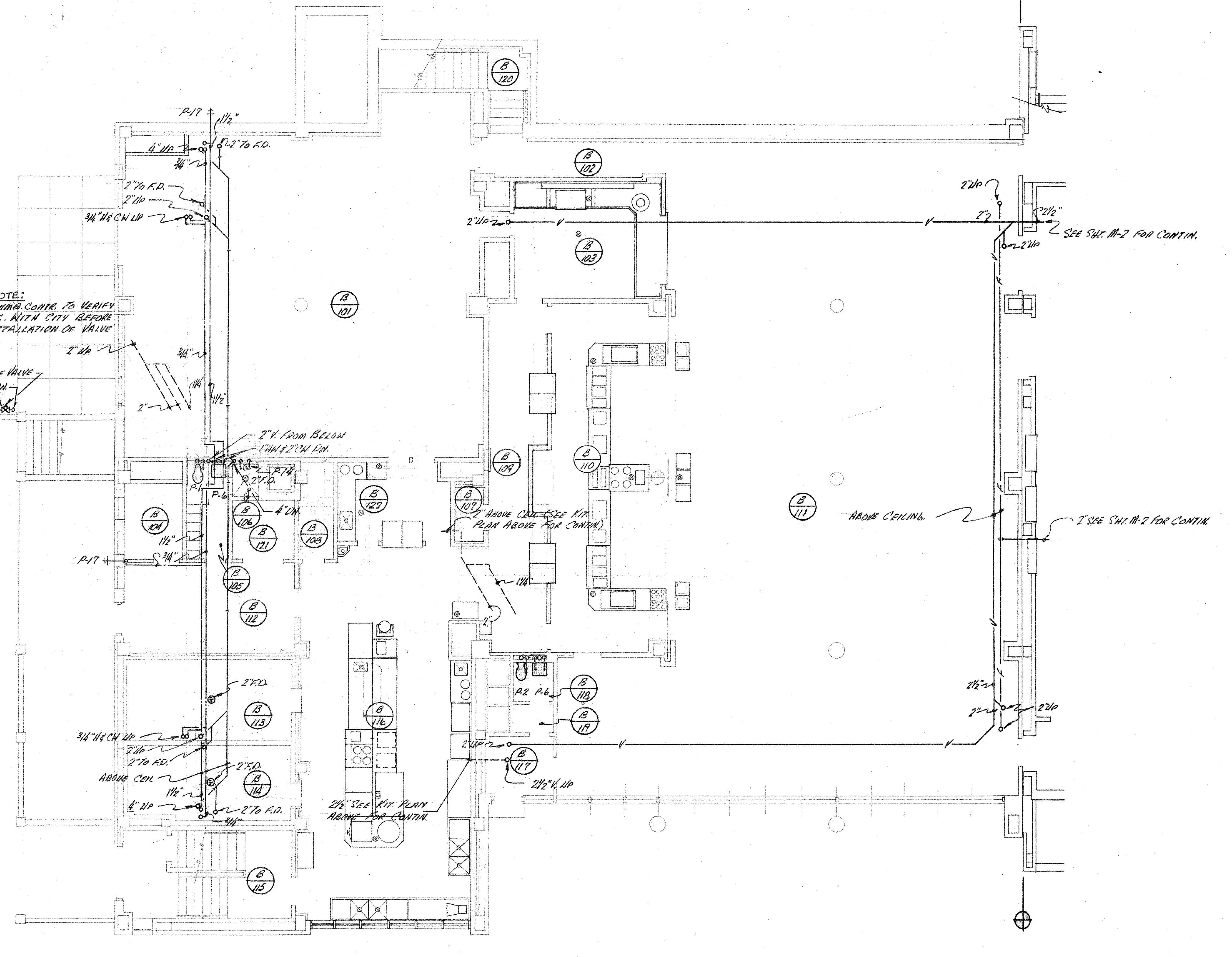
1. 4" D.S. BY GENERAL CONTRACTOR
2. 4" CAST IRON PIPE BY PLUMBING CONTRACTOR
3. 4" VITREOUS CLAY TILE BY PLUMBING CONTRACTOR (SEE PLOT PLAN ARCH. SHT. #2 FOR CONTIN.) Plumbing CONTR. to extend Elbow above Finish Grade line 2" in proper location for Sheet metal downspouts above. Sheet metal by General Contractor



NOTE:
BRACKET ALL WELDED CONSTRUCTION

GREASE TRAP DETAIL

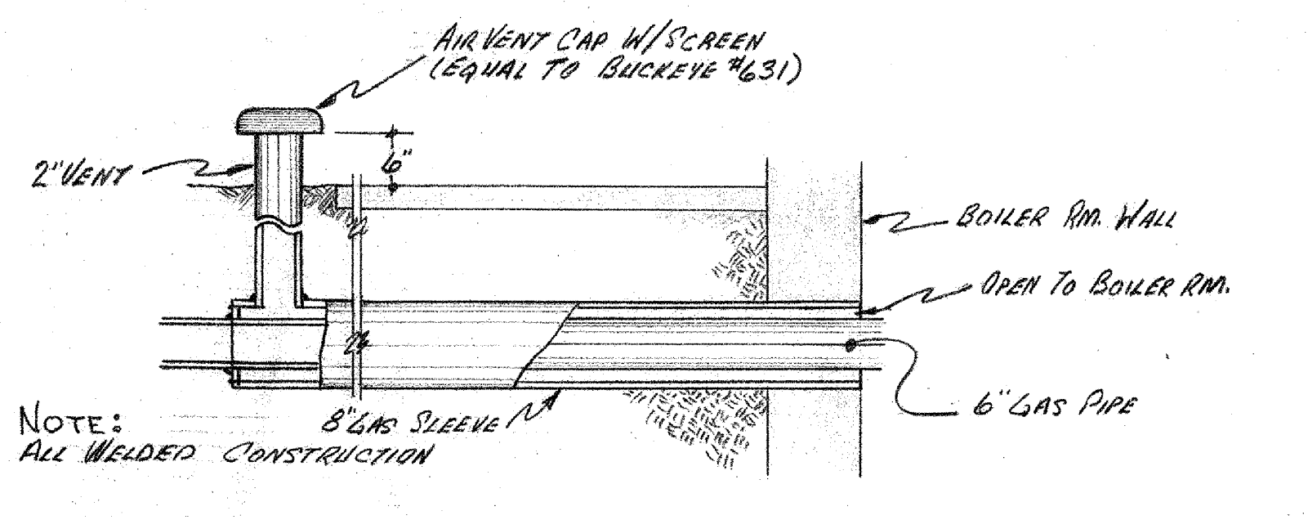
No
SCALE



PLUMBING, FIRST FLOOR PLAN (SECTION "B")

SCALE 1/8" = 1'-0"

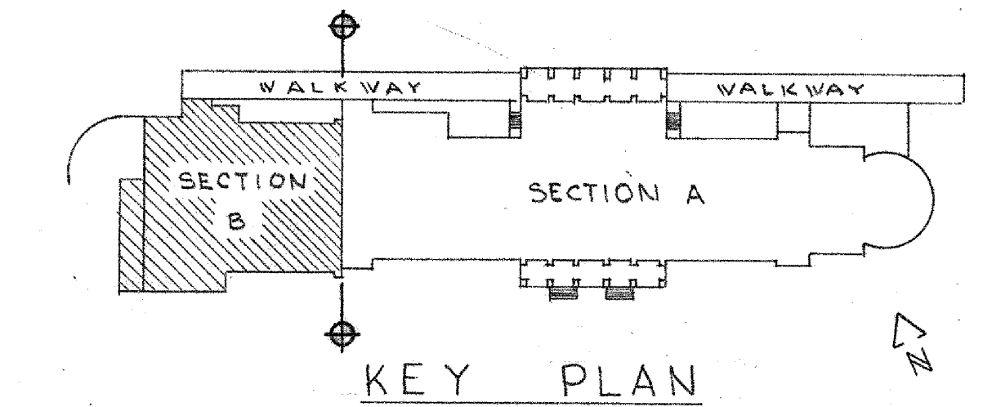
NORTH



NOTE:
ALL WELDED CONSTRUCTION

GAS SLEEVE DETAIL

No
SCALE



KEY PLAN

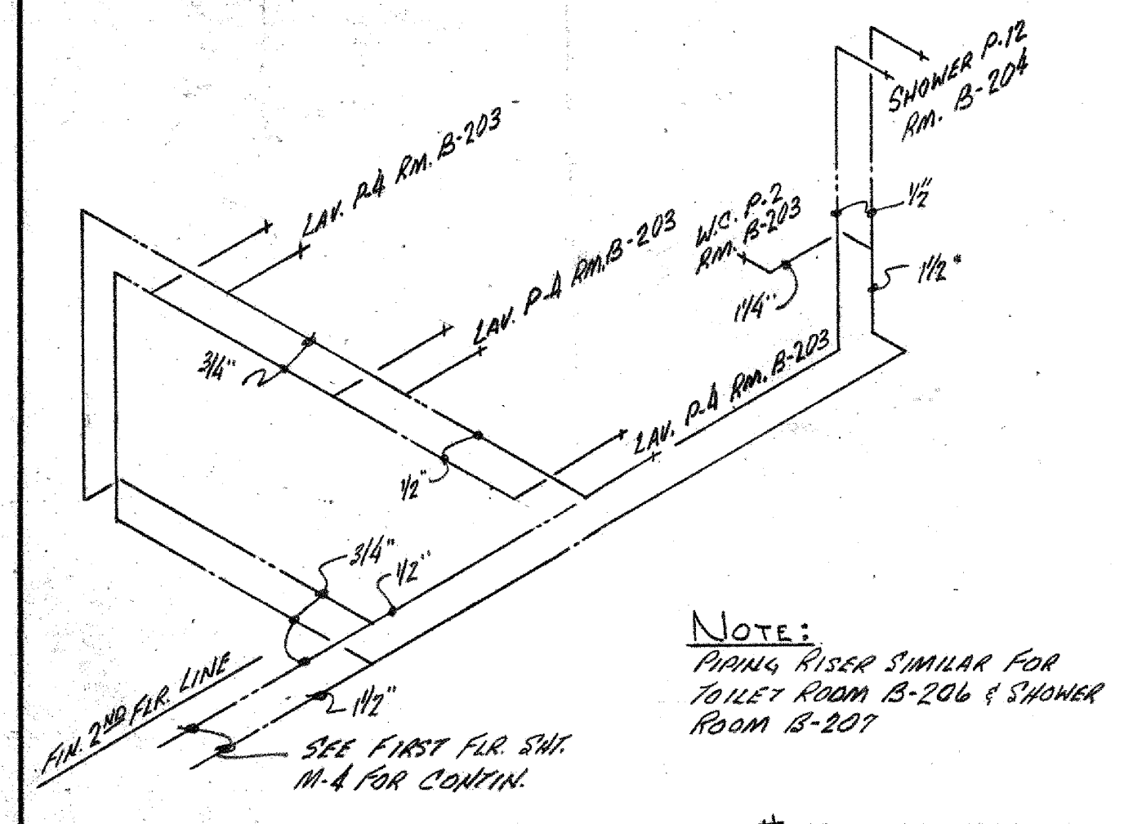
REVISIONS
4-11-66
SEE SCHEDULE THIS SHEET

BENET HILL
ACADEMY BUILDING
SISTER M. LIGUORI, O.S.B., SUPERIOR
COLORADO SPRINGS • • COLORADO

BRINKMAN & HAGAN ARCHITECTS
EMPORIA • • KANSAS

DATE
OCT. 12, 1965
SHEET
M-4
MECHANICAL

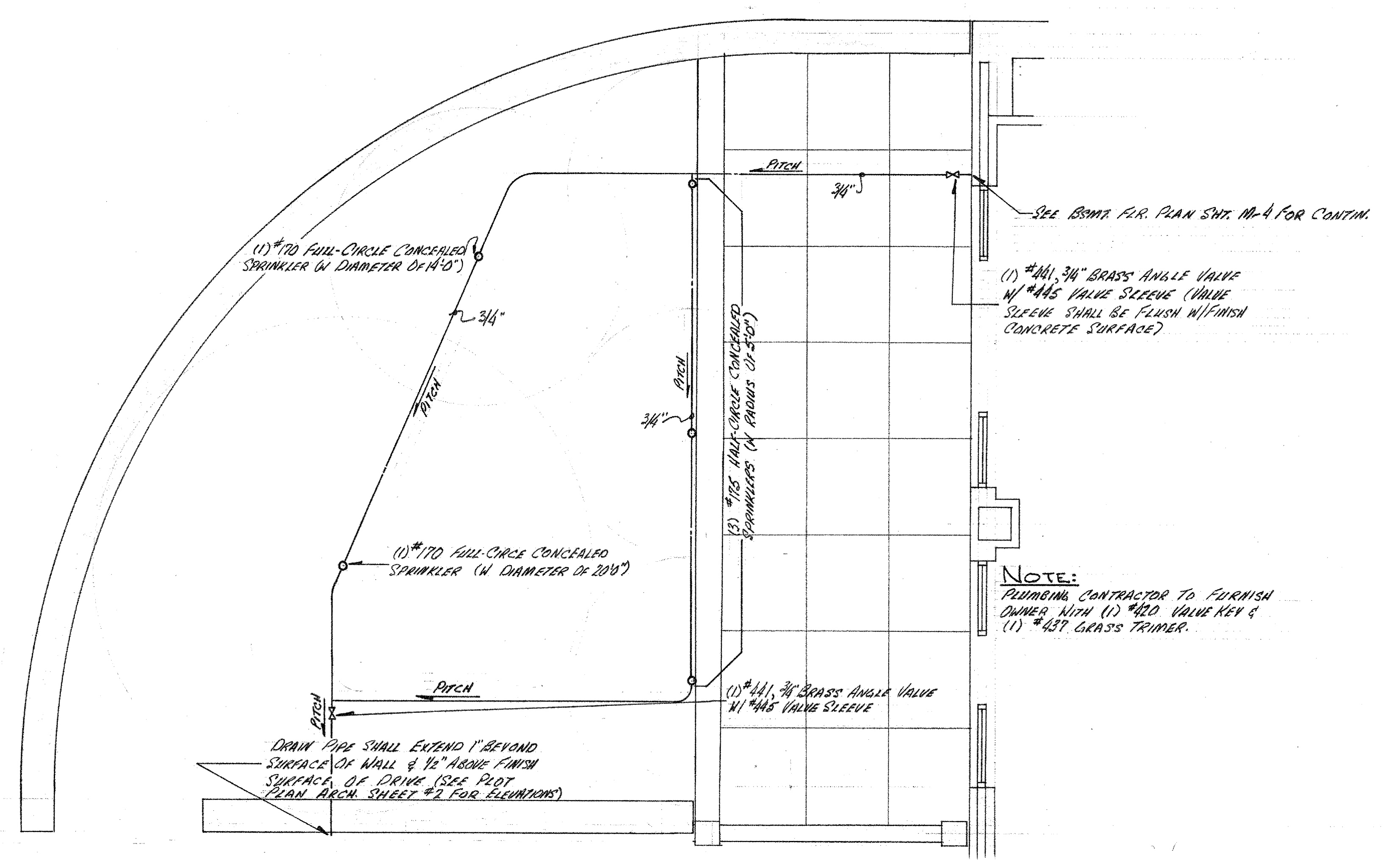
M-4



NOTE:
PIPING RISER SIMILAR FOR TOILET ROOM B-206 & SHOWER ROOM B-207

PIPING RISER # 3

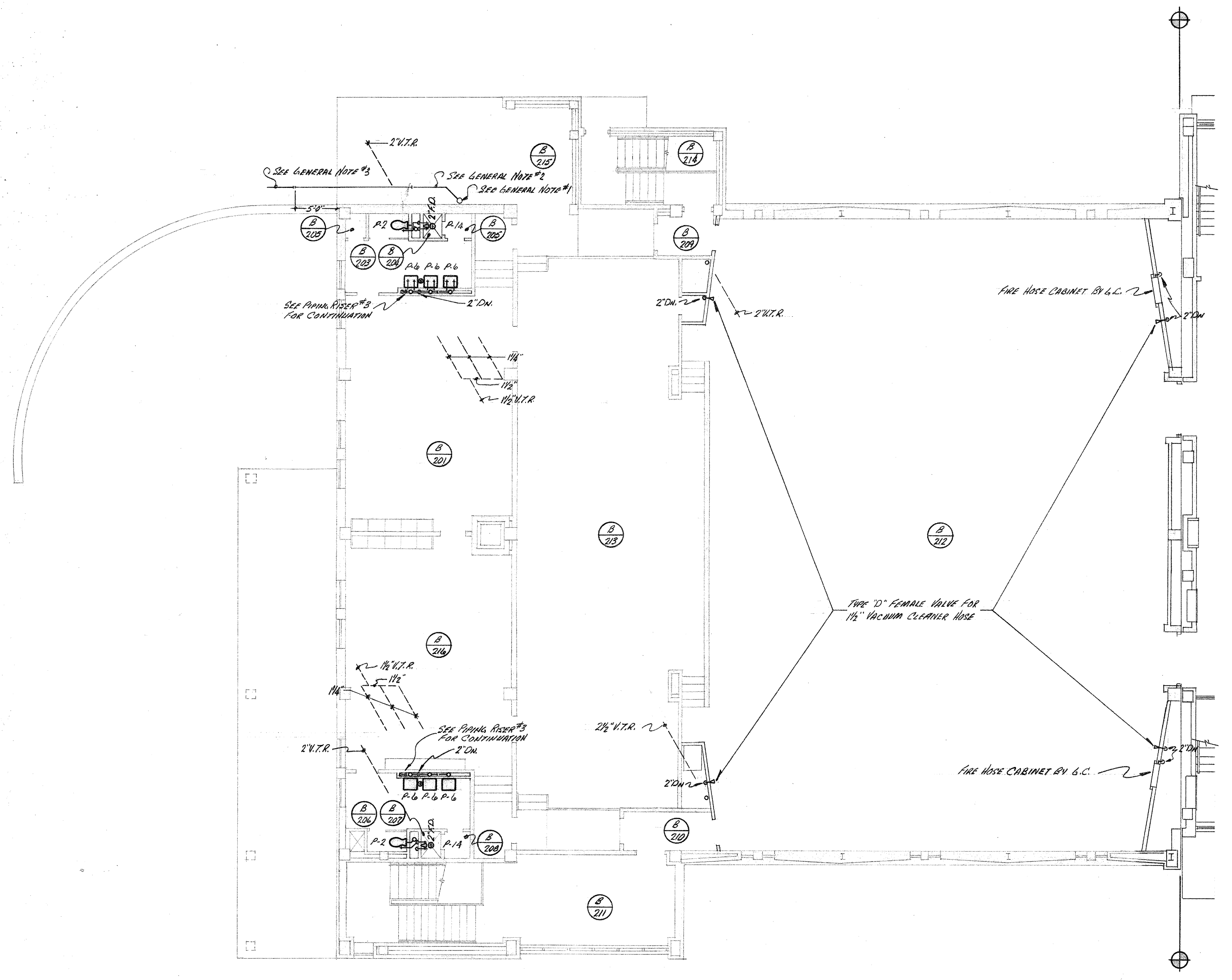
DO NOT SCALE



NOTE:
PLUMBING CONTRACTOR TO FURNISH OWNER WITH (1) #420 VALVE KEY & (1) #437 GRASS TRIMER.

PATIO LAWN SPRINKLE LAYOUT

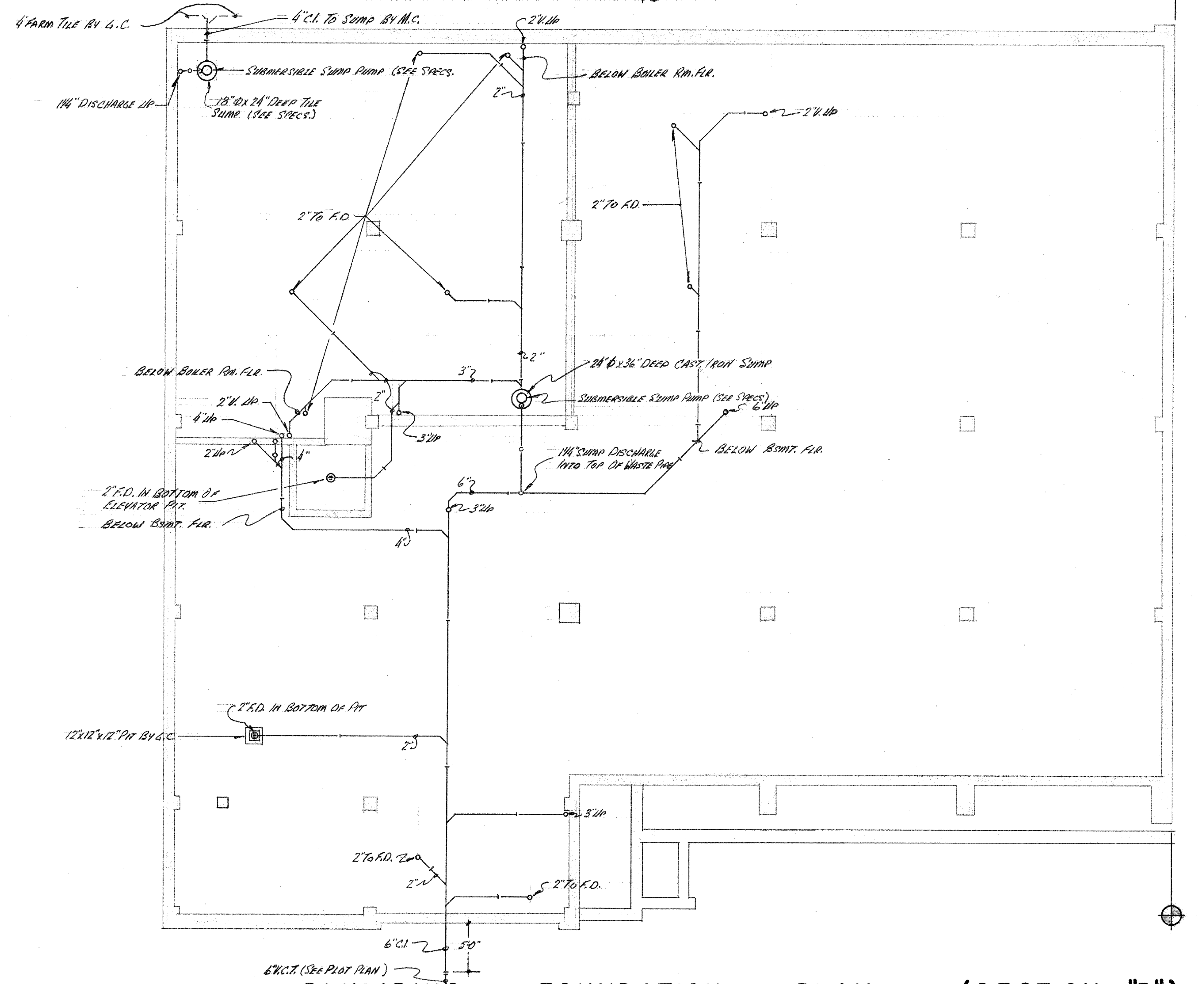
1/4" = 1'-0"



PLUMBING, SECOND FLOOR PLAN (SECTION "B")

SCALE 1/8" = 1'-0"

NORTH

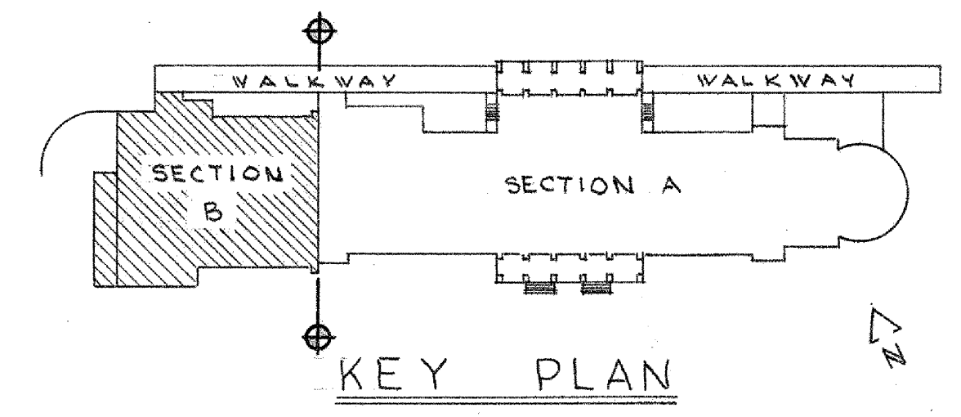


PLUMBING, FOUNDATION PLAN (SECTION "B")

SCALE 1/8" = 1'-0"

NORTH

DONALD L. HANSON
6733



KEY PLAN

REVISIONS

BENET HILL
ACADEMY BUILDING
SISTER M. LIGUORI, O.S.B., SUPERIOR
COLORADO SPRINGS • • COLORADO

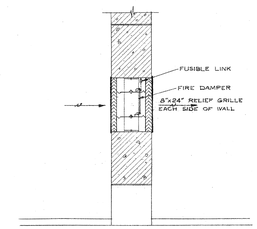
BRINKMAN & HAGAN ARCHITECTS
EMPORIA • • KANSAS

DATE
OCT. 12, 1965

SHEET
M-5

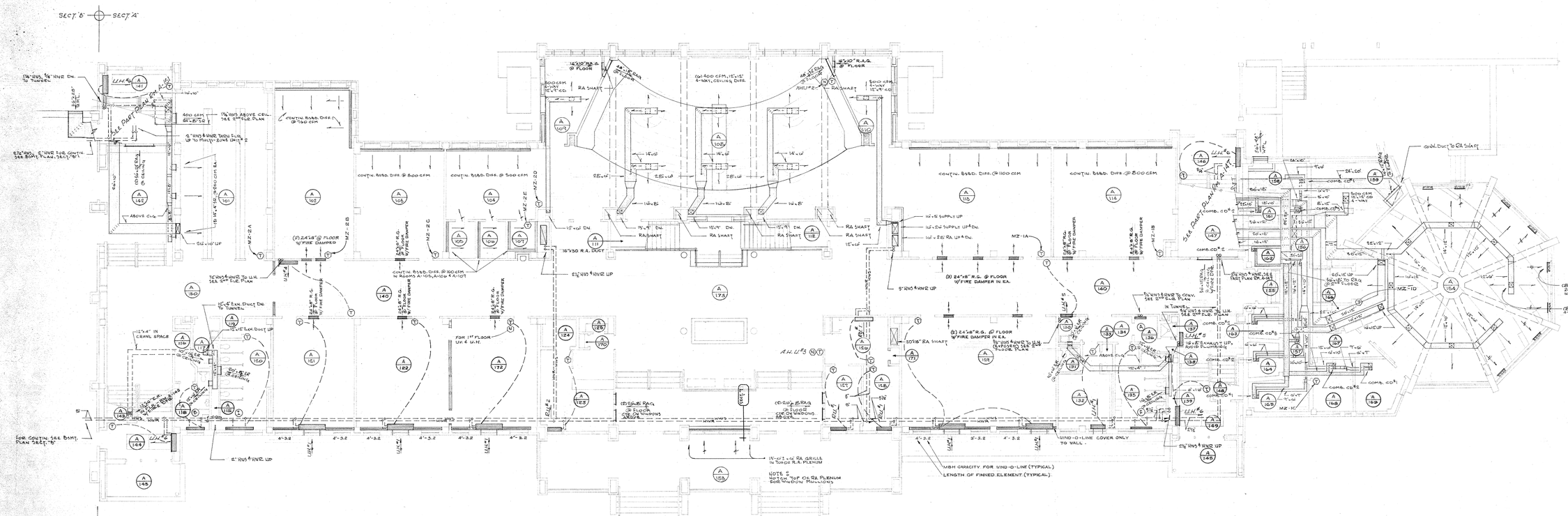
MECHANICAL

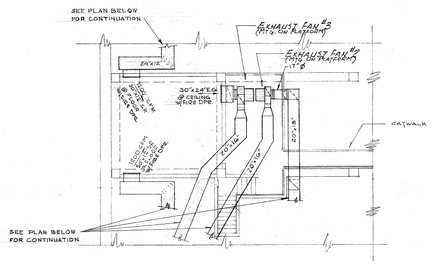
P, 2ND FLR P (S."B")



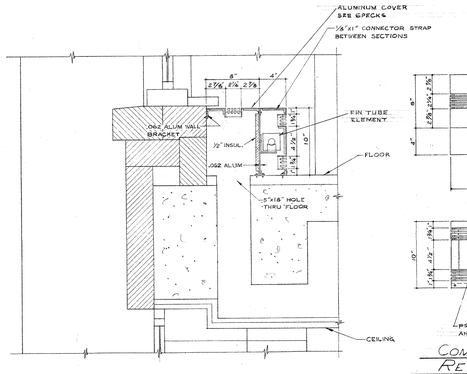
RELIEF GRILLE WITH FIRE DAMPER (TYPICAL)

SCALE 1/2"=1'-0"

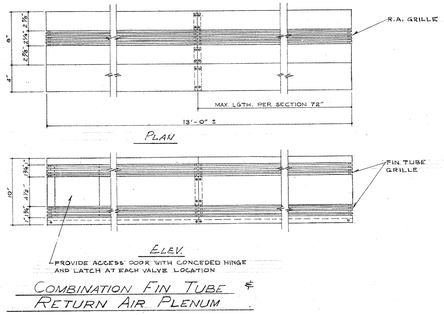




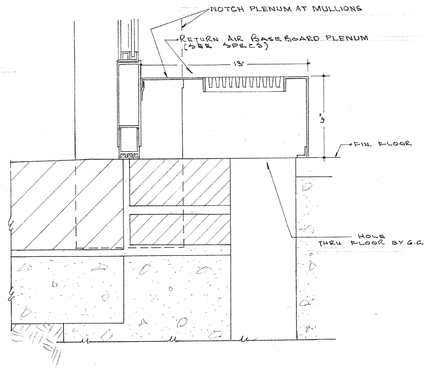
PART PLAN RM. A-303



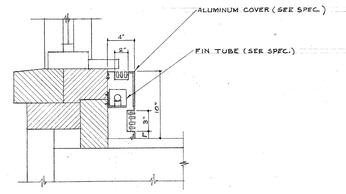
SECTION NO. 8 SCALE 1½"=1'-0"



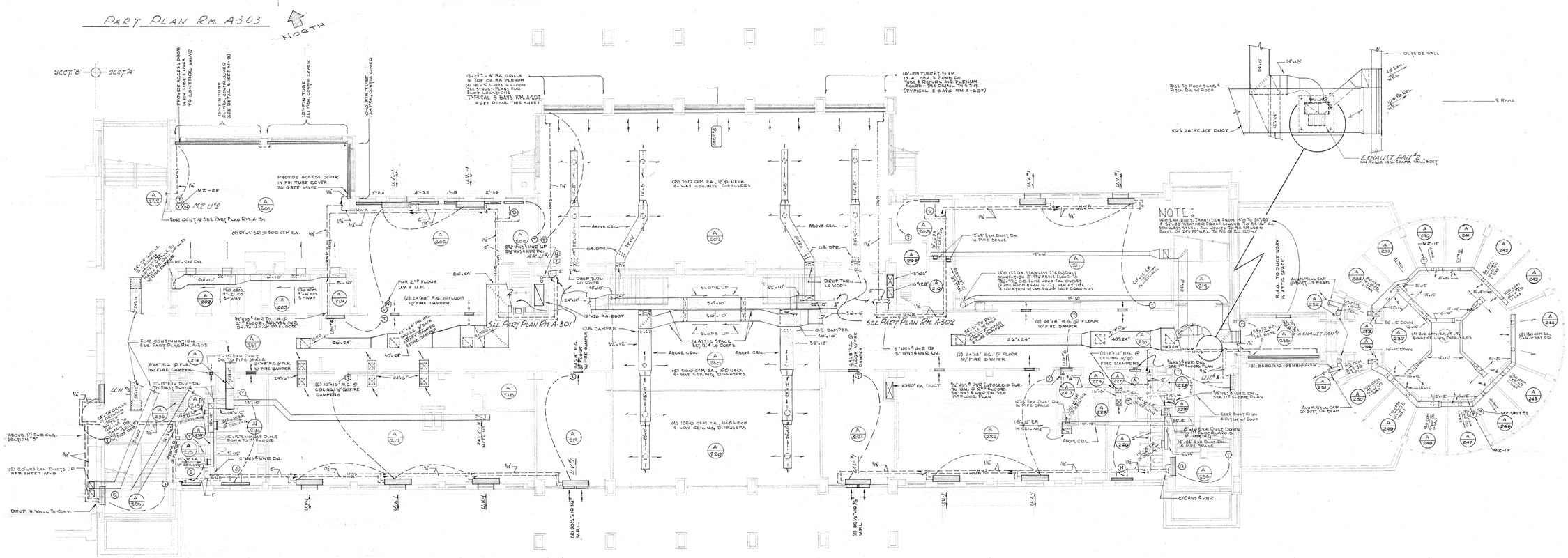
COMBINATION FIN TUBE RETURN AIR PLENUM



SECTION NO. 7 SCALE 3" = 1'-0"



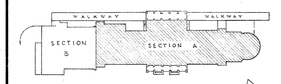
FIN TUBE SECTION SCALE 1½"=1'-0"



HEATING & AIR CONDITIONING, SECOND FLOOR PLAN (SECTION "A")

SCALE

NORTH



KEY PLAN

REVISIONS	BENET HILL ACADEMY BUILDING SISTER M. LIGUORI, O.S.B., SUPERIOR COLORADO SPRINGS • • COLORADO	DATE OCT. 12, 1965
		SHEET M-7
	BRINKMAN & HAGAN ARCHITECTS EMPORIA • • KANSAS	MECHANICAL

PUMP SCHEDULE

MARK	HP	CURRENT	RPM.	GPM.	HEAD IN FT.	REMARKS
PUMP #1	5	480/60/3	1750	160	45	HEATING WATER PUMP - SECTION "B"
" #2	5	480/60/3	1750	275	50	STAND BY HEATING WATER PUMP - SECTION "A"
" #3	5	480/60/3	1750	275	50	HEATING WTR. PUMP - SECTION "A"
" #4	5	480/60/3	1750	94	60	ALT. M-1 CHILLED WTR. PUMP
" #4A	5	480/60/3	1750	195	60	ALT. M-2 CHILLED WTR. PUMP
" #4C	7½	480/60/3	1750	240	70	ALT. M-3 CHILLED WTR. PUMP
" #5A	5	480/60/3	1750	150	45	ALT. M-1 CONDENSER WTR. PUMP
" #5B	5	480/60/3	1750	240	45	ALT. M-2 CONDENSER WTR. PUMP
" #5C	5	480/60/3	1750	300	45	ALT. M-3 CONDENSER WTR. PUMP

UNIT HEATER SCHEDULE

MARK	BTU/HR	G.P.M.	P.D.	MOTOR H.P.	MOTOR F.L.A.	MOTOR R.P.M.	C.F.M.	TYPE	FINISH	REMARKS
U.H. #1	10,900	1.1	.5'	1/50	1.9	1090	550	CEILING	3/4"	FRONT OUTLET, BACK INLET GRILLE
U.H. #2	18,400	1.9	.5'	1/50	1.9	1090	575	CEILING	3/4"	FRONT OUTLET, BACK INLET GRILLE
U.H. #3	29,600	2.4	.6'	1/25	1.8	1090	900	CEILING	3/4"	FRONT OUTLET, BACK INLET GRILLE
U.H. #4	15,600	1.9	.3'	1/30	1.9	1090	975	FLOOR	3/4"	WITH RETURN AIR INLET BASE
U.H. #5	18,400	1.9	.3'	1/30	1.9	1090	375	FULLY RECESSED	3/4"	FOUR SIDE OVERLAP
U.H. #6	23,400	2.4	A	1/25	1.8	1090	500	FULLY RECESSED	3/4"	FOUR SIDE OVERLAP

NOTE: 1. CAPACITIES BASED ON 160° ENT. AIR & 180° ENT. WATER
2. MOTORS ARE 120/60/1
3. RECESSED UH. TO HAVE ACCESS DOORS TO VALVES

ROOM UNIT SCHEDULE

MARK	TYPE	STD. AIR CAP.	WATTS	BTU MBH.	COOLING SENS.	COOLING TOTAL	G.P.M.	P.D. IN FT.	RUNOUTS SUPPLY	RUNOUTS RETURN	RUNOUTS DRAIN	REMARKS
RU-1	FLOOR	400	36	15.3	4.3	5.6	1.5	1.3'	3/4"	3/4"	3/4"	DRAIN THRU WALL TO GRASS
RU-2	FLOOR	400	72	31.7	8.6	11.2	3.0	5.4'	3/4"	3/4"	3/4"	DRAIN THRU WALL TO GRASS

NOTE: 1. HEATING CAPACITIES BASED ON 70° F. ENT. AIR & 180° F. ENT. WATER; COOLING CAPACITIES BASED ON ENT. AIR @ 78° F. D.B. & 65° F. ENT. WATER; MOTORS ARE 120/60/1, 1050 R.P.M.
2. ADD SEPERATE COOLING COIL; CHILLED WATER PIPING, DRAIN PIPE & NECESSARY CONTROLS ON ALT. M-1, M-2, M-3
3. AMERICAN-STANDARD REMOTAIRE 20, HERMAN-NELSON, NESBITT OR DUNHAM-BUSH

COMB. CEIL. DIFF. SCHEDULE

MARK	C.F.M.	PATTERN	SIZE	SUPPLY	RETURN	REMARKS
COMB. #1	150	4-WAY	13⅛"-16"	6"x 6"	6"x 6"	TITUS MODEL NO. THDCR-5I-5A
#2	100	4-WAY	13⅛"-16"	6"x 6"	6"x 6"	TITUS MODEL NO. THDCR-5I-5A
#3	190	4-WAY	22-1/8"-24"	9"x 9"	6"x 6"	TITUS MODEL NO. THDCR-6A

NOTE: 1. COMB. C.D.N.I. #2 ARE 3-WAY THROW.
2. COMB. C.D.I. #3 IS 4-WAY THROW.

AIR COND. UNIT SCHEDULE

MARK	STD. CFM.	EXT. S.P.	MAX. CUT. VEL.	MOTOR H.P.	MOTOR CURRENT	FILTER MAX. VEL. FPM.	FILTER TYPE	REMARKS
H.E.U.#1	8100	.35"	1400	5	480/60/3	300	THROWAWAY	HORIZ. 70" UNIT W/ VERT. DISCHARGE
" #2	6650	.50"	1500	5	480/60/3	300	THROWAWAY	HORIZ. UNIT W/ VERT. DISCHARGE
A.H.U.#1	6000	.45"	1500	3	480/60/3	300	THROWAWAY	VERT. UNIT W/ EXT. R. & RH.-PASS DRS.
" #2	3000	.75"	1650	2	480/60/3	300	do.	do.
" #3	6000	1.02"	1750	5	480/60/	300	do.	do.
" #4	2000	.60"	1685	1½	480/60/3	300	do.	do.
" #5	3500	.85"	1542	3	480/60/3	300	do.	VERT. UNIT W/ EXT. R. & RH.-PASS DRS.
" #6	12,000	.80	1187	7½	480/60/3	300	THROWAWAY	HORIZ. UNIT W/ INT. F. & RH.-PASS DRS.

NOTE: 1. ALL MOTORS TO BE 1750 RPM.
2. ALL UNITS TO HAVE COMBINATION FILTER & MIXING BOXES
3. W.Z. UNITS TO BE FURNISHED WITH BALANCING PLATE IN COOLING DECK

EXHAUST FAN SCHEDULE

MARK	C.F.M.	S.P.	FAN H.P.	FAN R.P.M.	FAN MAKE TO SPARES	DRIVE	CURRENT	REMARKS
EXH. FAN #1	2432	1/4"	1/8	960	●	BELT	480/60/3	NON-OVERLOADING UTILITY SET EXH.
EXH. FAN #2	2287	1/4"	1/8	910	●	BELT	do.	NON-OVERLOADING UTILITY SET EXH.
EXH. FAN #4	387	1/8"	1/20	1050	1483	DIRECT	do.	ROOM EXHAUSTER
EXH. FAN #5	2100	1/8"	1/6	1625	3107	DIRECT	115/60/1	ROOM EXHAUSTER
EXH. FAN #6	5250	1 1/2"	2	990	●	BELT	480/60/3	NON-OVERLOADING UTILITY SET EXH.
EXH. FAN #9	816	1/4"	1/4	1790	●	DIRECT	115/60/1	STRAIGHT THRU CENTRIFUGAL EXH., WALL BOX
EXH. FAN #8	2080	1/4"	1/4	700	●	DIRECT	115/60/1	STRAIGHT THRU CENTRIFUGAL EXH., CEILING BOX

NOTE: 1. MUTUNH EXH. W/ MODEL #8308-AL WALL CAP
2. UTILITY SET EXH. W/ VIBRATION ISOLATORS
3. ROOF EXH. W/ BIRD SCREEN, BACK DRAFT DMPR., & DISCONN. SW.

WATER COIL SCHEDULE

MARK	STD. AIR CFM.	COOLING G.P.M.	COOLING R.D. IN FT.	COOLING ENT. WATER	COOLING ENT. D.B.	COOLING ENT. W.B.	COOLING LVG. D.B.	COOLING TOTAL MBH.	COOLING REMARKS	HEATING G.P.M.	HEATING R.D. IN FT.	HEATING ENT. WATER	HEATING ENT. D.B.	HEATING MBH.	REMARKS
HE #1	8100	60	10'	49°	82.5°	69°	60.0	296.0		49	11'	180°	50°	470.0	
H.E. #2	6650	●	●	●	●	●	●	●	NO COOLING	24	11'	do.	50°	235.0	
A.H.U.#1	6000	56	9'	45°	80.5°	65°	54.1	180.0		35	9'	do.	50°	350.0	
A.H.U.#2	3000	21	7'	44°	82.5°	65°	49.1	105.0		16	7'	do.	50°	160.0	
A.H.U.#3	6000	●	●	●	●	●	●	●	NO COOLING	29	10'	do.	50°	290.0	
A.H.U.#4	2000	15	7'	45°	80.0°	65°	53.0	66.9		11	7'	do.	50°	108.0	
A.H.U.#5	3500	34	8'	45°	80.0°	65°	103.0	148.0		30	11'	do.	50°	297.0	
A.H.U.#6	12000	86	11'	45°	82.5°	65°	305.0	476.0	6 ROW MIN.	45	11'	180°	50°	448.0	

NOTE: 1. DESIGN CONDITIONS BASED ON 75° DB. & 65° W.B. OUTSIDE AIR, 75° DB. & 65° WB. RETURN AIR.
2. ALL COOLING COILS 6 ROW MINIMUM.
3. SENSIBLE MBH SHOWN IS CALCULATED ROOM SENSIBLE HEAT

UNIT VENTILATOR SCHEDULE

MARK	STD. AIR CFM.	MBH. HEAT. SURPLUS	MBH. HEAT. TOTAL	AIR TEMP. MIXED	AIR TEMP. FINAL	P.D.	G.P.M.	H.P.	MODEL	RUNOUTS SUPPLY	RUNOUTS RETURN	REMARKS
U.V. #1	750	55.5	99.5	90°	98.5°	1.8'	4.08	1/6	HEATING	9½"	7½"	41" x 10⅝" OUTSIDE INTAKE

NOTE: 1. CAPACITIES BASED ON 180° ENT. WTR., MOTORS ARE 1725 R.P.M., 120/60/1
2. WINDOW RADIATION USED TO UV. CAPACITIES BASED ON 600 BTU/LIN. FT. @ 150° AVERAGE WATER TEMP.

CONVECTOR SCHEDULE

MARK	CABINET DIMEN. LENGTH	CABINET DIMEN. DEPTH	CABINET DIMEN. HEIGHT	MBH.	G.P.M.	AIR H.P.	AIR WATER TEMP.	RUNOUTS SUPPLY	RUNOUTS RETURN	REMARKS
(A)	5'8"	4"	1'4"	8.1	.8	1/65	170°	3/4"	3/4"	
(B)	4'8"	4"	1'4"	6.9	.6	1/65	170°	3/4"	3/4"	
(C)	4'4"	6"	1'4"	9.0	.16	1/65	170°	3/4"	3/4"	
(D)	4'8"	6"	1'4"	10.6	.7	1/65	170°	3/4"	3/4"	
(E)	4'8"	6"	1'8"	7.1	.7	1/65	170°	3/4"	3/4"	
(F)	5'6"	6"	1'4"	7.9	.8	1/65	170°	3/4"	3/4"	
(G)	4'8"	10"	2'6"	9.0	.9	1/65	170°	3/4"	3/4"	FULLY RECESSED
(H)	5'6"	8"	1'4"	10.1	1.0	1/65	170°	3/4"	3/4"	
(I)	7'2"	6"	1'8"	11.2	1.1	1/65	170°	3/4"	3/4"	
(J)	7'2"	8"	1'8"	13.8	1.4	1/65	170°	3/4"	3/4"	
(K)	7'2"	6"	2'2"	15.0	1.5	1/65	170°	3/4"	3/4"	

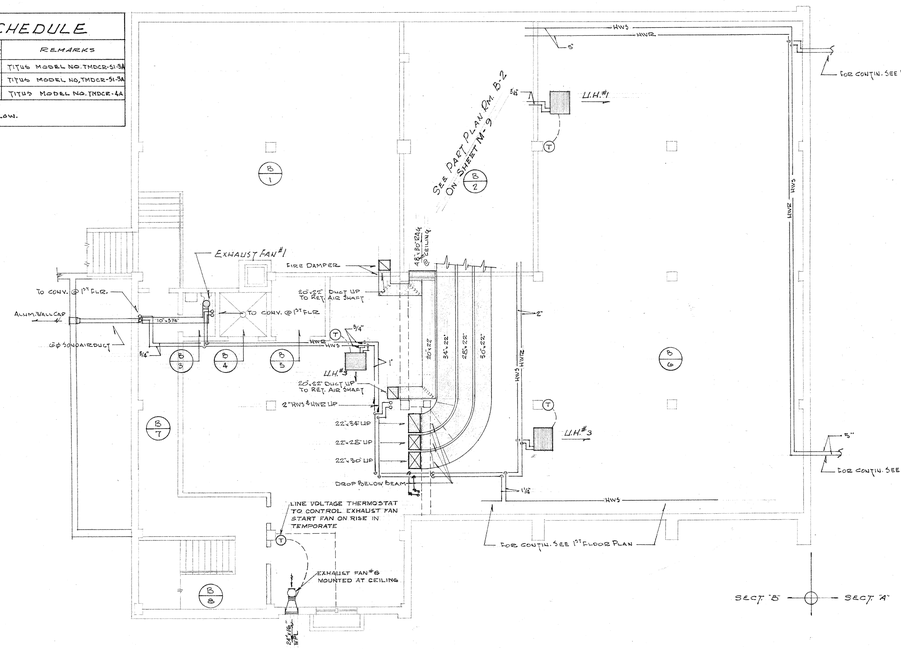
DUCT SCHEDULE

MAX. SIDE INCHES	STEEL U.S. STD. GAGE	ALUMINUM B&S GAGE	TYPE OF TRANVERSE JOINT CONNECTION	BRACING
UP TO 12	26	24	S. DRIVE, POCKET OR BAR SLIPS	NONE
13 TO 24	24	22	S. DRIVE, POCKET OR BAR SLIPS	NONE
25 TO 30	24	22	S. DRIVE, POCKET OR BAR SLIPS	1"x 1"x⅛" ∠s 4'-0 FROM JT.
31 TO 40	22	20	DRIVE, POCKET OR BAR SLIPS	1"x 1"x⅛" ∠s 4'-0 FROM JT.
41 TO 60	22	20	1¼" ANGLE CONNECTIONS, 1¼" POCKET OR 1¼" BAR SLIPS W/ 1¼" x ⅛" BAR REINFORCEMENT	1½"x1½"x⅛" ∠s 4'-0 FROM JT.

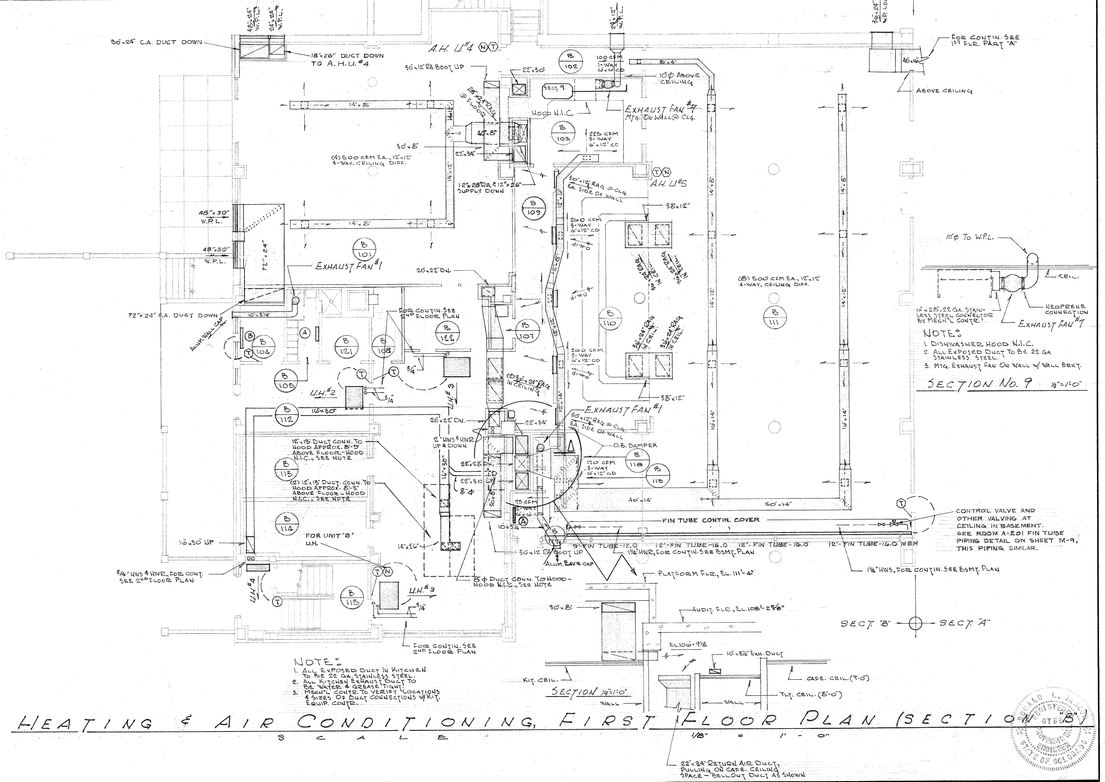
NOTE: 1. MAXIMUM JOINT SPACINGS TO BE 7'-10" O.C. DUCT SECTIONS OF 5'-0" MAY BE USED W/ BRACING ANGLES OMITTED & WITH JOINTS INDICATED. ALL DUCTWORK ABOVE 12" IN MAXIMUM WIDTH TO BE CROSS-BROKEN.

SYMBOLS

SYMBOLS	DESCRIPTION
HWS	HEATING WATER SUPPLY
HWR	HEATING WATER RETURN
CWS	CHILLED WATER SUPPLY
CWR	CHILLED WATER RETURN
D	CONDENSATE DRAIN
C	CONDENSER WATER
CR	CONDENSER WATER RETURN
	GATE VALVE
	CHECK VALVE
	MOTORIZED VALVE
	MANUAL AIR VENT
	BALL COCK
	ECCENTRIC REDUCER
	BRAIDED FLEX. CONN.
	ANCHOR
P	PRESS. GAGE
T	THERMOMETER
T N	PNEUMATIC THERMOSTAT WITH STAT
CD	CEILING DIFFUSER
SR	SUPPLY REGISTER
RAG	RETURN AIR GRILLE
ER	EXHAUST REGISTER

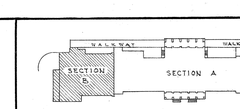


HEATING & AIR CONDITIONING, BASEMENT FLOOR PLAN (SECTION "B")
SCALE 1/8" = 1'-0"



NOTE:
1. ALL EXPOSED DUCT IN KITCHEN TO BE 22 GA STAINLESS STEEL.
2. ALL DUCTWORK TO BE SEALED TO BE WATER & GREASE TIGHT.
3. MECH. CONTR. TO VERIFY LOCATIONS & SIZES OF DUCT CONNECTIONS W/ KIT. EQUIP. CONTR.

HEATING & AIR CONDITIONING, FIRST FLOOR PLAN (SECTION "B")
SCALE 1/8" = 1'-0"



REVISIONS
5.25.66

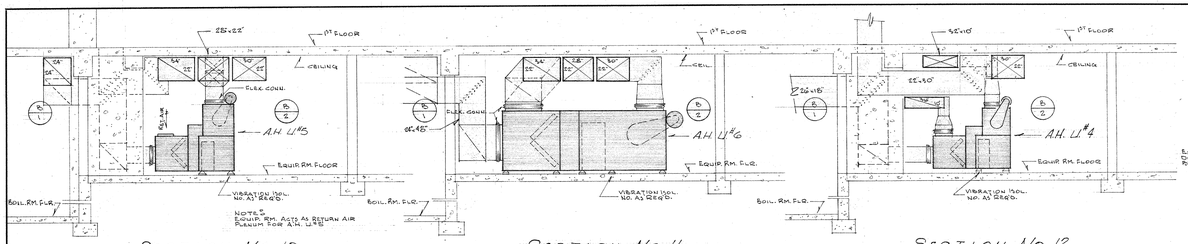
BENET HILL
ACADEMY BUILDING
SISTER M. LIGUORI, O.S.B., SUPERIOR
COLORADO SPRINGS • • COLORADO

BRINKMAN & HAGAN ARCHITECTS
EMPORIA • • KANSAS

DATE
OCT. 12, 1965

SHEET
M-8

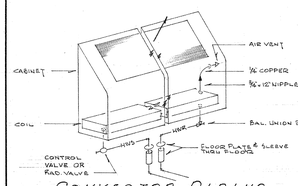
MECHANICAL



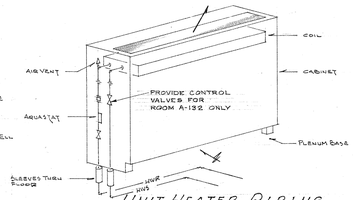
SECTION NO. 10
1/8" = 1'-0"

SECTION NO. 11
1/8" = 1'-0"

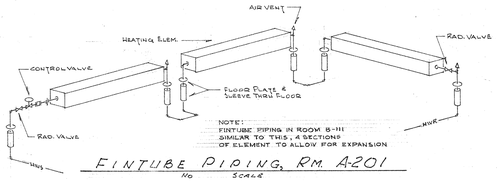
SECTION NO. 12
1/8" = 1'-0"



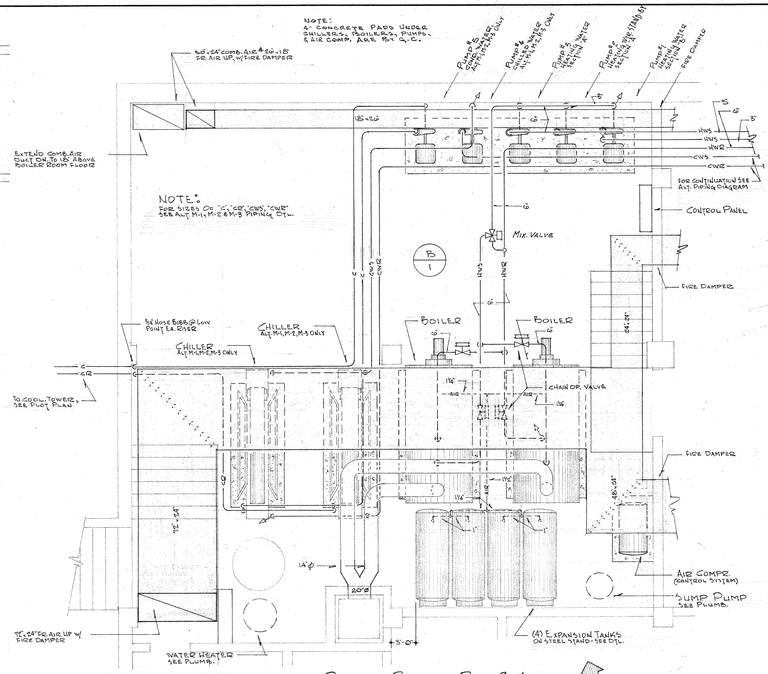
CONVECTOR PIPING
NO SCALE



UNIT HEATER PIPING
NO SCALE

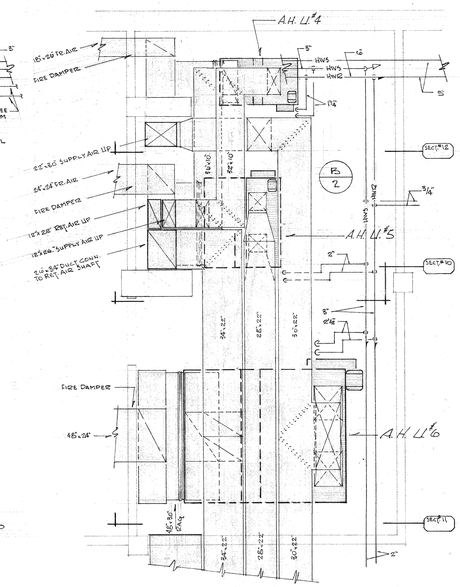


FINTUBE PIPING, RM. A-201
NO SCALE



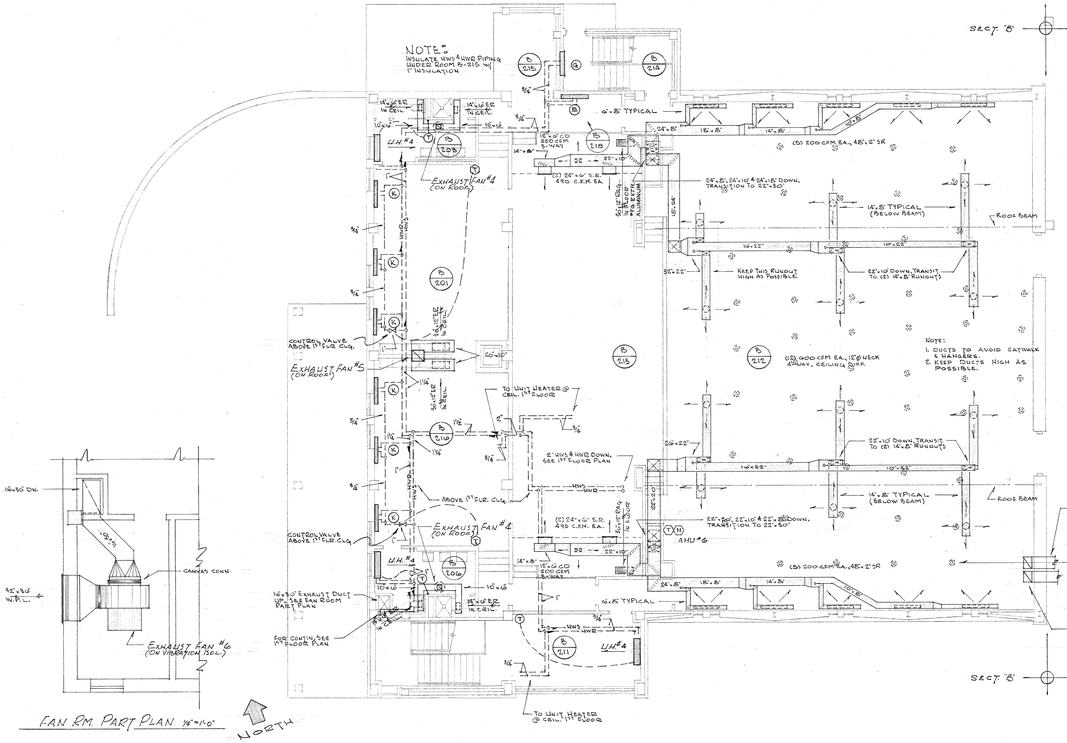
PART PLAN RM. B-1
1/8" = 1'-0"

NORTH



PART PLAN RM. B-2
1/8" = 1'-0"

NORTH


NOTE: INSULATE HWS & HWR PIPING UNDER SLAB A-215 W/ 1" INSULATION
W 8 X 35
W 14 X 61
W 16 X 26
W 14 X 22
W 8 X 18
W 10 X 12
W 12 X 14
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APPENDIX D

INSPECTOR CERTIFICATIONS

STATE OF COLORADO

ASBESTOS CERTIFICATION*

Colorado Department of Public Health
and Environment
Air Pollution Control Division

This certifies that

Michael Perry

Certification No: 15632

has met the requirements of 25-7-507, C.R.S. and Air Quality Control Commission Regulation No. 8, Part B, and is hereby certified by the state of Colorado in the following discipline:

Building Inspector*

Issued: 8/6/2008

Expires on: 8/6/2009

Authorized APCD Representative

** This certificate is valid only with the possession of a current Division-approved training course certification in the discipline specified above.*

This course meets the requirements of AQCC Reg.#8

Environmental Training & Consulting

2761 West Oxford Avenue #7
Englewood, CO 80110
(303)781-0422

CERTIFIES THAT

MICHAEL PERRY

has successfully completed

the **EPA-APPROVED AHERA ASBESTOS COURSE** for INSPECTOR

and passed the required examination in that discipline

This course is EPA-approved under Section 206 of the Toxic Substance Control Act (TSCA)

Course Date 07/28 – 07/30/08
No. of hours 24
Exam date 07/30/08
Certificate No. DO073008 - 10AI
Expires 07/30/09

Lester K Ablon

Authorized Signature

Invalid without raised seal

APPENDIX E

GLOSSARY

GLOSSARY

ASBESTOS - A generic name given to a number of naturally occurring silicates that have a unique crystalline structure. They are incombustible in air and separable into fibers. Asbestos includes the asbestiform varieties of Chrysotile, Crocidolite, Amosite, Anthophyllite, Actinolite, and Tremolite.

ACBM - Asbestos Containing Building Material. A term that encompasses surfacing, thermal system, and miscellaneous asbestos-containing material in or on interior/exterior parts of a building. This definition also included exterior hallways connecting buildings, porticos, and mechanical system insulation.

ACM - Asbestos-Containing Material. Any material with more than one percent (1%) asbestos content.

BULK SAMPLE - A piece of suspected asbestos-containing building material.

FIBER RELEASE - The process by which dust is given off from asbestos materials and becomes airborne.

FRIABLE - A material that can be crumbled, pulverized, or reduced to powder when dry, by moderate hand pressure.

FUNCTIONAL AREA - Specially distinct units within a building such as a room, a group of rooms, or a homogeneous area - this includes crawl spaces and areas above a drop ceiling.

HVAC - Heating, Ventilating, and Air Conditioning Systems. The system of pipes, ducts, and equipment (air conditioners, chillers, heaters, boilers, pumps, and fans) used to heat, cool, move, and filter air in a building.

HOMOGENEOUS AREA - An area which appears similar throughout in terms of color, texture, and date of material application.

INACCESSIBLE AREA - Inaccessible areas are those areas that cannot be inspected due to physical barriers. Buildings may contain areas that are intrinsically inaccessible. These include gaps and spaces in walls, areas above fixed ceilings and below floors, and enclosed boiler breechings and ducts. Some buildings contain other inaccessible areas, such as very small pipe tunnels, sealed crawl spaces, unsafe attics, encased boilers, etc.

NON-FRIABLE - A material which cannot be crumbled or pulverized by hand pressure.

PACBM - Presumed Asbestos-Containing Building Material

PIPE JOINT - The elbow, valve, connector, reduction or pipe hanger.

PLENUM - A space designed to transport air in a building. They are commonly found below ground level and in the space between a dropped ceiling and the floor above it.

PLM - Polarized Light Microscopy. An accepted method for analyzing bulk ACBM samples.

USEPA (EPA) - United States Environmental Protection Agency. The federal agency which governs environmental problems. In the case of ACBM in buildings, the USEPA deals with regulations and their guidelines for application, renovation, removal, and disposal of ACBM in building structures.

APPENDIX F

WALSH CREDENTIALS

CORPORATE CREDENTIALS

Walsh Environmental Scientists and Engineers, Inc. (WALSH) is a full-service, multi-disciplinary environmental consulting firm providing environmental and analytical services nationwide. Founded in 1979 by James P. Walsh, the firm presently employs more than 70 scientists and engineers, including 29 professionals with Master's Degrees and eight Ph.D. graduates. With three offices in two states, WALSH has established a reputation for quality and innovation by successfully completing complex environmental projects.

WALSH consists of a diverse group of highly-qualified and experienced professional personnel with advanced expertise in environmental engineering, geology, geochemistry, analytical chemistry, hydrology, soil science, water science, industrial hygiene and safety, and computer technology.

With more than 150 satisfied clients in 21 states, from small business owners to major oil companies, WALSH emphasizes personalized service provided by highly motivated senior professional staff.

Environmental Science and Engineering

WALSH is dedicated to accurately assessing and resolving complex environmental problems in an efficient and cost-effective manner. Our practical approach to managing the application of remediation technologies maximizes the company's ability to accomplish the goals of its clients.

The company's environmental services include:

- Phase I and Phase II Environmental Site Assessments
- "Superfund" and Hazardous Waste Site Investigations
- Underground Storage Tank Removal and Remediation
- Soil Boring, Logging, and Sampling
- Installation of Ground-Water Monitoring Systems
- Ground-Water and Surface Water Sampling
- Laboratory Testing of Soil and Ground-Water Samples
- Contaminant Characterization
- Solid Waste Landfill Permitting and Closure
- Computer Modeling of Environmental Systems
- Environmental Impact Assessments/Statements
- Expert Witness and Litigation Support